THIS FILM MAY NOT BE USED TO REPRODUCE ADDITIONAL FILM COPIES

Use of this film in reproduction is limited
to individual page reprints when occasional
demands require paper copies for use and study.

Micro Photo Inc.

OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 77

NO 1 THRU 13

OCT-DEC -1896

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

VOLUME LXXVII.

OCTOBER 6 TO DECEMBER 29, INCLUSIVE,

1896.

WASHINGTON:
GOVERNMENT PRINTING OFFICE
1897.

CONTENTS

ERRATA FOR VOLUME LXXVII OF THE OFFICIAL GAZETTE.

ANNOUNCEMENTS—VOLUME LXXVII.

DISCLAIMERS—VOLUME LXXVII.

TEXT OF THE OFFICIAL GAZETTE, OCTOBER 6 TO DECEMBER 29, 1896, INCLUSIVE.

INDEX TO THE DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

DIGEST OF DECISIONS OF THE COMMISSIONER OF PATENTS AND OF THE UNITED STATES COURTS IN PATENT CASES.

INDEX OF PATENTS AND PATENTEES FOR THE QUARTER YEAR, OCTOBER TO DECEMBER, 1896.

ERRATA.

568,818, page 36, in heading, name of inventor, for "Albert Ullman" read *Albert Ullmann.*

569,107, page 127, third claim, line 2, strike out the reference-letter "B," and, same claim, line 3, strike out reference-letter *a'*.

569,145, page 139, in heading, name of second-mentioned inventor, for "William Rauk" read *William Rank.*

569,582, page 300, in heading, name of assignee, for "Maximillian M. Scholtz" read *Maximillian M. Schoetz.*

569,911, page 421, second claim, line 5, after the word "posts" insert the words *and the resistances.*

570,391, page 604, in heading, name of inventor, for "George Fox, 2d" read *George Fox, II.*

570,470, page 648, in heading, assignment, name of first-mentioned assignee, for "Daniel T. McMullen" read *Daniel Y. McMullen.*

570,962, page 849, in heading, after residence of inventor, insert *assignor to William H. Haskell, Pawtucket, R. I.*

571,105, page 897, in heading, assignment, name of assignee, for "W. Butterworth & Sons Company" read *H. W. Butterworth & Sons Company.*

571,110, page 899, fourth claim, lines 5 and 6, strike out the words "and means to produce a uniform relative movement of said sheet and recorder" and insert the same after the words "coöperating recorder," line 5, same claim.

571,445, page 1016, in heading, assignment, name of assignee, for "Electric Bulletin Company" read *Electric Bullentin Company.*

571,486, page 1029, first claim, line 5, strike out the words "one of said doors."

571,523, page 1042, first claim, line 2, for "under" read *upper*, and, line 3, for "upper" read *under.*

571,733, page 1110, in heading, residence of inventor, for "Boston, Mass." read *Northampton, Mass.*

571,735, page 1111, in heading, name of administrator, for "Charles G. Brunson" read *Charles B. Brunson.*

571,774 and **571,775,** page 1144, in headings, residence of inventor, for "Wellington, New Zealand" read *Wellington, England.*

571,945, page 1203, in heading, assignment, first-mentioned assignee, for "Wilhelmina Laun Ertheiler" read *Wilhelmina Zaun Ertheiler.*

572,280, page 1344, twelfth claim, line 3, for the word "at" read *in.*

572,350, page 1237, forty-first claim, line 8, for the word "mount" read *movement.*

572,372, page 1375, in heading, assignment, second-mentioned assignee, for "Frank H. Burfee" read *Frank H. Burpee.*

573,102, page 1657, in heading, assignment, name of assignee, for "Albert K. Pettingill" read *Ubert K. Pettingill.*

573,271, page 1710, in heading, name of inventor, for "Joseph M. Householder" read *Joseph M. Housholder.*

573,377, page 1748, in heading, title of invention, for "Process of Consuming Hydrocarbon Gas" read *Process of Consuming Acetylene Gas.*

573,483, page 1807, in heading, assignment, name of assignee, for "Electric Chemical Company" read *Eclectic Chemical Company.*

573,765, pages 1903-1904, strike out all after number—title, drawing, and claims—and insert CANCELED.

573,771, page 1905, in heading, title of invention, for "Post-Winder and Wire-Fastener" read *Post-Winder and Wire-Fastener for Wire Fences.*

26,292, (Design,) page 1115, strike out all after number—title, drawing, and claim—and insert CANCELED.

29,093, (Trade-Mark,) page 809, in heading, name of registrant, for "Tarrant & Company" read *Tarrant & Co.*

29,287, (Trade-Mark,) page 1594, in heading, residence of registrant, for "South Hamilton, Canada" read *Hamilton, Canada.*

ANNOUNCEMENTS—VOL. LXXVII.

	Page.
APPLICATIONS UNDER EXAMINATION—	
Condition of	2, 160, 320, 458, 638, 828, 980, 1130, 1278, 1434, 1602, 1788, 1944
ATTORNEYS—	
Order denying disbarred attorneys access to papers—	
Order 1108	1129, 1277, 1433, 1943
Order—Disbarring John Johnson	159
William W. Osborn	1
Rescinding order disbarring Robert A. Kellond	827
BELGIAN PATENTS—	
Information in regard to	1601, 1943
CHANGES IN CLASSIFICATION—	
Order 1100	319
1104	319
1107	979
COUPON ORDERS—	
New five-cent	1
COURT OF APPEALS OF THE DISTRICT OF COLUMBIA—	
Act establishing, extract from	1129, 1943
DRAWINGS—	
Blue-prints of	159
ERRATUM	811
FOREIGN PATENT LAWS—	
Mexico	827
FOREIGN PATENTS AND PUBLICATIONS CONTAINED IN THE SCIENTIFIC LIBRARY	1, 457
INDEXES TO FOREIGN PATENTS	637, 1433, 1787
INDEXES TO PATENTS ON ELECTRICITY	1129, 1601, 1943
INDEXES TO PERIODICALS—	
Announcement relative to those on file in the Scientific Library	1277, 1787
OATHS OF APPLICANTS IN FOREIGN COUNTRIES—	
Order 822	1, 637, 827, 1277, 1433, 1787
PRINTED COPIES OF PATENTS, PRICE OF—	
Order 1094	1, 457, 637, 1277, 1787
PUBLISHERS' CATALOGUES—	
Request for	637, 827, 1278, 1602
PUNCTUATION OF PRINTED SPECIFICATIONS OF PATENTS—	
Order 789	828, 1277
RULES OF PRACTICE—	
Amendment to Rules 65, 68, and 134	637, 1433, 1787
SCIENTIFIC LIBRARY, PRIVILEGES OF—	
Order 799	2, 160, 458, 637, 1130, 1434, 1788
SIGNATURES TO SPECIFICATIONS—	
Order 600	1, 159, 457
SPECIFICATIONS AND AMENDMENTS—	
Extracts from Rules of Practice in relation to	159, 457, 1129, 1601, 1943
SPECIFICATIONS AND AMENDMENTS, PREPARATION OF, FOR THE PRINTER—	
Order 525	457, 827, 1129, 1433, 1601
WITHDRAWAL OF CASE FROM ISSUE—	
Order 629	638, 1601
WOMEN INVENTORS—	
List of, for sale	1433

DISCLAIMER.

	Page.
John H. Stonemetz	1601

OFFICIAL GAZETTE

OF THE

UNITED STATES PATENT OFFICE.

OCTOBER–DECEMBER, 1896.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 1. TUESDAY, OCTOBER 6, 1896. PRICE—$5 per year.

CONTENTS.

	Page
ATTORNEYS	1
PRICE OF PRINTED COPIES OF SPECIFICATIONS AND DRAWINGS	1
NAMES OF APPLICANTS	1
NEW COUPON ORDERS FOR COPIES OF PATENTS, ETC	1
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	1
FOREIGN PATENTS AND PUBLICATIONS	1
PRIVILEGES OF THE SCIENTIFIC LIBRARY	2
ISSUE OF OCTOBER 6, 1896	2
APPLICATIONS UNDER EXAMINATION	2
PATENTS GRANTED	3
REISSUES	None.
DESIGNS	144
TRADE-MARKS	148
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Cushman *v.* Lines	153
Richardson *v.* Leidgen	153
Morgan *v.* Hanson	154
DECISIONS OF THE U. S. COURTS—	
Dueber Watch Case M'f. Co. *et al. v.* Robbins *et al*	154

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,
Washington, D. C., September 29, 1896.

SIR: The Secretary of the Interior has ordered that William W. Osborn, of Lansing, Mich., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

E. WOMACK,
Chief Clerk.

The Commissioner of Patents.

Price of Printed Copies of Specifications and Drawings.

It is hereby ordered, pursuant to an amendment of section 498 of the Revised Statutes, entitled "An act amending the statutes relating to the sale of printed copies of patents," approved May 19, 1896, that the price to be paid for uncertified printed copies of specifications and drawings of patents shall be, for single copies, or any number of unclassified copies, five cents each; for copies by subclasses, three cents each; by classes, two cents each, and for the entire set of patents issued, in one order, one cent each.

This order will be in effect on and after July 1, 1896.

Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

New Coupon Orders for Copies of Patents, Etc.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., June 5, 1896.

In view of the reduction in the price of printed copies of specifications and drawings under the act of May 19, 1896, coupon orders good for a single copy thereof will be obtainable from this Office on and after July 1, 1896, in packages of twenty, at $1 per package. These orders will also be receivable for blueprints and in duplicate for one copy of THE OFFICIAL GAZETTE. They will not be sold in quantities less than packages of twenty.

S. T. FISHER,
Acting Commissioner.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.
Argentine Republic.
Belgium.
Brazil.
Costa Rica.
Denmark.
Haiti.
Honduras.
Italy.
Mexico.
Netherlands.
Norway.
Peru.
Portugal.
Russia.
San Salvador.
Servia.
Sweden.
Switzerland.

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Foreign Patents and Publications.

The patents (if printed) and other official patent publications of the following governments may be found in the Scientific Library:

Austria-Hungary.
Barbadoes.
Belgium.
British Honduras.
Canada.
Ceylon.
Denmark.
Finland.
France.
Germany.
Great Britain.
Hawaii.
India.
Italy.
Jamaica.
Japan.
Leeward Islands.
Luxemburg.
Malta.
Mauritius.
Netherlands.
New South Wales.
New Zealand.
Norway.
Portugal.
Queensland.
Russia.
South Australia.
Spain.
Straits Settlements.
Sweden.
Switzerland.
Tasmania.
Trinidad.
Victoria.
West Australia.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of October 6, 1896.

Patents	434—No. 568,724 to No. 569,156, inclusive.
Designs	27—No. 26,143 to No. 26,169, inclusive.
Trade-Marks	54—No. 28,924 to No. 28,977, inclusive.
Labels	None.
Prints	None.
Reissues	None.
Total issue	515

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	...	New Hampshire	3	...
Arizona Territory	...	...	New Jersey	26	2
Arkansas	1	...	New Mexico Territ'y	...	...
California	14	...	New York	76	10
Colorado	5	...	North Carolina	1	...
Connecticut	9	3	North Dakota	...	...
Delaware	2	...	Ohio	33	2
District of Columbia	5	...	Oklahoma Territory	...	...
Florida	...	...	Oregon	2	...
Georgia	3	...	Pennsylvania	53	4
Idaho	...	...	Rhode Island	8	2
Illinois	27	3	South Carolina	...	...
Indian Territory	...	...	South Dakota	1	...
Indiana	9	1	Tennessee	2	1
Iowa	9	1	Texas	3	...
Kansas	9	...	Utah	2	...
Kentucky	8	1	Vermont	3	2
Louisiana	1	...	Virginia	...	1
Maine	2	...	Washington	3	...
Maryland	7	1	West Virginia	1	...
Massachusetts	39	7	Wisconsin	11	...
Michigan	15	...	Wyoming	1	...
Minnesota	5	1	U. S. Army	...	...
Mississippi	...	...	U. S. Navy	...	...
Missouri	14	...			
Montana	1	...	Total to citizens of the United States	420	43
Nebraska	4	1			
Nevada	...	...			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	...	...	Mexico	...	...
Australia	...	...	Netherlands	...	...
Austria-Hungary	3	...	Newfoundland	...	...
Barbadoes	...	...	New South Wales	1	...
Belgium	...	...	New Zealand	...	...
Bermuda	...	...	Norway	...	...
Brazil	...	...	Orange Free State	...	...
Canada	8	1	Portugal	...	...
Cape Colony	...	...	Queensland	...	...
Ceylon	...	...	Russia	...	...
Chile, Republic of	...	...	Scotland	4	...
Colombia	...	...	South African Republic	...	...
Cuba	...	...	South Australia	...	...
Denmark	...	...	Spain	...	...
Ecuador	...	...	Straits Settlements	1	...
England	11	5	Switzerland	2	...
France	...	1	Venezuela	...	...
Germany	10	3	West Australia	...	...
Guatemala	...	...			
India	...	...	Total to citizens of foreign countries	41	11
Ireland	1	1			
Italy	...	...			

APPLICATIONS UNDER EXAMINATION.

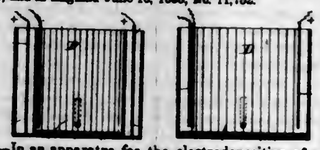
Condition at Close of Business September 29, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Aug. 29	Sept. 21	224
261	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Sept. 8	Sept. 19	90
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Sept. 1	Sept. 15	123
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Aug. 31	Sept. 8	158
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Aug. 31	Sept. 5	179
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Sept. 2	Sept. 2	212
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Aug. 31	Sept. 1	209
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Aug. 31	Sept. 1	261
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Aug. 31	Aug. 31	200
246	I. Tillage and Fences	Aug. 31	Aug 28	188
	Between one and two months.			
96	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Aug. 14	Sept. 12	172
356	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Aug. 22	Sept. 8	169
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Aug. 19	Sept. 4	151
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 19	Sept. 3	327
215	XVII. Paper Manufactures and Printing.	Aug. 19	Sept. 1	176
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 13	Aug. 28	164
190	IX. Hydraulics, Fire-Extinguishers, etc.	Aug. 24	Aug. 26	190
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 13	Aug. 26	270
93	XXI. Textiles, etc.	Aug. 8	Aug. 24	173
248	XVIII. Steam-Engineering, etc.	Aug. 5	Aug. 18	151
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Aug. 14	252
102	XIX. Stoves and Furnaces	Aug. 10	Aug. 10	298
221	XXIII. Instruments of Precision, Acoustics, etc.	Aug. 5	Aug. 10	318
253	X. Carriages and Wagons	Aug. 3	Aug. 10	490
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 1	Aug. 6	382
108	II. Farm Stock, Products, etc.	Aug. 10	Aug. 4	327
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	July 29	Aug. 4	395
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 3	July 17	427
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes.	July 20	Aug. 15	1188
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	July 28	Aug. 12	154
80	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	July 27	Aug. 10	479
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 1	July 29	673
	Between three and four months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 2	July 31	745
	Total number of applications awaiting action			9,906
	Under one month in arrears.			
	Designs	Sept. 2	Sept. 21	151
	Trade-Marks	Sept. 12	Sept. 18	75

PATENTS

GRANTED OCTOBER 6, 1896.

568,724. APPARATUS FOR ELECTRODEPOSITION OF GOLD OR SILVER. EMILE ANDREOLI, London, England. Filed July 10, 1895. Serial No. 555,502. (No model.) Patented in Belgium Apr. 1, 1895, No. 114,959, and in England June 18, 1895, No. 11,752.



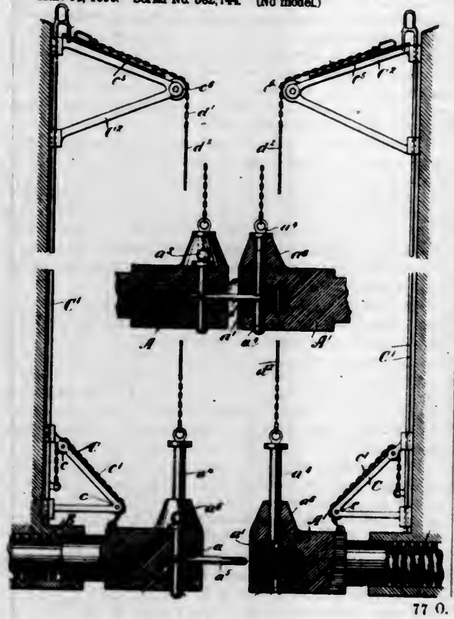
Claim.—In an apparatus for the electrodeposition of gold and silver from a solution, a tank provided with one or more anodes and a series of amalgamated cathodes, each cathode consisting of perforated, skeleton, or network plates and a layer of mercury in the bottom of the tank into which each of the cathodes dips, said layer of mercury being connected with the negative pole of electricity thereby constituting a common vehicle for the current from all the cathodes while at the same time maintaining the said cathodes constantly amalgamated.

568,725. TRACK-GAGE. HARRY W. ARMSTRONG, Oakmont, Pa. Filed Nov. 21, 1895. Serial No. 569,604. (No model.)



Claim.—A combined track-gage and level, having at one end a lug or stop adapted to engage the side of the rail for gaging the width of the track, and a separate vertically movable and adjustable level-measuring bar having at its lower end a plate 6 adapted to rest on the surface of the rail and to bear laterally against said lug or stop, which serves as a guide therefor; substantially as described.

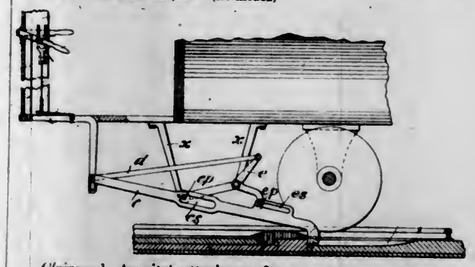
568,726. CAR-COUPLING. EMIL BALKER, Chicago, Ill. Filed Mar. 11, 1896. Serial No. 582,744. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head, having two cavities on the same plane, a coupling-link, set in one of these two cavities and a pin set vertically in the draw-head and engaging the link, holding it securely therein, in position to enter the corresponding cavity of an opposite draw-head, a drop-pin, sliding in a hole, passing vertically through the other cavity, and adapted to arrest the link of an opposite draw-head thereby coupling the draw-heads together, a bracket secured to the wall of the car above the draw-head, a grooved pulley set in the bracket over the pin-hole, a chain attached to the dropping-pin and passing over the pulley, a forked guide, secured to the bracket, a sliding handle, attached to the chain, sliding on the bracket between the tines of the forked guide, and having a hole in its base-plate, adapted to receive a hook, whereby the dropping-pin may be lifted above the cavity in the draw-head and held in uplifted position.

2. In a car-coupling, the combination of a draw-head, having two cavities on the same plane, a coupling-link, set in one of these two cavities and a pin set vertically in the draw-head and engaging the link, holding it securely therein, in position to enter the corresponding cavity of an opposite draw-head, a drop-pin, sliding in a hole, passing vertically through the other cavity, a bracket secured to the wall of the car above the draw-head, a grooved pulley set in the bracket over the pin-hole, a chain attached to the dropping-pin and passing over the pulley, a sliding handle attached to the chain, having a hole in its base-plate and adapted to be held in uplifted position by a hook, a push-rod, adapted to slide up and down along the wall of the car, a handle connected to the upper end of the push-rod and having a hook adapted to enter the hole in the base-plate of the lifting-handle, a bracket secured to the wall of the car above and in near proximity to the draw-head, grooved pulleys set in the bracket, a chain secured to the lower end of the push-rod passing around the bracket and connected to the draw-head for the purpose of automatically releasing the drop-pin from its fastening, when the draw-heads are forcibly joined.

568,727. SWITCH. EMIL BALKER, Chicago, Ill. Filed Mar. 30, 1896. Serial No. 585,369. (No model.)



Claim.—1. A switch attachment for street-cars, comprising two bell-crank levers, one pivoted in the platform of the car and the other on a bracket underneath the car, a connecting-rod connecting these bell-crank levers, a slotted oscillating lever, having a changeable fulcrum, connected to the bell-crank levers, and adapted to be moved forward and downward by the bell-crank lever, pivoted in the platform of the car, and returned to its normal position by the other bell-crank lever; a lifting-lever hinged to a post on the platform of the car, a connecting-rod, connecting the lifting-lever to the bell-crank lever, pivoted in the platform of the car, means for securing the lifting-lever to the post on the platform in position, and means for disengaging the lifting-lever from the post by a treadle, attached to the bell-crank lever pivoted in the platform.

2. In a switching attachment for street-cars, the combination with a slotted switching-lever, adapted to be shifted in its fulcrum, and with a bell-crank lever, pivoted to the platform of the car and connected to the switch-lever, of a bell-crank lever, having one end connected to the head end of the switching-lever and the other end by means of a connecting-rod to the joint of the switching-lever with

operating bell-crank lever, for the purpose of shifting back the switching-lever into its normal position.

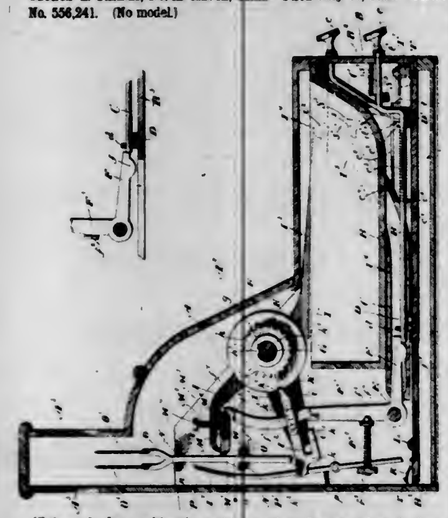
3. In a switching attachment for street-cars, the combination with a lifting-lever for operating the switching attachment, and normally secured in this position by a pivot, set in the lever and entering in a corresponding recess in the post, of a bell-crank lever, hinged to the post, engaging with its forked arm the pivot, securing the lifting-lever in position and having its other end connected to a treadle, attached to the bell-crank lever, operating the switching attachment, for the purpose of disengaging the lifting-lever from the post by means of the treadle.

4. In a switching attachment for street-cars, comprising two bell-crank levers, one pivoted in the platform of the car and the other on a bracket underneath the car, a connecting-rod connecting these bell-crank levers, a slotted oscillating lever, having a changeable fulcrum, connected to the bell-crank levers, and adapted to be moved forward and downward by the bell-crank levers, pivoted in the platform of the car, and returned to its normal position by the other bell-crank lever; the combination with the switching-lever of a roller, set in slot in the hooked end of the switching-lever and adapted to carry the edge of the switching-lever above the ground.

5. In a switching device for street-cars, comprising two bell-crank levers, one pivoted in the platform of the car and the other on a bracket underneath the car, a connecting-rod, connecting these bell-crank levers, a slotted oscillating lever, having a changeable fulcrum, connected to the bell-crank levers, and adapted to be moved forward and downward by the bell-crank lever, pivoted in the platform of the car, and returned to its normal position by the other bell-crank lever; the combination with a switching-lever having a roller revolving in a pivot secured to one side of the head of the switching-lever, of a block or lifting-lever rail, set on the side of the slot wherein the switching-lever engages, for lifting the switching-lever out of the slot.

568,728. CASH INDICATING AND REGISTERING APPARATUS.

GEORGE L. BARNES, North Haven, Conn. Filed July 17, 1895. Serial No. 556,241. (No model.)



Claim.—1. In combination with a series of registering devices, a movable frame, a series of pawls for actuating the registering devices, mounted on the frame, a series of movable arms connected with the pawls, so as to move them into and out of register-device-engaging position, and a series of keys connected with such arms, so that the movement of a key causes the arm corresponding thereto to move toward the registering devices, substantially as and for the purpose specified.

2. In combination with a series of registering devices, a movable frame, a series of pawls for actuating the registering devices, mounted on the frame, a series of movable arms connected with the pawls, so as to move them in and out of register-device-engaging position, a second movable frame, connections between the two frames, whereby movement of the second one causes the other to move, and a series of keys movably mounted upon the second frame, and connections between such keys and the series of movable arms, whereby the keys normally hold the arms, to retract the respective pawls, and connections between the keys and the pawl-operating arms, whereby movement of a key upon the second frame causes the arm corresponding thereto to move its pawl toward the registering devices, substantially as and for the purpose specified.

3. In combination with a series of registering devices, a movable frame, a series of pawls, for actuating the registering devices, mounted on the frame, a series of movable arms connected with the pawls, so as to move them toward and from the registering devices, yielding means for pressing such arms toward the registering devices, a series of keys, and connections between the same and the pawl-moving arms, whereby the arms are normally held back, and, as any key is moved, the respective arm is left free to move toward the registering devices, substantially as and for the purpose shown.

4. In combination with a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of movable arms connected with the pawls, yielding means for forcing the arms toward the registering devices, arms connected with the pawl-actuating arms, and a series of movable devices, to support these second arms, adapted to be moved from under the same, substantially as and for the purpose set forth.

5. In combination with a series of registering devices, a movable frame, a series of pawls movably mounted thereon, a series of levers each having an arm connected with one of the pawls, yielding means tending to swing the levers to carry the pawls toward the registering devices, a second movable frame connected with the first one, so as to actuate the same, and a series of keys movably mounted upon the second frame, to engage arms of the levers and hold them normally retracted, adapted to be withdrawn out of engagement with said arms by movement upon the frame supporting the keys, substantially as and for the purpose described.

6. In combination with a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of levers each having an arm connected with one of the pawls so as to move the same toward and from the respective registering device, yielding means for swinging the levers to carry the pawls toward the registering devices, and a series of keys for supporting the other arms of the levers, adapted to be withdrawn therefrom, substantially as and for the purpose described.

7. In combination with a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of levers each having an arm connected with one of the pawls so as to move the same toward and from the respective registering device, yielding means for swinging the levers to carry the pawls toward the registering devices, a series of movable keys, for supporting the other arms of the levers, adapted to be withdrawn therefrom, and means for moving back any lever which has been released by the withdrawal of its key, substantially as and for the purpose specified.

8. In combination with a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of levers each having an arm connected with one of the pawls so as to move the same toward and from the respective registering device, yielding means for swinging the levers to carry the pawls toward the registering devices, a series of movable keys for supporting the other arms of the levers, adapted to be withdrawn therefrom, springs to hold the keys normally in position to support such arms, and means for moving back any lever which has been released by withdrawal of its key, substantially as and for the purpose shown.

9. In combination with a series of movable keys, a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of movable arms having curved edges engaging bearings on the pawls so as to move in both directions with the pawls, means independent of the keys for moving the arms toward the registering devices, and connections between the keys and the movable arms, whereby, as a key is actuated, the respective arm will be caused by its actuating means to move toward the registering device, substantially as and for the purpose set forth.

10. In combination with a series of registering devices, a movable frame, a series of pawls mounted thereon, a series of movable arms having curved edges on their front and rear sides engaging bearings on the pawls, means for moving the arms toward the registering devices, a series of movable keys, connections between the same, and the movable arms, whereby as a key is actuated, the respective arm will be caused to move toward the registering device, and means for returning the arm, substantially as and for the purpose described.

11. In combination with a series of registering devices, a swinging frame, a series of sliding pawls mounted thereon to engage and actuate the registering devices, and a series of moving arms each engaging, with its forward and rear edges, bearings on one of the pawls, substantially as and for the purpose shown.

12. In combination with a series of registering devices, a swinging frame, a series of sliding pawls thereon to engage and actuate the registering devices, and a series of movable arms each having its forward edge engaging one of the bearings on one of the pawls curved and its rear edge adapted to engage the other bearing on the pawl, substantially as and for the purpose set forth.

13. In combination with a series of registering devices, a swinging frame having the two transverse bars, the series of sliding pawls mounted on the frame to engage and actuate the respective registering devices, each having its forward portion guided in a slot in one of the transverse bars, and its rear end guided in a slot in the other bar, and provided with an arm extending under such bar, to hold the pawl down in place as it moves, substantially as and for the purpose described.

14. In combination with a series of registering devices, a swinging frame having the two transverse bars, the series of sliding pawls thereon, to engage and actuate the respective registering devices, each having its forward portion guided in a slot in one of the bars, and its rear end guided in a slot in the other bar, and provided with an arm extending under the bar, movable arms, and bearings on the pawls engaged thereby, substantially as and for the purpose specified.

15. In combination with a registering device, having a ratchet-wheel, a swinging frame, a sliding pawl mounted thereon, and having the two roller-bearings, and a movable arm for moving the pawl toward and from the ratchet-wheel projecting between and adapted to engage such bearings with its front and rear sides, substantially as and for the purpose shown.

16. In combination with a registering device having a ratchet-wheel, a swinging frame, a sliding pawl mounted thereon having the two bearings, and a movable arm for moving the pawl toward and from the ratchet-wheel having a portion projecting up between and engaging such bearings, curved so as to be substantially concentric with the ratchet-wheel, when the arm is moved toward the latter, substantially as and for the purpose set forth.

17. In a registering mechanism, in combination with two ratchet-wheels, of which one has one notch deeper than the others, the swinging frame, a sliding pawl mounted thereon, having the two ratchet-wheel-engaging noses, of which the one to engage the ratchet-wheel with the deep notch is longer than the other, a movable arm and bearings on the pawl to engage the front and rear sides of the arm, whereby it will move the pawl toward and from the ratchet-wheels as it swings in one direction and the other, while leaving the pawl free to move with the swinging frame, substantially as and for the purpose described.

18. In a registering mechanism, in combination with two ratchet-wheels, of which one has one notch deeper than the others, the swinging frame, the sliding pawl mounted thereon, consisting of two plates connected together and having the noses to engage the ratchet-wheels, formed so that the one to engage the deep-notched wheel is longer than the other, and a movable arm for moving the pawl to and from the ratchet-wheels projecting up between two bearings between these plates, substantially as and for the purpose specified.

19. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator engaging and actuating pieces mounted on the frame, a series of devices engaging the actuating devices and exerting upon them a yielding pressure to force them toward their indicator-engaging positions, a series of movable keys to engage and retain portions of such devices adapted to be moved to leave the latter free to move the indicator-engaging pieces into position to engage and actuate the indicators as the frame is moved, substantially as and for the purpose described.

20. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator engaging and actuating devices mounted on the frame, a series of arms engaging and moving such pieces, yielding means, tending to move the arms to carry the respective pieces into position to engage the indicators, a second movable frame, a series of keys movably mounted thereon, and connections between such keys and the movable arms, whereby the keys normally hold the arms to keep their connected movable pieces out of indicator-engaging position, and the movement of the keys on their frame leaves the arms free to move, under the stress of their yielding, actuating means, substantially as and for the purpose specified.

21. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator engaging and actuating pieces, mounted on the frame, spring-actuated devices connected with these pieces, so as to move the same into their indicator-engaging positions, a series of keys and connections between them, and the spring-actuated devices, whereby, as any key is operated, the respective spring-actuated device is left free to move the piece connected therewith into position, to engage and raise the respective indicator, as the frame is moved, substantially as and for the purpose set forth.

22. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on the frame, a series of arms connected with such pieces, to move them into indicator-engaging position, means tending to move the arms to bring the pieces into such position, a series of keys and connections between the same and the movable arms, whereby, as any key is moved, the respective arm will be left free to be moved, substantially as and for the purpose described.

23. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on the frame, a series of arms connected with such pieces to move them into and out of indicator-engaging position, means tending to move the arms into such position, a series of keys, and connections between the latter and the arms, whereby the unmoved keys cause the arms to be held back, to keep the pieces out of indicator-engaging position, and the drawing out of a key leaves the respective arm free to be moved, substantially as and for the purpose specified.

24. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on the frame, a series of spring pressed arms engaging such pieces, and a series of keys, and connections between the same and the arms, whereby the latter are held retracted, against the stress of their springs, until the respective keys are moved, and then are left free to be actuated by the springs, substantially as and for the purpose shown.

25. In an indicating mechanism, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on the frame, a series of movable arms connected with such pieces, yielding means tending to move the arms, to carry the respective pieces into position for engaging the corresponding indicators, a series of arms each connected with one of the former arms, and a series of keys to engage and support the second arms, substantially as and for the purpose set forth.

26. In an indicating mechanism, in combination with a series of movable indicators, a swinging frame, a series of movable pieces mounted on the frame, having parts to engage and lift the indicators, as the frame is raised, a series of levers having arms connected with the pieces on the frame, so as to move them into and out of indicator-engaging position, the springs acting upon the levers, and the series of movable keys to engage the other arms of the levers, substantially as and for the purpose described.

27. In an indicating mechanism, in combination with a series of movable indicators, a swinging frame, a series of indicator-actuating pieces movably mounted on the frame, a series of levers having arms connected with the pieces on the frame, so as to move them into and out of indicator-engaging position, yielding means acting upon the levers, tending to move them to carry the respective pieces into indicator-engaging position, a second movable frame connected with the other frame, so as to move the same, and a series of keys movably mounted on the second frame, having portions to engage arms of the levers, so as to hold the levers normally retracted, and to release them, when the keys are moved upon their supporting-frame, substantially as and for the purpose described.

28. In a registering and indicating machine, in combination with a movable indicator and a registering device, a movable frame, a movable piece, thereon having a part to actuate the registering device, and a part to engage and actuate the indicator, and means for moving such piece, on the frame, into and out of its register and indicator actuating position, substantially as and for the purpose specified.

29. In a registering and indicating machine, in combination with a movable indicator, and a registering device, a movable frame, a movable piece thereon, adapted to actuate both the registering device and the indicator, as the frame is moved, yielding means tending to move such piece into position for actuating the registering device and indicator, a key, and connections between the same and the movable piece, for holding the latter out of its register-device and indicator engaging position, substantially as and for the purpose shown.

30. In a registering and indicating machine, in combination with a movable indicator and a registering device, a movable frame, a movable piece mounted thereon, adapted to actuate both the registering device and the indicator, as the frame is moved, a lever connected with such piece, yielding means to move the lever, to carry the piece into its described engaging position, a key, and connections between the same and the lever, for holding the lever retracted, until the key has been moved a certain distance, substantially as and for the purpose set forth.

31. In a cash registering and indicating machine, in combination with a movable indicator, and a registering device, a movable frame, a movable piece mounted thereon, adapted to actuate both the registering device and the indicator, as the frame is moved, a two-armed lever, having one arm engaging such piece, to move the same on the frame, a spring to swing the lever, and a key having a portion adapted to engage and support the other arm of the lever, and to be moved out from under the same, substantially as and for the purpose described.

32. In combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, a series of levers connected with such pawls, so as to move them into

register-actuating position, a reciprocating frame, cam connections between the latter and the swinging frame, a series of keys, connections between the keys and levers, whereby the latter are held retracted, while the reciprocating frame is in, and the keys are unoperated, and means for holding retracted, while such frame slides out the levers corresponding to any unactuated keys, substantially as and for the purpose specified.

33. In combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, a series of levers, connected with the pawls, to move them into and out of register-actuating position, yielding means to move the levers, to carry the pawls toward the registering devices, a reciprocating frame, the series of movable keys thereon, the retaining-bar to engage the levers, and cam connections between the reciprocating and the swinging frame, to swing the latter, substantially as and for the purpose shown.

34. In combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, a series of spring-pressed levers, each having an arm connected with one of the pawls, and provided with notches, the catch-bar, to engage such notches, a reciprocating frame, a series of movable keys mounted on the latter to engage the other arms of the levers, cam connections between the reciprocating frame and the swinging one, whereby the latter is swung as the former is moved, means carried by the reciprocating frame, to retract the levers, and arms moving with the swinging frame, to raise the stop-bar from the notches in the lever-arms, as the reciprocating frame is moved back to its normal position, substantially as and for the purpose set forth.

35. In a cash-register, in combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, a series of levers connected with the pawls, a series of keys, connections between the latter and the levers, whereby the levers are held normally retracted by the unoperated keys, and the moving of a key releases the respective lever, the till having a movable part, and connections between such part, and the swinging pawl-carrying frame, whereby the movement of the movable part of the till causes such frame to swing, substantially as and for the purpose set forth.

36. In a cash-register, in combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, a series of levers each having an arm connected with one of the pawls, yielding means tending to swing the levers, to carry the pawls toward the registering devices, a series of keys to engage the levers, the till, having a movable part, and cam connections between such part, and the swinging frame, substantially as and for the purpose described.

37. In a cash-register, in combination with a series of registering devices, a swinging frame, a series of register-actuating pawls mounted thereon, the spring-pressed levers connected with such pawls, to move the same toward and from the registering devices, the series of keys to engage the levers, the till, having a movable part, connections between such part and the swinging frame, for moving the latter, and means traveling with the movable part of the till, for retracting any lever which has been released by movement of its key, substantially as and for the purpose specified.

38. In an indicator, in combination with a series of movable indicators, a movable frame, a series of movable pieces, mounted thereon, each having a part adapted to engage and actuate an indicator, as the frame is moved, a series of levers connected with such pieces, yielding means tending to move the levers to bring the movable pieces into position to engage the indicators, a series of keys to engage the levers, the till, having a movable part, and cam connections between such part and the movable frame, for moving the latter, substantially as and for the purpose shown.

39. In an indicator, in combination with a series of movable indicators, a swinging frame, a series of indicator-engaging movable pieces thereon, the spring-pressed levers connected with such pieces, a series of movable keys to engage the levers, the till, having a movable part, cam connections between such part and the swinging frame, and means, moving with the movable part, adapted to retract any levers released by movement of the respective keys, substantially as and for the purpose set forth.

40. In an indicator, in combination with a series of movable indicators, a swinging frame, a series of movable pieces on such frame, having parts to engage and actuate the indicators, a series of spring-pressed levers connected with such pieces, a movable part of the till, communications between such part and the swinging frame, whereby the latter is caused to swing, by movement of the former, a series of keys having portions to engage and support arms of the levers, against the stress of the lever-moving springs, and springs to return such keys, when they have been pulled out to release the respective levers, substantially as and for the purpose described.

41. In combination with a till, having a movable part, a series of keys mounted on a frame moving with such part, the series of levers having arms to engage and be supported by the keys, when the movable part of the till is in position to close the latter, the swinging frame, connections between the latter and the movable part of the till, whereby the frame is caused to swing by the movement of such part, the movable pieces mounted on the swinging frame, and connected with arms of the levers, and means for holding such arms from movement, after the movable part of the till has been moved to take all the keys away from the levers, substantially as and for the purpose specified.

42. In combination with a till having a movable part, a series of keys movably mounted on a frame, moving with such part, the swinging frame, the series of movable pieces mounted on such frame, the series of levers, each having an arm to engage one of the keys, and an arm connected with one of the movable pieces, yielding means for swinging the levers, when released by the keys, a catch-bar, to engage and hold the levers, means tending to move it into engagement with the lever arms, connections between the movable part of the till and the swinging frame, whereby the latter is caused to swing by movement of the former, and means actuated by movement of the movable part of the till to raise the catch-bar from the lever-arms, as the till is closed, substantially as and for the purpose set forth.

43. In combination with a till having a movable part, and a frame moving with such part, the series of keys movably mounted on such frame, a swinging frame, cam connections between the latter and the movable part of the till, a series of movable pieces mounted on the swinging frame, the series of levers each having an arm to be engaged by one of the keys, and an arm connected with one of the pieces on the movable frame, a catch-bar to engage the levers, means tending to force it down into lever-engaging position, an arm moving with the swinging frame, and connections between such arm and the catch-bar, whereby, as the frame is swung down, the catch-bar is lifted from its lever-engaging position, substantially as and for the purpose described.

44. In combination with a till having a movable part, and a frame moving with such part, the series of keys movably mounted on such part, a swinging frame, connections between the latter and the movable part of the till, for swinging the frame, as the till is opened and closed, a series of movable pieces mounted on the swinging frame, the series of levers each having an arm to be engaged by one of the keys, and an arm connected with one of the pieces on the swinging frame and notched, yielding means tending to swing each lever, as it is released by its key, the catch-bar, to engage the notched ends of the levers, means carried by the frame moving with the movable part of the till, adapted to swing the levers, to raise their key-engaging arms above the plane of the keys, and an arm moved by connections with the movable part of the frame, to cause the catch-bar to be raised away from the levers, when the till is closed, substantially as and for the purpose specified.

45. In combination with a till having a movable part, and a frame moving with the latter, the series of keys on such frame, a swinging frame, connections between the latter and the movable part of the till, for swinging the frame, as the till is opened and closed, a series of movable pieces mounted on the swinging frame, the series of levers, each having an arm to be engaged by one of the keys, and an arm connected with one of the movable pieces on the swinging frame and provided with two notches, yielding means to swing the levers, when released by retraction of the respective keys, a catch-bar to engage the notched ends of the lever-arms, means, actuated from the movable part of the till, to cause the bar to be raised away from the lever-arms, while the till is closed, and means carried by the frame moving with such part, to engage the levers and swing them to raise their key-engaging arms above the level of the keys, substantially as and for the purpose shown.

46. In a registering-machine, in combination with a movable drawer, the keys mounted thereon, the registering devices, the swinging frame, the pawl-pieces mounted thereon, the levers each having an arm to be engaged and supported by one of the keys, and a notched arm connected with one of the pawl-pieces, springs for moving such levers, one or more arms connected with the swinging frame, cam connections between such arm or arms and the drawer, the catch-bar to engage the notched ends of the levers, arms connected with such bar, means moving with the swinging frame to engage these arms, and raise the bar away from the notched parts of the levers, while the drawer is closed, and means moving with the drawer, to engage and move the levers against the stress of their springs after the drawer has been opened a certain distance, substantially as and for the purpose set forth.

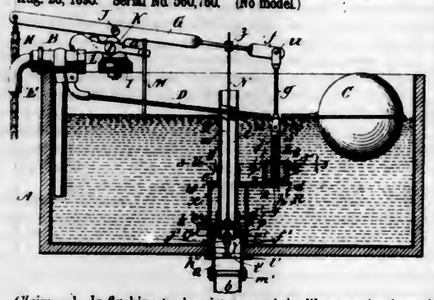
47. In a registering-machine, in combination with a movable drawer, the keys mounted thereon, the registering devices, the swinging frame, the movable pawl-pieces mounted thereon, one or more arms connected with the frame, cam connections between such arm or arms, and the drawer, the series of spring-pressed levers, each having an arm to be engaged and supported by one of the keys, and an arm connected with one of the pawl-pieces, and provided with two notches, a swinging frame having a bar to engage such notches, means for holding such bar up out of notch-engaging position, while the drawer is closed, and until it has been moved a certain distance, in opening direction, and means moving with the drawer to cam the levers back against the stress of their springs, substantially as and for the purpose described.

48. In a register and indicator, in combination with a movable drawer, a series a movable keys mounted thereon, a series of registering devices, and a series of movable indicators, a swinging frame, a series of pawl-pieces mounted thereon each having portions adapted to be moved simultaneously into position for actuating a registering device and the corresponding indicator, the series of levers, each having an arm adapted to be supported by one of the keys while such key is in its normal position on the drawer, and the drawer is closed, and an arm connected with one of the pawl-pieces, and provided with the two notches, a catch-bar, normally tending to engage the notched parts of the levers, one or more arms connected with the swinging frame, cam connections between such arm or arms and the drawer, whereby the frame is swung as the drawer is opened, and means, also, actuated by the drawer to move the catch-bar away from the notched parts of the levers, when the drawer has been closed far enough to bring the keys under the lever-arms to be supported by them, substantially as and for the purpose specified.

49. In combination with a supporting-frame provided with suitable key-guides, a movable key having a portion bent at an angle to its shank, a stirrup-plate having a bent part through which the key-shank passes, and its body provided with a longitudinal slot, having its end engaging the bent part of the key, and a spring on the key-shank between the part of the plate through which the shank passes, and a stationary abutment, substantially as and for the purpose shown.

50. In combination with a supporting-frame provided with suitable key-guides, a series of movable keys each having a portion bent at an angle to its shank, stirrup-plates for the respective keys, each having a bent part through which the key-shank passes, and its body provided with a longitudinal slot through which the bent part of the key passes, the springs on the key-shanks engaging the parts of the plates through which such shanks pass, and a guide-plate for the shanks engaging the springs, so that the stress of each spring is transmitted to the respective key by the stirrup-plate, substantially as and for the purpose set forth.

568,729. FLUSHING-TANK, &c. Thomas C. Beaumont, New York, N. Y., assignor to the Henry Huber Company, same place. Filed Aug. 28, 1895. Serial No. 560,780. (No model.)



Claim.—1. In flushing tanks, cisterns and the like, a tank adapted to hold water, an outlet-valve for said tank and a lever operating said valve, in combination with a casing carried by said tank and having a valve-seat opposite said valve, a valve-guide carried by said casing above said seat and engaging said valve intermediate of its ends, and a dash-pot controlling the closing of said valve and consisting of two cup-shaped members, having their open ends opposed each to the other, the one connected to the valve and movable and the other connected to said casing and stationary.

2. In flushing tanks, cisterns and the like, a tank holding water, an outlet-valve therefor, and means for operating it, in combination with a dash-pot controlling said valve consisting of two members, a pot and a plunger the one movable into and entirely out of the other, the one fixed within said tank and the other connected to and movable with the valve, one of said members having an elongated guiding-stud *k* parallel with the movement of the valve, and the other an inverted-cup-shaped member, above and moving down upon the fixed member, having its open lower side opposed thereto, and having an elongated tubular stem *k* having an internal socket *j* fitting and sliding on said stud and thereby guiding said members in their relative movements.

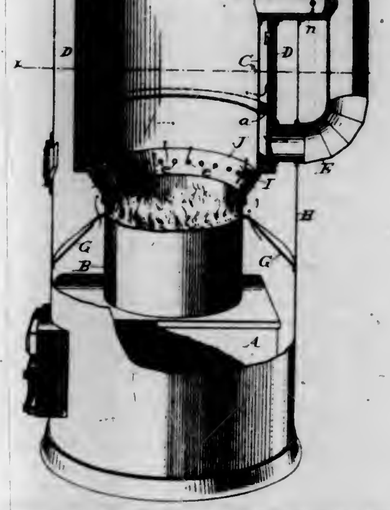
3. In flushing tanks, cisterns and the like, a tank, a vertically-movable outlet-valve therefor and means for moving it, in combination with a dash-pot controlling closing of said valve, consisting of a fixed pot, and a movable plunger *c*, the plunger connected to and moving with the valve and having an annular chamber *r* open at bottom passing above the pot, when the valve is lifted, and the pot disposed below the point of normal water-level of the tank, cup-shaped and receiving the end of the plunger when the latter falls, whereby the plunger in falling confines air within its chamber *r*, and during the closing of the dash-pot this air cushions its fall.

4. In flushing tanks, cisterns and the like, a tank having an outlet-valve having a communicating passage through it, and an upwardly-extending end rising above the water-line, in combination with a hush-plate within the lower end of said valve near its seat controlling communication through the valve, and automatically closing such communication when the valve is lifted and opening it when the valve is closed, said valve having an internal guide near its lower end, and a post movably carried in said guide, projecting below the valve, striking a fixed part of the tank when the valve seats, and then operating said plate.

5. For flushing tanks, cisterns and the like, a tabular valve having an outer and an inner seating-face, the outer face adapted for engagement with a valve-seat and the inner face adapted for engagement with an inner valve, in combination with a hush-plate valve within said tabular valve and engaging the inner seat thereof, and means for operating said hush-plate valve projecting exteriorly of said tabular valve, said valve having a guide below said plate guiding said means substantially as and for the purpose set forth.

6. For flushing tanks, cisterns and the like, an outlet-valve comprising a casing Q having seat O, tabular passage therebelow, lug *i* below said seat, of a valve proper F having a face P engaging said seat, traversed by a tabular passage and having a movable internal seat V, a hush-plate X within said valve proper F opposite said seat, a guide *j'* in said valve proper below said seat V, and a post *k'* carried movably by said guide *j'* between said hush-plate and said lug, and engaging the latter when the valve proper is closed, and thereby moved upward and lifting said hush-plate.

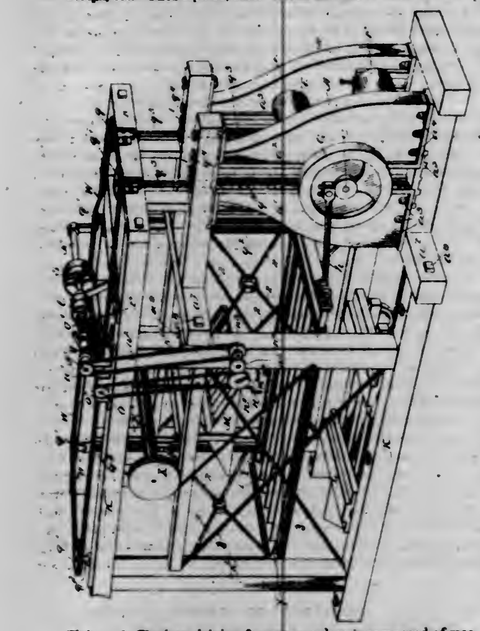
568,730. HOT-AIR FURNACE. Ernest Betz, Washington, D. C. Filed Mar. 2, 1896. Serial No. 581,898. (No model.)



Claim.—1. In a hot-air furnace, the combination with a fire-pot B provided with the air-inlets *e* and a register for closing the same, of a combustion chamber C provided at or near its top with an annular row of holes *b*, and a heating-drum D surrounding said combustion-chamber, and having a smoke-pipe opening at the bottom of said drum, all constructed and arranged to operate as and for the purpose set forth.

2. In combination with a fire-pot, the drums C and D constructed and arranged in relation to each other as shown and described, and the diaphragm *a* between said drums and having an opening O at a point opposite that for the smoke-pipe, substantially as shown and described.

568,731. STONE-SAWING MACHINE. FREDERICK BIELKEN, St. Joseph, Mo. Filed Apr. 30, 1895. Serial No. 547,665. (No model.)



Claim.—1. The iron driving frames or columns composed of massive castings, the top and bottom plates and keys, and top and bottom timbers bolted to the same and to the main saw-frame, combined with the main driving-shaft and its rising and falling blocks supporting said shaft, and means for raising and lowering the same, substantially as and for the purposes set forth.

2. In combination with the iron driving-frame columns, and with their top and bottom timbers, and their plates and keys, and with the main shaft and its boxes adapted to be raised and lowered in said columns, the main frame firmly bolted to such driving-frame, the saw-sash in the main frame, its pitman connected to a crank on the main shaft in the iron driving-frame, and the described means for raising and lowering equally and simultaneously the main shaft and the saw-sash to preserve their proper relative alinements, all substantially as set forth.

3. In a stone-sawing machine, the combination with the iron driving-frame connected to the wooden saw-frame substantially as set forth, of the described feed devices, consisting of the non-shifting cross-shaft N, its sprocket-wheel n', and chain n^2, sprocket n^3, pinion n^4, gears n^5, n^6, each removable and changeable for varying the feed, chain n^8, sprocket n^9, sprocket o', adjustable worm-shaft O, o^2, worm-wheel P, and its feed-screw p', and the described system of vertical screws, their sprocket-wheels and endless chain engaging therewith.

4. In combination, the non-reciprocating cross shaft N, its clutch U and gears U', the feed-screw p', worm-wheel P, worm-shaft O, o^3, adapted at one end to be swung into and out of engagement with wheel P, and a shifter p^3, for effecting such engagement and disengagement.

5. In combination, the iron columnar castings a', a^2, the wooden sills beneath and the wooden frame above the same, and the plates a^3, a^4, and their keys a^6, a^8, all substantially as and for the purposes set forth.

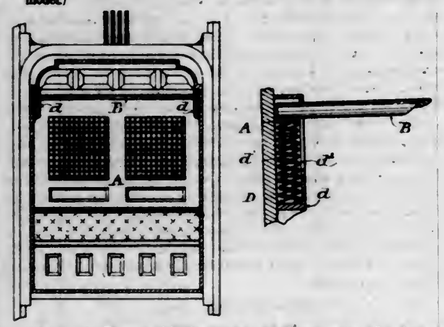
568,732. IRONING-MACHINE. GOTTLOB BINDER, Philadelphia, Pa. Filed Nov. 18, 1895. Serial No. 569,243. (No model.)



Claim.—1. In an ironing-machine, a roller, an iron consisting of a box or chamber having a removable, perforated plate or cap, pipes perforated along one of their respective sides located at the sides of the iron and connected to gas and air pipes so that a mixture of the two elements may be fed to and discharged through the perforations into said box or chamber toward the base thereof, said base, comprising two angular plates arranged to form a centrally-peaked chamber above the points of contact of said roller therewith, to permit steam and moisture to collect therein and pass off therefrom without saturating the roller or dampening the garment during the ironing thereof, means for actuating said roller, and a perforated pipe between the gas and air pipes adapted to discharge fresh air toward the perforations of said gas and air pipes, substantially as and for the purposes described.

2. In an ironing-machine, driving and loose pulleys mounted on an apertured stud, a driving-pinion secured to and rotating with said driving-pulley, a movable bar adapted to slide through the aperture of said stud, a belt-shifter carried by said bar, an arm secured to said movable bar, a link and treadle pivotally connected to said arm and adapted to shift the arm, bar and belt shifter in one direction, and a spring coiled around said bar and resting against said arm; said spring adapted to shift said arm, bar and belt shifter in the opposite direction, substantially as and for the purposes described.

568,733. LIFE-SAVING DEVICE FOR ELEVATOR-CARS. CHAS. O. BREED, Lynn, Mass. Filed Aug. 23, 1895. Serial No. 560,308. (No model.)



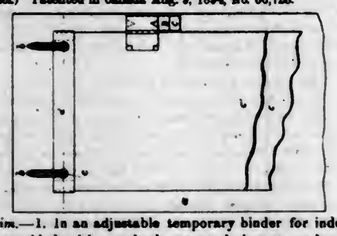
Claim.—1. The combination with an elevator-car of a bar or series of bars supported substantially horizontally within the car, above the head of and in convenient position to be grasped by a passenger of average height, and yielding supports for said bar or bars, substantially as described.

2. A safety device for elevator-cars, and in combination with such car and located in the same above the heads of the passengers, a safety-bar as B, boxes d, d, and springs D, D, and plates d', d', substantially as shown and described.

3. In combination with an elevator-car, and attached to the same above the heads of the passengers and within reach of the same, a bar as B with means for elastic attachment to such car, substantially as and for the purpose set forth and described.

4. In a safety device for elevators, the combination with an elevator-car of the slotted boxes d, d, secured to the sides of the elevator above the heads of the passengers, the springs D, D, within said boxes, the plates d' secured each to the upper end of one of the springs and a safety-bar B having its ends projected through the slots in the boxes and resting on the plates carried by the springs.

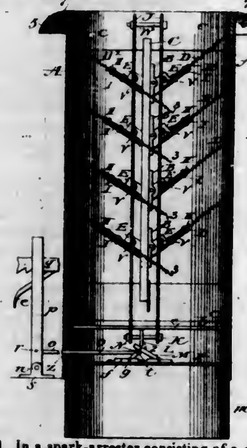
568,734. ADJUSTABLE BINDER FOR INDEX-FILES. FRANCIS W. BRIGGS, Auburn, Me., Filed Aug. 1, 1896. Serial No. 601,371. (No model.) Patented in Canada Aug. 9, 1894, No. 66,723.



Claim.—1. In an adjustable temporary binder for indexed files a base provided with standards mounted thereon, and a plate of malleable metal having holes therein adapted to register with holes in the sheets to be bound and to receive said standards the free ends of the plate extending beyond said holes and adapted to be bent around the sides of the sheets, substantially as and for the purposes set forth.

2. In an adjustable temporary binder for indexed files a base provided with standards mounted thereon, an indexed card having holes therein, a series of sheets to be bound having holes therein and a plate of malleable metal having holes therein, the holes in the card-sheets and binder being adapted to register with each other and to receive said standards and the ends of said plate being adapted to be bent around the sides of said card and sheets, substantially as and for the purposes set forth.

568,735. SPARK-ARRESTER. JOSEPH T. BRIGHT, Midway, Ky. Filed July 16, 1896. Serial No. 599,452. (No model.)



Claim.—1. In a spark-arrester consisting of a cylinder in which are several woven-wire wings, hinged to a perpendicular hinge-plate, which is fixed through the center of the cylinder by the aid of cross-plates which are fastened to bands, which are fastened to a cylinder on its inside, and upright lever-bars which are attached to hinge-plates, which are attached to woven-wire wings and lever-arms operated by a hand-lever through which the woven-wire wings are opened or closed at the will of the engineer, substantially as set forth.

2. The combination of the hand-lever with the lever-rod, the lever-arms, the lever-plates, the lever-bars, the hinge-plates, the woven-wire wings, the ratchet, the cylinder, the bands with cross-plates, the flange that laps over the top edge of the smoke-stack, to keep the cylinder in position, the reversibility of the woven-wire wings in the cylinder, all of which is under the control of the engineer, to spread or close the woven-wire wings by the operation of a hand-lever, substantially as set forth.

568,736. STEERING VESSELS. ANDREW R. BROWN, Edinburgh, Scotland. Filed Nov. 8, 1895. Serial No. 568,259. (No model.) Patented in England Oct. 9, 1888, No. 14,456.

Claim.—1. In a hydraulic telemotor apparatus the combination of a receiving-cylinder provided with a piston; a lever connected to said piston; and means connected to said lever for automatically centering said piston.

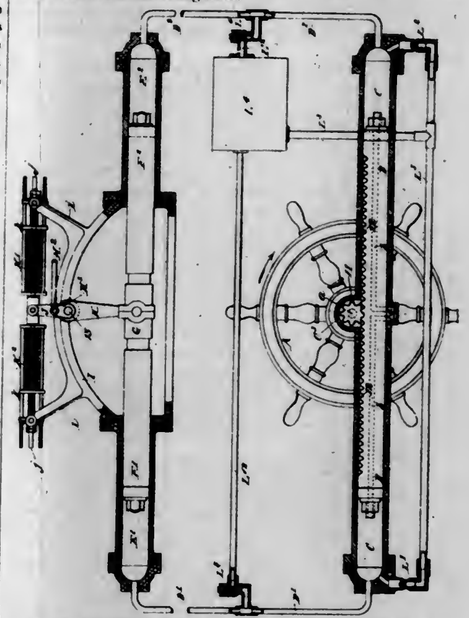
2. In a hydraulic telemotor apparatus, the combination with a receiving-cylinder provided with a piston, of a spring or springs connected to said piston for automatically centering the same.

3. In a hydraulic telemotor apparatus the combination of a transmitting-cylinder provided with a piston; means for establishing communication between the ends of said cylinder; a receiving-cylinder provided with a piston; pipes connecting said cylinders; and means connected to the piston of said receiving-cylinder for centering the same.

4. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston; a receiving-cylinder provided with a piston; pipes connecting said cylinders; and springs connected to the piston of said receiving-cylinder for automatically centering the same.

5. In a hydraulic telemotor apparatus, the combination of a receiving-cylinder provided with a piston or plunger; an arm or lever secured to a rock-shaft and connected to said piston; a correcting-lever also secured to said shaft; and springs connected to said correcting-lever.

6. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston; a receiving-cylinder provided with a piston; pipes connecting said cylinders; an arm or lever secured to a rock-shaft and connected to the piston of said receiving-cylinder; a correcting-lever also secured to said shaft; and springs connected to said correcting-lever.



7. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston; means substantially as described for establishing communication between the ends of said cylinder; a receiving-cylinder provided with a piston; and pipes connecting said transmitting and receiving cylinders.

8. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder; a pipe connecting the ends of said cylinder; a cock or valve located in said pipe and provided with a forked arm or lever; and a piston within said cylinder provided with a tooth or projection fitting into said forked lever.

9. In a hydraulic telemotor apparatus, the combination of the following-named parts: a transmitting-cylinder provided with a piston; a receiving-cylinder provided with a piston; a reservoir or tank; a pipe for supplying fluid to said transmitting-cylinder from said tank; pipes connecting said transmitting and receiving cylinders; and a pipe, or pipes, leading from said connecting-pipes to said tank and provided with spring-loaded safety-valves.

10. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston or plunger having a rack formed upon or attached to its surface within said cylinder; a pinion within said cylinder meshing with said rack and mounted upon a shaft; a hand-wheel secured to said shaft; a receiving-cylinder provided with a piston; and pipes connecting said receiving and transmitting cylinders.

11. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston or plunger having a rack formed upon or attached to its surface within said cylinder; a pinion within said cylinder meshing with said rack and mounted upon a shaft; a hand-wheel secured to said shaft; a receiving-cylinder provided with a piston; pipes connecting said transmitting and receiving cylinders; an arm or lever secured to a rock-shaft and connected to the piston of said receiving-cylinder; a correcting lever also secured to said shaft; and springs connected to said correcting-lever.

12. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder provided with a piston; mechanism for reciprocating said piston; a receiving-cylinder provided with a piston; a rod connected to said last-mentioned piston for operating the valve of a steering engine; and a separate indicator-cylinder provided with a piston, adapted to be operated by the movement of the rudder.

13. In a hydraulic telemotor apparatus, the combination of transmitting and receiving cylinders; an indicator-transmitting cylinder; an indicator-receiving cylinder; a piston within said indicator-receiving cylinder provided with a rack; a toothed sector secured to a shaft and meshing with said rack; and an index-arm also secured to said shaft, for indicating the angle of the rudder.

14. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder; a receiving-cylinder; pipes connecting said

cylinders; an indicator-transmitting cylinder provided with a piston operated by the movement of the rudder; an indicator-receiving cylinder provided with a piston; pipes connecting said cylinders; and an index-arm operated by the movement of the piston in said indicator-receiving cylinder.

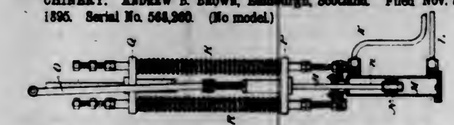
15. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder; a receiving-cylinder; pipes connecting said cylinders; an indicator-transmitting cylinder provided with a piston operated by the movement of the rudder; an indicator-receiving cylinder provided with a piston; pipes connecting said cylinders; an index-arm operated by the movement of the piston in said indicator-receiving cylinder; and mechanism substantially as described for bringing the pistons of said cylinders into corresponding positions.

16. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder; a piston provided with a rack upon its surface within said cylinder; a shaft carrying a pinion in mesh with said rack within the cylinder; a hand-wheel for operating said shaft; a second shaft connected to said hand-wheel shaft by gearing; and an indicating apparatus operated by said second shaft.

17. In a hydraulic telemotor apparatus, the combination of a transmitting-cylieder; a piston within said cylinder provided with a rack; a shaft carrying a pinion in mesh with said rack; a hand-wheel for operating said shaft; a bevel-gear secured to said shaft and meshing with a bevel-gear on a second shaft; a block connected to said second shaft by screw-threads and provided with an internal helix; a helical spindle actuated by said internal helix; and an index-arm connected to said spindle.

18. In a hydraulic telemotor apparatus, the combination of a transmitting-cylinder; a piston within said cylinder provided with a rack; a shaft carrying a pinion in mesh with said rack; a hand-wheel for operating said shaft; an indicating apparatus connected to said shaft; a receiving-cylinder provided with a piston for actuating the steering engine; an indicator-transmitting cylinder provided with a piston operated by the movement of the rudder; an indicator-receiving cylinder; a piston within said indicator-receiving cylinder, provided with a rack; a toothed sector secured to a shaft and meshing with said rack; and an indicating apparatus connected to said shaft.

568,737. TELEMOTOR APPARATUS FOR STEERING MACHINERY. ANDREW B. BROWN, Edinburgh, Scotland. Filed Nov. 8, 1895. Serial No. 568,260. (No model.)



Claim.—1. In a telemotor apparatus the combination of the following-named parts: a double-acting transmitting-cylinder; a piston, within said cylinder, provided with a piston-rod; a rack-bar formed upon or secured to said piston-rod; a housing or frame; a pinion mounted upon a shaft and meshing with said rack-bar; a hand-wheel mounted upon a second shaft; gearing connecting said pinion with said hand-wheel shaft; a receiving-cylinder provided with a piston; pipes connecting said transmitting and receiving cylinders; and means for centering the piston of said receiving-cylinder.

2. In a telemotor apparatus, the combination of the following-named parts: a double-acting transmitting-cylinder; a piston, within said cylinder, provided with a piston-rod; a rack-bar formed upon or secured to said piston-rod; a housing or frame, as *c;* a pinion, as D, mounted upon a shaft, as *d*, and meshing with said rack-bar; a gear-wheel, as E, mounted upon said shaft and meshing with a second gear-wheel, as E', secured to a second shaft, as *e;* a hand-wheel shaft, as *f*, carrying at one end a pinion, as F, in mesh with said second gear-wheel, and at the other end a hand-wheel, as G; a receiving-cylinder provided with a piston; pipes connecting said transmitting and receiving cylinders; and means for centering the piston of said receiving-cylinder.

3. In a telemotor apparatus, a transmitting-cylinder constructed of two cylinders or parts united by a distance-piece, so as to form a single cylinder for the purposes set forth.

4. In a telemotor apparatus, the combination of a transmitting-cylinder constructed of two cylinders or parts united by a distance-piece so as to form a single cylinder and provided with a piston; pipes for supplying and discharging fluid to and from each end of said cylinder; and mechanism for reciprocating said piston.

5. In a telemotor apparatus the combination of a transmitting-cylinder; a receiving-cylinder; pipes connecting said cylinders; and a valve-box in communication with each end of said transmitting-cylinder and containing an inlet and an outlet valve, for the purposes set forth.

6. In a telemotor apparatus, the combination of a transmitting-cylinder; a receiving cylinder; pipes connecting said cylinders; valve-boxes connected to the ends of said transmitting-cylinder and containing each an inlet and an outlet valve; a supply tank or chamber; and a pipe connecting said tank with said valve-boxes.

7. In a telemotor apparatus, the combination of a receiving-cylinder provided with a piston having a piston-rod; a connecting-link and cross-heads secured to said piston-rod; and springs secured to said cross-heads for automatically centering said piston.

8. In a telemotor apparatus, the combination of a receiving-cylinder provided with a piston having a piston-rod; a connecting-link and cross-heads secured to said piston-rod; springs secured to said cross-heads for automatically centering said piston; a transmitting-cylinder provided with a piston; and pipes connecting said transmitting and receiving cylinders.

9. In a telemotor apparatus, the combination of a transmitting-cylinder; a piston, within said cylinder, provided with a piston-rod; a rack-bar formed upon or secured to said piston-rod; a pinion mounted upon a shaft and meshing with said rack; a hand-wheel mounted upon a shaft; gearing connecting said pinion with said hand-wheel shaft; a receiving-cylinder provided with a piston having a piston-rod; springs connected to said piston-rod; and pipes connecting said transmitting and receiving cylinders.

10. In a telemotor apparatus, the combination of a transmitting-cylinder constructed of two parts united by a distance-piece and provided with a piston; mechanism for reciprocating said piston; a receiving cylinder provided with a piston; springs for automatically centering said piston; and pipes connecting said transmitting and receiving cylinders.

11. In a telemotor apparatus, the combination of a transmitting-cylinder provided with a piston having a piston-rod provided with a rack-bar; a pinion mounted upon a shaft for operating said rack-bar; a second pinion mounted upon the same shaft; and an indicating apparatus operated by said second pinion.

12. In a telemotor apparatus, the combination of a transmitting-cylinder provided with a piston having a piston-rod provided with a rack-bar; a pinion as D mounted upon a shaft as *d* for operating said rack-bar; a second pinion as *l* mounted upon the same shaft and meshing with a toothed sector as *r* carrying an index-pointer as *s;* and a graduated quadrant index-plate as *p*.

13. In a telemotor apparatus, the combination with a transmitting-cylinder provided with a piston and piston-rod, of a pipe connecting the ends of said cylinder on both sides of said piston and provided with a cock or valve, and a lever connected to said cock for operating the same for the purposes set forth.

14. In a telemotor apparatus, the combination of the following-named parts: a transmitting-cylinder provided with a piston-rod; a pipe, connecting the ends of said cylinder on both sides of said piston, and provided with a cock or valve; and a toothed sector connected to said cock and meshing with a second sector connected to an operating-lever.

568,738. APPARATUS FOR STEERING VESSELS. ANDREW B. BROWN, Edinburgh, Scotland. Filed Nov. 8, 1895. Serial No. 568,261. (No model.) Patented in England June 21, 1889, No. 10,132.

Claim.—1. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head and carrying a fluid-motor apparatus adapted to operate said frame and the rudder.

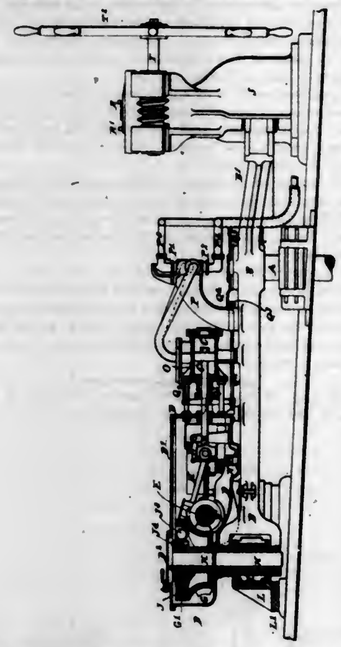
2. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head; a rack secured to the deck of the vessel; and a fluid-motor apparatus carried by said frame and provided with a pinion in mesh with said rack.

3. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head and carrying the following-named parts: cylinders provided with pistons and connecting-rods; a crank-shaft operated by said rods and provided with a worm-gear; and a vertical shaft provided at one end with a worm-wheel in mesh with said worm-gear and at its other end with a pinion in mesh with a fixed rack secured to the deck of the vessel.

4. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head and carrying the following-named parts: cylinders provided with pistons and connecting-rods; a crank-shaft operated by said rods and having a worm-gear fixed thereon; a worm-wheel loosely mounted on a vertical shaft and meshing with said worm-gear, said worm-wheel being provided with suitable clutch mechanism to cause it to engage its shaft; and a pinion secured to said vertical shaft and meshing with a fixed rack secured to the deck of the vessel.

5. In a steering apparatus for vessels, a clutch mechanism consisting of a shaft having a worm-wheel loosely mounted thereon, and a clutch-ring, within said worm-wheel, secured to said shaft by means of a boss provided with a worm-wheel; one end of said ring being provided with a spring bearing against said boss, and the other end with a screw-pin bearing against said spring.

6. In a steering apparatus for vessels, the combination of a crank-shaft, gearing, and rods for driving the same; a closed box or casing, as D, inclosing said parts; an oil-reservoir as M; and a pump, as N, for returning oil from the bottom of said casing to said reservoir.



7. In a steering apparatus for vessels, the combination of a crank-shaft, gearing, and rods for driving the same; a closed box or casing, as D, inclosing said parts; an oil-reservoir as M; an oil-pump, as N, provided with a rod, as N'; and a lever connecting said rod with the valve-rod of the engine.

8. In a steering apparatus for vessels, the combination of a controlling-valve; a controlling-piece for said valve centered in the line of axis of the rudder-head; and mechanism for actuating said valve through said controlling-piece.

9. In a steering apparatus for vessels, the combination of a tiller or frame secured to the rudder-head and carrying a fluid-motor apparatus; a controlling-piece centered on said frame, and connected to the valve of said apparatus; and mechanism for actuating said valve through said controlling-piece.

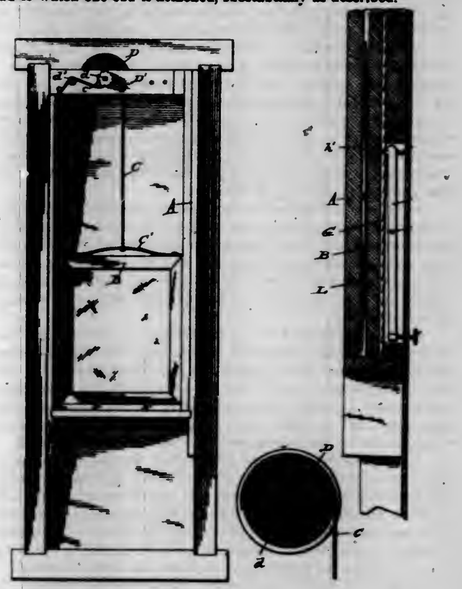
10. In a steering apparatus for vessels, the combination of a tiller or frame secured to the rudder-head and carrying a fluid-motor apparatus; a valve-rod connected to the controlling-valve of said apparatus; a lever connected to said valve rod; a spindle connected to said lever and provided at its other end with a bevel-pinion; a toothed sector meshing with said pinion and arranged to turn loosely on said rudder-head; and an operating-rod connected to said sector.

11. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head and carrying a fluid-motor apparatus; gearing for operating said frame located at one end thereof and connected to said motor apparatus by a clutch mechanism; and gearing located at the other end of said frame and connected to a hand-wheel shaft by a clutch mechanism; whereby the rudder may be operated either by said fluid-motor apparatus or by hand-power.

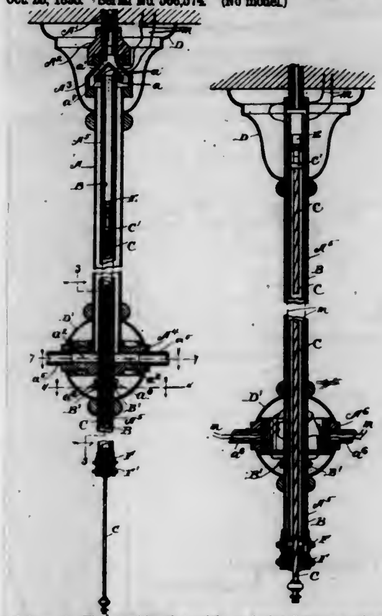
12. A steering apparatus for vessels, consisting of a tiller or frame secured to the rudder-head; a rack secured to the deck of the vessel; a fluid-motor apparatus carried by said frame and provided with gearing in mesh with said rack; a clutch mechanism for disconnecting said gearing from said fluid-motor apparatus; a toothed sector formed upon or secured to one end of said frame; a hand-wheel shaft connected to said sector by gearing; and a clutch mechanism for disconnecting said gearing from said sector; whereby the rudder may be operated either by said fluid-motor apparatus or by hand-power.

568,739. SASH-BALANCE. RICHARD L. BROWN, Salisbury, N. C. Filed Jan. 31, 1896. Serial No. 577,562. (No model.)

Claim.—The combination with a sliding window, of a spring-bar secured to the upper end of the sash, a chain or cord connected with said bar and a spring-drum around which said chain or cord is wound and to which one end is attached, substantially as described.



568,740. ELECTRIC SLIDE FOR CHANDELIERS. GEORGE J. CARSON, Chicago, Ill., assignor to Henry G. Willard, same place. Filed Oct. 23, 1895. Serial No. 566,574. (No model.)



Claim.—1. The combination with a tubular fixture or chandelier, of a tube having on its inner surface electric conductors insulated from said tube but exposed interiorly, a hollow rod to operate in the tube, an insulated piece secured in the upper end of said rod, straps secured in said insulated piece, a block located between the straps and carrying spring-actuated contacts, electric connections with the contacts, and passing through the rod, and electric connections with the conductors in the tube, substantially as described.

2. The combination with a tubular fixture or chandelier, of a tube having on its inner surface electric conductors insulated from said tube but exposed inwardly, a hollow rod provided with a guide-block hav-

ing recesses to stride said conductors, to operate in the tube, a block, carrying spring-actuated contacts, secured on one end of said rod, electric connections with the contacts and passing through the rod, and electric connections with the conductors, substantially as described.

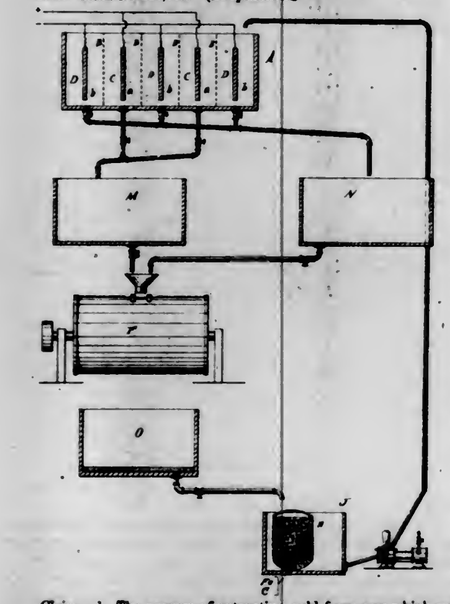
3. The combination of a tubular fixture provided with passages for the illuminating fluids, with a tube having on its inner surface electric conductors insulated from said tube, but exposed interiorly, a hollow rod provided with a guide-block having recesses to stride said conductors, to operate in said tube, a block, carrying spring-actuated contacts secured on one end of the rod, electric connections with the contacts and passing through the rod, electric connections with the conductors in the tube, and means to sustain the slide-rod in the desired position, substantially as described.

4. The combination with a tube having on its inner surface electric conductors insulated from said rod but exposed interiorly, an electric connection with said conductors, a rod movably located in the tube, a guide-block secured on the rod, a block, carrying spring-actuated contacts, secured on one end of the rod, and electric connections with the contacts and extending longitudinally with the rod, substantially as described.

5. The combination with a tube having on its inner surface electric conductors insulated from said rod, but exposed interiorly, an electric connection with said conductors, a rod movably located in the tube, a guide-block secured on the rod, a block, carrying spring-actuated contacts, secured on one end of the rod, electric connections with the contacts and extending longitudinally with the rod, and means to sustain the rod in the desired position, substantially as described.

6. The combination of the outer tube A, secured to the supply-pipe with the intermediate tube A^3, closed at its upper end, located in said tube with a space therebetween, for the passage of gas, the tube B, within the tube A^3, the insulating-strips *b*, and conducting-pieces *b'*, on the inner surface of the tube B, the conductors *m*, electrically connected to the pieces *b'*, the hollow rod C, in the tube B, the guide-block C', having the recesses *c'*, on said rod, the straps c^3, secured to the upper end of the rod and provided with the binding-screws c^4, the block E, having the recesses *e*, the spring-actuated contacts *c*, in said recesses, the conductors *n*, passing through the rod C, and secured at one of their ends to the straps c^3, and at their other ends to the socket-piece for the light, all constructed, arranged and operating substantially as described.

568,741. PROCESS OF EXTRACTING GOLD FROM SUBSTANCES CONTAINING IT. Henry R. Carey, New York, N. Y. Filed Feb. 9, 1895. Serial No. 537,770. (No specimens.)



Claim.—1. The process of extracting gold from ores which consists in electrolyzing a bromide salt of an alkaline base in solution to separate the bromin from the alkali, maintaining the bromin compounds set free at the anode separate from the alkali during electrolysis, treating the ore with the bromin products to dissolve the gold, adding the alkali to recombine the compounds of bromin and gold, precipitating the gold, and reconveying the resulting bromide salt to be reelectrolyzed in a continuous process, substantially as described.

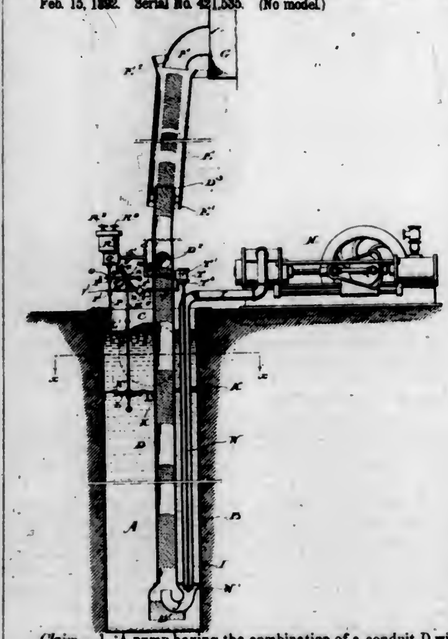
2. The process of extracting gold from substances containing it, which consists in generating by electrolysis, an oxygenated bromin solution, subjecting the substance containing the gold to the action of said solution, adding an alkali, and running the solution through a mixture of pieces of iron and pieces of carbon, to precipitate the gold, substantially as set forth.

3. The process of extracting gold from substances containing it, which consists in subjecting the substance containing the gold to the action of a bromin solution, adding an alkali, and running the solution through a mixture of pieces of iron and pieces of carbon, substantially as herein set forth.

4. The process of extracting gold from substances containing it, which consists in dissolving the gold by a bromin solution, adding an alkali, filtering the solution precipitating the gold and separating the bromin and alkali, from each other by electrolysis, substantially as herein set forth.

5. The process of extracting gold from ores which consists in decomposing a bromide of an alkaline base by electrolysis, dissolving the gold by the anode solution, adding the cathode solution, running the product through a mixture of iron and carbon to precipitate the gold, and redecomposing the liberated bromin solution by electrolysis, substantially as specified.

568,742. PUMP. Benjamin S. Church, New York, N. Y. Filed Feb. 15, 1892. Serial No. 421,535. (No model.)



Claim.—1. A pump having the combination of a conduit D with its lower end open for the admission of fluid, a water-reservoir connected with the lower end of conduit D an air-compressor, a compressed-air pipe I having a nozzle J opening into the bottom of conduit D; a conduit F situated above and in line with the upper end of conduit D, the space between conduit D and conduit F being open to the atmosphere and a receptacle G.

2. A pump having the combination of a conduit D with its lower end open for the admission of fluid, a water-reservoir connected with the lower end of the conduit D, an air-compressor, a compressed-air pipe I having a nozzle J opening into the bottom of conduit D; a ventilated conduit E leading upward from the top of conduit D, and a conduit F situated at the top of conduit E and leading to a reservoir G.

3. A pump having the combination of a well or tank as B, a conduit D opening at the bottom of said tank; an air compressor and pipe I leading therefrom into the bottom of conduit D; a diaphragm K situated in tank B or its equivalent as described and having a valve-seated opening K', a valve L operating in opening K', and automatic valve-actuating mechanism for opening and closing said valve to regulate the supply of water to conduit D.

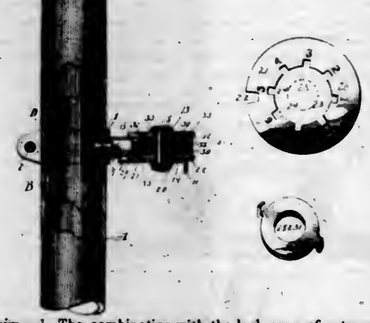
4. A pump having the combination of a well or tank as B, a conduit D opening at the bottom thereof; an air compressor and pipe I leading therefrom into the bottom of conduit D; a diaphragm K situated in tank B or its equivalent as described and having a valve-seating opening K', a valve L operating in opening K', a valve *w'* arranged in air-pipe I, and automatic valve-actuating mechanism arranged to actuate valves L and *w'* regulating the supply of water and air to conduit D.

5. In a pump constructed substantially as described, the combination with a valve L governing the flow of water and opening in the direction of flow, of a counterweight adjusted to close said valve when the flow of water ceases or diminishes; a catch arranged to hold the valve seated, and an automatic catch-lifting device arranged to lift the catch and permit the valve to open at regular intervals.

6. In a pump constructed substantially as described, the combination with a valve L governing the flow of water and opening in the direction of flow; of a counterweight adjusted to close said valve when the flow of water ceases or diminishes; a catch arranged to hold the valve seated; a valve *w'* regulating the flow of compressed air in the pump; valve-actuating mechanism arranged to open and close said valve, and an automatic device arranged to lift the catch of valve L at regular intervals and to open and close valve *w'* substantially as and for the purpose specified.

7. In a pump constructed substantially as described, the combination with the water and air valve connections of the cylinder Q, the pistons Q' moving thereon, the piston-rod P connected to piston Q' and arranged to actuate the valves as described; the valve Q^2 controlling the admission of fluid to cylinder Q and actuated by the movements of the water-valve; the cylinder R, the piston R' working in said cylinder and connected with rod P; the by-passes R^2 and R^3 connecting with cylinder R at both ends, the valves R^4 and R^7 situated in by-passes R^2 and R^3 and the adjustable valves R^5 and R^6 also situated in said by-passes, all substantially as and for the purpose specified.

568,743. BICYCLE-LOCK. Louie H. Clark and Ernest A. Munger, Fond du Lac, Wis., assignors to William T. Allen and Arthur C. Ewen, Brooklyn, N. Y. Filed Jan. 28, 1896. Serial No. 577,138. (No model.)



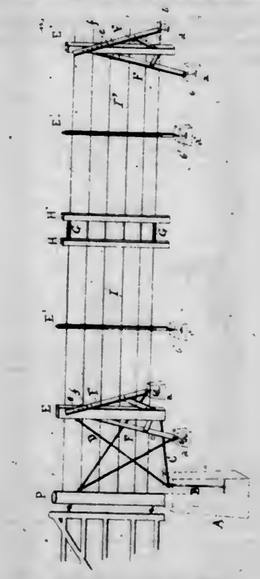
Claim.—1. The combination with the lock-case, of rotary tumblers having notched peripheries and notched interiors, carriers located in the central openings of the tumblers and occupying the same plane, said carriers each having a projection adapted to enter one of the internal notches and project beyond the face of the carrier, a rotary dial having a projection whereby to turn the carriers and then in turn the tumblers and a bolt, substantially as set forth.

2. The combination with a casing, circular tumblers having internal notches and a peripheral notch, a carrier located in the central opening of each tumbler and occupying the same plane, said carriers each provided with a peripheral projection which enters one of these notches and extends beyond the plane of the tumbler, of a rotary dial provided with a projection adapted to engage a tumbler projection whereby to throw the tumbler, a sliding bolt, and means for operating the slide-bolt, substantially as set forth.

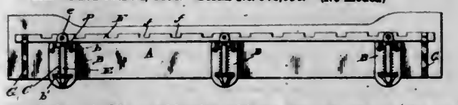
3. The combination with a casing, a slide-bolt, and a slide connected with the bolt, said slide having an elongated slot, of a dial, rotary tumblers, a central bolt passing through the dial-tumblers, casing and slot in the slide and means for retaining the slide in place, substantially as set forth.

568,744. FENCE. Adolphus H. Cook, Markham, Canada, assignor of one-half to Adam Hood, same place. Filed June 4, 1896. Serial No. 594,218. (No model.)

Claim.—A stationary fence comprising the following elements: the excavations A, *a*, *a'*; cables B, *b*, *b'*, provided with a cross-bar on the lower end and a ring at the top, firmly embedded in cement and stones; cables C and D from the ring on the cable B to the upright E; uprights E, E' and intermediate uprights H, H'; stringers I, I', attached to the uprights; coiled springs G G placed between the intermediate uprights; side stakes F, F, attached to the cables *b*, *b*, and provided with a series of staples on the under side of the upper part thereof and pivotally connected to the uprights E by means of short links, substantially as and for the purpose specified.



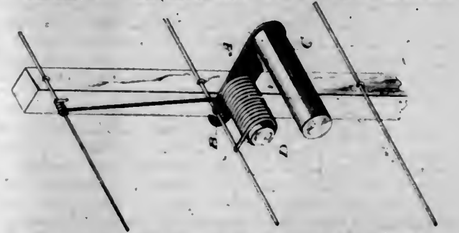
568,745. SPRING BED-BOTTOM. Thomas M. Cottle, Albertville, Ala. Filed Jan. 24, 1896. Serial No. 576,656. (No model.)



Claim.—1. The combination with the side rail, of a bracket secured thereto and a spring-actuated movable part on said bracket, a flexible connection between the movable part and the bracket, a notched bar secured to the movable part, and a flexible connection between the notched bar and the side rail, substantially as shown and described.

2. The combination with the bracket, having a guiding-flange closed at one end and open at the other, of a movable part having undercut grooves to engage and receive said flange, a spring between the movable part, and a lug on the bottom of the bracket, and a notched bar secured to the movable part and flexibly connected with the side rail, substantially as shown and described.

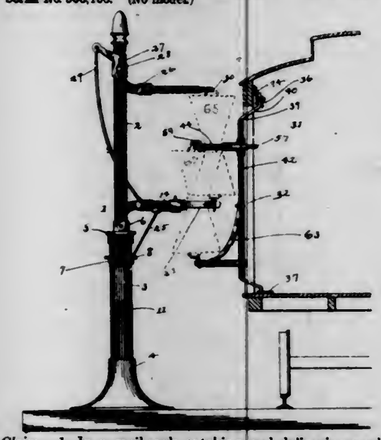
568,746. WIRE-STAY-WEAVING DEVICE. Edward M. Crouch, Hartland, Wis. Filed June 22, 1896. Serial No. 596,415. (No model.)



Claim.—1. A device for weaving stay-wires into wire fences, comprising the hooked bar A provided with a hole E slightly larger in diameter than that of the stay-wire, a coil-supporting spindle D, and a handle C projecting at right angles to the bar A and adapted to temporarily support a winding-sleeve, substantially as described.

2. A device for weaving stay-wires into wire fences, comprising the hooked bar A provided with a hole B slightly larger in diameter than that of the stay-wire, a coil-supporting spindle D, and a handle C projecting at right angles to the bar A and adapted to temporarily support a winding-sleeve; in combination with the crank F and winding-sleeve G, having a perforated lug H for holding the end of the wire, substantially as described.

568,747. MAIL-SACK CATCHING AND DELIVERING MECHANISM. MONTROVILL D. CUMMINGS, Columbus, Ohio. Filed Aug. 22, 1895. Serial No. 560,108. (No model.)



Claim.—1. In a mail-sack catching and delivering mechanism the combination with the standard 1 formed of two sections, one of said sections being rotatively supported by the other and a coil-spring the respective ends of which are connected with the upper and lower standard-sections, of sack-supporting arms fulcrumed to said rotating standard-section, said sack-supporting arms having their rear portions connected by spring-rods, substantially as and for the purpose specified.

2. In a mail-sack catching and delivering mechanism the combination with the track-crane standard consisting as described of upper and lower sections, said upper section being journaled in said lower section, a collar 7 surrounding said lower section and a coil-spring connecting said upper and lower sections as described, of upper and lower sack-supporting arms fulcrumed to said upper section, a spring-rod connection between the rear portions of said crane-arms and a brace having a pivotal connection with said lower crane-arm and adapted to bear upon the collar 7, substantially as and for the purpose specified.

3. In a mail-sack catching and delivering mechanism the combination with the track-crane standard consisting of upper and lower sections, said upper section being adapted to rotate within said lower section and having a spring connection therewith as described and a collar 7 on said lower section, the latter having a toothed periphery, of crane-arms 26 and 14 fulcrumed to said rotating standard-section, a spring-rod connection as described between said crane-arms, and a projecting tooth formed on the lower side of said arm 14, said tooth being adapted to drop into engagement with the ratchet-teeth of said collar when said arm is dropped downward substantially as and for the purpose specified.

4. In a mail-sack catching and delivering mechanism the combination with a crane-standard and arms fulcrumed thereto, a substantially U-shaped sack-yoke pivotally connected with the outer end of one of said arms and a locking-pin loose in said arm, said pin adapted by the centrifugal motion of said arm to be thrown out across said yoke substantially as and for the purpose specified.

5. In a mail-sack catching and delivering mechanism the combination with a track-standard, an upper arm 26 fulcrumed to said standard and adapted to engage the upper end of a sack, of a lower tubular arm 14 having its rear portion fulcrumed to said standard, a rotatable tube 16 within said arm 14, a sliding pin 17 within said tube 16, a substantially U-shaped yoke 21 supported from the outer end of said tube 16 and means for rotating said yoke to a horizontal position said rod 16 adapted to pass through and across said yoke substantially as and for the purpose specified.

6. In a mail-sack catching and delivering mechanism the combination with a car having a doorway therein, of a car-crane standard 39 having crank-shaped terminations, said crank terminations detachably journaled above and below said car-door, arms 44 and 60 extending from said standard 39, means for suspending a sack between said arms and an inclined arm 57 extending from the rear portion of said arm 44 as described, substantially as and for the purpose specified.

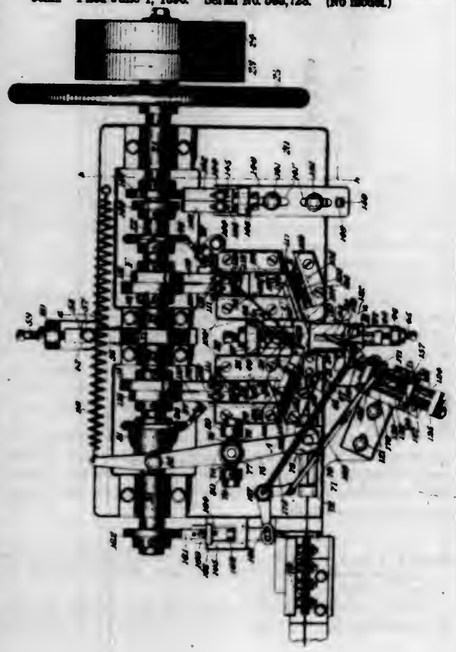
7. In a mail-sack catching and delivering mechanism the combination with a car having a doorway therein, a car-crane standard 39 having crank-shaped terminations, said cranks having bearings above and below said car-doorway and a casing 42 surrounding said standard 39, of an arm 44 extending from the upper portion of said casing 42 and adjustably connected therewith, a catching-arm 57 extending at an incline from said arm 44 and a normally-depressed arm 60 extending from the lower portion of said casing 42, substantially as and for the purpose specified.

568,748. HYDROCARBON GENERATOR AND BURNER. BENJAMIN G. DEVOR, Lima, Ohio. Filed Apr. 20, 1895. Serial No. 546,468. (No model.)



Claim.—A hydrocarbon generator and burner comprising a tubular oil-receptacle, an annular vaporizing-chamber having an aperture in the under side thereof, and partitions within said vaporizing-chamber to each side of said aperture extending almost to the top of said vaporizing-chamber, a hollow connecting-section uniting the oil-receptacle and the vaporizing-chamber and forming a passage for the oil between the oil-receptacle and the vaporizing-chamber, a removable, cylindrical vapor-shell having a contracted mouth and radially-projecting arms at the top thereof adapted for contact with the upper side of the vaporizing-chamber to support the vapor-shell loosely within the open central portion of the vaporizing-chamber beneath the top thereof, and a vapor-delivery pipe having one end thereof secured to the vaporizing-chamber between the partitions aforesaid, and its other end free and extending downwardly beneath the vapor-shell and provided with a vapor-outlet in the upper side thereof in line with the central passage of the vapor-shell, substantially as specified.

568,749. CHAIN-MACHINE. JOHN H. DOOLITTLE, Greystone, Conn. Filed June 1, 1896. Serial No. 593,738. (No model.)



Claim.—1. A chain-machine having supporting means for the link-blank, said machine comprising reciprocatory, obliquely-disposed benders movable toward and from each other and arranged and constructed to engage the ends of a link-blank to form thereon, during the reciprocative movements of said benders, loops substantially at right angles to each other; and means for actuating said benders.

2. A chain-machine comprising supporting means for the link-blank; two sets of slides, each set thereof consisting of a pair of slides disposed at an angle to each other; means for actuating the slides; and loop-benders carried by one slide of each set and operative simultaneously to form loops on the ends of the link-blank.

3. A chain-machine comprising supporting means for the link-blank; two sets of slides, each set consisting of a pair of slides disposed at an angle to each other; cam mechanism for actuating the slides in one direction; springs for actuating the slides in the opposite direction; and loop-benders carried by one slide of each set and operative simultaneously to engage the ends of the link-blank to form the loops.

4. A chain-machine comprising supporting means for the link-blank; two sets of slides, each set consisting of a pair of slides disposed at an angle to each other and one slide of each set having a pair of adjustable followers; two sets of cam mechanisms, each set comprising a pair of cams, one for each follower, whereby the followers of each set will be engaged alternately; means for retracting said slides; and loop-benders carried by said slides.

5. A chain-machine having supporting means for the link-blank, said machine having loop-bending mechanism embodying two sets of slides, each set comprising a pair of followers and a loop-bender and mechanism for operating the followers of each set alternately to thereby impart to each loop-bender intermittent movements.

6. A chain-machine having supporting means for the link-blank, said machine having a pair of loop-benders operative simultaneously to form loops in the ends of a link-blank; means for actuating said loop-benders toward each other to start the loops; means for retracting said benders slightly; and means for actuating said benders toward each other to completely form the loops.

7. A chain machine having supporting means for the link-blank; a pair of loop-formers movable in diagonally opposite directions and in planes oblique to a horizontal plane; means for actuating said formers; and means for bending the ends of the links around said formers.

8. A chain-machine having supporting means for the link-blank a pair of formers disposed at an angle to each other and having movements in diagonally opposite directions whereby their planes of movement intersect each other, means for actuating said formers and means for bending the ends of the links around said formers.

9. A chain-machine having supporting means for the link-blank a pair of formers comprising a pair of rods movable in diagonally opposite directions; means for actuating said formers in one direction; cam mechanism for actuating said formers in the opposite direction and means for bending the ends of the links around said formers.

10. A chain-machine having supporting means for the link-blanks a pair of formers comprising rods movable in diagonally opposite directions; a spring on each of said formers for moving the same into operative position; cam mechanism for withdrawing and holding said formers withdrawn from their operative positions during a certain period in the operation of the machine and means for bending the ends of the links around said formers.

11. A chain-machine having a support; a pair of formers, one mounted above and the other below said support and movable in diagonally opposite directions; means for moving said formers into their operative positions; means for withdrawing and holding said formers withdrawn from their operative positions during a certain period in the operation of the machine, said means comprising levers pivotally connected to said support; rods connecting said formers and levers; cam mechanism operatively engaging said levers during a predetermined period in the operation of the machine and means for bending the ends of the links around said formers.

12. A chain-machine including as an element a normally-fixed die with an angular working face having at each side of its apex a transversely-inclined face and a longitudinally-inclined face in angular relation to such transversely-inclined face.

13. A chain-machine including as an element a normally-fixed die with an angular face provided with a centrally-disposed groove or slot extending longitudinally thereof, said angular face having at each side of its apex a transversely-inclined and a longitudinally-inclined portion in angular relation to such transversely-inclined face.

14. A chain-machine comprising a frame; a normally-fixed, adjustable die thereon having an angular face comprising at each side of its apex a transversely-inclined portion and a longitudinally-inclined portion disposed in angular relation relatively to each other; a movable link-blank bender carried by said frame and having an angular face corresponding with one part of the angular face of the fixed die; and means for actuating said link-blank bender toward and away from said fixed die.

15. A chain-machine comprising a frame; a normally-fixed, adjustable die thereon having an angular face comprising on each side of its apex a transversely-inclined and a longitudinally-inclined portion disposed in angular relation relatively to each other; a slide on said frame; a link-blank bender carried by said slide and having an angular face corresponding with one part of the angular face of the fixed die; cam mechanism for actuating said slide and thereby the link-blank bender toward the fixed die; and means for actuating said slide and thereby moving said link-blank bender away from said die.

16. A chain-machine comprising a frame; a normally-fixed, adjustable die thereon having an angular face comprising on each side of its apex a transversely and a longitudinally inclined face disposed in angular relation relatively to each other, the faces at one side of the apex being in alternation with the faces at the opposite side thereof; a slide on said framework; an adjustable link-blank bender carried by said slide and having an angular face corresponding with one part of the angular face of the fixed die; and means for actuating said link-blank bender toward and from said die.

17. A chain-machine comprising a frame, a normally-fixed adjustable die thereon having an angular face; a slide on said frame; an adjustable link-blank bender carried by said slide and having an angular face corresponding with the angular face of the fixed die; a cutter supported on said slide and longitudinally and transversely adjustable thereon; and means for actuating said link-blank bender and cutter toward and from said fixed die to practically simultaneously sever the link-blank from the wire and bend the same into angular relation relatively to the fixed die.

18. A chain-machine comprising a gripping device; means for actuating said gripping device toward the link and embodying a slide having a pair of followers; cam mechanism for engaging said followers alternately; connecting mechanism between said slide and gripping device; mechanism for rocking said gripping device intermediate of the actuation of the followers; and means for retracting said gripping device.

19. A chain-machine comprising a frame; a die normally fixed thereon and having an angular face; a gripping device disposed in front of the angular face of said die; means for actuating said gripping device toward said die at one side of its apex; means for retracting the same to a point beyond its apex; means for rocking said gripping device to the opposite side of its apex; and means for again actuating said gripping device toward said die at such side of its apex.

20. A chain-machine comprising gripping mechanism consisting of a pair of shafts and a gripping device secured to one of said shafts; a slide having a pair of followers secured thereto; cam mechanism for actuating said followers alternately; connecting mechanism between said slide and one of the shafts for actuating said gripping device; a second slide having a follower; cam mechanism engaging said follower; connecting mechanism between said slide and gripping device for rocking said device; and means for retracting said gripping device at certain periods in the operation of the machine.

21. A chain-machine comprising mechanism for bending a link-blank centrally of its longitudinal length; reciprocatory loop-bending mechanism for engaging the ends of such bent link-blank and simultaneously forming during its reciprocative movement loops thereon; and means for actuating such bending mechanism.

22. A chain-machine comprising mechanism adapted to feed a predetermined length of wire; a cutter; mechanism operative to bend a link-blank centrally of its longitudinal length; reciprocatory loop-bending mechanism operative to simultaneously engage the ends of such bent link-blank and during its reciprocative movement form loops thereon substantially at right angles to each other; and means for actuating such feeding and bending mechanisms.

23. A chain-machine comprising mechanism operative to bend a link-blank centrally of its length into angular position; former mechanism operative to permit the loops to be partially shaped around the same and embodying means for withdrawing said mechanism at a predetermined period in the operation of the machine, loop-bending mechanism operative to engage the ends of the link-blank and simultaneously form the loops, and embodying means for actuating said mechanism, to partially form the loops to then retract the same to permit the withdrawal of the former mechanism, and to then actuate said loop-bending mechanism into position to reengage the partially-formed loops to complete the same.

24. A chain-machine comprising bending mechanism operative to bend a link-blank centrally of its length; former mechanism embodying formers having their planes of movement intersecting each other; loop-bending mechanism operative simultaneously to engage the ends of the link-blank to form loops therein substantially at right angles to each other; and means for actuating said mechanisms.

25. A chain-machine comprising bending mechanism operative to bend a link-blank centrally of its length; former mechanism embodying formers having their planes of movement intersecting each other; loop-bending mechanism operative simultaneously to engage

the ends of the link-blank to form loops therein substantially at right angles to each other; cam mechanism for actuating all of said mechanisms in one direction; and means for actuating said mechanisms in the opposite direction.

26. A chain-machine comprising bending mechanism operative to engage a link-blank and bend the same centrally of its length; former mechanism embodying formers operative simultaneously, one to engage the link-blank above one end thereof and the other below the other end thereof; loop-bending mechanism embodying a pair of loop-benders operative to engage the ends of the link-blank, and each of said benders having intermittent movements of varying lengths; and means for actuating said mechanisms.

27. A chain-machine comprising bending mechanism operative to bend a link-blank centrally of its length into angular position; former mechanism; loop-bending mechanism operative simultaneously to engage the ends of the link-blank; gripping mechanism operative to engage one of the loops of the completed link at one side of its apex and carry said link into the path of the partially-formed loop of the next link-blank; and means for actuating said mechanisms.

28. A chain-machine comprising cutting mechanism and bending mechanism operative to practically simultaneously sever a link-blank of a predetermined length and bend the same into angular position centrally of its length; former mechanism; loop-bending mechanism operative to engage the ends of said bent link-blank and simultaneously form the loops thereof substantially at right angles to each other; and means for actuating such mechanisms.

29. A chain-machine comprising cutting and bending mechanisms operative to sever a link-blank from the stock and bend the same into angular position centrally of its length; former mechanism embodying formers operative in diagonally opposite directions, whereby the planes of movement thereof intersect each other; loop-bending mechanism operative to engage the ends of the bent link-blank and simultaneously form the loops thereon substantially at right angles to each other; gripping mechanism operative to engage the completed link and carry the same into the link bending or curling path of the wire blank; and means for actuating said mechanisms.

30. A chain-machine comprising feeding mechanism operative to feed the wire a predetermined length; cutting and bending mechanism operative to sever a link-blank and bend the same into angular position centrally of its length; former mechanism embodying formers operative in diagonally opposite directions; loop-bending mechanism operative at an angle to the feed of the wire to engage the ends of said link-blank to simultaneously form the loops thereon; gripping mechanism; and means for actuating said mechanisms.

31. A chain-machine comprising link-bending mechanism embodying a normally-fixed die having an angular face at each side of its apex with transversely and longitudinally inclined portions; former mechanism embodying formers having their working ends extending through said fixed die and projecting at the longitudinally-inclined faces thereof; and means for actuating said mechanisms.

32. A chain-machine comprising link-bending mechanism embodying a normally-fixed die having an angular face at each side of its apex with transversely and longitudinally inclined portions; former mechanism embodying formers having their working ends extending through said fixed die and projecting at the longitudinally-inclined faces thereof; loop-bending mechanism embodying loop-benders disposed at the same inclination as the longitudinally-inclined portions of the fixed die; and means for actuating said mechanisms.

33. A chain-machine comprising bending mechanism embodying a normally-fixed die having an angular face comprising on each side of its apex transversely and longitudinally inclined portions disposed in angular relation relatively to each other, and a movable link-blank bender; feeding mechanism operative to feed the link-blank a predetermined length, whereby it will be fed in a horizontal plane substantially in parallelism with the horizontal plane of the points of juncture of the longitudinally and transversely inclined portions of the die, and whereby also that part of the link-blank which is to form the link has the center of its length adjacent to the apex of said angular-faced die; and means for actuating the link-blank bender to thereby bend said link-blank centrally of its length into angular relation relatively to said die.

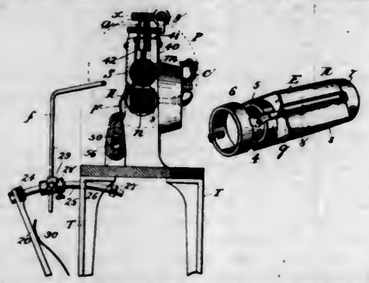
34. A chain-machine having bending mechanism comprising a normally-fixed die with an angular face and a movable link-bender; feeding mechanism operative to feed the work a predetermined length, whereby that part thereof which is to form the link has the center of its length adjacent to the apex of said die; means for actuating the link-bender, to bend said link-wire centrally of its length into angular position relatively to said die; loop-bending mechanism operative to engage the ends of said bent link-blank and simultaneously form the loops thereon; and means for actuating said loop-bending mechanism.

35. A chain-machine comprising feed mechanism operative to feed a wire a predetermined length; means for simultaneously bending or curling the ends of the link-blank into loops; and means for carrying a completed link into the loop bending or curling path of the next link-blank, whereby the links are united to form a chain by bending or curling a partially-formed loop of the uncompleted link-blank through a loop of the completed link.

36. A chain-machine comprising feeding mechanism operable to feed a wire a predetermined length; means for bending the link-blank centrally of its length; means for bending or curling the ends of the link-blank into loops; and means for carrying a completed link into the loop bending or curling path of the next link-blank, whereby the links are united to form a chain by bending or curling a partially-formed loop of the uncompleted link-blank through a loop of the completed link.

37. A chain-machine embodying means for bending or curling the end of a link-blank into a loop and means for carrying a completed link into position to have its loop in the path of bending or curling of said link-blank, whereby the link and link-blank are united by bending or curling the partially-formed loop of such blank through the loop of the completed link.

568,750. FUR-PLUCKING MACHINE. ISIDOR DREISDNER, Brooklyn, N. Y. Filed Feb. 10, 1896. Serial No. 578,659. (No model.)



Claim.—1. In a fur-plucking machine the combination of a body or roller having a general polygonal section, uniform throughout its length, a coöperating roller arranged parallel therewith, means for producing rotation applied to the first-named roller, a rest for the skin or pelt and a movable carrier, substantially as described.

2. In a fur-plucking machine the combination of a body or roller having a general polygonal section, uniform throughout its length, a coöperating roller arranged parallel therewith, means for producing rotation applied to the first-named roller, and a rest for the skin or pelt, substantially as described.

3. In a fur-plucking machine the combination of a body or roller having a general polygonal section, uniform throughout its length, a second roller having a flexible or elastic surface arranged parallel and adjacent to the first-named roller, a rest for the pelt or skin and a carrier for movably supporting the skin, substantially as described.

4. The combination in a fur-plucking machine of a roller having an elastic surface, a roller or body having a general polygonal section, uniform throughout its length, and a flexible or elastic surface, a rest for the pelt or skin and a movable carrier for the pelt or skin, substantially as described.

5. The combination in a fur-plucking machine of a body or roller having a quadrangular section, uniform throughout its length, a coöperating roller arranged parallel therewith, means for producing rotation applied to the first-named roller, a rest for the pelt or skin and a movable carrier, substantially as described.

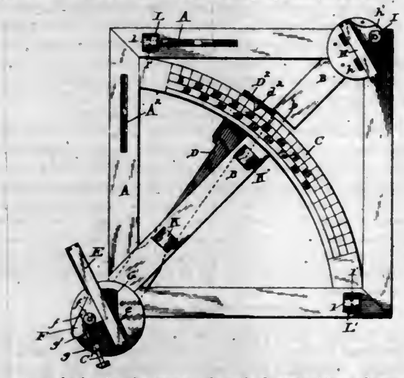
6. In a fur-plucking machine the combination of a roller having a polygonal section, uniform throughout its length, a coöperating roller, means for producing rotation applied to the first-named roller, a rest for the pelt in the form of an open parallelogram and a movable carrier, substantially as described.

568,751. COMBINED SQUARE AND LEVEL. ARTHUR H. EDWARDS and JOHN HAZARD, Wheatland, Mo. Filed Dec. 10, 1895. Serial No. 571,682. (No model.)

Claim.—1. A device for the purpose described, comprising a frame carrying an arc, a movable index mounted for coöperation therewith, adjustable reflectors at diametrically opposite corners of the frame and sights on said frame, substantially as and for the purposes specified.

2. A device for the purpose described, comprising a frame carrying an arc, a movable index mounted for coöperation therewith, adjustable reflectors at diametrically opposite corners of the frame and sights on said frame, said frame being provided with levels, substantially as and for the purposes specified.

3. A device for the purpose described, comprising a frame carrying an arc, reflectors at diametrically opposite corners of the frame, sights, and a pivoted index-arm, mounted to move with one of said reflectors, substantially as and for the purposes specified.



4. A device for the purpose described, comprising a frame carrying an arc, reflectors at diametrically opposite corners of the frame, sights, and a pivoted index-arm, mounted to move with one of said reflectors and means for adjusting said reflectors, substantially as and for the purposes specified.

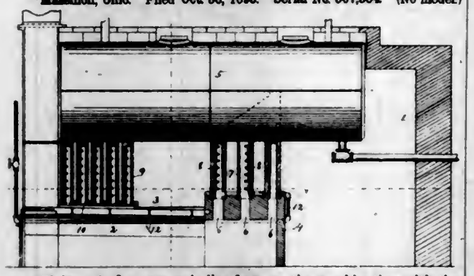
5. A device for the purpose described, comprising a frame carrying an arc, reflectors at diametrically opposite corners of the frame, sights, and a pivoted index-arm mounted to move with one of said reflectors, means for adjusting said reflectors and levels on the upper face of said frame, substantially as and for the purposes specified.

6. A device for the purpose described, comprising a frame carrying an arc, a pivoted arm, carrying an index, movable over said arc, sights on said frame, a hinged reflector at one corner and a hinged reflector at the diametrically opposite corner, mounted for movement with said arm, substantially as and for the purposes specified.

7. A device for the purpose described, comprising a frame carrying an arc, a pivoted arm, carrying an index movable over said arc, sights on said frame, a hinged reflector at one corner and a hinged reflector at the diametrically opposite corner, mounted for movement with said arm, and means for moving the last-mentioned reflector, independent of said arm, substantially as and for the purposes specified.

8. The combination with the frame carrying an arc and sights disposed as specified, of levels on the upper face of said frame, a pivoted arm, carrying an index, movable over said arc, a hinged reflector at one corner, with means for adjusting it vertically, a reflector at the diametrically opposite corner, movable with said arm, a hinge on which said reflector is mounted, means for adjusting the vertical position of the reflector and means for turning the same about its pivot, independent of said arm, substantially as and for the purposes specified.

568,752. STEAM-BOILER FURNACE. HENRY H. EVERHARD, Massillon, Ohio. Filed Oct. 30, 1895. Serial No. 567,384. (No model.)



Claim.—1. In a steam-boiler furnace, the combination with the undivided fire-chamber, the grate-bars, and the horizontal air-tube dividing the ash-pit into two chambers, of the steam or compressed-air-jet pipes alternately communicating with the fire-chamber, substantially as described.

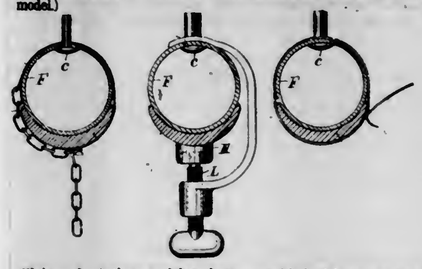
2. In a steam-boiler furnace, the combination with the steam or compressed-air-injecting pipe, and the perforated block secured thereto, of the perforated tube and cap, substantially as described.

3. In a steam-boiler furnace, the combination with the grate-bars, the series of vertical perforated tubes supported thereby, and the horizontal air-tube dividing the ash-pit into two chambers, of the bridge-wall formed with ducts, the perforated vertical pipes connected therewith, and the steam or compressed-air-jet pipes for alternately injecting superheated steam into the fire-chamber, above the grate-bars, substantially as described.

4. In a steam-boiler furnace, the combination of the steam-injecting pipe, with the perforated block, and means within said block for retarding the flow of steam therethrough whereby the steam may be superheated and sprayed forward and over the fuel, substantially as described and for the purpose set forth.

5. The combination in a steam-generator furnace, of the divided ash-pit, the grate-bars, the series of vertical tubes between the bridge-wall and the deflecting-wall, the steam or compressed-air jet disposed to direct the steam or compressed air forwardly over the fresh fuel to the front of the fire-chamber and back over the incandescent fuel on the opposite side of the fire chamber, substantially as set forth.

568,753. CLAMP FOR REPAIRING BICYCLE-TIRES. WILLIAM FOTH, Orange, N. J. Filed Dec. 14, 1895. Serial No. 572,122. (No model.)



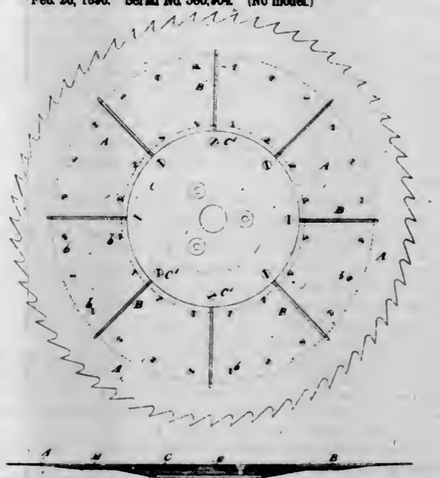
Claim.—1. A tire-repairing clamp, provided with an aperture to embrace the shank of a repair-plug and provided with means for holding it upon the tire during the inflation of the same, substantially as herein set forth.

2. A tire-repairing clamp, consisting of a flexible band formed with a hole to embrace the shank of a repair-plug and provided with means for holding it upon the tire, as herein set forth.

3. A tire-repairing clamp, consisting of a flexible band formed with a graduated series of holes to fit repair-plugs of different sizes, and provided with means for holding it upon the tire, as set forth.

4. A tire-repairing clamp, consisting of a flexible band formed with a graduated series of holes, and having at one end a strap provided with a series of teeth, and at the opposite end a hole to insert the strap and adapted to engage the said teeth, substantially as herein set forth.

568,754. CIRCULAR SAW. JACOB E. FOX, Seattle, Wash. Filed Feb. 26, 1896. Serial No. 580,904. (No model.)



Claim.—1. The combination of a circular saw having radial slots extending from near the rim to the central opening with a stiffening-plate fastened to the side thereof, substantially as shown and described.

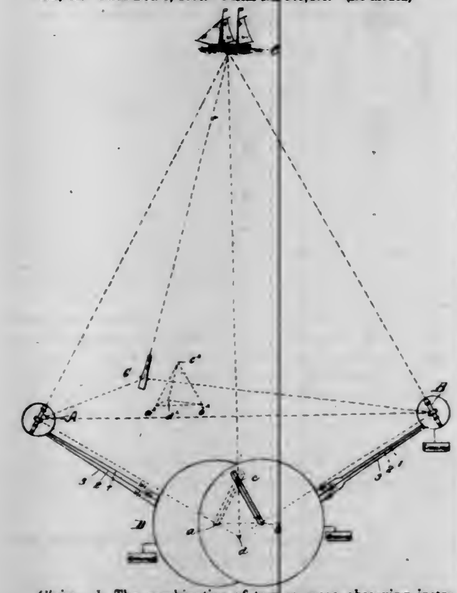
2. The combination of a circular saw having a central hole of large diameter and radial slots extending from near the rim to the central hole with a circular plate of the same thickness as the saw

filling the central hole therein, and a stiffening-plate attached to one side of the saw and central plate, substantially as shown and described.

3. In a circular saw the combination of a head-plate having a central hub or boss, a stiffening-plate having a central hole to fit said hub, and a circular plate having a central hole to fit the same hub, with a circular saw having a large opening to fit over the above circular plate and radial slots extending from this central opening to near the rim and means for fastening it to the stiffening-plate, substantially as shown and described.

4. In a circular saw the combination with the saw having radial slots extending from near the rim to the central opening, a collar within this opening and fitting closely over the central shaft, said collar being a gage thicker than the saw, with a stiffening-plate upon each side of the saw and means for attaching the said stiffening-plates to the saw, substantially as shown and described.

568,755. APPARATUS FOR INDICATING DISTANCE AND DIRECTION OF REMOTE OBJECTS. George G. Greenough, Fort McPherson, Ga. Filed Dec. 3, 1890. Serial No. 373,473. (No model.)



Claim.—1. The combination of two or more observing instruments with a receiving instrument containing line-indicators, one corresponding to each observing instrument, and connecting mechanism between each observing instrument and the corresponding line-indicator whereby the latter is moved in unison with the former, and a third or additional line-indicator, the center of movement of which is in the same relation to that of the first-mentioned line-indicators, that a predetermined known point is to the observing instrument, substantially as described.

2. A distance and position indicating instrument comprising two or more material line-indicators movable about different centers corresponding in relative position to two or more known observing-stations, and a disk or dial, the center of movement of which is in the same relation to that of the first-mentioned indicators that a predetermined known point is to the observing-stations, said disk having means for determining a radial visual line thereon, and being provided with a graduated scale or table along said visual line, substantially as and for the purpose described.

3. The combination of a circuit-controlling wheel rotatable in either direction with a series of circuit-controlling contacts engaged successively by said wheel in definite order relative to the direction of rotation thereof, and a corresponding series of independent electromagnetic devices and electric circuits connecting the same with the respective contacts, whereby said electromagnetic devices are energized in definite order with relation to the direction of rotation of the said circuit-wheel, substantially as and for the purpose described.

4. The position-indicating instrument comprising two or more disks having peripheral bearings in which they turn about axes eccentric one to the other, substantially as and for the purpose described.

5. The combination of a circuit-controller capable of movement in opposite directions with a series of circuit-controlling contacts engaged successively thereby in definite order relative to the direction of movement of said circuit-controller, a corresponding series of electromagnetic responsive devices, and independent circuits connecting each with its respective contact, a movable toothed member actuated by said electromagnetic responsive devices the teeth being arranged with relation thereto so that the direction of movement depends upon the order of response of said devices and is thus in one or the opposite direction according as the circuit-controller is moved in one or the opposite direction, substantially as described.

6. The combination of the circuit-wheel adapted to be rotated in either direction with a series of independent contacts engaged successively thereby in one or the reverse order according to the direction of rotation thereof; a corresponding series of electromagnetic responsive devices, one connected in circuit with each of said contacts, and a toothed wheel as k the teeth of which are adapted to be actuated by said electromagnetic devices and are so arranged that the direction of rotation of said wheel is in one or the opposite direction according as said devices are actuated in one or the opposite order, substantially as described.

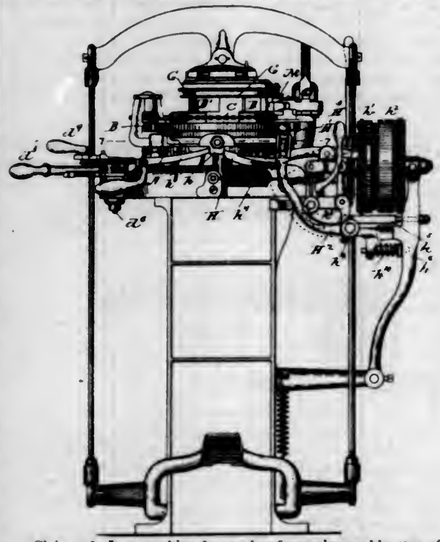
568,756. INSULATED ELECTRIC CABLE. Max Guilleaume, Mülheim-on-the-Rhine, Germany. Filed Nov. 25, 1895. Serial No. 570,063. (No model.) Patented in England Aug. 22, 1895, No. 15,826; in Germany Aug. 23, 1895, No. 85,221; in Belgium Oct. 17, 1895, No. 117,920; in Hungary Nov. 26, 1895, No. 4,627, and in Austria Jan. 6, 1896, 46/33.



Claim.—1. In an electric cable, the combination, with the conductor b, of the inner and outer windings a a' of fibrous material and the intervening serving of insulating material c arranged inside and outside alternate convolutions of the windings a a', substantially as and for the purpose set forth.

2. An electric cable or conductor furnished with insulating material arranged inside and outside alternate convolutions of windings of fibrous material.

568,757. MACHINE FOR CUTTING SOLES. David F. Hartford, Boston, Mass. Filed Dec. 14, 1894. Serial No. 531,768. (No model.)



Claim.—1. In a machine for cutting forms the combination of a ring-gear; studs and wheels within that gear for supporting it; blocks within that gear for supporting the table of the machine; that table; pattern-supports also within that gear; a pattern carried by these supports; a knife-carriage on the table, and a connection between the ring-gear and the knife-carriage; all substantially as described.

2. In a machine for cutting forms the pattern-supports, in combination with means for adjusting both to receive the pattern, and additional means for further adjusting one of them to suit an angle or quick curve of the pattern, all substantially as described.

3. In a machine for cutting irregular forms a knife-carriage consisting of a bed; an endwise-moving plunger or ram; a swivel-head, connected by a pin to one end of the ram; a knife-holder on the swivel-head; and two links L^2 and L^3 to connect the plunger and bed and guide the plunger in its endwise movements; all substantially as described.

4. In combination a swivel-head; a knife carried by it; a pin on which the swivel-head swivels; a ring-tracing roller; and wheels mounted on the swivel-head, and supporting the ring-tracing roller; all substantially as set forth.

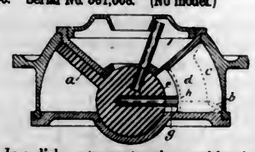
568,758. KEY-HOLDER. Victoria J. Harvey, Red Jacket, Mich. Filed Jan. 28, 1896. Serial No. 577,136. (No model.)



Claim.—1. A key-fastener comprising a plate adapted to be engaged under the lock and formed with a longitudinal slot, hooks pivotally connected therewith and adapted to engage a key and means for holding the plate in position on a door, and means for adjusting the said plate, substantially as described.

2. A key-locking device, comprising a plate having a longitudinal slot and a holder, rods having hooks engaging means on opposite sides of said plate and their other ends hooked to engage a key and a screw eye adapted to secure said plate in position, on the door, substantially as described.

568,759. WATER-METER. Freeman W. Hood, Newton, Mass., assignor to the Hersey Manufacturing Company, Boston, Mass. Filed Feb. 26, 1896. Serial No. 581,068. (No model.)



Claim.—1. In a disk water-meter the combination with a disk-chamber and disk, of an abutment provided with a slot in the face thereof adjoining the ball of the piston, a pin projecting from the ball of said piston and acting in said slot, substantially as set forth and described.

2. In a disk water-meter a disk, a pin projecting radially from the center of the ball of the disk, said pin acting in a slot in the face of the abutment adjacent to the ball of the disk, substantially as set forth and described.

3. In a disk water-meter a disk, a pin projecting from the ball of the disk, said pin being free to rotate in the ball of the disk and roll against the side of a slot in the abutment, substantially as set forth and described.

568,760. EJECTOR MECHANISM FOR BREAKDOWN FIREARMS. George A. Horne, Syracuse N. Y., assignor to the Syracuse Arms Company, same place. Filed May 26, 1896. Serial No. 593,112. (No model.)



Claim.—1. In a breech-loading firearm, the combination with a movable extractor, and a hammer; of a reciprocating ejector movable in a plane substantially parallel with the extractor, and formed with an upwardly-extending offset or arm at its rear end having its upper extremity extended laterally beyond the inner longitudinal side of the underlying portion of the ejector and engaged with the front end of the extractor, a pivoted detent for preventing movement of the ejector, and a reciprocating trip interposed between the hammer and the detent for forcing said detent from operative position, substantially as and for the purpose described.

2. In a breech-loading firearm, the combination with a movable extractor, a hammer, and a fore-end; of a reciprocating ejector having an upwardly-extending offset or arm at its rear end engaged with the extractor, and provided with a lateral shoulder engaged with the top face of the fore-end, and movable along said face, a pivoted detent for preventing movement of the ejector, and a reciprocating trip interposed between the hammer and the detent for forcing said detent from operative position, substantially as and for the purpose specified.

3. In a breech-loading firearm, the combination with a frame having a front arm or extension provided with a substantially upright slot in its front face, a movable extractor, a hammer and a fore-end; of an ejector engaged with the extractor, a detent pivoted to the fore-end for preventing movement of the ejector and having its rear end normally arranged substantially flush or coincident with the rear face of the fore-end and movable into the slot in the front face of said arm or extension, a reciprocating trip interposed between the hammer and the detent and having its front end movable into engagement with the rear end of the detent and means for automatically returning the trip to its normal position, substantially as and for the purpose set forth.

4. In a breech-loading firearm, the combination with a frame having a front arm or extension provided with a substantially upright slot in its front face, a movable extractor, a hammer and a fore-end; of a reciprocating ejector engaged with the extractor, and provided with a lateral shoulder engaged with the top face of the fore-end and movable along said face, a detent pivoted to the fore-end for preventing movement of the ejector and having its rear end normally arranged substantially flush or coincident with the rear face of the fore-end and movable into the slot in the front face of said arm or extension, a reciprocating trip interposed between the hammer and the detent, and having its front end movable into engagement with the rear end of the detent, and means for automatically returning the trip to its normal position, substantially as and for the purpose described.

5. In a breech-loading firearm, the combination with a frame having a front arm or extension provided with a substantially upright slot in its front face, a fore-end, a reciprocally-movable extractor, and a hammer; of a reciprocating ejector formed with an upwardly-extending offset or arm at its rear end having its upper extremity extended laterally beyond the longitudinal side of the underlying portion of the ejector and engaged with the front end of the extractor, said extension of the offset or arm being provided with a lateral shoulder engaged with the top face of the fore-end and movable along said face, a detent pivoted to the fore-end for preventing movement of the ejector and having its rear end normally arranged substantially flush or coincident with the rear face of the fore-end and movable into the slot in the front face of said arm or extension, a reciprocating trip interposed between the hammer and the detent, and having its front end movable into engagement with the rear end of the detent, and a spring for automatically returning the trip to its normal position, substantially as and for the purpose specified.

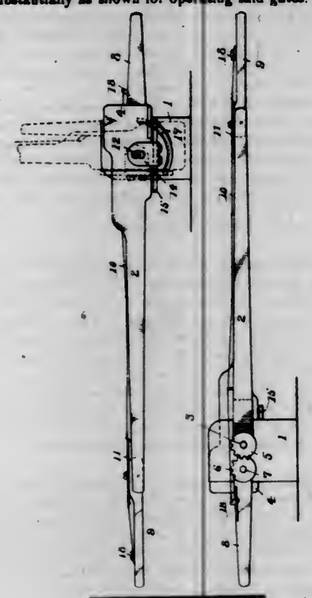
568,761. DRAWBRIDGE-GATE. James Hughes, Bridgeport, Conn. Filed Apr. 27, 1896. Serial No. 589,167. (No model.)

Claim.—1. In a drawbridge-gate of the class described, the combination with the hinged section 2, bearing a segment, a secondary section 8 bearing a segment meshing with and operated by the section aforesaid, of an operating-rod journaled upon the draw and in line with the trunnion of said main section, and adapted to be operated from the center of the draw, and an angle-iron upon the outer end of the rod aforesaid and bearing a shoe to engage and operate said gates.

2. In a drawbridge-gate of the class described, the combination with the hinged section 2 bearing a segment, a secondary section bearing a segment meshing with and operated by the section aforesaid, and a section 9 pivoted to the outer end of the section 2, of connections between said outer sections and the secondary sections whereby the former is operated by the latter, an operating-rod journaled upon the draw and in line with the hinged section 2, and a shoe mounted upon the outer end of said rod adapted to engage and operate the gate, substantially as described.

3. In a drawbridge-gate of the class described, the combination with a post, of a gate hinged thereto having an enlarged end, a radial

grooved cleat secured to said post, a lug upon the enlarged end of the gate, engaging the groove aforesaid, whereby said gate is braced, and means substantially as shown for operating said gates.

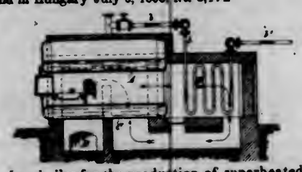


568,762. ATTACHMENT FOR HARNESS. JEDEDIAH D. HULL, El Dorado, Kans. Filed May 7, 1896. Serial No. 590,638. (No model.)



Claim.—In combination with the turnback-strap, and the hip-strap of a harness, the line-holding attachment made of one piece of spring metal, having the raised portion, provided with the lips 11, the openings 6 and 7 through which said hip-strap passes, the spring-arms touching at their free ends forming one complete loop.

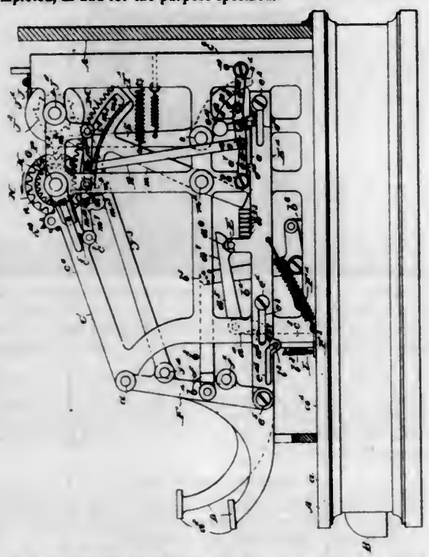
568,763. SUPERHEATER. OSKAR HUNGER, Duriach, Germany, assignor to Rudolf Gritzner, same place. Filed Oct. 16, 1895. Serial No. 565,900. (No model.) Patented in Switzerland Dec. 31, 1894, No. 9,532, and in Hungary July 6, 1895, No. 3,174.



Claim.—In a boiler for the production of superheated steam, the combination of a boiler A for generating steam, presenting the hottest heating-surface to the combustion-gases developed on the grate, a superheating-chamber B through which the combustion-gases pass, said boiler having a part C presenting the coolest portion of the heating-surface to the gases before their escape in the chimney, pipe *b*, and a superheating-coil for conducting the steam to be superheated from the boiler A through the superheating-chamber B in the same direction as the current of the combustion-gases, substantially as and for the purpose specified.

568,764. CASH REGISTER AND INDICATOR. JAMES JACQUES and CLARENCE S. TRASK, Lowell, Mass., assignors to the Columbia Cash Register Company, Portland, Me. Filed July 19, 1895. Serial No. 556,474. (No model.)

Claim.—1. The combination of a series of key-slides, bars, movable with any of said key-slides, and each provided with a rack, a pair of oppositely-acting pawls for each of said racks, and a lever, connecting the pawls of a pair to each other and arranged to hold one of said pawls in engagement with the corresponding rack when the other is out of such engagement, and said bars having also projections each adapted to raise a pawl out of engagement with the corresponding rack at the completion of the movement of the corresponding bar in one direction, the registering-gear, a segment of a gear, engaging said gear and operated by the movement of any key-slide to rotate said gear, said segment having two racks, provided with oppositely-inclined teeth, two pawls, adapted to engage said last-named racks, respectively, a lever, connecting said last-named pawls to each other and adapted to hold either of said last-named pawls out of engagement with the corresponding rack when the other is in such engagement, and a rod, connecting said levers, to cause the operative movement of said segment to end with the operative movement of the corresponding key-slide and to prevent said segment from moving in one direction until its movement in the opposite direction is completed, as and for the purpose specified.



2. The combination of a series of keys, a series of stops and a guide-rod passing through said stops and arranged at right angles to the planes in which said keys move, said keys having forks adapted to pass between said stops on opposite sides of said guide-rod, as and for the purpose specified.

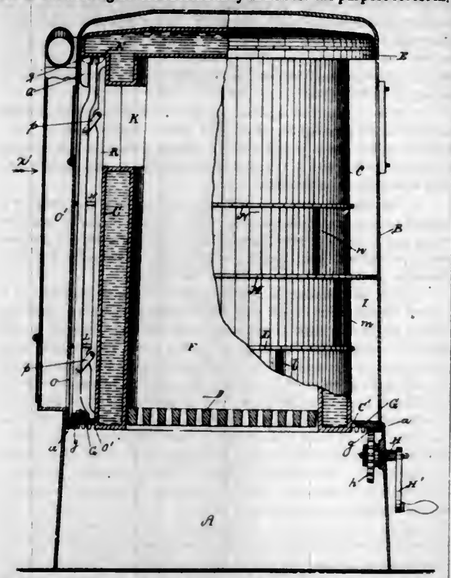
3. The combination of the case, the keys, the drawer, sliding in said case and having two notches, a spring, to open said drawer, a lever, operated by the movement of any key, two bolts, pivoted to said lever on opposite sides of its fulcrum, one of said bolts being normally engaged with one of said notches when said drawer is closed and withdrawn therefrom at the beginning of the operative movement of any key and supported on the top of said drawer, on a slight outward movement of said drawer, and the other of said bolts being thrown into engagement with the other of said notches, and withdrawn therefrom on the completion of the return movement of said key, to prevent said drawer being opened until said key is fully operated and returned to its normal position, as and for the purpose specified.

4. The combination of the frame, a shaft, having a longitudinal groove, a series of registering-wheels, loose on said shaft, an equal series of pawls, each pivoted on one of said wheels and each bearing upon said shaft and adapted to engage said groove, a spring-arm, secured to said shaft, a stud, on said frame, to stop said arm, and another spring, to rotate said shaft when said arm is disengaged from said stud until said arm again strikes said stud, to restore said wheels to their zero positions, as and for the purpose specified.

568,765. CLEANING DEVICE FOR HOT-WATER HEATERS. CHARLES A. JOHNSON, Everett, Mass. Filed July 18, 1896. Serial No. 599,697. (No model.)

Claim.—1. In a hot-water heater a rotary gear-ring and means for rotating the same, combined with a series of segmental rings secured at intervals to said gear-ring, a post secured to said gear-ring and having pivotally connected to its upper end, a weighted scraper

for the purpose of cleaning the under side of the crown water-chamber of the heating device substantially as and for the purpose set forth.

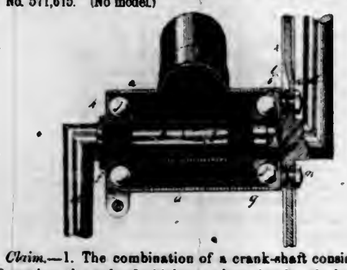


2. In a hot-water heater a rotary gear-ring G and a series of segmental rings L, M, N, secured thereto, combined with a vertical post P secured to said gear-ring, links *p*, *p* pivotally connected to said post and to a scraper-bar R adapted to be held by gravity against the exterior of the water-chamber C substantially as and for the purpose set forth.

568,766. FIREPROOFING LIQUID. STANISLAW KALAMAIKOWSKI, New York, N. Y. Filed Apr. 23, 1896. Serial No. 588,792. (No specimens.)

Claim.—The herein-described fireproofing liquid consisting of water, borax, boracic acid, sulfate of ammonia, muriate of ammonia and cream of tartar in about the proportions specified.

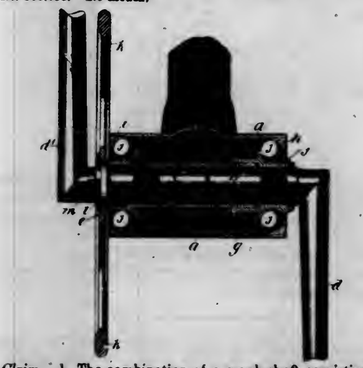
568,767. CRANK-SHAFT AND BEARING FOR BICYCLES. ROBERT M. KEATING, Springfield, Mass. Filed Dec. 10, 1895. Serial No. 571,615. (No model.)



Claim.—1. The combination of a crank-shaft consisting of two shaft-sections the ends of which are adapted to interlock and prevent rotation of one without the other; a sleeve engaging one of said parts by an interior threaded connection and provided at its opposite end with an exterior thread; the shaft-section *c* being provided with a thread the reverse in direction from the exterior thread upon the sleeve; a cone-piece *f* threaded to engage with the thread upon the sleeve and also the thread upon the shaft-section *c*; a cone-piece *g* mounted upon the shaft-section *b*; rings *h* and *i* interiorly shaped for the traverse of the balls and threaded upon their peripheries and the bracket *a* interiorly threaded at each end to receive the rings *h* and *i*, substantially as and for the purposes stated.

2. The combination of a shaft-section *b* having a cone-piece *g* mounted thereon and resting against a shoulder *b'*; a sleeve *e* interiorly threaded to engage a thread upon the shaft-section *b* and bear with its end against the cone-piece *g* and having its opposite end exteriorly threaded; a shaft-section *c* having a threaded portion running in a direction opposite from the exterior thread upon the sleeve *e*; a cone-piece *f* having an exterior annular ball-traversing recess and interiorly provided with a right and left hand thread to engage the thread upon the shaft-section *c* and the exterior thread upon the sleeve; collars *h* and *i* having interior annular ball-traversing recesses and threaded upon their exterior; a bracket *a* interiorly threaded at the ends to engage the peripherical threaded rings *h* and *i* and balls arranged in said ball-receiving channels, the inner ends of the shaft-sections being adapted to interlock, substantially as and for the purposes stated.

568,768. CRANK-SHAFT AND BEARING FOR BICYCLES, &c. ROBERT M. KEATING, Springfield, Mass. Filed June 1, 1896. Serial No. 593,733. (No model.)



Claim.—1. The combination of a crank-shaft consisting of two shaft-sections the ends of which are adapted to interlock and prevent when so interlocked rotation of one without the other, a sleeve having at one end a cone-bearing integral therewith and engaging one of said shaft-sections by an interior threaded connection and provided at its opposite end with an exterior thread, a bearing-piece *f* having an interior thread to engage a thread on the shaft-section *b* and having an extension *g* interiorly threaded to engage the thread on the end of the sleeve *e*; a bracket *a* bearing-rings at each end thereof and balls interposed between the bearing-rings and cones, substantially as shown.

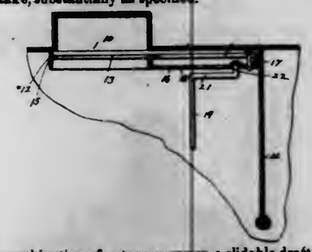
2. The combination of a crank-shaft consisting of two shaft-sections with their ends arranged to interlock and prevent rotation of the one without the other when so interlocked, a sleeve mounted by interior threaded connection on one shaft-section and extending over a portion of the other shaft-section and having a screw *o* mounted in and projecting through its side, the last-named shaft-section having a longitudinal slot to receive the screw end, a short sleeve *f* mounted on the last-named shaft-section by an interior threaded connection and engaging by threaded connection the end of the long sleeve, cone-bearings on each of said sleeves, a bracket bearing rings therein and balls arranged between the rings and cones, substantially as shown.

3. The combination of a hanger *a* crank-shaft section *b* having a thread on a part of its exterior shaft-section *c* having a like threaded part but in reverse direction the ends of the shaft-sections being shaped to interlock, a sleeve *e* having a cone-bearing at one end and an exterior thread at its opposite end, and interiorly threaded to engage the thread on the shaft-section *c*, means to prevent rotation of the sleeve *e* and section *b* independently of each other but permitting longitudinal movement therebetween a short sleeve *f* interiorly threaded to engage the thread on the shaft-section *b* and also threaded to engage the thread on the end of sleeve *e* and having an exterior cone-bearing surface, a bracket *a*, bearing-rings mounted in each end thereof and balls arranged between the cones and rings, substantially as shown.

568,769. STOVE OR RANGE. MAX M. KOCH and JOHN ERBEN, Cleveland, Ohio; said Erben assignor to said Koch. Filed Apr. 27, 1896. Serial No. 589,278. (No model.)

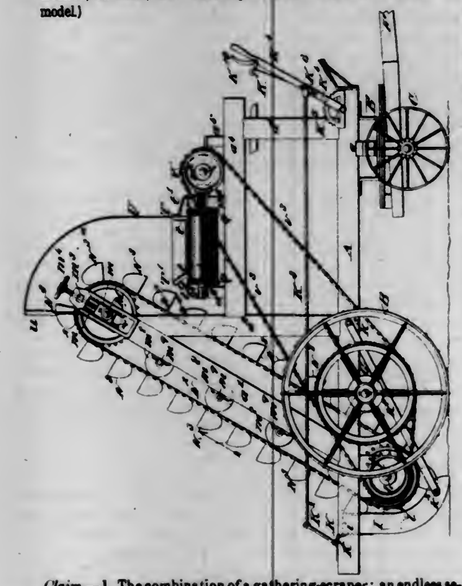
Claim.—1. A stove or range comprising a fire-box, an oven, a flue above the oven communicating with the fire-box, a flue below the oven, an end flue connecting the upper and lower flues, an uptake communicating with the flue below the oven, a frame arranged in the flue below the oven and against the wall with which the uptake is connected, a slidable and apertured draft-regulator arranged in said frame, a rock-shaft for moving said draft-regulator, extending outside the stove, a cover-plate connected to the outer side of the stove immediately below the rock-shaft, and the indicator-disk fixed on the said shaft and arranged in a plane between the cover-plate and the outer side of the stove, substantially as specified.

2. The stove or range described comprising a fire-box, an oven, a flue above the oven communicating with the fire-box, a flue below the oven, an end flue connecting the upper and lower flues, an uptake communicating with the flue below the oven through an opening in the wall of said flue, a frame arranged in the flue below the oven and against the inside of the wall with which the uptake is connected and a slidable and apertured draft-regulator arranged in said frame, and adapted to control communication between the flue below the oven and the uptake, substantially as specified.



3. The combination of a stove or range, a slidable draft-regulator arranged within the stove or range, a rock-shaft for moving said draft-regulator extending outside the stove, the cover-plate connected to the outer side of the stove immediately below the rock-shaft, and the indicator-disk fixed on the said shaft and arranged in a plane between the cover-plate and the outer side of the stove, substantially as and for the purpose set forth.

568,770. GATHERING AND LOADING APPARATUS. JOSEPH J. KULAGE, St. Louis, Mo. Filed Sept. 9, 1895. Serial No. 561,993. (No model.)



Claim.—1. The combination of a gathering-scraper; an endless series of elevator-buckets which move from in front toward said scraper in loading; and means by which the scraper is adjusted to scrape to different depths and the space between the lower axis of the series of buckets and the face of the scraper through which the buckets pass is increased when the depth of the scraper's cut is increased and diminished when it is diminished.

2. In a gathering-machine a scraper; a bent shaft K; bearings attached to the frame of the machine, in which said shaft turns; bearings attached to the scraper in which said shaft turns and by which the scraper is suspended from it; bars K', K'; means pivotally connecting them at one end to the scraper at opposite sides, near the scraper's cutting edge; and means pivotally connecting them to the frame of the machine.

3. In a gathering-machine, a scraper; a bent shaft K; the lever K^3 attached to said shaft; bearings attached to the frame of the machine, in which said shaft turns; bearings attached to the scraper in which said shaft turns and by means of which the scraper is suspended from the shaft; bars K', K'; means pivotally connecting them at one end to the scraper at opposite sides, at points from which they extend upward and forward at an angle; means pivotally connecting their upper ends to the frame of the machine; a rod K^5 connected at one end with said lever K^3; a lever K^4, connected to the other end of said rod; and means locking said lever K^4 in position substantially as described.

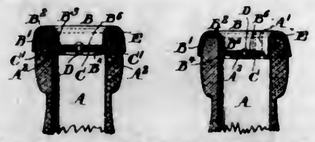
4. The combination in a loading apparatus of a scraper; a shaft in front of it; bearings in which said shaft revolves; two or more pulleys spaced apart on said shaft, an upper pulley; a belt passing over said pulleys and a series of elevator-buckets attached to said belt substantially as described.

5. The combination in a gathering and loading apparatus of a laterally-extending endless conveyer-belt; a pair of shafts each carrying two or more pulleys spaced apart, over which said belt travels; and a pair of side boards each provided with a flexible lip, guarding the sides of said belt substantially as described.

6. The combination in a gathering and loading apparatus, of a pair of wheels which in part support the apparatus; a shaft; bearings within which said shaft turns, means connecting said wheels to said shaft when the apparatus is moved forward, and forcing said shaft and wheels to move together, but permitting said wheels to revolve, on said shaft when moved backward; a gathering-scraper; a shaft rotating in front of said scraper, two or more pulleys on said last-mentioned shaft spaced apart; and two sprocket-wheels, one near the outer end of each outer pulley; a shaft located near the point to which the material is elevated, a pulley and a pair of sprocket-wheels on said shaft; a belt having a sprocket-chain attached to each edge, and said belt running over said pulleys, and said sprocket-chains over said sprocket-wheels; a series of elevator-buckets attached to said belt rising next the rear of the apparatus with tops uppermost and descending next the front of the apparatus with tops down, means transmitting motion from said shaft with which said wheels connect, to said belt and sprocket-chains; and means conveying material dumped from said buckets, to one side of said apparatus substantially as described.

7. The combination in a gathering apparatus of a shaft; a pair of supporting-wheels on said shaft; means which automatically make said wheels fast to said shaft, when the wheels run forward and allow them to run backward loose; a scraper carried by said machine; an endless series of buckets, which move from in front toward said scraper in loading; and means by which the scraper is adjusted to scrape to different depths, and the space between the lower axis of the series of buckets and the face of the scraper through which the buckets pass, is increased when the depth of the scraper's cut is increased, and diminished when it is diminished.

568,771. CLOSURE. ALBERT S. LAMBERT and EDMUND HOFFMAN, Bridgeton, N. J., assignors, by mesne assignments, to the Practical Closure Company, same place. Filed Sept. 27, 1895. Serial No. 563,847. (No model.)

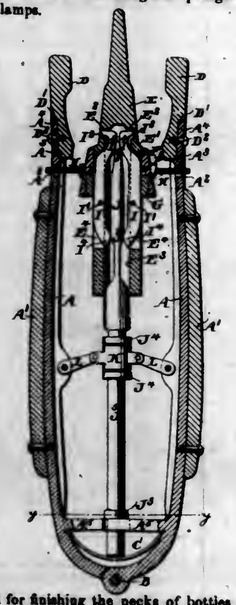


Claim.—A closure-cap formed of sheet metal having a depressed central portion B^3 and an intermitted depending flange B^4 in combination with a metal plate C riveted to the bottom of the depressed portion B^3 and having outwardly-extending lugs C' extending between portions of flange B^4.

568,772. TOOL FOR FINISHING GLASS BOTTLES, &c. ALBERT S. LAMBERT and EDMUND HOFFMAN, Bridgeton, N. J., assignors, by mesne assignments, to the Practical Closure Company, same place. Filed Oct. 15, 1895. Serial No. 565,739. (No model.)

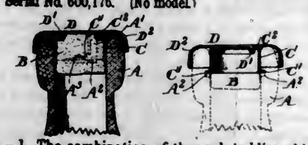
Claim.—1. In a tool for finishing the necks of bottles, the combination with the clamps A of the heads D adapted to shape the outside of the bottle-neck, a spring adapted to force the clamps A apart, a head F supported by and between the clamps A, a former E supported by head F but free to turn therein, said former having a hollow base and slots E^2 therein, levers I pivoted to the head E and having dies I^2 attached thereto so as to register with the slots E^2, a plunger J arranged to actuate levers I positively so as to advance and retract dies I^2 and means for actuating said plunger operated by the motion of the clamps.

2. In a tool for finishing the necks of bottles, the combination with the clamps A of the heads D adapted to shape the outside of the bottle-neck, a spring adapted to force the clamps A apart, a head F supported by and between the clamps A, a former E supported by head F but free to turn therein, said former having a hollow base and slots E^2 therein, fixed dies E^5 formed or secured on the outside of the former E so as to register with the slots E^2, levers I pivoted to the head E and having dies I^2 attached thereto so as to register with the slots E^2, a plunger J arranged to actuate levers I and advance or retract dies I^2 and means for actuating said plunger operated by the motion of the clamps.



3. In a tool for finishing the necks of bottles, the combination with clamps A having formers D secured to their ends of a head F supported by and between said arms and having a slot F' formed in it, a former E having a flange E^5 adapted to engage slot F', dies I^2 situated within former E and adapted to project through slots E^2 therein, a rod J^2 supported between the clamps A and connected therewith as described and so as to be moved longitudinally as the clamps close and open, and a plunger J secured to said rod and arranged to positively actuate the dies I^2 both to open and close them.

568,773. CLOSURE. ALBERT S. LAMBERT and EDMUND HOFFMAN, Bridgeton, N. J., assignors, by mesne assignments, to the Practical Closure Company, same place. Filed Sept. 27, 1895. Renewed July 22, 1896. Serial No. 600,176. (No model.)



Claim.—1. The combination of the cork-holding thimble C having an inwardly-turned top flange C^3 with the metal cap-piece D having a depressed bead D' upset to clamp the thimble-flange C^3 between it and the cap-piece.

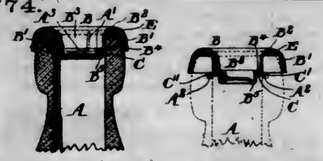
2. The combination of the cork-holding thimble C having an inwardly-turned top flange C^3 and outwardly-extending lugs C' with the metal cap-piece D having a depressed bead D' upset to clamp the thimble-flange C^3 between it and the cap-piece.

3. The combination of the cork-holding thimble C having an inwardly-turned top flange C^3 with the metal cap-piece D having a depressed bead D' upset to clamp the thimble-flange C^3 between it and the cap-piece, and a corrugated outer flange D^2.

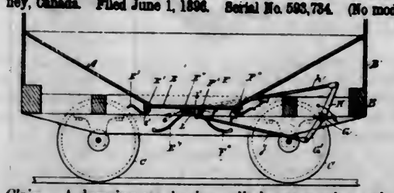
568,774. CLOSURE. ALBERT S. LAMBERT and EDMUND HOFFMAN, Bridgeton, N. J., assignors, by mesne assignments, to the Practical Closure Company, same place. Filed Sept. 27, 1895. Renewed July 22, 1896. Serial No. 600,177. (No model.)

Claim.—A closure-cap formed of sheet metal having a depressed central portion B^3 formed with a shoulder B^4 and dependent flange B^5 in combination with a ring C having outwardly-extending lugs C' clamped between the shoulder B^4 and flange B^5.

568,774.

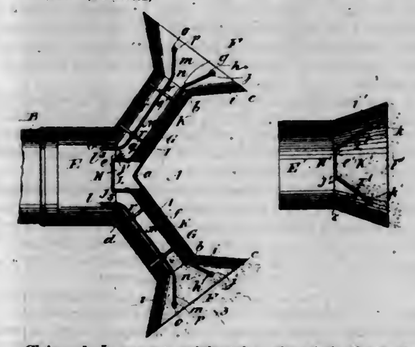


568,775. COAL-DUMPING CAR. WILLIAM G. LAKE, North Sydney, Canada. Filed June 1, 1896. Serial No. 593,734. (No model.)



Claim.—A dumping-car, having a discharge-opening and a pair of movable doors mounted on rollers combined with inclined or curved guideways E^3, F^3, E^4, F^4, for said door, the ways E^3, F^3, being inclined or curved upwardly and the ways E^4, F^4, being curved or inclined downwardly to cause the inner ends of the doors to descend and the outer ends thereof to ascend during the dumping operation and suitable connecting mechanism for actuating and locking said doors as and for the purpose set forth.

568,776. DISCHARGE-SPOUT FOR POWDER-DISTRIBUTERS. CLINTON H. LEGGETT, New York, N. Y. Filed Dec. 12, 1895. Serial No. 571,967. (No model.)



Claim.—1. In a spout, an inlet-tube and a tubular flaring mouth, in combination with a partition having diverging legs extending longitudinally of and dividing the interior of the spout into a plurality of conduits, and having a large aperture between said legs and opposite said tube.

2. In a spout, an inlet-tube and a flaring mouth, in combination with a perforated partition having an aperture opposite said tube and between its legs and having legs extending longitudinally of and dividing the interior of the spout into a plurality of conduits.

3. In spouts of the described class, an inlet-tube and branch tubes leading diagonally therefrom, in combination with a vertical partition extending into said inlet-tube, and longitudinally of each branch tube and dividing the latter into longitudinal conduits.

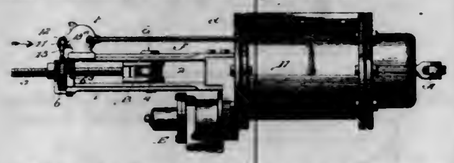
4. In spouts, an inlet-tube and branch tubes leading diagonally therefrom, in combination with a partition within the spout having diverging legs, one in each of said branches, dividing the latter into longitudinal conduits.

5. In spouts of the described class, an inlet-tube and branch tubes leading diagonally therefrom, in combination with a perforated partition in each branch tube dividing the interior thereof into conduits.

6. In spouts of the described class, an inlet-tube E, branches G leading therefrom, and mouths F on said branches, in combination with a partition H having legs I in each of said branches, and partitions O, one in each of said branches, said partitions dividing said branches into a plurality of conduits.

568,777. SLACK-ADJUSTER FOR BRAKES. JOHN K. LESCHE, Chicago, Ill., assignor to Charles F. Quincy, same place. Filed May 9, 1896. Serial No. 590,910. (No model.)

Claim.—1. In a brake-adjuster, the combination with a lever having a movable fulcrum, of a take-up mechanism for shifting said fulcrum, a support for the movable fulcrum and take-up mechanism, and a take-up motor mounted on the support of the take-up mechanism; substantially as and for the purposes specified.



2. In a brake-adjuster, the combination with a fulcrum-guide or stirrup having a movable fulcrum-block arranged therein, of a motor supported by or on the stirrup, and interposed mechanism for actuating the fulcrum-block from the motor; substantially as and for the purposes specified.

3. In a brake system, the combination with the cylinder-levers thereof, of a brake-cylinder, a stirrup or fulcrum-guide supported on or by the brake-cylinder, a fulcrum-block arranged in the stirrup or fulcrum-guide, a take-up motor supported on or by the stirrup or fulcrum-guide, and mechanism interposed between the take-up motor and fulcrum-block for actuating the fulcrum-block from the motor; substantially as and for the purposes specified.

4. In a brake-adjuster, the combination with a lever having a movable fulcrum, of a take-up mechanism for shifting said fulcrum, a cylinder and piston take-up motor for operating said take-up mechanism, and ratchet mechanism interposed between the take-up mechanism and take-up motor and arranged to be actuated by the inward stroke of the piston of the take-up motor; substantially as and for the purposes specified.

5. In a brake-adjuster, the combination with the take-up mechanism, of a take-up motor having a piston, a pawl-rod parallel with the piston-rod and coupled thereto, and a pawl carried by the pawl-rod and arranged to actuate the take-up mechanism on the inward stroke of the piston of the motor; substantially as and for the purposes specified.

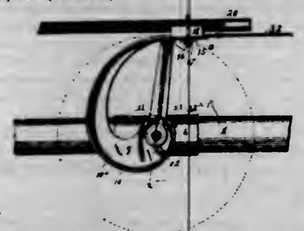
6. In a brake-adjuster mechanism, the combination with a screw and ratchet nut and pawl mechanism for adjusting the fulcrum-block, of a ring or link for supporting the pawl out of engagement with the ratchet-nut during the readjustment of the fulcrum-block, substantially as and for the purposes specified.

7. In brake-adjuster mechanism having a screw, a pawl-and-ratchet mechanism, and a take-up motor, the combination therewith of a reciprocating pawl-rod movable in ways, and a ring or link for suspending the pawl from the pawl-rod, whereby the pawl may be suspended by the link and tripped by the reciprocation of the pawl-rod, substantially as and for the purposes specified.

8. In a fluid-pressure brake system the combination with a take-up device and a brake-motor, of an intermediate fluid-pressure take-up motor, having a piston provided with a leakage-port whose area is less than the inlet-port of the cylinder, substantially as and for the purposes specified.

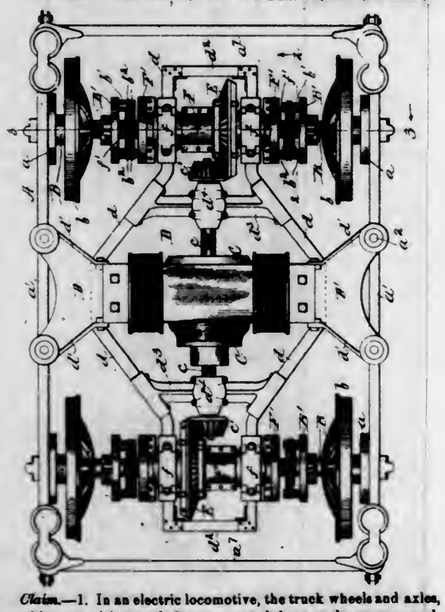
568,778. WHIPPING ATTACHMENT FOR HORSE-POWERS.

WINFIELD S. LIVERGOOD, Kansas City, Mo. Filed Sept. 27, 1895. Serial No. 563,900. (No model.)



Claim.—In a whipping attachment for horse-powers, the combination with the yoke carried on the driving-shaft, a hollow standard mounted thereon having a suitable pulley near its lower end, the draft-pole connected with said yoke, and the block adjustably mounted on said draft-pole, of a vertical shaft mounted in said block and adjustable therein, a horizontal eccentric-lever pivoted on said vertical shaft, a stop on said eccentric-lever, a cap secured to said vertical shaft having an extension thereon, a tension-spring having one end engaged by said stop on the eccentric-lever and the other end engaged by said extension on said cap, an extension on said eccentric-lever, a whip carried on said extension, a strap passing around said eccentric, and a cable connected with said strap and passing under said pulley and up through said hollow standard on the yoke, substantially as and for the purpose set forth.

568,779. ELECTRIC LOCOMOTIVE. JOSEPH R. LOCKWOOD, Detroit, Mich. Filed June 10, 1893. Serial No. 477,230. (No model.)



Claim.—1. In an electric locomotive, the truck wheels and axles, in combination with a truck-frame mounted thereon, sleeves surrounding the axles but not in contact therewith, an elastic connection between said sleeves and axles, a supplemental frame separate from and independent of the axles, arranged in the space between the latter, mounted on the truck-frame and connected at its respective ends with the sleeves, an electric motor mounted wholly on said supplemental frame, and gearing connecting said motor with the sleeves, substantially as described.

2. In an electric locomotive, the truck wheels and axles, in combination with a truck-frame mounted thereon, a supplemental frame connected to and elastically supported on the truck-frame and extending from axle to axle, tubular sleeves of greater diameter than the axles surrounding the latter and having bearings in the respective ends of the supplemental frame, elastic connections between said sleeves and the axles, a motor mounted on the supplemental frame, and a driving connection between said motor and the said sleeves, substantially as described.

3. In an electric locomotive, a truck-frame separate from the car-body, in combination with a motor-frame also separate from the car-body and constructed independently of the truck-frame but connected to and supported by the latter, revoluble tubular shafts mounted in suitable bearings at the respective ends of the said motor-frame, driving-gears connected to the said shafts, truck-axles passing through the said tubular shafts but not in contact therewith, an elastic or yielding connection between the said axles and the tubular shafts, and an electric motor mounted wholly on the motor-frame and having its armature-shaft provided with gears engaging respectively with the driving-gears on the tubular shafts, substantially as described.

4. In an electric locomotive, the truck wheels and axles, in combination with a truck-frame separate from the car-body and mounted on said axles, a motor-frame also separate from the car-body and constructed independently of the truck-frame but arranged in the space between the car-axles and supported by the respective side bars of said truck-frame, tubular sleeves, of greater diameter than the truck-axles, arranged to surround the same without contact therewith and mounted in bearings on the respective ends of the motor-frame, a yielding connection between the said sleeves and axles, a motor mounted wholly on the said motor-frame, and a driving connection between the motor and one or both of said tubular sleeves, substantially as described.

5. In an electric locomotive, a truck-frame, in combination with the truck wheels and axles mounted therein, a supplemental motor-frame arranged between the axles and provided with lateral extensions elastically supported on the respective side bars of the truck-frame, revoluble tubular shafts mounted in bearings at the respective ends of said supplemental frame and surrounding the respective axles but not in contact therewith, elastic connections between the said shafts and their respective axles, gear-wheels mounted on the respective tubular shafts, and an electric motor mounted wholly on said supplemental frame and having its armature-shaft arranged lengthwise of the truck and provided with gears at its ends engaging respectively with the gears of said shafts, substantially as described.

6. In an electric locomotive, the truck-axles, in combination with revoluble tubular shafts, F, inclosing the axles but not in contact therewith, an elastic connection between the axles and their respective shafts, a motor-frame, D, arranged between the axles and connected at its ends to the said tubular shafts by suitable journal-bearings in which the latter may turn, beveled gears, E, secured to the tubular shaft, an electric motor, C, mounted wholly on said frame and having its armature-shaft, *c*, arranged lengthwise of the truck and beveled gear-pinions, *c'*, fixed on the ends of said armature-shaft and arranged to engage respectively with the beveled gears on the tubular shafts, substantially as described.

7. In an electric locomotive, the wheels and axles and the truck-frame, A, in which they are mounted, in combination with the supplemental frame, D, supporting the motor-gearing, the castings, D', at the sides of said frame connected with the truck-frame, the supporting-springs, a^3, and the motor, C, mounted on the frame, substantially as described.

8. In an electric locomotive, the truck wheels and axles, in combination with a truck-frame mounted thereon, a supplementary motor-frame connected to said truck-frame, arranged in the space between the axles, independent of the latter and revoluble sleeves independent and outside the motor and inclosing the axles, but not in contact therewith, and mounted in said supplemental frame, an electric motor mounted wholly on said supplemental frame independent of and separated from said axles and sleeves, a driving connection between the motor and said sleeves, and elastic connections between said sleeves and axles, substantially as described.

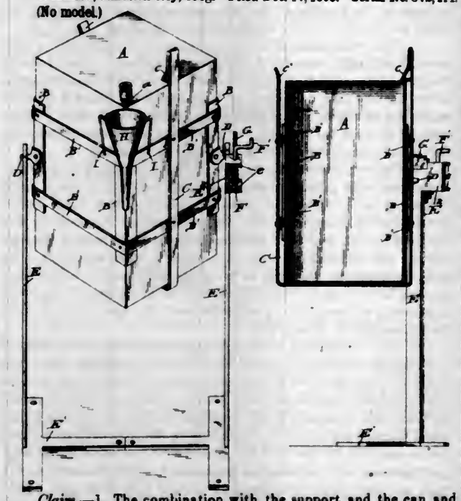
568,780. COMPOSITION OF MATTER FOR USE IN MANUFACTURING GLOW BODIES FOR INCANDESCENT LAMPS.

GEORG LOWENHERZ, Berlin, Germany. Filed June 2, 1896. Serial No. 594,010. (No specimens.)

Claim.—The herein-described composition of matter to be used for manufacturing glow bodies for incandescent lamps, consisting of a combination of the oxids of thorium and cerium with one or more of the oxids of the gold group, as palladium, iridium, osmium, ruthenium, rhodium, and the like.

568,781. CAN SUPPORTING AND TILTING DEVICE.

HUBERT C. MANON, Junction City, Oreg. Filed Dec. 17, 1895. Serial No. 572,411. (No model.)



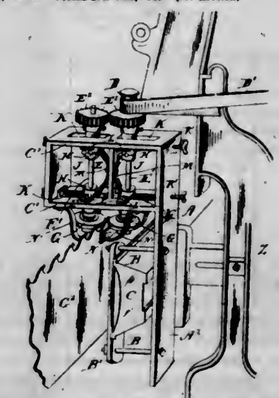
Claim.—1. The combination with the support and the can and its protecting-case, and a funnel pivotally hung from said can at one corner thereof of pintles supported at opposite corners of said can, a worm-gear on one of said pintles and a worm-shaft on the support, meshing with the gear and having a handle by which it is turned, substantially as and for the purposes specified.

2. The combination with the support and the can and its protecting-case, of pintles supported at opposite corners of said can, a worm-gear on one of said pintles and a worm-shaft on the support, meshing with the gear and having a handle by which it is turned, and a funnel pivotally supported on the protecting-case, the wires in which said funnel is pivotally supported being mounted upon a band surrounding the case near its upper end substantially as and for the purposes specified.

3. The combination with a can, and a support therefor of a case therefor consisting of corner-pieces and bars pivotally mounted in said support and embracing the can, and a spring-strip passing under the can and upon opposite sides thereof, the ends of said strip being extended beyond the top of the can, one formed with a spring-latch adapted to be automatically engaged over the top of the can and the other with an outwardly-bent portion.

568,782. SAW-DRESSING DEVICE.

BENJAMIN F. MARABLE, Dubuque, Iowa, assignor of one-half to Michael Hanley, same place. Filed Jan. 8, 1896. Serial No. 574,746. (No model.)



Claim.—1. The herein-described device for use as set forth, comprising a supporting-frame having laterally-projecting portions provided with alined openings, rotatable shafts passing through said openings, grinding-wheels mounted upon the lower ends of the shafts, said lower ends of the shafts projecting below the lower laterally-projecting portion of the frame, and horizontally-arranged adjusting-rods working within the supporting-frame at opposite sides thereof, and projecting inwardly and adapted to effect lateral adjustment of the shafts, and means for locking the shafts in their adjusted positions, as described.

2. In a device of the character described the combination with a supporting-frame having laterally-projecting portions, and the rotatable shafts and the grinding-wheels thereon, of clamps having supporting-arms secured at one end to the lower laterally-projecting portion of the frame, and said arms being arranged upon each side of the grinding-wheels, said clamps being adapted to clamp a saw upon each side at points below said grinding-wheels in proximity to the teeth of the saw, all as described.

3. The herein-described device for use as set forth comprising a supporting-frame and a depending portion adapted to be adjustably clamped to a support as described, the horizontal portions of said frame having alined openings, rotatable shafts passing through said openings, grinding-wheels on the shafts, boxes also on the shafts, lugs carried by the boxes and adapted to be secured to the horizontal portions of the frame, adjusting-rods for effecting lateral adjustment of the shafts, springs bearing upon the boxes and adapted to resist inward movement of the shafts, gear-wheels carried by the upper ends of the shafts and in gear with each other, and a pulley on one of the shafts, as specified.

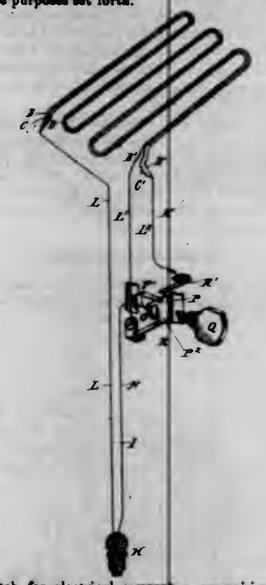
568,783. SWITCH FOR ELECTRIC HEATING DEVICES.

JOHN E. MEEK, New York, and FREDERICK L. POWERS, Brooklyn, N. Y., assignors to the H. W. Johns Manufacturing Company, New York, N. Y. Filed May 13, 1895. Serial No. 549,055. (No model.)

Claim.—1. A switch for electrical apparatus, comprising a rotatable make-and-break-circuit device, inclosed within an exterior casing, the axis whereof is transverse to the axis of the make-and-break-circuit device, for the purposes set forth.

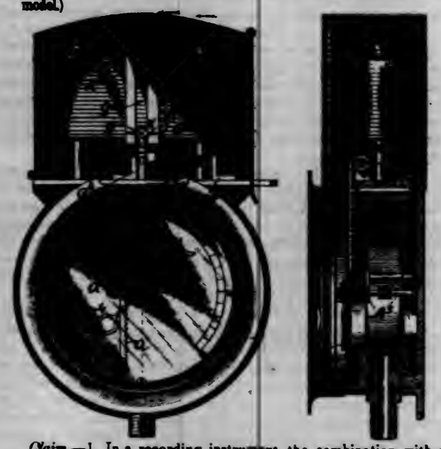
2. A switch for electrical apparatus, comprising a rotatable make-and-break-circuit device, inclosed within an exterior casing, the axis whereof is transverse to the axis of the make-and-break-cir-

cuit device, and insulating-plugs which close the ends of the exterior casing, for the purposes set forth.



3. A switch for electrical apparatus, comprising a rotatable make-and-break-circuit device, inclosed within an exterior casing, the axis whereof is transverse to the axis of the make-and-break-circuit device, and insulating-plugs which close the ends thereof, having rounded exterior surfaces, for the purposes set forth.

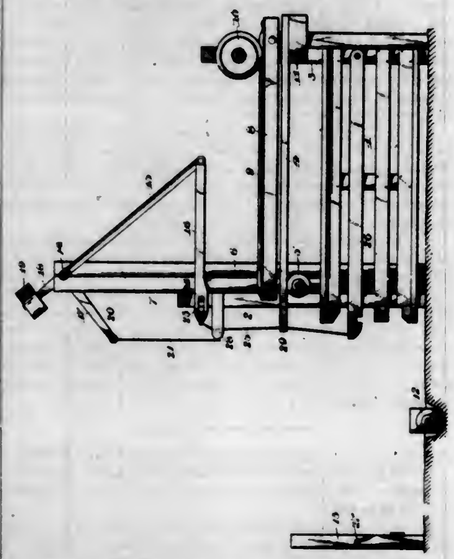
568,784. AUTOMATIC RECORDING INSTRUMENT. EDWARD L. MILLER, Chicago, Ill. Filed Jan. 10, 1893. Serial No. 457,900. (No model.)



Claim.—1. In a recording instrument, the combination with a pressure-gage, of a rack-bar, adapted to receive an endwise reciprocating movement therefrom, a pinion, engaging the upper end of said rack-bar, a disk wheel, having an elongated hub on which said pinion is rigidly mounted, a worm-shaft, on which said disk wheel is loosely mounted, a ratchet-pinion, rigidly mounted on the worm-shaft, a spring-pressed dog, mounted in said ratchet-wheel and engaging said ratchet-pinion, a spring-pressed pawl, locking the ratchet-pinion against a back movement, a spool, on which the record-ribbon is wound, and means for connecting said shaft and spool, whereby an intermittent rotary motion is transmitted to the spool coincident with the movement of the rack-bar, substantially as described.

2. In a recording instrument, the combination with a pressure-gage, of a rack-bar, receiving a reciprocating endwise movement from the spindle of said gage, a disk wheel, having an elongated hub, a pinion, rigidly mounted on said hub and with which said rack-bar engages, a worm-shaft, on which said disk wheel is loosely mounted, a ratchet-wheel, rigidly mounted on the worm-shaft, a spring-pressed dog, mounted in the disk wheel and engaging the ratchet-wheel, a spring-pressed pawl, engaging with and locking said ratchet-wheel against a back movement, a hollow shaft, provided with a flange, a pinion, mounted thereon and engaging with the worm-shaft, a receiving-spool, and means for connecting said hollow shaft and spool in a rotary movement, substantially as set forth.

568,785. GATE. EDSON C. MOORE, Riverside, Iowa. Filed Mar. 31, 1896. Serial No. 585,616. (No model.)



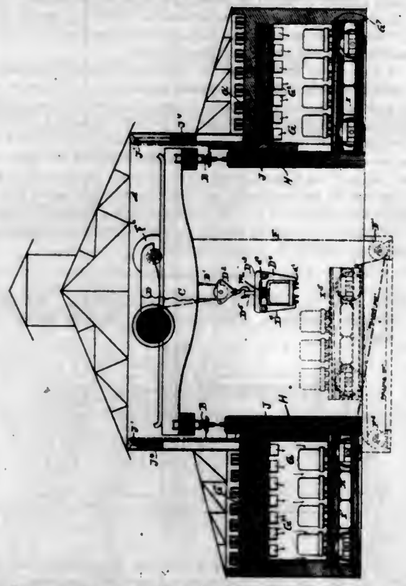
Claim.—1. The combination of a supporting-frame, a sliding gate, a horizontal rock-shaft provided with an arm connected with the gate and adapted to actuate the same when the rock-shaft is rotated, and an L-shaped arm mounted at its angle on the rock-shaft, and having one portion extending upward and provided with a weight adapted to assist in the opening of the gate and capable of maintaining the latter in its open position, substantially as described.

2. The combination of a supporting-frame, a sliding gate, a horizontal rock-shaft journaled on the supporting-frame, located above the gate and provided with a central arm connected with and adapted to actuate the gate, and a pair of L-shaped arms mounted at their angles on the ends of the rock-shafts and provided with weights adapted to assist the opening of the gate and capable of maintaining the same in its open position, substantially as described.

3. The combination of a supporting-frame, a sliding gate provided at its front with upwardly-extending bars arranged in pairs, a guide projecting forward from the upwardly-extending bars, a link-bar 16 provided at its front end with a slot and arranged between the side bars and located above the guide, a fastening device passing through the slot and securing the lever to the bars, a latch mounted on the gate, a connection arranged in the guide and attached to the latch and the link-bar, and a rock-shaft journaled on the supporting-frame and having a depending arm connected with the rear end of the link-bar, substantially as described.

4. The combination of a supporting-frame having a track-bar 8, a sliding gate having front and rear end bars extended above it, a roller 10, located above the track-bar 8 and journaled between the rear end bars, a horizontal track-bar 4 carried by the front and rear end bars and extended beyond the same, the front end of the track-bar 4 forming a guide, a counterbalancing block or weight secured to the rear end of the track-bar 4, a roller 5 journaled on the supporting-frame and receiving the track-bar 4, a latch mounted on the gate, an upper guide extending from the end bars of the gate, a link-bar 16 pivotally connected to the front end bars and having a limited longitudinal movement, a latch connection extending from the latch to the front end of the link-bar and passing through said guides, and a rock-shaft journaled on the supporting-frame and provided with a centrally-depending arm connected with the rear end of the link-bar, substantially as described.

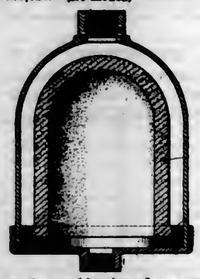
568,786. PLANT FOR ANNEALING TIN-PLATE. THOMAS R. MORGAN, Jr., Alliance, Ohio, assignor of three-fourths to Thomas R. Morgan, Sr., William H. Morgan, and John R. Morgan, same place. Filed May 31, 1895. Serial No. 551,250. (No model.)



Claim.—1. In an annealing plant comprising an oven, a track leading into the oven, a portable hearth on the track, an overhead traveling crane and chain actuated by a drum on the crane and passing around sheaves in the floor for drawing the hearth into and removing it from the oven.

2. An annealing plant, comprising an oven, a track leading into the oven, a portable hearth on the track, an overhead traveling crane for depositing the filled trays on the hearth, a winding-drum and chain carried by the crane, and sheaves located below the floor of the building and around which said chain passes for moving the hearth in or out of the oven, substantially as set forth.

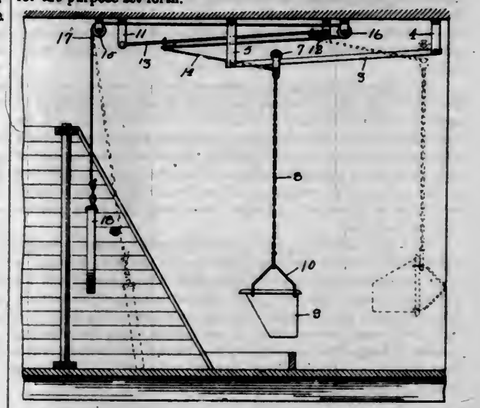
568,787. FILTER. JOHN OWEN, Jr., Newport, Ky. Filed Oct. 8, 1895. Serial No. 565,027. (No model.)



Claim.—In a filter, the combination of an outer metallic case and its metallic detachable bottom, each part having a part of the locking arrangement connected therewith, an inverted cup of porous material, located entirely within the said case, an outward projecting flange on the rim of the said cup, and an elastic packing-ring arranged between the outer edge of the said cup and the inner edge of the case, the said ring having its inner edge beveled to correspond with and arranged above the flange on the said cup, substantially as set forth.

568,788. COW-STABLE APPLIANCE. SEWELL M. PARKER, Robbinsdale, Minn. Filed Dec. 19, 1895. Serial No. 572,642. (No model.)

Claim.—1. The combination, with a cow-stall, of the tracks arranged over the stall, the pulleys on said track, a pan or receptacle, a flexible connection between said pulleys and said pan, and means connecting said pulleys with the cow, whereby when the animal lies down the pan will be drawn away from the cow toward the rear of the stall, for the purpose set forth.



2. The combination, with a cow-stall, of the forwardly-inclined track arranged over the same, the pulleys, a pan or receptacle, a flexible connection between said pulleys and said pan, and means connecting said pulleys with the cow, whereby when the animal lies down the pan will be drawn away from the cow toward the rear of the stall for the purpose set forth.

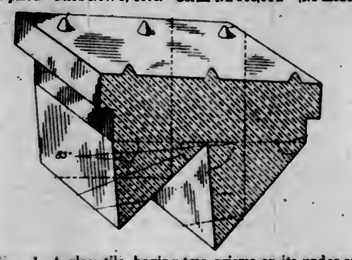
3. The combination, with a cow-stall, of the forwardly-inclined track suspended above the same, the pulleys thereon, a pan or receptacle supported thereby, flexible connections between said pulleys and the cow, whereby the pan or receptacle will be permitted to return to its normal position, after being drawn toward the rear of the stall by the movement of the animal while lying down substantially as described.

4. The combination, with the stall or stand, of the tracks arranged above the same, a pan suspended from two of the tracks, a brace slidable on a third track or rail and adapted to communicate its movement to the pan, and means for connecting the brace to the animal whereby as the animal lies down the pan will be moved back, substantially as described.

5. A cow-stable appliance, comprising parallel rails suspended above the stall, pulleys to run thereon, a pan or receptacle supported by said pulleys, a rod forming a third rail arranged between said first-named rails and parallel thereto, a V-shaped brace or connection between said pulleys and said third rail, said connection having a looped portion to clasp said third rail and to slide freely thereon, a flexible connection between said brace and the cow standing in the stall, whereby when the animal lies down the pan will be pushed up the track toward the rear of the stall for the purpose set forth.

6. A cow-stable appliance, comprising forwardly-inclined rails suspended above the stall, pulleys to run thereon, a pan or receptacle, a flexible connection between said pan and the pulleys, a rod forming a third rail arranged between said first-named rails and also forwardly inclined, a V-shaped part provided with a loop at its apex to encircle said third rail and to slide thereon, and having its ends connected to said pulleys, the rope or chain connecting said brace with the animal, the pulley over which said rope or chain passes, whereby when the animal lies down the pulleys supporting the pan will be pushed up the inclined track and the pan moved to the back of the stall, substantially as described.

568,789. VAULT-LIGHT. JAMES G. PENNYCUICK, Toronto, Canada, assignor to John Lawrence Spink and Thomas Walter Horn, trustees, same place. Filed Nov. 5, 1895. Serial No. 568,014. (No model.)



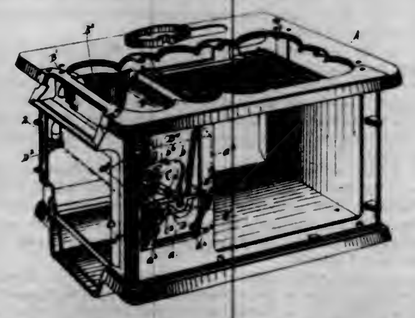
Claim.—1. A glass tile, having two prisms on its under surface, arranged one behind the other, the reflecting-surface of one prism

being at an angle of substantially forty-five degrees to the horizontal, and the reflecting-surface of the other prism being at an angle of substantially fifty degrees to the horizontal, the said prisms reflecting the rays of light in the same general direction, and each having a non-reflecting surface in front of the reflecting-surface, substantially as described.

2. A glass tile, having two prisms on its under surface, arranged one behind the other, the reflecting-surface of one prism being at an angle of substantially forty-five degrees to the horizontal, and the reflecting-surface of the other prism being at an angle of substantially fifty degrees to the horizontal, the said prisms reflecting the rays of light in the same general direction, and each having a non-reflecting surface in front of the reflecting-surface, the said tile having its upper surface set at an angle to the upper line of the said prisms, substantially as described.

3. A glass tile, having two prisms on its under surface, arranged one behind the other, the reflecting-surface of one prism being at an angle of substantially forty-five degrees to the horizontal, and the reflecting-surface of the other prism being at an angle of substantially fifty degrees to the horizontal, the said prisms reflecting the rays of light in the same general direction, and each having a non-reflecting surface in front of the reflecting-surface, the said tile having a rabbet formed thereon above the upper line of the prisms, whereby the whole volume of light may be transmitted, substantially as described.

568,790. GRATE. George H. Phillips, Geneva, N. Y. Filed Apr. 16, 1895. Serial No. 545,872. (No model.)



Claim.—1. In a stove, the combination of an inclosing shell, having an opening in its wall, the combustion-chamber, having its end wall or brick formed with an opening alined with that in the wall of the shell, a rigid support for the grate-bars, and a plate or door for normally closing the opening in said end wall or brick, said plate or door detachably engaging the support and locking the end wall or brick thereto and thereby preventing vertical movement of said brick and grate-bars, substantially as described.

2. In a stove, the combination of an inclosing shell, having an opening in its wall, the combustion-chamber, having its end wall or brick formed with an opening alined with that in the wall of the shell, a rigid support having a lateral arm formed with a groove for the contiguous end of the grate-bar and with a shoulder adjacent thereto, and a plate or door for normally closing the opening in the end wall or brick of said combustion-chamber, said plate or door being attached at one end to the said end wall and having its other end formed with lateral shoulders receiving said shoulder of the lateral arm between them, substantially as described.

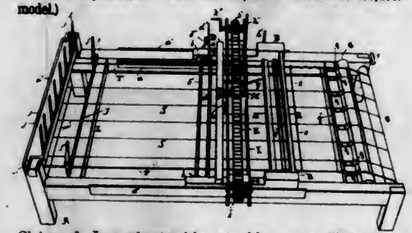
3. In a stove, the combination of an inclosing shell having an opening in its wall and provided with engaging shoulders arranged at an angle with each other and projecting from the lower ends of the upright edges and the lower edge of the opening, a plate or section for normally closing the lower portion of the opening having its lower and side edges engaged with said shoulders, the plate or section being provided with an aperture therethrough and having its opposite ends removably secured to the adjacent portion of the wall and its upper edge provided with an engaging shoulder, a door for closing the remaining portion of the opening having its lower edge engaged with the outer face of said shoulder, substantially as described.

4. In a stove, the combination of an inclosing shell having an opening in its wall, a plate or section for normally closing a portion of the opening provided with an aperture therethrough and having its opposite ends removably secured to the adjacent portion of the wall and its upper edge provided with an engaging shoulder, a door for closing the remaining portion of the opening having its lower edge engaged with the outer face of said shoulder, a combustion-chamber having an opening in its wall alined with the former opening, and a removable plate or section for normally closing the latter opening, substantially as specified.

5. In a stove, the combination of a combustion-chamber having an opening in its end brick, a support beneath the combustion-chamber, and a plate or section for normally closing the opening and locking the end brick against vertical movement, said plate or section having its lower edge provided with a shoulder for engaging the support, substantially as and for the purpose specified.

6. In a stove, the combination of a combustion-chamber having an opening in its end wall, a lug projecting from the outer face of said wall above the opening, a support beneath the combustion-chamber having its upper edge formed with an inwardly-extending shoulder, a plate or section for normally closing the opening having its lower edge provided with separated shoulders for engaging the upper and lower faces of the former shoulder and its upper part provided with an aperture for receiving said lug, whereby said door serves also to lock the end wall against vertical movement, and a fastener for engaging the lug and holding the section or plate in its normal position, substantially as and for the purpose described.

568,791. STAY-WIRE-WINDING MACHINE. William G. Phillips, Hopedale, Ill. Filed June 22, 1896. Serial No. 596,408. (No model.)



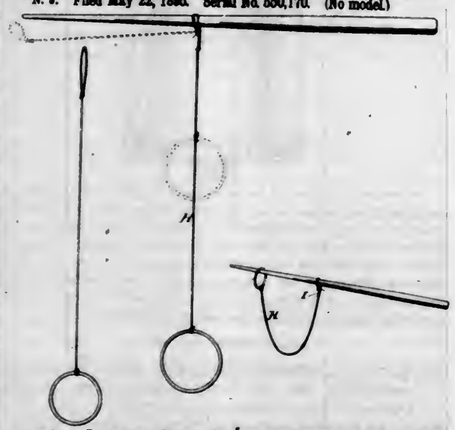
Claim.—1. In a wire-working machine, an oscillating bar provided with an opening or openings through which the main wires pass, and are kinked by rocking the bar, or held more or less firmly, substantially as and for the purpose specified.

2. In a wire-kinking device, a fastening device to hold it at any angle, thereby creating a friction on main wires, substantially by the means and for the purpose specified.

3. In a stay-wire-winding device a plate supported at right angles to main wire, carrying on either side a wheel, riveted one onto the other, one plain with a notch cut into it, and at the opposite side through both wheels a radial groove cut to receive the main wire through another radial groove cut through the aforesaid plate, and a spool feeding the stay-wire as the wheel carries it around the main wire, substantially as herein described and for the purpose specified.

4. In a wire-working machine, having a stay-wire-tying device, levers and cross-bars alternating the operation of a single chain, when levers are rested alternately on corresponding cross-bars, by rocking the frame carrying the tying device, substantially as and for the purpose specified.

568,792. GAME APPARATUS. Edward H. Pratt, Jersey City, N. J. Filed May 22, 1896. Serial No. 590,170. (No model.)



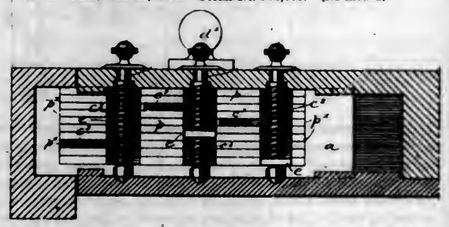
Claim.—In a game device, the combination of a stick, a series of rings of varying sizes, a looped cord attached respectively to each ring, said stick being provided with an eye intermediate to the length of the stick and at a distance from the point thereof greater than half of the combined length of a cord and the diameter of its attached ring, said eye adapted for passage of the loop of a cord through the same and over the end of the stick, substantially as and for the purposes described.

568,793. WITHDRAWN.

568,794. PATCH FOR BICYCLE-TIRES. Albert C. Rendein, Menominee, Mich. Filed Apr. 11, 1895. Serial No. 545,315. (No model.)

Claim.—The combination with the outer case or cover of a pneumatic tire, of a patch consisting of a piece of flexible material secured to the inner surface of the tire by means of cement, a layer of which is interposed between the adjacent faces of the tire and patch, the said patch being further secured to the tire by spaced rows of stitches extending substantially at right angles to each other, the said stitches being passed through both the patch and the tire while the cement is in a plastic condition, whereby the said plastic cement is drawn by the thread into and caused to fill the perforations formed by the stitches, in such manner as to render both the outer case and patch impervious to air, substantially as described.

568,795. COMBINATION-LOCK. James Richardson, New York, N. Y. Filed Dec. 23, 1895. Serial No. 572,995. (No model.)



Claim.—1. In a lock, the combination of a bolt or device moving therewith, one or more grooves or guides in said bolt or device, a traveling detent in each of said grooves or guides, the grooves or guides each having an opening adjustable in position through which its detent may pass when the bolt or device is moved.

2. In a lock, the combination of a bolt or device moving therewith, a series of plates each provided with an abutting shoulder one or more other plates distributed through said series of plates and without an abutting shoulder, a traveling detent adapted to move past said plates and to engage with said shoulders to detain the bolt, and means for moving the detent to a plate without a shoulder to release the bolt.

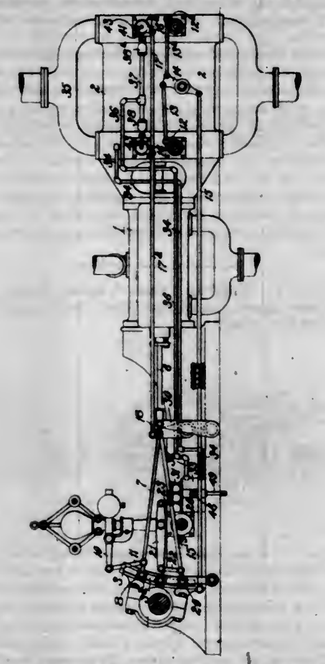
3. In a lock, the combination of the bolt, a series of plates moving therewith and arranged in a tier, each plate carrying a number of abutting shoulders, the shoulders of each plate being respectively in rows with each other; a number of other plates interspersed between the plates of said series in the tier but without abutting shoulders, a number of detents equal to the number of rows of shoulders and corresponding respectively thereto, said detents being adapted to impinge against said shoulders to detain the bolt, and means for moving said detents to positions opposite the plates having no shoulders thereby releasing the bolt, substantially as described.

4. In a lock, the combination of the bolt a series of plates moving therewith and arranged in a tier, each plate carrying a number of abutting shoulders, the shoulders of each plate being respectively in rows with each other; a number of plates interspersed between the plates of said series in the tier and interchangeable in position therewith but without abutting shoulders, a number of detents equal to the number of rows of shoulders and corresponding respectively thereto, said detents being adapted to impinge against said shoulders to detain the bolt, and means for moving said detents to positions opposite the plates having no shoulders thereby releasing the bolt, substantially as described.

5. In a lock, a series of plates each provided with a notch in its edge, the plate being placed to bring the notches in line to form a groove, the notch in one plate being longer than those in the other plates, in combination with a detent occupying said groove and means for moving it therein to bring it to the extended notch for the purpose set forth.

6. In a lock a series of plates moving with the bolt a plurality of grooves being formed across the edges of said plates by similarly-shaped notches in each plate registering with one another, a traveling detent in each groove preventing the movement of the plates and bolt one or more of the plates having a notch extended to form a cavity adapted to receive the detent when the plates are moved in a lateral direction with respect to the grooves.

568,796. FLUID-COMPRESSOR. Francis M. Ritts, Pittsburg, Pa. Filed Dec. 9, 1895. Serial No. 571,501. (No model.)



Claim.—1. In an elastic fluid-compressor, the combination, of a compressing-cylinder, valve mechanism controlling the valves of said cylinder, and so connected with the motor as to be positively and continuously operated by the motor during the whole of the cycle of operation of the compressor, a pressure-actuated device connected to and acting to vary the operation of said valve mechanism, and connections from the compressor-cylinder and from the outlet passage or reservoir of the compressor to the pressure-actuated governing device, whereby the adjustment of the valve mechanism is effected by the opposing pressures of the fluid in the cylinder and in the outlet passage or reservoir of the compressor, substantially as set forth.

2. In an elastic fluid-compressor, the combination, of a compressor-cylinder, valve mechanism controlling the valves of said cylinder, and so connected with the motor as to be positively and continuously operated by the motor during the whole of the cycle of operation of the compressor, a fluid-pressure-actuated device for effecting the adjustment of the valve mechanism and means whereby the operation of the fluid-pressure-actuated device is controlled by the opposing pressures of the fluid in the compressor-cylinder and in the outlet passage or reservoir of the compressor, substantially as set forth.

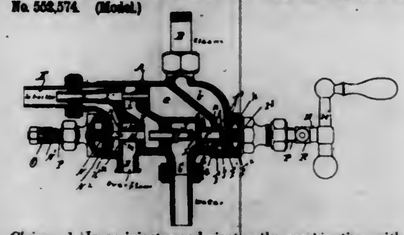
3. In an elastic fluid-compressor, the combination, of a motor, a compressor-cylinder, valve mechanism receiving motion from the motor through an adjustable link connection for directly operating the valves of the compressor-cylinder from the motor, and a fluid-pressure-governing device for effecting the adjustment of the link connection and controlled by the opposing pressure of fluid in the compressor-cylinder and in the outlet passage or reservoir of the compressor, substantially as set forth.

4. In an elastic fluid-compressor, the combination, substantially as set forth, of a compressing-cylinder, positively-operated valve mechanism controlling the outlet-valves of said cylinder, a pressure-actuated governing device connected to and acting to vary the period of operation of said valve mechanism, valve mechanism controlling the admission of pressure from the compressing-cylinder to said pressure-actuated governing device, and connections for actuating said controlling-valve mechanism by the actuating mechanism of the outlet-valves.

5. In an elastic fluid-compressor, the combination, substantially as set forth, of a compressing-cylinder, a motor effecting the function of fluid compression in said cylinder, valve mechanism controlling the outlet-valve of the compressing-cylinder and operated positively by the motor, a pressure-actuated governing device connected to and adapted to vary the position of the member through which the motor operates said valve mechanism, valve mechanism controlling the admission of pressure from the compressing-cylinder to said pressure-actuated governing device, and connections for actuating said controlling-valve mechanism by the actuating mechanism of the outlet-valves.

6. In an elastic fluid-compressor, the combination, substantially as set forth, of a compressing-cylinder, a motor effecting the function of compression in said cylinder, valve mechanism controlling the outlet-valves of the compressing-cylinder, a valve-actuating member operated positively by the motor-shaft and connected with said valve mechanism, a pressure-actuated governing device connected to said valve mechanism and adapted to vary the period of operation imparted to it by the actuating member, valve mechanism controlling the admission of pressure from the compressing-cylinder to the pressure-actuated governing device, and connections for actuating said controlling-valve mechanism by the actuating mechanism of the outlet-valves.

568,797. INJECTOR. FRANK C. SAPPER, Erie, Pa., assignor to the Sinn Company, Limited, same place. Filed June 12, 1895. Serial No. 552,574. (Model.)



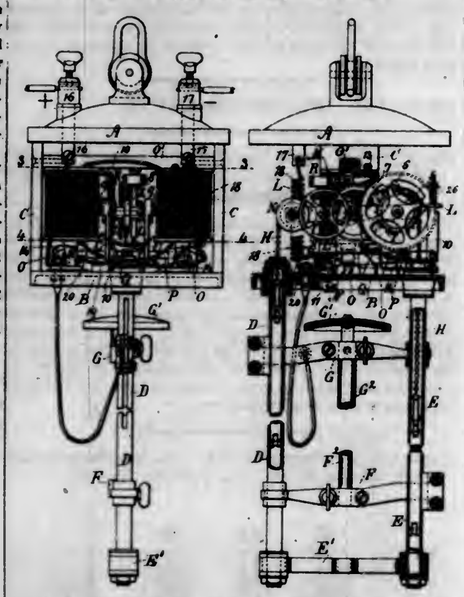
Claim.—1. In an injector and ejector, the combination, with the casing A provided with steam-passages *b* and *c*, and water-passages C and K; of a lifting-tube J connecting the passages C and K, an injector-tube L projecting from the passage *c* through the passage K, a stationary ejector-tube I projecting within the tube J, a retractable valve-stem H provided with a valve F and a collar, and a valve F normally closing the opening between the passages *b* and *c* and provided with a valve-seat *f*, a tube *f'* slidable in a socket in the ejector-tube I, and an open sleeve engaging with the collar on the valve-stem H, said valve-stem operating when partially retracted to permit steam to pass from the passage *b*, through the seat *f*, tube I and pipe J, to the passage K, and operating when fully retracted to permit steam to pass direct from the passage *b*, through the passage *c*, to the tube L, substantially as set forth.

2. In an injector and ejector, the combination, with the casing A provided with a steam-passage *b*, and a water-passage C; of a lifting-tube J connecting the passage C with the water-outlet, a tube M arranged in line with the tube J and also communicating with the water-outlet, an overflow passage D provided with an opening *m* connected with the water-outlet, a valve controlling the passage of steam from the passage *b* through the tube J, a retractable stem H for operating the said valve, a valve N operating to close the end of the tube M and the opening *m* after the said valve has been fully opened, and links P and connections operatively connecting the valve N with the valve-stem H, substantially as set forth.

568,798. ELECTRIC-ARC LAMP. RUPERT SCHNEPRAUER, Hoboken, N. J., assignor to the Auerbach-Weelverton Electric Company, same place. Filed Sept. 24, 1895. Serial No. 563,482. (No model.)

Claim.—1. The combination with the carbon-holders and a chain or cord connected at its ends to the carbon-holders, of a frame, pivots on which said frame can be rocked, a sprocket-wheel for the chain, gearing and a fly-wheel carried by the rocking frame, a stop-weight and a separate stationary support for the same, and an electromagnet and connections therefrom for swinging the rocking frame and moving the fly-wheel into contact with the weight or away from the same, substantially as specified.

2. The combination in an electric-arc lamp, of an electromagnet having two differentially-wound spools, stationary cores with tapering projecting ends and a yoke connecting the cores, armatures having forked ends adjacent to the tapering cores, a rock-shaft of magnetic material uniting the armatures, a rocking frame and mechanism for drawing the arc, and a connection between the armatures and such rocking frame, and a spring and screw for adjusting the spring and regulating the force with which the armatures are held against the action of the electromagnet, substantially as set forth.



3. The combination in an electric-arc lamp, of carbon-holders and mechanism for connecting the same and allowing them to be moved toward or from each other, gearing and a fly-wheel acted upon by the movement of the carbon-holders, a rocking frame carrying such gearing and fly-wheel, a stop for the fly-wheel, an electromagnet having a tapering core, a forked armature adjacent to the core and a connection therefrom to the rocking frame carrying the gearing, a spring and rheostat in a shunt between the binding-posts, and an arm extending from the armature and acting upon the spring to open or close the shunt-circuit, substantially as set forth.

4. The combination in an electric-arc lamp having an electromagnet and a stationary core with tapering projecting end, of an armature having a forked end adjacent to the tapering core, pivots for the armature, a rocking frame and connection therefrom to the armature, carbon-holders and mechanism for drawing the arc, a spring and screw for adjusting the spring and regulating the force with which the armature is held against the action of the electromagnet, substantially as set forth.

5. The combination in an electric-arc lamp having a differentially-wound electromagnet, a stationary core with tapering projecting end, an armature having a forked end adjacent to the tapering core, pivots for the armature, a rocking frame and connection therefrom to the armature, carbon-holders and mechanism for drawing the arc, a spring and screw for adjusting the spring and regulating the force with which the armature is held against the action of the electromagnet, substantially as set forth.

6. The combination in an electric-arc lamp, of carbon-holders and mechanism for connecting the same and allowing them to be moved toward or from each other, gearing and a fly-wheel acted upon by the movement of the carbon-holders, a rocking frame carrying such gearing and fly-wheel, a stop for the fly-wheel, an electromagnet having a tapering core, a forked armature adjacent to the core and a connection therefrom to the rocking frame carrying the gearing, a circuit-closing spring in a shunt between the binding-posts and an arm extending from the armature and acting upon the spring to open or close the shunt-circuit, substantially as set forth.

7. The combination in an electric-arc lamp, of carbon-holders, and mechanism for moving one of such carbon-holders toward or from the other, gearing and a fly-wheel acted upon by the movement of the carbon-holders, a rocking frame carrying such gearing and fly-wheel and a stop for the fly-wheel, an electromagnet having a tapering core, a forked armature adjacent to the core and a connection therefrom to the rocking frame carrying the gearing, substantially as set forth.

8. The combination in an electric-arc lamp, of carbon-holders and mechanism for moving one of such carbon-holders toward or from the other, gearing and a fly-wheel acted upon by the movement of the carbon-holders, a rocking frame carrying such gearing and fly-wheel, and a stop for the fly-wheel, an electromagnet having a tapering core, a forked armature adjacent to the core and a link having a slot for connecting the armature and rocking frame, substantially as specified.

9. The combination in an electric-arc lamp, of carbon-holders, a rocking frame, gearing and a fly-wheel and a connection to the carbon-holder for rotating the fly-wheel, an electromagnet in the circuit to the carbons, an armature acted upon by the same, a shunt-circuit between the binding-posts and the spring-contact in the same, an arm or projection on the armature for acting upon the said spring and a slotted link connecting the armature and rocking frame for allowing the armature to act upon the circuit-closing spring without moving the rocking frame, substantially as set forth.

568,799. CAR-COUPLING. ADOLPH F. SCHNEIDER, Castell, Tex. Filed June 6, 1896. Serial No. 594,539. (No model.)



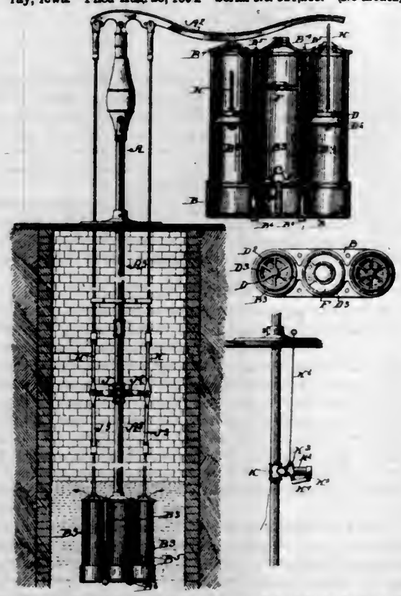
Claim.—1. The combination with a draw-head and its slide, of a latch mounted to work in a slot in the slide and carrying a sliding plate, and a curved spring-plate secured to said latch, substantially as specified.

2. The combination with a draw-head and its slide of a latch mounted to work in a slot in the slide and carrying a sliding plate, a curved spring plate secured to said latch, and a spring acting upon the rear end of the sliding block to force it outward, substantially as specified.

3. The combination with the draw-head, of the block mounted to slide therein, and having a slot, springs acting on said block, a pivoted latch having an arm and a plate pivotally secured thereto and movable in guides within the draw-head, and a spring acting on said latch substantially as specified.

4. The combination with the draw-head, of the block mounted to slide therein and having a slot, springs acting on said block, a pivoted latch having an arm and a plate pivotally secured thereto and movable in guides within the draw-head, and a curved spring-plate secured to the upper end of said latch, substantially as and for the purposes described.

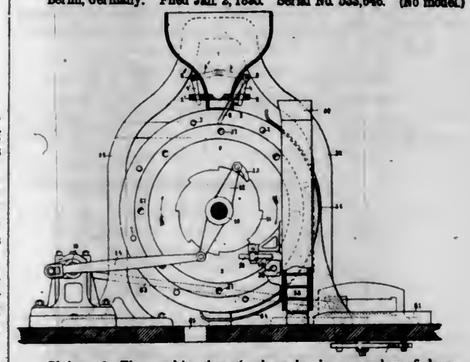
568,800. DOUBLE-ACTION FORCE-PUMP. ADAM SCHOLL, Murray, Iowa. Filed Aug. 25, 1894. Serial No. 521,285. (No model.)



Claim.—1. An improved pump comprising a base having three open-topped communicating chambers and a partition in the central chamber, a duplex valve fixed to said partition, a cylinder fitted in the top of each of said chambers, valved plungers in the two outside cylinders, a valve in the central chamber to retain water in its upper portion, a top having three integral distinct arched covers fitted to the cylinders as shown, a well-tube fitted to the central part of the top to communicate with the central chamber, U-shaped rods or yokes to clamp the base and cylinders and top together, and means for reciprocating the plungers in the cylinder, arranged and combined in the manner set forth for the purposes stated.

2. A device for draining part of the well-tube of a pump, comprising a T-joint adapted to be placed in the well-tube, a pipe-section attached to the remaining end and having a hole in its top, an elongated metal loop encircling said pipe and having a pad adapted to normally close said hole, an arm formed on said loop, and pivoted to the under side of the pipe-section, substantially as and for the purposes stated.

568,801. MATCH-BOX-FILLING MACHINE. ALBERT SCHUTTER, Berlin, Germany. Filed Jan. 2, 1895. Serial No. 533,646. (No model.)

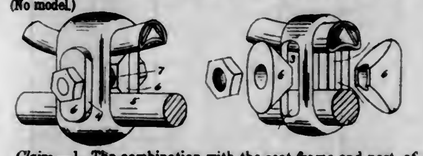


Claim.—1. The combination of a drum having a number of chambers in the periphery thereof, a hopper above said drum and a box-holding frame below the drum, movable floors to said chambers guide-rods for said floors lateral arms to said guide-rods, springs for drawing inward said floors, means for periodically and successively pushing outward the arms of said guide-rods, spring-latches 29 for maintaining said arms in outwardly-extended position and dogs 31 for dislodging said latches for the purpose set forth.

2. The combination with the drum 6 having in its periphery chambers 16, of the hopper 1 above said drum and a box-holding frame 48 below said drum rod 44 43 lever 54 spring 47 and slide 53 substantially as and for the purpose described.

3. The combination with the box-holding frame 48 the hopper 1, slides 2', 2, levers 4, 4', 5, 5', and lever 9, of the drum 6 having chambers 16, pins 7 ratchet-wheel 11 lever 12 pawl 13 rod 14 and lever 39 40 with locking-bolt 38 adapted to be operated thereby for controlling the movement of the drum and hopper-slides as described.

568,802. MEANS FOR ATTACHING BICYCLE-SADDLES. BENJAMIN S. SEAMAN, Canton, Ohio. Filed Nov. 11, 1895. Serial No. 568,563. (No model.)



Claim.—1. The combination with the seat-frame and post, of a bicycle, of the shell-frame with slots at right angles to each other through one of which said seat-frame and post pass, and the wedge-shaped blocks passing through the slots at right angles to said frame, and the screw-bolt and nut for holding said wedge-shaped blocks in place, substantially as described.

2. In a bicycle, the combination with the seat-frame and post, of the shell comprising a four-sided block, formed with slots or apertures at each side intersecting each other, the wedge-shaped adjusting-blocks having central apertures, the headed screw-bolt passing therethrough, the retaining-nut and the spline or feather engaging with a recess in one of said wedge-shaped bolts, substantially as described.

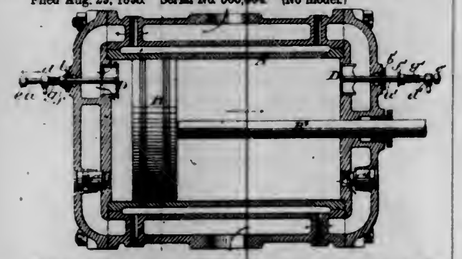
568,803. TAG-FASTENER. WILLIAM A. SEIBEL, Independence, Iowa. Filed Jan. 13, 1896. Serial No. 575,359. (No model.)

Claim.—As an improved article, the herein-described device for attaching tags to goods consisting of the plate formed with a curved

groove near the end with a central depression, the pivoted needle pointed at one end and formed with a groove near said point, and the stud secured to the opposite end of said needle; substantially as specified.



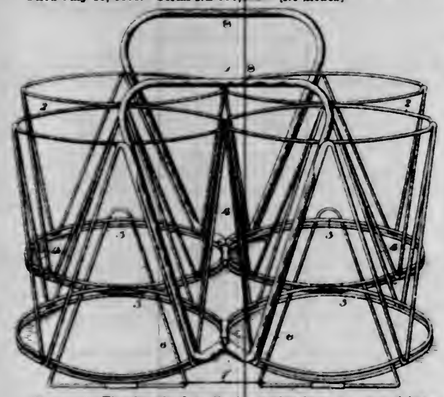
568,804. AIR-COMPRESSOR. HENRY C. SERGEANT, Westfield, N. J., assignor to The Ingersoll-Sergeant Drill Company, New York, N. Y. Filed Aug. 29, 1895. Serial No. 560,864. (No model.)



Claim.—1. In an air-compressor, the combination with an inlet-valve upon which when closed the pressure of the air compressed within the compressor-cylinder acts with a tendency to keep it closed, a spring arranged on the stem of said valve, a reciprocating tappet-rod and a tappet on said rod for operation directly on said spring to compress the said spring during each stroke of the compressor-piston to a degree sufficient to cause the said spring to open the valve against such pressure of the air within the cylinder, substantially as herein described.

2. In an air-compressor, the combination with an inlet-valve having two projections on its stem, of a tappet-carrier and a tappet thereon engaging the valve-stem between said projections for acting positively on one of said projections to close the valve, and a spring applied between the tappet and the other of said projections for opening the valve, substantially as herein described.

568,805. CANNING-BASKET. LAURA M. SHEPHERD, Crete, Nebr. Filed July 13, 1895. Serial No. 555,922. (No model.)

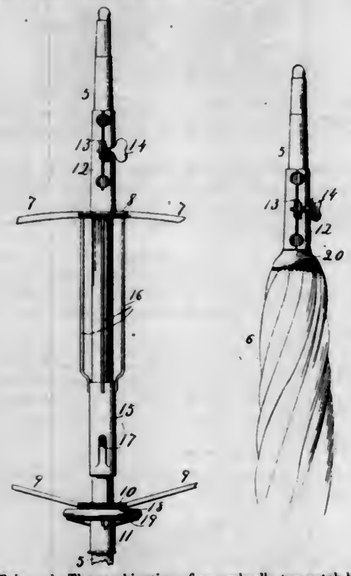


Claim.—1. The herein-described canning-basket, comprising a receptacle formed from a series of rings, having their centers in alinement and interconnected by suitable braces, a bail or handle attached to said receptacle, and a removable false bottom inserted between the lower rings forming the bottom of said receptacle, substantially in the manner and for the purpose described.

2. The herein-described canning-basket, consisting of a receptacle formed entirely from wire and comprising in its construction, a series of rings having their centers in alinement, reversely-inclining braces connecting said rings and spacing the same at suitable distances apart, a bail or handle attached to said receptacle, and a removable false bottom also composed of wire and adapted to be introduced between spaced rings forming the base of said cup or receptacle, substantially as and for the purpose set forth.

3. The herein-described canning-basket comprising a series of receptacles assembled in a cluster and suitably connected, each of said cups or receptacles being formed to receive a can or jar and having its base formed by a pair of rings having their centers in alinement and spaced apart vertically, a removable false bottom common to two or more of said receptacles and adapted to be inserted between the base-rings thereof, and one or more bails or handles attached to said cluster, substantially in the manner and for the purpose specified.

568,806. UMBRELLA. CHARLES SIMMONS, Atlanta, Ga. Filed Nov. 6, 1895. Serial No. 568,117. (No model.)



Claim.—1. The combination of an umbrella-top notch having an outward-projecting ferrule parted along one side and provided with ears at the sides of the parting; a binding-screw through the said ears; a ferrule-shaped body connected with the top notch and provided with a spring-catch; a runner fitted to slide over and upon the said ferrule-shaped body and adapted to be removably engaged by the said spring-catch substantially as described.

2. An umbrella-top notch ring having an outward-projecting clamping-ferrule, and a body-ferrule connected with the top-notch ring by wires substantially as described, whereby crookedness in a walking-cane to be used as the umbrella-handle will be accommodated.

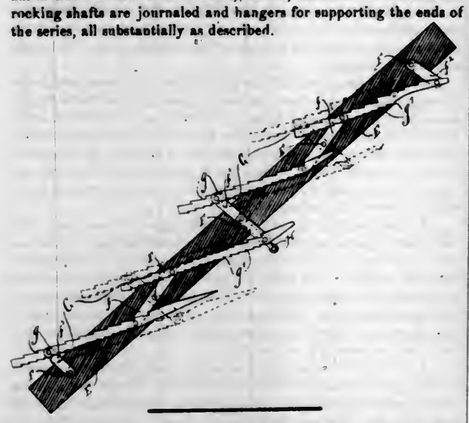
568,807. SEPARATOR FOR GRAIN-THRESHERS. DAVID SHELLING, Baker, Ill. Filed Aug. 30, 1895. Serial No. 561,002. (No model.)

Claim.—1. In a grain-threshing machine and in combination, a conveyer and separating mechanism located above the conveyer, said separating mechanism consisting of a series of fish-backs having notched upper and lower surfaces arranged, when in operation, to overlap one another, pivoted hangers supporting the front and rear ends of the series and intermediate arms set upon rocking shafts, the said arms extending above and below the shafts and being connected at their ends pivotally to upper and lower successive fish-backs overlapping so that the under teeth of the upper act upon the straw, all substantially as described.

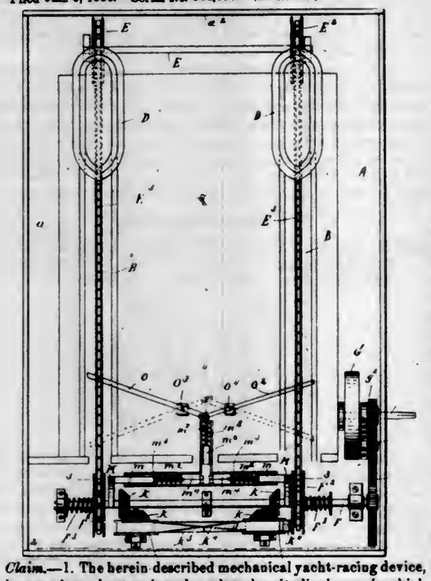
2. In a grain-threshing machine and in combination a conveyer and separating mechanism located above the conveyer, said separating mechanism consisting of a series of fish-backs having notched upper and lower surfaces arranged when in operation to overlap one another, pivoted hangers supporting the front and rear ends of the series and intermediate arms set upon rocking shafts, the said arms set at different angles on the shaft, substantially as described.

3. In combination, the conveyer and the series of overlapping fish-backs located above the conveyer and notched on upper and lower

surfaces, rocking shafts provided with arms, said arms having pivotal connection with the overlapping ends of the fish-backs, crank mechanism fixed to one of the rocking shafts, side bars E in which the rocking shafts are journaled and hangers for supporting the ends of the series, all substantially as described.



568,808. YACHT-RACING TOY. EMMET G. SOLOMON, Omaha, Nebr. Filed Jan. 9, 1896. Serial No. 574,856. (No model.)



Claim.—1. The herein described mechanical yacht-racing device, which comprises a bottom board or plate, longitudinal ways in which two yachts are adapted to travel, a shaft mounted transversely at each end of the bottom board or plate, and sprocket-wheels mounted thereon, provided with endless belts which are connected with said yachts, and means for revolving one of said shafts and for moving said yachts, one of said shafts being connected by means of suitable gearing with a spring-drum, and the sprocket-wheels mounted on said shaft being loosely connected therewith, and said shaft being also provided with beveled gear-wheels which operate in connection with corresponding beveled gear-wheels mounted at right angles to said shaft on which are mounted a belt provided with shoulders or projections which are adapted to operate in connection with said sprocket-wheels, substantially as shown and described.

2. The herein-described mechanical yacht-racing device, which comprises a bottom board or plate, longitudinal ways in which two yachts are adapted to travel, a shaft mounted transversely at each end of the bottom board or plate, and sprocket-wheels mounted thereon, provided with endless belts which are connected with said yachts, and means for revolving one of said shafts and for moving said yachts, one of said shafts being connected by means of suitable gearing with a spring-drum, and the sprocket-wheels mounted on said shaft being loosely connected therewith, and said shaft being also provided with beveled gear-wheels which operate in connection with corresponding beveled gear-wheels mounted at right angles to said shaft on which are mounted a belt provided with shoulders or projections which are adapted to operate in connection with said sprocket-wheels, and brakes suitably mounted adjacent to each of said sprocket-wheels, and provided with operating device connected with levers which are adapted to be operated by the yachts, substantially as shown and described.

3. The herein-described mechanical yacht-racing device, which comprises a bottom board or plate, longitudinal ways in which two yachts are adapted to travel, a shaft mounted transversely at each end of the bottom board or plate, and sprocket-wheels mounted thereon, provided with endless belts which are connected with said yachts, and means for revolving one of said shafts and for moving said yachts, one of said shafts being connected by means of suitable gearing with a spring-drum, and the sprocket-wheels mounted on said shaft being loosely connected therewith, and said shaft being also provided with beveled gear-wheels which operate in connection with corresponding beveled gear-wheels mounted at right angles to said shaft on which are mounted a belt provided with shoulders or projections which are adapted to operate in connection with said sprocket-wheels, and brakes suitably mounted adjacent to each of said sprocket-wheels, and provided with operating devices connected with levers which are adapted to be operated by the yachts, and a push-button in operative connection with said brakes, and by means of which the yachts may be put in motion, substantially as shown and described.

568,809. BRAKE-SHOE. GEORGE W. STEVENS, Elyria, Ohio. Filed Jan. 28, 1896. Serial No. 577,111. (No model.)



Claim.—1. A brake-shoe, having a flange-dressing portion of greater length than the body of the shoe, substantially as described.

2. A brake-shoe, comprising a body portion adapted to engage the flange and tread of a car-wheel and having an extension at one or both of its ends to prolong the flange-dressing side of the brake-shoe, substantially as described.

3. A brake-shoe comprising a body portion having on one or both ends thereof an extension of gradually-decreasing width, substantially as described.

4. A brake-shoe comprising a body portion having on one or both of its ends, and at one side thereof, an extension of gradually-decreasing width, substantially as described.

5. A brake-shoe comprising a body portion provided on one or both of its ends with an extension having one inclined side and one straight side, substantially as described.

6. A brake-shoe comprising a body portion provided with a groove adapted to receive the flange of a wheel, and an extension at one or both ends of said body portion on that part of the brake-shoe containing said groove and in continuation thereof, substantially as described.

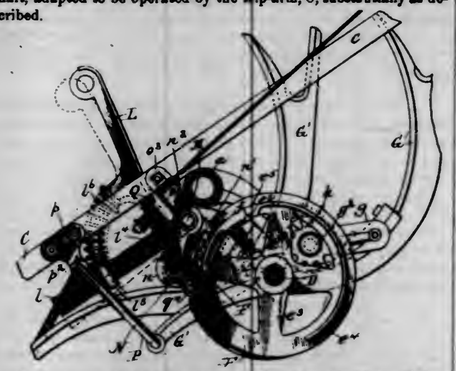
7. A brake-shoe comprising a body portion with a groove on one side thereof adapted to receive the flange of a wheel, an extension on one or both ends of said body portion in continuation of that part thereof containing said groove, said extension having one straight side and one inclined side, substantially as described.

568,810. GRAIN-BINDER. BENJAMIN F. STEWART, West Pullman, Ill. Filed June 24, 1895. Serial No. 553,895. (No model.)

Claim.—1. In a grain-binder, the binder-shaft; the driving-wheel fixed thereon and provided with the internal gear; the packer-shaft; a short tubular shaft loose on the forward end of the packer-shaft, provided at one end with a pinion engaging with the said internal gear of the driving-wheel, mounted in suitable bearings midway its length, and provided at its other end with a clutch; a second clutch on the packer-shaft adapted to engage with the first clutch; and devices for operating the said clutches.

2. In a grain-binder, the binder-shaft in combination with a binder-wheel fixed on the end thereof, and provided with a circular side flange, e^4, extending part way around the wheel; a spring device mounted on said flange; the compressor-arm rock-shaft; a compressor-arm mounted on said rock-shaft; an arm, N, provided with a roller adapted to travel on the flange e^4, mounted on said rock-shaft; a trip-arm, O, mounted on said shaft, and a clutch mechanism adapted

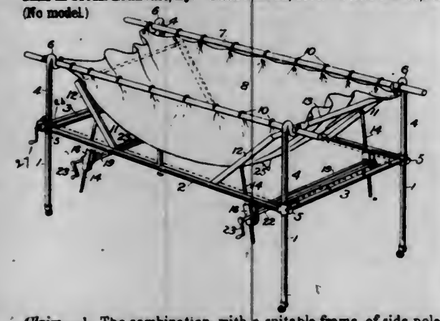
to engage the binder-wheel with a pinion mounted on the packer-shaft, adapted to be operated by the trip-arm, O, substantially as described.



3. In a grain-binder, the binder-shaft, in combination with internally-geared binder-wheel fixed on the rear end thereof and having a forwardly-projecting, circular side flange, c^4, extending part way around the wheel, a lever, F, mounted within said rim at the front end thereof and provided with a loop or hook at its outer end extending around and above the forward end of the rim, an actuating-spring within the rim, arranged normally to hold the hooked end of the lever outward beyond the flange, a compressor-arm shaft journaled outside of said wheel and extending to the rear thereof, and an arm, N, fastened to the forward end of said compressor-shaft, provided with a roller on its outer free end arranged to contact with the flange on the binding-wheel during the operation of forming and binding the bundle, but dropping through the opening in said flange to permit the dropping of the compressor and discharge of the bundle, when the binding of the latter is completed, substantially as described.

4. In a grain-binder, a revolvable wheel provided with a circular flange on one side and partly cut away, in combination with a hook-lever elastically pivoted at one end to the inside of said flange and provided at its outer end with a bend or hook turned around a little way over the front end of the flange, the width of the hook-space being considerably greater than the thickness of the flange, and a device connected with the binding mechanism and operated by the said flange and hook to stop and start the binding mechanism, as required in a grain-binder, substantially as described.

568,811. COMBINATION BED AND BATH FOR INVALIDS. ALBERT A. STOLL, Louisville, Ky. Filed June 22, 1896. Serial No. 596,528. (No model.)



Claim.—1. The combination, with a suitable frame, of side poles or bars supported thereby, a sheet of canvas or like material detachably secured on said poles, cross or end bars movably supported on the frame beneath said sheet at the ends thereof, and means for raising said end bars, substantially as described.

2. The combination, with a suitable frame, of side poles or bars supported thereby, a sheet of canvas or like material detachably secured on said side poles, cross or end bars movably supported on the frame beneath said sheet at the ends thereof, and means for raising either end bar independently of the other, substantially as described.

3. The combination with a suitable frame, of side posts mounted therein, poles or bars removably supported by said posts lengthwise of the frame, a sheet of canvas or like material detachably secured on said poles, cross or end bars movably mounted on the frame beneath said sheet at the ends thereof, and means for raising either end bar independently of the other substantially as described.

4. The combination, with a suitable frame, of side posts mounted therein, poles or bars removably supported by said posts lengthwise of the frame, a sheet of canvas or like material detachably secured on said poles, U-shaped yokes pivotally mounted on the frames beneath said sheet at the end thereof and extending across the frame, and means for raising either yoke independently of the other, substantially as described.

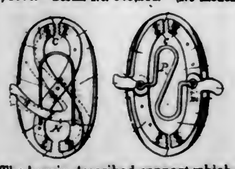
5 The combination, with a suitable frame, of side posts supported thereby termieating in hooks at their upper ends, poles laid lengthwise of the frame in said hooks, a sheet of canvas or like material provided at its sides with means for detachably securing the same to said poles, end yokes having the side bars pivoted on the frame and the cross-bars extending across the frame beneath the sheet, and means for elevating or lowering either end yoke independently of the other, substantially as described.

6. The combination, with a suitable frame, of side posts vertically movable and adjustable therein and terminating in hooks at their upper ends, poles laid lengthwise of the frame in said hooks, a sheet of canvas or like material provided at its sides with eyelets, hooks engaging said eyelets and poles and supporting said sheet on said poles, end yokes vibrating from pivots on said frame beneath said sheet, and means for raising either end yoke independently of the other, substantially as described.

7. The combination, with a suitable rectangular frame, as shown, of side posts vertically movable and adjustable therein and terminating in hooks at their upper ends, poles laid lengthwise of the frame in said hooks, a sheet of canvas or like material provided at its sides with means for attaching the same to said poles, end yokes vibrating from pivots on said frame, a threaded rod pivotally attached to each yoke, and a threaded collar supported on the frame in which said rod works, and independent means for rotating each of said collars, substantially as described.

8. The combination, with a rectangular frame, of side posts mounted therein terminating in hooks, side poles laid on said hooks longitudinally of the frame, a sheet of canvas or like material provided at its longitudinal edges with means for securing it on said poles, end bars carrying said frame beneath said sheet at each end thereof, a threaded rod supporting each end bar, threaded collars mounted in the frame in which said rod works, and a crank and intermediate gear for rotating each of said collars, substantially as described.

568,812. GARMENT-SUPPORTER. CHARLES E. STONE, Amesbury, Mass., assignor of one-half to Benjamin F. Sargent, same place. Filed Jan. 13, 1896. Serial No. 575,211. (No model.)



Claim.—1. The herein-described support which consists of a casing or shell within which is rigidly secured a longitudinal member, the ends of which are bent in opposite directions, and in which is also placed, a pivoted member of similar form, which is also arranged longitudinally of the casing or shell, and the ends or jaws of which are bent in the direction of those of the rigid member, and means for operating said pivoted clamp so as to throw the ends or jaws thereof in contact with those of the rigid member, substantially as shown and described.

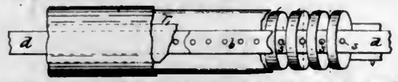
2. The herein-described support which consists of a casing or shell within which is rigidly secured a longitudinal member, the ends of which are bent in opposite directions, and in which is also placed, a pivoted member of similar form, which is also arranged longitudinally of the casing or shell, and the ends or jaws of which are bent in the direction of those of the rigid member, and means for operating said pivoted clamp so as to throw the ends or jaws thereof, in contact with those of the rigid member, consisting of a spring, and an arm or lever connected with said pivoted member and extended through one side of the shell or casing, substantially as shown and described.

3. The herein-described support which consists of a casing or shell within which is rigidly secured a longitudinal member, the ends of which are bent in opposite directions, and in which is also placed, a pivoted member of similar form, which is also arranged longitudinally of the casing or shell, and the ends or jaws of which are bent in the direction of those of the rigid member, and means for operating said pivoted member so as to throw the ends or jaws thereof, in connection with those of the rigid member, consisting of a spring, and an arm or lever connected with said pivoted member and extended through one side of the shell or casing, and the ends or jaws of each of the members being upset or set out from the shell or casing, substantially as shown and described.

4. The herein-described support which consists of a casing or shell provided with side flanges or rims, and members which are located therein, and extend longitudinally thereof, part of said members being pivoted and part being rigidly secured to the shell or casing, and the outer ends of said members at each end of the shell or casing being upset or set out therefrom, and the ends or jaws of each being also provided with serrations or teeth, and means for operating the pivoted members so as to throw the ends or jaws thereof, in contact with the rigid members, substantially as shown and described.

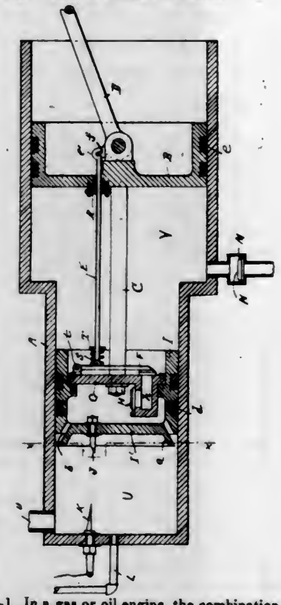
5. The herein-described support which consists of a casing or shell provided with side flanges or rims and members which are located therein, and extend longitudinally thereof, part of said members being pivoted and part being rigidly secured to the shell or casing, and the outer ends of said members at each end of the shell or casing being upset or set out therefrom, and the ends or jaws of each being also provided with serrations or teeth, and means for operating the pivoted members so as to throw the ends or jaws thereof, in contact with the rigid members, consisting of springs which are connected therewith, and arms or levers which are also connected therewith or formed thereon, and which extend through the side of the casing or shell, substantially as shown and described.

568,818. TIRE FOR BICYCLES. WILLIAM H. TAYLOR, Narragansett Pier, R. I. Filed Dec. 26, 1895. Serial No. 573,257. (No model.)



Claim.—In a bicycle-tire the combination of a series of spring-rings, a short distance apart, a bar carried inside of said rings, and riveted to them, a textile covering for said rings and bar, and short strips of metal placed on the outside of said textile covering, without riveting, and held in place by a textile strip cemented over them, to the textile covering, substantially as described.

568,814. GAS-ENGINE. GUSTAV A. THODE, Osmond, Nebr. Filed Jan. 29, 1896. Serial No. 577,238. (No model.)

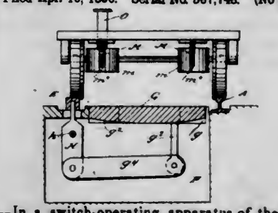


Claim.—1. In a gas or oil engine, the combination of the cylinder A having the portions U and V; the hollow piston I working in the part U and having the head I′ provided with the flange a and the apertures b arranged as shown; the detachable head G secured to said piston and having the port h, the check-valve H and the operated valve F; the piston B having the packing-gland R and working in the part V; the rod C connecting said pistons; the rod E connecting said valve F at one end and having at its opposite end the hook e' connecting with wrist-pin f secured to a vibrating arm at end of a pitman D connecting said piston B; the casing M having the check-valve N and connected to the part V as shown, substantially as shown and described, for the purposes set forth.

2. In an engine of the kind described, the combination with the power-cylinder having suitable controlled supply and exhaust valves and means for igniting gas charges, of the piston I having head I′ and radial ports or apertures a, port h, check-valve H, valve F and means for controlling the latter valve by suitable connection with the vibrating rod connecting the piston with the crank of main shaft, substantially, as shown and described.

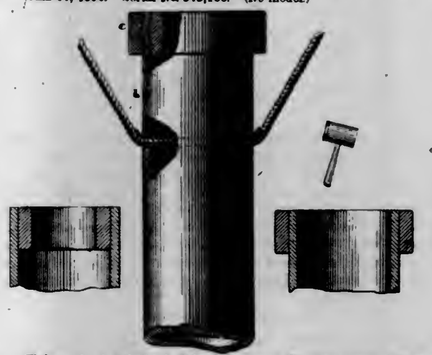
3. In a gas or gasolene engine having a larger and a smaller cylinder placed tandem and connected, the combination of the hollow piston I, the air-piston B, the rod C connecting said pistons, the valve F attached to piston I, the rod E connecting said valve and having a connection at e' f with a vibrating arm on end of a pitman D and suitable packing around rod E where it passes through head of piston B, substantially as shown and described.

568,815. SWITCH-OPERATING APPARATUS. CHARLES THORNEWELL, Brooklyn, N. Y., assignor of one-half to Alfred Abrahams, same place. Filed Apr. 16, 1896. Serial No. 587,748. (No model.)



Claim.—In a switch-operating apparatus of the character described, the combination with a switch-plate E, of a plate G placed over a chamber F, suitably located beneath the switch-plate, said plate being convex in cross-section on its under surface and being adapted to rock on its supports, a depending arm g^3 connected with said plate, a transverse plate g^4 pivotally connected with said arm g^3, a lever H pivotally connected with said plate g^4, a rod k on which said lever is mounted, said rod k being supported by hangers k^2, said lever H being connected with the switch-plate, hangers k^2 secured to the platform of the car, a weighted crank-lever carrying a roller m^3 and a vertically-movable rod connected with said crank-lever to operate the same, substantially as described.

568,816. TUBULAR BELL. JAMES E. TREAT, Boston, Mass., assignor to the United States Tubular Bell Company, Methuen, Mass. Filed Jan. 11, 1896. Serial No. 575,100. (No model.)



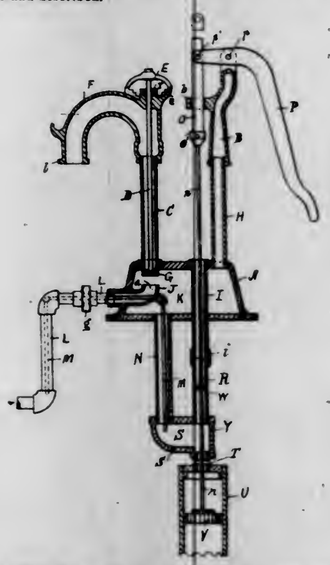
Claim.—1. A tubular bell having a metallic ring secured thereto at its end, said metallic ring fitting in intimate, solid contact throughout its length against said tube, whereby the sonorous vibrations of the latter are amplified, substantially as described.

2. A tubular bell having its end fitted very firmly to the exterior of a metallic ring, substantially as described.

3. A tubular bell having its end embraced and held firmly both externally and internally between metallic rings, substantially as described.

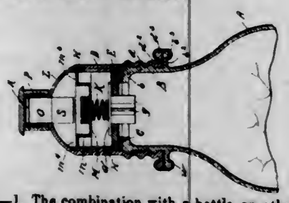
568,817. AUTOMATIC DRAIN FOR PUMPS. MOSES R. TURNER, Greensburg, Ind., assignor to Charles L. White, Decatur County, Ind. Filed Feb. 12, 1896. Serial No. 578,969. (No model.)

Claim.—1. The combination to form an automatic drain for the aboveground chambers and discharge-pipe of a pump, of a hollow base having suitable openings for connecting inlet and outlet pipes; a hollow casting having at its under side a small drainage-hole and suitable holes for connecting piping located at a convenient distance below said base and connected thereto by a pipe or casing inclosing a pump plunger-rod, and by a discharge-pipe adjacent; a well-pipe leading from said hollow casting downward to a pump-cylinder provided with a suitable piston or plunger attached to said plunger-rod; an air-chamber and standard attached to top of said base; a surface discharge-pipe attached to top of said base, said pipe having at its upper part a step-rest and packing-box; a yoke resting on said step-rest secured to the upper end of a rod passing through said packing-box and through said discharge-pipe to the bottom thereof; a disk valve secured to the lower end of said rod arranged to be seated either against the lower end of said discharge-pipe or against a discharge-opening below leading to an underground distributing-pipe; an underground distributing-pipe attached to said base, leading from the base above ground to a suitable distance below ground; a smaller pipe inserted into said underground pipe, said base and said discharge-pipe below said base, said smaller pipe beginning at a suitable point below the ground-surface and leading upward through the portions above ground, through the base and continuously downward to a point in said hollow casting below the level of the point of beginning, and means for operating said pump, substantially as and for the purpose shown and described.



2. In a pump, the combination with the hollow base and underground distributing-pipe, of the part Y having the chamber S provided with the drainage-hole S', said chamber being connected at top by a pipe inclosing a plunger-rod and below by a well-pipe leading downward to a pump-cylinder; the pipe N connecting said base with said chamber S; the siphon-pipe M leading from the underground distributing-pipe upward through its upper portions, through said pump-base and downward through said pipe N, terminating in said chamber S at a point of lower level than the point of beginning, substantially as shown and described.

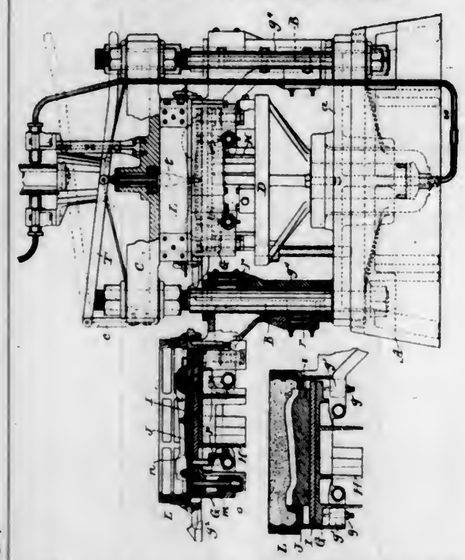
568,818. BOTTLE. ALBERT ULLMAN, Macon, Ga. Filed Jan. 25, 1896. Serial No. 576,821. (No model.)



Claim.—1. The combination with a bottle or other vessel provided with a neck, of a tubular attachment secured thereto, a plate or disk placed upon the neck of the bottle and provided with a central port or opening, a valve adapted to close the same, a spiral spring placed upon said valve and a vertically-movable valve-guard supported upon said spring, said valve-guard being adapted to fit within the tubular attachment and being provided with a row of perforations or openings in the outer side thereof, said tubular attachment being provided with a cap which is adapted to be secured thereto, and with a supplemental valve-guard which is arranged above the movable valve-guard, said parts being constructed, combined and arranged, substantially as shown and described.

2. The combination with a bottle or other vessel provided with a neck, of a tubular attachment secured thereto, a plate or disk placed upon the neck of the bottle and provided with a central port or opening, a valve adapted to close the same, a spiral spring placed upon said valve and a vertically-movable valve-guard supported upon said spring, said valve-guard being adapted to fit within the tubular attachment and being provided with a row of perforations or openings in the outer side thereof, said tubular attachment being provided with a cap which is adapted to be secured thereto, and with a supplemental valve-guard which is arranged above the movable valve-guard, and said tubular attachment being provided with vertical ribs in its inner walls which rest upon the disk or plate on which the valve is placed, and by means of which said disk or plate is held in position, substantially as shown and described.

568,819. MOLDING-PRESS. GEORGE W. VAN TINE, Bayonne, N. J. Filed Oct. 25, 1893. Serial No. 489,124. (No model.)



Claim.—1. In a molding-press, the combination with a swinging sand-box hinged to a standard of the said press, of a pressure device carried by and horizontally movable with the said sand-box or its support and vertically movable therein, a pattern supported by said pressure device, a stripping-plate, a latchment device for retaining said stripping-plate in an elevated position when the pattern is withdrawn from the sand, and means, movable with said pattern, for automatically releasing the latchment device, to permit the stripping-plate to descend after the pattern has been lowered.

2. The combination, with a molding-press, of swinging sand-boxes hinged to the opposite side standards of the press, and movable in and out of the press independently of each other, and vertically-movable pressure-blocks and patterns carried by and horizontally movable with the said sand-boxes or their supports.

3. In a molding apparatus, the combination with a sand-box and a pressure device vertically movable therein, of a pattern supported by said pressure device, a stripping-plate, a latchment device for retaining said stripping-plate in an elevated position while the pattern is withdrawn from the sand, and means, movable with said pattern, for automatically releasing the latchment device, to permit the stripping-plate to descend after the pattern has been lowered.

4. In a molding apparatus, the combination with a sand-box and a pressure block or device vertically movable therein, of a pattern movable with said pressure device, a stripping-plate, spring-pressed latches for retaining said stripping-plate in an elevated position while the pattern is withdrawn from the sand, and means, movable with said pressure device and pattern, for automatically releasing said latches, to permit of the descent of the stripping-plate, after the pattern has been lowered.

5. In a molding apparatus, the combination with a sand-box and a pressure device and pattern vertically movable therein, of a stripping-plate also vertically movable in said sand-box but independently of said pattern, a latchment device for retaining the stripping-plate in contact with the molded sand after the pattern has been withdrawn therefrom, and means, movable with said pattern, for automatically releasing said latchment device to permit of the withdrawal of the stripping-plate subsequent to the withdrawal of the pattern.

6. In a molding apparatus, the combination with a sand-box and a pressure device and pattern vertically movable therein, of a stripping-plate, a latchment device for retaining said stripping-plate in an elevated position while the pattern is being withdrawn from the molded sand, means, movable with said pattern, for automatically releasing said latchment device, to permit the stripping-plate to descend after the pattern has been lowered, and cushioning means to soften the descent of the stripping-plate and prevent injury to the mold by jars incidental to the fall of said stripping-plate.

7. In a molding apparatus, the combination with a sand-box, of a pressure block or device vertically movable therein, a pattern above said pressure block or device, the stripping-plate J having depending legs or projections *n* provided with shoulders, spring-pressed latches *p* arranged to engage said shoulders when the stripping-plates are lifted, and disengaging devices vertically movable independently of said stripping-plates and serving to release said latches from said shoulders, and thus permit of the descent of the stripping-plates subseqnent to the withdrawal of the patterns from the molded sand.

8. In a molding apparatus, the combination with a sand-box, as G, provided with air-cushioning dash-pots *o*, of a pressure device, a pattern and a stripping-plate all vertically movable in said sand-box, a latchment device to retain said stripping-plate elevated while the pattern is withdrawn from the sand, and means for releasing said latchment device after the pattern has descended, said stripping-plate being provided with pins or legs *m* closely fitting in said dash-pots and forming pistons, to operate substantially as described.

9. In a molding apparatus, the combination with a sand-box, as G, of a pressure block or device, a pattern, and a stripping-plate all vertically movable in said sand-box, said pressure block or device having projections and said stripping-plate having depending legs *n* provided with shoulders *n'*, the rockers P pivotally supported from said sand-box and having arms or latches *p* and disengaging lugs or arms *p'*, the latter arranged to be engaged by said projections on said pressure block or device, and springs for operating said rockers to hold said arms or latches *p* in contact with the said legs *n* on the stripping-plate.

10. In a molding-press, the combination with a swinging sand-box hinged to the standard of the press, of a sand-removing device movable with said sand-box and arranged to sweep over the press-platen when the said box is swung in and out of the press.

11. In a molding-press, the combination with a swinging sand-box provided with a pivoting-sleeve surrounding a standard of the press, of a sand-removing device attached to said sleeve and arranged to sweep over that part of the press-table which is adjacent to said sleeve when the said sand-box is swung in and out of the press, and thus keep the press-table clear of sand.

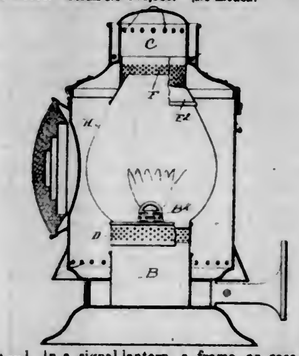
12. In a molding-press, the combination with swinging sand-boxes, of sand-removing devices movable with said sand-boxes and arranged to sweep over the press platen and table when said boxes are swung in and out of the press.

13. In a molding-press, the combination with a standard thereof, of a swinging sand-box provided with a sleeve surrounding said standard, said sleeve being provided near its top and bottom with a partial circumferential series of antifriction rollers or bearings arranged oppositely to each other, and adjustable boxes in which said rollers are mounted.

14. In a molding-press, the combination with sand-boxes which are movable in and out of the press and which are provided with pressure devices and patterns, of vertically-movable sprue-forming pins supported by the cross-head of the press and thus adapted to be plunged into the sand while the sand-boxes are in pressing position, and removable plates or blocks in which said pins are mounted, so that said pins may be changed to vary their positions for different patterns.

15. In a molding-press, the combination with the posts or standards thereof, of swinging sand-boxes hinged to said posts or standards and movable in and out of the press independently of each other, said sand-boxes being provided with stops adapted to come in contact with said posts or standards to thereby limit the inward movements of the said sand-boxes when the latter are swung into pressing position beneath the cross-head of the press.

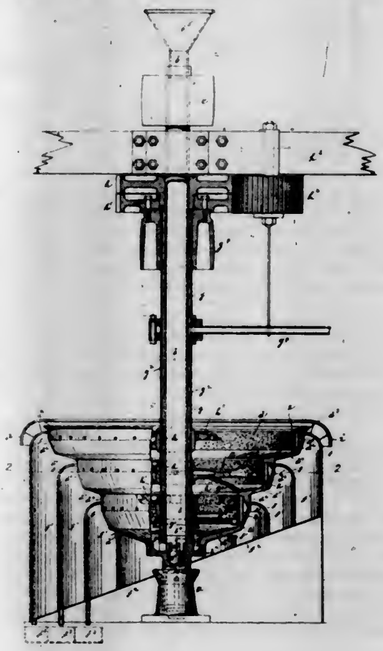
568,820. SIGNAL-LANTERN. THOMAS J. WADDELL, Des Moines, Iowa, assignor of one-half to LAWRANCE C. O'BRIEN, same place. Filed Nov. 30, 1895. Serial No. 570,589. (No model.)



Claim.—1. In a signal-lantern, a frame or case having fixed glasses to radiate light, a base having an open-topped chamber in its center to admit an oil-reservoir, perforations to admit air to enter the lower portion of the case, a hinged top having an annular chamber that admits air, a perforated collar at the bottom of the inside wall of said chamber provided with a flaring flange at its lower end to engage a glass chimney, an oil-reservoir having a perforated collar at its top adapted to support a glass globe or chimney, a burner on the top of the oil-reservoir, and a glass globe or chimney, arranged and combined as and for the purposes stated.

2. An improved signal-lantern comprising a frame or case having fixed glasses to radiate light, a base having an open-topped chamber in its center to admit an oil-reservoir, perforations to admit air to enter the lower portion of the case, a hinged top having a perforated upper portion, a perforated collar connected with said upper portion provided with a flaring flange at its lower end to engage a glass chimney, an oil-reservoir having a perforated collar at its top adapted to support a glass globe or chimney, and a fixed perforated collar in concentric position with the central and perforated upper portion of the hinged top, arranged and combined as and for the purposes stated.

568,821. CENTRIFUGAL FILTER. JOHN R. WARING, Newark, N. J., and HENRY R. CASSEL, New York, N. Y. Filed Nov. 25, 1895. Serial No. 569,978. (No model.)



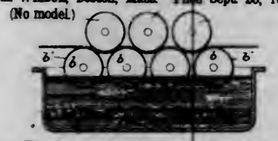
Claim.—1. A centrifugal filter composed of a rotating vessel having perforated steps, filtering bodies secured within the steps, a feed-pipe opening at the bottom of the vessel, a surrounding hollow shaft, radial arms secured to the shaft, and scrapers secured to the arms, substantially as specified.

2. A centrifugal filter composed of a rotating vessel having perforated steps, filtering bodies secured within the steps, a central feed-pipe opening at the bottom of the vessel, a hollow shaft surrounding the feed-pipe and forming a water-conduit around the same, radial arms connected to the hollow shaft, discharge-tubes communicating with the water-conduit, and inclined scrapers secured to the radial arms, substantially as specified.

3. A centrifugal filter composed of a rotating vessel having perforated steps, filtering bodies secured within the steps, a central feed-pipe opening at the bottom of the vessel, a surrounding hollow shaft, radial arms secured to the shaft, inclined scrapers carried thereby, a series of collecting-chambers surrounding the vessel and communicating respectively with the perforated steps, and a series of receiving vessels communicating with the collecting-chambers, substantially as specified.

568,822. LAMP-WICK AND ART OF PRODUCING SAME

GEORGE H. WILBUR, Boston, Mass. Filed Sept. 20, 1895. Serial No. 563,152. (No model.)



Claim.—1. The herein described art of producing lamp-wicks, which consists in constructing a long strip of untreated wick fabric, mechanically working and forcing particles of carbon suspended in a liquid into the meshes and between the fibers thereof, drying the said strip, brushing the said strip to free it from surplus carbon, cutting it into convenient lengths, and singeing one end of each of the wicks thus formed.

2. The herein-described art of producing lamp-wicks which consists in constructing a long strip of untreated wick fabric, passing the same between rolls, some of which are suspended in a mixture of liquid and carbon, whereby the strip is impregnated with carbon, drying the said strip, brushing the latter to remove the surplus carbon therefrom, and finally cutting it into convenient lengths.

568,823. WIRE STRETCHER AND TIGHTENER.

JOHN M. WILSON, Conway Springs, Kans. Filed Jan. 6, 1896. Serial No. 574,517. (No model.)



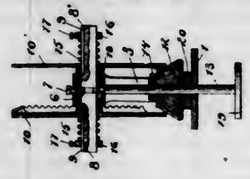
Claim.—1. In the herein-described wire stretcher and tightener, the combination of a lever-bar having the hooks for engaging the chain, the claw for catching the wire said claw and hooks at one end of said lever, the claw for pulling the staple and the slot, 9, the straining-arms having hooks on their under side for engaging the wire and hooks on the upper side, said arms journaled to said lever-bar.

2. In the herein-described wire-stretcher the combination of the lever-bar having a claw at one end, for engaging the wire, a claw at the opposite end, the arms 2, secured together at one end, said arms provided with hooks for engaging the wire, and hooks for engaging the chain, substantially as described.

568,824. GEARING FOR WASHING-MACHINES.

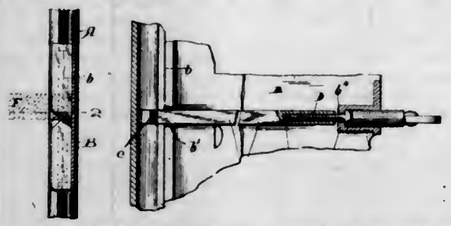
SAMUEL M. WINDMILLER and LEE HOLFORD, Nebo, Ill. Filed May 27, 1896. Serial No. 593,315. (No model.)

Claim.—A gearing for washing-machines, comprising the base-plate 1, the integral arms 3 3 joined at their top to form an integral bearing-block 4, the set-screw 7, the horizontal shaft 5 journaled in said bearing-block and provided with the circumferential groove 6 and the longitudinal keyways 8 8', keys 9 9, the mutilated gear-wheels 10 10', the springs 15, and the collars 16 mounted on said horizontal shaft 5, in combination with the vertical shaft 13 journaled in the bearing 18 in the block 4, and the bevel pinion 12 secured on said shaft by a set-screw and alternately meshing with the mutilated gear-wheels 10 10', substantially as and for the purpose set forth.



568,825. LIBRARY-SHELVING.

WILLIAM H. WINSLOW and FRANCIS A. WINSLOW, Chicago, Ill. Filed Jan. 29, 1896. Serial No. 577,248. (No model.)



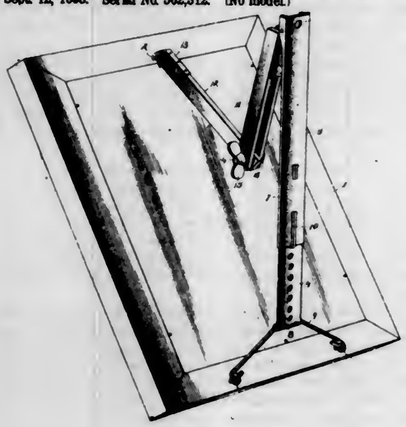
Claim.—1. The combination with an upright having an undercut groove, and a bracket having a bearing-face adapted to rest against the faces of the overhanging edges, and guiding-lugs extending into the groove, of a clamping device having a horizontal portion extending into the groove and engaging with the overhanging edges thereof, said portion having sufficient lateral extent to prevent its withdrawal from the groove, but thin enough when given a quarter-turn to permit of its insertion or removal therefrom, and means for preventing the turning of said portion when in a clamped position; substantially as described.

2. The combination with an upright having an undercut groove, of a bracket having a bearing-face adapted to rest against the faces of the overhanging edges, and guiding-lugs extending into the groove, a notch in said bearing-face registering with the overhanging edges, a clamping device normally seated in said notch whereby the rotation of said device is prevented, said clamping device having a portion extending into the undercut groove and of sufficient lateral extent to prevent its withdrawal therefrom, but thin enough when given a quarter-turn to be removed therefrom; substantially as described.

3. The combination with an upright having an undercut groove, of a bracket having a bearing-face resting against the faces of the overhanging edges, and guiding-lugs entering the groove, a bolt having a head adapted to engage with the overhanging edges, means for normally preventing the rotation of said bolt, a hollow lug provided with a suitable shoulder, and a screw resting against said shoulder and connected with the bolt; substantially as described.

568,826. ADJUSTABLE PICTURE OR MIRROR FRAME HOLDER.

SAMUEL L. YOUNG and JAMES A. NORRIS, East Liverpool, Ohio. Filed Sept. 12, 1895. Serial No. 562,312. (No model.)



Claim.—1. In a frame holder or support, a hanger made extensible longitudinally and comprising two sections, one section being adapted to telescope within the other section and one of said sections carrying a spring-catch adapted to cooperate with engaging surfaces on the other section for holding the sections relatively fixed, and provision for connecting the end of one of the sections to the frame, in combination with a jointed and folding connection attached to the other section of the hanger and having provision whereby it may be engaged with the frame, substantially as described.

2. The herein-described frame-holder, comprising a vertical hanger-bar, a perforated strap adjustable longitudinally of said hanger, a catch carried by said hanger and engaging with the perforations in the strap, and the pivoted and folding arms attached to said hanger, the device as a whole being adapted to be applied to a frame and to be adjusted to suit the size of said frame, substantially as specified.

568,827. ROPE-FASTENER.

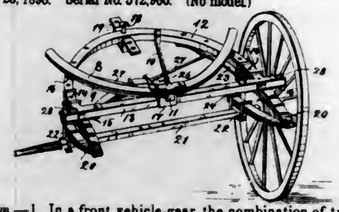
ALBERT L. ADAMS, Cedar Rapids, Iowa. Filed Mar. 25, 1896. Serial No. 584,888. (No model.)



Claim.—As a new article of manufacture, a rope-fastener composed of a single piece of bent wire in substantially the form shown and described, that is to say, having the loop *a* and *b b* at one end, the members *c c* at practically right angles to the limbs *b b*, and converging toward the limbs *d d*, and the terminal limbs *d d* at practically right angles to the parts *c c*, whereby the ends of the fastener are adapted to overlap, and one to overlie the other, when attached to a pair of ropes or the like.

568,828. FRONT GEAR FOR VEHICLES.

OTTO ARMLEDER, Cincinnati, Ohio, assignor to the O. Armleder Company, same place. Filed Dec. 23, 1895. Serial No. 572,960. (No model.)

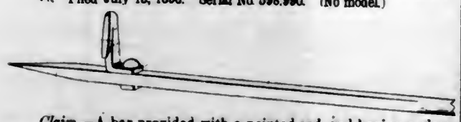


Claim.—1. In a front vehicle-gear, the combination of two half-elliptical springs 20 supported on the axle and extending forwardly therefrom, leaves 24 of their lower halves being extended sufficiently rearwardly to permit attachment of shackles 25 and each having a shackle connected thereat, a spring 26 supported on and between these two shackles, a truss supported by the three springs and rigidly connected to them, as to springs 20 by bolts which pass through the rearwardly-extended leaves 23 of their upper halves and the truss and as to spring 26 by a double brace 27 interposed between it and the truss, a fifth-wheel supported by the latter and a king-bolt which connects the gear to the vehicle body.

2. In a front vehicle-gear the combination of the supporting-springs, a truss supported by them, consisting of the straight front rail 13 and the rearwardly-curved bolster 12, connected thereto, a plate 17 projecting upwardly from rail 13, posts 16 projecting upwardly from bolster 12, a lower fifth-wheel part, which is supported on these parts and connected to them and to the truss below, an upper fifth-wheel part, connected to the vehicle-body and a king-bolt on which the gear swings.

568,829. WIRE-STRETCHER.

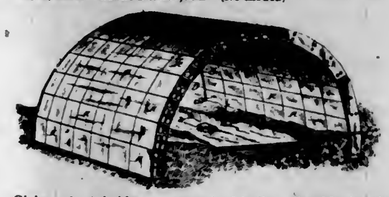
ELVIN S. BARROWS, Clarendon, Vt. Filed July 13, 1896. Serial No. 598,990. (No model.)



Claim.—A bar provided with a pointed end, and having a claw-knee pivoted thereto, the base of the V-shaped slot of which is directed toward said bar, substantially as shown and described.

568,830. BRIDGE.

BENJAMIN L. BLAIR, Indianapolis, Ind. Filed July 3, 1896. Serial No. 597,994. (No model.)



Claim.—1. A bridge composed of hollow clay blocks, the ends whereof at those portions exposed to receive water are filled with concrete, substantially as and for the purposes set forth.

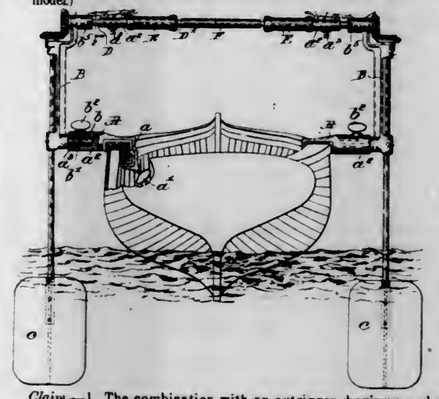
2. A bridge composed of hollow blocks, the ends being filled with concrete embedded therein, and protecting-plates secured to the ends of the bridge by means of bolts, substantially as set forth.

3. The combination, in a bridge, of hollow clay blocks forming the arch, concrete filling the ends of those of said blocks into which by their situation water is apt to enter, bolts embedded in said concrete, and metal plates secured to said bolts and protecting the ends of the arch, the whole being arranged and operating substantially as set forth.

4. As a new article of manufacture, hollow burned-clay blocks for building bridges, the openings wherein are filled with concrete after the blocks are made, whereby water is excluded therefrom, substantially as set forth.

568,831. PROPELLING APPARATUS FOR BOATS.

JAMES F. BLISS, Boston, Mass. Filed Mar. 17, 1896. Serial No. 583,535. (No model.)



Claim.—1. The combination with an outrigger, having a socket therein, of a bracket, provided with a spindle adapted to be loosely secured in said socket, a shaft mounted in said bracket and carrying a propelling-blade, a second shaft also mounted in said bracket, and connections between said shafts, whereby movement of one causes movement of the other, substantially as described.

2. In a propelling mechanism of the kind herein described, a shaft, a suitable journal bearing therefor, engaging surfaces provided on said bearing, a dog carried by said shaft to coöperate with said engaging furnaces, and connections between said shaft and a propelling-blade, substantially as and for the purpose described.

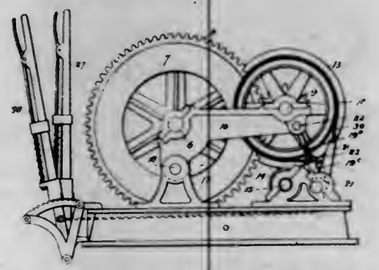
3. The combination with an outrigger, of a bracket, a socket in one and a spindle on the other, said spindle being adapted to be loosely secured in said socket, a shaft mounted in said bracket and carrying a propelling-blade, a second shaft also mounted in said bracket, connections between said shafts, whereby movement of the latter causes movement of the former, and means to lock the said latter against rotary movement, substantially as described.

568,832. HOISTING-MACHINE.

HENRY BOLTHOFF, Denver, Colo. Filed Feb. 12, 1896. Serial No. 579,106. (No model.)

Claim.—1. In a hoisting-machine the combination with a suitable frame, of the yoke pivotally mounted on the frame at one extremity, a shaft eccentrically mounted on the frame, an arm connecting the eccentric shaft with the extremity of the yoke remote from its pivotal extremity, the main shaft journaled in the yoke and carrying the winding-drum, the counter-shaft journaled in the yoke remote from its pivotal extremity, a pulley fast on the counter-shaft, suitable gearing

connecting the main and counter shafts, the motor-shaft journaled in the frame below the counter-shaft and carrying the friction-pulley adapted to engage the face of the pulley on the counter-shaft, and suitable means for actuating the eccentric shaft, whereby the pulleys on the counter and motor shafts are connected and disconnected at will substantially as described.

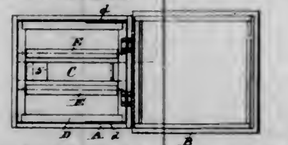


2. In a hoisting-machine, the combination with a suitable supporting-frame, of the yoke having one extremity pivotally mounted on the frame, a shaft eccentrically mounted on the frame, a supporting-arm connecting the eccentric shaft with the extremity of the yoke remote from its pivoted extremity, the main shaft journaled in the yoke above the pivotal point and carrying the winding-drum, the counter-shaft journaled in the extremity of the yoke remote from the pivotal extremity, suitable gearing connecting the main shaft and the counter-shaft, another shaft journaled in the framework below the counter-shaft and carrying the friction-pulley, another pulley fast on the counter-shaft and adapted to engage the face of the friction-pulley, and suitable means for imparting a partial rotation in reverse directions to the eccentrically-mounted shaft, substantially as described.

3. In a hoisting-machine, the combination with a suitable frame, of the yoke-arms pivoted at one extremity on the frame, a shaft eccentrically mounted on the frame, arms 19 connecting the eccentric shaft with the yoke-arm extremities remote from their pivoted extremities, the arms 19 having collars surrounding the eccentric shaft, the main shaft journaled in the yoke above the pivoted extremities of the yoke-arms and carrying the winding-drum, the counter-shaft journaled in the yoke-arm extremities remote from their pivoted extremities, a pulley fast on the counter-shaft, suitable gearing connecting the main and counter shafts, the motor power shaft carrying the friction pulley adapted to engage the face of the pulley on the counter-shaft, and an arm fast on the eccentric shaft and connected with a suitable lever for actuating the last-named shaft, substantially as described.

4. In a hoisting-machine, the combination with a suitable supporting base or frame, of the yoke pivotally mounted on said frame at one extremity, a shaft eccentrically mounted on the frame, arms connecting the eccentric shaft with the extremity of the yoke remote from its pivoted extremity, the main shaft carrying the winding-drum, the counter shaft journaled in the yoke extremity remote from its pivotal extremity and carrying the brake-wheel, a link attached to the eccentric shaft and connected with one extremity of the brake-strap, a collar movably mounted on the eccentric shaft and having two oppositely-disposed arms, the opposite extremity of the brake-shaft being connected with one of said arms, and the brake-lever with the other arm, a pulley also mounted on the counter-shaft, gearing connecting the main and counter shafts, the motor-shaft carrying the friction-pulley adapted to engage the pulley on the counter-shaft, and suitable means for actuating the eccentric shaft, substantially as described.

568,833. POLISHING APPLIANCE FOR SHOES. GEORGE F. BOWMAN and ALBERT G. LANGELL, Cleveland, Ohio. Filed Mar. 19, 1894. Serial No. 504,122. (No model.)

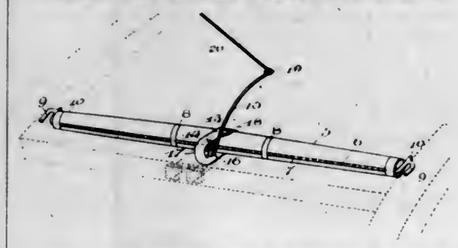


Claim.—1. The combination of a suitably-supported foot-rest, a roller upon each side of said rest and parallel thereto, and a polishing-cloth in engagement with said rollers, substantially as set forth.

2. A frame and a pair of rollers lengthwise of said frame and journaled in the ends thereof, and a foot-rest between said rollers, substantially as set forth.

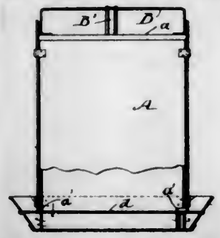
3. A frame and a pair of parallel cylindrical rollers, in combination with a foot-rest between said rollers and a strip of flexible polishing material, substantially as set forth.

568,834. HORSE-DETACHING DEVICE. WILFORD C. BROWN, Sinai, Ky. Filed June 10, 1896. Serial No. 594,988. (No model.)



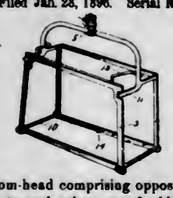
Claim.—As an improved article of manufacture, a singletree 5, formed with a longitudinal semicircular recess 6 in which is secured by bands 8 8 the oscillating shaft 7, its outer ends formed with integral trace-hooks 9 9 and lugs 10 10, and provided with the eyebolt 12, in combination with the chain 13 secured to the shorter arm 14 of the operating-lever 15 fulcrumed in the bracket 16 on the strap 17, its upwardly-extending longer arm formed with an eye 19 to which is attached a rope 20, substantially as and for the purpose set forth.

568,835. DRINKING-FOUNTAIN. EDWARD M. CHRIST, Pine Grove, Pa. Filed Feb. 25, 1896. Serial No. 580,703. (No model.)



Claim.—The combination of the cylindrical reservoir having L-shaped slots in its open end and springs normally closing said slots and cross-handles upon its closed end; with the shallow pan having a bar running therethrough which engages with the said slots, substantially as shown and described.

568,836. BROOM-HEAD. DAVID F. COOK and HANER U. ABBOTT, Converse, Ind. Filed Jan. 28, 1896. Serial No. 577,146. (No model.)

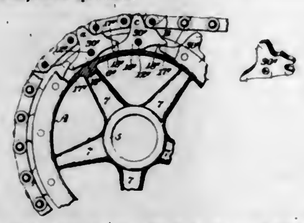


Claim.—A broom-head comprising opposing frames or sections adjustable relatively to each other, one of said sections having guide-arms which project transversely toward the opposing section and slidingly engage notches therein, hooks on the notched section adapted to engage under the arch of the other section, and provision for connecting the sections at their lower portions, the transverse arms serving to prevent relative vertical movement of the notched section and also serving to confine the straw between them, substantially as described.

568,837. SPROCKET-WHEEL. JOHN COWEN, Hartford, Conn. Filed June 12, 1896. Serial No. 596,157. (No model.)

Claim.—1. A sprocket-wheel having a movable member provided with a pair of oppositely-extending projections, one of which projections is provided with a recess.

2. A sprocket-wheel having an annularly-recessed rim or flange having a series of members pivotally secured therein, each of said members having a pair of oppositely-extending projections and one of said projections having a recess therein for the reception of a projection of a companion sprocket.



3. A sprocket-wheel having a series of movable members, each having oppositely-extending projections and each having a projection alternately disposed above and below a projection of its companion sprockets and adapted to engage the same.

4. A sprocket-wheel provided with a movable member having a pair of oppositely-extending projections and a bulging portion or extension above one of said projections and constituting a bearing portion adapted to support a chain-link.

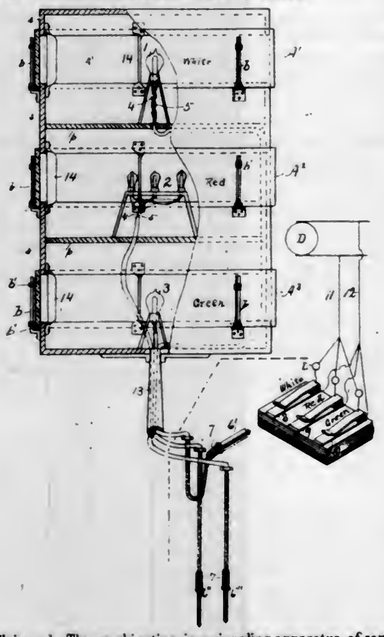
5. A sprocket-wheel provided with a movable member having a pair of oppositely-extending projections, one of which has a recess, and said movable member also having a bearing portion or extension adapted to support a chain-link.

6. A sprocket-wheel having an oscillatory sprocket comprising a spur and a base provided with or embodying oppositely-disposed projections, one of which has a recess therein, said sprocket also having a bearing portion or extension above one of its projections and adapted to support a chain-link.

7. A sprocket comprising a spur and a base provided with or embodying oppositely-disposed projections, one of which has a recess therein.

8. A sprocket comprising a spur and a base provided with or embodying oppositely-disposed projections, said sprocket having a bulging portion or extension intermediate of one of the faces of said spur and of one of the projections, thereby forming a bearing portion adapted to support a chain-link.

568,838. NIGHT SIGNALING. ROY O. CROWLEY, Elizabeth, N. J. Filed Dec. 12, 1895. Serial No. 571,896. (No model.)

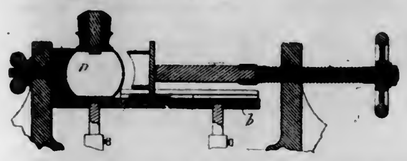


Claim.—1. The combination, in a signaling apparatus, of several separate chambers, each having an all-around opening, differently-colored stationary glass coverings for the several openings, cooperating electric lights in the chambers, and means for controlling the lights to illuminate the colored glasses in the desired order.

2. The combination, in a signaling apparatus, of non-transparent sections *s*, *s*, and partitions, *p*, with openings between the sections, extending all around the sections, the differently-colored stationary glass bands A', A^2, A^3, also extending all around the sections, over the openings, and supporting-brackets *b* therefor.

3. The combination, in a signaling apparatus, of non-transparent sections *s*, *s*, and partitions, *p*, with openings between the sections, extending all around the sections, bars 14 holding the sections the proper distance apart, and glass bands A', A^2, A^3 also extending all around the sections, over the openings.

568,839. APPARATUS FOR ORNAMENTING SOFT-METAL HOLLOW WARE. WILLIAM A. CUPPERS, Jr., Revere, Mass., assignor to the American Soda-Fountain Company, Boston, Mass. Filed Jan. 13, 1869. Serial No. 575,374. (No model.)



Claim.—1. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a suitable frame, a concave rest to support one side of the article, a die-carrier or platen movable toward and from said rest and provided with a projecting die of any desired contour to indent the exterior of the article of hollow ware on the side opposite to that held against said rest, substantially as described.

2. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a suitable frame, a concave rest to support one side of the hollow article and permit it to be turned from time to time, a die-carrier or platen movable toward and from the concave rest and a die projecting from the carrier or platen toward the concave face of the rest in the form of a rib or flange of any desired configuration to indent the exterior of the hollow article on its side opposite said rest, substantially as described.

3. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one side of the article, a table on which the bottom of the article may rest and a die movable toward and from the rest to engage the outer side of the article opposite that held against the rest, substantially as described.

4. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame, a concave rest to support one side of the article, a table at right angles to the concave rest to support the article vertically and a die-carrier sliding along the said table toward and from the concave side of the rest and provided with a die to engage that side of the article opposite to the rest, substantially as described.

5. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame, a concave rest to support one side of the article, a plunger movable toward and from the concave side of the rest, a vertically-adjustable table on which the bottom of the article may rest, and a die sliding on the said table toward and from the concave rest and adapted to be operated by said plunger; whereby the table may be adjusted for different articles without changing the relative position of the die, substantially as described.

6. An apparatus for ornamenting soft-metal hollow ware from the exterior thereof, comprising a frame having parallel standards provided with threaded apertures, a concave rest having a screw projecting through one of said apertures from the inner side of the standard and provided with a nut, a screw-plunger extended through the other aperture toward the concave side of the rest, a vertically-adjustable table between and below the concave rest and plunger, a die-carrier sliding on the table and having a plate or platen in the path of the plunger, and a die on the said plate or platen to engage the side of the article opposite to that held in the rest; the base of the article being adapted to be seated on the table, substantially as described.

7. The combination with the frame, the concave rest and the plunger movable toward and from the concave side thereof, of a vertically-adjustable die-carrier having a plate or platen extending in the path of the plunger and provided on its opposite side with a die to engage the side of the article opposite to that held in the concave rest, substantially as described.

8. In a machine for ornamenting hollow ware from the exterior thereof, a die comprising a slide or base, a plate or platen projecting up therefrom and a die proper on one side of the plate or platen in the form of a rib or flange of any desired configuration, substantially as described.

9. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one vertically extending side of the article, a male die movable toward and from the concave side of the said rest to engage the exterior of the hollow article opposite the rest and a plug to removably fit the open upper end or neck of the vessel above where it is acted upon by the die, substantially as described.

10. An apparatus for ornamenting soft-metal hollow ware, comprising a frame, a concave rest to support one vertically-extending side of the hollow article, a male die movable toward and from the concave side of the said rest, to engage the exterior of the said hollow article opposite the rest, and a sectional removable plug for the open upper end or neck of the vessel, substantially as described.

568,840. TELEPHONE-SWITCHBOARD. LINVAL W. DAVIS, Mineral, W. Va. Filed Dec. 5, 1895. Serial No. 571,122. (No model.)

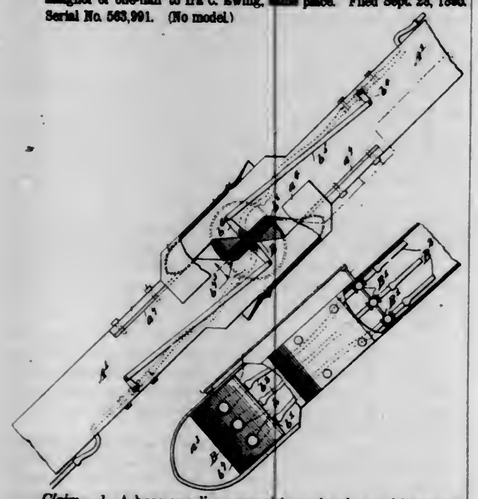


Claim.—1. In a telephone-switch, a series of contact-plates, connected with a call-bell, a series of contact-plates each connected to a different line-wire, the central instrument and contact-rods, the ground connections and plugs, all arranged, substantially as shown and described.

2. In a telephone-switch the combination with central instrument and call-bell of a block having a series of recesses, contact-plates located in said recesses, one of said plates being connected with the call-bell, and the other of said plates being connected to a line-wire, the contact-rods, and the ground connections all arranged, substantially as shown and described.

3. In a telephone-switch the combination with the central instrument and call-bell of a block having a series of recesses such as 1, 2, 3 and 4, the contact-plates F located in said recesses, and connected with the call-bell, the contact-rods arranged upon the sides of the block, and connected with the central instrument, the contact-plates H, located in the recesses, and connected by line wires with distant instruments, the ground contact-plates located in recesses 5 in the side of the block, and the plugs for making such connections, substantially as shown and described.

568,841. HOSE-COUPLING. SHERMAN W. DAY, Avonmore, Pa., assignor of one-half to Ira C. Ewing, same place. Filed Sept. 23, 1895. Serial No. 563,991. (No model.)



Claim.—1. A hose-coupling comprising a head, a rocking valve-block therein having a port, a valve carried by the head, a connection between said port and the valve, and a connection between the block and valve whereby said valve may be opened and closed by the movements of the block, substantially as specified.

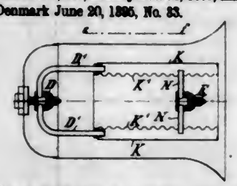
2. A hose-coupling comprising a head, a yielding side portion thereto, a rocking valve-block in the head and having a port, a valve, a flexible hose connection between the port in the block and the valve, and means for controlling the valve by the rocking of the valve-block, substantially as specified.

3. In a hose-coupling, the combination with a head, of a rocking valve-block with which the hose communicates, a valve commanding the hose, and an operative connection between the valve-block and the valve, substantially as described.

4. In a hose-coupling, a head having a hose terminal carried by the head, a spring-wall at one side of the hose terminal, the wall being vertically extended and having top and bottom edge flanges, the flanges being extended approximately to the center of the head, and a tongue rigid with the head and carried opposite the yielding wall, the tongue being capable of passing inward of the spring-wall of a companion head and the spring-wall being capable of pressing and holding a tongue inward against the head, substantially as described.

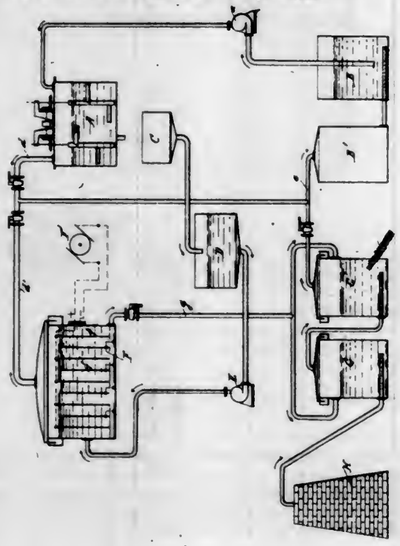
5. In a hose-coupling, a head having means for connection with a companion, a valve-block rockably mounted in the head and having a port therein, a valve-block having a plane side capable of hermetic connection with the corresponding side of the companion block, and a hose communicating with the port, substantially as described.

568,842. PETROLEUM-VAPOR BURNER WITH OVERHEATER. LUDWIG DÜRR, Bremen, Germany. Filed July 8, 1893. Serial No. 479,931. (No model.) Patented in Germany Mar. 28, 1893, No. 73,613, and June 17, 1893, No. 74,274; in Switzerland June 28, 1893, No. 7,254; in England June 29, 1893, No. 12,771; in France July 5, 1893, No. 231,339; in Belgium July 5, 1893, No. 105,415; in Austria-Hungary Oct. 10, 1893, No. 34,848 and No. 54,403; in Italy Dec. 31, 1893, XXVIII, 35,188, LXIX, 89, and in Denmark June 20, 1895, No. 83.



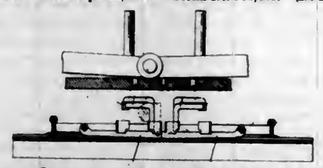
Claim.—The combination of a casing with an inclosed annular drum, a petroleum-feed pipe entering said drum, a burner placed within the casing back of the drum, a second burner placed in front of the casing within the drum, and with feed-pipes that connect the interior of the drum with the burners, substantially as specified.

568,843. PROCESS OF TREATING METALLIC SULFIDS. VICTOR ENGELHARDT and ADOLF NETTEL, Vienna, Austria-Hungary. Filed Apr. 20, 1896. Serial No. 588,331. (No specimens.)



Claim.—The process of treating a metallic sulfur compound, which consists in first converting the said compound into a soluble double sulfid by treating it with any suitable reagent, such as the sulfhydrate of calcium, in aqueous solution; then decomposing the resulting solution by electrolysis to produce the metal and sulfureted-hydrogen gas, then treating the spent solution with carbonic-acid gas to precipitate a carbonate of the base and liberate sulfureted-hydrogen gas, then recovering the oxid of the reagent and the carbonic-acid gas from the precipitate by calcination, then combining the sulfureted-hydrogen gas given off during the process with the said oxid to form more reagent, and using the recovered carbonic-acid gas to treat more spent solution, substantially as set forth.

568,844. AUTOMATIC RAILWAY-SWITCH. HANS H. FRÖLAND, Iola, Wis. Filed Sept. 14, 1895. Serial No. 562,473. (No model.)



Claim.—1. In an automatic-switch mechanism, the combination with the track-locking devices consisting of a transverse bar rigidly connected to the switch-rails, horizontal links pivotally connected to each other and at their outer ends to the transverse bar, and a locking-pin connected to said links, of releasing mechanism carried by the moving train, and consisting essentially of adjustable shoes which engage and shift the track, substantially as described.

2. In an automatic switch, the combination of the mechanism carried by the moving car, consisting essentially of the vertically-adjustable shoes and the levers for operating them, of the track-locking devices, consisting essentially of the transverse bar connecting the switch-tracks, horizontal links pivotally connected to each other and at their outer ends to the transverse bar, and a locking-pin connected to said links, all substantially as set forth..

3. In a switch mechanism, the combination with the releasing contrivances carried by the moving car and including a curved shoe, of the track-locking devices, consisting essentially of a locking-pin carried by a horizontal linked bar pivotally attached to the rigid transverse bar connecting the rails, a releasing-finger therefor which is actuated by the moving shoe, and a stationary shifting finger, all arranged substantially as described.

4. The combination of the movable mechanism, consisting of the key-acting shoe or shoes, mechanism for supporting and adjusting them, the interlocking guiding devices to steady or actuate the shoes, and the track-locking mechanism, comprising a locking-pin, releasing-fingers for said pin, and rigid shifting fingers for the track, substantially as described.

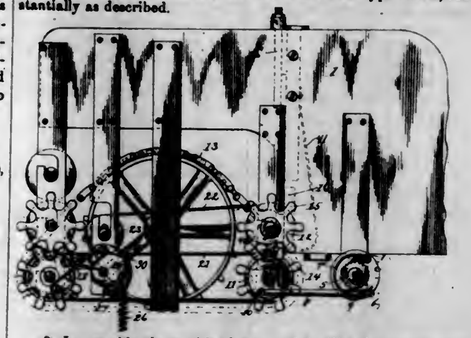
5. In a switch, the combination with a moving vehicle, of an adjustable shoe thereon, said shoe being compoundly curved and having pointed ends, and the track-locking mechanism, consisting of a locking-pin, carried by a linked bar pivotally attached to the rigid transverse bar connecting the rails, a releasing-finger on said linked bar adapted to be engaged by the aforesaid shoe, and a shifting finger which is rigid with the track, substantially as described.

6. In combination with a track-locking device, of key-acting shoe or shoes carried by vertical rods, said rods having horizontal actuating-levers connected therewith and journaled in a framework on the car-platform vertical rods also journaled in said framework, having connection with the shoe-carrying rods and provided with hand-wheels by means of which said shoes may also be operated, substantially as set forth.

568,845. MACHINE FOR MARKING ENVELOPS OR THE LIKE. JAMES GEARY, Bradford, Pa., assignor of part of his right to Joseph C. Greenewald and Mary E. Geary, same place. Filed Sept. 23, 1895. Serial No. 563,427. (No model.)

Claim.—1. In a machine for marking letters and the like, the combination of the feeding-table, the feeding-roller situated in and below the upper surface of the table, devices for intermittently moving the roller to feed a letter, means for moving the letter beyond the feeding-roller, the fixed separating-plate 41, and the adjustable fingers having free ends contiguous the table and held below the lower edge of the said plate and in a different vertical plane, said ends being composed of elastic friction material, substantially as described.

2. In a machine for marking letters and the like, the combination of the feeding-table, the feeding-roller situated in and below the upper surface of the table, devices for intermittently moving the roller to feed a letter, the gripping feeding-rollers 11 and 12, the impression-roller, the type-roller, said feeding-rollers and impression-roller being circumferentially grooved and the cords or belts situated in said grooves and adapted to convey a letter between and from the feeding-rollers to and between the impression and type rollers, substantially as described.



3. In a machine for marking letters and the like, the combination of the feeding-table, the feeding-roller situated in and below the upper surface of the table, devices for intermittently moving the roller to feed a letter, the gripping feeding-rollers 11 and 12, the impression-roller, the type-roller, said feeding and impression rollers being circumferentially grooved and the cords or belts 22 and 21, situated in said grooves and adapted to convey a letter between and from the said feeding-rollers to and between the impression and type rollers, a cord 22 and a cord 21 having contiguous parts to hold a letter between them while being moved thereby, substantially as described.

4. In a machine for marking letters and the like, the combination of the feeding-table, the feeding-roller situated in and below the upper surface of the table, devices for intermittently moving the roller to feed a letter, the impression-roller, a type-roller, devices comprising endless bands or the like for moving a letter to and between said rollers, a stop-plate provided with notches to receive said bands, mechanism to momentarily move the said plate into the path of a letter until its forward edge is in continuous contact therewith, and devices adapted to subsequently move the plate out of said path, substantially as described.

5. In a machine for marking letters and the like, the combination of the feeding-table, the feeding-roller situated in and below the upper surface of the table, devices for intermittently moving the roller to feed a letter, the impression-roller, a type-roller, devices for moving a letter or the like to and between said rollers, a stop-plate, a shaft to which the plate is fixed, a spring to move the plate into the path of a letter, and a rod pivoted to an arm on said shaft and to the impression-roller to suitably move the plate and put the spring under tension, substantially as described.

568,846. BALING-PRESS. JACOB R. GRIFFITH, Kansas City, Mo. Filed Aug. 20, 1895. Serial No. 559,936. (No model.)

Claim.—1. In a baling-press, the combination with a baling-chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a bed-plate provided with suitable guides for the free end of the pitman, and a spring-retracted roller obliquely movable upon the bed-plate and adapted to receive the impact of the pitman near the end of its forward stroke, substantially as described.

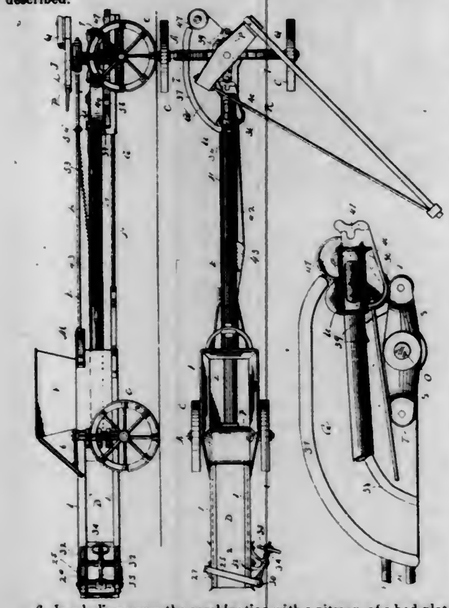
2. In a baling-press, the combination with a baling-chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a bed-plate provided with suitable guides for the free end of the pitman, a rigid seat in the bed-plate adapted to receive the free end of the pitman at the forward end of its stroke, and a locking device for holding the pitman in the said seat, substantially as described.

3. In a baling-press, the combination with a baling-chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a bed-plate provided with suitable guides for the free end of the pitman, a seat in the bed-plate adapted to receive the free end of the pitman at the forward end of its stroke, and a spring-actuated locking device for holding the pitman in the said seat, substantially as described.

4. In a baling-press, the combination with a baling-chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a bed-plate provided with suitable guides for the free end of the pitman, a seat in the bed-plate adapted to receive the free end of the pitman at the forward end of its stroke, and a spring-retracted roller movable upon the bed-plate and adapted

to receive the impact of the pitman after each compression and force it into the said seat, substantially as described.

5. In a baling-press, the combination with a baling chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a bed-plate provided with suitable guides for the free end of the pitman, one of the guides being so formed as to form a seat for the free end of the pitman at the forward end of its stroke, and a friction-roller movable upon the bed-plate and provided with a spring-actuated mechanism by which the roller forces the free end of the pitman along the guide and into the said seat at the forward end of the stroke of the pitman, substantially as described.



6. In a baling-press, the combination with a pitman, of a bed-plate provided with suitable guides, for one end of the pitman, means for operating the pitman, a seat at the forward end of the bed-plate adapted to receive the free end of the pitman, and a spring-actuated mechanism on the bed-plate for forcing the pitman into the said seat, substantially as described.

7. In a baling-press, the combination with a reciprocating pitman, of means for reciprocating the pitman, a bed-plate provided with rigid guides within which the pitman reciprocates, a spring-retracted roller in the path of the pitman, a seat in one of the rigid guides adapted to receive the pitman at the end of a reciprocation, and means by which the spring-retracted roller forces the pitman into its seat and imparts to the pitman an initial impetus on its rearward reciprocation, substantially as described.

8. In a baling press, the combination with a baling-chamber, of a follower operating therein, a pitman connected with the follower, means for operating the pitman, a friction-roller revoluble upon the free end of the pitman, a bed plate provided with guides within which the pitman-roller reciprocates, a spring-retracted roller movable upon the bed-plate and located in the path of the pitman-roller and adapted to receive the impact of the pitman-roller at the end of a reciprocation, substantially as described.

9. In a baling-press, the combination with a baling-chamber provided with a contractible exit end, of two arms pivoted to one side of the baling-chamber, one above and one below the same and extending transversely across the said chamber, a rod connecting the opposite ends of the two arms and provided with two friction-rollers, two brackets provided with outwardly-inclined faces over which the friction-rollers are adapted to travel and means for holding the said rollers upon the inclined faces at any point desired, substantially as described.

10. In a baling-press, the combination with a baling-chamber, of two arms pivoted to one side of the baling-chamber, one above and one below the same and extending transversely across the said chamber, a rod connected at its ends to the two arms and being provided with two friction-rollers, two brackets secured to the baling-chamber and provided with outwardly-inclined faces over which the two rollers are adapted to travel, a rod secured perpendicularly to the first rod, a rod vertically pivoted between the two brackets and provided with an opening through which the horizontal rod freely passes, and means for moving the horizontal rod through the said opening and locking it in any desired position, substantially as described.

11. In a baling-press, the combination with a baling-chamber provided with a contractible exit end, of the arms, 25, pivotally secured to one side of the baling chamber, the vertical rod, 29, the horizontal rod, 33, the brackets, 32, secured to the opposite side of the baling-chamber and provided with outwardly-inclined faces, friction-rollers on the rod, 29, adapted to travel over the inclined faces, the vertical rod, 31, pivoted between the brackets and provided with a horizontal opening in which the rod, 33, is movably fitted, and a yielding locking device for holding the rod, 33, in any desired position within the opening in the rod, 31, substantially as described.

12. In a baling-press, the combination with a baling-chamber having a contractible exit end, of the plates or arms, 25, pivoted to one side of the baling-chamber, one above and one below, the brackets, 32 secured to the opposite side of the chamber and provided with outwardly-inclined faces, a vertical rod, 29, connecting the arms, 25, and having a friction-roller adapted to travel over the said inclined faces, a horizontal rod, 33, secured at one end to the rod, 29, and having its other end screw-threaded, a vertical rod, 31, pivoted at its ends between the brackets, 32, and provided with a horizontal opening through which the rod, 33, freely passes, a hand-wheel fitted to the screw-threaded end of the rod, 33, and a spring tension between the hand-wheel and the rod, 31, substantially as described.

13. In a baling-press, the combination with a baling chamber, of a transverse plate pivoted at or near one edge to the baling-chamber and normally inclining rearwardly, a platform or plate hinged to the upper side of the baling-chamber and above the transverse inclined plate, and a transverse plate the lower edge of which rests upon the upper side of the inclined plate and against the under side of the upper plate or platform, substantially as described.

14. In a baling-press, the combination with a baling-chamber, of the rearwardly-inclined plate, 7, hinged to the under side of the upper side of the chamber, a plate, 6, hinged to the upper side of the upper side of the chamber and above the first plate, and a transverse plate, 9, extending through the top of the baling-chamber and connecting the upper and lower hinged plates, substantially as described.

15. In a baling-press, the combination with a baling-chamber, of the rearwardly-inclined plate, 7, provided with means for limiting its downward movement, and having a hinged connection with a baling-chamber on the under side of the top side of the chamber, a platform, 6, located above the plate, 7, and hinged to the top side of the upper side of the baling-chamber, a transverse plate, 9, extending through the upper side of the baling-chamber and connecting the plates, 6, and 7, whereby when the lower plate is moved to a horizontal position the upper plate is raised, substantially as described.

16. In a baling-press, the combination with a baling-chamber, of the box, 4, secured to the upper side thereof, and provided with the hinged lid, 6, a plate, 7, rearwardly inclined and extending transversely across the inside of the baling-chamber and hinged therein at or near the front edge of the box, 4, and a plate, 9, connecting the lid of the box and the under plate, 7, substantially as described.

17. In a baling-press, the combination with a baling-chamber, of the casting, 4, secured to the upper side of the baling chamber, the rear axle extending transversely across and under the baling chamber, a U-shaped bolt or stirrup passing around the axle at each side of the baling-chamber and secured at its upper end to the sides of the casting, 4, the casting, 13 provided with openings through which the bolt passes and located between the baling-chamber and the axle, the castings, 16, 17, and 18 provided with the grooves, 20, in which lie the two arms of the bolt or stirrup, and the spring-actuated retaining-arms, 14, one end of each of which passes through the side of the baling-chamber, the said retaining-arms being pivoted respectively between the castings, 16, 17, 18, and 13, substantially as described.

18. In a baling-press, the combination with a baling-chamber, of a pitman provided with the cam, 40 at its free end and a follower that operates in the baling-chamber at its other end, a friction-roller pivoted to the free end of the pitman, a bed-plate provided with the guide-flanges, 37, 38, and 39, between which the said friction-roller is movable, the spring-retracted roller, 47, movably secured to the forward end of the bed-plate in the path of the roller aforesaid, and toward the guide-flange, 39, and a vertical power-shaft pivoted to the bed-plate and provided with the double-armed lever, 8, having the friction-rollers, T, adapted to engage the cam, 40, substantially as described.

19. In a baling-press, the combination with a baling-chamber, of a plate on top of the baling-chamber, the rear axle extending transversely across and under the baling-chamber, a stirrup upon each side of the baling-chamber engaging the axle at its lower end and at its top end secured to the top plate, a series of plates located between the arms of the stirrups, and a series of retaining-arms alternating between and pivotally engaging the series of plates, each of said arms having one end extending through the baling-chamber, substantially as described.

20. In a baling-press, the combination with a baling-chamber, of a plate on top of the baling-chamber, the rear axle extending transversely across and under the baling-chamber, a stirrup upon each side of the baling-chamber engaging the axle at its lower end and secured at its top end to the top plate, a series of plates located between the arms of the stirrups, each of said plates being provided with a recess in its upper and lower side, and a series of retaining-arms alternating between the said series of plates, the upper and lower side of each retaining-arm being provided with a projection adapted to the adjacent recess in the contiguous plate of the said series of plates, and each retaining-arm having one end extending through the baling-chamber, substantially as described.

21. In a baling-press, the combination with a baling-chamber, of a plate on top of the baling-chamber, the rear axle extending transversely across and under the baling-chamber, a stirrup upon each side of the baling-chamber engaging the axle at its lower end and secured at its top end to the top plate, a series of plates located between the arms of the stirrups and between the top plate and the axle, one or more of the said plates being provided with an outwardly-extending projection, a rod secured at its lower end to the lowest plate of the series and at its upper end to the top plate and passing over the outer end of the said projection, and a series of retaining-arms alternating between the series of plates and pivotally supported between the said plates, the said arms each having one end extending through the baling chamber, substantially as described.

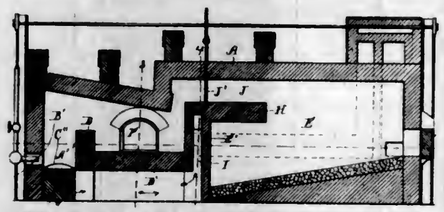
22. In a baling-press, the combination with a baling-chamber, of means for forcing the material to be baled rearwardly therein, a transverse plate or apron pivotally supported at one edge within the baling-chamber and adapted to have its free edge swung rearwardly by the baling material, a plate or platform hinged to the top of the baling-chamber, and means by which the free edge of the apron is forced forwardly when the platform is swung in the proper direction, substantially as described.

23. In a baling-press, the combination with the baling-chamber, of a transverse plate or apron pivotally supported at one edge within the baling-chamber and having its opposite edge free to swing rearwardly, a plate or platform hinged to the top of the baling-chamber, and a plate connecting the two hinged plates at one side of their hinged portions, whereby the apron is swung upon its hinged connection when the platform is swung in the proper direction, substantially as described.

24. In a baling-press, the combination with the baling-chamber, of the apron, 7, hinged at one edge to and within the baling-chamber, the platform, 6, hinged to the top of the baling-chamber, and the connecting-plate, 9, located between the apron and the platform, substantially as described.

568,847. COMBINED PAIR AND REHEATING FURNACE.

SAMUEL R. GROVE and GEORGE EMLONG, Muncie, Ind. Filed Jan. 11, 1896. Serial No. 575,154. (No model.)



Claim.—1. In a furnace, the combination with a pair furnace and sheet or reheating furnace, of a dividing-wall separating the furnaces into compartments, a combustion-chamber, passage-ways connecting the combustion-chamber with the compartments of the pair and sheet or reheating furnaces adapted to pass the products of combustion through the compartments of the pair furnace and then through the compartments of the sheet or reheating furnace, dampers controlling said passage-ways, flues leading from the compartments of the pair furnace to the stack, dampers for controlling said flues, flues leading from the compartments of the sheet or reheating furnace to the stack, and dampers for controlling said flues, substantially as described.

2. In a furnace, the combination with a pair furnace and sheet or reheating furnace, of a separating-wall separating the pair furnace from the sheet or reheating furnace, a flue connecting the pair furnace with the sheet or reheating furnace, passing through the separating-wall, a damper for controlling said flue, a flue leading from the pair furnace to the stack, a damper for controlling said flue, a flue leading from the sheet or reheating furnace to the stack, a damper for controlling said flue, a combustion-chamber, and a passage-way connecting the said chamber with the pair furnace, substantially as described.

568,848. BELT-FASTENER.

FREDERICK R. HAMILTON and CHARLES H. MOORE, Jr., Bath, N. Y. Filed May 25, 1896. Serial No. 593,006. (No model.)



Claim.—1. The herein-described fastening device, comprising a sleeve, and a locking member pivotally mounted therein and provided with downwardly-curved ends, as set forth:

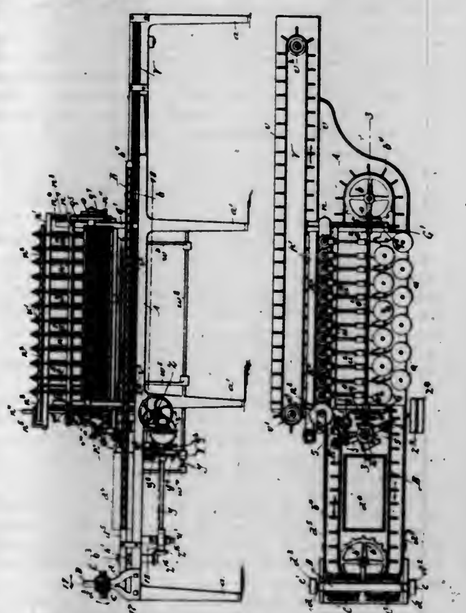
2. The herein-described fastening device, comprising a sleeve, a locking member having a depending pin pivotally mounted in said sleeve and provided with downwardly-curved ends, as set forth.

3. The herein-described fastening device, comprising a sleeve having an elliptical opening therein, and a pivoted locking member adapted to be passed through said opening, as set forth.

4. The herein-described fastening device, comprising a sleeve having a hole or opening therein, and a pivoted locking member adapted to be passed through said hole or opening and provided with downwardly-curved ends, as set forth.

568,849. MACHINE FOR SOLDERING CAPS ON CANS.

MILLARD J. HAWKINS, Newport, N. Y. Filed July 5, 1895. Serial No. 554,938. (No model.)



Claim.—1. The combination with a horizontal endless can-carrier, of two brushes arranged side by side over portions of the carrier which move in opposite directions, and mechanism whereby said brushes are rotated in opposite directions, substantially as set forth.

2. The combination with an endless can-carrier, of a yoke arranged over portions of the carrier which move in opposite directions, brushes mounted on separate shafts which are both journaled in said yoke in line with each other, and mechanism whereby said shafts are rotated in opposite directions, substantially as set forth.

3. The combination with a hollow arm or flux-conduit and a brush-holder secured to said arm, of a clamping-disk provided on its back with grooves and secured in said holder, and an annular row of bristles clamped between said disk and holder, substantially as set forth.

4. The combination with a can-carrier, a rotatable fluxing device, a horizontal shaft to which said fluxing device is secured, and a driv-

ing device applied to said shaft, of a yoke in which said shaft is journaled and provided with a vertical stud, and a bearing or socket in which said stud can be raised and lowered and also turned, for adjusting said shaft horizontally and vertically, substantially as set forth.

5. The combination with the horizontal feed-belt and the soldering-table, a shifting frame adapted to transfer the cans from the feed-belt to the soldering-table, mechanism whereby said frame is reciprocated longitudinally, and independent guide devices whereby a transverse movement toward and from the soldering-table is imparted to the frame simultaneously with its longitudinal movement, substantially as set forth.

6. The combination with the feed-belt and the soldering-table, of a shifting frame adapted to transfer the cans from the feed-belt to the soldering-table, mechanism whereby said frame is reciprocated longitudinally, an oblique front guide whereby the shifting frame is caused to move toward the soldering-table during the first part of its forward stroke, and an oblique rear guide whereby the shifting frame is caused to move away from the soldering-table during the subsequent part of its forward stroke, substantially as set forth.

7. The combination with the feed-belt and the soldering-table, of a shifting frame adapted to transfer the cans from the feed-belt to the soldering-table, mechanism whereby said frame is reciprocated longitudinally, a pivoted oblique front guide whereby the shifting frame is caused to move toward the soldering-table during the first portion of its forward stroke, a spring whereby said guide is held yieldingly in its normal position, an oblique rear guide whereby the shifting frame is caused to move away from the soldering-table during the subsequent part of its forward stroke, and a longitudinal return-guide whereby the shifting frame is caused to return longitudinally during its backward stroke, substantially as set forth.

8. The combination with the feed-belt and the soldering-table, of a shifting frame adapted to transfer the cans from the feed-belt to the soldering-table, mechanism whereby said frame is reciprocated longitudinally, an oblique front guide whereby the shifting frame is caused to move toward the soldering-table during the first part of its forward stroke an oblique rear guide whereby the shifting frame is caused to move away from the soldering-table during the subsequent part of its forward stroke, a retaining-pawl whereby the shifting frame is compelled to move longitudinally during its return stroke, and means whereby said pawl is released when the shifting frame has reached the oblique front guide, substantially as set forth.

9. The combination with a vertically-movable soldering-tool, of an actuating-cam provided with a lifting-section which is circumferentially adjustable and mechanism connecting the cam with the soldering-tool, whereby the beginning of the lifting movement of the tool can be regulated, substantially as set forth.

10. The combination with a soldering-tool, of a downwardly-projecting rod or bar arranged therein and capable of vertical movement independently of the same, a releasable solder-feed device and a releasing device connected with said rod or bar and controlling said solder-feed device, whereby, when said rod or bar comes in contact with the cap of a can, the releasing device is prevented from affecting the solder-feed device, while, when the rod or bar does not come in contact with a cap, the releasing device shifts the solder-feed to an inoperative position, substantially as set forth.

11. The combination with a vertically-movable soldering-tool, of a downwardly-projecting rod or bar arranged therein and capable of vertical movement with the same and also independently of the same, a solder-feed device, and a releasing device connected with said rod or bar and controlling said solder-feed device, whereby, when said rod or bar encounters the cap of a can as it descends with the soldering-tool it is arrested and the releasing device is thereby prevented from affecting the solder-feed device, while when no cap is encountered said rod or bar continues to descend until the releasing device shifts the solder-feed device to an inoperative position, substantially as set forth.

12. The combination with a vertically-movable soldering-tool, of a downwardly-projecting rod arranged therein and capable of vertical movement with the same and also independently of the same, a solder-wire guide, a reciprocating feed-pawl and a releasing-plate arranged over said pawl and connected with said rod or bar by a depending rod, substantially as set forth.

13. The combination with a soldering-tool, of a feed-bar capable of movement toward and from said tool, a feed-pawl pivoted to said feed-bar, and a telescopic solder-wire feed-tube composed of a section connected with said feed-bar and a section supported adjacent to the soldering-tool, substantially as set forth.

14 The combination with a soldering-tool, of a solder-wire feed-tube, a solder-feed device, a support to which the inlet end of said tube is loosely connected and means whereby the delivery end of said tube is swung away from the soldering-tool after the solder has been fed against the soldering-tool, substantially as set forth.

15. The combination with a vertically-movable soldering-tool and a cross-head whereby the tool is lifted, of a solder-wire feed-tube, a support on which the delivery portion of said tube rests, and a lever and rod whereby a laterally-ascending movement is imparted to said feed-tube from said cross-head substantially as set forth.

16. The combination with a vertically-movable soldering-tool and a cross-head whereby the tool is lifted, of a solder-wire feed-tube composed of an inlet portion and delivery portion connected by a telescopic joint, means whereby the delivery portion is connected with said cross-head and swung away from the tool after the solder has been fed against the same, a feed-bar with which the inlet portion of the tube is loosely connected, and a feed-pawl mounted on said feed-bar, substantially as set forth.

17. The combination with a solder-wire feed-tube composed of a stationary delivery-section and an inlet-section capable of longitudinal telescopic movement with reference to said delivery-section, of a detent-pawl attached to the delivery-section of said tube, a feed-bar connected with the inlet-section of said tube, and a feed-pawl mounted on said feed-bar, substantially as set forth.

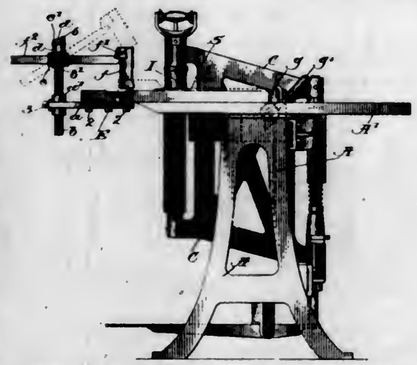
18. The combination with the soldering-table and the delivery-belt, of a transversely-reciprocating shifting frame whereby the cans are transferred from the soldering-table to the delivery-belt, and mechanism whereby the frame is elevated during its effective stroke and lowered during its return stroke, substantially as set forth.

19. The combination with the soldering-table and the delivery-belt, of a transversely-reciprocating shifting frame whereby the cans are transferred from the soldering-table to the delivery-belt, and switch-rails and tilting switch-levers, whereby said frame is elevated during its effective stroke and lowered during its return stroke, substantially as set forth.

20. The combination with the soldering-table provided with transverse oblique guide ribs and slots, and the delivery-belt, of a shifting frame composed of transverse oblique bars and longitudinal bars, the rear bar of which is provided with pins which are adapted to project through said slots, and transverse oblique guide devices whereby the rear ends of said transverse bars are raised during their forward stroke and lowered during their return stroke, substantially as set forth.

21. The combination with the soldering-table, the delivery-belt, and the shifting frame whereby the cans are transferred from said table to said belt, of a driving-shaft, an actuating-cam adjustably secured thereto and effecting the forward stroke of said shifting frame, a tappet whereby the return stroke is effected, and a rock-shaft and rock-arm which are actuated by said adjustable cam and tappet and which actuate said shifting frame, substantially as set forth.

568,850. BOSOM-STRETCHER FOR SHIRT-IRONING MACHINES. WILLIAM A. R. HENRICI, Chelsea, Mass. Filed June 16, 1896. Serial No. 595,765. (No model.)



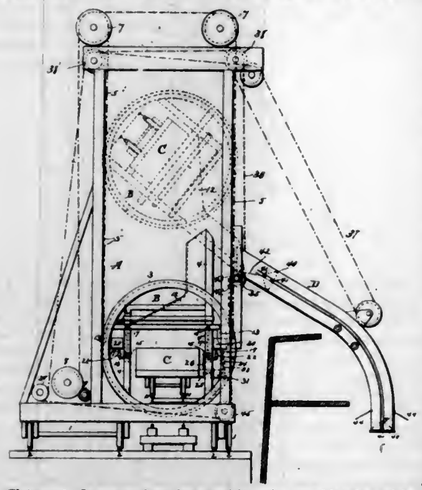
Claim.—1. In a bosom-stretching device for shirt-ironing machines, a holder to engage the neckband or collar of the shirt, a rigidly-attached arm, a pivotally-mounted support for and in which said arm is longitudinally movable, and means to lock the arms and retain the holder in fixed position, substantially as described.

2. In a device of the class described, a vertically-adjustable pivotally-mounted rocker, an arm longitudinally movable in the rocker, a holder on said arm, to engage the neckband or collar of a shirt, and means to simultaneously lock the rocker from pivotal movement and to clamp the arm therein, substantially as described.

3. In a device of the class described, a yoke having a depending shank, means to hold the latter in vertically-adjusted position, a rocker pivoted in the yoke, a holder having an arm longitudinally movable in the rocker, and means carried by the rocker to clamp the arm therein, substantially as described.

4. In a device of the class described, a yoke having a grooved side, a rocker pivotally mounted in said yoke, a holder, an arm secured thereto and longitudinally movable in the rocker, and a locking member pivotally mounted on the rocker, to engage the grooved side of the yoke and prevent tipping of the rocker and also to clamp the holder-arm in the latter, substantially as described.

568,851. CAR-DUMPING MACHINE. GEORGE H. HULETT, Cleveland, Ohio. Filed Oct. 23, 1895. Serial No. 566,612. (No model.)



Claim.—1. In a car-dumping machine, the combination with a main frame, of a main cylinder into which a loaded car is run, and flexible devices in which the cylinder is suspended, of a hopper adapted to be locked over the top of the car and through which the contents of the latter is dumped, substantially as set forth.

2. In a car-dumping machine, the combination with a main cylinder, a car and flexible suspending devices constructed to elevate, lower and turn the cylinder, of a hopper supported on stationary brackets and means for clamping the car between the hopper and a part of the cylinder, substantially as set forth.

3. In a car-dumping machine, the combination with a main frame, a main cylinder, and a car located in the cylinder, of a hopper supported on stationary brackets on the main frame means for raising the car to the hopper, means for jacking the car in place and securing the car and hopper together and means for raising lowering and dumping the car, substantially as set forth.

4. In a car-dumping machine, the combination with a main frame, a main cylinder and cable in the loops of which the cylinder is suspended and by means of which the cylinder is turned axially, of a hopper, a car, means for locking the car and hopper together, a block for locking the car against lateral movement, this block and means for locking it, substantially as set forth.

5. In a car-dumping machine, the combination with a main cylinder, means for suspending and turning the latter, and a car, of a hopper, means for locking the car and hopper together, a block suspended from some part of the cylinder and having connection, with the hopper whereby its position is automatically controlled, and means for locking this block, substantially as set forth.

6. In a car-dumping machine, the combination with a car-dumping mechanism, of an inclining chute movable bodily up and down vertically whereby to discharge at the same angle into the hold of a vessel whether it be high or low, and means for elevating the material to be lowered through the chute to discharge into the upper end of the chute, substantially as set forth.

7. In a car-dumping machine, the combination with a dumping mechanism, of a chute, and a traveler or valve therein, substantially as set forth.

8. In a car-dumping machine, the combination with a cylinder, of blocking carried by the cylinder for holding the car to be dumped securely in position, and hydraulic devices also located in the cylinder for holding the blocking in position, substantially as set forth.

9. In a car-dumping machine, the combination with a cylinder, of blocking pivotally suspended in the cylinder for holding the car to be dumped securely in position, and self-contained hydraulic devices carried by the cylinder for operating the blocking, substantially as set forth.

568,852. HEATER. ZACHARIA D. JONES, Visalia, Cal., assignor of one-half to George X. Wendling, Hanford, Cal. Filed May 5, 1896. Serial No. 590,331. (No model.)



Claim.—1. In a water-heater, the combination with the casing having inlet and discharge openings, of a circulating-pipe within the casing and an open-ended deflecting and conveying cylinder within the casing, the ends of which aline with the inlet and discharge openings of the casing, substantially as described.

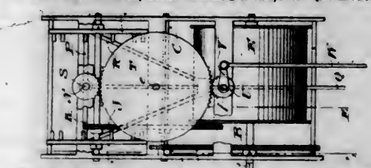
2. In a water-heater, the combination with the casing having inlet and discharge openings, of an open-ended deflecting and conveying cylinder within the casing, formed conical at its lower end, the ends of the cylinder alining with the inlet and discharge openings of the casing, and a coiled circulating-pipe surrounding the said cylinder, substantially as described.

3. In a water-heater, the combination with a sectional casing formed with inlet and discharge openings, the sections of said casing being detachable, of a heat deflecting and radiating body within the casing supported wholly upon one of the sections thereof and a circulating-pipe also arranged within the casing and supported wholly upon a section different from that which supports the said radiating and deflecting body, substantially as described.

4. In a water-heater, the combination with a closed casing comprising a central section, a top section provided with a discharge-opening and a bottom section having an inlet-opening, of a deflecting and radiating body provided with a conical end arranged to aline with the inlet-opening, said radiating body being supported wholly upon one of the sections of the casing, and a circulating-pipe coiled around the radiating body and supported wholly upon a section of the casing different from that which supports the radiating body, substantially as described.

5. In a water-heater, the combination with a closed casing provided at its top with a central discharge-opening and with an inlet-opening located at one side of its bottom, of an open-ended radiating and conveying cylinder alining with the discharge-opening at its upper end and at its bottom provided with a conical cap extending laterally into alinement with the inlet-opening, and a circulating-pipe coiled around the cylinder, substantially as described.

568,853. MECHANICAL MOTOR. ISAAC JOHNSON, Milwaukee, Wis. Filed Mar. 28, 1896. Serial No. 585,179. (No model.)



Claim.—1. The combination of a suitable frame, a gear-train in the frame, suitable means for automatically driving the gear-train, a pair of escape-wheels carried by an arbor of the gear-train, another arbor between the escape-wheels provided with a bar mounted at right angles to the escapement-wheels and having the extremities thereof in the form of pallets engageable with said wheels, a pendulum hung on the pallet-bar arbor, a crank in gear with the latter arbor, and a longitudinally-reciprocative rod connected to the crank.

2. The combination of a suitable frame, a series of arbors rotative in the frame and in gear with each other, a drum carried on one of the arbors, a weight in flexible connection with the drum, a pair of escape-wheels carried by another of said arbors, a pallet-bar carried by an arbor rotative in the frame at a right angle to those aforesaid, this pallet-bar being engageable with said escape-wheels, a pendulum hung from the latter arbor, a crank in gear with the pendulum-arbor, and a longitudinally-reciprocative rod connected to the crank.

568,854. AUTOMATIC-FIGURE ADVERTISING DEVICE. PAUL T. KENNY, New York, N. Y. Filed Jan. 23, 1896. Serial No. 576,507. (No model.)

Claim.—1. The combination with a device for displaying advertisements, of the pole adjacent to said device, the climbing figure mov-

able upon the pole, the striking figure adjacent to the top of the pole, and means for operating said figures, substantially as described.



2 The combination in an advertising device of the pole, the climbing figure upon the pole, a striking figure adjacent to the top of the pole, means for raising the climbing figure and imparting a climbing movement thereto, means for operating the striking figure as the climbing figure reaches the top of the pole, and means for releasing and dropping the climbing figure simultaneous with the operation of the striking figure, substantially as described.

3. The combination in an advertising device, of the pole, the climbing figure upon the pole, a suspending wire or rope for said figure, a drum for winding said rope to raise the figure, a continuously-operating motor, a clutch between the motor and the drum, and means for disengaging the clutch when the figure reaches the top of the pole, whereby the drum is permitted to unwind freely, and means for engaging the clutch members as the figure reaches the bottom of the pole whereby the drum is again set in motion to wind the rope and raise the figure, substantially as described.

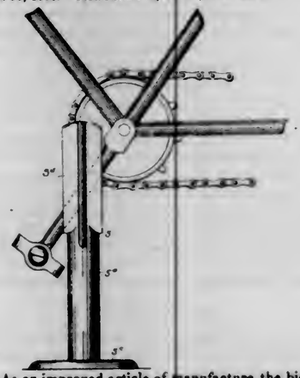
4. The combination with a device for displaying advertisements and the pole, of a figure having movable limbs, a friction-wheel mounted in the figure and engaging the pole, mechanism for moving the limbs of the figure and a pawl-and-ratchet device constructed and arranged to engage said mechanism with the friction-wheel during the upward movement of the figure, whereby the limbs are given a climbing movement, and to disengage said mechanism from the friction-wheel as the figure descends the pole, substantially as described.

5. The combination with the device for displaying advertisements, of the pole, the climbing figure upon the pole, movable limbs upon the figure and mechanism for operating the same, the friction-wheel for operating said mechanism, the yoke surrounding the pole, and means for varying the pressure of the friction-wheel upon the pole, substantially as described.

6. The combination with the pole and the climbing figure, of the striking figure adjacent to the top of the pole and having its body movably mounted upon a pivot, the motor, the drum-shaft and drum, the suspending-rope connecting the climbing figure with the drum, the disk 44 operated periodically by the drum-shaft through a suitable train of mechanism, and tappets upon said disk arranged to engage and move the striking figure, substantially as described.

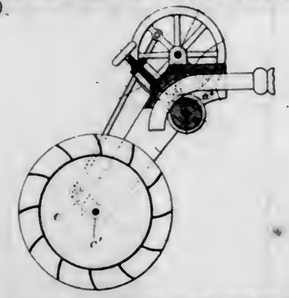
7. In an advertising device, the combination with the pole and the climbing figure, of the motor-shaft, the drum and the drum-shaft, the rope connecting said figure with the drum, the clutch connecting the motor-shaft with the drum-shaft, the clutch-lever for operating the clutch, the locking-lever for locking the clutch in its closed condition, the worm on the drum-shaft, the worm-wheel meshing with said worm, and the adjustable pins on the worm-wheel, said pins being arranged to engage alternately with the clutch-lever and the locking-lever, substantially as and for the purpose described.

568,855. BICYCLE-SUPPORT. HORACE G. KENNEDY, Denver, Colo. Filed Nov. 30, 1895. Serial No. 570,700. (No model.)



Claim.—As an improved article of manufacture, the bicycle-support herein described, comprising the upright standard, a suitable base, and a forked upper portion whose arms are separated by a narrow space adapted to receive the bicycle-crank, said space being of sufficient depth to allow the crank to move downward therein until the pedal engages the lower part of the support on one side, and the butt of the crank the upper part of the support on the opposite side, as and for the purpose set forth.

568,856. TOY WATER-WHEEL. JAMES D. KIDDLEY and SAMUEL L. POWERS, Newton, Mass. Filed May 6, 1895. Serial No. 548,338. (No model.)



Claim.—1. In a faucet attachment, the combination of a frame or support comprising an arm, a seat on one side thereof at its inner end and fixedly attached to it and projecting laterally from it to extend over and engage one side of the faucet-spout, and suitable bearings at the outer end of the frame for the shaft of a bucket-wheel; a clamping-piece in juxtarelation to said seat to engage the opposite side of the spout, and movable on the arm toward and from the seat; adjusting means interposed between the clamping-piece and seat and operating by engagement therewith to force said parts toward each other upon the spout; and a bucket-wheel rotatively supported by the bearings at the outer end of the frame in position to receive a stream of water issuing from the faucet-spout when the frame is clamped thereto.

2. A faucet attachment comprising a frame composed of side arms and a seat extending between the same for engaging the discharge-spout of the faucet; a water-wheel journaled between said arms at the outer end of the frame; a shaft at the inner end of the frame; connections between the water-wheel and the shaft to turn the latter; a clamping-piece opposed to the seat; and means for moving said clamping-piece toward and from the seat for the purpose described.

3. A faucet attachment comprising a frame composed of side arms and a spout-engaging seat extending between the same; a yoke straddling the seat and extending beyond the same; a clamping-piece journaled in the extending portions of said yoke; a screw entered through the yoke and bearing against the back of the seat; and a water-wheel journaled between the side arms of the frame at the outer end.

568,857. HORSESHOE-CALK. BERNARD KOELKER and JOHN THANEY, Milwaukee, Wis. Filed Dec. 26, 1895. Serial No. 573,253. (No model.)



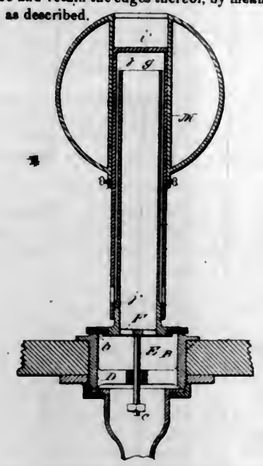
Claim.—1. A tubular horseshoe-calk, having a slit or a series of slits extending for a suitable distance in the upper portion thereof, and having a longitudinal slot in the lower portion extending through the calk, said slot being separate from, and independent of, the slit, or one of a series of the slits.

2. The combination, with a tubular expansible calk provided through its lower portion with a longitudinal slot, of an expanding-pin provided medially with a laterally-projecting lug, said lug constituting a shoulder, which projects laterally through the longitudinal slot of the calk, to such an extent, and so located, as, when the pin is within the calk, to be engaged by a removing-tool.

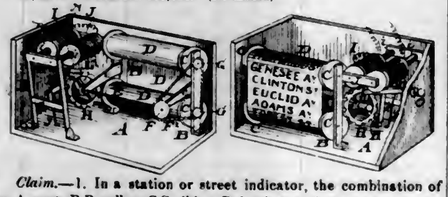
3. The combination with an expansible tubular calk having its bore contracted, and said calk also provided with a longitudinal slot, of an expanding-pin acting against the contracted portion of the bore of the calk, and provided with a laterally-projecting lug adapted to pass through the longitudinal slot.

568,858. VALVE. THEODORE LINKE, New York, N. Y. Filed July 30, 1895. Serial No. 557,633. (No model.)

Claim.—The combination in a water-tank, which is provided with a suitable valve, in the top of which is fitted a coupling adapted to be connected with the outlet-pipe, said coupling being provided with a spider guide, and a tube provided with an outwardly directed flange, to which is fitted a washer, which is adapted to close the opening in said coupling, said tube being provided with a spider-frame in the lower end thereof, to which is secured a depending rod, provided with a nut, which passes through to the spider-guide in the coupling, an exterior tube closed at one end, and provided at the lower end thereof with lateral ports or openings, said ends being interiorly screw-threaded, and adapted to engage the screw-threads upon the enlarged portion of the first-mentioned tube, whereby the annular chamber is formed between said tubes, and a hollow spherical float having a central tubular portion and semicircular air-tight chambers upon each side thereof, the tubular portion of which is adapted to engage the outer tube and retain the edges thereof, by means of said screws, substantially as described.



568,859. STATION OR STREET INDICATOR. EDWARD B. LODGE, Cleveland, and WILLIAM R. LODGE, Cuyahoga Falls, Ohio. Filed June 15, 1896. Serial No. 595,621. (No model.)



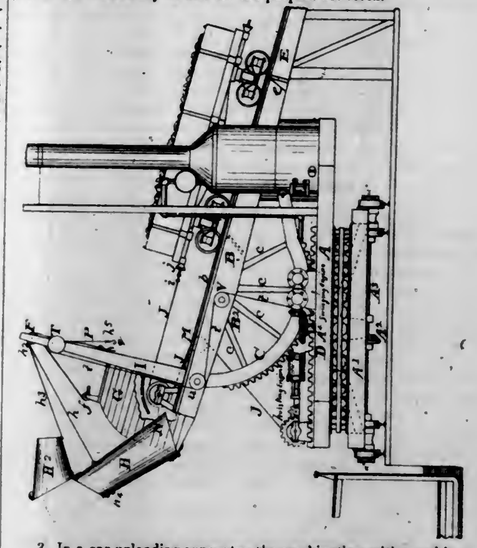
Claim.—1. In a station or street indicator, the combination of box A, posts B B, rollers C C, ribbon D, having station or street names printed thereon, shaft E journaled in brackets *e e*, sprocket-wheel F on said shaft, chain belt F' connecting said sprocket with pinions G G, on ribbon-rollers C C, notched wheel H on opposite end of shaft E, electromagnet I, supported on bar J, pivoted frame K, connected with cores *i i* of electromagnet, lever L on hub of wheel H, connecting-rod M, connecting frame K with said lever L, pawl N on end of lever L engaging with the notches in wheel H, all constructed and adapted to operate substantially as described and for the purpose specified.

2. The combination with trolley-pole and trolley-wire, of the brackets V V, mounted on the trolley-wire, bracket *q* attached to trolley-pole, armed wheel Q, having contact-pins *s*, and mounted on said bracket *q*, spring *t* on the trolley-pole adapted to contact with said pins *s*, and wire *u* connecting said spring *t* with the electromagnet I in the indicator-box A, all constructed and adapted to operate substantially as described and for the purpose specified.

568,860. CAR-UNLOADING APPARATUS. TIMOTHY LONG, Cleveland, Ohio, assignor to The McMyler Car Dumping Machine Company, Cuyahoga County, Ohio. Filed Dec. 19, 1894. Serial No. 532,364. (No model.)

Claim.—1. In a car-unloading apparatus, a rocking platform composed of side girders, cross-girders B', B', joining said side girders, track-rails *b b* on said platform, rockers on which said platform is mounted and having gear-teeth, the rack-toothed rails with which said gear-teeth mesh, and the rotatable platform and means for rocking the car-platform, substantially as described.

2. In a car-unloading apparatus, a rocking platform composed of side girders, cross-girders uniting said side girders in their rear portion, a trough bottom in its forward portion, rockers on which said platform is mounted, having gear-teeth, rack-toothed rails, with which said gear-teeth mesh, and a rotatable platform, the arrangement being such that as the platform is rocked forward, the forward end of the platform and car shall be advanced beyond the end of the platform, substantially as and for the purpose set forth.



3. In a car-unloading apparatus, the combination, with a rocking platform of the character described, of the posts and frame F, F², mounted on the forward end of said platform, a curved top chamber, curved plate attached to and forward of said posts F, and an adjustable spout hinged to forward part of said chamber, as described.

4. In a car-unloading apparatus, the combination with a rocking platform of the character described, of the posts and frame F F², the divided chamber attached to and forward of said posts, and adjustable delivery-spout, having a hinged nozzle, ropes attached to said spout, and pulleys at the top of the frame over which said ropes pass, and adapted for adjusting said nozzle, substantially as and for the purpose set forth.

5. In a car-unloading apparatus, the combination of a rocking platform, rockers, and toothed rails, sheaves attached to the forward end of said platform; sheaves, back of said first-mentioned sheaves, cables running over said sheaves, drum mounted on the forward end of the platform and with which the cables are connected, and the hoisting-engine, for discharging the contents of the car, substantially as described.

6. In a car-unloading apparatus, a normally-inclined platform and rockers to which said platform is secured, the said platform being unobstructed at one end for the passage of a car thereon, and provided with a discharge-spout at its other end.

7. In a car-unloading apparatus, the combination with a truck and a rotary platform thereon of a platform having rockers, the latter resting on the rotary platform, the said rocking platform being unobstructed at one end for the passage of a car thereon and provided at its other end with a discharge-spout.

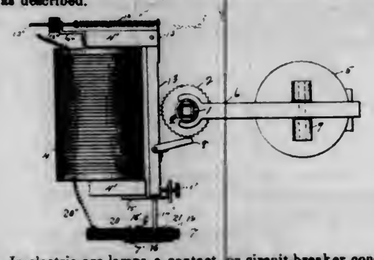
8. In a car-unloading apparatus the combination with a truck and a rotary platform thereon, of a platform having rockers, the latter being located nearer the discharge end of said platform, the end of the platform farthest from the rockers being unobstructed for the passage of a car thereon, while the other end thereof is provided with a discharge-spout.

9. In an apparatus for unloading cars, the combination with a rocking platform the rockers being located nearer one end, the longer end of the platform being unobstructed for the passage of a car over same, while the shorter end or the end nearer the rockers is provided with a stop or abutment, of means for drawing a car onto the platform over the unobstructed end thereof, and for tilting the platform.

568,861. ELECTRIC-ARC LAMP. NORMAN G. MEADE, Jamestown, N. Y. Filed May 15, 1896. Serial No. 591,664. (No model.)

Claim.—1. In electric-arc lamps, a screw-clutch composed of collar 2', ratchet-wheel 2, spring 10, hinged jaws 3, 3, in combination with beveled collar 23, 23, and means for actuating the clutch, substantially as shown and described.

2. In electric-arc lamps, a collar 7, ratchet-wheel 2, spring 10, hinged jaws 3, 3, having their inner faces threaded and engaging with threads on carbon-carrier 1, and the beveled collar 23, 23, substantially as described.



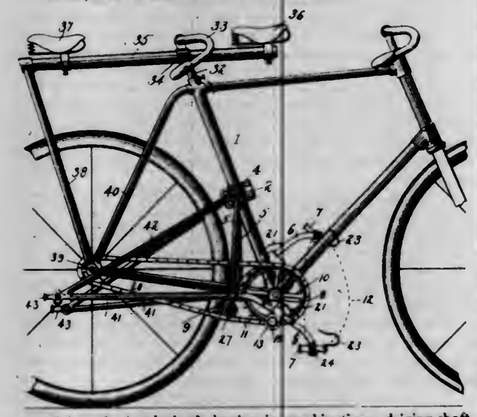
3. In electric-arc lamps, a contact, or circuit-breaker consisting of non-conducting piece 7, spring 20, sliding piece 19 with slot 18, and pin 14, spring 16 and piece 21 bearing on sliding piece 19, combined to operate substantially as shown and described.

4. In electric-arc lamps, the combination of a main magnet 5, pole-pieces 5', and 9, bent lever 6, armature 22, collar 2' and ratchet-wheel 2, spring 10, hinged jaws 3, 3, and bevel-collar 23, 23, of spring-clutch, substantially as shown and described.

5. In electric-arc lamps, the combination of a shunt-magnet 4, armature 13 and pin 14 moving in slot 18 of sliding piece 19 in circuit breaker or contact, substantially as shown and described.

6. In electric-arc lamps, the combination of a shunt-magnet 4, armature 13, pin 14, pawl 8, lever 6, main magnet 5, armature 22, collar 2', and ratchet-wheel 2, spring 10, hinged jaws 3, 3, beveled collar 23, 23, block 7, springs 16 and 20, with movable piece 19, slot 18, and piece 21 of contact or circuit breaker, substantially as shown and described.

568,862. VELOCIPEDE. ROBERT MIEHLE, Chicago, Ill. Filed Dec. 3, 1894. Serial No. 530,698. (No model.)



Claim.—1. A velocipede having in combination a driving-shaft having a crank, a driving-lever having a floating pivot and being provided with lug-and-notch connection with said crank whereby it may be adjusted, and means for yieldingly holding said lug and notch in engagement substantially as set forth.

2. A velocipede having in combination a driving-shaft having a crank, a floating driving-lever having notches or catches, a box pivoted to said crank and through which said lever passes, a pin or lug carried by said box and engaging in said notches, and a spring or cushion for holding said pin and notches normally in engagement, substantially as set forth.

3. A velocipede having in combination a driving-shaft provided with a crank, a driving-lever adjustably connected to said crank and having a floating pivot, and a lateral projection located at said pivot for enabling the rider to adjust said lever by means of his foot, substantially as set forth.

4. A velocipede having in combination an elliptical sprocket-wheel, a sprocket-chain passing around said wheel for communicating motion to the driving-wheel, and an idler arranged between the folds of the chain and in the line of or immediately above the slack side of the chain when the major diameter of the sprocket-wheel is transverse to such portion of the chain, whereby said idler will be substantially out of contact with the chain when the latter is taut and the major diameters of the sprocket are acting thereon substantially as set forth.

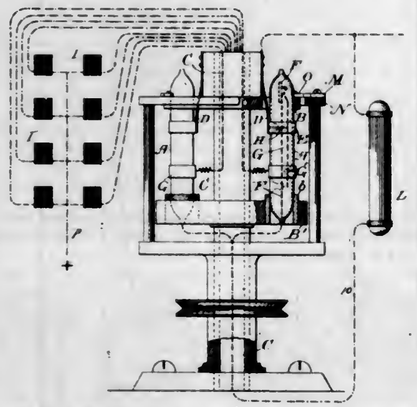
5. A velocipede having in combination a driving-shaft provided with a crank, a floating pedal-lever connected to said crank and having a pedal, a rearwardly-projecting pivoted arm, a second pedal supported by said arm and a second arm pivoted to said second pedal and to said lever, substantially as set forth.

6. A velocipede having in combination a driving-shaft provided with a crank, a floating pedal-lever pivoted to said crank and having a pedal, an arm pivotally connected to the rear end of said pedal-lever, a second arm pivotally supported on the machine and connected with said first arm, a pedal supported on said arms and said arms being arranged in diverging vertical planes, substantially as set forth.

7. A velocipede having in combination a frame, the post 32 adjustably secured to said frame and having an eye 34, a bar passing through and detachably secured in said eye for carrying two saddles, and the rear end of said bar being detachably supported upon the frame, substantially as set forth.

8. A velocipede having in combination a frame, a post 32 detachably supported on said frame, a handle-bar secured to said post, a bar extending through said post and carrying a saddle at each end, and means for supporting the rear end of said bar substantially as set forth.

568,863. MEANS FOR GENERATING ELECTRIC WAVES OR OSCILLATIONS. DANIEL MCF. MOORE, Newark, N. J., assignor to the Moore Electrical Company, New York, N. Y. Filed Dec. 7, 1895. Serial No. 571,341. (No model.)



Claim.—1. The herein-described improvement in generating electric waves, oscillations or disturbances by interruptions of a circuit of induction, consisting in momentarily interrupting in succession a series of such circuits, turning the electric waves, vibrations or disturbances produced by each interruption into a working circuit common to said circuits of induction, and in the intervals between interruptions of each circuit and during the operation of other circuits, connecting each circuit to a source of electric energy.

2. The combination, substantially as described, of a series of circuits of induction normally connected to a source of electric energy and each adapted by interruption to generate electric waves, oscillations or disturbances, as described, a working circuit common to such series, a series of interrupters, one for each circuit of the series, operating in succession, and switch devices for momentarily connecting each circuit of induction at the time of interruption to the working circuit and at the same time disconnecting it from the other circuits of induction.

3. The combination, substantially as described, of two or more circuits of induction, each adapted as described to generate by interruption electric waves, oscillations or disturbances, corresponding interrupters operating in succession to each momentarily break its circuit, the remaining circuit or circuits being at such times of interruption connected to their source, and a working circuit, common to said circuits, and into which the electric waves or oscillations generated by said interruptions are discharged.

4. The combination, substantially as described, of a series of circuits of induction, each adapted as described to generate by interruption electric waves, oscillations or disturbances, a working circuit common to the same, a series of interrupters one for each circuit of induction, means for operating said interrupters in succession, and switch devices for connecting each circuit of induction to the working circuit simultaneously with the action of its interrupter.

5. The combination of a circuit of induction, substantially such as described, a generator, a working circuit independent of said circuit of induction during the passage therethrough of current from said generator, and an interrupter and switch-contacts connected therewith for shifting the circuit of induction to the working circuit simultaneously with the interruption of connection between the generator and said circuit.

6. The combination, substantially as described, of a frame holding a series of spring-actuated supports moving between suitable stops or abutments and each carrying a circuit-interrupter adapted to operate by momentum, and means for alternately actuating said supports against the springs and releasing them in succession.

568,864. PERMUTATION-LOCK. IRA W. MOORE, New York, N. Y., assignor of one-half to Edward Simmons, Keyport, N. J. Filed Apr. 4, 1895. Serial No. 544,377. (No model.)

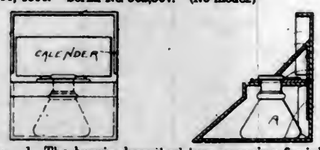


Claim.—1. In a permutation-lock having the tumblers mounted on the sliding bolt, said bolt consisting of a skeleton comprising a bottom and side portions with ear extensions of the sides, the knob-spindle mounted in the axis of said ear extensions; the tumblers consisting of a middle toothed disk with a plain peripheral portion, and a smaller plain disk each side of the middle disk; friction-controlling disks between the ears of the bolt and the plain disks, said plain disks having the curved slots, and the middle disk having the stud-pins for actuating the plain disks in combination with the rotating knob-spindle adapted for turning the middle disk and thereby setting either disk independently, and with the tumbler-controlling guard mounted in a fixed position on the lock-case, also with the spring-pawl controlling the toothed disk, said tumblers having the radial slots for engaging the guard substantially as described.

2. In a permutation-lock having the tumblers mounted on the sliding bolt, said bolt consisting of a skeleton composing a bottom plate and side plates with ear extensions of the sides, and seated in the bottom of the case; the knob-spindle mounted in the axis of said ear extensions, the tumblers mounted on said spindle between said ears and consisting of a middle toothed disk with a plain peripheral portion, and a smaller plain disk each side of the middle disk; friction-controlling disks between the ears of the bolt and the plain disks, said plain disks having the curved slots, and the middle disk having the stud-pins for actuating the plain disks respectively, in combination with the rotating knob-spindle mounted in said ears suitably to carry the disks above the bottom of the bolt, and adapted for turning the middle disk and thereby setting either disk independently, and with the tumbler-controlling guard mounted in a fixed position on the case, also with the spring-pawl for controlling the toothed disk, said tumblers having the radial slots for engaging the guard substantially as described.

3. A permutation satchel-lock consisting of the long narrow case adapted to the satchel-frame, and having the extension part *a*, the skeleton bolt adapted to slide lengthwise in the bottom of the case and having the ear extensions *c* of the sides, the tumbler-disks mounted on the knob-stem in the ear extensions *c*, said spindle and disks adapted for setting either disk independently by turning the middle disk, the slotted side of the part *a*, of the case permitting the sliding of the knob-stem with the bolt, the spring-pawl and the tumbler-guard fixed on the case, all substantially as described.

568,865. INKSTAND. JOHN H. MCBRIDE, Topeka, Kans. Filed Mar. 10, 1896. Serial No. 582,567. (No model.)



Claim.—1. The herein-described box or casing for ink stands or bottles, said box or casing being provided with an open back and with a hole or aperture in the top thereof, through which the neck of the bottle projects, and the bottom of the box or casing being projected and adapted to be folded to form a back for said box or casing, and also to form a top or cover therefor, and said back portion being provided with a strip or plate which is secured thereto, and adapted to be folded over the top of the box or casing, and which is provided with an aperture or opening through which the neck of the bottle projects, substantially as shown and described.

2. The herein-described box or casing for ink stands or bottles, said box or casing being provided with an open back and with a hole or aperture in the top thereof, through which the neck of the bottle projects, and the bottom of the box or casing being projected and adapted to be folded to form a back for said box or casing, and also to form a top or cover therefor, and said back portion being provided with a strip or plate which is secured thereto, and adapted to be folded over the top of the box or casing, and which is provided with an aperture or opening through which the neck of the bottle projects, and the top or cover being provided with a strip or plate which is secured to the inner surface thereof, and which is adapted to be folded so as to form a brace or support for the top or cover, and to hold it in a vertical position, said part or support being adapted to have a calendar secured thereto, substantially as shown and described.

3. The herein-described box or casing for ink stands or bottles, said box or casing being provided with an open back and with a hole or aperture in the top thereof, through which the neck of the bottle projects, and the bottom of the box or casing being projected and adapted to be folded to form a back for said box or casing, and also to form a top or cover therefor, and said back portion being provided with a strip or plate which is secured thereto, and adapted to be folded over the top of the box or casing, and which is provided with an aperture or opening through which the neck of the bottle projects, and the top or cover being provided with a strip or plate which is secured to the inner surface thereof, and which is adapted to be folded so as to form a brace or support for the top or cover, and to hold it in a vertical position, said parts or support being adapted to have a calendar secured thereto, and said top or cover being provided with sides and front flanges substantially as shown and described.

568,866. CULTIVATOR. WILLIAM D. MCCAULY, Elmore, Ark. Filed Nov. 21, 1895. Serial No. 569,688. (No model.)

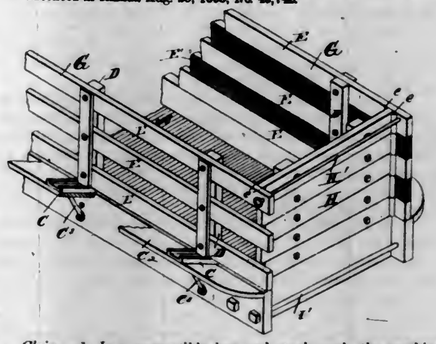


Claim.—1. A frame having perforated beams in combination with a cultivator provided with a standard having notched and perforated parallel arms extending rearward and uniting in a single downwardly-curved bar to the forward end of which is attached a cultivating-shovel, as set forth.

2. A frame having perforated beams and bolts and nuts fitting said perforations, combined with a cultivator provided with a standard having notched and perforated arms extending rearwardly fitting outside of said frame and registering with said bolts, as set forth.

3. In a cultivator, a frame composed of parallel beams, provided with a plurality of holes for the axle-rod, the transverse frame-rods, and the plow attachments, and adapted as described for the detachable connection of the plows, the cotton scraper, and the harrows as set forth.

568,867. COMBINED HAY AND STOCK RACK. RICHARD MCLANE, Harrow, Canada. Filed Oct. 12, 1895. Serial No. 565,527. (No model.) Patented in Canada Aug. 23, 1895, No. 49,742.



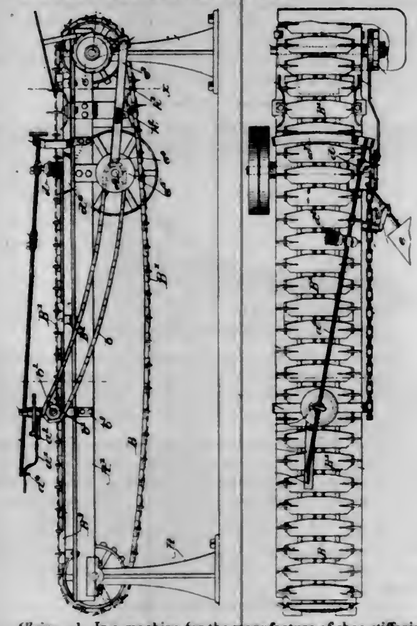
Claim.—1. In a convertible hay and stock rack, the combination of a wagon frame or body, the side frames and brackets having a flexible connection with said side frames, said brackets consisting

of a vertical portion adapted to receive the side frames when they are vertical, and an inclined portion extending out from the frame adapted to support the side frames when lowered to constitute the hay-rack, substantially as described.

2. In a hay and stock rack, the combination of the body or frame, the side frames supported on the bars D, and the brackets C said brackets consisting of a vertical portion and a portion approximately horizontal provided with a channel in which to receive and support the bars D, said channel extending through the vertical and horizontal portion whereby the guide and support are provided in the vertical portion for the bars when the side frames are vertical, and a guide and support are provided on the horizontal portion when the side bars are lowered to form the hay-rack, substantially as described.

3. In a hay and stock rack, the combination of the frame or body B, the brackets C, and the side frames, said brackets consisting of a vertical portion located inside of the body, and an inclined portion extending out over the body, and means for connecting the side frames and the brackets, substantially as described.

568,868. MACHINE FOR MANUFACTURING SHOE-STIFFENINGS. JOHN R. MCMAHON and THOMAS F. HART, Lynn, Mass. Filed Nov. 29, 1895. Serial No. 570,332. (No model.)



Claim.—1. In a machine for the manufacture of shoe stiffenings, the combination with an endless carrier composed of a series of flexibly-connected stiffening-supporting surfaces, of holding devices pivotally mounted upon the opposite ends of the said supporting-surfaces and adapted when opened to expose an open space of substantially the length of the stiffening-layer to be applied to the stiffener-surface, and means to open and close the said holders, substantially as described.

2. In a machine for the manufacture of shoe-stiffenings, the combination with an endless carrier composed of a series of stiffening-supporting surfaces joined by a flexible connection, of registering devices applied to the side edges of said stiffening-supporting surfaces, and pivoted holders mounted upon the opposite ends of the said surfaces, and means to open and close the said holders to receive stiffening layers, substantially as described.

3. In a machine for the manufacture of shoe-stiffenings, the combination with an endless carrier, composed of a series of stiffening-supporting surfaces jointed together, holding devices pivotally mounted upon the opposite ends of said surfaces, means to open the said holders for the reception of stiffener-layers, and to thereafter close them on the said layers, of a brush, and means to automatically operate it to apply cement from one to the other end of the said layers, substantially as described.

4. In a machine for the manufacture of shoe stiffenings, the combination with an endless carrier composed of a chain having attached to it a series of plates to constitute stiffening-supporting surfaces, of holding devices attached to the opposite ends of each of said plates to engage and hold the stiffening-layers in place on said plates, and devices to open the holders to enable a stiffening-layer to be applied to the supporting-surface, substantially as described.

5. In a machine for the manufacture of shoe-stiffenings, the combination with an endless carrier having stiffening-supporting surfaces, of holding devices to engage and hold the stiffening-layers in place, and devices to open the holders and effect the discharge of the cemented layers, substantially as described.

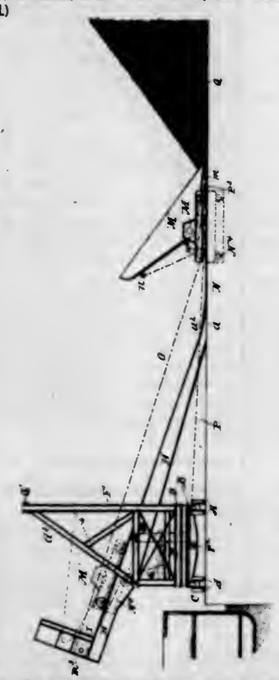
6. In a machine for the manufacture of shoe-stiffenings, the endless series of supports for the layers of stiffening material, and suitable holders to hold the same in place thereon, combined with a cement-holder, a brush, and means to actuate the brush to apply cement from one to the other end of the stiffener-layers, substantially as described.

7. In a machine for the manufacture of shoe-stiffenings, the endless series of supports for the layers of stiffening material, and suitable holders to hold the same in place thereon, combined with a brush to act on the superimposed stiffener-layers and smooth the united layers, substantially as described.

8. In a machine for the manufacture of shoe-stiffenings, the endless series of supports for the layers of stiffening material, and holders to hold the same in place thereon, combined with a cement-holder, a brush, and means to actuate the brush to apply cement from one to the other end of the stiffener-layers, and a brush to act on the superimposed stiffener-layers and smooth the united edges, substantially as described.

9. In a machine for the manufacture of shoe-stiffenings, the endless series of supports for the layers of stiffening material and holders to hold the same in place thereon, combined with a cement-holder, a brush, and means to actuate the brush to apply cement from one to the other end of the stiffener-layers, and devices to automatically supply the parts with cement, substantially as described.

568,869. PORTABLE DEVICE FOR LOADING VESSELS. JOHN MCMYLER, Cleveland, Ohio. Filed Oct. 31, 1894. Serial No. 527,571. (No model.)



Claim.—1. The combination with a movable truck, and a scoop-shaped car pivoted thereto, of a flexible line attached to the truck passing around a pulley in advance of the truck and then rearwardly to a point behind the truck for forcing the scoop into a mass of coal and means for withdrawing the scoop from the mass of coal, substantially as set forth.

2. The combination with truck and a tilting platform pivoted at a point between its ends to said truck, of a truck adapted to travel on said tilting platform, a scoop-shaped car mounted on the truck and means for forcing the scoop into a mass of coal and means for drawing the truck with the scoop thereon back onto the tilting platform.

3. In combination with a truck and a tilting platform thereon, a scoop shaped car mounted on a truck, means for forcing the scoop into a mass of coal, means for drawing the truck with the scoop thereon onto the tilting platform and means for tilting the platform.

4. The combination with a movable device having a trackway thereon and a series of tracks located side by side, the movable trackway adapted to register with any one of the series of tracks, of a truck, a scoop-shaped car pivoted thereto, a flexible line attached to the truck, passing around a pulley in advance of the truck and then rearwardly to a point behind the truck whereby the truck with the scoop thereon is forced from the movable track into a mass of coal covering any one of the series of tracks and means for withdrawing the scoop from the mass of coal, substantially as set forth.

5. In combination with a truck and a tilting platform thereon, a scoop-shaped car pivotally mounted on a truck, means for forcing the car into a mass of coal, and means for turning the car-body to a horizontal position and for drawing it onto the platform.

568,870. TUBING. MARK M. NICHOLLS, New York, N. Y. Filed Apr. 28, 1896. Serial No. 589,375. (No model.)

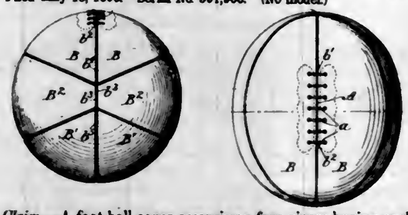


Claim.—1. A tubing comprising in its structure a layer composed of Venetian red and cotton-seed oil and a layer of glue and glycerin.

2. A tubing comprising in its structure an inner layer composed of Venetian red and cotton-seed oil, a layer of glue and glycerin surrounding said first-named layer, and a textile body-sheath, substantially as and for the purposes specified.

3. A tubing comprising in its structure an inner layer composed of Venetian red and cotton-seed oil, a coiled spring embedded therein, a textile body sheath surrounding said layer of Venetian red and cotton-seed oil, and a layer of glue and glycerin surrounding said textile body-sheath, substantially as and for the purposes specified.

568,871. FOOT-BALL. ALEXANDER NISBET, New York, N. Y., assignor to the A. G. Spalding & Bros., same place and Chicago, Ill. Filed May 18, 1896. Serial No. 591,906. (No model.)



Claim.—A foot-ball cover comprising four pieces having each a length less than the semicircumference of the ball and two truncated parts of a length to permit their truncated ends to meet in the arc of a circle passing through the poles of the ball, the said several parts or pieces being secured together and meeting in a common seam which lies in the arc of said circle passing through the poles of the ball, substantially as shown and described.

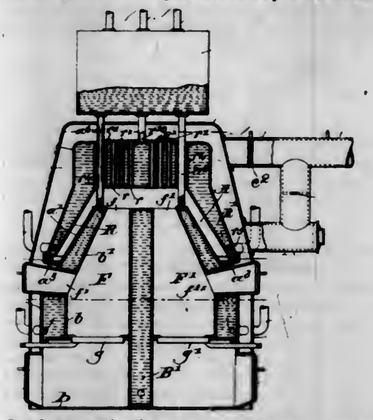
568,872. HOT-WATER HEATING APPARATUS. JOSEPH C. NORTON, Lynn, Mass. Filed July 13, 1896. Serial No. 598,974. (No model.)

Claim.—1. In an apparatus of the class described, a plurality of independent fire-pots, a continuous water-shell surrounding and separating said pots, and a separate feed-opening for each pot, extended through the water-shell, whereby any or all of the fire-pots may be used as desired, substantially as described.

2. In an apparatus of the class described, a water-shell comprising an outer wall and a plurality of inner walls, to form a plurality of independent fire-pots, the said inner walls extending between and forming the dividing water-space between the fire-pots, substantially as described.

3. In an apparatus of the class described, a water-shell having its exterior elliptical in cross-section, and forming with its inner wall a plurality of independent fire-pots separated by a water-space, a grate in each pot, a feed-opening for each pot, whereby one or all of the fire-pots may be used, and inlet and outlet openings for the water, substantially as described.

4. In an apparatus of the class described, a water-shell comprising an outer wall and a plurality of inner walls, to form a plurality of independent fire-pots, and a separate grate and feed-opening for each pot, the said inner walls extending between and forming the dividing water-space between the fire-pots, and also extending below the grates to separate the ash-pits, substantially as described.



5. In a hot-water heating apparatus, a fire-pot, a surrounding, externally-conical water-shell, a water-reservoir having flues therethrough above said fire-pot, a depending flaring base for said reservoir, a head, and connections between it, the reservoir and water-shell, substantially as described.

6. In an apparatus of the class described, a water-shell, an inclosed fire-pot, a water-reservoir, means to support it on said shell, flues extended through the reservoir, a damper therefor, a water-head, and connections between it, the shell and reservoir, substantially as described.

7. In an apparatus of the class described, a water-shell, a plurality of fire-pots therein, an exterior casing, a water-reservoir within it and having an annular, depending extension surrounding the upper part of the shell, a two-way outlet for the products of combustion, and means to regulate the passage of said products, substantially as described.

8. In an apparatus of the class described, a water-shell, a plurality of fire-pots therein, an exterior casing, a water-reservoir within it and having an annular, depending extension surrounding the upper part of the shell, a series of flues in the central portion of the reservoir, a regulator therefor, means to adjustably support the reservoir on the shell, a water-head, and connections between it, the water shell and reservoir, substantially as described.

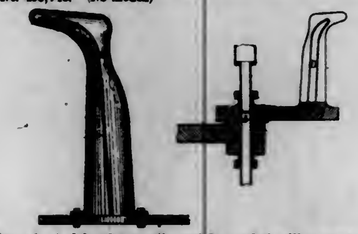
568,873. ANIMAL-POKE. WILLIAM H. PARKER, West, Tex. Filed Dec. 31, 1895. Serial No. 573,939. (No model.)



Claim.—A combined halter and poke having a frame consisting of a metal rod doubled upon itself at its center to form a chin-piece and side or cheek pieces, said chin-piece being perpendicular to the

plane of the cheek-pieces and the latter being provided with upper and lower pairs of opposite integral loops or eyes, a nose-band terminally connected to the lower loops or eyes, and a brow-band, a crown-strap, and a throat-latch terminally connected to the upper loops or eyes, substantially as specified.

568,874. DEVICE FOR DRYING TEXTILE ARTICLES. CHARLES PEASE, Hillsborough, N. H., assignor of two-thirds to Kirk D. Pierce, same place, and Sam K. Paige, Warner, N. H. Filed Jan. 5, 1894. Serial No. 495,748. (No model.)

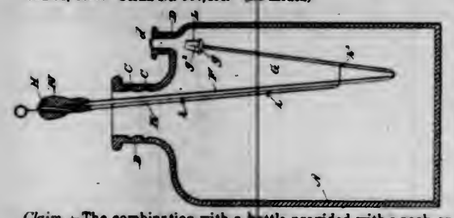


Claim.—1. A drier for textile articles and the like comprising a support, a table rotatably mounted thereon, drying-forms upon said table, a pipe through the table and the support, the table being rigidly secured to said pipe, a partition across said pipe, entrance and exit passages for the drying agent in the said forms, and ducts connecting the entrance-passage of a form with the pipe on one side of the partition and the exit-passage with the pipe on the other side of the partition; substantially as described.

2. A drier for textile articles and the like comprising a support, a table rotatably mounted thereon, drying-forms upon said table, a pipe through the table and the support, the table being rigidly secured to said pipe, a partition across said pipe between the top and bottom of the table, entrance and exit passages for the drying agent in the said forms, and channels through the table, said channels connecting the entrance-passage of a form with the pipe on one side of the partition and the exit-passage with the pipe on the other side of the partition; substantially as described.

3. A drier for textile articles and the like comprising a support, a recessed table rotatably mounted upon said support, drying-forms upon said table, entrance and exit passages for the drying agent in said forms, a pipe through the table and the support, the table being rigidly secured to said pipe, a supply-pipe G, a swivel connection between the supply-pipe and the pipe through the table and support, a partition across said latter pipe at a point between the top and bottom of the table, and channels formed in the table and connecting the pipe on one side of the partition with the entrance-passage in a form and the pipe on the other side of the partition with the exit-passage in a form; substantially as described.

568,875. BOTTLE. SEBASTIAN B PECKINPAUGH, Centralia, Wis., assignor of one-half to Theodore Asa Taylor, Grand Rapids, Wis. Filed Oct. 31, 1895. Serial No. 567,453. (No model.)



Claim.—The combination with a bottle provided with a neck or nozzle as B and a supplemental neck or nozzle, as D, the latter of which is provided with a cap or cover of glass, of a corking device comprising a handle, to which is secured a rod, as F, which is bent to form a return-arm as G, and a wire connected therewith, by means of which the spring-arm G, may be contracted or drawn toward the rod F, substantially as shown and described.

568,876. HOSE-NOZZLE. JOHN W. REGAN, Boston, Mass. Filed Apr. 25, 1896. Serial No. 589,017. (No model.)

Claim.—1. In a hose-nozzle a pipe having attached to its end an ejector having one or more slits combined with a rotating adjustable cap mounted on said ejector and having transverse slits or notches adapted to be brought in or out of alinement with the ejector-slits substantially as and for the purpose set forth.

2. In a hose-nozzle a pipe having attached to its end an ejector having one or more slits combined with a rotary adjustable cap mounted on said ejector and having transverse slits or notches adapted to be brought in or out of alinement with said ejector-slits, and having one or more slits or notches for throwing a sheet or sheets of water to one side of the ejector substantially as and for the purpose set forth.



3. In a hose-nozzle a pipe having attached to its end a slitted ejector combined with a laterally or radially slitted adjustable cap and a suitable locking or holding device for holding the parts in their proper adjusted positions substantially as and for the purpose set forth.

568,877. NITRO COMPOUND. WALTER F. REID, Addlestone, and EDWARD J. V. EARLE, London, England. Filed Nov. 30, 1895. Serial No. 570,687. (No specimens.)

Claim.—1. The herein-described process which consists in nitrating linolein (or ricinolein), incorporating it with a solid and finely-pulverized carbonate of an alkali or alkaline earth, and then removing the excess of carbonate by subsidence.

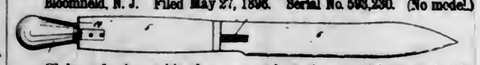
2. The herein-described process of preparing nitro compounds which consists in subjecting linolein (or ricinolein) to the action of nitric acid, then incorporating with the nitrated linolein (or ricinolein) a solid and finely-pulverized carbonate of an alkali or alkaline earth, then heating the compound and removing the excess of carbonate.

3. The process herein described, which consists in nitrating linolein (or ricinolein) by subjecting it to the action of nitric acid, incorporating with the nitrated linolein (or ricinolein) a solid and finely-pulverized carbonate of an alkali, or alkaline earth, removing the excess of carbonate and then mixing the nitrated substance with nitrocellulose.

4. The process herein described, which consists in nitrating linolein (or ricinolein) by subjecting it to the action of nitric acid, incorporating with the nitrated linolein (or ricinolein) a solid and finely-pulverized carbonate of an alkali, or alkaline earth, mixing the nitrated linolein (or ricinolein) with nitrocellulose, and finally adding a solvent which dissolves both the nitrated substance and the nitrocellulose.

5. The herein-described compound consisting of nitrocellulose and a nitro compound resulting from the nitration of linolein (or ricinolein).

568,878. COMBINED CARVER AND STEEL. MARY SAMMIS, Bloomfield, N. J. Filed May 27, 1896. Serial No. 593,230. (No model.)



Claim.—1. A combined carver and steel, comprising a suitable handle having a central longitudinal bore or passage formed therein, and a blade secured thereto, at one end thereof, and a steel which is adapted to be inserted through said central longitudinal bore or passage, said steel being provided with a handle and with an annular groove adjacent to said handle, and the handle of the blade being provided with springs which are adapted to enter said groove, the end of the blade adjacent to the handle being provided with a longitudinal slot into which the end of the steel projects, substantially as shown and described.

2. A combined steel and carver comprising a suitable handle, having a carving-blade secured thereto, said handle being provided with a central longitudinal passage or opening, and said blade with a slot adjacent thereto, and a steel provided with a handle, said steel being adapted to be passed through said opening or passage in the handle of the blade, and means for detachably connecting it with said handle, substantially as shown and described.

568,879. RAILROAD AND METHOD OF LEVELING SAME. MAURICE SHEAREN, Decatur, Mich. Filed Dec. 24, 1895. Serial No. 573,192. (No model.)



Claim.—The method of leveling or surfacing a railroad consisting in supporting the rails on ties which are broader at the top than at the bottom with sloping sides elevating the tie and pouring dry sand between the ties and the road-bed when the ties are elevated as specified.

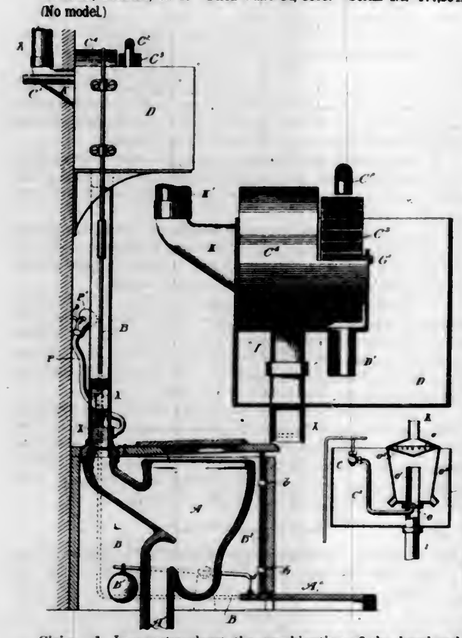
568,880. HAME ATTACHMENT. GEORGE SIEGENTHALER, Fremont, Ohio. Filed Feb. 28, 1896. Serial No. 581,188. (No model.)



Claim.—1. In a hame attachment the combination of the hame having a portion of its draft-sustaining surface of uniform size, substantially as described, with a clip B consisting of the bands B', B', extending entirely around the hame, and the link or staple B^3, connecting said bands and cast integral therewith, the screws b', b', and the dished or concaved points or binding ends thereof, all constructed and arranged substantially in the manner and for the purpose set forth.

2. In a hame attachment the combination of a hame having a portion of its draft-sustaining surface of uniform size, substantially as described, and a metallic strip secured to one edge of said hame, with a clip B consisting of the bands B', B', extending entirely around said hame, and the link or staple B^3 connecting said bands and cast integral therewith, screws b', b', cubical heads thereon, and the dished or concaved points or binding ends of the said screws, all constructed and arranged substantially as and for the purpose set forth.

568,881. WATER-CLOSET. WILLIAM SIMMONDS and CHARLES LINEGAR, Yonkers, N. Y. Filed June 14, 1893. Serial No. 477,531. (No model.)



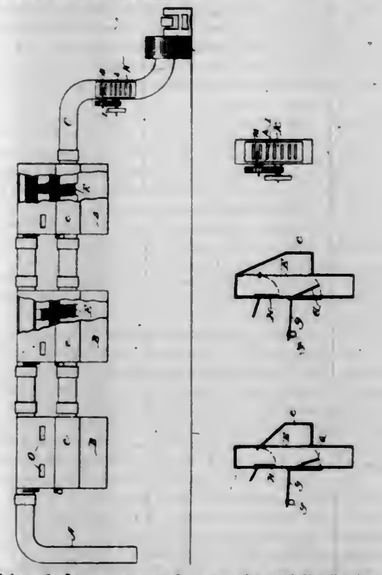
Claim.—1. In a water-closet, the combination of the bowl and tank, a flushing-passage connecting them, a water-wheel so arranged as to be driven by water admitted to the tank, an exhaust-fan driven by the wheel and connected by a passage on one side with the bowl and by a passage on the other side with a ventilating pipe or outlet, a normally-closed valve for admitting water to the wheel and tank, an operating connection between the valve and seat of the closet whereby the valve is opened when the seat is occupied, a normally-unseated overflow-pipe arranged within the tank and that automatically closes the flushing-passage leading from the tank to the bowl when said valve is opened and water is admitted to the wheel and tank, a valve closing the mouth of the overflow-pipe and its controlling-float, substantially as set forth.

2. The combination of the tank, the bowl, the water-wheel, the fan, the connecting-passages, the water-inlet valve, the operating rod or device for opening and closing the valve, and the overflow devices controlled by said rod and consisting of a pipe normally unseated from the flushing-outlet of the tank but seated to close the same by the action of said rod and having an overflow-valve at its upper end controlled by a float, the combination being and operating substantially as set forth.

3. The combination of the tank, the bowl, the water-wheel, the fan, the connecting-passages, the water-inlet valve, the vertically-adjustable overflow-pipe having the float-valve, the rod or device for controlling the valve and overflow devices, and the hinged platform by which the rod is operated, the combination being and operating substantially as set forth.

4. The combination of the tank, the bowl, a connecting-passage between the bowl and the tank, an inlet-valve, an operating-rod connected therewith, a movable overflow-pipe, connections between the overflow-pipe and the valve-operating rod, and ventilating devices connected with the bowl and operated by water admitted to the tank.

568,882. PNEUMATIC SEED-COTTON CONVEYER AND DISTRIBUTER. EMMETT L. SMITH, Birmingham, Ala. Filed May 15, 1896. Serial No. 591,676. (No model.)



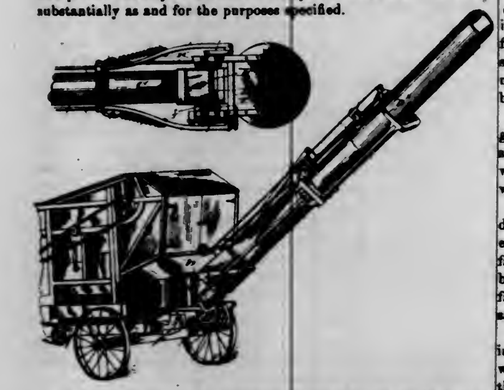
Claim.—1. In an apparatus for conveying and distributing seed-cotton the combination with the conduit or conveyer proper, a series of distributing-chambers communicating with said conduit at different points in its length and a suction-pipe communication with said distributing chambers with means for creating an air-draft as described, of screens interposed between the distributing-chambers and suction-pipe, the screen in the distributing-chamber farthest from the source of cotton supply being of greater area than the screen in the distributing-chamber nearest the source of cotton supply; substantially as described.

2. In an apparatus for conveying and distributing seed-cotton, the combination with the conduit or conveyer proper, a series of distributing-chambers communicating with said conduit at different points in its length and a suction-pipe communicating with said distributing-chambers with means for creating an air-draft as described, of screens interposed between the distributing-chambers and suction-pipe, the screen nearest the source of cotton supply extending below the conduit or conveyer, and the screen in the distributing-chamber farthest from the source of cotton supply being extended up into the conduit or conveyer; substantially as described.

568,883. PNEUMATIC STRAW-STACKER. JOHN S. SMITH, La Fontaine, Ind., assignor to the Indiana Manufacturing Company, Indianapolis, Ind. Filed Feb. 23, 1895. Serial No. 539,234. (No model.)

Claim.—1. The combination, with the hinged trunk or chute of a pneumatic straw-stacker, of a rock-shaft, arms rigidly connected to said rock-shaft, connections extending from said arms to points on

said trunk, and pivoted at the respective ends, and a segmental rack and pinion whereby said rock-shaft may be rocked back and forth, substantially as and for the purposes specified.



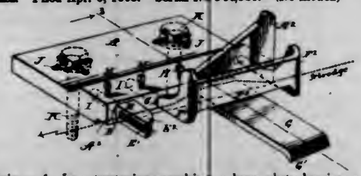
2. The combination of a threshing-machine having the discharge-orifice for the straw at the lower side on the rear end; a pneumatic stacker connected to said threshing-machine at said point, the trunk whereof is composed of two sections hinged together, and mechanism for raising and lowering the same, the lower trunk-section being also hinged to the threshing-machine structure and of sufficient length to extend to above its top, and the second trunk-section being hinged to the lower section and adapted to be folded back over the top of the threshing-machine, when the lower section is in elevated position for storage or transportation, all substantially as shown and described.

3. The combination, in a pneumatic stacker, of a lower hinged trunk-section, a second trunk-section hinged to said lower section, means of operating said trunk as a whole on the hinge of the lower trunk-section, an arm on the second trunk-section, and a connection extending from the framework to said arm, whereby, when the trunk is raised as a whole to a certain point, said section will be automatically pulled upon and folded over by the operation of said connection, substantially as set forth.

4. The combination, in a pneumatic stacker, of the trunk or chute made up of sections hinged together and to the threshing-machine structure, means of elevating and depressing said trunk, a connection extending from the frame to an arm on the upper hinged trunk-section, whereby said upper trunk-section is folded over as the trunk reaches a certain elevation, and springs operating reversely to said connection which aid in unfolding the trunk-section, as it reaches the predetermined point in lowering the trunk, substantially as set forth.

5. The combination, in a pneumatic stacker, of a lower structure, a trunk or chute hinged thereto, a shaft extending transversely across under said trunk and forming a portion of the means whereby it is elevated and depressed, and a coiled spring surrounding said shaft and connected thereto at one end and to the framework at the other end, whereby a portion of the weight of the trunk is carried and the power required to elevate the same reduced, substantially as set forth.

568,884. **WEB-SELVAGE GUIDE.** EDGAR STEVENS, Lawrence, Mass. Filed Apr. 3, 1895. Serial No. 544,329. (No model.)



Claim.—1. In a tentering-machine, a base-plate having a thickened taking edge provided in the under side with a longitudinal depression A^1, and also provided with a series of horizontal recesses, in combination with tentering-chain pins I, a series of guide-pieces received and supported in said recesses and coacting to maintain the position of the fabric as it is drawn through the machine, the vertical triangular-shaped guard A^2 forming an integral part of each taking edge adapted to restrain overriding through "fullness" of the fabric edges as they are laterally drawn against said edge, the fourway apertures J for proper adjustment to said tentering-machine, and the means substantially as illustrated for attaching said bed-plate thereto, all for the purpose and in the manner specified.

2. In a tentering-machine the combination with bed-plate of the double guide-bar having a connecting-web adapted to restrain the fullness of the cloth from encroachment and overriding of the selvages, and provided with supporting-shanks whereby it may be secured to the bed-plate, the bifurcated guide-piece, each arm of which is provided with rounded corners in the direction from which the fabric enters adapted to prevent a vertical undulatory action of the selvage while being directed upon the chain-pins of the tentering-machine, and also provided with a shank for its attachment to the bed plate substantially as specified.

3. The bed plate A, provided with a vertical guide A^3, the double guide-bar, the bifurcated guide-piece E and the means for sustaining said double, and bifurcated guides to said bed, in combination therewith the guide-piece G and the double guide bar having the coacting web F^3 substantially as and for the purpose set forth.

4. The combination of the bed-plate and guides, with the additional supporting guide-piece G downturned at G' on its outward edge, which extends far enough to prevent the sagging of the wet fabric from withdrawing it from juxtaposition with the edge of said bed-plate, and the raised web F^3 serving to prevent the fullness of the fabric from riding up and crowding the selvages closely against the said edge substantially as set forth.

5. The bed-plate A having a raised vertical guard A^3 at its working edge in combination with a double guide-bar provided with a web F which is parallel to said guides and arranged for holding down the fabric, a support over which the fabric passes below the said web and guides substantially as set forth.

6. In combination with a bed-plate, a series of guides removably socketed in the said plate, one of said guides being bifurcated to allow the passage of the fabric through it, another guide being below the fabric for supporting the same as it travels, and other guides of the series being above the said fabric on each side of the said supporting-guide substantially as set forth.

568,885. **CAN-SEAMING MECHANISM.** JOHN A. STEWARD, Clarendon, Vt. Filed Dec. 3, 1895. Serial No. 570,940. (No model.)



Claim.—1. A can-seaming disk having a peripheral recess and a projection extending beyond the same and beyond the outer edge of the disk beneath said recess; substantially as described.

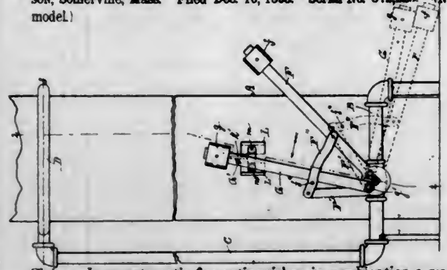
2. A cam-seaming disk having a peripheral recess and a projection extending beyond the same and beyond the outer edge of the disk, beneath said recess, and provided with an inclined face; substantially as described.

3. A can-seaming disk having a peripheral recess and a projection beneath the same, said projection having an inclined upper face and extended beyond the edge of the disk between the recess and the lower face of the said disk; substantially as described.

4. The combination with a can-seaming disk having a peripheral recess and a projection beneath the same extended beyond the outer edge of the disk beneath the recess and provided with an inclined upper face, and vertical walls beneath said projection of a roll having a flange and an inwardly and downwardly extending inclined wall beneath said flange, substantially as specified.

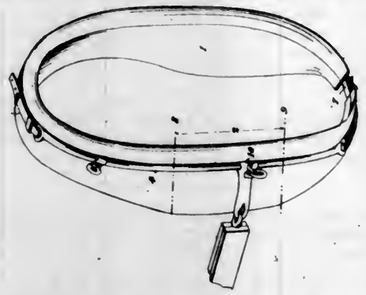
5. The combination with a can-seaming disk having a peripheral recess and a projection beneath the same extended beyond the outer edge of the disk beneath the recess and provided with an inclined upper face, of a roll having a flange and an inwardly and downwardly extending inclined wall beneath said flange and a peripheral recess beneath said inclined wall, substantially as specified.

568,886. **AUTOMATIC FIRE-EXTINGUISHER.** DANIEL C. STILLSON, Somerville, Mass. Filed Dec. 16, 1895. Serial No. 572,225. (No model.)



Claim.—In an automatic fire-extinguisher, in combination a water-supply pipe, a valve or cut-off thereon and a sprinkler device, a weighted valve-lever on said valve and a pivoted hammer-lever, a wire with fusible connections, a pivoted pawl connected to said wire and a pivoted weighted releasing-lever held by said pawl-lever and means for holding the hammer-lever and valve-lever in position and the valve closed substantially as and for the purpose set forth.

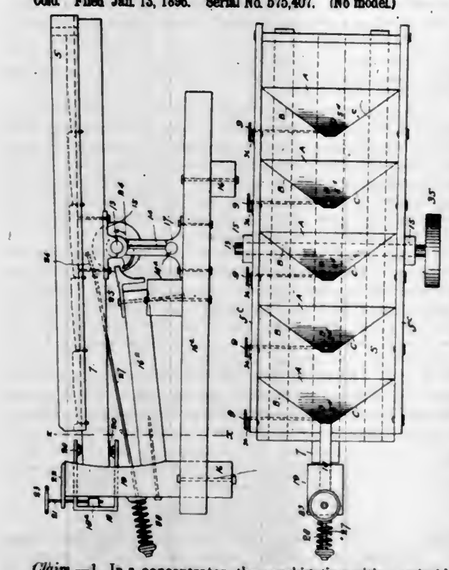
568,887. **SELF-ADJUSTING HORSE-COLLAR.** JAY L. TORREY, Embar, Wyo. Filed May 14, 1894. Serial No. 511,092. (No model.)



Claim.—1. A horse-collar made in one section with the opening at the bottom, the sides of which are flexibly united at the top and unsecured at the bottom, each side being substantially of a uniform size for a considerable portion of its length above and below the ordinary draft-point, and each of the lower ends being constructed of pliable material and closed, whereby the size of the collar may be varied, both in length and width, and the draft-point correspondingly changed, all substantially as described and for the purpose set forth.

2. A horse-collar made in one section with the opening at the bottom, the sides of which are flexibly united at the top and unsecured at the bottom, each side being substantially of a uniform size for a considerable portion of its length above and below the ordinary draft-point, and each of the lower ends being constructed of pliable material and closed, whereby the size of the collar may be varied, both in length and width, in combination with a pair of hames with adjustable fastenings at the top and the bottom, whereby the collar may be adjusted, both in length and width, and the draft-point raised or lowered, by adjusting the hame-fastenings, all substantially as described and for the purpose set forth.

568,888. **ORE-CONCENTRATOR.** WILLIAM E. WILD, Denver, Colo. Filed Jan. 13, 1896. Serial No. 575,407. (No model.)



Claim.—1. In a concentrator, the combination with a suitable stationary frame, of the oscillatory yoke mounted thereon, the shaft journaled in the yoke, a cam fast on the shaft, a stationary tappet which the said cam engages, the concentrating-table movably mounted on the shaft, a spring-held rod connecting the table with the stationary frame, and a suitable bumper lying in the path of the table, substantially as described.

2. In a concentrating-table, the combination with a suitable stationary frame, of an oscillatory yoke trunnioned thereon, a rotatable shaft journaled on the yoke and longitudinally movable thereon, a spiral cam fast on the shaft and engaging a groove formed in the yoke, means attached to the shaft and engaging the framework of the table for imparting a lateral reciprocation to the table in conjunction with the spiral cam, the concentrating-table movably mounted on the shaft, a stationary tappet, a cam 24 fast on the shaft and adapted to engage the tappet as the shaft rotates, a spring-held rod connecting the table with the stationary frame, and a bumper lying in the path of the table, substantially as described.

3. In a concentrator, the combination with a stationary frame, of the oscillatory yoke trunnioned thereon, the rotatable shaft journaled in the yoke and movable endwise therein, a cam attached to the shaft, a stationary tappet which said cam engages, the table movably mounted on the shaft, a spring-held rod connecting the table with the stationary frame, and means connected with the shaft and engaging the yoke for imparting an endwise movement to the shaft, and means attached to the shaft and engaging the table for imparting a lateral reciprocation to the latter, substantially as described.

4. In a concentrator, the combination with a suitable stationary frame, of the oscillating yoke mounted thereon, the shaft journaled in the yoke, and movable endwise thereon, the table movably mounted on the shaft, and means attached to the shaft and engaging the table for imparting a lateral reciprocation to the latter, substantially as described.

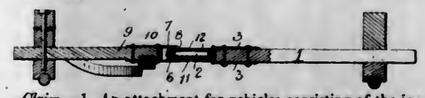
5. In a concentrator, the combination with a suitable stationary frame, of the oscillatory yoke mounted thereon, the shaft journaled in the yoke and movable endwise thereon, the table movably mounted on the shaft which engages its central portion transversely, the table having one or more pockets, each having the general outline of an isoceles triangle, said pocket being deepest at the vertex, which is turned toward the tail of the table, and suitable means attached to the shaft for simultaneously imparting to the table a longitudinal oscillation, and a transverse reciprocation, substantially as described.

6. In a concentrator, the combination with the stationary frame, of the oscillatory yoke trunnioned on the frame, the shaft journaled in the yoke, the table movably mounted on the shaft, a stationary tappet, a cam made fast on the shaft and engaging the tappet, a spring-held rod connecting the table with the frame, a bumper lying in the path of the table, and means attached to the frame for adjusting the inclination of the table, substantially as described.

7. In a concentrator, the combination with a suitable frame, of the oscillatory yoke mounted thereon, a shaft journaled in the yoke, the table mounted on the shaft, and means attached to the shaft and engaging the frame for actuating the yoke and the table, substantially as described.

8. In a concentrator, the combination with a suitable stationary frame, of the oscillatory yoke mounted on the frame, the shaft journaled in the yoke and movable endwise thereon, a table movably mounted on the shaft, means attached to the shaft and engaging the yoke for imparting a transverse reciprocation to the table, and means attached to the shaft and engaging the frame for imparting a longitudinal oscillation to the table and yoke, substantially as described.

568,889. **VEHICLE RUNNING-GEAR.** ISAAC M. ALLEN and JOHN M. MILLER, Harrisburg, Ill. Filed June 16, 1896. Serial No. 595,775. (No model.)



Claim.—1. An attachment for vehicles consisting of the journal connected fixedly to one of the ends of the coupling-sections, and yieldingly to the opposite end of the other section of said coupling and carrying thereon a rotatable sleeve substantially as described.

2. The combination with the running-gears of a vehicle, of the herein described antifrictional device consisting of the journal; a collar adapted to receive said journal and admit of the rotation thereof, and a sleeve loosely mounted upon said journal, substantially as described and for the purpose named.

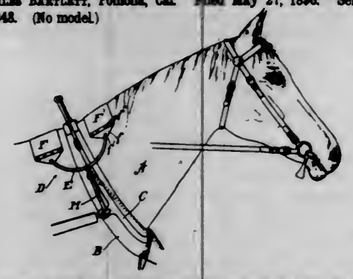
3. The herein-described antifrictional device consisting of the two sections of the coupling-pole, means for connecting said sections in such a manner that each may rotate independently of the other, and a sleeve mounted upon said connecting device, and adapted to rotate thereon, substantially as described and for the purpose named.

4. An attachment for coupling-poles consisting of the journal; means for connecting said journal to the other section of the coupling-

pole; a sleeve mounted upon the journal; in combination with an antifrictional roller attached to said collar, and held in contact with the fifth-wheel of the vehicle, substantially as described and for the purpose named.

568,890. COLLAR-PAD OR BRIDGE-SUPPORT FOR HARNESS.

CHARLES BARTLETT, Pomona, Cal. Filed May 27, 1896. Serial No. 593,243. (No model.)



Claim.—1. A bridge-support comprising two side bars: two pads attached to and connecting the bars, and suitable means for attaching the bars to the part to be supported.

2. A bridge-support comprising two side bars: two flexible pads connecting the ends of the side bars, and means secured to the side bars intermediate the ends thereof, and adapted to be attached to the part to be supported.

3. A bridge-support comprising two side bars: pads arranged between and connecting the bars with each other: and independent means for connecting each bar with the part to be supported.

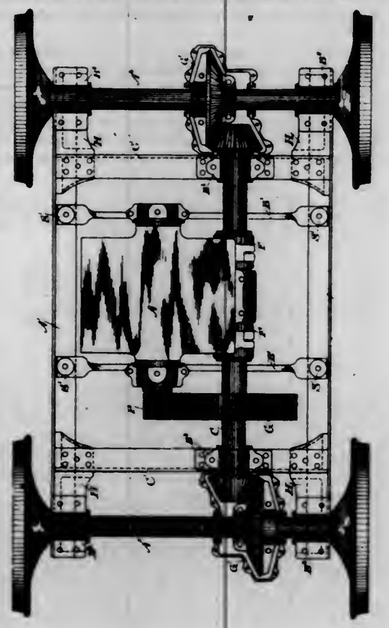
4. A bridge-support comprising two curved side bars: pads arranged between and attached to the ends of the bars: straps, one secured to each bar near its mid-length and adapted to be attached to the part to be supported.

5. In combination, the two side bars: triangular metal spreader-plates, one pivoted to each end of each bar: suitable flexible pads secured to the spreader-plates: and suitable means for independently securing each bar to the part to be supported.

6. In combination, a hame: two pads, one arranged in front and the other at the rear of the hame: two side bars connecting the pads with each other, and each attached by suitable means to its respective member of the hames.

568,891. ELECTRIC-MOTOR TRUCK.

NORMAN C. BASSETT, Lynn, Mass., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Mar. 20, 1891. Serial No. 385,747. (No model.)



Claim.—1. The combination in an electric-motor truck with longitudinal side-bars forming part of a truck-frame, of a longitudinal counter-shaft geared to the car-axles and mounted in bearings in fixed relation thereto, and a motor elastically supported upon the side-bars, having its axis parallel with the counter-shaft and having bearings on said counter-shaft, whereby the armature-gear is maintained in mesh with that on the shaft.

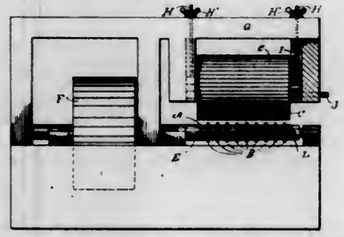
2. The combination of the longitudinal side-bars, forming part of the truck-frame, with the cross-bars affording rigid bearings for a counter-shaft geared to both axles, and the motor-carrying bars furnishing an elastic support for the propelling-motor.

3. An electric-motor truck having elastically-supported motor-carrying bars, and an electric motor pivoted thereto in substantially the line of the center of gravity of the machine and geared to the driven axle or axles, as described.

4. The combination with a truck-frame, of a longitudinally-arranged shaft geared to both axles by bevel-wheels, and an electric motor pivotally supported on transverse elastically-supported bars and geared to the shaft, substantially as described.

568,892. MACHINE FOR GROOVING BOOT OR SHOE SOLES.

GEORGE BRYANT, San Francisco, Cal., assignor to Alice Elizabeth Bryant, same place. Filed May 20, 1896. Serial No. 592,282. (No model.)



Claim.—1. An apparatus for grooving leather, consisting of a gang of circular saws or gutters, an arbor upon which saws are fixed, a mechanism by which said arbor is rotated, a roller, the journal-boxes of which are supported in line above the saw-arbor and means whereby the rotation of the roller is regulated to retard the movement of the leather and allow the cutters to act upon it.

2. A device for cutting grooves upon the surface of leather, consisting of a gang of saws adjustably attached to an arbor, and a mechanism by which the arbor is rotated, a corrugated roller, the journal-boxes of which are vertically movable in guides above the saw-arbor, vertical suspending-rods extending upwardly from the journal-boxes, with screw-threaded upper ends and nuts turnable thereon, whereby the suspending-rods may be lengthened or shortened, springs acting to force the boxes downward when the nuts are turned to allow the rods to be lengthened and means for retarding the rotation of the roller and causing the material to move at a rate of speed less rapid than that of the cutters.

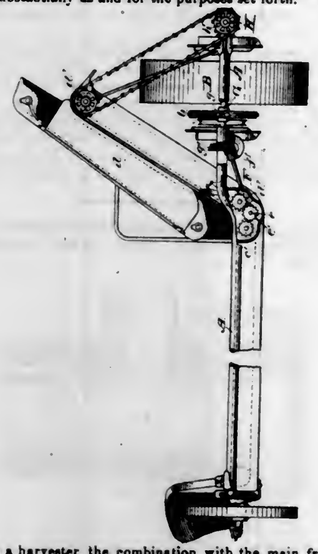
3. An apparatus for grooving boot and shoe soles consisting of a gang of saws adjustably fixed upon a saw-arbor, mechanism by which the saws and arbor are rotated, a corrugated roller, the shaft of which is journaled in vertically-adjustable boxes above the cutters, whereby the material to be grooved is passed between the roller and the cutters, and tension-screws adapted to press against the rollers so as to retard its rotation and thus cause the material to move at a rate of speed less rapid than that of the cutters.

4. A device for grooving leather for boot and shoe soles consisting of a saw-arbor having a feather, saws having central holes fitting the arbor and keyways adapted to slip over the feather whereby the saws are caused to rotate with the arbor, collars having corresponding holes and keyways fitting the arbor between the saws whereby the distance between the latter is regulated and maintained, a nut screwing upon the outer end of the arbor to lock the saws and collars in place, a driving-shaft journaled in line with the saw-arbor, the meeting ends of the two having a locking tongue and slot whereby the arbor is removably connected with the driving-shaft, a vertically-adjustable horizontally-rotatable roller journaled above the saw-arbor and tension screws adapted to press against the end of the roller to retard its rotation, and the movement of the material to be grooved between it and the saws or cutters.

568,893. DRIVING CONNECTION FOR HARVESTERS.

HENRY F. CRANDALL and EDWARD J. BIRKETT, Milwaukee, Wis., assignors to the Milwaukee Harvester Company, same place. Filed Sept. 30, 1895. Serial No. 564,137. (No model.)

Claim.—1. In a harvester, the combination with the main frame, main wheel and platform conveyer, of a main driving-shaft behind and parallel with the axle of the main wheel, with which it has suitable driving connection, an idler meshing with a gear on the inner-roller shaft of said conveyer, and a shaft connected with the driving and idler shafts by bevel-gears all located in front of the rear sill of the frame, substantially as and for the purposes set forth.



2. In a harvester, the combination with the main frame, main wheel and conveyer and lower elevator belts, of a main driving-shaft behind and parallel with the axle of the main wheel with which it has a suitable driving connection, an idler meshing with a gear on the lower-roller shaft of said elevator-belt, and a shaft connected with the driving and idler shafts by bevel-gears, all located in front of the rear sill of the main frame, substantially as and for the purposes set forth.

3. In a harvester, the combination with the main wheel and conveyer and lower elevator belts, of a main driving-shaft behind and parallel with the axle of the main wheel with which it has a suitable driving connection, a spur-gear idler meshing on opposite sides with gears on the shafts of the inner conveyer-roller and of the lower roller of the lower elevator-belt respectively, and a shaft arranged lengthwise of the machine and connected with the main driving and idler shafts by gears, substantially as and for the purposes set forth.

4. In a harvester, the combination with the main wheel and conveyer and elevator belts, of a main driving-shaft located behind and parallel with the axle of the main wheel with which it is connected, and provided at one end with an internal gear, a shaft located between and parallel with the lower elevator and inner conveyer rollers and provided with an idler which meshes with gears on the shafts of said rollers, and a shaft arranged lengthwise of the machine and connected at one end with said idler-shaft by bevel-gears and provided at the other end with a gear or pinion which meshes with the internal gear on the driving-shaft, substantially as and for the purposes set forth.

5. In a harvester, the combination with the main frame, seat-support, main wheel and conveyer and lower elevator belts, of a driving-shaft arranged lengthwise of the machine in front of the rear sill of said frame and connected by a train of gears with the inner conveyer and lower elevator rollers, and a gear-case containing said gears and serving to fasten said seat-support to the rear sill of said frame, substantially as and for the purposes set forth.

568,894. HUB-ATTACHING DEVICE.

STILLMAN DAY, Leominster, Mass., assignor to the F. A. Whitney Carriage Company, same place. Filed Jan. 13, 1896. Serial No. 575,259. (No model.)



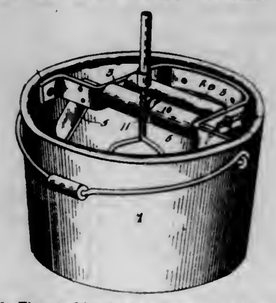
Claim.—1. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a rigid bar permanently secured to the axle, notched at its outer end to snugly fit said lip and thereby constitute an unyielding catch having a retaining-wall on one side and an opposed stop-surface on the other side firmly holding the hub against longitudinal movement in either direction, said bar being rigidly held at its inner end against longitudinal movement, and a spring independent of said bar normally maintaining the same in yielding engagement with said lip, substantially as described.

2. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a socket-piece fixed on and projecting laterally from the axle, a rigid bar, notched at its outer end to snugly fit said lip and thereby constitute an unyielding catch having a retaining-wall on one side and an opposed stop-surface on the other side, firmly holding the hub against longitudinal movement in either direction, said bar being rigidly held at its inner end by said shoulder against longitudinal movement, and having a shank held by and operating in said socket-piece, and a spring independent of said bar normally holding the same in engagement with said lip, substantially as described.

3. In a hub-attaching device, the combination with an annular inturned lip on the hub, of a socket-piece fixed on the axle, an annular dust-guard secured to the said socket-piece and surrounding the axle closely adjacent said hub, a rigid bar, having a notch at its outer end to engage said lip, and a radially-projecting shank at its inner end held by and operating in said socket-piece, said dust-guard being properly cut away to permit said bar to operate, and a spring normally holding said bar in engagement with said lip, substantially as described.

568,895. MOP-WRINGER.

HENRY A. DECHENNE, Woburn, Ill. Filed June 27, 1896. Serial No. 597,213. (No model.)

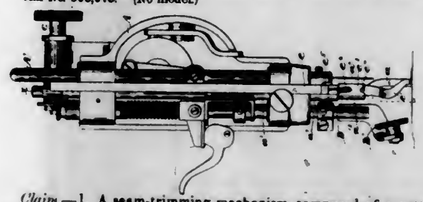


Claim.—1. The combination in a mop-wringer, of parallel rollers, one of said rollers being formed in two sections independently journaled and having their adjacent ends spaced apart, substantially as and for the purpose described.

2. The combination in a mop-wringer, of a horizontal U-shaped frame arranged in the upper portion of a pail and having its terminal portions bent to form attaching-ears by which said frame is secured to the pail, and parallel rollers journaled in said frame, one of said rollers being formed in two sections independently journaled, and having their adjacent ends spaced apart, substantially as and for the purpose described.

568,896. SEAM-TRIMMING MECHANISM.

GEORGE H. DIMOND and WILBUR F. DIAL, Bridgeport, Conn., assignors to The Wheeler & Wilson Manufacturing Company, same place. Filed July 13, 1896. Serial No. 598,973. (No model.)

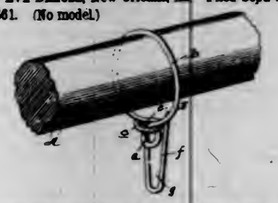


Claim.—1. A seam-trimming mechanism, composed of a cutter-block, a reciprocating bar having an attached knife, a second bar having an attached independent yielding holding device cooperating with the knife, and means connected with and for reciprocating both of said bars in the proper time and order, to operate, substantially as described.

2. A knife-bar, an attached knife, a second bar arranged parallel to the same, a holding device mounted loosely on said second bar, a spring interposed between said holding device and said bar, a rotating shaft, and a cam thereon, combined with a lever connected directly with both said bars whereby they are operated, substantially as described.

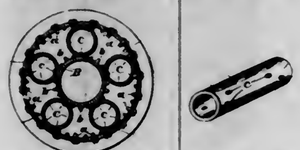
3. In a seam-trimming mechanism, a knife-bar, an adjustable knife-block attached thereto and a knife mounted on said block, combined with a second bar having an attached independent yielding holding device cooperating with said knife, means connected with and for reciprocating both of said bars in the proper time and order, a needle-hole plate and a cutter-block to operate, substantially as described.

568,897. RING FOR CURTAIN, MOSQUITO-BAR, AND OTHER POLES. EVA DRAUBE, New Orleans, La. Filed Sept. 12, 1895. Serial No. 562,861. (No model.)



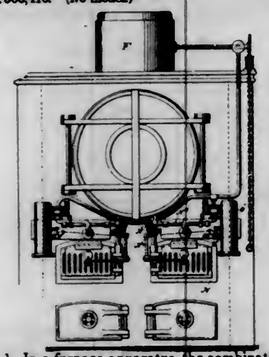
Claim.—The herein-described device made from a single piece of wire and consisting essentially of the eye *a*, at one end of the piece of wire, the comparatively large ring *b*, disposed at right angles to the eye *a*, the portion *c*, at one end of the ring *b*, bent around the portion of wire between the eye *a*, and the ring *b*, and terminating in the forwardly-extending portion *d*, at the side of the eye *a*, and the depending hook *g*, forming a continuation of the portion *d*, and extending at right angles to the ring *b*, and having its free end pointed, all as and for the purpose set forth.

568,898. ROLLER-BEARING FOR SHAFTING. LEE O. GILLILAND, Chicago, Ill., assignor of five-ninths to Cyrenius A. David and William S. Sharpneck, same place. Filed Dec. 23, 1895. Serial No. 573,029. (No model.)



Claim.—In a roller-bearing the combination, of a box, journal, and rollers having cylindrical bearing-surfaces and a series of projections and depressions placed in separate rows and arranged upon a spiral or twist, said several projections and depressions being in coincident radial position upon the several bearing-surfaces, as specified.

568,899. FURNACE APPARATUS. CHARLES A. GRAS, New York, N. Y., assignor to Francis Deimel, same place. Filed Feb. 24, 1896. Serial No. 580,410. (No model.)



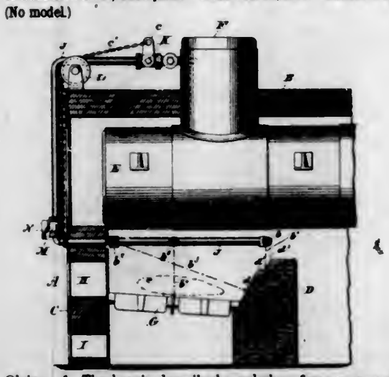
Claim.—1. In a furnace apparatus, the combination of a slotted furnace-door combined with door-operating means, a slotted slide carried upon the furnace door, a piston provided with a rack, a pivoted toothed arc cooperating with the rack, and a connection between the arc and the slotted slide.

2. In a furnace apparatus, the combination of a slotted furnace-door combined with door-operating means, a slotted slide carried upon the furnace-door, a piston provided with a rack, a pivoted toothed arc cooperating with the rack, and a flexible connection intervening between the arc and the slotted slide, substantially as described.

3. A swinging slotted furnace-door, a vertical shaft connected thereto, a horizontal shaft geared to the vertical shaft, the said two shafts comprising the furnace-door opening mechanism, a piston provided with a toothed rack, a pivoted toothed arc meshing with the rack, a slotted slide carried upon the furnace-door, and a connection between the slide and the arc comprising in its structure a lost-motion device such as the sleeves N^{9} N^{14} and their lugs, substantially as described.

4. A horizontally-swinging vertically-slotted furnace-door combined with operating mechanism therefor, a steam-supply over the furnace-door having a valve therein, the said valve being rigidly connected to the said furnace-door-operating mechanism, a piston carrying a rack, a toothed arc meshing with the said rack, a slotted slide carried upon the furnace-door, and a connection between the arc and the slide whereby the slotted slide will be slowly moved to close the slots in the furnace-door when the door has been closed.

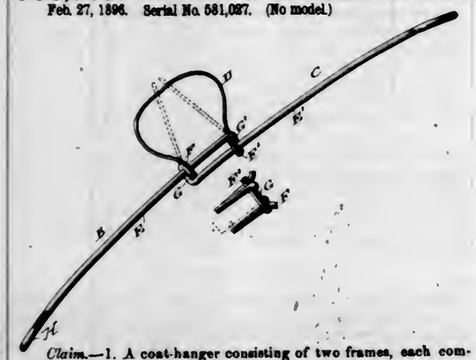
568,900. FURNACE. CHARLES A. GRAS, New York, N. Y., assignor to Francis Deimel, same place. Filed Feb. 24, 1896. Serial No. 580,411. (No model.)



Claim.—1. The herein-described smokeless furnace comprising front, side and top walls and a stepped fire-bridge D, of a grate, an inclined steam jet or jets traversing the space above the grate and impinging against the face of the fire-bridge, a steam jet or jets originating above and impinging upon the stepped portion of the fire-bridge, combined with draft-producing means.

2. The combination in a furnace, of a grate, a back wall or fire-bridge D having an inclined stepped face combined with steam-jets as b^{3} located above and impinging against an inclined face of the back wall, and a downwardly-projected steam jet or jets b' located above and impinging upon the stepped portion of the back wall, substantially as specified.

568,901. COAT-HANGER. GARRETT L. GRIER, Milford, Del. Filed Feb. 27, 1896. Serial No. 581,027. (No model.)



Claim.—1. A coat-hanger consisting of two frames, each composed of a single piece of material, bent so as to form side members with diverging outer ends, and with a cross bar at its inner end with eyes through which the side members of the other frame are freely received, and means connecting the opposite cross-bars of the sections for suspending the hanger said parts being combined substantially as described.

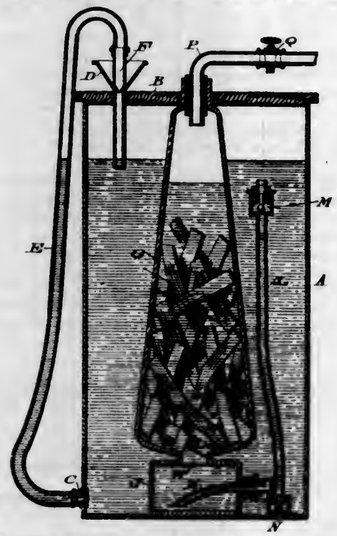
2. A coat-hanger consisting of two sections, each section being composed of side pieces, having eyes at their inner ends, with connecting cross-bars, the side pieces of each section freely passing through the eyes of the other section, and a strap attached at its ends to said cross-bars, said parts being combined substantially as described.

3. A coat-hanger, consisting of two frames, each composed of a single piece of material bent so as to form side members, a cross-bar and eyes, through which latter the side members of the other frame are freely received, and a strap attached at its ends to the cross-bars, said side members diverging from their centers and having their outer ends turned, the parts named being combined, substantially as described.

568,902. SMOKELESS POWDER. FRANCIS A. HALSEY, San Rafael, Cal. Filed Mar. 16, 1896. Serial No. 583,331. (No specimens.)

Claim.—A compound consisting of nitrate of strontia, ammonium picrate, potassium bichromate and potassium permanganate as described.

568,903. GAS-GENERATOR. EDWARD P. HARRIS, Chester, Pa., assignor to J. G. Gray, assignee of Queen & Company, Incorporated, Philadelphia, Pa. Filed Oct. 5, 1895. Serial No. 564,706. (No model.)



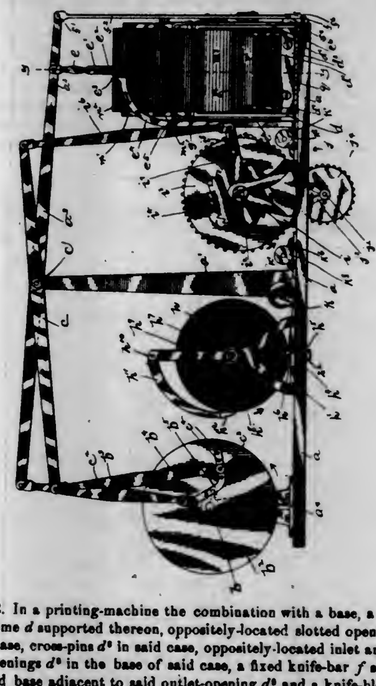
Claim.—1. A gas-generator consisting of a jar, a vessel within said jar, a chamber within said jar in communication with the base of said vessel, a tube in said jar having a valve at each end, a second tube leading from said first-mentioned tube into said chamber, and a pipe leading from said vessel to without said jar, said pipe having a cock thereon, said parts being combined substantially as described.

2. The jar A having the cover B, the vessel G and chamber J within said jar having the communicating neck H, the tube L having the valves M and N working as described at its opposite ends, the tube K leading from said tube L into said chamber J, and the pipe leading from said vessel G to without said jar, said parts being combined substantially as described.

3. In a gas-generator the jar A with inlet-funnel D in the cover thereof, the vessel G and chamber J with communicating neck H, the tube L having a valve at each end communicating with said jar A, the tube K leading from said tube L into the chamber J, the pipe F' leading from the vessel G to without the jar, and provided with the cock Q, and the flexible pipe E connected to the lower part of the jar A, and having a connected pipe F adapted to be inserted in said funnel D, said parts being combined substantially as described.

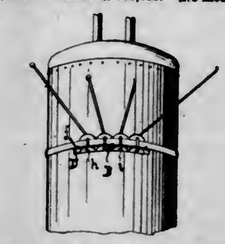
568,904. PRINTING-MACHINE. HARRY J. HEINBERGER, Columbus, Ohio. Filed July 1, 1895. Serial No. 554,556. (No model.)

Claim.—1. In a printing-machine the combination with a base *a*, having a mortise k^{2} therein, a paper-roll-carrying reel mounted on said base, a spring-actuated tension-arm pivotally connected with the roll-supporting frame and adapted to bear against the roll, coacting feed-rolls journaled in front of said paper roll between which the paper strip from said paper roll is adapted to pass and means for imparting an intermittent rotary motion to said feed-rolls, of guide-blocks k^{3} movably supported in said base-mortise k^{2} between said paper and feed rolls, and an adjusting-screw k^{7} connecting said guide-blocks, said screw having a right-hand threaded engagement with one of said blocks and a left-hand threaded engagement with the other, means for producing a temporary rigid connection of one of said guide-blocks with the base, and a printing mechanism in line with the feed-rolls, substantially as and for the purpose specified.



2. In a printing-machine the combination with a base, a casing or frame *d* supported thereon, oppositely-located slotted openings in said case, cross-pins d^{9} in said case, oppositely-located inlet and outlet openings d^{8} in the base of said case, a fixed knife-bar *f* secured to said base adjacent to said outlet-opening d^{8} and a knife-blade f^{4} pivoted at one end to one end of said knife-bar *f*, of a type-holding chase d^{2} within the casing *d*, substantially acorn-shaped cam-plates projecting therefrom, inwardly extending and curved recesses d^{3} formed as described in said cam-plates and adapted to receive loosely the pins d^{9}, a transverse pin d^{5} extending through said slotted openings *d'* and supporting said cam-plates as described, an ink-carrying belt passing through said case *d*, a yoke e^{3} embracing opposite sides of said case and connected with the ends of said pin d^{5}, a plunger e^{4} extending upward from said yoke, a connecting-bar between said plunger and knife-blade and means for imparting a vertical reciprocating motion to said plunger, substantially as and for the purpose specified.

568,905. TOWEL-RACK. SAMUEL J. HOLMES, Montclair, N. J. Filed Aug. 28, 1895. Serial No. 560,733. (No model.)



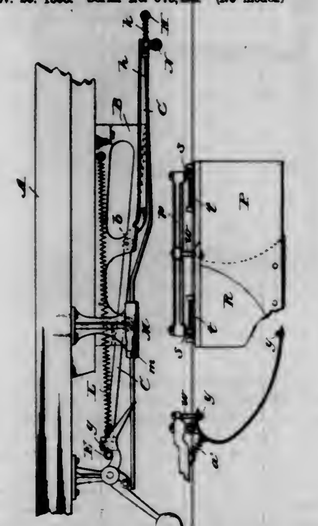
Claim.—1. In a towel or like rack, a channel-shaped support having top and bottom perforated flanges and adapted to be secured to a boiler, or stovepipe; said flanges being formed with kerfs or scallops to permit the support to adapt itself to different curvatures, combined with a supporting bar or bars substantially as described.

2. In a towel or like rack, an adjustable, flexible strap, combined with a channel-shaped support having top and bottom perforated flanges and adapted to embrace the strap to be secured to the boiler or stovepipe; said flanges being formed with kerfs or scallops to permit the support to adapt itself to different curvatures, combined with a supporting bar or bars substantially as described.

3. In a towel-rack, the combination of a strap provided with means for securing it to a boiler, &c., a channel-shaped support mounted to slide on the strap and kerfed or scalloped to permit it to adapt itself to different curvatures, and provided with series of oppositely-placed sockets, a series of supporting-bars extending through the sockets, and a pressure-plate placed on the support and bearing against the bars, substantially as described.

4. In a towel-rack, the combination of a strap provided with means for securing it to a boiler, &c., a channel-shaped support mounted to slide on the strap and kerfed or scalloped to permit it to adapt itself to different curvatures, and provided with series of oppositely-placed buttonhole-sockets, a series of supporting-bars extending through the sockets and provided with headed ends, and a pressure-plate placed on the support and bearing against the bars, substantially as described.

568,906. CAR-FENDER. WILLIAM R. HOWE, Dayton, Ohio. Filed Nov. 29, 1895. Serial No. 570,492. (No model.)



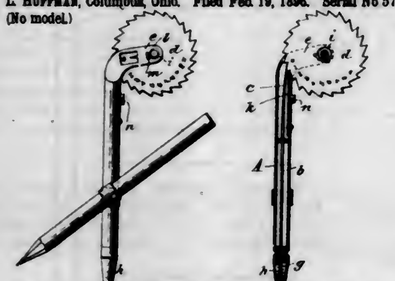
Claim.—1. In a safety appliance for street cars, the combination, with the car, of a movable fender, guide-frames therefor, springs to throw out said fender, a dog pivoted on the car-body to swing vertically, rear cross-bar of said fender held by said dog, and trip-bar extending across the front of said fender, with rods for sustaining same, supported by and sliding on said fender-frame, the rear end of said rods being in position to contact directly with said dog to release the fender and allow it to be thrown out in advance of the car, and a weight for returning said dog to its normal position, substantially as shown and described.

2. In a safety appliance for street-cars, the combination, with the car, of a sliding frame covered with wire-netting at its forward end, guide-frames at each side of the car carrying antifriction-rollers over which the sliding frame is propelled, with springs to throw forward said frame, dog pivoted to the car to swing vertically and to hold back said frame against the spring action, rear cross-bar of said fender held by said dog, trip-bar extending across the front of said frame, rods for sustaining same with guides on said frame in which said rod slides, said rods uniting at the back to form a plunger and rear end of said plunger contacting directly with said dog to release the frame and allow it to be thrown out in advance of the car, with weight to return said dog to its normal position, substantially as shown and described.

3. In a safety appliance for street cars, a wheel-guard constructed of two pieces of sheet metal curved substantially as described overlapping each other and fastened together, rods secured to the upper surface thereof, with eyebolts secured to the car-truck upon which said rods are hung, substantially as shown and described.

4. In a safety appliance for street cars, a wheel-guard, constructed of two pieces of sheet metal suitably curved overlapping each other and fastened together, rods secured to the upper surface thereof, with eyebolts secured to the car-truck upon which said rods are hung, said eyebolts arranged to turn to allow said sheet-metal pieces to be swung forward at the middle, with bolt for holding same in advance of said eyebolts, and brace-rod to connect the upper and lower edges thereof substantially as shown and described.

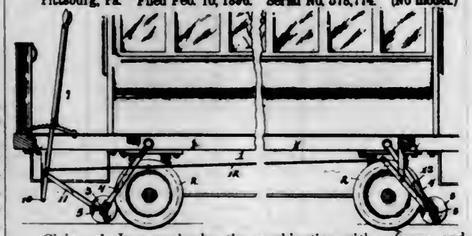
568,907. DEVICE FOR AIDING WORK OF ADDITION. ALBERT L. HUFFMAN, Columbus, Ohio. Filed Feb. 19, 1896. Serial No. 579,906. (No model.)



Claim.—1. A device for aiding the process of addition, comprising a stem adapted to be taken in the hand like a pencil, a ratchet-wheel *d* having a series of numbers or characters thereon journaled at the upper end of the stem, a plunger *b* within the stem projecting at the lower end thereof, a spring-finger *c* at the upper end of the plunger to engage the ratchet-wheel, spring *g* to return the plunger to its normal position, a coiled spring *i* connected at one end to the axis of the ratchet-wheel and at the other to the stem to reset the wheel, a stop *m* on the stem and pin *l* connected with the wheel to engage the stop, the spring-dog *k* located within the stem and arranged to disengage the spring-finger *c*, and a button *n* on the dog *k* protruding at the side of the stem, all constructed and combined substantially as shown and described.

2. A device for aiding the process of addition, comprising a stem adapted to be taken in the hand like a pencil, a ratchet-wheel *d* having a series of numbers or characters thereon journaled at the upper end of the stem, a plunger *b* within the stem projecting at the lower end thereof, a spring-finger *c* at the upper end of the plunger, spring *g* to return the plunger to its normal position, a spring pawl or dog *k* for the wheel *d* located within the stem and arranged to bear against the finger *c* to disengage it from the wheel, and a button *n* connected with the dog and protruding at the side of the stem, substantially as shown and described.

568,908. CAR-BRAKE. JAMES JAMIESON and ROBERT GRAY, Pittsburg, Pa. Filed Feb. 10, 1896. Serial No. 578,774. (No model.)

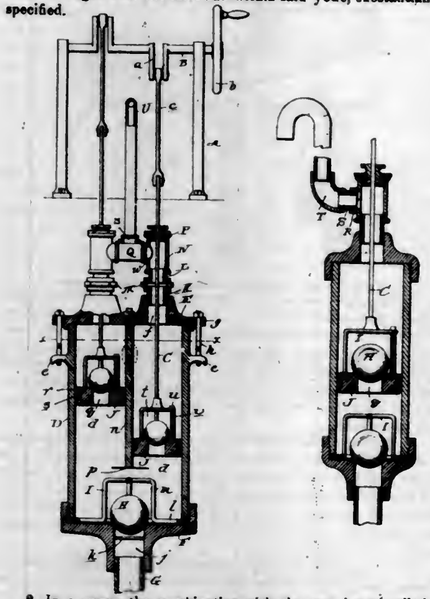


Claim.—1. In a car-brake, the combination with a frame, and car-wheels, of a transverse brake-beam, inclined hangers depending from the frame and suspending the transverse brake-beam therefrom, brake-wheels journaled on the ends of the brake-beam and arranged to swing downward to contact with the car-wheels and track, a substantially vertically-disposed operating-lever fulcrumed at its lower end and located at one end of the frame, and an inclined bar pivoted at its upper end to the lever and connected at its lower end to the transverse brake-beam, substantially as described.

2. In a car-brake, the combination with a frame, and car-wheels, of brake-beams arranged adjacent to the car-wheels, hangers suspended from the frame and carrying the brake-beams, brake-wheels journaled on the ends of the brake-beams and arranged to swing downward to contact with the car-wheels and the track, a lever 13 fulcrumed intermediate of its ends and located at one end of the frame and connected at its lower end with the adjacent brake-beam, a lever 9 located at the other end of the frame and fulcrumed at its lower end, a bar connected with the lever 9 and the adjacent brake-beam, and a rod connecting the levers, substantially as and for the purpose described.

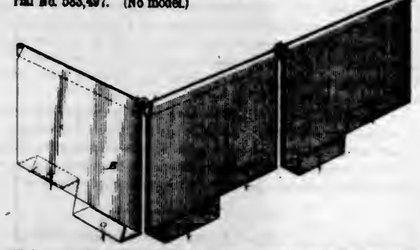
568,909. PUMP. KARL A. KLOSE, Richfield, Minn., assignor of one-half to William K. Seward, Butte, Mont. Filed Mar. 9, 1896. Serial No. 582,437. (No model.)

Claim.—1. The pump-barrels having the bottom closing-plate provided with the inlet-aperture and the vertical marginal internally-threaded flange, said barrels having the division-wall cut away at its lower end, as shown, in combination with the valve yoke I, composed of the ring or annulus secured between said plate and the lower edge of the barrels, and a skeleton frame rising therefrom, and the ball-valve arranged over the inlet and within said yoke, substantially as specified.



2. In a pump, the combination with the two barrel-cylinders having the central division-wall cut away at its lower end, the base-plate having the inlet-aperture, the valve-yoke or frame secured over said aperture and the rubber ball-valve arranged in said yoke, the plungers carrying ball-valves and having yokes for said valves, the top plate for the barrels, the tubes rising therefrom, the section connecting said tubes and having the endwise passages, and ball-valves therein, and the lateral passage to receive a discharge-pipe, substantially as specified.

568,910. ADJUSTABLE PARTITION FOR BOXES, SHELVING, &c. NATHANIEL KNOWLES, Philadelphia, Pa. Filed Mar. 17, 1896. Serial No. 583,497. (No model.)



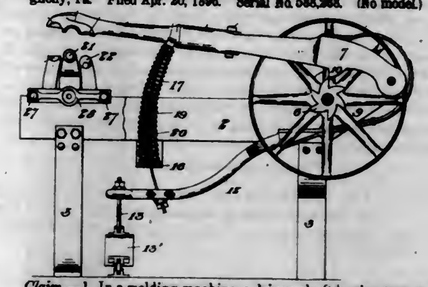
Claim.—1. In a device of the character described, a partition consisting of a suitable body portion, and laterally-extending feet projecting from either side thereof, eyes on said partition, and staples which are adapted to be inserted in said eyes, substantially as described.

2. A partition having an upright body portion, laterally-extending feet, a portion of each foot being folded over on itself, studs or pins passing through said feet, and having their heads engaged between said folded portion, and its foot, and eyes in the upper portion of said partition, substantially as described.

3. A plurality of partitions, each having an upright body portion, a foot projecting laterally therefrom in either direction, a fastening device secured to said feet, and eyes in the upper portions of said partitions, in combination with staples for holding the same in position, substantially as described.

4. In an adjustable partition, a suitable body portion, laterally-extending feet, means on said feet for attaching said device to the structure to be partitioned, eyes on said partition, and means for supporting the partition with respect to the adjacent one, substantially as described.

568,911. WELDING-MACHINE. WILHELM C. KROSCHER, Allegheny, Pa. Filed Apr. 20, 1896. Serial No. 588,268. (No model.)



Claim.—1. In a welding-machine, a driven shaft having two cam-wheels thereon, a hammer having a bifurcated stock, each arm of the stock being pivoted to the frame in the rear of the cam-wheels, and the frame having, above the cam-wheels, guides arranged to contact with the two arms and prevent side motion of the hammer; substantially as described.

2. In a welding-machine, the combination with a swinging hammer, of a pivoted lever having a curved spring arranged to bear upon the hammer-stock, and a yielding rest upon which the hammer bears, substantially as described.

3. In a welding-machine, a swinging hammer, a cam-wheel arranged to oscillate the same, a lever having a curved spring arranged to bear upon the hammer-stock, a spring upon which the hammer-stock rests, and a connection between said spring and the pivoted lever, substantially as described.

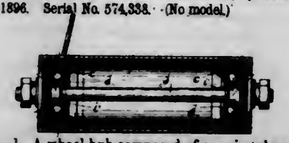
4. In a welding-machine, a hammer having a bifurcated stock, each arm of the stock being pivoted to a side frame, a driven shaft having cam-wheels arranged to contact with the stock-arms, and provided between said arms with a pulley; and a pivoted lever having curved springs arranged to bear upon the arms of the hammer-stock, substantially as described.

5. In a machine for scarfing tubes, the combination with a scarfing horn and a welding-horn, of a swinging hammer having recesses arranged to coöperate with both of said horns; substantially as described.

6. A scarfing-machine, having a scarfing-horn, a welding-horn, and a swaging-block, and provided with a swinging hammer, having portions arranged to coöperate with each of the horns and the swaging-block, substantially as described.

7. A machine for swaging pipe, said machine having attached thereto at one side a loosely-sliding head arranged to contact with the side of the machine and having a gaging aperture for the end of the pipe; substantially as described.

568,912. WHEEL-HUB. JOHN J. LAASS, Syracuse, N. Y. Filed Jan. 4, 1896. Serial No. 574,338. (No model.)



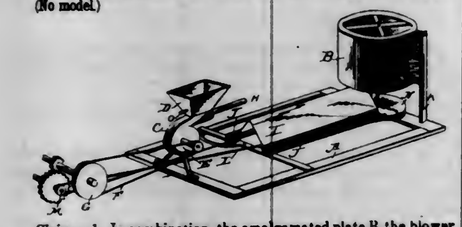
Claim.—1. A wheel-hub composed of a main tube provided with perforations in its end portion for the attachment of the spokes, a bushing secured with its body portion to the inner surface of the main tube and terminated with circumferentially-reduced end portions, and ball-bearing cups inserted in the end portion of the bushing and provided with flanges seated on the ends of the bushing as set forth.

2. A wheel-hub consisting of a tube forming the body of the hub, a bushing secured with its body portion to the inner surface of the tube and terminated with circumferentially-reduced end portions forming recesses between said tube and bushing, circumferential rows of perforations in said tube and leading to said recesses for the reception of the ends of the wire spokes, said recesses being open to the ends of the hub for the purpose set forth.

3. In a bicycle-wheel, the combination of a tube having uniform diameter throughout its length and forming the body of the hub, a bushing secured within said tube and having circumferentially-reduced end portions forming recesses between said bushing and tube, circumferential rows of perforations in said tube leading to said recesses, wire spokes inserted with their ends in said perforations and secured within said recesses, bearing-cups secured in the ends of said bushing and provided with flanges within said tube and bearing against the ends of said bushing and suitable bearings for said cups as set forth.

4. In a wheel-hub, the combination of a tube of uniform diameter throughout its length and forming the body of the hub, a bushing secured within said tube and to the central or main portion thereof and having its end portions reduced circumferentially forming recesses between said tube and bushing, circumferential rows of perforations in said tube and leading to said recesses, bearing-cups secured within the ends of the bushing, wire spokes formed with hooks on their inner ends and inserted in said perforations and bearing on said reduced end portions and bushing directly over said cups, and suitable antifriction-bearings for said cups as set forth.

568,918. APPARATUS FOR SEPARATING GOLD FROM SAND, &c. John Marshall, Fairfield, Cal., assignor to the Marshall Gold Saver Company, same place. Filed Aug. 9, 1895. Serial No. 558,800. (No model.)

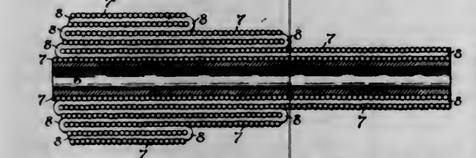


Claim.—1. In combination, the amalgamated plate B, the blower having a nozzle directed thereto and adapted to blow the material thereagainst the amalgamated roof-shaped plate I between the blower and the amalgamated plate B and the screens J, J, along the edges of the roof-shaped plate, substantially as described.

2. In combination, the blower, the amalgamated plate B arranged opposite the same, and an amalgamated roof-shaped plate between the blower and the plate B over which the blast operates longitudinally of said plate, substantially as described.

3. In combination, the blower having a nozzle directed substantially horizontally and the revolving amalgamated plate B in the form of a wheel presenting its outer convex surface to the blast, substantially as described.

568,914. WIRE-WOUND GUN. Joseph A. Miller, Providence, R. I. Filed July 28, 1893. Serial No. 481,734. (No model.)



Claim.—1. A gun strengthened by coils of wire wound around the gun and wires extending longitudinally between the coils, as described.

2. In a gun, the combination with a central tube or barrel, of coils of wire wound around the same, and a series of wires extending parallel or nearly parallel to the axis of the gun and transversely to the coils of wire, as described.

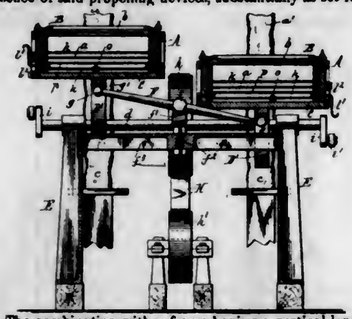
3. In a gun, the combination with a central tube or barrel having spiral grooves formed on the outer surface of the same, of coils of wire wound spirally around the tube or barrel, and wire placed longitudinally between the spirals, as described.

4. In a gun, the combination with the central tube or barrel, and coils of wire wound spirally around the same, of wires placed between two coils of the spirally-wound wires so as to cross the spirally-wound wires, as described.

5. The combination with a gun-barrel, of the wires 7 and 8 interplaited, in the manner substantially as described, to resist longitudinal as well as transverse strain, as described.

568,915. SIFTING-MACHINE. John E. Mitchell, Jackson, Mich., assignor to the Harmon Manufacturing Company, same place. Filed Nov. 12, 1895. Serial No. 568,674. (No model.)

Claim.—1. In a separating-machine, the combination with a frame having a substantially horizontal sieve or other surface upon which the material rests, of means whereby a vertical longitudinal gyratory motion is imparted to said frame, and stationary propelling devices arranged above said surface and held in such proximity thereto as to be embedded, wholly or partially, in the material flowing over said surface, whereby the material is propelled over the surface in a direction contrary to that in which the lower half of the gyratory movement is performed and in which the material would be propelled in the absence of said propelling devices, substantially as set forth.



2. The combination with a frame having a vertical longitudinal gyratory motion and containing a horizontal surface over which the material flows, of propelling devices arranged above said surface and made adjustable toward and from the same, whereby said propelling devices can be placed in proximity of such surface so as to propel the material in one direction or can be raised to a position in which they allow the material to be propelled in the opposite direction, substantially as set forth.

3. The combination with a frame having a vertical longitudinal gyratory motion, of a horizontal sieve and a conveyer-bottom arranged in said frame, discharge spouts connected with said bottom, and propelling devices arranged above said bottom and made adjustable toward and from the same, whereby the material falling upon said bottom can be caused to flow in opposite directions, substantially as set forth.

4. The combination with a frame having a vertical longitudinal gyratory motion and containing a horizontal surface over which the material flows, of transverse crank-rods journaled in said frame above said surface and means whereby said rods can be secured in their adjusted position, substantially as set forth.

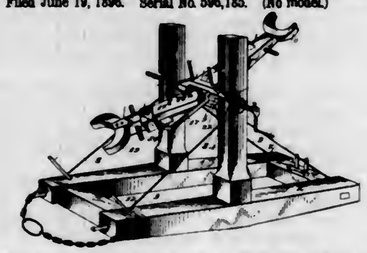
5. The combination with two sieve-frames arranged side by side, and means whereby a vertical longitudinal gyratory motion in opposite directions is imparted to said frames, of a transverse equalizing-lever on which said frames are supported, substantially as set forth.

6. The combination with two sieve-frames arranged side by side and means whereby a vertical longitudinal gyratory motion in opposite directions is imparted to said frames, of a transverse equalizing-lever on which said frames rest, and a pivotal support for said lever capable of vertical adjustment, substantially as set forth.

7. The combination with two sieve-frames arranged side by side and means whereby a vertical longitudinal gyratory motion in opposite directions is imparted to said frames, of a transverse equalizing-lever provided with knuckles at its middle and at its ends, socket-pieces secured to said frames and resting on the end knuckles of said lever, and a supporting-socket in which the pivotal knuckle of said lever rests, substantially as set forth.

8. The combination with two sieve-frames arranged side by side, of transverse crank-shafts arranged underneath said frames, bearings secured to said frames and engaging with the cranks of said shafts, a transverse equalizing-lever on which said frames rest, and a vertically-adjustable pivotal support for said lever, substantially as set forth.

568,916. REEL-CARRIER. King Morehead, Salisbury, Mo. Filed June 19, 1896. Serial No. 596,185. (No model.)

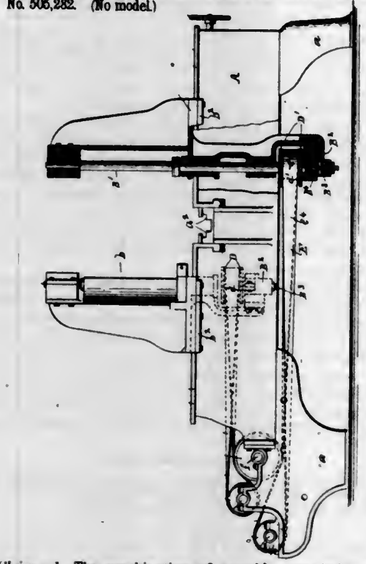


Claim.—1. In a reel-carrier, the combination of a supporting-frame, a horizontal shaft journaled thereon, and a spool comprising a rigid arm provided with an extension, a pivoted arm mounted on the extension of the rigid arm and adapted to be swung laterally to facilitate the removal of wire, a sliding sleeve embracing the extension and the pivoted arm and securing the arms in alinement, and a removable locking-pin holding the sleeve in position, substantially as described.

2. In a reel-carrier, the combination of a supporting-frame, a horizontal shaft journaled thereon, and a spool mounted on the shaft and comprising a rigid arm having an extension, a pivoted arm connected with the extension and provided with means for detachably securing it in alinement with the rigid arm, heads arranged at the outer ends of the arms and presenting outer concave faces for the reception of wire, handles mounted on the arms adjacent to the outer ends thereof, and the centrally-arranged pins projecting from opposite sides of the spools, substantially as described.

3. In a reel-carrier, the combination of a supporting-frame, a horizontal shaft journaled thereon, and a spool mounted on the shaft and comprising a rigid arm having an extension, a pivoted arm connected with the extension, adapted to be swung laterally and provided with means for holding it in alinement with the rigid arm, centrally-arranged cross-pieces located at opposite sides of the shaft and the centrally-arranged pins passing through perforations of the cross-pieces and the shaft and securing the spool to the latter, one of the pins being removable, substantially as and for the purpose described.

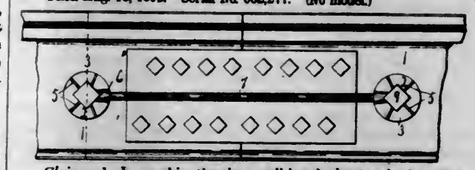
568,917. POWER-TRANSMITTING MECHANISM. Henry W. Morgan, Rochester, N. Y. Original application filed Dec. 29, 1892. Serial No. 456,631. Divided and this application filed Mar. 27, 1894. Serial No. 505,282. (No model.)



Claim.—1. The combination of movable oppositely-arranged bearings, means for simultaneously adjusting said bearings toward and away from each other, a pair of upright shafts journaled in the bearings, a pair of secondary driving-pulleys mounted on the shafts and having their peripheral faces arranged in different horizontal planes, a pair of main driving-pulleys arranged side by side at one side of said shafts in a plane disposed at an angle with the axes of the shafts, a pair of idlers alined with one of the main driving-pulleys and having their axes arranged in different planes, and a belt having separated driving-loops passed over said pulleys mounted on the shafts, one branch of one loop being passed over one main driving-pulley and connected to or merged into the corresponding branch of the other driving-loop and the opposite branch of the former loop being passed at one side of the other main driving pulley and around the idler alined with the adjacent side of the latter main driving-pulley and connected to or merged into one extremity of a section of the belt having its intermediate portion passed between said branch of the latter loop and the adjacent face of the latter main driving-pulley and around said latter driving-pulley, and its opposite extremity passed around the second idler and connected to or merged into the opposite branch of the former loop, substantially as and for the purpose described.

2. The combination with main driving-pulleys arranged side by side, and having their axes disposed in planes substantially coincident, and idlers supported at one side of the main driving-pulleys and revoluble on axes arranged parallel with the former axes, said idlers being alined with one of the main driving-pulleys and one of the idlers being arranged above the other and nearer than the other to the adjacent driving-pulley; of a frame, bearings arranged at the opposite side of the main driving-pulleys and movable along the frame toward and away from each other, and the main driving-pulleys, one of said bearings being nearer than the other to said driving-pulleys, shafts journaled in the bearings and arranged at an angle with the axes of the main driving-pulleys, secondary driving-pulleys mounted on the shafts and arranged one above the other, and a belt passing over the main driving-pulleys, and idlers, and having driving-loops of unequal length arranged one above the other and passed respectively over the secondary driving-pulleys, substantially as and for the purpose set forth.

568,918. RAIL-BOND. Henry S. Newton, Syracuse, N. Y. Filed Aug. 10, 1896. Serial No. 602,277. (No model.)



Claim.—1. In combination in a rail-bond, the bond-wire; contact-plates positively attached to the ends thereof, having flat, inner faces, covered with tin or solder, for making contact with the side of the rail; and means for securing the bond in position.

2. In combination in a rail-bond, the bond-wire, contact-plates positively attached to the ends thereof, having flat, inner faces; securing bolts and nuts; and spring-washers arranged between the nut and the rail, for locking the nut and compensating for expansion.

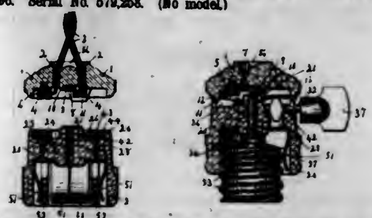
3. In an electric railway, the combination of the rails and bond; the rails having a portion of their surface around the bolt holes corresponding in area to the size of the contact-plates of the bond faced off smooth; and the bond composed of the wire, and of end pieces secured to the ends thereof, having their comparatively large, inner faces covered with tin or solder for attaching the bond to the smooth surface of the rail, holes through said end pieces corresponding to the bolt-holes in the rails; and bolts and nuts for securing the bond in position.

4. In combination in a rail-bond, the bond-wire; circular contact-plates positively attached to the ends thereof, having smooth inner faces, and outer surfaces provided with reinforcing-ribs; securing bolts and nuts.

5. In combination in a rail-bond, the bond-wire; contact-plates positively attached to the ends of the wire, having a comparatively thin circular contact portion provided with a smooth inner surface for making contact with the rail, an outwardly-extending tubular portion, for receiving the securing bolt, and reinforcing-ribs; and securing bolts and nuts.

6. As an article of manufacture, a rail-bond consisting of the bond-wire; end pieces or contact-plates secured to the ends thereof; said end pieces having comparatively thin circular contact portions, outwardly-extending tubular portions and reinforcing-ribs, and an enlarged portion on one side of each, provided with an opening fitted to receive the end of the wire.

568,919. SOCKET FOR INCANDESCENT ELECTRIC LAMPS. James Pass and Albert P. Seymour, Syracuse, N. Y. Filed Feb. 14, 1896. Serial No. 579,258. (No model.)



Claim.—1. In a porcelain socket, the combination of the body and the base, the adjacent faces of both being provided with depressions and integral projections, and fitted to each other so as to form an arcing-chamber, substantially circular in cross-section and comparatively narrow in the direction of the axis of the socket, contact-plates attached to said faces, positively separated from each other by said projections and depressions, when the parts are assembled, and means for connecting the body to the base, substantially as described and shown.

2 A socket for an incandescent electric lamp composed of a porcelain base and body formed with corresponding notches and projections on their adjacent faces, and having the contact-plates, spring and key arranged between said adjacent faces in a thin arcing-chamber, and corresponding integral projections and depressions for positively separating the metallic parts in one leg from those in the other, substantially as described and shown.

3. In a socket composed of porcelain, the body adapted to be attached by a single screw in circuit to the base, and said base provided with two holes for the leading-in wires, contact-pieces with binding-screws arranged on the lower face adjacent to said holes respectively, a depression in said face to receive one contact-piece, and a wall projecting from said face positively to separate said contact-piece from the opposite contact-piece, substantially as described and shown.

4. In a socket of porcelain adapted to be suspended by the conducting-wires, two holes formed in the base for admitting the respective wires, contact-pieces with binding-screws, a single screw in circuit for connecting the body to said base, said body and base being provided with a tubular projection and semicircular wall, whereby said connecting-screw and metallic parts engaging therewith are positively insulated from the metallic parts in opposite leg of circuit, substantially as described and shown.

5. In an incandescent-electric-lamp socket formed of porcelain, the combination of the base and body attached by a single contact-screw positively insulated, said base and body having their adjacent faces fitted with corresponding projections and notches; the contact-pieces on the lower face of the base being positively separated from each other by insulating-walls, the upper adjacent face of the body being provided with a central perforated column and with spurs and projections for fixing the positions of the contact springs and pieces and holding them securely in their proper positions, substantially as described and shown.

6. In a socket for an incandescent electric lamp, the base formed with two holes for the respective leading-in wires, contact-plates attached on its lower face, and said face formed with a depression for receiving one contact-plate, an elevated wall for positively separating the same from the other contact-plate, a thin circumferential marginal wall and two guides of different widths integral with said marginal wall, substantially as described and shown.

7. A two-part socket comprising a body and a base portion, contacts in the base, cooperating contacts in the body and a single screw connecting the body and the base and serving as a lamp terminal.

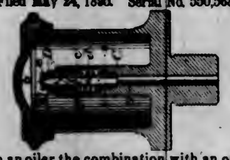
8. A porcelain socket having its mouth provided with screw-threaded sections and intermediate smooth sections, said smooth sections being greater in width than the screw-threaded sections.

9. In a porcelain socket, the base provided on its lower face, with a circumferential marginal wall 12, integral therewith, the guides 11 and 13 of different size, a depression 9, elevated wall 10 at one end thereof, and holes 2 2 for the leading-in wires, and external channel 56 connecting said holes, substantially as described and shown.

10. In a porcelain socket, the body portion 20, having the circumferential margin 25, tubular projection 21, thickened portion 24, spur 26, pillow 28, opening 29, having on one side bearing 30 and on the marginal side notch 31, substantially as described and shown.

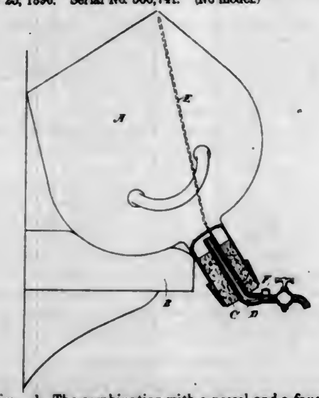
11. In a porcelain socket, the combination of the body and base, means for connecting them together, a contracted arcing-chamber formed between them; wire-holes 2 2, cut-out 29, and notch 31, all opening into said chamber; and cords 3 3, contact-plate 51, and guide 13 and key 32, closing said wire-holes, cut-out and notch respectively, substantially as described and shown.

568,920. OIL-CUP. LEONARD A. PETERS, Waukatosa, Wis., assignor of one-half to the Milwaukee Brass and Copper Works, Milwaukee, Wis. Filed May 24, 1895. Serial No. 550,568. (No model.)



Claim.—In an oiler the combination with an oil cup or receptacle having a feed-passage extending through the base and neck and terminating at its upper end in an enlarged screw-threaded portion or recess, a conical or tapering valve having a threaded stem adapted to be screwed into the upper contracted portion of said passage with its apex projecting upwardly, a plug externally threaded to engage the thread in the enlarged portion or recess of said passage and formed or provided with an inverted valve seat terminating at its upper end in a contracted aperture and a spiral spring inserted in said recess so as to press at its upper end against said plug, substantially as and for the purposes set forth.

568,921. FAUCET AND AIR-INLET ATTACHMENT. CHARLES L. J. POURANTE and JULES CH. DE ST. HUBERT, San Francisco, Cal. Filed Feb. 25, 1896. Serial No. 580,741. (No model.)

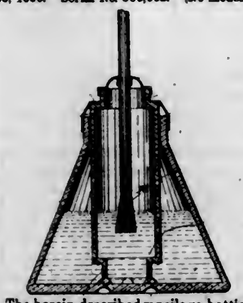


Claim.—1. The combination with a vessel and a faucet by which its contents may be withdrawn, of an air-tube leading from a point outside the vessel to a point into the upper part of its interior, and being formed of bendable material so that it may be bent to suit the vessel with which it is to be used, said tube having its outer end perforated, a readily-removable casing adapted to be supported on the upper side of the faucet-shank, and to surround the inlet end of the air-tube, and a body of pulverized material contained within the casing through which the air passes before it enters the tube.

2. The combination with a demijohn or vessel containing wine of a faucet fitting the lower part through which the wine may be drawn, an air-tube extending from the upper interior part of the demijohn along the line of the faucet having fine perforations in the outer end for the admission of air, a chamber surrounding said outer end having a screen covering the air-inlets to the pipe, and a body of pulverized sulfur covering said screen so that air admitted to take the place of the wine when drawn must first pass through the sulfur before entering the receptacle.

3. A device to preserve wines from the direct action of atmospheric air, consisting of a containing vessel and a faucet for withdrawing the contents therefrom, a tube or passage leading from the interior of the vessel to the exterior thereof, and substantially parallel with the shank of the faucet, and having an air-inlet at its outer end to admit air to the vessel, a readily-removable casing to be seated upon said shank and to be fitted over said outer end and means for supporting a body of pulverized material within the casing and over the air-inlet of the tube whereby the air is filtered before being admitted to the vessel.

568,922. MUCILAGE-BOTTLE. CARROLL H. REED, New York, N. Y. Filed Feb. 20, 1896. Serial No. 580,062. (No model.)

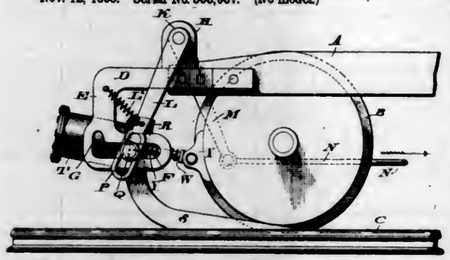


Claim.—1. The herein-described mucilage-bottle which comprises a main bottle or receptacle provided with a neck, and a removable or detachable tube which is adapted to fit within said neck, and one end of which is adapted to rest upon the bottom of the main bottle or receptacle, which is provided with means for admitting the mucilage thereto and the other end of which is adapted to serve as a neck through which the brush is inserted, said tube being reversible within said bottle or receptacle, substantially as shown and described.

2. The herein-described mucilage bottle or receptacle, which comprises a main body portion which is provided with a neck of the usual form, and a detachable and reversible tube which is adapted to fit within said neck, said tube being provided with a neck at each end, and one end thereof, being adapted to rest upon the bottom of the main bottle or receptacle, and the other end to project above the neck thereof, substantially as shown and described.

3. The herein-described mucilage bottle or receptacle, which comprises a main body portion which is provided with a neck of the usual form, and a detachable and reversible tube which is adapted to fit within said neck, said tube being provided with a neck at each end, and one end thereof, being adapted to rest upon the bottom of the main bottle or receptacle, and the other end to project above the neck thereof, and said tube being provided with a cap or cover which is secured to the handle of the brush and adjustable thereon, substantially as shown and described.

568,923. AIR-BRAKE. JOHN E. REYBURN, Philadelphia, Pa. Filed Nov. 12, 1895. Serial No. 568,667. (No model.)



Claim.—1. In an air-brake, a rail-shoe adapted to be interposed between a car-wheel and the track, a brake-shoe mounted upon a support common to itself and said rail-shoe, said brake-shoe being movable independently of said rail-shoe, and being provided with a cushioning device, and an arm forming a guide for said support, substantially as described.

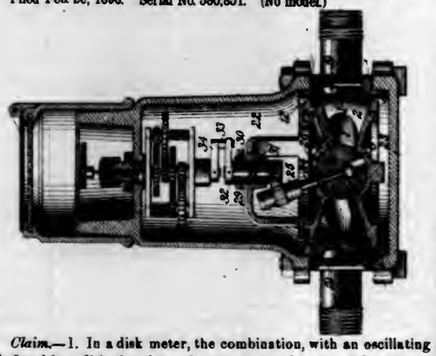
2. An air-brake consisting of a rail-shoe, a cylinder having a piston therein, and mounted thereon, a slotted arm suitably fulcrumed, a pin mounted on said rail-shoe and adapted to engage the slot in said arm, and a brake-shoe attached to the rod of said piston, substantially as described.

3. In a braking apparatus, a bell-crank, one member of which is attached to the brake-rod, the other having a slot therein, a pin passing through said slot, a rail-shoe, an air-reservoir mounted thereon, said pin engaging said rail-shoe, an arm having a slot therein, in which said pin is movable, and a spring common to said arm and one limb of said bell-crank, substantially as described.

4. In a braking apparatus, the bell-crank K suitably fulcrumed, one limb thereof having a slot therein, a rail-shoe, an air-reservoir mounted thereon, a slotted arm suitably supported, a pin passing through the slot of said lever and arm, and means for holding said bell-crank in position, substantially as described.

5. In an air-brake, a rail-shoe adapted to be interposed between a car-wheel and the track, a brake-shoe movable independently of said rail-shoe, and connected with a swinging support common to itself and to said rail-shoe, and a stationary slotted arm forming a guide for said support, said parts being combined substantially as described.

568,924. DISK METER. EDWIN RUUD and ABRAM G. HOLMES, Pittsburg, Pa., assignors to the Pittsburg Meter Company, same place. Filed Feb. 26, 1896. Serial No. 580,851. (No model.)



Claim.—1. In a disk meter, the combination, with an oscillating disk fitted in a disk-chamber, of a stem secured to the disk, a longitudinally-adjustable shaft which is actuated by the disk, a driving-arm on the shaft, a sleeve carried by the driving-arm which forms a bearing for the stem of the disk and which is adjustable thereon by longitudinal movement of the shaft, substantially as set forth.

2. In a disk meter, the combination, with an oscillating disk, of a stem secured to the disk, a driving-shaft, an arm secured to the shaft and actuated by the stem, a detachable bearing interposed between the arm and stem, and means for simultaneously adjusting the shaft and the bearing on the stem, substantially as set forth.

3. In a disk meter, the combination, with an oscillating disk fitted in a disk-chamber, of a stem secured to the disk, a forked driving-arm on a shaft which is actuated by the disk, and a tubular bearing fitted in the forked driving-arm and forming an elongated bearing for the stem, substantially as set forth.

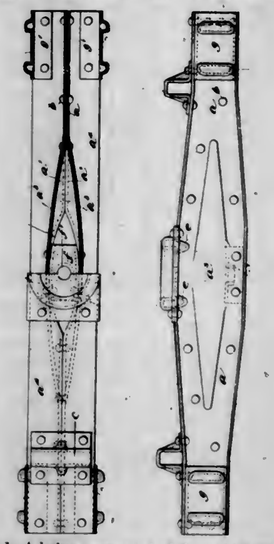
4. In a disk meter, the combination, with an oscillating disk fitted in a disk-chamber, of a stem secured to the disk, a driving-arm rigidly connected to a longitudinally-movable shaft which is actuated by the disk, and a sleeve on the stem which is fitted in a slot formed in the driving-arm and is movable longitudinally therewith, substantially as set forth.

5. In a disk meter, the combination, with an oscillating disk, of a stem secured to the disk, a driving-shaft, an arm secured to the driving-shaft and actuated by the stem, a fixed support or frame, an adjustable bushing in the support or frame forming a bearing for the driving-shaft, and means whereby the bushing may be adjusted and fixed in adjusted position, substantially as set forth.

6. In a disk meter, the combination, with an oscillating disk, of a stem secured to the disk, a driving-shaft, an arm secured to the shaft and actuated by the stem, a loosely-fitted detachable bearing interposed between the arm and stem, and means for simultaneously adjusting the shaft and the bearing on the stem, substantially as set forth.

7. In a disk meter, the combination, with an oscillating disk, of a stem secured to the disk, a driving-shaft, an arm secured to the driving-shaft and actuated by the stem, a fixed support or frame, an adjustable bushing in the support or frame forming a bearing for the driving-shaft, and means for fixing said bushing in adjusted position substantially as set forth.

568,925. BOLSTER FOR RAILWAY-CARS. CHARLES T. SCHOEN, Philadelphia, Pa. Filed Aug. 21, 1896. Serial No. 603,440. (No model.)



Claim.—1. A bolster composed of channel-beams deeper at the center than at the ends and riveted together by their webs, substantially as described.

2. A bolster composed of channel-beams deeper at their centers than at their ends and riveted together by their webs and having their centers spread apart, substantially as described.

3. A bolster composed of channel beams riveted together by their webs and having central longitudinal ribs, substantially as and for the purpose described.

4. A bolster composed of channel-beams united by their webs and having their ends provided with flanged pieces riveted thereto and constituting column-guides, substantially as described.

5. A truck-bolster composed essentially of channel-beams riveted together by their webs, spread apart at their centers, and supplied

with a center brace having a king-pin opening, substantially as described.

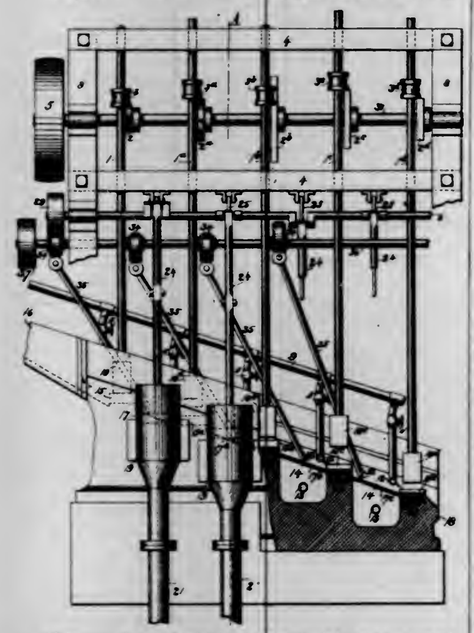
6. A bolster composed of channel-beams united back to back by their webs, and having their flanges constructed with bosses about midway of the length of the bolster, substantially as described.

7. A truck-bolster composed of channel-beams having their greatest vertical height at their center, and tapering thence convergently to opposite ends, spread apart at their center, and provided with longitudinal reinforces in their webs, a king-bolt socket, and tie-plates at their ends, substantially as described.

8. A body-bolster composed of channel-beams having their greatest height at their center and tapering thence toward their ends, united back to back by their webs, and having central vertical tie-plates, substantially as described.

9. A body-bolster composed of two channel-beams united back to back by their webs and having their webs spread apart to form a king-bolt socket, and central vertical tie plates or reinforces, substantially as described.

568,926. CRUSHING APPARATUS. EDWARD D. SELF, South Orange, N. J. Filed July 27, 1894. Serial No. 518,709. (No model.)



Claim.—1. An ore-crushing apparatus having a mortar comprising successive dies and stamps, and having screens over which the crushed material passes intermediately of the successive dies and stamps, in combination with an apparatus for producing upward currents of a fluid through the screens substantially as specified.

2. In a stamp-mill, the combination with a mortar and stamps of dies arranged in series and provided with grooves through which fine material may pass, the grooves decreasing in depth as the ore reaches them in finer condition, substantially as specified.

3. In an ore crushing and separating apparatus, the combination of a number of stamps arranged in series, dies for said stamps provided with grooves decreasing in depth as the ore reaches them in finer condition, screens intermediate of the dies and supply-pipes for introducing currents of water into the apparatus, substantially as specified.

4. In an apparatus for separating substances of different specific gravities, the combination with crushing-surfaces and intermediate screens, of an apparatus for producing an upward flow of a fluid through the screens, and over the dies, whereby the finer, lighter material is prevented from passing through the screens, substantially as specified.

5. In a stamp-mill, the combination with a series of dies, of a motor supporting said dies and having a series of passage-ways extending through it to the spaces between the dies, the passage ways being adapted to convey currents of a fluid, substantially as specified.

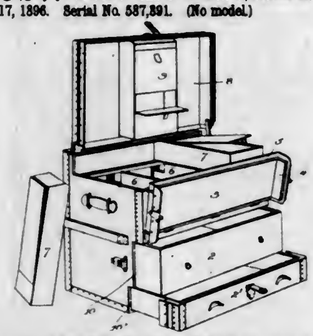
6. In a stamp-mill, the combination with a series of stamps and corresponding dies of a series of screens interposed between the dies over which the crushed material passes, reciprocating rods 24 and connecting linkwork 25, 26, 27, and 28 for transmitting motion from the rods to the screens, substantially as specified.

7. In an apparatus for crushing and separating ores, the combination of a series of stamps, means for raising the successive stamps to different heights decreasing as the material passes through the apparatus, dies for the stamps, screens intermediate of the dies and means for producing upward currents of a fluid through the screens, substantially as specified.

8. In an apparatus for crushing ore the combination of a series of stamps and corresponding dies, the dies being provided with grooves extending lengthwise of the apparatus, substantially as specified.

9. In an apparatus for separating substances of different specific gravities, the combination of a series of stamps and corresponding dies arranged adjacent to each other, screens intermediate of these dies and means for producing an upward intermittent or pulsating current through the screens, substantially as specified.

568,927. TRUNK. CALVIN R. STARR, Columbus, Ohio. Filed Apr. 17, 1896. Serial No. 587,891. (No model.)

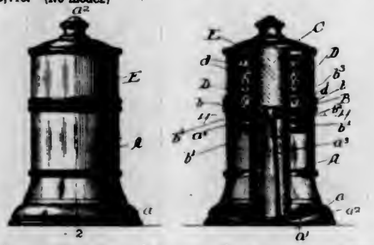


Claim.—1. A trunk having its shell divided horizontally into two independent sections A and B, the upper section B having vertical partitions 6 6 to form compartments opening upwardly, boxes or receptacles 7 7 removably supported over the outer of said compartments, a lid 8 for the section B containing a box or receptacle 9 to fit in the space between the boxes 7 7, the section A open at its front, recesses 10 10′ in the sides thereof, a drawer 2 to slide in the upper part of said section, and a drawer 2′ in the bottom of the section having a reinforced portion adapted to fit in the recesses 10′, and a reinforced door 3 to fit in recesses 10, substantially as shown and described.

2. In a trunk, a shell open at its lower front wall, recesses 10 10′ in the sides thereof, a drawer 2 sliding in the upper part of said opening, a drawer 2′ in the bottom of said shell having a reinforced portion adapted to fit in recesses 10′, and a reinforced door 3 to fit on the recesses 10, substantially as shown and described.

3. In a trunk, a shell open at its front side near its bottom, recesses 10′ in the sides of said shell, a drawer to slide in the bottom of said shell having a reinforced portion adapted to fit in said recesses, substantially as and for the purpose explained.

568,928. EVAPORATING OR VAPORIZING APPARATUS. JAIRUS L. STRATTON and FRANK MURDOCK, Kansas City, Kans., assignors to the Cre-Ozone Company, Reading, Kans. Filed Oct. 24, 1895. Serial No. 566,713. (No model.)



Claim.—1. An evaporating or vaporizing apparatus comprising a diaphragm, B, having a central opening therein, an annular flange, b^3, extending around said opening, an annular wick, C, extending through said opening and suitably secured to said flange, a perforated tube, D, secured to the diaphragm and having the annular corrugations, d, the adjustable cap, E, fitted upon the outer peripheries of said corrugations, and the screw-threaded portion, b', adapted to be screwed upon a suitable fluid-receptacle; substantially as described.

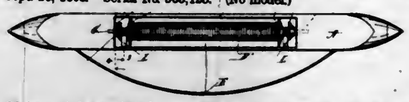
2. In an apparatus of the class described, the combination with a fluid-receptacle having a central longitudinal air-tube, of a perforated tube, D, having the annular corrugations, d, the diaphragm, B, having a central opening, the air-tube being arranged to extend through said opening, an annular wick, C, extending in said fluid-receptacle and tube, D, and the cap, E, supported by said annular corrugations, d, substantially as described.

3. In an apparatus of the class described, the combination with the annular fluid-receptacle, A, having the perforated supporting-base, a, the diaphragm, a', and the air-tube a^3, extending longitudinally through said fluid-receptacle, of the diaphragm, B, having an annular opening, a flange, b^3, encircling said opening, a perforated tube, D, annular corrugations, d, upon said tube, a wick, C, extending through said fluid-receptacle and tube, D, a hollow stopper, b^5, encircling the upper end of the air-tube, a^3, and adapted to secure the wick, C, to the annular flange, b^3, and the cap, E, fitted upon the outer peripheries of the corrugations, d, substantially as described.

4. An apparatus of the class described comprising a suitable fluid-receptacle and air-tube extending longitudinally through the same, a perforated tube, corrugations extending around said tube, a diaphragm separating said fluid-receptacle from said tube, an annular opening in said diaphragm, a suitably-supported wick extending through the fluid-receptacle and into said perforated tube, and a cap adapted to be longitudinally adjustable upon said corrugated tube; substantially as and for the purpose set forth.

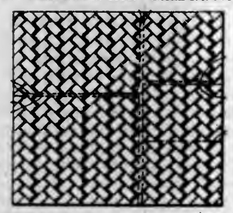
5. In an apparatus of the class described, the combination with a suitable fluid-receptacle, A, an air-tube extending longitudinally through the same, and a screw-threaded neck, a^4, of the perforated tube, D, corrugations, d, diaphragm, B, having an annular opening, the flange, b', the wick, C, extending through said fluid-chamber and through said perforated tube, said wick extending around the air-tube, a^3, and suitably secured to the annular flange, b^3, the screw-threaded portion, b', fitted to the neck, a^4, and the cap, E, adapted to be longitudinally adjustable upon said corrugations; substantially as and for the purpose set forth.

568,929. LOOM-SHUTTLE. WALTER TODD, Paterson, N. J. Filed Sept. 20, 1895. Serial No. 563,125. (No model.)



Claim.—A loom-shuttle, provided with a chamber in the upper side thereof, a shaft or rod in said chamber and adapted to support a spool, a hole in the said shuttle at one end of the chamber and a slot at the opposite end thereof, springs secured to the side walls of the said chamber and adapted to impinge against the spool, a sliding plate at the end of said chamber adjacent to said slot and provided with a notch or recess, and a thread-guide secured to said shuttle, substantially as described.

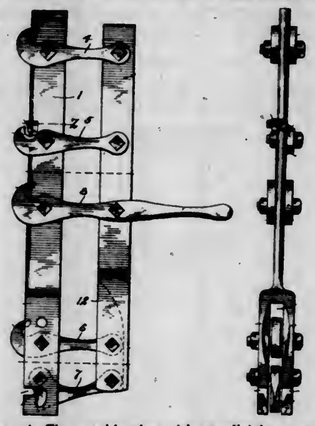
568,930. PHRAGMITE STRUCTURE. HELEN M. VAN ETTEN, Moravia, N. Y. Filed Dec. 2, 1895. Serial No. 570,798. (No model.)



Claim.—1. A sheet material from which to cut or stamp blanks for the manufacture of various articles, which sheet is of a uniform texture and thickness throughout its length and width and composed of woven East Indian phragmites and flexible solidifying cement incorporated in the structure of the sheet to render the same infrangible and self-sustaining as set forth.

2. As an improved article of manufacture, a sheet material from which to cut or stamp blanks for various purposes, which material is composed of a plurality of layers of woven East Indian phragmites, each of which layers is rendered infrangible independently of the companion layer by a flexible solidifying cement incorporated in the structure of the layer and a coat of flexible cement uniting said layers, said united layers forming the aforesaid sheet material of a uniform thickness and texture throughout and infrangible in character as set forth.

568,931. FENCE-WIRE-CRIMPING DEVICE. WILLIAM H. H. WEST, Jerseyville, Ill., assignor of two-thirds to H. S. Daniels and J. W. Enos, same place. Filed July 22, 1896. Serial No. 600,148. (No model.)



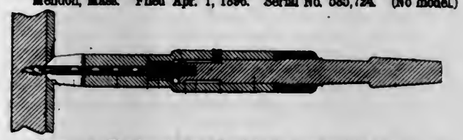
Claim.—1. The combination with parallel bars, and means for moving them longitudinally relative to each other, of a wire-crimper having pivotal connection with each of the bars and adapted to act in opposition to one of the bars for crimping a wire, substantially as and for the purpose set forth.

2. The combination with parallel bars having parallel members, and means for moving the bars longitudinally relative to each other, of a wire-crimper located between the parallel members of the bars and having pivotal connection therewith, and having an end constructed to engage with and crimp a wire between the parallel members of a bar, substantially as and for the purpose set forth.

3. The combination with parallel bars, and means for moving them longitudinally relative to each other, of wire-crimpers having pivotal connection with the bars, and a wire-cutter, the latter having pivotal connection with the bars and adapted to act in opposition to a fixed cutter to sever a wire, substantially as set forth.

4. The combination with parallel bars, one of the bars having parallel members and formed with an L-slot in each member, and means for operating the bars, of a wire-crimper having pivotal connection with the bars and having a bill to act jointly with the L-slots, substantially in the manner set forth for the purpose described.

568,932. CENTERING DEVICE FOR BITS. SAMUEL W. WILCOX, Mendon, Mass. Filed Apr. 1, 1896. Serial No. 585,724. (No model.)



Claim.—1. The herein-described device, comprising a body, carrying a tool, and a centering member surrounding the lower end of and movable longitudinally relatively to, said body, the lower end or nose of said member embracing said tool and provided with suitable side apertures for the egress of the shavings from the tool, substantially as described.

2. The herein-described device, comprising a body adapted to carry a tool, and a centering member supporting said body and movable longitudinally relatively thereto, the lower end or nose of said member being adapted to rest on the surface to be operated upon, and having one or more lateral apertures for the shavings, and an adjustable stop carried by said body and free to contact against said member to limit the movement of the tool, substantially as described.

3. The herein-described device, comprising a body, carrying a tool, a centering member mounted on said body, and movable longitudinally thereof, and an adjustable stop adapted to contact against the end of the centering member, to limit the said longitudinal movemet of said member toward said body, the lower end or nose of said member embracing said tool, and having one or more lateral openings for the egress of the shavings, said end or nose being shaped to conform to the surface to be operated upon, substantially as described.

4. The herein-described device, comprising a body adapted to carry a tool, a centering member supporting said body, and embracing the tool at its lower end or nose, said end or nose being shaped to conform to the surface to be operated upon, and having one or more side

apertures for shavings, a longitudinal groove in said body and a stud in said member, to hold said body and member together, a pocket in said member below the body and a spring therein tending to maintain said member and body extended, and an adjustable stop on said body free to contact with said member, substantially as described.

568,933. ELECTRIC MINING-MACHINE. ROBERT H. WILES, Freeport, Ill. Filed May 22, 1896. Serial No. 592,540. (No model.)



Claim.—1. In a machine of the class described, the combination with a suitable carriage, of devices arranged, upon the carriage, to cut a kerf into which the carriage may advance, means for forcing the carriage into the kerf so cut, and a wheel revolubly mounted upon the carriage and arranged to bite into one, only, of the kerf's broader walls as the carriage is forced forward.

2. In a machine of the class described, the combination with a suitable carriage, of devices arranged upon the same to cut a kerf into which the carriage may advance, means for forcing the carriage forward in the kerf, a wheel revolubly mounted in the carriage in position to project from one broader face only of the carriage and bite into the adjacent kerf-wall as the carriage advances, and a second wheel arranged to bite the opposite kerf-wall in a similar manner.

3. In a mining-machine adapted to form a kerf or cut, the combination with a carriage adapted to advance into the kerf and suitable cutting mechanism for forming the kerf in advance of the carriage, of a toothed wheel mounted on the carriage and free to rotate in a plane approximately perpendicular to the carriage and approximately parallel to the line of motion thereof, the teeth of the wheel being adapted to embed themselves successively in one of the walls of the kerf as the wheel is rotated by its contact with said wall and the forward motion of the carriage.

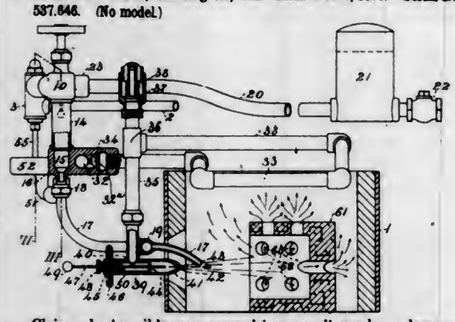
4. In a mining-machine adapted to form a kerf or cut, the combination with a carriage adapted to advance into the kerf and suitable cutting mechanism for forming the kerf in advance of the carriage, of a series of toothed wheels mounted on the carriage and free to rotate in a plane approximately perpendicular to the carriage and approximately parallel to the line of motion thereof, the teeth of the wheels being adapted to embed themselves successively in one of the walls of the kerf as the wheels are rotated by their contact with said wall and the forward motion of the carriage.

5. In a mining machine adapted to form a kerf or cut, the combination with a carriage adapted to advance into the kerf and suitable cutting mechanism supported by the carriage and adapted to form the kerf in advance thereof, of two toothed wheels supported by the carriage and each free to rotate in a plane approximately perpendicular to the plane of the carriage and approximately parallel to the line of motion thereof, the teeth of said wheels being adapted to embed themselves in the respective walls of the kerf as they are rotated by their contact with said walls respectively, and the forward motion of the carriage of each of said wheels being adapted to relieve the carriage of the pressure brought to bear upon it through the other wheel.

6. In a mining-machine adapted to form a kerf or cut, the combination with a carriage adapted to advance into the kerf and suitable cutting mechanism supported by the carriage and adapted to form the kerf in advance thereof, of a toothed wheel mounted on the carriage, the teeth of said wheel being of the same lateral width at the apex as at the base, and said wheels being free to rotate in a plane approximately perpendicular to the carriage and approximately parallel to the line of motion thereof, the teeth of the wheels being adapted to embed themselves successively in one of the walls of the kerf as the wheels are rotated by their contact with said walls and the forward motion of the carriage.

7. In a mining-machine of the class described, the combination with the head, *c'*, and the cutting-chain, D, adapted to form a kerf in advance of said cutting-head, of a series of guiding-wheels, E, E, E', journaled in said head, the teeth of said wheels being adapted to embed themselves successively in one of the faces of the kerf as they are rotated by their contact with said walls and the forward motion of the head, *c'*.

568,934. AUTOMATIC SIGHT-FEED CRUDE-OIL BURNER. DANIEL C. WILSON, Los Angeles, Cal. Filed Feb. 7, 1895. Serial No. 537,646. (No model.)



Claim.—1. An oil-burner comprising an oil supply, a burner, means for generating steam, a water supply, a head, connected with the water supply, having an outlet-port, and a coil of wire situated at the outlet-port of the head in a vertical position and of such a diameter as to cause the water to be separated into drops by passing through it, substantially as described.

2. An oil-burner comprising an oil supply, a burner, means for generating steam, a water supply, tubes through which the water and oil supplies pass, and a wire coil located in one of the tubes and situated at the outlet-port of the head in a vertical position and of such a diameter as to cause the water to be separated into drops by passing through it; substantially as described.

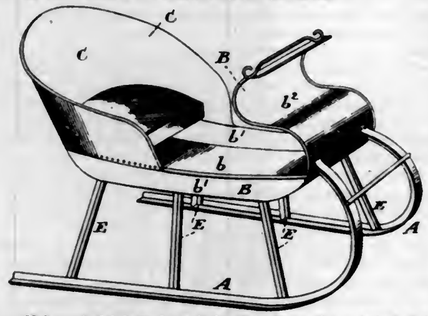
3. An apparatus for burning oil comprising a water-supply pipe an upper head having a chamber with which the water-supply pipe is connected and a contracted orifice beneath the chamber, a valve for controlling the orifice, a pendent coil of wire surrounding the lower end of the orifice for arresting the flow and producing large drops of water, the lower head having a chamber and a tube around the coil and connecting the chambers in the upper and lower heads; substantially as described.

4. An apparatus for burning oil comprising a water-supply pipe, the upper head having a chamber with which the water-supply pipe is connected and a contracted orifice beneath the chamber, a valve for controlling the orifice, the lower head having a chamber and a pipe leading from the chamber formed with a partition having a Z-shaped recess forming a trap and a tube connecting the chambers in the upper and lower heads; substantially as described.

5. An oil-burner comprising the steam-injector tube having a conical inner end formed with a contracted discharge-opening, the strainer-tube located in the injector-tube, the threaded plug with which the strainer-tube is connected, having a hand-wheel, the stuffing-box connected with the plug, and the sliding rod extending through the stuffing-box, through the plug, and through the strainer-tube, for cleaning the discharge-opening of the injector-tube; substantially as described.

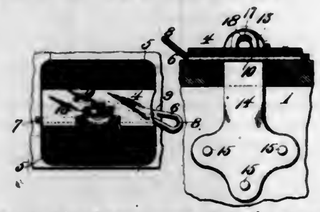
6. The combination with a burner for steam and oil, sources of water and oil, water and oil ducts having sight-tubes therein and leading from the said sources of water and oil to the burner, heads for the sight-tubes having ports forming portions of the ducts aforesaid, and a steam-generator in the water-duct interposed between the sight-tube for water and the burner; substantially as described.

568,935. SLEIGH. CASPER ZIMMERMAN, Big Stone City, S. D. Filed Dec. 6, 1895. Serial No. 571,304. (No model.)



Claim.—A sleigh made entirely of sheet metal, consisting of the T-runners A A curled up in front, the bottom, sides, and dash-piece B, the back C lapped about and riveted to the sides and the seat D, located in the flare of back and bent over in front, all as shown and described.

568,936. BOX-FASTENER. CHARLES W. BERSLER, St. Louis, Mo. Filed Apr. 13, 1896. Serial No. 587,419. (No model.)



Claim.—1. A box-fastener, composed of a box member and a lid member, the box member consisting of an arm secured to the box and having a head, and the lid member consisting of a plate having a raised portion and an opening through which the head passes; and a spring pivoted at one end to the plate and normally in engagement with the head of the box member, and means carried by the spring whereby it may be moved out of engagement with the head, substantially as shown and described.

2. A box-fastener consisting of a plate 3 having a raised middle portion 4 and adapted to be secured to the lid of the box, a spring having a substantially straight arm 7, a return-bend 8, and an arm 9, said spring fitting beneath the raised portion of the plate and its arm 9 being connected to the raised portion of the plate, and a box member having a head 13, substantially as and for the purpose set forth.

568,937. MINING-MACHINE. HENRY H. BLISS, Washington, D. C. Filed July 27, 1891. Serial No. 400,893. (No model.)

Claim.—1. The combination of the carriage, the drill, and the chain carrying cutters, arranged to move forward longitudinally in the aperture formed by the drill, and then transversely at an angle to said aperture, substantially as set forth.

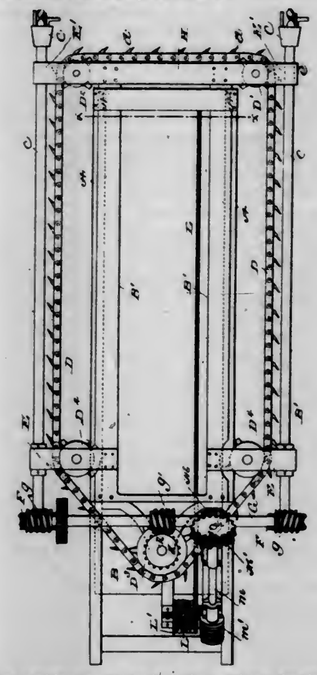
2. The combination with the carriage, of the drill, the bearing for the said drill, and the chain provided with cutters and arranged to travel first longitudinally of the machine and then transversely in the plane of the drill-apertures, substantially as set forth.

3. The combination with the carriage, of the drill, the chain provided with cutters moving continuously in one direction in the plane of the drill and mounted independently thereof, and the drill bracket or support extending across the vertical planes of the path of the chain cutters, substantially as set forth.

4. The combination with the carriage, of the drill, the chain provided with cutters moving transversely in the plane of the drill, forward from a wheel on the rear of the carriage across the front of the carriage and then to the rear thereof, and the drill support or bracket arranged to move partly in the aperture formed by the drill and partly in the kerf formed by the chain cutters, substantially as set forth.

5. The combination of the carriage, the drill, the chain having cutters moving transversely in the plane of the drill, and the shoe or traveling abutment, as at R, substantially as set forth.

6. The combination of the bed, the carriage, the chain provided with cutters and moving transversely across the front end of the carriage, and a holding projection secured to the carriage and extending outward in the horizontal planes of the chain and engaging with the wall of the coal to provide the carriage with an abutment against lateral movement, substantially as set forth.



7. The combination of the bed, the carriage, the single cutter-chain moving transversely across the front end of the carriage, the devices for advancing and withdrawing the carriage on the bed, and a projection mounted stationarily on the front end of the carriage and engaging the side wall of the main kerf, whereby said projection forms an abutment for the carriage against the lateral thrust of the cutters, substantially as set forth.

8. The combination with the carriage, of the drill, the chain having cutters moving transversely of the machine in the planes of the drill, and the arms or brackets for carrying the drill having inner ends of a vertical dimension less than the kerf formed by the chain cutters and having passages for the said chain cutters, substantially as set forth.

9. The combination of the carriage, the chain having cutters which move transversely across the path of the carriage, and a cutting mechanism at the end of the path of the operative part of the chain, arranged in advance of the cutters at the said end of said path, said cutter-chain and said cutting mechanism lying in the same horizontal planes whereby the chain cutter operates in transverse lines only, substantially as set forth.

10. The combination of the carriage, the chain having cutters moving transversely of the carriage and the drill forming an aperture of a vertical dimension greater than that of the kerf formed by the chain cutters, and the drill support or bracket having a part wider vertically, and a part narrower vertically than the kerf of the chain cutters, substantially as set forth.

11. The combination with the bed having channel-bars, front carriage-guides located in horizontal planes other than those of the channel-bars, and the front chain-guide wheels, of a rear chain-driving wheel, a cutter-chain traveling on lines diverging from said wheel and subsequently around front guide-wheels, and a carriage across the front end of which said chain travels on said guide-wheels, said carriage having a rear portion sliding in said channel-bars of the bed, and also having one or more longitudinal sliding guide-bars lying in the horizontal planes of the chain, and sliding in said front guides on the bed, all of said parts being arranged substantially as described whereby powerful leverage can be imparted through a relatively small driving sprocket-wheel, and the planes of travel of the chain and the carriage can all be maintained parallel to the horizontal planes of the kerf, substantially as set forth.

12. The combination with the bed having side bars, and cross-braces connecting said side bars, and a carriage mounted on said bed, having a chain guiding and supporting frame, an endless cutter-chain

passing entirely around the said chain-guiding frame in a path extending from a relatively small main driving-wheel on lines diverging outwardly from the said driving-wheel for guiding the chain across the front, said chain supporting and guiding frame, said driving-wheel, said loose wheels, and said chain all being arranged in the same substantially horizontal planes, other than the horizontal planes of the bed-bars, substantially as set forth.

13. In a mining-machine, the combination, of the bed, the carriage traveling thereon, an endless chain passing from the rear of the carriage across the front thereof, and a steadying projection secured to the front end of the carriage and extending laterally to the side wall of the main kerf, and having a wall engaging or bearing face lying entirely between the upper and the lower horizontal planes of the chain cutters, substantially as set forth.

14. In a mining-machine, the combination, of the bed having side bars with longitudinal guides, the motor-carriage fitted to the said guides, a cutter-chain arranged and traveling in a plane substantially parallel to the plane of the said guides, a chain-frame having one or more longitudinal thrusting and carrying bars in the plane of the chain-links and a front cross-support H extended beyond the side lines of the bed, front chain-wheels on said cross support in the horizontal planes of the thrusting-bars, a rear chain-driving wheel, and a chain support or guide between the said driving-wheel and the front wheels, said guide being arranged in the plane of the thrusting-bars to support the chain vertically and hold it on lines which diverge outwardly from the driving-wheel, all of the last-said parts (to wit, the chain-frame, the front cross-support, the front wheels, the driving-wheel, and the intermediate chain-guide) being arranged in substantially the same plane and parallel to the guide on the bed, substantially as set forth.

15. In a mining-machine, the combination of the following elements, namely, the portable bed having longitudinally-arranged side bars, longitudinally-arranged shoes or runner-supports below said side bars, a carriage having a motor-support fitted in a guide on the said bars of the bed, a chain-frame having one or more longitudinal thrusting and carrying bars, a cutter-chain arranged in the horizontal planes of the thrusting-bars, and parallel to the plane of the bed-bars, front wheels for said chain, a power-wheel for said chain on the motor-support (all the said wheels being in a plane substantially parallel to the said bed-guide), the front stationary guide for the chain-frame, and a traveling holder on the carriage bearing against a wall cut in the coal, whereby the cutters can while cutting be advanced on straight lines without interference with the bed or longitudinal runners, substantially as described.

16. In a mining-machine, the combination of the following elements, namely, a portable bed-frame, longitudinally-arranged runners or shoes below the bed-frame, a motor-support fitted to and guided on the bed in a fixed path, a chain-frame having one or more longitudinal thrusting and carrying bars, a cutter-chain arranged thereon to travel in planes substantially coincident with those of the thrusting-bars and parallel to said bed-guide; a front guide for said thrusting-bars in the plane of the chain-links and held by a support extending vertically away from the plane of the guide on the bed to the plane of the chain, and a rear traveling support for the chain-frame extending vertically to the planes of the cutter-chain, whereby the chain-frame is held in the plane of the chain and out of contact with the bed-bars to provide free space for the cutters to travel without interference from the bed or runners, substantially as set forth.

17. In a mining-machine, the combination of the following elements, namely, a portable bed having longitudinally-arranged side bars providing a carriage-guideway, longitudinal runners or supports under the bed, a motor-support fitted to the guideway on the bed, a cutter-chain, a chain-frame having one or more longitudinal bars B' in the plane of the chain, a front guide on the bed fitted to the said bars B', a cross-support H at the front of said bars, a chain-driving wheel, the last-said parts (to wit, the driving-wheel, the chain, the sliding bars B', and front cross-support H) being held substantially parallel to the aforesaid bed-guides, whereby they can be advanced and retracted without interfering with the bed or ground support, and a steadying-holder traveling with the carriage and bearing against a wall of the coal to prevent torsion of the chain-frame and hold it in line, substantially as set forth.

18. The combination of the bed, the carriage, the cutter-carrying chain, the rear horizontal driving sprocket-wheel, the vertical shaft secured to said sprocket wheel, the carriage-moving mechanism having a rotary member secured to and mounted on the carriage on a transverse axis immediately behind the vertical chain driving shaft, and a relatively stationary member secured to the bed and engaging with the rotary member, the electric motor mounted on and traveling with the carriage in fixed relations to the rotary member of the carriage-moving mechanism and to the cutters, the chain-driving gearing actuated by the electric motor, and the worm and worm-gearing interposed between the chain-driving gearing and the carriage-moving mechanism, substantially as set forth.

19. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal chain-driving sprocket-wheel, the vertical shaft carrying said sprocket-wheel, the carriage-moving mechanism having a rotating member mounted on the carriage on a transverse axis, and a stationary member secured to the bed and engaging with the rotary member, the electric motor secured directly to the carriage and moving therewith in fixed relation to the cutters and the carriage-moving mechanism, said motor being connected to the said chain-driving shaft, and the longitudinally-arranged shaft connecting the chain-driving mechanism with the transverse carriage-moving mechanism, substantially as set forth.

20. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal driving sprocket-wheel, the vertical shaft carrying said wheel, the electric motor secured to the carriage, the transversely-mounted rotating carriage-moving mechanism below the motor, the power-gearing situated on the carriage in front of the motor for actuating both the vertical chain-shaft and the carriage-moving mechanism, substantially as set forth.

21. The combination of the bed, the carriage, the chain provided with cutters, the horizontal driving sprocket-wheel, the vertical shaft carrying said wheel, the shaft and gearing in front of said vertical shaft and connected thereto, the carriage-moving mechanism having a rotary member mounted on the carriage behind the vertical shaft, and the intermediate longitudinally-arranged shaft for driving the carriage-moving mechanism and extending therefrom to the aforesaid shaft and gearing in front of the vertical chain-driving shaft, substantially as set forth.

22. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal driving sprocket-wheel therefor, the vertical shaft carrying said sprocket-wheel, the motor, the power-shaft and gearing in front of the motor and connected to the vertical chain-shaft, a rotating carriage-moving mechanism mounted transversely on the carriage behind the vertical chain-shaft, and the longitudinally-arranged power-shaft connected to the said carriage-moving mechanism and extending forward to the aforesaid shaft and gearing in front of the motor, substantially as set forth.

23. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal driving sprocket-wheel therefor, the vertical shaft carrying said sprocket-wheel, the motor on the carriage, the transversely-mounted rotary carriage-moving mechanism on the carriage behind the vertical chain-shaft, the gearing in front of both the motor and the vertical shaft for driving the chain, and a shaft extending backward from said front gearing and under the motor, and connected to the carriage-moving mechanism, substantially as set forth.

24. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal driving sprocket-wheel therefor, the chain-driving mechanism having a vertical shaft for said sprocket-wheel and a horizontal power-shaft geared to the vertical shaft, the carriage-moving mechanism having a rotary member mounted transversely on the carriage behind the vertical shaft, and the power-shaft driven by the said chain-driving mechanism and connected to the said rotary carriage-moving member, substantially as set forth.

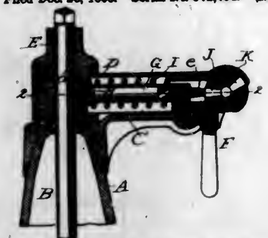
25. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal driving sprocket-wheel therefor, the vertical shaft for said wheel, the transverse power-shaft geared directly to the vertical chain-shaft, the electric motor having a transversely-mounted armature-shaft, the gearing connecting the armature-shaft and said power-shaft, a carriage-moving mechanism also mounted transversely on the carriage, and a longitudinal shaft between the carriage-moving mechanism and the transverse power-shaft, substantially as set forth.

26. The combination of the bed, the carriage, the cutter-carrying chain, the horizontal sprocket-wheel for said chain, the vertical shaft carrying said wheel, the electric motor with the transversely-mounted armature, the transverse power-shaft interposed between the motor and the vertical shaft, and the straight spur-gearing at the side of the motor in the longitudinal planes of the machine and interposed between the armature and the transverse power-shaft, substantially as set forth.

27. The combination of the bed, the carriage, the horizontally-arranged endless chain, the frame for the said chain, the rear driving sprocket-wheel, the vertical shaft carrying said sprocket-wheel, the horizontally-arranged power-shaft geared to the vertical shaft, the carriage-moving mechanism on the carriage, the longitudinally-arranged intermediate shaft geared to the said power-shaft and to the carriage-moving mechanism, the electric motor secured to the carriage and having a transversely-mounted armature-shaft, and the straight spur-gearing at the side of the machine in planes parallel to the vertical longitudinal planes thereof and connecting the armature-shaft with the transverse power-shaft, substantially as set forth.

28. The combination in a mining-machine, of the bed, the carriage moving in a guide thereon, a chain, provided with cutters, mounted on said carriage and moving in one direction across the front end of the carriage, a drill arranged to bore an aperture additional to the kerf formed by the chain, and a steadying or holding projection situated eccentrically as to the axis of the drill and extending laterally to the outer circle of rotation of the cutter on the drill, said bearing projection and its support being smaller in cross-section than said bore, whereby friction is reduced, and a space for clearance is provided, as set forth.

568,938. RAILROAD-SWITCH STAND. THOMAS E. CALVERT, Lincoln, Nebr. Filed Dec. 20, 1895. Serial No. 572,751. (No model.)



Claim.—1. In combination with the switch-stand, the signal-shaft provided with a transverse opening therethrough; a lever mounted upon the stand and also provided with an opening; a block, such as E, mounted upon the shaft and provided with a transverse opening; and a pin adapted to be passed through the opening in the lever and into the shaft and block to secure said latter parts together.

2. In combination with the switch-stand, the signal-shaft provided with a transverse opening therethrough; a lever mounted upon the stand, and also provided with an opening; a block, such as E, mounted upon the shaft and provided with two openings substantially at right angles to one another; and a pin adapted to lock said latter parts together, substantially as and in the manner set forth.

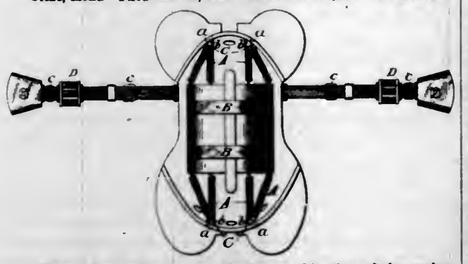
3. In combination with the switch-stand; the signal-shaft; a block such as E, mounted upon said shaft; a spring-pressed bolt for engaging said block; and a handle or lever F provided with the openings J and K, substantially as and for the purposes described.

4. In combination with the switch-stand, the signal-shaft; a block, such as E, secured to said shaft; a table secured to the stand; a lever journaled upon the shaft and adapted to swing across the table; a spring-pressed bolt mounted within said lever; and a handle pivoted in the outer end of the lever, said handle being provided with a recess in its head to permit the bolt to enter the same when the switch is being thrown automatically, and to permit the adjustment of the lever and bolt with relation to the shaft and locking-block.

5. A locking-lever for switch-stands, provided with a recessed opening in one face; a sliding bolt mounted within said lever; a lock mounted within said recessed opening; and a spring adapted to act on the bolt and also to hold said lock in place.

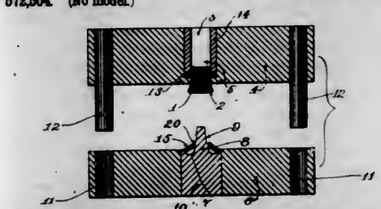
6. In combination with a switch-stand; a signal-shaft; a table; a locking-block secured to the shaft; a lever journaled upon the shaft, and provided with a recessed opening in one face; a lock seated in said opening; a sliding bolt within the lever; a spring acting on said bolt and also serving to retain the lock in place; and a handle pivoted in the outer end of the lever, the head of which is provided with a recess for the reception of the end of the sliding bolt when the switch is thrown automatically, and with a second recess for the lock-bolt.

568,939. RIDING-SADDLE. WILLIAM D. DAVIS, Fort Assiniboine, Mont. Filed Mar. 13, 1896. Serial No. 583,143. (No model.)



Claim.—In a spring-seat saddle the combination of the spring-seat, of springs A A, passing through the pommel to both sides of the saddle and the rear springs passing through the rear end of said seat and to the rear of said saddle at C C, and the leather covering over said seat, substantially as described.

568,940. DEVICE FOR MAKING COVERED EYELETS. ALANSON C. BRIARBROOK, Northampton, Mass. Filed Dec. 18, 1895. Serial No. 572,504. (No model.)



Claim.—1. The improved method of producing covered eyelets, which consists in first forming a washer of the covering material with the hole therethrough smaller than the hole through the eyelet that is to be covered, then upsetting or dishing the said washer to give it the shape of a truncated cone, and expanding the central hole thereof, then applying the eyelet and washer to each other with the truncated end of the cone within the throat of the eyelet, and then subjecting the two to compression to mold the covering upon the end and within the throat of the eyelet, substantially as described.

2. The mold for making covered eyelets, having the circular recess 7 to form the outer portion of the molded head or covering, and also having the pin 9 formed with a tip of reduced diameter relatively to the base portion thereof, which latter fits within the throat of the eyelet and assists in the molding operation, substantially as described.

3. The mold for making covered eyelets, having the circular recess 7 to form the outer portion of the molded head or covering, and also having the pin 9 formed with a tip of reduced diameter relatively to the base portion thereof, which latter fits within the throat of the eyelet and assists in the molding operation, and having the shoulder 20 at the upper part of the said base portion, substantially as described.

4. The mold for making covered eyelets, having the circular recess 7 to form the outer portion of the molded head or covering and also having the pin 9 formed with a tip of reduced diameter relatively to the base portion thereof, which latter fits within the throat of the eyelet and assists in the molding operation, combined with the heater-plate perforated to fit upon pin 9, and also having the lower portion of the perforation therethrough flared or countersunk as at 18, substantially as described.

5. The mold for making covered eyelets, having the circular recess 7 to form the outer portion of the molded head or covering, and also having the pin 9 formed with a tip of reduced diameter relatively to the base portion thereof, which latter fits within the throat of the eyelet and assists in the molding operation, and having the shoulder 20 at the upper part of the said base portion, combined with the heater-plate perforated to fit upon pin 9, and also having the lower portion of the perforation therethrough flared or countersunk as at 18, substantially as described.

568,941. DEVICE FOR USE IN PUNCHING FROM SHEETS OF PLASTIC MATERIAL. ALANSON C. BRIARBROOK, Northampton, Mass. Filed Dec. 18, 1895. Serial No. 572,505. (No model.)

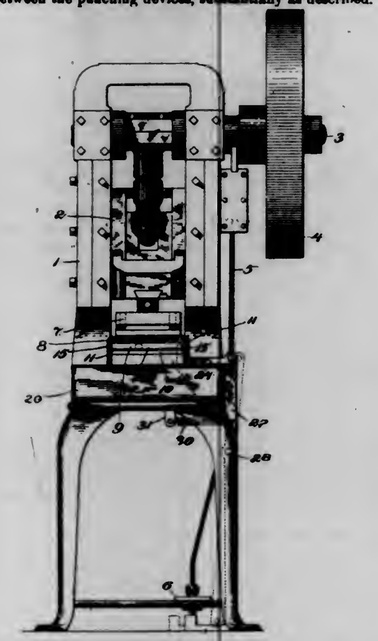
Claim.—1. The combination with punching devices having a gang of punches arranged in parallel rows, of gaging or positioning devices to give to the blank which is to be punched a shift in a diagonal direction at successive punching operations to thereby enable the material of said blank to be utilized more completely, substantially as described.

2. The combination with punching devices having a gang of punches arranged in parallel rows, of a reversible plate or holder 17 made with an opening therein to receive a sheet or strip of material from which portions are to be punched, said opening having lateral displacement as stated, a stop for limiting the extent to which the plate may be inserted, said plate having also a notch 21 to one side of the middle thereof and adapted in one position of the plate or holder to receive the said stop, substantially as described.

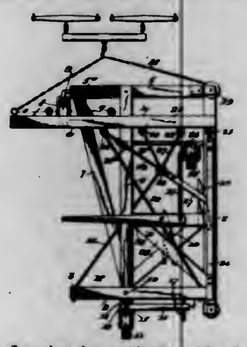
3. The combination with punching devices, and operating mechanism therefor, including means whereby to render such devices active at the desired times, and controlling devices operated by the insertion of the blank to be punched serving to prevent the punching devices from being made operative until the blank which is to be punched has been given the correct position between the punching devices, substantially as described.

4. The combination with punching devices having a gang of punches arranged in parallel rows, and operating mechanism therefor, including means whereby to render such devices active at the desired times, of a reversible plate or holder having a laterally-displaced opening for the reception of the sheet or strip of material to be punched,

a laterally-displaced notch in its rear side, and cam-shaped portions, a stop to enter said notch in one position of the plate or holder, and controlling devices embracing a movable member which is operated upon by the said cam-shaped portions and serving to prevent the punching devices from being made operative until after the said plate or holder has been given the correct position at each insertion of the same between the punching devices, substantially as described.



568,942. PLOW. Joseph Foucek, Visalia, Cal. Filed May 6, 1896. Serial No. 590,449. (No model.)

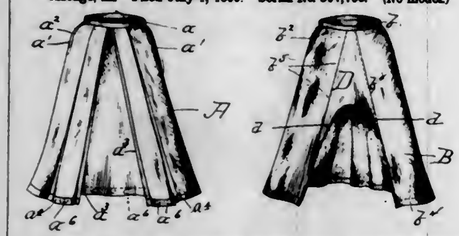


Claim.—1. In a plow the combination with a frame supported by caster-wheels and carrying one or more plowshares, of a rear cross-bar pivoted to said frame, a side bar rigidly secured to said cross-bar, a front draft-bar hinged to said side bar, and a series of rods hinged to said draft-bar and connected with said rear bar by means of a rod secured in said rear cross-bar, and rings to which the inner ends of said rods are secured substantially as set forth.

2. In a plow, the combination with a frame supported by caster-wheels and carrying one or more plowshares, means for raising or lowering said shares, of a rear cross-bar pivoted to said frame, a side bar rigidly secured to said cross-bar, a front draft bar hinged to said side bar, a series of rods hinged to said draft-bar and connected with said rear bar by means of a rod secured in said rear cross-bar, a ring to which the inner ends of said rods are loosely secured, and a toothed rack and means for guiding the rear caster-wheel for the purpose described.

3. In a plow, the combination with a main frame supported by caster-wheels and carrying one or more plowshares, of the cross-beams 18 and 21, the side bar 20, the rods 27, 28 and 29 hinged to the cross-beam 21, the rod 31 secured in the beam 18, the rod 22 secured in the beam 18 and to the front cross-piece of the frame, the ring 26 with which said rods are hinged, means for raising and lowering the frame, and means for guiding the same, substantially as described.

568,943. SKIRT FOR RIDING-HABITS. Agnes S. Greenleaf, Chicago, Ill. Filed July 1, 1896. Serial No. 597,706. (No model.)



Claim.—1. As a new article of manufacture, a garment comprising two skirts joined at the waist, the outer skirt being open at the back from the lower hem substantially to the waistband and the under skirt having an opening in front extending upwardly from the lower hem a desired distance, substantially as described.

2. As a new article of manufacture, a garment comprising two skirts united to a single waistband, the outer skirt being open at the back from the lower hem substantially to the waistband and the under skirt being open in front from the lower hem upwardly a desired distance, substantially as described.

3. As a new article of manufacture, a riding-habit comprising a double skirt, the outer skirt being open at the back from the lower hem substantially to the waist to expose the under skirt through said opening only, and the under skirt being open in front from the lower hem upwardly to a desired extent, the open portion of the under skirt being covered by the front of the outer skirt, substantially as described.

4. As a new article of manufacture, a garment comprising two skirts joined at the waist, the outer skirt being open at the back from the lower seam substantially to the waist, the under skirt being open at the front from the lower hem to the waist, and a gore or inserted piece of flexible material secured in the upper portion of the opening in the under-skirt front, substantially as and for the purpose specified.

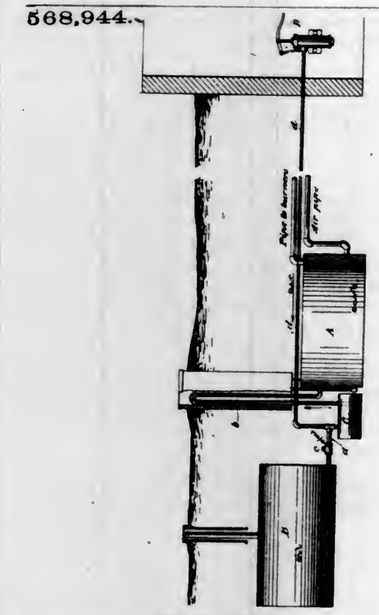
5. As a new article of manufacture, a skirt for riding-habits comprising two skirt members joined at the waist, the outer skirt provided with one or more side openings extending from the waistband downwardly a short distance, an opening at the back of said outer skirt extending from the lower hem to or substantially to the waistband, and a suitable stiffening on each side of the outer skirt extending from the lower hem upwardly a desired distance, the under skirt having an opening in front extending from the lower hem to or near the waistband and a gore or inserted piece, as D, filling the upper portion of said opening and sewed to the edges thereof along its two long sides, the lower margin *d*, of said gore being shaped substantially as described.

6. A skirt for riding-habits comprising two skirts joined at the waist, the outer skirt being provided with one or more side openings extending from the waistband downwardly a short distance and having an opening at the back extending from the lower hem to or substantially to the waistband, a featherbone stiffening on each side of the outer skirt extending from the lower hem upwardly a desired distance, the under skirt having an opening in its front extending from the lower hem to the waistband, a gore or inserted piece, filling the upper portion of said opening and sewed to the edges thereof along its two long edges, the lower margin *d*, of said inserted piece being shaped as described, and suitable weights secured to the lower hem of the outer skirt at desired points, substantially as specified.

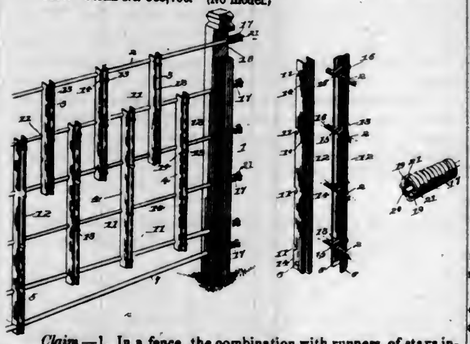
568,944. DEVICE FOR CHARGING HYDROCARBON-GAS GENERATORS. Arthur R. Griffen, Verona, N. J., assignor to the Gilbert & Barker Manufacturing Company, Springfield, Mass. Filed Jan. 22, 1895. Serial No. 535,769. (No model.)

Claim.—In an apparatus for carbureting air the combination of a carbureter, a storage-tank, a supplementary tank located below the level of the storage-tank, a pipe leading from the storage-tank into the top of such supplementary tank and a check-valve therein, a pipe extending from a point within and near the bottom of such supplementary tank upward to a point above the highest level of liquid within said storage-tank and thence downward and into said carbureter, an air-compressor and a pipe leading from such air-compressor into the top of said supplementary tank, substantially as and for the purposes set forth.

568,944.



568,945. FENCE. Joseph M. Gross, Dublin, Pa. Filed Mar. 18, 1896. Serial No. 583,736. (No model.)

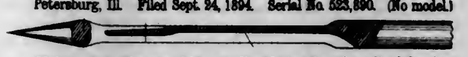


Claim.—1. In a fence, the combination with runners, of stays intersecting the runners, each stay being of semitubular construction with its edges provided with transversely-alined open-sided notches or seats to receive the runners, and having a continuous longitudinal cross sectionally-rounded rib upon its outer or front side, and looped staples having their legs fitted in perforations arranged upon opposite sides of the said rib, with their looped ends engaging and corresponding in cross-sectional area with said ribs, and with their free extremities engaged with the runners between the vertical planes of the edges of the stay to bow said intermediate portions of the runners inwardly, substantially as specified.

2. A fence-stay constructed of sheet metal and folded upon itself to form a semitubular or cross sectionally-semicircular bar provided at its edges with seats or notches to fit fence-runners, provided at its outer or convex side with an integral continuous cross-sectionally-rounded strengthening-rib, and provided upon opposite sides of said rib with perforations arranged out of transverse alinement with said seats or notches, substantially as specified.

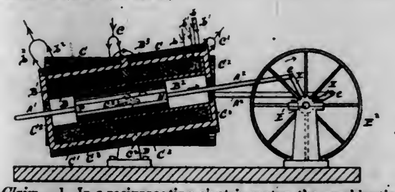
3. In a fence, the combination with runners and a termiual post through which the extremities of the runners extend, of tension devices including coiled springs fitted at their inner extremities in seats formed in the outer side of said post concentric with the runners, said runners extending axially through the springs and being provided at their extremities with eyes, and folding caps for connecting the extremities of the runners to the springs, said caps consisting of crossed pins intersecting in the terminal eyes of the runners and provided at their extremities with hooks to engage the outermost coils of the springs, substantially as specified.

568,946. SEWING-MACHINE NEEDLE. William H. Hanna, Petersburg, Ill. Filed Sept. 24, 1894. Serial No. 523,890. (No model.)



Claim.—A sewing-machine needle of the class described, having a body, a reduced stem integral with said body and pierced by a transverse eye, said stem having on one side a longitudinal short groove terminating in said eye and decreasing in depth upwardly and on the diametrically opposite side, a long groove having its upper termination in the body of the needle and its lower termination in the eye of the needle, the depth of said long gooove from its lower end upward increasing proportionately with the decreasing depth of the short groove; said needle also having a tapering point below said eye; also having integral enlargements below and contiguous to said eye in line with both of said grooves and of the same width as the grooves in the stem of the needle; as set forth.

568,947. OSCILLATING RECIPROCATING TRIPOLAR ELECTRIC MOTOR. Thomas H. Hicks, Detroit, Mich. Filed Dec. 19, 1892. Serial No. 455,564. (No model.)



Claim.—1. In a reciprocating electric motor, the combination of a solenoid-core, wound with two conductors *b* and *b'*, a piston, A; the two conductors being alternately traversed by a current of electricity; the current when flowing through the conductor *b* causing the piston to move in one direction in the axis of said core, and when flowing through the conductor *b'* causing the piston to move in an opposite direction, substantially as described.

2. In a reciprocating electric motor, the combination of a solenoid with a tripolar magnet, substantially as described.

3. In a reciprocating electric motor, the combination of a solenoid with a magnet; the solenoid and magnet having a separate helix, substantially as described.

4. In a reciprocating electric motor, the combination of a solenoid with a magnet, each having their respective helix; said magnet surrounding the solenoid, substantially as described.

5. In a reciprocating electric motor, the combination of a solenoid and a magnet; said solenoid and magnet being journaled in bearings so as to oscillate together, substantially as described.

6. In a reciprocating electric motor, the combination of a magnet and a solenoid; said magnet having an annular pole-piece, B^2, surrounding the solenoid, substantially as described.

7. In a reciprocating electric motor, the combination of a solenoid and a magnet; the magnet-poles being located intermediate and at the ends of the solenoid, substantially as described.

8. In a reciprocating electric motor, the combination of a solenoid and a magnet; the solenoid-helix having two circuits, and the magnet having only one circuit wound in two reverse directions, thereby producing a consequent pole-magnet, substantially as described.

9. In a reciprocating electric motor, the combination of a solenoid with a magnet; the conductors of the helices of the solenoid and magnet being joined together in linear series, substantially as described.

10. In a reciprocating electric motor, a rotating commutator, consisting of a metallic ring F^4, and a metallic semicircular segment, F^5, and three contact-brushes; one of said brushes being in sliding contact with said ring, and the other two brushes being alternately in sliding contact with said semicircular segment; the brushes in sliding contact with the semicircular segment being used to produce the reciprocating motions of the motor, substantially as described.

11. In a reciprocating electric motor, the combination of two solenoids with a rotating commutator; the pistons of the two solenoids rotating the commutator and the commutator controlling the movements of the solenoid-pistons, substantially as described.

12. In a reciprocating electric motor, the combination of a commutator with a solenoid; the solenoid having two electrical circuits *b*, *b'*; the commutator shifting the current alternately from one of said circuits to the other; one circuit being used to move the piston of the solenoid in one direction and the other circuit being used to move the piston in an opposite direction; the commutator being rotated by the piston, substantially as described.

13. In a reciprocating electric motor, the combination of a solenoid, a commutator, and a pair of switches; the solenoid having two

electrical circuits; the commutator shifting the current alternately from one of the circuits to the other; the two switches being respectively arranged in the two solenoid-circuits, said switches serving to reverse the direction of the piston of the solenoid, substantially as described.

14. In a reciprocating electric motor, the combination of two solenoids, two pairs of switches K′, K², K³, K⁴, and a commutator; each solenoid having two circuits *b* and *b′*, the commutator shifting the current alternately from one circuit to the other of each solenoid, thereby operating four circuits; the two pairs of switches being used to reverse the movements of the pistons of the two solenoids simultaneously, substantially as described.

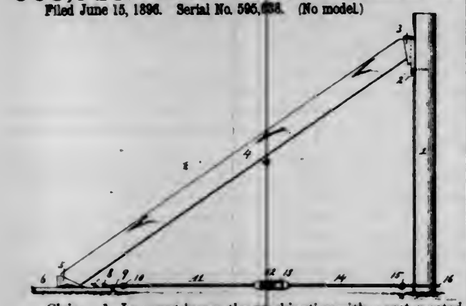
15. In a reciprocating electric motor, the combination of two tripolar magnets and their respective solenoids, two pairs of switches K′, K², K³, K⁴, and a rotating commutator; the solenoids and magnets each having their respective helices and reciprocating pistons; the commutator being used to shift the current for producing reciprocating motions of the two pistons, and the switches for reversing the direction of rotation of the motor, substantially as described.

16. In an electric motor, the combination with two solenoid-helices, each having their respective pistons, of two magnets, two pairs of switches, a drive-wheel, and a rotating commutator; each solenoid being provided with circuits, *b*, *b′*, each magnet having three magnetic poles; the commutator shifting the current in the two solenoid-circuits for producing automatic reciprocating motions of the two pistons, the switches being used to reverse the direction of rotation of the drive-wheel; the pistons having each oscillating and reciprocating motions, substantially as described.

17. The combination of the herein-described tripolar magnet and solenoid, substantially as set forth.

18. In an electric motor, the combination of two tripolar magnets and solenoids herein described and substantially as set forth.

568,948. POST-BRACE. HARRISON A. HILL, Huntsville, Kans. Filed June 15, 1896. Serial No. 595,638. (No model.)



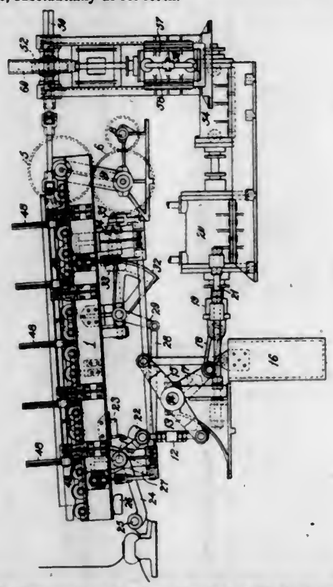
Claim.—1. In a post-brace, the combination with a post erected from the ground, sockets secured to said post near its upper end, foot-plates staked or pinned to the ground at a suitable distance from the post and also provided with sockets, inclined brace bars fitting in said sockets, a ring or band surrounding the post near the ground, rods connected thereto, turnbuckles swiveled to the outer ends of said rods, and rods linked to the foot-plates and engaging said turnbuckles, substantially as described.

2. In a post-brace, the combination with a post erected from the ground and provided with sockets near its upper end, foot-plates staked or pinned to the ground at a suitable distance from the post, and also provided with sockets and with outwardly-disposed hooks links engaging said hooks, a ring or band surrounding the post near the ground, rods connected to said ring or band, turnbuckles swiveled upon the outer ends of said rods, a second pair of rods pivotally connected to said links and having their screw-threaded inner ends engaged by said turnbuckles, and inclined brace-bars fitting in said sockets at their opposite ends, substantially as described.

568,949. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Youngstown, Ohio. Filed Aug. 5, 1896. Serial No. 601,691. (No model.)

Claim.—1. The combination of a frame having positively-driven rollers mounted thereon and pivotally supported so as to move vertically through an arc of a circle, laterally-movable guides arranged above the feed-rollers, and means for raising the table and shifting the guides laterally, substantially as set forth.

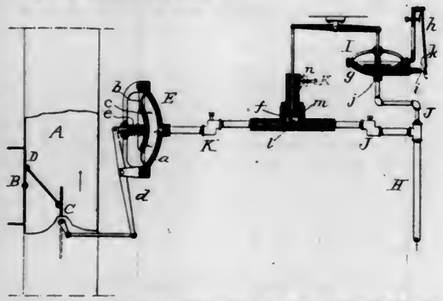
2. The combination of a frame having positively-driven rollers mounted thereon and pivotally supported so as to move vertically through an arc of a circle, laterally-movable guides arranged above the feed-rollers, means for raising the table and shifting the guides laterally, and a tilting frame for removing the articles rolled from the feed-table, substantially as set forth.



3. The combination of a frame having positively-driven rollers mounted thereon, links connecting the table with stationary supports, a shaft provided with arms mounted on the table, one of said arms being provided with a lifting-block, longitudinally-arranged guides above the feed-rollers, connections from said guides to the other arm on said shaft and means for rotating the shaft, substantially as set forth.

4. The combination of a feed-table having positively-driven feed-rollers, laterally-movable guides arranged above the feed-rollers, means for shifting said guides, tilting frames having one of its arms normally below the feed-rollers, and means for rotating the tilting frame, substantially as set forth.

568,950. TEMPERATURE REGULATING OR CONTROLLING DEVICE. WARREN S. JOHNSON, Milwaukee, Wis. Filed Apr. 1, 1896. Serial No. 585,790. (No model.)



Claim.—1. In combination with a temperature-controlling valve or damper; a fluid-pressure motor for actuating the same, a source of fluid-pressure; an intermediate fluid-controlling valve adapted and arranged to open communication between the source of pressure and the fluid pressure motor and to close communication between said motor and the atmosphere, and to close communication between the source of the supply and the motor, and open communication between the motor and the atmosphere; a motor for actuating said valve; a thermostat controlling said motor; a reducing-valve between the source of supply and the fluid-controlling valve; and a second reducing-valve between the fluid-controlling valve and the damper-actuating motor.

2. In combination with supply-pipe H, motor E, and a valve or damper actuated by said motor; double-acting valve *f* introduced into pipe H between the source of pressure and the motor E; thermostatically-controlled motor I for actuating valve *f*; reducing-valve J, located between the source of fluid-pressure and valve *f*; and reducing-valve K, located between the motor E and the outer atmosphere, substantially as set forth.

3. In combination with a temperature-controlling valve or damper; a fluid-pressure motor for actuating the same; a source of fluid-pressure; an intermediate fluid-controlling valve adapted and arranged to open communication between the source of pressure and the fluid-pressure motor and to close communication between said motor and the atmosphere, and to close communication between the source of supply and the motor, and open communication between the motor and the atmosphere; a motor for actuating said valve; a thermostat controlling said motor; and a reducing-valve between the source of supply and the fluid-controlling valve.

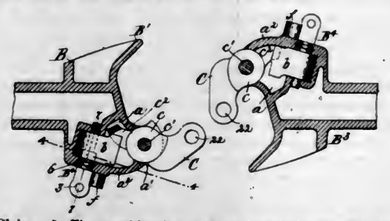
4. In combination with a temperature-controlling valve or damper, a fluid-pressure motor for actuating the same; a source of fluid-pressure; an intermediate fluid-controlling valve adapted and arranged to open communication between the source of pressure and the fluid-pressure motor, and to close communication between said motor and the atmosphere, and to close communication between the source of supply and the motor and open communication between the motor and the atmosphere; a motor for actuating said valve; a thermostat controlling said motor; and a reducing-valve between the motor of the temperature-controlling valve or damper and the fluid-controlling valve.

568,951. FLEXED FRACTURE-SPLINT. WILLIAM D. KEARNS, Pittsburg, Pa. Filed June 13, 1895. Serial No. 552,646. (No model.)



Claim.—A flexed palmar splint for treating fracture of the fore-arm or wrist, having a longitudinal brachial surface and a metacarpal palmar surface at a somewhat obtuse angle to each other, the metacarpal portion being retroflected or turned upward at the wrist, and also bent sidewise on its longitudinal axis and the brachial portion having a transverse upward swelling or projection to support the wrist; substantially as described.

568,952. CAR-COUPLING. EDWARD W. KELLEY, Lowell, Mass. Filed Mar. 3, 1896. Serial No. 581,705. (No model.)

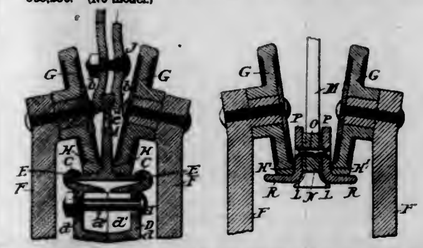


Claim.—1. The combination with an interiorly-recessed draw-head, of a coupling-knuckle pivoted in and closing the entrance to said recess and provided with a tail projecting thereinto, a pivotally-supported locking-block in the recess adapted to automatically move into position against the tail of and to lock the knuckle, and a pivoted support or retainer connected with said locking-block and adapted to engage the draw-head to hold the locking-block out of engagement with the coupling-knuckle, said retainer being so hung that it will be tripped to release the locking-block by the force of the concussion produced by the contact of the two opposed draw-heads, substantially as described.

2. The combination with an interiorly-recessed draw-head, of a coupling-knuckle pivoted in and closing the entrance to said recess and provided with a tail projecting thereinto, a pivotally-supported locking-block in the recess adapted to automatically move into position against the tail of and to lock the knuckle, an externally-operated actuator upon which said block is supported and by which it is turned to raise it out of the path of the knuckle-tail, and a support or retainer pivoted to the actuator and adapted to engage a projection on the exterior surface of the draw-head, to hold the locking-block in inoperative position, said retainer being so hung that it will be tripped to release the locking-block by the force of the concussion produced by the contact of the two opposed draw-heads, substantially as described.

3. The combination with an interiorly-recessed draw-head, of a coupling-knuckle pivoted in and closing the entrance to said recess and provided with a tail projecting thereinto, a pivotally-supported locking-block in the recess adapted to automatically move into position against the tail of and to lock the knuckle, an externally-operated actuator upon which said block is supported and by which it is turned to raise it out of the path of the knuckle-tail, said actuator having a head provided with a lateral extension, a support or retainer pivoted to said extension and having a shoulder at its lower end adapted to engage a projection on the exterior surface of the draw-head to hold the locking-block in a raised position out of engagement with the knuckle-tail and permit of its being tripped by the trainman to lock the coupling-knuckle, said pivoted retainer being so hung that it will be tripped to release the locking-block by the force of the concussion produced by the contact of the two opposed draw-heads, substantially as described.

568,953. HAY-CARRIER AND ATTACHMENT THEREFOR. WILLIAM LOUDEN, Fairfield, Iowa. Filed Mar. 14, 1896. Serial No. 583,256. (No model.)



Claim.—1. The combination of a track-rail having a centrally-located vertical web or webs and laterally-extended flanges projecting therefrom, and a hay-carrier having wheels adapted to run on the inner portions of said lateral flanges, and to bear against the vertical web or webs and be guided thereby along the track, substantially as set forth.

2. The combination of a track-rail having a centrally-located vertical web or webs and laterally-extended flanges projecting therefrom, and a hay-carrier having wheels adapted to run on the inner portions of said lateral flanges, the upper edges of said wheels being outwardly inclined and the lower edges adapted to bear against the vertical flange and be guided thereby, substantially as described.

3. The combination of a track-rail having a central vertical web and laterally-projecting flanges, a hay-carrier having wheels adapted to run on the inner portions of said flanges, and a stop-block adapted to clamp on the outer edges of the flanges, and be adjusted thereon independently of the carrier, substantially as set forth.

4. The combination of a track-rail having a central vertical web and laterally-projecting flanges, a suspending device connected to said vertical web, a hay-carrier having wheels set to escape said suspending device and adapted to run on the inner portions of the lateral flanges, and a stop-block adapted to clamp on the outer edges of said flanges and be adjusted thereon independently of the carrier, substantially as described.

5. A suspending device for elevated track-rails consisting of a single piece of inverted-U-shaped metal having its ends drawn together so as to stand face to face and embrace the edge of a track-rail between them, substantially as described.

6. A suspending device for elevated track-rails consisting of a single piece of inverted-U-shaped metal having its ends drawn together so as to stand face to face and embrace the edge of a track-rail between them, and means to hold said ends in engagement with the rail, substantially as set forth.

7. The combination of a track-rail having a vertical web with a bead or T-head on the upper edge thereof, a suspending device consisting of a single piece of inverted-U-shaped metal having its ends drawn together so as to stand face to face, their inner faces being adapted to catch under the bead of the rail, and a bolt to hold them in engagement with the bead, substantially as shown and described.

8. The combination of a track-rail having a vertical web with a bead or T-head on the upper edge thereof, a suspending device consisting of a single piece of inverted-U-shaped metal having its ends drawn together so as to stand face to face and embrace the bead of the rail between them, their lower ends being inwardly beveled to slip over said bead, substantially as set forth.

9. A stop-block composed of two members arranged face to face and adapted to clamp over the edge of a track-rail, a cavity being formed in the adjoining face of each member, substantially as and for the purpose set forth.

568,954. HEATING AND VENTILATING APPARATUS. Galett L. Marble, Seattle, Wash. Filed Jan. 31, 1895. Serial No. 536,576. (No model.)

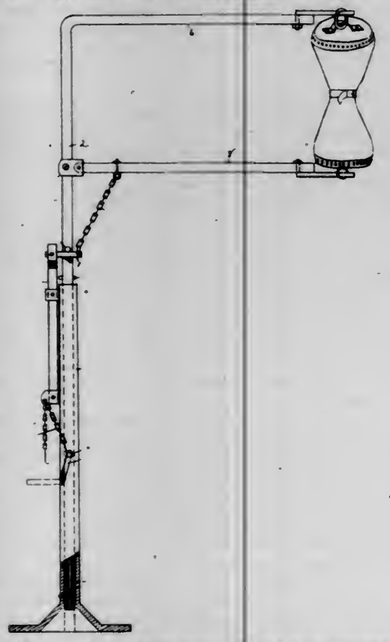


Claim.—1. A heating-drum comprising an inlet-flue, an outlet-flue, a fresh-air flue extending through the drum having an inlet-opening from the room at its lower end, and an outlet-opening discharging into the room at its upper end, a damper located within the fresh-air flue adjacent to and controlling the inlet-opening within the room, and the supply of fresh air from the outside; substantially as described.

2. The heating-drum B, provided with a ventilating air-flue *g* having a valve *j* by means of which the air passing up the air-flue is admitted into the room or apartment or may be caused to pass into the main flue as may be desired; substantially as described.

3. A heating-drum comprising an inlet-flue *c*, an outlet-flue *c'*, a fresh-air flue *h* extending through the drum having an inlet-opening at its lower end outside of the room and an outlet-opening discharging into the room at its upper end, and a ventilating-flue *g* extending through the drum having an inlet-opening from the room at its lower end and an outlet-opening discharging outside of the room at its upper end; substantially as described.

568,955. MAIL-CRANE. Arthur Mostenhimer, Milwaukee, Wis. Filed July 6, 1896. Serial No. 598,155. (No model.)

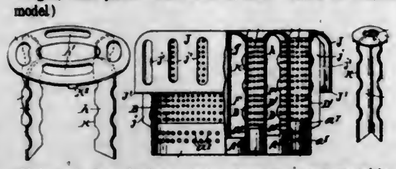


Claim.—1. In a revolving crane a locking device consisting of a pivotally-mounted yoke, lugs secured to the crane proper, a swinging arm secured to the crane, a connection connecting said swinging arm with the yoke.

2. A crane consisting of a hollow casting, said casting having in its side a spirally-inclined slot, the crane proper pivotally mounted in said casting, lugs located on said crane above the casting, a handle attached to the crane and extending through the said slot, a yoke pivotally mounted on the casting and adapted to engage the under side of the crane-lugs, a swinging arm attached to the crane, a connection connecting said yoke with the swinging arm, said crane adapted to automatically turn when the bag is taken from the same.

3. In a revolving crane a supporting device consisting of a hook attached by a flexible connection to a stationary point; an ascending and descending protrusion secured to the crane, said hook adapted to pass under the said protrusion and support the crane, said hook adapted to disengage the protrusion when the crane is raised.

568,956. HYDROCARBON-GENERATOR. Edwin G. Mummery, Detroit, Mich., assignor of three-twentieths to W. G. Hastie and N. S. Wright, same place. Filed Feb. 8, 1896. Serial No. 578,475. (No model.)



Claim.—1. In a hydrocarbon-generator, a cast-metal base constructed with a vaporizing-trough, having an inner flange and a heat-conducting outer flange integral with the base, an air-inlet within said trough opening through the base, and foraminous walls located about said trough and extending upward above said flanges forming a combustion-chamber above said trough, and an air-chamber above said air-inlet communicating through said foraminous walls with the combustion-chamber, said integral outer flange provided round about said vaporizing-trough with openings therethrough below the foraminous walls to admit air into the trough at the base of the combustion-chamber, close to the bottom of the trough, substantially as and for the purpose described.

2. In a hydrocarbon-generator, a cast-metal base constructed with a vaporizing-trough, having a heat-conducting outer flange integral with the base, said outer flange provided round about said vaporizing-trough with perforations or openings therethrough to admit air into said trough in proximity to the fuel in the bottom of the trough, substantially as and for the purpose described.

3. In a hydrocarbon-generator, the combination of a cast-metal base, formed with a vaporizing-trough, an air-inlet, opening through the base within said trough, foraminous walls located about said trough forming a combustion-chamber thereabove, and an air-chamber above said air-inlet, and a cap located over said air-chamber, said cap provided with arms or partitions secured thereto projecting downward within said air-chamber, for the purpose set forth.

4. In a hydrocarbon-generator, the combination of a cast-metal base constructed with an inner trough, an outer trough communicating with the inner trough, an air-inlet within the inner trough opening through the base, an air-inlet between said troughs opening through the base, perforated sheet-metal walls located about said troughs forming combustion-chambers thereabove, and air-chambers above said air-inlets, and caps located over said air-chambers provided with arms or partitions secured thereto projecting downward within said air-chambers between the corresponding perforated walls, said caps and the partitions secured thereto, together with the perforated walls being removable from the base, for the purpose set forth.

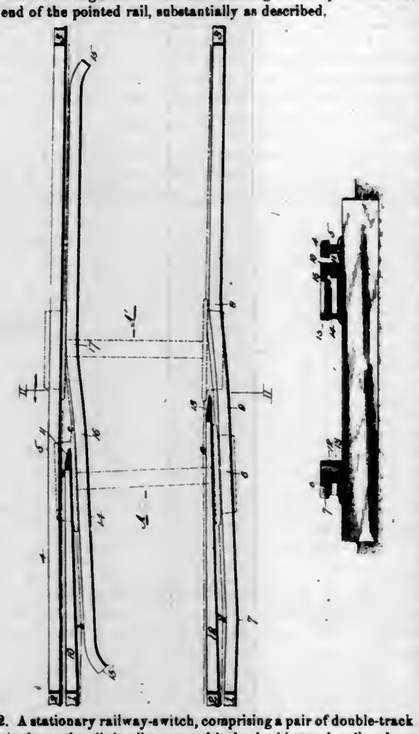
5. In a hydrocarbon-generator, the combination of a base, foraminous walls located thereabove forming combustion-chambers therebetween, and air-chambers communicating through said foraminous walls with said combustion-chambers, and caps located over said air-chambers provided with integral partitions extending downward adjacent to the corresponding foraminous walls, substantially as set forth.

6. In a hydrocarbon-generator, the combination of a base, foraminous walls located thereabove forming a combustion-chamber therebetween, and an air-chamber communicating through said foraminous walls with said combustion-chamber, and a cap located over said air-chamber provided with partitions secured thereto extending downward adjacent to the corresponding foraminous walls, said partitions being corrugated or cut away at intervals on their edges adjacent to said foraminous walls, substantially as set forth.

7. In a hydrocarbon-generator, the combination of a base, foraminous walls located thereabove forming combustion-chambers therebetween, air-chambers opening through said base communicating through said foraminous walls with said combustion-chambers, and caps located over said air chambers provided with partitions secured thereto extending downward adjacent to the corresponding foraminous walls, the outer cap provided with a downwardly-projecting flange having openings therein for the purpose set forth.

568,957. STATIONARY RAILWAY-SWITCH. Moses S. Pittman, Independence, Mo., assignor of one half to John W. Wood, same place. Filed July 25, 1896. Serial No. 600,437. (No model.)

Claim.—1. A stationary railway-switch, comprising a pair of double-track rails, single track rails in alinement with the double-track rails, a bent rail connecting one of the double-track rails with one of the single-track rails, and having the bent portion or apex thereof disposed outwardly of the longitudinal line of said connected rails, a pointed rail 12, forming a continuation of the companion double-track rail and inclining inwardly thereof, and a rail connecting with the other single-track rail and inclining inwardly toward the free end of the pointed rail, substantially as described.



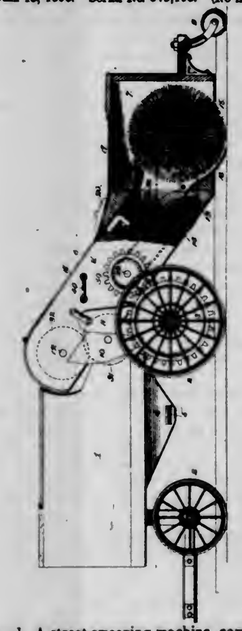
2. A stationary railway-switch, comprising a pair of double-track rails, single-track rails in alinement with the double-track rails, a bent rail connecting one of the double-track rails with one of the single-track rails, and having the bent portion or apex thereof disposed outwardly of the longitudinal line of said connected rails, a rail connecting with the other single-track rail and inclining inwardly to a point inward of the longitudinal line of said single and the alined double track rail, and a pointed rail 12, forming a continuation of said alined double-track rail, and inclining inwardly thereof, and having its inner side and end beveled outwardly so as to dispose the extreme point of said rail outward of the vertical plane represented by the inner margin of the rail which inclines inwardly from the last-named single-track rail, substantially as described.

3. A stationary railway-switch, comprising a pair of double-track rails, single-track rails in alinement with the double-track rails, a bent rail connecting one of the double-track rails with one of the single-track rails, and having the bent portion or apex thereof disposed outwardly of the longitudinal line of said connected rails, a rail connecting with the other single-track rail and inclining inwardly to a point inward of the longitudinal line of the other single and double track rails, a pointed rail 12, forming a continuation of said other double-track rail, and inclining inwardly thereof, and having its inner side and end beveled outwardly so as to dispose the extreme point of said rail outward of the vertical plane represented by the inner margin of the rail which inclines inwardly from the last-named single-track rail, and a guard-rail arranged at the inner side of and parallel with that portion of the bent rail connected to the first-named single-track rail, and of such length that the flange of one wheel will overlap the beveled end of the pointed rail 12 before the flange of the companion wheel passes from the controlling influence of said guard-rail, substantially as shown and described.

4. A stationary railway-switch, comprising a pair of double-track rails, single-track rails in alinement with the double-track rails, a bent rail connecting one of the double-track rails with one of the single-track rails, and having the bent portion or apex thereof disposed outwardly of the longitudinal line of said connected rails, a rail connecting with the other single-track rail and inclining inwardly to a point inward of the longitudinal line of the other single and double track rails, a pointed rail 12, forming a continuation of said other double-track rail, and inclining inwardly thereof, and having its inner side and end beveled outwardly so as to dispose the extreme point of said rail outward of the vertical plane represented by the inner margin of the inclined rail connected to said other single-track rail, a guard-rail arranged at the inner side and parallel with that portion of the bent rail connected to the first-named single-track rail and of such length that the flange of one wheel will overlap the beveled end of the pointed rail 12 before the flange of the companion wheel passes from the controlling influence of said guard-rail, and a short pointed rail arranged at the inner side of and parallel with the oppositely bent portion of said bent rail, and beveled at its outer side as at 11, so as to dispose its extreme point inward of the vertical plane of the outer margin of said guard-rail, substantially as described.

5. A stationary railway-switch, comprising double-track rails, single-track rails in longitudinal alinement with one set of double-track rails, a bent rail connecting one of the single-track rails with the longitudinally-alined double-track rail, and having the bent portion or apex thereof disposed outwardly of the longitudinal line of said connected rails, a short pointed rail forming a continuation of one of the other set of double-track rails and arranged parallel with and at the inner side of said bent rail, but extending only about to the apex of said bent rail, and beveled divergently away from said bent rail at its outer side, as at 11, a second pointed rail 12, of greater length than the first, and forming a continuation of the double-track rail which is companion to the first-named double-track rail, and extending inwardly of the longitudinal line represented by said double-track rail and the other single-track rail, and beveled forwardly and outwardly at its inner margin, as shown at 13, a rail connecting said last-named single-track with the remaining double-track rail, and bent as at 7 to provide an outwardly-extending portion which connects directly with said last-named double-track rail, and an inwardly-extending portion which extends approximately parallel with the short pointed rails, and bent also as at 8 to provide a portion which connects directly with the last-named single track rail, and extends inwardly therefrom to a point inward of the pointed end of the pointed rail 12, and to provide the oppositely-extending portion 9, which connects the two inwardly-extending portions and a guard-rail, which is bent inwardly at its opposite ends and to extend approximately parallel with the short pointed rail 10 and that portion of the first-named bent rail leading directly to the first-named single-track rail, and to produce a more abruptly-inclined connecting portion 16, substantially as shown, and for the purpose described.

568,958. STREET-SWEEPER. Thomas J. Robertson, Golden, Mo. Filed Jan. 13, 1896. Serial No. 575,193. (No model.)

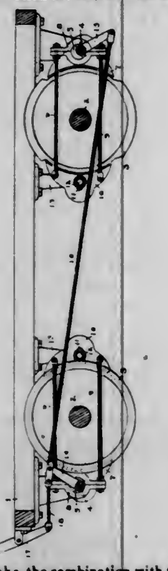


Claim.—1. A street-sweeping machine, comprising a dirt-receptacle and a sweeper-casing, both being wheel-supported, and the lat-

ter consisting of a rotary brush, an endless elevator, a dirt guide interposed between the brush and the elevator, a cross-bar above the receiving end of the elevator and provided with depending angular flanges, a brush-carrying frame provided with arms which fit slidingly between said flanges, and means to clamp said arms at any desired point of adjustment between said flanges, substantially as described.

2. A street-sweeping machine, comprising a dirt-receptacle and a sweeper-casing, both being wheel-supported, and the latter consisting of a rotary brush, an endless elevator, a dirt-guide interposed between the brush and the elevator, a cross-bar above the discharge end of the elevator and provided with depending angular flanges, lugs depending from the rear ends of said flanges, a brush-carrying frame, provided with arms which fit slidingly between said flanges, screw-threaded rods secured to said frame and projecting forwardly through said lugs, and nuts engaging the front ends of said rods, substantially as shown and described.

568,959. CAR-BRAKE. AUGUST ROTHENBERG, Rochester, N. Y. Filed Mar. 18, 1896. Serial No. 583,116. (No model.)



Claim.—1. In a brake, the combination with the wheel, of a shaft, having three cams or eccentrics thereon, a brake-shoe journaled on the central cam, sleeves on the outer cams, a second brake-shoe, and connections between it and the sleeves, substantially as described.

2. In a brake, the combination with a pair of wheels, of a shaft having at each end a set of three cams or eccentrics, a pair of brake-shoes for each wheel, one shoe of each pair mounted directly on the central one of the three cams, sleeves on the two outermost cams of each set, and connections between said sleeves and the other brake-shoe of the pair, substantially as described.

3. In a brake, the combination with a pair of wheels, of a shaft having a set of three cams at each end, a pair of brake-shoes for each wheel arranged on opposite sides thereof, and connections between the central cam of each set and one of the shoes, and between the two outer cams of each set and the other brake-shoe of the pair, substantially as described.

4. In a brake, the combination with the wheel, of a shaft having a set of three cams thereon, the central cam being arranged on the opposite side of the shaft from the other two, a brake-shoe on one side of the wheel operated upon by the central cam, and a second brake-shoe on the other side of the wheel connected to and operated by the outer cams of the set, substantially as described.

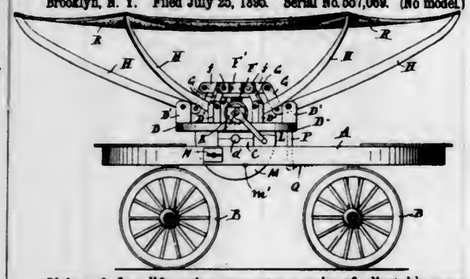
5. In a brake, the combination with the wheel, of a shaft having a set of three cams thereon, the central cam being arranged on the opposite side from the other two, a brake-shoe on one side of the wheel operated upon by the central cam, and a second brake-shoe on the other side of the wheel, a support on which said shoe slides and pivots, and connections between the outer cams and the last-mentioned brake-shoe, substantially as described.

6. In a brake, the combination with the wheel, a shaft having a set of three cams thereon, two on one side, and one on the other, of the brake-shoe having the slot, the stationary supporting-pin in said slot, connections between said shoe and the outer cams of the set, and the brake-shoe operated upon by the central cam of the set, substantially as described.

7. In a brake, the combination with the wheel, of a shaft having oppositely-arranged cams thereon, a brake-shoe on one side of the wheel carried by one cam, and a brake-shoe on the opposite side of the same wheel actuated by the other cams, substantially as described.

8. In a brake, the combination with the two pairs of wheels, the two shafts 4 having cams 5, 5 and 6, and the arms 14 and 15 thereon, and the connecting-rods 16, of the brake-shoes 7 and 10, the sleeves 8 and rods 9, and means for rotating the shafts 4, substantially as described.

568,960. LIFE-SAVING APPARATUS. LORENZO D. B. SHAW, Brooklyn, N. Y. Filed July 25, 1895. Serial No. 557,069. (No model.)



Claim.—1. In a life-saving apparatus a series of adjustable arms radiating from a common center, a body-receptacle consisting of netting or other suitable material attached to said arms, said arms being fulcrumed to standards on a pivoted plate or platform, and means such as described for operating same substantially as set forth.

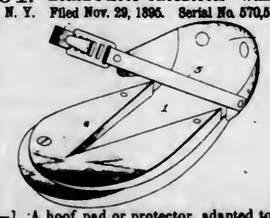
2. In a life-saving apparatus a pivoted plate or platform mounted in bearings carried by a suitable frame or truck, said platform having a series of lugs or standards, adjustable arms radiating from a common center and fulcrumed to said standards, netting or other suitable material secured to said arms, and short bars or arms connecting the inner ends of said adjustable arms to lugs on the head of a screw operated substantially as set forth.

3. In a life-saving apparatus a pivoted plate or platform mounted in bearings carried by a suitable frame or truck, said platform having a series of lugs or standards round its outer edge and a bevel-wheel arranged in its central portion, a screw passing through the center of said bevel-wheel the head of which is provided with a series of lugs, a bevel cog-wheel in gear with said bevel-wheel and adapted to be operated by a handle, adjustable arms fulcrumed to the lugs or standards on the pivoted plate, netting or other suitable material secured to said arms and connecting-pieces attached to the inner ends of said adjustable arms and the lugs on the screw-head substantially as set forth.

4. In a life-saving apparatus a pivoted platform carrying adjustable arms and means for operating same, netting or other suitable material secured to said arms, a plate secured on one side of said platform and having holes into which a bolt on the frame is free to pass to hold same in a raised or lowered position and an arm secured to the under side of said platform, a spring attached to said arm and to the frame substantially as and for the purposes set forth.

5. In a life-saving apparatus, a pivoted plate, a platform, and means for tilting same, lugs or standards on said platform, adjustable arms radiating from a common center fulcrumed to said lugs or standards, netting or other suitable material secured to the outer ends of said arms, and means for extending and contracting said adjustable arms substantially as and for the purposes set forth.

568,961. HORSE'S-HOOF PROTECTOR. WILLIAM C. SHERMAN, Sidney, N. Y. Filed Nov. 29, 1895. Serial No. 570,518. (No model.)



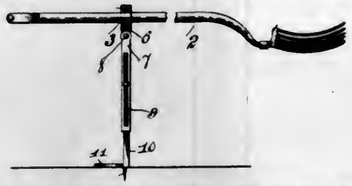
Claim.—1. A hoof pad or protector, adapted to be detachably applied to a horse's hoof when shod, the same having a contour corresponding substantially to the interior curvature of the shoe, an insole secured to the inner surface thereof and formed to accommodate the frog of the foot, a forwardly-projecting toe-plate interposed between the main body of the pad and the insole and adapted to be removably inserted above the toe of the shoe, and means for supporting the heel of the pad with relation to the hoof, substantially as specified.

2. A hoof pad or protector adapted to be detachably secured to a horse's hoof when shod, the same comprising a main body portion having a contour corresponding substantially to the interior curvature of the shoe, a toe-plate secured to the inner surface thereof and adapted to engage over the toe of the shoe, and an elastic heel-cushion bent to embrace the rear portion of the hoof and constituting a heel extension of the pad, the said heel-cushion being provided with forwardly-projecting end portions which are adapted to rest above and engage the heel ends of the horseshoe, substantially as described.

3. In a hoof pad or protector, the pad proper adapted to be arranged beneath the sole of the foot and conforming in contour to the inside dimensions of the horseshoe to which the same is applied, in combination with a toe-plate secured to the inner face of said pad and projecting slightly beyond the toe of the pad and adapted to engage above the toe of the shoe, a heel-cushion riveted or otherwise secured to a heel extension of said pad and provided with a backing or reinforcing plate of sheet metal bent into substantially semicircular form and having its opposite edges projecting forward and adapted to engage above the heel extremities of the shoe, and a clamping-band having its ends secured to said heel-cushion and passing around the hoof, substantially in the manner and for the purpose specified.

4. A pad or protector adapted to be detachably fitted to a horse's hoof, when shod, the said pad or protector comprising a forwardly-projecting toe-plate adapted to engage over the toe of the shoe, and the elastic heel portion having the forwardly-projecting ends which embrace the hoof on opposite sides and are adapted to engage over the heel ends of the shoe, substantially as described.

568,962. DIGGING AND STABLE FORK. CHARLES W. SKEELS, New Cumberland, Ohio. Filed Sept. 17, 1895. Serial No. 562,771. (No model.)



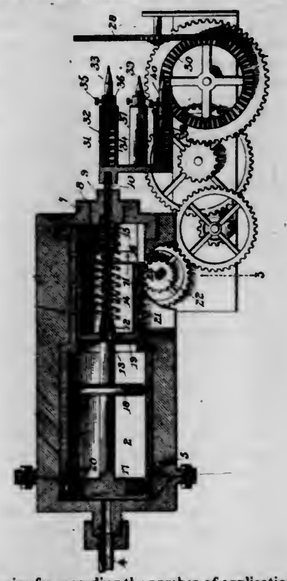
Claim.—In an agricultural implement, a fork having a suitable handle, an adjustable clamp secured to the handle of the fork, said clamp consisting of semicircular sections hinged together at the bottom and having a shank by which it is secured in position, a brace 7 to which the shank of the clamp is secured, said brace having a slot 9 and groove as described, an auxiliary brace 10 slidable in the groove, a set-screw slidable in the brace to secure the auxiliary brace in any adjusted position, and a base-plate having securing projections, said base supporting the auxiliary brace as and for the purpose specified.

568,963. PRESSURE-RECORDER FOR FLUID-PRESSURE BRAKES. SAMUEL L. TERRY, Phillipsburg, Kans., assignor of one-half to William Stretton, same place. Filed June 24, 1895. Serial No. 553,906. (No model.)

Claim.—1. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger adapted to be moved in one direction by the piston and having a return-spring, a recording medium, connections between the recording medium and the slide or plunger, including a clutch mechanism, whereby forward motion only is communicated to the recording medium, and a marker operatively connected with the slide or plunger and adapted to be moved into contact with the surface of the recording medium, substantially as specified.

2. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a movable recording medium, a marker, connections between the piston and said marker and recording medium whereby the recording medium receives a limited movement before the marker is affected, and means for returning the marker and piston to their initial positions, substantially as specified.

3. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a movable recording medium, means for operating the recording medium, and a plurality of markers operatively connected to the piston and adapted to be advanced toward the plane of and brought successively in contact with the surface of the recording medium to indicate pressures of different tension, substantially as specified.



4. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger arranged in the path of the piston and carrying a rack, a pinion meshing with said rack, a rotary dial, gearing connecting the dial with said pinion, interposed clutch mechanism to communicate forward and prevent backward rotation of the dial, a marker adapted to come in contact with the surface of the dial, and connections between the marker and the slide or plunger, substantially as specified.

5. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger arranged in the path of the piston, a dial, connections between the slide or plunger and the dial, whereby motion in a uniform direction is imparted to the dial, a stem loosely connected to the slide or plunger whereby the slide or plunger is capable of a limited motion independently of the stem, a return-spring for the slide or plunger, and a marker carried by the stem and adapted to be brought thereby into contact with the surface of the dial, substantially as specified.

6. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger arranged in the path of the piston, a stem loosely connected to the slide or plunger, whereby the latter is capable of a limited movement independently of the stem, a return-spring for the slide or plunger, an auxiliary spring adapted to be engaged by the slide or plunger at an intermediate point of its path, a marker carried by the stem, a rotary dial arranged in the path of the marker, and connections between the slide or plunger and the dial, substantially as specified.

7. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger arranged in the path of the piston, a stem loosely connected to the slide or plunger whereby the latter is capable of a limited movement independently of the stem, a return-spring for the slide or plunger, an auxiliary spring adapted to be engaged by the slide or plunger at an intermediate point of its movement, means for adjusting said springs, a marker carried by the stem, a rotary dial arranged in the path of the marker, and means for communicating motion from the slide or plunger to the dial, substantially as specified.

8. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a plunger arranged in the path of the piston, a stem connected to the plunger, a return-spring for the slide or plunger, a rotary dial, connections between the slide or plunger and the dial, a head carried by the stem, and a plurality of spring-pressed markers carried by the head with their tips or points at different

intervals from the plane of the dial and adapted to be successively brought into contact with the surface thereof, substantially as specified.

9. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having a piston exposed to train-pipe pressure, a slide or plunger arranged in the path of the piston, a stem connected to the slide or plunger, main and auxiliary springs for returning the slide or plunger, the latter being engaged by the slide or plunger at an intermediate point of its movement, a rotary dial, connections between the slide or plunger and the dial, a head fixed to the stem, sockets arranged upon the head, markers fitted to slide in the sockets and adapted to be brought successively in contact with the surface of the dial, and cushion-springs for holding the tips or points of the markers at different distances from the plane of the dial and allowing the repression thereof when brought into contact with the dial, substantially as specified.

10. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, the same having communicating main and auxiliary cylinders, the main cylinder having inlet and exhaust ports, a piston arranged in the main cylinder and provided with a disk operating in the auxiliary cylinder, a slide or plunger arranged in the auxiliary cylinder, a stem having a headed or shouldered extremity fitting in a socket in the slide or plunger, whereby the slide or plunger is capable of limited movement independently of the stem, main and auxiliary springs for returning the slide or plunger, the auxiliary spring terminating short of the plane of the plunger and adapted to be engaged thereby at an intermediate point of its stroke, a dial, connections between the slide or plunger and the dial whereby rotary motion is imparted to the latter at each forward movement of the former, and a plurality of repressible markers adapted to be brought into contact with the surface of the dial and having their points normally arranged at different intervals from the surface thereof, substantially as specified.

11. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, including a movable recording medium, a marker mounted for movement toward and from the plane of the recording medium, means controlled by and permanently exposed to fluid-pressure in the brake mechanism for moving the marker toward the recording medium, and means controlled by fluid-pressure for operating the recording medium, substantially as specified.

12. A device for recording the number of applications of pressure in a fluid-pressure brake mechanism, including a movable recording medium, a cushioned marker mounted for movement toward and from the plane of the recording medium and yieldingly held out of contact therewith, means controlled by train-pipe pressure for moving the marker toward the recording medium, and means controlled by train-pipe pressure for imparting advance movement to the recording medium, substantially as specified.

13. In a fluid-pressure brake system, the combination with a moving part exposed to fluid-pressure, of a pressure-recording device, and connections between the moving part and the recording device, whereby the former is adapted to move a limited distance without imparting motion to the latter, substantially as specified.

14. In a fluid-pressure brake system, the combination with a moving part permanently exposed to fluid-pressure and yieldingly held in its repressed position, of a movable pressure-recording device, and means connected with said recording device and arranged in the path of the moving part, whereby movement of the moving part due to a fluid-pressure sufficient for operating the brake mechanism under ordinary circumstances is allowed without affecting the recording device, substantially as specified.

15. Means for recording the maximum application of pressure in a fluid-pressure brake mechanism, the same including a movable recording device capable of movement in one direction only, a moving part or member exposed to fluid-pressure in the brake mechanism, and means connected to the recording device and arranged in the path of said moving part whereby motion is communicated by said moving part or member to the recording device when the fluid-pressure in the brake mechanism exceeds a predetermined limit, substantially as specified.

568,964. ELECTRIC CABLE. Silvanus P. Thompson, London, England. Filed Dec. 19, 1893. Renewed Aug. 11, 1896. Serial No. 602,457. (No model.) Patented in England Dec. 21, 1891, No. 22,304, July 4, 1893, No. 13,064, and Dec. 19, 1893, No. 13,581; in France June 30, 1892, No. 222,460, and Dec. 13, 1893, No. 234,763; in Germany Oct. 23, 1892, No. 86,013; in India Apr. 25, 1893, No. 330, and Aug. 17, 1894, No. 18; in Spain Sept. 4, 1893, No. 13,896, and Apr. 10, 1894, No. 15,308; in Brazil Feb. 7, 1894, No. 1,636; in Ceylon Aug. 22, 1894, No. 443, and in Straits Settlements Dec. 14, 1895.

Claim.—1. An electric cable for submarine use consisting of a main copper conductor continuous from end to end, surrounded by an insulating-sheathing and furnished at regular intervals along its length with branch conductors all of equal high resistance and equal self-induction, each such branch conductor consisting of a metallic core jointed into the main conductor and of an insulating-sheath extending all along its length and continuous with the insulating-sheath of the main conductor, the outer end of each such branch being earthed.



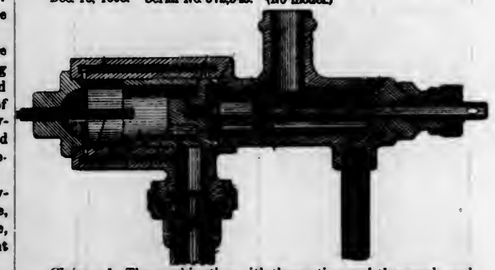
2. The combination with a single-conductor electric cable for submarine use of one or more compensating branches, each such branch consisting of an insulated conductor having both a higher resistance and a higher self-induction than the entire length of the main conductor jointed into the cable at some intermediate point and constituting an integral part of the cable.

3. The combination with an electric cable for submarine use having two insulated conductors, of one or more compensating branches, each such branch being jointed in as a bridge across from one conductor to the other conductor, such branch being surrounded throughout its entire length with insulating material which is jointed into and continuous with that of the cable.

4. The combination with an electric cable having two insulated conductors, of an intermediate piece of special cable containing also a bridge-wire possessing both self-induction and high resistance, the insulating material surrounding said bridge-wire being continuous with the insulation surrounding the two insulated conductors.

5. The combination with an electric cable having two separately-insulated conductors running therethrough side by side of one or more compensating branches, each such branch being of higher resistance and self-induction and jointed on as a leak from one of the conductors to the sea, said branches being taken at regular intervals and alternately from the two conductors.

568,965. VALVE. Samuel Tyldesley, Watertown, N. Y. Filed Dec. 18, 1895. Serial No. 572,543. (No model.)



Claim.—1. The combination with the casting and the supply and outlets thereof, of the piston mounted to move in the chamber of the casting the piston-rod and wing-valves thereon, one set of valves being adjustable with relation to the other and a valve carried at the end of said piston, whereby the piston cuts off the supply before the valve is seated, substantially as described.

2. The combination with the casting and the supply and outlet pipes, of a piston mounted to reciprocate in the main chamber of the casting and to move across the end of the supply-pipe and a valve carried by the piston-rod and arranged at the inner end of the piston and wing-valves on the piston-rod, one set of valves being adjustable with relation to the other, whereby the piston cuts off the supply before the valve is seated, substantially as described.

3. The combination with the casting and the supply and outlet pipes, of a piston mounted to reciprocate in the main chamber of the casting and to move across the end of the supply-pipe and a valve carried by the piston-rod and arranged at the inner end of the piston and wing-valves on the piston-rod, one set of valves being adjustable with relation to the other whereby the piston cuts off the supply before the valve is seated, said valve being located in a recess in the end of the piston, substantially as described.

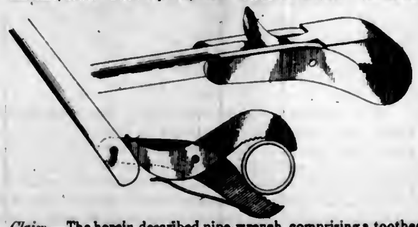
4. The combination with the casting and the supply and outlet pipes, of a piston mounted to reciprocate in the main chamber of the casting and to move across the end of the supply-pipe and a valve carried by the piston-rod and arranged at the inner end of the piston and wing-valves on the piston-rod, one set of valves being adjustable with relation to the other whereby the piston cuts off the supply before the valve is seated, said valve being located in a recess in the end of the piston, and means for releasing the pressure in the said main chamber of the casting, substantially as described.

5. The combination with the casting and the supply and outlet pipes, of a piston mounted to reciprocate in the main chamber of the

casting and to move across the end of the supply-pipe and a valve carried by the piston-rod and arranged at the inner end of the piston and wing-valves on the piston-rod, one set of valves being adjustable with relation to the other whereby the piston cuts off the supply before the valve is seated, said valve being located in a recess in the end of the piston, and means for releasing the pressure in the said main chamber of the casting and communicating with the supply-pipe, substantially as described.

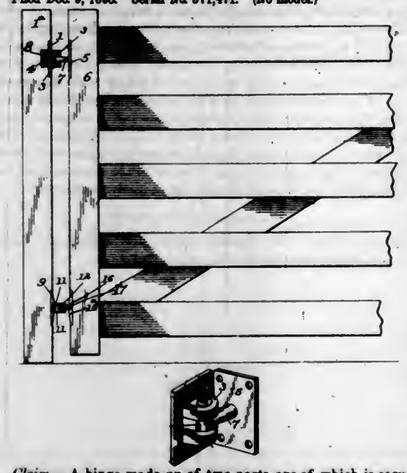
6. The combination with the casting and the piston and valve and piston-rod, of the wing-valves upon said rod, one set of valves being adjustable with relation to the other, substantially as described.

568,966. PIPE-WRENCH. Jonas T. Wiley and Elmer E. Boyd, Liscomb, Iowa. Filed Sept. 23, 1895. Serial No. 563,383. (No model.)



Claim.—The herein-described pipe-wrench, comprising a toothed main jaw having its rear end forked, a supplemental jaw pivoted intermediate its ends in the fork of the main jaw and formed at its rear end with a rounded convex face, a handle pivoted in the fork of the main jaw and extended in longitudinal alinement with and beyond its pivot into the path of the rear end of the other jaw, said handle being formed with a rounded extremity which cooperates with the convex face of the supplemental jaw, whereby the handle acts with increasing leverage on the supplemental jaw, and a jaw-closing spring extending longitudinally of the main jaw and secured fixedly at one end to the forward end of the main jaw and bearing at its free end against the rear end of the other jaw, substantially as described.

568,967. GATE-HINGE. James L. Wilson, Mountain Peak, Tex. Filed Dec. 9, 1895. Serial No. 571,471. (No model.)

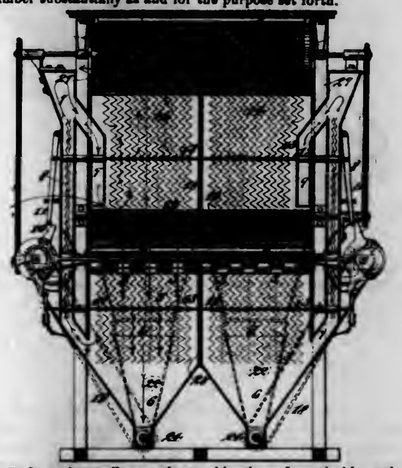


Claim.—A hinge made up of two parts, one of which is secured to the supporting-post or upright and is formed with two parallel loops slightly separated one from the other located just outside the recess in said post, and the other adapted to be secured to the gate, having an outwardly-extending arm and a cross-head adapted to be passed between said parallel loops and to bear against the rear surface thereof, substantially as and for the purpose described.

568,968. DUST-COLLECTOR. Joseph W. Wilson, Salt Lake City, Utah. Filed Mar. 4, 1895. Serial No. 540,451. (No model.)

Claim.—1. In a dust-collector, the combination of a suitable casing having an upper and lower air-chamber, a central air-inlet in communication with said lower air-chamber, corrugated screen located in said air-chambers, the corrugations in the screens in the lower chamber being made to overlap, and suitable passages having corrugated screens located in them for forming a communication between the two air-chambers substantially as and for the purpose set forth.

2. In a dust-collector, the combination of a suitable casing having upper and lower air-chambers, a central air-inlet in communication with said lower chamber, corrugated screens located in said chambers, passages having corrugated screens located therein and forming a communication between the upper and lower air-chambers, and a rotating-screen outlet in communication with said upper air-chamber substantially as and for the purpose set forth.



3. In a dust-collector, the combination of a suitable casing, a chamber in said casing forming a central air-inlet for the casing, a number of compartments also located in said casing and arranged above and beneath said inlet, a passage forming a communication between the upper and lower compartments, a series of corrugated screens located in the compartments and passages, a chamber located above the upper compartments and communicating therewith, and a rotary screen in said chamber for throwing out the purified air; substantially as shown and described.

4. In a dust-collector, the combination of a casing, an air-inlet in said casing, a compartment with which said air-inlet communicates, and screens arranged in a zigzag manner and overlapping, located in the compartment and adapted to be moved therein, and suitable means for moving said screens consisting of rods passing through the screens, clamps for attaching the screens to the rods at the points of contact, a spring-knocker connected with said rod and a cam for engaging said knocker, substantially as shown and described.

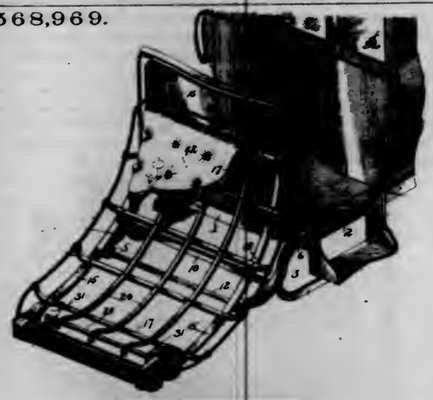
5. In a dust-collector, the combination of the casing, the air-inlet, the upper and lower compartments, and the passages forming a communication between them containing the corrugated screens, the spiral conveyer located in the lower compartments, for conveying away the dust, the traveling brush in the upper compartments for conveying away the dust in these compartments, and suitable dust-passages forming communication between the upper and lower chambers, and the lower chamber and the passages containing the corrugated screens, substantially as shown and described.

6. In a dust-collector, the combination of a suitable casing formed with upper and lower compartments and with a central air-inlet having a number of deflectors therein, suitable openings in said air-inlet and communicating with the lower air-chamber, a series of valves for said openings and adapted to be automatically moved so as to alternately open and close a part of the openings, corrugated screens located in said upper and lower air-chambers, and passages also provided with corrugated screens for forming a communication between the said air-chambers, substantially as and for the purpose set forth.

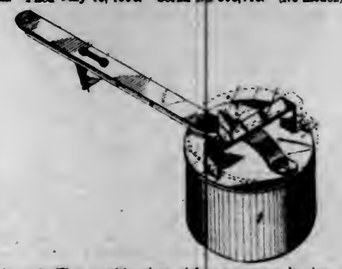
568,969. CAR-FENDER. William B. Baker, Shamokin, Pa., assignor of one-half to William E. Klumbach, same place. Filed Feb. 21, 1896. Serial No. 580,188. (No model.)

Claim.—In a car fender, a fixed portion therefor comprising a metallic bracket and a depending wheel-guard therefrom, a removable portion pivotally attached to the said fixed portion, and comprising the side and end bars, the cross-ribbons therefor and the longitudinal slats, double bearing-plates at the forward end thereof, the tread-wheels mounted therein and geared to a rotating pneumatic roller, combined with a tension-spring to counterweight the said removable portion, substantially as described.

568,969.



568,970. SAUCEPAN-COVER. GEORGE CURLEY, Salt Lake City, Utah. Filed July 10, 1896. Serial No. 598,710. (No model.)



Claim.—1. The combination with a saucepan having a handle projecting outwardly therefrom, of a cover therefor, a handle attached to said cover, extending outwardly therefrom, resting upon the handle of said pan and pivotally connected thereto, substantially as and for the purpose described.

2. The combination with a saucepan having a handle projecting outwardly therefrom, with a headed pin upon its upper side, of a cover for said pan having a handle extending outwardly therefrom, resting upon the handle of said pan and provided with a keyhole-slot within which said headed pin fits, whereby a pivotal connection between said handles is formed and whereby said cover may be readily detached from the handle of the pan.

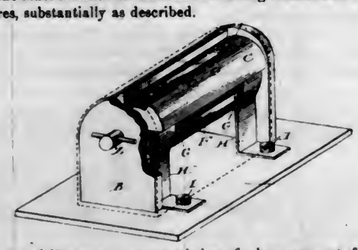
3. The combination with a saucepan having a handle projecting outwardly therefrom with a headed pin upon its upper side and a projection upon its under side, of a cover for said pan having a handle extending outwardly therefrom, resting upon the handle of said pan, extending slightly beyond the outer end thereof and provided with a keyhole-slot therein, within which said headed pin fits, whereby a pivotal connection between said handles is formed and whereby said cover-handle may be readily detached from the handle of the pan.

4. The combination with a saucepan having a handle projecting outwardly therefrom, of a cover for said pan, having an arched strip of metal upon its upper side and a handle for said cover pivotally connected thereto near one edge thereof, extending outwardly beneath said arched strip and curved slightly so that it engages the under side of said strip and holds said cover in frictional contact therewith.

5. The combination with a saucepan having a handle projecting outwardly therefrom, of a cover for said pan having an arched strip of metal upon its upper side, a projection on said strip and a handle for said cover pivotally connected thereto near one edge thereof, extending outwardly beneath said arched strip and curved slightly, so that it engages the under side of said strip and holds said cover in frictional contact therewith.

568,971. MULTIFUSE CUT-OUT. WILLIAM EHRHARDT, Union, N. J. Filed Dec. 23, 1895. Serial No. 573,110. (No model.)

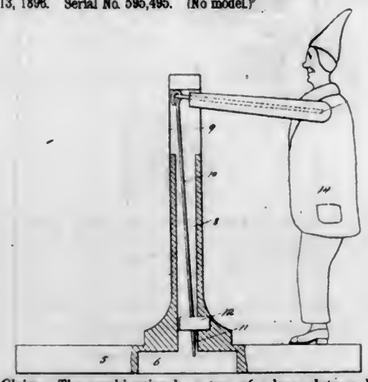
Claim.—1. A multifuse box or cut-out comprising a base, supports fastened to said base, a spindle having a handle or handles, journaled in said supports and acting as an axle, a cylinder fastened to said axle revolving with said axle by imparting rotation to the handle, depressed or countersunk portions in face of cylinder, holes in depressed or countersunk portions of cylinder and extending below the surface of said depressed portion, plugs fastened in said holes, conducting contact-plates containing holes the center of which coincides with the center of the plugs and placed in the depressed portions of cylinder, screws or the like to retain the contact-plates in depressed portions, fusible strips or wires connected to contact-plates, conducting brushes or springs one end of which presses against contact-plates, the other fastened to the base and having terminals for the circuit-wires, substantially as described.



2. A multifuse or cut-out, consisting of a base, supports fastened to said base, a spindle having a handle or handles journaled in said supports and acting as an axle, a ratchet-faced cylinder or its equivalent fastened to said axle, revolving with said axle by imparting rotation to the handle in the direction of the length of the teeth, depressed or countersunk portions in face of ratchet-faced cylinder, holes in depressed or countersunk portions of the ratchet-faced cylinder and extending below the surface of said depressed portion, plugs fastened in said holes, conducting contact-plates, containing holes the centers of which coincide with the center of the plugs and placed in the depressed portions of cylinder, screws or the like to retain the contact-plates in depressed portions, fuse wires or strips connected to said contact-plates, conducting brushes or springs one end of which presses against contact-plates and the other securely fastened to the base, terminals fastened to the brushes or springs and the circuit-wires substantially as described.

3. A multifuse or cut-out, consisting of a base, supports fastened to said base, a spindle having a handle or handles journaled in said supports and acting as an axle, a ratchet-faced cylinder having a multiplicity of teeth or its equivalent on its surface, fastened to said axle, revolving with said axle by imparting rotation to the handle in the direction of the length of the teeth, depressed or countersunk portions in face of ratchet-faced cylinder, holes in depressed or countersunk portions of the ratchet-faced cylinder and extending below the surface of said depressed portion, plugs fastened in said holes, a multiplicity of conducting-plates, containing holes the centers of which coincide with the center of the plugs and placed in the depressed portions of the ratchet-faced cylinder, screws or the like to retain the contact plates in depressed portions, fuse wires or strips connected to said contact-plates, two or more sets of conducting springs or brushes one end of which presses against the contact-plates and the other fastened to the base, terminals fastened to the brushes, and the circuit-wires of two or more circuits substantially as described.

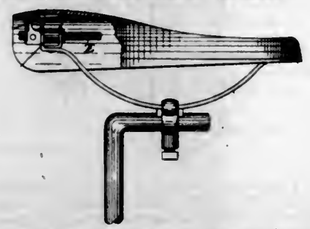
568,972. TOY. CLEMENT ENGEL, New York, N. Y. Filed June 13, 1896. Serial No. 595,495. (No model.)



Claim.—The combination in a toy, of a base plate or board, a vertical standard mounted thereon, a rod or wire which passes through said standard, and is provided at its lower end with an outwardly-curved and upwardly-directed arm, on which is mounted a button or head, said standard being also provided at its upper end with slots or openings in its opposite sides, and with a yoke of wire or similar material, which is connected with the upper end of said wire or rod, and

the sides of which are pivotally connected with a figure, said figure being designed to represent a man, and provided with arms through which the sides of said yoke pass, and said base plate or board being provided beneath said standard with a chamber into which the lower end of the rod projects, and said base plate or board being provided in the upper side thereof, with an opening through which the arm provided with the button or head passes, substantially as shown and described.

568,973. BICYCLE-SADDLE. ARTHUR L. GARFORD, Elyria, Ohio. Filed Mar. 12, 1895. Serial No. 541,421. (No model.)



Claim.—1. In a bicycle saddle, the combination of a saddle-seat bent downward at the sides but not at the front end, and a transverse vertical plate having side arms which are secured to the downwardly-turned sides of the seat near the front end thereof, and a rearwardly-extended arm which is secured to the under side of the seat, with a seat-support secured to the rear end of the seat, and having at its front end two separated vertical ears, a threaded sleeve extending between and secured to said ears, a screw which screws into said sleeve and has a cylindrical front end which passes through a cylindrical hole in the transverse plate, and an annular flange which bears against the rear side of the said plate, said screw having a longitudinal slot in its front end, substantially as and for the purpose specified.

2. In a bicycle-saddle, the combination of a flat-spring seat-support having an upwardly-turned end, an ear lying parallel with said end and secured to said support, an internally-threaded sleeve lying in holes in said ear and end, one of said holes being uncylindrical, and the part of the sleeve lying in said hole being correspondingly shaped, said sleeve having an external annular flange at one end and having its other end upset, with a seat, a transverse plate secured to and projecting downward from the under side of one end of said seat and having a hole through it, and a screw adapted to turn in said sleeve, having a cylindrical front end which extends through the holes in said plate, and having an annular flange which bears against said plate, substantially as and for the purpose specified.

3. In a bicycle-saddle, a stamped metal plate having a hole through it and having three arms bent backward from the top and sides thereof and lying in planes approximately at right angles to the plane of said plate, substantially as and for the purpose specified.

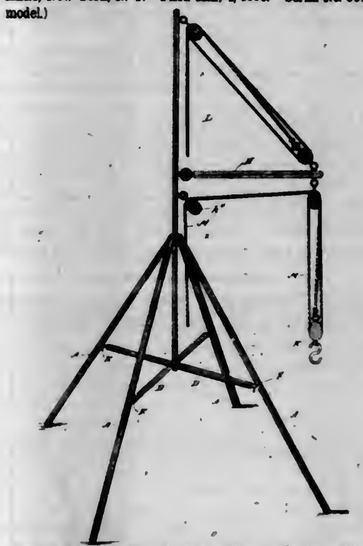
4. In a bicycle-saddle, the combination of a saddle-seat bent downward at its sides but not at its extreme front end, and a transverse perforated plate lying beneath said front end and having three rearwardly-extended arms which are respectively secured to the top near the front end thereof, and the two adjacent downwardly-turned sides of said seat, with a seat-support secured at its rear end to the rear end of said seat, a bearing for an adjusting-screw secured to the front end of said seat-support, and an adjusting-screw which screws into said bearing and has (1) a cylindrical front part which passes through the perforation in said plate, and is slotted in its front end to receive a screw-driver, and (2) an annular flange, back from said front end, which bears against the rear side of said plate, substantially as and for the purpose specified.

568,974. BICYCLE-SADDLE. ARTHUR L. GARFORD, Elyria, Ohio. Filed Mar. 15, 1895. Serial No. 541,890. (No model.)



Claim.—In a bicycle-saddle, the combination of the rear seat-support made of flat spring-steel having its front end upturned, and a block which embraces and is adapted to slide upon said seat-support, with a curved wire spring having two strands, the rear ends of which are seated in sockets in said block, and a screw which passes loosely through a hole in the upturned end of the rear seat-support and which screws into a threaded hole in the said block, said screw having a head which abuts against the front side of said upturned end, substantially as and for the purpose specified.

568,975. SELF-SUPPORTING TOY DERRICK. WILLIAM M. HART, New York, N. Y. Filed Mar. 4, 1896. Serial No. 581,779. (No model.)



Claim.—1. A toy derrick, comprising a plurality of legs or supports as A, which are connected at one end by a ring which is passed therethrough, and the connected ends of which are cut out so as to form a circular opening, said legs or supports being also provided with transverse braces or bars, and a shaft which is passed through said circular opening, and the lower end of which is pivotally connected with one of said braces or bars, said shaft being provided with an arm which is pivotally connected therewith, and provided with two pulley-blocks at its outer end, and said shaft being also provided with two pulley blocks one of which is connected with its upper end, and the other being connected therewith, below said arm or adjacent thereto, substantially as shown and described.

2. A toy derrick, comprising a plurality of legs or supports as A, which are connected at one end by a ring which is passed therethrough, and the connected ends of which are cut out so as to form a circular opening, said legs or supports being also provided with transverse braces or bars, and a shaft which is passed through said circular opening, and the lower end of which is pivotally connected with one of said braces or bars, said shaft being provided with an arm which is pivotally connected therewith, and provided with two pulley-blocks at its outer end, and said shaft being also provided with two pulley blocks one of which is connected with its upper end, and the other being connected therewith, below said arm or adjacent thereto, and a loose pulley-block, which is adapted to be employed in connection therewith, and two ropes, said ropes being connected with said pulley-blocks, substantially as shown and described.

568,976. LID FOR INK-WELLS. ARTHUR HAWKRIDGE, Weehawken, N. J. Filed June 4, 1896. Serial No. 594,199. (No model.)



Claim.—1. A lid for ink-wells composed of a base-plate adapted to be attached to the desk, a cover hinged thereto and composed of a rotatable head, a bezel in which said head is mounted, an elastic diaphragm, and a disk supporting said diaphragm and supended from the head; said head, disk and diaphragm being provided with perforations; combined with a lock for the lid, substantially as described.

2. The combination with a base-plate, of a circular bezel hinged thereto, a head mounted to rotate in said bezel and provided with an opening, a disk seated on the opposite side of the bezel and suspended from the head and provided with a perforation, and an elastic diaphragm located between the head and the disk and slitted for the passage of the pen, substantially as described.

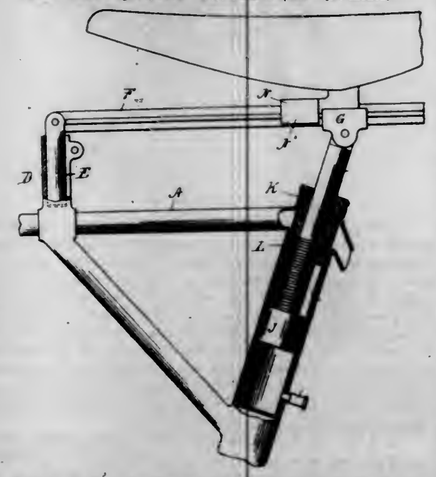
3. The combination with a base-plate, of a bezel hinged thereto, a rotatable head mounted in said bezel and provided with an open-

ing, a stop or stops for limiting the motion of the head, a perforated disk seated in the bezel and suspended from the head, and an elastic diaphragm located between the head and the disk and slitted for the passage of the pen, substantially as described.

4. The combination with a base-plate, of a bezel removably attached thereto, a rotatable head mounted in said bezel and provided with an opening, a stop or stops for limiting the motion of the head, a perforated disk seated in the bezel and suspended from the head, and an elastic diaphragm located between the head and the disk and slitted for the passage of the pen, substantially as described.

5. The combination with a base-plate, of a bezel hinged thereto, a head mounted to rotate in said bezel and provided with an opening, a stop or stops for limiting the motion of the head, a perforated disk seated in the bezel and suspended from the head, an elastic diaphragm located between the head and the disk and slitted for the passage of the pen, and a lock for the bezel, substantially as described.

568,977. BICYCLE-SEAT. Robert E. Helmore, West Bay City, Mich. Filed Aug. 24, 1895. Serial No. 560,380. (No model.)



Claim.—1. In a bicycle, the combination with the frame, of a seat-bar hinged thereto at one end, a cylinder on the frame beneath the free end of the bar, a freely-movable piston-rod slidingly connected to the seat-bar at its upper end, and a piston on its lower end engaging in the cylinder, substantially as described.

2. In a bicycle, the combination with the frame, of a seat-bar hinged thereto at one end, a cylinder secured in the strut member of the frame, a piston therein, a piston-rod projecting therethrough, a block hinged to the upper end of the rod, with which the seat-bar has a sliding engagement, and a seat on the seat-bar, substantially as described.

3. In a bicycle, the combination with the frame, of the socket D thereon, the pin E adjustably secured in the socket, the seat-bar F hinged to the pin, a seat slidingly supported on the seat-bar, a cylinder beneath the free end of the seat-bar, a piston therein and a connecting-rod between the piston and the seat-bar having a movable connection with the latter, for the purpose described.

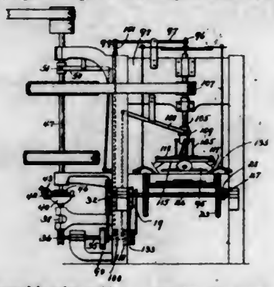
4. In a bicycle, the combination with the frame of a strut member having a cylinder in the upper end thereof, a pump connection into said cylinder, a piston in the cylinder, a hinged seat-bar, a connecting-rod on the piston, a block G pivoted to the upper end of the connecting-rod and a ball-bearing between the block G and the seat-bar, substantially as described.

5. In a bicycle, the combination of a bicycle-frame, a horizontal yieldable seat-bar thereon, a seat-block guided and sliding on the seat-bar, a seat on said block and means for preventing the accidental displacement of said block, substantially as described.

568,978. BARREL-HEAD MACHINE. Albert Hitzert, Saginaw, Mich., assignor of one-half to Jackson & Church, same place. Filed Apr. 8, 1896. Serial No. 544,921. (No model.)

Claim.—1. In a barrel-head machine, a carrier comprising carrier-chains, a cross-bar, a series of adjustable plates or heads on the front face of the cross-bar, dogs for holding the plates in their adjusted position, means for tripping the dogs and means for returning the plates, substantially as described.

2. In a barrel-head machine, the combination of a carrier having chains and cross-bars, a series of adjustable plates or heads on the front face of the cross-bars, springs acting to hold the plates in their initial position, dogs for holding them in their adjusted position, and means for tripping the dogs, substantially as described.



3. In a barrel-head machine, a carrier, the cross-bars thereon, the heads 62, having ratcheted stems 63 passing through the cross-bar, springs 68 for holding the heads in their initial position, the spring-pressed rods 66, having toothed dogs 65 adapted to engage the ratcheted stems, and means for shifting the rods 66, to release the dogs in the travel of the carrier.

4. In a barrel-head machine, the combination of an intermittently-actuated carrier, cross-bars thereon, having adjustable heads or plates on the front face, and an indicator such as the ring 60, in the relation and for the purpose described.

5. In a barrel-head machine, the combination of the table the intermittently-actuated carrier comprising the connecting cross-bars running over the table, a fence at one end of the table, having its bottom edge elevated above the table the width of the blanks, the adjustable plates on the front face of the cross-bars, the trimming-saw, 57 at one edge of the table, the cutters, and the indicator, such as the ring 60, between the fence and cutters.

6. In a barrel-head machine, the combination with endless-carrier sprocket-chains, clamping device, cutters, and means for actuating the same, of sprocket-wheels over which the chains pass, a shaft on which the wheels at one end are mounted, a sleeve on which the opposite wheels are mounted, a shaft passing through the sleeve, and means for adjusting the sleeve transversely of the shaft and locking the same in its adjusted position, comprising a finger on the shaft, a finger on the sleeve, and an adjusting-means connecting the fingers, substantially as described.

7. In a barrel-head machine, the combination of suitable clamps for the lumber, of a revolving cutter-head above the work, and cutters thereon comprising separate blades arranged one in advance of the other united and arranged at an obtuse angle to the plane of the work and means for moving the cutters into the work to cut out and to cut both the bevels on the edge of the head.

8. In a barrel-head machine, the combination of suitable clamps for the lumber, of cutters comprising separate cutting-blades the cutting edges of which are arranged one in advance of the other and the whole above the work, arranged at an obtuse angle to the barrel-head, means for revolving the cutters and for moving them into and out of the work to cut both the bevels as described.

9. In a barrel-head machine, the combination with suitable clamps for the lumber, of a rotary cutter-head above the work, curved disk cutters secured at the edges of the head at an obtuse angle to the barrel-head, having eccentrically-arranged saw-teeth thereon and means for rocking the cutters to bring the teeth in and out of the work.

10. In a barrel-head machine, the cutter comprising a head, a concavo-convex sector-shaped disk, a pivotal support therefor and cutter-teeth eccentrically arranged at one edge of the disk a support for the head and means for actuating the cutters.

11. In a barrel-head machine, the combination of the cutter-head, the inclined shaft such as 125ª thereon, the cutter 128 thereon, the curved disk 129ª, having eccentrically-arranged teeth at one edge, and means for rocking the shaft to bring the cutters into and out of the work.

12. In a barrel-head machine, the combination of the cutter-head, having a revolving radial guide therein, an inclined bracket adjustably secured in said guide, a shaft journaled in said bracket, carrying the cutters at its lower end, and means for rocking the shaft to bring the cutters into and out of the blank or work.

13. In a barrel-head machine, the combination of the revolving cutter-head, the radial rock-shafts thereon, the inclined shafts at the outer edge of the head, the eccentrically-arranged cutters at the lower end thereof arranged eccentric to the rock-shaft a gear connection between the two shafts, and means for rocking the rock-shaft for the purpose described.

14. In a barrel-head machine, the combination of the revolving cutter-head, the inclined brackets 117 thereon, the inclined shafts journaled in the brackets, the eccentrically-arranged cutters at the lower end of the shafts arranged eccentric to the rock-shaft, horizontal shafts journaled on the head and extending to the brackets, a gear connection between the two shafts and means for actuating the rock-shaft.

15. In a barrel-head machine, the combination of the table a vertical revolving hollow shaft above the table journaled in stationary bearings, carrying the cutter-head at its lower end, a shaft extending through the hollow shaft, a clamping-disk at the lower end of the shaft, means for intermittently reciprocating the inner shaft, cutters on the head and means for moving the cutters upon the head intermittently in and out of the work.

16. In a barrel-head machine, the combination of the hollow shaft 105, carrying the cutters, the reciprocating shaft 96 within, the clamping plate at the lower end thereof, and the corner-clamps 135, connected to and operated by the shaft 96, substantially as described.

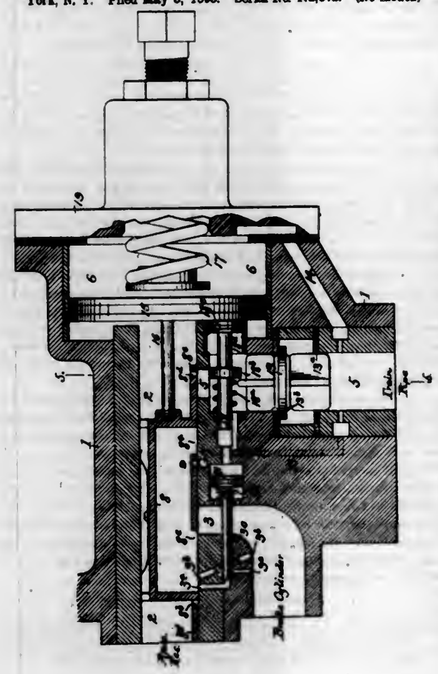
17. In a barrel-head machine, the combination of the table, the movable clamp above the table, of a series of dogs normally beneath the table, and devices for moving them up through the table into the work as the upper clamp moves down.

18. In a barrel-head machine, the combination of the table, the movable clamp above the table, the disk 83 below the table, the adjustable pointed dogs or pins 85 at the edges of the disk entering apertures in the table and normally below the top thereof, and intermittently-actuating devices for the disk to raise the dogs above the table, for the purpose described.

19. In a barrel-head machine, the combination with the table, the feeding devices for the material on and over the table and the reciprocating cutters above the same as described, the ring 92 in the table below the cutters, means for holding the ring normally to form a complementary portion of the table, and mechanism acting automatically for causing the ring to recede as the cutters lower comprising the rotating cam-plate 80 and levers for turning the plate during the movement of the cutters, substantially as described.

20. In a barrel-head machine, the combination of the table-section 75, the journal 77, the pin thereon entering the section 75, the bracket 79 supporting the lower end of the hub, the ring 92, around the section 75, the spring-supported disk 84 carrying the ring, the dogs 85, the disk 83 carrying the dogs and the intermittently-actuated cam-plate 80 between the two disks, substantially as described.

568,979. TRIPLE VALVE FOR AIR-BRAKES. Henry L. Howe, Canandaigua, N. Y., assignor to the Standard Brake Company, New York, N. Y. Filed May 3, 1893. Serial No. 472,872. (No model.)



Claim.—1 In a brake mechanism, the combination with a casing having ports communicating with train-pipe, brake-cylinder, and auxiliary reservoir, of a valve device controlling such ports and movable first to place the train-pipe and brake-cylinder in communication and maintain such communication until the pressures therein are substantially equalized and movable subsequently to place the auxiliary reservoir and brake-cylinder in communication, substantially as described.

2. The combination with the brake-cylinder, of the train-pipe having a communication therewith, the auxiliary reservoir also having a communication therewith, a movable part operating to open the first-mentioned communication and permit the substantial equalization of pressures in said train-pipe and brake-cylinder, means for cutting off the train-pipe from the brake-cylinder, and means for operating subsequently to the former to open the latter communication, substantially as described.

3. In a brake mechanism, the combination with a casing having ports communicating with train-pipe, brake-cylinder and auxiliary reservoir, of a valve device controlling such ports and movable first to place the train-pipe and brake-cylinder in communication and maintain such communication until the pressures therein are substantially equalized, and movable subsequently to place the auxiliary reservoir and brake-cylinder in communication and again movable upon the raising of train-pipe pressure to close said latter communication, substantially as described.

4. In a brake apparatus, a valve device controlling ports communicating with train-pipe, brake-cylinder and auxiliary reservoir, and means for causing said valve device to first open communication between the train-pipe and brake-cylinder and maintain such communication until the pressures therein are substantially equalized and thereupon causing said valve device to open communication between the auxiliary reservoir and brake-cylinder, substantially as described.

5. In a brake apparatus, the combination with the train-pipe, auxiliary reservoir and brake-cylinder passages of a valve device controlling communication between the train-pipe and brake-cylinder and also between the auxiliary reservoir and brake-cylinder normally holding the communication between the auxiliary reservoir and brake-cylinder closed and only opening such communication after the communication between the train-pipe and brake-cylinder has been opened, whereby the auxiliary-reservoir pressure is held from passing into the brake-cylinder until after pressure from the train-pipe has been admitted to the brake-cylinder, and said valve device also controlling communication between the auxiliary reservoir and brake-cylinder irrespective of the primary communication of the train-pipe with the brake-cylinder.

568,980. TRIPLE VALVE. Henry L. Howe, Canandaigua, N. Y., assignor to the Standard Brake Company, New York, N. Y. Original application filed May 3, 1893, Serial No. 472,872. Divided and this application filed July 6, 1894. Renewed Aug. 20, 1896. Serial No. 603,425. (No model.)

Claim.—1. In a brake apparatus, a valve controlling a port for the admission of the train-pipe pressure to the auxiliary reservoir and to the brake-cylinder, of a second valve controlling a port for the admission of the auxiliary-reservoir pressure to the brake-cylinder and maintaining said port closed until the pressures in the train-pipe and brake-cylinder are substantially equalized, as set forth.

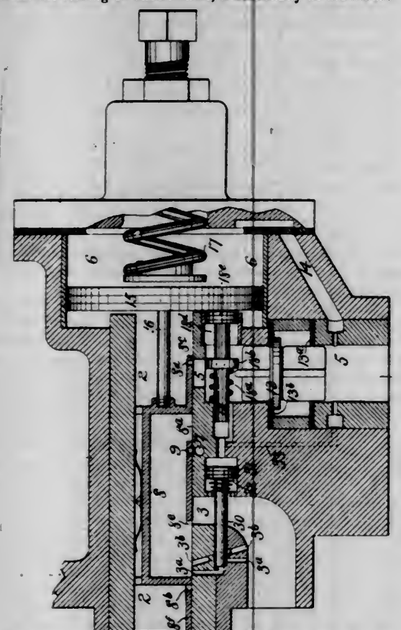
2. In a brake apparatus, a valve controlling ports for the communication of the train-pipe with the brake-cylinder and of the brake-cylinder with the exhaust, and a second valve upon the admission of the train-pipe pressure to the brake cylinder then admitting the auxiliary-reservoir pressure to the brake-cylinder through a suitable port, substantially as described.

3. In a brake apparatus, a valve controlling ports for the admission of the train-pipe pressure to the auxiliary reservoir and to the brake-cylinder and from the brake-cylinder to the exhaust, and a second valve movable after the first-mentioned valve to control a port for the admission of the auxiliary-reservoir pressure to the brake-cylinder, substantially as described.

4. In a brake apparatus, a valve controlling a port for the admission of the train-pipe pressure to the brake-cylinder, another valve movable after the first-mentioned valve to control a port for the admission of the auxiliary reservoir pressure to the brake-cylinder, a check-valve in the train-pipe passage and a movable stop to prevent the seating of said check-valve, substantially as described.

5. In a brake apparatus, a valve controlling ports for the admission of the train-pipe pressure to the auxiliary reservoir and to the brake-cylinder, and a second valve by such admission to the brake-cylinder thereupon admitting the auxiliary-reservoir pressure to the brake cylinder through a suitable port, a check-valve in the train-pipe passage and a movable stop to prevent the seating of said check-valve, substantially as described.

6. In a brake apparatus, a valve controlling a port for the admission of train-pipe pressure to the brake-cylinder, another valve or piston and its port, exposed to both train-pipe and brake-cylinder pressure, controlling by the difference in these pressures the admission of auxiliary-reservoir pressure to the brake-cylinder and the closing of communication between brake-cylinder and auxiliary reservoir, a check-valve in the train-pipe passage and a movable stop to prevent the seating of check-valve, substantially as described.



7. In a brake apparatus, a valve controlling a port for the admission of the train-pipe pressure to the brake-cylinder, and another valve controlling a port for the admission of the auxiliary-reservoir pressure to the brake-cylinder having a piston exposed on opposite sides to the train-pipe and brake-cylinder passages, substantially as described.

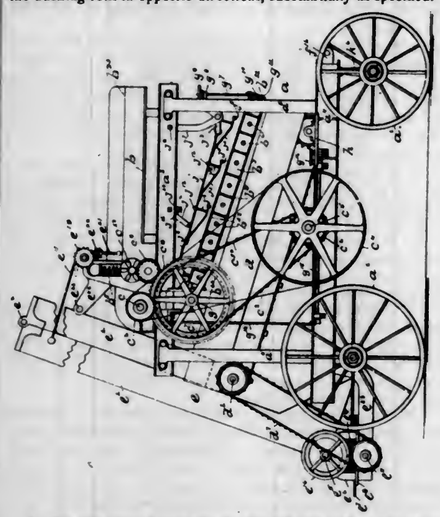
8. In a brake apparatus, the combination of a valve controlling communication between the train-pipe and brake cylinder, and another valve independently movable of the first-named valve controlling communication between the auxiliary reservoir and brake-cylinder and said valve normally holding such communication closed until after the first-named valve has moved to admit pressure from the train-pipe into the brake-cylinder, substantially as described.

9. The combination with the train-pipe, auxiliary reservoir and brake-cylinder, of a valve opening the train-pipe to the brake-cylinder and maintaining such opening until the pressures therein are substantially equalized, and another valve operative upon such equalization to automatically admit the auxiliary-reservoir pressure to the brake-cylinder, as set forth.

568,981. CORN-HUSKER AND STALK-CUTTER. GEORGE C. JANNEY, Muncie, Ind. Filed Sept. 9, 1895. Serial No. 561,930. (No model.)

Claim.—1. In a corn-husker, the combination with the husking-rolls arranged on an incline as described, of the vibrating bars arranged above said rolls, a frame for supporting said bars, a crank-shaft journaled in said frame and one end of each of said bars, the opposite ends of said bars being connected by links to said frame, each of said bars having small cutting projections extending downwardly therefrom, means for rotating said crank-shaft whereby said bars are caused to move alternately away from and toward said rolls and travel longitudinally in one direction substantially parallel with said rolls and in the opposite direction to the ears of corn on said rolls with the sharpened projections engaging the husks of said ears, substantially as specified.

2. The combination with the inclined husking-rolls, the vibrating bars arranged above said rolls, and a frame supporting said bars, said bars being pivotally connected by links to said frame at one end and at the other journaled to a crank-shaft supported by said frame, said bars being each provided with an extended hook-shaped projection beyond said pivotal connection, and spring-pressed projections on said bars, the arrangement being such that the spring-pressed projections and the hook-shaped projections are alternately moved to and from the husking-rolls in opposite directions, substantially as specified.



3. The combination with the inclined husking-rolls, of the vibrating bars arranged above said husking-rolls, said bars being pivotally supported at one end and connected at the opposite end to a crank-shaft, hook-shaped projections on the ends of said vibrating bars extending beyond the pivotal connections of said bars, the construction being such that the vibrating bars and the hook-shaped projections are adapted to move alternately in opposite directions to and from the husking rolls, substantially as specified.

4. The combination with the husking-rolls arranged in pairs and inclined as described, of a series of vibrating bars pivotally supported at one end and connected at the other to a revolving crank-shaft, as described, said bars being provided with extended hook-shaped projections extending beyond the pivotal support and having auxiliary spring-pressed bars connected thereto, said spring-pressed bars being provided with pointed projections, substantially as specified.

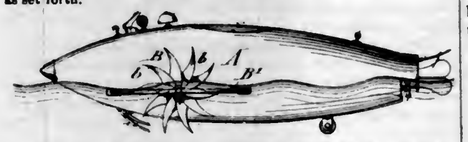
5. The combination with the inclined husking-rolls arranged in pairs, of a series of vibrating bars operated by a crank-shaft, as described, a pivoted support for each of said bars, and a hook-shaped projection on each of said bars extending beyond its pivoted support, and means for uniformly and simultaneously adjusting the respective pivotal connections, substantially as specified.

6. The combination with husking-rolls arranged in pairs, the rolls of each pair being provided with husking-pins and oppositely-arranged grooves, supporting-bars at each end for said rolls having bearing-seats and bearings for said rolls seated in said bars, the bearing-seat for one of the rolls of each pair being slotted so that the bearing can move therein, an S-shaped lever for each of said movable bearings pivoted in said supporting-bars so as to rest at one end in contact with said movable bearing and to extend downwardly from said bar at the opposite end, a lug on said bar, an adjustable rod extending through said S-shaped lever and said lug parallel with the supporting-bar, a spring on said rod, and a set-screw extending through the end of said bell-crank lever so as to contact with said lug, substantially as specified.

7. The combination with the husking-rolls arranged in pairs and supported at each end by supporting-bars having slotted openings, movable bearings for one of said rolls fitted into said slotted openings, and an S shaped lever fitted in said bar so as to contact at one end with said movable bearing and extending at the opposite end at right angles to said bar, a stationary lug on the supporting-bar arranged opposite to the projecting end of said S-shaped lever, a connection from said bell-crank lever through said lug, a spring connected to said S-shaped lever and bearing at one end against said stationary lug, and an adjustable stop in said S-shaped lever adapted to contact with said lug, substantially as specified.

568,982. LIFE-SAVING APPARATUS FOR VESSELS. LOUIS KONRAD and GUSTAV P. FROMM, Brooklyn, and HANS KAUER, New York, N. Y. Filed May 13, 1896. Serial No. 591,351. (No model.)

Claim.—1. A life-saving apparatus for vessels, consisting of a torpedo-shaped hollow body, a propeller at the rear end of the same, a transverse shaft, paddle-wheels having curved and pointed paddles applied to the ends of the shaft, a motor for imparting rotary motion to the paddle-wheels and propeller, a reel for the life-line at the interior of the body, and a guide-tube for the life-line extending from a point above the reel toward the rear end of the body, substantially as set forth.



2. A life-saving apparatus for vessels, consisting of a torpedo-shaped hollow body, means for propelling the same in forward direction, a motor for actuating the propelling device, a reel in said body for the life-line, a guide-tube extending from a point above the reel toward the rear end of said body, and anchors pivoted to the front part of the body, substantially as set forth.

3. A life-saving apparatus for vessels, consisting of a torpedo-shaped hollow body, means for propelling said body in forward direction, a motor for actuating said propelling device, a steering-rudder formed of stationary intersecting blades at the rear end of the body, a reel for the life-line, a guide-tube for said life-line extending from the reel through said body, anchors pivoted to the lower front part of said body, and a guide-roller at the lower rear part of the same, substantially as set forth.

4. A life-saving apparatus for vessels, consisting of a torpedo-shaped hollow body, means for propelling the same in forward direction, a motor for actuating the propelling device, means for starting and stopping said motor, steering devices at the rear end of the body composed of stationary intersecting blades, a reel at the interior of the body for the guide-line, a guide-tube for the life-line, pivoted anchors at the lower front part of the body, and a roller at the lower rear part of the same, substantially as set forth.

568,983. PROCESS OF REFINING AND BLEACHING ANIMAL FATS. EMERICH MEISEL, Vienna, Austria-Hungary. Filed June 2, 1894. Serial No. 513,242. (No specimens.)

Claim.—The process herein described of refining and bleaching animal fats and oils composed essentially of saponifiable glycerides of the fatty acids, which consists in mixing the fat or oil at the melting-temperature of the same with from 1.04 to four per cent. of the dry pulverized residuum or waste obtained in the manufacture of yellow prussiate of potash, permitting said waste to act on the fat or oil, and then subjecting the mass to a filtering operation while keeping the same in heated condition, substantially as set forth.

568,984. MACHINE FOR SPINNING CIRCULAR FORMS OF METAL. FRITZ MINK, Philadelphia, Pa., assignor to the Keystone Watch Case Company, same place. Filed Apr. 3, 1893. Serial No. 468,769. (No model.)

Claim.—1. In a machine for spinning circular forms of metal, the combination of a spinning-head adapted to receive and hold the work, and a positively-driven spinning-tool adapted to act upon the inner surface of the work and by its positive rotation impart a rotary movement to the work, whereby the different portions of the work are successively acted upon by the positively-driven spinning-tool.

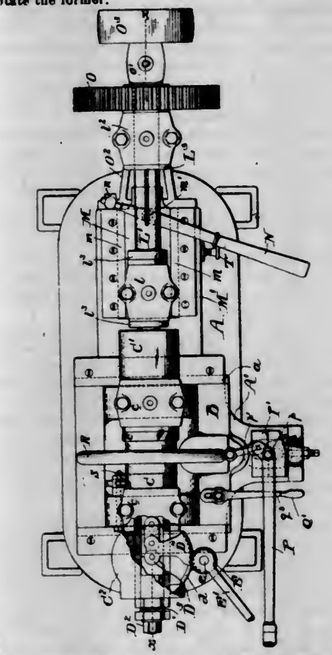
2. In a machine for spinning circular forms of metal, the combination of a rotatable and transversely-movable hollow spinning-head, means to clamp the object to be spun and the die within the head, and a former movable longitudinally with reference to the spinning-head.

3. In a machine for spinning circular forms of metal, the combination of a rotatable hollow spinning-head, a rotatable former, said spinning-head and former having freedom of longitudinal and transverse movement with reference to one another, and means to clamp the object to be spun and the die within the spinning-head.

4. In a machine for spinning circular forms of metal, the combination of a rotatable hollow spinning-head having an opening in its face, a plunger movable longitudinally in the spinning-head, a rotatable former movable longitudinally with reference to the spinning-head and means to positively rotate the former.

5. In a machine for spinning circular forms of metal, the combination of a rotatable cylinder having a hollow spinning-head provided with an opening in its face, a longitudinally-movable plunger located in said cylinder and extending into the hollow spinning-head, means to move the plunger longitudinally from the rear of the cylinder, a rotatable former and means to positively rotate the former, the former and spinning-head being movable longitudinally with reference to one another.

6. In a machine for spinning circular forms of metal, the combination of a rotatable cylinder having a hollow spinning-head provided with an opening in its face, a longitudinally-movable plunger located in the cylinder and extending into the hollow spinning-head connected at its end by a knuckle-joint with the rear end of the cylinder, means to operate the knuckle-joint, a rotatable former movable longitudinally with reference to the spinning-head, and means to positively rotate the former.



7. In a machine for spinning circular forms of metal the combination of a rotatable cylinder having a hollow spinning-head provided with an opening in its face, a longitudinally-movable plunger located in the cylinder and extending into the hollow spinning head connected at its end by a knuckle-joint with the rear end of the cylinder a toothed segment carried by the knuckle-joint, a pinion gearing with the segment to operate the knuckle-joint, and a rotatable former movable longitudinally with reference to the spinning-head.

8. In a machine for spinning circular forms of metal, the combination of a transversely-movable rotatable hollow spinning-head having an opening in its face, means to clamp the object to be spun and the dies within the head, a longitudinally-movable former in line with the hollow spinning-head, and power devices to positively drive the former.

9. In a machine for spinning circular forms of metal, the combination of a transversely-movable rotatable hollow spinning head having an opening in its face, adjustable stops to limit the transverse movement of the spinning-head, means to clamp the object to be spun and the dies within the head, a longitudinally-movable former in line with the hollow spinning-head, and power devices to positively drive the former.

10. In a machine for spinning circular forms of metal, the combination of a stationary frame, a transversely-movable frame guided thereon, a rotatable hollow spinning-head carried by the transversely-movable frame, means to clamp the object to be spun and the die in the hollow spinning-head, and a longitudinally-movable rotatable former in line with the spinning head.

11. In a machine for spinning circular forms of metal the combination of a stationary frame, a transversely-movable frame guided thereon, a rotatable hollow spinning-head carried by the transversely-movable frame, means to clamp the object to be spun and the die in the hollow spinning-head, a longitudinally-movable frame in line with the spinning head, a rotatable former carried by the longitudinally-movable frame, and power devices to positively drive the former.

12. In a machine for spinning circular forms of metal, the combination of a rotary hollow spinning-head having an opening in its face, a rotatable spindle in line with the hollow spinning-head, a former

carried by the rotatable spindle and a clamping-rod connected with the former and extending longitudinally in the shaft.

13. In a machine for spinning circular forms of metal, the combination of a hollow rotary spinning-head having an opening in its face, a longitudinally-movable frame in line therewith, a rotary spindle carried by the frame and a former carried by the spindle.

14. In a machine for spinning circular forms of metal, the combination of a hollow rotary spinning-head having an opening in its face, a longitudinally-movable frame in line therewith, a lever to move the frame longitudinally, a rotary spindle carried by the frame, and a former carried by the mandrel-shaft.

15. In a machine for spinning circular forms of metal, the combination of a hollow rotary spinning-head having an opening in its face, a longitudinally-movable frame in line therewith, stops to limit the movement of the frame, a rotary spindle carried by the frame, and a former carried by the mandrel-shaft.

16. In a machine for spinning circular forms of metal, the combination of a rotary hollow spinning-head having an aperture in its face, a stationary guide-frame M', a longitudinally-movable frame M guided thereon, a guide-rod T carried by the movable frame M and guided in the stationary frame M', a spring stop acting upon the rod T to limit the movement of the frame M, and a rotary former carried by the frame M.

17. In a machine for spinning circular forms of metal, the combination with a rotary former, of a rotary hollow spinning-head having an opening in its face to admit the former, and an opening in its side to admit the die and object to be operated upon.

18. In a machine for spinning circular forms of metal, the combination with a rotary former, of a rotary hollow spinning-head having an opening in its face to admit the former and an opening in its side to admit the die and object to be operated upon, and a finger-hole in the side opposite the opening to admit the die and object.

19. In a machine for spinning circular forms of metal, the combination with a rotary former, of a hollow rotary spinning-head having an opening in its face to admit the former, and an annular shoulder upon the interior of the face about said opening, and a longitudinally-movable clamping-plunger within the head in the rear of the annular shoulder about the opening in the face.

20. In a machine for spinning circular forms of metal, the combination with a rotary former, of a hollow rotary spinning-head having an opening in its face to admit the former, and an annular shoulder upon the interior of the face about said opening, and provided with an aperture to admit the die and object to be spun located in the rear of the annular shoulder about the opening in the face, and a longitudinally-movable clamping-plunger within the head in the rear of the annular shoulder about the opening in the face.

21. In a machine for spinning circular forms of metal, the combination with a rotary former, of a hollow rotary spinning-head having an opening in its face to admit the former and an opening in its side to admit the object to be spun and the die, a longitudinally-movable plunger in the spinning-head, and spring-pressed movable pieces carried by the head adjacent to the opening in the face and projecting into the interior of the head in front of the plunger.

22. In a machine for spinning circular forms of metal, the combination with a rotary former of the rotary cylinder C having the hollow spinning-head C' with the central opening f in the face and the side opening F, and having the projecting ledge f' about the opening f, the plunger D movable in the cylinder C, and the sectional die K and die-clamping plates I, J.

23. In a machine for spinning circular forms of metal, the combination with a rotary former, of the rotary cylinder C having the hollow spinning-head C' with the central opening f in the face and the side opening F, and having the projecting ledge f' about the opening f, the plunger D movable in the cylinder C, the spring-pressed pieces G having heads G' normally projecting into the hollow head adjacent to the rear of the ledge f', and the sectional die K and clamping-plates I, J.

24. In a machine for spinning circular forms of metal, the combination with a rotary former, of the rotary cylinder C having the hollow spinning-head C' with the central face-opening f and the side opening F, and having the projecting ledge f' about the face-opening f, the spring-pressed pieces G carried by the spinning-head C' and having the heads G' normally projecting into the hollow head adjacent to and in the rear of the ledge f' and the movable plunger D in the cylinder C.

25. In a machine for spinning circular forms of metal, the combination with the hollow spinning-head having a side opening F, of the sectional die K and the clamping-blocks I, J to contain the die and center the head through the opening F.

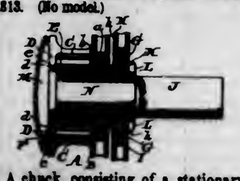
26. In a machine for spinning circular forms of metal, the hollow spinning head C' having the side opening F the face-opening f with the surrounding ledge f', and the recesses g the pieces G located in the recesses g and having heads G' projecting into the interior of the cylinder adjacent to the ledge f', and springs H bearing on the pieces G and normally forcing them rearwardly.

27. In a machine for spinning circular forms of metal, the hollow spinning-head C' having the side opening F the face-opening f with the surrounding ledge f' and the recesses g, the pieces G located in the recesses g and having heads G', projecting into the interior of the cylinder adjacent to the ledge f', the springs H bearing on the tubes G and normally forcing them rearwardly, and the screw-plugs H' for holding the springs H.

28. In a machine for spinning circular forms of metal, the combination with the dies to contain the object to be spun of a positively-driven rotary spindle, a former carried by the spindle, and a clamping-rod extending through the spindle and engaging the shank of the former to clamp it in the spindle and permit it to be positively driven thereby.

29. In a machine for spinning circular forms of metal, the combination with a recessed spinning head, and the dies to contain the object to be spun, of a positively-driven rotary spindle L', a former L carried thereby, and the clamping-rod L^2 having the head l^2 extending through the spindle and engaging the shank of the former so as to clamp the former in the spindle and cause it to be driven thereby.

568,985. CHUCK. FRITZ MIEK, Philadelphia, Pa., assignor to the Keystone Watch Case Company, same place. Filed Nov. 13, 1895. Serial No. 568,813. (No model.)



Claim.—1. A chuck, consisting of a stationary brace-piece for bracing the back of the article to be clamped, a clamping-piece having spring clamping edges to clamp the edge of the article, an expanding-piece acting in conjunction with the clamping-piece to expand the clamping edges thereof, and means to move both clamping-piece and expanding-piece together to draw the work held by the clamping-piece upon the face of the stationary bracing-piece.

2. A chuck, consisting of a stationary brace-piece for bracing the back of the article to be clamped, a clamping-piece having spring-clamping edges to clamp the edge of the article, an expanding-piece acting in conjunction with the clamping-piece to expand the clamping edges thereof, and provided with an extension, and means acting on the extension of the expanding-piece to move both clamping-piece and expanding-piece together to draw the work held by the clamping-pieces upon the face of the stationary bracing-piece.

3. A chuck, consisting of a stationary stem, a brace-piece supported thereby upon a stationary seat, a clamping-piece having spring clamping edges for clamping the edge of the work arranged about the brace-piece, an expanding-piece upon which the clamping-piece may be moved to expand its spring clamping edges, and provided with a lug or lugs G at the rear, and a movable piece carried by the stem and movable thereon engaging the lugs of the expanding-piece and adapted when operated to draw the expanding-piece and chuck rearwardly with reference to the brace-piece.

4. A chuck, consisting of the stationary stem having a threaded portion K, an expanding-piece E surrounding the stem and having an externally-threaded portion A, a clamping-piece having spring-arms adapted to be expanded by the piece E to engage the edge of the work, and provided with internal threads b adapted to the threads a of the piece E, a brace-piece supported by the stem on a stationary seat, and a threaded ring H carried by the stem and engaging the expanding-piece E.

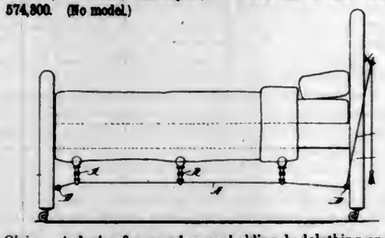
5. In a chuck, the combination with spring clamping-piece and expanding-piece acting in conjunction therewith, of the stationary brace-piece, and rotary ring H engaging the expanding-piece and adapted to move it rearwardly together with the spring clamping-piece.

6. In a chuck, the combination with the stationary brace-piece, and the clamping-piece having the spring clamping-arms, of the expanding-piece acting in conjunction with the clamping-piece to expand the spring-arms thereof, and provided with the lug or lugs G, the stationary stem having the threaded portion K provided with the notch or notches L to receive the lugs G and the threaded ring H on the stem having an annular shoulder I adapted to engage the lug or lugs G and draw the expanding-piece and clamping-piece rearwardly with reference to the brace-piece.

7. A chuck, embracing a brace-piece having a stationary support, a clamping-piece having expansible clamping edges, means to expand said edges to clamp the work, and means to move the clamping-piece rearwardly with reference to the stationary brace-piece, whereby the work clamped by said clamping-piece may be drawn drawn down upon the face of the brace-piece.

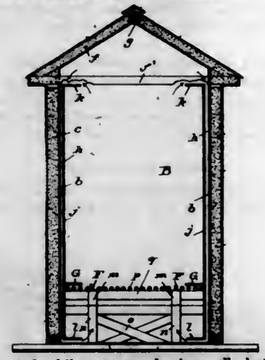
8. A chuck consisting of a stationary stem, a brace-piece fitting loosely thereon upon a stationary seat, and a clamping-piece having expansible clamping edges for clamping the work.

568,986. DEVICE FOR SECURING BEDCLOTHES ON BEDS. WILLIAM F. HAGEL, Philadelphia, Pa. Filed Jan. 9, 1896. Serial No. 574,800. (No model.)



Claim.—A device for securing or holding bedclothing on beds, consisting of a cord adapted to be stretched along the side between and secured to the posts thereof and devices for holding the bedclothes to said cord, each device consisting of two spring-clamps linked together at the ends opposite their jaws and each being provided with a sliding ring on the shank to bring together and hold said jaws in clasping or holding position, all constructed and arranged as herein shown and described.

568,987. DRY-KILN. JOHN F. OLDFIELD, Baltimore, Md. Filed Aug. 14, 1896. Serial No. 602,811. (No model.)



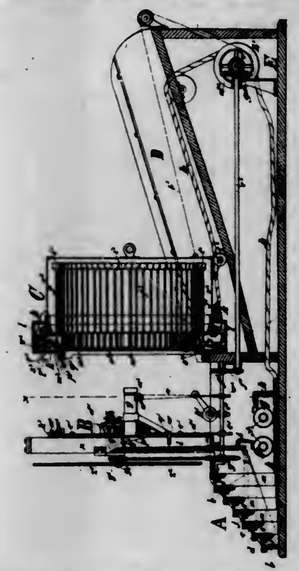
Claim.—1. A dry-kiln structure having walls, bottom and roof filled or made heat-insulated and tightly closed without inlets, vents or other opening but provided at the top with an outlet to the atmosphere; a heater near the bottom but elevated above the bottom; and down passages or ducts within the structure and open at the top of the drying-chamber and also open at the bottom into the drying-chamber below the heater, whereby in operation the material to be dried is kept in a hot humid atmosphere and a downdraft will be produced in the said ducts and hot moist air in the top will pass down and be delivered under the heater without being condensed or chilled and then pass up through the heater where its temperature is increased and again through the material being dried, and finally hot mist or steam will be forced out of the said outlet at the top.

2. A dry-kiln structure having walls and bottom filled or made heat-insulated and tightly closed without inlets, vents or openings; a heat-insulated roof having an opening to the atmosphere extending longitudinally; an elevated cover over said opening but not closing it; and a flap of cloth or other flexible material secured to the cover, hanging down over the opening and resting on the roof.

3. A dry-kiln structure having walls, bottom and roof filled or made heat-insulated and tightly closed without inlets, vents or other opening but provided at the top with an outlet to the atmosphere; a cloth or other flexible flap covering said opening for the purpose of retaining the moisture under pressure; a heater near the bottom but elevated above the bottom; and down passages or ducts within the structure and open at the top of the drying-chamber and also open at the bottom into the drying-chamber below the heater.

4. A dry-kiln structure having all external parts of the drying-chamber heat-insulated and tightly closed without inlets, vents or opening; in combination with a heater near the bottom but elevated above the bottom; vertical passages or down-ducts, A, beginning at the top of and adjoining the side insulated walls and extending down said walls below the heater; three horizontal flanges, one, k, at the top, another, l, at the bottom and a third, G, above the heater all projecting inward toward the center of the drying-chamber, substantially as shown and described.

568,988. APPARATUS FOR SETTING TYPE AND SIGNS BY MEANS OF PHOTOGRAPHY. EUGENE POLLOLY, Buda-Pesth, Austria-Hungary. Filed Nov. 13, 1894. Serial No. 528,630. (No model.)



Claim.—1. In an apparatus for setting up types and signs by means of photography, a system of keys provided with letters, music-signs, or like characters, electromagnets operated by depressing such keys, a photographic apparatus for photographing the types brought before the objective by said electromagnets, a further set of electromagnets operated by the same system of keys and opening the shutter of the photographic apparatus so as to expose the characters to a sensitized plate, substantially as described and shown in the drawings.

2. In an apparatus for setting up types and signs by means of photography, a slide a' mounted on vertically-movable bolt d' engaging with eccentric e' of shaft f', and a slide b' operated horizontally by the arm m' of levers attracted by magnets h, said slides a', b' forming the photographic shutter and being arranged between the objective and the sensitized plate u, such magnets h being actuated by depressing the keys d, substantially as described and shown in the drawings.

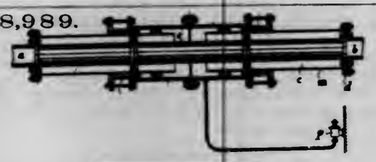
3. In an apparatus for setting up types and signs by means of photography, a type-drum C mounted on rollers behind the photographic apparatus B, in which drum the types bearing different alphabets are on heads i^3 of horizontal rods j^3 arranged around the inside of the drum C and operated by magnets l, said drum C being moved on inclined plane D by means of ropes running onto the drum of a winding mechanism, substantially as described and shown in the drawings.

4. In an apparatus for setting up types and signs by means of photography, a system of keys bearing the characters to be set up and mounted on axles c in electrical connection with batteries f, g types brought into a position to be photographed on depressing the corresponding keys, magnets l attracting arm r^4 engaging with toothed block k^3 of rods j^3, which latter are returned to their original position by springs, substantially as described and shown in the drawings.

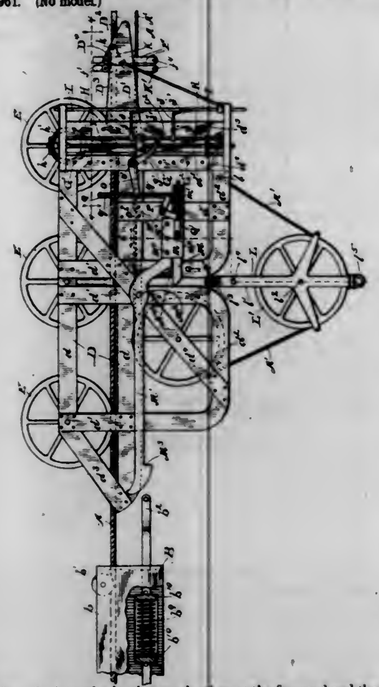
568,989. JACKET FOR STEAM-PIPES. JOHANN D. H. REIMER, Hamburg, Germany. Filed June 1, 1896. Serial No. 593,706. (No model.)

Claim.—A jacket for steam-pipes composed of flanged end sections, a connecting telescoping section, and stuffing-boxes that form steam-tight joints between the sections, substantially as specified.

568,989.



568,990. AUTOMATIC HOISTING, CARRYING, AND LOWERING MECHANISM. John P. Reinert, Elgin, Ill., assignor of one-half to Eugene G. Hammond, same place. Filed Feb. 27, 1896. Serial No. 580,961. (No model.)



Claim.—1. A carrier having mechanism at the forward end thereof arranged in the forward movement of the carrier to extend under and pick up from the cable on which the carrier is moving a guide for a second cable, in combination with a guide for a hoisting and hauling cable consisting of side plates, a roller rotatably mounted between the side plates for the hoisting and hauling cable to travel on and springs between the plates arranged to grasp the main cable on which the carrier travels, with projections outside the side plates, with which projections the mechanism for picking the guide for the cable engages; substantially as described.

2. A carrier, a cable on which the carrier travels, plates adjustably secured to the forward end of the carrier so as to extend each side of the cable, such plates having inclined upper edges, a guide for a hoisting and hauling cable consisting of side plates, a roller rotatably mounted between the side plates on which roller the hoisting and hauling cable travels, springs between the plates arranged to grasp the cable on which the carrier is mounted, rollers rotatably mounted outside of the side plates so that the inclined upper edge of the plates mounted on the carrier will extend thereunder in the forward movement of the carrier; substantially as described.

3. A carrier, a cable on which the carrier travels, plates adjustably secured to the forward end of the carrier so as to extend, vertically, each side of the cable, such plates having inclined upper edges, a guide for a hoisting and hauling cable, such guide consisting of side plates, a roller rotatably mounted between the side plates, springs between the plates arranged to grasp the cable carrying such guide, rollers rotatably mounted outside of the side plates so that the inclined upper edge of the plates mounted on the carrier will extend thereunder in the forward movement of the carrier, and means for automatically forcing such guide off of such vertical plates onto the cable, in the backward movement of the carrier; substantially as described.

4. A carrier, a cable on which the carrier travels, plates secured to the forward end of the carrier extending vertically each side of the cable, such plates having inclined upper edges, with a shoulder against which a guide for a hoisting and hauling cable will be in contact when one or more of such guides are mounted on such plates, cams rotatably mounted on such plates, a traveler connected to and actuated by the supporting-wheels of the carrier and a connection between such carrier and the cams whereby at determined intervals the cam is actuated, and such cam arranged to raise the guide over the shoulder against which the guide is in contact; substantially as described.

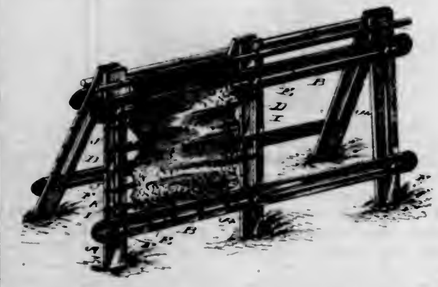
5. A carrier, a cable on which the carrier travels, a traveler connected to and actuated by the supporting wheels of the carrier, a yieldingly-extended catch, levers actuable by the movement of the carrier in one direction and a connection between such levers and the yieldingly-extended catch; substantially as described.

6. A carrier, a cable on which the carrier travels, a traveler connected to and actuated by the supporting-wheels of the carrier, levers actuable by the movement of the carrier in one direction, a yieldingly-extended catch mounted on a fulcrumed lever, the movement whereof is limited on its fulcrum, and a connection between the levers actuated by the traveler and the yieldingly-extended catch, whereby when a load is released from the carrier by the automatic retraction of the catch, the fulcrumed lever is in position so that the free end thereof may engage with a coupler; substantially as described.

7. In an automatic hoisting, carrying and unloading apparatus, the combination of a frame, wheels rotatably mounted in the frame to travel on a cable, guides mounted on such cable for carrying a second cable, a hoisting-frame having a pulley rotatably mounted therein, a cable secured to the frame of the apparatus, passing under the pulley in the hoisting-frame, back to and over a pulley in the frame of the apparatus, and from thence through the guides to a motor actuating such cable, a fulcrumed lever in the frame of the apparatus, catches on the ends of the fulcrumed lever, one of such catches arranged to engage with the hoisting-frame and the other with an anchor, and when the catch is engaged with the hoisting-frame the weight of such hoisting-frame disengaging the catch at the other end of the fulcrumed lever from the anchor; substantially as described.

8. An anchor attachable to a cable for holding a carrier in position on the cable while a load is being hoisted thereto consisting of a carriage, a coupler mounted in the carriage, a clamp secured to the cable, a cam in such clamp, a lever actuating the cam and a flexible connection between the lever and the carriage; substantially as described.

568,991. CURTAIN-STRETCHER. Josephine Smith, Jacksonville, Ill. Filed June 29, 1896. Serial No. 597,388. (No model.)



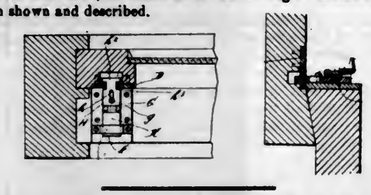
Claim.—1. The combination of the hook having a retaining-lip at one end, and an extension-bar having a series of eyes adapted to be engaged by said retaining-lip and provided at one end with a hook.

2. In a curtain-stretcher, the combination of two frames hinged at their upper ends, each frame consisting of three uprights having longitudinal slots therein, the outer uprights having a series of notches in their outer edges and the central uprights having similar notches in both edges, horizontal bars having longitudinal slots therein, adjustable bolts connecting the uprights and the bars, rods secured to the outer faces of the uprights at the upper ends of the same, and hook-and-pin connections adapted to be seated in the notches and hold the curtain.

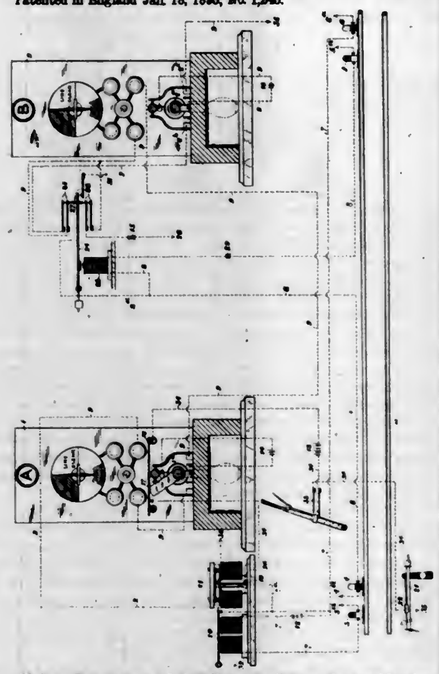
568,992. SASH-LOCK. Thomas J. Sutton, New York, N. Y. Filed Jan. 22, 1896. Serial No. 576,374. (No model.)

Claim.—The combination with window-sashes, of a plate fixed on the upper sash and provided with a vertical slot opening into a transverse slot at the lower end of a plate fixed on the lower sash at right

angles to the first-mentioned plate, a longitudinally-slotted sliding plate or bar, provided with a transverse head, mounted on said lower sash-plate, a pin in said plate adapted to engage in the slot of said bar, a plate hinged to said bar adjacent to the outer end of the slot thereof, said hinged plate being provided with an upward projection, a band secured to the lower sash-plate, a shoulder on the hinged plate adapted to abut against the said band, a spring fitted in a recess in the sliding bar designed to operate to force said hinged plate in contact with said band, all constructed and arranged substantially as herein shown and described.



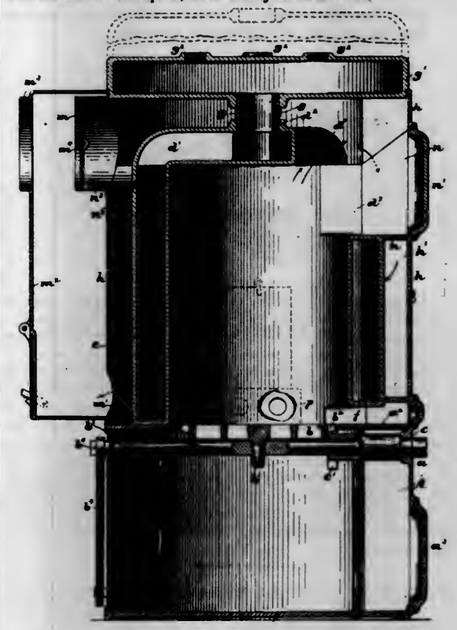
568,998. LOCK-AND-BLOCK SIGNALING ON RAILWAYS. William R. Sykes, Jr., and John P. O'Donnell, London, England, assignors to Reginald Breadalbane Annesley, Liverpool, and Edwin Blakey, Bradford, England. Filed Feb. 6, 1895. Serial No. 537,534. (No model.) Patented in England Jan. 18, 1895, No. 1,245.



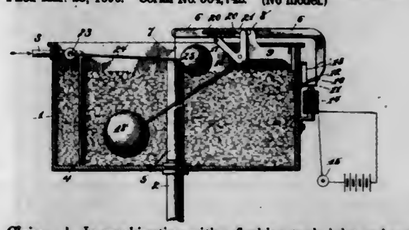
Claim.—In a system of signaling on railways, the combination, with the single-needle instruments 1 and 2 operatively connected together; of a treadle 6, an electromagnet 10 provided with an armature, a battery 12, a treadle 3, and a wire 7 connecting the said treadles and electromagnet with the battery 12; a polarized relay 11 included in the block-circuit 9 of the instrument 1, a local circuit 7ª holding the armature in contact with the electromagnet 10 after the same has been energized, the contacts 33 and a signal catch-handle for connecting them, a battery 13, a wire 34, connected with the starting-signal and to the contacts 33 and battery 13; a tongue 19 connected with the relay 11, and a contact 20 connected to the wire 34, the said starting-signal not being free to be operated until after the treadle 6 has been depressed, energizing magnets 10, and the tongue 19 has been placed in contact with the contact 20, by means of the "line-clear" current from instrument 2, substantially as set forth.

568,994. HEATER FOR HOT WATER OR STEAM. George Talbot, Lynn, Mass., assignor to the Talbot Heater Manufacturing Company, of Maine. Filed May 11, 1896. Serial No. 591,041. (No model.)

Claim.—In a heater, a double-wall or hollow fire-box, provided at its upper end with connected hollow spiders or arms, extended across the fire-pot and having a common outlet, a drum of greater diameter than and mounted above said fire-pot and in communication with said outlet, and a surrounding jacket or casing depending from the periphery of the said drum, the said casing being separated from the exterior of said fire-pot to leave a space for the products of combustion to pass, the bottom of the drum directing the products of combustion into said space, substantially as described.



568,995. FLUSH TANK. Harry Thwaites, Philadelphia, Pa. Filed Mar. 25, 1896. Serial No. 584,742. (No model.)



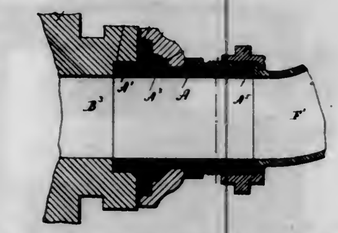
Claim.—1. In combination with a flushing-tank, inlet and outlet pipes, a stand-pipe having its lower end serving as a valve to close the outlet pipe, a lever to which the valve is attached, a bracket to which the lever is pivoted, a spring-pressed dog secured on the lever adapted to engage a notch in the bracket, a bell-crank lever pivoted to the bracket, a roll journaled in the end of one of its members to engage the under side, a float for operating the bell-crank lever and an electromagnet for releasing the lever, as and for the purpose described.

2. In combination with a flush-tank, an inlet-pipe and an outlet-pipe, a stand-pipe, the lower end of which serves as a valve to close the outlet-pipe, a lever to which said valve is attached, a float adapted to give said lever a tendency to swing, an armature for locking said lever against said tendency, an electromagnet for withdrawing said armature from said lever, a dog for locking said lever in an elevated position when swung upward, and means for returning the several parts to their normal position, as shown and described.

3. The herein-described combination of a flush-tank, the inlet and outlet pipes thereof, a float for controlling the inflow of water through said inlet-pipe, a stand-pipe having a valve formed upon its lower end, adapted to close said outlet-pipe, the lever 6, to which said stand-pipe is connected, a bracket to which said lever is pivoted, the bell crank lever 16 pivoted to said bracket, a spring-actuated dog 21 secured to the lever 6 and adapted to engage a notch formed in said bracket, the float 18 connected to the said bell-crank lever whereby the latter

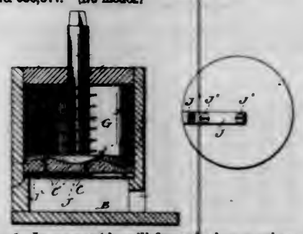
is adapted to give the lever 6 a tendency to swing and to release said dog from said notch, a spring-actuated armature adapted to lock the lever 6 against its tendency to swing, an electromagnet for disengaging said armature from said lever, and an electric circuit for energizing said magnet, substantially as and for the purposes set forth.

568,996. COUPLING FOR WATER-CLOSETS. JAMES TOTHAM, New Haven, Conn., assignor of one-half to John M. Peck, same place. Filed May 28, 1896. Serial No. 593,434. (No model.)



Claim.—In a self-adjusting coupling for water-closet bowls and flush-pipes, the combination with a bowl provided with a neck, of a rubber coupling-pipe adapted at its inner end to be inserted into the outer end of the neck, and formed at its outer and its inner ends with outwardly-projecting annular flanges, of a coupling-plate adapted to be connected with the bowl, and to be engaged with the flange at the inner end of the pipe for pressing the same against the neck, an externally-threaded spud-collar located upon the outer portion of the rubber coupling-pipe and arranged to be non-rotatable thereupon, and to have its outer end engaged by the flange formed at the outer end of the pipe, an elbow-coupling provided with a flange engaging with the flange at the outer end of the pipe, and a coupling-collar holding the flanged end of the elbow-coupling against the flanged outer end of the pipe, and engaging with the spud-collar, substantially as set forth.

568,997. PORTABLE MILL FOR REDUCING CRACKERS TO POWDER. WILLIAM TREWHELLA, Meriden, Conn. Filed July 29, 1896. Serial No. 600,577. (No model.)



Claim.—1. In a portable mill for reducing crackers to powder, the combination with a box containing a cylindrical chamber, of a fixed perforated metallic grinding-plate located within the said chamber, in a horizontal plane, a grinding-disk located above the said plate, and coacting therewith, a spindle or shaft to the lower end of which the said disk is secured, means for pressing the disk downward against the plate, a handle applied to the spindle for rotating it, and a knife applied to the lower face of the disk, extending outward to the edge thereof, and having its outer end formed with a clearing-finger.

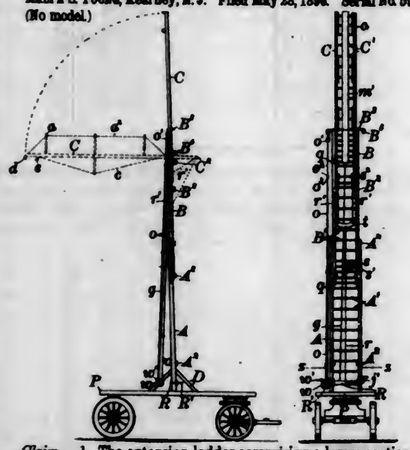
2. In a portable mill for reducing crackers to powder, the combination with a box having a cylindrical chamber, of a horizontally-arranged fixed grinding-plate located within the said chamber, and formed with perforations which are larger at their lower than at their upper ends, whereby they clear themselves readily of powder, a grinding-disk located above the said plate, a knife applied to the lower face of the said disk, extending outward to the edge thereof, and constructed at its outer end with a clearing-finger, a spindle having the disk secured to its lower end, a disk-shaped cover located within the upper end of the chamber and having the spindle projecting upward through it, and a spring interposed between the cover and disk for forcing the latter downward upon the crackers.

568,998. DEVICE FOR OPENING KNIVES. ANDREW C. WEEKS, Alhambra, Cal. Filed May 2, 1896. Serial No. 589,969. (No model.)

Claim.—As a new article of manufacture a device for opening knives consisting of a body portion of plate spring metal in one end of which is formed an opening, and in the other two parallel slits forming between the slits a spring-tongue which is normally sprung outwardly and the outer end formed into an inwardly-directed hook, substantially as shown and described.



568,999. COMBINED EXTENSION-LADDER AND FIRE-ESCAPE. RALPH S. YOUNG, Kearney, N. J. Filed May 23, 1896. Serial No. 593,391. (No model.)



Claim.—1. The extension-ladder comprising a lower section having a guide-pulley near the upper end and a reel at its foot, one or more intermediate sliding sections of which the lower is adapted to slide upon the first-named section and provided each with guide-pulleys near the opposite ends, an upper or bridge section fitted to slide upon the adjacent intermediate section, automatically-operating detents for retaining said sliding sections in their extended positions, guides for always retaining said intermediate section or sections in parallel relation with the lower section and guides for retaining said upper or bridge section parallel with the adjacent section until fully extended upon the same, and a line attached at one end to the lower end of the bridge-section, passing over the guide-pulleys as described and running to the reel at the foot of the lower section, whereby the rotation of the reel in one direction to draw in the line operates to extend the ladder and the turning of the reel in the opposite direction for slackening said line causes the upper or bridge section to swing transversely upon its detents, as and for the purpose set forth.

2. The extension-ladder comprising the lower section A A′ with guides A^3 and provided with reel R and grooved pulley s, the intermediate section B B′ with guides B^3 and grooved pulleys s' and s^3 and with cross-bar B^4, the upper or bridge section C C′ with laterally and upwardly projecting hooks C^3 adapted to engage the cross-bar B^4, the line $r\,r'$ passing around the pulleys s, s' and s^3 and connecting the lower end of the bridge-section with the reel R, and detents interposed between the adjacent sections for retaining the same in their elevated positions, as and for the purpose set forth.

3. The extension-ladder comprising the lower section A A′ with guides A^3, the intermediate section B B′ with guides B^3 and cross-bar B^3 with depending pulley-block s' and the upper or bridge section C C′, means for elevating the intermediate and bridge sections and retaining them in their elevated positions and for laterally extending said bridge-section, a hoisting-drum w at the base of the lower section, and an endless sectional line o extended between said pulley-block and hoisting-drum, each section of said line having a ring o^3 at one end and a hook o^3 at the other end, whereby the length of said line may be varied by the removal or insertion of sections to adapt it to correspond with the degree of extension of the ladder, as and for the purpose set forth.

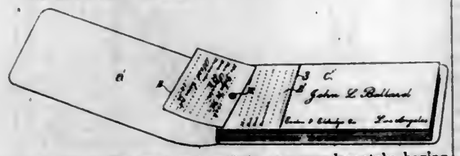
4. In an extension-ladder constructed with a sliding and swinging upper section and means for elevating and laterally extending the same, the combination, with said upper section, of a folding-platform composed of longitudinally-hinged portions of which one is fixed to the rungs of said section, as and for the purpose set forth.

5. In an extension-ladder comprising a lower section A A′, an intermediate section B B′, an upper or bridge section C C′, and means for elevating the intermediate and bridge sections and for laterally extending the said bridge-section, the combination, with the bridge-section, of rods a pivoted to the side bars C in the upper or outer portion thereof and springs for retaining said rods normally in parallel relation to the side bars, and lines a^3 connected at one extremity to the outer ends of said side bars, attached to the free ends of said rods, passing thence through suitable guides to the opposite ends of said bars C and secured at the opposite ends to the intermediate section beneath said bridge-section, as and for the purpose set forth.

6. In an extension-ladder comprising a lower section A A′, an intermediate section B B′, an upper or bridge section C C′, and means for elevating the intermediate and bridge sections and for laterally extending the latter, the combination, with the bridge-section, of rods a pivoted to the side bars C in the upper or outer portion thereof and springs for retaining said rods normally in parallel relation to the side bars, and lines a^3 connected at one extremity to the outer ends of said side bars, attached to the free ends of said pivoted rods, passing thence through suitable guides to the opposite ends of said bars C and through a combined guide and stop b^3 upon the intermediate section beneath the bridge-section and attached at the other extremity to a depending counterbalance-rod b, as and for the purpose set forth.

7. In an extension-ladder comprising a lower section A A′, an intermediate section B B′, an upper or bridge section C C′, and means for elevating the intermediate and bridge sections and for laterally extending the latter, the combination, with the bridge-section, of the lines c having their extremities attached to opposite ends of the side bars of the section C C′ upon the under side, the rods a having extensions a^4 pivoted to said bars intermediate the extremities of the lines c, and means for automatically turning said pivoted rods into parallel and transverse relation to said bars C for varying the tension of the lines c, as and for the purpose set forth.

569,000. COMBINATION CARD-CASE WITH CARDS AND MEMORANDUM ATTACHMENT. CYRUS L. ADAMS, Orange, Cal., assignor of one-half to John L. Ballard, Los Angeles, Cal. Filed Apr. 17, 1896. Serial No. 587,927. (No model.)



Claim.—1. The combination of the memorandum-stubs having detachable address-cards thereon; the flap composed of two leaves folded together; and the pivot-fastener pivoting the stubs and flap together.

2. A memorandum-book composed of a cover comprising two leaves which fold toward each other, and one of which is provided with a pocket opening toward the fold between the leaves; the flap adapted and arranged to be inserted into such pocket; the memorandum leaves and the memorandum-stubs with detachable address-cards; and the pivotal fastener passed through the stubs, the leaves and the flap, and fastened to pivot the stubs, leaves and flap together.

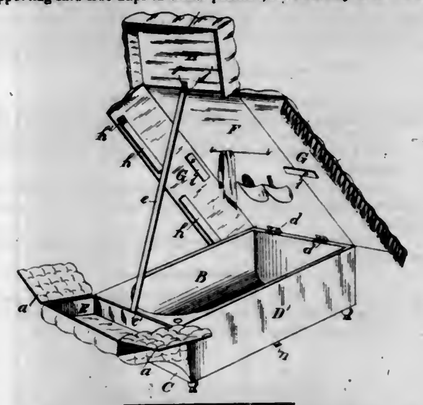
3. The combination of the cover comprising two leaves adapted to fold toward each other and one of which is provided with a pocket opening toward the fold; the book; the flap inserted in the pocket; and the pivot pivoting the flap to the book.

4. The combination of the cover comprising two leaves adapted to fold toward each other and one of which is provided with a pocket opening toward the fold; the book composed of a number of independent leaves; the flap inserted in the pocket, and the pivotal fastener passed through the leaves and the flap to pivot them together.

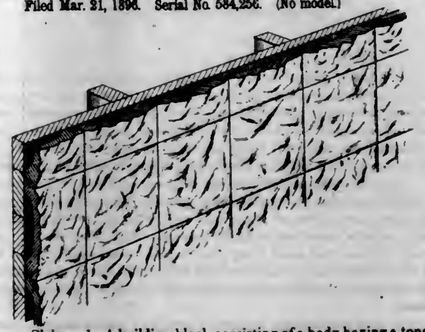
569,001. COMBINED COUCH, BED, AND BATH-TUB. JOHAN BOCK, New York, N. Y. Filed Feb. 7, 1896. Serial No. 578,306. (No model.)

Claim.—1. In a combined couch, bed, and bath-tub, a casing containing a bath-tub, and a bed portion forming a cover for said casing and bath-tub, together with a head portion having two separately-hinged and outwardly-opening auxiliary pillow portions, the same when closed serving to support a main pillow portion, substantially as set forth.

2. A combined couch, bed, and bath-tub, the same comprising an oblong-shaped casing, the said casing containing a bath-tub and having a frame portion at one end thereof, a pair of auxiliary pillow-pieces hinged to said framing, and arranged to fold inwardly and outwardly, a cover portion hinged to said casing at its opposite end, an inclined head piece formed at the free end of said cover portion, said inclined head-piece arranged to fit within the aforesaid framing when said auxiliary pillow-pieces are opened, and upon said auxiliary pillow-pieces when they are closed, side flaps flexibly connected to said cover portion and arranged to be adjusted and held either at right angles to said cover portion or in a plane therewith, and means for supporting said side flaps in either position, substantially as set forth.



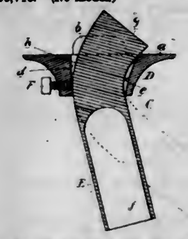
569,002. ARTIFICIAL STONE. EDWARD BOEHM, Woodbury, N. J. Filed Mar. 21, 1896. Serial No. 584,256. (No model.)



Claim.—1. A building-block consisting of a body having a tongue and groove formed upon two opposite sides thereof, a semidovetail groove formed on the inner part of the third side, and a semidovetail flange formed on the inner part of the fourth side, as and for the purpose described.

2. A building-block consisting of a molded representation of stone having a tongue and ledge on one side, a corresponding groove and flange on the opposite side, said ledge having apertures to receive screws, a semidovetail groove formed on the inner edge of the third side and a corresponding semidovetail flange formed on the inner edge of the fourth side, as and for the purpose described.

569,003. BRUSH-HEAD. DAVID G. BONHALLIE, Detroit, Mich., assignor of one-half to James R. Brown, same place. Filed Oct. 24, 1895. Serial No. 566,718. (No model.)



Claim.—1. In a reversible brush, the combination with the brush head and handle, of a connection between the two comprising the member E having the handle-socket f and flaring head g integral therewith united by a curved bend h, and the member D secured to the brush-head, provided with a tapering socket d adapted to receive the head g and having the socket-enlargement or entering-slot e, substantially as described.

2. In a reversible brush the combination with the brush head and handle, of a connection between the two comprising the member

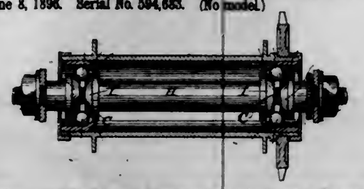
E having the handle-socket *f* and the flaring head *g* integral therewith united by a curved bend A, and the member D consisting of the plate *a* secured to the brush-head and having the downwardly-projecting side flanges *b* and the tapering socket *d* adapted to receive the head *g* and having the enlargement or entering-slot *e* and the set-screw F, substantially as described.

569,004. SLATING COMPOUND. WILLIAM H. BRAWLEY, New York, N. Y., assignor of two-thirds to Charles N. Coles, same place, and John B. Coles, Bayonne, N. J. Filed Mar. 30, 1896. Serial No. 585,461. (No specimens.)

Claim.—1. A slating compound comprising shellac, alcohol and alumina, mixed in substantially the proportions and in the manner set forth.

2. A slating compound comprising a shellac solution and alumina, as set forth.

569,005. BALL-BEARING FOR BICYCLES. CHARLES T. BROWN, Chicago, Ill., assignor of one-half to Flora L. Brown, same place. Filed June 8, 1896. Serial No. 594,663. (No model.)



Claim.—1. A ball-bearing comprising a shaft, cones thereon each having a track, one cone being adjustable, a casing, cups having internally-extending annular flanges, balls interposed between the cones and cups, a spool longitudinally movable on the shaft between the cones thereon, said spool being provided on its ends with tracks for the balls, and such tracks corresponding with the tracks on the cones.

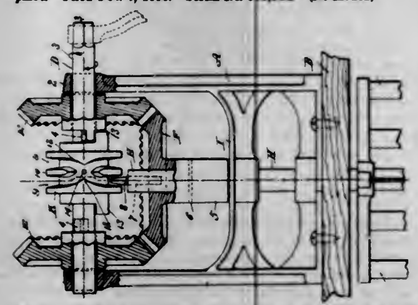
2. A ball-bearing comprising a shaft, cones thereon, each having a track, one cone being adjustable, a casing having tracks therein, balls interposed between the tracks on the cones and the tracks in said casing, a spool longitudinally movable on the shaft between the cones thereon, said spool being provided on its ends with tracks for the balls, such casing, cones and balls being constructed to coöperate and transmit end thrust through the balls between the cylinder and cones.

3. In a ball-bearing, two sets of balls and three bearing-surfaces for every ball of both sets, the inner bearing of both sets being connected and movable endwise on the shaft, whereby pressure upon one set of balls is transferred to the other, substantially as shown.

4. In a ball-bearing two sets of balls, combined with an endwise-movable spool or sleeve placed on the shaft and having a cone-bearing upon each end, substantially as described.

5. In a ball-bearing the shaft, a stationary cone-bearing upon one end of the shaft, and an adjustable one upon the other, and stationary cups which form the outer bearings for the balls, combined with an endwise-movable spool or sleeve placed on the shaft and having a cone-bearing upon each end, whereby all of the bearings can be adjusted by the adjustable cone from one end, substantially as set forth.

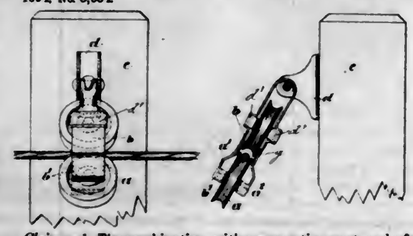
569,006. MECHANICAL MOVEMENT. ARNIDAS J. CORNEAU, Westfield, Mass., assignor to Rotary Ring Manufacturing Co., same place. Filed Feb. 7, 1896. Serial No. 578,344. (No model.)



Claim.—1. In a mechanical movement, the herein-described means for reciprocally rotating the agitator element of washing-machines, churns, and similar apparatus, comprising a suitably-supported driving-shaft having a free longitudinal movement in its bearings, bevel-gears face to face, loose on said shaft each of said gears having a clutch projection on the inner end of its hub, a shaft H, supported in the frame of the machine vertical to the axis of said driving-shaft, and having a cylindrical perforation in its end, a pinion F, fixed on said shaft H, engaging with the gears on said driving-shaft, combined with an oscillating clutch-shipper supported on the extremity of said shaft H, and a clutch fixed on said driving-shaft having grooves with which said oscillating shipper engages alternately, and means on said clutch for engagement with said shipper, whereby said clutch is alternately engaged with said face-to-face bevel-gears, substantially as set forth.

2. In a mechanical movement, the herein-described means for reciprocally rotating the agitator element of washing-machines, churns, and similar apparatus, comprising a suitably-supported driving-shaft having a free longitudinal movement in its bearings, bevel-gears face to face, loose on said shaft, each of said gears having a clutch projection on the inner end of its hub, a shaft H, supported in the frame of the machine vertical to the axis of said driving-shaft, and having a cylindrical perforation in its end, a pinion F, fixed on said shaft H, engaging with the gears on said driving-shaft, combined with an oscillating clutch-shipper supported on the extremity of said shaft H, the clutch K, fixed on said driving-shaft for engagement with said clutch-shipper, having two annular grooves, a cam 12, on one wall of each groove, and the rib 10, broken away opposite said cams, substantially as set forth.

569,007. PULLEY FOR WIRES OF RAILWAY-SIGNALS AND POINT-BOLTS. ARTHUR G. EVANS, London, England. Filed Sept. 12, 1895. Serial No. 562,267. (No model.) Patented in England Feb. 20, 1894, No. 3,634.

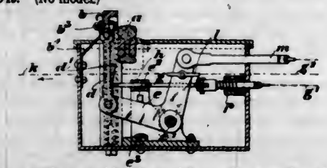


Claim.—1. The combination, with a supporting-post, and a forked bracket secured thereto and provided with a pin; of the forked bracket *b* looped over the said pin and provided with longitudinal paths *b'* at its lower part, and guide-strips *g*; and a grooved pulley for supporting the wire, said pulley being provided with pivots which are free to roll in the paths *b'* and having its flanges between the said guide-strips whereby the wire is kept in the groove of the pulley, substantially as set forth.

2. The combination, with a supporting-post, and a forked bracket secured thereto and provided with a pin; of the forked bracket *b* looped over the said pin and provided with longitudinal paths *b'* at its lower part and *d'* at its middle part, and guide-strips *g* between the said paths; a grooved pulley for supporting the wire, and a grooved guide pulley, said pulleys being each provided with pivots which are free to roll in the respective paths *b'* and *d'* and having their flanges between the said guide-strips, substantially as set forth.

3. The combination, with a supporting-post, and a forked bracket secured thereto and provided with a pin; of a forked bracket looped over the pin and free to tilt and slide circumferentially as well as to swing upon the said pin and provided with parallel paths *b'* at its lower part; and a grooved pulley, for supporting the wire, free to revolve and roll longitudinally in the said bracket, substantially as set forth.

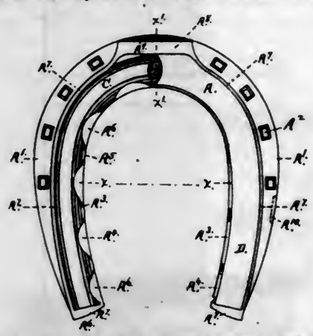
569,008. AUTOMATIC RAILWAY SIGNALING APPARATUS. JOHN FORSTER, St. Helens, England. Filed Oct. 3, 1895. Serial No. 564,542. (No model.)



Claim.—1. The combination, with a railway-rail, and a depressible treadle; of a pivoted bell crank lever, a link provided with a projecting tooth and pivotally connected to one arm of the bell-crank lever and to the treadle, means—such as a rod—for operating a signal-gong, connected to the other arm of the bell-crank lever; and locking mechanism provided with means for retracting it and operating to engage with the said tooth when the said treadle is depressed and thereby preventing it from rising, substantially as set forth.

2. The combination, with a railway-rail, and a depressible treadle; of a pivoted bell-crank lever operatively connected to the said treadle, a tooth *d'* supported by the said bell-crank lever, a rod *m* pivoted to the said bell-crank lever and operating a signal-gong, wires *k* and *g*[3] connected to the bell-crank lever and extending in opposite directions to operate signals, a slidable spring-pressed locking-blade for engaging with the said tooth when depressed, thereby preventing the treadle from rising, and a wire *g'* for retracting the said locking-blade, substantially as set forth.

569,009. CUSHIONED HORSESHOE. FREDERICK W. HANN, New York, N. Y. Filed Apr. 14, 1896. Serial No. 587,532. (No model.)



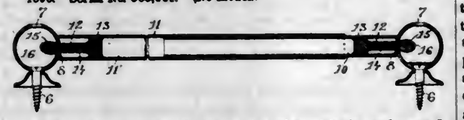
Claim.—1. A horseshoe-frame having bands A^5 and A^7, a solid calk supported by and uniting the bands A^7; the said calk having a straight front edge and beveled backward on its under side to form a sharp edge; in combination with the elastic packing, as and for the purpose described.

2. A horseshoe-frame having a band A^5 provided with elevations constructed to be bent over and retain the packing; bands A^7, a solid calk supported by and uniting the bands A^7; the said calk having a straight front edge and beveled backward beneath to form a sharp edge, in combination with the elastic packing, as and for the purpose described.

3. A horseshoe having grooves formed by the bands A^5 and A^7, the elevations on band A^5; calk and web B'; the said web uniting the said bands forming the grooves and the calk; in combination with the elastic packing, as and for the purpose described.

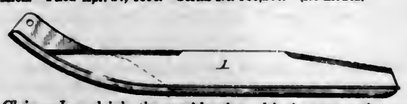
4. A horseshoe having grooves formed by the bands A^5 and A^7, the elevations on band A^5; calk having a straight front edge; and web B'; the said web uniting the said bands forming the grooves and calk; in combination with the elastic packing, as and for the purpose described.

569,010. CURTAIN-ROD. TIMOTHY D. PRATT, Providence, R. I., assignor of one-half to William E. Burrows, same place. Filed Mar. 18, 1896. Serial No. 583,661. (No model.)



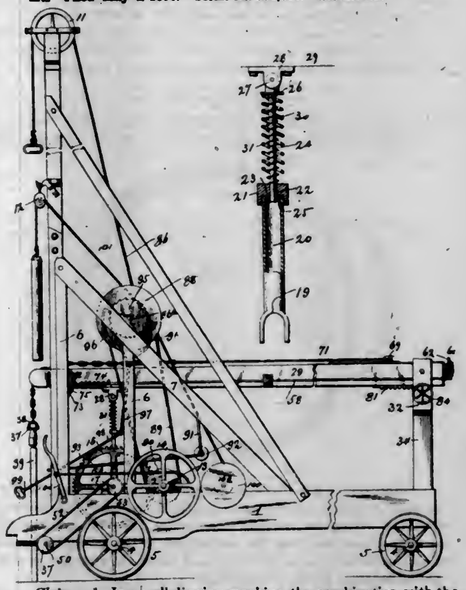
Claim.—In a curtain-rod, the combination with the end posts 5, the screws 6 and the telescopically-connected tubular rods 10 and 11, of the spring-clamps 12, each having the base 13 the shank 14 and the head 15 split longitudinally, whereby the rods are secured to the end posts, as described.

569,011. SLEIGH-RUNNER. JACOB R. SJOLANDER, Ironwood, Mich. Filed Apr. 27, 1896. Serial No. 589,277. (No model.)



Claim.—In a sleigh, the combination with the runner the upper side of which extends in a straight horizontal line from the front to near the rear and the under side at the front end curved or rounded and said front end formed with a rearwardly-extending horizontal slot, of the metal shoe having the front end curved upwardly, and formed with a central rib engaging with said slot, and said end and rib projecting up above the front end of the runner, substantially as described.

569,012. WELL-BORING MACHINE. GEORGE ZINK, Clear Spring, Md. Filed May 4, 1896. Serial No. 590,167. (No model.)



Claim.—1. In a well-digging machine, the combination with the base, and the pivoted walking-beam, of the two-part pitman detachably connected therewith comprising the rod provided with a transverse pin, the screw-threaded collar through which said rod passes having an interior annular shoulder, the long and short coiled springs on said rod, the tube to which said collar is secured, the bifurcated or slotted arm at the lower end thereof, the pitman and the driving-wheel; substantially as described.

2. In a well-digging machine, the combination with the base and the pivoted walking-beam, of the oscillating rod or shaft journaled to one side thereof, the crank at the rear end thereof, the pivoted rod, the oscillating notched disk, the screw-shaft on which said disk is loosely mounted, the spring-pawl pivoted to said disk, the ratchet-wheel fixed to the screw-shaft with which said pawl engages, the screw-threaded block or cross-head, the rod and drill-chain, the arm at the front end of said oscillating shaft, the torsional spring and the dog or stop with which said arm engages; substantially as described.

3. In a well-digging machine, the combination with the pivoted walking-beam, of the oscillating rod or shaft journaled to the side of the walking-beam, the crank at the rear end thereof, the rod connected therewith, the disk with which said rod is connected, the rotatable screw-shaft on which said disk is loosely mounted, the spring-pawl pivoted to said disk, the ratchet-wheel fixed to said screw-shaft, the screw-block or cross-head on said screw-shaft, the rod and drill-chain connected therewith, the arm at the front end of said oscillating shaft, and the vertically-adjustable and swinging or hinged dog or stop; substantially as described.

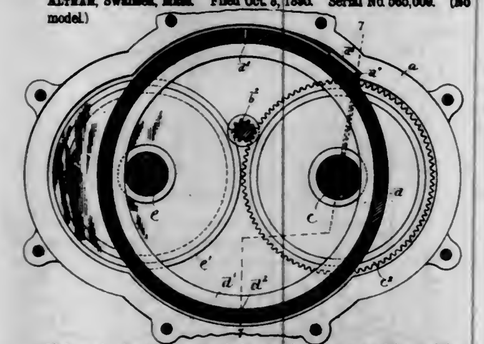
4. In a well-digging machine, the combination with the base, the standards or uprights, the pivoted walking-beam, the oscillating rod or shaft journaled to one side thereof having an arm and torsional spring at one end, the crank at the other end, the rod and notched disk, the spring-pawl and ratchet, the rotatable screw-shaft, the screw-block or cross-head, and the rod and drill-chain, of the vertical rod secured to said standards, made cylindrical at the upper part, screw-threaded at the lower part, and angular intermediate of said parts, the dog having hinges one of which has an angular bore, the stop or lug formed with said dog, and the screw-nut on said rod; substantially as described.

5. In a well-digging machine the combination with the base, the transverse bar at the base, the rotatable hub having peripheral teeth and an angular bore, and the rotatable block fitting therein having an angular bore for the passage of the drill-rod, of the worm, the rotatable and laterally-movable shaft upon which it is fixed, the collars

therein, the coiled springs and the fast and loose pulleys; substantially as described.

6. In a well-digging machine, the combination with the base, the uprights, the pivoted walking-beam, the two-part yielding and detachable pitman connected therewith, the wrist-pin with which the forked end of said pitman engages, the cogged driving-wheel, the pulley thereon, the driving-shaft and pinion and the driving-pulley, of the transverse bar at the front of the machine, the rotatable hub journaled thereto having an angular bore and peripheral cogs, the rotatable block fitting therein having an angular bore for the passage of the drill-rod, the rotatable and laterally-movable shaft having a worm engaging with said cogs, the collars thereon, the coiled springs, the fast and loose pulleys, and the belt; substantially as described.

569,013. POWER-TRANSMITTING MECHANISM. GEORGE J. ALTHAM, Swansea, Mass. Filed Oct. 8, 1895. Serial No. 565,009. (No model.)



Claim.—1. A power-transmitting mechanism comprising a driving shaft or spindle, a driven shaft located at one side of the driving-shaft and having gear-toothed connections therewith, an idle-shaft movable toward and from the opposite side of the driving-shaft, and smooth-surfaced rolls on the driven and idle shafts arranged as antifriction-bearings for the driving-shaft.

2. A power-transmitting mechanism comprising a driving-shaft or spindle, a driven shaft located at one side of the driving-shaft and having gear-toothed connections therewith, an idle-shaft movable toward and from the opposite side of the driving-shaft, smooth-surfaced rolls on the driven and idle shafts arranged as antifriction-bearings for the driving-shaft, bearings for said driven and idle shafts, and independent antifrictional means for laterally supporting said driven and idle shafts, whereby the friction of said shafts on their bearings is reduced.

3. A power-transmitting mechanism comprising a driving-shaft, a driven shaft at one side of the driving-shaft and having gear-toothed connections therewith, an idle-shaft movable toward and from the opposite side of the driving-shaft, smooth-surfaced rolls on the driven and idle shafts constituting antifriction-bearings for the driving-shaft, and a ring surrounding the driven and idle shafts and constituting antifriction-bearings therefor.

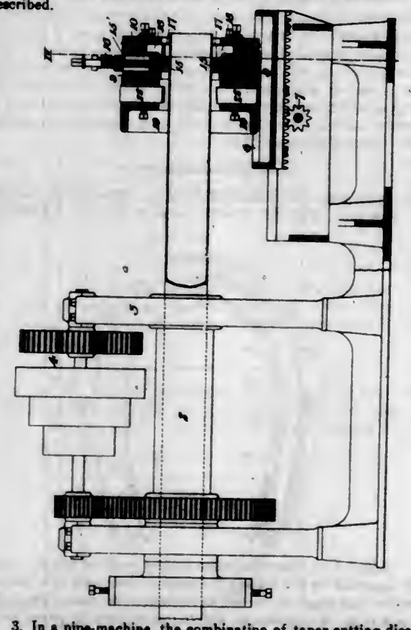
4. A power-transmitting mechanism comprising a driving-shaft, a driven shaft at one side of the driving-shaft, gears connecting said shafts, an idle shaft movable toward and from the opposite side of the driving-shaft, smooth-surfaced rolls on the driven and idle shafts constituting antifriction-bearings for the driving-shaft, a ring surrounding the driven and idle shafts and constituting antifriction-bearings therefor, fixed bearings supporting the driven shaft, and movable bearings for the idle-shaft movable toward and from said fixed bearings.

5. A power-transmitting mechanism comprising a driving-shaft, a driven shaft at one side of the driving-shaft, gears connecting said shafts, an idle-shaft at the opposite side of the driving-shaft, rolls on the driven and idle shafts constituting antifriction-bearings for the driving-shaft, a ring surrounding the driven and idle shafts and constituting antifriction-bearings therefor and provided with means for elevating and discharging oil, a conduit arranged to receive oil from the ring, and a bearing communicating with the conduit and receiving oil therefrom.

569,014. APPARATUS FOR FINISHING PIPE. JAMES M. BAILEY, Allegheny, Pa. Filed Jan. 16, 1896. Serial No. 575,761. (No model.)

Claim.—1. In a pipe-machine, the combination of cutting-dies arranged to cut through a pipe, and taper-cutting dies arranged to act upon the outer surface of the end portion of the pipe and cut the same to conform to the taper of the threading-dies, substantially as described.

2. In a pipe-machine, the combination of cutting-dies arranged to cut through a pipe, and taper-cutting dies arranged to engage the outer surface of the end portion of the pipe and cut away the metal so as to conform to the taper of the threading-dies, and a movable holder by which the taper-cutting dies are carried; substantially as described.



3. In a pipe-machine, the combination of taper-cutting dies arranged to engage the outer surface of the end portion of the pipe and cut the same to conform to the taper of the threading-dies, threading-dies arranged to act upon the said tapered portion, and means for bringing the threading-dies into action after the operation of the taper-cutting dies; substantially as described.

4. In a pipe-machine, the combination of cutting-dies arranged to cut through a pipe, taper-cutting dies arranged to cut away the outer surface of the end portion of the pipe so as to conform to the taper of the threading-dies, threading-dies arranged to act upon the said tapered portion, and means for bringing said dies into operation successively in the order recited; substantially as described.

5. A pipe-threading machine, having cutting-dies for tapering the pipe to conform to the taper of the threading-dies, and threading-dies, said dies being arranged and adapted to act upon the pipe successively, and said dies being mounted upon a carriage which is movable along the pipe to bring the tapering and threading dies successively to the part of the pipe to be threaded; substantially as described.

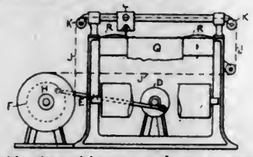
6. In a pipe-threading machine, the combination with a plate or frame, of cutting-dies for tapering the pipe to conform to the taper of the threading-dies carried on one side of the plate, and threading-dies carried upon the opposite side thereof, said dies being adapted to be brought into operation upon the pipe successively; substantially as described.

7. In a pipe-threading machine, the combination with a plate or frame, having clamps for the pipe, of cutting-dies for tapering the pipe to conform to the taper of the threading-dies carried on one side of the plate, and threading-dies carried upon the opposite side thereof, said dies being adapted to be brought into operation upon the pipes successively substantially as described.

8. The combination of cutting-dies adapted to cut through a pipe, and cutting-dies for tapering the pipe, said dies for tapering being arranged back of the cutting-dies, adjusting mechanism by which the die holders are caused to approach the pipe to bring the cutting and tapering dies successively into engagement therewith, and a stop to limit inward movement of the dies; substantially as described.

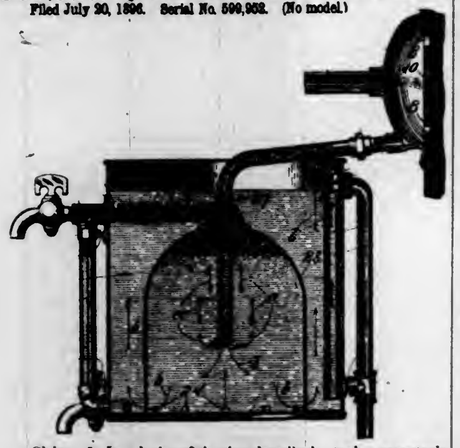
569,015. MEANS FOR TREATING WOVEN FABRICS. CHARLES CROSSLEY, Sudbury, England, assignor to Francis Nicholas Fennell, London, England. Filed Nov. 4, 1895. Serial No. 567,901. (No model.)

Claim.—1. In combination with a power-loom, a guide-bar N; a reciprocating knife-holder L; means for the reciprocation of the same; supports for the guide-bar N affixed to the loom-frame between the traverse of the shuttle-thread and the loom-rail, two depending knives M, M of a rounded contour at their ends, adapted to spread and open the twisted longitudinal threads immediately after the fabric has been woven to give opacity to the same and without tearing or injury thereto, substantially as described.



2. In combination with a power-loom, transversely-operating knives adapted to spread and open the twisted longitudinal threads immediately after weaving to give opacity to the same, and oscillating knives with serrated edges alternating in position, means for oscillating said knives longitudinally of the fabric for spreading the transverse threads, and bars W, W, supporting the fabric under the action of the oscillating knives, substantially as described.

569,016. OIL-SEPARATOR. OLIVER A. DARROW, O'Fallon, Ill. Filed July 20, 1896. Serial No. 599,952. (No model.)



Claim.—1. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a faucet controlling the flow from said pipe, a pipe positioned with its lower open end within said tank and near the bottom thereof, and a connection with the upper end of said pipe forming a passage through the wall of said tank, substantially as specified.

2. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a faucet controlling the flow from said pipe, a vent in said outlet-pipe and projecting upwardly therefrom, a pipe positioned with its lower open end within said tank and near the bottom thereof, and a connection with the upper end of said pipe forming a passage through the wall of said tank, substantially as specified.

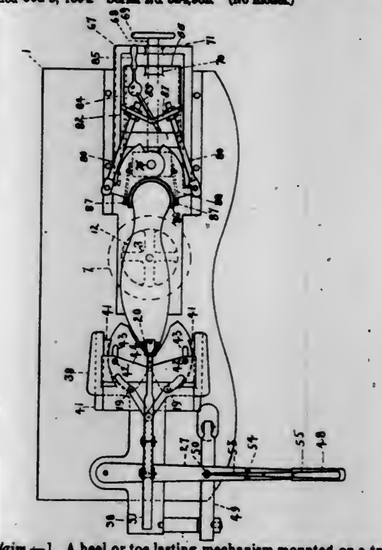
3. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a pipe positioned with its lower open end within said tank and near the bottom thereof, a connection with the upper end of said pipe forming a passage through the wall of said tank, and a drain-pipe leading from said passage, substantially as specified.

4. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a faucet controlling the flow from said pipe, a vent in said outlet-pipe and projecting upwardly therefrom, a pipe positioned with its lower open end within said tank and near the bottom thereof, a connection with the upper end of said pipe forming a passage through the wall of said tank, and a drain-pipe leading from said passage, substantially as specified.

5. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a faucet controlling the flow from said pipe, a vent in said outlet-pipe and projecting upwardly therefrom, a pipe positioned with its lower open end within said tank and near the bottom thereof, a connection with the upper end of said pipe forming a passage through the wall of said tank, a drain-pipe leading from said passage, and a glass gage connected with said tank, substantially as specified.

6. In a device of the class described, a tank, a receptacle within said tank having an open bottom and a closed top, an inlet-pipe leading to the interior of said receptacle, an outlet-pipe leading from the top of said receptacle, a faucet controlling the flow from said pipe, a vent in said outlet-pipe and projecting upwardly therefrom, a pipe positioned with its lower open end within said tank and near the bottom thereof, a connection with the upper end of said pipe forming a passage through the wall of said tank, a drain-pipe leading from said passage, and a faucet in the bottom of said tank, substantially as specified.

569,017. LASTING-MACHINE. GEORGE FERGUSON, Boston, Mass. Filed Oct. 5, 1894. Serial No. 534,962. (No model.)

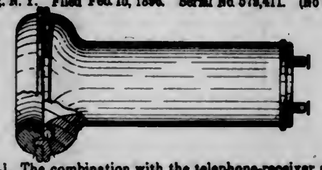


Claim.—1. A heel or toe lasting mechanism mounted on a transverse pivot having a free limited axial play, to accommodate the mechanism to various lasts.

2. In combination with laterally relatively adjustable heel and toe lasting mechanisms, a last post mounted on a pivot capable of corresponding lateral sliding.

3. The combination of the block 38, the forms 56 and 57, the wipers 26, and the set-screw 58, substantially as described.

569,018. TELEPHONE. ALFRED GARTNER, Newark, N. J., assignor to Robert Baker and John Pilmer, Brooklyn, and Edgar L. Ryder, Sing Sing, N. Y. Filed Feb. 15, 1896. Serial No. 579,411. (No model.)

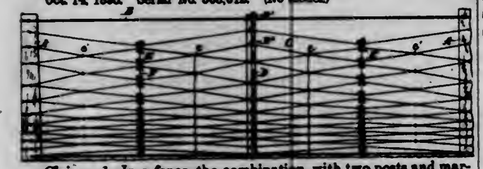


Claim.—1. The combination with the telephone-receiver and its diaphragm, of a series of balls arranged in the receiver and forming an annular bearing for one side of the diaphragm, and an annular curved flange also arranged in said receiver and forming the bearing for the other side of said diaphragm, substantially as and for the purposes described.

2. The combination with the telephone-receiver and its diaphragm, of an annular groove or channel arranged in said receiver, a series of balls in said channel and adapted to form the bearing for one side of the diaphragm, and an annular curved flange, of a diameter equal to the diameter of the channel, also arranged in said re-

ceiver and adapted to form the bearing-surface for the other side of said diaphragm, substantially as and for the purposes described.

569,019. FENCE. THOMAS C. GREENE, Liberty, Ind., assignor, by direct and mesne assignments, to ANNA P. GREENE, same place, Benjamin C. Koch, Tremont, Ill., and Lottie A. Kinney, Indianapolis, Ind. Filed Oct. 14, 1895. Serial No. 565,612. (No model.)



Claim.—1. In a fence, the combination, with two posts and marginal cables at top and bottom of the fence connected at their ends to said posts, of a series of notched stays connected to said cables, an inside wire next to each cable and connected to said posts and stays, wires intermediate between said last-mentioned wires strung in primary pairs and connected with the posts and stays and brought together in secondary diagonal pairs and fastened without crossing or being twisted at two points between each stay and post, and then spread apart between said fastenings, and each wire secured by means of an elastic tie as and for the purposes specified, to its next adjacent wire throughout the entire series of wires intermediate of the marginal cables.

2. In a fence, in combination with the posts and stays, a series of wire strands forming the body of the fence, some of said strands being arranged in diagonal pairs, the strands of each of said diagonal pairs being brought close together but without touching each other and being fastened together by means of ties, one of which for each pair of wires consists of a pair of springs linked together and placed, one on each side of the two wires to be joined whereby the two wires can approach and recede from each other to suit the change in the length of the strands due to expansion or contraction, substantially as described and for the purposes specified.

3. In a fence, the combination, with the posts A and the stays D having the parallel marginal cables secured to said posts and stays, of the intermediate wires C arranged in diagonal pairs substantially as described, the strands of said pairs being secured together by means of elastic ties, the elastic ties E each consisting of a pair of springs linked together and between which the wires to be tied are placed and stay-rods F, all substantially as shown and specified.

4. In a fence, the combination with the posts A and the stays D having the parallel marginal cables B secured thereto, of the intermediate wires C arranged in pairs the wires of which run diagonally with relation to each other, the elastic ties E connecting the diagonal wires in pairs, the ties c joined in vertical series by connecting-wires and the independent ties c', all substantially as described and specified.

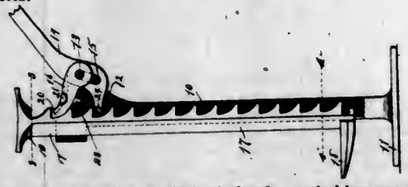
5. In a fence, the combination, with the posts A and the stays D, having the parallel marginal cables B secured to said posts and stays, of the intermediate wires C, arranged in diagonal pairs, substantially as described, the strands of said pairs being secured together by means of elastic ties, the elastic ties E formed of two spiral springs, placed, one on each side of the wires to be fastened together, and having the outer ends of said springs bent back and inserted through the inside of both of the springs and terminating with a hook to engage the opposite spring, and the stay-rods F, all substantially as shown and specified.

6. In a wire fence the stay D made from sheet metal and V-shaped in cross-section, said stay having the side edges bent out to form the flanges d^2 notches d to admit the fence-strands, the slots d' leading to the side edge and inside slots d^3 having the central slots d^4, leading to the end, the inner ends of the two horizontal slots located in the same horizontal and vertical planes, in combination with the wires of the fence and the locking-wire D^3 substantially as set forth.

569,020. LIFTING-JACK. JOHN C. HACKETT, St. Louis, Mo. Filed Apr. 9, 1894. Serial No. 506,810. (No model.)

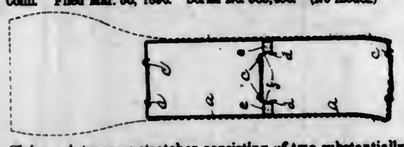
Claim.—1. In a lifting-jack, the combination of a standard, ears formed on and transversely extending from said standard, a toothed bar mounted within said standard, a pin transversely seated in said ears, a bifurcated detent fulcrumed upon said pin, and a lever provided with a slot and fulcrumed upon the same pin that the bifurcated detent is fulcrumed upon, said lever being located between the bifurcated arms of the detent, the point of the lever being adapted to engage with the teeth of the vertical bar mounted within the standard.

2. A lifting-jack, comprising a vertically-slotted standard, a toothed bar provided with a head and foot and mounted for reciprocation in said standard, ears formed on, and extending transversely from, the upper portion of said standard, a pin transversely seated in said ears, a bifurcated detent pivoted upon said pin and provided with an engaging portion adapted for contact with the toothed bar and with lugs adapted for engagement with the said ears, a lever, provided with a slot arranged obliquely to its longitudinal axis, mounted upon said pin and having an engaging portion adapted for engagement with the toothed bar, and a lug formed on the said detent and adapted for engagement by the engaging portion of the said lever, as set forth.



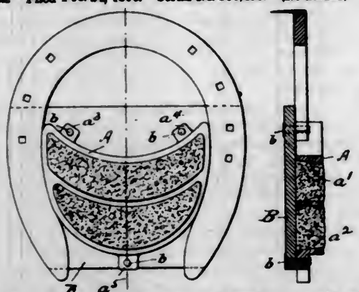
3. The combination in a lifting jack, of a toothed bar mounted for vertical reciprocation, a single transverse pin, a bifurcated dog, or detent, mounted upon said pin and having opposite projections 21, 22, which rest upon the standard of the jack and assist in supporting the load, said detent having a downwardly-projecting lug 23, and a lever mounted upon the same pin that said dog, or detent, is mounted upon and located in the bifurcation of said dog, or detent, with one of its ends in a plane below said downwardly projecting lug 23, whereby when the outer end of said lever is depressed the inner portion thereof will engage the downwardly-projecting lug and lift said dog, or detent, out of engagement with said toothed bar, substantially as herein specified.

569,021. TROUSERS-STRETCHER. HENRY C. HATCH, Windham, Conn. Filed Mar. 30, 1896. Serial No. 585,460. (No model.)



Claim.—A trousers-stretcher consisting of two substantially rectangular frames whose sides are adjustably connected by interlocked angular end portions c c the two rectangular frames being hinged together midway their length as set forth, and one of said frames being provided with angular stops f, all substantially as and for the purpose specified.

569,022. HORSESHOE-PAD. WILLIAM R. JENNINGS, Bath, England. Filed Feb. 24, 1896. Serial No. 580,490. (No model.)

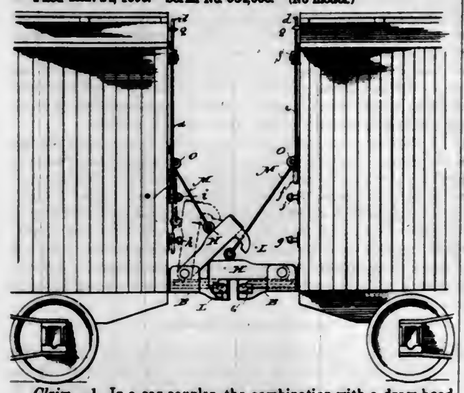


Claim.—1. The combination with a flexible plate B, of a cast-metal frame A having tapered chambers a' a^3 and lugs a^3 a^4 a^5, rivets b, and compressed non-slipping material in chambers a' a^3, substantially as described.

2. The combination with a leather plate B, of a cast-metal frame A having tapered recesses a' a^3 and lugs a^3 a^4 a^5, rivets b, and compressed rope in the chambers a' a^3, substantially as described.

3. The combination with a horseshoe, of a leather plate B extending from the heels to about three-fifths of the distance toward the toe of the shoe and coinciding with its side edges with the exterior side edges of the shoe, a cast-metal frame A fitted within the rear part of the shoe having crescent-shaped chambers a' a^3 tapering from above downwardly, lugs a^3 a^4 and a^5, rivets b b b, and compressed non-slipping material held within said chambers a' a^3, substantially as set forth.

569,023. CAR-COUPLING. JOHN M. KINCADE, Westville, Ohio. Filed Mar. 24, 1896. Serial No. 584,608. (No model.)



Claim.—1. In a car-coupler, the combination with a draw-head having a lateral horn extending from each side of a jaw pivoted to said head and having a horn extending downward from near each side thereof and adapted to ride over and engage with such lateral horns of an opposing car and mechanism for raising said pivoted jaw, adapted to be operated from either side or top of the car.

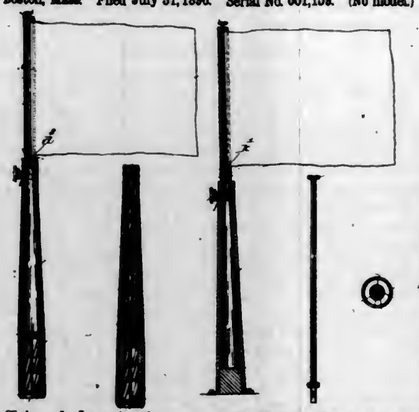
2. In a car-coupler, the combination with a draw-bar and its head, a horn projecting from said head, a recess in said head adapted to receive an ordinary link, a shank extending through said link and secured to said head, lugs or ears extending from said head and having a jaw pivoted between them.

3. In a car-coupler, the combination with a draw-head having a jaw pivoted thereto and a recess therein, said recess adapted to receive an ordinary draft-link, of a shank or staple extending through said link and adapted to hold it when used for coupling, and a lip projecting into the outer end of said recess and adapted to hold the said link within the recess when not in use.

4. In a car-coupler, the combination with a draw-head having a lateral projection from each side thereof, said projections being curved backward to form hooks, a jaw pivoted in said head and having a depending projection near each side thereof, said projections being curved along their front edges and hooked-shaped along their rear edges, whereby they will ride over the lateral projections of an opposing coupler and be prevented from being disengaged by constant jarring.

5. In a car-coupler, the combination with a draw-head having a lateral horn extending from each side of a jaw pivoted to said head, and having a horn extending downward from near each side and adapted to ride over and engage with such lateral horns of an opposing car.

569,024. RAILWAY-SIGNAL FLAGSTAFF. GEORGE P. KOCH, Boston, Mass. Filed July 31, 1896. Serial No. 601,159. (No model.)

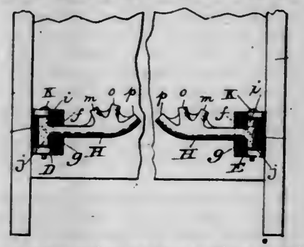


Claim.—1. In a signal apparatus, a hollow holder, a flag-case adapted to slide thereinto, and a combined closure and set-screw to close the end of the holder and to retain the flag case in extended, operative position, substantially as described.

2. In a signal apparatus, a hollow holder threaded at its upper end and having a threaded hole in its side, a tubular flag-case adapted to slide thereinto, means to furl and spread the flag, and a threaded closure for the holder, having a threaded shank to enter the hole in said holder and retain the flag-case in extended position, substantially as described.

3. In a signal apparatus, a longitudinally-slotted tubular flag-case, a rotatable rod therein to which the flag is secured, a holder in which the case is adapted to enter when not in use, a chamber in the lower end of the holder, a closure therefor, and a combined cap and set-screw, to close the other end of the holder and also to serve as a retaining device for the flag-case when extended in operative position, substantially as described.

569,025. CANOPY OR NETTING SUPPORT. JOHN R. LEARY, Brooklyn, N. Y. Filed July 2, 1896. Serial No. 597,891. (No model.)



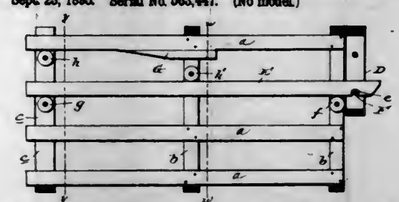
Claim.—1. A support for a canopy or netting comprising brackets secured to the frame of a bed or similar object, sockets in said brackets extending into the same at different angles, and a series of independent bow-shaped arms removably held in said sockets and adapted to support said canopy or netting, substantially as described.

2. A support for a canopy or netting comprising a spring-holding bow, an upright bow and a slanting bow, and supports for said bows having sockets in which the bows are removably held, substantially as described.

3. In combination with the bed-frame, brackets secured thereto, swinging brackets removably attached to said first brackets, bows removably secured to said swinging brackets, and a canopy or netting supported by said bows, substantially as described.

4. A removable and separable supporting-frame for a canopy or netting, composed of fixed brackets and swinging brackets, a suitable support for said fixed brackets, and bows supported by said swinging brackets, one of said bows constituting a spring-holding arm for the canopy, substantially as described.

569,026. FARM-GATE. ROBERT LOVE, Loyalhanna, Pa. Filed Sept. 23, 1895. Serial No. 563,447. (No model.)



Claim.—The combination of the upright posts, the upright bars c, connected in a hinged manner to one of the posts and carrying rollers g, h, a keeper connected to the other post and having a bolt F, the gate proper comprising the upper longitudinal bar extending between the upright bars c, above the roller h, and having the beveled projection or block adapted to take upon said roller, the lower longitudinal bars also extending between the bars c, and the upright bars b, fixedly connected to the longitudinal bars and carrying rollers f, k', and the endwise-movable latch-bar extending between the bars b, and also between the bars c, and arranged below the roller k', and above the rollers f, g, and having the notch in its under side adapted to engage the bolt of the keeper substantially as specified.

569,027. BICYCLE RIDING-HABIT. HERMAN MOSTKOWITH, Brooklyn, N. Y. Filed Jan. 30, 1896. Serial No. 577,353. (No specimens.)

Claim.—1. A bicycle-habit, consisting of a skirt having an opening in the upper portion of its back and provided with a flap covering the said opening, the skirt having side plaits adapted to fold over the

flap and fastening on the outside thereof, whereby the flap is concealed, substantially as described.



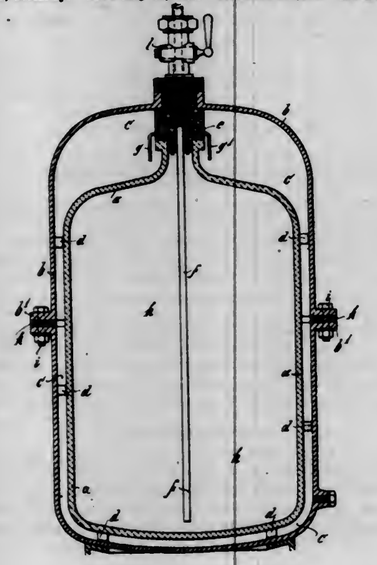
2. A bicycle-habit, consisting of a skirt having an opening in the upper portion of its back and provided with a flap covering the said opening, the skirt being divided in the rear below the flap, and having side plaits depending from the waistband and folding over the flap and fastening on the outside thereof, whereby the flap and division in the skirt are concealed, substantially as described.

3. A bicycle-habit consisting of a skirt and trousers connected at the waist and having an opening at their back, the habit being provided with a flap adapted to cover the said opening and forming a part of the skirt and of the seat of the trousers, the skirt having side plaits adapted to fold over the flap and fastening on the outside thereof, substantially as described.

4. A bicycle-habit consisting of a skirt and trousers connected at the waist and having an opening at their back, the habit being provided with a flap adapted to cover the said opening and forming a part of the skirt and of the seat of the trousers, the skirt being divided in the rear from its lower edge to the crotch of the trousers and the edges thus formed being secured to the inside seams of the legs of the trousers, the skirt having side plaits at the waist folding over the flap and fastening on the outside thereof, substantially as described.

5 A bicycle-habit, consisting of a skirt and trousers, united at the waistband, and having an opening at their back and provided with a flap forming a part of the skirt and of the seat of the trousers, adapted to be secured beneath the waistband and to cover the said opening, the skirt being divided in the rear from its lower edge to the crotch of the trousers, and the edges thus formed secured to the inside seams of the legs of the trousers, the skirt having also side plaits, the inner face of the trousers having inwardly-projecting tongues to be secured beneath the flap, the said side plaits folding over the flap and fastening on the outside thereof, the top of the side plaits forming a continuation of the waistband over the flap, substantially as described.

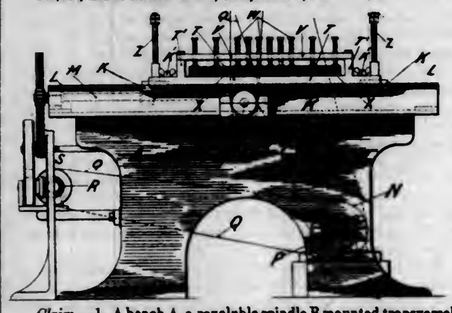
569,028. VESSEL FOR STORING AND TRANSPORTING LIQUORS CONTAINING GAS UNDER PRESSURE. LEOPOLD NATHAN, Rottweil, Germany. Filed May 14, 1894. Serial No. 511,261. (No model.)



Claim.—1. In a vessel for storing and transporting liquids containing gas under pressure, the combination with the inner vessel constructed of porcelain or similar material as specified, of the outer vessel of metal or the like surrounding the inner vessel and of such greater size than the latter as to form a space between the two vessels upon all sides of the inner vessel, a stopper fitting in the upper end of the inner vessel and capillary tubes carried by said stopper and communicating at one end with the space between the vessels and at the opposite end with the interior of the inner vessel, as specified.

2. In a vessel for storing and transporting liquids containing gas under pressure, the combination with the inner vessel constructed of porcelain or similar material as specified, of the outer vessel of metal or the like surrounding the inner vessel and of such greater size than the latter as to form a space between the two vessels upon all sides of the inner vessel, a stopper fitting in the upper end of the inner vessel, capillary tubes carried by said stopper and communicating at one end with the space between the vessels and at the opposite end with the interior of the inner vessel, as specified; and elastic rings *d*, arranged between the two vessels.

569,029. APPARATUS FOR PRODUCING RAISED PANELS AND MOLDINGS ON SQUARE BALUSTERS, &c. WILLIAM OSBERT, London, England. Filed Dec. 3, 1895. Serial No. 570,876. (No model.) Patented in England Feb. 3, 1896, No. 2,800; in Belgium Nov. 7, 1895, No. 118,212, and in France Nov. 7, 1895, No. 251,518.

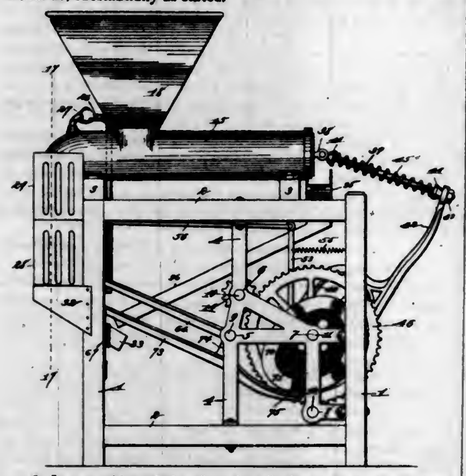


Claim.—1. A bench A, a revolvable spindle B mounted transversely on the bench A, and cutters F adjustably secured on the spindle B, in combination with a traveling table K mounted on the bench A, a revolvable screwed rod M mounted longitudinally on the bench A and engaged with the table K, and a frame T detachably secured on the table K, means being provided for rigidly holding panels, balusters and the like in the frame T, and for revolving the spindle B and the rod M, substantially as described, for the purpose specified.

2. The combination with a bench A, carrying a transverse revolvable spindle B, provided with adjustable cutters F, and a longitudinally-traveling table K, actuated by a longitudinal revolvable screwed rod M, of a frame T detachably secured on the table K, and provided with longitudinal clamping-bars V and bolts W, means being provided for revolving the spindle B and the rod M, substantially as described for the purposes specified.

569,030. CAN-FILLING MACHINE. WILLIAM S. PLUMMER, St. Louis, Mo. Filed Feb. 10, 1896. Serial No. 578,818. (No model.)

Claim.—1. In a machine of the class described, a hollow cylinder fixed in horizontal position and having its rear end open and its forward end bent downwardly at right angles to the body of said cylinder, said forward end being somewhat contracted in size, a discharge-nozzle attached to and depending downwardly from said forward end, an air-discharge pipe communicating with the interior of said discharge-nozzle, a plunger operating in the body of said cylinder, a pipe penetrating said cylinder at a point in front of the path of said plunger, an inlet-valve in said pipe, a hopper positioned above said cylinder and connecting with the interior thereof, and means for operating said plunger, which means consists of the pair of perforated ears 38 attached to the rear end of said plunger, the rod 39 having its forward end pivoted between said ears 38, the oblong loop 40, the journal-bearing 41 attached to the lower end of said loop 40, the shaft 12 passing through said journal-bearing 41, the arm 42 attached to the upper end of said loop, the rod 39 having its outer end passing through the extreme upper end of said arm 42, the collars 44 loosely mounted upon said rod 39, the expansive coil-spring 45 mounted upon said rod 39 between said collars 44, the gear-wheel 46 rigidly fixed upon the shaft 11 adjacent to the loop 40, the pinion 14 mounted upon the shaft 10 between the frames 4 and meshing with said gear-wheel 46, and the eccentric 47 having the peripheral flange 48 arranged to operate in said loop 40, said eccentric 47 having the slot 49 to admit the hub of the gear-wheel 46 and the slot 50 through which passes the bolt 51, said bolt being fixed to one of the spokes of the gear-wheel 46, substantially as stated.



2. In a machine of the class described, the vertical can-chute, the horizontal can-chute and means of passing the cans from said vertical can-chute to said horizontal can-chute, which means consists of the eccentric 70 located upon the shaft 11, the bearing-flange 71 extending around the entire circumference of said eccentric, the hub 72 at the center of said eccentric through which hub passes the shaft 11, the arm 73 having the integral projection 74 at its center, the shaft 9 passing through the upper end of said projection 74, the rear end of said arm 73 being curved downwardly and having the pair of pins 75 projecting upwardly from said rear end, the upwardly-extending finger 76 attached to the forward end of said arm 73, the inclined flange 77 on said upwardly-extending finger, and means for operating said shaft 11, substantially as stated.

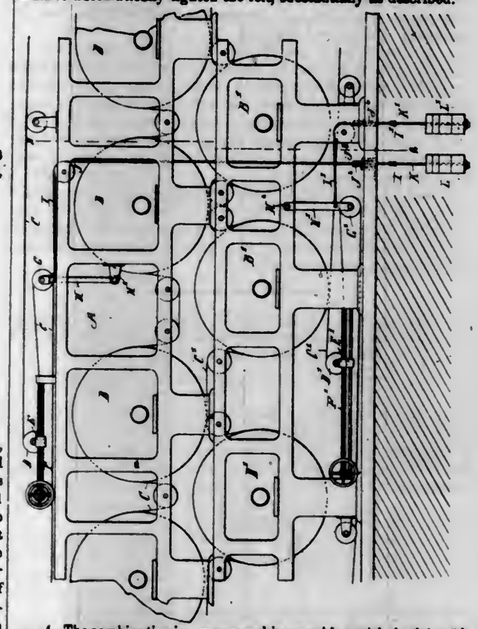
3. In a machine of the class described, the combination with a discharge-nozzle of a horizontal can-chute and means for raising a can against said nozzle to be filled, which means consists of the eccentric 58 fixed upon the shaft 11, said eccentric being provided with the hub 59 and the set-screw 60, the arm 64 having the journal-bearings 65 provided near its rear end, through which journal-bearings passes the shaft 9, the plate 66 attached to the forward end of said arm 64, said plate being normally positioned beneath the discharge-nozzle, the retractile coil-spring 67 attached to the forward end of said arm 64, the lower end of said spring being attached to a portion of the frame of the machine and the lower end of said arm 64 being positioned directly beneath the eccentric 58, the spring bearing-plate 68 attached to the upper face of said lower end of said arm 64, said eccentric 58 operating directly upon said spring bearing-plate, the set-screw 69 passing through the rear end of said arm 64 and engaging directly against the under side of said spring bearing-plate for the purpose of adjusting the same, substantially as stated.

569,031. AUTOMATIC TIGHTENER FOR DRIER-FELTS OF PAPER-MAKING MACHINES. THOMAS PUSEY, Stockton, Cal., and THOMAS H. LATIMER and THOMAS H. SAVERY, Wilmington, Del. Filed June 1, 1895. Serial No. 551,408. (No model.)

Claim.—1. The combination in a paper-making machine, with the drier-felt and the drying-rolls, of the adjustable tightening-roller around which passes the felt and means for normally holding said roller stationary, another tightening-roller journaled in freely-movable bearings, the felt also passing around said second roller, and a weight connected to the said freely-movable bearing to automatically tighten the felt, substantially as described.

2. The combination, in a paper-making machine, with the drier-felt and the drying-rolls, of the normally-stationary yet adjustable tightening roller around which passes the felt, tightening-screws engaging the bearings of the said roller to adjust the same, another tightening-roller journaled in freely-movable bearings, the felt also passing around said second roller, and a weight connected to the said freely-movable bearing to automatically tighten the felt, substantially as described.

3. The combination, in a paper-making machine, with the drier-felt and the drying-rolls, of a tightening-roller around which passes the felt, normally-stationary bearings in which said roller is journaled, adjusting-screws for moving said bearings, depending arms pivoted at their upper ends to the frame of the machine, and carrying bearings at their lower ends, so that the said bearings are freely movable at all times, another tightening-roller journaled in said freely-movable bearings, and engaging the felt, and a weight connected to the said arms to automatically tighten the felt, substantially as described.



4. The combination in a paper-making machine, with the drier-felt and the drying-rolls, of the adjustable tightening-roller around which passes the felt and means for normally holding said roller stationary, depending arms pivoted at their upper ends to the frame of the machine, and carrying bearings at their lower ends, so that the said bearings are freely movable at all times, another tightening-roller journaled in said freely-movable bearings, and engaging the felt, and a weight connected to the said arms to automatically tighten the felt, substantially as described.

5. In a paper-making machine, the combination, with the drier-felt and the drying-rolls, of a normally-stationary tightening-roller engaged by the felt at one side, means under the control of the operator, for adjusting said tightening-roller, another tightening-roller journaled in bearings arranged to move freely in substantially the same plane as that in which the first-named roller moves, the felt engaging the second roller on the opposite side to the first-named roller, and a weight connected to the second roller to automatically tighten the felt, substantially as described.

6. The combination, in a paper-making machine, with the longitudinally expansible and contractile drier-felt and the drying-rolls, of the movable roller arranged in contact with said felt, and means for pressing the roller against the felt to keep it under a uniform tension irrespective of its elongation or contraction, substantially as described.

569,032. WRIST-GUIDE AND TAILPIECE FOR STRINGED INSTRUMENTS. WILLIAM H. RICHARDSON, Trenton, N. J., assignor to himself, William Walton, and Charles H. Walton, same place. Filed May 27, 1896. Serial No. 593,303. (No model.)

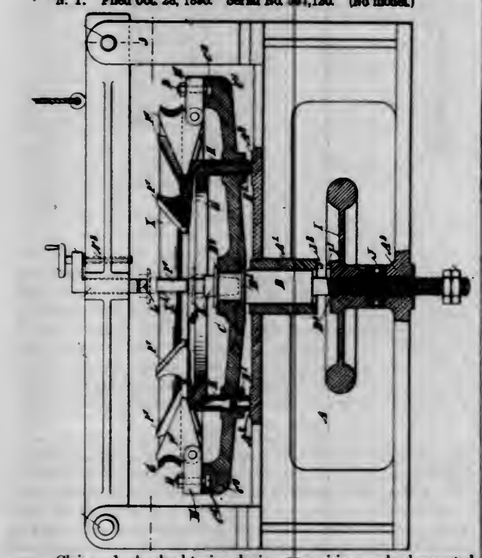


Claim.—1. A wrist guide and tailpiece for stringed instruments, constructed from one piece of material, the two parts being at angles

to each other, and the tailpiece having a series of guide-openings adjacent to the guide-piece and a second series of openings below the guide-openings, and a comb attached to the under face of the tailpiece, the teeth whereof extend through the second series of openings in the tailpiece, the teeth of the comb being of such size as to provide a space between the side and lower end walls of the openings containing the comb-teeth and corresponding portions of the teeth, substantially as shown and described.

2. A wrist-guide and tailpiece for stringed instruments constructed of a single piece of material, the two parts being at angles to one another, the tailpiece having a series of longitudinally-arranged guide-openings through which the strings are to pass after having passed beneath the wrist-guide, the tailpiece being further provided with a lower series of openings having straight sides and concaved lower ends, a comb the body of which is in engagement with the under face of the tailpiece between the two series of openings, the teeth of the said comb extending within the lower openings and admitting of one or two strings being secured to the tailpiece at each of the lower openings, the attaching device employed for securing the attachment to the instrument serving also to secure the comb of the tailpiece, as and for the purpose specified.

569,033. WHEEL-TRUING DEVICE. Frederick Schrader, Rockaway, N. J., assignor to the Garvin Machine Company, New York, N. Y. Filed Oct. 23, 1895. Serial No. 567,120. (No model.)



Claim.—1. A wheel-truing device, comprising a wheel mounted to turn and adapted to be raised and lowered, pivot-blocks held on said wheel, jaws fulcrumed on said pivot-blocks, and a rest for the inner ends of said jaws, and adapted to be turned with said wheel and always remain in the same horizontal plane upon raising and lowering the wheel, substantially as shown and described.

2. A wheel-truing device, comprising a wheel mounted to turn and adapted to be raised and lowered, pivot-blocks held on said wheel, jaws fulcrumed on said pivot-blocks, a rest in the form of a ring, for the inner ends of said jaws and adapted to be turned with said wheel and always remain in the same horizontal plane upon raising and lowering the wheel, and pins supporting the said rest, and loosely fitted in the web of said wheel, the lower ends of the pins being mounted to travel on a circular track, substantially as shown and described.

3. A wheel-truing device, comprising a carrier, means to move the same, a circular series of jaws mounted on the carrier and adapted to be moved into engagement with the wheel-rim, and means actuated by the movement of the carrier for moving said jaws into engagement with the wheel-rim, substantially as set forth.

4. A wheel-truing device, comprising a carrier, means to move the same, a circular series of pivoted jaws carried on the carrier and adapted to engage the rim of a wheel to be trued, and means actuated by the movement of the carrier for swinging said jaws into engagement with the wheel rim, substantially as set forth.

5. A wheel-truing device, comprising a carrier, a circular series of pivoted jaws mounted thereon and adapted to engage the rim of a wheel to be trued, devices located centrally with respect to said series of jaws to engage and hold the wheel-hub, and a ring located between the said hub holding devices and the carrier, said ring being arranged to engage said jaws and swing the same pivotally into engagement with the wheel-rim, substantially as set forth.

6. A wheel-truing device, comprising a carrier, means to move the same, a circular series of jaws mounted on the carrier and adapted to be moved into engagement with the rim of a wheel to be trued, and a plate arranged to engage said jaws when the carrier is moved, said jaws being moved by engagement with the plate into engagement with the wheel-rim, substantially as set forth.

7. A wheel-truing device, comprising a carrier, means to move the same, a circular series of pivoted jaws mounted on the carrier and adapted to engage the rim of a wheel to be trued, and a plate arranged to engage said jaws when the carrier is moved, said jaws being swung pivotally by engagement with the plate into engagement with the wheel-rim, substantially as set forth.

8. A wheel-truing device, comprising a carrier, a circular series of pivoted jaws mounted thereon and adapted to engage the rim of a wheel to be trued, a shaft connected to the carrier and adapted when operated to move the same axially, and a plate arranged to engage the jaws when the carrier is moved in one direction to swing said jaws pivotally into engagement with the wheel-rim, substantially as set forth.

9. A wheel-truing device, comprising an endwise-movable shaft, a disk-like carrier thereon adapted to be turned, a circular series of pivoted jaws on the carrier adapted to engage the rim of a wheel to be trued, and a plate arranged to engage the jaws when the carrier is moved, said jaws being swung pivotally on engagement with the plate into engagement with the wheel rim, substantially as set forth.

10. A wheel-truing device, comprising a carrier and a plate arranged to turn in unison, the said carrier being provided with means for moving it toward and from the plate, and a circular series of pivoted jaws carried on the carrier and arranged to be engaged by said plate when the carrier is moved, said jaws being adapted when engaged by the plate to be swung pivotally into engagement with the wheel-rim, substantially as set forth.

11. A wheel-truing device, comprising a disk-like carrier provided with a circular groove, pivot-blocks having fastening devices engaging said groove and adjustable along the same, jaws pivoted on said blocks and adapted to be swung into engagement with the rim of a wheel to be trued, and means for actuating said jaws, substantially as set forth.

12. A wheel-truing device, comprising a wheel provided with a flat-topped rim projecting from its upper side and provided with a groove, pivot-blocks having bolts engaging said wheel, said blocks having their ends extending inward beyond the edge of the projecting rim of the wheel, jaws pivoted on the projecting ends of the pivot-blocks and adapted to be swung into engagement with the rim of a wheel to be trued, a circular plate arranged inside the projecting rim of the wheel whereon the jaws are carried, said plate being arranged to engage the jaws and swing the same into engagement with the rim of a wheel to be trued, and means for moving said ring relatively to said wheel, substantially as set forth.

13. In a wheel-truing device, the combination of a frame, a shaft mounted in the frame and adapted for endwise movement, a wheel carried on the shaft and adapted to be turned, a series of jaws pivoted on said wheel and adapted when swung pivotally to engage the rim of a wheel to be trued, said wheel whereon the jaws are carried being provided with apertures extending through it, pins adapted to play through said apertures and having their lower ends engaging the frame, and a ring secured to said pins above the wheel through which the pins play, said ring being arranged to engage the jaws when the shaft is moved endwise to swing said jaws pivotally, substantially as set forth.

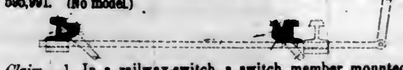
14. A wheel-truing device, comprising a frame, a shaft arranged to engage under the hub of a wheel to be trued, a carrier mounted to turn on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for simultaneously actuating said jaws, a bar pivoted to the frame and adapted to swing vertically, said bar being arranged to extend across said carrier over the wheel thereon, and an adjustable rod connected to said bar and arranged to engage the upper part of the hub of the wheel on the carrier, substantially as set forth.

15. A wheel truing device, comprising a frame, a shaft arranged to engage under the hub of a wheel to be trued, a carrier mounted to turn on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for simultaneously actuating said jaws, a bar pivoted to the frame and arranged to extend across said carrier over the wheel thereon, and an adjustable rod connected to said bar and having a roller arranged to engage the upper part of the hub of the wheel on said carrier, substantially as set forth.

16. A wheel-truing device, comprising a frame, a shaft mounted thereon and adapted to engage under the hub of a wheel to be trued, a carrier mounted on the frame and having a circular series of jaws to engage the rim of a wheel to be trued, means for moving the carrier, means actuated by the movement of the carrier for moving the jaws into engagement with the wheel-rim when the carrier is moved, and a rod adjustably carried on the frame in alinement with the shaft and arranged to engage the upper part of the wheel-hub, substantially as set forth.

17. A wheel-truing device, comprising a carrier, a circular series of pivot-blocks secured on the carrier, jaws pivoted on said blocks and arranged in a circular series, said jaws being arranged to be swung pivotally into engagement with the rim of a wheel to be trued, said pivot-blocks being adjustable circumferentially of the circular series, and means for actuating the jaws, substantially as set forth.

569,034. RAILWAY-SWITCH. Charles H. Sturgis and Wilbur H. Sturgis, Swartz Creek, Mich. Filed June 18, 1896. Serial No. 595,991. (No model.)



Claim.—1. In a railway-switch, a switch member mounted to rotate between adjacent ends of a track-rail, the said switch member comprising a body having a rounded bottom and sides and a flat top, and a switch-rail located upon the flat upper portion of the body, extending beyond a side of the body at its wider end and being substantially flush with the said body at its contracted end, as and for the purpose set forth

2. In railway-switches, a switch member mounted to rotate between adjacent ends of a track-rail, the said switch member consisting of a body having a flat top and rounded bottom and sides, a plate located beneath the switch member and having its upper surface curved for continuous engagement with the aforesaid body of the switch member, and a switch-rail located upon the upper portion of the said body, extending at its wider end beyond the body, the narrower end of the switch-rail being substantially flush with the side of the body, as and for the purpose set forth.

3. In a railway-switch, a switch member adapted to rotate between adjacent ends of a track-rail, the said switch member consisting of a body portion having its sides and bottom rounded, and provided with a flat top and a tapering V groove in its outer side, and a switch-rail secured to the top of the body, the wider end of the switch-rail extending beyond the outer side face of the body, the pointed end of the switch-rail being substantially flush with the inner wall of the aforesaid groove in said body, as and for the purpose set forth.

4. A switch having main and switch rails and two switch members or points forming continuations of the switch-rails and mounted to rock in the operation of the switch, each switch member or point having a rail formed thereon and the switch members being connected with opposite disposition whereby when the rail of one switch member or point is engaged with the main rail the rail of the remaining switch member or point will be out of engagement with the remaining adjacent main rail, substantially as described.

5. A switch having main and switch rails and two switch members or points forming continuations of the switch-rails, the switch members or points being mounted to rock and to carry the wheels of the car during its passage over the switch, the switch-rails being constructed to throw the wheels from one track to the other and being oppositely disposed to each other and connected to turn simultaneously, substantially as described.

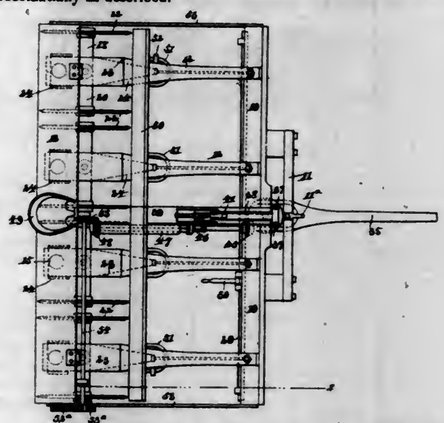
569,035. GRAIN-DRILL. Calvin C. Blair, Beloit, Kans. Filed June 23, 1896. Serial No. 596,598. (No model.)

Claim.—1. In a planter or like machine, a caster-wheel journaled in the frame of the planter, and a lock lever arranged for locking engagement with a portion of the shank of the said caster-wheel, whereby the said shank may be held in a fixed position when desired, a gear carried by the caster-wheel, a driving-shaft driven from the said gear, and a shifting-lever arranged to carry the driving-shaft to and from a connection with the gear of the said caster-wheel, as and for the purpose set forth.

2. In a grain-drill or like machine, the combination, with a frame, of arms connected with the frame and capable of a vertical movement at their rear ends, a pair of axles pivoted in each arm and capable of lateral movement, disks mounted upon the axles, a locking device provided for the axles and carried by the said arms, and means for operating the locking devices, as and for the purpose set forth.

3. The combination with a frame, of a supporting-wheel, a shank carrying the supporting-wheel and turning on a vertical pivot, a tongue connected to the shank, means for holding the shank for turning, a shaft geared with the carrying-wheel, and a lever capable of simultaneously moving the shaft and moving the means for locking the shank, substantially as described.

4. The combination with a frame, of a driven gear-wheel, a tongue connected and moving in unison with said gear-wheel, means for locking the tongue, a shaft driven from the gear-wheel, and a lever capable of moving in unison the shaft and means for locking the tongue, substantially as described.

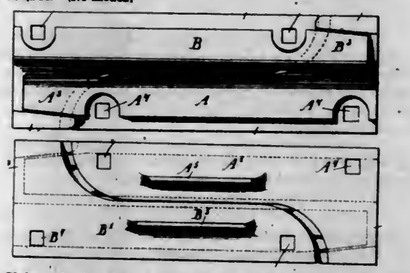


5. A planter having a carrying-wheel and seed-dropping mechanism driven from the carrying-wheel, a tongue in unison with which the carrying-wheel turns, means for holding the tongue from turning, and a shifting device capable of simultaneously releasing the said means and disconnecting the gearing by which the dropping mechanism is driven, substantially as described.

6. The combination with a frame, of an arm, two axles carried by the arm and having their adjacent ends pivoted thereto, a disk carried by the outer end of each axle, a shoe sliding on the arm and engaging the axles to hold the same, and means for controlling the shoe, substantially as described.

7. The combination with a frame, of an arm, an axle carried by the arm and having its inner end pivoted thereto, a cultivating instrument carried at the outer end of the axle, and means movable on the arm and capable of engaging the axle to hold the same from pivotal movement, substantially as described.

569,036. RAIL-JOINT. Carl W. Dehn, Topeka, Kans., assignor to Carl J. Rosen, Jr., same place. Filed Mar. 21, 1896. Serial No. 584,241. (No model.)



Claim.—1. A rail-joint, comprising two fish-plates made approximately L-shaped in cross-section, and base-plates integral with the outer sides of the bottom parts of the fish-plates, to form a rest for the base of the rail, said base-plates having S-shaped edges extending in direct line with the rails at the meeting-point of the same, substantially as shown and described.

2. A rail-joint, comprising two fish-plates made approximately L-shaped in cross-section, and base-plates formed integral therewith having inner S-shaped edges adapted to abut against one another and extend under the rail in direct line therewith, said base-plates being formed at their under side with longitudinal ribs to fit snug between adjacent ties, as and for the purpose set forth.

3. A rail-joint, comprising two fish-plates made approximately L-shaped in cross-section, and base-plates formed integral therewith, each base-plate being provided at one end with a wedge-shaped bottom portion and at the other end with a correspondingly-shaped head to be engaged by the wedge-shaped bottom portion of the other fish-plate, the body portion between said ends having an S-shaped inner edge whereby said base-plates form an S-shaped joint extending par-

allel with the rails at the meeting-point of the same, substantially as shown and described.

569,037. COMBINED PIPE AND NUT WRENCH. Thomas Dixon, McKeesport, Pa. Filed Mar. 21, 1896. Serial No. 584,223. (No model.)

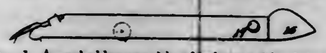


Claim.—1. A wrench, comprising a fixed jaw, a movable jaw on the shank of the fixed jaw and having a recess formed in it, a block in said recess adapted to move transversely of the fixed-jaw shank and having teeth to engage teeth on the shank, a wedge adapted to slide longitudinally of the recess and engage upon a longitudinally-inclined surface of the block, and clamping means for said wedge, substantially as specified.

2. A wrench, comprising a fixed jaw, a jaw movable on the shank of the fixed jaw, clamping means comprising a slidable wedge, a roller-jaw, arms in which said roller-jaw is mounted, a shaft from which said arms extend, the said shaft having bearings in slots in the movable jaw extended parallel with the gripping-face of the movable jaw, a spring engaging on said shaft, and a screw-block in the movable jaw engaging the opposite end of the spring, substantially as specified.

3. A monkey-wrench, comprising a shank carrying a fixed jaw, a movable jaw fitted to slide on said shank, a rack secured on said shank, a spring-pressed toothed block fitted to slide in said movable jaw and adapted to engage the said rack, and a wedge movable on said movable jaw and adapted to engage said toothed block, substantially as shown and described.

569,038. RULING-PEN AND HOLDER. Albert N. Dow, Exeter, N. H. Filed Feb. 17, 1896. Serial No. 579,547. (No model.)



Claim.—1. A penholder capable of being used horizontally upon a sheet of paper, the said penholder being provided with bearing-surfaces located at its pen receiving end and at the rear of the said end, the lower edges of the said surfaces being in alinement, substantially as described.

2. A penholder provided with a straight-edge as an under edge, and bearing-surfaces or edges extending downward through the straight-edge, the bearing-surfaces or edges being in alinement, as and for the purpose specified.

3. The combination, with a double nibbed pen, the pairs of nibs being spaced apart, of a holder, and means for securing the holder to the pen, the said holder being provided with substantially sharp bearing-surfaces projected from its lower edge, the said surfaces being in alinement and in alinement with one set of nibs of the pen, as and for the purpose specified.

4. A penholder provided with a straight-edge serving as an under edge, and a revolving bearing-surface extending below the said straight-edge, as and for the purpose specified.

569,039. BADGE. Oliver T. Kane, Harvey, Ill. Filed June 25, 1896. Serial No. 596,850. (No model.)



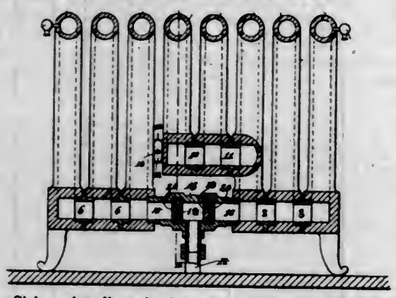
Claim.—1. A badge having the representation of a human being, and comprising a body portion and a head portion, the said head portion having an elongated neck extending into the body portion, the said body portion being adapted to slide on the neck portion, and a spring connecting the head portion with the body portion, substantially as specified.

2. A badge, comprising a body portion and a head portion, one part having a movement relatively to the other part, the head part having an elongated neck extended into the body portion, a string or similar device connected to the body portion, a spring connected at one end to the body portion and at the other end to the head portion, and a fastening device on the head portion, substantially as specified.

3. A badge, having the representation of a human being and comprising a body portion and head portion, the body portion being movable relatively to the head portion, an elongated neck portion extended from the head into the body portion, the lower end of said neck being turned inward to engage with an inwardly-turned plate at the upper end of the body portion, and a spring connected at one end to said inwardly-turned plate and at the other end to the inner side of the head at the top, substantially as specified.

4. A badge, comprising a body portion of box-like construction having a back plate, the upper end of which has an inwardly-turned portion or plate, a head portion having an elongated neck extended into the body portion and guided in its movement by the inwardly-turned portion of the back plate, the said inwardly-turned portion of the back plate also serving as a stop to prevent a complete detachment of the parts, a spring extended from said inwardly-turned portion to a connection with the inner side of the head portion near its top, and a fastening-pin on the head portion, substantially as specified.

569,040. STEAM-RADIATOR. Augustus Eichhorn, Orange, N. J. Filed Apr. 30, 1896. Serial No. 589,690. (No model.)



Claim.—A radiator having a series of loops, the loops being divided into two sections, one of which sections has loops of uniform length, said loops having communication with each other at their lower ends and the lower portion of the innermost loop of the first section having an opening in its side, the remaining or second section of loops having a part of the loops of the same length as the loops of the first section, the loops of such part being in communication with each other at their lower ends and the innermost loop having an opening in its side and approximately horizontally alined with the opening in the innermost loop of the first section, the second section having an additional loop in communication with the innermost loop of the first-named loops of the second section, said additional loop being shorter at its lower end than the remaining loops to form a space inclosed by the outermost lines of the radiator, a valve-casing having two horizontal and oppositely-projecting outlet-thimbles, said thimbles respectively communicating with the openings in the inner sides of the aforesaid innermost loops, the valve-casing also having an inlet-orifice and the valve-casing being received within the space left by the shortened loop of the radiator and valve-gates respectively for the outlet members of the valve-casing, the gates being capable of independently controlling the sections of the radiator, substantially as described.

569,041. ASH-SIFTER. John N. Fordham, Brooklyn, N. Y. Filed Feb. 26, 1896. Serial No. 580,800. (No model.)

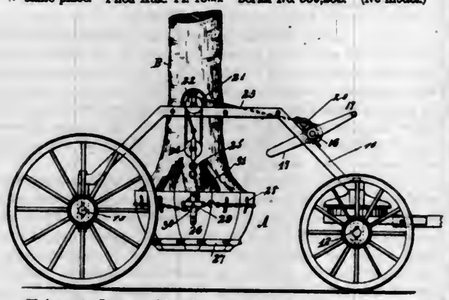


Claim.—1. An ash-sifter, having a grate formed of a wire ring, a series of wire rods having their ends formed with loops to engage said ring, said rods extending parallel across the ring, and a transverse brace extending across the series of rods and having at its central portion an eye to receive the pivot-pin, substantially as set forth.

2. The combination, in an ash-sifter, with the casing having an open bottom adapted to rest on an ash-can or the like, said casing having a hopper extending from the side and near the upper end thereof and provided with a diametrically-opposed chute; of an inclined grate pivoted centrally of said casing, said grate consisting of a wire ring, a series of parallel rods secured only at their ends to said ring, and a transverse brace extending across said ring at right angles to said rods, said brace having at its central portion an eye to receive a pivot-pin, as and for the purpose set forth.

3. In an ash-sifter, the combination with the casing having an open bottom adapted to rest on an ash-can or the like and provided with a hopper and a diametrically-opposed chute; of a cross-bar attached to the sides of said casing having a pin projecting upwardly from its center, an inclined grate formed of a wire ring and a series of parallel bars secured only at their ends to said ring, a transverse brace extending across said ring at right angles to said rods and having at its central portion an eye to receive said pin, and an operating-handle formed integral with said ring and extended through a slot in said casing to the outside thereof, as and for the purpose set forth.

569,042. DEVICE FOR TRANSPORTING TREES. Charles O. Halling, Minneapolis, Minn., assignor of one-half to Gilbert Amonsen, same place. Filed Aug. 14, 1895. Serial No. 559,262. (No model.)



Claim.—1. In a machine for transporting trees, a truck provided with a divided axle and with a brace fitted to and removably held between the sections of said divided axle, substantially as set forth.

2. In a machine for transporting trees, a carriage, a winding mechanism located on the carriage, and a collapsible and expansible basket having compressing devices connected with the said winding mechanism, substantially as set forth.

3. In a machine for transporting trees, a truck provided with a divided axle, a winding mechanism located on the body of the truck, a hoisting mechanism connected with the winding device, and a collapsible and expansible basket, having compressing devices connected with the hoisting mechanism, as and for the purpose specified.

4. In a machine for transporting trees, a truck provided with a divided axle, a block adapted to be introduced between the axle-sections, bolts contained in the axle-sections, extending beyond top and bottom thereof, a bar having sockets receiving the heads of the axle-bolts and extending over the top of the said block, a turnbuckle receiving the lower heads of the axle-bolts, and removable bolts connecting the turnbuckle, inserted block and upper locking-bar, as and for the purpose set forth.

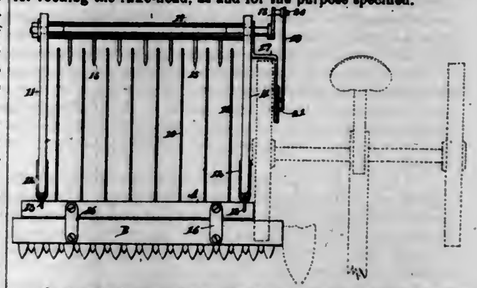
5. In a machine for transporting trees and for similar purposes, a hoisting device, and a basket adapted to be supported by the hoisting device, comprising a series of members having sliding engagement with each other, and a chain extending circumferentially around the basket, guides through which the chain passes, and a connection between the chain and the hoisting devices, as and for the purpose specified.

6. In a machine for transporting trees, a compressible basket combined with a hoisting mechanism applied to and extended from said basket and adapted to compress the same when the hoisting strain is applied, substantially as set forth.

7. In a machine for transporting trees, a compressible basket combined with a hoisting chain or cable extending circumferentially thereof and thence around suitable guides upward, whereby as the hoisting strain is applied, the basket will be compressed, substantially as and for the purpose set forth.

569,048. CLOVER-SEED HARVESTER. Samuel Hamilton, Wilson, Mo. Filed May 26, 1896. Serial No. 593,151. (No model.)

Claim.—1. A gathering attachment for mowers, consisting of a drop-bar forming the forward portion of the attachment, teeth rearwardly projected from the drop-bar, side pieces having a hinge connection with the drop-bar outside of the teeth, a rake-head journaled in the said side pieces, the teeth whereof are arranged to extend between the teeth of the drop-bar, and means, substantially as described, for rocking the rake-head, as and for the purpose specified.

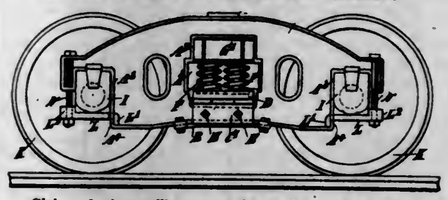


2. A gathering attachment for mowers, consisting of a drop-bar forming the front thereof, teeth rearwardly projected from the drop-bar, side pieces having a hinged connection with the drop-bar, being placed outside of the teeth of the same, a rake mounted to turn in the side pieces at the rear of the drop-bar teeth, a lever, a connection between the lever and the rake-head, and a locking device for the lever, substantially as set forth.

3. The combination, with the mower-bar of a mower, of a drop-bar attached to the mower bar, teeth rearwardly projected from the drop-bar, side pieces located outside of the drop-bar teeth and having a hinged connection with the drop bar, a rake mounted in the side pieces at the rear of the drop-bar teeth, a lever, and a connection between the said lever and the rake, whereby the latter may be rocked to and from the drop-bar teeth, as and for the purpose set forth.

4. The combination, with the mower-bar of a mowing-machine, a drop-bar attached to the mower-bar, and teeth rearwardly projected from the said drop-bar, the rear ends of the teeth being upwardly inclined, of side pieces located outside of the said teeth and having a hinged connection with the drop-bar, a rake-head journaled in the said side pieces, the teeth whereof are arranged to extend downward between the upturned ends of the drop-bar teeth, a shifting lever, a locking device for the same, and a crank-and-link connection between the shifting lever and the said rake-head, as and for the purpose set forth.

569,044. METALLIC CAR-TRUCK. James S. Hardie, El Dorado, Kans. Filed Jan. 25, 1896. Serial No. 576,870. (No model.)



Claim.—1. A metallic car-truck, provided with truck-arches rigidly connected with each other at or near the middle and formed with transverse openings, compression-wedges set in the bottoms of said openings, spring-seats resting on the top of said compression-wedges and extending into said openings, means for fastening said compression-wedges and seats in place on the truck-arches, springs held in said seats, and a truck-bolster fitted between said truck-arches and having reduced ends extending into said openings and resting on the top of said springs, substantially as shown and described.

2. A car-truck, comprising two truck-arches rigidly connected with each other, each truck-arch having a transverse opening, the upper portion of which is contracted, a truck-bolster fitted in the upper portion of said openings, and springs seated in the openings and below the truck-bolster and respectively bearing against the truck-bolster, substantially as described.

3. A truck having two truck-arches, each formed with an opening, the upper portion of which is contracted, a truck-bolster having its ends respectively fitted within the upper portions of said openings, and means within the openings and below the truck-bolster by which the truck-bolster is held in place, substantially as described.

4. A truck comprising a truck-arch having an opening therein, a bolster fitting within said opening, a compression-wedge rested on the bottom of the said opening, a spring-seat rested on the wedge, and a spring carried by the seat and engaging the bolster, substantially as described.

5. A truck comprising a truck-arch having an opening therein, a compression-wedge consisting of an angular plate, one arm of which is capable of lying within the opening and the other arm engaging the side of the arch, a spring-seat having a main portion rested on the compression-wedge and within the opening and having a leg extending alongside of the arch and oppositely to the arch-side-engaging arm of the compression-wedge, a spring carried by the spring-seat, and a bolster engaged by the spring, substantially as described.

6. A truck having a truck-arch formed with an opening, the central portion of which is enlarged over the terminals, a spring-seat fitted within the contracted lower portion of the opening, springs rested on the spring-seat, and a truck-bolster fitted within the upper contracted portion of the opening and engaged by the springs, substantially as described.

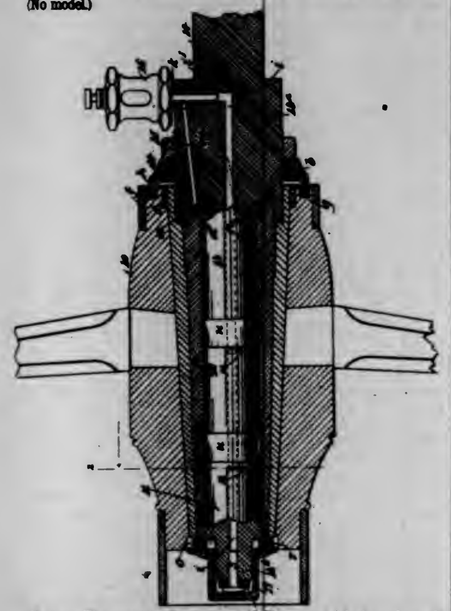
7. A truck, comprising a truck-arch formed with an opening, the central portion of which is enlarged over the size of the ends, a bolster fitted within the contracted upper portion, a spring-seat having vertical guides receiving the sides of the contracted lower portion, and a spring carried by the spring-seat and pressing the bolster, substantially as described.

8. A truck having a truck-arch formed with an opening, a compression-wedge having a part lying against the side of the arch, a spring-seat rested on the compression-wedge and having a part lying against the opposite side of the arch, a bolt passing through the arch and holding said parts to the arch, a bolster fitted within the opening, and a spring carried by the spring-seat and engaging the bolster, substantially as described.

9. A truck having a truck-arch formed with a recess capable of receiving a journal-box, a bar having a pin engaging the truck-arch and extending beneath the recess, and a bolt connected to the outer end of the bar and to the truck-arch above the bar, substantially as described.

569,045. OILING DEVICE FOR VEHICLE AXLES AND WHEELS.

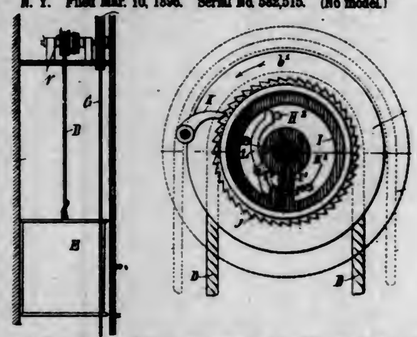
Addison C. Holt, Lynchville, Me. Filed Feb. 1, 1896. Serial No. 577,692. (No model.)



Claim.— The combination of an axially-recessed hub, a sleeve in said hub, a spindle having an enlarged portion, the forward end of said enlarged portion being inserted in a counterbore in said sleeve, a collar having screw-thread engagement with said enlarged portion of the spindle, the said collar having an annular flange engaging in an annular channel in the rear end portion of the hub, an oil-cup communicating with a vertically-disposed oil-passage formed in the enlarged portion of the spindle, the said oil-passage communicating with an oil-passage extending longitudinally through the center of the spindle, which has lateral feed-passages, the said vertical oil passage also communicating with a smaller oil-passage arranged above the longitudinal oil-passage, the said upper oil-passage communicating at its end with a packing-ring in the hub-box, a plug-valve for the end of said longitudinal passage through the center of the spindle, a screw-cap engaging over said plug-valve, the said screw-cap engaging with the reduced screw-threaded portion of the spindle and having a flange engaging against the outer end of the hub, and a packing-ring engaged between the flange of said screw-cap and the end of the packing in the hub, substantially as specified.

569,046. HOISTING APPARATUS.

Anton Larsen, New York, N. Y. Filed Mar. 10, 1896. Serial No. 582,515. (No model.)



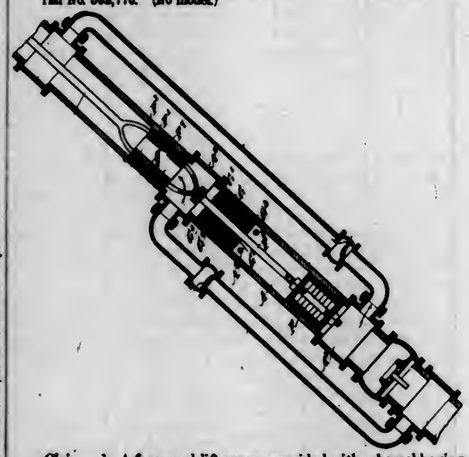
Claim.—1. In a hoisting apparatus, the combination of a shaft, a spring-band adapted to be carried around in one direction by the rotation of said shaft and adapted to be opened by rotating said shaft in the opposite direction, a pulley carrying the cage-carrying cable or rope, said spring-band being secured to said pulley, and a ratchet-wheel normally engaged by said spring-band, and a pawl fulcrumed on a fixed part in the well of the hoisting apparatus and engaging said ratchet-wheel, substantially as specified.

2. A hoisting apparatus, comprising a shaft, a hoisting-pulley on said shaft, over which passes a hoisting-rope, a disk secured on said shaft and provided with lugs, a split friction-band adapted to be acted on at its ends by said lugs, a ratchet-wheel normally engaged by said band, a pawl for holding said ratchet-wheel from rotation in one direction, and a pulley carrying the cable for the cage and rigidly connected with said friction-band, said pulley being mounted to rotate loosely on the shaft, substantially as specified.

3. A hoisting apparatus, comprising a shaft, a hoisting-pulley on the shaft, over which passes a hoisting-rope, a disk secured on said shaft and provided with lugs, a split friction-band adapted to be acted on at its ends by said lugs, a ratchet-wheel normally engaged by said band, a pawl engaging with the ratchet-wheel, a pulley carrying the cable for the cage and rigidly connected with said friction-band, said pulley being mounted to rotate loosely on the shaft, and a lever fulcrumed on the friction-band and interposed between the free end of the band and one of said lugs, substantially as specified.

569,047. FORCE AND LIFT PUMP.

Julian L. Lefevre and Charles S. Upton, Eureka Junction, Wash. Filed May 23, 1896. Serial No. 593,776. (No model.)



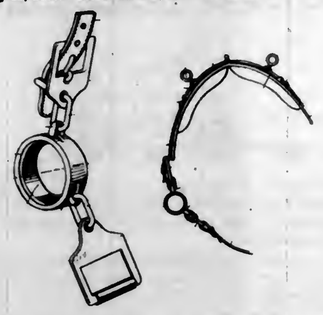
Claim.—1. A force and lift pump, provided with a barrel having an enlarged seat, a packing made in parts and containing a central packing for the passage of the plunger-stem, and alternately-arranged exterior leather rings and metal rings, of which the leather rings are adapted to expand into the enlarged seat, substantially as shown and described.

2. A pump having a barrel formed in two sections, a T connecting the sections, a pipe extending from the T longitudinally with the barrel to one end of the same, a second pipe extending longitudinally with the barrel from one end of the same to the other, a packing held stationary within the inner end of one section of the barrel, a rod reciprocal through the packing, two plungers fixed to the rod and respectively located on each side of the packing, a valve in the lower portion of the barrel, and a valve in each pipe, all of said valves opening upward, substantially as described.

3. A pump having a barrel formed in two sections, a T connecting the sections, an additional T at each outer end of the sections, a valve communicating with the lowermost T, a suction-pipe projecting from the valve, a pipe extending from the first or intermediate T to the suction pipe, an upwardly-opening valve within the pipe which extends from the said T, a second pipe extending from and communicating with each of the remaining T's, an upwardly-opening valve in the second pipe, a packing within the upper portion of the lower section of the barrel, a rod movable through the packing, and two plungers carried by the rod, the plungers being respectively located on each side of the packing, substantially as described.

569,048. HARNESS.

Nelson H. Merick, Glencoe Mills, N. Y. Filed May 12, 1896. Serial No. 591,219. (No model.)



Claim.—1. A harness, comprising a tug formed with eyes, an elongated link engaging the upper one of the eyes, a buckle-plate loosely connected with the said link, a strap engaging the said buckle-plate, a loop held on the strap, and a plate engaging the said loop and fastened to the saddle, substantially as shown and described.

2. A harness, comprising a tug formed with an upper and a lower eye, an elongated link engaging said upper eye, a buckle-plate loosely connected with the said link, a strap engaging the said buckle-plate, a loop held on the strap, a plate engaging the said loop and fastened to the saddle, a second link engaging the lower eye of the tug, and a belly-band plate loosely connected with the said second link, substantially as shown and described.

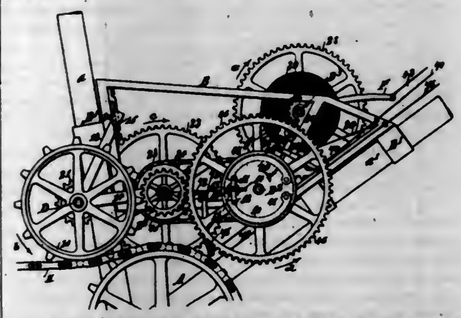
3. The combination with a shaft-tug formed with a metallic ring having an interior annular recess and an elastic ring fitted into said recess, said tug having an upper and a lower eye; of a link engaging the upper eye, a buckle-plate loosely connected with said link, a strap engaging said buckle-plate and having a loop connected to the upper end thereof, a saddle, a plate fastened to the saddle and engaging said loop, a second link engaging the lower eye, and a belly-band plate loosely connected with said latter link, as shown and described.

569,049. POWER-ACCUMULATOR.

Martin J. McDonald, Trenton, N. J. Filed Nov. 15, 1895. Serial No. 569,053. (No model.)

Claim.—1. The combination, with a driving mechanism, a power-accumulator shaft, springs secured to the said shaft, being coiled around the same and attached to a fixed support, a power-transmitting gearing adapted for engagement with the driving mechanism, a clutch-controlled gear carried by the accumulator-shaft and in winding connection with the transmitting-gear, a brake controlling the said clutch, and a second clutch connection between the accumulator-shaft and the transmitting-gear, the latter connection operating to convey the power of the springs to the transmitting-gearing and a third clutch connection whereby the springs may be wound up by the winding mechanism as and for the purpose specified.

2. The combination, with a driving mechanism, a power-accumulating shaft and a support for the same, springs attached to and coiled around the said accumulator-shaft, being secured also to the fixed support, and a transmitting-gearing located between the driving mechanism and power-transmitting shaft and adapted for engagement with the former, of a winding mechanism for the said accumulator shaft, the same consisting of a gear fixed to the said shaft a clutch loosely mounted on the said shaft and connected with the said gear, a brake adapted to hold the clutch stationary, and a connection between the said gear and the transmitting-gearing, the brake being so arranged with reference to the clutch that when the brake is released from engagement with the clutch the springs will act to turn the shaft and convey their power to the transmitting-gearing, as and for the purpose specified.



3. The combination, with a driving mechanism, a power-accumulator shaft, a support for the same, springs attached to and coiled around the said shaft, being also secured to a fixed support, and transmitting-gearing adapted for engagement with the driving mechanism and located between it and the power-accumulator shaft, of a gear-wheel secured on the accumulator-shaft, a clutch loosely mounted on the said shaft and comprising a shell, pawls in engagement with the inner peripheral portion of the shell, and spring-controlled arms pivoted to the said pawls and pivotally attached to the said gear, a connection between the said clutch-controlled gear and the transmitting-gearing, substantially as described, a brake comprising two jaws, pivoted at opposite ends to supports, the jaws being adapted to clamp respectively opposite portions of the shell of the clutch, and a lever for controlling the said brake, as and for the purpose specified.

4. The combination, with a driving mechanism, a power-accumulator shaft, a support for the same, springs coiled around the said shaft, being attached thereto and to a fixed support, a line-shaft having a positive gear connection at one of its ends with the accumulator-shaft, and a clutch-controlled connection with the transmitting-gear, of a gear loosely mounted on the said line-shaft and in driving connection with the transmitting-gearing, a shell attached to the said shaft, segmental pawls pivotally connected to the gear and adapted for engagement with opposite points on the said shell, the free ends of the pawls being provided with pivotally-connected links having sliding movement in the opening in the gear, a friction-wheel carried by the connecting pivot-pin of the said links, and a trip-arm terminating in a shoe, adapted for engagement with the said friction-wheel to force the same inward, releasing the pawls from the clutch and thereby causing the gear to turn loosely on the said shaft to cease winding the said springs, as and for the purpose set forth.

5. The combination, with a driving mechanism, a power-accumulator shaft, a support for the same, springs coiled around the said shaft, being attached thereto and to a fixed support, a line-shaft having a positive gear connection at one of its ends with the accumulator-shaft, and a clutch-controlled connection with the transmitting-gearing, of a gear loosely mounted on the said line-shaft and in driving connection with the transmitting-gearing, a shell attached to the said shaft, segmental pawls pivotally connected to the gear and adapted for engagement with the opposite points on the said shell, the free ends of the pawls being provided with pivotally-connected links having sliding movement in an opening in the gear, a friction-wheel carried by the connecting pivot-pin of the said links, and a trip-arm terminating in a shoe, adapted for engagement with the said friction-wheel to force the same inward, releasing the pawls from the clutch and thereby causing the gear to turn loosely on the said shaft to cease winding the said springs, and a trip mechanism operated from the power-accumulator shaft and operating on the said trip-arm to force the latter to an engagement with the aforesaid friction-wheel, thereby automatically stopping the winding of the springs, substantially as described.

6. The combination, with a support, transmitting-gearing journaled in the said support and adapted for engagement with a power mechanism, a power-accumulator shaft journaled in the support, springs attached to the said shaft, and coiled around the same, being also secured to the said support, a line-shaft intermediate of the ac-

cumulator-shaft and power-transmitting gearing, the said shaft being geared at one end to the power-accumulator shaft in a substantially positive manner, of a gear-wheel loosely mounted on the opposite end of the line-shaft, having driving connection with the transmitting-gears, a clutch secured to the said shaft near the said gear, comprising a shell, segmental pawls pivoted at one of their ends to the gearing, having engagement with the inner peripheral surface of the clutch-shell, links pivotally connected, and connected to the free ends of the pawls, the connecting-pin of the said links being passed through an opening in the said gear and provided at its inner end with a friction-roller, a trip-arm having sliding movement on the frame, and provided with a semicircular shoe adapted for engagement with the said roller, a disk attached to the accumulator-shaft, provided with an extension from its periphery, a star-wheel engaged by the said extension, and a cam operated by the said star-wheel to move the shifting arm in a direction to engage with the friction-wheel of the clutch, thereby releasing the gear controlled by the clutch from engagement with the line-shaft and causing the winding action of the accumulator-shaft to cease, as and for the purpose specified.

7. The combination, with a frame, transmitting-gearing journaled in the said frame and adapted for engagement with a driving mechanism, a power-accumulator shaft, springs coiled around the said shaft, being secured thereto and to a fixed support, a clutch-controlled connection between one end of the power-accumulator shaft and the transmitting-gear, an intermediate line-shaft constituting a portion of the said gearing, a gear-wheel loosely mounted upon the opposite side of the said shaft, a clutch controlling the said gear and comprising a shell secured to the shaft, pawls engaging with the periphery of the said shell, being pivoted at one of their ends to the gear, their opposite ends being connected by links, the connecting pivot-pin whereof is passed through an opening in the wheel and provided at its inner end with a friction-roller, a trip-slide terminating in a flanged shoe, adapted to operate in the frame and to receive upon the outer surface of its flange the aforesaid friction-roller, applying the pawls to the shell of the clutch, and a lever for operating the said slide, as and for the purpose set forth.

8. The combination with a frame, of a spring-motor, a set of gearing for transmitting winding movement to said motor, an additional set of gearing capable of receiving movement from the motor, two clutches respectively capable of connecting and disconnecting the two sets of gearing, and means controlled by the motor by which one of said clutches may be automatically disconnected upon the completion of the winding of the motor, substantially as described.

9. The combination with a frame, of a spring-motor, a shaft driven by said motor, a gear-wheel loose on the shaft, a clutch capable of connecting said gear-wheel with the shaft when the shaft revolves in one direction, a second gear-wheel also loose on the shaft, a second clutch capable of connecting the second gear with the shaft, and a shifting arm controlled by the motor and capable of operating the second clutch, substantially as described.

10. The combination with a frame, of a spring-motor, means for transmitting winding movement to the motor, a clutch controlling said means, and means automatically controlled by the motor for operating the clutch, substantially as described.

11. The combination with a frame, of a spring-motor, means for transmitting winding movement to the motor, a clutch controlling said means, a shifting arm capable of operating the clutch and step-by-step movement-transmitting mechanism interposed between the shifting arm and the motor whereby the shifting arm is automatically operated, substantially as described.

12. The combination with a frame, of a spring-motor, means for winding the motor, a rotary clutch controlling said means, the said clutch having a radially-movable operating-wheel, two shifting arms eccentric to the axis of the clutch and respectively capable of moving the operating-wheel toward or from said axis, and means for operating the shifting arms, substantially as described.

13. In a clutch, the combination with a shaft, of a wheel loose on said shaft, a clutch member fixed to the shaft, a clutch-arm carried by the wheel, a radially-movable slide with which the arm is connected, and means for moving the slide, substantially as described.

14. In a clutch, the combination with a shaft, of a wheel loose on the shaft, two clutch-arms carried by the wheel, a slide having a toggle connection with the clutch-arm, a clutch member fixed to the shaft and with which the clutch-arms engage, and a mounted shifting arm having a curved shoe eccentric to the axis of the wheel, the arm being movable to engage and disengage the shoe with the slide, substantially as described.

15. In a clutch, the combination with a shaft, of a wheel loose on the shaft, two clutch-arms fixed to the wheel, a slide radially movable on the wheel, a toggle-link connecting each arm with the slide, and an operated shifting arm eccentrically disposed to the axis of the wheel, substantially as described.

16. The combination, with a frame, of a spring-motor, movement-transmitting mechanism connected with the motor, a clutch controlling said mechanism, means for operating the clutch, and a step-by-step movement-transmitting mechanism interposed between the motor and the clutch-operating means, substantially as described.

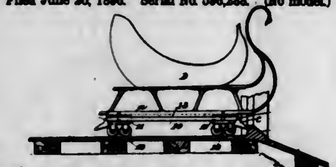
17. The combination with a frame, of a spring-motor, movement-transmitting mechanism connected with said motor, a clutch controlling said movement-transmitting mechanism, a disk moving in unison with the motor and having a projection thereon, a star-wheel with which the projection periodically engages, a shifting arm coöperating with the clutch, and means operating with the star-wheel for moving the shifting arm, substantially as described.

18. The combination with a frame, of a spring-motor, movement-transmitting mechanism in connection with the motor, a clutch controlling said mechanism, a shifting arm, a disk moving with the motor and having a projection thereon, a star-wheel periodically engaged by the projection, and a cam revolving with the star-wheel and engaging the shifting arm, substantially as described.

19. The combination of two sets of mounted gearing, a shaft continually geared with one set and capable of being geared with the remaining set, a pivotally-mounted arm carrying the shaft and means for locking the arm at varying adjustments, substantially as described.

20. The combination with a frame, of mechanism carried thereon, a shaft geared with the mechanism, means for mounting said shaft to move in an arc, an arm connected to the shaft, a shaft rotatable in the arm, and a plate having a curved slot fixed on the shaft, the said slot receiving a part rigid with the frame, substantially as described.

569,050. SLEIGH-TRUCK. Seth C. Hutter, Sherbrooke, Canada. Filed June 20, 1896. Serial No. 596,288. (No model.)



Claim.—1. A sleigh-truck, comprising a reach-bar, a cross-bar at each end of said reach-bar, casters on the under side of each end of the cross-bars, and a buffer-block on the end of the truck, substantially as described.

2. A sleigh-truck, comprising a reach-bar, a cross-bar at each end of the reach-bar, a double-roller caster on the under side of each end of the cross-bars, and a buffer-block projecting at each end of the truck, the nose of each of said blocks having clearance from the surface that supports the caster-rollers, substantially as described.

3. In a device of the described construction, the similar buffer-blocks at the ends of the sleigh-truck, each block comprising a base-plate having a downwardly and forwardly projecting nose, and a stiffening-flange at each side of the block and engaging the base-plate and nose thereon, substantially as described.

4. A sleigh-truck, comprising a reach-bar, a cross-bar at each end of the reach-bar, a grooved track-rail secured on the reach-bar, casters on the under side of each end of the cross-bars, and a buffer-block projecting at each end of the truck, having a downwardly-inclined nose that avoids contact with the surface over which the casters travel, substantially as described.

569,051. SHINGLE-MACHINE. Willis J. Perkins, Grand Rapids, Mich. Filed Apr. 3, 1894. Serial No. 506,196. (No model.)

Claim.—1. In a shingle-machine, the combination with an intermittently-rotating tilt-actuating cam, an escapement and a shingle-carriage adapted to actuate said escapement, substantially as described.

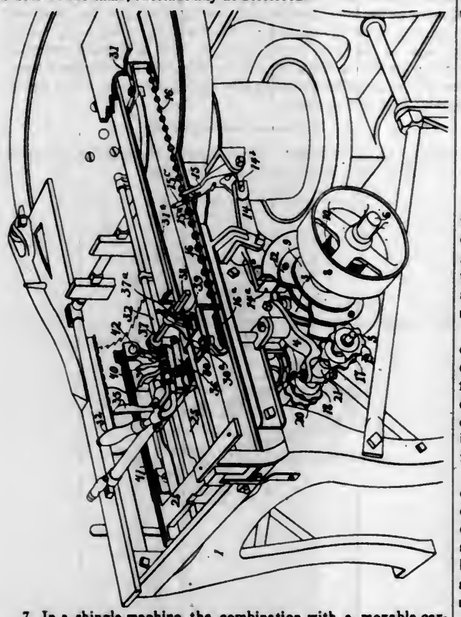
2. In a shingle-machine, the combination with an intermittent escapement movement, the beats of which are determined by carriage travel, of a tilt-actuating cam operated through said movement, and suitable power for operating the same.

3. In a shingle-machine, the combination with an intermittently-rotating tilt-actuating cam, of an escapement partially actuated by carriage movement.

4. In a shingle-machine, the combination with a reciprocating carriage, an escapement outside of said carriage, an arm connected to said escapement, surfaces on said carriage that shift the said arm to correspond to the carriage movement, and a tilt-table operated by the said escapement, substantially as described.

5. In a shingle-machine, the combination with a movable carriage, of an intermittently-moving tilting mechanism adapted to convey intermittent movement to the tilt-table, a tilt-table, an escapement mechanism, and suitable mechanism for automatically releasing said escapement mechanism from the operation of the carriage when said carriage is shifted, substantially as described.

6. In a shingle-machine, the combination with a rotating tilt-actuating cam and a plurality of stops having a synchronism of movement therewith, a trip or abutting surface, and a movable carriage adapted to come in contact with the said trip or abutting surface and to actuate the same, substantially as described.



7. In a shingle-machine, the combination with a movable carriage, of a release or escapement device, a train of mechanism, a suitable power for operating said train of mechanism, and a tilting-block-regulating table, substantially as described.

8. In a shingle-machine, the combination with a reciprocating carriage, a tilting-table, a train of operative mechanism connected thereto, and an escapement device for controlling said train of mechanism.

9. In a shingle-machine, the combination of a yielding device having an operative engagement in normal position with an escaping device, an escaping device substantially as described, and suitable mechanism for shifting said yielding device into inoperative adjustment with said escapement, substantially as described.

10. In a shingle-machine, the combination of a reciprocating carriage adapted to support a shingle-bolt, a saw, a moving supporting-surface beneath the shingle-bolt for supporting in whole or in part the shingle-bolt, and adapted to propel or assist in propelling the shingle-bolt toward the saw.

11. In combination with a movable carriage, of a tilt-table and a movable bolt-supporting feed and suitable mechanism for giving a forward movement of said bolt-supporting feed toward the saw.

12. A movable bolt-supporting feed, in combination with a tilt-table, upon which said feed is supported, and suitable mechanism for operating said feed, substantially as described.

13. The combination with a carriage, of a movable flexible feed, a tilt-table supporting said flexible feed, and suitable mechanism for operating said feed.

14. The combination of a movable feed, a tilt-table supporting said feed, suitable mechanism for giving the forward movement to said feed, and a stop for arresting the movement of the shingle-bolt supported on said feed, substantially as described.

15. The combination with a flexible bolt-feed, a tilt-table supporting said feed, chain-wheels engaging with said feed, and suitable mechanism for giving the required movement to the feed, substantially as described.

569,052. MANUFACTURE OF CIGARETTES. Charles K. Pickles, St. Louis, Mo., assignor, by mesne assignments, to J. V. Pickles, same place. Filed Mar 14, 1896. Serial No. 583,177. (No model.)

Claim.—1. The process of making cigarette-wrappers which consists in forming the wrapper into a cylinder with its edges turned outwardly, folding such outturned edges back and corrugating, crimping or indenting the edge portion against the body portion while a part of the body portion projects abnormally and is sustained internally, substantially as herein set forth.

2. The process of making cigarette-wrappers which consists in forming the wrapper into a cylinder with its edges turned outwardly, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper while the adjacent portion of the body is projected abnormally and sustained internally and externally, substantially as herein set forth.



3. The process of making cigarette-wrappers which consists in forming a wrapper into a cylinder with its edges turned outwardly, crimping, corrugating or indenting such outturned portions immediately next to the cylindrical body of the wrapper, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper, substantially as herein set forth.

4. The process of making cigarettes which consists in simultaneously advancing the wrapper and the filler, causing the wrapper to encircle the filler with the edges of the wrapper turned outwardly, folding such outturned edges back and corrugating, crimping or indenting the edge portions against the body portion, while the adjacent part of the body portion projects abnormally and is sustained internally and externally, substantially as and for the purpose set forth.

5. The process of making cigarettes which consists in simultaneously advancing the wrapper and the filler, causing the wrapper to encircle the filler with the edges of the wrapper turned outwardly, crimping, corrugating or indenting such outturned portions immediately next to the cylindrical body, folding such outturned portions back and corrugating and thereby pressing the same at the fold against the body of the wrapper, substantially as and for the purpose set forth.

6. A cigarette-wrapper consisting of a tubular body having its edge portion turned outwardly, said outturned portions being crimped, corrugated or indented together, immediately next to the body, and being folded back and corrugated at the fold against the body, whereby said portions form a seam lying flat on the exterior of the body, substantially as described.

7. A cigarette consisting of a filler and a wrapper therefor, said wrapper having its edge portions turned outwardly and crimped, corrugated or indented together, immediately next to the body, and being folded back and corrugated at the fold against the body, whereby said portions form a seam lying flat on the exterior of the body, substantially as described.

8. A cigarette-machine comprising, in combination with devices for folding the wrapper in tubular form and folding its edges together, an interior curved guide supporting a radially-raised fin, and devices arranged tangentially to the wrapper for pressing the folded edge portion against said fin, substantially as set forth.

9. A cigarette machine comprising, in combination with devices for simultaneously advancing the wrapper and the filler and for folding the wrapper into cylindrical form around said filler and folding its edges together, an interior curved guide supporting a radially-raised fin and devices arranged tangentially to the wrapper for pressing the folded edge portion against the fin, substantially as set forth.

10. In a cigarette-machine, the combination with devices for folding the wrapper into tubular form and folding its edges together, of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and devices on the opposite side of said fin for pressing the folded edge portions against said fin, substantially as and for the purpose set forth.

11. In a cigarette-machine, the combination with devices for simultaneously advancing the wrapper and the filler, and for folding the wrapper in tubular form around said filler and folding its edges together, of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and devices on the opposite side of said fin for pressing the folded edge portion against said fin, substantially as and for the purpose set forth.

12. In a cigarette-machine, the combination with devices for folding the wrapper into tubular form and folding its edges together, of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and a crimping, corrugating or indenting wheel on the opposite side of said fin for pressing the folded edge portions against said fin, substantially as and for the purpose set forth.

13. In a cigarette-machine, the combination with devices for simultaneously advancing the wrapper and the filler, and for folding

the wrapper into cylindrical form around said filler and folding its edges together, of an interior curved guide supporting a raised fin, a smooth wheel opposite said fin and forming an abutment therefor, and the crimping, corrugating or indenting wheel on the opposite side of said fin for pressing the folded edge portions against said fin, substantially as and for the purpose set forth.

14. In a cigarette-machine, the combination with devices for folding the wrapper into tubular form with outturned edge portions, of a pair of crimping, corrugating or indenting wheels arranged tangentially to the body portion to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-guide, and a device opposite said fin on the side with the folded portions for securing the folded portions to the body, and a smooth abutment arranged opposite said device on the opposite side of said fin, all substantially as and for the purpose set forth.

15. In a cigarette-machine, the combination with devices for folding a wrapper into tubular form with outturned edge portions, of a pair of crimping, corrugating or indenting wheels arranged tangentially to the body portion, to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-guide, and a crimping, corrugating or indenting wheel arranged opposite said fin on the side with the folded portions, and a smooth wheel arranged opposite said wheel on the other side of said fin, all substantially as and for the purpose set forth.

16. In a cigarette-machine, the combination with devices for simultaneously advancing the filler and the wrapper and for folding the wrapper into tubular form with outturned edge portions, of a pair of crimping, corrugating or indenting wheels, arranged tangentially to the body portion to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-guide, and a device opposite said fin on the side with the folded portions for securing the folded portions to the body, and a smooth abutment arranged opposite said device on the other side of said fin, all substantially as and for the purpose set forth.

17. In a cigarette-machine, the combination with devices for simultaneously advancing the filler and the wrapper, and for folding the wrapper into tubular form with outturned edge portions, of a pair of crimping, corrugating or indenting wheels arranged tangentially to the body portion, to operate on the outturned portions, a folding-guide arranged to fold back said outturned portions, a curved guide suspended from the frame and extending from the first-mentioned folding devices in position to be inside of the wrapper, a raised fin on said curved guide close alongside of and extending beyond said folding-guide, and a crimping, corrugating or indenting wheel arranged opposite said fin on the side with the folded portions, and a smooth wheel arranged opposite said wheel on the other side of said fin, all substantially as and for the purpose set forth.

569,053. HAIR-PIN. FRANK J. PROKOP, Dolgeville, N. Y. Filed Jan. 9, 1896. Serial No. 574,877. (No model.)

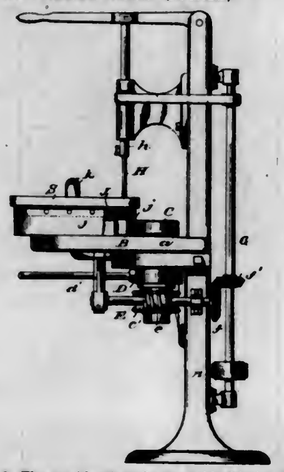


Claim.—1. A hair-pin, comprising a chambered lower section provided with an opening in its side above the bottom of the chamber, an upper section provided with a shank fitting in the upper part of the chamber of the lower section, and a spring secured to the shank and projecting below the same, the lower end of the spring being bent at an angle to the body of the spring to form an upwardly-projecting locking member adapted to project through the opening of the lower section or to be folded against the body of the spring within the portion of the chamber below said opening, substantially as described.

2. A hair pin, comprising a chambered lower section provided with an opening in opposite sides one above the other, an upper section having its shank fitting in the lower section and provided with a pin projecting into the upper opening of the lower section, and an upwardly and outwardly projecting spring-locking member secured to the lower end of the shank, said member being adapted to project through the lower opening in the lower section or to be folded in the chamber below the said opening, substantially as described.

3. A hair-pin, comprising a chambered lower section having a shield at its upper end and provided with openings in opposite sides, said openings being in different horizontal planes, an upper section having its shank fitting in the upper part of the chamber of the lower section and provided with a pin projecting therefrom into the upper opening of the lower section, and a spring secured to the shank and projecting below the same, the lower end of the spring being bent at an angle to the body of the spring to form a laterally-projecting locking member which is adapted to project through the lower opening of the lower section or to fold against the body of the spring, substantially as described.

569,054. ROUTER. HENRY E. PURDY, Michigan City, Ind. Filed Mar. 16, 1896. Serial No. 583,467. (No model.)



Claim.—1. The combination of a rotatable friction-disk, a guide-roller beside it; means for moving the disk or roller to or from the other; and a routing-tool above the guide-roller; with a pattern having a guiding-flange formed by a metallic ribbon *j* secured to its edge, said flange being adapted to be clamped between the disk and roller and thereby fed past said roller and rotate the pattern, substantially as described.

2. The combination of a stationary roller, a routing-tool axially in line with the roller, and a friction-disk beside the roller; with a work-holder having a flange conforming in contour to the groove to be cut except that where corners are to be formed in groove the flange is bent on arcs corresponding to the circumference of the roller substantially as described; said flange being clamped between and guided by said roller and disk, with means for rotating the router, means for rotating said disk, and means for causing the disk and roller to clamp or release the pattern flange, substantially as and for the purpose specified.

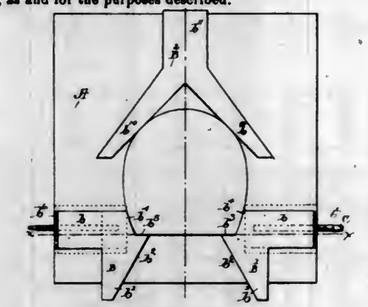
3. The combination of the main frame, the table, the stationary guide-roller thereon, the friction disk beside the guide-roller, an eccentric bearing for the disk-carrying shaft, means for rotating said shaft, and for rotating said bearing so as to move the disk toward or away from the roller; a routing-tool axially above the roller, and means for rotating said tool; with a combined pattern and work-holder, having a flange on its bottom conforming in contour to the groove to be cut except that where corners are to be formed in groove the flange is curved on arcs corresponding to the circumferential curvature of the roller, all substantially as and for the purpose set forth.

569,055. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Sept. 24, 1889. Serial No. 324,919. (No model.)

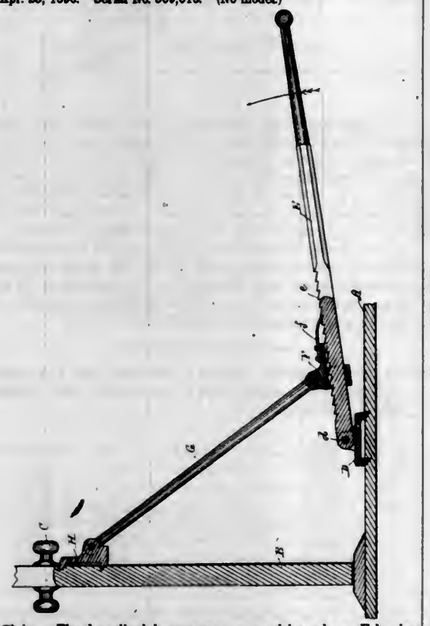
Claim.—1. The combination in a top-lift or heel blank holding and centering device of the block A, having the recesses b^4, the slide-blocks b b', one in each recess, the gage blocks B B' attached respectively to said slide-blocks and a spring or springs for moving said slide-blocks toward each other, as and for the purposes described.

2. The combination in a top-lift or heel-blank holding and centering device of the block A, having the recesses b^4, the gage-blocks B B' arranged to slide therein, the hole b^{14} connecting the recesses b^4, studs upon the blocks to enter said recesses and a spring connecting said studs contained in the hole b^{14}, substantially as described.

3. A heel lift or blank holder having a flat face, yielding V-shaped back-stop upon said face and independent breast gages B attached to said block having independent lateral movements in relation to each other, as and for the purposes described.

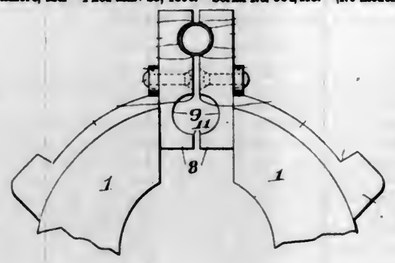


569,056. DOOR-OPENER. JOHN W. REGAN, Boston, Mass. Filed Apr. 25, 1896. Serial No. 589,018. (No model.)



Claim.—The described door-opener, comprising a lever E having a toothed portion *e*, a block D pivoted to the lower end of said lever and having prongs to engage the floor, a rod G, a block F pivoted to one end of said rod and adjustable longitudinally on the lever E, a spring-pawl *f* on said block and adapted to engage the teeth, a block H pivoted to the other end of said rod and provided with prongs to engage the door, substantially as described.

569,057. CLAMPING-JAW FOR VISES. ROBERT M. REILLY, Baltimore, Md. Filed Mar. 23, 1896. Serial No. 584,413. (No model.)



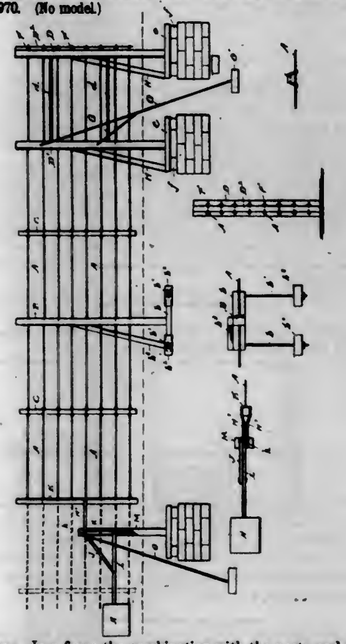
Claim.—1. In an attachment for vises, the combination of the jaws having graduated grooves with counterweights pivoted to said jaws and adapted to anchor the jaws with certain of the grooves above the vise, substantially as set forth.

2. In an attachment for vises, the combination of the jaws having grooves forming clamping-points at the intersection of the grooves and the face of the clamps, with the counterweights pivoted to the center of the jaws, and adapted to anchor the latter to a vise with the pivot above the vise-jaws, substantially as and for the purpose set forth.

3. The combination with the jaws having graduated grooves at right angles to each other, of the anchors pivoted centrally to the jaws, and having an enlarged free-end portion provided with a shoulder, substantially as and for the purpose set forth.

4. In a pipe-clamp attachment for smiths' vises, the combination of the jaws having grooves at right angles to each other and diagonal corner-grooves, with anchors having one end pivoted to the jaws and the other end left free and provided with an enlarged portion to weight the clamps in operative position to a vise, as set forth.

569,058. COMBINED WIRE FENCE AND STRETCHER. WILLIAM H. RINGLE, Van Buren, Ohio. Filed Aug. 2, 1895. Serial No. 557,970. (No model.)



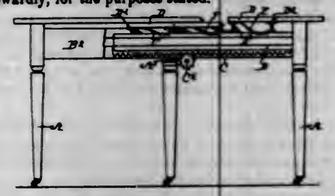
Claim.—In a fence the combination with the posts, and the longitudinal fence wires loosely attached thereto, of a suspended bar E to which said wires are fastened at one end, a short post L beyond said bar, and having in its upper portion a vertical slot which is in line with said bar, a permanently-weighted beam L one end of which rests and has a pivoted bearing on the bottom wall of said slot, a vertical rod or brace fixed to said end, a rigid oblique brace J which connects the upper end of said rod or brace with an intermediate portion of said beam, and a pair of parallel links H' connected to opposite sides of an intermediate portion of said bar E, and to the apex of the triangle formed by the beam L, the rod K, and the brace J, substantially as specified.

569,059. EXTENSION-TABLE. ELIJAH J. ROBERTS, Boone, Iowa. Filed Sept. 6, 1895. Serial No. 561,715. (No model.)

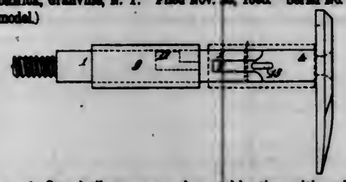
Claim.—1. In an extension-table, the combination of the mating leaves D, respectively provided with dowel-pins H and recesses H^2 pivoted links D^2, and the supports B having fixed leaf-springs F, for the purposes stated.

2. The combination of an extension-table, of two end pieces each having a stationary top thereon, suitable bars fixed to each part and slidingly connected with each other, a series of extension-leaves mounted on said bars, and provided with dowel-pins and recesses as set forth, links pivoted to the bars and to the extension-leaves and of such

a length as to assume a vertical position when the extension-leaves are elevated to horizontal alinement with the stationary top, and yielding-pressure devices fixed to the same bars to normally force the leaves upwardly, for the purposes stated.



569,060. BOILER-SCRAPER. John I. Rossman and Joseph R. McCormick, Granville, N. Y. Filed Nov. 23, 1895. Serial No. 569,930. (No model.)



Claim.—1. In a boiler-scraper, the combination with a shank, a scraper-blade, and a stem fixed to said blade and pivoted to said shank, of a sleeve slidable on said shank and stem, and means for locking said sleeve in its forward position to retain the shank and stem in alinement, substantially as described.

2. In a boiler-scraper, the combination with a shank, a scraper-blade, and a stem fixed to said blade and pivoted to said shank, of a sleeve slidable on said shank and stem, and having a recess and chamber in its front end into which a projection on the stem is adapted to enter as the sleeve is moved forward, to lock the same in its forward position and thus retain the shank and stem in alinement, substantially as described.

569,061. CANISTER. Henry Robinson, Springfield, Mass. Filed Jan. 23, 1896. Serial No. 576,569. (No model.)



Claim.—A receptacle and a carrier having a receiver made laterally removable or slidable in the carrier, said receptacle having an opening or communication to the receiver, and the carrier having a portion made to close said communication when the carrier has moved the receiver to exposed position substantially as described.

569,062. FLUXING-MACHINE. Nehemiah R. Saulsbury, Ridgely, Md. Filed Nov. 13, 1895. Serial No. 568,686. (No model.)

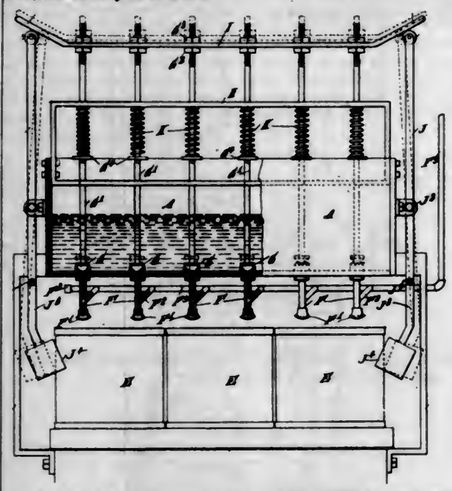
Claim.—1. A fluxing-machine, comprising a tank provided with outlets in its bottom, vertically-sliding and spring-pressed valves in the tank for closing said outlets, and pivoted levers controlled by the movement of the cans for raising the valves to open the outlets, substantially as described.

2. A fluxing-machine, comprising a tank provided with outlets in its bottom, a plurality of vertically-sliding and spring-pressed valves in the tank for closing the outlets, a bar connecting the upper ends of the valve-stems, and means for engaging the said bar to raise the valves and open the outlets, substantially as described.

3. A fluxing-machine, comprising levers having friction-rollers extending into the path of the cans to be fluxed, an acid-tank having outlets, spring-pressed valves for normally closing said outlets and adapted to be opened by said levers, and a bar on which the stems of said valves are fastened, said bar being provided with inclined ends engaged by said levers, substantially as shown and described.

4. A fluxing-machine, comprising an acid-tank having valved outlets, and levers for opening said valves, and formed with extensions adapted to be set at angles to the levers, substantially as shown and described.

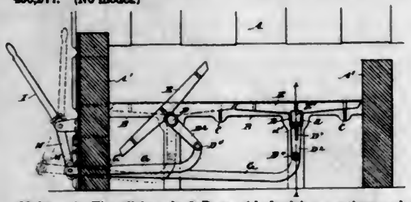
5. A fluxing-machine, comprising a tank provided with nozzles, sliding and spring-pressed valves for closing the nozzles, a bar having inclined ends and to which the valve-stems are secured and levers pivoted to the tank and having one end engaging the inclined ends of the said bar, said levers being controlled by the movement of the cans, substantially as described.



6. A fluxing-machine, comprising a tank provided with nozzles projecting from its bottom, vertically-sliding and spring-pressed valves in the tank for closing the nozzles, a bar having upwardly-inclined ends and to which the upper ends of the valve-stems are adjustably secured, and pivoted levers having rollers on their upper ends engaging the inclined ends of the said bar, said levers being provided with adjustable extensions carrying rollers, substantially as described.

7. In a fluxing-machine, the combination with a tank provided with nozzles, valves for closing said nozzles, and means for opening the valves, said means being controlled by the movement of the cans, of an air-supply pipe, and branch pipes connecting the nozzles with the said air-pipe, substantially as described.

569,063. GRATE. Walter E. Scott, New York, N. Y., assignor to Edward Gibson, Jersey City, N. J. Filed Jan. 31, 1893. Serial No. 460,277. (No model.)



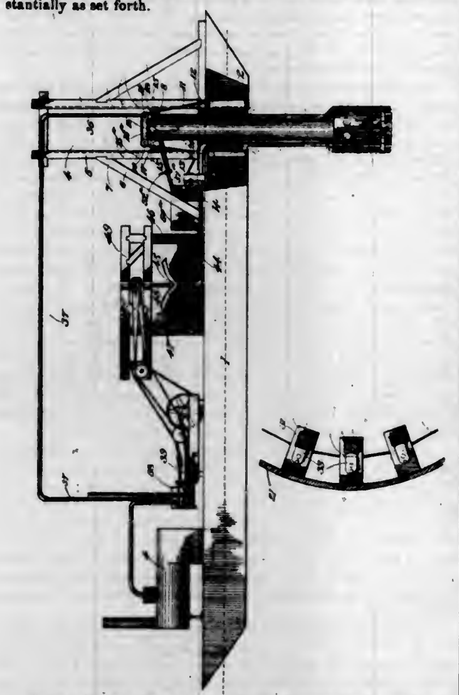
Claim.—1. The tilting shaft D provided with a continuous longitudinal pocket *d* and below with a central longitudinal depending web D′, the bottom of the pocket being composed of cross-bars with liberal openings *d′* between them, and the web D′ connecting the said cross-bars at the middle; substantially as described.

2. The tilting shaft D provided with a continuous longitudinal pocket *d* and below with a central longitudinal depending web D′, the bottom of the pocket being composed of cross-bars with liberal openings *d′* between them, and the web D′ connecting the said cross-bars at the middle, in combination with the sections E of integral grate-bars provided with rectangular arms E′ loosely fitting within the pocket *d*, the grate-bars resting upon the top edges of the side walls of said pocket; substantially as described.

569,064. GOLD-MINING DREDGE. William E. Seanor and Donald A. McCaskill, Lytton, Canada. Filed May 24, 1895. Serial No. 550,569. (No model.)

Claim.—1. In a dredge, a barge, a submergeable tubular caisson-body mounted for adjustment on the barge, a compressed-air-pipe connection with the caisson-body, and a flexible pump suction-pipe passed into the caisson-body near the lower end of the latter, said pump suction-pipe having a sliding connection with the caisson-body at the point where it enters the same, substantially as set forth.

2. In a mining-dredge, a barge provided with a vertically-disposed opening, a guide-tower built on the barge over the opening therein, a tubular submergeable caisson-body arranged to work within the guide-tower and provided on its upper end with exterior guide-pulleys, an adjusting-cable arranged to be drawn downward over the guide-pulleys at the top of the caisson-body, means for positively fastening the caisson body in its lowered position, and suitable compressed-air and suction pipe connections with said caisson-body, substantially as set forth.



3. In a dredge, a barge provided with a vertically-disposed opening, a guide-tower built on the barge over said opening and provided with corner-uprights having a series of bolt openings therein, a tubular submergeable caisson-body arranged to work within the guide-tower and provided with a series of radial bracket-arms carrying guide-rollers engaging with said corner-uprights, means for lowering said caisson-body, stop-bolts adapted to be inserted in said bolt-openings above said bracket-arms, and suitable compressed-air and suction pipe connections with said caisson-body, substantially as set forth.

4. In a dredge, a barge provided with a vertically-disposed opening, a guide-tower built on the barge over said opening, a tubular submergeable caisson-body arranged to work within the guide-tower and provided on its upper end with exterior guide-pulleys, a fixed guide-pulley mounted on the deck of the barge at one side of the caisson-body, an adjusting-cable secured fast at one end at a point opposite the fixed guide-pulley, and passed over the guide-pulleys on the caisson-body and under the fixed guide-pulley, an adjusting device connected with said cable, and suitable compressed-air and suction pipe connections with said caisson-body, substantially as set forth.

5. In a dredge, the combination of a barge, a vertically-adjustable submergeable caisson-body mounted on the barge and provided at its extreme upper end with a door-inclosed manhole and near its lower end with a vertical series of spaced air-escape valves, and suitable compressed-air and suction pipe connections with said caisson-body, substantially as set forth.

6. In a dredge, the combination of a barge, a vertically-adjustable submergeable caisson-body mounted on the barge and provided with a door-inclosed manhole at its upper end and at its lower end with an enlarged portion having in one side a door-opening, an inwardly-opening discharge-door mounted within the enlarged lower end of the caisson-body over said side door-opening, and suitable compressed-air and suction pipe connections with said caisson-body, substantially as set forth.

7. In a dredge, a barge, a vertically-adjustable submergeable caisson-body mounted on the barge and provided at its upper end with a door-inclosed manhole, a flexible air-tight sheeting connected at one edge to the extreme lower edge of the caisson-body, adjusting devices connected with the other edge of said sheeting and adapted to extend the same below the lower end of the caisson body, and suitable compressed-air and suction pipe connections with the caisson-body, substantially as set forth.

8. In a dredge, a barge, a vertically-adjustable submergeable caisson-body mounted on the barge and provided with an enlarged lower end portion having near its lower edge a circular series of inwardly-projecting guide-lugs having guide-openings therein, sliding extension-bolts mounted in the guide-openings of said guide-lugs, a catch device for securing the extension-bolts in adjusted positions, a flexible air-tight sheeting arranged to extend circularly around the entire lower end of the caisson-body and secured at one edge to the lower edge of the caisson-body, the other edge of said sheeting being secured at the lower ends of the sliding extension-bolts, and suitable compressed-air and suction pipe connections with the caisson-body, substantially as set forth.

9. In a dredge, a barge, a vertically-adjustable submergeable caisson body mounted on the barge and provided with an enlarged lower end portion having a stuffing-box in its top, a compressed-air-pipe connection with the enlarged lower end of the caisson-body, and a flexible pump suction-pipe having a stiff sliding pipe-section arranged to work in said stuffing-box, substantially as set forth.

10. In a dredge, a barge, a submergeable caisson-body mounted for adjustment on the barge, a flexible compressed-air supply-pipe connected with the caisson-body, a flexible pump suction-pipe having its lower end arranged within the lower end of the caisson-body, a side-inclosed pump-chamber arranged on the deck of the barge, an interior annular discharge trough or basin arranged within the pump-chamber, a suitable pump arranged within the pump-chamber and suitably connected with said suction-pipe, and sluice-box connections with said discharge trough or basin, substantially as set forth.

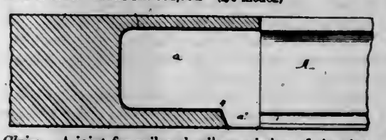
11. In a dredge, a barge, a submergeable caisson-body mounted for adjustment on the barge, suitable compressed-air and suction pipe connections with the caisson-body, an air-tight collecting-box arranged on the deck of the barge, a flexible pipe connection between said collecting-box and the upper end of the caisson-body, and a cut-off clamp adapted to engage said flexible pipe connections at a point intermediate of its ends, substantially as set forth.

569,065. FILTER. Joseph T. R. Selman, Toronto, Canada. Filed Nov. 22, 1894. Serial No. 529,617. (No model.)



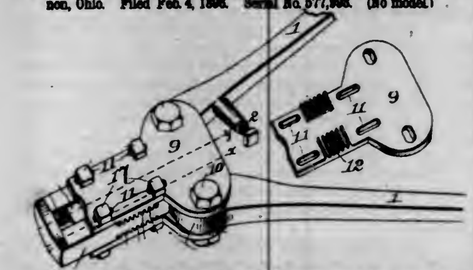
Claim.—The combination, with the T and the filtering mechanism connected therewith, of the filtering-screen in the outlet of the T, the revoluble brush beneath the screen, the motor on the brush-shaft, the disks forming the bearings of said shaft, the inner disk being perforated, and the valve-controlled member below the brush, substantially as described.

569,066. RAIL-JOINT. Lemuel R. Shockley, Milford, Del. Filed June 3, 1895. Serial No. 551,584. (No model.)



Claim.—A joint for railroad-rails consisting of abutting rail-sections, one of said sections being provided with a mortise or socket closed at its top and having its bottom closed through a portion of its length and open through the outer portion of its length and the other of said rail-sections being provided with a tenon or arm, the top of which extends in a plane below the top of the rail and the bottom of which extends for a part of its length in the plane of the bottom of the rail and throughout the remainder of its length in a plane above the bottom of the rail, whereby said tenon or arm is adapted to fit within said mortise, substantially as described.

569,067. ROD OR BOLT CUTTER. LOUDON SILCOTT, Mount Vernon, Ohio. Filed Feb. 4, 1896. Serial No. 577,998. (No model.)



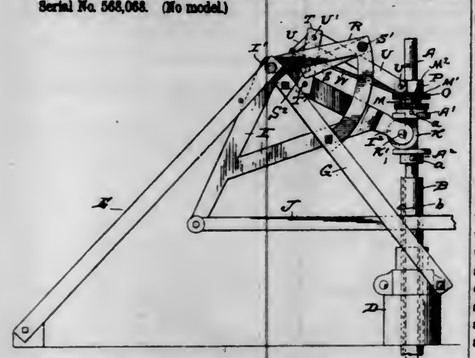
Claim.—1. A tool having the rack-plates secured to the tool-handles, and the toothed cutter-guard adjustably secured to and between the said plates, as set forth.

2. A tool having the cutter-guard with a longitudinal opening and provided on its face with teeth upon opposite sides of the said opening, as set forth.

3. The handles having cam projections and a semicircular bearing for the cutter-cams, and the pivot-pins formed upon the face of the cam projections, combined with the cutter having cams engaged by the said pins, as set forth.

4. The combination of the cutter having a portion of its thickness removed, and the handles having a portion of their heads similarly removed, with the cutter-guard having teeth, and the rack-plates secured to the handle-heads and to the cutter-guard, as set forth.

569,068. OIL-WELL JACK AND PUMPING APPARATUS. EDWIN B. SMITH and HENRY BENARD, Fremont, Ohio. Filed Nov. 5, 1895. Serial No. 568,068. (No model.)



Claim.—1. The combination with the upright pump-rod, the stationary frame provided with two brackets R arranged a suitable distance apart, and a suitably-actuated and horizontally-pivoted bell-crank lever I arranged between said brackets and operatively connected with the pump-rod, of the collar P suitably supported upon the pump-rod a suitable distance above the aforesaid connection of the bell-crank lever with said rod, and the lever mechanism comprising the links S and T and lever U arranged and operating substantially as shown, for the purpose specified.

2. The combination of the upright pump-rod provided with two collars $A' A^2$ rigid with the rod and located a suitable distance apart, a suitably-supported and suitably-actuated vertically-tilting lever extending between the aforesaid collars and provided with revolable bearings interposed between the aforesaid collars and supporting the pump-rod, and suitable means for automatically giving the pump-rod a fractional turn at suitable intervals of time during the operation of the pump, substantially as set forth.

3. The combination with the suitably-reciprocated upright pump-rod, of a wheel toothed upon its periphery and operatively connected with the pump-rod, another wheel toothed on the periphery and loosely mounted upon said rod, and the loosely-mounted wheel having a notch between two adjacent teeth, a suitably-actuated pawl arranged adjacent to both of said wheels, which pawl operatively engages the loosely-mounted toothed wheel and is adapted to operatively engage the other toothed wheel upon its engagement with the aforesaid notch, substantially as and for the purpose set forth.

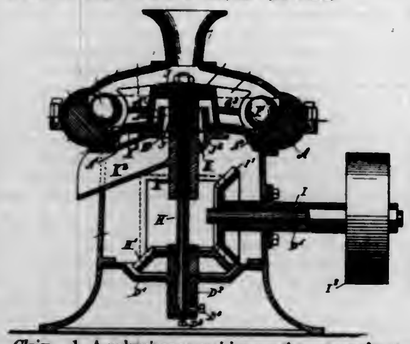
4. The combination with the suitably-reciprocated upright pump-rod, of a wheel toothed upon its periphery and operatively connected with the pump-rod, another and diametrically larger wheel toothed on the periphery and loosely mounted upon the pump-rod, and the two wheels having a corresponding number of teeth, and the wheel having the larger diameter being provided with a notch between two adjacent teeth, which notch registers with a space between two adjacent teeth in the other wheel, an automatically-actuated pawl arranged adjacent to both of said wheels, which pawl operatively engages the toothed wheel having the greatest diameter, and is adapted to operatively engage the other toothed wheel upon its engagement with the aforesaid notch, and suitable means acting to retain the pawl in engagement with the pawl-actuated wheel or wheels, substantially as shown, for the purpose specified.

5. The combination of the upright pump-rod provided with two collars $A' A^2$ rigid with the rod and located a suitable distance apart, a suitably-supported and suitably-actuated vertically-tilting lever extending between the aforesaid collars and provided with revoluble bearings interposed between the aforesaid collars and supporting the pump-rod, a ratchet-wheel L operatively connected with the pump-rod, a ratchet-wheel O mounted upon said rod so as to be capable of turning independently of the rod and having a larger diameter than the first-mentioned ratchet-wheel, both of said wheels having a corresponding number of teeth and the diametrically larger wheel being provided with a notch between two of its adjacent teeth, which notch registers with the space between two adjacent teeth in the diametrically smaller wheel, an arm or member M journaled upon the pump-rod between the two ratchet-whee , a pawl M' pivoted vertically to said arm, said pawl engaging the larger ratchet-wheel and arranged to engage both ratchet-wheels when it enters the aforesaid notch during the rotation of the larger wheel, a spring acting to retain the pawl in engagement with the ratchet wheel or wheels, and lever mechanism operatively connecting said pawl with the aforesaid tilting lever, substantially as shown, for the purpose specified.

6. The combination with the suitably-reciprocated upright pump-rod, of a wheel toothed upon its periphery and operatively connected with said rod, another wheel toothed upon its periphery and loosely mounted upon said rod, and each of said wheels having a prime number of teeth, and the loosely-mounted wheel having a notch between two adjacent teeth, a suitably-actuated pawl arranged adjacent to both of said wheels and operatively engaging the loosely-mounted wheel and adapted to operatively engage the other wheel upon its engagement with the aforesaid notch, substantially as and for the purpose set forth.

7. The combination with the suitably-reciprocated upright pump-rod, of a wheel toothed upon its periphery and operatively connected with the pump-rod, another and diametrically larger wheel toothed on the periphery and loosely mounted upon the pump-rod and the two wheels having a corresponding and prime number of teeth, and the diametrically larger wheel being provided, between two adjacent teeth with a notch registering with a space between two adjacent teeth in the smaller wheel, an automatically-actuated pawl arranged adjacent to both of said toothed wheels and operatively engaging the diametrically larger wheel and adapted to operatively engage the smaller wheel upon its engagement with the aforesaid notch, and suitable means acting to retain the pawl in engagement with the pawl-actuated wheel or wheels, substantially as set forth.

569,069. QUARTZ-MILL. FRANK P. SNOW, Baker City, Oreg. Filed July 15, 1895. Serial No. 556,042. (No model.)

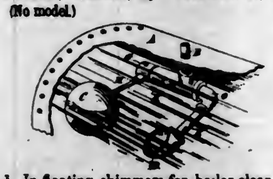


Claim.—1. A pulverizer comprising a casing, an annular track in said casing, pulverizing-balls placed in the track and adapted to be rotated to pulverize material by a liquid and the material to be pulverized being forced against them, and means for directing the liquid and material against the balls with a force to actuate said balls, substantially as specified.

2. A mill or pulverizer comprising an annular track, balls mounted on said track, a rotary wheel having arms extended outward from its hub and terminating at a point within the circumference of the row of balls, a feed-hopper, and mechanism for operating the rotary wheel whereby water and material to be pulverized by the balls will be forced against the balls to impart pulverizing motion to them substantially as described.

3. A mill, comprising a casing having an inlet-hopper, and provided with an outlet at or near its center, an annular track held in the said casing, balls mounted to travel on the said track, and a revoluble wheel held in the said casing and extending with its wings within a short distance of the said balls, to impart a traveling motion to the water and material fed to the casing, to cause the material to propel the said balls, substantially as shown and described.

569,070. FLOATING SKIMMER FOR BOILER-CLEANERS. JOHN J. SWEENEY, Louisville, Ky. Filed Mar. 21, 1896. Serial No. 584,295. (No model.)



Claim.—1. In floating skimmers for boiler cleaners, the combination of the float C attached to the rod H, the curved pipe F O E, having an opening I, being attached to said rod by the removable pin G, so that when the pin is removed the rod H can be detached and the pipe F O E can be withdrawn from the tube K; the waste-pipe B holds the tube K, which encircles the pipe F, bearing on it only at two points, allowing the pipe F to revolve freely so as to form a swinging joint, and being convex so as to leave a space between the pipe F and the tube K; the portion E of the pipe F O E bears at its end and being convex so as to leave space between the tube and cup D to receive the water or scum, all substantially as described.

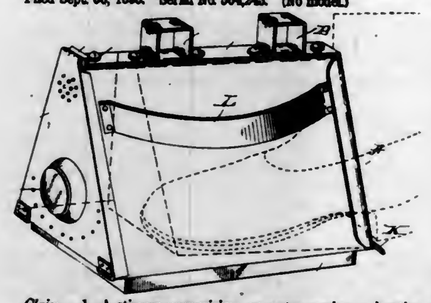
2. In floating skimmers for boiler-cleaners the combination of the float C attached to the rod H, the curved pipe F O E, having an opening I, being attached to said rod by removable pin G; the waste-pipe B holds the tube K, which encircles the pipe F, bearing on it only at two points, allowing the pipe F to revolve freely so as to form a swinging joint, all substantially as described.

3. In floating skimmers for boiler-cleaners the combination of the float C attached to the rod H, the curved pipe F O E having an opening I being firmly attached to said rod; the waste-pipe B holding the tube K, which encircles the pipe F bearing on it only at two points allowing it to revolve freely so as to form a swinging joint, all substantially as described.

4. In floating skimmers for boiler-cleaners, the combination of the float C attached to the rod H, the curved pipe F O E having an opening I being firmly attached to said rod; the tube K encircling the pipe F, bearing on it only at two points, allowing the pipe F to revolve freely within it so as to form a swinging joint.

5. The combination of a rod H attached to the pipe F O by means of the removable pin G; the tube K encircling said pipe and bearing only at two points, allowing the pipe to revolve freely within it so as to form a swinging joint, principally for use in automatic floating skimmers for boiler-cleaners as herein described.

569,071. SADDLE-STIRRUP. CHARLES SWINDELL, Pollard, Tenn. Filed Sept. 30, 1895. Serial No. 564,243. (No model.)

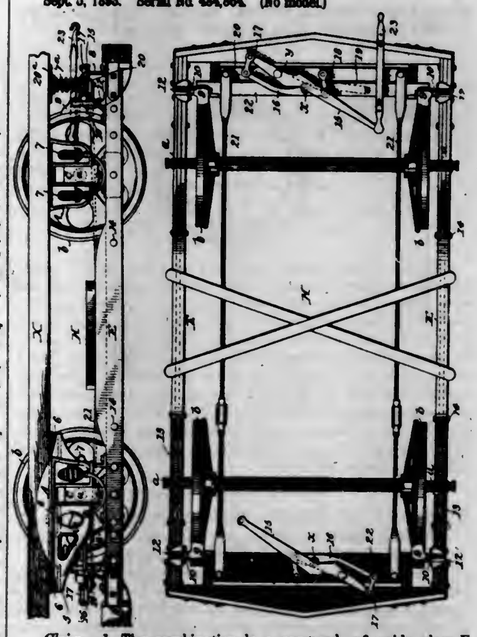


Claim.—1. A stirrup comprising an outer casing, a heating device therein, and a foot-casing within the outer casing and separated therefrom at its bottom and sides, whereby heat-circulating spaces are formed.

2. A stirrup comprising an outer casing open at its forward end, a door for said end, the lamp within the casing at said end, the foot-casing within the outer casing and to the rear of and in line with the lamp, said foot-casing being smaller than the stirrup-casing whereby the heat-circulating spaces are formed about the foot-casing and the same is adapted to be kept warm by heat from the lamp, substantially as shown and described.

3. A stirrup comprising an outer casing, a foot-casing smaller in transverse area than the outer casing and fitting therein and at its top secured to the top of the outer casing whereby heat-circulating spaces are formed between the bottoms and sides of the casings, the foot-casing stopping short of the front end of the outer casing to form a lamp-chamber, the heat-circulating spaces communicating with said chamber but at the rear ends closed with the exception of the bottom space which is open to the outer air, and a lamp in the lamp-chamber, substantially as shown and described.

569,072. TRUCK. JOHN A. TACKABERRY, New York, N. Y. Filed Sept. 5, 1893. Serial No. 484,864. (No model.)



Claim.—1. The combination in a car-truck, of a side piece E having its middle portion of greater vertical width than its end portions, said piece being vertically and uniformly grooved or recessed from end to end, a reinforcing-plate of a vertical width not exceeding that of the end portions fitted in said groove or recess, and suitable devices to secure the parts together, substantially as described.

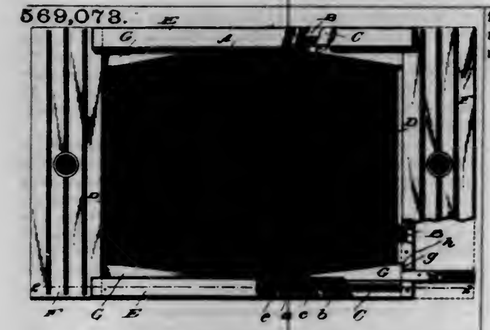
2. The combination of the truck-frame suspended from the car-axles and provided with the brackets 8 at or near the ends, pedestals having each at one side an extension 5, and supporting-springs between said extensions and brackets, substantially as described.

569,073. EXTENSION-SCREEN. HARRY A. WAY, Burlington, Vt. Filed July 16, 1896. Serial No. 598,434. (No model.)

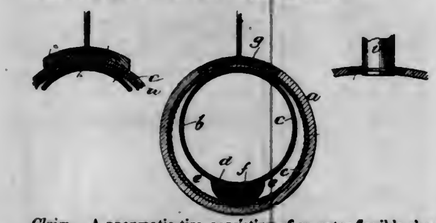
Claim.—1. The combination with the screen-frame and end panels of the guide-tongues G having shoulders *g*, said tongues secured to the panels and arranged to slide in guideways provided for them on the interior opposite edges of the top and bottom rail of the screen-frame, and the strips D provided with recesses or notches A, which are entered and engaged by the shoulders *g* of the guide-tongues, when the panels are moved outwardly, as and for the purposes hereinbefore set forth.

2. The combination of the screen-frame; the end panels; the rails E; the coiled springs and spindles housed in said rails; the guide-tongues G provided with shoulders *g* and movable in guideways on the screen; and the strips D having notches or recesses A, which are entered and engaged by the shoulders *g* of the guide-tongue when the panels are moved outwardly—the parts being constructed and arranged for joint operation as hereinbefore shown and described.

569,078.



569,074. PNEUMATIC TIRE. Orrange W. Winn, Brooklyn, N. Y. Filed Feb. 24, 1893. Serial No. 463,606. (No model.)



Claim.—A pneumatic tire, consisting of an outer flexible sheathing-tube, an inclosed inflatable tube, a cushion located between said tubes adjacent to the tread of the tire, the said cushion being of a substantially semicircular form in cross section and arranged with its outer curved surface as a support to the sheathing-tube, whereby an air-space is formed between the tubes at each side thereof from a central point at the tread of the tire to the inner side of the same opposite said tread, the inflatable tube being of such dimensions in cross-section relative to the sheathing-tube as to only contact on one side with the said cushion and on its opposite side with said sheathing-tube at a central point on its inner side, substantially as described and for the purpose set forth.

569,075. FURNACE-CHARGING APPARATUS. SAMUEL T. WELLMAN, Upland, Pa., and CHARLES H. WELLMAN, South Chicago, Ill. Filed Jan. 28, 1896. Serial No. 577,159. (No model.)

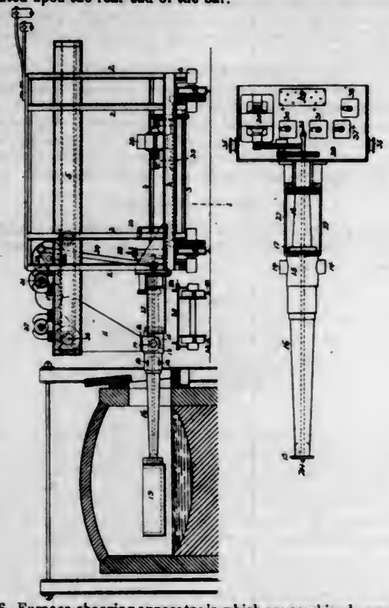
Claim.—1. Furnace-charging apparatus in which are combined a frame mounted so as to be movable toward and from the front of the furnace, a charging-bar trunnioned on said frame, a cranked shaft mounted on the upper portion of the frame and connected by side rods to the charging-bar, and means for imparting movement to said shaft so as to cause the rocking of the charging-bar on its trunnions.

2. Furnace-charging apparatus in which are combined a truck mounted so as to be movable toward and from the front of the furnace, a frame carried by said truck, a charging-bar trunnioned on said frame, a cranked shaft connected to the charging-bar, an electric motor connected by means of reducing-gears to the truck-wheels, and an electric motor connected by a train of reducing-gears to the crank-shaft which rocks the charging-bar.

3. Furnace-charging apparatus in which are combined a charging-bar mounted so as to be movable into and out of the furnace, and having horizontal trunnions, said bar being free to turn axially in the trunnioned portion, and an electric motor carried by the trunnioned portion of the charging-bar and connected by a train of reducing-gears to the axially-rotative part of the same.

4. Furnace-charging apparatus in which are combined a girder mounted so as to be movable across the front of the furnace, an electric motor and reducing-gears whereby such movement is effected, a truck movable to and fro on the girder in a direction at right angles to the girder movement, an electric motor and reducing-gears whereby the movement of said truck is effected, a frame carried by said truck, a charging-bar horizontally trunnioned on said frame but free to turn axially in the trunnioned portion, an electric motor and devices operated thereby whereby the rocking of the charging-bar on its trunnions is effected, and an electric motor mounted on the charging-bar and connected by a train of reducing-gears to the axially-rotative portion of the same.

5. Furnace-charging apparatus in which are combined a frame mounted so as to be movable toward and from the front of the furnace, a charging-bar trunnioned on said frame, and extending rearwardly therefrom, and a controlling-cab and its appurtenances mounted upon the rear end of the bar.

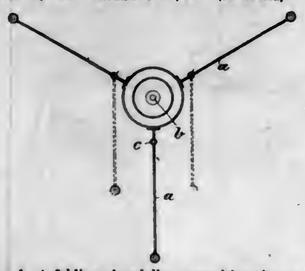


6. Furnace-charging apparatus in which are combined a carriage mounted on rails in front of the furnace, feed-truck rails interposed between said main rails and the front of the furnace, an elevated girder supported on the main carriage and overhanging the feed-truck rails, a frame mounted on said elevated girder and free to move to and fro thereon, and a charging-bar carried by said frame.

7. Furnace-charging apparatus in which are combined a girder mounted so as to be movable across the front of the furnace or furnaces, a truck mounted on said girder so as to be movable to and fro thereon in a direction at right angles to the girder movement, a frame carried by said truck, a charging-bar horizontally trunnioned on said frame and free to turn in the trunnioned portion, a cab mounted upon said charging-bar, electric motors for effecting the movement of the girder and its truck and for causing the swinging and turning of the charging-bar, and motor-controlling switches carried by the cab.

8. In a furnace-charging apparatus, the combination with a charging-box having a socket thereon, of a charging-bar having a flanged forward end for engaging with the socket on the box, and a longitudinal bolt passing through the charging-bar and adapted to engage with the charging-box so as to prevent the withdrawal of the flanged head of the bar from the socket, substantially as described.

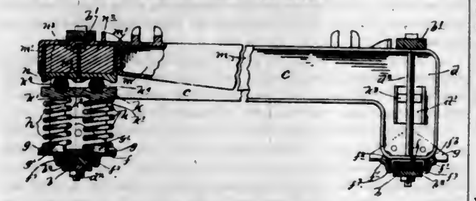
569,076. GASELIER. HERMANN ARNHOLD, Berlin, Germany. Filed Feb. 19, 1896. Serial No. 579,967. (No model.)



Claim.—1. A folding chandelier comprising the vertical supply-pipe, and the horizontal branch pipes, said pipes hinging on vertical pivots to swing horizontally and thus fold against each other at one side of the vertical supply-pipe, substantially as described.

2. In combination with the vertical supply-pipe with the lower head and with the vertical sockets disposed about said lower head and the chandelier-arms having vertical pintles at their inner ends adapted to said vertical sockets whereby the arms may be swung horizontally to fold against each other, said vertical pintles comprising stop-cocks for controlling the supply of gas.

569,077. CAR-TRUCK. JOHN C. BARBER, St. Paul, Minn. Filed Dec. 12, 1895. Serial No. 571,851. (No model.)



Claim.—1. In a car-truck, a transom and bolster-columns formed integral with each other, with the columns extending downward below the body of the transom, substantially as described.

2. In a car-truck, a transom and bolster-columns stamped or pressed up, integral with each other, from a single piece of sheet metal into the form of a channel, with the columns extending below the body of the transom, substantially as described.

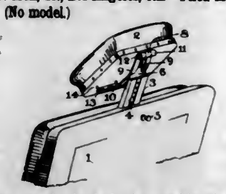
3. In a car-truck, the transom c and bolster-columns *d* integrally formed from a single piece of sheet metal, stamped or pressed into the form of a channel-iron, having an endless marginal flange and provided with the guide-seats *d'*, substantially as described.

4. In a car-truck, the combination with spring-supporters for the bolster, having their base of resistance on the truck-frame, of the truck-bolster, supported by said spring-supports, having adjustable bearing-blocks engaging said spring-supports, and provided with removable adjusting or take-up blocks between said bearing-blocks and said truck-bolsters, whereby, by changing or varying the thickness of the adjusting-blocks employed, said truck-bolster may be vertically adjusted, substantially as described.

5. In a car truck, the combination with the spring-supports for the truck-bolster having their base of resistance on the truck-frame, of the truck-bolster, having at its opposite ends, the seats *m'*, the bearing-blocks *n* telescoping into said seats *m'*, and the removable adjusting or take-up blocks m^3, working within said seats *m'* between said blocks *n* and the upper wall of said bolster, substantially as, and for the purposes set forth.

6. In a car-truck, the combination with the integrally-formed transoms and bolster-columns *c*, *d*, of the saddle-plates *f* f^2, secured to and tying together the pairs of bolster-columns, longitudinally of the truck, and the spring-seats *g*, resting on the saddle-plates, and having upturned ends also secured to and connecting said pairs of bolster-columns, substantially as described.

569,078. HEAD-REST. JOHN A. BARKER, Pasadena, Cal., assignor to Frederick J. Moll, Sr., Los Angeles, Cal. Filed Mar. 19, 1896. Serial No. 583,934. (No model.)

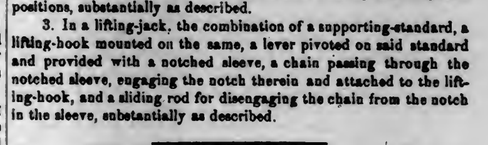


Claim.—1. In a barber's chair the combination of a standard, a bracket having shoulders and secured to the standard, a bifurcated bow-shaped link pivoted to the standard, a head-rest and means for pivoting the opposite end of the link to the head-rest substantially as set forth.

2. The combination of a head-rest, a standard, a bracket having shoulders and a curved outer portion and secured to the standard, the curved bifurcated spring-link hinged at its inner end to the curved portion, and at its outer end to the head-rest; the spring link when folded being adapted to rest on the shoulders of the bracket and to receive the curved outer portion of the bracket within it; substantially as described.

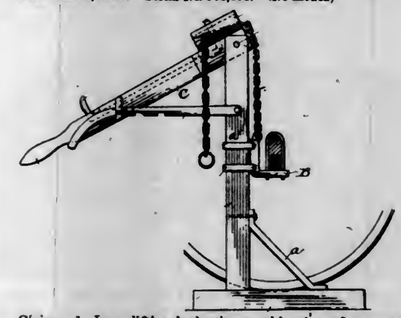
569,079. AUTOMATIC STOCK-WATERING DEVICE. DAVID H. BAUSMAN, Bausman, Pa. Filed Dec. 3, 1891. Serial No. 413,945. (No model.)

Claim.—1. The combination in a stock-watering device having the bowls, B, as described, secured to the front wall of a manger, as shown; with the feed-pipe, C, secured in position underneath said manger and close to the bottom thereof, and the branch pipes, *c'*, connecting said feed-pipe and said bowls through their back walls and above the bottoms thereof; of the feed-pan, D, as described, the pipe, E, having one end connected with the pan through the bottom thereof, and the vertically-adjustable joint, E', as described, connecting the free ends of the said pipes, E and C, as shown; and means provided, such as the float-valve, F, as described, to regulate the flow of water into said pan; all substantially as and for the purpose hereinbefore set forth.



2. In an automatic stock-watering device, in combination, the manger, A, as shown; the troughs, B, as described, secured to the front wall of said manger; the feed-pipe, C, underneath the manger and secured in position near the bottom thereof; the branch pipes, *c'*, connecting said feed-pipe and said troughs through their back walls and above the bottoms thereof; the feed-pan, D, as described, with the pipe, E, having one end secured through the bottom of the pan, and the vertically-adjustable joint, E', as described, connecting the adjacent ends of the said pipes, C and E, as shown; the float-valve, F, as described, to regulate the flow of water into said pan; and tubular connection provided, such as the vertically-adjustable joint, G, as described, and the pipe, H, to conduct water from a reservoir to the said valve; all substantially as described and for the purpose set forth.

569,080. WAGON-JACK. ASA M. BEARD, New Boston, N. H. Filed Mar. 3, 1896. Serial No. 581,695. (No model.)



Claim.—1. In a lifting-jack, the combination of a supporting-standard, a lifting-hook mounted on the same, a lever pivoted at the upper end of the standard and provided with a notched sleeve, a chain passing through the notched sleeve and connected to the lifting-hook, the construction and operation being such that the sleeve alone engages the chain and acts as a lever in raising it, substantially as described.

2. In a lifting-jack, the combination of a supporting-standard, a lifting-hook mounted on the same, a lever pivoted at the upper end of the standard and provided with a notched sleeve, a chain connected to the lifting-hook and passing directly upward through the sleeve, and a notched lever attached to the standard and adapted to engage a portion of the pivoted lever to hold it in any of its adjusted positions, substantially as described.

3. In a lifting-jack, the combination of a supporting-standard, a lifting-hook mounted on the same, a lever pivoted on said standard and provided with a notched sleeve, a chain passing through the notched sleeve, engaging the notch therein and attached to the lifting-hook, and a sliding rod for disengaging the chain from the notch in the sleeve, substantially as described.

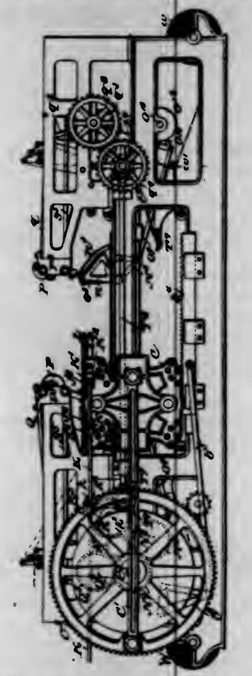
569,081. PRINTING-PRESS. HENRY F. BECHMAN, Battle Creek, Mich., assignor to the Duplex Printing Press Company, same place. Filed Apr. 20, 1896. Serial No. 588,215. (No model.)

Claim.—1. The combination of two type-beds, a reciprocating gripper-cylinder for and coacting with each bed and mechanisms for feeding sheets of paper to one cylinder at each end of its stroke; with a vibrating sheet-transferring mechanism substantially as described, at each end of the bed adapted to take printed sheets from one cylinder, and deliver them to the other cylinder, as and for the purpose set forth.

2. In a printing-press, the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as de-

scribed, with mechanism for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder, substantially as described.

3. In a printing-press the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as described, with mechanism at each end of the press for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder, substantially as described.



4. In a printing-press, the combination of a pair of beds, and a pair of coacting reciprocating gripper-cylinders substantially as described; with means for feeding sheets of paper to one cylinder at one end of press, and mechanism substantially as described for taking a printed sheet from the upper side of the first cylinder and delivering it to the upper side of the other cylinder, substantially as described.

5. In a printing-press, the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as described, with mechanism at each end of press for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder, and mechanism for feeding sheets to the first cylinder at each end of press, substantially as described.

6. In a printing-press, the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as described, with mechanism for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder; with delivery mechanism for removing the printed sheets from the second cylinder, substantially as described.

7. In a printing-press the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as described, with mechanism at each end of the press for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder; with delivery mechanism for removing the printed sheets from the second cylinder, substantially as described.

8. In a printing-press, the combination of a pair of beds, and a pair of coacting reciprocating gripper-cylinders substantially as described; with means for feeding sheets of paper to one cylinder at one end of press, and mechanism substantially as described for taking a printed sheet from the upper side of the first cylinder and delivering it to the upper side of the other cylinder, and mechanism for removing the perfected sheets from the second cylinder, substantially as described.

9. In a printing-press, the combination of a pair of beds and a pair of coacting reciprocating gripper-cylinders substantially as described, with mechanism at each end of press for taking a printed sheet from the upper side of one cylinder and delivering it to the upper side of the other cylinder, and mechanism for feeding sheets to the first cylinder at each end of press, and mechanism for removing the perfected sheets from the second cylinder, substantially as described.

10. In a printing-press the combination of a pair of type-beds, a pair of reciprocating impression-cylinders, and a vibrating sheet-transferring device at one end of the press, substantially as described.

11. The combination of a pair of type-beds, a pair of reciprocating impression-cylinders coacting with said beds, and a vibrating sheet-transferring device at each end of the press, substantially as described.

12. The combination of a pair of type-beds, a pair of impression-cylinders, an intermittently-vibrating sheet-holder adapted to deliver sheets to one cylinder; and mechanism for transferring sheets from the other cylinder to said holder, substantially as described.

13. In a printing-press the combination of a pair of type-beds, and a pair of coacting impression-cylinders, a sheet-holder at each end of one bed adapted to deliver printed sheets to the cylinder coacting with said bed, and a sheet-transferring mechanism at each end of the other bed adapted to remove printed sheets from the other cylinder and deliver them to the sheet-holders, substantially as described.

14. In a printing-press the combination of a pair of parallel type-beds, a pair of coacting cylinders, with a swinging or vibrating sheet-transferring mechanism at one end of the beds for transferring sheets from one cylinder to the other, substantially as described.

15. The combination of a pair of parallel type-beds, and a pair of coacting cylinders; with a vibrating sheet-transferring mechanism at each end of the press adapted to transfer sheets from one cylinder to the other, substantially as described.

16. The combination of a pair of parallel type-beds, a reciprocating grip-cylinder, for and coacting with, each bed; a vibratory sheet-holder at each end of the upper bed, and a vibrating sheet-transferring mechanism at each end of the beds, adapted to take sheets from the lower cylinder and deliver them to the holders, substantially as described.

17. In a printing-press the combination of a type-bed, a reciprocating cylinder, a sheet-holder, and a table or fly moving with the cylinder adapted to lay out the sheet suspended by the holder prior to its delivery to the cylinder, substantially as described.

18. The combination of a type-bed, a reciprocating cylinder, a set of sheet-delivery tapes beside and traveling with the cylinder, and means for driving said tapes independently of the reciprocation of the cylinder, substantially as described.

19. The combination of a stationary bed and reciprocating gripper cylinder, and vibratory sheet-holders with vibrating sheet-transferring arms at each end of the bed, adapted to take printed sheets from the cylinder, and deliver them to said holders and means for simultaneously vibrating said transfer-arms, in opposite directions, substantially as described.

20. The combination of a pair of parallel type-beds, a reciprocating gripper-cylinder for each bed, a vibratory sheet-holder suspended above and opposite the end of the upper bed, and vibrating sheet-transferring arms N below the holder adapted to transfer sheets from the lower cylinder, to the holder, substantially as described.

21. The combination of a pair of parallel type-beds, a reciprocating gripper-cylinder for each bed, a vibratory sheet-holder suspended above and opposite each end of the upper bed; and vibrating arms below each holder adapted to transfer sheets from the lower cylinder to the holders, and means for simultaneously vibrating said arms in opposite directions, substantially as described.

22. The combination of a pair of parallel type-beds, a reciprocating gripper-cylinder for each bed, a sheet-holder at each end of the upper bed, and a sheet-transferring mechanism at each end of the press adapted to take sheets from the lower cylinder, and give them to the holders; with the systems of carrier-tapes beside and moving with the upper cylinder, the tables above the tapes; and the folder-tapes at each end of press into which the printed sheets are delivered by the cylinder carrier-tapes when the cylinders are at the ends of their strokes, substantially as described.

23. The combination with the sheet-holder consisting of the hangers P, and gripper-shaft R', the lever S, and the slide S^2, with means for raising and lowering said hangers, and means for reciprocating slide S^2, for the purpose and substantially as described.

24. The combination of the shaft P^2, the hangers P suspended from arms on said shaft, the guide P^1, the gripper-shaft R' in said hangers, the lever S, and slide S^2; with means substantially as described for reciprocating said slide, and means for oscillating shaft P^2, all substantially as and for the purpose described.

25. The combination of the stationary bed and reciprocating cylinder, having a gripper-shaft, the shafts J, J' beside the cylinder and traveling therewith, the shaft J^3 carrying arms J^5, tape-wheels J^4 on said arms, and tapes J^6 arranged substantially as described; with the stripping-fingers L on shaft J', and means for oscillating said shaft so as to cause the fingers to strip the sheets from the cylinder into the tapes during the travel of the cylinder, the delivery-tapes, and the arms M' for the purpose and substantially as described.

26. The combination with the stationary bed, and reciprocating cylinder, the shafts J, and J^3 beside and traveling with the cylinder, the arms J^5 on shaft J^3 carrying tape-wheels J^4, and the tapes J^6 arranged substantially as described; and means for driving the tapes in one direction; with the stationary shaft M, carrying arms M' with rollers M^2, and the tapes M^3, substantially as described, adapted to receive the sheets from tapes J^6 when the cylinder is at the end of its stroke, all substantially as described.

27. The combination with the cylinder B having gripper-shafts, provided with T-heads, D^3, d^3, the spring-controlled shafts D^4, d^4, having arms D^5, d^5, and the links D^6, d^6 connecting said arms to the T-heads, with the loose gear E carrying pins E' E^2 respectively adapted to engage said T-heads, and means for regulating the rotation of said gear, independent of its travel with the cylinder, all substantially as and for the purpose set forth.

28. In a printing-press the combination of a type-bed, a reciprocating gripper-cylinder, a device adapted to temporarily suspend the sheets substantially as described; and means for transferring printed sheets from the cylinder to the holder, and mechanism for removing the sheets from the holder, substantially as and for the purpose described.

29. In a printing-press the combination of a type-bed, a reciprocating gripper-cylinder, and a sheet-holder above the bed; with a vibrating sheet-transferring mechanism adapted to take printed sheets from the cylinder and deliver them to the sheet-holder; and mechanism for removing the sheet from the holder, substantially as and for the purpose described.

30. The combination of a stationary bed and reciprocating gripper cylinder; with vibrating sheet-transferring arms at each end of the bed, adapted to take printed sheets from the cylinder; means for simultaneously vibrating said transfer arms, in opposite directions; and means for removing the sheets from the said arms, substantially as and for the purpose set forth.

31. In a printing-press the combination of a type-bed; a reciprocating cylinder; sheet-delivery tapes mounted on the cylinder-carriage, and adapted to receive the sheets from the cylinder; and means for driving said tapes; a fixed set of tapes beyond the range of travel of the cylinder, but projecting into the path of travel of the moving tapes, so as to alternate therewith when the cylinder is at the end of its stroke, whereby the printed sheets are transferred from the cylinder-tapes to the fixed tapes while the cylinder is at the end of its stroke, substantially as described.

32. In a printing-press the combination of a type-bed; a reciprocating cylinder; sheet-delivery tapes mounted on the cylinder-carriage, and adapted to receive the sheets from the cylinder; stripping-fingers also moving with the cylinder adapted to direct the sheets onto the tapes; and means for driving said tapes; a fixed set of tapes beyond the range of travel of the cylinder, but projecting into the path of travel of the moving tapes so as to alternate therewith when the cylinder is at the end of its stroke, whereby the printed sheets are transferred from the cylinder-tapes to the fixed tapes while the cylinder is at the end of its stroke, substantially as described.

569,082. TREE-PROTECTOR. HARRY H. BELKNAP, Philadelphia, Pa. Filed Sept. 5, 1895. Serial No. 561,517. (No model.)



Claim.—1. In a device of the character described, a crimped housing adapted to be secured around the trunk of a tree, a strip of cotton-batting increased in thickness toward its lower edge and terminating above the lower edge of the housing, supporting the housing and causing it to flare, and a poisonous material applied to the under side of the housing below the batting, as and for the purpose described.

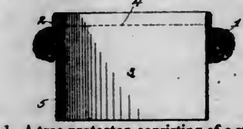
2. In a device of the character described, a crimped housing, a lining consisting of batting increased in thickness toward the lower edge, terminating above the lower edge and below the upper edge of the housing, said upper edge being folded over the batting and stitched thereto, and a poisonous material applied to the under side of the housing below the cotton-batting, as and for the purpose described.

569,083. TREE-PROTECTOR. HARRY H. BELKNAP, Philadelphia, Pa. Filed Sept. 20, 1895. Serial No. 563,072. (No model.)

Claim.—A tree-protector composed of cotton-batting having binding-strips of cloth stitched upon either side, the edges of the batting being free and a strip having an adhesive or sticky material on one side secured to the binders as and for the purpose described.



569,084. TREE-PROTECTOR. HARRY H. BELKNAP, Philadelphia, Pa. Filed Oct. 26, 1895. Serial No. 567,004. (No model.)

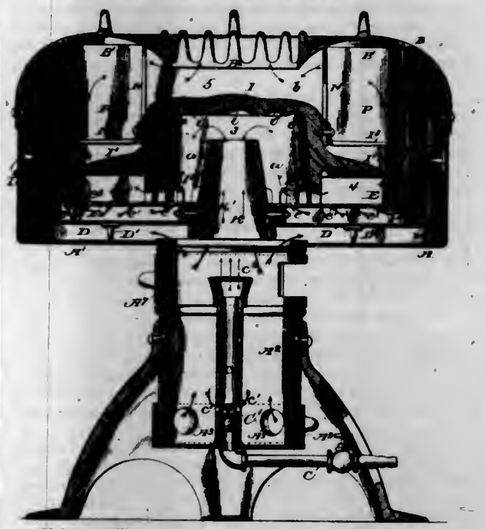


Claim.—1. A tree-protector, consisting of a strip of paper folded at its upper edge and having secured thereto, beneath said fold, a strip of cotton-batting, by stitching, as shown and described.

2. As a new article of manufacture, a tree-protector, consisting of a strip of paper having its upper edge turned over, a strip of cotton-batting having its upper edge secured beneath said folded strip by a line of stitching 4, and a sticky material applied to the outer surface of the paper strip below said cotton-batting, as specified.

3. In a tree-protector, a strip of paper 3, having its upper edge 2, folded over, a strip of batting having its upper edge secured beneath this folded edge by a line of stitching, a sticky material 5, applied to and covering the outer surface of the strip 3, below the cotton-batting, as shown and for the purpose set forth.

569,085. GAS-STOVE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Feb. 7, 1896. Serial No. 578,304. (No model.)



Claim.—1. The combination of a chamber having an inlet-opening at the bottom and a suitable outlet-opening, a dome situated within said chamber above its inlet-opening, and means for admitting air through the bottom of the chamber at points contiguous to the base of the dome; with means for admitting fuel into the dome through the inlet-opening, substantially as and for the purpose described.

2. The combination of a chamber having an inlet-opening at the bottom and a suitable outlet-opening, a dome situated within said chamber above its inlet-opening, and provided with an external flange which extends laterally to near the side walls of the chamber, and means for admitting air through the bottom of the chamber at points contiguous to the base of the dome; with means for admitting fuel into the dome through the inlet-opening, substantially as and for the purpose described.

3. In a gas-heater the combination of a combustion-chamber and a dome therein having ports in its lower edge and provided with a flange or ring exterior to and above said ports adapted to spread out the burning gases or products of combustion escaping from the dome

in a thin layer; with means for admitting air into gases as they pass under the flange, and means for discharging combustible fluids into the dome, substantially as described.

4. In a gas-heater the combination of a combustion-chamber and an air-chamber exterior thereto with a dome in said combustion-chamber having an external flange or ring and ports below the flange for the escape of burning gases from the dome, said flange being adapted to spread out the burning gases in a thin layer and direct them against the walls of the inclosing chamber; with means for admitting air from said air chamber into the burning gases, and means for discharging combustible fluids into the dome, substantially as and for the purpose described.

5. The combination of the casing, the interior combustion-chamber and air-passages between the casing and combustion-chamber, with the tube extending into the combustion-chamber, the dome in the combustion-chamber over the tube, and a burner below the tube, substantially as described.

6. The combination of the casing having an enlarged upper part provided with air-passages around its walls and an interior combustion chamber communicating with the air-passages; with the tube, the dome in the combustion-chamber over the tube, having ports and a flange extending toward the walls of the combustion-chamber; with a burner below the tube, and a gas and air mixing tube below the burner, all substantially as and for the purpose set forth.

7. The combination of the cylinder, the casing thereon having air passages around its walls substantially as described and an internal combustion-chamber; with a gas and air mixing tube in the cylinder, a burner on said tube; a tube supported in the casing over the burner, and extending into the combustion-chamber; and a dome over said tube within the combustion-chamber, having ports in its lower edge; and apertures for admitting air from said air-passages into the burning gases in said dome and combustion-chamber, substantially as described.

8. In a gas-heater the combination of the casing, its cover, the combustion-chamber E and interposed diaphragm D, arranged to form air-passages between the diaphragm and casing and between the diaphragm and combustion-chamber, said air-passages communicating with the combustion-chamber; with the dome in chamber E and means for discharging combustible gases into the dome, substantially as described.

9. In a gas-heater, the combination of the casing; the vessel E therein having perforated bottom and interposed diaphragm D arranged to form air-passages between the casing and vessel; with the dome I within vessel E, the burner below the dome, and means for introducing products of combustion from the burner into the dome; substantially as described.

10. The combination of the casing; the vessel E therein and the diaphragm D interposed between the vessel and casing so as to form air-passages therebetween; with the tube K passing through the casing and diaphragm, the air and gas mixer and burner below the tube, and the gas-trapping dome I in vessel E above the tube, all constructed and adapted to operate, substantially as and for the purpose described.

11. The combination of the casing, having an interior combustion-chamber, and the communicating outer and inner air chambers or passages 1 and 2 within the casing around the combustion-chamber and communicating therewith; with the dome I having flange I', within the combustion-chamber; and the burner below and discharging into the dome, all constructed and arranged substantially as described.

12. The combination of the casing, having an interior combustion-chamber, and an air chamber or passage surrounding the combustion-chamber within the casing; with the dome I within the combustion chamber, having ports in its lower edge and an exterior flange above the apertures; the burner below the dome, the tube interposed between the burner and dome, and the gas and air mixer below the burner, all substantially as and for the purpose described.

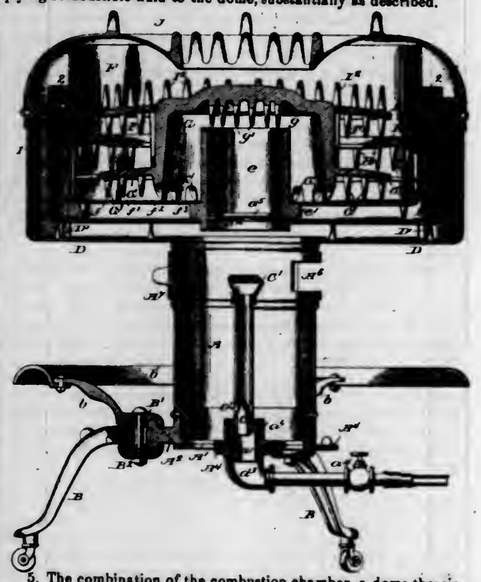
569,086. GAS-STOVE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Mar. 18, 1896. Serial No. 583,719. (No model.)

Claim.—1. The combination of a gas-burner, a tube above the same, and a dome over the tube into which the products of combustion are delivered, said dome having depending studs over the tube, substantially as described.

2. The combination of the combustion-chamber, a tube therein, a burner below the tube, a dome over and partly inclosing the tube having a radial external flange and an inner cavity in which are depending studs and means for admitting air to said combustion-chamber, substantially as described.

3. The combination in a heater of a combustion-chamber, a dome therein into which the combustible fluid is delivered, a casing inclosing the dome, and a series of two or more superimposed alternately-disposed annuli in the combustion-chamber exterior to the dome, between which the combusting gases are successively passed, and means for injecting air at intervals into the gases, substantially as described.

4. The combination of the combustion chamber having an air passage or chamber around its walls and bottom communicating with said combustion-chamber, a dome supported in said chamber, a series of two or more annuli in the combustion-chamber, and means for supplying combustible fluid to the dome, substantially as described.



5. The combination of the combustion-chamber, a dome therein having a lateral flange near its lower edge, an annular ring on the side of casing above the flange, and another annulus surrounding the dome above the ring; with means for admitting combustible fluid to the dome and means for admitting air to the combustion-chamber, substantially as and for the purpose set forth.

6. The combination of the combustion-chamber, a dome therein having a lateral flange near its lower edge, an annulus on the side of casing above the flange, another annulus surrounding the dome above the ring, said flange, ring and annuli being studded substantially as described, and means for injecting air into the gases passing from the dome past the flange, ring and annuli, with means for admitting combustible fluid into the dome, substantially as and for the purpose set forth.

7. The combination of the combustion-chamber, the casing; a tube supported therein projecting into the combustion-chamber, a dome in the combustion-chamber, inclosing the tube, and two or more annuli surrounding said dome, with means for admitting air into the gases in the combustion-chamber, substantially as and for the purpose described.

8. The combination of the deflector E, the tube *e* therein, the combustion-chamber F within deflector E, the dome G, having flange G' in chamber F, and the annuli H and I, surrounding the dome and means for admitting combustible fluid to the dome and means for admitting air to the combustion-chamber substantially as described.

9 The combination of the combustion-chamber F, casing D, and deflector E; dividing the space between the chamber and casing into air passages which communicate with the combustion-chamber, the tube *e* supported on deflector E and projecting into the combustion-chamber; the dome G in the combustion-chamber, over tube *e*, having flange G', and the annuli H and I; exterior to the dome; with the burner below the tube, and means for supplying gas and air to the burner, substantially as and for the purpose set forth.

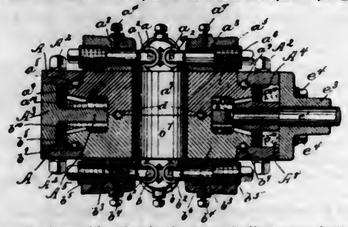
10. The combination with the cap A' having lateral T-flange A^3, the legs B, and the arms *b*; with the bolt B' and clip-plates B^2 for securing the legs and arms to the flange, substantially as described.

11. The combination of the cylinder, the burner therein; the casing D supported on the cylinder, the combustion-chamber in said casing, the tube in said chamber above the burner, the dome superimposed over the tube having a cavity in its ceiling, and a lateral flange; and the annuli H and I in the combustion-chamber exterior to the dome, and means for admitting air to the combustion-chamber for the purpose and substantially as described.

12. The combination of the cylinder, the gas-burner therein, the casing D on the upper end of cylinder, the combustion-chamber F in the casing, the deflector E between the casing and combustion chamber, dividing the space between the chamber and casing into air-passages communicating with the combustion-chamber and the tube above the burner passing through the casing and deflector into the combustion-chamber; with the dome G over said tube, one or more annuli surrounding the dome; said annuli being studded, substantially as described.

13. The combination of the cylinder, the removable tube C therein having a gas-tip at one end and a burner at the other; the casing D, deflector E and combustion-chamber F supported on said cylinder; and the tube *e* above the burner having a removable ring e^3, with the dome G in the combustion-chamber having internal cavity *g*, studs *g'*, and external studded flange G'; the studded annulus H above the flange, the studded annulus I above annulus H, the cover; and perforations in the walls of the combustion-chamber for admitting jets of air into the burning gases therein, substantially as and for the purpose set forth.

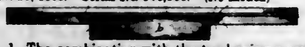
569,087. WIRE-GROOVING MACHINE. WILLIAM G. BURNHAM, Boston, Mass. Filed Jan. 22, 1896. Serial No. 576,415. (No model.)



Claim.—1. A machine for producing spirally-grooved wire consisting of a set of grooving devices mounted on a rotating carrier; a similar set of grooving devices adapted to operate upon the wire after it has passed by the first set, said second set being also mounted on a rotating carrier, and means for rotating said carriers in opposite directions, substantially as described.

2. The combination with the converging grooving devices, *a*; of a rotating carrier for said devices; the grooving devices *b*; a carrier for said devices; a frame or casing for said carriers; a series of balls interposed between said frame and each of the said carriers; and another series of balls interposed between the said carriers themselves, a bevel-gear on each carrier, and a shaft and pinion cooperating with said gears, substantially as described.

569,088. SELF-LOCKING CAN-TOP. THOMAS H. COAKLEY, Baltimore, Md., assignor of one-fourth to E. Madison Mitchell, same place. Filed Nov. 29, 1895. Serial No. 570,368. (No model.)



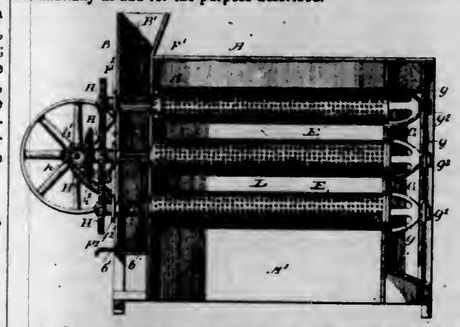
Claim.—1. The combination with the top having a central opening with a continuous surrounding depending flange and inclined portion, of the cap having a continuous depending flange, the lower edge of which is normally turned outward, substantially as shown and described.

2. The combination with the top having an outer depending flange and a central opening with continuous inclined wall and depending flange, of the cap having a depending flange the lower end of which is normally turned outwardly around its entire circumference and at the upper edge formed with an outwardly-extending flange, the upper face of which is inclined, substantially as shown and described.

569,089. TUBULAR GRAIN-SEPARATOR. JOHN R. CORNWALL, Moline, Ill., assignor to the Barnard & Leas Manufacturing Company, same place. Filed Nov. 11, 1895. Serial No. 568,580. (No model.)

Claim.—1. The combination in a grain cleaner, having a common discharge-chamber at one end and a common feed-chamber at the other end thereof, of a series of rotary screens each provided with a tubular casting at its forward end, said casting being formed with a gudgeon of less diameter than the cylinder and extending across and journaled in the walls of the feed-chamber, having grain-receiving slots through its sides within the feed-chamber, and an inwardly-flaring or bell-shaped opening which causes the grain to slide into the cylinder, as said casting revolves, all constructed and arranged to operate substantially as and for the purpose described.

2. In a grain-cleaner, the combination of a screening-chamber, a common feed-chamber, at one end thereof, and a common discharge-chamber at the other; with a series of parallel rotary screens each having a casting, on its front end; said casting being formed with a gudgeon of less diameter than the cylinder and extending across and journaled in the walls of the feed-chamber having grain-receiving slots in its sides substantially as described, and an inwardly-flaring or bell-shaped opening in its inner end from which the grain slides into the cylinder, as said casting revolves; a bell or dome shaped spider G connected to and supporting the rear end of each screen within the common discharge-chamber; and means for rotating said screens, all substantially as and for the purpose described.



3. In a grain-cleaner, the combination of the screening-chamber, a common feed-chamber at one end, and a common discharge-chamber at the other end thereof; with a series of horizontal parallel screens E, arranged in the screening-chamber; castings F fastened to and supporting the front ends of the screens, said castings each having grain-receiving slots in its sides within the feed-chamber, and an inwardly-flaring or bell-shaped opening in its inner end from which the grain slides into the cylinder, as said casting revolves; said casting being also provided with gudgeons *f'* extending across and journaled in the walls of the feed-chamber and the spiders G in the common discharge-chamber attached to the rear ends of the screens, the intermeshing gears on the gudgeons of the castings F, exterior to the feed-chamber, and the shafts and bevel-gearing for imparting motion thereto, all constructed and arranged to operate substantially as and for the purpose described.

4. In a grain-cleaner the combination of a series of parallel rotary perforated screens each having a casting F at its forward end, said casting having grain-receiving slots in its sides within the feed-chamber, and an inwardly-flaring or bell-shaped opening from which the grain slides into the cylinder, said casting also having a gudgeon on its outer end extending across and journaled in the walls of the feed-chamber, and an opening at the rear end of said screens for the discharge of the grain, the rear end of each screen being connected to and supported by a bell or dome shaped spider G within the common discharge-chamber; and means for rotating said screens, all constructed and arranged to operate substantially as and for the purpose described.

569,090. TIN-PLATE CLEANING AND POLISHING MACHINE. DANIEL COX and LAVOMER SPENCER, Martin's Ferry, Ohio. Filed Mar. 31, 1896. Serial No. 585,621. (No model.)

Claim.—1. In a machine for polishing tin-plate, a revolving frame having one or more carriers, means for locking said carrier while moving through the cleaning substance, and releasing said carrier as it emerges from said substance, substantially as shown and described.

2. In a machine for polishing tin-plate, a revolving frame having one or more swinging carriers, the locking and releasing devices, and a fulcrum roller over which said carrier drops to discharge, substantially as shown and described.

3. In a machine as described, a trough for holding the abrasive material, having a smooth bottom, a frame held to revolve therein having members held pendent by gravity, means for automatically locking such pusher members to a fixed or non-swinging position as they swing to a pendent position, substantially as shown and for the purposes described.

4. In a machine as described, the combination with the trough and the rotary carrier, having swinging pendent members arranged substantially as shown, of the adjustable roller C, arranged at the discharge end of the trough as and for the purposes specified.

5. A tin-plate cleaning and polishing machine comprising a trough for holding the abrasive material, a carrier-frame rotatable therein, one or more transverse rock-shafts journaled in such frame, having pendent forked pusher members, spring-actuated detents for locking the shafts from movement during the passage of the pusher members through the abrasive material, a throw-off located in the trough-frame adapted to engage the detents and move them to a released position, substantially as shown and for the purposes described.

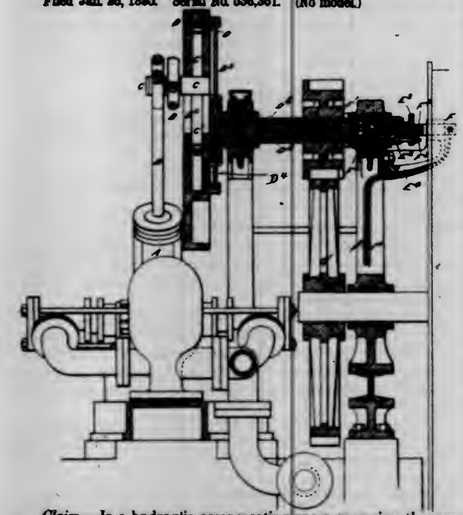
6. In a machine as described, in combination with the trough and

the rotary frame mounted therein, rock-shafts G, having pendent pusher-fingers, having yielding contacting portions, substantially as shown and described.



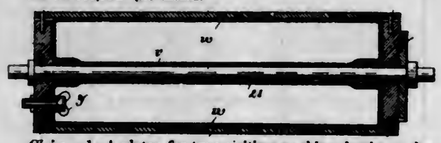
7. A machine for the purpose described, comprising a main frame having a trough for holding the abrasive material, dusting and polishing rolls, a fulcrum or guide roll arranged in advance of the dusting and polishing roll and at the discharge end of the trough, a rotary carrier held within the trough, having swinging pendent pusher members adapted to engage the fulcrum-roll as they pass it and discharge the cleaned plate over such rolls to the polisher and duster rolls, all arranged substantially as shown and for the purposes described.

569,091. HYDRAULIC COMPENSATING PUMP OR ENGINE. ARTHUR R. CUTLER and REGINALD DOREEN, Mosman, New South Wales. Filed Jan. 26, 1895. Serial No. 536,361. (No model.)



Claim.—In a hydraulic compensating pump or engine, the combination of a shaft geared for the transmission of power and having on one end a crank-disk provided with ram-cylinders and a radial slot communicating therewith, the said shaft and crank-disk having through-passages communicating with the ends of said ram-cylinders, the hydraulic cylinders and their plungers, a crank-pin connected with said plungers and provided with rams working in the ram-cylinders of the crank-disk, automatic pressure-regulating mechanism communicating with the through-passages of the shaft and crank-disk for supply of fluid to and exhaust from the ram-cylinders to automatically adjust the crank-pin, and an intensifier adapted to communicate with said through passages intermediate the ram-cylinders and pressure regulating mechanism substantially as described.

569,092. TYPE-WRITING-MACHINE PLATEN. JAMES D. DAUGHERTY, Kittanning, Pa., assignor to The Daugherty Typewriting Company, of Pittsburg, Pa. Original application filed Oct. 27, 1893, Serial No. 489,285. Divided and this application filed July 10, 1895. Serial No. 555,584. (No model.)



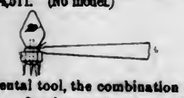
Claim.—1. A platen for type-writing machines having a sheath to receive the impact or blow of the type and an inflatable cushion connected with said sheath to support the same and adapted to deaden the sound of the blow of the type.

2. A platen for type-writing machines having a sheath to receive the impact or blow of the type, and an inflatable tube passing through the said sheath, engaging and supporting the sheath and adapted to deaden the sound of the blow of the type.

3. A platen for type-writers' machines comprising end pieces, a printing-surface surrounding the same, pins connecting the printing-surface and the end pieces, and an elastic air-tube between the end pieces adapted to support the printing-surface.

4. A platen for type-writing machines comprising the end pieces, a shaft extending through the same, a cylindrical printing-surface surrounding the end pieces, an elastic air-cylinder within the printing-surface, the said air-cylinder having a central tube through which the shaft passes.

569,093. DENTAL TOOL AND PLUGGER. JAMES W. DENNIS, Cincinnati, Ohio, assignor to Clara E. Dennis, same place. Filed Jan. 6, 1896. Serial No. 574,511. (No model.)



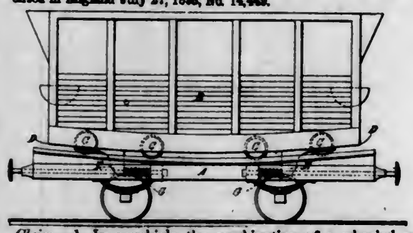
Claim.—1. In a dental tool, the combination with a handle and a socket carried thereby, of a pin-carrying head adjustably connected with the said socket, as and for the purpose set forth.

2. In a dental tool, a shank, a sleeve connected with the shank at an angle thereto, a nut carried by the said sleeve, and a pin-carrying head adjustable in the said nut, as and for the purpose set forth.

3. A dental tool, comprising a handle provided with a socket, a pin-carrying head, and a screw for connecting the pin-carrying head with the socket of the handle, as and for the purpose specified.

4. In a dental tool, the combination with a handle provided with a socket, of a pin-carrying head, a screw for connecting the pin-carrying head with the socket of the handle, and a plugging-head secured upon the end of the screw, as and for the purpose set forth.

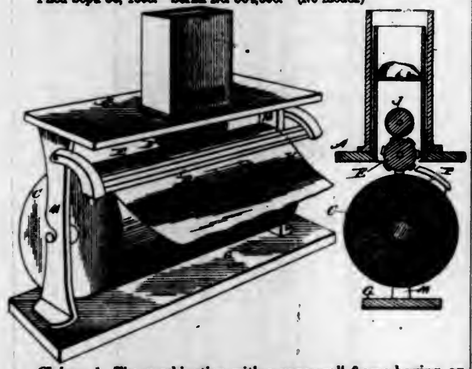
569,094. CAR OR CARRIAGE. HENRY W. D. DUNLOP, Lucan, Ireland, assignor to the Dunlop's Patent Truck Company, Limited, Dublin, Ireland. Filed Mar. 9, 1896. Serial No. 582,463. (No model.) Patented in England July 27, 1893, No. 14,449.



Claim.—1. In a vehicle, the combination of a wheeled under frame, a body mounted on said under frame and capable of a certain amount of free longitudinal movement thereon, and springs to limit the movement of the body, said springs only coming into action when the body has moved some distance from its central position, substantially as described.

2. In a vehicle, the combination of a wheeled under frame, curved rails thereon, a body capable of movement on said rails and so arranged that gravity tends to restore the body to its normal central position whenever it is moved therefrom, and springs to limit the extent of movement of the body from the central position, substantially as described.

569,095. ADVERTISING DEVICE. DAVID J. ETLY, Louisville, Ky. Filed Sept. 30, 1895. Serial No. 564,096. (No model.)



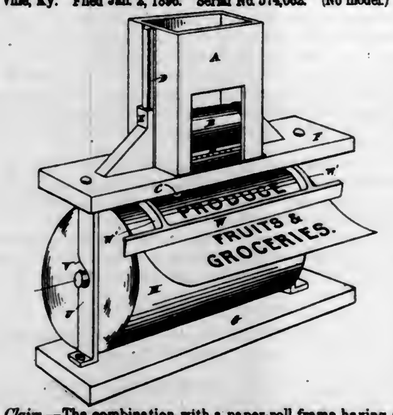
Claim.—1. The combination with a paper-roll frame having an aperture in its top plate, of a box movable vertically in said aperture, and carrying printing means, and guides for said box supported by said top plate.

2. The combination with a paper-roll frame having an aperture in its top plate, of a guide-box supported on said plate above said aperture, a second box fitted within the guide-box to have free vertical movement therein and in said aperture, and a printing-roller journaled in said second box adapted to engage the roll of paper, substantially as described.

3. The combination with a paper-roll frame having an aperture in its top plate, of a guide-box supported on said plate, above said aperture, a second box fitted within the guide-box to have free vertical movement therein and in said aperture, a printing-roller journaled in said second box, an inking-roller also journaled in said second box to engage the printing-roller, and a weight on the said second box, substantially as described.

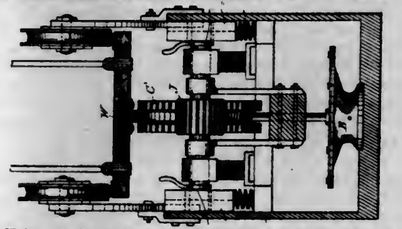
4. The combination with a paper-roll frame having an aperture in its top plate, of a guide-box supported on said plate above the aperture, a second box fitted within the guide-box to have free vertical movement therein and in said aperture, printing and inking rollers journaled in said second box, a horizontal partition in the box above the printing and inking rollers, and a weight supported on the partition, substantially as described.

569,096. PAPER REEL AND PRINTER. DAVID J. ETLY, Louisville, Ky. Filed Jan. 2, 1896. Serial No. 574,062. (No model.)



Claim.—The combination with a paper-roll frame having an aperture in its top plate, of grooved guides supported on said plate at opposite sides of the aperture, a vertically-movable box projecting through said aperture and having tongues received by said grooves in the guides, and inking and printing rollers carried by said box, substantially as described.

569,097. ELEVATED RAILWAY. ROBERT M. FRYER, Washington, D. C. Filed June 18, 1896. Serial No. 596,095. (No model.)



Claim.—1. In an elevated railway, suspended cross-ties provided on their upper, outer ends with rails, and on the opposite, or under side, with a traction rail or rails, substantially for the purposes set forth.

2. In an elevated railway, suspended cross-ties, provided on their upper, outer ends with rails, and on the opposite, or lower side with a rail, or rails in combination with a driving-wheel or driving-wheels in connection therewith as shown and described.

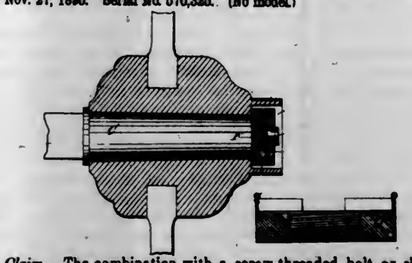
3. In an elevated railway, suspended cross-ties, provided on their upper, outer ends with rails, and the opposite, or lower side with a rail, or rails in combination with a driving-wheel, or driving-wheels adjusted to the lower rail from below by pneumatic or hydraulic pressure, to produce the requisite degree of traction substantially as above set forth.

4. In an elevated railway, the arrangement of a plurality of suspended cross-ties with rails attached to their upper, outer ends and a single rail located at or near the center, on the opposite side of the same ties, and an adjustable driving-wheel whereby the auxiliary pressure exerted in an upward (central) direction is greater than that which is exerted on either one of the upper rails in a downward direction, thus concentrating this pressure where it is needed for traction purposes, and distributing it where it would be a detriment, in carrying out the objects of the invention.

5. In an elevated railway, a suspended car, supported by wheels resting on two (2) rails located at or near the outer ends of the connecting-ties, as shown, having an adjustable driving-wheel protruding from the top of said car to engage with a rail located underneath said ties, for the combined purpose of driving the car and conducting electricity, as and for the purposes and objects stated.

6. In an elevated railway, the combination with a plurality of suspended cross-ties, of rails located at their upper, outer ends and a toothed rack on the opposite side of the same ties, adapted to engage with a spur driving-wheel, protruding from the top of a swinging car located below said ties in the manner shown for the purpose of propelling the car from the center as illustrated.

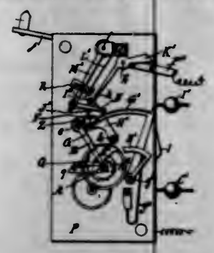
569,098. NUT-LOCK. JAMES M. GILMORE, New York, N. Y. Filed Nov. 27, 1895. Serial No. 570,335. (No model.)



Claim.—The combination with a screw-threaded bolt or shaft provided with a many-sided extension, of a nut adapted to be mounted in said screw-threaded bolt or shaft, said nut being provided in one side thereof with a many-sided cavity or space, and a plate adapted to fit within said cavity or space, and provided with a many-sided central opening, and means for holding said plate in position, consisting of side arms formed upon or secured to said nut, and provided with cross-heads, said side arms being adapted to operate in connection with angular notches or recesses formed in the sides of said plate substantially as shown and described.

569,099. ELECTRIC CLOCK STRIKING MECHANISM. FRANÇOIS E. GIROD, Geneva, Switzerland. Filed Oct. 11, 1895. Serial No. 565,407. (No model.) Patented in Switzerland Mar. 15, 1895, Nos. 10,073 and 10,074.

Claim.—In clocks intended to sound the hours and halves by means of an electric bell of any well-known system whatever, the combination of a lever connected to and oscillating with the pendulum with a click intended to act at each double oscillation of the pendulum upon one tooth of a rack the position of which is determined by the usual hour-snail, a contact-lever intended to shut the circuit of the electric bell once at each double oscillation of the pendulum, and a rocking lever bearing two pins intended to put the said click and contact-lever out of action when the said rack reaches its rest position, substantially as shown and described.



569,100. JEWELRY. GEORGE P. A. GUFFEKER, Schwenksville, Pa. Filed May 18, 1896. Serial No. 592,015. (No model.)



Claim.—1. The combination of a casing comprising a front and back portion, and a connecting-web portion extending part way around the same, the said front and back portions projecting outwardly beyond the said web portion, and forming with said web portion a pocket with opening at the edge of the casing, for the edgewise insertion of the coin, and a transverse retainer passing from the front to the back portion of the casing across said opening, whereby the coin is seated upon the connecting-web portion of the casing and held in place by said transverse retainer, substantially as specified.

2. The combination of the casing comprising front and back portions with projecting ears having openings therein, a segmental connecting-web forming, with said front and back portions of the casing, a pocket for the reception of the coin, and a retainer adapted to the openings of the ears on the front and back portions of the casing and extending across the mouth of the pocket so as to retain the coin therein, substantially as specified.

569,101. AUTOMATIC ELECTROMAGNETIC BRAKE FOR RAILWAY-CARS. EDGAR A. HAUERWAS, Saratoga Springs, N. Y. Filed May 23, 1895. Serial No. 550,425. (No model.)

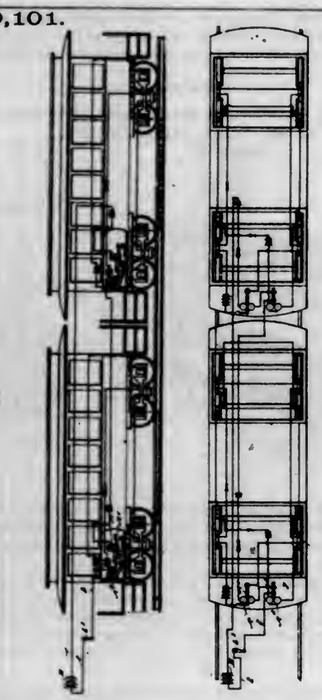
Claim.—1. A train-braking system, comprising electromagnetic brakes adapted to engage with a track between the wheels of a truck, a normally open local circuit in which the brakes are located, a source of electricity for said local circuit including an electromagnet controlling a circuit-closer operating to close all the local circuits of a train, a normally-closed circuit in which the circuit-closer is located and a source of electricity for said normally-closed circuit, substantially as specified.

2. An electromagnetic brake for a car adapted to engage with the track on which the car-wheels move, a local open circuit comprising a source of electricity, the said brake being located in said local circuit, a normally-closed main circuit, comprising an electromagnet controlling an armature in the local circuit, and another local circuit, comprising a track-section, an electromagnet in said last-named local circuit, the armature thereof being in the main circuit, substantially as specified.

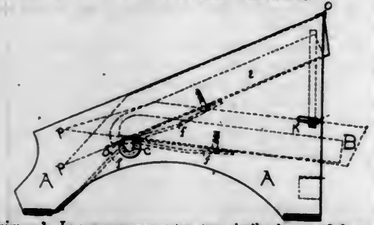
3. A car-brake comprising an electromagnet in a normally open local circuit, a closer for said local circuit and a main circuit for controlling said closer, an air-brake-controlling armature comprised in said main circuit, and an electromagnet in a circuit comprising a track-section for controlling said armature, substantially as specified.

4. In a car-brake the electromagnets in a normally open local circuit, a closer for the local circuit, consisting of an armature held by an electromagnet in a main circuit, a normally-closed main circuit, an electromagnet in the main circuit for controlling the closer of the local circuit and an electromagnet in a circuit comprising a section of the track for operating an air-brake and the electromagnetic brakes adjacent to the car-wheels remaining on the track, substantially as specified.

569,101.



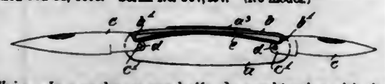
569,102. GAME APPARATUS. JOHN R. IRVIEN, Brooklyn, N. Y. Filed June 26, 1895. Serial No. 554,085. (No model.)



Claim.—1. In a game apparatus, two similar boxes of tin or other material with sloping top and two sides connected by a bracing-strip and resting on four feet; a rod or axle, on which swings a tilting compartment or pan, with three raised edges; said rod encircled by a spiral wire spring; two or more movable wooden cleats pivoted flat on the bottom of the interior of tilting pan; a flat metal spring-catch for holding tilting compartment; whereby small balls or marbles may be discharged from tilting compartment substantially as and for the purpose set forth.

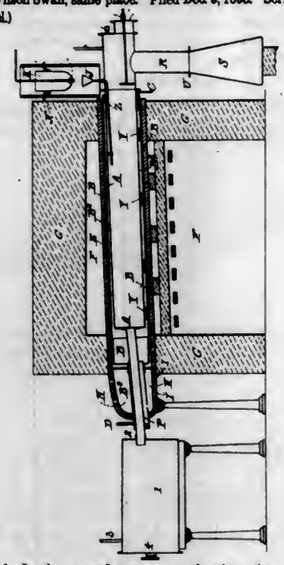
2. The combination in a game apparatus of two similar boxes with sloping top, an inner tilting compartment or pan on the bottom of which are pivoted flat two or more movable wooden cleats, adjustable to various angles, for guiding or controlling the direction of small balls or marbles to be discharged from both tilting pans simultaneously in opposite forward directions, on a board containing a diagram of a foot-ball field in miniature, substantially as and for the purpose set forth.

569,103. KNIFE. EDMUND JAEGER, Hohscheid-Solingen, Germany. Filed Oct. 31, 1895. Serial No. 567,497. (No model.)



Claim.—In a pocket or pen knife, the combination with the side plates a a^3 of the shell having each two incisions a' situated at the ends of said plates, of a curved separate back plate b having at its ends angular projections b' taking into the incisions of the side plates; the latter having further each a rib a^3 taking over the back plate b; blades held by said side plates, and a spring arranged between said back plate and the tangs of the blades, substantially as described.

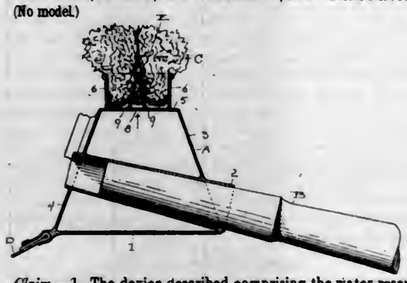
569,104. PROCESS OF AND APPARATUS FOR MAKING CYANIDS. JAMES A. KENDALL, London, England, assignor of one-half to Joseph Wilson Swan, same place. Filed Dec. 9, 1895. Serial No. 571,582. (No model.)



Claim.—1. In the manufacture or production of cyanids, the improvement consisting in heating the cyanid-yielding materials in a suitable vessel, while circulating hydrogen gas in a confined space around said vessel, substantially as described.

2. An apparatus of the kind described consisting of an inner vessel for receiving the cyanid-making materials, a continuation or extension of said vessel in which the cyanid is adapted to condense and be conveyed to a suitable receptacle, an outer surrounding vessel or casing so disposed about the inner vessel as to leave an intervening space, means for heating the vessels, and means for circulating hydrogen gas through the intervening space, substantially as described.

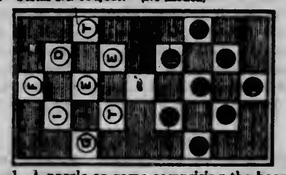
569,105. DEVICE FOR WASHING AND CLEANING WINDOWS. JOHN KIEFER, Cleveland, Ohio. Filed Mar. 14, 1896. Serial No. 583,267. (No model.)



Claim.—1. The device described comprising the water-reservoir having a series of small outlets longitudinally along one side, a wall 9 immediately around said outlets and forming a water distributing chamber outside of the reservoir, a sponge-inclosing wall 6 outside of said water-distributing chamber and higher than the wall 9 thereof, and means secured to said outer wall to confine a sponge within the same, substantially as described.

2. The water-reservoir having a series of perforations 8 centrally from end to end and a wall 9 immediately about said perforations and forming a water-distributing chamber outside the reservoir and an outer sponge-supporting wall 6 deeper than wall 9 and apart from the same, in combination with a sponge within said wall 6 and the rod E to fasten the sponge secured at one end to wall 6 and extending longitudinally over the center of said water-distributing chamber and means to fasten the free end of said rod, substantially as described.

569,106. PUZZLE. THOMAS LEE, Philadelphia, Pa. Filed June 29, 1895. Serial No. 554,446. (No model.)

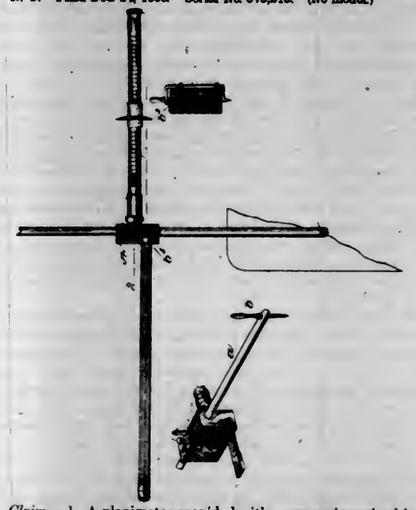


Claim.—1. A puzzle or game comprising the board bearing the two communicating groups of playing-spaces, and the two differently-colored sets of checkers each set bearing the letters of a certain word; substantially as set forth.

2. A puzzle or game comprising the board bearing the two communicating groups of playing-spaces, arranged in the form of double pyramids and the two sets of checkers of distinguishing colors, each set bearing the letters of a certain word; substantially as set forth.

3. A puzzle or game consisting of the board bearing the two groups of playing-spaces arranged as specified and connected by the single central space, and the two sets of checkers or blocks of distinguishing colors, the checkers of each set bearing the letters composing a certain word; substantially as set forth.

569,107. PLANIMETER. ALPHEUS C. LIPPINCOTT, New York, N. Y. Filed Dec. 24, 1895. Serial No. 573,215. (No model.)



Claim.—1. A planimeter provided with a measuring-wheel having rotary and longitudinal movements, a removable shaft therefor of translucent material, a graduated scale inclosed in said shaft, and a tracer-bar, as set forth.

2. A planimeter provided with a measuring-wheel having rotary and longitudinal movements, a frame, a shaft for said wheel removably held at one end to said frame and formed of translucent material, a graduated scale inclosed in said shaft, a tracer-bar, and a guide therefor, as set forth.

3. A planimeter provided with a measuring-wheel having rotary and longitudinal movements, a frame, a tracer-bar, a guide B therefor, a holder a' extending from one side of said frame, a hollow shaft for said wheel secured in said holder and formed of translucent material and a graduated scale within said shaft, as set forth.

4. In a planimeter having a frame and an adjustable tracer-bar, a depressible pin carried by said frame, and a spring engaging said pin for normally holding the same elevated, as and for the purpose set forth.

5. A planimeter having a frame, an adjustable tracer-bar, a guide-bar pivoted to said frame, and a depressible pin having its lower point in perpendicular alinement with the pivot of said guide-bar, as set forth.

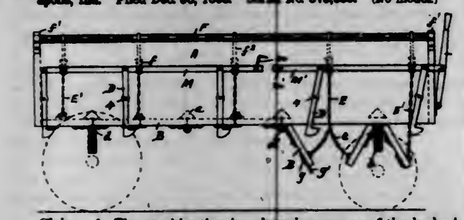
6. A planimeter having a frame, and an adjustable tracer-bar, a guide-bar pivoted to said frame, a depressible pin having its ends in perpendicular alinement with the pivot of said guide-bar, and the spring acting on said pin, substantially as set forth.

7. A planimeter having a frame-block, a tracer-bar adjustable in said frame-block having a tracer-pin at one end, a guide-bar, a

hollow screw pivoting the latter to said frame-block, and the depressible spring-held pin extended through said hollow screw and a coincident opening in said frame-block, substantially as set forth.

8. The herein described planimeter, comprising the frame-block, the longitudinally adjustable tracer-bar, the removable shaft having a graduated scale, the wheel thereon, the guide-bar pivoted to said frame-block, and the depressible pin having its ends in the same vertical line with the pivot of said guide-bar, substantially as set forth.

569,108. DUMPING WAGON-BODY. HENRY D. LORAIN, Indianapolis, Ind. Filed Dec. 30, 1895. Serial No. 573,855. (No model.)

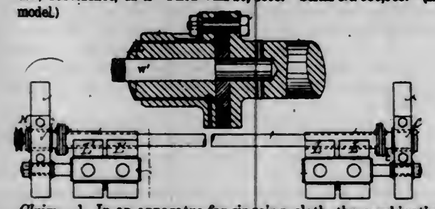


Claim.—1. The combination in a dumping-wagon of the body A, the drop-door floor-sections B having hinges *d* and rods g^3 hanging said doors to said body; the chains F and E, the latter having bifurcated ends *e* connecting said sections; the longitudinal shafts F extending the length of the said body and mounted rotatably at the top at or near the sides thereof, and provided with the lifting-arms f^3 connecting with the upper ends of said chains; the lever H pivoted near its lower end to the front end of said body approximately central on said front, said lever having at its upper portion a thumb-latch engaging with the notched quadrant I; the arms f^3 secured to the forward end of said shafts F and connected operatively to said lever H by means of the rods *i i'*; the rocking arms D pivoted to said body, each provided at its lower end with a catch-hook engaging with the bar *g* attached to each of said sections; the rods C connecting the upper ends of said levers D; the rocking shaft A supported across the front end of said body; the lever G secured at its lower end to one end of said shaft A and connected to the forward end of one of said rods C, and a shorter companion lever having its lower end secured to the opposite end of said shaft A and its upper end connected to the forward end of the other of said rods C, all operating substantially as shown and described.

2. In a dumping-wagon, the combination of the doors having the latch-bolts and provided with the lifting mechanism substantially as described; the rocking levers pivoted at each side of the body, the lower ends of which have a hook engaging with said latch-bolts; the longitudinal operating-rods connecting with the upper ends of said levers, said rods being made in two sections having the hook and eye for connecting or disconnecting said sections, and means for manipulating said rods, as shown and for the purposes set forth.

3. In a dumping-wagon, the combination of the body A; the drop-doors B supported at one side by hinges *d* through which pass the rods g^3 which are supported by the cleats R attached at under side of the frame of said body; the plates *f* attached to one of each pair of doors; the bars *g* secured to the free ends of said doors; the rocking arms or levers D having hooks at their lower ends supporting said bars *g* and doors; the connecting-rods M M' operating said levers D, said rods being provided with the hook *m* and eye *m'* for connecting said rods or detaching them, and the means herein described for operating said rods M' and M and for lifting said doors, substantially as shown and for the purposes set forth.

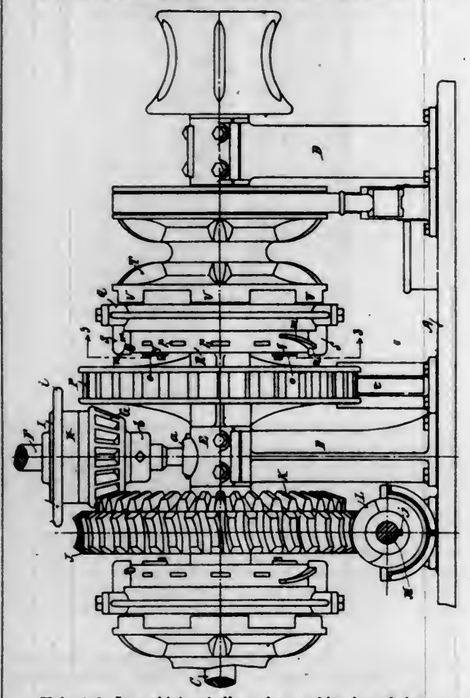
569,109. APPARATUS FOR SINGEING CLOTH. JOSEPH P. MARTON, Providence, R. I. Filed Jan. 29, 1895. Serial No. 536,585. (No model.)



Claim.—1. In an apparatus for singeing cloth, the combination with means for drawing the cloth forward, of the singeing-tube forming a portion of the electric circuit by means of which it is heated, the connected sleeves, the non-conducting core, means for revolving the singeing tube, the electric brushes in contact with the sleeves of the singeing-tube, and electric connection with the brushes, substantially as described.

2. In an apparatus for singeing cloth, the combination with means for drawing the cloth forward, of the singeing-tube forming a portion of the electric circuit by means of which it is heated, the insulated metallic rod for supporting the heated tube, the non-conducting core between the rod and the inner surface of the tube, means for revolving the singeing-tube, the electric brushes in contact with the sleeves of the singeing-tube, and electric connection with the brushes, substantially as described.

569,110. SHIP'S WINDLASS. JOSEPH P. MANTON, Providence, R. I. Filed Aug. 19, 1895. Serial No. 559,833. (No model.)



Claim.—1. In a ship's windlass, the combination of the worm-gear upon the windlass-shaft, with the driving-shaft, and bearing-boxes, the slidable worm engaging with the worm-gear, and the removable cap resting over the shaft, in the space between the end of the worm, and the face of the bearing-box, substantially as described.

2. In a ship's windlass, the combination of the windlass-shaft C, and the loose wildcat T, provided with the projecting clutch-lugs V, with the clutch-head Q, keyed to the windlass-shaft, the cam-ring R, provided with the openings *p*, the inclined cams *m*, upon the periphery of the cam-ring, the holding-plates *o* provided with the friction-pads *q*, and the sliding clutch-bolts S, held in the clutch-head Q, and provided with the notches *n*, for engagement with the operating-cams, substantially as described.

569,111. MESSAGE-HOLDER FOR USE WITH HOMING PIGEONS. HENRI MARION, Annapolis, Md. Filed June 6, 1896. Serial No. 594,595. (No model.)

Claim.—1. A message-holder for use with homing pigeons, comprising a spring clasp or band adapted to be detachably connected to the leg of the pigeon, and a box or case for the message connected to said spring clasp or band, substantially as described.

2. In a message-holder for use with homing pigeons, the combination with the spring-clasp adapted to be detachably connected to the leg of the pigeon, and a box or case for the despatch rigidly attached to said clasp and removable therewith, substantially as described.

3. In a message-holder for use with homing pigeons, the combination with a hinged spring-clasp adapted to be detachably connected to the leg of the bird, with a box or case attached to said clasp and adapted to hold the despatch, substantially as described.

4. In a message-holder for use with homing pigeons, the combination with a hinged clasp adapted to be detachably connected to the leg of the bird, of a case rigidly attached to said clasp, and a box for the message adapted to slide in said case and to be normally held therein, substantially as described.



569,112. PROCESS OF PREPARING SOLUBLE COLLOIDS. EDMUND J. MILLS, Glasgow, Scotland. Filed Apr. 11, 1896. Serial No. 587,202. (No specimens.)

Claim.—The process of preparing from gelatin or a gelatin-containing or gelatigenous substance a solution permanently liquid in the cold, by treating it with an alkaline substance with the aid of heat substantially as hereinbefore described.

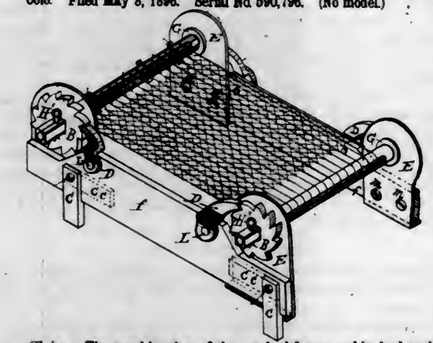
569,113. ALLUVIAL-GOLD WASHER. JAMES MILLER, Sault Ste. Marie, Canada. Filed Mar. 24, 1896. Serial No. 584,707. (No model.)



Claim.—1. The improved gold-washer consisting of a metal trough having transverse interior corrugations or ribs, riffle-plates which are of inverted-V shape in cross-section and arranged over and upon said ribs, and secured at their ends to the upwardly-extended sides of the trough proper, substantially as shown and described.

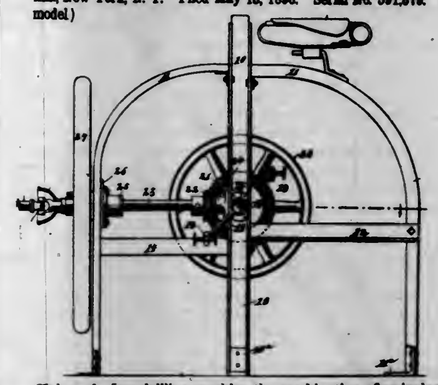
2. The improved gold-washer consisting of the sheet-metal trough, having a series of transverse, parallel corrugations, or inwardly-projecting ribs, formed by corresponding exterior grooves or depressions, a series of riffles coinciding with said ribs, and the rockers *e*, arranged and secured in the exterior grooves or depressions, as shown and described.

569,114. BED-SPRING TIGHTENER. JOHN J. A. MILLER, Denver, Colo. Filed May 5, 1896. Serial No. 590,796. (No model.)



Claim.—The combination of the cot-bed frame and its bed-spring, of the divided adjustably-separable tubular shaft or clamping-bar having square ends and an interior divided core or filling, the collars and ratchet-wheels secured thereon, the holding-pawl pivoted to said frame in operative engagement with said ratchet-wheels, with the sides of said bed-frame and the legs pivoted thereto having a rabbeted step fitting under the edges of said sides and a removable pivotal bolt having parallel sides adapted to secure said legs to said sides in either a vertical or horizontal position, substantially as described.

569,115. DRIVING MECHANISM FOR DRILLS. FOSTER MILLIKEN, New York, N. Y. Filed May 13, 1896. Serial No. 591,379. (No model.)



Claim.—1. In a drilling-machine the combination of an inclosing skeleton frame having arched upper members terminating below in rigid supporting legs and feet at their lower ends, a seat or saddle mounted upon the top thereof, a pedal-shaft with driving-cranks and pedals, journaled centrally within said frame below said seat, and a balance-wheel, connecting-gears, and driven shaft for converting the motion to the drill also located centrally within the skeleton frame, substantially as and for the purpose described.

2. In a drilling-machine the combination of an inclosing skeleton frame having arched upper members, a seat or saddle mounted upon the top thereof, a pedal-shaft with driving-cranks and pedals journaled centrally within said frame below said seat and a balance-wheel, connecting-gears, and driven shaft located within the framework for converting the motion, said driven shaft having also outside the framework a balance-wheel and a universal joint for connecting with a flexible drill-shaft, substantially as and for the purpose described.

3. The combination, with a frame comprising forward uprights, central uprights, a rear upright arched to meet and connect with the central uprights, cross-bars connecting the various uprights at each side of the frame, and a seat mounted upon the upper portion of the rear uprights, of roller-bearings located in the central uprights, a shaft journaled in the said bearings, having crank-arms attached, and pedals carried by the crank-arms, a balance-wheel located on the pedal-shaft, the said balance-wheel being provided with an attached gear, a shaft located at right angles to the pedal-shaft and having a beveled pinion engaging with the said beveled gear, a line-shaft extending outward beyond the front of the machine, a balance-wheel secured upon the line-shaft, and a flexible shaft provided with a tool-holder, connected with and operated upon the line-shaft, as and for the purpose specified.

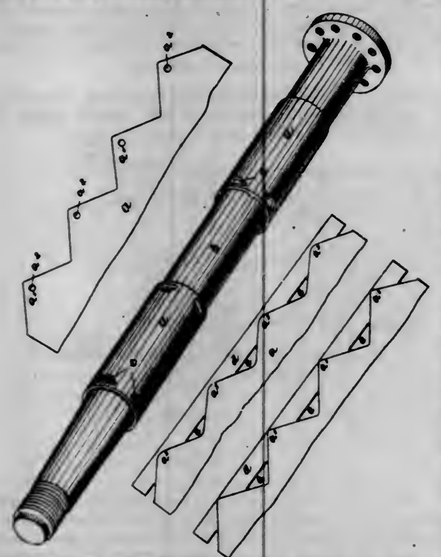
569,116. PROPELLER-SHAFT FOR MARINE ENGINES. DONALD B. MORISON, Hartlepool, England. Filed Aug. 7, 1895. Serial No. 558,546. (No model.) Patented in England Oct. 15, 1894, No. 19,696; in France July 27, 1895, No. 249,235, and in Belgium July 30, 1895, No. 116,895.

Claim.—1. A propeller-shaft provided with a liner in the form of a tube or hollow cylinder whereof the end or ends exposed or liable to exposure to the action of sea-water, is or are each made to terminate in an uneven or irregular form, whereby the line of division or contact between the adjacent exposed surfaces of the shaft and liner will not be located wholly or mainly in a plane at right angles to the axis of the shaft.

2. A propeller-shaft provided with a liner having one or each end formed with one or more projections extending lengthwise of the shaft, substantially as herein described for the purpose specified.

3. A propeller-shaft provided with a liner the end or each end of which is exposed or liable to exposure to the action of sea-water, terminates in a toothed, zigzag or notched form, substantially as described for the purposes specified.

4. A propeller-shaft provided with a liner formed at one or at each end with one or more projections extending longitudinally of the shaft, and means for holding said projection or projections against said shaft, substantially as herein described.



5. A propeller-shaft having a liner formed at one or at each end with projections extending longitudinally of the shaft, and a ring connecting said projections and covering them either partially or entirely and maintaining them in close contact with said shaft, said ring having its outer diameter equal to that of the liner and its inner diameter of greater diameter than said shaft, substantially as herein described.

6. A propeller-shaft having a liner formed at one or at each end with projections extending longitudinally of the shaft, and a ring adapted to connect said projections and form therewith and said shaft, a space for the reception of filling material, said liner and ring having holes formed between them and communicating with said space, substantially as described for the purpose specified.

569,117. EYE-SHADE. CHARLES P. MOSHER, Groton, N. Y., assignor of one-half to John S. Kirkendall, Ithaca, N. Y. Filed Mar. 5, 1896. Serial No. 581,925. (No model.)



Claim.—1. An attachment for spectacles or eyeglasses consisting of two disks having interlocking projections at their outer edges adapted to receive the spectacle-frame, and an elastic connection at their inner edges uniting the said disks whereby they are adapted to be applied to glasses of various sizes, and attached and detached by a longitudinal stretching of the elastic connection, substantially as described.

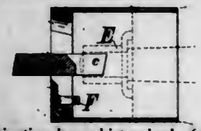
2. An attachment for spectacles or eyeglasses consisting of two disks having at their outer edges inwardly-extending parallel arms, the arms projecting inward substantially parallel with the faces or planes of the disks, and an elastic connection connecting the disks at their inner edges whereby they are adapted for attachment and detachment by a longitudinal separation of the disks, substantially as described.

3. An attachment for eyeglasses or spectacles consisting of a disk having at its outer edges interlocking arms for engagement with the spectacles or eyeglasses, the said interlocking arms having outwardly-projecting handles.

4. An attachment for spectacles or eyeglasses having at its outer edges engaging or interlocking means at the inner sides thereof, and oppositely-projecting handles at the outer edges for the purpose described.

569,118. VEHICLE-WHEEL. SAMUEL A. MOTHERAL, Cincinnati, Ohio. Filed Aug. 26, 1895. Serial No. 560,561. (No model.)

Claim.—1. In a vehicle-wheel, the combination of the hub point-band, and a wrench-head pivoted within said band, and adapted, when turned upon its pivot in one direction, to embrace the axle-nut, whereby when the wheel is turned, the nut is either unscrewed or screwed up, substantially as shown and described.

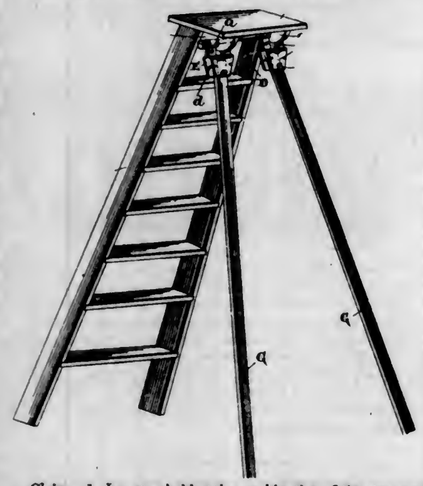


2. The combination, in a vehicle-wheel, of the point-band, a disk fitted in the outer end of said band, a wrench-head fitting the perforation in said disk, and a pivot for the wrench-head upon which it is swung in one direction to engage the axle-nut, and in the reverse direction to release the nut and close the point-band, substantially as hereinbefore set forth.

3. The combination of the hub, the point-band secured thereto, the perforated disk fitted within the outer end of said point-band, a wrench-head swiveled in said opening and adapted, when in the normal position, to close the same, and when turned upon its pivot to embrace the axle-nut, and the spring-catch to hold said head in its normal position, substantially as shown and described.

4. The combination, in a vehicle-wheel, of the point-band, the perforated disk fitted in the outer end of said band, a wrench-head fitted in said disk, the pivot-pin passing through said band, disk and wrench-head, said head and disk having countersunk perforations around the pivot-pin, and a coiled spring around the pivot-pin seated in said countersunk perforations, substantially as shown and described.

569,119. STEP-LADDER. THEODORE J. MCCORMICK, Pomona, Cal. Filed Oct. 28, 1895. Serial No. 567,152. (No model.)

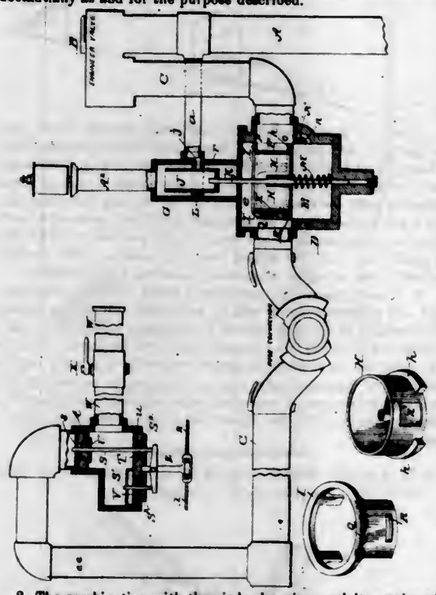


Claim.—1. In a step-ladder, the combination of the step provided at its under side at opposite ends with supporting-brackets, a hinge-bolt passing through said brackets, supporting-legs having hinges provided with hinge-ears which receive the said bolt, the hinge-ears of each hinge straddling the bracket with the ears at the inner and outer sides respectively.

2. A hinge for step-ladders consisting of separated parallel portions having at one end a hinge-eye, a supporting-leg pivoted below its upper end between the said parallel separated portions, and stops or projections supported by the parallel portions at their inner sides and situated a distance apart greater than the width of the adjacent portion of the leg, whereby the leg is permitted only a limited amount of lateral movement upon its pivotal point, substantially as and for the purpose described.

569,120. PNEUMATIC SIGNALING SYSTEM. ABNER J. MCGEHEE, Jackson, Tenn. Filed Oct. 24, 1895. Serial No. 566,764. (No model.)

Claim.—1. The combination with the air-brake pipe and its engineer's valve; of a conductor's release-valve arranged in the train-pipe and comprising a valve opening to the outer air to discharge air for applying the brakes, a supplementary air-chamber, and a double-acting signal-valve arranged to close the connection of the main air-pipe and to discharge the supplementary air-chamber, a single lever operating both the brake and signal valve and a valve and whistle located on the engine, said valve being constructed to admit air to the whistle to sound a signal when a limited reduction of air-pressure is made in the train-pipe, and to permit free passage of air through it without sounding the whistle when applying or removing the brakes substantially as and for the purpose described.



2. The combination with the air-brake pipe, and its engineer's valve; of a conductor's release-valve arranged in the train-pipe and comprising a valve opening to the outer air to discharge air for applying the brakes, a supplementary air-chamber with means for adjusting its capacity and a double-acting signal-valve arranged to close the connection of the main air-pipe and to discharge the supplementary air-chamber, a single lever operating both the brake and signal valve and a valve and whistle located on the engine, said valve being constructed to admit air to the whistle to sound a signal when a limited reduction of air-pressure is made in the train-pipe, and to permit free passage of air through it without sounding the whistle when applying or removing the brakes substantially as and for the purpose described.

3. In a pneumatic signaling system, the combination with the train brake-pipe; of a double-service conductor's valve having in one valve construction both a brake-valve and a signal-valve, and an air-chamber, said signal-valve being arranged as described whereby when the signal cord is pulled the air escapes from the air-chamber to the atmosphere and when the signal-cord is released the air-chamber is recharged from the brake-pipe, causing a sudden limited reduction in the train-pipe substantially as shown and described.

4. In a pneumatic signaling system the combination with the train brake-pipe; of a double-service "conductor's" valve having in one valve construction both a brake-valve and a signal-valve, and an adjustable air-chamber, said signal-valve being arranged as described whereby when the signal-cord is pulled the air escapes from the chamber to the atmosphere, and when the signal-cord is released the chamber is recharged from the brake-pipe, causing a sudden limited reduction in train-pipe substantially as shown and described.

5. The combination with the brake-pipe; of a double signal-valve located on the engine having one of its chambers lying in the brake-pipe and the other of its chambers connected to the main-reservoir pipe between the main reservoir and the engineer's valve and also to the whistle-pipe, and constructed substantially as described whereby when a limited reduction of pressure is made in the brake-pipe on the train one portion of said valve will move in a predetermined direction and will cause the other portion in the signal-chamber to also move in the same predetermined direction and discharge air to sound the whistle, but when the reduction of pressure is made on the engine by the engineer's valve to apply the brakes, and also when the brake-pipe is recharged by the engineer's valve to release the brakes, no signal will be given as set forth.

6. In a pneumatic signal system operating by a reduction of pressure in the air-brake pipe, the combination with said air-brake pipe; of a supplementary air-chamber constructed in the form of an extended pipe provided with a stop-cock or cut-off in its length to adjust its discharging capacity, and a double-acting signal-valve located at the junction of the supplementary air-chamber and the air-brake pipe and operating substantially as shown and described.

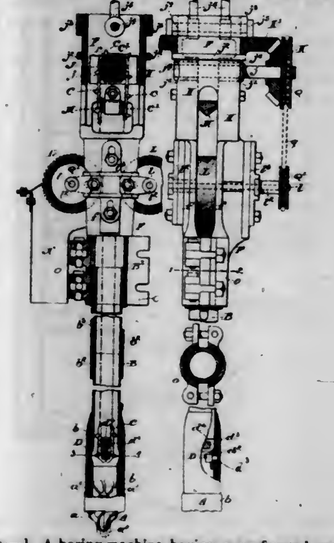
7. In a pneumatic signal system operating by a reduction of pressure in the air-brake pipe, the combination with said air-brake pipe; of the supplementary air-chamber W having stop-cock X, the brake-valve V, the double signal-valve T U connected together by the same stem, the T-shaped handle Z having its opposite arms resting against the two valve-stems, and operating-ropes for pulling this handle in opposite directions substantially as shown and described.

8. In a pneumatic signal system operating by a reduction of pressure in the air-brake pipe, the combination with the air-brake pipe, the engineer's valve, and the air-reservoir pipe; of a double valve having its upper chamber connected with a whistle and connected directly to the air-reservoir pipe and its lower chamber with the air-brake pipe, one portion of said valve playing in one valve-chamber and controlling the whistle-ports, and the other portion of the valve playing in the other valve-chamber but connected to the first-named portion and operating the same without interfering with the charging and discharging of the air-brake pipe substantially as shown and described.

9. In a pneumatic signal system operating by a reduction of air-pressure in the air-brake pipe of the train, the combination with the air-brake pipe and engineer's valve; of a whistle connected to the reservoir air-pipe between the reservoir and the engineer's valve, and a valve operating the whistle-port located in the air-brake pipe between the engineer's valve and the train-pipe substantially as shown and described.

10. The combination of valve-chamber D having subchambers E, F, *e* connecting with the air-brake pipe and having port *n* and valve N, the valve-chamber G communicating with the whistle and having a port leading to the air-reservoir, the signal-valve J with port *r*, and stem K and rigidly-attached valve H, stationary ring I with extension bearing port R, and the spring M substantially as and for the purpose described.

569,121. APPARATUS FOR BORING EARTH, MINERALS, &c., FOR PROSPECTING PURPOSES. FARQUHAR M. MCLARTY, Penang, Straits Settlements. Filed Sept. 6, 1895. Serial No. 561,651. (No model.) Patented in England Aug. 31, 1894, No. 16,604; in France Aug. 28, 1895, No. 249,946; in Transvaal Oct. 1, 1895, No. 980; in Western Australia Oct. 15, 1895, No. 753, and in Spain Dec. 26, 1895, No. 18,031.



Claim.—1. A boring-machine having a perforated and hollow boring head or tool and tubing carrying the same, and means for rotating it, the said hollow head being provided at its lower end with blades curved from the circumference of the hollow head to the central axis, and leaving openings between them, the said blades being adapted to cut the material being bored and deliver the borings into the interior of the head between the blades when the apparatus is driven in the direction that wedges the borings toward the center, or in part thereinto and in part to press them into the surrounding

strata when the apparatus is driven in the direction that wedges the borings away from the center, substantially as hereinbefore described.

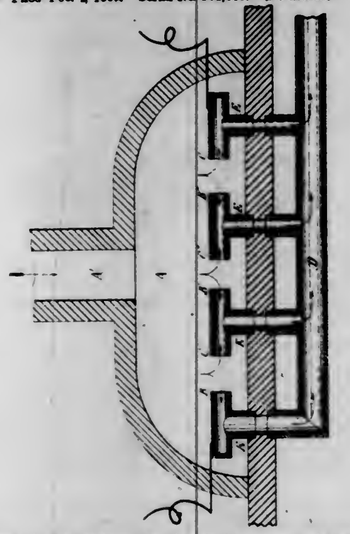
2. A boring apparatus having a perforated and hollow boring head or tool, and tubing carrying the same and an elevator within the tubing, with means for working the elevator, the chain of the said elevator being constructed with closed links to prevent the escape of material through the chain, and the said chain carrying scoops which fill the space between the chain and the tubing, and formed so that the elevator when working in either direction takes up and elevates the whole of the material passed into the interior of the boring head or tool, substantially as hereinbefore described.

3. In apparatus for boring, tubing having an elevator therein with means for working the elevator, the scoops of the elevator constituting links in the chain, a pin and tumbler within the tube, around which the chain works, the scoops being formed with flat, or approximately flat, faces, the edges of which bear against the tube, so that the material being elevated, is confined between two adjacent scoops and the tube, and means for removing the material from the scoops before it reaches the said tumbler, substantially as hereinbefore described.

4. In apparatus for boring, the combination of a perforated and hollow boring head or tool, tubing, an elevator, provided with scoops presenting flat, or approximately flat, faces, means for working the elevator and a scraper, in combination with an adjustable revolving brush situated in proximity to the elevator-chain, before it passes over the upper pulley or tumbler so as to remove the material from the scoops before they pass around the said pulley, and while the borings are still within control, substantially as hereinbefore described.

5. A boring apparatus having a perforated and hollow rotary boring head or tool, and tubing carrying the same, with an endless elevator within the tubing, and carrying scoops which fit against the said tubing, and pulleys, tumblers, or pins, over which the endless elevator passes (the pulley, tumbler or pin below, being provided with means for the exclusion of grit and for retaining a lubricant as described) and means such as the brushes d^3 whereby material is prevented from clogging the moving parts, and gear for giving the requisite rotary motion to the tumbler from the rotation of the tubing and clearers whereby material is cleared from the said elevator, before it passes over the top pulley tumbler, or pin, and whereby delivery of the borings is secured, all substantially as hereinbefore described.

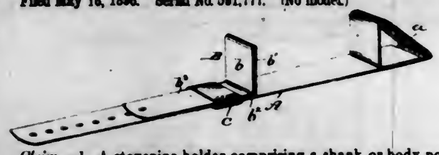
569,122. ELECTRICAL GAS-REACTION APPARATUS. ALOYS A. NAVILLE, PHILIPPE A. GUYE, and CHARLES E. GUYE, Geneva, Switzerland. Filed Feb. 4, 1896. Serial No. 578,063. (No model.)



Claim.—1. An apparatus for electrical gas reactions intended to treat any kind of gases by means of any kind of electric current, comprising a series of independent insulated metallic tubes interposed in line between two electrodes connected to opposite poles of a source of electricity, and gas-conduits communicating with the inside and outside of said tubular electrodes respectively, substantially as and for the purpose specified.

2. The combination, in an apparatus for electrical gas reactions, of independent alined tubular electrodes, a tubular collector, insulating-tubes connecting the tubular electrodes with the collector, and connections between said electrodes and a suitable source of electricity, substantially as shown and described.

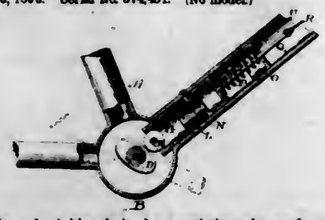
569,123. STOVEPIPE-HOLDER. FRANK J. NORTON, Ithaca, N. Y. Filed May 16, 1896. Serial No. 591,777. (No model.)



Claim.—1. A stovepipe-holder comprising a shank or body portion having a stop projection on its end and locking perforations in its body, an adjustable stop sliding thereon and having a perforated shank portion lying upon the shank of the holder, a sliding keeper embracing both the shanks of the body portion and the sliding stop with a pinching frictional contact, said parts being constructed as described to cramp and bind and remain in the position to which they are placed, and hold the sliding stop to its position while punching the hole in the stovepipe substantially as shown and described.

2. A stovepipe-holder comprising a shank or body portion having a stop projection on its end, an adjustable stop sliding thereon and consisting of a shank portion, a projecting stop portion and a doubled-under portion lying beneath one end of the shank portion, so as to cause the shank of the adjustable stop to lie at a slight angle to the shank of the main body, and a sliding keeper embracing both the shanks of the body portion and adjustable stop, and adapted to cramp and bind and fix the adjustment of the two to each other as described.

569,124. BRAKE. CHARLES G. POLLEYS, Newport, R. I. Filed Jan. 6, 1896. Serial No. 574,451. (No model.)



Claim.—1. A bicycle-brake, consisting of a perforated partition located in the framework, a suitable valve connected thereto, and a spring-actuated piston also placed in the casing, combined with a cam or eccentric for operating the piston, and a mechanism connected to the piston and extending up to the handle-bar, or any other part that may be preferred whereby the piston can be thrown in and out of action at the will of the rider, substantially as described.

2. In a bicycle-brake, the crank-shaft, a cam or eccentric connected thereto, a friction roller or rollers, a piston placed in the casing of the bicycle and operated in one direction by the cam or eccentric, a rod extending from the end of the piston, and means for holding the piston out of operation with the cam, combined with the partition placed in the frame, and a suitable valve connected to the partition, a spring placed between the end of the piston and the partition, and the framework of the bicycle, substantially as described.

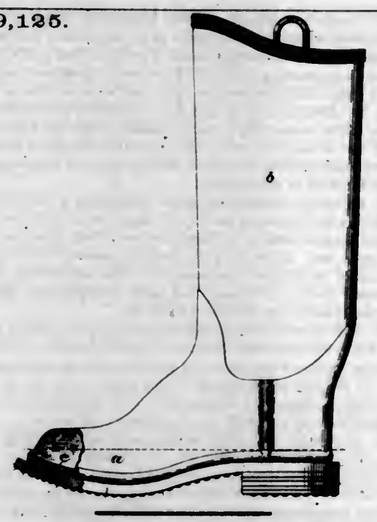
3 In a bicycle-brake, the framework of the bicycle provided with the hub B, the crank-shaft C, the cam or eccentric applied to the crank-shaft, suitable friction-rollers, the piston provided with a rod, and a spring for returning the piston to position; and a stop for the piston, combined with the valved partition placed in the framework, and a mechanism extending up to the handle-bars, or any other part of the bicycle that may be preferred whereby the piston may be held out of operation with the cam or eccentric, substantially as set forth.

569,125. RUBBER BOOT OR SHOE. ALFRED C. TORBERT, Austin, Ill. Filed May 24, 1895. Serial No. 550,570. (No model.)

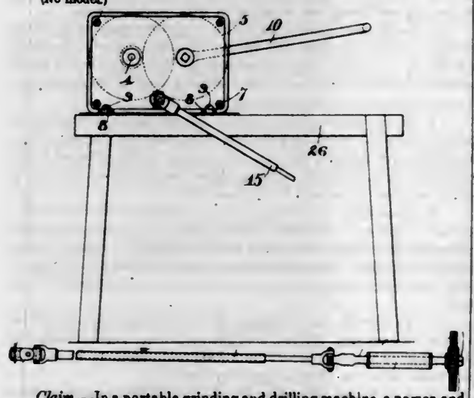
Claim.—1. As a new article of manufacture, a boot or shoe, comprising in its construction, an insole, an upper of rubber, a single outsole projecting out beyond the upper in all directions, so as to protect it, and a heel secured to said outsole and extending to the rear edge thereof.

2. As a new article of manufacture, a boot or shoe comprising a rubber upper, a leather insole, a single leather outsole, projecting out beyond the front and rear portions of the insole and the upper to form a guard, nails securing said outsole to the insole, and a heel coextensive with the rear portion of the outsole and nailed directly thereto.

569,125.



569,126. GRINDING AND DRILLING MACHINE. JOHN CAREY and WILLIAM A. REID, Schenectady, N. Y., assignors of one-half to Garret Myers, same place. Filed Mar. 26, 1896. Serial No. 584,925. (No model.)



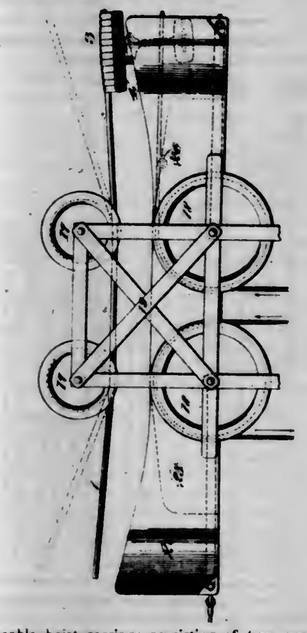
Claim.—In a portable grinding and drilling machine, a power and speed driving mechanism, consisting of a pair of gear-wheels overlapping each other, a pinion on the shaft of the second of these gear-wheels with which pinion the first gear-wheel meshes, a crank-handle mounted on the shaft of the first gear-wheel, a third shaft located below the shafts of the gear-wheels, and having a pinion meshing with the second gear-wheel, the third shaft having a projection on the opposite side of the gearing from the crank-handle and below the latter and adapted to have secured thereto a tool, in combination with a base, and side plates serving as bearings for the several shafts and detachably connected together and to the base, as set forth.

569,127. FALL-ROPE CARRIER. WILLIAM L. GARREIS, St. Louis, Mo. Filed Feb. 7, 1896. Serial No. 578,339. (No model.)

Claim.—1. In a cable hoist, the combination of a carriage adapted to travel on a cable and having guides adapted to center the fall-rope carrier and a fall rope carrier consisting of a yoke having drums and curved guides bridging said yoke, all arranged so that said drums and guides are adapted to separate when the carriage is wedged between said guides, substantially as and for the purpose set forth.

2. A fall-rope carrier consisting of a yoke having drums and curved guides bridging said yoke and movable transversely in the legs of said yoke, whereby the drum and guide on one leg are adapted to separate from those on the other leg when the carriage is wedged between said guides, substantially as and for the purpose described.

3. A fall-rope carrier consisting of a yoke each of whose legs has a drum journaled and longitudinally movable in a cylindrical chamber arranged transversely in said leg, a bow-shaped guide-bar for each leg whose ends rest movably in sockets in said leg, said drum projecting from said chamber and having an axle fitting in a bearing provided therefor in said guide-bar, and a spring in each chamber bearing against said drum and the end of the chamber, whereby said drums and guide-bars are adapted to bridge said yoke and to yield automatically when the carriage is wedged between said guides, substantially as and for the purpose set forth.



4. A cable-hoist carriage consisting of two grooved wheels adapted to travel on the cable, and a framework suspended from their axles and carrying the hoisting-tackle, said framework having an outer pair of guides flaring at their ends and adapted to center a hanger or fall-rope carrier suspended from their cable, and a second pair of guides arranged medially between the outer guides and tapering to an edge at each end whereby it is adapted to wedge between guides on said hanger, substantially as and for the purpose set forth.

5. The combination of a main cable, hangers or fall-rope carriers suspended therefrom at suitable intervals and each consisting of a yoke having drums and curved guides bridging said yoke and arranged to separate transversely, and a traveling carriage consisting of grooved wheels resting on said cable and having a framework suspended from their axles and carrying the hoisting-tackle, said framework having an outer pair of guides flaring at their ends and adapted to center said hanger, and a second pair of guides arranged medially between the outer guides and tapering to an edge whereby it is adapted to be wedged between the guides on the hanger and separate the same, substantially as and for the purpose set forth.

569,128. REEL. HIRAM A. GUILD, Knoxville, Pa. Filed May 27, 1896. Serial No. 593,238. (No model.)

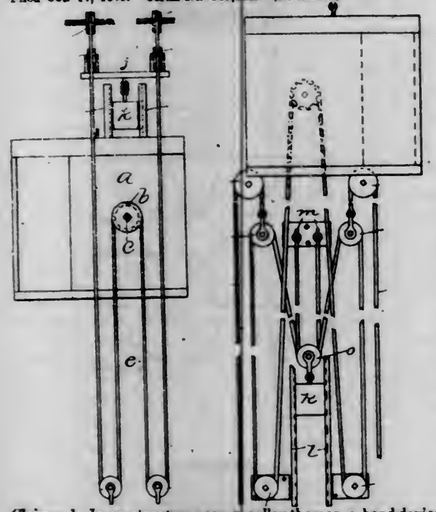


Claim.—1. A reel composed of two end pieces or caps, a drum or spool to which a line is attached between the caps, a shell having a guide-opening for the line surrounding the drum between the caps and adapted to rotate when the line is being wound upon the drum, and means for locking the shell against rotation in a direction opposite that in which the line is wound upon the drum.

2. In a reel, the combination of a spindle joining the end pieces or caps of the reel, a drum or spool to which the line is attached loosely mounted upon the spindle, a cylindrical shell provided with heads loosely mounted upon the drum, a slit in the shell through which the line passes, a pawl-and ratchet connection between one of the heads and one of the caps, and means for locking the drum to the spindle, substantially as described.

3. In a reel, the combination of a spindle joining the end pieces or caps of the reel, a drum or spool to which the line is attached loosely mounted, upon the spindle, a shell provided with heads loosely mounted upon the drum, a guide-opening for the line through the shell, and means for locking the drum and the shell to the spindle to prevent the line from running out, substantially as described.

569,129. ELEVATOR. CHARLES A. HARKNESS, Providence, R. I. Filed Oct. 17, 1895. Serial No. 565,855. (No model.)



Claim.—1. In an elevator, a car, a pulley thereon, a hand device for said pulley, two actuating-pulleys connected with the motor, guides on the wall of the hatchway out of the path of the car, a tension device traveling in said guides and having a pulley, and a controlling-line having its ends secured directly to the wall of the hatchway, and passing under the pulley of the tension device, around the said actuating-pulleys, and around the said pulley on the car.

2. In an elevator, a car, a hand device on the car for the controlling-line, two actuating-pulleys connected with the motor, stationary guides out of the path of the car, a tension device traveling in said guides and having a pulley, an idler pulley on the walls of the hatchway, and a controlling-line having its ends secured directly to the wall of the hatchway and passing under the pulley on the tension device, around the idler-pulley on the wall of the hatchway, from thence around the actuating-pulleys, and finally connected to the hand device on the car.

3. An elevator apparatus, comprising a car, a line traveling with the car, a hand device on the car for shifting said line, a movable door, and means coacting with the door for locking the line when the door is partially or entirely open.

4. In an elevator, a movable door, a controlling-line connected to and traveling with the car, and means coacting with the door to lock said line against movement relatively to the hatchway while the door is partially or entirely open, whereby creeping of the car is prevented.

5. In an elevator, a car, an operative line traveling with the car, and means in the hatchway for locking said line to the hatchway to prevent creeping of the car.

6. In an elevator, a car, an operative line traveling with the car, a movable door, a latch for said line mounted in the hatchway, and means mounted on said door and coacting with said latch whereby the latch locks the line to the hatchway when the door is partially or entirely open.

7. An elevator-controlling device, comprising a line traveling with the car, a movable latch mounted in the hatchway, a movable door, and means coacting with the door whereby the latch is engaged with the line only when the door is open.

8. An elevator-controlling device, comprising a line traveling with the car and provided with stops, a movable latch mounted in the hatchway, a door, and means coacting with the door for holding the latch out of engagement with the line except when the door is open.

9. An elevator-controlling device, comprising shifting means on the car, a chain connected therewith and traveling with the car, a movable latch in the hatchway, and a door, coacting with said latch whereby the latch is moved into engagement with the chain when the door is open.

10. An elevator-controlling device comprising an operative line traveling with the car, a supplemental chain mounted on the car and connected with the line-shifting means, a movable latch in the hatchway, and a door coacting with said latch whereby the latter is engaged with the links of the supplemental chain only when the door is open.

11. An elevator-controlling device, comprising a line traveling with the car for controlling the motor, means on the car for shifting the said line, a movable latch in the hatchway, and means mounted on the car independently of the said shifting means for connecting the line and the latch to stop the car.

12. An elevator-controlling device comprising a line traveling with the car for controlling the motor, means on the car for shifting the line, a movable latch in the hatchway, means with which the latch may engage, said means being operatively connected with the line and mounted on the car independently of the said shifting means, and a hand device for causing said latch to engage the last said means and thereby stop the travel of the car.

13. An elevator-controlling device comprising line-shifting means on the car, a line traveling with the car and provided with one or more stops, said line being connected with the said line-shifting means, a latch on the wall of the hatchway and means on the car for causing a positive engagement between said latch and the said line provided with stops as aforesaid, to stop the travel of the car.

14. An elevator-controlling device comprising line shifting means on the car, a line traveling with the car provided with one or more stops, and connected with the line-shifting means, a latch on the wall of the hatchway, and hand-operative means on the car for causing a positive engagement between the said latch and the said line, to stop the travel of the car.

15. An elevator-controlling device, comprising shifting means on the car, a chain connected therewith and traveling with the car, a movable latch in the hatchway, and hand-operative means on the car for moving said latch into engagement with the said chain.

16. An elevator-controlling device comprising shifting means on the car, a chain traveling with the car and connected with the shifting means, a movable latch mounted in the hatchway, and a hand-operative means, having as a part thereof a bow or cross-head for moving the latch into engagement with the chain.

17. An elevator-controlling device, comprising an operative line, means on the car for shifting the line to operate the car, secondary mechanism for stopping the car, and a single handle adapted to be connected to both said line shifting means and said secondary mechanism whereby either may be operated thereby.

18. An elevator-controlling device, comprising a controlling-line, a wheel or pulley on the car for shifting the line, a secondary mechanism for stopping the car, and a handle arranged to operate either the wheel or pulley or the stopping mechanism alternately, and in such way that when one is being operated the other is disengaged therefrom.

19. An elevator-controlling device, comprising an operative line, a latch for engaging the line, a wheel on the car for operating the line, a handle for the wheel and means for disengaging the handle and the wheel when the latch engages the line.

20. An elevator-controlling device, comprising an operative line, a latch in the hatchway for engaging said line, a wheel on the car for the operative line, a handle, and a clutch interposed between the handle and the wheel, whereby when the wheel is turned during the travel of the car by the engagement of the latch with the line, the handle is not turned but remains stationary.

21. An elevator-controlling apparatus, comprising an operative line, a latch, a wheel on the car for operating said line, means on the car for causing the latch to engage the line, and a handle connected to the said wheel and to the said means, for operating both of them.

22. An elevator-controlling device, comprising an operative line, a latch for engaging said line, a wheel on the car for operating the line, means on the car for causing the latch to engage the line, a handle connected with the said means, and a clutch interposed between the handle and the wheel.

23. As a means for locking the controlling-line of an elevator, a movable door having an arm secured thereto, and a pivoted weighted latch directly engaged by the arm on the door, whereby it is held out of its locking position, and being adapted to swing to its locking position when the door is partially or entirely open.

24. As a means for locking the controlling-line of an elevator, a movable door provided with an arm which moves therewith, a weighted latch pivoted to normally swing into its locking position, but engaged by the arm of the door and held out of its locking position by the said arm when the door is closed, said arm moving as aforesaid with the door, whereby the latch swings into its locking position when the door is partly or entirely open.

25. An elevator-controlling device comprising an operative line, a latch for engaging said line, a wheel on the car for operating the line, a tubular shaft for said wheel, means on the car for causing the latch to engage the line, a rod passing through the tubular shaft for operating said means, a handle pivoted to a collar loose on the shaft, and having the said rod secured thereto, and a clutch interposed between the handle and the tubular shaft.

26. A lock for a door, consisting of toggle-levers pivoted to the door and to a stationary support and arranged to have their pivots in a straight line when the door is closed, and a stop carried by one of the levers for engaging the other lever for the purpose set forth.

27. A lock for a door, consisting of two pivoted levers, one having its outer end pivoted to the rear edge of the door, and the other having its outer end pivoted to the wall in the rear of the door, whereby said levers are out of the way behind the door when the latter is opened, and a stop carried by one lever for engaging the other lever to hold them with their pivots in a straight line.

28. A lock for a door, consisting of toggle-levers pivoted to the door and to a stationary support, and arranged to have their pivots in a straight line when the door is closed, a handle pivoted on the door, a lever for moving the toggle-levers so that the door may be opened, and a link connecting the handle on the door and the said lever.

29. A lock for a door, consisting of toggle-levers pivoted to the door and to a stationary support, and arranged to have their pivots in a straight line when the door is closed, a handle pivoted on the door, a lever arranged to have a portion under one of the toggle-levers to lift it, and a link connecting the handle and the said lever.

30. The combination with the door and the toggle-levers pivoted together, of stops on the adjacent ends of said levers, and a spring interposed between said stops.

31. The combination with a movable door, and two toggle-levers for locking said door, and pivoted to the door and to a stationary support, a vertically-movable bar connected with one of said levers, and a lock for said bar adapted to be moved out of the path of the said bar by the car, so as to allow the door to be opened.

32. The combination with a door, and a lock for said door, of a mechanism for locking the said lock from being actuated, and having a portion extending out into the path of the car, whereby it may be positively engaged by said car, and mechanically disengaged by the car from the said lock.

33. The combination with a door, and a lock for said door, of mechanism for locking the said lock from being actuated, said mechanism having as a part thereof a cross-head mechanically connected to said lock mechanism adapted to be directly and positively engaged by the car, for mechanically disengaging the mechanism from the lock.

569,180. COMBINED GAME APPARATUS AND CIGAR-CUTTER. ELMER J. HAVERLY, Sayre, Pa. Filed Feb. 3, 1896. Serial No. 577,848. (No model.)



Claim.—1. The combination of a casing, a spindle journaled therein, a disk loosely mounted upon the spindle and having its periphery marked with a series of distinguishing marks, a ratchet-wheel rigidly attached to the spindle, a spring-pressed pawl pivoted to the face of the disk engaging the ratchet-wheel, a push-rod connected with the spindle to give it a turn in one direction and then release it, and means substantially as described for giving the spindle a backward turn when released whereby a rotary impulse shall be imparted to the disk.

2. The combination of a casing, a spindle journaled therein, a disk loosely mounted upon the spindle, a ratchet-wheel and pawl arranged to impart motion from the spindle to the disk, a coiled spring having its ends attached to the spindle and to the casing, and means substantially as described for rotating the spindle to wind up the spring and for releasing the spindle so that the spring may act to turn the spindle backward and give a rotary impulse to the disk.

3. The combination of a casing, a spindle journaled therein, a disk loosely mounted upon the spindle and having its periphery marked with a series of distinguishing signs, a ratchet-wheel and pawl arranged to impart motion from the spindle to the disk, means for turning the spindle in one direction, a coiled spring for turning the spindle in the opposite direction to give motion to the disk when the spindle is released, and a stop device attached to the spindle, said stop device and ratchet-wheel being so arranged relatively as to cause some one of the distinguishing signs upon the periphery of the disk to register with an opening in the casing when the disk comes to rest.

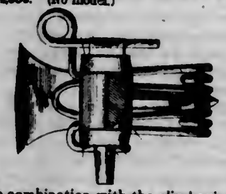
4. The combination of a casing, a spindle journaled therein, the disk *d* mounted upon the spindle and adapted to be driven thereby, the ratchet-wheel or pinion *m* rigidly attached to the spindle, a push-rod *p* passing through a hole in the casing and prevented from turning therein, a pawl *n* coupled to the inner end of the push-rod and free to swing therefrom against the ratchet-wheel, the pawl being provided with teeth to engage the ratchet-wheel and a blank portion between the teeth and coupling-point to release the spindle when the rod *p* is pushed in, and a spring acting to throw the push-rod out.

5. In combination, a driving-spindle, a disk loosely mounted upon the spindle, a ratchet-wheel rigidly attached to the spindle and a pawl pivoted to the disk and adapted to engage the teeth of the ratchet-wheel, said pawl being extended outwardly from its pivot-point and provided with a pin *k* to which is hinged the free end of a spring *i* so that when the pawl is turned sufficiently away from the ratchet-wheel the spring will cease to act upon it, and the pawl will remain out of engagement with the ratchet-wheel, the disk then remaining unaffected by the turning of the spindle.

6. The combination of a casing, a spindle journaled therein, means for driving the spindle, a disk loosely mounted upon the spindle, a ratchet-wheel and pawl arranged upon one side of the disk to impart motion from the spindle to the disk, a groove in the spindle upon the opposite side of the disk, and a spring attached to the disk and engaging said groove substantially as described and for the purpose set forth.

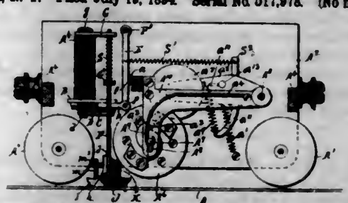
7. The combination in a casing A provided with the openings *a* and *a'* of the spindle *c* journaled in sockets in the heads of the casing, disk *d* of the character described loosely mounted upon the spindle and actuated thereby through the pawl *f* and ratchet-wheel *e*, a ratchet wheel or pinion *m* secured to the spindle and driven by the weighted pawl *n* and push-rod *p*, the spring *s* for returning the push-rod and pawl to place, the spring *u* for giving the spindle a backward turn when the cut away portion *n'* of the pawl *n* releases the ratchet-wheel *m*, and a cutter-blade *w* adapted to pass across the opening *a* secured to the spindle as shown and provided with a projection *w'* adapted to strike against a pin *x* to limit the backward motion of the spindle, the pin *x* and ratchet-wheel *e* being so arranged relatively as to cause some one of the distinguishing marks upon the periphery of the disk *d* to register with opening *a'* when the disk comes to rest.

569,181. THILL-COUPLING. PORTER C. HAYES, Burgh Hill, Ohio, assignor of one-half to Samuel W. Sigler, same place. Filed Jan. 4, 1896. Serial No. 574,239. (No model.)



Claim.—The combination with the clip having parallel ears, the thill-iron, and the bolt having its head provided with a transverse groove, of the spring having a curved or bowed portion located between said ears, two lower coils, and upward extension passed over one of said ears and having a bent or curved end bearing against the periphery of one end of said bolt, said spring at its other end being extended upwardly and twisted to form a third coil from which extends a downwardly-projecting arm designed to fit in the groove of said bolt-head, substantially as set forth.

569,182. MECHANICAL MOVEMENT. GEORGE W. HEY, Syracuse, N. Y. Filed July 19, 1894. Serial No. 517,978. (No model.)



Claim.—1. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter;

of a vertically and laterally movable rotary feeler provided with a tip-piece for engaging the flaps of the envelops of the mail-matter, connected to the catch for forcing the same from operative position, and a feed for feeding the letters to the feeler, substantially as and for the purpose described.

2. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler provided with a tip-piece for engaging the flaps of the envelops of the mail-matter, a feed for feeding the letters to the feeler, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose specified.

3. The combination with a printing device and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers provided with a tip-piece for engaging the flaps of the envelops of the mail-matter, a feed for feeding the letters to the feelers, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as and for the purpose set forth.

4. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler for engaging the flaps of the envelops of the mail-matter, a feed for feeding the letters to the feeler, a pivoted link D connected to the bar F, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose described.

5. The combination of a printing device and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers for engaging the flaps of the envelops of the mail-matter, pivoted links D G connected to the bars F F, a feed for feeding the letters to the feelers, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as and for the purpose set forth.

6. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable rotary feeler for engaging the flaps of the envelops of the mail-matter, connected to the catch for forcing the same from operative position, a tip projecting in advance of the feeler for engaging the mail-matter, and a feed for feeding the letters to the feeler and tip, substantially as and for the purpose described.

7. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable rotary feeler for engaging the flaps of the envelops of the mail-matter, connected to the catch for forcing the same from operative position, a tip of less width than the feeler projecting in advance of the feeler for engaging the mail-matter and a feed for feeding the letters to the feeler and tip, substantially as and for the purpose specified.

8. The combination with a printing device and a catch for holding the printing device out of the path of the mail-matter; of a vertically and laterally movable bar F having a rotary feeler for engaging the flaps of the envelops of the mail-matter, a tip projecting in advance of the feeler for engaging the mail-matter, a feed for feeding the mail-matter to the feeler and tip, a crank C operated by the bar F, and a movable bar *b* connected to said crank and catch for forcing the catch from operative position, substantially as and for the purpose described.

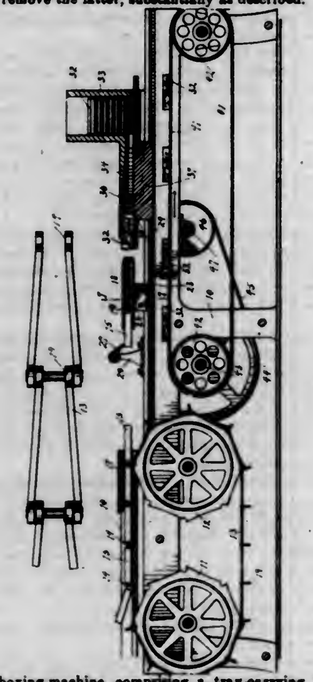
9. The combination with a printing device and a bar E carrying a catch for holding the printing device out of the path of the mail-matter; of oppositely-arranged vertically and laterally movable bars F F having rotary feelers for engaging the flaps of the envelops of the mail-matter, a tip projecting in advance of the feeler for engaging the mail-matter, a feed for feeding the mail-matter to the feeler and tip, cranks C C operated by the bars F F, and a movable bar *b* connected to said cranks and bar E for forcing the catch from operative position, substantially as set forth.

10. The herein-described feeler provided with a tip-piece projecting in advance of its engaging edge, substantially as and for the purpose set forth.

11. A feeler provided with a tip piece projecting in advance of its engaging edge and formed of less width than said engaging edge, substantially as and for the purpose set forth.

569,133. BOXING-MACHINE. WILLIAM F. HUTCHINSON, New York, N. Y. Filed Oct. 26, 1895. Serial No. 566,817. (No model.)

Claim.—1. A boxing-machine, comprising a reciprocating tray-carrying holder, means for delivering a tray to the holder at one end of its stroke, means for delivering a shuck upon the holder at the opposite end of its stroke, and mechanism to force the tray into the shuck and remove the latter, substantially as described.



2. A boxing-machine, comprising a tray-carrying holder and shuck-carriage movable back and forth in relation to each other, the tray-holder being adapted to receive a shuck at one end, and the carriage being arranged to deliver the shuck upon the holder, and mechanism to force the tray into the shuck and remove the latter, substantially as described.

3. A boxing-machine, comprising a tray-carrying holder and shuck-carriage movable back and forth in relation to each other, the holder being adapted to receive a tray at one end of its stroke, and the carriage being arranged to deliver a shuck upon the holder on the return stroke of the latter, and automatic feeding devices to supply the holder with trays and the shuck-carriage with shucks, substantially as described.

4. The combination with a tray-holder having one end shaped to engage a shuck, of the shuck-carriage, means for delivering shucks to the carriage, and the shaping-spout having inclined side and top walls, substantially as described.

5. The combination with the hopper having a discharge-spout with inclined walls, of the shuck-carriage reciprocating beneath the spout and hopper, and mechanism for entering a tray in the shuck as it leaves the spout, substantially as described.

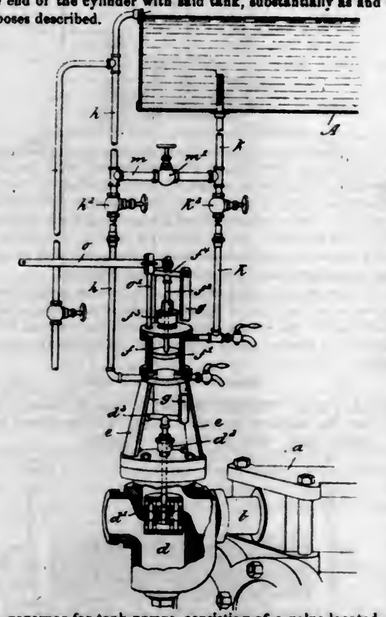
6. In a boxing-machine, the combination of the reciprocating tray-holder, means for delivering a shuck over the holder at one end of its stroke, and the swinging abutment-pawl hanging above the holder and in the path of the shuck and tray carried thereby, the pawl being free to swing in one direction and serving as a rigid abutment in the opposite direction whereby it pushes the tray and wrapper from the tray-holder, substantially as described.

7. The combination with the shuck-hopper and the shuck-carriage reciprocating beneath the hopper and arranged to discharge shucks therefrom, of a shaping-guide operating by external pressure on the shucks to open them, and mechanism for entering the trays in the shucks as the shucks are discharged, substantially as described.

8. The combination with the reciprocating tray-holder and mechanism for placing the tray in the shuck, of a guide and feed mechanism to feed trays to the tray-holder, said guide and feed mechanism comprising a traveling chain with abatments thereon, mechanism for imparting an intermittent movement to the chain, and a bridge extending across the chain top, substantially as described.

569,134. TANK-PUMP GOVERNOR. GEORGE H. IMMENDORF and AXEL H. ENGSTROM, Philadelphia, Pa.; said Engstrom assignor to said Immendorf. Filed Jan. 30, 1896. Serial No. 576,074. (No model.)

Claim.—1. A governor for tank-pumps, consisting of a valve located on the steam-supply to the pump, a cylinder, a piston traversing said cylinder and connected with said valve, a stand-pipe leading to one end of said cylinder and opening into the tank at its other end at a height above the normal height of water in said tank, an overflow-pipe connected to said stand-pipe at a height corresponding to the normal height of water in the tank, and a pipe connecting the opposite end of the cylinder with said tank, substantially as and for the purposes described.



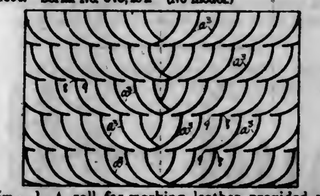
2. A governor for tank-pumps, consisting of a valve located on the steam-supply to the pump, a cylinder, a piston traversing said cylinder and suitably connected with said valve, a stand-pipe leading to one end of said cylinder and filled with water to a height corresponding to the height of water required in the tank, and a pipe connecting the opposite end of the cylinder with the tank, whereby said piston is operated by variations in pressure of the water in the tank and thereby through its connections regulates the steam supply to the pump, a branch pipe connecting said stand-pipe and tank-pipe together and a valve controlling said branch pipe and adapted when opened to equalize the pressures in the stand and tank pipes, substantially as and for the purposes described.

569,135. KITCHEN-TABLE. HENRY A. JACKSON, Washington, D. C. Filed Jan. 21, 1896. Serial No. 576,323. (No model.)



Claim.—The combination with a table provided with one or more longitudinal slots or openings in its top near one side thereof, a flange or raised portion extending entirely around said slots or openings, and a supplemental frame or platform secured to the legs thereof, and provided with a longitudinal back piece of one or more removable slides or boards extended vertically through said slots or openings and having shoulders adapted to rest on said flange or raised portion, whereby said boards are suspended in said slots, substantially as set forth.

569,136. PUTTING-OUT ROLL. ALBERT F. JONES, Salem, Mass., assignor to the Vaughn Machine Company, Portland, Me. Filed Jan. 14, 1896. Serial No. 575,484. (No model.)



Claim.—1. A roll for working leather provided with circular blades or vanes arranged in longitudinal or axial rows, each row of circular blades having a plurality of blades on one side of a transverse line through the roll curved in one direction and a plurality of blades on the other side of the said transverse line curved in an opposite direction, substantially as described.

2. A roll for working leather provided with circular blades arranged on the roll with the upper end of one circular blade contiguous to the lower end of another circular blade whereby a plurality of the continuous circular blades encircle the roll in the form of a substantially continuous scalloped blade extended from a transverse line through the roll toward its end, substantially as described.

3. A roll for working leather provided with circular blades or vanes arranged in longitudinal or axial rows with a plurality of blades or vanes in each row of substantially the same radius, substantially as described.

4. A roll for working leather provided with a plurality of longitudinal or axial rows of circular blades or vanes, the vanes comprising each of said rows being made in arcs of circles of substantially the same radius, and the vanes of adjacent rows being formed on the cylinder with the lower ends of an upper circular blade extended by the upper end of a lower circular blade, substantially as described.

5. A roll for working leather provided with circular blades or vanes arranged in longitudinal or axial rows, each row being composed of two sets disposed on opposite sides of a transverse line through the roll and extending at an angle opposite to that of the other set in the same row, the circular blades of one row being arranged on the cylinder with relation to the circular blades of the next adjacent row, so that the lower portion of a circular blade in an upper row may act on the hide or skin in a different direction from the upper portion of a circular blade in the next adjacent row, substantially as described.

6. A roll for working leather consisting of a cylindrical body provided with a plurality of circular blades arranged in longitudinal or axial rows, with the circular blades of each row curving in opposite directions from a line transversely through the roll, the lower portion of the circular blades on one side of the said transverse line being nearer together than the upper portions of the same circular blades, substantially as described.

569,137. METER. FRANK LAMBERT, Brooklyn, N. Y., assignor of one-half to Joseph W. Kay, same place. Filed Feb. 6, 1895. Serial No. 537,464. (No model.)



Claim.—1. In a meter of the nutating type a hollow piston, provided with means for preventing the passage through said piston of the actuating flow, substantially as described.

2. In a meter of the nutating type, a hollow piston having a transverse wall or partition closing the passage through said piston of the actuating flow.

3. In a meter, the combination with a piston-chamber, and a hollow nutating piston made in sections, of a central spindle connecting the top and bottom sections of the ball supported by the piston, and an obstruction-piece for preventing the passage of a liquid through the hollow space of the piston, substantially as specified.

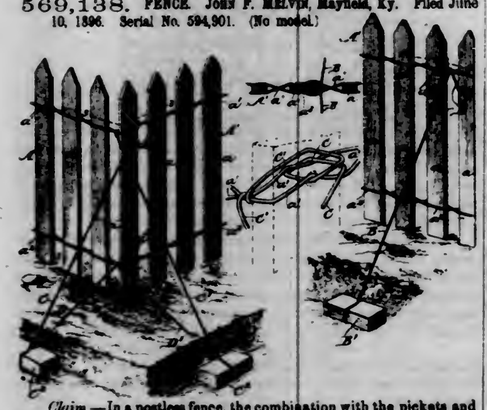
4. In a meter, the combination with a piston-chamber and a diaphragm, of a nutating piston the plates forming the piston being inclined toward each other at their outer or peripheral portions and there being a hollow space between the plates at their outer or peripheral portions, substantially as specified.

5. In a water-meter, the combination with a piston-chamber, a diaphragm and registering mechanism, of a piston formed of an inner

plate and outer plates free to slide at their outer edges upon one another, substantially as specified.

6. In a meter, the combination with a piston-chamber and a diaphragm of a hollow nutating piston, made in sections a ball made in sections carried by the piston a central spindle or screw passing through the ball-sections, internal ribs or lugs for supporting the sections of the piston and means for preventing the passage of the liquid through the hollow space of the piston, substantially as specified.

569,138. FENCE. JOHN F. MELVIN, Mayfield, Ky. Filed June 10, 1896. Serial No. 594,901. (No model.)



Claim.—In a postless fence, the combination with the pickets and their intertwisted upper and lower wires a a^3, forming the sections of the fence; of bracing-wires C C' for said sections at their ends extending through apertures in the top of the end picket, the wire C being passed around the back of said picket, thence forwardly and downwardly, and the wire C' being extended around the front of said picket, thence downwardly and outwardly, crossing said former wire, the lower ends of said wires being connected directly with anchors buried in the ground, wires D D' connecting the lower end of said end picket directly with said anchors, and additional bracing-wires B connecting the tops of certain pickets between the ends of the fence-section with anchors buried in the ground as and for the purpose set forth.

569,139. BUNSEN BURNER. EUGÈNE MOREAU and SIDNEY MASON, Philadelphia, Pa., assignors to George A. Myers & Co., Baltimore, Md. Filed June 18, 1896. Serial No. 594,900. (No model.)



Claim.—1. A Bunsen burner having therein a diaphragm provided with a series of openings symmetrically arranged, and an occluding-plate having a plurality of series of openings arranged correspondingly to the openings in the diaphragm, whereby by rotating the plate any desired number of the openings in each of the series may be caused to register with the respective openings in the diaphragm to admit the desired quantity of gas, or the supply of gas may be entirely cut off, substantially as described.

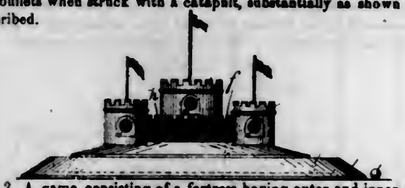
2. A Bunsen burner comprising a tube having a slot extending from the bottom thereof a short distance upward, openings extending from the sides of the slot, a diaphragm located adjacent to the openings, and a rotating occluding-plate having an extension, the extension being received by the openings, as the plate rotates, substantially as described.

3. A Bunsen burner comprising a tube having a slot extending from its lower end a short distance upward, side openings extending from the slot, a thimble having its upward end formed by a diaphragm having openings therein, a lug on the thimble entering the slot in the tube, and a rotating occluding-plate having an extension, substantially as described.

4. A Bunsen burner comprising a tube having a slot extending from its lower end a short distance upward, side openings extending from the slot, a thimble having its upper end formed by a diaphragm having openings therein, a lug on the thimble entering the slot in the tube, a rotating occluding-plate having an extension, and a cap inclosing the lower end of the tube, substantially as described.

569,140. GAME-BOARD. ALEXANDER HURICK, Pittsburg, Pa. Filed Mar. 16, 1896. Serial No. 583,287. (No model.)

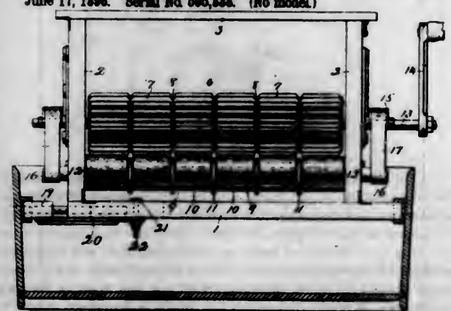
Claim.—1. In a game, the representation of a fortress having corner-towers, and a center tower, and inner and outer bastion inclined at different angles, a ditch or foss between the two bastions, shutters hinged in the towers and sides of the fortress, said shutters being provided with apertures leading to pockets adapted to receive the bullets when struck with a catapult, substantially as shown and described.



2. A game consisting of a fortress having outer and inner bastions, inclined at different angles, a foss surrounding the inner bastion, towers and side walls forming the fortress proper, said towers having a socket to receive a flagstaff and the towers and side walls provided with hinged shutters having apertures leading to pockets, having spring-hinges adapted to receive the bullets when shot into the same by a catapult, substantially as shown and described.

3. In a game, a representation of a fortress, having towers and shot-holes and bastions of different angles, a catapult, a bullet propelled thereby and received by the bastions and directed to the main body of the fortress, tower or shot-hole, as and for the purpose described.

569,141. WASHING-MACHINE. JOHN H. STEWART, Williamsport, Pa., assignor of one-half to Joseph Vanbuskirk, Dubois, Pa. Filed June 17, 1896. Serial No. 595,838. (No model.)



Claim.—A washing-machine having an adjustable bed plate, slotted standards hinged to the bed-plate, devices separably uniting said standards at the top, a bed formed of short rotary sleeves turning rods bearing in said standards, stationary disks between said sleeves, a main roller journaled in said slots above the rotary bed and provided with longitudinal flutings and also with circumferential slots at points opposite said stationary disks, means for turning the main roller, and an elastic connection between the journals of the main roller and lugs adjustably fixed to the standards below said roller, substantially as described.

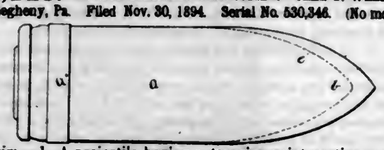
569,142. MEAT-HANGER. LAWRENCE S. TRAVERS, Palmyra, N. Y., assignor of two-thirds to George R. Brown, same place, and William A. Judd, Clifton Springs, N. Y. Filed July 29, 1895. Serial No. 557,490. (No model.)



Claim.—1. A meat-hook comprising a single piece of spring material the central portion of which is formed into a resilient supporting-bend, and the remaining portion is formed into a frame, the tip end of each side of which is pointed, a portion of each arm of the frame adjacent its end being doubled back upon itself and forming a narrow recess or space between it and the side, and the portion between the said doubled portion and the tips being inclined inwardly, whereby the tips are caused to normally stand near each other, and the tips, the inclined, and the doubled portions and the sides of the frame all lying in the same plane, substantially as set forth.

2. A meat-hanger composed of a wire body with integral prongs having shoulders, and a space below the shoulders to support the weight of the meat.

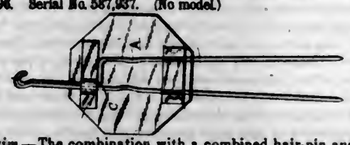
569,143. ARMOR-PIERCING PROJECTILE. CHAS. Y. WHEELER, Allegheny, Pa. Filed Nov. 30, 1894. Serial No. 530,346. (No model.)



Claim.—1. A projectile having a tapering-point portion or forward end formed of an integral body of metal, the outer surface metal of which is unhardened, while the interior body back of such surface metal and conforming substantially to the desired projectile outlines is hardened, substantially as set forth.

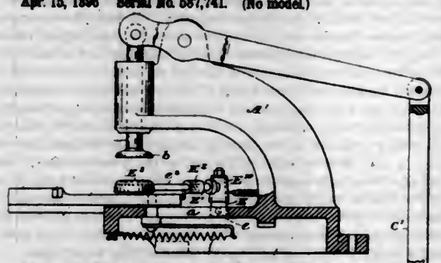
2. The method of forming projectiles consisting in forming a steel projectile, then hardening the forward end for a considerable depth into the body portion, and then drawing the temper from the surface metal of the forward end, so as to leave the projectile with the covering of unhardened surface metal and an interior body back thereof which is hardened, substantially as and for the purposes set forth.

569,144. HAIR-PIN AND BUTTON-HOOK. BEN WHITELEY, Sterling, Colo., assignor of one-half to I. N. Ford, same place. Filed Apr. 17, 1896. Serial No. 587,937. (No model.)



Claim.—The combination with a combined hair-pin and button-hook formed of a single piece of wire and having a lateral portion, of a device to which it is designed to be connected, the same having guides in which the pin portion is received and guided, substantially as shown and described.

569,145. EMBOSSING-MACHINE. FRANK YOUNG and WILLIAM RAUH, New York, N. Y., assignors to Kahn & Levy, same place. Filed Apr. 15, 1896. Serial No. 587,741. (No model.)



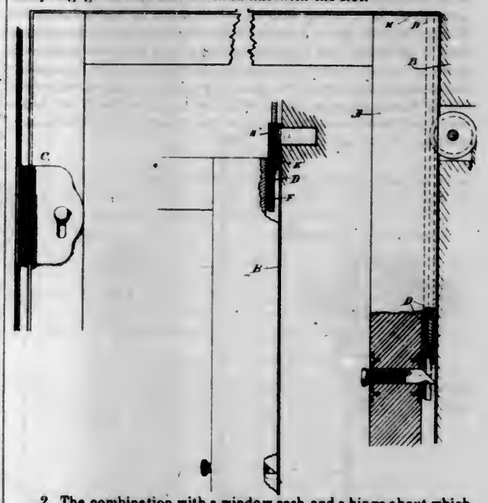
Claim.—1. The combination, with a vertical plunger and operating-lever, of an independent pivoted spring-controlled gas-burner normally stationed under the same, and of a reciprocating carriage constructed and arranged to be manually pushed inward and normally thrown out by a spring, and provided with means to engage the said gas-burner, whereby the spring-controlled gas-burner may be pushed to one side of the plunger-support, when the carriage is in an inward position.

2. The combination, with a vertical plunger and operating-lever, of a spring-controlled gas-burner normally located under the same and provided with an automatic gas-cock controlled by the movement of the burner, and of a reciprocating carriage constructed and arranged to be manually pushed inward and normally thrown out by a spring, whereby the spring-controlled gas-burner may be pushed one side and the supply of gas checked when the said carriage is in an inward position.

3. The combination, with a vertical plunger and operating-lever, of an independent pivoted spring-controlled gas-burner normally stationed under the same, and of a reciprocating carriage provided with a platen constructed and arranged to be manually pushed inward and normally thrown out by a spring, and provided with means to engage the said gas-burner, whereby the spring-controlled gas-burner may be pushed to one side of the plunger, and whereby the carriage-platen and the gas-burner may alternately be brought under the die.

569,146. ADJUSTABLE SLIDING AND SWINGING WINDOW-SASH. EDWARD S. BARNEY, San Francisco, Cal., assignor of one-third to A. T. Dewey, same place. Filed Jan. 27, 1896. Serial No. 576,932. (No model.)

Claim.—1. The combination with a window-sash, of a cord-retainer vertically slidable between the sash and the casing, said retainer having a slot or catch and a bevel-pointed latch slidable through the sash at right angles with its line of travel, and adapted to automatically engage the retainer when in line with the slot.



2. The combination with a window-sash and a hinge about which it is turnable out of its line of travel, of a cord-retainer vertically slidable between the edge of the sash and the casing, having a slot, a transversely-slidable spring-actuated bolt upon the sash, the point of which is formed to automatically engage the cord-retainer, and a locking-notch on the bolt to prevent its being withdrawn until the sash is relieved of the pull of the weights.

3. The combination with a window-sash, of a cord-retainer vertically slidable between the edge of the sash and the casing having its upper end adapted to contact with a stop on the casing when the sash is at the top of its vertical travel, whereby the sash is relieved of the pull of the weights, a transversely-sliding bolt movable on the sash with its point adapted to automatically engage a slot in the cord-retainer when in line therewith, and a notch in the bolt which locks it in engagement with the retainer, and prevents its withdrawal until the retainer contacts with the stop and allows the sash to move upward enough to disengage the lock.

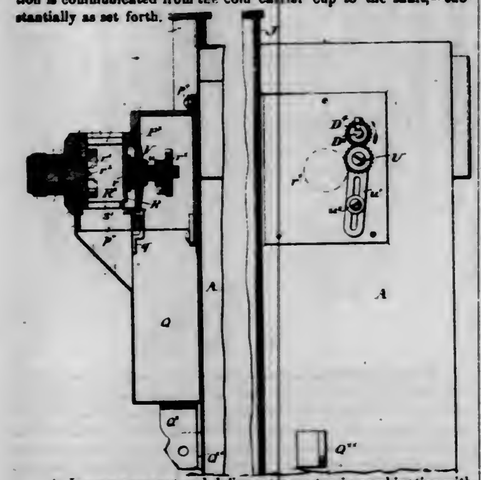
4. The combination, with a window-sash, a cord-retainer vertically slidable between the sash and the casing and means for engaging and locking the retainer, of a removable stop H' adapted to be secured at various points on the casing, having a curved end through which the weight-cord is slidable and against which the retainer is arrested when released from its locking means.

569,147. PREPAYMENT SALE AND DELIVERY MECHANISM. JOHN DELANEY, Philadelphia, Pa., assignor to Holme & McIlhenny, same place. Filed Nov 14, 1895. Serial No. 568,910. (No model.)

Claim.—1. In combination with a gas meter provided with an inlet pipe and an outlet pipe, a valve casing or boxing mounted upon the interior of the meter casing, an inlet opening in the wall of the meter casing, leading from the inlet pipe to the interior of the valve casing, an opening leading from the valve casing to the gas-measuring mechanism of the meter, a valve controlling said last mentioned opening, means for operating said valve, and a plate mounted within the valve casing in the vicinity of the wall in which the inlet opening is formed and extending past said inlet opening,—substantially as set forth.

2. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a cylindrical coin carrier cup mounted free for rotation in the vicinity of said shaft, and controlling the same, a cylindrical driving cup mounted in nested relationship with respect to said coin carrier cup, and adapted for rotation in both directions, a slot in the exterior cup, a slot in the interior cup adapted to be placed in registry with the first named slot, means provided in the first named cup for arresting a coin in its descent, the arrangement being such that the arrested coin operates to lock or latch the two cups together, a casing inclosing said cups and embodying a coin slot, one of said cups having a stud or shaft extending to the exterior of the casing, a handle mounted on said stud or shaft, and stops which limit the throw of said handle in both directions, substantially as set forth.

3. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, and controlling the same, a driving cup mounted in nested relationship with respect to said coin carrier cup, a slot in the exterior cup, a slot in the interior cup adapted to be placed in registry with the first named slot, means provided in the interior cup for arresting a coin in its descent, the arrangement being such that the arrested coin operates to lock or latch the two cups together,—means for supporting said cups, and means for imparting manual rotation directly to one of them, and means for adjusting the gearing through which motion is communicated from the coin carrier cup to the shaft,—substantially as set forth.



4. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup, mounted free for rotation in the vicinity of said shaft, and adapted to co-mmunicate motion to it, a coin slot formed in the wall of the cup, a driving cup mounted in nested arrangement with and free for rotation with respect to, said coin carrier cup, a coin slot formed in the wall of said cup, a pin mounted in the base of one of said cups and a device for arresting a coin in its descent, mounted in the other of said cups, a casing in which said cups are mounted, and a coin receiving compartment or box,—substantially as set forth.

5. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft and adapted to communicate motion to it, a coin slot formed in the wall of the cup, a device in the center of the cup, adapted to arrest a coin in its descent through the cup, a cup mounted in nested arrangement with and free for rotation with respect to, said coin carrier cup, a coin slot formed in the wall of said cup a pin mounted in the base of the last mentioned cup, a casing in which the said cups are mounted, and a coin receiving compartment or box,—substantially as set forth.

6. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, gearing connective of said cup and said shaft, two coin slots formed respectively in diametrically opposite sides of said cup, a slotted boss in the center of said cup, adapted to arrest a coin in its descent, a driving cup mounted in nested arrangement with and free for rotation with respect to said coin carrier cup, two coin slots formed respectively in diametrically opposite sides of said cup, a pin mounted in the base of the last mentioned cup adapted to encounter a coin supported in the first mentioned cup, a casing in which said cups are mounted, a handle for operating the cups, and a coin receiving compartment, substantially as set forth.

7. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, gearing connective of said cup and said shaft, two coin slots formed respectively in diametrically opposite sides of said cup, a slotted boss in the center of said cup, adapted to arrest a coin in its descent, a driving cup mounted in nested arrangement with and free for rotation with respect to said coin carrier cup, two coin slots formed respectively in diametrically opposite sides of said cup, one of said slots being too small to admit a coin of the size required to operate the apparatus, a pin mounted in the base of the last mentioned cup adapted to encounter a coin supported in the first mentioned cup, a casing in which said cups are mounted, a handle for operating the cups, and a coin receiving compartment,—substantially as set forth.

8. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, gearing connective of said cup and said shaft, two coin slots formed respectively in diametrically opposite sides of said cup, a slotted boss in the center of said cup, adapted to arrest a coin in its descent, a driving cup mounted in nested arrangement with and free for rotation with respect to said coin carrier cup, two coin slots formed respectively in diametrically opposite sides of said cup, a pin mounted in the base of the last mentioned cup adapted to encounter a coin supported in the first mentioned cup, a casing in which said cups are mounted, a coin receiving slot formed in said casing with which slots in the cups are adapted to be brought into registry, a coin delivery opening formed in the lower portion of said casing, a handle for operating the cups, and a coin receiving compartment, substantially as set forth.

9. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, gearing connective of said cup and said shaft, two coin slots formed respectively in diametrically opposite sides of said cup, a slotted boss in the center of said cup, adapted to arrest a coin in its descent, a driving cup mounted in nested arrangement with and free for rotation with respect to said coin carrier cup, two coin slots formed respectively in diametrically opposite sides of said cup, a pin mounted in the base of the last mentioned cup adapted to encounter a coin supported in the first mentioned cup, a casing in which said cups are mounted, a handle for operating the cups, stops for limiting the throw of the handle one of said stops arresting said handle at the point in its travel when it has carried the driving cup into such position that its receiving slot is in registry with the receiving slot of the casing, and a coin receiving compartment,—substantially as set forth.

10. In a prepayment and delivery apparatus, in combination with a shaft the rotation of which controls the delivery of merchandise, a coin carrier cup mounted free for rotation in the vicinity of said shaft, gearing connective of said cup and said shaft, two coin slots formed respectively in diametrically opposite sides of said cup, a slotted boss in the center of said cup, adapted to arrest a coin in its descent, a driving cup mounted in nested arrangement with and free for rotation with respect to said coin carrier cup, two coin slots formed respectively in diametrically opposite sides of said cup, one of said slots being too small to admit a coin of the size required to operate the apparatus, a pin mounted in the base of the last mentioned cup adapted to encounter a coin supported in the first mentioned cup, a casing in which said cups are mounted, a coin receiving slot formed in said casing with which slots in the cups are adapted to be brought into registry, a coin delivery opening formed in the lower portion of said casing, a handle for operating the cups, stops for limiting the throw of the handle, one of said stops arresting said handle at the point in its travel where it has carried the driving cup into such position that its receiving slot is in registry with the receiving slot of the casing, and a coin receiving compartment,—substantially as set forth.

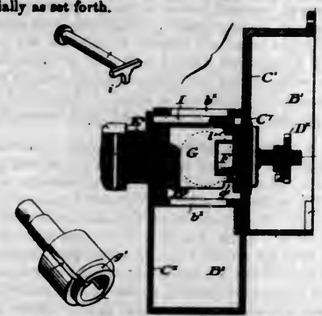
11. In a prepayment and delivery mechanism, in combination with a main casing, a supplemental casing attached to the main casing at its top and bottom and open at the lower side, and containing mechanism adapted to receive a coin and to deliver it through the open lower side of said supplemental casing, a coin box or receptacle, the upper end of which is open so that the coin box and supplemental casing are adapted to be arranged with the edge of the one overlapping the edge of the other, keepers adapted to secure the box and casing in this relation, and a lock engaged with lugs mounted respectively upon the main casing and supplemental casing, substantially as set forth.

12. In combination with the valve casing, the valve seat, the valve arm, and the valve pivotally supported on said arm, a projection mounted on said arm and arranged to make contact with the valve near the margin thereof, substantially as set forth.

569,148. PREPAYMENT SALE AND DELIVERY MECHANISM.

JOHN DELANEY, Philadelphia, Pa., assignor to Helme & Mellhenny, same place. Filed Apr. 16, 1896. Serial No. 587,817. (No model.)

Claim.—1. In a coin controlled or operated apparatus, in combination, a casing embodying a slot, a coin cup or device mounted in said casing, embodying a coin slot, and adapted to be moved to a position in which the coin-receiving end of its slot is in registry with the slot in the casing, a bar adapted for longitudinal movement along said slot to a position in which it closes said slot, and means for temporarily securing said bar in its slot closing position, at such times as the coin receiving end of the cup slot is out of registry with the casing slot, and enabling its movement to expose the casing slot when the coin-receiving end of the cup slot is in registry with said casing slot, substantially as set forth.



2. In a coin controlled or operated apparatus, in combination, a casing embodying a slot, a coin cup or device, mounted in said casing, embodying a coin slot, and adapted to be moved to a position in which the coin receiving end of its slot is in registry with the slot in the casing, a device mounted on the casing and adapted to be moved to different positions of adjustment in one of which positions it closes the casing slot and in another of which it exposes said slot, means for securing said device in its closing position, and a shear plate mounted upon said bar and in contact with the wall or portion of the apparatus in which the slot is formed, the said shear plate being in the movement of the bar carried along the under edges of the slot in a direction transverse to the length of any article presented through the slot, and exercising a shearing action in connection with the edges of the slot, substantially as set forth.

3. In a coin controlled or operated apparatus, in combination, a casing embodying a slot, an operating bar or shaft a handle bar having a handle, mechanism rendered capable upon receiving a coin dropped through said slot, of being operated by the movement of the handle, a closing bar mounted in the casing and adapted to be moved into and out of a position in which it closes the slot, and so arranged as, when moved out from the slot, to engage with and prevent the movement of the handle, substantially as set forth.

4. In a coin controlled or operated apparatus, in combination, a casing embodying a slot, an operating bar or shaft, a handle bar having a handle, a coin block or cup mounted on the operating bar, a coin block or cup mounted on the handle bar, slots formed in said cups adapted to receive a coin, a circumferential groove formed in one of said cups, a closing bar adapted to be moved into and out of a position immediately beneath the slot and having a stud which engages in the circumferential groove of the cup and is adapted to ride forward along a coin slot of a cup, substantially as set forth.

5. In a coin controlled or operated apparatus, in combination, a casing embodying a slot, an operating bar or shaft, a handle bar having a handle, a coin cup or block mounted on the operating bar, a coin cup or block mounted on the handle bar, slots formed in said cups or blocks adapted to receive a coin, a circumferential groove formed in one of said cups or blocks, a closing bar adapted to be moved into and out of a position immediately beneath the slot and having a stud which engages in said circumferential groove adapted to ride forward along the coin slot of said cup, a recess formed in handle or handle bar in such position that when the handle is in position to be thrown for the operation of the apparatus said recess will present in front of said closing bar, substantially as set forth.

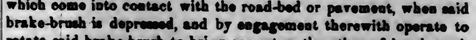
6. In combination with the operating shaft of a coin controlled apparatus, a coin cup or block mounted on said shaft, an operating handle, a coin cup or block connected to said handle, one of said cups or blocks having an unreduced portion of the same diameter as the other cup or block and a reduced portion nested within suitable recess in the other cup or block, a slot formed through both cups or blocks, a casing having a coin slot, and means for arresting a coin of a given size in its passage through the slot in the coin cups or blocks, and a slot closing bar adapted to be moved into and out of a position in proximity to the slot in the casing, substantially as set forth.

7. In combination with the operating shaft of a coin controlled apparatus, a coin cup or block mounted on said shaft, an operating handle, a coin cup or block connected to said handle, one of said cups or blocks having an unreduced portion of the same diameter as the other and a reduced portion nested within a suitable recess in the other, a slot formed through both cups or blocks, a casing having a coin slot, and means for arresting a coin of a given size in its passage through the slot in the coin cups or blocks, a slot closing bar adapted to be moved into and out of a position in proximity to the slot in the casing, and means for preventing its withdrawal except when the slot of the coin cups is in registry with the slot in the casing, substantially as set forth.

8. In combination with the operating shaft of a coin controlled apparatus, a coin cup or block mounted on said shaft, an operating handle, a coin cup or block connected to said handle, one of said cups or blocks having an unreduced portion of the same diameter as the other and a reduced portion nested within a suitable recess in the other, a slot formed through both cups or blocks, a casing having a coin slot, and means for arresting a coin of a given size in its passage through the slot in the coin cups or blocks, a slot closing bar adapted to be moved into and out of a position in proximity to the slot in the casing, a recess in the handle bar or its connections, which recess, when the handle is in position to be thrown, presents itself in front of said closing bar, substantially as set forth.

569,149. LOOM-HEDDLE.

GEORGE O. DRAPER, Hopedale, Mass., assignor to the Northrop Loom Company, same place and Saco, Me. Filed Apr. 3, 1896. Serial No. 586,085. (No model.)



Claim.—A loom-heddle composed of a single piece of wire having at its end a supporting-loop by which to connect it with a heddle-operating bar, and having a short, flattened portion between its ends which is provided with a warp-eye, the said eye being in the plane of the opening in the said supporting-loop, substantially as described.

569,150. VEHICLE-BRAKE.

CHARLES B. FAIRCHILD, New York, N. Y., assignor of one-eighth to Daniel W. Dosley, Chicago, Ill. Filed Feb. 18, 1896. Serial No. 579,719. (No model.)



Claim.—1. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, said brush being supported in permanent longitudinal adjustment upon the vehicle and being movable toward and from the road-bed, surfaces formed on said brake-brush which come into contact with the road-bed or pavement, when said brake-brush is depressed, and by engagement therewith operate to rotate said brake-brush to bring the free ends of the brush-teeth into contact with said road-bed or pavement, the free ends of said brush-teeth extending farther from the axis of rotation of the brake-brush than do the rotating surfaces at the point where, normally, they first come into contact with the road-bed or pavement, means to lower and raise said brake-brush, means to secure it in depressed position and stops to limit the rotation of said brake-brush, substantially as described.

2. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, said brake-brush being mounted upon a brake-frame, pivoted, adjacent to one end, to a rigid portion of the car, surfaces formed on said brake-brush, which come into contact with the road-bed or pavement, when said brake-brush is depressed, and by engagement therewith operate to rotate said brake-brush to bring the free ends of the brush-teeth into contact with said road-bed or pavement, the free ends of said brush-teeth extending farther from the axis of rotation of the brake-brush than do the rotating surfaces at the point where, normally, they first come into contact with the road-bed or pavement, means to lower and raise the free end of said brake-frame, a lock to secure said free end of the brake-frame in depressed position and stops to limit the rotation of said brake-brush, substantially as described.

3. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured two sets of brush-teeth, said brush being supported in permanent longitudinal adjustment upon the vehicle and being movable toward and from the road-bed or pavement, cam-surfaces formed on said brake-brush which come into contact with the road-bed or pavement, when said brake-brush is depressed, and by engagement therewith operate to rotate said brake-brush to bring one set or the other of brush-teeth into contact with the road-bed or pavement, depending upon the direction of movement of the car, the free ends of the brush-teeth extending farther from the axis of rotation of said brake-brush than do the rotating surfaces at the point where, normally, they first come into contact with the road-bed or pavement, means to lower and raise said brake-brush, means to secure it in depressed position and stops to limit the rotation of said brake-brush, substantially as described.

4. In a vehicle-brake, the combination of a revoluble brake-brush,

consisting of a rigid hub or body in which are secured two sets of brush-teeth, said brush being supported upon a brake-frame, pivoted, adjacent to one end, to a rigid portion of the car, surfaces formed on said brake-brush, which come into contact with the road-bed or pavement, when said brake-brush is depressed, and by engagement therewith operate to rotate said brake-brush to bring the free ends of one set or the other of brush-teeth into contact with the road-bed or pavement, depending upon the direction of movement of the car, the free ends of the brush-teeth extending farther from the axis of rotation of said brush than do the rotating surfaces at the point where, normally, they first come into contact with the road-bed or pavement, means to lower and raise the free end of said brake-frame, a lock to secure the free end of the brake-frame in depressed position and stops to limit the rotation of said brake-brush, substantially as described.

5. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, said brake-brush being bodily movable toward and from the road-bed or pavement and being supported in permanent longitudinal adjustment upon the vehicle, means to lower and raise said brake-brush, means to secure said brake-brush in depressed position and stops to limit the rotation thereof, substantially as described.

6. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, a brake-frame, pivoted, adjacent to one end, to a rigid portion of the car, upon which said brake-brush is mounted, means to lower and raise the free end of said brake-frame, a lock to secure said free end of the brake-frame in depressed position, and stops to limit the rotation of the brake-brush, substantially as described.

7. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brake-brush, a brake-frame, comprising lateral members, in which are formed the bearings for the brake-brush and a middle member, a hole or opening in which embraces and the sides of which are closely adjacent to the hub of said brake-brush, said brake-frame being pivoted, adjacent to one end to a rigid portion of the car, means to lower and raise the free end of said brake-frame, a lock to secure the free end of the brake-frame in depressed position, and stops to limit the rotation of the brake brush, substantially as described.

8. In a vehicle-brake, the combination of a revolable brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brake-brush, said cam-surface being nearest to the axis of rotation of said brake-brush, at the middle, circumferentially, thereof and said brush being symmetrical on both sides of said middle line, said brake-brush being bodily movable toward and from the road-bed or pavement and being supported in permanent longitudinal adjustment upon the car, means to lower and raise said brake-brush, a lock to secure said brake-brush in depressed position and stops to limit the rotation thereof, substantially as described.

9. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, said brake-brush being mounted upon a suitable brake-frame, supported in permanent longitudinal adjustment upon the car in such manner as to be bodily movable toward and from the road-bed or pavement, means to lower and raise said brake brush, a lock to secure it in depressed position and stop to limit the rotation of said brake-brush, said stop consisting of a rod or bar supported in lugs or brackets formed on the brake-frame in the path of the brush-teeth, as said brake-brush rotates, substantially as described.

10. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, which form an eccentric or cam surface, relatively to the axis of rotation of said brush, a stop to limit the rotation of said brake-brush, a frame upon which said brake-brush is mounted, said brake-frame being supported in permanent longitudinal adjustment upon said car, and being movable toward and from the road-bed or pavement, a pawl or detent, which secures said brush-frame in depressed position, means to trip said pawl or detent to release said brake and means to raise said brake-frame, substantially as described.

11. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brake-brush, a stop to limit the rotation of said brake-brush, a brake-frame pivoted, adjacent to one end, to a rigid portion of the car, surfaces formed on said brake-brush, which come into contact with the road-bed or pavement, when said brake-brush is depressed, and by engagement therewith operate to rotate said brake-brush to bring the free ends of one set or the other of brush-teeth into contact with the road-bed or pavement, depending upon the direction of movement of the car, the free ends of the brush-teeth extending farther from the axis of rotation of said brush than do the rotating surfaces at the point where, normally, they first come into contact with the road-bed or pavement, means to lower and raise the free end of said brake-frame, a lock to secure the free end of the brake-frame in depressed position and stops to limit the rotation of said brake-brush, substantially as described.

12. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brake-brush, a stop to limit the rotation of said brake-brush, a pivoted brake-frame on which said brake-brush is mounted so as to be in permanent longitudinal adjustment upon the vehicle, a pawl or detent pivoted above the free end of said brake-frame and adapted to lock the said free end of said brake-frame in depressed position, a lever applied to said pawl or detent to rotate the same so as to trip said pawl or detent and release the brake, and a link connecting the free end of said brake frame with the said pawl or detent, at a distance from its pivotal point, substantially as described.

13. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brake-brush, a stop to limit the rotation of said brake-brush, a pivoted brake-frame on which said brake-brush is mounted, so as to be in permanent longitudinal adjustment upon the vehicle or car, a pawl or detent pivoted above the free end of said brake-frame and adapted to lock the same in depressed position, levers applied to said pawl or detent to rotate the same so as to trip said pawl or detent and release the brake and a link connecting the free end of said brake-frame with said pawl or detent at a distance from its pivotal point, said connection comprising a slot, which engages a pin secured in said brake-frame or in said pawl, substantially as described.

14. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, a stop to limit the rotation of said brake-brush, a pivoted brake-frame on which said brake-brush is mounted so as to be in permanent longitudinal adjustment upon the vehicle or car, a pawl or detent pivoted above the free end of said brake-frame and adapted to lock the free end of said brake-frame in depressed position, a lever applied to said pawl or detent to trip the same and release the brake, connection between the free end of said brake-frame and said pawl or detent, whereby pivotal movement of said pawl or detent to release the brake will raise the free end of said brake-frame and a catch to secure the same in raised position, substantially as described.

15. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub in which are secured a plurality of brush-teeth, the free ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, a stop to limit the rotation of said brake-brush, a pivoted brake-frame on which said brake-brush is mounted, a pawl or detent pivoted above the free end of said brake-frame and adapted to lock the free end of said brake-frame in depressed position, a bell-crank pivoted on the car, a rod connected to one arm of said bell-crank, the opposite end of which is applied to said pawl or detent, a lever applied to the other arm of the bell-crank, the relation of parts being such that depression of said lever so applied to the bell-crank will operate to trip the pawl or detent and release the brake, connection between the free end of said brake-frame and said pawl or detent such that rotation of said pawl or detent to release the brake will raise the free end of the brake-frame and a catch to secure the lever applied to the bell-crank in depressed position, substantially as described.

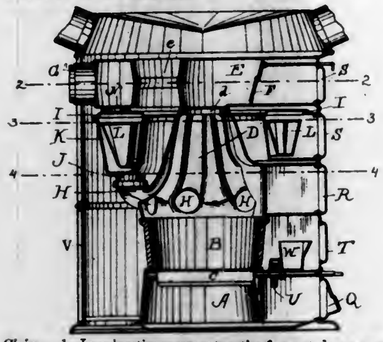
16. In a vehicle-brake, the combination with a brake-brush, consisting of a rigid back in which are secured a plurality of resilient brush-teeth, said brake-brush being supported in permanent longitudinal adjustment upon the car and being movable toward and from the road-bed and means to lower and raise said brake-brush, of rigid shoes on said brake-brush which come into contact with the road-bed when said brush is depressed, and limit the flexure of the brush-teeth, substantially as described.

17. In a vehicle-brake, the combination with a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of resilient brush-teeth, said brake-brush being supported in permanent longitudinal adjustment upon the car and being movable toward and from the road-bed or pavement, means to lower and raise said brake-brush, stops to limit its rotation and rigid shoes thereon which come into contact with the road-bed or pavement, when said brake-brush is depressed and operate to limit the flexure of the brush-teeth, substantially as described.

18. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, said brush being supported in permanent longitudinal adjustment upon the vehicle and being movable toward and from the road-bed or pavement, means to lower and raise said brake-brush, stops to limit the rotation thereof and means to maintain said brush in such position, that, normally, the shortest brush-teeth will come into contact with the road-bed first when said brush is depressed, substantially as described.

19. In a vehicle-brake, the combination of a revoluble brake-brush, consisting of a rigid hub or body in which are secured a plurality of brush-teeth, the ends of which form an eccentric or cam surface, relatively to the axis of rotation of said brush, said brush-teeth being so disposed that the weight thereof will maintain said brake-brush in such position, normally, that, the brush-teeth, which project the shortest distance from the axis of rotation of said brake-brush will be at the extreme lower side thereof, said brush being supported in permanent longitudinal adjustment upon the vehicle and being movable toward and from the road-bed or pavement, means to lower and raise said brake-brush and stops to limit the rotation of said brake-brush, substantially as described.

569,151. HEATING APPARATUS. NEWLAND E. FROST, Boston, Mass., assignor to Emerson R. Bissell, Tyrone, N. Y. Filed Feb. 18, 1896. Serial No. 579,687. (No model.)



Claim.—1. In a heating apparatus, the fire-pot dome open at its top, the annular smoke-drum above said dome and communicating therewith through a dampered passage, and a series of upturned, radial, hollow arms leading from the base of said dome, in combination with an annular casing interposed between said drum and arms and communicating with each, and a water-ring inclosed within said casing, substantially as set forth.

2. In a heating apparatus, the fire-pot dome formed with deep vertical corrugations, short, radial, hollow arms opening from the enlarged base of each corrugation, and a water-ring surrounding the tapering upper portion of said dome, in combination with a casing inclosing said ring and constituting a flame and smoke space with which said arms communicate, and a smoke-drum above said casing and communicating therewith, substantially as set forth.

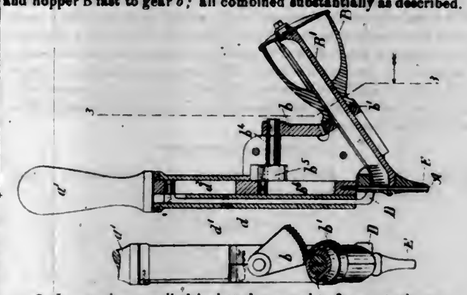
3. In a heating apparatus the dome D opening at top into the smoke-drum E and having short, hollow, upturned arms H, leading from its base, in combination with a water-ring surrounding the dome and with its casing K having in its bottom necks J connecting with said arms, and provided with a covering-plate I having fine openings N communicating with the drum E, substantially as set forth.

4. In a heating apparatus, the fire-pot B having a tapering dome D, open at its top, and a lateral passage leading therefrom, the annular smoke drum E extending each way from said passage to the funnel, and the hollow arms H leading from the base of the dome, in combination with the transversely-partitioned water-ring L having corrugated side walls, the inlet and outlet pipes O P for continuous water circulation, and the casing or flame-space K surrounding said ring, substantially as set forth.

569,152. TACKER. WILLIAM GODDU, Winchester, Mass., assignor to Albert Van Wagenen, Newton, Mass. Filed Aug. 24, 1895. Serial No. 560,447. (No model.)

Claim.—1. In a tacker, a cylindrical stud grooved to form a tackway, combined with a tack-holder which has a stem at one end bored to receive the cylindrical stud, whereby the stud is both a tackway and a support upon which the tack-holder oscillates, substantially as described

2. In a tacker the driver A; its slide *a* containing cam-groove b^4; rock-shaft b^4; its arm b^3 engaging cam groove b^4 in slide *a*; segmental gear *b* fast to rock shaft b^4; gear b' meshing with segmental gear *b*; and hopper B fast to gear b'; all combined substantially as described.



3. In a tacker a cylindrical stud grooved to form a tackway; a tack-holder which has a stem at one end bored on a slant to the axis of the holder, and serving as a journal-box for the cylindrical stud, and a rib, as b^3 to throw the tacks onto flattened surface of the stud when the tack-holder oscillates, substantially as described.

4. In a tacker a tack-holder with a stem bored on a slant to the axis of the holder, combined with a stud which is also the tackway, and with a pair of ribs, as b^3 b^3, one for throwing and the other for deflecting the tacks to the flattened surface of the stud, all substantially as described.

569,153. SEAT. JOHN B. GOODWIN, Pittsburg, Pa. Filed Dec. 19, 1895. Serial No. 572,688. (No model.)



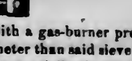
Claim.—1. In a seat for cars the combination of an upright rod, a catch arranged on said rod, a seat having arms embracing the rod, a flange arranged on one of the arms and merging therewith at its sides, and lugs below the flange, as and for the purpose described.

2. In a seat for cars, the combination with an upright rod, an arm having an end embracing the rod, a flange arranged on the arm and swinging therewith at the sides, lugs below the flange and a catch near the top of the rod to sustain the arm, as and for the purpose described.

569,154. PROCESS OF MAKING SOAP POWDER. SAMUEL V. HARBAUGH, Baltimore, Md., assignor to John W. Bowen, same place. Filed Feb. 25, 1896. Serial No. 580,734. (No specimens.)

Claim.—The herein-described improvement in making soap powder in the form of dry powder having an appearance resembling corn-meal, consisting of first bringing the fat to a melted condition; pouring a solution of caustic soda quickly and in full volume over said melted fat or oil without stirring; then stirring gently for a few minutes; then adding a solution of lime and thoroughly incorporating all the ingredients by stirring; allowing the mass to stand until it assumes a granular or powdered condition; then spreading the mass out to dry; and finally passing the dried mass through a sieve.

569,155. GAS-BURNER. PETER KELLER, Chicago, Ill. Filed Oct. 4, 1895. Serial No. 564,623. (No model.)

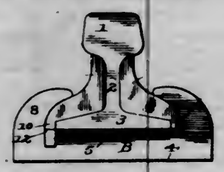


Claim.—1. The combination with a gas-burner provided with a sieve, of a gravity-valve of less diameter than said sieve and conforming in shape with the same adapted to partially close said sieve under

excessive pressure, said valve having a stem adapted to loosely fit within an opening in a valve-seat mounted within said gas-burner, substantially as described.

2. In a gas-burner, the combination with a valve-seat consisting of a metal cap securely mounted in the middle portion of said burner below the sieve and having a central opening therein, of a gravity-valve having a stem adapted to enter said opening in said valve-cap, and said sieve situated above said valve-seat and conforming in shape with said valve, said valve being adapted to come into contact with said sieve and partially close the same under excessive pressure, substantially as described.

569,156. FISH-PLATE. JOHN I. HITE, Johnstown, Pa. Filed Apr. 29, 1896. Serial No. 589,508. (No model.)



Claim.—1. In a rail-splice, the combination with rails, of a rail-chair on which the rails rest and which is provided with longitudinal recesses, in the upper face of its base, said recesses being located adjacent the edges of the base-flanges of the rails, the rail-chair also having retaining-flanges, fish-plates held between the retaining-flanges and the rails, and keys wedged in the recesses between the fish-plates and the rail-chair, substantially as described.

2. In a rail-splice, the combination with rails, of a rail-chair on which the rails rest and which is provided with longitudinal recesses in its bottom, and also has retaining-flanges, fish-plates held between the retaining-flanges and the rails, said fish-plates having their lower ends located immediately above the longitudinal recesses of the rail-chair, and keys wedged in the recesses and having their ends bent down against the ends of the rail-chair.

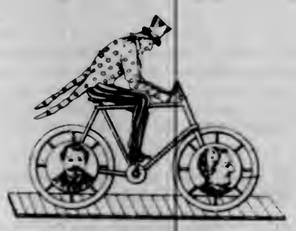
DESIGNS.

26,143. BUTTON. BERNARD I. MCELROY, Providence, R. I. Filed July 21, 1896. Serial No. 600,068. Term of patent 7 years.



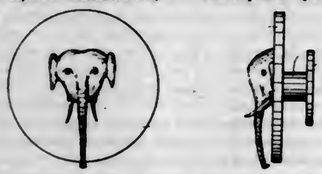
Claim.—The design for a button herein shown and described.

26,144. CAMPAIGN-BADGE. CHARLES FENWICK GARAGHTY, Bay City, Mich. Filed Aug. 3, 1896. Serial No. 601,561. Term of patent 3½ years.



Claim.—The design for a campaign-badge, herein shown and described.

26,145. BADGE. DAVID W. CASSEDAY, Minneapolis, Minn. Filed June 18, 1896. Serial No. 596,077. Term of patent 7 years.



Claim.—The design for a badge, substantially as herein shown and described

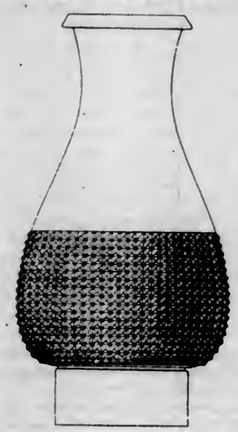
---

26,146. BACK FOR BRUSHES, &c. DANIEL A. LOSEKE, Sag Harbor, N. Y. Filed Nov. 30, 1895. Serial No. 570,702. Term of patent 7 years.



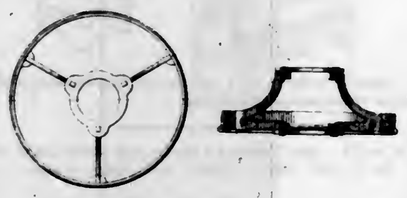
Claim.—The design for the back and handle of a brush, mirror or similar article, substantially as shown and described.

26,147. LAMP-CHIMNEY. GEORGE W. BLAIR, Pittsburg, Pa. Filed May 7, 1896. Serial No. 590,623. Term of patent 14 years.



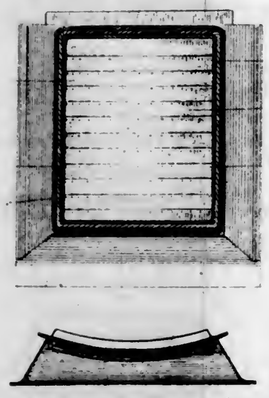
Claim.—The design for lamp-chimneys substantially as herein described and shown.

26,148. GALLERY FOR INCANDESCENT LIGHTS. WILLIAM ELIOT BARROWS, Philadelphia, Pa., assignor to the Welsbach Light Company, Gloucester City, N. J. Filed May 21, 1896. Serial No. 592,481. Term of patent 14 years.



Claim.—The design for a gallery for an incandescent gas light, substantially as shown and described.

26,149. GAS-BURNER. WILLIAM G. TAYLOR, Pittsburg, Pa., assignor to The Taylor Burner & Electroplating Co., Limited, same place. Filed Feb. 26, 1896. Serial No. 580,906. Term of patent 14 years.



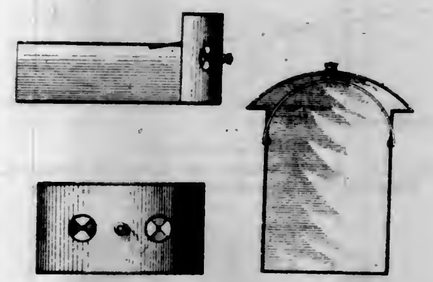
Claim.—The design for gas-burners substantially as herein shown and described.

26,150. GAS-STOVE. WILLIAM H. WILKINSON, New York, N. Y. Filed Aug. 21, 1896. Serial No. 603,543. Term of patent 3½ years.



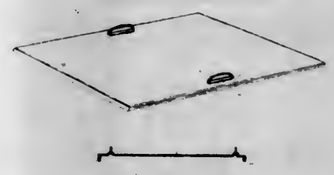
Claim.—The design for a gas-stove herein shown and described.

26,151. ASH-PAN. FANNIE FAIRLEY and ELEANOR E. GUMSTON, Wilkinsburg, Pa. Filed Aug. 5, 1896. Serial No. 601,813. Term of patent 7 years.



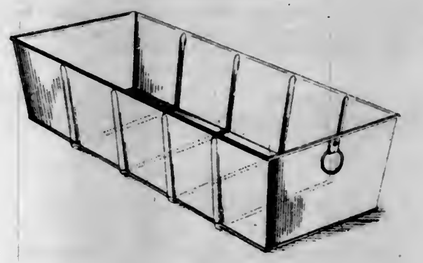
Claim.—The design for an ash-pan, substantially as herein shown and described.

26,152. BAKING-TIN. EMMA J. DYKEMAN, Rural Grove, N. Y. Filed Aug. 5, 1896. Serial No. 601,816. Term of patent 14 years.



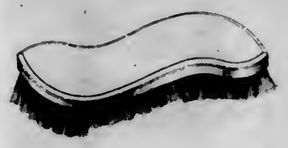
Claim.—The design for a bake-pan, substantially as shown and described.

26,153. BUTTER-RECEPTACLE. CHARLES I. CONOVER, Charleston Four Corners, N. Y. Filed Aug. 19, 1896. Serial No. 603,274. Term of patent 7 years.



Claim.—The design for a butter-receptacle, substantially as shown and described.

26,154. SCRUBBING-BRUSH. SAMUEL K. HAWKINS, New York, N. Y. Filed July 30, 1896. Serial No. 601,100. Term of patent 3½ years.



Claim.—A design for a scrubbing-brush, substantially as herein shown and described.

26,155. FAN FOR SEWING-MACHINES. WILLIAM B. HALLOWELL, Washington, D. C. Filed Aug. 13, 1896. Serial No. 602,673. Term of patent 7 years.



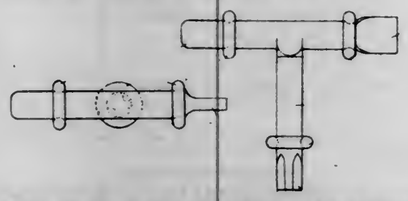
Claim.—The design for a fan for sewing-machines, substantially as herein shown and described.

26,156. HORSESHOE-CALK. JOHN R. WILLIAMS, Scranton, Pa. Filed July 31, 1896. Serial No. 601,201. Term of patent 7 years.



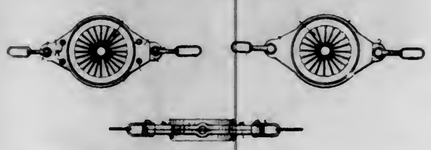
Claim.—The design for a horseshoe-calk substantially, as herewith shown and described.

26,157. PRINTER'S WRENCH. JAMES L. LEE, Chicago, Ill. Filed June 27, 1896. Serial No. 597,260. Term of patent 7 years.



Claim.—The new, useful and original design or shape for printers' wrenches, substantially as herein shown and described.

26,158. LOCK-CASE. WILLIAM F. TROAST, Lancaster, Pa., assignor to the Slaymaker-Barry Company, same place. Filed Apr. 16, 1895. Serial No. 545,973. Term of patent 7 years.



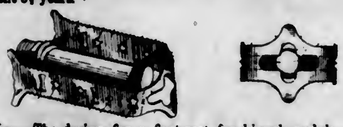
Claim.—The design for a lock-case, as shown and described.

26,159. STEAM-RADIATOR. CHARLES R. HARRIS, Williamsport, Pa. Filed Sept. 24, 1894. Serial No. 523,935. Term of patent 14 years.



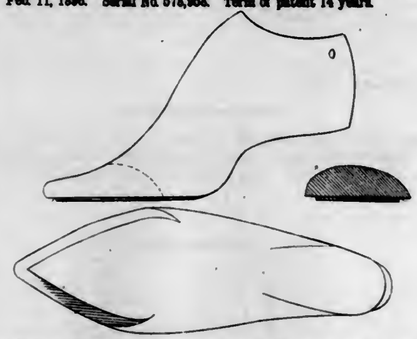
Claim.—The design for a steam-radiator substantially as herein shown and described.

26,160. FOOT-REST FOR PEDALS. WILLIAM NICHOLS BEARDSLEY, Bridgeport, Conn. Filed Feb. 12, 1896. Serial No. 578,062. Term of patent 3½ years.



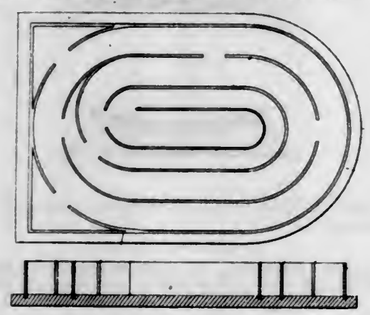
Claim.—The design for a foot-rest for bicycle-pedals, substantially as herein shown and described.

26,161. LAST. WILLIAM R. CHAPLIN, West Newbury, Mass. Filed Feb. 11, 1896. Serial No. 578,958. Term of patent 14 years.



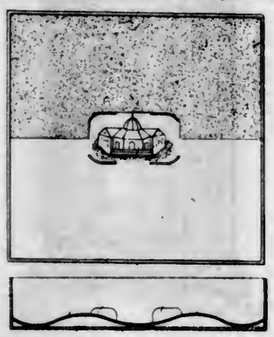
Claim.—The design for a last, substantially as herein shown and described.

26,162. PUZZLE-BOX. CLARENCE R. R. BITTER, Toledo, Ohio. Filed Aug. 7, 1896. Serial No. 602,069. Term of patent 3½ years.



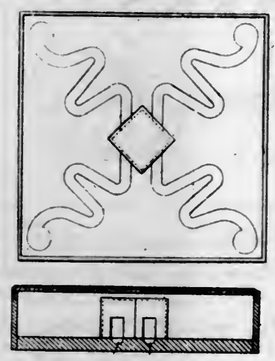
Claim.—The design for a puzzle box or case herein shown and described.

26,163. PUZZLE-BOX. JOHN PETERKIN, Brooklyn, N. Y. Filed July 30, 1896. Serial No. 601,097. Term of patent 3½ years.



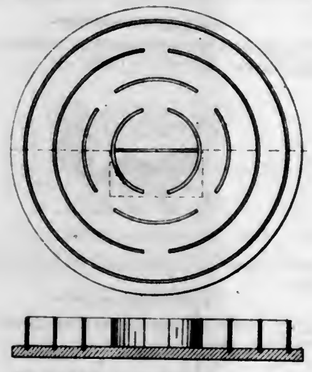
Claim.—The design for puzzle boxes or cases, herein shown and described.

26,164. PUZZLE-BOX. ERNEST HERBER, New York, N. Y. Filed July 30, 1896. Serial No. 601,096. Term of patent 3½ years.



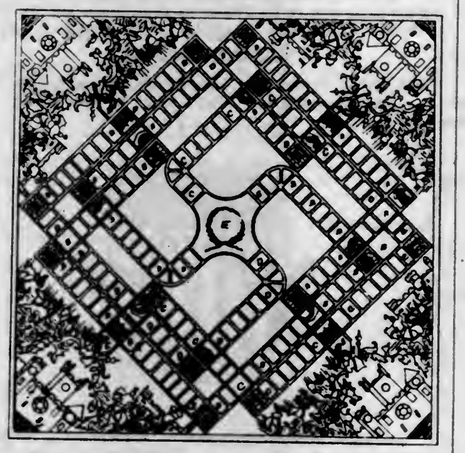
Claim.—The design for a puzzle box or case, herein shown and described.

26,165. PUZZLE-BOX. JOHN D. SCHMIDT, New York, N. Y. Filed Aug. 1, 1896. Serial No. 601,391. Term of patent 3½ years.



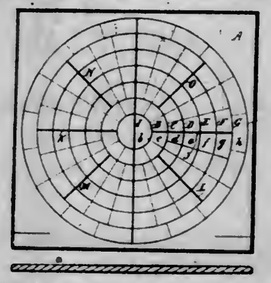
Claim.—The design for a puzzle box or case herein shown and described.

26,166. GAME-BOARD. CLARENCE JUSTIN MYERS, Middletown, Pa. Filed June 22, 1896. Serial No. 596,543. Term of patent 3½ years.



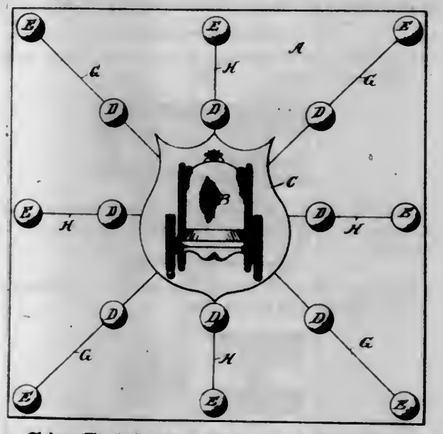
Claim.—The design for a game-board herein shown and described.

26,167. GAME-BOARD. ROBERT R. HILL, North East, Pa. Filed June 6, 1896. Serial No. 594,694. Term of patent 7 years.



Claim.—The design in a game-board substantially as herein shown and described.

26,168. GAME-BOARD. JOHN BURROWS HALL TRAINER, Williamsport, Pa. Filed July 14, 1896. Serial No. 599,194. Term of patent 3½ years.



Claim.—The design for puzzle or game board, herein shown and described.

26,169. HANDKERCHIEF OR SIMILAR FABRIC. JAMES G. CLARK and SAMUEL F. PRICE, Oshkosh, Wis. Filed July 31, 1896. Serial No. 601,253. Term of patent 3½ years.



Claim.—The design for a fabric, substantially as herein shown and described.

TRADE-MARKS

REGISTERED OCTOBER 6, 1896.

28,924. MUSTARD AND TABLE-MUSTARD. J. & J. COLMAN, London, England. Filed Aug. 28, 1896.



Essential feature.—The words "COLMAN'S MUSTARD," a representation of a bull's head, and an American flag. Used since 1886.

28,925. TABLE-MUSTARD. J. & J. COLMAN, London, England. Filed Aug. 28, 1896.



Essential feature.—The words "COLMAN'S MUSTARD," a representation of a bull's head, and the royal British standard. Used since 1886.

28,926. MUSTARD AND TABLE-MUSTARD. J. & J. COLMAN, London, England. Filed Aug. 28, 1896.



Essential feature.—The words "COLMAN'S MUSTARD" and a representation of a bull's head and the Russian imperial standard. Used since 1886.

28,927. MUSTARD AND TABLE-MUSTARD. J. & J. COLMAN, London, England. Filed Aug. 28, 1896.



Essential feature.—The words "COLMAN'S MUSTARD" and a representation of a bull's head and the "Union Jack." Used since 1886.

28,928. TEA. REED, WALSH & LANGE, Chicago, Ill. Filed Aug. 25, 1896.



Essential feature.—A symbol or representation "SILVER SEAL," whether expressed by word or picture or both combined, and the monogram "R W & L." Used since July 25, 1896.

28,929. DRIED APPLES. HERNDON-CARTER COMPANY, Louisville, Ky. Filed Aug 19, 1896.

PARAGON

Essential feature.—The word "PARAGON." Used since October, 1875.

28,930. GIN AND OTHER SPIRITS. EDWARD VAUGHAN-JONES, London, England. Filed Aug. 14, 1896.



Essential feature.—A representation of a cat holding a flag. Used since 1866.

28,931. WHISKY. JOHN JAMESON & SON, LIMITED, Dublin, Ireland. Filed Aug. 14, 1896.

JJ&S

Essential feature.—The initials and abbreviation "J J & S," in combination with an ornamented heptagon device and the words "HEPTAGON GRADE." Used since November 6, 1895.

28,932. LAGER-BEER. HILL'S UNION BREWERY COMPANY, LIMITED, Newark, N. J., and London, England. Filed May 22, 1896.



Essential feature.—The symbol "A. 1. AMERICAN," written or printed across the shield of the United States of America. Used since November 29, 1893.

28,933. BEER AND ALE. ANCHOR BREWING COMPANY, Dobbs Ferry and New York, N. Y. Filed Aug. 13, 1896.



Essential feature.—A representation of a bunch or cluster of anchors. Used since 1886.

28,934. COMPOUNDS FOR MAKING NON-ALCOHOLIC DRINKS. JAMES S. GREASLEY, Harrisburg, Pa. Filed Aug. 10, 1896.



Essential feature.—The word "ORANGE" in a curved line, with "NECTAR" in a horizontal line below it, the initial "O" of the first word being of the same height as the letters of both words, with a branch of orange-tree bearing fruit and leaves arranged above said words. Used since April 15, 1896.

28,935. MALT TONICS. ROCHESTER BREWING COMPANY, Rochester, N. Y. Filed Aug. 28, 1896.



Essential feature.—The compound word "VITA-MALT." Used since August 19, 1896.

28,936. OILS AND LUBRICANTS OF ALL KINDS. VACUUM OIL COMPANY, Rochester, N. Y. Filed Aug. 15, 1896.

VELOCITÉ

Essential feature.—The word "VELOCITÉ." Used since September 1, 1890.

28,937. OILS AND LUBRICANTS OF ALL KINDS. VACUUM OIL COMPANY, Rochester, N. Y. Filed Aug. 15, 1896.

VACUOLINE

Essential feature.—The word "VACUOLINE." Used since September 28, 1886.

28,938. PREPARATION FOR LAYING DUST. SOLOMON COLEMAN, Memphis, Tenn. Filed Aug. 24, 1896.

KLEENATENE

Essential feature.—The word "KLEENATENE." Used since August 13, 1896.

28,939. COMPOSITION FOR PRESERVING PATENT-LEATHER. THOMAS P. SPENCER, Lynchburg, Va. Filed Sept. 1, 1896.



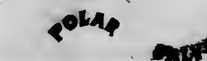
Essential feature.—A monogram containing the letters "SPLP." Used since June 1, 1896.

28,940. CORN-CURERS. AGATHE PALESI, Nuremberg, Germany. Filed Aug. 22, 1896.

WATTORIN

Essential feature.—The word "WATTORIN." Used since October 31, 1895.

28,941. SALVE. JULIA A. O'KEEFE, Randolph, Mass. Filed Aug. 14, 1896.



Essential feature.—The words "POLAR SALVE." Used since October 3, 1895.

28,942. VETERINARY LINIMENT. WILLIAM WEINGARD, Toledo, Ohio. Filed Aug. 13, 1896.



Essential feature.—A plurality of representations of the fore part of a horse. Used since August 5, 1896.

28,943. REMEDIES FOR PERSPIRING FEET. BÖHRINGER & REUSS, Cannstadt, Germany. Filed Aug. 15, 1896.

„Antisudorin"

Essential feature.—The word "ANTISUDORIN." Used since March 22, 1896.

28,944. REMEDIES FOR EPILEPSY AND NERVOUS DISEASES. LOUIS CH. HORN, Baltimore, Md. Filed Aug. 31, 1896.

Saint Jean

Essential feature.—The words "SAINT JEAN." Used since May 26, 1896.

28,945. REMEDIES FOR WHOOPING-COUGH, COLDS AND HOARSENESS, AND THROAT AND LUNG TROUBLES. BAMFORD & ROBERTSON, Pittsburg, Pa. Filed July 25, 1896.

TARINE

Essential feature.—The word "TARINE." Used since September 12, 1895.

28,946. NASAL SYRINGES. WM. H. ARMSTRONG & Co., Indianapolis, Ind. Filed June 30, 1896.

"SUCCESS"



Essential feature.—The word "SUCCESS" with a cut representing a portion of a human face with the nasal organs in section. Used since September, 1888.

28,947. ELECTRIC ROTARY FANS. JAMES GOLDMARK and WILLIAM J. WALLACE, New York, N. Y. Filed Sept. 8, 1896.

HURRICANE

Essential feature.—The word "HURRICANE." Used since May 1, 1896.

28,948. CLOTHES-WRINGERS AND THE PARTS THEREOF. THE AMERICAN WRINGER COMPANY, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Filed Sept. 8, 1896.

WELCOME

Essential feature.—The word "WELCOME." Used since September 28, 1876.

28,949. CLOTHES-WRINGERS AND THE PARTS THEREOF. THE AMERICAN WRINGER COMPANY, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Filed Sept. 8, 1896.

EMPRESS

Essential feature.—The word "EMPRESS." Used since April 14, 1896.

28,950. YARNS AND THREADS. J. R. LEMON & Co., Boston, Mass. Filed Aug. 29, 1896.

FRANKLIN

Essential feature.—The word "FRANKLIN." Used since March, 1893.

28,951. YARNS AND THREADS. J. R. LEMON & Co., Boston, Mass. Filed Aug. 29, 1896.

HURON

Essential feature.—The word "HURON." Used since August, 1893.

28,952. YARNS AND THREADS. J. R. LEMON & Co., Boston, Mass. Filed Aug. 29, 1896.

RIVERSIDE

Essential feature.—The word "RIVERSIDE." Used since December, 1893.

28,953. YARNS AND THREADS. J. R. LEMON & Co., Boston, Mass. Filed Aug. 29, 1896.

BALTIC

Essential feature.—The word "BALTIC." Used since December, 1893.

28,954. HORSE-BLANKETS. WILLIAM R. RILEY & Co., Philadelphia, Pa. Filed June 4, 1895.

YELLOWSTONE

Essential feature.—The word "YELLOWSTONE." Used since May 13, 1891.

28,955. ROOFING-FELT. WARREN CHEMICAL AND MANUFACTURING COMPANY, New York, N. Y. Filed Aug. 13, 1896.



Essential feature.—An ornamental diagonal band of red color, edged with an irregular border of gray and bearing the word "COMPOSITE" in ornamental block capitals of the same color. Used since November 2, 1886.

28,956. REMEDIES FOR THROAT AND LUNG AFFECTIONS. CHARLES AROLD ROACH, St. Paul, Minn. Filed June 4, 1894.

Dutch Cough Syrup Co.

Essential feature.—The words "DUTCH COUGH SYRUP CO." in script type. Used since October 2, 1893.

28,957. PHARMACEUTICAL PREPARATIONS FOR INTERNAL USE. CHEMISCHE FABRIK VON HEYDEN, Gesellschaft mit Beschränkter Haftung, Radebeul, Germany. Filed Sept. 2, 1896.

DUOTAL

Essential feature.—The word "DUOTAL." Used since July 21, 1896.

28,958. MEDICINE COMPOSED MAINLY OF HERBS. EMMET DENSMORE and HELEN DENSMORE, New York, N. Y. Filed Sept. 11, 1896.

Garfield

Essential feature.—The word "GARFIELD." Used since September, 1885.

28,959. IRON TONIC. RUDOLPH E. RHODE, Chicago, Ill. Filed Aug. 24, 1896.

HAEMOVIN

Essential feature.—The word "HAEMOVIN." Used since December 15, 1895.

28,960. CHAMPAGNE-WINE. KRUG & Co., Rheims, France. Filed Aug. 17, 1896.



Essential feature.—A representation of a scutcheon bearing the word "KRUG" and headed with a crowned armor. Used since June 10, 1864.

28,961. JAPAN TEA. CROSS ABBOTT COMPANY, Hartford, Vt. Filed Aug. 29, 1896.



Essential feature.—The words "GREEN MOUNTAIN" arranged above a pictorial representation of a range of hills within a crescent. Used since January 1, 1896.

28,962. TEA. PETER C. LARKIN, Toronto, Canada. Filed July 14, 1896.



Essential feature.—The words "THE SALADA TEA COMPANY, LIMITED," in a curved line, with the words "GOLDEN TEA-POT BLEND" in an oppositely-curved line below, and a representation of a teapot between them, with the phrase "PURE CEYLON TEA" following the same and curved in the same direction as the latter words, the whole being inclosed in a rectangular border. Used since December 31, 1892.

28,963. GLUCOSE AND GRAPE-SUGAR. THE ROCKFORD SUGAR REFINING COMPANY, LIMITED, Rockford, Ill. Filed June 16, 1896.



Essential feature.—A figure of an oval inclosing a stripe or a series of stripes. Used since March 19, 1896.

28,964. STARCH. ALONZO F. KEITH, Omaha, Nebr. Filed Aug. 24, 1896.

ENAMEL



Essential feature.—The word "ENAMEL" and a representation of a linen collar and cuff surrounded by a circle. Used since February 15, 1896.

28,965. SOAP POWDER. LOUISA EMERSON, Natick, Mass. Filed Sept. 23, 1893.



Essential feature.—A portrait of Samuel Emerson. Used since 1886.

28,966. SOAP OF A DARK COLOR. L. BOLTON & COMPANY, Des Moines, Iowa. Filed Sept. 9, 1896.

BLACK CROW



Essential feature.—The words "BLACK CROW" or a picture of a black crow. Used since October, 1895.

28,967. CEMENT. SOLOMON BASS, New York, N. Y. Filed Aug. 24, 1896.

THE POWERFUL



Essential feature.—The words "THE POWERFUL" and a pictorial representation of two hands pulling upon two bands. Used since July 1, 1896.

28,968. PAINT. J. A. & W. BIRD & Co., Boston, Mass. Filed Sept. 10, 1896.

MAGNITE

Essential feature.—The word "MAGNITE." Used since July 16, 1896.

28,969. FERTILIZER FOR HOUSE-PLANTS. A. W. PERKINS & Co., Rutland, Vt. Filed Aug. 5, 1896.

PLANTENE

Essential feature.—The word "PLANTENE." Used since April 20, 1896.

28,970. KEYED STRINGED INSTRUMENTS. MORRIS STEINERT, New Haven, Conn. Filed Sept. 12, 1896.

STEINERTONE

Essential feature.—The word "STEINERTONE." Used since May 15, 1896.

28,971. GAS-BURNERS. THE ESTATE OF THEODORE CLOUGH, DECEASED, Dobbs Ferry, N. Y. Filed July 3, 1896.



Essential feature.—The word "CLOUGH" upon a green background. Used since 1871.

28,972. LAMPS, LAMP OR GAS GLOBES, CHIMNEYS, SHADES, REFLECTORS, AND STANDS. THE PHOENIX GLASS COMPANY, Pittsburg, Pa. Filed Sept. 2, 1896.

VOLLENDEN

Essential feature.—The word "VOLLENDEN." Used since August 4, 1896.

28,973. EMERY AND CORUNDUM WHEELS. THE ELECTRIC EMERY WHEEL COMPANY, Newark, N. J. Filed Feb. 28, 1896.



Essential feature.—A representation of a shield provided with hills and forests and a representation of a deer, with a spread-eagle perched on said shield, all arranged on a white field in the center of a representation of an emery-wheel, and the words "THE ELECTRIC." Used since December 1, 1879.

28,974. PNEUMATIC TIRES OF THE SINGLE-TUBE VARIETY. THE HARTFORD RUBBER WORKS COMPANY, Hartford, Conn. Filed Aug. 17, 1896.



Essential feature.—A symbol comprising a representation of a pneumatic tire in annular form provided on opposite sides with an outspread wing. Used since July 1, 1896.

28,975. BICYCLES OR LIKE VEHICLES. WILLIAM CRAWFORD, New York, N. Y. Filed Aug. 25, 1896.



Essential feature.—The letter "N," with the words "NEW YORK" across the diagonal member, and the word "FLYER." Used since March 30, 1896.

28,976. BICYCLES. THE STODDARD MANUFACTURING COMPANY, Dayton, Ohio. Filed Sept. 8, 1896.

TIGRESS

Essential feature.—The word "TIGRESS." Used since August 29, 1896.

28,977. VELOCIPEDES AND PARTS THEREOF. POPE MANUFACTURING COMPANY, Hartford, Conn. Filed Aug. 16, 1896.

Columbia

Essential feature.—The word "COLUMBIA" displayed in script letters and terminating in a paraph. Used since 1878.

THE NORRIS PETERS CO. PHOTO-LITH WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

CUSHMAN *v.* LINES.

Decided August 10, 1896.

INTERFERENCE—DESIGN—OIL-CAN—IDENTITY.

The design of Fig. 2 differs from the design of Fig. 3 as clearly as either differs from the design of Fig. 1. Priority is accordingly awarded to Lines.

APPEAL from the Examiners-in-Chief.

DESIGN FOR OIL-CANS.

Application No. 502,446 of J. W. Cushman filed March 5, 1894. Design Patent No. 23,042 granted John Lines February 6, 1894.

Messrs. Baldwin, Davidson & Wight for Cushman.
Messrs. Earle & Seymour for Lines.

SEYMOUR, *Commissioner:*

Prior to the invention of either of the parties to this interference a favorite style of oil-can was the one shown in Cushman's Exhibit September 11, 1893, (sample,) of which the following is an illustration:



Afterward Cushman designed an oil-can like this:



Cushman attempted to have oil-cans of the last-mentioned kind made in quantities, and entered into correspondence with the Scovill Manufacturing Company, of which Lines was the foreman, for that purpose. Lines thereupon originated an oil-can like this:



On December 21, 1893, Lines applied for a patent upon this design, which was issued to him on February 6, 1894. Seeing this patent, Cushman applied for a patent upon his oil-can, Figure 2, above, and in his patent drawings he illustrates his design by Figs. 2 and 3, as though Fig. 3 were a modification of Fig. 2. The proofs show Lines was prior to Cushman in originating the design of Fig. 3, unless Cushman's design shown in Fig. 2 is substantially the same as Fig. 3.

The question is a clear and simple one and does not require the critical analysis of the record. There is practically no dispute about the facts, and the plain question is whether Figs. 2 and 3 are the same design, so that when Cushman originated Fig. 2 he also originated Fig. 3. I think not, and that the design of Fig. 2 differs from the design of Fig. 3 as clearly and in as substantial matters as either differs from the patented design of another illustrated in Fig. 1.

It is considered, therefore, that priority of invention should be awarded to Lines, and the decision of the Examiners-in-Chief must be reversed.

RICHARDSON *v.* LEIDGEN.

Decided June 15, 1895.

1. DIVISION—CANCELLATION OF CLAIMS—SECOND APPLICATION—ABANDONMENT.

When upon a requirement of division claims for a process were canceled and an application was limited to the claims for an article and a second application for the process was filed while the first application was pending, but not within two years from the cancellation of the process claims from the first application, *Held* that the process claims were not abandoned and that the second application was a division of the first.

2. INTERFERENCE—BURDEN OF PROOF—FIRST TO MAKE CLAIM—RULE 116.

The first to make a claim in substance and effect covering the invention is the senior party. (*Edison* v. *Ball*, 71 O. G., 1313.)

APPEAL on motion.

PROCESS OF MAKING LOCK-NUTS.

Patent granted Julius C. Richardson July 15, 1890, No. 432,081. Application of Nicolaus Leidgen filed July 11, 1892, No. 439,667.

Mr. J. S. Barker for Richardson.
Messrs. Winkler, Flanders, Smith, Bottum & Vilas and *Mr. W. G. Henderson* for Leidgen.

SEYMOUR, *Commissioner:*

This is an appeal by Richardson from the decision of the Primary Examiner refusing his motion to shift the burden of proof from Richardson to Leidgen.

On April 2, 1888, Leidgen filed an application, Serial No. 269,305, containing claims for a nut-lock and for a process of making the same. Upon the requirement of division, May 19, 1888, Leidgen canceled the claims for the process and limited the case to the article. This application became Patent No. 529,034 on November 13, 1894.

On August 9, 1889, Richardson filed an application for a method of making nut-locks, which application became a patent July 15, 1890.

Within four days of two years after the granting of Richardson's patent Leidgen filed an application, Serial No. 439,667, for the process of making nut-

locks, which application is alleged to be a division of the application filed by him on April 2, 1888. The second application of Leidgen and the patent to Richardson were put in interference August 8, 1894.

In declaring the interference the Examiner gave Leidgen the benefit of his original application and made him the senior party. Richardson contends that Leidgen's first application, so far as it relates to the process of making lock-nuts, became an abandoned application, as the claims for the process were not prosecuted within the two years from the cancellation of said claims and the requirement of division by the Office in May, 1888, and, being abandoned, the second application, filed July 11, 1892, could not be a division thereof and derive any aid as to the date of filing from such original application.

It is thought that this contention is not sound and that the second application is a division of the first. The second application of Leidgen was filed while the first application was pending, and under the practice of the Office the claims for the process in the second case could have been embodied in the first case, or if the applicant's second case had not been filed he could have by amendment reinserted the claims for the process. As he presented claims for the process while the original case was pending, it cannot be held that he abandoned such claims.

Richardson further contends that whether or not the second application of Leidgen be considered as a division of the first the burden of proof should be shifted, as Leidgen did not *claim* in his first application the invention in controversy in this interference.

The claim of Leidgen involved in this interference reads as follows:

1. The method or process of making lock-nuts, which consists of folding the blank upon itself into two sections or layers which are joined at one edge, of perforating and threading the blank thus formed through both sections or layers and of then separating the sections or layers, substantially as and for the purposes set forth.

The process claims in Leidgen's first application were limited to the additional step of hardening or tempering the nuts after the sections are separated. Such a process is made the subject of the fourth claim of Leidgen's second application. Leidgen's claim 1, above quoted, is substantially the same as claim 1 of Richardson's patent and is broader than any claim in Leidgen's original application, and it was not made by Leidgen until the filing of his second application, which was about two years after the issue of Richardson's patent.

Rule 116 provides:

116. In original proceedings in cases of interference the several parties will be presumed to have made the invention in the chronological order in which they claimed the same in their completed applications for patents clearly illustrating and describing the invention; and the burden of proof will rest upon the party who shall seek to establish a different state of facts.

The first to make a claim in substance and effect covering the invention is the senior party. (*Edison* v. *Ball*, 71 O. G., 1313.)

Richardson being the first party to make the claim in controversy, it must be held that he is the senior party, and the burden of proof is upon Leidgen to show that Richardson is not the first inventor of the matter in issue.

The decision of the Primary Examiner is reversed.

MORGAN *v.* HANSON.

Decided June 13, 1896.

INTERFERENCE—MOTION TO DISSOLVE—IRREGULARITY—BREADTH OF ISSUE.

It is a cardinal principle that in declaring an interference the issue must be as broad as the broadest claim included thereunder.

APPEAL on motion.

REVOLVING CHAIRS.

Application of Frederick L. Morgan filed September 25, 1895, No. 563,572. Application of Miles A. Hanson filed July 15, 1895, No. 555,945.

Mr. John E. Wiles for Morgan.
Messrs. Benedict & Morsell for Hanson.

FISHER, *Acting Commissioner:*

This case comes before me on appeal from the Examiner's refusal to dissolve upon the ground that no interference in fact exists as to claim 6 of Hanson's application and upon the ground of irregularity for the reason that the issue is not as broad as said claim 6, which is stated to be included under the issue.

The determination of the first ground rests upon the question as to whether the "rigid pins or projections" in the issue means the same as Hanson's "adjustable arm" and whether, also, the "means for holding the arm" of Hanson has the same meaning as the "lateral notches" of the issue.

The Examiner says that—

there is no element in Hanson's sixth claim that does not find an equivalent in the issue. The structures are so nearly identical that it is difficult to conceive how it could be otherwise.

This conclusion is believed to be correct. The structure is the same in each case, and the claim and issue are simply different statements of the elements of that structure. The use of general or specific terms to describe the features of such structure does not affect the existence of a condition of interference.

The second ground is based upon good reason. The sixth claim of Hanson is broader in certain respects than the issue. "Means for holding the arm" is a more general expression than "lateral notches." It is a cardinal principle that in declaring an interference the issue must be as broad as the broadest claim included thereunder; otherwise, as Hanson alleges is the fact in this case, a party may be the inventor of the broad claim and not the inventor of the more specific issue.

For this reason the interference is dissolved and should be redeclared, so as to have an issue as broad in all respects as any claim included thereunder.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Sixth Circuit.

DUEBER WATCH CASE MANUFACTURING COMPANY *et al. v.* ROBBINS *et al.*

Decided May 12, 1896

1. COLBY—WATCH-PENDANT—VOID AND NOT INFRINGED.

Letters Patent No. 287,001, granted October 23, 1883, to Caleb K Colby, for a watch-pendant, examined and claim 1 thereof *Held* void for want of invention in view of the prior state of the art, and, if valid, *Held* not infringed.

2. INFRINGEMENT—LICENSE—ESTOPPEL.

The fact that defendant was a licensee cannot estop him from disputing the validity of the patent under which he takes his license in a suit for infringements charged to have taken place after the license was drawn, though in a doubtful case it might have considerable evidential force as an admission of validity.

3. INVENTION—EXTENSIVE USE—OTHER CAUSE.

Extensive use is only to be considered evidence of invention in doubtful cases and it loses its force when attributable to another device used in connection with the alleged invention and which was useful and popular.

APPEAL from the Circuit Court of the United States for the Eastern Division of the Northern District of Ohio.

STATEMENT OF THE CASE.

This was a suit in equity by Royal E. Robbins and Thomas M. Avery against the Dueber Watch Case Manufacturing Company, John C. Dueber, its president, and William C. Moore, its secretary and treasurer, for alleged infringement of a patent relating to stem-winding watches. The circuit court entered an interlocutory decree sustaining the patent, finding infringement, and referring the case to a master for an accounting. (74 O. G., 965; 71 Fed. Rep., 189.) Defendants have appealed.

This is an appeal from a decree enjoining the infringement of a patent. R. E Robbins and Thomas M. Avery, as trustees, held the title, by assignment, to a patent (No. 287,001) issued on October 23, 1883, upon an application made February 1, 1883, to Caleb K. Colby, for a new and useful improvement in stem-winding watches. It was averred in the bill and appeared in the evidence that the Dueber Watch Case Manufacturing Company had taken a license from Robbins and Avery of the following patents for improvements in watchcases: No. 192,425, issued June 26, 1877, to Fisher and Lucas: No. 220,916, issued October 28, 1879, to E C. Fitch; No. 287,001, issued October 23, 1883, to C. K Colby, and No. 312,856, issued February 24, 1885, to George Hunter.

On the 13th of February, 1891, the license was terminated because of the failure of the defendant company to make returns and payments in accordance with its provisions. The defenses set up in the answer were want of novelty, anticipation, and non-infringement. The Colby invention relates to the class of watches known as "stem-winding watches," in which a key or stem-arbor passes through the hollow stem of the case into engagement with the winding-arbor of the watch-movement, so that by the rotation of the key the watch may be wound. By its longitudinal movement within the stem the key may be retracted from the winding-arbor of the movement sufficiently to allow the movement to be easily lifted out of the case or inserted therein. The gist of the device is in providing a spring-latch within the hollow stem, by which the key and stem may be latched to each other in such a manner that the key will be held in its inner position, but will yield upon effort and allow the key to be retracted a certain distance, when the spring will again operate as a latch to secure the key in the second or outer position, from which it can by another effort be pushed back to its first position. The patent describes the essential feature of the device—

as an elastic or spring-latch attachment of the stem with the key, whereby the latter is free to rotate, but is prevented from being moved longitudinally except by a special effort.

The specification and drawings describe the various forms of the device. In some of them the spring-latch is attached to the stem and engages in a circumferential groove upon the key, and in others the spring is attached to the key and engages in a circumferential groove on the stem. In others a shoulder is substituted for the groove. Figs. 1, 2, 6, 7, 10, 11, and 12 in the Colby patent give a sufficient understanding of the operation of the device and its variations. The figures are as follows:

Fig. 1.

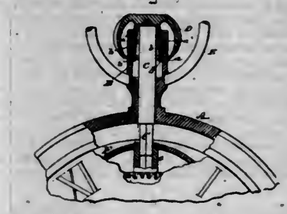


Fig. 2.

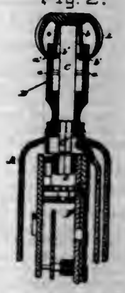


Fig. 6.



Fig. 7.



Fig. 10.

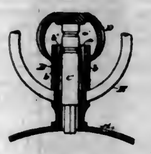


Fig. 11.



Fig. 12.



The inventor describes the purpose of his invention as follows:

My invention relates to a stem-winding pendant for watches, being especially adapted to that class of watches wherein the back of the case is permanently closed and the movement, or the ring in which it is mounted, is hinged to the cup like case. My pendant may, however, be used in any watch case. In watches having stem-winding pendants the key in the pendant passes into the movement and engages a socket or square in or on the winding-arbor, and before the movement can be lifted out or turned on its hinge this key must be disengaged from the movement by withdrawing it far enough to clear the latter. My invention provides a ready means for doing this.

* * * * * * *

Figure 1 is a vertical mid-section of a watch-pendant provided with my improvements, the plane of the section being taken edgewise of the watch-case, and the key shown as protruding into the hollow of the winding-arbor. Fig. 2 is a similar section taken at right angles to Fig. 1, showing the key withdrawn, so as to permit the movement to be lifted out.

* * * * * * *

A is the watch-case. B is the tubular stem, attached to the case in the usual way. C is the key, and D is the crown attached thereto to form a head or thumb-piece, by which the key is turned in winding. These parts, *per se*, are common in stem winding and setting watches.

a and *a'* are two internal circular grooves at different depths in the hollow of the stem. They form latch-bearings for the rotating key.

To the crown D or the key C, indifferently, are secured latch spring or springs *b b*, preferably four in number, provided with projecting angles or parts *b'*. These angles spring into and engage one or the other of the grooves *a a'*, and the springs are inserted in the hollow of the stem, as shown in Figs. 1 and 2. When the key is pressed clear down into the hollow of the stem, the elasticity of the springs causes the projections *b'* to engage in the lower groove, *a*. The key will now be in engagement with the winding-arbor C in the movement F. (If there be a movement in the case,) and by rotating the key in the usual way the watch will be wound up. The bearing which the key finds in the neck

of the stem and that which the crown finds on the exterior surface of the stem prevent any lateral play of the key, and the engagement of the latch-spring b in groove a prevents any longitudinal movement of the key, unless some force is applied to move it. In other words, the key rotates readily, but only yields to extra pressure purposely exerted when an attempt is made to withdraw it longitudinally. If, however, it be desired to disengage the key from the movement for any purpose whatever, the operator may grasp the crown, and pull on it with force sufficient to disengage the springs from groove a, when the key may be withdrawn far enough for the projection b' to engage groove a'. The parts will now assume the position shown in Fig. 2. The key will be withdrawn far enough to be free from the movement, and it may be rotated freely in this position in the bearing found in the groove a'.

* * * * * * *

In lieu of employing the two grooves a a' in the stem and one series of projections b' on the springs, I may employ but one groove a, as in Fig. 6, and provide the springs with two series of projections b'. In Fig 7 I have shown a further modification, in which the springs are mounted in the hollow of the stem, and the two series of projections b' thereon protrude through slots in the wall of the stem. A groove in the margin of the opening in the hollow crown D takes over and engages the lower one of these projections, as clearly shown in said figure. * * * In Fig. 10 I have shown the grooves a and a' formed in the shank of the key itself and the latch-springs mounted in the stem, and in Fig. 11 I have shown the same arrangement, except that the key is provided with projecting ribs b', and the springs have recesses a to engage said ribs. In Fig. 12 I have shown the grooves a a' arranged exteriorly of the stem and the springs arranged to engage them in that position. * * * I have shown all of these forms and modifications in order to illustrate the many ways in which my invention may be carried out. The essential feature of all is the elastic or spring latch attachment of the stem B with the key C, whereby the latter is free to rotate, but is prevented from being moved longitudinally, except by a special effort. The annular groove or rib engaged by the spring-latch I denominate an "annular latch device," and it is immaterial whether the projecting part is on the spring or the other part, and it is also immaterial whether the spring be connected with the key or the tubular stem. The operation is the same in either case. The upper groove, a', in the stem is not absolutely necessary, as it is not necessary that the key shall be rotative when drawn back, as in Fig. 2; but some form of stop should be provided to prevent the key from being entirely withdrawn. This withdrawal of the key is not desirable, although it will do no particular harm.

* * * * * * *

I have not shown how my key C may be employed as a push-pin for releasing the lid of the case from its spring-catch, as I make no claim to this. I will say, however, that the tip of the key passes through the case-spring, and a shoulder on its shank rests on the latter. The retaining-groove a is made wide enough to allow of the necessary slight movement longitudinally of the key. This is a common mode of constructing such push-pin devices.

It must be borne in mind that my invention is designed to be applied only to the pendants of stem-winding watches wherein the key is mounted rotatively in the stem and projects normally into the movement to engage the winding-arbor.

The drawings of the patent are as follows:

FIG. 1.

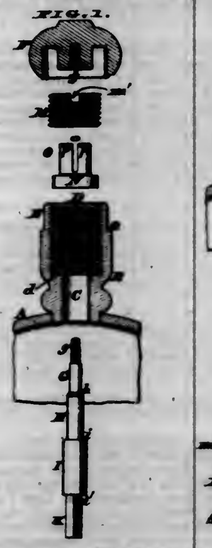


FIG. 2.

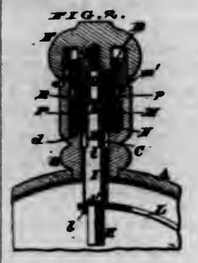


FIG. 3.



I am aware that it has been proposed to provide "key-winding watches," so called, with a chambered stem, and to insert the key into this stem simply as a retaining-pocket, wherein it is held by a spring to prevent it from dropping out. In this construction, however, the key does not project into the hollow of the case, nor is it desirable or necessary that the chamber in the stem shall connect with the hollow cavity of the case, except incidentally to provide room. Keys mounted in pockets in the stems in this manner do not or need not rotate. In the stem-winding pendant herein shown the key must project into the case and must rotate, and it is not intended that it shall ever be withdrawn from the hollow of the stem or be detached from the case.

The only claim of the patent upon which the charge of infringement is based is the first claim, as follows:

1. The combination, in a stem-winding watch, of the tubular stem, a key mounted to rotate in said stem and to project into the movement and engage the winding-arbor, as shown, a spring attached to one of these parts and arranged to engage the other part to form a latch device, as shown, and the said winding-arbor, all arranged substantially as and for the purposes set forth.

The alleged infringement is made under the patent issued to W. W. Bradley, and assigned to John C. Dueber, (No. 411,420,) and dated September 24, 1889. The patentee declares that his invention—

consists in providing a watch-case pendant with a peculiar combination of devices that enables the push-pin or stem to perform the threefold purpose of winding the watch, setting the hands of the same, and operating the case-spring, the details of said devices being hereinafter more fully described, and then pointed out in the claims.

We quote from the explanation of the drawings given by the patentee:

Figure 1 is an enlarged sectional elevation showing the various members of my watch-case pendant separated from each other. Fig. 2 is an axial section showing said parts fitted within the pendant and the push-pin held in its normal position by the action of the case-spring. Fig. 3 is an enlarged axial section of the spring-clutch and a modified form of the keeper.

A represents a portion of the "center" of a hunting-case watch, and B is a pendant attached thereto, said pendant having at its inner end a smooth bore C, opening into a screw-threaded chamber D, of somewhat larger diameter than said bore, thus forming an annular bearing D in said pendant. The opposite or outer end of said chamber is open, and this end of the pendant is reduced in diameter, so as to form a neck E and an annular shoulder e, said neck having the hollow crown or knob F fitted around it, which knob is screw-threaded internally, as at f, to admit the screw g at the outer end of the shank G of the push-pin or stem. h is a rounded or inclined shoulder formed at the junction of said shank with the spindle H of push-pin I, the latter having a shoulder i at its upper end and a similar shoulder i' at its lower end, which latter shoulder i' is formed where said pin or stem I joins the square arbor K. This arbor traverses a circular eye l in the free end of the case-spring L, and is arranged to operate either the winding or setting mechanism in the usual manner. Engaged with the screw-threaded chamber D is a hollow nut or keeper M, whose bore m is somewhat larger in diameter at top than at bottom, as more clearly seen in Fig. 3, and the upper end of this nut is nicked or slotted at m' m' to admit a suitable turning implement. This nut may either bear against the spring-clutch, or it may be coupled thereto; but as seen in Fig. 2 said nut is screwed down until it comes in contact with an annular collar N at the inner end of said clutch O, the latter having a series of longitudinal slots o extending from its upper end almost to said collar. Furthermore, the inner portion of this clutch is chambered out at P, thereby affording an annular shoulder R between said chamber and the spring-prongs p.

Fig. 2 shows the parts properly fitted together and in their normal position.

When the various parts of this pendant are properly fitted together and occupy their normal positions, as seen in Fig. 2, the stress of spring L advances the push-pin I and forces its shoulder h against the shoulder R of the clutch, thereby causing the crown F to recede a slight distance from the shoulder e, in which position of the push-pin the arbor K is in gear with the winding mechanism; but by pushing against the crown until it strikes the shoulder e the spring L will be bent sufficiently to liberate the "front back" of the watch and allow it to fly open, and by properly turning said crown the watch will be wound in the usual manner. This free opening of the case-spring and winding of the watch is due to the fact that the spindle H now occupies the chamber P of the clutch, while its prongs p surround the shank G, but do not grasp the same. Therefore the opening of the case and winding of the watch can be performed without producing any frictional action of the spring-clutch, but when the hands require setting sufficient force is exerted against the crown F to pull it forward until the shoulder i comes in contact with the inner end of collar N, which limits the advance of the push-pin and brings its arbor K into communication with the setting mechanism. This advance or outward pull of the push-pin or stem causes its rounded shoulder h to act as a wedge that gradually opens the clutch-prongs p and allows the spindle H to be grasped by them, as seen in Fig 4. Consequently the clutch has now a frictional hold around said spindle, and when the push-pin is turned either to the right or left said clutch turns in unison therewith, because it is not engaged with the chamber D; neither is it secured tightly within said chamber by the nut or other keeper M. After the hands have been set sufficient pressure is exerted against the crown F to overcome the grasp of the clutch and force the push-pin or stem back to its original position, where

it again assumes its normal function of opening the case and winding the watch.

The court below held that the Colby patent was for a new and useful device and was valid, and that the defendants' device was an infringement thereof, and after the hearing upon the merits entered a decree for a perpetual injunction, and referred the question of damages to a master. Pending the reference this appeal was taken, under section 7 of the court of appeals act, from the decree below, as an interlocutory order granting an injunction.

Before TAFT, LURTON, and HAMMOND, Judges.

Mr. Chas. R. Miller and *Mr. Robt. H. Parkinson* for the appellants.

Mr. Lysander Hill for the appellees.

TAFT, *J.*, (after stating the facts:)

The decree of the circuit court must be reversed for two reasons: first, because the Colby patent, in view of the state of the art, did not involve patentable invention; second, even if the Colby patent can be sustained, its scope is so narrow, in view of prior inventions, that the defendants' device is not an infringement.

The object of Colby's device was to permit the movement of a stem-winding watch to be lifted out of the case and freed from the stem-arbor or key by withdrawing the key from its connection with the movement back into the stem and so securing it in both its outer and inner positions in the stem that it could not be moved from either to the other without an effort. The outer and inner positions of the key were secured by spring-latches. The spring-latches were effected by a spring attached either to the inside of the stem or to the key, the ends or shoulders of which took into or struck against annular grooves or shoulders on the other piece. It was old in the art to permit the movement of the stem-winding watch to be removed from the case by withdrawing the key back into the stem. This is shown in the Fitch patent issued October 28, 1879. It has the ordinary stem and stem-arbor. The stem-arbor projects into the movement and engages the winding-arbor. A spiral spring working between a shoulder on the inner end of the stem-arbor and the inner end of the pendant or stem holds the stem-arbor in engagement with the winding-arbor. When the movement is to be removed and it is desired to retract the stem-arbor, the owner or operator pulls the crown of the stem-arbor outward, overcomes the force of the spiral or helical spring, and withdraws the stem-arbor into the stem sufficiently to permit the lifting of the movement out of the case. A similar patent granted to Fitch, with the helical spring placed inside the stem instead of inside the case, was an earlier patent by the same inventor. The Fitch patent, it will be observed, had not the spring-latch feature of the Colby patent. The spiral spring operated merely to hold the stem-arbor, by the constant force of the spring, in operation with the winding-arbor, and the spring-pressure had to be overcome by the operator, and continuously overcome while the stem remained retracted. The Fitch patent does show, however, the retraction of the stem from one position to another for the purpose of releasing the movement, and it uses as an agent in maintaining one of the two positions a spiral or helical spring. It presents the same short stem-arbor that we find in the Colby patent.

The Lehman patent is for a stem-winding and stem-setting watch—that is, a watch in which the key in the stem extends into the movement and may be adjusted either to wind or to set the watch by its longitudinal movement in the stem. In order to maintain the key in the inner and outer positions in the stem, two annular grooves on the key are provided at its inner end within the case, and a spring-latch which is secured in the movement takes into one or the other of these annular grooves and holds the stem-arbor in position either for winding or setting. The spring, like that in the Colby patent, is strong enough to hold the stem in position against any movement of the crown, except by special effort. The Lehman patent thus shows the spring-latch inside of the case used upon the stem-arbor to secure the inner and outer positions of the stem-arbor against anything but special effort. The Lehman patent, however, does not provide for an easy removal of the movement from the case by retraction of the stem-arbor. The Yager patent, invented in 1862, is a French patent for a stem winding and setting watch in which the movement may be easily taken out of the case by a retraction of the stem. The inner end of the key or stem-arbor, reaching beyond the stem inwardly, has two annular grooves. Inside the outer rim of the case is a split spring, which embraces the end of the stem-arbor. As the stem-arbor is pulled outwardly this spring takes into one annular groove of the arbor, and as the arbor is pressed inwardly it takes into the other, and thus secures a stationary position of the stem-arbor, permits its rotation in either position, and prevents its disturbance except by special effort. There is no difference between the spring-latch of the Yager patent and the functions which it performs and those which the spring-latch in the Colby patent performs except that the spring-latch of the Colby patent is located inside of the stem instead of being inside the case. We thus find in the prior art the use of the spring-latch upon the stem for the exact purpose which Colby had in mind—namely, of securing the stem in two different positions, the inner and outer positions, from either of which the arbor could not be moved to the other position without special effort. Even if it required invention to change the location of the spring-latch from its position inside the case, as shown in the Yager and Lehman patents, to one inside the stem, as in Colby's device, that change was also suggested in the prior art. It is found in the Fisher and Lucas patent. That was a patent of June 26, 1877. It was not for either a stem-winding or a stem-setting watch. It was a so-called "key-winding" watch; but the stem of the watch was used as the place in which to hold the key. When the key was to be used as such, it was removed entirely from the stem and applied as an ordinary key in an old-style watch. When not thus used, the key fitted into the stem, and while in the stem operated as a push-pin against the spring which held the case shut, and thus was used to open the case. The key had a crown like that of the stem-arbor of a stem-winding watch. The stem did not open into the case of

the watch and the key did not reach through the side of the case into the movement, as in stem-winding watches. The key was secured in the stem by springs attached to the key, which had annular grooves in them, into which the projecting outer ends of the stem took and prevented the key from being removed from the stem except by a pull. This showed the use of the spring-latch inside the stem to secure the key in a position from which it could not be moved except by special effort. It showed the spring-latch operating between the stem and the stem-arbor or key. Although the capacity of the key for rotation in the stem was not utilized in the Fisher and Lucas patent, it plainly had such capacity. It is true the key was not used as a key while in its position inside of the stem, but it occupied the place where the ordinary stem-arbor is, and, so far as the function of retaining the key in one position from which it could not be moved except by special effort, the spring and the groove, or, in other words, the spring-latch, of the Fisher and Lucas patent discharged the same function as the spring-latch of the Colby patent. The Colby patent is a mere duplication of the same device, in the same place, for the same general purpose. By putting the Fisher and Lucas patent alongside the Lehman and Yager and the Fitch patents one finds every element of the Colby patent discharging the same function without accomplishing any new result. The Colby device is possibly a neater form and works in a smoother way; but this is all. It is questionable whether, without reference to the prior art, the use of a latch-spring to hold yieldingly a shaft inside of a cylinder in two different positions at different times would involve patentable invention. Certainly it does not involve patentable invention when we find the suggestions of every feature of it in the prior patents already referred to.

The fact that for a time the defendant was a licensee of the Colby patent cannot, of course, estop the defendant from disputing its validity in a suit for infringements charged to have taken place after the license was withdrawn. Such a fact, in a doubtful case, might have considerable evidential force as an admission of the validity of the patent by the licensee. Here, however, we do not have a case involving doubt. More than this, the license embraced the Fitch and the Fisher and Lucas patents, and the admission contained in the act of accepting the license thereby loses much of its weight.

Another ground relied upon and strenuously pressed on the court for holding that the Colby patent involves invention is the fact that it has gone into very general use. The Colby device is used chiefly in stem winding and setting watches, and not in a stem-winding watch, for which it was invented. It is used in connection with movements made under the Church patent, which we had to consider in the case of *Watch Co.* v. *Robbins*, (70 O. G., 132; 22 U. S. App., 601; 12 C. C. A., 174; 64 Fed. Rep., 884.) The in-and-out movement of the stem-arbor of the Colby patent was, when united with the Church patent, readily adapted to shift the winding and hand-setting train from one engagement to the other; and as the patents were owned by the same persons the Colby device came to be largely used with the Church movement. Its extensive use is due rather to the meritorious character of the Church invention than to the fact that it has supplied a long-felt want in the field of watch-making. Extensive use is only an element to be considered in a case where patentability and invention are doubtful. Where, as here, the extended use can be attributed to something other than the mere novelty of the device, it loses its evidential force.

Second. Even if the Colby device is to be sustained as valid, the prior art is so close to it that its scope must be narrowly limited. The defendants' device does not contain a spring attached either to the stem or to the key. It is attached to a hollow nut or threaded cylinder which moves with the rotation of the key and saves the grinding of the spring ends in the annular grooves or against the annular shoulders and performs the same function in a somewhat different way. Unquestionably if the Colby patent could be held to be a pioneer patent and one requiring a broad construction we should hold that the latch-spring contained in the Colby patent is seen in the defendants' device; but the Colby patent must be limited to the particular form shown, and in this view there is a distinguishing difference in that the spring in the defendants' device is not attached to either the key or the stem. It is held in position inside of the stem in a different way—a way which enabled the inventor to prevent the friction of the spring end against the stem or the stem-arbor during the rotation of the stem-arbor. This is enough to escape infringement. The learned judge at the circuit held otherwise. An examination of his opinion satisfies us that he gave much too wide a scope to the object and the result of the Colby patent and that the benefits which he pointed out are due wholly to its connection with the Church movement in a stem winding and setting watch. Of course Colby would be entitled to any benefit which might come from the use of his device in a stem-set watch, although he might never have contemplated its use in such a watch; but the argument that his device must have novelty and invention in it because of its extensive use must fail when it is seen that the extended use finds its explanation in the novelty and utility of the Church movement, with which it is sold, and not in anything either novel or strange in the mechanism of the Colby stem.

The decree is reversed, at the cost of the appellees, with instructions to dismiss the bill.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 2. TUESDAY, OCTOBER 13, 1896. PRICE—$5 per year.

CONTENTS.

	Page
ATTORNEYS	159
EXTRACTS FROM THE RULES OF PRACTICE, ETC.	159
PHOTOGRAPHIC COPIES OF DRAWINGS	159
NAMES OF APPLICANTS	159
PRIVILEGES OF THE SCIENTIFIC LIBRARY	150
ISSUE OF OCTOBER 13, 1896	160
APPLICATIONS UNDER EXAMINATION	160
PATENTS GRANTED	161
REISSUES	305
DESIGNS	305
TRADE-MARKS	309
PRINTS	None.
LABELS	None.
DECISIONS OF THE U. S. COURTS—	
Drawbaugh *v.* Seymour, Commissioner of Patents	313

Attorneys.

DEPARTMENT OF THE INTERIOR,
OFFICE OF THE SECRETARY,

Washington, D. C., October 7, 1896.

SIR: The Secretary of the Interior has ordered that John Johnson, of New York city, N. Y., be not recognized after this date as attorney or agent in the prosecution of any claim or other matter before this Department or any Bureau thereof.

Very respectfully,

E. WOMACK,
Chief Clerk.

The Commissioner of Patents.

Extracts from the Rules of Practice in Relation to the Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

Photographic Copies of Drawings.

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
WASHINGTON, D. C.

1. The Patent Office is prepared to furnish positive blue-print photographic copies of any drawing, foreign or domestic, in the possession of the Office, in sizes and at rates as follows:

Large size, 10x15 inches.....25 cents per copy
Medium size, 7x11 inches.....15 cents per copy
Small size, 5x8 inches.....5 cents per copy

2. An order for small-sized copies can be filled only when it relates to the drawings of an application for patent. *Single* small-sized copies of such drawings will be furnished only where they are to be placed in the Office file-wrappers, under Order No. 986 of January 25, 1894. Otherwise, small-sized copies are made only *in duplicate*, and one of each pair of copies is retained by the Office to be placed in the file, unless copies have been previously furnished for the file, in which latter case both copies will be forwarded as ordered. It follows, therefore, that in all cases, except as above indicated where the copies are to be placed in the file, small-sized copies must be paid for at the rate of ten cents per sheet of drawings copied; that is, two copies of each sheet must be ordered.

3. Copies that are to be certified must be of the large or 10x15 size. Copies of the drawings of foreign patents also will be furnished only in the large size. In ordering copies of the drawings of foreign patents either the serial number of the domestic application in which they were cited or the class and subclass in which such drawings may be found, must be given.

4. Except in the case of foreign patents, the Office will not ordinarily fill orders for less than all the sheets of drawings of an application or patent. Where, however, after copies of the drawings of an application have been placed in the file, a part of the sheets of such drawings are altered or additional sheets are filed, then orders for duplicate copies limited to such altered or added sheets only will be filled.

5. Delays in filling orders will be greatly lessened if the fullest data are furnished, and the work will be much facilitated if a separate order is made for each patent or application. The Office will furnish blanks for this purpose, on request.

6. The five-cent coupons issued by this Office are receivable in payment for blue-prints, but postage-stamps will not be accepted for this purpose. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

This notice approved August 18, 1896.

S. T. FISHER,
Acting Commissioner.

Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of October 13, 1896.

Patents	439	No. 560,157 to No. 560,595, inclusive.
Designs	21	No. 25,170 to No. 25,190, inclusive.
Trade-Marks	33	No. 28,978 to No. 29,010, inclusive.
Labels	None.	
Prints	None.	
Reissue	1	No. 11,572.
Total issue	494	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	...	New Hampshire	3	...
Arizona Territory	....	....	New Jersey	22	....
Arkansas	1	....	New Mexico Ter	....	....
California	10	2	New York	69	14
Colorado	4	....	North Carolina	3	...
Connecticut	19	1	North Dakota	3	....
Delaware	2	...	Ohio	48	4
District of Columbia	3	....	Oklahoma Ter	1	....
Florida	1	....	Oregon	4	....
Georgia	2	....	Pennsylvania	46	3
Idaho	....	....	Rhode Island	6	...
Illinois	32	2	South Carolina	1	....
Indian Territory	....	....	South Dakota	1	....
Indiana	13	...	Tennessee	5	....
Iowa	9	1	Texas	6	1
Kansas	7	....	Utah	....	....
Kentucky	4	....	Vermont	2	....
Louisiana	2	....	Virginia	5	....
Maine	3	....	Washington	2	....
Maryland	2	....	West Virginia	3	....
Massachusetts	29	....	Wisconsin	8	....
Michigan	12	....	Wyoming	....	....
Minnesota	3	....	U. S. Army	....	....
Mississippi	1	....	U. S. Navy	....	....
Missouri	13	....			
Montana	....	....	Total to citizens of the United States	422	28
Nebraska	3	...			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina Republic	...	...	Japan	....	....
Austria-Hungary	1	...	Mexico	....	....
Bahama Islands	1	....	Netherlands	1	...
Belgium	....	...	Newfoundland	....	..
Bermuda	....	....	New South Wales	1	...
Brazil	....	...	New Zealand	1	....
Canada	2	....	Norway	....	....
Cape Colony	....	...	Porto Rico	....	...
Chile, Republic of	....	....	Portugal	....	..
Colombia	....		Queensland	....	....
Costa Rica	....	....	Russia	1	....
Cuba	....	...	San Salvador	....	....
Denmark	....	...	Scotland	1	....
Ecuador	....	...	South Australia	....	...
England	6	1	Spain	....	...
France	2	....	Sweden	1	...
Germany	16	4	Switzerland	2	...
Greece	....	...	Venezuela	....	...
Guatemala	....	...	Victoria	....	...
India	....	...	West Australia	....	.
Ireland	....	....		—	—
Island of Guernsey	....	....	Total to citizens of foreign countries	38	5
Italy	2	...			

APPLICATIONS UNDER EXAMINATION.

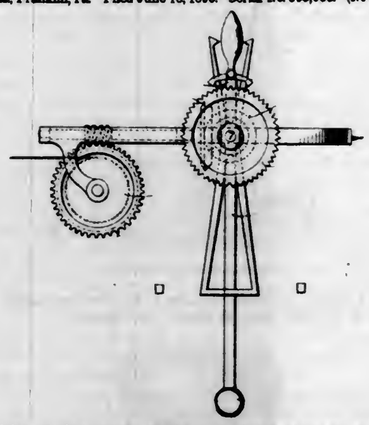
Condition at Close of Business October 6, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Sept. 8	Sept. 28	153
250	VIII. Furniture, Beds, Store Furniture, etc.	Sept. 6	Sept. 28	215
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Sept. 10	Sept. 25	118
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Sept. 8	Sept. 15	132
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Sept. 8	Sept. 11	201
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Sept. 12	Sept. 9	156
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Sept. 8	Sept. 9	241
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Sept. 8	Sept. 9	285
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Sept. 8	Sept. 8	232
246	I. Tillage and Fences	Sept. 9	Aug. 28	204
	Between one and two months.			
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Aug. 22	Sept. 19	211
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Aug. 11	Sept. 12	181
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Aug. 25	Sept. 11	192
138	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 13	Sept. 10	147
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Aug. 19	Sept. 9	378
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Sept. 5	Sept. 5	193
215	XVII. Paper Manufactures and Printing.	Aug. 27	Sept. 5	174
93	XXI. Textiles, etc	Aug. 20	Sept. 5	162
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 1	257
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 13	Aug. 28	297
120	IX. Hydraulics, Fire-Extinguishers, etc.	Aug. 24	Aug. 26	237
248	XVIII. Steam-Engineering, etc	Aug. 19	Aug. 21	153
106	II. Farm Stock, Products, etc	Aug. 14	Aug. 21	378
221	XXIII. Instruments of Precision, Acoustics, etc.	Aug. 22	Aug. 20	356
102	XIX. Stoves and Furnaces	Aug. 17	Aug. 17	313
253	X. Carriages and Wagons	Aug. 10	Aug. 15	484
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 6	Aug. 10	395
85	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 8	Aug. 8	392
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 15	July 17	405
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes.	July 20	Aug. 20	1187
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 3	Aug 19	481
	Between three and four months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 1	Aug. 22	676
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 4	July 31	819
	Total number of applications awaiting action			10,405
	Under one month in arrears.			
	Designs	Sept. 14	Sept. 26	147
	Trade-Marks	Sept. 18	Sept. 18	115

PATENTS

GRANTED OCTOBER 13, 1896.

569,157. SYSTEM FOR OPERATING OIL-WELLS. GEORGE ALLEN, Franklin, Pa. Filed June 18, 1896. Serial No. 595,980. (No model.)



Claim.—1. In a system for the transmission of power, the combination with a connecting medium between the driving and driven mechanism, of a compensating device interposed between the ends of the connecting medium and constituting a part thereof, and fixed stops with which the compensating device engages, the parts being constructed and arranged to automatically shorten or lengthen the connecting medium, and thereby maintain it at any predetermined length, substantially as set forth.

2. In a system for the transmission of power, the combination with a reciprocating connecting medium between the driving and driven mechanism, of a compensating device for shortening and lengthening said connecting medium, and fixed stops with which said compensating device engages and by which it is caused to operate, substantially as set forth.

3. In a system for the transmission of power, the combination with a reciprocating connecting medium between the driving and driven mechanism, of a compensating device interposed between and connecting two sections of the connecting medium, said compensating device comprising means for shortening or lengthening the connecting medium, and fixed stops with which the compensating device engages, substantially as set forth.

4. In a system for the transmission of power, the combination with a reciprocating connecting medium between the driving and driven mechanism, of a compensating device interposed between and connecting two sections of the connecting medium, said compensating device being provided with a ratchet and pawl, and devices connected therewith for taking up the slack of and imparting slack to the connecting medium, and fixed stops with which the compensating device engages and governs its action, substantially as set forth.

5. The combination with a connection between driving and driven mechanism, of a compensating device connected with said connection and consisting of a lever, a ratchet device to be operated by said lever, a weighted arm, means for operating said weighted arm to throw the ratchet device in operation and for moving said lever to move the ratchet devices and devices between the ratchet devices and said connection, whereby to lengthen and shorten the latter automatically, substantially as set forth.

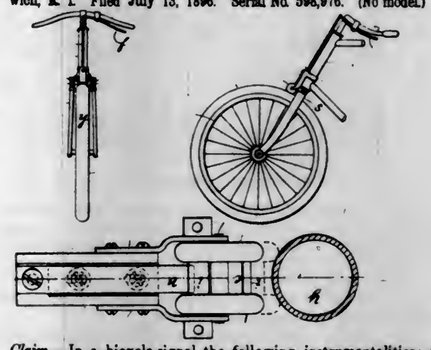
6. The combination with a connection between driving and driven mechanism, of a compensating device attached to said connection, said compensating device comprising a ratchet device, a lever for operating said ratchet device, gearing between said ratchet device and said connection, a weighted arm constructed and adapted to move the dog of the ratchet device into operative position automatically, and a stop for moving said weighted arm and for moving the lever on its fulcrum whereby to transmit motion to the ratchet device and gearing for the purpose of lengthening or shortening said connection, substantially as set forth.

7. The combination with a connection between driving and driven mechanism, of a compensating device attached thereto, said compensating device comprising, a pivoted lever, means for causing said lever to move on its fulcrum, a ratchet-wheel, gearing connected with said ratchet-wheel for causing said connection to be lengthened or shortened, a double dog adapted to engage the ratchet-wheel, said dog being pivoted to said lever and provided with a weight, and means for automatically throwing one or the other end of said dog in engagement with the ratchet-wheel, substantially as set forth.

8. In a compensating device, the combination with a frame, devices mounted in said frame and adapted to lengthen or shorten the rod or connection between driving and driven mechanism, a shaft mounted in said frame and geared with said devices, a ratchet-wheel secured to said shaft, a lever mounted loosely on said shaft, stops for moving said lever on its fulcrum, a weighted dog pivotally connected to said lever, a pivotally-supported weighted arm and fingers projecting from said weighted arm and adapted to strike the dog and throw it in engagement with the ratchet-wheel, said weighted arm being constructed and adapted to be operated by said stops, substantially as set forth.

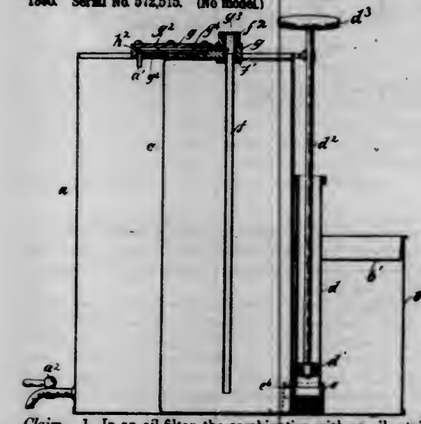
9. In a compensating device, the combination with a frame, of a drum mounted therein and adapted to receive a section of wire or cable thereon, said frame being adapted to have another section of said wire or cable attached thereto, a worm-wheel on the shaft of said drum, a worm-shaft meshing with the worm-wheel, a gear secured to said worm-shaft, a transverse shaft, a gear on said transverse shaft and meshing with said first-mentioned gear, a ratchet-wheel secured to the transverse shaft, a weighted lever loosely mounted on said transverse shaft, a weighted dog attached to said lever and adapted to engage the ratchet-wheel, a weighted arm mounted on the transverse shaft, fingers projecting from said weighted arm and terminating at opposite sides of the weight on the dog, and stops for operating said weight-arm for throwing the dog and for moving said lever for operating the ratchet devices, substantially as set forth.

569,158. BICYCLE-ALARM. BENJAMIN ARNOLD, East Greenwich, R. I. Filed July 13, 1896. Serial No. 598,976. (No model.)



Claim.—In a bicycle-signal the following instrumentalities: a plate, with means for attaching it rigidly to the front fork, a block slidingly attached to said plate, a notched wheel fast on a shaft, bearings on the sides of the block to hold said shaft, a flat resilient tongue attached at one end to said block and having its free end in one of the notches in said wheel, a friction-wheel also fast on said shaft in position to rest on the front wheel of the bicycle, with means for sliding the block up and down, substantially as described.

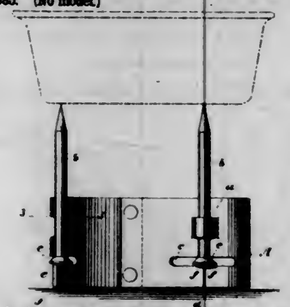
569,159. OIL-FILTER. FOREST RAIN, Chicago, Ill. Filed Dec. 18, 1895. Serial No. 572,515. (No model.)



Claim.—1. In an oil-filter, the combination with an oil-retaining tank, of a pressure-tank situated within said retaining-tank, a filtering-chamber provided upon the top of said retaining-tank, a pipe or tube extending downward from said filtering-chamber into said pressure-tank nearly to the bottom thereof and communicating with said filtering-chamber, a porous diaphragm or partition provided in said filtering-chamber through which the oil must pass in passing from the pressure-tank to the retaining-tank, a receiving-tank mounted upon the exterior of said retaining-tank, and a pump for forcing oil from the receiving-tank into the pressure-tank; substantially as described.

2. In an oil-filter, the combination with the cylindrical oil-tank *a*, of the cylindrical pressure-tank *c* situated therein, the crescent-shaped receiving-tank *b* mounted upon the exterior of said oil-tank *a*, a pump for forcing the oil from said receiving-tank into said pressure-tank, the vertical tube or pipe *f* extending into the pressure-tank, a removable cap upon the upper end of said tube or pipe, a filtering chamber or receptacle mounted upon the upper end of said oil-tank *a* and provided with a removable cover, and a porous diaphragm or partition situated within said filtering-receptacle; substantially as described.

569,160. ENAMELER'S TRIPOD. EDWARD W. BALL and LOUIS E. VACHEROT, Wood Haven, N. Y., assignors to the Lalance & Grosjean Manufacturing Company, New York, N. Y. Filed July 1, 1896. Serial No. 597,685. (No model.)



Claim.—1. An enameler's tripod comprising an apertured base A and headed removable points *b* seated in the apertures, and point-supports carried by the base in proximity to the apertures and adapted to receive the thrust of the heads of the points.

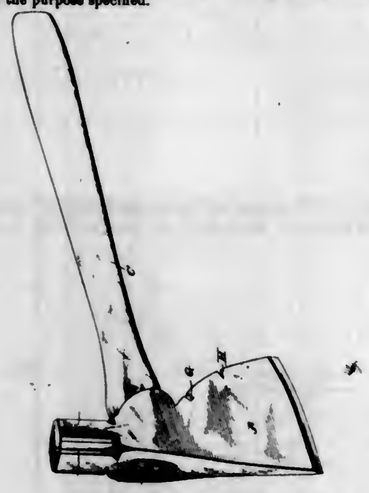
2. An enameler's tripod comprising a body A provided with stirrups *a* and slots *c d*, the said slots *c d* forming tangs *f* and removable points cooperating with the stirrups and slots.

3. An enameler's tripod comprising a slotted or channeled base combined with removable points seated in the slots or channels.

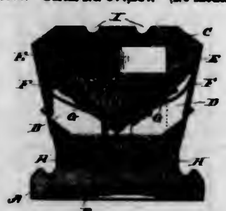
4. An enameler's tripod comprising a slotted base provided with point-supports combined with removable points passing through the material of the base and maintained in the base by the point-supports.

569,161. HATCHET. JAMES R. BAILEY, Connellsville, Pa. Filed Jan. 11, 1896. Serial No. 575,069. (No model.)

Claim.—As a new article of manufacture, a hatchet having its poll provided with beveled corners, and having longitudinal grooves centrally of the beveled portions, a shoulder formed at the end of the bevel and groove by an undercut which receives the head of the nail as and for the purpose specified.



569,162. INK-WELL. JAMES R. BAILEY, Connellsville, Pa. Filed Jan. 29, 1896. Serial No. 577,287. (No model.)



Claim.—1. In an ink-well, a casing, tubes leading into said casing, a base, a boss on said base adapted to fit in the casing and close the ends of the tubes, as and for the purpose described.

2. An ink-well consisting of a casing and a base, the latter having a boss projecting upward therefrom adapted to fit the open end of the former, one or more tubes projecting through the casing into the reservoir at an angle and terminating in contact with the boss, escutcheons secured to the casing over the ends of the tubes, doors hinged to said escutcheons and adapted to normally hold said doors in a closed position and permit them being forced open by a pen substantially as and for the purposes set forth.

3. In an ink-well, a casing, tubes leading into said casing, a boss adapted to fit within the casing and close the ends of the tubes and notches in the lower ends of the tubes forming inlets with the boss, as and for the purpose described.

4. The herein-described combination of a base A and casing C having a reservoir formed therein, boss B, adapted to close the lower end of the casing and form a bottom for the reservoir, tubes G, projecting through said casing and into the reservoir terminating in contact with the boss, openings H, formed in the lower end of the tubes whereby ink is fed from the reservoir to the tubes and a given level maintained, escutcheons E, secured to the outer surfaces of the casing having openings formed therethrough which register with the tubes, doors F, pivoted to said escutcheons and adapted to close the openings therein, and springs G adapted to close and hold the doors in their closed position and permit them being opened when sufficient pressure is brought thereon substantially as and for the purposes set forth.

5. In an ink-well, an air-tight reservoir, one or more tubes leading into said reservoir at an angle and having their inner ends sealed by bearing against the bottom of the reservoir and an inlet formed in each tube between the edge of the tube and the bottom of the reservoir, as and for the purpose described.

6. In an ink-well, an air-tight reservoir, a number of tubes leading into said reservoir, said tubes having their inner ends joined together and sealed by bearing on the bottom of the reservoir and an inlet formed in each tube between the edge of the tube and the bottom of the reservoir, as and for the purpose described.

7. In an ink-well, a reservoir, tubes leading into the reservoir a boss composed of elastic material adapted to fit in the bottom of the reservoir and seal the lower ends of the tubes and inlets in said tubes, as and for the purpose described.

569,163. SOFA OR LOUNGE. SAMUEL C. BADGUE and AARON T. BALL, Waco, Tex. Filed Apr. 18, 1896. Serial No. 588,115. (No model.)



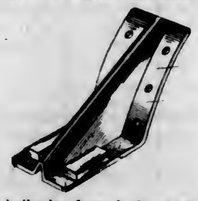
Claim.—1. In a sofa, lounge, or similar article of furniture, the combination with a frame composed of side and end pieces, legs supporting said frame, and guide-strips on the inner side at each end of said side pieces; of a pair of blocks having recesses in their ends, fitting over said guide-strips between said side pieces, and adapted to slide thereon; a bottom composed of woven-wire fabric stretched between said blocks; a central piece mounted longitudinally of said frame, and carrying a double set of ratchet-teeth upon its upper side; a brace rigidly mounted at one end upon the inner side of each of said blocks, and engaging one set of said ratchet-teeth; and means for pulling said blocks in opposite directions toward the ends of the sofa, substantially as described.

2. In a sofa or like article of furniture, the combination with a frame composed of side and end pieces, legs supporting said frame, and guide-strips on the inner side at each end of said side pieces; of a pair of blocks having recesses in their ends, fitting over said guide-strips between said side pieces, and adapted to slide thereon; a bottom composed of woven-wire fabric stretched between said blocks; braces and ratchet-teeth holding said blocks apart; a pair of end frames having side pieces pivoted to the side pieces of the main frame near their ends; and means for supporting said pivoted end frames in the desired position, substantially as described.

3. In a sofa or like article of furniture, the combination with a main frame composed of side and end pieces, legs supporting said frame, and guide-strips on the inner side at each end of said side pieces; of a pair of blocks having recesses in their ends, fitting over said guide-strips between said side pieces, and adapted to slide thereon; a bottom composed of woven-wire fabric stretched between said blocks; a central piece mounted longitudinally in said main frame; a bar provided with two sets of ratchet-teeth thereon mounted upon said central piece; a pair of pawls one mounted upon the inner side of each of said blocks, and adapted to engage one of said set of ratchet-teeth, and act as braces for said blocks; and stay-bolts passing through each of the end pieces of said frame and each of said blocks, substantially as described.

4. In a sofa or like article of furniture, the combination with a main frame composed of side and end pieces, legs supporting said frame, and guide-strips on the inner side at each end of said side pieces; of a pair of blocks having recesses at their ends, fitting over said guide strips between said side pieces, and adapted to slide thereon; a bottom composed of woven-wire fabric stretched between said blocks; a central piece mounted longitudinally in said main frame; a bar provided with two sets of ratchet-teeth thereon mounted upon said central piece; a pair of pawls, one mounted upon the inner side of each of said blocks, and adapted to engage one of said sets of ratchet-teeth, and act as braces for said blocks; stay-bolts passing through each of the end pieces of said frame and each of said blocks; a pair of end frames having side pieces pivoted to the side pieces of the main frame near their ends; and means for supporting said pivoted end frames in the desired position, substantially as described.

569,164. BOILER-LUG. THOMAS C. BEST, Chicago, Ill. Filed May 25, 1894. Serial No. 512,392. (No model.)



Claim.—1. A boiler-lug formed of one integral piece of ductile metal and having its center strengthening-rib U-shaped in cross-section, substantially as described.

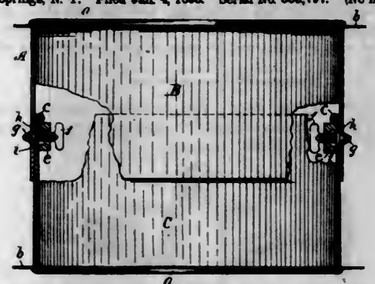
2. A boiler-lug formed of one integral piece of wrought iron or steel provided with a center strengthening-rib, folded or pressed back upon itself to form substantially a U shape in cross-section, and a supporting-flange on each side of the rib, substantially as described.

3. A boiler-lug provided with a center strengthening-rib U-shaped in cross-section, and roll-recesses formed of one integral piece of wrought-iron, substantially as described.

4. A boiler-leg having a center strengthening-rib U-shaped in cross-section, supporting-flanges at an angle thereto provided with roll-recesses; the whole composed of one integral piece of wrought-iron, substantially as described.

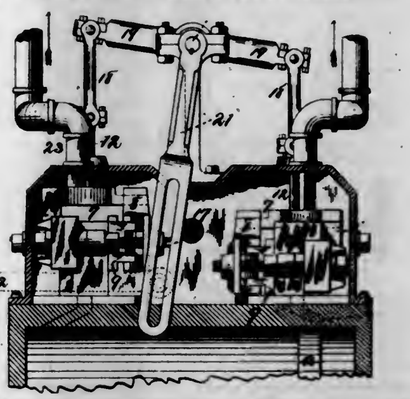
5. In combination with a boiler, a metal supporting-lug for the boiler having a center strengthening-rib U-shaped in cross-section, and rolls upon which the lug is supported and moved, substantially as described.

569,165. STOVEPIPE-THIMBLE. JOHN R. BOSTWICK, Clifton Springs, N. Y. Filed Jan. 4, 1895. Serial No. 533,797. (No model.)



Claim.—A stovepipe-thimble consisting of the overlapping sections B and C, the latter being formed with a stiffening flange or bead at its inner end in combination with screw-nuts held by said section C adjacent to said flange or bead, and fastening-screws held by said nuts and adapted to press the section B, and the nuts being provided each with a slight internal cavity whereby they are adapted to the employment of rigid collars or enlarged parts on the screws near the points of the latter, substantially as and for the purpose set forth.

569,166. VALVE MECHANISM. JOHN M. BOUCK, Gouverneur, N. Y. Filed Oct. 11, 1895. Serial No. 565,313. (No model.)



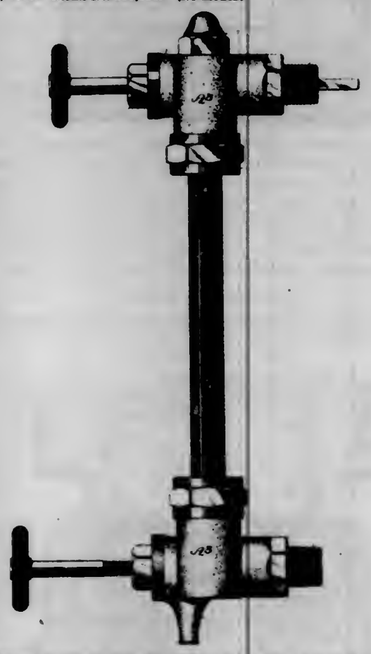
Claim.—1. The combination with a cylinder its piston, and its cylinder-ports, of twin valves in a single steam-chest, each comprising a stationary abutment provided with a port or ports, slide-valves in contact with the vertical faces of said abutment on opposite sides, a yoke across said abutment carrying said slide-valves, a presser-bar engaging adjustably with one of said slide-valves with a rocking bearing, and means to vertically reciprocate said slide-valves to alternately operate said twin valves to open and close their respective steam and exhaust ports, and means to supply steam to said steam-chest in which it surrounds both valves and from which it enters the cylinder through said valves alternately.

2. A valve comprising an abutment provided with a suitable port or ports, slide-valves in contact with opposite vertical faces of said abutment, a yoke across said abutment carrying said slide-valves, a presser-bar engaging adjustably with one of said slide-valves with a rocking bearing and means to reciprocate said slide-valves, to open or close the inlet or exhaust the ports, in combination with a steam-chest inclosing said valve.

3. The combination with a cylinder provided with a piston and having suitable cylinder-ports, and a steam-chest upon said cylinder, of twin valves, inclosed within said steam-chest, each comprising an abutment, slide-valves in adjustable contact with opposite faces of said abutment, a presser-bar engaging with one of said slide-valves with a rocking bearing and suitably connected to the other one, a yoke by which said slide-valves are carried, a stem connecting each yoke to the end of a walking-beam and means to operate said beam to reciprocate said slide-valves to admit or exhaust steam from the cylinder.

4. A cylinder and steam-chest thereon in combination with a valve consisting of an abutment provided with a steam-port registering with a cylinder-port and an exhaust-port, said abutment, a slide-valve in contact with the rear face of said abutment, a cross-bar carrying it, a pressure-bar adjustably supported by said cross-bar, a slide-valve pivoted and adapted to rock upon said pressure-bar and in contact with the front face of said abutment, and means to reciprocate said yoke and slides to close the exhaust-port and open the steam port and to close the steam-port and connect it and the cylinder-port to exhaust from said cylinder, and an exhaust-pipe connected to said exhaust-port.

569,167. WATER-GAGE. William Britton, Boone, Iowa, assignor of one-half to James Halbert, Boonesborough, Iowa. Filed June 24, 1895. Serial No. 553,995. (No model.)

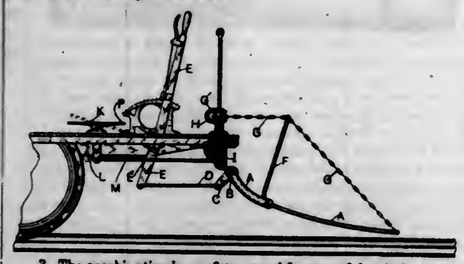


Claim.—A water-gage for boilers, comprising two valves, each designed to be screwed into the boiler and each having a central longitudinal opening communicating with the boiler, also a chamber in its central portion having a valve-seat at each end, a double valve in each chamber, a lateral extension on each valve-chamber having a vertical bore communicating with the said chamber of the valve, a glass tube having its ends seated in said vertical bores means for closing the end of the lower vertical bore and a screw-plug in the top of the upper vertical bore to provide means for detaching the glass tube without disturbing either valve, substantially as and for the purposes stated.

569,168. SAFETY-GUARD FOR CARS. Andrew J. Brown, Chicago, Ill. Filed Feb. 25, 1895. Serial No. 539,526. (No model.)

Claim.—1. The combination in a safety-guard for cars having a cushioned frame A forming a platform which is pivotally connected to a horizontally-swinging hanger which is pivotally attached to the car, of pulleys on the car and a chain or like flexible support having the central portion around the pulleys and the ends thereof attached to the frame A, whereby the chain serves to hold the frame at the desired distance above the track and is adapted to have a longitudinal movement over the pulleys to permit lateral vibrations of the frame, substantially as described.

2. The combination with a car, of a horizontal rock-shaft B and operating-lever E therefor upon the car, and a safety-guard at the front end of the car comprising a main frame A filled with cushioning material, and a cushioned back frame F connected pivotally with frame A, to fold against the same, and a chain connected with the car and with the two frames which is adapted to hold them in position for duty, the main frame A rigidly connected with a rock-shaft to be swung in the vertical plane as the shaft is rocked, the shaft mounted in bearings in a hanger which is pivotally mounted on the car, to vibrate with the shaft and the safety-guard frames in a horizontal plane, and means on the car through which the hanger is vibrated, substantially as described.



3. The combination in a safety-guard for cars of the chain or other flexible support G, the pulleys G′ and G″, and tube H between the pulleys, the chain attached to the safety-guard frames and operating over the pulleys and through the tube, in the manner and for the purpose as described.

569,169. REVERSIBLY-SUPPORTING WRITING-TABLET. David I. Byers, Hartwell, Ohio. Filed Nov. 9, 1895. Serial No. 568,420. (No model.)



Claim.—1. In an apparatus of the kind and for the purpose described, the combination of an inclined writing-tablet, a supporting-frame for it, roll-paper supports projecting from its elevated end thereof, swinging clamps pivotally supported, reaching across the tablet at each end thereof, said clamps being from their pivotal supports extended inwardly below the writing-tablet and a spring on the under surface of the latter acting by pressure on said inwardly-extended parts of the clamps, for the purpose described.

2. In an apparatus of the kind and for the purpose described, the combination of an inclined writing-tablet, a supporting-frame for it, roll-paper supports projecting from its elevated end, clamps reaching across the tablet, one at each end thereof, rocker-bars 16 and 19, journaled in the sides of frame 7 to which the clamps are connected and thereby pivotally supported, and springs bearing against flat surfaces on the rocker-bars to hold them in adjusted positions.

3. In an apparatus of the kind and for the purpose described, the combination of an inclined writing-tablet, a supporting-frame for it, roll-paper supports projecting from its elevated end, rocker-bars 16 and 19 journaled in the sides of frame 7, a clamp 12 reaching across the tablet near the upper end thereof having an operating-handle 14 and its ends bent down at the sides of the tablet and connected to the protruding ends 15 of rocker-bar 16, a combined clamp and tearing-blade 13 reaching across the tablet near the lower end thereof, arms 17 whereby it is secured to the protruding ends 18 of rocker-bar 19, operating-knobs 20 for clamps 13 and a spring 21 secured midway between the rocker-bars to the under side of the tablet and in contact with the former for the purpose described.

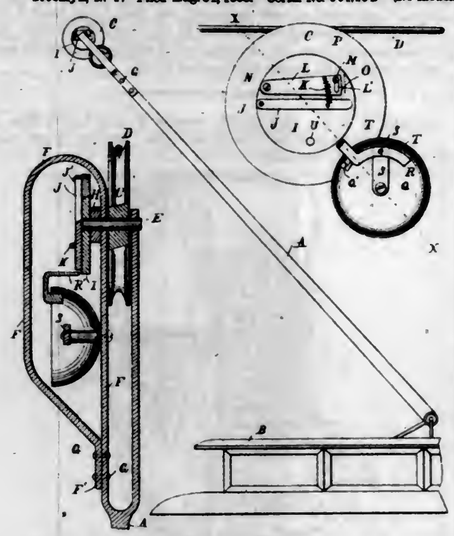
569,170. BOG-CUTTER. John R. Cannon, West Suffield, Conn. Filed July 10, 1895. Serial No. 555,562. (No model.)



Claim.—In combination, the shafts *a* each extended to form a handle *b*, the uprights *c* and the two knife-blades pivoted together at

the rear end and pivotally and adjustably attached to said uprights through the medium of bolts and nuts, all substantially as described.

569,171. SPEED-INDICATING ALARM. Benjamin F. Card, Brooklyn, N. Y. Filed Aug. 31, 1895. Serial No. 561,104. (No model.)

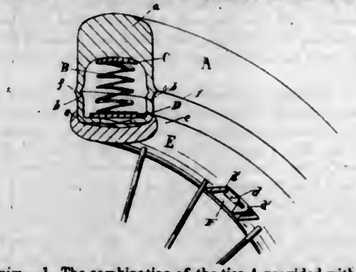


Claim.—1. The combination of a car propelled by electric energy, a pole extending therefrom, a trolley upon the pole and adapted to roll along an electric conductor and means substantially as described governed by the trolley independently of electrical energy for giving a signal at and beyond a predetermined speed of said car.

2. The combination of a car propelled by electric energy, a pole extending therefrom, a trolley upon the pole and adapted to roll along an electric conductor and means governed by the trolley for giving a signal at and beyond a predetermined speed of said car, said means consisting of a signal and a centrifugal device for operating the signal and driven by said trolley independently of intermediate speed-increasing gearing.

3. The combination of a car propelled by electric energy, a pole extending therefrom, a trolley upon the pole and adapted to roll along an electric conductor and means governed by the trolley for giving a signal at and beyond a predetermined speed of said car, said means consisting of a support fixed to and rotary with said trolley, an arm pivoted upon said support eccentrically to the axis of said trolley and movable in a plane perpendicular to said axis, a spring for limiting the throw of said arm and having one end fixed thereto and the other end attached to an adjustable arm, a bell secured to the tine F of the fork at the end of the trolley-pole, a vibrator R having a striker Q′, a spring T and an extension R′ of the vibrator lying out of the path of the end of the arm J, whereby and for the purpose set forth in the specification, the end of said arm will be thrown into contact with and strike the extension and ring the bell at and beyond the predetermined speed of said car.

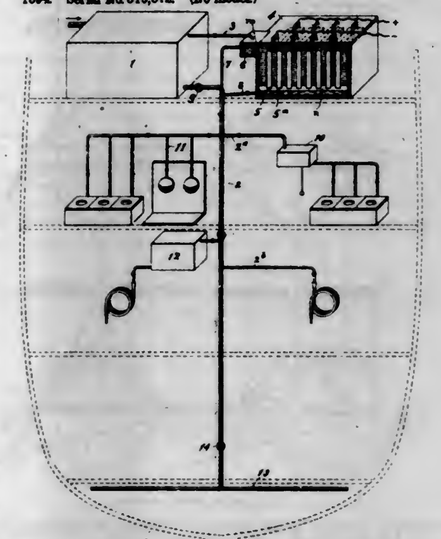
569,172. BICYCLE-TIRE. John W. Carns and Edward Failor, Pierce, Ohio. Filed Dec. 30, 1895. Serial No. 573,691. (No model.)



Claim.—1. The combination of the tire A provided with the side members *b*, having the creases *f*, the springs B provided with the hooks *c*, the retaining-band D located above the lower convolutions of the springs, and seated in hooks *c*, and means for clamping the band D upon the felly substantially as and for the purpose set forth.

2. The combination of the tire A provided with the side members *b*, stitched together the springs B, provided upon their outer ends with the plates C, the retaining-band D located over the lower convolutions of the springs, and the right and left screw-threaded bar *d*, substantially as and for the purpose specified.

569,173. APPARATUS FOR DISINFECTING SHIPS OR OTHER STRUCTURES. Henry R. Carsel, New York, N. Y. Filed June 22, 1894. Serial No. 516,072. (No model.)



Claim.—1. An apparatus for disinfecting ships comprising a reservoir, an electrolytic tank connecting therewith by a feed-pipe, a distributing-pipe and a pair of branch pipes connecting both the reservoir and the electrolytic tank with the distributing-pipe.

2. The combination of an electrolytic tank having a raised compartment with an open partition, as described, a feed-pipe, a distributing-pipe, and branch pipes connecting the compartment and the lower end of the tank, respectively, with the distributing-pipe.

3. An apparatus for disinfecting ships comprising a reservoir for salt water, a tank connected therewith and containing anodes and cathodes for electrolytic decomposition, a pipe distributing system for leading the water from the reservoir to different parts of the ship, a duct establishing communication between the decomposing-tank and said pipe system, and a valve for regulating the flow of disinfecting fluid through said duct.

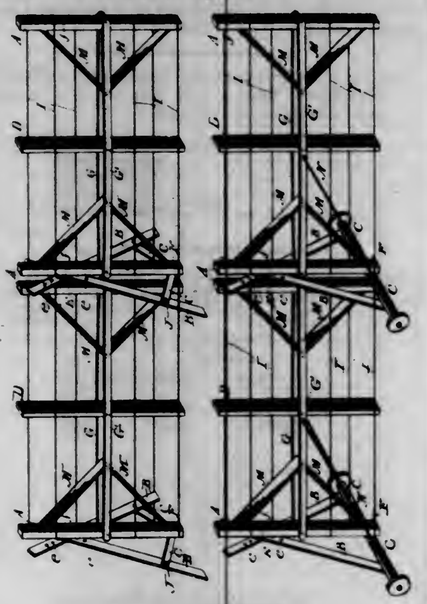
569,174. FENCE. Adolphus H. Cook, Markham, Canada, assignor of one-half to Adam Hood, same place. Filed June 4, 1896. Serial No. 594,319. (No model.)

Claim.—1. In a sectional fence, a section comprising the following elements, the upright posts A A, with bolt-holes *f*, *f*, the central rails G G′, the intermediate upright D, braces M from posts A to rails G G′, stringers I attached to the uprights A A and passing alternately on either side of the intermediate upright D, the links C C, pivotally attached to the uprights A, A, by bolts F, and to the side stakes B, B, by the bolts J, the said side stakes being provided with a series of bolt-holes *e*, substantially as and for the purpose specified.

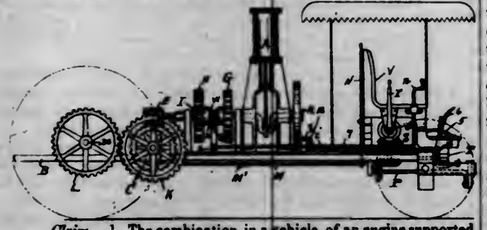
2. In a sectional fence, a section comprising the following elements, upright post A A, with bolt-holes *f*, *f*, central rails G G′, the intermediate upright D, braces M from posts A to rails G G′, stringers I attached to the uprights A A and passing alternately on either side of intermediate upright D, the links C C pivotally attached to the uprights A A, by bolts F, and to the extremities of the side stakes B, B, by bolts J, the ends of the side links C C projecting beyond the side stakes B B, and being formed into axles with wheels fitted thereon, the braces N N from the ends of links C C to the rails G G′, and the side stakes B, B, being provided with a series of bolt-holes *e*, substantially as and for the purpose specified.

3. In a sectional fence, the combination of two sections each comprising the uprights A A, central rails G G′, braces M M from the uprights A A to rails G G′, with adjustable side stakes B B pivotally

connected with the lower part of the uprights A by links C C which project beyond the ends of the side stakes B B, the projections being rounded into axles with wheels attached, braces N N from the outer ends of the links C C to the rails G G', and the connecting-bolt E, substantially as and for the purpose specified.



569,175. MOTOR-VEHICLE. JAMES M. COOK, Mount Gilead, Ohio. Filed Feb. 7, 1896. Serial No. 578,565. (No model.)



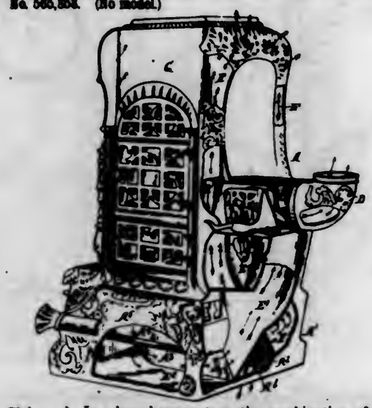
Claim.—1. The combination, in a vehicle, of an engine supported on a framework thereof; a shaft operated by said engine; a small and a large gear-wheel running loosely on said shaft, a clutch mounted upon and secured to said shaft between said gear-wheels, so that when said clutch is engaged with either of said wheels motion is imparted to them from the said shaft; a pair of parallel shafts, one on either side of said engine-shaft; a small and a large gear loosely mounted on one of said parallel shafts, the larger wheel engaging with the smaller wheel on the engine-shaft, and the smaller one engaging with the larger one on said engine-shaft; a clutch mounted and secured to said parallel shaft between said gear-wheels thereon; a gear-wheel mounted and secured to the other of said parallel shafts engaging the smaller of the gear-wheels on said engine-shaft, and means for manipulating said clutches simultaneously, substantially as shown and for the purposes set forth.

2. In a vehicle, the combination of the framework and running-gear, an engine supported by said framework; the gear-wheels and clutch on the driving-shaft; the parallel shafts having the gear-wheels engaging the gear-wheels on said driving-shaft; the worm-gears secured to said parallel shafts; a pair of gear-wheels mounted revolubly on a transverse shaft and engaging said worm-gears; a clutch mounted and secured to said transverse shaft between said gear-wheels thereon so that said clutches may engage with said wheels, and intermediate gearing by which motion is transmitted to the driving-wheels of said vehicle, substantially as described.

3. In a motor-vehicle, the combination of the shaft F³, wheels J and H, clutch W', shaft F, wheels G and I, clutch W, shaft F' and wheel G' all mounted and operating substantially as shown and for the purposes set forth.

4. In a motor-vehicle, the combination of a framework and running-gear; an engine supported by said framework; the shafts and gearing connecting said engine to drive said vehicle; a suitable seat and canopy supported upon said framework; the frame-piece R; the short axles Z' pivoted to said frame-piece and having the arms Z connected by the bar *p* having the drop-loop; the shaft P having the lever P' connected to said drop-loop; the shaft S and shaft O, said shafts being connected and operated by means of suitable miter gear-wheels, and the lever r all arranged and operating substantially as described and shown for the purposes set forth.

569,176. COAL-STOVE. GEORGE W. COPE, Detroit, Mich., assignor to the Art Stove Company, same place. Filed Oct. 16, 1895. Serial No. 565,853. (No model.)



Claim.—1. In a base-burner stove, the combination of a shell, a base provided with a flue E^3 passing from the rear about the front and again to the rear, a combustion-chamber, a smoke-chamber connecting with the combustion-chamber, a smoke-flue leading from the smoke-chamber adjacent to the combustion-chamber downward into one end of the flue E^3, and an additional smoke-flue communicating with the other end of the flue E^3 and with the outlet for the products of combustion, said smoke-chamber provided with a damper between the adjacent ends of the smoke-flues, said shell extending rearward to embrace said smoke-flues, said smoke-flues and shell spaced the one from the other and forming an air-flue between the flues and between the flues and shell, substantially as and for the purpose set forth.

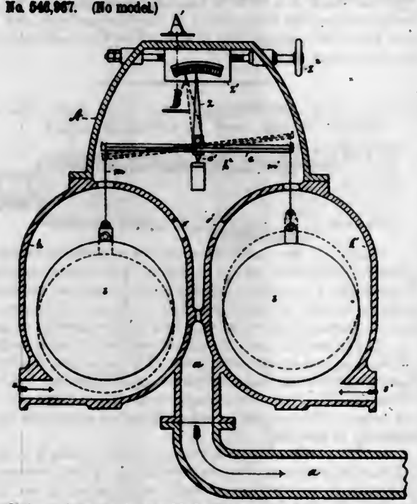
2. In a base-burner stove, the combination of a shell, an ash-wall, a base formed with a flue E^3 passing from the rear about the front and again to the rear, a combustion-chamber on one side of the ash-wall, a smoke-chamber, a smoke-flue separated from the ash-wall communicating with the combustion-chamber and with one end of the flue E^3, and an additional smoke-flue communicating with the other end of the flue E^3 and with the outlet for the products of combustion, said shell extending rearward to embrace the smoke-flues, said smoke-flues separated one from another and from the shell of the stove to form a hot-air flue between the smoke-flues and between the smoke-flues and the shell, substantially as set forth.

3. In a base-burner stove, the combination of a shell, a combustion-chamber, an ash-wall, a base provided with an upwardly-projecting wall A^3 intermediate its sides, a base-plate A^2 above said wall forming a flue E^3 passing about said wall from rear to rear of the base, a flue E communicating with the combustion-chamber and with one end of the flue E^3, and a flue E' located to the rear of the flue E communicating with the other end of the flue E^3 and with the outlet for the products of combustion, said flues E and E' spaced from the shell of the stove to form a hot-air flue therebetween, substantially as set forth.

4. In a base-burner stove, the combination of a shell, a magazine separated therefrom, a combustion-chamber, an ash wall to the rear of the combustion chamber, a smoke-chamber separated laterally from the shell, a base formed with a flue E^3 led about three sides thereof, a downwardly-extended smoke-flue E separated from the ash-wall and from the shell of the stove to lead the products of combustion into the flue E^3, and an upwardly-extended smoke-flue E' located to the rear of the flue E and spaced therefrom to carry the products of combustion to the outlet therefor, and an air-passage F opening through the base of the stove and passing around and between said smoke-flues around said smoke-chamber and around and between the shell and the magazine, said air-passage opening through the shell of the stove at the top thereof, substantially as set forth.

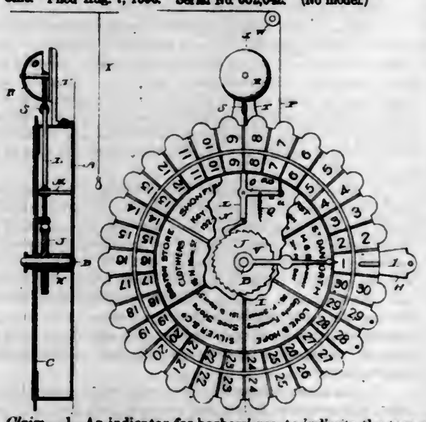
5. In a base-burner stove, the combination of a shell, a combustion-chamber, a magazine separated from the shell, a divisible smoke-chamber C separated laterally from the shell, an ash-wall, a base formed with a flue E^3, smoke-flues E' E' depending from the smoke-chamber, the one to the rear of the other and separated laterally from the shell forming an air-flue F at the sides of said smoke-flues and smoke-chamber, said smoke-flues E E' communicating with the interior of the smoke-chamber, and with the flue E^3 in the base of the stove, said air-flue F open at the base and passing around and between said smoke-flues, and between the ash-wall and adjacent flue, also about the smoke-chamber and between the magazine and shell, for the purpose set forth.

569,177. SCALE FOR WEIGHING GASEOUS SUBSTANCES. ALPHONS CUNODIN, Dusseldorf, Germany. Filed Apr. 24, 1895. Serial No. 546,967. (No model.)



Claim.—A gas-scale provided with a pair of chambers *k*, *k'*, having inlet-orifices, a joint-chamber k^3, communicating with chambers *k*, *k'*, a common exhaust-pipe *a*, floats suspended within chambers *k k'*, a scale-beam operated thereby, a pointer secured to the scale-beam, a movable scale *x'*, and a worm x^2, for adjusting the scale in a lateral direction, substantially as specified.

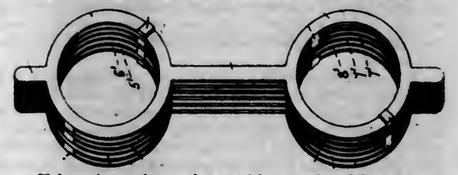
569,178. BARBER'S TURN. OSCAR L. DANFORTH, Mansfield, Ohio. Filed Aug. 7, 1896. Serial No. 602,042. (No model.)



Claim.—1. An indicator for barbers' use, to indicate the turn of each customer, composed of a hollow circular case, a stud placed in the center of the same, a disk placed loose upon the said stud, a ratchet-wheel secured upon the hub of the disk, a portion of the said disk divided into any number of parts, and numbered, T-shaped ribs secured upon the disk, or forming part of the same, the ribs so placed that they line with the center of the disk and form pockets around the outer periphery of the disk checks placed within each pocket, each check numbered to conform to the numbers upon the face of the disk; the said checks held in position by a tongue-spring secured to or forming part of the disk, by pressing the checks against the flanges formed by the T-shaped ribs; a lever pivoted to the inside of the back of the case, the lower end provided with a pawl to engage the ratchet-wheel, the upper end engaging with the lever of a bell secured upon the top of the case; a coil-spring secured at one end to a horizontal arm forming part of the lever, the other end to the back of the case; a cord secured to the outer end of the arm, the said cord passing over suitable pulleys and in line with the chairs, the outer end secured to a suitable stationary point pendent cords secured to the main cord, and placed in suitable position to be operated from each chair, substantially as shown and described.

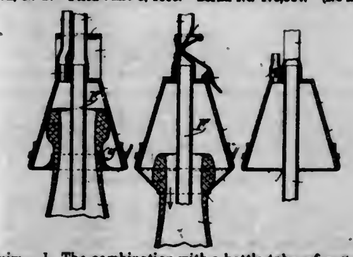
2. In an indicator and advertising medium for use in barber-shops and other purposes, a circular disk adapted to be rotated upon a center stud or pin the said disk divided into any number of parts, each part numbered in consecutive numbers, the same number of pockets upon the face extending to the outer periphery of the disk, checks placed within the pockets and numbered to correspond with the stationary numbers on the disk, the said checks held in position by any suitable mechanism, the center of the disk divided into equal parts to receive business cards, a stationary indicator-arm secured upon the outer end of the stud and in line with the face of the disk, the said disk adapted to be operated by any suitable mechanism from each chair, substantially as shown and described.

569,179. REED FOR WARPING. HERBERT DAVENPORT, Paterson, N. J. Filed Mar. 9, 1895. Serial No. 541,129. (No model.)



Claim.—A warping-reed, comprising a series of dents having enlarged ends, series of stop-blocks secured between said dents at or near the edge of said enlarged ends, and arranged in groups alternately upon the opposite edges of said dent, the series of blocks at or near one edge being located at a greater distance from the center of the reed than the corresponding series on the opposite edge, substantially as shown and described.

569,180. BOTTLING APPARATUS. MELVIN E. DONALLY, New York, N. Y. Filed June 8, 1893. Serial No. 476,907. (No model.)



Claim.—1. The combination with a bottle-tube, of a stopper encircling said tube and adapted to close the mouth of the bottle around the tube and having a substantially rigid skirt, and a yielding envelop carried by said skirt and adapted to be slipped upon the outside of the neck or mouth of bottle as the tube is inserted therein and to close tightly about the same.

2. The combination with a bottling-tube, of a stopper and a yielding diaphragm having a single aperture to receive the neck of a bottle and adapted to encircle the same and to prevent the escape of liquid from the bottle.

3. The combination with a bottling-tube, of a cap secured to the tube and having an extended skirt, and an elastic diaphragm secured to said skirt and having a central aperture to receive the neck of a bottle.

4. The combination with a bottling-tube, of a cap encircling said tube, a clip to compress said tube supported in fixed relation to said cap, and a yielding arm to operate said clip and adapted to be moved to open the clip by contact with the bottle when the bottle and cap are brought together.

5. The combination with a bottling-tube, a gas-return tube and a bung having independent connections for said tube, of a stopper fit-

ting both tubes and adapted to close the mouth of the bottle around the tube and having a substantially rigid skirt, and a yielding envelop carried by said skirt and adapted to be slipped upon the outside of the neck or mouth of the bottle as the tubes are inserted therein and to close tightly about the same.

569,181. BOTTLE-STOPPER AND BOTTLE. CHRISTIAN DORN and NATHAN REINSTEIN, Philadelphia, Pa. Filed Dec. 2, 1895. Serial No. 570,754. (No model.)



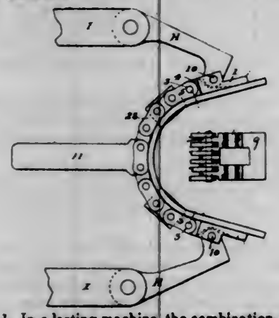
Claim.—1. A non-fillable bottle, jug or the like, provided with a cylindrical neck with an annular groove therein, a bulb-shaped chamber at the base of said neck with an opening at the base of the said chamber of smaller diameter than the said neck, a weighted valve mounted in said bulb-shaped chamber, a plurality of locking-pieces provided with a rib adapted to engage in said annular groove in said neck, and a double conical wedge-piece having a tortuous passage therethrough and adapted to engage said locking-pieces, substantially as described.

2. A non-fillable bottle, jug or the like, provided with a cylindrical neck, with an annular groove therein, a bulb-shaped chamber at the base of said neck with an opening at the base of the said chamber of a smaller diameter than the cylindrical portion of said neck, a valve consisting of a stem, a solid ball at the upper end of said stem, and a hollow rounded bulb at the lower end of said stem adapted to rest on the walls of said opening at the base of said chamber, locking-pieces provided with ribs adapted to engage in said annular groove and means for forcing said locking-pieces outward and for holding them in position, and for guarding the passage between them, substantially as described.

3. A device for preventing the refilling of bottles comprising a valve located near the base of the neck of the bottle, a plurality of locking-pieces having ribs adapted to engage in corresponding grooves in the neck of the bottle, a perforated wedge-piece in the form of two truncated cones connected together near their apices and serving to wedge said locking-pieces outward and to guard said valve, substantially as described.

4. The combination with a bottle provided with a bulb-shaped chamber at the base of the neck thereof, and an annular groove in said neck, of a check-valve in said chamber, a plurality of locking-pieces having ribs adapted to engage in corresponding grooves in the neck of the bottle, a perforated wedge-piece in the form of two truncated cones connected together near their apices and serving to wedge said locking-pieces outward and to guard said valve, substantially as described.

569,182. LAST-CLASP FOR LASTING-MACHINES. JAMES A. DUNPHY, Groton, Mass., assignor to the Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Filed Mar. 29, 1895. Serial No. 543,779. (No model.)

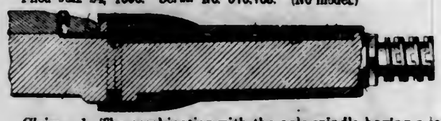


Claim.—1. In a lasting-machine, the combination of a toe-wiper carriage and toe-wiping instrumentalities with a flexible toe-clasp, having at its ends rigid, pivotally-connected toe-cap pressure-blocks, and between its ends a guide extension; and with a facing-pad mounted on the face of said flexible toe-clasp and of its rigid, pivotally-connected toe-cap pressure-blocks, substantially as and for the purpose set forth.

2. In a lasting-machine, the combination of a facing pad and a flexible last-clasp having rigid end blocks each formed with a hinge-pin hole between its ends and on its outer side, and with a perforation between the hinge-pin hole and its outer end for a fastening which secures a facing-pad end on the inner face of said block, substantially as and for the purpose set forth.

3. In a lasting-machine the combination of a flexible last-clasp comprising a chain and a detachable facing, of rigid end blocks formed with perforated end fingers intermeshing with chain-links and pivotally connected therewith; movable supports for the ends of the flexible last-clasp, the supports being pivotally connected with the rigid end blocks at a distance from the outer ends thereof; and the facing covering the inner surface of the chain and rigid end blocks, and means for pressing said blocks inwardly, substantially as and for the purpose set forth.

569,183. VEHICLE-AXLE. OCTAVIUS S. EBERT, Galesburg, Ill. Filed Jan. 24, 1896. Serial No. 576,703. (No model.)



Claim.—1. The combination with the axle-spindle having a longitudinal oil-chamber, of the absorbent pad extended lengthwise of the chamber and having portions extending from one end thereof to embrace the axle, and springs secured to the pad and to the said end portions thereof to force the same outward, substantially as specified.

2. The combination with the axle-spindle having a longitudinal oil-chamber and an annular channel, of a pad of absorbent material having a portion extending lengthwise of said chamber and portions embracing the spindle and arranged in said channel, the said pad being formed with oppositely-disposed shoulders at opposite ends, substantially as described.

3. The combination with the axle-spindle having a longitudinal oil-chamber and an annular channel with an oil-duct communicating therewith, of an absorbent oil-conveyer arranged in said chamber parallel with the spindle and having at one end integral curved portions seated in said annular channel, a spring extending lengthwise of and secured to the inner side of the conveyer at one end, and independent springs secured to the inner faces of the said curved portions, substantially as and for the purpose specified.

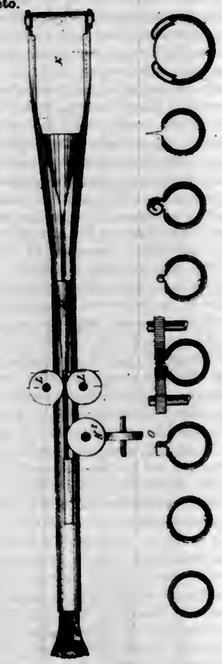
569,184. MANUFACTURE OF CIGARETTES. NASH J. EVANS, Salem, Va., assignor to the Bonsack Machine Company, same place. Filed Sept. 5, 1895. Serial No. 561,479. (No model.) Patented in England Dec. 9, 1892, No. 22,647.

Claim.—1. The method or process herein described for manufacturing cigarettes, which consists in associating a tobacco filler and a paper strip by wrapping the strip around the filler, bringing its edges into engagement with each other, folding or rolling such engaged edges together while the strip encircles the filler, uniting the folded or rolled-together edges into a projecting seam by pressing, indenting or crimping them together, applying paste to one side of the seam and then folding the seam down upon the body of the cigarette and securing it thereto.

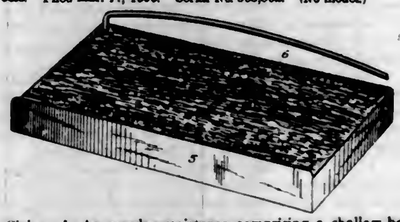
2. In a cigarette-machine, the combination with a former or device by which a paper strip is wrapped around a tobacco filler and means for advancing the paper strip and filler through such former, of the following elements arranged for operation substantially in the manner set forth, to wit: a folder or device for folding or rolling the opposite edges of the strip together while it encircles the tobacco filler, mechanism for pressing, crimping or incorporating the edges of the encircling strip together and securing them into a seam, pasting mechanism adapted to apply paste to one side of the seam and devices for folding the seam down upon the body of the cigarette and securing it thereto.

3. In a cigarette-machine, the combination substantially as set forth, with a tubular former and a carrier-belt passing through the same, of the following elements arranged for operation in the manner set forth, to wit: a folder or device for folding, rolling or interlocking the opposite edges of a wrapper-strip together while it incloses a tobacco filler, mechanism for crimping the folded, rolled or interlocked wrapper edges and securing them into a seam, and pasting mechanism adapted to apply a line of paste to one side of the crimped seam, a guide for turning the seam down upon the body of the cigarette and a die or former for securing it thereto.

4. The combination, substantially as set forth, with devices for inclosing the tobacco filler in a wrapper-strip with the edges of the strip projecting, of a former or spiral guide for folding, rolling or interlocking the projecting edges together, crimping-disks between which the edges of the wrapper-strip pass after leaving the former, a pasting mechanism for applying paste to one side of the seam and a guide for turning the seam down upon the body of the cigarette and securing it thereto.



569,185. ENVELOP-MOISTENER. JOHN G. EVERSMAN, Denver, Colo. Filed Mar. 17, 1896. Serial No. 583,502. (No model.)



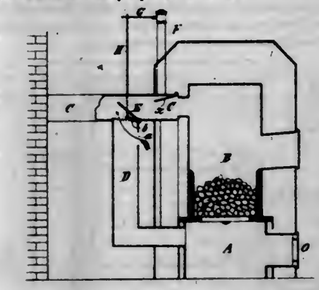
Claim.—1. An envelop-moistener comprising a shallow box or trap containing an absorbent pad, and a flap-opener composed of a piece of wire attached to the tray and projecting a short distance above the body thereof, as and for the purpose set forth.

2. An envelop-moistener comprising a shallow tray or pan filled with some suitable absorbent material, and a flap-opener consisting of a piece of wire fastened to one corner of the tray, extending upward a short distance above the body of the tray to a bend, and extending thence lengthwise of the tray to the opposite corner where it terminates in a free or unsupported extremity, substantially as described and for the purpose set forth.

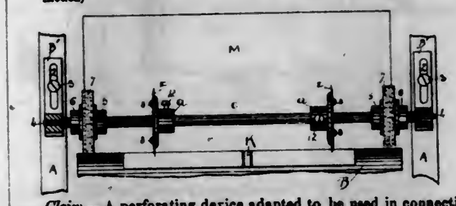
569,186. HEAT OR DRAFT REGULATOR. LEWIS H. FISHER, Walpole, Mass. Filed July 23, 1895. Serial No. 556,910. (No model.)

Claim.—1. In a stove or other heater, the combination with the ash-pit and smoke-pipe, of a flue connecting said pipe and ash-pit, and having a permanent opening to always admit outside air, a damper located at the junction of the flue and smoke-pipe for closing and opening the passage between them and also for opening and closing or partly closing the passage in the smoke-pipe for the products of combustion, all as and for the purposes set forth.

2. In combination with a check-draft damper of a stove or other heater, a thermostat having the expansible tube L, and the non-expansible rod M, the rotatable thimble K, resting on the tube L and provided with a slot, the lever G, passing through such slot in the thimble and fulcrumed to said rod, and resting on a portion of said thimble, and the rod H for connecting the lever G and check-draft damper, all as and for the purposes set forth.



569,187. PERFORATING DEVICE. BENJAMIN P. FLOOD, Omaha, Nebr., assignor of two-thirds to Alfred H. Comstock and Robert R. Ballman, same place. Filed June 20, 1895. Serial No. 553,479. (No model.)



Claim.—A perforating device adapted to be used in connection with a cylinder-press comprising the solid bearings, B', B', adjustably secured to the bed of the press, the shaft, C, rotatably held within said bearings, the friction-disks, 7, 7, adjustably mounted upon said shaft, C, by means of the ends, 5 and 6, threaded upon said shaft, C, said friction-disks working against the cylinder of the press, the sliding collars, *a*, *a*, adjustably upon said shaft, C in combination with the cutter-knives, *e*, *e*, secured to said sliding collars, *a*, *a*, and adapted to work against the cylinder, all substantially as and for the purpose set forth.

569,188. TEA OR COFFEE POT STRAINER. THOMAS GADDIS, Harrowgate, England. Filed Aug. 23, 1895. Serial No. 560,229. (No model.) Patented in England Feb. 19, 1894, No. 3,590, and in Germany Feb. 26, 1895, No. 86,675.



Claim.—In a strainer for teapots, coffee-pots, wine-bottles, the combination of the funnel or spout *a*, provided at one end with a lip *b*, and at the other end with the box *c*, and a perforated elastic disk secured in the said box, the said spout being provided with one or more than one sieve.

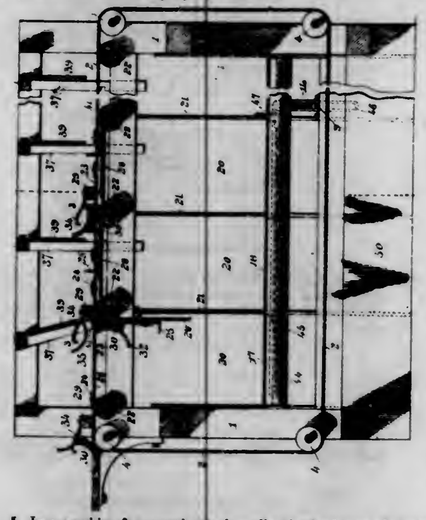
569,189. MACHINE FOR GRADING AND ASSORTING LEAF-TOBACCO. JOHN M. GALE, Eaton, and OSCAR A. GALE, West Alexandria, Ohio. Filed Sept. 19, 1895. Serial No. 563,021. (No model.)

Claim.—1. In a machine for assorting and grading leaf-tobacco, the combination of a carrier, leaf-holders attached to the carrier, and trips arranged to extend within the path of the tobacco-leaf so as to be actuated thereby and release the tobacco from its holder, substantially in the manner set forth for the purpose described.

2. In a machine for assorting and grading leaf-tobacco, the combination of a carrier, leaf-holders attached to the carrier, and a series of trips disposed in progressive relation and extending within the path of the tobacco so as to be actuated thereby to effect a release of the tobacco from its holder, substantially as and for the purpose set forth.

3. In a machine for assorting and grading leaf-tobacco, the combination of a carrier, a series of leaf-holders attached thereto, clamping devices provided at intervals in the length of the leaf-holders and spaced at proper intervals apart, and a number of trips disposed in a progressive series and adapted to operate in the spaces between the clamping devices and be actuated by the tobacco so as to effect a release of the latter from their holders, substantially as specified.

4. In a machine for assorting and grading leaf-tobacco, the combination of a carrier, a leaf-holder attached to the carrier and provided with an evener or gage and with a series of clamping devices spaced at proper intervals apart, and a series of trips disposed in progressive relation and extending within the path of the tobacco so as to be actuated thereby and release the tobacco from the holders, substantially as set forth for the purpose described.



5. In a machine for assorting and grading leaf-tobacco, the combination of a carrier, leaf-holders attached to the carrier and provided with means for receiving the tobacco, clamping-fingers for securing the tobacco, and a progressive series of trips arranged to be actuated by the tobacco to effect a release thereof from the holders, substantially as and for the purpose set forth.

6. A machine for grading and assorting leaf-tobacco, comprising a series of compartments, a carrier disposed to travel over the said compartments, leaf-holders attached to the carrier, and trips, one for each compartment, and disposed in a progressive series and adapted to be actuated by the tobacco so as to release the latter and effect its deposition into the proper compartment, substantially as described for the purpose set forth.

7. A machine for assorting and grading leaf-tobacco, comprising a series of compartments, a carrier adapted to move over the compartments and provided with a series of leaf-holders, a series of trips disposed in progressive relation and arranged to engage with the tobacco and effect a deposition of the same into the proper compartment, and a conveyer forming a bottom to the compartments and adapted to receive and support the tobacco deposited therein and to discharge the same from the compartments, substantially in the manner set forth for the purpose specified.

8. In a machine for assorting and grading leaf-tobacco, the combination with a series of compartments, means for dropping the tobacco into the proper compartments, and a conveyer forming a bottom to the compartments, of extensions at one end of the compartments, bottoms closing the extension-compartments and adapted to drop at one end, means for connecting the bottoms in series, and a catch for supporting the said bottoms and automatically actuated by the conveyer to trip and release the said bottoms, substantially as set forth for the purpose described.

9. In a machine for assorting and grading leaf-tobacco, the combination with a series of compartments, means for depositing the tobacco therein, and a conveyer forming a bottom to the compartments, of extension-compartments at one side of the machine and forming a continuation of the aforesaid compartments, drop-bottoms closing the extension-compartments and connected in series, a catch for supporting the drop-bottoms in closed relation, and a bar attached to the conveyer and adapted to disengage the catch from the bottoms, substantially as and for the purpose set forth.

10. In a machine for assorting and grading leaf-tobacco, the combination with a series of compartments, provisions for supplying the compartments with tobacco of substantially equal length, and a conveyer forming a bottom to the said compartments, of extension-compartments at one side of the machine and in line with the respective aforesaid compartments, drop-bottoms for closing the extension-compartments and connected in series, a spring-catch having an offstanding portion and adapted to hold the compartments in closed relation, a bar attached to the conveyer and adapted to engage with and release the catch from the said drop-bottoms, a slotted link operatively connected with the drop-bottoms, and a rotating shaft having a crank operating in conjunction with the said slotted link to close the drop-bottoms after they have discharged their load, substantially in the manner set forth for the purpose described.

11. In a machine for assorting and grading leaf-tobacco, the combination with a series of compartments, and means for depositing tobacco of substantially equal length into the proper compartments, of an endless conveyer common to and forming a bottom for all the compartments, and actuating mechanism for intermittently operating the said conveyer, as and for the purpose set forth.

12. In a machine for assorting and grading leaf-tobacco, the combination with a series of compartments, means for depositing the tobacco therein in assorted lengths, and a conveyer forming a bottom to the compartments, of extension-compartments forming continuations of the respective aforesaid compartments, drop-bottoms for closing the extension-compartments and connected in series, a slotted link operatively connected with the drop-bottoms, a power-driven shaft having a crank operating in conjunction with the slotted link, and actuating mechanism between the said power-driven shaft and the conveyer for intermittently operating the latter, substantially in the manner set forth for the purpose described.

13. In a machine for assorting and grading leaf-tobacco, the combination of a series of compartments, an endless carrier disposed to travel over the said compartments, supports bearing leaf-holders permanently attached at one end to the carrier and having their opposite ends free and adapted to drop, drop-tables extending over the upper ends of the aforesaid compartments to sustain the said leaf-holder supports, hooks sustaining the drop-tables in a normal position, and trips operatively connected with the hooks and adapted to be actuated by engagement with the tobacco in the leaf-holders so as to withdraw the hooks from engagement with the drop-tables, substantially in the manner and for the purpose specified.

14. In a machine for assorting and grading leaf-tobacco, the combination of a series of compartments, an endless carrier provided with leaf-holders which are adapted to drop, a series of rollers for the upper portion of the carrier to travel over, drop-tables for supporting the leaf-holders in their travel over the compartments, hooks for sustaining the drop-tables in a normal position, trips operatively connected with the hooks and actuated by the tobacco clamped in the leaf-holders to automatically disengage the hooks from the drop-tables, and projections extending from the rear edges of the drop-tables to be engaged by a portion of the endless carrier so as to automatically reset the drop-tables, substantially in the manner set forth for the purpose specified.

15. In a machine for assorting and grading leaf-tobacco, the combination of an endless conveyer, leaf-holder supports having permanent attachment at one end to the conveyer and formed with hooks at their opposite end, and eyes to be automatically engaged by the said hooks, as and for the purpose set forth.

16. A carrier for the purposes set forth, in combination with flexible supports, two bars disposed in parallelism and attached to the flexible supports, receivers secured to one bar, and clamping-fingers attached to the other bar to coöperate with the receivers, substantially in the manner set forth for the purpose described.

17. In combination, a carrier, flexible supports, two bars extending in parallelism, receivers attached to one bar and having their outer ends notched, and clamping-fingers secured to the other bar and having their outer ends beat and arranged to act in conjunction with the notched ends of the receivers, as and for the purpose specified.

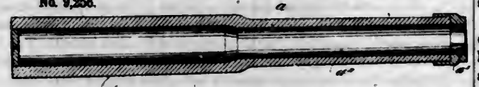
18. In combination, a carrier, flexible supports, two bars extending in parallelism and having attachment with the said supports, receivers provided on one bar, clamping-fingers secured to the opposite bar and arranged to coöperate with the receivers, and spring-retainers attached to one of the bars and adapted to exert a pressure upon the opposite bar to maintain the said bars in proper relation, substantially in the manner set forth for the purpose described.

19. In combination, a carrier, flexible supports, two bars secured to the flexible supports and extending in parallelism, one of the bars having curved seats, spring-retainers attached to the opposite bar and having their outer ends curved to coöperate with the curved seats, and clamping provisions having connection with the said bars, substantially as set forth for the purpose described.

20. In a machine for assorting and grading leaf-tobacco, the combination with a carrier, and trips, of a holder comprising a bar attached to the carrier, outwardly-extending parts applied to the bar at intervals in its length to admit of the said trips passing between them to engage with the leaf of tobacco and effect its release, and a bar having clamping-fingers to coöperate with the said outwardly-extending parts to grip the leaves of tobacco to be assorted, and movably related with respect to the first-mentioned bar, substantially as and for the purpose described.

569,190. HIGH-EXPLOSIVE PROJECTILE AND GUN FOR THROWING SAME.

LOUIS GATHMANN, Chicago, Ill. Filed July 10, 1893. Serial No. 480,100. (No model.) Patented in England June 17, 1893, No. 9,256.



Claim.—1. A gun for throwing rifled explosive projectiles having the bore at the muzzle end thereof rifled and fitting closely such rifled projectile, the main part of the bore in the rear of said rifled portion and to about midway between the ends of the gun being smooth and larger than the projectile, and the bore in the rear of said main part being still larger, while its rear end provides the charge-chamber, substantially as described.

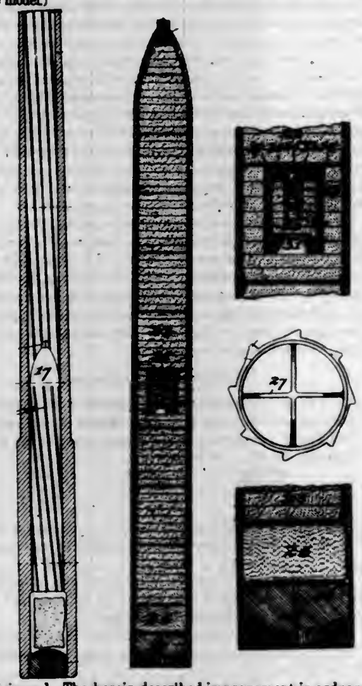
2. A gun having its bore constructed in three sections, namely, a charge-chamber a', an intermediate portion a^2 smaller than said charge-chamber a', and the rifled muzzle portion a^3 smaller than said intermediate portion a^2, substantially as described.

3. The herein-described improvement in ordnance consisting of a gun having an enlarged bore and adapted to a projectile of smaller diameter than the bore, said projectile having an open base through which a portion of the expelling charge may pass, while the remainder of the expelling-gases fill the enlarged bore and envelop the shell, substantially as described.

4. The method of firing a light shell charged with high or other explosives, which consists in exploding the expelling charge at the base of the shell and simultaneously transmitting the pressure due to the explosion of the propelling charge to the interior and exterior of the shell, whereby the interior and exterior pressures thereon are so equalized as to support and secure its expulsion in integral form, substantially as described.

569,191. PROJECTILE AND GUN FOR THROWING SAME.

LOUIS GATHMANN, Chicago, Ill. Filed Mar. 17, 1896. Serial No. 583,538. (No model.)



Claim.—1. The herein-described improvement in ordnance comprising in combination a gun and a projectile or torpedo, said gun having a bore of greater diameter than the projectile and rifled throughout its length except at the powder-chamber, said projectile having a shell open at the base and containing high explosives packed therein with means arranged in the open base of the shell to confine the explosives therein, and said open base permitting the gases of the expelling charge to enter the base of the shell, while the enlarged bore permits said gases to envelop the shell, substantially as and for the purpose set forth.

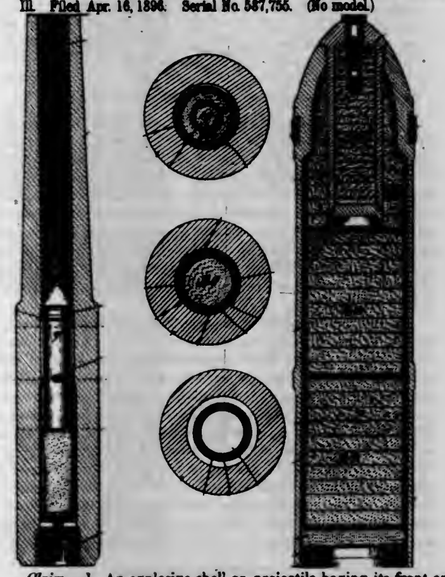
2. A projectile or torpedo having a shell with high explosives packed therein, a detonator enveloped by the explosive, said shell having its base open to the expelling-gases of the powder charge, substantially as described.

3. The herein-described improvement in projectiles comprising in combination a metallic shell, and a sealed shell or shells containing high explosives and arranged within the interior of the principal shell, a liquid body filling the interstices between the shells, a liquid seal at the base of the outer shell and an open frame or spider confining the explosives within the shell and permitting the gases of the expelling charge to pass to the interior thereof, substantially as and for the purpose described.

4. An explosive projectile or torpedo having an open base and filled with a material such as wet gun cotton, a detonator having a strong shell inclosed with said explosive material and a gun for throwing said torpedo, said gun having a bore of larger diameter than the torpedo, except at its muzzle, whereby to provide an annular space about the torpedo when in place in the bore of the gun, the gun and torpedo having contacting surfaces of such form as to cause an axial rotation of the torpedo when discharged and the interspace permitting the pressure of the expelling charge to be exerted equally on the exterior and the interior of the torpedo, in such manner that a torpedo having a maximum charge of the explosive material may be used.

569,192. HIGH-EXPLOSIVE SHELL.

LOUIS GATHMANN, Chicago, Ill. Filed Apr. 16, 1896. Serial No. 587,755. (No model.)



Claim.—1. An explosive shell or projectile having its front end made massive and provided with an external compression-band of greater diameter than the main body of the shell and said body being relatively thinner or lighter than the front end, open at its base and provided with peripheral guiding-lugs located in the rear of said compression-band, substantially as and for the purpose described.

2. An explosive shell or projectile having its front end constructed heavy or massive and its body portion thinner or lighter, said body being open at its base, a compression-band located on the front or massive portion of the shell and adapted to fit within the bore of the gun and to engage the rifled grooves thereof, and the body of the shell being provided in the rear of the compression-band with projections adapted to serve as guides to center the shell within the gun, substantially as described.

569,193. BOX-COVER BRACE OR SUPPORT.

CARL R. GEORG, Milwaukee, Wis., assignor of one-half to William H. Siehr, same place. Filed June 6, 1896. Serial No. 594,498. (No model.)



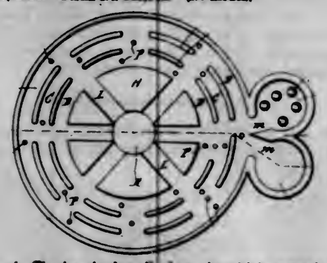
Claim.—1. A box holder or support consisting of a plate having a bifurcated lower portion adapted to be adjusted to the back wall of a box, at the angle thereof, the inner furcate part lying against the inner face of the end wall of the box, said plate formed or provided

with an upwardly-extending projection which lies adjacent to the outer edge of the cover of the box, and is provided with inwardly-extending lips between which the edge of the cover is received.

2. A box-cover support or brace consisting of a plate slotted upwardly from its lower edge to form a bifurcated lower portion, the edges of said slot provided with projecting shoulders, and said plate extended upwardly and formed with inwardly-extending lips.

3. A box holder or support consisting of a plate having a bifurcated lower portion adapted to be adjusted to the back wall of a box at the angle thereof, the inner furcate part lying against the inner face of the end wall of the box, said plate formed with an upwardly-extending projection, extending at an obliquity and lying adjacent to the outer edge of the cover of the box, and provided with inwardly-extending lips between which the edge of the cover is adapted to be received.

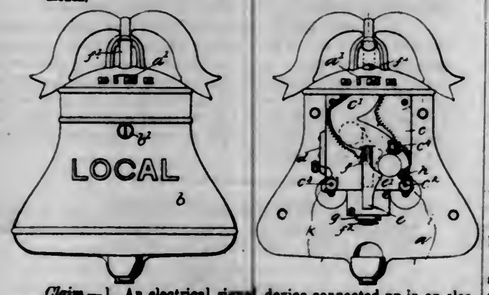
569,194. PUZZLE. HARVEY GILES, Bound Brook, N. J. Filed Mar. 19, 1896. Serial No. 583,972. (No model.)



Claim.—1. The herein-described puzzle, which comprises a plate or board, having a plurality of annular chambers, a central circular chamber, radial passages which form communications between all of said annular chambers, and said circular chamber, two circular chambers at the side of the outer annular chamber, and communicating therewith, and a plurality of balls or spherical bodies which are adapted to be placed in one of said outer chambers, and to be passed into the other, said annular chambers being also provided with a plurality of vertical pins, by which the passage of the balls or bodies through, are prevented except in certain directions, substantially as shown and described.

2. The herein-described puzzle, which comprises a plate or board, having a plurality of annular chambers, a central circular chamber, radial passages which form communications between all of said annular chambers, and said circular chamber, two circular chambers at the side of the outer annular chamber, and communicating therewith, and a plurality of balls or spherical bodies, which are adapted to be placed in one of said outer chambers, and to be passed into the other, said annular chambers being also provided with a plurality of vertical pins, by which the passage of the balls or bodies through are prevented except in certain directions, and the central circular chamber and one of the side circular chambers which communicate with the outer annular chamber being deeper than said annular chambers and said radial passages, substantially as shown and described.

569,195. COIN-CONTROLLED SIGNAL APPARATUS. WILLIAM GRAY, Hartford, Conn., assignor to the Gray Telephone Pay Station Company, same place. Filed Sept. 7, 1895. Serial No. 561,762. (No model.)



Claim.—1. An electrical signal device connected up in an electric circuit, a coin-channel, a ward projecting into the channel, connected to one pole of a battery and in its movement permitting the coin to travel therealong, a conductor located on the opposite side of the channel from the ward and in the path of movement of a falling coin in its passage along the channel and connected up to the opposite pole of the battery, and a follower to insure the engagement of the coin with the conductor, all substantially as described.

2. An electric signal device connected up in an electric circuit, a coin-channel, a reciprocating ward projecting into the channel, connected with one pole of a battery and in its movement permitting a coin to travel therealong, means for causing the slow return of the ward, a conductor located on the opposite side of the channel from the ward and in the path of movement of a falling coin in its passage along the channel and connected to the opposite pole of the battery all substantially as described.

3. An electrical signal device connected up in an electric circuit, a coin-channel, a reciprocating ward projecting into the channel, connected with one pole of a battery and in its movement permitting a coin to travel therealong, a dash-pot, a piston located in the dash-pot and connected with the ward, and a conductor located on the opposite side of the channel from the ward and in the path of movement of a falling coin in its passage along the channel and connected to the opposite pole of the battery, all substantially as described.

4. An electrical signal device connected up in an electric circuit, a coin-channel, a ward projecting into the channel, connected to one pole of a battery and, in its movement, permitting a coin to travel along the channel, and a conductor located on the opposite side of the channel from the ward in the path of movement of a falling coin in its journey through the channel and connected up to the opposite pole of the battery, all substantially as described.

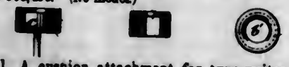
5. An electrical signal device joined up in an electric circuit, a coin-channel, a ward projecting through one wall of the channel and in the path of movement of a falling coin and connected to one pole of the battery, a conductor located in the opposite wall of the channel in the path of movement of a falling coin and connected to the opposite pole of the battery and a follower located in the channel in the path of movement of the falling coin, all substantially as described.

6. An electrical signal device connected up in an electric circuit, a coin-channel, a reciprocating ward controlling the movement of a coin along the channel, a dash-pot, a piston located in the dash-pot and connected with the ward to control its movement, and a conductor located on the opposite side of the channel from the ward and in the path of movement of a falling coin, all substantially as described.

7. An electrical signal device connected up in an electric circuit, a coin-channel, a ward projecting into the channel, connected with one pole of a battery and in its movement permitting a coin to travel therealong, a conductor located on the opposite side of the channel from the ward and in the path of movement of a falling coin in its passage along the channel and connected to the opposite pole of the battery, a dash-pot a piston located in the dash-pot and connected with the ward, and a relief-port automatically operated in the movement of the piston, all substantially as described.

8. A signal apparatus joined up in an electric circuit, a coin-channel, a reciprocating ward connected to one pole of a battery and projecting into the path of movement of a falling coin and controlling its movement along the channel a follower coöparting with the ward in controlling the movement of said coin, to force it against a conductor, and the conductor connected to the opposite pole of the battery and preventing the backward movement of the coin along the channel, all substantially as described.

569,196. TYPE-WRITING-MACHINE CUSHION-KEY. ROBERT S. GRAHAM and WILLIAM R. SAVELL, Newark, N. J., assignors to the Type-Writer Cushion-Key Company, same place. Filed Apr. 21, 1894. Serial No. 508,496. (No model.)



Claim.—1. A cushion attachment for type-writer and similar keys formed of yielding material and having an open top to expose the character on the key.

2. A cushion attachment for type-writer and similar keys having its upper portion extended over the top of the key and open at its center to expose the character on the key.

3. A cushion attachment for type-writer and similar keys formed of yielding material and constructed to expose the underlying character on the key.

4. A cushion attachment for type-writer and similar keys extended over the key to form a yielding touch-surface said cushion being open at its center to expose the character on the key.

5. A cushion attachment for type-writer and similar keys consisting of an elastic band to be fitted over the key and extended over the plane of the top thereof and having a sight-opening to expose the character on the key.

6. A cushion attachment for type-writer and similar keys having its upper edge curved inward to form a cushion-roll and leave an open center.

7. A cushion attachment for type-writer and similar keys having an open center to expose the character on the key beneath and a cushion-roll bounding the walls of said opening.

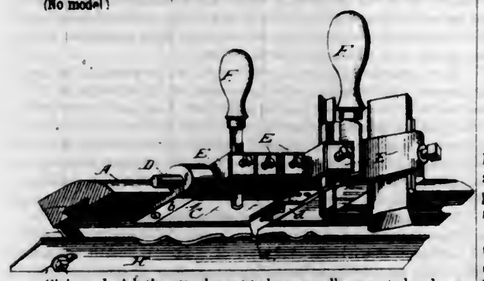
8. A key-cushion consisting of a soft-rubber cylinder having an inwardly-turned flange at the top leaving an opening for exposing the top of the key.

9. In combination with a key, a soft-rubber cylinder of lesser diameter than the key and having, when applied to the key, a lip or flange extending inwardly on top of the key and leaving an opening to expose the top of the key.

10. A key-cushion consisting of a soft-rubber cylinder provided at its top with a flange extending inwardly and downwardly and leaving an opening to expose the top of the key.

11. In combination, a key provided with an external groove and a soft-rubber key-cushion provided with an internal flange projecting into said groove.

569,197. ATTACHMENT FOR WOODWORKING-LATHES. JOHN G. HALLSTROM, Jamestown, N. Y. Filed May 5, 1896. Serial No. 590,281. (No model.)



Claim.—1. A lathe attachment to be manually operated and comprising a grooved bar at one side only of the axial line of the work, a slide mounted in said groove and having a head extending along the same, a knife-holder extending laterally from the slide and a knife in said holder, said slide and holder being so connected that they may be jointly and freely moved along the grooved bar, by hand, so that their relative positions may be maintained.

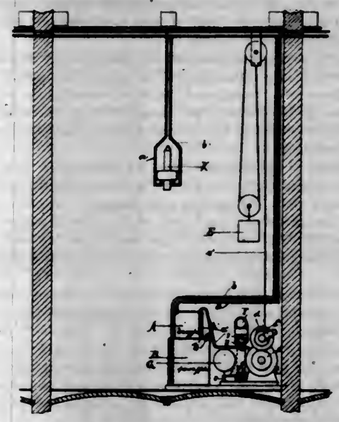
2. In a lathe attachment designed to be operated by hand, the combination, with a fixed grooved bar or member upon one side only of the axial line of the work, of a rest comprising a slide to engage and to be moved, by hand, along said grooved bar or member, and having laterally-projecting arms provided with bearings in their outer ends, a shaft carried in said bearings and maintained parallel with said groove, and a centrally-hung knife-holder pivotally mounted on said rod and adapted to receive a knife or cutter.

3. In a lathe attachment adapted to perform various kinds of work, the fixed grooved bar or member at one side only of the axial line of the work, in combination with a rest comprising a slide having a head to engage and operate along said groove, and provided with outwardly-extending arms, a shaft parallel with the groove and having its opposite portions mounted in bearings in the outer extremities of said arms, knife-holders pivotally hung upon said shaft and having the outer ends adapted to receive knives or cutters, and a handle on the rest whereby the latter and its attachments may be manually adjusted along the grooved bar to cause its knives or cutters to operate upon the piece to be turned for substantially the full length thereof.

4. In a lathe attachment adapted to perform various kinds of work, the fixed bar or member having a groove extending longitudinally along it at one side only of the axial line of the work, in combination with a rest adapted to be manually operated and having a slide to engage and operate within said groove, a rod mounted in the rest parallel with the groove, a pattern removably and adjustably secured below the grooved bar or member, a holder adapted to swing upon the rod, and provided with a knife or cutter, and a plate adjustably fitted to the under side of the holder, having a downturned extension to engage the pattern whereby the holder is automatically raised and lowered during the movement of the rest along the grooved bar or member.

5. In a lathe attachment adapted to perform various kinds of work, the combination, of a fixed grooved bar or member on one side only of the axial line of the work, a rest to be manually operated and having a slide to operate in said groove, and having horizontal arms projecting laterally from the under side of the bar, and provided with bearings, a shaft or rod mounted in said bearings parallel with the groove of the bar or member, knife-holders hung upon said shaft or rod, knives or cutters adapted to be adjustably mounted in the holders, a pattern below the grooved bar or member and the angular plates and securing means whereby the pattern is adjustably held and supported from the bar or member.

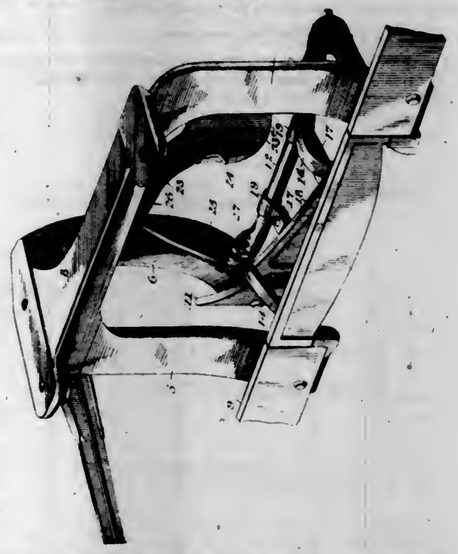
569,198. INCANDESCENT OIL LIGHTING. SIEGMUND HENLEIN, Frankfort-on-the-Main, Germany. Filed Mar. 27, 1896. Serial No. 585,060. (No model.)



Claim.—1. In a distribution apparatus for vapor-burners and the like, the combination of a central oil-receptacle and a central benzin-receptacle with means to introduce compressed air thereto and pipes leading from the two receptacles to the burners, substantially as described.

2. In a distributing apparatus for vapor-burners and the like, the combination of a central oil-receptacle and a central benzin-receptacle with means to introduce compressed air thereto and pipes leading from the two receptacles to the burners, and an expansible air-reservoir communicating with the air-pipe, and means to indicate when the reservoir is distended, substantially as described.

569,199. TRAMWAY-SWITCH. MAURY W. HIBBARD, Chicago, Ill., assignor to the W. W. Sprague Company, same place. Filed July 22, 1895. Serial No. 556,711. (No model.)



Claim.—1. A switch of the class described, comprising in combination with a main track having a gap therein, a branch track and movable rail-sections adapted to bridge the gaps and a crank or eccentric shaft to which one of said movable rails is rigidly and the other pivotally secured whereby when the shaft is rocked one of said sections is moved out of and the other into operative position, substantially as described.

2. A switch of the class described, comprising in combination a main track and a branch and movable rail-sections adapted to bridge the gaps in the main track and between the main track and the

branch, a rocking crank or eccentric shaft, one of said movable rail-sections being rigidly connected to the crank-shaft and having its axis in line with the journals thereof and the other being pivotally connected to the eccentric or cranked portion of the shaft whereby when the shaft is rocked one of said sections is reciprocated and the other is swung, substantially as described.

3. In a switch of the class described, the combination with a main track and a branch, of a frame adapted to support the ends of the track-rail at the switch, a crank-shaft journaled in said frame a movable rail-section rigidly secured to the crank-shaft and a movable rail-section pivotally connected to the cranked portion of said shaft, substantially as described.

4. In a switch of the class described, the combination with the main track and branch rails, of a hanger for supporting the ends of said rails, a crank-shaft journaled in said hanger, a movable rail-section rigidly connected with said crank-shaft, a sliding rail-section pivotally connected with the eccentric portion of said shaft and supports upon said hanger for said movable rail-section, substantially as described.

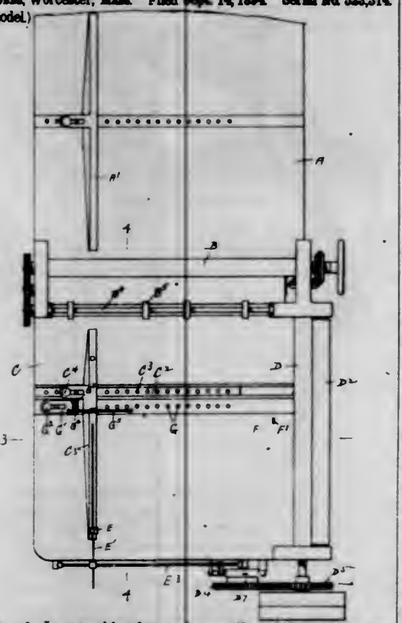
5. The combination with the main and branch tracks, of a hanger for supporting the ends of said tracks, a crank-shaft journaled on the hanger, a rail-section rigidly connected with the crank-shaft and a second rail-section pivotally connected with the eccentric portion thereof, an operating-lever and a link pivotally connecting said operating-lever and the crank-shaft whereby the latter may be rocked in its bearings to shift one of said rails into and the other out of position, substantially as described.

6. The combination with the main-track and branch-track rails, of a pivoted frame carrying a rail-section and a second rail-section connected to said frame eccentrically to its axis and means for rocking said frame whereby one of said rails is caused to swing therewith and the other is caused to reciprocate, substantially as described.

7. The combination with the main track and branch, of a pivoted frame carrying a track-rail section, a rail-section eccentrically connected with said frame and adapted to be moved into and out of position by the swinging thereof, an operating-lever having a hooked extension to support the swinging rail and a link connecting said lever with the frame, substantially as described.

8. The combination with the main and branch tracks and a swinging frame carrying a track-rail section, of a movable track-rail section pivotally connected to said frame eccentrically to its axis and an operating-lever connected with said frame and said lever being adapted when operated to project across the track into the path of a carrier, substantially as and for the purpose described.

569,200. MACHINE FOR SCORING CARDBOARD. CLARENCE W. HOBBS, Worcester, Mass. Filed Sept. 14, 1894. Serial No. 523,314. (No model.)



Claim.—1. In a machine for scoring cardboard the combination with a table, a reciprocating bar by which a sheet of cardboard is pushed along said table, mechanism by which a sheet of cardboard is fed upon said table in front of said reciprocating bar, actuating mechanism by which said bar is reciprocated, a clutching mechanism by which said actuating mechanism is connected with the driving power, a yielding stop placed in the path of the advancing sheet of cardboard as it is fed upon the table in front of said reciprocating bar, said yielding stop being operatively connected with said clutching mechanism, whereby the reciprocating-bar-actuating mechanism is automatically connected with the driving power by the forward movement of the cardboard, substantially as described.

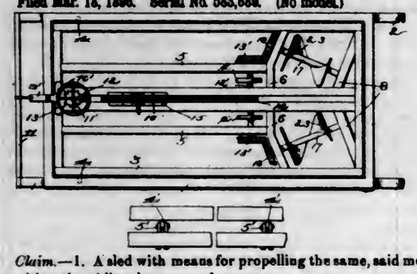
2. In a machine for scoring cardboard the combination of a table upon which the carboard is fed to a scoring mechanism, of a reciprocating bar by which the cardboard is advanced to the scoring mechanism, a pivoted finger extending over said reciprocating bar and a spring with its tension supplied to said finger to press it downward, said finger having a cam-surface arranged to be acted upon by the reciprocating bar, whereby said finger is raised.

3. In a machine for scoring cardboard, the combination of a table upon which the cardboard is fed to a scoring mechanism, of a reciprocating bar by which the sheet of cardboard is advanced toward the scoring mechanism, and an elastic blade having one end attached to said reciprocating bar and having its free end pressing against the surface of the table, substantially as described.

4. In a machine for scoring cardboard, the combination with a table, a scoring mechanism, a reciprocating bar by which the cardboard is moved toward said scoring mechanism, a stop, as E^3 arranged in the path of the sheet of cardboard as it is fed in front of said reciprocating bar, and a stop-bar as F' projecting above the surface of said table between said reciprocating bar and said scoring mechanism and means for depressing said stop-bar below the surface of the table, substantially as described.

5. In a machine for scoring cardboard, the combination with a scoring mechanism and a table upon which the cardboard is supported and a reciprocating bar by which the cardboard is pushed toward said scoring mechanism, of actuating mechanism by which said reciprocating bar is moved, said actuating mechanism comprising a clutch by which it is operatively connected with a driving part of the machine, a stop E adjustably attached to said reciprocating bar, a sliding rod F' provided with a head F^3 placed in the path of the advancing cardboard as it is placed before said reciprocating bar, whereby the advancing cardboard is made to move said sliding rod, and mechanism connecting said sliding rod with said clutch, substantially as described.

569,201. SLED-PROPELLER. HOWARD H. HOMER, Franklin, Me. Filed Mar. 18, 1896. Serial No. 583,688. (No model.)



Claim.—1. A sled with means for propelling the same, said means comprising the obliquely-arranged screws.

2. A sled with means for propelling the same, said means comprising the pair of obliquely-arranged screws.

3. A sled with means for propelling the same, said means comprising the obliquely-arranged screws, said screws extending in opposite directions to each other.

4. A sled with means for propelling the same, said means comprising the pair of obliquely-arranged screws, said screws being driven from a common shaft.

5. A sled with means for propelling the same, said means comprising the screws carrying bevel gears, the transverse shaft carrying gear meshing therewith, the sprocket-wheel arranged centrally of said transverse shaft, and the chain and sprocket for rotating said transverse shaft, substantially as described.

6. A sled with means for propelling the same, said means comprising the obliquely-arranged screws, and the brake mechanism for locking said screws against rotation.

7. A sled with means for propelling the same, said means including the shaft 12' and the screws carrying the gears, the frictional disks also carried by said shaft, the brake-shoes, the pivoted plate under spring-tension carrying said shoes, and the means for depressing said plate to bring said shoes into contact with said disk to lock said screws.

569,202. FOLDING BED. JACOB HOTHAPILLAR, Dayton, Ohio. Filed May 11, 1895. Serial No. 548,928. (No model.)

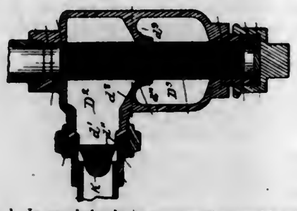


Claim.—1. In a folding bed the combination with a base and upright frame a bed-frame hinged to the base a foot and head piece hinged to the bed-frame, a guide-piece adjustably secured to the upright frame a windlass secured to the head-piece a flexible cord wrapped around the windlass and one end secured to the upright frame and the other end to the guide piece substantially as specified.

2. In a folding bed the combination with a base and upright frame a bed-frame pivoted upon the base a head-piece hinged to the bed-frame a windlass carried thereon a guide-piece adjustably secured to the upright frame a flexible cord wrapped around the windlass and secured at its opposite ends to the upright frame and guide-piece a guide-loop secured to the head-piece for the reception of the guide-piece for the purpose substantially as specified.

3. In a folding bed the combination with a base and upright frame and pivoted bed-frame, a head-piece hinged to the bed-frame a windlass carried thereon, a guide-piece adjustably secured to the upright frame, and passing through a guide-loop secured to the head-piece, a flexible cord wrapped around the windlass and hooks 22 and 23, to which the ends of the cords are fastened, secured to the upright frame and to the guide-piece respectively for the purpose substantially as specified.

569,203. STRAINER FOR AIR-BRAKES OF CARS. THOMAS B. HUNT, Chicago, Ill. Filed Apr. 24, 1896. Serial No. 588,913. (No model.)



Claim.—1. In an air-brake apparatus, the combination with the main air-brake pipe and the triple valve controlling the communication with the brake-cylinder, of an upright drain-cup interposed between said main pipe and valve, and provided with a removable strainer and a removable cap at its lower end closing the exit-opening of the drain-cup and holding the removable strainer in place, substantially as specified.

2. The combination with the main air-brake pipe and valve, of a branch pipe leading from the main pipe and communicating with the valve, of a drain-cup located in said branch pipe and interposed between said main pipe and said valve and provided with a removable cap, substantially as specified.

3. The combination with the main brake-pipe and valve, of a branch pipe leading from the main pipe and communicating with the valve, of a drain-cup connected to said branch pipe and provided with a removable cap closing the exit-opening of the drain-cup, and having a removable strainer held in place by said cap, substantially as specified.

4. The combination with a drain-cup having inlet and outlet openings for the air to pass through and a double strainer and a removable cap closing the exit-opening of the drain-cup and holding the strainer in place, substantially as specified.

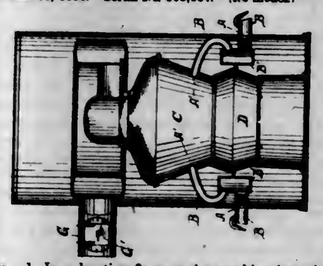
5. The combination with a drain-cup having inlet and outlet openings for the air to pass through and a double strainer, comprising two separate strainers fitting one inside the other and each provided with an internal ring or shoulder and a removable cap closing the exit-opening of the drain-cup and holding the strainer in place, substantially as specified.

6. The combination with a drain-cup divided into two chambers by an intermediate web or wall, of a strainer extending through said intermediate web or wall, the lower surface of said intermediate web or wall being recurved substantially as specified.

7. The combination with a drain-cup divided into two chambers by an intermediate web or wall, of a strainer extending through said intermediate web or wall, the upper surface of said web or wall being downwardly inclined and furnished with openings, substantially as specified.

8. The combination with a drain-cup provided with a removable cap, of a removable tubular strainer inside the cup, and a second strainer in the air-outlet opening or passage leading from said cup, said removable cap closing the exit opening of the drain-cup and holding the strainers in place, substantially as specified.

569,204. DRAFT ATTACHMENT FOR FURNACES. AUGUSTUS JAHANT, Akron, Ohio, assignor of one-half to John C. Weber, same place. Filed June 15, 1896. Serial No. 595,667. (No model.)



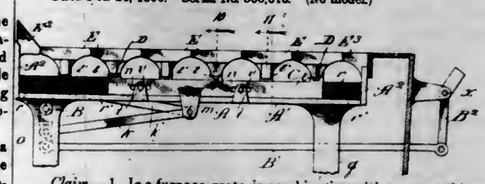
Claim.—1. In a heating-furnace the combination with the fire-chamber C, of the draft-flue B provided with the inclosed supporting-frame E with its funnel-shaped induction attachment A, and the rotary vanes F, the flange or shield F'', said draft-flue B being also provided with the eduction funnel-shaped attachment A', the opening of which is smaller than the opening of the induction attachment A operating substantially as shown and described.

2. In a heating-furnace the combination of the draft-flue B provided with the induction attachment A and the eduction attachment A' as a means of supplying air to the combustion-chamber substantially as shown and described.

3. The draft-flue B provided with the attachment-supporting frame E, its self-rotating vane F, and the flange or shield F'' operating substantially as shown and described.

4. The draft-flue B entering the furnace within the fire-chamber above the fire-box, and having the single eduction attachment A' to contract the stream of air as it is discharged within the fire-chamber operating substantially as shown and described.

569,205. FURNACE-GRATE. FRANKLIN W. JARVIS, Chicago, Ill. Filed Feb 26, 1896. Serial No. 580,818. (No model.)



Claim.—1. In a furnace grate, in combination with a supporting-frame, grate-bar-sustaining bars supported in pairs at opposite sides of the frame to slide lengthwise thereon, means for sliding said sustaining-bars in relatively-contrary directions, grate-bars on said sustaining-bars, and grate-fingers supported to alternate with each other on the successive grate-bars, substantially as and for the purpose set forth.

2. In a furnace-grate, in combination with a supporting-frame, grate-bar-sustaining bars supported in pairs at opposite sides of the frame to slide lengthwise thereon, means for sliding the members of said pairs of sustaining-bars in relatively-contrary directions, grate-bars journaled on said sustaining-bars, means for rocking the members of pairs of said grate-bars in relatively-contrary directions, and grate-fingers supported to alternate with each other on the successive grate-bars, substantially as and for the purpose set forth.

3. In a furnace-grate, in combination with a supporting-frame, the pairs of bars C and C' having the members of each pair supported on the opposite sides of the side bars of said frame to slide lengthwise thereon, a rock-shaft B carrying the cross-heads o and o', links k

and k' connecting said bars C and C' with said cross-heads respectively at opposite sides of said rock-shaft, a rod B' extending from one of said cross-heads, an operating-lever B^3 connected with said rod, grate-bars on said bars C and C' and grate-fingers supported to alternate with each other on the successive grate-bars, substantially as and for the purpose set forth.

4. In a furnace-grate, in combination with a supporting-frame, grate-bar-sustaining bars supported in pairs at opposite sides of the frame to slide lengthwise thereon, means for sliding the members of said pairs of sustaining bars in relatively-contrary directions, grate-bars journaled on said sustaining bars, grate-fingers supported to alternate with each other on the successive grate-bars, a rock-shaft B carrying loosely a cross-head o^3, a bar F pivotally suspended from alternate grate-bars, a bar F' pivotally suspended from grate-bars alternating with those carrying the bar F, a link f connecting said bar F with said cross-head at one side of the rock-shaft, a link f' connecting said bar F' with said cross-head at the opposite side of the rock-shaft, a rod B^3 extending from the cross-head and an operating-lever B^4 connected with said rod, substantially as and for the purpose set forth.

5. In a furnace-grate, in combination with a supporting-frame, the pairs of bars C and C' having the members of each pair supported on the opposite sides of the side bars of said frame to slide lengthwise thereon, a rock-shaft B carrying, to rock with it, the cross-heads o and o' and, loosely, the cross-head o^3, links k and k' connecting said bars C and C' with said cross-heads o and o', respectively, at opposite sides of said rock-shaft, a rod B' extending from the cross-head o, an operating-lever B^3 connected with said rod, grate-bars journaled on said bars C and C', grate-fingers supported to alternate with each other on the successive grate-bars, a bar F pivotally suspended from alternate grate-bars, a bar F' pivotally suspended from grate-bars alternating with those carrying the bar F, a link f connecting said bar F with the cross-head o^3 at one side of the rock-shaft, a link f' connecting said bar F' with said cross-head o^3 at the opposite side of the rock-shaft, a rod B^3 extending from the cross-head o^3 and an operating-lever B^4 connected with said rod, substantially as and for the purpose set forth.

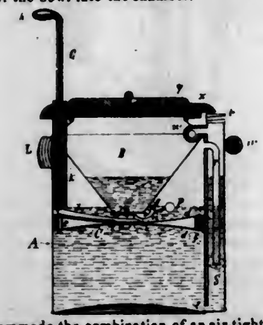
6. In a furnace-grate, in combination with a supporting-frame, grate-bars each formed angular in cross-section between and at its end portions and rounded at its opposite ends between the angular portions, recesses s^3 in the sides of said rounded portions and spacing-ribs i on the intermediate angular portion, double grate-fingers E having sockets i' at which they straddle said grate-bars between the ribs thereon and single grate-fingers E' having sockets i' provided with projections i^3 and at which they seat in said recesses s^3, the grate-fingers alternating with each other on the successive grate-bars, substantially as described.

7. In a furnace-grate, the combination of a frame A comprising the T-bars A', connecting-bars A^3 and legs g, slotted sustaining-bars C and C' supported on opposite sides of each T-bar to slide lengthwise thereon and connected by bolts o passing through their slots and through the web of said T-bar, a rock-shaft B carrying the cross-heads o and o', links k and k' connecting said sustaining-bars with said cross-heads respectively at opposite sides of said rock-shaft, a rod B' extending from one of said cross-heads, an operating-lever B^3 connected with said rod, grate-bars on said sustaining-bars and grate-fingers supported to alternate with each other on the successive grate-bars, substantially as and for the purpose set forth.

8. A furnace-grate comprising, in combination with a supporting-frame, the pairs of sustaining-bars C and C' provided, respectively, with the upward-projecting bearings l and l' and having the members of each pair supported on the opposite sides of the side bars of said frame to slide lengthwise thereon and to cause said bearings on the members of the pairs of sustaining-bars to alternate with each other, a rock-shaft B carrying the cross-heads o, o' and o^3, links k and k' connecting said bars C and C' with said cross-heads o and o', a rod B' extending from the cross-head o, an operating-lever connected with said rod, grate bars D and D' journaled on said bearings l and l' and locked to said bars C', grate-fingers supported to alternate with each other on the successive grate-bars, and stationary guide-fingers E^2 and E^4 at the opposite ends of the grate, hangers k and k' depending, respectively, from the grate-bars D and D', bars F and F' pivotally connected, respectively, with said hangers k and k', links f and f' connecting the bars F and F' with the cross-head o^3, a rod B^3 extending from said cross head o^3 and an operating-lever connected with said rod B^3, the whole being constructed and arranged to operate substantially as and for the purpose set forth.

569,206. COMMODE. EDWARD W. JENKINS, Durbin, N. D. Filed Mar. 23, 1894. Serial No. 504,754. (No model.)

Claim.—1. In a commode the combination of an air-tight chamber, to fill with water, having a bowl in its top, a pipe r communicating with said chamber at the top near the bowl, and extending well down in contact with the water, a circulating-tube S, communicating with the bottom of the chamber, and the top of the bowl, arranged to confine a pressure of air within the chamber, below the bowl, and support a column of water in the bowl, above the level of water in the chamber, and means for relaxing the pressure, and draw the contents of the bowl into the chamber.



2. In a commode the combination of an air-tight chamber to fill with water, having a bowl in its top, a check-valve in the bottom of the bowl, a piston fitting said chamber, and mechanism to work said piston, and produce a pressure within the chamber and against said valve, as and for the purpose specified.

3. In a commode the combination of a water vessel with a bowl in its top, a check-valve in the bottom of the bowl, a circulating tube S communicating with the bottom of the vessel and the top of said bowl, and means of circulating water through said tube into said bowl, a movable partition fitting said vessel, and dividing the vessel, into upper and lower compartments, said partition arranged to work to the bottom of the vessel, as the water discharges from the lower compartment, converting the space of the lower compartment, into the upper, available for the use of said bowl substantially as described.

4. In a commode the combination of a water-bucket, with a handle w, secured to the bucket, having a bowl in its top, a check-valve in the bottom of the bowl a piston fitting within said bucket dividing the same into upper and lower compartments, a tube r, connecting the bucket communicating with the upper part near the bowl and extending well down in contant with the water, a circulating-tube connecting the vessel, and communicating with the lower part of the vessel below the piston and the top of the bowl for the purpose specified.

5. In a commode the combination of a cylindrical chamber, having a bowl in its top, a check-valve in the bottom of the bowl, a piston fitting tightly in said chamber, a tube S, communicating with the bottom of the chamber, and the top of the bowl, a tube r connecting to the chamber near the top of the space between the piston and the bowl, and arranged to extend well down in contact with the water, and means for moving said piston as and for the purpose specified.

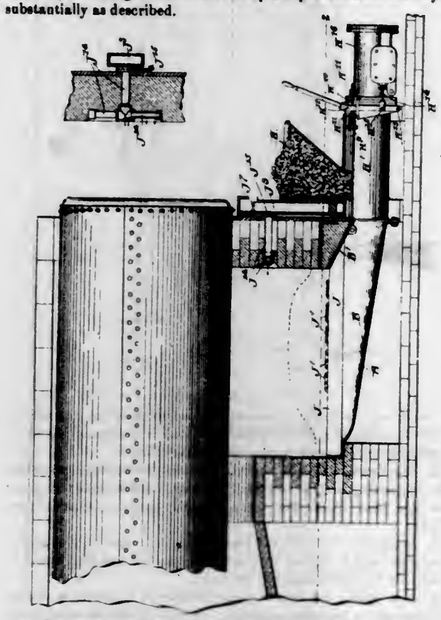
6. In a commode the combination of a cylindrical chamber having a bowl arranged in the upper part thereof, a check-valve in the bottom of said bowl having a plate m of suitable material fitting over and tightly closing the aperture in said bottom, a circulating-tube communicating with the bottom of said chamber and top of said bowl, and pumping mechanism for discharging water through said tube, from said chamber into said bowl, and, for emptying said bowl substantially as set forth.

569,207. BOILER OR OTHER FURNACE. EVAN W. JONES, Portland, Oreg., assignor to the Jogada Furnace Company, Chicago, Ill. Filed May 13, 1893. Serial No. 474,121. (No model.)

Claim.—1. A fuel magazine for an under-feed furnace, said magazine having flaring sides gradually decreasing in depth rearwardly and a curved or inclined bottom and horizontal attaching-flanges at its upper edges which latter are provided with longitudinal slits and twyers secured to said flanges through the longitudinal slits, to thereby permit the twyers to expand and contract, substantially as described.

2. In an under-feed furnace with a fuel opening below the line of the fire, a solid, stationary, slightly-inclined fuel-bed having flaring sides gradually decreasing in depth rearwardly, and a curved or inclined bottom and horizontal attaching-flanges at its upper edges which latter are provided with longitudinal slits, twyers secured to said flanges through the longitudinal slits which permit them to expand and contract, and a ram or plunger for forcing the fuel into the magazine, substantially as described.

3. In an under-feed furnace provided with a fuel-opening below the line of the fire, a stationary, slightly-inclined fuel-bed, twyers located near the top of the fuel-bed, removable, non-revoluble, channeled blocks or dies in said twyers having concavities in their upper surfaces with closed bottoms which are adapted to receive and permanently hold slag, which forms a fireproof protection to the twyers, substantially as described.



4. In an under-feed furnace provided with a fuel-opening below the line of the fire, a stationary slighly-inclined fuel-bed, longitudinal movable twyers located near the top of the fuel-bed, removably non-revoluble channeled blocks or dies in said twyers having concavities in their upper surfaces with closed bottoms which are adapted to receive and permanently hold slag which forms a fireproof protection to the twyers, substantially as described.

5. A furnace with a fuel-chamber having an upwardly-expanding cross-section and sides gradually decreasing in depth rearwardly and located below the line in which the air is forced into the fuel, twyers located near the top of said chamber and having removable blocks or dies, which latter are formed with staples or eyes on their under sides and removable confining-rods passed through the eyes, substantially as described.

6. A furnace with a fuel-chamber having an upwardly-expanding cross-section and sides gradually decreasing in depth rearwardly, and located below the line in which the air is forced into the fuel, twyers located near the top of said chamber and provided with removable blocks or dies having air-channels in their sides of different sizes, staples or eyes on the under side of the blocks and removable rods passed through the eyes for connecting the blocks, substantially as described.

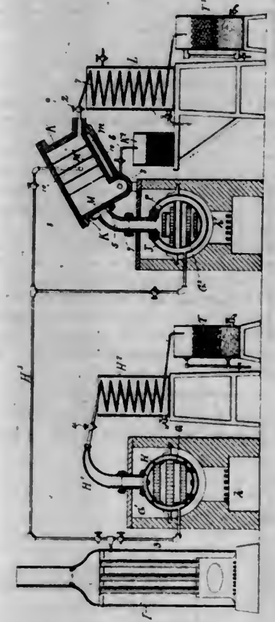
7. A furnace with a fuel-chamber having an upwardly-expanding cross-section and sides gradually decreasing in depth rearwardly, and located below the line in which the air is forced into the fuel, twyers near the top of said chamber with removable blocks having variable air-channels in the sides and fitted to the tops of the air pipes or twyers, staples J^9 on the under side of said blocks, confining-rods passed through the staples; side branches J^{13} on the air-pipes; removable covers J^{10} on the end of the air-pipes; opening J^6 and slides J^4, substantially as described.

8. In an under-feed furnace provided with a fuel-opening below the line of the fire, a gradually, upwardly-inclined fuel-bed, twyers near the top of said bed, removable, stationary, blocks or dies having variable air-channels in their sides and fitted to the twyers, concavities in the upper surfaces of the blocks having closed bottoms for receiving and permanently holding slag, staples or eyes on the under side of the blocks, and confining-rods passed through the eyes, substantially as described.

9. In a furnace provided with an upwardly-expanded fuel-chamber closed at bottom and sides, and having connection with an air-supplying apparatus at or near its top, air-pipes J and J^3, cut-off slide J^7, and back-pressure valve J^8, substantially as described.

10. In an under-feed furnace with a fuel-opening below the line of the fire, a magazine gradually decreasing in depth toward the rear and provided with a curved or inclined bottom and horizontally-attaching flanges to its upper edges provided with longitudinal slits, twyers secured to said flanges through the longitudinal slits to permit expansion and contraction, an air-distributing pipe for forcing air over the top of the fire, and a ram or plunger for forcing the fuel into the magazine; substantially as described.

569,208. PROCESS OF AND APPARATUS FOR EXTRACTING OIL. HERMAN T. C. KRAUS, Brooklyn, N. Y. Filed Oct. 11, 1895. Serial No. 565,400. (No model.) Patented in England Oct. 25, 1895, No. 20,107.



Claim.—1. In the art of extracting oil, the herein-described process, to wit: mixing the oil-bearing material with water, subjecting this mixture to the action of heat, and a relatively high pressure, whereby the vaporization of the water is prevented, then relieving the pressure and allowing the water to rapidly vaporize and pass off, carrying with it the oily or fatty material, and then separating the materials which pass off from each other, substantially as set forth.

2. In the art of extracting oil, the herein-described process, to wit: mixing the oil-bearing material with water, subjecting the mixture to the action of saturated, but not superheated, steam, at about sixty pounds pressure, then allowing the steam to flow through the chamber in which the material being treated is contained, and then collecting and separating the materials which pass off from such chamber, substantially as set forth.

3. In the art of extracting oil, the herein-described process which consists in subjecting the oil-bearing material to the action of saturated steam at a high pressure, such material being mixed with water, maintaining such pressure until the oily or fatty matter expands and separates from the materials with which it was associated, and then relieving the pressure, whereby there is a flow of steam through the chamber in which the material is contained, and the vaporous and the oily or fatty parts of the material being treated are carried on with the flowing steam, and subsequently separating the material so carried on, substantially as set forth

4. In the art of extracting oils, the herein-described process, which consists in subjecting the oil-bearing material to the action of saturated steam at a high pressure, the material being mixed with water during such treatment, maintaining the pressure in the chamber containing the material for a sufficient length of time, and at the same time maintaining the steam in a saturated, but not superheated, condition by external heat, then relieving the pressure and causing a flow of the steam through the chamber, and finally separating the material carried on with the flowing steam, substantially as set forth,

5. In the art of extracting oil, the herein-described process, to wit: subjecting a mixture of fatty or oily material and water to a high degree of heat and pressure while in a closed vessel or chamber maintaining the heat and pressure a sufficient length of time, then relieving the pressure from the chamber or vessel, allowing the water in the mixture to vaporize rapidly and pass off, carrying with it oily

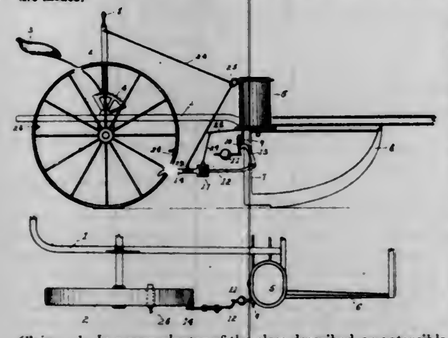
matter, and finally collecting and separating the materials which escape therefrom, substantially as set forth.

6. In the art of extracting oil, the herein-described process, to wit: subjecting a mixture of the oily or fatty matter and water to a heat approximately 600° Fahrenheit, and a corresponding degree of pressure, in a closed chamber or vessel, maintaining such heat and pressure by the indirect application of heat to such vessel, then relieving the pressure within such chamber or vessel, and finally collecting and separating the materials which escape therefrom, substantially as set forth.

7. In the art of extracting oils, the herein-described process, which consists in treating the oil-bearing material while mixed with water to the action of saturated steam at a relatively high pressure, maintaining such heat and pressure a suitable length of time, then relieving the pressure and permitting the steam to flow through the chamber containing such materials to carry with it the vapor of water and the oily or fatty matter, separating the oily or fatty matter from a portion of the water, then subjecting this material to a high degree of heat and pressure in a closed vessel, maintaining such heat and pressure a sufficient length of time, relieving the pressure from such material, permitting the vapors and oily matter to escape therefrom, and separating the oily from the vaporous material which so escapes, substantially as set forth.

8. The combination of the outer cylinder J, arranged to be closed steam-tight, external means for applying heat to such cylinder, another cylinder P, arranged to be closed steam-tight, such latter cylinder being smaller in diameter, and longer than the cylinder J, and supported in the ends thereof, and the glands or stuffing-boxes P', secured to the heads of the cylinder J, and surrounding the cylinder P, whereby the latter is removably supported within the outer cylinder, substantially as set forth.

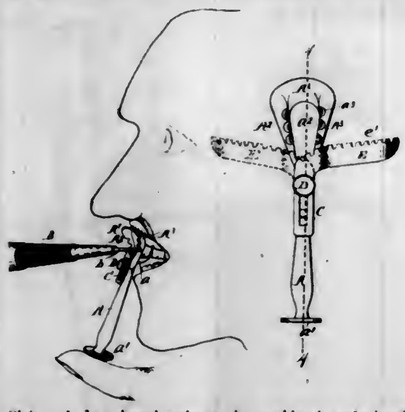
569,209. CHECK-ROW ATTACHMENT FOR CORN-PLANTERS. ELIJAH KRICK, Wolfdale, Ohio. Filed June 10, 1896. Serial No. 594,942. (No model.)



Claim.—1. In a corn-planter of the class described, an extensible trip-lever 12 pivotally mounted as shown upon one of the planting-shoes, having its bent forward end 13 adapted to intermittently engage a fixed arm on the rock-shaft, and having its rear end provided with an extensible plate 14 slotted as shown for the purpose specified; a vertically-adjustable and centrally-slotted plate 17 arranged on said plate 14 as described and connected with the spring plate 28 by the cord 29; the spring-plate 28 arranged as shown and adapted to normally return the said trip-lever to its normal position after each operation; in combination with the pendent arm 10 fixed upon one end of the said shaft 9 and immediately adjacent to the forward end of the said trip-lever, the said arm being provided upon its free end with a weighted ball for the purpose specified; and a plurality of markers 26 fixed upon the perimeter of the wheel and adapted to intermittently engage the said trip-lever, all substantially as described.

2. The combination in a wheeled corn-planter, of the planting-shoes 6; the seed-hoppers 5 mounted on said shoes, and provided in the base thereof with the seed-dropping valves; the oscillating rock-shaft 9 arranged as shown on said shoes; the pendent arm 10 fixed on one extremity of said shaft and provided with an adjustable weighted ball 11 for the purpose specified; a trip-lever 12 fulcrumed as shown upon one of the said planting-shoes, with its forward end adapted to intermittently oscillate the said shaft by engagement with the said arm 10, and having upon its rear end a slotted extensible plate 14 provided with the staple 23 and the vertically-adjustable plate 17; the spring-plate 28 fixed to the base of the said hopper 5, as shown and connected to the said plate 17 by the cord 29, for the purpose described; and a plurality of fixed markers 26 arranged on the wheel 2 as described and adapted to successively oscillate said shaft by engagement with the said trip-arm, all substantially as described.

569,210. REST FOR DENTAL-ENGINE TOOLS. CHARLES H. LAND, Detroit, Mich. Filed Aug. 17, 1895. Serial No. 559,584. (No model.)



Claim.—1. In a dental tool-rest, the combination of a handle, a rest for the point of a dental engine, and means to support the tool-rest upon a desired tooth, substantially as set forth.

2. In a dental tool-rest, the combination of a handle A provided with a supporting body or head A' to support a dental tool, the upper end of said head formed with a projecting lip-guard, substantially as set forth.

3. In a dental tool-rest the combination of a handle, a supporting body or head A' formed with a central opening, and with supporting sides A^2 A^2, substantially as set forth.

4. In a dental tool-rest, the combination of a handle, a means of support, and a laterally-projecting tool-rest E, substantially as set forth.

5. In a dental tool-rest, the combination of a handle, a projecting support arranged to have a bearing against a desired tooth, and an adjustable tool-rest, substantially as set forth.

6. In a dental tool-rest, the combination of a handle, a means of support, and an adjustable laterally-projecting tool-rest E, substantially as set forth.

569,211. FLOUR BOLTING OR SCALPING MACHINE. ISAIAH C. LANDES and MILTON C. LANDES, Yerkes, Pa. Filed May 22, 1896. Serial No. 592,641. (No model.)

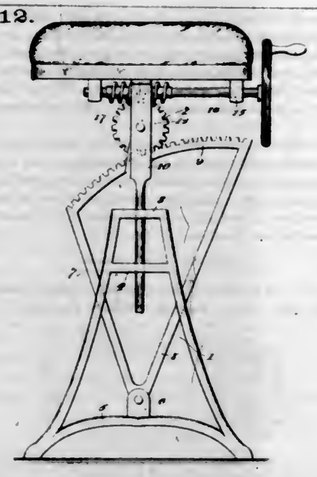


Claim.—In a gyratory bolting or scalping machine, a series of sections each provided with a spirally-arranged partition adapted to be gyrated, a sieve or separating-cloth supported at the base of each section and partition, and an oscillating arm carried by each section and adapted to knock periodically against each of said partitions while the machine is being gyrated to thereby agitate each sieve or separating-cloth, substantially as and for the purposes described.

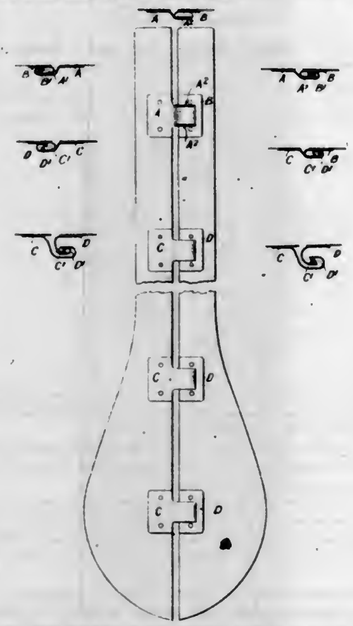
569,212. STOOL. DELBERT E. LANE, Beloit, Wis. Filed Nov. 1, 1895. Serial No. 567,574. (No model.)

Claim.—The combination in a stool of a seat, a standard, a segmental toothed bracket pivoted to the base of the standard, a pinion meshing with the segment of such bracket, uprights vertically adjustable in said standard and carrying said pinion and seat, a screw-threaded shaft suspended from the seat, a worm-gear carried by the uprights and meshing with the shaft and means for operating said shaft, substantially in the manner and for the purpose set forth.

569,212.



569,213. CORSET-FASTENING. FRIEDRICH M. LENNIG, Barmen, Germany. Filed Dec. 12, 1894. Serial No. 531,583. (No model.) Patented in England Dec. 8, 1894, No. 23,922.

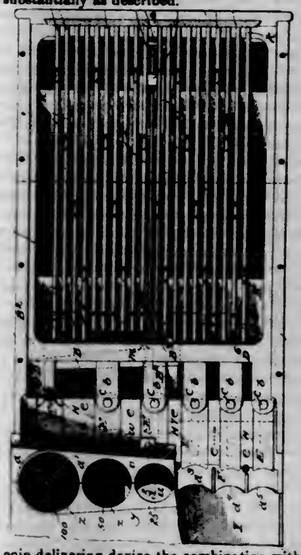


Claim.—The combination with two meeting edges adapted to move reciprocally in different planes, and a fastener composed of two complementary parts having their shanks turned in the same direction and provided with barbs C' D' and constructed to be brought one over the other in locking and to unlock by reciprocal motion in the direction of the meeting edges, of a fastener composed of two complementary interlocking parts constructed to unlock by reciprocal motion at an angle to said meeting edges, one of said parts provided with an upturned flap A^3 on each side holding the parts against motion in a direction parallel with such meeting edges, for the purpose set forth.

569,214. COIN-CHANGING DEVICE. ADOLPH L. LEVIN, Denver, Colo. Filed Mar. 25, 1896. Serial No. 584,799. (No model.)

Claim.—1. In a coin delivering device the combination with coin-receptacles, of coin ejecting slides adapted to enter the receptacles, and reciprocating frames in different horizontal planes but in pivotal connection with said slides, substantially as described.

2. In a coin-delivering device the combination with coin-receptacles, of coin-ejecting slides adapted to enter the receptacles in a common plane, and a series of superposed reciprocating frames each bearing a pilot-arm in different planes having pivotal connection with said slides, substantially as described.



3. In a coin-delivering device the combination with coin-receptacles, of coin-ejecting slides adapted to enter the receptacles, a series of reciprocating frames in pivotal connection with said slides, and a series of operating-bars arranged to directly engage one or more of the frames, substantially as described.

4. In a coin-delivering device the combination with coin-receptacles, of coin-ejecting slides adapted to enter the receptacles, a series of reciprocating frames in pivotal connection with said slides, a coacting series of operating-bars arranged to engage one or more of said frames, and suitable means common to all of the frames for returning them to normal position after each forward thrust, substantially as described.

5. In a coin-delivering device the combination with coin-receptacles, of reciprocating frames adapted to eject coins therefrom, operating-bars of skeleton form having supporting-shoes and arranged to impinge against one or more of the frames for the purpose of advancing same, and a yieldingly-retained reciprocating yoke bearing upon each of said frames to return them to their normal positions, substantially as described.

6. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars of skeleton form having depending supporting-shoes, of a yoke yieldingly connected with a fixed support and having a buffer-arm projecting in the path of said frames for the purpose of returning them to their normal position, substantially as described.

7. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars of skeleton form having front and rear supporting-shoes, of a skeleton yoke having an adjustable spring connection with a fixed support and a buffer-arm projecting in the path of said frames to return them to their normal position, substantially as described.

8. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of a yoke bearing a buffer-arm projecting in the path of said frames, and a tension-spring having an adjustable connection with the yoke and a link connection with a fixed support, substantially as described.

9. In a coin delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of a skeleton yoke bearing a buffer-arm projected in the path of said frames, a slotted fixed lug affording a guide for said arm, and a tension device having an adjustable connection with the yoke and a link connection with the lug aforesaid, substantially as described.

10. In a coin delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of a skeleton yoke bearing a buffer-arm projecting in the path of said frames, a notched tongue extending into the yoke, a slotted lug affording a guide for the arm, and a tension-spring interposed between said tongue and lug being connected to the latter by a slotted link, substantially as described.

11. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of a skeleton yoke bearing a buffer-arm with an angular cushioned shoulder projecting in the path of said frames, a slotted fixed lug affording a guide for the buffer-arm, and a tension spring interposed between said yoke and lug being connected with the latter by an embedded slotted link, substantially as described.

12. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of a shift-lever adapted to interlock at suitable intervals with one of said frames, and suitable means interposed between said bars and lever whereby the latter together with its interlocked coin-ejecting frame is advanced, substantially as described.

13. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of an oscillating lever bearing a surface tooth adapted to interlock at suitable intervals with one of said frames, and suitable means interposed between all of said bars and the lever whereby the latter together with its interlocked coin-ejecting frame is advanced, substantially as described.

14. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever adapted to interlock at suitable intervals with one of said frames, and a yieldingly-supported yoke for engaging the shift-lever to advance it and subsequently return all of the parts to their normal positions substantially as described.

15. In a coin-delivering device the combination with coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever adapted to interlock at suitable intervals with one of said frames, and a spring-retained yoke for returning the parts to their normal positions having an advance spur for engaging the shift-lever to actuate it, substantially as described.

16. In a coin-delivering device the combination with a casing having coin-receptacles at one end and a transversely-located cushion at the other, of reciprocating coin-ejecting frames, operating-bars engaging the frames, a return-yoke also engaging the frames bearing an advance spur, an auxiliary shift-lever, and means for interposing the lever in the path of said spur on the yoke, substantially as described.

17. In a coin delivering device the combination with a casing having coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever normally located below the plane of said frames, a vertically-movable arm for elevating the shift-lever into engagement with one of the frames, and a return-yoke bearing a spur on its leading end for impinging upon the shift-lever to advance it, substantially as described.

18. In a coin-delivering device the combination with a casing having coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever transversely located in the casing and normally occupying a plane below that of the frames, a vertically-movable arm for elevating the lever into engagement with one of the frames, a return-yoke bearing a spur on its leading end for impinging upon the shift-lever to advance it, and a raised track onto which the lever moves, substantially as described.

19. In a coin-delivering device the combination with a casing having coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever transversely located in the casing and normally occupying a plane below that of the frames, a vertically-movable weighted arm for elevating the lever into engagement with one of the frames, and a return-yoke bearing a spur on its leading end for actuating the lever together with its interlocked frame simultaneously with a movement of any other frame or frames, substantially as described.

20. In a coin-delivering device the combination with a casing having coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever transversely located in the casing and normally occupying a plane below that of the frames, a vertically-movable weighted arm bearing a shoe for elevating the lever into engagement with one of the frames, and a return-yoke bearing a spur on its leading end for impinging upon the shift-lever to advance it, substantially as described.

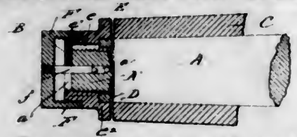
21. In a coin-delivering device the combination with a casing having coin-receptacles, coin-ejecting frames and their operating-bars, of an auxiliary shift-lever transversely located in the casing and normally occupying a plane below that of the frames, an angular vertically-movable arm terminating in a shoe which penetrates the casing for elevating the lever aforesaid into engagement with one of the frames, and a return-yoke bearing a spur on its leading end for impinging upon the shift-lever to advance it, substantially as described.

22. In a coin-delivering device the combination with coin-receptacles, of suitable means for ejecting coins therefrom, a coin-chute in common communication with the receptacles, and a counter located between said receptacles and chute finished in horizontal escallops the edges whereof are beveled in opposite directions from center of the counter, substantially as described.

23. In a coin-delivering device the combination with a graduated series of coin-holders, suitable means for ejecting coins therefrom, a coin-chute in common communication with the holders, and a counter located between said holders and chute finished in a series of escallops in register with the coin-holders the edges whereof are beveled in opposite directions from center of the counter, substantially as described.

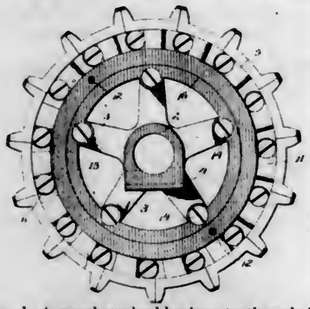
24. A casing for a coin-delivering device having a top plate or keyboard crossed transversely by a thumb-support and broken by a series of key-stem slots, in combination with a corresponding series of tapering key-stems protruding from said slots, and an equal number of controlling-keys detachably secured upon their respective key-stems, substantially as described.

569,215. **AXLE-NUT FOR VEHICLES.** JOHN E. LEWIS, Reading, Pa. Filed Apr. 9, 1896. Serial No. 586,822. (No model.)



Claim.—The combination with a spindle having a transverse groove *d'* and central perforation in the end thereof, of a nut having a series of recesses *e*, a sliding catch B in said groove adapted to engage one of said recesses at either end of the groove, and a nut-cap having a projection entering said central perforation to prevent disengagement of the catch, substantially as set forth.

569,216. **SPROCKET-WHEEL.** JOHN LINDSAY, Millbury, Mass. Filed Sept. 26, 1895. Serial No. 563,729. (No model.)



Claim.—1. A sprocket-wheel having a tooth made in circumferentially-alined sections, and means for adjusting said sections, whereby the tooth may be expanded or contracted.

2. A sprocket-wheel having a radially-divided sprocket-tooth, and means for adjusting the divided portions of said tooth and thereby expanding or contracting the latter.

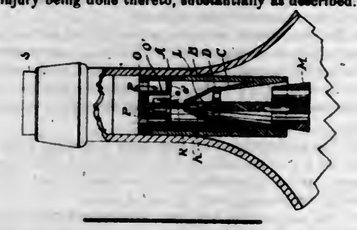
3. In a sprocket-wheel, the combination with a fixed rim, of an outer rim composed of a plurality of segments each of which is provided with a half sprocket-tooth, and means for simultaneously adjusting said rim-segments and expanding each tooth, for the purpose specified.

4. The herein-described wheel, comprising a main rim, a sectional rim arranged outside of and beyond the main rim and composed of a series of segments, means for equally and simultaneously adjusting all of said segments for increasing or diminishing the diameter of the wheel, and the contractible eye-bearings for clamping the rim-segments, substantially in the manner and for the purpose described.

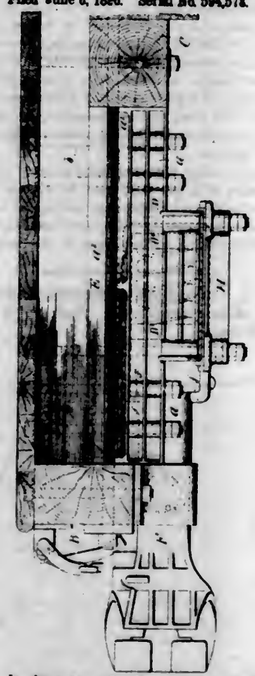
5. In a wheel, a fixed rim, and a supplemental expansible rim comprising a series of rim segments having inwardly-extending stems, in combination with a rotatable scroll-ring for simultaneously moving said rim-segments outward or inward for increasing or diminishing the diameter of the wheel, and a concentric bearing-ring arranged in the diametric plane of the scroll-ring and having a rabbeted engagement therewith, substantially as and for the purpose described.

569,217. **BOTTLE.** CHARLES P. LUNDQUISTE, Brooklyn, N. Y., assignor of one-half to Edwin C. Dennin, same place. Filed July 24, 1895. Serial No. 556,977. (No model.)

Claim.—The combination with a bottle or similar receptacle of a tubular plug, adapted to be secured within the neck thereof and within the lower end of said plug is formed an upwardly-directed conical portion, the lower end of which is connected with the tubular portion forming an incline valve seat, the enlarged end of which extends downwardly, the apex of said device being cut away, and adapted to receive a plate provided with apertures or ports, and having a central bore, a plate O mounted at the upper end of a tube A, which plate is provided with ports and having located centrally therein a downwardly-directed rod, said plate O also being provided with downwardly-directed tubular extensions, having side ports and an annular rim, an inverted conical valve having a depending annular flange adapted to inclose the upper portion of the conical device C, the ports in said device being closed by a mica valve which is held in position by spring-pins H, which pass through lugs or projections formed on the upper side of the plate B, said conical valve K being provided with a downwardly-directed rod, the upper portion of which is tubular, adapted to receive the lower end of the rod R, connected with the plate O and to be vertically movable thereon, the valve K being vertically movable thereon, the lower end of said tube B being provided with a weight M, the sides of which are beveled and which is provided with ports or openings, said weight being adapted to close the lower end of the tube A whereby, the bottle may not be filled without injury being done thereto, substantially as described.



569,218. **LOCOMOTIVE-TENDER COUPLING.** JOHN MACKENZIE, Cleveland, Ohio, assignor to the Buckeye Malleable Iron and Coupler Company. Filed June 6, 1896. Serial No. 594,573. (No model.)



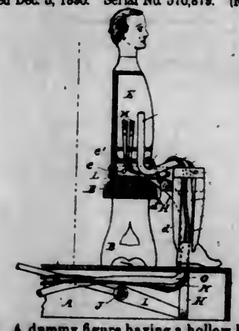
Claim.—1. In draw-gear for locomotive tenders, the combination with a body-bolster, end sill, central longitudinal timber connecting the body-bolster and end sill, side plates both of which are secured to the under side of the longitudinal timber, and abut at their ends against the end sill and body-bolster and a bottom plate secured against the side plates, of a draw-bar, a yoke secured to the rear end of the latter, followers passing through the yoke and confined between vertical flanges on the side plates and a spring interposed between the followers, substantially as set forth.

2. In draw-gear for locomotive-tenders, the combination with a body-bolster, end sill, central longitudinal timber connecting the body-bolster and end sill, side plates both of which are secured to the under side of the longitudinal timber, and a bottom plate having recesses adapted to receive projections on the side plates and secured to said side plates, of a draw-bar, a yoke secured to the rear end of the latter, followers passing through the yoke and confined between vertical flanges on the side plates and a spring interposed between the followers, substantially as set forth.

3. In draw-gear for locomotive-tenders, the combination with a body-bolster, end sill, central longitudinal timber exteeding from the end sill to the bolster, side plates both of which are secured against the under side of said timber, the said side plates being of greater depth at their centers than at their ends and a bottom plate secured against the deeper parts of the side plates by bolts passing through the side plates and longitudinal timber, of a draw-bar, a yoke secured to the rear end of the latter, followers passing through the yoke and confined between flanges in the side plates and a spring interposed between the followers, substantially as set forth.

4. The combination with side plates, a bottom plate, followers and a spring, of a draw-bar, a yoke secured to the draw-bar and embracing the followers, a combined support and guide for sustaining the outer end of the draw-bar pockets integral with the guide the open ends of said pockets constituting abutments for limiting the lateral play of the draw bar and springs seated in said pockets and bearing directly against the sides of the draw-bar, substantially as set forth.

569,219. **MUSICAL FIGURE.** DANA K. MARSHALL, Manchester, N. H. Filed Dec. 3, 1895. Serial No. 570,879. (No model.)



Claim.—1. A dummy figure having a hollow body portion, pipes or reeds arranged within said body portion, and forming part of an organ, jointed legs connected to said body portion, a base or support to which the lower limbs are rigidly attached, a bench or stool attached to said base serving as a seat for the figure, and means for adjusting the figure from a standing to a sitting posture.

2. A movable or adjustable dummy figure provided with one or more pipes or reeds arranged within its body portion, and forming part of an organ, jointed legs connected to said body portion, suitable clothing for said figure, flexible pipes connected to said pipes or reeds concealed underneath said clothing and extending down the legs of the figure through a suitable base or support, the said base or support, to which the lower limbs are rigidly attached, a bench or stool attached to the base and serving as a seat for the figure, and means for adjusting the figure from a standing to a sitting posture.

3. A dummy figure comprising a hollow body portion and jointed legs connected thereto, a base or support to which the lower portions of the legs are rigidly attached, a bench or stool attached to the base adapted to serve as a seat for the figure, and means for adjusting the figure from a sitting to a standing posture.

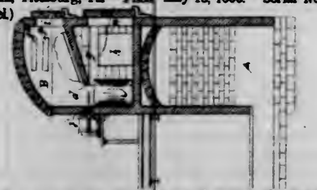
569,220. **CARPENTER'S SQUARE.** DANIEL MARTIN, Cambridge, Mass. Filed Jan. 29, 1896. Serial No. 577,221. (No model.)



Claim.—In a carpenter's square, the combination with the member *a* having the extension or finger a^3 and provided with the slot b^5 extending through the finger a^3, of the member *a'* pivoted to the fin-

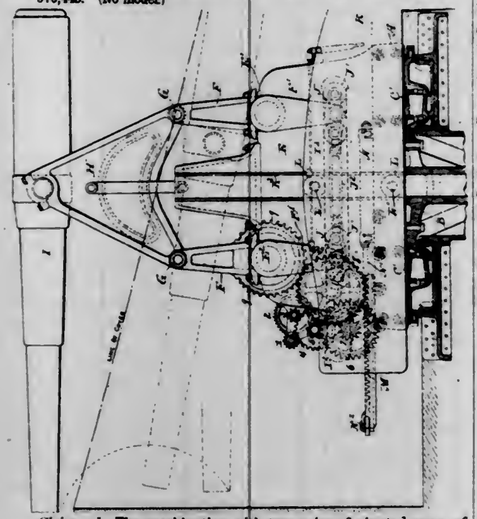
ger a^3 and provided with the notch b, the lever b^3 pivoted in the slot b^2 and extended in the direction of the length of the finger a^3 and provided at its outer end with the finger or projection b^3 adapted to enter the notch b of the member a', a spring in the slot b^2 acting upon the rear arm of the lever b^3, and a finger-piece secured to the said lever and extended through a slot in the side wall of the slot b^2, substantially as described.

569,221. APPARATUS FOR MELTING METALS. RICHARD G. G. MOLDENKE, Pittsburg, Pa. Filed May 18, 1896. Serial No. 591,986. (No model.)



Claim.—In an apparatus for melting of metals, the combination with a crucible-furnace, having a sloped platform for the charge and means for heating the charge up to (or near) its melting-point, of an electric apparatus, comprising two carbon electrodes, set in sliding sockets, funnel-shaped holes in the wall of the furnace, and a horseshoe electromagnet, set between the carbon electrodes, the carbon electrodes being inserted into the furnace through the funnel-shaped holes in this wall, and adapted to produce therein an electric arc, and the electromagnet blowing the vertex of the arc toward the charge in the furnace.

569,222. COUNTERPOISE DISAPPEARING GUN-CARRIAGE. WILLIAM H. MORGAN, Alliance, Ohio. Filed Jan. 22, 1896. Serial No. 576,445. (No model.)



Claim.—1. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms and counterweights guided to move vertically and connected to the lower ends of said arms.

2. The combination with two pairs of crank-arms journaled at points between their ends, of a top carriage for a gun, the said carriage mounted on the upper ends of said arms, counterweights loosely carried by the lower ends of said arms and means for guiding the counterweights vertically, substantially as set forth.

3. The combination with side frames and two pairs of crank-arms journaled at points between their ends, of a top carriage for a gun the said carriage mounted on the upper ends of said arms, counterweights carried by the lower ends of said arms and means for preventing longitudinal movement of the counterweights, but permitting free vertical movement thereof, substantially as set forth.

4. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms counterweights guided to move vertically and connected to the lower ends of said arms, a hydraulic brake or checking device, and means connecting the moving parts with said hydraulic brake or checking device, substantially as set forth.

5. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms counterweights guided to move vertically and connected to the lower ends of said arms, a checking-cylinder, piston therein, and gearing connecting one pair of pivoted arms, and the piston, substantially as set forth.

6. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights guided to move vertically, and provided each with a longitudinal bearing, and trucks carried by the lower ends of the pivoted arms, the rollers or wheels of the truck resting under the longitudinal bearings of the counterweights and supporting the latter.

7. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights guided to move vertically and provided, each, with a longitudinal bearing, trucks carried by the lower ends of the pivoted arms, the rollers or wheels of the truck resting under the longitudinal bearings of the counterweights, and supporting the latter and distance-pieces connecting the two trucks of each counterweight.

8. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights, each provided with a longitudinal slot, and trucks carried by the pivoted arms, and resting within the slots in the counterweights and supporting the latter, substantially as set forth.

9. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights, each provided with a longitudinal slot, trucks carried by the pivoted arms and resting within the grooves in the counterweights and supporting the latter and distance-pieces connecting the trucks, substantially as set forth.

10. The combination with two pairs of pivoted arms, of a top carriage for a gun, the said carriage supported by the upper ends of said arms, devices connecting the lower ends of said pivoted arms and counterweights supported by said devices.

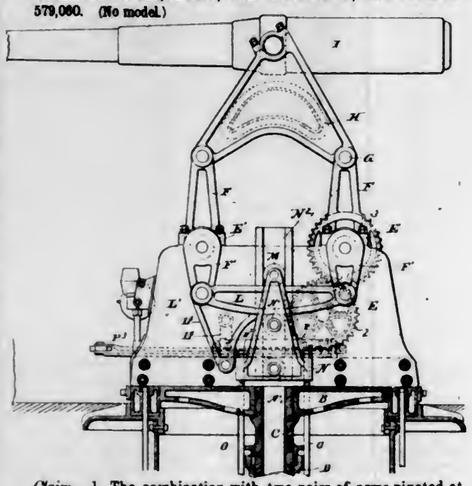
11. The combination with two pairs of arms pivoted at points between their ends, of a top carriage supported by the upper ends of said arms, devices connecting the lower ends of said arms, and counterweights guided to move vertically, supported by said devices.

12. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by devices carried by the upper sections of said arms, devices connecting the lower sections of said arms, and counterweights suspended from said latter devices.

13. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by devices carried by the upper sections of said arms, devices connecting the lower sections of said arms, and counterweights guided to move vertically, suspended from said latter devices.

14. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by devices carried by the upper sections of said arms, devices connecting the lower section of said arms counterweights supported by said latter devices, and a hydraulic brake for checking the movement of the parts during recoil.

569,223. DISAPPEARING COUNTERPOISE GUN-CARRIAGE. WILLIAM H. MORGAN, Alliance, Ohio. Filed Feb. 12, 1896. Serial No. 579,060. (No model.)



Claim.—1. The combination with two pairs of arms pivoted at points between their ends, of a top carriage supported by the upper

ends of said arms, bars connecting the lower ends of said arms and counterweight-suspending devices mounted on said bars.

2. The combination with two pairs of arms pivoted at points between their ends, of a top carriage supported by the upper ends of said arms, bars connecting the lower ends of said arms and counterweight-suspending devices guided to move vertically and resting on said bars, substantially as set forth.

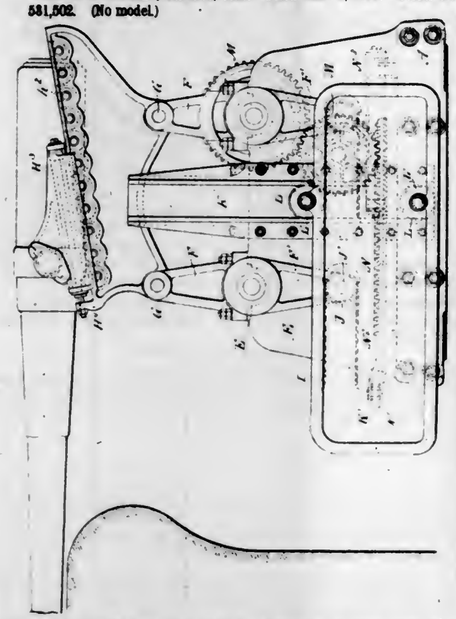
3. The combination with two pairs of arms pivoted at points between their ends, of a top carriage supported by the upper ends of said arms, devices connecting the lower ends of said arms, yokes guided to move vertically and resting on said devices and counterweights suspended from said yokes.

4. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by the upper sections of said arms, devices connecting the lower sections, yokes each carrying a roller which rests on the upper surfaces of said devices and counterweights carried by said yokes.

5. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by the upper sections of said arms, devices connecting the lower sections, yokes mounted on said devices and guided to move vertically and counterweights suspended from said yokes.

6. The combination with two pairs of arms pivoted at points between their ends, of a gun supported by the upper sections of said arms, bars connecting the lower sections, counterweights supported by said bars, and a crank connecting each bar with the adjacent side frame.

569,224. DISAPPEARING COUNTERPOISE GUN-CARRIAGE. WILLIAM H. MORGAN, Alliance, Ohio. Filed Mar. 2, 1896. Serial No. 581,502. (No model.)



Claim.—1. The combination of two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights carried by the lower ends of said arms, and gun-carrying devices yieldingly carried on the top carriage.

2. The combination of two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights carried by the lower ends of said arms, trunnion-bearings slidingly mounted on the top carriage and yielding devices for checking the rearward movement of said bearings.

3. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights carried by the lower ends of said arms, cylinders slidingly mounted on the upper face of the top carriage and provided with trunnion-bearings, piston-rods secured to said top carriage, and pistons on the piston-rods, substantially as set forth.

4. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights guided to move vertically supported by the lower ends of said arms, and gun-carrying devices yieldingly carried on the top carriage.

5. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms, counterweights carried by the lower ends of said arms, the said counterweights guided to move vertically, trunnion-bearings slidingly mounted on the top carriage, and yielding devices for checking the rearward movement of said bearings, substantially as set forth.

6. The combination with a top carriage and counterweights for normally holding said top carriage elevated, of trunnion-bearings adapted to slide on said top carriage and means for checking the rearward movement of said trunnion-bearing.

7. The combination with a top carriage, parallel arms carrying said top carriage, and counterweights for normally holding said top carriage elevated, of trunnion-bearings mounted and adapted to slide on said top carriage, and means for gradually checking the rearward movement of said bearings.

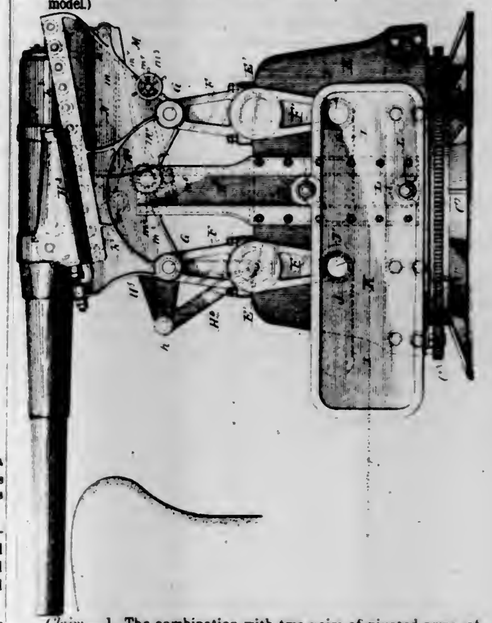
8. The combination with a top carriage, counterweights for normally holding said top carriage elevated and devices connecting the top carriage and counterweights, of a liquid checking device on the top carriage and trunnion-bearings carried by said checking device.

9. The combination with a top carriage, counterweights for normally holding same elevated, and devices connecting the top carriage and counterweights, of stationary pistons and piston-rods connected to the top carriage, sliding cylinders mounted on the top carriage and trunnion-bearings carried by the cylinders, substantially as set forth.

10. The combination with a carriage and counterweights for normally holding said top carriage elevated, of trunnion-bearings adapted to slide on said top carriage, means for checking the movement of said trunnion-bearings, and a brake for gradually checking the movements of the counterweights.

11. The combination with a top carriage, counterweights for normally holding same elevated and devices connecting the top carriage and counterweights, of trunnion-bearings mounted to slide on said top carriage, means for checking the sliding movement of said bearings and a brake for checking the movements of the top carriage and counterweights.

569,225. DISAPPEARING GUN-CARRIAGE. WILLIAM H. MORGAN, Alliance, Ohio. Filed June 27, 1896. Serial No. 597,263. (No model.)



Claim.—1. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms and connecting said arms whereby the latter are caused to move in unison, counterweights carried by the lower ends of said arms, gun-carrying devices yieldingly carried on the top carriage and devices connecting the yielding carrying devices and the system of arms, substantially as set forth.

2. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms and connecting said arms whereby the latter are caused to move in unison, counterweights

carried by the lower ends of said arms, trunnion-bearings slidingly mounted on the top carriage, yielding devices for checking the rearward movement of said bearings and devices connecting the sliding trunnion-bearings and the system of arms, substantially as set forth.

3. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms and connecting said arms whereby the latter are caused to move in unison, counterweights carried by the lower ends of said arms, cylinders slidingly mounted on the upper face of the top carriage and provided with trunnion-bearings, piston-rods secured to said top carriage, pistons on the piston-rod, and devices connecting the cylinders and the system of arms, substantially as set forth.

4. The combination with two pairs of pivoted arms, of a top carriage supported on the upper ends of said arms and connecting said arms whereby the latter are caused to move in unison, counterweights guided to move vertically, supported by the lower ends of said arms, gun-carrying devices yieldingly carried on the top carriage, and devices connecting the yielding carrying devices and the system of arms.

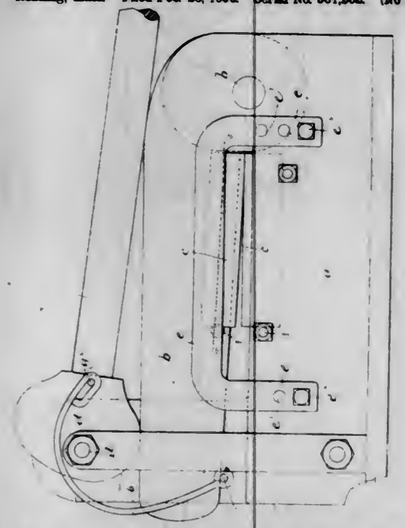
5. The combination with a top carriage and counterweights for normally holding said top carriage elevated, of trunnion-bearings adapted to slide on said top carriage, means for checking the rearward movement of said trunnions and devices connecting the sliding trunnion-bearings with the devices connecting the counterweight and top carriage whereby when the trunnion-bearings begin to move rearwardly the counterweights begin to move vertically.

6. The combination with a top carriage, parallel arms carrying said top carriage and counterweights for normally holding said top carriage elevated, of trunnion-bearings mounted and adapted to slide on said top carriage, means for gradually checking the rearward movement of said bearings and means connecting the system of parallel arms with the trunnion-bearings.

7. The combination with a top carriage, counterweights for normally holding said top carriage elevated and devices connecting the top carriage and counterweights, of a liquid-checking device on the top carriage, trunnion-bearings carried by said checking device, and devices connecting said liquid-checking device with the devices connecting the top carriage and counterweights.

8. The combination with a top carriage, counterweights for normally holding same elevated, and devices connecting the top carriage and counterweights, of stationary pistons and piston-rods connected to the top carriage, sliding cylinders mounted on the top carriage, trunnion-bearings carried by the cylinders and devices connecting the sliding cylinders with the devices connecting the top carriage and counterweights.

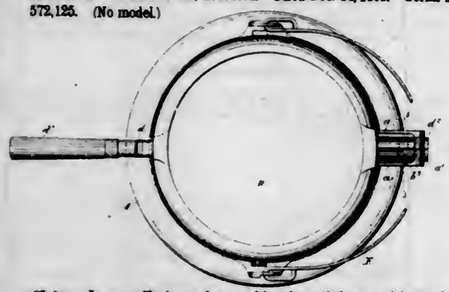
569,226. METAL-SHEARING MACHINE. Jared B. McLane, Reading, Mass. Filed Feb. 23, 1896. Serial No. 581,202. (No model.)



Claim.—1. In a machine of the character specified, the combination of a supporting-frame having a fixed shear-blade; a lever pivoted at one end to said frame and carrying a shear-blade adapted to cooperate with that on the supporting-frame; and a cam-head pivoted to the supporting-frame, arranged to bear on the swinging end of the lever, and having two interchangeably-operative differentiated cam surfaces and a median surface nearest the pivot, whereby movement of the cam-head from a position where said median surface engages the lever may operate to engage either cam-surface with the lever, each cam-surface having a sufficient total rise to bring the shear-blades together but so differentiated that one brings said blades together through a greater portion of their length than the other under the same extent of movement of the cam-head, substantially as and for the purpose described.

2. In a machine of the character specified, the combination of a supporting-frame having a fixed cutting member, a lever pivoted at one end to said frame and carrying a cutting member adapted to cooperate with the fixed member, a cam-head pivoted to the supporting-frame, arranged to bear on the swinging end of the lever and having two interchangeably-operating cam surfaces with a median surface nearest the pivot whereby movement of the cam head from a position where said median surface engages the lever may operate to engage either cam-surface with the lever, said cam-head having a cam-shaped groove in one side the converse of the exterior cam-surfaces with relation to the pivot of the head; an arm fastened to the lever and engaging the cam-groove on the upper side of the pivot; and an operating arm or lever on the cam-head.

569,227. WAFFLE-IRON. Jasper N. Nutt, Sidney, Ohio, administrator of Edward F. Nutt, deceased. Filed Dec. 14, 1895. Serial No. 572,125. (No model.)



Claim.—In a waffle-iron, the combination of the usual base-ring as A, provided at one side with the usual jaws as *a*, said jaws being united by a cross piece or bar as *a'*, and the usual waffle-irons or jaws which are provided at one side with handles, and at the opposite side with projections or shoulders which are pivotally connected and adapted to be inserted between the jaws of the base-ring, whereby when the waffle-irons or jaws are turned backward, they will strike against the cross-bar *a'*, and will thus serve as a support for the device independently of the usual bail, substantially as shown and described.

569,228. CLIP FOR WIRE-ROPE WAYS. Arthur Painter, San Francisco, Cal., assignor to H. M. Barstow, Napa, Cal. Filed July 28, 1896. Serial No. 600,761. (No model.)



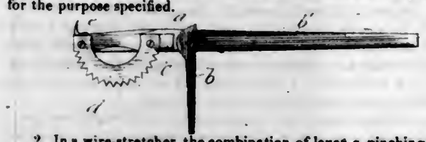
Claim.—1. A clip for wire-rope ways, consisting of a body portion provided with grooved hooks separated from each other and adapted to engage with different strands in the cable, substantially as set forth.

2. A clip for wire-rope ways consisting of a body portion having at one end an arm to receive a hanger and at its opposite end a pair of hooks separated from each other and adapted to engage with different strands of a ropeway and having grooves on their opposite sides, substantially as set forth.

3. A clip for wire-rope ways consisting of a body portion provided at one end with a suspending arm and at its opposite end with a pair of hooks separated from each other, spirally grooved on opposite sides and having at their front ends flanges, substantially as set forth.

569,229. WIRE-STRETCHER. George F. Pratt, Canton, Conn., assignor of one-half to Sherman E. Brown, Collinsville, Conn. Filed Mar. 9, 1896. Serial No. 582,359. (No model.)

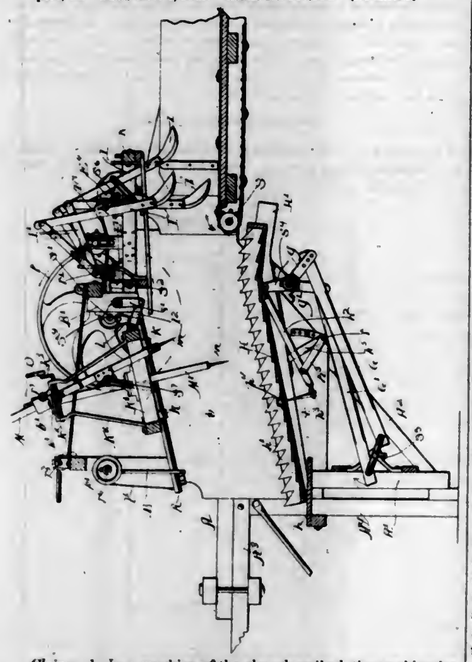
Claim.—1. The improved wire-stretcher herein described, comprising the lever *a*, pinching-lever *b*, pinch-block *c*, and curved segmental plate *d*, serrated on the outer circumference, constituting a rolling or changeable fulcrum for the lever, all substantially as and for the purpose specified.



2. In a wire-stretcher, the combination of lever *a*, pinching-lever *b*, pinch-block *c*, and curved segmental fulcrum-plates *d d*, lying in planes outside of the plane of the pinch-block and pinching-lever, substantially as and for the purpose specified.

3. The combination of lever *a*, pinching-lever *b*, pinch-block *c*, abutting against a raised shoulder integral with lever *a*, and curved segmental fulcrum-plates *d d*, lying in planes outside of the plane of the pinch-block and the pinching lever, substantially as and for the purpose specified.

569,230. BAND-CUTTER AND FEEDER FOR THRESHING-MACHINES. Frank Quintus, Paul Quintus, and Charles Quintus, Freeport, Ill. Filed Nov. 4, 1895. Serial No. 567,814. (No model.)



Claim.—1. In a machine of the class described, the combination with a suitable frame adapted for attachment to a threshing machine, of means for receiving bundles of grain and carrying them toward the thresher, knives adapted to sever the bands upon the bundles, oscillating rakes supported above the carrying mechanism, a crank shaft connected with said rakes and adapted to move them alternately toward and away from the thresher, and means for adjusting the longitudinal position of the crank-shaft and rakes with reference to the thresher and thereby varying the points upon the carrying mechanism at which the rakes shall operate on the grain supported thereby.

2. In a machine of the class described, the combination with a suitable frame adapted to be attached to a threshing-machine, of means for supporting bundles of grain and carrying them toward the thresher, knives adapted to sever the bands of the bundles, a rake-supporting frame mounted on the main frame and adjustable longitudinally thereon, a crank-shaft mounted on said movable frame, oscillating rakes mounted on said movable frame and connected with said crank-shaft and means for operating said crank-shaft and moving said rakes alternately toward and away from the thresher, the movement of the rakes toward the thresher being adapted to feed the grain thereto, and the adjustment of the rake-supporting frame being adapted to vary the working points of the rakes with reference to the carrying mechanism beneath them.

3. In a machine of the class described, the combination with a suitable frame adapted to be attached to a threshing-machine, of means for supporting bundles of grain and carrying them toward the thresher, knives adapted to sever the bands of the bundles, a suitably-rotated shaft mounted on the frame, a rake-supporting frame supported on the main frame above the carrying mechanism and longitudinally adjustable with reference to the machine, oscillating rakes mounted in said adjustable frame, a crank-shaft mounted on said frame and means substantially as shown and described connecting said crank-shaft with the rotating shaft on the main frame, whereby the rotation of the main shaft rotates the crank-shaft whatever may be the position of the rake-supporting frame upon the main frame.

4. In a machine of the class described, the combination with a suitable frame adapted to be attached to a thresher, of means for supporting bundles of grain and moving them toward the thresher, knives adapted to sever the bands of the bundles, vertically-adjustable supports mounted on the frame above the carrying mechanism, a rake-supporting frame mounted on said supports and adjustable lengthwise of the machine, oscillating rakes mounted on said frame, a crank-shaft also mounted on the frame and connected with said rakes and adapted by its rotation to oscillate the same, a suitably-rotated power-shaft mounted on the main frame and means substantially as shown and described connecting said power-shaft with said crank-shaft and adapted to transmit the rotation of the power-shaft to the crank-shaft whatever may be the position of the crank-shaft with relation to the power-shaft.

5. The combination with the frame of the machine, of bundle-carrying mechanism supported thereby, knives adapted to sever the bands of bundles supported by the carrying mechanism, the vertically-adjustable rods, R, R, supported above the carrying mechanism, the frame, K', supported by said rods and longitudinally adjustable thereon, the crank-shaft, S^7, mounted on the frame, K', the oscillating rakes, M, M', supported by said frame and connected with said crank-shaft, means for adjusting the frame upon the rods, R, R, the suitably-rotated shaft, S^2, mounted on the main frame, and the sprocket-wheels, E^5, E^6, E^7, E^8, and sprocket-chains, F^2, F^3, connected and combined substantially as shown and described and transmitting the motion of the shaft, S^2, to the crank-shaft.

6. In a machine of the class described, the combination with a suitable frame adapted to be attached to the thresher, of a conveyer adapted to receive bundles of grain and carry them toward the thresher, knives supported by the frame and adapted to sever the bands of the bundles, longitudinally-reciprocating tables adapted to receive the grain from the conveyer and support it in its passage to the thresher, rake-teeth lying beneath each table and adapted to be projected upward through it as it moves away from the thresher and to be dropped below it as it moves toward the thresher and oscillating rakes supported above said tables and adapted to move the grain thereon toward the thresher.

7. The combination with the frame of the machine, the endless conveyer adapted to receive bundles of grain and move them toward the thresher and the knives adapted to sever the bands of the bundles, of the longitudinally-reciprocating tables, H, H', adapted to receive grain from the conveyer, means substantially as shown and described for imparting reciprocal motion to the tables, the rake-frames, k^3, k^3, pivoted to the tables and lying below them and provided with teeth, *t*, adapted to be projected upward through the tables, means substantially as shown and described for operating said rake-frames and pressing the teeth upward through the tables as they move away from the thresher, the overhead feeding-rakes, M, M', and means substantially as shown and described for operating said overhead rakes and moving the grain on said tables toward the thresher, the tables and rakes being adapted to move always in opposite directions and the teeth, *t*, being adapted to retard the movement of portions of the grain toward the thresher; substantially as shown and described.

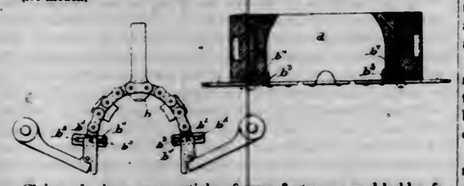
8. The combination with the frame of the machine, of the suitably-rotated crank-shaft, S^3, the shaft, S^4, parallel thereto, the arms, *g*, *g'*, pivoted on the shaft, S^4, and having upward extensions, the pitmen, G, G', connecting said arms with the crank-shaft, the longitudinally-reciprocating tables, H, H', supported on and oscillated by the upward extensions of the arms, *g*, *g'*, the rake-frames, k^3, k^3, provided at one end with teeth, *t*, and pivoted at the opposite end to the tables and the links, k^3, supporting the free ends of said rake-frames and adapted to force the teeth thereon upward through the tables as the latter move in one direction and to draw them downward as they move in the other direction; substantially as shown and described.

9. The combination with the main frame, and the bundle-supporting and band-cutting mechanisms supported thereby, of the vertically-adjustable rods, R, R, the frame, K', supported by the rods and moving longitudinally thereon, the transverse rod, S^9, provided with a crank, *s*, and the depending arms, *s'*, *s'*, the links, l^3, connecting said depending arms with the frame, K', and the lever, L', adapted to operate the crank, *s'*, and thereby to oscillate the rod, S^9, and move the frame, K', upon the rods, R, R.

10. The combination with the frame, K', the horses K^3, K^3, mounted thereon, the transverse rod, r^7, the bearings, *k'*, *k'*, supporting the

rod, r^1, and sliding on the horses, the bolts, k^3, k^3, engaging said bearings and provided with cranks, k^2, of the yoke, O, connecting said cranks and adapted to rotate them in unison and thereby to vary the position of the rod, r^1, upon the horses; substantially as shown and described.

569,231. PAD-HOLDER FOR LASTING-MACHINES. CHARLES O. RAY, Gray, Me., assignor to the Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Filed Aug. 5, 1895. Serial No. 558,229. (No model.)



Claim.—1. As a new article of manufacture, a pad-holder for lasting-machines, the same comprising a clasp and one or more pad-keepers projecting beyond the inner face of the clasp and provided with angular ends, substantially as and for the purpose set forth.

2. In a lasting-machine, the combination of a clasp and a flexible pad for the clasp with a pad-keeper projecting beyond the inner face of the clasp and clamping the pad in position at the inner face of the clasp, substantially as and for the purpose set forth.

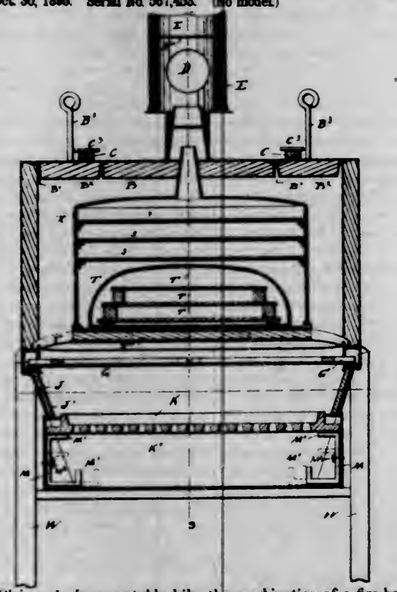
3. The combination of a last-clasp, a pad therefor along the inner side of the clasp, and an adjustable pad-keeper clamp, which clamps the pad in place along the inner face of the clasp, substantially as and for the purpose set forth.

4. The combination of a flexible last-clasp, a flexible pad therefor, and a plurality of pad-keepers which grip and hold the pad in place, the pad being a facing along the inner face of the clasp and mounted between opposed surfaces of the keepers and clasp, substantially as and for the purpose set forth.

5. The combination of a last-clasp with a facing; a pad-keeper having a pad-clamping projection, the pad-keeper extending beyond the inner face of the clasp, substantially as and for the purpose set forth.

6. The combination of a last-clasp with a plurality of adjustable pad-keepers projecting beyond the inner face of the clasp, mounted at an edge thereof, and having angular clamping projections, substantially as and for the purpose set forth.

569,232. KILN FOR DECORATING PORCELAIN OR GLASS. JOHN P. RIEFFEL, New York, N. Y. Filed Apr. 18, 1893. Renewed Oct. 30, 1896. Serial No. 567,453. (No model.)



Claim.—1. In a portable kiln, the combination of a fire-box, a casing above the fire-box, a muffle supported in said casing, a fuel-chamber around said muffle within said casing, and an oscillatory grate between said fire-box and fuel-chamber.

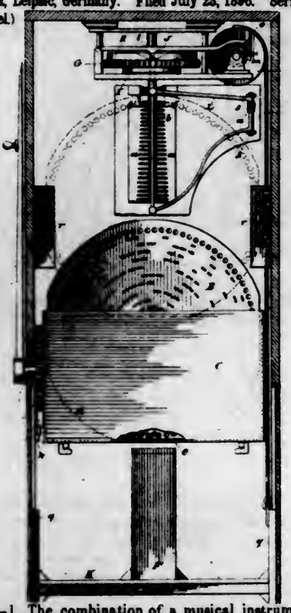
2. In a portable kiln, the combination of a fire-box, a casing above the fire-box, bars extending across the bottom of said casing, heat absorbing and radiating plates disposed between said bars and forming a central floor, a muffle supported on said floor, and a fuel-chamber around said muffle within said casing.

3. A kiln for burning articles of glass or porcelain composed of a base-frame, transverse bars, plates between said bars, a muffle supported on said bars and plates, a casing on the base-frame and surrounding the muffle, and U-shaped sliding grate-bars below the muffle and its support for supporting the fuel between the walls of the muffle and the casing, substantially as set forth.

4. In a portable kiln, the combination of a fire-box, a casing above the fire-box, an outer muffle in the casing, an interior muffle in the lower part of the outer muffle, the upper part of said outer muffle being fitted with removable shelves, and a fuel-chamber around said outer muffle within said casing, substantially as set forth.

5. In a portable kiln, the combination of a fire-box, a casing above the fire-box, two damper-equipped flues extending from the top of the casing and merging into an enlarged main flue, a muffle in said casing, a conical flue extending from said muffle through the top of the casing, a damper equipped conical flue of larger diameter than the top of said muffle-flue, mounted on said casing, and surrounding said muffle-flue, said casing-flue extending into the enlarged main flue at a point between the converging flues, and a damper in the enlarged main flue, substantially as set forth.

569,233. MECHANICAL MUSICAL INSTRUMENT. ERNST P. RIEBNER, Leipsic, Germany. Filed July 23, 1896. Serial No. 600,201. (No model.)



Claim.—1. The combination of a musical instrument, separate tune-sheets for operating the same and means for conveying said sheets to operative position in the musical instrument.

2. The combination of a musical instrument, separate tune-sheets for operating the same and means for automatically conveying said sheets to and from operative position in the musical instrument.

3. The combination of a musical instrument, separate tune-sheets for operating the same, means for automatically conveying said sheets to and from operative position in the musical instrument and means for holding the note-sheet while in operative position and for automatically releasing said sheet after the tune has been played thereby.

4. The combination of a musical instrument, separate tune-sheets for operating the same, means for automatically conveying said sheets to and from operative position in the musical instrument, and means for automatically engaging and holding the note-sheet while in the operative position and for automatically releasing said sheet after the tune has been played thereby.

5. The combination of a mechanical musical instrument, separate tune-sheets for operating the same, means for automatically conveying said sheets to and from operative position in the musical instrument and means for selecting any of the sheets for conveyance to operative position in a musical instrument.

6. In a mechanical musical instrument, the combination of a pivot for a rotating disk, a movable spring-pressed head upon said pivot and means for holding a disk in place on the pivot against the pressure of the spring-pressed head.

7. The combination of a musical-note-sheet receptacle having separate compartments for each sheet, a pointer, an index cooperating therewith, intermediate mechanism between said pointer and movable note-sheet receptacle whereby a movement of the pointer from one indication on the index to another will cause a corresponding movement of the note-sheet receptacle to bring the note-sheet designated by the pointer to a certain point for removal from the receptacle.

8. The combination with a musical instrument and driving mechanism for operating the same, of a plunger for conveying note-sheets to operative position in the musical instrument and intermediate mechanism between said driving mechanism and the plunger whereby an operation of the musical instrument will cause a movement of the plunger.

9. The combination with a musical instrument and driving mechanism for operating the same, of a note-sheet receptacle, a plunger adapted to operate in said note sheet receptacle for conveying note-sheets in operative position in the musical instrument and intermediate mechanism between said driving mechanism and the plunger whereby an operation of the musical instrument will cause a movement of the plunger.

10. The combination with a musical instrument and driving mechanism for operating the same, of a movable note-sheet receptacle, a plunger adapted to operate in said note-sheet receptacle for conveying note-sheets to operative position in the musical instrument, means for moving the note-sheet receptacle so that one of the note-sheets therein may be brought into the path of the plunger and intermediate mechanism between said driving mechanism and the plunger whereby an operation of the musical instrument will cause a movement of the plunger.

11. The combination with a musical instrument, and driving mechanism for operating the same, a movable note-sheet receptacle, a plunger adapted to operate in said note-sheet receptacle for conveying note-sheets to operative position in the musical instrument, means for moving the note-sheet receptacle so that one of the note-sheets therein may be brought into the path of the plunger, intermediate mechanism between said driving mechanism and the plunger and means connected with and operated by the driving mechanism for retaining the note-sheet in operative position during the playing of the instrument and for releasing said sheet after the tune has been played.

12. The combination with a musical instrument, of a movable note sheet receptacle, a plunger adapted to operate in said note-sheet receptacle for conveying note-sheets to operative position in the musical instrument, cam-disks and means for operating said cam-disks, a lever operated by one of said cam-disks and connections between the said lever and the plunger, a sheet-holder and connections between said sheet-holder and the other cam-disk, whereby a rotation of said cam-disks will cause a note-sheet to be fed into operative position in the musical instrument and the sheet-holder to bear upon the note-sheet after it has been so fed and retain it in this position during a revolution thereof.

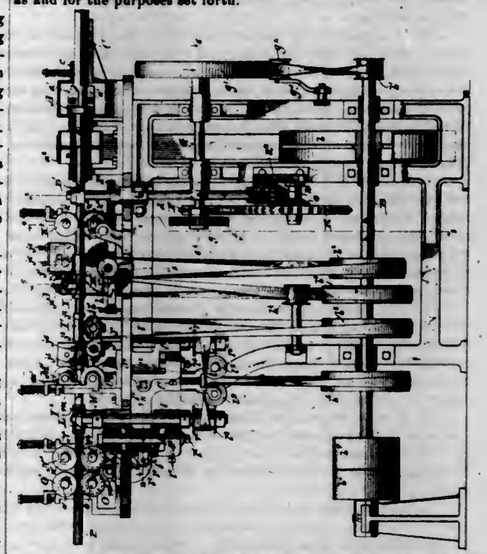
569,234. MACHINE FOR MAKING DOWEL-PINS. HENRY H. ROCKWELL, Milwaukee, Wis. Filed Apr. 13, 1893. Serial No. 470,235. (No model.)

Claim.—1. In a machine for making dowel-pins, the combination of a rotary rounding-cutter by which the blank is reduced to cylindrical form and a rotary fluting-cutter having concave serrated cutting edges arranged to operate simultaneously upon the rounded blank and having its axis substantially at right angles to the path of the blank but in a different plane, substantially as and for the purposes set forth.

2. In a machine for making dowel-pins, the combination of a rotary rounding-cutter by which the blank is reduced to cylindrical form, rotary fluting-cutters having concave serrated edges arranged to operate on opposite sides of the blank as it passes from said rounding-cutter, with their axes substantially at right angles to the blank and their peripheries presented thereto, and means of advancing the blank lengthwise and holding it from turning, substantially as and for the purposes set forth.

3. In a machine for making dowel-pins, the combination of a fluting-cutter having a concave serrated edge on its periphery, which is presented to the blank, a grooving-saw adapted to form a continuous longitudinal groove in the blank, the axes of said cutter and saw being arranged substantially at right angles to the path of the blank and means of holding the blank from turning as it passes said fluting-cutter and grooving-saw, substantially as and for the purposes set forth.

4. In a machine for making dowel-pins, the combination of a rounding-cutter, a rotary fluting-cutter having a concave serrated edge, a grooving-saw projecting normally at its periphery into the path of the rounded blank, and means for holding the blank from turning as it passes said fluting-cutter and grooving saw, substantially as and for the purposes set forth.



5. In a machine for making dowel-pins, the combination of four rotary fluting-cutters having concave serrated edges arranged in opposing pairs to operate on opposite sides of the blank, a grooving-saw arranged to simultaneously cut a longitudinal groove therein and means of holding the blank from turning as it passes said fluting-cutters and grooving-saw, substantially as and for the purposes set forth.

6. In a machine for making dowel-pins, the combination of a guiding-sleeve, a rotary fluting-cutter having a concave serrated edge on its periphery which projects through an opening in the side of said sleeve and mounted on a shaft substantially at right angles to the path of the blank and means of moving the blank endwise through said sleeve and holding it from turning as it passes said fluting-cutter, substantially as and for the purposes set forth.

7. In a machine for making dowel-pins, the combination of a grooving-saw arranged to cut a continuous longitudinal groove in the blank and a guiding-roller having a concave periphery and a tongue adapted to enter the groove made by said saw and thereby prevent the blank from turning, substantially as and for the purposes set forth.

8. In a machine for making dowel-pins, the combination of a grooving-saw arranged to cut a continuous longitudinal groove in the blank, rotary fluting-cutters having concave serrated cutting edges arranged to operate simultaneously on opposite sides of the blank, and a guiding-roller having a concave periphery and a tongue adapted to enter the groove made by the saw and thereby prevent the blank from turning, substantially as and for the purposes set forth.

9. In a machine for making dowel-pins, the combination of a stationary guiding-sleeve having a longitudinal slot in one side, a grooving-saw projecting at its periphery through said slot into said sleeve and having its axis substantially at right angles to the path of the blank and means of feeding a blank lengthwise through said sleeve and of holding it from turning therein, substantially as and for the purposes set forth.

10. In a machine for making dowel-pins, the combination of opposing feeding and guiding rollers having concave peripheries, rotary fluting-cutters mounted on shafts substantially at right angles to the path of the blank, with their peripheries presented thereto, and having concave serrated edges arranged to operate on opposite sides of the blank, one or more stationary guiding-sleeves having openings in the sides through which the fluting-cutters project and means of feeding a blank lengthwise through said sleeve or sleeves and of holding it from turning therein, substantially as and for the purposes set forth.

11. In a machine for making dowel-pins, the combination of one or more pairs of concave feeding and guiding rollers arranged on opposite sides of the path of the blank, one roller being capable of yielding away from the other, and a rotary fluting-cutter having a concave serrated edge mounted on a shaft transverse to the path of the blank and adjustable toward and from it, substantially as and for the purposes set forth.

12. In a machine for making dowel pins, the combination of suitable feeding and guiding devices and two sets of rotary fluting-cutters mounted on shafts on opposite sides of and transverse to the path of the blank, the shafts of one set of cutters being approximately at right angles to those of the other set, and the shafts of both sets being laterally and longitudinally adjustable, substantially as and for the purposes set forth.

13. In a machine for making dowel-pins, the combination, of rotary fluting-cutters having concave serrated edges arranged on opposite sides of the path of the blank and mounted upon shafts set substantially at right angles to and adjustable toward and from the path of the blank, stationary guiding-sleeves having openings in the sides through which said cutters project and means of feeding a blank lengthwise through said sleeves and of holding it from turning therein, substantially as and for the purposes set forth.

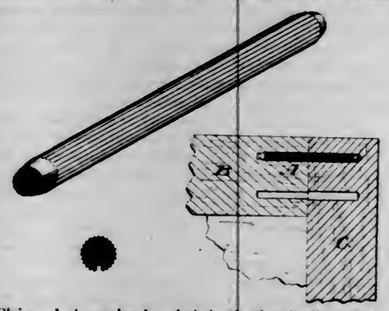
14. In a machine for making dowel-pins, the combination of a stationary guiding-sleeve having a longitudinal slot in one side, a grooving-saw projecting at its cutting edge through said slot into said sleeve, the saw-arbor being set substantially at right angles to the path of the blank and adjustable toward and from the same and means of feeding a blank lengthwise through said sleeve and of holding it from turning therein, substantially as and for the purposes set forth.

15. In a machine for making fluted dowel-pins, the combination with a rotary rounding-cutter, an angular guide or bed plate and an opposing yielding angular presser-plate, rotary fluting-cutters arranged to operate on opposite sides of the rounded blank, and a grooving-saw arranged to cut a continuous longitudinal groove therein, substantially as and for the purposes set forth.

16. In a machine for making dowel-pins, the combination of means for forming a continuous dowel-rod of suitable shape, a cutter for forming a longitudinal groove in said rod, and a holding device for engaging said groove, substantially as and for the purposes set forth.

17. In a machine for making dowel-pins, the combination of means for shaping a rod to a substantially circular outline with a longitudinal depression from such outline, a roller having a concave periphery and a flange or tongue for engaging said depression, and feed mechanism for causing the longitudinal passage of the rod, substantially as and for the purposes set forth.

569,235. DOWEL PIN AND JOINT. HENRY H. ROCKWELL, Milwaukee, Wis. Filed Jan. 8, 1894. Serial No. 496,086. (No model.)

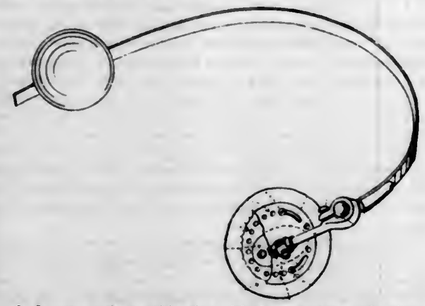


Claim.—1. A wooden dowel-pin having longitudinal ribs forming edges adapted to embed themselves in the wood into which the pin is driven, shallow grooves or creases between the ribs adapted to retain glue distributed around the pin approximately its entire length, and a longitudinal vent-groove of greater depth than the glue-retaining creases or grooves between the ribs or beads, substantially as and for the purposes set forth.

2. A dowel-joint comprising two adjoining parts, one having a hole bored crosswise of its grain and the other a smaller hole lengthwise of its grain, and a dowel-pin of uniform diameter from end to end driven into the holes in and joining said parts, and having longitudinal ribs forming edges adapted to embed themselves in the wood into which the pin is driven, shallow glue-retaining creases or grooves between said ribs, and a longitudinal vent-groove, substantially as and for the purposes set forth.

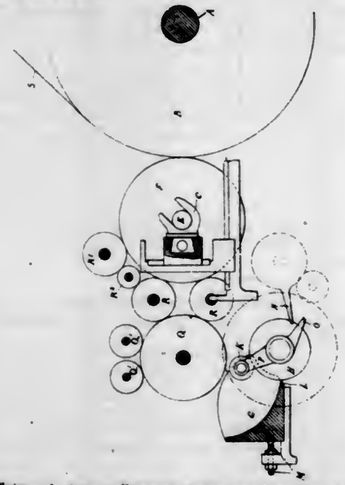
569,236. TRUSS. JOHN D. ROWLEY, Kansas City, Mo., assignor of one-half to Everett A. Rowley, same place. Filed Dec. 19, 1895. Serial No. 572,714. (No model.)

Claim.—1. In a truss-pad, the combination with the body portion having a concavity in the front side thereof and ventilating air-ducts extending through said body portion near its periphery, an elastic cover to the front side of said body portion, a fixed oblong attachment-plate embedded in the back and secured at both ends to said pad a stud on the other side of said body portion to that having said concavity and a perforate plate having a central opening adapted to receive said stud, covering said fixed plate, and having its perforations registering with the said ducts in the body of said pad, substantially as and for the purpose described.



2. In a truss the combination with the truss-band, of a plate rigidly attached to and extending beyond one end of said band, and a ball upon the outer end portion of said plate, a pad-supporting adjustable swivel-bar having one end of its body connected with said pad and the other end turned back nearly upon itself to form a clamp the inner surface of said bent portion of said bar having an annular groove, adapted to receive said ball upon the plate of said truss-band, and in frictional contact with the entire surface of said ball, said bent portion of said bar being extended beyond said ball in the direction of said pad, and a screw in the said extension of said bar extending within the body portion of said bar, whereby the pad may be reversed in position without removal of the pad supporting bar from the truss band as shown and described.

569,237. PRINTING WALL-PAPER. HAROLD W. SANDERSON, London, England. Filed Aug. 30, 1894. Serial No. 520,835. (No model.) Patented in England May 30, 1894, No. 10,529, and in France July 30, 1894, No. 240,394.

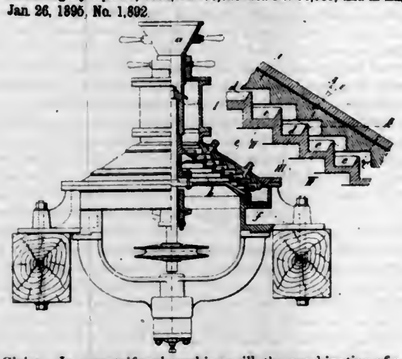


Claim.—1. In a wall-paper-printing machine the combination of a duct G provided with a knife L and screws M, ink-roller H adapted to receive rotary motion, ink-carrying rollers Q, ink-distributing rollers Q', inking-rollers R, R', intermediate roller R^3, printing-roller F and vibrator K carried by a rocking frame P adapted to be vibrated by means of an arm N on the gearing, all for the purposes and substantially as set forth.

2. In a wall-paper-printing machine having an ink-roller H which is adapted to receive rotary motion, ink-carrying rollers Q, ink-distributing rollers Q', inking-rollers R, R', intermediate rollers R^3 and printing-rollers F, the combination therewith of a duct G having a knife L and set-screws M by means of which set-screws and knife the quantity of ink supplied onto the ink-roller H may be regulated, and a vibrator K carried by a rocking frame P adapted to have rocking motion imparted to it by means of suitably-supported arms N which

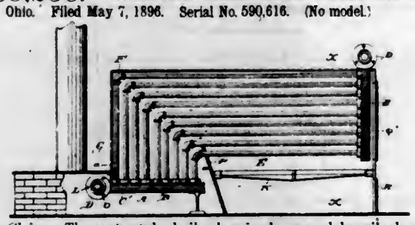
are adapted to depress the rear end O of said rocking frame and thereby raise the opposite and vibrator-carrying end so that said vibrator is made to intermittently come in contact with the ink-transmitting roller G, all for the purposes and substantially as set forth.

569,238. CENTRIFUGAL CRUSHING-MILL. RICHARD SAUERBREY, Stassfurt, Germany. Filed May 6, 1896. Serial No. 590,475. (No model.) Patented in Germany Feb. 6, 1891, No. 58,630; in Austria-Hungary Apr. 29, 1892, No. 53,929 and No. 90,583, and in England Jan. 26, 1895, No. 1,892.



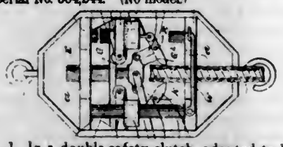
Claim.—In a centrifugal crushing-mill, the combination of a hollow conoidal mantle having inner grinding surfaces *e* with a series of rotating troughs arranged to throw the material centrifugally against said grinding-surfaces; said troughs having within them ribs *c* for creating a current of air substantially as set forth.

569,239. WATER-TUBE BOILER. GEORGE SCHIELER, Mansfield, Ohio. Filed May 7, 1896. Serial No. 590,616. (No model.)



Claim.—The water-tube boiler herein shown and described, consisting of the casing or shell, the grate arranged therein, the inclined bridge-wall or plate at one end of the grate, the vertical castings at the front end, the horizontal sections at the rear, the flanged connections secured to each other and connected with the said castings, the horizontal and vertical water-tubes arranged in series of tubes at the side, the depending or vertical short intermediate pipes arranged above the grate, and the horizontal intermediate pipes communicating or integral with the vertical intermediate pipes and arranged reversely on each side thereof.

569,240. DOUBLE SAFETY-CLUTCH FOR SUPPORTS FOR SCAFFOLDS. HERMANN SCHUBERT, New York, N. Y. Filed Mar. 21, 1896. Serial No. 584,244. (No model.)



Claim.—1. In a double safety-clutch, adapted to be used in connection with cords or ropes for supporting scaffolds and other devices, a stationary frame, a vertically-movable frame mounted therein, four jaws or levers pivotally connected with said movable frame, two of said levers being arranged at each side, two ropes adapted to pass through said levers and means for operating said levers, substantially as shown and described.

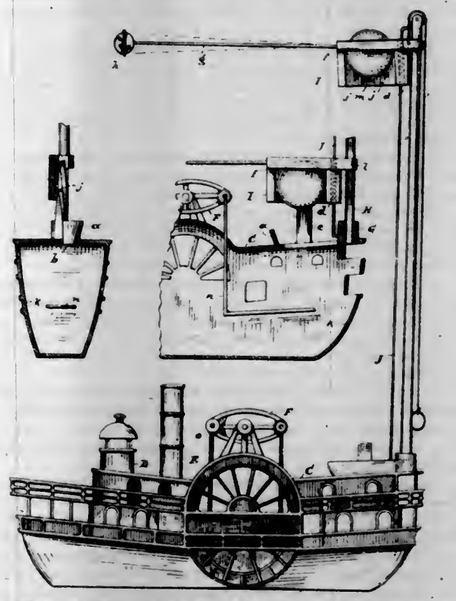
2. In a double safety-clutch, adapted to be used in connection with cords or ropes for supporting scaffolds and other devices, a stationary frame, a vertically-movable frame mounted therein, four jaws or levers pivotally connected with said movable frame, two of said levers being arranged at the side of the same and being inclined toward the others, two ropes adapted to be passed between the edges of said jaws, a rod vertically movable in said frame, the lower end of said rod being provided with a head and lever pivoted to said head and projecting through the sides of the frame, arms pivotally connected with said head and jaws also connected therewith, substantially as described.

3. In a double safety-clutch adapted for use in connection with cords or ropes for supporting scaffolds or other devices, a stationary frame, a vertically-movable frame mounted therein, jaws or levers pivoted to said frame on the lower side thereof, said jaws or levers being arranged on the opposite side, ropes adapted to be passed between said levers, a roller connected with each of said jaws and adapted to operate in connection with said ropes, substantially as described.

4. In a double safety-clutch adapted for use with cords or ropes for supporting scaffolds or other devices, a stationary frame a vertically-movable frame mounted therein, four jaws or levers pivotally connected with said movable frame and arranged in pairs at each side thereof, each pair being adapted to be inclined toward those on the opposite side, ropes passing through said levers, means for operating said jaws or levers, four sliding plates or jaws upon the upper side of said movable frame, a roller carried by each of said jaws and adapted to be operated in connection with each of said sliding plates or jaws, and adapted to force the same inwardly, substantially as described.

5. In a safety-clutch adapted for use in connection with ropes or cords for scaffolds or other devices, a stationary frame, a vertically-movable frame mounted therein, four levers or jaws pivotally connected with said movable frame, two of said jaws being arranged at each side thereof, ropes passing between said jaws, means for operating said jaws or levers, four sliding plates mounted upon said movable frame and arranged in pairs at each side thereof, a roller carried by each of said plates and adapted to operate in connection with said sliding plates or jaws mounted adjacent to said frame, inclined blocks or surfaces adapted to force the same inwardly, springs connected therewith and adapted to draw the same outwardly, substantially as shown and described.

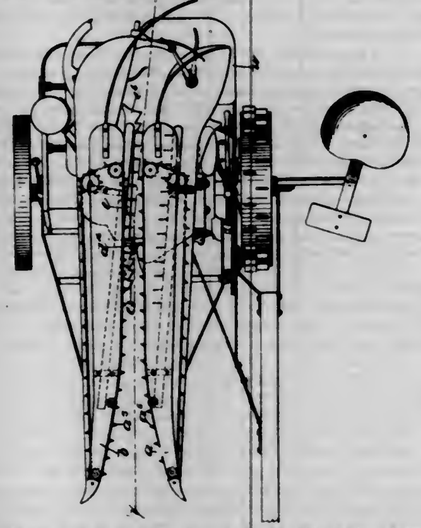
569,241. TOY MONEY-BOX. ROBERT J. SELLENTINE, Cleveland, Ohio. Filed Apr. 3, 1896. Serial No. 586,058. (No model.)



Claim.—1. In a toy money-box the combination of an imitation steamboat having an opening on top with post and guard adjacent said opening, a pole with side rod and a coin-carrier with vibrating rod and jingle-bell at the end thereof arranged in operative connection with said pole for depositing coins substantially in the manner as and for the purpose set forth.

2. In a toy the combination of a box, resembling a boat with movable beam and an opening through the deck of said boat, a pole with side rod placed adjoining said opening and a coin-carrier with vibrating bar and jingle-bell slidingly connected with said pole to operate substantially as and for the purpose set forth.

569,242. CORN-HARVESTER. CHARLES S. SHARP, Auburn, N. Y., assignor to the D. M. Osborne & Company, same place. Filed Oct. 12, 1895. Serial No. 565,443. (No model.)



Claim.—1. In a corn-harvester, a pair of feeding-chains adapted to receive the corn between them and feed it along, and clearing devices located adjacent thereto, and moving alternately to push the corn away from said chains, substantially as described.

2. In a corn-harvester, feeding mechanism for the corn having as a cooperative part of it a continuously-moving feeding-chain, and an intermittently-moving clearing device therefor, located adjacent thereto, and adapted to push the corn away from the chain, substantially as described.

3. In a corn-harvester, a pair of continuously-moving feeding-chains adapted to receive the corn between them and feed it along, and a pair of feed-chain-clearing devices located adjacent to said feed-chains, and moving intermittently and alternately to push the corn away from one and then away from the other feed-chain, substantially as described.

4. In a corn-harvester, a pair of feeding-chains adapted to receive the corn between them and feed it along, and a pair of reciprocating clearers located close to said chains, substantially as described.

5. In a corn-harvester, a pair of feeding-chains adapted to receive the corn between them and feed it along, and a pair of four-motion clearing-plates for said feeding-chains, located adjacent thereto to clear them of weeds, &c., substantially as described.

6. In a corn-harvester, in combination with upper or stalk-feeding devices, of a pair of butt-feeding chains adapted to receive the corn between them and cooperate with said stalk-feeding devices in feeding it along, and clearing devices for said butt-feeding chains, and means for moving them in and out to disengage the weeds, &c., from said chains, substantially as described.

7. In a corn harvester, feeding-chains adapted to receive the corn between them and feed it along, and a pair of reciprocating clearing-plates located close to said chains, for removing weeds, &c., therefrom, said plates having teeth on their adjacent edges, substantially as described.

8. In a corn-harvester, feeding-chains adapted to receive the corn between them and feed it along, a pair of clearing-plates for said chains having toothed extensions in advance of the feeding-chains, means for moving said clearing-plates inwardly to remove weeds, &c., from the feeding-chains and to engage the corn in advance of said feeding-chains, and for moving them rearwardly to feed the corn along into engagement with said feeding-chains, substantially as described.

9. In a corn harvester, the combination of a pair of gathering-arms, a laterally-confined passage-way forming a continuation of the passage-way between said gathering-arms, a cutter crossing the passage-way, and a binder at the rear, upper or stalk-feeding devices, a pair of butt-feeding chains at opposite sides of said laterally-confined passage extending from the cutter toward the binder, and a pair of clearing-plates for said butt-feeding chains having forward extensions in advance of the cutter provided with teeth, and means for moving said plates to clear the butt-feeding chains and to engage and feed along the corn to the cutter and butt-feeding chains, substantially as described.

10. In a corn-harvester, wherein the corn is fed along a laterally-confined passage-way to a binder, a cutter, and continuously-operating butt-feeding chains which terminate adjacent said cutter and which engage the butts of the corn and assist in feeding said corn along the passage-way, and reciprocating toothed plates which engage the butts of the corn in said passage-way in advance of said butt-feeding chains and draw them into engagement with and across the cutter and deliver them cut to said butt-feeding chains, substantially as described.

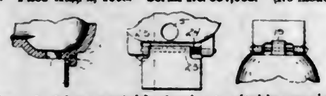
11. In a corn-harvester, wherein the corn is fed along a laterally-confined passage-way to a binder, a cutter, butt-feeding devices which terminate adjacent the cutter and which engage the butts of the cut corn and assist in feeding said corn along said passage-way, and two alternately-operating toothed plates which engage the butts of the corn in said passage-way in advance of said butt-feeding devices and draw them into engagement with and across the cutter, and deliver them to said butt-feeding devices, substantially as described.

12. In a corn-harvester, wherein the corn is fed along a laterally-confined passage-way to a binder, a cutter, butt-feeding devices which terminate adjacent the cutter, which engage the butts of the cut corn and assist in feeding said corn along said passage-way, and two alternately-operating toothed plates located at opposite sides of said passage-way, which alternately engage the butts of the corn in said passage-way in advance of said butt-feeding devices, moving them against one and then against the other wall of said passage-way and drawing them into engagement with and across the cutter and delivering them cut to said butt-feeding devices, substantially as described.

13. In a corn-harvester, feeding-chains adapted to receive the corn between them and feed it along, a pair of clearing-plates for said chains, having toothed extensions beyond the rear of the feeding-chains, means for moving said clearing-plates inwardly to disengage weeds, &c., from said feeding-chains, and to engage the corn at the rear of said chains, and for moving them rearwardly to pack the corn into the binder, substantially as described.

14. In a corn-harvester, a pair of feeding-chains adapted to receive the corn between them and feed it along, clearing-plates therefor, having toothed extensions in advance of and also beyond the rear of said feeding-chains, and means for operating said clearing-plates, substantially as described.

569,243. LAWN-SPRINKLER. LOUIS H. SHOLDER, Cleveland, Ohio. Filed Aug. 2, 1895. Serial No. 557,953. (No model.)



Claim.—1. A lawn-sprinkler having a suitable spraying-discharge opening, in combination with a water-guard pivoted at one side of said opening and adapted to swing toward and from it, and to be moved laterally, and a locking projection at one side of the guard with which it is adapted to be brought into engagement by said lateral movement, whereby the guard may be adjusted in position relatively to the stream and locked in adjusted position, substantially as described.

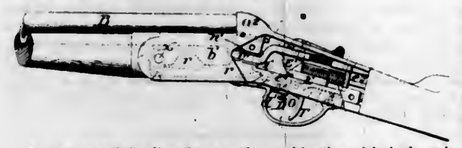
2. A lawn-sprinkler having a suitable spraying-discharge opening and pivot-bearings at one side thereof, in combination with a water-guard pivoted between said bearings and adapted to swing toward and from the discharge-opening and to be moved laterally and locked in working position by being brought into engagement with one of said bearings, substantially as described.

3. A lawn-sprinkler having a suitable spraying-discharge opening, and pivot-bearings at one side thereof with a rod mounted therein, in combination with a water-guard adapted to swing and slide laterally on said rod, and a spring adapted to bring said guard into engagement with one of said pivot-bearings, substantially as described.

4. A slidable sprinkler of the variety shown, having a single spraying-discharge at its center, a connection for the hose at one side, and a hole opposite said hose connection to attach a cord for the purpose of drawing the sprinkler over the lawn, and a pivoted upwardly-extending spray-guard supported on top of said sprinkler, and at one side of the single central spraying-discharge, substantially as described.

569,244. BREECH-LOADING FIREARM. ALFRED SILL, Philadelphia, Pa.; Edwin M. Sill, Alfred H. Sill, and Clarence Sill executors of said Alfred Sill, deceased. Filed Mar. 30, 1893. Serial No. 468,278. (No model.)

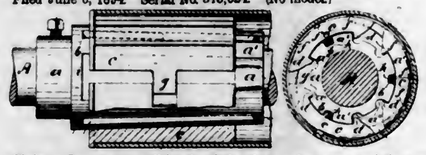
Claim.—1. In a breech-loading firearm, the combination of the firing-bolt having the raised head, and the rearwardly-extended rod, the bent lock-plate bifurcated or slotted to receive the said head, the vertical angle-piece M having a forwardly-extended rod at the upper end, said piece having its vertical limb slotted at one edge to receive the rod of the firing-bolt, a spring seated upon the said rod and bearing against the angle-piece, and a second spring seated upon the rod of said angle-piece and bearing against the said locking-plate, together with means for retracting said bolt and plate against the action of the said spring, and for holding said bolt retracted and subject to the action of the trigger, substantially as specified.



2. In a breech-loading firearm, the combination with the breech-frame open at the side, the pivoted barrel, the detachable firing-bolt, its spring, the barrel-locking plate, the angle-piece carrying a spring for said locking-plate and forming an abutment for the spring of the firing-bolt, and the side retaining-bar, of the bar H pivoted to the under side of the barrel and arranged at its rear end to act upon said bolt to retract it as the barrel is depressed, together with means for holding said bolt retracted, subject to the action of the trigger, substantially as specified.

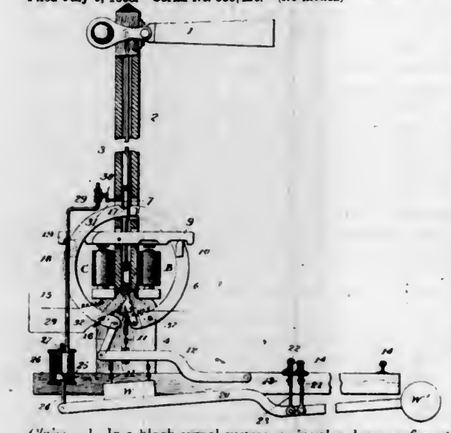
3. In a breech-loading firearm the combination of the breech-frame open at the side, the detachable firing-bolt carrying the spring, the barrel-locking plate, the angle-piece carrying the spring, which operates the said locking-plate and the side retaining-bar, all constructed and arranged substantially as and for the purpose specified.

569,245. EXPANSIBLE CHUCK. JAMES O. SMITH, Newark, N. J. Filed June 6, 1894. Serial No. 513,624. (No model.)



Claim.—In an expansible chuck having a plug mounted thereon, ribs with undercut edges and having longitudinal grooves therein, a sectional sleeve mounted on said plug, each of said sections having lips adapted to engage said undercut edges and a tongue adapted to enter said groove, flanges on each of said sections, said sections being provided with recesses intermediate of their length and adapted to have said flanges enter therein, a collar on one end of said plug and screws fitting in the outer end of said grooves, all of said parts being combined substantially as described.

569,246. BLOCK-SIGNAL. LUTHER C. SMITH, Carbondale, Pa. Filed July 9, 1895. Serial No. 555,426. (No model.)



Claim.—1. In a block-signal system, a signal and means for setting the same to "danger," a series of locking devices operated simultaneously to lock said signal in the "danger" position upon the passage of a train, and means for unlocking said devices successively, substantially as described.

2. In a block-signal system, a signal and a series of locking devices adapted to lock said signal in the "danger" position, means for setting the signal to "danger" and automatically locking it with said devices, and means for automatically unlocking said devices successively, substantially as described.

3. In a block-signal system, the combination of a signal and means for setting the same to "danger," a series of locking devices for locking the signal in the "danger" position, a series of magnets for unlocking said devices, and means for energizing said magnets successively, substantially as described.

4. In a block-signal system, a signal and means for setting the same to "danger," a series of locking devices for said signal, and mechanism for unlocking said devices successively, including an electromagnet for each device, a circuit or circuits for said magnets, and means for closing the circuit or circuits and exciting the magnets successively, substantially as described.

5. In a block-signal system, a signal and mechanism for automatically setting the signal to "danger" upon the passage of a train, a series of locking devices for locking said signal in the "danger" position, a corresponding series of magnets, adapted, when energized, to unlock said devices, a series of track instruments, and electrical connections between the track instruments and the magnets, whereby the successive operation of the track instruments will operate the magnets and unlock the locking devices successively, substantially as described.

6. In a block-signal system, a signal arranged to normally assume the "safety" position, a weight attached to said signal by a chain or flexible connection and adapted to throw it to "danger," a lever upon one end of which said weight is supported, a counterweight upon said lever for normally supporting the weight and permitting the signal to stand in the "safety" position, and a track instrument operating on the support for the weight and arranged to lower said support and raise the counterweight upon the passage of a train, thereby permitting the weight to set the signal to "danger," substantially as described.

7. In a railway block-signal, the combination of the signal proper, a weight attached to and arranged to hold the signal in the "danger" position, a locking device constructed to lock the signal in the "danger" position, said locking device being connected to and operated by said weight, a support independent of the locking device and arranged to hold said weight in an elevated position, and means for lowering said support upon the passage of a train, thereby permitting the weight to set the signal to "danger" and lock the same, substantially as described.

8. In a railway-signal, the combination with the signal proper and the signal-operating rod, of a pair of locking-arms connected with the rod, a common armature-lever for locking both of said arms, a pair of independent armature-levers for locking the arms separately, and means for operating said levers to unlock the arms, substantially as described.

9. In a railway block-signal, the combination of the signal proper, the signal-operating rod, the locking-arms, the weight connected to the signal and locking-arms and arranged to raise the same, and means for releasing said locking-arms, said signal and locking-arms being arranged to drop by gravity when released, substantially as described.

10. In a railway block-signal, the combination with the signal proper, of the locking-arms and means for releasing said arms successively, and the safety-catches connected with said locking-arms and arranged to prevent said arms from dropping simultaneously, substantially as described.

11. In a railway block-signal, the combination with the signal proper, and the operating-rod having its upper end connected with the signal, of the weight connected with the lower part of said rod for setting the signal to "danger," a support for normally holding the weight in its upper position, means for lowering said support upon the passage of a train, thereby permitting the weight to set the signal to "danger," and a dash-pot or equivalent device for holding said support temporarily in its lower position, substantially as described.

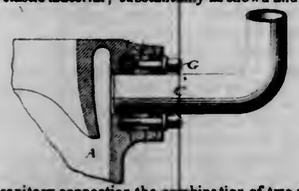
12. In a railway block-signal, the combination with the signal proper, the signal-operating rod, and the weight connected to said rod by a chain or equivalent flexible connection, of a lever supporting said weight, a counterweight upon the lever sufficient to hold the weight normally in an elevated position, means for raising the counterweight upon the passage of a train, and means for holding said counterweight temporarily in an elevated position, substantially as described.

13. In a railway block-signal, the combination with the signal proper and the signal-operating rod, of the weight W, the lever 20 upon which the said weight rests, the counterweight upon the opposite end of the lever, the spring-rail arranged to operate said lever upon the passage of a train, the air-cylinder and piston arranged to hold the counterweight elevated, and means for releasing the air, substantially as described.

569,247. PIPE CONNECTION. WILLIAM SMITH, Trenton, N. J. Filed June 17, 1895. Serial No. 553,036. (No model.)

Claim.—1. In a pipe connection two metal frames independent

of the connected parts and an intervening form of elastic material, in combination with means also independent of the connected parts for clamping said metal frames upon said form of elastic material and expanding the same both inwardly and outwardly in the plane of said form of elastic material; substantially as shown and described.

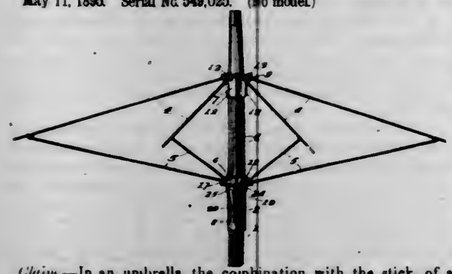


2. In a sanitary connection the combination of two metal frames independent of the connected parts, a form of elastic material between said frames, registering apertures formed through said metal frames and form of elastic material, said apertures in one of said metal frames being threaded, and screw-bolts uniting said metal frames and adapted to clamp said form of elastic material between said metal frames and expand it both inwardly and outwardly in its plane; substantially as shown and described.

3. The combination of the horn of a water-closet bowl, a metallic pipe inserted therein, two metal rings loosely surrounding said metallic pipe within said horn, a ring of elastic material placed intermediate said metal rings, and screw connections between said metal rings adapted to clamp said rings upon said elastic ring and expand it outwardly against the inner side of said horn and inwardly against said metallic pipe; substantially as shown and described.

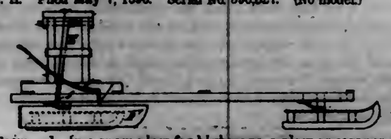
4. In a pipe connection two metal rings, said rings being beveled on their opposing faces, a ring of elastic material intermediate said two metal rings, said ring of elastic material having internal and external flanges bearing upon the beveled faces of said metal rings in combination with screws adapted to clamp said metal rings upon said ring of elastic material and expand it diametrically inwardly and outwardly; substantially as shown and described.

569,248. UMBRELLA. JOHN W. SNOWDEN, Evanston, Ill. Filed May 11, 1895. Serial No. 549,025. (No model.)



Claim.—In an umbrella, the combination with the stick, of a frame made up of a series of ribs and braces having a knob or ball at their inner ends and a sleeve secured near the upper end of said stick, having its upper portion outwardly flared and provided with a series of slots, a disk fitting against the upper edge of said sleeve having a shank projecting downwardly therefrom forming a socket between said disk and the flared portion of said sleeve for the reception of the balls or knobs on said ribs, said disk being provided with a slot at one point in its periphery, a recess at another point in its periphery and springs for securing said disk to said sleeve so as to permit the rotation thereof, one of the springs provided with a depression for the purpose of locking said disk, and a follower secured to the braces near the lower end of the stick, substantially as and for the purpose described.

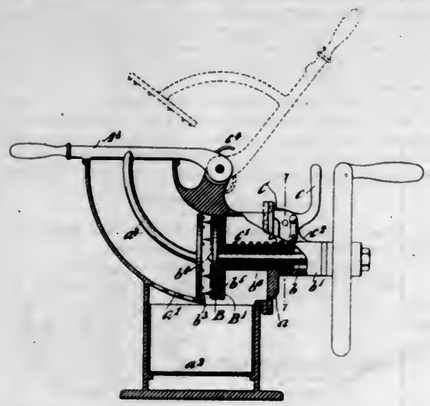
569,249. ROAD SNOW-PLOW. GEORGE O. SPENCER, Manchester, N. H. Filed May 7, 1896. Serial No. 590,527. (No model.)



Claim.—1. In a snow-plow for highways, a plow or scraper hung at each side of an ordinary sled, a suitable frame adapted to rest upon said sled provided with a windlass and a rope or cable in connection with each of said scrapers, each being provided with a bar placed at an angle therewith the forward end of which is attached to the forward end of the scraper and the rear end bent at an angle and provided with an extensible connection which is attached to the rear portion of the scraper, and for maintaining either end of said scrapers at the desired elevation, all substantially for the purpose set forth.

2. In a snow-plow for highways, a frame adapted for attachment to an ordinary sled, a plow or scraper consisting of planks hung one at each side of and at an angle with the runners of said sled, a pulley-block attached near the rear end of each scraper, a rope or cable having one end secured to the top of said frame and the other wound around a windlass mounted in said frame, the said windlass, and means for adjusting the forward ends of said scrapers substantially for the purpose set forth.

569,250. ICE CRACKING AND SHAVING MACHINE. FREDERICK E. STEERE, Lynchburg, Va. Filed Jan. 24, 1896. Serial No. 576,712. (No model.)



Claim.—1. An ice shaving and cracking machine, comprising a hopper, a plunger mounted in said hopper, a rotary shaft, a disk mounted on said shaft, knives carried by said disk, another disk mounted on a sleeve surrounding and movable longitudinally on the rotary shaft, spikes extended from said last named disk and adapted to be passed through openings in the first-named disk, and means for moving the spike-carrying disk longitudinally of the rotary shaft, substantially as specified.

2. An ice cracking and shaving machine, comprising a hopper having openings in its lower side, a receiver below said openings, a plunger movable in said hopper, a rotary shaft, a cutter-carrying disk mounted on the said shaft within the hopper, a spike-carrying disk mounted on a sleeve movable longitudinally of the rotary shaft, a rack loosely mounted on the said sleeve and having a lug projecting into an annular groove in the sleeve, a fulcrumed lever having a segment-gear engaging the said rack, and means for locking said lever, substantially as specified.

3. The combination of a hopper, a plunger movable therein, a rotary shaft, a disk mounted on the shaft and provided with knives, and another disk movable longitudinally of said rotary shaft, and provided with spikes adapted to engage the ice beyond the first-mentioned disk, substantially as set forth.

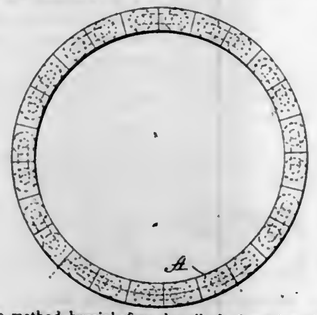
4. The combination of a hopper, a plunger movable therein, a rotary shaft, a disk carried thereon and provided with knives, a sleeve movable longitudinally on and adapted to turn with the shaft, a disk carried on said sleeve, spikes carried on said last-named disk and adapted to crack the ice, and means for moving the sleeve longitudinally on the shaft, substantially as set forth.

569,251. NON-OXIDIZABLE LINING FOR SUPERHEATERS. LEVI STEVENS, Trenton, N. J. Original application filed Dec. 13, 1895, Serial No. 572,023. Divided and this application filed Jan. 8, 1896. Serial No. 574,727. (No model.)

Claim.—1. A lining for steam-superheaters, consisting of a solution of silica combined with prussiate of potash, substantially as described.

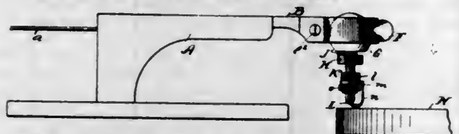
2. The method hereinbefore described of lining a steam-superheater, consisting in coating the finished parts thereof with prussiate of potash combined with a solution of silica, then putting the parts together and subjecting them to heat.

3. The method hereinbefore described of coating superheaters, the same consisting in coating the castings with prussiate of potash combined with a solution of silica, putting the parts together to form a superheater, then heating the superheater to about 1,200° Fahrenheit, and then admitting dry steam.



4. The method hereinbefore described of coating the exposed parts of a steam-superheater, the same consisting in first coating the cores with prussiate of potash and solution of silica, then casting the parts, finishing, and afterward coating the finished parts of the castings with the same material and subsequently heating.

569,252. APPARATUS FOR MANIPULATING PRECIOUS STONES WHILE BEING POLISHED. ALVIN L. STRASBURGER, New York, N. Y. Filed Nov. 8, 1895. Serial No. 568,309. (No model.)



Claim.—1. In an apparatus of the character described, the combination of an adjusting-head, a holder carried by the adjusting-head and adjustable in altitude and azimuth in said adjusting-head, means for securing said holder in its adjusted position, an independent gem-carrier carried by the holder and movable independently thereof and means for determining the extent of movement of said gem carrier.

2. In an apparatus of the character described, the combination of an adjusting-head comprising sections D E provided with grooves *d e*, as described, and with adjustable means for holding the sections together, a spherical holder carried in the adjusting-head and exposed on opposite sides thereof, a gem-carrier carried by the holder, and an index upon an exposed side of the spherical holder and upon the adjusting-head to give readings of the altitude and azimuth of the holder, with relation to the adjusting-head.

3. In an apparatus of the character described, the combination of an adjusting-head, a spherical holder carried by the adjusting-head and adjustable in altitude and azimuth in said adjusting-head, indices upon said spherical holder and adjusting-head to indicate the position of the holder with relation to the head, an independently-movable gem-carrier carried by the holder and means for determining the extent of movement of the gem-carrier in the holder and for locking the gem-carrier in the position to which it has been moved.

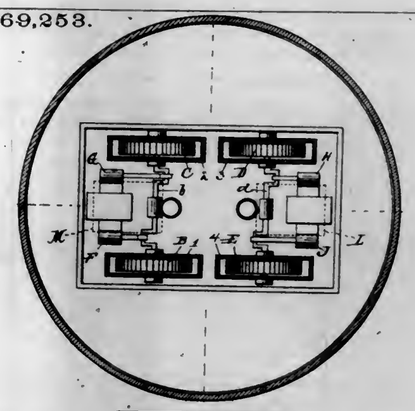
4. In an apparatus of the character described, the combination of an adjusting-head, a spherical holder carried by and adapted to turn in the adjusting-head, indices upon said spherical holder and adjusting-head to indicate the position of the holder with relation to the head, an independently-movable gem-carrier carried by the holder and provided with a disk having a series of depressions and a spring-pressed bolt carried by the holder and adapted to enter the depressions in the disk and lock the gem-carrier to the holder, substantially as described.

569,253. STEAMBOAT. SOREN D. THORSON, Chicago, Ill. Filed Nov. 7, 1895. Serial No. 568,160. (No model.)

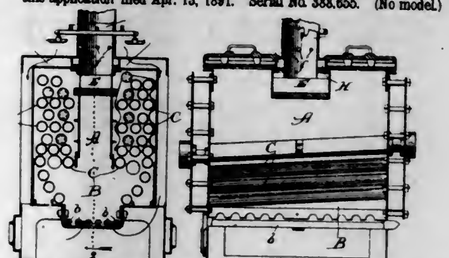
Claim.—1. In a vessel or ship substantially as described, the combination with a hull in the form of a section of a sphere and having parallel open channels across its bottom and wheel-houses opening to such channels, of paddle-wheels located within the wheel-houses and having their journal-bearings above the water-draft line, substantially as described and for the purpose set forth.

2. A boat substantially as described having a circular hull whose bottom is of uniform curvature in all directions and across which run a pair of parallel open channels, and having wheel-houses opening to such channels and paddle-wheels journaled within such wheel-houses and in planes parallel with the channels, substantially as described and for the purpose set forth.

569,253.



569,254. DRAFT-REGULATOR. FRANCIS H. TREAT, Chicago, Ill. Original application filed Nov. 13, 1890, Serial No. 371,287. Divided and this application filed Apr. 13, 1891. Serial No. 388,655. (No model.)



Claim.—1. In combination with the chimney of a boiler having openings at its top communicating with its ash-pit for the admission of air, a movable pipe inside the chimney and having dampers secured thereto at the sides of the chimney corresponding to the openings for the admission of air, whereby as the pipe is moved to regulate the draft from the chimney the draft into the boiler is correspondingly regulated, substantially as described.

2. In combination with the chimney of a boiler, a movable pipe in the chimney, an opening near the chimney for the admission of air, a damper secured to the movable pipe and at the sides of the chimney and corresponding to the air-inlet, and means for moving the pipe by pressure of steam from the boiler, whereby as the pipe is moved to regulate the draft, the damper is correspondingly moved to open or close the air-inlet, substantially as described.

569,255. TYPE-WRITING MACHINE. HENRY H. UNZ, Philadelphia, Pa. Filed Apr. 11, 1891. Serial No. 388,475. (No model.)



Claim.—1. In combination, a platen, a line-space ratchet and pawl, a reciprocating frame to which said pawl is pivoted, said frame reciprocating at an angle to the plane of the platen and a fixed guide for said reciprocating frame.

2. In combination, a platen, a line-space ratchet and pawl, a reciprocating frame to which said pawl is pivoted, and a finger-rest on said frame and a fixed guide for said reciprocating frame.

3. In combination, a platen, a line-space ratchet and pawl, a reciprocating frame to which said pawl is pivoted, and an adjustable line-space stop and a fixed guide for said reciprocating frame.

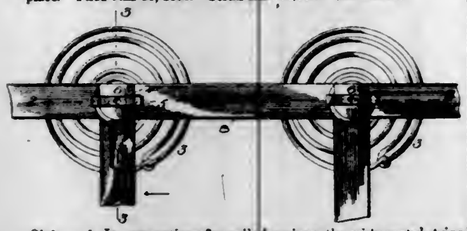
4. In combination, a platen, a line-space ratchet and pawl, a reciprocating frame to which said pawl is pivoted, and an adjustable line-space stop attached to said frame and a fixed guide for said reciprocating frame.

5. In combination, a platen, a line-space ratchet and pawl, a reciprocating frame to which said pawl is pivoted, a carriage-frame, and an adjustable line-space stop attached to said carriage-frame and a fixed guide for said reciprocating frame.

6. In combination, a platen, a line-space ratchet and pawl, a re-

ciprocating frame to which said pawl is pivoted, a carriage-frame, a disk having a portion of its surface cut away, said disk being attached to the carriage-frame but capable of rotary motion.

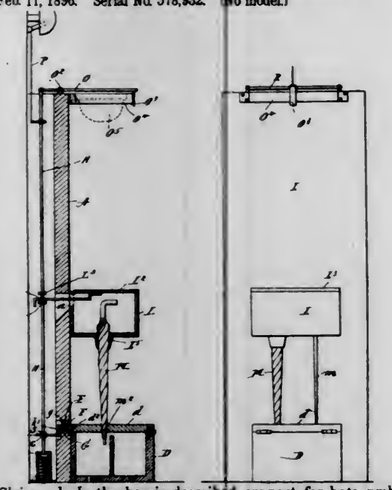
569,256. CONNECTION FOR COILED SPRINGS. WILLIAM C. VAN CISE, Jamestown, N. Y., assignor to Joseph M. Himebaugh, same place. Filed Jan. 10, 1896. Serial No. 574,960. (No model.)



Claim.—1. In connections for coiled springs, the wide metal strips 8, 8, having loop 4 to pass onto a coil of the cone-spring 3 as shown, the strip 2 passing transversely through the loop 4 within the coil, substantially as shown.

2. In connections for coiled springs, the wide metal strips 8, 8, having center loops 4 to pass onto the center of a coiled spring, a strip passing transversely through the center of the coiled springs, the strips being adapted to engage the springs and hold them in position, substantially as shown.

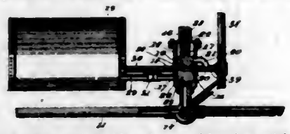
569,257. SUPPORT FOR UMBRELLAS, CANES, &c. FRANCIS X. WALDRON, Jersey City, N. J., and JOHN PAQUET, Brooklyn, N. Y. Filed Feb. 11, 1896. Serial No. 578,932. (No model.)



Claim.—1. In the herein-described support for hats, umbrellas &c., a backboard, a vertically-movable rod supported behind the same and having connection for attachment to an alarm-bell, said rod being provided at its upper end with a pivoted lever which projects inwardly in front of said support and is provided with a spring-catch, a hat-support secured to said back portion, the outer end of which is adapted to be engaged by said spring-catch, backboard having formed therein about midway thereof a slot, a box or receptacle mounted on said back in front of said slot, provided with a hinged cover, an arm secured to the under side of said cover and adapted to project through a slot formed in the back of the board and to rest upon a support connected with said movable rod, said box being provided at its bottom with holes or openings, and a box or receptacle at the bottom of said board having a hinged cover provided with holes or openings corresponding to those in the other box, substantially as described.

2. In the herein-described support for hats, umbrellas &c., a backboard, a vertically-movable rod supported behind the same and having connection for attachment to an alarm-bell, said rod being provided at its outer end with a pivoted lever which projects inwardly in front of said support and is provided with a spring-catch, a hat-support secured to said back and adapted to be engaged by said spring-catch, said back having formed therein about midway thereof a slot, a box or receptacle mounted in front of said slot and provided with a hinged cover, an arm secured to the under side of said cover and adapted to project through a slot formed in said back and to rest upon its support connected with said movable rod, said box having formed in the bottom thereof, holes or openings, an additional box at the bottom of said back also provided with a hinged cover in which are formed openings corresponding with those in the bottom of the other box and means connected with said vertically-movable rod and with the cover of said box or receptacle at the bottom of said back for locking the covers therein in position, substantially as shown and described.

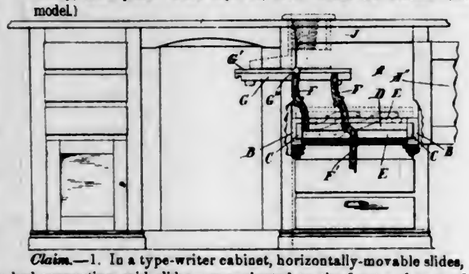
569,258. AIR-BRAKE. THOMAS WALKER and RICHARD R. COOK, Philadelphia, Pa. Filed June 3, 1895. Serial No. 551,537. (No model.)



Claim.—1. In an air-brake, the combination with a main reservoir, main supply-pipe, auxiliary tank and a brake-cylinder having means for admitting air centrally thereto and having its head perforated, of a triple valve consisting of a casing with three openings on one side thereof and two openings on the opposite side in alinement with the central and upper opening on the opposite side thereof, a valve-head fitting said casing having a single lateral opening therethrough, connections between said auxiliary tank and said central and lower opening and connections between said brake-cylinder and the two openings on the opposite side thereof, and the valve 23 provided with the straight passage-way 28, substantially as and for the purpose described.

2. In an air-brake, the combination with a main reservoir, main supply-pipe, auxiliary tank and brake-cylinder having means for admitting air centrally thereto and having its heads perforated, of a triple valve consisting of a casing having a series of three openings on one side thereof and two openings in alinement with the central and upper opening on the opposite side thereof, a valve-head fitting said casing having a single opening extending laterally therethrough, a rectangular stem extending upwardly from said valve-head fitting a rectangular opening in the cap of the said casing, a spring between said cap and said valve-head, connections between said auxiliary tank and the central and lower of the series of three openings on one side of said casing and connections between said brake-cylinder and the two openings on the opposite side thereof, and the valve 23 provided with the straight passage-way 28, substantially as and for the purpose set forth.

569,259. TYPE-WRITER CABINET. DAYTON D. WALTON, JAMES BARKER, and HENRY VAN DYKE, Grand Rapids, Mich., assignors to Fred Macey, same place. Filed Sept. 24, 1895. Serial No. 563,555 (No model.)



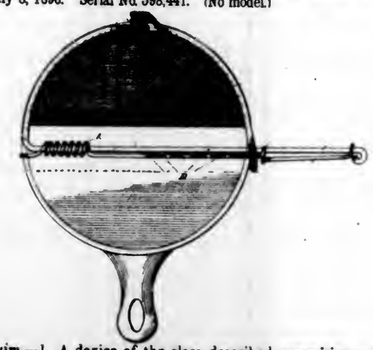
Claim.—1. In a type-writer cabinet, horizontally-movable slides, a bed connecting said slides, arms pivoted to the front and rear of said bed, and swinging in a plane transverse to said slides, and a table pivoted to said arms and supported solely by the same when elevated, substantially as described.

2. In a type-writer cabinet, horizontally-movable slides, a bed between the forward part of said slides and connecting the same and a receptacle between the rear part of said slides, arms pivoted to swing transversely of said slides, a table pivoted to said arms and supported thereby, and moving both laterally and vertically when elevated, substantially as described.

3. In a type-writer cabinet, a horizontally-movable bed, arms pivoted to the front and rear thereof, one or more of said arms extended below said bed, and having a set-off in said extension, a weight attached to said set-off portion, and engaging the under side of said bed, to limit the movement of said arms, and a table pivoted to said arms and supported thereby, substantially as described.

4. In a type-writer cabinet, horizontally-movable slides, a transverse bed between said slides, arms pivoted to the respective front and rear sides of said bed, set-off extensions on two of said arms, a weight attached to said extensions, and engaging the under side of said bed, a table supported by said arms and pivoted to the same, a turn-table on said table, and a receptacle between the said slides at the rear of the bed, substantially as described.

569,260. STRAINER. GEORGE O. WALTON, Easton, Pa. Filed July 8, 1896. Serial No. 598,441. (No model.)



Claim.—1. A device of the class described comprising a frame having a foraminous body attached thereto and provided with means for attachment to the desired vessel, and spring retaining means secured to said frame and adapted to act in conjunction therewith to secure the foraminous body to said vessel.

2. A device of the class described comprising a spring-frame having a foraminous body secured thereto, fingers on the frame adapted for engagement with a vessel and means acting in conjunction with said fingers to attach the strainer to the vessel.

3. A device of the class described comprising a spring-frame having a foraminous body secured thereto and provided with fingers adapted to engage a vessel, a spring-retracted hook carried by the frame and adapted to engage the vessel and means for applying and removing said retraction with respect to the hook.

4. A device of the class described comprising a spring-frame provided with a foraminous body and having fingers adapted to engage a vessel, a spring carried by the frame and provided with a hook at one extremity and adapted to engage a vessel, the other extremity of said spring being extended and provided with a series of corrugations adapted to engage a vessel and retract the hook through the medium of said spring.

569,261. COMPOUND REINFORCED TUBING. GEORGE T. WARWICK, Newark, N. J. Filed Jan. 24, 1896. Serial No. 576,692. (No model.)



Claim.—In combination a tube-section A, formed from a sheet-metal blank by bending the blank into tubular form and forming therein a reëntering dovetail between the seam, and a tube-section B, formed from a sheet-metal blank with its edges constituting the inturned lips, the latter section sheathing the first, and having its lips disposed upon the flanks of the said dovetail portion of the inclosed tube, the said so-disposed portions being compressed, leaving the inner wall of the tube unbroken and unshouldered, substantially as described.

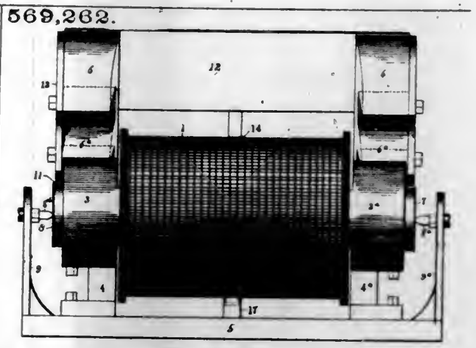
569,262. ELECTROMAGNET. JAMES WAYLAND, Newark, N. J. Filed Dec. 10, 1895. Serial No. 571,658. (No model.)

Claim.—1. An electromagnet provided with a straight core having a polar extension at each end, a curved armature at each end embracing the lateral and end faces of each pole-piece and having an end face for engaging the top of the polar extension, the armatures being journaled to rock in a plane transverse to the core.

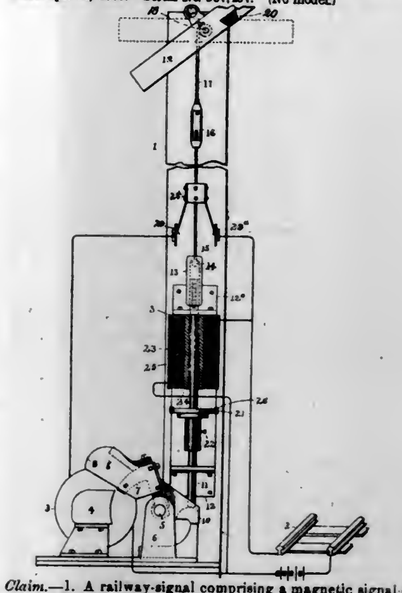
2. An electromagnet having a straight core, pole-pieces at the ends thereof, curved armatures cooperating with said pole-pieces and mounted to rock in a plane transverse to the core, end plates 11 of magnetic material, and iron yokes or bridges 8 and 12 connecting the end plates.

3. An electromagnet having an armature provided with wings to pass over two side polar faces, and a mass of iron connecting the wings to cooperate with the end polar face.

569,262.



569,263. RAILWAY-SIGNAL. JAMES WAYLAND, Newark, N. J. Filed Apr. 14, 1896. Serial No. 587,457. (No model.)



Claim.—1. A railway-signal comprising a magnetic signal-operating device controlled by the presence of a train, a circuit-breaker operated thereby for opening the circuit when the signal is operated, an auxiliary tubular magnet through which the signal is operated, said magnet being in a shunt of high resistance around the magnetic signal-operating device and the circuit-breaker, an armature carried by said rod, and connections for energizing the tubular magnet when the signal is operated.

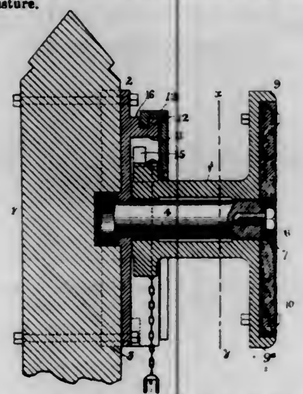
2. A railway-signal comprising an electromagnetic signal-operating device controlled by a track-circuit, a signal device controlled thereby, means for overweighting the same to give it a definite normal tendency, step 10, actuated by the controlling-magnet, and a sliding rod 11 connecting with the signal device and normally resting on said step but disconnected therefrom.

3. A railway-signal comprising a signal-operating magnet in a circuit including the track-rails, a circuit-breaker actuated by the signal, and a high-resistance magnet surrounding the signal-operating rod and cooperating with an armature carried by said rod, said magnet being in a shunt around the operating-magnet and the circuit-breaker.

4. In a railway-signal, an electromagnetic operating device controlled by the presence of a train, a signal-rod, of non-magnetic material, a semaphore connected therewith, a tubular magnet through which said rod passes, said magnet having its coils between two concentric shells of iron, an armature carried by the rod, and connections for energizing the magnet when the signal is operated.

569,264. RAILWAY-SIGNAL. JAMES WAYLAND, Newark, N. J. Filed Apr. 14, 1896. Serial No. 587,458. (No model.)

Claim.—1. In a railway-signal the combination of a supporting-frame secured to the post, a semaphore rotatably mounted thereon, a web on the frame overhanging the joint between the fixed and movable parts of the signal, and a cover supported by the web to exclude rain and moisture.



2. In a railway-signal the combination of a frame supported on the post, a stud secured therein, a sleeve rotatably mounted on the stud, a web on the frame overhanging the joint between the sleeve and the stud, and a cover supported by the web.

3. In a railway-signal, the combination of a frame supported on the post, a stud secured therein, a sleeve rotatably mounted on the stud, said sleeve being provided with a plate at the outer end having side flanges to retain a semaphore-blade, a web on the frame overhanging the joint between the sleeve and the frame, and fixed stops on the frame cooperating with a lug on the sleeve to limit its tilting movement in either direction.

4. In a railway-signal, the combination of a frame supported on the post, a stud secured therein, a sleeve rotatably mounted on the stud carrying the semaphore-blade, an overhanging cover for the joint between the sleeve and the frame, and a flange or enlargement on the sleeve within the cover.

5. In a railway-signal, the combination of a frame supported on the post, a stud secured therein, a sleeve rotatably mounted on the stud carrying the semaphore or signal device, lugs on the frame to limit the rotary movement of the sleeve, a projection from the sleeve cooperating with said lugs and a sliding cover over the joint between the sleeve and the frame.

6. In a railway-signal, the combination of a frame supported on a post, a stud secured therein, a sleeve rotatably mounted on the stud carrying the signal device, a sliding cover over the joint between the sleeve and the frame and a bolt and flange on the end of the stud holding the sleeve in position.

7. In a railway-signal, the combination of a frame supported on the post, said frame being provided with a ribbed web overhanging the joint between the fixed and movable parts of the signal, a rotatable signal device mounted on the frame, and a cover overhanging the joint and supported on the rib.

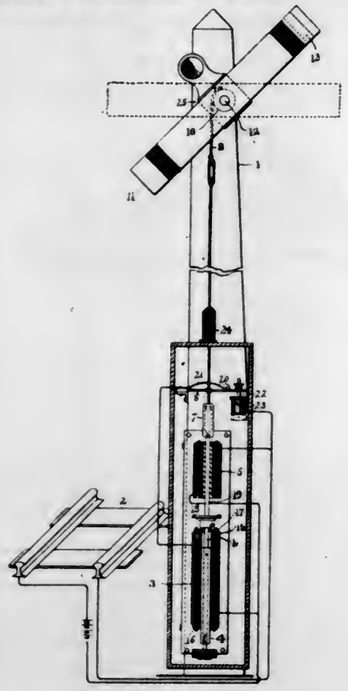
8. In a railway-signal, the combination of the frame provided with overhanging web 11, having a supporting-rib for the cover 13, the rotatable signal device, and the cover 13 hung upon the rib and projecting below an enlargement of the rotatable member of the signal, for the purpose described.

569,265. RAILWAY-SIGNAL. JAMES WAYLAND, Newark, N. J. Filed June 2, 1896. Serial No. 594,007. (No model.)

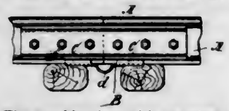
Claim.—1. A railway-signal comprising a semaphore controlled by two magnets having their axes in the same line, one of low resistance to operate the signal and the other of high resistance to lock the same, a circuit-changer operated by the signal apparatus for controlling the circuit of the low-resistance magnet, and a shunt around the circuit-changer and low-resistance magnet including the high-resistance magnet.

2. A railway-signal comprising two magnets having their axes in the same line, one to operate the signal and the other to lock it, a circuit-changer comprising a pivoted arm and a mercury contact for cutting the lifting-magnet out of circuit and energizing the locking-magnet, and a projection on the signal-rod adapted to engage said arm and cut out the lifting-magnet when the latter has completed its upward movement.

3. A railway-signal comprising a motor-magnet, a signal-rod, tubular nut 7, a circuit-breaker engaged by said nut on its upward traverse, and a slip connection with the semaphore at the nut to permit the latter to rise independently of the signal.



569,266. ELECTRIC BOND. MERLE J. WIGHTMAN, Scranton, Pa. Filed Feb. 20, 1896. Serial No. 580,006. (No model.)

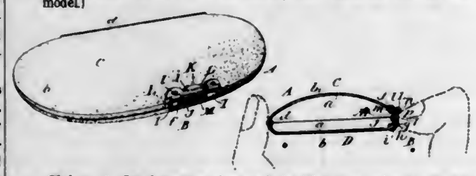


Claim.—1. The combination with meeting sections of flanged metal traversed by the electric current, of an electric bond consisting of a metal plate lying against said sections with a thin edge contiguous to the edge of the flanges of the respective sections and constructed to allow for expansion and contraction at the joint, the thin edge of the flange and plate being fused together, as and for the purpose described.

2. The combination with meeting rails, of a bond provided with one or more lateral lips and welded or brazed at said lips to the edge of the flanges of the respective rails, the intermediate portion of the bond being bent or curved over the joint between the rails.

3. An electric bond for flanged metal-work consisting of a continuous plate of metal having upturned lips C, for union with the edge of a metal flange, and a bent or curved intermediate portion *d*, as and for the purpose described.

569,267. CLASP FOR EYEGLASS-CASES, &c. ALFRED G. WILLIAMS, Newark, N. J., assignor to Louis W. Levy, Castleton, and Edward Dreyfus, New York, N. Y. Filed Dec. 20, 1895. Serial No. 572,726. (No model.)



Claim.—1. In clasps, catches and the like, a member having an integral elastic finger carried by one part and engaging another part, and a wedge-surface adjacent to said finger receiving and applying thereto a releasing strain.

2. In clasps, catches and the like, a catch member carried by one part and having two fingers spaced apart and engaging another part, and a wedge-surface between said fingers receiving and transmitting thereto an opening force.

3. In clasps, catches and the like, a catch consisting of two plates, one adapted for one part and another for another part of an article, and one of said plates having a portion engaging the other plate when the catch is in the locked position, said plates having wedge-surfaces receiving and transmitting a releasing force for freeing the catch.

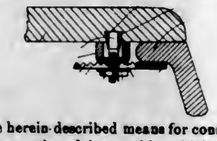
4. For catches and the like, a metal plate attachable to one part of a case, and having projecting fingers I for engaging another part of a case, a wedge-surface J, and a body A carrying said fingers and wedge.

5. For catches and the like, a plate K attachable to one part of a case, and having integral shoulders L for engagement by another part of a case, and a wedge-surface M.

6 In clasps for cases and the like, a case comprising two parts swinging together to close and a part to open, the one having a projecting finger and an adjacent wedge-surface. and the other having an edge engaged by said finger when said parts are in the closed position, said finger then catching said parts closed, and said surface adapted to receive and transmit an opening force to separate said parts.

7. In cases and the like, a case having hinged parts C and D, the one having a catch B comprising separated yielding fingers I and an intermediate wedge-surface J, said fingers engaging the edge of the other part and holding the parts in the closed position, and said wedge-surface receiving and transmitting an opening force to release said fingers.

569,268. ADJUSTABLE WASHBASIN-CLAMP. GEORGE M. WILLMENT, New York, N. Y. Filed June 2, 1896. Serial No. 593,966. (No model.)



Claim.—1. The herein-described means for connecting a bowl or basin with a marble or other slab, or table, which consists of a bolt which is fixed in the bottom portion of said slab or table, an attachment mounted on said bolt, and provided with a cross-head having transverse ratchet-teeth formed therein, and a plate having a longitudinal slot through which said bolt passes, said plate being provided on its under side with ratchet-teeth which engage with those formed in the attachment, and said plate being held in place by a nut or bur, and being provided with a head which presses on an annular flange or rim formed on the bowl or basin, substantially as shown and described.

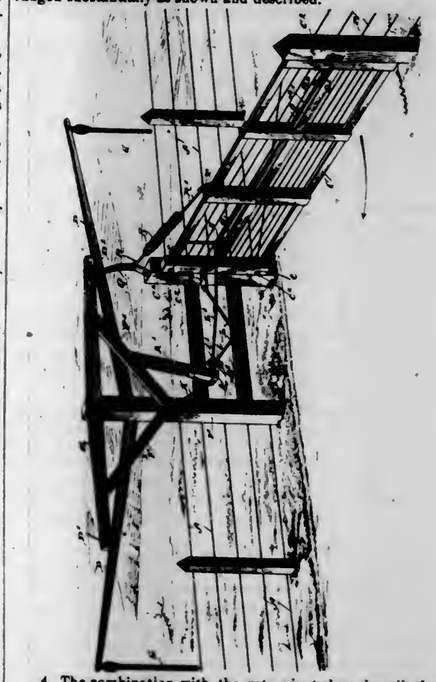
2. The herein-described means for securing a bowl or basin to a marble or other slab, or table, which consists of a number of bolts, secured in said slab, around the central opening formed therein, an attachment mounted on each of said bolts provided with a cross-head having ratchet-teeth formed in the outer surface thereof, and a plate mounted on each of said bolts, and provided with transverse ratchet-teeth which are adapted to engage with those formed in the attachment, said plates being also provided with curved or segmental heads which are adapted to bear upon an annular flange or rim formed on the bowl or basin, and said bolts being each provided with a washer and a nut or bur, substantially as shown and described.

569,269. AUTOMATIC GATE. DALTON K. WILSON, Crystal, Iowa. Filed Nov. 18, 1895. Serial No. 569,337. (No model.)

Claim.—1. The combination with the beam and operating-levers, of the gate pivoted as described, the pivoted arm operatively connected with the levers, the bracket-arm attached to the gate, the link-rods connecting said bracket-arm and pivoted arm, the latch-bar and pivoted trip, and the link-rods connecting said trip and pivoted arm, substantially as shown and described.

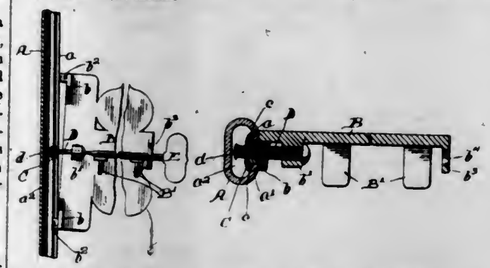
2. The combination with the beam and the brace-arms, of the operating-levers pivotally supported from the ends of the beam, the pivoted arm attached to one of the brace-arms, the flexible connections between the ends of the levers, and the pivoted arm, the bracket-arm attached to the gate, the latch-bar and the pivoted trip, and the link-rod connections between the ends of the pivoted arm and the bracket-arm and trip, all arranged substantially as shown and described.

3. The combination with the hinged gate having the bracket-arm M, and the latch-bar N, of the pivoted trip for operating said latch-bar, the hand-operated levers D D, the pivoted arm K′, the flexible connections joining said arm and the levers, and the link-rods L L′ connecting said arm with the bracket-arm and pivoted trip, all arranged substantially as shown and described.



4. The combination with the gate pivoted as described, of the beam and operating-levers, the intermediate connections between the operating-levers and gate, the spring Q, attached to the hinged post of gate, and connected at its upper end to the beam, the spring S, having the hook ends R and R′, and the clevis T, all arranged substantially as shown and described.

569,270. LIBRARY-SHELVING. WILLIAM H. WINSLOW and FRANCIS A. WINSLOW, Chicago, Ill. Filed Jan. 29, 1896. Serial No. 577,247. (No model.)



Claim.—1. The combination with a suitable upright of a bracket adapted to engage therewith having a key-operated fastening device upon the edge of the bracket which engages with the upright, said fastening device having a key-engaging portion adjacent to said edge and suitable guiding devices for guiding a long operating-key from the front edge of the bracket to the fastening device.

2. The combination with a suitable upright of a shelf-bracket adapted to engage therewith having a key-operated fastening device upon the edge of the bracket which engages with the upright, said fastening device having a key-engaging portion adjacent to said edge, and a shelf resting upon the bracket and forming in connection therewith a guiding-channel extending from the fastening device to the opposite edge of the bracket and adapted to receive and guide an operating-key from the front edge of the bracket to the fastening device.

3. The combination with a suitable upright of a shelf-bracket having a rear edge adapted to engage therewith and a suitable clamping device upon said edge, said clamping device being provided with a key-engaging portion adjacent to said edge and a notched shelf rest-

ing upon the bracket and forming therewith an open guiding-channel extending from the forward edge of the bracket to the clamping device.

4. The combination in a device of the class described, and with an upright having an undercut groove of a bracket having a short key-operated clamping device for adjustably clamping it to the upright, shelf-supporting lugs upon the bracket and a notched shelf resting upon said lugs, the sides of the notch together with the lugs forming an open guiding-channel for an operating-key.

5. The combination with an upright having an undercut groove, of a supporting-bracket, a nut having suitable shoulders for engagement with the overhanging edges of the upright, means for preventing the rotation of said nut when in a clamped position, a screw connecting said nut with the bracket, whereby the tightening of the screw secures the bracket to the upright, said screw being provided with a head fitted to a corresponding operating-key and a guide extending to the front of the bracket and adapted to guide said key; substantially as described.

6. The combination with an upright having an undercut groove, of a supporting-bracket, a clamping-nut having shoulders adapted to impinge upon the inner faces of the overhanging edges, a screw connecting the bracket with said nut and means for clamping the nut to said screw when desired; substantially as described.

7. The combination with an upright having an undercut groove, of a supporting-bracket, a clamping-nut of a size small enough to pass through the opening between the overhanging edges, but having shoulders when turned at right angles thereto which will engage with the overhanging edges, a screw connecting said nut with the bracket, said screw being headed so that when sufficiently withdrawn the head will strike the nut and clamp the same to the screw; substantially as described.

8. The combination with an upright having an undercut groove, of a bracket having a suitable bearing-surface adapted to slide upon the overhanging edges of the upright and a clamping device consisting substantially of the nut, C, having a square portion adapted to slide in a slot between the overhanging edges, and shoulders adapted to bear against the inner faces of said overhanging edges when turned at right angles thereto, a screw connecting said nut with the bracket and means for clamping said screw to the nut whereby said nut may be withdrawn from said slot when given a quarter-turn; substantially as described.

9. The combination with an upright having the overhanging edges, *a*, *a'*, of the bracket, B, having the guiding-surfaces, *b*, *b*, the clamping device consisting of the nut, C, having the shoulders, *c*, *c*, the lug, *b'*, the screw, D, connecting said lug with the nut and the head, *d*, adapted when the screw is sufficiently withdrawn to clamp the nut thereto; substantially as and for the purpose set forth.

569,271. WATER-METER. GEORGE B. BARRETT, Buffalo, N. Y. Filed Oct. 30, 1894. Serial No. 527,442. (No model.)



Claim.—1. In a disk water-meter, the combination with a two-part casing, one part of said casing having an internal annular seat or shoulder and inlet and outlet openings formed entirely within and located respectively above and below said seat, of a disk-chamber resting on said seat and having lugs at suitable points, against and over which the other part of the casing rests for securing the disk-chamber in the casing, substantially as described.

2. In a disk water-meter, the combination with a two-part casing, both parts having suitable meeting edges one part being provided with an annular seat and with inlet and outlet openings formed entirely within said part and located respectively on opposite sides of said seat, below the meeting edges, a disk-chamber having an annular flange resting on said seat, and lugs projecting above said flange and against and above which the meeting edge of the other part engages when said parts are assembled, substantially as described.

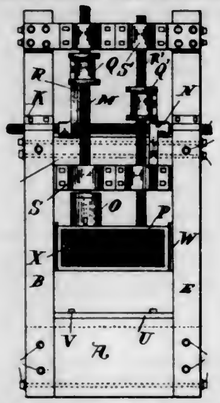
3. In a disk water-meter, the combination of a casing formed in two parts, one part having inlet and outlet openings and an annular seat, the other part being circular in cross-section and adjustable axially to any position on the lower part, and a disk-chamber having an annular flange fitting said seat, being also axially adjustable said chamber dividing the space within the casing into two compartments communicating respectively with the inlet and outlet openings, and having also lugs above said flange upon which rests the circular edge of one part of the casing, and gearing for driving a register carried part by the disk-chamber and part by the adjustable portion of the casing, arranged and operating, substantially as described.

4. In a disk water-meter, the combination with the outer casing having two parts joined by symmetrical meeting flanges, one part being provided with an annular seat for the disk-chamber and an inlet-opening on one side of said seat and an outlet-opening on the other side thereof, both said inlet and outlet openings being formed entirely in the side wall of the one part, of a separate removable disk-chamber provided with a lateral annular flange resting in said seat so as to divide the space between said disk-chamber and said outer casing into an inlet-chamber and an outlet-chamber, and also provided with an inlet-port on one side of said annular flange and an outlet-port on the other side thereof, so that each of the two parts of the outer casing and the disk-chamber may be adjusted axially to any position relative to each other, substantially as described.

5. The combination with the disk-chamber of a measuring-disk comprising a metallic web, and a hard-rubber ring attached to said web by a tongue and groove, substantially as described.

6. The combination with the disk-chamber and diaphragm, of a measuring-disk comprising a metallic web having a radial slot for said diaphragm, and a hard-rubber ring removably fastened on the edge of said web, and having its ends projecting into the slot so as to receive the thrust of the disk on the diaphragm, substantially as described.

569,272. ORE-CRUSHING MILL. SAMUEL M. BRIGGS, San Francisco, Cal. Filed July 3, 1895. Serial No. 554,904. (No model.)



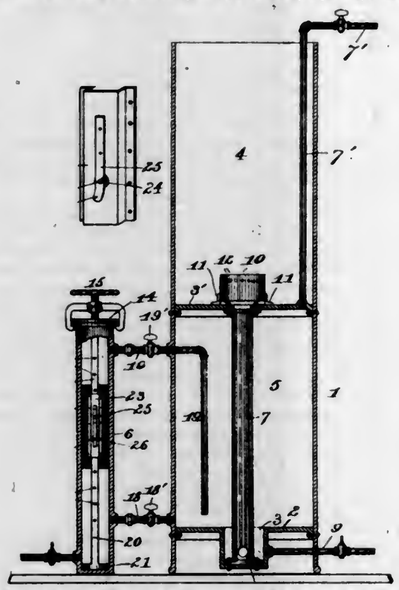
Claim.—1. In an ore-crushing mill the combination with a shaft, cams, dies and shoes of the mortar-block cut away at the corners to admit the vertical posts of the framework, said posts being secured to said block by bolts passing entirely through said block, and a mortar secured to said block and having a flange with its corners cut away to correspond with the cut-away edges of said block, said posts being flush with the outer surface of said block, substantially as described and for the purpose set forth.

2. In an ore-crushing mill, the combination with a shaft, cams, dies, shoes and tappets of a mortar-block having its vertical edges cut away to admit the vertical posts of the framework, bolts passing entirely through said block and said posts and adapted to bind them together, a mortar formed with an outer flange having its corners cut away to admit said posts, and a casting extending about the two inner faces of each post and having inclined grooves for the reception of sieves, said posts being flush with the vertical surface of said block and arranged to not interfere with the discharge from all four sides of said mortar, substantially as and for the purpose set forth.

3. In an ore-crushing mill, the combination with a shaft, cams, dies, shoes and tappets, of a mortar-block having its corners cut away to admit the vertical posts of the framework, a mortar having vertical walls and a flange extending at right angles from the lower edge of said walls, the corners of said flange being cut away to admit the vertical posts of the framework of the mill, and one or more plates Y having their corners chamfered off and adapted to be placed between said shoes and the bottom of said mortar substantially as shown and for the purpose set forth.

569,273. ACETYLENE-GAS GENERATOR. ALFRED S. BUCHER, Decatur, Ga. Filed July 15, 1896. Serial No. 599,310. (No model.)

Claim.—1. In an acetylene-gas generator, a receiver and a discharge-pipe for gas, a water-tank and a pipe connecting said tank with said receiver and extending to near the bottom of the latter, and a gas-generator connected to said receiver and an inverted cup perforated at its top end and set over and near the opening of said pipe into said tank substantially as and for the purpose specified.



2. In an acetylene-gas generator, a cylinder, a bottom therein having a cylindrical depression downwardly from its center, a diaphragm dividing said cylinder into two compartments, a perforation in said diaphragm, a pipe flanged at its ends and secured at said diaphragm and to the bottom of said diaphragm and to the bottom of said depression, a hole in the lower end of said pipe, smaller than the internal area thereof, a cup perforated around its sides near its top and seated near to and over the upper end of said pipe, a blow-off pipe leading outwardly from said depression, a gas-discharge pipe leading from the upper interior of the lower compartment, two valve-governed pipes leading from the sides of said lower compartment, a valve in each of said pipes, an open-topped cylinder lying alongside of said compartment and interiorly connected with said pipes, a drain-pipe leading from the bottom of said cylinder, a valve governing same a perforated basket in said cylinder nearer the lower pipe, and a closure for the open upper end of said cylinder, all combined, arranged, and operated substantially as and for the purpose specified

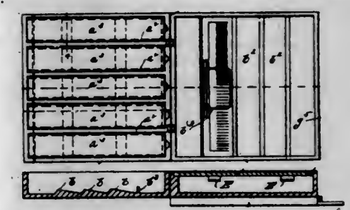
3. In an acetylene-gas generator, a holder, means for introducing water under pressure into the same at its bottom and a gas-generator provided with means for the suspension of calcium carbid therein, consisting of a basket having a guide secured to its side, a rod provided with a longitudinally-extending series of perforations, a pin adapted to secure said rod in any set position in said guide, pipes connecting said generator respectively at its bottom and top with said holder for the purpose specified.

4. In an acetylene-gas generator, a holder, means for introducing water under pressure into the same at its bottom and a gas-generator provided with means for the suspension of calcium carbid therein, consisting of a basket having a guide secured to its side, a rod provided with a longitudinally-extending series of holes, a spring secured to said guide, a pin thereon passing through said guide and adapted to enter one hole of said series and secure said rod in any set position, and pipes connecting said generator respectively at its bottom and top with said holder, for the purpose specified.

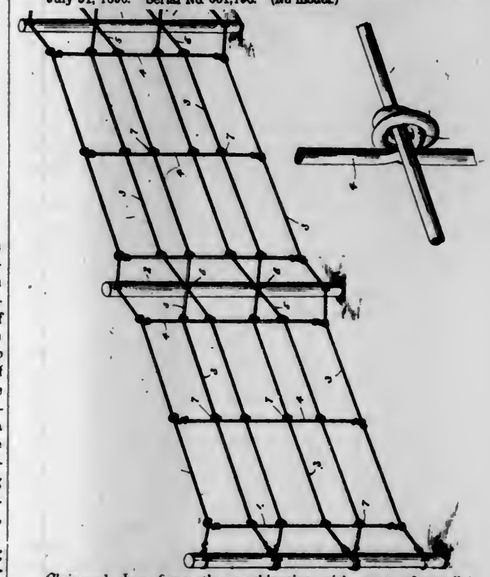
569,274. BARBER'S CASE. GUSTAVE CARLSON and PERRY LAWSON, Valentine, Nebr. Filed June 4, 1896. Serial No. 594,333. (No model.)

Claim.—1. A box or casing of the class herein described, consisting of two separate similar parts which are hinged together, one of said parts being provided with inclined ledges or shelves, and spring-clamps for securing the combs or other articles thereto, and the other being provided with transverse chambers which are provided with straps for securing razors thereto, substantially as shown and described.

2. A box or casing of the class herein described, consisting of two separate similar parts which are hinged together, one of said parts being provided with inclined ledges or shelves, and spring-clamps for securing the combs or other articles thereto, and the other being provided with transverse chambers which are provided with straps for securing razors, thereto, said box or casing being also provided with a supplemental casing which is secured to the outer side thereof in which is mounted a razor-strap which is retained therein by a spring and which is adapted to be withdrawn therefrom when required for use, and to return thereto by said spring, substantially as shown and described.



569,275. WIRE FENCE. WILLIAM CONRAD, Atlanta, N. Y. Filed July 31, 1896. Serial No. 601,198. (No model.)



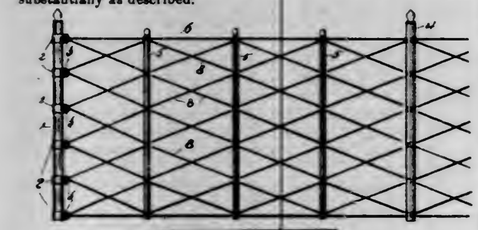
Claim.—1. In a fence, the combination with posts, of parallel runners arranged in pairs, the members of each pair intersecting each other in the planes of the posts and extending loosely through guide-eyes or staples supported thereby, whereby the upper runner of each pair in one panel becomes the lower runner of the same pair in the adjoining panel, and stays intersecting the runners at intervals and permanently secured thereto at their points of intersection, substantially as specified.

2. In a fence, the combination with posts, of parallel runners arranged in pairs of which the members intersect each other in the planes of the posts and extend loosely through guide-eyes or staples supported thereby, and stays intersecting the runners at intervals and provided at each point of intersection with a lock, consisting of an inner coil embracing the runner and an outer coil intersecting said inner coil, whereby the straight portion of the stay at one side of the plane of the runner is intersected by the straight portion at the other side of the runner, to secure the parts against relative displacement, substantially as specified.

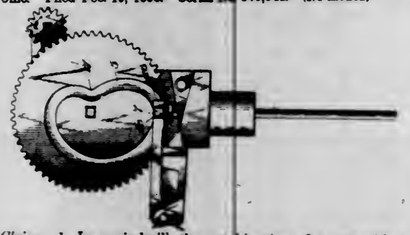
569,276. FENCE. CALVIN F. DARNELL, Indianapolis, Ind. Filed Jan. 13, 1896. Serial No. 575,282. (No model.)

Claim.—In a fence, the combination, with the posts 5, of the buttons 9, extending outward from said posts the width of two wires, and wires 8, each extending in a zigzag direction and supported alternately on the upper side of a button on one post and then on the lower side of a lower button on the next post, and so on, each button

having a wire resting against its upper and against its lower sides, substantially as described.



569,277. WINDMILL-GEARING. WILLARD W. DAY, Kossuth, Ohio. Filed Feb. 19, 1896. Serial No. 579,941. (No model.)

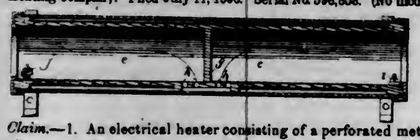


Claim.—1. In a windmill, the combination of a rotatable part driven from the wind-wheel shaft and having a cam groove or way on one side, a rod reciprocated by means of the said cam groove or way, an arm pivotally supported at its inner end, and a bar having pivotal connection with the outer end of the pivoted arm and pivotally secured at its inner end to the power-transmitting rod, substantially as and for the purpose set forth.

2. In a windmill, the combination of a pump-rod, a rotatable part driven from the wind-wheel shaft and having a cam groove or way to effect a reciprocating movement of the pump-rod, an arm having pivotal connection with the windmill-head, a guide-bar having pivotal connection with the pump-rod and with the said pivoted arm, and a spring interposed between the pivoted arm and the guide-bar to produce a relative closing of these parts and a lowering of the pump-rod, substantially as set forth.

3. In a windmill, the combination of a gear-wheel having a cam-groove in one face of approximately oval or elliptical form and having an indentation in one side adjacent to an end of the cam-groove and the spindle upon which the gear-wheel is mounted, a pinion mounted upon the wind-wheel shaft and meshing with the gear-wheel to rotate the latter once during each four revolutions of the said pinion, a pump-rod having a traveler operating in the cam-groove, a guide-bar having pivotal connection with the pump-rod and provided with pendent ears at its outer end, a pivoted arm having vertical ears to receive the pendent ears of the guide-bar, a pin pivotally connecting the ears of the guide-bar and pivoted arm, and a spring mounted upon the pin between the adjacent ears of the guide-bar and having its end portions exerting an outward pressure upon the ends of the guide-bar and pivoted arm, the parts being arranged to operate substantially in the manner set forth.

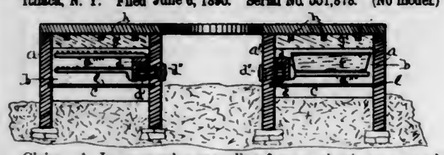
569,278. ELECTRIC HEATER. GEORGE R. FRALEY, Philadelphia, Pa., assignor, by direct and mesne assignments, to The Globe Electric Heating Company. Filed July 11, 1896. Serial No. 598,858. (No model.)



Claim.—1. An electrical heater consisting of a perforated metallic casing open at both ends, a fireproof inner cylinder, a wall at or near the center of said cylinder forming two chambers therein, openings in said chambers registering with the perforations in the casing and stands of wire coiled around said fireproof cylinder through which the current flows, substantially as described.

2. An electrical heater composed of the metallic perforated casing, a fireproof cylinder therein, a dividing-wall in said cylinder, openings in said cylinder connecting with the perforated casing, a wall or inclosure surrounding said openings and flush with the lower wall of the casing, flanges at each end of the cylinder closing the ends of the casing and forming a chamber between the inner cylinder and the casing, substantially as described.

569,279. GLASS-ANNEALING FURNACE. JAPHUS GEORGE, Ithaca, N. Y. Filed June 6, 1896. Serial No. 551,878. (No model.)



Claim.—1. In an annular annealing-furnace, having an annular annealing-chamber, and an annular annealing-carriage; the annular-shaped flue, in which the products of fuel combustion are conveyed about the circuit of the furnace, located beneath the annealing-chamber, and whose roof makes the floor of the annealing-chamber; the flue being separated therefrom by its metallic roof, through which roof its heat radiates up to and anneals the glass, while the glass is conveyed about the annealing-chamber, as set forth.

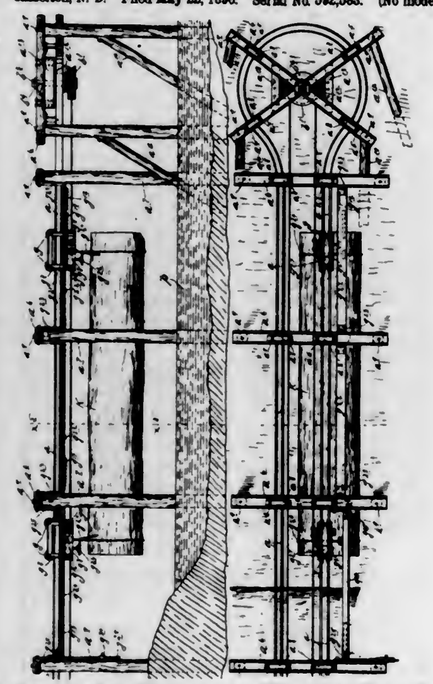
2. The described annular flue, beneath the described annular annealing-chamber, roofed by metallic plates; in combination with the described glass-annealing carriage, whose rim *d* is supported on brackets, which project horizontally outward from the inner central wall of the furnace; and on which brackets the carriage, by its rim, rotates, the wheels being journaled, on the brackets, as set forth.

3. In the described glass-annealing furnace provided with a rotating glass-annealing carriage; the combination of the hanging walls *g'* the mortised pintle-pieces *h*, inserted into the roof of the furnace, for the attachment of the hanging walls *g'*, and the pins *h''*, by which several parts the mantle-walls *g'* are held to the roof, as set forth.

4. In the described annealing-furnace, provided with an annular annealing-chamber, and with an annular annealing-carriage; the angular-shaped rim *d*; its horizontal portion furnishing on the under side the rail-track surface, for the wheels *d'*; and its perpendicular portion the surface to which the brackets are attached; in combination with the wheels *d'* on the brackets *d''*, on which the carriage rotates, as set forth.

5. In the described glass-annealing furnace, provided with an annular glass-annealing chamber, beneath whose floor is located the annular flue *c*, the arched fuel-chamber *c'* provided with the heat-equalizing apertures *c''*; in combination with the heat-equalizing plate *c'''*, as set forth.

569,280. TRANSPORTATION SYSTEM. WALLACE GROSVENOR, Casselton, N. D. Filed May 22, 1896. Serial No. 592,583. (No model.)



Claim.—1. The combination with a truck and chain, of a chain holding and releasing device comprising a keeper or abutment, a hook, and a removable detent, all mounted on said support and so arranged that said detent may be moved through an end link of the chain, and that any desired link of the opposite end of said chain may be engaged over said hook, substantially as described.

2. The combination with a truck of a holding and releasing device comprising a keeper, a screw-shaft and a hook, on said truck, with said parts so arranged that the end of said shaft may be moved through an end link of the chain and that any desired link of the opposite end of said chain may be engaged over said hook, substantially as and for the purposes set forth.

3. The combination with the trucks and the chain-holder screw-shafts having pinions thereon, of the releasing-racks in the line of travel engageable with said pinions, for automatically releasing the load, substantially as described.

4. The combination with the pair of trucks having the chain-holder screw-shafts provided with pinions, staggered in respect to each other, of the pair of releasing-racks in the line of travel, staggered in respect to each other, for cooperation with said pinions, substantially as described.

5. The combination with the trucks, of the chain-holding screw-shafts thereon, provided with pinions, and the pair of releasing-racks for cooperation with the holder of the rear truck, one of which racks is laterally movable in respect to the other for adaptation to logs of different lengths, substantially as described.

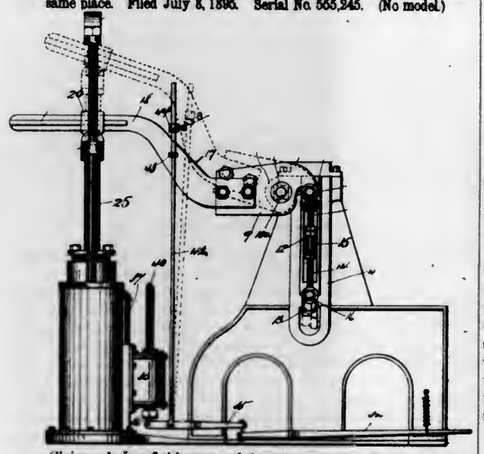
6. The combination with the track, the trucks and the traveling cable, of the grip mechanism comprising the jaws g^6 loosely threaded on the studs g^6, the springs g^7, tending to throw said jaws apart, and a power device for positively forcing said jaws together, substantially as described.

7. The combination with the track, the trucks and the traveling cable, of the grip mechanism comprising the jaws g^6 loosely threaded on the studs g^6, the springs g^7, the screw-shaft g^8 carrying the inner member of said jaws, the pinions g^{11} on said shafts g^8, and the releasing-rack g^{13}, in the line of travel, engageable with said pinions to release the grips from the cable, substantially as described.

8. The combination with the elevated track, the trucks and the traveling cable, of the loading-platform and the hand-screws for raising and lowering said platform, substantially as and for the purposes set forth.

9. The track structure, comprising the upright a^7, the cross-ties a^8 made fast to said uprights, the brackets a', secured to said cross-ties at their upper ends and spread at their lower ends, the rails a made fast to the outer sides of the lower ends of said brackets, and the filling rail or pieces a^2 secured between the spread lower ends of said brackets, substantially as described.

569,281. SHEARING-MACHINE. GEORGE GUILD, Cambridge City, Ind., assignor to the Cambridge City Punch, Shear, and Roll Company, same place. Filed July 8, 1895. Serial No. 555,245. (No model.)



Claim.—1. In a fluid-actuated shearing-machine, the combination with a descending knife-head, and a supporting-frame, of vertically-disposed cylinders having fluid-actuated pistons provided with vertically-projecting piston-rods, cross-heads on said rods, suitable guide-rods whereon said cross-heads slide, knife-head levers secured on a common rocking shaft, means for connecting the rear ends of said levers to said cross-heads and the forward ends to said knife head, a starting-valve adapted to simultaneously admit the actuating fluid into the bottom ends of said cylinders, a treadle-lever, a valve-lever connected at one end to said treadle-lever and at its opposite end to said valve, a trip-lug on the side of said knife-head lever, a trip-rod connected at its bottom end to said valve-lever and extending vertically through said trip-lug eye, and a trip-collar adjustably secured on said rod and adapted to be engaged by said lug to reverse said valve, all substantially as and for the purpose set forth.

2. In a shearing-machine, the combination with a rocking lever, of a lever-block slotted to receive the end of said lever, a lower journal formed on said block and having its axis at right angles with said lever, a reciprocating cross-head having an upper recessed concave bearing adapted to receive the bearing of said block, retaining-lugs formed integral on said cross-head at the ends of said recessed bearing, and a retaining-pin passing through said lugs and the axis of said block-bearing substantially as and for the purpose set forth.

3 In a shearing-machine, the combination with a cylinder and the piston-rod thereof, of a rocking lever having guide-strips thereon, and a lever-block rocking on said piston-rod, slotted to receive therein both the lever and its guide-strips, substantially as described.

569,282. TOY CANNON AND TARGET. JAMES HANNAH, Muscatine, Iowa. Filed Jan. 30, 1896. Serial No. 577,414. (No model.)



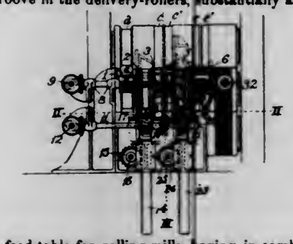
Claim.—1. The herein-described toy comprising a cannon having a tubular barrel, a reciprocating spring-actuated plunger therein, a trigger for said plunger, a hammer carried by and forming a part of the plunger, and a cap-socket located near the breech of the barrel, the said cap-socket being slotted to engage the plunger-stem and formed to constitute a holder for a percussion-cap, substantially as described.

2. The herein-described toy, comprising a tubular barrel, a rest in which said barrel is seated provided with a transverse groove or recess, a reciprocating spring-actuated plunger within the barrel and extending in rear of the breech thereof and provided near its rear end with a laterally-disposed hammer forming a part of the plunger-stem, and a detachable cap socket fitted in the transverse groove of the rest, the said cap-socket being provided with an aperture through which the plunger-stem reciprocates and also provided in its rear face with a notch for exposing a percussion-cap to the action of the hammer, substantially as described.

569,283. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Youngstown, Ohio. Filed June 6, 1896. Serial No. 594,476. (No model.)

Claim.—1. A feed-table for rolling-mills having in combination a series of delivery-rollers arranged in certain vertical and horizontal planes, a series of receiving-rollers arranged in different vertical and horizontal planes, and mechanism for lifting an article from the receiving-rollers and shifting it laterally onto the delivery-rollers, substantially as set forth.

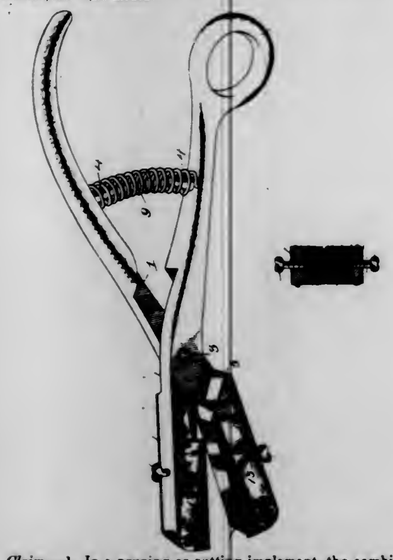
2. A feed-table for rolling-mills, having in combination a series of delivery-rollers having two or more grooves, a series of receiving-rollers arranged in a plane below the delivery-rollers, a mechanism for lifting an article from the receiving-rollers and depositing it on the delivery-rollers, and bridges for directing the article into the proper groove in the delivery-rollers, substantially as set forth.



3. A feed-table for rolling-mills, having in combination a series of receiving-rollers, a series of delivery-rollers arranged in a plane above the receiving-rollers, and vertical slides provided with plates downwardly inclined toward the delivery-rollers, whereby an article may be raised from the receiving-rollers and moved laterally onto the delivery-rollers, substantially as set forth.

4. A feed-table for rolling-mills, having in combination a series of receiving-rollers, a series of delivery-rollers, vertical slides provided with downwardly-inclined plates, and with retaining-plates above the inclined plates, and curved blocks intermediate of the slides, substantially as set forth.

569,284. COMBINED PRUNING, CLIPPING, AND HOLDING IMPLEMENT. RICHARD JACKS, Quincy, Cal. Filed Oct. 26, 1895. Serial No. 566,992. (No model.)



Claim.—1. In a pruning or cutting implement, the combination of oppositely-disposed jaws, plates secured to one side of the jaws and projecting a short distance from their inner faces, cutting-blades fitted to the opposite side of the jaws and projecting from their inner faces about parallel with the said plates, elastic gripping strips or blocks frictionally held in the spaces formed between the respective cutting-blades and plates, backing-plates interposed between the elastic strips and the jaws, and set-screws operating in threaded openings of the jaws to relatively adjust the said elastic gripping-strips, substantially as set forth.

2. A pruning or cutting implement comprising levers pivoted together and having their end portions extended beyond the pivotal connection to form jaws, plates secured to one side of the jaws and extending a short distance from their inner faces, cutting-blades adjustably connected with the opposite side of the jaws and extending beyond their inner faces parallel with the said plates, elastic gripping strips or blocks frictionally held in the spaces formed between the plates and cutting-blades, backing-plates interposed between the jaws and the rear side of the elastic strips, and set-screws operating in the jaws to project the elastic gripping-strips to a greater or less distance from the jaws, substantially in the manner set forth for the purpose described.

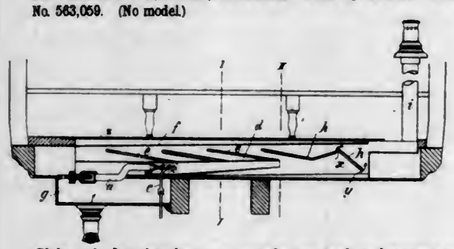
569,285. NAIL-FILE. BENJAMIN W. JACOBS, Chicago, Ill. Filed Feb. 15, 1896. Serial No. 579,335. (No model.)



Claim.—1. As an improved article of manufacture, a nail-file, provided with a blade having a file-surface, one edge of the blade being cut away to form a series of segmental notches or recesses, which are also provided with file-surfaces, substantially as herein shown and described.

2. The herein-described nail-file constructed with a blade provided with a file-surface, and having one edge thereof cut away to form a series of segmental recesses or notches b^2 which are reduced in size from the point of the blade toward the opposite end thereof, said blade being provided with a straight edge or web b^4 below said recesses, also provided with file-surfaces, whereby the nail is made uniformly convex and is smoothed on the under surface, substantially as and for the purpose described.

569,286. GAS-HEATER FOR CARRIAGES, &c. BAREND JANSE and JAKOB DE WITTE, Utrecht, Netherlands. Filed Sept. 20, 1895. Serial No. 563,059. (No model.)



Claim.—1. In a heating apparatus for cars and analogous structures, the burner *a*, the box *x* extended longitudinally under the floor, with provisions for supplying gas and air and for conveying away the gaseous products of combustion after their heat has been mainly removed, in combination with the plate *d*, lying immediately over the flame, and the plate *f* mounted above and out of contact therewith, the inclined plates *e* adapted to perform the triple functions of conducting the heat upward, distributing it, and arresting radiant heat, and the top plate or floor-plate *z*, all arranged to serve substantially as herein described.

2. In a heating apparatus for cars and analogous structures, the burner *a*, the box *x* extended longitudinally under the floor, with provisions for supplying gas and air and for conveying away the gaseous products of combustion after their heat has been mainly removed, in combination with the plate *d* lying immediately over the flame, and the plate *f* mounted above and out of contact therewith, the plates *e* extending upward from the lower plate *d* inclined as shown, and the provisions for inducting fresh air below and allowing it to flow upward along the sides of the box and thence into the interior of the car, all arranged for joint operation substantially as herein specified.

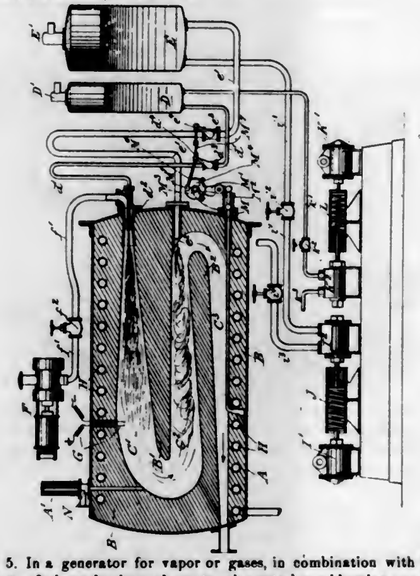
569,287. BOILER. VICTOR KARAVODIN, St. Petersburg, Russia. Filed Feb. 16, 1895. Serial No. 538,657. (No model.)

Claim.—1. In a generator for vapor or gases, in combination with an outer vessel having a suitable lining or interior shell and cooling-passages, appliances for introducing steam into said interior shell, and an independent water-pipe leading into said interior shell, and means for increasing the temperature of the steam within said shell without heating the outer vessel exteriorly, substantially as set forth.

2. In a generator for vapor or gases, in combination with its casing, a fuel-supply pipe entering said casing and means for automatically maintaining said fuel under pressure exceeding that in the generator and for increasing and decreasing the supply of fuel, as the temperature within the casing is decreased or increased, substantially as set forth.

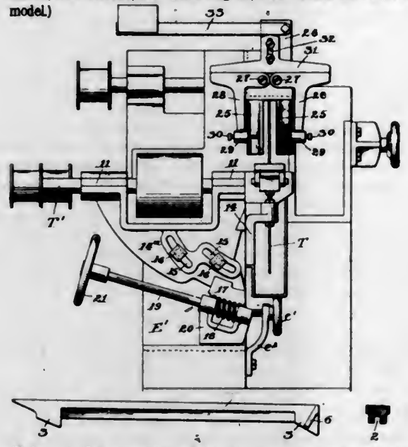
3. In a generator for vapor or gases, in combination with its casing, an oil-supply pump and a water-supply pump, and automatic means for limiting the pressure applied to the oil and to the water by said pumps, substantially as set forth.

4. In a generator for vapor or gases, in combination with its casing, a fuel-supply pipe and a water-pipe entering said casing, and joint mechanical means for automatically and simultaneously increasing the supply of fuel and decreasing the supply of water, and vice versa, in accordance with the temperature within the generator, and comprising suitable valves in the pipes supplying the fuel and the water, coupled together, and a thermostat for actuating the coupling device, substantially as set forth.



5. In a generator for vapor or gases, in combination with its casing, a fuel-supply pipe and a water-pipe entering said casing, proper valves within said pipes, a thermostat, and a connection between the thermostat and said valves, whereby the operative opening in one valve is increased, while the other is reduced, substantially as set forth.

569,288. PLANING AND RESAWING MACHINE. GEORGE LHOTE, New Orleans, La. Filed Aug. 27, 1895. Serial No. 560,653. (No model.)



Claim.—1. In a machine of the character described, the combination with the frame having upon its upper portion a longitudinal rib 4, and the beveled surfaces 5, at the ends of said rib, of a jointing-table comprising a narrow bar channeled longitudinally on its under side to engage said rib, and provided with downwardly-projecting end supports 3, having beveled surfaces which rest upon and coact with the correspondingly-beveled surfaces 5, together with an adjusting device connected with said frame and table, substantially as specified

2. In a machine of the class described, and designed for operating upon narrow or edgewise-disposed material, the combination with a supporting-frame, of a laterally-tilting saw-carrying frame mounted thereon and having its axial bearings in the vertical plane of the saw and its center of movement in a line intersecting the axis of the saw in the horizontal plane thereof, and the saw-arbor mounted on said carrying-frame and free to swing in a vertical plane both above and below its normal or horizontal position, whereby the saw thereon may be inclined in either direction with respect to the line of feed, substantially as specified.

3. In a machine of the character described, the combination with the supporting-frame, of a rocking or tilting saw-carrying frame pivotally and adjustably mounted thereon, and having its bearings in the vertical plane of the saw and its center of movement in a line intersecting the axis of the saw in the horizontal plane thereof, means for adjusting said rocking or tilting frame to tilt or incline the saw in either direction with respect to the line of feed of the machine, and means for effecting an adjustment of said frame in a direction transverse to the line of feed, substantially as specified.

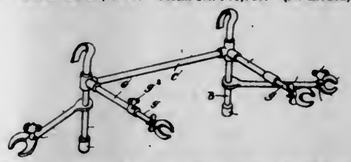
4. In a machine of the character described and designed for operating upon narrow or edgewise-disposed material, the combination with a main supporting-frame, a supplemental frame mounted thereon to move transversely with respect to the line of feed of the machine, and means for adjusting said supplemental frame, of a saw-supporting frame pivotally mounted on supplemental frame to swing in both directions with respect to the line of feed, and having its pivotal bearings in the vertical plane of the saw, and its center of movement in a line at right angles with the axis of the saw and intersecting the same in the horizontal plane of said axis and means for adjusting said saw-supporting frame, so as to tilt or incline the saw with respect to the line of feed of the machine, substantially as specified.

5. In a machine of the character described, the combination, with a main supporting-frame, of a plank-centering device on the latter, comprising two pivoted levers having depending arms arranged oppositely with respect to the feed-line of the machine, a vertically-adjustable head bearing upon said levers, a weighted lever acting upon said head, and adjusting devices on the said arms, substantially as specified.

6. In a machine of the character described, the combination with the main frame, of a plank-centering device on the latter, and comprising two vertically-arranged pivoted wings 25 which lie on the respective sides of the central line of the machine and in advance of the saw or other tool, the two T-shaped levers having depending arms which embrace the respective wings and have an adjustable bearing thereagainst, a vertically-adjustable head acting upon said levers, and a weighted lever acting upon said head, substantially as specified.

7. In a machine of the character described, the combination with a main supporting-frame, of a plank-centering device on the latter, comprising two oppositely-disposed pivoted T-shaped levers, a vertically-adjustable head bearing upon said levers, and a weighted lever acting upon said head, substantially as described.

569,289. SUPPORT FOR BICYCLES. JAMES S. LYNCH, Brooklyn, N. Y. Filed Jan. 27, 1896. Serial No. 576,919. (No model.)



Claim.—1. A support for bicycles or other vehicles, comprising a frame, which is provided with four projecting arms, two of which are free to swing on the frame, and each of which is provided at its outer end with a clamp, substantially as shown and described.

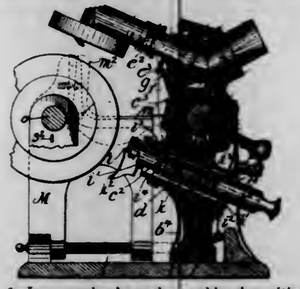
2. A support for bicycles or other vehicles, comprising a frame, which is provided with four projecting arms, two of which are free to swing on the frame, and each of which is provided at its outer end with a clamp, and the clamps at the ends of the swinging arms being at right angles to those with which the stationary arms are provided, substantially as shown and described.

3. A support for bicycles or other vehicles, comprising a frame, which is provided with four projecting arms, two of which are free to swing on the frame, and each of which is provided at its outer end with a clamp, and the clamps at the ends of the swinging arms being at right angles to those with which the stationary arms are provided, and said stationary arms being provided with longitudinally-adjustable sections, substantially as shown and described.

4. A support for bicycles or other vehicles, comprising a frame, which is provided with four projecting arms, two of which are free to swing on the frame, and each of which is provided at its outer end with a clamp, and the clamps at the ends of the swinging arms being at right angles to those with which the stationary arms are provided, and said stationary arms being provided with longitudinally-adjustable sections, which are free to revolve in the stationary parts, substantially as shown and described.

5. A support for bicycles and similar vehicles, consisting of a frame, provided at its upper side with hooks or other means by which it may be suspended, said frame being provided at each side with two projecting arms at the ends of which are formed clamps which are adapted to be connected with the frame of the vehicle, substantially as shown and described.

569,290. GRAPHOPHONE. THOMAS H. MACDONALD, Bridgeport, Conn., assignor to the American Graphophone Company, of West Virginia. Filed Nov. 2, 1895. Serial No. 567,729. (No model.)



Claim.—1. In a graphophone the combination with the carriage and its actuating-screw, of a guide-tube inclosing said screw and upon which the carriage slides, an arm or support on the carriage for the recorder or reproducer a ring on the carriage arranged concentric to the tube, and a handle for manipulating said ring to both lift the reproducer or recorder from the record cylinder and disengage the carriage from the feed-screw and for lowering the recorder or reproducer to the record and engaging the carriage with the feed-screw, by a reverse movement, substantially as described.

2. In a graphophone the combination with the feed-screw and its inclosing tube, of a carriage sliding on the latter, a nut for throwing the carriage into gear with the feed-screw, a ring having peripheral cam-surfaces thereon, one for disengaging the nut from the feed screw and the other for lifting the recorder or reproducer off the record-cylinder, and arranged concentrically to the inclosing tube, and a handle or device for actuating said ring, substantially as described.

3. In a graphophone the combination with the carriage and a recorder or reproducer carried thereby, of a device—such as a cam—mounted on the carriage for lifting the recorder or reproducer and simultaneously locking it in its raised position, and a handle for actuating said cam and for manually moving the carriage, substantially as described.

4. The combination with the carriage, of a shaving knife or cutter carried by a spring-actuated stem adjustable in said carriage, and normally held out of contact with the record-cylinder, a split sleeve around said stem, a device—such as a screw—for compressing the sleeve to clamp and hold the stem in an adjusted position, and a lever for actuating said device, substantially as described.

5. In a graphophone, the combination with the carriage, of a shaving knife or cutter carried by a spring-actuated stem adjustable in said carriage, and normally held out of contact with the record-cylinder, a split tube around said stem forming a chamber about the same, in which chamber the actuating-spring is inclosed, and means for compressing said sleeve to clamp the stem in an adjusted position against the tension of said spring, substantially as described.

6. In a graphophone, the combination with the carriage, of a shaving knife or cutter carried by a stem adjustable in said carriage, a split sleeve around said stem, means for compressing said sleeve to clamp the stem in an adjusted position, and a spline on the stem engaging in the slot or groove formed by the split in the sleeve, substantially as described.

7. In a graphophone, the combination with the mandrel, of a gate carrying one bearing thereof and adapted to drop on a horizontal axis when opened, and means for locking said gate in a closed position, substantially as described.

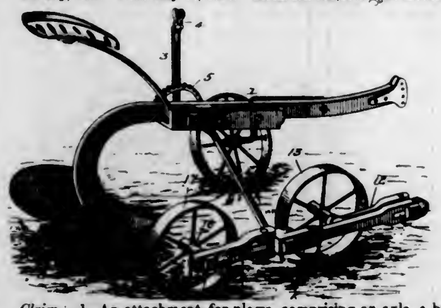
8. The combination with the mandrel, of a gate carrying one bearing thereof and adapted to drop on a horizontal axis when opened, and an automatically-operating latch on said gate for locking it in its closed position, substantially as described.

9. The combination with the mandrel, of a gate carrying one bearing thereof, a spring-actuated latch for automatically locking said gate in its closed position and adapted to engage in a flaring notch in the frame of the machine, substantially as described.

10. In a graphophone the combination with a mandrel and its shaft, of bearings one stationary and the other movable, upon which said shaft normally rests, a gate carrying said movable bearing, and an auxiliary bearing in proximity to the stationary bearing and with which said shaft makes engagement to arrest and prevent rotation of the mandrel when said gate is open, substantially as described.

11. In a graphophone the combination with a tubular pivoted joint to which the recorder or reproducer is adapted to be connected, and through which the sound is communicated of a spring connected therewith, of a tension not sufficient to overcome but acting to diminish the force of gravity by which said instrument is held in contact with the record-cylinder, substantially as described.

569,291. ATTACHMENT FOR SULKY-PLOWS. JOHN Q. MANN, Pursley, Tex. Filed May 12, 1896. Serial No. 591,254. (No model.)



Claim.—1. An attachment for plows, comprising an axle, a bar mounted upon the axle so as to tilt vertically, front and rear arms having connection with the bar and capable of swinging horizontally, and ground-wheels mounted upon spindles carried by the said arms, substantially as and for the purpose set forth.

2. An attachment for plows, comprising an axle, a bar mounted upon the axle and capable of tilting vertically, arms having pivotal connection with the bar and adapted to swing horizontally, and ground-wheels supported by the laterally-swinging arms and capable of being separated or brought together, substantially in the manner set forth for the purpose described.

3. The combination with a plow, of an axle having a crank portion, means for turning the axle relative to the plow and securing it in an adjusted position, a bar mounted upon the outer end of the axle and capable of tilting vertically, and ground-wheels operatively connected with the bar, substantially in the manner set forth for the purpose described.

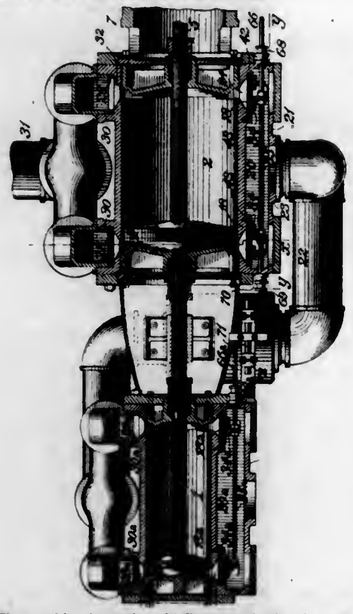
4. In a plow attachment, the combination of a bar capable of tilting vertically, a laterally-swinging arm having adjustable connection with the bar and bearing a ground-wheel, a second arm having pivotal connection with the bar and adapted to swing horizontally, and a spindle bearing a ground-wheel and adjustably connected with the last-mentioned arm, substantially as set forth for the purpose described.

5. The combination with a plow, and an axle having a crank portion and provided with means to secure it in an adjusted position, of a bar mounted upon the axle so as to tilt vertically and having a slot at its front end, a block adjustably connected with the bar by means of the slot, a laterally-swinging arm having connection with the block and bearing a ground-wheel, a rear arm having pivotal connection with the said bar so as to swing horizontally and having a longitudinal slot in its rear portion, and a spindle adjustably secured in the longitudinal slot of the rear arm and bearing a ground-wheel, substantially as set forth for the purpose described.

569,292. STEAM-ENGINE. ALBERT K. MANSFIELD, Salem, Ohio. Filed Dec. 3, 1895. Serial No. 570,933. (No model.)

Claim.—1. The combination, substantially as set forth, of a steam-cylinder, a piston and rod fitted to reciprocate therein, a crank-shaft connected with said piston-rod, two multiported steam-valves and two multiported exhaust-valves, each controlling a series of ports adjacent to one end of the cylinder, mechanism for coincidently reciprocating said steam and exhaust valves, two cut-off valves, each controlling a port in one of the steam-valves, and mechanism operated from the crank-shaft for reciprocating said cut-off valves at right angles to the traverse of the steam-valves.

2. The combination, substantially as set forth, of a steam-cylinder, a piston and rod fitted to reciprocate therein, a crank-shaft connected with said piston-rod, two multiported steam-valves and two multiported exhaust valves, each controlling a series of ports adjacent to one end of the cylinder, an eccentric fixed on the crank-shaft or on a shaft rotated thereby, connections for coincidently reciprocating the steam and exhaust valves from said fixed eccentric, two cut-off valves, each controlling a port in one of the steam-valves, an adjustable eccentric rotated by the crank-shaft, a governor varying and controlling the position of said eccentric, and connections through which the cut-off valves are reciprocated, by said adjustable eccentric, at right angles to the traverse of the steam-valves.



3. The combination, substantially as set forth, of a steam-cylinder, a piston and rod fitted to reciprocate therein, a crank-shaft connected with said piston-rod, two multiported steam-valves and two multiported exhaust-valves, each controlling a series of ports adjacent to one end of the cylinder, an eccentric fixed on the crank-shaft or on a shaft rotated thereby, connections for coincidently reciprocating the steam and exhaust valves from said fixed eccentric, two cut-off valves, each controlling a port in one of the steam-valves, an adjustable eccentric rotated by the crank-shaft, a governor varying and controlling the position of said eccentric, and connections through which the cut-off valves are reciprocated, by said adjustable eccentric, at right angles to the traverse of the steam-valves.

4. The combination, substantially as set forth, of a steam-cylinder, a piston and rod fitted to reciprocate therein, a crank-shaft connected with said piston-rod, two multiported steam-valves and two multiported exhaust-valves, each fitted to reciprocate transversely to the cylinder and controlling a series of ports adjacent to one end thereof, two rock-shafts, each journaled transversely on the cylinder substantially in the central plane of the valves at one end thereof, links coupling crank-arms on each of said shafts with the adjacent steam and exhaust valves, an eccentric fixed on the crank-shaft or on a shaft rotated thereby, a link connecting the strap of said eccentric with an arm on one of the rock-shafts, a link connecting an arm on said rock-shaft with an arm on the rock-shaft at the opposite end of the cylinder, two cut-off valves each controlling a port in one of the steam-valves, an adjustable eccentric rotated by the crank-shaft, and stems connecting said cut-off valves one with the other and with the strap of the adjustable eccentric.

5. The combination, substantially as set forth, of a steam-cylinder, a piston fitted to reciprocate therein, a crank-shaft connected with said piston, valve-faces formed on said cylinder near its ends, each having a series of ports, the openings of which, on the valve-face, are longitudinal to the cylinder and are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on the opposite side of the cylinder-wall which are transverse to the cylinder, multiported or gridiron slide-valves controlling said cylinder-ports, and mechanism for reciprocating said slide-valves transversely to the cylinder.

6. The combination, substantially as set forth, of a steam-cylinder, a piston fitted to reciprocate therein, a crank-shaft connected with said piston, valve-faces formed on said cylinder near its ends, each having a series of ports, the openings of which, on the valve-face, are longitudinal to the cylinder and are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on the opposite side of the cylinder-wall which are transverse to the cylinder, multiported or gridiron slide-valves controlling one of said series of cylinder-ports and having a series of ports, the openings of which, on the face of the valve, are longitudinal to the cylinder and are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on the back of the valve which are transverse to the cylinder, and mechanism for reciprocating said slide-valves transversely to the cylinder.

7. The combination, substantially as set forth, of a steam-cylinder, a piston fitted to reciprocate therein, a crank-shaft connected with said piston, valve-faces formed on said cylinder near its ends, each having a series of ports, the openings of which, on the valve-face, are longitudinal to the cylinder and are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on the opposite side of the cylinder-wall which are transverse to the cylinder, multiported or gridiron main slide-valves controlling said cylinder-ports, cut-off valves fitted to reciprocate on and controlling the ports of said main valves, mechanism for reciprocating said main valves transversely to the cylinder, and mechanism for reciprocating said cut-off valves at right angles to the traverse of the main valves.

8. A multiported or gridiron slide-valve for steam-engines, having a series of ports, the openings of which, on the face of the valve, are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on the back of the valve, at right angles to the openings in its face.

9. The combination, substantially as set forth, of a steam-cylinder, which is multiported adjacent to one of its ends, a multiported or gridiron main slide-valve controlling the cylinder-ports and having a series of ports, the openings of which, on its face, are separated by bridges of metal, and which merge, by inclined sides, into one or more openings on its back at right angles to those on its face, a cut-off valve controlling the openings on the back of the main valve, and mechanism for reciprocating the main and cut-off valves in directions at right angles one to the other.

10. The combination, substantially as set forth, of a steam-cylinder, a piston fitted to reciprocate therein, a crank-shaft connected with said piston, multiported or gridiron slide-valves fitted to traverse over and control series of ports in valve-faces near each end of the cylinder, a fixed and a removable guide on each of said valve-faces, transverse to the cylinder and controlling rectilineal movement of a valve, and mechanism for reciprocating said valves transversely to the cylinder.

11. The combination, substantially as set forth, of a steam cylinder, a piston fitted to reciprocate therein, a crank-shaft connected with said piston, multiported or gridiron main slide-valves fitted to traverse over and control series of ports in valve-faces near each end of the cylinder, a fixed and a removable guide on each of said valve-faces, transverse to the cylinder and controlling rectilineal movement of a main slide-valve, a valve-chest inclosing said valves, cut-off valves controlling the ports of the main valves, guides on the valve-chest cover controlling rectilineal movement of the cut-off valves, mechanism for reciprocating the main valves transversely to the cylinder, and mechanism for reciprocating the cut-off valves at right angles to the traverse of the main valves.

569,293. PROCESS OF SOFTENING BASE BULLION. GEORGE A. MARSH, Carnegie, Pa. Filed Mar. 10, 1896. Serial No. 582,615. (No specimens.)

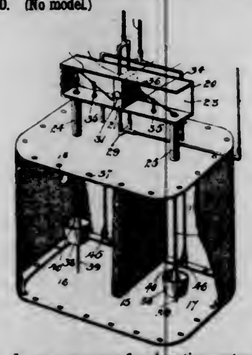
Claim.—1. As an improvement in the art of treating bullion containing lead, arsenic, antimony, and other oxidizable impurities, but substantially free from zinc, the method herein described for removing arsenic, antimony, and other oxidizable impurities, which consists in melting the bullion, heating the molten bullion to a temperature at which litharge will be reduced by the arsenic and antimony, i. e. about a bright-red heat, and then promoting the formation of litharge or oxid of lead in the molten bullion by any known means of oxidizing, and thereby permitting of the reduction of the litharge by the arsenic and antimony, and the consequent elimination of such impurities, substantially as set forth.

2. As an improvement in the art of treating bullion containing lead, arsenic, antimony, or other oxidizable impurities, but substantially free from zinc, the method herein described for removing the arsenic, antimony, and other oxidizable impurities which consists in melting the bullion, heating the molten bullion to a temperature at which litharge will be reduced by arsenic and antimony, i. e. about a bright-red heat, and then promoting the formation of litharge and other oxids by forcing a fluid into the molten bullion, whereby the molten bullion is agitated, subjecting large surfaces of the metal to the oxidizing action of the air, and opportunity is afforded for the reduction of the litharge by the arsenic and antimony, substantially as set forth.

3. As an improvement in the art of treating bullion containing lead, arsenic, antimony, and other oxidizable impurities, but substantially free from zinc, the method herein described for removing the arsenic, antimony, and other impurities, which consists in melting the bullion, heating the bullion to a temperature at which litharge will be

reduced by arsenic and antimony, i. e. about a bright-red heat, promoting the formation of litharge or oxid of lead in the molten bullion by any known means of oxidizing, and thereby permitting of the reduction of the litharge by the arsenic and antimony, and the consequent elimination of such impurities, and finally subjecting the softened bullion to any suitable desilverizing process, substantially as set forth.

569,294. COMPRESSED-AIR WATER-ELEVATOR. JAMES A. MARTIN and JOHN L. LATTA, Hickory, N. C. Filed Nov. 19, 1895. Serial No. 569,440. (No model.)

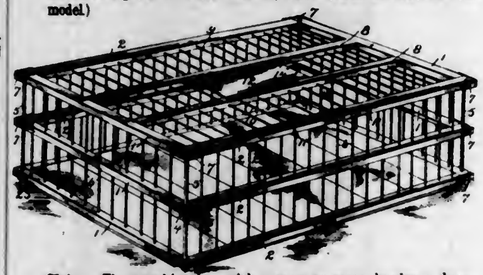


Claim.—1. In an apparatus for elevating water, the combination of a water-chamber divided into two compartments, each having a valve controlled inlet-opening, a water-pipe having communication with the said compartments and provided with suitably-arranged check-valves, an air-chest arranged above the water-chamber and divided by a partition into two compartments, pipes supporting the air-chest and connecting its compartments with corresponding compartments of the water-chamber, passages extending through the partition of the air-chest and communicating at their opposite ends with an air-supplying and an air-exhaust pipe, a valve seated in the said partition and intercepting the passages therein and provided with ducts to alternately register with the air-supplying and the air-exhausting pipes, rods operating through the aforesaid connecting-pipes and having connection with the valve, and buckets attached to the rods and controlled by the variation of the water-level in the compartments of the water-chamber, substantially as set forth for the purpose described.

2. In a water-elevating apparatus, the combination of a water-chamber subdivided into two compartments having valve-controlled inlet-openings, a water-pipe communicating with the said compartments and having check-valves, an air-chest divided by a partition into two compartments which are in communication with corresponding compartments of the water-chamber, said partition having inlet and exhaust passages, a valve seated in the said partition and provided with ducts disposed to alternately register with the said air inlet and exhaust passages, horizontally-disposed levers arranged in the compartments of the air-chest and operatively connected with the said valve, and buckets located in the compartments of the water-chamber and directed in their vertical movements and operatively connected with the said horizontal levers, and operated by the change in water-level in the compartments of the water-chamber to reverse the position of the valve in the air-chest, substantially in the manner set forth for the purpose described.

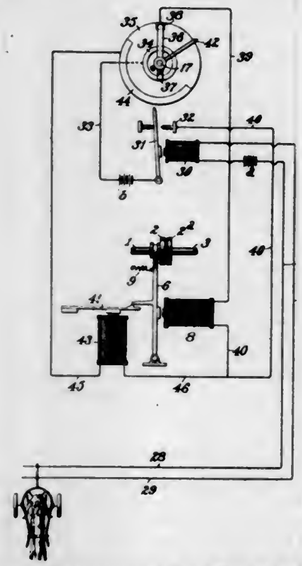
3. A water-elevating apparatus comprising in its organization an air-pump, an air-reservoir, a water-chamber subdivided into two compartments having valve-controlled inlet-openings, an air-chest, a partition dividing the air-chest into two compartments, which latter are in communication with corresponding compartments of the water-chamber, and which partition is formed with air-passages, pipes supporting the air-chest and connecting its compartments with the water-chamber compartments, a rotary valve seated in the said partition and intercepting the air-passages therein, and formed with inversely-disposed ducts, horizontally-disposed levers located in the compartments of the air-chest and operatively connected with the rotary valve, rods operating through the connecting-pipes and having attachment with the said levers, buckets arranged in the compartments of the water-chamber and connected with the said rods and controlled in their movements by the change in water-level to reverse the position of the rotary valve, a water-pipe having a fork the branches of which communicate with the compartments of the water-chamber and have check-valves, said water-pipe having a discharge-spout and provided with a controlling-valve, an exhaust pipe having a fork in communication with the air-passages in the partition of the air-chest, and an air-pipe having a fork in communication with the opposite ends of the air-passages in the said partition and connecting with the air-reservoir and the air-pump, substantially in the manner set forth for the purpose described.

569,295. COOP FOR CHICKENS. WALTER W. MENDENHALL, Greensborough, N. C. Filed June 17, 1896. Serial No. 593,110. (No model.)



Claim.—The combination with a coop or crate having a door-opening and transversely-disposed wires at the extremities of the door-opening, of a door or closure provided at its extremities with kerfs or slots 13 and 17 to engage said wires, respectively, a spring arranged in a socket communicating with the slot 13 at one end of the door and bearing at one end against the wire with which the slot 13 is engaged to force the door toward the other wire, a transverse pin connecting the walls of the kerf or slot 13 to strike the wire in said slot and limit the movement of the door under the tension of the spring, and a projecting ear at the free end of the door formed by an extension of one side of the slot 17 to bear upon the outer side of the wire with which said kerf or slot 17 is engaged, substantially as specified.

569,296. TIMING MECHANISM FOR RACES. CHARLES A. NEWBAKER, Pittsburg, Pa. Filed Feb. 25, 1896. Serial No. 580,710. (No model.)



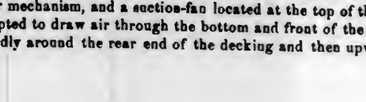
Claim.—1. The combination of an indicating mechanism, a motor, a clutch mechanism for connecting the motor and indicating mechanism, a magnet for shifting the clutch members to closed position, a catch for holding the clutch members in closed position and a magnet for shifting the catch, the circuits for said magnets being adapted to be closed, one at the beginning and the other at the end of the race, on the passage of the horse past a predetermined point, substantially as set forth.

2. The combination of an indicating mechanism, a motor, a clutch mechanism for connecting the motor and indicating mechanism, a magnet controlling the engaging movement of the clutch mechanism, a circuit for said magnet, two make-and-break mechanisms included in said circuit, one of which is operated by the indicating mechanism, a magnet for operating the other make-and-break mechanism, the circuit for said magnet being arranged so as to be closed on the passage of a horse past a predetermined point, substantially as set forth.

3. The combination of an indicating mechanism, a motor, a clutch mechanism for connecting the motor and indicating mechanism, two magnets, one controlling the closing and the other the opening movement of the clutch members, circuits for said magnets, two make-and-break mechanisms in each of said circuits, one of the make-and-break mechanisms in each circuit being operated by the indicating mechanism, a magnet for operating the other make-and-break mechanism in said circuits, the circuit for said magnet being arranged to be closed on the passage of a horse past a predetermined point, substantially as set forth.

4. The combination of an indicating mechanism, a motor, a clutch mechanism for connecting the motor and indicating mechanism, two magnets, one controlling the closing and the other the opening movement of the clutch members, circuits for said magnets, a magnet having its armature included in both of said circuits, a circuit for said magnet arranged to be closed on the passage of a horse past a predetermined point, a make-and-break mechanism in the circuits of the clutch-controlling magnets, and operated, in succession, by the indicating mechanism, and means for shifting the armature of the third magnet intermediate of the operation of the make-and-break mechanisms, substantially as set forth.

569,297. WATCHCASE-SPRING. CHARLES NOBS, Jr., Newark, N. J. Filed May 28, 1896. Serial No. 593,378. (No model.)



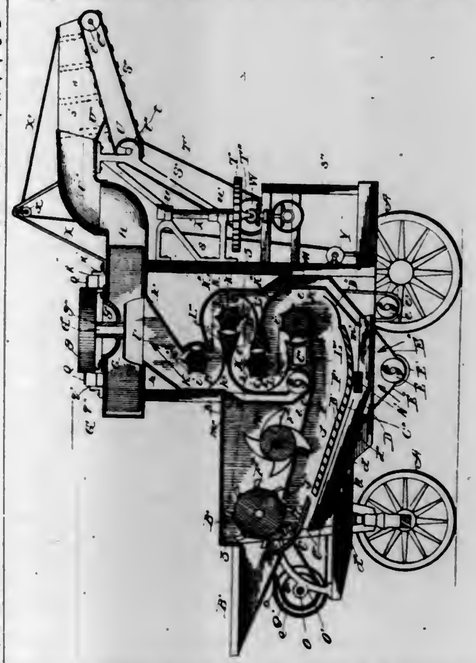
Claim.—A watchcase-spring *a*, provided with a lip or tongue a^2, having an outwardly-extending part a^4 and a downwardly-projecting portion a^3, in combination, with a backing *b*, having oppositely-arranged fingers or projections *b'*, with an opening b^2 between them, a longitudinally-arranged slot or opening b^4, into which said downwardly-projecting portion a^3 is adapted to be fitted, and said fingers *b'* being cut away, as at b^4, forming seats for said outwardly-extending part a^4 of said lip or tongue a^2, all arranged, substantially as and for the purposes set forth.

569,298. THRESHING-MACHINE. JOHN R. OUTRAM, Urbana, Ohio, assignor to Sam Bufkin, Columbus, Ohio. Filed Mar. 23, 1896. Serial No. 584,485. (No model.)

Claim.—1. In a threshing-machine, the combination with the casing having an exit at the top, a screened opening in the bottom and an opening in the front of the casing, of thresher mechanism located in the casing in front of the opening in the bottom and over the opening in the front of the casing, and a suction-fan located at the top of the casing and in the rear of the screened opening adapted to draw air through the screened opening and front of the casing and up out through the exit, whereby the threshed straw and dust are pulled in an upward direction from the screen through the casing and out through the exit by the force of the air, substantially as described.

2. In a threshing-machine, the combination with the casing, having an exit at the top and a screened opening in the bottom, of thresher mechanism located in the casing in front of the opening in the bottom, a decking located above the said opening, extending rearwardly from the thresher mechanism, an upwardly-extending passage at the rear of the decking and a suction-fan located at the top of the casing adapted to draw air through the screened opening of the casing under and around the rear end of the decking and then upwardly through the passage and out through the exit, whereby the threshed straw and dust are drawn rearwardly over the screened opening and upwardly through the passage and out through the exit, substantially as described.

3. In a threshing-machine, the combination with the casing having an exit at the top, an opening in the bottom and an opening in the front of the casing, of thresher mechanism located in the casing in front of the opening in the bottom and over the opening in the front of the casing, a downwardly-inclined decking arranged above the opening in the bottom and on a plane above the opening in the front, a downwardly-inclined grate or screen below the decking and over the opening in the bottom, the decking and screen or grate forming a downwardly-inclined passage in the rear of the opening in the front of the casing for the threshed straw and dust after leaving the thresher mechanism, and a suction-fan located at the top of the casing adapted to draw air through the bottom and front of the casing rearwardly around the rear end of the decking and then upwardly through the exit, whereby the threshed straw and dust are drawn through the downwardly-inclined passage and then upwardly out through the exit by the force of the air, substantially as described.



4. In a threshing-machine, the combination with the casing having an exit at the top and an opening in the front of the casing, of thresher mechanism located in the casing and over the opening in the front of the casing, a decking located in the casing and in rear of the thresher mechanism and on a plane above the opening in the front of the casing and a suction-fan located at the top of the casing adapted to draw air through the opening in the front of the casing under and around the rear end of the decking and then upwardly out through the exit whereby the threshed straw and dust are drawn rearwardly from the thresher mechanism under the decking and then upwardly through the casing and out through the exit, substantially as described.

5. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing on a plane above the air-ingress opening, of a tortuous passage-way leading to the exit and located in the rear of the thresher mechanism and having its opposite end communicating with the air-ingress opening, a grain-chute leading from the passage-way, and a suction-fan at the exit adapted to draw air through the opening and through the tortuous passage out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

6. In a threshing-machine, the combination with the casing provided with an exit for the threshed straw and dust, a screened opening in the bottom and an opening in the front of the casing, of thresher mechanism located in the casing in front of the opening in the bottom and over the opening in the front of the casing, a tortuous passage-way leading to the exit and communicating with the openings, a grain-chute leading from the passage-way, and a suction-fan at the exit adapted to draw air through the openings in the bottom and front of the casing and through the tortuous passage out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

7. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing, of a tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, a grain-chute leading from the passage-way, a rotatable cylinder located at the bends in the tortuous passage-way adapted to guide the straw around the bends and turn the straw over, and a suction-fan at the exit adapted to draw air through the opening and through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn

through the tortuous passage and out through the exit, substantially as described.

8. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air adjacent to the lower portion of the casing, and thresher mechanism located in the casing on a plane above the air-ingress opening, of a tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, a downwardly-extending grain-chute leading from the passage-way, projections in the passage-way arranged in the path of the straw and over the downwardly-extending grain-chute, and a suction-fan at the exit adapted to draw air through the opening and through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

9. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing, of a tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, a rotatable cylinder located at the bends in the tortuous passage-way, a downwardly-extending grain-chute leading from the passage-way, projections in the passage-way arranged in the path of the straw and over the downwardly-extending grain-chute, and a suction-fan at the exit adapted to draw air through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

10. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing on a plane above the air-ingress opening, of a tortuous passage-way leading to the exit located in the rear of the thresher mechanism and having its opposite end communicating with the air-ingress opening, means in the passage for turning over the straw, and a suction-fan located at the exit adapted to draw air through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

11. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air adjacent the lower portion of the casing, and thresher mechanism located in the casing on a plane above the air-ingress opening, of an upwardly-extending tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, a downwardly-extending grain-chute leading from the passage-way, and a suction-fan located at the top of the casing adapted to draw air through the opening upward through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn upwardly through the tortuous passage-way and out through the exit, substantially as described.

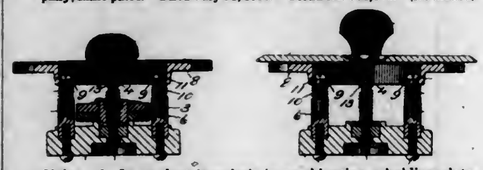
12. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing on a plane above the air-ingress opening, of a tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, the tortuous passage consisting of vertical passages and horizontal passages, the horizontal passages being arranged at a downwardly incline, a grain-chute leading from the passage-way, and a suction-fan located at the top of the casing adapted to draw air through the opening, through the tortuous passage and out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage and out through the exit, substantially as described.

13. In a threshing-machine, the combination with the casing having an exit for the threshed straw and dust and an opening for the ingress of air, and thresher mechanism located in the casing, of a tortuous passage-way leading to the exit and having its opposite end communicating with the air-ingress opening, a downwardly-extending grain-chute leading from the passage-way and communicating with an air-ingress opening, and a suction-fan located at the exit adapted to draw air through the opening, through the passage-way and through the grain-chute out through the exit, whereby the threshed straw and dust are drawn through the tortuous passage out through the exit, substantially as described.

14. In a threshing-machine, the combination with the casing having an exit at the top, an opening in the bottom and an opening in the front of the casing, of thresher mechanism located in the casing in front of the opening in the bottom and over the opening in the front of the casing, a downwardly-inclined decking arranged above the opening in the bottom, a downwardly-inclined grate or screen below the decking and over the opening in the bottom, the decking and screen or grate forming a downwardly-inclined passage in the rear of the opening in the front of the casing for the threshed straw and dust after leaving the thresher mechanism, a tortuous passage-way leading from the rear end of the inclined passage-way upward to the exit consisting of vertical and horizontal passages and the horizontal passages arranged at a rearward incline, and a suction-fan located at the top of the casing adapted to draw air through the bottom and front of the casing rearwardly around the rear end of the decking and then upwardly through the tortuous passage and then through the exit, whereby the threshed straw and dust are drawn through the downwardly inclined passage and then upwardly through the tortuous passage out through the exit, substantially as described.

15. In a threshing-machine, the combination with the casing provided with an exit for the threshed grain and straw and an air-ingress opening, of a flue leading from the exit, thresher mechanism located in the casing, a suction-fan at the exit and within the fine, a swinging arm secured to the rear end of the casing, a stacker secured to the arm, and a hood supported by the arm and swiveled to the end of the flue, substantially as described.

569,299. ELECTRIC SNAP-SWITCH. CHARLES G. PERKINS, Hartford, Conn., assignor to The Perkins Electric Switch Manufacturing Company, same place. Filed July 31, 1896. Serial No. 601,178. (No model.)



Claim.—1. In an electric switch, in combination, a holding-plate adapted to be firmly secured to a supporting part, a base bearing the operating mechanisms, yielding connections between the holding-plate and the base, a cover-plate outside of the holding-plate, and a handle for moving the operating mechanisms said handle having a part bearing against the cover-plate, substantially as specified.

2. In an electric switch, in combination, a holding-plate adapted to be firmly secured to a supporting part, a base bearing contacts and a rotary spindle carrying contact connecting and disconnecting parts, yielding connections between the holding-plate and the base, a cover-plate outside of the holding-plate, and a handle connected with the rotary spindle borne by the yielding base and having a part bearing against the cover-plate, substantially as specified.

3. In an electric switch, in combination, a holding-plate adapted to be firmly secured to a supporting part, a base bearing contacts and a rotary spindle carrying contact connecting and disconnecting parts, posts yieldingly connected with the holding-plate and firmly connected with the base, a cover-plate outside of the holding-plate, and a handle for moving the operating mechanisms and having a shoulder bearing against the cover-plate, substantially as specified.

4. In an electric switch, in combination, a holding-plate adapted to be firmly secured to a supporting part, a base bearing contacts and a rotary spindle carrying contact connecting and disconnecting parts, posts firmly connected with the base and passing through perforations in the holding-plate, spiral springs mounted upon the posts and thrusting between shoulders on the same and the under side of the holding-plate, a cover-plate outside of the holding-plate, and a handle for moving the operating mechanisms, said handle bearing against the cover-plate and holding the same in position, substantially as specified.

569,300. ELECTRIC SWITCH. WILLIAM H. POWELL, Hartford, Conn., assignor to The Perkins Electric Switch Manufacturing Company, same place. Filed Feb. 8, 1896. Serial No. 578,514. (No model.)



Claim.—1. A single-pole switch having a base with a plural number of pairs of contacts which are unequally spaced about the axis of the base, a handle-spindle held by the base and adapted to be given an intermittent rotation, and a plural number of insulated conducting-posts connected with and moved by the spindle and adapted to connect the pairs of contacts, said posts being equal in number to the pairs of contacts and also unequally spaced about the axis of the spindle so that different combinations of pairs of contacts are joined by the successive movements of the posts during the rotation of the handle-spindle, substantially as specified.

2. A single-pole switch having a base with a plural number of pairs of contacts, one of each of the pairs of contacts being adapted to be connected with the circuit-wires and the other of each of the pairs of contacts being electrically connected together, a handle-spindle held by the base and adapted to be given an intermittent rotation, and a plural number of insulated conducting-posts connected with and moved by the spindle and adapted to connect the pairs of contacts, said posts being located so that different combinations of pairs of contacts are joined by the successive movements of the posts during the rotation of the handle, substantially as specified.

3. A single pole switch having a base with a plural number of pairs of contacts, a handle-spindle held by the base and adapted to be given an intermittent rotation, and a plural number of insulated conducting-posts connected with and moved by the spindle and adapted to connect the pairs of contacts, said posts being unequally placed about the axis of the spindle so that different combinations of sets of contacts are joined by the successive movements of the posts during the rotation of the handle, substantially as specified.

4. A single-pole switch having a base with a plural number of pairs of contacts, one of each of the pairs of contacts being adapted to be connected with the circuit-wires and the other of each of the pairs being electrically connected together, a rotary handle-spindle held by the base and adapted to be given an intermittent rotation, and a plural number of insulated conducting-posts connected with and moved by the spindle and adapted to connect the pairs of contacts, said posts being unequally placed about the axis of the spindle so that different combinations of pairs of contacts are joined by the successive movements of the posts during the rotation of the spindle, substantially as specified.

5. A single-pole switch having a base with a plural number of pairs of contacts, a handle-spindle held by the base and adapted to be given an intermittent rotation, the number of movements of the handle during one revolution being greater than the number of pairs of contacts, and a plural number of insulated conducting-posts unequally spaced about the axis of the spindle with which they are connected so as to be moved by the spindle and adapted to join the pairs of contacts, said posts having a greater number of movements during one rotation of the handle than there are pairs of contacts so as to join different combinations of pairs of contacts at the successive movements of the spindle, substantially as specified.

6. A single-pole switch having a base with a plural number of pairs of contacts, a handle-spindle held by the base and adapted to be given an intermittent rotation, a plural number of insulated conducting-posts connected with and moved by the spindle and adapted to join the pairs of contacts, said posts being equal in number to the pairs of contacts but being unequally spaced about the axis of the spindle so as to join different combinations of pairs of contacts at the successive movements of the spindle, substantially as specified.

7. A single-pole switch having a base with a plural number of lower stationary contacts and a corresponding number of upper stationary contacts, a rotary handle-spindle held by the base, and an insulating-block connected with and moved by the spindle, said block bearing a plural number of conducting-posts adapted to connect the upper and lower stationary contacts, which posts are unequally spaced about the block so that different combinations of upper and lower contacts are joined by the successive movements of the posts during the rotation of the block, substantially as specified.

8. A single-pole switch having a base with a plural number of lower stationary contacts and a corresponding number of upper stationary contacts, one set of contacts bearing binding-posts for the attachment of the circuit-wires and the other set being electrically connected, a handle-spindle held by the base and being adapted to be given an intermittent rotation, and an insulating-block connected with and moved by the handle-spindle, said block bearing a plural number of conducting-posts arranged to connect different combinations of pairs of upper and lower stationary contacts as the block is intermittently moved, substantially as specified.

9. A single-pole switch having a base with a plural number of lower stationary contacts and a corresponding number of upper stationary contacts, one set of contacts bearing binding-posts for the attachment of the circuit-wires and the other set being electrically connected together, a handle-spindle held by the base and adapted to be given an intermittent rotation, and an insulating-block connected with and adapted to be moved by the spindle, the block having a greater number of movements during one revolution around the spindle than there are sets of upper and lower contacts, said block bearing connecting-posts equal in number to the number of sets of contacts, substantially as specified.

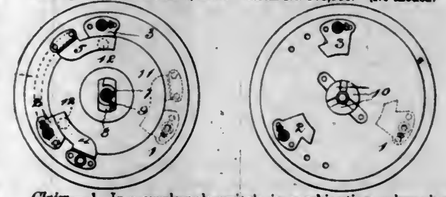
10. A single-pole switch having a base with a plural number of lower stationary contacts connected with binding-posts for the attachment of circuit-wires and a corresponding number of conducting-

brushes that are electrically connected together, a handle-spindle held by the base and adapted to be given an intermittent rotation, and an insulating-block connected with and moved by the spindle, said block bearing conducting-posts equal in number to the brushes and arranged to join different combinations of brushes and contacts as the block is intermittently moved, substantially as specified.

11. A single-pole switch having a base with a plural number of stationary contacts connected with binding-posts for the attachment of circuit-wires and a corresponding number of conducting-brushes that are electrically connected together, a handle-spindle held by the base and adapted to be given an intermittent rotation, an insulating-block connected with and moved by the spindle, said block bearing conducting-posts equal in number to the brushes and arranged to join different combinations of the contacts and brushes as the block is intermittently moved, the block also bearing hubs with lettered indications to denote the position of the connecting-posts, substantially as specified.

12. A single-pole switch having an insulated circular base with three stationary contacts on its upper face, connected with binding-posts for the attachment of the circuit-wires and three conducting-brushes that are electrically connected on the bottom of the base, a handle-spindle having a rotation divided into four periods, an insulating-block loosely connected with the spindle and adapted to have a four-period intermittent rotation around the axis of the spindle, said block bearing three conducting-posts arranged about the block so as to join first, diametrically opposite contacts and brushes, next contiguous contacts and brushes, next three pairs of contacts and brushes, and finally the other contiguous pairs of contacts and brushes, as the handle is given a revolution, substantially as specified.

569,301. ELECTRIC SWITCH. WILLIAM H. POWELL, Hartford, Conn., assignor to The Perkins Electric Switch Manufacturing Company, same place. Filed Feb. 8, 1896. Serial No. 578,515. (No model.)



Claim.—1. In a single-pole switch, in combination, a base bearing a plural number of contacts and brushes, one of said contacts being permanently electrically connected with one of said brushes, a handle-spindle supported by the base and adapted to be given an intermittent rotation, and insulated connecting-posts connected with and intermittently moved by the spindle, said connecting-posts being arranged at different intervals about the axis of the spindle so as to join first one set, then more than one set of contacts and brushes as they revolve around the spindle, substantially as specified.

2. In a single-pole switch, in combination, a base with sets of stationary contacts and brushes unequally spaced about the axis of the base and a handle-spindle adapted to be given an intermittent rotation of more periods during one revolution than there are sets of stationary contacts and brushes, and connecting-posts connected with and moved intermittently by the handle, there being the same number of connecting-posts as there are sets of contacts and brushes and said posts being spaced in the same unequal manner as the sets of contacts and brushes, substantially as specified.

3. In a single-pole switch, in combination, a base bearing stationary contacts and brushes and a handle-spindle adapted to be given an intermittent rotation, and two connecting-posts connected to and intermittently movable with the spindle, the sets of contacts and brushes being arranged unequally about the base and the connecting-posts being arranged unequally about the axis of the spindle which has more intermittent movements during one revolution than there are connecting-posts, substantially as specified.

4. In a single-pole switch, in combination, a base with a plural number of lower stationary contacts and a plural number of upper stationary brushes, one of the brushes being electrically connected with one of the contacts, a handle-spindle supported by the base and adapted to be given an intermittent rotation, insulated connecting-posts having an intermittent movement around the axis when the spindle is turned, said posts being arranged at unequal intervals about the spindle so as first to connect certain sets of contacts and brushes then other sets of contacts and brushes and finally all of the sets of contacts and brushes during one revolution around the spindle, substantially as specified.

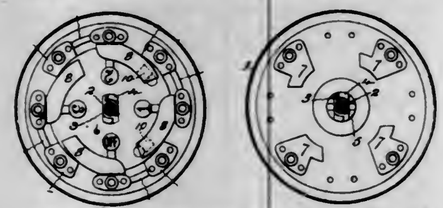
5. In a single-pole switch, in combination, a base bearing a pair of lower stationary contacts and a pair of upper stationary brushes,

one of said contacts being permanently connected with one of said brushes, a handle-spindle adapted to be given an intermittent rotation, an insulating-block connected with and rotated by the spindle, two connecting-posts arranged near the periphery of the block and adapted to connect the pairs of contacts and brushes, each successive movement given to the connecting-posts being less than the distance between the two points of contact between the contacts and brushes whereby during one revolution of the block the posts between the cutting in of each different circuit cut off the circuits altogether, substantially as specified.

6. In a single-pole switch, in combination, a base bearing a plural number of contacts and a plural number of brushes, one of said contacts being permanently electrically connected with one of said brushes, a handle-spindle supported by the base and adapted to be given an intermittent rotation, and an insulated connecting-post connected with and intermittently moved by the spindle, said connecting-post being arranged so as to join different contacts and brushes during a revolution around the spindle, substantially as specified.

7. In a single-pole switch, in combination, a base bearing a plural number of contacts and brushes, some of said contacts being permanently electrically connected with some of said brushes, a handle-spindle supported by the base and adapted to be given an intermittent rotation, and insulated connecting-posts connected with and intermittently moved by the spindle so as to first join one set then the other sets in addition as the connecting-posts revolve around the spindle, substantially as specified.

569,302. ELECTRIC SWITCH. WILLIAM H. POWELL, Hartford, Conn., assignor to The Perkins Electric Switch Manufacturing Company, same place. Filed June 29, 1896. Serial No. 597,306. (No model.)



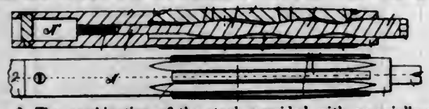
Claim.—1. In an electric switch, in combination, a base with a plural number of sets of stationary contacts, one of each of the sets of contacts being electrically connected with one of the sets next in advance, a handle-spindle supported by the base and adapted to be given an intermittent rotation, and a plural number of insulated conducting contacts connected with and moved by the turning of the spindle and adapted to connect certain different sets of stationary contacts at each movement of the spindle, substantially as specified.

2. In an electric switch, in combination, a base with a plural number of contact-plates and brushes arranged in sets, the contact-plate of each set being electrically connected with the brush of the set next in advance, a handle-spindle supported by the base and adapted to be given an intermittent rotation, and a plural number of conducting-posts connected with and moved by the turning of the spindle and adapted to connect certain different sets of plates and brushes at each movement of the spindle, substantially as specified.

3. In an electric switch, in combination, a base with a plural number of contact-plates and brushes arranged in sets, the contact-plate of each set being electrically connected with the brush of the set next in advance, a handle spindle supported by the base and adapted to be given an intermittent rotation, and a pair of conducting-posts located a distance apart equal to the distance between each set of plates and brushes and connected with and moved by the turning of the handle-spindle so as to connect the sets of brushes and contacts in pairs successively as the posts are revolved about the spindle, substantially as specified.

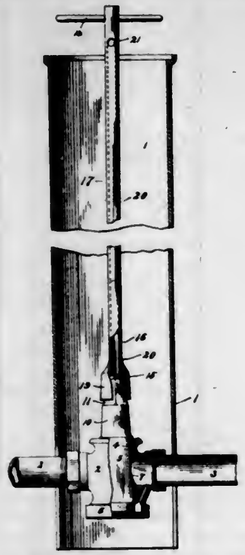
569,303. EXPANSION-REAMER. JOSEPH SINGER, Los Angeles, Cal. Filed Dec. 23, 1893. Serial No. 494,507. (No model.)

Claim.—1. The expansion-reamer for reaming gun-barrels set forth comprising the bit-stock provided with an axially-arranged cylindrical chamber which opens at the front end of the stock and terminates in a screw-threaded socket at the rear end of the stock, and longitudinal slots opening through the stock into such chamber and having the rear and front walls of the slots inclined outward at corresponding angles toward the front end of the stock; the bit-operating bolt having inclined bit-engaging faces and screw-threaded at its rear end and arranged in such chamber with its screw screwed into the screw-socket; the bits arranged one in each of the slots in the stock and provided with inclined faces resting upon the spindle-shaped body of the bit-operating bolt, and having their rear and front ends beveled to fit the inclined rear and front walls of the slots.



2. The combination of the stock provided with an axially-arranged chamber and with the longitudinal slots opening into such chamber; the rear and front end walls of such slots being inclined at corresponding angles toward the front end of the bit stock; the rod fastened to the stock to rotate the same; the bit-operating bolt arranged in the chamber and provided with the inclined bit-engaging faces; the bits arranged one in each of the slots in the bit-stock and each having its ends inclined to fit the inclined faces of the end walls of the slot and having its inner face arranged to rest upon the inclined face of the bit-operating bolt, and suitable means for operating the bolt.

569,304. STOP-COCK FOR WATER-SERVICE SYSTEMS. JASPER SLAYMAKER, Sunbury, Pa., assignor of two-thirds to the Sunbury Water Company, same place. Filed Mar. 17, 1896. Serial No. 583,637. (No model.)



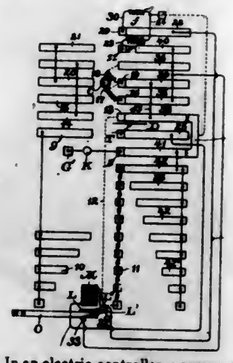
Claim.—1. A stop-cock for water-service pipes having a plug provided in communication with the interior of the casing with a bore, a normally-closed test-valve for controlling said bore and yieldingly held seated, and a sliding stem connected to the test-valve and exposed for exterior pressure to unseat the valve, whereby the test-valve may be unseated simultaneously with the operation of the plug to indicate the position thereof, substantially as specified.

2. A stop-cock for water-service pipes having a plug provided with a wrench-seat, and a test-valve for controlling a port in communication with the interior of the stop-cock casing, and having a stem exposed contiguous to the wrench-seat for contact by a wrench fitted upon said seat, whereby the test-valve is unseated when a wrench is applied to turn the plug, substantially as specified.

3. A stop-cock having a plug provided with an exterior wrench-seat and also provided with an axial bore communicating with the interior of the casing, a test-valve to control said bore, and a stem connected to the test-valve, extending through the bore and exposed contiguous to the wrench-seat for contact by a wrench fitted upon the seat, substantially as specified.

4. A stop-cock for water-service pipes having a plug provided with a wrench-seat and an axial bore communicating with the interior of the stop-cock casing and terminating contiguous to said wrench-seat, a test-valve for controlling the bore in the plug and provided with a stem terminating contiguous to the wrench-seat, and a wrench adapted to be fitted upon said wrench-seat to engage the valve-stem and unseat the test-valve and provided with a bore to communicate with said bore in the plug and terminating at its upper end in an outlet-port, substantially as specified.

569,305. SYSTEM OF CONTROL FOR ELECTRIC MOTORS. ELMER A. SPERRY, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed Feb. 21, 1895. Serial No. 539,297. (No model.)



Claim.—1. In an electric controller, a source of electrical supply, a series electric machine, an independent field-coil of high resistance for such machine, the controller adapted to assume a position wherein the main circuits are open, in combination with contacts so located in the controller that at the above position of the controller the source of supply is connected with the field-coil of high resistance.

2. In an electric controller a source of electrical supply, a series electric machine, an independent field-coil of high resistance for such machine, the controller adapted to assume a position wherein the main circuits are open, contacts so located in the controller that at the above position of the controller the source of supply is connected with the field-coil of high resistance, in combination with means responsive to an electric current for holding an electric circuit open.

3. In an electric controller, a source of electrical supply, a series electric machine, an independent field-coil of high resistance for such machine, the controller adapted to assume a position wherein the main circuits are open, contacts so located in the controller that at the above position of the controller the main source of supply is connected with the field-coil of high resistance, in combination with means responsive to an electric current for transferring the high-resistance field-coil to the said main circuit.

4. In an electric-brake system, the combination of means for placing the motor in operative connection with a source of electrical supply so as to be driven as a motor, contacts for connecting the source of electrical supply to an auxiliary field-coil of such machine, a reversing-switch for reversing the relation of armature and field, and contacts and brushes for coupling them as a generator to an electric circuit.

5. In an electric-brake system, the combination of means for placing the motor in operative connection with a source of electrical supply so as to be driven as a motor, contacts for connecting the source of electrical supply to an auxiliary field-coil of such machine, a reversing-switch for reversing the relation of armature and field, and contacts and brushes for coupling them as a generator to an electric circuit and including in said circuit a regulating device.

6. In an electric-brake system, the combination of means for placing the motor in operative connection with a source of electrical supply so as to be driven as a motor, contacts for connecting the source of electrical supply to an auxiliary field-coil of such machine, a reversing-switch for reversing the relation of armature and field, contacts and brushes for coupling them as a generator to an electric circuit, and means for automatically coupling the auxiliary field-coil to the armature-circuit whenever the flow of current in the main source falls below a predetermined amount.

7. In an electric-brake system, the combination of means for placing a motor in operative connection with a source of electric supply, contacts for including the source of electric supply with an auxiliary field-coil only of the motor, a short-circuiting device for cutting out the brake-magnets at a predetermined time, a reversing-switch, and means for opening the short circuit around the brake-magnets.

8. In an electric-brake system, the combination of a motor having main and auxiliary field-coils with contacts for including the auxiliary field in the trolley-circuit when the motor is not propelling the car.

9. In an electric brake system, the combination of a dynamo-electric machine for propelling and braking the vehicle, an auxiliary field-coil for maintaining the field magnetization, and automatic means for shifting the connections of the field-coil from the main source of supply to the armature of the dynamo-electric machine.

10. In an electric motor, for propelling and braking the vehicle, the combination of main and auxiliary field-coils, and means for connecting the auxiliary field-coil to the main source of supply or the motor-armature.

11. In an electric motor, for propelling and braking a vehicle, the combination of main and auxiliary field-coils, and current-controlled means for shifting the connections of the auxiliary field coil from the source of supply to the armature of the motor upon failure of said source.

12. In an electric-brake system, the combination of a controller for regulating the supply of energy to the motors and the brakes, an auxiliary field-coil on the motor for maintaining a certain amount of field magnetization, contacts for including this coil in circuit with the source of supply, and a current-controlled device for shifting the connections from one source to another upon failure of the first.

13. The combination of an electric motor having main and auxiliary field-coils, means for reversing the relation between the armature and fields, and automatic means for shifting the connections of the auxiliary field-coil from one source of supply to another.

14. In a controller for electric motors, the combination of contacts for regulating the supply of energy to the power side of the system, contacts for regulating the supply of energy to the brake side of the system, brushes and connections for establishing various combinations in the circuit relations, certain of the brushes making contact with one side of the system when the circuit is interrupted, and automatic means for changing the connections of the auxiliary field-coils from the source of supply to the armatures of the motors upon failure of the said source.

15. The combination with a dynamo-electric machine, of main and auxiliary field-coils, contacts for establishing circuit relations between the source of supply and the dynamo electric machine, contacts for establishing circuit relations between the dynamo-electric machine and brakes, and current-controlled means for automatically changing the auxiliary field-coil from the trolley-circuit to the armature of the dynamo electric machine.

16. In an electric-brake system, the combination of contacts for regulating the supply of energy to the brakes, brushes in engagement with certain of the contacts in the off position of the controller, and automatic means for changing the circuit relations at the time the controller is in the off position.

17. In an electric-brake system, the combination of a controller for regulating a motor used to propel or brake a vehicle, main and auxiliary field-coils on the motor, automatic means for changing the connections of the auxiliary field-coil, and means for interrupting the circuit relation of the auxiliary field-coil and armature when the motor is propelling the car.

18. In an electric-brake system, the combination of a controller for regulating the supply of current to a dynamo-electric machine when propelling or braking a car, main and auxiliary field-coils on the dynamo-electric machine, and automatic means carried by the controller for shifting the connections of the auxiliary field-coil from the trolley to the armature of the dynamo-electric machine.

19. In an electric-brake system, the combination of a dynamo-electric machine having main and auxiliary field-coils, contacts for including the auxiliary field-coil in either the trolley or the armature circuit, and a shunting device for the brake-magnets for preventing their acting at a certain time.

20. In an electric-brake system, the combination of a motor having main and auxiliary field-coils, a controller for regulating the energy of the system, current-controlled means for including the auxiliary field-coil in circuit with the source of supply or the motor-armature, and a device for momentarily shunting the brake-magnets before the current from the motor-armature is supplied thereto for the purpose of braking the vehicle.

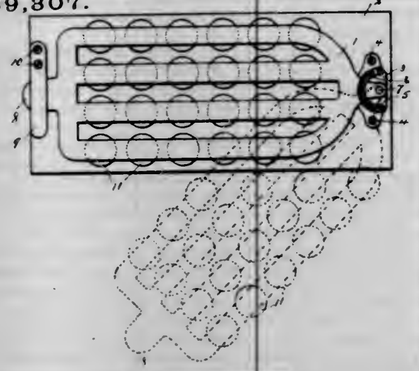
569,306. OIL-PAINT. IRVING H. SWINK, Dublin, Pa. Filed Oct. 23, 1895. Serial No. 566,626. (No specimens.)

Claim.—The hereinbefore-described process of making an oil-paint consisting of combining sweet skimmed milk a suitable pigment kerosene-oil rosin-oil and linseed-oil by first mixing the milk lime and pigment and fermenting the mass and then adding the aforesaid kerosene rosin and linseed oils in the proportions substantially as described.

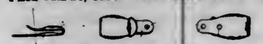
569,307. SPOOL-HOLDER. DAVID F. TAYLOR, Wichita, Kans. Filed Apr. 14, 1896. Serial No. 587,506. (No model.)

Claim.—The herein-described spool-holder consisting of the combination of a base-support 2, the spring-keeper 9 secured at one end to said support, the plate 3 secured to the opposite end of said support, the circular track 5 secured to said plate 3, the frame 1 journaled to said plate at 7 between said plate and said track 5 said track adapted to support said frame 1 when swung around to remove thread, said frame being provided with the pins 12 for holding the spools and the lip 8 for engaging the spring 9.

569,307.



569,308. FASTENING DEVICE. SIMPSON G. TEMPLE, Nottingham, Ohio. Filed Jan. 21, 1896. Serial No. 576,270. (No model.)



Claim.—As an improved article of manufacture, a shoe-lace fastener, constructed substantially as herein shown and described, consisting of a thin metal plate bent over upon itself, having eyelet-holes for attaching it to the shoe-tongue formed in the lower portion and having edges of the lower portion bent upward and those of the upper portion bent downward to form a contracted space between the two portions, as and for the purposes set forth.

569,309. ELECTRIC SNAP-SWITCH. GEORGE R. THOMAS, Hartford, Conn., assignor to The Perkins Electric Switch Manufacturing Company, same place. Filed May 16, 1896. Serial No. 591,747. (No model.)



Claim.—1. A switch having a base bearing contacts, a rotary spindle, a disk of insulating material connected to and movable with the spindle and having recesses in its upper and lower faces, and conducting-pieces of spring metal each formed in the shape of a hollow square with one side partially cut away, a part of each square extending onto the upper face, a part extending onto the lower face and the parts of the cut-away sides that project toward each other extending into and loosely resting in the recesses in the upper and lower faces of the disk, substantially as specified.

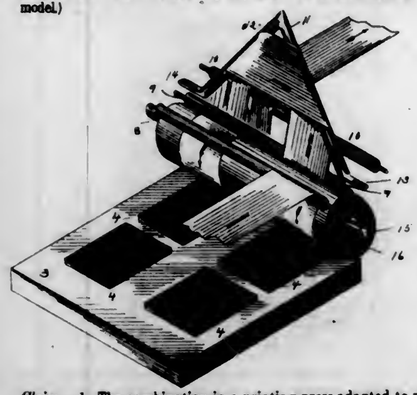
2. A switch having a base bearing contacts, a rotary spindle, a block of insulating material connected to and movable with the spindle and provided with slots and recesses, and connecting-pieces that are substantially hollow squares with one side split, loosely held by the block with parts extending through the slots and parts projecting toward each other and resting in the recesses, substantially as specified.

3. A switch having a base bearing contacts, a rotary spindle, an insulating-block connected to and movable with the spindle and provided with slots and sockets, and conducting-pieces formed in the shape of a hollow square with their ends entering and resting in the sockets and the sides opposite the ends passing through the slots, substantially as specified.

4. A commutator-block for an electric snap-switch of the within-described class consisting of a disk of insulating material with slots extending inward from the periphery, sockets formed in the faces adjacent to the slots, raised bosses on the faces between the slots and sockets, and conducting-pieces passing through the slots and bent so that their ends project into the sockets, substantially as specified.

5. A commutator-block for an electric snap-switch of the within-described class, consisting of a disk of insulating material provided with a central perforation and adapted to be supported by a rotary spindle, metallic connecting-pieces loosely connected with the disk and projecting beyond the upper and lower faces of the disk, and raised bosses of insulating material projecting above the upper surface of the disk between the metallic connecting-pieces, the upper surfaces of the bosses being parallel with the upper and lower faces of the disk whereby the end of a brush is lifted from the level of the disk when a boss is lying beneath it, substantially as specified.

569,310. PRINTING-PRESS. HENRY A. W. WOOD, New York, N. Y., assignor to the Campbell Printing Press and Manufacturing Company, of New York. Filed July 14, 1892. Serial No. 439,964. (No model.)



Claim.—1. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the bed, and means moving with the cylinder, adapted to transfer the web laterally of the cylinder, substantially as described.

2. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the form-bed, and a turner moving with the cylinder, adapted to transfer the web laterally of the cylinder, and to turn the same, whereby the web may be perfected, substantially as described.

3. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the form-bed, and a turner moving with the cylinder consisting of the right-angled bars 11 and 12 around which the web may be led and transferred laterally of the impression-cylinder, substantially as described.

4. The combination in a printing-press adapted to print on a web from forms, of a form-bed having forms arranged side by side, an impression-cylinder, means for moving the impression-cylinder relatively to the form-bed, a carriage in which said impression-cylinder is mounted, and a turner also mounted on said carriage, adapted to transfer the web laterally of the impression-cylinder, substantially as described.

5. The combination in a printing-press of the class described, of the stationary form-bed, the carriage, means for reciprocating the carriage, an impression-cylinder mounted in the carriage, suitable guiding-rollers also mounted in said carriage, and a turner device mounted on said carriage around which the web is led, and thereby transferred laterally, substantially as described.

6. In a printing-press of the class described, the combination of the stationary form-bed, the reciprocating carriage, means for reciprocating the same, the impression-cylinder, guiding-rollers 8, 9 and 10, and turner-bars 11 and 12 carried by said carriage around which the web may be led, and thereby transferred laterally of the impression-cylinder, substantially as described.

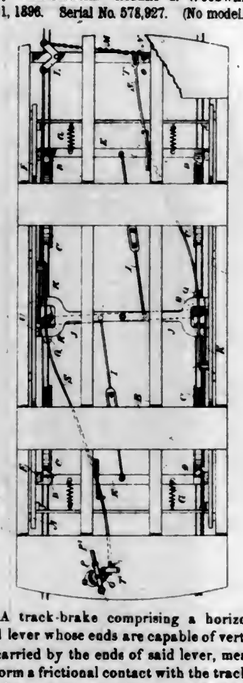
7. The combination of a stationary form-bed, an impression-cylinder, means for reciprocating the same relatively to the form-bed, a turner moving with the cylinder, web-guides and web feeding or manipulating devices, substantially as described.

8. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the bed, and means for transferring the web laterally of the cylinder, and directing the same twice around the cylinder, of an adjusting mechanism, whereby register may be obtained between the two portions of the web that pass around the cylinder, substantially as described.

9. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the form-bed, and a turner moving with the cylinder adapted to transfer the web laterally of the impression-cylinder, and to direct the web a second time around the cylinder, and means for adjusting the turner, whereby register may be obtained between the two portions of the web that pass around the cylinder, and proper action of the deflected web may be obtained upon the turner, substantially as described.

10. The combination in a printing-press adapted to print on a web from forms, of a form-bed, an impression-cylinder, means for moving the impression-cylinder relatively to the form-bed, and a turner moving with the cylinder consisting of the right-angled bars 11 and 12, the ends of said turner-bars being mounted on blocks, which blocks are adapted to be adjusted vertically, substantially as described.

569,311. CAR-BRAKE. ROBERT G. WOODWARD, Alameda, Cal. Filed Feb. 11, 1896. Serial No. 578,927. (No model.)



Claim.—1. A track-brake comprising a horizontally-disposed centrally-piroted lever whose ends are capable of vertical movement, a shoe or shoes carried by the ends of said lever, means for depressing the shoes to form a frictional contact with the track, wheel-brakes and connections between them and the track-brake lever whereby the movement of the latter acts to apply the wheel-brakes.

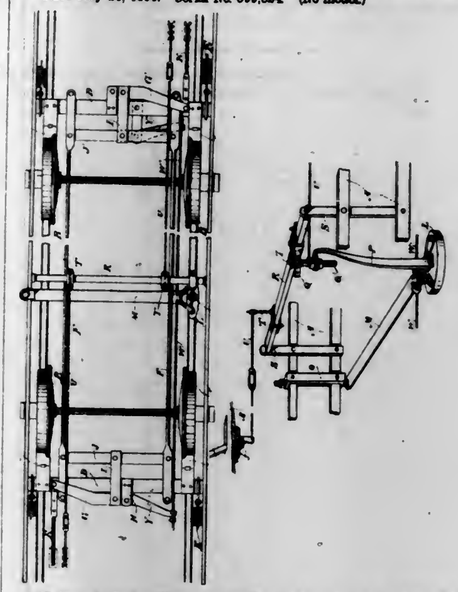
2. In a car-brake, a centrally-pivoted lever capable of vertical movement, track-brakes carried by the ends of said lever, mechanism by which the lever may be depressed so as to depress one of the track-brakes and cause a frictional contact between the shoe and the track, wheel-brakes adapted to form contact with the wheels, brake-bars upon which they are carried and rods connecting the brake-bars with the track-brake-carrying lever, whereby the turning of said lever about its fulcrum, will force the wheel-brake shoes into contact with the wheels.

3. The combination of track-brakes carried upon a vertically-movable and centrally-pivoted lever, with wheel-brake and rods connecting the brake-bars with said central lever whereby the depression of one end of the lever will cause a frictional contact between the track-brake and the track, and a resulting movement of the lever about its fulcrum to simultaneously apply the wheel-brakes.

4. In a car-brake, a centrally-pivoted lever having track-brakes upon its opposite ends, a foot-lever and connections between it and the brake carrying lever whereby either end of the latter may be depressed to form frictional contact with the track, wheel-brakes mounted upon laterally-moving brake-bars, rods connecting said brake-bars with the centrally-pivoted lever whereby the wheel-brakes may be automatically applied by the action of the track-brake, and other rods connecting the outer ends of the track-brake lever with bell-crank levers fulcrumed at opposite ends of the cars, a vertical brake-shaft with means for rotating it, and a rope or chain connecting the bell-crank lever therewith, whereby the wheel-brakes may be independently applied by hand.

5. Wheel-brakes mounted upon laterally-moving brake-bars, a centrally-pivoted lever with which said brake-bars are connected at opposite sides of its fulcrum, rods connecting with the outer ends of said lever and extending to opposite ends of the car exterior to the wheels, horizontally-disposed bell-crank levers fulcrumed at the angle with one end of each of which one of the rods connects, a chain or rope connecting with the opposite end of the bell-crank lever, a vertical brake shaft or drum having a stud or arm projecting therefrom with which the end of the chain is connected so that a partial rotation of the brake-shaft acts through the stud to take up the slack of the rope or chain and bring the brakes into contact with the wheel.

569,312. CAR-BRAKE. ROBERT G. WOODWARD, Alameda, Cal. Filed July 20, 1896. Serial No. 599,824. (No model.)



Claim.—1. In a railway-car brake, a shoe or shoes suspended above the rail, a connection whereby it may be depressed by the operator into frictional contact with the rail whereby it is moved backward from the direction in which the car is traveling, wheel-brakes adapted to press upon opposite sides of all of the wheels upon which the car is carried, and an intermediate mechanism whereby the movement of the shoe acts to draw both sets of brakes simultaneously against the wheels.

2. In a railway-car brake, a shoe or shoes suspended above the rail, a rocking bar journaled across the car and connected with the shoe so that the rocking of the bar will depress the shoe upon the track, connections between the rocking bar and a hand-lever whereby the shoe is depressed into contact with the track and moved backwardly from the direction of travel of the car, rods connecting the shoe with the intermediate brake-beam connections at opposite ends whereby both sets of brake-shoes are simultaneously applied to the car-wheel.

3. In a railway-car brake, a shoe suspended above the rail, a rocking bar journaled across the truck-frame with which the shoe is connected, connections between the rocking bar and the hand-lever whereby the shoe may be depressed into contact with the track, connections between the track-shoe and the brake-beams, intermediate connections between the track-shoe and the rocking bar and means whereby said intermediate connections are vertically adjusted.

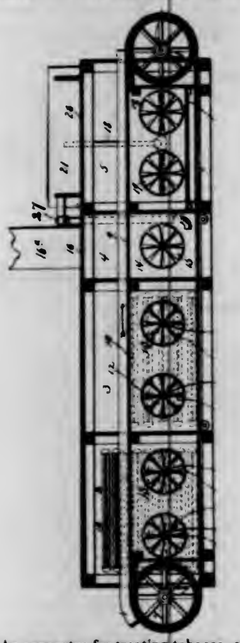
4. In a railway-car brake, a shoe, a rocking bar journaled across the truck-frame from which the shoe is suspended in line above the track, a horizontally-disposed arm fulcrumed at one side of the truck and having the other connected with the shoe, mechanism connecting the rocking bar with the hand brake-lever whereby the bar may be tilted so as to force the shoe into contact with the track, and connections between the shoe and the brake-beams whereby the backward movement of the shoe caused by the frictional contact with the track will apply the brakes simultaneously to both sets of wheels.

5. In a railway-car brake, a vertically-movable shoe suspended above the track, a rocking shaft journaled across the truck-frame and so connected with the shoe that the latter is depressed into contact with the track by the rocking of the bar, connections between the shoe and the brake-beams, a connection between the rocking bar and the hand brake-lever and an intermediate take-up link *d* whereby the lost motion is taken up and the shoe depressed into contact with the track by the first movement of the hand-lever.

6. In a railway-car brake, the vertically-movable shoe suspended above the track, a rocking shaft journaled across the truck-frame and so connected with the shoe that the latter is depressed into contact with the track by the rocking of the bar, connections between the shoe and the brake beams, a hand-lever, a link fulcrumed to the lower end thereof, a connection from the link to the shaft at one side of the fulcrum-point of the former, and a lug against which the opposite end of the link contacts when the first movement of the lever

is made, whereby the link is caused to swing about its fulcrum point and move the end with which the rocking-shaft connection is made so as to take up lost or slack motion of the parts.

569,313. APPARATUS FOR TREATING TOBACCO. JOHN WRIGHT, Richmond, Va. Filed Sept. 26, 1895. Serial No. 563,751. (No model.)



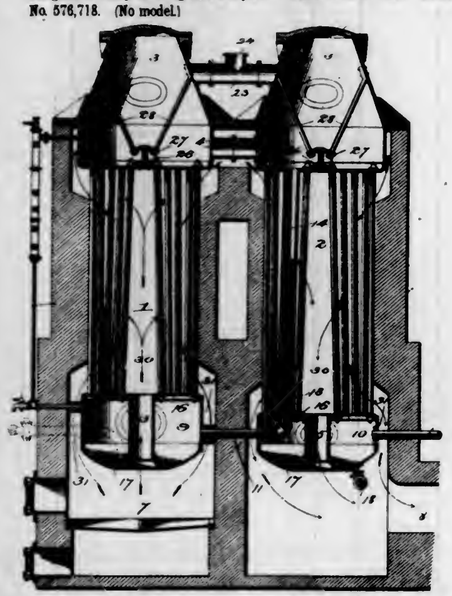
Claim.—1. An apparatus for treating tobacco, comprising a box or case divided into a series of compartments, each compartment comprising two communicating chambers, heating-coils situated in one of the chambers of each of two compartments, devices located in openings in the partitions between the communicating chambers for forcing a current of air through the chambers, the third compartment having an air suction and forcing device mounted in the partition between its two chambers, the fourth compartment provided with air-circulating and liquid-spraying devices, and means for conveying the tobacco through these chambers.

2. An apparatus for treating tobacco comprising a box or case containing a series of compartments, each of which compartments comprises two communicating chambers, heating devices situated in one of the chambers of each of two compartments and means for forcing a current of air through these chambers, the third compartment provided with an opening in the top of one of its chambers, an air suction and forcing device in the partition between these two chambers, the fourth compartment provided with air-circulating and fluid-spraying devices, means for preventing undue pressure of moist air in said compartment, and means for conveying the tobacco through the series of treating-chambers, substantially as set forth.

3. An apparatus for treating tobacco, comprising a box or case divided into four compartments, each of which comprises two communicating chambers, devices located in the partition between these chambers for forcing a current of air through the chambers, heating-coils located in one of the chambers of each of two compartments, the third or cooling compartment provided with an opening in the top in communication with one of its chambers, a suction and forcing fan in communication with its chambers, the fourth or ordering compartment provided with a spraying device in one of its chambers, an air-circulating device mounted in proximity to said spraying device and arranged to cause a circulation of moist air through the two chambers composing this compartment, and a device to prevent and relieve undue pressure of the moist atmosphere in the ordering-compartment, and an endless tobacco-conveyer running through the several compartments, substantially as set forth.

4. An apparatus for treating tobacco comprising a box or casing divided into four compartments, each of which is composed of two communicating chambers, heating devices situated in the smaller chamber of two of said compartments, means for forcing a current of air therethrough, means for sucking air into and forcing it out of the third compartment, a spraying device situated in the smaller chamber of the fourth compartment, means for circulating air through said compartment, and a traveling conveyer for conveying the tobacco through the several larger chambers of the several compartments, substantially as set forth.

569,314. STEAM-BOILER. WILLIAM WRIGHT, Newburg, N. Y., assignor to Mary E. Wright, same place. Filed Jan. 24, 1896. Serial No. 576,718. (No model.)

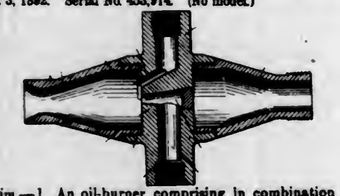


Claim.—1. In a steam-boiler, the combination with a suitable setting containing a vertical chamber, of a steam-dome suspended therein, a set of water-tubes suspended from the dome, a water-chamber suspended from the lower ends of the tubes, longitudinal rods passing through the tubes, and open washers connecting the opposite ends of the rods with the dome above, and water-chamber below, respectively substantially as described.

2. In a steam-boiler of the character described, the combination with an outer shell, of a steam-dome suspended in the upper part of the shell, and having a fire-passage around its lower portion, a water-chamber surrounding the lower fire-sheet, and having a fire-space around it, and an opening through it, and water-tubes connecting both chambers, in the manner and for the purpose set forth.

3. In a steam-boiler, the combination with a suitable setting provided with a pair of vertical fire-chambers, of a primary and secondary boiler a set of vertical water-tubes suspended from a pair of communicating steam-domes, a pair of water-chambers suspended from the tubes, and a feed-water connection entering the secondary water-chamber, and delivering therefrom to the primary water-chamber, substantially as described.

569,315. OIL-BURNER. JOHN R. ARMSTRONG, Chicago, Ill., assignor to the International Gas and Fuel Company, same place. Filed Dec. 3, 1892. Serial No. 453,914. (No model.)



Claim.—1. An oil-burner comprising in combination a hollow body, a nozzle having threaded connection with the body and said body having threaded bosses for steam and oil supply connections, and a bridge with a passage therein axial with respect to the body, communicating with the steam-supply and discharging into the nozzle and an oil-duct in the bridge discharging obliquely into the nozzle above the steam-discharge, air-passages being formed between the bridge and the side walls of the body and opening into the nozzle, substantially as described.

2. An oil-burner having in combination a hollow body and a nozzle, said body having a bridge crossing the hollow thereof and said bridge having a steam-duct leading into one end thereof and discharging into the nozzle coaxially therewith and an oil-duct leading into its other end and discharging into the nozzle obliquely across the steam-discharge, lateral air-passages being formed between the bridge and the sides of the body and opening into the nozzle, substantially as described.

3. An oil-burner having in combination a hollow body and a discharge-nozzle having a screw-threaded connection therewith, said body having screw-threaded bosses, one projecting upwardly and the other downwardly and providing connections for oil and steam supply respectively, a vertical bridge crossing the hollow interior of the body and having an oil-duct therein discharging into the said nozzle obliquely across the axis thereof and a steam-passage discharging axially with respect to the said nozzle, and an air-induction nozzle having a screw-threaded connection with the body back of the bridge an air-passage being formed between the bridge and the body and communicating with the interior of the induction and discharge nozzles, substantially as described.

569,316. SHUTTLE FOR SEWING-MACHINES. HENRY A. BATES, Yonkers, N. Y. Filed June 27, 1895. Serial No. 554,188. (No model.)



Claim.—1. The combination with the shuttle having a cavity and a removable disk held firmly into such cavity by friction on its edges, of a removable disk fitting loosely into such cavity and having a central projecting sleeve with a tapering exterior surface adapted to receive and firmly hold by friction the paper tube of the thread-bobbin and to revolve with the same as the thread is drawn off, and a spring to press the exposed side of the thread-bobbin against the stationary disk within the shuttle, substantially as set forth.

2. The combination with a shuttle having a cavity with a stationary side against which the thread of the bobbin is adapted to rest, of a disk embracing one side of said bobbin and having a tubular sleeve which tightly holds by friction the tube of the thread-bobbin, and a pin in the shuttle for receiving loosely the disk and sleeve so that the latter are rotated together with the bobbin as the thread is drawn off, substantially as set forth.

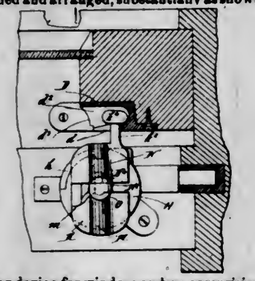
3. The combination with a shuttle having a cavity, of two removable disks held firmly in position by the friction of the edges, a concave disk having a central tapering projection adapted to receive and hold firmly the paper tube of a thread-bobbin, and a spring acting to press the thread of the bobbin against the internal surface of one of the removable disks, substantially as set forth.

4. The combination with the shuttle having a cavity with a stationary side against which the thread of the bobbin rests, of a removable disk having a centrally-projecting sleeve with a tapering exterior surface adapted to receive and hold firmly by friction the paper tube of the thread-bobbin and to be inserted with the bobbin into the cavity of the shuttle, and a spring acting upon the disk to press the thread of the bobbin against the interior of the shuttle to apply tension to the thread as the bobbin and disk are revolved, substantially as set forth.

5. The combination with a shuttle having a cavity for a thread-bobbin and an annular shoulder around the opening, of a removable disk adapted to be received into the cavity and rest at its edges against the shoulder, and having a spring formed of the metal of the disk acting to press one side of the thread-bobbin against the interior of the shuttle at the opposite side to the spring-disk, substantially as set forth.

569,317. LOCKING DEVICE FOR WINDOWS. EDWIN H. BEEKMAN, Plainfield, N. J. Filed Dec. 11, 1895. Serial No. 571,728. (No model.)

Claim.—1. A locking device for window-sashes, comprising two parts, one of which consists of a vertical plate which is secured to the side of the upper sash, and is provided with a vertical longitudinal chamber which opens at the bottom, and with a vertical slot in the front side thereof, which also opens at the bottom, and the other being composed of a circular housing which is secured to the lower sash, and in the outer side of which is mounted a sliding bolt which is adapted to operate in connection with a hole or opening formed in the window-frame, said circular housing being also provided with a sliding cross-head on which is mounted a sliding block, the inner end of said sliding block being provided with a lever which is pivotally connected therewith, and said sliding block being also operatively connected with said bolt, and said sliding cross-head being provided at its inner end with an arm which is adapted to enter the slot formed in the plate which is secured to the upper sash, said parts being constructed, combined and arranged, substantially as shown and described.



2. A locking device for window-sashes, comprising two parts, one of which consists of a vertical plate which is secured to the side of the upper sash, said plate being provided with a vertical chamber which opens inwardly at the lower end thereof, and with a vertical slot which communicates with said chamber and which also opens inwardly, at the lower end thereof, the other part being composed of a circular housing which is secured to the lower sash, and in the outer side of which is a sliding bolt, said circular housing being provided with a sliding cross-head on which is mounted a sliding block, which is provided with an angular block adapted to move in a slot formed in the bottom of said cross-head, said sliding cross-head being provided at its inner end with an arm which is adapted to enter the vertical slot in the plate secured to the upper sash, and on the outer end of which is formed a head which is adapted to enter the vertical chamber formed in said plate, and said angular block being provided with a shank which projects through the circular housing, and on the lower end of which is mounted a spring which operates in connection therewith, the lower end of said shank being provided with an arm which connects with a cross-head formed on said sliding bolt, and said sliding block being provided with a lever which is pivotally connected with the inner end thereof and which is adapted to be operated, substantially as shown and described.

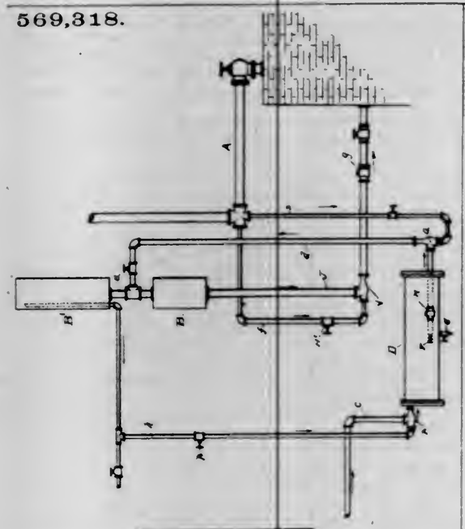
3. A locking device for window-sashes comprising a circular housing which is adapted to be secured to the lower sash, said housing being provided in the outer side thereof with a sliding bolt which is adapted to enter a hole or aperture in the window-frame, said housing being also provided with a sliding cross-head which is adapted to be turned thereon, and said cross-head being provided with a sliding block on which is formed, or with which is connected an arm which is adapted to operate in connection with a locking device secured to the upper sash, said sliding block being also in operative connection with said sliding bolt, and said block being also provided with a lever by means of which the parts are operated, said parts being constructed, combined and arranged, substantially as shown and described.

569,318. WATER-RETURN SYSTEM FOR STEAM-GENERATORS. ELIJAH B. BENHAM, Mystic, Conn., and JAMES MCALLISTER, Providence, R. I.; said Benham assignor to said McAllister. Filed Jan. 20, 1896. Serial No. 576,109. (No model.)

Claim.—1. In a water-returning apparatus, the combination of a stand-pipe having two chambers connected by a pipe, a receiving-chamber, a pipe connecting said receiving-chamber and the chambers of the stand-pipe, a pipe from the steam-main to the pipe connecting the receiving-chamber with the chambers of the stand-pipe, an ejector in said pipe from the steam-main arranged to discharge into the pipe connecting the receiving-chamber with the stand-pipe chambers, a pipe connecting the stand-pipe chambers and the boiler, an ejector in said pipe between the stand-pipe chambers and the boiler, and an auxiliary pipe from the steam-main arranged to discharge through said ejector, and an auxiliary pipe connecting the upper stand-pipe chamber and the receiving-chamber, an ejector in said auxiliary pipe arranged to discharge into said receiving-chamber, substantially as set forth.

2. In a water-returning apparatus, the combination of a stand-pipe having two chambers connected by a pipe, a receiving-chamber, a pipe connecting said receiving-chamber and the chambers of the stand-pipe, a pipe from the steam-main to the pipe connecting the receiving-chamber with the chambers of the stand-pipe, an ejector in said pipe from the steam-main arranged to discharge into the pipe connecting the receiving-chamber with the stand-pipe chambers, an auxiliary pipe connecting the upper stand-pipe chamber and the receiving-chamber, an ejector in said auxiliary pipe arranged to discharge into said receiving-chamber, substantially as set forth.

569,318.



569,319. ROD OR ROLLER SUPPORTING DEVICE. JACOB BERWANGER, Bellevue, Ky. Filed Apr. 18, 1896. Serial No. 588,069. (No model.)



Claim.—1. A rod or roller supporting device, consisting of the cage E, consisting of the part E^2, parts E^3, E^3, outlying flanges E^4, E^4, the back E^2 being cut away relatively to the sides E^3, E^3, forming the recess K in combination with the adjustable immediate support H, composed of the basal part H^2 and arm H^3, of a size to enter the recess K aforementioned, and the basal part adapted to be received within the cage, and a set-screw for setting the adjustable portion H in relation to the cage E, substantially as and for the purposes specified.

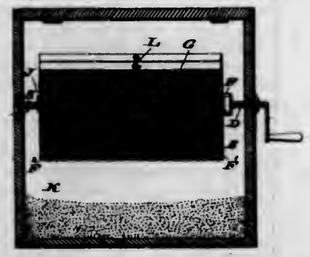
2. The combination of the cage having back E^2, sides E^3, E^3, outlying flanges extending from the base of the sides outwardly and provided with the set-screw J, J^3, and the plate D laid against the bottom of these flanges and secured thereto, the back E^2 being cut back in reference to the sides E^3, E^3, and forming the recess K, and the sliding adjustable part H, consisting of the base part sliding within the cage and upon the plate D, and the arm H^3 connected to the basal part, the arm H^3 adapted to enter the recess K as the basal part H^2 is slid away from the rod or roller, to be upheld, substantially as and for the purposes specified.

3. The combination of a rod or roller, and two supporting devices one at each end of said rod or roller, each device consisting of the cage E, having outlying flanges E^4 and plate D secured to the said flanges, the back of the cage being cut away forming recess K, and the basal sliding portion H^2, and arm H^3 of said portion H^2, the arm H^3 adapted to be received into the recess K, and the set-screw J, J^3, screwed through the cage, and against the basal portion H^2, substantially as and for the purposes specified.

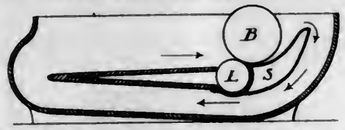
569,320. SIFTER FOR ASHES, &c. JACOB BOHOWITZ, Philadelphia, Pa. Filed Mar. 21, 1896. Serial No. 584,261. (No model.)

Claim.—1. In an ash-sifter, a screen having a gudgeon on one end, on which said screen is longitudinally movable, a socket on the other end, and a crank-shaft journaled in the wall of an inclosing box and provided with a head removably fitting in said socket, and means connected with said gudgeon for retaining said screen in fixed position thereon, said parts being combined substantially as described.

2. An ash-sifter consisting of a box, a screen having on one end a gudgeon on which said screen is longitudinally movable, keys for retaining said screen in place on said gudgeon, a socket secured to the other end of said screen, a crank-shaft journaled in the wall of the said box and having a head removably engaged in said socket, said parts being combined substantially as described.



569,321. MACHINE FOR REDUCING PAPER-STOCK TO PULP. AUGUSTUS P. BROWN, Fort Madison, Iowa. Filed Jan. 12, 1895. Serial No. 534,645. (No model.) Patented in England Jan. 23, 1895, No. 1,615, and in France Jan. 23, 1895, No. 244,564.



Claim.—1. In a pulp-machine the combination of a tank, a midfeather located above the bottom of the tank and below the pulp-line thereof so as to divide its interior into two passages located one above the other, a horizontal beater-roll, a roll located beneath the beater-roll and serving as a revolving bed-plate, and means for revolving said rolls in opposite directions, said rolls being located with their bite below the pulp-line and opposite one of the passages aforesaid and said midfeather terminating at one end in proximity to one of the rolls and at the other end a sufficient distance from the end of the tank to leave a space for circulation, substantially as set forth.

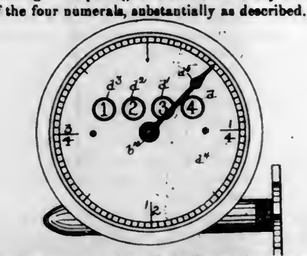
2. In a pulp-machine the combination of a tank, a midfeather located above the bottom of the tank and below the pulp-line thereof so as to divide its interior into two passages located one above the other, a horizontal beater-roll, a roll located beneath the beater-roll and serving as a revolving bed-plate, and means for revolving the rolls in opposite directions, the revolving bed-plate being located opposite one end of the midfeather so as to bring the bite of the rolls below the pulp-line and opposite the end of the upper circulating-passage, a space being left between the other end of the midfeather and the end of the tank for circulation, substantially as set forth.

3. In a pulp-machine the combination of a tank, a midfeather located above the bottom of the tank and below the pulp-line thereof so as to divide its interior into two passages located one above the other, a horizontal beater-roll, a roll serving as a revolving bed-plate located beneath the beater-roll and opposite one end of the midfeather so as to be between the upper and lower circulating-passages, means covering the lower side of the revolving bed-plate and means for revolving the rolls in opposite directions, the bite of the rolls being located below the pulp-line and opposite one end of the upper passage, and space being left between the midfeather and the end of the tank for circulation, substantially as set forth.

4. In a pulp-machine the combination of a tank, a horizontal beater roll, a roll located beneath the beater-roll and serving as a revolving bed-plate, a midfeather terminating at one end in proximity to the revolving bed-plate and at the other end some distance from the end of the tank, said midfeather being located upon the receiving side of the rolls, above the bottom of the tank and below the pulp-line thereof so as to divide the interior of the tank into two passages located one above the other, a backfall located opposite the revolving bed-plate and on the discharge side of the rolls, and means covering the lower portion of the revolving bed-plate, substantially as set forth.

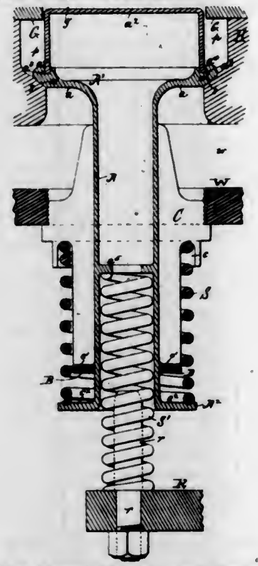
569,322. CYCLOMETER. CHARLES H. CLAWSON, Everett, Mass., assignor to John W. Wilson, Boston, Mass. Filed Sept. 5, 1895. Serial No. 561,512. (No model.)

Claim.—1. A cyclometer comprising the following instrumentalities, viz: a containing-case of substantially small diameter provided with a dial having four openings arranged in a substantially straight line, four indicating-disks located within the casing and arranged in a circle, one behind each opening, and each disk being provided with indications or numerals arranged at an angle to a radial line through the center of the numeral, the two outside or endmost disks being located in a different plane from the two intermediate disks, and gearing to effect progressive rotation of the said disks, to thereby bring each numeral on each disk opposite its opening in the dial whereby all the numerals will be substantially vertical to a transverse line through the openings in the dial, to thereby obtain a straight reading of the four numerals, substantially as described.



2. A cyclometer comprising the following instrumentalities, viz: a containing-case of substantially small diameter, a plate a^5 located in said case, screws inserted through the bottom of the case to firmly secure the plate a^5 within the said case, studs erected upon the plate a^5 in the arc of a circle, sleeves upon the said studs, four indicating-disks mounted on said sleeves with the two outside or endmost disks in a different plane from the two intermediate disks, each disk being provided with numerals or indications arranged at an angle to a radial line through the center of the numeral, gearing secured to the said sleeves to effect progressive rotation of the said indicating-disks, a dial d^4 within the casing having four holes or openings arranged in a straight line and with each of which cooperates an indicating disk to obtain a straight reading of the four numerals brought in line with the said openings, substantially as described.

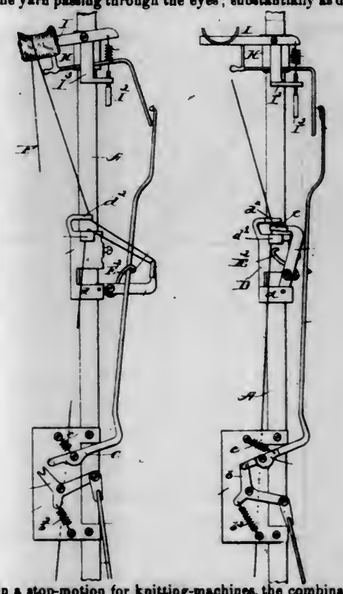
569,323. INLET-VALVE FOR AIR-COMPRESSORS. HUGH V. CONRAD, North Tarrytown, N. Y. Filed Nov. 9, 1894. Renewed Mar. 4, 1896. Serial No. 582,274. (No model.)



Claim.—In an inlet-valve for the compression-cylinder of an air-compressor or equivalent pump, the combination of a hollow valve-stem, a casing in which said stem has bearing and longitudinal play, a valve-body composed of a flared or flanged head on said stem, externally adapted to fit to the valve-seat in the port-recess in the cylinder-head, and a separate hollow cap provided with a bevel-flange at its rim adapted to seat in a corresponding groove in the face of the stem-head and to be held thereto by a lip provided on said face of said stem-head, together with a controlling-spring mounted on said casing and engaging said valve-stem, substantially as and for the purpose set forth.

569,324. STOP-MOTION FOR KNITTING-MACHINES. SAMUEL CREAGER, Hagerstown, Md., assignor of one-half to Charles S. Emmert, same place. Filed Feb. 7, 1896. Serial No. 578,382. (No model.)

Claim.—1. In a stop-motion for knitting-machines, the combination with the belt or clutch shifter operating lever and the latch for holding said lever in normal position having the operating rod or arm, of the gravitating trip having the operating-arm for cooperation with the arm or rod on the latch, guide-eyes through which the yarn passes and an eye on the trip adapted to be held in alinement therewith by the yarn passing through the eyes; substantially as described.



2. In a stop-motion for knitting-machines, the combination with the clutch or belt shifter operating lever and the latch for holding said lever in normal position with the rod or arm connected therewith for operating the same; of a tension-trip held out of engagement with said operating rod or arm by spring-pressure; substantially as described.

3. In a stop-motion for knitting-machines, the combination with the belt or clutch shifter operating lever and the latch for holding the same in normal position having the operating arm or rod, of the gravitating trip having the curved operating-arm for cooperation with the arm or rod on the latch, guide-eyes through which the yarn passes and an eye on the trip adapted to be held in alinement therewith by the yarn passing through the eyes; substantially as described.

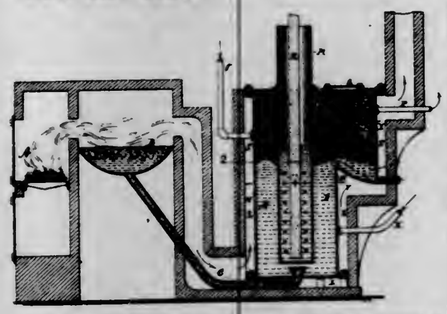
4. In a stop-motion for knitting-machines, the combination with the standard, the pivoted clutch or belt shifter operating lever, the pivoted latch for holding said lever in normal position having the upwardly-extending rod or arm, of a bracket on the standard having guide-eyes for the yarn, a trip pivoted to said bracket adapted to engage the latch-operating arm or rod to release the latter and having an eye adapted to be held in alinement with the guide-eyes by the yarn passing through the same; substantially as described.

5. In a stop-motion for knitting-machines, the combination with the clutch or belt shifter operating lever, the spring-actuated pivoted latch cooperating therewith to hold the lever in normal position and the operating arm or rod connected with said latch and having the cross-arms thereon, of the guide-eyes, the pivoted trip having an eye adapted to be held in alinement with the guide-eyes by the yarn, and the curved operating-arm on the trip adapted to strike the cross-arm when the yarn is broken and the trip operated, substantially as described.

6. In a stop-motion for knitting-machines, the combination with the clutch or belt shifter operating lever and the spring-actuated latch for holding said lever in normal position, of the standard, the bracket mounted on said standard, the tension-lever pivotally mounted on said bracket and the kicker rigidly connected with said tension-lever; substantially as described.

7. The combination with the standard of the bracket secured therein, the clutch or belt shifter operating lever pivotally mounted on said bracket and the latch for holding said lever in normal position also mounted on said bracket and having the upwardly-extending operating rod or arm, the bracket mounted on the standard near the top thereof and having a pivoted tension-lever thereon with a kicker connected with said lever and adapted to cooperate with the latch-operating rod or arm when the lever is depressed by the tension of the yarn; substantially as described.

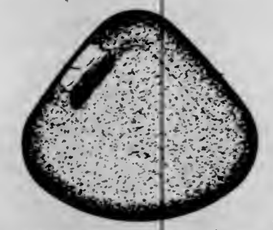
569,325. PROCESS OF AND APPARATUS FOR PRODUCING CYANIDS. PAUL DANCKWARDT, New York, N. Y. Filed July 1, 1896. Serial No. 597,722. (No model.)



Claim.—1. The process of producing cyanids which consists in melting the chlorid of an alkali or alkali-earth metal, introducing into the molten bath carbon and nitrogen, electrolyzing the bath while in contact with said carbon and nitrogen, and continuously removing the cyanid so formed from the action of the electric current, substantially as described.

2. An apparatus for producing cyanids which consists of a metallic vessel forming a negative pole, a positive pole within the vessel, a perforated tube surrounding said positive pole, means for heating chlorid and a conduit therefrom leading to the metallic vessel, and a pocket in the side of the vessel and having a restricted communication therewith, and remote from said conduit, substantially as described.

569,326. BICYCLE-SADDLE. ALFRED C. DRURY and GEORGE R. SIMS, Canton, N. Y. Filed Mar. 25, 1896. Serial No. 584,803. (No model.)



Claim.—1. A saddle for cycles comprising a suitable base, a flexible cover secured to and extending over said base, padding inserted between the base and its cover and terminating in rear of the front edge of the saddle-base, and an inflatable tube or sack located at the front edge of the saddle, between the base and its cover and in the hollow or cavity made by the termination of the padding, substantially as described.

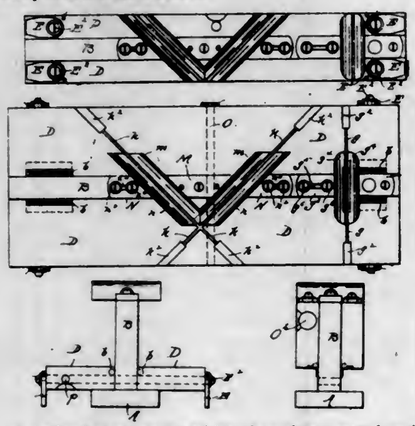
2. A saddle for cycles, comprising a base curving upward toward its rear edge and having the reinforcing-strips at its front and rear edges, the front strip being formed with an offset and having a notch therein, a flexible cover extending over the base of the saddle, the padding interposed between the base and cover and terminating short of the front edge of the saddle, and the inflatable tube or sack arranged in advance of the padding and between the base and cover and having its valve-stem arranged in the notch of the front reinforcing-strip, all arranged substantially as and for the purpose described.

569,327. MITER-BOX. JOHN ELLIS, Jersey City, N. J., assignor of one-half to Charles H. Van Pelt, same place. Filed Apr. 16, 1896. Serial No. 587,879. (No model.)

Claim.—1. A miter box or case, comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, substantially as shown and described.

2. A miter box or case, comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, and said central vertical plate being provided on its upper edge or side with two short plates which are secured thereto, at each side of said transverse slot, and each of which is provided with a jaw, one of which is adjustable, and also with similar plates arranged at the sides of the diagonal slots to which jaws are secured, one of said jaws in connection with each slot being adjustable, and the hinged side plates being provided on their upper or inner surfaces with transverse and diagonal grooves which correspond with said slots, substantially as shown and described.

3. A miter box or case comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, and said central vertical plate being provided on its upper edge or side with two short plates which are secured thereto, at each side of said transverse slot, and each of which is provided with a jaw, one of which is adjustable, and also with similar plates arranged at the sides of the diagonal slots to which jaws are secured, one of said jaws in connection with each slot being adjustable, substantially as shown and described.

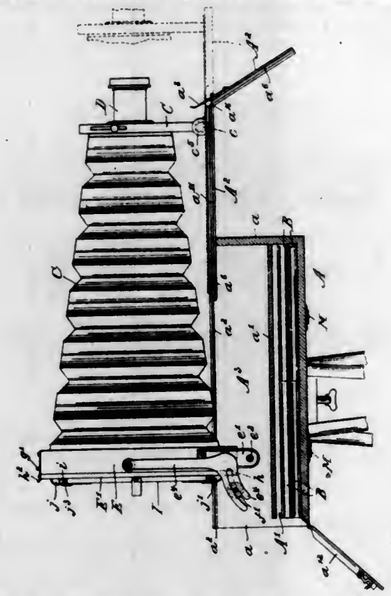


4. A miter box or case comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, and said central vertical plate being provided on its upper edge or side with two short plates which are secured thereto, at each side of said transverse slot, and each of which is provided with a jaw, one of which is adjustable, and also with similar plates arranged at the sides of the diagonal slots to which jaws are secured, one of said jaws in connection with each slot being adjustable, and the hinged side plates being provided on their upper or inner surfaces with transverse and diagonal grooves which correspond with said slots, substantially as shown and described.

5. A miter box or case comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, and said central vertical plate being provided on its upper edge or side with two short plates which are secured thereto, at each side of said transverse slot, and each of which is provided with a jaw, one of which is adjustable, and also with similar plates arranged at the sides of the diagonal slots to which jaws are secured, one of said jaws in connection with each slot being adjustable, and the hinged side plates being provided on their upper or inner surfaces with transverse and diagonal grooves which correspond with said slots, and said side plates and said central vertical plate being provided with a transverse bore which is adapted to receive a bolt or rod, substantially as shown and described.

6. A miter box or case comprising a base-plate, a central vertical longitudinal plate, and two side plates which are hinged thereto, said central vertical plate being provided with a transverse slot at or near one end thereof, and with two diagonal slots which, if projected would intersect each other, and said central vertical plate being provided on its upper edge or side with two short plates which are secured thereto, at each side of said transverse slot, and each of which is provided with a jaw, one of which is adjustable, and also with similar plates arranged at the sides of the diagonal slots to which jaws are secured, one of said jaws in connection with each slot being adjustable, and the hinged side plates being provided on their upper or inner surfaces with transverse and diagonal grooves which correspond with said slots, and said side plates and said central vertical plate being provided with a transverse bore which is adapted to receive a bolt or rod, and said side plates being also provided with legs or supports which are pivotally connected therewith, substantially as shown and described.

569,328. PHOTOGRAPHIC CAMERA. JOSEPH M. ELLIOT, Philadelphia, Pa. Filed Feb. 10, 1896. Serial No. 578,676. (No model.)



Claim.—1. A camera holder and support, consisting of a box provided with an internal partition dividing the same into two compartments, one to receive a camera and its accessories and the other plate-holders, a removable two-part lid adapted to be slid in the sides of said box and provided with a rack, and a pinion connected with the bellows of said camera and adapted to be extended by the travel of said pinion in connection with said rack, substantially as and for the purposes set forth.

2. A holder and support for a camera, consisting of an oblong box divided by an internal partition into two compartments, one to receive plate-holders and the other a camera and its accessories, said box provided with a hinged drop and a removable lid adapted to be slid in the sides of said box and provided with a rack adapted to engage a pinion of the bellows-frame of said camera, substantially as and for the purposes set forth.

3. A holder and support for a camera, consisting of a box provided with an internal partition dividing the same into two compartments, one to receive and conceal a camera and its accessories and the other to receive plate-holders, and a lid or cover adapted to be slid in the sides of said box and provided on one side with a rack, said lid or cover provided also with spring-clamps so as to permit of the fall of said lid or cover, substantially as and for the purposes set forth.

4. A holder and support for a camera, consisting of a box internally divided into two compartments by a partition, one to receive a camera and the other plate-holders, said box provided with an end flap and a removable lid or cover having on one side a rack, said lid or cover hinged at or beyond the center and provided with spring clamping-fingers adapted to engage pins or buttons for holding the same rigidly and to permit of the fall of the same as required, substantially as and for the purposes set forth.

5. A holder and support for a camera, consisting of a box internally divided by a partition into two compartments and having a hinged end flap, a removable lid or cover adapted to be slid in the sides of said box, a camera pivotally connected with the sides of said box and provided with slotted fingers adapted to engage clamps for maintaining said camera in a rigid operative position and means for extending the bellows of said camera in connection with the removable lid of said box, substantially as and for the purposes set forth.

6. A holder and support for a camera, consisting of a box divided into two internal compartments, a removable spring-clipped hinged lid adapted to be slid in the sides of said box, a camera pivotally supported to uprights secured to the sides of said box and having curved slotted arms extending therefrom and adapted to engage clamping means connected with the sides of said box, substantially as and for the purposes set forth.

7. A camera holder and support provided with channeled sides and with a lid or cover provided with a rack, a camera pivotally supported by standards to the sides of said holder and having curved slotted fingers engaging clamps of said holder, a pinion adapted to mesh with said rack and a rod adapted to actuate said pinion and to fold inwardly, when not in operative position, substantially as and for the purposes set forth.

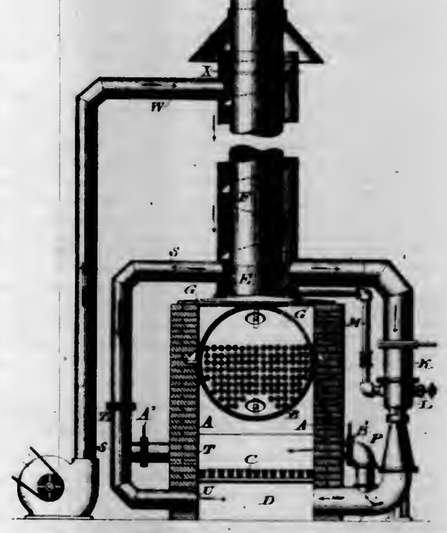
8. The combination, with a holder and support of the character described, of a camera pivotally supported internally therein and adapted to be concealed within the same and to be lifted therefrom into an operative position in connection with a rack and a pinion, said rack connected with a removable cover and the pinion with the lens and bellows frame of the camera, said pinion mounted on a shaft, one portion of which is extended and hinged to another portion, and means for establishing a rigid connection of the hinged portions of said shaft with one another for actuating said pinion in connection with said rack, substantially as and for the purposes set forth.

9. The combination, with a holder and support of the character described, of a camera and its accessories adapted to be concealed within said holder, a partition separating the camera from a compartment for the reception of plate-holders, an end falling flap, a removable lid in channeled engagement with said holder and having the forward portion thereof hinged and adapted to drop upon the release of means connected therewith and with the rear portion of said lid or cover, substantially as and for the purposes set forth.

10. The combination, with a holder and support, of a camera provided with a rear frame resting upon a ledge and provided with spring-clamps for holding the same in required position, a ground or focusing glass engaging said frame and spanning clamps j' and j', secured at the middle to said rear frame and having other portions free and provided at the ends with projecting fingers j^3 and j^3, adapted to bear normally with a spring-tension against the frame of said ground or focusing glass, substantially as and for the purposes set forth.

11. The combination, with a holder and support of the character described, of a camera pivotally supported therefrom and provided with depending slotted fingers engaging clamps, a spring-latch connected with the forward end internally of said holder and adapted to engage a loop on the top of said camera-frame, substantially as and for the purposes set forth.

569,329. APPARATUS FOR IMPROVING COMBUSTION IN FURNACES. THOMAS M. EYNON, Philadelphia, Pa. Filed Dec. 27, 1895. Serial No. 573,538. (No model.)



Claim.—1. A furnace having a grate, a flue provided with a surrounding jacket forming an intervening air-space, a spiral plate located in said air-space, pipes leading from said jacket and having branches leading into said furnace above and below said grate, gates in said pipes, a boiler in said furnace having a steam-pipe leading therefrom, and a steam-jet connected with said steam pipe, and discharging into one of said former-mentioned pipes, said parts being combined substantially as described.

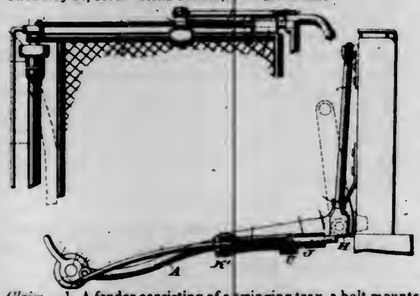
2. A furnace having a grate, a flue provided with a surrounding jacket forming an intervening air-space, a hood on said flue covering the top of said air space, a spiral plate located in said air-space, pipes

leading from said jacket and having branches leading into said furnace above and below said grate, gates in said pipes, a boiler in said furnace having a steam pipe leading therefrom, and a steam jet connected with said steam-pipe and discharging into one of said former-mentioned pipes, said parts being combined substantially as described.

3. A furnace having a grate, a flue provided with a surrounding jacket forming an intervening air-space, a spiral plate located in said air-space, pipes leading from said jacket and having branches leading into said furnace above and below said grate, gates in said pipes, an air-blast pipe leading into said jacket, a boiler in said furnace having a steam-pipe leading therefrom, and a steam-jet connected with said steam-pipe, and discharging into one of said former-mentioned pipes, said parts being combined substantially as described.

4. A furnace having a grate, a flue provided with a surrounding jacket forming an intervening air-space, a hood on said flue covering the top of said air-space, a spiral plate located in said air-space, pipes leading from said jacket and having branches leading into said furnace above and below said grate, gates in said pipes, an air-blast pipe leading into said jacket, a boiler in said furnace having a steam pipe leading therefrom, and a steam-jet connected with said steam-pipe, and discharging into one of said former-mentioned pipes, said parts being combined substantially as described.

569,330. CAR-FENDER. CHRISTIAN FINK, Philadelphia, Pa.
Filed May 26, 1896. Serial No. 593,137. (No model.)



Claim.—1. A fender consisting of a swinging tray, a bolt mounted on the same, a stationary part with which said bolt is adapted to engage, and a swinging trigger on the tray connected with said bolt for withdrawing the same, and permitting the tray to drop, said bolt controlling the primary position of said tray, substantially as described.

2. A swinging tray, arms on which said tray is journaled, and a frame to which said arms are pivoted, said arms having vertical lips adapted to abut against said frame, and horizontal lips adapted to have said tray abut thereagainst, substantially as described.

3. In a fender, a frame adapted to be secured to a car and having a lug thereon, arms pivotally attached to said frame, a tray having journals with bearings in said arms a buffer on said tray, a trigger mounted on said tray, a spring-controlled bolt connected at one end with said trigger and at the other end engaging said lug, said bolt being guided in the journals of said tray, and said trigger having a cross-bar extending in front of and above the buffer of the tray.

4. A tray, studs on the forward end thereof, pilot-wheels on said studs, and a yielding cushion connected at its ends with said studs, and set forward from said tray with a space between the parts, so that when it is struck, it will yield rearwardly, and close said space, substantially as described.

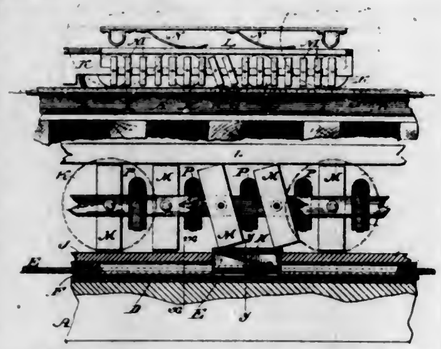
569,331. ELECTRIC RAILWAY. ADELOS GORTON, Philadelphia, Pa. Filed Dec. 31, 1890. Renewed May 11, 1894. Serial No. 510,929. (No model.)

Claim.—1. In an electric railway, a chair with a longitudinal recess, a metal sleeve in said recess, a section of an electric wire in said sleeve and insulated therefrom, transmitters connected with said wire, magnets operating said transmitters and a cover for said recess forming a guide for the current-gatherer, substantially as described.

2. In an electric railway, a chair with a longitudinal recess containing a metal sleeve inclosing a section of an electric wire insulated therefrom, and provided with transmitters, magnetically operated to connect and form the electric circuit, with a cover forming a guide-rail for the current-gatherer, substantially as described.

3. In an electric railway, a holder normally in an electric circuit, swinging brushes carried by said holder and normally electrically insulated therefrom but adapted to contact therewith, and magnets carried by said holder, said parts being combined substantially as described.

4. In an electric railway, a chair with a longitudinal recess, a metal sleeve in said recess, a section of an electric wire in said sleeve and insulated therefrom, transmitters connected with said wire, a holder having magnets operating said transmitters, and a cover for said recess forming a guide for the current-gatherer, substantially as described.

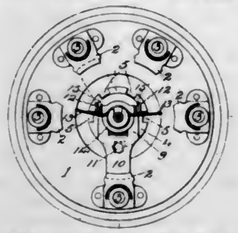


5. In an electric railway, a chair with a longitudinal recess containing a metal sleeve inclosing a section of an electric wire insulated therefrom, and provided with transmitters magnetically operated to connect with the sleeve when the brush is upon it, and form the current-circuit, with a cover forming a guide-rail for the current-gatherer, substantially as described.

6. In an electric railway, a current-gatherer having brushes normally without any electric connections and insulated from one another, adapted to be forced into motor-contact when making supply-contact, as described.

7. In an electric railway, a current-gatherer, having brushes normally without any electric connections, and insulated from one another.

569,332. SNAP-SWITCH. GERALD W. HART, Hartford, Conn., assignor to the Hart & Hegeman Manufacturing Company, same place. Filed July 9, 1896. Serial No. 598,517. (No model.)



Claim.—1. In a snap-switch, in combination, a base, contacts secured to the base, a notched plate on the base, a spindle rotarily supported by the base, a latch movable longitudinally and rotarily independently of the spindle which supports it said latch having a part adapted to engage the notches in the plate, a conducting-pole carried by the latch, a part connected with the spindle and adapted to engage and move the latch, and a single latch throwing and locking spring that is engaged by a part connected with the spindle and made tense when the spindle is rotated and that engages a part connected with the latch and tends to hold the latch against longitudinal movement when the spring is being made tense, whichever direction the spindle is rotated, substantially as specified.

2. In a snap-switch, in combination, a base, contacts secured to the base, a lock on the base, a spindle rotarily supported by the base, a latch movable longitudinally independently of the spindle and having a part adapted to engage the lock, a conducting-pole carried by the latch, a part connected with the spindle and adapted to engage the latch and move it longitudinally, and a single latch throwing and locking spring supported by the spindle and having outwardly-extending ends, one of which ends engages on one side of the spindle a part connected with the latch and a part connected with the spindle and the other of which ends engages on the other side of the spindle a part connected with the latch and a part connected with the spindle, so that as the spindle is rotated in either direction tension is given the spring by moving one end, the other end being held in a manner that tends to hold the latch against longitudinal movement, substantially as specified.

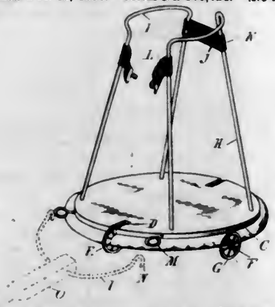
3. In a snap-switch, in combination, a base, contacts secured to the base, a notched plate attached to the base, a spindle rotarily supported by a part of the plate, a latch movable about the spindle and having a part adapted to engage the notches in the plate, a conducting-pole carried by the latch, a part connected with the spindle and adapted to engage and move the latch, and a single latch throwing and locking spring supported by the spindle and having an end that is engaged by a part connected with the spindle so that when the spindle is rotated the spring is made tense, and an end that engages a part connected with the latch so that when the spring is made tense for throwing the catch it also tends to keep the latch engaged with the lock, substantially as specified.

4. In a snap switch, in combination, a base, contacts secured to the base, a lock on the base, a spindle rotarily supported by the base, a latch movable about the spindle and having a part adapted to engage the lock, said latch being extended to form a movable pole of the switch, a part connected with the spindle and adapted to engage and move the latch, and a single latch throwing and locking spring supported by the spindle and having its ends extending outwardly in opposite directions, one of which ends is engaged by a part connected with the latch on one side when the spindle is rotated in one direction and the other of which ends is engaged by another part connected with the latch on the opposite side when the spindle is rotated in the opposite direction, substantially as specified.

5. In a snap-switch, in combination, a base, contacts secured to the base, a lock on the base, a spindle supported by the base, a latch movable about the spindle and having a part adapted to engage the lock, a conducting-pole carried by the latch, a part connected with the spindle and adapted to engage and move the latch, a pair of arms projecting from the latch, a pair of arms projecting from a part connected with the spindle, and a spring supported by the spindle and engaging the arms, substantially as specified.

6. In a snap-switch, in combination, a base, contacts secured to the base, a notched plate attached to the base, a spindle supported by a hub of the notched plate, a latch with a longitudinal and rotary movement independent of the spindle and having a part adapted to engage the notches of the plate, a cam secured to the spindle and adapted to engage a part of the latch and move it in one direction, a pair of arms projecting from the latch, a pair of arms projecting from a plate secured to the spindle, and a spring supported by the spindle with its ends normally engaging the arms of the latch so as to hold the latch against the cam, said spring being arranged to be engaged by the arms projecting from the plate secured to the spindle, substantially as specified.

569,333. DOLL-WALKER. HENRIETTA B. HINCKLEY, Waterbury, Conn. Filed Feb. 18, 1896. Serial No. 579,721. (No model.)

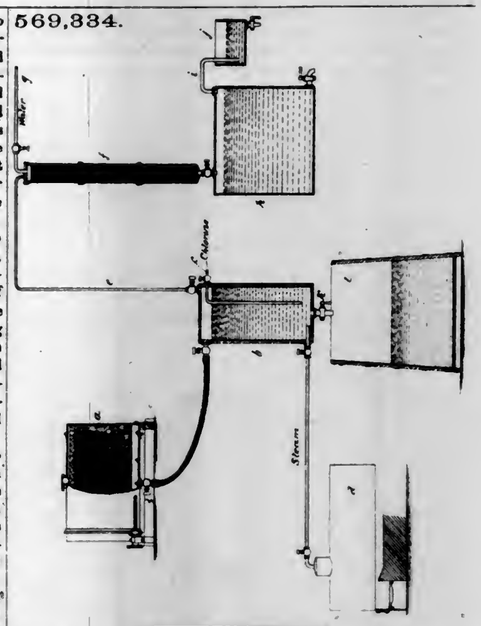


Claim.—A doll-walker comprising a base C having the slots D, the wheels E journaled in the slots, the transverse axle F, the wheels G at the ends of the axle, the inverted-U-shaped inclined frame H on top of the base having the curved horizontal bearing I at the top, the strap J connecting the rear vertical standards and vertically adjustable thereon as described and the straps L with suitable adjusting connection for connecting the front standards, the parts arranged as and for the purpose described.

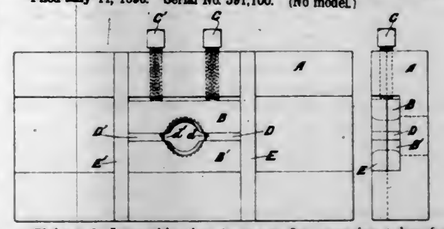
569,334. PROCESS OF EXTRACTING GOLD. BERTRAND C. HINMAN, New York, N. Y., assignor to the Gold and Bromine Separating Company, same place and West Virginia. Filed Nov. 15, 1895. Serial No. 569,035. (No specimens.)

Claim.—The process of extracting gold from ore, which consists in dissolving the precious metals by bromin chlorid, adding chlorin to the liberated bromin, separating the bromin chlorid thus formed from the solution in the form of vapor, condensing such vapor, and precipitating the gold, substantially as specified.

569,334.



569,335. DRAW-PLATE. JAMES HUDSON, Birmingham, England. Filed May 11, 1896. Serial No. 591,100. (No model.)



Claim.—1. In combination, in means for removing tubes from mandrels, a pair of non-rotary dies having curved bearing-surfaces and arranged with laterally-extending openings between them, and distance-pieces in said openings between the dies, substantially as described.

2. The combination of a block A fitted with adjustment-screws C C', of the two die parts B B' having distance-pieces D D' interposed between them and with spaces *d d'* on each side, substantially as set forth.

569,336. ELEVATOR ATTACHMENT. EBENEZER C. JENKINS, Shrewsbury, Mass. Filed Nov. 2, 1895. Serial No. 567,685. (No model.)

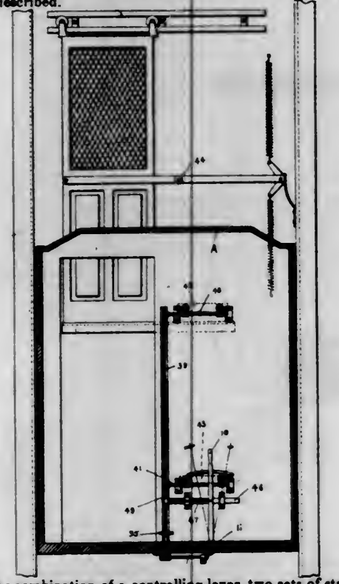
Claim.—1. The combination of controlling ropes or cables, a movable device for drawing up on one rope while relaxing the other rope, and a compensating device for automatically equalizing the action of the movable device so that the amount of rope drawn up on one cable by the combined action of the movable device and the compensating device will be equal to the amount let out on the other rope, substantially as described.

2. The combination of controlling ropes or cables connected at their lower ends to positively operate a motor-controlling device, and at their upper ends to fixed supports, a movable device on the elevator-car for drawing up on one rope while relaxing the other rope, and a compensating device also carried by the car for equalizing the action of the movable device and for keeping the ropes taut, substantially as described.

3. The combination of controlling-ropes, guide-pulleys mounted on the car, an oscillating take-up device, and means for shifting the guide-pulleys to compensate for the action of the take-up device and to keep the ropes taut, substantially as described.

4. The combination of controlling-ropes, guide-pulleys mounted on the car, an oscillating take-up device, and a cam for shifting the guide-pulleys, substantially as and for the purpose set forth.

5. The combination of controlling-ropes, a controlling-lever, an oscillating arm, take-up pulleys journaled on said arm, guide-pulleys carried by slides, a cam for actuating said slides, and a sector carried by said oscillating arm and arranged to actuate said cam, substantially as described.



6. The combination of a controlling-lever, two sets of stationary cams, one set of cams being arranged to stop the elevator-car opposite intermediate landings, and the second set of cams being arranged to stop the elevator-car near the ends of its run, an arm turning with said controlling-lever and located in position to normally engage with the cams for stopping the car at the ends of its run, and means for moving said arm into position to engage with the other set of cams, substantially as described.

7. The combination of an elevator-car, a controlling mechanism mounted in said car, a series of cams for stopping the car opposite various landings, an arm for actuating said controlling mechanism normally located in position not to engage with said cams, and cams for stopping the car at the end of its run, said stopping-cams being arranged to engage with the arm when in its normal position, substantially as described.

8. The combination of an elevator-car, a controlling-lever mounted in said car, a door leading into the elevator-well, a catch or trigger actuated by said controlling lever, and arranged to hold the door open while the car is opposite the landing and to release said door when the controlling-lever is shifted to start the car in either direction, substantially as described.

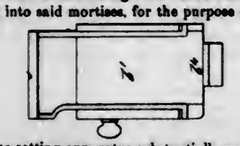
9. The combination of an elevator-car, a controlling-lever mounted in said car, a door leading into the elevator-well, foot-controlled connections for automatically opening said door, a catch or trigger for holding the door open, said catch or trigger being arranged to be released when the controlling-lever is shifted from its central position, substantially as described.

10. The combination of an elevator-car, a controlling-lever mounted in said car, foot-controlled connections for automatically stopping the elevator-car and for automatically and simultaneously opening an elevator-door, and a catch or trigger for holding the door open, said catch being arranged to be released when the controlling-lever is shifted from its central position, substantially as described.

11. The combination of an elevator-car, a controlling lever mounted in said car, a vertically-movable spring-pressed rod connected to automatically open the door leading into the elevator-well, a slide having a catch or trigger for engaging a projection upon the vertically-movable, spring-pressed rod, the parts being arranged to form a catch for holding the door open while the car is opposite the landing, and for releasing said door when the controlling-lever is shifted, substantially as described.

569,337. TYPE-SETTING APPLIANCE. LOUIS K. JOHNSON and ABBOT A. LOW, Brooklyn, N. Y., assignors to the Alden Type Machine Company, New York, N. Y. Filed Jan. 30, 1896. Serial No. 577,440. (No model.)

Claim.—1. In type-setting apparatus substantially such as described the combination of the bed-plate formed with a series of mortises, and a series of interchangeable channel-holders formed with tenons fitting into said mortises, for the purpose described.



2. In type-setting apparatus substantially such as described the bed-plate formed with a series of mortises, and with a series of pusher-grooves, the interchangeable channel-holders formed with the tenons fitting into said mortises, and a series of pusher-blades, and mechanism for reciprocating them, substantially in the manner and for the purpose described.

3. In combination with a type-channel holder an integral front and rear guard arranged substantially as described.

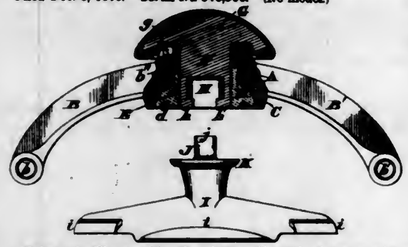
4. In combination with a channel-holder, an integral front and rear guard, and means for adjusting said duplex guard longitudinally with relation to the type-channel substantially in the manner described.

5. In combination with a channel-holder and type-channel, a type-guard formed with a lateral arm for the support of the channel on the open side of the holder substantially in the manner described.

6. In combination with a type-channel holder open on one side, a front and rear type-guard formed with a connecting-bar extending across the open side of the holder and acting as a support for the channel on that side of the holder, substantially in the manner described.

7. In combination with a type-channel holder open on one side and formed with a tenon for insertion in a mortise on the supporting-bed, a bar for supporting the channel on the open side of the holder said supporting bar being situated above the top of the holder a distance greater than the projection of the tenon by which the holder is held upon the bed, for the purpose and substantially in the manner described.

569,338. TROLLEY-WIRE HANGER. WILLIAM S. KLEINGER, Bantam, Ohio, assignor to the Kleinger-Iron Company, Cincinnati, Ohio. Filed Feb. 3, 1896. Serial No. 578,500. (No model.)



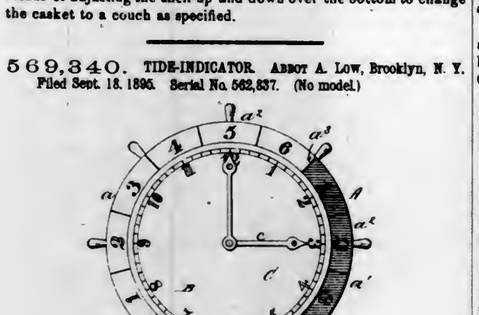
Claim.—1. The combination, in a trolley-wire hanger, of a yoke; an insulated member applied thereto, and having a vertical chamber with a pair of inclined bearings at its lower end; and a line-wire holder provided with a pair of inclined lugs that engage over said bearings, for the purpose described.

2. The combination, in a trolley-wire hanger, of a yoke; an insulated member F applied thereto, and having a vertical chamber H with a pair of inclined bearings h h', at its lower end; a line-wire holder I having a pair of inclined lugs j j', that engage over said bearings; and a locking device so applied to said member F as to prevent retrograde turning of said stem, in the manner herein described.

3. The combination, in a trolley-wire hanger, of a yoke; an insulated member F applied thereto, and having a vertical chamber H, with a pair of inclined bearings h, h', at its lower end; a line-wire holder I having a pair of inclined lugs j, j', that engage over said bearings; a perforation in said wire-holder; and a split spring-key L that passes through said perforation and bears against the larger end of either one of said bearings h or h', all as herein described, and for the purpose stated.

569,339. BURIAL-CASKET. WILLIAM C. KNAPP, Kalamazoo, Mich., assignor to the Model Casket Company, same place. Filed June 18, 1896. Serial No. 595,964. (No model.)

Claim.—1. In a burial-casket, the combination of the shell A; the bottom C movably supported therein; the top B, hinged thereto at the back; links D, D, connecting the top and the bottom together; antifriction-rollers E, E, E, E, upon the bottom to guide it within the shell; a shaft F, in each end of the bottom; pinions I, I, rigidly secured to each end thereof; vertical racks I', supported inside the shell in position to mesh with said pinions; and a lock or clasp for securing the cover in the closed position; all coacting together substantially as described for the purpose specified.



2. In a burial-casket, the combination of the shell A; a bottom C, movably supported therein; the top B, hinged thereto at the back; links D, D, connecting the top and the bottom together; antifriction-rollers E, E, E, E, upon the bottom to guide it within the shell; and a lock or clasp for securing the cover in the closed position all coacting together substantially as described for the purpose specified.

3. In a burial casket the combination of the shell A; the bottom C, movably supported therein; the top B, hinged thereto at the back; links D, D, connecting the top and the bottom together; and a lock or clasp for securing the cover in the closed position all coacting together substantially as described for the purpose specified.

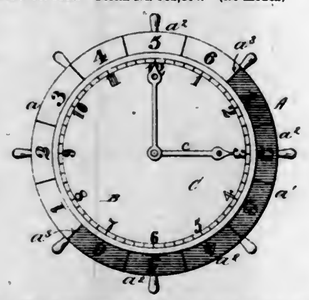
4. In a burial-casket, the combination of the shell A; the bottom C, movably supported therein; the top B, hinged thereto at the back; links D, D, connecting the top and the bottom together; a shaft F, in each end of the bottom; pinions I, I, rigidly secured to each end thereof; vertical racks I', supported inside the shell in position to mesh with said pinions; and a lock or clasp for securing the cover all coacting together substantially as described for the purpose specified.

5. In a burial-casket the combination of the shell A; the bottom C, movably supported therein; the top B, hinged thereto at the back; links D, D, connecting the top and the bottom together, slide-bolts D', detachably securing the links to the top; and a lock or clasp for securing the cover in the closed position substantially as described.

6. In a burial-casket the combination of the shell A; the bottom C, movably supported therein; the top B, of two sections hinged together to fold back for a support, hinged thereto at the back; links D, D, connecting the top and the bottom together; and a locker-clasp for securing the cover in the closed position as specified.

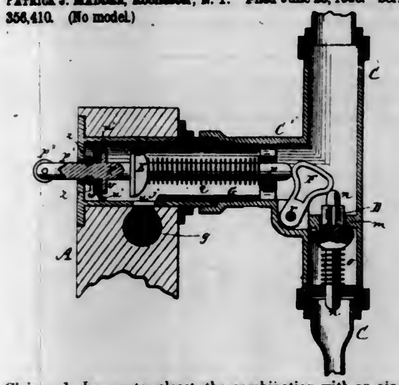
7. In a burial-casket, the combination of the shell A; a suitable cover therefor; the bottom movably supported therein; and suitable means of adjusting the shell up and down over the bottom to change the casket to a couch as specified.

569,340. TIDE-INDICATOR. ABBOT A. LOW, Brooklyn, N. Y. Filed Sept. 18, 1895. Serial No. 562,837. (No model.)



Claim.—The combination of a clock and dial, a ring adjustable on the clock with relation to the dial thereof, said ring being divided into two equal parts, distinguished by contrasting shades or colors, representing approximately high and low tide, said two equal divisions being subdivided into six parts and numbered to represent approximately the hours of the tide, and the hour-hand of the clock, the whole arranged and operating in such manner that the said hour-hand indicates simultaneously both the hour of the day and the hour of the tide, while the position of the ring with relation to the dial indicates the relation of the tide to the meridian, substantially as herein set forth.

569,341. FLUSHING ATTACHMENT FOR WATER-CLOSETS. PATRICK J. MADDEN, Rochester, N. Y. Filed June 23, 1890. Serial No. 356,410. (No model.)



Claim.—1. In a water-closet, the combination with an air-tight tank and a bowl, of a water-supply pipe, a valve arranged therein, a spring holding said valve normally seated, a pipe leading to the tank, a pipe leading to the bowl, a valve-seat arranged therein and adjustable independently thereof, a valve E adapted to close upon said seat, means for transmitting movement from the valve E to the valve first aforesaid, and a stem fixed to the valve E and projecting from the pipe in position to be engaged and operated, substantially as set forth.

2. In a water-closet, the combination with an air-tight tank and a bowl, of a water-supply pipe, a valve arranged therein, a spring holding said valve normally seated, a pipe leading to the tank, a pipe leading to the bowl, a valve E and valve-seat arranged therein, said valve and seat being relatively adjustable so that the closed position of the valve may be varied, a stem fixed to the valve and projecting from the pipe and into the bowl, a seat having a projection adapted to engage said stem, means for transmitting movement from the valve E to the valve first aforesaid, and a spring holding the valve E normally unseated, said spring being of sufficient strength to hold the seat partly elevated, substantially as set forth.

3. In a water-closet, the combination with an air-tight tank and a bowl, of a water-supply pipe, a valve and valve-seat arranged therein, a spring holding said valve normally seated, a pipe leading to the tank, a pipe leading to the bowl, a valve E and valve-seat arranged therein, said valve-seat being adjustable, a stem fixed to the valve and projecting from the pipe and into the bowl, a seat having a projection adapted to engage said stem, means for transmitting movement from the valve E to the valve first aforesaid, and a spring holding the valve E normally unseated, said spring being of sufficient strength to hold the seat partly elevated, substantially as set forth.

4. In a water closet, the combination with a tank and a bowl, of a water-supply pipe, a valve and valve-seat arranged therein, a spring holding said valve normally seated, a pipe leading to the tank, a pipe C' leading to the bowl, a valve E arranged therein and having a stem projecting from the pipe in position to be operated upon, means for transmitting movement from the valve E to the valve first aforesaid, and the adjustable tube G arranged in the pipe C' and having a seat j for the valve E, substantially as set forth.

5. In a water-closet, the combination with the bowl and a water-supply pipe, of a seat adapted to rest upon the bowl, a rail to which said seat is hinged; a bracket to which said rail is secured, said bracket having lugs a^2 engaging the bowl, and means for securing the bracket to the water supply pipe, substantially as set forth.

6. In a water-closet the combination with the bowl, of a flushing-tank having a main outlet and an auxiliary outlet located below the main outlet, a pipe for conveying water from said outlets to the bowl, a valve in said pipe and means for seating said valve while the tank is being filled, substantially as set forth.

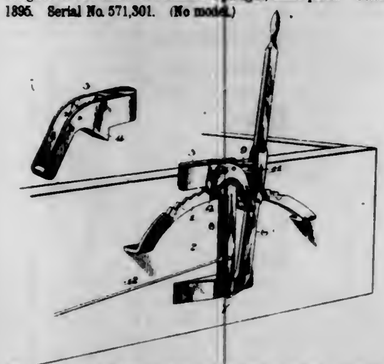
7. In a water-closet, the combination with the bowl, of an air-tight flushing-tank having a main outlet located above the bottom thereof and an auxiliary outlet located below the main outlet, a pipe for conveying water from said outlets to the bowl, a valve in said pipe and means for seating said valve while the tank is being filled, substantially as set forth.

8. In a water-closet, the combination with the bowl, of an air-tight tank having a main outlet and an auxiliary outlet located below the main outlet, pipes for supplying the tank with water and for conveying water therefrom to the bowl, valves in said pipes, and means for reciprocally operating said valves, seating one and unseating the other, substantially as set forth.

9. In a water-closet, the combination with the bowl, of an air-tight tank and a discharge-pipe extending through and terminating

some distance above the bottom of the tank, and having a lateral opening between its upper end and the bottom of the tank, and means for closing said pipe while the tank is being filled, substantially as set forth.

569,342. VEHICLE-BRAKE. JOSEPH H. MILLER, Oklahoma, Okla., assignor of one-third to Franklin Springer, same place. Filed Dec. 6, 1895. Serial No. 571,301. (No model.)

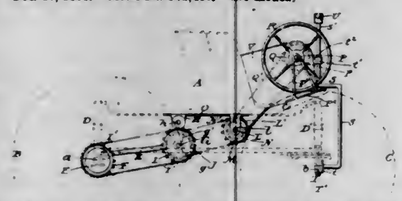


Claim.—1. In a device of the class described, the combination of a curved ratchet, an oscillating bar disposed radially with relation to the ratchet, an operating-lever fulcrumed at the lower end of the bar, located in advance of the same and having an intervening space between its rear edge and the front edge of the bar, a substantially L-shaped pawl pivoted at its angle on the oscillating bar, extending forward and rearward from the same and having its rear portion or arm weighted and engaging the ratchet, the front portion or arm extending downward below the ratchet and having a transverse portion located in advance of the bar and arranged in the space between the same and the lever, and means for connecting the lever and the bar to permit the former to have a limited movement independent of the latter, substantially as described.

2. In a device of the class described, the combination of a curved ratchet, a pair of oscillating bars located at opposite sides of the ratchet and pivoted at their lower ends, an operating-lever fulcrumed at its lower end between the lower terminals of the oscillating bars and provided, intermediate of its ends, with an opening receiving the ratchet, an L-shaped pawl pivoted at its angle at the upper ends of the bars, extending forward and rearward from the same, the rearwardly-extending arm being weighted and engaging the ratchet, and the forwardly-extending arm being composed of two sides located at opposite sides of the ratchet and extending downward below the same, a transverse fastening device connecting the lower terminals of the sides of the pawl and located in the space between the lever and the oscillating bars, and a link connecting the lever and the bars, substantially as described.

3. In a device of the class described, the combination of a curved ratchet, an oscillating bar disposed radially with relation to the ratchet, an operating-lever fulcrumed on the pivot of the bar and located in advance of the latter, a link 9 loosely connecting the operating-lever and the bar, and a substantially L-shaped pawl pivoted on the bar independently of the lever, having its rear arm weighted and engaging the ratchet, and having its front arm interposed between the lever and the bar and adapted to be engaged by the former, substantially as and for the purpose described.

569,343. VEHICLE. MOSES MISHEL, Gloversville, N. Y. Filed Dec. 17, 1895. Serial No. 572,486. (No model.)

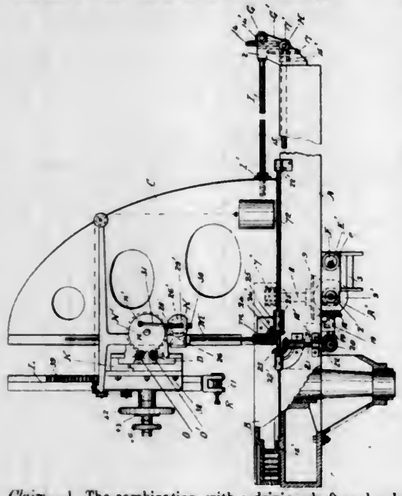


Claim.—1. In mechanism for transmitting motion to the rear wheels of a vehicle, the combination with ratchet-wheels calculated to be secured to the respective inner ends of the hubs of said wheels, sprocket-wheels provided each with a pawl for coaction with its neighboring ratchet-wheel and calculated to be loosely mounted on the spindles of the axle of said wheels, bearings provided with brackets and calculated to have each a pivoted connection with the side sills of the body of a vehicle, and a drive-shaft supported by its outer end portions in the said bearings, of connection-arms jointed each with an outer end portion of said drive-shaft and having their opposite ends provided with means for jointed connection with the rear axle of a vehicle, sprocket-wheels secured on each end of the drive-shaft for alinement with the sprocket-wheels provided with the pawls, and a chain belt connecting said sprocket-wheels on the shaft with those coacting with the ratchet-wheels, substantially as and for the purposes set forth.

2. In mechanism for transmitting motion to the rear wheels of a vehicle, the combination with a pair of coupling-plates O O, a drive-shaft having its outer end portions mounted in bearings connected with brackets which are respectively pivoted with each said coupling-plate in the same manner, sprocket-wheels mounted on the outer ends of the said drive-shaft for transmitting motion to a chain belt for revolving sprocket-wheels calculated to revolve the rear wheels of the vehicle, and connecting-rods for a jointed connection between said shaft and the rear axle of the vehicle, of a second shaft having its end portions supported in bearings which are each rigidly secured to said coupling-plates, so that their centers may each be at uniform distances from the centers of the bearings of the drive-shaft, a driven sprocket-wheel mounted on the drive-shaft, a drive sprocket-wheel secured to the second shaft, and connected by a chain belt with the driven sprocket-wheel on the drive-shaft, a driven sprocket-wheel also secured to said second shaft and calculated to be driven by a suitable driving mechanism, substantially as and for the purposes set forth.

3. In mechanism for transmitting motion to the rear wheels of a vehicle, the combination with the main drive-shaft P, calculated to be revolved by a suitable motor and mounted in bearings *p p* secured to standards P' rigidly connected with a common base-plate calculated to be secured to the foot-board of the body of a vehicle, a hand-wheel R secured on said main drive-shaft, a sprocket-wheel Q also secured to said shaft, of shafts L and G, mounted in bearings connected with coupling-plates O O, sprocket-wheels M, N, J, I, F, endless chains Q', N', and I' pawls pivoted with the sprocket-wheels F and ratchet-wheels E connected with the inner ends of the hubs of the rear wheels of a vehicle for coaction with said pawls, substantially as and for the purposes set forth.

569,344. BORING AND TURNING MILL. GEORGE W. MORTON, Wilmington, Del., assignor to the Betts Machine Company, same place. Filed June 27, 1896. Serial No. 597,100. (No model.)



Claim.—1. The combination, with a driving-shaft, and a double lock-plate secured thereon; of two toothed wheels journaled one on each side of the lock-plate, each wheel being provided with means for connecting it to the lock-plate; a driving-pulley and a toothed pinion secured together and journaled on the said shaft, a pin supported parallel with the said shaft, and three toothed wheels of different diameters secured together side by side and gearing into the said wheels and pinion on the driving-shaft, substantially as set forth.

2. The combination, with a driving-shaft, and a double lock-plate secured thereon; of two toothed wheels journaled one on each side of the lock-plate, each wheel being provided with means for connecting it to the lock-plate; a driving-pulley and a toothed pinion secured together and journaled on the said shaft, a single lock-plate secured on the said shaft and provided with means for connecting it to the said driving-pulley, a pin supported parallel with the said shaft, and three toothed wheels of different diameters secured together and gearing into the said wheels and pinion on the driving-shaft, substantially as set forth.

3. The combination, with a driving-shaft, and a double lock-plate secured thereon; of two toothed wheels journaled one on each side of the lock-plate, each wheel being provided with means for connecting it to the lock-plate; a driving-pulley and a toothed pinion secured together and journaled on the said shaft, a single lock-plate secured on the said shaft and provided with means for connecting it to the said driving-pulley, a supporting-bracket, an eccentric journaled in the said bracket and provided with a pin arranged parallel with the said shaft, three toothed wheels of different diameters secured together and journaled on the said pin, and means for turning the said eccentric and thereby throwing the said three wheels into or out of gear with the said wheels and pinion on the driving-shaft, substantially as set forth.

4. The combination, with a bed, uprights slidable longitudinally thereon, and a cross-rail slidable vertically on the said uprights; of a driving shaft provided with a driving-pulley and journaled at the rear of the bed, two shafts extending across the bed at its rear, disengageable driving mechanism connecting the two said shafts with the said driving-shaft, vertical screws engaging with the cross-rail, horizontal screws engaging with the uprights, and intermediate driving devices connecting the said vertical and horizontal screws respectively with the two said shafts at the rear of the bed, substantially as set forth.

5. The combination, with a bed, a horizontally-arranged face-plate supported by the bed, a main driving-shaft provided with means for revolving it, said means being arranged at one side of the bed, and intermediate driving mechanism connecting the said shaft and face-plate; of two uprights slidable longitudinally on the bed, a cross-rail, a saddle and a tool-slide, all carried by the said uprights; an auxiliary driving-shaft extending across the bed at its rear and provided with means for revolving it separate from the said means for revolving the face-plate, horizontal screws engaging with the said uprights, and toothed wheels connecting the said screws with the said auxiliary driving-shaft, substantially as set forth.

6. The combination, with a bed, a horizontally-arranged face-plate supported by the bed, a main driving-shaft provided with means for revolving it, said means being arranged at one side of the bed, and intermediate driving mechanism connecting the said shaft and face-plate; of two uprights slidable longitudinally on the bed; a vertically-slidable cross-rail, a saddle and a tool-slide, all carried by the said uprights; an auxiliary driving-shaft extending across the bed at its rear and provided with means for revolving it separate from the said means for revolving the face-plate, vertical screws engaging with the said cross-rail, and intermediate driving mechanism operatively connecting the lower ends of the said screws with the said auxiliary driving-shaft, substantially as set forth.

7. The combination, with a bed, uprights slidable longitudinally thereon, and a cross-rail slidable vertically on the said uprights; of a shaft H extending across the bed at its rear and provided with means for revolving it, horizontal shafts 15 extending longitudinally of the bed, beveled toothed wheels connecting the shafts H and 15, vertical screws engaging with the cross-rail and having beveled toothed wheels 16 secured on their lower ends, and beveled toothed wheels splined on the shafts 15 and engaging with the said wheels 16, substantially as set forth.

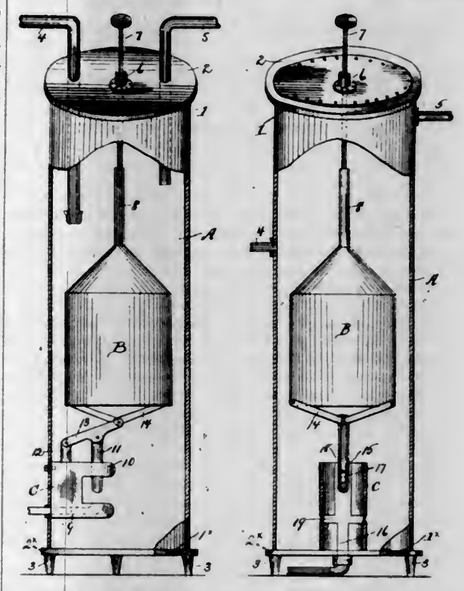
8. The combination, with a swiveled bracket, and a tool-slide carried thereby and provided with a toothed rack; of a central shaft journaled in the said bracket and provided with means for revolving it and a collar preventing it from sliding longitudinally, a sleeve journaled in a recess in the said bracket and on the said central shaft and provided with a toothed pinion gearing into the said rack, a hand-wheel secured on the projecting end of the said sleeve and provided with a friction-clutch member, a friction-clutch member splined on the projecting front end of the said central shaft, and a nut screwed on the front end of the said central shaft, substantially as set forth.

9. The combination, with a tool-slide; of a tool-holder provided with a shank revoluble in a socket in the tool-slide, said tool-slide and tool-holder being provided with intergearing teeth, and with keyways, the keyway in the shank having lateral slots permitting the tool-holder to be secured in various positions; and a key in the said keyways, substantially as set forth.

10. The combination, with a non-revoluble tool-slide having a series of teeth on its lower end; of a tool-holder provided with a toothed shoulder engaging with the said teeth, and a shank revoluble in a socket in the tool-slide; a tool-post carried by the said tool-holder; and means for securing the said shank in the socket, substantially as set forth.

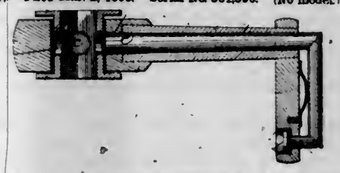
11. The combination, with a tool-holder provided with a forked end; of a tool-post carried by the said forked end and provided with a slot for the tool, and two shoulders, one of the said shoulders being normally clear of the forked end when the other shoulder is bearing against it; and a screw operating to clamp the tool in the tool-holder and to cause both shoulders to bear upon the tool-holder before the elastic limit of the said forked end is exceeded, substantially as set forth.

569,345. GAS, OIL, AND WATER SEPARATOR. ALBERT P. MCBRIDE, Independence, Kans. Filed May 9, 1896. Serial No. 590,819. (No model.)



Claim.—A separator of the kind named, comprising a cylindrical vessel provided with exterior screw-threads at its respective ends, top and bottom caps 2, 2×, formed with rim-flanges having interior screw-threads to engage the threads on the ends of the vessel, an inlet pipe, an outlet-pipe, said pipes being located at the upper portion of the vessel, a vertically-arranged guide-rod projected centrally through the upper cap of the vessel, a cylindrical float in the vessel, having a closed top and open bottom, a hollow vertical stem projected upward from the top of the float and adapted to telescope with the said guide-rod, a valve-chamber mounted in the bottom of the vessel and formed with a valve-seat and an opening to admit water, a valve in the said chamber, a rod extending across the open bottom of the float and connected to the stem of the valve, and an outlet-pipe leading from the valve-chamber.

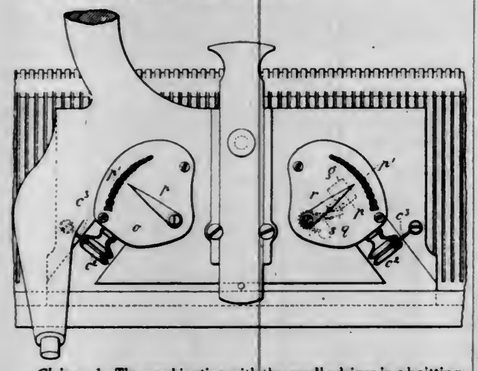
569,346. CRANK-HANDLE. JAMES D. MCFARLAND, Jr., Prosper, Oreg. Filed Mar. 2, 1896. Serial No. 581,596. (No model.)



Claim.—1. A crank-handle consisting of a hollow shank, an eye in the end of said shank, a bushing with a square hole, and a series of holes around the circumference thereof, a locking-rod passing through the hollow of the shank and adapted to enter the circumferential holes in the bushing, and a spring for normally holding said rod out of engagement with said holes, all substantially as described.

2. The combination of a crank-handle, with a locking-rod adapted to enter circumferential holes, or slots, on the stem of the device to be operated, and a spring for normally holding said rod out of engagement with said holes, or slots, all substantially as described, for the purposes specified.

569,347. KNITTING-MACHINE. PER PERSSON, Stockholm, Sweden, assignor to the Aktiebolaget Per Perssons Vaf-Och Stickmaskin, same place. Filed Jan. 6, 1896. Serial No. 574,429. (No model.) Patented in France Apr. 18, 1895, No. 246,731.



Claim.—1. The combination with the needle-driver in a knitting-machine, the slotted supporting-plate and a stud extending up from the needle-driver through the slot, of a screw supported at its ends in the plate and a nut upon the screw acting upon the stud for adjusting the needle-driver, there being projections upon the stud extending up at each side of the nut, substantially as set forth.

2. The combination with the needle-driver in a knitting-machine, the slotted supporting-plate and a stud extending up from the needle-driver through the slot, of a screw supported at its ends in the plate and a nut upon the screw acting upon the stud for adjusting the needle-driver, there being projections upon the stud extending up at each side of the nut, and a spring acting upon the stud to keep one of the projections toward the nut, substantially as set forth.

3. The combination with the needle driver in a knitting-machine, the slotted supporting-plate and a stud extending up from the needle-driver through the slot, of a screw supported at its ends in the plate and a nut upon the screw acting upon the stud for adjusting the needle-driver, a cover-plate and index-arm above the cover-plate, an arm beneath the cover-plate, a projection on the nut and a spring to press the arm against the projection, substantially as set forth.

4. The combination in a knitting-machine, of a two-part needle-driver, a slotted supporting plate and studs extending up from the two-part needle-driver through such slots, two separate screws one for each portion of the needle-driver and nuts upon the screws for adjusting the respective parts, projections upon the respective studs for the nuts to act against, two arms upon one of the nuts to act simultaneously on both portions of the two-part needle-driver and springs for holding the studs toward the arms, substantially as set forth.

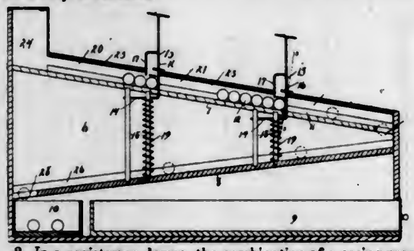
5. The combination in a knitting-machine, of a two-part needle-driver, a slotted plate and studs projecting through the slots for supporting the two-part needle-driver, an adjusting-screw with arms adapted to act upon the two studs for adjusting them simultaneously, a second screw and nut with an arm acting against the stud upon one portion of the two part needle-driver to adjust the same independently of the other part, substantially as set forth.

6. The combination in a knitting-machine with the slotted supporting-plate, of a two-part needle-driver, a projection or stud upon each part passing through a slot in the supporting-plate, two screws and nuts moved by the screws, arms projecting from one of the nuts and acting against projections upon both of the studs, springs for moving the studs with their projections toward the arms, an arm upon the second nut passing above one of the arms that extends from the other nut to act against the projection from the stud in adjusting the relative position of the two-part needle-driver, substantially as set forth.

7. The plate for a knitting-machine index having a pattern representing a row of knitted loops of gradually-decreasing size for indicating the size of loop by the index-arm, substantially as specified.

569,348. REGISTERING DEVICE. GEORGE A. PHILLIPS, Columbus, Ind. Filed Jan. 3, 1896. Serial No. 574,189. (No model.)

Claim.—1. In a registering device, the combination of a casing provided with a series of longitudinal inclined runways, each of said runways being provided with a pair of movable stops each consisting of a single piece of sheet metal provided with an aperture adapted to permit the passage of a ball, and a guard cut from the body of said stop and bent over said aperture, the space between the body of the stop and the guard being sufficient to permit the entrance of a ball arranged one in advance of the other, a series of balls arranged in said runways, the said runways being provided with graduation-marks arranged opposite the balls therein, and a ball-receptacle arranged beneath said runway so as to receive the balls therefrom, all substantially as set forth.

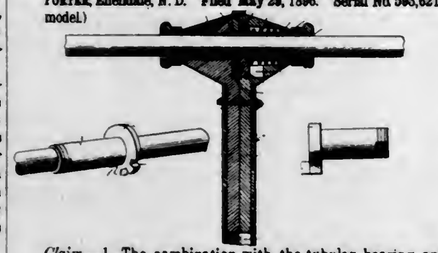


2. In a registering device, the combination of a casing provided with a series of longitudinal runways, each of said runways being provided with a movable stop consisting of a single piece of sheet metal provided with an aperture adapted to permit the passage of a ball, and a guard cut from the body of said stop and bent over said aperture, the space between the body of the stop and the guard being sufficient to permit the entrance of a ball, a series of balls arranged in said runways, the runways being provided with graduation-marks arranged opposite the balls therein, a ball-receptacle arranged beneath said runways, and an inclined chute arranged beneath the runways so as to receive the balls from the several runways and deliver them to the ball-receptacle, all substantially as set forth.

3. In a registering device, the combination with an inclined runway adapted to receive a series of balls, of the movable stop mounted in said runway so as to intercept said balls, said stop consisting of a single piece of sheet metal provided with an aperture adapted to permit the passage of a ball, and a guard cut from the body of said stop and bent over said aperture, the space between the body of the stop and the guard being sufficient to permit the entrance of a ball, substantially as set forth.

4. In a registering device, the combination with an inclined runway adapted to receive a series of balls, of a movable stop mounted in said runway so as to intercept said balls, said stop consisting of a single piece of sheet metal provided with an aperture adapted to permit the passage of a ball, a guard cut from the body of said stop and bent over said aperture, the space between the body of the stop and the guard being sufficient to permit the entrance of a ball therebetween, and the lower end of said stop bent at an angle to the body thereof and provided with a pair of openings adapted to receive a pair of rods upon which the said stop may be longitudinally moved, and a spring adapted to engage the said lower end of the stop and hold the said stop in position to prevent the passage of the balls in the runway, all as and for the purpose set forth.

569,349. ADJUSTABLE BICYCLE HANDLE-BAR. BENJAMIN PORTER, Ellendale, N. D. Filed May 29, 1896. Serial No. 593,621. (No model.)



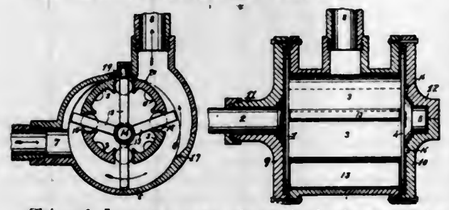
Claim.—1. The combination with the tubular bearing and the handle-bar rotating therein and provided with a ratchet, of a tubular latch or bolt mounted in the said bearing, sliding freely along the handle-bar into engagement with the ratchet, and extended out through the end of said bearing and there provided with a finger-piece, substantially as and for the purpose specified.

2. The combination with the tubular bearing and the handle-bar rotating therein and provided with a ratchet, of a tubular latch or bolt mounted in the bearing, sliding freely along the handle-bar into engagement with the ratchet, and extended outwardly beyond the end of the bearing, and an annular thumbpiece on the outer end of the bolt or latch and having a flange overlapping the end of the bearing, substantially as and for the purpose specified.

3. The combination with the tubular bearing formed of abutting chambered sections and the handle-bar turning in the said bearing and having a fixed ratchet within the chamber formed between said abutting sections; a bolt slot or guideway being formed in the said sections and intersecting the ratchet-chamber, of a tubular bolt or latch mounted in one section, extended outwardly therethrough and beyond the outer end thereof and provided at its outer end with a finger-piece, and a nose on the inner end of the tubular bolt sliding through said slot or guideway, and through the ratchet recess or opening, whereby the nose will be braced against strain at both sides of the ratchet, substantially as and for the purpose specified.

4. The combination with the tubular bearing formed in two abutting chambered sections, and the handle-bar turning in said bearing, and having a ratchet within the chamber between the said sections; the ratchet having a sleeve-like hub rigidly fastened to the handle-bar and extended out through one bearing-section and there provided with a removable collar, a tubular bolt or latch sliding in the opposite section and provided with a spring pressing it inward, the said tubular bolt extending outwardly through and beyond the bearing-section and there provided with a removable annular finger piece and the inner end of the said bolt or latch having a nose engaging the fixed ratchet.

569,350. ROTARY PUMP. HENRY W. POTTER, Titusville, Pa. Filed June 5, 1895. Serial No. 551,737. (No model.)



Claim.—1. In a rotary pump; the running head constructed as described firmly attached to and concentric with the driving-shaft, the shell of the running head being slotted and fitted to receive the packing-slips 15, a spider inserted in the running head consisting of the pistons 13, passing through slots in the packing-slips, each piston being hinged on a loose central pin 14, said pistons being of length sufficient to fill the chamber of a stationary and inclosed outer cylinder 6 eccentric to the running head; the outer cylinder having the inlet and outlet pipes 7, and 8; all the parts working in combination substantially as shown and described.

2. A rotary pump, consisting of the running head constructed as described, attached to and concentric with the driving-shaft; a spider in the said running head constructed of pistons extending through packing-slips in the exterior shell of the running head, the pistons being hinged on a loose central pin and of the right length to fill the space in an outer and eccentrically-placed closed cylinder inclosing the running head; the outer cylinder having inlet and discharge ports, and with the inside of the cylinder cut away as shown near the discharge-port so as to facilitate the flow of fluid, and with an abutment-plate inserted in the shell of the outer cylinder and resting on the top of the running head; all the parts working in combination substantially as shown and for the purpose herein set forth.

569,351. PITCHER OR OTHER VESSEL. JOHN PUTNAM, Philadelphia, Pa. Filed Mar. 10, 1896. Serial No. 582,582. (No model.)

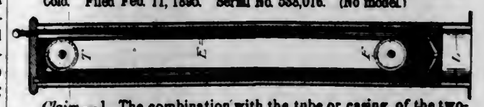


Claim.—1. A pitcher having gudgeons on its sides, and a detachable swinging lid journaled on said gudgeons, and having a rear end with a depending rim outside of the body of the pitcher, and normally free from contact with said body when the front end of said lid is in contact with the discharge-lip of the pitcher, substantially as described.

2. A swinging lid having a front portion adapted to close the spout of a vessel, and a rear portion provided with a depending rim which freely embraces the top of the body of said vessel, and is above and free from contact therewith, when the front portion is seated on the spout, substantially as described.

3. A pitcher having gudgeons on opposite sides of the body thereof, and a removable lid having depending side rims and inclined throats in said rims, the upper walls of which are mounted on said gudgeons, the rear end of the rim of the lid being normally free from contact with the body said parts being combined substantially as described.

569,352. TROLLEY-CATCHER. CHARLES F. RANDALL, Denver, Colo. Filed Feb. 11, 1895. Serial No. 538,016. (No model.)



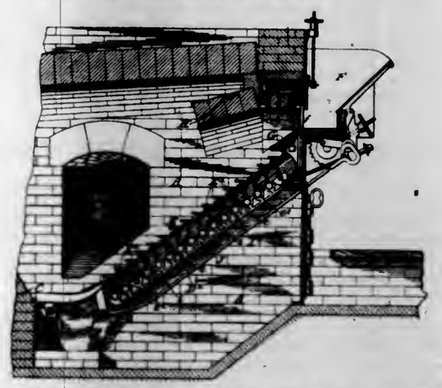
Claim.—1. The combination with the tube or casing, of the two-part weight located therein, a spring-held rod connecting the two parts of the weight, a dog hinged to the rod, a ratchet located within the tube in suitable proximity to the weight, and a rope or similar connection between the weight and the trolley-pole, substantially as described.

2. The combination with the tube or casing attached to the car, of the two-part weight, the yielding connection whereby the parts of the weight are held in operative relation, the dogs carried by the weight, the ratchets adapted to engage the dogs, and the rope connecting the weight and the trolley-pole, substantially as described.

3. The combination with the tube or casing attached to the car, of the two-part weight located in the tube, the yielding connection between the two parts of the weight, the dogs carried by the weight, the ratchets adapted to engage the dogs, the pulleys attached to the tube and to the weight, and the rope attached to the tube, engaging the pulleys and connected with the trolley-pole, substantially as described.

4. The combination with the tube or casing of a weight located therein, a spring-held rod movably attached to the weight, a dog hinged to the rod, a ratchet located within the tube in suitable proximity to the weight, and a rope or similar connection between the weight and the trolley-pole, substantially as described.

569,353. FURNACE-GRATE. WILLIAM R. ROSEY, Chicago, Ill., assignor to the Westinghouse, Church, Kerr & Company, New York, N. Y. Filed Dec. 8, 1890. Serial No. 373,941. (No model.)

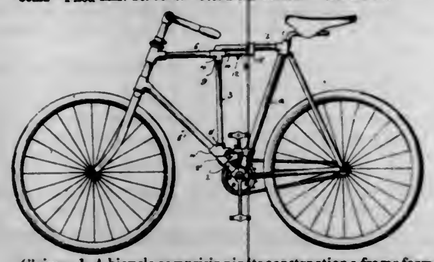


Claim.—1. A flat-topped grate bar for inclined or stepped furnace-grates consisting of a cast vertical web or body and a top plate, the front and rear parts of which are longitudinally separable, the front portion or edge of said top plate consisting of one or more detachable parts, substantially as described.

2. In a flat-topped grate-bar, the combination, with a cast vertical web or body part, of a cast top plate consisting of a rear portion cast integral with the web and a front portion composed of a plurality of separately-detachable sections.

3. In a flat-topped grate-bar, the combination, with a cast vertical web or body part, of a cast top plate composed of a rear portion having integral connection with the web at its ends and separated from said web between its ends by a slot, and a front, detachable portion provided with one or more projections extending through said slot, and with a downwardly-directed flange arranged in front of the web, whereby it may be bolted to the latter.

569,354. FOLDING BICYCLE. MICHAEL B. RYAN, Bridgeport, Conn. Filed Mar. 26, 1896. Serial No. 584,921. (No model.)



Claim.—1. A bicycle comprising in its construction a frame formed in two sections hingedly connected together, one of said sections being provided with a bolt and the other section with a keeper for the bolt, the said bolt and keeper extending in a substantially horizontal direction and located at a distance from the hinged connection, and the bolt casing and keeper being adapted to closely meet, to insure rigidity of the frame in use.

2. A bicycle comprising in its construction a frame formed in two sections one of which is provided with a substantially vertical brace, and the other having fulcrum pieces sleeved on the brace, and bolts and keepers carried by said sections, the said bolts and keepers extending in a substantially horizontal direction and located at a distance from the hinged connection, and the bolt casings and keepers being adapted to closely meet, to insure rigidity of the frame in use.

3. A bicycle comprising in its construction a frame formed in two sections one of which is provided with a substantially vertical brace, and with bolt-keepers and the other having fulcrum-pieces sleeved on the brace, bolt-casings carried by said fulcrum-pieces, and spring-bolts in said casings, the said bolts and keepers extending in a substantially horizontal direction and located at a distance from the hinged connection, and the bolt casings and keepers being adapted to closely meet, to insure rigidity of the frame in use.

4. In a bicycle, the combination with the bars 1, 1′, the brace 3 and the coupling-tubes 2, 2′, of the fulcrum-pieces 4, 4′, secured to the front frame-sections 6, 6′, and sleeved on the brace 3, and bolts and keepers for locking the fulcrum-pieces, the said bolts and keepers extending in a substantially horizontal direction and located at a distance from the hinged connection, and the bolt casings and keepers being adapted to closely meet, to insure rigidity of the frame in use, substantially as described.

5. In a bicycle, the combination with the bars 1, 1′, the brace 3 and the coupling-tubes 2, 2′, of the fulcrum-pieces 4, 4′ secured to the front frame-sections 6, 6′ and sleeved on the brace 3, the bolt-casings 8, 8′ secured to the fulcrum-pieces and containing spring-bolts, and keepers 15, 15′ secured to the bar 1 and to the main post *a* of the machine, substantially as described.

569,355. FOLDING-MACHINE. CONRAD SCHUTZ, Philadelphia, Pa. Filed June 27, 1895. Serial No. 554,183. (No model.)

Claim.—1. In a folding-machine, a compound plunger comprising a primary and a secondary plunger, a compound cam connected with the compound plunger, a support for the material to be folded, in combination with a latch which automatically engages and holds the secondary plunger depressed during the interval required for a second stroke of the primary plunger, substantially as shown and described.

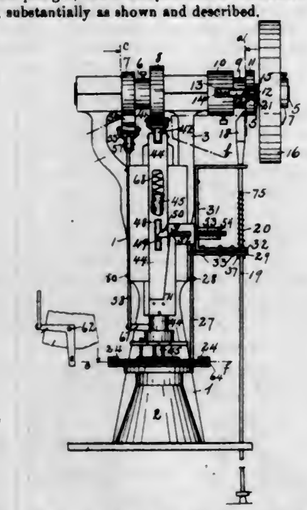
2. In a folding-machine, in combination, a compound plunger comprising a primary and a secondary plunger, a revolving compound cam, mechanism connecting the plunger and the cam, a latch and a support for the material to be folded, substantially as shown and described.

3. In a folding-machine, in combination, a compound plunger comprising a primary and a secondary plunger, a revolving compound cam connected with the said plunger, an automatic latch, a device for withdrawing the latch and a support for the material to be folded, substantially as shown and described.

4. In a folding-machine, in combination, a revolving compound cam, a rock-lever, a primary plunger, a secondary plunger, a latch and a support for the material to be folded, substantially as shown and described.

5. In a folding-machine, in combination, a revolving compound cam, a rock-lever, a primary plunger, a secondary plunger, a latch, a finger which disengages the latch and a support for the material to be folded, substantially as shown and described.

6. In a folding-machine, in combination, an oscillating ring, a cam connected therewith, a set of oscillating blades adapted to be operated by the said ring, a support for the material to be folded, a compound plunger, and a compound cam connected with the said plunger, substantially as shown and described.



7. In a folding-machine, in combination, an oscillating ring having pins projecting from the face thereof, and oscillating blades provided with angular slots adapted to engage the said pins, mechanism for oscillating the said ring, a support for the material to be folded, a secondary plunger which holds the material and a primary plunger which reciprocates in unison with the said blades to fold the material, substantially as shown and described.

8. In a folding-machine, in combination, a rotating cam, a bell-crank connected therewith, an oscillating ring, radially-moving blades, means connecting the said ring and blades for oscillating the said blades, a support for the material to be folded, a compound plunger and a rotating compound cam connected therewith, substantially as shown and described.

9. In a folding-machine, in combination, a rotating cam, a rock-lever, a bell-crank, a rod connecting the rock-lever and the bell crank, an oscillating ring, blades connected with the oscillating ring, and means for holding the material to be folded, substantially as shown and described.

10. In a folding-machine, in combination, a cam, a rock-lever, a bell-crank, a spring-controlled rod connecting the rock-lever and the bell-crank, an oscillating ring and oscillating blades connected therewith and means for supporting and holding the material to be folded, substantially as shown and described.

11. A compound plunger comprising a primary plunger provided with a finger and a secondary plunger, in combination with a latch adapted to engage and hold the secondary plunger and to be disengaged by the finger of the primary plunger, substantially as shown and described.

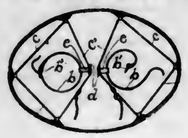
12. In a folding-machine, in combination, a primary plunger, a secondary plunger, a latch, a spring-anvil, and a set of oscillating blades, substantially as shown and described.

13. In a folding-machine, in combination, a primary plunger, a secondary plunger, a latch, a rotating cam connected with the plungers, a cushioned anvil, and a set of oscillating blades, substantially as shown and described.

14. In a folding-machine, in combination, a primary plunger, a secondary plunger, a latch, a cushioned anvil, a set of oscillating blades, and an oscillating ring, substantially as shown and described.

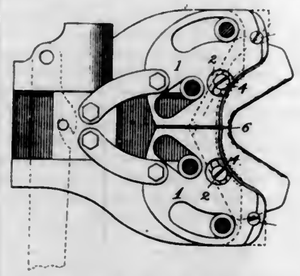
15. A compound plunger comprising a primary plunger and a secondary plunger, in combination with a latch adapted to engage and hold the secondary plunger during a given interval, and mechanism for disengaging the latch at the end of the interval, substantially as shown and described.

569,356. SKIRT-SUPPORTER. SARAH M. SMITH, St. Augustine, Fla. Filed July 13, 1896. Serial No. 599,046. (No model.)



Claim.—In combination with a skirt, straps secured thereto near the front and rear portions, a ring traveling on each of the straps, strips connecting with the rings, and garters to which the straps are connected, the strip and ring joining the skirt-strap above the garters, substantially as described.

569,357. LASTING-MACHINE. STEPHEN SHOW, Everett, Mass., assignor to the Goodyear Shoe Machinery Company. Filed June 5, 1894. Renewed Sept. 8, 1896. Serial No. 605,193. (No model.)



Claim.—1. In combination with a lasting-machine head of the class described, lasting-plates composed of guiding and supporting plates, and removable working-edge plates, and means to adjust said working-edge plates upon the supporting-plates with reference to the median line of contact of said working edges, substantially as shown and described.

2. In combination with a lasting-machine head of the class described, lasting-plates composed of guiding and supporting plates, and removable working edge plates, and suitable screw holding and adjusting mechanism to adjust and maintain the set position of said working-edge plates upon the supporting-plates with reference to their median line of contact, substantially as shown and described.

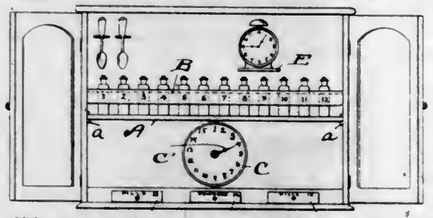
569,358. DRAFTSMAN'S MEASURE. HALFDAN SOMMERFELDT, Baltimore, Md. Filed Dec. 2, 1895. Serial No. 570,805. (No model.)



Claim.—1. A scale comprising a series of graduated leaves bent to form a hinge a movable series of leaves provided with eyes and adapted to be secured to the fixed leaves by means of a pintle passing through said eyes and hinge.

2. A scale comprising a fixed series of graduated leaves, bent to form a hinge and to be secured to a movable series of leaves by a pintle.

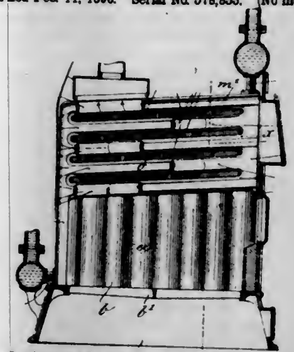
569,359. MEDICINE DOSE-INDICATING CABINET. NARCISSA S. SPRINGER, Cleveland, Ohio, assignor of one-half to John N. Weld, same place. Filed Jan. 2, 1896. Serial No. 574,033. (No model.)



Claim.—1. A medicine-cabinet comprising in its construction the following elements: a bottle-rack consisting of a horizontal and vertical portion, the horizontal portion provided with openings to receive the bottles, and the vertical portions adapted to have characters formed or printed thereon to designate the bottles or contents, and a lower sliding shelf to support the bottom of the bottles, substantially as and for the purpose shown and described.

2. In a medicine-cabinet, the combination with a bottle-rack and shelf, the said rack being provided with a horizontal portion provided with holes for receiving and retaining the bottles and a vertical portion for receiving the necessary characters to designate the bottles or contents, of an indicator having characters corresponding with the characters on the rack, said indicator being provided with a movable pointer, substantially as and for the purpose shown and described.

569,360. SECTIONAL WATER-HEATER. CANBY STEEL, Philadelphia, Pa., assignor to the George P. Steel Iron Company, Camden, N. J. Filed Feb. 11, 1896. Serial No. 578,853. (No model.)



Claim.—1. A water-heater, comprising a series of vertically-arranged water-containing sections interposed between two end water-containing sections, the lower ends of which form the sides of the fire-box, each of said vertical and side sections being separately connected at their upper ends with a common water-reservoir and at their lower ends with a second reservoir, said sections being otherwise disconnected from each other, all arranged so that each water-section may be separately filled or emptied without disturbing the other sections, substantially as and for the purposes described.

2. In a sectional water-heater, a water-section consisting of a rear and a front vertical leg, a series of superposed parallel branches substantially hexagonal in vertical cross-section connecting the legs together and extending above the fire-box, each branch provided with a vertically-arranged contraction at or near its end, said vertically-arranged contracted ends being formed alternately at the rear and front end of the successive branches to form vertical flue-openings for passage of fire-gases from the fire-box, substantially as and for the purposes described.

3. In a sectional water-heater, a water-section consisting of a rear and a front leg vertically arranged in the heater, the rear leg forming a portion of the back of the fire-box, and a series of superposed branches substantially hexagonal in vertical cross-section arranged parallel with each other and extended in an inclined horizontal direction over the fire-box, each branch being provided at or near one end with a vertically-arranged contraction to form a flue for passage of gases from the fire-box to and around each branch, and said contracted ends being arranged in staggered relationship, substantially as and for the purposes described.

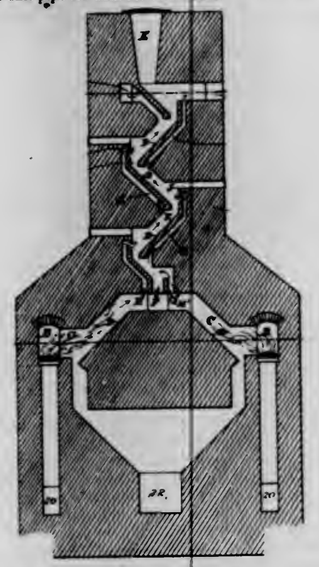
4. In a sectional water-heater, a water-section consisting of a rear and a front leg vertically arranged in the heater, the rear leg forming a portion of the back of the fire-box, and a series of superposed branches arranged parallel with each other and extended in an inclined horizontal direction over the top of the fire-box, each branch being provided at or near one end with a vertically-arranged contraction to form a flue for the passage of gases from the fire-box to and around each branch, said contracted ends being arranged in staggered relationship in the series of branches of substantially hexagonal shape in vertical cross-section throughout their length, substantially as and for the purposes described.

569,361. ORE-ROASTING FURNACE. CHARLES E. STOCKFORD, Sulphur Creek, Cal. Filed Apr. 20, 1896. Serial No. 588,250. (No model.)

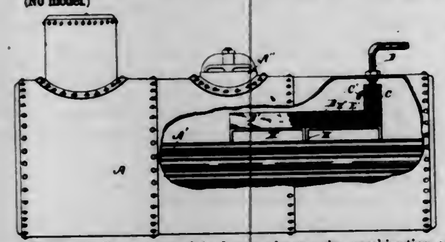
Claim.—1. In a roasting-furnace, the combination, of a shell or casing, a series of superposed oppositely-inclined floors having vertically-connecting throats between the bottom of each floor and the upper end of the succeeding one, fireplaces in the shell or casing, one on each side of the ore-passage, and having arches or openings leading inward, a passage or flue back of each floor and following the inclination thereof and of its vertical throat, and having substantially the same diameter throughout, having a channel opening into the ore-passage at the top of one floor and just above the lower end of the floor next above, whereby the heat acts directly on the ore passing alternately under one floor and then over the ore on the floor above, and means for charging the furnace.

2. An improved ore-roasting furnace consisting of a shell or casing having a central ore-passage, arches or passages leading outwardly from the bottom thereof, fireplaces on each side of the passage, one communicating with each arch or passage, a series of oppositely-inclined floors within the ore-passage, having vertically-connecting throats, a flue or passage back of each floor and leading directly into

the ore-passage at the upper portion of one floor and just above the lower portion of the floor next above, whereby the heat alternately passes under one floor and then passes over the body of ore on the floor above, a chamber circumscribing the uppermost floor and receiving the hot air and fumes both from above and from below the ore, and an exit-pipe for said air and fumes.



569,362. FEED-WATER HEATER AND PURIFIER. JACOB STRUBEL, Kalamazoo, Mich. Filed July 9, 1896. Serial No. 598,516. (No model.)



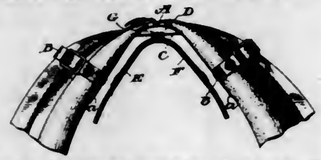
Claim.—1. In an internal feed-water heater the combination of the bases H, H, to rest upon the tubes of the boiler; the sections or trays B, B', formed into a long continuous trough by the partitions E, E'; subpartitions E", E", extending between the partitions E', to retard the passage of the water through the troughs; a receptacle C, to form a connection therewith with a delivery-pipe from toward the top thereof and a supply-pipe D, leading down toward the bottom of the receptacle all coacting substantially as described for the purpose specified.

2. In an internal feed-water heater, the combination of the sections B, B', formed into a long continuous trough by the partitions E', E'; subpartitions E", E", extending between the partitions E', to retard the passage of the water through the troughs; a receptacle C, to form a connection therewith with a delivery-pipe from toward the top thereof and a supply-pipe D, leading down toward the bottom of the receptacle all coacting substantially as described for the purpose specified.

3. An internal feed-water heater consisting of a box-like casing with alternate partitions extending from opposite sides nearly across the same to form a tortuous trough-like passage, subpartitions between the alternate partitions of lesser height to retard the passage of the water in combination with a supply-pipe delivering the feed-water into one end of the same to allow it to pass through the passage to become thoroughly heated as specified.

4. In an internal feed-water heater the combination of a receptacle; a supply-pipe leading toward the bottom of the receptacle; an overflow-passage from the receptacle and a casing with a tortuous passage into which the receptacle delivers the water coacting as specified.

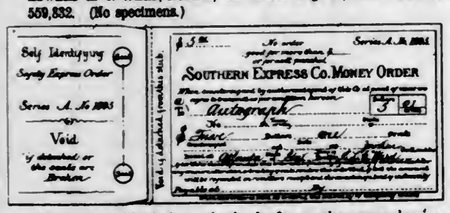
569,363. COLLAR-PAD. ROBERT C. VAN DERVEER, Carlisle, Ohio. Filed Nov. 29, 1895. Serial No. 570,433. (No model.)



Claim.—1. A collar-pad consisting of an outer, transversely-curved, section, A, adapted to be secured to a collar, a horizontal plate arranged within and connecting the side walls of the outer section, another, inner, section having a flexible pad attached thereto, and a flat, horizontal, bar connected to the said pad-section and extending across the upper face of the horizontal plate, of the upper, outer, section, from one end thereof to the other, substantially as set forth.

2. A collar-pad consisting of an outer metallic saddle-shaped section A, having secured thereto straps B, a plate C connecting the flaring walls of said section and extending continuously from the one to the other thereof, an inner metallic saddle-shaped section F having a flexible pad secured to its inner face, lugs G at the front and rear ends of the last said section, and a bar H connecting said lugs and extending across the upper surface of the plate C from the front edge to the rear edge thereof, substantially as set forth.

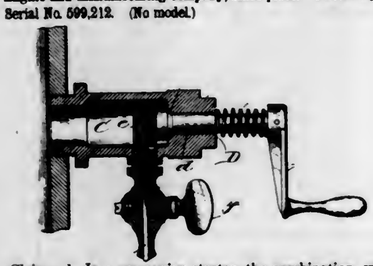
569,364. SELF-IDENTIFYING CHECK, DRAFT, ORDER, &c. EDWARD L. C. WARD, Atlanta, Ga. Filed Aug. 19, 1895. Serial No. 559,832. (No specimens.)



Claim.—1. A blank for a check, draft, or other paper having a pay-order, an attached notice-stub bearing the name of the payee, and an envelop inclosing and concealing the notice-stub, said envelop being open at one edge to receive the notice-stub and provided, upon opposite sides of said open edge, with flaps adapted to be secured to the front and rear sides of the notice-stub, substantially as specified.

2. A blank for a check, draft, or other paper having a pay-order, an attached notice-stub bearing the name of the payee, and an envelop inclosing and concealing the notice-stub, said envelop being open at one edge to receive the notice-stub and being cut away or split from the extremities of said open edge toward the opposite edge to form intermediate flaps upon opposite sides of said open edge, the flaps being gummed upon their inner surfaces to adhere to the front and rear surfaces of the notice-stub, substantially as specified.

569,365. GAS-ENGINE STARTER. CHRISTIAN J. WEINMAN and EDWARD E. EUCHENHOFER, Dayton, Ohio, assignors to the Dayton Gas Engine and Manufacturing Company, same place. Filed July 15, 1896. Serial No. 599,212. (No model.)



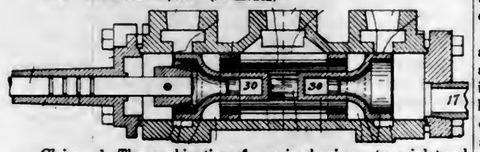
Claim.—1. In a gas-engine starter, the combination, with a rod provided with a striking-head, and means for rotating the rod, of a passage way for the insertion of a match up to the striking-head, substantially as shown and described.

2. In a gas-engine starter, the combination, with a rod provided with a striking-head and means for rotating the rod, of a passage-way for the insertion of a match up to the striking-head, and valve to close the passage-way when the match is inserted, substantially as shown and described.

3. In a gas-engine starter, the combination, with a rod, carrying a valve and a striking-head, and means for rotating the rod, of a passage-way for the insertion of a match up to the striking-head, and valve to close the passage-way when the match is inserted, substantially as shown and described.

4. In a gas-engine starter, the combination, with a rod carrying a valve, with spring for holding the valve in its seat, and means for rotating the rod, said rod having at its inner end a striking-head mounted eccentrically of the rod, of a stop cock opening opposite the striking-head, with valve therefor, through which the match is passed and whereby the match is broken off at the closing of the stop-cock valve, substantially as shown and described.

569,366. VALVE. THEODORE S. WILKIN, Milwaukee, Wis., assignor to the Filer & Stowell Company, same place. Filed Jan. 13, 1896. Serial No. 575,226. (No model.)



Claim.—1. The combination of a casing having a steam inlet and exhaust, and provided with a set of ports leading to one cylinder, and a second set of ports leading to another cylinder, a single valve within the casing, and means for actuating this valve in different directions, whereby said valve is made, respectively, to admit steam to and exhaust from one cylinder, while the other cylinder is closed against the admission of steam, to admit to and exhaust steam from said other cylinder while the first-named cylinder remains inactive, or to admit steam to and exhaust from both cylinders simultaneously, whereby the pistons within the cylinders are made to operate either alternately or simultaneously, substantially as set forth.

2. The combination, of a casing having a steam inlet and exhaust, and provided with a set of ports leading to one cylinder, and a second set of ports leading to another cylinder, a single valve within the casing, and a universally-jointed lever for actuating the valve in different directions, whereby said valve is made, respectively to admit steam to and exhaust from one cylinder while the other cylinder is closed against the admission of steam, to admit to and exhaust steam from said other cylinder, while the first-named cylinder remains inactive, or to admit steam to and exhaust from both cylinders simultaneously, whereby the pistons within the cylinders are made either to operate alternately or simultaneously, substantially as set forth.

3. The combination of a casing having a steam inlet and exhaust, and provided with ports adapted to be connected to a steam-cylinder, a valve within the casing, the ends of which are adapted to regulate the openings or ports leading to the cylinder, said valve provided with a central cavity or recess adapted to register with the steam-inlet, and side and end communicating passages closed from the central cavity or recess, said communicating passages leading to the exhaust-opening of the casing, and means for reciprocating the valve longitudinally, whereby, when reciprocated in either direction, one of the ports leading to the cylinder is brought into open communication with the central cavity or recess of the valve to admit live steam to the cylinder, while the other port in communication with the cylinder is brought into open communication with the passages leading to the exhaust from the casing, to allow a free passage of the exhaust-steam from the cylinder to said exhaust-opening of the casing, substantially as set forth.

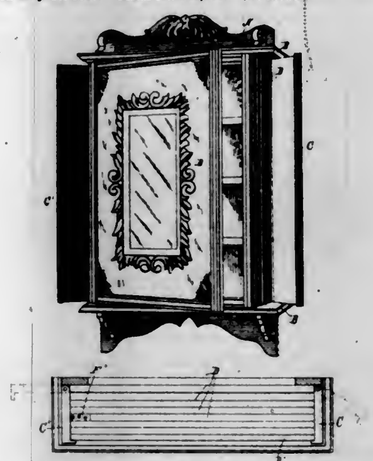
4. The combination, of a casing having a steam inlet and exhaust and provided with ports adapted to be connected to a steam-cylinder, a valve within the casing, said valve provided with a central cavity or recess adapted to register with the steam-inlet, and also with communicating front, rear and side passages closed from the central cavity or recess, and leading to the exhaust of the casing, and means for rotating the valve, whereby, when rotated in either direction, one of the ports leading to the cylinder is brought into open communication with the central cavity or recess of the valve, to admit live steam to the cylinder, while the other port in communication with the cylinder is brought into open communication with the passages leading to the exhaust from the casing, to allow a free passage of the exhaust-steam from the cylinder to said exhaust-opening of the casing, substantially as set forth.

5. In a valve for operating the pistons of steam-cylinders, the combination, of a casing having a steam inlet and exhaust, and provided with a set of ports leading to one cylinder, and a second set of ports leading to another cylinder, a valve within the casing, the ends of the valve adapted to regulate the openings or ports leading to one cylinder, said valve provided with a central cavity or recess adapted to register with the steam-inlet, and side and end communicating passages closed from the central cavity or recess, said communicating passages leading to the exhaust-opening of the casing, and means for either reciprocating longitudinally or rotating the valve, whereby, when reciprocated longitudinally in either direction, one of the ports leading to the cylinder is brought into open communication with the central cavity or recess of the valve, to admit live steam to the cylinder, while the other port in communication with the cylinder is brought into open communication with the passages leading to the exhaust from the casing, to allow for a free passage for the exhaust-steam from the cylinder to said exhaust-opening of the casing, and the valve when rotated in either direction, adapted to bring one of the ports of the other set leading to the cylinder into open communication with the central cavity or recess of the valve, to admit live steam to the cylinder, while the other port in communication with said cylinder is brought into open communication with the passages leading to the exhaust from the casing, to allow a free passage for the exhaust-steam from the cylinder to said exhaust-opening of the casing, substantially as set forth.

6. The combination, of a casing having a steam inlet and exhaust, and provided with ports adapted to be connected to a steam-cylinder, and with annular grooves leading to said ports, a valve within the casing, the ends of which are adapted to regulate the openings or ports leading to the cylinder, said valve provided with opposite cavities, communicating with each other by an opening, one of said cavities adapted to register with the steam-inlet, and side and end communicating passages closed from the central cavity or recess, said communicating passages leading to the exhaust-opening of the casing, and means for reciprocating the valve longitudinally, whereby, when reciprocated in either direction, one of the ports leading to the cylinder is brought into open communication with the cavity of the valve which receives steam direct from the inlet, to admit live steam to the cylinder, and the opposite cavity of the valve is brought into communication with the annular groove, while the other port in communication with the cylinder is brought into open communication with the passages leading to the exhaust from the casing, to allow a free passage of the exhaust from the cylinder to said exhaust-opening of the casing, substantially as set forth

7. The combination, of a valve and its stem, a casting provided with an eye or sleeve through which the valve-stem passes, and is rigidly secured therein, an operating-lever having a ball-and-socket joint, an arm, having its lower end turning pivotally in one direction at the upper end of the casting, and a pivot-pin at right angles to the other pivot, said pin pivotally connecting the upper end of the arm with the lower end of the operating-lever, substantially as set forth.

569,367. COMBINATION DISPLAY-CABINET. THOMAS E. WOOD, Kalamazoo, Mich., assignor of one-half to Charles D. Fuller, same place. Filed May 18, 1895. Serial No. 549,800. (No model.)



Claim.—1. An article of manufacture consisting of a piece of furniture provided with an album comprising sections D hinged together at their backs at E, an upper shelf B', a lower shelf B, said shelves having a space between them open on three sides in which said sections are pivotally supported and being of sufficient dimensions to cover and protect the upper and lower edges of said sections when closed, and a suitable casing pivoted at each end of said shelves and closing upon the folded leaves, substantially as described.

2. An article of manufacture consisting of a piece of furniture

provided with an album comprising sections D hinged together at their backs at E, an upper shelf B', a lower shelf B, said shelves having a space between them open on three sides in which said sections are pivotally supported and being of sufficient dimensions to cover and protect the upper and lower edges of said sections when closed, substantially as described.

3. In an article of furniture, the combination of hinged sections pivotally supported thereon; and adapted to close like a book the outer section forming a cover that projects slightly beyond the others and a suitable casing adapted to engage the outer leaf thereof in closing to form the sections into a closed cabinet, as specified.

4. In an article of furniture, the combination of sections or leaves hinged together and adapted to close like a book; a suitable support for the same; and folding wings adapted to shut over the back and front of said book to form the same into a cabinet, as specified.

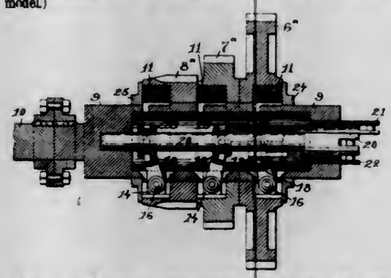
569,368. HEMMER FOR SEWING-MACHINES. ROSSELL S. BARNUM, Chicago, Ill., assignor to Frank L. Goodrich, same place. Filed Sept. 12, 1892. Serial No. 445,661. (No model.)



Claim.—1. A bed plate hemmer for sewing-machines consisting of a single piece of sheet metal, and comprising a shank, a scroll extending across one end thereof, the same being formed by bending the end portion of the metal upwardly into an offset plane and then downwardly and inwardly with its extremity directed toward the shank and in a plane above the level of the shank, whereby no part of the shank extends beneath the scroll and a space is left between the latter and the bed-plate for the passage of the fabric, and a guard-arm formed in prolongation of and in the same plane with a shank, said arm being arranged to extend transversely of the scroll and at a distance therefrom.

2. A bed-plate hemmer for sewing-machines consisting of a single piece of sheet metal and comprising a shank, a scroll extending across one end thereof, said scroll being formed by bending the end portion of the metal upwardly into an offset plane and then downwardly and inwardly with its extremity directed toward the shank and into a plane above the level of the shank, whereby no part of the shank extends beneath said scroll and a space is left between the latter and the bed-plate for the passage of the fabric, and two guard-arms formed in prolongation of and in the same plane with the shank, said arms being arranged to extend at opposite ends of the scroll transversely to the latter and at a distance therefrom.

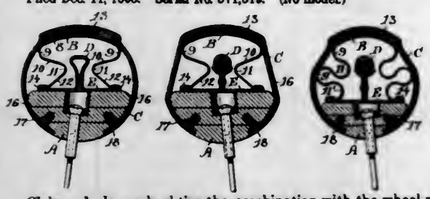
569,369. MECHANISM FOR VARYING SPEED. WILLIAM CORLISS, Providence, R. I. Filed Nov. 11, 1895. Serial No. 568,576. (No model.)



Claim.—1. The clutch mechanism herein described, the same consisting of a split ring, adapted to bear against the cylindrical face of a recess in the wheel, loose on the shaft, a tubular shaft, a right and left hand screw connected to a lever extending through an opening in the wall of the tubular shaft, a grooved sleeve connecting with the screw-operating lever, and the mechanism for operating the grooved sleeve, whereby the movement of the sleeve operates the lever to turn the screw and thereby force the split end of the ring apart and the outer surface of the ring against the cylindrical surface of the recess in the wheel and connect the wheel so as to rotate with the shaft, as described.

2. In mechanism for transmitting power at varying speeds, the combination, with the shaft 3, the series of graduated gears connected therewith, the tubular shaft 9, and the series of gears mounted thereon and provided each with a cylindrical recess, of the split rings 11, 11, the blocks 14 14, the double-ended screws 16 16, the levers 17 17 provided with the bifurcated ends 18, the rods 20, 21 and 22 each provided with a grooved sleeve 19 and the hand-levers connected therewith, whereby any one of the gears mounted on the shaft 9 may be connected with or disconnected from the shaft 9 and the speed of the shaft varied, as described.

569,370. WHEEL-TIRE. WILLIAM CORLISS, Providence, R. I. Filed Dec. 11, 1895. Serial No. 571,819. (No model.)



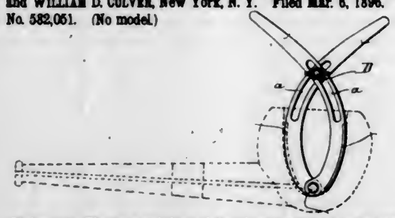
Claim.—1. In a wheel-tire the combination with the wheel-rim, the plate E and the stop D, of a series of independent springs B the ends of which are secured to the opposite sides of the plate E, adapted to form a spring-cushioned bearing for the wheel in which the compression of the spring is limited, as and for the purpose described.

2. In a wheel-tire the combination with the wheel-rim of the plate E formed into a ring adapted to incloss the rim, the stop D, a series of independent springs B the ends of which are secured to the opposite edges of the plate E, and the envelop C; the whole constructed to form a cushioned bearing for a wheel in which a series of transverse springs are interposed between the outer surface of the wheel-rim and the inner surface of the envelop, as described.

3. In combination an envelop having the thickened tread-bearing 13 and the sides 16, the plate E, the stop D, and the series of transverse springs B the ends of which are secured to the plate E, whereby a cushioned spring-bearing is formed, adapted to be secured to the rim of a wheel, as and for the purpose described.

4. In a wheel-tire the combination with the wheel-rim, a plate encircling the wheel-rim, a series of independent transverse springs each having the arched bearing-center 8, the curves 9 9 and 11 11, the ends of the springs secured to the plate E, and an envelop the sides of which are secured to the wheel-rim, whereby a spring-cushioned bearing inclosed in an envelop is interposed between the wheel-rim and the road, as described.

569,371. PIPE-CLEANER. WILLIAM C. CULVER, Jersey City, N. J., and WILLIAM D. CULVER, New York, N. Y. Filed Mar. 6, 1896. Serial No. 582,051. (No model.)



Claim.—1. The expansible tool for cleaning pipe-bowls composed of two arms pivoted together at their ends and having cutting edges adjacent to the pivot and extending along the outer edges of the arms, the free ends of such arms forming handles for manipulating the tool, substantially as set forth.

2. The tool for cleaning pipe-bowls, composed of two slotted arms pivoted together and having cutting edges at the exterior curved edges of the arms and a clamp-screw passed through the slots, substantially as set forth.

569,372. WRENCH. EDWARD CUNNINGHAM, Horton, Kans. Filed Mar. 23, 1896. Serial No. 584,470. (No model.)

Claim.—1. In a wrench, the combination, with a ratchet, of a pivotally-secured right-and-left pawl having inclined sides, a pivot-dog having a wedge-shaped head, a retracting-spring for said dog, a stud-bolt provided with an angular chamber, a slide-bar with a recessed head inserted within said chamber, a frame mounted upon said stud-bolt, said frame having arms to one of which is secured a shoulder, a lever pivoted to said shoulder and, at its lower end, to a slide-bar passing through said arm of said frame, a spring for said slide-bar, and a recessed head upon the inner end of said slide-bar, substantially as described.

2. In a wrench, the combination, with a handle having a bifurcated upper end, of a ratchet coupled to a hollow stud-bolt passing

transversely through said handle, a slide-bar with a recessed head secured within the chamber in said hollow stud-bolt, a right-and-left pawl having inclined sides pivoted within said handle, a dog having a wedge-shaped head mounted within said handle, said dog having a retracting-spring coiled upon its shank, a frame carried by the stud-bolt and having arms, the outer arm provided with a shoulder to which is pivoted a lever, said shoulder acting as a fulcrum for said lever, a slide-bar passing through said arm and connected to the lower end of said lever at its outer end and its inner end terminating in a head having a recessed outer face and provided with a shoulder against which one end of a spring upon said slide-bar abuts, the other end of said spring abutting against the inner face of said arm of the frame, substantially as described.

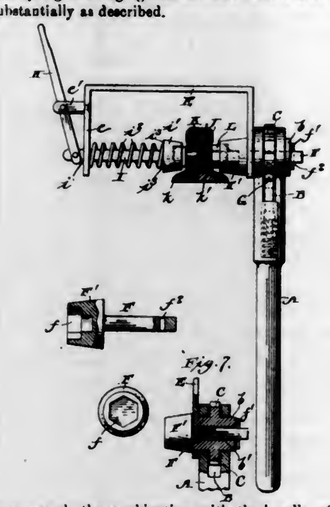
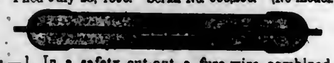


Fig. 7.

3. In a wrench, the combination, with the handle, of a ratchet and pawl, the hollow stud-bolt *b*, the slide-bar F with recessed head F', the frame E, the lever H pivoted on the fulcrum *e* and to the slide-bar I passing through said frame E, said slide-bar provided with the recessed head *i'* adapted to receive the head of the bolt J and to retain the same in its normal position, substantially as described.

4. In a wrench, the combination, with the handle, of a ratchet, pawl and pivot-dog, a stud-bolt supporting said ratchet and the frame E, a slide-bar F having a recessed head F' adapted to receive the nut L and the threaded end of the bolt J, a lever fulcrumed to said frame and pivoted to a slide-bar passing through one arm of said frame, said bar carrying a spring and terminating in a shouldered head whose outer face is recessed to receive the head of the bolt J, substantially as described.

569,373. CUT-OUT FOR ELECTRIC CIRCUITS. LOUIS W. DOWNES, Providence, R. I., assignor of one-half to William C. Woodward, same place. Filed July 23, 1896. Serial No. 600,298. (No model.)



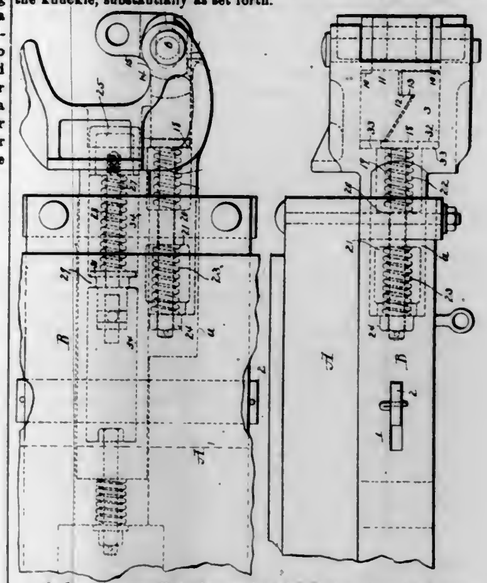
Claim.—1. In a safety cut-out, a fuse-wire combined with an inclosing sheath, and surrounded by a mass of finely-divided refractory material in a loose condition, placed in said sheath in such manner as to leave an air-space about the fuse-wire, substantially as described.

2. In a safety cut-out, the combination with a fuse-wire, of an inclosing sheath, a perforated drum within said sheath partially inclosing the fuse-wire to form an air-space about the same, and a mass of finely-divided refractory material—such as slaked lime—filling the sheath about said drum, substantially as described.

3. In a safety cut-out, the combination with a fuse-wire, of an inclosing sheath consisting of a tube with perforated end pieces or caps, a perforated paper drum within said sheath, partially inclosing the fuse-wire to form an air-space about the same, and a mass of finely-divided refractory material—such as slaked lime—filling the sheath about said drum, substantially as described.

569,374. CAR-COUPLING. RICHARD J. EDWARDS, Galena, Ill. Filed Jan. 25, 1896. Serial No. 576,831. (No model.)

Claim.—1. In a car-coupling, the combination with the draw-head, of a knuckle connected thereto so as to have a pivotal and a longitudinal movement, shoulders on the draw-head, guides in the knuckle for said shoulders, and shoulders on the knuckle to engage the shoulders on the draw-head and limit the outward movement of the knuckle, substantially as set forth.



2. In a car coupling, the combination with a draw-head, of a pivoted knuckle so connected with the draw-head as to have a pin-and-link motion, said knuckle having grooves terminating at one end in shoulders, and shoulders on the draw-head disposed in said grooves and adapted to be engaged by the shoulders at one end of said grooves, substantially as set forth.

3. In a car-coupling, the combination with a draw-head, and a knuckle pivoted thereto, said knuckle having a curved enlargement thereon of a sprig-pressed block adapted to bear against the enlargement on said knuckle and hold it in its open position, substantially as set forth.

4. In a car-coupling, the combination with a draw-head, of a knuckle pivoted thereto, said knuckle having a curved enlargement between its arms, and a spring-pressed block having a curved end to engage said curved enlargement and hold the knuckle open, substantially as set forth.

5. In a car-coupling, the combination with a draw-head, of a knuckle pivoted thereto so as to have a pivoted and a pin-and-link motion, a curved shoulder on the inwardly-projecting arm of the knuckle, a longitudinally-movable yielding block, and a curved shoulder on said block to engage the shoulder on the knuckle, substantially as set forth.

6. In a car-coupling, the combination with a draw-head, of a knuckle pivoted thereto so as to have a pin-and-link motion, a longitudinally-movable yielding block adapted to interlock with the inwardly-projecting arm of the knuckle, said block having a recess in its bottom and a lug in the draw-head to enter said recess, substantially as set forth.

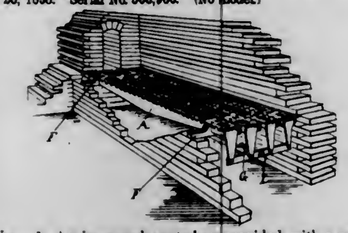
7. In a car-coupling, the combination with a draw-head and a draw-bar, of a tubular extension on the draw-bar and communicating with the draw-head, a knuckle pivoted to the draw-head so as to have pin-and link motion, a longitudinally-movable block adapted to interlock with the inwardly-projecting arm of the knuckle, a shank secured to said block and extending through said tubular extension, shoulders in said extension, a spring within said tubular extension bearing against one of said shoulders and the block, and another spring bearing against the other shoulder and a nut on the end of said rod, substantially as set forth.

8. In a car-coupling, the combination with a draw-head and a knuckle pivoted thereto so as to have a pin-and-link motion, of a longitudinally-movable yielding block adapted to interlock with the inwardly-projecting arm of the knuckle, and a locking-block set up less than an inch from the bottom of the draw-head, substantially as set forth.

9. A knuckle for a car-coupling having two members disposed at right angles to each other and having an elongated slot at the junction of said members, said knuckle also having elongated slots curved at one end and shoulders at the curved end of said slots substantially as set forth.

10. A knuckle for a car-coupling comprising two members disposed at right angles to each other and having an elongated slot at the junction of said members, and a curved enlargement on one of said members at its junction with the other member, substantially as set forth.

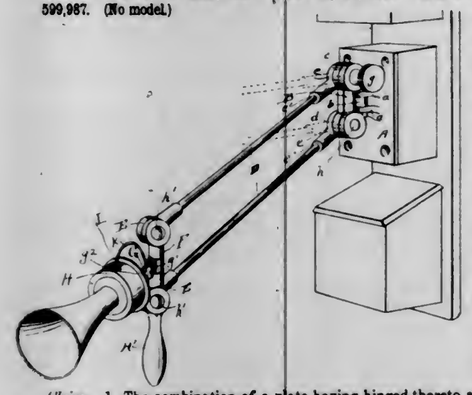
569,375. GRATE-BAR. JAMES T. FULLER, Calvert, Tex. Filed Oct. 26, 1895. Serial No. 566,966. (No model.)



Claim.—1. An improved grate-bar provided with a semicylindrical journal rounded below, and its upper surface forming part of the grate-surface, with draft-spaces between the cross-walls forming the bearing portions, in combination with a supporting-bar matching with said cross-walls and open under said draft-spaces, substantially as described.

2. An improved grate-bar having a perforated journal located away from the end, and forming part of the upper face of the grate-bar, consisting of transverse cross-walls and intermediate downward spaces, for sifting ashes therethrough and the ventilation of said journal, in combination with an open supporting-bar.

569,376. ADJUSTABLE BRACKET FOR TRANSMITTERS. ANDREW Y. GORDON, Massillon, Ohio. Filed July 21, 1896. Serial No. 599,987. (No model.)



Claim.—1. The combination of a plate having hinged thereto a bar provided with disks, heads pivotally connected to the bar, parallel bars connected to heads at their inner and outer ends, and the bar F, carrying the transmitter H, substantially as and for the purpose specified.

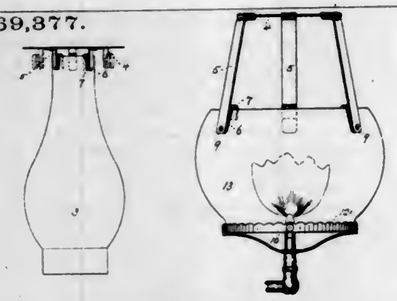
2. A plate having pivotally attached thereto a bar, said bar provided with disks, parallel bars connected to heads, and said heads pivotally connected to the bars B and F, the arm G, provided with the eye g', the clamping-bolt g^2, passed through the members of the arm G, and the transmitter-plate I, substantially as and for the purpose specified.

3. The pivoted bar B, provided with the disks d and c, the disk c, being concaved upon one of its faces, the spring C, located in the concavity of the disk c, the nut g, the parallel bars D, the bar F, carrying a transmitter and provided with an operating-handle, substantially as and for the purpose specified.

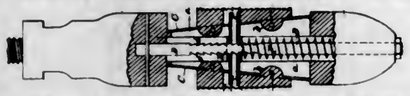
569,377. HEATER FOR ATTACHMENT TO OIL OR GAS BURNERS. HERVEY H. HALLETT, Rockland, Mass. Filed May 27, 1895. Serial No. 550,775. (No model.)

Claim.—In combination with a metallic plate, two or more pendent supports detachably affixed thereto, a plurality of folds at the lower extremity of said supports to form a flexible foot, and a perforation likewise in the end of each foot, whereby the plate may be mounted upon a chimney, a globe, or a globe-holder, as set forth and explained.

569,377.



569,378. WELL-CASING SPEAR. ELLERY M. HOAGLAND, East Oakland, Cal. Filed Mar. 16, 1896. Serial No. 583,352. (No model.)



Claim.—1. In a casing-spear having a stock with inclined-plane seats, and slidable wedges or slips mounted thereon, having elongated slots, a means tending to force and hold the wedges or slips upwardly, slidable locking-pins engaging said wedges or slips, and on which the latter have an independent vertical movement, and devices in the stock for engaging the locking-pins to hold and to release them.

2. In a casing-spear having a stock with inclined-plane seats, and slidable wedges or slips mounted thereon, a means tending to force and hold the wedges or slips upwardly, locking-pins engaging said wedges or slips, and on which the latter have an independent vertical movement, and devices in the stock for engaging the locking-pins to hold and to release them, consisting of a rod or spindle within the stock having teeth with stop-shoulders and inclined faces.

3. In a casing-spear having a stock with inclined-plane seats and slidable wedges or slips mounted thereon, the rod or spindle within the stock and having teeth, the spring-controlled sliding cross head on said rod or spindle, and having hollow arms projecting outwardly and engaging the wedges or slips by means of fitting in an enlarged or oblong slot therein whereby the wedges or slips have an independent movement on said arms, and slidable locking pins or pawls seated in the arms and adapted, when forced inwardly, to engage with the teeth of the rod or spindle, and to be relieved therefrom by the downward movement of the cross-head.

4. In a casing-spear having a slotted stock and inclined-plane seats with wedges or slips fitted thereon, the slotted removable wearing-plates on said inclined-plane seats and on which the wedges or slips slide, and the means for securing the wedges or slips consisting of the ears with cross-pins playing behind the slotted wearing-plates.

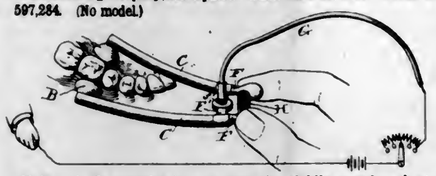
569,379. WASHING-MACHINE. JOHN HOFMANN, Covington, Ky., assignor, by direct and mesne assignments, to the Acme Company, same place. Filed Dec. 16, 1895. Serial No. 572,281. (No model.)



Claim.—1. The combination, in a washing-machine, of a suds-box having a slotted lid I i' i'' i'' hinged to it; a concave rubber D D' E, adapted to vibrate within said box; a convex rubber F F' G, applied to guides H H', of said lid, and adapted to vibrate within said concave rubber; a slotted lever N n, projecting rigidly from said convex rubber, and traversing the slot i', a slide M carried by a rod L, and reciprocating within the slot n, rocking levers K, K', mounted upon the lid, and having said rod L, secured to them; rods P, P', that pass through the slots i'', i'', and connect said levers K, K', to the concave rubber; and a handle-bar k, uniting the upper ends of these levers, all as herein described, and for the purpose set forth.

2. A washing-machine hinge consisting of a plate R capable of being secured to the tub A, and having near one end a longitudinal slot r, and near its other end a lateral stud r', in combination with a plate S capable of being attached to the lid I, and having near one end a lateral stud s, that traverses said slot r, and near its other end a curved slot s' through which is passed said stud r' said slot s', being eccentric, with reference to said stud s, for the purpose described.

569,380. DENTAL CATAPHORIC APPARATUS. MERRILL W. HOLLINGSWORTH, Philadelphia, Pa., assignor to the S. S. White Dental Manufacturing Company, same place. Filed June 29, 1896. Serial No. 597,284. (No model.)



Claim.—1. In cataphoric apparatus, the yielding carrier adapted to be self-conforming to the surface with which contact is to be made, substantially as set forth.

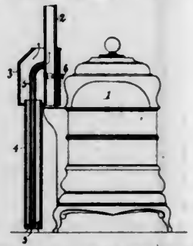
2. In cataphoric apparatus, the yielding or self-conforming carrier of coiled wire, substantially as set forth.

3. In cataphoric apparatus, the carrier consisting of coiled wire and the rubber cover, substantially as set forth.

4. In cataphoric apparatus, the combination of the carriers, and the adjustably-connected, spring-actuated carrier-arms curved to correspond approximately with the curvature of the human jaw, substantially as set forth.

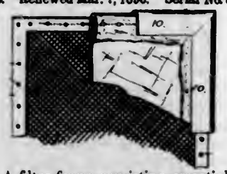
5. In cataphoric apparatus, the combination of the carriers, the adjustably-connected, spring-actuated carrier-arms, and the handle-pieces with which the respective carrier-arms have turning connection, substantially as set forth.

569,381. HEATER AND VENTILATOR. ELIJAH HOUGH, Saginaw, Mich. Filed Jan. 8, 1896. Serial No. 574,671. (No model.)



Claim.—In a heating and ventilating attachment for stoves, the combination with the stovepipe, of a drum surrounding the pipe and having openings above, and the pipe 4 extending from the base of the drum to the floor, whereby the cold air will be drawn from the floor through the pipe 4 and discharged into the drum to be heated by the stovepipe and pass out the top of the drum, and the ventilating-flue 5 within the pipe 4 and extending from near the lower end thereof into the drum and connected with the stovepipe above the damper, whereby the foul air may be conveyed from the floor of the room and discharged into the stovepipe, substantially as and for the purpose set forth.

569,382. FILTER. EDWARD M. KNIGHT, New York, N. ... Filed June 24, 1895. Renewed Mar. 7, 1896. Serial No. 582,276. (No model.)



Claim.—1. A filter-frame consisting, essentially, of a reticulated or woven-wire backing, a sheet or piece of fabric laid upon the same with its raw edges turned outwardly and folded upon the outer face of the fabric, and a surrounding strip for binding edges of the backing and turned-over portion of the fabric.

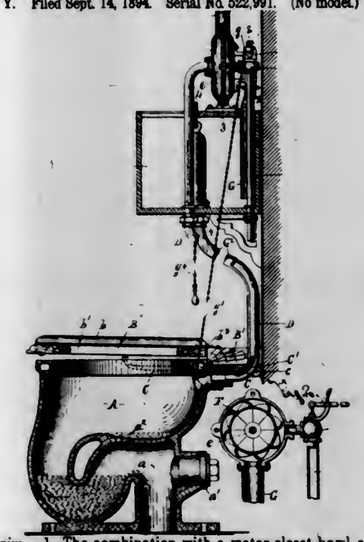
2. A filter-frame consisting, essentially, of a reticulated or woven-wire backing, a plate or strip surrounding the same and secured to the edges thereof, said surrounding plate or strip having apertures made through it, and a sheet of fabric laid over the outer face of the backing and stitched to the plate or strip through the holes therein said fabric having its raw edges folded toward the outer face of the fabric, and down upon the same, and means for clamping the turned-over portion of the fabric and exterior edge of the surrounding plate or strip.

3. A filter-frame having a filter-bed composed, essentially, of a sheet of fabric through which the water is filtered said fabric having its raw edges folded outwardly and down upon the exterior face of the fabric so that they may be presented toward the water to be filtered.

4. A filter-frame consisting, essentially, of a foraminous backing the outer edges of which are secured to a surrounding plate or strip having openings made through it, a sheet of asbestos placed over said backing, means whereby the fabric is secured to the surrounding plate or strip through the openings in the same, and a clamping frame or strip folded over the edges of the surrounding apertured plate or strip and the raw edges of the fabric.

5. A filter-frame consisting of an exterior frame having outwardly-extending flanges, a foraminous plate or backing laid upon said flanges, and having its edges secured to a plate or strip having a series of openings made through it, a sheet of asbestos placed over the exterior face of the foraminous plate or backing with its raw edges projecting beyond the surrounding apertured plate or strip, said projecting flange adapted to be folded outwardly whereby the raw edges of the fabric are folded outside of and against the outer face of the fabric so as to be presented toward the water passing through the fabric, and an interior supporting-frame for the filter-bed.

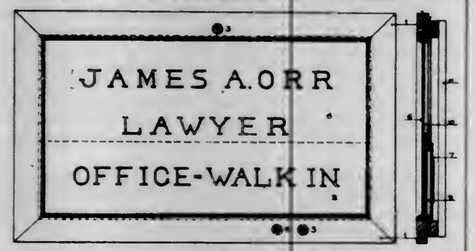
569,383. WATER-CLOSET. MICHAEL L. MCGUIRE, Syracuse, N. Y. Filed Sept. 14, 1894. Serial No. 522,991. (No model.)



Claim.—1. The combination with a water-closet bowl, a tank, a conducting-pipe leading thence to the bowl for flushing the same, a feed-pipe leading to the tank, a valve therein for controlling the flow of water to the tank, a movable seat, and connections between the latter and said valve for holding such valve open while the seat is depressed; of an uptake air-pipe connected with the bowl above its water-line and leading to the open air, a fan in this pipe, and a water-motor in the feed-pipe between the valve and tank for driving the fan, as and for the purpose set forth.

2. The combination with a water-closet bowl, a tank, a conducting-pipe leading thence to the bowl for flushing the same, a manually-operated valve in said pipe, an automatic overflow through this valve, a feed-pipe leading to said tank, a valve therein, a movable seat, and connections between the latter and said feed-valve for holding this valve continuously open while the seat is depressed; of an uptake air-pipe connected with the bowl and leading to the open air, a fan in this pipe, and a water-motor in the feed-pipe between the feed-valve and tank for driving the fan, as and for the purpose set forth.

569,884. OFFICE-INDICATOR. CHARLES L. MCKESSON, Howard, Kans. Filed Mar. 4, 1896. Serial No. 581,521. (No model.)



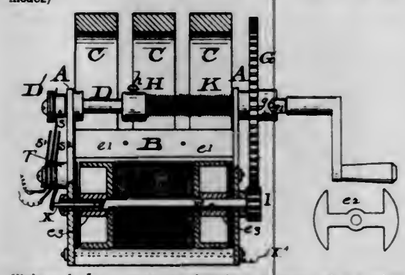
Claim.—1. The combination in an office-sign of the glass 6 with a sign giving name and occupation upon the upper part thereof and the lower part left transparent to act as a covering for the slide 7 containing an indicator, consisting of a clock dial and hands, a celluloid card and suitable matter painted on the glass and written on the card, substantially as set forth.

2. In an office-sign the combination of the slide 2, the groove 10 in the frame of such sign, the pulley 12 with a ratchet edge for the reception of the spring 13, together with a shaft having a square shoulder at one end, providing a way by which the pulley can be turned by means of a key inserted through a hole in the frame, the cord 15 for raising the slide, the block 14 fastened to the center of such slide and the staple in such block to which the cord 15 is fastened for the purpose of moving such slide up and back of the opaque part of the glass 6, and holding it there, substantially as set forth.

3. In an office sign the sprocket-wheels 18 and 19 attached to a shaft with a square shoulder so that the same can be turned by means of a round key with a square hole in the end of it, the sprocket-chain connecting the sprocket-wheels 18 and 19, the sprocket-wheel 19 and the pinion 21 securely fastened to a shaft which passes through the pinion 20 and the sleeve thereto attached, the pinion 23 which engages in and is turned by the pinion 21 and the pinion 22, which engages and turns the pinion 20, the hour-hand attached to the sleeve on pinion 20, and the minute-hand attached to the shaft to which the sprocket-wheel 19 is fastened, by means of which mechanism the minute-hand of the clock is moved over the dial 8, twelve times as fast as the hour-hand when the sprocket-wheel is turned by means of the key, substantially as set forth.

4. In an office-sign the combination of a wooden or metal frame with the groove 10 providing for the moving of the slide 2 up back of the opaque part of the sign and the holes 3, 4 and 5 for the reception of a key to raise the slide 2 and set the hands on the clock-dial 8 and adjust the "A" and "P" before the "M," substantially as set forth.

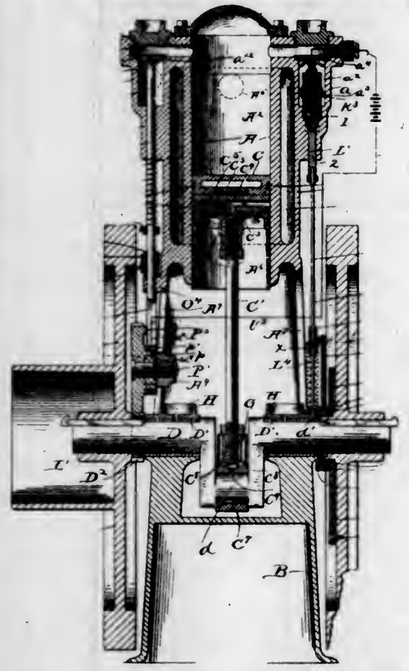
569,885. MAGNETO-ELECTRIC GENERATOR. CHARLES H. NORTH, Cleveland, Ohio. Filed Apr. 14, 1896. Serial No. 587,560. (No model.)



Claim.—1. In a magneto-electric generator, the combination with the rotary armature E and vibratory shaft D, of the springs S, S', S^2, mounted on the end plate A, spring S^2 contacting with pin X in the armature-shaft, spring S' connected in the main circuit, spring S interposed between said springs S', S^2, and connected in the main circuit, also connected with the end of the vibratory shaft D, and adapted thereby for changing the electric current between said springs S' S^2, as and for the purpose set forth.

2. In a magneto-electric generator, the combination with the rotary armature E, of the cylinder composed of the stamped pole-pieces B B, having the end projections b^4 b^4, the stamped plates A A, comprising heads for the cylinder, and having the perforated lugs a a and curved edges between said lugs, adapted to receive the said projections b^4, and the tie-rods a^3 which enter said lugs, and bind the pole-pieces to the end plates, substantially as described.

569,886. GAS-ENGINE. FRED C. OLIN, Buffalo, N. Y. Filed Feb. 11, 1893. Renewed Mar. 13, 1896. Serial No. 583,134. (No model.)



Claim.—1. In a gas-engine, the combination with the cylinder, two valve-casings rigid with each other and located the one within the other, a duct or passage-way adapted to open communication between the chamber of the outer-valve casing and the chamber of the cylinder, an air-induction port or passage-way opening into the chamber of the outer-valve casing, a gas-induction port or passage-way opening into the chamber of the inner-valve casing, of a valve for opening and closing communication between the chamber of the outer-valve casing and chamber of the cylinder and a valve for opening and closing communication between the chambers of the two valve-casings, the valve of the outer-valve casing having a stem extending downwardly through the inner valve, a nut or rigid member on the lower end of said valve-stem, a coil-spring mounted on the stem between said rigid member and the inner valve, and a shoulder on said valve-stem adapted to abut the top of the inner valve when the outer valve is closed, substantially as set forth.

2. In a gas-engine, the combination with the cylinder, two valve-casings rigid with each other and located the one within the other, a duct or passage-way adapted to open communication between the chamber of the outer-valve casing and the chamber of the cylinder, an air-induction port or passage-way opening into the chamber of the outer-valve casing, a gas-induction port or passage-way opening into the chamber of the inner-valve casing, of a valve for opening and closing communication between the chamber of the outer-valve casing and chamber of the cylinder, and a valve for opening and closing communication between the chambers of the two valve casings, the outer or upper valve having a downwardly-extending stem suitably connected with the lower or inner valve, a guide for said stem within the chamber of the outer-valve casing, a shoulder on the stem for supporting said guide, said guide comprising downwardly and outwardly inclined arms connected at their lower and outer ends by a rim engaging the surrounding wall of the chamber of the valve-casing, substantially as set forth.

3. In a gas-engine, the combination with the gas-induction valve, and engine-shaft, of a rotating member operatively mounted on said shaft, an eccentric loose upon the shaft and having an arm pivoted to said rotating member, a weighted arm rigid with and extending laterally of the eccentric, a spring acting in the direction to retain the eccentric in its normal position and suitable mechanism operatively connecting the aforesaid valve with the eccentric and adapted to hold the valve closed or partially closed, the arrangement of parts being such that when the speed of the engine-shaft becomes too great or abuormal the centrifugal force developed in the aforesaid weight shall shift the eccentric against the action of the aforesaid spring,

and cause the aforesaid valve-holding mechanism to perform its function, substantially as set forth.

4 In a gas-engine, the combination with the cylinder, valve-casing rigid with the cylinder, gas-induction port or passage-way opening into the chamber of said valve-casing, said chamber being adapted to communicate with the chamber of the cylinder, and a valve for opening and closing said communication, said valve being adapted to be opened by the suction created by a vacuum or partial vacuum in the cylinder, and having a stem extending outwardly through the valve-casing, of the engine-shaft, a fly-wheel operatively mounted on said shaft, an eccentric loosely embracing the engine-shaft or hub of the fly-wheel, and having a laterally-extending arm pivoted to one of the spokes or arms of the fly-wheel, a weighted arm rigid with and extending laterally of the eccentric, a spring acting to retain the eccentric in a concentric position, an eccentric-strap embracing the eccentric and connected with the aforesaid valve stem in such a manner, and the arrangement of parts being such, that when the speed of the engine-shaft becomes abnormal or too great said valve shall positively be held closed or partially closed until normal speed of the shaft is again attained, substantially as set forth.

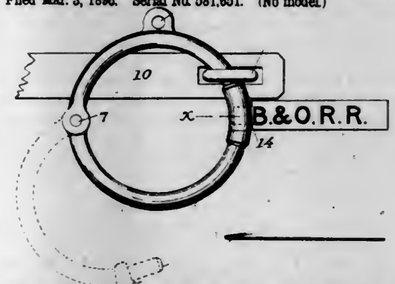
5 In a gas-engine, the combination with an upright cylinder a valve-casing rigid with said cylinder, a gas-induction port or passage-way opening into the chamber of said valve-casing, said chamber being adapted to communicate with the chamber of the cylinder, and a valve for opening and closing said communication, said valve being adapted to be opened by suction created by a vacuum or partial vacuum in the cylinder, and having a stem extending downwardly through the valve-casing, of the engine-shaft, a fly-wheel operatively mounted on said shaft, an eccentric mounted on the hub of said wheel and having a laterally-extending arm pivoted to one of the spokes or arms of the fly-wheel, a weighted arm rigid with and extending laterally of the eccentric, a spring acting to retain the eccentric in its normal position, an eccentric-strap embracing the eccentric and connected with the aforesaid valve-stem in such a manner and the arrangement of parts being such that when the speed of the engine-shaft becomes abnormal or too great the aforesaid valve shall be positively held closed or partially closed until normal speed again obtains, substantially as set forth.

6. In a gas-engine, the combination with the gas-induction valve and valve-casing, the stem of the valve extending outwardly through the valve-casing, a sliding sleeve or collar on said stem, fixed member on the stem outside of said collar and a coil-spring suitably mounted on the stem between said fixed member and sliding member, of the engine-shaft, a fly-wheel operatively mounted on the shaft, an eccentric loosely mounted on the shaft or fly-wheel hub and having a laterally-extending arm pivotally connected with the fly-wheel, a weighted arm rigid with and extending laterally of the eccentric, a spring acting to retain the eccentric in its normal position, an eccentric-strap embracing said eccentric and pivotally connected with the aforesaid sliding member on the valve-stem, the arrangement of parts being substantially as and for the purpose set forth.

7. In a gas-engine, the gas-induction valve having a stem composed of three sections, the lower section, at its upper end, extending into a corresponding hole in the outer end of the central section and said portion of the central section being tapering outwardly, externally screw-threaded, and engaged by a correspondingly-threaded nut securely clamping said section onto the lower section, substantially as set forth.

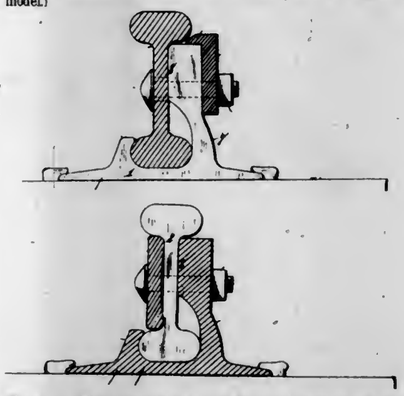
8. In a gas-engine, the combination with the cylinder, two valve-casings rigid with the cylinder and located the one within the other, an air-induction port communicating with the chamber of the outer-valve casing, a gas-induction port communicating with the chamber of the inner-valve casing, a valve for opening and closing communication between the chambers of said valve-casings, a duct or passage-way, a', closed at the outer end and adapted to establish open communication between the chamber of the outer-valve casing and the chamber of the cylinder, and a valve for opening and closing said communication, said valves being suitably connected with each other and adapted to be opened by suction created by a vacuum or partial vacuum formed within the cylinder, of an insulated conducting piece or member extending into said duct and supported by but insulated from the engine, and electrically connected or adapted to be electrically connected with the one terminal of an electric battery, a non-insulated conducting-piece electrically connected with the engine, extending into the aforesaid duct, terminating, within said duct, in a laterally-extending member adapted to bear upon the inner end of the aforesaid insulated conducting-piece, and being rigidly secured to the stem of one of the aforesaid valves, the engine forming part or being adapted to form a part of the electric circuit, suitable means for actuating said valve-stem to cause the non-insulated conducting-piece to become electrically disconnected from the insulated conducting-piece, engine-shaft and suitable means operatively connected with said shaft for turning said stem in the one direction and suitable means for turning said stem in the opposite direction, the parts being arranged substantially as and for the purpose set forth.

569,887. SEAL-PADLOCK. NATHAN C. POND, Port Chester, N. Y. Filed Mar. 3, 1896. Serial No. 581,651. (No model.)



Claim.—In seal-locks, the combination of a body and a shackle portion hinged together at one side, one of the said portions being provided with a tenon and the other having a socket to receive it; the tenon and one side of the socket having apertures registering with each other when the lock is closed, and a seal of thin sheet material provided with a tongue of a width to fit closely to the said apertures and bent bodily to one side forming an anchoring-fluke the whole width of the tongue, substantially as described.

569,888. RAILWAY-RAIL AND CHAIR OR BED. LEWIS S. PROCTOR, Sheffield, Ala. Filed Feb. 19, 1896. Serial No. 579,903. (No model.)



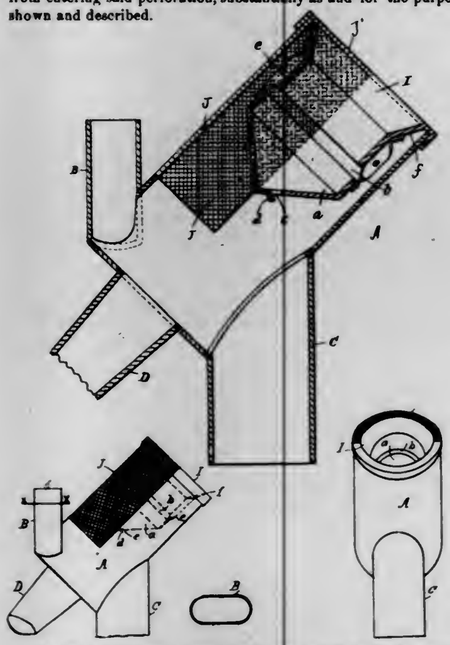
Claim.—1. The combination with the track-rails, of the continuous rail-bed composed of abutting chairs secured to the cross-ties and extended continuously throughout the track, each chair having a vertically-projecting flange or rib in contact with the inner side of the rails, throughout their length, and a vertically and inwardly projecting flange provided with a shoulder for contact with the outer side of the rail-webs, throughout their length, fish-plates on the inner side of the rail-joints, and fish-plates on the outer side of the chair-joints, substantially as described.

2. The combination with reversible track-rails having heads that are alike on both edges, of a continuous rail-bed composed of abutting chairs secured to the cross-ties and extended continuously throughout the track to support the rails at all points, each chair being provided with a vertically-projecting flange or rib in contact with the inner side of the lowermost rail-heads, throughout their length, and a vertically and inwardly projecting flange provided at the top with a shoulder for contact with the outer side of the rail-webs, throughout their length, a fish-plate on the inner side of each rail-joint, and a fish-plate on the outer side of each chair-joint and provided with a flange resting on the shouldered flange of the chair, substantially as described.

569,889. GRAIN RECLEANER AND SEPARATOR. JAMES B. SCHUMAN, Columbia, Ind. Filed Jan. 27, 1896. Serial No. 576,973. (No model.)

Claim.—1. A recleaner and separator, in combination with a pneumatic grain-conveyer, comprising a main body and chamber having an inlet-opening at one end and attached to conveyer-pipe;

at its upper side near the inlet end an air-outlet situated at one side and out of the line of the air-blast from the conveyer-pipe; a grain-discharge opening at the lower side of the main chamber at or near the said inlet; a sleeve depending from the upper end of the main chamber so attached to the dust-outlet end that all portions around the said sleeve are inclosed at the lower side of body and end, while the upper portion of the body side and end is provided with a screen of close mesh; a cone secured and depending from the inner side of said main chamber, said cone being slightly larger at its base than the diameter of said sleeve and overlapping the same but slightly separating it to provide a passage between lower end of said sleeve and base of said cone, said cone having at the lower side of its apex a perforation partially covered by a lip so that a blast from the inlet will strike the point of the cone and be deflected from said lip and from entering said perforation, substantially as and for the purposes shown and described.



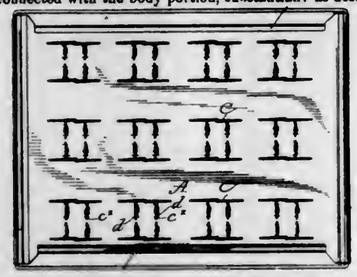
2. The combination, with a grain-conveyer of the kind described, of a recleaner and separator attached to the discharging end of said conveyer, comprising the main body portion having the central inlet; the air-outlet at the upper side; the grain-outlet at the lower side; and the cone supported within said body portion, the apex of said cone being central with said inlet and situated in line therewith; the sleeve having the annular flange, which incloses the outer portion of the end of said body portion opposite the said inlet thereto, said sleeve being somewhat smaller at its inner end than the base of said cone, the said cone and said sleeve providing, as situated, a deflector and an outlet-passage for dust or chaff, substantially as shown and described.

3. In a pneumatic grain-conveyer of the kind described, the combination of the recleaner A composed of the cylindrical body portion having the inlet D; the air-outlet B; the grain-outlet C; the cone *a*, having the opening *c* and lip *d*; the sleeve *f* having the annular flange covering the end of said body portion around said sleeve, said cone being supported in front of said sleeve so as to provide a passage *b* between, said sleeve being open to the atmosphere at I; the screen J at upper portion of said body portion, and the screen J' around upper portion of the discharging end of said body portion, substantially as and for the purposes shown and described.

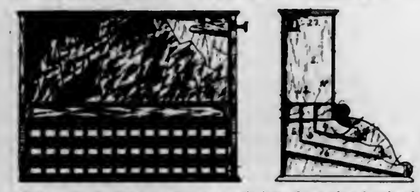
569,390. EGG-CRATE. GEORGE W. SPURR, Wabash, Ind., assignor to the Household Specialty Company, same place. Filed Feb. 24, 1896. Serial No. 580,422. (No model.)

Claim.—1. An egg-crate comprising the sheet-metal body having struck-up portions forming a plurality of pairs of perforations, and the egg-shaped loops having twisted necks and laterally-turned portions below said necks, the ends of said lateral portions being bent at right angles to and inserted in the perforations of the base, substantially as described.

2. An egg-crate comprising the sheet-metal body portion having longitudinal and transverse strengthening-ribs and upwardly-turned ends, the rectangular wire loop connecting said ends, and the wire loops connected with the body portion, substantially as described.



569,391. GAME APPARATUS. CHARLES J. STAUFFIGER, Buffalo, N. Y. Filed Feb. 19, 1896. Serial No. 579,916. (No model.)



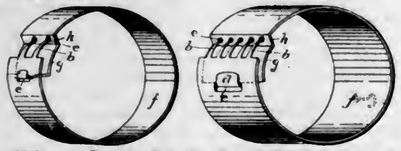
Claim.—1. A game apparatus consisting of a casing having in its upper portion a closed and unobstructed chamber and in its lower portion a series of chutes, their upper inlet-orifices being arranged in the floor of the closed chamber, their lower numbered outlet-orifices being arranged in the front of the casing below the closed chamber, a fixed propelling device in the wall of the closed chamber and a ball to be propelled within the closed chamber and to pass by gravity into the inlet-orifice of one of the chutes and along such chute to its numbered outlet-orifice.

2. A game apparatus consisting of a casing having in its upper portion a closed and unobstructed chamber with transparent front wall, and in its lower portion a series of chutes, their upper inlet-orifices being arranged in the floor of the closed chamber, their lower numbered outlet-orifices being arranged in the front of the casing below the closed chamber a fixed propelling device in the wall of the closed chamber, a ball to be propelled within the closed chamber and to pass by gravity into the inlet-orifice of one of the chutes and along such chute to its numbered outlet-orifice and an open passage leading from the top or cover on the casing to the muzzle of the propelling device for the purpose stated.

569,392. PROCESS OF PRODUCING AZO COLORS ON FIBER. FRITZ STORCK, Prague, Austria-Hungary, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Oct. 31, 1895. Serial No. 567,527. (No specimens.) Patented in Germany Nov. 4, 1893, No. 80,409; in France Nov. 6, 1893, No. 233,876, and in England Nov. 6, 1893, No. 21,067.

Claim.—The process herein described of producing fast insoluble azo colors on the fiber, which consists in impregnating the fibers to be dyed or printed with a sodium salt of phenol, and subsequently submitting the fibers to the action of mixtures of diazo compounds of aromatic bases with cupric chlorid, substantially as set forth.

569,393. PIN-AND-CATCH DEVICE. WILLIAM H. STRECKER and ARTHUR D. MOORE, New York, N. Y. Filed Jan. 22, 1896. Serial No. 576,392. (No model.)



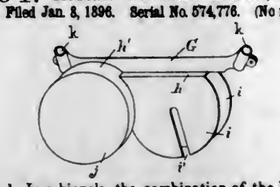
Claim.—1. In a catch device, the combination of two portions one provided with a terminal pin and contiguous eye or loop, and the other with an end hook to engage said eye or loop, and a second eye or loop to receive and serve as a guard for the pin, substantially as set forth.

2. A pin-and-catch device made from a single piece of metal bent circular, provided at one end with a terminal pin and contiguous eye or loop, and at the other with an end hook to engage said eye or loop and an eye or loop to receive and serve as a guard for the pin, substantially as set forth.

3. A pin-and-catch device adapted to serve as a ring for curtain-poles and consisting of a blank of sheet metal bent and provided at one end with a terminal pin or pins and contiguous eye or opening, and at the other with a hook-ended offset, the radial portion of which is perforated to receive and guard the pin or pins, substantially as set forth.

4. A pin-and catch device consisting of a blank of sheet metal bent and provided at one end with a terminal pin or pins and contiguous eye or opening; at the other with a hook-ended offset, the radial portion of which is perforated to receive and guard the pin or pins, and medially with a device for the attachment of a suspending medium, substantially as set forth.

569,394. BICYCLE. HEZEKIAH J. THOMPSON, Nassau, Bahama Islands. Filed Jan. 8, 1896. Serial No. 574,776. (No model.)



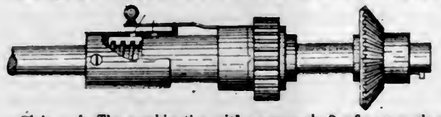
Claim.—1. In a bicycle, the combination of the bars of the bicycle-frame; a crank-axle carrying a sprocket; and a shield or casing comprising the central horizontal plate having at each end a clip, *k*, to engage the bars of the bicycle-frame, and provided with downward circular-shaped plates which take astride of the crank-sprocket and each plate provided with a radial slot fitting down over the crank-axle, as set forth.

2. In a bicycle, the combination of the bars of the bicycle-frame; a crank-axle carrying a sprocket; the auxiliary shaft carrying on its ends two auxiliary side sprockets; and a shield or casing comprising the central horizontal plate having at each end a clip, *k*, to engage the bars of the bicycle-frame, and provided with downward circular-shaped plates, *i*, which take astride of the said crank-sprocket and each of said plates provided with a radial slot fitting down over the crank-axle, and said central plate also provided with a surface at each side and downward-projecting circular plates, *j*, which are wider apart than the first-named circular-shaped plates and take on opposite sides of and cover the said two auxiliary sprockets.

569,395. PROCESS OF DYEING PHENETIDIN RED. EDUARD ULLRICH and MORITZ VON GALLOIS, Höchst-on-the-Main, Germany, assignors to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 26, 1893. Serial No. 494,752. (No specimens.) Patented in Germany Jan. 17, 1892, No. 64,510; in England Mar. 5, 1892, No. 4,407, and in France Mar. 5, 1892, No. 219,909.

Claim.—The process of producing a bluish-red color in dyeing fibers, which consists in combining on the fiber orthonitroparaphenetidin with beta-naphthol to an azo compound, and fixing the color by turkey-red oil and a metallic compound, substantially as described.

569,396. AUTOMATIC SAFETY SPRING-CLUTCH. JOHN ANNAN, Brooklyn, N. Y. Filed Oct. 12, 1895. Serial No. 565,485. (No model.)

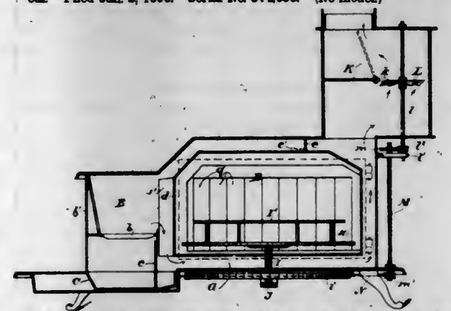


Claim.—1. The combination with a power-shaft, of a gear-wheel mounted thereon, an operating-shaft provided with a gear-wheel, which is revolubly mounted thereon, and adapted to operate in connection with the gear-wheel on the power-shaft, a clutch secured to said operating-shaft which comprises a tubular head mounted on said shaft, a sliding sleeve mounted therein, and provided with a clutch-head which is adapted to operate in connection with the revoluble gear-wheel, a spring within said tubular head, and adapted to project said sleeve, said sleeve being also provided with projections or shoulders which are adapted to operate in connection with notches or recesses formed in the gear-wheel, and said sliding sleeve being provided with a spring-arm on which is formed a pin or projection which is adapted to operate in connection with openings or holes formed in the tubular head, substantially as shown and described.

2. The combination with a shaft, provided with a gear-wheel revolubly mounted thereon, and having notches or recesses in the hub thereof, of a clutch, comprising a tubular head which is secured to said shaft, and one end of which is open and directed toward said gear-wheel, a spring-operated sleeve mounted in said tubular head, and adapted to be projected in the direction of said gear-wheel, said sleeve being provided with a head on which are formed projections adapted to operate in connection with notches or recesses formed on the hub of the wheel and said head of the sleeve being also provided with a spring-arm having a pin or projection on the lower side thereof adapted to operate in connection with holes or openings in the tubular head of the clutch, substantially as shown and described.

3. The combination with a shaft provided with a gear-wheel which is revolubly mounted thereon, of a clutch comprising a tubular head which is secured to said shaft and one end of which is open, and directed through said gear-wheel, a spring-operated sleeve mounted in said tubular head and adapted to be projected in the direction of said gear-wheel, said sleeve being provided with a head, and said head and the hub being provided, one with projections formed thereon, and the other with corresponding notches or recesses, said projections being adapted to engage with said notches or recesses, and the head of said sleeve and said tubular head in which the sleeve is mounted being provided with means whereby they may be locked together, substantially as shown and described.

569,397. COOKING-STOVE. JOHN E. ARMSTRONG, Santa Cruz, Cal. Filed Jan. 2, 1896. Serial No. 574,038. (No model.)



Claim.—1. In a cooking-stove, a fire-box and an oven, the front wall of the oven forming the back of the fire-box, said wall having upon its fire-box side the series of parallel forwardly-projecting ribs or flanges forming an open passage which communicates with a passage below the oven.

2. In a cooking-stove having a fire-box and an oven separated by a wall which forms the front of the oven and the back of the fire-box, a transverse series of parallel vertically-disposed flanges or ribs projecting forwardly from the fire-box side of said wall, and a heat-passage communicating with the lower ends of the spaces between said flanges or ribs and passing directly under the oven, and thence to the stovepipe.

3. In a cooking-stove having a fire-box and an oven separated by a wall which forms the front of the oven and the back of the fire-box, a transverse series of parallel vertically-disposed flanges or ribs projecting forwardly from the fire-box side of said wall, a heat-passage communicating with the lower ends of the spaces between said flanges or ribs and passing directly under the oven and thence to the stovepipe, and an ash-pan under the fire-box having a wall or partition forming the front of said underlying passage where it communicates with the spaces between the flanges or ribs.

4. In a cooking-stove having a fire-box and an oven separated by a wall, the vertically-disposed flanges or ribs extending forwardly from the fire-box side of the wall and dividing the oven from the fire-box, a heat-passage communicating with the lower ends of the spaces between said ribs or flanges, and passing directly under the oven and communicating with the stovepipe, and an ash-pan having a wall or partition forming the front of said passage where it communicates with the spaces between the ribs or flanges.

5. In a cooking-stove having a fire-box and an oven, the dropped top of said stove over the fire-box, the vertically-disposed forwardly-extending ribs or flanges on the wall dividing the fire-box from the oven, the upper damper-controlled passage to the stovepipe, and the lower heat-passage communicating with the fire-box and passing under the oven and thence to the stovepipe.

6. In a cooking-stove, the combination of a rotatable plate within the oven, a stovepipe having a direct passage for the escaping products of combustion and an indirect passage, a damper in the direct passage for diverting the products of combustion into the indirect

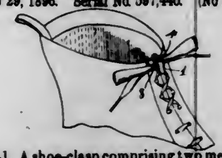
passage, a fan-wheel within said indirect passage adapted to be operated by said products of combustion when diverted, and power-transmitting connections between said fan and the rotating plate whereby the latter is operated.

7. In a cooking-stove, the combination of a rotatable plate within the oven, a stovepipe having a direct passage for the escaping products of combustion and an indirect passage, a damper in the direct passage for diverting the products of combustion into the indirect passage, a fan-wheel within said indirect passage, adapted to be operated by said products of combustion when diverted, and power-transmitting connections between said fan and the rotating plate whereby the latter is operated, consisting of a shaft on which said fan is mounted, a counter-shaft to which said fan is geared, a driving-shaft of the plate and a belt and pulleys by which the counter-shaft transmits motion to the driving-shaft of said plate.

8. In a cooking-stove having an oven and heat-passages communicating with the fire-box of the stove, a stovepipe having a direct and an indirect passage for the products of combustion, a damper within the direct passage adapted to divert the products of combustion to the indirect-passage, a fan-wheel within said indirect passage, a rotatable plate within the oven and power-transmitting connections between the fan-wheel in the stovepipe and the rotatable plate in the oven whereby the latter is operated.

9. In a cooking-stove, the combination of a rotatable plate within the oven, a fan-wheel in the stovepipe, a damper in said pipe for opening and closing a direct passage therethrough, and directing the products of combustion against the fan-wheel, for operating the latter, connections from the fan-wheel for operating the rotatable plate, revoluble shelves upon said plate, adapted to receive dishes and a fixed arm on the inside of the stove-door with which the shelves are adapted to come in contact, to change their position at each revolution of the plate.

569,398. SHOE-LACE CLASP. OLAUS S. AUGENSEN, Chicago, Ill. Filed June 29, 1896. Serial No. 597,440. (No model.)



Claim.—1. A shoe-clasp comprising two members, a concave member 1 and a member 2 pivoted thereto, openings in the sides of said member 1, and an opening in the middle portion of said member 2.

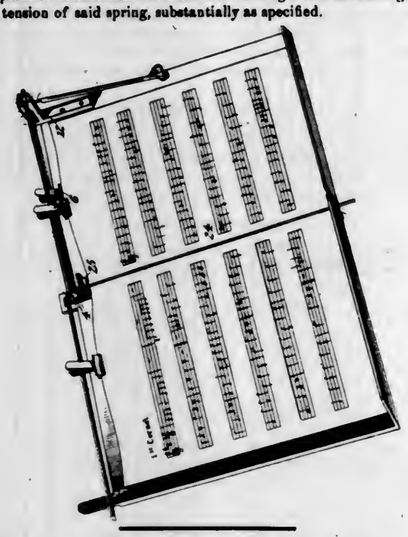
2. A shoe-lace clasp comprising a member 1 provided with a reduced end portion, having a depression, a member 2 pivoted to said member 1, and a spring-tongue on said member 2 adapted to engage said depression in said member 1.

3. A shoe-lace clasp comprising a concave member 1 provided with openings at its sides and a reduced end portion provided with a depression, a member 2 pivoted to said member 1 and provided with an opening at its middle portion, and a spring-tongue on said member 2 adapted to engage said depression in said reduced portion of said member 1.

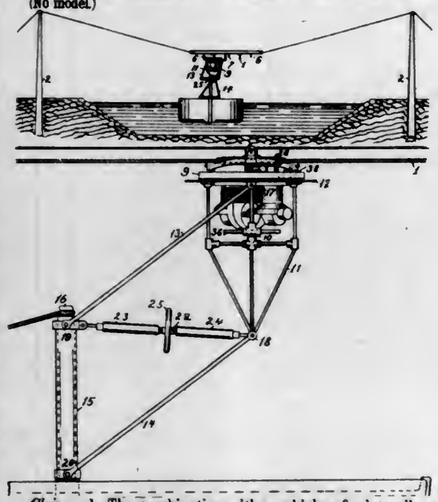
569,399. LEAF-TURNER. EDWIN L. RADGLEY, Clayton, Ill., assignor of two-thirds to Orion E. Bryant and Elmer E. Smith, same place, and George R. Oder, Springfield, Ill. Filed May 13, 1895. Renewed Aug. 6, 1896. Serial No. 601,926. (No model.)

Claim.—1. In a device of the class described, the combination with a rack, of spring-actuated turning-arms provided with means for engaging leaves, a clamp having parallel jaws between which the extremities of the turning-arms may be arranged and held in a common plane, and a spring-tongue arranged in operative relation with the jaws and provided with a shoulder to close the front end of the opening or slot between the jaws, said jaws being provided with registering perforations spaced from the shoulder of the spring-tongue a distance approximately equal to the thickness of a turning-arm, a trip-rod having a pin adapted to operate in said perforations of the jaws and having a tapered or pointed extremity adapted to pass between the foremost turning-arm and the adjacent turning-arm and also adapted to engage and repress the spring-tongue, and means for operating the trip-rod, substantially as specified.

2. In a device of the class described, the combination with a rack, and spring-actuated turning-arms mounted thereon and provided with means for engaging leaves, of a clamp having jaws between which the free ends of the turning-arms may be arranged, a spring-tongue for temporarily holding the turning-arms in place between the jaws, a rock-shaft mounted horizontally in rear of and parallel with the rack and terminating at one end adjacent to the center of the rack in a rearwardly-extending crank-arm, and at the other end in a forwardly-extending crank-arm, a trip-rod pivotally connected at its lower end to said forwardly-extending crank-arm and provided with a reduced upper extremity fitting in guide-openings in the jaws of the clamp, and a retracting-spring connected to said rearwardly-extending arm of the rock-shaft to normally hold the trip-rod out of engagement with said spring-tongue, the rearwardly-extending crank-arm being adapted for connection with means for turning the rock-shaft against the tension of said spring, substantially as specified.



569,400. MEANS FOR PROPELLING CANAL-BOATS, &c. SAMUEL W. HALCH, Yonkers, N. Y. Filed July 7, 1894. Serial No. 516,799. (No model.)



Claim.—1. The combination with a vehicle, of a laterally-movable frame supported thereby, a gripping-wheel base supported by and vertically jointed to said frame, gripping-wheels horizontally mounted on said base substantially over said joint, actuating mechanism for the gripping-wheels, and a fixed way engaged by said wheels, substantially as described.

2. The combination with a vehicle, of a laterally-movable frame supported thereby, a gripping-wheel base supported by and vertically jointed to said frame, gripping-wheels horizontally mounted on said base substantially over said joint, actuating mechanism for the gripping-wheels, a fixed way engaged by said wheels, and means for vertically adjusting the gripping-wheels, substantially as described.

3. The combination with a vehicle, of a laterally-movable and vertically-adjustable frame supported thereby, a gripping-wheel base supported by and vertically jointed to said frame, gripping-wheels horizontally mounted on said base substantially over said joint, actuating mechanism for the gripping-wheels, and a fixed way engaged by said wheels, substantially as described.

4. The combination with a vehicle, of a mast, a frame laterally jointed thereto, a gripping-wheel base supported by and vertically jointed to said frame, gripping-wheels horizontally mounted on said base substantially over said joint, actuating mechanism for the gripping-wheels, and a fixed way engaged by said wheels, substantially as described.

5. The combination with a vehicle, of a mast, a sleeve carried thereby, a vertical frame, parallel braces hinged to both sleeve and frame, means for vertically adjusting the height of the frame relatively to that of the sleeve, a gripping-wheel base supported by and vertically jointed to said frame, gripping-wheels supported by said base, actuating mechanism for the gripping-wheels, and a fixed way engaged by said wheels, substantially as described.

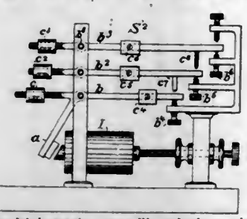
6. The combination with two gripping-wheels, of a gripping-wheel base, brackets hinged to said base and carrying said gripping-wheels, one of said brackets having an eye on the same side of its hinge as its wheel and the other having an eye on the opposite side, a rigid link connecting said eyes, means for drawing said gripping-wheels together and means for revolving them, substantially as described.

7. The combination with a gripping-wheel base, of two gripping-wheels adjustable to and from each other, brackets carrying said wheels, a link attached between the brackets, a spring constructed to be strained by the extension of said link, means for separating the wheels and for bringing them together, and means for revolving them, substantially as described.

8. The combination with two gripping-wheels provided with gear-teeth, of a gripping-wheel base, brackets hinged to said base and carrying said gripping-wheels, shafts through the hinges of said brackets, pinions on the shafts which engage with the gripping-wheels, means for simultaneously revolving the shafts, and means for drawing the wheels together, substantially as described.

9. The combination with two gripping-wheels provided with gear-teeth, of a gripping-wheel base, brackets hinged to said base and carrying said gripping-wheels, shafts through the hinges of said brackets, a motor geared to said shafts, pinions on the shafts which engage with the gripping-wheels, and means for drawing the wheels together, substantially as described.

569,401. MULTIPLE-STATION TELEPHONE-CIRCUIT. JOHN A. BARRETT, Rutland, Vt., assignor to the American Bell Telephone Company, Boston, Mass. Filed Jan. 27, 1896. Serial No. 577,049. (No model.)



Claim.—1. A multiple-station metallic telephone-circuit, and a telephone at each station in a normally open bridge or branch thereof, controlled by an automatic telephone-switch, in combination with an independent signaling-circuit having a line conductor formed of the two wires of the said metallic circuit joined in parallel, a selective relay at each station in the said signaling-circuit; and an associated call-signal instrument controlled thereby, each station-relay being adjusted to actuate its call instrument on the passage through its coils of a definite and different strength of calling-current, and to maintain the irresponsiveness of the said call instrument on the passage of stronger or weaker call-currents.

2. The combination in a telephone system, of the two wires of a telephone party line, forming in series the direct and return conductors of a metallic telephone-circuit, and in parallel the single conductor of a ground return-signaling circuit, and a telephone at each subscriber's station connected or adapted for connection in the said metallic circuit, or in a normally discontinuous bridge or branch thereof, with a selective switch or relay connected in the said signaling-circuit at each substation, and independent call and busy signals, and a telephone connection-lock, associated with said relay and controlled thereby; the several station-relays being adjusted to actuate their associated call-signals selectively, with a definite strength of calling-current different for each, and to actuate their associated busy-signals, and telephone locking devices collectively, when excited by an actuating-current of strength greater than that of the strongest calling-current, substantially as described.

3. A grounded signaling-circuit extending from a central station to a number of subscribers' stations, having a line conductor formed by connecting in parallel the two wires of a metallic telephone-circuit, in combination with a substation call-bell connected with a current-generator in a local circuit, and a selective relay with its electromagnet in the said signaling-circuit, provided with circuit-controlling devices for progressively and successively closing and opening the said local bell-circuit, the said relay being adjusted to close the said local circuit and operate the bell with a current of definite and predetermined strength flowing in the signaling-circuit, and to close and instantly reopen the said circuit and thereby prevent the signal from being given, on the passage of a stronger current, substantially as described.

4. In a telephone system, the two wires of a telephone party line, forming in series the two line conductors of the metallic telephone-circuit, and in parallel, the single conductor of a ground return-signal circuit, in combination at each subscriber's station with a telephone in the said metallic circuit or in a bridge or branch thereof, and an electromagnetic signal instrument in the said grounded circuit, the electromagnetic coils of the said instrument being connected half in circuit with one line conductor and half in circuit with the other, in such manner that the two said halves may coöperate magnetically in the signaling-circuit, and oppose each other magnetically in the talking-circuit, whereby a number of signaling-magnets may be connected with a telephone-circuit without introducing impedance.

5. In combination with the two wires of a multiple-station telephone line forming severally the outgoing and return conductors of a metallic talking-circuit, and jointly when connected in parallel the single conductor of a ground return-signaling circuit; a subscriber's station apparatus comprising a telephone, and an automatic lever-switch controlling the connections thereof, two local circuits containing respectively the station call-bell, and the actuating-electromagnet of a visual busy-signal and a locking device for the said telephone switch-lever; and a selective electromagnetic switch or relay in the main signaling circuit, provided with a series of armature-actuated circuit-changing levers controlling the said local circuits, and adapted to close the local bell circuit; to hold it open; and to close the busy-signal and switch-lock circuit, according to the strength of current flowing in the main signaling circuit, substantially as described.

6. In a telephone subscriber's station apparatus the combination of a relay or electromagnetic switch comprising an electro-magnet connected in the main signaling-circuit, a lever attached to the armature thereof, a second lever hung in the path of the first to be actuated thereby, and carrying a front contact-stop therefor, and a third lever hung in the path of the second to be operated thereby, with two normally open local circuits, one containing the station call-bell and leading through the first and second levers, the front contact of the first, and the resting-contact of the second, and the other containing the electromagnet of a busy-signal indicator and telephone-switch lock, and leading through the third lever and its front contact, whereby the first local circuit may be closed, or closed and immediately opened, and the second local circuit closed, as the relay-armature is by different main-line currents partially or fully attracted, and moves one, two or all of the said levers, substantially as described.

7. In a telephone-station apparatus, a selective relay comprising an electromagnet, a pivoted lever mounted on the armature thereof, another pivoted lever lying in the path of movement of the said armature-lever, and a third pivoted lever mounted in the path of the second, the third lever being adapted to be operated by the second, and the second by the first, as the armature-lever completes successive portions of its stroke, and independent circuit-changers controlled by the said levers respectively, substantially as described.

8. The combination in a telephone signaling-circuit, of a series of selective relays or switches one at each station, each comprising an electromagnet, an armature therefor and a pivoted lever mounted thereon and carrying a circuit-closer, a second pivoted lever mounted in the path of the armature-lever and carrying a circuit-breaker, and a third pivoted lever mounted in the path of the second and carrying a circuit-closer, the third lever being adapted to be actuated by the second, and that by the first, each after its actuating-lever has begun its stroke, and two local circuits for each relay, one containing a call-bell, the circuit-closer of the first lever and the circuit-breaker of the second, and the other containing the electromagnet of a busy-indicator, and telephone-lock; and the circuit of the third lever, the said relays being selectively adjusted to initially respond by moving their first lever only to a definite strength of current different for each station, and to respond collectively by moving all of their levers, to a current stronger than the strongest calling-current, substantially as described.
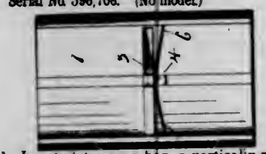
9. In a selective switch, the combination with an electromagnet, and a lever actuated thereby, means for opposing the movement of the lever by forces increasing progressively through successive stages of travel, a pair of contact-points adapted to be closed in its first stage of movement, another pair adapted to be separated in its second stage, and a third pair adapted to be closed in its third stage, as described.

10. The combination in a selective switch, of an electromagnet

and pivoted lever carrying the armature thereof, another pivoted lever lying in the path of movement of the armature-lever, and a third pivoted lever in the path of the second-mentioned lever, adjustable weights upon each of the levers, and switch-contacts controlled by each lever, as described.

11. In combination with a telephone-line having at its subscribers' stations a telephone-switch adapted when operated to interrupt the line-circuit, a disconnecting or clearing-out annunciator having an indicator and a permanently-polarized electromagnet normally retaining the indicator in its dormant or concealed position, the said indicator having two equal and oppositely-acting helices, one of these, that tending to reinforce the permanent magnetism being in the main signaling-circuit formed by connecting the two wires of the talking-circuit in parallel, together with a source of current, and the other in an independent circuit together with a similar source of current, whereby the said annunciator is maintained inert while the telephone-circuit remains unbroken at the substation, but is responsive to the interruption thereof, as described.

569,402. TOILET-BOX. JOHN W. BECK, Toledo, Ohio. Filed June 24, 1896. Serial No. 596,708. (No model.)



Claim.—1. In a toilet-case, a box, a vertically-movable bottom arranged therein, having a supplemental radially-expansible spring secured centrally to the under side of the bottom engaging frictionally with the sides of the box to hold the bottom in position after being adjusted vertically.

2. In a toilet-case, a box, a vertically-movable bottom arranged therein having a spring comprising a plate having four oppositely-projecting spring-arms extending therefrom of a length to extend slightly beyond the edges of the bottom whereby they engage with the sides of the box to hold the bottom in position after being adjusted vertically.

569,403. CUSHION-TIRE FOR VEHICLES. JOHN R. BOICE, Toledo, Ohio. Filed June 1, 1896. Serial No. 593,704. (No model.)



Claim.—In a cushion-tire for vehicles, a tube having an inner and an outer portion of a like thickness, the outer portion being of a greater width than the inner portion, and sides of a greater thickness connecting the outer and inner portions angled outwardly toward the periphery of the tube and a resilient filling for the interior of the tube.

569,404. ALIZARIN DYE AND METHOD OF MAKING SAME. RICHARD BRASCH, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Jan. 11, 1895. Serial No. 534,574. (Specimens.)

Claim.—1. The process for the manufacture of alizarin coloring-matters dyeing claret-red shades from the alizarin of commerce, which consists in converting the alizarin by heating with benzoyl-chlorid into benzoyl-alizarin, nitrating the product at ordinary temperature with nitrosulfuric acid, separating the benzoylized alpha-nitroalizarin by pouring it into water, saponifying it by means of soda-lye and reducing it into the amido compound by means of reducing agents, such as zinc, substantially as set forth.

2. As a new article of manufacture alpha-amido-flavo and anthra purpurin, insoluble in water difficultly soluble in alcohol, ether and benzene having the formula:

$$C_6H_2(OH)=(CO)_2=C_6H(OH)_2NH,$$

and dyeing mordanted wool and cotton claret-red shades.

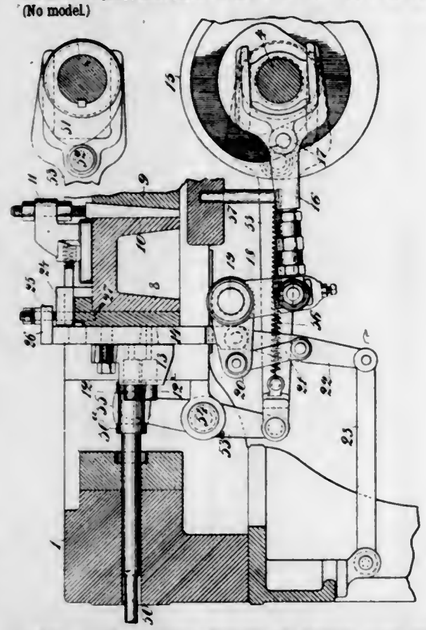
569,405. GREEN ALIZARIN DYE AND METHOD OF MAKING SAME. RICHARD BRASCH, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Jan. 11, 1895. Serial No. 534,575. (Specimens.) Patented in Germany Mar. 5, 1892, No. 67,470; in England Aug. 5, 1892, No. 14,717, and in France Aug. 18, 1892, No. 223,766.

Claim.—1. The process of producing novel green coloring-matters from alpha-amido and alpha-nitro compounds of alizarin, which consists in mixing these alizarin compounds with glycerin and sulfuric acid, gradually heating the mixture up to a temperature of from 110° to 120° centigrade and separating the quinolized product by pouring the heated mixture into water, substantially as set forth.

2. The process herein described of producing green coloring-matters from alpha-amido and alpha-nitro compounds of alizarin, which consists in quinolizing said compounds by heating them with glycerin and sulfuric acid, separating them by pouring them into water, next heating the quinolin compounds with concentrated solutions of alkaline-bisulfite compounds, such as sodium bisulfite so as to produce easily-soluble bisulfite compounds from the quinolized alizarin compounds, substantially as set forth.

3. As a new product, the alpha-quinolin compound of alizarin, being nearly insoluble in water, difficultly soluble in the ordinary organic solvents, easily soluble in sulfuric acid, soluble in alkali-sulfite compounds with a pretty carmine-red color, and dyeing mordanted wool and cotton in green shades, substantially as set forth.

569,406. MACHINE FOR MAKING RIVETS OR THE LIKE. ANDREW C. CAMPBELL, Waterbury, Conn., assignor to the E. J. Manville Machine Company, same place. Filed Oct. 21, 1895. Serial No. 566,302. (No model.)



Claim.—1. In a two-blow machine for heading rivets and the like, the combination with the reciprocating punch-carrier, the punch-slide mounted on the same, and the punches, of the mechanism for shifting said slide, comprising a rotating shaft, a cam 15 on said shaft, a guided connecting-rod 16, having a stud 17 adapted to engage said cam, a rock-shaft 19, provided with an arm 18, coupled to the rod 16 and an arm 20, a link 22, coupled at one end to the punch-slide and at the other end to a link 23, the said link 23, coupled at one end to the main frame, and a link 21, which is coupled at one end to the arm 20, and at the other end to the middle of the link 22; whereby a parallel motion is formed which permits the punches to reciprocate without interfering with their shifting movements, substantially as set forth.

2. In a machine for heading rivets and the like, the combination with the gate, the eccentric and yoke on the main shaft for operating the same, the said main shaft, a die, an abutment-pin, and a knock-out bolt, of the lever-hammer 48, pivoted or fulcrumed in the frame and adapted to impinge upon the knock-out bolt, the operating-rod 50, mounted in a bearing in the frame and having a head at its outer end which engages said lever-hammer as described, a rotating shaft 4, driven from the main shaft at one-half the speed of the latter, a cam on said shaft 4, and lever mechanism intermediate said cam and the operating-rod 50, whereby said cam actuates the operating-rod, the lever 48, and the knock-out pin, to expel the finished rivet, substantially as set forth.

3. In a machine for making rivets and the like, the combination, with the frame, having guides for the gate, the said gate, a rotating shaft 2, in the frame, an eccentric on said shaft for operating the gate, a coupling block 9, mounted adjustably in a recess in the gate, a connecting-rod 7 connecting said eccentric with the block 9, a punch-carrying slide and punches on the gate, and mechanism intermediate said shaft 2 and said slide for shifting the punches, of adjusting-keys 10 and 10×, at the respective ends of said coupling-block 9, for adjusting it with respect to the gate, substantially as and for the purposes set forth.

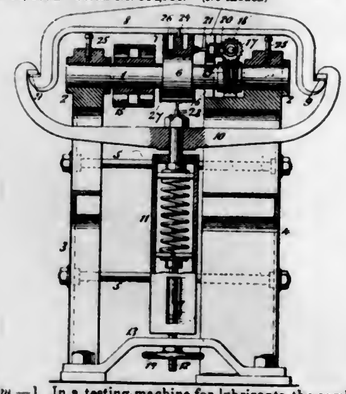
4. The combination with the rotating shaft 2, the eccentric 6 on said shaft, the connecting-rod 7, having a yoke embracing the eccentric and a circular coupling-head 7×, of the coupling-block 9, having in it a bearing to receive the head 7×, said bearing extending rearwardly or toward the driving-shaft under the shaft to form a receptacle to catch the lubricant, and having a recess 9× above said head to retain a lubricant, substantially as set forth.

5. In a machine for making rivets and the like, the combination with a guide and feeding mechanism for the wire or rod, of mechanism for clamping on and shearing off the blank, said mechanism comprising a reciprocating clamp having a fixed jaw and a movable clamping-jaw carried by the fixed jaw, and a jaw-locking device, comprising a bracket or abutment on the frame in position to take over the movable jaw while the device is in the cutting position and keep the jaws firmly locked on the wire, substantially as set forth.

6. In a two-blow machine for heading rivets and the like, the combination with the punch-carrying gate, the punch-slide and punches, and punch-shifting mechanism, of stops for limiting the movement of the punch-slide in both directions, comprising an overhanging lug 24, on the gate, a lug 26 on the punch-slide, a screw-rod 27, in the lug 24, and a screw 25, in the lug 26, the rod 27 extending through a hole in the lug 26, and having a head on its upper end adapted to engage the upper surface of the lug 26, and an automatic mechanism for locking the punches in their terminal positions, comprising a spring-bolt 28, on the gate, the beveled nose of which is adapted to engage a shoulder on the punch-slide in both of its positions, an elbow-lever fulcrumed on the gate, one arm of which engages the spring-bolt and the other bears on a cam 32, on the main frame, and the said cam, substantially as set forth.

7. In a machine for heading rivets and the like, the combination with the gate, the eccentric and yoke on the main shaft for operating the same, the said main shaft, a die, an abutment-pin, and a knock-out bolt, of the lever-hammer 48, pivoted or fulcrumed in the frame and adapted to impinge upon the knock-out bolt, the operating-rod 50, mounted in a bearing in the frame and having a head at its outer end which engages said lever-hammer as described, a rotating shaft 4, driven from the main shaft at one-half the speed of the latter, a cam 51, on said shaft 4, a cam-rod 53, bearing a roller 52 upon which the cam 51 bears, a spring 56, for retracting the rod 53, and a lever 53ª, fulcrumed on the main frame, one arm of said lever being coupled to the cam-rod 53 and the other arm being coupled to the rod 50, substantially as set forth.

569,407. MACHINE FOR TESTING LUBRICANTS. ROLLA C. CARPENTER, Ithaca, N. Y., assignor to Tinius Olsen, Philadelphia, Pa. Filed June 14, 1894. Serial No. 514,530. (No model.)



Claim.—1. In a testing-machine for lubricants, the combination, with a revolubly-mounted shaft, and a journal thereon having a diameter greater than the adjacent portions of said shaft, of a bearing-block bearing against said journal and a frame for holding said block in place upon said journal, arranged to permit said block to reciprocate across said journal, whereby, when said block is reciprocated, lubricant which has escaped from the bearing-surfaces is restored thereto, substantially as described.

2. In a testing-machine for lubricants, the combination, with a revolubly-mounted shaft and a journal thereon having a diameter greater than the diameter of adjacent portions of said shaft, of a bearing-block bearing against said journal, and means for automatically reciprocating said block across said journal whereby, when said block is reciprocated, lubricant which has escaped from the bearing-surfaces is restored thereto, substantially as described.

3. In a testing-machine for lubricants, the combination, with a revolubly mounted shaft and a journal thereon having a diameter greater than the diameter of adjacent portions of said shaft, of a bearing-block pressing upon one side of said journal, the other side of said journal having no bearing thereon, a frame for holding said bearing-block in place upon said journal, arranged to permit said block to reciprocate across said journal, whereby, when said block is reciprocated lubricant which has escaped from the bearing-surfaces is restored thereto, means for pressing said bearing-block against said journal, and means for measuring the frictional moment produced by the friction of said bearing-block against said journal, substantially as described.

4. In a testing-machine for lubricants, the combination, with a revolubly-mounted journal, of a bearing mounted upon knife-edges in line with the axis of said journal, and scale-beams projecting from said bearings at right angles to the journal, and having weights thereon for measuring the frictional moment, substantially as described.

5. In a testing-machine for lubricants, the combination, with a revolubly-mounted journal, of a bearing mounted upon knife-edges in line with the axis of said journal, scale-beams projecting from said bearings at right angles to the journal, and having weights thereon for measuring the frictional moment, and means for regulating the pressure of the bearing upon the journal, substantially as described.

6. In a testing-machine for lubricants, the combination, with a revolubly-mounted shaft, and a journal thereon, of a bearing upon said journal, a yoke connected therewith, a second yoke connected with said first-named yoke by frictionless connections, and pressure exerting devices connected with said second yoke and adapted to cause said bearing to press against said journal, substantially as described.

7. In a testing-machine for lubricants, the combination, with a revolubly-mounted shaft, and a journal thereon, of a bearing upon said journal, a yoke connected therewith, a second yoke connected with said first named yoke by frictionless connections, and a spring dynamometer connected with said second yoke and adapted to cause said bearing to press against said journal, substantially as described.

8. In a testing-machine for lubricants, the combination, with a revolubly-mounted shaft, and a journal thereon, of a bearing upon said journal, a yoke connected therewith, a second yoke, and knife-edge connections between said yokes, and a spring-dynamometer with said second yoke and adapted to cause said bearing to press against said journal, substantially as described.

9. In a testing-machine for lubricants, the combination, with a shaft revolubly mounted, a journal upon said shaft, and a bearing upon said journal, of a worm-gearing or equivalent mechanism engaging with said bearing and adapted to cause the same to reciprocate, substantially as described.

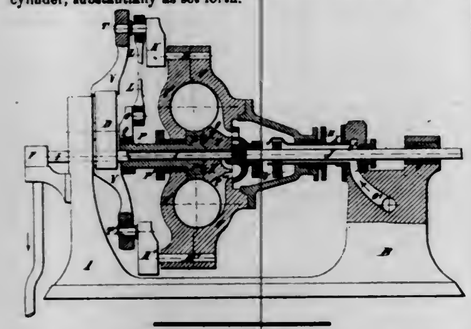
569,408. ROTARY ENGINE. EDMOND CHABOCHE, Paris, France. Filed Aug. 24, 1894. Serial No. 521,574. (No model.) Patented in France Mar. 17, 1894, No. 237,105; in Belgium July 20, 1894, No. 111,076; in Switzerland July 23, 1894, No. 9,043; in Germany July 27, 1894, No. 82,242; in England Aug. 3, 1894, No. 14,940, and in Austria-Hungary Sept. 3, 1894, No. 1,032.

Claim.—1. A rotary engine, consisting of a cylinder having interior partitions forming compartments, a piston in each compartment, a hollow shaft concentrically to the cylinder, a sleeve mounted on the shaft and connected with said pistons, a crank on the outer end of said sleeve, a crank on said cylinder, a connecting-rod between said cranks, a stationary eccentric, a connecting-rod mounted loosely on said eccentric and pivoted to the crank on the cylinder, a steam-chest on the cylinder, and an independently-rotating valve in said steam-chest, substantially as set forth.

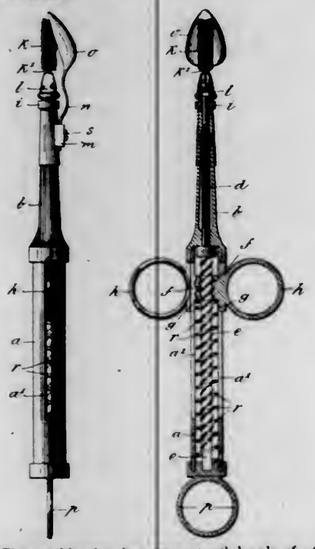
2. A rotary engine, consisting of a cylinder having interior partitions forming compartments, a piston reciprocating in each of said compartments, a sleeve mounted on the shaft of the engine and carrying said pistons, a crank attached to the outer end of said sleeve, cranks arranged at diametrically opposite points on the cylinder, a connecting-rod between the crank on said sleeve and one of the cranks, a stationary eccentric, connecting-rods pivoted to said cranks and mounted loosely on said eccentric, and a valve for controlling the admission and escape of steam to the compartments of said cylinder, substantially as set forth.

3. In a rotary engine, the combination, of a cylinder partitioned internally to form compartments and provided with admission and exhaust ports for each compartment, with a circular valve set in a

steam-chest and mounted loosely on the shaft supporting the cylinder, said valve being likewise provided with inlet and outlet ports to correspond to the ports of the cylinder and with an exhaust-channel in said shaft, and means for rotating the valve, at less speed than the cylinder, substantially as set forth.



569,409. ROTARY TOOTH-BRUSH. GEORGE C. COURTRIGHT and JOHN W. PURDY, Philadelphia, Pa. Filed Nov. 13, 1895. Serial No. 568,807. (No model.)

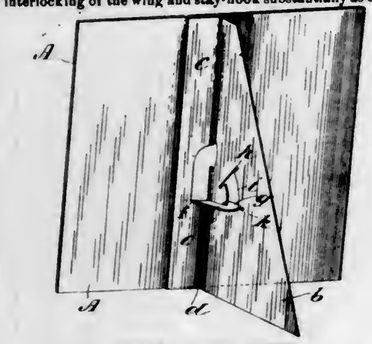


Claim.—The combination, in a rotary tooth-brush, of a two-part casing, one portion of which is vertically slitted and provided at the end with a removable cap having a thumb or finger supporting ring and the other portion is made tapering, a spindle adapted to be rotated in said casing, one portion of said spindle being spirally fluted or twisted, a block or piece provided with ring-handling devices, said block thereby adapted to be slid in said slitted casing on said spindle, a spiral spring mounted in said casing between said block and bottom of said casing, a rotary brush connected with the upper end of said spindle and a spoon-shaped shield removably secured to the tapered portion of said casing and projecting beyond and sidewise of said brush, substantially as shown and for the purposes described.

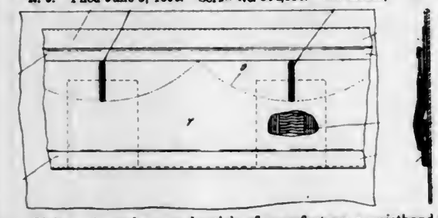
569,410. EASEL. GUSTAF L. R. DAHLBERG, Somerset, N. J. Filed June 30, 1896. Serial No. 597,513. (No model.)

Claim.—1. The combination in an easel, of the wing-brace comprising the marginal attaching portion and the folding portion jointed to said marginal portion, the vertically-swinging stay-hook jointed by the score-line to the said marginal portion and having the laterally-projecting hook-head, the oblique slot in the wing adapted for inserting the hook-head through it when the wing and the hook are partly set for use, and the branch slot for complete adjustment and interlocking of the parts substantially as described.

2. The combination in an easel, of the wing-brace comprising the marginal attaching portion and the folding portion jointed to said marginal portion, the vertically-swinging stay-hook jointed by the score-line to the marginal portion and having the laterally-projecting hook-head, the oblique slot in the wing adapted for inserting the hook-head through it when the wing and hook are partly set for use, and the branch slot, said slot having the notch extension in the direction of the joint-line *d*, and adapted for complete adjustment and interlocking of the wing and stay-hook substantially as described.

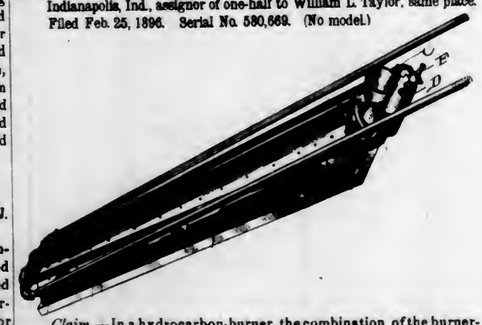


569,411. ELASTIC WAISTBAND. JAMES B. FAITOUTE, Newark, N. J. Filed June 5, 1896. Serial No. 594,356. (No model.)



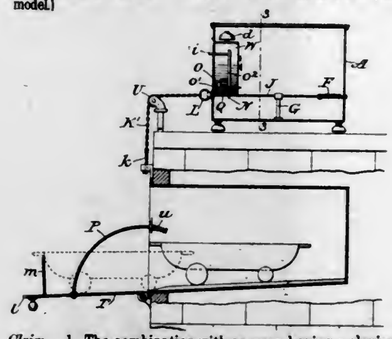
Claim.—As an improved article of manufacture, a waistband for trousers comprising a facing-strip provided with a longitudinally-extending fold, a buttonhole-strip folded longitudinally and provided along the upper edge thereof with a hem securing said portions together and having buttonholes cut therein at predetermined points, elastic strips, provided with a frilled or inelastic portion extending longitudinally thereof, the upper ends of which are secured between the folded portion of the buttonhole-strip, the upper ends of which strips extend beyond the lower portion of the buttonholes, the lower portion of said elastic strips extending within a hem or folded portion of the facing and being secured therein by means of the stitching which forms said hem, and also by means of the stitching which secures the facing to the buttonholes, said buttonhole-strip being provided in one side thereof near its lower edges with slits, through which said elastic strips pass, whereby the waistband may be readily secured to the trousers by stitching the upper and lower edges thereof to the same, substantially as described.

569,412. HYDROCARBON-BURNER. CHARLES A. HANABLE, Indianapolis, Ind., assignor of one-half to William L. Taylor, same place. Filed Feb. 25, 1896. Serial No. 580,669. (No model.)



Claim.—In a hydrocarbon-burner, the combination, of the burner-body, the air-tube with open end leading into said body, a horizontal mixing-chamber secured to the same end of the structure, a steam-inlet pipe and a vapor-inlet pipe leading into opposite ends of said horizontal mixing-chamber to discharge toward each other, the discharge-orifice of said steam-pipe being in a plane higher than that of the vapor-pipe, said mixing-chamber being provided with a small discharge-orifice in one side which leads into said air-tube, substantially as set forth.

569,413. BAKING AND COOKING OVEN. FELIX HEINEMANN, Charlottenburg, Germany. Filed Nov. 5, 1894. Serial No. 527,882. (No model.)



Claim.—1. The combination with an oven having a sloping bottom for delivering a utensil from the oven, of a door hinged at its lower edge and adapted, when opened, to receive the utensil delivered therefrom, means for locking the oven-door and means for automatically opening the door, substantially as described.

2. The combination with an oven having a sloping bottom for delivering a utensil from the oven, of a door hinged at its lower edge, and adapted, when opened, to receive the utensil delivered therefrom, said door in its opened condition lying in the same plane with the sloping bottom of the oven, a catch for locking the oven-door and clockwork and connections for releasing said catch to open said door, substantially as described.

3. The combination with an oven having a sloping bottom for delivering a utensil from the oven, of a door hinged at its lower edge, and adapted, when opened, to receive the utensil delivered therefrom, said door in its opened condition lying in the same plane with the sloping bottom of the oven, a catch for locking the oven-door, clockwork and connections for releasing said catch to open said door, and a flange upon the inner face of said door for arresting the movement of the utensil delivered from the oven, substantially as described.

4. The combination with an oven having a sloping bottom for delivering a utensil from the oven, of a door hinged at its lower edge, and adapted, when opened, to receive the utensil delivered therefrom, said door in its opened condition lying in the same plane with the sloping bottom of the oven, a catch for locking the oven-door, clockwork and connections for releasing said catch to open said door, a flange upon the inner face of said door for arresting the movement of the utensil delivered from the oven, and a spring-cushion for said door, substantially as described.

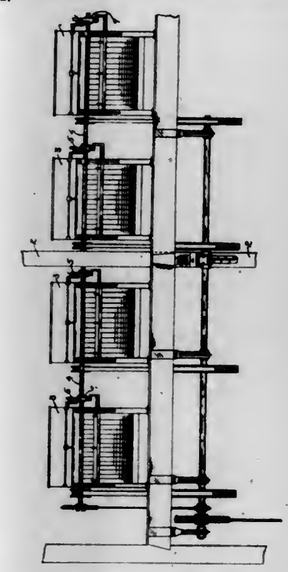
5. The combination with an oven having a sloping bottom for delivering a utensil from the oven, of door T, flange *m*, arm P and spring *u*, catch *k* for locking the door, chain K', rod J and spring F for releasing catch *k*, lever O engaging rod J, and clockwork for actuating said lever to release rod J, substantially as described.

569,414. SUCCESSIVE DRIVE MECHANISM FOR MACHINES IN SERIES. GEORGE E. HENRY, Terre Haute, Ind. Filed Apr. 22, 1896. Serial No. 588,631. (No model.)

Claim.—1. The combination with a series of mechanisms to be actuated, of a shaft extending alongside the same, means for driving it, a wheel mounted on the shaft opposite each mechanism to be operated, an actuating-cam on each wheel out of line with the cams on all the other wheels, and a link-and-lever connection between the cams and the mechanisms to be actuated, whereby the latter will operate in succession.

2. The combination with a series of mechanisms to be actuated, of a shaft extending alongside the same, means for driving it, a wheel loosely mounted on the shaft opposite each mechanism to be operated and having a toothed hub, clutches secured to the shaft having teeth to engage the teeth of the wheel-hubs, an actuating-cam on each wheel, and a link-and-lever connection between the cam and the mechanisms to be actuated, whereby the wheels may be so set that the cams will be out of line with each other.

3. The combination with a series of mechanisms to be actuated, of a shaft extending alongside the same, means for driving it, a wheel loosely mounted on the shaft opposite each mechanism to be operated and having its hub toothed at one end clutches adjustably secured to the shaft having teeth to engage those of the wheel-hub, the teeth of the one and the spaces between the teeth of the other being numbered, an actuating-cam on each wheel, and a link-and-lever connection between the cams and the mechanisms to be actuated, whereby the wheels may be so set on the shaft as to actuate such mechanisms in succession.



569,415. ANTIPYRIN MANDELATE AND METHOD OF MAKING SAME. OSCAR HINSBERG, Geneva, Switzerland, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Hochst-on-the-Main, Germany. Filed Oct. 31, 1895. Serial No. 567,500. (Specimens.)

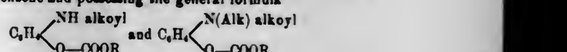
Claim.—1. The process herein described of producing mandelate of antipyrin, which consists in the reaction of antipyrin with phenylglycollic acid, substantially as set forth.

2. As a new article of manufacture, mandelate of antipyrin, being a solid substance melting at 52°, soluble in nearly all solvents separating out as an oil from its solutions which gradually solidifies to an opaque white powder, not decomposable by neutral solvents, easily decomposable by alkalies and acids into its component parts.

569,416. ESTER OF ALKOYLAMIDOPHENOLS AND METHOD OF MAKING SAME. OSCAR HINSBERG, Geneva, Switzerland, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Oct. 31, 1895. Serial No. 567,501. (Specimens.)

Claim.—1. The process herein described of producing carbonic esters of alkoylamidophenols and of their derivatives, which consists in treating alkoylamidophenols and their derivatives, the nitrogen atom of which is alkylated, in the form of their salts with esters of chlorcarbonic acid, substantially as set forth.

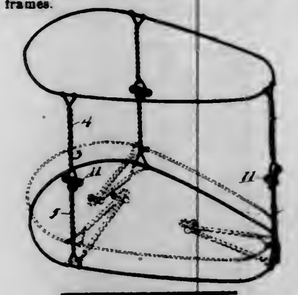
2. As a new article of manufacture carbonic esters of alkoylamidophenol, being colorless compounds having melting-points between 80° and 161° centigrade, crystallizing well, difficultly soluble in cold water but easily soluble in hot water or alcohol, less soluble in ether and benzene and possessing the general formula



569,417. THERMAL-BATH CABINET. CHARLES S. JONES and KING MCCREERY, Toledo, Ohio. Filed Nov. 25, 1895. Serial No. 569,979. (No model.)

Claim.—A cabinet comprising an upper and a lower frame formed of wire, each bent into the desired contour, a plurality of standards connecting the same, each consisting of two sections, an upper section and a lower section pivotally arranged with reference to each other and to the frames, each section being composed of two strands of wire twisted upon each other, one end of both strands being looped to embrace one of the frames to form a hinge, the opposite end of each section being looped to form a bearing for a pivot-pin, by which means the two sections are assembled in hinge relation, the strands of one section of the standard being looped to form a bearing against the strands of the opposite section to engage therewith

when the standard is extended in combination with the covering secured to the frames.



569,418. BLUE DYE AND METHOD OF MAKING SAME. HEINRICH LAUBMANN, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed Dec. 26, 1893. Serial No. 494,750. (Specimens.)

Claim.—1. The process of producing blue coloring-matter, which consists in treating an acid solution of dinitroanthrachrysone-disulfonic acid with reducing agencies, such as iron, zinc &c., and subsequently boiling the same with alkalies, substantially as described.

2. As a new article of manufacture, a blue coloring-matter derived from anthrachrysone, being a red crystalline powder, dissolving in hot water with a beautiful red, in diluted alkalies with blue, in concentrated sulfuric acid with bluish-red color, very sparingly soluble in hot alcohol or aceton, insoluble in the other usual organic solvents, and further characterized that in an acid bath it is completely taken up by wool and that the fibers dyed in this manner assume shades ranging from blue to violet on being treated with metallic mordants, substantially as described.

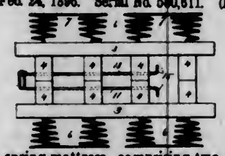
569,419. DINITROANTHRACHRYSONE-DISULFONIC ACID AND METHOD OF MAKING SAME. HEINRICH LAUBMANN, Höchst-on-the-Main, Germany, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, same place. Filed May 10, 1894. Serial No. 510,789. (Specimens.) Patented in Germany Dec. 23, 1892, No. 70,806.

Claim.—1. The process of reducing dinitroanthrachrysone-disulfonic acid, which consists in sulfonizing anthrachrysone, and nitrating the sulfonation product, substantially as described.

2. As a new article of manufacture, dinitroanthrachrysone-disulfonic acid having the following characteristics: being easily soluble in water and alcohol, quickly soluble in ether, benzin, chloroform and glacial acetic acid, undergoing rapid decomposition on being heated above 230° centigrade, soluble in alkalies with reddish color, its sodium salts crystallizing from water in the form of gold-yellow leaflets which on analysis give numbers corresponding to the formula

$$C_{14}H_4O_8(NO_2)_2(SO_3Na)_2H_2O.$$

569,420. SPRING-MATTRESS. JOHN F. LEACH, Independence, Mo. Filed Feb. 24, 1896. Serial No. 580,611. (No model.)



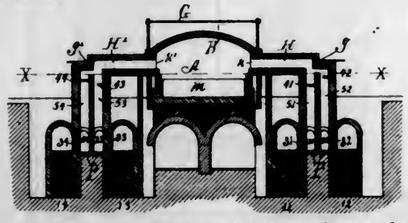
Claim.—A spring-mattress, comprising two sections, each consisting of a suitable framework, and a series of springs, sliding rods extending transversely of each framework, and hinged together and provided with shoulders at their outer ends, substantially as described.

569,421. REGENERATIVE GAS-FURNACE. LOUIS J. LEMAIRE, Alexandria, Ind. Filed Sept. 26, 1895. Serial No. 563,698. (No model.)

Claim.—1. In a reverberatory furnace in combination with the hearth, of air-regenerating chambers, two on each side thereof, corresponding deposition-chambers two on each side of the hearth arranged to receive the draft on its passage from the hearth to the regenerative chambers or vice versa, ports connecting each regenerative chamber with its corresponding deposition-chamber, and flues provided with valves connecting the deposition-chambers with the hearth, substantially as described and shown.

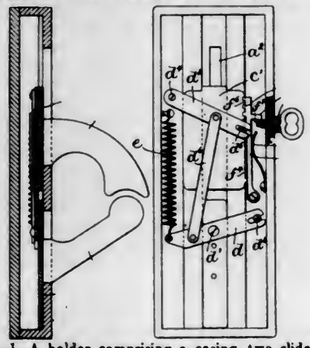
2. In a reverberatory furnace in combination with the hearth, of air-regenerating chambers two on each side thereof, corresponding deposition-chambers two on each side of the hearth arranged to receive the draft on its passage from the hearth to the regenerative chambers or vice versa, ports connecting each regenerative chamber with its corresponding deposition-chamber, flues provided with valves connecting the deposition-chambers with the main flues communicating with the hearth by ports, and means for introducing combustible gas into said main flues, substantially as described and shown.

3. In a reverberatory furnace, means for introducing heated air into the hearth, consisting of double air-regenerating chambers on each side of the hearth, flues for admitting air into said regenerative chambers, flues connecting said regenerative chambers with the hearth, and valves in said flues for controlling the outflow through one or both of said double chambers at will, substantially as described and shown.



4. In combination with the hearth A of a reverberatory furnace, means for heating and introducing the air therein mixed with gas, consisting of valves D D', butterflies E E', flues 11, 12, 13, and 14, air-regenerating chambers 1, 2, 3, and 4, ports 31, 32, 33, and 34, deposition-chambers 21, 22, 23, and 24, flues 51, 52, 53, and 54, provided with valves 41, 42, 43, and 44, and main flues H H', communicating with hearth A by ports K K', substantially as described and shown.

569,422. COAT AND HAT HOLDER. JACOB F. MAIN, Boston Mass. Filed Oct. 9, 1895. Serial No. 565,101. (No model.)



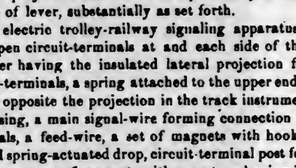
Claim.—1. A holder comprising a casing, two slides movable therein, a hook attached to one slide, and a guard attached to the other slide, connections between the slides whereby motion may be imparted from one to the other, and a spring whereby the slides are normally raised.

2. A holder, comprising a casing, two slides movable therein, a hook attached to one slide, and a guard attached to the other slide, connections between the slides whereby motion may be imparted from one to the other, a spring whereby the slides are normally raised, and means for locking the slides.

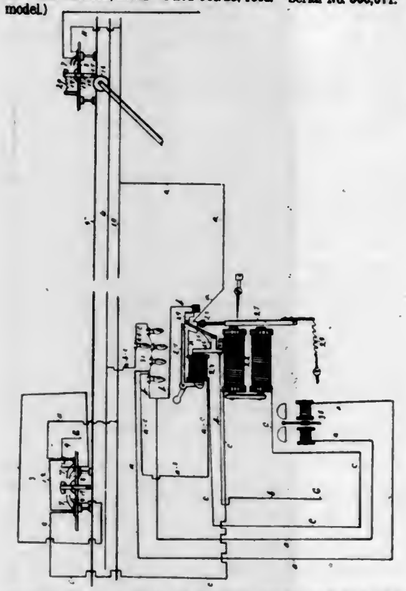
3. A holder, comprising a casing, two slides movable therein, a hook attached to one slide, and a guard attached to the other slide, connections between the slides whereby motion may be imparted from one to the other, a spring whereby the slides are normally raised, means for locking the slides, consisting of a latch or detent in the casing adapted to engage one of the slides, and a key for displacing said detent to release the slides.

569,423. NUT-LOCK. THOMAS OLDROYD, New London, Conn. Filed Mar. 10, 1896. Serial No. 582,555. (No model.)

Claim.—The combination with the end of a spindle, rod or bolt, of the herein-described nut which is adapted to be mounted thereon, said spindle being provided with a cylindrical extension on which are formed shoulders or projections, said nut having an annular flange or rim B, and having formed therein a transverse slot b^3, in which is pivoted a lever D, one end of which projects through the slot slightly beyond the walls of the nut, the other end of said shoulder being provided with a projection d^2 adapted to operate in connection with the shoulders or projections in the extension of the spindle, and a spiral spring E adapted to force the end of the lever outwardly, and a cap or cover G, rectangular in cross-section, and having formed in one side thereof longitudinal grooves adapted to receive the end of said lever, as set forth.



569,424. ELECTRIC TROLLEY-RAILWAY SIGNAL. HOMER A. PARRISH, Jackson, Mich. Filed Oct. 23, 1895. Serial No. 566,671. (No model.)



Claim.—1. The normally open elastic circuit-terminals, in combination with the pivoted vertical lever provided with the lateral insulated projection at the upper end, and a spring attached to the side opposite the projection and above the point of pivoting to prevent rebounding of lever, substantially as set forth.

2. An electric trolley-railway signaling apparatus, comprising normally open circuit-terminals at and each side of the crossing, a pivoted lever having the insulated lateral projection for operating said circuit-terminals, a spring attached to the upper end of the levers on the side opposite the projection in the track instruments each side of the crossing, a main signal-wire forming connection with the circuit-terminals, a feed-wire, a set of magnets with hooked armature and pivoted spring-actuated drop, circuit-terminal post for contacting with the drop, a set of magnets with armature having insulated end for contacting with and putting up the drop, a signal or signals, a circuit-wire running from feed-wire to main signal-wire and including therein the signal or signals and the first-named magnets, a circuit-line running from feed-wire to ground and including therein the signal or signals, and the circuit-terminal post and drop; and a circuit-line running from feed-wire to ground and including therein the latter-named magnets, and the circuit-terminals at the crossing, substantially as set forth.

3. An electric trolley-railway signaling apparatus, comprising suitable track-circuit terminals each side of and at the crossing, a main signal-wire forming connection therewith, a feed-wire, a set of magnets with hooked armature and pivoted spring actuated drop, and circuit-terminal post for contacting with said drop; a set of magnets with armature having insulated end for contacting with and putting up the drop, a signal or signals, a circuit-line running from the feed-wire to the main signal-wire and including therein the signal or signals, and the first-named magnets; a circuit-line running from the feed-wire to the ground and including therein the signal or signals, the circuit-terminal post and drop; and a circuit-line running from the feed-wire to the ground and including therein, the latter-named magnets, and the circuit-terminals at the crossing, substantially as set forth.

569,425. PARAETHOXYPHENYLSUCCINAMIC ACID AND METHOD OF MAKING SAME. ARNALDO PIUTTI, Naples, Italy, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Nov. 2, 1895. Serial No. 567,734. (Specimens.)

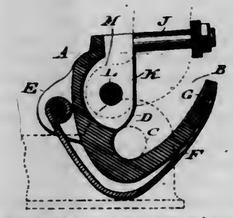
Claim.—1. The process herein described of producing paraethoxyphenylsuccinamic acid which consists in heating succinic acid with paraphenetidin until the formation of water ceases, then dissolving the product of the reaction in caustic soda, and precipitating the paraethoxyphenylsuccinamic acid by a mineral acid, substantially as set forth.

2. As a new article, paraethoxyphenylsuccinamic acid, having the constitutional formula

$$C_6H_4\begin{cases}COOH\\CONHC_6H_4OC_2H_5,\end{cases}$$

being easily soluble in alcohol and acetic acid, difficultly soluble in water, crystallizing in lustrous colorless plates, melting at from 160° to 161°; its sodium salt being easily soluble in water and obtained as a white powder on evaporating its solutions, substantially as set forth.

569,426. SHAFT OR TONGUE COUPLING. LEWIS PRIDEAUX, Philadelphia, Pa. Filed Apr. 30, 1896. Serial No. 589,632. (No model.)



Claim.—1. In a shaft or tongue coupling a hook member having a body with a hook proper and provided with ears, and a spring pivoted to said ears, and having an end freely embracing said hook.

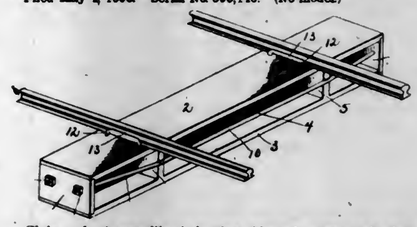
2. In a coupling, a hook member having a body with a hook proper, and a spring connected with said body, and provided with lips freely embracing the adjacent portion of said hook, said parts being combined, substantially as and for the purpose set forth.

3. In a coupling, a body provided with the hook A, the clips J and the ears K, said parts being combined substantially as described.

4. In a shaft-coupling, a member having a body with the ears M adapted to receive a bolt, the clips J adapted to be secured to the shaft, and the ears E, and a spring pivotally secured to said ears and having lips at its free end embracing said hook.

5. A hook, a body carrying the same, attaching devices, an anti-rattling spring, which latter is provided with lips which freely embrace the body portion of said hook and ears holding said spring, substantially as described.

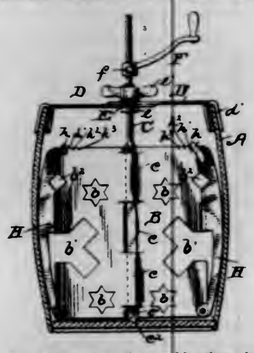
569,427. METAL TIE. EDGAR L. SAWYER, Perrysburg, Ohio. Filed May 4, 1896. Serial No. 590,140. (No model.)



Claim.—1. A metallic tie having side webs, recesses in the webs, end plates upon each end of the tie, a truss-rod passed through the end plates and seated in the recesses of the webs, and nuts secured upon the rods outside of the end plates.

2. A metal tie formed of double-T-shaped metal having connecting side webs, shoulders upon each edge of the plates of the tie, end plates arranged upon the ends of the tie and held from vertical movement by the shoulders, recesses in each of the webs, a truss-rod passed through the end plates and seated in the recesses of the webs and nuts secured upon the rods outside of the end plates.

569,428. PAINT-MIXER. JACOB P. J. SAXER, Cleveland, Ohio. Filed Feb. 21, 1896. Serial No. 580,155. (No model.)



Claim.—1. In a paint-mixer, the combination with a dasher provided with a suitable shaft, of a two-piece cross-head provided with bifurcated inner ends which overlap and act to support the shaft-bearings, provided at their outer ends, with suitable clamps for securing the cross-head to a keg, and a clamping device for firmly clamping said bifurcated inner ends, substantially as described.

2. In a paint-mixer, the combination with a revoluble dasher, provided with a suitable shaft, a two-piece cross-head having bifurcated inner ends which overlap and act to support the bearing of said shaft, clamps for securing the outer ends of said cross-head to a keg, and a bushing provided with a head and thumb-nut for securely clamping said bifurcated inner ends, of adjustable side pieces pivoted to the lower part of said dasher and provided with a latch adapted to engage notches in the upper part of said dasher, substantially as and for the purpose set forth.

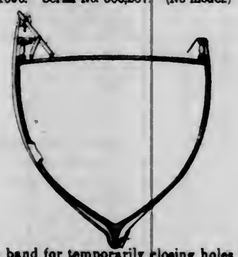
3. In a paint-mixer the following elements in combination a dasher consisting of a flat plate provided with cut-away portions and openings formed with pointed edges; a shaft secured to said dasher by alternate and oppositely struck-up recesses C C, and means for revolving said shaft; a two piece cross-head provided with bifurcated overlapping inner ends; a bushing E having a head *e* and being externally screw-threaded to receive the thumb-nut *e'* to securely clamp said bifurcated ends and form a bearing for the said shaft C; clamps attached to the outer ends of said cross-head for securing same to a keg; and adjustable side pieces H pivoted to the dasher and provided with the latch *h* as a means of adjusting the position substantially as and for the purpose set forth.

569,429. SALICYLIC COMPOUND AND METHOD OF MAKING SAME. ROBERTO SCHIFF, Pisa, Italy, assignor to the Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Filed Dec. 11, 1895. Serial No. 571,812. (Specimens.)

Claim.—1. The process herein described of manufacturing a compound from salicylic acid and hexamethylenetetramin, which consists in dissolving both substances simultaneously in benzene while heating the mixture, and then permitting the resulting product to crystallize from the solution, substantially as set forth.

2. The compound of salicylic acid and hexamethylenetetramin a white crystalline product, easily soluble in alcohol or water, less soluble in benzene, ether, or ligroin and melting at 95° centigrade.

569,430. LEAK-STOPPER. CHARLES SCHRODER, Columbus, Ohio. Filed Apr. 20, 1896. Serial No. 588,287. (No model.)

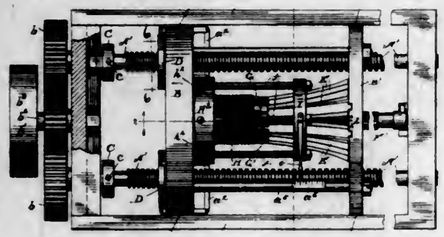


Claim.—1. A band for temporarily closing holes in vessels having at its lower end a weight, and a hook adapted to engage the keel.

2. An apparatus for temporarily closing holes in vessels, comprising a drum or windlass, a movable carriage therefor, and a band having a weight and a book at its lower end adapted to engage the keel.

3. Means for temporarily closing holes in vessels while in the water, comprising a band having a weighted iron or steel hook at its lower end, and a magnet adapted to draw said hook under the keel into position to engage the same, substantially as set forth.

569,431. MACHINE FOR CORRUGATING PIPE OR TUBING. SAMUEL S. SERGEANT, Chicago, Ill. Filed Feb. 17, 1896. Serial No. 579,473. (No model.)



Claim.—1. The combination with a main frame, of a carriage movably mounted thereon, a series of arms radially arranged on said carriage, a corrugating-wheel journaled on each of the arms, means to force and hold said wheels in contact with the pipe or tube, and a screw-shaft to propel the carriage, substantially as described.

2. The combination with a main frame, of screw-shafts journaled thereon, means to operate said shafts, a traveler and guide-plate forming a carriage mounted on the screw-shafts, a segmental releasing-nut pivotally secured in the traveler near each of its ends and adapted to engage the screw shafts, a series of corrugating-wheels radially arranged on the carriage, and means to force and hold said wheels in contact with the pipe or tube, substantially as described.

3. The combination with the screw-shafts, of a traveler provided with a tapering opening near each of its ends, a tapering segmental releasing-nut pivotally secured to the traveler in said openings, and adapted to engage the screw-shafts and to be released therefrom, substantially as described.

4. The combination with the screw-shafts, of a mechanism to drive the same, a traveler provided with a tapering opening near each of its ends, and recesses in its rear surface near said openings, a tapering segmental releasing-nut pivotally secured to the traveler in said openings and adapted to engage the screw-shafts when advancing thereon, and to be released therefrom when desired, and springs located in the recesses in the traveler to hold the segments of the nut out of engagement with the shafts, substantially as described.

5. The combination of the screw-shafts, with a mechanism to drive the same, a traveler and guide plate or piece forming a carriage mounted on said shafts, a hollow screw-threaded head secured on the front of the traveler, a series of clamping-arms pivotally secured at one of their ends to the head, a corrugating-wheel on each arm, a clamping-collar around the arms, a screw-threaded collar on the head connected with the clamping-collar, and having means to advance it on the head and the clamping-collar on the arms, substantially as described.

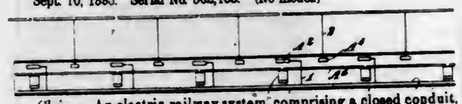
6. The combination of the screw-shafts, with a mechanism to drive the same, a traveler and guide-plate forming a carriage mounted on said shafts, a hollow screw-threaded head secured on the front of the traveler, a series of clamping-arms pivotally secured at one of their ends to the head, a corrugating-wheel on each arm, a clamping-collar around the arms, a screw-threaded collar on the head, a ring having an annular flange secured on the periphery of said collar, a loose ring encircling the head between the flange and screw-threaded collar and connected to the clamping-collar, and means to advance the clamping-collar on the arms, substantially as described.

7. The combination of the screw-shafts, with a mechanism to drive the same, a traveler and guide-plate forming a carriage mounted on said shafts, the guide-plate having a central opening and a series of radial grooves around said opening, a hollow screw-threaded head secured on the front of the traveler, a series of clamping-arms pivotally secured at one of their ends to the head, and having their other ends located in the grooves of the guide piece or plate, a corrugating-wheel on each arm, a clamping-collar around the arms, a screw-threaded collar on the head connected with the clamping-collar, and having means to advance it on the head, and the clamping-collar on the arms, substantially as described.

8. The combination with the disk G, having the recesses *g*, provided with the enlargements g^3, and the alternate recesses *g'*, of the disk G', having the open slots g^3, and secured on the disk G, the series of arms E, having the projections *e'*, at one of their ends, the corrugating-wheels E', journaled on said arms, and a spring to hold the arms normally apart, substantially as described.

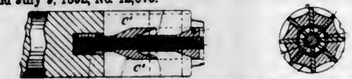
9. A traveler provided with a tapering opening, and recesses near said opening, a segmental tapering nut pivotally secured to the traveler in the opening, and springs in the recesses to hold the segments out of the tapering opening, substantially as described.

569,432. ELECTRIC-RAILWAY SYSTEM. BARTON R. SHOVER, Indianapolis, Ind., and FRANK P. TOWNSEND, Asbury Park, N. J. Filed Sept. 10, 1895. Serial No. 562,103. (No model.)



Claim.—An electric-railway system, comprising a closed conduit, a main circuit-wire located therein, contact-plates fixed within the upper portion of the conduit and having connection with the main wire, other contact-plates in the conduit between the first-named contact-plates, a sectional working rail between the track-rails, one of the track-rails being in the return-circuit, connections between said other contact-plates and the working rail, contact-strips in the conduit and a permanent magnet carried by a car, and connected in series with the motor on the car, for moving the strips to contact with the plates, substantially as specified.

569,433. BORING AND CUTTING TOOL. WILLIAM T. SMITH, Bolton, England, assignor of one-third to Ben Walmsley, same place. Filed Apr. 18, 1896. Serial No. 588,089. (No model.) Patented in England July 9, 1892, No. 12,676.



Claim.—1. In a tool of the character described, the combination of a holder centrally bored and radially slotted; cutters occupying the slots and inclined on their inner edges and also formed with reentrant inclines; a conical expanding device occupying the bore of the holder and engaging the inclined inner edges of the cutters and recessed for engagement with the reentrant inclines of the latter; and means for adjusting said expanding device longitudinally of the holder for the purpose described.

2. In a boring and cutting tool the combination of a shank or holder having radial slots, cutters fitting within these slots and having inclined and recessed parts formed on their inner edges, a sleeve having inclined and hollowed parts formed on it, a screw for operating said sleeve, and a cap for securing these parts, substantially as described.

569,434. PRINTING-PRESS. LOUIS W. SOUTHGATE, Worcester, Mass., assignor to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed May 15, 1893. Serial No. 474,363. (No model.)

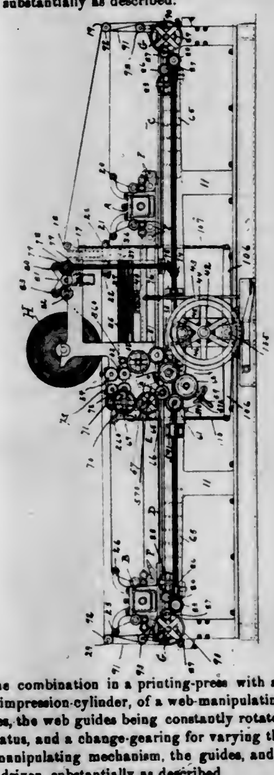
Claim.—1. The combination with a web-printing machine having a stationary form-bed, a traveling impression-cylinder and a web-manipulating mechanism, the latter consisting of means for continuously feeding a web into and out of the press, and for shifting the web in the press, of means for adjusting the action of the web-manipulating mechanism, and cutting-cylinders running at a constant peripheral speed greater than the peripheral speed of the means for feeding the web continuously out of the press, substantially as described.

2. The combination with a web-printing machine having a stationary form-bed a traveling impression-cylinder, web-guides and a web-manipulating mechanism, the latter consisting of means for continuously feeding the web into and out of the press, and two loopers for respacing the web in the press, of means for adjusting the action of the web manipulating mechanism, and cutting-cylinders running at a constant peripheral speed greater than the peripheral speed of the means for feeding the web continuously out of the press, substantially as described.

3. The combination in a web-press with a form-bed and a traveling cylinder, of suitable web manipulating and guiding mechanisms embracing continuously-rotating guides, and means for varying the speed of the manipulating mechanism and of the guides, substantially as described

4. The combination in a printing-press with a form-bed and traveling impression-cylinder, of a web manipulating mechanism and web-guides, the web-guides being constantly rotated, and a change-gearing for varying the speed at which the web-manipulating mechanism and the guides are driven, substantially as described.

5. The combination in a printing-press with a form-bed, and a traveling impression-cylinder, of a web-manipulating mechanism, a suitable inking apparatus, and a change-gearing for varying the speed at which the web-manipulating mechanism and the inking apparatus are driven, substantially as described.



6. The combination in a printing-press with a form-bed, and a traveling impression-cylinder, of a web-manipulating mechanism and web-guides, the web guides being constantly rotated, a suitable inking apparatus, and a change-gearing for varying the speed at which the web-manipulating mechanism, the guides, and the inking apparatus are driven, substantially as described.

7. The combination of a form bed, a traveling impression-cylinder, a feeding-in looper, a series of cams, from any one of which the feeding-in looper can be operated, and means for drawing the web through the press, substantially as described.

8. The combination in a printing-press with a form-bed, and a traveling impression-cylinder, of a looping delivery-roller, and a series of cams, from any one of which the looping delivery-roller can be actuated, substantially as described.

9. The combination in a web-printing press with a form-bed and a traveling impression-cylinder coacting therewith, of oppositely-acting feeding-in and feeding-out looping-rollers, and a series of cams for operating these looping-rollers, from any one of which the looping-rollers can be actuated, substantially as described.

10. The combination in a web-printing press with a form-bed and traveling impression-cylinder, of feeding-in and feeding-out web-looping rollers, a series of cams, a yoke engaging each cam and actuated thereby, and means for bringing any one of these yokes into operation as desired, to actuate the feeding-in and feeding-out looping-rollers, substantially as described.

11. The combination in a printing-press with a form-bed and a traveling impression-cylinder, of constantly-running feeding-in and feeding out rollers, means for varying the speed at which these rollers run, the web feeding-in and feeding-out looping-rollers, and means for varying the stroke of the looping-rollers to correspond with the variance of the speed of the feeding-in and feeding-out rollers, substantially as described.

12. The combination in a printing-press with a form-bed and a traveling impression-cylinder, of the continuously-running feeding-in and feeding-out web-rollers, means for varying the speed of the same, the feeding-in and feeding-out web-looping rollers, a series of cams for actuating the same, and means for connecting the proper cam so that the looping-rollers will be actuated to correspond with the feeding-in and feeding-out continuously-running rollers, substantially as described.

13. The combination in a web-printing press of the class described of a web-looping roller mounted in vibrating arms actuated from a shaft, a series of yokes loosely mounted on this shaft, a series of constantly-rotating cams which the yokes engage, and means for con-

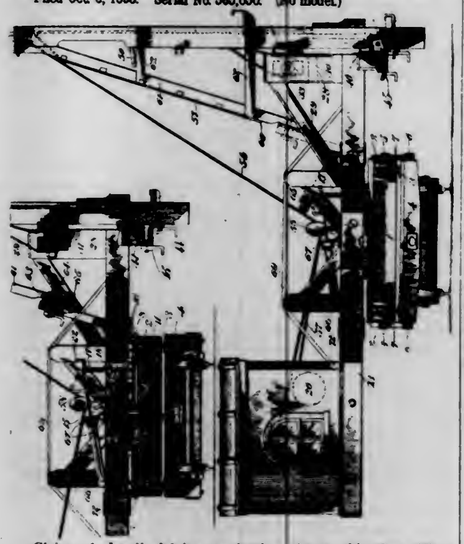
necting any one of the yokes to the shaft, as desired, substantially as described.

14. The combination in a web printing press of the class described of the feeding-in and feeding-out web-looping rollers, said looping-rollers being mounted so as to be actuated from a common shaft, a series of yokes mounted on this shaft, said yokes engaging a series of constantly-rotating cams, and means for connecting any one of these yokes to the shaft, whereby the movement of the looping-rollers can be varied, substantially as described.

15. The combination in a web printing press of the class described of means for actuating one or more of the looping-rollers, consisting of the constantly-driven shaft 42 which carries a series of cams, the shaft 105, which is connected to actuate the looping roller or rollers, the series of yokes loosely mounted on this shaft, and means as the tapered pin 125 adapted to connect any one of the yokes to the shaft 105, whereby the shaft 105 can be given a different oscillating motion, as desired, substantially as described.

16. The combination in a printing-press of a form-bed, a traveling impression-cylinder, web-guides, a web-manipulating mechanism, a suitable ink-supplying apparatus, and means for varying the speed at which the web-manipulating mechanism and the ink-supplying apparatus is driven, substantially as described.

569,435. PILE-DRIVER. JOHN A. SPANGLER, Washington, Pa. Filed Oct. 8, 1895. Serial No. 565,050. (No model.)



Claim.—1. In pile-driving mechanism, the combination with a carriage, frame pivoted thereto, and frame-revolving mechanism, of bearing-plates 72 secured to the side beams of the carriage upon opposite sides of the axis of the carriage and provided with apertures immediately adjacent to the opposite sides of the beams, a segmental series of apertures 73 in the carriage, and pins 70 designed to enter the apertures upon opposite sides of the side beams of the frame and to enter apertures 73 to prevent vibration of the frame upon the carriage, substantially as specified.

2. In pile-driving mechanism, the combination with a frame, of leaders pivotally secured thereto, a supporting-frame likewise pivotally carried by the frame, and a detachable pivotal connection between the supporting-frame and the leader-frame at right angles to the pivotal connection between the leader support and frame, substantially as specified.

3. In pile-driving mechanism, the combination with a frame and leaders pivoted thereto, of a ladder secured to the leaders, a ladder-supporting frame carried by the frame, and a detachable pivotal connection between the ladder and ladder-supporting frame independent of, but in approximate axial alinement with the pivot of the leaders, substantially as specified.

4. In pile-driving mechanism, the combination with a frame, of leaders pivotally secured thereto, and a folding leader-support carried by the frame and designed to be folded thereupon, and mechanism carried by the leader-support for securing the leaders in the depressed position, substantially as specified.

5. In pile-driving mechanism, the combination with a frame, of leaders pivotally secured thereto, a ladder carried by the leaders, a ladder-supporting frame, a detachable pivotal connection between the ladder and ladder-supporting frame independent of but in approximate axial alinement with the pivot of the leaders, a leader-support carried by the frame and designed to support the leaders in the depressed position, substantially as specified.

6. In pile driving mechanism, the combination with a frame, leaders pivoted to the support, a ladder secured to the leaders, a hinged frame carried on the frame, and a pivotal connection between the ladder and the hinged frame, said pivotal connection and the pivotal connection between the leader-support and the leaders being in approximate axial alinement, substantially as set forth.

7. In pile-driving mechanism, the combination with a frame, of leaders having a plurality of pivotal connections therewith a ladder secured to the leaders, a ladder-supporting frame carried by the frame, and a detachable pivotal connection between the ladders and ladder-supporting frame, substantially as specified.

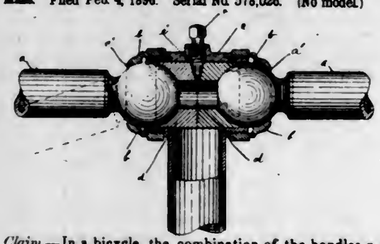
8. In pile-driving mechanism, the combination with a frame, of leaders pivoted thereto provided with a ladder, a folding leader-support and a hinged ladder-supporting frame carried by the frame and designed to support the leaders in the depressed and elevated positions, substantially as specified.

9. In pile-driving mechanism, the combination with a frame, of leaders pivotally secured thereto, a ladder carried by the leaders, a ladder-supporting frame, a detachable pivotal connection between the ladder and ladder-supporting frame independent of but in approximate axial alinement with the pivot of the leaders, a leader-support carried by the frame and designed to support the leaders in the depressed position, and mechanism carried by the leader-support for securing the leaders thereto, substantially as specified.

10. In pile-driving mechanism, the combination with a frame, of leaders pivotally secured thereto, a ladder carried by the leaders, a ladder-supporting frame, a detachable pivotal connection between the ladder and ladder-supporting frame independent of but in approximate axial alinement with the pivot of the leaders, a folding leader-support carried by the frame and designed to support the leaders in the depressed position, and mechanism carried by the folding leader-support for securing the leaders thereto, substantially as specified.

11. In pile-driving mechanism, the combination with a main frame and upright frame thereupon, of leaders pivoted thereto, a segmental track upon the frame, a pair of segmental bearings upon the leaders concentric and in substantially the same vertical plane with the segmental track upon the frame, whereby the track and bearings constitute guiding mechanism for the leaders when they are swung upon their pivot, corresponding holes in the frame and in one of the segmental bearings, and a bolt designed to be inserted in correlative holes, substantially as specified.

569,436. BICYCLE-HANDLE. CHARLES O. SPURR, Brockton, Mass. Filed Feb. 4, 1896. Serial No. 578,026. (No model.)

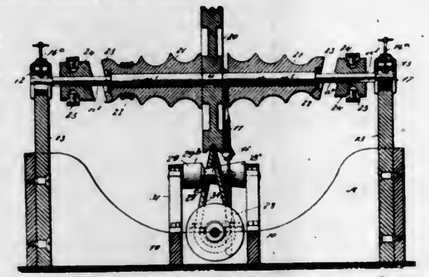


Claim.—In a bicycle, the combination of the handles *a*, *a*, provided with the spherical ends *a' a'*; the caps *b*, *b*; bearing pieces *d*, *d*; and regulating-screw *e*, provided with conical end *e'*; substantially as, and for the purpose above described.

569,437. DEVICE FOR OPERATING HAY-FORKS. JOHN F. TUTTLE, Springdale, Wash. Filed Aug. 14, 1895. Serial No. 559,282. (No model.)

Claim.—1. In a machine for controlling hay-forks and like devices, a driving-shaft, a pulley located on the said shaft, a guide-pulley located beneath the said shaft-pulley, the said guide-pulley being made in two sections, one section being of greater diameter than the other, the section of the smallest diameter being conical, whereby a shoulder is formed between the two sections, the said guide-pulley being placed at an angle to the shaft-pulley, a driving-pulley located at an angle to the guide pulley and beneath the same, being provided with a peripheral V-groove, and a belt engaging with the three pulleys, substantially as and for the purpose set forth.

2. In a machine for operating hay-forks and the like, the combination with a line-shaft, a pulley thereon, a conical or stepped pulley loose on the shaft, and a clutch for locking the conical or stepped pulley to the shaft, of a guide-pulley below the pulley of the said shaft, said guide-pulley being in two sections with shoulder between them, one section being larger than the other and the smaller section being conical, a grooved driving-pulley below and at right angles to the guide-pulley, and a belt passing around the said pulleys, the said belt being crossed between the guide-pulley and the pulley of the line-shaft, substantially as described.



3. In a machine for operating hay-forks and like articles, the combination, with a line-shaft, a driving pulley secured on the shaft, conical or stepped pulleys mounted to turn on the shaft at each side of the driving-pulley, the face of each stepped or separated pulley-partition being concaved, a clutch adapted one for engagement with each stepped or conical pulley, and shifting devices for operating the said clutches, of a drive-shaft, a guide-pulley secured on the said drive-shaft beneath the driving-pulley of the line-shaft, and at right angles to the line-shaft, a second pulley located above the pulley of the drive-shaft, said guide-pulley being conical and having an abrupt shoulder at its small end being placed at right angles thereto, and a belt passed around the pulley on the line-shaft, crossed and carried over the lower pulleys, as and for the purpose specified.

569,438. GOLF-CLUB. DAVID I. URQUHART, Glasgow, and ROBERT L. URQUHART, Edinburgh, Scotland. Filed Mar. 10, 1896. Serial No. 582,648. (No model.) Patented in France Mar. 18, 1895, No. 252,585, and in Belgium Feb. 11, 1896, No. 119,794.



Claim.—1. In a golf-club, the combination of the recessed head C formed with the internal grooves and the head B having tailpiece A provided with the tapered teeth or ribs *a* adapted to fit snugly within the grooves of the recessed head C, and means for securing the tailpiece within the recessed head, substantially as set forth.

2. In a golf-club, the combination of the recessed head C having the annular series of internal grooves, the head B formed with a tailpiece A and the circular series of tapered teeth *a*, and means for securing the tailpiece A within the head C.

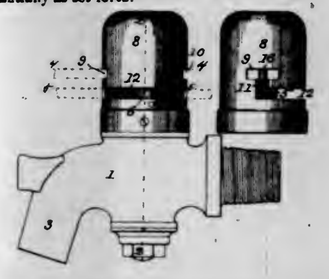
3. In a golf-club, the combination of the recessed head C, the guiding-pin F, the head B having the tailpiece A formed with a central opening adapted to fit over the guide-piece F, and means for securing the tailpiece within the head, substantially as set forth.

4. In a golf-club, the combination of the recessed head C, the head B formed with the tailpiece A supported in said recessed head, and a locking-lever E pivoted in the head C at the back of the club so as to be out of the player's line of sight, said lever E being adapted to engage the tailpiece A, substantially as described.

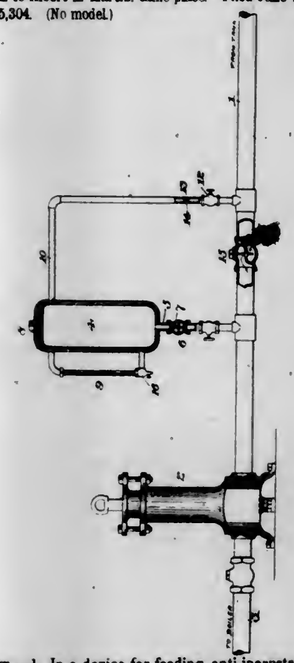
5. In a golf-club, the combination of the recessed head C, the locking-lever E pivoted in an opening at the back of the head C and formed with a button portion *e'*, and the locking-shoulder *e*, with the head B having the tailpiece A fitting in the recessed head C and formed with a shoulder a^3 with which the shoulder *e* of the lever engages, substantially as set forth.

569,439. REGISTERING-FAUCET. CHARLES VAN GRAAFEILAND, St. Louis, Mo., assignor to Caroline Lueders, same place. Filed Feb. 23, 1894. Serial No. 501,860. (No model.)

Claim.—In an automatic registering-faucet, the combination of the revolnble faucet-plug, a registering mechanism actuated thereby, and a casing inclosing the same, and having an opening in its side for the entrance of the operating-key, said opening consisting of a semi-circular opening 12, and entrance and withdrawal orifices 9 and 10, connected to the respective ends of the opening 12, by vertical slits 11, substantially as set forth.



569,440. DEVICE FOR FEEDING ANTI-INCRUSTATION COMPOUNDS TO BOILERS. WILLIAM A. WEST, Boone, Iowa, assignor of one-half to Albert L. Martin, same place. Filed June 12, 1896. Serial No. 595,304. (No model.)



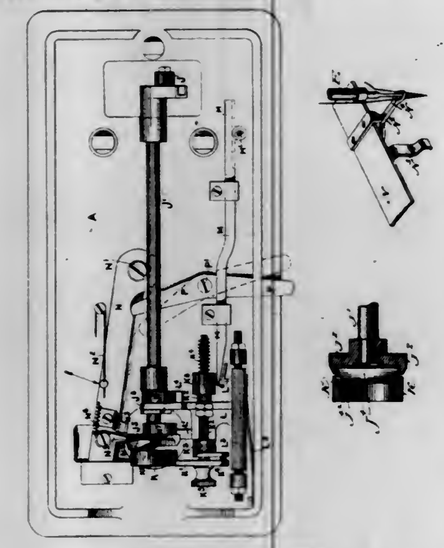
Claim.—1. In a device for feeding anti-incrustation compounds to steam-boilers, the combination with a pump, of a feed-water pipe having the valve therein, the pipe leading therefrom and having a spring-actuated check-valve, the oil-receptacle communicating with the latter pipe, and the pipe leading from the top of the oil receptacle to the feed-pipe.

2. In a device for feeding anti-incrustation compounds to steam-boilers, the combination of the feed-pipe having the valve therein, the pump communicating with said pipe, the short pipe leading from the feed pipe and having a spring-actuated check-valve, the oil-receptacle communicating with the short pipe and having the screw-plug, the pipe leading from the top of the oil-receptacle to the feed-pipe and having the reduced passage and the cock or valve below the same.

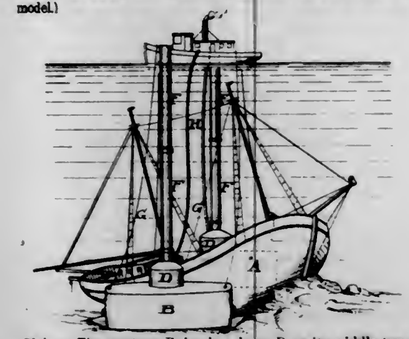
569,441. SEWING-MACHINE. VICTOR WITTE, London, England. Filed July 28, 1893. Serial No. 481,703. (No model.) Patented in England Feb. 28, 1893, No. 4,353.

Claim.—In loop-forming mechanism for sewing-machines, the combination with a rotating shaft, a hook carried thereby and adapted to receive a centrally-located detachable bobbin-case and a vertically-reciprocating needle, of a horizontal swinging arm N pivoted at one end beneath the base-plate and a bracket N^3 on the arm N, a cam N^7 on the rotating shaft of the hook to give motion to the bracket N^3 and arm N, and a spring N^5 for moving the arm N toward the cam N^7, a finger N^4 rigidly fixed to and projecting laterally from the free

end of arm N and an adjacent finger N^4 pivoted to the arm N, a spring N^5 to hold the finger N^3 in contact with the finger N^4, the fingers being bent in opposite directions near their extremities to form an eye with the extremities meeting for the passage of the needle and the fingers together forming a cylindrical neck rearward of the eye, and a lever P pivoted on the base-plate to throw the arm N and its fingers N^4, N^3 out of the region of the cam action when required, substantially as set forth.



569,442. APPARATUS FOR RAISING SUNKEN VESSELS. ALBERT H. WOLF, West Dover, Ohio, assignor of one-half to Nicholas J. Bayian, Cleveland, Ohio. Filed May 28, 1896. Serial No. 593,429. (No model.)

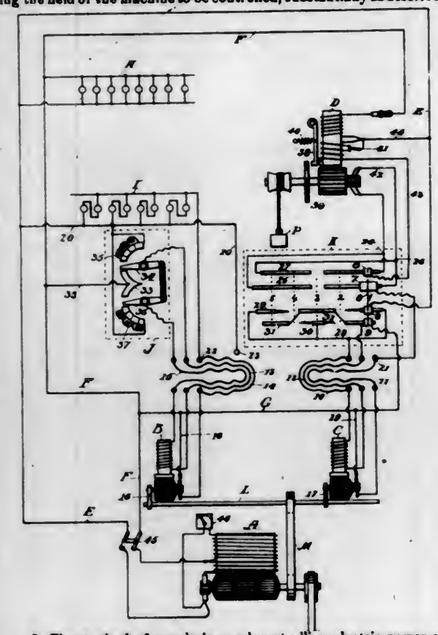


Claim.—The pontoon B, having dome D on its middle top part, and the chamber C, located in its interior middle part, the stand-pipe E on the top of said chamber C, and extending upward out through the dome, and the hose H connected with the top of the dome, all constructed and combined as and for the purpose set forth.

569,443. SYSTEM OF ELECTRICAL DISTRIBUTION. GRANVILLE T. WOODS, New York, N. Y., assignor, by mesne assignments, to S. E. Riley, same place. Filed Feb. 5, 1896. Serial No. 578,157. (No model.)

Claim.—1. The method of operating and regulating the work of an electric motor, consisting in maintaining one coil of the field-magnets of the electric motor at a constant strength, supplying its armature from a source of constant potential, supplementing the electromotive force of said source by electromotive force from a supplementary source, varying the electromotive force of said supplementary source and at the same time varying the strength of the field-magnet of the motor, substantially as described.

2. The method of regulating and controlling electric-power apparatus, consisting in supplying current to two electrodynamic machines whose armatures are in series with each other, and regulating the electromotive force of one of the machines to control the other machine by driving the armature of the regulating-machine at a practically constant speed and varying its field and simultaneously varying the field of the machine to be controlled, substantially as described.



3. The method of regulating and controlling electric-power apparatus, consisting in supplying current to two electrodynamic machines whose armatures are in series with each other, and regulating the electromotive force of one of the machines, both in amount and direction, to control the other machine, by maintaining the speed and connections of the armature of the regulating-machine practically constant and varying and reversing its field while at the same time varying the field of the other, substantially as described.

4. The method of reversing an electric motor, supplied with current from a constant-potential source and from a supplemental source, consisting in magnetically producing at the supplemental source a counter electromotive force independently of the motor and thereby reducing to the minimum the electromotive force supplied to the motor and then reversing the motor, substantially as set forth.

5. The method of performing work by an electric motor supplied with current from a variable generator and a constant-potential generator, which consists in simultaneously and differentially varying the field-magnet strength of the variable generator and the motor, without changing the field-magnet strength of the constant-potential generator, substantially as set forth.

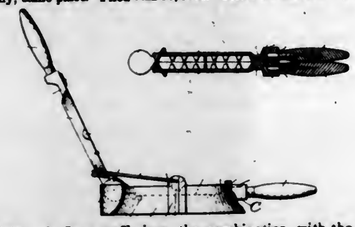
6. The combination of a constant-potential generator having conductors leading therefrom and a translating device, a second generator having its armature operating in a variable magnetic field, said armature being in electrical connection with the said conductors and also in connection with the translating device, and a switch mechanism the two parts of which are mechanically connected for operation and so arranged that one part controls the variation of the field of the said second generator while the second part controls the reversing of the translating device, substantially as set forth.

7. In combination with a constant-potential generator having conductors leading therefrom and a motor, a second generator having its armature operating in a variable magnetic field, said armature being in electrical connection with said conductors and also in connection with the motor, and switch mechanism having four movable contacts insulated from each other and mechanically connected for simultaneous operation, two of said contacts being in movable electrical connection with the terminals of the field-circuit of the said second generator, the two remaining movable contacts being in movable electrical connection with the reversing-terminals of the motor, substantially as set forth.

8. In combination with a constant potential electrical generator having conductors leading therefrom and a translating device, a second electrical generator having its armature operating in a varying magnetic field, said armature being in constant permanent electrical connection with the said conductors and also in connection with the translating device and switch mechanism whereby the said varying magnetic field is controlled and the translating device reversed simultaneously.

9. The combination with a constant-potential generator and a supplemental generator of a motor receiving current from said generators, and a regulating and controlling switch between the supplemental generator and the motor provided with contacts and connections for varying the electromotive force of the supplemental generator, and contacts for reversing the motor and for placing it on short-circuit in the transition between direct and reverse operation, substantially as set forth.

569,444. WAFFLE-IRON. ROBERT O. BINGHAM and BERNARD P. WAGNER, Sidney, Ohio, assignors to the Wagner Manufacturing Company, same place. Filed Jan. 30, 1895. Serial No. 536,668. (No model.)

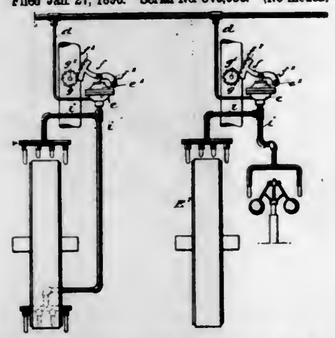


Claim.—1. In a waffle-iron, the combination, with the ring, of the pans journaled in said ring so as to open in a plane at a right angle to their axis of rotation, and each provided with a stud on the outer side, a bail loosely secured in ears cast on the ring, and stops on the ring limiting the backward movement of the bail, whereby when one of the pans is raised the bail is adapted to engage with the stud and hold said pan in an elevated position.

2. A waffle-iron comprising pans each formed with a semispherical projection, the plane of which is at a right angle to the plane of the face of the pan, and a handle-carrying stem opposite said projection, one of said stems having an abutment and the other a corresponding recess, and a ring formed with a semispherical socket for receiving the projections on the pans, whereby when the pans are together on the ring the projections form a ball-joint and the abutment engages with the recess and prevents lateral movement of the pans with relation to each other.

3. A waffle-iron comprising pans each formed with a semispherical projection, the plane of which is at a right angle to the face of the pan, and a journal-stem opposite said projection, said stems being provided with interlocking means and screw-threaded shanks, and handles screwed on said shanks, the shanks being so positioned with relation to each other that when the handles are in place thereon the handles will come together when the pans are closed.

569,445. AUTOMATIC ENGINE-STOP. ARTHUR K. BONTA, Hoboken, N. J., assignor to the Bonta Manufacturing Company, of New Jersey. Filed Jan. 27, 1896. Serial No. 576,930. (No model.)

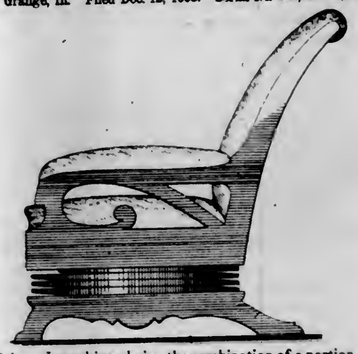


Claim.—1. An automatic engine-stop consisting of an air-motor adapted to operate a cut-off valve of the engine in combination with a source of air supply acting through the motor to hold the valve open and a pipe or pipes leading from the motor to a point or points adjacent to the moving parts driven by the engine, and air-releasing devices located at such points and adapted to be operated by such part when deranged, substantially as described.

2. In an automatic engine-stop, the combination of an air-storage tank, means for maintaining a constant pressure therein, a trunk-line of pipe extending from the tank, a plurality of engines, a plurality of air-motors, one for controlling the cut-off valve of each engine, branch pipes leading from said trunk-pipe to each air-motor and supplying air-pressure thereto to hold the cut-off valves open, normally-closed exhaust-pipes leading from the air-motors to points adjacent to the moving parts of the engine or machine driven thereby and air-releasing devices in said exhaust-pipes adapted to be operated by the moving parts of the engine or machinery driven thereby, substantially as described.

3. A pneumatic system for stopping the motors or engine of a power plant, the same consisting of a number of air-motors respectively actuating the controlling-valves of the motor or engines, exhaust-pipes leading from said air-motors to a switchboard and from the switchboard to various air-releasing devices and valves in the pipes at the switchboard whereby any portion of the system may be made operative at will, substantially as described.

569,446. PLATFORM ROCKING-CHAIR. WILLIAM I. BUNKER, La Grange, Ill. Filed Dec. 12, 1893. Serial No. 493,481. (No model.)



Claim.—In rocking-chairs, the combination of a portion adapted to be rocked, a rocking coil or spring the coils of which are thinned or beveled on that side of the center of oscillation in which the rocking is to take place, and a base, substantially as described.

569,447. PLATFORM ROCKING-CHAIR. WILLIAM I. BUNKER, La Grange, Ill. Filed Dec. 12, 1893. Serial No. 493,482. (No model.)



Claim.—1. In rocking-chairs, the combination of a chair-frame, and contacting rocking-surfaces comprising a number of stripa parallel with the side of the frame having wedge-shaped spaces between their ends, substantially as described.

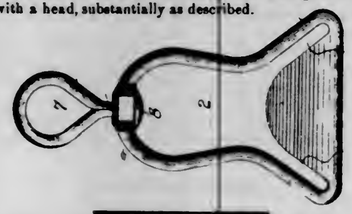
2. In rocking-chairs, the combination of a chair-frame, contacting rocking-surfaces comprising a number of strips parallel with the side of the frame having wedge-shaped spaces between their ends, and base-rails, substantially as described.

3. In rocking-chairs, the combination of a chair frame, base-rails, contacting rocking-surfaces comprising a number of strips parallel with the side of the frame having wedge-shaped spaces between their ends arranged between the chair-frame and the base-rails, and means for securing the parts together, substantially as described.

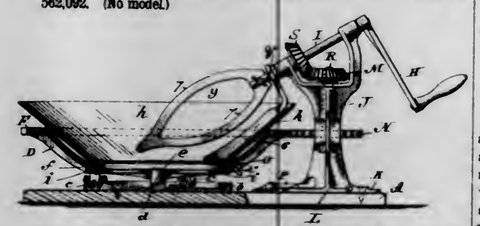
569,448. GRAB FOR HOISTING-CHAINS. JAMES DUDLEY, Killbuck, Ohio. Filed Nov. 27, 1895. Serial No. 570,285. (No model.)

Claim.—As an improved article a grab for a hoisting-chain, comprising the curved arms flaring outwardly at their lower ends in oppo-

site directions, and formed integral with an inward-extending flat connecting-piece curved or rounded at its inner portion whereby outwardly-extending slots are formed, the walls of which are parallel with the boss or enlargement with which the upper ends of said arms are connected, the swivel consisting of a metal bar bent over to form a circular eye and the ends passed through said enlargement and provided with a head, substantially as described.

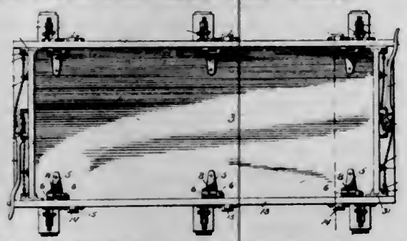


569,449. DOUGH-MIXER. WILLIAM B. EDWARDS and GEORGIANNA E. POTTER, Holyoke, Mass. Filed Sept. 10, 1895. Serial No. 562,092. (No model.)



Claim.—In a dough-mixer, the standard J, hinged at its lower end to the base, having a recess near its center to receive the wheel N, and provided at its upper end with bearings for the shaft I, and having a vertical opening through it to receive the shaft R, combined with the wheels N, M, placed on the shaft R; the mixer-shaft provided with a gear S, and the mixer *y*; and the revolving pan-holder and pan placed therein, substantially as shown and described.

569,450. FOLDING WAGON-BODY. JOHN M. FISCHER, De Soto, Mo. Filed Dec. 18, 1895. Serial No. 572,552. (No model.)

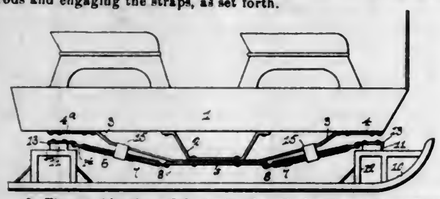


Claim.—1. In a folding wagon, the combination with the bed or bottom, the supporting-beams, the folding side-boards, the brackets secured to said beams provided with set-screws, the brace-bars secured to said brackets and provided with apertures with which said screws engage and the brackets secured to said side-bars with which said brace bars engage, of the hinges connecting the bottom and side-boards, each consisting of two leaves one of which is formed with two boxes and the other leaf having two extensions one of which is provided with pintles engaging with said boxes and one of said extensions adapted to slip through a recess in one of said boxes and the end-gates and means for securing them in place, substantially as described.

2. In a folding wagon, the combination with the bottom, the supporting-beams, and the hinged side-bars provided with guides at the ends, of the end-gates working in said guides, the brackets and rings connected with the guides, the bracket secured to said end-gate, the lever pivoted thereto having a slot and pin, the chains connected with said pin and the chains connected with the inner end of the lever and each of said chains connected with one of the aforesaid rings, substantially as described.

569,451. THOROUGH-BRACE FOR VEHICLES. OSCAR B. FULLER, Duane, N. Y. Filed Nov 1, 1895. Serial No. 567,599. (No model.)

Claim.—1. The combination of the central yokes adapted to be attached to the body, the double straps engaging the yoke and extending oppositely longitudinally of the body, clips engaging the straps and adapted to be attached to the running-gear, brace-rods also adapted to be attached to the body, and collars carried by the brace-rods and engaging the straps, as set forth.



2. The combination of the body, the side bearing-bridges 2, the brace-bars 3 attached to the body and bridges, the central yokes 5 also attached to the bridges, the double straps engaging the yoke and extending oppositely longitudinally of the body, the running-gear, clips attached to the running-gear and engaging the straps, and collars carried by the brace-rods and confining the straps, as set forth.

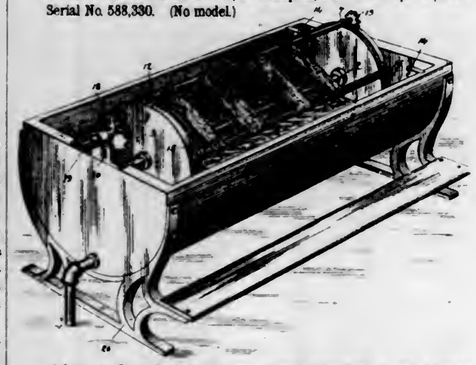
569,452. POCKET-KNIFE. GEORGE GARDNER, Winsted, Conn. Filed July 18, 1896. Serial No. 599,660. (No model.)



Claim.—1. In a knife the combination with the handle, frame and bolster thereof, of an opening through said bolster, a blade movable through said bolster into or out of the frame; stops to limit the movement of the blade, and a pin upon one side of the blade; a lever within said frame and extending longitudinally therein parallel with said blade, and formed with a head at its outer end; an opening in said head, and a clearance-groove into said opening, whereby the pin on the blade may enter said opening for engagement therewith, substantially as described.

2. In a knife, the combination with the rectangular frame formed from a single piece of metal, and comprising a bolster, an opening through said bolster, a blade adapted to be moved in and out of the frame through said opening; stops to limit the outward movement of said blade; a pin mounted upon one side of the shank of the blade; a spring-lever within the frame, and extending longitudinally through it parallel with said blade, said lever adapted at its inner end to engage with said pin, and formed at its outer end with a head having an opening therein, and a clearance-groove entering said opening, said opening also formed with a V-shaped notch for engagement with said pin, whereby said blade is held in its open position, substantially as described.

569,453. APPARATUS FOR DYEING SKEINS. WILLIAM J. GUEASON and JOSEPH H. BOWER, Philadelphia, Pa. Filed Apr. 20, 1896. Serial No. 588,330. (No model.)



Claim.—1. In a device of the character described, a reel having heads each composed of two disks, one having an annular groove on its inner face, the other reduced in diameter at its outer edge forming, when placed together, an L-shaped groove, boxes having projections formed on their lower ends to slide in said groove and rods journaled in the boxes, as and for the purpose described.

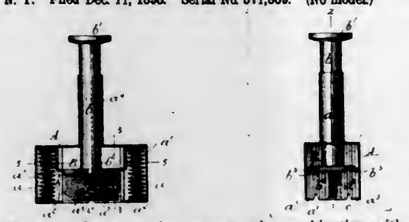
2. The herein-described combination of a tank 1, a shaft 2 journaled therein, a reel composed of the heads 3 secured upon said shaft, work-supporting rods 9 journaled in suitable bearings made adjustable upon said heads, feed-rods 12 also journaled in bearings carried by said heads, gears 13 carried by the outer ends of said feed-rods, a semicircular rack-bar 14 secured within the tank with which said pinions are adapted to mesh, a gear 17 secured upon the shaft 2, a gear 18 adapted to mesh therewith, and a shaft 19 upon which the last-named gear is secured, all arranged substantially as and for the purposes set forth.

3. In a device of the character described a tank, a reel journaled therein having heads 3 each composed of two disks 4 and 5 so shaped as to form an annular groove and journal-boxes 7 fitting in the grooves, as and for the purpose described.

4. In a device of the character described a tank, a reel journaled therein having grooved heads, journal-boxes slidable in the grooves, work-supporting rods journaled in the boxes and having pinions on their ends and a semicircular rack-bar secured within the tank with which the pinions are adapted to mesh, as and for the purpose described.

5. In a device of the character described, a reel having circumferentially-grooved heads, boxes slidable in the grooves of the heads, set-screws on the boxes to secure them in place hinge-caps on the boxes having open slots on their ends, pivoted bolts adapted to swing into the slot and bind the cap and rods journaled between the cap and the box, as and for the purpose described.

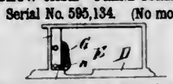
569,454. ENVELOP-STAMPER. IRA C. GOODRIDGE, Rochester, N. Y. Filed Dec. 11, 1895. Serial No. 571,809. (No model.)



Claim.—1. In an envelop-stamper, the combination with the magazine A having retaining-points a^3 at its lower edges, and slots a^2 in its end walls, of the plunger B movable within the magazine and having arms b^2 extending through said slots for keeping the edges of the plunger out of contact with the inner walls of the magazine, and springs arranged to act on said arms b^2 for normally holding the plunger at the upper portion of the magazine.

2. In an envelop-stamper, the combination with the magazine A having the spring-chambers a, the slots a^2 and the retaining-points a^3, of the springs a' in the said chambers, and the plunger B having the arms b^2 extending through the said slots and bearing on the said springs, substantially as described.

569,455. SHOW-CASE. FRANK GURLEY, High Point, N. C. Filed June 11, 1896. Serial No. 595,134. (No model.)



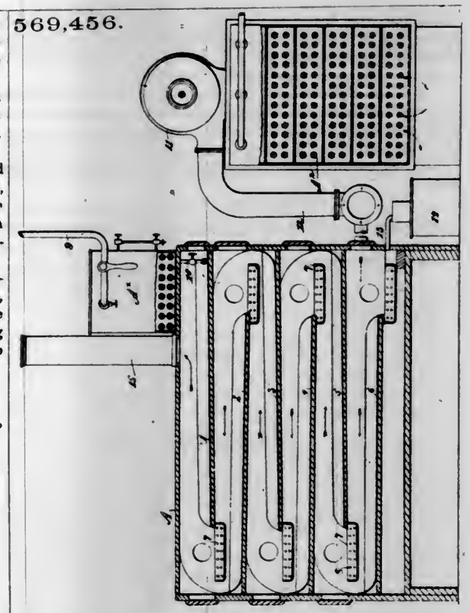
Claim.—A show-case having a door-frame at one side, a door in the frame, a floor in the case, the bottom strip of the frame having a recess extending down to the floor and cut transversely through the strip to the level of the floor, and a block fitting the said recess beneath the door, substantially as described.

569,456. APPARATUS FOR EVAPORATING LIQUIDS. LEON F. HAUETMAN, New Orleans, La. Filed June 8, 1896. Serial No. 594,703. (No model.)

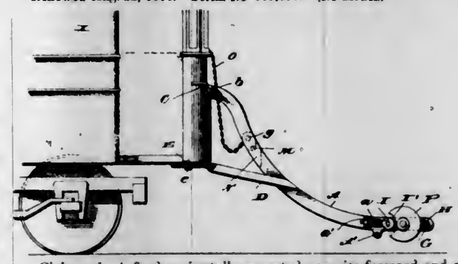
Claim.—1. An apparatus of the class described, comprising a casing, a series of inclined plates arranged therein and forming chambers having communication one with another, a liquid-receiver at the end of each plate, means for heating liquid in said receivers, a supply-tank for the apparatus, and means for forcing heated air through the apparatus in a direction opposite to that in which the liquid is flowing, substantially as specified.

2. An apparatus of the class described, comprising a casing, a series of plates arranged longitudinally therein and inclined alternately in opposite directions, liquid-receiving vessels at the ends of the plates and adapted to overflow the liquid from one plate onto the plate immediately below, means for heating liquid in the receivers, a liquid-tank arranged on the top of the casing, a valve-controlled pipe leading from said tank into the upper portion of the casing above the first evaporating-plate, heating-pipes arranged in said liquid-tank, a heater arranged adjacent to the casing, an air-blower arranged on said heater and receiving air therefrom, and a pipe leading from the blower into the lower chamber within the casing, substantially as specified.

569,456.



569,457. CAR-FENDER. GEORGE A. HENRY, Wilmington, Del., assignor of one-third to W. B. Clerk, same place. Filed Oct. 17, 1895. Renewed Aug. 22, 1896. Serial No 603,650. (No model.)



Claim.—1. A fender pivotally mounted near its forward end on a slidingly-supported spring-actuated pivot and constructed and arranged to be forced bodily with its pivot, upon meeting an obstruction, rearwardly and its rear end dropped automatically, substantially as specified.

2. A fender pivotally mounted near its forward end, springs acting on said pivot for normally holding the same in its forward position, the said fender being normally supported at its rear end and mounted to move rearwardly to drop the rear end and tilt the fender on its pivot by contact with an obstruction, substantially as specified.

3. The combination with a fixed frame, of a fender loosely upheld at its rear end on said frame, and having its lower end pivotally mounted on a slidingly-supported spring-actuated pivot; substantially as described.

4. A fender mounted at its lower end on a pivot mounted to slide bodily rearward in guides in a horizontal plane, and its upper end mounted removably in supports, and a fixed frame on which the upper end is supported and in which the pivot at the lower end slides, and springs acting on said pivot, substantially as described.

5. The combination with a fixed frame, of a fender, a pivot therefor near its forward end mounted to slide in the fixed frame, supports on the fixed frame for the rear end of the fender, and springs for normally holding said pivot in its forward position, substantially as specified.

6. The combination with the fixed frame and the lugs upon the inner faces of the side bars thereof formed with notches having inclined walls, of a fender having lugs at its rear end to engage said notches and a pivot for said fender at the lowermost front end of said fender slidingly mounted in longitudinal slots in the side bars of said frame, substantially as specified.

7. The combination with the fixed frame and the lugs upon the inner faces of the side bars thereof formed with notches having in-

clined walls, of a fender having lugs at its rear end to engage said notches and a pivot for said fender slidingly mounted in the side bars of said frame, and springs acting on said pivots to normally hold it in its forward position, substantially as specified.

8. The combination with the side bars, of the fixed frame and their rear connecting-rod having pintles, of brackets on the car to receive said pintles, brace-arms secured to said side arms and having their rear ends slotted, lugs on said side arms and springs arranged between the same and the pivot of the fender, substantially as specified.

569,458. POWER-TRANSMITTING GEAR FOR WINDMILLS. WILLIAM C. HOFFNER, Prospect Park, Cal. Filed Jan. 4, 1896. Serial No. 574,303. (No model.)



Claim.—1. The combination with a support, of a windmill, a crank-arm moving with the windmill, a block slidable longitudinally with the crank-arm, a rod connected to the block, a cam capable of actuating the block in its sliding movement, and an auxiliary wind-wheel controlling the cam, substantially as described.

2. The combination with a support, of a wind-wheel, a crank moving with the wind-wheel, a block slidable longitudinally with the crank, a rod connected to the block, a cam controlling the block in its sliding movement, an auxiliary wind-wheel, and a spring connected to the auxiliary wind-wheel and capable of regulating its movements, substantially as described.

3. The combination with a support, of a crank-arm, a part on which said crank-arm is mounted a block slidable on the crank-arm, a rod connected to the block, a cam capable of controlling the block in its sliding movement, and means for operating the cam, substantially as described

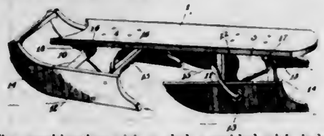
4. The combination with a support, of a crank-arm having a groove, a part on which said crank-arm is mounted a block slidable in said groove, a rod connected to the block and having a pin, a grooved cam receiving the pin in the groove of the cam, and means for actuating the cam, substantially as described.

5. The combination with a support, of a hollow shaft, a wind-wheel fixed on said hollow shaft, a crank-arm carried by the hollow shaft, a block slidable longitudinally on the crank-arm, a rod connected to the block, a solid shaft rotatable within the hollow shaft, a cam connected to the solid shaft and actuating the block in its sliding movement, an auxiliary wind-wheel connected to the solid shaft, and a spring actuating the auxiliary wind-wheel, substantially as described.

6. The combination with a support, of a revoluble shaft, a crank-arm, a block slidable longitudinally on the crank-arm, a member pivotally connected to the block, and means for controlling the position of the block on the crank-arm, substantially as described.

569,459. SLED. BENJAMIN F. HOOK, Holmesville, Ohio. Filed Nov. 1, 1895. Serial No. 567,667. (No model.)

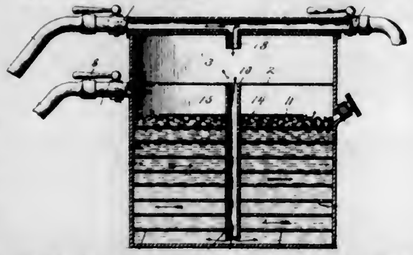
Claim.—1. In a sled of the character described, the combination with the sled body 1, and the bearing-heads 4 and 5 attached thereto said bearing-heads being angularly disposed with relation to the sled-body and reversely disposed with relation to each other, of the forward and rear reversely-acting runner-trucks 10 and 11, comprising the runners 12 and 13 and the parallel connecting brace-bars 14 and 15, the bearings 19 carried by said brace-bars, the recesses 20 formed in the bottoms of said bearings, the springs 21 located in said recesses and the axles 18 mounted in said bearing-heads and projecting on either side thereof, said projecting ends being journaled in the spring-cushioned bearings 19 carried by the parallel connecting brace-bars 14 and 15, substantially as described.



2. The combination with a sled, provided with independently-movable trucks and designed to be steered by the tilting of the sled-body thereon, of the outwardly-projecting handles or grasping-bars attached to the runners of one of the trucks and adapted to be grasped to control or vary the degree of incliuation of the sled-body, substantially as described.

3. In a sled of the character described, the combination with the sled-body and the bearing-heads attached thereto, said bearing-heads being angularly disposed with relation to the sled-body and reversely disposed with relation to each other, of the forward and rear reversely-acting runner-trucks, comprising the runners and the parallel connecting brace-bars, the bearings carried by said brace-bars, the recesses formed in the bottoms of said bearings, the springs located in said recesses and the axles mounted in said bearing-heads and projecting on either side thereof, said projecting ends being journaled in the spring-cushioned bearings carried by the parallel connecting brace-bars; and the outwardly-projecting handles attached to the runners of the rear truck and adapted to be grasped to control or vary the degree of inclination of the sled body, substantially as described.

569,460. CARBURETER. CHARLES W. INGRAHAM, Heppner, Oreg., assignor of one-half to Harry Warren, same place. Filed Dec. 27, 1895. Serial No. 573,443. (No model.)

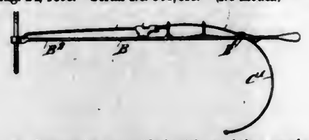


Claim.—In a gas-generating apparatus, an upright oil-tank provided above its horizontal center with a horizontal partition-plate between which and the top of the tank is confined an upper air-chamber, and below which partition-plate is confined a lower oil-chamber, said tank also having at one side directly below the partition-plate an offstanding valved gas-outlet pipe, a central air-tube depending from the partition-plate to a point in close proximity to the bottom of the tank, a series of parallel diaphragms fitted within the tank around the central air-tube and provided with a series of oil openings or perforations out of vertical alinement, a horizontal deflecting-plate fitted on the central air-tube between the uppermost diaphragm and the side gas-outlet pipe, a straight air-distributing tube arranged flat on top of the lid of the tank and provided with valved extremities and at an intermediate point with a central discharge-neck projected through an opening in the lid of the tank, a blowpipe device having pipe connections respectively with the gas-outlet pipe and one of the valved ends of the air-distributing tube, and an air-supply tube connected with the other valved end of said distributing-tube, substantially as set forth.

569,461. PROCESS OF MANUFACTURING STEEL. ELIAS M. JOHNSON, New York, N. Y. Filed May 21, 1896. Serial No. 592,496. (No specimens.)

Claim.—The process herein described of making chrome-steel which consists in introducing into the steel as it is flowing from the converter or furnace in a molten state, chromium in a fluid or semi-fluid state; substantially as described.

569,462. SPECTACLES. JOHN T. MEREDITH, Shawnee, Ohio. Filed Aug. 24, 1895. Serial No. 560,416. (No model.)



Claim.—1. Spectacles, provided with straight temples, auxiliary temples fitted to slide on the said straight temples, and having an outer, curved ear portion, and means for locking the said auxiliary temples to the straight temples, as set forth.

2. Spectacles, provided with straight temples, each of which is provided with bearings and a connecting guide-rod, an auxiliary temple for each straight temple, and fitted to slide in the said bearings, and a catch connected with the inner end of the auxiliary temple and fitted to slide on the said guide rod, substantially as shown and described.

3. Spectacles provided with straight temples, each of which is provided with bearings and a connecting guide-rod, an auxiliary temple for each straight temple and fitted to slide in the said bearings, a catch connected with the inner end of the auxiliary temple and fitted to slide on the said guide-rod, and a lug on the said straight temple, and adapted to be engaged by the said catch, to lock the auxiliary temple in place, substantially as shown and described.

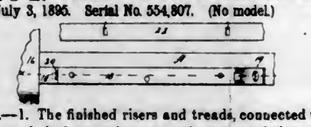
569,463. CIRCULAR-KNITTING DEVICE. DANIEL MINICH Philadelphia, Pa., assignor of one-half to David Gerstlauer, same place Filed Oct. 1, 1895. Serial No. 564,260. (No model.)



Claim.—1. A knitting-machine having a bracket, a spool-holding pin thereon, a stationary cam-groove cylinder secured to said bracket, a needle-cylinder having a shank for rotating it, needles movable in slots in said needle-cylinder and having their lower ends in the cam-groove of the stationary cylinder, and a ferrule encircling said shank and adapted to support said cam-grooved cylinder.

2. A knitting-machine consisting of a stationary cylinder with a cam grooved in its inner face, a needle-cylinder within said stationary cylinder, a rotary shank connected with the needle-cylinder, needles having their lower ends engaged by said cam-groove and a ferrule connected with said stationary cylinder for supporting the same.

569,464. STAIRS. ETHELBERT A. MOORE, New Britain, Conn. Filed July 3, 1895. Serial No. 554,807. (No model.)



Claim.—1. The finished risers and treads, connected together at their outer angle before setting up, each step consisting of one riser and one tread and fastening-irons, by means of which the successive steps from the bottom up may be secured to a pair of stringers, substantially as described and for the purpose specified.

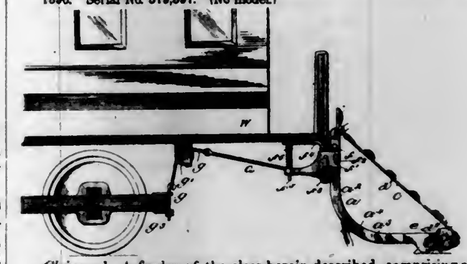
2. The finished risers and treads permanently connected together in steps before setting up, each separately-completed step having fastening-irons permanently attached thereto by means of which the successive steps may be secured, one by one, to a pair of stringers, substantially as described and for the purpose specified.

3. The finished risers and treads connected together in steps, a pair of brackets inside of each step to which the riser and tread of said step are secured, and means for securing said brackets to a pair of stringers for attaching the several steps one by one, substantially as described and for the purpose specified.

4. The combination of the risers and treads with brackets secured upon the inside of the riser and tread of each step, the vertical arms of said bracket having a tongue at their lower end and the horizontal arms having an upwardly-inclined securing-lip with a mortise to receive said tongue, substantially as described and for the purpose specified.

5. The finished risers and treads connected together in steps before setting up, and provided at the rear edge of each with upwardly and rearwardly inclined securing-lips, substantially as described and for the purpose specified.

569,465. WHEEL-FENDER. STEPHEN NORTON, Rochester, N. Y., assignor of one-fourth to Edwin D. Watkins, Lima, N. Y. Filed Feb. 15, 1896. Serial No. 579,397. (No model.)



Claim.—1. A fender of the class herein described, comprising a scoop-net, a sectional frame therefor composed of vertical side bars and lower side bars pivoted thereto, plate-springs designed to hold said lower side bars either extended or raised, and flanges on said lower side bars adapted to limit the movement thereof, substantially as set forth.

2. A fender of the class herein described, comprising a scoop-net, a sectional frame therefor composed of vertical side bars and lower side bars pivoted thereto, flanges on the rear ends of said lower side bars adapted to limit the movement thereof, and plate-springs supported by said vertical side bars and bearing against said flanges, as and for the purpose set forth.

3. A car-fender comprising a frame, a spring-held rotatable rod mounted therein, wheels or pulleys fast on said rod having grooves or kerfs therein, and a flexible scoop-net connected at its lower end to said wheels or pulleys and engaging said grooves or kerfs, substantially as set forth.

4. A car-fender comprising a scoop-net composed of transverse bars, and flexible straps or chains, a frame therefor having a spring-held rod and wheels or pulleys thereon having grooves or kerfs therein, and links connecting said flexible straps or chains to said wheels or pulleys, said links fitting in said grooves or kerfs, substantially as set forth.

5. The combination with the frame, of the spring-held rod, the wheels or pulleys thereon, the scoop-net having cross-bars and flexible straps or chains connected to said pulleys, plate-springs carried by said frame, and the cross-bar secured to said plate-springs and to which said straps or chains are connected at their upper ends, substantially as set forth.

6. The combination with the frame having a lower extensible part or section, of the flexible scoop-net connected at its lower end to the forward end of said extensible part or section, the upper cross-bar to which the upper end of said scoop-net is connected, and the plate-springs to which said upper cross-bar is connected, said plate-springs at their lower ends engaging and holding said extensible part or section of said frame, substantially as set forth.

7. The combination with a car, of a fender having a scoop-net, pivoted arms depending from the car-body and to which said fender is connected, said arms having rearward extensions, springs bearing on said extensions and cords or chains connecting said arms to the wheel-truck, said cords or chains engaging the car-body, whereby any rocking of the latter will effect the oscillation of said fender, substantially as set forth.

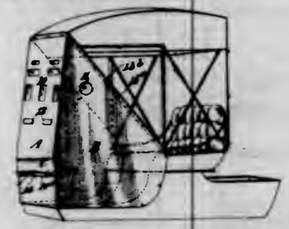
8. The combination with the car-body, of a scoop-net, a frame therefor, pivoted supporting-plates for said frame, springs bearing on extensions of said supporting-plates, and connections between said pivoted supporting-plates and the wheel-truck, substantially as set forth.

9. The combination with a car-body, of pivoted arms depending therefrom and having rearward extensions, a scoop-net, a frame therefor carried by said depending arms, springs acting on said extensions, and connections between said depending arms and the wheel-truck, substantially as set forth.

10. The combination with a car, of a scoop-net, a frame therefor having extensions, pivoted arms depending from the car-body and to which said extensions are connected, springs bearing down on said extensions in rear of said arms, cords or chains connected to said arms and to the wheel-truck, and wheels or pulleys on the car-body over which said cords or chains are passed, substantially as set forth.

11. The combination with a car, of a frame having an extensible section, plate-springs acting on said section, a spring-held shaft having wheels or pulleys, a scoop-net connected at its lower end to said wheels or pulleys, a cross-bar supported by said plate-springs and to which said net is connected, depending pivoted arms to which extensions of said frame are connected, springs acting on said extensions, and connections between said arms and the wheel-truck, substantially as set forth.

569,466. STORM-GUARD FOR VEHICLES. Sylvanus Norton, Sinclairville, N. Y. Filed Dec. 18, 1895. Serial No. 572,545. (No model.)



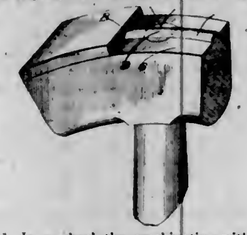
Claim.—1. A device for attaching the hoods, storm guards or aprons to the dash of a vehicle, the said device comprising a strap, a clamping device secured to one end of the strap, a take-up lever connected with the opposite end of the strap, and a second clamping device connected with the said take-up lever, as and for the purpose specified.

2. A locking device for the storm curtains, aprons or guards of vehicles, the same consisting of a strap, a clamping device adjustably connected with one end of the strap, a take up lever fulcrumed upon the opposite end of the strap, a second clamping device connected with the aforesaid lever, and a locking device for the lever, as and for the purpose specified.

3. A locking device for storm aprons and guards of vehicles, the same consisting of a strap, a clamp adjustably attached to one end portion of the strap, a take-up lever fulcrumed at or near the opposite end of the strap, a second clamping device adjustably connected with the aforesaid take-up lever, and a lock carried by the strap and adapted for engagement with the aforesaid take-up lever, as and for the purpose specified.

4. A locking device for storm aprons, guards and the like for vehicles, the same consisting of a body-strap and a buckle adjustably connected with one end of the strap, a clamping device attached to the said buckle, a take-up lever fulcrumed at the opposite end of the said body strap, having openings therein, a sleeve adjustable on the said lever, means for attaching the sleeve positively to the lever, a second clamping device in pivotal connection with the aforesaid sleeve, and a lock link or loop on the body-strap adapted to receive an end of the take-up lever, substantially as shown and described.

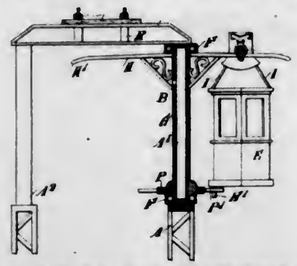
569,467. WAGON-WHEEL. William S. O'Brien, Lafayette, Ind. Filed July 25, 1895. Serial No. 557,139. (No model.)



Claim.—1. In a wheel, the combination with its hub and felly provided with a flat tread, of a continuous peripheral, comparatively narrow rib, medially located upon the tread of the felly, and corresponding to the arc of a circle in cross-section, spokes having their outer ends fitting within sockets, and extending entirely through the felly, the ends of the spokes being conformable to the shape of the rib and flush with the face of the felly and rib, respectively, whereby at regular intervals the grain of the spokes crosses the grain of the rib and is exposed upon the sides of the rib so as to constitute a continuous reinforcing-rib as a means for retaining a flat grooved tire in place upon the felly, when shrunk upon the same, substantially as set forth.

2. In a wheel, the combination with its hub and felly provided with a flat tread, of a continuous peripheral, comparatively narrow rib, medially located upon the tread of the felly, and corresponding to the arc of a circle in cross-section, spokes having their outer ends fitting within sockets, and extending entirely through the felly, the ends of the spokes being conformable to the shape of the rib and flush with the face of the felly and rib, respectively, whereby at regular intervals the grain of the spokes crosses the grain of the rib and is exposed upon the sides of the rib and a flat interiorly-grooved tire fitting the rib and the tread of the felly, respectively, the opposite walls of the groove thereof making close contact with both grains of the wood exposed at the rib upon the felly and the ends of the spokes, respectively, substantially as set forth.

569,468. AERIAL RAILWAY. Ignacio Montes de Oca y Mellan, New York, N. Y. Filed Jan. 14, 1896. Serial No. 575,440. (No model.)



Claim.—1. In an aerial railway, the combination of a cable on which cars are adapted to run, revoluble supporting-arms engaging the cable, and a wheel secured to the shaft of said arms, and adapted to be engaged and turned by the cars, substantially as described.

2. In an aerial railway, the combination of a cable on which cars are adapted to run, revoluble supporting-arms engaging the cable, and a wheel secured to the shaft of said arms and provided with pins or teeth adapted to be engaged and turned by projections on the cars, substantially as described.

3. A car for aerial railways of the class described, provided with a series of projections located in substantially the same horizontal plane and adapted to turn a wheel mounted to rotate about a stationary vertical axis, substantially as described.

4. The combination of the cable, the rotatable vertical sleeve or shaft having arms in supporting engagement with the cable, a wheel on said shaft, and a car adapted to run on the cable and provided with means for automatically turning the wheel during the passage of the car at the support, substantially as described.

5. A car for aerial railways, comprising a car proper or body, a carriage or trolley located above the body and adapted to run upon a cable, and hangers extending from each side of the trolley to the car-body, forming an inclosed space for the reception of the cable, to prevent the car from being thrown off the cable in case of the trolley leaving the cable, substantially as described.

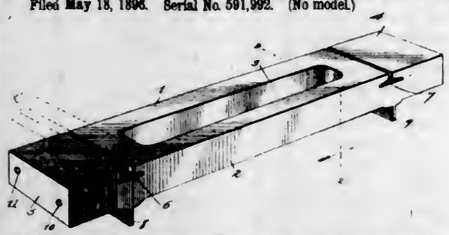
6. A trolley for aerial railways, comprising a casing, and rollers journaled therein and adapted to engage the cable, the side walls of the casing projecting below the rollers to limit the lateral movement of the trolley, substantially as described.

7. The combination of the car-body, the hangers at the upper end thereof, the trolley connected to the hangers, and the shield surrounding the trolley and covering the upper ends of the hangers, as and for the purpose set forth.

8. A trolley for aerial railways, comprising a trolley proper adapted to run on a cable, and a yoke or arm pivoted to the trolley and having at its free end a guide adapted to receive the cable, substantially as described.

9. A trolley for aerial railways, comprising a trolley proper adapted to run on a cable, and a yoke or arm pivoted to the trolley and having its free end formed with a hook adapted to receive the cable, a hinged member for closing the opening of the hook, and means for locking the hinged member, substantially as described.

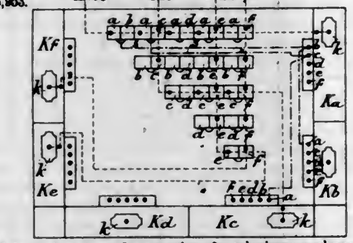
569,469. RAILROAD-TIE. Charles A. T. Peters, Dexter, Mo. Filed May 18, 1896. Serial No. 591,992. (No model.)



Claim.—1. A railroad-tie, consisting of a bar of iron having transverse recesses in the ends of its upper surface, said recesses being designed to receive the bottom flanges of the rail, and having the vertical opening extending through its center from near the inside of one rail to near the inside of the opposite rail, and also having air-passages extending through its entire length, and lugs projecting downwardly from the under surface of said tie into the road-bed, substantially as specified.

2. A railroad-tie, consisting of the parallel horizontal bars 1 and 2, said bars being rectangular in cross-section, the rectangular blocks 4 and 5 joining the ends of said bars 1 and 2 and forming the aperture 3 between said bars, said rectangular blocks 4 and 5 having the recesses 6 and 7 in their upper faces and designed to receive the bottom flanges of the rails, the lugs 8 and 9 extending downwardly at right angles from the lower sides of said rectangular blocks 4 and 5, all cast integral, substantially as specified.

569,470. TELEPHONE-EXCHANGE SYSTEM. Pierre E. Ravenot and George A. Hess, Paris, France. Filed July 8, 1896. Serial No. 598,456. (No model.) Patented in France Aug. 8, 1893, No. 232,019; in England Apr. 30, 1894, No. 8,539, and in Germany June 2, 1895, No. 86,953.



Claim.—A system of connections for telephone-exchange switchboards based on the principle of arithmetic combinations, the subscribers of the exchange being divided up in groups *a b c d e* to *n*, each of which is represented in the exchange by jack-boards *aaa*, *bbb*, *ccc*, *ddd*, *eee*, with one jack for every subscriber of the group and those jack-boards being combined in pairs forming section-switchboards *ab*, *ac*, *ad*, *ae* to *an*; *bc*, *bd*, *be* to *bn*; *cd*, *ce* to *cn*; *de* to *dn*, the total number of said sections being $\frac{n\,(n-1)}{2}$.

569,471. SLEEVE-PROTECTOR. John P. Reilly, St. Louis, Mo., assignor of two-thirds to William B. Addington and Charles W. Block, same place. Filed Mar. 10, 1896. Serial No. 582,670. (No model.)



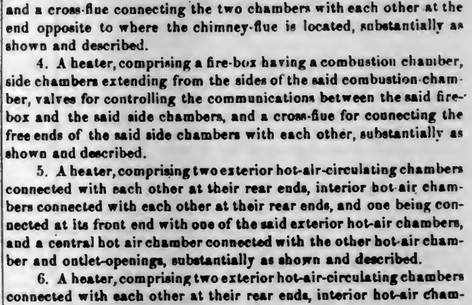
Claim.—1. As an article of manufacture, a sleeve-protector comprising the body portion 1 stamped from cardboard, the strip of muslin 2 pasted across the front outer edge, the front edge of said body 1 and muslin 2 being bent outwardly and backwardly and pasted down thus forming a loop extending around said front edge, and an elastic band in said loop, substantially as stated.

2. As an article of manufacture, a sleeve-protector comprising the body portion 1 stamped from cardboard, the front edge of said body being bent outwardly and backwardly and pasted down thus forming a loop extending around said front edge, and an elastic band in said loop, substantially as stated.

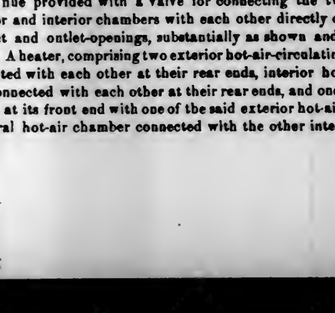
3. In a sleeve-protector, the blank 1 cut from cardboard and rolled into a tube, the front edge of said blank being bent outwardly and backwardly, said blank being rounded at its rear corners and having its front corners cut away, and said blank being of such a size and shape that its ends will overlap at a point intermediate of the wrist and elbow of the wearer and that the ends of the part which is bent outwardly and backwardly forming the wristband will meet and not overlap, substantially as specified.

569,472. SLEEVE-PROTECTOR. John P. Reilly, St. Louis, Mo., assignor of two-thirds to William B. Addington and Charles W. Block, same place. Filed Apr. 27, 1896. Serial No. 589,311. (No model.)

Claim.—In a sleeve protector, the blank 1 cut from paper and rolled into the form of a tube, said blank consisting of the end 2 which is substantially semicircular in form, the end 3^a which is substantially straight with rounded corners and turned outwardly and backwardly to form the wristband 3^b, and the portion 3 connecting the said end 2 and said end 3^a and having the irregular edges 4 and 5, in combination with the eyelet 6 inserted near one end of the wristband 3^b, the hook 7 inserted near the opposite end of said wristband and the elastic 8 inserted in said eyelet 6 and connecting said eyelet with said hook, substantially as specified.



569,473. HEATER. Adam W. Ringland, Toledo, Ohio. Filed June 26, 1895. Serial No. 554,121. (No model.)



Claim.—1. A heater, comprising a combustion-chamber having its opposite side walls curved inwardly, whereby convex surfaces are presented to the products of combustion, a grate arranged in the base of said chamber, and hot-air chambers on opposite sides of the combustion-chamber, and air inlets and outlets for both air and products of combustion, substantially as shown and described.

2. A heater, comprising a combustion-chamber having opposite, inwardly-curved side walls, and a grate located at its base, segmental hot-air chambers on opposite sides of said combustion chamber, and chambers F and F^w arranged exteriorly to the hot-air chambers, and having valved openings in their lower portion, for communicating with the combustion-chamber, substantially as shown and described.

3. A heater, comprising a fire box having a combustion-chamber, side chambers having valved communications with the said combustion chamber, one of the side chambers leading to the chimney-flue, and a cross-flue connecting the two chambers with each other at the end opposite to where the chimney-flue is located, substantially as shown and described.

4. A heater, comprising a fire-box having a combustion chamber, side chambers extending from the sides of the said combustion-chamber, valves for controlling the communications between the said fire-box and the said side chambers, and a cross-flue for connecting the free ends of the said side chambers with each other, substantially as shown and described.

5. A heater, comprising two exterior hot-air-circulating chambers connected with each other at their rear ends, interior hot-air chambers connected with each other at their rear ends, and one being connected at its front end with one of the said exterior hot-air chambers, and a central hot air chamber connected with the other hot-air chamber and outlet-openings, substantially as shown and described.

6. A heater, comprising two exterior hot-air-circulating chambers connected with each other at their rear ends, interior hot-air chambers connected with each other at their rear ends, and one being connected at its front end with one of the exterior hot-air chambers, a central hot-air chamber connected with the other hot-air chamber, and a flue provided with a valve for connecting the two adjacent exterior and interior chambers with each other directly opposite the air duct and outlet-openings, substantially as shown and described.

7. A heater, comprising two exterior hot-air-circulating chambers connected with each other at their rear ends, interior hot-air chambers connected with each other at their rear ends, and one being connected at its front end with one of the said exterior hot-air chambers, a central hot-air chamber connected with the other interior hot-air

chamber, and a distributing-dome connected with the said central hot-air chamber, substantially as shown and described.

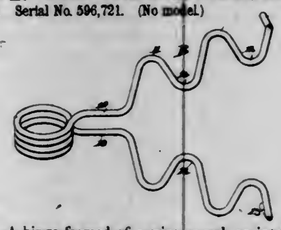
8. A heater, comprising two exterior hot-air-circulating chambers connected with each other at their rear ends, interior hot-air chambers connected with each other at their rear ends, and one being connected at its front end with one of the said exterior hot-air chambers, a central hot-air chamber connected with the other interior hot-air chamber, a distributing-dome connected with the said central hot-air chamber, and a partition or baffle-plate in the said dome, to deliver part of the hot air rising from the said central hot-air chamber to the rear part of the dome and the rear distributing-pipes, substantially as shown and described.

9. A heater, comprising a fire-box formed with a combustion-chamber, side chambers having valved connections with the said combustion-chamber, one of the chambers being connected with the chimney-flue, a cross-flue for connecting the front ends of the said side chambers with each other, exterior hot-air-circulating chambers connected with each other at their rear ends and arranged on the outside of the said chambers, and interior hot-air chambers connected with each other at their rear ends and located between the said side chambers and the combustion-chamber and outlet-openings, substantially as shown and described.

10. A heater, comprising a fire-box having a combustion-chamber, side chambers having valved communications with the said combustion-chamber, one of the chambers being connected with the chimney-flue, a cross-flue for connecting the front ends of the said side chambers with each other, interior hot-air-circulating chambers having air-inlets and connected with each other at their rear ends and located between the said side chambers and the combustion-chamber, a central hot-air chamber connected with one end of the said interior hot-air chambers, and a distributing-dome connected with the said central hot-air chamber, substantially as shown and described.

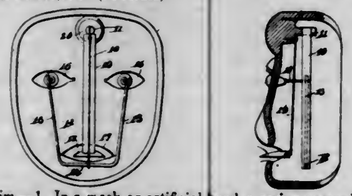
11. A heater comprising a fire-box, provided with a combustion-chamber, side chambers having valved connections with the said combustion-chamber, one of the chambers being connected with the chimney-flue, a cross-flue for connecting the front ends of the said side chambers with each other, interior hot-air-circulating chambers having air-inlets and connected with each other at their rear ends and located between the said side chambers and the combustion-chamber, a central hot-air chamber connected with one of the said interior hot-air chambers, a distributing-dome connected at its rear end with the said central hot-air chamber, and a water-tank arranged in the said combustion-chamber, substantially as shown and described.

569,474. HINGE. TYREE RODES, Nashville, Tenn. Filed June 24, 1896. Serial No. 596,721. (No model.)



Claim.—A hinge formed of a wire or rod, an intermediate portion of which is coiled to produce an eye and the end portions of which extend outwardly from the eye to form two shanks which project outwardly and diverge from each other, the shanks being corrugated and having at their extremities oppositely-projected studs, the plane in which the corrugated shanks lie being at right angles to the plane in which the eye lies, substantially as described.

569,475. EYE AND TONGUE SUPPORT FOR ARTIFICIAL HEADS AND MASKS. ISIDOR ROESCHER, New York, N. Y. Filed June 13, 1896. Serial No. 595,384. (No model.)



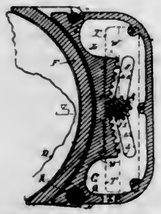
Claim.—1. In a mask or artificial head, a spring secured at one of its ends in the said mask or head, being free to vibrate throughout the remaining portion of its length, a yoke carried by the said spring, also free to vibrate, and artificial eyes secured to the said yoke, the eyes being loosely contained in the eye-openings of the mask or head, whereby the eyes will follow the vibratory movement of the spring and yoke supporting them, as and for the purpose specified.

2. In a mask or head having eye-openings, artificial eyes located at the eye-openings, being free to move therein, and a pendulum-support for the said eyes, the said support being located upon the inner surface of the aforesaid mask or head, as and for the purpose specified.

3. In an artificial head or mask having eye-openings and a projection upon its inner side at its forehead portion, a yoke, eyes attached to the said yoke, the said eyes appearing at the eye-openings, and a spring attached to the center of the yoke and at its upper end to the projection in the head or mask, the yoke, the eyes and spring being free from all contact with any portion of the mask except the aforesaid projection, as and for the purpose specified.

4. The combination, with a mask or artificial head having eye-openings therein and a mouth-opening, together with a stepped projection formed upon its inner face near the center of the forehead, of a spring attached to the inner or reduced portion of the said projection and extending downward therefrom, a yoke attached to the lower end of the said spring, the side members of the yoke extending up to the aforesaid eye-openings, each side member having attached thereto an artificial eye, the spring below its support, together with the yoke and artificial eyes being free to vibrate, and a tongue loosely contained in the mouth-opening and attached at its inner end to the vibratory spring, which spring at its upper end is secured to the forward or enlarged portion of the aforesaid stepped projection in the head or mask, one spring being back of the other, as set forth.

569,476. BRAKE. WILLIAM H. SAUVAGE, Denver, Colo., assignor of one-half to Singleton M. Merrison, same place. Filed Jan. 21, 1896. Serial No. 576,317. (No model.)



Claim.—1. The combination in a brake, of a box or supporting-base having a removable side, a double integral inclined toothed rack therein adjacent to the periphery of the wheel upon which said brake is to act, a pinion in said box meshing with said rack, a shaft passing through said box and rigidly secured to said pinion, means whereby an operator may rotate said pinion, and a brake-shoe removably secured to said box, substantially as described.

2. The combination in a brake of a box or supporting-base, a shoe removably secured thereto, a double wedge-shaped toothed rack diverging in opposite directions from the central portion of said box, a shaft passing through said box and supported in adjustable bearings, a pinion secured to said shaft and meshing with said rack, and means for manually rotating said pinion to move and wedge said brake-box or supporting-base and shoe into operative engagement, substantially as described.

3. The combination in a brake of two oppositely-disposed integral inclined toothed racks diverging from a common center of the box from the brake's shoe, a pinion in mesh with the central portion of said racks, a shaft to which said pinion is secured, adjustable supports for said shaft, a shoe removably secured to said box or supporting-base and means for rotating said pinion, substantially as shown whereby said box or supporting-base and shoe are moved obliquely into operative engagement with the vehicle-wheels, substantially as set forth.

4. The combination in a street-railway-car brake, of the box having the double inclined rack, of the pinion meshing therein, the shoe adjustably secured thereto, the shaft and the adjustable hangers, with the chain-sheaves, the chains connecting the brakes of the forward set of wheels with those of the rear set of wheels, the rods and the turnbuckles in said chain, a sprocket-wheel on the brake-actuating shaft of the forward set of brakes, a chain-sheave on the lower end of the crank-rod, a chain connecting the two last-named chain-sheaves, and an operating crank on the end of said crank-rod whereby all of said brakes are operated at the same time, substantially as described.

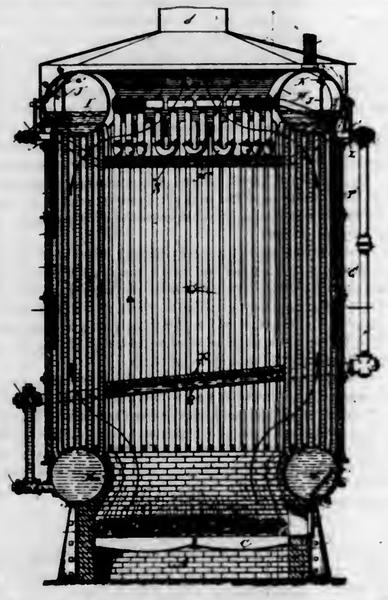
5. The combination in a vehicle brake, of the box having a removable side, a shoe removably secured thereto, a double inclined continuous rack in said box, a pinion meshing with said rack, a shaft to which said pinion is secured, slots through said cover and box parallel with said rack through which said shaft extends, adjustable hangers substantially as shown pivoted to the vehicle-frame, and means whereby the operator may rotate said shaft and pinion, to apply said brake to the vehicle-wheels, as set forth.

6. The combination with the box having the double inclined continuous rack therein, the removable cover, the slots in said cover and box, the pinion, the shaft, the brake-shoe, the dust-shields, the dust-outlet in the bottom of said box, the collars and the cleats, as set forth.

7. The combination in a brake, of a shaft supported in adjustable bearings, a pinion keyed to said shaft, a hollow box or block having a removable side, slots in said cover and box through which said shaft passes, a rack inclined in opposite directions in the same plane from a common center, thereby forming a continuous double inclined toothed plane, diverging in opposite directions from said common center, and away from the brake-shoe of the brake, a brake-shoe removably secured to said box substantially as described, means for operating said shaft to rotate said pinion from the front of the vehicle or car, means for closing the slots into said box and means for adjusting the several parts for wear and slack, as set forth.

8. A brake comprising a brake-shoe, a supporting-base to which said shoe is removably secured, a wedge-shaped inclined toothed plane integral with said supporting-base, a toothed pinion in mesh with said toothed, wedge-shaped plane, a shaft to which said pinion is secured, means for adjusting said shaft and pinion in relation to said toothed incline to compensate for wear of said shoe, and means for rotating said shaft and pinion to move said shoe and base into operative engagement with the object to which said brake is opposed, as set forth.

569,477. BOILER. NEWTON L. WARREN, Springfield, Ohio. Filed Mar. 12, 1896. Serial No. 582,961. (No model.)



Claim.—1. In a water-tube boiler, an upper and lower endless drum, tubes connecting said drums, one or more series of feed-water pipes adapted to receive and initially heat the water by being located in the heat discharging passage, and a distributing-pipe connected to said feed-water pipes for distributing the feed-water to said endless drums and circulating-tubes.

2. In a water tube boiler, an upper and lower endless drum, connected together with up-and-down circulating-tubes, a set of secondary up-circulating tubes also connecting said drums and an upper and lower baffle-wall supported by said secondary up-circulating tubes, as shown and described.

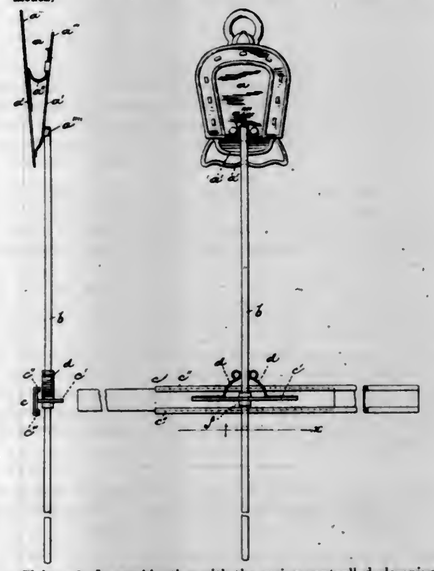
3. In a water-tube boiler, the combination with an upper and lower endless drum and up-and-down circulating-tubes connecting them together, of a feed-water heater adapted to receive water from a supply-pipe, a distributing-pipe located within the upper drum and adapted to receive water from the feed-water heater, a series of nozzles connected to said distributing-pipe and adapted to extend a short distance into the outer series of water-circulating tubes and conduct the feed-water into such outer tubes, whereby the down-current in said outer tubes is augmented.

4. In a water-tube boiler, the combination with an upper and lower endless drum, with up-and-down circulating-tubes connecting said drums together, of a fire-box extending partly around said lower drum and nearly to its upper surface and adapted to partially support said drum, a flanged metal casing encircling said fire-box and also supporting said drum, an inner wall of brick or other suitable non-conducting material adapted to incase each of the down-circulating tubes, and a metal shell or casing adapted to encircle or incase said wall as shown and described.

5. In a water-tube boiler, the combination with an upper and lower endless drum connected together by up-and-down water-circulating tubes, a distributing-pipe suspended in said upper drum, angle-irons with eyes in one part of them secured to the interior of said upper drum, hooks adapted to be inserted in said eyes for suspending said distributing-pipe, and nozzles connecting each down-circulating tube with said distributing-pipe, and a manhole in each of said drums to allow of the interior of the drums and circulating-pipes being cleaned, as shown and described.

6. In a water-tube boiler, the combination with a lower and upper endless drum and up-and-down tubes connecting them together, of a feed-water heater located essentially within the heat-discharging passage of the apparatus whereby it is subjected to sufficient heat, said heater at the discharge end being in communication with the interior of the boiler so that water entering said heater is conducted through it into said passage whereby it becomes heated and is then discharged into the boiler proper to supply the same with heated water, substantially in the manner and for the purpose shown and described.

569,478. BOOKKEEPER'S POSTING-GUIDE. EDWIN H. WINTERMUTE, Jr., Newark, N. J. Filed Nov. 9, 1895. Serial No. 568,444. (No model.)



Claim.—1. In combination with the spring-controlled clamping-jaws, of the rod *b*, and extensible bar *c*, arranged and sliding thereon, substantially as set forth.

2. In combination with the spring-controlled clamping-jaws, of the pivoted rod and sliding bar, all arranged and combined, substantially as set forth.

3. In combination with the spring-controlled clamping-jaws, of the rod pivoted upon the upper face of one of said jaws, and adapted to extend downward therefrom over the center of the page, and an extensible guide-bar centrally perforated to receive said rod, and means for holding said bar and rod in sliding relation, substantially as set forth.

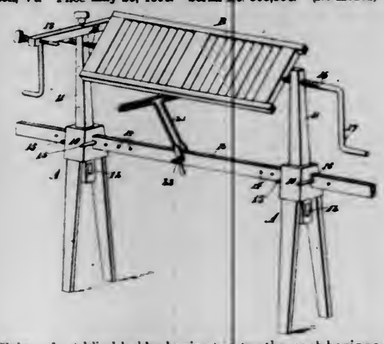
4. The improved posting-guide for bookkeepers, the same comprising a clamp, a rod *b*, pivoted to one of the jaws of said clamp, and adapted to extend down over and lengthwise of the page, and a bar *c* adapted to extend parallel with the lines of the page, on opposite sides of said rod, and be drawn down from line to line, substantially as set forth.

5. The improved posting-guide for book keepers, the same comprising a clamp, a rod *b*, pivoted to one of the jaws of said clamp, and a bar *c*, having a flange *c'*, angular tube *f*, and opposing springs *d*, *d*, all arranged and combined, substantially as set forth.

6. The combination with spring-actuated jaws *a'*, *a'*, adapted to grasp the top of the leaves of a book and present broad clamping-surfaces thereto, of a rod *b*, secured to one of said jaws and projecting beyond said broad clamping-surfaces so as to extend down over the central part of the uppermost leaf, and a sliding transverse bar, carried by said rod, substantially as set forth.

7. The combination with the clamp, comprising broad jaws *a'*, *a'*, a spring normally closing said jaws and finger parts for opening said jaws against the power of the spring when said finger parts are pressed together, of a rod *b*, and transverse guiding-bar *c*, all arranged and operating, substantially as set forth.

569,479. BLIND-HOLDER. JOHN W. WOODWARD, South Royalton, Vt. Filed May 29, 1896. Serial No. 593,591. (No model.)

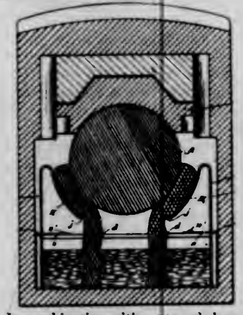


Claim.—1. A blind-holder having two trestles, each having a head orificed horizontally and vertically, an upright movable longitudinally in each vertical orifice of the heads, a connecting-bar passed through the horizontal orifice of the heads and through openings in the uprights, means for removably attaching the connecting-bar to the heads, and a screw carried in the upper end of each upright, substantially as described.

2. A blind holder having two trestles, an upright held by each trestle, a connecting-bar for the trestles, a screw carried by each upright an arm pivoted to the connecting-bar and means for holding it adjustably at various inclinations with relation thereto, substantially as described.

3. A blind-holder having two trestles each with a head vertically and horizontally orificed, a connecting-bar for the trestles, the bar passing through the horizontal orifices, means for removably attaching the bar to the heads, an upright longitudinally movable in each vertical orifice in the heads and having openings through which the connecting-bar passes, a screw carried by the upper portion of each upright, a horizontal bar held by one upright, an additional screw in each end of the horizontal bar, and an arm pivoted to the connecting-bar and capable of being removably held at various inclinations, substantially as described.

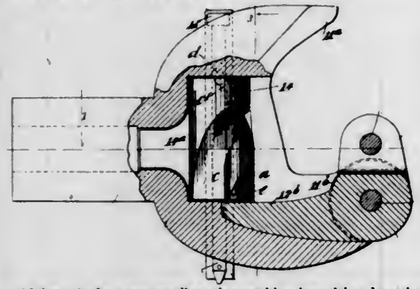
569,480. CAR-AXLE LUBRICATOR. ARTHUR W. WRIGHT, Detroit, Mich., assignor of one-thirtieth to Jane P. Williams, same place. Filed Nov. 12, 1895. Serial No. 568,677. (No model.)



Claim.—1. In combination with a car-axle box, a transverse partition below the journal, made in sections and having the division-line between the sections across the axis of the axle and provided with longitudinal apertures for the passage of lubricating-wicks, means for linking the sections of the partition together, and spring-standards rising from the partition free from the wick and engaging the wick above the partition, substantially as described.

2. In a car-axle box, a transverse partition adapted to be placed below the journal, made in sections, and provided with longitudinal apertures for the passage of lubricating-wicks and with longitudinal apertures for the passage of wick-supporting springs and engaging-catches adapted to engage the sections of the partition and hold the same together, all said parts being combined, substantially as described.

569,481. CAR-COUPLING. ANDREW D. ALDEN, Brockport, Pa. Filed Jan. 20, 1896. Serial No. 576,174. (No model.)



Claim.—1. In a car-coupling, the combination with a draw-head, and a knuckle pivoted to the draw-head, of a rockable dog having a spiral groove and a channel that is an extension of said groove, and a slidable tripping-bar having a toe adapted to traverse the channel and rock the dog when the tripping-bar is longitudinally moved, the tailpiece of the knuckle, which loosely engages the spiral groove, being locked by a shoulder thereof when the knuckle is closed and released when the tripping-bar is slid, substantially as described.

2. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto, a rocking dog having a shoulder to be engaged by the knuckle when the same is moved into operative position, and provided with an inclined spiral channel, and a tripping-bar movable adjacent to the dog and provided with a toe to traverse the channel and rock the dog to release the knuckle when the tripping-bar is moved, substantially as set forth.

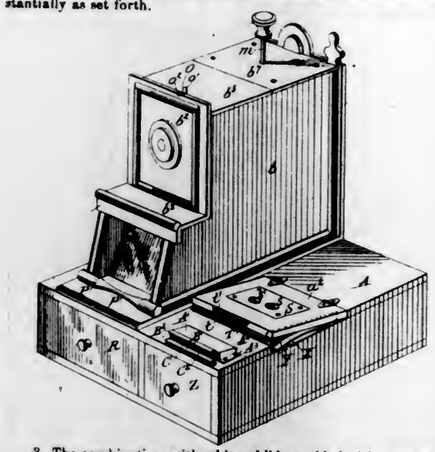
3. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto, a rocking dog provided with a spiral channel and having a shoulder to engage the knuckle when the same is moved into operative position, a tripping-bar mounted to slide in the draw-head under the dog, and a toe on said tripping-bar arranged when the tripping-bar is slid to engage the spiral channel and rock the dog to release said knuckle, substantially as set forth.

4. In a car-coupling, the combination of a draw-head, a knuckle pivoted thereto, a rocking dog having a spiral channel and provided with a shoulder to engage the knuckle when the same is moved into operative position, a tripping-bar mounted to slide in the draw-head under the dog, an operating-lever connected to the tripping-bar and arranged to move the same, and a toe on the tripping-bar arranged when said bar is slid, to engage the spiral channel and rock the dog to release the knuckle, substantially as set forth.

569,482. MATCH-DELIVERING AND CIGAR-CUTTING APPARATUS. OLE ANDERSON, New Sweden, Minn. Filed Nov. 12, 1895. Serial No. 568,675. (No model.)

Claim.—1. The combination with a match-box having a downward and forward inclined partition dividing the box into a match-compartment and a rear compartment, of a slide arranged below the match-compartment and provided with a slot, a cam-block secured to the end of the slide and within the rear compartment, a transverse bar, a pair of studs secured in said bar and passing loosely through the cam-block, a spiral spring surrounding each stud, said springs being between the bar and cam-block, a cam arranged to move at right angles to the slide, and in contact with the cam-block, a plunger to which said cam is fixed, a guide through which the plunger passes, a collar on the plunger, a spring surrounding the plunger, said spring bearing on the guide and against the collar, and a floor beneath the front end of the slide, substantially as set forth.

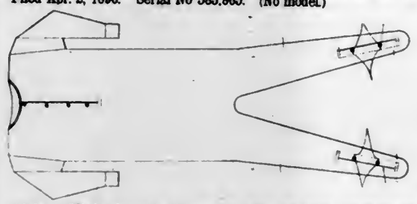
2. The combination, with a hinged lid provided with a dovetailed recess, a plate let into the lid and provided with holes to receive the cigar end, and a knife-block having a guide-piece movable in the dovetailed recess and provided with a downward and rearward inclined front surface, of a knife secured to said guide-piece and below the plate, a fixed abutment arranged to contact with the front surface of the knife-block, a transverse cleat secured to the under side of the lid and provided with holes, a plurality of pins fixed to the knife-block and movable in said holes, and springs intermediate the knife-block and transverse cleat, whereby the knife-block is pressed forward, substantially as set forth.



3. The combination, with a hinged lid provided with a dovetailed recess, a plate let into the lid and provided with holes to receive the cigar end, and a knife-block having a guide-piece movable in the dovetailed recess and provided with a downward and rearward inclined front surface, of a knife secured to said guide-piece and below the plate, a fixed abutment arranged to contact with the front surface of the knife-block, a transverse cleat secured to the under side of the lid and provided with holes, a plurality of pins fixed to the knife-block and movable in said holes, springs intermediate the knife-block and transverse cleat, a downward-extending plate secured to the lid at one side, and a spring fixed at one end and bearing at its other end against the under side of the lid, substantially as set forth.

4. The combination, with a holder, of a clamp having the forward edges of its top and bottom bent to form tubes, of a striking-block held by said clamp with its forward edge back of the said tubes, substantially as set forth.

569,483. NIGHT-DRAWERS. COLLINS ARNOLD, Albany, N. Y. Filed Apr. 2, 1896. Serial No. 585,865. (No model.)

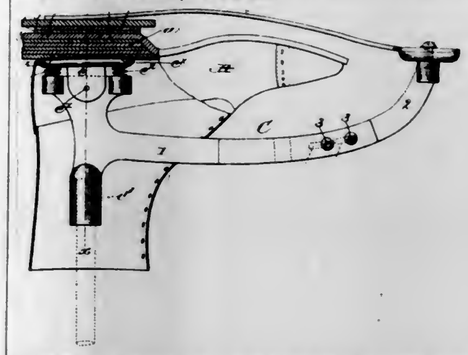


Claim.—Night-drawers having leg portions each terminating in a foot-covering or boot composed of several pieces of cut fabric, one piece comprising the upper and counters, another piece the inner sole, and the third piece the outer sole, having the edge of the upper inclosed between and secured by a line of stitching to the introverted side and toe edges of the inner and outer soles, and having the rear edges of the soles secured to the edges of the counters by a line of stitching, substantially as described.

569,484. HEEL-TRIMMING PATTERN AND HOLDING DEVICE THEREFOR. CURTIS F. BABCOCK, Auburn, Me. Filed Feb. 24, 1896. Serial No. 580,385. (No model.)

Claim.—1. The combination with a pattern to be applied to and to determine the shape of the bottom of the heel of a shoe, of a portable pattern-holder constructed to engage the shoe and the said pattern to hold the latter in position upon the heel, said holder being supported by the shoe and freely movable in any direction by and with said shoe in the hands of the operator for presentation of said shoe and its heel in usual manner to a heel-trimming device, substantially as described.

2. The combination with a pattern adapted to be applied to and to determine the shape of the bottom of the heel of a shoe, of a portable pattern holder having connected members to engage the shoe and pattern to hold the latter in position upon the heel, one of said members acting from without and the other from the interior of the shoe, said holder being supported by the shoe and freely movable in any direction by and with said shoe in the hands of the operator for presentation of said shoe and its heel in usual manner to a heel-trimming device, substantially as described.



3. The combination with a pattern adapted to be applied to the bottom of a heel, of a holder therefor comprising two members adapted to embrace the said heel, one from within and the other from without the shoe, the latter of said members being resilient, substantially as described.

4. The combination with a pattern adapted to be applied to the bottom of the heel, of a portable holder comprising two members adapted to embrace between them the said heel, one from within and the other from without said shoe, a movable heel-seat pivotally connected with the member within the shoe, and a spring or springs to sustain the said seat in position, substantially as described.

5. The combination with a pattern adapted to be applied to the bottom of a heel of a shoe, of a portable holder for and to embrace said heel from within and without said shoe, and means for lengthening and shortening said holder to adapt the latter for boots and shoes of different sizes, substantially as described.

6. The combination with a pattern adapted to be applied to the bottom of a heel of a shoe, of a portable holder therefor comprising rigid and resilient members embracing said heel from within and without said shoe, said resilient member being hinged to said rigid member and having a swinging movement about its said hinge to enable said holder to be applied to and removed from the shoe, substantially as described.

7. The combination with a pattern adapted to be applied to the bottom of a heel of a shoe and made larger than said heel with a supporting portion at its under side to rest upon said heel and of a size smaller than the latter, of a portable pattern-holder constructed to engage the shoe and the said pattern to hold the latter in position upon the heel, and, with the shoe, freely movable in any direction in the hands of the operator for presentation of the shoe and the heel in usual manner to a heel-trimming device, said pattern-supporting portion, smaller than the heel, permitting presentation of the heel-trimming device to the edge of the top lift of said heel, substantially as described.

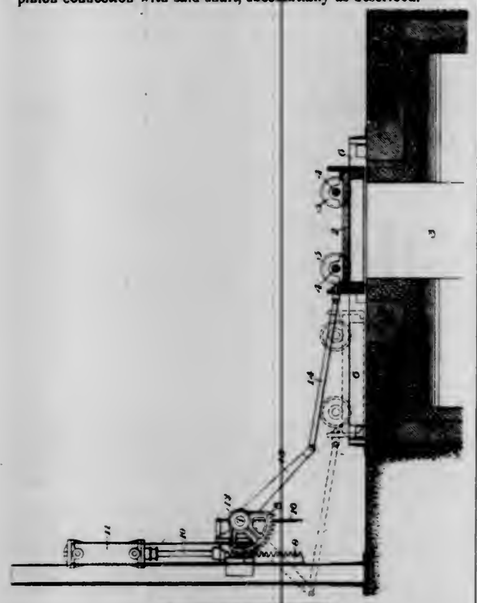
8. The combination with a pattern adapted to be applied to the bottom of a heel of a shoe, having a supporting portion at its under side to rest against said heel and of a size smaller than the latter, of a portable pattern-holder constructed to engage the shoe and the said pattern to hold the latter in position upon the heel, and, with the shoe, freely movable in any direction in the hands of the operator for presentation of the shoe and the heel in usual manner to a heel-trimming device, said pattern-supporting portion, smaller than the heel, permitting presentation of the heel-trimming device to the edge of the top lift of said heel, substantially as described.

569,485. APPARATUS FOR OPERATING SOAKING-PITS. PER T. BERG, Munhall, Pa. Filed Jan. 7, 1896. Serial No. 574,606. (No model.)

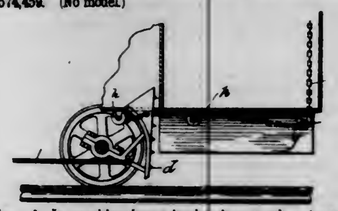
Claim.—1. The combination with a series of soaking-pits and their covers, of a shaft extending past the series and having a series of clutches thereon, each clutch being connected to one of the soaking-pit covers; substantially as described.

2. The combination with a series of soaking-pits, and their covers of a shaft having a series of clutches, each clutch having a flexible connection with a soaking-pit cover, and a hydraulic cylinder arranged to oscillate said shaft, substantially as described.

3. The combination with a series of soaking-pits, and their covers of a shaft extending longitudinally at one side of the same and connected with the covers, and a hydraulic cylinder having a rack-and-pinion connection with said shaft, substantially as described.



569,486. BRAKE. JOHN F. BURGIN, Allegheny, Pa., assignor of two-fifths to William Eberhardt, same place. Filed Jan. 6, 1896. Serial No. 574,459. (No model.)



Claim.—1. In combination, a brake-shoe, teeth arranged on the lower surface of the brake-shoe and separated to lie on opposite sides of the rail, said shoe having a curved upper surface, arms leading to the brake-shoe and pivoted to the car-axle, a series of pulleys arranged below the car and a chain for operating the shoes, as and for the purpose described.

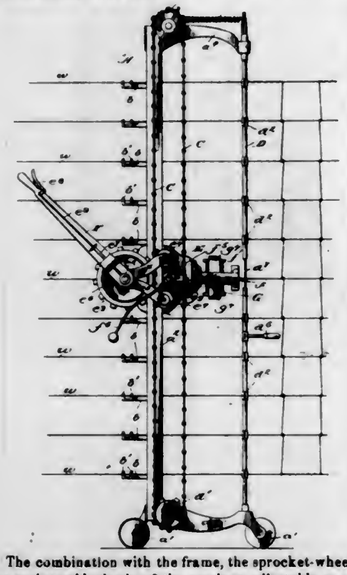
2. In combination, a brake-shoe having a curved upper surface, teeth arranged along its lower edges and protruding on each side of the rails, arms leading from the brake-shoes and pivoted to the car-axle, a connecting-rod for each pair of shoes extending transversely of the truck, connecting-rods extending longitudinally of the truck, and pivotally secured to the brake-shoes, a series of pulleys arranged below the car and a chain operating over the pulleys, as and for the purpose described.

569,487. WIRE-FENCE MACHINE. WILLIAM F. DOBBS, Windham, Ohio. Filed Dec 3, 1895. Serial No. 570,911. (No model.)

Claim.—1. A wire-fence machine, comprising a frame having uprights, sprocket-wheels on said frame, a chain engaging said sprocket-wheels, a carriage adjustable on said frame, a lug projecting from said carriage to which said chain is connected, a wheel on said carriage engaging said chain, means for moving said wheel, and a twister mounted in said carriage, as set forth.

2. A wire-fence machine comprising a frame having uprights, sprocket-wheels on said frame, a chain engaging said sprocket-wheels, a carriage adjustable on said frame, a lug projecting from said carriage to which said chain is connected, a wheel on said carriage engaging said chain, a ratchet-wheel, an operating-handle carrying a pawl engaging said ratchet-wheel, and a twister mounted in said carriage, substantially as set forth.

3. A wire-fence machine, comprising a frame having uprights, sprocket-wheels on said frame, a chain engaging said sprocket-wheels, a carriage adjustable on said frame, a lug projecting from said carriage to which said chain is connected, a wheel on said carriage engaging said chain, means for moving said wheel, a twister having a shaft fitted in said carriage, an operating-shaft, and bevel gear-wheels on said shafts, substantially as set forth.



4. The combination with the frame, the sprocket-wheels and the chain engaging said wheels, of the carriage adjustable on said frame and to which said chain is connected, the wheel on said carriage engaging said sprocket-chain, the operating-handle, the twister having a shaft mounted in said carriage, said shaft having tapered slots in its sides, the twister-head on the outer end of said shaft, and the operating-shaft engaging said twister-shaft, substantially as set forth.

5. The combination with the wheeled truck of the uprights removably secured thereto, the arm between the upper ends of said uprights, the sprocket-chain and wheels therefor, the carriage vertically adjustable on said uprights, the operating sprocket-wheel mounted on said carriage and engaging said chain, the arms having lazy-wheels holding said chain against said operating-wheel, the operating-handle for moving said latter wheel, the twister having a shaft in said carriage, and means for operating the same, as set forth.

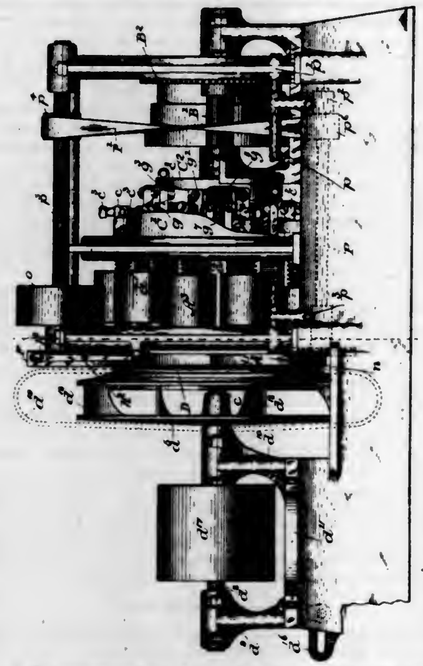
6. A fence-machine having an upright frame and a vertically-adjustable carriage, a twister having a shaft provided with longitudinal slots in its sides, said slots tapering from their centers to the ends, a spool-holder formed on said shaft, a twister-head on one end of said shaft and guiding-jaws on the opposite end thereof, an operating-shaft, a bevel gear-wheel mounted on each of said latter shafts and meshing with each other, and an operating-handle for said operating-shaft, substantially as set forth.

7. The combination with the frame formed of two upright parallel bars, the vertically-adjustable carriage, and the twister, of the series of arms secured to one of said bars and having slotted ends to engage the fence-wires, and the series of arms secured to the other one of said bars and having oppositely-slotted lugs, as and for the purposes set forth.

8. The combination with the upright frame, the vertically-adjustable carriage, and the twister, of the pivoted rod, the gripping-arms extending therefrom having slotted ends, the spring acting on said rod, and the bar parallel with said rod, substantially as set forth.

569,488. MACHINE FOR MAKING BUNGS. EDWARD E. ELDER, Lynn, and HERBERT S. KELLY, Salem, Mass., assignors to the Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Filed July 18, 1892. Serial No. 440,364. (No model.)

Claim.—1. In a machine for turning the edge of bung and other blanks, to form bungs therefrom, a rotary hub or carrying-support; a series of rotary chucks which are mounted upon such rotary hub or carrying-support each of such chucks comprising two members which have closing and opening movements relative to each other, as set forth, to close upon the blank, to hold and to rotate it, and to unclose and deliver it; rotary band-saws, one or more; and mechanism, essentially as described, for moving the chucks in successive order toward the band-saws, while turning with their rotary hub or carrying-support, and for moving such chucks away from the band-saws, in combination; substantially as and for the purposes specified



2. The combination in a machine for forming bungs and similar articles of the rotary support and block-turning devices with the slide blank-holder A, mounted upon the rotary support to be movable lengthwise the same, and having the chuck members A′ A^2 mounted thereon, as specified, the slide-shaft a^4, carrying the member A^2 of the chuck, the spring C, the cam C′, the lever c' connected with the shaft a^4 and bearing against the cam, and the cam C^3 acting against the slide A, through the cam-roll c^6 carried by the slide-arm c^3, and the spring c^3 acting against the slide A in opposition to the cam C^3, as and for the purposes described.

3. The combination in a machine for forming bungs and similar articles of the rotary and slide chucks, and the blank-turning devices, the feed-chute, and the blank transferrer or carrier comprising a holder having a surface upon which the blank rests and a shoulder which bears against the rear edge of the blank, and which is movable across the lower end of the feedway by the engagement of the spindle of the chuck with a latch carried thereby, said latch being pivoted and held as described, so as to be disengaged from the chuck-spindle after it has been moved a slight distance, sufficient to permit the members of the chuck to engage the blank and a spring for returning the transferrer or carrier to its original position at the end of the chute, substantially as described.

4. The combination in a machine of the character specified of the traveling and rotary chuck, an escape-chute which has its upper section hinged so as to be moved outward from the path of the blank-holder, and then to fall or move below it with chuck-separating devices, and a blank stop or stripper, substantially as described.

5. The combination of the traveling and rotary blank-holder, the plates n' n^2 hinged as specified, and forming the upper part of the escape-chute moved by spindles of the chuck out of position to permit the passage of the formed blank, and then returning to its position beneath it to receive the form of the blank, as and for the purposes described.

6. In a machine for making bungs and similar articles the combination of the blank-holding rotating and presenting devices, the rotary band saw or saws, its or their supporting-frame provided with exhaust wings or blades, and the hood or cover to inclose the same, as and for the purposes described.

7. The combination in a machine for making bungs and similar articles of one or more band-saws which are carried by an exhaust-fan, said exhaust-fan and a casing for the same, whereby the opening to the fan is within the circle or space bounded by the saw or saws, substantially as and for the purposes described.

8. The combination of the rotary support or hub B, having the V-shaped slides, and the recesses extending inward therefrom with the blank-holders having the V-shaped sliding sections to fit the V-shaped ways and the extensions to enter the recesses, and the caps b', as and for the purposes described.

9. The combination with the plate d^4 having the radial recess d^8, of the holder d, having the radial flange d^9, adapted to the recess d^8, and having also the shoulder d'; and the concentric saws D, the outer projecting beyond the inner, and both secured within the body of the holder d, and bearing against the shoulder d'; as set forth.

10. The combination with the bed d^{13}, having lugs d^{16}, d^{16}, each provided with a horizontal slot d^{17}, of the plate d^{11}, having downwardly-extending lugs d^{14} provided with pivot-pin d^{15}, and having also the bearing-arms d^4 and d^{10}, carrying the shaft d^5, the frame d^5, and the saws D, as described; whereby the plate d^{11} and its superposed parts, may be lifted upon its pivotal bearings, to afford ready access to the saws, for renewal, or repair.

569,489. PROCESS OF MAKING XANTHIN DERIVATIVES. EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Sept. 23, 1895. Serial No. 563,430. (No specimens.)

Claim.—1. The process which consists in treating dialkyl uric acid with halogen compounds of phosphorus, for the purpose of converting the same into halogen derivatives of alkylized xanthin.

2. The process which consists in treating dialkyl uric acid with a pentahalogen compound of phosphorus in the presence of a solvent of the dialkyl uric acid.

3. The process which consists in treating dialkyl uric acid with a pentahalogen compound of phosphorus in the presence of phosphorus oxychlorid.

4. The process which consists in treating dialkyl uric acid with a pentahalogen compound of phosphorus in the presence of a solvent such as phosphorus oxychlorid, and then treating the resulting halogen derivatives with reducing agents to convert them into homologues of xanthin.

5. The process which consists in treating a halogen derivative of xanthin with a reducing agent to convert the same into a homologue of xanthin.

6. The process which consists in treating a halogen compound of a dialkyl derivative of xanthin with a reducing agent to convert the same into a homologue of xanthin of the type of theophyllin.

7. The process which consists in treating dialkyl uric acid with a pentahalogen compound of phosphorus in the presence of a solvent of the dialkyl uric acid, then converting the resulting halogen dialkyl derivative into a homologue of xanthin by a reducing agent.

569,490. PROCESS OF MAKING DERIVATIVES OF XANTHIN. EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed May 18, 1896. Serial No. 592,049. (No specimens.)

Claim.—1. The process which consists in treating the salt of a halogen dialkyl derivative of xanthin with an alkylizing agent, substantially as set forth.

2. The process which consists in heating the salt of a halogen dialkyl derivative of xanthin with a halogen compound of an alkyl, substantially as set forth.

3. The process which consists in heating the silver salt of chlorotheophyllin with iodid of methyl, substantially as set forth.

4. The process which consists in treating dialkyl uric acid with a halogen compound of phosphorus, then converting the resulting halogen dialkyl derivative of xanthin into its salt, and then alkylizing the said salt to form the halogen trialkyl derivative of xanthin.

5. The process which consists in treating dialkyl uric acid with a halogen compound of phosphorus, then converting the resulting halogen dialkyl derivative of xanthin into its salt, then alkylizing said salt, and finally reducing the halogen trialkyl derivative of xanthin, whereby the homologue of xanthin of the type of caffein is produced.

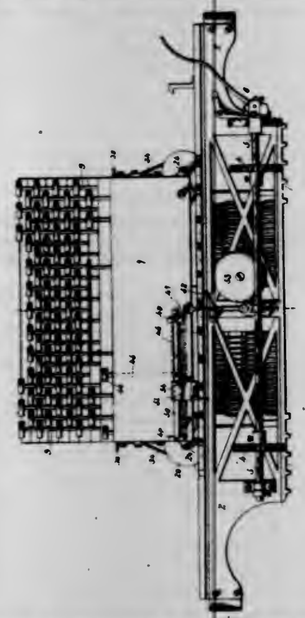
6. The process which consists in heating dialkyl uric acid with a pentahalogen compound of phosphorus in the presence of a solvent of the dialkyl uric acid, then converting the resulting halogen dialkyl derivative of xanthin into its salt, then treating such salt with the iodid of an alkyl, and finally treating the resulting halogen trialkyl derivative of xanthin with reducing agents, substantially as set forth.

7. The process which consists in heating dimethyl uric acid with a pentahalogen compound of phosphorus in the presence of phosphorus oxychlorid, then converting the resulting halogen derivative of theophyllin into its salt, and then treating such salt with methyl iodid, substantially as set forth.

8. The process which consists in heating dimethyl uric acid with a pentahalogen compound of phosphorus in the presence of a phosphorus oxychlorid, then converting the resulting halogen derivative of

theophyllin into its salt, then treating such salt with methyl iodid, and finally treating the resulting chlorocaffein with a reducing agent, substantially as set forth.

569,491. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn. Filed July 12, 1894. Serial No. 517,324. (No model.)



Claim.—1. In a type-writing machine, the combination with a frame, a carriage mounted thereon, means for feeding the carriage on the frame, type-bars, keys and operating connections, of ribbon-spool spindles slidably mounted upon the carriage for movement transverse to the line of writing, means for moving said spindles longitudinally during the movement of the carriage, ribbon-spools carried by said spindles, ratchet wheels fixed to the spindles, and pivotal arms supported by the carriage and arranged in operative relation at their free ends with said ratchet-wheels, the pivotal points of the swinging arms being out of the vertical planes of the ratchet-wheels, substantially as specified.

2. The combination with a framework, a carriage mounted thereon, feeding devices for the carriage, type bars, keys, and operating connections, of ribbon-spool spindles slidingly mounted upon the carriage for movement transverse to the line of writing, means for moving said spindles longitudinally, ribbon-spools carried by the spindles, ratchet-wheels fixed to said spindles, swinging arms pivotally connected to the carriage and arranged at their free ends in operative relation with the ratchet-wheels, catches or stop-pawls mounted upon the carriage to engage the teeth of the ratchet-wheels and prevent backward or return movement thereof, and means for locking said catches or stop-pawls out of operative relation with the ratchet-wheels, substantially as specified.

3. The combination with a frame, a carriage mounted thereon, feeding mechanism for the carriage, type-bars, keys, and operating connections, of ribbon-spool spindles mounted upon the carriage, means for rotating the spindles, ribbon-spools slidably mounted upon said spindles, springs coiled upon the spindles and bearing against the spools to maintain them in their normal positions, and catches pivoted to and supported by the carriage adjacent to the spindles to engage the spools when moved out of their normal positions, substantially as specified.

4. The combination with a frame, a carriage mounted thereon, feeding mechanism for the carriage, type bars, keys, and operating connections, of ribbon-spool spindles mounted upon the carriage, means for rotating said spindles, ribbon-spools feathered upon the spindles, springs for normally holding the spools in their normal positions, and gravity-catches 32 normally bearing upon the peripheries of the ribbon spools and provided with catches to engage the same when the spools are pressed backward against the tension of their actuating-springs to expose the line of writing, substantially as specified.

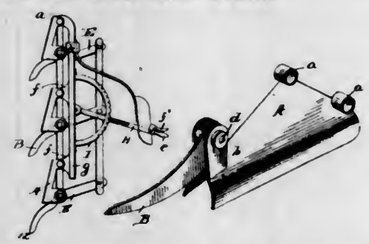
5. In a type-writing machine, the combination with a framework, a carriage and printing mechanism, of a ribbon spool, means for imparting axial movement to the spool to feed the ribbon transversely, and a pivotal arm having a fixed pivot on the carriage and adapted to swing parallel with the plane of the axis of the spool, the free end of the arm being held by gravity in permanent engagement with a ratchet fixed to the spindle of the spool and being provided with a lateral ear or projection in contact with the side of the ratchet to prevent disengagement, substantially as specified.

6. The combination with a frame, a carriage mounted thereon, feeding mechanism for the carriage, a type-bar-supporting ring depending from the carriage, type-bars, keys, and operating connections, of a pointer or indicator pivotally mounted upon the type-bar-supporting ring and having a reduced or pointed free extremity adapted when depressed to indicate the point of impression of the next printing character, said pointer being shorter than the type-bars to terminate short of the point of impression, a key arranged contiguous to the keyboard, and connections between the key and the pointer, substantially as described.

7. The combination with a frame, a carriage mounted thereon, feeding mechanism for the carriage, type bars, keys, and operating connections, of a stationary base, a platen or tablet mounted in said base for movement transverse to the line of writing, means for securing paper upon the upper surface of the platen or tablet, and an adjustable stop carried by and movable parallel with one of the side edges of the platen or tablet and adapted to engage a fixed part of the base to indicate the position of the platen or tablet when returned after displacement, substantially as specified.

8. The combination with a frame, a carriage mounted thereon, feeding mechanism for the carriage, type-bars, keys, and operating connections, of a platen or tablet mounted for movement transverse to the line of writing, means for securing paper upon the surface of the platen or tablet, and a stop device comprising a clamp adjustably mounted upon the side edge of the platen or tablet and adapted to engage a stationary object to indicate the position of the platen or tablet when returned after displacement, substantially as specified.

569,492. HARROW. HENRY L. FLEMMER, Prairieton, Ind. Filed June 16, 1896. Serial No. 595,795. (No model.)



Claim.—1. A machine-harrow made up of sections, said sections comprising two parallel rods, shoes preferably tapering and connecting said rods, each of said shoes being adapted to carry a pulverizer, said pulverizer being journaled on said shoe, as set forth.

2. The combination in a machine-harrow composed of two or more sections, each of said sections having shoes provided on their upper surface with lugs at one end and supporting-arms in which are journals on the other end and rods passing through said lugs and journals by which a more or less number of said shoes are connected in each section, substantially as described.

3. A machine-harrow consisting of two or more sections, each section being composed of two parallel rods, shoes mounted thereon, pulverizers mounted on said shoes, the said sections being connected together for joint operation substantially as described.

4. A machine-harrow consisting of two or more sections connected together, each section having shoes with downwardly-bent sharp edges and tapering from front to back and provided with lugs and journal-arms, rods for connecting said shoes by passing through said lugs and journals and adapted to carry pulverizers, for the purpose set forth.

5. In a machine-harrow, the combination of the shoe A, the lugs *a*, the upwardly-extending arms *b* and the pulverizer B, pivoted between said arms *b*, substantially as described.

569,493. BICYCLE-STAND. FERRAUD GIACINTO, New York, N.Y. Filed Oct. 31, 1895. Serial No. 567,540. (No model.)

Claim.—1. In a stand or support for safety-bicycles, the bracket having a seat such as *e* in combination with tripod-legs, one of which is adapted to abut against and fit within the seat *e* of said bracket, substantially as described.

2. In a stand or support for safety-bicycles, the bracket provided with the transverse web D having a notched seat *e* in the path of the central tripod-leg, combined with said tripod-legs which are hung in the bracket in a manner to permit the central leg thereof to fit in the seat *e* and be held therein against lateral play, substantially as described.

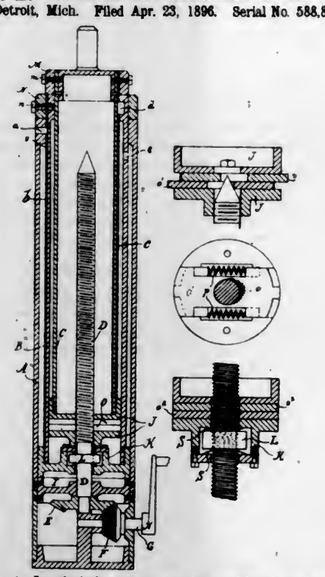


3. In a stand or support for safety-bicycles, the combination with a bracket, of a pivotal bolt or arbor, a central leg mounted on said arbor or bolt to swing to an inclined position backwardly with relation to the bolt, and the side legs connected with said arbor to swing laterally on diverging lines; the connection between the side legs and the arbor being effected by articulated knuckles each having a pivotal joint at an intermediate point of its length, whereby the side legs may spread laterally without riding against the head of the central leg, substantially as described.

4. In a stand or support for safety-bicycles, the combination with a bracket, a pivotal bolt or arbor, and a central leg, of the side legs, and the knuckles connected by clips to the bolt or arbor and having the sections *h*, *h'* coupled together by joints which limit the lateral movement of the legs, substantially as and for the purposes described.

5. In a stand or support for safety-bicycles, the bracket having the inclined shoulders or ledges *g*, *g*, in combination with the legs E, E, hung to the bracket to have a limited lateral play and adapted to bear against the ledges or shoulders, for the purposes described, substantially as set forth.

569,494. EXTENSION AND RETRACTION DEVICE. JAMES J. GIER, Detroit, Mich. Filed Apr. 23, 1896. Serial No. 588,818. (No model.)



Claim.—1. In a hoisting apparatus the combination of an outside stationary section, a vertical screw-shaft journaled in said outside section, two movable sections concentric with and within said outside stationary section, a nut in the inside section engaging with said screw-shaft when both sections are at their lowest point, a nut in the bottom of the outer movable section below the threaded portion of said screw-shaft when said section is at its lowest point, a dog to couple said movable sections together, adapted to be operated by the upper portion of said threaded shaft and means substantially such as described for preventing said movable sections from rotating, substantially as and for the purposes set forth.

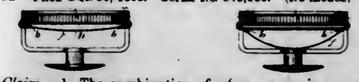
2. In a hoisting apparatus the combination with an outside section, a vertical shaft journaled in said section free to rotate but held against longitudinal motion and having a portion of its length threaded, two concentric movable sections each provided with a nut at its lower end to engage with the threaded portion of said screw-shaft, a dog carried by the inner movable section and adapted to engage with the outer movable section near its upper end, and also adapted to cause the inner movable section to raise the outer movable section, substantially as shown and described.

3. In a hoisting apparatus the combination of an outer stationary section, a screw-threaded shaft, means for rotating said shaft, a plurality of concentric movable sections, the inner one of which is in engagement with said screw-shaft when the apparatus is closed, whereby the rotation of said shaft raises the inner movable section, a dog for locking said inner movable section to the adjacent section at a certain point in its extension, and a nut in said adjacent section adapted to engage with said screw-shaft, substantially as shown and described.

4. In a hoisting apparatus the combination with a stationary section and a threaded shaft journaled in said section of means for rotating said shaft, a plurality of concentric moving sections and means for successively engaging said sections with said threaded shaft and for locking each section as it nears the upper end of said threaded shaft with the next outer section, substantially as shown and described.

5. In a hoisting apparatus the combination of a stationary outer section, a screw-threaded shaft journaled in said section and provided with means for rotating the same in either direction, of a plurality of concentric inner movable sections, means for successively connecting said sections with said screw-shaft beginning with the innermost section in extending the apparatus and ending with the innermost section in retracting the apparatus, means for locking each movable section to the next outer movable section at a certain point in its extension and for unlocking the same at a corresponding point in its retraction, substantially as shown and described.

569,495. CUFF-BUTTON. GEORGE P. A. GUNTHER, Schwenksville, Pa. Filed Dec. 31, 1895. Serial No. 573,909. (No model.)



Claim.—1. The combination of a frame or casing, a coin or like body contained therein, and an elastic retainer adapted to a groove in said frame or casing and having a projecting portion overlapping said coin and holding the same in place.

2. The combination of a frame or casing, a coin or like body contained therein, an elastic retainer adapted to a groove in said frame or casing and having a portion overlapping the coin so as to hold the same in place, said elastic retainer being contractible so that it can be withdrawn from engagement with the groove in the casing.

3. The combination of a frame or casing, a coin or like body contained therein, and a curved or dished elastic retainer having its outer portion adapted to a groove in the frame or casing and having an inwardly-projecting flange for retaining the body of the button in place.

569,496. ROUND-PAPER-BOX MACHINE. LEE T. HALLOCK, Danbury, Conn., and IRA P. HALLOCK, Yonkers, N. Y. Filed Nov. 19, 1895. Serial No. 569,451. (No model.)

Claim.—1. In a pasteboard-bandbox machine, the combination with a drum and mechanism for forming a box thereon, of feed-rolls for taking the pasteboard and paper covering from their reels, means for converting said pasteboard into lengths, means for gluing said paper covering, means for converting said covering into lengths greater than that of the pasteboard, and attaching said strips thereto, substantially as described.

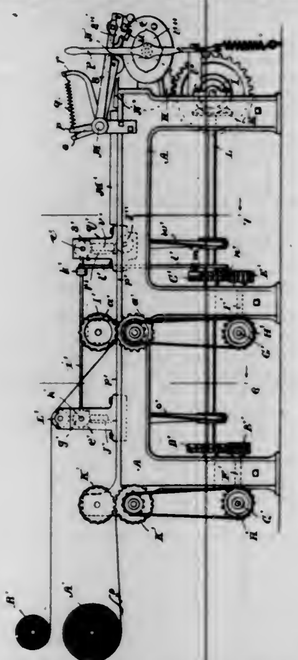
2. In a bandbox-machine, the combination with a drum and mechanism for forming a box thereon, of feed-rolls for taking the paper covering and pasteboard from their reels, means for cutting said pasteboard into lengths, mechanism for preparing and attaching a paper covering to said pasteboard lengths, which covering is of greater width and breadth than said pasteboard length to which it is attached, means for gluing the under end and edge of the prepared strip, substantially as described.

3. The combination with the forming-drum, of the rock-shaft M, pivoted arms *n* hinged to said shaft, and bearing a following roll, a weighted arm secured to the shaft for retaining said roll upon the drum, a yieldable connection between the shaft and the arms of the roll, a lever *s* secured to the shaft and bearing crimping-rolls, means whereby said shaft is actuated, substantially as described.

4. The combination with the forming-drum, of the rock-shaft M, arms *n* hinged to said shaft, and bearing a following roll, a weighted arm *i* secured to said shaft for retaining said roll upon the drum, a rotary cam *l* having connections with said arm *i* whereby the latter is operated, a yieldable connection between the shaft and the arms of the roll, whereby the latter is yieldably retained upon the drum, substantially as described.

5. In a pasteboard-bandbox machine, the combination with the forming drum and means for clamping the end of a strip thereon, of feed rolls for taking the pasteboard from the rolls, a knife for severing the same, means for feeding the paper upon and gluing it to the pasteboard, knives for severing said paper in proper lengths, substantially as described.

6. In a machine for automatically making bandboxes, the combination of a drum provided with mechanism for clamping the end of a pasteboard and paper strip, feed rolls for taking the pasteboard and paper from their reels, a glue-roll for gluing the under side of the paper, a knife for cutting the pasteboard into lengths, rolls I' for compressing said lengths to the glued paper covering, a knife r' for severing the paper strip, and means for gluing the under end and edge thereof.

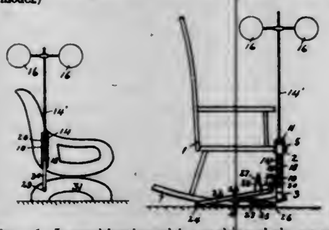


7. In a machine of the class described, the combination with the knives J' and r', of the shafts h' and t' bearing cams to operate said knives, rock-shaft i' connected with the shafts aforesaid, lever l' connected with the said rock-shaft, means for operating said lever for the purpose of manipulating the knives aforesaid, substantially as described.

8. In a pasteboard-bandbox machine, the combination of the pasteboard feed-rolls, a knife adjacent thereto to cut the pasteboard into lengths, a gluing device for applying the glue for a paper covering, means for feeding the covering from its roll and gluing the same to the several pasteboard lengths, a final severing-knife for cutting the covering the desired length, a glue-roll and means for gluing the under edge and end of the completed strip.

9. The combination with the forming-drum, of a clamping device therein, a spring-actuated trip-lever upon the outside of the drum and connected with the said clamping device, an arm pivoted to the frame and bearing a lug to engage said trip-lever, a cam f secured to a driven shaft and adapted to manipulate the arm, whereby the latter in turn operates the clamping device, substantially as described.

569,497. FAN ATTACHMENT FOR ROCKING-CHAIRS. GUSTAV HERPURTH, Philadelphia, Pa. Filed May 7, 1896. Serial No. 590,535. (No model.)



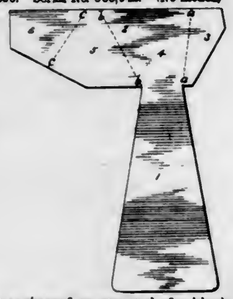
Claim.—1. In combination with a rocking-chair, a screw-threaded rod, a nut, a link attached to the said nut, and mechanism for holding the link, substantially as shown and described.

2. In combination with a rocking-chair, a journaled rod having a screw-threaded section mounted on the chair, a nut adapted to the screw-threaded section, a lever pivoted on the chair and having one end connected with the nut and the opposite end bearing on the floor, a second lever pivoted on the chair and having its end bearing on the floor, and a spring which separates the levers, substantially as shown and described.

3. In combination with a rocking-chair, a channel and a clamp fixed thereon, an adjustable yoke and a clamp attached thereto, a journaled screw-threaded rod supported by the channel, and a nut adapted to run in the channel and traverse the rod, substantially as shown and described.

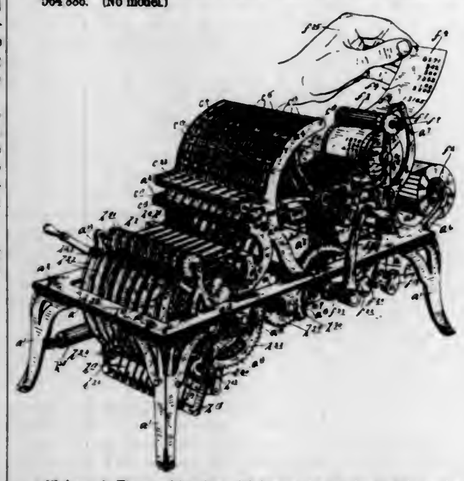
4. In combination with a rocking-chair, a clamp, a lever pivoted thereon and having a bearing on the floor, a second lever pivoted on the clamp and having a bearing on the floor, a spring which separates the two levers, and a fan connected with and operated by the levers, substantially as shown and described.

569,498. NECKTIE. MAYER JACOBOWITZ, Keyport, N. J. Filed Apr. 24, 1896. Serial No. 588,942. (No model.)



Claim.—A neckscarf constructed of a blank comprising a body and a cross-piece at the upper end of the body and integral therewith, the cross-piece having its ends projecting to unequal distances beyond the edges of the body, providing end flaps 3 and 6 and intermediate front and rear pieces 4 and 5, respectively, folded on the lines substantially as shown, the end flap 6 folding downwardly into the space formed between the front and rear pieces, and the end flap 3 folding laterally into the space formed between the parts 5 and 6, substantially as set forth.

569,499. LISTING AND COMPUTING MACHINE. HASTINGS H. JOHNSON, CLARENCE O. WHITE, and MARSHALL B. LLOYD, Minneapolis, Minn.; said Johnson and Lloyd assignors, by direct and mesne assignments, to said Johnson and White. Filed Oct. 7, 1895. Serial No. 564,886. (No model.)



Claim.—1. The combination with impression devices, of the series of double-sector combined type and key levers having the type and the key notations in reverse order, and provided with fingering-surfaces, and one or more dogs engageable with the key sector or sectors, under the fingering movement, to positively intercept and stop

the said levers, as required for alining the desired type or stopping the said sectors in the desired position, substantially as described.

2. In a listing and computing machine, the combination with impression devices and a series of counters, of the series of double-sector combined type and key levers having the type and the key notations in reverse order on the respective sectors, and provided with fingering-surfaces on the key-sectors, devices adapted to be set by the movement of said sector-levers for action on said counters, and one or more dogs engageable with the fingering-surfaces of the key-sectors, under the fingering movement, to positively intercept and stop the said levers, as required, for the purposes had in view, substantially as described.

3. The combination with impression devices, of the series of double-sector combined type and key levers, and a stop-board consisting of a series of movable dogs engageable with the sector levers, under the fingering movement, to positively intercept the same, substantially as described.

4. The combination with impression devices, of the series of double-sector combined type and key levers, a stop-board consisting of a series of pivoted dogs engageable with the sector-levers, under the fingering movement, to positively intercept the same, and a corresponding series of pivoted finger guards overlying said dogs, substantially as described.

5. The combination with impression devices, of the decimal scale series of double-sector combined type and key levers, as described, and the corresponding series of pivoted stop-dogs overlapping from the higher to the lower orders, in the decimal scale, and operative on said sectors, as described, for automatically assembling the cipher-type under the fingering movement required for assembling the digit-type, substantially as described.

6. The combination with the sector-levers c having type and key notations, arranged as described, of the lugs c^{19} the cam-toes c^{19} on the key-sectors and the pivoted stop-dogs c^{17} with the lateral projections c^{20}, all arranged and operating, substantially as and for the purpose set forth.

7. The combination with type selecting and alining devices and a platen or printing device movable against the alined type to take the impression, of a knuckle or toggle lever, for moving said platen, composed of a pair of separated arms which meet and engage on passing the dead centers only, substantially as and for the purpose set forth.

8. The combination with type selecting and alining devices, of a spring-held pivoted platen or printing-rocker, a gravity action knuckle-arm pivoted to said platen, a hand-shaft and a rigid knuckle arm carried by said shaft and engageable with said gravity-arm only while passing the dead-centers, so as to make the impression and effect the release, substantially as and for the purpose set forth.

9. The combination with the double-sector combined type and key lever c, as described, of the spring-held printing-rocker $f\,f'$ having the impression-roller f^2, the paper strip f^4 and feed devices for the same, inking devices for the assembled type, the hand-shaft f^{23} with hand-lever f^{24}, the gravity knuckle-arm f^{18} with lateral lug f^{20} and the rigid knuckle-arm f^{22} on said hand-shaft with notch f^{21} engageable with said lug of said gravity-arm, substantially as described.

10. The combination with the printing-rocker $f\,f'$ having the spring-pawls f^{18}, of the ratchet feed-disks f^{12} engaged by said pawls, the ribbon f^{10}, the spools f^{11}, the spindles f^{14} common to said spools and feed-disks, and the clamping or tension devices f^{13} f^{15}, all arranged and operating substantially as described.

11. The combination with the double-sector levers c, of the spring-held printing-rocker $f\,f'$, the impression-roller f^2 and feed-roller f^3 on said rocker, the paper strip f^4 unwinding from spool f^5, the feed-roller ratchet f^7, the spring-pawl f^8, the inking-ribbon f^{10} and its supporting devices f^{11} to f^{16}, the hand-shaft f^{23} with hand-lever f^{24}, the gravity arm f^{18} with stud f^{20}, and the arm f^{22} with notch f^{21} on the hand-shaft f^{23}, all arranged and operating substantially as described.

12. A computing mechanism, involving the combination of a decimal-scale series of primary counters capable of collective and independent actions, a corresponding series of carriers for the tens, adapted to be set, by said primary counters each in position to operate, later, on the primary counter of the next higher order, and a cradle-like rocking rack provided with a series of pivoted dogs staggered in the order of the decimal scale, and arranged to clear the carriers on the primary stroke of the rack, and to engage with the set members of said carriers, in succession, on the return movement of said rack, for carrying the tens, substantially as described.

13. The combination with the decimal-scale series of double-sector combined type and key levers, of the decimal-scale series of counters, and a corresponding series of counter-actuating dogs connected by links with said sector-levers, for movement to and from their set position, with said sectors, substantially as described.

14. The combination with impression devices, of a series of double-sector levers, a series of counters, a series of counter-actuating dogs connected by links with said sector-levers and adapted only to be set thereby, for collective action, later, on the counters, a dog-driver engageable with said dogs, when set, to collectively operate the counters and return the sector-levers to normal position, and, means for operating said impression devices and said dog-driver, in succession, substantially as described.

15. The combination with type-assembling devices, of a decimal-scale series of primary counters, capable of collective and independent actions, a corresponding series of dogs connected with said type-assembling devices for common movement therewith, and adapted to be set thereby for collective action later on said counters, and a corresponding series of carriers, for the tens, adapted to be set, in any order, by said primary counters, for action, later, on the primary counters, in succession, to carry the tens, substantially as described

16. The combination with the counter supporting shaft h, the counters h' and the arms h^4 pivoted on said shaft, of the counter-actuating dogs pivoted to said arm, and having beveled heels and the movable bar or dog-driver h^{12} with reversely-beveled edge, for action on said dogs, whereby the cam action of said beveled surfaces will lock the dogs to the counters and prevent the counters from throwing past their proper stopping position, substantially as described.

17. The combination with impression devices and type-assembling devices, of a series of primary counters, a series of counter-actuating dogs movable, one by each of said primary counters and adapted to be set, by said assembling devices, for collective action, later, on said counters, a series of tens-carriers adapted to be set, by said counters, for action thereon, later, to carry or add the tens, a reciprocating rack or body provided with a bar for collective action on said dogs and counters, under the primary stroke of said rack, and having a series of dogs, staggered in the order of the decimal scale, for action on said carriers, in succession, under the return stroke of the rack, to carry the tens, and means for operating said impression devices and reciprocating said rack, in the proper order, substantially as described.

18. The combination with impression devices, of the double-sector levers c, as described, the series of counters h', the series of pivoted arms h^4, the series of counter-actuating dogs h^6 pivoted to the arms h^4 and connected by links h^{11} with said sector-levers, the series of primary counters h', the series of carriers h^{14} h^{15}, the cradle with the common bar or dog-driver h^{12}, and provided with the staggered gravity-dogs h^{24}, the hand-shaft f^{23} with hand-lever h^{24}, and connections from said shaft, for operating said impression devices and returning said cradle, in the proper order, all substantially as and for the purposes set forth.

19. The combination with impression devices, of the double-sector combined key and sector levers c, the series of counters h, the arms h^5 pivoted on the counter-shaft, the dogs h^6 pivoted to said arms h^5, normally engaging the counters but free to move over the same when being set by the sectors, counter-returning devices, and a common releasing device for said dogs h^6, whereby the return of said counters will assemble the proper type for printing the total, and said sector-levers may be returned to their normal position without moving the counters from their normal or starting position, substantially as described.

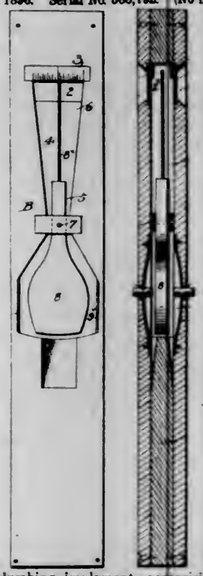
20. The combination with a decimal-scale series of counters, of a common shaft, supporting the same, having a corresponding series of circumferential grooves and provided with a longitudinal groove intersecting the circular grooves, a common bar or rod seated in said longitudinal groove, and a series of dogs seated in said circular grooves and hung on said bar, with said parts so arranged that the counters may freely turn on said shaft, in the counting movement and be engaged by said dogs, when said shaft is moved, for restoring the counters to their normal or starting position, substantially as described.

21. The combination with the shaft h having the circular grooves p and the longitudinal groove p', of the counters h' on said shaft having the broad teeth h^3, the inner radial arms of which span the said grooves p, the bar p^3 loosely seated in the groove p', the dogs p^2 seated in said grooves p and loosely hung on said bar p^3, a crank-handle p^6 for moving said shaft h connected therewith, with freedom for a limited idle motion, and provided with a finger p^5, adapted to engage with the extended end of the bar p^3, for normally holding the dogs p^2 up out of the way of the counters, whereby, on the turn of the said shaft, the said counters may be restored to their normal position, substantially as described.

22. The combination with type-assembling devices operative in any order, of a corresponding series of primary counters, capable of both collective and independent actions, a corresponding series of counter-actuating dogs movable one by each of said type-assembling devices and thereby adapted to be set for subsequent collective action on said counters, and a corresponding series of independently-movable carriers for the tens, movable in any order one by each of said primary counters, and thereby adapted to be set for subsequent suc-

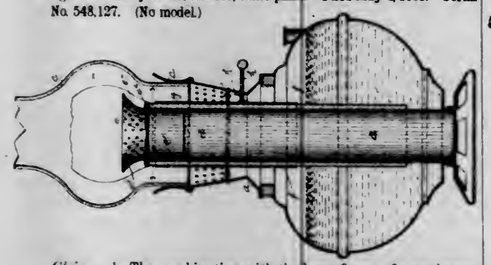
cessive action on said primary counters, to carry the tens, substantially as described.

569,500. PLUMB-LEVEL. FRANK G. JUNEY, Rochester, N. Y. Filed Feb. 26, 1896. Serial No. 580,792. (No model.)



Claim.—A plumbing implement, comprising a stock or plate formed with an interior chamber, oppositely-disposed sight-apertures provided with graduated scales, a weight pivotally hung in the chamber of the stock, a pointer on the upper end of the weight above the pivotal support thereof, oppositely-disposed springs seated in the chamber of the stock, and elastic push-buttons projected through the sides of the stock and secured in the arches of the springs, whereby the weight may be clamped between the inner ends of the push-buttons, substantially as and for the purpose specified.

569,501. LAMP-BURNER. JOSEPH KAMPF, Allegheny, Pa., assignor to Henry Adler, trustee, same place. Filed May 4, 1895. Serial No. 548,127. (No model.)



Claim.—1. The combination with the lamp fount, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a cap engaging with the top of said stationary interior wick-tube, and a movable flame-regulating tube fitting around the stationary interior wick-tube to form a wick-space, sliding directly on the wick and adapted to open and close the wick-space between the cap and the top of the movable flame-regulating tube, substantially as and for the purposes set forth.

2. The combination with the lamp-fount, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a cap engaging with the top of said stationary interior wick-tube, a movable flame-regulating tube fitting around the stationary wick-tube to form a wick-space, sliding directly on the wick and adapted to open and close the wick-space between the cap and top of the movable flame-regulating tube, and means for operating said flame-regulating tube, substantially as and for the purposes set forth.

3. The combination with the lamp-fount, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a cap engaging with the top of said stationary interior wick-tube, a movable flame-regulating tube fitting around the stationary wick-tube to form a wick-space, sliding directly on the wick and adapted to open and close the wick-space between the cap and top of the flame-regulating tube, and an operating-handle connected to the regulating-tube for opening and closing the same, substantially as and for the purposes set forth.

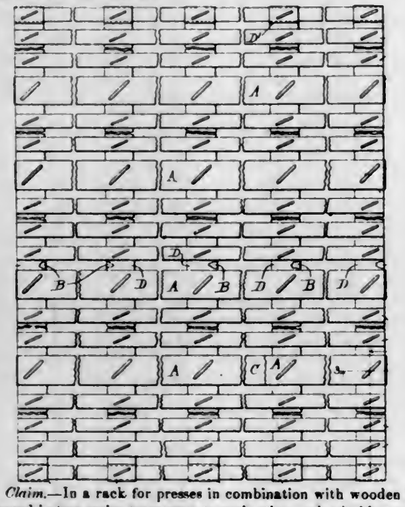
4. The combination with the lamp fount, of a stationary interior wick-tube extending through said fount and supported entirely thereby at its lower end, a cap having a ring or shoulder thereon engaging with the top edge of said wick-tube, a movable flame-regulating tube forming with the interior wick-tube a wick-space, sliding directly on the wick and adapted to open and close the wick-space between the ring or shoulder and the top of the movable flame regulating tube, and means for operating said regulating tube, substantially as and for the purposes set forth.

5. The combination with the lamp fount, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a cap having a ring or shoulder thereon engaging with the top edge of said wick-tube and a perforated outwardly-flaring flame-spreader thereon, a movable flame-regulating tube fitting around the wick-tube to form a wick-space, and sliding directly on the wick and adapted to open and close the wick-space between the cap and top of the regulating-tube, and means for operating said flame-regulating tube, substantially as and for the purposes set forth.

6. The combination with the lamp-fount, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a movable flame-regulating tube around the interior wick-tube forming with the same a wick-space, and sliding directly on the wick, a cap comprising a tubular portion adapted to be inserted in the top of the wick-tube, said cap having a perforated outwardly-flaring flame-spreader thereon and a ring or shoulder fitting over the top edge of the wick-tube and adapted to press against the top edge of the wick, and an operating-handle connected to said flame-regulating tube for opening and closing the exterior wick-space between the top of the regulating-tube and the ring or shoulder, substantially as and for the purposes set forth.

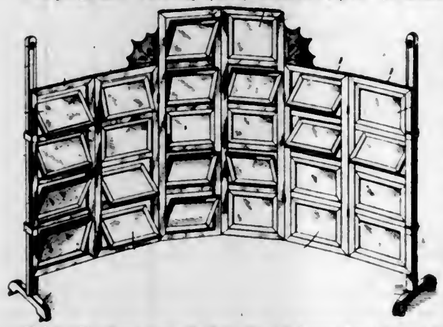
7. The combination with the lamp-fount and burner-base thereon provided with an inclined slot, of a stationary interior wick-tube extending through the fount and supported entirely thereby at its lower end, a movable flame-regulating tube around the interior wick-tube forming with the same an annular wick-space, and sliding directly on the wick, an operating-handle projecting from the flame-regulating tube through said slot, a cap comprising a tubular portion adapted to be inserted in the top of the wick-tube, said cap having a perforated outwardly-flaring flame-spreader thereon extending above the same and a ring or shoulder fitting over the top edge of the wick-tube and adapted to press against the top edge of the wick, substantially as and for the purposes set forth

569,502. RACK FOR PRESSES. CHARLES KERR, Chicago, Ill., assignor to Jerome E. Davis, Oak Park, Ill. Filed Nov. 13, 1895. Serial No. 569,328. (No model.)



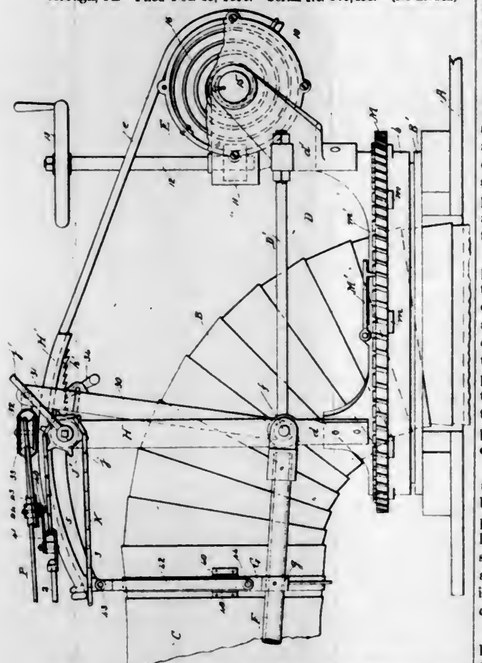
Claim.—In a rack for presses in combination with wooden bars arranged in two series transverse to each other and suitably secured at their intersections; metal straps extending lengthwise of the bars upon their proximate faces; the straps extending in either direction being folded over the outermost of the bars extending in the transverse direction whereby the pressure tending to separate laterally the bars of each series and to strain longitudinally the bars of the other series is opposed by the tensile resistance of the metal straps; substantially as set forth.

569,503. ADJUSTABLE REFLECTING-SCREEN. PEARL KEYES, Hot Springs, Ark. Filed May 9, 1896. Serial No. 590,853. (No model.)



Claim.—The herein-described portable reflecting-screen consisting of a frame made up of one or more panels, reflectors pivotally mounted in said panel or panels, uprights upon which said frame is supported, guide-rollers in said uprights, cords passing over said rollers and connected at one end to said frame and balance weights upon the other ends of said cords, substantially as and for the purpose described.

569,504. PNEUMATIC STACKER. FRANK F. LANDIS, Waynesborough, Pa. Filed Feb. 15, 1896. Serial No. 579,438. (No model.)



Claim.—1. In a pneumatic straw-stacker, the combination, with a delivery-pipe, a discharge-pipe, and a flexible junction-pipe; of a revoluble frame supporting the discharge-pipe and provided with a cylindrical base arranged concentric with the delivery-pipe; a wheel journaled or mounted loosely to revolve on the said base and affording a means for oscillating the said frame, and means for coupling and uncoupling the said wheel and base, substantially as set forth.

2. In a pneumatic straw-stacker, the combination, with a delivery-pipe, a discharge-pipe, and a flexible junction-pipe; of a revoluble frame supporting the discharge-pipe and provided with a cylindrical base arranged concentric with the delivery-pipe; a wheel journaled or mounted loosely to revolve on the said base, and a pawl pivoted to the said base and engaging with notches in the said wheel, substantially as set forth.

3. In a pneumatic straw-stacker, the combination, with a delivery-pipe, a discharge-pipe, and a flexible junction-pipe; of a supporting-frame, arms pivoted to the said frame, a forked bracket also pivoted to the said frame, means for supporting the upper part of the discharge-pipe and the upper ends of the said arms from the said forked bracket, a supporting-rope attached to the said forked bracket, and a ring supporting the lower part of the discharge-pipe and carried by the said arms in front of the said forked bracket, substantially as set forth.

4. In a pneumatic straw-stacker, the combination, with a delivery-pipe, a discharge-pipe, and a flexible junction-pipe; of a supporting-frame, arms pivoted to the said frame, means for supporting the upper part of the said discharge-pipe and the upper ends of the said arms from the said frame, and a ring mounted on the upper end of the said junction pipe close to the lower end of the discharge-pipe, and permitting the said discharge-pipe to be detached from the junction-pipe, substantially as set forth.

5. In a pneumatic straw-stacker, the combination, with a supporting-frame, a discharge pipe, and a forked bracket pivoted to the said frame and operatively connected with the said pipe; of a barrel and means for revolving it carried by the said frame, a flexible connection between the said barrel and forked bracket, and a spring connected to the said barrel and operating to sustain the weight of the discharge-pipe, substantially as set forth.

6. In a pneumatic straw-stacker, the combination, with a supporting-frame, and a discharge-pipe pivotally connected with the said frame; of a winch carried by the said frame and provided with a lifting-rope connected with the said discharge-pipe, and a spring connected to the rope-barrel of the said winch and operating to sustain the weight of the discharge-pipe, substantially as set forth.

7. In a pneumatic straw-stacker, the combination, with a frame, and a discharge-pipe pivotally supported thereby; of a curved rope-guide connected with the said pipe and arranged over the front part of the said frame, a winch carried by the rear part of the frame, and a rope secured to the front end of the said guide, resting on its curved portion, and connected to the said winch, substantially as set forth.

8. In a pneumatic straw-stacker, the combination, with a supporting-frame, of a telescopic discharge-pipe, sheaves J at the sides of the discharge-pipe wheels J' at the lower end of the discharge-pipe, and supporting devices carrying the said pipe, sheaves and wheels, and pivoted to the said frame; of flexible connections secured at one end to the lower part of the slidable pipe-section, passing over the said sheaves and wheels and secured at the other end to the upper part of the said slidable pipe-section, the lower part of the said slidable pipe-section being supported by the upper portions of the said flexible connections, substantially as set forth.

9. In a pneumatic straw-stacker, the combination, with a supporting-frame, a telescopic discharge-pipe, sheaves J at the sides of the discharge-pipe, wheels J' above the discharge-pipe at its lower end, and pivoted supporting devices carrying the said pipe, sheaves and wheels, from the said frame; of flexible connections secured at one end to the lower part of the slidable pipe-section, passing over the said sheaves and wheels and secured at the other end to the upper part of the said slidable pipe section, the upper and lower end portions of the said flexible connections being inclined in opposite directions with respect to the axis of the discharge-pipe, and the lower part of the said slidable pipe-section being supported by the upper end portions of the said flexible connections, substantially as set forth.

10. In a pneumatic straw-stacker, the combination, with a frame, and a telescopic discharge-pipe pivotally supported thereby; of flexible connections K having their upper ends attached to the upper side portions of the slidable pipe-section at its outer end, having their lower ends attached to the lower side portions of the slidable pipe-section at its inner end, and having their intermediate portions operatively supported from the said frame; and means for supporting the inner end of the said slidable pipe-section from the upper portions 4 of the said flexible connections, substantially as set forth.

11. In a pneumatic straw-stacker, the combination, with a supporting-frame, a telescopic discharge-pipe, guide-sheaves J at the sides of the discharge-pipe, sprocket-wheels J' at the lower end of the discharge-pipe, and pivoted supporting devices carrying the said pipe, sheaves and wheels from the said frame; of flexible connections comprising cords secured to the lower part of the slidable pipe-section and passing over the said guide-sheaves, drive-chains secured to the said cords and engaging with the said sprocket-wheels, and rods connected to the said chains and secured to the upper part of the said slidable pipe-section, the lower part of the said slidable pipe-section being supported on the said rods, substantially as set forth.

12. In a pneumatic straw-stacker, the combination, with a supporting-frame, and a telescopic discharge-pipe; of a ring connected

with the lower part of the said pipe, a forked bracket pivoted to the said frame and connected with the said ring, forwardly-projecting arms pivoted to the said frame and secured to the said ring, sheaves J supported by the front ends of the said arms at the sides of the discharge-pipe, wheels J' supported by the said forked bracket at the lower end of the discharge-pipe, and flexible connections having their ends secured to the slidable pipe-section and passing over the said sheaves and wheels, substantially as set forth.

13. In a pneumatic straw-stacker, the combination, with a telescopic discharge-pipe, and flexible connections attached to the slidable pipe-section and operating to extend it; of an extensible deflector; guide-sheaves 33 and 43 supported respectively at the lower end of the discharge-pipe and by the said flexible connections, and a cord passing around the said guide-sheaves and operatively connected with the deflector, the guide-sheaves 43 being constrained to move in the reverse direction to the slidable pipe and operating to keep the said cord taut, substantially as set forth.

14. In a pneumatic straw-stacker, the combination, with a telescopic discharge-pipe, and flexible connections attached to the slidable pipe-section and operating to extend it; of an extensible deflector; a yoke or lever pivoted at the lower end of the discharge-pipe, sheaves 33 supported from the said yoke, sheaves 43 supported from the said flexible connections, and a cord passing around the said sheaves and operatively connected with the deflector, substantially as set forth.

15. In a pneumatic straw-stacker, the combination, with a supporting-frame a telescopic discharge-pipe pivotally supported by the said frame, and a bar or guide H' connected with the inner end portion of the said pipe and moving with the said pipe about its pivotal center; of an extensible deflector at the upper end of the said pipe; flexible connections for extending the slidable pipe-section, a pivoted yoke or lever operating to retract the deflector and provided with a catch or pawl engaging with the said bar or guide, guide-sheaves 33 and 43 carried respectively by the said flexible connections and by the said yoke, and a cord passing around the said guide-sheaves and operatively connected with the deflector, substantially as set forth.

16. In a pneumatic straw-stacker, the combination, with a telescopic discharge-pipe, and flexible connections attached to the slidable pipe-section and operating to extend it; of an extensible deflector; guide-sheaves 33 supported at the lower end of the discharge-pipe, a bar extending transversely of the discharge-pipe, pivoted links connecting the said bar to the said flexible connections, guide-sheaves 43 carried by the said bar, and a cord passing around the said guide-sheaves and operatively connected with the deflector, substantially as set forth.

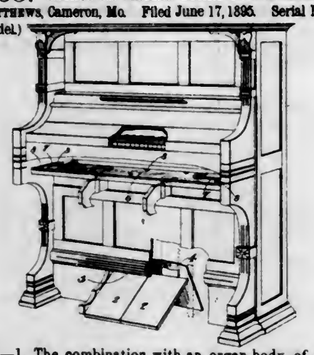
17. In a pneumatic straw-stacker, the combination, with a supporting-frame, of a telescopic discharge-pipe pivotally supported by the said frame and provided with an extensible deflector at its upper end, flexible connections for extending the slidable pipe-section, a cord for operating the deflector, take-up mechanism connecting the said cord with the said flexible connections and operating to keep it taut, and lifting mechanism carried by the said frame and connected with the discharge-pipe, whereby the angle of the said pipe may be changed without affecting the adjustment of its slidable pipe-section or of its deflector, substantially as set forth.

18. In a pneumatic straw-stacker, the combination, with a supporting-frame, and a telescopic discharge-pipe pivotally supported by the said frame; of an extensible deflector at the upper end of the said pipe; flexible connections for operating the slidable pipe-section, a support—such as a yoke—pivotally supported by the said frame, guide-sheaves carried by the said flexible connections and support, a cord passing around the said guide-sheaves and operatively connected with the deflector, and catch mechanism connecting the said support with the said pipe, constraining it to move back and forth when the pipe is raised and lowered and permitting it to be moved back and forth independent of the motion of the pipe, substantially as set forth.

19. In a pneumatic straw-stacker, the combination, with a supporting-frame, and a discharge-pipe pivotally supported by the said frame; of a forked bracket pivoted to the said frame, connections supporting the upper portion of the said pipe from the said bracket, a rope-guide journaled on the said forked bracket, links pivotally connecting the front end of the said rope-guide with the side portions of the lower part of the discharge-pipe, and a winch carried by the said frame and having its rope attached to the said rope-guide, substantially as set forth.

20. In a pneumatic straw-stacker, the combination, with a supporting-frame, a telescopic discharge-pipe, and a sheave J' supported from the said frame independent of the said pipe; of a connection passing over the said sheave and connected to the outer end portion of the slidable pipe-section, and means for suspending the inner end portion of the slidable pipe-section from that portion of the said connection extending between the said sheave and the outer end portion of the slidable pipe-section, substantially as set forth.

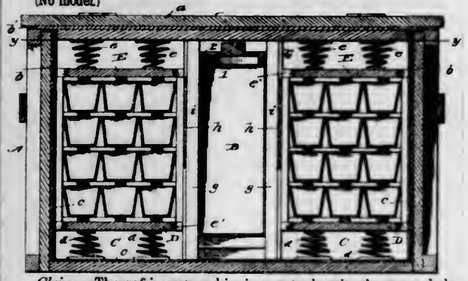
569,505. INSECT OR VERMIN GUARD FOR ORGANS. FRANCIS M. MATTHEWS, Cameron, Mo. Filed June 17, 1895. Serial No. 553,087. (No model.)



Claim.—1. The combination with an organ-body, of a metallic strip having slotted ends and pins adapted to removably hold the strip above the opening beneath the keys, substantially as and for the purpose specified.

2. The combination with an organ-body of that class where a space is left beneath the keys and between the front of the case and the front board A, or like member, of a metallic strip entirely closing the space between those parts and provided with slots for the reception of the knee-swell mechanism, and means for removably securing the strip in place, substantially as specified.

569,506. REFRIGERATING SHIPPING-CRATE. MARTIN S. MILLARD, Kansas City, Mo., assignor of one-half to Harry L. Nicol, same place. Filed Mar. 20, 1894. Renewed Mar. 24, 1896. Serial No. 584,688. (No model.)



Claim.—The refrigerator shipping-crate herein shown and described comprising a closed casing provided with metallic lining and a tightly-fitting cover, the vertical guide-uprights *g* fastened centrally within the case and having the side shields *i* secured thereto, a closed refrigerant-tank B fitted between the guides *g* and out of contact with the side shields *i*, and the top and bottom sets of spring-cushioned followers D, E, arranged within the respective provision-compartments of the case, the lower followers D having their springs resting upon the bottom of the case, and the upper follower E arranged to face the lower followers and with their cushion-springs bearing against the cover of said case, for the purposes described, substantially as set forth.

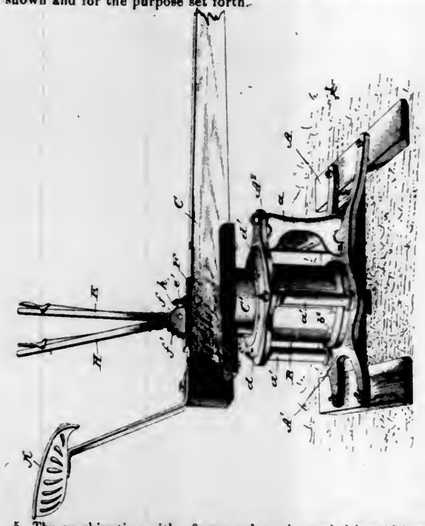
569,507. STUMP-EXTRACTOR. JOSEPH J. MILNE, Monmouth, Ill., assignor to the Milne Manufacturing Company, same place. Filed Mar. 12, 1896. Serial No. 582,943. (No model.)

Claim.—1. The combination with a suitably-supported drum having ratchet-teeth at each end, of a sweep, pawls adapted to engage the ratchet-teeth, and independent levers mounted on said sweep and connected to the pawls, substantially as shown and described.

2. The combination with a suitably-supported sweep and a drum having two sets of ratchet-teeth, of pawls adapted to be thrown in and out of engagement with said ratchet-teeth, and independent levers mounted on the sweep and connected to said pawls, substantially as shown and for the purpose set forth.

3. The combination with a suitably-supported sweep and a drum having two sets of ratchet-teeth, of pawls adapted to be thrown in and out of engagement with the ratchet-teeth, independent levers mounted on the sweep and connected to the pawls, and a brake-block mounted on one of the connecting-rods so that when the pawl is thrown out of engagement with its ratchet-teeth the block will be brought in contact with the drum, substantially as shown and described.

4. The combination with a suitably-supported sweep and a drum having two sets of ratchet-teeth, of pawls adapted to be thrown in and out of engagement with said ratchet-teeth, independent levers mounted on the sweep and connected to the pawls by rods, and a conical block mounted on one of the connecting-rods so as to be thrown in engagement with a corresponding recess in the drum, substantially as shown and for the purpose set forth.



5. The combination with a frame, a drum journaled in said frame and having two sets of ratchet-teeth, of a sweep mounted on said frame, a pawl adapted to engage one set of ratchet-teeth, a second pawl pivoted to the frame and adapted to engage the other set of ratchet-teeth, together with independent levers mounted on the sweep and connected to said pawls, substantially as shown and for the purpose set forth.

6. The combination with a frame, of a drum journaled therein and provided with ratchet-teeth at its upper end, a bracket or turn-table mounted on said frame, a sweep, a transverse bar or pawl vertically movable and bearing at its ends in slots in said bracket or turn-table, and an operating-lever pivoted on the sweep and connected to said pawl by a rod, substantially as shown and for the purpose set forth.

7. The combination with a frame, of a drum journaled therein and provided with ratchet-teeth at its upper end, a bracket or turn-table mounted on said frame, a sweep, a vertically-movable pawl bearing at its ends in said bracket or turn-table, an operating-lever mounted on the sweep, a rod connecting the pawl with the lever, and a spring for normally depressing said pawl, substantially as shown and described.

8. The combination with a suitable supporting-frame, of a drum journaled therein and provided with a central opening through the same, ratchet-teeth formed on each end of the drum, a bracket or turn table mounted on the frame, a sweep and a pawl carried by said turn-table and adapted to engage the ratchet-teeth at the upper end of the drum, a pawl pivoted to the under side of the frame to engage the ratchet-teeth at the lower end of the drum, independent operating-levers mounted upon the sweep, and rods connecting said levers to the pawls, substantially as shown and described.

9. The combination with a suitable supporting-frame, of a drum journaled therein and provided with a central opening through the same, ratchet-teeth formed on each end of the drum, a bracket or turn-table mounted on the frame, a sweep and a pawl adapted to engage the ratchet teeth at the upper end of the drum, a pawl pivoted to the under side of the frame to engage the ratchet-teeth at the lower end of the drum, independent levers mounted on the sweep, rods connecting said levers to the pawls, and a block mounted on one of the connecting-rods so as to bear against one end of the drum, substantially as shown and for the purpose set forth.

10. The combination with a suitable supporting-frame, of a drum journaled therein and provided with a central opening through the same, ratchet-teeth formed on each end of the drum, a bracket or turn-table mounted on the frame, a sweep and a pawl adapted to engage the ratchet-teeth at the upper end of the drum, a pawl pivoted to the under side of the frame to engage the ratchet-teeth at the lower end of the drum, springs for throwing the pawls in engagement with the ratchet-teeth, independent levers mounted upon the sweep, and rods connecting said levers to the pawls, substantially as shown and for the purpose set forth.

11. The combination with a suitable supporting-frame, of a drum journaled therein and provided with a central opening through the same, the lower end of said drum having ratchet-teeth and a conical recess, as shown, a pawl pivoted to the under side of the frame so as to engage said ratchet-teeth, a sweep mounted upon the frame so as to turn thereon, an operating-lever pivoted upon the sweep by a rod which passes through the drum and connected to the pawl, and a conical block mounted upon the connecting-rod above the pawl so as to engage the conical recess in the drum when the lever is operated to disengage the pawl from its ratchet-teeth, substantially as shown and described.

12. In a stump-extractor, the combination, of a frame mounted on runners and consisting of upper and lower plates connected to each other by standards, a drum journaled between said plates and provided with a central opening through the same, a bracket or turn-table mounted on the frame, a sweep and a vertically-movable pawl adapted to engage ratchet-teeth at the upper end of the drum, a pawl pivoted to the lower plate of the frame so as to engage ratchet-teeth at the lower end of the drum; together with independent levers pivoted upon the sweep-rods connected to the pawls and to the levers, and a brake-block located on one of the connecting-rods so as to bear against the drum when the lever which is connected to said rod is operated, substantially as shown and described.

13. In a stump-extractor, the combination, of a frame mounted on runners and consisting of upper and lower plates connected to each other by standards, a drum journaled between said plates and provided with a recess through the same and with ratchet-teeth at each end, a bracket or turn-table mounted on the frame and held in engagement therewith by segmental plates, a sweep secured to said bracket or turn-table, a vertically-movable bar or pawl bearing at its ends in said bracket or turn-table and adapted to engage the ratchet-teeth at the upper end of the drum, a pawl pivoted to the under side of the frame so as to engage the ratchet-teeth at the lower end of the drum, and springs for actuating said pawls; together with operating-levers pivoted upon the sweep and connected to said pawls for throwing them out of engagement with their ratchet-teeth, substantially as shown and for the purpose set forth.

569,508. TABLE ATTACHMENT FOR CHAIRS. JOHN E. MOODY, Berkeley Springs, W. Va. Filed Dec. 11, 1895. Serial No. 571,813. (No model.)



Claim.—1. As an improved article of manufacture, a restaurant-table adapted to be attached to a chair, comprising the table-top 2, having a rim 3 provided with notches 5, a metallic band 4 adapted to hold the handles of cups in said notches, a support consisting of a rod 10 having arms 12, and means for adjusting the height of said table, all substantially as described and shown.

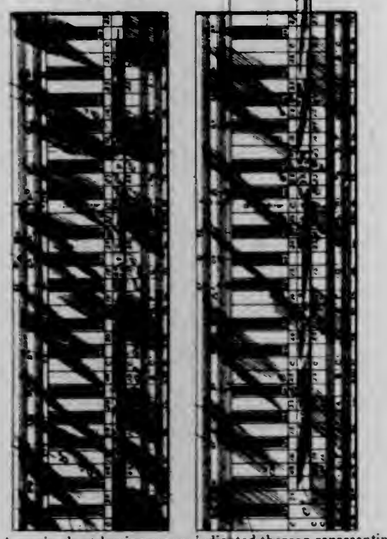
2. The combination with a chair, of the table 2, the fixed foot 9, the rod 10 having branches 12 secured to the under side of the table, the adjusting-nut 13, the slotted irons 14, clips 15, wing-nuts 16, and spring-catch 18', all constructed and arranged substantially as shown and described.

3. The combination with a chair, of a table, the rod 10 arranged to turn in bearings attached to the chair, said rod having branches 12 secured to the under side of the table, and the spring-catch 18', all constructed and arranged substantially as shown and described.

569,509. MUSIC-CHART. FRANZ MUELLER, Spokane, Wash. Filed Dec. 14, 1895. Serial No. 572,205. (No model.)

Claim.—1. A music-chart having spaces indicated thereon representing a portion of a piano-keyboard, and a chord-slide having

figures or signs thereon adapted to indicate the chord combinations of each musical key, as set forth.



2. A music-chart having spaces indicated thereon representing a portion of a piano-keyboard, and a chord-slide having spaces marked thereon corresponding to said former spaces, and figures or signs in said latter spaces adapted to indicate the chord combinations of each musical key, as set forth.

3. A music-chart having spaces indicated thereon representing a portion of a piano-keyboard, spaces below said keyboard and corresponding with said former spaces, signs in said latter spaces indicating the basic note of each musical key, a chord-slide also having spaces marked thereon corresponding to said former spaces, signs in the spaces of said chord-slide adapted to indicate the chord combinations of each musical key, and an indicating-point on said slide for indicating the basic key-note of each chord, substantially as set forth.

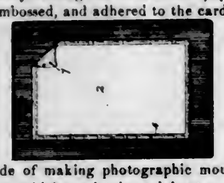
4. A music-chart having spaces indicated thereon representing a portion of a piano-keyboard, spaces below said keyboard and corresponding with said former spaces, signs in said latter spaces indicating the basic key-note of each musical key, cleffs arranged above and below said keyboard representation and having the note represented by each key indicated thereon and also its designating-letter, a chord-slide also having spaces marked thereon corresponding to said former spaces, signs in the spaces of said chord-slide adapted to indicate the chord combinations of each musical key, and an indicating-point on said slide for indicating the basic key-note of each chord, substantially as set forth.

5. A music-chart having spaces indicated thereon representing a portion of a piano keyboard, spaces below said keyboard and corresponding with said former spaces, signs in said latter spaces indicating the basic key-note of each musical key, cleffs arranged above and below said keyboard and having the note represented by each key indicated thereon and also its designating-letter, spaces corresponding to the keyboard spaces and having the musical name of each note indicated thereon, a chord-slide also having spaces marked thereon corresponding to said former spaces, signs in the spaces of said chord-slide adapted to indicate the chord combinations of each musical key, and an indicating-point on said slide for indicating the basic key-note of each chord, substantially as set forth.

569,510. ART OF MANUFACTURING PHOTOGRAPHIC MOUNTS. JAMES W. MCCABE, New York, N. Y. Filed May 28, 1896. Serial No. 593,379. (No specimens.)

Claim.—1. As an improvement in the art of manufacturing photographic mounts, the mode of applying the panel or border to the surface of the cardboard, which consists in placing together a sheet of cardboard and a sheet of ornamental paper having a dry adhesive substance of the character specified, and in then causing said ornamental paper to adhere to the cardboard by subjecting the same to heat and pressnre.

2. The mode of manufacturing photographic mounts, which consists in applying a sheet of ornamental paper having a dry adhesive surface to the face of a sheet of cardboard, and in then forcing the same against a heated die having an embossing means and a cutting means, and thereby causing the ornamental paper to be simultaneously cut out, embossed, and adhered to the cardboard.



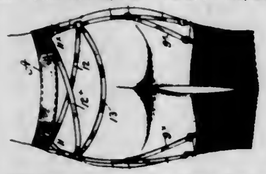
3. The mode of making photographic mounts with embossed panels or borders, which consists in applying to a sheet of ornamental paper an adhesive substance which may be softened or dissolved under the action of heat, in laying such sheet when dry upon the cardboard with the adhesive side of the paper to the face of the cardboard, and in then simultaneously embossing and cutting out the ornamental paper to form the panel or border, and at the same operation by means of the pressure and also by the action of the heat, causing the said panel or border to adhere to the surface of the cardboard.

4. The mode of uniting paper to cardboard which consists in applying to the paper an adhesive substance which may be softened or dissolved under the action of heat, in laying such paper when dry upon the cardboard with the adhesive side of the paper to the face of the cardboard, and in then simultaneously embossing and cutting out the paper, and at the same operation by means of the pressure and also by the action of the heat causing the said paper to adhere to the surface of the cardboard.

5. The method of uniting paper to a support which consists in applying to the support a paper having its back provided with a dry adhesive substance which may be softened or dissolved under the action of heat, and in then, by means of pressure and by the action of heat, causing the said paper to adhere to the surface of said support.

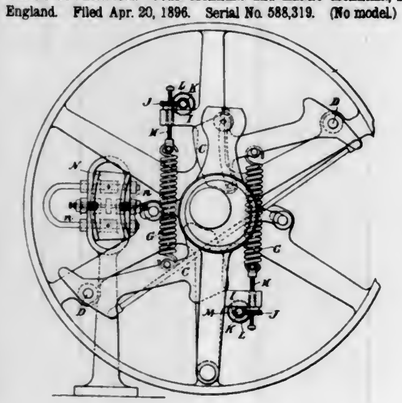
6. The mode of uniting paper to a support which consists in applying to the paper an adhesive substance which may be softened or dissolved under the action of heat, in then laying such paper when dry upon the support with the adhesive side of the paper to the face of the support, and in then by means of pressure and also by the action of heat, causing the said paper to adhere to the surface of the said support.

569,511. GARTER AND BELT. FRANK H. MCCLUNG, Jr., Knoxville, Tenn. Filed Dec. 17, 1895. Serial No. 572,422. (No model.)



Claim.—The combination with the body-belt and the elastic garter-straps suspended therefrom, and provided with oppositely-arranged rings, as shown, of the non-elastic crossed straps having one end secured to the body-belt and the other ends fastened to the rings, and the straight strap, connected to the rings.

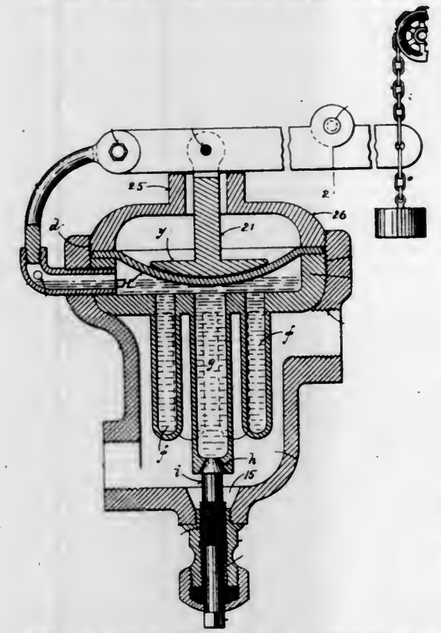
569,512. SPEED ALTERING OR ADJUSTING MECHANISM FOR SHAFT-GOVERNORS. JOHN MCLAREN and HENRY MCLAREN, Leeds, England. Filed Apr. 20, 1896. Serial No. 588,319. (No model.)



Claim.—1. In expansion or shaft governors which are controlled by springs, the combination of a screw to which one end of the controlling-spring is attached, a nut on the said screw and gearing to rotate the said nut, with a movable contact piece or shoe capable of being brought into position to act on the gearing so as to rotate the nut in either direction to increase or reduce the tension of the spring, substantially as hereinbefore described.

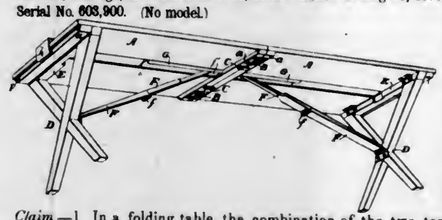
2. In expansion or shaft governors which are controlled by springs, the combination of a screw to which one end of the controlling-spring is attached, a nut on the said screw, and gearing to rotate the nut, with a movable contact piece or shoe capable of being moved into position to contact with the gearing so as to increase or decrease as required the tension of the spring, and springs acting on the contact piece or shoe to normally maintain it in its inoperative position, substantially as hereinbefore described.

569,513. DAMPER-REGULATOR. GEORGE F. NILSSON, Whitinsville, Mass. Filed Oct. 7, 1895. Serial No. 564,943. (No model.)



Claim.—In a damper-regulator a body for connection with the flow of the generator; an expansion chamber; a tube projecting therefrom into the body and having a port forming a valve-seat; a series of closed tubes opening into the expansion-chamber and pendent into the flow in said body; a valve in the body for closing said seat; a flexible diaphragm in said chamber; and mechanism actuated by the diaphragm for operating a damper substantially as specified.

569,514. FOLDING TABLE. JOSEPH PALMER, Aurora, and JOHN PALMER, Chicago, Ill. Filed Nov. 11, 1895. Renewed Aug. 25, 1896. Serial No. 603,900. (No model.)

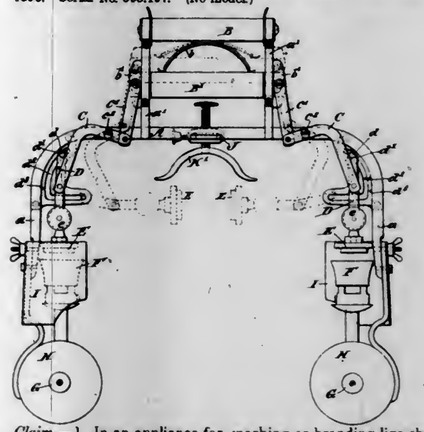


Claim.—1. In a folding table, the combination of the two top sections hinged together, the support hinged to each section, the jointed brace pivoted to said support, and the flanged guide-plate upon the section slidingly engaged by said brace, substantially as and for the purpose specified.

2. In a folding table, the combination of the top sections having each cleats on its under side at its ends, the hinges connecting a cleat of one section with a cleat of the other, the support hinged to each section on its under side adjacent to its other cleat in position for the latter to be engaged thereby, a jointed brace pivoted to the support, and a flanged guide-plate slidingly engaged by a head upon the brace, and having a lug or projection for said head to abut against, substantially as and for the purpose set forth.

3. In combination with a folding table having a guide-rod, a straight-edge slidingly connected to said rod, composed of sections hinged together, substantially as and for the purpose specified.

569,515. APPLIANCE FOR BRANDING SHEEP OR OTHER ANIMALS. HENRY W. POTTER, Wellington, New Zealand, assignor of one-half to Simeon Frankel, Sydney, New South Wales. Filed June 11, 1896. Serial No. 595,197. (No model.)



Claim.—1. In an appliance for marking or branding live sheep and other animals, a brand upon the end of an arm or lever (such as D) in combination with a bracket having a cam-slot (such as *d'*) an operating bell-crank lever (such as C) and a pitman connecting said lever to an operating-handle substantially as and for the purposes specified.

2. In an appliance for marking or branding live sheep and other animals, a brand upon the end of an arm or lever (such as D) having a pin at its end fitted with an antifriction-roller working in a cam-groove of approximately the shape herein described, said arm or lever being connected to an operating-handle substantially as and for the purposes specified.

3. In an appliance for marking or branding live sheep and other animals, a pair of brands (such as E) adapted to be pressed against each side of the animal's face in combination with a pair of burners mounted upon the frame of the appliance, substantially as and for the purposes specified.

4. In an appliance for marking or branding live sheep and other animals, the combination of a frame provided with a fixed handle and a movable handle, and a spring to retain the said movable handle in normal position, one or more brands, and cam-guided lever mechanism for actuating the brand or brands from the movable handle of the appliance, substantially as specified.

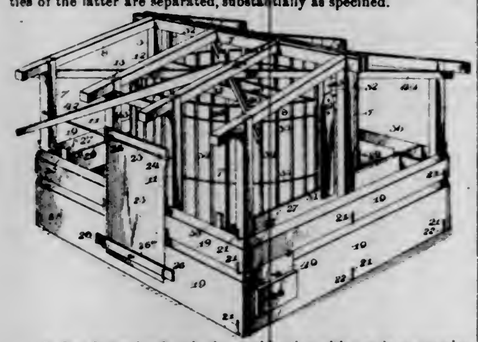
5. In an appliance for marking or branding live sheep and other animals, the combination of a frame having a fixed handle and a movable handle, a set of three brands, one of which occupies a fixed central position to mark the top of the animal's nose and the two side brands being movable toward each other to brand or mark the sides of the animal's face, and cam-controlled lever mechanism for actuating the side brands from the movable handle of the appliance, substantially as specified.

569,516. FARROWING-PEN. EDWARD POWERS, Arkansas City, Kans., assignor of one-half to Samuel J. Smith and John H. Smith, same place. Filed Oct. 10, 1895. Serial No. 565,241. (No model.)

Claim.—1. In a farrowing-pen, the combination with a skeleton frame and siding-boards detachably secured thereto and adapted to be removed to ventilate the interior, of packing-troughs arranged within the pen above its floor to form subjacent retreats and contiguous to the side walls thereof to receive packing material, said troughs being accessible by removing the contiguous siding-boards without entering the pen, substantially as specified.

2. In a farrowing-booth, the combination with a main or exterior pen, of a movable interior pen constructed of a continuous flexible wall having free extremities adapted to be secured together to cut off, or separated to establish, communication with the surrounding

portion of the main or exterior pen, said exterior pen having a door-opening for communication with the interior pen when the extremities of the latter are separated, substantially as specified.

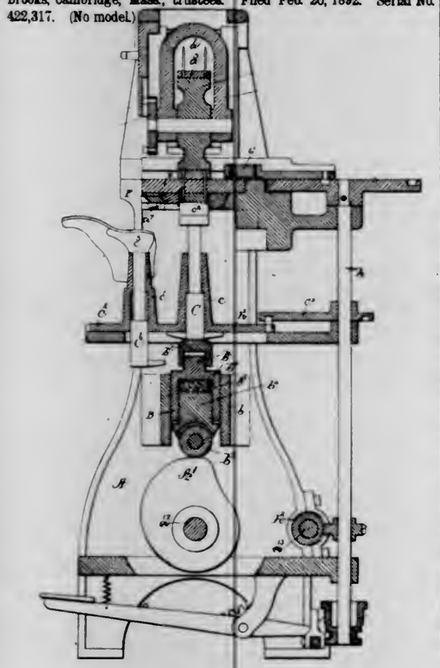


3. In a farrowing-booth, the combination with a main or exterior pen having a side door-opening, and means for closing the same, of an interior pen constructed of a continuous flexible wall supported at its lower edge by the floor of the pen, and complemental securing devices on the extremities of said flexible wall and also on the wall of the main or exterior pen upon opposite sides of the door-opening, substantially as and for the purpose specified.

4. In a farrowing-booth, the combination with a main or exterior pen, of a central or interior pen constructed of a continuous flexible wall provided at its free extremities with duplicate eyes adapted to register for engagement by pins, and corresponding eyes arranged upon opposite sides of a door-opening in the main or exterior pen to provide for securing the extremities of the flexible wall to the wall of the main or exterior pen upon opposite sides of its door-opening, substantially as specified.

5. In a farrowing-booth, the combination with a main or exterior pen, of a movable interior pen having a flexible wall constructed of spaced vertical slats and connecting transverse bands and adapted to be expanded and contracted laterally, and means for vertically adjusting the interior pen and securing it at the desired adjustment, substantially as specified.

569,517. HEEL-NAILING MACHINE. Freeborn F. Raymond, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Feb. 20, 1892. Serial No. 422,317. (No model.)



Claim.—1. In a heel-nailing machine a sectional compressing-die and mechanism for holding or moving the sections while the heel is being compressed, and a separate mechanism for holding said sections after the heel is compressed, with light pressure, substantially as and for the purpose described.

2. The combination in a heel-nailing machine of a sectional die, locking devices for locking the sections of the die together and springs for holding the sections of the die together when not otherwise locked, as and for the purposes described.

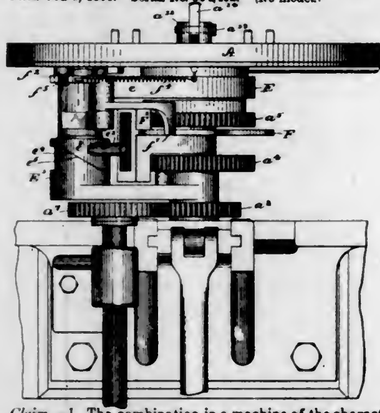
3. The combination in a heel-nailing machine of a reciprocating gang of awls and a reciprocating gang of drivers adapted to be reciprocated in successive order through the holes of the common templet, a pressure-head, a slide-plate carrying two operative spindles, one of which supports a heel-seat former, and the other a last or work support interposed between the pressure-head and the templet, as and for the purposes described.

4. The combination in a heel-nailing machine of a common actuating-cam or power-applying device and pressure-head and two spindles C C′ and mechanism by means of which they are successively operated by said pressure-head, and the heel-pricking and nail-driving devices, substantially as described.

5. The combination of the pressure-head and heel-pricking devices, the pressure-head and heel-nailing devices, the slide-plate having two spindles or work-supports and means for automatically moving each of them into and out of operative relation with the pressure-head, substantially as described.

6. In a heel-nailing machine the combination of the former, the movable die, the former-actuating spindle and die-locks carried by said spindle, substantially as described.

569,518. NAIL-FEEDING DEVICE. Freeborn F. Raymond, 2d, Newton, and Charles H. Fogg, Hyde Park, Mass., assignors to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Oct. 3, 1895. Serial No. 564,492. (No model.)



Claim.—1. The combination in a machine of the character specified, of the nail holding and feeding plate and means for turning the same, comprising its shaft, the stationary gear a^4, the movable gear a^5 varying as to teeth as described, and the pinion a^3 carried by the shaft and engaging the teeth of the stationary and movable gear, the movable gear being connected with the nail holding and feeding plate.

2. The combination of the nail-holding plate A, having the hub a^{10}, and hole a^{18} with the pin A^3 connecting the gear a^5 with the plate.

3. The combination of the nail holding and feeding plate A, having the hub a^{10} and hole a^{18}, the pin A^3 connecting the gear a^5 therewith, and means for moving the plate and hub from and toward said pin.

4. The combination of the nail holding and feeding plate A, the pin or stud a^{17}, and the lifting-lever a^{14}, pivoted to the plate and having a lifting cam-section a^{15} and a holding-section a^{16}.

5. The combination in a machine of the character specified, of, the nail holding and feeding plate A, the cover-plate D, and means for operating the cover-plate, comprising the cam F, the connecting-lever f^3 and spring f^4.

6. The combination of the cover-plate D, the cam F having surfaces f, f', the lever f^3, pivoted as described, and having the arms f^6, f^7, the pin f^5 and the spring f^4, substantially as described.

7. The combination of the arm e, the nail holding and feeding plate A and cover-plate D, and means for moving the arm vertically, whereby said plates are disengaged from their operating mechanism.

8. The combination of the arm e, the nail holding and feeding plate A, and the cover-plate, the said arm having a vertical movement and a horizontal movement whereby the said plates are disengaged from their operating mechanism and moved laterally therefrom.

9. The combination of the nail holding and feeding plate, the cover-plate, the supporting-arm e, the said arm having a lateral movement in relation to the devices for operating the plates.

10. The combination of the nail holding and feeding plate A, the cover-plate D, the arm e for supporting the same, having a bracket F^2, to which the cover-operating lever f^3 is pivoted, the said lever bearing a detachable relation to its operative cam whereby it is adapted upon the movement of the arm e to be moved vertically with the nail holding and feeding plate and the cover-plate, or laterally or both in relation to said cam, as and for the purposes described.

11. The combination in a machine of the character specified of a stationary vertical shaft which may be a cam-shaft of the machine with which the nail-feeding apparatus is used and which carries the mechanism for actuating the nail holding and feeding plate and the cover-plate with the said nail holding and feeding plate and cover-plate and means for disengaging them from said stationary actuating devices and moving them away from the same, as and for the purposes described.

12. The combination of the rotary shaft a' adapted to rotate when the nail-holding machine is in operation, a fixed gear a^4 through which the shaft extends, a gear a^5 loose upon said shaft and having teeth varying in number from the teeth of the gear a^4, a pinion a^3 mounted at the end of an arm attached to said shaft to engage the teeth of the gears a^4, a^5, and a nail holding and feeding plate adapted to be operated by said gear a^3.

13. The combination of the rotary shaft a^6, the fixed gear a^4, the loose gear a^5, the operating-pinion a^3, the shaft extending above the upper surface of the gear a^5 and providing a centering support for a nail feeding and loading plate, and said nail feeding and loading plate having a hole for the reception of the end of said shaft and connected with the gear a^5 to be turned thereby.

14. The combination of the shaft, the fixed gear a^4, the gear a^5 loose upon the shaft, the arm a^2 carrying the pinion a^3 which engages the teeth of the gear a^4, a^5, and is fixed to said shaft and an edge cam carried by said arm to be rotated therewith, the nail holding and feeding plate engaged by the pinion a^3 and the cover-plate actuated by said revolving cam.

15. The distributer herein described, having the plate b in which is formed one or more lines of holes to register with one or more lines of holes of the nail holding or feeding plate, integral extensions b' united at their lower ends by the integral ring b^2 and the removable plate b^3 attached to said extensions or frame and having holes of any desired arrangement therein, and tubes connecting the holes of the plate b with the holes of the plate b^3.

16. The combination in a distributer of the plate b having the extensions b' and ring or frame b^2 with the plate b^3.

17. The skimmer having upon its under surface the parallel flanges h^3, with the cover h having a tongue h' to engage the flanges.

18. A skimmer formed of a segmental block having nail receiving and holding holes therein, and a segmental cover-plate secured to the block by an extension entering a straight recess or passage therein, and handles which hook upon the skimmer, as and for the purposes described.

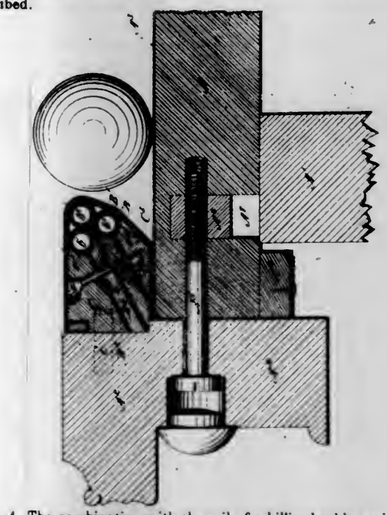
19. The skimmer-block in the form of a sector having nail receiving and holding holes, and the skimmer-handles secured to the ends and front of the block to extend outwardly and forwardly from the front corners, substantially as described.

569,519. BILLIARD-TABLE CUSHION. William J. Rodd, St. Leonards, New South Wales, assignor to Walter George Henderson, Sydney, New South Wales. Filed Aug. 19, 1895. Serial No. 559,844. (No model.)

Claim.—1. The combination with the rail of a billiard-table, of a backing secured to the rail and having a plurality of longitudinal grooves, a plurality of inflated tubes arranged in the grooves, and an air-valve having a terminal provided with nipples to which the inflated tubes are attached air-tight at one end, said terminal being common to all the tubes at one end, for the purpose of simultaneously inflating them, substantially as described.

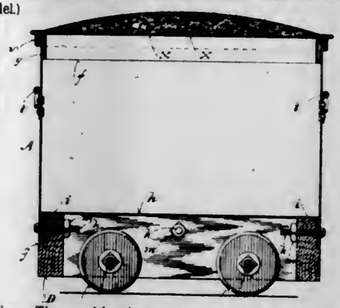
2. In a billiard-table cushion, the combination with a backing secured to the rail of the table and having two grooves in its inner face, of two inflated tubes arranged in said grooves, an inflated tube superimposed upon the tubes arranged in said grooves, and means for confining said tubes in the said grooves, substantially as described.

3. In a billiard-table cushion, the combination with a backing composed of a plurality of sections superimposed one upon the other, of a plurality of inflated tubes arranged in a group against said backing, each of said tubes being incased in a textile casing having radially projecting webs disposed between the sections of said backing, and means for securing said sections together, substantially as described.



4. The combination with the rail of a billiard-table, and a backing secured to the rail, of a plurality of inflatable tubes mounted on and connected with the backing, and an air-valve having a terminal common to all the tubes and provided with nipples to which the tubes are attached air-tight at one end, whereby the tubes may be simultaneously inflated, substantially as described.

569,520. COMBINATION WASTE-BARREL AND TRUCK. John R. Russell, Lynn, Mass. Filed Jan. 4, 1894. Serial No. 495,646. (No model.)



Claim.—The combination of the rectangular truck, D, provided with the rabbet, j, and the wheels within said frame mounted on axles journaled in the side bars; the rectangular metallic box having its upper edge folded inward at, f, and its bottom depressed inwardly forming the double flange, i, seated in said rabbet; the bolts and nuts detachably securing said flange to the frame; and a cover for said box all being arranged substantially as specified.

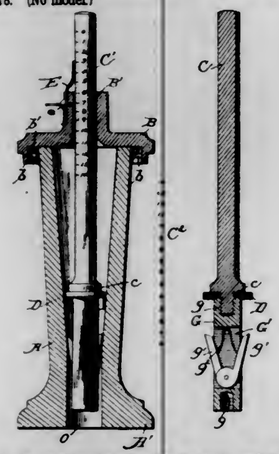
569,521. SLEEPING-SACK. Fannie H. Scatchard, Oneonta, N. Y. Filed Oct. 18, 1894. Serial No. 526,297. (No model.)



Claim.—A sleeping-sack consisting of a bag closed at the bottom and having at the top a projecting flap forming a continuation of one

side of the bag, the outer portion of said flap being centrally slitted and said slitted portion extending inwardly to a neck-opening formed in the flap whereby when the flap is folded the opposite sides of the same will meet over the breast portion of the sack, substantially as specified.

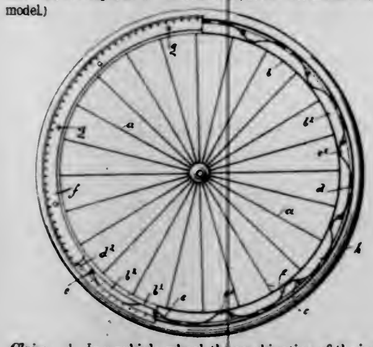
569,522. DEVICE FOR REDUCING SIZE OF RINGS. GEORGE P. SOMMER and THOMAS SLY, Honesdale, Pa. Filed Apr. 28, 1896. Serial No. 589,478. (No model.)



Claim.—1. In combination the die, the drift, and the detachable and reversible extractor carried by said drift, substantially as described.

2. In combination the die, the drift, and the extractor comprising the detachable and reversible part G, and the pivoted extracting-arms carried by said part G, substantially as described.

569,523. CUSHION-TIRE FOR VEHICLE-WHEELS. ALBERT E. SPENCER, Brooklyn, N. Y. Filed Jan. 21, 1896. Serial No. 576,337. (No model.)



Claim.—1. In a vehicle wheel, the combination of the inner rim *b*, having flanges *b'* and b^2, the outer rim *d*, having flanges *d'* and d^2, the guard *f*, with means as described for binding the parts together and preventing the outer rim from slipping around the inner rim, the springs *e*, inclosed within said parts, and the tread *h*, to form a cushion-tire, substantially as described.

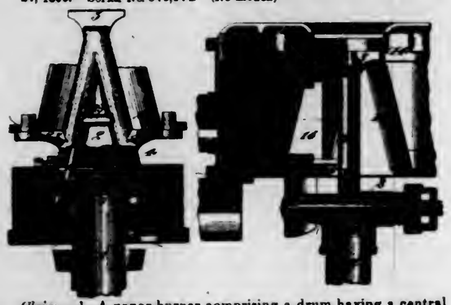
2. In a vehicle-wheel, the combination of the inner rim *b*, having flanges *b'* and b^2, the outer rim *d* having flanges *d'* and d^2, the guard *f*, with means as described for binding the parts together and preventing the outer rim from slipping around the inner rim, the springs *e* inclosed within said parts, said outer rim and its adjacent parts arranged to move over the flanges of the inner rim after the manner of a telescope, and the tread *h*, to form a cushion-tire, substantially as described.

3. In a vehicle-wheel, the combination of the inner rim *b*, having flanges *b'* and b^2, the outer rim *d* having flanges *d'* and d^2, the guard *f*, the bolts *g* passing through the slots *c c*, and flange d^2 and adapted to move in a vertical direction and also slightly in a lateral direction, and the springs *e*, substantially as described and for the purposes specified.

4. In a vehicle-wheel, the combination of the inner rim *b*, having flanges *b'* and b^2, the outer rim *d* having flanges *d'* and d^2, the guard *f*, the bolts *g*, and the springs *e*, the said bolts pressing against the outer side of said springs when pressure is exerted on the springs, substantially as described and for the purposes specified.

5. In a vehicle-wheel, the combination of the inner rim *b*, having flanges *b'* and b^2, the outer rim *d*, having flanges *d'* and d^2, the guard *f*, with means as described for binding the parts together and preventing the outer rim from slipping around the inner rim, and the springs *e*, inclosed within the said parts and having their free ends not abutting, and adapted to move in a longitudinal direction, substantially as described and for the purpose set forth.

569,524. VAPOR-BURNER. LOUIS STOCKSTROM, St. Louis, Mo., assignor of one-half to Charles A. Stockstrom, same place. Filed Jan. 27, 1896. Serial No. 576,974. (No model.)



Claim.—1. A vapor-burner comprising a drum having a central tube, a vaporizer located within the central tube, having a laterally-extending lip and a valve located therebeneath, a mixing-tube extending from the outlet of the valve to the drum and a subsidiary burner located within the drum above the lip between the vaporizer and the outlet of the mixing-tube; the lip serving to prevent the flame of the subsidiary burner passing downward to the valve; substantially as described.

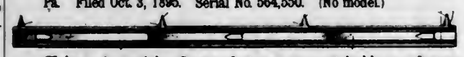
2. A vapor burner comprising a drum having a central tube, a subsidiary burner located in one side of said tube, a vaporizer having a lip extending beneath said subsidiary burner and a triangular head adapted to bear against the upper end of said tube, a valve located at the base of said vaporizer and controlling the jet-opening of the valve, and a mixing-tube extending from a point in proximity to said jet-opening to said drum; substantially as set forth.

3. A vapor-burner comprising a drum having a central tube, a vaporizer located within the central tube having a valve located therebeneath, a mixing-tube extending from the outlet of the valve to the drum, a subsidiary burner located within the drum between the vaporizer and the outlet of the mixing-tube, and the guard secured over the end of the valve for preventing the gas issuing therefrom passing to the subsidiary burner thereabove; substantially as described.

4. A vapor-burner comprising a vaporizer of A shape having ports extending therethrough and formed with lateral arms having vertical studs, with a three-pronged head, and with a lip, the burner-drum having holes registering with the studs, a central tube provided with a subsidiary burner in the wall thereof, and the mixing-tube, the burner-drum being supported removably in position for use by the three-pronged head bearing against the upper end of the central tube in conjunction with the lip on which the subsidiary burner bears, substantially as described.

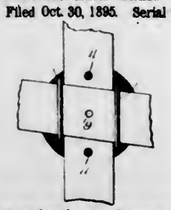
5. A vapor-burner comprising a vaporizer having a transverse valve at the base thereof, a guard mounted on the jet end of the valve, the approximately elliptical or oblong base-ring at right angles to the valve, the approximately elliptical or oblong wire-gage ring seated on the base-ring, the approximately elliptical or oblong initial heating cup provided with a vertical extension and rotatable beneath the base-ring; substantially as described.

569,525. CARPET-HOLDER. MICHAEL H. SULLIVAN, Carbondale, Pa. Filed Oct. 3, 1895. Serial No. 564,550. (No model.)



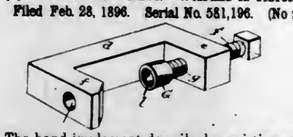
Claim.—An article of manufacture, a carpet holder or fastener constructed substantially as herein set forth, formed of a thin metallic strip having grooves or ribs extending parallel with and contiguous to its edges, and having tapering engaging spurs along one edge curving upwardly and away from the plane of the strip, and having the edge portions of the said spurs recurved to prevent their cutting the carpet, and having fastening-points punched or cut from the body of the strip between the parallel grooves or ribs and extending transversely of the strip, substantially as and for the purpose specified.

569,526. HARNESS HEAD-GEAR. EDWARD G. SYLVESTER, Thornton, Iowa. Filed Oct. 30, 1895. Serial No. 567,424. (No model.)



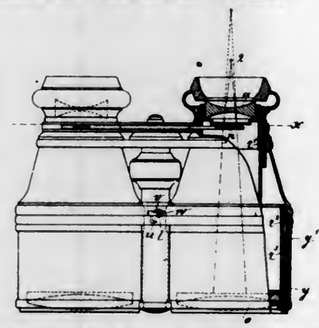
Claim.—In a harness head-gear, the combination with the head-stall, and a strap forming the brow-band and throat-latch and crossing the head-stall at a slight departure from a right angle, of a rosette, parallel loops spaced apart and secured to the rosette the one in advance of the other, one of the said straps passing between the parallel loops and the other strap extending over the first-mentioned strap and passing through the loops, and a stud secured about centrally to the rosette and passing through corresponding openings in the crossing straps, substantially as and for the purpose set forth.

569,527. COTTER-PIN PRESS. WILFRED R. TILTON, Prairie Depot, Ohio. Filed Feb. 28, 1896. Serial No. 581,196. (No model.)



Claim.—The hand implement described consisting essentially of the frame having a fixed and integral jaw at each end, one of said jaws having a transverse screw-tapped aperture disposed in the longitudinal plane of the frame and the other jaw a similarly-disposed plane aperture, always in alinement with the threaded aperture, the threaded bolt or rod having a wrench-seat at its outer end and bearing in the threaded aperture of said jaw, and provided at its inner end with a circumferential groove, and the brass head having the concave seat to receive the threaded end of a pin or key and swiveled to the grooved head of the bolt or rod, and the whole being adapted to clamp the head of a crank-bar of a bicycle and displace the key or pin through the plane aperture, substantially as shown and described.

569,528. FIELD-GLASS. EMILE TOUSSAINT, Berlin, Germany. Filed June 5, 1896. Serial No. 594,433. (No model.)



Claim.—1. In a field-glass with adjustable magnifying power, the combination with oculars *a*, of convex glasses *p* placed in front of them and of a small lever or knob *l*, which simultaneously moves aside the said convex glasses *p* and causes the objectives *o* to be pushed out to an extent *z* which equals the difference of the focal distances of the objective alone and of its combination with the convex glass *p* inserted in front of the ocular, substantially as described.

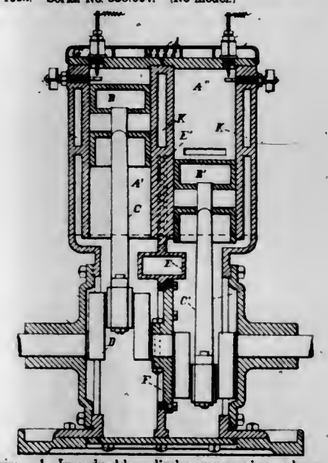
2. In a field-glass of the kind described, the combination with objectives *o* and means for securing the small lever or knob *l*, of a spring *s* which pushes forward the objectives, and of a pin *w* fixed in the bridge i^4 carrying the objective tube r^1, whereby the knob *l* is again released, substantially as described.

569,529. ELECTROTHERAPEUTIC BAND. BENTON H. VELLINES, Norfolk, Va. Filed Nov. 30, 1895. Serial No. 570,623. (No model.)



Claim.—In a therapeutic band for personal wear, the combination with a circular perforated band of metal, such as copper, having its end portions reduced in thickness to form extended overlapping adjusting-tongues *a*, of a second strip B of opposite character, such as zinc, placed around the said copper band, and of the same length as the unreduced portion thereof, and a tape band placed entirely around the zinc and the tongues of the copper, and provided at its end portions with means for their adjustable connection, the upper and lower edge portions of the copper being bent outwardly and over upon the zinc and tape, substantially as specified.

569,530. GAS-ENGINE. HARRY A. WINTER, Grand Rapids, Mich., assignor to the Sintz Gas Engine Company, same place. Filed June 24, 1895. Serial No. 553,897. (No model.)



Claim.—1. In a double-cylinder gas-engine, a base, a partition-wall arranged to divide said base into two chambers, a shaft arranged to pass through said base, and a removable bearing for said shaft mounted in said partition-wall, substantially as described.

2. In a gas-engine having a plurality of cylinders and partitioned compartments connected with said cylinders, an outside opening in one of said compartments having a removable cover and an inside opening in the partition smaller than the outside and provided with a cover, the said covers forming the bearings of the crank-shaft, substantially as described.

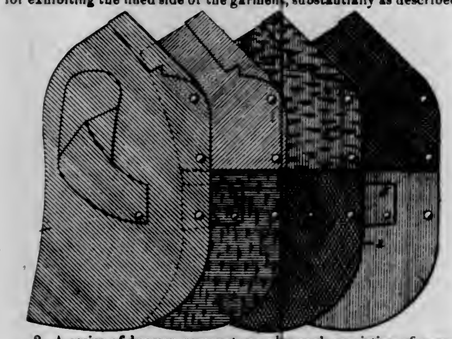
3. In combination, the cylinder, the box arranged on the top of the same, said box being provided with outlet-openings and being adapted to be heated by the radiation of the heat from the cylinder, the mixing-chamber and the pipes leading from said heater-box thereto, substantially as described.

4. In combination, the cylinder, a cap placed on the cylinder with a space between, said cap having turned-over edges forming a closed heating box or chamber, deflecting-plates located in said chamber, and inlet and exit openings to and from said chamber, substantially as described.

5. In combination in a gas engine, the igniting device comprising the vertically-movable rod carrying a projection, the stationary contact-arm, the movable contact-arm carrying a fast disk and a loose disk, a yielding connection between said disks with means for adjusting the same, and the trip adapted to be operated by said projection; substantially as described.

569,531. EXHIBITING SAMPLES OF GARMENTS. MARCUS A. ADLER, New York, N. Y. Filed Mar. 19, 1896. Serial No. 583,911. (No model.)

Claim.—1. A series of dummy garment samples each consisting of a narrow strip of goods having a lining and finished at one edge to exhibit the profile cut of a garment and unfinished at the other edge, and provided at the unfinished edge with a sleeve section, said lining having an edge portion loose or detached, so that it can be lifted for exhibiting the lined side of the garment, substantially as described.



2. A series of dummy garment samples each consisting of a narrow strip of goods provided with lining and finished at one edge to exhibit the profile of a garment and unfinished at the other edge, said lining having an edge or portion loose or detached for exhibiting the under or lined side of the goods, and a sleeve-section secured in proximity to the loose edge or portion of the lining and adapted to be tucked in between said lining and goods substantially as described.

3. A series of dummy garment samples each consisting of a narrow strip of goods finished at one edge to exhibit the profile cut of a garment and unfinished at the other edge, and provided at the unfinished edge with a sleeve-section finished at one edge and secured at its other edge so as to be capable of being folded back or concealed substantially as described.

4. A series of dummy garment samples each consisting of a narrow strip of goods finished to exhibit the profile of a skirt portion of a garment, and a narrow strip of different goods finished to exhibit the profile of an upper or unskirted portion of a garment, said samples being adapted to be superposed, substantially as described.

569,532. PISTON FOR STEAM-ENGINES. EDWIN J. ARMSTRONG, Oswego, N. Y., assignor to the Ames Iron Works, same place. Filed Dec. 26, 1895. Serial No. 573,352. (No model.)



Claim.—1. The combination, with a screw-threaded piston-rod, of a piston having a split or divided hub formed with a screw-threaded opening for the piston-rod, and means for springing the parts or halves of said hub in opposite directions, whereby the piston may be clamped on the rod, substantially as described.

2. A piston cast with two hubs having a screw-threaded opening for a piston-rod, and perforations formed in one of said hubs and corresponding screw-threaded perforations formed in the other, and bolts for springing said hubs toward each other, whereby the piston may be clamped on a piston-rod, substantially as described.

569,533. COMBINED PIPE WRENCH AND CUTTER. HERBERT C. ATKINSON, Auburn, Ky., assignor of one-half to Aaron F. Coghill, same place. Filed Jan. 29, 1896. Serial No. 577,278. (No model.)



Claim.—1. In a pipe-wrench, the combination with the bifurcated stock 1, and forked block 3 pivoted in said stock and having parallel jaws 4 provided with teeth 6 and 7, of the rotatable plate 9 pivoted between the jaws 4 and provided with jaws 10, 11 and 12, and a threaded handle 21 movable in the said stock and pivotal block to engage the rotatable jaw-plate and hold the same stationary, substantially as described.

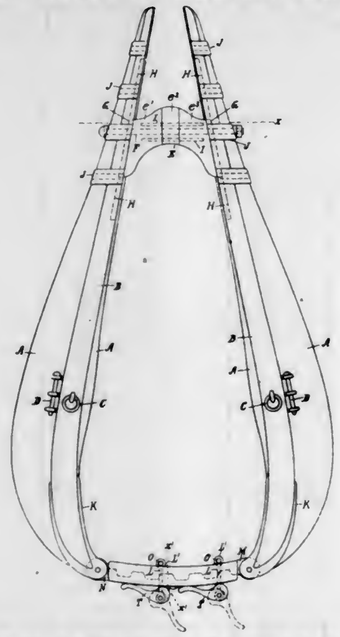
2. In a pipe-wrench, the combination with the bifurcated stock 1 having a threaded aperture 19, of the forked block 3 pivoted in said stock and provided with two parallel jaws 4 having curved toothed ends 5, a rotatable jaw-plate pivoted between the jaws 4 and provided with toothed jaws 10 and 12, and a threaded handle 21 fitted into the threaded aperture in the stock 1 and adapted to be projected through a corresponding aperture in the forked block 3 to engage the jaw-plate and hold the latter stationary, substantially as described.

3. In a pipe-wrench, the combination with the bifurcated stock 1, of the forked block 3 pivoted in said stock and provided with two parallel jaws 4 having curved toothed ends 5, a rotatable jaw-plate pivoted between the jaws 4 and provided with toothed jaws 10 and 12, and means for locking the stock, forked block and jaw-plate immovably relative one to the other, substantially as described.

4. In a pipe-cutter, the combination with the bifurcated stock 1 having a threaded aperture 19, of the forked block 3 pivoted in said stock and provided with two parallel jaws 4 having a plurality of recesses 7^a adapted for the reception of a pipe, a rotatable jaw-plate pivoted between the jaws 4 and provided with a jaw 11, a rotary cutter journaled in the end of the jaw 11, a socket 17 formed in said jaw-plate, and a threaded handle 21 fitted in the threaded aperture in the stock and adapted to be projected into the socket 17 and turn the jaw-plate on its pivot to advance the cutter to its work, substantially as described.

5. In a combined pipe wrench and cutter, the combination with the bifurcated stock 1 having a threaded aperture 19, of the forked block 3 pivoted between the ends of said stock and provided at one end with parallel jaws 4 having curved toothed ends 5 and having at its other end an aperture 20 adapted to register with the threaded aperture 19 in the stock, a rotatable jaw-plate pivoted between the jaws and provided with toothed jaws 10 and 12, and a jaw 11 carrying a rotary cutter, a plurality of recesses 7^a formed in the jaws 4 adapted to receive a pipe, teeth 7 formed in said jaws in rear of said recesses, a socket 17 formed in the jaw 10, and a threaded handle fitted in the threaded aperture in the stock and adapted to be projected into the socket 17, or through the aperture 20 in the forked block into engagement with the jaw-plate, substantially as described, and for the purpose specified.

569,534. ADJUSTABLE COLLAR. JOSEPH ATKINSON, Florence, Canada. Filed Mar. 23, 1896. Serial No. 584,579. (No model.)



Claim.—1. In a collar, the block, E, composed of the sections, c', c^3, c^4, in which pin-holes, c^4, are formed and the pins, I, I, in combination with the sides, A, A, and hames, B, B, rigidly secured thereto or formed integral therewith, and means for holding these parts at the position to which they may be adjusted, substantially as and for the purpose set forth.

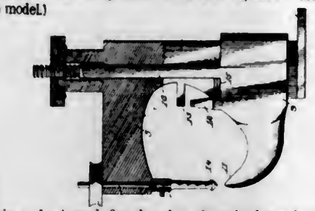
2. The adjustable block, E, composed of the sections, c', c^3, and, c^4, formed with pin-holes, c^4, and with the tongues or tenons, G, G, and the pins, I, I, in combination with the sides, A, A, in which the recesses, H, are formed, and the hames, B, B, rigidly secured to or formed integral with the sides, A, A, and means for holding the parts at the position to which they may be adjusted, substantially as and for the purpose set forth.

3. The adjustable block, E, formed in three sections, c', c^3, c^4, and with the tongues or tenons, G, G, and the pins, I, in combination with the body sides, A, A, in which the grooves or recesses, H, H, are formed, the clasps, J, J, and bolt, F, substantially as and for the purpose set forth.

4. The couplings, N, M, one of which is formed in two parts, N', N^3, hinged or pivotally secured together, and the other of which is formed with side flanges, M', and with the elongated slots, M^3, and each formed with alternate corresponding projections and recesses, N^3, and, M^3, respectively, and means for holding the couplings at the position to which they are adjusted, in combination with the straps, K, K, and body sides, A, A, substantially as and for the purpose set forth.

5. The couplings, N, M, one of which is formed in two parts, N', N^3, hinged or pivotally secured together, and the other of which is formed with side flanges, M', and with elongated slots, M^3, and each formed with alternate corresponding projections and recesses, N^3, and, M^3, respectively, the eyebolts, L, pins, O, and eccentric clamps, T, in combination with the straps, K, K, and the body sides, A, A, substantially as and for the purpose set forth.

569,535. DENTAL-PLATE-POLISHING TOOL. PRESTON B. BARNES, Hubbard City, Tex. Filed Mar. 20, 1896. Serial No. 584,169. (No model.)



Claim.—1. A tool for dressing dental plates having a bit and means for communicating rotary motion thereto, and a rest for contact with the roof side of the plate provided with a reduced bearing-point to follow inequalities in the surface of said plate, substantially as specified.

2. A tool for dressing dental plates having a bit and means for communicating rotary motion thereto, an adjustable rest having a reduced bearing point arranged in alinement with the bit and adapted to follow inequalities in the surface of the dental plate, and means for adjusting the rest to vary the interval between its bearing-point and the bit, substantially as specified.

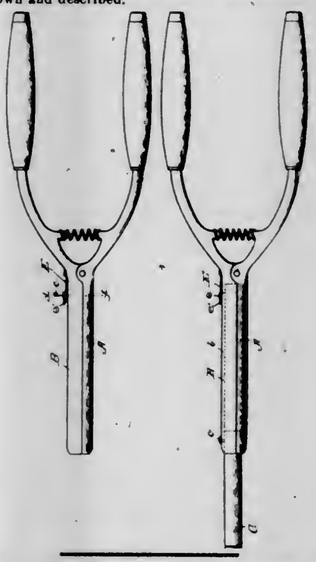
3. A tool for dressing dental plates having a bit and means for communicating rotary motion thereto, an adjustable rest having a bearing-point arranged in alinement with and adapted to be moved toward and from the extremity of the bit, means for adjusting the rest, and a stop to limit the movement of the rest before the bearing-point comes in contact with the extremity of the bit, substantially as specified.

4. A tool for dressing dental plates having a bit, and means for communicating motion thereto, an adjustable rest having a reduced bearing-point arranged in alinement with the bit, means for communicating motion to the rest to vary the interval between its bearing-point and the extremity of the bit, an indicator carried by the rest and arranged in operative relation with a fixed stop, and a gage for designating the interval between the bearing-point and the extremity of the bit, substantially as specified.

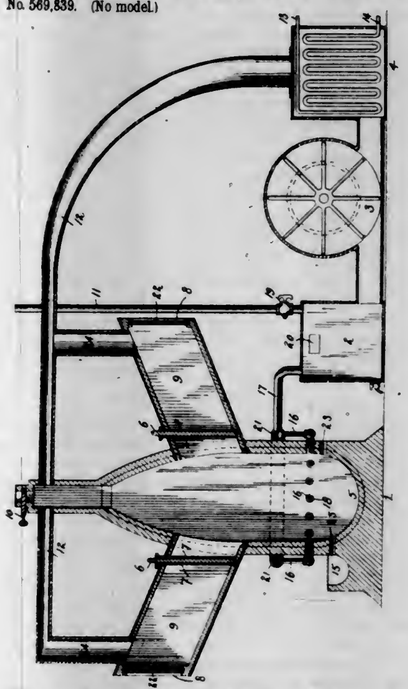
5. A tool for dressing dental plates having a frame, a bit having its spindle mounted upon the frame, means for communicating motion to the bit-spindle, a rest mounted upon the frame and having a reduced bearing-point arranged in alinement with the bit, an adjusting-screw carried by the rest, and a thumb nut or wheel threaded upon the adjusting-screw and adapted to be manipulated to vary the interval between the bearing-point and the extremity of the bit, substantially as specified.

569,536. CURLING-IRON. NANNIE BERRYMAN, Buechel, Ky. Filed June 10, 1896. Serial No. 594,975. (No model.)

Claim.—As an improved article of manufacture, a curling-iron comprising the cylindrical jaw B, having the guide-slot *b* and the spring E rigidly secured at one end to the jaw B, and formed with the semicircular retaining-recess *e* and flaring end *e'*, in combination with the sliding beater-bar C, provided with the set-screw *c*, substantially as shown and described.



569,537. COMBINED CALCINER AND SMELTER. CHARLES J. BEST and ANSON E. MEANOR, Chicago, Ill. Filed Nov. 21, 1895. Serial No. 569,839. (No model.)



Claim.—1. In a smelting device, a smelter or furnace, 1, the calcining-chambers, 9, leading from the smelter proper and inclined downward toward the said smelter the solid slide-door, 6, and the double perforated door, 7, both located at the end of calcining-chambers nearest to and abutting the smelter proper, which confine the ores and other materials in the calcining-chambers, and prevent the said materials from dropping into the smelter until desired, all for the purpose specified.

2. In a smelting device or furnace the combination with the smelter proper, 1, of the calcining-chambers, 9, 9, located about

midway between the twyer-holes and top of the smelting-furnace proper, and inclined downward, toward, and opening and leading into the smelter proper, the solid slide-door, 8, located between the halves of the double perforated door, the double perforated door, 7, both located at the end of the calcining-chambers nearest to and abutting the smelter proper, which confine the ores, fluxes and fuel in the calcining-chambers and prevent the said materials from dropping into the smelter until desired, the pipes, 24, entering the top of the calcining chambers, the pipe, 12, leading from the top of pipe, 24, to the cooling-coils; the cooling-coils, 13, 14, located at the terminus of pipe, 12, fan 3, located between the cooling-coils 13, 14, and the precipitating-tank 2 and connected therewith by suitable ducts and apertures, by means of which gases are drawn from the calcining-chambers, and the tank 2, wherein the volatile metals are precipitated, thus saving a fair percentage of actual metal which usually escapes with the gas, all for the purpose specified.

3. In a smelting device or furnace the combination of the furnace or smelter proper, 1, calcining-chambers 9, 9, entering the side thereof about midway between the twyer-holes and the top of the furnace wherein the ores, flux, fuel &c. are primarily placed, having a solid slide-door, 6, which slides between the halves of the double perforated door 7, the double perforated door, 7, said doors being at the end of the calcining-chambers, 9, 9, nearest to and abutting the smelter proper, the said calcining chambers having a suitable opening at the top, the pipe, 24, leading from said opening and forming a suitable passage therefrom, the pipe 12, proceeding in a curvilinear line from the top of pipe 24, and extending to the cooling-coils, 13 and 14, all forming suitable ducts and passages communicating with each other, and the fan, 3, suitably located for creating a suction or draft from the said coils 13 and 14, with communications leading from the coils on one side, and to a precipitating-tank, 2, on the other, all for the purpose specified.

4. In a smelting device an attachment and combination for the preliminary treatment of ores and carbonizing of fuel, consisting of a combination of the smelter or furnace, the calcining-chambers, 9 9, the pipe, 24, proceeding from a suitable aperture at the top of the calcining-chambers, 9, 9, the pipe, 12, proceeding from the top of pipe, 24, in a curvilinear line to the cooling-coils, 13 and 14, cooling-coils 13, 14, forming together with pipes 24 and 12 suitable ports and passages, fan 3, located between the cooling-coils, 13, 14, and the precipitating-tank 2, and connected therewith by suitable ducts and apertures, suitably located for creating a suction or draft from the coils, the ducts or passages leading from and connecting the cooling-coils with the said fan, for forcing the same by blast into a precipitating-tank, the precipitating-tank 2, and the pipes 11 and 17, leading therefrom, all for the purpose specified.

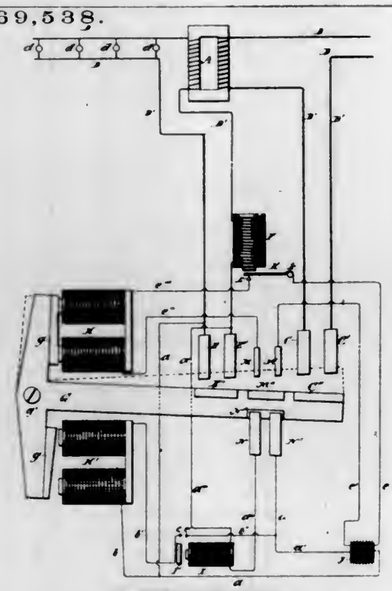
5. In a smelting device or furnace the combination with the furnace proper having calcining-chambers at suitable places on the sides thereof, said calcining-chambers having an opening or aperture at a desirable place on the upper side, of a pipe entering said calcining-chambers at the aperture, and another pipe proceeding from the top of said first pipe in a curvilinear line downward, and connecting with certain cooling-coils the cooling-coils communicating by suitable passages with a fan for suction and exhaustion from the cooling-coils and adjacent passages, a longitudinal duct communicating, on the other side of said fan, with a precipitating-tank and suitable pipes leading therefrom, as and for the purpose specified.

569,538. AUTOMATIC CUT-OUT FOR ELECTRICAL TRANSFORMERS. ALBERT C. BOOTH, Cedar Rapids, Iowa. Filed Feb. 6, 1895. Serial No. 537,517. (No model.)

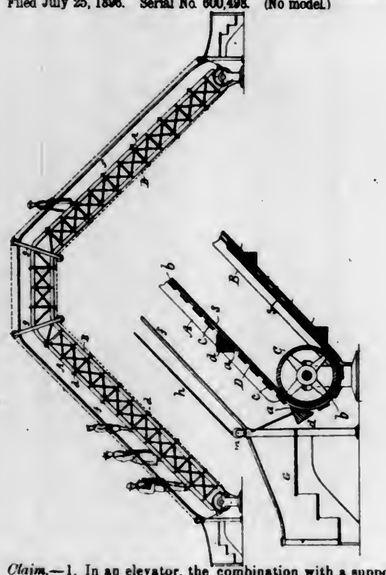
Claim.—1. In an automatic cut out for electrical transformers, the combination with primary and secondary circuit wires, of a switch of insulating material and provided with metal contact-plates to close the primary and secondary circuits, electromagnets to actuate said switch in two directions, an independent battery to energize said magnets, a magnet in the circuit between said battery and the secondary circuit to close the battery-circuit with one of the switch-actuating magnets, and a magnet in series with the secondary circuit for interrupting the circuit of the battery with the other switch-actuating magnet substantially as described.

2. The combination with primary and secondary wires, substantially as described, a switch adapted to close the circuits therein, a pair of electromagnets adapted to actuate said switch in both directions, an independent generator furnishing current to said magnets and also to said secondary wires, successively, a relay in circuit with the said generator and secondary wires, the armature of said relay being adapted to close the generator-circuit with one of said switch-actuating magnets, an electromagnet with its coil in circuit with said secondary wires, and a gravity-armature forming a part of the generator-circuit with the other switch-actuating magnet, and adapted to close said circuit when out of contact with the magnet above it.

569,538.



569,539. ELEVATOR. GEORGE F. BROTT, Washington, D. C. Filed July 25, 1896. Serial No. 600,498. (No model.)

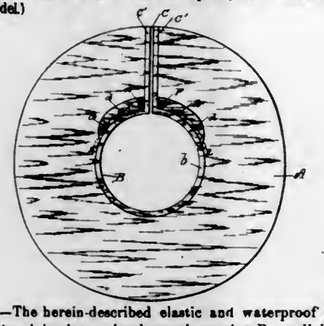


Claim.—1. In an elevator, the combination with a support consisting of two upper and two lower, stationary angle-irons, of an endless belt, a series of slats forming bearings on said angle-irons for said belt, steps carried by said belt, and rotative drums, on which said belt moves, substantially as and for the purposes described.

2. The combination with a supporting-frame consisting of two upper and two lower angle irons, which are connected by braces, of an endless, flexible belt, transverse slats secured to said belt, the extended ends of said slats bearing on flanges of said angle-irons, and steps mounted on said slats, the parts being so constructed that, in the forward movement of the belt, the slats bear on flanges of the upper angle-irons, and in the return movement of the belt, said slats bear on the upper faces of flanges of the lower angle-irons, substantially as set forth and described.

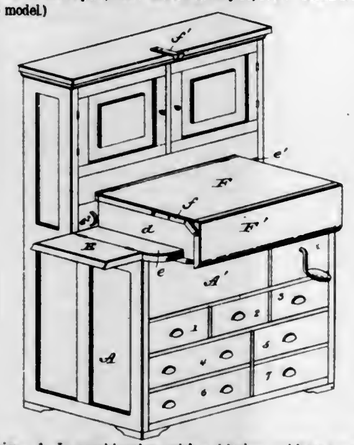
3. The combination with a supporting-frame, a trackway and rotative drums, of an endless belt, consisting of one or more steel bands, having a layer of textile material secured thereto, and a series of slats secured to said belt and forming bearings for it on said trackway, substantially as and for the purposes described.

569,540. NECK-PROTECTOR. EDMUND E. CARLTON, Cambridge, Mass. Filed July 16, 1895. Renewed Sept. 11, 1896. Serial No. 605,541. (No model.)



Claim.—The herein-described elastic and waterproof shield or neck-protector A having a circular neck-opening B, a radially-slitted portion C, non-elastic segmental reinforcing-pieces D, D, secured to the shield A about the neck-opening B upon each side of the radially-slitted portion C and each provided with a plurality of perforations *d* for the reception of a fastening device, and waterproof covering-strips C secured over the reinforcing-pieces D, D, substantially as shown and described.

569,541. KITCHEN-CABINET. THOMAS CARNEY, Central City, W. Va. Filed Sept. 5, 1895. Renewed July 11, 1896. Serial No. 599,201. (No model.)

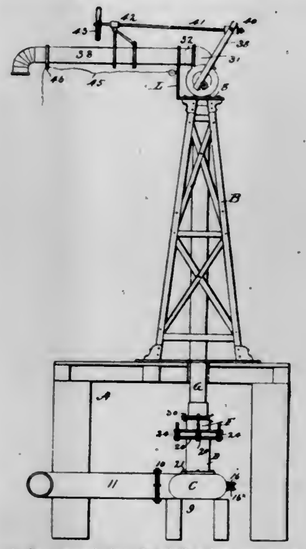


Claim.—1. In combination with a kitchen-cabinet constructed substantially as shown, of a cover F hinged to the lower edge of the upper part of the cabinet, an apron F' hinged to the outer edge of the cover, so that the edge of the apron will extend above the edge of the cover when the latter is raised and a hook *f'* attached to the top of the cabinet so that the apron will engage therewith when the cover is raised, substantially as shown and for the purpose set forth.

2. In combination with a kitchen-cabinet having vertical strips *d d* and a kneading-board at the lower end of said strips, of a cover F hinged to the cabinet so as to rest upon the upper edges of the strips *d d*, an apron F' connected to the outer edge of the cover by strap hinges as shown, and a catch *f'* attached to the top piece of the cabinet so as to engage with the upper edge of the apron when the cover is raised to a vertical position, substantially as shown and for the purpose set forth.

3. As an improved article of manufacture, a kitchen-cabinet constructed substantially as shown and provided with a series of drawers, the frame of the cabinet having air passages or channels which communicate with the drawers and provide means for ventilating the same, a bin and a sifter above the drawers, strips *d d* supporting a removable kneading-board, a cover F adapted to rest upon the upper edges of the strips *d d* when lowered, and an apron F' hinged to the outer edge of the cover and adapted to engage a catch *f'* at the upper end of the cabinet when the cover is raised, substantially as shown and described.

569,542. STAND-PIPE AND WATERING-CRANK. DANFORTH CHENEY, Brookfield, Mo. Filed Mar. 25, 1896. Serial No. 584,824. (No model.)



Claim.—1. In a stand-pipe for delivering water to a tender, a suitable stand provided with a table at its upper end, a water-chamber having a seat for the end of a stand-pipe to rest on, a stationary cylinder secured on the water-chamber, a vertically-movable, non-revoluble stand-pipe section in the cylinder arranged to project into the water-chamber and stand with its lower end on the seat therein, a stuffing-box casing on the top of the said pipe-section, an upper section of stand-pipe suitably secured in the stuffing-box casing to turn on its axis therein, a collar on the upper end of the revoluble stand-pipe section formed with gudgeons, ring-wheels on the hubs bearing with their perimeters on the table-levers to turn the hubs to lift the whole stand-pipe, and a discharge-pipe on the upper end of the stand-pipe, whereby the upper section thereof may be turned on its bearing in the stuffing-box.

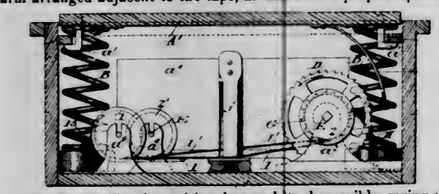
2. An apparatus for delivering water to a tender, comprising a suitable stand-pipe provided with a table on its top, a water chamber formed with a seat to receive the lower end of a stand-pipe, a stationary cylinder secured on the water-chamber and having an annular flange at its upper end, radially-arranged guide-posts in the flange, elastic cushions on the guide-posts, a vertically-movable, non-revoluble stand-pipe section in the said cylinder adapted to project into the water-chamber and stand on the seat therein, a stuffing-box casing on the end of the said stand-pipe section formed with an annular flange at its lower end having the guide-posts projected therethrough and yieldingly resting on the cushions a foot-piece for the upper section of stand-pipe in said casing to turn on its axis therein, an upper section of stand-pipe in the foot-piece, a discharge pipe on the upper end of said section, a collar on the upper end of the revoluble section of stand pipe formed with gudgeons, hubs eccentrically mounted on the gudgeons, ring-wheels on the hubs bearing on the table, and a lever to rotate the hubs and lift the whole stand-pipe, substantially as and for the purpose specified.

3. In a stand-pipe, the combination of a water-chamber, a stand-pipe composed of two sections, the lower one of which projects into the water-chamber and is non-revoluble, and the upper one of which is revoluble on its union to the other, and means to lift the whole stand-pipe, and means to turn the revoluble section, substantially as described.

4. The combination with vertically-movable and rotative stand-pipe, supporting-collar on the upper portion thereof formed with gudgeons, a table on the stand, rim-wheels, hubs turning in the rim-wheels and having the said gudgeons eccentrically carried therein, levers radially secured to the hubs, a bar, as 40, journaled in the upper ends of the levers, a fast-threaded screw-rod 41 in the bar 40, the discharge-pipe, a support for the outer end of the screw-rod 41 on the discharge-pipe, and a hand-wheel to turn said rod.

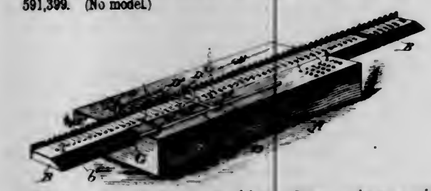
569,543. PASSENGER-REGISTER. WILLIAM H. CLING, Charleston, S. C. Filed Mar. 23, 1896. Serial No. 584,582. (No model.)

Claim.—1. In a register of the character specified, the combination, with the depressible cover, springs supporting it, a hook-pawl pendent from the cover, a shaft arranged horizontally, two ratchet-wheels mounted thereon, a stop-pawl engaging one of said wheels, two reels and a tape connecting them, one of said reels being removably applied to the aforesaid shaft, and the other reel being supported in brackets from which it is removable, and the indicator or pendent arm arranged adjacent to the tape, as and for the purpose specified.



2. The combination, with a box and its depressible, spring supported cover, or tread-plate, of the shaft E, supported horizontally in bearings and its ends extending free on the outer sides of the latter; ratchet-wheels fixed on said shaft, pull and stop pawls engaging such ratchets; and reels which are adapted to be placed on either end of said shaft E, and to be mounted removably in brackets arranged on the floor of the box, and a tape connecting such reels, as shown and described.

569,544. CALCULATOR. WESLEY A. COPELAND, CYRUS ROBERTS, and THOMAS J. MCCRARY, Alvord, Tex. Filed May 13, 1896. Serial No. 591,399. (No model.)



Claim.—1. A calculator comprising a frame or base provided with a series of numbers, a sliding bar having longitudinal serrations thereon, and provided with suitable numbers opposite said serrations, a lever or pusher movably held to the frame or base adapted to be swung into engagement with the serrations on said sliding bar and having a sliding movement on the base, substantially as shown and described.

2. A calculator comprising a frame or base, a bar slidably connected therewith and provided with a longitudinal serrated plate, a lever or pusher movably secured to frame adapted to be swung into engagement with said serrated plate having a sliding movement on the base, and a stop on the frame or base for limiting the movement of said lever or pusher, substantially as shown and described.

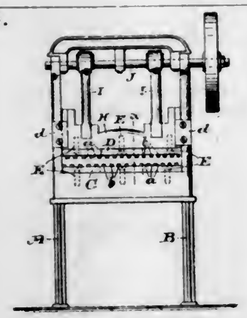
3. A calculator comprising a frame or base, a stop located near the lower end of said base, a bar slidably secured to said frame, and provided with a longitudinal serrated plate, a lever or pusher movably secured by guides to said frame and adapted to have a swinging and sliding movement in said guides and provided with a projecting arm whereby it may be swung into engagement with the serrated plate on the sliding bar and pushed down until engaged by the stop on the frame or base, substantially as shown and described.

4. A calculator comprising a frame or base provided with a longitudinal guideway, a row of figures arranged at one end of the base and at one side of said guideway, a stop placed on the frame or base on the same side of the guideway and at the lowest of said figures, a series of figures at or near another corner of said frame, a lever or pusher movably held in guides on said frame and provided with a projecting pointer, an index-pointer secured to the frame opposite the stop on the frame, a bar sliding in the guideway of the frame, and having a row of figures in regular notation on its upper surface and a stop at or near its lower end, and provided with a longitudinally-serrated plate adapted to be engaged by the lever or pusher, substantially as shown and described.

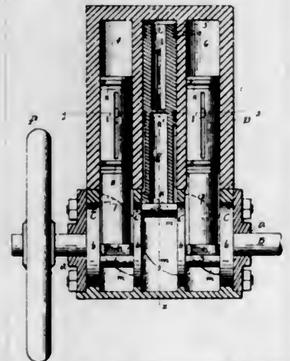
569,545. SAW-SETTING MACHINE. ROBERT R. COURSEN, Newark, N. J. Filed May 31, 1895. Serial No. 551,237. (No model.)

Claim.—A saw-setting machine having a series of removable hammer and anvil sections, an upwardly-extending guide G integral with the frame thereof, removable guides *d*, *d*, engaging said frame, and a carrier H adapted to move in said guides and having secured to its under side said hammers, all of said parts being combined substantially as described.

569,545.



569,546. STEAM, AIR, OR WATER MOTOR. ERNEST M. CRANDALL, St. Joseph, Mo. Filed June 17, 1896. Serial No. 595,881. (No model.)



Claim.—1. In a motor, the combination of a crank-shaft, a cylinder having induct and educt ports, a chambered piston having elongated induct and educt ports adapted to be brought into register with the corresponding ports of said cylinder, and having also a foot which impinges upon a crank of said shaft, and means for partially rotating said piston during its reciprocation, to bring the several ports successively into the proper operative relations, substantially as specified.

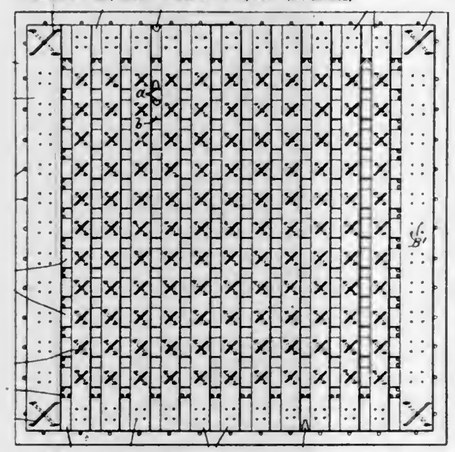
2. In a motor, the combination of the casing the crank-shaft having three or more cranks inside said casing, a cylinder opposite to each of the said cranks and having induct and educt ports, the elongated open-ended pistons, having each elongated induct and educt ports, adapted to be brought to register with the corresponding ports of the said cylinder, by a rotary movement of the piston and having also each a foot which impinges upon one of the said cranks, and means for partially rotating the said pistons as they are reciprocated, substantially as specified.

3. In a motor, the combination with the casing having internal circular bearings, the crank-shaft journaled in the walls of the said casing and carrying within the same a series of large circular disks which fit said bearings and which carry equally distant cranks, the cylinder-case having as many independent cylinder-chambers as there are cranks in the said shaft, and opposite the same, said chambers having each an induct and an educt port, the elongated reciprocative open-ended cylinder-pistons, having each an elongated, induct and educt port communicating with the open chamber thereof and adapted to be brought into and out of register with the corresponding ports of the cylinder by a rotary movement of the piston, said pistons also having each a foot which impinges against one of the said cranks, together with means for partially rotating said cranks, together with means for partially rotating said pistons as they are reciprocated, substantially as specified.

4. In a motor, the combination of the casing A, having the internal bearings, the crank-shaft, the cylinder-case having as many independent cylinder-chambers as there are cranks in the said shaft, and having also induct and exhaust chambers connected with suitable conduits and also each connected with each of the said cylinder-chambers, the elongated cylinder-pistons, having the open chambers therein, and induct and exhaust ports through the lateral walls of said chambers, and also having each a foot arranged to impinge upon the cranks of the said shaft, together with means whereby said pistons are partially rotated as they are reciprocated to properly operate the induct and exhaust ports, substantially as specified.

5. In a motor, the combination with the series of cylinders, the series of chambered, reciprocative cylinder-pistons, provided with laterally-extending feet, and the crank-shaft having cranks upon which said feet impinge, said cylinders and pistons having suitable induct and exhaust ports, of the casing in which said shaft is journaled, said casing having therein two series of oppositely-inclined cam-surfaces upon which said feet impinge during portions of their strokes, substantially as specified.

569,547. RACK FOR PRESSES. JEROME E. DAVIS, Oak Park, Ill. Filed Nov. 25, 1895. Serial No. 570,056. (No model.)



Claim.—1. A rack for presses comprising in combination, wooden bars sheathed with metal strips on their inner or facing surfaces; such metal strips having lugs struck from their substance projecting from their faces forming apertures through the metal strips; the nails which secure the parts together being driven through the wooden bars and passing the metal strips at such apertures substantially as set forth.

2. A rack for presses comprising in combination two transverse series of wooden bars; metal strips with which the bars respectively are armored at their inner faces; said metal strips having tangs struck from their substance projecting from their faces forming apertures in the strips; said tangs being driven into the wooden bars, the two series of armored bars being assembled with the apertures of one series registering with the apertures of the other series at their intersections, and nails or staples which secure said series together driven through the wooden bars at such registering apertures in the metal strips.

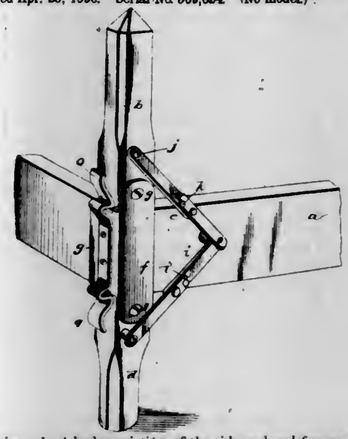
3. A rack for presses comprising wooden bars arranged in two transverse series, in combination with metal strips with which such bars are armored on their faces; said bars having tangs struck from their substance and projecting from their faces; said tangs being adapted to penetrate the wooden bars respectively and thereby to indicate the location of the apertures formed in the metal strips by striking up such tangs, and the staples or nails which secure the parts together driven through the wooden bars at the location of said apertures.

4. A rack for presses comprising in combination wooden bars sheathed with metal strips on their inner faces, such strips having lugs struck from their substance projecting from their faces; apertures in the strips adjacent to the lugs; the strips being assembled with the lugs of each series projecting toward the transverse series and into the apertures thereof, whereby the metal bars of each series are laterally stopped on the transverse metal bars respectively.

5. A rack for presses in combination, wooden bars arranged in two transverse series and metal strips which sheath the inner faces of such bars; the metal strips having tangs struck from their substance and projecting from their faces and apertures adjacent to the roots of such tangs; the strips being assembled with the tangs of each series of metal bars projecting toward the transverse series and into the apertures thereof, thence into the opposite wooden bars, whereby the tangs of each metal strip secure it to the transverse wooden bar and stop it laterally on the transverse metal bar and the two transverse series of bars are secured together at their intersections by the lap of the metal bars.

6. A rack for presses comprising bars faced with metal as described, the tangs struck from the metal bars at the intersections being made from the lap metal and folded up away from each other.

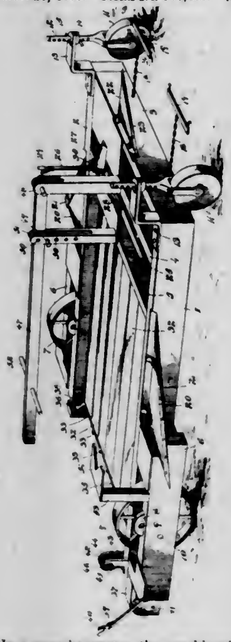
569,548. FOLDING BEDSTEAD. JOHN R. DEINER, Pottsville, Pa. Filed Apr. 25, 1896. Serial No. 589,024. (No model.)



Claim.—1. A bed consisting of the side and end frames, the plate secured to the corners thereof, the head and foot sections, the legs pivoted thereon, a series of links connected to said sections and to the legs, and a spring-bar engaging said sections and legs, for the purpose set forth.

2. A bed consisting of the side and end frames, the plates secured to the corners thereof, said plates extending above and below the frame and having pivotal journals on their ends on which the head and foot sections are carried, the legs pivoted thereon and a series of links connected to the head and foot sections and the legs having the pivotal connections, for the purpose set forth.

569,549. CORN-HARVESTER. CHARLES E. DETLING, Ansonia, Ohio. Filed Nov. 29, 1895. Serial No. 570,485. (No model.)



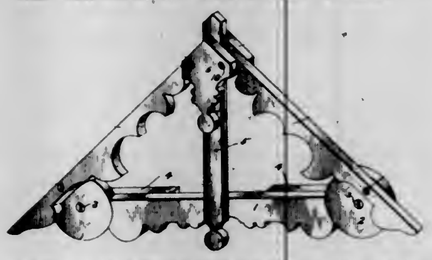
Claim.—1. In a corn-harvester, the combination of longitudinal beams, slats extending parallel with the beams and forming a platform between them, means connected with the front ends of the slats for simultaneously turning them either into a vertical or horizontal position, a bar for supporting the rear ends of the slats and having crank-arms at its ends, one of the crank-arms being held in a notch in a longitudinal beam, and a block forming a bearing for the other crank-arm and journaled to the opposite longitudinal beam, whereby

the supporting-bar can turn upon its crank-arms to free the rear ends of the slats and can move with the said block to a vertical position, substantially as and for the purpose set forth.

2. In a corn-harvester, the combination with a series of slats forming a platform, and means for turning the slats into a horizontal or a vertical position, of a supporting-bar for sustaining the slats at one end and having crank-terminals, a block forming a bearing for one of the crank-terminals, and a lever secured to the terminal of the supporting bar journaled in the block, and having a hand-latch to engage with a toothed segment to secure the supporting-bar in the located position, substantially as set forth.

3. In a corn-harvester, the combination with longitudinal beams, slats forming a platform between the beams, and means connected with the front ends of the slats to turn them into a horizontal or a vertical position, of a supporting-bar having crank-arms at its ends and adapted to engage with the rear ends of the slats, one of the crank-arms entering a notch in a longitudinal beam, a block journaled to the opposite longitudinal beam and receiving the other crank-arm, a lever secured to the latter crank-arm and having a hand-latch to engage with a notched segment of the block, a drum, and a chain or cable connecting the drum with the block for turning the supporting-bar into a vertical position, substantially as and for the purpose set forth.

569,550. GABLE ORNAMENT. THOMAS L. DILLON, Nashville, Tenn. Filed June 25, 1896. Serial No. 596,196. (No model.)



Claim.—1. An adjustable gable ornament having a base-bar, a central upright, a center block or ornament mounted to slide upon the upright, and side bars pivotally connected to said center block or ornament and loosely connected with the base-bar contiguous to its extremities, substantially as specified.

2. An adjustable gable ornament having a base-bar, a central upright, a center block or ornament mounted to slide upon the upright, side bars pivotally connected to the center block or ornament, and adjustable corner blocks mounted upon the base-bar and pivotally connected with the lower extremities of the side bars to provide for the lateral expansion and contraction of the ornament, substantially as specified.

3. An adjustable gable ornament having a base bar, rotary corner blocks or disks mounted upon the base-bar, a central upright, a center block or ornament mounted to slide upon the upright, and side bars pivotally connected at their upper extremities to the center block or ornament and at their lower extremities to the corner blocks or disks, substantially as specified.

4. An adjustable gable ornament having a base-bar carrying terminal rotary corner blocks or disks, a central upright provided in its rear side with a channel or groove, a center block or ornament having a rear plate carrying a slide to operate in said channel or groove, and side bars pivotally connected at their upper and lower extremities, respectively, to the center block or ornament and the corner blocks or disks, substantially as specified.

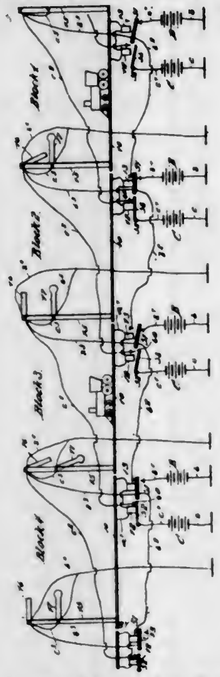
569,551. BLOCK-SIGNAL SYSTEM. JOSEPH E. DONBAVAND, Millville, N. J. Filed Nov. 23, 1894. Serial No. 529,716. (No model.)

Claim.—1. The combination, with the signal-post, of the semaphore-arm having a knife-edge bearing thereon, a toothed segment connected with the arm to swing it to "danger," and operating mechanism geared to the segment, substantially as described.

2. The combination, with the signal-arm, the segmental gear connected thereto, the motor having a gear-and-screw connection with the segmental gear, means for breaking the gear connection between the motor and segmental gear, and a stop to limit the movement of the segmental gear and arm, substantially as described.

3. The combination, with the signal-arm and the segmental gear secured to the arm, of the motor beneath the segmental gear, the screw geared to the motor and held to engage the segmental gear, and electrically-operated mechanism for raising and lowering the screw, substantially as described.

4. The combination, with the signal-arm, the segmental gear connected thereto, the motor geared to the segmental gear, a second motor and a signal-arm operated by the second motor, and a switch operated by the movement of the first segmental gear to switch the current through the second motor, substantially as described.



5. The combination, with the signal-arm, the segmental gear for turning it and the motor operatively connected with the gear, of a second arm and motor, a switch comprising separable conducting-arms adapted when connected to close the circuit through the second motor, and means for pressing the arms together by the movement of the segmental gear, substantially as described

6. The combination, with the signal-arm, the segmental gear connected with the arm, the screw movable into and out of engagement with the gear, the curved rib on the gear, and the pawl movable with the screw and adapted to engage the rib, substantially as described.

7. The combination, of a signal-arm, gearing connected to and adapted to operate the arm, a sliding contact-block on the track, a lever connected to the contact-block, and a rod connected to the lever and having a slotted connection with the signal-arm, substantially as set forth.

8. In a block-signal system, the combination, of a signal, a motor, gearing for operating the signal from the motor, an electric circuit including a generator, means actuated by a passing train for controlling said circuit, and means actuated by the breaking of the circuit for maintaining said gearing out of operation until the signal has returned to its normal position, substantially as specified.

9. The combination of a support, a signal mounted thereon and having a shaft, a gear on said shaft, a screw-shaft pivoted adjacent to said gear with its screw meshing therewith, a motor geared to the screw-shaft, an electromagnet having an armature connected to the screw-shaft and adapted when attracted to said magnet to hold the screw-shaft in engagement with said gear, and means for actuating said motor and electromagnet, substantially as set forth.

10. The combination of a support having a bearing, a signal-arm having a flattened shaft mounted to rock in said bearing, a gear secured to said shaft, a screw-shaft pivotally mounted adjacent to said gear and meshing therewith, a motor adapted to drive said screw-shaft, an electromagnet having an armature connected to the screw-shaft and adapted when attracted to said magnet to hold the screw-shaft and gear in engagement, and means for actuating said motor and electromagnet, substantially as set forth.

11. The combination of a support, a signal thereon, a motor for actuating the signal, gearing between the motor and the signal and comprising two members, one of which is movable, a signal-circuit including the said motor and also an electromagnet, an armature operated by said magnet and connected to and adapted to operate the movable member of the gearing, and a switch controlled by the movement of the signal and arranged to throw the motor out of circuit when the signal moves to "safety," substantially as set forth.

12. A block-signal system, comprising a series of blocks, one of which has a siding, track-circuits for the blocks each having a relay, signal-circuits controlled by the relay of the block having the siding, signaling mechanism for the block having the siding and adapted to be set to signal to trains passing in opposite directions, said signaling mechanism being controlled by the respective signal-circuits of the block having the siding, and a switch located on the block having the siding and adapted to control the respective signal-circuits, substantially as set forth.

13. A block-signal system having blocks, each having a track-circuit extending along it and having a generator at one end of the block, the track-rails forming the conductors of said track-circuit, and being connected at the end of the block opposite to the generator, relays having their coils included in said track-circuit at different distances, respectively, from the generator and arranged to be successively short circuited by a train passing along said block from the end opposite the generator toward said generator and to be simultaneously short-circuited by a train passing along said block in the opposite direction, and signaling mechanism having circuits controlled by the respective relays, substantially as set forth.

14. A block-signal system having blocks each having a track-circuit extending along it and including a generator at one end of the block, and having a relay adjacent to the end of the block opposite the generator and a second intermediate relay between said first-mentioned relay and the generator, said relays being arranged to be successively short-circuited by a train passing along the block, signaling mechanism, and signal-circuits for said signaling mechanism including generators, each such signal-circuit extending from and controlled by the relay at the end of one block, to and being also controlled by the similar relay of the next block, and thence to and being also controlled by the intermediate relay of the next succeeding block, substantially as set forth.

15. A block-signal system having blocks each having a track-circuit extending along it and including a generator at one end of the block, a relay adjacent to the end of the block opposite to said generator and a second intermediate relay between the first-mentioned relay and the generator, said relays being arranged to be successively short-circuited by a train passing along the block, signaling mechanism and signal-circuits therefor including generators, each such signal-circuit extending from and controlled by the relay at the end of one block, to and being also controlled by the intermediate relay of an adjacent block, substantially as set forth.

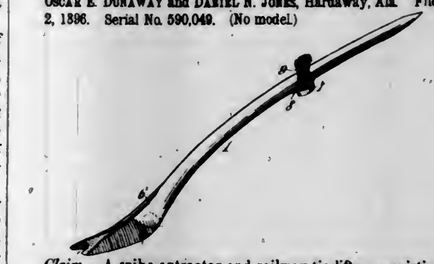
16. A block-signal system having blocks each having a track circuit extending along it and including a generator at one end of the block, a relay adjacent to the end of the block opposite the generator and two intermediate relays at different points, between the first-mentioned relay and the generator, said relays being arranged to be successively short-circuited by a train passing along the track, main signaling mechanism having signal-circuits each extending from and controlled by the relay at the end of one block to and being also controlled by one of the intermediate relays of an adjacent block, and auxiliary signaling mechanism having auxiliary signal-circuits each controlled by the main signaling mechanism of one block and extending to and controlled by the other intermediate relay of the same block, substantially as set forth.

17. The combination of a support, a signal thereon, a motor for actuating the signal, gearing between the motor and signal and comprising two members, one of which is movable, a signal-circuit including said motor and also an electromagnet and an armature operated by said magnet and connected to and adapted to actuate the movable member of the gearing and means for throwing said motor out of operation while maintaining the signal-circuit closed, substantially as set forth.

18. The combination, of a support, a signal thereon, a motor to actuate the signal, gearing between the motor and signal and comprising two members, one of which is movable, a signal-circuit including said motor and also an electromagnet and an armature operated by said magnet and connected to and adapted to actuate the movable member of the gearing, and means actuated from said signal for throwing the motor out of operation while maintaining the signal-circuit closed, substantially as set forth.

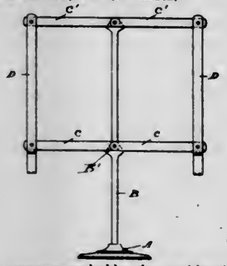
19. A block system, having blocks each provided with two sets of signaling mechanism for trains passing in opposite directions along the block, a signal-circuit for each signaling mechanism on each block, the signal-circuits having their ends overlapped, and a track-circuit on each block having a generator at one end of the block and relays located along said block at different distances from the generator and adapted to be successively short-circuited through the axles of a train passing along the block, said relays being arranged to control the respective signal-circuits of the blocks wherein they are located, substantially as set forth.

569,552. SPIKE-EXTRACTOR AND RAILWAY-TIE LIFTER. OSCAR E. DUNAWAY and DANIEL N. JONES, Hardaway, Ala. Filed May 2, 1896. Serial No. 590,049. (No model.)



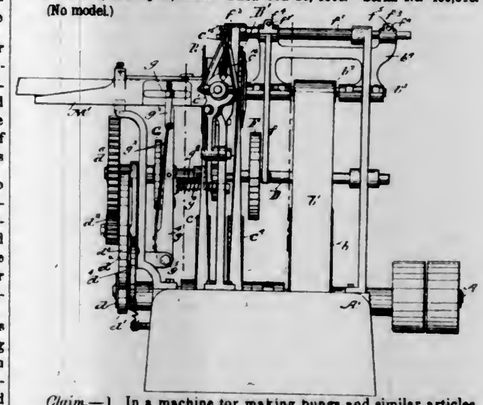
Claim.—A spike-extractor and railway-tie lifter, consisting of a curved shank having at one end a foot-piece constructed with a claw and a broadened or widened base-surface or tread, at the other end a sharp, penetrating point, and intermediate the ends, in juxtaposition to the penetrating point, a cross-arm which constitutes a foot-rest for the workman to hold the shank depressed while spiking the rail to the tie, substantially as and for the purposes described.

569,553. NEWSPAPER-HOLDER. CARLOS E. DURRHER, Chicago, Ill., assignor of one-half to William C. Streabell, same place. Filed May 26, 1896. Serial No. 593,198. (No model.)



Claim.—In a newspaper-holder the combination of a metal base, to the center of which is securely fastened an upright metal post, the said post being slightly bent away from a vertical line at a point above the base, and shaped to form a square shoulder B' on which one end of each of the metal stripes C C rests, the metal stripes C C and C' C' each being riveted at one end to the said post and at the other end to the upright metal strips D D, thereby forming a square frame, and the said strips D D being bent into hooks at the bottom, substantially as described and for the purpose set forth.

569,554. MACHINE FOR MAKING BUNGS, &c. EDWARD E. ELDER, Lynn, Mass., assignor to the Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Filed Oct. 26, 1891. Serial No. 409,818. (No model.)



Claim.—1. In a machine for making bungs and similar articles, the combination with a stationary raceway to receive a blank-strip: of a revoluble cutter which is movable either to the right or to the left transversely of the raceway, to sever a blank from the blank-strip; a rotary traveling chuck, coincident with the raceway, and receiving actuation from the main shaft of the machine, to receive

the blank; and a revoluble edge-finishing device, concentric with the revoluble cutter, and similarly actuated, to act upon the bung-blank held by the chuck.

2. In a machine for making bungs and similar articles, the combination of parallel raceways, each having longitudinal recess *h* and transverse recess *m*, extending across the raceway, as shown; a rotary cutter arranged intermediately and transversely of the raceways and movable edgewise into and out from the same; a rotary traveling chuck, to receive the bung-blanks directly from the raceway; and revoluble edge-finishing devices which are mounted in advance of the feedways, and in planes parallel with the rotary cutter; substantially as described.

3. In a machine for making bungs and similar articles, the combination of a stationary raceway which has a recess or way *h*, for a blank-strip or for a severed blank, and which has also a transverse recess *m*, and a front section or space which is adapted to receive a single blank; a rotary traveling chuck or blank-holder, coincident with the raceway; a revoluble shaft which is mounted upon a traveling support, and which is provided with a blank-severing cutter which is adapted to be engaged with the raceway, and which is provided also with rotary side or edge shaping devices; substantially as specified.

4. In a machine for making bungs, and similar articles, the combination of a stationary raceway which has a recess or way *h*, for a blank-strip or for a blank, and which has also a transverse recess *m*, for the operation of a cutter; a revoluble shaft, which is mounted upon a traveling support, which is provided with a blank-severing cutter which is adapted to the transverse recess in the raceway, and which is provided also with adjustable edge-shaping devices which are of dissimilar dimensions, as shown, so that various degrees of bevel or inclination may be formed upon the side or edge of the bung; substantially as specified.

5. In a machine for making bungs and similar articles, the ways M and M'; and the chucks or blank-holders C, and C', upon the shafts *c'*, *c²*; combined with the blank-cutter or saw B, and the edge-finishing saws B', upon the shaft b^2; substantially as and for the purposes set forth.

6. The combination in a machine for making bungs and similar articles, of a raceway the inner end of which is somewhat out of line with the main portion thereof, thereby providing the stop m^{30}; a stop m^4, at the end of the raceway; and a transferrer m^2, to move a blank from the first section of the raceway to the second; a cutter to sever the strip into blanks, movable transversely of the raceway, in front of said transferrer; edge-forming devices; and a chuck or blank-holder for engaging the blank while it is held in the offset section of the raceway, and presenting it to the action of edge-forming devices; as and for the purposes described.

7. The combination of the race or feed way of the machine; the movable blank-edge-forming devices, and the blank rotating and presenting chuck or holder, comprising the end face or stock c^7, its sliding head c^8, the face-plate c^9, the sliding rotary spindle or shaft *c'*, the lever c^{10} pivoted as described, and connected with the sliding spindle *c'*; and a rod c^{20}, extending to the slide-block c^8; the spring c^{21}; and the cam to act against the arm c^{12} of the lever; as and for the purposes described.

8. In a machine for making bungs and similar articles, the combination with the reciprocating rotary edge-shaper; of the end plates or sections of oppositely-placed blank-holders or chucks; the face-plates of such holders or chucks; and means, embracing band-wheels *c* and c^4, belt c^3, and pulleys c^5, c^6, for imparting motion to the chucks.

9. The combination of the raceway M, M', having end offset, stops, and blank-transferrer, as specified; with the blank grasping, rotating and reciprocating chuck; the reciprocating severing-saw; and the edge-shaping devices; substantially as and for the purposes described.

10. In a machine for making bungs and similar articles, the combination of the shaft A, supported in the frame A', and provided with drums or band-wheels *b* and *c*; the shaft b^3, mounted in the oscillating hanger b^4, carrying the blank-cutter B, and the edge-trimmers B', and provided with pulley b^5; the shafts *c'*, *c²*, carrying the chucks C and C', and each provided with pulley c^5; the raceway M, M', having end offset, stops, and blank-transferrer, as described, and the belts *b'* and c^3, transferring motion, respectively, from the main shaft to the shafts b^3 and *c'*.

11. In a machine for making bungs and similar articles the combination of the shaft A, having band-wheels *b* and *c*; the shaft b^3, mounted in the oscillating hanger b^4, carrying the blank-cutter B, and the edge-trimmers B', and provided with pulley b^5; the shafts *c'*, *c²*, carrying the chucks C, C', and each provided with pulley c^5; the belts *b'* and c^3, transferring motion from the main shaft to the shafts b^3 and *c'*; the raceway M, M', having end offset, stops, and blank-transferrer, as set forth; and the cam-shaft D, receiving power from the shaft A, and provided with cams H, H', to cause reciprocation of the cutter, and of the edge trimmers; to act upon the chuck, and permit it to be moved by an actuating-spring; and to actuate the strip from which the blanks are cut; substantially as and for the purposes specified.

12. The combination in a machine for making bungs and similar articles, of the main shaft, the rotary reciprocating chuck; the blank severing and shaping devices, positively rotated from the main shaft, and the blank-strip feed, the chuck closing and traveling mechanism, and the cutting and trimming and traveling mechanism, actuated by cams upon a separate shaft; both the severing devices and the trimming devices being mounted in a vertical plane, and a frictional connection between the main shaft and the cam-shaft; as and for the purposes described.

13. The combination in a machine for making bungs and the like, of two raceways or feedways; a strip-feeding mechanism for each feedway; a rotary blank receiving and transferring chuck or blank-holder, at the end of each feedway; and an intermediate traveling or reciprocating hanger or carriage, a saw or cutter mounted thereon, and an edge shaping or trimming device, also mounted thereon; the said cutter and shaping devices being alternately moved into operative relation with the two chucks; whereby blanks are alternately cut, and formed, by the same cutting and forming instrumentalities, during each movement thereof; as and for the purposes described.

14. In a machine for making bungs and similar articles, the combination of two parallel, horizontal feedways; a rotary blank holding and presenting chuck, at the end of each feedway; the shafts of the chucks being oppositely arranged, and nearly at a right angle with the feedways; and a single rotary, reciprocating, edge-shaping device, movable toward and from each chuck, as and for the purposes specified.

15. In a machine for making bungs and similar articles, the combination of two parallel, horizontal feedways; a rotary, reciprocating, blank-holding chuck, at the end of each feedway; and supported upon shafts which are arranged substantially at a right angle with the feedways, and a rotary, reciprocating, edge-shaping device, adapted, as described, to act upon and vary the configuration of the contact portion of the bung-blanks.

16. The combination in a machine for making bungs and similar articles, of two parallel open feedways; a rotary blank-edge-forming device; and the two rotary blank holding and presenting chucks, arranged with their faces opposite each other; the blank-holding chucks, and the blank-edge-forming device, being relatively movable, one in relation to the other, as described, whereby two previously-severed blanks are trimmed, in successive order, by the same edge-forming devices; as and for the purposes set forth.

17. The combination in a machine for making bungs and similar articles, of a reciprocating, rotary, blank-edge-trimming device; and two oppositely-placed rotary blank holding and presenting chucks, arranged face to face, as shown, and adapted to present the edges of the blanks to the action of the cutting or shaping mechanism, as it is moved past them alternately in either direction, and bearing a slight angular relation to the line of movement of the edge-trimming device; as and for the purposes described.

18. The combination in a machine for making bungs and similar articles, of the power-shaft A; the cam shaft D; and the intermediate connections, comprising a smooth-surfaced roll *d*, upon the power-shaft; a loose band *d'*, or equivalent friction device, about the same; the smooth-edged wheel d^3, to engage the roll *d*, or friction-surface thereon; the pinion d^2, actuated by the roll d^3; and the gear d^6, upon the shaft D; substantially as specified.

19. The combination of the main shaft A, having the roll *d*; the cam-shaft D, having the gear d^6; and the hanger d^4, suspended from the cam-shaft D, and carrying the wheel d^3, and pinion d^2, and the spring d^9; substantially as described.

20. The combination of the main shaft A, having the roll *d*; the cam-shaft D, having the gear d^6; the hanger d^4, suspended from the cam-shaft D, and carrying the wheel d^3 and pinion d^2, the spring d^9 and lifting-latch d^{10}, and the lever d^{11}, for moving the hanger, and therefore the wheel d^3, from engagement with the roll *d*, and holding it separated therefrom; substantially as described and shown.

21. The combination of the raceway, having the offset at its end, as specified; the transferrer m^2; and an automatic transferrer-lifter; substantially as described.

22. The combination in a machine for making bungs and similar articles, of the parallel, transversely rectangular raceways M and M', each provided with a lateral severing-recess *m*; a depending freely-oscillating vertically and transversely arranged revoluble severing-saw, between the two raceways, and in coincidence with the recess thereof; blank-holding chucks arranged at the end of the raceways, and at a right angle therewith; and vertically-arranged edge finishing devices, mounted upon the suspended shaft or journal of the revoluble severing-saw, in advance of the discharging ends of the raceways; substantially as and for the purposes set forth.

23. In a machine for making bungs and similar articles, the combination with two stationary raceways, arranged substantially parallel to each other; of a cut-off saw, arranged at a point between

the ends of the raceway; means for oscillating the cut-off so that it may act alternately upon the strips held by the respective raceways; a rotary blank-holding chuck, arranged at the inner end of each of the raceways, and with their longitudinal axes at an angle to the raceway; an edge-finishing device, located beyond the chucks; and means for oscillating said edge-finishing device, to bring it into engagement alternately with the blanks held by the respective chucks.

24. In a machine for making bungs and similar articles, the chuck-slide c^7, face-plate c^9 carried thereby; the rod c^{20}, its stops X, X^1, and the spring c^{21}; the lever c^{10}, and the face-plate c^9 and its shaft *c'*; all combined and arranged to operate substantially as and for the purposes described.

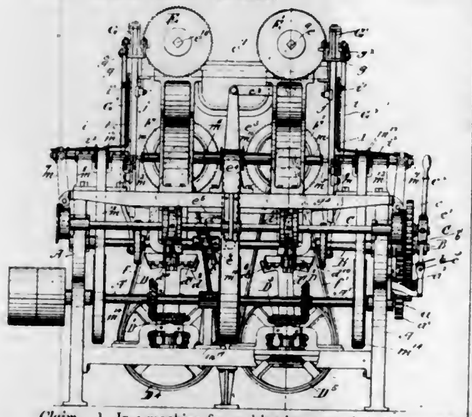
25. The combination of the depending, oscillatory edge-trimming devices, and the oppositely-placed chucks C and C', arranged nearly at a right angle with such trimming devices, and operatively connected with the described bent lever slide-rod, and related parts, whereby they are made adjustable in relation to such devices; substantially as and for the purposes described.

26. In a machine for making bungs and similar articles, the combination with the feedway or racewway of the machine, of the strip-engaging feed g^2, *g g'*; lever g^4; spring g^5, connecting the lever with the holder g^2; the cam G; and the steady-rod g^6, carrying the returning-spring g^8.

27. In a machine for making bungs and similar articles, the combination of the described raceway, having the depression, lower section, or offset *m'*, at its end, as specified; the transferrer m^2, for moving the severed blanks into the lower section or offset portion of the ways; and the automatic transferrer-lifter or incline *o'*; substantially as set forth.

28. The combination with the rotary reciprocating shaft *c'*, and its chuck C or C', having head stock c^8; of the tail-stock or face-plate c^9, carried by the block c^8, and adapted to be rotated therein; substantially as described.

569,555. MACHINE FOR MAKING BUNGS, &c. EDWARD E. ELDER and EUGENE H. TAYLOR, Lynn, Mass., assignors to the Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Filed Oct. 26, 1891. Serial No. 409,815. (No model.)



Claim.—1. In a machine for making bungs, and similar articles, the combination of the main or actuating shaft A', of the machine; the blank severing saws E and E', connected with and operated by such shaft; mechanism, substantially as specified, for moving the saw-carriage and saws forward and backward in relation to the bung-strip feedway of the machine; a clutch for connecting such mechanism to, and disconnecting it from the main shaft; and the saws F and F', connected for rotation, as set forth, with the main shaft A'; substantially as and for the purposes described.

2. The combination in a machine for making bungs and similar articles, comprising a common main or power shaft, of the described duplex instrumentalities, the cam-shafts B and C, and clutches for independently connecting them with and disconnecting them from the main shaft of the machine; the strip-feedways G and G'; the blank-severing saws E and E', connected with the main shaft of the machine for continuous rotation; the carriage c^7, upon which the saws E and E' are mounted; a reciprocating strip-feeder for each of the feedways G, G'; a cam upon the cam-shaft B, connected with the carriage c^7, as described, to reciprocate it and its saws; a separate cam g^4, for independently actuating its respective blank-strip feed, mounted upon such shaft; the edge-shaping devices E, E', and the chucks or blank-holders, connected with the main shaft, to be continuously rotated; a separate carriage for each edge-shaping device or bung-former; cams upon the cam-shaft C, connected with such separate carriages, for their reciprocation; and separate chuck-actuators, and separate cams upon the shaft C, for actuating them, or permitting them to be operated by springs; as and for the purposes set forth.

3. The combination in a machine for making bungs and the like, of a feedway along which a blank-forming strip is fed; a stop, at the end of such feedway; an opening across the feedway, in front of the stop; a reciprocating severing device, for cutting the strips into blanks; an ejector which is moved by such severing devices into contact with the side of the blank-strip; and a spring which is compressed by such movement, and thereby adapted to actuate the ejector to force the waste end of a blank-strip through such opening, when the waste end is smaller than the opening; substantially as and for the purposes described.

4. The combination in a machine for making bungs, and the like, of the blank-strip feedway; a stop, at the end of the feedway; an opening across the feedway, in front of the stop, through which the waste end of a strip is adapted to be ejected; an adjustable gate or plate for varying the size of the opening; and an ejector to remove the waste end of a strip from the feedway, automatically, when it is of less size than such cross-opening; as and for the purpose set forth.

5. The combination in a machine for making bungs and similar articles, of the described feedway; a stop, at the end of the feedway, against which the strip is fed; an opening through the sides of such feedway, near its inner end; a reciprocating cutter, to cross such feedway; and an ejector H, which is held at the end of a flexible arm, and which is connected with the carriage which carries the cutter, by a rod, substantially as specified, and a spring h^4; as and for the purpose described.

6. The combination in a machine for making bungs and the like, of the strip-feedway of the machine; the reciprocating draw-dog g^{16}; the reciprocating yielding draw-roll support g^{13}; and the roll g^{15}, eccentrically mounted in said arm; and its actuating-spring g^{12}; as and for the purpose described.

7. The combination in a machine for making bungs and the like; of the described strip-feedway; a stop, at the end of the feedway; the strip-drawers; the strip-detent and strip-holder; the adjustable plate g^{13}; the ejector H; and the blank-severing saw; substantially as described.

8. The combination of the main shaft of the machine; the cam-shafts C and B, and the train of gears connecting the same, comprising the pinion *a*, the intermediate gear *a'* and pinion a^2, the loose gear *b* on the shaft B, and the loose gear *c* upon the shaft C, each of which carries a member of a clutch, and a fast member of a clutch upon each shaft B, C, and a handle or lever for moving it into engagement with its rotary member; as and for the purposes specified.

9. The combination of the blank-strip feedway; the spring-arm *h*, secured by one extremity to the body of such feedway; the ejector-block H, upon the free end of the spring arm *h*; and the rod *h'*, pivoted to the ejector-block, connected with the slide or carriage, and encircled by the actuating-spring h^4; substantially as shown and described, and for the purposes specified.

10. The combination of the power-shaft A', carrying gear-wheels as described; the short shaft d^5, and its gear-wheels; the horizontal shaft *d*, having inner terminal gear-wheel, and band-wheel, and carrying the adjustable carriage *d'* and swinging frame D^4; the horizontal shaft d^3, carrying trimming-saw and band-wheel, and supported by the shaft *d*, and the frame D^4; and a connecting band or belt upon the two band-wheels; substantially as specified.

11. The combination of the rotary bung-edge-shaping device; its shaft d^3, and adjustable frame D^4, with the sector-gear d^8, attached to the frame; the sector-gear d^9, at the end of the lever d^{10}, to engage the sector-gear d^8; and the cam d^{12}, upon the shaft C; substantially as described.

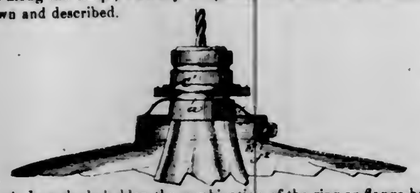
569,556. SHADE-HOLDER FOR INCANDESCENT-LAMP SOCKETS. MORRIS D. GREENGARD, St. Louis, Mo. Filed Jan. 20, 1896. Serial No. 576,200. (No model.)

Claim.—1. A shade-holder, comprising the ring or flange provided with clasps extended longitudinally in the direction of the circumference of the ring, and slides for operating said clasps, such slides being movable along both the ring and the clasps, whereby to operate the latter, substantially as shown and described.

2. A shade-holder, comprising a ring provided with circumferentially-extended spring-clasps, and slides movable independently of said ring and clasps, whereby they may move along both ring and clasp to operate the latter, substantially as shown and described.

3. The shade-holder herein described, consisting of the cylindrical ring or flange having the circumferentially-extended clasps having their main portions movable into and out of the line of the ring and provided at their free ends with approximately radial portions, and the slides held to and movable along the ring or flange and also mov-

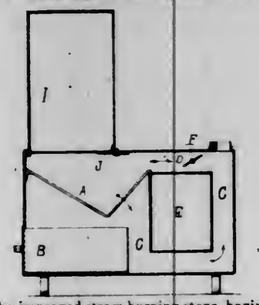
able along the clasps, whereby to operate the latter, substantially as shown and described.



4. In a shade-holder, the combination of the ring or flange having the clasps separated at their side edges from said ring or flange and the adjusting-slides having each a body portion extending above the shank of the clasp, flange portions f^2 which project alongside the said shank into the ring and thence outwardly along the inner side of the ring, whereby they are held to the ring over the clasp and are movable longitudinally along both such parts, substantially as shown and described.

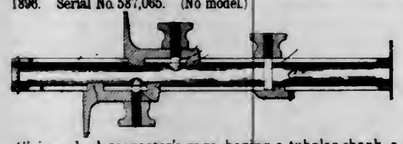
5. The combination with the lamp-socket having a shoulder of the holder having arms provided at their free end with bearing portions and the ring fitted on the socket above the shoulder and having cams engaging the said bearing portions substantially as shown and described.

569,557. STRAW-BURNING STOVE. Walter P. Hitchings, Wanbay, S. D. Filed Aug. 26, 1895. Serial No. 560,611. (No model.)



Claim.—The improved straw-burning stove, having an oven, and a flue passing in front of and beneath it, as shown, and the fire-pot composed of angular bars, arranged partly beneath the feeder and partly beneath the griddle-holes, the inclined rear side of the fire-pot being separated from the oven-wall and arranged over the entrance of the base flue C, as shown and described, for the purposes specified.

569,558. CARPENTER'S GAGE. Louis Joncas, Salem, Mass., assignor of one-half to Francois H. Genereux, same place. Filed Apr. 11, 1896. Serial No. 587,065. (No model.)

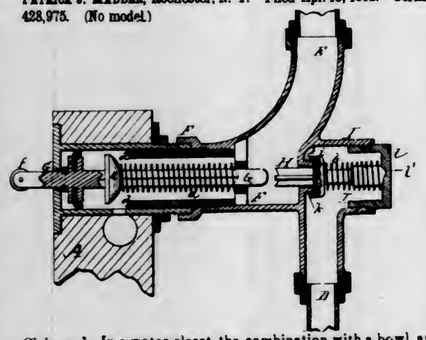


Claim.—1. A carpenter's gage, having a tubular shank, a closed slot being provided in one side of said shank, said slot having an enlargement at one end thereof, a fixed marker in the shank, and a movable head to cooperate with said marker, said head having an extended base to slide on the outside of the said shank, a guide-lug projecting from the base to travel in the slot, and a screw and thumb-nut, the head of the former passing through the slot and engaging the edges thereof inside the shank for clamping the movable head in desired adjustment, said screw-head being capable of removal through said enlargement, substantially as described.

2. A carpenter's gage, comprising a tubular shank, closed slots therein on opposite sides, one of said slots having an enlargement at one end thereof, fixed markers on opposite sides of said shank and movable heads to cooperate with said markers, said heads each having an extended base to slide on the outside of the said shank and a screw and thumb-nut, the head of the former passing through the adjacent slot and engaging the edges thereof inside the shank for clamping its head in desired adjustment, the said screw-heads being capable of removal through said enlargement, substantially as described.

3. A carpenter's gage, having a tubular shank, said shank being elliptical in cross-section, a closed slot being longitudinally provided in one broad side of said shank and having an enlargement at one end thereof, a suitable marker and a head cooperating therewith, said head having an extended base to slide on the outside of the said shank, and a screw and thumb-nut, the head of the former passing through the slot and engaging the edges thereof inside the shank for clamping the head in desired adjustment, said screw-head being capable of removal through said enlargement, substantially as described.

569,559. FLUSHING ATTACHMENT FOR WATER-CLOSETS. Patrick J. Madden, Rochester, N. Y. Filed Apr. 13, 1892. Serial No. 428,975. (No model.)



Claim.—1. In a water-closet, the combination with a bowl, and a water-supply pipe having a branch communicating therewith, of a valve and valve-seat located in said branch and being relatively adjustable for the purpose of regulating the flow of water past them, a hinged seat, and connections between said hinged seat and valve, whereby movement of the seat is transmitted to the valve, said connections being adjustable substantially as and for the purpose set forth.

2. In a water-closet, the combination with a bowl, an air-tight flushing-tank into which water is forced under pressure, a pipe for conveying water from the tank to the bowl, and a relatively-adjustable valve and valve-seat arranged in said pipe, of a hinged seat and connections between said hinged seat and valve, said connections being adjustable, substantially as set forth.

3. In a water-closet, the combination with a bowl, a water-supply pipe communicating therewith, a disk-valve for controlling the flow of water through said pipe, and a hinged seat, of connections between the hinged seat and valve, said connections including the pivoted arm g having a lateral extension p and a set-screw engaging said extension for the purpose of adjusting it, substantially as set forth.

4. In a water-closet, the combination with a tank, a bowl, and a valve-casing having a branch communicating with the water-supply pipe, a second branch communicating with the tank, a third horizontal branch communicating with the bowl, a perforated diaphragm located opposite this third branch and resulting in a chamber with which the branch first aforesaid communicates, and a screw-cap closing said chamber, of a valve located in said chamber, a spring holding said valve normally seated, a valve-seat and valve located in the third branch of the casing, a spring holding said valve normally unseated, a horizontal stem carrying said valve and projecting from the valve casing, a hinged seat, a projection carried by the hinged seat and projecting downward therefrom and adapted to engage said stem, and means for transmitting movement from the valve last aforesaid to the valve first aforesaid, substantially as set forth.

569,560. FLUSHING ATTACHMENT FOR WATER-CLOSETS. Patrick J. Madden, Rochester, N. Y. Filed Mar. 10, 1893. Serial No. 465,406. (No model.)

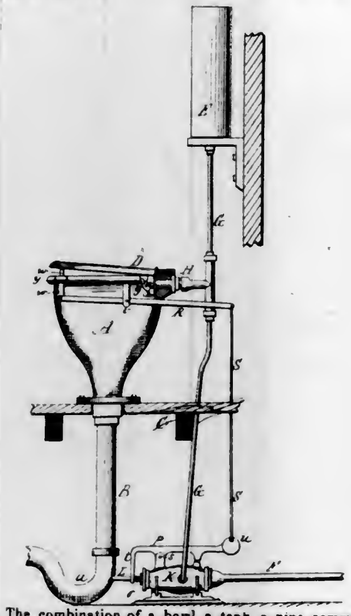
Claim.—1. The combination of a bowl, a tank, a pipe communicating with the tank and extending below the bowl, a water-supply pipe communicating with the tank-pipe below the bowl, a valve controlling communication between said pipes, a pipe for conveying the water from the tank to the bowl, a valve controlling the flow of water through said pipe, a drain communicating with the tank-pipe below the bowl, and means for unseating the valve that controls communication between the supply-pipe and tank-pipe and at the same time seating the valve that controls the flow of water to the bowl, and vice versa, substantially as set forth.

2. The combination of a bowl, a tank, a pipe communicating with the tank and extending below the bowl, a water-supply pipe communicating with the tank-pipe below the bowl, a valve controlling communication between said pipes, a pipe branching from the tank-pipe and communicating with the bowl, a valve controlling communication between the tank-pipe and drain, and means for unseating the valve that controls communication between the supply-pipe and tank-pipe and at the same time seating the valve that controls the flow of water to the bowl, and vice versa, substantially as set forth.

3. The combination of a bowl, a tank, a pipe communicating with the tank, and extending below the bowl, a water-supply pipe and drain communicating with the tank-pipe below the bowl, a valve controlling communication between the tank-pipe and supply-pipe and between the tank-pipe and drain, a pipe branching from the tank-pipe and communicating with the bowl, a valve controlling said branch pipe, and means for so operating the valve that the branch pipe is closed when the tank-pipe is in communication with the supply-pipe and open when the tank-pipe is in communication with the drain, substantially as set forth.

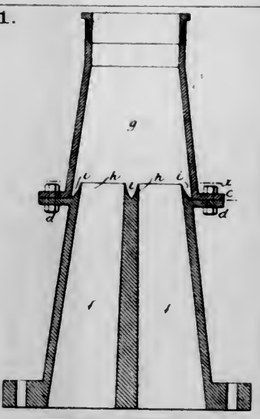
4. The combination of a bowl, a hinged seat, a tank, a pipe communicating with the tank and extending below the bowl, a water-supply pipe communicating with the tank-pipe below the bowl, a valve controlling communication between said pipes, a pipe branching from the tank-pipe and communicating with the bowl, a valve controlling communication between said branch and tank pipes, a drain communicating with the tank-pipe below the bowl, and connections between the hinged seat and both of the valves aforesaid, whereby the depressing of the seat closes the branch pipe and opens the supply-pipe, and the elevating of the seat permits a reversal of these conditions, substantially as set forth.

5. The combination of a bowl, a hinged seat, a tank, a pipe communicating with the tank and extending below the bowl, a water-supply pipe and drain communicating with the tank-pipe below the bowl, a valve controlling communication between the tank-pipe and supply-pipe, and between the tank-pipe and drain, a pipe branching from the tank-pipe and communicating with the bowl, a valve controlling communication between branch pipe and tank-pipe, and connections between the hinged seat and both of said valves, whereby the depressing of the seat closes communication between the tank-pipe and branch pipe, and between the tank-pipe and drain, and establishes communication between the tank-pipe and supply-pipe, and the elevating of the seat permits a reversal of these conditions, substantially as set forth.

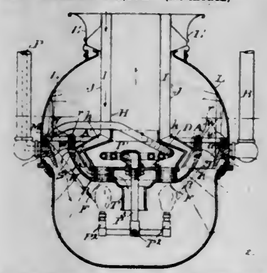


569,561. EXHAUST-NOZZLE. Cassius M. Marshall, Frankfort, Ind., assignor of one-half to Alfred N. Berry, same place. Filed Sept 23, 1895. Serial No. 563,432. (No model.)

Claim.—An exhaust-nozzle comprising two sections, the lower section having two tapering exhaust-passages the upper ends of which are provided with annular projections exteriorly tapered to bring said ends to an edge, and the upper section provided with the single tapering passage, the inner wall of said section extending beyond and below said projection and thereby providing upwardly-flared annular pockets, all as and for the purposes set forth.



569,562. GAS-LAMP. James F. McElroy, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Nov. 17, 1894. Serial No. 529,174. (No model.)



Claim.—1. In a lamp, an outer ring, an inner ring attached thereto, air-spaces between said rings, a lower globe hinged to said outer ring, a reflector and disk secured to said inner ring, a transparent material covering said air-spaces, and a burner and chimney, substantially as described and for the purpose set forth.

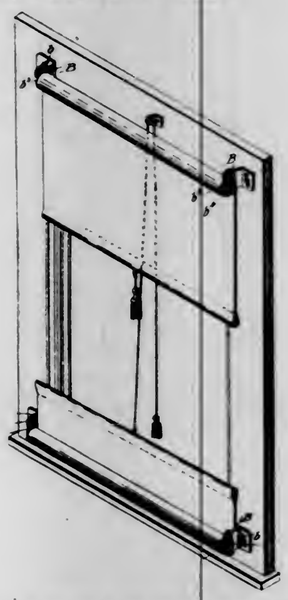
2. In a lamp, a reflector provided with openings immediately above the burner, a plate arranged above said reflector provided with openings registering with the openings in the reflector, of a coil of pipe adapted to carry gas to the burner placed above said plate, a transparent globe opening downward and surrounding said burners, arranged in such a manner that the dome of the lamp is illuminated, substantially as described and for the purpose set forth.

3. In a lamp, a reflector provided with a series of openings along its upper surface, a series of tubes extending upward from the lower surface of said reflector, a plate placed above said reflector, said reflector, plate and tubes joined together, a coil adapted to conduct gas to the burner, a lower chimney resting upon said plate and connected at its upper extremity with an upper chimney, said lower chimney provided with a series of metallic ribs, a dome, a globe around the burner, a mica ring between the dome and the globe of the lamp, substantially as described and for the purpose set forth.

4. In a lamp, the combination of a reflector, a gas-burner, a series of openings through the reflector corresponding to the number of burners, a coil of gas-pipe arranged above said reflector, with a lower chimney flaring outward about midway between its ends, connected at its upper extremity with the upper chimney, with an enveloping tube placed about said upper chimney so arranged that the air passing downward between the upper chimney and the enveloping tube shall come into contact with said lower chimney and be conducted to the burner, substantially as described and for the purpose set forth.

5. In a lamp, the combination of the burner and transparent globe placed about said burner, and a reflector placed above said burner and provided with chimney openings therethrough, means located in the line of draft above said openings for heating the gas, with communication therefrom to the burners, and means for heating the air used in combustion consisting of passage-ways formed around the chimney and in a chamber around the draft-holes in the reflector, openings leading therefrom interiorly with reference to the burners, and opening from said heating-chamber leading from the periphery of the reflector-plate exteriorly with reference to the burners, whereby the draft is equalized around the flame of the burners, substantially as described and for the purpose set forth.

569,563. CURTAIN-POLE BRACKET. GEORGE P. NEAL, Evansville, Ind., assignor of one-half to Joel P. Thurston, same place. Filed July 25, 1896. Serial No. 600,516. (No model.)



Claim.—1. A bracket for curtain-poles formed with an inclined slot in its base for the securing device, whereby it may be adjusted on said device in both vertical and transverse directions, substantially as set forth.

2. A bracket for supporting curtain-poles formed with a diagonal slot in its base and brads at one side thereof, substantially as set forth.

3. The combination of the bracket formed with a diagonal slot in its brace and brads on opposite sides thereof on the outer face, and a single screw mounted in said slot to secure said bracket in place, substantially as set forth.

4. The combination, with a curtain-pole, of a pair of brackets for supporting the same, each of which is formed with a diagonal slot in its base-plate, that in one extending in a direction opposite to the direction of that in the other, brads on opposite sides of said slots on the rear faces of said base-plates, and a single screw in each of said slots for securing said brackets in position, substantially as set forth.

5. A bracket for curtain-poles having a base-plate and supporting-arm, which base is formed with a diagonal slot and provided with securing devices, and which arm is formed with a T-shaped slot in its end, the vertical portion whereof extends substantially equal distances on each side of the entrance thereto, substantially as set forth.

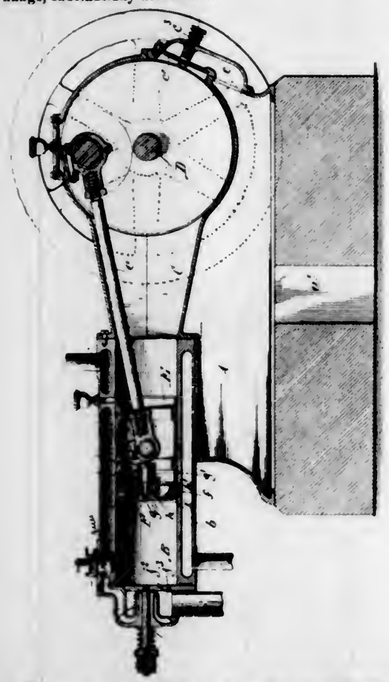
569,564. GAS-ENGINE. FRED C. OLIN, Buffalo, N. Y. Filed Aug. 7, 1894. Serial No. 519,628. (No model.)

Claim.—1. The combination with the cylinder provided with an exhaust-valve in its front end, of a piston arranged in the cylinder and provided with an air inlet valve, a fuel-port opening into the cylinder about midway of its length, a fuel-valve controlling the passage of fuel through said port and capable of being opened when the piston reaches about the middle of its backward stroke just before the piston covers the fuel-port and mechanism whereby the exhaust-valve is closed during the forward stroke of the piston, opened during about one-half of the backward stroke thereof and until after the fuel-valve has been opened and then closed during the remainder of the backward stroke of the piston, substantially as set forth.

2. The combination with the engine-cylinder and the hollow piston provided with a valve-seat, of a valve adapted to bear against said seat and provided with a marginal flange which projects rearwardly, substantially as set forth.

3. The combination with the engine-cylinder and the hollow piston provided with a valve-seat, of a valve adapted to bear against said seat and provided near its margin with a row of openings, substantially as set forth.

4. The combination with the engine-cylinder and the hollow piston provided with a valve-seat, of a valve adapted to bear against said seat, said valve being provided with a marginal rearwardly-projecting flange and an annular row of openings on the inner side of said flange, substantially as set forth.



5. The combination with the engine-cylinder and the hollow piston provided with a bridge or stop, of a valve adapted to bear against a seat on the piston, and provided with an internally-screw-threaded opening, a valve-stem guided in said bridge and having an external screw-thread at one end which engages with the threaded opening of the valve and a radial arm arranged on the valve-stem and adapted to strike said stop for holding the stem against turning, substantially as set forth.

6. The combination with the engine-cylinder and the hollow piston, of a bridge extending across the piston and provided with a pot or barrel, a valve adapted to bear against a seat formed on the piston, a stem supporting said valve and guided in said bridge and a plunger or dash secured to the stem and fitting into the pot or barrel, substantially as set forth.

7. The combination with the engine-cylinder and the exhaust-valve provided with a stem, of a rock-lever adapted to bear loosely against said stem for opening the valve, and a spring-arm provided at one end with a shoulder which is adapted to engage with the stem and hold the valve open, substantially as set forth.

8. The combination with the engine-cylinder and the exhaust-valve provided with a stem, of a rock-lever adapted to bear loosely against said stem for opening the valve, a spring-arm provided with a shoulder adapted to engage with said stem for holding the valve open, and an inclined lug formed on the rock-lever and adapted to engage with said spring-arm for throwing its shoulder out of engagement with the stem and permitting the valve to close, substantially as set forth.

9. The combination with the engine-cylinder and the exhaust-valve provided with a stem, of a rock-lever adapted to bear loosely against said stem for opening the valve, a spring-arm provided with a shoulder adapted to engage with said stem for holding the valve open, a block provided with an inclined face and adjustably secured to the under side of said spring-arm by a bolt passing through a slot in the spring-arm a lug arranged on the rock-lever and provided with an inclined face which is adapted to engage with the inclined block and throw the shoulder of the spring arm out of engagement with the stem, and a wedge for holding the shoulder of the spring-arm out of the path of the valve-stem, substantially as set forth.

10. The combination with the engine-cylinder and the shaft, of a pump-barrel having a delivery-pipe connected with the cylinder and a plunger, a support arranged on the shaft an eccentric-disk provided with an elongated opening which receives the shaft and with a slot on one side of the opening, a bolt arranged in said slot and adjustably securing the eccentric-disk to said support, and an eccentric-strap surrounding the eccentric-disk and connected with said plunger, substantially as set forth.

11. The combination with the engine-cylinder and the valve which controls the admission of fuel into the cylinder, of two movable slide-sections arranged end to end, and a trip device bearing against the slide-sections, the latter being adapted to abut against each other when moved in one direction and form a continuous bearing-surface for the trip device whereby the valve is held closed and to be separated when moved in the opposite direction thereby forming a gap or recess which releases the trip device and opens the valve, substantially as set forth.

12. The combination with the engine-cylinder and the valve which controls the admission of fuel into the cylinder, of a reciprocating actuating-rod, two slide-sections adapted to abut against each other to form a continuous bearing-surface or to separate to form a gap between the sections, one of the sections being rigidly connected with the actuating-rod, and the other section being loosely connected with the actuating-rod, and a trip device bearing against the slide-sections and connected with the valve, substantially as set forth.

13. The combination with the engine-cylinder and the fuel-controlling valve, of two slide-sections, one of which is provided with a tenon which is adapted to engage with a recess, in the other section and a trip device bearing against said slide-sections and connected with the valve, substantially as set forth.

14. The combination with the engine-cylinder, the fuel-controlling valve and the actuating-rod, of a fixed slide section connected at one end with the actuating-rod, a loose slide section adapted to bear with one end against the opposite end of the fixed section, a tappet secured to the actuating-rod and adapted to bear against the opposite end of the loose slide-section and a trip device bearing against said sections and connected with said valve, substantially as set forth.

15. The combination with the engine-cylinder and the fuel-controlling valve, of two slide sections adapted to abut against each other while moving in one direction and to separate while moving in the opposite direction and a trip-arm connected with said valve and provided with a trip-roller bearing against said slide-sections, substantially as set forth.

16. The combination with the engine-cylinder and the fuel-controlling valve, of a slide provided on one side with a flat bearing-face and a recess, and a trip device connected with said valve and adapted to engage with said face and recess, substantially as set forth.

17. The combination with the engine-cylinder and the fuel-controlling valve, of a slide provided on one side with a flat bearing-face and an inclined face at the end of the flat face, and a trip device connected with said valve and adapted to engage with the flat and inclined faces, substantially as set forth.

18. The combination with the engine-cylinder and the fuel-controlling valve, of a releasing-slide composed of two sections, a regulating-slide provided with a flat face and an inclined face, and a trip-arm connected with said valve and bearing against said releasing and regulating slides, substantially as set forth.

19. The combination with the engine-cylinder, of a valve casing having its outlet connected with said cylinder, a valve controlling the inlet of said casing, a valve-stem loosely connected with said valve and mechanism for shifting the valve-stem, substantially as set forth.

20. The combination with the engine-cylinder and the actuating-rod, of a valve-casing having its outlet connected with said cylinder, a valve controlling the inlet of the valve-casing, a valve-stem loosely connected with the valve, a slide having a movement with said rod, a trip-arm loosely connected with said stem and bearing against said slide, and a spring which tends to lift the valve-stem and release the valve, substantially as set forth.

21. The combination with the engine-cylinder, the fuel-controlling valve and the actuating-rod, of a slide controlling said valve, a collar secured to the actuating-rod and provided with a depending yoke, a governor-weight pivoted on said collar and provided with a shifting arm adapted to engage with said slide, a tension-rod secured at one end to said weight and provided at its opposite end with a screw-nut and a spring interposed between said screw-nut and said yoke, substantially as set forth.

22. The combination with the engine-cylinder, the fuel-controlling valve and the actuating-rod, of a slide controlling said valve, a governor-weight pivoted on said rod and provided with a shifting arm which engages with said slide, a stop adapted to limit the swinging movement of the weight in one direction, a spring secured to said weight and a stop adapted to bear against said spring and hold the weight against swinging in the opposite direction, substantially as set forth.

23. The combination with the engine-cylinder, of a contact-rod projecting into the cylinder and forming one terminal of an electric current, a rock-spindle provided within the cylinder with a contact-finger forming the other terminal of the electric current and adapted to engage with said rod, a spring whereby said spindle is turned for holding the finger against said rod, and a trip-arm secured to the outer end of said spindle and adapted to turn the spindle for moving the contact-finger away from the contact-rod, substantially as set forth.

24. The combination with the engine-cylinder, of a plug arranged in said cylinder and provided with a central opening and a screw-threaded opening, a screw-threaded contact-rod engaging with the threaded opening and forming one terminal of an electric current, a bearing-sleeve arranged in said central opening and provided with a flange inside of the cylinder and a screw-threaded portion outside of the cylinder, a screw-nut applied to the screw-threaded portion of the bearing-sleeve, said bearing-sleeve, flange, and screw-nut being insulated from the plug, a rock-spindle journaled in said bearing-sleeve and provided with a contact-finger forming the other terminal of said electric current, and adapted to bear against said contact-rod, a spring whereby the contact-finger is held against said rod and a trip-arm secured to the outer end of the spindle and adapted to move the contact-finger away from the contact-rod, substantially as set forth.

25. The combination with the engine-cylinder and the actuating-rod, of a contact-rod projecting into the cylinder and forming one terminal of an electric current, a rock-spindle provided with a contact-finger forming the other terminal of the electric current, a spring whereby said finger is yieldingly held against said contact-rod, a trip-arm secured to the rock-spindle and composed of an inner radial portion and an outer portion arranged at an angle to the radial portion and a tappet secured to the actuating-rod and adapted to engage with the trip-arm for moving the contact-finger away from the contact-rod, substantially as set forth.

569,565. MACHINE FOR CUTTING TWIST-DRILLS, &c. HEBER C. PETERS, Boston, Mass., assignor of one-half to James H. Reed, same place. Filed Sept. 4, 1894. Serial No. 521,995. (No model.)

Claim.—1. A machine for cutting twist-drills, &c., comprising a grooving device, an arbor for supporting a blank and presenting the same to the action of the grooving device said arbor having a feed-spiral, a fixed device engaging said feed-spiral, a sliding frame in which said arbor is mounted to turn, a driving-shaft, means for transmitting rotary motion from said shaft to said arbor as the sliding frame and arbor move endwise, and reversing devices whereby at the end of the stroke of the sliding frame and arbor in each direction the rotary motion given to the driving-shaft and transmitted to the arbor is reversed, substantially as described.

2. A machine for cutting twist drills, &c., comprising a grooving device, an arbor for supporting the blank and presenting the same to

the action of the grooving device, said arbor having a feed-spiral, a sliding frame in which said arbor is mounted to turn, a driving-shaft, a wheel thereon compelled to rotate therewith but free to slide longitudinally thereon, a projection from the said sliding frame causing the said wheel to move in unison with the said frame, means for transmitting rotary motion from the said wheel to the said arbor, loose wheels on said driving-shaft adapted to be rotated in opposite directions, a clutch-hub whereby either of said loose wheels may be clutched to the driving-shaft, and a shifter for said clutch-hub operated by the sliding frame, substantially as described.

3. The combination with the arbor having a feed-spiral, a sleeve carrying a pin engaging said spiral, a locking device for holding said sleeve from rotation, a device for rotating said sleeve, normally out of engagement therewith, and means whereby at the end of the retracting movement of the arbor the locking device is disengaged and the rotating device is engaged to give a partial rotation to the sleeve, substantially as described.

4. The combination with the sliding frame the arbor journaled therein and having a feed-spiral, the sleeve having a projection engaging said feed-spiral and also provided with a worm-gear, the stand supporting said sleeve, the locking device engaging the sleeve, the worm normally disengaged from the worm-gear, the bar 88 whereby the worm and locking device may be shifted, the cam-piece carried by the sliding frame and adapted to actuate the bar 88, and means whereby after the said cam-piece acts to move the bar it is thrown out of engagement with the latter, substantially as described.

5. The combination with the sliding frame, the arbor journaled therein having a feed-spiral, the sleeve having a projection engaging said feed-spiral, the worm-gear attached to said sleeve, the pins 97, 97, rotating with said sleeve and worm-gear, the stand supporting the sleeve, the locking device in the sleeve, the worm normally disengaged from the worm-gear, the bar 88 whereby the worm and locking device may be shifted, the pivotally-mounted cam-piece adapted to actuate the bar 88, and the arm 96, substantially as described.

569,566. TIRE FOR VEHICLE-WHEELS. CHARLES A. PRATT, Clinton, Mass. Filed Aug. 12, 1895. Serial No. 559,036. (No model.)



Claim.—1. A tire for vehicle wheels consisting of an air-tight tube composed of sponge or cellular rubber provided with a core consisting of granular cork having communicating interstices or air-spaces between its particles, a substantially inelastic inclosing sheath expansively restricted, and a valved nipple affording communication with the interior of the tube, whereby the tube may be inflated and the cellular-rubber body constricted within its normal bounds.

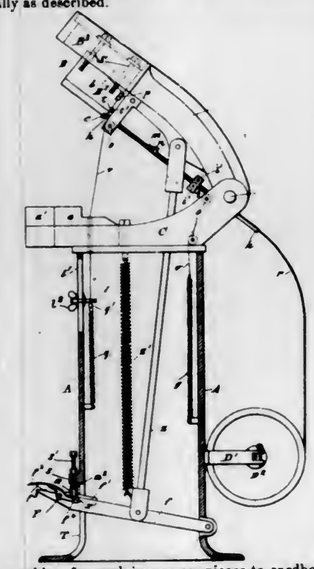
2. A tire for vehicle-wheels consisting of an air tight tube composed of cellular rubber provided with a light core of different substance, having communicating interstices or air-spaces between its component particles, a substantially inelastic inclosing sheath expansively restricted, and a valved nipple affording communication with the interior of the tube, whereby the tube may be inflated and the cellular-rubber body constricted within its normal bounds.

569,567. APPARATUS FOR APPLYING METAL STRIPS TO BOX-CORNERS. OTTO SCHUBERT and MAX SCHUBERT, Charlottenburg, Germany, assignors to the United States Metal Box Corner Company, Atlanta, Ga. Filed Dec. 6, 1894. Serial No. 531,006. (No model.)

Claim.—1. A machine for applying corner-pieces to cardboard and like boxes, comprising a frame, an anvil mounted on the frame, a lever carrying a hammer and pivoted to the frame, the reciprocating yielding shearing-piece, a guide rail supported between the lever and the frame, a feeding device having pawls and sliding on the guide-rail, and means for advancing the feeding device on the outward throw of the lever; substantially as described.

2. A machine for applying corner pieces to cardboard and like boxes, comprising a frame, an anvil mounted on the frame, a lever carrying a hammer and pivoted to the frame, the reciprocating shearing-piece, a guide rail supported between the lever and the frame, a feeding device having pawls and sliding on the guide-rail and means for actuating the feeding device consisting of cord and spring for drawing the feeding device along the guide-rail toward the fulcrum of the lever, on the downward throw of the lever and the opposing cord and spring for advancing the feeding device on the upward throw of the lever, and the adjustable bolt; substantially as described.

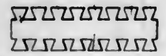
3. A machine for applying corner-pieces to cardboard and like boxes, comprising a frame, an anvil mounted on the frame, a lever carrying a hammer and pivoted to the frame, a guide-rail supported between the lever and the frame, a feeding device having pawls and sliding on the guide-rail, the standards secured to the rail in the rear of the feeding device, the shaping-rollers mounted between the standards, and means for actuating the feeding device to cause it to draw the strip between the shaping-rollers and feed it beneath the hammer; substantially as described.



4. A machine for applying corner-pieces to cardboard and like boxes, comprising a frame, an anvil mounted on the frame, a lever having a channel, and pivoted to the frame, a hammer having a shoulder fitting in the channel, and cut away at an angle on each side of the shoulder, and the bolts for adjusting the hammer longitudinally on the lever; substantially as described.

5. A machine for applying corner-pieces to cardboard and like boxes, comprising a frame, an anvil mounted on the frame, a lever carrying a hammer and pivoted to the frame, the block having spring-latches, a treadle mechanism for operating the lever, having a treadle, an overlapping plate located on the treadle with which the latches are adapted to engage and a treadle-plate pivoted to the treadle and having extensions adapted to release the latches from the overlapping plate; substantially as described

569,568. METAL STRIP FOR CORNERS OF BOXES. OTTO SCHUBERT and MAX SCHUBERT, Charlottenburg, Germany, assignors to the United States Metal Box Corner Company, Atlanta, Ga. Original application filed Dec. 6, 1894, Serial No. 531,006. Divided and this application filed June 5, 1896. Serial No. 594,360. (No model.) Patented in England Apr. 16, 1891, No. 8,485; in Belgium Nov. 8, 1894, No. 112,631; in Sweden Nov. 9, 1894, No. 6,384; in Switzerland Nov. 12, 1894, No. 9,364; in Denmark Nov. 13, 1894, No. 257, and in Italy Nov. 17, 1894, No. 37,633/474.



Claim.—A metal strip for a metal-corner-binding machine having its edges formed with dovetailed recesses and with bent-over dovetail serrations having inbent prongs; substantially as described.

569,569. UMBRELLA. RUFUS WAPLES, Jr., Philadelphia, Pa. Filed June 12, 1896. Serial No. 595,303. (No model.)

Claim.—1. In an umbrella, the combination with a frame-rod and a support to which said rod is pivoted at its inner end, of a rod or rods secured at their inner ends to the said first rod at a point adjacent to the point at which said first rod is pivoted to the support substantially as shown and described.

2. An umbrella comprising a support and frame-rods and having its frame-rods arranged in sets each set being composed of a main rod pivoted at its inner end to the support, and a rod or rods pivoted at their inner ends to said first rod near the inner end of said first rod substantially as shown and described.

3. The umbrella herein described comprising the central supports, the ribs and braces pivoted at their inner ends to their respective supports, and ribs and braces secured at their inner ends to said pivoted ribs and braces near the inner ends of the latter all substantially as shown and described.



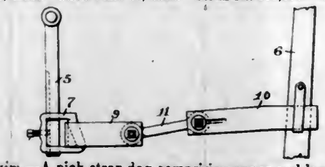
4. An umbrella having its ribs arranged to expand in two opposite sets connected together and its braces arranged in similar sets connected together, the ribs and braces being related and means for securing the umbrella to the stick substantially as and for the purposes set forth.

5. In an umbrella substantially as described the rib-support, comprising the frame having the bar, a yielding strip at the inner side of said bar a clamp-screw turned through the bar and bearing against the strip and the connection secured to said frame and adapted to encirele the handle substantially as set forth.

6. In an umbrella, the rib-support comprising the frame having the bars provided with bosses forming a shoulder upon which the cover may bear, the connection secured to said frame, the strip arranged along the inner side of one of the frame-bars and the clamp-screw bearing against said strip all substantially as shown and described.

7. In an umbrella the brace-support comprising the divided sleeve having side strips or plates united by a flexible connection and a clamp-bar swiveled to one of such side plates and having a cam portion, and an eye on the other side plate all substantially as and for the purposes set forth.

569,570. PICKER-STRAP DOG FOR LOOMS. PETER ASHBY, Valley Falls, R. I., assignor to the Whitin Machine Works, Whitinsville, Mass. Filed June 11, 1896. Serial No. 595,097. (No model.)



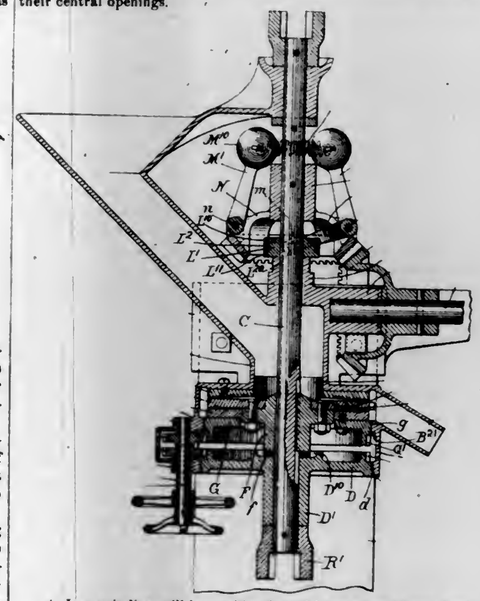
Claim.—A pick-strap dog comprising upper and lower members having openings to receive the picker-arm, a connecting-plate for the rear ends of said members, and an inclined strap-bar connecting the forward ends of the members, together with a clamping device carried by the connecting-plate, whereby the pick-strap dog may be secured to a picker-arm.

569,571. GRINDING-MILL. DE LONSON E. BARNARD, Beloit, Wis. Filed Nov. 18, 1895. Serial No. 569,297. (No model.)

Claim.—1. In a grinding-mill in combination with a horizontal rotating grinder; two non-rotating grinders facing respectively the upper and lower faces of the rotating grinder; the latter being free to rise and fall between the non-rotating grinders and provided with a stop other than the lower grinder to limit its approach to the latter.

2. In a grinding-mill in combination with a horizontal rotating grinder; two non-rotating grinders respectively above and below the rotating grinder, the lower of the non-rotating grinders being vertically adjustable; the rotating grinder being free to rise and fall between the other grinders and provided with an adjustable stop to limit its approach to the adjustable grinder.

3. In a grinding-mill in combination with the case having a cylindrical chamber; a non-rotating annular grinder secured rigidly within the case at one end of the cylindrical chamber next to such fixed grinder; an annular non-rotating grinding-disk and an annular carrier to which the same is rigidly secured; the carrier being peripherally threaded and the case being interiorly threaded to receive the same, whereby the last-mentioned grinder may be adjusted in the case toward and from the first-mentioned fixed grinder: and a rotating grinder located between the two, having its shaft extending through their central openings.



4. In a grinding-mill in combination with upper and lower horizontal non-rotating annular grinders; a rotating grinder located between them, and a carrier to which it is rigidly secured; the shaft of the rotating grinder extending through the central openings of the annular non-rotating grinders, the carrier of the rotating grinder being free to rise and fall with its grinder independently of its shaft by which it is rotated, and an adjustable stop for such carrier to limit the approach of the rotating grinder to the lower fixed grinder.

5. In a grinding-mill in combination with upper and lower horizontal non-rotating annular grinders; a rotating grinder located between them having its shaft extending through their central openings and a carrier by which the said rotating grinder is supported, such carrier being free to move up and down independently of the shaft, but adapted to be rotated by the latter; the upper fixed grinder being rigidly secured to the top of the case, the carrier of the lower fixed grinder being peripherally threaded and screwed into the case whereby it is adapted to be adjustable toward the upper fixed grinder; the lower end of the case having an opening adapted to admit the upper fixed grinder and the carrier of the lower grinder and being interiorly threaded at such opening; the bottom plate peripherally threaded and adapted to be screwed in such opening and centrally pierced to admit the shaft and provided with a step about such central opening; the carrier of the rotating grinder being supported on such step, whereby the bottom plate carries a stop to limit the approach of the rotating grinder to the lower non rotating grinder, and such stop is adjustable by rotating the bottom plate in its threaded connections to the case.

6. In a grinding-mill having a horizontal rotating grinder, a non-rotating grinder above and below the same; the upper fixed grinder having an annular opening and no other through which the grain is admitted, and the rotating grinder having apertures extending through it from its upper to its lower grinding-surface; the upper opening of such apertures being at a distance outward from the margin of the annular opening, and the lower mouth of said apertures being above the grinding-surface of the lower fixed grinder; whereby grain entering between the upper fixed grinder and the rotating grinder is subject to the grinding process on the upper surface of the rotating grinder before it can pass through said apertures.

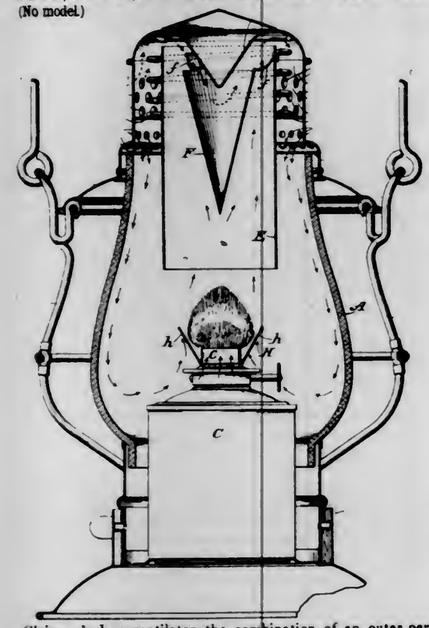
7. In a grinding-mill comprising a fixed grinder and a rotating grinder; the fixed grinder having a central opening through which the grain is admitted to the crevice between the grinding-faces; a cylindrical gate fitted to such annular opening and adapted to be adjusted down past such crevice to close the same, and a centrifugal governor actuated in the train which drives the rotating grinder; and connections therefrom to such cylindrical gate whereby it regulates the access of grain to the crevice, and thereby to the grinding-faces, according to the speed of the mill.

8. In a grinding-mill in combination with the case; an upper grinding-disk fixed with respect to the case; a lower grinding-disk having its carrier peripherally threaded and screwed into the case; a rotating grinding-disk interposed between the other two, and having its carrier stepped on the bottom of the case, the bottom plate being peripherally threaded and screwed into the wall, the peripherally-threaded carrier and the peripherally-threaded bottom plate having each a cogged flange concentric with their threaded peripheries respectively; the shaft of one pinion being a sleeve journaled in the case and the shaft of the other pinion extending through such sleeve and journaled beyond it in the case, both of said shafts protruding from the case, and the inner shaft protruding from the sleeve and each provided with means for rotating it at will; substantially as and for the purpose set forth.

9. In a grinding-mill in combination with the stationary grinding-disks, the lower of which is vertically adjustable; a rotating grinding-disk feathered on its shaft and adapted thereby to float between the two stationary disks and having its carrier stepped on the case, said step being vertically adjustable, whereby it may be adjusted to any desired distance from the lower stationary grinder and adapted to rise freely toward the upper grinder according to the relative quantity of grain between the rotating grinder and the stationary grinders respectively.

10. In a grinding-mill, a fixed horizontal annular grinding-disk; a rotating horizontal grinding-disk below it, and a stationary grinding-disk below the case in which such grinders are located, having an inlet by which the grain is delivered through the upper annular disk onto the upper side of the rotating disk; said rotating disk having apertures leading through it onto the upper surface of the lower disk; the rotating disk being feathered on its shaft and adapted to float between the two stationary disks, whereby the grain is distributed to both sides of the rotating disk and the latter automatically adjusts itself to the quantity of grain between it and the stationary disks respectively.

569,572. VENTILATOR FOR LANTERNS, &c. WILLARD A. BOURNE, New York, N. Y. Filed June 20, 1896. Serial No. 596,231. (No model.)



Claim.—1. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder, having its upper edge above the perforations in the outer shell, and a deflector supported centrally within said cylinder and free therefrom, said deflector having its upper surface formed to deflect upwardly on the opposite side such currents of air as may pass over the edge of said tube or cylinder on the one side and strike the deflector, and having its under surface formed to divide the rising currents of heated air and gases, substantially as shown and described.

2. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder having its upper edge above the perforations in the outer shell, a deflector supported centrally within said tube or cylinder and free therefrom, said deflector having its upper surface formed to deflect upwardly on the opposite side such currents of air as may pass over the edge of the tube or cylinder on the one side and strike the deflector, and having its under surface formed to divide the rising currents of heated air and gases, and a substantially conical deflector supported above the first-named deflector in line therewith and with its smaller end downward, substantially as shown and described.

3. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder having its upper edge above the perforations in the outer shell, and a hollow deflector with flaring walls supported centrally within said tube or cylinder and free therefrom, with its apex downward and its open base upward and below the upper edge of said cylinder.

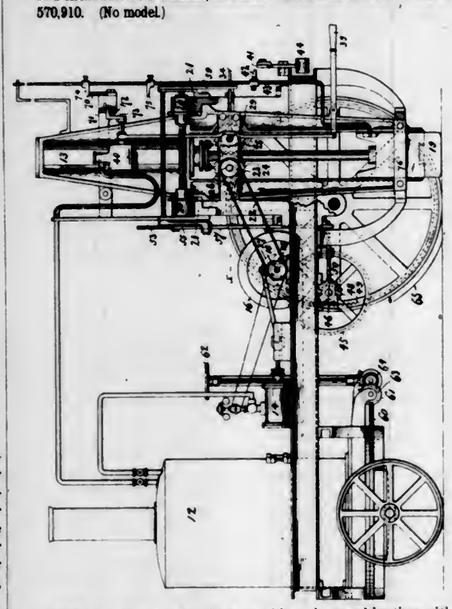
4. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder having its upper edge above the perforations in the outer shell, a hollow deflector with flaring walls supported centrally within said tube or cylinder and free therefrom, with its apex downward and its open base upward and below the upper edge of said tube or cylinder and a substantially conical deflector supported by said shell above the first-named deflector and in line therewith and with its smaller end downward, substantially as shown and described.

5. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder having its edge above the perforations in the outer shell, and a hollow cone supported centrally within said tube or cylinder and free therefrom, with its apex downward and its open base upward and below the upper edge of said tube or cylinder, substantially as shown and described.

6. In a ventilator, the combination of an outer perforated shell, an inner, imperforate tube or cylinder having its edge above the perforations in the outer shell, a hollow cone supported centrally within said tube or cylinder and free therefrom, with its apex downward and its open base upward and below the upper edge of said tube or cylinder, and a second cone supported by said shell above the first-named cone and in line therewith and with its point downward, substantially as shown and described.

7. In a lamp or lantern, the combination with the wick-tube of a plate hinged to one side of said wick-tube and cut out to fit around the edges of said wick-tube, the end portions of said plate being turned upwardly to protect the edges of the flame from air rising from below, substantially as shown and described.

569,573. ROAD-RAMMING MACHINE. ALEXANDER D. BUCHANAN, Long Island City, N. Y.; Anna C. P. Buchanan administratrix of said Alexander D. Buchanan, deceased. Filed Dec. 3, 1895. Serial No. 570,910. (No model.)

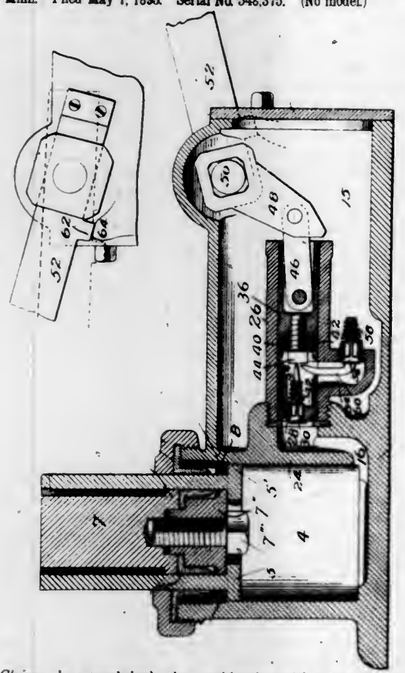


Claim.—1. In a road-making machine, the combination with a truck on which it is mounted, of a steam-hammer mounted on a transverse track, an engine driving a constantly-rotating shaft, a screw-and nut connection between the truck and the frame of said hammer, friction-disks mounted on said nut constantly rotated by said shaft in opposite directions and a clutch mounted on and keyed to said nut but having a longitudinal motion thereon by means of which said nut is caused to rotate in either direction to shift said hammer transversely.

2. In a road-making machine, the combination of a boiler and a steam-hammer with a truck on which they are mounted and a guide for indicating the true road level.

3. In a road-making machine, the combination of a boiler and a steam-hammer with a truck on which they are mounted, a guide for indicating the true road level and a pendulum for indicating the level of the truck.

569,574. TRACK-JACK. EDWARD P. CALDWELL, Minneapolis, Minn. Filed May 7, 1895. Serial No. 548,375. (No model.)



Claim.—In a track-jack, the combination with a broad base, of an upright cylinder mounted thereon, a removable cap therefor, a reservoir also arranged upon said base at one side of said cylinder and below the plane of the upper end thereof, a plunger within said cylinder, suitable packing between said plunger and said cap, said plunger being provided with an opening in its lower end, a second plunger arranged within the same, the removable section forming the lower portion of said second plunger, the packing between said removable section and the inner surface of said first-named plunger, the pump-barrel arranged within said reservoir, and provided with a passage leading to said cylinder, a valve for closing said passage, a piston for opening said valve and means for operating the same, substantially as described.

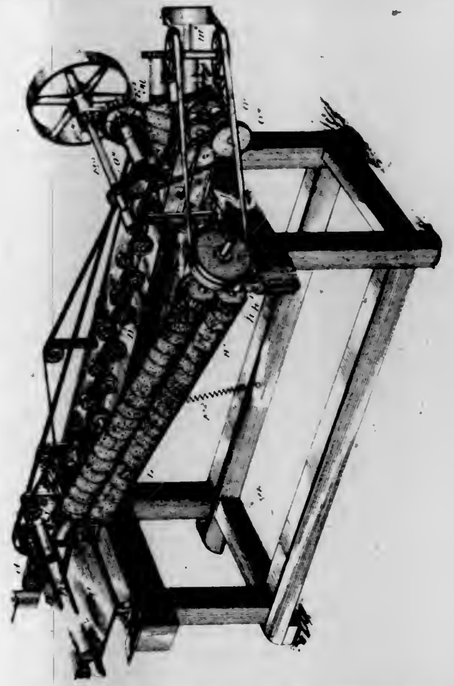
569,575. TOBACCO-LEAF-STEMMING MACHINE. ROBERT W. COFFEE, Richmond, Va., assignor to the Coffee Stemming Machine Company, same place. Filed Jan. 22, 1896. Serial No. 576,444. (No model.)

Claim.—1. In a tobacco-leaf-stemming machine, the combination with wipers for removing the body of the leaf from the stem, of a feed mechanism for advancing the stem with the body of the leaf sidewise during the stemming operation; substantially as described.

2. In a tobacco-leaf-stemming machine, the combination with the rotary wiping mechanism for removing the body of the leaf from the stem, of a feed mechanism for advancing the stems with the body of the leaf sidewise as the latter is being separated or detached; substantially as described.

3. In a tobacco-leaf-stemming machine, the combination with the rotary wiping mechanism for removing the body of the leaf from the stem, of a feed mechanism for advancing the stems with the body of the leaf and simultaneously drawing the stem away from the wiping mechanism; substantially as described.

4. In a tobacco-leaf-stemming machine, the combination of the rotary wiping mechanism for removing the body of the leaf from the stem and the feeding mechanism for holding the stems, said wiping mechanism and feeding mechanism being arranged in gradually-diverging lines; substantially as described.



5. In a tobacco-leaf-stemming machine, the combination of the rotary wiping mechanism for removing the body of the leaf from the stem and the feeding mechanism for holding the stems, said wiping mechanism and feeding mechanism being arranged in gradually-diverging lines, and the feeding mechanism extending beyond the entrant portion of the wiping mechanism, whereby the leaves are carried to the wiping mechanism; substantially as described.

6. In a tobacco-stemming machine, the combination with the feeding mechanism for cooperating with the stem of the leaf, of the rotary cylinders for separating the body of the leaf from the stem arranged with their axes at an acute angle to the line of feed; substantially as described.

7. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism for cooperating with the stem of the leaf, of the rotary cylinders for separating the body of the leaf from the stem arranged with their axes at an acute angle to the line of feed and with their entrant ends in proximity to the feeding mechanism at an intermediate point, whereby the leaves are fed to the cylinders; substantially as described.

8. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism for coöperating with the stem of the leaf, of the rotary cylinder for separating the body of the leaf from the stem having its operative surface formed in a spiral to advance the body of the leaf in unison with the feeding mechanism; substantially as described.

9. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism for cooperating with the stem of the leaf, of the cylinders for separating the body of the leaf and stem rotating in opposite directions and having their operative surfaces formed into oppositely-arranged spirals for advancing the body of the leaf in unison with the feeding mechanism; substantially as described.

10. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism, for cooperating with the stem of the leaf, of the cylinders covered with card-clothing and arranged with their axes at an acute angle to the line of feed; substantially as described.

11. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism for cooperating with the stem of the leaf, of the cylinder covered with card-clothing wound spirally thereon and arranged with its axis at an acute angle to the line of feed; substantially as described.

12. In a tobacco-leaf-stemming machine, the combination with the feeding mechanism for cooperating with the stem of the leaf, of the cylinders covered with card-clothing the clothing on each cylinder wound spirally and in an opposite direction to the clothing on the other cylinder, said cylinders being arranged with their axes at an acute angle to the line of feed; substantially as described.

13. In a tobacco-leaf-stemming machine, the combination with the main stem holding and feeding mechanism and mechanism for stripping the body of the leaf from the stem of a supplemental or secondary stem holding and feeding mechanism and mechanism for stripping the remannig leaf particles from the stem; substantially as described.

14. In a tobacco-leaf-stemming machine, the combination with the main stem holding and feeding mechanism, and mechanism for stripping the body of the leaf from the stem, of a supplemental or secondary reversely-arranged stem holding and feeding mechanism and mechanism for stripping the remaining leaf particles from the stem, whereby both ends of the stem are subjected to the stripping action; substantially as described.

15. In a tobacco-leaf-stemming machine, the combination with the main stem holding and feeding mechanism and a secondary stem holding and feeding mechanism lying parallel thereto and extending beyond the main holding and feeding mechanism, of wiping-cylinders arranged at an acute angle to the main stem holding and feeding mechanism and secondary wiping-cylinders arranged at an opposite acute angle to the secondary stem holding and feeding mechanism; substantially as described.

16. In a tobacco-leaf-stemming machine, the combination with the stem holding and feeding mechanism and wiping-cylinders arranged at an acute angle to the line of feed of a supporting conveyer or chain for the stems located between the holding and feeding mechanism and cylinders; substantially as described.

17. In a tobacco-leaf-stemming machine, the combination with the stem holding and feeding mechanism and wiping-cylinders arranged at an acute angle to the line of feed, of a supporting conveyer or chain located between the holding and feeding mechanism in line with said conveyer and a secondary set of wiping-cylinders arranged on the side of said secondary holding and feeding mechanism opposite to the main wiping-cylinders; substantially as described.

18 In a stemming-machine, the combination with mechanism for stripping the body of the leaf from the stem, of a stem holding and carrying device, the same comprising two endless chains, driving and supporting rollers for the same, and two series of rollers, the one series engaging the inner face of one chain opposite the working section thereof and the other series engaging the inner face of the opposite chain along the line of the working section thereof, said opposing series of rollers serving to hold the two chains together in working position; substantially as described.

19. In a stemming-machine, the combination with the stripping mechanism of a leaf carrying or feeding mechanism for engaging the stem to advance the latter, said feeding mechanism comprising a pair of endless feeding-chains arranged to run in parallel planes, a series of rolls engaging the rear face of one chain and a second series of rolls engaging the rear face of the opposite chain, the rolls of said two series being arranged in alternate succession, to produce reverse curves in the chain and increase the bite on the stem; substantially as described.

20. In a tobacco-leaf-stemming machine, the combination with the mechanism for stripping the body of the leaf from the stem, of a pair of stem holding and feeding chains, and guides for directing said chains in a sinuous course during the time the stem is held thereby; substantially as described.

21. In a tobacco-leaf-stemming machine, the combination with a pair of stem holding and feeding chains of a pair of wiping-rollers provided with a covering of spirally-wound card-clothing and having their axes arranged at an acute angle to the line of travel of the chains; substantially as described.

22. In a tobacco-leaf-stemming machine, the combination with a pair of stem holding and feeding chains and guides for holding said chains in contact during the time the stem is held thereby of a pair of wiping-cylinders covered with spirally-wound card-clothing arranged with their axes at an acute angle to the line of travel of the chain and with their meeting portions in substantially horizontal alinement with those portions of the chain coming in contact and adapted to hold the stems between them; substantially as described.

23. In a tobacco-leaf-stemming machine, the combination with the stem holding and feeding mechanism of the stripping-cylinders arranged to feed the body of the leaf in the same direction as the feeding mechanism and a knife on one of the cylinders for severing the stem when a predetermined length has been separated from the leaf; substantially as described.

24. A wiping-cylinder for tobacco-leaf-stemming machines covered with card-clothing and having a knife fixed thereto for severing the stem when a predetermined length has been stripped from the body of the leaf; substantially as described

25. A wiping-cylinder for tobacco-leaf-stemming machines having card-clothing spirally wound thereon and provided with a peripheral knife for severing the stem when a predetermined length has been stripped from the body of the leaf; substantially as described.

26. In a tobacco-leaf-stemming machine the combination with the receiving-table and butter against which the stems are alined, of a stem holding and feeding mechanism arranged in line with the butter and the wiping-cylinders arranged diagonally to said lines; substantially as described.

27. In a tobacco-leaf-stemming machine, the combination with the receiving-table having the belt thereon for advancing the leaves, the movable butter against which the stems are positioned, a stem holding and feeding mechanism arranged in line with the butter and diagonally arranged wiping-cylinders for stripping the body of the leaf from the stem; substantially as described.

28. In a tobacco-leaf-stemming machine, the combination with the stem holding and feeding mechanism and mechanism for stripping the body of the leaf from the stem of the receiving-table having the apron or belt thereon for advancing the leaves in succession and a rotary flexible disk for receiving the stems as they are delivered from the belt and delivering them to the holding and feeding mechanism; substantially as described.

29. In a tobacco-leaf stemming machine, the combination with the stem holding and feeding mechanism and stripping mechanism for removing the body of the leaf from the stem of the receiving-table having the belt for advancing the leaves, the roll under which the leaves pass as they leave the belt and the flexible disk and chain for cooperating with the stems of the leaves to deliver the same to the holding and feeding mechanism; substantially as described.

30. In a stemming-machine, the combination of the following elements, to wit: a leaf-feeding mechanism engaging the stem and carrying the leaf sidewise; and a stemming mechanism or device to which the leaf is submitted by the feeding mechanism; substantially as described.

31. In a stemming-machine, the combination of the following elements, to wit: a feeding mechanism for advancing or carrying leaves sidewise; and a stemming mechanism sustaining a diagonal relation to the feeding mechanism; substantially as described.

32. In a stemming mechanism, the combination of the following elements, to wit, a stemming mechanism provided with a wiping surface or surfaces; and a feeding mechanism for advancing the leaf sidewise, said feeding mechanism being arranged to travel in a path at an angle to the movable wiping surface or surfaces of the stemming mechanism.

33. In a stemming-machine, the combination of the following elements, to wit: a leaf carrier or feeding mechanism engaging the stems and advancing the leaves laterally of the stems; and a wiping mechanism comprising opposing working surfaces moving in same direction in planes diagonal to the line of feed movement; substantially as described.

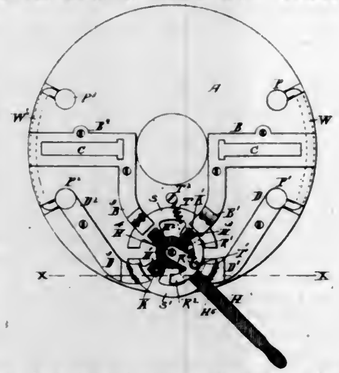
34. In a stemming-machine, the combination of the following elements, to wit: a leaf carrying or feeding mechanism for receiving the stems and carrying them laterally; and a stemming or wiping mechanism diagonally disposed with respect to the line of feed movement and provided with helical wiping surfaces, substantially as described.

35. In a stemming mechanism, the combination of the following elements, to wit: a feeding or carrying mechanism adapted to engage the stems of leaves and advance the latter sidewise; and a stemming mechanism diagonally disposed with reference to the direction of feed movement of the leaves, said mechanism comprising movable surfaces provided with a series of flexible teeth arranged in lines diagonal to the direction of motion of said movable surfaces.

36. In a stemming mechanism, such as described, the combination of the following elements, to wit: a stemming or wiping mechanism comprising opposing wiping-surfaces moving in the same direction, each composed of a multiplicity of separate teeth arranged in lines at an angle to the direction of the motion of said surfaces and having their outer ends bent or inclined rearwardly; and a feeding mechanism having its line of travel at an angle to the plane of motion of the movable surfaces of the stemming or wiping mechanism and in proximity to one end thereof.

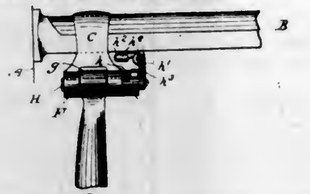
37. In a stemming mechanism, the combination of the following elements, to wit: a stemming or wiping mechanism adapted to operate longitudinally of the stem and remove the leaf portion therefrom; and a feeding mechanism traversing in front of the stemming mechanism and beyond the entrant end thereof in a plane diagonal to the direction in which the stemming mechanism operates upon the leaf, that is sidewise of the stem, whereby the leaf is carried sidewise through the stemming mechanism while the latter operates longitudinally of the stem to remove the leaf portion therefrom; substantially as described.

569,576. ELECTRIC SWITCH. GEORGE EMMETT, Attleborough, Mass., assignor to the New England Electric Supply Company, Boston, Mass. Filed Feb. 26, 1896. Serial No. 580,841. (No model.)



Claim.—In an electrical switch, the combination of fixed switch-pieces connecting the terminals of an electric-circuit line, and fixed switch-pieces connected to a translating device; with an oscillating switch-carrier having segment switch-pieces, electrically insulated from each other, adapted to put the translating device into the electric circuit, or to cut it out, and close the line-circuit, a spring snap-piece R, R', R^3, a spring T, a handle for moving both the said oscillating switch-carrier and a spring snap-piece R R' R^3 into such a position that the spring T will impart rapid movement to the oscillating switch-carrier, and the said spring snap-piece and spring, substantially as and for the purpose set forth.

569,577. THILL-COUPLING. MOSES P. FAVOR, Hill, N. H. Filed Nov. 29, 1895. Serial No. 570,425. (No model.)



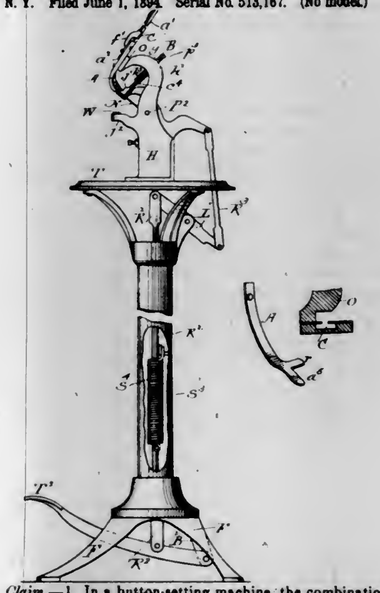
Claim.—A thill-coupling strap having ears for receiving the eye of a thill said ears being perforated for the reception of a retaining-pin, one of said ears having a hub or projection provided with slots as at f^3 f^3 both cutting through to the said perforation, the former slot running in the direction thereof from the outer end inward and the latter running crosswise and intersecting at one end with the slot f^3, a retaining-pin having a lateral projection near one end and at said end provided with an arm having a hinged extension, and a spring attached to said arm acting upon its hinged extension, substantially for the purpose set forth.

569,578. HEMMER. FRANK L. GOODRICH and RUSSEL S. BARNUM, Chicago, Ill. Filed Feb. 16, 1892. Serial No. 421,774. (No model.)



Claim.—A hemmer consisting of a single integral piece of sheet metal having three diverging arms, comprising a rearwardly-extending shank *g* adapted to be secured to the presser-foot of the machine, a short lateral arm folded downwardly and horizontally inward to form the dividing-plate *c* of the scroll of the hemmer, and a long lateral arm located opposite the short lateral arm and folded downwardly around the dividing-plate *c* to form the lower plate *a* of the hemmer, the scroll thus formed by said lateral arms being open from front to rear of the device, and the forward edge of the upper plate *b* of the scroll being curved upwardly to afford an easy entrance of the cloth to said scroll, a forwardly-extending neck or tongue *c'* on the front edge of the dividing-plate *c*, and a short wire *d* rigidly secured to said neck *c'* and located transversely of the device immediately in front of the upper portion of the scroll-opening, said wire being of greater length than the width of the neck *c'* along the line of its junction with the wire, and the projecting ends of the latter being rounded, substantially as described.

569,579. BUTTON-SETTING MACHINE. ALBERT W. HAM, Troy, N. Y. Filed June 1, 1894. Serial No. 513,167. (No model.)



Claim.—1. In a button-setting machine, the combination of the following instrumentalities, viz: an anvil; a feed mechanism, to feed staples having buttons strung loosely upon them, including a raceway having a passage-way to receive the staple, and a slot to receive that portion of the button-eye, or shank, between the head of the button and the crown of the staple, to guide and deliver said staple and button to a carrier-driver; a carrier-driver, to receive and hold said staple and button, provided with a slot to accommodate the eye of the button and shoulders to bear upon the crown of the staple, in open communication with the feed mechanism to which slot and shoulders the staple and button are delivered by the feed and from which they must be retracted to be removed from said carrier-driver; and actuating devices for changing the relative positions of said anvil, feed and carrier-driver, whereby the legs of the staple are clenched, substantially as described.

2. In a button setting machine, a pivotal carrier-driver having a claw in its outer end, the carrier-driver being connected with the reciprocable actuating mechanism to be swung between and cooperate successively with the feed and the anvil, a spring clamping-jaw on the carrier-driver, and normally in unset condition thereon, and a stop in the path of the spring, for setting it in the approach of the carrier-driver, substantially as and for the purpose set forth.

3. In a button-setting machine, the combination with a stationary jaw provided with clenching-sinks in the upper face, of an upper jaw provided with a button receiving slot and button-lifting spring, said upper jaw being pivoted to the lower jaw; and a button-chute constructed and arranged to deliver a button having a fastener threaded into the eye thereof into the said slotted jaw and button-lifting spring at each reciprocation of the latter, substantially in the manner as and for the purposes set forth.

4. In a button-setting machine the combination with a stationary head made with a laterally-extended jaw part, a vertical slot and provided with a setting-die in its upper face, substantially as described, of an upper jaw pivoted to the jaw part of the head, and arranged to move in the vertical slot in the latter; said upper jaw being constructed to be reciprocated upon its pivot to engage with the die in the jaw part of the head, and made with a button-receiving slot in its jaw end; a button-lifting spring provided with a slot in its free end and at its outer end attached to said upper jaw so as to be above the latter and to have its button-receiving slot in vertical alinement with the slot in the upper jaw; and a stationary button-chute made with a slot in its under face and adapted to connect with the slot in said upper jaw and the slot in said button-lifting spring at each reciprocation of said upper jaw and deliver to said jaw and spring the lowermost staple with its button substantially in the manner as and for the purposes set forth.

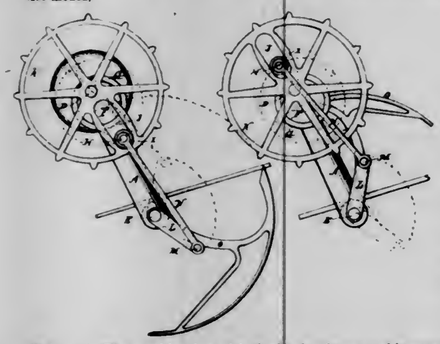
5. The combination with the head H, made with the upward extension A^3, spring-bar B, and spring A, and jaw part J^3, said head being attached to the table T; of the upper jaw J', pivoted to the jaw part of said head, said upper jaw having the slot *m*, the slotted lifting-spring N, and the button-chute C made with the slot to be attached to the upward extension of said head and made to connect with the slot in said upper jaw and lifting-spring when said jaw is raised; and the upright rod R^3, connected to the handle end H^3, of said upper-jaw part, constructed and arranged to be operated, substantially as and for the purposes set forth.

6. The combination with the upper jaw J' of the button-holding slot *m*, having downwardly and outwardly tapering sides that approach each other and then widen out to produce the angle *k*, and having the square end k^3, made with the notch k^2; of the lifting-spring N, made with the slot *l*, in its free end and at its lower end attached to the upper jaw, substantially in the manner as and for the purposes set forth.

7. In a button-setting machine, a carrier-driver connected with the reciprocable actuating mechanism to be swung between and cooperate successively with the feed and the anvil, a spring clamping-jaw on the carrier-driver, and normally in unset condition thereon, a button-and-staple let-off for the feed normally in set condition to restrain the buttons and staples, as specified, a stop in the path of the spring for setting it in the approach of the carrier-driver and a projection moving in harmony with the carrier-driver to unset the let-off and permit the escape of a button with its fastener, substantially as described.

8. In a button-setting machine, the combination of the following instrumentalities, viz: an anvil; a feed mechanism including a raceway having a passage-way for the staple and a slot to receive that portion of the button-eye between the head of the button and the crown of the staple, to guide and deliver the staple with the button strung on its crown to a carrier-driver; a carrier-driver having a slot to accommodate the eye of the button and shoulders to bear upon the crown of the staple, in open communication with the raceway; a staple and button holder for said carrier-driver; a stop therefor and actuating devices for changing the relative positions of said anvil, feed and carrier-driver, substantially as described.

569,580. BINDING MECHANISM FOR HARVESTERS. MOSES A. KELLER, Batavia, N. Y. Filed Mar. 14, 1895. Serial No. 541,690. (No model.)



Claim.—1. The combination with the binder-frame and knotter-driving shaft, of a stationary eccentric formed on or secured to the frame about the said shaft, a crank journaled on the eccentric, and a driving-gear or sprocket-wheel rigidly secured on the knotter-driving shaft and provided with means connecting it with the crank, whereby said crank is caused to have a variable motion through a uniform motion of the knotter-driving shaft, substantially as and for the purpose set forth.

2. The combination with the binder-frame, the knotter driving shaft and needle-shaft, of a crank eccentrically journaled on the frame about the knotter-driving shaft, a driving gear or wheel fast on the knotter-driving shaft, means for movably connecting it with the crank to give said crank a variable motion by a uniform motion of the wheel, and means connecting the crank with and operating the needle-shaft, substantially as and for the purpose set forth.

3. The combination with the binder-frame, the knotter-driving shaft and the needle-operating shaft, of a crank journaled on the frame eccentrically to the knotter-driving shaft, a driving gear or wheel fast on the knotter-driving shaft and provided with a radial slot, means adapted to move in said slot for connecting the said crank with the said gear or wheel, whereby the crank is caused to have a variable motion through a uniform motion of the driving-gear, and the pitman connecting the said crank with the cranked arm of the needle-shaft whereby the needle or compressing-arm is caused to have a variable motion through a uniform motion of the knotter-driving shaft, substantially as shown and described.

4. The combination with the binder-frame, the knotter and needle operating shafts journaled in the frame, a revoluble crank journaled on the frame eccentric to the knotter-operating shaft, a driving gear or wheel fixed to the said knotter-operating shaft, means connecting the crank with said driving-gear adapted to allow relative radial movement, and means connecting the crank with the needle-shaft, whereby a variable vibrating motion is given to the needle-shaft, and a uniform rotating motion to the knotter-driving shaft by a uniform rotating motion of the driving-gear.

5. The combination with the binder-frame, the knotter and needle operating shafts, of a revoluble crank journaled on said frame, means connecting it with the driving-gears of the knotter-driving shaft and the needle-operating shaft, and adapted to give a variable vibrating motion to the needle-shaft and a uniform rotating motion to the knotter-driving shaft.

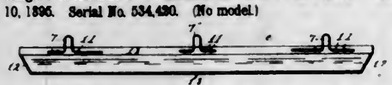
6. In a grain-binder, the combination with a needle, and a needle-shaft, of mechanism for driving such shaft, comprising a knotter-driving shaft and a gear mounted concentrically thereon, and a crank mounted upon an axis eccentric to the knotter-driving shaft and having a sliding connection with the gear and devices connecting the crank with the needle-shaft; substantially as and for the purpose set forth.

569,581. BUTTON. JAMES E. KENNA Pittsburg, Pa. Filed Apr. 3, 1895. Serial No. 544,331. (No model.)



Claim.—The tube A, having flanges, B, E, opening and recess C, with outer spring G, and button H, having opening I, opening and recess F in combination with rod D, inner spring J, and fastener, all as substantially set forth.

569,582. WEATHER-STRIP. ORTON C. LITTLE, Menasha, Wis., assignor of one-half to Maximillian M. Scholtz, same place. Filed Jan. 10, 1896. Serial No. 534,430. (No model.)

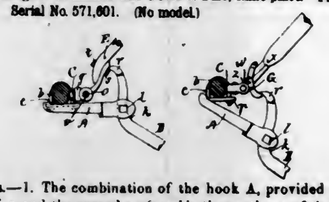


Claim.—1. In a weather-strip for the lower end of doors, the combination of a piece of material having a form for resting upon the floor and for its attachment to a door, and having a strip of felt, or like impressible material attached to said piece between it, the floor and door, and also upon its ends for fitting said floor and door, a torsional wire spring-hinge consisting of a prong for insertion into the edge of said material adjoining said door and through said felt, thence extending along said edge and felt strip a distance sufficient for providing therein for the required spring of the hinge by the torsion of said wire and being loosely connected to said edge and embedded in said felt, thence being bent into a loop having parallel side wires arranged at a right angle with the length of the weather-strip, said loop being adapted for receiving a screw for attachment to a door and for its vertical adjustment thereon, the wire then being returned to, embedded in said felt, extended along, and secured to said edge of the weather-strip, substantially as described.

2. In a weather-strip for the lower end of doors, the combination of a piece of material having a form for resting upon the floor and for its attachment to a door, and having a strip of felt, or like impressible material attached to said piece between it, the floor and door, and also upon its ends for fitting said floor and door, a torsional wire spring-hinge consisting of a prong for insertion into the edge of said material adjoining said door and through said felt, thence extending along said edge and felt strip a distance sufficient for providing therein for the required spring of the hinge by the torsion of said wire and being loosely connected to said edge and embedded in said felt, thence being bent into a loop having parallel side wires arranged at a right angle with the length of the weather-strip, said loop being adapted for receiving a screw for attachment to a door and for its vertical adjustment thereon, the wire then being returned to, embedded in said felt, extended along, and secured to said edge of the weather-strip, said hinge being arranged to normally hold the outer lower edge of said weather-strip elevated above, and free from the floor, and an arm upon the weather-strip near the latch edge of the door for which said strip is fitted, said arm being arranged for striking a fixed stop upon the door-jamb, and thereby to press said outer lower edge downward upon the floor, substantially as set forth.

3. In a weather-strip for doors and for preventing air-currents from passing under the same, a wire spring connecting-hinge, formed of a single piece of wire and having the bends *a*, *c*, *e*, the parallel wires *b*, *b*, the wires *d*, *d*, adapted to be embedded in the felt of the weather-strip, and a prong at one or both ends of the wire of said hinge arranged at substantially a right angle with the wire *d*, substantially as described.

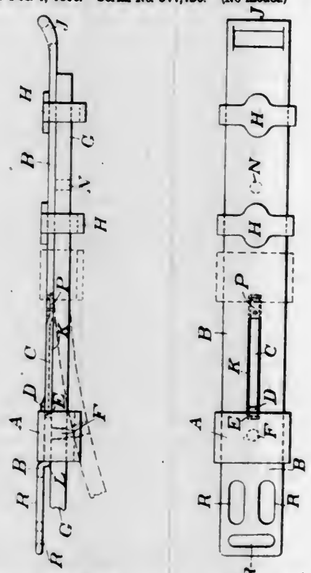
569,583. THILL-COUPLING JACK. JOHN R. MAINES, Providence, R. I., assignor to himself and David J. BARR, same place. Filed Dec. 9, 1895. Serial No. 571,601. (No model.)



Claim.—1. The combination of the hook A, provided with the opening *f*, *g*, and the curved surface *l* in the portion *g* of the opening with the lever D, provided with the curved bearing-surface *k*, substantially as described for the purpose specified.

2. The combination of the hook A, provided with the opening *f*, *g*, with the lever D, provided with the curved bearing-surface *k*, and the bearing-piece G, made in two pivoted parts, substantially as and for the purpose specified.

569,584. HARNESS-BUCKLE. JAMES R. MOLE, Janesville, Wis. Filed Feb. 1, 1896. Serial No. 577,726. (No model.)



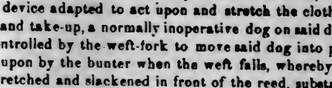
Claim.—1. In a harness-buckle, the plate B having orifices near the ends and the bend or step L, said plate provided with a projecting peg F, in combination with a movable band A, and a fixed band, the said movable band being constructed to fit three sides of said plate closely, substantially as described.

2. In a harness-buckle, the plate B having orifices near the ends and the bend or step L, said plate provided with slot K, spring C and the peg F, in combination with a movable band A, substantially as described.

569,585. LIFTING-JACK. CHARLES T. MOORMAN, Packwood, Iowa. Filed Aug. 28, 1895. Serial No. 560,778. (No model.)

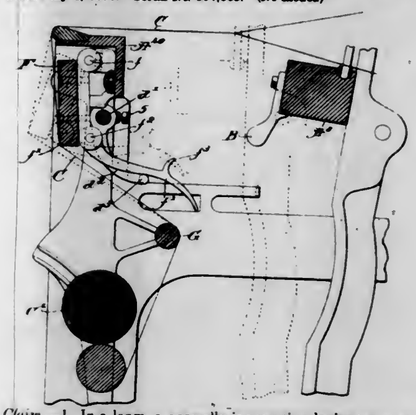
Claim.—1. In a lifting-jack, the combination with a frame, of a lifting-bar slidingly secured in the frame, a handle having a T-head rigid therewith, a fulcrum-link pivotally connected to the head, and a pawl connection between the bar and the T-head, substantially as described.

2. In a lifting-jack the combination with a frame, of a lifting-bar slidingly supported therein, a handle having oppositely-extending projections at its inner end, a fulcrum-link, shifting connections between the link and frame and between the link and a handle projection, a pawl having a shifting pivotal connection with the other handle projection, a rack on the lifting-bar, and a spring for normally forcing the pawl into engagement with the rack, substantially as described.



3. In a lifting jack, the combination with a frame, of a vertically-movable lifting-bar, a lever mechanism for raising the bar comprising a fulcrum-link having a shifting connection with the frame, a hand-lever having a shifting connection with the upper end of the link, and a vertically-movable pin passing through the frame, a pawl having a shifting connection with the handle-lever, and a spring for normally forcing the pawl into connection with the lifting-bar, and a projection on the lifting-bar for raising the same independent of the lever mechanism, substantially as described.

569,586. CLOTH-EVENING DEVICE. JAMES H. NORTHROP, Hopedale, Mass., assignor to the Northrop Loom Company, Saco, Me. Filed July 1, 1896. Serial No. 597,665. (No model.)



Claim.—1. In a loom, a normally inoperative device to act upon and stretch the cloth between the reed and take-up, means to operate said device, and controlling mechanism for said means, operative upon failure of the weft, to thereby operate the cloth-stretching device, substantially as described.

2. In a loom a weft-fork, a normally inoperative device to act upon and stretch the cloth between the reed and take-up, a dog carried by said device, a cooperative bunter, and means controlled by the weft-fork to move said dog into position to be engaged by the bunter upon failure of the weft, substantially as described.

3. In a loom a weft-fork, the lay, a bunter thereon, a pivotally-mounted device adapted to act upon and stretch the cloth between the reed and take-up, a normally inoperative dog on said device, and means controlled by the weft-fork to move said dog into position to be acted upon by the bunter when the weft fails, whereby the cloth will be stretched and slackened in front of the reed, substantially as described.

4. In a loom, a pivotally-mounted bar to act upon and stretch the cloth between the reed and take-up, a dog on said bar, a cooperating bunter, and a dog-controlling device operative upon failure of the weft to move said dog into position to be struck by the bunter, whereby the pivoted bar will act upon and stretch the cloth, substantially as described.

5. In a loom a weft-fork, the breast-beam, a swinging board pivotally mounted below it and to act upon the under side of the cloth to stretch it, and means controlled by the weft-fork, to swing said board outwardly and upwardly against the cloth when the weft fails, substantially as described

6. In a loom, a weft-fork, a normally inoperative device to act upon the cloth and stretch it between the reed and take-up, a dog and a cooperating bunter, to operate said device, a rock-shaft under control of the weft-fork, and means secured to said rock-shaft to move the dog into position to be struck by the bunter, substantially as described.

7. In a loom, a normally inoperative device to act upon and stretch the cloth between the reed and take-up, and means operative upon failure of the weft to move the said device to act upon and stretch the cloth in front of the reed, substantially as described.

569,587. RAILWAY-TRACK GAGE. DANIEL H. REODER, Wellington, Kans. Filed Mar. 14, 1895. Renewed May 15, 1896. Serial No. 591,716. (No model.)

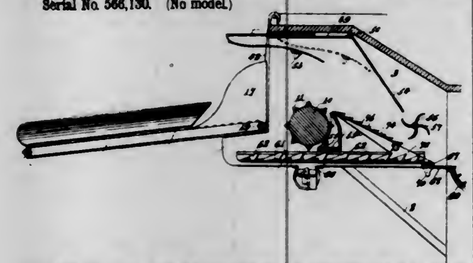


Claim.—1. A railway-track gage, consisting of a rod having at one end a recessed head and provided internally at opposite sides with a plurality of grooves, and a gage-block having opposite sides provided with grooves and adjustably engaging the grooves in the recessed head.

2. A railway-track gage, consisting of a rod having heads at its end portions, and one of the heads provided internally with a plurality of grooves, a grooved gage-block engaging the grooved head and adapted to be extended the required amount for any additional width of track on curves, and a curved or segmental bubble, or spirit-level mounted on the rod for establishing or verifying the necessary superelevation of the outer rails of curved track.

3. A railway-track gage, consisting of a rod having a forked, shouldered head at one end, and a chambered, or recessed head at the opposite end, provided internally with a plurality of grooves, an adjustable gage-block having a plurality of grooves engaging the grooves of the chambered, or recessed head for adjusting the gage-block to a greater or less extent, and a curved or segmental bubble, or spirit-level arranged in a chamber in the rod between the forked, shouldered head and the chambered, or recessed head, for establishing or verifying the necessary superelevation of the outer rails of curved track.

569,588. FEEDING ATTACHMENT FOR THRESHING-MACHINES. GEORGE W. RUCKER, Belle Plaine, Iowa. Filed Oct. 18, 1895. Serial No. 566,130. (No model.)



Claim.—1. In a feeding attachment, the combination of a casing having at its end means to support one end of a carrier, the said carrier, means for driving the same, and flexible connections secured to the end of the carrier which is supported on the casing, said connections being carried up over the top of the casing, substantially as set forth.

2. The combination of a carrier having a frame and side boards secured to and extending longitudinally along the sides of the frame, said side boards being adjustable toward and from each other and having means to maintain them parallel to each other when moved, substantially as set forth.

3. The combination of a carrier having a frame, and side rails provided with openings, brackets arranged to slide in said openings, and side boards secured to the brackets and adjustable toward and from each other, substantially as set forth.

4. The combination of a carrier having a frame provided with perforated side bars, triangular brackets having horizontal lower sides arranged to slide in said perforations in the side rails of the frame, the inner sides of said brackets being inclined upward and outward, and side boards secured to the inclined sides of the brackets, substantially as set forth.

5. The combination in a feeding attachment, of a casing having vertical guides, a carrier having engagement with said guides, sheaves on the upper part of the casing, and flexible connections secured to the carrier and passing over said sheaves, substantially as set forth.

6. The combination in a feeding attachment, of a frame, shafts journaled therein, an endless carrier on said shafts, a clutch member connected to turn with the shaft, a clutch member movable toward and from said first-named clutch member, means for driving the same, a rod connected to the movable clutch member, a wedge arranged to engage under and move said rod to shift the clutch member, means for holding the clutch members normally in engagement, and a lever connected to said wedge, to operate the same, substantially as set forth.

7. In a feeding attachment, the combination of a casing, a drum mounted to turn therein and provided with knives, a guide at the upper part of the casing, a slide in said guide, and knives on said slide, substantially as set forth.

8. In a feeding attachment, the combination of a casing, a drum mounted to turn therein and provided with knives, a guide at the upper part of the casing, a slide in said guide, springs on said slide, and a knife on said spring, substantially as set forth.

9. In a feeding attachment, the combination of a casing, knives operatively mounted therein, a conveyer arranged across the casing below the knives, means for operating said conveyer, and springs arranged at opposite sides of the conveyer to close the spaces between the same and the inner walls of the casing, substantially as set forth.

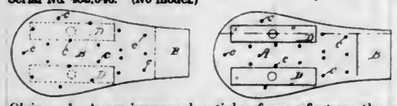
10. In a feeding attachment, the combination of a casing, knives operatively mounted therein, a conveyer comprising a floor arranged across the casing below the knives, means for operating the conveyer, and springs secured along the sides of the conveyer and projecting above the upper face thereof, said springs having their upper parts arranged to bear against the inner walls of the casing, substantially as set forth.

11. In a feeding attachment, the combination of a casing, a drum therein having knives, a conveyer below the drum, means for operating the conveyer, spring-plates secured to the sides of the conveyer and arranged to bear against the inner side walls of the casing, upwardly and rearwardly inclined portions on said plates, and an inclined floor secured to said inclined portions, substantially as set forth.

12. In a feeding attachment, the combination of a casing, knives operatively mounted therein, a conveyer located in the casing below the knives and having its rear end vertically movable, and a plate loosely secured at its ends to the sides of the casing and extending across the same beneath and adapted to support the rear end of the conveyer, said plate having its edge extending beyond the rear edge of the conveyer, and adapted to engage and rest on the separator-concave, substantially as set forth.

13. In a feeding attachment, the combination of a casing, knives operatively mounted therein, a conveyer located in the casing below the knives and having its rear end vertically movable, a plate extending across the casing beneath and adapted to support the rear part of the conveyer and lugs at the forward edge of said plate and at opposite ends thereof, said lugs being pivoted to the sides of the casing, said plate having its rear edge adapted for up-and-down movement when the plate is swung pivotally on said lugs, said rear edge of the plate being arranged to extend beyond the rear edge of the conveyer in position to engage the separator-concave, substantially as set forth.

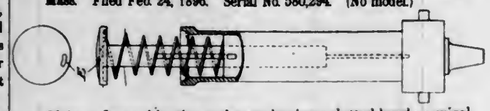
569,589. HEEL-CUSHION FOR BOOTS OR SHOES. CLARANCE P. SHAW, Abington, Mass., assignor of two-thirds to Charles H. Cobb, same place, and Edwin L. Sprague, Boston, Mass. Filed Aug. 8, 1893. Serial No. 482,646. (No model.)



Claim.—1. As an improved article of manufacture, the within-described heel-cushion, comprising the metal plate A, the lining B therefor, and a suitable number of bowed springs D, secured centrally to the under side of said plate, said cushion being adapted to be applied to the upper side of the inner sole of a boot or shoe of ordinary construction without alteration of said boot or shoe, the free ends of said springs engaging and free to slide upon the upper side of the inner sole above the heel of the boot or shoe when in use, substantially as described.

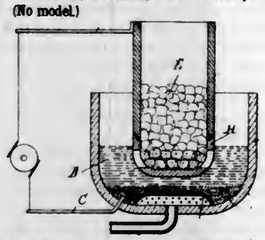
2. As an improved article of manufacture, the within-described heel-cushion, comprising the perforated metal plate A, the perforated lining B applied directly to said plate, the perforations of said plate and its lining registering, and a suitable number of bowed springs D, secured centrally to the under side of said plate, said cushion being adapted to be applied to the upper side of the inner sole of a boot or shoe of ordinary construction without alteration of said boot or shoe, the free end of said springs engaging and free to slide upon the upper side of the inner sole above the heel of the boot or shoe when in use, substantially as described.

569,590. HAND TACKING MACHINE. WALTER SHAW, Boston, Mass. Filed Feb. 24, 1896. Serial No. 580,294. (No model.)



Claim.—In combination a plunger having a slotted head; a spiral spring surrounding the stem of the plunger; and guides for the stem of the plunger; the head serving as the upper abutment of the spiral spring, and the slot in the head as a channel through which the spiral spring may be inserted and removed by turning the spring, substantially as set forth.

569,591. METHOD OF AND MEANS FOR ELECTRIC GENERATION. SIDNEY H. SHORT, Cleveland, Ohio. Filed Apr. 9, 1896. Serial No. 586,796. (No model.)



Claim.—1. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the electrochemical action of oxygen through the negative plate of the cell, as and for the purpose set forth.

2. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the electrochemical action of an electrolyte, capable of acting upon the carbon and regenerating the electrolyte through the agency of the negative plate; as and for the purpose set forth.

3. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the action of a decomposable electrolyte, capable of acting upon the carbon and regenerating the electrolyte by supplying oxygen thereto through the agency of the negative plate; as and for the purpose set forth.

4. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the electrochemical action of an electrolyte, capable of acting upon said carbon in the presence of heat and regenerating the electrolyte by supplying the active element thereof through the agency of the negative plate; as and for the purpose set forth.

5. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the action of a decomposable electrolyte and simultaneously therewith regenerating said electrolyte by supplying oxygen thereto through the agency of the negative plate; as and for the purpose set forth.

6. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the action of a decomposable oxid and then supplying oxygen to said oxid through the agency of the metallic base of such oxid to regenerate the same; as and for the purpose set forth.

7. The method of converting the potential energy of carbon into electrical energy, which consists in subjecting the carbon to the electrochemical action of a decomposable electrolyte containing oxygen and capable of yielding its oxygen, and then regenerating such oxid through the agency of the negative plate by the addition thereto of fresh oxygen; as and for the purpose set forth.

8. The method of generating electricity from carbon which consists in oxidizing a negative plate in the presence of an electrolyte adapted to transfer the oxygen to the carbon, as and for the purpose set forth.

9. The method of generating electricity from carbon which consists in forming oxids of the negative plate and then subjecting the carbon to the action of such oxid as and for the purpose set forth.

10. The method of converting the potential energy of carbon into electrical energy which consists in supplying oxygen to the negative plate to form an oxid thereof and then subjecting the carbon to the electrochemical action of such oxid, as and for the purpose set forth.

11. The method of converting the potential energy of carbon into electrical energy which consists in supplying air to the negative plate to form an oxid thereof and then subjecting the carbon to the electrochemical action of such oxid, as and for the purpose set forth.

12. The method of converting the potential energy of carbon into electrical energy which consists in supplying blasts of air to the negative plate to form an oxid thereof and then subjecting the carbon to the electrochemical action of such oxid, as and for the purpose set forth.

13. The method of converting the potential energy of carbon into electrical energy which consists in forming an oxid from the negative plate of a cell and subjecting the carbon to the action of such oxid, and maintaining the whole in a heated condition, as and for the purpose set forth.

14. The method of converting the potential energy of carbon into electrical energy which consists in forming an oxid from the negative plate of a cell and subjecting the carbon to the electrochemical action of such oxid in the presence of heat, as and for the purpose set forth.

15. The method of converting the potential energy of carbon into electrical energy which consists in supplying oxygen to the negative plate in the presence of heat and then subjecting the carbon to the electrochemical action of the resulting oxid, as and for the purpose set forth.

16. The method of converting the potential energy of carbon into electrical energy which consists in supplying oxygen in a heated condition to the negative plate of a cell and then subjecting the carbon to the electrochemical action of the resulting oxid, as and for the purpose set forth.

17. The method of converting the potential energy of carbon into electrical energy which consists in maintaining the negative plate in molten condition, then supplying oxygen thereto and finally subjecting the carbon to the electrochemical action of the resulting oxid, as and for the purpose set forth.

18. The method of converting the potential energy of carbon into electrical energy which consists in reducing the negative plate to molten state by subjecting the same to hot air, and then subjecting the carbon to the electrochemical action of the resulting oxid, as and for the purpose set forth.

19. The method of converting the potential energy of carbon into electrical energy which consists in subjecting the negative plate to hot air whereby it is reduced to molten state and is oxidized, and then subjecting the carbon to the electrochemical action of such oxid, as and for the purpose set forth.

20. The method of converting the potential energy of carbon into electrical energy which consists in oxidizing lead and then subjecting the carbon to the electrochemical action of the lead oxid, as and for the purpose set forth.

21. An apparatus for converting the potential energy of carbon into electrical energy comprising the combination of a negative plate adapted to receive oxygen and an electrolyte adapted to transfer the oxygen to the carbon, as and for the purpose set forth.

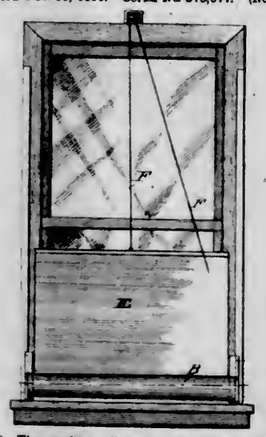
22. As a generator of electricity, an oxidizable plate, a carbon plate and an intervening electrolyte adapted to transfer electrochemically the oxygen from such oxidizable plate to the carbon plate, as and for the purpose set forth.

23. As a generator of electricity, an oxidizable plate, a carbon plate and an intervening molten mass or electrolyte adapted to transfer electrochemically the oxygen from such oxidizable plate to the carbon as and for the purpose set forth.

24. As a generator of electricity, a lead plate, a carbon plate and an intervening lead oxid and means for supplying oxygen to said lead plate, as and for the purpose set forth.

25. The combination of a carbon plate, a plate of material negative as compared with carbon, an electrolyte medium connecting said plates, and means for supplying oxygen to said medium through the agency of said negative material; as and for the purpose set forth.

569,592. CURTAIN-FIXTURE. EMSLEY L. SLIGHT, Ennis, Tex., assignor of two-thirds to James A. Mulkey and Edward Wilkins, same place. Filed Feb. 11, 1896. Serial No. 578,877. (No model.)



Claim.—1. The spring-roller curtain with vertically-adjustable sliding head carrying the journals of the same and having grooved runners at its end, in combination with guide-strips on the window-frame, and a pinching cam-pulley and cord extending from the pulley to the curtain and holding the same against the tension of the spring-

roller and means for holding the sliding head to its varying adjustments against its tendency to roll onto the curtain from the tension of its spring-roller substantially as shown and described.

2. The combination of a spring roller curtain, a sliding head extending across the window and formed with a curved housing inclosing the roller, and slotted ends retaining the journals and provided with runner extensions, a pinching cam pulley and cord extending from the pulley to the curtain and holding the latter against the tension of the spring-roller, guide-strips on the window-frame adjustably retaining the sliding head, and friction-springs for holding the latter to its position substantially as and for the purpose described.

3. The combination with the guide-strips on the window-frame, of a sliding head having grooves in its ends to receive the journals of the spring-roller and runners for its guiding-strips; in combination with plugs fitting in said grooves and retaining the journals, and flat springs fastened to the ends of the head between the latter and the window-frame to provide a frictional lock for the sliding head and also to retain the plugs substantially as and for the purpose described.

569,593. ARTIFICIAL HAND. JOHN VOEGTLEIN, Republic, Mich., assignor of one-half to George W. Barnes and Amanda E. Barnes, same place. Filed Mar 9, 1896. Serial No. 582,447. (No model.)



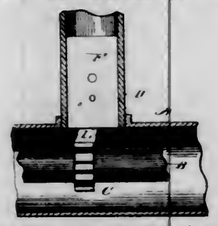
Claim.—1. An artificial hand consisting of a wrist portion, a series of finger members connected therewith, each formed of sections pivoted to each other and having also toggle joining means, said toggle devices being operated from the wrist portion as specified.

2. An artificial hand comprising a wrist portion and articulated finger members having toggle devices joining same, a slidable cuff member held on the wrist portion connected with the toggle devices and means for sliding such cuff member all arranged substantially as shown and for the purposes described.

3. An artificial hand comprising a wrist portion and artificial finger members, toggle devices joining the same, a cuff member joined to such toggle devices, held to slide on the wrist portion and a screw-ring connected to the said cuff, movable on the wrist portion all arranged substantially as shown and described.

4. An artificial hand having a wrist portion articulated finger members connected therewith, and means held on the wrist portion adapted to be operated by contact with a counter or shelf as set forth.

569,594. BICYCLE-LOCK. CHARLES R. WOODBURY, Washington, D. C. Filed Feb. 11, 1896. Serial No. 578,892. (No model.)



Claim.—1. In a bicycle a pedal-shaft having within an inclosure cogs projecting radially beyond the periphery of the shaft to its several sides, in combination with an inclosed lock-bar pivoted so its free end may move back and forth lengthwise of such shaft by means of a key, so as to pass into or out of engagement with such cogs, to lock and unlock the bicycle, substantially as set forth.

2. In a bicycle the pedal-shaft having cogs C projecting around it, in combination with a lock having a lever L held by a pivot P so as to turn to pass lengthwise of the shaft between the cogs, and a slide M' adapted to be moved by the same key as the lever to lock the lever in position locked or unlocked.

3. In a bicycle having on its pedal-shaft a cog-wheel C, a lock having the lever L pivoted to move in line lengthwise between such cogs to lock and unlock the bicycle by means of such cogs, substantially as set forth.

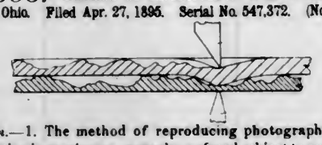
4. In a bicycle having on its pedal-shaft a cog-wheel C, a lock having a lever L pivoted to turn to lock and unlock the bicycle by means of such cogs, in combination with a slide adapted to be moved by a key and held by a spring S, and having a catch M' adapted to hold the lever locked or unlocked, substantially as set forth.

5. In a bicycle a lock inclosed in a part of its frame and adapted to lock the bicycle, and having in addition to the parts adapted to lock the bicycle, a spring-holder I adapted to catch and lock the barrel G in place, and thus lock the lock in its seat, and adapted to be operated by a separate key from that adapted to operate the lock, so as to enable the barrel to be removed to unfasten the lock in its seat for removal.

6. In a bicycle a tubular frame having its pedal-shaft seat arranged to form a passage-way into a seat in an upward tube of the frame, in combination with a removable lock adapted to lock the pedal-shaft, and to be inserted and removed by such passage-way and to be held in such seat, and having a projecting shoulder or part adapted to serve in connection with a notch or seat for such projection, as a guide in inserting and adjusting the lock in place properly, and in holding it secure.

7. In a bicycle a removable lock located in an inclosed seat, and having a key-barrel arranged to be inserted as a holder and having a spring-holder in the lock adapted to engage with a recess in such barrel-holder after its insertion so as to lock the holder in its seat, in combination with a special key different from a key adapted to lock and unlock the lock, adapted to disengage such spring-holder and thus allow the lock to be removed.

569,595. METHOD OF ENGRAVING. NOAH S. AMSTUTZ, Cleveland, Ohio. Filed Apr. 27, 1895. Serial No. 547,372. (No model.)



Claim.—1. The method of reproducing photographs, sketches, &c., consisting in causing an unevenly-surfaced subject to automatically present a superimposed recording material, more or less against a recording-tool, substantially as specified.

2. The method of reproducing photographs, sketches, &c., consisting in causing an unevenly-surfaced subject to automatically present a recording film, sheet or plate more or less against a recording-tool, the recording material being placed between the subject and the tool, substantially as specified.

3. The method of reproducing photographs, sketches, &c., consisting in first producing a composite plate or sheet by placing an unevenly-surfaced subject and a reproducing material one against the other, and then progressively subjecting the reproducing material to the action of a recording-point as the material is automatically directed by the uneven subject, substantially as specified.

4. The method of reproducing photographs, sketches, &c., consisting in causing an unevenly-surfaced subject to automatically move a superimposed recording material to and from an adjacent recording-tool, according to the configuration of the subject.

5. The method of reproducing photographs, sketches, &c., consisting of first producing a composite plate or sheet by placing a variable-surfaced subject and a reproducing material one against the other, and then progressively subjecting the reproducing material to the action of a graver or cutter disposed at a predetermined distance from the point of support, whereby the reproducing material is caused to conform substantially to the undulations of the relief or intaglio surface and receive cuttings of varying depth.

6. The method of reproducing pictures, sketches, &c., consisting of first producing a composite plate or sheet by placing a subject in relief or intaglio and a reproducing material one against the other, then placing said composite plate or sheet between two points, one of which is a graver or cutter, arranged at a predetermined distance from each other, and causing the graver or cutter to produce cuttings of varying depth upon the reproducing material according to variations of the relief or intaglio surface, substantially as specified.

7. The method of reproducing pictures, sketches, &c., consisting in progressively presenting the different portions of a reproducing material to the action of a graver or cutter while the reproducing material and a variable-surfaced subject are superimposed.

8. The method of reproducing pictures, sketches, &c., consisting in progressively subjecting a relief-surface and superimposed film or sheet to the action of a graver or cutter which is held in a fixed position relative to the thickness of the films or sheets.

9. The method of reproducing pictures, sketches, &c., consisting in forming the subject in the shape of a relief or intaglio surface, and placing contiguous thereto a suitable cutter and causing a sheet of any suitable material to engage the relief-surface between such cutter and such surface, the said sheet of material and relief-surfaced subject being held in absolute register and by means of the relief-surface causing the cutter to penetrate the sheet deeper and shallower according to the configurations of the relief-surface, substantially as specified.

10. The method of reproducing relief or intaglio surfaces, consisting in placing the material upon which the reproduction is to be made between such surface and a contiguous cutter, and holding the surface and material in register, and while so held moving the cutter in parallel paths in one or more directions across the material, whereby the unevenness of the surface causes the cutter to penetrate the material to a greater or less depth, thereby reproducing in lines upon such surface a facsimile of the subject.

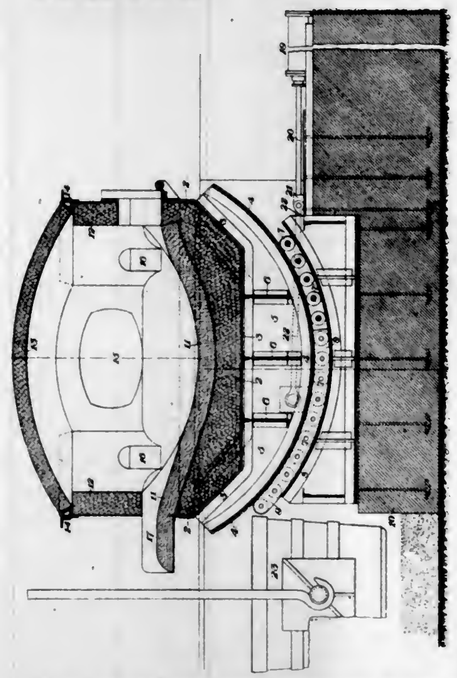
11. The method of reproducing relief or intaglio surfaces, consisting in forming parallel grooves upon a reproducing material, placing said material between such surface and a contiguous cutter and then moving the material and surface at about right angles to the grooves, whereby the unevenness of the relief or intaglio surface will cause the cutter to penetrate deeper or shallower into the material.

12. The method of engraving, consisting first in forming a subject with an uneven surface; second in resting against said surface yielding material; third in fixing a graver or cutter at a predetermined distance from the support of said uneven surface, and fourth, in giving motion to either the said subject and yielding material, or to the said graver or cutter.

13. A relatively-fixed cutter, a subject comprising a variable surface, a holder for supporting the said surface, said holder supported at a uniform distance from the cutter, and means for progressively presenting the different portions of a reproducing material, interposed between said cutter and variable surface, to the action of the cutter while it and the relief-surface are superimposed.

REISSUES.

11,572. OPEN-HEARTH FURNACE. HENRY AIKEN, Pittsburg, Pa., FREDERICK W. WOOD, Baltimore, Md., and HARRY H. CAMPBELL, Steelton, Pa. Filed Sept. 5, 1896. Serial No. 605,043. Original No. 481,885, dated Aug. 30, 1892.

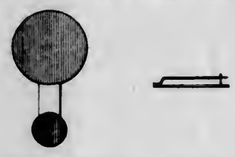


Claim.—1. A metallurgical furnace having rockers on which it can be tipped, a supporting-cradle, traveling antifriction-rollers between the rockers and cradle, and a discharging-spout at the end of the furnace toward which it is oscillatory substantially as and for the purposes described.

2. A metallurgical furnace having rockers on which it can be tipped, a supporting-cradle comprising curved rails, lateral, confining-plates, antifriction-rollers set on the rails between said plates, and means for tipping the furnace, substantially as and for the purposes described.

DESIGNS.

26,170. BADGE. JOHN W. HERBERT, Salem, Nebr. Filed July 18, 1896. Serial No. 599,739. Term of patent 3½ years.



Claim.—The design for a badge, substantially as shown and described.

26,171. BADGE. JUNIUS F. WHITING and EZRA CATHER, Lebanon, Oreg. Filed Aug. 17, 1896. Serial No. 603,089. Term of patent 3½ years.



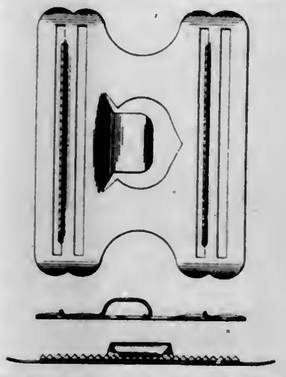
Claim.—The design for a campaign badge, substantially as herein shown and described.

26,172. HAIR ORNAMENT. ALBERT PHILIP SUTER, New York, N. Y. Filed Sept. 4, 1896. Serial No. 604,904. Term of patent 14 years.



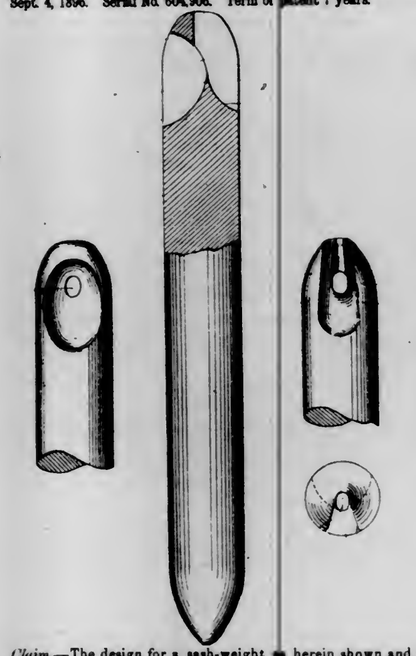
Claim.—The design for a hair ornament, as herein described.

26,173. BACK-BAND HOOK. HIRAM E. WETHERBEE, Greenville, Miss., assignor of one-half to Loui Hart, Cincinnati, Ohio. Filed Aug. 26, 1896. Serial No. 604,032. Term of patent 14 years.



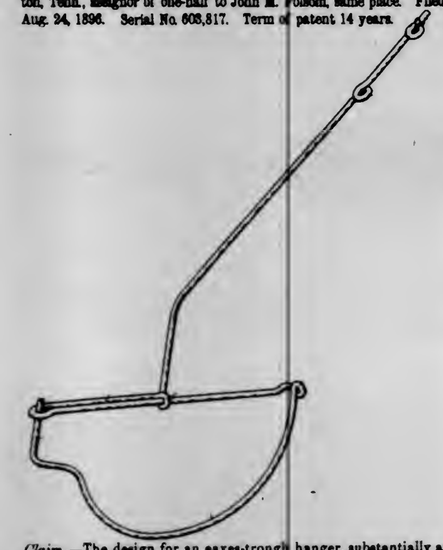
Claim.—The design for a back-band hook herein shown and described.

26,174. SASH-WEIGHT. ROBERT R. BREN, New York, N. Y. Filed Sept. 4, 1896. Serial No. 604,906. Term of patent 7 years.



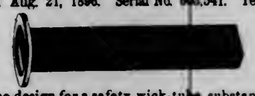
Claim.—The design for a sash-weight as herein shown and described.

26,175. EAVES-TROUGH HANGER. JOHN F. PIERCE, Elizabethton, Tenn., assignor of one-half to John M. Folsom, same place. Filed Aug. 24, 1896. Serial No. 603,817. Term of patent 14 years.



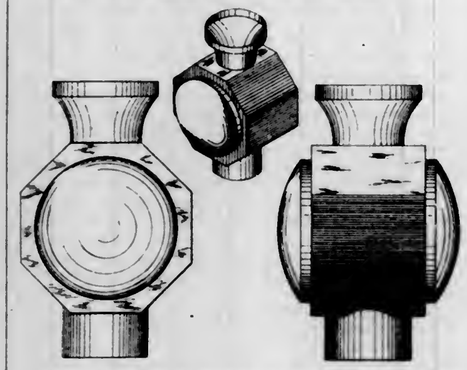
Claim.—The design for an eaves-trough hanger, substantially as shown and described.

26,176. SAFETY WICK-TUBE. ROBERT H. SMITH, Washington, D. C. Filed Aug. 21, 1896. Serial No. 603,541. Term of patent 7 years.



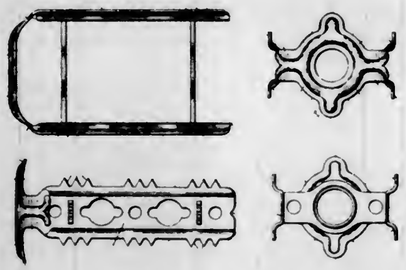
Claim.—The design for a safety wick-tube, substantially as herein shown and described.

26,177. BICYCLE-LAMP BODY. GEORGE HAVELL, Newark, N. J., assignor to the Havell Manufacturing Company, same place. Filed May 22, 1896. Serial No. 592,681. Term of patent 14 years.



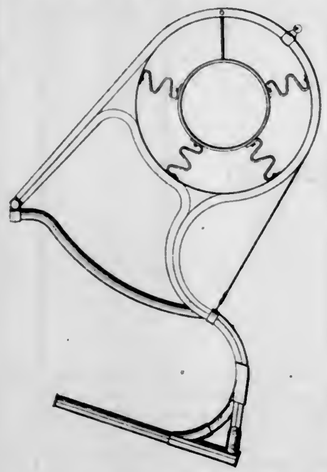
Claim.—The design for the body of a bicycle-lamp, substantially as herein shown and described.

26,178. FOOT-PLATE FOR BICYCLE-PEDALS. WARREN R. WARNER, Rochester, N. Y. Filed Aug. 26, 1896. Serial No. 604,034. Term of patent 7 years.



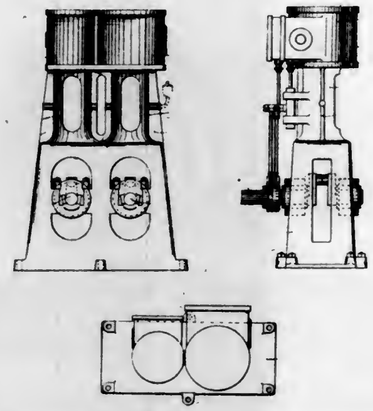
Claim.—The design for a foot-plate for bicycle-pedals, substantially as shown and described.

26,179. BICYCLE-FRAME. LUTHER G. BILLINGS, Clifton, N. Y. Filed Aug. 28, 1896. Serial No. 604,224. Term of patent 14 years.



Claim.—The design for a frame for a bicycle, substantially as herein shown and described.

26,180. FRAME FOR STEAM-ENGINES. HENRY M. LANE, Cincinnati, Ohio. Filed Aug. 5, 1896. Serial No. 601,810. Term of patent 14 years.



Claim.—The design for the frame of a steam-engine, substantially as herein described and shown.

26,181. CASING FOR HEATING APPARATUS. ROBERT M. DIXON, East Orange, N. J., assignor to The Safety Car Heating and Lighting Company, New York, N. Y. Filed Mar. 22, 1894. Serial No. 504,726. Term of patent 14 years.



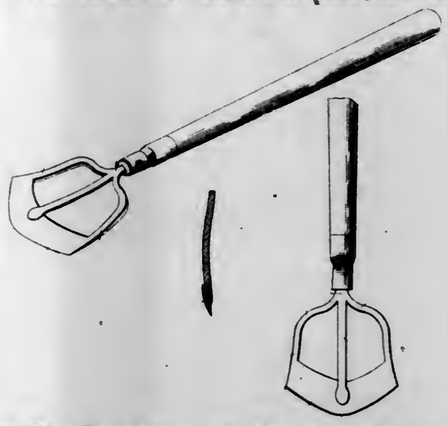
Claim.—A casing for heating apparatus consisting of the peculiar exterior configuration herein shown and described.

26,182. GRAVE-MARKER. IRA C. MOORE and CHARLES FRED TROTT, Waterbury, Conn. Filed June 20, 1896. Serial No. 596,347. Term of patent 14 years.



Claim.—The design for a grave-marker substantially as shown and described.

26,183. WEED-HOE. SAMUEL CRAIG and JOHN CRAIG, Garden City, Kans. Filed Sept. 1, 1896. Serial No. 604,588. Term of patent 14 years.



Claim.—The design for a weed-hoe herein shown and described.

26,184. KITCHEN-CABINET. JAMES WILLIAM BURNETT, Huntington, W. Va. Filed Sept. 3, 1896. Serial No. 604,801. Term of patent 14 years.



Claim.—The design for kitchen-cabinets herein shown and described.

26,185. CHAIR. THEODORE J. PALMER, Hackensack, N. J. Filed Aug. 20, 1896. Serial No. 603,421. Term of patent 3½ years.



28,985.



Claim.—The design for a chair as herein shown and described.

26,186. GAME-BOARD. JAMES M. SCHWARTZ, New York, N. Y. Filed Sept. 4, 1896. Serial No. 604,906. Term of patent 3½ years.



Claim.—The design for a game-board, substantially as shown and described.

26,187. BAGATELLE-BOARD. WILLIAM L. SOMMER, New York, N. Y. Filed Sept. 1, 1896. Serial No. 604,587. Term of patent 7 years.



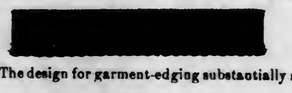
Claim.—The design for bagatelle-boards, substantially as herein shown and described.

26,188. PRINT OR PATTERN FOR CIGAR-BOXES. NICHOLAS WITSCH, Jersey City, N. J., assignor to the American Lithographic Company, New York, N. Y. Filed Sept. 5, 1896. Serial No. 605,033. Term of patent 7 years.



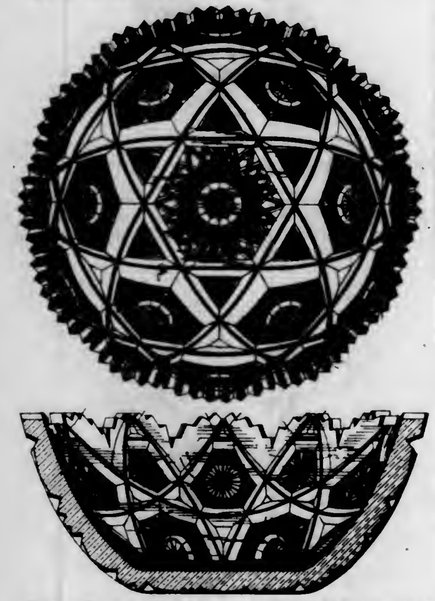
Claim.—The design for an ornamental print or pattern for cigar-boxes, substantially as shown and described.

26,189. GARMENT-EDGING. HENRY HAASE, Philadelphia, Pa., assignor to the Hensel, Colladay Company, of Pennsylvania. Filed Aug. 8, 1896. Serial No. 602,201. Term of patent 14 years.



Claim.—The design for garment-edging substantially as described and shown.

26,190. GLASS VESSEL. BENJAMIN DAVIES, Hoboken, N. J., assignor to L. Straus & Sons, of New York. Filed Sept. 5, 1896. Serial No. 605,032. Term of patent 7 years.



Claim.—The design for the ornamentation of glass vessels substantially as herein described and shown.

TRADE-MARKS

REGISTERED OCTOBER 13, 1896.

28,978. CORSETS AND SIMILAR UNDERWEAR. THE WARNER BROTHERS COMPANY, New York, N. Y., Chicago, Ill., and Bridgeport, Conn. Filed Aug. 25, 1896.



Essential feature.—A representation of the whole or a portion of the human figure covered with an outer garment, showing a portion of an undergarment as though visible by means of X-rays. Used since April 20, 1896.

28,979. CARPETS, COVERS, AND FURNITURE STUFFS. GEBRÜDER SCHOELLER, Düren, Germany. Filed July 20, 1896.



Essential feature.—A representation of an anchor. Used since April 11, 1892.

28,980. COTTON YARNS. J. P. NAWRATH & CO., New York, N. Y. Filed Sept. 15, 1896.

RED BALL



Essential feature.—The representation of a ball and the symbolic words above it, "RED BALL." Used since 1871.

28,981. BINDING-TWINE. DEERING HARVESTER COMPANY, Chicago, Ill. Filed Sept. 10, 1896.



Essential feature.—A picture of a bale of twine with the word "DEERING" printed thereacross. Used since February 1, 1896.

28,982. TRANSMISSION-ROPE. H. CHANNON COMPANY, Chicago, Ill. Filed Sept. 14, 1896.

AJAX

Essential feature.—The word "AJAX." Used since December 15, 1895.

28,983. POWER-BELTING. FAYERWEATHER & LADEW, New York, N. Y. Filed Sept. 17, 1896.



Essential feature.—The words "HOYT'S CRESCENT" and a representation of a crescent and a star pierced by an arrow. Used since September 10, 1895.

28,984. POWER-BELTING. FAYERWEATHER & LADEW, New York, N. Y. Filed Sept. 17, 1896.



Essential feature.—The words "HOYT'S LION" and a representation of a lion's head. Used since October 10, 1895.

28,985. LITHOGRAPHIC PRINTS. KAUFMANN & STRAUSS COMPANY, New York, N. Y. Filed July 25, 1896.



Essential feature.—A representation of a shield bearing on its lower part a monogram of the letters "K & S Co" and on its upper part a representation of a printer's roller and surmounted by a staff bearing a pair of outstretched wings. Used since July 6, 1896.

28,986. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "A." Used since January 1, 1896.

28,987. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "B." Used since January 1, 1896.

28,988. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "F." Used since January 1, 1896.

28,989. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "J." Used since January 1, 1896.

28,990. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "P." Used since January 1, 1896.

28,991. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Aug. 17, 1896.



Essential feature.—The letter "W." Used since January 1, 1896.

28,992. COUGH MIXTURES, BLOOD-PURIFIERS, POWDERS, LINIMENTS, PILLS, SYRUPS, EXTRACTS, TONICS, AND BITTERS. ELLSHUNT MEDICINE CO., Des Moines, Iowa. Filed July 10, 1896.

Ellshunt

Essential feature.—The word "ELLSHUNT." Used since June 1, 1896.

28,993. REMEDIES FOR DISEASES OF THE BLOOD, LIVER, AND KIDNEYS. BRIGHTS CHEMICAL CO., Little Falls, N. Y. Filed Aug. 27, 1896.



Essential feature.—A representation of the Statue of Liberty, two lions arranged at the foot of the said statue, sunset appearing in the background, the words "BLOOD, LIVER AND KIDNEY CURE, CURES BLOOD, LIVER AND KIDNEYS," arranged radially and in the rays of the setting sun, a scroll partly encircling the representation and words, the words "BRIGHTS KIDNEY BEAN FOR PAIN IN THE BACK" arranged on the said scroll, four scrolls angularly disposed, on which appear the words "KIDNEYS, LIVER, BOWELS, BLOOD," the words "TRADE MARK 1896" arranged on a scroll located below the statue, the words "PRICE 50c." arranged on each side of said scroll, and inclosing lines surrounding the representation and words. Used since January 1, 1896

28,994. REMEDIES FOR BLOOD DISEASES. CHEMISCHE FABRIK GRÜNAU LANDSHOFF & MEYER, Grünau, Germany. Filed Apr. 24, 1896.

Eurythrol

Essential feature.—The word "EURYTHROL." Used since March 1, 1896.

28,995. REMEDY FOR INEBRIETY. ELIZABETH WILLIAMS MARTINDALE CAMERON, Brooklyn, N. Y. Filed Sept. 16, 1896.



INEBRATONE

Essential feature.—The word "INEBRATONE," a pictorial representation of a pyramid, and the letters "V. I. M." Used since September 10, 1896.

28,996. REMEDY FOR BURNS. SALLIE B. HULL, Fort Worth, Tex. Filed Aug. 24, 1896.

ANTIBRULE

Essential feature.—The word "ANTIBRULE." Used since April 1, 1896.

28,997. SPECIFICS FOR THE EXTERMINATION OF ZYMOTIC AND CONTAGIOUS DISEASES. ANTON LIEBIG, New York, N. Y. Filed Sept. 15, 1896.

ANTIDOTUM ULTIMATUM

Essential feature.—The words "ANTIDOTUM ULTIMATUM." Used since January 1, 1887.

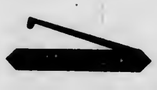
28,998. MEDICATED TABLETS. ORION KING, Cleveland, Ohio. Filed July 13, 1896.

REX

VAGINAL TABLETS

Essential feature.—The words "REX VAGINAL TABLETS." Used since July 1, 1896.

28,999. TEETHING-POWDERS. JAMES H. STEDMAN, London, England. Filed Aug. 17, 1896.



Essential feature.—The words "GUM LANCET" appearing upon a facsimile of the same. Used since February 23, 1877.

29,000. LEMONS. SANTA BARBARA LEMON GROWERS' EXCHANGE, Santa Barbara, Cal. Filed Sept. 17, 1896.



Essential feature.—A representation of an ancient mission-bell or other kind of bell. Used since August 1, 1896.

29,001. LEMONS. SANTA BARBARA LEMON GROWERS' EXCHANGE, Santa Barbara, Cal. Filed Sept. 17, 1896.



Essential feature.—A representation of a California or other kind of palm. Used since August 1, 1896.

29,002. COLORS FOR CONFECTIONERS. OEHME & BAIER, Leipsic, Germany. Filed Aug. 17, 1896.



Essential feature.—A representation of a griffin holding in one claw a heraldic shield. Used since January 1, 1894.

29,003. MINERAL SPRING WATER. THE PURITAS MINERAL SPRINGS COMPANY, Cleveland and Rockport, Ohio. Filed Aug. 20, 1896.

PURITAS WPMSCo WATER

Essential feature.—The words "PURITAS WATER," in connection with a representation of a lozenge bearing upon its face the initial letters of the registrant. Used since October, 1894.

29,004. WHISKIES. CARSTAIRS, MCCALL & CO., Philadelphia, Pa. Filed Sept. 14, 1896.

BELLE OF PENNSYLVANIA

Essential feature.—The words "BELLE OF PENNSYLVANIA." Used since September 4, 1896.

29,005. WHISKIES. CARSTAIRS, MCCALL & CO., Philadelphia, Pa. Filed Sept. 14, 1896.

INVINCIBLE

Essential feature.—The word "INVINCIBLE." Used since September 4, 1896.

29,006. STOGIES. THE R. & W. JENKINSON COMPANY, Pittsburg and Allegheny, Pa. Filed June 19, 1896.



Essential feature.—The word "WINNERS," having a large "W" with a wreath encircling the same and the balance of the word arranged between horizontal lines. Used since April, 1893.

29,007. WALL-SIZE. VICTOR J. BUCHMAN and NORMA A. STERN, Bridgeport, Conn. Filed June 23, 1896.

MOLESCA

Essential feature.—The word "MOLESCA." Used since February 27, 1896.

29,008. BICYCLES, VELOCIPEDES, AND ARTICLES ACCESSORY THERETO. THE LOZIER MANUFACTURING COMPANY, Toledo, Ohio. Filed Aug. 19, 1896.



Essential feature.—Shield-like figures and connecting and intersecting bars, displayed on a background of contrasting color or tint. Used since October 21, 1895.

29,009. BICYCLES. THE STODDARD MANUFACTURING COMPANY, Dayton, Ohio. Filed Sept. 8, 1896.

TIGER



Essential feature.—The word "TIGER" or a representation of a tiger. Used since January 5, 1895.

29,010. PERFUMES, SOAP, AND CREAMS. APOTHEKER WEISS & CO., Giessen, Germany. Filed May 18, 1896.



Essential feature.—A representation of a rhombus and the word "IRIS." Used since August, 1894.

THE NORRIS PETERS CO. PHOTO-LITHO. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

DRAWBAUGH *v.* SEYMOUR, COMMISSIONER OF PATENTS.

Decided September 29, 1896.

1. DRAWBAUGH—TELEPHONE—REJECTION.

Applications of Daniel Drawbaugh, Serial No. 111,554, filed November 12, 1893, and Serial No. 126,530, filed April 3, 1884, for telephone-transmitters, examined and *Held* to have been properly rejected by the Patent Office, as Drawbaugh was not the inventor.

2. AFFIDAVIT UNDER RULE 75.

In an affidavit under Rule 75 total omission of a statement of facts as to the time and circumstances of the conception of the invention and its development to completion prior to the filing date of the reference is fatal.

3. STATUTORY REQUIREMENTS—COMPLIANCE WITH—ONUS ON APPLICANT.

In an application for a patent the onus of showing that all the conditions and provisions of the law have been fully complied with, making it appear that the inventor is justly entitled to a patent under the law, and showing that the invention is sufficiently useful and important to justify the issue of a patent is upon the applicant.

4. COMMISSIONER—AUTHORITY AND DUTY OF.

Notwithstanding that the law has provided certain official agencies to advance the work of the Patent Office the Commissioner is the head of the Bureau, and if there be any reasonable ground within his knowledge why a patent should not issue, whether specific objection be raised by the Examiners or not, it is his duty to refuse the patent, and it is especially his duty to do so when the Primary Examiner and the Examiners-in-Chief have found such ground for refusal to exist.

5. DEFENSE OF PRIORITY—PRIOR INVENTION MUST HAVE BEEN COMPLETE.

Where a plaintiff claims to be an original inventor and the defense is that the defendant is a prior inventor, thus conceding the invention of the plaintiff, but challenging his claim to priority of invention, it is imperative that the invention or discovery relied upon as a defense must have been complete and capable of producing the result sought to be accomplished, and this fact must be shown by the defendant. Progress, as such, no matter how near it may have approximated the end in view, cannot avail to defeat a patent. (Citing *Coffin* v. *Ogden*, 5 O. G., 270; 18 Wall., 120-124.)

6. FINDING BY SUPREME COURT CONCLUSIVE.

It is not for a moment supposable that if a device produced in an incomplete state by the defense in a court suit was or had been practically operative it would not have been produced in evidence in an operative condition. In view of this and in view of a finding by the Supreme Court that the original instrument did not disclose the complete invention and that all claims to the contrary are wholly unfounded in truth such finding will be accepted as final and conclusive.

7. TECHNICAL PARTY—JUDGMENT.

It is not necessary that a person should appear upon the record as a technical party to the proceedings in order to be bound by a judgment. If he be a substantial party, he will be bound by the finding in the case.

8. UNCERTIFIED COURT RECORD—OFFICIAL REPORT, TAKING NOTICE OF.

It is not necessary that a duly-certified transcript record of a case in a Federal court be filed in the Patent Office in order to render it competent for its tribunals to take notice of and be guided thereby. The officials of the Patent Office are not obliged to find their conclusions and judgments upon such evidence produced in such manner and form as is required by the rules of common law. They are not confined to merely technical evidence, but may resort to any source of intelligence upon which they can reasonably and safely act The findings and judgment of a court as published in an official report are therefore competent to them, and were in this case ample ground for the rejection of claims.

32. In the matter of the application of Daniel Drawbaugh, assignor, and by mesne assignments, to the Drawbaugh Telephone and Telegraph Company, assignee, for an improvement in telephone-transmitters.

34. In the matter of the application of Daniel Drawbaugh, assignor, and Drawbaugh Telephone and Telegraph Company, assignee, for an improvement in telephone-transmitters.

Messrs. Church & Church for the appellants.

ALVEY, *Ch. J.:*

These appeals, Nos. 32 and 34, are from the Patent Office, and present questions of the right to patents for certain alleged new and useful improvements in telephone-transmitters. The applications in the two cases are founded upon substantially the same subject of alleged invention, and the questions presented in the two cases are substantially the same, and the two appeals have been argued together as one case, and may therefore be considered and determined together as one case.

The oral argument was heard in November last; but time was given to file additional briefs as to a question of practice and of power in the Patent Office, and in the meantime the appellant, Drawbaugh, made application to Congress for relief in respect to his alleged invention of the speaking-telephone and operative apparatus, including the alleged inventions involved in these appeals. While that application was pending and being considered by a Congressional committee we deemed it proper to withhold the decision of this court, as our decision might possibly affect, prejudicially, the application to Congress. We have, however, been informed that the particular claim of invention involved in these appeals has been withdrawn from the application before Congress, and we now proceed to decide upon and dispose of the claims presented in the present application.

The records of these appeals show that on the 12th of November, 1883, the appellant, Daniel Drawbaugh, filed in the Patent Office an application for a patent for certain new and useful improvements in telephone-transmitters, which application became known and designated as Serial No. 111,554 and is the one upon which the appeal in Case No. 32 is based; that subse-

quently, on the 3d of April, 1884, Drawbaugh filed a second application as a division of his prior application of the 12th of November, 1883, whereby he sought to obtain a patent for a divisible part of the invention described and claimed in his prior application. This second application is known and designated as Serial No. 126,530 and is the application upon which the appeal in No. 34 is founded.

Both of the applications in question have been assigned to and are now owned by the Drawbaugh Telephone and Telegraph Company, according to the statement contained in the brief of the appellant.

The claims in No. 111,554 are five in number, and in No. 126,530 the claims were sixteen in number, though only the first nine of these latter are presented for consideration here. These latter and the five claims in No. 111,554 are those only involved on the present appeals. These several claims are recited in the margin below in the terms in which they were made in the Patent Office.* They were all rejected by the Primary Examiner, and his rejection of such claim was duly affirmed by the Board of Examiners-in-Chief on appeal by Drawbaugh, and on further appeals to the Commissioner in person the rejection of the preceding claims was affirmed, and hence the appeals to this court.

The rejection of the applications on the several appeals was founded principally upon three grounds: first, that Drawbaugh, the appellant, failed to overcome and show antedates of his alleged invention to the dates of certain references made in the Patent Office, being patents and publications showing and describing in substantial manner the invention claimed by Drawbaugh, by reason of the insufficiency and incredibility of the affidavit or affidavits filed by him under Rule 75 of the Patent Office; second and principally, that Drawbaugh was not in fact the inventor at all of the telephone-transmitter claimed by him, so held by the officials of the Patent Office on the findings and authority of the Supreme Court of the United States in the case of the *American Bell Telephone Company* v. *The People's Telephone Company*, reported, with other cases, in 43 O. G., 377 and 126 U. S., 1, and known as the "*Telephone Cases*," and, thirdly, that if Drawbaugh had in fact made any progress toward completing such invention as that claimed by him he had by his great delay and neglect in completing and bringing forward the same abandoned all claim thereto.

The appellant has assigned a great number of reasons for the appeals—eighteen in all—the reasons being the same in both appeals. The errors assigned against the rulings of the Patent Office officials are reducible to three or four, and are that the Commissioner erred in rejecting as incompetent and insufficient the affidavits of applicant filed under Rule 75, to the effect that applicant's invention was complete and reduced to practice prior to the dates of the patents and publications cited against him by the Primary Examiner; that the Commissioner erred in holding in effect that the applicant, Drawbaugh, was discredited and rendered incompetent to establish the actual fact and prior date of his invention by reason of the opinion and findings of the Supreme Court in the *Telephone Cases;* that the Commissioner erred in admitting and considering the opinion and findings of the Supreme Court in the *Telephone Cases* as proof of the facts alleged therein, and that the Commissioner erred in giving effect to the opinion and findings of the Supreme Court as an estoppel, and, further, that the Commissioner erred in finding as matter of fact and in the absence of competent evidence that the telephone-transmitter made and used by the applicant prior to June, 1878, and referred to in his affidavit, was inoperative, incomplete, or abandoned. The reasons assigned for the appeals are set out in detail in the margin below.†

CLAIMS OF No. 111,554.

*1. As a tension-regulator or means for varying the resistance to a telephonic current finely-divided conducting material in a loose or free state, substantially as described.

2. The combination with a body of finely-divided conducting material in a loose and free state, of a vibratory plate or diaphragm for varying the resistance of said body, substantially as described.

3. In a telephone, in combination with the diaphragm thereof, a mass of comminuted conducting material interposed in the electric current and operated upon by sound-waves to vary the current, substantially as described.

4. As a tension-regulator or means for varying the resistance in telephone-transmitters, finely-divided carbon in a loose and free state.

5. The combination in a telephone-transmitter with a body of finely-divided carbon in a loose and free state of a vibratory plate or diaphragm for varying the electrical resistance of said body in accordance with its own vibrations.

CLAIMS OF No. 126,530.

1. In a telephone-transmitter, and in combination with the diaphragm, a layer of finely-divided conducting material, interposed between two conducting-plates, one of which is connected to the diaphragm, substantially as described.

2. In a telephone a diaphragm, two conducting-plates, one plate being connected to said diaphragm, and the other plate having a means of adjustment for varying its position with reference to the first plate, and a mass of comminuted conducting material interposed between said plates, substantially as described.

3. In a telephone-transmitter, comminuted conducting material, the supporting tube or cup and the conducting-plates, substantially as described.

4 In a telephone, comminuted conducting material, the supporting tube or cup of non-conducting material, and the conducting-plates, substantially as described.

5. In a telephone, comminuted conducting material, the supporting tube or cup attached to and carried by the mouthpiece or cover and the conducting plates, substantially as described

6. The combination in a telephone and with the circuit thereof, a diaphragm, a mass of finely-divided conducting material, a support for the latter and adjusting devices engaging said support, substantially as described.

7. In a telephone, a diaphragm, two plates of conducting material, one of which is influenced by the vibrations of said diaphragm, a mass of divided conducting material between said plates, and a means of varying the initial pressure applied to said mass by said plates, or either of them, substantially as described.

8. In a telephone, and in combination with the two conducting-plates, one of which is vibrated by the diaphragm and an interposed electrode, a support for the electrode passing through the diaphragm and attached to the cover or mouthpiece, substantially as described.

9. In a telephone, the combination of a resistance-varying electrode, adjusting devices for varying the initial pressure upon said electrode, located upon and operated outside of the cover or mouthpiece, substantially as described.

REASONS OF APPEAL.

†1. That the Commissioner erred in admitting and considering the opinion of the Supreme Court of the United States in *American Bell Telephone Company* v. *The People's Telephone Company* (126 U. S., 1) as proof of the facts alleged therein.

2. That the Commissioner erred in considering evidence *dehors* the record.

3. That the Commissioner erred in predicating his finding of fact upon an examination of an alleged copy of the evidence in *American Bell Telephone Company* v. *The People's Telephone Company*, said evidence not having been produced as part of the record and no opportunity afforded applicant to be heard thereon or to offer evidence in explanation or denial thereof.

4 That the Commissioner erred in giving effect to the said opinion of the Supreme Court of the United States as an estoppel.

5. That the Commissioner erred in holding in effect that the questions of originality and invention of the subject-matter of this application are *res adjudicata* in view of *American Bell Telephone Company* v. *The People's Telephone Company*.

6. That the Commissioner erred in holding in effect that the applicant, Drawbaugh, was discredited and rendered incompetent to establish the actual fact and date of his invention by reason of the said opinion and finding of the Supreme Court of the United States.

7. That the Commissioner erred in finding as a matter of fact and in the absence of competent evidence that the telephone-transmitter made and used by the applicant prior to June, 1878, and referred to in his affidavit was inoperative, incomplete, or abandoned.

8. That the Commissioner erred in rejecting as incompetent and insufficient the affidavits of applicant filed under Rule 75, to the effect that applicant's invention was completed and reduced to practice prior to the dates of the patents and publications cited against him by the Primary Examiner.

9. That the Commissioner erred in finding as a matter of fact that the apparatus described and claimed in this application is in all respects as to construction and operation the same as the alleged reproduction of exhibit "F" referred to in the opinion of the Supreme Court of the United States.

10. That the Commissioner erred in deciding and holding that applicant is bound and concluded by the opinion and decision of the Supreme Court of the United States in the case of the *American Bell Telephone Company* v. *The People's Telephone Company* from asserting originality and priority of invention of the subject-matter of this application, the parties, subject-matter, and issues tried in said suit being essentially different from those presented in this case

11. That the Commissioner exceeded his jurisdiction in importing into the case, as a reason for rejection, the alleged insufficiency of the affidavit filed by applicant under Rule 75.

12. That the Commissioner erred in considering on appeal and in relying upon as one of the grounds for the affirmance of the decision of the Board the alleged insufficiency of the affidavit filed, said objection or reason for rejection not having been advanced in the first instance by the Primary Examiner and no opportunity having been allowed applicant to either traverse or meet said grounds or reasons of rejection.

13. That the Commissioner erred in considering on appeal reasons and grounds of rejection not given by the Primary Examiner and which the applicant under the statutes and the rules was not required to meet.

14. The Commissioner erred in finding that the invention of this application has been in public use for more than fifteen years or for any period, there being no evidence in the record establishing the fact or time of use.

15. The Commissioner erred in deciding that applicant is debarred by considerations of public policy from obtaining a patent for the inventions described and claimed in his said application.

16. That the Commissioner erred in refusing to grant a patent as prayed, because of the decision of the Supreme Court of the United States in *American Bell Telephone Company* v. *The People's Telephone Company*.

17. That the Commissioner erred in deciding that the affidavit filed by applicant under Rule 75 is insufficient.

18. That the Commissioner erred in deciding that the invention described and claimed in said application was abandoned or the right to a patent thereto forfeited.

It is not denied by Drawbaugh, indeed could not be, that the patent and publications given as references in the Patent Office show and describe substantially the same invention as that claimed by him. Some of the claims set forth in his application are almost literal transcripts of the claims in the Hunning's patents of 1881, given as references, with others, in the Patent Office. But the contention of Drawbaugh is that he made the invention, the subject of his present claim, before the dates of the patents and publications referred to in the Patent Office. He claims, according to his affidavits, that his invention was prior to June, 1878. He says in his brief that he is now fighting for a status. He says—

he does not expect that the decision of this court, at this time, will award him a patent. He expects to have to prove by legal evidence his priority over other claimants to the same invention, and what he now desires is to be put in position to make the test.

In his attempt to put himself in position to make such test and to show priority of his alleged invention over the references given he filed affidavits in each case, substantially in the same terms, under Rule 75. In the first of these affidavits he deposed and said—

that he is the inventor of the subject-matter described and claimed in the above entitled application; that prior to the month of June, 1878, he constructed, used and practically operated a telephone-transmitter the same in all essential particulars as described in said application; that portions of the said transmitter was made and used prior to June, 1878, are in existence, but are not now in deponent's possession, being filed as exhibits in the suit now pending, entitled "*The American Bell Telephone Company* v. *The People's Telephone Company;*" that he has never abandoned said invention, and that, to the best of his knowledge and belief, the said invention was not in public use or on sale in this country for more than two years prior to the filing of his application therefor.

In appeal No. 34 the affidavit of Drawbaugh states that deponent is the inventor of the improvements in telephone-transmitters described and claimed in his application, Serial No. 126,530, filed by him April 3, 1884;

that prior to the month of September, 1878, he was engaged in perfecting certain inventions he had made relating to the art of telephony, and, as a part of his efforts in this direction, he constructed, at his shop, at Eberly's Mill, a transmitter in all particulars substantially identical with the exhibit heretofore filed in this case; that the said transmitter was connected in circuit with a magneto-receiver and a battery; that words and sentences spoken to said transmitter were transmitted over the line-wire and reproduced, heard and understood at the receiver; that the instrument was used and exhibited to numerous persons at affiant's shop, in Eberly's Mill, at various times prior to the month of September, 1876; that it was a full-sized, practical and operative instrument, and that said instrument was exhibited to many persons in the years 1876 and 1877, among whom may be mentioned, [naming several persons]

As will be observed, while the deponent states that the invention of the transmitter claimed was made prior to June, 1878, and the instrument is in a general way described, yet there is a total omission of the statement of facts as to the time and circumstances of the conception of the invention and its development to completion prior to June, 1878, such as is required by Rule 75; but without going into an examination as to whether these affidavits, taken separately or altogether, present sufficient specific facts to gratify Rule 75, which requires the applicant to make oath to facts showing a completion of the invention in this country before the filing of the application on which the domestic patent expired, or before the date of the foreign patent, or before the date of the printed publication, etc., we shall proceed to the consideration of the more material and important questions—whether the affidavits are entitled to credence in view of the case and decision therein reported as *Telephone Cases*, (43 O. G., 377; 126 U. S., 1,) and whether it was competent and proper for the officials of the Patent Office to refer to and make the decision of those cases the ground for refusing a patent on the claims made by the appellant, Drawbaugh.

But before proceeding to consider these questions it is proper that we shall refer to the provisions of the statute and see what such provisions require of the applicant as conditions upon which his application will be entitled to favorable consideration in the Patent Office.

By section 4886 of the Revised Statutes of the United States it is provided that—

any person who has invented or discovered any new and useful art, machine, manufacture or composition of matter, or any new and useful improvement thereof, not known or used by others in this country, and not patented or described in any printed publication in this or any foreign country, before his invention or discovery thereof, and not in public use or on sale for more than two years prior to his application, unless the same is proved to have been abandoned, may upon payment of the fees required by law, and other due proceedings had, obtain a patent therefor.

Sec 4888. Before any inventor or discoverer shall receive a patent for his invention or discovery he shall make application therefor, in writing, to the Commissioner of Patents, and shall file in the Patent Office a written description of the same, and of the manner and proceedings of making, constructing, compounding, and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make, construct, compound, and use the same; and in case of a machine, he shall explain the principle thereof, and the best mode in which he has contemplated applying that principle, so as to distinguish it from other inventions; and he shall particularly point out and distinctly claim the part, improvement, or combination which he claims as his invention or discovery. The specification and claim shall be signed by the inventor and attested by two witnesses.

Sec 4889. When the nature of the case admits of drawings, the

applicant shall furnish one copy signed by the inventor or his attorney in fact, and attested by two witnesses, which shall be filed in the Patent Office, etc.

* * *

Sec. 4891. In all cases which admit of representation by model, the applicant, if required by the Commissioner, shall furnish a model of convenient size to exhibit advantageously the several parts of his invention or discovery.

Sec. 4893. On the filing of any such application and the payment of the fees required by law, the Commissioner of Patents shall cause an examination to be made of the alleged new invention or discovery; and if on such examination it shall appear that the claimant is justly entitled to a patent under the law, and that the same is sufficiently useful and important, the Commissioner shall issue a patent therefor.

These provisions of the statute indicate very clearly the conditions upon which a patent is granted, and they also clearly indicate that the onus of showing that all the conditions and provisions of the law have been fully complied with is upon the applicant. It is incumbent upon him not only to comply with all the conditions and provisions of the statute, but, in the language of the statute, to make it appear "that he is justly entitled to a patent under the law," and that the invention is sufficiently useful and important to justify the issue of such patent therefor. The patent should not issue as an experiment upon the public nor to embarrass or infringe the use of other inventions having just priority. To every application for a patent the public is a party in an important sense, more than that of mere formal grantor. It is substantially interested in preventing the people from being harassed by the claims of a monopoly when in fact there may be unjust grounds for such claims. It is the duty of the Commissioner of Patents, representing the public and also the private rights of the inventor involved in the pending application, as well as all other inventors having the sanction of the Patent Office, to see that entire justice be done to all concerned. The law has provided certain official agencies to aid and advance the work of the Patent Office, such as the Primary Examiners, the Examiner of Interferences, and the Examiners-in-Chief; but they are all subordinate and subject to official direction of the Commissioner of Patents, except in the free exercise of their judgments in the matters submitted for their examination and determination. The Commissioner is the head of the Bureau, and he is responsible for the general issue of that Bureau. If, therefore, there be any substantial reasonable ground within the knowledge or cognizance of the Commissioner why the patent should not issue, whether the specific objection be raised and acted upon by the Examiners or not, it is his duty to refuse the patent, and especially it is so when the Primary Examiner and the Examiners-in-Chief have found such ground for refusal to exist.

It is a settled principle that where a party claims to be an original inventor and the defense of the defendant is that he is a prior inventor, thus conceding the invention of the plaintiff, but challenging the claim of priority of invention—

the invention or discovery relied upon as a defense must have been complete, and capable of producing the result sought to be accomplished; and this must be shown by the defendant. The burden of proof rests upon him, and every reasonable doubt should be resolved against him. If the thing were embryonic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view. The law requires not conjecture, but certainty. (*Coffin* v. *Ogden*, 5 O. G., 270; 18 Wall., 120, 124.)

The principle applies with full force to the facts of the present case. Upon the most favorable view for the appellant, and even supposing that he was placed in a position to contest the priority of the invention described in the patents and publications given as references against his applications, he would be confronted with and required to overcome the facts disclosed in the answer and his own testimony given in the case of *The American Bell Telephone Company* v. *The People's Telephone Company*, reported in 43 O. G., 377, and 126 U. S., 1. The facts deposed to in that case by him would at least be admissible against him as admissions; but the question is whether the findings and opinion of the Supreme Court in that case can be invoked and relied upon by the officials of the Patent Office, and by this court on review of the action of such officials, to show either that the claims for invention of the transmitter here involved had no real or colorable existence prior to June, 1878, or July, 1880, or if Drawbaugh had in fact experimented and made some progress toward the invention of such instrument prior to those dates, or either of them, that the same remained in an inchoate and incomplete condition, insufficient upon which to found a claim for a patent.

It is contended by the appellants, Drawbaugh and his assignees, that the case of *The American Bell Telephone Company* v. *The People's Telephone Company*, as reported in 43 O. G., 377, and 126 U. S., 1, could not be taken notice of and made the ground for the rulings in the Patent Office, whereby the applications of Drawbaugh and his assignees were refused, first, because the present applicants were not parties to that proceeding, and therefore not bound thereby, and, second, because the subject-matter of litigation in that proceeding was other and different from the subject-matter in the present proceedings.

This contention on the part of the appellants renders it necessary that we refer to and state with particularity the nature of the case of *The American Bell Telephone Company* v. *The People's Telephone Company* and what was in reality involved therein and what was in reality determined by the decision of the Court and to what extent Drawbaugh and his assignees were affected thereby.

The bill in that case was filed by the American Bell Telephone Company and others as owners of two patents, known as the "Bell telephone patents," to enjoin the defendants, the People's Telephone Company, from infringement of those patents. The first of those patents was granted to Alexander Graham Bell on the 7th of March, 1876, for new and useful improvements in telegraphy, and the second was granted to the same inventor, for new and useful improvements in electric telephony, on the 30th of January, 1877. The bill against the People's Telephone Company, assignees of Drawbaugh, was filed on the 25th of October, 1880, and it was alleged—

that telephone-exchanges then existed in more than two hundred and seventy-five towns and cities of the United States, and in every State thereof, and existed substantially in every city of the United States having more than fifteen thousand inhabitants, and in many similar places; that there were then in use more than one hundred thousand electric speaking-telephones licensed by and paying royalty to the Bell Telephone Company; that the owners of said Bell patents, and those who had been licensed by them, had devoted great time and attention and large sums of money to the development of the telephone and the introduction thereof into extensive use, and to the proper construction of the most suitable telephone lines and systems and telephone appliances, and had constructed many thousand miles of telephone-lines for use with telephones owned by the Bell Company.

The bill then alleged that certain parties named, claiming to be assignees under Drawbaugh, had set up a claim that Drawbaugh had made certain experiments relating to electric speaking-telephones, and they alleged and pretended that Drawbaugh was the original and first inventor of the electric speaking-telephone, and that electric speaking-telephones had not before the application made by Drawbaugh been in public use or on sale for more than two years, with the knowledge and consent of Drawbaugh, and that they, the alleged assignees, on or about the 21st of July, 1880, induced Drawbaugh to make and cause to be filed in the Patent Office of the United States an application for a patent to issue to them as assignees of said Drawbaugh, as the first and original inventor of the electric speaking-telephone, the said defendants well knowing at the time that electric speaking-telephones had been in public use by the Bell Company and its licensees for more than two years before said application.

It was further alleged that if Drawbaugh had ever before made his pretended inventions they—

had not been by him, or any one claiming under him, introduced into public use, and that knowledge thereof had been withheld from the complainants and the public, except so far as they had been disclosed within the three months then last passed by certain newspaper publications,

those publications being specially referred to in the bill and afterward in the testimony. (126 U. S., 552.)

These allegations made it necessary for Drawbaugh or his assigns, composing a corporation of which he appears to have been a member or interested therein, and which corporation was made a formal technical party defendant, to disclose fully and particularly the circumstances of the invention claimed to have priority over those claimed and asserted by the Bell Company. The assigns of Drawbaugh, representing him in all respects and asserting what were claimed to be his rights as an inventor, put in an elaborate answer whereby they undertook to disclose what they alleged to be the facts and the history of his invention of the telephone and its apparatus for practical use in order to show priority of invention and superior claim to that of the Bell Company. The parts of the answer material to the questions here involved are as follows, the marks of italics being ours:

11. Further answering, this defendant says, that Daniel Drawbaugh, of Eberly's Mill, etc., was and is the original and first inventor and discoverer of the art of communicating articulate speech between distant places by voltaic and magneto electricity, *and of the construction and operation of machines and instruments for carrying such art into practice;* that long prior to the alleged inventions by said Alexander Graham Bell, and long prior to the respective inventions of said Gray and Edison, said Daniel Drawbaugh, then and now residing at Eberly's Mill, constructed and operated practical working electric speaking-telephones at said Eberly's Mill and exhibited their successful operation to a great number of other persons resident in his vicinity and elsewhere; that the said electric speaking-telephones was constructed and successfully and practically used by him, and contained all the material and substantial parts and inventions patented in said Patents No. 174,465 and No. 186,787, granted to said Bell; also contained other important and valuable inventions in electric and magneto telephony, and were fully capable of transmitting, and were actually used for transmitting, articulate vocal sounds and speech between distant points by means of electric currents; that some of the original machines and instruments invented, made, used, and exhibited to many others, long prior to the said alleged inventions of said Bell, or either of them, are still in existence and capable of successful practical use, and are identified by a large number of persons who personally tested and used, and knew of their practical operation and use, in the years 1870, 1871, 1872, 1873, 1874, and both subsequently and prior thereto; that certainly more than fifty, and probably not less than one hundred persons, or even more, were cognizant of said Drawbaugh's invention and use of said telephones, and of his claim to be the original and first inventor thereof, prior to the alleged inventions of Bell, or either of them; that said Drawbaugh, for more than ten years prior to the year 1880, was miserably poor, in debt, with a large helpless family dependent upon his daily labors for support, and was, from such cause alone, utterly unable to patent his said invention, or caveat it, or manufacture and introduce it upon the market; that said Drawbaugh never abandoned his said invention, nor acknowledged the claims of any other person or persons thereto, but always persisted in his claims to it, and intended to patent it as soon as he could procure the necessary pecuniary means therefor; that said Drawbaugh never acquiesced in the public use of said Bell, Gray, Edison, Blake, or other telephones nor in the claims of the alleged inventors thereof, nor gave his consent to such use; and that, in view of the facts aforesaid, neither said Bell nor any other person or persons whatever, except the said Drawbaugh, can now obtain a valid patent therefor, nor are the patents granted to such Bell as aforesaid, or either of them, of any validity or value whatever.

12. Further answering, this defendant says, that the said Daniel Drawbaugh, after making, testing, using, and extensively exhibiting his inventions to others, and allowing them experimentally to personally test and ascertain its successful practical operation and utility, as aforesaid, and after the full and repeated demonstration of its successful working, as aforesaid, conceived that its range and capacity of usefulness to the public might be very greatly enlarged; that many improvements of great value might be made and added to it which, without departing from its principle, might increase its value to himself and to the public, and therefore set himself at work to discover and invent such improvements; that he discovered and invented some of said additional improvements prior to any alleged invention by the said Bell; and that, notwithstanding his embarrassed and impoverished pecuniary condition, and his utter want of proper mechanical tools, materials, and appliances to conduct such work, he labored with all reasonable diligence to perfect and adopt his said improvements, *and did, finally, in due exercise of such reasonable diligence, perfect and adopt the same;* and that, in so far as the said Bell has incorporated such improvements in his said two patents, or either of them, he, the said Bell, has surreptitiously and unjustly obtained a patent or patents for that which was in fact first invented by said Drawbaugh, who was using reasonable diligence in perfecting and adopting the same; and therefore the patent or patents of the said Bell therefore is, or are, invalid and void.

13. Further answering, this defendant says, that it has, by purchase, and for valuable consideration, acquired the right, title, and interest of said Daniel Drawbaugh *in and to all his said inventions, discoveries and improvements in electric speaking-telephones*, and has full right, at law and equity, to make, sell, and use electric speaking-telephones, embodying the inventions, discoveries, and improvements of said Drawbaugh, without interference from or molestation by said Bell or his assigns, and without liability to these complainants therefor.

In support of the averments of this answer a great many witnesses were examined, and prominent among them was Drawbaugh himself. He admitted in his testimony that he furnished to counsel, to enable him to prepare the answer, a full account or history of his invention of the telephone apparatus, and he adopted in his testimony, as said by the circuit judge, (22 Fed. Rep., 311,) the statements of the answer as true. This answer of the assignees was filed in December, 1880, or January, 1881. The precise date does not appear. After a great many witnesses had been examined Drawbaugh was produced as a witness in behalf of the defense in December, 1881, and he was subjected to a most full and exhaustive examination and cross-examination in reference to everything that related to his conception and experimental work on what he claimed to be his prior invention of the telephone. Among the exhibits produced and identified by him, with the time of their construction, were the "Teacup transmitter and receiver, 66 and 67" and the "Tumbler and tin cup and mustard-can, ('F' and 'B,' 67, 69." The cut or drawing of exhibit "F," representing the transmitter, the tumbler-exhibit, with the fixtures thereto belonging, is shown on page 116 of 126 U. S., and the parts are shown to be in a broken and fragmentary condition. The exhibits "F," "B," "C," and "I" were not in condition for use when they were produced and put in evidence. They were mere "remains," as said by the Supreme Court, and no one but Drawbaugh himself could tell how they were to

be used. At a subsequent stage of the taking of the testimony, in the latter part of 1881, Drawbaugh reproduced exhibit "F" in a more complete and perfect form, and the cut or drawing of this reproduced exhibit appears on page 117 of the *Telephone Cases*, (126 U. S.,) and its construction and various parts are fully indicated by the reporter.

The transmitter, the invention of which is claimed in the present cases, is the same as that represented by the letter "F" and exhibit in the case of *The American Bell Telephone Company* v. *The People's Telephone Company*, and is the same mentioned and referred to in the affidavits of Drawbaugh filed in the present cases as having been filed in the case of *The Bell Telephone Company* v. *The People's Telephone Company*, then pending in the Circuit Court of the United States for the Southern District of New York. No model of the original transmitter has ever been filed or exhibited with the present applications in the Patent Office. The excuse for this omission, as stated in the affidavits, was—

that portions of said transmitter was made and used prior to June, 1878, are in existence, but are not now in deponent's possession, being filed as exhibits in the suit now pending in the Circuit Court of the United States for the Southern District of New York, entitled "*The American Bell Telephone Company* v. *The People's Telephone Company*."

It is thus made plain beyond question that the claim now made in these appeals is the same that was presented, questioned, and definitely passed upon in the case referred to and reported in 43 O. G., 377, and 126 U. S., 1. Indeed, it could not be credited for a moment that so important a part of the telephone apparatus as the transmitter, now claimed to have been completed and fully reduced to practical operation prior to June, 1878, would not have been included in the assignment to those who composed the People's Telephone Company and have been included in the application of 21st of July, 1880, for a patent if such alleged invention had in fact been made, as now claimed, prior to the date of the assignment by Drawbaugh; but the application of Drawbaugh of July, 1880, for a patent for the benefit of his assignees contains no such claim for invention as that now set up in the present applications. Indeed, the whole transaction between Drawbaugh and his assignees would seem clearly to imply that there was no such claim then existing for the invention now set up and sought to be maintained. In the assignment by Drawbaugh to Klemm, Marx, Wolf, and Loth, of the 21st of July, 1880, it is recited by Drawbaugh that—

I have invented certain new and useful improvements in the transmission of vocal speech, and the apparatus to be used for such purpose, for which I am about to make application for Letters Patent of the United States,

and he then proceeds to assign to Klemm, Marx, Wolf, and Loth the full and exclusive right to the said invention, as fully set forth and described in the specification prepared by him, dated the 21st of July, 1880, preparatory to obtaining Letters Patent therefor. It is not shown or pretended that the present claim was embraced in that assignment or in the application that was made to the Patent Office in July, 1880, nor is there any reason assigned why it was not so embraced, if it then had real existence; and by the answer of the assignees of Drawbaugh, claiming under the assignment of July, 1880, and the subsequent assignment of the 4th of September, 1880, which answer was based on information furnished by Drawbaugh, it is expressly averred—

that the People's Telephone Company, by purchase, and for valuable consideration, acquired the right, title, and interest of said Daniel Drawbaugh in and to all his said inventions, discoveries, and improvements in electric speaking telephones, and has full right, at law and in equity, to make, sell and use electric speaking-telephones, embodying the inventions, discoveries, and improvements of said Drawbaugh, without interference from or molestation by said Bell or his assigns.

There can be, therefore, no doubt that all claims to invention or discoveries, of whatever nature or kind, relating to the electric speaking-telephone and the operative apparatus pertaining thereto that had been made or attempted before the date of the assignments were intended to be transferred and to be made the subject of patent, and if no such claim as that now made for the transmitter was embraced in the assignment and application for patent in 1880 it was because no such claim to invention then had existence. Indeed, upon review of the whole case the conclusion is unresistible that it was not until Drawbaugh was put forward as a witness to sustain the defense of the People's Telephone Company in 1881 that the idea was conceived or the pretense made that the exhibit "F" and exhibit "F" reproduced, representing the transmitter, the subject of the claims in the present cases, was a completed and operative instrument prior to the patent inventions owned and operated by the Bell Company, and this was, in effect, according to the findings and opinion of both the Circuit Court for the Southern District of New York and the Supreme Court of the United States on appeal.

In the circuit court the case underwent most careful examination, and reëxamination upon additional evidence, but with the same result. The learned judge of the circuit court, commenting on the defense of Drawbaugh and his assignees, (22 Fed. Rep., 312,) said:

According to the theory of the defendants, therefore, as early as February, 1875, Drawbaugh had not only distanced Bell in the race of invention, but also Gray and Edison, and had accomplished practically all that has since been done by a host of other inventors. The case for the defendants must stand or fall by this theory. The proofs leave no room for fair doubt that the defendants' contention is substantially true, or that the defense has no foundation in fact. It is either true that Drawbaugh had long been treading his solitary path of investigation, and experimenting in poverty and obscurity, but had perfected his work when the inventions of other explorers were in embryo, or his story is an ingenious fabrication. And, as will hereafter appear, if the defense is a fabrication, many disinterested witnesses have contributed innocently to give it color and strength, but Drawbaugh has deliberately falsified the facts.

On page 552 of the report it is said by the court:

Those with whom Drawbaugh is associated in the defense understood fully, and so did he, that the fact that a professional inventor and patentee did not go to the Patent Office, to secure an invention like the telephone, for ten years after it had been completed and demonstrated, was almost conclusive against the theory that he had made the invention; and that unless this presumption could be parried, no court would credit his story. The theory of constraining poverty was, therefore, fomentated in the answer, elaborately fortified by witnesses, and testified to by Drawbaugh. It is overthrown by a few plain, indisputable facts, and Drawbaugh's veracity falls with it.

And the conclusion was that the defense founded upon the Drawbaugh claims had wholly failed.

On appeal the language of the Supreme Court was not less direct and emphatic in rejecting all the claims and pretentions put forward as originating with Drawbaugh than that of the circuit court. All his claims were wholly refuted and rejected as unfounded in truth. The Court in an elaborate and able opinion by the late Chief-Justice Waite, (126 U. S., 1, 546, 565,)

after stating the claims of invention in detail and after examining the evidence at great length, held that the claim of the alleged invention of the telephone by Drawbaugh prior to Bell's discovery and invention, patented to him March 7, 1876, was not made out; that the claim was not founded in truth and fact. And in regard to exhibits "F" and "B," the transmitter and receiver, and other exhibits filed in that case the Court said:

We have not overlooked the depositions that have been taken in such large numbers to show that Drawbaugh was successful with "F," "B," "C," "I," and "A" before "D" and "E" were made. They have been studied with care, and if they contained all the testimony in the case it would be more difficult to reach the conclusion that Drawbaugh's claim was not sustained. But in our opinion their effect has been completely overcome by the conduct of Drawbaugh, about which there is no dispute, from the time of his visit to the Centennial until he was put forward by the promoters of the People's Company, nearly four years afterward, to test the claims of Bell. He was silent so far as the general public were concerned, when if he had really done what these witnesses now think he did he would most certainly have spoken. There is hardly a single act of his connected with his present claim, from the time he heard, before going to Philadelphia, that some one else had invented a telephone which was on exhibition at the Centennial that is not entirely inconsistent with the idea even then of a complete discovery or invention by himself which could be put to any particular use. It is not pretended that what he did was done in private. He had influential friends with ample pecuniary resources, ready to help him in bringing out his inventions when they promised success. He easily got aid for his clock and for his faucet. The news of Bell's invention spread rapidly and at once, and it took but a few months to demonstrate to the world that he had achieved a brilliant success. If it were known at Eberly's Mill alone that Drawbaugh had been doing the same thing for years in his shop there—and it certainly would have been known all through the little village if it had actually been done—no one can believe that the public would be kept in ignorance of it until four years afterward, when a "special" from Washington to the *Cincinnati Commercial* announced a "telephone consolidation" to have entire charge of the telephones, not only for this country, but in the world, that could transmit messages "for almost a song."

But there is another fact in this case equally striking. As has already been seen, "F," "B," "C," and "I" were in no condition for use when they were produced and put in evidence. They were mere "remains," and no one but Drawbaugh himself could tell how they were made or how they were to be used. He undertook to reproduce some of them especially "F" and "B." This was in the latter part of 1881, while the testimony was being taken. The Bell Company proposed that they should be tried to see if they would do what the witnesses said had been done with the originals, which the remains show must have been exceedingly primitive in their character. The testimony also shows that when they were originally used by or in the presence of the witnesses no particular care was taken in their adjustment. They were lying around in the shop or standing upon shelves. Some say that when experiments were made they were held in the hand or allowed to stand on the table. Many testified to satisfactory results, and Drawbaugh himself said in his deposition: "I would have persons in the cellar reading printed matter—some advertisement or something—and I could hear the words that were read; and at other times I would go down into the cellar and read something, and coming up they would repeat the words to me that I had read."

The proposition of the Bell Company was accepted, and the reproductions were tried in March, 1882, under the most favorable circumstances. Three days were occupied in the test, and it is substantially conceded that it was a failure. Occasionally a sound was heard and sometimes a word, but "it would not transmit sentences." At the time of these experiments "F," which was the transmitter, was placed on a table, and used as Drawbaugh said it was originally. Two years afterward other reproductions were presented, differently constructed and used in a different way, and these would "talk," but they were neither made nor used in the same way as the originals. To our minds the result of the second experiments conclusively showed that the original instruments could not have done what the witnesses supposed they did, and that what they saw and heard was produced by some other means than an electric speaking-telephone. We do not doubt that Drawbaugh may have conceived the idea that speech could be transmitted to a distance by means of electricity and that he was experimenting upon that subject; but to hold that he had discovered the art of doing it before Bell did would be to construe testimony without regard to "the ordinary laws that govern human conduct." (107 U. S., 203.) Without pursuing the subject further, we decide that the Drawbaugh defense has not been made out.

It is not supposable for a moment that if the transmitter, the subject of the present claim, produced and represented in a crude, incomplete, and ineffective state by the defense in the *Bell Telephone Case* as exhibit "F," was or had been in fact completed and practically operative in the fall of 1881 or March, 1882, and it is now claimed to have been, that it would not have been produced in evidence in that case in that condition instead of the original crude fragments (or the first reproduction thereof in March, 1882, that would not transmit sentences) that were in fact produced by Drawbaugh in that case. There is no reason assigned, and there could be none, why the improved and perfected instrument, if it existed, as now claimed, was not produced in that case, and it was not until two years afterward that a completed and effective instrument was produced, and then it was not shown by whom it was invented.

Now, on this state of case, and seeing what the Supreme Court of the United States have found and determined in respect to the alleged claims to invention by Drawbaugh, including the claim to the invention of the transmitter, the subject of the present applications, and how completely such claims have all been rejected as wholly unfounded in truth, the question is, are not such findings and adjudication by the highest court of the country to be accepted as final and conclusive as to the alleged claim to the invention involved in the present cases? Or is there to be allowed in the Patent Office an attempt to overrule that decision?

It is argued that the subject-matter of the present applications is different from that presented in the case of the Bell Telephone Company against the assignees of Drawbaugh, and therefore Drawbaugh is not concluded by the findings and decree in the *Telephone Cases;* but to this contention we cannot assent. We have shown that the present claim for invention of the transmitter was made in the case of *The Bell Telephone Co.* v. *Drawbaugh or Assignees* and was attempted to be supported by the testimony of Drawbaugh himself. It is true the object of presenting the claim and the attempt to support it in that case was not to procure a patent, as it is in the present cases; but the issue was as to the invention in fact and as to the priority of invention. The question was whether Drawbaugh and those claiming under him had the right by reason of priority of invention to use the instruments alleged to have been invented by Drawbaugh as against the inventions claimed and owned by the Bell Company. The issue in that case was substantially the same as it would have been on an issue of interferences as between the alleged invention of Drawbaugh and the patents issued to Bell or other patents for the invention claimed by Drawbaugh. In both cases alike the burden of proof was and would be upon Drawbaugh or his assignees, and as we understand his position on these appeals it is that he desires to be given a status in the Patent Office to enable him to establish the fact of invention and the priority thereof to the dates of the references set up in the Patent Office; but, as we have shown, these questions have been definitely settled adverse to Drawbaugh and his assignees in the case of *The Bell Telephone Company* v. *The People's Telephone Company*, (43 O. G., 377; 126 U. S., 1.)

It is further argued, however, that the purpose of the two proceedings are not the same, and therefore the judgment of the Supreme Court in the case of *The Bell Telephone Company* v. *The People's Telephone Company* cannot bind or conclude Drawbaugh or his as-

signees in the present applications; but in this we cannot concur. While Drawbaugh may not have been a technical party defendant to the case of the Bell Company against his assignees, he was a substantial party thereto. He was fully and completely represented by the corporation, his assignee, in which he was interested, and he was an active party in conducting the defense. He furnished the facts upon which the defense depended, and he was treated and referred to throughout as the substantial party concerned in maintaining the defense. To hold, after the proceedings and all that has occurred in that case, that Drawbaugh and his assignees are not bound by the findings and judgment therein would be to sacrifice substance to mere technicality and do that at which reason and common sense would revolt. It is not necessary that a person should appear upon the record as a technical party to the proceedings in order to be bound by the judgment. (1 Greenleaf Evidence, secs. 522, 523, 535, 536; 4 G. & I., 407, 408.) If he is represented in the proceedings or is a party in fact, though not of record, he will be bound. We are therefore decidedly of opinion that Drawbaugh and those claiming under him are bound by the findings and decree of the Supreme Court in the case of *The Bell Telephone Company* v. *The People's Telephone Company*, reported in 43 O. G., 377 and 126 U. S., 1, on the present applications to the Patent Office.

But there is still another objection urged, and that is that it was not competent to the Patent Office officials nor to this court to take notice of and be guided by the decision of the case of *The American Bell Telephone Company* v. *The People's Telephone Company*, as officially reported in 43 O. G., 377 and 126 U. S., 1, and that the proceedings in that case could only be recognized and made the basis of action in the Patent Office in the present applications, if at all, by filing therein a duly certified transcript record of that case, to be made a part of the record of the present appeals, as in ordinary judicial proceedings. This contention is founded upon the theory that the Primary Examiner, the Examiners-in-Chief, and the Commissioner of Patents are all essentially judicial officers and act judicially in the discharge of their respective functions in determining the question for or against the right of an applicant for a patent, and that they act only upon such evidence as is received in courts of justice. That the investigation of every disputed claim presented for a patent involves the adjudication of questions of fact upon scientific or legal principles, and that such questions are therefore essentially judicial in their character, may well be conceded; but it does not by any means follow that those officers can only found their conclusions and judgments upon such evidence, produced in such manner and form as is required by the rules of the common law. Their methods of procedure and the nature of the evidence and means of reaching facts upon which they may act are altogether different from those prevailing in the ordinary courts of the country. They are supposed to be not only learned in the law that pertains to their offices, but skilled and expert in the various branches of science and art, and fully learned in the history of inventions, and able always to determine, in the interest of the public as well as in that of the applicant, whether the invention is new and useful and not before known or used by others. To ascertain these facts, the officials of the Patent Office are not confined to technical evidence, such as may be required in a court of justice. They may resort and do constantly resort to official gazette journals of science and to books and publications of all kinds and descriptions for information that may enlighten them in their investigations, as well as to the files of the Patent Office itself. Any source that brings to them intelligence upon which they can reasonably and safely act may be consulted and made the basis of their judgment.

In the present cases, it appears, the officials in the Patent Office, in support and as the foundation of one of the principal grounds of their rulings and determination against the applications of the appellants, have referred to and relied upon the findings and judgment of the Supreme Court of the United States in the case of *The American Bell Telephone Company* v. *The People's Telephone Company*, as reported in 43 O. G., 377, and 126 U. S., 1. That is an official report, made under the authority of law, and the findings of the Court and the decision thereon in respect to all questions arising under the laws of the United States not only bind the parties to the proceedings, formal or otherwise, but all the Departments of Government. The decision had reference to what had transpired and to what was still pending in the Patent Office. The officials in that office, as well as this court and all other United States courts, were and are bound to take notice of that decision and the findings and conclusions of the Court and to act in conformity to them. The law has provided for distributing the reports of the Supreme Court to the judges and to the Departments, and, among others, to the Patent Office. (Rev. Stats. U. S., sec. 683.) and there was therefore no practical use to be subserved nor any substantial principle to be gratified by the production of a verified transcript of the record of the case referred to upon which the decision of the Supreme Court was based. It would only have added to the expense and volume of the proceedings in the Patent Office and the transcript made up for this court, without at all adding to the verity of the findings and decision of the Court as officially reported in 43 O. G., 377, and 126 U. S., 1.

We are of opinion, therefore, that the official report of the case of *The American Bell Telephone Company* v. *The People's Telephone Company* (43 O. G., 377; 126 U. S., 1) was properly referred to and made the basis of the rulings of the officials in the Patent Office, and that upon the findings and decision of the Supreme Court in that case all credit was properly denied to the affidavits filed by Drawbaugh in these cases, and that the case reported in 43 O. G., 377, and 126 U. S., 1, furnished ample ground for the rejection of the claims made by the appellants in these cases, which have been considered together as one case.

There is another principal ground acted upon in the Patent Office for the rejection of these claims, and that is abandonment by Drawbaugh. Upon the assumption that he may have made a patentable invention of a transmitter, as he now claims, that by his great delay and neglect in applying for a patent and allowing others to invent and occupy the field and expend their money and time in developing the business and establishing the use of the alleged invention he has forfeited and abandoned all claim to such invention, if he ever had any in fact, and for that reason his claim should be rejected. If it were necessary to invoke this principle in order to dispose of this case, we should not hesitate, upon the facts disclosed, to approve of the rulings of the officials of the Patent Office in this respect upon the principle of either of the cases of *Pennock & Sellers* v. *Dialogue*, (2 Pat., 1, 16, 19, 23:) *Shaw* v. *Cooper*, (7 Pat., 292:) *Kendall* v. *Winsor*, (21 How., 322:) *Seymour* v. *Osborne*, (11 Wall., 516:) (*Consolidated Fruit Jar Co.* v. *Wright*, (12 Blatchf., 149,) and same case, (94 U. S., 92;) but as we held that Drawbaugh was never the inventor of the transmitter, as now claimed by him and as stated in his affidavits, prior to the dates given in the references cited against him in the Patent Office, it is therefore unnecessary to test the decision of the case upon this objection.

We shall direct a certificate of the proceedings in these cases, Nos. 32 and 34, and of this opinion and decision, sustaining the decision appealed from, to be returned to the Commissioner of Patents, to be entered of record in the Patent Office, and it is so ordered.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 3. TUESDAY, OCTOBER 20, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
CHANGES IN CLASSIFICATION	319
ISSUE OF OCTOBER 20, 1896	320
APPLICATIONS UNDER EXAMINATION	320
PATENTS GRANTED	321
REISSUES	None.
DESIGNS	445
TRADE-MARKS	449
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Ex parte Bryant	451
DECISIONS OF THE U. S. COURTS—	
Taylor *et al.* v. Sawyer Spindle Company	452
Electric Boot and Shoe Finishing Company v. Little *et al.*	456

Changes in Classification.

(ORDER No. 1,100.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., August 22, 1896.

The following changes in classification are hereby directed:

A new subclass is established in **Division I, Class 39, Fences**, under subclass 5, Gates, to be numbered and entitled 103, Race-starters.

In Division XXXII the subclasses under **Class 150, Packing and Storing Vessels, Glass and Pottery**, are abolished, and Class 215, Bottles and Jars, is established, with the following subclasses:

1. Bottle attachments—
2. Clip.
3. Bottle-cases—
4. Wire,
5. Wrapper—
6. Corrugated.
7. Bottle-labels.
8. Bottle-stoppers—
9. Cap—
10. Crimped,
11. Elastic,
12. Frangible,
13. Screw,
14. Disk,
15. Dose—
16. Droppers,
17. Expanding—
18. Cam,
19. Screw,
20. Fasteners—
21. Bail—
22. Locking,
23. Cap—
24. Tie,
25. Spring—
26. Clip,
27. Wire,
28. Internal—
29. Ball,
30. Extension—
31. Wire,
32. Plug,
33. Locks,
34. Pivoted—
35. Locking—
36. Ball,
37. Cam—
38. Plug,
39. Rotary,
40. Bottle-stoppers—
41. Pivoted—
42. Locking—
43. Lever—
44. Lever and yoke,
45. Plug—
46. Slotted,
47. Top—
48. Slotted,
49. Wire,
50. Screw,
51. Spring—
52. Catch,
53. Plug—
54. Composite,
55. Bottle-stoppers—
56. Plug—
57. Screw,
58. Pullers,
59. Tube—
60. Valve—
61. Ball,
62. Rotary,
63. Screw,
64. Vent.
65. Bottle-valves—
66. Controllers—
67. Spring,
68. Weight—
69. Pendent,
70. Float,
71. Guards—
72. Caps,
73. Fasteners,
74. Multiple,
75. Valves and seats.
76. Bottles—
77. Compartment,
78. Indicating,
79. Bottles—
80. Jugs,
81. Mucilage—
82. Brushes,
83. Scrapers,
84. Necks—
85. Breakable,
86. Nesting.
87. Jar-closures—
88. Cap—
89. Grooved,
90. Ring,
91. Screw—
92. Inclines,
93. Ring,
94. Jar-closures—
95. Clamp—
96. Lever,
97. Screw,
98. Pivoted,
99. Spring—
100. Bow,
101. Inclines,
102. Packing,
103. Stoppers—
104. Expanding,
105. Plug—
106. Screw.
107. Jars.

S. T. FISHER,
Acting Commissioner.

(ORDER No. 1,104.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., October 5, 1896.

In Division XIII a subclass is established in **Class 85, Nails and Spikes**, to be designated 19, Shoe nails and tacks, making.

In Division XI, Class 24, Clasps, Buckles, and Buttons, and the subclasses under it are abolished and the following classes and subclasses are established:

Class 24, Buckles, Buttons, Clasps, etc:

1. Baggage-checks.
2. Bale and package ties—
3. Bale-ties,
4. Package-ties.
5. Belt-slide and skirt-supporting attachments.
6. Buckles—
7. Bail,
8. Clamp,
9. Guards,
10. Lock,
11. Pivoted-tongue,
12. Pivoted-tongue and clamp,
13. Rigid-frame and tongue,
14. Slide,
15. Sliding tongue-piece,
16. Suspender,
17. Wedge,
18. Buckles and snap-hooks combined.
19. Buttoners.
20. Buttons—
21. Cloth-shank,
22. Link,
23. Separate thread bar.
24. Button-fasteners—
25. Integral-prong,
26. Spring,
27. Tack-and-rivet.
28. Buttons, detachable—
29. Spring-fasteners,
30. Spiral,
31. Separable—
32. Spring—
33. With operating devices,
34. Screw,
35. Buttons, hinged shoe—
36. Axial,
37. Single spring-leaf,
38. Double spring-leaf,
39. Sliding shoe.
40. Button-covers.
41. Button-guards.
42. Button-loops.
43. Carriage-curtain fasteners.
44. Clasps—
45. Album,
46. Extensible,
47. Hook-and-loop—
48. Spring-retained,
49. With keeper,
50. Keyhole-slot,
51. Lace,
52. Lever,
53. Pencil,
54. Pivoted-latch.
55. Resilient head and socket
56. Ribbon,
57. Shoe,
58. Spring,
59. Spring with closing device,
60. Wedge.
61. Cord and rope clamps—
62. Friction,
63. Positive-grip.
64. Corset-fastenings.
65. Cuff-holders.
66. Eyelets—
67. Plastic-head.
68. Garment-fastenings—
69. Lacing,
70. Spring-frame.
71. Garment-supporters.
72. Glove-fastenings.
73. Hooks—
74. Foldable,
75. Hat-hangers,
76. Hat-holders,
77. Hooks and clasps combined,
78. Guarded,
79. Lock,
80. Picture,
81. Pneumatic,
82. Removable,
83. Spring-bill,
84. Suspension devices,
85. Twin,
86. Two-part.

Snap-hook+—
82. Pivoted-tongue,
83. Sliding-bolt,
84. Spring-tongue.
85. Hooks and eyes.
86. Lacing-studs—
87. Plastic-head.
88. Necktie-fasteners—
89. Band-fasteners,
90. Depressors,
91. Make-ups.
92. Paper-fasteners.
93. Safety attachments—
94. Safety attachments and pencil-clasps combined.
95. Pocket.
96. Sleeve-holders.
97. Strap-attaching devices.
98. Suspenders.
99. Suspender-ends.
100. Tags and tag-fasteners.

Class 218, Button Setting and Eyeleting:
1. Button-setting machines
2. Button-setting tools.
3. Eyeleting-machines.

Class 219, Punches.

JOHN S. SEYMOUR,
Commissioner.

Issue of October 20, 1896.

Patents	390	No. 569,596 to No. 569,985, inclusive.
Designs	21	No. 26,191 to No. 26,211, inclusive.
Trade-Marks	23	No. 29,011 to No. 29,033, inclusive.
Labels	None.	
Prints	None.	
Reissues	None.	
Total issue	434	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	....	New Hampshire	2	....
Arizona Territory	....	....	New Jersey	20	....
Arkansas	2	....	New Mexico Territ'y	....	....
California	8	....	New York	57	8
Colorado	2	....	North Carolina	1	....
Connecticut	15	1	North Dakota	....	....
Delaware	4	....	Ohio	34	....
District of Columbia	4	....	Oklahoma Territory	2	....
Florida	....	....	Oregon	1	....
Georgia	1	2	Pennsylvania	36	....
Idaho	1	....	Rhode Island	2	....
Illinois	25	5	South Carolina	....	....
Indian Territory	....	....	South Dakota	....	....
Indiana	15	....	Tennessee	5	....
Iowa	7	1	Texas	4	....
Kansas	5	....	Utah	....	1
Kentucky	2	....	Vermont	....	....
Louisiana	2	....	Virginia	4	....
Maine	1	....	Washington	4	....
Maryland	6	1	West Virginia	1	....
Massachusetts	43	3	Wisconsin	7	....
Michigan	21	....	Wyoming	....	....
Minnesota	8	....	U. S. Army	....	....
Mississippi	....	....	U. S. Navy	....	....
Missouri	10	....			
Montana	5	....	Total to citizens of the United States	370	22
Nebraska	1	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	1	....	Mexico	....	....
Australia	....	....	Netherlands	....	....
Austria-Hungary	....	....	Newfoundland	....	....
Barbadoes	....	....	New South Wales	....	....
Belgium	....	....	New Zealand	1	....
Bermuda	....	....	Norway	....	....
Brazil	....	....	Orange Free State	....	....
Canada	8	....	Portugal	....	....
Canary Islands	1	....	Queensland	....	....
Cape Colony	....	....	Russia	....	....
Ceylon	....	....	Scotland	....	....
Chile, Republic of	....	....	South African Republic	....	....
Colombia	....	....	South Australia	....	....
Cuba	....	....	Spain	....	....
Denmark	1	....	Straits Settlements	....	....
England	14	1	Sweden	1	....
France	4	....	Venezuela	....	....
Germany	8	....	West Australia	....	....
Guatemala	....	....			
India	1	....			
Ireland	....	....	Total to citizens of foreign countries	41	1
Italy	1	....			

APPLICATIONS UNDER EXAMINATION.

Condition at Close of Business October 13, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Sept. 14	Sept. 21	213
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Sept. 15	Sept. 16	296
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Sept. 14	Sept. 15	161
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Sept. 15	Sept. 14	219
246	I. Tillage and Fences	Sept. 15	Sept. 14	220
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Sept. 14	Sept. 14	200
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Sept. 14	Sept. 13	233
	Between one and two months.			
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Sept. 8	Sept. 29	183
250	VIII. Furniture, Beds, Store Furniture, etc.	Sept. 8	Sept. 28	320
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Sept. 11	Sept. 26	148
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Sept. 2	Sept. 19	209
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Sept. 5	Sept. 18	149
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Sept. 12	Sept. 14	158
93	XXI. Textiles, etc.	Aug. 21	Sept. 14	201
89	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Sept. 2	Sept 10	419
215	XVII. Paper Manufactures and Printing.	Aug. 27	Sept. 5	222
255	XII. Mechanical Engineering, Store-Service, etc.	Aug. 19	Sept. 5	275
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 13	Sept. 5	178
120	IX. Hydraulics, Fire-Extinguishers, etc.	Aug. 26	Aug. 31	264
253	X. Carriages and Wagons	Aug. 14	Aug. 26	470
102	XIX. Stoves and Furnaces	Aug. 17	Aug. 25	340
248	XVIII. Steam-Engineering, etc.	Aug. 19	Aug. 22	172
106	II. Farm Stock, Products, etc	Aug. 14	Aug. 21	340
221	XXIII. Instruments of Precision, Acoustics, etc.	Aug. 22	Aug. 18	365
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 17	Aug. 17	411
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 15	July 22	401
	Between two and three months.			
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 1	293
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 12	Aug 28	473
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Aug. 11	Aug. 26	223
240	VII. Harvesters, Games and Toys, and Velocipedes.	July 28	Aug. 26	1389
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 8	Aug. 13	386
	Between three and four months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 9	Aug. 27	627
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 4	July 31	864
	Total number of applications awaiting action			10,925
	Under one month in arrears.			
	Designs	Sept. 23	Oct. 1	161
	Trade-Marks	Sept. 21	Sept. 30	68

PATENTS.

GRANTED OCTOBER 20, 1896.

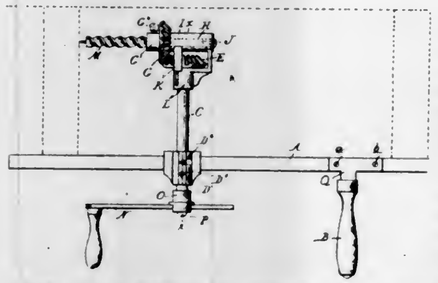
569,596. DISINFECTING APPARATUS. HORACE R. ALLEN, Indianapolis, Ind. Filed June 3, 1895. Serial No. 551,509. (No model.)



Claim.—1. In a rotary fan having blades covered with an absorbent material adapted to be kept moist by the continual supply of liquid disinfectants thereto, the combination with said covered blades of means for moistening the absorbent surface consisting of a reservoir to contain the liquid to be applied to the blades, a perforated pipe running the whole length of each of the blades and revolving therewith, valves for regulating the discharge of liquid through the pipe and tubular connection of the pipes with the reservoir, substantially as described and specified.

2. The combination with the blades B^2 covered with an absorbent material, of the reservoir F, pipes f and f' leading from the tank to the blades, said pipes being perforated to discharge liquid matter contained in the reservoir onto the absorbent material of the blades, and the supply-pipe G emptying into the reservoir and having a governor M to open and close a valve in the pipe G substantially as described and for the purposes specified.

569,597. BORING-MACHINE. ELLIOTT E. ANTHONY, Detroit, Mich. Filed Feb. 3, 1896. Serial No. 577,889. (No model.)



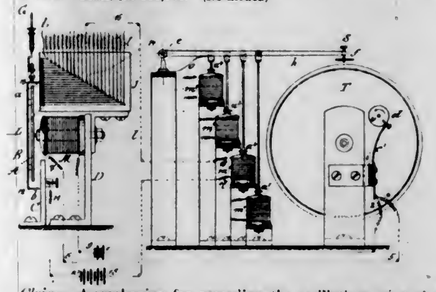
Claim.—1. In a boring-tool, the combination with a spanning feed-bar having a handle thereon and adapted to be moved longitudinally to feed the tool, of a hollow standard, means for adjustably securing the standard to the bar, a shaft passing through the standard, a bearing on the standard, a shaft in the bearing at an angle to said other shaft, intermeshing gears on the shafts, a tool-holder, and a handle for rotating the shafts, substantially as described.

2. In a boring-machine, the combination of the handled feed-bar, the sliding clamp in the feed-bar formed with a split clamping-sleeve engaging with the feed-bar and with a split clamping-sleeve at right angles thereto, the tubular standard adjustably secured by said clamping-sleeve to the feed-bar, a bearing connected to the end of the standard at right angles thereto, a stub-shaft journaled in said bearing, and carrying the boring-tool and drive mechanism for said stub-shaft actuated by an adjustable crank-handle on the end of a drive-shaft passing through the standard, substantially as described.

3. In a boring-machine, the combination of the angle bar A, the handle B secured thereto, the sliding clamp D formed with a split triangular sleeve adjustably clamping the bar A and with the tubular split sleeve D^2 for securing the standard, the tubular standard C provided with the bearing I, the stub-shaft H journaled in said bearing and carrying the bevel-pinion G and boring-tool M, the shaft F journaled in the standard and carrying the bevel-pinion K meshing with the bevel-pinion G' and the handle N adjustably secured to the shaft F, substantially as described.

4. The combination of a stub-shaft carrying the boring-tool, a drive-shaft carrying an actuating-crank, a frame or standard forming suitable bearings in which the two shafts are journaled at right angles to each other and connected by intermediate gearing and a feed-bar provided with a sliding clamp having a clamping-sleeve formed thereon adapted to adjustably secure the standard at right angles to the feed-bar, substantially as described.

569,598. ELECTRIC APPARATUS FOR REGISTERING FIGURES AT DISTANCES. MAX ARNDT, Aix-la-Chapelle, Germany. Filed Aug. 5, 1895. Serial No. 558,316. (No model.)



Claim.—A mechanism for recording the oscillations or strokes of a gas-balance at a distance from the instrument, consisting of an oscillating body in connection with a moving part of the instrument, which oscillating body is suspended in front of several conductors L, arranged one above another and in front of a conductor C connected with the battery; and of a rotary recording-drum over or in front of which are arranged, fixed in levers, writing or marking studs or styles, each of said levers being placed behind or over an electro-magnet and each of the series of electromagnets being on the one hand in connection with a conductor L and on the other hand with the battery, and of an electromagnet M in connection with a battery through conducting-wires in which is interposed a circuit-breaker which periodically breaks the electric circuit, said magnet M being located opposite the oscillating body, substantially as described and shown.

569,599. DRESS-SHIELD. DAVID BASCH, New York, N. Y., assignor to the I. B. Kleinert Rubber Company, same place. Filed Jan. 13, 1896. Serial No. 575,302. (No model.)

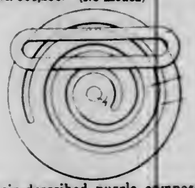
Claim.—1. As an improved article of manufacture, a dress-shield having eyelets at the junction of the body and arm flaps, and other eyelets near the edge of the arm-flap between the first-mentioned eyelets and the end of said arm-flap, and provided with elastic straps passing through said eyelets and having an end left free to permit of altering the normal acting length of each of said straps, substantially as described.

2. As an improved article of manufacture, a dress shield having eyelets at the junction of the body and arm flaps, and other eyelets near the edge of the arm flap between the first-mentioned eyelets and

the end of said arm-flap, and provided with elastic straps each having one free end provided with a clasp and passing through said eyelets whereby their normal acting length may be changed, all substantially as shown and described.

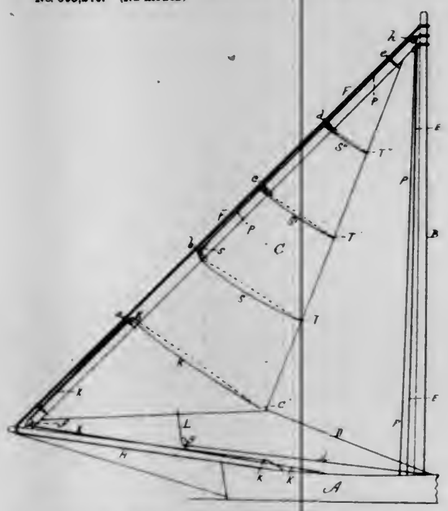


569,600. PUZZLE. WILLIAM S. BATES, Chicago, Ill. Filed Feb. 29, 1896. Serial No. 581,253. (No model.)



Claim.—The herein described puzzle composed of a flat spiral with a closed outer end, a disk secured to the inner end of the spiral, and a loop strung upon one of the coils of the spiral, substantially as set forth.

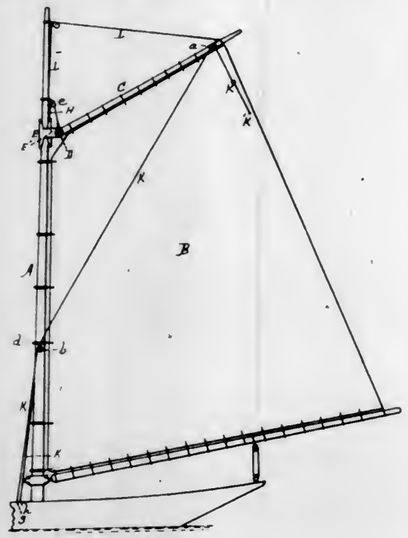
569,601. FOLDING AND REEFING APPARATUS FOR JIBS. FRANCISCO V. DE BEM, Gloucester, Mass. Filed June 12, 1896. Serial No. 595,279. (No model.)



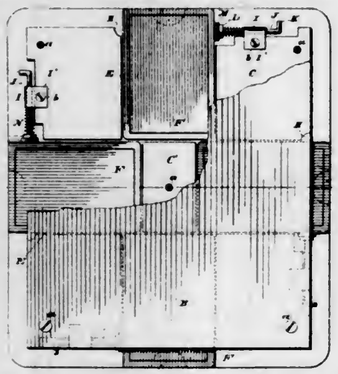
Claim.—The herein-described improved folding and reefing apparatus for jibs, consisting of the combination with the mast, jib, jib-stay and hanks; of the reefing-ropes K secured at one end to the lower, inner corner C of the jib on the opposite sides thereof, extending therefrom directly across the jib to and through the lower hank *a* and thence to the bowsprit and deck; the half-reefing sheet L extending centrally from the lower end of the jib to the deck; the clue-rope P extending from the deck to the upper portion of the mast and thence through the hanks *e*, *d* and *c*; the pair of clue-ropes S extending from the inner edge of the jib on opposite sides thereof to the lower end of the clue-rope P; and other pairs of clue-ropes similarly secured to the inner edge of the jib and extending to the clue-rope P, substantially as described.

569,602. REEFING APPARATUS FOR FORE-AND-AFT SAILS. FRANCISCO V. DE BEM, Gloucester, Mass. Filed June 12, 1896. Serial No. 595,280. (No model.)

Claim.—In a reefing apparatus of the character described, in combination, the mast; the gaff-yoke consisting of the jaws E and F provided respectively with the extensions E′ and F″; the gaff pivoted to said extensions so as to swing vertically therein; the sail B; peak-halyard; and the ropes K secured at K′ to opposite sides of the sail and extending therefrom over suitable pulleys on the gaff and suitable blocks on one of the rings or hooks *d* to the deck, substantially as described.



569,603. DUPLICATE-WHIST APPARATUS. RICHARD M. BENT, New York, N. Y. Filed Mar. 5, 1896. Serial No. 581,900. (No model.)



Claim.—1. An apparatus for the purposes described comprising a tray having recesses in the sides thereof adapted to receive cards, and a spring-actuated holding device for each of said recesses adapted for contact with the edges of the cards within the recesses to maintain the same in position therein, substantially as specified.

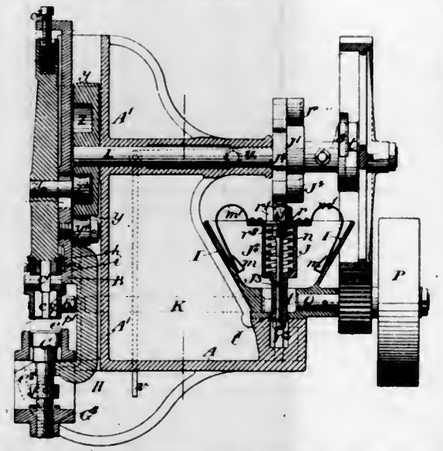
2. An apparatus for the purposes described comprising a tray having recesses in the sides thereof adapted to receive cards, and spring-actuated holding devices arranged in the sides of said tray adjacent to the receiving ends of said recesses, adapted for contact with the edges of the cards to maintain said cards in position within said recesses, substantially as specified.

3. An apparatus for the purposes described comprising a tray consisting of a base, and a cover for said base, recesses arranged in said tray in the sides thereof between said cover and base, and spring-actuated holding devices adapted for contact with the edges of the cards to maintain the same within said recesses partly within the outline of the cover, and wholly within the outline of the base, substantially as specified.

4. An apparatus for the purposes described comprising a tray consisting of a base, and a cover for said base of smaller outline than said base, receptacles to receive the cards arranged in the sides of said tray between the base and cover, a holding device arranged at each side of the tray adjacent to each receptacle consisting of a bearing, a rod carried in said bearing provided at one end with a finger portion, and at its other end with a button having an elastic cushion secured upon its outer face, and a spring disposed upon said rod between the bearing and the button aforesaid to hold the latter in contact with the edges of the cards to maintain the same in position within the receptacles, substantially as specified.

5. An apparatus for the purposes described comprising a tray consisting of a base having solid blocks secured thereon near its corners, each of said blocks having one of its exposed edges recessed, a block secured upon said base in the center thereof having its corners arranged adjacent to the inner corners of the first mentioned blocks, thumb indentations in the edges of said base midway between the corner-blocks, a cover for said base extending to the edges of the corner-blocks only, bearings secured in the recessed edges of the corner blocks, rods carried in said bearings provided at their rear ends with outwardly-projecting finger portions, and at their forward ends with buttons having elastic cushions secured upon their outer faces, and springs disposed upon said rods between the buttons and the bearings substantially as and for the purposes set forth.

569,604. APPARATUS FOR PRODUCING DESIGNS IN CAKES OF SOAP. BROR F. BERGH, New York, N. Y., assignor, by direct and mesne assignments, to Michael Hoffman Wilson, Brooklyn, N. Y. and the Archer Manufacturing Company, Rochester, N. Y. Filed Nov. 13, 1895. Serial No. 568,753. (No model.)



Claim.—1. The combination of a receiver for a cake of soap, a punch and a reciprocating carrier therefor for producing in said cake a cavity or cavities for the reception of a coloring substance, and a feed-box having openings in it corresponding with the punch for supplying the coloring substance to said cavity or cavities and located between the punch-carrier and the receiver, the punch passing through said openings in the feed-box and alternately opening and closing the same, substantially as herein described.

2. The combination of a receiver for a cake of soap, a punch for producing in said cake a cavity or cavities for the reception of a coloring substance, a reciprocating feed-box from which the coloring substance is supplied to said cavity or cavities and which leaves the receiver open for the reception of the cake but closes it to confine the cake therein during such supply, and guides in said feed-box for the punch, substantially as herein described.

3. The combination of a receiver for a cake of soap, a punch for producing in said cake a cavity or cavities for the reception of a coloring substance, and a reciprocating feed-box from which the coloring substance is supplied to said cavity or cavities and through which said punch passes and which enters said receiver as a plunger to confine the cake therein during the operation of the punches and during the supply of the coloring substance to the said cavity or cavities, substantially as herein described.

4. The combination of a receiver for a cake of soap, a punch for producing in said cake a cavity or cavities for the reception of a coloring substance, a reservoir for coloring-matter for filling said cavity or cavities, a reciprocating feed-box containing guides for the punches and serving to open and close the receiver, a ram for forcing the coloring substance from said reservoir through said feed-box into said cavity or cavities, and a flexible pipe between said ram and the reciprocating feed box, substantially as herein described.

5. The combination of a slide and a stationary guide therefor, a second slide and guides therefor on the first-mentioned slide, a feed-box carried by one slide, a punch carried by the other slide and working through said feed-box and a ram for forcing semifluid material into and through said box, and a cam-shaft and cams thereon for giving said slides separate movements in their respective guides and for operating said ram, substantially as herein described.

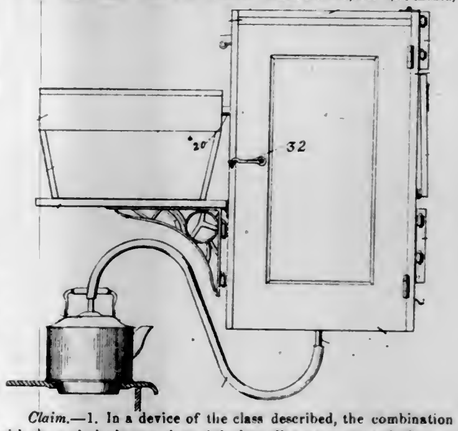
6. The combination of the receiver, the reciprocating feed-box conforming externally to and entering said receiver for closing it, the plunger forming the bottom of said receiver and the slide by which the said feed-box and plunger are both carried, the said slide and feed-box being capable of a limited movement independently of said plunger, substantially as herein described.

7. The combination of the punch-carrying slide and the reciprocating feed-box-carrying slide the one movable within or upon the other, the cam-shaft and the two cams thereon for operating the two slides respectively, and the spring interposed between the two slides for permitting the movement of the punch-carrying slide while the feed-box-carrying slide remains stationary, substantially as herein described.

8. The combination of a receiver for a cake of soap, a punch for producing in said cake a cavity or cavities for the reception of a coloring substance, a stationary reservoir for a coloring substance to be supplied to said cavity or cavities, a reciprocating feed-box between said reservoir and said receiver, a flexible pipe between said reservoir and feed-box, and a ram and means of producing a yielding pressure thereon for forcing the coloring substance from said reservoir through said pipe to the feed-box, substantially as herein described.

9. The combination of a receiver for a cake of soap, a punch and a reciprocating carrier therefor for producing in said cake a cavity for the reception of a coloring substance, a feed-box having an opening in it corresponding with the punch for supplying the coloring substance to said cavity and located between the punch-carrier and the receiver, and a ram for forcing the coloring substance through said feed-box and through said opening, the punch passing through said opening and alternately opening and closing the same, substantially as herein described.

569,605. BREAD-RAISING APPARATUS. JOHN BERNTSEN, Albert Lea, Minn. Filed Oct. 14, 1895. Serial No. 565,606. (No model.)



Claim.—1. In a device of the class described, the combination with the main body or casing, of the kneading-pan arranged adjacent thereto, the pipe connecting the interior of said main body or casing with the interior of said kneading-pan, and means for supplying steam to said main body or casing to be conveyed through said pipe to said kneading-pan, for the purpose set forth.

2. In a device of the class described, the combination, with the main body or casing, provided with a swinging shelf on its side, of the kneading-pan arranged upon said shelf, means connecting the interior of said pan with the interior of said main body or casing, the tube leading into the lower part of said main body or casing, means for supplying steam to said casing through said tube, and the deflector arranged within said casing over the steam-inlet in the lower part thereof, for the purpose set forth.

3. In a device of the class described, the combination, with the main body or casing, of the shelves hinged to the sides thereof, means

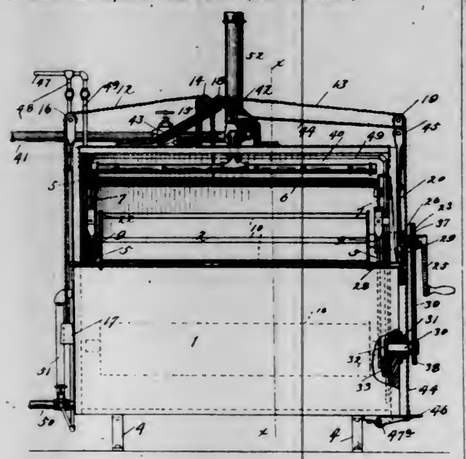
for supporting said shelves in a horizontal position, the kneading-pan arranged upon one of said shelves, the tube connecting said pan with the interior of said casing, means for supplying steam to said casing, the top of said casing or main body being provided with a series of openings, and one of said shelves being adapted to cover said openings, substantially as described.

4. A bread-raising apparatus comprising the main portion or box provided with a series of shelves whereon the pans of dough may be placed, the tube or pipe connecting the lower portion of said box with the steam-boiler, a dough-kneading box arranged adjacent to said main portion a tube connecting the interior of said main portion with said kneading box whereby the steam may be introduced into the latter from said main portion, and said box being provided in its top with a series of openings and means for closing the same, substantially as described.

5. A bread-raising apparatus comprising the main portion or box, provided with a series of shelves, means connecting the lower portion of said box with a steam receptacle or boiler, suitable outlets being provided in the top of said box to permit the escape of steam, means for closing the same, and a horizontally-movable deflector supported above the steam-inlet opening, whereby the steam may be deflected from one side of the box to the other, for the purpose set forth.

569,606. DISH-CLEANER. GEORGE S. BLAKESLEE, Chicago, Ill.

Filed June 19, 1895. Serial No. 553,325. (No model.)



Claim.—1. In a dish-washing machine, a receptacle adapted to contain water, in combination with a dish-holding basket, guides secured to opposite sides of the receptacle, a supporting device for said basket movably secured to said guides, and devices for raising and lowering said supporting device, substantially as specified.

2. In a dish-washing machine, a receptacle adapted to contain water, in combination with a dish-holding basket, guides secured to the sides of the receptacle, a cross-bar 6 having depending portions 7 and curved ends 9 to form bearings on which the basket is supported, a connection between said ends 7 and the guides, and means for raising and lowering said cross-bar and basket, substantially as specified.

3. In a dish-washing machine, a receptacle adapted to contain water, in combination with a dish-holding basket, guides secured to opposite sides of the receptacle, a supporting device for said basket movably connected to said guides, means for raising and lowering said supporting device, and means for rotating the basket, substantially as specified.

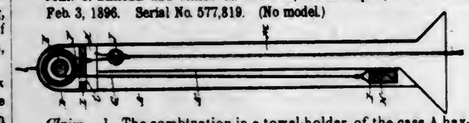
569,607. HOOK AND EYE. MARY G. BOTTO, Philadelphia, Pa.

Filed Oct. 18, 1895. Serial No. 566,033. (No model.)



Claim.—In a hook, a bill, a back formed of members extending rearwardly from the bend of said bill, reentrant members extending from said former members, necks extending outwardly from said reentrant members, and eyes on the ends of said necks, substantially as described.

569,608. TOWEL-HOLDER. LUCIUS F. BRISTOL, Shell Rock, and JOHN O. BAXTER and JAMES M. SEARLES, Cedar Rapids, Iowa. Filed Feb. 3, 1896. Serial No. 577,819. (No model.)

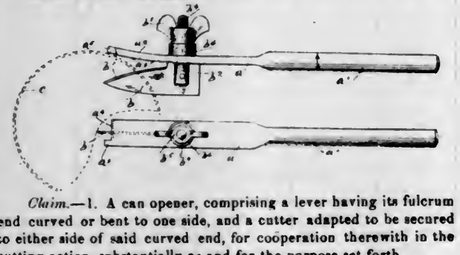


Claim.—1. The combination in a towel-holder, of the case A having flared, open, lower end A′ and partition A″, supporting means B, the head-block K K having bridge L with slots *l l′* therein, roller E with a reduced middle portion towel-supporting straps F F with spring-clip J, and strap G with weight H, substantially as and for the purpose set forth.

2. In a towel-holder, the combination of a case having one compartment, open at the bottom, to receive the towel, and another, open at the upper end, to receive a weight, a roller mounted revolubly in a head-block at the upper end of the case, straps wound oppositely thereon, and adapted to support the towel and weight, respectively, means for supporting said case, and a clip to retain the towel, substantially as and for the purpose set forth.

3. In a towel-holder, the combination of the head-block the roller revoluble therein, the middle strap G with a weight H at its lower end, the oppositely-wound side straps F F, and the spring-clip J having arms *j j* to connect with said straps F F, substantially as and for the purpose set forth.

569,609. CAN-OPENER. OLIVER A. BURNES, Minneapolis, Minn., assignor to Laura Johnson, Northfield, Minn. Filed Feb. 28, 1896. Serial No. 581,136. (No model.)



Claim.—1. A can opener, comprising a lever having its fulcrum end curved or bent to one side, and a cutter adapted to be secured to either side of said curved end, for cooperation therewith in the cutting action, substantially as and for the purpose set forth.

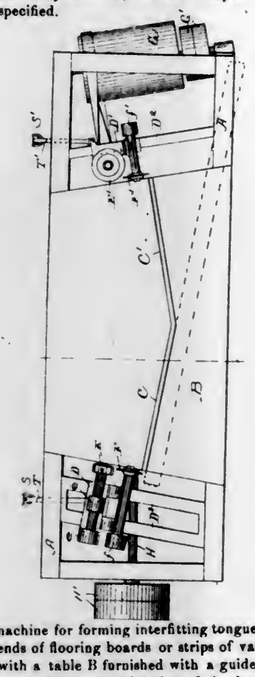
2. A can-opener, comprising the lever *a* with curved fulcrum end a^3 formed at its extreme end with the sharp biting or fulcrum edge a^4, and the knife *b* securable to either side of said lever, for cooperation with either the convex surface of said fulcrum end a^3, or with said biting edge a^4, substantially as and for the purposes set forth.

3. A can-opener, comprising the lever *a* with curved fulcrum end a^3 formed at its extreme end with the sharp biting or fulcrum edge a^4 and guide-lug a^5, and the knife *b* securable to either side of said lever *a*, for cooperation either with the convex surface of said fulcrum end or with said biting edge a^4, substantially as and for the purposes set forth.

4. In a can-opener, the combination with the lever *a a′* provided at its intermediate portion with the shank-seat a^6 and at its end with the curved and serrated fulcrum end a^3 a^3 formed at its extreme end with the biting edge a^4 and guide-lug a^5, of the knife *b*, the clamp-stud b^3 secured to said knife *b* and having the shank portion b^4 working through said shank-seat a^6, and the thumb-nut b^5 working on the screw-threaded end of said stud b^3, substantially as and for the purposes set forth.

569,610. MACHINE FOR FORMING INTERFITTING TONGUES AND GROOVES ON OPPOSITE ENDS OF FLOORING-BOARDS. JOHN P. BURNHAM, Chicago, Ill., assignor to Thomas Wilce, same place. Filed Nov 15, 1893. Serial No. 490,977. (No model.)

Claim.—1. The machine for forming a tongue on one end and a groove at the other end of variable-length flooring-boards, comprising in combination the following instrumentalities: (1) a support for the board (2) a rotary grooving mechanism rotating parallel with the plane of the board-support, (3) a rotary tonguing mechanism rotating at right angles with the plane of the board-support, (4) a guide for the side of the board extending at right angles to the line of the cut of said tonguing mechanism and being toward the grooving mechanism unobstructed and open so that a board longer than the distance between the tonguing mechanism and the grooving mechanism may be set against said guide, said guide also extending from the grooving mechanism in a line at right angles to the cut of the grooving mechanism and being toward the tonguing mechanism in similar manner unobstructed, (5) a saw for cutting off and squaring one end of the board preparatory to grooving the same, and a second saw for cutting off and squaring the other end of the board preparatory to tonguing the same, said mechanisms for grooving and tonguing and sawing the board, and said devices for supporting and guiding the board being relatively movable, the one in respect to the other, substantially as specified.



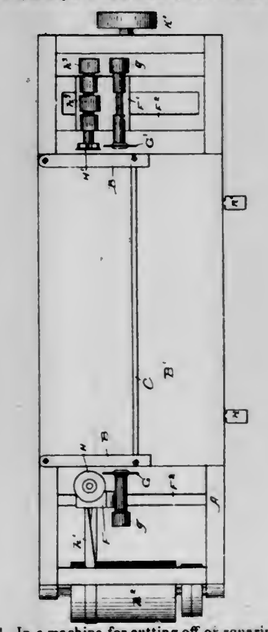
2. In a machine for forming interfitting tongues and grooves on the opposite ends of flooring boards or strips of varying lengths the combination with a table B furnished with a guide extending longitudinally of the table for the side edge of the board to fit against while being operated upon first at one end and then at the other, of a transversely-reciprocating slide or cross-head mounted on said table at one end of said guide, and provided with a cut-off saw and tonguing mechanism for first cutting off or squaring one end of the board and forming a tongue thereon, and a second transversely-reciprocating slide or cross-head mounted on said table at the other end of said guide and provided with a cut-off saw and a grooving mechanism for cutting off or squaring the other end of the board and forming a groove therein, the continuously-operated shaft H and the clutch-operating mechanism for reciprocating the cross-heads at the will of the operator, said parts being arranged and cooperating together to first operate upon one end of the board and then upon the other end of the board, substantially as specified.

3. In a machine for forming interfitting tongues and grooves on the opposite ends of flooring boards or strips, the combination of table B, guides C C′ arranged at an angle to each other on said table, transversely-reciprocating cross-heads D D′ mounted on said table in guideways, one at right angles to each of said guides C C′, and one of said cross-heads being provided with and carrying a continuously-operated tonguing mechanism, and the other of said cross-heads being provided with and carrying a continuously-operated grooving mechanism, a continuously-rotated shaft H, a shaft L geared to said shaft H by a clutch, said clutch, the counter-shaft R, crank *v*, slotted arm U, arms S S′, and connections T T′, all arranged and combined substantially as specified.

4. In a machine for forming interfitting tongues and grooves on the opposite ends of flooring boards or strips, the combination of table B, guides C C′ arranged at an angle to each other on said table, transversely-reciprocating cross-heads D D′ mounted on said table in guideways one at right angles to each of said guides C C′, and one of said cross-heads being provided with and carrying a continuously-operated tonguing mechanism, and the other of said cross-heads being provided with and carrying a continuously-operated grooving mechanism, a continuously-rotated shaft H, a shaft L geared to said shaft H by a clutch, said clutch, the counter shaft R, crank *v*, slotted arm U, arms S S′, and connections T T′, each of said cross-heads also being provided with and carrying a cut-off saw, substantially as specified.

5. In a machine for forming interfitting tongues and grooves on the opposite ends of flooring boards or strips, the combination of a table B provided with two guides C C′ arranged at an obtuse angle to each other on said table, and two reciprocating slides or cross-heads mounted in guideways on said table, one at right angles to each of said guides C C′ and at the opposite ends of said guides, one of said slides being provided with and carrying a cut-off saw and a tonguing mechanism arranged and adapted to form a tongue at one end of the board, and the other of said slides being provided with a cut-off saw and a grooving mechanism arranged and adapted to form a groove in the opposite end of the board, the obtuse angle of said guides permitting the free end of the board to clear one of said slides and mechanisms while the other end of said board is being operated upon, substantially as specified.

569,611. MACHINE FOR TONGUING AND GROOVING ENDS OF FLOORING-BOARDS. JOHN P. BURNHAM, Chicago, Ill., assignor to Thomas Wilce, same place. Filed Jan. 6, 1896. Serial No. 574,514. (No model.)



Claim.—1. In a machine for cutting off or squaring and forming interfitting tongues and grooves on the opposite ends of flooring-boards, the combination of the following parts or elements: a bed or support upon which the board may be laid; an edge-guide for the edge of the board to fit against; face-guides above said bed or support for the face of the board to fit against; lifting devices for lifting or pressing each end of the board alternately against said face guides; two transversely-reciprocating cross-heads; a cut-off saw and a grooving-tool mounted on one of said cross-heads; a cut-off saw and tonguing-tools mounted on the other of said cross-heads; said machine having also a means for withdrawing the board lengthwise out of the way of the cut-off saws on the return motion of said cross-heads; and mechanism for automatically operating said lifting device, and the means for withdrawing the board lengthwise, substantially as specified.

2. In a machine for cutting off or squaring and forming interfitting tongues and grooves on the opposite ends of flooring boards; the combination with edge guide and face-guides for the edge and face of the board to fit against, of devices D D having each a separate movement toward the face-guides to press each end of the board alternately against the same, and each a separate movement lengthwise of the board to withdraw each end of it alternately from the path of the tools after being operated upon thereby; a cut-off saw and a grooving tool for one end of the board, and a second cut-off saw and tonguing-tools for operating upon the other end of the board, said cut-off saws and grooving and tonguing tools on the one hand, and said devices for holding and guiding the board on the other hand being relatively movable the one in respect to the other, substantially as specified.

3. The combination with the bed or support B′ upon which the board may be laid, of an edge-guide C for the edge of the board, a face-guide B above said bed or support for the face of the board, a device D for lifting the board from said bed or support and pressing

it against said face-guide, and a transversely-reciprocating tool-carrying cross-head, and mechanism for automatically operating said device D to lift the board and press it against said face-guide, said device D having also a lateral movement in the direction of the length of the board for the purpose of withdrawing the board from the return path of the tools carried by said cross-head, and mechanism for automatically imparting said lateral movement to said device D, substantially as specified.

4. The combination with the bed or support B' upon which the board may be laid, of an edge-guide C for the edge of the board, a face-guide B above said bed or support for the face of the board, a device D for lifting the board from said bed or support and pressing it against said face-guide, and a transversely-reciprocating tool-carrying cross-head, and mechanism for automatically operating said device D to lift the board and press it against said face-guide, said device D having a shoulderless tapering end with sharp edge to bear against the board to enable it by embedding itself more or less in the board to compensate for variations in the thickness of the board, substantially as specified.

5. The combination with the bed or support B' upon which the board may be laid, of an edge-guide C for the edge of the board, a face guide B above said bed or support for the face of the board, a device D for lifting the board from said bed or support and pressing it against said face-guide, and a transversely-reciprocating tool-carrying cross head, and mechanism for automatically operating said device D to lift the board and press it against said face-guide, said device D having also a lateral movement in the direction of the length of the board for the purpose of withdrawing the board from the return path of the tools carried by said cross-head, and mechanism for automatically imparting said lateral movement to said device D, said device D having a sharp end to bear against the board to adapt it to give the board its lengthwise or withdrawing movement, substantially as specified.

6. The combination with a bed or support upon which the board may be laid and an edge-guide for the edge of the board of a face-guide for the face of the board above said bed or support, a device for lifting that end of the board which is being operated upon from said bed or support and pressing said end against said face-guide, a means for imparting to the board a movement in the direction of its length, and a cut-off saw and a matching-tool for forming a tongue or groove on the end of the board, said devices for guiding, holding and moving the board on the one hand, and said cut-off saw and matching-tool on the other hand being relatively movable the one in respect to the other, substantially as specified.

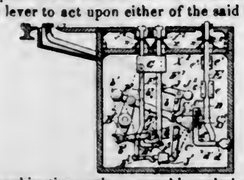
7. The combination with a bed or support upon which the board may be laid and an edge-guide for the edge of the board of a face-guide for the face of the board above said bed or support, a device for lifting that end of the board which is being operated upon from said bed or support and pressing said end against said face-guide, a means for imparting to the board a movement in the direction of its length, and a cut-off saw and a matching-tool for forming a tongue or groove on the end of the board, said devices for guiding, holding and moving the board on the one hand, and said cut-off saw and matching-tool on the other hand being relatively movable the one in respect to the other, and mechanism for automatically operating said device for pressing the board against said face guide, and the means for giving it its lengthwise movement, substantially as specified.

8 The combination with a bed or support upon which the board may be laid and an edge-guide for the edge of the board of a face-guide for the face of the board above said bed or support, a device for lifting that end of the board which is being operated upon from said bed or support and pressing said end against said face-guide, a means for imparting to the board a movement in the direction of its length, and a matching-tool for forming a tongue or groove on the end of the board, said devices for guiding, holding and moving the board on the one hand, and said matching-tool on the other hand being relatively movable, the one in respect to the other, substantially as specified.

9. The combination with an edge-guide for the edge of the board of a face guide for the face of the board, a device for pressing the board against said face-guide, a means for imparting to the board a movement in the direction of its length, and a matching-tool for forming a tongue or groove on the end of the board, said devices for guiding, holding and moving the board on the one hand, and said matching-tool on the other hand being relatively movable the one in respect to the other, said device for pressing the board against said face-guide and said means for imparting to the board a movement in the direction of its length, consisting of a bar D provided with a sharp end for engaging the board, substantially as specified.

569,612. RAILWAY-SWITCH. GUSTAVUS A. BURSCH, Brooklyn, N. Y., assignor to Frederick J. W. Bursch, same place. Filed Nov. 14, 1895. Serial No. 568,375. (No model.)

Claim.—1. The combination with a movable switch-tongue of a shaft, means to impart motion from said shaft to said tongue by the movement of said shaft, a beam secured to said shaft, a lever adapted to be operated by the passage of the car and non-automatic means, operated by power received from the momentum of the passing car, to cause said lever to act upon either of the said beams.



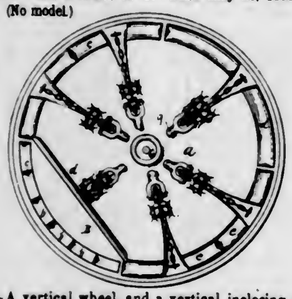
2. The combination with a movable switch tongue of a shaft, means to impart motion from said shaft to said tongue, a beam secured to said shaft, arms secured to either end of said beam and non-automatic means operated by power received from the momentum of the passing car whereby a lever adapted to be shifted by the passage of the car may be caused to act upon eitner of said arms.

3. The combination with a movable switch-tongue of a shaft, means to impart motion from said shaft to said tongue, a beam secured to said shaft, arms secured to either end of said beam a lever adapted to be shifted by the passage of the car and a plurality of rods, operated independently of said lever, by the operation of which either of said arms may be caused to receive the action of said lever.

4. The combination with a movable switch-tongue, of a shaft, means to impart motion from said shaft to said tongue, a beam secured to said shaft, arms secured to either end of said beam, a buffer C adapted to be shifted by the passage of the car and means to cause one or the other of said arms to assume a position which will cause it to be acted upon by the said buffer.

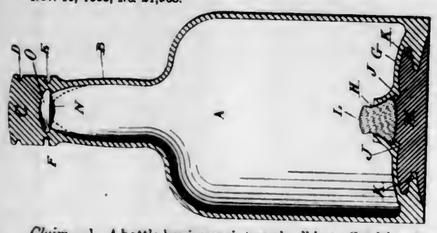
5. The combination with a movable switch-tongue, a lever adapted to be shifted by the passage of the car and means to impart motion from said lever to said tongue, of a plurality of rods, means to cause said rods to act upon the mechanism intermediate the said lever and switch-tongue by the movement of said rods and cause the said tongue to be moved in one direction or the other by the said lever.

569,613. TURBINE WATER-WHEEL. JAMES CALDWELL and EMERY CALDWELL, Auburn, N. Y. Filed May 20, 1896. Serial No. 592,362. (No model.)



Claim.—A vertical wheel, and a vertical inclosing case that is open at its bottom, and provided at its top with a series of openings of different sizes, combined with a series of vertically-moving gates which correspond in size to the openings in the top of the case; the posts rising from the top of the case, the guiding-pulleys on the posts, and a separate chain for each gate, substantially as shown.

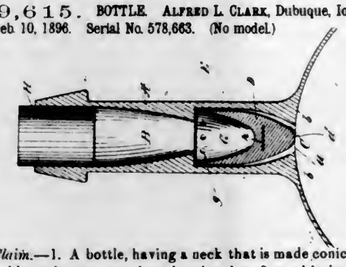
569,614. BOTTLE. MATTHEW CARR, London, England. Filed June 15, 1896. Serial No. 595,589. (No model.) Patented in England Nov. 19, 1895, No. 21,985.



Claim.—1. A bottle having an integral solid cap C, with a groove E at the joint between the same and the bottle-neck and having also a groove D about its upper part above the groove E, said cap having a hollowed under part at O opposite the groove E and the ridge F both of said grooves being exposed, substantially as described.

2. A bottle having a cavity in its bottom with a pointed ridge as K extending about the same, the cement held in said cavity by the ridge, said bottom having a central conical opening with a ridge J about the base of the same and the cork resting on said ridge, substantially as described.

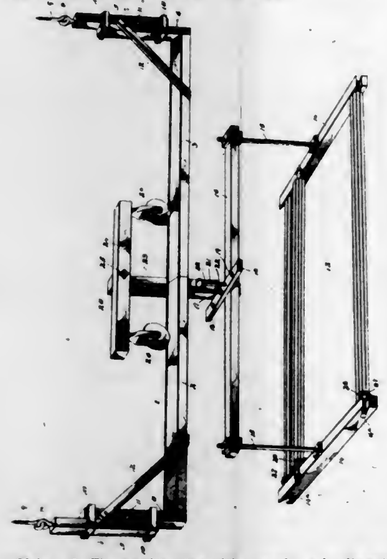
569,615. BOTTLE. ALFRED L. CLARK, Dubuque, Iowa. Filed Feb 10, 1896. Serial No. 578,663. (No model.)



Claim.—1. A bottle, having a neck that is made conical upon its inner side at its upper end, and a chamber formed in its lower end having abrupt walls or shoulders at its upper end, combined with a hollowed elastic plug-valve having its upper end so shaped as to spring out under said walls or shoulders, substantially as shown.

2. A bottle having a neck that is provided with the conical portion B in its upper part, a chamber in its lower end; the upper end of the chamber forming an abrupt shoulder that stands about a right angle to the length of the neck, combined with a compressible valve that has its upper end to extend at right angles to its length, so as to catch under said abrupt shoulder, and a plate that is placed in the end of the valve, substantially as described.

569,616. QUILTING ATTACHMENT FOR SEWING-MACHINES. WASHINGTON B. CLICK and ISAAC A. CLICK, Whitewright, Tex. Filed Mar. 8, 1895. Serial No. 541,029. (No model.)

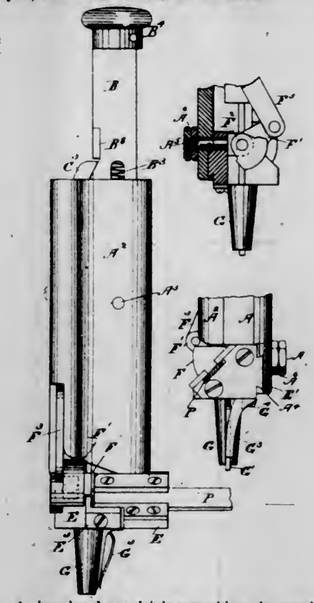


Claim.—1. The combination with a track, and adjustable supporting devices for the same whereby the inclination thereof may be varied, of a hanger adapted to support a quilting-frame and having a traveler-bar adapted to traverse the track and corresponding in inclination therewith, and an upright depending from said traveler-bar, and means for securing said upright in a desired position with relation to the traveler-bar whereby the former is adapted to occupy a vertical position irrespective of the angle of inclination of the latter, substantially as specified.

2. The combination with a track, and adjustable means for supporting the same whereby it may be arranged at the desired inclination, of a hanger adapted to support a quilting-frame and having a traveler-bar mounted to traverse the track and correspond in inclination therewith, an upright bar, and a clamping-bolt engaging registering openings in said upright and traveler bars to allow adjustment of the upright bar with relation to the traveler-bar and enable said parts to be locked at the desired adjustment, whereby the upright bar is adapted to occupy a vertical position irrespective of the inclination of the traveler-bar, substantially as specified.

3. The combination with a track, of end supports for the track, each support comprising relatively-adjustable parallel members each provided with a keeper or sleeve embracing the other member, one of the members being rigidly secured to an extremity of the track and the other being universally mounted at its upper extremity to provide for swinging movement in all directions, wedges 11 adapted to be inserted between the contiguous surfaces of the members of each support, whereby said members may be locked at any desired extension to arrange the track at the desired inclination, and a hanger adapted to support a quilting-frame and having an angularly-adjustable traveler-bar mounted to traverse the track and provided with locking devices whereby it may be secured at an inclination corresponding with that of the track, substantially as specified.

569,617. HAND PEGGING-MACHINE. JOSEPH E. CRISP, Somerville, and GEORGE W. COPELAND, Malden, Mass., assignors, by mesne assignments, to the Goodyear Shoe Machinery Company, Portland, Me. Filed May 23, 1892. Serial No. 433,943. (No model.)



Claim.—1. In a hand peg-driving machine, the combination of casing carrying and guiding suitable awl and peg driving mechanism consisting of two parts connected by dovetails, a swinging lever pivoted between said parts, and a bolt holding said parts fixed in position, and upon which said lever is pivoted substantially as shown and described.

2. In a hand peg-driving machine, the combination of casing, carrying and guiding suitable awl and peg driving mechanism, a support for the peg guiding, feeding, and the stationary member of the peg-wood shear connected thereto by dovetails, a bolt to fix said support in position, and the swinging member of the peg-wood shear pivoted to said bolt, substantially as shown and described.

3. The combination in a hand peg-driving machine of the driver-plunger, B with the tooth B^3, the awl-carrier C, the pawl C^2 with the extension C^3, the spring C^5 and the cam A^7 on the casing A all operating substantially as shown and described for the purpose set forth.

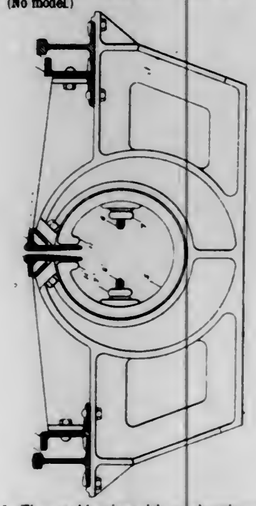
4. The combination in a hand peg-driving machine of the compound swinging lever D, D', and D^2 mounted upon the bolt A^3, the driver-plunger B provided with the pin B^7 and the awl-carrier C having the roll secured thereto, all operating substantially as shown and described for the purpose set forth.

5. In a peg-driving machine the combination with suitable peg-feeding, and peg-driving mechanism having a horizontal peg-wood guideway set at an angle substantially as described to the awl and

driver, of a swinging peg-wood shear and suitable operating mechanism which shears a peg from the angular-held peg-wood and swings the same under the driver by the contact of the square cutting edge of said shear against said peg, substantially as shown and described.

6. In a peg-driving machine the combination with the delivery-nozzle, awl, and driver thereof, of the swinging register-point G^2 and spring G^3 all operating substantially as shown and described.

569,618. ELECTRIC CONDUIT AND APPURTENANCES. MALCOLM DICKERSON, Fort Wayne, Ind. Filed Sept. 11, 1893. Serial No. 485,214. (No model.)



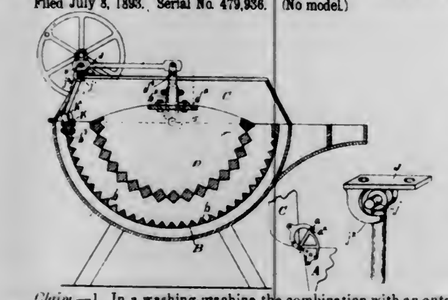
Claim.—1. The combination with an electric conduit, of conductor-supports each comprising a hollow insulating-sleeve having an enlarged head which abuts on the outer surface of the conduit and a body portion which fits and is sealed within an aperture in said wall, said sleeve being open at its inner end only, a slightly-yielding non-metallic tubular core inserted within said sleeve, a metallic stem seated in the tubular core, and means for attaching the conductor to the outer end of the stem.

2. In an electrical conduit a pipe made of hard non-conducting material formed with a longitudinal slot through its top and interiorly-depending integral lips in the edges of said slot in combination with two surface slot-rails extending downward through the slot in the pipe and past the lips thereof.

3. The combination with the transverse supporting-yokes having the slotted conduit-pipe mounted centrally therein and provided with center slot-rails depending into said pipe, of the track-rails mounted on the ends of the yokes, and the side slot-rails mounted adjacent to the track-rails to form lateral drainage-conduits, the center slot-rails being raised above the track-rails, substantially as described.

4. In an electrical railroad a system of supporting-yokes placed at intervals in combination with two central slot-rails two exterior track-rails and two side slot-rails combined substantially as shown.

569,619. WASHING-MACHINE. CONRAD DIETZ, Covington, Ky. Filed July 8, 1893. Serial No. 479,936. (No model.)

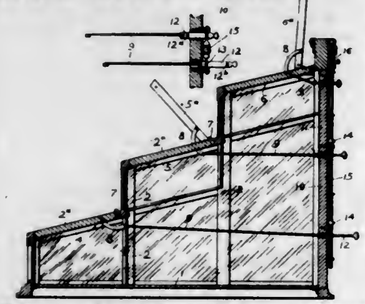


Claim.—1. In a washing-machine the combination with an outer casing or tub, a ribbed receptacle pivotally mounted in said tub, a top or cover hinged to the tub, and a dasher pivotally mounted in elongated bearings in the top or cover, of a crank-shaft, a pitman pivotally connecting the crank-shaft and rubber, and a rod detachably connected at one end to one end of the pivoted receptacle, and pivotally connected at its other end to the pitman at a point near the crank-shaft, substantially as set forth.

2. In a washing-machine the combination with an outer casing or tub, a ribbed receptacle pivotally mounted in said tub, a cover hinged to the tub, brackets secured to the inner faces of the sides of the cover and having closed elongated grooves and a rubber having bearings which rest within said elongated grooves, of a crank-shaft journaled in bearings carried by the cover, a pitman connecting the crank-shaft and rubber and a rod detachably connected at one end to one end of the receptacle and detachably connected at its other end to the pitman at a point near the crank-shaft.

3. In a washing-machine, the combination with a tub or casing, a cover hinged thereto, a receptacle pivotally mounted in the tub, and a rubber pivotally mounted in bearings carried by the cover, of a crank-shaft, a pitman connecting the crank and rubber, plates each having a stud and a horn each latter being in a plane adjacent to the free end of its studs, one of said plates being secured to the receptacle and the other to the pitman and a rod mounted at its ends on said studs and retained against accidental displacement by the horns, substantially as set forth.

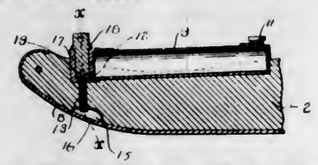
569,620. SHOW-CASE. JOSEPH M. DILS, South Bend, Ind. Filed Nov. 29, 1895. Serial No. 570,333. (No model.)



Claim.—1. A show-case, comprising separate compartments, arranged one above the other in steps within an outer case, each compartment being provided with an independently-hinged door, lever 8, rod 9, extending to the rear of the case and a locking slide-rod 15 to engage with the said rods, substantially as described.

2. A show-case, comprising a frame having a series of step-like panels, each fitted with separately-hinged doors, a lever 8, secured to each door, a rod 9, knob-plate 12, hook 13, slide-rod 15 having spurs to engage the hooks and a lock to engage the slide-rod, substantially as described for the purpose specified.

569,621. SLED. EVARISTE DORE, Minneapolis, Minn., assignor of one-half to Anthony Chouinard, same place. Filed May 13, 1896. Serial No. 591,448. (No model.)



Claim.—1. The combination, with a sled-runner, of an oil-receptacle applied thereto, and means for delivering the oil from said receptacle onto the under surface of the forward end of the runner.

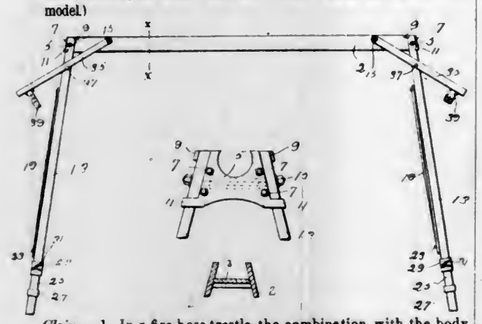
2. The combination, with a sled-runner, having an upturned forward end, of an oil-receptacle applied to said runner, and means for delivering the oil from said receptacle onto the under surface of the upturned forward end of the runner.

3. The combination with a sled-runner, of an oil-receptacle arranged thereon, means for guiding the oil from said receptacle onto the under surface of the forward end of the runner, and means for regulating the flow of oil from said receptacle.

4. The combination, with a sled-runner, provided with a shoe 8, of a cup 15 arranged above said shoe, a series of openings 16 extending from said cup to said shoe, an oil receptacle carried from said shoe, and means for delivering the oil from said receptacle into said cup, for the purpose specified.

5. The combination, with the sled-runner, provided with the shoe 8 having the opening 16, the cup 15 arranged above said shoe, the reservoir 9 arranged upon said shoe, and communicating with said cup, and the regulating plug or valve 18.

569,622. FOLDING FIRE-HOSE TRESTLE. WARD B. DRUMMOND, Minneapolis, Minn. Filed Apr. 7, 1896. Serial No. 586,485. (No model.)



Claim.—1. In a fire-hose trestle, the combination, with the body portion, consisting of the side plates 2, the center plate 3, and the end plates or heads 5 having the curved openings in their upper portions, of the folding legs 13 secured to said side plates 2, for the purpose set forth.

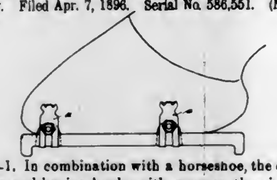
2. The combination, in a folding fire-hose trestle, with the body portion, consisting of the center plate 3 and the side plates 2, and the end plates 5 provided with the curved openings in their upper portions, the said side plates 2 being provided with the lugs 9 and 11, of the legs 13 pivoted to said side plates and provided with the adjustable braces 19.

3 The combination, in a fire-hose trestle, with the body portion, of the folding legs pivoted thereto at the opposite ends of said body portion, the braces 19, each pivoted upon one of said legs, and means for securing the opposite ends of said braces to the opposite legs, for the purpose specified.

4. The combination, in a fire-hose trestle, with the body portion, and the folding legs, of the pivoted braces 35, and the straps 39 extending across from one of said braces to the other, for the purpose set forth.

5. The combination, in a fire-hose trestle, with the body portion and the folding legs secured thereto, provided with the adjustable braces 19, of the adjustable feet secured upon two of said legs, for the purpose specified.

569,623. NAILLESS HORSESHOE. CHRISTIAN EISENBERG, Berlin, Germany. Filed Apr. 7, 1896. Serial No. 586,551. (No model.)

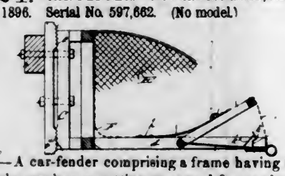


Claim.—1. In combination with a horseshoe, the clamps extending therefrom and having hooks with grooves therein, substantially as described.

2. In combination, the horseshoe having a dovetail recess, the wedge-shaped connecting-piece *e* therein, and the clamp held to the wedge-shaped piece adjustably, substantially as described.

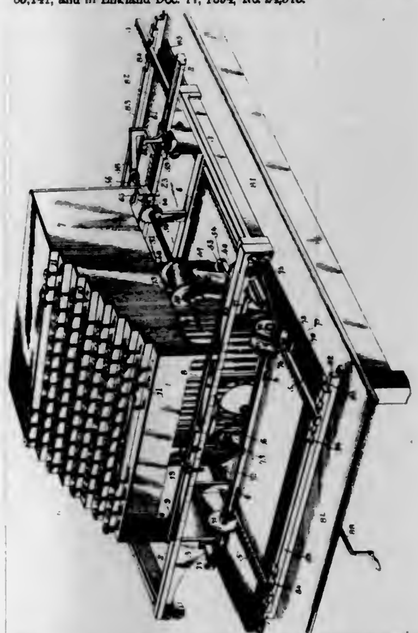
3. In combination, the horseshoe having recesses, and a clamp having hooks and a slot *c* with means in said slot for holding the clamp in place.

569,624. CAR-FENDER. HOWARD D. FISHER, Reading, Pa. Filed July 1, 1896. Serial No. 597,662. (No model.)



Claim.—A car-fender comprising a frame having horizontal side bars and end cross-bar, a netting or guard-frame pivoted at its rear end between said side bars and having its free forward end connected to said cross-bar by a folding material, a spring to normally raise said guard-frame, a spring-catch to lock the same when in lowered position, and a pivoted section of fender inclosed by said guard-frame and connected to said spring-catch so as to automatically operate the latter as required, substantially as and for the purpose set forth.

569,625. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn., assignor to Alice M. Fisher, T. Stackpole, and W. M. Nixon, same place. Filed Oct. 31, 1893. Serial No. 489,634. (No model.) Patented in France Dec. 14, 1894, No. 243,639; in Germany Dec. 15, 1894, No. 85,141, and in England Dec. 17, 1894, No. 24,513.



Claim.—1. In a type-writing machine, the combination of a framework having guides for supporting a carriage, loose tracks adapted to be arranged upon and hold in place the page of a book which is to receive the impression of the printing mechanism, front and rear alined seats in the base of the frame to fit upon and traverse the tracks, and line-spacing mechanism for moving the framework upon the tracks, substantially as specified.

2. In a type-writing machine, the combination of a framework provided with front and rear base-bars parallel with the line of writing and having series of alined seats, the lower sides of the seats being open, loose tracks adapted to be arranged upon the sheet or leaf to receive the impression and fitting in said seats, whereby the frame may be placed upon the tracks after the latter have been adjusted upon the page or leaf, and line-spacing mechanism for moving the framework upon the tracks, substantially as specified.

3. The combination of a framework having carriage-guides, parallel tracks supporting said framework, means for adjusting the tracks laterally with relation to the framework, and line-spacing mechanism including a transverse shaft, spur-wheels carried by said shaft and adjustable thereon to agree with the interval between the tracks and adapted to engage racks on said tracks, and means for rotating said shaft, with a carriage and printing mechanism, substantially as specified.

4. The combination of a framework having carriage-guides, tracks supporting said framework, means for adjusting the tracks laterally with relation to the framework, a transverse shaft journaled upon the framework, spur-wheels adjustably secured to the shaft and engaging racks with which the tracks are provided, a ratchet fixed to the shaft, a spacing-lever having a spring-tooth to engage said ratchet, a gravity-pawl to prevent backward rotation of the ratchet, and a sliding gage arranged in the path of the spacing-lever to regulate the throw thereof, with a carriage and printing mechanism, substantially as specified.

5. The combination with a framework having carriage-guides, a carriage mounted thereon, carriage feeding mechanism, type-bars, keys, and operating connections, of ribbon-spools, spindles carrying said spools, means for imparting longitudinal movement to the spin-

dles, a line-stop arranged in the path of the carriage, and a pawl carried by said line-stop to engage a ratchet on one of said spindles, substantially as specified.

6. The combination with a framework having carriage-guides, a carriage mounted thereon, carriage feeding mechanism, type-bars, keys, and operating connections, of ribbon-spools, a line-stop arranged in the path of the carriage, and a pawl adjustable to agree with the position of the line-stop and adapted to engage a ratchet on the spindle of one of the spools, substantially as specified.

7. The combination with carriage guides, a carriage mounted thereon, and feeding mechanism for the carriage, of type-bars mounted upon a pendent supporting-ring, keys, partitions removably fitted in the carriage, and operating connections between the keys and the type-bars carried respectively by said partitions, whereby the operating connections may be removed independently by the removal of the partitions, substantially as specified.

8. The combination with carriage-guides, a carriage mounted thereon, and feeding mechanism for the carriage, of type-bars, keys, operating connections between the type-bars and keys, slidable uprights, pivotal yokes connected to the said uprights, and having cross-bars arranged between contiguous rows of keys, and connected thereto, and means for communicating the motion of the uprights to the carriage feeding mechanism, substantially as specified.

9. The combination with carriage-guides, a carriage mounted thereon, feeding mechanism for the carriage, type-bars, keys, and operating connections between the keys and type-bars, of pivotal yokes having cross-bars arranged between contiguous rows of keys, pins carried by the key-shanks to engage said cross-bars, slidable uprights connected to the side arms of said yokes, and means for communicating the motion of the uprights to the carriage feeding mechanism, substantially as specified.

10. The combination with carriage-guides, a carriage mounted thereon, feeding mechanism for the carriage, type-bars, keys, and operating connections between the keys and type-bars, of pivotal yokes having cross-bars arranged between contiguous rows of keys and adapted to be engaged by lateral pins carried by the key-shanks, slidable uprights connected to the side arms of said yokes, operating connections between the uprights and the carriage feeding mechanism, and a rock-shaft journaled in the carriage and having arms engaging said uprights to insure uniformity of movement thereof, substantially as specified.

11. The combination with carriage-guides, a carriage mounted thereon, carriage feeding mechanism, type-bars, keys, and operating connections between the keys and type-bars, of uprights slidably mounted upon the carriage and operatively connected to the carriage feeding mechanism, means for communicating the movement of the keys to said uprights, and a key-lock adapted to engage one of said uprights, substantially as specified.

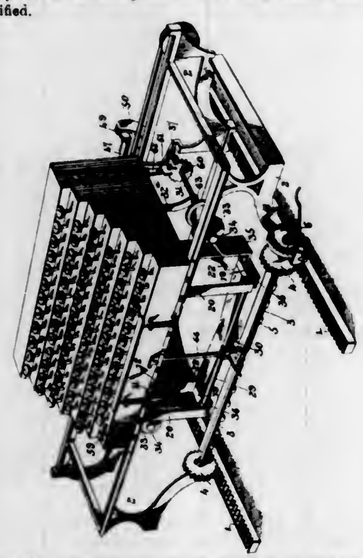
12. The combination with carriage-guides, a carriage mounted thereon, carriage feeding mechanism, type-bars, keys, and operating connections between the keys and type-bars, of uprights slidably mounted upon the carriage and operatively connected to the carriage feeding mechanism, means for communicating the movement of the keys to said uprights, an adjustable line-stop arranged in the path of the carriage, and a key-lock carried by said adjustable stop and adapted to engage a projection upon one of said uprights, substantially as specified.

13. The combination with carriage-guides, a carriage mounted thereon, carriage feeding mechanism, type-bars, keys, and operating connections between the keys and type-bars, of ribbon-spools, slidable spindles carrying said spools, means for moving said spindles longitudinally as the carriage is fed laterally to cause a lateral feed of the ribbon, slidable uprights mounted upon the carriage and operatively connected to the carriage feeding mechanism, operating connections between the keys and said uprights, and an adjustable line-stop arranged in the path of the carriage and carrying a pawl to engage a ratchet upon one of the spool-spindles to feed the ribbon longitudinally, and a key-lock to engage a projection upon one of the uprights, substantially as specified.

14. The combination with carriage-guides, a carriage mounted thereon, carriage feeding mechanism, keys, and operating connections between the keys and said feeding mechanism, of a pendent type-bar-supporting ring provided with lateral slotted extensions, type-bars mounted upon said ring and operatively connected to the keys, ribbon-guides mounted for longitudinal movement in said slots, ribbon-spool spindles supporting the upper ends of said guides, spools feathered upon said spindles, return-springs, and means for feeding the spools longitudinally and transversely, substantially as specified.

569,626. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn. Filed Nov. 30, 1894. Serial No. 530,400. (No model.)

Claim.—1. In a type-writing machine, the combination of a framework having elevated front and rear carriage-guides parallel with the line of writing, the front guide being supported solely at its extremities whereby the view under the intermediate portion thereof is unobstructed, a carriage mounted upon said guides and having a pendent type-bar-supporting ring which is arranged below the plane of the carriage-guides, said supporting-ring being of crescent shape in plan with its open side to the front and its extremities contiguous to the vertical plane of the front guide and supported by vertical hangers, printing mechanism, including type-bars mounted upon said supporting-ring and having their common printing-point midway between the front extremities of the supporting-ring and contiguous to the vertical plane of the front guide, whereby the line of vision of an operator passes under the front carriage-guide and embraces the entire line of writing between the extremities of the supporting-ring, the keyboard which is also supported by the carriage being arranged above the horizontal plane of the carriage-guides and between the vertical planes of the same with its front edge contiguous to the vertical plane of the front guide, and operating devices, substantially as specified.



2. The combination of a type-bar-supporting ring having spaced perpendicularly-disposed webs, type-bars arranged at their extremities between the webs and having trunnions mounted in open-sided seats in the outer edges of the webs, and a sectional flexible strip removably secured to the outer edge of the supporting-ring, each section of the strip having a plurality of perpendicularly-disposed tongues arranged in contact with the outer edges of said webs to close the outer sides of the seats, substantially as specified.

3. The combination with a supporting-framework having carriage-guides, a carriage mounted thereon and provided with feeding mechanism, type-bars, keys, and operating connections, of ribbon-spool spindles supported at one end and having the other end free, means for feeding said spindles longitudinally, ribbon-spools slidably and removably fitted upon the said free ends of the spindles, means for imparting rotary movement to the spindles and through the same to the spools, and ribbon shields or guides having arms fitted slidably upon and depending from the ribbon-spool spindles, and being arranged at opposite ends of the spools, substantially as specified.

4. The combination with a supporting-framework having carriage-guides, a carriage mounted thereon and provided with feeding mechanism, type-bars, keys, and operating connections, of ribbon-spool spindles supported at one end and having the other end free, ribbon-spools removably fitted upon the free ends of the spindles, means for imparting longitudinal and rotary movement to the spindles, removable stops attached to the free extremities of the spindles, springs arranged in rear of the spools to hold them normally in contact with the stops, and ribbon shields or guides fitted to slide upon the ribbon-spool spindles and removable therefrom with the spools, said shields or guides having arms arranged respectively at opposite ends of the spools, substantially as specified.

5. The combination with a supporting-framework having carriage-guides, a carriage mounted upon the guides and provided with feeding mechanism, type-bars, keys, and operating connections, of ribbon-spool spindles, mounted in bearings on the side walls of the carriage, said bearings being arranged respectively near the rear and at an intermediate point of each spindle, means for feeding the spindles longitudinally, ribbon-spools feathered upon the spindles, springs for holding the spools in their normal or operative positions, removable stops attached to the free front extremities of the spindles and consisting of thumb-screws, means for imparting a rotary movement to the spindles, and ribbon shields or guides depending from the ribbon spool spindles and removable therefrom with the spools, substantially as specified.

6. The combination with a supporting-framework having carriage-guides, a carriage mounted thereon and provided with feeding mechanism, type-bars, keys, and connections, of ribbon-spool spindles and means for feeding the same longitudinally, ribbon-spools removably attached to said spindles, means for imparting a rotary movement to the spindles, ribbon shields or guides depending from the ribbon-spool spindles, and keepers arranged contiguous to the writing-plane and having open front ends, adapted to receive the lower ends of the ribbon shields or guides, substantially as specified.

7. In a type-writing machine, carriage feeding mechanism having oppositely-disposed ratchet-bars arranged in a common plane with facing toothed edges, one of said bars being mounted for limited longitudinal movement and being spring-actuated to return it to its normal position and the other bar being fixed, said movable ratchet-bar being also mounted for transverse movement in the plane of the fixed bar, a rigid operating-pawl arranged between the toothed edges of the bars and having opposite integral teeth or edges adapted, respectively, to engage the teeth upon the ratchet-bars, and normally in engagement with the longitudinally-movable ratchet-bar, means for vibrating the pawl to cause alternate engagement with the ratchet-bars, and release mechanism for imparting transverse movement to the movable ratchet-bar to disengage it from the dog and allow free backward and forward movement of the carriage, substantially as specified.

8. The combination with a supporting-framework, a carriage, type-bars, keys, and operating connections, of carriage feeding mechanism having a fixed ratchet-bar and a vertically and longitudinally movable ratchet-bar arranged with their toothed edges parallel and spaced apart, an operating-pawl arranged between and adapted to engage the toothed edge of either ratchet-bar, a spring to actuate the movable ratchet-bar longitudinally when released, a releasing-lever operatively connected with the movable ratchet-bar and adapted to move the same vertically to disengage it from the operating-pawl, a release-key, and connections, substantially as specified.

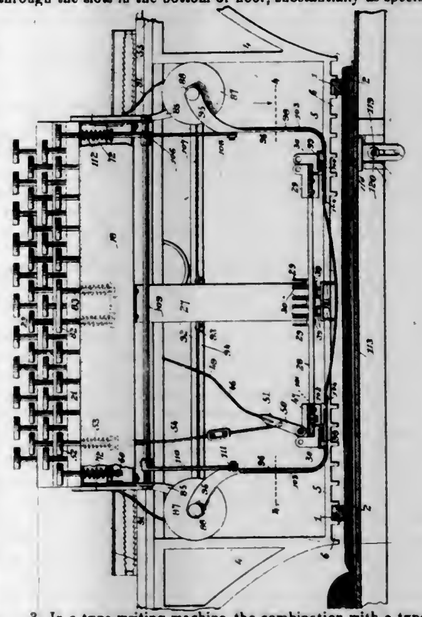
9. The combination with a supporting-framework, a carriage, type-bars, keys, and operating connections, of carriage feeding mechanism having a fixed ratchet-bar and a vertically and longitudinally movable ratchet-bar, and the movable ratchet-bar being provided with a longitudinal rib or flange, an operating-pawl adapted to engage the toothed edge of either ratchet-bar, a spring for actuating the movable ratchet-bar and imparting a longitudinal movement thereto when released, a releasing-lever provided with a finger arranged in operative relation with said rib or flange on the movable ratchet-bar, a release key, and connections between said key and the releasing-lever, substantially as specified.

10. The combination with a supporting-framework, a carriage, type-bars, keys, and operating connections, of carriage feeding mechanism having a fixed ratchet-bar and a parallel vertically and longitudinally movable ratchet-bar, swinging arms provided with guides in which the ends of said movable ratchet-bar are slidably mounted, a spring for moving the slidable ratchet-bar longitudinally when released, an operating-pawl arranged to engage the toothed edge of either ratchet-bar, and normally in engagement with the movable ratchet-bar, a releasing-lever operatively connected with the movable ratchet-bar and adapted when actuated to move the said ratchet-bar vertically from the fixed ratchet-bar to disengage its teeth from the operating-pawl, a release-key, and connections between the release-key and the releasing-lever, substantially as specified.

569,627. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn. Filed July 31, 1895. Serial No. 557,696. (No model.)

Claim.—1. In a type-writing machine, the combination with carriage-guides, a carriage having a crescent type-bar-supporting ring, carriage feeding mechanism, and type-bars having pivotal type-heads provided with trip-arms, of a pivotal shifting-arm having a head adapted to be arranged in the path of said trip-arms for engagement thereby when the type-head reaches the printing-plane, the shifting-arm having a spring blade carrying said head, and means for operating the shifting arm so as to hold the type-head in its adjusted position while the impression is being made, substantially as specified.

2. In a type-writing machine, a carriage mounted upon guides for movement parallel with the line of writing and having a casing constructed of sheet metal bent at intervals to form front and rear sides and ends, a slotted bottom or floor, a keyboard closing the front portion of the top of the casing, and a removable plate closing the rear portion of the same, the key-levers being arranged within the casing, and draw-wires for connection with type-bars extending through the slots in the bottom or floor, substantially as specified.



3. In a type-writing machine, the combination with a type-bar-supporting ring, of upper and lower type-bar-bearing clips secured, respectively, to the upper and lower surfaces of the supporting-ring, the upper bearing-clips having lateral upstruck flanges terminating at their outer ends in bearing-eyes and arranged at intervals on the ring, and the lower bearing-clips being provided beyond the outer edge of the supporting-ring with upturned bearing-eyes terminating approximately in the plane of the bearing-eyes on the upper clips, and type-bars mounted in said bearing-eyes, substantially as specified.

4. In a type-writing machine, the combination with a type-bar-supporting ring, of upper and lower type-bar-bearing clips secured, respectively, to the upper and lower surfaces of the supporting-ring, the upper bearing-clips being arranged at intervals upon the supporting-ring and having upstruck lateral flanges and bearing-eyes, and the lower bearing-clips having downturned lateral flanges provided beyond the outer periphery of the supporting-ring with upturned bearing-eyes, the lower bearing-clips being arranged below the intervals between the upper bearing-clips, and type-bars mounted in the bearings of the clips, substantially as specified.

5. In a type-writing machine, the combination with a type bar-supporting ring, of type-bar-bearing clips arranged alternately above and below the plane of the supporting-ring and provided, respectively, with threaded openings and longitudinal slots, the supporting-ring being provided, respectively, in the planes of the upper and lower clips with slots and threaded perforations, and screws engaging the registering slots and perforations to secure the clips at the desired radial adjustment, substantially as specified.

6. In a type-writing machine, the combination with carriage and printing mechanism, of vertical slides mounted upon the carriage and operatively connected with the printing mechanism, a rock-shaft having crank-arms connected to said slides, a feed-pawl arranged in operative relation with a rack, connections between said feed-pawl and the rock-shaft, a return-spring for the rock-shaft to return the feed-pawl to its normal position, and a tension-rod connected at one end by a lever with said return-spring and provided at the other end with an adjustable exposed head having a stem threaded in a socket in the body portion of the rod, substantially as specified.

7. In a type-writing machine, the combination with a type-bar-supporting ring, of ribbon-spools mounted for axial movement above the plane of the supporting-ring, ribbon-guides mounted for movement simultaneous with the ribbon-spools and depending therefrom, said ribbon-guides having horizontal inturned lower extremities and upstruck clips in said horizontal extremities, and guide-strips carried by the type-bar-supporting ring and arranged transverse to the line of writing for engagement by the upstruck clips, substantially as specified.

8. In a type-writing machine, the combination with printing mechanism including a type-bar-supporting ring, of ribbon-spools

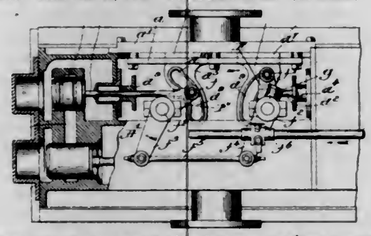
mounted for axial movement transverse to the line of writing, ribbon-guides mounted upon the spindles of the ribbon-spools and extending to a point below the plane of the type-bar-supporting ring, a ribbon-shifting key, a rock-shaft connected to the ribbon-shifting key, and connections between the rock-shaft and said ribbon-guide, whereby the latter may be moved transversely to the line of writing to expose the same, substantially as specified.

9. In a type-writing machine, the combination with a type-bar-supporting ring, of ribbon-spools mounted for axial movement above the plane of the supporting-ring and transverse to the line of writing, ribbon-guides mounted for movement simultaneous with the ribbon-spools and depending therefrom, said ribbon-guides having horizontal inturned lower extremities, and guide-strips carried by the type-bar-supporting ring transverse to the line of writing and having an interlocking sliding connection with the ribbon-guides, substantially as specified.

10. In a type-writing machine, the combination with printing mechanism including a type-bar-supporting ring, of ribbon-spools mounted for axial movement transverse to the line of writing, ribbon-guides mounted upon the spindles of the ribbon-spools and extending to a point below the plane of the type-bar-supporting ring, a ribbon-shifting key, and connections between the shifting-key and said ribbon-guide whereby the latter may be moved transversely to the line of writing to expose the same, substantially as specified.

11. In a type-writing machine, the combination with parallel tracks adapted to be arranged upon a page of a book, and a frame mounted upon the tracks for movement parallel therewith, of a table having countersunk vertically-adjustable supporting-strips adapted to be arranged, respectively, under the opposite sides of a book to support the same in a horizontal position, an elevating-spring arranged under each supporting-strip and adapted to elevate the same with the superposed portion of a book, and a shouldered locking-arm threaded in a fixed guide and extending through a slotted arm on the supporting-strip with its shoulder in contact with said arm, the locking arm extending to and beyond the front of the table and terminating in means whereby it may be rotated to secure the strip at the desired vertical adjustment, substantially as specified.

569,628. STEAM-ENGINE. FREDERICK FOSDICK, Fitchburg, Mass. Filed Jan. 23, 1896. Serial No. 576,481. (No model.)



Claim.—1. A valve mechanism for steam-engines, comprising a valve, a rock-shaft, means to actuate the latter and a reciprocating cam having a rectilinear movement interposed between said valve and rock-shaft and actuated by the latter, substantially as described.

2. A valve mechanism for steam-engines, comprising a valve, an actuating-cam connected thereto, and a rocking actuator engaging said cam, to operate the same, substantially as described.

3. A valve mechanism for steam-engines, comprising valves, reciprocating cams having rectilinear movements connected with and to actuate the respective valves, rocking actuators for and in engagement with the respective cams, and means to move the said actuators, substantially as described.

4. In a valve mechanism, a crank, a rock-shaft, a wrist plate and pin, carried by said rock-shaft, the valve, a cam connected with and to operate the same, said cam having a cam-surface cooperating with and driven by said pin, said cam-surface for the greater part of its length being concentric with said rock-shaft and terminating in an offset portion, whereby said cam and its valve remain substantially inactive during the movement of said pin on said concentric cam-surface and are moved quickly by the cooperation of said pin with said offset cam-surface, substantially as described.

5. A valve mechanism, comprising a wrist-pin, an operating-rod therefor driven by an eccentric or other moving part, a cam attached directly to the valve-stem, and slotted for a greater part of its length to conform to the path of movement of said wrist-pin, and provided with an offset portion, to give to the valve a quick opening and closing movement, substantially as described.

6. The combination with the steam-valves of an engine, of means to give the valves positive and alternately intermittent motion, said means comprising cams connected to said valves and having rectilinear movements, and means to operate said cams from a moving part of the engine, substantially as described.

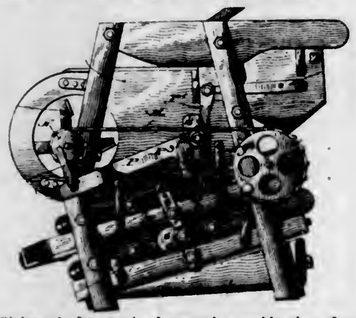
7. The combination with the steam-valves of an engine, of means to impart to said valves positive and alternately intermittent motion, said means comprising cams connected to said valves and having rectilinear movements, actuating mechanism for the cams and an automatic cut-off device responsive to changes in the speed of the engine to vary the operation of said actuating mechanism, substantially as described.

8. A valve mechanism for steam-engines, comprising valves, cams positively connected with and to actuate the respective valves, actuators for and in engagement with the respective cams, and means to move said actuators, substantially as described.

9. The combination with the steam-valves of an engine, of means to impart to said valves positive and alternately intermittent movement said means comprising cams positively connected with and to actuate said valves, and means to operate said cams for a moving part of the engine, substantially as described.

10. The combination with the steam-valves of an engine, of means to impart to said valves positive and alternately intermittent movement, said means comprising cams positively connected with and to actuate said valves, actuating mechanism for said cams, and an automatic cut-off device to respond to changes of speed in the engine to vary the operation of said actuating mechanism, substantially as described.

569,629. FANNING-MILL. MATT J. FRAMBACH, Rock, Iowa. Filed Nov. 12, 1895. Serial No. 568,702. (No model.)



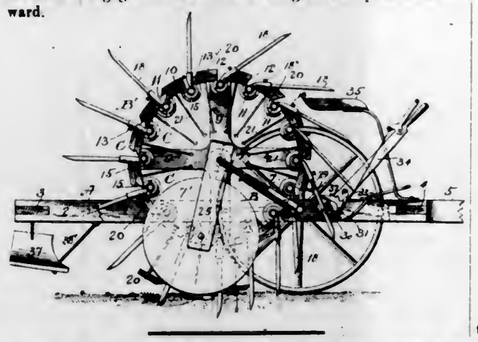
Claim.—1. In a grain-cleaner, the combination of a shoe carrying a screen, supplemental screens arranged one above the other below the shoe-screen, and means for simultaneously shaking all of said screens comprising a lever having an upwardly-projecting arm connected to the shoe and a downwardly-projecting arm pivotally secured below the upper supplemental screen, a second lever fulcrumed at a point between said supplemental screens and pivotally connected at its ends to said screens, a link connecting the said two levers, and mechanism for imparting motion to the first-mentioned lever.

2. In a grain-cleaner, the combination of a shoe carrying a screen, supplemental screens arranged one above the other below the shoe-screen and means for simultaneously shaking all of said screens comprising a lever having an upwardly-projecting arm connected to the shoe, and a downwardly-projecting arm pivotally secured below the upper supplemental screen, and provided with perforations, a second lever fulcrumed at a point between said supplemental screens pivotally connected at its ends to said screens, and perforated at its upper end, a link adjustably connecting the said two levers, and mechanism for imparting motion to the first-mentioned lever.

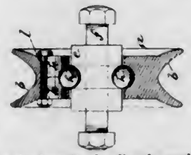
569,630. ROTARY PLOW. JOHN H. FROST, Six Mile, Ala. Filed Jan. 2, 1896. Serial No. 574,001. (No model.)

Claim.—1. In a rotary plow, the combination of the frame, the crank-axle mounted therein, a plow-wheel journaled in the bail of the axle, and formed with circular seats across the face of the wheel, having slots opening into the seats, plow-teeth having a head-piece to fit the seats in the wheel and arranged to have a limited oscillating movement therein, sliding cleaning-plates across the face of the wheel having their ends projecting beyond the edges of the wheel, and wheels hung on opposite sides of the plow-wheel to push the cleaning-plates out.

2. In a rotary plow, the combination of the frame, the crank-axle mounted therein, a plow-wheel journaled on the bail of the axle and having a broad rim formed with circular seats extending across the perimeter, having slots opening therein with their rear edges formed to serve as stops against which the plows lodge and are held, and their front edges chamfered to permit the plows to fall forward, plow-heads fitted to oscillate in the circular seats, plow-teeth adjustably secured in the plow-heads, cleaning-slats disposed between adjacent plows and provided with vertical rods at each end arranged to slide in guideways in the rim of the wheel, arms pivotally hung on opposite sides of the plow-wheel, and wheels journaled in the free ends of the arms to engage the ends of the cleaning-slats and push them outward.

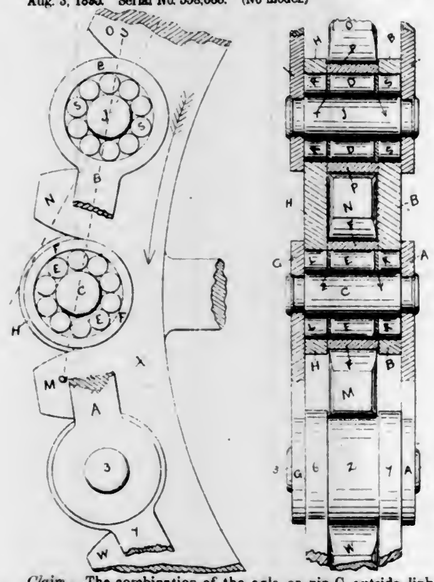


569,631. BALL-BEARING TROLLEY-PULLEY. HERBERT N. GALE, Bristol, Conn. Filed July 14, 1896. Serial No. 599,084. (No model.)



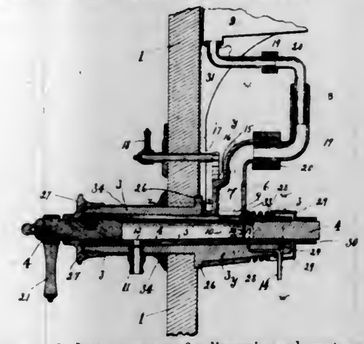
Claim.—The herein-described pulley for trolleys, consisting of the pulley-body having the exterior line-wire trough, the interior ball-trough, the ball-supply orifice, and the ball-confiners, in combination with the hub grooved exteriorly to form the ball-trough, and the pulley-shaft bearing the said hub, all substantially as and for the purpose set forth.

569,632. DRIVE-CHAIN. JOHN C. GARROOD, Lynn, Mass. Filed Aug. 3, 1895. Serial No. 558,083. (No model.)



Claim.—The combination of the axle or pin C, outside link G, set of rollers L, washer Z, set of rollers E, washer Y, set of rollers K, hollow, roller bearing roller, F, inside roller bearing link B, set of rollers R, washer T, set of rollers D, washer V, set of rollers S, and hollow, roller bearing roller P, in an antifriction drive-chain, substantially as described.

569,633. APPARATUS FOR DISPENSING SODA-WATER. CHARLES A. GEDDES, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Kirby Manufacturing Company, Camden, N. J. Filed Dec. 5, 1895. Serial No. 571,111. (No model.)



Claim.—1. In an apparatus for dispensing soda-water or the like, the combination of the series of receptacles provided each with an exit-opening, the rotatable plug having a cavity therein, the discharge-nozzle, the pipe leading from a gas charged-water container or the like, together with the orifices in the wall of said cavity of the plug, adapted to communicate respectively with the nozzle, the exit-openings of the said receptacles and the said pipe when the plug is suitably rotated, substantially in the manner and for the purposes hereinbefore set forth.

2. In an apparatus for dispensing soda-water or the like, the combination of the movable segment, a series of receptacles therein, each provided with an exit-opening, the rotatable plug having a cavity therein, the discharge-nozzle, and the orifices in the wall of said cavity adapted to communicate respectively with the nozzle, and the exit-opening of any one of the series of exit-openings of said receptacles when the plug is suitably rotated, substantially as and for the purpose set forth.

3. In an apparatus for dispensing soda-water or the like, the combination of the series of syrup-jars, the rotatable segment, the series of receptacles therein, each provided with an exit-opening, the pipe connection between said receptacles and jars adapted to allow the rotation of the said segment, the discharge-nozzle, the rotatable plug having a cavity therein, and the orifice in the wall of said cavity adapted to communicate with the exit-openings of the said receptacles when the plug is suitably rotated, substantially as and for the purposes set forth.

4. In an apparatus for dispensing soda-water or the like, the combination of the series of receptacles each provided with an exit-opening, the discharge-nozzle, the pipe leading to a source of supply of gas-charged water or the like, the rotatable plug having a cavity therein, and the orifices in the wall of said cavity, adapted to communicate respectively with the nozzle, the exit-openings of the said receptacles, and the aforesaid pipe, all constructed and adapted to operate substantially as and for the purposes set forth.

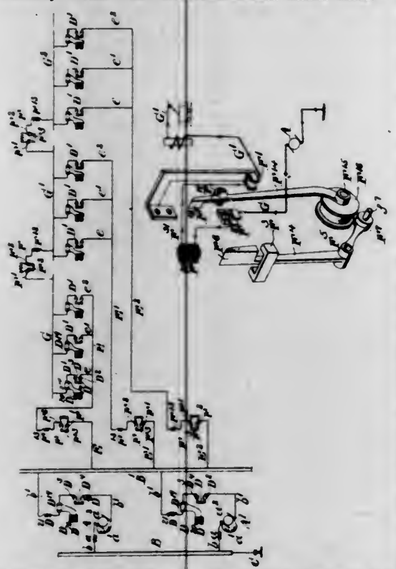
569,634. SYSTEM OF DISTRIBUTING ELECTRICAL POWER, &c. WILLIAM D. GHARKY, Philadelphia, Pa. Filed July 2, 1895. Serial No. 554,712. (No model.)

Claim.—1. In a system for the distribution of electrical power consisting of a series of distributing-conductors as G, G', G^2, and independent feed-wires leading from a source of electrical power to each conductor, the combination of two or more distributing-conductors with one or more automatic cut-outs adapted as described to normally connect adjacent conductors and to sever their electrical connection when there is an abnormal flow of electrical current from one conductor, and means for automatically actuating the cut-out to restore connection on the reduction of flow from said conductor beyond a determined amount.

2. In combination with a distributing electrical conductor as G, G', two or more feed-wires as E, E', leading thereto from a source of electrical supply and each connected therewith at one or more points, and one or more automatic cut-outs situated in the feed wire or wires and arranged as described to sever the electrical connection between the feed-wire and the distributing-conductor in case of a reversal of current in the feed-wire.

3. In combination with a distributing electrical conductor as G, G', two or more feed-wires as E E' leading thereto from a source of electrical supply and each connected therewith at one or more points, one or more automatic cut-outs situated in the feed wire or wires and arranged as described to sever the electrical connection between the

feed-wire and the distributing-conductor in case of a reversal of current in the feed-wire, and an automatic cut-out or cut-outs situated near the power end of a feed wire or wires and adapted as described to sever its connection with the source of electrical supply when there is an abnormally excessive flow of current on said wire or wires.



4. In combination with a distributing electrical conductor as G, G', two or more feed-wires as E, E', leading thereto from a source of electrical supply and each connected therewith at one or more points, one or more automatic cut-outs situated in the feed wire or wires and arranged as described to sever the electrical connection between the feed-wire and the distributing-conductor in case of a reversal of current in the feed-wire, an automatic cut-out or cut-outs situated near the power end of a feed wire or wires and adapted as described to sever its connection with the source of electrical supply when there is an abnormally excessive flow of current on said wire or wires, and means for automatically actuating the cut-out to restore connection on the reduction of flow from said feed wire or wires beyond a determined amount.

5. The combination of two or more distributing-conductors as G, G', G^2, with independent feed-wires leading from a source of electrical power to each such conductor, one or more automatic cut-outs normally connecting adjacent distributing-conductors and adapted as described to sever the connection on the occurrence of an abnormal flow from one of such conductors, means for actuating the cut-out to restore the electrical connection on the reduction of flow from the cut-out conductor, beyond a determined amount, and automatic cut-outs situated in the feed-wires normally connecting the feed-wires with the distributing-conductors, but adapted to sever said connection on a reversal of the current through the feed-wire.

6. The combination of two or more distributing-conductors as G, G', G^2, with independent feed-wires leading from a source of electrical power to each such conductor, one or more automatic cut-outs normally connecting adjacent distributing-conductors and adapted as described to sever the connection on the occurrence of an abnormal flow from one of such conductors, means for actuating the cut-out to restore the electrical connection on the reduction of flow from the cut-out conductor, beyond a determined amount, automatic cut outs situated in the feed-wires adjacent to the distributing-conductor and normally connecting the feed-wires with the distributing-conductors but adapted to sever said connection on a reversal of the current through the feed-wire, and automatic cut-outs situated in the feed-wires adjacent to the source of electrical power adapted to sever electrical connection on the occurrence of an abnormally excessive flow.

7. The combination of two or more distributing-conductors as G, G', G^2, with independent feed-wires leading from a source of electrical power to each such conductor, one or more automatic cut-outs normally connecting adjacent distributing conductors and adapted as described to sever the connection on the occurrence of an abnormal flow from one of such conductors, means for actuating the cut-out to restore the electrical connection on the reduction of flow from the cut-out conductor, beyond a determined amount, automatic cut-outs situated in the feed-wires adjacent to the distributing-conductor and normally connecting the feed-wires with the distributing-conductors but adapted to sever the connection on a reversal of the current through the feed-wires, automatic cut-outs situated in the feed-wires adjacent to the source of electrical power adapted to sever electrical connection on the occurrence of an abnormally excessive flow, and means for actuating said cut-outs to restore the electrical connection on the reduction of the flow from the feed-wire beyond a determined amount.

8. The combination of two or more dynamos with a common electrical conductor receiving current therefrom, a cut-out situated in the connection from each dynamo to the common conductor, means for actuating said cut-outs to sever said connection on the reversal of currents therein, and means for actuating said cut-out to sever said connection on the occurrence of an excessive flow of current through said connection.

9. The combination of two or more dynamos with a common electrical couductor receiving current therefrom, a cut-out situated in the connection from each dynamo to the common conductor, means for actuating said cut-out to sever said connection on the reversal of current therein, two or more feed-wires leading from the common conductor to a distributing conductor or conductors, automatic cut-outs situated in each feed-wire adapted to sever electrical connection on the increase of flow from the feed-wire beyond a determined amount, and automatic cut-outs situated in the feed-wires adjacent to their connection with the distributing-conductor adapted to sever electrical connection on a reversal of current in the feed-wire.

10. In combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as spring D^8 for opening the switch, a catch for holding the switch closed, an armature-magnet connected with the catch a coacting magnet, one or both of said magnets being an electromagnet, and one magnet being excited by the current flowing through the conductor so as to change its polarity on a reversal of said current, said coacting magnets being combined with the catch as described and so as to disengage it when the normal polarity of the magnet excited by the current in the conductor is reversed.

11. In combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as spring D^8 for opening the switch, a catch for holding the switch closed, an armature-magnet connected with the catch, a coacting magnet, one or both of said magnets being an electromagnet, and one magnet being excited by the current flowing through the conductor, said magnets being so wound as to oppose like poles to its coacting magnet when the current in the main conductor is flowing in normal direction and opposite poles when the current is reversed, and the coacting magnets being combined with the catch as described and so as to disengage it and release the switch when their poles attract each other.

12. In combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as spring D^8 for opening the switch, a catch for holding the switch closed, an armature-magnet connected with the catch, a coacting magnet, one or both of said magnets being an electromagnet, and one magnet being excited by the current flowing through the conductor, so as to change the polarity on a reversal of said current, said coacting magnets being combined with the catch as described and so as to disengage it when the normal polarity of the magnet excited by the current in the conductor is reversed, and an electromagnet excited by the normal current through the main conductor arranged to act upon the catch and release the switch when the flow from the conductor becomes excessive.

13. In combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as springs D^8 for opening the switch, a catch for holding the switch closed, an armature-magnet connected with the catch, a coacting magnet, one or both of said magnets being an electromagnet, and one magnet being excited by the current flowing through the conductor, said magnets being so wound as to oppose like poles to its coacting magnet when the current in the main conductor is flowing in normal direction, and opposite poles when the current is reversed, and the coacting magnets being combined with the catch as described and so as to raise it and release the switch when their poles attract each other, and an electromagnet excited by the normal current through the main conductor arranged to act upon the catch and release the switch when the flow from the conductor becomes excessive.

14. The combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as spring D^8 for opening the switch, a pivoted lever D^9 having a catch D^{11} adapted to engage the switch and hold it in position to close the circuit, a magnet as D^{13} secured to said lever, a magnet as D^{20} arranged to coact with magnet D^{13}, one or both of said magnets being an electromagnet, and one magnet being excited by the current flowing through the conductor, said magnets being wound in such a way as to oppose similar poles to its coacting magnet when the current is flowing in normal direction, and opposite poles when the current is reversed.

15. In combination with two sections of an electrical conductor, a switch adapted to connect said sections, means as springs D^8 for opening the switch, a pivoted lever D^9 having a catch D^{11} adapted to engage the switch and hold it in position to close the circuit, a magnet as D^{13} secured to said lever, a magnet as D^{20} arranged to coact with magnet D^{13} and one magnet being excited by the current flowing through the conductor, said magnet being wound in such a way as to oppose similar poles to its coacting magnet when the current is flowing in normal direction, and opposite poles when the current is reversed, a lever D^{15} pivotally connected to lever D^9 at one end and engaged at the other as specified so as to permit lever D^9 to move independently of it under the action of magnets D^{13} D^{20} but to carry said lever D^9 with it when said lever D^{15} is moved, an armature d^{15} secured to lever D^{15} and an electromagnet D^{21} excited by the current in the main conductor and adapted to raise the lever D^{15} and with it lever D^9 on the occurrence of an abnormally excessive current.

16. The combination with two sections of an electric conductor of a switch, means tending to return said switch to a position to close the circuit, means tending to move said switch to a position to open the circuit, a catch arranged to normally intercept the last-mentioned device and prevent its acting on the switch, means for releasing said catch, a second catch or latch arranged to engage the switch when opened and resist the devices tending to close it again, and means for releasing said second catch to permit its closing of the switch.

17. The combination with two sections of an electric conductor of a switch, means tending to return said switch to a position to close the circuit, means tending to move said switch to a position to open the circuit, a catch arranged to normally intercept the last-mentioned device and prevent its acting on the switch, an armature connected with said catch, an electromagnet excited by the current in the main conductor arranged to act on the armature and raise the catch when an abnormally excessive flow occurs in the conductor, a second catch or latch arranged to engage the switch when opened and resist the devices tending to close it again, and means for releasing said second catch to permit its closing of the switch.

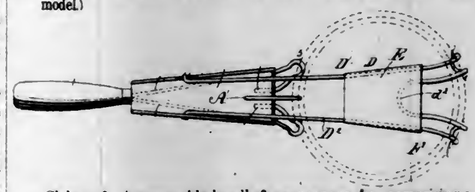
18. The combination with two sections of an electric conductor of a switch, means tending to return said switch to a position to close the circuit, means tending to move said switch to a position to open the circuit, a catch arranged to normally intercept the last-mentioned device and prevent its acting on the switch, an armature connected with said catch, an electromagnet excited by the current in the main conductor arranged to act on the armature and raise the catch when an abnormally excessive flow occurs in the conductor, an electromagnet situated in a shunt connected to each section of the conductor and a catch actuated by said electromagnet and arranged to be thrown by its action into engagement with the switch to prevent it from closing and to maintain said engagement until the current flowing through the shunt to the conductor falls below a determined amount.

19. The combination with two sections of an electric conductor of a switch, constantly-acting means tending to return said switch to a position to close the circuit, intermittently-acting means tending to move said switch to a position to open the circuit, a catch arranged to normally intercept the last-mentioned device and prevent its acting on the switch, an armature connected with said catch, an electromagnet excited by the current in the main conductor arranged to act on the armature and raise the catch when an abnormally excessive flow occurs in the conductor, a mechanical catch arranged to engage the switch in position to open the circuit at the time that the device which opens the switch releases it, and to be released by the action of the opening device after a short interval, an electromagnet situated in a shunt connected to each section of the conductor and a catch actuated by said electromagnet and arranged to be thrown by its action into engagement with the switch to prevent it from closing and to maintain said engagement until the current flowing through the shunt to the conductor falls below a determined amount.

20. The combination with two sections of an electric conductor of a switch as F^8, a lever F^4 supporting the switch means for moving the lever to close the switch, a wiper-lever F^{14} pivoted eccentrically to the pivot of lever F^4 and arranged to engage said lever in the position it occupies when the switch is closed and to release it after moving through a determined arc, constantly-acting means for revolving the wiper-lever in a direction to force the switch open, a catch as F^9 adapted to engage the wiper-lever and prevent its opening the switch, an electromagnet as F^{13} excited by the current in the main conductors and arranged to raise the catch F^9 when an abnormally excessive current flows through said conductor, a shunt F^{21} connecting the two sections of the conductor, an electromagnet F^{20} excited by the shunt current, and a catch F^{25} actuated by the magnet F^{20} and adapted when said magnet acts upon it to engage the switch-lever F^4 and hold the switch open.

21. The combination with two sections of an electric conductor of a switch as F^8, a lever F^4 supporting the switch means for moving the lever to close the switch, a wiper-lever F^{14} pivoted eccentrically to the pivot of lever F^4 and arranged to engage said lever in the position it occupies when the switch is closed and to release it after moving through a determined arc, constantly-acting means for revolving the wiper-lever in a direction to force the switch open a catch as F^9 adapted to engage the wiper-lever and prevent its opening the switch, an electromagnet as F^{13} excited by the current in the main conductor and arranged to raise the catch F^9 when an abnormally excessive current flows through said conductor, a shunt F^{21} connecting the two sections of the conductor, an electromagnet F^{20} excited by the shunt-current, a catch F^{25} actuated by the magnet F^{20} and adapted when said magnet acts upon it to engage the switch-lever F^4 and hold the switch open, and an automatic catch F^{22} adapted to engage the switch-lever and hold the switch open when it is released by the wiper-lever said catch being acted on by the wiper to release the switch as the wiper completes its movement after opening the switch.

569,635. REMOVABLE HANDLE FOR SAUCEPANS. ELI J. GILPIN, Fowler, Ind. Filed Feb. 19, 1896. Serial No. 579,835. (No model.)

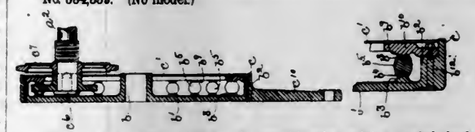


Claim.—1. A removable handle for saucepans, &c., comprising a handle proper having two arms projected therefrom which terminate in depending prongs, and a plate having apertured flanges thereon, and two longitudinally-adjustable spring-arms having depending prongs thereon, said arms having fingers upon their ends which engage with the apertures of the said flanges, substantially as shown and described.

2. In a removable handle for pans, &c., the combination of a longitudinally-adjustable clamp comprising spring-arms having fingers and depending looped prongs thereon, and a handle proper having two looped prongs depending therefrom which prongs lead downwardly and an angular plate having apertured flanges thereon, substantially as shown and described.

3. In a removable handle for pans, &c., the combination with an angular plate having apertured flanges projected from the edges thereof, clamping-prongs depending therefrom and a handle attached thereto, of an adjustable clamp comprising two attached spring-arms having fingers thereon and prongs depending therefrom, substantially as shown and described.

569,636. BICYCLE. JOHN GOETTEL, Boston, Mass., assignor of one-half to E. Bertram Newton, same place. Filed Mar. 21, 1896. Serial No. 584,339. (No model.)

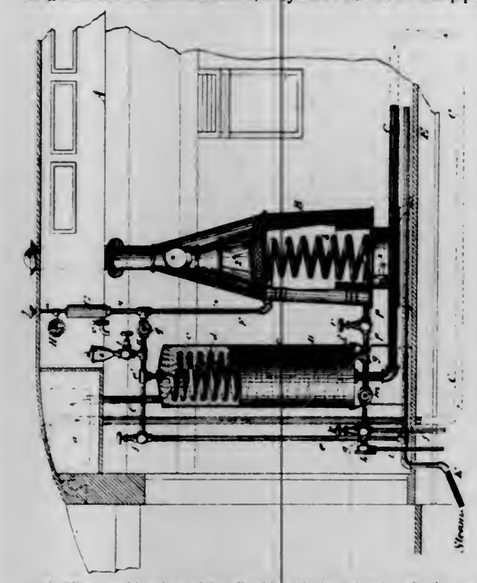


Claim.—In a safety-bicycle, the combination with a pedal-shaft having bearings in the framework between the front and rear wheels of the said bicycle, a driving-wheel fast on the pedal-shaft consisting of the disk b' provided with an annular rim and on its inner face with projections b^3 having in their faces ball-receiving sockets provided with projecting teats b^4, a ring b^{10} secured to said disk and provided with projections having ball-receiving sockets provided with projecting teats b^5, balls interposed between said disks and extended into the sockets of the said projections to be embraced by the same and provided at their opposite ends with sockets into which extend the projecting teats b^4, b^5 and on which the said balls turn, a counter-shaft supported by the framework and extended into the driving-wheel, a pinion fast on the counter-shaft within the driving-wheel and meshing with the said balls, a sprocket-wheel fast on the counter-shaft, a sprocket-wheel fast on the rear wheel of the bicycle and a link chain connecting said sprocket-wheels, substantially as described.

569,637. HEATING APPARATUS FOR CARS, &c. EDWARD E. GOLD, New York, N. Y. Filed Jan. 4, 1889. Serial No. 295,433. (No model.)

Claim.—1. The combination with a liquid-radiating circuit, of a heater traversed thereby, a stove or equivalent source of heat, an

intermediate fluid-circuit in operative contact with said stove and heater, a source of steam and a connection therefrom to said intermediate circuit, whereby the latter may be traversed by fluid circulating between the stove and heater, or by steam from said steam-pipe.



2. The combination with a liquid-radiating circuit, of a heater traversed thereby, a radiating-coil in such heater, a stove or equivalent source of heat, a heating-coil therein, pipes connecting the terminals of said coils together to form an intermediate circuit, a source of steam and a pipe for conducting the steam to said intermediate circuit, whereby it may be admitted into the radiating-coil of said heater, and valves for controlling its admission thereto and for controlling the discharge of water therefrom.

3. The combination with a liquid-radiating circuit, a stove or equivalent source of heat, and an intermediate fluid-circuit in operative contact with said stove and said radiating-circuit, of valves for closing communication between the part of said intermediate circuit which is in operative contact with the stove and the part thereof which is in operative contact with said radiating-circuit, and a steam-pipe connecting with the latter part of said intermediate circuit, whereby the radiating-circuit may be heated by steam.

4. The combination with the liquid-radiating circuit, of a heater traversed thereby, a stove or equivalent source of heat, an intermediate fluid-circuit in operative contact with said stove and traversing said heater, whereby it is adapted to communicate heat from the stove through the heater to said radiating-circuit, a source of steam and a pipe leading thence to said heater and communicating with said intermediate circuit, a valve for controlling the admission of steam through said pipe, two valves in said intermediate circuit between said heater and stove, and a valve for controlling the discharge of water of condensation.

569,638. BUCKLE. DANIEL GOODROW, Boston, Mass. Filed July 1, 1895. Serial No. 554,598. (No model.)



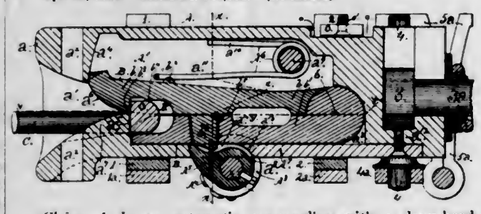
Claims.—1. A buckle comprising two separable members, constructed to be separated and closed for each manipulation of the buckle, one of said members carrying a stud which normally stands between said members, an upturned flange bent downwardly at its free end on one of said members, a downturned flange on the other of said members, the downturned flange having its free end bent upwardly but left free and clear of said downturned portion, and means for locking said flanges together, substantially as described.

2. A buckle or strap-fastener comprising separable members hinged one to the other at one side, and embracing a fastening-stud, one of said members being provided with an upturned flange rolled over on itself to form an eye, the other of said members having a downturned flange or lip bent upwardly at its free end, said upwardly-projecting free end being provided with a perforation, and a pin to cooperate with said flanges, said pin having an eye arranged to register with said perforation, substantially as described.

3. A buckle or strap-fastener comprising separable members hinged one to the other at one side, and fastening means for the other side, said means comprising two eyes formed on one member with an intervening space between the same, and a downturned flange or lip bent upwardly at its free end in an open U shape on the other member to enter between and register with said eyes, the free end of said upturned lip having a perforation, and a pin arranged to slide in said U-shaped lip and engage said eyes, said pin being provided with a central eye to cooperate with and rest adjacent said perforation when in locking position, substantially as described.

4. A buckle or strap-fastener comprising separable members embracing between them a fastening-stud, and means to lock said members against separation, said means comprising eyes formed at one side in one member, a U-shaped lip formed on the other member to register with said eyes, having an upturned prolongation, perforated at its outer end, and a pin arranged to slide in said U-lip and engage said eyes, said pin having a central eye on one side thereof to cooperate with said perforation in receiving a locking-bolt, substantially as described.

569,639. CAR-COUPLING. ALBERT F. GUHL, Rowenna, Pa. Filed Apr. 22, 1895. Serial No. 546,651. (No model.)

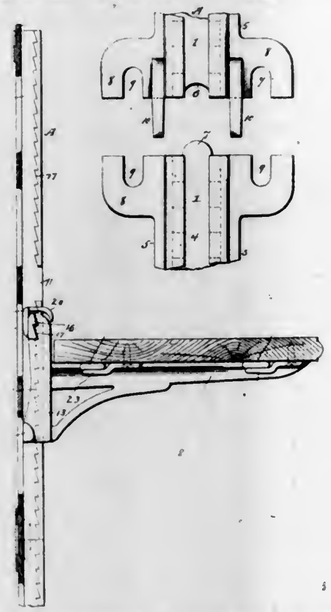


Claim.—1. In an automatic car-coupling with a draw-head adapted to be secured to the body of a car as shown, a coupling-block housing-chamber within the draw-head, near to the bull-nose end thereof, having the recess, a^3, in the rearward end wall, and the abutting curved portions, a^4 and a^5, in the forward end wall, the curved portions having each a different radial extent from the pivot-point, 6, with the link-mouth, a', opening through the bull-nose face into the chamber, having the curved portion, a^6, about, and the link-holding hook, a^7, within said opening, with a link-shaft recess on each side of the hook; of a two-parted block, rule-jointed at one end, fitted into said chamber, and a plate secured into the bottom of the draw-head; with means provided, such as the described link, C, to connect two draw-heads; and, with mechanism provided to manipulate said block, substantially as described and for the purpose hereinbefore set forth.

2. In an automatic car-coupling of the character described, a coupling-block comprising two portions, placed one above the other, rule-jointed at one end and adapted to be placed within the housing-chamber as shown, the jointed end within the rear end wall recess, and the forward ends of the portions in contact with the curved portions of the forward end wall; a notched spring-arm-supporting strip secured, forwardly, to the top of the upper portion; a coupling-link end recess in the adjacent faces of both of the portions, with a link-retaining hook constituting the front wall of said recess in the upper portion, and an edge ledge, rearward of said wall, in the top of said recesses; a vertical opening through the body of the lower portion of the block, and a lifting finger or lug, as shown, extending through said opening and secured to the under face of the upper portion of said block, all substantially as described and for the purpose hereinbefore set forth.

3. In a car-coupling of the character described, with a draw-head having the usual bull-nose end, the usual link-entering opening therein, with a link-retaining nose or coupling-hook and a link-shaft channel on either side of said hook, of the coupling-block housing-chamber opening through the bottom thereof and situated in the forward portion of the draw-head with a bottom plate provided to close said opening, said chamber having a rear end wall recess with a circular arched upper face, and lower and upper front end wall circular arc portions, said arched face and circular arc portions radiating from a common center and situated at different radial distances from said center, said center constituting the pivot-axis of the coupling-block, and the rearwardly and downwardly sloping concaved portion on either side of said link-entering opening joining said circular arc portions, all substantially as described and for the purpose hereinbefore set forth.

569,640. SHELVING. FRANK E. HARTZELL, Alliance, Ohio. Filed Jan. 18, 1896. Serial No. 576,010. (No model.)



Claim.—1. The combination with a wall-support adapted to receive a bracket, said support having ribs with teeth on their under faces, of a bracket having teeth to engage the teeth on said ribs, and a wedge or key adapted to be inserted between said bracket and the back of the support and immediately in rear of the teeth, whereby to prevent the accidental disengagement of said teeth, substantially as set forth.

2. The combination with a wall-support adapted to receive a bracket, said support having inwardly-projecting ribs with teeth on their under faces, of a bracket having teeth to engage the teeth on the ribs, a wedge or key adapted to be inserted between the bracket and the back of the support, and a hook or lip on said wedge or key adapted to engage the upper end of the bracket, substantially as set forth.

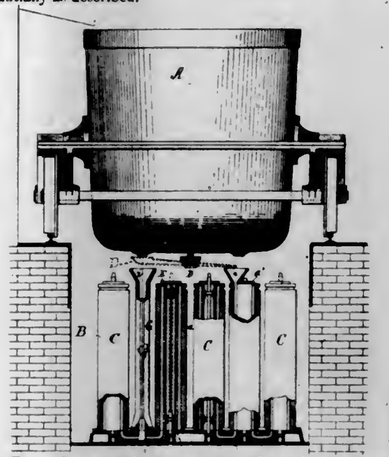
3. The combination with a support and a bracket adjustably attached thereto, of laterally-projecting lugs on the shelf-supporting arm of said bracket, a shelf on the bracket, and locks secured to the under face of the shelf and adapted to engage said laterally-projecting lugs, substantially as set forth.

569,641. APPARATUS FOR CASTING TUBULAR INGOTS OR METAL TUBES. WILLIAM HECKERT, Findlay, Ohio. Filed May 2, 1891. Serial No. 391,385. (No model.)

Claim.—1. The combination with the mold having a cylindrical shell or casing, of a detachable cap-plate or cover provided with a funnel at one side thereof having its aperture adjacent to the inside of the shell or casing and adapted to receive and conduct the molten metal down the side of the mold, substantially as described.

2. An apparatus for casting tubular ingots comprising a group of molds, a runner-brick channeled to connect the bottoms of the molds with a common gateway, and a centrally-arranged mold communicating with the other molds of the group through said runner-brick, and provided with a detachable cap-plate or cover provided with vent-openings and having a funnel at one side thereof having its aperture adjacent to the inside of the shell or casing and adapted to receive the molten metal and convey the same down the side thereof, the said mold serving as a common gateway for delivering the molten metal to the channels connecting the adjoining molds and upward into said molds, substantially as described.

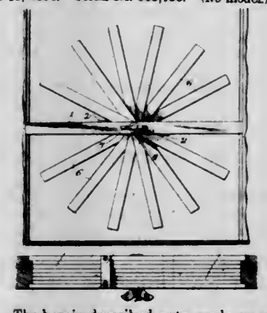
3. In combination with the cylindrical shell or mold, the tubular sand core centrally arranged therein, the expansible and contractible core-barrel consisting of a longitudinally-slitted cylinder supported within the sand core so as to close upon itself under pressure, and provided with bulged portions or indentations adapted to yieldingly engage the centering-spindle, and the core stem or spindle having the collars thereon adapted to impinge against said indentations for the purpose of centering said core-barrel and sand core within the shell, substantially as described.



4. The mold comprising the outer cylinder shell, the tubular sand core within the shell, the yielding core-barrel consisting of a longitudinally-slitted metallic cylinder having its sides indented or bulged near each end thereof, the centering-spindle having collars thereon adapted to fit within the core-barrel and impinge against said indentations so as to hold the barrel normally expanded within the sand core, and the removable cover having the overlapping flanges adapted to rest upon the tops of the shell and sand core so as to aid in holding the parts in proper position, substantially as described.

5. The combination with the cylinder, shell or casing, of a yielding centering device arranged within the casing, a sand core held upon the centering device, and a cap-plate or cover engaging the sand core and having an overlapping flange encompassing a portion of the shell, the said cap being provided with an inlet for the molten metal and vent-openings for the escape of air located above the space which separates the shell and sand core, substantially as described.

569,642. NURSERY-GATE. SAMUEL C. HOLMER, Brockton, Mass. Filed June 11, 1896. Serial No. 595,133. (No model.)



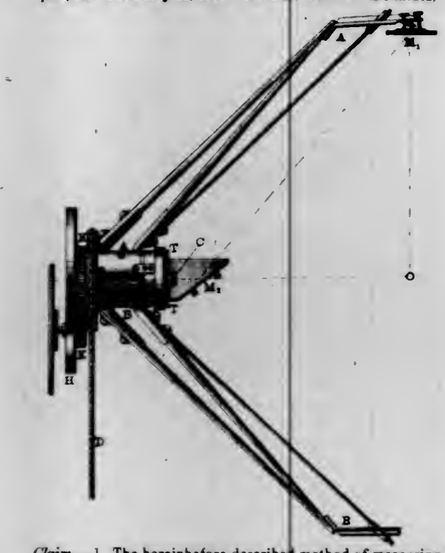
Claim.—1. The herein-described gate, made up of a pair of bars extending transversely of a doorway, a bolt passing through said bars, a series of ribs pivoted to said bolt, and means for clamping said ribs in any desired position, substantially as and for the purpose set forth.

2. A gate made up of a pair of bars extending transversely of a doorway, a plate secured to one of said bars and slidingly connected with the other, a bolt passing through said bars, a thumb-screw upon the outer end of said bolt, and a series of ribs pivoted to said bolt, substantially as and for the purpose described.

3. A gate made up of a pair of bars extending transversely of a doorway, plates connecting said bars, each of said plates being secured at one end to one of said bars and formed with a slot at its other end through which a screw or bolt in the other of said bars passes, a bolt passing through said bars, a thumb-screw upon the outer end of said bolt, and a series of ribs pivoted to said bolt, each provided with

a laterally-projecting pin and with a slot or recess, the pins in each of said ribs being adapted to engage the slot or recess in each adjacent rib to limit the outward movement of said ribs, substantially as and for the purpose described.

569,643. APPARATUS FOR MEASURING CANDLE-POWER OF ARC-LAMPS. EDWIN J. HOUSTON and ARTHUR E. KENNELLY, Philadelphia, Pa. Filed May 11, 1896. Serial No. 591,178. (No model.)



Claim.—1. The hereinbefore-described method of measuring the mean spherical luminous intensity of a source of light, which consists in revolving two mirrors about an axis passing through the source under such conditions, that the light from the source is reflected in different successive angles of a single plane onto the screen of a photometer and also transmitted in this reflected passage according to a simple harmonic law.

2. In an apparatus for measuring the mean spherical luminous intensity of a source of light, the combination of two revolving mirrors and means for varying the intensity transmitted to the photometer according to a simple harmonic law.

569,644. STREET-SWEEPER. PETER JACOBSON and CHARLES E. CAIN, Milwaukee, Wis. Filed Apr. 27, 1896. Serial No. 589,160. (No model.)

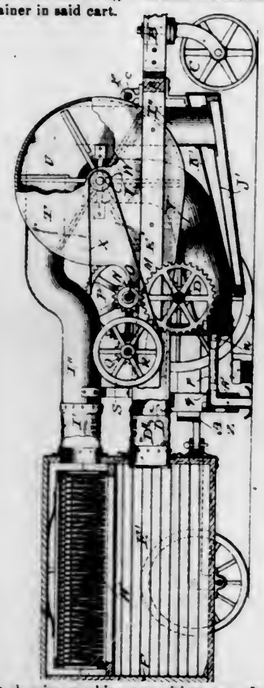
Claim.—1. A street-cleaning machine comprising a suitable frame provided with a guideway, a series of vertical pipes loose in the guideway for close yielding contact with the surface to be cleaned, a suction and blast apparatus in communication with the pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle.

2. A street-cleaning machine comprising a suitable frame provided with a guideway, a series of vertical pipes loose in the guideway for close yielding contact with the surface to be cleaned, a suction and blast apparatus in communication with the pipes, a dirt-receptacle in connection with said apparatus an air-strainer in the receptacle, an air-conveyer leading from said receptacle, and a dust-collector in communication with the conveyer.

3. A street-cleaning machine comprising a suitable frame provided with a guideway, a series of vertical pipes loose in the guideway for close yielding contact with the surface to be cleaned, surface-brushes in advance of the pipes, a suction and blast apparatus in communication with said pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle.

4. A street-cleaning machine comprising a stay-frame, a traction-wheel axle having its bearings in the frame, another frame in tilt connection with the axle and former frame, suitable means for adjusting the tilt-frame and maintaining the same in adjusted position, a guideway hung from said tilt-frame, a series of vertical pipes loosely arranged in the guideway, a suction and blast apparatus on the aforesaid tilt-frame in communication with the pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle.

5. A street-cleaning machine comprising a stay-frame a traction-wheel axle having its bearings in the frame, another frame in tilt connection with the axle and former frame, suitable means for adjusting the tilt-frame and maintaining the same in adjusted position, a guideway hung from said tilt-frame, vertically-yielding pipes arranged in the guideway, a rotary fan and its casing arranged on the aforesaid tilt-frame, clutch-controlled speed-gear in train with said axle and fan, flexible tubes connecting the aforesaid pipes and fan-casing, a closed cart coupled to the stay-frame and provided with an air-outlet, a spout of the fan-casing in flexible connection with the cart, and an air-strainer in said cart.



6. A street cleaning machine comprising a stay-frame, a traction-wheel axle having its bearings in the frame, another frame in tilt connection with the axle and former frame, suitable means for adjusting the tilt-frame and maintaining the same in adjusted position, a guideway hung from said tilt-frame, a series of vertical pipes loosely arranged in the guideway, spring-hung brushes arranged forward of the pipes, a suction and blast apparatus on the aforesaid tilt-frame in communication with the pipes, a dirt-receptacle, in connection with said apparatus, and an air-strainer in the receptacle.

7. A street-cleaning machine comprising a stay-frame, a traction-wheel axle having its bearings in the frame, another frame in tilt connection with the axle and former frame, suitable means for adjusting the tilt-frame and holding the same in adjusted position, a guideway hung from the said tilt-frame, vertically-yielding pipes arranged in the guideway, a rotary fan and its casing arranged on the aforesaid tilt-frame, clutch-controlled speed-gear in train with said axle and fan, flexible tubes connecting the aforesaid pipes and fan-casing, a closed cart coupled to the stay-frame, a spout of the fan-casing in flexible connection with the cart, an air-strainer in said cart, an exhaust-air spout in flexible connection with the aforesaid cart, and a dust-collector in communication with the discharge end of the latter spout.

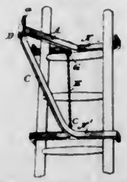
8. A street-cleaning machine comprising a suitable frame, a series of vertically-disposed pipes adjustable to have the whole area of their lower ends in parallel yielding contact with the surface to be cleaned, a suction and blast apparatus in communication with the pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle consisting of an angular frame having its top sides and ends lined with porous fabric, bars hung in the frame and strands of yarn suspended from the bars.

9. A street-cleaning machine comprising a suitable frame, a series of pipes for close yielding connection with the surface to be cleaned, a suction and blast apparatus in communication with the pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle consisting of a crate-like frame having the top, sides and ends thereof lined with porous fabric, bars hung in the frame and strands of yarn suspended from the bars, together with suitable means for jarring said strainer to dislodge dust therefrom.

10. A street-cleaning machine comprising a suitable frame, a series of pipes for close yielding contact with the surface to be cleaned, a suction and blast apparatus in communication with the pipes, a dirt-receptacle in connection with said apparatus, an air-strainer in the receptacle, an air-conveyer spout leading from said receptacle, and a dust-collector consisting of a suspended frame, upper and lower sheets of porous fabric on the frame, and a collar on said upper sheet for the engagement of the discharge end of said spout.

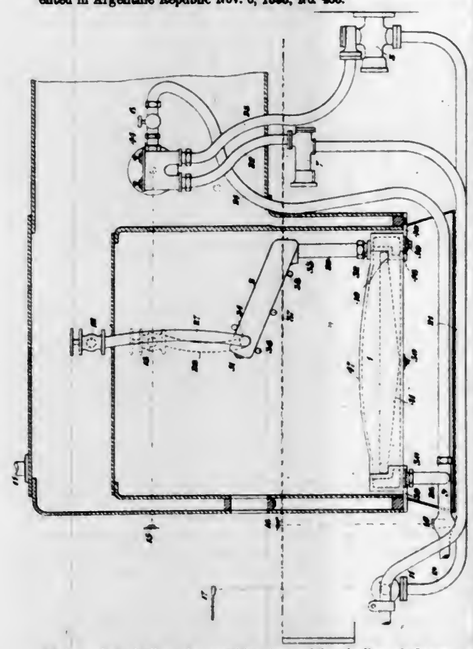
11. A street-cleaning machine comprising a suitable frame provided with a guideway a series of vertical pipes loose in the guideway for close yielding contact with the surface to be cleaned and provided at their surface-contact ends with upturned shoes longitudinally of the machine, a suction and blast apparatus in communication with said pipes, a dirt-receptacle in connection with said apparatus, and an air-strainer in the receptacle.

569,645. SCAFFOLD-BRACKET. ALFRED E. JONES, Walton, England. Filed Sept. 3, 1895. Serial No. 561,295. (No model.)



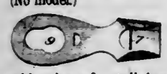
Claim.—In a scaffold-bracket the combination with a horizontal tie-bar provided at its rear end with a cross-bar adapted to extend at the rear of and engage a ladder and having at its ends forwardly-extending lips or hooks to engage the ladder sides, of a strut hinged at its upper end to the forward end of the tie-bar and provided at its lower end with a cross-bar adapted to extend across and engage the front of the ladder and having rearwardly-extending lips or hooks to also engage the ladder sides and a chain connecting the tie-bar with the strut and serving to limit the distance said parts may be separated.

569,646. FIRE-BAR SUPPORT AND DEFLECTOR. JOHN KING, CHARLES DOWNES, and JOHN WADDINGTON, Buenos Ayres, Argentine Republic. Filed May 28, 1896. Serial No. 593,468. (No model.) Patented in Argentine Republic Nov. 6, 1895, No. 403.



Claim.—In a boiler, the combination, with a hollow deflector, a hollow fire-bar support, and a pipe connecting the said parts; of a feed-water supply-pipe connected to the fire-bar support, and a connection between the said deflector and the water-space of the boiler, whereby the feed-water is passed through the said support and deflector before it enters the said water-space, substantially as set forth.

569,647. FASTENER FOR TAILPIECES OF MUSICAL INSTRUMENTS. OSCAR H. LEHMANN, Evansville, Ind. Filed Sept. 8, 1895. Serial No. 561,692. (No model.)

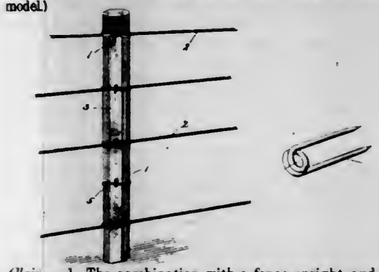


Claim.—1. The combination of a tailpiece of a musical instrument having a notch formed therein and a fastener for said tailpiece, said fastener being formed with a head for holding the tailpiece and a tongue for engagement with the notch, substantially as and for the purpose set forth.

2. As a new article of manufacture, a fastener for tailpieces for musical instruments stamped from a single piece of metal and formed with a wedge-shaped head, a tongue in said head and a graduated opening substantially as shown and described.

3. The combination of a tailpiece of a musical instrument having a notch formed therein and a fastener therefor, said fastener being formed with a head and having wings for holding the tailpiece, a tongue formed in said head for engagement with the notch, and a graduated opening for engagement with the end pin of the instrument, substantially as shown and described.

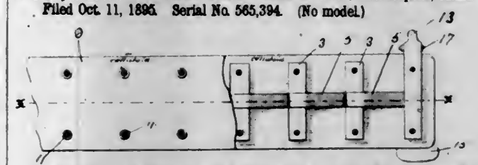
569,648. FASTENING DEVICE FOR FENCE-RUNNERS. PAUL H. LOGAN, El Paso, Tex. Filed Feb. 24, 1896. Serial No. 580,412. (No model.)



Claim.—1. The combination with a fence-upright, and a runner intersecting the plane thereof, of a staple engaging the post and arranged to straddle the runner, said staple being provided in its outer end with an eye, and a tie-wire engaging said eye and encircling the fence-upright, substantially as specified.

2. The combination with a fence-upright, and a fence-runner intersecting the plane thereof, of a staple engaging the upright and straddling the runner, said staple being provided at its outer end with an eye, and a tie-wire extending through the eye of the staple and encircling the fence-upright, said tie-wire having its sides extended respectively upon opposite sides of the fence-runner with their extremities intertwisted at the opposite side of the upright, substantially as specified.

569,649. ELECTRIC BAND. JOHN E. LUCK, Minneapolis, Minn. Filed Oct. 11, 1895. Serial No. 565,394. (No model.)



Claim.—1. An electric band comprising two bands or strips of a material which is an electric insulator, a chain of thin cells provided between said bands or strips, permanent fastenings between the cells and the bands or strips, terminal electrodes, and the edges of said bands being separated to permit the introduction of an exciting fluid between the same, substantially as described.

2. The combination, in an electric belt or band, of a chain of cells composed of flat copper or zinc parts separated by felt or like absorbent material, and the two bands or strips of material such as celluloid, by which the bands or cells are embraced and permanently secured, and contact or pole plates arranged on the surface of said bands or strips and electrically connected with the chain of cells, substantially as described.

3. The combination in an electric band or belt, of the strips of celluloid or like material, the chain of cells made up of flat copper

and zinc parts suitably separated by an absorbent material, eyelets passing through said parts and the said strips, and suitable terminal electrodes, substantially as described.

4. The combination, of a suitable covering with the zinc strips 3, the copper strips 5 secured thereto, the interposed felt strips 7 arranged upon opposite sides of said metal strips, and the pole-plates 15 pivotally connected to the end strips, for the purpose set forth.

5. The combination, with the battery formed of the series of metal strips and the interposed felt strips, with the celluloid bands secured upon opposite sides thereof, of the pole-plates 15 pivotally connected to the end metal strips and provided with suitable springs 19, for the purpose set forth

---

569,650. CARPET-STRETCHER. PUBLIUS V. MONROE, Waukesha, Wis. Filed Aug. 7, 1896. Serial No. 601,953. (No model.)



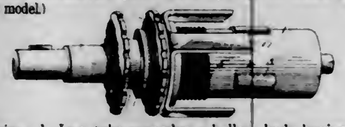
Claim.—1. A carpet-stretcher comprising a frame, a bar movable endwise in the frame said bar being provided with a terminal anchor and a wheel-toothed rack, a carpet-engaging head provided with an elongated shank reciprocable in the frame and having a wheel-toothed rack and a pawl-toothed rack, a pinion axled in the frame and meshing with said wheel-toothed racks on said bar and said shank, a lever-handle pivoted on the frame and provided with a pawl releasably engaging the pawl-toothed rack on said shank.

2. A carpet-stretcher comprising a frame, a bar movable endwise in the frame said bar being provided with a terminal anchor and a wheel-toothed rack, a carpet-engaging head provided with an elongated shank reciprocable in the frame and having a wheel toothed rack and a pawl-toothed rack, a pinion axled in the frame and meshing with said wheel-toothed racks on said bar and said shank, a lever-handle pivoted on the frame and provided with a pawl releasably engaging the pawl-toothed rack on said shank, and a click pivoted on the frame releasably engaging said pawl-toothed rack.

3. In a carpet-stretcher, the combination with a frame, of a carpet-engaging head provided with a shank reciprocable in ways in the frame, a bar reciprocable endwise in the frame which bar is disposed parallel with and alongside of said shank and extends movably through said carpet-engaging head, an anchor on the free extremity of the bar on the same side of the frame and more distant therefrom than the carpet-engaging head adapted to engage a floor, and means adapted to reciprocate the shank and the bar with reference to each other.

4. In a carpet-stretcher a frame, a carpet-engaging head provided with a wheel-toothed shank reciprocable in the frame, a bar disposed parallel with and alongside of said shank and provided with an anchor on the same side of the frame as said carpet-engaging head and with a wheel-toothed rack, a pinion axled in the frame and meshing with said racks respectively, and a means for reciprocating the carpet engaging head and its shank.

569,651. BOILER-TUBE EXPANDER. JOSEPH C. MORRISON, Akron, Ohio, assignor, by direct and mesne assignments, of one-half to John K. Williams, same place. Filed Sept. 14, 1895. Serial No. 562,564. (No model.)



Claim.—1. In a tube-expander, a hollow body having a guide-opening in one end, a circular bearing-recess at its other end, and a series of roll slots or openings between its ends, the swaging-rolls, an interiorly-threaded feed-nut mounted for a fixed rotation in said bearing recess, and a tapered mandrel having exterior threads engaged by the threads of said feed-nut and a straight guide-pin extension working in the guide-opening of the body, substantially as set forth.

2. In a tube-expander, a hollow casing-body provided with a closed end having a guide-opening therein, a circular series of roll slots or openings, and an inner circular bearing-recess formed in its open end, the swaging-rolls arranged in said slots or openings, an interiorly-threaded feed-nut provided with an inner thickened end turning in said bearing-recess and with a hand-wheel at its outer end, a threaded collar screwed into the open end of the casing-body to hold the feed-nut in place, and an exteriorly-threaded adjusting-mandrel mounted in the feed-nut and provided with a tapered unthreaded portion and a straight guide-pin projected from said tapered portion and working in the guide-opening of the casing-body, substantially as set forth.

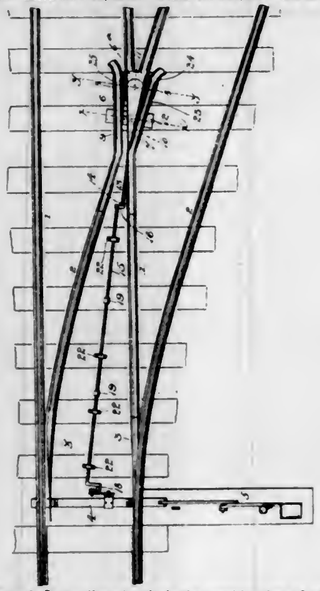
3. In a tube-expander, the tool body provided with an exteriorly-threaded portion, an annularly-grooved finger-nut mounted on said threaded portion, and a gage consisting of a collar loosely fitted in the groove of the nut and a series of horizontal gage-arms bent integrally from the collar and disposed parallel with the tool-body, substantially as set forth.

569,652. SEWING-MACHINE. MICHAEL C. MULLARKY, Montreal, Canada. Filed Apr. 4, 1895. Serial No. 544,504. (No model.)



Claim.—In a wire-sewing machine, the combination, with a reciprocatory cross-head provided with a recess in its upper end, of a circular head journaled in the said recess and free to oscillate back and forth, and an awl and a grooved needle projecting upwardly from the said head and arranged substantially equidistant from its center and on opposite sides thereof, substantially as set forth.

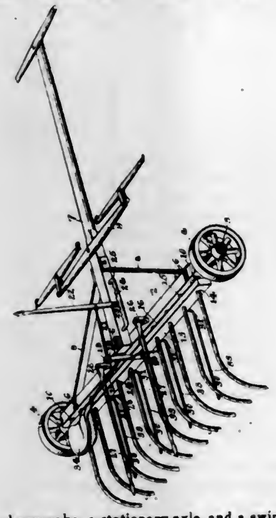
569,653. RAILROAD-SWITCH. JAMES L. MCCANN, Roanoke, W. Va. Filed Nov. 22, 1895. Serial No. 569,841. (No model.)



Claim.—1. In a railroad-switch, the combination of a frog located at the point of intersection of the rails of the main track and siding, and having a movable or pivoted point, an arm in line with the pivoted frog-point and projecting from the free end thereof and located above the plane of the lower side of the frog, and having an arm at its free end, and an operating-rod having connection with the said arm and with the switch-rod, substantially as set forth for the purpose described.

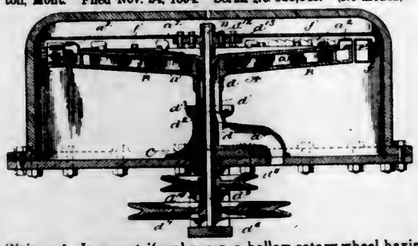
2. In a railroad-switch, the combination of the movable switch-rails, a switch-rod, a frog located at the intersection of the main and branch rails comprising a rigid part and a pivoted point whose adjacent ends are halved together and formed on the arcs of circles, an arm in line with and projecting from the free end of the pivoted frog-point and terminating in an arm, an operating-rod having compensating joints and adapted to transmit motion from the switch-rod to the pivoted frog-point, guard-rails on opposite sides of the pivoted frog point, and a pin passing through registering openings in the guard-rails and pivoted frog-point, substantially as set forth for the purpose described.

569,654. RAKE. ARCHIBALD Y. MCILROY and JOSEPH L. MCILROY, Tolar, Tex. Filed June 9, 1894. Serial No. 514,093. (No model.)



Claim.—In a horse-rake, a stationary axle, and a swinging rake hinged thereto, in combination with a horizontal rake-lifting lever fulcrumed on said axle and projecting rearward over and connected to the rake, a second rake-lifting lever fulcrumed in advance of the axle, a rack for engaging and holding said second lever, and connection between said second lever and the rake, whereby the rocking of the horizontal lever will effect a rocking of the second lever, causing the latter to lock with the rack and uphold the rake, substantially as described.

569,655. CENTRIFUGAL PUMP. CHARLES MCINTYRE, Fort Benton, Mont. Filed Nov. 24, 1894. Serial No. 529,843. (No model.)



Claim.—1. In a centrifugal pump, a hollow rotary wheel having discharge-openings adjacent to its periphery, nozzles or elbows fitted in said openings, and divergent guide-plates within said wheel extending from the center to near the periphery thereof and having angular branches inclosing said discharge-openings, substantially as set forth.

2. In a centrifugal pump, a hollow rotary wheel composed of upper and lower plates or disks connected together at their edges, said upper plate having openings therein, nozzles or elbows fitted in said openings and having their outer ends on a line with the periphery of the wheel, and the series of guide-plates located within the wheel and extended from the center to near the periphery thereof on one side of each of said openings and having each a right-angular branch extending over the other side of such opening, substantially as set forth.

3. In a centrifugal pump, a rotary wheel having its inlet at its center and its discharge on a line with its periphery, said wheel being inclined upward from its center outward and made hollow and provided with a series of radial guides diverging from the center to its points of discharge for directing the flow of the water, said guides being provided with outer angular branches, substantially as set forth.

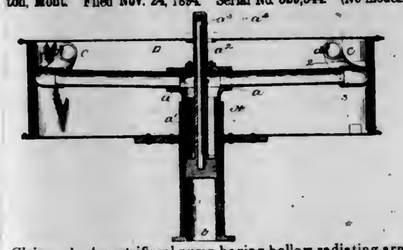
4. The combination of the hollow rotary wheel having a central inlet-opening, a depending cylindrical extension, discharge nozzles or elbows, radial guide-plates located in said wheel and extending from its center to said discharge nozzles or elbows, the casing in which said cylindrical extension fits, having a central sleeve, and the shaft fitted in said sleeve and supporting said wheel, substantially as set forth.

5. In a centrifugal pump, a hollow rotary wheel having a lower cylindrical extension and a depending supporting-sleeve within said extension, discharge-nozzles secured in the top of said wheel adjacent the periphery thereof, a casing in which the cylindrical extension of said wheel fits, a rotary shaft extended through said central sleeve, the series of buckets surrounding said wheel, the ring carrying the same supported by said shaft, and the arms connected to said ring and also to said shaft, substantially as set forth.

6. In a centrifugal pump, a hollow rotary wheel having a lower cylindrical extension and a depending supporting-sleeve within said extension, discharge-nozzles secured in the top of said wheel adjacent the periphery thereof, a casing having a sleeve therein in which said central sleeve fits, a rotary shaft extended through said central sleeve, a bearing-box for the lower end of said central sleeve, the circular series of buckets surrounding said wheel, a ring carrying the same, a hub keyed on said shaft, and arms connected to said hub and said ring, substantially as set forth.

7. In a centrifugal pump, a hollow rotary wheel having a lower cylindrical extension and a depending supporting-sleeve within said extension, discharge-nozzles secured in the top of said wheel adjacent the periphery thereof, a casing in which the cylindrical extension of said wheel fits, a rotary shaft extended through said central sleeve, the circular series of buckets each of which is of approximately V shape open at their wide ends and having extensions on one side, the ring carrying the same supported by said shaft, and the arms connected to said ring and also to said shaft, substantially as set forth.

569,656. CENTRIFUGAL PUMP. CHARLES MCINTYRE, Fort Benton, Mont. Filed Nov. 24, 1894. Serial No. 529,844. (No model.)



Claim.—1. A centrifugal pump having hollow radiating arms the outer ends of which are bent or curved inward and then upward at an angle to said arms, substantially as set forth.

2. A centrifugal pump having hollow radiating arms, and traps secured on the outer ends of said arms bent or curved inward about on a line parallel with said radiating arms and also bent or curved upward, substantially as set forth.

3. A centrifugal pump having hollow radiating arms, and traps or nozzles secured on the outer ends of said arms and bent or curved inward about on a line with said radiating arms and having outer horizontal discharge ends, substantially as set forth.

4. The combination with a centrifugal pump having hollow radiating arms, of the traps or nozzles herein described designed to be attached to the outer ends of said arms, said traps or elbows being bent or curved inward to one side of said radiating arms on a slight incline and then bent or curved upward and thence transversely to said radiating arms, substantially as set forth.

5. In a centrifugal pump, the combination with the hollow wheel having a lower central opening, a depending cylindrical extension and an upper sleeve, of the casing having a circular groove or channel supplied with mercury, or its equivalent, and in which said extension fits, the central sleeve located in and connected to said casing, and the shaft fitted in said latter sleeve and also in the upper sleeve of the wheel, substantially as set forth.

569,657. FOLDING CHAIR. CHARLES NIVISON, Kalamazoo, Mich., assignor, by direct and mesne assignments, to the Kalamazoo Sled Company and Frank W. Underwood, same place. Filed Mar. 1, 1895. Serial No. 540,141. (No model.)

Claim.—1. In a folding chair, the combination of a back-piece, A, doubled into a loop, the downwardly-extending ends forming the forward legs, A', A', of the chair; the rear leg, B, pivoted at *n* between the legs, A', A'; the chair-seat, C; the pivot, *t*, connecting the upper end of the leg, B, and the front of seat, C; a rod, *r*, between the legs,

A', A', at the height of the back of the seat with an offset therein; hinged connections, D, D', from the rod, *r*, to the pivot, *t*; a spring-catch, *u*, on the leg, B, to engage the rod, *r*, when the chair is closed, all substantially as described for the purpose specified.



2. In a folding chair, the combination of a back-piece, A, doubled into a loop, the downwardly-extending ends forming the forward legs, A', A', of the chair; the rear leg, B, pivoted at *n* between the legs, A', A'; the chair-seat, C; the pivot, *t*, connecting the upper end of the leg, B, to the front of the seat, C; the rod, *r*, between the legs, A', A', at the height of the back of the seat; the block-stop, *r'*, on the rear of said chair-seat; hinged connections, D, D', from the rod, *r*, to pivot, *t*; a spring-catch, *u*, on the leg, B, to engage the rod, *r*, when the chair closes, all substantially as described for the purpose specified.

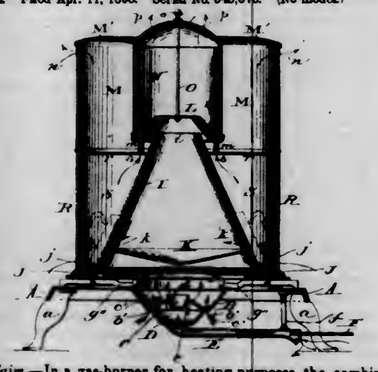
3. In a folding chair, the combination of the back-piece, A, doubled into a loop at the top with the downwardly-extending ends forming the forward legs, A', A', of the chair; the rear leg or legs pivoted at *n* between the legs, A', A'; the chair-seat, C; the pivot, *t*, connecting the upper end of the rear leg or legs to the front of the chair-seat, C; the rod, *r*, between the legs, A', A', at the height of the back of the seat; a folding connection from the rod, *r*, to the pivot, *t*, at the front of the seat; and a suitable clamp for clamping the chair in the folded position, for the purpose specified.

4. In a folding chair, the combination of a back-piece extending downwardly and forming the forward legs A' A' of the chair; the rear leg pivoted at *n* between the legs A' A'; the chair-seat C; the pivot, *t*, connecting the upper end of the leg B and the front of seat C; a rod, *r*, between the legs A' A' at the height of the back of the seat with an offset therein; hinged connections D, D' from the rod, *r*, to the pivot, *t*; a spring-catch, *u*, on leg B, to engage the rod, *r*, when the chair is closed, substantially as described for the purpose specified.

5. In a folding chair, the combination of a back-piece extending downwardly and forming the forward legs A' A' of the chair; the rear leg, B, pivoted at, *n*, between the legs A' A'; the chair-seat, C; the pivot, *t*, connecting the upper end of the leg B, to the front of the seat, C; the rod, *r*, between the legs A' A', at the height of the back of the seat; the block-stop, *r'*, on the rear of said chair-seat; hinged connections, D' D' from the rod, *r*, to pivot, *t*; a spring-catch, *u*, on the leg B, to engage the rod, *r*, when the chair closes, all substantially as described.

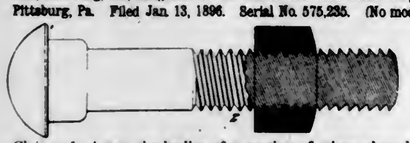
6. In a folding chair, the combination of a back-piece extending downwardly and forming the forward legs A' A' of the chair; the rear leg or legs pivoted at, *n*, between the legs A' A'; the chair-seat, C; the pivot, *t*, connecting the upper end of the rear leg or legs to the front of the chair-seat C; the rod, *r*, between the legs A' A', at the height of the back of the seat; a folding connection from the rod, *r*, to the pivot, *t*, at the front of the seat; and a suitable clamp for clamping the chair in the folded position, for the purpose specified.

569,658. GAS HEATING APPARATUS. MATTS L. NYBERG, Erie, Pa. Filed Apr. 11, 1895. Serial No. 545,370. (No model.)



Claim.—In a gas-burner for heating purposes, the combination with the cup-shaped burner B, having a horizontally-projecting annular offset or shoulder *b*, about midway of its depth, provided with a series of apertures *b'*, and the pipes E and F, of the concavo-convex removable cap C, seated on said offset and having a series of peripheral notches *c'*, coincident with the ledge-apertures *b'*, the central nipple *d* and a series of concentric slots *c*, *c*, substantially as described.

569,659. GRIP-NUT. JAMES R. OLIVER, Shields, and HUBERT CREMAN, Pittsburg, Pa., assignors to the Oliver Iron and Steel Company, Pittsburg, Pa. Filed Jan. 13, 1896. Serial No. 575,235. (No model.)



Claim.—1. A nut, the bodies of a portion of whose threads extend at a different angle from the bodies of the remaining threads; substantially as described.

2. A nut, having a portion of its threads of V shape, and the remainder of ratchet form, substantially as described.

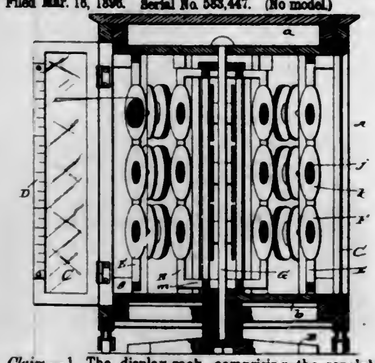
3. The combination with a bolt, of a nut, the bodies of a portion of whose threads extend at the same angle as those of the bolt, while the bodies of the remaining nut-threads extend at a different angle therefrom; substantially as described.

4. The combination with a bolt having V-threads, of a nut having a portion of its threads of V shape, while the remainder are bent into ratchet form; substantially as described.

5. The combination with a bolt, of a nut, the bodies of the inner threads of which extend at the same angle as those of the bolt, while the bodies of the outer threads are bent to a different angle; substantially as described.

6. A nut, the opposite sides of a portion of whose threads extend at the same angle while the one side of the remaining threads extends at a different angle from that of the opposite side; substantially as described.

569,660. REVOLVING SHOW-RACK. TENIS OLSON, Harlan, Iowa. Filed Mar. 16, 1896. Serial No. 583,447. (No model.)

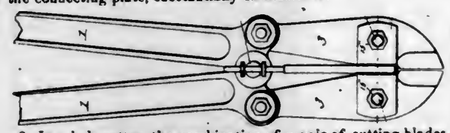


Claim.—1. The display-rack, comprising the revoluble casing mounted on rollers and the central pedestal, the central rotatable frame H, held in position by the vertical rod G, the frames E, arranged around the central rotatable frame, and one or more of said frames being hinged so as to afford access to the central frame, the spools journaled in the inner and outer frames respectively and adapted to be readily removable therefrom, and having a trunk of flattened oblong form as *j*, and oblong heads *k*, whereby they project but slightly from their upright bearing-frames, and the heads and trunks of the outer frames may turn close within their frames when the latter have been moved on their hinges, and the outer doors C, all arranged to form a compact article, substantially as specified.

2. A display-case, comprising a central rotatable spool-rack and spool-racks arranged concentrically to the central rack and carrying-spools, one or more of the sections of the outer rack being hinged so that access may be had to the inner rack the trunks or bodies and heads of the spools being of flattened oblong form so that they may be turned to occupy but little space when the hinged frames supporting them are opened for access to the case, substantially as specified.

569,661. BOLT-CUTTER. JOHN H. OSBORNE, Anderson, Ind. Filed Feb. 26, 1896. Serial No. 580,797. (No model.)

Claim.—1. A bolt-cutter consisting of a pair of cutting-blades, operating-handles pivoted thereto at the upper ends thereof, a plate, bolts pivotally connecting the blades to said plate, each of said bolts consisting of an eccentric portion which fits within a circular opening in a blade and a smaller threaded portion which extends through the plate, a nut adapted to be secured upon said threaded portion, an outwardly-extending enlargement carried by the eccentric and adapted to secure the blade to the plate, and a projection upon the eccentric adapted to enter one of a series of recesses formed in the inner side of the connecting-plate, substantially as described.



2. In a bolt-cutter, the combination of a pair of cutting-blades, operating-handles therefor, a plate, bolts pivotally connecting the blades to the plate, each bolt consisting of an eccentric portion which fits a circular opening in a blade, a smaller threaded portion which extends through the plate and is provided with a securing-nut, a projection on the eccentric adapted to fit one of a series of recesses formed in the inner side of the plate, a permanent mark upon the bolt outside of the plate, permanent marks on the outer side of the plate corresponding to the recesses in the inner side of the plate, and means for adjusting the eccentric and for securing the blades to the plate, substantially as described.

3. In a bolt cutter, the combination of a pair of cutting-blades, operating-handles therefor, a connecting-plate, bolts pivotally connecting the blades to the plate, each of said bolts consisting of an eccentric portion adapted to fit a circular opening in a blade, a threaded smaller portion extending through the plate, a nut to fit said threaded portion and secure the bolt in place, a projection upon the eccentric portion adapted to enter one of a series of recesses in the inner side of the plate, an enlarged portion formed on the eccentric and adapted to fit a recess formed in the blade, and a squared portion formed on said bolt, substantially as described and for the purpose set forth.

4. A bolt-cutter consisting of a pair of cutting-blades, operating-handles pivoted to the upper ends of said blades, a plate, bolts pivotally connecting the blades to said plate, each of said bolts consisting of an eccentric portion which fits within a circular opening in the blade, and a smaller threaded portion which extends through the plate, a nut adapted to be secured upon said threaded portion means for securing the blades to the plate and for retaining them upon the bolts, and a projection upon the eccentric adapted to enter one of a series of recesses formed in the inner side of the connecting-plate, substantially as described.

569,662. HOSE-SUPPORTER. ISAAC H. PAUL, Jr., Bridgeport, Conn., assignor to the Frake Manufacturing Company, same place. Filed July 29, 1896. Serial No. 600,871. (No model.)

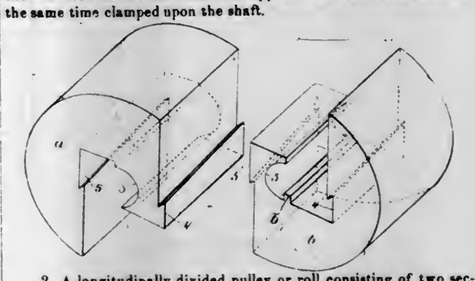


Claim.—1. In a garment-supporter, of the character described, the combination, with a base having an elongated central eye adapted to receive a headed stud and a portion of the goods or fabric of a garment, of a spring-tongue separated from the sides of the base, a bridge connecting the forward end of said tongue with said base, the opposite end of such tongue also connected with such base, said tongue normally elevated above the plane of the base, so that it may have an independent vertical action to accommodate for different thickness of fabric, substantially as described.

2. In a garment supporter, of the character described, the combination, with a base-piece having an elongated central eye adapted to receive a headed stud covered with fabric, of elongated side openings in the sides of such base and running parallel with the central stud-receiving eye, thus forming a narrow spring-tongue, a bridge connecting the forward end of said tongue with said base, said tongue normally elevated above the plane of such base and thus provide a vertical spring or movement to accommodate for different thickness of fabric, substantially as described and for the purpose set forth.

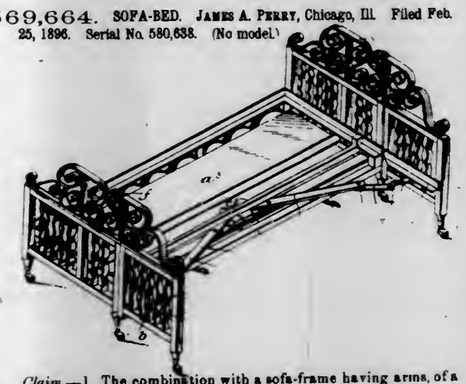
569,663. SPLIT ROLL OR PULLEY. GEORGE E. PERKINS, Cambridge, Mass. Filed Mar. 1, 1895. Renewed Mar. 10, 1896. Serial No. 582,661. (No model.)

Claim.—1. A longitudinally-divided pulley or roll consisting of two sections each having a curved external face forming a part of the periphery of the roll, a curved internal face forming a part of the bore of the roll, a longitudinal tapering dovetail projection or rib at one side of the internal face and a longitudinal tapering dovetail recess at the opposite side of said internal face, the projection and recess of one section being formed to engage respectively the recess and projection of the other section and cause a compressive or clamping action when one section is moved longitudinally upon the other, so that the sections are interlocked at opposite sides of the bore and at the same time clamped upon the shaft.



2. A longitudinally-divided pulley or roll consisting of two sections each having a curved external face forming a part of the periphery of the roll, a curved internal face forming a part of the bore of the roll, a longitudinal tapering dovetail projection or rib at one side of the internal face and a longitudinal tapering dovetail recess at the opposite side of said internal face, the projection and recess of one section being formed to engage respectively the recess and projection of the other section and cause a compressive or clamping action when one section is moved longitudinally upon the other, one of said sections having a spline at one edge of its curved internal surface arranged to be forced into its groove by said clamping action.

569,664. SOFA-BED. JAMES A. PERRY, Chicago, Ill. Filed Feb. 25, 1896. Serial No. 580,638. (No model.)



Claim.—1. The combination with a sofa-frame having arms, of a pair of swinging panels hinged at the rear of the arms and arranged to swing in line with said arms or inward at right angles thereto to form the sofa-back, said panels being higher than the arms, a top piece hinged to each arm and arranged to swing into an upright position, means for securing the said top pieces in their upright positions, and a mattress formed of two portions hinged together and arranged to lie in the same plane when the bed is opened, one of said portions being arranged to swing upward and form the back cushion of the sofa, substantially as described.

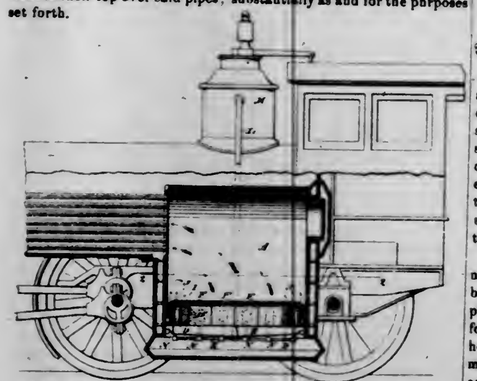
2. The combination with a sofa-frame and a pair of swinging panels hinged to the frame, of a pair of segment-levers pivoted to the frame and provided with toothed segments in mesh with each other, and means for connecting the segment-levers to the swinging panels, substantially as described.

3. The combination with a sofa-frame and a pair of swinging panels hinged to said frame, each panel being provided with an inwardly-extending arm, of a pair of segment-levers pivoted to the sofa-frame and provided with toothed segments in mesh with each other, and links connecting the outer ends of the segment-levers to the respective inward-projecting arms, substantially as described.

569,665. FURNACE. WILLIAM A. PERRY, New York, N. Y., assignor to Thomas C. Miles, same place. Filed Oct. 31, 1895. Serial No. 567,469. (No model.)

Claim.—1. The furnace having the grate-bars, combined with the series of pipes arranged along the edges of the furnace, and the series of casings within the fire-chamber over the grate, said casings completely covering the tops of said pipes and the sides thereof adjacent to the fire and being provided with perforations in their top over said pipes; substantially as and for the purposes set forth.

2. The furnace having the grate-bars, combined with the series of pipes arranged along the edges of the furnace, the series of nozzles N located below and leading to said pipes and connected with a source of supply, and the series of casings within the fire-chamber over the grate, said casings completely covering the tops of said pipes and the sides thereof adjacent to the fire and being provided with perforations in their top over said pipes; substantially as and for the purposes set forth.



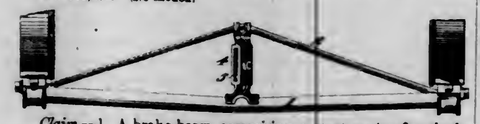
3. The furnace having the grate-bars, combined with the series of pipes along the outer edges of the furnace, and the series of sections F housing said pipes, the said sections being in contact with one another and composed of the members G, H, I, the member I being perforated above said pipes; substantially as set forth.

4. The furnace having the grate-bars, combined with the series of pipes along the outer edges of the furnace, the nozzles N connected with the boiler and located below said pipes D, and the series of sections F housing said pipes, said sections being in contact with one another and composed of the members G, H, I, the member I being perforated above said pipes; substantially as set forth.

5. The furnace having the grate-bars, combined with a series of pipes D along the outer edges of the furnace, and the series of sections F housing said pipes and being in contact with one another and each composed of the thickened member G, the thinner member H and the arch or member I connecting said members G, H, and perforated above the pipes; substantially as set forth.

6. The furnace having the grate-bars, combined with the series of blocks D' extending along the edges of the fire-box and having the vertical openings D, and the series of fire-brick F housing said blocks and perforated over said openings; substantially as set forth.

569,666. **BRAKE-BEAM.** CHARLES K. PICKLES, St. Louis, Mo., assignor to J. J. McCarthy, Chicago, Ill. Filed Sept. 8, 1896. Serial No. 605,158. (No model.)



Claim.—1. A brake-beam comprising a strut made of a single piece and having cross-grooves at each end, those at one end being adapted to fit over the compression member and those at the other end being adapted to fit over the tension member, substantially as and for the purpose set forth.

2. A brake-beam comprising a strut having cross-grooves in its ends adapted to fit over the tension member and the compression member, respectively, substantially as and for the purpose set forth.

569,667. **BRAKE-BEAM.** CHARLES K. PICKLES, St. Louis, Mo., assignor to J. J. McCarthy, Chicago, Ill. Filed Sept. 8, 1896. Serial No. 605,159. (No model.)

Claim.—1. A truss brake-beam comprising a compression member of elliptical cross-section at its middle portion and having an elliptical collar fitting over said compression member and forming part of the strut, substantially as and for the purpose set forth.

2. A brake-beam comprising a strut composed of sections having respectively a rib and cross-grooves in their abutting ends, said rib being adapted to interlock with either of said cross-grooves, substantially as and for the purpose set forth.

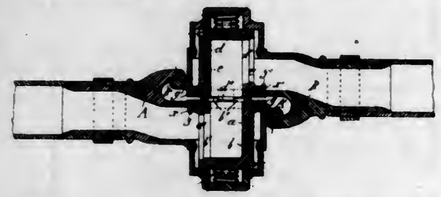
3. A brake-beam comprising a strut composed of sections having respectively a rib and cross-grooves in their abutting ends, said rib being adapted to interlock with either of said cross-grooves, and the outer section having cross-grooves adapted to receive the tension member, substantially as and for the purpose set forth.



4. A brake-beam comprising a compression member, a strut and a tension member, and brake-heads each having a hole into which an end of the compression member extends and through which the tension member extends, and an end plate for each of said brake-heads, said end plate having ribs thereon engaging notches in the end of the compression member and in the outer side of the brake-head, said end plate having also a hole through which the tension member extends, and a nut on each end of the tension member, whereby the end plate locks the compression member and the brake-head rigidly together, substantially as and for the purpose set forth.

5. A brake-beam consisting of a compression member having notches in its ends and an opening near each end for the tension member, brake-heads each having a hole into which an end of the compression member fits and having notches in its outer face, an end plate for each brake-head having ribs fitting into the notches of the brake-head and of the compression member and having a hole for the tension member, a strut mounted on the middle of the compression member, and a tension member fitting over the end of the strut and having its respective ends extend through the openings in the compression member and the holes in the end plates, said ends being screw-threaded and provided with nuts, substantially as and for the purpose set forth.

569,668. **RAILROAD-CAR COUPLING.** WILHELM PINCKERT, Stettin, and CARL PRUTZ, Stargard, Germany. Filed Feb. 29, 1896. Serial No. 581,234. (No model.)



Claim.—In a train-pipe coupling, the two coupling-pieces A, B, with interlocking parts, each coupling-piece having a removable screw-cap, a hollow valve-box in each coupling-piece, each valve-box having an opening laterally and having a pin x fitting between cheeks to hold the box in place, the hollow rotary valves within the valve-boxes having lateral openings, the pin-and-groove connection between each valve-box and valve, the said valves having interlocking parts and the springs within the caps pressing upon the valves, substantially as described.

569,669. **MACHINE FOR SHAPING SMOKELESS POWDER.** FRANCIS G. DU PONT, Wilmington, Del. Filed Aug. 1, 1896. Serial No. 601,352. (No model.)

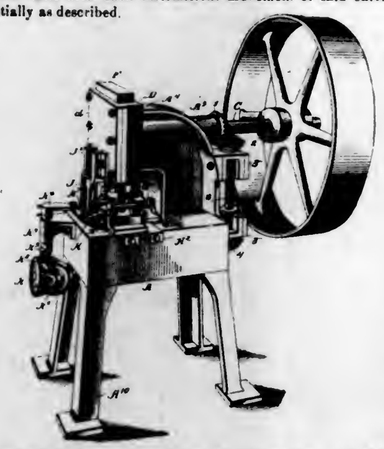
Claim.—1. In a machine for perforating grains of explosive, the combination with a carrier having a series of cells to receive the grains, and means for moving said carrier intermittently forward, of means for supplying said cells with grains, perforating mechanism, and an ejector, substantially as described.

2. In a machine for perforating grains of explosive, the combination with a disk having a series of cells to receive the grains, and means for rotating said disk with an intermittent movement, of means for supplying said cells with grains, perforating mechanism, and an ejector, substantially as described.

3. In a machine for perforating grains of explosive, the combination with a disk having a series of cells to receive the grains, a power-shaft, and gear connection between said disk and said power-shaft adapted to rotate said disk with an intermittent movement, of means for supplying said cells with grains, perforating mechanism, and an ejector, substantially as described.

4. In a machine for cutting sticks of explosive into grains, the combination with a carrier having a series of cells to receive the grains, and means for moving said carrier intermittently forward, of a feeding-tube adapted to discharge into said cells, a knife, and means for causing said knife to pass across the mouth of said tube after each intermittent movement of said carrier, substantially as described.

5. In a machine for cutting sticks of explosive into grains, the combination with a carrier having a series of cells to receive the grains, and means for moving said carrier intermittently forward, of a feeding-tube adapted to discharge into said cells, a vibrating knife adapted to pass across the mouth of said tube, and means for operating said knife after each intermittent movement of said carrier, substantially as described.



6. In a machine for cutting sticks of explosive into grains, the combination with a disk having a series of cells to receive the grains, and means for rotating said disk with an intermittent motion, of a feeding-tube adapted to discharge into said cells, a knife pivoted centrally of said disk, cam-actuated mechanism for causing said knife to move across the mouth of said tube and means for operating said knife after each intermittent movement of said disk, substantially as described.

7. In a machine for perforating grains of explosive, the combination with a carrier having a series of cells formed therein, and means for moving the same intermittently forward, of means for supplying said cells with grains of explosive, a reciprocating cross-head stationed over the line of travel of said carrier, and perforating and ejecting devices carried thereby, substantially as described.

8. In a machine for perforating grains of explosive, the combination with a carrier having a series of cells to receive the grains, and means for moving said carrier forward with an intermittent motion, of a reciprocating cross-head having a transverse opening therein stationed over the line of movement of said carrier, a suitable guideway therefor, a sliding block mounted in said opening, a power-shaft, a cam thereon fitted in said block, and perforating and ejecting devices carried by said cross-head, substantially as described.

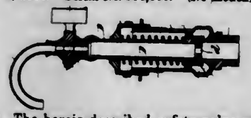
9. In a machine for perforating grains of explosive, the combination with a table having discharge-openings therein, a disk resting thereon having cells to receive the grains, means for rotating said disk with an intermittent movement, and means for supplying said cells with grains, of a reciprocating cross-head, perforating-punches and an ejector carried thereby, guides for said punches, and means for reciprocating said cross-head, substantially as described.

10. In a machine for perforating grains of explosive, the combination with a table, a disk resting thereon having a notched periphery and having cells to receive the grains, means for rotating said disk with an intermittent movement, a locking-pawl engaging with said notched periphery, and means for supplying said cells with grains, of a reciprocating cross-head, and perforating and ejecting mechanism carried thereby, substantially as described.

11. In a machine for cutting sticks of explosive into grains and perforating the grains thus formed, the combination with a table having discharge-openings formed therein, a disk resting thereon having a series of cells to receive the grains, a feeding-tube adapted to discharge into said cells, cutting mechanism adapted to reciprocate across the mouth of said feeding-tube at the close of each forward movement of said disk, and a reciprocating cross-head having perforating and ejecting devices secured thereto, of a power-shaft, and mechanism thereon and in gearing connection therewith for causing said disk to rotate with an intermittent forward movement, and for causing the reciprocation of said cross-head and operation of said cutting mechanism, substantially as described.

12. In a machine for cutting sticks of explosive into grains and perforating the grains thus formed, the combination with a table having discharge-openings formed therein, a disk resting thereon having a series of cells to receive the grains, a feeding-tube adapted to discharge into said cells, a cutting-knife pivoted centrally of said disk and adapted to reciprocate across the mouth of said feeding-tube at the close of each forward movement of said disk, a reciprocating cross-head having perforating and ejecting devices secured thereto and having a transverse opening formed therein, suitable support therefor, and a sliding block mounted in said opening, of a power-shaft, a cam thereon adapted to fit in said sliding block and cause the reciprocation of said cross-head, an intermediate shaft in gearing connection with said power-shaft, and mechanism thereon for causing intermittent forward movement of said carrier and the operation of said cutting-knife, substantially as described.

569,670. **SAFETY-VALVE FOR BOILERS.** THOMAS POTTERTON, London, England, assignor to Albert Belton Potterton, same place. Filed May 8, 1896. Serial No. 590,699. (No model.)

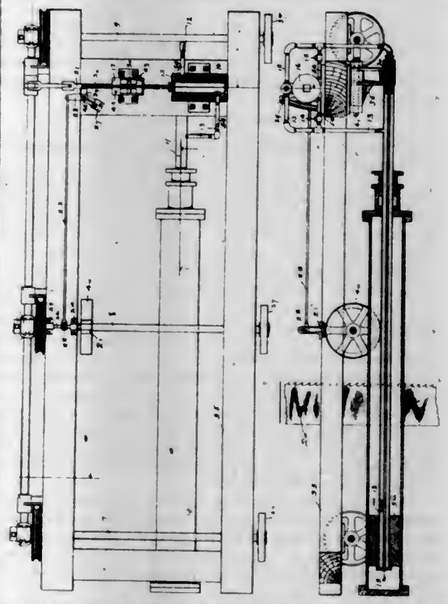


Claim.—1. The herein-described safety-valve which is provided with a vertically-movable hollow spindle, the upper end of which is provided with a valve or cock, and a discharge-pipe, substantially as shown and described.

2. The herein-described safety-valve which is provided with a vertically-movable hollow spindle, the upper end of which is provided with a valve or cock, and a discharge-pipe, said hollow spindle being mounted in a casing at the lower end of which is a valve-seat, on which the lower end of the spindle is adapted to be seated, substantially as shown and described.

3. The herein-described safety-valve which is provided with a vertically-movable hollow spindle, the upper end of which is provided with a valve or cock, and a discharge-pipe, said hollow spindle being mounted in a casing at the lower end of which is a valve-seat, on which the lower end of the spindle is adapted to be seated, and said spindle being also provided with a spring which is mounted thereon within said casing, and which is adapted to force the same upon the valve-seat, substantially as shown and described.

569,671. **STEAM-OFFSET FOR SAWMILL-CARRIAGES.** GEORGE W. PRESCOTT, Eau Claire, Wis. Filed Apr. 30, 1895. Serial No. 547,694. (No model.)



Claim.—1. The combination with a sawmill-carriage, of an offsetting mechanism comprising a steam cylinder and piston, mounted on the carriage, an air-cylinder through which the piston-rod passes, and a piston on the rod inside of said cylinder, the air-cylinder hav-

ing openings for a portion of its length, and inwardly opening check-valves in its imperforate ends, substantially as described.

2. The combination with a sawmill-carriage, of an offsetting mechanism comprising an actuating steam cylinder and piston, a valve controlling the admission of steam to said cylinder, valve-operating mechanism and means for automatically reversing the same at each reversal of the movement of the carriage, substantially as described.

3. The combination with a sawmill-carriage, of an offsetting mechanism operated by a steam cylinder and piston, a steam-valve, and a friction-gear device for reversing said valve at each reversal of the carriage, substantially as described.

4. The combination with a sawmill-carriage, of an offsetting mechanism operated by a steam cylinder and piston, a steam-valve, valve-operating mechanism comprising a segmental friction-gear, and a friction gear-wheel meshing with the segment-gear and keyed on one of the carriage-axles, substantially as described.

5. The combination with a sawmill-carriage, of a steam-feed cylinder, an offsetting mechanism for the carriage provided with a steam-cylinder and valve-chest, and pipes connecting the ends of said valve-chest with the respective ends of the steam-feed cylinder, substantially as described.

6. The combination with a sawmill-carriage, of a steam-feed cylinder, provided with a hollow piston-rod, a pipe running through said rod, an offsetting mechanism for the carriage provided with a steam-cylinder for operating it, a pipe connecting one end of the offsetting cylinder with the hollow piston-rod, and a second pipe connecting the other end of said offsetting cylinder with the pipe running through the piston-rod, substantially as described.

7. The combination with a sawmill-carriage, of a steam-feed cylinder, a hollow piston-rod therefor communicating with the cylinder at one side of the piston, a pipe inside the piston-rod communicating with the cylinder at the other side of the piston, an offsetting mechanism for the carriage comprising a steam-cylinder, and valve-chest, a pipe connecting one end of said valve-chest with the hollow piston-rod, a second pipe connecting the other end of the valve-chest with the pipe inside the piston-rod, and a valve controlling the flow of steam from said pipes into the valve-chest, substantially as described.

8. The combination with a sawmill-carriage, having a steam-feed cylinder provided with a hollow piston-rod of an offsetting mechanism comprising a steam-cylinder and valve-chest, containing receiving and exhaust ports, separate pipes connected with the hollow piston-rod and supplying steam to the ends of the valve-chest, branch pipes connecting said steam-pipes with the exhaust-ports, and an outwardly-opening check-valve in each branch pipe, substantially as described.

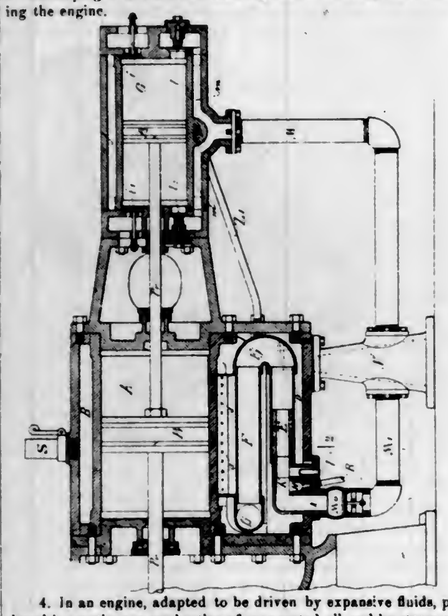
9. The combination with a sawmill-carriage having a steam-feed cylinder, of an offsetting mechanism comprising a steam-cylinder and valve-chest, separate pipes connecting the ends of the offsetting cylinder with the corresponding ends of the feed-cylinder, branch pipes connecting said supply pipes with the exhaust-ports of the offsetting cylinder, and outwardly-opening check-valves in said branch pipes, substantially as described.

569,672. OIL-ENGINE. THURSO VON QUERFURTH, New York, N. Y. Filed Jan. 10, 1895. Serial No. 534,477. (No model.)

Claim.—1. The combination, with an engine, adapted to be driven by expansive fluids, and having a working cylinder with a piston and a piston-rod, with ports for inlet and exhaust of the expansive fluids at each stroke, a valve-chest with a sliding valve and a valve gear driven from an eccentric, set on the crank-shaft, of apparatus for developing the expansive fluids comprising a burner with an oil-evaporating pan, an oil and an air delivery pipe and an igniting-tube, a combustion-chamber attached to the burner and connecting with flues, arranged in the jacket, surrounding the working cylinder, in sections laterally ascending, the uppermost section of these flues being closed on end and perforated on sides by a row of small holes, admitting the hot combustion-gases into direct contact with cooling-water, pumps attached to the engine and operated by a connecting-rod from the valve-gear and delivering continuously the supply of oil and water; an air-compressing cylinder, joined to the working cylinder and worked with the same piston-rod, a compressed-air receiver connected with the discharge valve of the air-compressing cylinder, and with the air-delivery pipe attached to the burner.

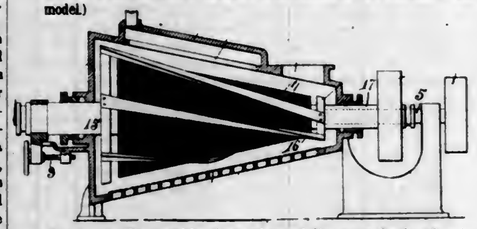
2. In an engine, adapted to be driven by expansive fluids, the combination with a burner with an air and a fuel delivery pipe, an oil-evaporating pan and an igniting-tube, of a combustion-chamber attached to the burner and connecting with flues, for the purpose of producing expansive fluids by continuous combustion of evaporated oil mingled with air.

3. In an engine, adapted to be driven by expansive fluids and provided with an apparatus for producing such expansive fluids by continuous combustion of evaporated oil mingled with air, the combination with a combustion-chamber, of flues, connected with the combustion-chamber and arranged within a cooling-chamber, in sections laterally ascending, the upper section being closed on end and perforated on sides by a row of small holes, for the purpose of conducting the hot gases through cooling-water, and utilizing their excessive heat for developing of steam to be used together with the gases for driving the engine.



4. In an engine, adapted to be driven by expansive fluids, produced by continuous combustion of evaporated oil, and by steam produced from the cooling-water, used in the process of reducing the excessive heat of the combustion-gases, the combination with an oil and a water supply pump, secured to the engine in suitable position, and having plungers of proportionate areas, with rods coupled together in a block, of a gear, comprising a rocking rod, pivoted on one end, and having its other end adjustably secured to the valve-gear, and a connecting-rod, adjustably attached to the rocking rod, and secured to the coupling-block of the plunger-rods of the pumps, for the purpose of working the supply-pumps and regulating the supply of oil and water to the engine, according to its load.

569,673. WASHING-MACHINE FOR PAPER-STOCK. MICHAEL J. ROACH, Anderson, Ind. Filed Oct. 3, 1895. Serial No. 564,517. (No model.)



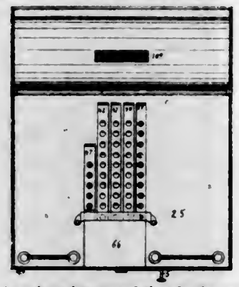
Claim.—1. The combination, substantially as set forth, of a circular casing having an inlet and an outlet for stock, a hollow revolver mounted therein and having a foraminous periphery, a series of ribs mounted to turn in the annular space within the casing and around the revolver, means for turning said revolver and series of ribs independently, and an inlet and outlet for washing-water.

2. The combination with a casing provided with an inlet and outlet for stock at its opposite ends and with a longitudinal water-inlet opening or slot extending continuously, substantially from end to end of the casing, the edge of said opening constituting a ledge against which the stock is dashed and separated, and a supply-pipe or conduit designed to supply water to the inlet-opening along its entire length to simultaneously dislodge the stock adhering to the ledge and to supply the interior of the casing with water, and a revolver within the casing designed to agitate the stock.

3. The combination, substantially as set forth, of a circular casing having an inlet and outlet for stock and having a foraminous wall portion, a circular revolver mounted in the casing and having a foraminous periphery, and a series of ribs mounted to travel independently in the annular space between the casing and revolver.

4. The combination, substantially as set forth, of a circular conical casing, a conical casing mounted to turn therein and having a foraminous periphery, a dipper within the larger end of the revolver, and a discharge-pipe communicating with said dipper.

569,674. CASH REGISTER AND RECORDER. JOSEPH F. SCHEUER, Milwaukee, Wis. Filed Mar. 20, 1895. Serial No. 542,543. (No model.)



Claim.—1. A cash-register consisting in the combination of an inclosing case provided with a cash-drawer, and an automatic lock therefor, a series of type-holding slides, movably located in guide-ways on said case, a numerically-graduated series of movable spring-supported types located in said slides, a bed-plate located below the path of the slides and types, one or more ink-ribbons stretched across said bed-plate, means for supporting one or more record-strips in the rear of said bed-plate, and a discharge-roller adapted to draw one of the said strips over said bed-plate and to discharge the same over said roller to the exterior of the case, together with means for forcing one of said types from each slide into contact with the ink-ribbons, and an actuating push-bolt adapted to release the lock of the cash-drawer and to actuate said discharge-roller, substantially as described.

2. A cash-register consisting in the combination of an inclosing case provided with a cash-drawer and an automatic lock therefor, a series of type-holding slides movably located in guideways on said case, a series of movable spring-actuated types supported from said slides, a bed-plate located below the path of the slides and types, one or more ink-ribbons stretched across said bed-plate, and means for supporting duplicate record-strips in the rear thereof, a friction-plate and a discharge-roller adapted to draw one of said strips over said bed-plate and to discharge the same over said roller by frictional contact with said plate, a record-storing roller, adapted to draw the other of said strips over said bed-plate and to wind it upon said roller, and means for forcing said types into contact with one of said ribbons, and an actuating push-bolt, adapted to actuate the record and discharge rollers, and to release the lock of said drawer, substantially as described.

3. A cash-register consisting in the combination of an inclosing case provided with a cash-drawer and an automatic lock therefor, a series of type-holding slides mounted movably on said case, a numerically-graduated series of spring-actuated type supported from said slides and a bed-plate located below the path thereof, one or more ink-ribbons stretched across the bed-plate, means for supporting a supply of record-strips in the rear of the bed-plate, a discharge-roller adapted to draw one of said record-strips over said bed-plate, and a friction-plate against which said discharge-roller is adapted to press to facilitate the discharge of the record-strip, together with a printing-plate for forcing one or more of said types into contact with the upper ink-ribbon, and an actuating push-bolt, adapted to release the lock of the cash-drawer and to actuate said printing-plate and discharge-roller, substantially as described.

4. A cash-register consisting of the combination of an inclosing case, provided with a cash-drawer and lock therefor, a series of type-holding slides mounted movably on said case, a numerically-graduated series of types movably supported by said slides, a bed-plate located below the path thereof, one or more ink-ribbons stretched across said bed-plate and wound over spools at each side thereof, means for passing record-strips over said bed-plate and under said ink-ribbons, and a printing-plate for forcing one or more of said types with the upper ink-ribbon, together with an actuating push-bolt adapted to release said drawer and to actuate said printing-plate with its inward movement and to rotate said spools with its outward movement, substantially as described.

5. A cash-register consisting of the combination of an inclosing case provided with a cash-drawer, a series of type-holding slides movably supported in slotted guide-bearings by said case, a series of movable spring actuated types supported from said slides, a bed-plate located below the path of said slides, one or more supply spools or rollers adapted to support paper record-strips thereon, one or more actuating-rollers adapted to draw said strips from the supply-rollers over said bed-plate, one or more ink-ribbons stretched transversely of said strip or strips over said bed-plate, and a vertically-movable printing-plate supported over said bed-plate and above the type-slides and types, together with a push-bolt adapted to release said drawer and communicate motion to the printing-plate with its inward movement, and to the actuating-rollers of the record-strips with its outward movement, substantially as described.

6. A cash-register consisting in the combination of an inclosing case having a cash drawer, a series of type-slides movably supported in guide-bearings by said case, a series of vertically-movable types supported by said slides, a bed-plate located below the path of said type-slides, means for passing one or more record-strips over said bed-plate, a spring actuated, vertically-movable printing-plate, a toggle-jointed lever, adapted to support said printing-plate against the tension of its actuating-springs, and a lever for tripping said toggle-joint, together with a push-bolt adapted to actuate said trip-lever and release the cash-drawer, substantially as described.

7. A cash-register consisting of the combination of an inclosing case having a cash-drawer provided with an automatically-locking hook, a series of type-slides movably supported in guide-bearings by said case, a series of numerically-graduated types supported in said slides by spring-actuated stems, a bed-plate located below the path of said type slides, means for passing record-strips over said bed-plates, a spring-actuated vertically-movable tie plate, located in the interior of said case, a toggle-jointed lever located beneath said tie-plate and having arms adapted to be forced into alinement to elevate the tie-plate against the tension of its actuating-springs, a printing-plate supported from said tie-plate above said bed-plate and above the type-slides, and types, and a lever for tripping said toggle-joint, together with a push-bolt adapted to actuate said trip-lever and to release the locking-hook of said drawer, substantially as described.

8. A cash-register consisting of the combination of an inclosing case having a cash-drawer provided with an automatically-locking hook, a series of type-slides movably supported in guide-bearings by said case, a series of numerically-graduated types movably supported by said slides, a bed-plate located below the path of said type-slides, a spring-actuated vertically-movable tie-plate located in the interior of said case, a toggle-jointed lever located beneath said tie-plate and having arms adapted to be forced into alinement to elevate the tie-plate against the tension of its actuating-springs a printing-plate supported from said tie-plate above said bed-plate and above the type-slides and types, a lever for tripping said toggle-joint, together with a pivotally-supported lever for realining the arms of said toggle-joint, and a push-bolt adapted to actuate said trip-lever, to engage and actuate the joint-closing lever, and to release the locking-hook of said drawer, substantially as described.

9. A cash-register consisting of the combination of an inclosing case, having a cash-drawer and an automatic lock therefor, a series of type-slides movably supported by said case a numerically-graduated series of movable numeral types supported by certain of said slides, and a series of movable character types supported by other of said slides, a bed-plate located below the path of said slides, and one or more ink-ribbons stretched across said bed-plate, a printing-plate adapted to force one or more of the types into contact with said ink-ribbons, together with one or more rollers adapted to feed the record-strips over the bed-plate, and a push-bolt adapted to actuate said printing-plate and to release said drawer with its inward movement, and to communicate motion to said rollers during its outward or reverse movement, substantially as described.

10. A cash-register consisting of the combination of an inclosing case provided with a cash-drawer, one or more type-slides movably supported in slotted guides by said case, a series of vertically-movable spring-actuated types supported by slide or slides, and a bed-plate located under the path thereof, a revoluble winding-spool located in the rear of each slide, and an actuating-cord connecting it therewith, an adding-roller adapted to be actuated by the forward revolution of said winding-spool, a gear-wheel adapted to be periodically actuated by said roller, and a registering-drum connected by suitable gearing with said periodically-actuated gear-wheel, together with a manually-operated push-bolt for actuating the types in said type-slides, and opening the cash-drawer in connection therewith, substantially as described.

11. A cash-register consisting of the combination of an inclosing case provided with a cash-drawer, one or more slides movably supported in slotted guides by said case, a series of vertically-movable spring-actuated types supported by said slides, a series of interacting gear-wheels, and a revoluble registering-drum connected with said type-slides and adapted to be actuated thereby, together with a printing-plate for actuating said types individually, to print one or more record-strips, and a push-bolt for actuating said printing-plate and opening the cash-drawer, substantially as described.

12. A cash-register consisting of the combination of an inclosing

case having a cash-drawer, a series of movable type-slides supported by said case, a series of vertically-movable spring-actuated types supported by said slides, a series of winding-spools revolubly supported in the rear of said slides, cords or chains wound upon said spools and connected with said slides, slide-withdrawing springs adapted to be wound up by the forward revolutions of said spools, means for temporarily holding said spools against the tension of said springs, gearing adapted to communicate the motion of said spools to revolving registering-drums, and an arched portion of said case adapted to cover said drum, provided with a slot adapted to expose the registering-numerals thereon successively with the revolutions of said drum, together with an actuating push-bolt and suitable mechanism for communicating the motion thereof to said types independently, said bolt being also adapted to release said cash-drawer and winding-spools, substantially as described.

13. In a cash-register, substantially as described, the combination with the actuating push-bolt, of the rocking shaft 10, the hook-engaging catch 17 rigidly located in the bottom of the case, and the eccentric pivotally supported in the rear of said catch, together with the connections between said shaft and said eccentric adapted to communicate the motion of said shaft to the eccentric and to oscillate the latter, substantially as described.

14. A cash-register, consisting in the combination of an inclosing case provided with a cash-drawer, one or more type-slides movably supported in slotted guides by said case, a series of vertically movable types supported by said slide or slides, and a bed-plate located below the path thereof, one or more revoluble registering-drums located in the rear of said type slides, and connections between said slides and registering-drums, adapted to communicate the motion of the former to the latter together with means for simultaneously actuating said types and releasing said drawer, substantially as described.

15. In a cash-register, substantially as described, the combination of the inclosing case having a door in the rear thereof, and a hinged cover therefor, a locking-hook attached to said rear door adapted to engage with a catch attached to the case, a rod adapted to force said locking-hook into engagement with the catch, a pivotally-supported two-armed lever connected to said rod and a lug attached to the cover adapted to actuate the rod and force the same into engagement with the door-locking hook, substantially as described.

16. In a cash-register, the combination of the inclosing case, the front and rear covers and the rear door therefor, the door-locking rod adapted to be actuated by the front cover and the reciprocating key adapted to engage with a catch on the rear cover, together with the key-actuating mechanism, connecting said locking-rod with said key, substantially as described.

17. In a cash-register, the combination of a printing-plate supported by vertically-movable rods, a tie-plate connecting the lower ends of said rods, and one or more springs adapted to depress the tie-plate, together with means for supporting said tie-plate in opposition to said springs, and a drawer-releasing push-bolt for temporarily removing such support, substantially as described.

18. In a cash-register, the combination of a spring-actuated printing-plate, a toggle-jointed lever adapted to support said printing-plate in opposition to its actuating-springs, and a trip-lever adapted to force the arms of said toggle-joint out of alinement to remove the support from said printing-plate, substantially as described.

19. In a cash-register, the combination of a toggle-jointed lever adapted to support a printing-plate in opposition to one or more plate-actuating springs, a trip-lever for forcing the arms of said toggle-joint out of alinement with each other, and removing the support from said printing-plate, and a joint closing or realining lever adapted to force said arms into realinement, together with an actuating push-bolt adapted to successively actuate said trip-lever and said joint closing or realining lever, substantially as described.

20. In a cash-register, the combination of a revolving shaft and discharge-roller located thereon, a one-way clutch adapted to communicate motion from a reciprocating push-rod to said shaft, a record-roller, and a ribbon-winding spool, each independently connected with said shaft by suitable gearing, substantially as described.

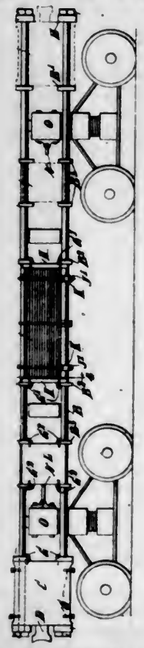
21. In a cash-register, the combination with a drawer-releasing push-bolt provided with a clutch on its rear end, of one or more spring-actuated winding-spools provided with pawl-engaging ratchets, a shaft located in the rear of said spool or spools provided with one or more ratchet-engaging pawls, and an arm attached to said shaft adapted to be engaged by said clutch, to rock the shaft and engage and disengage said pawls from their respective ratchet-wheels, substantially as described.

569,675. POCKET COIN-HOLDER. PHILIPP SEILER, Chicago, Ill. Filed June 1, 1896. Serial No. 593,691. (No model.)

Claim.—A coin or pocket safe consisting of two sections, each having peripheral overlying flanges, provided with slots and with notch indentations to interlock one with the other, to be held normally closed and to be opened by pressing upon opposite sides of the rim of the box, substantially as shown and described.



569,676. RAILROAD-CAR. JOHN SHAW, Woodburn, Oreg. Filed Jan. 16, 1896. Serial No. 575,696. (No model.)



Claim.—1. A railroad car, provided with a longitudinally-extending draw-frame comprising sets of upper and lower tubes, a block formed with longitudinal seats for part of the said rods, and clamping-bolts connecting diagonal tubes with each other and passing through said block, substantially as shown and described.

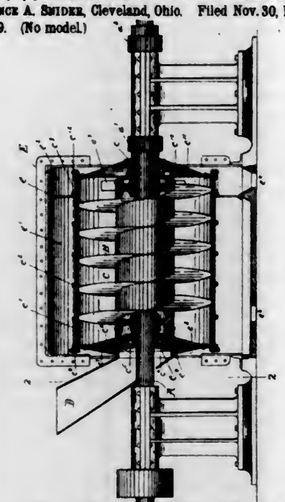
2. A railroad-car, provided with a longitudinally-extending frame comprising longitudinal rods having fixed collars, a spring-frame formed with longitudinal seats at its corners for said rods or tubes, and means for fastening said collars and spring-frame together, substantially as shown and described.

3. Draft mechanism for railway-cars, the mechanism comprising four parallel rods having rectangular relation to each other, a draw-head having longitudinal passages through which the rods respectively pass, and means for rigidly securing the draw-head to the rods, substantially as described.

4. Draft mechanism for railway-cars, the mechanism comprising four parallel rods having rectangular relation to each other, a block having longitudinal grooves respectively receiving the rods, ties located at each end of the block and connecting the rods, and U-shaped clamping-bolts connected to a portion of the rods and respectively extending diagonally to the diagonally-opposite rods to which the clamping-bolts are also connected, substantially as described.

5. Draft mechanism for railway-cars, the mechanism comprising parallel longitudinal rods, a block having longitudinal grooves respectively receiving the rods, the blocks being interposed between the rods, and clamp-bolts secured to the rods and passed diagonally through the block and connected with the respective diagonally-opposite rods, substantially as described.

569,677. CENTRIFUGAL DRYING AND FILTERING MACHINE. CLARENCE A. SNIDER, Cleveland, Ohio. Filed Nov. 30, 1895. Serial No. 570,669. (No model.)



Claim.—1. In a centrifugal drying and filtering machine, the combination of a revoluble perforated drum, having large peripheral discharge-openings near one end, and an annular V-shaped pocket at the other end, which pocket has an axial feed-opening, and a series of openings to the drum near the apex of said pocket, a screw conveyer in said drum, and differential driving mechanism for said drum and conveyer, substantially as and for the purpose specified.

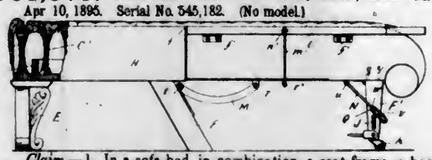
2. In a centrifugal drying and filtering machine, the combination of a shaft, a drum having (1) hubs which are mounted on the shaft, (2) the perforated body part having the large peripheral discharge-openings near one end, and (3) the dish-shaped end plate with openings to the drum, and an oppositely-bent dish-shaped false end piece with an axial feed-opening, a screw conveyer fastened to the shaft within the drum, and differential driving mechanism for said shaft and drum, with an inclosing casing having the internal partition-flange, substantially as and for the purpose specified.

569,678. INDIVIDUAL COFFEE OR TEA SERVICE UTENSIL. ALBERT F. STEPHENS and RICHARD T. CONNELL, St. Joseph, Mo. Filed Jan. 13, 1896. Serial No. 575,224. (No model.)



Claim.—As a new article of manufacture, an individual coffee or tea service utensil, comprising a perforated bowl having a handle, a lid or cover for the same also provided with a handle, and a foraminous cylinder or casing within said bowl held in place by the bottom of the bowl and the cover thereof, substantially as shown and described.

569,679. SOFA-BED. HENRY M. STOKES, Boston, Mass. Filed Apr 10, 1895. Serial No. 545,182. (No model.)



Claim.—1. In a sofa-bed, in combination, a seat-frame, a back-frame hinged thereto, a leg pivoted to the back, a bar adapted to slide in grooves or guideways on the back, a rod pivoted to said sliding bar, a slot in said rod engaging with a shoulder on the leg, a curved bar pivoted to the lower end of said sliding bar and to the seat-frame or its leg.

2. In a sofa-bed, in combination, a seat-frame, a back-frame hinged thereto, a bar adapted to slide in grooves or guideways on the back, a panel or board hinged at the front of the back, a rod pivoted by one end to said panel, and by its other end to the sliding bar, and a curved bar pivoted to the lower end of said sliding bar and to the seat-frame or its leg.

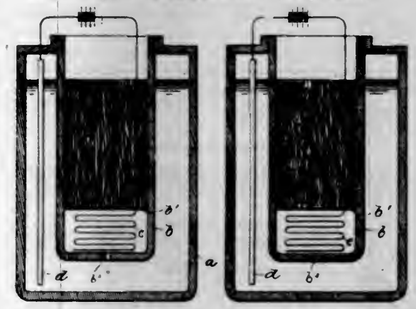
3. In a sofa-bed, in combination, a seat-frame, a back-frame hinged thereto, a leg pivoted to the back, a bar adapted to slide in grooves or guideways on the back, a rod pivoted to said sliding bar, a slot in said rod engaging with a shoulder on the leg, a panel or board hinged at the front of the back, a rod pivoted by one end to said panel and its other end to the sliding bar and a curved bar pivoted to the lower end of said sliding bar and to the leg.

4. In a sofa bed, in combination, a seat-frame, a series or line of springs along the front, an upholstered piece extending along the front, and backward over the top and resting on the line of springs and a movable cushion for the seat-frame which lies up against and meets the back edge of the front upholstered piece.

5 In a sofa-bed the combination with a seat-frame, of a back-frame provided at its top with an overhanging longitudinally-recessed projection, and a cushion arranged upon the seat and back frame and having its upper edge seated in the recess of the overhanging projection, substantially as described.

6. In a sofa-bed, in combination, a seat-frame and a back-frame, a series of springs in said frames, an upholstered piece in front of the seat-frame projecting over the top edge of the frame and resting on a line of springs at the front, a recess in the upper part of the back-frame and a cushion extending from the front piece, along the seat and back and its upper edge being disposed in said recess in the back.

569,680. ELECTROLYTIC PROCESS OF BLEACHING AND REFINING. BERTRAND S. SUMMERS and LELAND L. SUMMERS, Chicago, Ill. Filed Nov. 29, 1895. Serial No. 570,394. (No specimens.)



Claim.—1. The herein-described method of bleaching, which consists in immersing the material to be bleached in the region of the positive pole in an electrolytic bath containing a hydrate and a fluoride, passing a current of electricity through said bath, and isolating the chemical agents passing to the positive pole which come in contact with the material to be bleached from the agents passing to the negative pole, substantially as described.

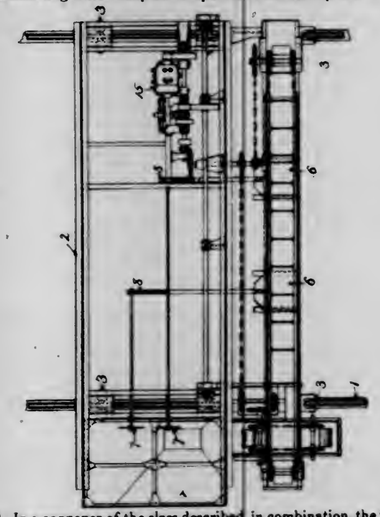
2. The herein-described method of bleaching by which the deleterious effects of the bleaching agent are prevented, which consists in immersing the material to be bleached in an electrolytic bath containing a fluoride and a material yielding a bleaching agent when electrolyzed, and passing a current of electricity through said bath, whereby the fluoride acts to prevent deleterious action upon the material being bleached, substantially as described.

3. The herein-described process of degumming, bleaching and refining vegetable fibers which consists in first subjecting the same to the influence of a combined hydrate and fluoride bath, passing a current of electricity through said bath, and then subjecting said fibers to the influence of a fluoride bath, and passing a current of electricity through said fluoride bath; substantially as described.

4. The herein-described process of degumming, bleaching and refining vegetable fibers which consists in subjecting the same to the influence of a bath containing sodium hydrate and a small quantity of a fluoride, passing a current of electricity through said bath, and then subjecting the fibers to the influence of a fluoride bath, and passing a current of electricity through said bath; substantially as described.

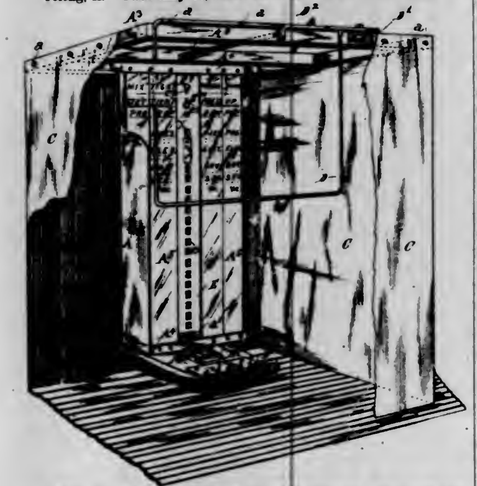
569,681. CONVEYER. MAXIMILIAN M. SUPPES, Lorain, Ohio. Filed June 25, 1896. Serial No. 596,855. (No model.)

Claim.—1. In a conveyer of the class described, in combination a horizontal frame movable upon a track, a horizontal conveyer upon said frame, a pocket carried by said frame and at a distance below the horizontal conveyer, a vertical conveyer passing through said horizontal conveyer, their axes being at right angles to each other, said vertical conveyer being adapted to remove the material from the pocket and deliver it to the horizontal conveyer, and means carried by the traveling frame adapted to operate the several parts.



2. In a conveyer of the class described, in combination, the frame 2 adapted to travel upon track 1, the horizontal conveyer 5 carried by the frame, the bin 9, the chute 10 adapted to convey material from bin 9 to pocket 11, the vertical conveyer 12 arranged at one end of conveyer 5 to remove material from pocket 11 and deliver it to conveyer 5, the gates 6 in the trough 4 and motor 15 adapted to operate the several parts.

569,682. VOTE-RECORDING MACHINE. WILLIAM A. SWAREN, Oblong, Ill. Filed May 16, 1895. Serial No. 549,558. (No model.)



Claim.—1. The herein-described vote-recording apparatus consisting of a cabinet; a plate attachable to said cabinet and having apertures corresponding in number and position to the designations of the respective offices for which there are candidates to be voted for, irrespective of the number of said candidates; a ballot or ballots attachable to said cabinet, and having official designations registering with the apertures in said plate, also having in range with said apertures the names of the candidates of the several parties for each of said offices respectively; an intermittently-movable tally-sheet within said cabinet contiguous to said apertures; and means adapted to print through said apertures on said tally-sheet the party designations of the respective candidates for which votes are cast; as set forth.

2. In a vote-recording apparatus the means adapted to facilitate the insertion, adjustment and removal of the tally-sheet in the cabinet; consisting of the rolls G, G' the plates G^3, the spindles g, g', g^3, the shaft F^3, the plate F, the standard F', the screws F^2, F^4, and the jam-nuts F^4, in combination with; the cabinet within which the rolls are supported, and a tally-sheet connected with said rolls, as set forth.

3. In a vote-recording apparatus the means adapted to automatically close and lock the voting-apertures when the gate of the booth is open; consisting of the slides E', E^3, the spring E^4 between said slides, the upper and lower locks on the face-plate, the lower bolt of the upper lock engaging with the slide E' to prevent downward movement of that slide, and the lower bolt of the lower lock engaging with the slide E^3 to prevent upward movement of that slide; the rod E^5 provided with cams and the spring E^6 adapted to react and move the rod E^5 upward, in combination with; the cabinet and the face-plate on the cabinet having apertures with which the apertures in the slides register, as set forth.

4. In a vote-recording apparatus the locks E^9 each provided with two spring-bolts, the slides E', E^3, provided with notches adapted to receive the bolts, the upper bolt of the upper lock being adapted when pushed out to prevent upward movement of the slide E' and the lower bolt of the same lock being adapted to prevent downward movement of the slide E', the lower bolt of the lower lock being adapted to prevent upward movement of the slide E^3 and the upper bolt of the lower lock being adapted to prevent downward movement of the same slide, the spring interposed between the slides E' and E^3, the spring E^3 connected with the slide E' and adapted to react to pull the slide upward, the rod E^5 having cams adapted to move the bolts of the locks E^9, the spring E^6 connected with the rod E^5 and adapted to react to pull the rod upward, in combination with; the cabinet, a face-plate on the cabinet, a frame on the cabinet provided with a gate adapted to engage with the rod J, the rod J, the slide F^6 connected with the rod J and provided with a cam f^3 engaging with the rod E^5 and the spring K supported on the cabinet and adapted to react to move the slide F^6; all cooperating for the purpose of locking and unlocking the slides E' and E^3, as set forth.

5. In a vote-recording apparatus having an intermittently-moving tally sheet and mechanism for actuating same, the means adapted to lock said actuating mechanism; consisting of a rod J provided with notches j, j', a tube J' inclosing said rod, the guide D^7 connected with the tube, the slides D^4, D^5 moving in the guide D^7, and means adapted to move said slides alternately inward and outward, as set forth.

6. In a vote-recording apparatus the gate having a segment-plate D^3 provided with hooks d', d^3, the spring D^2 connected with said gate, the slides D^4 and D^5 adapted to be moved in one direction by the fingers d^3 and d' respectively, and adapted to be moved in the opposite direction by the spring D^6 and D^8 respectively, the guide D^7 accommodating the slides D^4, D^5, the tube J' with which the guide is connected, the rod J within the tube and having notches in which said slides engage in combination with; the cabinet, an intermittently-moving tally-sheet within the cabinet actuated by the mechanism connected with the rod J, and the frame supported on the cabinet and supporting the gate; all cooperating to control the movement of the tally-sheet by the opening and closing of the gate, as set forth.

7. In a vote-recording apparatus the combination of, a cabinet; a rectangular frame detachably connected with said cabinet; a gate and curtains supported on said frame; an apertured face plate on said cabinet; slides within said cabinet having apertures registering with the apertures in said face-plate; and locking mechanism engaging with said slides and operated by said gate; as set forth.

8. In a vote-recording apparatus, the combination of; a cabinet provided with supporting plates and having in its lower part a receptacle for written ballots, also having in its back a door; an apertured face-plate on the front of said cabinet; slides having apertures registering with the apertures in said face-plate; a rotatable roll contiguous to said slides; a tally-sheet on said roll; and means adapted to print on said tally-sheet against said roll and through the apertures in said face-plate and slides; as set forth.

9. In a vote-recording apparatus the combination of a cabinet, means connecting said cabinet with a supporting structure, a frame detachably connected with the top of said cabinet, curtains connected with said frame, an apertured face-plate connected with said cabinet, slides connected with said face-plate and adapted to open and close the apertures therein, locks on the face-plate engaging with said slides, a tally sheet, rolls within the cabinet carrying the tally-sheet, means adapted to intermittently rotate said rolls and move said tally-sheet contiguous to the apertures in the face-plate, means adapted to imprint votes on said tally-sheet through the apertures in the face-plate, and a gate on the frame connected with the cabinet and adapted to operate locks controlling the mechanism actuating the tally-sheet substantially as set forth.

10. In a vote-recording apparatus of that class employing an intermittently-moving tally-sheet, the means adapted to lock the mechanism actuating the tally-sheet, in such manner as to prevent untimely movement thereof, consisting of a suitably-supported ratchet-wheel H provided with holes h^2 and connected with one of the rolls carrying the tally-sheet, a reciprocating slide F^8 provided with a double cam f', a bar F^9 provided with a bolt F^{10} adapted to enter the holes h^2 and a pawl h engaging with the teeth of the ratchet-wheel, all co-operating as set forth.

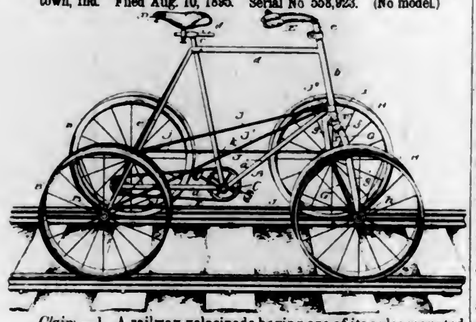
11. In a voting apparatus, the combination of; a cabinet; rotatable rolls within said cabinet; a tally-sheet connected with said rolls a face-plate contiguous to said tally-sheet and provided with apertures; a reciprocating rod J; a slide connected with said rod and provided with a pawl adapted to engage with the teeth of a ratchet-wheel; a ratchet-wheel connected with one of said rolls a pawl adapted to engage with the teeth of and prevent backward movement of said ratchet-wheel; and a spring adapted to react and move said slide, also adapted to retain the pawl on the slide in engagement with the ratchet-wheel; as set forth.

12. In a vote-recording apparatus the combination of; a cabinet; a perforated face-plate secured to said cabinet; perforated slides moving in guides and adapted to abut against each other; locks having alternately-operating bolts engaging with said slides; and a tally-sheet contiguous to the apertures in said slides; as set forth.

13. In a vote-recording apparatus, the combination of; a cabinet; a perforated face-plate secured to the cabinet; a perforated slide E' working in guides in said face-plate; a perforated slide E^3 working in guides in the slide E'; a spring interposed between and acting against said slides; a lock secured to said face-plate and having two alternately-operating bolts engaging with the slide E' one of said bolts serving to limit the upward movement of said slide, and the other serving to limit the downward movement of said slide; a lock secured to said face-plate and having two alternately-operating bolts engaging with the slide E^3, one of said bolts serving to limit the upward movement of said slide and the other serving to limit the downward movement of said slide; and an intermittently-moving tally-sheet contiguous to the apertures in said slides; as set forth.

14. In a vote recording apparatus the combination of a cabinet, means connecting said cabinet with a supporting structure, a frame detachably connected with the top of said cabinet, curtains connected with said frame, an apertured face-plate connected with said cabinet, slides connected with said face-plate and adapted to open and close the apertures therein, locks on the face-plate engaging with said slides, a tally-sheet, rolls within the cabinet carrying the tally-sheet, means adapted to intermittently rotate said rolls and move said tally-sheet contiguous to the apertures in the face-plate, and a gate on the frame connected with the cabinet and adapted to operate locks controlling the mechanism actuating the tally-sheet substantially as set forth.

569,683. RAILWAY-VELOCIPEDE. CHARLES N. TRETOR, Hagerstown, Ind. Filed Aug. 10, 1895. Serial No. 558,923. (No model.)



Claim.—1. A railway-velocipede having one of its axles mounted to rock or turn a limited distance in its support, in combination with jointed braces connected to the movable axle, for the purposes described, substantially as set forth.

2. A railway-velocipede having one of its axles arched and mounted to rock or turn in its bearing to adjust the wheels thereon close to the wheels on the other axle, in combination with prop-jointed braces connected to the two axles, and clamps engaging with the adjustable axle to hold the same in fixed relation to the other axle, substantially as and for the purposes described.

3. In a railway-velocipede, the combination with a rear axle, of a sleeve f, an arched axle fitted in the sleeve and adapted to turn or rock therein, clamps carried by the sleeve and engaging with the arched axle, and jointed braces pivoted to the front axle, substantially as described, for the purposes set forth.

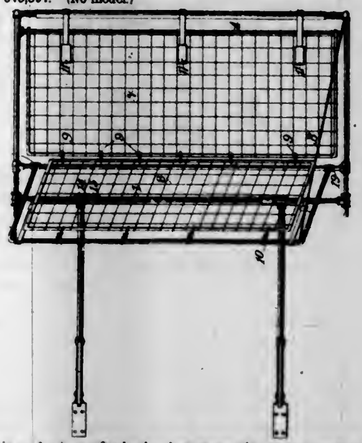
4. In a railway-velocipede, the combination with a suitable frame, and a rear straight axle having the wheels B', of a forging F having the axle-sleeve f, the arched axle fitted in said sleeve and carrying the wheels H at its outer arched ends, clamps carried by the sleeve and embracing said axle G, and jointed braces connected to said front and rear axles, substantially as and for the purposes described

5. In a railway-velocipede, the combination with a frame having the reach-bars and a steering-head, of a rear axle carried by the frame, a front axle on the steering-head, the diagonal braces on opposite sides of the reach-bar and attached at their respective ends to the steering-head and the rear axle, and wheels on said axles, substantially as and for the purposes described.

6. In a railway-velocipede, the frame having a steering-head, the reach bars, and the inclined rear bars c, combined with a front axle on the steering-head, a rear axle supported by the reach, the wheels on the ends of said axles, and the diagonal braces on opposite sides of the reach and attached at their ends to the steering-head and the rear axle, respectively, substantially as described.

7. In a railway-velocipede, the combination with a frame, a rear wheeled axle, and a steering-head, of an adjustable wheeled front axle having means for holding the same in rigid relation to the head, and diagonal braces joined to the head and the rear axle, substantially as described.

569,684. CAR-FENDER. WILLIAM THOMPSON, Albany, N. Y., assignor to Eugene R. Hartt, same place. Filed Dec. 28, 1895. Serial No. 573,597. (No model.)



Claim.—1. A car-fender having supporting-arms arranged to be attached to the car-truck, said arms having a rotatable bar attached thereto and adjustable clutch devices arranged to limit the rotation of the bar, and retaining devices arranged to receive and removably hold the fender in position substantially as described.

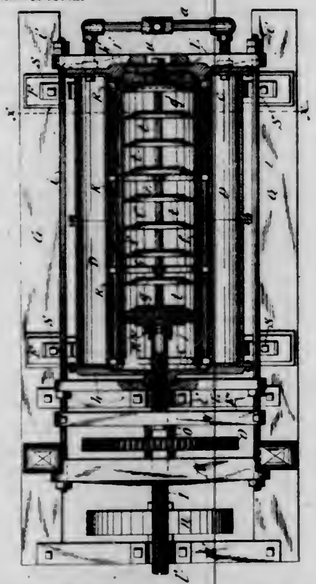
2. A car-fender consisting of supporting-arms arranged to be attached to the car or its accessories, said arms having a rod or bar revolubly attached thereto and stop devices arranged to control the movement of said bar, and a main framework arranged to be removably attached to the rod or bar, and a movable dashboard-guard arranged to fold upon the main framework and resilient retaining devices arranged to hold the dashboard-guard in position and a bed attached to the framework and to the dashboard-guard, the resilient retaining devices being arranged to allow resilience to the bed and dashboard-guard substantially as described.

3. A car-fender having a movable contact-cushion consisting of a flexible cable covered with a cushioning material and having springs at its ends arranged to exert their resilience endwise of the flexible cable, said springs being helical in form and consisting of a plurality of helical springs, the convolutions thereof being sufficiently spread and arranged so that the convolutions of one will lie between those of the other and turn or rotate in order that the length of the springs may be lengthened or shortened, that more or less resilience may be exerted on the cushioned cable substantially as described.

569,685. APPARATUS FOR SHAPING WOOD AND PULP PLATES. FRANKLIN D. TIFT, Beaver Falls, N. Y., assignor to William J. Hiss, East Orange, N. J. Filed July 19, 1895. Renewed Sept. 9, 1896. Serial No. 605,331. (No model.)

Claim.—1. The combination of the cylinder C formed with the steam-jacket D and opening D' through said jacket and provided with

the door B, the rack R composed of the cradles *c c* and longitudinal rods connecting said cradles to each other, the dies *g g'* in opposite ends of the cylinder and the press screw I pivotally connected to one of said dies as set forth.



2. In combination with the cylinder C, the rack R composed of semicircular cradles *c c*, connected by rods *d d'* and metallic pipes *f f* receiving said rods through them and abutting against the cradles substantially as set forth and shown.

3. The combination, with the cylinder C, die *g* and press-screw I, of the head *h'* formed with the recess *r'*, the die *g'* seated in said recess and the bolt *u* securing said die to the aforesaid head as set forth and shown.

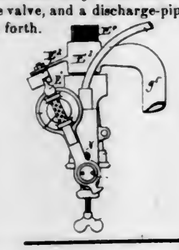
4. The combination of the cylinder C formed with the steam-jacket D and opening D' through said jacket, the door B over said opening, the heads *h h'* closing the ends of the cylinder, the rack R seated in the cylinder for supporting the blanks, the die *g'* fastened to one of said heads, the press-screw I extending through the opposite head, and the die *g* pivotally connected to said screw as set forth.

5. The combination of the cylinder C formed with the steam-jacket D, the heads *h h'* closing the ends of the cylinder the tie-rods *i i* securing said heads to the cylinder and extending beyond the head *h*, the cross-heads N N secured to the extensions of said rods, the press-screw I passing through said cross-heads, the nut O' confined between the cross-heads and formed with the gear wheel O, the shaft *l* parallel with the said screw and provided with the driving-pulley *n*, the pinion P fixed to said shaft and meshing with the aforesaid gear-wheel, the die *g* connected to the inner end of the screw, and the die *g'* seated in the opposite end of the cylinder substantially as set forth and shown.

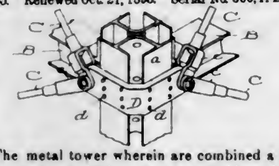
569,686. FIRE-EXTINGUISHING APPARATUS. JOSEPH L. TIRARD, Caen, France. Filed Dec 19, 1894. Serial No. 532,332. (No model.)

Claim.—1. The combination with a thermostat a rotatable arm carrying the latter a frangible tube adapted to be broken by the said arm when rotated, an air-tube in communication with the frangible tube, a counterbalanced rotatable body, a receptacle containing liquid and into which receptacle the air-tube leads said receptacle adapted to discharge into the rotatable body when the frangible tube is broken to effect the tilting of the said body in the manner described, a water-pipe, a valve therein, a rotatable arm adapted to be operated by the tilting body and devices intermediate the arm and the valve adapted to permit of the opening of the valve when the said body is tilted and a discharge-pipe in connection with the water-pipe, all as set forth.

2. The combination with a thermostat, a rotatable arm carrying the latter, a frangible tube adapted to be broken by the said arm when rotated a counterbalanced rotatable body an air-tube in communication with the frangible tube, a receptacle containing liquid and into which receptacle the air-tube leads, said receptacle adapted to discharge into the rotatable body when the frangible tube is broken to effect the tilting of the said body, in the manner described, a water-pipe, a valve therein, the valve-rod, a rod jointed at one end thereto, a shaft having a notch in which the opposite end of said rod seats, a rotatable arm mounted at one end on said shaft and adapted to rotate when the aforesaid body tilts, to cause the shaft to rotate and free the lower end of the jointed rod from the notch and permit the opening of the valve, and a discharge-pipe in connection with the water-pipe, as set forth.

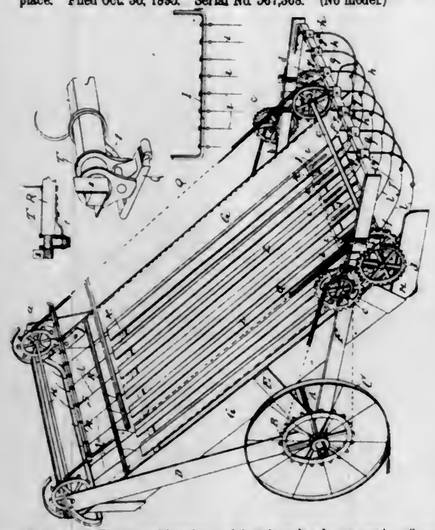


569,687. METAL TOWER. JAMES TODD, Batavia, Ill., assignor to the Challenge Wind Mill and Feed Mill Company, same place. Filed Jan. 30, 1895. Renewed Oct. 21, 1895. Serial No. 566,414. (No model.)



Claim.—The metal tower wherein are combined a Larimer column arranged with one of its beams at the outside and the other at the inside, a band D placed around said outer beam and secured to both flanges thereof, and also having its ends extended beyond said flanges without however being attached to the flanges of the inside beam, and tension-braces C attached to the ends of said band and exerting their tension in directions parallel to the faces of the flanges of said outer beam, whereby the tendency of the braces to straighten out the bend in the web of said outer column-beam is overcome, substantially as specified.

569,688. HAY RAKE AND LOADER. HOMER J. VAN NOSTRAN, Canton, Ohio, assignor of two-thirds to Joseph E. Van Nostran, same place. Filed Oct. 30, 1895. Serial No. 567,368. (No model.)



Claim.—1. The combination with a hay-loader trough, of endless chains carrying rotatable rake-heads, and independently-adjustable stripping-wires arranged longitudinally of and above the bottom of the trough to strip the hay from the teeth of the rake, substantially as set forth.

2. The combination with a hay-loader trough, of stripping-wires, extending longitudinally thereover the full length of the trough, and independently adjustably secured at one of the ends thereof, substantially as described and for the purpose set forth.

3. In a hay-loader, the combination with the trough, of stripping-wires extending longitudinally above said trough, and a coupling-bar extending across the frame of the machine, boxes carried thereon, independently-adjustable supports engaging therewith for carrying one end of the stripping-wires, substantially as set forth.

4. The combination in a hay-loader, having gear and chain wheels, driven by a chain connection with the supporting and driving wheels, of sliding boxes supported on the rearwardly-projected frame thereof, having journaled therein, shafts carrying the gear and chain wheels, depending brackets, screw-threaded shaft supported therein, and the retaining-nuts, substantially as described and for the purpose set forth.

5. The combination in a hay-loading trough, of the slats extending longitudinally therethrough, and forming the bottom of the same, with extension-slats, having slotted apertures therein, and adapted to be adjustably attached to the lower ends of the bottom slats, substantially as described and for the purpose set forth.

6. The combination in a carrier-chain, for hay-loaders, of a carrier-link pivoted to said chain and provided with upwardly-projecting apertured lugs, with a rake-head journaled in the apertures of said lugs, the L-shaped trips *s* on the ends of said head adapted to engage with guides at the top of the trough of the loader whereby the teeth of the rake may be stripped from the hay, substantially as set forth.

569,689. ARTIFICIAL FUEL. JOHN VAN OPSTAL, New York, and EMIL M. FORST, Woodside, N. Y. Filed June 28, 1895. Serial No. 554,355. (No specimens.)

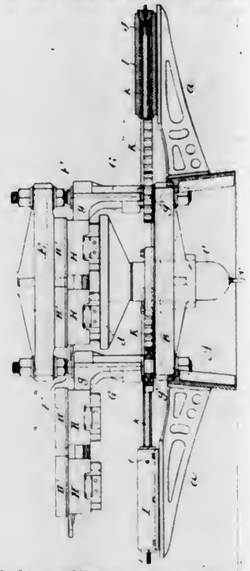
Claim.—1. The process of producing an artificial fuel which consists in treating coal-tar pitch with soda to purify the same, removing the soda and the impurities, mixing the pitch, so purified, with coal-dust, and molding the mixture, substantially as described.

2. The process of producing an artificial fuel which consists in adding soda to molten pitch, boiling the mixture so as to cause the soda to combine with the impurities of the pitch, separating the pitch from the soda and impurities, mixing the pitch with coal-dust, and molding the mixture, substantially as described.

3. As a new composition of matter, coal-tar pitch, purified by soda, and coal-dust, mixed substantially in the proportions specified.

4. As a new composition of matter, coal-dust and coal-tar pitch deprived of its acid constituents, mixed substantially in the proportions described.

569,690. MOLDING-PRESS. GEORGE W. VAN TINE, Bayonne, N. J. Filed Oct. 25, 1893. Serial No. 489,125. (No model.)

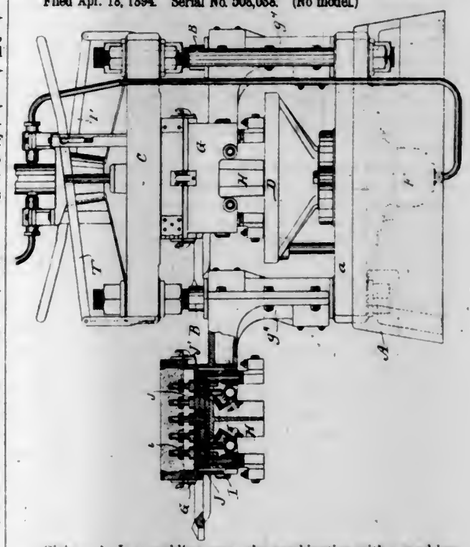


Claim.—1. In a molding-press, the combination with pressure-cylinders, pistons working therein and racks operatively connected with said pistons, of swinging sand-boxes and gears engaged by said racks and operatively connected with said sand-boxes.

2. In a molding-press, the combination with the posts or standards thereof, of sleeves surrounding said posts or standards and provided with gears, sand-boxes carried by arms extending from said sleeves, pressure cylinders, pistons working in said cylinders and racks engaging said gears and operated from said pistons.

3. In a molding-press, the combination with the posts or standards F, of the sleeves G surrounding said posts and provided with the gears *g'* and the arms *g*, sand-boxes H supported by said arms, pressure-cylinders I, pistons J working therein, racks K engaging said gears, and rods *k* connecting said racks with said pistons.

569,691. MOLDING-PRESS. GEORGE W. VAN TINE, Bayonne, N. J. Filed Apr. 18, 1894. Serial No. 508,088. (No model.)



Claim.—1. In a molding-press, the combination with a sand-box and a press-block and pattern-plate vertically movable in said box, of a plurality of superposed strippers or stripping-plates movable independently of each other and of said pattern-plate, and which are to be moved upward with the latter at the pressing operation, and mechanism, operated by said press-block, whereby said strippers or stripping plates are successively released so that they may be lowered independently of and one after the other, and independently of said pattern-plate.

2. The combination with a sand-box G, and strippers J and J' all vertically movable in said sand-box, said strippers having, respectively, the depending projections *m* and *n*, of the spring-acted rockers I' having arms *p* and *p*^{a}, of different lengths, and having also the arms *p*^{b} to be acted on by parts of the said press-block to operate said rockers in opposition to the action of their springs.

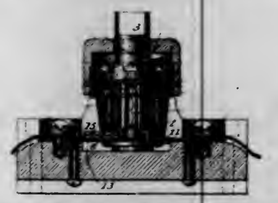
3. In a molding-press, the combination with a cope-forming sand-box, of a pattern or gate or runner forming plate vertically movable in said sand-box and provided with one or more openings and with one or more hollow projections above said openings, of a sprue-former supported by the press-head and vertically movable relative thereto and having one or more tapering portions arranged to register with said hollow projections and openings when the said sand-box is in pressing position in the press.

4. The combination with the press-head C, of the sprue-formers *t* vertically movable relative thereto and having tapering portions *t'*, the operating hand-levers T for depressing or lifting said sprue-formers, and the sand-box G', of the press-block H and the plate I' both having openings *h'* and the said plate having the hollow projections *t*^{2} registering with said openings.

569,692. MULTIPLE-FUSE CUT-OUT. GARDNER T. VOORHEES, Boston, Mass., assignor to the Voorhees Electric Company, same place. Filed Feb 26, 1894. Serial No. 501,623. (No model.)

Claim.—1. As a new article of manufacture, a multiple-fuse cut-out, consisting of a fuse carrier; a plurality of fuses carried thereby; a contact at one end of each fuse; an exposed contact for the other end of the fuse, a conducting-shell for the fuse-carrier; and a conductor connecting the shell with the fuses *seriatim*; the shell being formed with an opening, the exposed fuse-contact exposed at said opening, and the shell and carrier being movable one in relation to the other; all substantially as and for the purpose set forth.

2. As a new article of manufacture, a multiple-fuse cut-out, consisting of a fuse-carrier; a plurality of fuses carried thereby; a contact at one end of each fuse; an exposed contact for the other end of the fuse; a conducting-shell for the fuse-carrier; and a conductor connecting the shell with the fuses *seriatim*; the shell being provided with two openings; the fuse-carrier being exposed at one of said openings; and the exposed fuse-contact being exposed at the other of said openings, all combined substantially as and for the purpose set forth.



3. As a new article of manufacture, a multiple-fuse cut-out consisting of a fuse-carrier; a plurality of fuses carried thereby; a contact for one end of each fuse; an exposed contact for the other end of the fuses, a conductor connecting the conducting-shell with the fuses *seriatim*; and an insulator intermediate the conducting-shell and the fuse-carrier, the conducting-shell having an opening at which the exposed fuse-contact is exposed and the shell and carrier being movable, one in relation to the other, all substantially as and for the purpose set forth.

4. The combination with a base and a fuse-cut-out-receiving socket, having a terminal within it which terminal is insulated from it, of a multiple-fuse cut-out comprising a multiple-fuse carrier; a plurality of fuses carried thereby; independent contacts for one set of fuse ends; an exposed contact for opposite fuse ends; a conducting-shell for the fuse-carrier; a conductor connecting the fuse-contacts *seriatim* with the conducting-shell; the shell having an opening and coupling with said socket and the exposed fuse-contact electrically connecting with the terminal within said socket, all substantially as and for the purpose set forth.

5. In a multiple-fuse cut-out, the combination of a fuse-carrier, a series of fuses carried thereby and separated one from the other by partitions; a non-conducting shell about the fuse-carrier having an exposed shell-contact and a conductor connecting the exposed shell-contact and fuses *seriatim*, substantially as and for the purpose described.

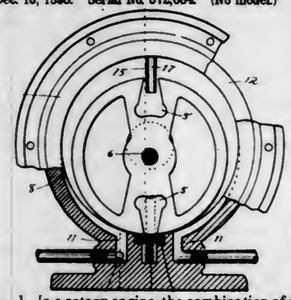
6. As a new article of manufacture, a multiple-fuse cut-out consisting of a fuse-carrier, a plurality of fuses carried thereby, a contact at one end of each fuse, an exposed contact for the other end of the fuse, a non-conducting shell for the fuse-carrier carrying an exposed contact, and a conductor connecting the exposed shell-conductor with the fuses *seriatim*, the shell being formed with an opening, the exposed fuse-contact being exposed at said opening, and the shell and carrier being movable one in relation to the other, all substantially as and for the purpose set forth.

7. As a new article of manufacture, a multiple-fuse cut-out consisting of a fuse-carrier, a plurality of fuses carried thereby, a contact at one end of each fuse, an exposed contact for the other end of the fuse, a non-conducting shell for the fuse-carrier having an exposed shell-contact, and a conductor connecting the exposed shell-contact with the fuses *seriatim*, the shell being provided with two openings, the fuse-carrier being exposed at one of said openings, and the exposed fuse-contact being exposed at the other end of said openings, all combined substantially as and for the purpose set forth.

8. As a new article of manufacture, a multiple fuse cut out consisting of a fuse-carrier, a plurality of fuses carried thereby, a contact for one end of each fuse, an exposed contact for the other end of the fuses, a conductor connecting the exposed shell-contact with the fuses *seriatim*, and an insulator intermediate the exposed shell-contact and the fuse-carrier, the insulator having an opening at which the exposed fuse-contact is exposed, and the insulator and carrier being movable one in relation to the other, all substantially as and for the purpose set forth.

9. The combination with a base and a fuse-cut-out-receiving socket, having a terminal within it, which terminal is insulated from it, of a multiple-fuse cut-out comprising a multiple-fuse carrier, a plurality of fuses carried thereby, independent contacts for one set of fuse ends, an exposed contact for opposite fuse ends, a non-conducting shell for the fuse-carrier having an exposed shell-contact, a conductor connecting the fuse-contacts *seriatim* with the exposed shell-contact, the shell having an opening and coupling with said socket so that the exposed shell-contact contacts with said shell, and the exposed fuse-contact contacts with the terminal within said socket, substantially as and for the purpose set forth.

569,693. ROTARY ENGINE. ISAAC WARNER, Vera Cruz, Ind. Filed Dec. 13, 1895. Serial No. 572,064. (No model.)



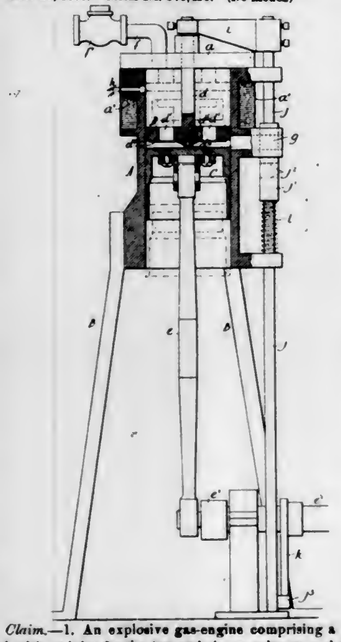
Claim.—1. In a rotary engine, the combination of a cylinder provided with beveled edges on its inner ends: a piston-hub arranged eccentrically therein: two disks for carrying the pistons provided with beveled peripheries adapted to revolve in and against the beveled edges of the cylinder and against the piston-hub: steam-pipes adapted to discharge live steam between the disks and cylinder-heads: two pistons attached separately to the disks, one to each; and provided with seats for metallic packing-pieces for said pistons: metallic pieces for said pistons: a metallic piece placed within the cylinder between the ports: and springs placed under the metallic pieces to hold them in position respectively.

2. In a rotary engine, two disks for carrying two pistons independently of each other, provided with bevel shaped peripheries and a cylinder having its ends beveled to form seats for the disks.

3. In a rotary engine, two disks for carrying two pistons independently of each other adapted to be revolved against the ends of the cylinder respectively in seats provided therefor, cylinder-heads placed so as to form a chamber between them and the disks, and steam-pipes forming a communication between said chambers and the induction-port respectively.

4. In a rotary engine, two disks placed at opposite ends of the cylinder in combination with two pistons rigidly attached, one to each disk, and the two disks with their respectively attached pistons arranged to move independently of each other.

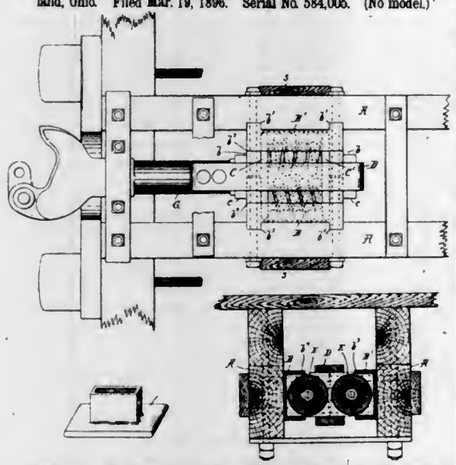
569,694. GAS-ENGINE. MAX W. WEIR, Newark, N. J. Filed Nov. 29, 1895. Serial No. 570,459. (No model.)



Claim.—1. An explosive gas-engine comprising a cylinder provided with an inlet for the gas and air, an exhaust, and spark-producing means, a working piston, a compression-piston having valve-controlled openings, and means for operating said compression-piston and controlling the exhaust comprising a rod having connections at its upper end with said piston and having a valve connection with the exhaust and controlled by cam connection with the driving-shaft.

2. An explosive gas-engine comprising a cylinder provided with an air and gas inlet, an exhaust and a spark-producing device, a working piston having crank connection with the driving-shaft, a compression-piston having a plurality of apertures normally closed by a spring-controlled disk valve, and having a rod extending without the cylinder, and a rod for operating the compression-piston and controlling the exhaust having connection at its upper end with the piston-rod and having a slotted portion moving across the exhaust-passage, said rod being normally raised, and a cam on the driving-shaft for intermittently depressing said rod.

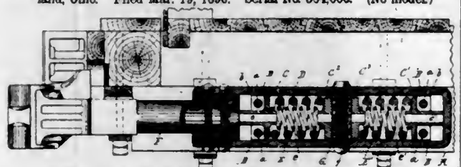
569,695. DRAFT-RIGGING FOR CARS. GEORGE L. WEISS, Cleveland, Ohio. Filed Mar. 19, 1896. Serial No. 584,005. (No model.)



Claim.—1. In draft-rigging for railway-cars, the combination of a casing having end plates *b b* and outwardly-extending ribs *b' b'* in line with said end plates, said plates and ribs having transverse holes b^3 b^3 for the retaining-bolts, follower-plates within the casing at both ends thereof having integral stems which project through said end plates between the bolt-holes, two springs side by side within said case, between said follower plates, a strap which embraces said casing, follower-plates and springs, and the draw-bar connected with the front end of said strap, substantially as and for the purpose specified.

2. In draft-rigging for railway-cars, the combination of a casing composed of two twin sections, each having end buffer-plates *b b* at both ends, said end plates at each end of both sections having two transverse horizontal bolt-holes, bolts in said holes, the follower-plates *C C'* within said casing at both ends thereof, having integral stems, wider than they are high, which extend out through the end plates between the bolt-holes, two springs set side by side within said casing, flanges upon the upper and lower edges of said casing-sections which prevent the removal of the springs, a strap which embraces said casing, follower-plates and springs, and the draw-bar secured to the front end of said strap, substantially as and for the purpose specified.

569,696. DRAFT-RIGGING FOR CARS. GEORGE L. WEISS, Cleveland, Ohio. Filed Mar. 19, 1896. Serial No. 584,006. (No model.)

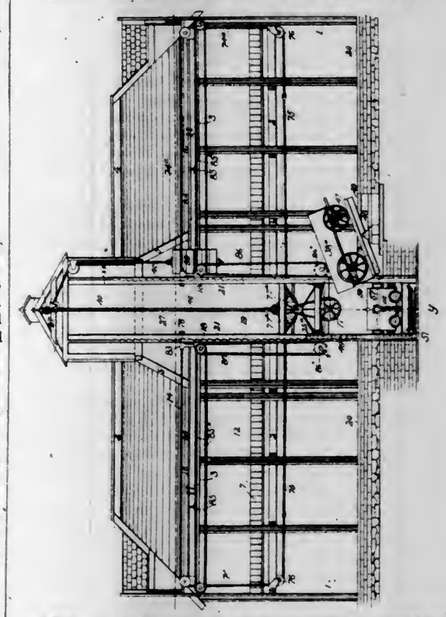


Claim.—1. In draft-rigging for cars, the combination of the end buffer-plates *b b*, and the inwardly-projecting ribs *b' b'*, follower-plates which normally lie against the inner sides of said buffer-plates and have stems which project out through said buffer-plates, two follower-plates which lie on opposite sides of said ribs and are normally in contact therewith, two springs arranged tandem and placed between the follower-plates as described, a strap which embraces the buffer-plates, followers and springs, a draw-bar which lies between and is secured to the front ends of said strap, and a pressure-bar lying between the two middle follower-plates and secured to said strap, substantially as and for the purpose specified.

2. In draft-rigging for cars, the combination of a casing having end plates and internal ribs near its middle, a strap passing around said casing, and a draw-bar secured to the front end of said strap, with the two follower-plates at the ends of said casing having stems which project out through the end plates of said casing, the two follower-plates which lie within the casing on opposite sides of said ribs, two springs arranged tandem and placed between the follower-plates as described, and a pressure-bar extending through the casing between the two middle follower-plates, and secured at its ends to the legs of the strap, substantially as and for the purpose specified.

3. In draft-rigging for cars, the combination of a casing composed of two sections, each of which has the end plates *b b*, the internal ribs *b'* near its middle, and the internal longitudinal flanges b^2 b^3 on its lower and upper edges, a strap passing around said casing, and a draw-bar secured to the front end of said strap, with the two followers within the casing in contact with the ends thereof, having stems which project out through said ends, the two follower-plates which lie between the flanges b^2 b^3 and on opposite sides of the ribs *b'*, two springs set tandem between said followers as described, and a pressure-bar extending between the legs of the strap and secured thereto by a rivet or bolt, said bar having shoulders *g*, substantially as and for the purpose specified.

569,697. ELEVATOR AND DUMP. GUSTAVE WENZELMANN, Missal, Ill. Filed July 27, 1895. Serial No. 557,309. (No model.)



Claim.—1. An elevator and dump comprising a hauling-track running lengthwise the building, an elevator and pit intermediately located therewith, a dumping-track located overhead in the direction of the hauling-track, a trap-door to cover the pit and a differential lifting-drum, a cable connecting the elevator and drum, and a cable adapted to connect the drum with the grain-wagon, substantially as described.

2. An elevator and dump comprising a hauling-track running lengthwise the building, an intermediately-arranged elevator shaft and pit, a dumping-track located overhead and extending from both sides of the elevator-shaft, a cable-carrier having its extremities terminating upon opposite sides of said shaft, an elevator-cage and car carried thereby, and the latter adapted to connect with said cable-carrier, substantially as described.

3. An elevator and dump comprising a hauling-track, an overhead dumping-track, an elevator connecting the same, a dumping-car to fit the elevator and track, a cable-carrier adapted to the overhead track to engage the car and an adjustable dumping-car-operating device upon the overhead track, substantially as described.

4. An elevator and dump comprising a hauling-track, an overhead distributing dumping-track, a cross-track intersecting the latter, an elevator connecting said tracks, a dumping-car to fit the elevator and tracks, a divided cable with coupling-links to engage the car on the main track when desired and a similar cable also adapted to engage with said car when desired to move the car upon the cross-track, substantially as described.

5. An elevator and dump comprising a storage-warehouse, having a plurality of bins to hold separate kinds of material, a hauling-track, and an overhead distributing-track, leading to and accessible to each of said bins, an elevator and dumping car having a set of wheels upon each of its four sides, an elevated cross-track connected therewith and a chute located beneath said cross-track to empty into the grain-cars, substantially as described.

6. An elevator and dump comprising a hauling track, an intermediately-located dumping-pit and track-rails leading from the said dumping-pit, an elevator at one end of the said track-rails, and an elevator-cage having hinged doors carrying rails leading to said track-rails, substantially as described.

7. An elevator and dump comprising an elevator shaft and cage, an overhead distributing dumping-track, and a cross-track having rails elevated above the distributing-track, a dumping-car having two sets of wheels, each set to engage respectively with one of said tracks, vertically-movable rails upon the cage to be intercepted and lift the car from the lower set of rails in the cage, substantially as described.

8. The combination with the vertical shaft, timbers of an elevator with ratchet-bars hinged thereto to fold from one side to the other thereof and an elevator-cage having a spring-dog to engage with said rack when the latter is folded in the same plane therewith and to move free thereof when folded *per contra*, substantially as described.

9. An elevator and dump comprising a hauling-track, a pit, a trap-door, tilting dump-beams to support the wagon-wheels, and grain-fenders hinged to the track-framing to fold over the ends of said beams, substantially as described.

10. The hoisting device for elevators and dumps consisting of the elevator-shaft and hauling-track, a cable attachable to the wagon, pulleys, a large drum at the top of the elevator shaft connected to said cable, a smaller drum forming part of the larger one, a cable connecting the same with an elevator-cage, and cable-guiding pulleys supported upon a counter-shaft to direct the running of both cables, substantially as described.

11. In an elevator and dump, the combination with the elevator-cage, of the longitudinal bottom bar fitted beneath the dump-doors of the car to close them, steady-pin sockets upon said bar, and spring-actuated steady-pins upon the cage to engage with said sockets, substantially as described.

12. A dumping-car comprising a box or shell, bars of triangular cross-section secured to the bottom sides of the shell to provide parallel intervening spaces between the oppositely-inclined walls of the bars, hinged door-slats fitted to the bars to close said spaces, a cross-bar adapted to lift said doors and a latch for holding the cross-bars, substantially as described.

13. In a dumping-car, the combination with box of an intermediate division-bar, a series of transverse bars of triangular cross-section connecting the division-bar with the ends of the car with intervening spaces, doors hinged to said transverse bars to close said spaces, vertically-moving cross-bars for lifting the doors, and a longitudinal bar to lift and hold the cross-bars, substantially as described.

14. In a dumping-car for elevators, the combination with the box, of the slatted bottom, the hinged doors, the door-lifting cross-bar, vertical side bars secured to said cross-bar, and supported to reciprocate upon the car-box, and a latch-lever pivoted to the box and adapted to swing either beneath or from beneath projections upon said side bars, substantially as described.

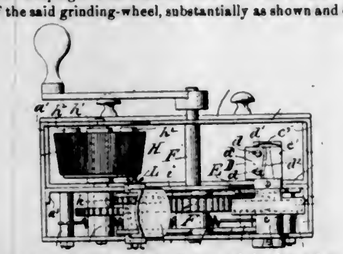
15. In a dumping-car for elevators, the combination of a box a series of triangular slats a series of doors a cross-bar a latch-bar the vertical slide-plates and a swinging latch-lever to engage said plates, substantially as described.

16. A dumping-car comprising a box or shell, a plurality of triangular cross-bars with intervening spaces between them, and a corresponding series of doors adapted to cover and uncover said spaces, and a cross-bar to connect said doors and operate them conjointly, substantially as described.

569,698. PENCIL-SHARPENER. WILLIAM H. WHITE, Nyack, N. Y., assignor of one-half to Eugene W. Rutherford, Brooklyn, N. Y.

Filed Apr. 21, 1896. Serial No. 588,442. (No model.)

Claim.—1. A pencil-sharpener comprising a revoluble hub which has a cylindrical opening therethrough for engagement with the end of a pencil, said opening being conical in longitudinal section at its forward part and having a contracted cylindrical outlet leading from the apex of said conical portion, the forward end of the said hub being cut away upon an angle coincident with the angle of its conical opening and having a knife mounted thereon, and a revoluble chuck, and a conical grinding-wheel, and a framework upon which the said parts are mounted and means for simultaneously rotating them, and means for keeping the said chuck out of normal alinement with the edge of the said grinding-wheel, substantially as shown and described.

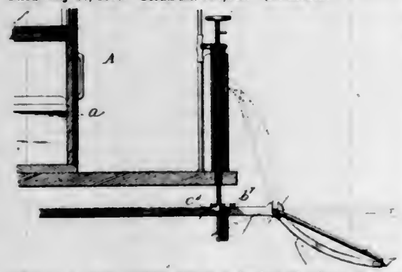


2. In a pencil-sharpener, the framework having a drawer therein and the revoluble driving-wheel, and the pinions engaging with said driving-wheel; combined with the revoluble hollow hub having a cutting-knife secured in a recess of its forward end, and the fork which is pivotally mounted upon the shaft of the main driving-wheel which fork is connected to a spiral spring at its lower end and to a revoluble cylindrical hub at its upper end, said hub containing a spring-clutch adapted to hold a pencil; and the revoluble grinding-wheel having a removable conical grinding-ring thereon, substantially as shown and described.

3. The combination of the revoluble hub having a pinion thereon and a cylindrical opening therethrough which is cone-shaped at its forward portion and which terminates in a contracted cylindrical outlet and which has a knife mounted in a recess thereof, which recess is cut away upon an angle coincident with the angle of the said conical portion, and the driving-wheel having a fork loosely mounted upon the shaft thereof, which fork has a revoluble hub and pinion mounted upon its upper end and a normally-contracted spring attached to its lower end, said pinion meshing with the said driving-wheel and said hub having a spring-clutch therein for engagement with a pencil; with a revoluble grinding-wheel comprising a hub and a removable grinding-ring, the said parts all being mounted upon a framework, substantially as shown and described.

569,699. CAR-FENDER. GEORGE W. WILLEY, Philadelphia, Pa.

Filed July 27, 1895. Serial No. 557,340. (No model.)



Claim.—1. The combination in a fender, of a base or support, a series of bars carried thereby, and springs supported by said bars, said springs forming approximately V-shaped recesses for engagement with obstructions upon the track, substantially as specified.

2. The combination in a fender, of a series of forwardly-projecting bars, and covered springs connected to the front ends of said bars, said springs being arranged at an angle to each other and forming a series of approximately V-shaped recesses for engagement with obstructions upon the track, substantially as specified.

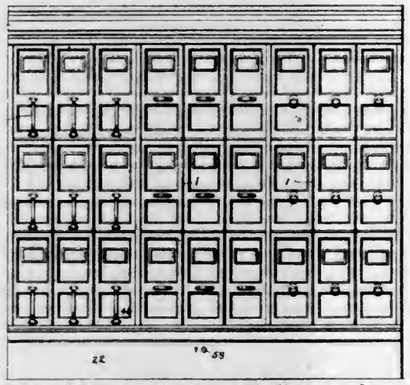
3. The combination in a fender, of a series of forwardly-projecting bars, a spring arranged on each side of and carried by said bars, said springs being so mounted as to form between them a series of approximately V-shaped recesses for engagement with obstructions upon the track.

4. The combination in a fender, of a frame, means for raising and lowering the same, a series of forwardly-projecting bars forming part of said frame, a transverse pivot-rod to which said forwardly-projecting bars are pivoted, and springs arranged on each side of said bars, and connected at one end to the forward end of the bars, and at the opposite end to said pivot-rod, substantially as specified.

569,700. BILL-FILE. EDMUND W. WOODRUFF, Washington, D. C.

Filed Aug. 22, 1895. Serial No. 560,119. (No model.)

Claim.—1. In a bill-file the combination with the file proper, of supporting means for the same consisting of independent front and rear uprights, transverse rods passing through the front and rear uprights and shelves carrying bent U-shaped file-box guides and directly engaging and spacing said uprights and supported on said rods, substantially as set forth.



2. In a bill-file the combination with the file proper, of supporting means for the same consisting of uprights, transverse rods, and shelves bent to engage the rods and carrying longitudinal bent U-shaped guides for the files, substantially as set forth.

3. In a bill-file the combination with the file proper, of supporting means for the same consisting of U-shaped uprights, transverse rods, and shelves having on their upper sides bent U-shaped guiding-ribs abutting the uprights, the shelves being bent to engage the rods, substantially as set forth.

4. In a bill-file the combination with the file proper, of supporting means for the same consisting of U-shaped uprights, shelves supported thereon, and back plates having flanges entering the rear uprights, substantially as set forth.

5. In a bill-file the combination with the file proper, of supporting means for the same consisting of upright parts, transverse rods carried thereby, shelves resting on said rods, and bent guiding-ribs engaging the edges of and uniting said shelves, substantially as set forth.

6. In a bill-file the combination with the file proper, of supporting means for the same consisting of U-shaped uprights, transverse rods, shelves engaging the latter and having hollow longitudinal ribs, and blocks on said rods and within the uprights and ribs, substantially as set forth.

7. In a bill file the combination with the file proper, of supporting means for the same consisting of uprights, transverse rods, and shelves bent at their front edges to pass down in front of the rods and thence downwardly and rearwardly to form inclined elastic tongues having the inclined surfaces 11 for engagement by the file-box, substantially as set forth.

8. The combination with the compartment having a transverse rod and a shelf, the front edge of which is bent down in front of the rod and thence downwardly and rearwardly to form the inclined elastic part 11, of the file having the packing-strip 49 to engage said elastic part, substantially as set forth.

9. The combination with the files, of the supporting-compartments having U-shaped uprights 1, and the packing 51 held in the latter, substantially as set forth.

10. The bill-file consisting of the front plate, the bottom plate, and side pieces connecting the front and bottom, the side pieces being bent to engage said bottom plate and to form the hollow side ribs 37, substantially as set forth.

11. The bill-file consisting of the plate forming the front and sides, the bottom plate bent to form a longitudinal hollow rib or groove, and a stiffening connecting-bar engaged by the lower edge of the front plate and having a tongue entering said rib or groove, substantially as set forth.

12. The bill-file consisting of the plate forming the front and sides and bent to form the hollow ribs 37, the bottom plate engaging said ribs and bent to form the central groove 39, and the stiffening-bar having tongues entering said ribs and groove, substantially as set forth.

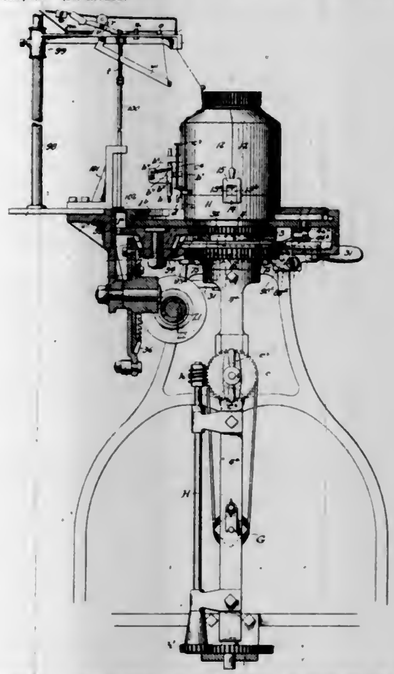
13. A bill-file of sheet metal having a hollow longitudinal rib 37 perforated as at 55 for the entrance of a locking projection, in combination with such projection.

14. The combination with the file proper, of supporting-shelves therefor having guiding U-shaped ribs 6, uprights 52 passing up through and guided by said ribs and having locking projections adapted to engage the file, and means for actuating and locking said uprights.

15. The combination with the files, of a section of compartments therefor, consisting of U-shaped uprights, rigid uprights 15 at the ends of the section, transverse front and rear rods passing through the uprights, shelves engaging said rods and having longitudinal guiding-ribs, diagonal tension-braces 16 at the ends of the section and engaging the ends of said rods, and end plates 20 having frames 21 secured to said uprights 15, substantially as set forth.

569,701. AUTOMATIC CIRCULAR-KNITTING MACHINE. ARTHUR WRIGHTSON, Philadelphia, Pa.

Filed Sept. 22, 1894. Serial No. 523,784. (No model.)



Claim.—1. In a circular-knitting machine, the combination of a stem; mechanism for imparting revolution thereto; a needle-cylinder resting upon the upper end of said stem and readily removable therefrom; a cam-cylinder surrounding said needle-cylinder and split vertically into two approximately equal portions; and mechanism for readily separating or uniting said portions, substantially as described.

2. In a circular-knitting machine, the combination of a needle-cylinder readily removable from its seat in the machine; a cam-cylinder surrounding said needle-cylinder and split vertically into two approximately equal portions; mechanism for readily separating or uniting said portions; and mechanism for imparting to said united portions motion relative to said needle-cylinder, substantially as described.

3. In a circular-knitting machine, the combination of a needle-cylinder; mechanism for imparting revolution thereto; a cam-cylinder surrounding said needle-cylinder composed of an upper portion containing needle-cams, which is split vertically into two approximately equal portions, and a lower base-ring to which the halves of the upper portion are hinged; lugs projecting from the unhinged sides of said split portions; and a yoke swiveled upon said base-ring which embraces said lugs when brought into juxtaposition and holds them together in a fixed position upon said base-ring, substantially as described.

4. In a circular-knitting machine, the combination of a stem; a needle-cylinder upon the upper end of said stem and removable therefrom; a spur-wheel upon the lower end of said stem; a cam-cylinder surrounding said needle-cylinder, composed of an upper portion containing needle-cams split vertically into two approximately equal portions, and a lower portion or base-ring; a spur-wheel upon said base-ring; a main driving-shaft having two sleeves; a sliding clutch upon said shaft engaging either of these sleeves; gearing whereby the revo-

lution of one of these sleeves imparts revolution to the spur-wheel upon the stem; and gearing and connections whereby the revolution of the other of these sleeves imparts a motion of reciprocation to the spur-wheel upon the base-ring of the cam-cylinder, substantially as described.

5. In a circular-knitting machine, the combination of a needle-cylinder; a cam-cylinder surrounding the same; means for imparting a motion of reciprocation to said cam-cylinder; a cam-groove in the interior of said cam-cylinder interrupted by a cam; a vertical slide-rod on the exterior of said cam-cylinder in operative connection with said cam; a spring tending constantly to lower said slide-rod; and a projection on said slide-rod fitting into a corresponding recess and opposing said spring; and a rod-cam adapted to strike the lower end of said slide-rod and remove the projection from its recess, allowing said rod to be lowered by the spring, substantially as described.

6. In a circular-knitting machine, the combination of a needle-cylinder; a cam-cylinder surrounding the same; means for imparting a motion of reciprocation to said cam-cylinder; a cam-groove and one or more needle-cams on the interior of the cam-cylinder; rods carried by said cam-cylinder, whereby said needle-cams are actuated; a pair of sliding segments partially surrounding the needle-cylinder, and carrying rod-cams in position to be struck by the said rods so as to actuate the needle-cams; and means for moving said segments, so that their rod-cams strike the rods at different points of the traverse of the cam-cylinder, consisting in the case of each segment of a rack on the outer edge of said segment; a reciprocating pawling-bar with two opposing pawls; a tripping-cam between the two pawls; and mechanism whereby the cam-segment at the extremity of each traverse throws the tripping-cam, bringing one pawl into action and throwing the other out, substantially as described.

7. In a circular knitting machine, the combination of a needle-cylinder, consisting of a contracted upper portion and an expanded lower portion; a cam-cylinder surrounding said needle-cylinder; a hollow stem, the upper portion of which extends through and fits closely but removably within the contracted upper portion of the needle-cylinder; a flange upon said stem upon the upper side of which the lower edge of the expanded portion of the needle-cylinder rests; and mechanism whereby the motion of revolution is imparted to said stem and with it to the removable needle-cylinder, substantially as described.

8. In a circular-knitting machine, the combination of a revoluble needle-cylinder; a cam-cylinder; and means for reciprocating the same; a main driving-shaft; sleeves upon said driving-shaft, the rotation of one of which effects the rotation of the needle-cylinder, and the rotation of the other of which effects the reciprocation of the cam-cylinder; a clutch whereby either sleeve is connected to said shaft; a lever whereby said clutch is thrown; slide-rods passing through and engaging opposite sides of said lever; springs whereby said slide-rods are shot; locking-levers holding said slide-rods against the action of the spring; a pattern-chain whereby one of said slide-rods is released so as to be shot throwing the lever so as to reciprocate the cam-cylinder; sliding cam-segments surrounding the said cam-cylinder; means for advancing and retracting the same during the reciprocation of the cam-cylinder; a lug on one of said segments; lever connections whereby at the end of its retraction said lug releases the other of said slide-rods so that it is thrown so as to rotate the needle-cylinder, substantially as described.

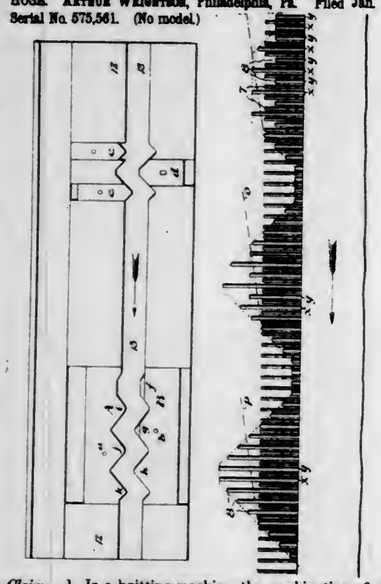
9. In a circular-knitting machine, the combination of a revoluble needle-cylinder; a cam-cylinder and means for reciprocating the same, and a thread-controlling mechanism consisting of a take-up lever through an eye in the extremity of which the thread passes, the said take-up lever being pivoted and swinging down against the pressure of a spring or counterweight; a vertical slide-rod; connections whereby the depression of the slide-rod holds the take-up lever in a fixed position, while its elevation renders it free to spring up under the influence of the spring or counterweight; and mechanism whereby the slide-rod is depressed during the rotation of the needle-cylinder and elevated during the reciprocation of the cam-cylinder, substantially as described.

10. In a circular-knitting machine, the combination of a revoluble needle-cylinder; a cam-cylinder and means for reciprocating the same, and a thread-controlling mechanism consisting of a pivoted tension-weight which when in its lower position rests upon the thread giving it a positive but not a prohibitory tension, and which when in its upper position leaves the thread entirely free; and mechanism whereby the said tension-weight is allowed to rest upon the thread during the reciprocation of the cam-cylinder, and is lifted during the rotation of the needle-cylinder, substantially as described.

11. In a circular-knitting machine, the combination of a revoluble needle-cylinder; a cam-cylinder and means for reciprocating the same, and a thread-controlling mechanism consisting of a take-up lever through an eye in the extremity of which the thread passes, the said take-up lever being pivoted and swinging down against the pressure of a spring or counterweight; a vertical slide-rod; a pivoted tension-weight which when in its lower position rests upon the thread giving it a positive but not a prohibitory tension, and which when in its upper position leaves the thread entirely free; connections whereby the depression of the slide-rod holds the take-up lever in a fixed position and lifts the tension-weight, while its elevation renders the take-up lever free to spring up under the influence of the spring or counterweight and lowers the tension-weight; and mechanism whereby the slide-rod is depressed during the rotation of the needle-cylinder and elevated during the reciprocation of the cam-cylinder, substantially as described.

12. In a circular-knitting machine, the combination of a revoluble needle-cylinder; a cam-cylinder and means for reciprocating the same, and a thread-carrying mechanism consisting of a fixed arm with eyes through which the main thread passes; a depending lever pivoted thereto having an eye at its extremity through which an auxiliary thread passes; a vertical slide-rod; a hole in said slide-rod through which the auxiliary thread passes; connections whereby when the slide-rod is in its upper position the auxiliary thread is free to pass through the hole in the slide-rod, and the depending pivoted lever thrown so as to bring the end of the auxiliary thread into proximity with the main thread, and whereby when the slide-rod is in its lower position the auxiliary thread is prevented from running through the hole in the slide-rod, while the end of the depending pivoted lever is removed from proximity with the main thread; and mechanism whereby the slide-rod is depressed during the rotation of the needle-cylinder and elevated during the reciprocation of the cam-cylinder, substantially as described.

569,702. MACHINE FOR KNITTING SEAMLESS FLEECE-LINED HOSE. ARTHUR WRIGHTSON, Philadelphia, Pa. Filed Jan. 15, 1896. Serial No. 575,561. (No model.)



Claim.—1. In a knitting-machine, the combination of a needle-cylinder adapted to be rotated; a cam-cylinder adapted to be reciprocated; a cam-groove within said cam-cylinder containing primary and secondary cams, the primary cams being in operative position both during the rotation of the needle-cylinder and the reciprocation of the cam-cylinder; and the secondary cams being in operative position during the rotation of the needle-cylinder but in inoperative position during the reciprocation of the cam-cylinder, substantially as described.

2. In a knitting-machine, the combination of a needle-cylinder adapted to be rotated; a cam-cylinder adapted to be reciprocated; a cam-groove within said cam-cylinder containing primary and secondary cams, the primary cams being in operative position both during the rotation of the needle-cylinder and the reciprocation of the cam-cylinder, the secondary cams being mounted upon a pair of movable cam-plates, and combined with mechanism whereby said cam-plates are advanced or retracted into operative or inoperative position, respectively, during the rotation of the needle cylinder and the reciprocation of the cam-cylinder, substantially as described.

3. In a knitting-machine, the combination of a cam-cylinder having a series of cams mounted upon opposing cam-plates, and mechanism whereby said cam-plates may be advanced or retracted, respectively, into operative or inoperative position, consisting of pin, *b*, slide rod, *b'*, lever, *a'*, and an inclined plane movable into or out of position to engage with the pin, *b*, substantially as described.

4. In a knitting-machine, the combination of a needle-cylinder fitted with needles mounted upon needle-jacks; bits upon said needle-jacks which are alternately half depth and full depth; a series of cams in position to control said bits, consisting in succession of half-depth tuck-cam *f*, cam *g*, being a half-depth full cam combined with a full-depth tuck-cam, and full-depth full cam *h*, the position of said three cams being coincident with three guides for backing, binding and facing threads, respectively, substantially as described.

5. In a knitting-machine, the combination of a needle-cylinder fitted with needles mounted upon needle-jacks; bits upon said needle-jacks which are alternately half depth and full depth; a series of cams in position to control said bits, consisting in succession of half-depth tuck-cam *f*, cam *g*, being a half-depth full cam combined with a full-depth tuck-cam, and full-depth full cam *h*, said raising-cams alternating with three depressing-cams, of which the first and second are less than full length, the said three raising-cams being coincident with three guides for backing, binding and facing threads, respectively, substantially as described.

6. As an article of manufacture, a stocking knit from top to toe without seam, with heel and toe pockets formed of plain knitting and the remainder (except the rib top, if present) formed of stockinet interiorly fleece-lined, substantially as set forth.

7. As an article of manufacture, a seamless, fleece-lined stocking, formed throughout with a continuous facing of plain knitting and lined within, except at the heel and toe pockets, with fleece, substantially as set forth.

569,703. WHEEL. GEORGE P. YEAKEL, Royersford, Pa. Filed Jan. 13, 1896. Serial No. 575,371. (No model.)



Claim.—In a wheel, the combination with the fellies rabbeted at opposite sides, of the bent plate provided with prongs driven into the fellies and formed with a rectangular projection, the rim having a groove with which said depression engages and the tire secured to said rim; substantially as described.

569,704. ADHESIVE COMPOUND. CLAYTON BEADLE, London, England, assignor to the American Viscose Company, Boston, Mass. Filed June 8, 1894. Serial No. 513,905. (No specimens.)

Claim.—1. The adhesive compound herein described consisting essentially of a mixture of a soluble compound of cellulose, and an insoluble soap.

2. The adhesive compound herein described consisting essentially of a mixture of a soluble compound of cellulose, consisting of cellulose treated with a caustic alkali and carbon bisulfid, and an insoluble soap.

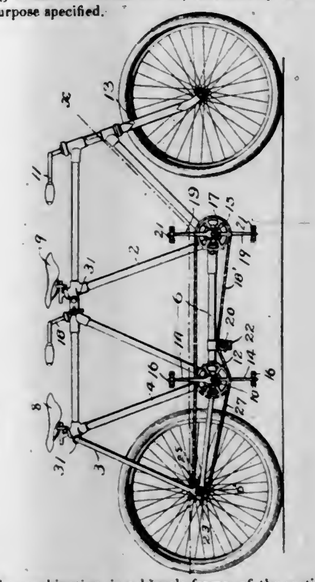
3. The adhesive compound herein described consisting essentially of a mixture of a soluble compound of cellulose and resinate of alumina, or its equivalent.

4. The decolorized adhesive compound herein described consisting essentially of a mixture of a soluble compound of cellulose, and a decolorizing agent, and an insoluble soap.

569,705. COMBINED SINGLE AND TANDEM BICYCLE. CHAS. E. BRENNAN, Minneapolis, Minn. Filed Apr. 18, 1895. Serial No. 546,167. (No model.)

Claim.—1. A bicycle-frame, comprising forward and rear sections whereto the wheels are attached, said forward section comprising a standard 2, a head and parts connecting the same, said rear section comprising the back and horizontal bars, said sections adapted to be secured to one another, and an independent middle section adapted to be inserted between the forward and rear sections, said middle section comprising upright or standard parts, and upper and lower horizontal sections, seats carried upon the forward and middle sections, and suitable driving mechanisms also carried thereon, substantially as described.

2. A bicycle-frame, comprising two independent forward and rear sections, means for detachably securing said sections together at their upper and lower parts, a middle independent section adapted to be inserted between said forward and rear sections, and comprising the V-shaped portions 4 and the horizontal part 6, means for clamping said middle section to said forward and rear sections, said clamping means consisting of the lugs provided on the forward and middle sections, bolts adapted to pass through said lugs, and the slotted ends of the adjacent section, said bolts being provided with the collar 41, the spring 47 and the thumb-nut 37, substantially as described and for the purpose specified.



3. The combination, in a bicycle-frame, of the section provided with the lugs 29, the bolt 31 extending through said lugs and provided with the enlarged cylindrical portion 33, the collar 41 upon said bolt, the spring 47 engaging said collar and engaging one of said lugs, the nut 37 provided with the enlarged cylindrical portion 39, and the frame-section provided with slots arranged to engage said bolt and having cylindrical recesses into which the enlarged portions 33 and 39 upon said bolt and nut respectively engage, for the purpose specified.

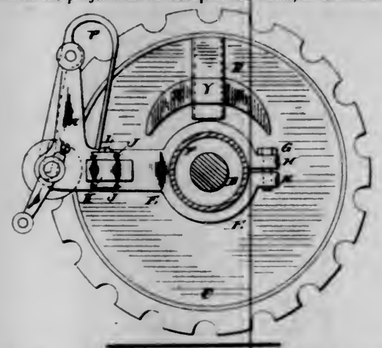
4. A bicycle-frame, comprising forward and rear sections whereto the wheels are attached, said forward section comprising a standard 2, a head and parts connecting the same, said rear section comprising the back fork and lower parts, said sections adapted to be secured to one another, and an independent middle section adapted to be inserted between said forward and rear sections, said middle section comprising the upright or standard parts, and a lower horizontal section whereby the lower parts of the forward and rear sections are connected, seats carried respectively upon one of the main sections and upon said independent section, and a suitable driving mechanism also carried thereon, substantially as described.

569,706. GEAR FOR BICYCLES. JOHN CLOUGH and ROCHESTER ILLINGWORTH, Bradford, England. Filed Dec. 27, 1895. Serial No. 573,528. (No model.) Patented in England Mar. 4, 1892, No. 4,288; in France June 25, 1892, No. 222,587; in Belgium June 25, 1892, No. 100,282; in Switzerland June 25, 1892, No. 5,511; in Italy June 27, 1892, No. 39,173/172; in Germany July 3, 1892, No. 71,949, and in Austria-Hungary July 31, 1893, No. 8,984 and No. 32,024.

Claim.—1. In a velocipede-gear of the character described, the combination with the crank-shaft and sprocket-wheel and the intermediate gearing, of internal projections on the sprocket-wheel, a revoluble plate, a bolt carried by the plate adapted to engage with said projections, and have a sliding movement, cam projections secured to the plate, and having a space between them adapted to receive the bolt and a spring-actuated catch or detent carried by the machine and adapted to enter the space between the cam projections and force the bolt out of engagement with the projections on the sprocket-wheel, as described.

2. In a velocipede-gear of the character described, the combination with the crank-shaft and sprocket-wheel, and the intermediate gearing, of a stationary bracket carried by the machine, a curved spring pivotally carried thereby, a revoluble disk having a crank-pin engaging one end of said spring and adapted to tilt or rock the latter, a catch or detent carried by the other end of the spring, internal projections carried by the sprocket-wheel, a revoluble plate, a bolt car-

ried thereby and adapted to engage said projections and have a sliding movement, cam projections secured to the plate and having a space between them adapted to receive the bolt and a spring-actuated catch or detent carried by the machine and adapted to enter within the space between the cam projections and force the bolt out of engagement with the projections on the sprocket-wheel, as described.



569,707. MUSICAL INSTRUMENT. GILBERT T. CRAIG, New York, N. Y., assignor to Rowland H. Mayland and J. Howard Foote, Brooklyn, N. Y. Filed Apr. 29, 1895. Serial No. 547,436. (No model.)

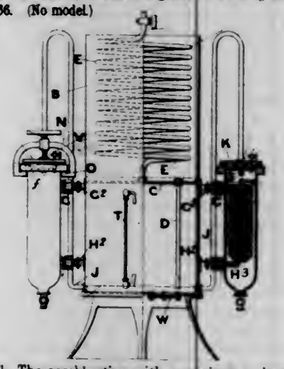


Claim.—1. In a musical instrument of the character described, the combination of a set of vibratory strings, hammers for striking said strings normally not in contact with said string and pins *r*, *r'*, &c., the upper portions of which form a series of steps, whereby the operator is enabled to strike one set of strings without danger of striking another set of strings, substantially as described.

2. In a musical instrument of the character described, the top part A, a vibratory string, a pin located in said top part, the bottom part B and a hammer located in said bottom part and adapted to strike said string when the said pin is depressed, said parts A and B being detachably connected, substantially as described and for the purposes specified.

3. In a musical instrument of the character described, the top part A, sets of vibratory strings, pins having their upper portions arranged in the form of a step or steps, located in said top part, the bottom part B and hammers located in said bottom part and adapted to strike said strings, when the pins are depressed, whereby the operator is enabled to strike one set of strings without danger of striking another set of strings, said parts A and B being detachably connected, substantially as described.

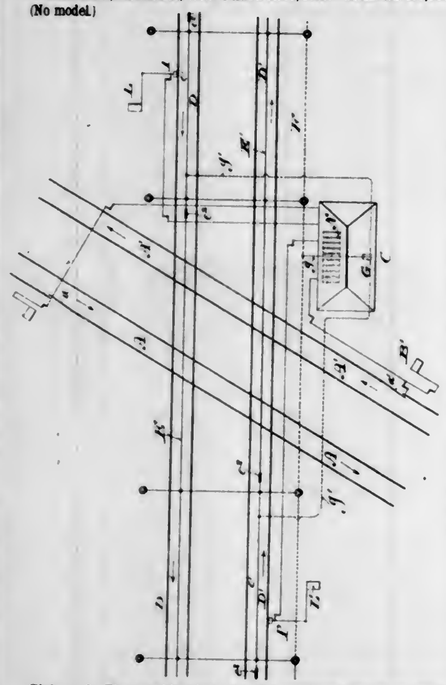
569,708. APPARATUS FOR MANUFACTURING ACETYLENE GAS. JOHN H. EXLEY, Bradford, England. Filed Aug. 31, 1895. Serial No. 561,066. (No model.)



Claim.—1. The combination with a receiver, a cistern arranged above the receiver, a pipe in communication with the lower portion of the cistern and with the receiver near the bottom of the latter, and a gas-delivery pipe communicating with the receiver at its upper end and extending through and out of the cistern, of gas-generators in valved communication with the receiver, and adapted to receive liquid from the receiver, and to deliver gas thereinto as and for the purpose specified.

2. The combination with a receiver, a cistern arranged above the receiver, a pipe in communication with the lower portion of the cistern and with the receiver near the bottom of the latter, and a gas-delivery pipe communicating with the receiver at its upper end and extending through and out of the cistern, of gas-generators in valved communication with the receiver and adapted to receive liquid therefrom and to deliver gas thereinto, and a safety-pipe communicating with the upper end of each generator, extending up above the maximum height of any liquid contained in the cistern, and also extending down and communicating with the receiver at the lower end thereof, all as and for the purpose specified.

569,709. SAFETY APPARATUS FOR RAILWAY-CROSSINGS. GEORGE GIBBS, Milwaukee, Wis. Filed Dec. 13, 1893. Serial No. 493,609. (No model.)



Claim.—1. The combination with the insulated section of working conductor on an electrically-operated road, of a cut-out therefor and a train stopping device such as a signal, derailing-switch, or the like, on the intersecting road operatively connected with said cut-out to block traffic on the electric road when the right of way is given to the other road.

2. In safety apparatus for railway-crossings, the combination with an electric line, of an interlocking machine controlling the operation of the safety devices of the several intersecting lines, a trolley-wire or conductor having an insulated section at the approach to the crossing, and a connection between said insulated section and a source of electricity comprising a switch connected with and controlled in operation by said interlocking machine, substantially as and for the purposes set forth.

3. In safety apparatus for railway-crossings, the combination with intersecting tracks of an interlocking machine controlling the operation of the safety devices of the intersecting lines, a scotch-block located adjacent to one of the intersecting tracks at the approach to the crossing and connected with and controlled in operation by said interlocking machine, a trolley-wire or electric conductor having an insulated section at the approach to the crossing, and a switch through which said insulated section is connected and disconnected with a source of electricity, also controlled in operation by said interlocking machine, substantially as and for the purposes set forth.

4. In safety apparatus for railway-crossings, the combination with an interlocking machine controlling the operation of the safety

devices of the several intersecting lines, of a scotch-block located at the approach of an intersecting line to the crossing and connected with and controlled in operation by said interlocking machine, said scotch-block consisting of a casing, a longitudinally-sliding bar guided therein and adapted to be projected through an aperture in the upper side of said casing, and a cam-lever inclosed in said casing and engaging with said bar, substantially as and for the purposes set forth.

5. In safety apparatus for railway-crossings, the combination with an interlocking machine controlling the operation of the safety devices of the several intersecting lines of a scotch-block located at the approach of an intersecting line connected with said interlocking machine and composed of a casing, a sliding bar guided obliquely therein and adapted to be projected through an aperture in its upper side, and a cam-lever fulcrumed in said casing in engagement with said bar and provided with an abutment adapted to engage with a shoulder on said bar and receive the end thrust thereon, substantially as and for the purposes set forth.

6. In safety apparatus for railway-crossings, the combination with an interlocking machine controlling the operation of the safety devices of the several intersecting lines, of a trolley-wire or conductor having an insulated section at the approach to said crossing, a connection between said insulated section and a source of electricity, provided with a switch which is connected with and controlled in operation by said interlocking machine, and a scotch-block located at the approach of the electric line to the crossing and connected with said interlocking machine, substantially as and for the purposes set forth.

7. In safety apparatus for railway-crossings, the combination with an interlocking machine controlling the operation of the safety devices of the several intersecting lines, of a trolley-wire or conductor having an insulated section at the approach to said crossing, a connection with a source of electricity provided with a switch connected with said interlocking machine, a scotch-block, and a signal located at or near the approach of the same line to said crossing, and each connected with said interlocking machine, substantially as and for the purposes set forth.

8. In safety apparatus for railway-crossings, a scotch-block consisting of a casing, a longitudinally-sliding bar guided therein and adapted to be projected through an aperture in the upper side of said casing, and a cam-lever fulcrumed within said casing and engaging with said bar, substantially as and for the purposes set forth.

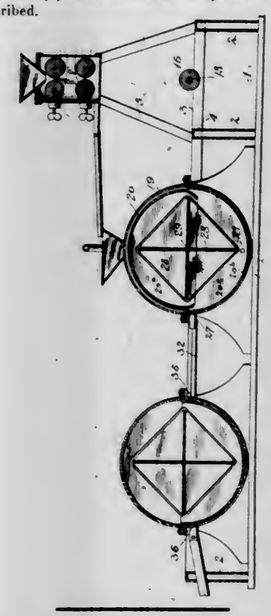
9. In safety apparatus for railway crossings, a scotch-block consisting of a casing having an aperture in its upper side guided obliquely therein, and a cam-lever inclosed in said casing in engagement with said bar and provided with an abutment adapted to engage with a shoulder on said bar and receive the end thrust thereon, substantially as and for the purposes set forth.

10. In safety apparatus for railway-crossings, the combination with an electric line, of a trolley-wire or conductor having an insulated section at the approach to the crossing terminating in advance of the crossing, and a connection with a source of electricity provided with a switch under the control of an operator, the main trolley-wire or conductor extending past the crossing so as to supply current to a motor thereon when the insulated section is deprived of current, substantially as and for the purposes set forth.

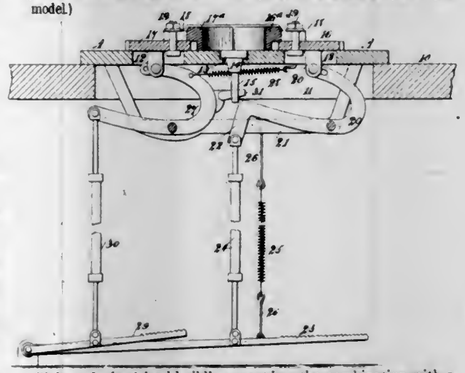
569,710. GOLD-AMALGAMATING APPARATUS. CONRAD GRAFF, Gunnison, Colo., assignor of one-half to James S. Phillips, same place. Filed Jan. 14, 1896. Serial No. 575,504. (No model.)

Claim.—1. In a gold-amalgamating apparatus, the combination with the frame, the hopper at the upper end thereof, the adjustable rollers located therein, the regulating-screws, and the trough at the lower end of said hopper, of the two-part scouring-box, provided with a hopper at the upper end and an exit-opening at the side, the perforated curved plate, located in the upper half of the box with a space therebetween and provided with semicircular heads, the curved imperforate plate located in the lower half of said box, fitting tightly against the same and provided with semicircular heads, the rotatable shaft and perforated radial arms, and the draw-off pipe communicating with the lower part of said box, substantially as described.

2. In a gold-amalgamating apparatus, the combination with the frame, the hopper at the upper end thereof, the adjustable rollers located therein, the regulating-screws and the trough at the lower end of said hopper, of the two-part scouring-box, provided with a hopper at the upper end and an exit-opening at the side, the perforated curved plate located in the upper half of the box, with a space therebetween and provided with semicircular heads, the curved imperforate plate located in the lower half of said box and fitting tightly against the same, and provided with semicircular heads, the rotatable shaft and perforated radial blades, the draw-off pipe communicating with the lower part of said box, the screw-cap in the end of said pipe, the rotatable shaft passing through said cap and provided with a crank at its outer end, and the flexible pipe or gooseneck connected with said draw-off pipe between the said cap and the box, substantially as described.



569,711. HEEL-BUILDING MACHINE. ELMER S. GROSS, Ellsworth, Me., assignor to Henry W. Cushman, same place, and Edward B. Bowen, Newton, Mass. Filed Jan. 15, 1896. Serial No. 575,624. (No model.)



Claim.—1. In a heel-building machine, the combination with a base-plate having openings therein, slides having guided movement over the openings in the said plate, jaws connected with the said slides, a follower located in the base-plate between the said jaws, levers connected with the slides, one of which is attached to the said follower, springs controlling the movement of the levers in one direction, and means for operating the levers in an opposite direction, as and for the purpose set forth.

2. In a heel-building machine, the combination, with a base plate, slides mounted thereon, jaws connected with the said slides, a follower located between the said jaws, and guides located at the ends of the jaws, and spring-controlled levers operating the said slides, one of the said levers operating to raise and lower the said follower, as and for the purpose specified.

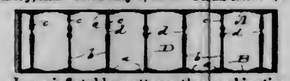
3. In a heel-building machine, the combination, with a base-plate having slides therein at each side of its center and a central countersunk opening, a follower located in the said countersunk opening, a slide located over each of the openings in the base-plate at the sides of the follower-receiving opening, and jaws connected with the said slides, of levers attached to the said slides, one of which levers is connected with the said follower, pedals, a connection between each pedal and a lever, and springs controlling the said levers in a direction opposite to that to which they are actuated by the movement of said pedals, as set forth.

4. In a heel-building machine, the combination of a base, jaws thereon adapted to clamp the heel between them, springs connected to the respective jaws and arranged to hold one jaw normally in and the other jaw normally out of operative position, a lever mechanism connected to and arranged to move one jaw into operative position, and other lever mechanism connected to the other jaw and arranged to move it out of operative position, substantially as set forth.

5. In a heel-building machine, the combination of a base, jaws thereon adapted to clamp the heel between them, a spring connected to and arranged to hold one jaw away from the other jaw, and lever mechanism connected to the respective jaws and arranged to move said jaws into and out of operative position respectively, substantially as set forth.

6. In a heel-building machine, the combination of a base, jaws thereon adapted to clamp the heel between them, means to hold one jaw normally in operative position and the other jaw normally out of operative position, and mechanism to move the jaws into and out of operation respectively, substantially as set forth.

569,712. INFLATABLE MATTRESS. JAMES W. HARDESTY, Montgomery, Ala. Filed July 3, 1896. Serial No. 597,976. (No model.)



Claim.—In an inflatable mattress, the combination with the bottom piece formed of a single strip or sheet of rubber or analogous impervious flexible material, and the upper portion formed of a like piece of material with the sides and ends continuous therewith, and stitched and cemented to the bottom piece, series of rubber disks, stitched and cemented at regular intervals to the inner surfaces of both the bottom and upper portions, loops of cord secured to said disks, the upper series of said loops being much longer than the lower series, and malleable metallic S-shaped links connecting the upper and lower series of loops, substantially as set forth.

569,713. WIRE-CONNECTOR. HERMAN HAUG, Newark, N. J., assignor to Charles H. McIntire, same place. Filed June 10, 1896. Serial No. 594,969. (No model.)



Claim.—1. A wire-connector consisting of a metal strip bent into the shape of two adjoining and connecting channels of different size and circular in cross-section, said channels being adapted to receive the wires to be jointed and to be twisted together with said inserted wires, substantially as and for the purposes described.

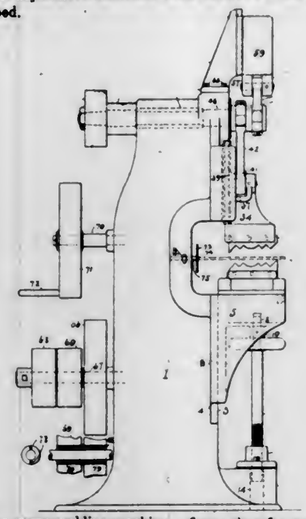
2. A connector for electric wires, consisting of a tube provided at opposite sides with longitudinally-extending depressions, dividing said tube into two adjoining and connecting circular-shaped channels of different size and adapted to receive the wires to be connected, and to be twisted together with the said wires, substantially as described.

569,714. CURVE-MOLDING MACHINE. GEORGE HENDERSON, Philadelphia, Pa. Filed Feb. 14, 1896. Serial No. 579,251. (No model.)

Claim.—1. In a curve-molding machine, a vertical framework therefor rectangular in section, a shaft thereto attached at its lower part for power transmission, pulleys thereon, a main shaft seated in the upper part of the framework and projecting outward therefrom at either end, a driven pulley at one end, double cranks at the other end, means to connect a cross-head and die to one crank for reciprocating motion, and means to connect the other crank to a reciprocating balance-weight, substantially as described.

2. In a metal-molding machine, a framework therefor, a driving and a main shaft therefor, pulleys thereon, means to communicate reciprocating motion from the main shaft to a guided cross-head having a die thereto attached, means to balance the reciprocating parts by a guided reciprocating balance-weight worked from the main shaft, and a movable table, guided upon the framing, dies thereto attached, and means to adjust the table and dies perpendicularly, substantially as described.

3. In a machine for forming metal moldings, a framework therefor, driving means thereto attached, means to convert the revolving driving motion into reciprocating motion to work dies, means to balance the reciprocating parts, an adjustable table, means to adjust the table, a central die thereon, and side guides thereon having means for parallel adjustment toward or from the central die, substantially as described.



4. In a curve-molding machine, a frame therefor, power-driving mechanism thereto attached for revolving motion, means to convert the revolving driving motion into reciprocating motion for working dies, means to balance the reciprocating parts, a table having means for vertical adjustment, a central seat thereto attached having a die-holder and a die thereto secured, a seat each side thereof pivotally attached at one end to the table to permit the seat to swing radially from the central seat, and guide-holders seated thereon having means for radial adjustment from a vertical line and having guides secured therein, substantially as described.

5. In a curve-molding machine, a frame therefor, a shaft thereto attached and having pulleys thereon for receiving power from the source of power supply, a pulley upon the shaft and carrying a belt to deliver the power to a pulley upon the main shaft also attached to the framing, means upon the framing intermediate to the aforesaid shafts for the attachment of hand or manual power and means to connect the hand or manual mechanism with the lower shaft and therefrom to the upper shaft for delivering the manual power to the reciprocating mechanism, substantially as described.

6. In a metal-molding machine, a framework therefor, means thereon and thereto attached for communicating power from the source of power supply, means to convey the power therefrom to a main shaft having means thereon and thereto attached to communicate oppositely-reciprocating motions, a balance in connection with one of the means for reciprocating motion, and dies attached to the other means for reciprocating motion, an adjustable table carrying dies oppositely to the aforesaid dies, and guides attached to the framing and means for their adjustment and security, substantially as specified.

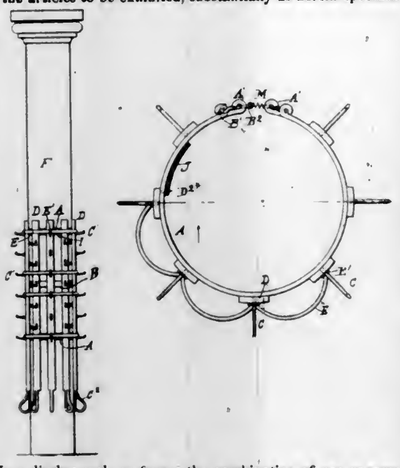
7. In a curve-molding machine, a double-crank shaft therefor formed of an integral piece, the double cranks being eccentric to the center thereof, oppositely, having at each outside and being separated by, a collar concentric with the shaft, substantially as described.

8. In a machine, a stud-shaft fixed to the machine-frame and projecting therefrom, a free pulley thereon, a pair of free pulleys thereon and means to secure the pair of free pulleys to each other for simultaneously revolving upon the fixed shaft, substantially as described.

9. In a curve-molding machine, means for reciprocally working a die, an adjustable table having a central die-holder thereto attached, a die secured thereto, and adjacent to each side thereof but unattached thereto, side-guide-holder seats, each one being pivoted to the adjustable table at one end, means to secure the holder-seats in parallel or diverging positions, concave seats within the upper face of the holder-seats, side-guide holders seated therein carrying side guides, and means to adjust and secure the side-guide holders toward or from the central die independent of each other, and independent of the central die-holder, substantially as described.

569,715. DISPLAY-RACK. WILLIAM HENDERSON and ORSON A. MORSE, New York, N. Y., assignors to themselves, and Henry Stockdale, Newark, N. J. Filed May 23, 1896. Serial No. 592,786. (No model.)

Claim.—1. The combination in a display rack or frame, of a plurality of clasping bands having elastic contractile force sufficient to clamp a post and thereby sustain the frame and its load, attached together by a series of connections presenting projections adapted to engage the articles to be exhibited, substantially as herein specified.



2. In a display rack or frame, the combination of one or more clasping-bands having a series of connecting-wires extending up and down, and intermittently bent horizontally to form projections adapted to engage the articles to be exhibited, substantially as herein specified.

3. In a display rack or frame, the combination of a plurality of clasping-bands connected together by a series of rigid and slotted facing-sections, and wires attached to the bands and bent horizontally through the slots to present projections adapted to engage the articles to be displayed, substantially as herein specified.

4. The combination in a display rack or frame having projections adapted to engage the articles to be exhibited, of a plurality of spring clasping-bands A, A, B, connected together, the bands A, A, having curved bearing-heads, substantially as herein specified.

5. The combination in a display rack or frame having projections adapted to engage the articles to be exhibited, of a plurality of spring clasping-bands A, A, including a band B, provided with a connection such as a hook and eye, for holding said band contracted, substantially as herein specified.

6. The combination in a display rack or frame having projections adapted to engage the articles to be exhibited, of a plurality of clasping-bands connected together by facing-sections D, having liberal intervening spaces and an inner fabric exposed through said spaces, substantially as herein specified.

569,716. GAS APPARATUS. THOMAS HENNESY, Excelsior Springs, Mo. Filed Sept. 24, 1895. Serial No. 563,523. (No model.)

Claim.—1. In combination with a fire-chamber, and a combustion-chamber; a flue to deliver the products from the former to the latter; and the boxes at the mouth of the flues, provided with the low front wall and the high side wall.

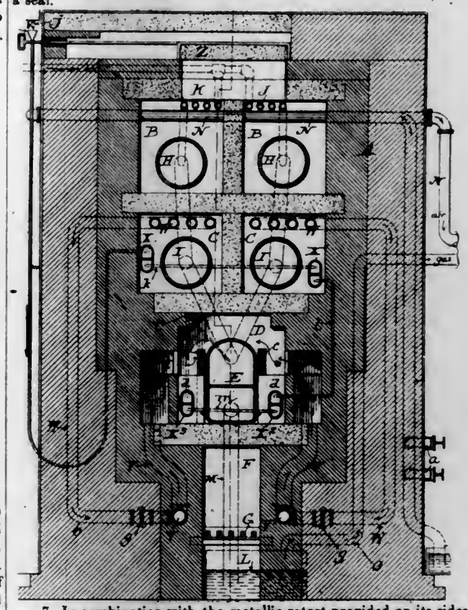
2. In combination with a fire-chamber and a combustion-chamber; flues to deliver the products from the former to the latter; a retort within the combustion-chamber; and a box at the mouth of each flue; said boxes being each provided with a high side wall to protect the retort, and a low front wall.

3. In combination with the fire-chamber and combustion-chamber; an air space or chamber opening into the combustion-chamber; a pipe embedded in the walls of the fire-chamber and opening at one end into the air-space and at the other end open to the atmosphere; a second pipe passing through one of the retort-chambers and open at one end to the atmosphere, and connected at the other end to the first-mentioned pipe; and valves applied to said pipes whereby they may be used separately or together.

4. In combination with a gas-generating retort or retorts; a gas-discharge pipe; a pipe for conveying the heated air to be mixed with the gas; and a relief-seal for the air-pipe.

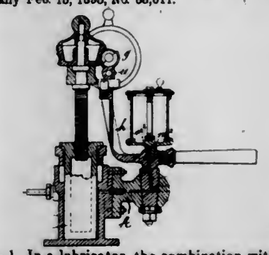
5. In combination with a gas-generating retort or retorts; a gas-discharge pipe; a coil or heater in which the air to be mixed with the gas is heated; and an inlet-pipe to said coil or heater, provided with two inlet openings and valves.

6. In combination with a gas-generating retort or retorts; a gas-discharge pipe; a coil or heater in which the air to be mixed with the gas is heated; and an inlet-pipe to said coil or heater, provided with two inlet openings and valves and having its end dipped into a seal.



7. In combination with the metallic retort provided on its sides with the laterally-extending longitudinal ribs; the slabs or tiles beveled to fit therebetween; the brick covering the crown of the retort; and the fire-clay covering for the flanges.

569,717. LUBRICATOR. FRIEDRICH KAUFHOLD, Merseburg, Germany. Filed Jan. 6, 1896. Serial No. 574,516. (No model.) Patented in Germany Feb. 15, 1895, No. 83,611.



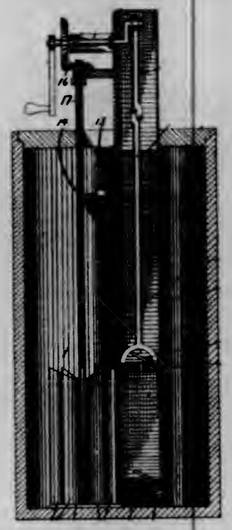
Claim.—1. In a lubricator, the combination with the cylinders, and their pistons, of screw-spindles connected with said pistons, gear-wheels on said spindles and engaging so as to rotate the spindles in opposite directions, worm-wheels connected with the gear-wheels, a worm adapted to be brought into engagement with either of said worm-wheels, and an oil-eduction channel adapted to be brought into communication with said cylinders alternately, as and for the purpose specified.

2. In a lubricator, the combination with the cylinders, and their pistons, of screw-spindles connected with said pistons, gear-wheels on said spindles and engaging so as to rotate the spindles in opposite directions, worm-wheels connected with the gear-wheels, a worm adapted to be brought into engagement with either of said worm-wheels, a valve in communication with an oil supply, and having a channel adapted to bring the cylinders alternately into communication with an oil-eduction channel, and means for operating the valve simultaneously with the operation of the worm, for the purpose described.

569,718. CHURN. ROBERT T. KENNEDY and SAMUEL W. KENNEDY, Bronwood, Ga., assignors of one-third to J. W. Glass, same place. Filed Nov. 27, 1895. Serial No. 570,496. (No model.)

Claim.—1. A pumping-churn consisting of a churning apparatus and a pump, the pump located within the body of the churn, a horizontal plate attached to the lower part of the pump-casing, a churning

apparatus consisting of a revolving shaft having suitable blades, the lower end of said shaft being journaled in said horizontal plate, the upper end of said shaft also journaled in a lateral extension secured to the pump-casing, said pump adapted to elevate the milk and discharge the same within the churn-body, a suitable operating device attached to the top of the pump-casing and adapted to operate the churn and the pump, the churning apparatus, the pump and the operating device all adapted to be removed from the churn-body in an entirety.

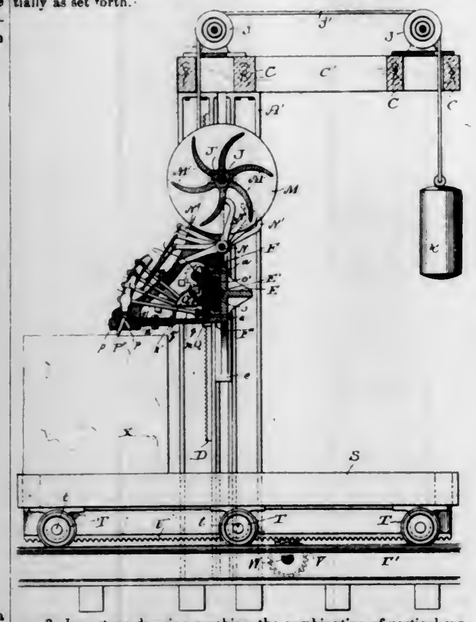


2. A pumping-churn consisting of a churning apparatus and a pump, the pump located within the body of the churn, a horizontal plate attached to the lower part of the pump-casing; the back of the pump-casing being hinged to the remainder of the pump-casing; a churning apparatus consisting of a revolving shaft having suitable blades, the lower end of said shaft being journaled in said horizontal plate, the upper end of said shaft also journaled in a lateral extension secured to the pump-casing; said pump adapted to elevate the milk and discharge the same within the churn-body, a suitable operating device attached to the top of the pump-casing and adapted to operate the churn and the pump, the churning apparatus, the pump and the operating device all adapted to be removed from the churn in an entirety.

569,719. STONE-DRESSING MACHINE. CHARLES LOHR, Milwaukee, Wis. Filed Aug. 25, 1896. Serial No. 603,342. (No model.)

Claim.—1. In a stone-dressing machine, the combination of vertical supporting and guide columns, a vertically-arranged power-shaft having a longitudinal groove therein, and a vertically-movable pinion splined thereto, a counterbalanced sliding head movable in said guide-columns, a transverse horizontal shaft geared to said pinion on the vertical shaft and supported on said sliding head, and carrying revolving tappet-arms, a carriage supported by and horizontally movable on said sliding head and transverse shaft, a chisel-board supported by said carriage, and having chisels adjustably arranged therein, a series of hammers pivotally attached to said carriage in line with said chisels, a series of bell-crank levers journaled in said carriage in engagement with said tappet-arms, links connecting said hammers with said levers, and a bracket-arm on said sliding head connected to and supporting the pinion on the said vertical shaft, substantially as set forth.

2. In a stone-dressing machine, the combination of vertical supporting and guide columns, vertical rack-bars on said columns, a vertically-arranged power-shaft having a longitudinal groove therein and a vertically-movable pinion splined thereto, a counterbalanced horizontal transverse sliding head vertically movable in said guide-columns, brackets rising from said sliding head, and one of said brackets having an arm connected to and supporting the pinion on the vertical shaft, a transverse horizontal shaft journaled in said brackets, and geared to the pinion on the vertical shaft, revolving tappet-arms splined to said transverse shaft and capable of longitudinal movement thereon, a carriage supported by and horizontally movable on said sliding head and transverse shaft, a chisel-board with adjustable chisels, pivoted spring-controlled hammers, and bell-crank levers linked to said hammers and in engagement with said tappet-arms, all carried by said carriage, another transverse horizontal shaft journaled in said brackets and carrying pinions at its ends in engagement with the rack-bars on the vertical columns, and means for controlling the revolution of said last-named transverse shaft, substantially as set forth.



3. In a stone-dressing machine, the combination of vertical supporting and guide columns, a vertically-arranged power-shaft having a longitudinal groove therein and a vertically-movable pinion splined thereto, a counterbalanced horizontal transverse sliding head vertically movable in said guide-columns and provided with a series of toothed or notched indentations in its front face, brackets rising from said sliding head and one of said brackets having an arm connected to and supporting the pinion on the vertical shaft, a horizontal transverse shaft journaled in said brackets and geared to the pinion on the vertical shaft, and provided with a longitudinal groove, horizontally-movable revolving disks splined to said transverse shaft and provided with radially-disposed curved tappet-arms, a carriage supported by and horizontally movable on said sliding head and transverse shaft, the revolving disks and tappet-arms on the latter being inclosed between the side pieces of said carriage, and a chisel-board with adjustable chisels, pivoted spring-controlled hammers, and bell-crank levers linked to said hammers and in engagement with said tappet-arms, all carried by said carriage, substantially as set forth.

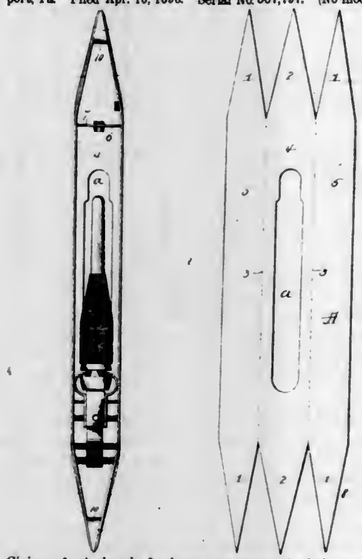
4. In a stone-dressing machine, the combination with a sliding head and a revolving horizontal shaft supported thereby, of a carriage supported and horizontally movable on said sliding head and shaft, a series of revolving disks splined to the shaft and carrying radially-disposed curved tappet-arms, said disks and arms being inclosed between the side pieces of said carriage, a chisel-board supported on and secured to said carriage and provided with two series of angularly-disposed openings therethrough, coinciding at top and thence diverging downwardly, chisels loosely held in said openings, a transverse rod extending through said carriage from side to side, a series of hammers having shanks pivotally attached to said rod, a transverse spring-plate extending across said carriage, a series of springs secured to said spring-plate and bearing upon the shanks of said hammers, and a transverse shaft provided with a series of bell-crank levers the upper arms of which are in engagement with said tappet-arms, and the lower arms of which are linked to the said hammer-shanks, substantially as set forth.

569,720. METHOD OF TRAINING HEDGES. LUTHER MATTHEWS, Paris, Tenn. Filed May 18, 1895. Serial No. 549,778. (No specimens.)

Claim.—The method herein described of training hedges, which consists in setting equidistant from each other a series of plants, setting a stay-plant midway between every second such plant and the succeeding one, closely trimming all said plants when they have attained a suitable height, removing the roots from one side of all the plants of the first series, bending down said plants, and securing them to the stay-plants, substantially as shown and set forth



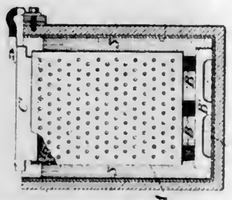
569,721. SHUTTLE FOR LOOMS. THOMAS MORRISON, Williamsport, Pa. Filed Apr. 16, 1896. Serial No. 587,797. (No model.)



Claim.—1. A shuttle for looms constructed of sheet metal, the blank of which the shuttle is formed being made in a single piece and having V-shaped notches cut in its ends and the blank folded along the lines extending from the inner ends of the notches at one end of the blank to the other and the edges of the V-shaped notches secured together, substantially as set forth.

2. A shuttle for looms constructed of sheet metal folded to form three sides and tapering ends, blocks or tips secured entirely within said ends and brace located near one end of the shuttle and secured transversely across the interior of the shuttle, substantially as set forth.

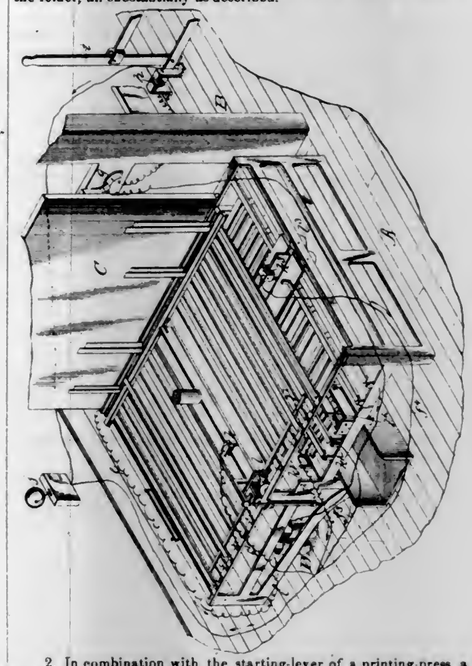
569,722. PLATING APPARATUS. JOHN T. MORROW, Great Falls, Mont. Filed Apr. 5, 1895. Serial No. 544,591. (No model.)



Claim.—In combination, the anode consisting of a perforated receptacle A filled with broken or scrap metal, the conducting-shoe C resting upon and above the said scrap metal, and the flexible conductor leading to the said shoe, whereby, as the scrap metal is corroded, the said shoe may descend by its own weight, substantially as set forth.

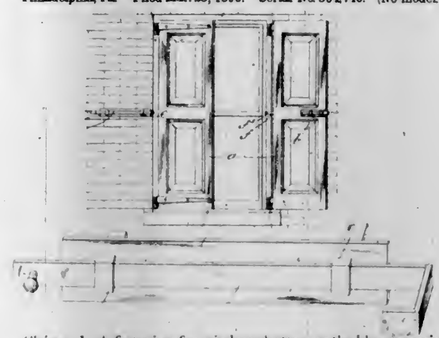
569,723. ALARM DEVICE FOR FOLDING-MACHINES. JAMES P. NEILAN, New London, Conn. Filed Feb. 15, 1892. Serial No. 421,544. (No model.)

Claim.—1. In combination with the movable delivery-board of a folding-machine, one member of a circuit-closer located on and operated by the delivery-board and the other member of the circuit-closer mounted in a fixed position with relation thereto, an electric circuit including an alarm, one pole of the battery of said circuit being connected to movable parts of the folder but insulated therefrom, and the opposite pole of said battery being connected with the frame of the folder, all substantially as described.



2. In combination with the starting-lever of a printing-press, a folder, a movable delivery-board mounted in operative relation to the folder, a circuit-closer borne on and operated by said lever, one member of a circuit-closer borne on and operated by the delivery-board and the other member of the circuit-closer mounted in a fixed position with relation thereto, and an electric circuit including an alarm, one pole of the battery being connected to the frame of the folder and the opposite pole with moving parts of the folder but insulated therefrom, all substantially as described.

569,724. SHUTTER-FASTENER. RUDOLPH A. W. OESTMANN, Philadelphia, Pa. Filed Mar. 25, 1896. Serial No. 584,746. (No model.)



Claim.—1. A fastening for window-shutters or the like, comprising a plate adapted to be secured to the wall of a building adjacent to a window-casing, a bolt adapted to be slid longitudinally in said plate without lateral movement, a substantially rectangular hook formed at one end only of said bolt and adapted to inclose the edge of a window-shutter to thereby secure the same when the shutter is opened, substantially as and for the purposes described.

2. A fastening for window-shutters or the like, comprising a plate, eyebolts adapted to secure the plate to the wall of a building adjacent to a window-casing, a bolt adapted to be slid longitudinally in said eyebolts and having a substantially rectangular hook formed at one end thereof and adapted to inclose the edge of a window shutter

to secure the same to the wall when the shutter is opened and a knob or pin secured to the other end of said bolt for sliding the same, substantially as described.

3. A fastening for window-shutters or the like, comprising a bolt and a support therefor located adjacent to a window-casing, said bolt having one end accessible from the hinged edge of a shutter, means for sliding said bolt longitudinally in its support without lateral movement therein, and a substantially rectangular hook formed at one end of said bolt and adapted to inclose the outer edge of the shutter when in open position, substantially as and for the purposes described.

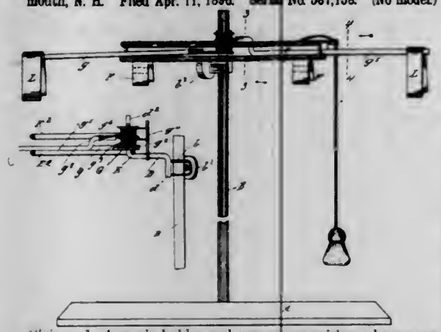
569,725. DEVICE FOR CUTTING CORN, &c. MARK W. PRINGLE, Cloud Chief, Okla. Filed Feb. 5, 1896. Serial No. 578,100. (No model.)



Claim.—1. The cutting device or apparatus herein described, which consists of a plate, means for attaching it to the hand, a cutting-blade secured to said plate and projecting at right angles therefrom, a supplemental plate or blade pivotally connected with the first-mentioned blade and which is adapted to be operated by the fingers of the hand, two bars passing through and connected with said supplemental plate, and between which two of the fingers of the hand are adapted to be passed, each of said cutting-blades having curved or segmental cutting edges substantially as shown and described.

2. A cutting device substantially as herein shown and described, comprising a triangular concavo-convex plate A adapted to be secured to the palm of the hand, a heavy piece of leather corresponding in form to said plate, and secured thereto, a cutting-blade provided with a semicircular or segmental cutting-cavity secured to said plate A, a supplemental cutting-plate H pivotally connected to one end of said blade and provided with a segmental cavity, a plate bar K secured to said supplemental blade adjacent to the cutting-cavity therein, a cross bar or pin passing through said supplemental blade near the outer end thereof and straps connected with said plate, whereby the same is secured in position, as and for the purpose set forth.

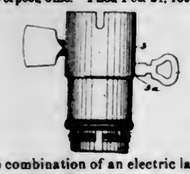
569,726. MUSIC HOLDER AND TURNER. FRED M. STACY, Portsmouth, N. H. Filed Apr. 11, 1896. Serial No. 587,158. (No model.)



Claim.—1. A music holder and turner, comprising a base, a vertical standard secured thereto, a vertically-adjustable yoke mounted on said standard, a vertical arm connected with said yoke, a rod secured thereto, and extending parallel with the base, outwardly-curved or segmental rods connected with the ends thereof, a plurality of spring-operated arms pivotally connected with said vertical arm, and adapted to swing between said outwardly-curved rods, said arms being provided at their outer ends with spring-clamps, or other devices for holding sheets or leaves of music and a spring-operated lever pivotally connected with the upper outwardly-curved rod at one end thereof, which is provided with two downwardly-directed projections or shoulders and which is adapted to operate, substantially as shown and described.

2. The herein-described music-holder, comprising a base A, a vertical standard B, connected therewith, a vertically-adjustable yoke *b*, provided with a set-screw b^2 mounted on the said standard, an angular rod D, having a depending arm *d*, by which the same is connected to the yoke, said rod being provided at its outer end with an upwardly-directed arm d^2, a rod E, secured to the outer end of said rod, two semicircular rods E^2 secured to said rod E, spring-clamps F secured to said rod E, a disk G mounted on the upwardly-directed arm d^2, an arm *g*, secured above said disk and having a circular head, g^2, a spiral spring g^3 above said circular head, one end thereof being secured to said arm *g*, and the other to a standard g^4, which is connected with the rod D, another arm g^5 above the spring g^3, a spring g^6 above the arm g^5 and connected therewith, and with the standard g^4, the arm g^5 being curved downwardly and extending parallel with the arm *g*, clamps L, secured to the said arms *g* and g^5, the lever M pivotally connected with the rod E^2, the inner end of said lever being provided with a hook *m* and the outer end having a depending cord m^2, and a spring m^3, one end of which is connected with said lever and the other end with a rod E, all constructed and adapted to operate as set forth.

569,727. LOCKING ELECTRIC-LAMP SOCKET. WILLIAM L. TAYLOR, East Liverpool, Ohio. Filed Feb. 21, 1896. Serial No. 580,210. (No model.)



Claim.—1. The combination of an electric lamp; a socket therefor; means for automatically locking the lamp in its socket by inserting the lamp therein and a key by which alone the lamp can be released.

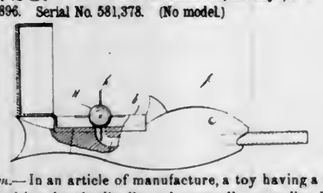
2. The combination of an electric lamp; a socket therefor; means for automatically locking the lamp in its socket by giving a partial turn to the lamp and a key by which alone the lamp can be released.

3. The combination of an electric lamp having a depression in its base; a socket therefor having a locking-spring adapted to engage with said depression and a key by which alone the lamp can be released.

4. The combination of an electric lamp having a depression in its base; a shell having a keyhole therein; a lamp-socket and a locking-spring attached to said lamp-socket adapted to engage with the depression in the lamp-base and having a keyhole registering with the keyhole in the shell.

5. The combination of an electric lamp having a depression in its base; a shell having a keyhole therein; a lamp-socket and a locking-spring attached to said lamp-socket, provided with a spur to engage with the depression in the lamp-base, said spring also having a keyhole registering with the keyhole of the shell.

569,728. TOY. FRANK R. TREASURE, Brooklyn, N. Y. Filed Feb. 29, 1896. Serial No. 581,378. (No model.)

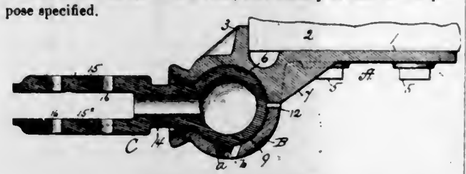


Claim.—In an article of manufacture, a toy having a main body provided with a longitudinally and upwardly extending bore, a circular plate, an upwardly-projecting flange on the edge of said plate, a hinged lid having a flange adapted to rest upon said plate-flange, said plate having a circular opening in its central portion in communication with aforesaid bore and a ball having a plurality of pins adapted to fit over said opening, all of said parts being combined, substantially as described.

569,729. DRAW-BAR ATTACHMENT FOR STREET-CARS. WILLIAM T. VAN DORN, Lincoln, Nebr. Filed Sept. 19, 1895. Serial No. 563,018. (No model.)

Claim.—1. The two-part car-bracket having a ball-socket formed therein, and provided with a flaring mouth leading from the socket and having a recess *a*, and the ball with stem and formed with a projection *b* to engage in the recess in the socket, substantially as set forth.

2. In a device for connecting a coupling or draw-bar to street-cars, the two-part car-bracket comprising the upper part A having a semispherical socket therein and formed with corner-studs on its lower side and the lower part B having a semispherical socket therein and formed with extended ends to fit between the corner-studs on the part B whereby the semispherical sockets are made to aline and said parts when arranged together having an opening into the socket, and a ball on the socket formed with a stem, substantially as and for the purpose specified.



569,730. RAILWAY-SWITCH. JOHN L. WAGNER, Terre Haute, Ind. Filed Mar. 10, 1896. Serial No. 582,614. (No model.)



Claim.—1. In a railway-switch, the combination, of the usual main and side track rails, a pair of switch-rails united by cross-bars, a switch-stand on one side of the track provided with a casing, a sprocket-wheel journaled in said casing, a pivoted lever with a segmental rack on its lower end which engages with mechanism for operating said sprocket-wheel, an idler-pulley fixed to a suitable point on the other side of the track, and a sprocket-chain mounted on said sprocket-wheel and attached to said switch-rails at each side thereof and running over said idler-pulley between said two attachments, substantially as set forth.

2. The combination, in a railway-switch structure, of the main rails, side-track rails, the switch-rails, a chain connected to said switch-rails and running within a casing over a sprocket-wheel thereon, and thence out and around an idle-wheel, said wheels, a spur-pinion on the same shaft as said sprocket-wheel, a lever mounted on a pivot-shaft in said casing and formed at its lower end into a spur gear-wheel engaging with said spur-pinion on the sprocket-wheel shaft, the whole being arranged and operating, substantially as set forth.

3. The combination, in a railway-switch structure, of the main-track rails, the side-track rails, the switch-rails, a chain connected to said switch-rails and running over sprocket-wheels, said sprocket-wheels, a pinion on the same shaft as the main sprocket-wheel, a lever mounted on a second shaft and having a gear-like end engaging with said first gear-wheel, said shaft carrying said lever having a large disk or washer whereby a large bearing is formed for said lever, a catch pivoted to the casing and adapted to engage with the teeth on the gear end of said lever, and a lock whereby the same may be fastened in position, substantially as shown and described.

569,731. FIRE-EXTINGUISHING COMPOSITION. JOSEPH LE ROY WEBBER, Syracuse, N. Y. Filed Mar. 16, 1896. Serial No. 583,294. (No specimens.)

Claim.—1. A fire-extinguishing liquid containing a concentrated solution of calcium chlorid and charged with carbon dioxid, as set forth.

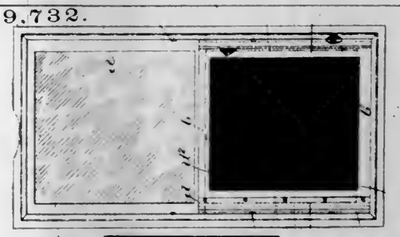
2_4. A fire extinguishing-liquid containing a concentrated aqueous solution of calcium chlorid, magnesium chlorid, and charged with carbon dioxid, substantially as specified.

3. A fire-extinguishing liquid, containing a concentrated aqueous solution of calcium chlorid, magnesium chlorid, sodium chlorid and charged with carbon dioxid, substantially as specified.

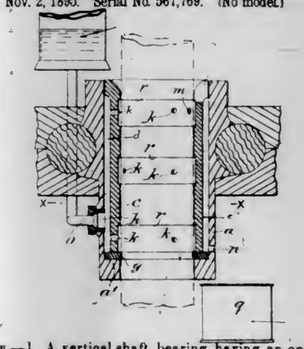
569,732. WINDOW-SCREEN. CHARLES C. WHEELER, Holland, Mich. Filed Oct. 22, 1895. Serial No. 566,469. (No model.)

Claim.—In combination, a screen-frame, an adjustable section secured on one side of the frame in position to be moved toward and away from the window-casing, an addition-strip secured to the opposite side of the frame, the said section and strip having narrow grooves extending along their outer faces, and guides secured to the casing and entering the said grooves in the adjustable section and addition-strip, said guides consisting of pins or staples having thin elongated heads to enable the use of very narrow grooves in the adjustable section and addition-strip, substantially as herein set forth.

569,732.



569,733. BEARING. ANDREW WILSON, Montreal, Canada, assignor of two-thirds to Frank Wilson and John S. Clunie, same place. Filed Nov. 2, 1895. Serial No. 567,769. (No model.)



Claim.—1. A vertical shaft bearing having an outer body and inner bearing portion proper, a supply-inlet near its lower end and an overflow at its upper end with a circuit or passage-way between such inlet and overflow, for the oil.

2. A vertical-shaft bearing having an outer body and inner removable bearing portion proper with an intermediate passage for oil and communicating ways to the face of the bearing, a supply-inlet to the passage near the lower end of the bearing and an overflow formed in same near the upper end thereof leading to an outlet as set forth.

3. A shaft-bearing having an outer body or frame section and an inner removable bearing-section proper grooved on its exterior to form independent feed and outflow spaces between the two sections, a supply-inlet to the intermediate feed-spaces, communicating ways leading from the supply-space to the inner face of the removable section, an overflow leading to the outflow-space and an outlet from this latter space, for the purpose set forth.

4. A self-lubricating bearing having an outer body or frame section and an inner bearing-section proper grooved on its exterior to form independent feed and outflow spaces between the two sections, the intermediate feed-spaces, ways for the oil leading through same to the inner bearing-face thereof, and annular grooves formed in such face in line with the inlet for the purpose set forth.

5. A self-lubricating bearing having an outer body or frame sections and an inner removable bearing-section proper grooved on its exterior to form independent feed and outflow spaces between the two sections, the intermediate feed-spaces, ways for the oil leading through same to the inner bearing-face thereof and grooves formed in such face in line with the said ways, for the purpose set forth.

6. A vertical-shaft bearing having an outer body or frame section, an inner removable bearing-section proper and an intermediate annular oil chamber or passage with ways leading through the bearing-section to the face of the inner section, a supply-inlet near the lower end of the bearing and an overflow at the top of same, and grooves formed in such face in line with said ways, for the purpose set forth.

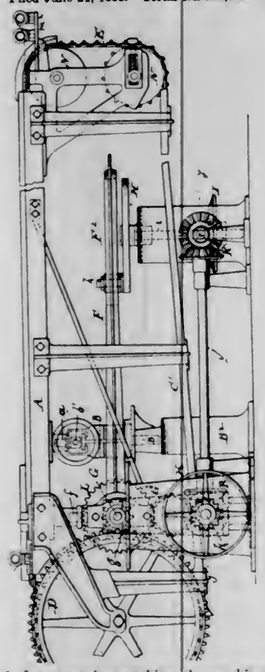
7. In a vertical-shaft bearing, an outer body or frame section having an inwardly-projecting shoulder at its lower end; an inner bearing-section proper supported by such shoulder and having independent longitudinal feed and outflow grooves or depressions on its exterior surface, a supply-inlet to the feed groove or grooves, ways from the latter to the inside face of the inner bearing-section, an overflow-opening between the said inside bearing-face and the outflow-groove and an outlet from the latter, for the purpose set forth.

8. In a vertical-shaft bearing, an outer body or frame section having an inwardly-projecting shoulder at its lower end; an inner bearing-section proper supported by such shoulder and having independent longitudinal feed and outflow grooves or depressions in its exterior surface, a supply-inlet to the feed groove or grooves, ribs intervening

such grooves and communicating openings in such ribs between the feed-grooves, ways from the latter to the inside face of the inner bearing-section, an overflow-opening between the said inner bearing-face and the outflow-groove and an outlet from the latter for the purpose set forth.

9. In a self-oiling vertical-shaft bearing, an outer body or frame section having an inwardly-projecting shoulder at its lower end; an inner bearing section proper supported by such shoulder and having independent longitudinal feed and outflow grooves or depressions in its exterior surface, an oil-supply located higher than the top of the bearing, a supply-inlet to the feed-grooves, ways from the latter to the inside face of the inner bearing-section, grooves formed in such face in line with said ways, an overflow-opening between the said inner bearing-face and the outflow-groove, and an outlet from the latter, for the purpose set forth.

569,734. TENTERING-MACHINE. EDWIN AINSWORTH, Wilmington, Del., assignor to the H. W. Butterworth & Sons Company, of Pennsylvania. Filed June 21, 1895. Serial No. 553,592. (No model.)



Claim.—1. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for said longitudinal frames whereby they are permitted to reciprocate and at the same time to move to or from each other, sprocket-wheels for operating the conveyers carried upon their respective frames, a transverse driving-shaft and gearing for operating the sprocket-wheels, a vertical pivot or axis for the transverse driving shaft arranged intermediate of the two longitudinal frames, power devices for oscillating the said transverse driving-shaft on its pivot, a transverse power-shaft arranged transversely to the pivot of the driving-shaft, and connecting power-transmitting devices between the power-shaft and the transverse driving-shaft immediately in line with the vertical axis or pivot about which the transverse driving shaft oscillates.

2. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for said longitudinal frames whereby they are permitted to reciprocate and at the same time to move to or from each other, sprocket-wheels for operating the conveyers carried upon their respective frames, a transverse driving-shaft and gearing for operating the sprocket-wheels, a vertical pivot or axis for the transverse driving-shaft arranged intermediate of the two longitudinal frames, power devices for oscillating the said transverse driving-shaft upon its pivot, a transverse power-shaft arranged transversely to the pivot of the transverse driving-shaft, and connecting power-transmitting devices consisting of spur-gearing between the power-shaft and the transverse driving-shaft immediately in line with the vertical axis or pivot about which the driving-shaft oscillates.

3. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for said longitudinal frames whereby they are permitted to reciprocate and at the same time to move to or from each other, sprocket-wheels for operating the conveyers carried upon their respective frames, a transverse driving-shaft and gearing for operating the sprocket-wheels, a vertical pivot or axis for the transverse driving-shaft arranged intermediate of the two longitudinal frames, power devices for oscillating the said transverse driving-shaft upon its pivot, a transverse power-shaft arranged transversely to the pivot of the driving-shaft, connecting power-transmitting devices between the power-shaft and the transverse driving-shaft immediately in line with the vertical axis or pivot of the transverse driving-shaft about which it oscillates, and clutch devices for throwing the power-transmitting devices into or out of operation.

4. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for said longitudinal frames whereby they are permitted to reciprocate and at the same time to move to or from each other, sprocket-wheels for operating the conveyers carried upon their respective frames, a driving-shaft and gearing for operating the sprocket-wheels, a vertical pivot or axis for the transverse driving-shaft arranged intermediate of the two longitudinal frames, power devices for oscillating the said driving-shaft upon its pivot, a transverse power-shaft arranged transversely to the pivot of a transverse driving-shaft, connecting power-transmitting devices consisting of spur-gearing between the power-shaft and the driving-shaft immediately in line with the vertical axis or pivot of the driving-shaft about which it oscillates, and a clutch for connecting the gearing with the power-shaft.

5. In a tentering-machine, the combination of two side guides, supports therefor to enable them to be reciprocated simultaneously in opposite directions, conveying devices carried upon the said frames for conveying the fabric through the machine while being treated, oscillating devices for oscillating the said frames in opposite directions, a transverse driving-shaft for operating the conveying devices adapted to oscillate to correspond with the reciprocation of the side guides, a transverse power-shaft arranged transversely to the axis of oscillation of the driving-shaft, and power-transmitting connections between the driving-shaft and power-shaft in the line of the axis of oscillation of the said driving-shaft.

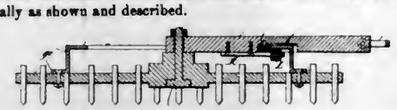
6. In a tentering-machine, the combination of two side guides and the supports therefor to enable them to be reciprocated in opposite directions, conveying devices carried upon said guides, an oscillating rotary driving-shaft for operating the conveying devices, a supporting-frame having a vertical axis in which said driving-shaft is journaled movably supported so as to move on a vertical axis, a transverse power-shaft supported in fixed bearings, power-transmitting connections between the power-shaft and oscillating driving-shaft within the supporting-frame and immediately in the line of the vertical axis, and power devices for oscillating the said oscillating driving-shaft.

7. In a tentering-machine, the combination of two side guides and the supports therefor to enable them to be reciprocated in opposite directions, conveying devices carried upon said guides, an oscillating rotary driving-shaft for operating the conveying devices, a supporting-frame in which the said driving-shaft is journaled movably to a vertical axis, a transverse power-shaft supported in fixed bearings, power-transmitting connections between the power-shaft and oscillating driving-shaft within the supporting-frame and immediately in the line of the vertical axis, power devices for oscillating the said oscillating driving-shaft, and clutch devices for throwing the power-transmitting devices into or out of action with the power-shaft.

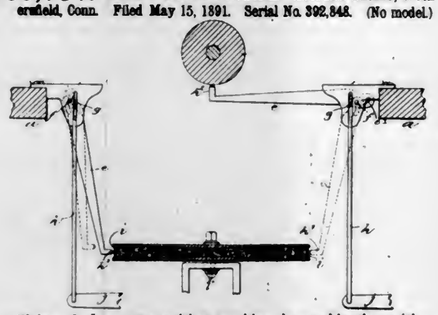
569,735. WITHDRAWN.

569,736. HARROW. JOSEPH A. BAILEY, Morristown, N.J. Filed Jan. 4, 1896. Serial No. 574,315. (No model.)

Claim.—A harrow comprising a plurality of radial arms which are connected with a central head, a tongue pivotally connected with said central head, and a ring connected with said arms and inclosing said head with which said tongue is also connected, and around which the latter is free to swing, said ring being provided with an annular inwardly-directed flange or rim, and said tongue being provided with a roller which is secured thereto, and which rests beneath said flange or rim, and said tongue being also provided with another roller which is connected therewith and in connection with which the inner edge of the annular flange or rim operates, and said radial arms being provided with the usual harrow-teeth which are secured thereto, substantially as shown and described.



569,737. TYPE-WRITING MACHINE. LEONARD BAILEY, Wethersfield, Conn. Filed May 15, 1891. Serial No. 392,848. (No model.)



Claim.—1. In a type-writing machine, in combination with a type-bar rotarily mounted on a connecting-rod and having a curve-shaped slot, a bracket having a guide-slot, a fulcrum-pin extending through the bracket and through the slot in the type-bar, the connecting-rod extending from the type-lever to the type-bar and in engagement with the slot in the bracket, and the type-lever, all substantially as described.

2. In a type-bar mechanism, in combination, a bracket-loop having guide-slots in each side thereof, a type-bar having a cam-groove, a fulcrum-pin passing through the bracket and through the cam-groove, a bar-actuating rod connected to the type-bar and to a type-lever and in engagement with the guide-slots in the bracket, and the type-lever, all substantially as described.

3. In a type-writing machine, in combination with the type-bars arranged about a common center, an inking-pad arranged within the group of types borne on the type-bars, the type-bars each bearing a type resting normally in contact with the inking-surface of the pad at the lower limit of the play of the type, brackets supporting the type-bars, cam-slots located in type-bars, fulcrum-pins secured to the brackets and extending through the slots, guide-slots located in the brackets, connecting-rods between the type-bars and type-levers, the upper end of the connecting-rods being in engagement with the guide-slots in the brackets, and the type-levers, all substantially as described.

4. In a type-writing machine, in combination with a series of type-bars each bearing type grouped about a common center, an inking-pad located with its outer surface normally in contact with the printing-surface of the type, and composed of a central ink-reservoir, a periphery of porous material, the disks with sloping surfaces with the central pad-pressing device, and a central support or pivot on which the inking device is rotated, all substantially as described.

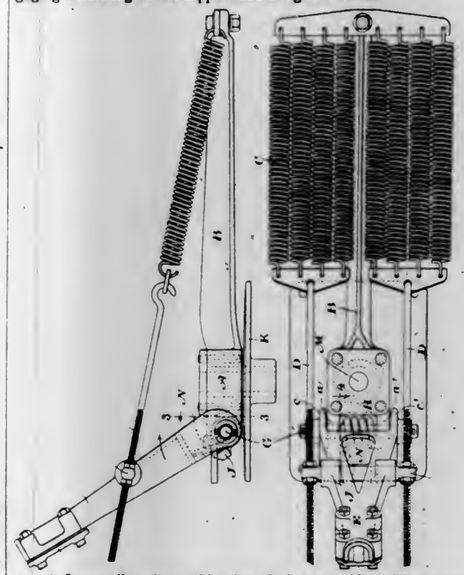
5. An inking device consisting of a main standard or support, a central pivot secured to and extending upward from this support, a sleeve borne and free to rotate on this pivot, a disk or disks secured to said sleeve, an absorbent material extending to or beyond the periphery and located between said disks, an ink supply also located between said disks, a nut or like screw-threaded device for compressing the disks secured to one end of the sleeve the opposite end of which is provided with a flange, and a nut secured to the upper part of the central support or pivot, all substantially as described.

569,738. UNDERRUNNING TROLLEY. NORMAN C. BASSETT, Lynn, Mass., assignor to the General Electric Company, of New York. Filed June 26, 1896. Serial No. 597,046. (No model.)

Claim.—1. In a trolley, the combination of a support for the trolley-pole, a base to which the support is pivoted, lifting-springs secured to the support and the base, and a spring acting to assist the lifting-springs when the trolley is in the lower position.

2. In a trolley, the combination of a support for the trolley-pole, a base to which the support is pivoted, lifting-springs secured to the support and the base, and a spring acting as a buffer-spring in the upper positions of the trolley, and as an assisting-spring in the lower positions.

3. In a trolley, the combination of a base, an arm extending from the base forming a support for the lifting-springs, projections from the base forming a support for a shaft upon which the trolley-support is pivoted, lugs on the base and on the support, and a spiral spring engaging with a lug on the support and a lug on the base.



4. In a trolley, the combination of a base provided with two projecting arms, a support for the trolley-pole provided with a similar pair of arms, a shaft extending through the arms and forming a pivot for the support, a spiral spring surrounding the shaft, a lug on the support, and a lug on the base engaging with the spring in certain positions of the trolley and other lugs on the base and support engaging with the spring in certain other positions of the trolley.

5. In a trolley, the combination of a base to which the lifting-springs and the support for the trolley-pole are secured, springs tending to raise the trolley to a vertical position at all times, and a spiral spring adapted to be coiled or wound from one end when used as a buffer-spring, and wound or coiled from the other end when used as an assisting-spring.

569,739. CARPENTER'S GAGE. RICHARD BATES, Bloomsburg, Pa. Filed Feb. 29, 1896. Serial No. 581,374. (No model.)



Claim.—1. The combination with a gage-stick, of a longitudinally-adjustable gage adapted for use upon curved surfaces the same comprising spaced gage-lugs rigid on the gage-frame, and an intermediate adjustable gage-lug, substantially as and for the purpose described.

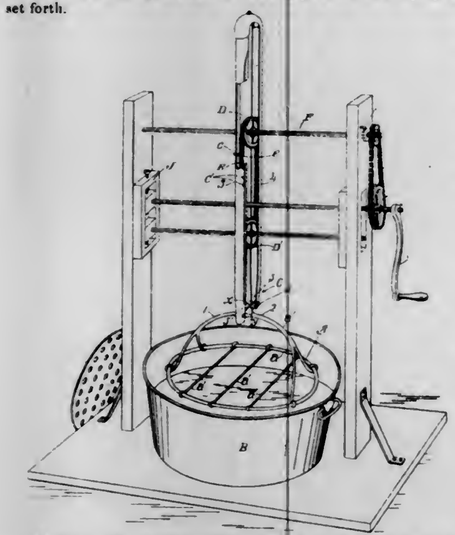
2. A carpenter's gage for use on curved edges or surfaces, comprising a gage-stick, a gage-frame slidingly mounted thereon, spaced gage-lugs carried thereby, a longitudinally-adjustable slide located intermediate said lugs and also carried by the gage-frame, a gage-lug on the said slide and adjustable therewith, and means for adjusting and holding the slide, substantially as specified.

3. The combination with the gage-stick, of the sliding gage-frame provided with a longitudinal slot opening out at one end thereof, spaced gage-lugs having a rigid relation to said frame and located upon opposite sides of the gage-stick, an adjustable slide capable of longitudinal movement with relation to the gage-frame and carrying at one end an intermediate gage-lug and at the other end a stop-lug working within the slot in the gage-frame, and provision for holding the slide fixed, substantially as described.

4. A gage comprising a suitable head or frame having three gage-lugs, the intermediate lug being adjustable in a plane substantially at right angles to a line drawn through the other lugs, substantially as described.

569,740. WASHING-MACHINE. HENRY G. BELCHER, Los Angeles, Cal. Filed Oct. 2, 1895. Serial No. 564,466. (No model.)

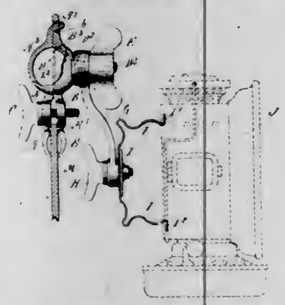
Claim.—1. A washing-machine provided with a vertically-reciprocating clothes carrying frame arranged to reciprocate in a water-holding vessel and also provided with an endless chain having means arranged to intermittently lift the frame when the chain is driven, and means for driving the chain, substantially as and for the purpose set forth.



2. In a washing-machine, the combination set forth of a vessel for holding water; the clothes-carrying frame arranged to reciprocate vertically in such vessel; the vertical support fastened to such frame and extending thereabove and provided with a lifting-catch; the sprocket-wheels arranged above the frame; the sprocket-chain provided with a spur arranged to engage the lifting-catch upon the vertical support; and means for operating the sprocket-wheels.

3. In a washing-machine, the combination of the sprocket-wheels arranged in a vertical plane; a sprocket-chain trained around the sprocket-wheels and provided with the lifting-spur; the clothes-carrying frame arranged beneath the sprocket-wheels; the vertical support composed of two channel-irons fastened together at their upper ends and fastened to the clothes-carrying frame at their lower ends and arranged upon opposite sides of the sprocket-wheels to chamber the rims thereof and the sprocket-chain, and provided with a lifting-catch arranged in the path of the lifting-spur; and means for operating the sprocket-wheels.

569,741. LAMP-SUPPORT. LEWIS F. BETTS, Brooklyn, N. Y., assignor to the Betts Patent Head Light Company, New York, N. Y. Filed Oct. 7, 1895. Serial No. 564,881. (No model.)

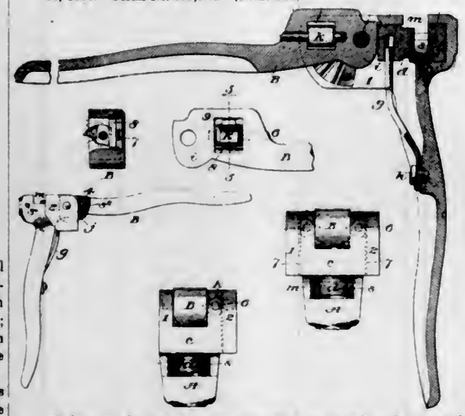


Claim.—1. In a lamp-support, a pair of dashboard-engaging clamps, and their operating-screw, one of said clamps having a hemispherical part provided with a central opening and intersecting slots b^2, in combination with a lamp-supporting arm mounted on a swivel-bolt having a head bearing in the hemispherical clamp and a squared portion extending through the opening thereof, and a clamp-nut E, the arrangement being such that the squared portion of the bolt may be moved into either of the vertical or horizontal slots b^2, and retained by bearing therein against rotation to hold the arm and lamp to throw more of the light upward, downward, or to either side, substantially as herein specified.

2. In a lamp-support, a pair of dashboard-engaging clamps, one of which has a hemispherical part provided with a central opening and intersecting slots b^2, in combination with an offset arm for supporting a lamp and mounted on a bolt swiveled in the hemispherical part and having a square portion, the opposite faces of the engaged end of the arm being curved to secure a proper bearing when reversed, together with a clamp-nut E, substantially as herein specified.

3. In a lamp-support, a pair of clamps adapted to engage with the dashboard of a carriage, in combination with a lamp-supporting arm having its end provided with a squared opening, a swivel-bolt having a squared portion extending through an opening in one of the clamps intersected by a slot b^2, said squared portion also entering the corresponding opening of the arm, together with a clamping-nut, substantially as herein specified.

569,742. SEAL-PRESS. EDWARD J. BROOKS, East Orange, N. J., assignor to the E. J. Brooks & Company, New York, N. Y. Filed Aug. 12, 1896. Serial No. 602,574. (No model.)



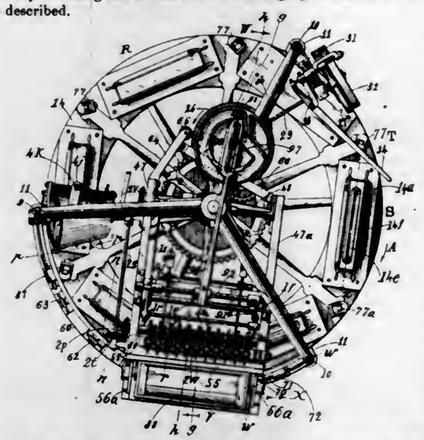
Claim.—1. In a seal-press composed principally of two main parts, having lever-handles integral therewith, a head on one of said parts containing a reciprocating die, and a fulcrum-pin which unites the two main parts, the combination of a cheek or cheeks forming part of said head and a suitable enlargement of the other main part, having respectively a spring-pressed pawl reversing on a pivot radial to said fulcrum-pin and a ratchet-rack concentric with said fulcrum-pin and having reversing recesses at its ends to coact with said pawl.

2. In a seal-press composed principally of two main parts, having lever-handles integral therewith, a head on one of said parts containing a reciprocating die, and a fulcrum-pin which unites the two main parts, the combination of a cheek forming part of said head and provided with a ratchet-rack concentric with said fulcrum-pin and a spring-pressed pawl carried by the other main part, reversing on a pivot radial to said fulcrum-pin, and coacting with said rack, substantially as hereinbefore specified.

569,743. MOLDING-MACHINE. ORRIN BRYANT, Buffalo, N. Y., assignor to the Bryant Iron Works Company, same place. Filed Oct. 1, 1895. Serial No. 564,289. (No model.)

Claim.—1. In a molding-machine, the combination of a continuously-rotatable table mounted on rollers on a supporting-base and having a series of brackets located on its horizontal face near the periphery at equal distances apart or substantially so, each bracket having a vertical portion facing the direction of movement, with a horizontally-swinging frame mounted on suitable supports on the machine so as to swing thereon and carrying the sand feeding and ramming mechanism, a vertically-movable bar mounted in guideways on one side of said frame, a cam secured to a shaft mounted in boxes on said swinging frame for engaging with and allowing the vertically-movable bar to move downward and engage with one of said brackets so that the movement of the swinging frame coincides with that of the horizontal rotating table, and then lifting said bar when the horizontally-swinging table has reached the limit of its movement in the direction of that of the rotating annular table, means for rotating said table and means for operating said cam, substantially as described.

2. In a molding-machine, the combination of a continuously-rotating table carrying a series of patterns, and mounted on a suitable support on the machine, and means for rotating said table, with a horizontally-swinging table and frame mounted on the central vertical shaft so as to swing thereon, and carrying the sand feeding and ramming mechanism, a frame-bar carrying a friction-roller at the rear of the swinging table and frame, means for moving said table and frame in one direction, a tappet secured to a vertical rotatable shaft mounted in bearings on the frame of the machine, and means connecting it with the driving-shaft for rotating said vertical shaft and tappet and thereby reversing the movement of the swinging table, substantially as described.



3. In a molding-machine, the combination with a rotatable table and means for turning it, of a horizontally-movable frame having its rear portion mounted on a central vertical supporting-shaft so as to swing horizontally thereon, a curved supporting-bar secured to the stationary table or base, a series of rollers mounted on said curved bar for supporting the front base portion of said horizontally-swinging table above the annular rotatable table, and means substantially as above described for giving the swinging table a horizontal swinging movement back and forth as above set forth.

4. The combination in a molding-machine, of an annular table mounted centrally on a vertical supporting-shaft and resting on a supporting-base so as to turn thereon, means for giving said table a rotary motion, a horizontally-swinging frame or table having its rear end mounted on said vertical central shaft and its front end supported on rollers mounted on a suitable supporting-base, means for giving it a swinging movement coinciding with the rotating table, a sand-feeding receptacle mounted on said swinging table, and means for operating it or moving it back and forth while the swinging table is in motion, substantially as described.

5. In a molding-machine, the combination of an intermediate pressing-platen mounted on arms pivoted to the machine, means substantially as above described for giving it its up-and-down movements for partly condensing the sand on a pattern in a flask, a covering of felt secured to the top of said platen, a series of ramming-hammers adapted to drop thereon to complete the condensing of the sand in said flask and means for operating said ramming-hammers, substantially as described.

6. In a molding-machine, the combination with a stationary circular table provided with rollers and a vertical central supporting-shaft, of a rotatable table mounted on said rollers and adapted to turn on the vertical shaft, means for giving said table a continuous rotary motion in one direction, a horizontally-swinging frame having its rear end mounted on the vertical shaft so as to swing thereon and having its front base supported on rollers mounted on a stationary support on the machine, means engaging with the driving mechanism and rotating table for swinging said frame horizontally back and forth, a sand-box mounted on said swinging frame, for feeding sand into a flask located on the continuously-moving table, a pressing-platen mounted on arms secured to a shaft set in bearings on the swinging table, ramming-hammers, mounted on the horizontally-swinging table above the pressing platen, for condensing the sand into the flask, and means substantially as above described for giving the sand-feeding mechanism, the pressing-platen and ramming-hammers their operating movements while the horizontally-swinging table is moving in unison with the continuously-rotating table.

7. In a molding-machine, the combination with the swinging frame, of the ramming-hammers and vertical hammer-bars mounted in said frame, and the disks or collars mounted on top of said bars, with a shaft mounted in bearings at the top of the horizontally-swinging frame and carrying two arms provided with foot-pieces to limit their rocking movement and connected at their tops by a cross-bar, and means consisting of a weighted arm mounted loosely on its shaft and provided with a slot 5^b and a pin rigidly secured to the shaft for limiting its movement, for moving said arms and cross-bar into or out of engagement with the disks at the top of the hammer-bars, so that the weight will hold them in either position for the purposes described.

8. In a molding-machine, the combination with a horizontally-swinging table, means for operating it and a table adapted to rotate continuously in one direction while the machine is in operation, means for rotating said table a series of rollers set in bearings upon a supporting-base and a vertical shaft on which the table turns, of a sand-feeding receptacle, arms connecting said receptacle with arms secured to a shaft mounted in boxes at the top of the horizontally-swinging frame and provided with an arm operated by a horizontal arm, a vertical driving-shaft on which said horizontal arm vibrates, and a friction-roller carried by the horizontal arm in engagement with a grooved cam mounted on the vertical driving-shaft for operating the sand-receptacle, substantially as described.

9. In a molding-machine, the combination with a swinging frame of a vertical rack-bar mounted in vertical bearings on the swinging frame and carrying a ramming-hammer, a gear-wheel 2^w, in gear with said rack-bar, and mounted loosely on a shaft set in bearings on the horizontally-swinging frame, collars rigidly secured to said shaft between which the gear-wheel rotates, a tooth secured to one of the collars, a spring-actuated pawl carried by the gear-wheel and adapted to engage with said tooth, to hold the wheel in engagement with the collar so as to rotate with it and the shaft, and means substantially as above described for disengaging said pawl from the tooth on the collar and thereby allowing the hammer to drop, as above set forth.

10. In a molding-machine, the combination with a swinging frame of a vertical rack-bar mounted on the horizontally-swinging frame and carrying a ramming-hammer, a gear-wheel in engagement with said rack-bar mounted loosely on a shaft adapted to rotate continuously in one direction and set in boxes on said horizontally-swinging frame, means for rotating said shaft, collars between which the gear-wheel rotates, rigidly secured to said shaft, a tooth on one of said collars, a spring-actuated pawl carried by the gear-wheel and adapted to engage with the tooth on the collar to hold the gear-wheel and collar in engagement and provided with a rear extension, an arm provided with a curved slot mounted on the collar and having an inward-extending pin 3^i, for disengaging said pawl, and a set-screw for securing said curved slotted arm and its pin 3^i, at any point of its adjustment, whereby the device may be adjusted to drop the hammer bar at any desired point, substantially as described.

11. In a molding-machine, the combination with the sand feeding receptacle and means for operating it, of an automatically-operated plate set in vertical slideways located within the sand-feeding receptacle so as to operate by gravity, a sand-holding frame, and an irregular-shaped bar secured at each end of the sand-holding frame below said plate, on which the lower edge of said plate is moved back and forth as the sand-receptacle is moved, and thereby automatically operated for scraping off the top of the sand in the frame above the flask for the purposes described.

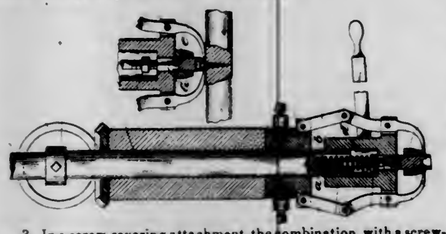
12. In a molding-machine, the combination of a supporting-table provided with a series of rollers set in bearings thereon, a central supporting-shaft mounted in the center of said supporting-table, a rotatable table mounted on said vertical shaft and resting on said rollers so as to turn thereon in one direction only, means for rotating said table, a series of flask-raising devices secured to the under side of the rotatable table and consisting of a frame rigidly secured to the under side of the rotatable table and carrying a roller at each end, a flat plate having flask-raising pins which extend up through the table and platform 14^s, and downward-extending sides between which are mounted rollers located so as to be directly above the rollers in the stationary frame, a horizontal bar having a wedge portion at each end, 44 44^s, and located between the upper and lower sets of rollers, a depending slotted arm pivoted to the under side of the moving table and having its lower end connected by a pin passing through the slot and secured to a portion extending from the wedge-bar, and a raised rib on the stationary table whereby the device is operated by said rib as the moving table carries it over, substantially as described.

569,744. SCREW-SEVERING ATTACHMENT FOR SCREW-DRIVING MACHINES. THOMAS BURCHILL, Cincinnati, Ohio, assignor to the Emerson & Fisher Company, same place. Filed Apr. 6, 1896. Serial No. 586,295. (No model.)

Claim.—1. In a screw-severing attachment, the combination, with a screw-driving mandrel, of cutting-jaws pivoted thereto, toggle-bars pivoted to said jaws, and means for operating same, whereby the screw may be severed at the completion of the mandrel stroke, substantially as shown and described.

2. In a screw-severing attachment, the combination, with a screw-driving mandrel, of cutting-jaws pivoted thereto, collar mounted and sliding on said mandrel with toggles connecting said collar and cut-

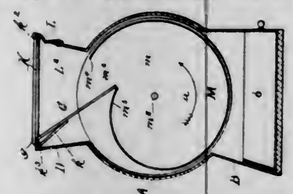
ting-jaws, and lever for operating said mandrel coupled to said collar, whereby the screw may be severed at the completion of the mandrel stroke, substantially as shown and described.



3. In a screw-severing attachment, the combination, with a screw-driving mandrel, of cutting-jaws pivoted thereto, collar mounted and sliding on said mandrel with toggles connecting said collar and cutting-jaws, lever for operating said mandrel coupled to said collar, movable screw-holder adjustably secured to said mandrel, with spring to normally hold said screw-holder extended, to separate the cutting-jaws and allow for the insertion of the screw, substantially as shown and described.

4. In a screw-severing attachment, the combination, with a screw-driving mandrel carrying a fixed sleeve at its outer end, with recesses formed therein, and screw-holder movably mounted in said recess, spring and stop-nut within said recess, to keep said holder extended, cutting-jaws pivoted to said sleeve, with means for operating same, and an adjustable nut on the outer end of said screw-holder, whereby the amount of cut of the cutting-jaws may be regulated, substantially as shown and described.

569,745. ASH-SIFTER. JOHN B. CHADBORN and EDWARD ANDROVETT, Newburg, N. Y. Filed Mar. 14, 1896. Serial No. 583,163. (No model.)



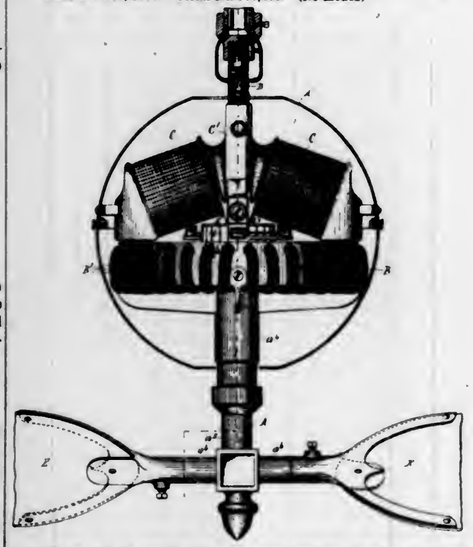
Claim.—1. In a sifter the combination of a casing provided with a circular portion, a bottom portion provided with a removable drawer and a top portion having an opening therein, said cylindrical casing being provided with a convolute sifter which is mounted therein, directly beneath said opening and which is composed of a cylindrical screen connected with circular end pieces, one side of the screen being connected to the end pieces at or adjacent to the perimeter thereof and being carried partially around the same and the opposite side being inwardly curved and the upper portion of said casing being provided with a downwardly-moving door adapted to close the opening and also to be held in a downwardly-inclined position so that it rests upon the inwardly-curved side of the screen and means for holding said-door closed, substantially as described.

2. In an ash-sifter, the combination of a casing provided with a circular or cylindrical portion, a bottom portion provided with a removable drawer, and a top portion provided with an opening, said cylindrical casing being provided with a convolute sifter which is mounted therein directly under the feed-opening, and which is composed of a convolute screen connected with circular end pieces, one side of the screen being secured to the end pieces at, or adjacent to the perimeters thereof, and being carried partially around the same, and the opposite side being inwardly curved and said upper portion being provided with a door which is adapted to close the opening therein, and also to be held in a downwardly-inclined position, so that it rests upon the inwardly-curved side of the screen, and said door being supported by a rectangular spring-frame which surrounds the opening in the top of the casing, and which is provided with arms which extend therethrough, to which the door is secured, substantially as shown and described.

3. In an ash-sifter, the combination of a casing provided with a circular or cylindrical portion, a bottom portion provided with a removable drawer and a top portion provided with an opening, said cylindrical casing being provided with a convolute sifter which is mounted therein and which is composed of a convolute screen connected with circular end pieces, one side of the screen being secured to the end pieces at, or adjacent to the perimeters thereof, and being carried partially around the same, and the opposite side being inwardly curved and said upper portion being provided with a door which is adapted to close the opening therein, and also to be held in a downwardly-inclined position so that it rests upon the inwardly-curved side of the screen, and said door being supported by a rectangular spring-frame which surrounds the opening in the top of the casing, and which is provided with arms which extend therethrough, to which the door is secured, and said convolute screen being provided with a shaft which extends therethrough, and through the casing and which is provided at one side with a crank by which it is revolved, substantially as shown and described.

4. In an ash-sifter, substantially as herein shown and described, the combination of a casing A having a cylindrical portion arranged longitudinally and centrally thereof, a rectangular base portion B, in the bottom of which is mounted a drawer *b*, the upper portion D of said casing being rectangular and open, and provided with a door G adapted to depend into the casing, and forming a chute for the material introduced, and also to close the opening in the top, said door being secured to arms *k* of the rectangular spring-frame K arranged in the opening in said top D, and which is adapted to be held in position by a spring-catch L secured to one side of the casing, which also is adapted to engage the free edge of the door to retain the same in a closed position, and circular head-pieces *m* mounted on the shaft m^3, which passes through the cylindrical portion of the casing, and is provided with a crank-handle m^2, and a convolute screen secured to said end pieces and having an open face between the ends thereof, through which the material is introduced thereinto, all constructed and adapted to operate as herein set forth.

569,746. ELECTRIC MOTOR. HERMAN B. COLLINS, Fulton, N. Y. Filed Nov. 20, 1895. Serial No. 569,489. (No model.)



Claim.—1. In combination, a rotary pendent head or part, and a motor for revolving the head or part, said motor being provided with an armature and a field-magnet magnetically coöperating to effect an upward tendency of the revolving head or part during the operation of the motor, substantially as and for the purpose described.

2. In combination, a rotary armature, a field-magnet having its pole-pieces arranged above the armature for magnetically attracting the same upwardly and a rotary head or part arranged beneath the armature and revolved thereby, substantially as and for the purpose specified.

3. In combination, a rotary head or part, a motor for revolving the head or part, said motor being provided with an armature and a field-magnet magnetically coöperating to effect an upward tendency of the revolving head or part during the operation of the motor, and a fan-blade revolved by the head or part, substantially as and for the purpose described.

4. In combination, a stationary shaft formed with a convex engaging face, a rotary armature, a field-magnet for magnetically attracting the armature upwardly, and a rotary head or part arranged beneath the armature and revolved thereby, said head or part being provided with a bearing-face for engaging the convex face, substantially as and for the purpose set forth.

5. In combination, a stationary shaft formed with a pair of separated engaging faces, a rotary armature, a field-magnet arranged at one side of the armature for coöperating therewith, and a rotary head or part arranged at the opposite side of the armature and revolved thereby, and provided with separated bearing-faces for engaging the former separated faces, one of said bearing-faces being formed convex, substantially as and for the purpose specified.

6. In combination, a pendent stationary shaft formed with an engaging face, a rotary head or part provided with a convex face for engaging the former face, and a motor for raising the head or part and revolving the same in its elevated plane, substantially as and for the purpose described.

7. In combination, a pendent stationary shaft formed with a convex engaging face at its lower end, and a stop-face arranged above the convex face, a rotary head or part encircling the shaft and provided with a convex face and a stop-face for engaging the former faces, and a motor for raising the head or part and revolving the same in its elevated plane, substantially as and for the purpose set forth.

8. In combination, a pendent stationary shaft, a rotary head or part provided with an internal chamber for receiving the head or shaft having its lower end closed, a pair of bearing-pieces interposed between the shaft and the end face of the chamber, and a motor for revolving the head or part, substantially as and for the purpose specified.

9. In combination, a pendent stationary shaft formed with an engaging face at its lower end, a rotary head or part formed with an internal chamber for receiving the shaft having its lower end closed, and formed with a bearing-face for engaging the former face, said chamber being provided with a bearing for the shaft and a superimposed lubricant-receptacle whereby said bearing and the engaging and bearing faces are submerged beneath the level of the lubricant, and a motor for revolving the head or part, substantially as and for the purpose described.

10. In combination, a pendent stationary shaft formed with a convex engaging face at its lower end, and a stop-shoulder arranged above the convex face, a rotary head or part provided with an internal chamber for receiving the shaft, having its lower end closed and formed with bearing and stop faces for engaging the former faces, said chamber being provided with a contracted portion above the bearing and stop faces for forming a bearing for the shaft, a lubricant-receptacle arranged above the bearing, a conduit extending downwardly from the receptacle into the internal chamber, and a second condnit extending from said chamber above the level of the lubricant in said receptacle, and a motor for revolving the head or part, substantially as and for the purpose set forth.

11. In combination, a pendent stationary shaft formed with a stop-face, a rotary armature encircling the shaft, a field-magnet arranged above the armature and coöperating therewith for suspending and revolving the armature, a rotary head or part arranged beneath the armature and provided with an internal chamber for receiving the shaft having its lower end closed, bearing-pieces interposed between the lower end of the shaft and formed with conduits for the passage of the lubricant, said bearing-pieces having the central portions of their adjacent faces engaged and the surrounding portions thereof disengaged, substantially as and for the purpose specified.

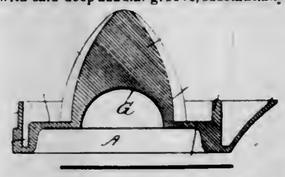
12. In combination, a rotary head or part, fan-blades connected to the head or part, an armature fixed to the head or part, a commutator comprising a series of segments, and an insulating-support for the segments fixed to the head or part and a field-magnet cooperating with the armature for suspending and revolving the same, substantially as and for the purpose specified.

13. The herein-described commutator, the same comprising a series of separated segments having arms or projections extending from their opposite ends, an insulating-support vulcanized to the segments, and provided with upper and lower flanges having sockets for receiving said arms or projections, substantially as and for the purpose described.

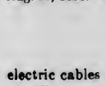
14. The herein-described flask for molding commutators, the same comprising a lower section having an annular wall projecting upwardly from its inner edge, an annular groove in its top face and a circular series of apertures extending downwardly from said groove through the section, a movable annular ring encircling the annular wall and formed of less diameter than the circular series of apertures, an intermediate section of greater diameter than the annular ring, provided with perforations extending through its upright wall and an annular groove in its inner peripheral face, and a top section formed with an annular groove in its lower face, substantially as and for the purpose specified.

569,747. LEMON-JUICE EXTRACTOR. THOMAS CURLEY, Troy, N. Y. Filed Dec. 12, 1895. Serial No. 571,902. (No model.)

Claim.—A device for extracting the juice of lemons, comprising a circular base, having a depending annular rim, with which is connected an upwardly-directed annular flange whereby a deep annular narrow groove is formed between said rim, and said flange, and said base being also provided centrally thereof with a cone, the sides of which are provided with vertical ribs, and said flange being provided at one side with a discharge-spout and said base with a fender or guard for said discharge-spout, and said discharge-spout being in communication with said deep annular groove, substantially as shown and described.



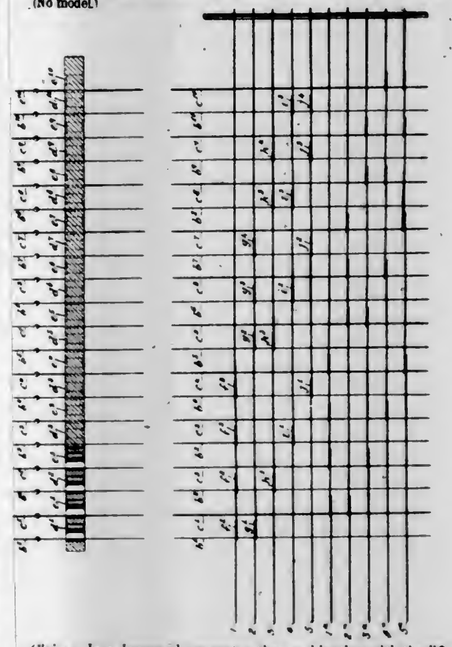
569,748. ARMORING OR COVERING FOR ELECTRIC CABLES. HENRY EDMUNDS, London, England. Filed Aug. 27, 1896. Serial No. 604,078. (No model.)



Claim.—1. Armorings or coverings for electric cables the said armorings or coverings being made of wires of ordinary round form alternating with wires having recesses at their sides in which the first-named wires engage substantially as and for the purposes herein specified.

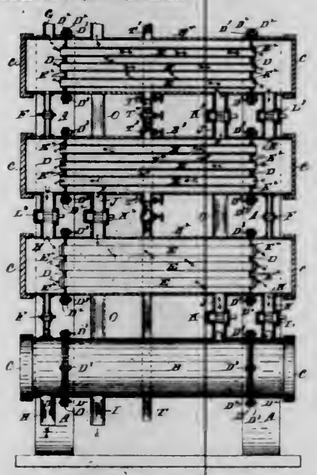
2. Armorings or coverings for electric cables the said armorings or coverings being made of wires of ordinary round form alternating with wires having recesses at their sides in which the first-named wires engage one set of wires being made of copper or other good conductive metal and the other set being made of iron or other strong protective material substantially as herein specified.

569,749. JACQUARD APPARATUS. FRANCIS B. FAWCETT, Kidderminster, England, assignor to George Matthias Whittall, Spring Bank, Wribbenhall, England. Filed Mar. 18, 1896. Serial No. 583,687. (No model.)



Claim.—In a Jacquard apparatus, the combination with the lifting cords, of a trap-board having its holes adapted to trap all the said cords in their normal or quiescent position, looped needles arranged in vertical rows two groups or sets of not less than five in each row with each loop on each needle forming with one loop on one of the needles above or below it in the same set a selected pair through which one of the lifting-cords passes, whereby the pushing back of all the needles in a set save the selected two will push all the cords of that set save one out of trap, substantially as described.

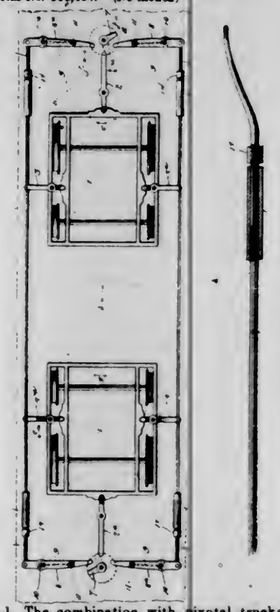
569,750. COMBINED COOLING, CONDENSING, AND STERILIZING APPARATUS. WILLIAM F. FRY, Cincinnati, Ohio. Filed May 8, 1895. Serial No. 548,555. (No model.)



Claim.—1. The combination of conducting-pipes E, and source of heat as T, the cylinders and chambers at the end portions of the cylinders, and the intervening tubes connected thereto, line of piping M, connected to the end chambers of the cylinders, and the central portion of the cylinders being separated from the end portions, and lines of piping O, connected thereto, and the three-way cocks located as described, substantially as and for the purposes specified.

2. The combination of conducting-pipes E, and source of heat as T, the cylinders and end chambers thereof, intervening tubes connected thereto, lines of piping M and O, and connection thereof with said intervening tubes substantially as described and the central portion of the cylinders being separated from the ends and connected to the inner lines of tubing, substantially as and for the purposes specified.

569,751. RAILWAY SWITCHING DEVICE. JAMES R. FLAGG, Frewsburg, and CHARLES E. LILLY, Jamestown, N. Y. Filed July 22, 1896. Serial No. 600,137. (No model.)



Claim.—1. The combination with pivotal trucks, of shifting-levers mounted for horizontal movement and operatively connected with the trucks, a crank-shaft, and operating connections between the crank-shaft and said levers whereby the rotation of the crank-shaft in one direction will communicate motion to levers connected respectively with the front and rear trucks, to turn said trucks in the same direction, substantially as specified.

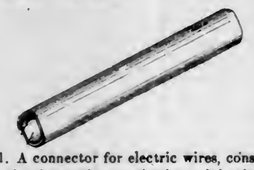
2. The combination with pivotal trucks, of shifting-levers mounted to swing in a horizontal plane and operatively connected respectively with the front and rear trucks, crank-arms arranged in operative relation respectively with the shifting-levers connected with the contiguous trucks, intermediate levers arranged in the paths of said crank-arms, and connections between each intermediate lever and a shifting-lever connected with the remote truck, whereby the operation of one crank-arm communicates motion in the same direction to the contiguous and remote trucks, substantially as specified.

3. The combination with pivotal trucks, of end and lateral shifting-levers operatively connected respectively with the front and rear trucks, a crank-arm arranged in the path of the end shifting-lever of the front truck, opposite intermediate levers arranged with their free ends in the path of the crank-arm, and operating connections between said intermediate levers and the lateral shifting-levers of the rear truck, substantially as specified.

4. The combination with pivotal trucks, of end and lateral shifting-levers operatively connected respectively with the front and rear trucks, a crank-arm arranged in the plane of the end shifting-lever, intermediate yieldingly-mounted levers arranged with their free ends in the path of the crank-arm, and connections between said intermediate levers and the lateral shifting-levers, each connection including a sectional connecting-rod having its sections mounted for independent sliding movement in one direction, whereby the intermediate lever is adapted to yield independently when encountered by the crank-arm moving in one direction, substantially as specified.

5. The combination with pivotal trucks, of end and lateral shifting-levers operatively connected respectively with said trucks, a crank-arm mounted in the plane of the end shifting-lever, intermediate spring-actuated levers arranged with their free ends in the path of said crank-arm, and a sectional connecting-rod between the outer end of each intermediate lever and the corresponding lateral lever of the rear truck, the sections of said rod being connected by a sliding joint including a tubular guide fitted upon one section to receive the extremity of the other section, and a shoulder on the second-named section to engage the extremity of the guide, substantially as specified.

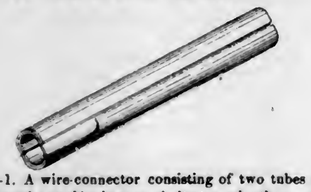
569,752. WIRE-CONNECTOR. ALFRED GARTNER, Newark, N. J., assignor to Charles H. McIntire, same place. Filed June 10, 1896. Serial No. 594,923. (No model.)



Claim.—1. A connector for electric wires, consisting of a metal strip bent into the shape of an oval tube and having its edges overlapping and adapted to slide on each other, said oval tube being adapted to receive the wires from opposite directions and to be twisted together with said wires, substantially as shown and described.

2. A connector for electric wires, consisting of a metal strip bent into the shape of an oval tube and having its edges overlapping and adapted to slide on each other, and of a dent or depression arranged in said tube and extending longitudinally through its entire length and dividing said tube into two connecting-channels, adapted to receive the wires from opposite direction and to be twisted together with the said wires, substantially as shown and described.

569,753. WIRE-CONNECTOR. ALFRED GARTNER, Newark, N. J., assignor of three-fourths to Charles H. McIntire, same place. Filed June 17, 1896. Serial No. 595,886. (No model.)



Claim.—1. A wire-connector consisting of two tubes arranged one within the other and in close proximity to each other, and adapted to receive the wires to be jointed and to be twisted together with the said wires, substantially as described.

2. A wire-connector consisting of two oval tubes arranged one within the other and in close proximity to each other, the internal longer diameter of the inner tube being equal to the combined diameter of the wires to be jointed, while its internal shorter diameter is equal to the diameter of a single wire, said connector being adapted to receive the wires and to be twisted together with the said wires, substantially as described.

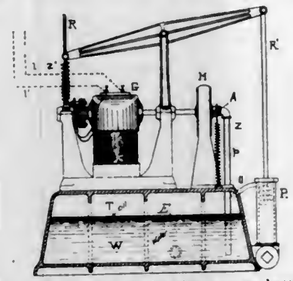
3. A wire-connector consisting of two tubes arranged one within the other and in close proximity to each other, each of said tubes being provided with an elongated open slot extending through the entire length of its respective tube, said connector being adapted to receive the wires and to be twisted together with the said wires, substantially as described.

4. A wire-connector consisting of two tubes arranged one within the other and in close proximity to each other, each of said tubes being provided with an elongated open slot extending through its entire length and arranged diametrically opposite each other, a longitudinally-extending depression arranged in one of said tubes and conforming in shape to the shape of the inserted wires, said connector being adapted to receive the wires to be jointed and to be twisted together with the said wires, substantially as described.

5. A wire-connector consisting of two tubes arranged one within the other and in close proximity to each other and provided with a longitudinally-extending depression, said connector being adapted to receive the wires and to be twisted together with said wires, substantially as described.

6. A wire connector consisting of two tubes arranged one within the other and in close proximity to each other, each of said tubes being provided with an elongated open slot and with a depression arranged diametrically opposite the slot, the depression in one tube conforming to the shape of the edges forming the slot in the other tube, said connector being adapted to receive the wires and to be twisted together with the said wires, substantially as described.

569,754. ELECTRIC LIGHTING BY WIND-POWER. JOHN W. GIBBONEY, Lynn, Mass. Filed July 23, 1896. Serial No. 600,248. (No model.)



Claim.—1. The method of charging storage batteries from a variable source of power, consisting in maintaining a strong magnetization of the field of the generator, storing the energy of the variable source of power until sufficient to start the generator at the required charging potential, and regulating the application of said power to produce a volume of charging-current proportionate to the amount of energy delivered at the place of storage, substantially as set forth.

2. In an apparatus for charging storage batteries, the combination with an electrical generator, of a fluid-motor for operating it, a closed chamber of a fixed capacity in which the motor-driving fluid is stored, a variable source of power operating to increase the pressure upon said fluid, and a regulator controlling the admission of the fluid to the motor, substantially as set forth.

3. The combination with a source of variable power, of a closed tank of fixed capacity, a fluid-motor connected thereto, a pump operated by said power for forcing fluid into said tank, and an automatic means for admitting the fluid to said motor when the pressure in said tank reaches a predetermined degree, as and for the purpose set forth.

4. The combination with a closed storage-tank and a receiving-tank, of a pump for transferring fluid from the latter to the former, and a fluid-motor connected to the storage-tank and discharging into the receiving-tank, as and for the purpose set forth.

5. The combination with the generator, of the hollow base divided into a storage-tank and a receiving-tank, a fluid-motor connected to said generator and communicating with both tanks, and a pump for transferring fluid from the receiving-tank to the storage-tank, as and for the purpose set forth.

6. In an impulse fluid motor, the combination with the fluid-discharge outlets, of a device actuated and controlled by the pressure of the operating fluid for regulating the discharge from said outlets, substantially as set forth

7. The combination with the impulse fluid-motor, of the taper-plugs controlling the outlets D, D', and an automatic pressure-controlled device for controlling the movement of said plugs and thereby regulating the discharge from said outlets for the purpose specified.

8. The combination of a windmill, a pump operated thereby, a primary lever, and a secondary lever pivoted to said primary lever and having a controlling spring or weight, said levers forming a part of the connection between the windmill and the pump and being adapted in their operation to change the effective leverage relation between the windmill and pump in accordance with changes in the power applied by the windmill.

9. The combination with the windmill pumping-rod R, and the pump with its rod R', of the walking-beam, the angle-lever pivoted to one end thereof, the windmill pumping-rod connected to one end of the angle-lever, and a spring joining the other end thereof to a fixed point, substantially as and for the purpose set forth.

10. The combination of a dynamo-generator for charging a storage battery, a motor, a variable source of power such as a windmill, means for storing the energy thereof until sufficient to move the generator at the required charging potential, and an automatic regulator for connecting the motor with the stored energy when the required pressure is obtained.

11. The combination of a dynamo-generator for charging a storage battery, a motor, a variable source of power such as a windmill, a fluid-pressure tank for storing the energy from said source of power until sufficient to move the generator at the required charging potential, and an automatic regulator for connecting the motor with the stored energy when the required pressure is obtained.

12. The method of charging storage batteries from a variable source of power, consisting in storing the energy from a variable source of power until sufficient to start the charging-generator at the required potential, and by the variations of the pressure or tension of the stored energy regulating the application of said power to produce a volume of charging current proportionate to the amount of energy delivered at the place of storage substantially as set forth.

569,755. PIPE-HANGER. BENJAMIN W. GRIST, Philadelphia, Pa., assignor to the Pennsylvania Iron Works Company, same place. Filed Feb. 14, 1895. Serial No. 538,427. (No model.)



Claim.—1. A pipe-hanger comprising a tubular body having between its ends a supporting device located at a distance from one end greater than the diameter of the pipe to be supported.

2. A pipe-hanger comprising a tubular body having between its ends a supporting device located at a distance from one end greater than the diameter of the pipe to be supported and a bracket between the under side of the supporting device and body.

3. A pipe-hanger comprising a tubular body having between its ends a supporting device located at a distance from one end greater than the diameter of the pipe to be supported, in combination with a bolt or rod extending through said body.

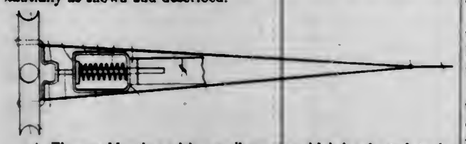
569,756. TROLLEY-SUPPORT FOR TROLLEY-CARS. OTTO HOLZ, Schenectady, N. Y. Filed May 2, 1896. Serial No. 590,008. (No model.)

Claim.—1. The combination with a trolley-arm, which is adapted to be secured to a car, of a frame supported thereby, and a spring-operated rod which passes therethrough, said rod being provided at its upper end with spring-arms, and two wheels or pulleys which are mounted thereon, and which are arranged horizontally, and provided with peripheral grooves, and between which the trolley wire or conductor is adapted to pass, said spring-arms by which the wheels or pulleys are supported being each provided with a cord or other device which extends therefrom, substantially as shown and described.

2. The combination with a trolley-arm, which is adapted to be rigidly secured to a car, of a frame supported on the upper end thereof, a vertically-movable spring-operated rod supported in said frame, and spring-arms connected with the upper end of said rod, and a grooved wheel or spool mounted on each of said arms, and between which the trolley wire or conductor, is adapted to pass, and means connected with said spring-arms for separating the same, substantially as shown and described.

3. The combination with a trolley-arm, which is adapted to be secured to a car, of a frame supported thereby, a spring-supported rod which passes vertically therethrough, and spring-arms connected

with the upper end of said rod, each of which supports a pulley provided with a peripheral groove, said pulleys being arranged side by side, and the grooves therein, being adapted to receive the trolley wire or conductor, and means for separating said spring-arms, substantially as shown and described.



4. The combination with a trolley-arm, which is adapted to be rigidly secured to a car, of a vertical frame mounted thereon, a spring-supported device connected therewith, and provided with spring-arms, each of which supports a peripherally-grooved pulley, said pulleys being arranged horizontally, and means for separating said pulleys, substantially as shown and described.

569,757. MEANS FOR CLOSING PUNCTURES IN PNEUMATIC TIRES. EDWIN G. HURT and ENOCH M. HOSTETTER, Caldwell, Idaho. Filed May 5, 1896. Serial No. 590,304. (No model.)



Claim.—The herein-described device for closing or sealing a puncture or hole in a pneumatic tire, consisting of a screw-threaded rod, having a head at one end and a collar mounted thereon, a disk provided with a central screw-threaded passage through which said rod is adapted to be passed, and an open, conical, hollow flexible attachment which is adapted to be mounted on said rod, adjacent to said head and to be held in position by said collar, and means for operating said parts, consisting of a tubular shaft having a head or handle at one end and provided near its open end with a transverse pin which is adapted to engage with a hook or projection formed on the end of said screw-threaded rod, and said tubular head being provided with a sleeve which is mounted thereon, and provided with shoulders or projections at opposite sides thereof, and with flanges at its end which are adapted to engage with a transverse slot or groove, in the surface of the disk which is mounted on said screw-threaded rod, substantially as shown and described.

569,758. MINING-MACHINE. FRANCIS M. LECHNER, Columbus, Ohio. Filed July 27, 1896. Serial No. 600,644. (No model.)



Claim.—1. In a mining-machine, the combination with the sliding frame thereof, an endless chain mounted and traveling on said frame and cutting-tools projecting from a portion of the links of said chain, said cutting-tools being arranged in pairs, of a holding-bar supported from and extending on the outer side of said traveling frame, said holding-bar passing between the tools of said pairs and having its outer surface on substantially the same plane with the outer ends of said tools, substantially as and for the purpose specified.

2. In a mining-machine the combination with the sliding frame, a traveling endless chain mounted thereon and tools projecting from portions of said chain-links, said tools being arranged in pairs as described, of a holding-bar supported from said traveling frame and extending on the outer side of the latter and between the tools of said pairs and a detachable head at the forward end of said holding-bars, substantially as and for the purpose specified.

3. In a mining-machine the combination with the sliding frame, an endless cutting-chain mounted and running thereon, said chain consisting of jointedly-connected and alternately-arranged tool holding and connecting links, tools projecting from a portion of said links, said tools being arranged in pairs, and oppositely-located lugs c^4 formed on the outer faces of said tool-holding links, of a holding-bar supported from said traveling frame and extending substantially in the direction of the length of the latter on one side thereof, said holding-bar passing between the tools of said bars and between the lugs c^4 of the tool-holding links, substantially as and for the purpose specified.

569,759. COMPOSITION OF MATTER. ROBERT H. MARTIN, Brooklyn, N. Y. Filed Jan. 9, 1896. Serial No. 574,918. (No specimens.)

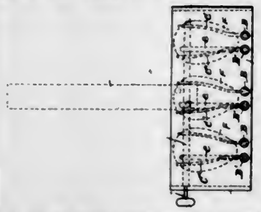
Claim.—1. The above-described composition of matter composed essentially of metal in small particles and asbestos fibers, combined and consolidated by pressure, for the purposes set forth.

2. The above-described composition of matter composed essentially of soft metals, such as lead or copper in small particles, and asbestos fiber intimately combined and consolidated by pressure, for the purposes set forth.

3. The above-described composition of matter composed essentially of metal in small particles, asbestos fiber and a natural lubricant, combined and consolidated by pressure, for the purposes set forth.

4. The above-described composition of matter composed essentially of a plurality of metals in small particles, and asbestos fiber combined and consolidated by pressure, for the purposes set forth.

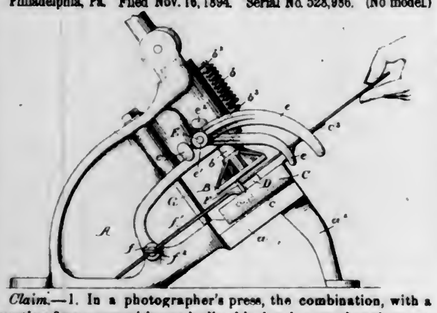
569,760. SAFETY EGG-CASE. JOHN MATHENY, Indianapolis, Ind. Filed Mar. 23, 1896. Serial No. 584,465. (No model.)



Claim.—1. An egg-case consisting of a metallic frame forming the sides and ends; a series of rods extending across the bottom of said frame and permanently secured thereto; a series of flexible yokes or loops secured at one side to each of said rods, the free portions of said yokes extending toward the top of said frame; a series of rods situated parallel with said fixed rods and mounted rotatably in said frame, and provided with a series of companion yokes secured thereto so that they may be moved toward and away from said first-mentioned yokes; a lever secured permanently to each of said rotatable rods; a rod slidable longitudinally through an aperture in the front of said frame near the upper portion, said rod being connected operatively to the upper end of each of said levers, and suitable means for latching said slidable rod to said frame when pressed inward, substantially as and for the purposes shown and described.

2. In an egg case or holder, the combination of the frame; the stationary rods across the bottom thereof provided with the flexible yokes; the rotatably-supported rods situated parallel with and adjacent to said fixed rods, and provided with companion yokes; the levers attached to said rotatable rods; the slidable operating-rod connecting the free ends of said levers; the handle at the end of said operating-rod, and the means for latching said rod to said frame, substantially as and for the purposes shown and described.

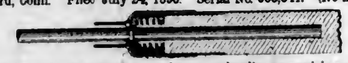
569,761. PHOTOGRAPHER'S PRESS. THOMAS H. MCCOLLIN, Philadelphia, Pa. Filed Nov. 16, 1894. Serial No. 528,936. (No model.)



Claim.—1. In a photographer's press, the combination, with a supporting-frame comprising an inclined bed and an overhanging arm, of a reciprocative platen disposed above and parallel with said bed, means for reciprocating said platen, a die-holder attachable to and detachable from said bed, adjustable end and lateral guides on said frame, and means for fixing said guides in their respective positions of adjustment, substantially as described.

2. In a photographer's press, the combination, with a supporting-frame provided with a suitable bed, a reciprocative platen above said bed, and means for reciprocating the platen, of a die-holder constructed to be slid upon said bed, and an adjustable yielding end guide rearward of said holder, said guide comprising a transverse bar or plate that lies against the under side of the platen and lateral rods that are extended from said plate or bar and adjustably mounted in supports in the respective sides of the frame, whereby the ends of the bar may be adjusted independently of each other, substantially as described.

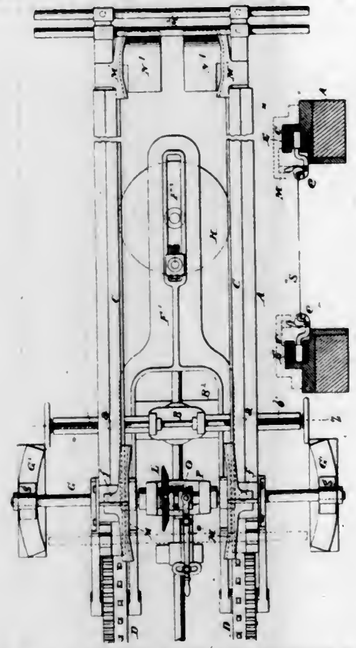
569,762. UMBRELLA ATTACHMENT. JOHN J. MCINTYRE, Hartford, Conn. Filed July 24, 1896. Serial No. 600,341. (No model.)



Claim.—1. An attachment for an umbrella, comprising a movable sleeve encircling the same and embodying an external inwardly-inclined wall, an inner downwardly-inclined wall, and an internal flange at the lower end of said downwardly-inclined wall and encircling the stick of the umbrella; and a spring disposed intermediate said flange and the handle of the umbrella.

2. An umbrella having, in combination with a handle and a stick, a sleeve fixedly secured thereto; a movable sleeve disposed thereon and having a cup-shaped end provided with an external inwardly-inclined wall, an inner downwardly-inclined wall, and an interiorly-extending flange projecting at right angles from said inner downwardly-inclined wall and encircling the stick of the umbrella; a spring intermediate said flange and the handle of the umbrella; and a flange secured to the stick and having an outer inclined surface conforming substantially to the contour of the inner portions of the tips and also serving to prevent the detachment of said movable sleeve.

569,763. TEXTILE-TENTERING MACHINE. ANDREW MCLEAN, Passaic, N. J., assignor to the H. W. Butterworth & Sons Company, of Pennsylvania. Filed June 21, 1895. Serial No. 553,598. (No model.)



Claim.—1. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for the said longitudinal frames whereby they are permitted to reciprocate and at the same time move to and from each other, sprocket-wheels for operating the conveyers carried upon the respective frames, gearing for operating the sprocket-wheels, a transverse driving-shaft for operating the gearing, gearing and shafts for operating the driving-shaft, a vertical pivot for the transverse driving-shaft arranged intermediate of the two longitudinal frames and adapted to oscillate about a vertical axis, an oscillating arm movable about the vertical axis of the driving-shaft and having journals upon each side and at a distance from the vertical axis so as to receive the horizontal driving-shaft to oscillate it while it rotates, a crank adapted to oscillate the said arm, and adjustable power-transmitting devices between the sprocket-wheels and driving-shaft.

2. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for the said longitudinal frames whereby they are permitted to reciprocate and at the same time move to and from each other, sprocket-wheels for operating the conveyers carried upon the respective frames, gearing for operating the sprocket-wheels, a transverse driving-shaft for operating the gearing, gearing and shafts for operating the driving-shaft, a vertical pivot or axis for the transverse driving-shaft arranged intermediate of the two longitudinal frames, an oscillating arm having widely-separated bearings in which is journaled the horizontal driving-shaft so that the power is applied upon each side of its vertical pivot, and a crank adapted to oscillate the said arm.

3. In a tentering-machine, the combination of two side guides, supports or frames therefor to enable them to be reciprocated simultaneously in opposite directions, conveying devices carried upon the said frames for conveying the fabric through the machine while being treated, an oscillating or rocking arm arranged between the two frames, a crank to oscillate or rock the said arm, power devices to operate the crank, bearings carried by the said oscillating or rocking arm on each side of its axis of oscillation and close to a vertical plane through the respective reciprocating frames, journals in said bearings connected with the said frames, and adjustable connections between the oscillating arms and frame.

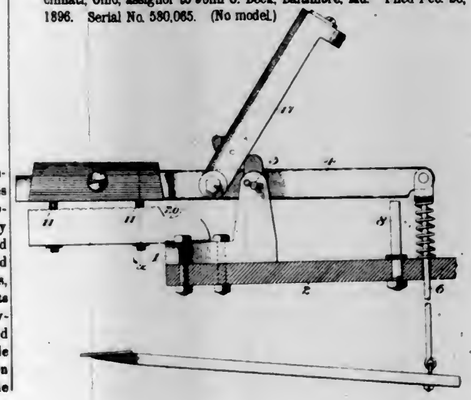
4. In a tentering-machine, the combination of two longitudinal reciprocating frames each provided with conveying devices for holding and stretching the fabric arranged between them, supports arranged at intervals for the said longitudinal frames whereby they are permitted to reciprocate and at the same time move to and fro from each other, sprocket-wheels for operating the conveyers carried upon the respective frames, gearing for operating the sprocket-wheels, a transverse driving-shaft for operating the gearing, gearing and shafts for operating the driving-shaft, a pivoted support for the oscillating driving-shaft, an oscillating arm journaled upon the driving-shaft upon each side of its vertical axis and supported thereby, and power devices for oscillating the oscillating arm arranged between the longitudinal frames.

569,764. ILLUMINATED SIGN. CHARLES L. NASON, New York, N. Y. Filed Dec. 14, 1895. Serial No. 572,104. (No model.)



Claim.—In an illuminated sign, the combination of a stationary outer casing, in the sides of which the letters of the sign are cut, a revoluble cylinder placed within said casing, an electrical motor at one end thereof for revolving said cylinder, an electric incandescent light within said cylinder and electrical conductors extending through said casing and through said cylinder, said conductors being in connection with said light, and with said motor, the body portion of said cylinder being transparent, and composed of spiral strips of different-colored material, substantially as shown and described.

569,765. CAN-SOLDERING MACHINE. GEORGE T. PILLINGS, Cincinnati, Ohio, assignor to John G. Beck, Baltimore, Md. Filed Feb. 20, 1896. Serial No. 580,065. (No model.)



Claim.—1. In a can-soldering machine, the combination with a blank-receiving horn, of one or more depressible gages therein adapted to gage and true the underlap edge of the blank, a movable gage for gaging and truing the overlap edge of said blank, and means for retaining said adjusted edges in position for soldering after being gaged and trued, substantially as shown and described.

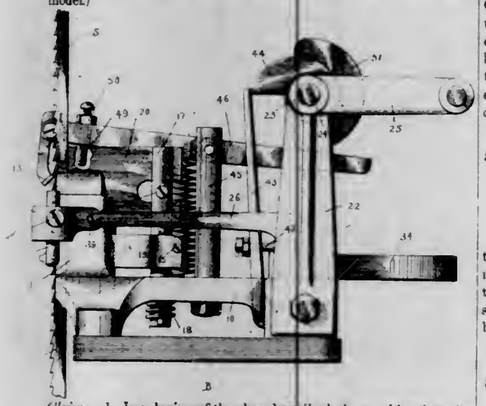
2. In a can-soldering machine, the combination with a blank-receiving horn, of one or more depressible gages therein adapted to gage and true the underlap edge of the blank, a pivoted gage for gaging and truing the overlap edge of said blank, and a pivoted spring-pressed lever carrying a clamping-knife adapted to retain said adjusted edges in position for soldering after being gaged and trued, substantially as shown and described.

3. In a can-soldering machine, the combination with a blank-receiving horn, of one or more depressible gages therein adapted to gage and true the underlap edge of the blank, a pivoted gage for gaging and truing the overlap edge of said blank, a pivoted spring-pressed lever carrying a clamping-knife adapted to retain said adjusted edges in position for soldering after being gaged and trued, and means for raising said lever and clamping-knife against the tension of said spring while the edges of the blank are being adjusted, substantially as shown and described.

4. In a can-soldering machine, the combination with a blank-receiving horn, a series of depressible gages therein adapted to gage and true the underlap edge of the blank, and means for retaining the adjusted edges of the blank in position to be soldered, of a pivoted gage adapted to gage and true the overlap edge of the blank and to be then turned back out of the way to permit free access to said overlap edge for the purpose of soldering the same, substantially as shown and described.

5. In a can-soldering machine, the combination with a blank-receiving horn, one or more depressible gages therein adapted to gage and true the underlap edge of the blank, and a pivoted lever carrying a clamping-knife for retaining the adjusted edges of the blank in position for soldering, of a gage pivoted to the lever for gaging and truing the overlap edge of the blank, and an auxiliary gage carried by said pivoted gage for gaging and truing the ends of the blank, substantially as shown and described.

569,766. **MACHINE FOR SETTING SAW-TEETH.** AUBREY M. PINEO, Gardner, Mass. Filed Feb. 1, 1896. Serial No. 577,667. (No model.)



Claim.—1. In a device of the class described, the combination of a base-plate, a saw-setting mechanism comprising spring-pressed swinging arms pivoted on the base-plate, adjustable stops for limiting the motion of the pivoted arms to regulate the amount of set or clearance given a saw, a feeding mechanism, means for adjusting the feeding and saw-setting mechanisms to coöperate with saws of different coarseness, an operating-shaft, cams mounted upon the operating-shaft and connected to actuate the saw setting and feeding mechanisms, the parts being combined and arranged to set the teeth of a band-saw without removing said saw from its machine, substantially as described.

2. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured on said operating-shaft in position to engage said pivoted piece, substantially as described.

3. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, a spring-yoke arranged to engage different notches in the pivoted arms, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured on said operating-shaft in position to engage said pivoted piece, substantially as described.

4. In a device of the class described, the combination of a base-plate, horizontally-swinging pivoted arms journaled thereon, stops adjustably mounted in said pivoted arms to regulate the set or clearance given a saw, a pivoted piece connected by links to said pivoted arms, an operating-shaft, and a cam secured upon said operating-shaft in position to engage said pivoted piece, substantially as described.

5. In a machine of the class described the combination of pivoted arms, adjustable hammers carried by said arms, a spring-yoke for simultaneously actuating said arms, a pivoted piece connected by links to said pivoted arms, and an operating-shaft and cam engaging said piece, substantially as described.

6. A device for clamping and holding a saw, comprising tapering side pieces, tapering jaws fitting between said side pieces, and a spring-pressed post for engaging and normally wedging said jaws into engagement with the sides of a saw, substantially as described.

7. A device for clamping and holding a saw, comprising tapering side pieces, tapering jaws fitting between said side pieces, a spring-pressed post for engaging and normally wedging said jaws into engagement with the sides of a saw, a screw connecting said jaws, and a spring mounted on said screw, and normally tending to open said jaws, substantially as described.

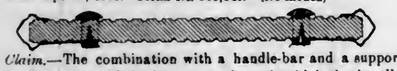
8. In a machine of the class described, the combination of side pieces 11 and 12, tapering jaws 13 and 14 fitting between said side pieces, a spring for normally wedging said jaws into engagement with the sides of a saw, and a feed mechanism for advancing the saw, substantially as described.

569,767. **HOOK AND EYE.** EVELYN M. QUEREAU, Peekskill, N. Y. Filed Jan. 24, 1896. Serial No. 576,671. (No model.)



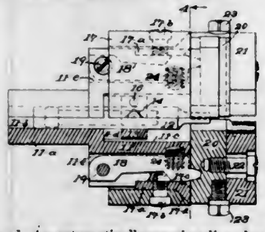
Claim.—As a new article of manufacture, a fastening device, substantially as herein shown and described, consisting of two similar parts composed of spring-wire and bent to form an eye A, and a hook C, both of which are in the same plane, said eye and hook being united by means of a central curved portion or loop B, and at the outer end of said eye is formed a ring or eyelet a, and the side of the loop C, being provided with an eyelet a^3, by means of which eyelets the device is connected with the garment whereby, an accidental disengagement of the parts is prevented when at right angles to each other, as set forth.

569,768. **HANDLE.** FREDERICK L. RAY, East Haddam, Conn. Filed Sept. 27, 1895. Serial No. 563,841. (No model.)



Claim.—The combination with a handle-bar and a support for the handle-bar provided with an eye through which the handle-bar may be inserted, of a tip provided with a socket for the reception of the end of the bar and a projection at one side of the wall of the socket, adapted to extend between the eye of the support and the body of the handle-bar within the eye, substantially as set forth.

569,769. **AUTOMATICALLY-OPENING DIE FOR CUTTING SCREW-THREADS.** HOWARD R. ROBINSON, Hartford, Conn. Filed Aug. 17, 1896. Serial No. 602,964. (No model.)



Claim.—1. An automatically-opening die, adapted to be attached to a turret or other carriage, and comprising the body, the same having sockets extending radially across the face of the body, die-holders fitting into said sockets, chasers mounted to the face of said die-holders, sectors pivotally mounted in the body and engaging said

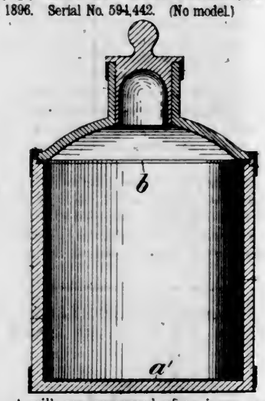
die-holders, the longitudinal sliding annular collar capable of a limited longitudinal movement and provided with shoes having cam-surfaces and engaging the sectors, springs to act upon the sectors, the cross-head mounted to the annular collar, the gage-plug borne by the cross-head all substantially as described.

2. An automatically-opening die, adapted to be attached to a turret or other carriage, and comprising the body, the same having sockets extending radially across the face of the body, die-holders fitting into said sockets, chasers mounted to the face of said die-holders, sectors pivotally mounted in the body and engaging said die-holders, the annular collar movably mounted on the exterior of the body and carrying the cross-head, the gage-plug borne by the cross-head, all parts combined and operating to throw the die to open adjustment when the advancing threaded end encounters the gage-plug and carries the same rearward substantially as described.

3. An automatically-opening die, adapted to be attached to a turret or other carriage, and comprising the body, the same having sockets extending radially across the face of the body, die-holders fitting into said sockets, chasers mounted to the face of said die-holders, sectors pivotally mounted in the body and engaging said die-holders, the longitudinal sliding annular collar capable of a limited longitudinal movement and provided with shoes having cam-surfaces and engaging the sectors, and devices acting upon the sectors, the cross-head mounted to the annular collar through the transverse opening 11^4 in line with the central cylindrical opening 11^5 of the body, substantially as described.

4. An automatically-opening die, adapted to be attached to a turret or other carriage, and comprising the body, the same having sockets extending radially across the face of the body, die-holders fitting into said sockets, chasers mounted to the face of said die-holders, sectors pivotally mounted in the body and engaging said die-holders, the longitudinal sliding annular collar capable of a limited longitudinal movement and provided with shoes having cam-surfaces and engaging the sectors, the cross-head mounted to the annular collar, the gage-plug held in the adjustable position by set-screw 14 to vary the length of thread to be cut substantially as described.

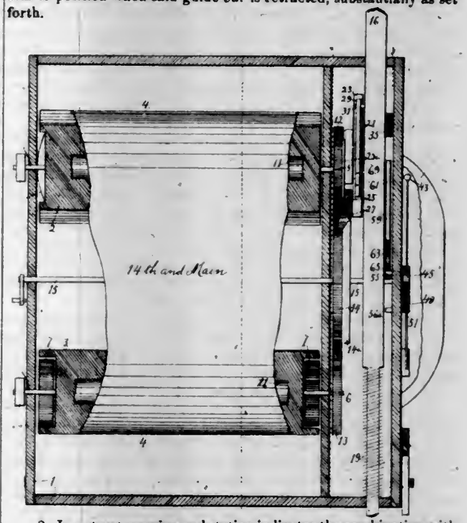
569,770. **MILK-CAN.** HULDA E. SCHMIDT, Silverton, Ohio. Filed June 5, 1896. Serial No. 594,442. (No model.)



Claim.—A milk can composed of an inner, removable, upright cylinder made of a non-corroding metallic substance; a surrounding outer upright cylinder or jacket made of a non-conducting fibrous material; a necked dome detachably fitting within the shouldered top of said outer cylinder, and a deeply-flanged lid or stopper fitting said dome, said cylinders both having suitable bottoms made of the same respective materials as themselves, and the dome and lid made of indurated fiber or a like fibrous material, substantially as herein set forth.

569,771. **STATION-INDICATOR.** MEDOR SHEPPEY and FRANKLIN D. MOORE, Fort Scott, Kans., assignors of one-third to Channing B. Campbell, same place. Filed Apr. 18, 1895. Serial No. 546,283. (No model.)

Claim.—1. The combination with a suitable frame, rollers mounted on shafts journaled in said frame a web having thereon the names of the stations or street-crossings carried on said rollers, a spring connecting one of said rollers with its shaft to compensate the increase and decrease of the roll thereon, gear-wheels mounted upon the shafts upon which said rollers are mounted, and a gear-wheel mounted on a shaft, journaled on the frame and meshing with said gear-wheels, of a guide-bar supported by and adapted to move in said frame, an arm pivoted to said guide-bar, a disk pivoted on said arm adapted to impinge upon the rim of said gear-wheel, a pawl on said disk adapted to engage the cogs of said gear-wheel, a spring on said arm bearing on the face of said disk, a lever pivoted on the frame having suitable connection with said guide-bar to operate said pawl, a spring on said guide-bar to retract the same and a spring on said arm to restore said arm to position when said guide-bar is retracted, substantially as set forth.



2. In a street-crossing and station indicator the combination with the frame of the indicator and a guide-bar supported by and adapted to move in said frame, of an arm pivoted to said guide-bar, a disk pivoted to said arm, a pawl on said disk a spring on said arm bearing on the face of said disk, a lever fulcrumed on said frame having suitable connection with said guide-bar to operate the same, a spring connected with said guide bar to retract the same, and a spring on said arm, bearing on a pin in said guide-bar to restore said arm when the guide-bar is retracted, substantially as set forth.

3. The combination with a suitable frame, rollers mounted on shafts journaled in said frame, suitable gearing for operating said rollers and a web carried on said rollers having thereon the names of the stations or street-crossings, of a guide-bar supported by and adapted to move in said frame, and a disk pivoted on said guide-bar provided with a pawl adapted to engage said gearing to operate the same to roll and unroll the web, substantially as set forth.

4. The combination with a suitable frame, rollers mounted on shafts, journaled on said frame, a web carried on said rollers having thereon the names of the street-crossings or stations, suitable gearing for operating said rollers, a guide-bar supported by and adapted to move in said frame, and means in connection with said guide-bar for operating said gearing, of a bell or gong mounted on said frame, a trip-lever fulcrumed on said frame, a hammer carried on the arm of said trip lever, adapted to strike said bell, a pin in said trip-lever arm working in a slot in said frame, an arm pivoted to said guide-bar, a shoulder on said arm adapted to come in contact with said pin, a lever fulcrumed on said frame having connection with said guide-bar for operating the same, means in connection with said pivoted arm for releasing said shoulder thereon from the pin on the trip-lever when the guide-bar is depressed, a spring acting on said trip-lever to cause it to return and cause the hammer to strike the bell, a spring connected with said guide-bar to retract the same, and a spring on said pivoted arm engaging a stop on said guide-bar to restore said arm when the guide-bar is retracted, substantially as set forth.

5. In a street-crossing and station indicator the combination with a suitable frame, a guide-bar supported by and adapted to move in said frame, and a lever fulcrumed on the frame and having suitable connection with said guide-bar to operate the same, of a bell or gong mounted on said frame, a trip-lever mounted on said frame, a hammer carried on the arm of said trip-lever adapted to strike said bell, a pin in said trip-lever arm working in a slot in said frame, an arm pivoted to said guide-bar, a shoulder on said arm adapted to come in contact with said pin, means in connection with said pivoted arm for releasing said shoulder from said pin on the trip-lever when the guide-bar is depressed, a spring acting upon said trip-lever to cause it to return and cause the hammer to strike the bell, a spring connected with said guide-bar to retract the same and a spring on said pivoted arm engaging a stop on said guide-bar to restore said arm when the guide-bar is retracted, substantially as set forth.

6. The combination with a suitable frame, rollers mounted upon shafts journaled in said frame, a web carried on said rollers having thereon the names of the stations or street-crossings, a lever fulcrumed on the frame, and means in connection with said lever for operating said rollers to roll and unroll the web therefrom, of a bracket adapted to support said frame, a hanger pivoted upon said bracket, a crank connected with said hanger adapted to be connected with an arm of said lever, a trip-lever fulcrumed on said bracket adapted to engage said hanger and to release the same as the frame is placed in the bracket, loose pulleys mounted in said hanger at the opposite ends thereof, and a cord passing over said pulleys to operate said hanger to cause the web to be wound and unwound on said rollers, substantially as set forth.

7. The combination with a suitable frame, rollers mounted upon shafts, journaled in said frame, a web carried on said rollers having thereon the names of the stations or street-crossings and suitable gearing for operating said rollers, of a lever fulcrumed on the frame, guide-bars supported by said frame adapted to move thereon and having suitable connection with said lever, and arms pivoted on said guide-bars and disks on said arms provided with a pawl adapted to engage said gearing for operating the same whereby said web may be wound upon either of said rollers from the other upon the out and return trip of the car, substantially as set forth.

8. The combination with a suitable frame, rollers mounted upon shafts, journaled in said frame, a web carried on said rollers having thereon the names of the stations or street-crossings and suitable gearing for operating said rollers, of a lever fulcrumed on the frame, guide-bars supported by said frame adapted to move therein and having suitable connection with said lever, a bell or gong mounted on said frame, spring-actuated trip-levers fulcrumed on said frame carrying hammers adapted to strike said bell, arms pivoted on said guide-bars having pivoted thereon disks provided with pawls adapted to engage said gearing for operating the same whereby said web may be wound upon either of said rollers from the other upon the out and return trip of the car, and arms pivoted on said guide-bars adapted to engage and actuate said trip-lever to cause the bell to be rung simultaneously with the action of the rollers in winding said web, substantially as set forth.

9. The combination with a suitable frame, rollers mounted upon shafts journaled in said frame, a web carried on said rollers having thereon the names of the stations or street-crossings, a lever fulcrumed on said frame, and means in connection with said lever whereby said web may be wound upon either of said rollers from the other upon the out and in trips of the car, of brackets at the end of the car adapted to support said frame, hangers pivoted upon said brackets, cranks connected with said hangers adapted to be connected with an arm of said lever, trip-levers fulcrumed on said brackets adapted to engage said hangers and to release the same as said frame is placed in the bracket, loose pulleys mounted in said hangers at the opposite ends thereof and cords passing over said pulleys, one of the said cords being adapted to operate the hanger of the bracket supporting the frame on the out trip, and the other cord to operate the hanger of the bracket supporting the frame on the return trip of the car and passing loosely over the pulleys of said hangers when locked by the trip-levers, substantially as set forth.

10. In a station-indicator having a suitable frame, a guide-bar adapted to move in said frame, an arm pivoted to said guide-bar, a disk pivoted on said arm and a pawl on said disk, substantially as and for the purposes set forth.

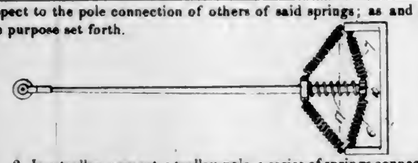
11. In a station-indicator having a suitable frame, a guide-bar adapted to move in said frame, an arm pivoted on one side of said guide-bar a disk pivoted on said arm and a pawl on said disk, an arm pivoted on the other side of said guide-bar, a shoulder on said arm and a curved extension thereon beyond said shoulder, substantially as set forth.

12. In a station-indicator the combination with a suitable frame, a bell mounted on said frame, a trip-lever provided with a spring bell-hammer fulcrumed on said frame, and a spring controlling the action of said lever, of a spring-actuated guide-bar supported by and adapted to move in said frame, an arm pivotally mounted on said guide-bar provided with a shoulder adapted to engage an arm of said trip-lever and having a curved portion, and a pin set in the frame adapted to engage said curved portion of said arm to release the shoulder thereon from said trip-lever arm substantially as set forth.

569,772. TROLLEY-SUPPORT FOR ELECTRIC RAILWAYS.

SIDNEY H. SHORT, Cleveland, Ohio. Filed June 8, 1896. Serial No. 594,690. (No model.)

Claim.—1. In a trolley-support for electric railways, a trolley-pole, a series of springs arranged to support said pole, said springs connected at one end to a fixed support and at the other to said pole, the pole connection of certain of said springs being movable with respect to the pole connection of others of said springs; as and for the purpose set forth.



2. In a trolley-support, a trolley-pole, a series of springs connected at one end to said pole, and a second series of springs having sliding connection with said pole; as and for the purpose set forth.

3. In a trolley-support, a base, a series of springs connected at one end to said base, a trolley-pole, certain of said springs being fixedly connected at their other ends to said pole, and the other of said springs having sliding connections with said pole adapted to move lengthwise thereof, whereby said pole is supported by said springs and is permitted universal movement; as and for the purpose set forth.

4. In a trolley-support, a base, a series of springs connected at one end thereof to said base, a trolley-pole having a sliding collar thereon, certain of said springs connected at the other end thereof rigidly to said pole, and the other of said springs being connected to said collar; as and for the purpose set forth.

5. In a trolley-support, a base, a series of pairs of springs connected at one end to said base, a trolley-pole, said springs connected at the other end to said pole, one member of each pair of said springs being slidingly connected to said pole; as and for the purpose set forth.

6. In a trolley-support, a base, a trolley-pole, a fixed and a loose sleeve mounted on said pole, a series of springs connected at one end to said base, a portion of said springs being connected at the opposite end thereof to said fixed sleeve, and a portion to said sleeve; as and for the purpose set forth.

7. In a trolley-support, a base, a trolley-pole, and a loose sleeve mounted on said pole, a series of springs connected at one end to said base, a portion of said springs connected at the opposite end thereof to said fixed sleeve and a portion to said loose sleeve, and a spring interposed between said sleeves; as and for the purpose set forth.

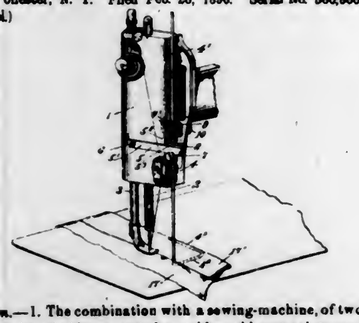
8. In a trolley-support, a base having posts rising therefrom at suitably-spaced distances apart, a pair of springs connected at one end to each of said posts, a trolley-pole, one member of each of said pair of springs being fixedly connected to said pole and the other member of each of said pair of springs having a sliding connection with said pole; as and for the purpose set forth.

9. In a trolley-support, a base, a series of springs, a trolley-pole, a fixed and a sliding sleeve mounted thereon, the members of said pairs of springs being connected at one end to said base and at the other end to said fixed and sliding sleeves respectively; as and for the purpose set forth.

10. In a trolley support, a base, a series of pairs of springs, a trolley-pole, a fixed and a sliding sleeve mounted thereon, the members of each pair of springs being connected at one end to said base, and at the other end to said fixed and sliding sleeve respectively, and a spring interposed between said sleeves; as and for the purpose set forth.

569,773. SEWING-MACHINE ATTACHMENT.

JAMES W. SIMONS, Port Chester, N. Y. Filed Feb. 26, 1896. Serial No. 580,806. (No model.)



Claim.—1. The combination with a sewing-machine, of two guiding devices detachably connected to said machine at points one above the other; and a fold-gage vertically adjustable in said guiding devices.

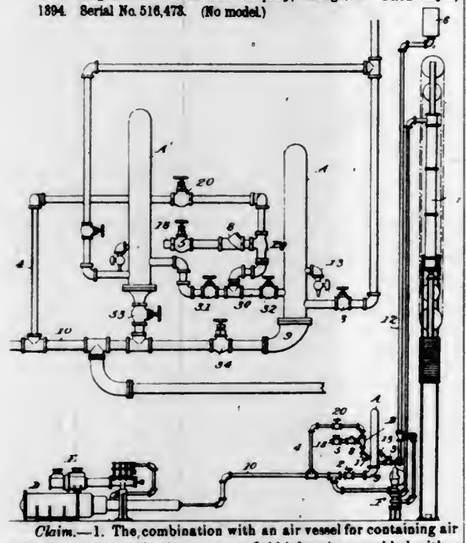
2. The combination with a sewing-machine head, of a fold-gage having a relatively long stem; and clamping means for said stem, located at different points on the head, whereby the device is maintained in vertical alinement.

3. A fold-gage comprising an elongated vertical bar bent at its lower end to form two right-angular portions, one extending transversely to the elongated bar and the other extending transversely to said elongated bar and to its other angular portion.

4. The combination with a sewing-machine head, of a perforated split clamp attached to said head; a pair of clamping devices carried by said clamp; a fold-gage having a perpendicular stem extending through said perforation and secured therein by said clamping devices; and a second clamp also secured to the head and engaging the stem at another point in the length thereof.

569,774. APPARATUS FOR FILLING AIR VESSELS UNDER PRESSURE.

ROBERT H. THORPE and THOMAS E. BROWN, Jr., New York, N. Y., assignors to the National Company, Chicago, Ill. Filed July 3, 1894. Serial No. 516,473. (No model.)



Claim.—1. The combination with an air vessel for containing air under high pressure having a motor-fluid-inlet pipe provided with a cock and a motor-fluid-discharge pipe also provided with a cock and both communicating with the air vessel near the bottom, of an injector having a nozzle communicating with the source of supply for the motor fluid to the air-chamber and having an air-inlet, and a discharge pipe leading from the injector to the air-chamber near the bottom thereof, all proportioned and arranged to force air directly into the closed air-chamber while the latter contains compressed air under high pressure substantially as described.

2. The combination in an elevator apparatus with the cylinder, piston, valve device, and motor-fluid-supply pipe communicating with said valve device, of an air-chamber for containing air under high pressure communicating with said motor-fluid-supply pipe and having a motor-fluid-discharge pipe and tank connected therewith, an injector having a nozzle communicating with the motor-fluid-supply pipe, an air-pipe, and a communication between the nozzle of the injector and the air-chamber, all proportioned and arranged to force the air directly into the closed air-chamber while the latter contains compressed air under high pressure substantially as described.

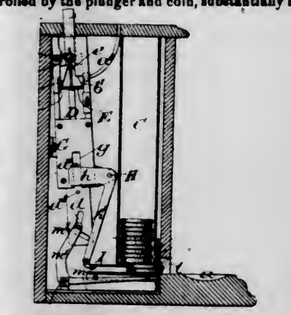
3. The combination in an elevator apparatus with the cylinder, piston, valve device, of an air-chamber having a closed top, a motor-fluid-supply pipe 10, communicating with air-chamber at its lower end, an injector, a pipe 4 connected to the pipe 10 and to the injector, an air-pipe 18 communicating with the injector and provided with a cock, a pipe connecting the injector with the air-chamber near the bottom thereof, a discharge-pipe 12 from the air-chamber provided with a cock, and a pipe connecting the pipe 10 with the valve device, substantially as described.

569,775. COIN-CONTROLLED VENDING-MACHINE.

STEPHEN VAIL, New York, N. Y. Filed Jan. 25, 1896. Serial No. 576,811. (No model.)

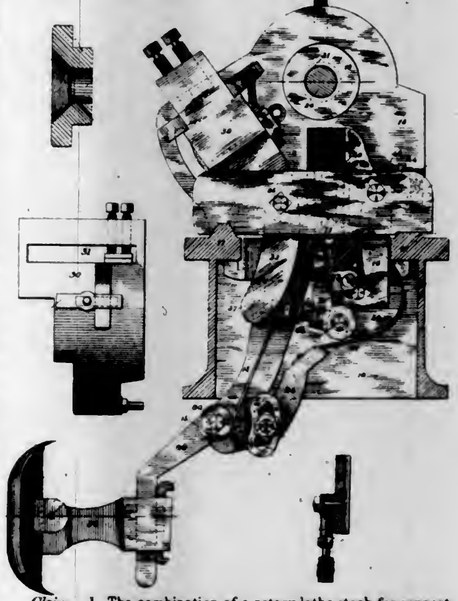
Claim.—1. The combination with a plunger, a discharge mechanism and a push-bar connected with the discharge mechanism, the plunger and the push-bar having their adjacent ends, the one forked and the other centrally located with respect the said forked end, of means for directing a coin into position between the said adjacent ends of the plunger and push-bar, and inclines in position to shift the coin edgewise out of engagement with one of the branches of the forked end, substantially as set forth.

2. The combination with a suitable casing provided with a receptacle for the articles to be dispensed and a discharge-chute, of a reciprocating push-bar, a plunger adapted to be locked to and released from the push-bar by a coin, a reciprocating discharge-plate, a gate for opening and closing the discharge-chute, and angle-levers connecting the gate and the discharge-plate with the reciprocating push bar controlled by the plunger and coin, substantially as set forth.



569,776. WOOD-TURNING LATHE.

CHARLES W. WILDER, Fitchburg, Mass. Filed June 17, 1890. Serial No. 355,774. (No model.)



Claim.—1. The combination of a rotary lathe-stock for supporting the work and a laterally-movable tool-holder provided with two tool-slots disposed one above the other, and means for holding two lathe-tools in said slots, the tool of one slot overlapping the path on the work of the tool supported in the other slot, substantially as described.

2. The combination of a lathe-bed, a sliding carriage thereon having an upright web provided with a guide-ring for the work, and a pivoted tool-holder supported on said carriage and provided with two tool-slots disposed one above the other, whereby the tools supported therein may overlap on the work.

3. The combination of a tool-carriage provided with a horizontal rod, a pivoted tool-support adjustable on said rod and provided with vertical guideways, and a tool holder movable vertically in said guideways.

4. The combination of a tool-carriage provided with a longitudinal rod, a pivoted tool-support longitudinally adjustable on said rod and provided with guideways, a tool-holder movable in said guideways, a crank-wheel, and an adjustable pitman connecting the crank-pin of the crank-wheel with said tool-holder.

5. The combination with a lathe-stock, of a tool-holder, a crank-wheel to which said tool-holder is connected, a knee-lever connected

with said crank-wheel for actuating it, and an elongated concave swinging knee-plate pivoted to an arm of said knee-lever, substantially as described.

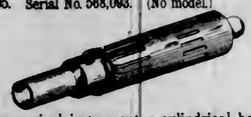
6. The combination with a lathe-stock, of a tool-holder, a knee-lever, mechanism connecting said knee-lever with said tool-holder for operating the latter, a horizontal arm vertically-adjustable on said knee-lever and a swinging concave knee-plate pivoted to the upper and outer end of said arm, substantially as described.

7. The combination with a lathe stock, of a tool-holder, a knee-lever, mechanism connecting said knee-lever with said tool-holder for operating the latter and embodying means adapted to alter the angle of said knee-lever; a horizontal arm vertically adjustable on said knee-lever, and a swinging knee-plate pivoted to the outer end of said arm and adapted to swing freely in upward direction on said outer end, substantially as described.

8. The combination with a lathe-stock, of a tool-holder, a crank-wheel to which said tool-holder is connected, a link, a flexible strap connecting said link and crank-wheel, a knee-lever, adjustable mechanism for connecting said link and knee-lever and adapted to alter the angle of said knee-lever, and means connected to, and adapted to operate the knee-lever, and pivotally adjustable thereon to thereby operate the tool-holder, substantially as described.

9. The combination with a lathe-stock, of a tool-holder, a crank-wheel to which said tool-holder is connected, a link, a flexible strap connecting said link and crank-wheel, a knee-lever provided with an arc-shaped slot at one end thereof, and adjustably connected to said link whereby the angle of said knee-lever can be changed, a horizontal arm vertically adjustable on said knee-lever, and a knee-plate pivotally movable on the outer end of said adjustable arm, substantially as described.

569,777. MUSICAL INSTRUMENT. HUBBARD D. B. WILLIAMS, Mansfield, Ohio, assignor of one-half to Charles H. Snyder, same place. Filed Nov. 6, 1895. Serial No. 568,093. (No model.)

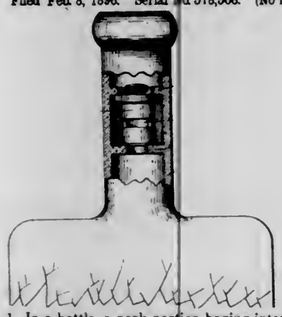


Claim.—1. In a musical instrument, a cylindrical body portion having a forward open end and a rear handled portion, one or more sound-emitting devices in the periphery of said body portion, and a shouldered mouthpiece fitting in the open end of said body portion and upon which the latter is adapted to be rotated, as set forth.

2. In a musical instrument, a cylindrical body portion having a forward open end and a rear handled portion, one or more sound-emitting devices in the periphery of said body portion, and a shouldered mouthpiece fitting in the open end of said body portion and provided with holes or openings adapted to register with said sound-emitting devices, substantially as set forth.

3. In a musical instrument, a cylindrical body portion having a rear handled end and a forward open end, one or more sound-emitting devices secured in the periphery of said body portion, a shouldered mouthpiece having a reduced cylindrical extension fitting in the open end of said body portion and upon which said body portion is adapted to be rotated, said extension being provided with holes or openings adapted to register with said sound-emitting devices, substantially as set forth.

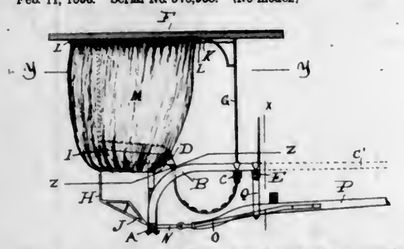
569,778. NON-REFILLABLE BOTTLE. PATRICK WILSON, Pittsburg, Pa. Filed Feb. 8, 1896. Serial No. 578,508. (No model.)



Claim.—1. In a bottle, a neck portion having interior flanges a valve resting on the lower of said flanges, said valve being composed of any suitable material, and having a plate at its lower extremity carrying a rubber washer forming a flap-valve over the aperture in the plate, said valve being also provided with a slot in the side and holes in the base for air-inlets, substantially as shown and described.

2. In a bottle, a neck portion having interior flanges a valve resting on the lower flange having a rubber flap-valve arranged at its base, and a washer over the head of the valve, said washer having air-holes, and the valve being provided with a slot in the side and holes in the base forming air-inlets, substantially as shown and described.

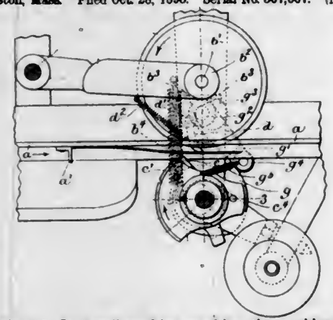
569,779. VEHICLE. JOHN APPLETON, Middletown, Cal. Filed Feb. 11, 1896. Serial No. 578,965. (No model.)



Claim.—1. In a vehicle of the class described the combination with suitable wheels, axle, and body of the shafts B rigidly attached to the axle and cut off immediately in front of the body, the draft-irons N rigidly attached to and near the ends of the axle, the pole O P suitably attached to such draft-irons N, the cross-bar E rigidly attached to the front end of the shafts B, the double brace Q rigidly attached to the cross-bar E, and provided with the inverted-U-shaped curve R, such curve R being adapted to engage with the pole P, and the clip S adapted to embrace the pole P, and the cross-bar E, all arranged substantially as shown and described.

2. In a vehicle of the class described, the combination of the axle, the body mounted on springs arranged on and connected with the axle and having the rear guide-lug I, the shafts B, rigidly attached to the axle and connected to the forward cross-bar of the body, the bars G, connected to and extending upwardly from the shafts B, the bar H, extending up through the guide-lug I, on the body and rigidly connected at its lower end to the axle A, the top secured upon the bars G, and H, the curtain-rod connected with the top, and the curtain suspended from the curtain-rod, substantially as and for the purpose set forth.

569,780. MAIL-MARKING MACHINE. GEORGE E. BARNARD, Fitchburg, Mass., assignor to the American Postal Machines Company, Boston, Mass. Filed Oct. 28, 1895. Serial No. 567,067. (No model.)



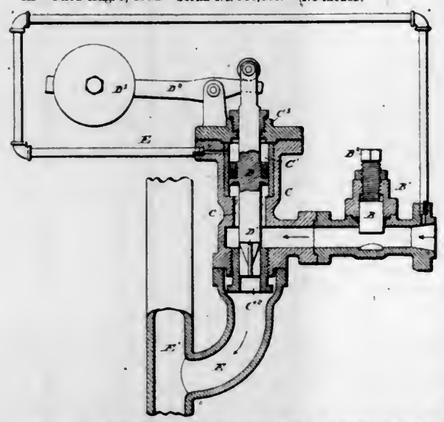
Claim.—1. In a mail-marking machine, the combination with a marking and an impression-cylinder arranged in juxtaposition and one journaled in fixed bearings and the other in a support movable toward and from the one in fixed bearings and yieldingly pressed toward the same, and a letter-displaced detent engaging said movable support to hold the cylinders apart; of a lever pivoted to a fixed support and engaging the said movable support, and means associated with the cylinder in fixed supports and coacting with said lever to effect outward movement of said movable support, substantially as described.

2. In a mail-marking machine, the combination with a marking and an impression cylinder arranged in juxtaposition and one journaled in fixed bearings and the other in a support movable toward and from the one in fixed bearings and yieldingly pressed toward the same, and a letter-displaced detent engaging said movable support to separate the cylinders; of a cam-lever pivoted intermediate of its length to a fixed support and bearing at one end against the said

movable support, and means associated with the cylinder in fixed supports and coöperating with the other end of said lever to effect outward movement of the opposed cylinder substantially as described.

3. In a mail-marking machine, the combination of a printing-cylinder and an impression-cylinder at opposite sides of the letter-path, one of said cylinders being journaled in fixed bearings and the other in a movable carrier which is normally pressed toward the letter-path, a cam which rotates with the fixed cylinder, a lever pivoted to a fixed support and located between said cylinders and comprising a longer arm engaged with said cam and a shorter arm engaged with said movable carrier, whereby said carrier is intermittently displaced and its cylinder forced out of the letter-path with the minimum expenditure of power, and a detent normally restraining the carrier and projecting into the letter-path so that it may be displaced to release the carrier and its cylinder through the agency of an approaching letter, substantially as described.

569,781. APPARATUS FOR CONTROLLING SPEED OF FLUID FLOWING THROUGH PIPES. THOMAS E. BROWN, Jr., and ROBERT H. THORPE, New York, N. Y., assignors to the National Company, Chicago, Ill. Filed Aug. 9, 1894. Serial No. 519,878. (No model.)



Claim.—1. In an apparatus for controlling the speed of a fluid flowing through a pipe, the combination with a pipe having a throttle, of means controlling the outflow from said pipe, connections whereby said means are subjected to the initial fluid-pressure in said pipe on one side, and a counterbalancing device operating upon the other side of said means, substantially as described.

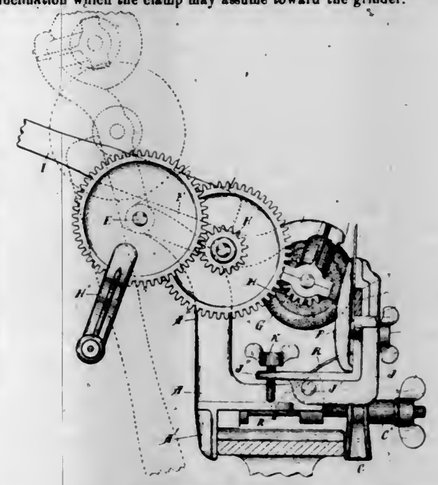
2. In an apparatus for controlling the speed of a fluid flowing through a pipe, the combination with a pipe having a throttle, of a piston controlling the outflow from said pipe, connections whereby said piston is subjected to the initial fluid-pressure in said pipe on one side, and a counterbalancing device operating upon the other side of the piston, substantially as described.

3. In an apparatus for controlling the speed of a fluid flowing through a pipe, the combination with a pipe having a throttle or orifice, of a cylinder connected to said pipe, a piston in said cylinder controlling the outflow from said pipe, connections with one side of the piston whereby it is subjected to the initial fluid-pressure, connections with the other side of the piston whereby it is subjected to the pressure of the outflow, and a counterbalance connected to the said piston, substantially as described.

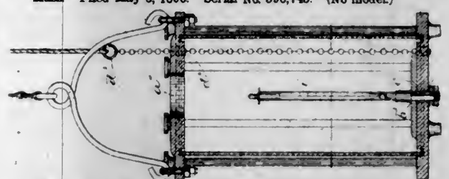
4. In an apparatus for controlling the speed of a fluid flowing through a pipe, the combination with a pipe having a throttling device, of a cylinder, a piston working therein, a plug connected to the piston and controlling the outflow from the pipe, connections between the outflow and one side of the piston, connections between the initial fluid and the other side of the piston, and a counterpoise, substantially as described.

569,782. GRINDING-MACHINE. PERRY H. CAZIER, Nashville, Mich., assignor to Scott McIntosh, Horace Parmer, and Isaac Sponable, Hastings, Mich. Filed July 13, 1895. Serial No. 555,938. (No model.)

Claim.—In a grinding-machine for mowing-machine knives, the frame, the pivoted arm, and the grinder supported by said arm, in combination with the clamp for the knife, comprising a bell-crank pivoted near the free end of its horizontal member, a clamp-jaw movable relatively to the upright member of said bell-crank, a spring operating to press said clamp toward the grinder and to cause the clamp to incline inward when the grinder is elevated, and an adjustable stop at the free end of the horizontal arm of the clamp to limit the degree of inclination which the clamp may assume toward the grinder.



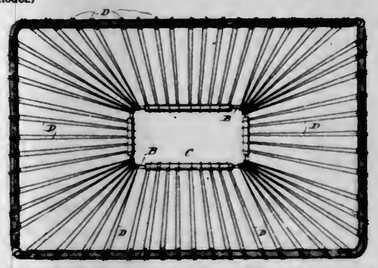
569,783. LIQUID-TESTING DEVICE. JESSE C. CONDÉ, Boston, Mass. Filed May 8, 1896. Serial No. 590,745. (No model.)



Claim.—1. A liquid-testing device comprising a receptacle having a liquid receiving and discharging port in its bottom, an air-passage in its upper portion, and a bail or handle whereby it may be suspended within a reservoir; a stud passing through the said bottom and fitted to rotate therein; a valve affixed to the stud and adapted to open and close the said port; a laterally-projecting arm affixed to the stud below the bottom of the receptacle; a cord or chain affixed to said arm, and guides on the receptacle arranged to hold a portion of the said cord in position to cause a pull on the cord to close the valve.

2. A liquid-testing device comprising a receptacle having a liquid receiving and discharging port in its bottom and an air-vent in its upper portion, and adapted to be suspended in a reservoir, a stud detachably connected to said bottom and fitted to rotate therein, said stud having an extension projecting above the bottom into the interior of the receptacle, a valve affixed to the stud and adapted to open and close the said port, and a thermometer affixed to the said extension and supported thereby within the receptacle.

569,784. SEAT OR CUSHION. JAMES T. COWLEY, Lowell, Mass., assignor, by mesne assignments, to the American Metallic Cushion Company, of West Virginia. Filed Mar. 2, 1896. Serial No. 581,463. (No model.)



Claim.—1. In a seat or cushion, a series of spring-wires, and means for supporting said wires adapted to contract under the action of weight on said seat or cushion.

2. In a seat or cushion, a series of spring-wires, and means for supporting said wires to which the ends of said spring-wires are connected adapted to contract under the action of weight on said seat or cushion.

3. In a seat or cushion, a series of spring-wires provided with a coil between the ends thereof, a support to which said spring-wires are connected located in the said coils, and supporting means to which the free ends of said wires are connected adapted to contract under the action of weight on said seat or cushion.

4. In a seat or cushion, a series of spring-wires provided with a coil between the ends thereof, a support to which said spring-wires are connected located in the said coils, and independent supporting means to which the upper and lower ends of said wires are connected and adapted to contract under the action of weight on said seat or cushion.

5. In a seat or cushion, a series of spring-wires provided with a coil between the ends thereof, a support to which said spring-wires are connected located in the said coils, supporting means to which the free ends of said wires are connected adapted to contract under the action of weight on said seat or cushion, and a series of under supporting-springs adapted to support the springs forming the seat or cushion.

6. In a seat or cushion, a series of spring-wires provided with a coil between the ends thereof, a support to which said spring-wires are connected located in said coil, and an upper and lower contracting frame to which the upper and lower ends of said wires respectively are connected and adapted to contract under the action of weight on said seat or cushion.

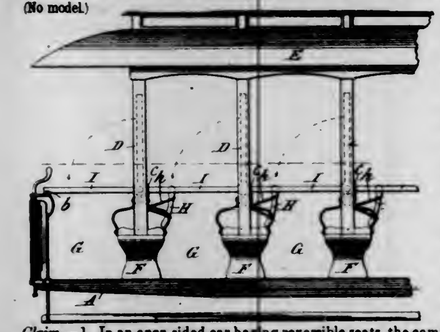
569,785. ELECTRIC GAS-LIGHTING BURNER. WILLIAM E. CRAM, Boston, Mass. Filed Jan. 29, 1896. Serial No. 577,225. (No model.)



Claim.—1. An electric gas-lighting burner having a fixed electrode, a cock, a cock-operating lever adapted to oscillate therewith and pivoted to the cock so that it can oscillate independently in a plane parallel with the axis of the cock, a movable electrode secured to the lever, and a lever-operating device having provisions not only for oscillating the lever to turn the cock and carry the movable electrode across the fixed electrode, but also for swinging the lever on its pivot to change the path of the movable electrode after each movement of the cock, whereby said electrode is caused to make contact with the fixed electrode during one movement of the cock and to avoid the fixed electrode during the opposite movement of the cock.

2. An electric gas-lighting burner having a fixed electrode, a cock, a cock-operating lever adapted to oscillate therewith and pivoted to the cock so that it can oscillate independently in a plane parallel with the axis of the cock, a movable electrode secured to the lever, a vertical stud journaled in a fixed bearing, a crank-arm affixed to said stud and having a cam-shaped slot engaged with the lever, and means for turning said stud, the said arm and lever being arranged to permit a partial closing movement of the cock without subjecting the movable electrode to contact with the flame.

569,786. SIDE GUARD FOR OPEN CARS. AUGUSTUS DE FOE DINICK, Wakefield, Mass. Filed Aug. 27, 1895. Serial No. 560,640. (No model.)



Claim.—1. In an open-sided car having reversible seats, the combination of movable side guards, and a gear connection between said guards and the reversible portion of the seats; substantially as described.

2. In an open-sided car having reversible seats, the combination of movable side guards, a gear connection between said guards and the reversible portion of the seats, and a locking device for locking said guards in open or closed position; substantially as described.

3. In an open-sided car having reversible seats, the combination of movable side guards, pivoted on the inner side of the side posts, a gear connection between said guards and the reversible portion of the seats; substantially as described.

4. In an open-sided car having reversible seats, the combination of the movable side guards, pivoted to the side posts, a gear connection between said guards and the reversible portion of the seats, and brackets on the adjacent side posts to limit the downward movement of the free ends of the guards; substantially as described.

5. In an open-sided car having seats with reversible backs, the combination of movable side guards, a gear connection between said guards and the reversible seat-backs; substantially as described.

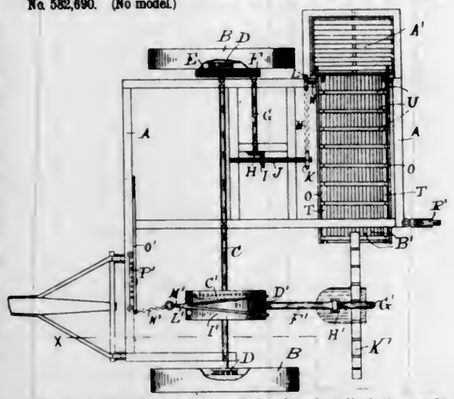
6. In an open-sided car having seats with reversible backs, the combination of movable side guards, pivoted to the side posts, and a gear connection between the arms of the reversible backs and said guards; substantially as described.

7. In an open-sided car having seats with reversible backs, the combination of movable side guards, pivoted to the side posts, gears connected with the arms of the seats and concentric with the pivots of the seat-arms, and gears on the guards meshing with the seat-arm gears; substantially as described.

8. In an open-sided car having seats with reversible backs, the combination of movable side guards, pivoted to the side posts, gears on the arms of the seats concentric with the pivots of the seat-arms, and mutilated or stop-motion gears on the guards concentric with their pivots; substantially as described.

9. In an open-sided car having seats with reversible backs, the combination of movable side guards being pivoted at their lower ends on the inner side of the side posts, and adapted when in open position to extend upward and lie flat against the said side posts, and means connecting said guards and the reversible portion of the seats, so that a reversal of the seats will turn the guards downward on their pivots into closed position; substantially as described.

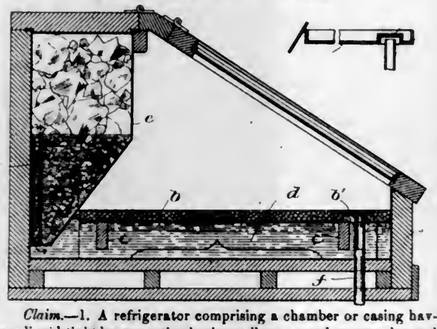
569,787. POTATO-DIGGER. JOHN C. HANNAH, RUPERT J. HANNAH, and JOSEPH W. HANNAH, Stockton, Cal. Filed Mar. 10, 1896. Serial No. 582,690. (No model.)



Claim.—1. In a potato digger of the class described, the combination with a suitable frame and driving-wheels suitably mounted on a driving-shaft journaled on such frame, of the casing I′ journaled on the driving-shaft, the bar F′ rigidly attached to the rear of such casing I′, the gooseneck G′ attached to the bar F′, the digger H′ attached to the bottom of the gooseneck G′, the bevel gear C′ rigidly attached to the driving-shaft within the casing I′, the bevel-pinion D′ rigidly mounted on the forward end of the shaft E′ and adapted to engage with the bevel gear-wheel C′, the shaft E′ suitably journaled to and beneath the bar F′, the wheel J′, K′ rigidly attached to the rear end of the shaft E′ and suitable means for raising and lowering the digger all arranged and operating substantially as shown and described.

2. In a potato-digger of the class described the combination with the frame A, wheels B, and shaft C of the clutches D, the casing I′, suitably journaled on the shaft C, the bar F′ rigidly attached to the rear side of the casing I′, the gooseneck G′, rigidly attached to such bar F′, the digger H′ rigidly attached to the lower end of the gooseneck G′, the bevel gear-wheel C′ rigidly attached to the shaft C, the bevel-pinion D′ rigidly attached to the forward end of the shaft E′ and adapted to engage with the bevel gear-wheel C′, the shaft E′ suitably journaled beneath the bar F′, the wheel J′, K′, rigidly mounted on the rear end of the shaft E′, the rod L′ attached to the casing I′, the chain N′ attached to the rod L′, the lever O′ pivotally attached to the frame A and adapted to engage with the chain N′, the gear-wheel E attached to the shaft C, the pinion F rigidly attached to the outer end of the shaft G and adapted to engage with the gear-wheel E, the shaft G suitably journaled transversely on the frame A, the bevel gear-wheel H rigidly attached to the inner end of the shaft G, the bevel gear-wheel I suitably attached to the shaft J and adapted to engage with the bevel gear-wheel H, the shaft J suitably journaled longitudinally on the frame A, the sprocket-wheel K rigidly attached to the rear end of the shaft J, the chain belt M adapted to engage with the sprocket-wheels K and L, the sprocket-wheel L attached to the end of the shaft N, the shaft N journaled in the top end of the elevator O and provided with the drum S, the elevator O suitably mounted on the frame A and the shoe Q, the shoe Q attached to the frame A by the rod P, the roller R mounted in the lower end of the elevator O, the elevator T, U, adapted to engage with the roller R and drum S, and the receptacle A′ attached to the side of the frame A all arranged and operating substantially as shown and described.

569,788. REFRIGERATOR. CHESTER D. HOLMES, Boston, Mass. Filed Jan. 23, 1896. Serial No. 576,517. (No model.)



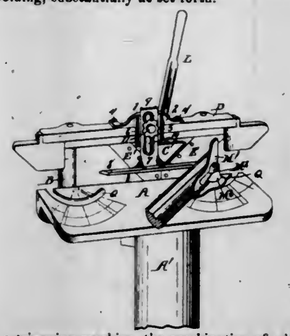
Claim.—1. A refrigerator comprising a chamber or casing having a liquid-tight lower portion horizontally-arranged supports located above the bottom of said chamber, a loose slab resting on said supports, an ice-receptacle located higher than said slab and provided with an outlet arranged to discharge liquid into said chamber, and an outlet or overflow pipe arranged as described relatively to said supports, to permit contact of the liquid which accumulates in the chamber with the bottom of the slab and to prevent the said liquid from rising above the slab.

2. A refrigerator comprising a chamber or casing having a liquid-tight bottom, a horizontal slab or false bottom supported above the bottom of said chamber and having a recess or opening extending upwardly from its under side, an ice-receptacle located higher than said slab and provided with an outlet arranged to discharge liquid into the chamber, and an outlet or overflow pipe the receiving end of which is located in said recess or opening above the lower surface of said slab and below the highest portion thereof, while its delivering end is located below the slab, whereby an accumulation of liquid is maintained in contact with the slab and is prevented from rising above the slab.

569,789. TRIMMING-MACHINE. HENRY M. LELAND, Detroit, Mich., assignor to the Leland & Faulconer Manufacturing Company, same place. Filed Sept. 21, 1895. Serial No. 563,206. (No model.)

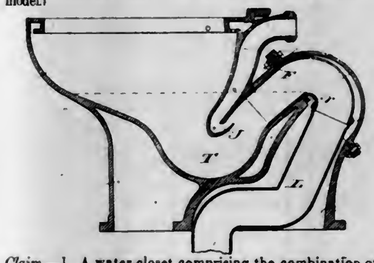
Claim.—1. In a trimming-machine, the combination of a bed, a gage, adjustable upon said bed, a support above said bed, a vertically-adjustable clamp depending from said support to engage upon the top of crown-molding and other work having any straight edge to be placed against the gage and hold the work upon the bed and against the inner face of said gage, said clamp supported above said bed to leave the bed unobstructed and its lower face presenting a clamping-surface throughout its length, a slide-frame, the upper bar of which constitutes the above support, a knife reciprocatory in said frame longitudinally of the bed and arranged to exert its force upon the work only in a direction toward the inner face of the gage in the act of cutting the molding, and means to reciprocate said knife in said frame, both the clamp and the knife in the act of cutting holding work firmly against the gage to effect a smooth cut, substantially as set forth.

2. In a trimming-machine, the combination of a bed, adjustable gages M, M′, reciprocatory knives converging toward the middle of said bed and movable in opposite directions longitudinally of the bed to exert their force upon the work only in a direction toward the inner face of the adjacent gage in the act of cutting the molding, a support above said bed, and a vertically-adjustable clamp depending from said support to engage upon the top of crown-molding and similar work and hold the work upon the bed and against the inner face of said gages, said clamp supported from above said bed to leave the bed unobstructed, and provided with an elongated base 8, the lower face of which presents a clamping-surface from one end to the other to hold the work in place adjacent to the inner face of either or both of said gages, whereby the reciprocation of the knives in one direction may cut a joint on one piece of molding, and their reciprocation in the contrary direction may cut the opposite joint upon a companion piece of molding, substantially as set forth.



3. In a trimming-machine, the combination of a bed, adjustable gages M, M′, a slide-frame B, a knife-slide reciprocatory in said frame longitudinally of said bed provided with knives converging toward the middle of the bed, means to reciprocate said knife longitudinally of the bed, a bridge D upon the slide-frame forming a way at the top of the knife-slide, a supported bracket 2 upon said bridge having a vertical depending portion formed with guide-flanges 5 and 6, a vertically-movable clamp 7 supported in the depending portion of said bracket, and provided with an elongated base 8, the lower face of which presents a clamping-surface from one end to the other, and with a vertical arm 9 having a vertical adjustment in said flanges, and means to hold the slide in any given position of vertical adjustment, whereby the bed is left free and unobstructed, said knives arranged to exert their force upon the work only toward the inner face of the adjacent gage in the act of cutting the molding, whereby the reciprocation of the knives in one direction may cut a joint on one piece of molding, and their reciprocation in the contrary direction may cut the opposite joint upon a companion piece of molding, substantially as set forth.

569,790. PIPE CONNECTION FOR WATER-CLOSETS. ATHERTON LORING, Cambridge, Mass. Filed Jan. 20, 1896. Serial No. 576,168. (No model.)



Claim.—1. A water-closet comprising the combination of a pedestal supporting a bowl, said pedestal being molded to form the trap below the bowl and containing an open chamber or recess in its base, with a continuous metallic connection between the closet and the sewer-pipe, said metallic connection having its inner end beneath the water seal of the trap and its lower portion within the said chamber in the pedestal, and a cap adapted to close the said chamber or recess and cover in the metallic sewer connection, substantially as described.

2. A water-closet comprising the following elements in combination, viz: a pedestal surmounted by the bowl and molded to form the trap-bend, a chamber or recess in the base of the pedestal, the trap-bend and chamber or recess terminating in openings adjacent to one another, a continuous metallic connection between the closet and the

sewer-pipe, said connection having its lower portion contained within the said pedestal chamber or recess, and its upper portion emerging from the opening thereof and projecting into the trap, the trap end of said connection being immersed in the water seal of the trap.

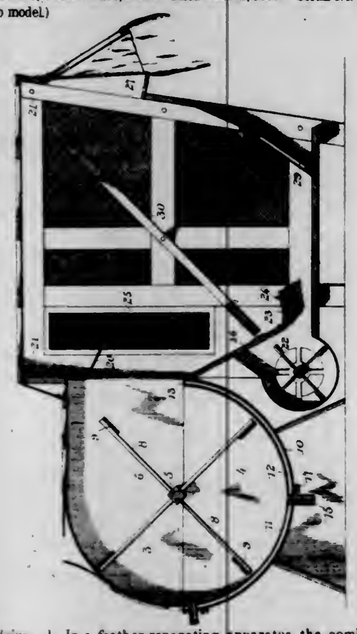
3. A water-closet comprising the following elements in combination, viz: a pedestal surmounted by the bowl and molded to form the trap-bend, a chamber or recess in the base of the pedestal, the trap-bend and chamber or recess terminating in openings adjacent to one another, a continuous metallic connection between the closet and the sewer-pipe, said connection having its lower portion contained within the said pedestal chamber or recess and its upper portion emerging from the opening thereof and projecting into the trap, the trap end of said connection being immersed in the water seal of the trap, and a cap formed to close the chamber or recess and trap-bend openings and to cover the metallic connection.

4. A water-closet comprising the following elements in combination, viz: a pedestal surmounted by the bowl and molded to form the trap-bend, a chamber or recess in the base of the pedestal, the trap-bend and chamber or recess terminating in openings adjacent to one another, a continuous metallic connection between the closet and the sewer-pipe, said connection having its lower portion contained within the said pedestal chamber or recess, and its upper portion emerging from the opening thereof and projecting into the trap, the trap end of said connection being immersed in the water seal of the trap, the opening of the said chamber or recess being large enough to admit the passage of the entire metallic connection when the pedestal and bowl are set in place.

5. A water-closet comprising the following elements in combination, viz: a pedestal surmounted by a bowl and molded to form a trap-bend, a chamber or recess in the base of the pedestal, the trap-bend and chamber or recess terminating in openings adjacent to one another, a continuous metallic connection between the closet and the sewer-pipe, said connection having its lower portion contained within the said pedestal chamber or recess, and its upper portion emerging from the opening thereof and connecting with the trap-bend.

6. A water-closet comprising the following elements in combination, viz: a bowl and a pedestal, said pedestal comprising two parts, one containing the trap-bend and passages pertaining to the closet, the other consisting of a chambered hood or cap, a continuous metallic connection between the trap and the sewer-pipe; the said hood or cap being conformed and adapted to inclose the parts of the metallic connection which protrude from the trap-containing portion of the pedestal.

569,791. FEATHER-RENOVATING APPARATUS. WILLIAM A. LOUGHRY, Yates Centre, Kans. Filed Mar. 28, 1895. Serial No. 543,505. (No model.)



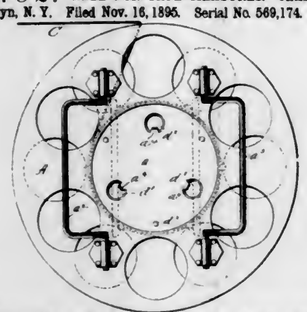
Claim.—1. In a feather-renovating apparatus, the combination of a drying-chamber having a delivery-opening in a side thereof near its upper end, a flange inclosing the sides and bottom of the said opening and gradually widening toward its lower end, a screen-door hinged above the delivery-opening to close the same and adapted to swing outward at its lower end and form a deflector to direct the feathers into the tick and admit of the escape of the air-current, strips of textile fabric connecting the edges of the door with the side members of the aforesaid flange, and an agitator to force the feathers from the drying-chamber through the delivery-opening and into the tick secured to the lower portion of the said flange and deflecting-door, substantially as set forth.

2. In a feather-renovating apparatus, the combination of a washer and a drier disposed in coöperative relation and in the same horizontal plane, the washer having the lower portion adjacent to the drier curved, and the drier having its lower adjacent portion oppositely inclining, an agitator arranged in the drying-chamber to lighten the feathers, and a fan located in the space formed between the curved side of the washer and the inclined portion of the drier to act in conjunction with the said agitator to lighten the feathers and expel the last traces of moisture therefrom in the final stage of the renovating process, substantially in the manner specified.

3. In a feather-renovating apparatus, the combination with the drying-chamber provided at its lower corner with an inwardly-swinging screen-door which normally inclines from the perpendicular, of an agitator arranged within the drying-chamber and adapted to sweep over the said screen-door in close proximity thereto, substantially as and for the purpose set forth.

4. The herein-described feather-renovating apparatus, comprising a washer and a drying-chamber in coöperative relation, the washer having screen-closed openings in its top side, and the drying chamber having a delivery-opening in its rear side, an agitator arranged within the washer, a second agitator located in the drying-chamber and adapted to force the feathers through the delivery-opening, a screen-door for closing the said delivery-opening and hinged above the opening to form a deflector when swung outwardly at its lower end, a fan arranged in the space formed between the lower corner of the drying-chamber and the opposing side of the washer, and a blast-regulating guard opening into the drying-chamber, substantially as and for the purpose set forth.

569,792. REEL FOR TAPE-MEASURES. JAMES W. LYON, Brooklyn, N. Y. Filed Nov. 16, 1895. Serial No. 569,174. (No model.)



Claim.—1. In a reel, the combination of a side piece provided with an integrally-formed axle or drum at its center, one end of the same being closed, and a second side piece having a central opening fitting over the axle or drum and surrounded by a flange adapted to turn on said drum, and a plate secured to the closed side of the drum and with its edges overlapping the edges of the opening in the second side piece for the purpose set forth.

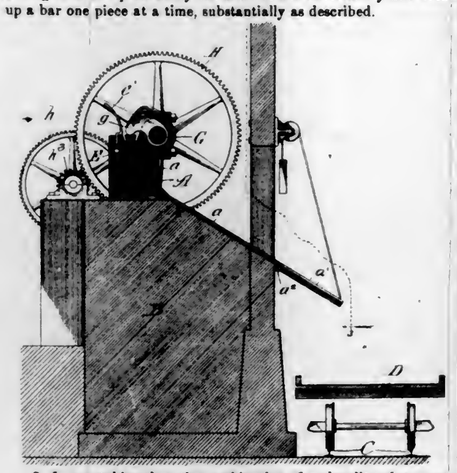
2. A reel having two side pieces one of which carries an axle upon which a hub on the other turns, the end of the tape being attached to the latter, and means for locking the parts to prevent relative rotation, substantially as described.

3. A reel having two side pieces one of which carries an axle upon which a hub on the other turns, the former provided with a handle and the latter provided with a crank whereby one may be held stationary while the other is rotated, the crank serving as a lock to prevent relative rotation of the parts.

569,793. METAL-BREAKING MACHINE. CHARLES L. MILLER and JEROME R. GEORGE, Chicago, Ill. Filed June 29, 1896. Serial No. 597,464. (No model.)

Claim.—1. In a metal-breaker, the combination of a supporting portion for the metal piece or bar, and a rotating shaft provided with a plurality of breaking-lever arms arranged to strike the metal bar and break it into a plurality of smaller pieces during one rotation of the shaft, substantially as described.

2. In a metal-breaker, the combination of a supporting portion for the metal, a rotating shaft, and a plurality of breaking portions arranged to be operated by the shaft to act successively and break up a bar one piece at a time, substantially as described.

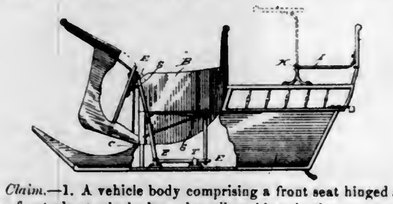


3. In a metal breaker, the combination of a plurality of supporting portions or anvils, a rotating shaft, and a plurality of breaking-lever arms arranged to be actuated thereby and so as to contact the metal bar successively and break it into a desired number of pieces during one rotation of the shaft, substantially as described.

4. In a metal breaker, the combination of a supporting portion for the metal, a rotating shaft provided with a plurality of breaking-lever arms arranged thereon so as to strike the metal bar successively and break it into a desired number of pieces during one rotation of the shaft, and means for guiding the metal bar into the desired position, substantially as described

---

569,794. VEHICLE-BODY. JACOB N. MILLER, Bellefontaine, Ohio. Filed June 12, 1895. Serial No. 552,538. (No model.)



Claim.—1. A vehicle body comprising a front seat hinged at its lower front edge to the body, and an elbow-hinge having one arm connected with the rear part of the front seat, and the other arm connected with the body beneath the front part of the seat; substantially as described.

2. A vehicle-body comprising a front seat hinged at its lower front edge to the body, an elbow-hinge connected with the rear part of the front seat, and the lugs secured to the body beneath the seat and providing rests for the elbow-hinge; substantially as described.

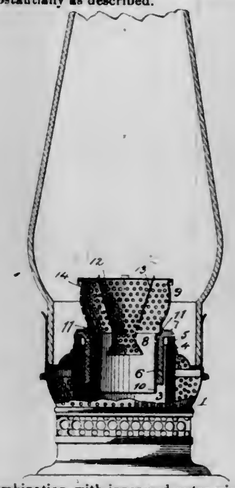
3. A vehicle-body comprising a front seat having a stop secured thereto, and hinged at its lower front edge to the body and the elbow-hinge connected with the rear part of the front seat and with the body and adapted to bear against the stop; substantially as described.

4. A vehicle-body comprising a rear seat having a half-back and pivoted to the body so as to be reversed, and the standards surmounting the body, and the arm-rests carrying a back extension and pivoted to the standards; substantially as described.

569,795. LAMP-BURNER. STEPHEN B. MORSS, Rahway, N. J., assignor to the Solar Manufacturing Company, of New Jersey. Filed Oct. 2, 1895. Serial No. 564,366. (No model.)

Claim.—1. A combined wick-tip and extinguisher comprising a rigid capillary or porous incombustible block or piece adapted to rest upon the top of a fibrous wick and having a greater horizontal cross-section than the wick so as to abut against the top of the wick-casing when the wick is lowered and substantially close the casing to act as an extinguisher, said piece being provided with a guide for directing its vertical movement, substantially as described.

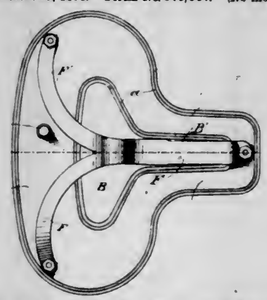
2. The combination, with wick-casing tubes, and a fibrous wick therebetween, of a rigid capillary or porous incombustible wick-tip resting upon said wick when the latter is raised above the casing but arranged to rest upon the casing-tubes and substantially close the casing when the wick is lowered below the same, to act as an extinguisher, said wick-tip being provided with a guide to direct its vertical movement, substantially as described.



3. The combination, with inner and outer wick-casing tubes, and a fibrous wick therebetween, of a rigid capillary or porous incombustible wick-tip resting upon said wick when the latter is raised above the casing but arranged to rest upon the casing when the wick is lowered below the same, and having, nearer the center than the inner wick-casing tube, an annular shoulder, and a perforated thimble resting upon said shoulder, substantially as described.

4. The combination, with inner and outer wick-casing tubes, and a fibrous wick therebetween, of a rigid capillary or porous incombustible wick-tip resting upon said wick when the latter is raised above the casing but arranged to rest upon the casing when the wick is lowered below the same, and having a cylindrical depending guide within the wick-casing, and a perforated thimble having a cylindrical portion within the guide, an outwardly-extending shoulder above the cylindrical portion supporting the thimble upon the wick-tip, and a perforated portion above the shoulder supplying air to the flame above said tip, substantially as described.

569,796. BICYCLE-SADDLE. STANLEY L. MYERS, Santa Rosa, Cal. Filed Nov. 25, 1895. Serial No. 570,007. (No model.)



Claim.—1. In a bicycle-saddle, a flat seat-plate curved to form a broad convex rear portion and having parallel forward extensions, said plate having a central opening of a substantially transverse oval form with a forward extension and said opening being entirely within the edges of the plate whereby the plate is closed at its front and rear, said plate having also downturned flanges bounding its outer periphery and the periphery of the open center, and provided with perforations, a casing formed of flexible material shaped substantially correspondingly with the plate and having lacing-holes coincident with those of the flanges whereby it is readily removable, and an inner expansible tube or lining and means for inflating the same.

2. An improved bicycle-saddle consisting of a flat seat-plate curved

to form a broad convex rear portion and returning upon itself to leave a central opening of a substantially transverse oval form, said plate having approximately parallel extensions adapted to form the front part of the saddle-base, and having downturned perforated flanges bounding its outer periphery and also the periphery of its open center, a support by which the saddle is connected with the seat-post, a casing of flexible material shaped correspondingly with the rigid plate and having its edges provided with lacing-holes coincident with those of the flanges whereby it may be removably attached to the plate, a single-section inner expansible tube or lining extending around the curved rear and sides of the plate and into the forward extensions and means for inflating said tube.

569,797. CAR-HOLDER. THEODORE R. NEWMAN, Rossland, Canada. Filed Aug. 20, 1896. Serial No. 603,373. (No model.)



Claim.—1. A holder of the class described, comprising a holder-shank, a clamping-bar secured to said shank, said clamping-bar being adapted to firmly hold the shank secured to a track-rail, and means for connecting said holder-shank to a car for preventing the latter leaving the rails, substantially as set forth.

2. A holder of the class described, comprising a holder-shank, a clamping-bar detachably secured to said holder-shank, said clamping-bar being adapted to hold said shank secured to a track-rail, and means for connecting said holder-shank to a car for preventing the latter leaving the rails, substantially as set forth.

3. A holder of the class described, comprising a holder-shank having one of its ends turned back to form a hook, a clamping-bar detachably secured to said holder-shank, said clamping-bar being adapted to hold said shank secured to a track-rail, and a fastening-chain connected to said holder-shank and adapted to be attached to a car to prevent the latter leaving the rails, substantially as set forth.

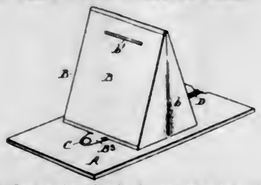
4. A holder of the class described, comprising a holder-shank having one of its ends turned back to form a hook and its other end bent to provide a stem, a clamping-bar detachably secured to said holder-shank intermediate said hook and stem and being adapted to hold said shank secured to a track-rail, and a chain connected to said stem and adapted to be attached to a car to prevent the latter leaving the rails, substantially as set forth.

5. A holder of the class described, comprising a holder-shank having one of its ends turned back to form a hook, a clamping-bar arranged upon said holder-shank and being adapted to hold said shank secured to a track-rail, said clamping-bar being provided with ears adapted to embrace the sides of said holder-shank and in conjunction with a bolt secure said clamping-bar upon the shank, and a chain connected to said holder-shank and adapted to be attached to a car to prevent the latter leaving the rails, substantially as set forth.

6 A holder of the class described, comprising a holder-shank one end of which is turned back to form a hook and having its inner side lying at substantially an acute angle to the body of said shank and the other end bent to provide a stem, a clamping-bar arranged upon said shank and being adapted to hold said shank secured to a track-rail, the end of said clamping-bar which is immediately adjacent to the hook of the holder-shank having its inner side reversely inclined to and at substantially the same angle as the inner side of the hook of the shank, said clamping-bar being also provided with depending ears adapted to embrace the sides of the holder-shank and in coujunction with a bolt rigidly secure the clamping-bar to the holder shank, said bolt being disposed in openings formed in the clamping-bar and holder-shank and adapted to register with each other, and a chain connected to the stem of the holder-shank and adapted to be attached to a car to prevent the latter leaving the rails, substantially as set forth.

7. A holder of the class described, comprising a holder shank having one of its ends turned back to form a hook the inner side of which lies at substantially an acute angle to the body of the shank and the other end being bent to provide a stem, a clamping-bar arranged upon said holder-shank and having one of its ends slightly inclined, said inclined end having its inner side rabbeted and reversely inclined to and at substantially the same angle as the inner side of the hook of the shank, said clamping-bar being also provided with oppositely-disposed depending ears adapted to embrace the sides of the holder-shank and in conjunction with a bolt securely hold said clamping-bar upon the holder-shank, said bolt being disposed in openings formed in the clamping-bar and the holder-shank adapted to register with each other, the opening in the clamping-bar having one of its sides tapered so as to permit said bolt readily passing therethrough when the clamping-bar is placed upon the holder-shank, and means carried by the stem of the holder-shank and adapted to be attached to a car to prevent the latter leaving the rails, substantially as set forth.

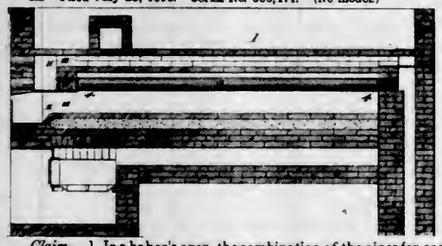
569,798. SAVINGS-BANK. HENRY H. NORRINGTON, West Bay City, Mich. Filed Feb. 8, 1896. Serial No. 578,472. (No model.)



Claim.—1. In a savings-bank, the combination of the sides B', B², flexible material connecting said sides and forming therewith a collapsible body, a flexible flap united to the lower edge of one of said sides, a base, a fastening passing through said flap and base, and means to secure the other of said sides to said base, whereby said body may be held upon the base in an expanded position, and collapsed and folded down upon the base without the removal of said fastening, for the purpose described.

2. In a savings-bank, the combination of the sides B', B², flexible material connecting said sides and forming therewith a collapsible body, a flexible flap united to the lower edge of one of said sides, a base, a fastening passing through said flap and base, and a band connected with the other of said sides extending over one end of the base and removably secured to said fastening to hold said body in an expanded position, and whereby the body may be collapsed and folded down upon the base, for the purpose described.

569,799. BAKER'S OVEN. EDWARD A. C. PETERSEN, Chicago, Ill. Filed July 25, 1896. Serial No. 600,471. (No model.)



Claim.—1. In a baker's oven, the combination of the pipes for conducting the heat and products of combustion, boxes formed to receive said pipes, and a mortar filling; said boxes being each composed of two members, and each member consisting of a plate 3 having ends 4 provided with semicircular recesses 5, substantially as and for the purposes set forth.

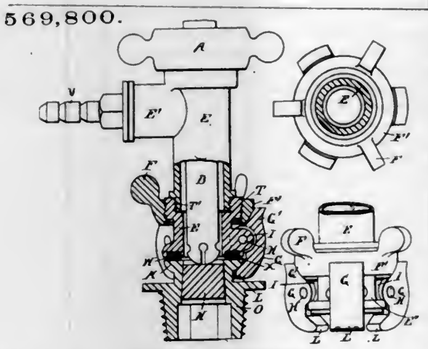
2. In a baker's oven, the combination of the pipes for conducting the heat and products of combustion, and means for sealing the ends of the pipes consisting of boxes adapted to receive a mortar, each box consisting of two sections, and each section consisting of a plate 3 having ends 4 provided with extensions 6 and semicircular recesses 5, substantially as set forth.

569,800. BEER-TAP. EDWARD C. POST, Monroe, Mich. Filed Sept. 7, 1895. Serial No. 561,825. (No model.)

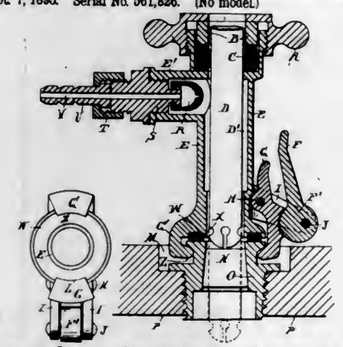
Claim.—1. In a coupling device for the purpose described, a hollow body, dogs G fulcrumed to the lower portion of said body and provided with jaws L at their lower extremities, and a nut having a threaded engagement with the lower portion of said body above the fulcrums of the dogs and on the inside of said dogs to actuate the dogs and set said jaws, substantially as set forth.

2. In a coupling device for the purpose described, the combination of a hollow body provided with a lower portion E³ having a threaded engagement therewith and forming a part of said lower portion of the body, dogs G fulcrumed to said body formed with jaws L, and means to actuate said dogs, said dogs having a beveled engaging face to take up the slack between the two faces of the coupling, substantially as set forth.

569,800.



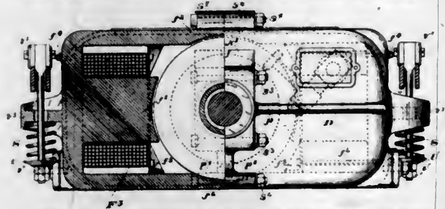
569,801. BEER-TAP. EDWARD C. POST, Monroe, Mich. Filed Sept. 7, 1895. Serial No. 561,826. (No model.)



Claim.—1. In a coupling device, the combination of a hollow body E provided on one side thereof with an arm terminating in a jaw Z, and with a dog G having a jaw L, and a cam bearing against said dog to actuate the dog and set its jaw, said body provided with a bracket on which said dog and said cam are fulcrumed, substantially as set forth.

2. In a coupling device, the combination of a hollow body E provided on one side thereof with a fixed arm G' terminating in a jaw Z, a dog G provided with a jaw L and a cam bearing against said dog to actuate the dog and set its jaw, said body provided with brackets on which said dog and said cam are fulcrumed, substantially as set forth.

569,802. ELECTRIC MACHINE. ALBERT SCHMID, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Nov. 27, 1891. Serial No. 413,174. (No model.)



Claim.—1. The combination with the armature of an electric motor, of a four-pole field-magnet constructed in two sections, one pole and a fraction of each of two others being carried by each section.

2. A field-magnet for electric machines constructed with four inwardly-directed poles, exciting-coils wound upon two of the poles, the other two remaining unwound, said field-magnet being divided into two sections through the two poles having no coils.

3. A field-magnet core for electric motors for street-cars constructed in two separable sections and having four poles, two horizontal and two vertical, the vertical dimensions of the core being less than the horizontal, and exciting-coils placed upon the horizontal poles only.

4. The combination with the axle of a car-truck, of an electric motor having its armature and its commutator rigid upon said axle, a field-magnet core constructed in two separable parts and forming an inclosing casing for the armature and commutator, and projecting from the axle horizontally in both directions, and springs supporting the respective ends of the field-magnet.

5. A field-magnet for electric motors of rectangular form, and of greater length than depth and having two horizontal poles and two poles at right angles thereto, said field-magnet being divided vertically through the latter poles, and bolts coupling the two sections together.

6. In a car-motor, the combination of an armature rigidly mounted upon the car-axle, a field-magnet vertically divided into two sections and provided with lugs s^3, s^3, receiving bolts s', s', and completely inclosing the armature, substantially as described.

7. The combination with the axle of a car, of the field-magnet of an electric motor surrounding the same and divided along the line of the axle and provided with bearing-lugs formed at the ends of the field-magnet, also longitudinally divided, and bushings within said bearing-lugs.

8. The combination with the axle of a car, of the field-magnet of an electric motor surrounding the same and provided with bearing-lugs at the respective ends of the field-magnet and with oil-cups above said bearing-lugs formed in said field-magnet casting.

9. In an electric motor, the combination with the car-axle of a sleeve surrounding said axle and having a rigid frictional engagement therewith at its ends and an armature the core of which is built upon said sleeve, substantially as described.

10. In an electric-car motor, an armature-core, and a sleeve upon which the core is built, and a car-axle upon which the sleeve is pressed and upon which it wedges at its respective ends.

11. A car-axle having a slightly-enlarged portion near its two ends, a sleeve pressed upon and tightly fitting said enlarged portions, and a driving-motor having its armature rigidly attached to said sleeves, substantially as described.

569,803. FUSE FOR ELECTRIC CIRCUITS. CHARLES F. SCOTT, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Dec. 3, 1895. Serial No. 570,947. (No model.)

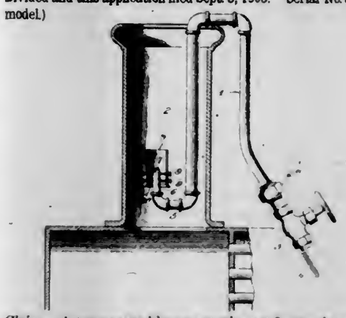


Claim.—1. A fuse for electric circuits comprising a strip of metal having a comparatively high degree of conductivity and reduced in size at a point intermediate its ends and a body of metal having a low melting-point reinforcing the reduced portion of said strip.

2. A fuse for electric circuits comprising two end portions and a narrow connecting strip or isthmus formed of a metal having a high degree of conductivity and a body of metal having a low melting-point reinforcing said strip or isthmus.

3. A fuse for electric circuits comprising two solid terminal ends and a plurality of strips connecting the same and forming integral parts thereof, each of said strips being reduced in size substantially midway of its ends and reinforced by a body of metal having a low melting-point.

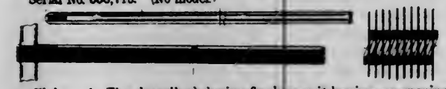
569,804. STACK BLOWER ATTACHMENT. NORBOURN H. SMITH, Bristol, Tenn. Original application filed Oct. 25, 1894, Serial No. 526,972. Divided and this application filed Sept. 3, 1895. Serial No. 561,321. (No model.)



Claim.—A temporary blower attachment for smoke-stacks, comprising a blower-pipe constructed in substantially a U shape and adapted to be placed astride of the upper edge of a smoke-stack with the upper portion of the pipe resting directly on said upper edge of the stack, whereby the pipe will be temporarily supported in a proper position with relation to the stack, the depending side portion of the pipe within the stack being provided at its lower end with an up-

turned jet device, and the outer depending side portion of the pipe being provided at its lower end with a coupling for the attachment of an air-supply pipe or hose, substantially as set forth.

569,805. LOOM. OBERLIN SMITH, Bridgeton, N. J., assignor of one-half to George Draper & Sons, Hopedale, Mass. Filed Aug. 9, 1895. Serial No. 558,718. (No model.)



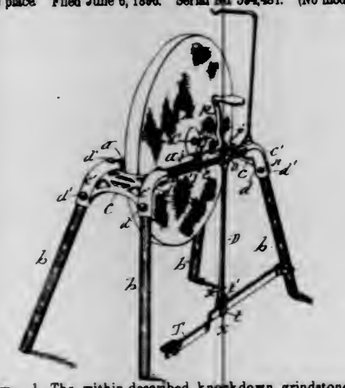
Claim.—1. The described device for looms, it having an opening for the passage therethrough of a warp-thread, said device being crimped or bent longitudinally and throughout its entire length whereby the portions at opposite sides said opening are offset to provide a straight passage of the thread through said opening, and at the same time enable two or more of said devices when closely arranged side by side to have free and independent longitudinal movement, substantially as described.

2. In a loom, the combination with a frame, and heddle-moving mechanism, of the heddle-frames, and devices carried thereby and provided with openings for the warp-threads, said devices being crimped or bent longitudinally for their entire lengths to offset portions at opposite sides of said opening to provide substantially straight passage of the warp-threads through said openings, substantially as described.

3. In a loom, the combination with a frame, and a lay, of devices provided with openings for the warp-threads said devices being crimped or bent longitudinally throughout their entire lengths to thereby offset portions at opposite sides said openings to provide a substantially straight passage of the warp-threads therethrough, and a stop-motion, and its feeler coöperating with the said devices, substantially as described

4. In a loom, the combination with a frame, a lay, the heddles having openings for the passage of the warp-threads, said heddles being bent or crimped longitudinally throughout their entire lengths to thereby offset portions at opposite sides of said openings, offset to provide substantially straight passage of the said threads, mechanism to move said heddles to shed the threads, a warp stop-motion and its feeler coöperating with said heddles, substantially as described.

569,806. GRINDSTONE-FRAME. HARVEY WHITE, Syracuse, N. Y., assignor to the Whitman & Barnes Manufacturing Company, same place. Filed June 6, 1896. Serial No. 594,431. (No model.)

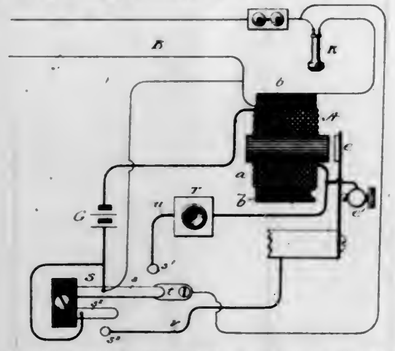


Claim.—1. The within-described knockdown grindstone-frame consisting of the parallel tubes *a a*, inclined tubes *b b b b*, plates *c c*, formed at their ends with concave clips *c' d* straddling the top portions of the tubes at their junctions, concave clip-ties *d d d d* on the under sides of the tubes, and bolts clamping said clips and clip-ties on the tubes, as set forth.

2. The combination of a shaft having one end terminated polygonal-shaped in cross-section and the opposite end provided with a permanently-affixed treadle-crank, a hand-crank provided with a polygonal eye for receiving therein the correspondingly-shaped end of the shaft and with jaws for embracing the arm of the fixed crank, and a bolt detachably clamping said jaws on said arm, as set forth and shown.

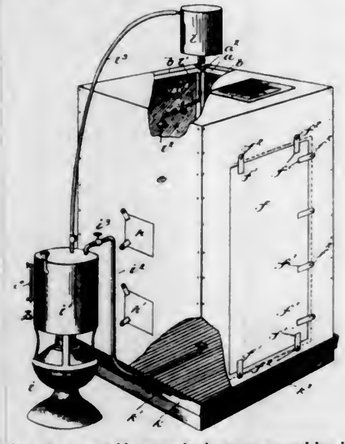
569,807. TELEPHONY. JOHN T. WILLIAMS, Brooklyn, N. Y. Filed Mar. 25, 1895. Serial No. 543,059. (No model.)

Claim.—1. In telephony, the combination of an induction-coil, a signaling instrument, the latter being in the secondary circuit of the induction-coil, a circuit shunting the secondary of the induction-coil, another circuit having two branches, one of which includes a circuit-interrupter and the primary of the induction-coil, and the other including the transmitter and the primary of the induction-coil and a switch arranged to close either of said branch circuits or said shunt-circuit while leaving the others open, substantially as described.



2. In telephony, the combination of an induction-coil, a signaling instrument, the latter being in the secondary circuit of the induction-coil, a receiving instrument also in the secondary circuit of the induction-coil, a circuit shunting the secondary coil and the receiver, another circuit having two branches one of which includes a circuit-interrupter and the primary of the induction-coil, while the other includes the transmitter and the primary of the induction-coil and a switch arranged to close either of said branch circuits or said shunt-circuit, while leaving the others open, substantially as described.

569,808. PORTABLE STEAM AND SHOWER BATH HOUSE. HIRAM E. WYCKOFF, Silver Creek, N. Y. Filed June 4, 1896. Serial No. 594,313. (No model.)



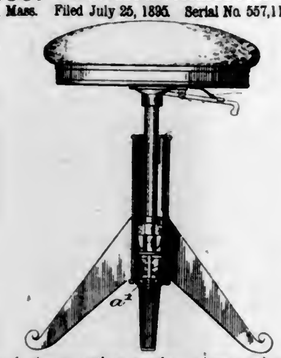
Claim.—1. A portable steam-bath closet, comprising in its construction, a frame composed of four vertical posts, each having cross-braces pivotally connected to it, and also having means for engaging the free ends of the braces of an adjacent post, and fastening means having the operative movements confined to the interior of the closet, and a flexible moisture-proof covering for the top and sides of the frame, said covering being permanently secured to the said vertical posts.

2. In a steam-bath apparatus, the combination with the vertical posts *a* having the cross-braces *b* pivoted thereto on one side, and recesses *d'* in another side, of spring-catches *d* carried by the outer ends and adapted to engage the recesses *d'* and a flexible covering permanently connected to the posts *a*, substantially as described.

3. In a steam-bath apparatus, the combination with the vertical posts *a*, having the headed studs *c* and the recesses *d'*, of the cross-braces *b* pivoted to the posts *a* and provided with slotted plates b^3 and catches *d*, adapted to engage the said studs and recesses, and a flexible covering permanently secured to the posts *a*, substantially as described.

4. In a steam-bath apparatus, the combination with the folding closet having the reservoir *l* and sprinkler l^2, of the boiler *i'* having steam-pipe i^3 leading to the lower part of the closet, and the steam-pipe l^3, connected with the reservoir *l*, substantially as described.

569,809. VERTICALLY-ADJUSTABLE SEAT. JOHN R. BURKE, Boston, Mass. Filed July 25, 1895. Serial No. 557,119. (No model.)



Claim.—1. A supporting member, a seat, and a seat-carrying member, a series of engaging surfaces on one and one or more locking devices on the other of said members constructed to interlock with the engaging surfaces and hold the members from movement in either direction, and a vertically-sliding operating member arranged to reciprocate between said members for operating the said locking device, substantially as described.

2. A supporting member, a seat and a tubular carrying member therefor, a series of engaging surfaces on one and one or more co-operating locking devices on the other of said members, constructed to interlock with the engaging surfaces and hold the members from movement in either direction and a vertically-sliding tubular operating member contained within the said tubular carrying member, and to control the engagement and disengagement of said locking devices, substantially as described.

3. A supporting member having a post provided with a series of lateral engaging surfaces, a seat, and a tubular carrying member therefor, one or more locking devices mounted at the lower end of said carrying member for and to engage said series of engaging surfaces, and provided with beveled operating-surfaces, and a vertically-sliding operating member within said carrying member and adapted to engage said beveled surfaces to positively move said locking devices out of engagement with said series of engaging surfaces, substantially as described.

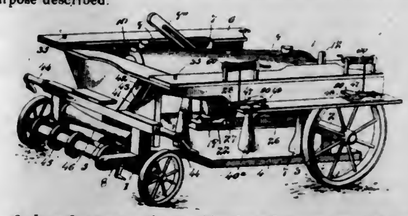
4. The supporting member, the post provided with lateral engaging surfaces, the seat, and carrying member therefor provided with the pivoted locking devices having beveled operating-surfaces at their lower ends and inturned portions at their upper ends, the vertically-sliding operating member within the said carrying member arranged to engage said beveled operating-surfaces, and provided with the openings d^4, to receive said inturned portions, operating substantially as described.

5. A supporting member, a post having lateral engaging surfaces, a seat, and seat-carrying member, the latter adapted to receive said post and being provided at its lower end with a head, locking devices pivoted in said head to coöperate with said surfaces, and an operating member within said carrying member, said head being provided with a slot below the path of movement of said operating member to receive the said post, to thereby prevent rotative movement without interfering with vertical movement, substantially as described.

6. A supporting member, having a tubular portion, said tubular portion being less in diameter in its lower end than in the remainder of its length, a seat, and seat-carrying member arranged within said tubular portion of the supporting member, a post provided with engaging teeth and centrally arranged within said tubular portion, one or more locking devices carried on the lower end of said seat-carrying member to engage said teeth, an annular disk fixed on said seat-carrying member to fit the lower end of said tubular member and to coöperate with the said lower end of the same to constitute a dash-pot to cushion downward movement of the seat-supporting member within said tubular member, substantially as described.

569,810. FIRE-ESCAPE. WILLIAM CAREY, Viola, Mich. Filed Dec. 31, 1895. Serial No. 573,921. (No model.)

Claim.—1. In a fire-escape, the combination of a gun provided with a longitudinal slot extending inward from the muzzle and a projectile provided with a pivoted link adapted, when the projectile is in the gun, to extend through the slot, substantially as and for the purpose described.



2. In a fire-escape, the combination of a gun, provided with a longitudinal slot extending inward from the muzzle, a projectile provided with a pivoted link adapted to extend through the slot, and a supplemental anchoring-bar connected with the link, substantially as described.

3. In a fire-escape, the combination of a gun provided with a longitudinal slot, a grappling projectile having a recess and provided with spring-actuated dogs, a link pivoted in the recess and adapted to extend longitudinally of the projectile, and also to project outward from the slot of the gun and provided with a dog, and a supplemental anchoring-bar connected with the link and provided with dogs and adapted to carry a rope, substantially as described.

4. In a fire-escape, a ladder composed of sides having their upper ends curved and forming hooks for engaging a roof, and rungs or steps connecting the sides, the lowermost rung being extended beyond both sides of the ladder and forming laterally-projecting arms 36 adapted to receive ropes for guiding the ladder, substantially as described.

5. The combination with a ladder provided with hooks for engaging a roof, of means for removing the ladder from a roof and lowering the same to the ground, said means comprising a substantially V-shaped hanger provided at the upper ends of its sides with teeth for detachably engaging a roof, a pulley arranged at the apex or lower end of the hanger, and a rope or cable arranged on the pulley and having one end attached to the bottom of the ladder, substantially as described.

6. In a fire-escape, the combination of a frame, a front axle connected therewith, a rear axle provided with depending arms hinged to the frame, carrying-wheels mounted on the axles a gun mounted on the rear axle, and conical posts mounted on the rear axle and arranged substantially parallel, substantially as described.

7. In a fire-escape, the combination of a frame comprising a base, a top, and posts supporting the top, a front axle pivotally connected with the base, a windlass-frame mounted on the front axle and supporting the top of the frame, a rear axle hinged to the platform, carrying-wheels mounted on the axles and a gun mounted on the rear axle, substantially as described.

8. In a fire-escape, the combination of a frame comprising a platform, and a top having opposite sides and provided with a front connecting the sides, a front axle, a rear axle hinged to the frame, carrying-wheels mounted on the axles a gun mounted on the rear axle, and a fastening device arranged at the front of the platform and adapted to lock the gun in a horizontal position, substantially as described.

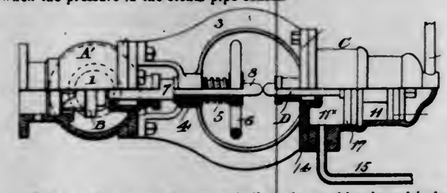
9. In a fire-escape, the combination of a frame, a cable carried by the frame, a base-plate having a longitudinal opening and provided with grooves at opposite sides of the opening to receive the cable, and a lever fulcrumed at one end in the opening, provided intermediate of its ends with a groove to receive the cable and having at its other end a foot-piece arranged to be engaged by the foot of a person, whereby the cable is controlled, substantially as described.

10. In a fire-escape, the combination with a track wire or cable, of a series of brackets provided with grooves or notches 56 receiving the track wire or cable, said brackets being provided above the grooves or notches with inverted-U-shaped recesses and having entrance-openings at their outer sides communicating with the recesses or grooves and the notches, to permit the track wire or cable to be disengaged from the bracket, and a shield substantially U-shaped in cross-section arranged in the recesses of the brackets and disposed over the track wire or cable, substantially as described.

569,811. SAFETY DEVICE FOR STEAM-BOILERS. GEORGES J. N. CARPENTIER, Newport News, Va. Filed June 9, 1896. Serial No. 594,888. (No model.)

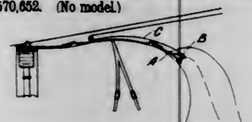
Claim.—1. A safety device for steam-boilers, comprising a stop-valve formed with a stem projecting beyond its valve-casing, a steam-

pipe leading from the valve-casing, a steam-cylinder having chambers of different diameters and arranged with the chamber of greater diameter next adjacent to the valve-stem, a pipe connection leading from the boiler into the smaller chamber of the cylinder, a pipe connection leading from the steam-pipe into the larger chamber of the cylinder, pistons in the cylinder having heads fitted to the respective chambers thereof, and the rod of the pistons being arranged in alinement with the valve-stem and to stand normally free from the projecting end thereof and to contact therewith and close the stop-valve when the pressure in the steam-pipe ceases.



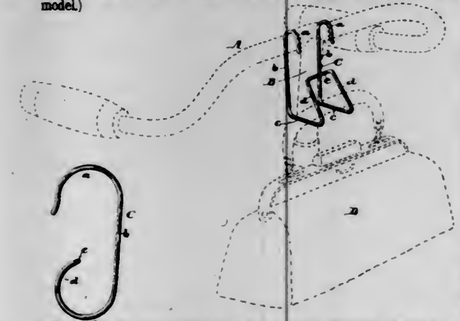
2. In a safety device for steam-boilers, the combination with the stop-valve the boiler and the steam-pipe, of a steam-cylinder having chambers of different diameters, a piston-rod provided with two piston-heads to fit the said chambers, a return steam-pipe leading from the larger cylinder-chamber to the steam-pipe, a steam-escape pipe in the return steam-pipe, and a valve in the escape-pipe.

569,812. **CRUPPER FOR RESTRAINING HORSES FROM KICKING.** HENRY CAVE, Rangiora, New Zealand. Filed Nov. 30, 1895. Serial No. 570,652. (No model.)



Claim.—A harness attachment for the purpose herein set forth, the same comprising a substantially U-shaped device having the ends provided with fastenings, the projecting rest or support joined to said device by a connecting-strip, and a supplemental rein attached to said strip and adapted to be passed through a guide on the harness, substantially as shown and for the purpose described.

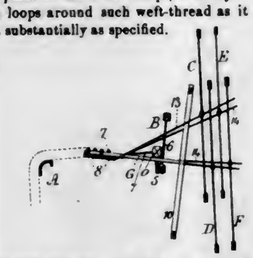
569,813. **BAGGAGE-SUPPORT FOR BICYCLES.** DANIEL CHAMBERLAIN, Boston, Mass. Filed May 6, 1896. Serial No. 590,428. (No model.)



Claim.—A baggage-support for use upon bicycles, formed of wire or similar material, and consisting of parts *a a*, bent to a curve to fit upon the guiding-support A, upon each side of the vertical standard B, the parts *b b* extended downward from parts *a*, the lower parts *c*, the upward-extended parts *d*, and the front portion *e* extended from one of said parts *d* to the other in front of standard *d*, all substantially as specified.

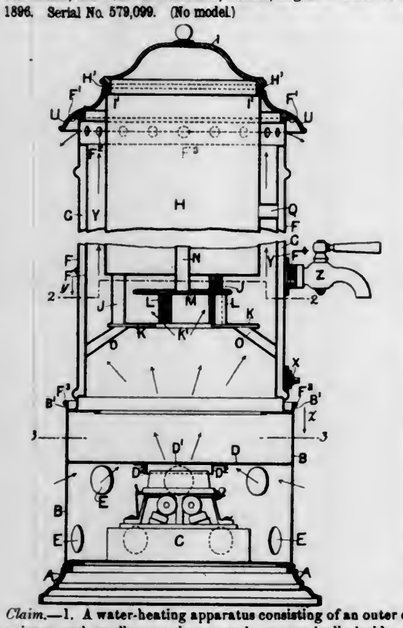
569,814. **LOOM FOR WEAVING PILE FABRICS.** CHARLES COUPLAND and FRED PEARSON, Seymour, Conn. Filed Dec. 6, 1895. Serial No. 571,238. (No model.)

Claim.—1. The combination in a loom for weaving warp-pile fabrics, with the lay, and devices for manipulating the warp, of distenders formed of smooth thin wire, means for raising and lowering the distenders into the upper and lower plane of the warps, and means for inserting a weft-thread above the distenders while the distenders are in the plane of the lower warps, whereby the pile-warps will be formed as loops around such weft-thread as it is supported by the distenders substantially as specified.



2. The combination with the lay, reed and heddles in a loom for weaving pile fabric, of distenders passing through the reed and bars connected with the distenders and behind the reed, a frame in which the distender-bars are sustained, pivots for such frame and means for raising and lowering the pivots and elevating or depressing the distenders, substantially as set forth.

569,815. **WATER-HEATING APPARATUS.** WALTER DARBY, ION DARBY, and JOHN H. PUNCHARD, London, England. Filed Feb. 12, 1896. Serial No. 579,099. (No model.)

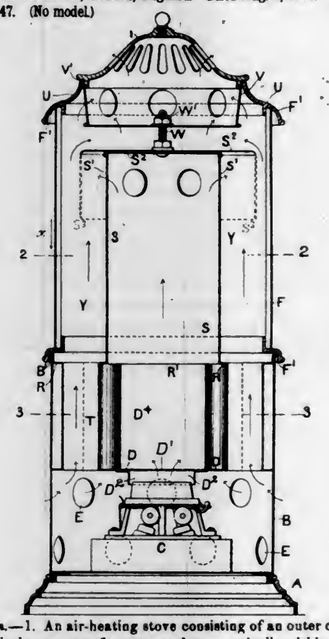


Claim.—1. A water-heating apparatus consisting of an outer casing an inner and smaller vessel arranged concentrically inside said casing and forming the water-holder, a vertical annular passage up which the products of combustion pass between said outer casing and water-holder, a shallow closed-in chamber or chambers arranged horizontally below said water-holder, and connected therewith, a division-plate or partition below said hollow chambers entirely dividing the upper part of the interior of the apparatus and water-containing devices from the lower part and all inlets for admitting air, an opening in said partition of a size and so arranged with respect to the burner or burners as to only permit the flame or flames thereof to pass through said opening and thereby prevent cold air reaching the water holder or chambers to be heated, as also prevent the formation of water of condensation on the surfaces to be heated of said water-holder or shallow chambers substantially in the manner and for the purposes hereinbefore described.

2. A water-heating apparatus consisting of the combination with a double casing such as F and F× forming a water-jacket such as G, of a water-holder such as H within said casing and forming an annular passage such as Y for the products of combustion to pass up between said water-jacket G and water-holder H, shallow water-heating chambers such as K and M below said water-holder, and connected by suitable connections thereto and to the water-jacket, a burner or burners such as C arranged below said water-holding devices, and a horizontal division-plate or partition such as D between said water-holding devices and the burner C with an opening such as D′ therein corresponding to the size, and fitting closely over the burner and through which the flame passes, all arranged and acting substantially in the manner, and for the purposes hereinbefore described with reference to Figs. 1 to 3 of the drawings hereunto annexed.

3. A water-heating apparatus, consisting of the combination with a single casing such as F of a water-holder such as H within said casing and forming an annular passage such as Y for the products of combustion to pass up between said casing and water-holder H, shallow water-heating chambers, such as K and M below said water-holder, and connected by suitable connections thereto, a burner or burners such as C arranged below said water-holding devices, and a horizontal division-plate or partition, such as D between said water-holding devices and the burner C with an opening such as D′ therein, corresponding to the size, and fitting closely over the burner, and through which the flame passes, all arranged and acting substantially in the manner, and for the purposes hereinbefore described with reference to Fig. 4 of the drawings hereunto annexed.

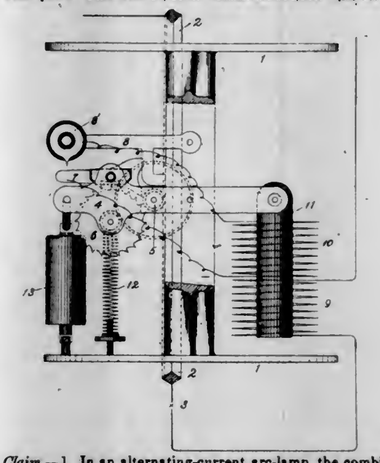
569,816. **HEATING-STOVE.** WALTER DARBY, ION DARBY, and JOHN H. PUNCHARD, London, England. Filed Aug. 3, 1896. Serial No. 601,547. (No model.)



Claim.—1. An air-heating stove consisting of an outer casing an inner vertical passage or flue arranged concentrically within said casing a vertical annular passage between said flue and said casing a horizontal division-plate or partition below said flue and entirely dividing the upper part of the interior of the apparatus from the lower part thereof an opening in said partition of a size and with respect to which the burner is so arranged as to only permit the flame to pass through said opening and consequently prevent cold air passing into said central flue a second division-plate or partition between the bottom of said flue and the first-named partition so that the products of combustion can alone pass into said flue a series of vertical tubes between said two partitions and arranged concentrically around said burner through which air can freely pass from below the first-named partition into the aforesaid vertical annular passage and be heated *en route* without coming in contact with the products of combustion substantially in the manner and for the purposes hereinbefore described.

2. An air-heating stove consisting of the combination with a casing such as F of a vertical flue such as S arranged centrally within said casing and forming an annular vertical passage such as Y between said flue and said casing a burner such as C in the lower part of said casing a division-plate or partition such as D with an aperture such as D′ therein with which latter the burner fits closely and thereby prevents cold air passing through said opening D′ a second partition such as R in which the open lower end of the flue S terminates so that the products of combustion can only pass up said flue a series of air-tubes such as T through said partitions D and R through which tubes air can freely pass from around the burner C into said annular passage Y and is heated *en route* and discharged from the latter substantially in the manner and for the purposes hereinbefore described.

569,817. **ELECTRIC-ARC LAMP.** HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Jan. 14, 1895. Serial No. 534,829. (No model.)



Claim.—1. In an alternating-current arc-lamp, the combination with a series coil and a coil in inductive relation thereto, of carbon-controlling mechanism comprising means actuated directly and solely by said coils to open and close the secondary circuit, substantially as described.

2. In an alternating-current arc-lamp, the combination with a series coil and a coil in inductive relation thereto, of gravity-actuated carbon-feeding mechanism and releasing means therefor, said releasing means being actuated directly and solely by the combined action of said coils, substantially as described.

3. In an alternating-current arc-lamp, the combination with a series coil, a coil in inductive relation thereto, and a rocking frame provided with a movable core for said coils, gravity-actuated carbon-feeding mechanism and locking and releasing means therefor, of a contact device in the path of movement of said locking and releasing means, the secondary circuit being completed by the engagement of said parts, substantially as described.

4. In an alternating-current arc-lamp, the combination with the carbon feeding rack and train and locking and releasing means therefor, of a movable contact device in the path of movement of said locking and releasing means, a coil in series with the lamp and a coil in inductive relation to said series coil, the terminals of which are respectively in said contact device and the adjacent portion of the locking and releasing means, substantially as described.

5. In an alternating-current arc-lamp, the combination with a coil in series with the lamp and a coil in inductive relation to said series coil, of a movable core for said coils, carbon-controlling mechanism comprising a tilting frame connected to said core at one end and carrying one terminal of the secondary coil at its other end, whereby the secondary circuit is opened and closed and the feeding mechanism controlled directly and solely by the action of said coils, substantially as described.

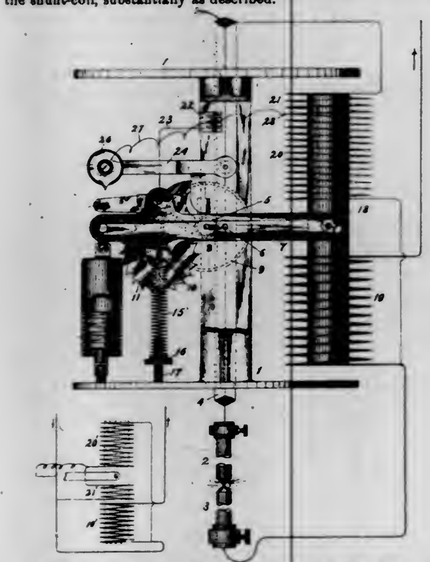
569,818. **ELECTRIC-ARC LAMP.** HARRY P. DAVIS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Jan. 14, 1895. Serial No. 534,830. (No model.)

Claim.—1. The combination with a series coil and a shunt-coil having two sections, one of which is normally short-circuited, of a rocking frame provided at one end with a movable armature or core common to said coils, and a spring and a movement-retarding device connected with the other end of said frame, substantially as described.

2. The combination with a series coil and a shunt-coil having two sections, one of which is normally short-circuited, of a working frame provided at one end with a movable armature or core common to said coils, and a spring and a movement-retarding device connected with the other end of said frame, substantially as described.

3. The combination with the lamp-frame, of the pivoted frame and the gear and escapement mechanism carried thereby, a core or armature and balancing means therefor, a series coil, a shunt-coil hav-

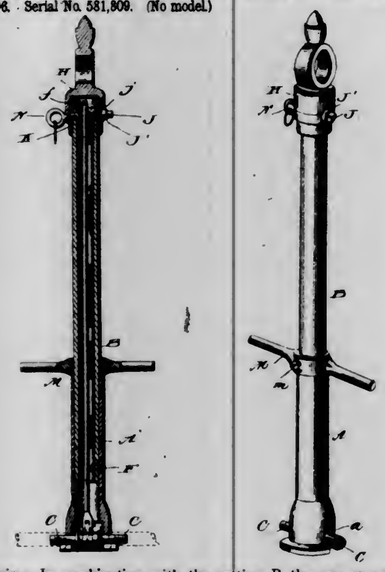
ing two sections and an insulated stop in the path of movement of the escapement and having a single connection to the two sections of the shunt-coil, substantially as described.



4. The combination with carbon-feed-regulating mechanism, of a series coil, two shunt-coil sections, a core or armature common to said coils and connections whereby one of said shunt-coil sections is short-circuited when the core is actuated by the series coil, substantially as described.

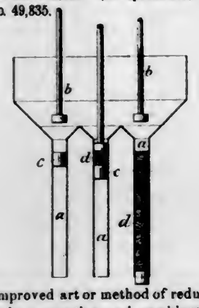
5. The combination with the pivoted frame and the feed-regulating mechanism carried thereby, of a movement-retarding device and a solenoid core, attached to opposite ends of said frame, a series coil and two shunt-coil sections common to said core and means whereby one of said shunt-coil sections is short-circuited when the core is actuated by the series coil, substantially as described.

569,819. COMBINATION HITCHING-POST AND CUT-OFF PLUG. WILLIAM E. DAVIS and SAMUEL A. MILLER, Centralia, Pa. Filed Mar. 4, 1896. Serial No. 581,809. (No model.)



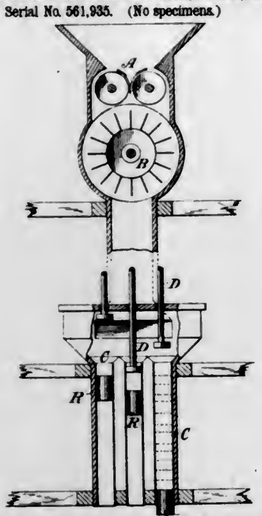
Claim.—In combination with the section B, the cap screwed thereto, the pin N recessed and carrying a ring, the said recess adapted to receive the rim of the cap, and the bolt J, substantially as shown and described.

569,820. METHOD OF REDUCING METALLIC SAND OR PULVERIZED ORES. ARCHIBALD A. DICKSON, Toronto, Canada. Filed Apr. 13, 1895. Serial No. 545,631. (No specimens.) Patented in Canada Sept. 3, 1895, No. 49,835.



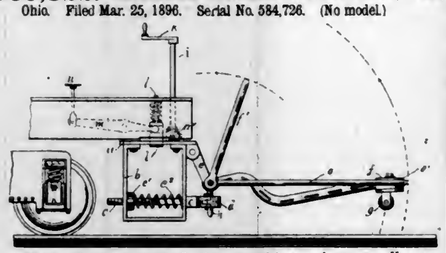
Claim.—The improved art or method of reducing metallic sands, or pulverized ores, in connection and combination with peat as a binding and combustible material, which consists, essentially, in the following sequence of operations, viz: first, drying the peat sufficiently to deprive it of all but the atmospheric degree of moisture; second, breaking or separating it into fragments which retain the natural fiber practically unbroken; third, incorporating or mixing such peat with the metallic sand or pulverized ores while both materials are perfectly cold; fourth, causing such combined materials to fall by gravitation into a forming tube or mold in evenly-disposed successive charges, and subjecting each of such charges therein to vertically-applied pressure against a yielding resistance, whereby the formative pressure upon all of the successively-formed blocks shall be the same irrespective of the varying density of such charges of the combined materials and evenly-hard blocks produced; and fifth, subjecting said blocks to the action of fire in a reducing-furnace until the constituent metals are fused and run off, substantially as set forth.

569,821. METHOD OF REDUCING METALLIC SAND OR PULVERIZED ORES. ARCHIBALD A. DICKSON, Toronto, Canada. Filed Sept. 9, 1895. Serial No. 561,935. (No specimens.)



Claim.—The improved art or method of reducing metallic sands, or pulverized ores, in connection and combination with peat-charcoal as a binding and combustible material, which consists, essentially, in the following sequence of operations, viz: first, drying the raw or natural peat sufficiently to deprive it of all but the atmospheric degree of moisture; second, breaking or separating it into fragments; third, incorporating or mixing such peat with the metallic sands, or pulverized ores while both materials are perfectly cold; fourth, causing such combined materials to fall by gravitation into a forming-tube, or mold in evenly-disposed successive charges, and subjecting such charges therein to vertically-applied compression against a yielding resistance, whereby the formative pressure upon all of the successively-formed blocks shall be the same irrespective of varying density of such charges, and evenly-hard blocks separate blocks are produced; fifth, eliminating the volatile elements by charring or carbonizing such blocks in a retort; and sixth, subjecting such carbonized blocks to the action of fire in a reducing-furnace for the recovery of the metals, substantially as set forth.

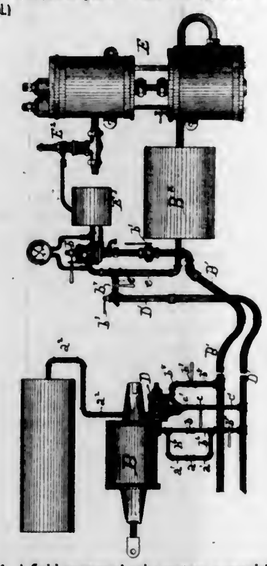
569,822. CAR-FENDER. JOHN GIBSON and JOHN WATSON, Toledo, Ohio. Filed Mar. 25, 1896. Serial No. 584,726. (No model.)



Claim.—1. A street-car fender comprising a plate extending under and across the forward end of the front platform, a two-part fender pivotally supported from said plate and adapted to fold upwardly against the forward end of the car, a housing projecting downwardly from each end of said plate, a spring-controlled, adjustable horizontal rod in each of said housings, means for connecting said rod with said fender whereby, through the adjustment of said rod, the fender may be supported at any desired height, means for swinging said plate with its attachments horizontally, and means for securing said plate at any position to which it may be swung, substantially as and for the purpose specified.

2. In a street-car fender, a tubular frame provided with a suitable netting, corner-blocks secured to the forward angles of said frame having rounded corners and grooved rims, in combination with an elastic guard, (as an india-rubber hose,) extending from the rear of said fender around its outer edge and in the grooves of said corner-blocks, substantially as and for the purpose specified.

569,823. AIR-BRAKE FOR RAILWAY-CARS. HENRY S. GRABING, Allegheny, Pa., assignor of two-thirds to James Olliffe, Sr., and James Olliffe, Jr., same place. Filed Feb. 28, 1895. Serial No. 540,114. (No model.)



Claim.—1. A fluid-pressure brake system, comprising an ordinary automatic system and a direct-air system, the latter consisting of a direct-air train-pipe communicating with the main air reservoir, a cock controlling admission of air to said train-pipe, a branch pipe leading from the train-pipe to the brake cylinder, a pressure-valve *b* in the branch pipe, a pipe leading from and into the branch pipe around the pressure-valve and provided with a check-valve opening to admit air to the brake-cylinder, and an engineer's valve b^2 to exhaust from the direct-air train-pipe, substantially as described.

2. A fluid-pressure brake system, comprising an ordinary automatic system, and a direct-air system, the latter consisting of a direct-air train-pipe communicating with the main reservoir, a cock controlling admission of air to said direct-air train-pipe, a branch pipe leading from said train-pipe to the brake-cylinder, a pressure-valve *b* in the branch pipe, a pipe leading from and into the branch pipe around the pressure-valve and provided with a check-valve, a pipe leading from the exhaust-opening of the triple valve to the direct-air train-pipe, and an engineer's valve b^2 to exhaust from the direct-air train-pipe, substantially as described.

569,824. BRUSH-HOLDER FOR DYNAMOS. WILLIAM M. HAND, St. Louis, Mo., assignor to the General Electric Company, of New York. Filed Jan. 27, 1896. Serial No. 576,944. (No model.)



Claim.—1. In combination with a commutator-brush and a holder therefor having a socket; a spring for pressing the brush and conducting the current, working in said socket and formed of flat metal having its transverse dimension in the direction of yielding reduced to give the requisite resiliency and having its other transverse dimension relatively increased to afford ample section for conductivity without heating, as herein explained.

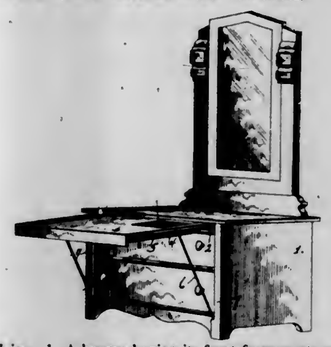
2. In combination with a commutator-brush holder having a socket; a spring working in said socket for pressing the brush and conducting the electric current, formed of metal having its transverse dimension in the direction of yielding reduced to give the requisite resiliency and having its other dimension increased to afford ample section for conductivity without heating, said spring being formed by bending the metal backward and forward upon itself in serpentine form, substantially as herein explained.

3. In a brush-holder, the combination of a head having a socket, a block fitting in the socket and adapted to carry a carbon, a plate fitting in the socket and having an inwardly-extending projection and an outwardly-extending handle, a set-screw fitting in the head and adapted to bear against said projection, springs connecting said block to said plate, and a stem connected to said block and passing loosely through said projection and said handle, substantially as and for the purpose set forth.

4. In a brush-holder, the combination of a block having a socket, and a carbon having a neck fitting in the socket and held therein by solder, substantially as set forth.

5. In a brush-holder, the combination of a block having a socket, and a brush having a perforated neck fitting in said socket and held therein by solder, substantially as set forth.

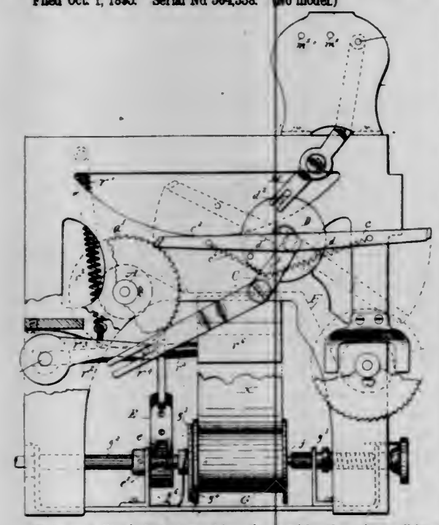
569,825. BUREAU AND DESK. JOHN H. HARRELL, Baltimore, Md., assignor to the Harrell Bureau-Desk Company, New York, N. Y. Filed Feb. 6, 1896. Serial No. 578,228. (No model.)



Claim.—1. A bureau having its front frame-posts provided with longitudinal recesses, brace-rods lying normally in the recesses, a sliding shelf arranged in the top of the bureau, guides arranged on the bottom of the shelf, the angular ends of the brace-rods operating in slots of the guides, a self-closing ink-well arranged in a depression in the shelf, and a paper-receptacle provided with a lid also arranged in the shelf, as and for the purpose described.

2. A bureau having its front frame-posts provided with longitudinal recesses, brace-rods lying in the recesses, a shelf slidable in the bureau and having a notch to receive the supporting-pins, guides formed on the shelf in which the ends of the brace-rods operate, a self-closing ink-well, and a paper-receptacle on the shelf, as and for the purpose described.

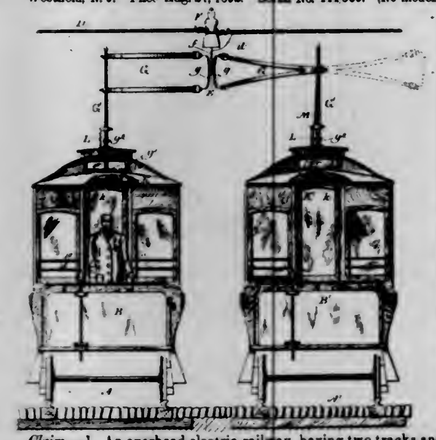
569,826. PRINTING-MACHINE. GEORGE W. HERRE, Cleveland, Ohio, assignor to the Cleveland Time Register Company, same place. Filed Oct. 1, 1895. Serial No. 564,338. (No model.)



Claim.—1. In a printing-machine, the combination of two ribbon-spools, and ratchet-wheels rigidly connected thereto, with a pivoted lever, mechanism for operating it, two spring-actuated pawl-arms pivoted to said lever, a rocker, three pins secured to the rocker, two of said pins being adapted to engage with the pawl-arms, an operating-lever having a slot which receives the third pin in the rocker, substantially as and for the purpose specified.

2. In a printing-machine, the combination of two ribbon-spools, and two ratchet-wheels rigidly connected thereto, a pivoted lever, having a slot, a rock-shaft, an arm secured thereto, a pin on the arm entering said slot in the lever, two spring-actuated pawl-arms pivoted to said lever, a rocker, two pins carried thereby which are adapted to engage with the pawl-arms, and means for holding the rocker in different positions, substantially as and for the purpose specified.

569,827. SINGLE-WIRE ELECTRIC RAILWAY. JOHN C. HENRY, Westfield, N. J. Filed Aug. 27, 1892. Serial No. 444,309. (No model.)



Claim.—1. An overhead electric railway, having two tracks and a single working conductor common to both, of a zigzag feed and span wire, insulators supported by said feed and span wire, having hangers to support the working conductor, and branch wires connecting said conductor with the feed and span wire, substantially as described.

2. An electric railway, consisting of a double track with a flexible working conductor common to both, and cars provided with trailing reversible contact devices which travel uninterruptedly on said conductor with their respective cars on either track, substantially as described.

3. An electric railway, consisting of a double track with a flexible working conductor common to both, and cars provided with trailing reversible contacts which travel on said conductor with their respective cars on either track, and pass each other on said conductor without breaking contact therewith when moving in opposite directions, substantially as described.

4. The combination with a flexible working conductor, of trailing reversible contact devices adapted to travel in opposite directions on said conductor and to pass each other when meeting without breaking contact with said conductor, substantially as described.

5. The combination with a double line of railway, and a flexible electrical conductor common to both tracks of said line of railway, of trailing reversible trolleys adapted to run on said electrical conductor, said trolleys being so constructed and arranged as to pass each other on said conductor without breaking contact therewith, substantially as described.

6. The combination with a double line of railway, and a flexible electrical conductor common to both tracks of said line of railway, of trailing reversible trolleys which may travel in opposite directions on said conductor, and which may pass each other thereon without breaking contact therewith, substantially as described.

7. In an electric railway, the combination with a flexible working conductor, of trailing reversible contacts adapted to travel in opposite directions thereon, and to pass each other when meeting without interfering, substantially as described.

8. In an electric railway, the combination with a flexible working conductor, of trailing reversible trolleys adapted to bear against opposite sides of said conductor so as to pass each other without interference when meeting, substantially as described.

9. In an electric railway, the combination with a wire working conductor, of trailing reversible trolleys adapted to bear against said conductor from opposite sides, but not project beyond the vertical central plane thereof, so as to pass each other without interference when meeting, substantially as described.

10. In a double-track electric railway, the combination with a single-wire working conductor common to both tracks, of cars carrying laterally-projecting trailing reversible trolley-arms, each arm having a vertical bar adjacent to said conductor, substantially as described.

11. In a double-track electric railway, the combination with a single-wire working conductor common to both tracks, of cars carrying laterally-projecting trailing reversible trolley-arms, each arm having a vertical bar adjacent to said conductor, and a contact-piece adapted to slide vertically on said bar, substantially as described.

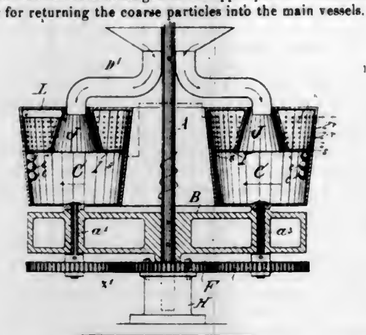
12. The combination with an electric car, of a standard hinged thereon upon a transverse axis, and a trolley-arm projecting laterally from said standard, substantially as described.

13. The combination with a double-track electric railway, of a single working conductor suspended between said tracks, and an electric car provided with an upright rotatable standard carrying a lateral trolley-arm projecting beyond the side of the car and adapted to be swung from one side to the other so as to be brought into contact with the working conductor when the car crosses over from one track to the other, substantially as described.

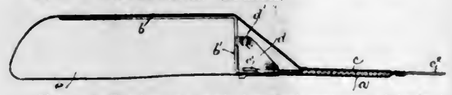
569,828. BALL GRINDING-MILL. ALBERT HERFELD, Halle-on-the-Saale, Germany. Filed May 3, 1895. Serial No. 548,021. (No model.)

Claim.—In a ball grinding-mill, the combination of a central main shaft, a frame mounted on the same, grinding vessels mounted on shafts of said frame, a stationary gear-wheel below the supporting-frame and through the center of which said main shaft turns, gear-wheels on the shafts of the grinding vessels intermeshing with the stationary gear-wheel whereby a planetary motion is imparted to the vessels around the main shaft, a diaphragm at the upper part of each grinding vessel, provided with a central hollow cone, opening both upwardly and downwardly, said diaphragm, cone and the upper part of each vessel forming an annular screening-chamber communicating with the lower part of said grinding vessel by slot-like openings in the diaphragm and located near the side walls of the vessel, openings in the upper portions of the side walls of the grinding vessels, grinding-balls in the lower parts of said grinding vessels, said grinding-balls being of greater diameter than the width of the slot-like openings, means for supplying the material to be ground into said

vessels, and curved tubes arranged in the upper part of the screening-chamber for returning the coarse particles into the main vessels.



569,829. DUST-PAN. DAVID HUNT, Boston, Mass. Filed Dec. 16, 1895. Serial No. 572,248. (No model.)



Claim.—1. The dust-pan herein described, consisting of the flexible bag *e*, and a two-part frame connected to the mouth thereof, one part of which has a handle and the other a lip, *a*, of a length corresponding to the width of the dust-pan, said parts being pivotally connected together, and thus adapted to open and close the mouth of said bag, and means for holding said two-part frame open.

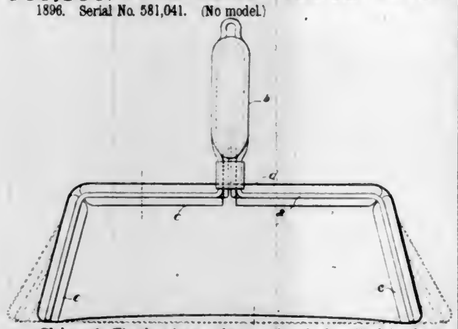
2. The dust-pan herein described, consisting of the flexible bag *e*, a two-part frame connected to the mouth thereof, one part of which has a handle and the other a lip, and pivotal connections for said parts of the frame thus adapting it to open and close the mouth of said bag, and a bail-shaped support for said bag *e* attached to the lip portion of the two-part frame.

3. The dust-pan herein described, consisting of the flexible bag *e*, and a two-part frame connected to the mouth thereof, one part of which has a handle and the other a lip, said parts being pivotally connected together, and thus adapted to open and close the mouth of said bag, and the plate *d* having formed thereon feet for elevating the rear end of the lower part of said two-part frame.

4. The dust-pan herein described, consisting of the flexible bag *e*, a two-part pivoted frame at the mouth thereof comprising the lip *a*, the handle portion *c*, and the plates *d* fixed to the lip, to which said handle portion is pivoted, substantially as described.

5. The dust-pan herein described, consisting of the flexible bag *e*, a two-part pivoted frame at the mouth thereof comprising the lip *a*, the handle portion *c*, and the plates *d* fixed to the lip, to which said handle portion is pivoted, said plates having grooves *d'*, substantially as described.

569,830. DUST-BAG. DAVID HUNT, Boston, Mass. Filed Feb. 27, 1896. Serial No. 581,041. (No model.)



Claim.—1. The dust-bag or dust-pan herein described, having an extensible supporting-frame and a flexible lip or edge strip connected thereto, and adapted to be drawn and held taut by extending said supporting-frame, substantially as described.

2. The dust-bag or dust-pan herein described, having an elastic supporting-frame, and a flexible lip or edge strip connected thereto, and curved longitudinally, and adapted to be straightened out by extending said frame, substantially as described.

3. The elastic supporting-frame comprising a top portion and two outwardly-projecting side portions, a handle attached to the top portion, and a flexible lip or edge strip connected with said frame and adapted to be drawn and held taut between the lower ends of the side portions by pressure upon the frame, substantially as described.

4. The extensible supporting-frame, comprising a top portion and two outwardly-projecting side portions a', a^3, a handle attached to the top portion, and a flexible lip or edge strip consisting of a metallic edge, and a belt to which it is applied, said strip being supported upon said frame and adapted to be drawn to conform to irregularities by pressure upon the frame, substantially as described.

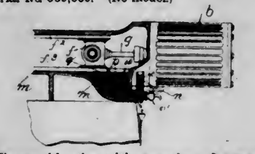
5. The extensible supporting-frame, comprising a top portion and two outwardly-projecting side portions a', a^3, a handle attached to the top portion, and a belt encircling the frame, and having a metallic edge between the lower ends of the side portions, and a flexible bag attached to said belt, substantially as described.

569,831. HANDLE FOR KNIVES OR FORKS. LANSING W. HURLBURT, Creston, Iowa. Filed Feb. 20, 1896. Serial No. 580,024. (No model.)



Claim.—The combination with the threaded shank of a knife or fork provided with an annular shoulder located at the inner end of the shank, a detachable hollow handle forming a condiment-receptacle and having its inner end interiorly threaded, arranged on said shank and abutting against said shoulder, said handle being provided at its outer end with a reduced cylindrical extension exteriorly threaded and provided with perforations, and an interiorly-threaded cap arranged on the threaded extension, forming a continuation of the handle and having its outer face flush with the outer face of the same, substantially as and for the purpose described.

569,832. ENGINE. ALBERT L. IDE, Springfield, Ill. Filed Apr. 25, 1896. Serial No. 589,089. (No model.)



Claim.—1. The combination with an engine, of a reservoir adapted to contain lubricating-oil, a moving portion of the engine being adapted to transfer said oil to bearing-surfaces of the engine, a receptacle adapted to receive the oil after having been transferred, a channel-way or passage through which the oil is adapted to be passed from said receptacle to the oil-reservoir, said receptacle being also adapted to receive the water that condenses from the engine, and means for withdrawing the water from said receptacle, substantially as described.

2. The combination with an engine, of a casing inclosing the working parts thereof, a reservoir adapted to contain lubricating-oil located in said casing, a moving portion of the engine being adapted

to transfer said oil to bearing-surfaces of the engine, a receptacle adapted to receive the oil after having been transferred, a channel-way or passage through which the oil is adapted to be returned from said receptacle to said reservoir, said receptacle being also adapted to receive the water that drops from the working parts of the engine, and means for withdrawing said water, substantially as described.

3. The combination with an engine, of a casing inclosing the working parts thereof, a reservoir adapted to contain lubricating-oil located within said casing, a moving portion of the engine being adapted to transfer said oil to the bearing-surfaces of the engine, a receptacle adapted to receive the oil thus transferred, a channel-way or passage through which the oil from said receptacle is adapted to be returned to the reservoir, means for retarding the oil in its return from the receptacle to the reservoir, said receptacle being also adapted to receive the water that condenses from the engine, and means for withdrawing said water, substantially as described.

4. The combination with an engine, of a casing inclosing the working parts thereof, a reservoir located within said casing adapted to contain lubricating-oil, means for transferring said oil to portions of the engine having frictional contact, a receptacle adapted to receive the oil after having been thus transferred, a passage-way through which the oil is adapted to be returned from said receptacle to said reservoir, a partition or partitions located in the path of the returning oil to retard its passage, said receptacle being also adapted to receive water that condenses from the engine, and means for withdrawing said water, substantially as described.

5. The combination with an engine, of a casing inclosing the working parts thereof, a reservoir adapted to contain lubricating-oil, means for transferring said oil to parts having frictional contact, a receptacle adapted to receive the oil after having been thus transferred, means for returning the oil in said receptacle to said reservoir, partitions *p p* located in said receptacle adapted to retard the oil in its return passage to the reservoir, said receptacle being also adapted to receive the water that condenses within the casing of the engine, a chamber *n* communicating with said receptacle, and an overflow-duct *o* located within said chamber, substantially as described.

6. The combination with an engine, of a reservoir adapted to contain lubricating-oil, means for casting said oil toward and upon portions of the engine having frictional contact, a receptacle located in the path of the oil as it is being cast from said reservoir adapted to receive the water as it drips from the engine and also the oil, after being thus cast, said oil and water being adapted to be separated in said receptacle, means for returning the oil from said receptacle to said reservoir and means for withdrawing the water from said receptacle; substantially as described.

7. The combination with an engine, of a reservoir adapted to contain lubricating-oil, means for casting said oil toward and upon portions of the engine having frictional contact, a receptacle located in the path of the oil as it is being cast from said reservoir adapted to receive the water as it drips from the engine, and also the oil after being thus cast, means for returning the oil from said receptacle to said reservoir, a chamber *n* communicating with said receptacle and an overflow-duct *o;* substantially as and for the purpose described.

8. The combination with an engine, of a reservoir adapted to contain lubricating-oil, means for casting said oil toward and upon portions of the engine having frictional contact, a receptacle located in the path of the oil as it is being cast from said reservoir adapted to receive the water as it drips from the engine and also the oil after being thus cast, means for returning the oil from said receptacle to said reservoir, means for retarding the oil in its return from the receptacle to the reservoir and means for withdrawing the water from the receptacle; substantially as and for the purpose described.

9. The combination with an engine, of a casing inclosing working parts thereof, a crank disk or disks, forming a part of said engine, a reservoir located beneath said crank disk or disks, adapted to contain lubricating-oil, said crank disk or disks being adapted to cast the oil from said reservoir upon parts of the engine having frictional contact a receptacle located in the path of the oil as it is being thus cast from said reservoir adapted to receive the water as it drips from the engine and also the oil after being thus cast, said oil and water being adapted to be separated in said receptacle, means for returning the oil from the receptacle to the reservoir and means for withdrawing the water from the receptacle; substantially as described.

10. The combination with an engine, of a casing inclosing working parts thereof, a crank disk or disks forming a part of said engine, a reservoir located beneath said crank disk or disks adapted to contain lubricating-oil, said disk or disks being adapted to cast the oil from said reservoir upon parts of the engine having frictional contact, a receptacle located in the path of the oil as it is being thus cast from said reservoir adapted to receive the water as it drips from the engine and also the oil after being thus cast, means for returning the oil from said receptacle to said reservoir, means for retarding the oil in its return from the receptacle to the reservoir, and means for withdrawing the water from the receptacle; substantially as described.

11. The combination with an engine, of a casing inclosing working parts thereof, a crank disk or disks forming a part of said engine, a reservoir located beneath said crank disk or disks adapted to contain lubricating-oil, said crank disk or disks being adapted to cast the oil from said reservoir upon parts of the engine having frictional contact, a receptacle located in the path of the oil as it is being thus cast from said reservoir adapted to receive the water as it drips from the engine and the oil after being thus cast, a passage-way between said receptacle and reservoir through which the oil is adapted to be returned to the reservoir, a partition or partitions placed within the path of the returning oil and means for withdrawing the water from said receptacle; substantially as described.

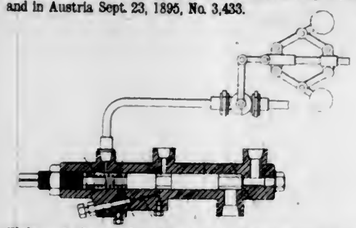
12. The combination with an engine, of a casing inclosing working parts thereof, a crank disk or disks forming a part of said engine, a reservoir located beneath said crank disk or disks adapted to contain lubricating-oil, said crank disk or disks being adapted to cast the oil from said reservoir upon parts of the engine having frictional contact, a receptacle located in the path of the oil as it is being thus cast from said reservoir, adapted to receive the water as it drips from the engine and the oil after being thus cast, a passage through which the oil from the receptacle may be returned to the reservoir, a partition or partitions located in the path of the returning oil, a chamber *n* communicating with said receptacle and a vent-duct *o* communicating with said chamber; substantially as and for the purpose described.

569,833. SLAG CEMENT. SOPHUS JORGENSEN, Copenhagen, Denmark. Filed Nov. 23, 1895. Serial No. 569,940. (No specimens.)

Claim.—1. The herein-described process of making slag cement, which consists in forming a mixture of ground slag, slaked lime and water, and allowing it to set or harden, then roasting such set or hardened mixture and reducing the same to a powder, and then mixing the said powder in the proper proportions with ground slag and slaked lime, substantially as described.

2. The herein described composition of matter for slag cement, consisting of ordinary slag cement, which is composed of ground slag and slaked lime, and a roasted and powdered mixture of ground slag, slaked lime and water, substantially as described.

569,834. GOVERNOR FOR MOTORS. CARL G. P. DE LAVAL, Stockholm, Sweden. Filed Jan. 22, 1895. Serial No. 535,818. (No model.) Patented in Sweden June 22, 1894, No. 6,008; in England June 22, 1894, No. 1,418; in Germany July 2, 1894, No. 84,915; in France Dec. 21, 1894, No. 243,832; in Belgium Dec. 21, 1894, No. 113,301; in Switzerland Dec. 21, 1894, No. 9,806; in Norway Dec. 21, 1894, No. 4,160; in Italy Dec. 31, 1894, No. 37,826; in Hungary Jan. 18, 1895, No. 1,985; in Spain Feb. 6, 1895, No. 16,757; in Denmark July 17, 1895, No. 119, and in Austria Sept. 23, 1895, No. 3,433.



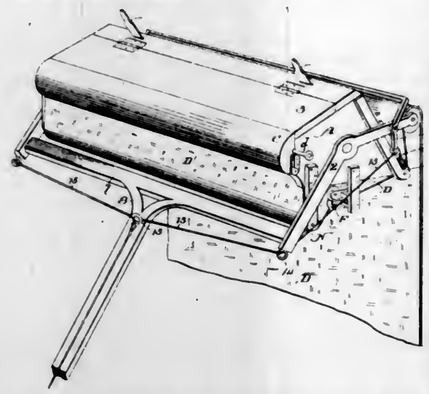
Claim.—1. In regulating means for steam-motors, the combination of a cylinder, constructed with steam and liquid inlets and outlets, a piston guided in the cylinder, throttling means, inserted in the outlet-conduit for the liquid and adapted to be acted on by the governor of the motor, and a spring, said piston at one side being adapted to be acted on by the steam-pressure, and at the other by that of the combined spring and liquid pressures, substantially as set forth.

2. In regulating means for steam-motors, the combination of a cylinder, constructed with steam and liquid inlets and outlets, a piston guided in the cylinder and provided with an annular recess at a point intermediate of its ends, throttling means, inserted in the outlet-conduit for the liquid and adapted to be acted on by the governor of the motor, and a spring, said annular recess being adapted to receive liquid at approximately the same pressure as that of the steam, and said piston, at one side, being adapted to be acted on by the steam-pressure, and at the other by that of the combined spring and liquid pressures, substantially as set forth.

3. In regulating means for steam-motors, the combination of a cylinder, constructed with steam and liquid inlets and outlets, and provided with an annular recess at a point intermediate of its ends adapted to receive liquid at approximately the same pressure as that of the steam, throttling means, inserted in the outlet-conduit for the liquid and adapted to be acted on by the governor of the motor, a spring, and throttling means, arranged between the said recess and the liquid-space at one end of the cylinder, said piston at one side being adapted to be acted on by the steam-pressure and at the other by that of the combined spring and liquid pressure, substantially as set forth.

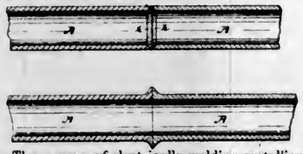
4. In regulating means for steam-motors, the combination of a cylinder, constructed with steam and liquid inlets and outlets, a piston guided in the cylinder and provided with an annular recess at a point intermediate of its ends adapted to receive liquid at approximately the same pressure as that of the steam, throttling means, inserted in the outlet-conduit for the liquid and adapted to be acted on by the governor of the motor, a spring, and throttling means, arranged between the said recess and the liquid-space at one end of the cylinder, and consisting of a spring-actuated plunger, guided in a cylinder and having a passage communicating at one end with said annular recess and at the other end with said liquid-space, said piston at one side being adapted to be acted on by the steam-pressure, and at the other side by that of the combined spring and liquid pressures, substantially as set forth.

569,835. PAPER-HANGING MACHINE. ANTON MARKMANN, Jersey City, N. J. Filed Mar. 21, 1894. Renewed Mar. 25, 1896. Serial No. 584,886. (No model.)



Claim.—The herein-described paper-hanging machine, composed of the following instrumentalities: a paste-reservoir provided with a regulating-slide, a paste-distributing device adjustably connected with the reservoir, a resistance-roller operated in conjunction with the paste-distributing device, a cutting mechanism to remove the margin and reduce the strip of paper to the required width, a support for the roll of paper, a pressure-roller, pivoted arms adapted to be operated from the floor, and having a limited movement, and a cutter attached to and carried by the said pivoted arms, substantially as described for the purpose set forth.

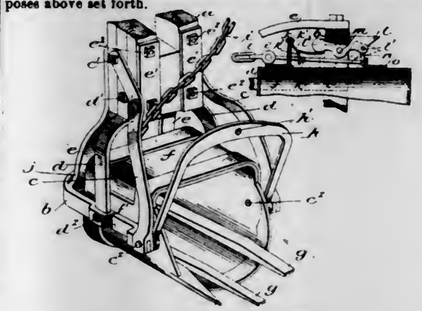
569,836. ELECTRICALLY-WELDED PIPE-JOINT. ALBERT H. MATATALL and IRA C. MATATALL, Harrison, N. J. Filed Aug. 26, 1895. Serial No. 560,485. (No model.)



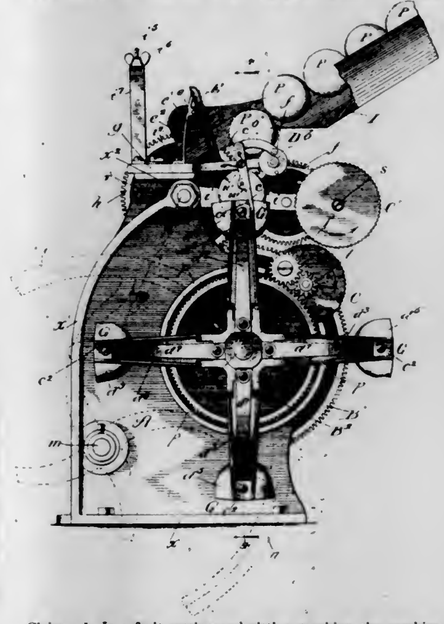
Claim.—The process of electrically welding metallic pipes which consists in interiorly reaming out both sections of the pipe, until the inward bevel extends to the periphery of the pipe, and thereby reducing outward resistance to end pressure, subjecting the reamed-out extremities to end-to-end pressure and, at the same time, to an electrical current, and thereby softening the extremities and turning the same outward and thus welding the parts together, substantially as set forth.

569,837. DREDGE-BUCKET FOR PLACER-MINING. WILLIAM J. MOORE, New Westminster, Canada. Filed May 11, 1896. Serial No. 591,194. (No model.) Patented in Canada Feb. 13, 1896, No. 51,319.

Claim.—In a placer-mining dredge-bucket, the combination of the frame *b*, secured by the braces *c*, *c*, *d*, *d*, and *e*, *e*, to the arm *a*, the bucket *f*, with the rest-plate *f'*, and back rests J, J, having axle-pins c^3, c^3, the bail *h*, chain *i*, and shackle *i'*, with pin i^2, of latch-rest *n*, and latch *l*, working on the centers or trunnions *m*, *m*, stop-plate *o*, with the plate *k*, secured to the bottom of the said bucket, of springs *K*, *K*, and forked springs k^3, substantially as and for the purposes above set forth.



569,838. FRUIT CUTTING AND PITTING MACHINE. JACOB F. REHM, Chicago, Ill. Filed Dec. 1, 1894. Serial No. 530,573. (No model.)



Claim.—1 In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft, a cup formed in separable sections carried by the shaft through a circular path concentric with said shaft and extending between the cutters, and cam mechanism for opening and holding open the sections at different points in said path, substantially as described.

2. In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft carrying near its opposite ends cooperating members of pairs of radially-extending resilient fingers, each pair carrying a cup formed in separable sections and said cups rotating with the shaft through a circular path extending between the cutters, and cam mechanism in the path of said fingers for separating the members of the pairs thereof to open and hold open the cup-sections at different points in said path, substantially as described.

3. In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft carrying near each of its opposite ends a radially-extending series of arms having pivotally fastened to them spring-controlled fingers carrying at their outer ends cup-sections forming cups rotating with the shaft through

a circular path extending between the cutters, and cam mechanism in the path of said fingers for forcing and holding them outward against the resistance of their controlling-springs and thereby separating the cup-sections at different points in said path, substantially as described.

4. In a fruit cutting and pitting machine, the combination with a pair of cooperating peripherally-serrated cutters C and C', of a rotary shaft B with which the cutters are geared, heads F and F' near opposite ends of the shaft and having radial arms d and d', spring-controlled fingers d^3 and d^4 pivotally connected with said arms and carrying at their outer ends sections d^5 and d^6 forming cups H rotated by the shaft in a circular path extending between the cutters, and cams p and p' against which said fingers bear resiliently under the tension of their controlling-springs, substantially as and for the purpose set forth.

5. In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft, a cup formed in separable sections carried by the shaft through a circular path extending between the cutters, cam mechanism for opening and holding open the sections at different points in said path, and an automatic feed for the fruit provided with trip mechanism actuated from a cup-section in traversing said path, substantially as described.

6. In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft, a cup formed in separable sections carried by the shaft through a circular path extending between the cutters, cam mechanism for opening and holding open the sections at different points in said path, an automatic feed device for the fruit, comprising a rotary shaft having blades extending from it and provided with means for rotating it, and trip mechanism actuated from a cup-section in traversing said path to operate said means to partially rotate the blade-carrying shaft, substantially as described.

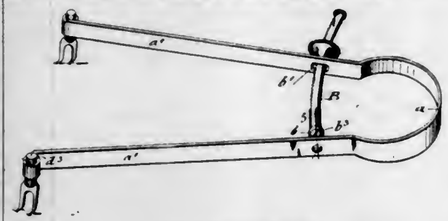
7. In a fruit-cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft carrying near its opposite ends cooperating members of pairs of radially-extending resilient fingers, each pair carrying a cup formed in separable sections and said cups rotating with the shaft through a circular path extending between the cutters, trip-studs on said fingers, and cam mechanism in their path for separating the members of the pairs of fingers to open and hold open the cup-sections at different points in said path, a feed device comprising a rotary shaft having blades extending from it and provided with means for rotating it, trip mechanism engaging with said means and extending into the path of said trip-studs, and a resiliently-supported clamp-plate opposing said feed device, substantially as described.

8. In a fruit cutting and pitting machine, the combination with a pair of cooperating rotary cutters, of a rotary shaft carrying near its opposite ends cooperating members of pairs of radially-extending resilient fingers, each pair carrying a cup formed in separable sections and said cups rotating with the shaft through a circular path extending between the cutters, trip-studs on said fingers and cam mechanism in their path for separating the members of the pairs of fingers to open and hold open the cup-sections at different points in said path, a feed device comprising a rotary shaft having blades extending from it and carrying a spur-wheel and, loosely, a disk carrying a dog to engage the spur-wheel, a trip-lever linked eccentrically with said disk and extending into the path of said trip-studs, and a resiliently-supported clamp plate opposing said feed device, substantially as described.

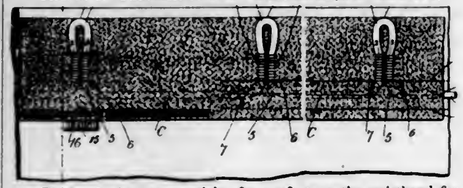
9. A fruit cutting and pitting machine comprising, in combination, a body A formed with circular cams p and p' and carrying a rotary shaft B, cooperating rotary cutters C and C' geared to said shaft and supported to yield one with relation to the other, cooperating members of pairs of radially-extending resilient fingers bearing against said cams, each pair carrying a cup G formed in separable sections and said cups rotating with the shaft through a circular path extending between the cutters, trip-studs on said fingers, a feed device comprising a rotary shaft f' carrying blades f on a sleeve f^2, a spur-wheel a on said shaft and a disk b thereon carrying a dog b^3, a trip-lever H connected by a link b' with the disk and extending into the path of the trip-studs, a resiliently-supported stop-plate E opposing said feed device, and a guide-trough I leading to the feed device, the whole being constructed and arranged to operate substantially as described.

569,839. RETRACTOR. JOHN T. R. ROELOFFS, New York, N. Y. Filed Dec. 11, 1895. Serial No. 571,738. (No model.)

Claim.—A retractor or surgical instrument for dilating a wound or other object, which consists of a spring-holder having legs provided at their outer ends with sockets, arranged at approximate right angles to said legs, means for adjusting the distance between the legs of the spring-holder, detachable dilators provided with shanks, and means for retaining the shanks of said dilators in said sockets, whereby the dilators are arranged at approximate right angles to the legs and may turn freely in the sockets, substantially as set forth.



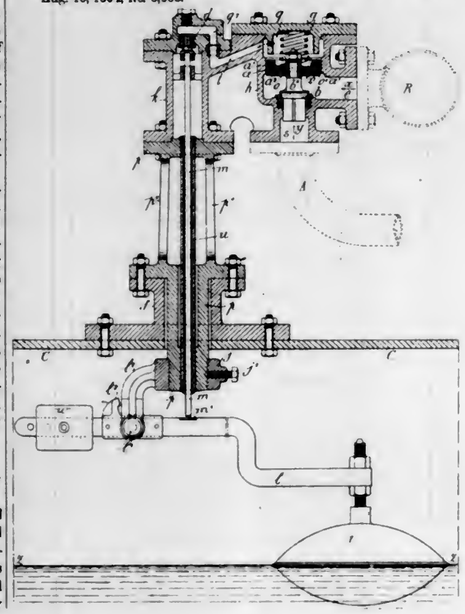
569,840. WAISTBAND FOR TROUSERS. JACOB ROSENBERG, New York, N. Y. Filed June 11, 1896. Serial No. 595,082. (No model.)



Claim.—1. As a new article of manufacture, the waistband for trousers composed of a woven fabric with a cord extending along one face and formed at intervals into transverse loops, the lower portions of which loops are for a short distance parallel and are between and confined by the crossing warp-threads with the ends protruding to form buttonhole-loops, substantially as set forth.

2. As a new article of manufacture, the waistband for trousers, composed of a woven fabric with a cord extending along one face and formed at intervals into transverse loops, the cord from loop to loop being upon one side of the fabric with the loops extending through with their lower portions between and confined by the warp-threads upon the other side of the fabric and the ends protruding to form buttonhole-loops, substantially as set forth.

569,841. AUTOMATIC FEED-WATER REGULATOR FOR STEAM-GENERATORS. FERDINAND M. SANDILLON, Las Palmas, Canary Islands. Filed Apr. 9, 1896. Serial No. 586,775. (No model.) Patented in France Apr. 25, 1894, No. 238,034; in England Aug. 7, 1894, No. 15,078; in Germany Aug. 8, 1894, No. 80,403, and in Switzerland Aug. 10, 1894, No. 8,888.



Claim.—1. In a feed-water regulator for steam-generators, the combination with the generator, a float therein and a depression valve adapted to open by the fall of the float, said valve controlling a passage leading from the generator to one chamber of a casing, of the said casing having in it two chambers separated by a movable pressure receiver and having an inlet and outlet for the feed-water to and from one of said chambers, the said pressure-receiver having in it a small, always-open port of less area than the said depression-valve, and a valve rigidly connected to the pressure-receiver and of less area than the latter, and controlling the flow of feed-water to the generator, substantially as set forth.

2. In a feed-water regulator, the combination with a casing having in it two chambers separated by a movable pressure-receiver, one of said chambers having an inlet and an outlet for the feed-water under pressure, the said pressure-receiver having in it a small always-open port or aperture for the passage through it of a part of the feed-water, a valve connected rigidly with said pressure-receiver and having a less area than the latter, said valve controlling the outlet for the feed-water from the chamber, a spring for closing said valve, a casing having in it a passage adapted to connect the chamber, q, back of the pressure-receiver with the generator to be supplied, a valve controlling said passage, and a float to control said valve.

3. The combination with the casing h, having in it two chambers separated by a movable piston a, one of said chambers having an inlet e and an outlet s for the feed-water, the said piston, having in it a small port for the water to flow through from the inlet side to the chamber q behind it, the valve b, connected with the piston and adapted to close the outlet s, and the spring g for closing the valve, of the casing k, having in it a chamber q', connecting with the chamber q, the support connecting the casing k with the generator and having in it a passage connecting the chamber q' with the generator, the valve d, controlling the said passage and provided with a stem extending into the generator, the float-lever l, under said stem, and the float on said lever, substantially as set forth.

4. The combination in an apparatus for the purpose specified, of the hollow base-piece f, adapted to be secured to the shell of a steam-generator or the like, the tubular support p, mounted on said base-piece and provided with a tube u, said support extending down through the hollow base-piece, the bracket secured to the lower end of the support p, the float-lever l, fulcrumed in said bracket, and the float i, on said lever, of the main and depression valves, arranged to operate as described, said depression-valve being controlled by the float.

569,842. FURNITURE-CASTER. EDWARD D. SCHMIDT, Cuyahoga Falls, Ohio. Filed Oct. 24, 1895. Serial No. 566,705. (No model.)



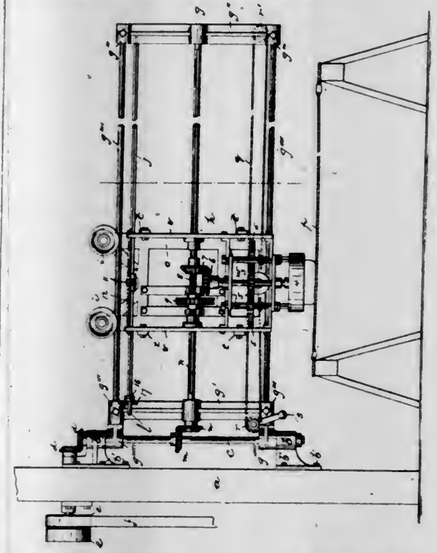
Claim.—1. In combination with a caster-pin, a caster-pin holder detached from said pin extending over the end of the pin and downward on the side thereof and provided on the side with an inward projection to clamp the pin and a spur at the extremity normally extending outwardly beyond the outside line of the pin whereby the spur is adapted to embed itself in the surrounding wood whereby the spring is adapted to secure itself by interlocking with the wood and remain in position while the pin is rotated or withdrawn, substantially as described.

2. In combination with a caster-pin, a staple straddling the end of the same and provided on the side of the pin with an inwardly-extending portion adapted to clamp the side of the pin and with a spur normally extending outwardly beyond the outside line of the pin whereby the spur is adapted to embed itself in the surrounding wood whereby the spring is adapted to secure itself by interlocking with the wood and remain in position while the pin is rotated or withdrawn, substantially as described.

569,843. POLISHING OR FINISHING MACHINE. HUGH SMITH, Newark, N. J. Filed Oct. 14, 1895. Serial No. 565,551. (No model.)

Claim.—1. The improved polishing or finishing machine herein described in which is combined with an oscillating frame, a horizontally and vertically movable frame, carrying rotary finishing-tools and weights counterbalancing the weight of said frame and tools and means for rotating said tools and for moving said frame horizontally and vertically, substantially as set forth.

2. The improved polishing or finishing machine comprising an oscillating frame having tracks or ways g''', angular shaft j, rotary shaft k, means for transmitting motion to said shaft, chain q, and sprocket-wheels r, r', a frame o, with wheels i, weighted parallel arms f, fulcrumed upon said frame, o, and supporting vertically-movable side bars or pieces, v, a frame secured to said pieces, gearing receiving power from said shaft k, and transmitting motion to the polishing or finishing tool, said finishing-tool and means connecting with the angular shaft, j, for raising and lowering the pieces, v, and its connections, all arranged and combined substantially as set forth.



3. The improved finishing-machine, comprising a frame movable pivotally and provided with tracks g''', g''', extending from one end of said frame to the other, a rotary shaft k, also extending from one end of the frame to the other, and oscillating horizontally therewith, chain or sprocket wheels arranged at opposite ends of said frame, the sprocket or chain wheel which is arranged at the pivotal end of said frame having a hand-crank s, a chain q, extending from chain-wheel to chain-wheel, and a tool-carrying frame carried by said oscillating or pivoted frame, and attached to said chain, q, and movable horizontally on said oscillating frame thereby, a finishing-tool carried by said tool-carrying frame and means for transmitting rotary movement from said rotary shaft k, to said tool, substantially as set forth.

4. The combination with the oscillating frame, the horizontally-sliding tool-carrying frame, a portion of which latter is vertically movable, tools arranged on said vertically-movable portion, means for transmitting rotary movement to said tools, means for raising and lowering said tools, and means for sliding said tool-carrying frame, the sliding means and the means for raising and lowering the tools extending to and being controlled by hand devices l, s, at the center of movement of said oscillating frame, and said hand devices arranged at the pivotal end of the oscillating frame, substantially as set forth.

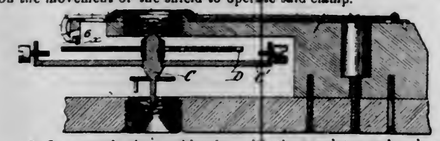
5. In a finishing-machine, the combination with the oscillating frame, provided with a horizontal track and a horizontal rotary shaft k, of a wheeled frame, o, levers t, t, vertically-movable pieces carried by said levers, counterbalance-weights, a frame carried by said vertically-movable pieces and having therein a train of gear-wheels which mesh with one another, shafts carrying said gear-wheels and rotary tools on said shafts, and a train of gears transmitting motion from said shaft k, means for rotating said shaft k, and means for operating the levers, t, substantially as set forth.

569,844. WATCH-REGULATOR. MICHAEL SPORLEDER, Lexington, Okla. Filed May 31, 1895. Serial No. 551,060. (No model.)

Claim.—1. In a watch, the combination with the regulator-index, the graduated scale therefor and the hair-spring, means for positively holding said spring, and a shield adapted to hide the scale and a portion of the index adjacent thereto, and adapted to prevent the movement of the index while the spring is held by said holding means.

2. In a watch, the combination with the regulator index, the scale therefor, and the hair-spring, of a clamp for the spring carried by

said regulator, a shield adapted to hide the scale, and means adapted on the movement of the shield to operate said clamp.



3. In a watch, the combination with the regulator and a clamp for grasping the balance-spring in different adjustments of the regulator, of a shield for the regulator, and a cam carried by the shield and engaging the clamp and adapted to operate the same.

4. In a watch, the combination of a regulator-index, a hair-spring, a rigid projection on the index adjacent to said spring, a lever pivoted on said index adapted to form with said projection a positive clamp for the spring, a shield for said index, and means for operating said lever upon the movement of said shield.

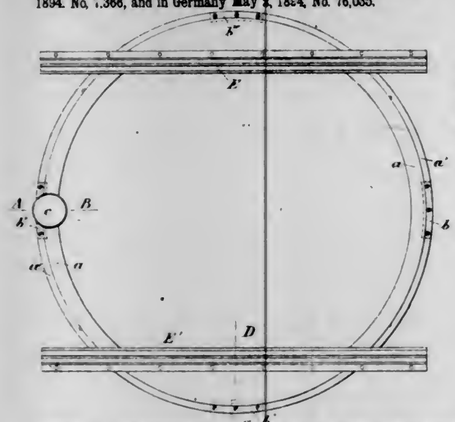
5. In a watch the combination with the balance-bridge, of the regulator pivoted thereon, a clamp carried by the regulator, and a shield for the regulator pivoted on the bridge above the regulator engaging and adapted to operate said clamp.

6. In a watch, the combination with the bridge having the bearing *b*, of the regulator pivoted thereon having the bifurcated end, the clamping lever pivoted in said bifurcation and having one arm engaging the balance-spring and the other arm having in its end a notch, the shield pivoted on the bridge, and the cam on said shield engaging the notch in said lever arm, substantially as described.

7. In a watch, the combination with the regulator, of the lever pivoted thereon, the clamp operated by said lever, the shield having therein a slot concentric with the regulator-pivot covering the graduated scale, said lever entering said slot, and means for holding said shield in a closed position, substantially as described.

8. In a watch, the combination with a regulator, of a shield therefor, a spring carried by the shield and engaging a fixed part of the watch for holding the shield in position in relation to the regulator, substantially as described.

569,845. APPARATUS FOR PRINTING OR RULING ON PAPER OR METAL. ANGELO TESSARO, Padua, Italy. Filed Jan. 23, 1895. Serial No 535,979. (No model.) Patented in Italy Mar. 11, 1892, LXI. 311; in England May 5, 1893, No. 9,046; in Belgium May 15, 1893, No. 104,481; in Spain June 17, 1893, No. 14,500; in France Aug. 3, 1893, No. 229,766; in Luxemburg Aug. 9, 1893, No. 1,872; in Sweden Aug. 11, 1893, No. 5,806; in Austria-Hungary Dec. 30, 1893, No. 42,530 and No. 66,647; in Norway Jan. 26, 1894, No. 3,370; in Switzerland Jan. 31, 1894, No. 7,366, and in Germany May 2, 1894, No. 76,035.



Claim.—1. In an apparatus for the purposes specified, the combination with a suitable non-rotating bed, having in it a circular, ring-like guide, a frame fitting into said guide and having retaining-keepers, said frame adapted to be rotated in said guide, straight, parallel guides fixed on said rotatable frame, a transverse bar mounted at its ends in said parallel guides and having retaining-keepers, a carriage mounted on said transverse bar for carrying the writing, drawing, numbering and printing devices, and means for securing said transverse bar and said carriage in place when set, substantially as set forth.

2. An apparatus for the purposes specified comprising the non-rotatable ring *a'*, the circular frame *a*, mounted to turn in said ring, said ring having plates which engage a circumferential groove in said frame, the straight, parallel guides on said frame, the transverse bar F, mounted at its ends in said guides, the carriage G, mounted on said bar and adapted to be moved longitudinally thereon, means on said carriage for locking it to said bar, means carried by said bar for locking it to said guides, a device substantially as described for drawing or marking mounted on said carriage, and a securing mechanism for securing the said device removably to said carriage, all combined and arranged substantially as set forth.

3. An apparatus for the purpose specified comprising a transferring device substantially as described adapted to be mounted on a drawing board or table, and comprising two straight, parallel, fixed guides, a frame B″, mounted in said guides, and a ring *a'*, adapted to be secured to said frame, in combination with a circular frame *a*, mounted in the ring *a'*, keepers for retaining the frame *a* in said ring, straight parallel guides on said frame *a*, a transverse bar F, mounted in the last-named guides, a carriage G, mounted on the bar F, means for securing the bar F and carriage G in position when adjusted, and means for securing to said carriage a device for drawing or marking, all combined and arranged to operate substantially as set forth.

4. In an apparatus for the purpose specified, the combination with the longitudinally-grooved bar F, having in it the rack *f*, of the carriage G, grooved to fit on the bar, the upright spindle *r*, in the carriage G, provided at its lower end with a pinion to gear with the rack *f*, and the clamping-nut *v* on the upright portion of the carriage, substantially as set forth.

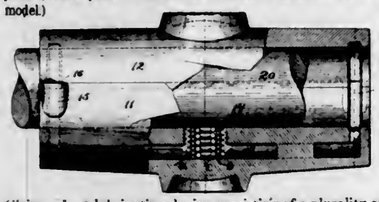
5. The combination with an open, circular, ring-like base to support the drawing, writing and printing devices, of the supporting-frame mounted and guided in said ring-like base and provided with two straight, parallel guides, a transverse bar mounted in said parallel guides, a carriage G, mounted on said bar and provided with means for securing the drawing, writing or printing devices thereto, and means for securing the said bar and carriage in place when set.

569,846. APPARATUS FOR TEACHING WORDS AND IDENTIFYING OBJECTS. JOHN G. THOMPSON, Leominster, and THOMAS E. THOMPSON, Lawrence, Mass. Filed May 8, 1895. Serial No. 548,547. (No model.)



Claim.—An apparatus of the kind described comprising a series of cards made up in pairs, one card of each pair being complete in itself and bearing thereon varying characterizations or expressions of a thing, said complete card being dissimilar from the other complete cards, and the second card of each series being made up of parts, each bearing thereon an expression or characterization corresponding to a part of the complete card, whereby the assembled parts of a card correspond exactly to the complete card, as set forth.

569,847. LUBRICATING DEVICE. EDWIN D. TUCKER, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed June 17, 1896. Serial No. 595,878. (No model.)



Claim.—1. A lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, substantially as described.

2. A lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, the successive spirals varying in pitch and being formed of different-sized wires, substantially as described.

3. A lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, the successive spirals varying in pitch, substantially as described.

4. A lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, the successive spirals varying in pitch and the spaces between the coils of one or more of the spirals being less than the diameter of the wire of the adjacent spirals, substantially as described.

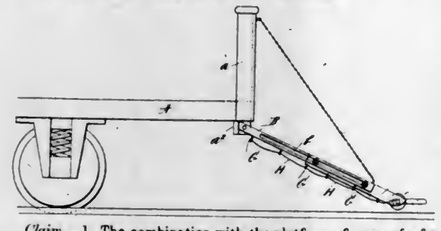
5. A lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, the spaces between the coils of one or more of the spirals being less than the diameter of the wire of the adjacent spirals, substantially as described.

6. A lubricating device consisting of a plurality of spiral springs arranged successively one within the other, the spaces between the coils of one or more of the spirals being less than the diameter of the wire of the adjacent spirals, substantially as described.

7. The combination with a journal-bearing and an oil-reservoir beneath the bearing, of a lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, substantially as described.

8. The combination with a journal-bearing and an oil-reservoir beneath the bearing, of a lubricating device consisting of a plurality of spiral springs having their successive coils lying so closely together as to form capillary spaces between them, and arranged successively one within the other, the spaces between the coils of one or more of the spirals being less than the diameter of the wire of the adjacent spirals, substantially as described.

569,848. CAR-FENDER. GEORGE A. WEED, New York, N. Y. Filed Feb. 4, 1896. Serial No. 577,978. (No model.)

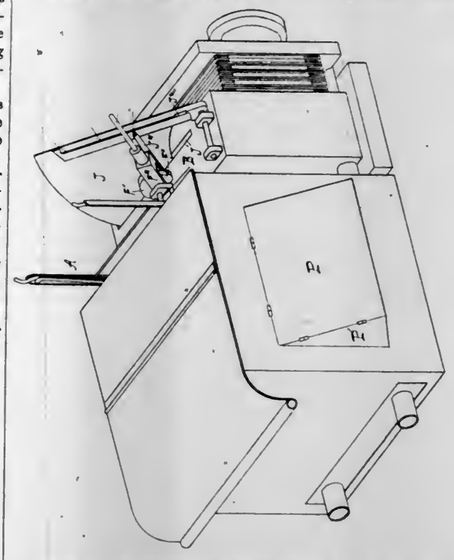


Claim.—1. The combination with the platform of a car of a fender or guard attached thereto, which consists of a main section or frame pivotally connected with the forward end of the platform and provided with longitudinal slots in the sides thereof, and a supplemental section connected with the main section by means of bolts, which engage the slots in the main section said main and supplemental sections being provided at each side with depending loops or similar devices, and a body portion of flexible material to the sides of which are secured cords adapted to pass through said loops said fender or guards being supported in front of a car in such a manner that the forward end thereof will rest adjacent to the tracks, substantially as shown and described.

2. The combination with the platform of a car of a fender consisting of a main section pivotally connected with the forward end of the platform of a car, to each side of which is formed a longitudinal slot, and a supplemental section provided with bolts which pass through said slots in the side of the main section, each of said sections being provided at each side thereof with depending loops or similar devices and a body portion of flexible material in the sides of which are connected cords adapted to pass through said loops, said fender being supported in the front of the car so that the forward end thereof will rest adjacent to the track and an auxiliary frame or section pivotally connected with the supplemental section, and projecting in front of the latter, and provided with rollers or wheels at each side of the forward end thereof, substantially as described.

3. The combination with the platform of a car of a fender or guard which consists of a number of sections or parts, the main section or part of which is connected with the forward end of the platform of a car, and having longitudinal slots formed in the side thereof, and a supplemental section provided with bolts adapted to engage said slots, each of said sections having depending loops secured to the sides thereof, and a body portion of flexible material to the sides of which are secured cords, adapted to pass through said slots, said guards or fender being supported in front of the car adjacent to the track, and an auxiliary frame or section pivotally connected with the supplemental section and adapted to project in front of the car, and provided with rollers or wheels at each side of the forward end thereof, and devices connected with the forward end of the main section or frame, and extended inwardly and outwardly, and connected with the dashboard to support the forward end of the fender, substantially as described.

569,849. OPTICAL LANTERN. SAMUEL W. ALLEN, Port Chester, N. Y. Filed Nov. 11, 1895. Serial No. 568,575. (No model.) Patented in England Dec. 23, 1892, No. 23,756.



Claim.—1. In combination with an optical lantern, the rotary slide-carrier adapted to hold two or more slides, a ratchet, hand-lever, and pawl, for turning the said carrier, and a dissolver or screen operated by means of the said hand-lever, substantially as set forth.

2. In combination in and with an optical lantern, the rotary slide-carrier adapted to hold two or more slides, a hand-lever and connections for turning the said carrier, and a dissolver or screen connected with and operated by means of the said hand-lever, substantially as set forth.

3. The improved valve and regulator having a plug V provided with a port V′, a regulating-pin extending through the said plug into the said port, a lock or lock-nut between the said pin and the said plug, and means for turning the said pin, whereby the flow of gas may be regulated by turning the said pin and whereby when the said pin is locked the turning of the pin will turn the valve without interfering with the regulation of the pin in the valve, substantially as set forth.

569,850. PULLEY. ERSKINE L. BABCOCK, Cuyahoga Falls, Ohio. Filed Sept. 25, 1895. Serial No. 563 608. (No model.)



Claim.—1. In a pulley, in combination, the cast-metal spider, the wrought-metal rim, bolts connecting the spider with the rim on opposite sides of the central plane of said spider and a crown-piece interposed between said spider and said outer rim and between the bolts which are on opposite sides of said central plane, substantially as described.

2. In a pulley, in combination, the cast-metal center, the wrought-metal rim, bolts connecting the two, and the wrought-metal crown-piece interposed between the center and the rim; said crown-piece being constructed with an inwardly-bent portion, substantially as described.

3. In a pulley, in combination, the cast-metal spider, the wrought-metal rim, bolts connecting the two, and the wrought-metal crown-piece interposed between the same provided with an inwardly-bent portion fitting into a recess in the said spider, substantially as described.

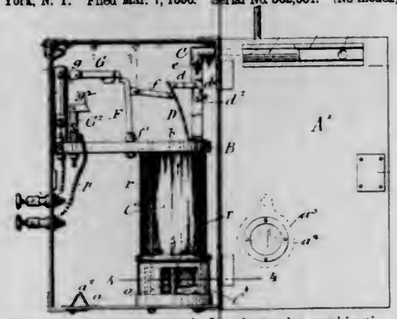
4. In a pulley, in combination, a cast-metal spider, a wrought-metal rim, bolts connecting the two, and a wrought-metal crown-piece interposed between the same; said crown-piece containing an

inward corrugation with flanges on each side of said corrugation, substantially as described.

5. In a pulley, in combination, the metal spider, the wrought-metal rim, the crown-piece interposed between the same, the spokes of said spider being provided with lugs extending over the crown-piece and secured to the rim on each side thereof, substantially as described.

6. In a split pulley, in combination, a split cast-metal center, a split wrought metal rim, bolts connecting the two, and a split wrought-metal crown-piece interposed between the same, substantially as described.

569,851. THERMOSTATIC FIRE-ALARM. HENRY FARR, New York, N. Y. Filed Mar. 7, 1896. Serial No. 582,801. (No model.)

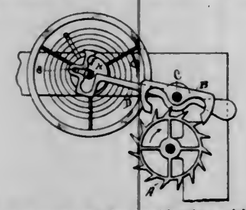


Claim.—1. In a thermostatic fire-alarm, the combination of a thermostatic bar, means for heating said bar, a detent connected with the thermostatic bar, a movable contact supported by said detent, and another contact adapted to be engaged by said movable contact whenever the heat action on the thermostatic bar is interrupted, so that an electric circuit is closed and the alarm of fire given, substantially as set forth.

2. In a thermostatic fire-alarm, the combination with a thermostatic bar, of means for constantly applying a heat action on said bar, a regulating device connected with the thermostatic bar for regulating the supply of gas to the heating agency, a detent also connected with said thermostatic bar, a pivoted contact supported by said detent and another contact adapted to be engaged by the pivoted contact when the same is released by the supporting-rod so as to close an electric alarm-circuit, substantially as set forth.

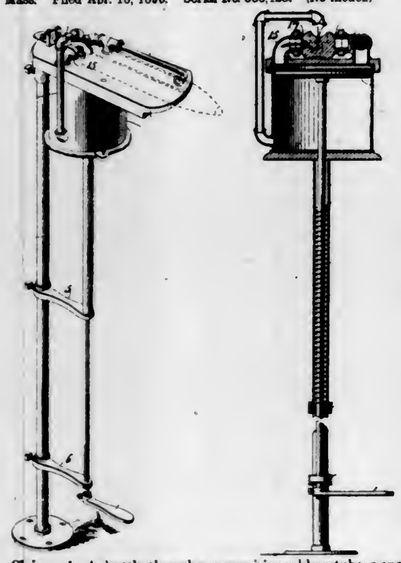
3. The combination with a casing, provided with suitable draft-openings, of a gas burner at the interior of said casing, means for supplying air to said burner, a shelf above the gas-burner, provided with an opening vertically above the flame, a thermostatic bar applied to the shelf and arranged above said opening, means connected with the free end of the thermostatic bar for regulating the supply of gas to the flame, a detent also connected with the free end of the thermostatic bar, a pivoted contact resting normally on the detent, and another contact which is engaged by the movable contact when the same is released by the extinction of the flame and the contraction of the thermostatic bar, so as to produce the closing of the electric circuit and the sounding of an alarm, substantially as set forth.

569,852. BALANCE-ESCAPEMENT FOR TIMEPIECES. HENRY S. BARBER, Hopkinton, R. I. Filed Jan. 20, 1896. Serial No. 576,106. (No model.)



Claim.—In an escapement, the combination, with a shaft, of two levers thereon, one of which is provided with pallets, and one end of the other lever is provided with a substantially U-shaped extension, the arms of which are at substantially right angles to the body thereof, and one of the arms is longer than the other, and is provided with a deep loop or recess at its center and two shallower loops between the center and the ends, a balance-wheel, the shaft of which is adapted to enter the shallower loops, and a pin on the hub of the wheel upon the side of the shaft opposite to the pivotal point of the lever, and adapted to enter and pass out of the deeper loop, substantially as set forth.

569,853. SHUTTLE-THREADER. RÉMI BRODEUR, Fall River, Mass. Filed Apr. 18, 1896. Serial No. 588,125. (No model.)



Claim.—1. A shuttle-threader, comprising a blow-tube, a suction-tube, and means for forcing air through said blow-tube and at the same time causing a suction through said suction-tube whereby the blowing and suction will operate jointly to thread a shuttle, substantially as specified.

2. A shuttle-threader, comprising a cylinder, a piston operating therein, a blow-tube communicating with the cylinder below the piston and having an outlet above the cylinder, a suction-tube communicating with the cylinder above the piston and having an inlet above the cylinder, and means for clamping a bobbin against said suction-tube, substantially as specified.

3. A shuttle-threader, comprising a cylinder, a piston operating therein, a blowpipe communicating with said cylinder below the piston and having an outlet above the cylinder, opposite suction-tubes communicating with the cylinder above the piston and having their inlets above the piston, and yielding material in the mouths of said suction-tubes, substantially as specified.

4. A shuttle-threader, comprising a cylinder, a piston operating therein, a blow-tube communicating with the cylinder below the piston, a suction-tube communicating with the cylinder above the piston, and another suction-tube opposite the first-named suction-tube and communicatiog with the cylinder above the piston, the said last-named suction-tube being adapted to swing laterally to clamp a bobbin between the two suction-tubes, the said blow-tube being arranged to act jointly with either one of the suction-tubes to thread a shuttle, substantially as specified.

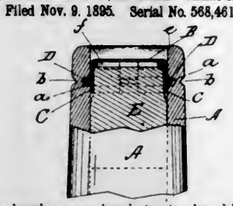
5. A shuttle-threader, comprising a cylinder, a piston operating therein, a blow-tube communicatiog with the cylinder below the piston and having an outlet above the cylinder, a suction-tube communicating with the cylinder above the piston and having an inlet above the cylinder, another suction-tube opposite the first-named suction-tube and communicating with the cylinder above the piston, the said last-named suction-tube being adapted to swing laterally to clamp a bobbin between the two suction-tubes, and an adjustable guide or receiver for the end of the shuttle, substantially as specified.

6. A shuttle-threader, comprising a cylinder, a piston operating therein, a table on the cylinder, a blow-tube communicating with the cylinder below the piston and having an outlet over the table, suction-tubes arranged at opposite sides of the table and communicating with the tube at the end of the cylinder, one of said suction-tubes being mounted to swing laterally, an arm extended rearward from said swinging tube and adapted to engage a shuttle, and a guide or receiver for the end of a shuttle, mounted on the table, substantially as specified.

7. A shuttle-threader, comprising a standard, a cylinder mounted thereon, a piston within the cylinder, a stem extended outward from the piston, guides adjustably mounted on the standard and through

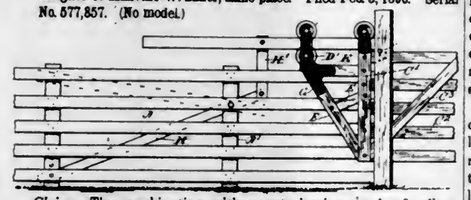
which the piston stem extends, an arm extended outward from the lower end of said stem, a spring for moving the piston upward, a blow-pipe communicating with the interior of the cylinder below the piston and having its outlet above the cylinder, and a suction-tube communicating with the said cylinder above the piston and having its inlet above the cylinder, substantially as specified.

569,854. METALLIC BOTTLE-SEAL. JAMES H. BULLARD, Springfield, Mass. Filed Nov. 9, 1895. Serial No. 568,461. (No model.)



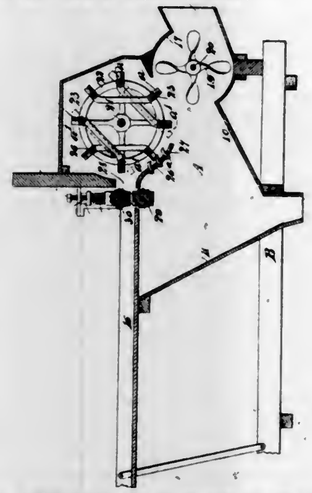
Claim.—In a bottle-seal, a bottle having breaking-grooves in its neck, combined with a cork or stopper having its upper end reduced in size, and a metallic cup-shaped seal having the cut-away portions *f* and the depending ribbed portions C, D, which fit over the reduced upper end of the cork or stopper, substantially as shown.

569,855. FARM-GATE. ALVOR BUTTERFIELD, Indianapolis, Ind., assignor to Manville W. Baker, same place. Filed Feb. 3, 1896. Serial No. 577,857. (No model.)



Claim.—The combination with a gate having a pair of rollers mounted thereon near one end of said gate but separated a suitable distance from each other, the outermost of said pulleys being adapted to engage the under edge of the track and the inner one of the pulleys resting on the upper edge of the track, of a lever pivoted to the fence, a standard pivoted to the short arm of the lever, a track mounted on the upper end of the standard and adapted to support and guide the gate through engagement with the pulleys on said gate in the manner as shown and described, and means for locking the lever in its different adjustments.

569,856. STALK-CUTTER. JOHN CARREY, De Soto, Mo. Filed Jan. 11, 1896. Serial No. 575,150. (No model.)



Claim.—1. In a machine for cutting cornstalks and like material, a rotatable cylinder, knives arranged in series on said cylinder and consisting of bars extending from one point on the peripheral face of the cylinder to another and having at their opposite ends, portions projecting beyond the cylinder and having at the sides of such projecting portions cutting edges, substantially as and for the purpose specified.

2. In a machine for shredding cornstalks and like material, a shredding-cylinder the same consisting of two heads rods connecting the said heads and knives arranged in series each knife being supported by two rods and consisting of bars extending at their opposite ends beyond the periphery of the cylinder proper, the outer edges of the knives being cutting edges and means substantially as described for spacing the knives on their supporting-rods as and for the purpose specified.

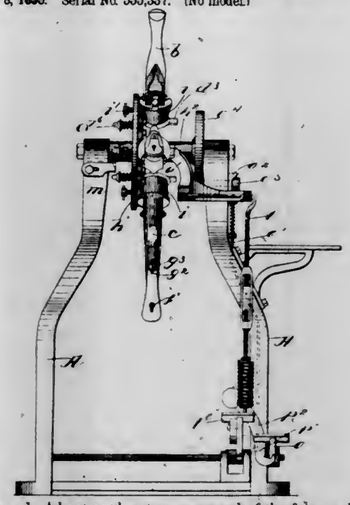
3. A cylinder comprising heads and rods connecting the same, knives arranged in series, each knife having the support of two rods, the ends of the knives being carried beyond the periphery of the cylinder, each knife being provided with a cutting edge at opposite sides of its extended portions, as and for the purpose specified.

4. A cylinder, the same comprising heads and rods connecting the same, knives arranged in series on the said cylinder, each knife being supported by two of the said rods, the knives of one set being made to cross the knives of an adjoining set, and each knife being made to extend beyond the peripheral surface of the cylinder, the cutting edges of the said knives being formed at opposite sides of their extremities, as and for the purpose specified.

5. In a machine for shredding cornstalks or like material, the combination, with a concave provided with teeth, of a cylinder mounted to revolve over the said concave and comprising heads, a shaft to which the heads are secured, supporting-rods extending from head to head and located near their peripheries, and knives arranged in series, each knife being supported by two rods, and each knife having its ends extending through the peripheral portions of the heads, the outer edges of the knives being cutting edges, the said knives being furthermore arranged to pass between the rows of teeth on the concave, and spacing devices for the said knives, substantially as described.

6. In a machine for shredding cornstalks and like material, the combination, with a casing having a receiving-opening, a feed device located at the said receiving-opening, comprising conical rolls held to revolve close to each other, the rolls being oppositely disposed and their outer surfaces roughened, and a suction-fan located at the rear lower portion of the casing, communicating with an exit-opening at that point, of a concave located at the rear of the said feed-rolls, and a cylinder mounted to revolve above the said concave and provided with slicing-knives, the said knives being arranged in series and each knife extending beyond substantially opposite sides of the cylinder, the extending portion of the knives being sharpened, whereby said knives have a slicing cut, as and for the purpose specified.

569,857. BOOT OR SHOE TREE. CHARLES F. CLARK, Boston, Mass., assignor to the Clark Manufacturing Company, same place. Filed July 8, 1895. Serial No. 555,337. (No model.)



Claim.—1. A boot or shoe tree composed of the front and back leg parts, the plate *f* sliding in a cut-away portion of the front leg part, having at its outer end the keyhole-slot *f'*, and at its inner end the spring-pressed pin g^4, with finger-piece g^3, and the fore part *g* having on its rear side the headed stud *g'*, which enters said keyhole-

slot f', and having at its upper end a socket which receives the pin g^3, substantially as described.

2. A boot or shoe tree comprising front and back leg parts, the sliding plate f on the front leg part, having at its inner end the spring-pressed pin g^3 with finger-piece g^4, the fore part g having at its upper end a socket which receives said pin g^3, and means for detachably connecting the lower end of said fore part with said sliding plate, substantially as described.

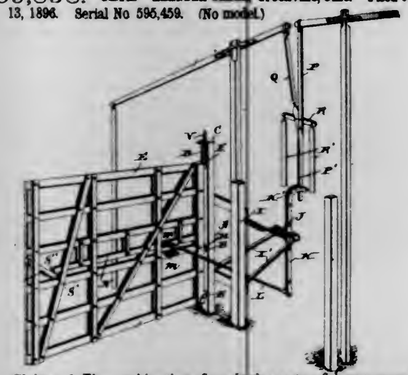
3. The separable parts b, c, of the tree, wedge d for separating them, sliding plate f and fore part, combined with the bell-crank locking-lever n for said plate f, pivoted to the part c, one arm of which lies in the path of movement of said wedge d, to be moved by it to lock the plate.

4. The separable parts b, c, of the tree, wedge d for separating them, sliding plate f having a notch in its under side, and a fore part, combined with the bell-crank locking-lever n, for said plate, pivoted to the part c, one arm of which has a latched end n^3 which enters the notch in said plate f to lock it, and the other arm of which lies in the path of movement of said wedge d, to be moved by it, and the spring n^3, substantially as described.

5. In a machine for holding boots and shoes while being operated upon, a rotatable disk, two or more trees supported thereby provided with expanding devices, a bell-crank lever for operating any one of said expanding devices, a treadle with which it is connected, a locking-pin o^3 for the shaft of said rotatable disk, cam-block o^2 for withdrawing it, a treadle connected with said cam block, and an intermediate locking-lever between said treadles.

6. The expansible form comprising the parts b, c, sliding plate on the part c, and fore part borne by it, and an expanding device for said form, combined with a bell-crank locking lever for said sliding plate operated by said expanding device, one arm of said lever being adapted to engage and hold said plate and the other arm to be engaged by said expanding device, substantially as described.

569,858. GATE. LEANDER CLARK, Greenville, Ohio. Filed June 13, 1896. Serial No. 595,459. (No model.)



Claim.—1. The combination of a swinging gate, a fulcrum arranged to the rear and to one side of the gate, a lever arranged intermediate its ends on said fulcrum and having its outer end curved in a vertical plane, a lever-turning mechanism connected to the curved end of the said lever, and a connection between the straight end of the lever and the gate, substantially as shown and described.

2. The combination with a swinging gate, a lever fulcrumed between its ends and a connection between one end of the lever and the gate, of hand-levers, a strap connecting one of said levers with the first-named lever, a second strap connecting the other hand-lever with the first-named strap, and a weight carried by the strap, substantially as shown and described.

3. The combination of a swinging gate, a lever fulcrumed between its ends, a connection between one end of the lever and the gate, and operating-levers, a strap connecting one of the hand-levers with the free end of the first-named lever, said strap having a half-turn at a point adjacent the connection with the said lever, a second strap leading from the other hand-lever to the first strap, said second strap having a half-turn between its ends, the connection between the straps being rigid, the strap being formed of spring metal and provided with said half-turn for the purpose, substantially as herein shown and described.

4. The combination of a swinging gate, a lever fulcrumed between its ends, a connection between one end of the lever and the gate, the operating-levers, the straps depending from the operating-levers and connected, one of said straps being continued beneath the point of connection and secured to the free end of the first-named lever, the transverse arm carried by the straps, and the weights depending from said arm, substantially as shown and described.

5. The combination of a swinging gate, a longitudinally-movable bar therein, gate opening and closing mechanism connected with said movable bar, the latch projected from the front end of the gate and normally in a lowered position and hinged at its rear end to the gate, and a hinge connection between the upper edge of the latch and the said longitudinally-movable bar, whereby when the gate is operated upon for opening, said latch will be raised and disengaged from the gate-post, substantially as shown and described.

6. The combination of the gate-post, the rod disposed vertically and secured thereto, the gate, the brackets projected therefrom which embrace the rod and which are adapted to move vertically thereon, the stirrup extending downward through the top support for the rod which is secured to the post, said stirrup having the angular lower end which embraces and moves upon the rod, said angular portion of the stirrup being positioned beneath one of the brackets of the gate, the stirrup being perforated, and a pin adapted to extend through one of the perforations after the gate is adjusted vertically, whereby the stirrup is held in the desired position and supports the gate at the desired elevation substantially as shown and described.

569,859. COMPOSITION OF MATTER. TIMOTHY COTTER and THOMAS H. WALKER, Kansas City, Mo., assignors of one-third to John McDonnell, same place. Filed Mar. 4, 1896. Serial No. 581,843. (No specimens.)

Claim.—The composition of matter, consisting of coal-tar pitch, coal-tar, hydrate of lime, oil, and sand or its equivalent, in about the proportions specified, as and for the purpose set forth.

569,860. BANK. CHARLES F. DISCH, New Haven, Conn. Filed Aug. 5, 1896. Serial No. 601,797. (No model.)



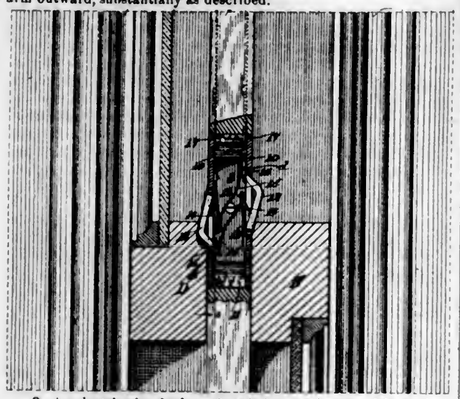
Claim.—1. In a bank, the combination with a case and a cover adapted to be secured thereto, said cover formed with a slot and a rib inclosing the same, of a slot-cover corresponding in shape to said rib, within which it is pivoted, said slot-cover formed at its free end with an inwardly-extending hook, a latch pivotally connected to the under side of the case-cover for engagement with said hook, and means extending upward through the case-cover, whereby said latch may be turned substantially as described.

2. In a bank, the combination with a case and a cover adapted to be secured thereto, said cover formed with a slot and a rib inclosing the same, of a spring-actuated slot-cover corresponding in shape to said rib, within which it is pivoted, said slot-cover formed at its free end with an inwardly-extending hook, and a latch pivotally connected to the under side of the case-cover for engagement with said hook, and means extending upward through the case-cover, whereby said latch may be turned, substantially as described.

569,861. CIRCUIT-CLOSER FOR BURGLAR-ALARMS. CHARLES H. DOWDEN, Newark, N. J. Filed Feb. 29, 1896. Serial No. 581,333. (No model.)

Claim.—1. An electric-circuit closer, comprising two side plates, a recessed insulating-block secured between said side plates, two rockable contact-blocks pivoted in apertures in the side plates, and a set of independent spring devices for each contact-block, located in the recess of the spacing-block, said spring devices being adapted to separately project the rockable contact-blocks, and complete an electric circuit between the side plates when either contact-block is pressed inwardly.

2. An electric-circuit closer, comprising side plates, an insulating spacing-block recessed at the front, and provided with a securable lid, the side plates being affixed to said block, and two independent contact devices operative in the recess in the spacing-block, each comprising an angular metal block pivoted at one end in an aperture in one of the side plates, a spring bracket-plate secured at one end to the inner side of a side plate near the pivoted end of the adjacent angular block, a bent presser-spring extended from the bracket-plate toward the free end of the opposite rockable block, and a spring-finger on the bracket-plate normally pressing the adjacent rockable arm outward, substantially as described.



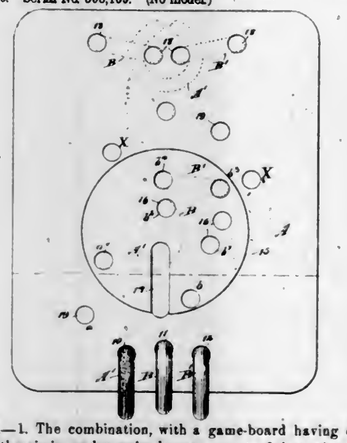
3. An electric-circuit closer for windows and adapted for embedment in a parting-strip of the window, comprising two metal side plates having elongated apertures, a recessed insulating-block on which the side plates are oppositely secured, angularly-formed blocks pivoted at one end of each to rock in the apertures in the side plates, two spring contact devices within the recess in the spacing-block, each of said contact devices being adapted to throw outward a respective rocking block, and to effect electric contact between the side plates and circuit-wires attached thereto, when either of said rockable blocks is inwardly pressed, substantially as described.

569,862. SELF THREADING LOOM-SHUTTLE. WILLIAM F. DRAPER and JAMES H. NORTHROP, Hopedale, Mass., assignors to George Draper & Sons, same place. Filed Jan. 11, 1896. Serial No. 575,108. (Model.)



Claim.—A self-threading shuttle having in its delivery end a longitudinal thread-eye and an open slot leading thereto, a horn forming one side of said slot and having a beak at its front end, combined with an independent guard projecting across the slot above the beak, an open side eye in the shuttle, and a guard for the opening of said eye, the horn guiding the thread from the longitudinal eye to the side eye, substantially as described.

569,863. PUZZLE. DALLAS DU BOIS, Montclair, N. J. Filed July 6, 1896. Serial No. 598,169. (No model.)

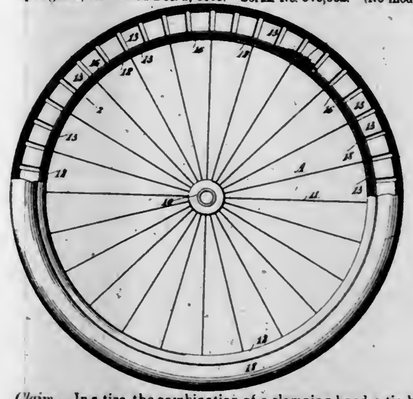


Claim.—1. The combination, with a game-board having openings made therein in predetermined arrangement, of rings adapted to be passed through the openings and from one opening to another, the said rings having a transverse opening in each, the ends being beveled in opposite directions, as and for the purpose specified.

2. The combination, with a game-board having a number of openings therein of circular form, and an oblong opening around which sundry of the circular openings are grouped, of rings adapted to be passed through the openings and from one opening to the other, the rings having a transverse cut, whereby each ring will be provided with opposing ends spaced apart, as and for the purpose specified.

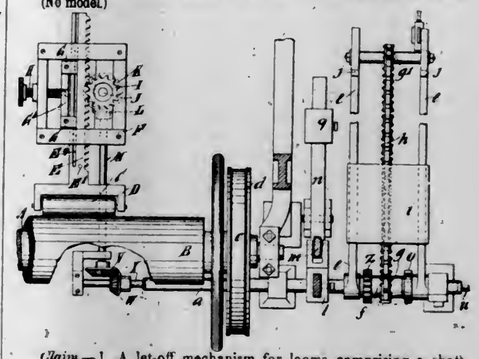
3. The combination, with a game-board having a number of openings therein of circular form, and an oblong opening around which sundry of the circular openings are grouped, of rings adapted to be passed through the said openings and from one opening to the other, the rings having a transverse cut, whereby each ring will be provided with opposing ends spaced apart, the opposing ends of each ring having opposite faces beveled in opposite directions, corresponding beveled surfaces on the ends facing one another, as and for the purpose specified.

569,864. TIRE FOR VEHICLE-WHEELS. SAMUEL S. ELDER, Springfield, Ill. Filed Dec. 2, 1895. Serial No. 570,802. (No model.)



Claim.—In a tire, the combination of a clamping-band, a tie-band surrounding and of greater diameter than the clamping-band, a covering extending over said bands, the tie-band being arranged at the tread of the tire, and a series of circular springs interposed between the tie-band and the clamping-band and secured at their inner sides to the clamping-band, each of said springs having at its outer portion a recess formed in it to receive the inner side of the tie-band, said circular springs and the tie-band having their outer surfaces flush, substantially as set forth.

569,865. LET-OFF MECHANISM FOR LOOMS. ARTHUR A. FORBES, St. Hyacinthe, Canada. Filed Dec. 27, 1895. Serial No. 573,440. (No model.)

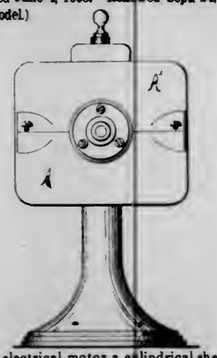


Claim.—1. A let-off mechanism for looms, comprising a shaft arranged lengthwise of the warp-beam and carrying pulleys b, friction-bands engaging the heads of the beam, band-holders connecting said bands to said pulleys, levers e rigidly secured to the aforesaid shaft and provided with abutments j, a gage s for ascertaining the position of the said levers e, the holders t for supporting the said levers, the car or weight held to travel on said levers e and to engage said abutments j, a rack E movable toward and from the warp-beam and carrying a follower, such as a roller to engage the warp, said rack being

provided with an aperture E', a pin E^3 adapted to be inserted in said aperture to collide with the frame and thereby limit the movement of the rack and determine the position thereof, a change-pinion I engaging the said rack and operatively connected to the aforesaid car, so that the rack and car may move in unison, means for imparting motion to the rack and car, a ratchet-wheel N operatively connected to the car so as to turn when the car travels on the levers *e* and a pawl O adapted to engage said ratchet to prevent rotation thereof in one direction and thereby temporarily prevent the return movement of the car, substantially as shown and described.

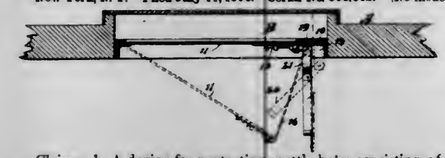
2. In a let-off mechanism for looms, a shaft arranged lengthwise of the warp-beam and carrying pulleys *b*, friction-bands engaging the heads of the beams, band-holders connecting said bands to said pulleys, levers *e* rigidly secured to said shaft, a car or weight *i* held to travel on said levers an angular offset *l* rigidly secured to said shaft, a lever *k* secured to said annular offset, a catch *r* for holding the lever stationary, an antifriction-roller *m* carried by said annular offset, a stationary bracket a balance-lever *n* fulcrumed in said bracket and engaging said antifriction-roller, and a slidable weight *q* on said balance-lever, substantially as shown and described.

569,866. ELECTRIC MOTOR. WALLACE E. FREEMAN, Long Island City, N. Y. Filed June 4, 1895. Renewed Sept. 24, 1896. Serial No. 606,334. (No model.)



Claim.—In an electrical motor a cylindrical shell constructed of two sections with a concentrical cylindrical field-magnet on the interior of the head of each of the sections, said field-magnet constructed in outline eccentric to the line of the exterior of the armature, substantially as shown and described.

569,867. SCUTTLE-HOLE PROTECTOR. ADOLF GANZENMÜLLER, New York, N. Y. Filed July 11, 1896. Serial No. 598,802. (No model.)



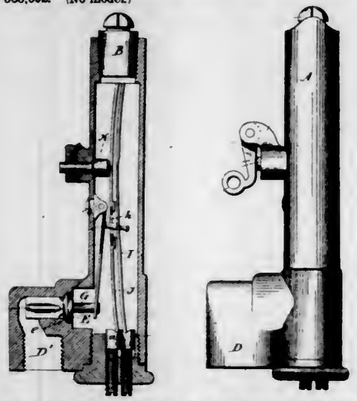
Claim.—1. A device for protecting scuttle-holes consisting of a frame, a door having a hinged connection with the frame, the said door being arranged to drop downward, locking devices for holding the door in a closed position against the frame, pulleys located on the under side of the said frame, and a cord passing over said pulleys and having its ends attached to the under side of the door near its free end, as and for the purpose set forth.

2. A device for protecting scuttle-holes, the same consisting of a frame having an opening therein of predetermined size, a door hinged to the frame and arranged to close the said opening, the said door having a hinged connection with the said frame and arranged to drop downward, locking devices for holding the door in closed position against the frame, hangers projected downward from the under face of the frame near opposite sides thereof and each carrying a pulley and a cord passing over the said pulleys and having its ends attached to the free end of the door, as and for the purpose specified.

3. In a device for protecting scuttle-openings, a frame fitted to the scuttle opening and provided with a drop-door, means for raising the said door from a lower to an upper position, and locking devices consisting of latches fulcrumed upon the frame and arranged to pass beneath the drop end of the door, guides for the said latches, and levers connected with the latches and extending below the said frame, as and for the purpose set forth.

4. A device for protecting scuttle-holes, consisting of a frame secured within the scuttle-opening and having an opening therein of predetermined size, the said frame comprising a horizontal member and a flanged member at the outer margin of the horizontal member, the said frame having a rabbet or recess made in the under side thereof, a door having a hinged connection with the under side of the horizontal member of the frame, the said door being arranged to drop downward, the free end of the door when closed entering the said rabbet in the under side of the frame, locking devices arranged to hold the door in closed position, and means connected with the said door for raising the same from the open to the closed position, as and for the purpose set forth.

569,868. SAFETY GAS-BURNER. WILLIAM GATES, Woodbridge, and LOUIS W. GATES, West Haven, Conn., assignors of one-third to George H. Smith, New Haven, Conn. Filed Mar. 18, 1896. Serial No. 583,692. (No model.)



Claim.—1. In a gas-burner the combination with a metallic shell and inlet-port thereof, a valve seated in said inlet, a valve-lever mounted in said shell and extending into the path of movement of said valve, a lever-spring mounted in the shell between its ends adapted to be placed under endwise tension by the contraction thereof, and adapted when under pressure to close said valve and means for temporarily moving the said valve-lever to open the valve, substantially as described.

2. In a gas-burner the combination with a shell and inlet-port thereof, a valve seated in said port, a valve-lever mounted within the shell and extending into the path of movement of the valve, a lever-spring mounted between the ends of the shell and adapted to be normally held under tension by the contraction thereof, a releasing device also mounted in the shell and means for moving said releasing device to operate said spring, substantially as described.

3. In a gas-burner the combination with a shell and inlet-port thereof of a valve seated in said port and formed with a stem projecting into said shell, a valve-lever pivoted in said shell and extending into engagement with said valve, a lever-spring mounted between the ends of the shell, a releasing device also mounted between the ends of the shell and means for adjusting the tension of the said lever-spring and releasing device and a plunger extending through one side of the shell, whereby said releasing device may be forced inward, substantially as described.

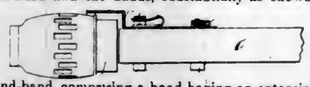
4. In a gas-burner, the combination with a shell, of a valve, and a valve-spring located within the said shell, adapted to be placed under endwise tension by the contraction thereof, and coacting with the valve to open and close the same, substantially as described.

5. In a gas-burner, the combination with a shell, of a valve, a valve-lever connected with the valve, and a valve-spring located within the shell, adapted to be placed under endwise tension by the contraction thereof, and coacting with the lever to operate the valve, substantially as described.

569,869. SAND-BAND. CHARLES R. GIBSON, Woodsville, N. H. Filed May 27, 1896. Serial No. 593,297. (No model.)

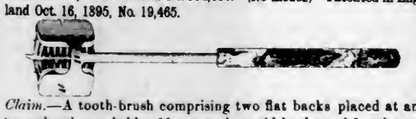
Claim.—1. A sand-band, comprising a hood having an extension adapted to engage the axle, bands straddling the said extension and adapted to engage the axle, and springs interposed betwen the extension and the bands, substantially as shown and described.

2. A sand-band, comprising a hood formed with an extension adapted to engage the axle, U-shaped bands straddling the extension and formed at their ends with inwardly-projecting lugs adapted to engage the under side of the axle, and springs interposed between the said extension and the bands, substantially as shown and described.



3. A sand-band, comprising a hood having an extension formed with openings in its sides, a U-shaped band passing with its sides through the said openings, the ends of the said band being formed with lugs extending inwardly to engage the under side of the axle, and a spring interposed between the said band and the extension, substantially as shown and described.

569,870. TOOTH-BRUSH. EDWARD H. HAMILTON, Poona, India. Filed June 6, 1896. Serial No. 594,497. (No model.) Patented in England Oct. 16, 1895, No. 19,465.



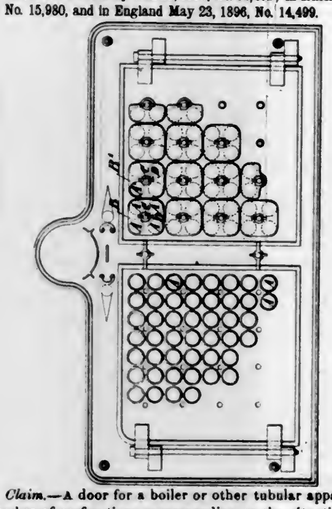
Claim.—A tooth-brush comprising two flat backs placed at angles to each other, a bridge 11 connecting said backs and forming an inverted-A-shaped trough, a handle secured to said bridge, and rows of bristles secured in the under faces of said backs and being shortest in the rows adjacent said bridge and longest in the outside rows, said bristles being inclined in a reverse direction to the inclination of said backs, the working surfaces of the rows adjacent said bridge being almost in engagement and the space between said working surfaces being gradually widened as the longer and outer rows are approached, whereby an angular or V-shaped opening is formed by said working surfaces, as and for the purpose set forth.

569,871. PRIMER FOR BLASTING-FUSES. JAMES H. HART, Meaderville, Mont. Filed Oct. 14, 1895. Serial No. 565,584. (No model.)



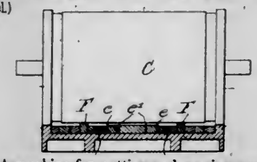
Claim.—A fuse-igniter consisting of a sleeve capable of embracing the end of the fuse, a cap or primer secured in one end of the sleeve and capable of lying adjacent to the end of the fuse, and a head secured to the outer side of the sleeve and around that portion which receives the cap, the head being capable of strengthening the sleeve, substantially as described.

569,872. PERFORATED DOOR FOR STEAM-BOILERS. JEAN HARTMANN, Mulhouse, Germany. Filed May 23, 1896. Serial No. 592,769. (No model.) Patented in France Dec. 14, 1894, No. 243,630; in Luxemburg Dec. 14, 1894, No. 2,197; in Belgium Dec. 15, 1894, No. 113,199; in Germany Jan. 25, 1895, No. 82,402; in Russia July 27, 1895, No. 15,980, and in England May 23, 1896, No. 14,499.



Claim.—A door for a boiler or other tubular apparatus, having a number of perforations corresponding to the situation of the several tubes, or spaces between the tubes, of the said apparatus, in combination with plates each of which serves to cover over one or more perforations; substantially as and for the purpose specified, and illustrated in the drawings.

569,873. MACHINE FOR CUTTING AND SCORING PAPER. WARREN B. HOWE, Chicago, Ill. Filed June 17, 1895. Serial No. 553,038. (No model.)

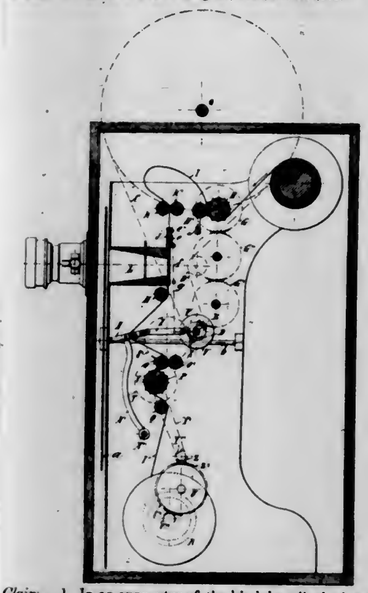


Claim.—A machine for cutting and scoring paper blanks comprising an impression-cylinder, a separate sheet-metal layer or covering of uniform thickness applied to cover the entire working surface of the cylinder, a reciprocating bed provided with bearing-flanges at its side margins which engage the ends of the cylinder, a cutting or scoring form resting on the bed and acting against said sheet-metal covering, and bearing-bars also resting on the bed at opposite sides of the form, said bars being adapted to act upon the sheet-metal covering of the impression-cylinder and operating to hold or press the same against the cylinder at the time the form is acting on said sheet-metal covering, said bars being constructed to take the pressure of the impression-cylinder in excess of that required for the operation of the cutting or scoring form.

569,874. MOISTURE-PROOF PAPER. WARREN B. HOWE, Chicago, Ill. Filed Mar. 28, 1896. Serial No. 585,186. (No specimens.)

Claim.—A paper or straw board, having incorporated in its surface fibers at one side thereof resin and alum and having its surface fibers at its opposite side saturated with silicate of soda or its equivalent and provided at such opposite side with a surface coating of paraffin whereby the paper is rendered waterproof on both sides and the silicate of soda or other grease-proof material is protected from moisture.

569,875. CHRONOPHOTOGRAPHIC APPARATUS. MARIE J. H. JOLY, Paris, France. Filed June 5, 1896. Serial No. 594,437. (No model.) Patented in France Aug. 26, 1895, No. 249,875.

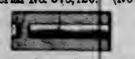


Claim.—1. In an apparatus of the kind described wherein a film having perforations at regular intervals therein is employed, two toothed rollers, the teeth thereon engaging perforations in the film, one for unrolling and the other for rewinding the film, means for rotating the rollers at a uniform continuous movement, means for forming a loop in the film in advance of the dark chamber, and a frame

reciprocating at right angles to the normal line of feed and acting to periodically form a loop in the film after it leaves the dark chamber, whereby the film is passed through said chamber by an intermittent movement, substantially as described.

2. In an apparatus of the kind described, means for unrolling and means for rewinding the film at a uniform continuous movement, means for forming a loop in the film in advance of the dark chamber, and a frame reciprocating at right angles to the normal line of feed of the film and acting to periodically form a loop therein after it leaves the dark chamber, whereby the film is passed through said chamber by an intermittent movement, and a clamp or gripping device located immediately in advance of the dark chamber and actuated to hold the film during intervals of exposure, substantially as described.

569,876. TYPE-MATRIX. WILLIAM KEMP, Jr., Washington, D. C. Filed Feb. 5, 1896. Serial No. 578,126. (No model.)



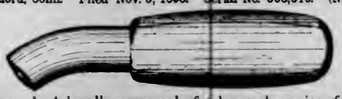
Claim.—1. A matrix-block having a matrix-cavity with a primary bottom, inclosing walls all of hard metal and a superposed bottom of soft metal having a character therein.

2. A matrix-block having an opening in the body thereof, a matrix-cavity in the upper end of the block over said opening, inclosing walls all of hard metal, a primary bottom and a superposed bottom of soft metal having a character therein.

3. A matrix-block having a vertical opening, a matrix cavity above the opening, inclosing walls and a primary bottom all of hard metal and said bottom extending into the upper end of said opening; and a superposed bottom of soft metal having a character therein.

4. A matrix-block having a matrix-cavity provided with inclosing walls all of hard metal and a support, and a bottom of soft metal resting on the support and having a character therein.

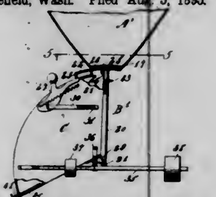
569,877. HANDLE FOR VELOCIPEDES. HENRY H. LUSCOMB, Hartford, Conn. Filed Nov. 5, 1895. Serial No. 568,016. (No model.)



Claim.—1. A handle composed of a bar and a series of longitudinal strips or sections united at their edges, the inner, flat faces of said sections constituting tangents to said bar.

2. An elastic handle having a bore adapted to receive a handle-bar or supporting member, and comprising independent strips of wedge-shaped cross-sectional form united at their edges, and having their inner faces tangentially disposed relatively to said handle bar or member, thereby leaving spaces intermediate of the bar or member and the handle at the points of juncture of the strips.

569,878. WEIGHING OR MEASURING MACHINE. SAMUEL P. MACKEY, Ridgefield, Wash. Filed Aug. 5, 1895. Serial No. 558,220. (No model.)



Claim.—1. The combination with a storage vessel having a valve-controlled outlet, of a rocking measuring-receptacle below the said outlet and engaging the valve thereof to operate it, and a locking-latch carried by the receptacle and engaging a fixed portion of the supporting-frame to lock the receptacle in a receiving position, substantially as described.

2. The combination with a storage vessel, and a valve controlling its outlet, of a weighing or measuring receptacle, supported at one edge to rock beneath the storage vessel, the said measuring vessel being provided with an inlet adapted for registry with the outlet of the storage vessel and having connection with the valve of the latter for operating it, a locking-latch controlling one position of the measuring-receptacle, said latch being carried by the receptacle and engaging a fixed support, and a scale-beam secured to the lower part of the receptacle and having a movable balance thereon, said beam being tripped by the weight of the contents of the receptacle, substantially as described.

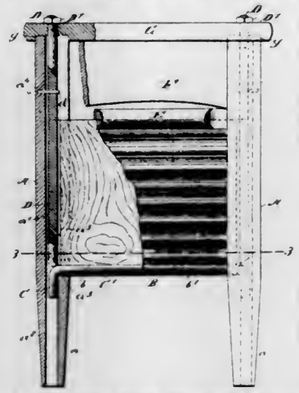
3. The combination, with a storage vessel provided with an outlet and a valve controlling the same, of a measuring-receptacle having a rocking support beneath the storage vessel, having a connection with the valve of the storage vessel and being also provided with an inlet adapted for registry with the outlet of the said storage vessel, a spring controlled latch on the receptacle, a keeper on a fixed support and adapted for engagement with the latch at one position of the measuring-receptacle, a scale-beam carried by the receptacle and tripped by the movement of the said receptacle, and an outlet through which the contents of the receptacle may escape, as and for the purpose set forth.

4. The combination, with a storage vessel divided into compartments, each compartment being provided with a valve-controlled opening, and a frame extending along the bottom of the vessel, of a measuring and weighing device, comprising a receptacle having a sliding and rocking movement on the frame, a guide carried by the said receptacle, adapted for engagement with keepers located beneath each compartment, a connection between the receptacle and the cut-off of the said vessel, a locking device, and a scale-beam operated by the weight of the contents of the receptacle, substantially as set forth.

5. The combination with a storage vessel having an outlet in its bottom, of a rocking measuring-receptacle below the storage vessel and provided with an inlet-opening, a valve secured to the receptacle adjacent to its inlet-opening and working in guideways in the bottom of the storage vessel, and a latch carried by the receptacle for holding the receptacle in a receiving position, substantially as described.

6. The combination with a storage vessel having a valve-controlled outlet, of a frame below the vessel, a measuring-receptacle mounted on the frame to rock and connected with the valve thereof, a pivoted and spring-pressed latch on the receptacle and engaging a keeper on the frame, and a link pivoted to the latch and having a sliding connection with the receptacle, substantially as described.

569,879. WASHBOARD. FREDERIC J. MERRIAM and JAMES A. W. SEARS, Escanaba, Mich., assignors to the Gladstone Washboard Company, Gladstone, Mich. Filed Feb. 25, 1895. Serial No. 539,643. (No model.)



Claim.—1. A washboard having longitudinally-grooved side bars, a rubbing-plate whose side edges enter said grooves, and rods extending in the latter and engaging such edges of the plate, substantially as shown and described.

2. A washboard having side bars, a rubbing-plate having loops at its side edges, the loops extending into the said side bars, and rods extending longitudinally of the side bars and engaging the loops, substantially as described.

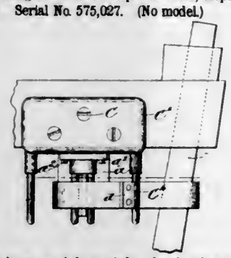
3. In a washboard, the combination, with side bars having longitudinal grooves which are enlarged interiorly as specified, of the intermediate panel composed of a filling-piece or body, and sheet-metal surfaces whose side edges are extended beyond the said body and expanded to fit the enlargements of the grooves, as shown and described.

4. A washboard having grooved side bars, a rubbing-plate, rods ranging longitudinally in said grooves and interlocking with extensions of the rubbing-plate, and pins preventing longitudinal displacement of the rods, substantially as described.

5. A washboard having side bars, a rubbing-plate having extensions engaging the side bars, rods ranging longitudinally of the side bars and engaging the rubbing-plate, means for holding said rods against longitudinal movement, a cap-piece at the upper ends of the side bars, the rods extending through the cap-piece and nuts engaging the ends of the rods and holding the cap-piece in place, substantially as described.

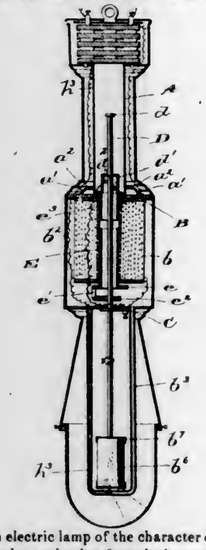
6. In a washboard, the combination, with the side bars provided with longitudinal grooves and longitudinal openings, the internal piece or body, the metallic plate extending from back to front, and the cross-rod held between the lower edges of the body and the plate, said cross-bar having hook like ends that engage the openings in the side bars, as shown and described.

569,880. CHECK FOR PICKER-STICKS. TIMOTHY MOONEY, Fall River, Mass., assignor to Geo. Draper & Sons, Hopedale, Mass. Filed Jan. 10, 1896. Serial No. 575,027. (No model.)



Claim.—In a loom, a picker-stick, a lay having an attached plate, a strap attached to said plate and made into a loop of a length inside less than the stroke of the said stick, and a lug connected to said strap, combined with a stop carried by the said lay and adapted to be struck by the said lug to stop further outward movement of said strap just before the stick in its outward movement, resisting the momentum of the shuttle, reaches the outer end of the slot in the lay in which it works, substantially as described.

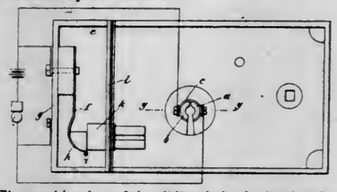
569,881. ELECTRIC-ARC LAMP. JAMES E. MORRIS, Chester, Pa., assignor of two-thirds to Charles E. Morris and James H. Denis, same place. Filed Apr. 2, 1896. Serial No. 585,959. (No model.)



Claim.—In an electric lamp of the character described, the magnet, a core, an annular projection from the bottom of said core, a depending lug integral with said projection, a disk having a central aperture and hinged to said lug, the tubular metallic piece c^3 having a flared head, located in said magnet-frame above the core, standards extending from said frame connected at the top by a cross-piece having a central aperture, a carbon-rod having a head formed on its upper end brushes d^3 connected respectively on different sides of the frame and extending inwardly from the same, whereby they engage different sides of the carbon-rod, substantially as described.

569,882. LOCK WITH ELECTRIC SAFETY ATTACHMENT. ADRIEN J. MOULART, Paris, France. Filed June 6, 1895. Serial No. 551,920. (No model.)

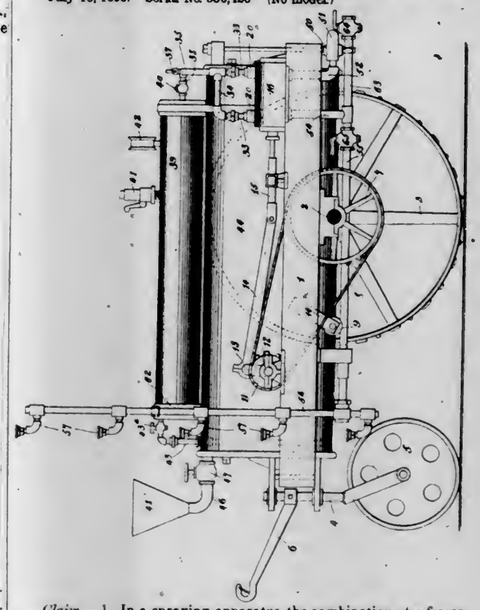
Claim.—1. In a lock, two conducting half-sleeves arranged out of contact with each other, a split keyhole sleeve surrounding them, an insulating-sleeve between the keyhole-sleeve and the half-sleeves, and an electrically-operated signaling device in circuit with the half-sleeves, substantially as described.



2. The combination of the sliding bolt, the insulated spring having its end curved upon itself and adapted to engage the bolt, the insulating-block secured on the spring and adapted to engage the bolt when the same is out of contact with the spring, and an electrically-controlled signaling device in circuit with the bolt, and spring, substantially as described.

3. In a lock, a circuit-closer consisting of two insulated parts located in the keyhole and adapted to be electrically connected upon the insertion of a key or other conducting article, a sliding bolt, a yielding contact in conducting contact with the bolt in one position thereof, and insulated therefrom in the other position of the bolt, an electric circuit having two branches or shunts in one of which are included the two insulated parts of the keyhole while in the other parallel branch or shunt are included the bolt and its yielding contact, and an electrically-operated signaling device in said circuit, substantially as described.

569,883. SPRAYING APPARATUS. JAMES C. OLLARD, Tacoma, Wash., assignor to himself and William J. Ollard, same place. Filed July 18, 1895. Serial No. 556,420 (No model.)

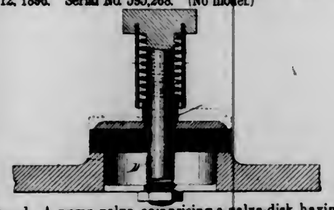


Claim.—1. In a spraying apparatus, the combination of a frame, a liquid-tank extending longitudinally along the central part thereof, discharge-pipes extending longitudinally of the frame on opposite sides of the liquid-tank, and connected thereto, means for forcing the liquid from the liquid-tank through the discharge-pipes, spraying-pipes swiveled on said discharge-pipes and arranged to swing laterally of the frame toward and from each other, a bracket mounted on the liquid-tank with its ends extending in opposite directions from the sides thereof, and notched arms pivotally connected to the spraying-pipes and having their notches arranged to engage the projecting ends of said bracket, substantially as set forth.

2. In a spraying apparatus, the combination of a frame, a liquid-tank extending longitudinally along the central part thereof, discharge-pipes extending on the frame at opposite sides of said liquid-

tank and connected thereto, a bracket held on the upper part of the liquid-tank, an air-tank supported by said bracket and also extending longitudinally of the frame above the liquid-tank arms on said bracket projecting on opposite sides of the air-tank, a connection between the air and liquid tanks, spraying-pipes swiveled on the discharge-pipes and arranged to swing laterally of the frame, and arms pivotally connected at their outer ends to the spraying-pipes and having their inner ends adapted for adjustable connection to the projecting arms of the bracket on the liquid-tank, substantially as set forth.

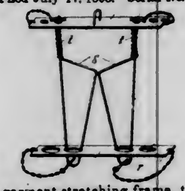
569,884. PUMP-VALVE. GEORGE PARKER, Whiting, Ind. Filed June 12, 1896. Serial No. 595,268. (No model.)



Claim.—1. A pump-valve, comprising a valve-disk having a hub consisting of a thin cylinder having an external flange of larger radius on its outer end, a fixed valve-stem on which slides the said hub, a casing surrounding the valve-stem attached to the outer end thereof and receiving at its open end the flanged end of the said hub, and a spring coiled on the stem within the said casing and pressing on the flanged end of the said hub, substantially as shown and described.

2. In a pump-valve, the combination of the valve-disk, a hollow central hub projecting from the upper end thereof and having an external flange upon its upper end, a stem fastened below the valve and fitting the hole through the hub of the valve, a head upon the upper end of the stem, a hollow cylindrical casing fixed to the head and surrounding the stem leaving an annular space just sufficient to receive the flanged end of the hub, and a spiral coiled spring within the annular space between the casing and stem and pressing upon the head of the valve-stem and the flanged end of the valve-hub, substantially as described.

569,885. GARMENT-STRETCHING FRAME. ALBERT E. PHELPS, Irvington, N. Y. Filed July 17, 1895. Serial No. 556,275. (No model.)



Claim.—1. In a garment-stretching frame, two plates, two garment-receiving wires held by the plates, an arm fixed to one end of each wire, and slidably connected with the main portion of the respective wires, and springs connected to the wires and engaging the arms, substantially as described.

2. In a garment-stretching frame, two plates each having an opening at each end, garment-receiving wires, means for holding said wires in the openings of the plates, arms formed on the wires and slidably connected to the main portions thereof, and expansive springs embracing the main portions of the wires and engaging the arms, substantially as described.

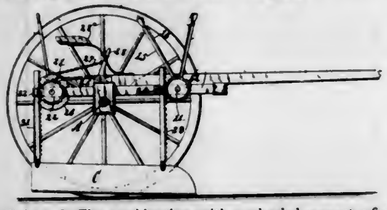
3. A garment-stretching frame having two plates each end of which is perforated, a flexible connection attached to each end of each plate, a pin carried by each flexible connection, and two garment-receiving members each having two eyes, the eyes being respectively projected through the perforations in the ends of the plates and engaged by the respective pins, substantially as described.

569,886. NAIL-STRIP. FREEBORN F. RAYMOND, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Jan. 2, 1890. Serial No. 335,596. (No model.)



Claim.—As an improved article of manufacture a nail-strip comprising a long holding-strip of flat, flexible material, projections extending laterally from the strip provided with perforations, the upper one of which is the longer and into which perforations nails are inserted, and from which they are removed by being driven downward through said holes, the whole forming a means for the transportation and feeding of loose headless nails, as and for the purposes described.

569,887. SCRAPER. GEORGE E. RICHARDSON, Pomona, Mich. Filed May 6, 1896. Serial No. 590,461. (No model.)



Claim.—1. The combination, with a wheeled support, a forward and a rear rock-shaft journaled in the said support, each shaft being provided at each end with a pinion, ratchet-wheels secured upon the forward shaft, having their teeth inclined in opposite directions, levers provided with latches engaging the said ratchet-wheels, and a locking device for the said forward shaft, of a lever connected with the rear shaft, and a chain attached to the said lever on the support and passed over the said pulley, a scraper, racks attached to the forward and rear side portions of the scraper, having guided movement upon the support, the said racks being in engagement with the said pinions, and a removable end-gate located at the rear portion of the scraper and connected with the aforesaid chain, as and for the purpose specified.

2. The combination of an axle, a frame carried by the axle, two shafts journaled in the frame, a pinion fixed to each end of each shaft, means on each shaft by which they may be turned, pawl-and-ratchet devices for holding the shafts stationary, a scoop located beneath the frame, rack-bars fixed to the scoop and respectively meshing with the pinions, a lever fulcrumed on the axle, a chain connected to the lever, a pulley carried by one shaft and over which the chain passes, and a sliding gate for the scoop, the gate having the chain connected thereto, substantially as described.

3. The combination of an axle, a frame carried by the axle, two shafts journaled in the frame, a pinion carried by each end of each shaft, two oppositely-disposed ratchet-wheels fixed to one shaft, a pawl-lever for each ratchet-wheel, means for holding the shafts in position, a scoop located below the frame, rack-bars carried by the scoop and respectively meshing with the pinions, a lever fulcrumed on the axle, a chain connected to the lever, a pulley carried by one shaft and over which the chain passes, and a vertically-movable gate located in slideways at the rear of the scoop, the gate being connected with the chain, substantially as described.

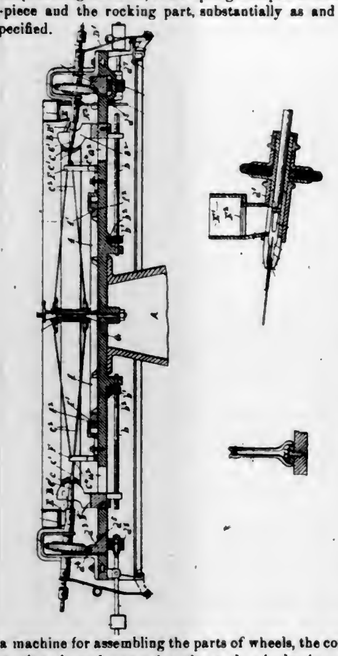
569,888. MACHINE FOR ASSEMBLING PARTS OF WHEELS. WILLIAM SANDERSON, Syracuse, N. Y., assignor of one-half to Harvey D. Burrill, same place. Filed Apr. 29, 1896. Serial No. 589,500. (No model.)

Claim.—1. In a machine for assembling the parts of wheels, the combination of a reciprocating operating-piece for securing the spoke-nipples in position, a wheel for revolving the operating-piece, a second wheel for engaging and driving the former wheel, and a rocking actuating part for forcing the operating-piece endwise through said wheel into and out of operative position, said rocking piece having its axis arranged substantially coincident with the axis of the second wheel, substantially as and for the purpose specified.

2. In a machine for assembling the parts of wheels, the combination of a reciprocating operating-piece, a wheel for revolving the operating-piece, a spring for moving the operating-piece endwise through said wheel, a second wheel for engaging and driving the first wheel having its axis arranged at substantially right angles with the axis of the first wheel, a movable support for the spring, and a rocking actuating part connected to said support and having its axis arranged substantially coincident with the axis of the second wheel, substantially as and for the purpose set forth.

3. In a machine for assembling the parts of wheels, the combination of a driving-wheel, an operating-piece reciprocating crosswise of the driving-wheel and arranged at an incline with the axis of said wheel, means for revolving the operating-piece, and an actuating part connected to the operating-piece for reciprocating the same, substantially as and for the purpose described.

4. In a machine for assembling the parts of wheels, the combination of a reciprocating operating-piece, means for frictionally revolving the operating-piece, a rocking part connected to the operating-piece for reciprocating the same, and a spring interposed between the operating-piece and the rocking part, substantially as and for the purpose specified.



5. In a machine for assembling the parts of wheels, the combination of operating-pieces for securing the spoke-nipples in position, means for simultaneously rotating the operating-pieces, and means for moving the operating-pieces endwise independently toward the spoke nipples, substantially as and for the purpose set forth.

6. In a machine for assembling the parts of wheels, the combination of a substantially horizontal driving-wheel, operating-pieces arranged above the driving-wheel and reciprocating crosswise of the same and arranged at an angle less than a right angle with the axle of said wheel, additional wheels mounted on the operating-pieces and frictionally engaged with the driving-wheel for frictionally revolving the operating-pieces independently, and means for moving the operating-pieces endwise indepeodently through the additional wheels toward their operative positions, substantially as and for the purpose described.

7. In a machine for assembling the parts of wheels, the combination of a substantially horizontal driving-wheel, a series of operating-pieces arranged above the driving-wheel and reciprocating crosswise of the same, a second series of operating-pieces arranged above the driving-wheel and reciprocating crosswise of the same in a plane arranged at an angle with the plane in which the former operating-pieces are reciprocally movable, additional wheels mounted on the operating-pieces and simultaneously rotated by the driving-wheel, and means for independently reciprocating the operating-pieces through the additional wheels, substantially as and for the purpose specified.

8. In a machine for assembling the parts of wheels, the combination of a series of operating-pieces, a second series of operating-pieces arranged at an angle with the former operating-pieces, wheels for independently revolving the operating-pieces of each series, and a disk having faces arranged out of alinement with each other for frictionally engaging and rotating the wheels and thereby revolving each series of the operating-pieces, substantially as and for the purpose specified.

9. In a machine for assembling the parts of wheels, the combination of a driving-wheel, operating-pieces reciprocating crosswise of the driving-wheel, additional wheels frictionally engaged with the driving-wheel for independently revolving the operating-pieces, a roller for adjustably forcing the first wheel toward the additional wheels, and means for holding the roller in its adjusted position, substantially as and for the purpose set forth.

10. In a machine for assembling the parts of wheels, the combination of a guide for the spokes and the nipples, provided with inner projecting shoulders for engaging the outer extremities of the spokes, and a chamber extending inwardly from the shoulders, said chamber being formed of greater diameter than the outer extremities of the spokes, and encircling said extremities for guiding the nipples thereto, a reciprocating operating-piece for securing the nipples in position, and means for automatically revolving the operating-piece, substantially as and for the purpose described.

11. In a machine for assembling the parts of wheels, the combination of guides for the spokes and the nipples, provided with inner projecting shoulders for engaging the outer extremities of the spokes, and a chamber extending inwardly from the shoulders, said chamber being formed of greater diameter than the outer extremities of the spokes, and encircling said extremities for guiding the nipples thereto, operating-pieces for securing the nipples to the spokes, means for actuating the operating-pieces, and clamps for engaging the spokes and preventing bending thereof, substantially as and for the purpose specified.

12. In a machine for assembling the parts of wheels, the combination of guides for receiving the spokes and the nipples, operating-pieces for securing the nipples to the spokes, means for actuating the operating-pieces, clamps for engaging the spokes and preventing bending thereof, said clamps being provided with spring-arms having their upper ends arranged on opposite sides of the outer ends of the spokes and the outer faces of said ends of the arms being engaged with shoulders formed upon the spokes, and means for reciprocating said clamps, substantially as and for the purpose set forth.

13. In a machine for assembling the parts of wheels, the combination of movable clutch-dogs for engaging the rim and holding the same true, said clutch-dogs being provided with slots extending therethrough, means for actuating the clutch-dogs, operating-pieces movable through the slots for securing the nipples to the rim, and means for revolving the operating-pieces, independently, substantially as and for the purpose specified.

14. In a machine for assembling the parts of wheels, a supporting-frame, a supporting-bracket detachably mounted on the frame and formed with separated bearings or sockets, a driving-wheel supported by said frame, a sleeve having its opposite ends journaled in the bearings or sockets, and a wheel arranged between said bearings or sockets and fixed to the sleeve, said wheel being engaged with the former wheel, and an operating-piece revoluble with said sleeve and reciprocating therethrough, substantially as and for the purpose set forth.

15. In a machine for assembling the parts of wheels, a supporting-bracket provided with a bearing or socket, a sleeve having one end journaled in the bearing or socket and provided with a wheel for revolving the same, a guide for the spoke-nipples, and a second guide for receiving the spoke-nipples from the first guide having one end arranged in said bearing or socket in alinement with the sleeve, an operating-piece reciprocally movable through the sleeve and the second guide, and means for revolving the operating-piece, substantially as and for the purpose specified.

16. In a machine for assembling the parts of wheels, the combination of clutch dogs movable toward and away from the outer peripheral face of the rim for holding said rim, guides for the nipples connected to said dogs and movable simultaneously therewith, and operating-pieces movable in the guides for securing the nipples to the rim, substantially as described.

17. In a machine for assembling the parts of wheels, the combination of clutch dogs having upright convex engaging faces movable toward and away from the outer peripheral face of the rim for holding the rim and preventing lateral deflection thereof, a driving-wheel, operating pieces for securing the nipples to the rim reciprocating crosswise of the driving-wheel, additional wheels mounted on the operating-pieces and engaged with the driving-wheel for revolving the operating-pieces, and means for moving the operating-pieces endwise independently through the additional wheels, substantially as and for the purpose set forth.

569,889. TROLLEY FOR ELECTRIC RAILWAYS. HENRY A. SEYMOUR, Washington, D. C., assignor to the General Electric Company, of New York. Filed June 15, 1896. Serial No. 595,653. (No model.)

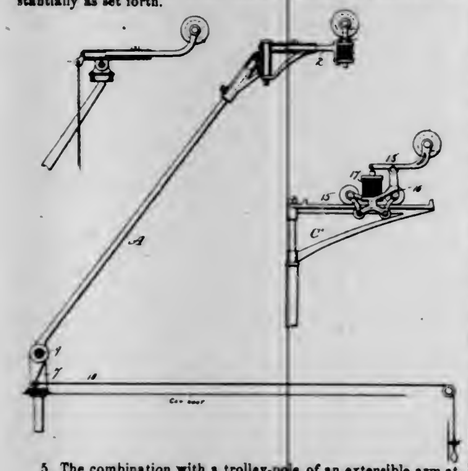
Claim.—1. The combination with a trolley-pole and a trolley-wheel holder at the upper end of said pole, of an electromagnetic device connected with said holder and constructed to force the trolley-wheel against the conductor, substantially as set forth.

2. The combination with a trolley-pole, of a movable arm attached to the upper end thereof, a trolley-wheel carried by said arm and an electromagnetic device also carried by said arm and connected with the trolley-wheel so as to force the latter against the conductor, substantially as set forth.

3. The combination with a trolley-pole, of an extensible arm pivotally connected thereto, and a trolley-wheel carried by said extensible arm.

4. The combination with a trolley-pole, of an extensible arm attached thereto, an electromagnetic device mounted on said extensible

arm and a trolley-wheel connected with said electromagnetic device in such manner as to be forced thereby against the conductor, substantially as set forth.

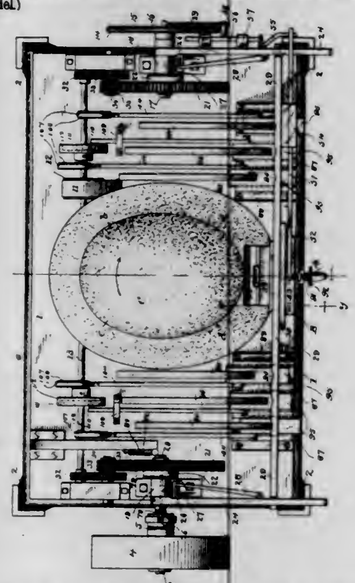


5. The combination with a trolley-pole, of an extensible arm attached thereto, a solenoid attached to the free end of said extensible arm and adapted, when energized, to force its core outwardly, a bracket at the upper end of said core and a trolley-wheel mounted in said bracket, substantially as set forth.

6. The combination with a pivoted trolley-pole and means under the control of the operator for maintaining the pole normally elevated, of a trolley-wheel supported by the upper end of the pole and an electromagnetic device also supported by the upper end of the pole and adapted to force the trolley-wheel against the wire when the car is running, substantially as set forth.

7. The combination with a trolley-pole, of a trailing extensible arm pivotally connected to the upper end of said pole, and a trolley-wheel carried by said arm, substantially as set forth.

569,890. HAT-CROWN-POUNCING MACHINE. CHARLES M. SNELL, Danbury, Conn. Filed July 3, 1895. Serial No. 554,790. (No model.)



Claim.—1. In a machine of the character described the combination with means for holding and rotating a hat-body, of a reciprocating pouncing-pad, a bar by which the pouncing-pad is carried and means for moving said bar and pairs of reciprocating guides upon which the bar rests alternately, said pairs of guides being respectively curved to correspond with the contour of different portions of a hat-crown, substantially as described.

2. The combination with means for holding and rotating a hat-body, of a reciprocating pouncing-pad, a bar by which the pouncing-pad is carried, arms by which said bar is carried, means for moving said arms in an arc of a circle, pairs of reciprocating guides respectively curved to correspond with the contour of different portions of a hat-crown and springs acting to hold the bar in contact with one of the pairs of guides as the bar is carried upward over the hat-crown by the arms.

3. The combination with means for holding and rotating a hat-body, a reciprocating pouncing pad and a bar by which the pouncing-pad is carried, of pairs of reciprocating guides upon which the bar rests alternately, studs 17 and 20, arms 24 journaled on said studs, gear-wheels 21 also journaled respectively on said studs and provided on their faces with clutch members and spring-actuated latches carried by the arms and adapted to engage the clutch members so that rotary motion of the gear-wheels is communicated to arms 24 and the bar and the reciprocating guides are swung upward over the hat-crown.

4. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a bar by which the pouncing-pad is carried, of pairs of reciprocating guides upon which the bar rests alternately, studs 17 and 20, arms 24 journaled respectively on said studs, gear-wheels 21 having clutch members 22, latches 27 carried by the arms and engaging the clutch members and levers 28 by which the latches are disconnected so that the arms, bar and pouncing-pad may be returned to their normal positions after the pouncing operation is completed.

5. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a bar by which the pouncing-pad is carried, and which is provided with grooves 90, of pairs of reciprocating guides upon which the bar rests alternately and which engage the grooves to prevent lateral movement of the bar, arms 24 by which the bar is carried and mechanism for swinging said arms and bar so that the pouncing-pad will pass over a hat-crown.

6. The combination with means for holding and rotating a hat-body, a pouncing-pad and a bar by which the pouncing-pad is carried, of arms 24 by which the bar is carried, pairs of reciprocating guides respectively curved to correspond with the contour of different portions of a hat-crown, mechanism for swinging said arms and bar upward over a hat-crown and mechanism for reciprocating the pad as it is carried over the crown.

7. The combination with a main shaft, a belt-pulley loose thereon, a clutch by which said belt-pulley and shaft are connected, operating-lever 80 and mechanism intermediate said lever and the clutch whereby the members of the clutch are engaged and disengaged and are locked in the position in which they are placed by movement of the operating-lever, of means for holding and rotating a hat-body, a reciprocating pouncing-pad, a moving bar by which the pouncing-pad is carried and pairs of reciprocating guides upon which the bar rests alternately, said operating-lever being engaged by the bar at the completion of the pouncing operation to disengage the clutch members and stop the machine.

8. The combination with means for holding and rotating a hat-body, a pouncing-pad, a bar by which said pad is carried pairs of reciprocating guides on which the bar rests alternately and mechanism for swinging said bar over the hat-body and for reciprocating the pouncing pad, of driving mechanism, stopping and starting mechanism and an operating-lever located to be moved in one direction to start the machine and to be engaged by the bar and moved in the opposite direction to stop the machine at the end of the pouncing operation.

9. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a moving bar by which the pouncing-pad is carried, of pairs of reciprocating guides respectively curved to correspond with the contour of different portions of a hat-crown, slides 87 by which the guides are carried and means for adjusting said slides and guides simultaneously to different sizes of the same style of hat.

10. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a moving bar by which the pouncing-pad is carried, of pairs of reciprocating guides respectively curved to correspond with the contour of different portions of a hat-crown, slides 87 by which the guides are carried, a bar by which said slides are connected, a stump 93 and an adjusting-screw whose thread engages the bar and which turns freely in the stump whereby adjustment to different sizes of hats is effected.

11. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a moving bar by which the pouncing-pad is carried, of guides respectively curved to correspond with the contour of different portions of a hat-crown, slides 95 to which the guides are detachably secured, connecting-rods 104 by which the slides are reciprocated and adjustable connections between said connecting-rods and said slides whereby the slides and guides may be adjusted in changing from one style of hat to another.

12. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a moving bar by which the pouncing-pad is carried, of guides respectively curved to correspond with the contour of different portions of a hat-crown, slides 95 to which the guides are detachably secured and which are provided with ways 100, connecting rods 104 having eyes 105, bolts 102 whose heads engage the ways, sleeves 103 on the bolts which are engaged by the eyes and thumb-nuts whereby the parts are locked together so that the slides may be adjusted in changing styles of hats.

13. The combination with means for holding and rotating a hat-body, a reciprocating pouncing-pad and a moving bar by which the pouncing-pad is carried, of guides respectively curved to correspond with the contour of different portions of a hat-crown and provided with bases 96 and lugs 97, slides 95 having sockets 98 to receive said lugs and bases and set-screws by which the guides are locked in position and mechanism for reciprocating said slides.

14. The combination with means for holding and rotating a hat-body, of a reciprocating pouncing-pad, a moving bar by which the pouncing-pad is carried, pairs of guides 84 and 85 upon which the bar rests alternately, said pairs of guides being respectively curved to correspond with the contour of different portions of a hat-crown, and mechanism for reciprocating said guides once during each rotation of a hat-body.

15. The combination with means for holding and rotating a hat-body, of a reciprocating pouncing-pad, a moving bar by which the pouncing-pad is carried, pairs of guides 84, 85 and 86 upon which the bar rests alternately, said guides 84 being curved to correspond with the contour of the back of a hat-body, said guides 85 being curved to correspond with the front of a hat-body and said guides 86 being curved to correspond with the sides of a hat-body, and mechanism for reciprocating guides 84 and 85 once during each rotation of the hat-body and for reciprocating said guides 86 four times during each rotation of a hat-body.

16. The combination with means for holding and rotating a hat-body, of a reciprocating pouncing-pad, a bar by which the pouncing-pad is carried, pairs of guides upon which the bar rests, said guides being curved respectively to correspond with the contour of different portions of a hat-crown, mechanism for reciprocating the guides and mechanism for swinging the bar upward and over the crown of a hat-body while said hat-body is making a certain predetermined number of rotations.

17. The combination with means for holding and rotating a hat-body, of a moving bar 29 provided with ways 30, pairs of reciprocating guides upon which the bar rests alternately, said pairs of guides being respectively curved to correspond with the contour of different portions of a hat-body, a pouncing-pad and a carrier therefor which reciprocates in said ways, rod 51 connected to said carrier and means for reciprocating said rod independently of the movement of the bar.

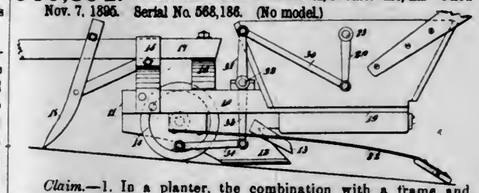
18. The combination with bar 29 having ways 30, pairs of reciprocating guides upon which said bar rests alternately, means for swinging the bar upward over the crown of a hat-body while resting on the guides and a reciprocating rod 51, of a carrier B which is reciprocated in said ways by said rod and a pouncing-pad moving with the carrier.

19. The combination with bar 29 having ways 30, pairs of reciprocating guides upon which said bar rests alternately, means for swinging the bar upward over the crown of a hat-body while resting on the guides, a carrier B and means for reciprocating said carrier in the ways, of a pouncing-pad, a holder therefor which lies in the carrier, springs intermediate said carrier and said holder and a set-screw whereby the pressure of the pouncing-pad in use may be regulated.

20. The combination with bar 29 having ways 30, pairs of reciprocating guides upon which said bar rests alternately, means for swinging the bar upward over the crown of a hat-body while resting on the guides, and a carrier B having means to reciprocate it in said ways and having a cross-piece 47, of a pouncing-pad, a holder therefor which lies within the carrier, springs intermediate said carrier and said holder and a set-screw engaging the cross-piece and bearing upon the holder whereby the pressure of the pouncing-pad in use may be regulated.

21. The combination with bar 29 having ways 30, pairs of reciprocating guides upon which said bar rests alternately, means for swinging the bar upward over the crown of a hat-body while resting on the guides, a carrier B having means to reciprocate it in said ways and having flanges 43 and a cross-piece 47, of a pouncing-pad, a holder therefor which lies within the carrier and is provided with sockets 44, springs in said sockets which bear upon the flanges and a set-screw engaging the cross-piece and bearing upon the holder as and for the purpose set forth.

569,891. PLANTER. JESSE W. STANCIL, Farmerville, La. Filed Nov. 7, 1895. Serial No. 568,186. (No model.)



Claim.—1. In a planter, the combination with a frame, and wheels mounted in the forward part of the frame, of a beam secured to the front end of the frame, a furrow-opener secured to the beam in front of the frame, a hopper mounted on the rear end of the said frame, a seed-distributing device in the hopper, means for operating the distributing device from the driving wheels, a smoothing-board secured to the front of the frame, and a delivery-chute secured to the smoothing-board, substantially as described.

2. In a planter, the combination with a frame, and wheels mounted in the forward part of the frame, of yokes secured to the forward part of the frame, a beam secured to the yokes, a furrow-opener secured to the beam, a hopper on the rear of the frame, a seed-distributing device in the hopper, means for operating the distributing device from the driving-wheels, a smoothing-board secured to the front of the frame, and a chute secured to each side of the smoothing-board, substantially as described.

3. In a planter, the combination with a wheel-supported frame having sliding ways formed in its rear portion, of a hopper on the said rear portion of the frame, and a board fitted to slide in the guide-ways of the frame and form a bottom for the hopper, said board being provided with drop-slides, substantially as described.

4. In a planter, a wheel-supported frame, a hopper located on the said frame, slideways formed in the frame, a removable closing-board adapted as a bottom for the hopper and fitted to slide in the said slideways, the said board having openings therein, seed-distributing slides having reciprocating movement in the said board, the pockets of the slides being adapted to cross the openings in the board, and a crank connection between the traction-wheels of the machine and the said slides, as and for the purpose set forth.

5. In a planter, a wheel-supported frame, a hopper located on the said frame, slideways formed in the frame, a closing-board adapted as a bottom for the hopper located in the said slideways, the said board having openings therein, seed-distributing slides having reciprocating movement in the said board, the pockets of the slides being adapted to cross the openings in the board, and a crank connection between the traction-wheels of the machine and the said slides, the crank connections between the slides and traction-wheels being at diagonally opposite points, a smoothing-board secured to the front of the frame, chutes secured to the smoothing-board and receiving the seed from the drop-slides and conducting them to the ground, and a drag adapted to close the furrow, as and for the purpose set forth.

6. In a planter, the combination, with a wheel-supported frame, a hopper secured on the said frame, a smoothing-board located below the hopper and adapted to travel in a furrow, the said board being between the traction-wheels of the machine, a chute located at each side of the rear end of the smoothing-board, a removable bottom for the hopper, provided with seed-drop slides and openings leading to the pockets of the same, the said drop-slides having crank connections with the traction-wheels, the connection of the two slides being at diametrically opposite points on the wheels, and a drag adapted to close the furrow, as and for the purpose set forth.

569,892. INCANDESCENT MANTLE. PETER STIENS, London, England. Filed Mar. 9, 1896. Serial No. 582,474. (No model.)

Claim.—1. An incandescent mantle comprising in its construction magnesium chlorid which has been exposed to a high temperature.

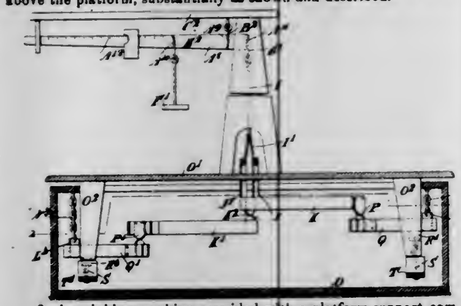
2. An incandescent mantle formed of magnesium chlorid, which has been exposed to a high temperature, burnt chalk and adhesive material.

3. The process of manufacturing mantles consisting in exposing magnesium chlorid to a high temperature, grinding it with burnt chalk and adhesive material, molding it under pressure, covering it with a solution of magnesium chlorid and again exposing it to heat.

4. The process of manufacturing mantles consisting in impregnating threads or woven material with magnesium chlorid which has been exposed to a high temperature drying them and covering them with a solution of magnesium chlorid and again exposing them to heat.

569,893. WEIGHING-MACHINE. RICHARD H. TAYLOR, Westport, Conn. Filed Feb. 12, 1896. Serial No. 578,979. (No model.)

Claim.—1. A weighing-machine provided with a series of beams for supporting the weighing-platform, said beams having segmental concentric faces, bands connected with said faces for supporting said beams and connecting the same with the support for carrying the platform and a band connecting said beams with the weighing-beam above the platform, substantially as shown and described.



2. A weighing-machine provided with a platform-support comprising two obliquely-arranged beams having concentric segmental faces, the faces of the inner ends of the beams being connected with the weighing-beam located above the platform, and the outermost faces being connected by bands with an overhead support, auxiliary beams supported from said oblique beams and having segmental faces for the bands, and transverse supports supported from the outer ends of the auxiliary beams and the outer ends of the oblique beams, the said supports being adapted to carry the platform, substantially as shown and described.

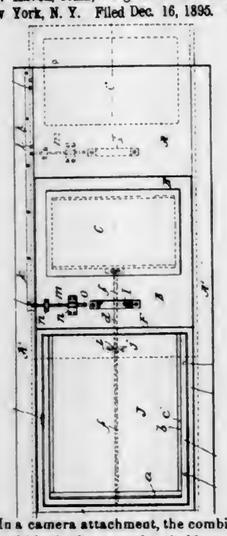
3. In a weighing-machine, the combination with a series of beams located beneath the weighing-platform, the said beams having segmental concentric faces and bands for supporting said beams and connecting them with a support for carrying the platform, of a weighing-beam located above the platform the said weighing-beam being provided with segmental concentric faces, one of which is connected with the said beams beneath the platform and the others connected respectively with a supporting-band, and a band adapted to carry the weights, substantially as shown and described.

569,894. ORE WASHER AND COLLECTOR. JAMES W. THOMPSON, St. Louis, Mo. Filed Feb. 26, 1896. Serial No. 580,924. (No model.)



Claim.—An ore washer and collector, comprising an inclined trough, cleats extending diagonally across the bottom of said trough, there being apertures in said bottom board adjacent to one edge and immediately in front of the lower end of each of said cleats, auxiliary bottoms in said troughs, the forward ends of which lie upon said cleats and the rear ends of which abut against the next cleat up the trough, there being apertures in said auxiliary bottoms, an inclined pipe under said trough, tubes connecting said pipe with said trough, traps depending from said pipe, and mercury in said traps.

569,895. CURTAIN-SLIDE CAMERA ATTACHMENT. WILLIAM TRUEMAN, New Haven, Conn., assignor to the E. & H. T. Anthony & Company, New York, N. Y. Filed Dec. 16, 1895. Serial No. 572,297. (Model.)



Claim.—1. In a camera attachment, the combination of a frame, a sliding carriage within the frame, a plate-holder, a slat-slide inclosed within the plate-holder and a device upon the frame of the attachment, which engages with the front edge of the slide, and automatically manipulates it upon movement of the carriage, for the purposes set forth.

2. In a camera attachment, the combination of a frame, a sliding carriage within the frame, a plate-holder, a slat-slide inclosed within the plate-holder, and a device located upon the frame of the attachment behind the plate-holder, which engages with the slide, and automatically manipulates it upon the movement of the carriage, for the purposes set forth.

3. In a camera attachment, the combination of a frame, a sliding carriage within the frame, a plate-holder, a slat-slide inclosed within the plate-holder, and a device located upon the frame and in rear of the plate holder, which engages with the front edge of the slat-slide, and automatically manipulates it upon movement of the carriage, for the purposes set forth.

4. In a camera attachment, the combination of a plate-holder, a sliding carriage adapted to receive and hold the plate-holder, a slat-slide inclosed within the plate-holder, and a sliding device in the rear of the plate-holder, and centrally located relative thereto, which engages with the front end of the slide, for the purposes set forth.

5. In a camera attachment, the combination of a frame, a sliding carriage, a plate-holder, a slat-slide inclosed by the plate-holder, a sliding device upon the frame of the attachment, located behind the plate-holder and centrally located thereon, which engages with the front edge of the slide, and means to limit the movement of said sliding device, for the purposes set forth.

6. In a camera attachment, the combination of a sliding carriage adapted to receive a plate-holder, a plate-holder, a slat-slide inclosed within the plate-holder, and means to actuate the slide, which during the operation of the attachment, is at all times substantially covered and protected by the plate-holder, for the purposes set forth.

7. In a camera attachment, the combination of a sliding carriage adapted to receive a plate-holder, a plate-holder, a slat-slide inclosed within the plate-holder and a sliding device located upon the frame, and which engages with the front edge of the slat-slide, and which, when the attachment is in operation is at all times, substantially covered and protected by the plate-holder and coactive parts, for the purposes set forth.

8. In a camera attachment, the combination of a frame, a sliding carriage, a plate-holder, a curtain slat-slide inclosed within the plate-holder, a device upon the frame of the attachment which engages with the front edge of the slide, and manipulates it upon movement of the carriage, and a device for determining the position of the carriage relative to the said device, for the purposes set forth.

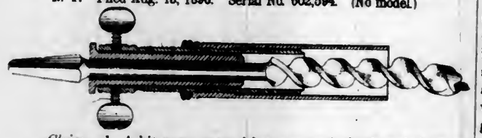
9. In a camera attachment, a sliding frame, a plate-holder, means to determine the position of the plate-holder in the carriage, a slat-slide inclosed within the frame of the holder, means upon the front edge of the slide, whereby it may be engaged by a sliding device upon the frame of the attachment, and said sliding devices adapted to engage with said means, for the purposes set forth.

10. In a camera attachment, the combination of a frame, a sliding carriage within the frame, means to determine the position of the carriage relative to the frame of the attachment, a plate-holder, means to determine the position of the plate-holder relative to the carriage, a slide for the plate-holder, a device upon the frame, which engages with the front edge of the slide, and which lies behind and is protected by the plate holder, for the purposes set forth.

11. In a camera attachment a slide for a plate-holder, a sliding device upon the frame of the attachment for manipulating said slide, which is covered and protected by the slide, and means to limit the movement of said sliding device, for the purposes set forth.

12. In a camera attachment, the combination of a frame, a sliding carriage within the frame, a plate-holder, a slide for the plate-holder, a rod adapted to slide in a groove in the frame, a portion of which projects outwardly and engages the front of the slide, means upon the slide to receive said part of the rod, and stops to limit the movement of the rod, for the purposes set forth.

569,896. BIT-GAGE. EDMUND VAN CAUWENBERG, New York, N. Y. Filed Aug. 13, 1896. Serial No. 602,594. (No model.)



Claim.—1. A bit-gage, comprising an exteriorly-threaded sleeve for engaging around the shank portion of the bit, clamping devices for clamping said sleeve on the bit-shank, and a gage-sleeve having an interior screw-thread to engage the screw-thread of the first-named sleeve, substantially as specified.

2. A bit-gage, comprising an exteriorly-threaded sleeve adapted to surround the shank portion of the bit, segmental clamping-blocks for engaging with the shank of the bit within the sleeve, set-screws engaging through tapped holes in the sleeve and impinging against said clamping-blocks, and a gage-sleeve having an interior screw-threaded portion to engage the screw-thread of the first-named sleeve, substantially as specified.

3. A bit-gage, comprising a sleeve adapted to engage around the bit-shank, and having a length substantially that of the bit-shank, segmental clamping-pieces adapted to engage the bit-shank within the sleeve, set-screws engaging through tapped holes in said sleeve and engaging with said segmental clamping-pieces, a gage-sleeve having an interior screw-thread at its upper portion to engage a screw-thread on the first-named sleeve, and a set-nut on said first-named sleeve, substantially as specified.

569,897. WIRE-STRETCHER. JOSEPH C. WALKER, Lewistown, Mont. Filed July 14, 1896. Serial No. 599,121. (No model.)



Claim.—1. A wire-stretcher, comprising a lever consisting of a straight portion 2, a curved portion 3 and a straight extension located at the outer terminus of the curved portion and arranged in alinement with the straight portion, said curved portion consisting of a regularly-curved inner part and an irregularly-curved outer part, and the lever being provided at the juncture of its curved portion 3 and its straight portion 2 with a depression, and a wire-holding clamp pivotally mounted in the depression and located directly above the lever, whereby the clamp is prevented from coming in contact with the fence-post and a central draft fence-lever is obtained, substantially as and for the purpose described.

2. A wire-stretcher comprising a lever provided with a perforation, and a clamp composed of a base-plate provided at one side with a substantially L-shaped flange having a vertical portion and a horizontal portion extending inward over the base-plate, a stud depending from the lower face of the base-plate and arranged in the perforation of the lever, a pivot extending upward from the upper face of the base-plate, and a detachable cam-lever provided with a perforation receiving the pivot, the head of the cam-lever extending under the horizontal portion of the L-shaped flange of the base-plate, whereby the cam-lever is retained on the pivot, substantially as described.

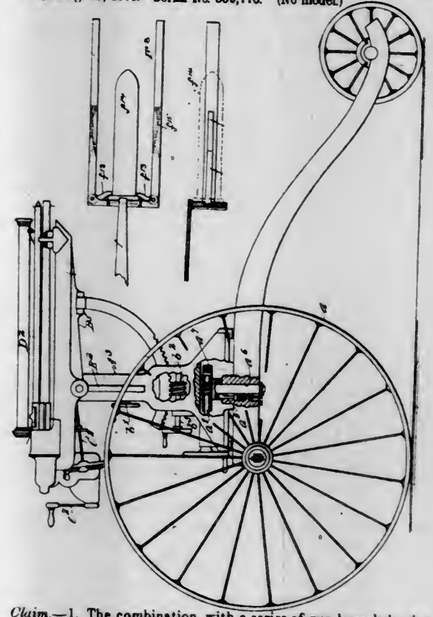
569,898. ADJUSTABLE CURTAIN BRACKET AND SUPPORT. ANDREW WALTON, Huntington, Ind., assignor of one-third to Sarah Langley, Chicago, Ill. Filed Apr. 24, 1896. Serial No. 588,995. (No model.)

Claim.—1. An adjustable window-fixture consisting of a bar composed of two parts telescoping one upon the other and adapted to extend across and be secured to the window-frame; a shade-roller support secured to each end of the bar, and longitudinal grooves also located at each end of the bar, in combination with curtain-bar brackets provided with the arms, *c*, *c*, adapted to adjustably engage with the grooves in the bar, and the adjustable arm, E, whereby the curtain-pole supports may be adjusted both longitudinally and transversely to the curtain-pole, substantially as described.



2. A curtain-pole support consisting of base-pieces adapted to be secured to either side of a window to the frame, and provided with one or more grooves extending horizontally parallel to the window, in combination with a curtain-pole bracket provided with an adjustable arm extending perpendicular to the window, and one or more arms adapted to adjustably engage with the grooves in the base-pieces whereby the support of the curtain-pole may be adjusted both longitudinally and transversely to the pole, substantially as described.

569,899. MACHINE-GUN. HARRY C. WEBB, Tacoma, Wash. Filed Aug. 19, 1895. Serial No. 559,770. (No model.)



Claim.—1. The combination, with a series of gun-barrels having pivotal connection with a support upon which they may be swung in a horizontal plane, of means for causing said movement, comprising a gear-wheel carried by each barrel, segmental gears engaging with adjacent gears, an operating-shaft for said gears, a dial or disk having distance-indicating marks thereon, and a pointer carried by the operating-shaft and movable over said marks, substantially as specified.

2. The combination with a central fixed gun-barrel, of a series of barrels arranged at each side thereof and adapted to swing in a horizontal plane, a gear-wheel rotatively mounted on a stud extended from said fixed barrel, a guideway extended transversely of the barrels, gear-wheels supported by said swinging barrels, the said gear-wheels having sliding connection with the guideway, segmental gears having a sliding connection with said guideway and adapted to transmit motion from the gear-wheel on the fixed barrel to the gear-wheels on the swinging barrel, and means for rotating the gear-wheel on the fixed barrel, substantially as specified.

3. The combination, with a series of gun-barrels adapted to swing in a horizontal plane, of mechanism substantially as shown and described, for causing said swinging movement, a pointer, and a numbered dial over which said pointer is movable to indicate the lateral deflection of said swinging barrels, as specified.

4. In a machine-gun, the combination with a barrel, of a pair of magazines mounted thereon, a rotary loading device in the rear end of each magazine, and mechanism for alternately operating said loading devices for transferring a cartridge from the magazines to the barrels, substantially as specified.

5. In a machine-gun, the combination with a series of barrels, of a pair of magazines for each of said barrels, mechanism for transferring a cartridge from said magazines alternately to a barrel, and mechanism operating simultaneously therewith for extracting an exploded shell from the barrel, substantially as specified.

6. The combination with a series of gun-barrels, of a pair of magazines for each of said barrels, a rotary loading device in the rear end of each of said magazines, mechanism for operating said devices to load a barrel alternately from said magazines, and a firing mechanism operated by the mechanism for operating the loading devices, substantially as specified.

7. The combination with a barrel, of a plunger movable in guide ways extended rearward from said barrel, a plunger-rod movable within said plunger, a firing-pin adapted to be pushed forward by said plunger, a spring for moving the said plunger-rod forward, a rotary shaft, a connection between said rotary shaft and the plunger, a sear for retaining the plunger-rod in its rearward position, the said sear being operated by the connection between the rotary shaft and the plunger, and alternately-loading devices on the barrel substantially as specified.

8. The combination, with a series of gun-barrels arranged in a horizontal plane and a magazine on each barrel, of a loading mechanism for each barrel, comprising a plunger movable in guideways extended rearward from the barrel, a firing-plunger movable within each plunger, mechanism for moving the several plungers in unison, mechanism for simultaneously releasing the several firing-plungers, and a shell-extractor, carried by each plunger, substantially as specified.

9. The combination with a gun-barrel, of a loading-plunger movable longitudinally in guideways rearward of said gun-barrel, a firing-plunger movable longitudinally within the said plunger, mechanism for operating each of said plungers, an arm having a lost-motion connection with the loading-plunger, and a shell-extractor connected with the said arm, substantially as specified.

10. The combination with a gun-barrel, of a loading-plunger movable in guideways extended rearward from said gun-barrel, a firing-plunger movable in the first-named plunger, mechanism for operating each of said plungers, an arm having a lost-motion connection with the loading-plunger, an extractor attached to said arm and comprising pivoted dogs adapted to engage with the flange of a cartridge-shell, rods to which said dogs are pivoted, and guideways extended at the sides of the gun-barrel through which said rods are movable, substantially as specified.

11. The combination with a series of gun-barrels, of a lateral deflecting-gage comprising a disk having a series of distance-indicating numbers thereon arranged to read from left to right and another series of distance-indicating figures arranged to read from right to left, a pointer movable over said disk, and means connected with said pointer for causing the lateral deflections of the gun-barrels, substantially as specified.

12. The combination, with a series of gun-barrels arranged in a horizontal plane, of a pair of magazines for each barrel, a rotary loading device in each magazine, intermeshing gear-wheels for rotating all of said loading devices, a master-gear for imparting motion to said gear-wheels, a transversely-reciprocating bar, a dog carried by said bar and engaging with the master-gear, and a cam for imparting motion to said bar to transmit rotary motion to the several gears, substantially as specified.

13. The combination, with a series of gun-barrels arranged in a horizontal plane, of a pair of magazines for each of said barrels, rotary loading devices in the rear end of each of said magazines, a gear-wheel having connection with each rotary loading device, a master-gear for transmitting motion to said gear-wheels, a transversely-movable bar, mechanism between said bar and master gear for imparting rotary motion to the master-gear, a cam for moving said bar, a door-closed opening in the breech of each barrel, and a connection between each door and said transversely-moving bar whereby all of said doors may be opened and closed simultaneously by the movement of the said bar, substantially as specified.

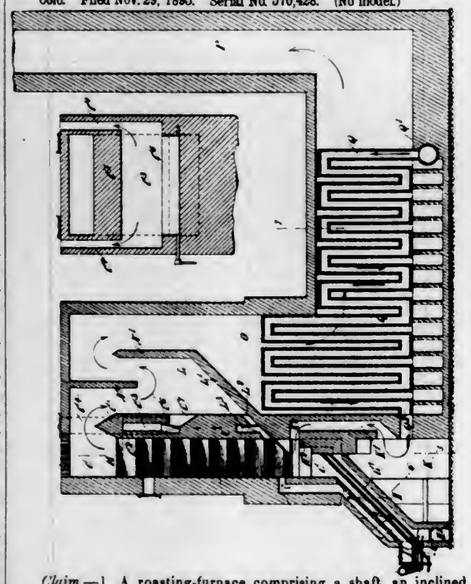
14. The combination with the supporting-axle and the stock, of a rotary pillar mounted on said stock for supporting a series of gun-barrels, an extension projected downward from said pillar, a worm-wheel loosely mounted on said extension, a worm shaft having its worm engaging the said worm-wheel, and a locking device for locking and releasing the said worm-wheel, substantially as specified.

569,900. RING ATTACHMENT. CHESTER H. WELLS, Meshoppen, Pa. Filed Aug. 19, 1896. Serial No. 603,261. (No model.)



Claim.—An improved ring attachment comprising a curved band of spring metal adapted to fit within a ring, devices for holding it in place, the body portion of the band or that part midway its ends being of less curvature than that of the ring whereby when a ring provided with the attachment is placed upon the finger the body of attachment will be bowed outward upon the curvature of the ring, the extremities of the attachment being bent normally inward out of engagement with the inner surface of the ring, to engage the finger by the expansion of the body portion of the attachment, substantially as and for the purpose described.

569,901. ROASTING-FURNACE. JAMES L. WELLS, Leadville, Colo. Filed Nov. 29, 1895. Serial No. 570,428. (No model.)



Claim.—1. A roasting-furnace comprising a shaft, an inclined hearth into which discharges said shaft, a settling-chamber connected with the upper end of said shaft and having an inclined bottom, and valved passages leading from said settling-chamber into said shaft, substantially as shown and described.

2. A roasting-furnace comprising a shaft having hollow partition-walls forming vertical flues for the passage of the ore, a hearth connected with the lower end of the said shaft below said partition-walls, a chamber in the upper end of the bridge-wall of the shaft and connected with the upper ends of the hollow walls, valved outlets leading from said chamber to the outer air, a settling-chamber connected with the upper end of said shaft, and a valved opening leading from said chamber into said settling-chamber, substantially as shown and described.

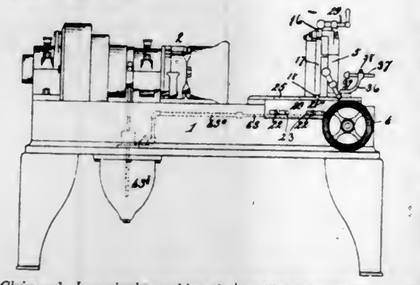
3. In a roasting-furnace, a housing, a shaft in the housing, a hearth, a settling-chamber in communication with the shaft, a series of flues arranged in the shaft, and a chamber within the housing, the said chamber being in communication with the atmosphere and with the flues and having a valved opening into the settling-chamber, substantially as described.

4. A roasting-furnace, comprising a casing having a shaft and a settling-chamber therein, the settling-chamber having a valved passage into the shaft, a series of vertically-extending flues having spaces between them and located within the shaft, a chamber with which the flues have common communication, the chamber having a valved passage into the settling-chamber and being in communication with the atmosphere, a hearth, and a fire-box, the fire-box being in communication with the flues and the hearth with the shaft, substantially as described.

5. A roasting-furnace, comprising a housing having a shaft, a hearth at the lower end of the shaft, a fire-box, a series of flues extending vertically within the shaft and having vertical passages between them, the flues being in communication with the fire-box, and a chamber within the housing, the chamber being in communication with the flues and with the atmosphere, substantially as described.

6. A roasting-furnace, comprising a housing, a shaft within the housing, a fire-box, a series of vertically-extending flues communicating with the fire-box and having vertical spaces between them, the flues having corrugated sides, and a chamber within the housing, the chamber having communication with the flues and with the atmosphere, substantially as described.

569,902. MACHINE FOR MAKING NIPPLES. WILLET C. WELLS and FRANK E. WELLS, Fostoria, Ohio. Filed Jan. 31, 1896. Serial No. 577,617. (No model.)



Claim.—1. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a rotatable cam-ring for actuating said dies, mechanism for holding said cam-ring in position to close the dies, mechanism operated by the forward movement of the carriage for releasing said cam-ring at a predetermined point, and a spring for actuating the cam-ring when the latter is released to open the dies, substantially as described.

2. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a cam-ring for actuating said dies, a spring operating to turn said cam-ring in one direction, a rod 14 pivotally connected to said cam-ring, and a pivoted lever 16 pivotally connected at one end to one end of said rod, the arrangement being such that when said rod and lever are brought into alinement the cam-ring will be turned against the action of said spring to close the dies, and when thrown out of alinement the spring will turn the cam-ring in the opposite direction and open the dies, substantially as described.

3. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a cam-ring for actuating said dies, a spring operating to turn said cam-ring in one direction, a rod 14 pivotally connected to said cam-ring, a pivoted lever 16 pivotally connected to one end of said rod and adapted when brought into alinement with the rod to hold the cam-ring turned against the action of said spring, and mechanism operated by the forward movement of the carriage for throwing said lever and rod out of alinement to permit the spring to turn the cam-ring and open the dies, substantially as described.

4. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a cam-ring for actuating said dies, a spring operating to turn said cam-ring in one direction, a rod 14 pivotally connected to said cam-ring, a pivoted lever 16 pivotally connected at one end to one end of said rod, a vertical bolt 18 engaging at its upper end the free end of the lever 16, a spring for depressing said bolt, and a face-plate 25 arranged in the path of the lower end of said bolt, whereby when the carriage is moved forward the bolt will be raised and throw the lever 16 to permit the spring to turn the cam-ring and open the dies, substantially as described.

5. In a nipple machine, the combination with a reciprocating carriage carrying radially movable dies, of a cam-ring for actuating said dies, a spring operating to turn said cam-ring in one direction, a rod 14 pivotally connected to said cam-ring, a pivoted lever 16 pivotally connected at one end to one end of said rod, a vertical bolt 18 engaging at its upper end the free end of the lever 16, a spring for depressing said bolt, and an adjustable race-plate 25 arranged in the path of the lower beveled end of said bolt, whereby when the carriage is moved forward the bolt will be raised at varying determined points and throw the lever 16 to permit the spring to turn the cam ring and open the dies, substantially as described.

6. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a cam-ring for actuating said dies, a spring operating to turn said cam-ring in one direction, a rod 14 pivotally connected to said cam-ring, a pivoted lever 16 pivotally connected at one end to one end of said rod, a vertically-movable bolt 18 having a beveled lower end and at its upper end engaging the free end of the lever 16, a spring for depressing said bolt, a plate 20 adjustably secured to the bed of the machine and provided with an inclined notch 21 adapted to be engaged by said bolt to limit the rearward movement of the carriage, and a face-plate 25 provided with an inclined end and adjustably secured to the plate 20, said face-plate being arranged in the path of the beveled end of the bolt and operated during the forward movement of the carriage to raise the bolt and throw the lever 14 to permit the spring to turn the cam-ring and open the dies, substantially as described.

7. In a nipple-machine, the combination with a reciprocating carriage carrying radially-movable dies, of a cam-ring for actuating said dies, a fixed lug 11 carried by said cam-ring, a spring 12 bearing against said lug and operating to turn said ring in one direction, a sleeve 13 journaled in said lug, a threaded rod arranged in said sleeve and adjustably held therein by nuts 15, a pivoted lever 16 pivotally connected at one end to one end of said rod and adapted when brought into alinement with the rod to hold the cam-ring turned against the action of said spring, and mechanism operated by the forward movement of the carriage for throwing said lever and rod out of alinement to permit the spring to turn the cam-ring and open the dies, substantially as described.

8. In a nipple-machine, the combination with a reciprocating carriage carrying screw-threading dies, of a vertically-movable cutter-head 26 arranged in bearings in the carriage-frame, means for moving said cutter-head in its bearings, and a knife 30 seated in a recess in said cutter-head and held therein by a key 31, said knife and key being interchangeable, for the purpose specified.

9. In a nipple-machine, the combination with a reciprocating carriage carrying screw-threading dies, of a vertically-movable cutter-head arranged in bearings in the carriage frame, a knife carried by said cutter-head, oppositely-disposed vise-jaws 33 traveling in ways arranged transversely to the line of the travel of the carriage and adapted to center the pipe to be cut, and a right and left screw 34 engaging threaded sockets 33 formed on said jaws and provided with a handle, substantially as described.

10. In a nipple-machine, the combination with a reciprocating carriage carrying screw-threading dies and pipe-cutting mechanism, of an oil-supply pipe, ducts leading from said pipe to the said dies, and means for alternately opening one of said ducts and simultaneously closing the other, substantially as described.

11. In a nipple-machine, the combination with a reciprocating carriage carrying screw-threading dies and pipe-cutting mechanism, of a duct 41 formed in the die-head and connected with an oil supply, a well in communication with said duct, ducts 45 and 46 communicating at one end with said well and leading respectively to the threading-dies and pipe-cutter, a reciprocating plunger arranged in said well and having an elongated opening registering with the duct 41, and provided with ports 49 and 50 adapted to be alternately brought in coincidence with the ducts 45 and 46 as said plunger is moved up or down, and a lever 51 for raising and lowering the plunger, substantially as described.

12. In a nipple-machine, the combination with a reciprocating carriage carrying screw-threading dies and pipe-cutting mechanism, of a duct 41 formed in the die-head and connected with an oil supply, a well in communication with said duct, ducts 45 and 46 communicating at one end with said well and leading respectively to the threading-dies and pipe-cutter, a reciprocating plunger arranged in said well and having an elongated opening registering with the duct 41 and provided with ports 49 and 50 adapted to be alternately brought in coincidence with the ducts 45 and 46 as said plunger is moved up or down, a lever for raising and lowering the plunger to bring either of said ducts and ports into coincidence, and means for holding said lever in an intermediate position to entirely shut off the supply of oil, substantially as described.

569,903. FINGER-NAIL CLIPPER. JULIUS D. C. WENGER, Ansonia, Conn., assignor to Lewis I. Cook and Chapel S. Carter, same place. Filed Mar. 21, 1896. Serial No. 584,242. (No model.)

Claim.—1. The combination of the rigid member, the spring member connected therewith by one end, coacting cutters on the disconnected ends of said members, and the operating-lever pivoted on the rigid member near the cutters and having a short end extended through a perforation in the spring member, substantially as described and for the purpose specified.

2. The combination of the rigid member longitudinally slotted, the spring member connected therewith by one end, coacting cutters at the disconnected ends of said members, the operating-lever pivoted

to said rigid member, and means for confining the lever when turned down into the slot of the rigid member, substantially as described and for the purpose specified.

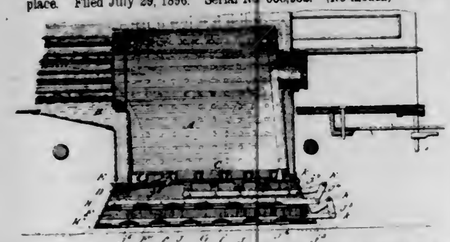


569,904. GATE-LATCH. CHARLES WHITEMAN, Rugby, England. Filed July 27, 1896. Serial No. 600,670. (No model.) Patented in England June 1, 1894, No. 10,622.



Claim.—A gate-fastener consisting of a hinged lower frame with a fastening-loop pivoted to its upper part which said lower frame is counterpoised and caused to project into the path of a closing gate by the weight of the said fastening-loop, or upper frame, substantially as described and set forth.

569,905. LOCOMOTIVE ASH-PAN. JAMES B WOOD, Gate City, Va., assignor of one-half to George A. Ewing and C. M. Carter, same place. Filed July 29, 1896. Serial No. 600,932. (No model.)



Claim.—1. An ash-pan for locomotive fire-boxes formed with an upper and lower compartment, the lower compartment having a slotted bottom, a slotted division-plate dividing such compartments, and independently-movable cut-off plates held to slide over the slotted division and bottom members and means for operating such slides from the engine-cab substantially as shown and described.

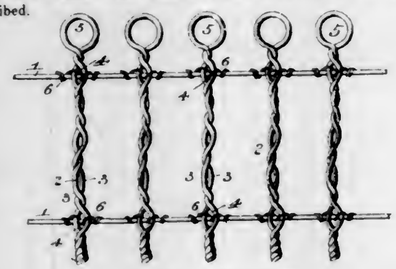
2. The combination with the fire-box having an ash-pan portion having hinged dampers one of which is slotted, said pan having a slotted bottom member and a slotted horizontal division-plate, of the slotted slides J J′ having operating-arms projected through the slotted damper, and crank and lever mechanism connected to such arms substantially in the manner shown and for the purposes described.

3. In an ash-pan of the kind described, the combination of the pan-casing having a slotted bottom and a horizontal slotted division-plate, of the cut-offs J J′ held to slide independently over the slotted division bottom members, said slides having their solid or cut-off portions made curved or dished shape and means for operating the said slides all arranged substantially as shown and described.

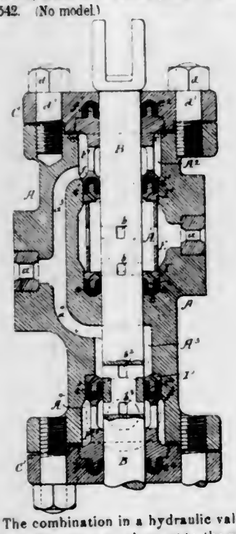
4. The combination with the ash-pan casing D, having a slotted bottom F′ and a slotted division-plate G, the rock-shafts K K′ having cranks j^4 j^3 and k^3 k^4 of the slotted slides J J′ movable over the bottom F and plate G, said plates having arms j^2 j^2 connected to the cranks j^4 j^3, the rock-rods L l′ having cranks l^3 l^4 and the pitmen l l' connecting the cranks l^4 l^2 with cranks k^2 k^4 all being arranged substantially as shown and for the purposes described.

569,906. WIRE FENCE. LEONARD WYSSINGER, Leitersburg, Md., assignor of one-half to Charles Clayton Zeigler, same place. Filed Apr. 24, 1896. Serial No. 588,949. (No model.)

Claim.—In a wire fence, the combination with the plain single horizontal wires and the double stay consisting of a single piece of wire bent over at the center forming a loop and two arms and said arms twisted together in opposite directions and formed with a number of large loops registering with the fence-wire and with smaller loops therebetween to receive a twisting-tool, of the fasteners consisting of a single piece of wire bent at its center forming two parallel arms which are extended through said large loops above and below the horizontal wires so as to embrace the same and said arms then bent outwardly in opposite directions over the wires of the stay and the ends twisted around the horizontal wires, substantially as described.



569,907. HYDRAULIC VALVE. JOHAN A. ZINN, Philadelphia, Pa., assignor to Bement, Miles & Co., same place. Filed Sept. 24, 1895. Serial No. 563,542. (No model.)



Claim.—1. The combination in a hydraulic valve, of the casing having supply and exhaust ports and a port to the machine, and having chambers therein, the chamber A′ communicating with the supply-port, the chambers A^3 and A^5 communicating with the port to the machine, and the chamber A^4 communicating with the exhaust-port, packing between the chambers, a piston-valve having two sets of ports, one set forming communication between the chambers A′ and A^3, and the other set forming communication between the chambers A^3 and A^4, substantially as specified.

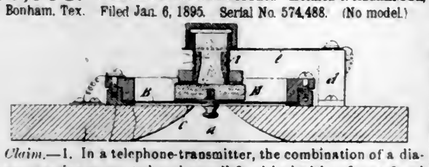
2. The combination in a hydraulic valve, of the casing having chambers A′, A^3, A^5 and A^4 formed therein, caps adapted to each end of the casing, packing-rings in the caps, cages, follower rings and packing between the chambers, with a piston having ports therein, substantially as described.

3. The combination in a hydraulic valve, of the casing having the chamber A′ communicating with a supply-port, chambers A^3 and A^5 communicating with a port to the machine and an exhaust-chamber A^4, packing-rings e, e' and e^3, tongued followers i, i', i^3 adapted to the packing-rings, cages F, F″, and caps, substantially as described.

4. The combination of the casing A having the chambers A′, A^3, A^5 and A^4, a packing-ring e adapted to the seat in the casing, a follower i mounted on the ring, a sleeve E and a follower i' mounted on the sleeve, a packing e', a cage F adapted to receive the packing e' and having a tongue adapted to packing e^3, a cap C to which the cage is adapted, a ring l^2 adapted to the opposite end of the casing, a packing-ring e^3 adapted to said ring, a cage F″, packing e^4, a cap C′, with a piston-valve B having two sets of ports arranged substantially as described.

5. The combination in a hydraulic valve, of the casing, the piston-valve, ports therein, a cap for the casing, a cage screwed into the said cap, a packing-ring confined in the cap by the cage, said cage also confining a packing in the casing, substantially as described.

569,908. TELEPHONE-TRANSMITTER. HORACE C. ALEXANDER, Bonham, Tex. Filed Jan. 6, 1895. Serial No. 574,488. (No model.)

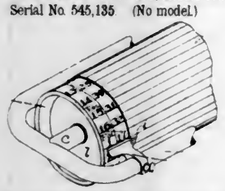


Claim.—1. In a telephone-transmitter, the combination of a diaphragm, a spring-supported carbon-cell furnished with a flange faced with soft material, and a filling of granulated electrode placed in the carbon-cell, substantially as specified.

2. In a telephone-transmitter, the combination of a diaphragm provided with a carbon button, a spring-supported carbon-cell furnished with a flange faced with soft material, and a filling of granulated carbon placed in the carbon-cell, substantially as specified.

3. The combination with a vibratory carbon button, of a flaring spring supported carbon-cell having a filling of granulated carbon, substantially as specified.

569,909. LINE-NUMBER AND POSITION ATTACHMENT FOR TYPE-WRITERS. CHARLES W. ATWOOD, Middle Granville, N. Y. Filed Apr. 10, 1895. Serial No. 545,135. (No model.)

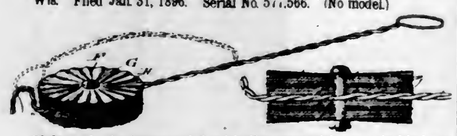


Claim.—1. The combination with a rotatable type-writer platen, of a device on one end thereof and rotatable therewith and numbered on its periphery to indicate the consecutive numbers and positions of type-written lines from the first inclusive to the bottom of the sheet and through more than one complete rotation of said platen, substantially as described.

2. The combination with a rotatable type-writer platen, of a wheel on one end thereof and rotatable therewith and numbered on its periphery to provide for indicating the consecutive numbers and positions of type-written lines from the first inclusive to the bottom of the sheet and through more than one complete rotation of said platen, and a guide position plate attached to the platen-carriage and adapted to indicate the consecutive lines on said wheel as the platen is rotated, substantially as described.

3. The combination with a rotatable type-writer platen, of a wheel on one end thereof and rotatable therewith and numbered on its periphery to provide for indicating the consecutive numbers and positions of type-written lines throughout the whole page, and a guide position plate removably attached to the platen-carriage and consisting of a collar embracing the fore arm of the carriage, a rearwardly-projecting plate, and a position-pointer, substantially as described.

569,910. FIRE-KINDLER. WILLIAM J. BENNETT, Fond du Lac, Wis. Filed Jan. 31, 1896. Serial No. 577,566. (No model.)



Claim.—1. An improved fire-kindler, comprising a suitable handle, and an absorbent body arranged thereon, said absorbent body consisting of a series of asbestos disks, upper and lower metallic disks, and intermediate metallic disks of foraminous construction, substantially as shown and described.

2. An improved fire-kindler, comprising a suitable handle, having a hook at one end, and a loop at the other, of an absorbent body arranged upon said handle, said absorbent body consisting of a series of asbestos disks, upper and lower metallic disks radially corrugated or fluted, and intermediate foraminous metallic disks arranged between the asbestos disks, all of said parts being held together by means of a suitable binding screw and nut, substantially as shown and described.

569,911. ELECTRICAL MUFFLE OR HEATER. LEVITT E. CUSTER, Dayton, Ohio. Filed May 31, 1895. Serial No. 551,034. (No model.)

Claim.—1. The herein-described muffle consisting of the two chambered parts A, B, the resistances therein the insulating-base, the contact-springs, the binding-posts, and suitable means substantially as described whereby the current may be caused to traverse the resistances in series or multiple, substantially as described.



2. The herein-described muffle consisting of the parts A, B, each having an internal lining of refractory material, a chamber or cavity, and a resistance-coil substantially covering the entire surface of the cavity; the insulating-base, the contact-springs the binding-posts and electrical connections between said posts and suitable means whereby an electrical circuit may be established through said resistances, substantially as described.

3. An electrical muffle having an interior chamber, electrical heating-wires surrounding said chamber, and opposite openings through the walls of the muffle for the entrance and exit of light, said openings being at angles to each other, and all adapted for the purpose and constructed substantially as described.

4. An electrical muffle having an interior chamber, whose top, bottom, and side walls are substantially covered with resistance-wires, and having substantially opposite openings in its walls respectively for the admission of a ray of light, and for the exit of it when reflected, substantially as and for the purpose described.

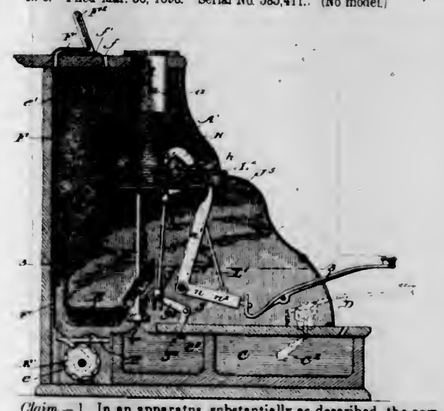
5. The combination of a muffle having a plurality of resistances around its heating-chamber, and sight-openings substantially as described; with a switch and electrical connections whereby said resistances may be connected in series or multiple substantially as described.

6. A muffle having a lower chambered part mounted on an insulating-base and provided with a resistance-coil; an upper part also chambered and provided with a resistance-coil; suitable means substantially as described, whereby a circuit may be established through said resistances in series or multiple at the will of the operator, and the two substantially opposite sight-openings communicating with the interior chamber of the muffle, for the purpose and substantially as described.

7. The combination of the muffle having upper and lower resistances, the plates F, G, connected to said resistances, substantially as described, the binding-posts, and the switch H, carrying contact button I, and flexible connection between said button and one binding-post, all substantially as and for the purpose set forth.

8. The combination with the two-part muffle, the resistance in each part, the insulating-base, the springs E, E′ electrically connected with the upper resistance; the plates F, connected to spring E, the plate G connected to post E′ and the lower resistance, the binding-posts d, d', the connections between the lower resistance and post d, the switch H connected with post d', and the button I on switch H connected to post d', all substantially as and for the purpose set forth.

569,912. MONEY-CHANGER. GEORGE T. FARNELL, Bayborough, N. C. Filed Mar. 30, 1896. Serial No. 585,411. (No model.)



Claim.—1. In an apparatus, substantially as described, the combination of the plurality of slides, independently-operating devices for operating the said slides, and a detent arranged for operation by the

operating devices of one slide and adapted to lock the succeeding slide from accidental movement as the preceding slide is positively operated substantially as set forth.

2. In an apparatus substantially as described, the combination of a series of coin discharging slides, independently-operating devices for operating the said slides, and a detent movable by the operating devices of one slide into locking engagement with a succeeding slide whereby to lock such slides from movement substantially as shown and described.

3. In an apparatus substantially as described, the combination of the coin-holder, the three coin-discharging slides arranged in series below the same, separate mechanism for operating the first slide, the first two slides, and all three slides, and detent devices by which the second and third slides are locked from movement when respectively only the operating devices of the first, and first and second slides are operated, the detents being connected with their respective operating devices, substantially as shown and described.

4. In an apparatus substantially as described, the combination of the coin-holder, the three slides below the same, the upper slide being provided in its opposite edges with stop-notches for the two detents, and with a depending tongue or flange overlapping both the second and first slides, the second slide having a stop-notch in one edge and an open-ended notch in its other edge and having a tongue or flange overlapping the first slide, such first slide being provided with open-ended notches in both edges, the detents operating in said notches, and means for operating said detents substantially as set forth.

5. In an apparatus substantially as described, the combination of the drawer, the coin-holder, the discharging slide or slides, an indicator by which to lock the slide or slides from operation when the coins have fallen below the level thereof, the drawer, and means by which the closing of the drawer may adjust the indicator clear of the coin-holder to permit the filling of such holder substantially as set forth.

6. An apparatus substantially as described comprising a coin-holder, a plurality of discharging-slides each slide after the first being provided with a projecting portion overlapping the preceding slide and the devices independent of said slides for operating the same, such devices being arranged to engage the projecting portions of their respective slides whereby said portions form bearings for the operating devices and constitute means for securing the movements of the preceding slides substantially as set forth.

7. In an apparatus substantially as described the combination of a series of overlying coin-discharging slides means whereby they may be moved a detent means whereby the detent may be moved at right angles to the plane of said slides to prevent the operation of any slide from accidentally operating any succeeding slide the latter having a part to abut said detent substantially as set forth.

8. The combination in an apparatus substantially as described, of the overlying slides having notched edges the detents operating in said notches and devices whereby the said slides and detents may be operated substantially as shown and described.

9. In an apparatus substantially as described the combination of the slides having notched edges, the detents operating in said notches and movable at right angles to the planes of the slides, and independently-operating devices for operating the said slides said devices being also connected with and operating the detents substantially as shown and described.

10. In an apparatus substantially as described the combination of the slides, the bell-crank levers having arms engaging said slides and the detents connected with the other arms of said levers and movable into engagement with the slides substantially as shown and described.

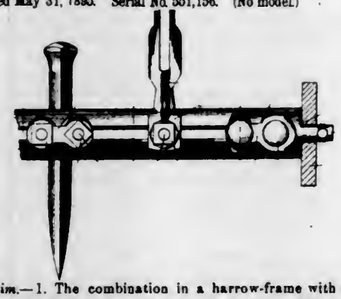
11. An apparatus substantially as described comprising a series of coin-holders, coin-discharging slides controlling said holders, a lock-bar movable into and out of position to hold the slides of the several holders from movement, the drawer and means whereby the movements of the drawer operate the locking-bar, substantially as set forth.

12. In an apparatus substantially as described, the combination of a series of coin-holders, coin-discharging slides controlling said holders, a pivoted lock-bar swinging into and out of position to hold the slides of the several holders from movement, a sliding rod connected with said lock-bar and the drawer having a cam-like portion engaging said sliding rod substantially as shown and described.

13. In an apparatus substantially as described, the combination of the coin-holder, devices for discharging the coins, the drawer, an indicator movable upon the coins and arranged to lock the slide or slides from movement, and intermediate devices between said indicator and drawer whereby the latter in one position may free the indicator substantially as shown and described.

14. In an apparatus substantially as described, the combination of the coin-holder, devices for discharging the coins, the drawer, an indicator pivoted between its ends and having one arm movable into the holder and arranged to rest upon the coins and to lock the slide or slides from movement when the coins have fallen below the level thereof, a rod connected with the other arm of said lever and devices between said rod and the drawer whereby the movements of the latter operate the indicator substantially as shown and described.

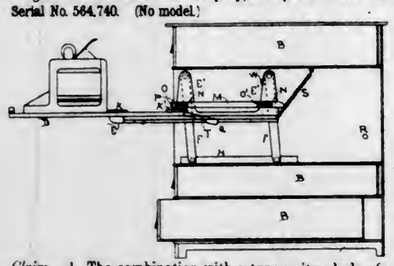
569,913. HARROW-FRAME. HENRY L. FERRIS, Harvard, Ill. Filed May 31, 1895. Serial No. 551,156. (No model.)



Claim.—1. The combination in a harrow-frame with a pair of angle-irons, of a plate clamped thereto by bolts passing between the angle-irons and having beveled portions lying against the faces of the angle-irons and preventing their separation, said plate being provided with an arm substantially at right angles thereto and bearing a cylindrical lug adapted to serve as the pivot for the bars; substantially as described.

2. In a harrow-frame, the combination with a pair of angle-irons arranged one above the other and with their angles extending away from each other, of a square tooth, a pair of blocks, one on each side of said angle-irons and having beveled portions conforming to and lying against the outer faces of the angle-irons, one of said blocks being provided with a vertical groove adapted to receive one of the corners of the tooth, and a staple partially encircling said tooth, passing between the angle-irons and through the second block and clamping all of the parts tightly together, whereby the tooth is wedged into one of the blocks and the angle-irons are wedged tightly toward each other and against the staple; substantially as described.

569,914. TYPE-WRITER DESK. FRANK FIELD, Muskegon, Mich., assignor to the E. H. Stafford Company, same place. Filed Oct. 5, 1895. Serial No. 564,740. (No model.)



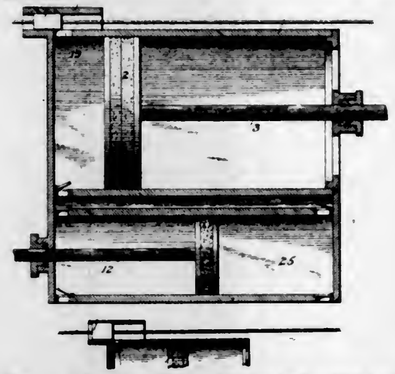
Claim.—1. The combination with a type-writer desk, of a type-writer support E having side pieces provided with uprights E', swinging supports F pivoted at their upper extremities to the upper ends of said uprights and at their lower extremities to the sides of the desk, a horizontally sliding table D moving on the said type-writer support, and a spring connected with the rear end of the type-writer support and with the desk for lifting said support when it is moved outward, substantially as described.

2. The combination with a type-writer desk or table, of a type-writer support sustained by swinging arms, said arms adapted to turn on their lower pivots for the purpose of raising and lowering the said support, ways in the type-writer support, a horizontally-moving table adapted to move in said ways and also to support the type-writer, a spring adapted to assist in raising the type-writer support as it is drawn from the case, and an automatic locking device adapted to prevent the table from sliding in the ways as the type-writer is moved into the case until said locking device has been removed from locking position by the lowering of the type-writer support, substantially as described.

3. In a type-writer desk the combination of a type-writer support, pivoted arms upon which the support is raised and lowered, a horizontal moving table adapted to support the type-writer, ways in the type-writer support in which the table is adapted to move, and a locking mechanism adapted to prevent the type-writer support from rising until the table is drawn out a sufficient distance to clear the

desk and moving the same from the desk to a position to be operated upon, substantially as described.

569,915. AIR-BRAKE MECHANISM FOR STREET-CARS. GEORGE A. GLASS, Freeburg, Pa., assignor of two-thirds to P. J. Bickle and D. G. Smith, same place. Filed Apr 30, 1896. Serial No. 589,694. (No model.)

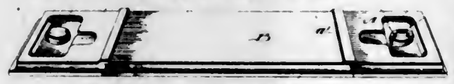


Claim.—1. Air-brake mechanism having a brake-cylinder, twin pumps in communication with the brake cylinder at one end, means for continuously operating the pump-pistons during the movement of the vehicle, and valve mechanism controlling an exhaust-port in the brake-cylinder, and including an open-ended guide or casing covering said port, and a slide-valve operating in the guide or casing, substantially as specified.

2. Air-brake mechanism having brake and pump cylinders formed in a common casting with an intermediate cored passage in communication by valved ports with said cylinders, pistons mounted in the pump cylinders and adapted to be continuously operated during the movement of the vehicle, a brake-piston, and a valve controlling an outlet-port in communication with the brake-cylinder, substantially as specified.

3. Air-brake mechanism having parallel brake and pump cylinders connected by an interposed parallel conductor, said conductor having valved communication with the cylinders, pistons mounted in said cylinders, the pump-cylinder pistons being adapted to be continuously operated during the movement of the vehicle, and a controlling-valve for an exhaust-port in communication with the brake-cylinder, said valve being mounted for movement parallel with the axis of the cylinder and having a stem connected to a hand-lever, substantially as specified.

569,916. RADIATOR-REST. JAMES F. GORMAN, Wilkes-Barré, Pa. Filed Dec. 28, 1895. Serial No. 573,651. (No model.)



Claim.—1. As an improved article of manufacture, a casting comprising in a single element a combined rest for a radiator, a drip-cup and a bushing; substantially as described.

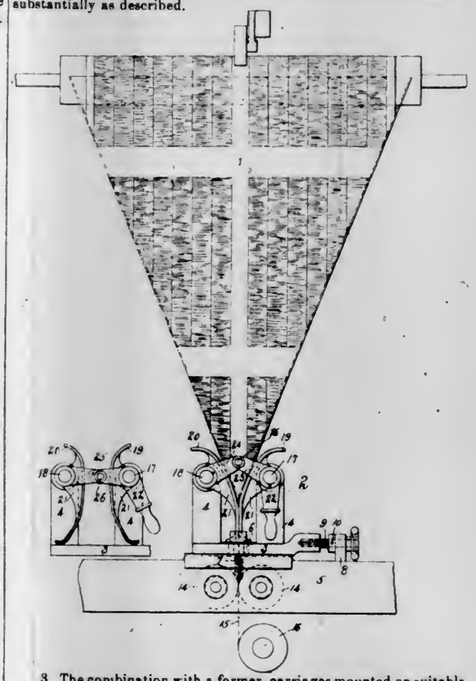
2. As an improved article of manufacture, a casting comprising in a single piece a body portion having a depression forming a drip-cup, and a horizontal portion extended upon the same and forming a support for the legs of a radiator; substantially as described.

3. As an improved article of manufacture, the end piece described comprising in a single piece a body portion with a depression forming a drip-cup, and a horizontal portion extending from the same and forming a support for the legs of the radiator and having a flange, substantially as and for the purpose specified.

569,917. FOLDING-MACHINE. SAMUEL G. GOSS, Chicago, Ill., assignor to the Goss Printing Press Company, same place. Filed May 7, 1895. Serial No. 548,451. (No model.)

Claim.—1. The combination with a frame, and a former, of carriages mounted on said frame and laterally adjustable thereon independently of each other, means for independently adjusting said carriages laterally relatively to the discharge-point of the former, and fold-laying devices mounted in said carriages, substantially as described and for the purpose specified.

2. The combination with a former, of fold-laying shields journaled on suitable supports one on each side of said former, near its apex, springs operating normally to yieldingly hold said shields in contact with one another at their lower opposing surfaces, and mechanism adapted to draw a web over said former and between said shields, substantially as described.



3. The combination with a former, carriages mounted on suitable framework below said former, and means for adjusting the position of said carriages laterally, of curved fold-laying plates journaled on said carriages one on each side of said former near its apex, springs operating normally to yieldingly hold said plates in contact with one another at their lower opposing surfaces, and mechanism adapted to draw a web over said former and between said plates, substantially as described.

4. The combination with a V-shaped former, of curved fold-laying plates located one on each side of said former near its apex, said plates being vertically slotted upon a line interior to the apex of said former, and having the portions exterior to said slots bent away from the rest of the surfaces of said plates and toward each other, and mechanism adapted to draw a web over said former and between said plates, substantially as described.

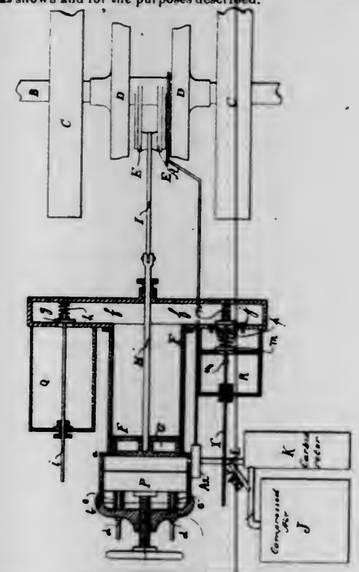
5. The combination with a V-shaped former, of curved fold-laying plates located one on each side of said former near its apex, said plates being vertically slotted upon a line interior to the apex of said former, and having the portions exterior to said slots bent away from the rest of the surfaces of said plates and toward each other, means for adjusting said plates, and mechanism adapted to draw a web over said former and between said plates, substantially as described.

6. The combination with a V-shaped former, carriages mounted upon suitable supports below said former, and means for adjusting the position of said carriages laterally, of shafts journaled in said carriages, one on each side of said former and near its apex, a hand-lever keyed upon one of said shafts, arms connecting said shafts, fold-laying shields keyed upon said shafts, springs bearing upon said shafts and adapted normally to yieldingly hold said shields in contact along their lower opposing surfaces, and mechanism adapted to draw a web over said former and between said shields, substantially as described.

569,918. GAS-ENGINE. HENRY C. HART, Detroit, Mich. Filed May 31, 1894. Serial No. 513,061. (No model.)

Claim.—1. In a gas-engine in which the work of the explosion is stored in an air-cushion, the combination of a chamber for containing the air constituting said cushion, one or more auxiliary air-chambers, and one or more valves adapted to close the passage between said chambers, substantially as shown and described.

2. In a gas-engine in which the work of the explosion is stored up in an air-cushion, an auxiliary air-chamber R, communicating with the main chamber, the chamber R, being divided into two compartments, valves *j m* adapted to close the passages between said compartments and the main chamber a valve-stem *r*, secured to the valve *j*, said valve-stem passing through, and adapted to slide through an aperture in the valve *m*, and a lug *q*, upon said valve-stem, substantially as shown and for the purposes described.



569,919. GARMENT-SUPPORTER. MARY E. HERRON, Oskaloosa, Iowa. Filed June 29, 1896. Serial No. 597,420. (No model.)



Claim.—1. In a garment-supporter, the combination with the plate formed with opposite lugs near one end and a lug at the opposite end, and on the other side formed with a series of hooks, all made integral, of the fastener consisting of the spring-wire, bent at the center, to form coils secured to the plate, and two parallel arms, one of which is pointed, adapted to engage with said opposite lugs; substantially as described.

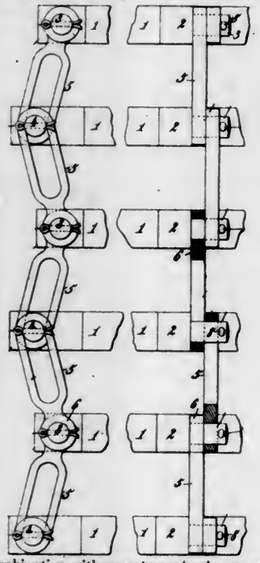
2. In a garment-supporter, the combination with the sheet-metal plate, formed at one end with two opposite lugs and at the other end with stops, and an intermediate lug, and on the opposite side formed with oppositely-extending hooks, of the removable and replaceable fastener consisting of a piece of spring-wire, bent at its center to form coils which engage with said intermediate lug, and forming two pointed pins engaging with the opposite lugs; substantially as described

569,920. LINK SYSTEM FOR OIL-PRESS BOXES. JOSEPH H. HUBBELL, Dayton, Ohio. Filed June 3, 1896. Serial No. 594,167. (No model.)

Claim.—1. The combination with the press-boxes of an oil-press, having pivot-pins at their ends, of the longitudinally-slotted pairs of links, each pair having one end mounted beside one another on a single pivot-pin of a box, the slotted other ends of each pair of links lying one beside the other on the pivot-pins of other boxes, substantially as described.

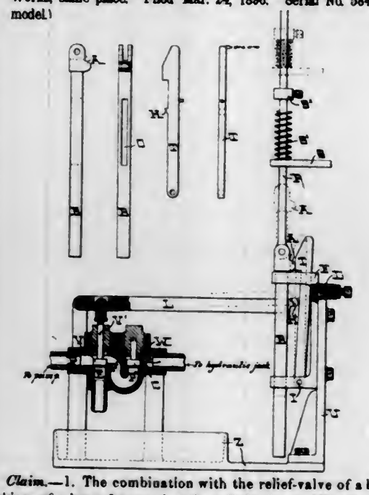
2. The combination with press-boxes having pivot-pins, of eyed and longitudinally-slotted links grouped in pairs at one end of the boxes, the two links of one pair being pivoted to one box and having slotted ends slidably engaged with the press box above and the press-box below the box to which said links are pivoted, each pair of links being mounted at one end side by side on a single pivot of a box and at the other end side by side on the pivots of other boxes, substantially as and for the purposes described.

3. The combination with press-boxes having alternating pins arranged at one end in two vertical rows, of links grouped in pairs and each pair pivoted at one end to one press-box and having longitudinally-slotted ends which engage other boxes, substantially as described.



4. The combination with press-boxes having at one end alternating pins, of eyed and longitudinally-slotted links forming a continuous link-chain connection from the top to the bottom box, one link extending from the pivot-pin of one box to the pivot-pin of another box on which the slotted end of another link is mounted, substantially as and for the purpose described.

569,921. HYDRAULIC RELIEF-VALVE MECHANISM. JOSEPH H. HUBBELL, Dayton, Ohio, assignor to the Buckeye Iron and Brass Works, same place. Filed Mar. 24, 1896. Serial No. 584,636. (No model.)



Claim.—1. The combination with the relief-valve of a hydraulic machine, of a lever for opening the relief-valve, a lifting-bar for lifting the valve-opening lever, a traveling finger, a device for holding the valve-opening lever raised, a spring placed under tension by the up motion of the traveling finger until the spring-pressure overcomes the fluid-pressure on the relief-valve, and means for releasing the valve-holding device when the lifting-bar descends, substantially as described.

2. The combination in a relief-valve mechanism for a hydraulic machine, of a relief-valve casing having an escape-outlet and pipe connections to connect with an accumulator or pump and the cylinder of the hydraulic machine, a relief-valve V controlling the escape-outlet,

a lever L acting on the relief-valve, a vertically-movable lifting-bar B, a latch-bar T, a traveling finger S, a spring S', means for causing the latch-bar to move into engagement with the lever when the latter is raised by the lifting-bar, and means for disengaging the latch-bar from said lever as the traveling finger and the lifting-bar descend, substantially as described.

3. The combination with a pressure-fluid relief-valve, and a valve-operating lever, of a lifting-bar for moving the lever to unseat the valve, a latch-bar or trigger for engaging the lever to hold the relief-valve unseated, means for moving the lifting-bar, and a trip device actuated by the lifting-bar to disengage the latch-bar or trigger from the valve-operating lever, substantially as and for the purposes described.

4. The combination with a pressure-fluid relief-valve, of a valve-operating lever, a lifting-bar for moving the lever to unseat the valve, means for moving the lifting-bar in one direction to unseat the valve, means for moving the lifting-bar in the opposite direction, a latch-bar or trigger for engaging the lever to hold the valve unseated, and a trip device operated by the lifting-bar to disengage the latch-bar or trigger from the valve-operating lever, substantially as and for the purposes described.

5. The combination with a pressure-fluid relief-valve, of a valve-operating lever for unseating the relief-valve, a lifting-bar for moving the lever, a latch-bar or trigger for engaging the lever to hold the valve unseated, a traveling arm or finger, a yielding device acted on by the traveling arm or finger to move the lifting-bar in one direction, and a trip-head actuated by the lifting-bar to disengage the latch-bar or trigger from the valve-operating lever, substantially as and for the purposes described.

6. The combination with a pressure-fluid relief-valve, of a valve-operating lever for unseating the relief-valve, a lifting-bar for raising the valve-operating lever, a rod connected with the lifting-bar and provided with a collar, a traveling arm or finger, a spring interposed between the arm or finger and the collar, a latch-bar or trigger for engaging the valve-operating lever to hold the valve unseated, and a trip device operated by the lifting-bar to disengage the latch-bar or trigger from said lever, substantially as and for the purposes described.

7. The combination with a pressure-fluid relief-valve, of a valve-operating lever for unseating the relief-valve, a lifting-bar for raising the lever to unseat the valve, a rod having a collar, a traveling arm or finger, a spring interposed between the traveling arm or finger and the collar, a rocking latch-bar or trigger for supporting the lever to hold the valve unseated, and a trip-head connected with the lifting-bar for operating the latch-bar or trigger to release the valve-operating lever, substantially as and for the purposes described.

8. The combination with a pressure-fluid relief-valve, of a lever for unseating said valve, a lifting-bar having a trip-head, a rod connected with the lifting-bar and provided with a collar, an arm or finger, a spring interposed between the arm or finger and the collar, and a pivoted spring-pressed latch-bar or trigger having means to engage and support the valve-operating lever to hold the valve unseated, substantially as and for the purposes described.

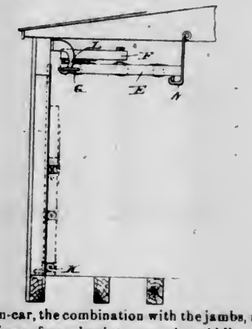
569,922. BED-PAN. CAROLINE L. HUTTON, St. Louis, Mo. Filed Ap. 8, 1896. Serial No. 586,642. (No model.)



Claim.—A bed-pan cushion, comprising the sack 5; which sack is composed of elastic material and is designed to inclose the bed-pan and has the slit 7 under the rear end of said bed-pan and the aperture 8 coinciding with the opening in said bed-pan; the pocket 11 formed integral with the upper side of said sack 5 and encircling the aperture 8, the valve 12 in the rear side of said pocket for inflating and deflating said pocket, the ring 9 formed integral with the sack 5 and engaging the bead around the opening in said bed-pan, the straps 13 and 14 attached to the rear edge of said sack 5 and passing downwardly upon opposite sides of the neck of said bed-pan and crossing each other below said neck, and the buttons 15 and 16 attached to said sack 5 upon opposite sides of the slit 7 to be engaged by the free ends of said straps, substantially as specified.

569,923. GRAIN-CAR DOOR. WILLIAM J. JOHNSTON, Port Huron, Mich. Filed Nov. 1, 1895. Serial No. 567,643. (No model.)

Claim.—1. In a grain-car a shutter having a single metal plate on its end bent so as to cover the inner face of the ends of the shutter-timbers and bind them together, and to project into a slotway in the door-jamb, and bent to one side within such slot to hold the shutter to the jamb, all substantially as set forth.



2. In a grain-car, the combination with the jambs, metallic slotted guides on their inner faces, having near the middle and at the top, cut-away portions, of doors having a flange at the edge entering said slot, and hooks on this flange within the slot, bails on the door, and hooks at the top with which said bails are adapted to engage, the flange-hooks, when the door is suspended, being opposite the cut-away portions.

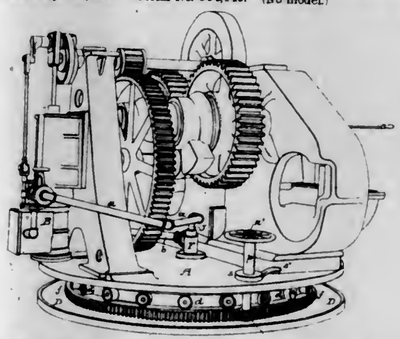
3. In a grain-car, the combination with the jambs, metallic slotted guides on their inner faces, a door having outwardly-projecting flanges on its edges, with means for preventing detachment except at its upper point, a hinged section at the top of the door, corresponding flanges on this section adapted to enter the slotted guides, and bolts on the door adapted to enter apertures in the jambs.

4. In a grain-car the combination of a shutter-section having ears at the top and bottom bent to the opposite sides, with door-jambs having metal guards with a slotway between arranged to engage with such ears to hold the shutter in place while free to run up and down and having a space cut out on one side of such slotway at a point arranged so the ear at the bottom can be drawn out inward from the slot to open the door, while the ear at the top of the shutter projecting to the opposite side will pass such point without liability to escape from the slot, substantially as set forth.

5. The combination with the door-jambs, a vertical slotted guide therein, a hooked flange on the end of the door engaging the slot, and friction-rollers for the door on that portion of the jamb which is within and hidden or protected by the flange, for the purpose specified.

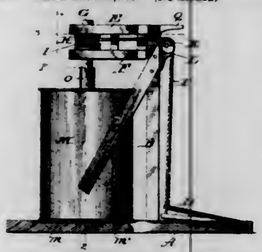
6. The combination with the door-jambs having guideways of a door, a roller-bearing, and a guard for said roller carried by the doors to keep them free from the grain at all points of movement.

569,924. MOTIVE-FLUID SUPPLY AND DISCHARGE DEVICE FOR ROTARY POWER-DRIVEN MACHINES. HENRY C. JONES, Wilmington, Del., assignor to the Hilles & Jones Company, same place. Filed Sept. 30, 1895. Serial No. 564,149. (No model.)



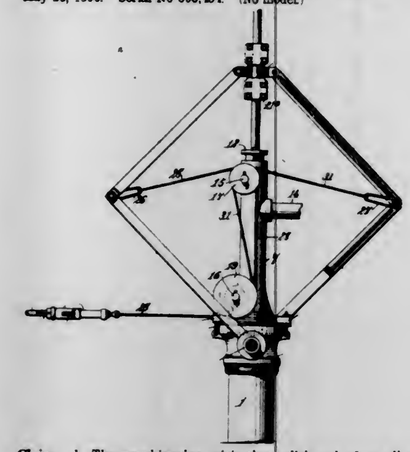
Claim.—The combination of a rotating power-driven machine having the motor located on the rotating element of the machine, with axially-located motive-fluid supply and discharge tubes, one inside of the other, said tubes being secured together at each end and the outer tube passing through the rotating element of the machine and through a fixed casing, and having ports within said casing, stuffing-boxes for said tube at opposite sides of the casing, a fixed fluid-pipe communicating with the interior of the casing, and a second fixed fluid pipe having a swiveled connection with the projecting end of the outer tube, substantially as specified.

569,925. CHURN. WILLIAM R. KRAMER, Coldwater, Mich. Filed Dec. 12, 1895. Serial No. 571,920. (No model.)



Claim.—In a churn, the combination with the standard B, of the arm E and supplemental arm F, said arm E having a rear extension Q pivoted to the upper end of the upright B, a shaft G, a dasher-staff n, a sleeve O located on the dasher-staff working therein, a pulley H, and cord I, and pulley K together with treadle D, substantially as set forth and described.

569,926. PUMPING-JACK. THOMAS G. LANEY, Lima, Ohio. Filed May 28, 1896. Serial No. 593,454. (No model.)



Claim.—1. The combination with the polish-rod of an oil-well pump, of toggle-levers connected with the polish-rod, a sheave or pulley, a cable connected with the pivotally-attached ends of the toggle-levers and passing over the sheave or pulley, and means for operating the cable to extend the toggle-levers and thereby raise the polish-rod, substantially as described.

2. The combination with the polish-rod of an oil-well pump, of two pairs of toggle-levers arranged at opposite sides of the polish-rod and connected therewith, sheaves or pulleys, cables connected with the pivotally-attached ends of the toggle-levers and passing over said sheaves or pulleys, and means for operating the cables to extend the toggle-levers simultaneously at opposite sides of the polish rod for the purpose of raising the latter in a perpendicular plane, substantially as described.

3. The combination with a well-casing, and a polish-rod, of a hollow column arranged on the well-casing, sheaves or pulleys mounted on the hollow column, toggle-levers pivotally supported by the casing and connected with the polish-rod, and cables connected with the toggle-levers and passing around the sheaves or pulleys, substantially as described.

4. The combination with a well-casing having lateral pipes or tubes, and a polish-rod, of toggle-levers journaled on said pipes or tubes and connected with the polish-rod, and means for operating the toggle-levers to work the polish-rod, substantially as described.

5. The combination with a well casing having lateral pipes or tubes and a polish-rod, of a hollow column supported by the well-casing, sheaves or pulleys mounted on the hollow columns, toggle-levers pivotally mounted on the pipes or tubes and connected with the polish-rod, and cables connected with the toggle-levers and passing around the sheaves or pulleys, substantially as described.

6. The combination with a well-casing, and a polish-rod, of a cross-head in which the polish-rod is free to axially rotate, toggle-levers mounted on the well-casing and pivotally connected with the cross-head in which the polish-rod is rotatable, and means for operating the toggle-levers to work the polish-rod, substantially as described.

7. The combination with a well-casing, of a polish-rod having upper and lower abutments or shoulders, a cross-head interposed between said abutments or shoulders and in which the polish-rod is axially rotatable, toggle-levers pivotally connected with said cross-head, and means for operating the toggle-levers to work the polish-rod, substantially as described.

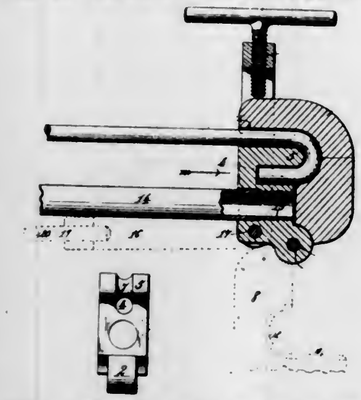
8. The combination with a well-casing, of a polish-rod having attached upper and lower clamps, a cross-head arranged between said clamps and in which the polish-rod can be rotated axially, toggle-levers pivotally connected with said cross-head, and means for operating the toggle-levers, substantially as described.

9. The combination with the polish-rod of a pump, of toggle-levers pivotally connected with the polish-rod, cables connected with the toggle-levers, sheaves or pulleys around which the cables extend, and an equalizer to which the cables are attached, substantially as described.

10. The combination with the polish-rod of a pump, of toggle-levers pivotally connected with the polish-rod, cables connected with the toggle-levers, sheaves or pulleys around which the cables extend, and an equalizer having adjustable rods to which the cables are attached, substantially as described.

11. The combination with the polish-rod of a pump, of toggle-levers pivotally connected with the polish-rod, cables connected with the toggle-levers, supporting-guides for the cables, and an equalizer connected with the cables and having an adjustable rod for connecting with the pull-rod by which it is operated, substantially as described.

569,927. PULL-ROD-BENDING APPARATUS. THOMAS G. LANEY, Lima, Ohio. Filed June 15, 1896. Serial No. 595,642. (No model.)



Claim.—1. The combination of a main body or frame having a bend-forming abutment and a socket located in juxtaposition to the latter to receive one end of a rod-section, a movable jaw having a hook-shaped groove, and a clamp for clamping the jaw upon the rod-section, substantially as described

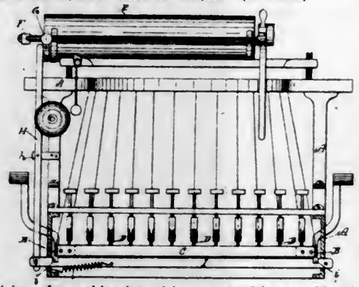
2. The combination of a main body or frame having a grooved bend-forming abutment and a socket arranged in juxtaposition thereto and adapted to receive one end of a rod-section, a pivoted clamping-jaw having a hook-shaped groove in its acting face, and a clamp for clamping the jaw upon the rod-section, substantially as described.

3. The combination of a main body or frame having a grooved bend-forming abutment and means for engaging one end of a rod-section, a jaw pivoted to the main body or frame and having a hook-shaped groove in its acting face, and a yoke provided with a clamping device for clamping the jaw upon the rod-section, substantially as described.

4. The combination of a main body or frame having a grooved bend-forming abutment, a handle and a socket for receiving one end of a rod-section, a clamping-jaw pivoted to the main body or frame and having a hook-shaped groove in its acting face, and a yoke pivoted to the main body or frame and provided with a clamping device for clamping the jaw upon the rod-section, substantially as described.

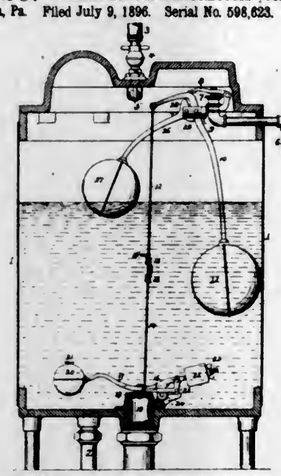
5. The combination of a main body or frame having a handle, a grooved bend-forming abutment and a socket for receiving one end of a rod-section, a clamping-jaw pivoted to the main body or frame and having a hook-shaped groove in its acting face, a yoke pivoted to the main body or frame, and a clamping-screw carried by the yoke for clamping the jaw upon the rod-section, substantially as described.

569,928. TYPE-WRITING MACHINE. WILLIAM G. LANE, North Sydney, Canada, assignor of one-half to Henry H. Bell, Halifax, Canada. Filed Jan. 13, 1896. Serial No. 575,203. (No model.)



Claim.—In combination with a type-writing machine in which the space-levers are moved at each movement of the key-levers and locked against movement when the key-levers are locked, the hereindescribed locking device for the space-levers which consists of a vertical lever H, pivoted intermediate its ends to one side of the machine-frame, a horizontally-arranged bar I, sliding back and forth in guides in the type-writer frame below the space-levers and pivoted at one end to the lower portion of the vertical lever, said sliding bar being provided on its upper edge near each end with a notch *i*, to receive the space-levers when depressed, a spring secured to the sliding bar and machine-frame for normally holding the sliding bar in such position that the notches will lie directly beneath the space-levers, and means carried by the type-writer carriage for moving the vertical lever whereby the horizontal bar is moved laterally to throw the notches out of alinement with the space-levers, as and for the purpose described.

569,929. HYDRAULIC AIR-COMPRESSOR. JOHN LIMING, Philadelphia, Pa. Filed July 9, 1896. Serial No. 598,623. (No model.)



Claim.—1. The combination in a hydraulic air-compressor, of a tank having water-inlet and air-outlet, a valved water-outlet, a primary float-lever operated by the rise and fall of the water in the tank, and a secondary lever adapted to operate the water-outlet valve and having a depending arm with float thereon, said lever being so hung that said float normally occupies a position on one side of a vertical line drawn through the fulcrum of the lever, the primary lever being adapted to act upon the secondary lever so as to carry the float of the latter to the opposite side of said vertical line, substantially as specified.

2. The combination in a hydraulic air-compressor, of a tank having water-inlet and air-outlet, a valved water-outlet, a primary float-lever actuated by the rise and fall of water in the tank, a secondary lever acted upon by said primary lever, and a connection between said secondary lever and the water-outlet-valve mechanism, said connection having a loose sliding joint whereby the said secondary lever positively controls the opening of the valve, but not the closing of the same, substantially as specified.

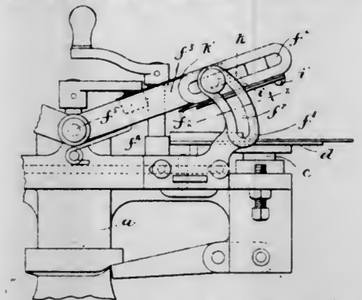
3. The combination of a tank having a water-outlet, a lever having a valve for closing said outlet and adapted to close automatically as the water falls in the tank, a supplementary lever adapted to lock the valve-lever in position when the valve is closed and a valve-opening device acting upon said supplementary locking-lever.

4. The combination of a water-tank having an outlet, a valve adapted to close said outlet, a lever carrying said valve and having on one arm a closed water vessel and on the other arm a weight, a supplementary lever serving to lock said valve-lever in position when the valve is closed, and a valve-opening device acting upon said supplementary lever.

5. The combination of a water tank having an outlet, a valve adapted to close said outlet, a lever carrying said valve and adapted to close the same automatically as the water-level falls, a supplementary lever hung to said valve-lever and adapted to lock the same in position when the valve is closed, a valve-opening device acting upon said supplementary lever, and means for causing the latter lever to engage with the valve-lever and impart raising movement thereto, substantially as specified.

6. The combination in a hydraulic air-compressor, of a tank having water-inlet, valved air-outlet and valved water-outlet, two sets of float-lever mechanism, one for effecting opening of the water-outlet valve and the other for effecting the closing of the same, and a yielding connection between the two, substantially as specified.

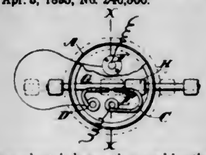
569,930. LEATHER-FOLDING MACHINE. JAMES I. MERRITT, Brockton, Mass., assignor to Charles C Merritt, same place. Filed Feb. 6, 1896. Serial No. 578,201. (No model.)



Claim.—1. In a folding-machine, the combination with a work-support, a former, and a folding jaw, arranged to coöperate substantially as described in forming a fold on a piece of work supported by the work-plate, the former being movable edgewise to withdraw it from the fold: of a clamp interposed between the former and work-plate and adapted to prevent displacement of the work by the edgewise movement of the former.

2. In a folding-machine, the combination with a work-support, a former, and a folding-jaw, arranged to coöperate substantially as described in forming a fold on a piece of work supported by the work-plate, the former being movable edgewise to withdraw it from the fold: of a stop arranged to bear on the upper surface of the former to prevent the folded-over portion of the work from being drawn backwardly by the former.

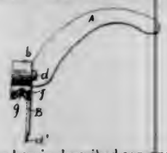
569,931. SOCKET AND SWITCH FOR INCANDESCENT LAMPS. JOHN M. MOFFAT, London, England. Filed Oct. 15, 1895. Serial No. 565,784. (No model.) Patented in England Apr. 16, 1894, No. 7,530, and in France Apr. 3, 1895, No. 246,360.



Claim.—1. In an electric lamp, the combination with the cap having conducting-plates E and F arranged for connection with the socket terminals, of the springs C and D having their free ends separated but in alinement with each other, the spring C being connected with the plate E and the spring D being connected to one of the leading-in wires, the other leading-in wire being connected to the plate F, and a longitudinally-movable rod G provided intermediate its ends with an insulated conducting projection H and arranged to be slid into contact with the ends of both said springs when the rod is moved in one direction and out of contact therewith when the rod is moved in the opposite direction, substantially as described.

2. In an electric lamp, the combination with the cap having conducting-plates E and F arranged for connection with the socket terminals, of the springs C, D and C', the spring C being connected to the plate E, two filaments L' and L respectively connected at one end to the springs D and C' and at their opposite ends to the plate F, and a longitudinally-movable rod G provided intermediate its ends with an insulated conducting projection H and arranged to be moved into contact with the springs to complete the circuit through the filaments L or L' separately or through both of said filaments in parallel, substantially as described.

569,932. CAN-OPENER. WILFORD L. PALMER, Washington, D. C.
Filed July 23, 1896. Serial No. 600,273. (No model.)



Claim.—1. The herein-described can-opener, comprising a bar or lever having a cutter-carrying head at one end portion whose vertical plane is at an oblique angle to that of the handle portion of said bar, a knife secured to the said head in the plane thereof, and having an upwardly and rearwardly inclined cutting edge, and a guard carried by said head above said cutting edge, and adapted to engage the peripheral edge of the can, substantially as specified.

2. The herein-described can-opener, consisting of a bar or lever having an upwardly-arched handle portion, and a cutter-carrying portion the plane of whose inner lateral face is oblique with reference to the vertical plane of the handle portion, and which is formed with a convex grooved guard projecting below its lower face, together with a knife or cutter secured thereto and having an inclined cutting edge extending underneath the said guard, substantially as specified.

3. The herein-described can-opener, comprising a bar or lever having at one end portion a cutter-carrying head, and bent for the remainder of its length to form a handle portion said head having on its under side a convex grooved projection, and a knife or cutter secured to the said head and having a curved and inclined cutting edge extending underneath the said projection, the vertical plane of said knife being oblique with respect to the vertical plane of the handle, substantially as specified.

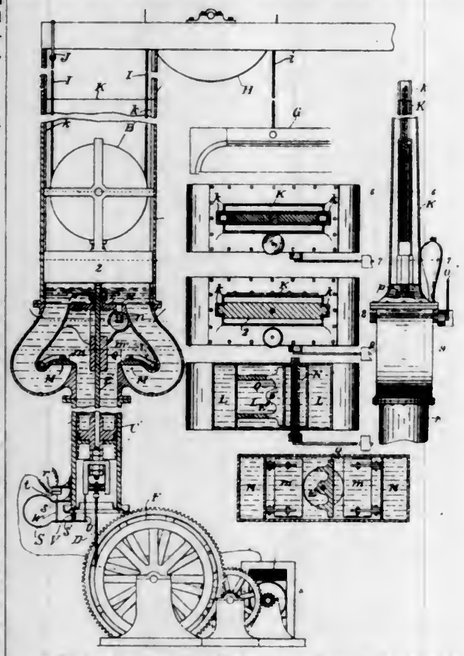
4. The herein-described can-opener, comprising a bar or lever having an upwardly-arched and laterally-curved handle portion, and a cutter-carrying head whose vertical plane is oblique with respect to that of said handle portion, said head having a grooved guard projecting below its lower face and adapted to engage the peripheral edge of the can, and an upwardly-beveled portion forward of said projection, together with the forwardly and downwardly extending knife secured to the said head near its inner end and formed with a sharp point, the inclined cutting edge of said knife extending below the said guard and having a double reverse curve, substantially as specified.

5. The herein-described can-opener having a cutter-carrying head at one end portion said head having a can-bearing at its under side, and an upwardly-arched handle portion having a lateral inward bend with respect to said head, whereby the cutter has, in operation, a natural tendency to follow the curve of the can, and a cutter secured to said head and having its cutting edge lying below the can-bearing, substantially as specified.

569,933. COMBINED ELECTRIC HYDRAULIC ELEVATOR.
JOHN PARKINSON, Los Angeles, Cal., assignor, by mesne assignments, to The Parkinson Elevator Company, same place and Phœnix, Ariz. Filed Nov. 14, 1895. Serial No. 568,898. (No model.)

Claim.—1. The combination of the cylinder; the piston arranged to move in the cylinder; a receptacle communicating with the cylinder; a body of liquid in the cylinder and receptacle; means adapted to allow, to control, and to prevent the flow of liquid from the cylinder to the receptacle to allow, to control, and to prevent the movement of the piston in one direction; a passage being provided between the receptacle and the cylinder; and an independent automatic check-valve arranged to allow a practically free and unobstructed flow of the liquid through the said passage from the receptacle into the cylinder, and prevent its return.

2. The combination of the cylinder; the piston arranged to work in the cylinder; a receptacle communicating with the cylinder; a body of liquid in the cylinder and receptacle; means adapted to allow, to control, and to prevent the flow of liquid from the cylinder to the receptacle to allow, to control, and to prevent the movement of the piston in one direction; the elevator-car operatively connected with the piston to move it in such direction; an electric motor operatively connected with the piston to move it in the other direction; a passage being provided between the receptacle and the cylinder; and an independent automatic check-valve arranged to allow a practically free and unobstructed flow of the liquid through the said passage from the receptacle into the cylinder, and prevent its return.



3. The combination of a cylinder; a piston arranged to move in such cylinder; means connected with the piston to move it in one direction; a receptacle; a body of liquid in the cylinder and receptacle; a passage being provided between the receptacle and cylinder; a valve arranged to allow the liquid to flow freely through such passage from the receptacle into the cylinder and prevent its return; a passage being provided to allow liquid to flow from the cylinder into the receptacle; a valve arranged to control and to prevent the flow of liquid through such passage; and means for operating such valve.

4. The combination of an electric motor; a load-moving appliance; a piston arranged between the motor and the load-moving appliance and operatively connected with each by suitable operative means respectively; such means; a cylinder in which the piston works; a receptacle communicating with such cylinder; a body of liquid in the cylinder and receptacle; means adapted to allow, to control, and to prevent the flow of liquid from the cylinder to the receptacle to allow, to control, and to prevent the movement of the piston in one direction; a passage being provided between the receptacle and the cylinder; and an independent automatic check-valve arranged to allow a practically free and unobstructed flow of the liquid through the said passage from the receptacle into the cylinder, and prevent its return.

5. In an elevator the combination of an electric motor; a piston; a cylinder in which the piston works; a receptacle communicating with the cylinder; a body of liquid in the cylinder and receptacle; means adapted to allow, to control and to prevent the flow of liquid from the cylinder to the receptacle to allow, to control and to prevent the movement of the piston in one direction; a passage being provided between the receptacle and the cylinder; an independent automatic check-valve arranged to allow a practically free and unobstructed flow of the liquid through the said passage from the receptacle into the cylinder and prevent its return; a drum driven by the motor; a flexible connection between the drum and one end of the piston and operatively connecting them; a car; a car sustaining pulley; and suitable means led over the pulley and connecting the car with the other end of the piston.

6. In a multiple-sheave elevator, the combination of the piston operatively connected at one end with the movable sheave to move the same to lift the car; means to allow, to control and to prevent the movement of the piston in one direction to allow, to control and to prevent the descent of the car; means adapted and arranged to allow the free movement of the piston in the other direction at the ascent of the car; and an electric motor operatively connected with the other end of the piston to move the piston to raise the car.

7. In an elevator, the combination of a piston arranged to reciprocate vertically and having its upper end operatively connected with the car; means adapted to allow, to control and to prevent the movement of the piston in one direction to allow, to control and to prevent the descent of the car; means adapted and arranged to allow the free movement of the piston in the other direction when the car ascends; and an electric motor operatively connected with the piston to move it in such other direction.

8. In an elevator, the combination of an electric motor; a piston; suitable means adapted to allow, to control and to prevent the movement of the piston in one direction; means adapted and arranged to allow a free and unobstructed movement of the piston in the other direction; a drum driven by the motor; flexible connection between the drum and the piston operatively connecting them; the movable sheave connected with the other end of the pistoo; the car; the car-sustaining pulley; and suitable flexible means fastened at one end to the car and led over the pulley and around the sheave and having its other end fixed, substantially as set forth.

9. In an elevator, the combination of a cylinder; a piston arranged to move in such cylinder; means connected with the piston to move it in one direction; a reservoir connected with the cylinder; a body of liquid in the cylinder and reservoir; a valve arranged to allow the liquid to flow freely through such passage from the reservoir into the cylinder and prevent its return; a passage being provided to allow liquid to flow from the cylinder into the reservoir; a valve arranged to allow, to control and to prevent the flow of liquid through such passage; and means for operating such valve.

10. In an elevator, the combination of a vertical cylinder; a piston arranged to move in such cylinder; means connected with the piston to move it down; a reservoir arranged above the cylinder; a body of liquid above the piston in the cylinder and reservoir; a passage being provided between the reservoir and cylinder; a valve arranged to allow the liquid to flow freely through such passage from the reservoir into the cylinder and prevent its return; a passage being provided to allow liquid to flow from the cylinder into the reservoir; a valve arranged to control and to prevent the flow of liquid through such passage; and means for operating such valve.

11. In an elevator, the combination of a vertical cylinder; a piston arranged in such cylinder; a drum; a flexible connection fastened to the lower end of the piston and wound around the drum; means for rotating the drum to wind the flexible connection and pull down the piston; a reservoir arranged above the cylinder and communicating therewith through a suitable valved opening; a body of liquid above the piston in the cylinder and reservoir; suitable connections operatively connecting the elevator-car with the upper end of the piston; and valves arranged to allow the liquid to flow freely from the reservoir into the cylinder when the piston descends, and to allow, to control, and to prevent the flow of liquid from the cylinder into the reservoir.

12. The combination of the vertical cylinder; the piston therein; means for pulling the piston down; a vertical reservoir arranged vertically above the cylinder; a partition between the cylinder and the reservoir; a piston-rod fastened to the piston and extending through the partition into the reservoir; a passage being provided communicating between the reservoir and the cylinder; a valve to allow liquid to flow through such passage from the reservoir into the cylinder and prevent its return; a passage being provided to allow liquid to flow from the cylinder into the reservoir; a valve to control and to prevent such flow; the body of liquid in the cylinder and reservoir, above the piston; the load; and means for connecting the load with the piston-rod to draw the piston up.

13. The combination of the vertical cylinder; the piston therein; means for pulling the piston down; a vertical reservoir arranged vertically above the cylinder; a partition between the cylinder and the reservoir; a piston-rod fastened to the piston and extending through the partition into the reservoir; a passage being provided communicating between the reservoir and the cylinder; a valve to allow liquid to flow from the reservoir into the cylinder and prevent its return; a passage being provided to allow liquid to flow from the cylinder into the reservoir; a valve to control and to prevent such flow; a body of liquid in the cylinder and reservoir above the piston; a movable sheave in the reservoir operatively connected with the piston-rod; the load; the load-sustaining pulley; and the flexible connection fastened at one end to the load, passed thence over the sustaining-pulley and under the movable sheave and thence up and fastened to a support.

14. In an elevator, the combination of the vertical cylinder; a piston therein; means to pull the piston down; a vertical reservoir arranged vertically above the cylinder; suitably-valved passages being provided communicating between the reservoir and the cylinder; a body of liquid in the reservoir and cylinder above the piston; a piston-rod connected with the piston and extending vertically therefrom into the reservoir; the movable sheave connected with the end of the piston-rod; guideways for the sheaves in the reservoir; the load; the load-sustaining pulley; and flexible connections passed over such pulley and operatively connected with the movable sheave so that the descent of the load will draw up such sheave, substantially as set forth.

15. The combination of the cylinder; the piston working in such cylinder; a reservoir above the cylinder; a valved passage being provided to allow liquid to flow from the reservoir into the cylinder and prevent its return; a body of liquid in the cylinder and reservoir above the piston; the piston-rod fastened to the piston; the load connected with the piston to move it; a passage being provided to allow liquid to flow from the cylinder into the reservoir; a valve to control the flow of liquid through such passage; and a cut-off valve fastened to the piston and arranged to close such passage at the final movement of the piston.

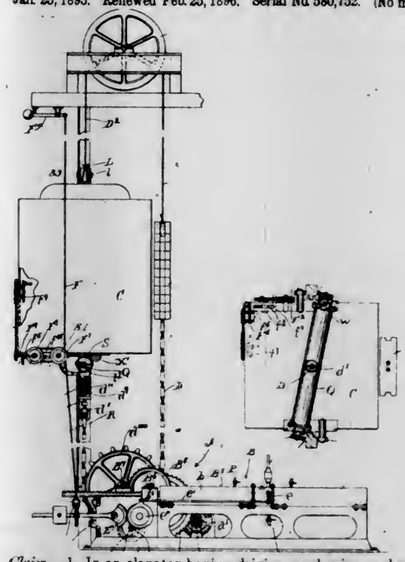
16. In an elevator, the combination of a piston working in a cylinder; the load; the sustaining-pulley; the rope connected with the load and passed over the sustaining-pulley and operatively connected with the piston; a reservoir reducing in capacity toward the top and communicating at its lower end with the cylinder above the piston; and a body of liquid in the cylinder and of sufficient quantity to be forced into the contracted portion of the reservoir at the upward movement of the piston whereby the proper proportion can be maintained between the increasing or decreasing length of load-suspending rope and the counterbalance therefor.

17. In a counterbalance for an elevator, the combination of the car, piston, and connections between the car and the piston and a liquid-holding column reducing in capacity toward the top, and arranged to apply a varying pressure to said piston substantially as and for the purpose set forth.

18. In a counterbalance for an elevator, the combination of the car and car-sustaining rope and a liquid-holding column uniform in capacity throughout an extent of its lower portion and reducing in capacity toward the top; and a piston operatively connected with the car-sustaining rope and arranged to reciprocate in the uniform lower portion of such column.

19. In an elevator, the combination of a cylinder; a piston operating therein; a reservoir arranged above the cylinder and communicating therewith; a body of liquid in the reservoir and cylinder to apply pressure to one side only of the piston; and means to allow, to control, and to prevent the movement of the liquid from the cylinder into the reservoir, and vice versa.

569,934. COMBINED ELECTRIC HYDRAULIC ELEVATOR. JOHN PARKINSON, Los Angeles, Cal., assignor, by mesne assignments, to The Parkinson Elevator Company, same place and Phœnix, Ariz. Filed Jan. 25, 1895. Renewed Feb. 25, 1896. Serial No. 580,752. (No model.)



Claim.—1. In an elevator having driving mechanism and an independent hydraulic speed-regulator, the combination set forth of the driving mechanism; the car supporting piston working in a hydraulic

cylinder, the rack carried by the piston, and the pinion meshing with the rack and connecting said rack with the driving mechanism to support the car.

2. In an elevator the combination set forth of a hydraulic cylinder comprising two compartments with a partition between the compartments; a piston provided with two heads, one in each compartment of the cylinder and arranged with its rod passing through the partition; two conduits connecting the two compartments between the piston-heads; valves to control the flow of the liquid through the conduits; and a body of liquid in the cylinder and conduits between the piston-heads.

3. In an elevator, the combination set forth of the car; a cylinder having two compartments communicating with each other through two conduits; a body of liquid in the compartments and conduits; a piston operatively connected with the car of the elevator through intermediate mechanism and arranged in the cylinder to force the liquid from one compartment to the other through the conduits as the car rises and descends; such intermediate mechanism; the main valve controlling both of the conduits to prevent and to allow the flow of liquid in either direction between the cylinders; valve-operating means operatively connected with the main valve and the car for operating the main valve; a check-valve arranged in one of the conduits to automatically allow a free flow in one direction through such conduit, and to entirely prevent any flow in the other direction therethrough; a valve arranged in the other conduit to control the quantity of liquid which is allowed to pass therethrough; governor mechanism connected with such valve to operate the same; and operative mechanism connecting the governor mechanism with the car.

4. In an elevator, the combination set forth of a car; a motor; power-transmitting mechanism for transmitting power from the motor to raise the car; a hydraulic cylinder comprising two compartments communicating with each other; a piston operatively connected with the power-transmitting mechanism and provided with two heads, one in each compartment of the cylinder; a body of liquid in the cylinder between the piston-heads; and a valve adapted and arranged to restrict the flow of liquid from one compartment to the other when the car descends and arranged to allow the liquid to return freely when the car rises.

5. In an elevator, the combination set forth of a car; a motor; power transmitting mechanism for transmitting power from the motor to raise the car; a hydraulic cylinder comprising two compartments communicating with each other; a piston operatively connected with the power-transmitting mechanism and provided with two heads, one in each compartment of the cylinder; a body of liquid in the cylinder between the piston-heads; a valve adapted to control the flow of liquid between the compartments; valve operating means for operating the same; means for applying power to and disconnecting power from the motor; and means connected with the car and arranged to operate the valve-operating means and the power connecting and disconnecting means.

6. In an elevator, the combination set forth of a car; an electric motor; a rheostat for controlling the supply of electricity to such motor; power-transmitting mechanism for transmitting power from the motor to raise the car; a hydraulic cylinder having two compartments communicating with each other; a piston operatively connected with the power transmitting mechanism and having two heads, one in each compartment of the cylinder; a body of liquid in the cylinder between the piston-heads; a valve adapted to control the flow of liquid between the compartments; valve-operating means for operating the same, and operative mechanism connected with the rheostat and with the valve-operating means and arranged to operate the rheostat to cut off the electric current from the motor when the valve is closed.

7. In an elevator, the combination set forth of the car; an electric motor; power-transmitting mechanism for transmitting power from the motor to raise the car; a hydraulic cylinder having two compartments communicating with each other; a piston operatively connected with the power-transmitting mechanism and having two heads, one in each compartment of the cylinder; a body of liquid in the cylinder between the piston-heads; a valve for controlling the flow of liquid between the compartments; a valve-rod connected with such valve to open and close the same; a rheostat for turning the electric current onto and off from the motor; a valve-rod connected with the valve to open and close the same; a toothed wheel connected with such rod to operate the same to open and close the valve; means for partially rotating the toothed wheel and a rheostat-operating pinion connected with the rheostat and geared with the toothed wheel; the whole being so arranged as set forth that when the toothed wheel is thrown into position in one direction to close the valve, the rheostat is thrown into position to cut off the current from the motor.

8. In an elevator, the combination set forth of the well; the car; the power connecting and disconnecting lever at the bottom of the well; the two pulleys on one stationary axle; such axle carried by the car; a movable pulley carried by the car; a single line of rope having one end fixed at the top of the well, and its other end fastened to the power connecting and disconnecting lever, and its body arranged around the pulleys; and means for operating the movable pulley.

9. The combination of the car; operative means for raising the car; means for connecting power with and disconnecting power from such operative means; rope-receiving pulleys attached to the car; an adjustable pulley carried by the car and arranged to move toward and from the rope-receiving pulleys; a rope fixed at one end and connected with and arranged to operate the means for connecting and disconnecting the power and arranged with one member around one of the rope-receiving pulleys, the other member around the other rope-receiving pulley, and with a loop in the rope between the two rope-receiving pulleys arranged around the adjustable pulley; means for holding such rope taut; a screw connected with the adjustable pulley to move the same toward and from the rope-receiving pulleys; a sprocket-wheel mounted on the car and provided with a crank for turning the same; a sprocket-wheel arranged to operate the screw; and a sprocket-chain connecting the two sprocket-wheels with each other.

10. In an elevator the combination set forth, of the two rope-receiving pulleys; the adjustable pulley arranged to move toward and from such rope-receiving pulleys; a screw arranged to operate the adjustable pulley toward and from the rope-receiving pulleys, means for operating such screw; and the operating-rope fixed at one end and having its other end operatively connected with the power connecting and disconnecting machinery and having one member wound around one of the rope-receiving pulleys and the other member wound around the other rope-receiving pulley and a loop between the rope-receiving pulleys passed around the adjustable pulley.

11. In an elevator the combination of the car; the supporting-sheave; the counterweight; the supporting-rope arranged over the sheave and fastened at one end to the car and at the other end to the counterweight; the driving-wheel; the flexible driving connection fastened to the counterweight and passed around the driving-wheel; and a spring-pressed adjustable take-up connecting the other end of the driving connection with the bottom of the car.

12. In an elevator a supporting-lever pivoted to the car; two supporting-sheaves arranged above the car; a counterweight; a supporting-rope passing over one of the sheaves and secured at one end to the counterweight and secured at the other end to one end of the supporting-lever; and another supporting-rope passing over the other sheave and fastened at one end to the counterweight and at the other end to the other end of the supporting-lever.

13. The combination of a hydraulic cylinder provided with a port; a piston arranged to work in such cylinder; a valve connected with the piston-head and arranged to close the port at one limit of the piston's movement; and adjustable means for adjusting the valve with relation to the piston-head.

14. The combination of a cylinder having two compartments communicating with each other through a suitable passage; a piston having two heads, one in each compartment; a body of liquid in the cylinder between the piston heads; a check-valve arranged to hinder the flow of liquid in one direction through the passage and to allow the flow in the other direction; and another valve arranged to cut off communication between the compartments.

15. The combination of a cylinder having two compartments communicating with each other through a suitable passage; a piston having two heads, one in each compartment; a body of liquid in the cylinder between the piston-heads; a check-valve arranged to hinder the flow of liquid in one direction through the passage and to allow the flow in the other direction; a passage not controlled by the check-valve arranged to allow a restricted flow of liquid between the compartments when the check-valve is closed and when it is opened; a valve for closing such passage; a governor arranged to operate such valve to open and close the same; and operative mechanism connecting the piston with the governor to drive the same.

16. The combination of the cylinder having two compartments communicating with each other; a piston having two heads, one in each compartment; a body of liquid in the cylinder between the two piston-heads; a liquid-supply pipe communicating with one of the compartments and extending upward therefrom to a source of supply; a supply of liquid in such pipe; and a check-valve arranged to prevent liquid from passing upward through such pipe and allow it to pass downward therethrough.

17. The combination of the elevator-car; the driving-wheel; means connecting the driving-wheel with the car to operate the same; a pinion connected with the driving-wheel to be rotated thereby; a rack geared with such pinion and arranged to move freely in one direction, and means for retarding the motion of the rack in the other direction.

18. The combination of the elevator-car; the driving-wheel; means connecting the driving-wheel with the car to operate the same; a pinion connected with the driving-wheel to be rotated thereby; a rack geared with such pinion and arranged to move freely in one direction; a cylinder having two compartments communicating with each other through a suitable passage; a piston connecting with the rack and having two heads one in each compartment; a body of liquid in the cylinder between the piston-heads; and means arranged to hinder the flow of liquid in one direction through the passage and to allow the flow in the other direction.

19. In a hydraulic elevator, the combination of a cylinder having two compartments; a passage between the compartments; a body of liquid in the compartments and passage; a piston arranged to force the liquid through the passage in either direction; a check-valve arranged to hinder the flow of liquid in one direction through the passage and to allow the flow in the other direction; a passage not controlled by the check-valve arranged to allow the restricted flow of liquid between the compartments when the check-valve is closed and when it is open; and a valve for controlling such passage.

20. In a hydraulic elevator, the combination of a cylinder having two compartments; a passage between the compartments; a body of liquid in the compartments and passage; a piston arranged to force the liquid through the passage in either direction; a check-valve arranged to hinder the flow of liquid in one direction through the passage and to allow the flow in the other direction; the passage not controlled by the check-valve arranged to allow the restricted flow of liquid between the compartments when the check-valve is closed and when it is open; a valve for controlling such passage, and another valve arranged to cut off communication between the compartments.

21. In a governor, the combination of the rotating shaft having the slotted radial arms; the rocking levers pivoted to such shaft; the governor-weights arranged to slide along the radial arms respectively; the connecting-rods within such arms respectively, and extending beyond the ends thereof and there connected with the sliding weights, respectively; the sleeve, and its rod; and the connecting-rods connecting the rocking levers with the sleeve in toggle fashion substantially as set forth.

22. The combination of the elevator-car; means for operating the car; a cylinder closed at the ends and fixed to and carried by the car; a rack arranged along the path of the car; a screw-shaft arranged to revolve in the cylinder and provided with a pinion meshing with the rack; a body of liquid in the cylinder; a movable head fitted to slide and not revolve within the cylinder and provided with a screw-threaded hole in which the screw-shaft fits and with a passage for liquid through the head; and a valve for hindering the flow of liquid in one direction through the head and allowing it to pass freely in the other direction.

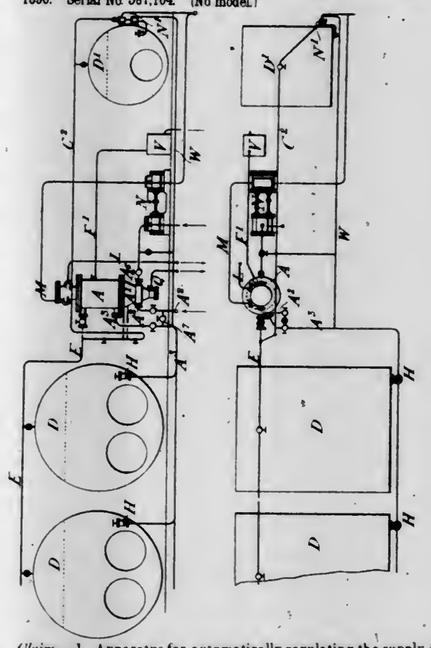
23. The combination of the elevator-car; means for operating the car; a cylinder fixed to and carried by the car; a rack arranged along the path of the car; a screw-shaft arranged to revolve in the cylinder and provided with a pinion meshing with the rack; a body of liquid in the cylinder; a movable head fitted to slide and not rotate within the cylinder and provided with a screw-threaded hole in which the shaft fits and with two passages for liquid through the head; a valve for one of such passages arranged to prevent the flow of liquid in one direction through the head and to allow it to pass freely in the other direction; a valve for the other passage; a governor; and operative means connecting the valve with the governor to cause the operation of the governor to close the valve.

24. The combination of the elevator-car; means for operating the car; a cylinder fixed to and carried by the car; a rack arranged alongside the path of the car; a screw-threaded shaft arranged to revolve in the cylinder and provided with a pinion meshing with the rack; a body of liquid in the cylinder; a movable head fitted to slide and not revolve within the cylinder and provided with a screw-threaded hole in which the shaft fits and with two passages for liquid through the head; a valve for preventing the flow of liquid in one direction through one of the passages in the head and allowing it to pass freely in the other direction; a rod extending along within the cylinder parallel with the screw-shaft; a valve for the other passage through the head arranged upon such rod to slide and not rotate thereupon; and a governor operatively connected with the valve-rod to rotate the same to open and close the valve.

25. The combination of a cylinder; a body of liquid therein; a movable head fitted to slide and not rotate within the cylinder and provided with a passage for the liquid therethrough, and with a screw-threaded hole; a screw-threaded shaft arranged in the cylinder and screwing through such hole and provided with a pinion; a valve arranged to hinder the flow of liquid in one direction through the head and allow it to flow freely in the other direction; and a rack meshing with the pinion for rotating the screw-shaft.

26. The combination of the cylinder; the body of liquid within the cylinder; the movable head arranged within the cylinder to slide therealong and provided with a passage for liquid therethrough; the valve arranged to close such passage; a valve-operating rod extending from such valve to the outside of the cylinder and means for operating such valve-rod to open and close the valve.

569,935. AUTOMATIC FEED-WATER REGULATOR, HEATER, AND PURIFIER. ERNEST PETERSEN, London, England. Filed Apr. 11, 1896. Serial No. 587,164. (No model.)



Claim.—1. Apparatus for automatically regulating the supply of feed-water to boilers consisting of a cylindrical vessel A into which the feed-water is forced by the feed-pump, and from which it passes to the boiler, a piston working freely between stops in the upper part of said vessel, the space in which above the piston is in communication with the steam-space of the boiler, a passage in said vessel controlled by the said piston and serving to establish a communication between the water-space of said vessel, and the hot well or supply-tank of the engine when the said piston is in the highest position, and a second passage also controlled by the piston and serving to establish a communication between the steam-space of said vessel and the steam-cylinder of an auxiliary feed-pump when the piston is in the lowest position, substantially as described.

2. In apparatus for automatically regulating the supply of feed-water to boilers, the combination of a cylindrical vessel A, through which the feed-water is forced on its way to the boilers, a piston I working between stops in the upper part of said vessel, a communication between the steam-space of the boiler to be fed and the space above said piston, a slide K connected by a tubular extension J with said piston, a cylindrical extension A^5 of said vessel A in which the slide K works having a port L communicating with the hot well or water-tank of the steam-engine, and a port M communicating with the steam-cylinder of an auxiliary feed-pump, a passage through the extension J and slide K adapted to establish a communication between the water-space of vessel A and port L when the piston I is in its highest position, and a passage K′ through slide K adapted to admit steam from the boiler to the port M when the piston is in its lowest position, substantially as described.

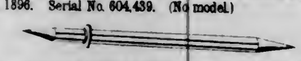
3. In apparatus for regulating the supply of feed-water to boilers, the combination of a cylindrical vessel A, through which the feed-water is forced on its way to the boilers, a piston I working between stops in the upper part of said vessel, a communication between the steam-space of the boiler to be fed and the space above said piston, a slide K connected by a tubular extension J with said piston, a cylindrical extension A^5 of said vessel A in which the slide K works having a port L communicating with the hot well or water tank of the steam engine, and a port M communicating with the steam-cylinder of an auxiliary feed-pump, a passage through the extension J and slide K adapted to establish a communication between the water-space of vessel A and port L when the piston I is in its highest position, and a passage K′ through slide K adapted to admit steam from the boiler to the port M when the piston is in its lowest position and layers of filtering material in the lower part of said vessel A through which the feed-water is made to pass in entering the latter, substantially as described.

4. In apparatus for regulating the supply of feed-water to boilers, the combination of a cylindrical vessel A, through which the feed-water is forced on its way to the boilers, a piston I working between stops in the upper part of said vessel, a communication between the steam-space of the boiler to be fed and the space above said piston, a slide K connected by a tubular extension J with said piston, a cylindrical extension A^3 of said vessel A in which the slide K works having a port L communicating with the hot well or water-tank of the steam-engine, and a port M communicating with the steam-cylinder of an auxiliary feed-pump, a passage through the extension J and slide K adapted to establish a communication between the water-space of vessel A and port L when the piston I is in its highest position and a passage K' through slide K adapted to admit steam from the boiler to the port M when the piston is in its lowest position, and layers of filtering material in the lower part of said vessel A through which the feed-water is made to pass in entering the latter, and a hood F supported free over the filter-layers, adapted to intercept and carry off any oil carried by the water through the filter-layers, substantially as described.

5. In apparatus for regulating the supply of feed-water to boilers, the combination of a cylindrical vessel A, through which the feed-water is forced on its way to the boilers, a piston I working between stops in the upper part of said vessel, a communication between the steam-space of the boiler to be fed and the space above said piston, a slide K connected by a tubular extension J with said piston, a cylindrical extension A^3 of said vessel A in which the slide K works having a port L communicating with the hot well or water-tank of the steam engine, and a port M communicating with the steam-cylinder of an auxiliary feed-pump, a passage through the extension J and slide K adapted to establish a communication between the water-space of vessel A and port L when the piston I is in its highest position and a passage K' through slide K adapted to admit steam from the boiler to the port M when the piston is in its lowest position and layers of filtering material in the lower part of said vessel A through which the feed-water is made to pass in entering the latter, and a hood F supported free over the filter-layers, adapted to intercept and carry off any oil carried by the water through the filter-layers, and perforated steam-coils C in said filter-layers for removing accumulated impurities therefrom, substantially as described.

6. In apparatus for automatically regulating the supply of feed-water to boilers, the combination of a cylindrical vessel A, through which the feed-water is forced on its way to the boilers, a piston I working between stops in the upper part of said vessel, a communication between the steam-space of the boiler to be fed and the space above said piston, a slide K connected by a tubular extension J with said piston, a cylindrical extension A^3 of said vessel A in which the slide K works having a port L communicating with the hot well or water-tank of the steam-engine, and a port M communicating with the steam-cylinder of an auxiliary feed-pump, a passage through the extension J and slide K adapted to establish a communication between the water-space of vessel A and port L when the piston I is in its highest position, and a passage K' through slide K adapted to admit steam from the boiler to the port M when the piston is in its lowest position, and a feed-valve H for the boiler which is kept down on its seat by means of a spring P adjusted by a screw-spindle Q for balancing the weight of the piston I, substantially as and for the purpose described.

569,936. FINGER-GUARD. EDGAR W. POTTER, Rochester, N. Y. Filed Aug. 31, 1896. Serial No. 604,439. (No model.)

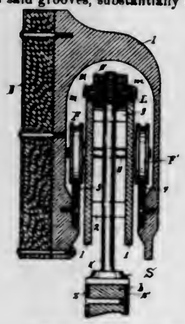


Claim.—1. As an improved article of manufacture, a finger-guard consisting of a rubber disk or body essentially polygonal in shape, and having a central circular bore or aperture and a metallic expanding-spring arranged centrally of the bore, substantially as shown and described.

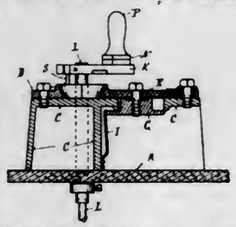
2. As an improved article of manufacture, a finger-guard for pens and pencils, and the like, consisting of a rubber disk or body essentially hexagonal in shape, and having a central circular bore or aperture, said disk or body being thickest at the center and tapering gradually toward the sides, and a metallic expanding-spring arranged central within the bore adapted to expand the center of said bore and contract the edges, substantially as shown and described.

569,937. HANGER FOR FOLDING DOORS. WILLIAM S. ROOF, Franklin, Ohio. Filed Apr. 19, 1894. Serial No. 508,126. (No model.)

Claim.—In a door-hanger, the combination with a U-shaped bracket I provided with tracks 4, 5, of a frame comprising side pieces 1, 1, and cross pieces 2, 3, the rollers F, F' and G, G' journaled on said frame and running on said tracks, the swivel-base L carried by the upper end of said frame, the vertically-adjustable spindle K provided at its lower end with a yoke S, *s*, *s'*, embracing the upper edge of the door and secured thereto, and screw-threaded at its upper end and loosely passing through said swivel-base, a swivel-nut M engaging the screw-threaded portion of the spindle K, a set-nut N screwed over said spindle above the nut M, the adjacent faces of the swivel-base and nut M being provided with corresponding annular grooves, and balls *m* arranged in said grooves, substantially as described.



569,938. HEEL-FORMER AND NAIL-DRIVER. SIMON ROSS, Cincinnati, Ohio, assignor to The Ross-Moyer Manufacturing Company, same place. Filed Mar. 16, 1896. Serial No. 583,394. (No model.)



Claim.—1. In a combined heel-former and nailing machine, the combination with a supporting-bed, of a stationary sectional heel-mold, a movable sectional heel-mold operating in conjunction therewith, a vertically-movable and horizontally-swinging nail-head, and a nail-driver cooperating with said nailing-head, substantially as described.

2. The combined heel-former and nailing-machine consisting substantially of the bed supporting a stationary sectional heel-mold, a movable sectional heel-mold operating in conjunction therewith, a nailing-head supported upon a swiveling rod and adapted to be moved into engagement with the heel and moved away therefrom, and a driver detachably connected thereto, substantially as specified.

3. In combination with a heel-former and nailing-machine, the swiveling nailing-head K provided with one or more nail-orifices *c*, means for elevating, swinging and depressing said head to engage with the heel and serve as a platen, substantially as specified.

4. In a heel-forming and nailing machine provided with a heel-compressing mold, the swiveling nailing-head K provided with nail-holes *c*, means for bringing it into position to engage with the top of the heel, in combination with the detachable driver provided with nail-engaging rods, substantially as specified.

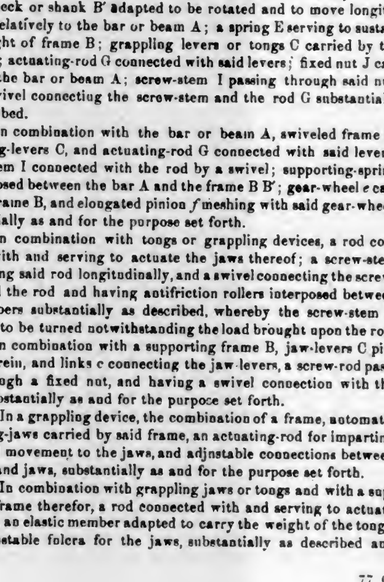
5. In a heel-forming and nailing machine provided with a heel-compressing mold, the swiveling nailing-head K in combination with a stop supported upon the frame of the machine upon which the said head rests when it is swung out of the nailing position, substantially as specified.

6. In a heel-former and nailing-machine, employing heel-compressing molds, the swiveling nailing-head K, means for moving said head into engagement with the top of the heel-lifts, a stop-gage for limiting and registering the movement of said head, substantially as specified.

569,939. TONGS OR GRAPPLE. HARRY SAWYER, Muskegon, Mich. Filed Mar. 18, 1896. Serial No. 542,222. (No model.)

Claim.—1. In combination with grappling jaws or tongs and with a supporting-frame therefor, a rod connected with and serving to actuate the jaws, and an elastic member adapted to carry the weight of the tongs, substantially as set forth.

2. A grappling device provided with a pair of jaws or grappling-levers, a support for said levers, means for opening and closing the levers relatively to each other, and an elastic member adapted to sustain the pivotal support of the jaws and to permit a descent of the jaws and an automatic grappling of the load when the tongs are lifted.



3. In combination with a main supporting bar or beam A, a frame B B' longitudinally movable relatively to the bar or beam A; tongs or grappling-levers pivoted in the frame B; a rod G connected with the grappling-levers, and a spring E serving to support the frame B and the grappling-levers, substantially as set forth.

4. In combination with a supporting bar or beam A, a frame B B' mounted therein; grappling-levers pivoted in said frame; a spring E serving to support the frame B; a rod G connected with and serving to actuate the grappling-jaws C; a screw-rod I passing through a fixed nut in the bar or beam A, and a swivel joint or connection between the rods G and I, substantially as and for the purpose set forth.

5. In combination with a bar or beam A and with tongs carried thereby, an actuating-rod connected with the tongs jaws or levers; a fixed nut carried by the bar or beam; a screw-stem passing through said nut, and a swivel connecting the screw-stem and the actuating-rod, substantially as and for the purpose set forth.

6. In combination with a bar or beam A, a frame B provided with a neck or shank B' adapted to be rotated and to move longitudinally relatively to the bar or beam A; a spring E serving to sustain the weight of frame B; grappling levers or tongs C carried by the frame B; actuating-rod G connected with said levers; fixed nut J carried by the bar or beam A; screw-stem I passing through said nut, and a swivel connecting the screw-stem and the rod G substantially as described.

7. In combination with the bar or beam A, swiveled frame B, grappling-levers C, and actuating-rod G connected with said levers; screw-stem I connected with the rod by a swivel; supporting-spring E interposed between the bar A and the frame B B'; gear-wheel *e* carried by frame B, and elongated pinion *f* meshing with said gear-wheel, substantially as and for the purpose set forth.

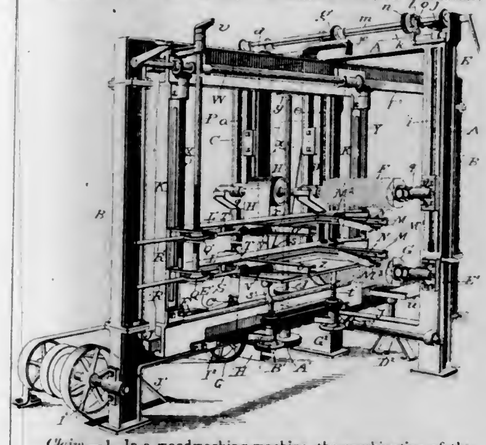
8. In combination with tongs or grappling devices, a rod connected with and serving to actuate the jaws thereof; a screw-stem for moving said rod longitudinally, and a swivel connecting the screw-stem and the rod and having antifriction rollers interposed between its members substantially as described, whereby the screw-stem is adapted to be turned notwithstanding the load brought upon the rod.

9. In combination with a supporting frame B, jaw-levers C pivoted therein, and links *c* connecting the jaw-levers, a screw-rod passing through a fixed nut, and having a swivel connection with the links, substantially as and for the purpose set forth.

10. In a grappling device, the combination of a frame, automatic grappling-jaws carried by said frame, an actuating-rod for imparting an initial movement to the jaws, and adjustable connections between the rod and jaws, substantially as and for the purpose set forth.

11. In combination with grappling jaws or tongs and with a supporting-frame therefor, a rod connected with and serving to actuate the jaws, an elastic member adapted to carry the weight of the tongs, and adjustable fulcra for the jaws, substantially as described and shown.

569,940. WOODWORKING-MACHINE. ROBERT SCHLEICHER, Louisville, Ky. Filed Jan 13, 1896. Serial No. 575,298. (No model.)



Claim.—1. In a woodworking-machine, the combination of the cutters; the reciprocating carriage; and a fixed and an adjustable clamping member, each comprising a fixed jaw; a lever pivoted in said jaw; a movable yielding jaw, provided with means for holding the free end of the pivoted lever and means for operating said movable jaw.

2. In a woodworking-machine in combination with the driving-shaft and the clutch mechanism mounted thereon; a pulley mounted on the outer end of the driving-shaft; a shifting-rod for the clutch mechanism, having two beveled blocks mounted thereon; and a weighted brake-lever pivoted to the frame of the machine and having a sleeve to operate on the driving-shaft pulley, said lever being actuated by the blocks on the shifting-rod.

3. In a woodworking-machine, the combination of the frame comprising two sections A and B rigidly secured to each other; of a fixed and adjustable cutter carried by the section A; mechanism for imparting rotary motion to said cutters; means for simultaneously adjusting the adjustable cutter and the cutter-driving mechanism; a reciprocating carriage mounted upon the section B; work-clamping mechanism mounted upon said carriage; means for vertically adjusting one member of said clamping mechanism; an adjustable table or support carried by the section B beneath the clamping mechanism; means for imparting motion to the reciprocating carriage; means for automatically stopping the travel of the carriage; and means for automatically releasing the clamping mechanism after it has passed between the cutters.

4. In combination with the rotary cutters and their driving mechanism; the reciprocating carriage; the work-clamping members mounted upon said carriage and adjustable one in relation to the other, each clamping member comprising a fixed jaw, an arm or lever pivoted in said jaw, provided with means for holding the free end of the arm or lever, a movable jaw, means, substantially such as described, for causing the movable jaw to approach the fixed jaw, and a spring interposed between said means and the fixed jaw.

5. In combination with the carriage, the bar L mounted thereon; a fixed jaw M provided with the arm or lever N; the movable jaw O; means carried by said jaw for holding the free end of the arm or lever N, and means for moving said jaw toward and from the fixed jaw.

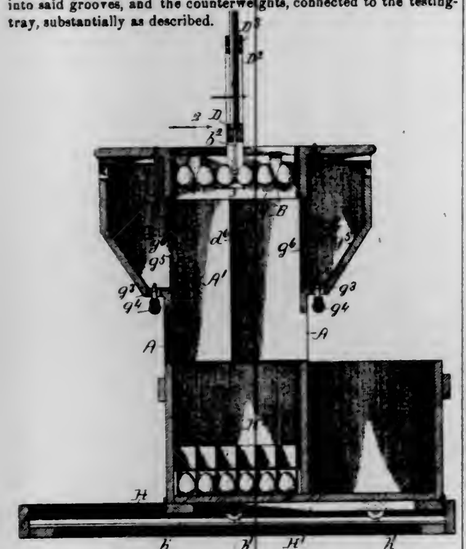
6. In combination with the carriage; bar L mounted thereon; a fixed jaw M provided with arm or lever N; movable jaw O; means carried by said jaw for holding the free end of the arm or lever N, plate Q; connections between said plate and jaw O; upright shaft P secured to the plate; and handle R.

7. In combination with the carriage of the fixed bar L and the movable bar L'; rock-shaft P; work-clamping members mounted upon the bars L and L'; each comprising a fixed jaw, a swinging lever or arm connected to said jaw, a movable jaw, means carried by said jaw for holding the free end of the arm or lever N, a plate connected to the rock-shaft P, and connections between said plate and the movable jaw; and means for raising and lowering the bar L'.

569,941. EGG-TESTER. JOHN SCHNEBERGER and VACLAV KOTVA, Chicago, Ill. Filed Dec. 30, 1895. Serial No. 573,781. (No model.)

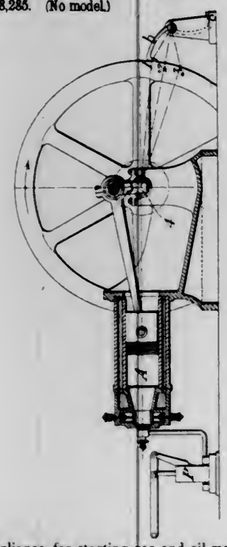
Claim.—1. In an egg-testing apparatus, the combination with a box-receptacle, of a movable testing-tray, located in said receptacle,

the tubular handle, the cross-bar, D, the guide-frame D', the companion standards, mounted on the box-receptacle and provided with grooves, the guide-lugs, attached to the guide-frame and extending into said grooves, and the counterweights, connected to the testing-tray, substantially as described.



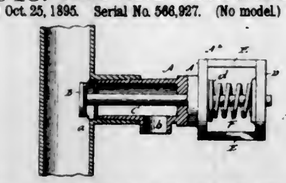
2. In an egg-testing apparatus, the combination with a box-receptacle, of a testing-tray, movably supported therein and consisting of a number of apertured slats and a box-frame, in which the respective ends of the slats are pivoted so as to be turned edgewise, the connecting-bar, loosely attached to the slats, the lug, secured to said bar, the handle rod, the link, joining said lug and handle-rod, the spring, connecting with and returning the slats to their normal position, the tubular handle, the cross-bar D, the guide-frame D', the companion standards, provided with grooves, the guide-lugs, attached to the guide-frame and extending into said grooves, and the counterweights, connected to and moving with the testing-tray, substantially as described.

569,942. APPLIANCE FOR STARTING GAS AND OIL MOTOR ENGINES. HERMANN SCHUMM, Cologne, Germany, assignor to the Gas-Motoren-Fabrik-Deutz, Cologne-Deutz, Germany. Filed July 7, 1896. Serial No. 598,285. (No model.)



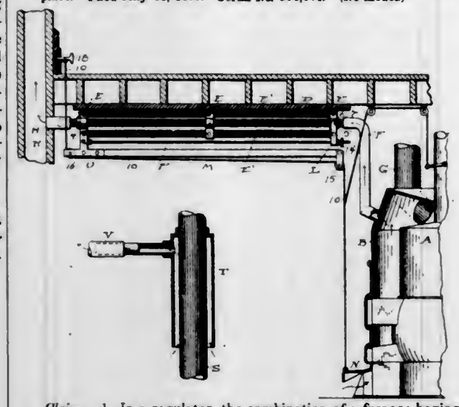
Claim.—Appliance for starting gas and oil motor engines consisting in a pivoted arm having spring action, which arm is adapted to bear against a peripheral part of the fly-wheel in such manner as to lie at an obtuse angle to the meeting radius thereof such as to resist its rotation when a charge is being pumped into the engine-cylinder, while on an impulse being given to the fly-wheel on the explosion of the charge, the latter will compress or force back the arm against its spring action and will at the same time force it downward through the radial position, after which the spring action of the arm will tend to accelerate the rotation of the fly-wheel, substantially as described.

569,943. RELIEF-VALVE. WILLIAM W. SHIRLEY, Westlake, La. Filed Oct. 25, 1895. Serial No. 566,927. (No model.)



Claim.—In a relief-valve of the character described the chambered shell or casting in the form of a tubular plug open at one end, and closed at its outer end by a thickened and flanged head having therethrough an opening for a valve-stem, an open spring box or housing carried by said thickened and flanged end, and separated thereby from the chamber of the casting, said casting having a lateral discharge-opening intermediate of its ends, in combination with the valve, its stem, and the spring coiled around said stem within the open box or housing and having a bearing at one end thereon and at the other end upon said stem, substantially as specified.

569,944. AUTOMATIC REGULATOR FOR FURNACES. ROBERT L. SHORT, Cleveland, Ohio, assignor of one-half to Charles Smith, same place. Filed May 11, 1896. Serial No. 590,971. (No model.)



Claim.—1. In a regulator, the combination of a furnace having a hot-air chamber with an outlet-opening, a duct communicating with the chamber through said opening, means for causing a draft through the duct, an expansion member subject to the heat of the medium passing through the duct, and means for controlling the furnace through variations in the length of the expansion member, substantially as set forth.

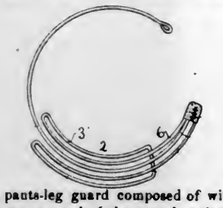
2. In a heat-regulator, a furnace and a hot-air chamber having an outlet-opening, a duct from said opening and means for causing a draft through said duct, in combination with a tubular expansion member forming a part of said duct and means for controlling the furnace through variations in the length of the said expansion member, substantially as described.

3. In a heat-regulator for furnaces, a hot-air chamber having an outlet-opening, a draft-flue and a duct from said opening to said flue, an expansion member forming a part of said duct and means for controlling the furnace through variations in the length of said expansion member comprising a pivoted arm and a flexible damper connection supported by said arm, substantially as set forth.

4. In a regulator for a furnace, a hot air chamber having an opening, a duct communicating with the chamber through said opening, an expansion-tube forming a part of said duct, and means to stimulate a draft through said duct, in combination with a pivoted yoke actuated by said expansion member, a pivoted arm and an actuating-rod connecting the yoke with the said arm, substantially as set forth.

5. The heat-regulator comprising a damper-chain, a pivoted arm having the chain passing over its free end, an operating-rod connected with the pivot end of the said arm, and a pivoted yoke connected with said rod, in combination with a hot-air chamber and a draft-flue, a duct connecting said chamber and flue and a tubular expansion member in said duct and subject to the heat of the air passing through the same and having a projection to engage and actuate said yoke, substantially as set forth.

569,945. PANTS-LEG GUARD. SAMUEL J. TURNER and CHARLES T. GLASSER, Minneapolis, Minn., assignors of one-fourth to Henry J. Glasser, same place. Filed Sept. 20, 1895. Serial No. 563,109. (No model.)



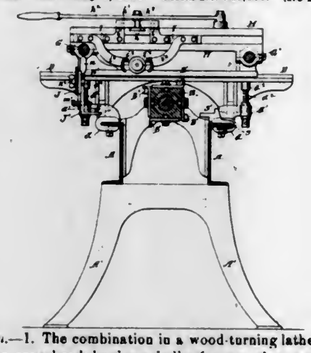
Claim.—1. A pants-leg guard composed of wire so bent upon itself as to form, near one end of the guard, spring jaws which are adapted to grasp and hold the fold of the pants, while the whole is adapted to encircle the leg and tightly clasp the pants about the leg, substantially as shown and described.

2. A pants leg guard composed of spring-wire in the form of an open ring, provided with outer and inner jaws formed by folding the wire upon itself, so that the forward end of the outer jaw extends transversely across the wires of the inner jaw, substantially as shown and described.

3. In a pants-leg guard, the combination of a spring-clasp in the form of an open ring, a clamp composed of wire bent upon itself to form an outer and inner jaw, and a cap surmounting the forward end of the inner jaw, substantially as set forth.

4. In a pants-leg guard, the combination of a spring-clasp in the form of an open ring, a clamp having jaws adapted to receive and hold the fold of the pants by spring action, all composed of a single wire, said wire being so bent upon itself that the outer jaw is the wider and the inner jaw the longer, substantially as shown and described.

569,946. WOOD-TURNING LATHE. DANIEL ADAMS, Philadelphia, Pa. Filed May 9, 1895. Serial No. 548,668. (No model.)
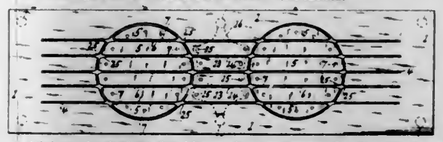


Claim.—1. The combination in a wood-turning lathe, of the rotary cutter, cross-heads having spindles for engaging, supporting and rotating the block to be turned, a swinging frame depending from one of the guide-rods of the machine, and angle-bars mounted on said frame and serving to support the block to be turned, said angle-bars being so located on the swinging frame that when the latter is moved inward and upward the block carried by the bars will be brought into position between the lathe-spindles, substantially as specified.

2. The combination in a wood-turning lathe, of the rotary cutter, cross-heads having spindles for engaging, supporting and rotating the block to be turned, a swinging frame depending from one of the guide-rods of the machine, angle-bars mounted on said swinging frame and adjustable thereon from and toward the axis around which it swings, said swinging frame being adapted to move inward and upward, whereby the block carried by the angle-bars of the frame is brought into position between the lathe-spindles, substantially as specified.

3. The combination in a wood-turning lathe, of the rotary cutter, cross-heads having spindles for engaging, supporting and rotating the block to be turned, the swinging frame depending from one of the longitudinal guide-rods of the machine and adapted to move inward and upward, bars carried by said swinging frame and adapted to support the block to be turned and to adjust the same to a position between the lathe-spindles, an intermediate cross-head located above the lathe-spindles and having transverse slides carrying jaws for engaging the block at a point between the ends of the same, a longitudinal slide having cams engaging projections on said transverse slides, and a lever for operating said longitudinal slide, substantially as specified.

569,947. TAILOR'S TABLE. MARCUS A. ADLER, New York, N. Y. Filed Aug. 6, 1896. Serial No. 601,885. (No model.)



Claim.—1. A slotted table-top having supporting-legs and provided with a rotary supporting portion comprising strips spaced to correspond with the slots in the table-top, independent risers for severally supporting the strips, a rotary or swivel base for the risers, and supporting-rollers for the edge of the swivel-base to steady the latter substantially as described.

2. A slotted table-top having supporting-legs and provided with suitably-separated rotary supporting portions each comprising strips spaced to correspond with the slots in the table-top, independent risers for severally supporting the strips, a rotary or swivel base for the risers, and supporting-rollers for the edge of the swivel-base to steady the latter, said table-top having a portion interposed between the rotary supporting portions, said interposed table-top portion comprising strips spaced to correspond with the slots or spaces in the table-top and in the rotary supporting portions, independent risers for severally supporting the interposed top strips, and a fixed base for the interposed strip-risers, said fixed base being secured to table-top legs substantially as described.

3. A slotted table-top having supporting-legs and provided with a rotary supporting portion comprising strips spaced to correspond with the slots in the table-top, independent risers for severally supporting the strips, a rotary or swivel base for the risers, and supporting rollers for the edge of the swivel-base to steady the latter, said table-top and rotary portion being cut away at edge portions to form enlargements or mouths at the meeting of the several slot portions substantially as described.

4. A slotted table-top having supporting-legs and provided with a rotary supporting portion comprising strips spaced to correspond with the slots in the table-top, independent risers for severally supporting the strips, a rotary or swivel base for the risers, supporting-rollers for the edge of the swivel-base to steady the latter, a locking-lever for the swivel-base, an actuating handle or rod for the lever, and a guide for the handle connected to a side or edge of the table-top substantially as described.

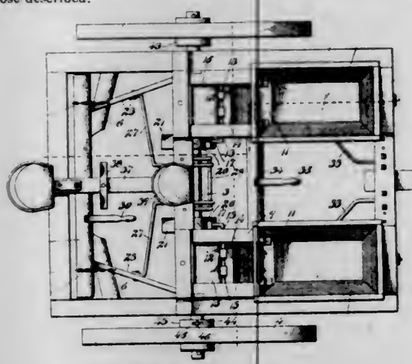
5. A slotted table-top having supporting-legs and provided with a rotary supporting portion comprising strips spaced to correspond with the slots in the table-top, independent risers for severally supporting the strips, a rotary or swivel base for the risers, and supporting-rollers for the edge of the swivel-base, said risers being spaced to permit the insertion of the operator's foot between said risers onto the base for swiveling the latter substantially as described.

569,948. POTATO-PLANTER. THOMAS BIDELMAN, Parshallville, Mich., assignor of one-half to Philip Dormire, same place. Filed Oct. 5, 1895. Serial No. 564,771. (No model.)

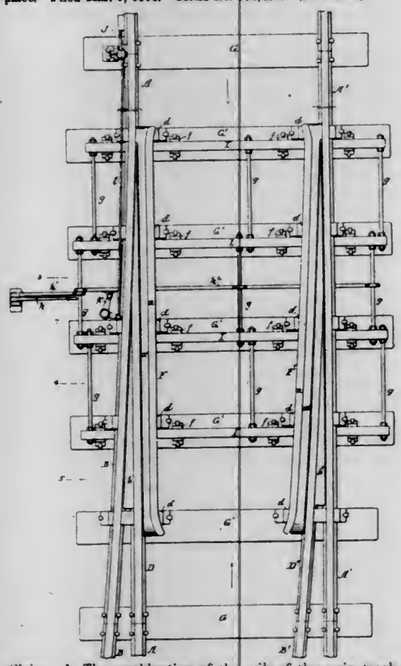
Claim.—1. In a planter, the combination of a rotating axle, a laterally-adjustable furrow-opener and seed-dropping mechanism, a pendent hanger having a horizontal portion, a standard having a ring at its front end which is laterally adjustable upon the said axle, an L-brace attached to the standard and having slidable connection with the horizontal portion of the said pendent hanger, and a covering-blade secured to the lower end of the said standard, substantially as and for the purpose set forth.

2. In a planter, the combination of the following elements, to wit: a main frame, supplemental frames having independent lateral adjustment with respect to each other and the main frame, and having openings at their rear ends and recesses at their front ends which recesses gradually deepen toward and communicate with the said openings, hoppers attached to and movable with the supplemental frames and placed above their recessed ends, seed-spouts carried by and attached to the rear ends of the said frames directly opposite the openings therein, valves located at the upper ends of the seed-spouts

and normally closing them and the openings of the supplemental frames, rods supporting the valves and having their opposite ends bent, springs engaging with one set of bent ends for normally retaining the valves closed, laterally-adjustable trips adapted to engage with the other set of bent ends of the said rods for actuating the valves, furrow openers and closers laterally adjustable to correspond with the position of the supplemental frames and the hoppers and seed-spouts carried thereby, and independent means for adjusting the furrow openers and closers so as to vary their distance from the surface of the ground, substantially in the manner set forth for the purpose described.



569,949. RAILWAY-SWITCH. CHARLES I. BISBING, Philadelphia, Pa., assignor of one-half to Oscar D. Holmes and Carlton J. Kirk, same place. Filed Mar. 9, 1896. Serial No. 582,407. (No model.)



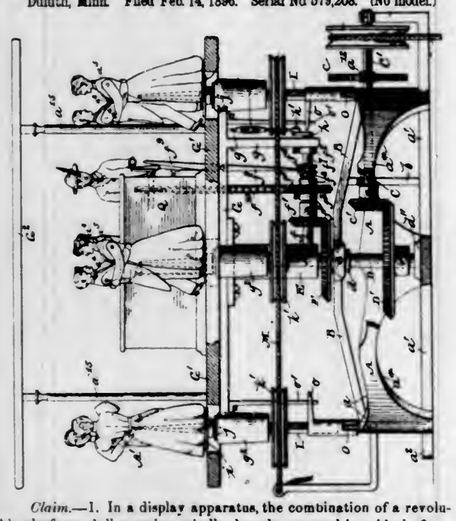
Claim.—1. The combination of the rails of the main track and siding, the switch-rails mounted so as to be vertically movable alongside of the fixed rails of the track, means for supporting said fixed rails above the level of the cross-ties, and a series of transverse wedge-bars connected by longitudinal stay-bars so as to move in unison and having wedges for acting upon said vertically-moving switch-rails so as to effect the depression of one simultaneously with the elevation of the other, said wedge-bars being seated but free to slide in shoes mounted upon and secured to the tops of the depressed cross-ties, whereby rigid vertical support is provided for each wedge-bar, substantially as specified.

2. The combination in a railway-switch, of the rails of the main track and siding, switch-rails mounted so as to be movable vertically alongside of the fixed rails of the track, means for supporting said fixed rails above the level of the cross-ties, and a series of transversely-movable switch-operating bars mounted on said ties and each connected to the switch-rails by means of links, the rails or bars being connected so as to move in unison whereby when said bars are moved one switch-rail will be positively elevated and the other will be positively depressed, the raised rail being supported upon the operating-bars, substantially as specified.

3. The combination in a railway-switch, of the rails of the main track and siding, switch-rails mounted so as to be vertically movable alongside of the fixed rails, means for supporting the fixed rails above the cross-ties, a series of transversely-movable wedge-bars mounted on said cross-ties and connected so as to move in unison, and links connecting said wedge-bars with the switch-rails whereby the movement of the switch-rails is due to the conjoint action of the wedges and links, substantially as specified.

4. The combination in a railway-switch, of the rails of the main track and siding, with switch-rails mounted so as to be vertically movable alongside of the fixed rails, said switch-rails having laterally-projecting tapered blocks, serving to lift the wheels of a locomotive or car approaching the switch from the rear, substantially as specified.

569,950. DISPLAY APPARATUS. FRIEDRICH W. G. BOETTCHER, Duluth, Minn. Filed Feb. 14, 1896. Serial No. 579,208. (No model.)



Claim.—1. In a display apparatus, the combination of a revoluble platform, doll-carrying spindles loosely mounted in said platform and adapted to be reciprocated up and down upon the revolution of the same, dolls mounted on said spindles and having movable arms and legs, levers connecting said arms and legs, and a rod connected to said levers of each doll and adapted to be reciprocated vertically by the vertical movement of the doll as the platform revolves, the construction being such that the arms and one leg move up simultaneously so that the dolls appear to be dancing a waltz or other movement, substantially as described.

2. In a display apparatus, the combination of a revoluble platform, vertically-movable spindles loosely mounted in said platform, pulley-wheels on said spindles, a belt for revolving said wheels, dolls mounted on said spindles and having movable arms and legs, and a rod connected to said levers of each doll and adapted to be reciprocated vertically by the vertical movement of the doll upon the revolution of the platform, the construction being such that the arms and one leg move up simultaneously so that the dolls appear to be dancing a waltz or other movement, substantially as described.

3. In a display apparatus, the combination with a movable platform, means for revolving the same, removable dancing-dolls mounted on said platform, apertured lugs on said dolls and pins for connecting the dolls in pairs, substantially as described.

569,951. DEVICE FOR PROPELLING VESSELS. JOHN BOND, Turlock, Cal. Filed Dec. 17, 1895. Serial No. 572,407. (No model.)

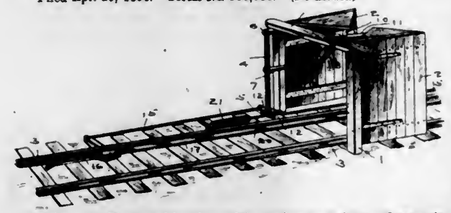
Claim.—1. In a vessel, open-ended cylinders located below the bottom of the vessel essentially in line with each other, an intermediate engine-compartment, connections between the engines and plungers which are adapted to reciprocate in the outer cylinders, cylinders of larger diameter intermediate between the outer ends of the plunger-cylinders and the central compartment having annular heads connecting them with the smaller plunger-cylinders, perforations extending longitudinally in annular series within said heads, with transverse slots or channels connecting the perforations with the interior of the enlarged cylinders whereby the water is admitted to the interior end of the plunger-cylinders and expelled therefrom by each reciprocation of the plunger and water is admitted to the outer end of the plunger-cylinders and expelled therefrom by the opposite movements of the piston and gates whereby the end of the cylinder and the annular openings of the larger cylinder may be closed or opened.



2. In a vessel open-ended cylinders located below the bottom of the vessel, essentially in line with each other, other cylinders of larger diameter connecting with the inner ends of the first-named cylinders, with heads at their junction, provided with an annular series of passages with slots or channels leading from said passages to the interior of the enlarged cylinders, plungers reciprocating within the smaller cylinders, a central engine-compartment and mechanism by which the plungers are reciprocated, a perforated rotatable ring at the outer ends of the passages, and mechanism by which said ring is turned so that its perforations coincide with those of the annular cylinder-head, or close them, as described.

3. In a vessel, a central engine-chamber located beneath the bottom of the vessel, open-ended cylinders of different diameters extending in line with said chamber, plungers reciprocating in the outer and smaller cylinders and connected with the engines of the central chamber, annular perforated rings, and mechanism by which they are rotated over the openings in the heads of the larger cylinders, and swinging gates and operating mechanism connected with a lever-arm thereon by which the outer ends of the smaller cylinders are closable.

569,952. MINE TRAP-DOOR. GEORGE BONENBERGER, Evansville, Ind., assignor to the Automatic Mine Door Company, Terre Haute, Ind. Filed Apr. 29, 1896. Serial No. 589,616. (No model.)



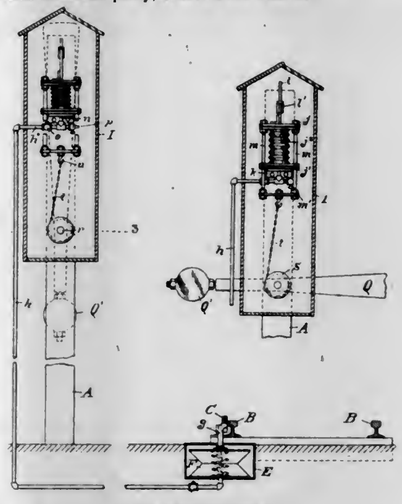
Claim.—1. The combination with a mine trap-door, of two pivoted trips connected by a moving bar lying close to one of the rails and moved away therefrom when either trip is operated; and connections between the trips and the door for opening the same, substantially as set forth.

2. The combination with a mine trap-door, of pivoted trips connected by a moving bar lying close to one of the rails, and moved away therefrom when either trip is operated, short arms formed on the trips and on the moving bar, connections between such arms and the door for opening the same, and means for closing such door after the cars have passed through the same, substantially as set forth.

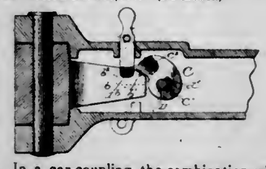
3. In a mine trap-door, the combination with a mine trap-door closing across a track, a vertical shaft connected with the door for opening and closing the same, such shaft provided with cranks near its lower end, two pivoted trips connected by a moving bar lying close to one of the rails, and moved away therefrom when either trip is operated, rods connecting the cranks of the operating-shaft with short arms formed on the pivoted trips and a weight or similar device connected to one of the cranks for closing the door when the moving bars are released, substantially as set forth.

569,953. RAILROAD TIME-SIGNAL. ROBERT T. BOWIE, Wimbledon, Md., assignor of one-half to John Wilson Brown, Baltimore, Md. Filed Mar. 31, 1896. Serial No. 585,590. (No model.)

Claim.—In a railroad-signal the combination of a flexible bellows-like bag having an upper and lower head; a vertically-movable slide-frame having two side rods, *m*, rigidly attached to the said upper head and the lower ends of said rods connected by a cross-piece, *m'*; a rock-shaft carrying a signal-arm, Q, provided with a counterweight; a pulley on said rock-shaft; and a chain connecting the said vertically-movable frame and pulley, as shown and described.



569,954. CAR-COUPLING. HARRY C. BUHOUP, Chicago, Ill. Filed Apr. 29, 1896. Serial No. 589,567. (No model.)



Claim.—1. In a car-coupling, the combination with a knuckle, its tailpiece, and a vertically-vibrating locking-block, of a trip-catch which projects through the coupler-head, that portion of said catch which is within the head being arranged in the path of the vibrating locking-block whereby the vibrating locking block may be caused to assume the forward or locked position by the manipulation of the projecting portion of said trip-catch after once being set for uncoupling; substantially as and for the purposes specified.

2. In a car-coupling, the combination with a knuckle and its tailpiece, of a vibrating locking-block, a shaft upon which the locking-block is loosely mounted, means for limiting the rotation of the locking-block independent of its shaft, and a trip-catch arranged in the path of the vibrating locking-block; substantially as and for the purposes specified.

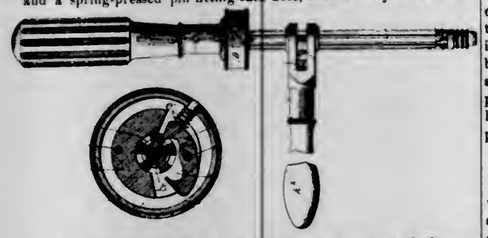
3. In a car-coupling the combination with a knuckle, its tailpiece and a horizontally-pivoted overbalanced locking-block, of a trip catch which projects through the head of the coupler and whose point of support is on the same side of the pivot of the locking-block as the center of gravity of the locking-block, that portion of the trip-catch within the coupler-head being arranged in the plane of vibration of the locking-block whereby the locking-block may be thrown into the locking position by the manipulation of the projecting portion of said trip-catch substantially as and for the purposes specified.

4. In a car-coupling, the combination with a knuckle, its tailpiece, and a horizontally-pivoted vibrating locking-block whose center of gravity is forward of its pivot, of a trip-catch which projects through the coupler-head and is arranged forward of the pivot of the locking-block and in the path of the tailpiece of the knuckle, substantially as and for the purposes specified.

569,955. COMBINATION-TOOL. OLIVER M. CHENEY, Topeka, Kans. Filed Apr. 16, 1896. Serial No. 587,753. (No model.)

Claim.—1. The combination with the shaft having corrugations and an inner reduced end provided with a groove, of a handle having a reduced end, a barrel secured on said reduced end and having an enlarged portion and provided with a bore to accommodate said shaft, a screw extending through said barrel and said handle and engaging said groove, said screw also serving to unite said handle and said barrel, a slot being formed in said barrel, a double pawl located in said slot and centrally pivoted, a ring loosely mounted on said bar-

rel and adapted to be rotated thereon, said ring having a hole therein, and a spring-pressed pin fitting said hole, substantially as set forth.



2. A combination-tool having a handle, an operating-shaft rotatably mounted at one end in said handle and slotted at its outer free end, a flat plate fitting in said slot and having opposite lugs projecting beyond the edges thereof, and a sleeve or thimble fitted on said slotted end and having opposite peripheral L-shaped slots through which said lugs are designed to project, substantially as set forth.

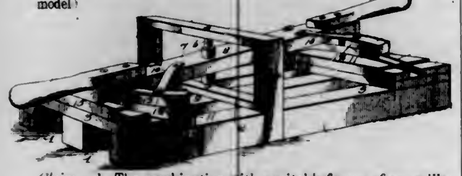
3. A combination-tool having an operating-shaft provided with a slotted reduced end, a lug extending from one side of said end, a flat plate fitted in the slot of said end and having opposite lateral lugs, and a sleeve or thimble provided with opposite L-slots, and a bayonet-slot to receive said lug, substantially as set forth.

4. A combination-tool having an operating-shaft provided with a slotted end and a lug, a plate fitted in said slot having lateral lugs, a sleeve having slots to accommodate said lugs and provided at its outer end with a recess and opening of different size, as set forth.

5. A combinatioo-tool of the character herein described, having an operating-shaft provided with longitudinal corrugations, a handle loose on said shaft having a double pawl to engage said shaft, a ring loosely mounted on said handle, a pin carried thereby adapted to operate said pawl and an auxiliary arm fitted on said shaft having a double pawl also designed to engage said shaft, substantially as set forth.

6. The herein-described tool comprising the shaft having longitudinal corrugations and a reduced slotted end, a handle loose on the other end of said shaft having a slotted barrel, a double pawl centrally pivoted in said slot, a ring loose on said barrel having a spring-pressed pin engaging said pawl, a plate fitted in the slotted end of said shaft having opposite lugs, a sleeve or thimble on said shaft having slots to accommodate said lugs, and an auxiliary arm movable on said shaft having a double pawl designed to engage therewith, substantially as set forth.

569,956. MACHINE FOR SAWING FELLIES, &c. JOHN L. COLE, Radford Furnace, Va. Filed Feb. 29, 1896. Serial No. 581,352. (No model.)



Claim.—1. The combination with a suitable frame, of an oscillating beam moving about a fixed fulcrum and carrying at or near its ends segments to the opposite sides of which are secured saws, and the end handles by means of which said beam is oscillated, substantially as and for the purpose described.

2. In a machine for forming fellies, &c., the combination with a suitable base-frame having a central vertical fulcrum-pin, of an oscillating beam journaled on said pin and adapted to reciprocate longitudinally of the pin or to rise and fall thereon to provide for the feed of the saws, the segments carried by said beam upon either side of the fulcrum, the saws attached to said segments, and provision whereby the beam may be oscillated by hand-power, substantially as described.

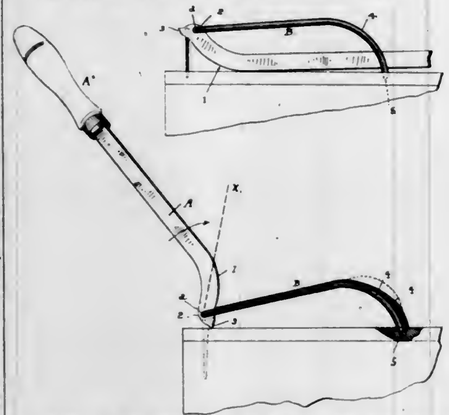
3. In a machine for manufacturing curved articles such as fellies, the combination with an oscillating beam, of arc-shaped cutters carried thereby and arranged in spaced pairs, one pair being located at a greater distance from the fulcrum of said beam than the other, substantially as and for the purpose described.

569,957. APPARATUS FOR MAKING PAPER-BOX BLANKS. HENRY R. CORKHILL, Jr., Rochester, N. Y., assignor to the Stecher Lithographic Company, same place. Filed May 15, 1896. Serial No. 591,705. (No model.)

Claim.—1. In an apparatus for making folding paper-box blanks, the combination with a die composed of a series of blunt-edged rules arranged to conform to the shape of the panels of the blank and the folding-lines between them, of a counter-die, having a series of panels corresponding in shape and size to the panels of the box as defined by the blunt rules, the adjoining panels in said counter-die being wholly in different planes, whereby the adjoining panels of a blank pressed between the die and counter-die will be wholly in different planes, some of the panels of the blank extending over the higher panels or portions of the counter-die and the adjoining panels of the blank being moved by the edges of the rules between the higher panels or portions of the counter-die, substantially as described.

2. In an apparatus for making paper-box blanks, the combination with a die composed of cutting-rules having outwardly-projecting sharp edges and rules of less height having outwardly-projecting blunt edges arranged to define the panels of the box-blank, of a counter-die composed of a hard base or plate against which the cutting-rules operate to sever the blank material and a series of detached panels secured to the face of the plate and raised above its surface, said panels corresponding in outline, size and position with alternate or non-adjoining panels of the box-blank, as defined by the blunt rules of the die, substantially as described.

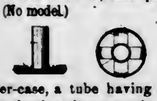
569,958. NAIL-EXTRACTOR. THOMAS C. CREIGHTON, Haywards, Cal. Filed Feb. 14, 1896. Serial No. 579,317. (No model.)



Claim.—1. The herein-described nail-extractor comprising the lever having a straight handle portion A^x, a curved head 1 terminating in the reversely-turned nose 2 and provided with gripping-jaws 3 3, and the spring arms B B attached to the nose on opposite sides of, and parallel with, the shank and having the downwardly-curved claws 4 4 terminating in sharp points 5 5, constructed to operate as set forth.

2. In a nail-extracting tool of the character herein described, the combination, with the lever portion having a curved outer end terminating in gripping-jaws, of the anchor constructed of spring-arms attached to the said lever at a point close to and above the gripping-jaws and on opposite sides thereof, and having downwardly-curved spring-claws provided with sharp points, said arms extending parallel with each other and with the lever, substantially as set forth.

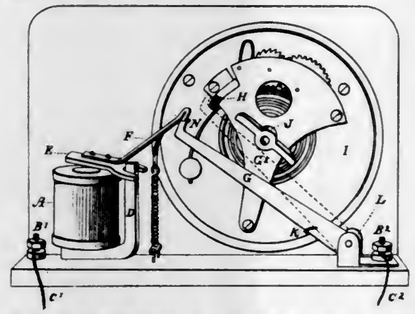
569,959. CASTER-CASE. LENI B. DENTON, Grand Rapids, Mich., assignor of one-half to Orin A. Ward, same place. Filed Feb. 6, 1896. Serial No. 578,255. (No model.)



Claim.—In a caster-case, a tube having radiating arms at the lower end, a track-plate having the outer rim turned up, and folded upon the rim of said track-plate to fit snugly over the edge of the radiating arms of the tube, and firmly connect the two, substantially as shown and described.

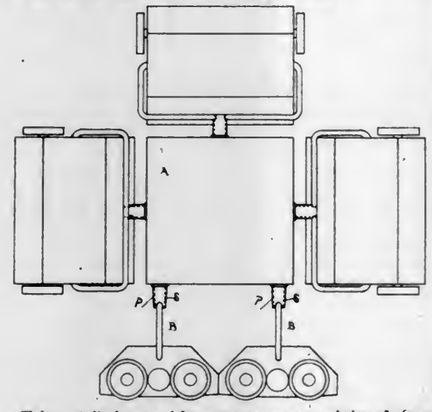
569,960. AUTOMATIC CIRCUIT BREAKER AND CLOSER. CHARLES C. DRAKE, Trenton, N. J. Filed July 10, 1896. Serial No. 598,761. (No model.)

Claim.—1. In a cut-out a motor provided with a movable arm adapted when released to release a detent and thereby permit the operation of such motor and the revolution by it of a cam bearing upon such arm until such arm is replaced thereby in its normal position, in combination with an electric magnet in a closed circuit, provided with an armature adapted to be attracted by an abnormal current, and by such attraction to release such arm.



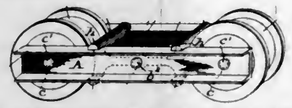
2. A cut-out comprising a magnet and its armature, a swinging arm engaged with the armature, a normally-wound motor having a detent in the path of the arm for releasing it, and a device operated upon movement of the motor for restoring the arm.

569,961. DISPLAY-STAND. WALTER J. DREW, Grand Rapids, Mich., assignor to The Bissell Carpet Sweeper Company, same place. Filed Mar. 16, 1896. Serial No. 583,399. (No model.)



Claim.—A display-stand for carpet-sweepers consisting of a frame provided with a plurality of downwardly-projecting pins adapted to engage with the bail-socket of a corresponding number of carpet-sweepers to support the frame in an upright position, and a plurality of supports carried by the frame and arranged to engage and support the carpet-sweepers to be displayed, substantially as described.

569,962. LUMBER-TRUCK. VICTOR L. EMERSON, Baltimore, Md., assignor to the Emerson Company, same place. Filed Mar. 6, 1896. Serial No. 582,122. (No model.)



Claim.—1. A lumber-truck for dry-kilns having two longitudinal beams; two wheels in alinement between the said beams and revolving in a plane which is parallel with said beams; a union stay-piece between the two beams and also between the wheels, said stay-piece having lateral projecting lugs at opposite sides which take both above and below the said beams; and an axle-bolt at each end through each wheel and also through the two beams.

2 A lumber-truck for dry-kilns having two longitudinal beams; two wheels in alinement between the said beams and revolving in a plane which is parallel with said beams; a union stay-piece between the two beams and also between the wheels and provided with stop-shoulders to prevent a lumber-supporting beam from slipping; and bolts confining the two beams together.

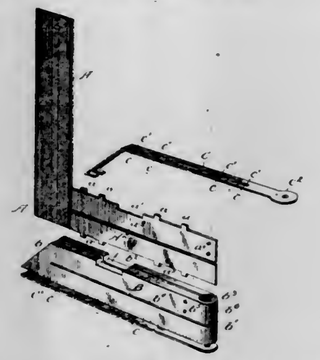
3. A lumber-truck for dry-kilns having two longitudinal beams; two wheels in alinement between the said beams and revolving in a plane which is parallel with said beams; a union stay-piece between the two beams and also between the wheels, said stay-piece having lateral projecting lugs at opposite sides which take both above and below the said beams and also having stop-shoulders to prevent a lumber-supporting beam from slipping.

4. A lumber-truck for dry-kilns having in combination two longitudinal bars; two wheels in alinement with each other between the said bars and projecting above the top thereof and revoluble in a plane parallel with said bars; means connecting the two bars to hold them in their proper relative position, and stop-shoulders to prevent a lumber-supporting beam that may rest upon the truck from slipping against the wheels, as set forth.

5. A lumber truck for dry-kilns having two parallel beams; two wheels in alinement between said two beams; and one stay-piece centrally placed between the beams and also between the wheels and provided above and below with stop-shoulders to prevent a lumber-supporting beam from slipping, whereby the truck may be reversed and used either side uppermost.

6. A lumber-truck for dry-kilns having two parallel beams; a distance-piece separating said beams and having lateral lugs which project and engage with the edge of said beams; and two wheels in alinement between said beams and revolving in a plane parallel therewith.

569,963. COMBINATION-TOOL. OLOF ENGMAN, Kewanee, Ill. Filed May 2, 1896. Serial No. 589,963. (No model.)



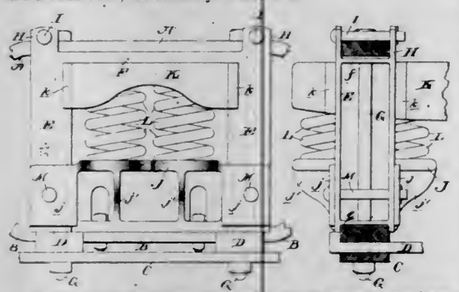
Claim.—A combined square, level, and T-square, comprising a metallic square having upon the upper and lower edges of one arm, lugs, a horizontal slot extending from the outer end nearly to its opposite end, a cut-away recess upon its upper edge near the middle thereof, and apertures in its outer end, a casing having a centrally and vertically formed slot extending from a cut-away end corner to a vertically-formed well in its opposite end, in which the arm of the square with the lugs fits, a slot in the casing corresponding to and in the same horizontal plane with said first slot, plates having apertures with inwardly-projecting lips thereon, registering with the lugs on the plates, and secured thereto upon the upper and lower surfaces of the casing, a dial upon the outer end of the upper plate, a post in the well in the casing, an index-finger secured to the upper end of the post to revolve over said dial, a T-square arm fitting in said slots in the casing and square, and having its inner end securely attached to revolve with said post and dial, an opening in the rear end of the casing and well, a plate secured over said opening, a screw threaded aperture in this plate and a thumb-screw in said aperture to hold the post in any desired position, and a level in the upper surface of the casing, substantially as described and set forth.

569,964. TRUCK-END CASTING. THOMAS EUBANK, Little Rock, Ark., assignor to the American Railway Equipment Company, East St. Louis, Ill. Filed July 15, 1896. Serial No. 599,234. (No model.)

Claim.—1. The combination with the arch-bars of a truck, of column guides formed with ears or lugs which extend above the top arch-bar, and bolts or rods in said lugs or ears and on top of the top arch-bar; substantially as described.

2. The combination with the arch-bars of a truck, of column-guides formed with a connecting-bar at their upper ends in which the top arch-bar is seated, lugs or ears extending up from these column-

guides or cross-bars, above the top arch-bar, bolts or rods in said lugs, a spring-seat to which the lower ends of the column-guides are secured, and column-bolts; substantially as described.



3. The combination with the arch-bars of a truck, of column-guides whose upper ends are connected, said connection forming a seat for the top arch-bar, lugs H extending up above the top arch-bar, bolts or rods I in said lugs, spring-seats having ears extending on each side of the column-guides, and bolts or rods which pass through said ears and column-guides; substantially as described.

4. The combination with the arch-bars of a truck, of column-guides formed with ears or lugs which extend above and below said arch-bars, respectively, and bolts or rods in said lugs or ears for supporting the parts in the event of the column-bolts breaking or becoming loose; substantially as described.

569,965. DOOR-HANGER. HENRY L. FERRIS, Harvard, Ill., assignor to Hunt, Helm & Ferris, same place. Filed Jan. 20, 1896. Serial No. 576,008. (No model.)



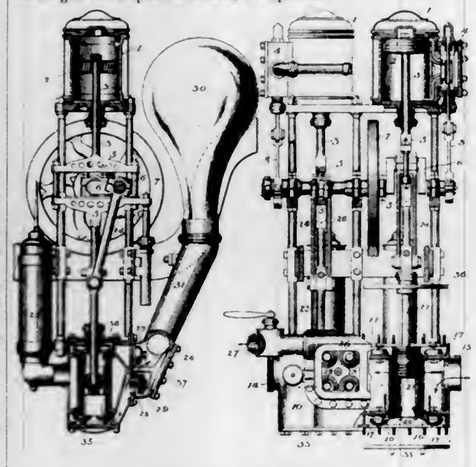
Claim.—1 A door-hanger comprising a bearing-wheel and frame adapted to be secured to the door, projecting above the latter and provided with a suitable housing for said wheel of a strap secured at its lower end to the frame, a spreader interposed between the upper portion of the door and the central portion of said strap and means for securing the strap at said central portion, the upper end of the strap extending to or near the housing, and a tie bolt for securing the sides of the housing against lateral spread and at the same time locking the wheel in position and securing the upper end of said tie-bolt, substantially as and for the purpose specified.

2. A door-hanger comprising a frame provided at its upper end with a housing and adapted to be secured at its lower end to a door, an aperture in each side of said housing, flanged thimbles, the reduced portions of which fit in said apertures, apertures extending through each of said thimbles constituting journal-bearings, a wheel, the hubs of which are suitably journaled within said thimbles, a centrally-enlarged opening extending through both hubs, a tie-bolt extending through the thimbles and through said central opening without being in contact with the latter, and means for securing said tie-bolt ends upon the outside of said thimbles, substantially as described.

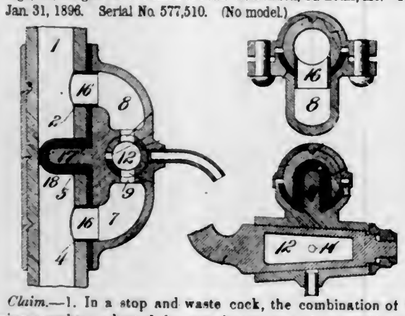
3. A door-hanger comprising a frame adapted to be secured at one end to a door and having at its opposite end a housing, apertures through the sides of said housing, flanged journal-bearings in said apertures, antifriction-rollers in said bearings, a supporting-wheel mounted in the said housing between the sides thereof, provided with bearing-surfaces constituting journals supported directly and only upon said antifriction-rollers, and a single tie-bolt passing centrally through said wheel and through the housing for securing the same together, substantially as described.

569,966. STEAM-FIRE-ENGINE PUMP. CHARLES H. FOX, Cincinnati, Ohio, assignor to the American Fire Engine Company, Seneca Falls, N. Y. Filed June 22, 1894. Serial No. 515,404. (No model.)

Claim.—In a steam fire-engine, the combination of a rectangular horizontally-arranged casting formed with an inner suction-chamber upper and lower horizontal partitions and two chambers outside of said partitions each divided by a transverse wall into two compartments which operate reciprocally as suction and force chambers, two pump-barrels mounted between the horizontal partitions, extending through but not communicating with the main suction chamber and opening each into two opposite reciprocally-acting compartments, water-supply inlets communicating with the respective ends of the main suction-chamber, valved openings arranged around the respective ends of the pump-barrels and forming a communication between the main chamber and the reciprocally-acting compartments, upper and lower cap-plates closing said compartments, a suitable discharge-chamber, an independent valved passage leading from each of the reciprocally-acting compartments to the discharge-chamber, and an engine of substantially the character described controlling pump-pistons working in the respective barrels, as explained.



569,967. STOP AND WASTE COCK. SAMUEL M. FRIEDE, Chicago, Ill., assignor of one-third to John W. Donnell, St. Louis, Mo. Filed Jan. 31, 1896. Serial No. 577,510. (No model.)



Claim.—1. In a stop and waste cock, the combination of two housing members adapted for attachment to a pipe provided with openings in its side, one of said members being provided with ports communicating with the openings in said pipe and with a channel forming a communication between said ports, and a valve-plug located in said channel, substantially as described.

2. In a stop and waste cock, the combination of the two housing members adapted for attachment to a pipe provided with openings in its side, one of said members being provided with ports communicating with the openings in said pipe and with a channel forming a communication between said ports, a valve-plug located in said channel, and a discharge-pipe leading from said channel, said plug provided with openings arranged to form communication between said ports or between either of them and said discharge-pipe, substantially as described.

3. In a stop and waste cock, the combination of two housing members adapted for attachment to a pipe provided with openings in its side, one of said members carrying an elastic bushing arranged to be inserted through the central one of said openings for the purpose of closing communication through the pipe, said member being provided with ports communicating with the two other openings in said pipe, and with a channel forming communication between said ports, and a valve-plug located in said channel, substantially as described.

4. In a stop and waste cock, the combination of two housing members adapted for attachment to a pipe provided with openings in its side, one of said members being provided with ports communicating with the openings in said pipe, and with a channel forming a communication between said ports, a valve-plug located in said channel, and tubes 16 connecting the interior of said pipe with said ports, substantially as described.

5. In a stop and waste cock, the combination of two housing members adapted for attachment to a pipe provided with openings in its side, one of said members being provided with ports communicating with the openings in said pipe, and means carried by said member arranged to close the passage-way through said pipe between said openings, said member being also provided with a channel forming a communication between said ports, a valve-plug located in said channel a discharge-pipe leading from said channel, said valve-plug being provided with openings arranged to form communication between said ports or between either of them and said discharge-pipe, substantially as described.

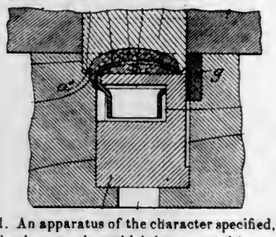
569,968. LACING-STUD. ELEAZER KEMPSHALL, Sharon, Mass., assignor to Theophilus King, trustee, Boston, Mass. Filed May 8, 1896. Serial No. 548,571. (No model.)



Claim.—1. A lacing stud or hook comprising a dome-shaped, perforated metal head, having a recessed or concave under side, and a coating of composition covering the convex upper side of the head, extending through the perforation in the head, and anchored in the concave under side of the head, the said coating having a flat under surface which is surrounded and protected by the margin of the head, substantially as and for the purpose set forth.

2. A lacing-hook comprising a dome-shaped perforated metal head, having a recessed or concave under side and a coating of composition covering the convex upper side of the head extending through the perforation in the head, and anchored in the concave under side of the head.

569,969. APPARATUS FOR COVERING LACING-HOOKS. ELEAZER KEMPSHALL, Newton, Mass., assignor to Theophilus King, trustee, Boston, Mass. Filed Jan. 30, 1896. Serial No. 577,406. (No model.)



Claim.—1. An apparatus of the character specified, comprising a base or plate having a socket which is open at the upper side of the plate, a holder formed to be inclosed by said socket and having a cover-molding upper face or bottom die adapted to support a head to be covered and a shank-receiving cavity below said face, and a top die formed to act on a plastic blank interposed between the holder and die, the holder and socketed plate being relatively movable to cover and uncover the holder.

2. An apparatus of the character specified, comprising a base or plate having a socket, a holder movable in said socket and adapted to support an article to be covered, a die formed to act on a plastic blank interposed between the holder and die, and means for displacing the holder to raise the covered article from the socket.

3. An apparatus of the character specified, comprising a base or plate having a socket and a molding-face at one side of the socket, a holder formed to be inclosed by the socket and having a molding-face which coincides with the molding-face on the plate when the holder is in its operative position, and a die adapted to cooperate with said molding-faces in forming a head from a plastic blank on an article supported by the holder.

4. An apparatus of the character specified, comprising, first, a base or plate having a socket and a molding-face at one side thereof; secondly, a lacing-hook holder formed to be inclosed by said socket and having a head-supporting and cover-molding face at its outer end, a shank-receiving cavity under said face, and a neck-receiving recess between said cavity and face, the said molding face coinciding with the molding-face of the plate when the holder is in its operative position; and thirdly, a die formed to cooperate with said molding-faces in forming a covering on the head of a lacing-hook.

5. A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, and hook-holders movable in said sockets, each having a head-supporting and cover-molding face at its outer end and a shank-receiving cavity below said face, the said cavities being within the sockets when the holders are in their operative positions and projected from the sockets for the reception and removal of the hook-shanks when the holders are displaced.

6 A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, hook-holders movable in said sockets, each having a head-supporting and cover-molding face at its outer end and a shank-receiving cavity below said face, the said cavities being within the sockets when the holders are in their operative positions, and means for simultaneously displacing said holders.

7. A lacing-hook-covering apparatus comprising a movable base or plate having a series of sockets which are open at one side of the plate, the other side of the plate having orifices coinciding with the sockets, hook-holders movable in said sockets, each having a head-supporting and cover-molding face at its outer end and a shank-receiving cavity below said face, the said cavities being within the sockets when the holders are in their operative positions, and a plate or holder having a series of pins adapted to enter the orifices in the plate to simultaneously displace the hook-holders.

8. An apparatus of the character specified, comprising a holder adapted to support an article to be covered, a base or plate having a socket formed to receive said holder, the plate projecting above the holder, so that the mouth of the socket forms a blank-receiving cavity above the said holder, and a die formed to act on a plastic blank in said cavity, the socketed plate and holder being relatively movable to cover and expose the holder.

569,970. EYELET. ELEAZER KEMPSHALL, Newton, Mass., assignor to Theophilus King, trustee, Boston, Mass. Filed May 14, 1896. Serial No. 591,458. (No model.)



Claim.—An eyelet comprising in its construction a body formed at one end with an inwardly-projecting member or flange, and a setting-flange of plastic material molded about the end of said body and interlocked with said member, said setting-flange being formed upon the exterior of the tubular body, with a shoulder surrounding the said body adapted to bear on the material in which the eyelet is inserted.

569,971. LACING-HOOK. ELEAZER KEMPSHALL, Newton, Mass., assignor to Theophilus King, trustee, Boston, Mass. Filed May 25, 1896. Serial No. 592,903. (No model.)



Claim.—1. A lacing-hook comprising an imperforate dome-shaped metallic head having its margin formed to bear as a dam or barrier on a flat seat or support and provided with cover locking or anchoring means, said head being adapted to support a plastic cover on its upper surface without permitting access of the plastic material to its under side.

2. A lacing-hook comprising a dome-shaped metallic head having its margin formed to bear as a dam or barrier on a flat seat or support and provided with cover locking or anchoring means, and a wear-resisting cover formed on the outer portion of the head and terminating at the margin of the head, the interior of which is vacant.

3. A lacing-hook comprising a dome-shaped metallic head having its margin formed to bear as a dam or barrier on a flat seat or support, an inclined flange projecting outwardly from said margin, and a wear-resisting cover formed on the outer portion of the head and on both sides of the flange, said cover terminating at the margin of the head, the interior of which is vacant.

569,972. SWITCH FOR SINGLE-RAIL RAILWAYS. EUGEN LANGEN, Cologne, Germany; Gustav Langen ancillary administrator of said Eugen Langen, deceased. Filed Sept. 26, 1895. Serial No. 563,757. (No model.) Patented in England Sept. 20, 1895, No. 17,576.

Claim.—1. In single-rail railways for suspended vehicles, the combination of two switches pivoted respectively to two branch lines and adapted to make connection with a main-line rail, an upward looped bar connecting the free ends of the two switches together and adapted to allow free passage to the wheel-frame of a vehicle between the two switches, and projecting arms or fenders on the wheel-frame

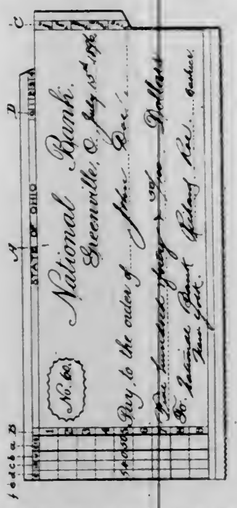
on the vehicle, which arms on approaching the switches press directly against the sides thereof so as to force them over in the event of their not being in the proper position for the passage of the approaching vehicle, substantially as described.



2. In single-rail railways for suspended vehicles, a switch device for connecting a main line with two branch lines, consisting of two switches *c*, *e*, and *d*, *f*, pivoted respectively to the branch-line rails *e*, *g*, and *f*, *h*, and adapted to connect these with the main-line rail *a*, *b*, and a transverse arched bar *l*, *m*, connected at its extremities to the two pivoted switches for causing them to move in unison, the open switch being made to form a considerable angle with its line of rail so as to be forced over into the closed position by the wheel-frame of a vehicle advancing along such line, substantially as described.

3. In single-rail railways for suspended vehicles, a switch device for connecting a main line with two branch lines consisting of two switches *c*, *e*, and *d*, *f*, pivoted respectively to the branch-line rails *e*, *g*, and *f*, *h*, and adapted to connect these with the main-line rail *a*, *b*, and a transverse arched bar *l*, *m*, connected at its extremities to the two pivoted switches for causing them to move in unison, and safety-guides for guiding the wheel-trucks while passing along the switches, substantially as described.

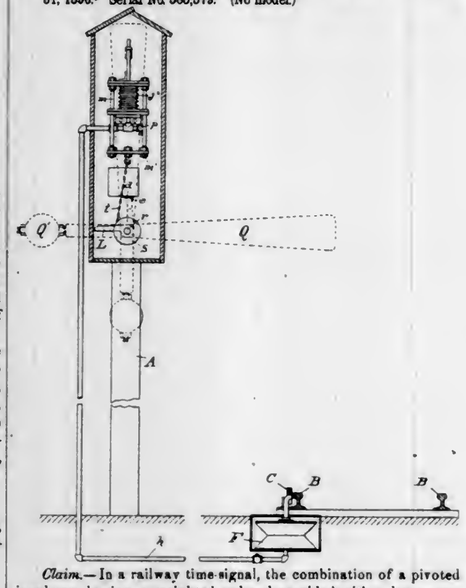
569,973. BLANK CHECK, DRAFT, &c. JAMES M. LANSDOWNE, Greenville, Ohio. Filed July 25, 1896. Serial No. 600,518. (No specimens.)



Claim.—1. A blank check, draft, or other like monetary instrument having the usual blank portion A, several series of spaces formed by vertically and horizontally ruled lines adjoining said blank portion at one end, and a vertical row of initial-figure indicators ranging from "1" to "9" in the series of spaces next to said blank portion, the remaining ruled spaces being adapted to receive in horizontal alinement with either of said indicators the respective figures representing the amount for which the check or draft is drawn.

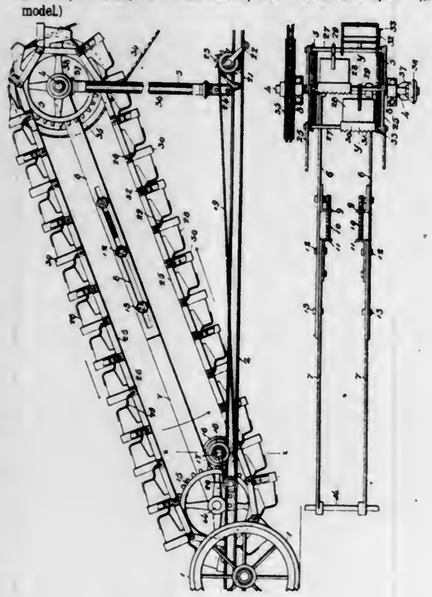
2. A blank check, draft, or other like monetary instrument having the usual blank portion A, several series of spaces formed by vertically and horizontally ruled lines adjoining said blank portion at one end, a vertical row of initial-figure indicators ranging from "1" to "9" in the series of spaces next to said blank portion, the remaining ruled spaces being adapted to receive in horizontal alinement with either of said indicators the respective figures representing the amount for which the check or draft is drawn, a vertical row of initial-figure-indicator duplicates at the other end of the blank portion, and a horizontal row of numerals ranging from "0" to "9" on one of the side edges of the instrument.

569,974. RAILWAY TIME-SIGNAL. ANTHONY A. LEHMANN, Baltimore, Md., assignor, by direct and mesne assignments, to John Wilson Brown, same place, and Robert T. Bowne, Wimbledon, Md. Filed Mar. 31, 1896. Serial No. 585,579. (No model.)



Claim.—In a railway time-signal, the combination of a pivoted signal arm having a weighted end and provided with a lever-arm; means to move the signal-arm to the "danger" position; clockwork mechanism having a detent to engage said lever-arm and hold the signal in the "danger" position while the clock runs for a prescribed period of time; and a stop device which is held out of action by the lever-arm while it is in the "danger" position but which prevents the clockwork from running when the said lever-arm is released, whereby when the detent releases the lever-arm the weighted end of the signal-arm will move the latter to the "safety" position and the stop device will automatically stop the clockwork from running.

569,975. DITCHING OR EXCAVATING MACHINE. MICHAEL C. MACKEY, St. Louis, Mo. Filed Jan. 10, 1896. Serial No. 575,023. (No model.)



Claim.—1. In a ditching-machine, a suitable brace, a series of buckets forming a conveyer carried by said brace, means for pivotally securing one end of the brace whereby the opposite or free end will gravitate or drop into contact with the ground, a traveling shaft for temporarily retaining the free end above the ground, and suitable rails for said shaft substantially as set forth.

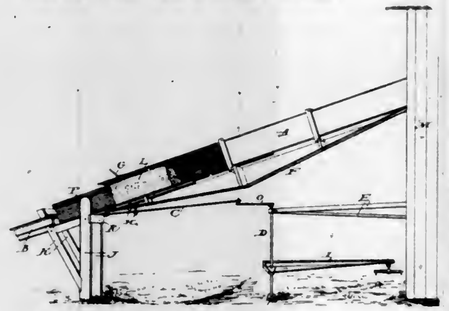
2. In a ditching-machine, a suitable wheeled truck, rails extending from the same to a suitable traction engine, standards located at a suitable distance from the truck, a drive-shaft mounted in suitable bearings on top of said standards and disposed transversely to the rails, an adjustable brace pivotally and loosely embracing said shaft, a shaft at the lower or free end of the brace, sprocket-wheels mounted on said shaft on either side of the brace, an endless conveyer supported and driven by said sprockets, a traveling transverse shaft cooperatiog with the brace for elevating or lowering the free end of the brace at will, and suitable supporting-rails for the transverse shaft substantially as set forth.

3. In a ditching-machine, a suitable wheeled truck, tracks or rails extending from the same to a suitable traction-engine, a conveyer-brace pivotally mounted at one end over the rails, a transverse shaft having wheels for supporting the lower end of said brace, and having suitable rollers disposed on the rails, suitable cable connections carried by the traveling shaft, a drum over which the cable passes, whereby upon the winding of the cable or cables, the traveling shaft is drawn in one direction and raises the free end of the brace a suitable distance above the ground, and whereby upon release of the drum the weight of the free end of the brace will drive the supporting-shaft in the reverse direction and cause the free end of the brace to gravitate and come in contact with the ground, substantially as set forth.

4. In a ditching-machine, an endless chain comprising a series of alternately-disposed outer links, transverse cylindrical rods connecting the adjacent ends of each pair of links, a tube embracing each rod between the links, a bucket having an open end passed over each tube, and a brace carried by the bottom of each bucket embracing the tube of the next succeeding rod, the buckets being disposed in alternate series on either side of the central line of the chain, substantially as set forth.

5. In a ditching-machine, a bucket having an open end, a band embracing the bucket about the edge of the open end thereof, a series of teeth or serrations formed at the medial portion of the band, and a plate carried by each band on the outer face thereof and having a terminal laterally-deflected end forming a side cutter for each bucket, substantially as set forth.

569,976. BALE-ELEVATOR. THOMAS F. MEATH, Humboldt, Kans. Filed Aug. 7, 1895. Serial No. 558,569. (No model.)



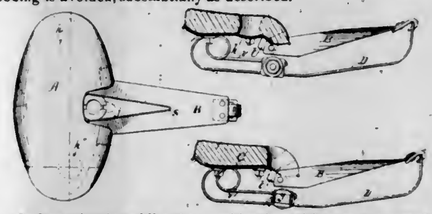
Claim.—1. The bale-elevating machine, having a chute A and reciprocating plunger B and retainers G, and H, H, to prevent backward movement of the bales, substantially as set forth.

2. The combination, in bale-elevating machines, of a chute A with reciprocating plunger B, connected with rotating shaft D by pitman-rod C and arm O, substantially as set forth.

569,977. CYCLE-SADDLE. LUCIEN-PERISSÉ, Paris, France. Filed Mar. 25, 1896. Serial No. 584,821. (No model.) Patented in France Jan. 13, 1896, No. 250,468.

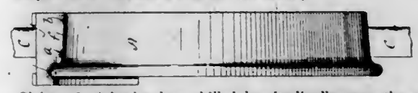
Claim.—1. A seat having two specially elastic parts corresponding with the positions of the ischiums, and a notch or recess in the front edge of the seat in the longitudinal line between said positions, said seat also having at the front edge elastic and yielding supports for the rider's thighs and a horn, distinct from the seat, extending forwardly from a point beneath the notch or recess, substantially as described.

2. A horn, distinct from the seat, composed of one or more straps or strips of flexible material with the two rear ends secured under the seat and the front end secured to a point above the plane of the seat, so that the difference in level between the seat and after part of the horn gives to the horn an inclination whereby all dangerous or hurtful rubbing is avoided, substantially as described.



3. In a bicycle saddle, the combination with a seat recessed in the front and middle thereof substantially as shown and described, of a forked flexible strap, secured to the seat itself or to lugs projecting therefrom underneath at either side of the recess and converging or rising toward a support or bracket located with reference to said seat at a higher and conveniently distant point, so as to operate as a protective horn, substantially as shown and set forth.

569,978. BRAKE-SHOE. DAVID PREW, Providence, R. I. Filed July 28, 1896. Serial No. 600,847. (No model.)

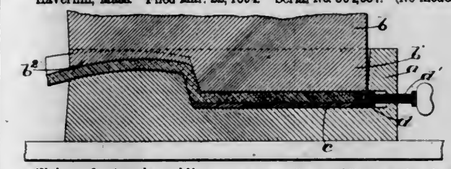


Claim.—1. A brake-shoe, chilled longitudinally upon the edge portions of its bearing-face, and having a soft unchilled middle portion, substantially as described.

2. A brake-shoe provided with a longitudinally-chilled groove adapted to bear upon the top of the flange of the wheel, and having a longitudinally-chilled portion at the opposite edge of the shoe, with an intermediate unchilled portion, substantially as described.

3. A brake-shoe having its bearing-face provided with the longitudinal chilled portions *a* and *b*, with the intervening unchilled portion *f*, substantially as described.

569,979. SOLE-MOLDING APPARATUS. GEORGE W. RODIGRASS, Haverhill, Mass. Filed Mar. 22, 1894. Serial No. 504,637. (No model.)



Claim.—1. A sole-molding apparatus for molding spring-heel shoes consisting of a female die having a heel-recess *a'* with a vertical heel-breast, and a transversely-curved shank portion a^3, said vertical heel-breast and transversely-curved shank portion being grooved as at 2 to receive and prevent injury to the channel-flaps, and the male die having a heel portion with a vertical heel-breast and a transversely-curved shank portion, said parts being adapted to cooperate to mold the sole between them, which sole presents when molded a transversely-curved shank, a vertical heel-breast, and a flat heel portion, substantially as described.

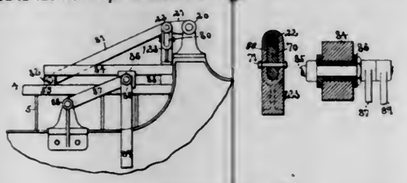
2. In a sole-molding apparatus, the combination of the female die having a heel-recess with a vertical heel-breast, and a shank portion, and false bottoms substantially as described for said heel-recess, and the male die having a heel portion *b'* with a vertical heel-breast, and a shank portion, substantially as described.

3. In a sole-molding apparatus, the combination of the female die having a heel-recess with a vertical heel-breast, and a shank portion, and false bottoms substantially as described for said heel-recess, and an adjustable block *d* or equivalent, and the male die having the heel portion *b'* with a vertical heel-breast, and a shank portion, substantially as described.

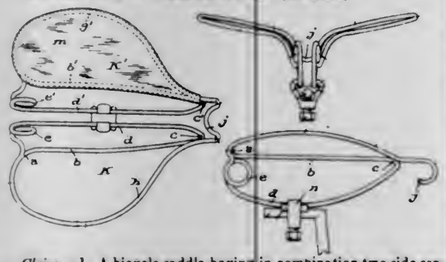
569,980. WOOL-WASHING MACHINE. FREDERICK G. SARGENT and ALLAN C. SARGENT, Graniteville, Mass. Filed Mar. 6, 1894. Serial No. 502,539. (No model.)

Claim.—The combination of a harrow, means for supporting the same, a slotted standard attached to the harrow, a crank whose pin

is free to slide in the slot, and a removable block adapted when inserted in the slot to prevent said sliding.



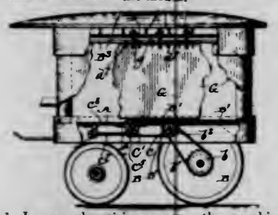
569,981. BICYCLE-SADDLE. EDGAR STRAKOSCH, Baltimore, Md.
Filed May 16, 1896. Serial No. 591,743. (No model.)



Claim.—1. A bicycle-saddle having in combination two side sections made of wire or spring-metal rod, each section consisting of a curved back and outer side rail forming part of the cantle and pommel, an inner bar connecting fore and aft between said cantle and pommel, a downcurved supporting-bar also extending fore and aft and at the front connected with the said inner bar and at the rear formed into a resilience-coil and connected with the said back rail, a cross-piece, *j*, uniting the said two sections at the front but said sections being separate along the center and at the rear; a saddle-supporting clamp gripping the downcurved supporting-bar of both of said sections; and a separate and independent seat of leather covering each section.

2. A bicycle-saddle having in combination two side sections made of wire or spring-metal rod, each section consisting of a curved back and outer side rail forming part of the cantle and pommel, an inner bar connecting fore and aft between said cantle and pommel, but on a lower plane so that each side section normally inclines upward from the center to the sides, and a downcurved supporting-bar extending fore and aft; a cross-piece uniting the said two sections at the front but said sections being otherwise unconnected; and a separate and independent seat covering each section.

569,982. ADVERTISEMENT-WAGON. THEODORE A. WARD, JOSEPH R. TURNER, and JOSEPH W. KENDALL, Tacoma, Wash. Filed Feb. 5, 1896. Serial No. 578,162. (No model.)



Claim.—1. In an advertising-wagon, the combination with a wagon proper having a continuously-revolving advertising-apron which forms the sides of the upper portion of the wagon, of revoluble standards mounted upon the wagon-body in such manner as to permit the continuously-revolving advertising-apron to be passed about them and to double on itself in a zigzag line in the manner described and shown, and thus permit a very great length of apron to be used on a small wagon, and means for revolving said standards and said apron, said means being connected with one of the traction-wheels of the wagon, substantially as described.

2. In an advertising-wagon, the combination with a wagon prope. having a continuously-revolving advertising-apron which forms the inclosing sides of the upper portion of the wagon, of revoluble standards mounted upon the wagon body or frame as described and shown, and provided with belt pulleys or wheels at bottom and top, and having the advertising-apron passed about them, a horizontal lower belt-wheel shaft mounted on said wagon and carrying a pair of belt pulleys or wheels, gearing for connecting the power mechanism of the wagon with said shaft, and a lower endless operating-belt, connecting the belt-wheels on said shaft with the belt-wheels on the standard, and thereby operating the latter and moving the endless apron, substantially as described.

3. In an advertising-wagon, the combination with a wagon proper, of revoluble standards mounted upon the same, an endless advertising-apron passed about said standards and forming the sides of the upper portion of the wagon and provided along its upper edge with supporting-wheels, a track mounted upon the frame of said wagon above the upper edge of said apron, and adapted to receive said supporting-wheels, and means for revolving said apron, substantially as described.

4. In an advertising-wagon, the combination with a wagon proper, revoluble standards mounted upon the same, two shafts mounted in said wagon and each carrying a pair of belt-wheels, means for adjusting one shaft away from the other, clutch mechanism on one of the shafts, an endless belt passed about said wheels, and a portion of the revoluble standards, means connecting one of said shafts to the power mechanism of the wagon, a continuously-revolving endless advertising-apron forming the inclosing portion of the upper part of the wagon, and passed about said standards, and means for supporting the upper edge of the apron, substantially as described.

569,983. BRAKE-SHOE. EUGENE W. APPLEGATE, Corning, N. Y., assignor to William E. Gorton, same place. Filed Jan. 24, 1896. Serial No. 576,666. (No model.)

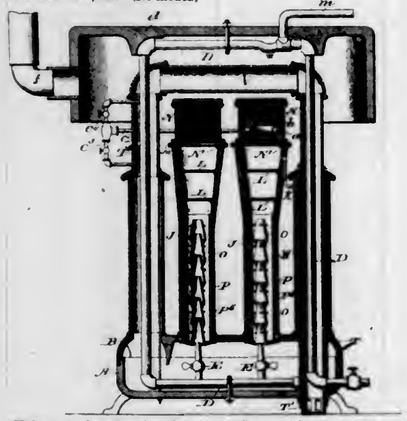


Claim.—1. A composite brake-shoe consisting of a cast-metal body portion and a soft-metal block having tapered sides and held therein against displacement by drafts, projections or the like independent of said tapered sides, substantially as described.

2. A composite brake-shoe composed of the main body and a soft-metal block having tapered sides and about which the body is cast and to which it is held by projecting parts such as projections on the soft-metal block forming anchors in the main body in addition to said tapered sides, the main body having chilled sections along the sides and at ends of said soft block, substantially as described.

3. In a brake-shoe a block of metal softer than the immediately-surrounding parts of the main shoe-body and formed with projecting portions, the said projecting portions being independent of and in addition to the inclined sides of said block and shoe-body, and the latter cast about and upon said projecting portions, which latter are thus integrally united with said body portion, substantially as described.

569,984. AIR AND GAS MIXER AND HYDROCARBON-FURNACE. VIRGIL W. BLANCHARD, New York, N. Y. Filed Sept. 22, 1896. Serial No. 606,641. (No model.)



Claim.—1. In a gas heating-stove the combination of a series of injector-tubes superimposed one above the other and all inclosed within an air-supply chamber, whereby gas passing through said tubes is successively charged and mixed with quotas of air before it escapes from the inclosing chamber, substantially as described.

2. In a gas heating-stove the combination of a series of injector-tubes superimposed one above the other within an inclosing air-supply chamber, whereby gas passing through said tubes is successively charged and mixed with quotas of air before it escapes from the inclosing chamber, with a gas supply jet for the first tube, and a burner or firing-plate through which the mixed air and gas is discharged, substantially as described.

3. The combination of an air-pipe, a burner at one end thereof, a gas-jet at the other end, and a series of injector-tubes arranged in said pipe between the jet and the burner, substantially as and for the purpose described.

4. The combination of an air-pipe, a burner at one end thereof, a gas-jet at the other end, and a series of injector-tubes arranged in said pipe, with means for heating the air supplied to said pipe, substantially as described.

5. The combination of an air-pipe, a burner at one end thereof, a gas-jet at the other end, and a series of injector-tubes arranged in said pipe, and means for supplying air or gas to the burner, substantially as described.

6. The combination of the casing, the air-pipes connected therewith, the tubes in said pipes, the perforated gas-trap on said pipes, and the gas-jets below the tubes, substantially as specified.

7. The combination of the casing, the gas-pipe therein and rising thereabove, having jets in the casing, the air-pipe partly surrounding the gas-pipe and communicating with the interior of the casing, and the air and gas mixers and burners on said casing over the jets and the air-pipes inclosing said mixers and supporting the burners substantially as set forth.

8. The combination of the casing, the gas-pipe therein and rising thereabove, having jets in the casing the air-pipe partly surrounding the gas pipe and communicating with the interior of the casing, the air-pipes over the jets also communicating with the interior of the casing, and the series of air and gas mixing tubes in said pipes, substantially as described.

9. The combination of the casing, the gas-pipe therein and rising thereabove, having jets in the casing, the air-pipe partly surrounding the gas-pipe and communicating with the interior of the casing, the air-pipes over the jets also communicating with the interior of the casing, and the series of air and gas mixing tubes in said pipes, the perforated plate above said tubes, and the perforated gas-trap above the plates, substantially as described.

10. The combination of mixing-tubes O, O, the pipe J, gas-diffusion plates L, and firing-plate L′ and the gas jets below the tubes, substantially as described.

11. The pipe J having a flaring extension in combination with a series of mixing-tubes O inclosed in said pipe below its extension, a gas-jet E and an air supply substantially as and for the purpose set forth.

12. The combination of a gas-jet with superimposed mixing-tubes O, the inclosing pipe J, the firing-plate, and trap N, substantially as and for the purpose specified.

13. The combination of mixing-tubes O, the inclosing pipe J the firing-plate L on said pipe, with the trap N above said plate and the air and gas delivery pipe *c*, substantially as and for the purpose described.

14. The combination of a gas-jet, mixing-tubes O, the inclosing pipe J, the firing-plate L′ superimposed on said pipe, having a layer of granulated fire-brick Q, substantially as and for the purpose described.

15. The combination of the casing, the air-pipe T, and gas-pipe D, with the tubes O, the inclosing pipe J, the plates L, L, in said pipe above the tubes, and the trap N, substantially as described.

16. The combination of the casing, the pipes J, the tapering mixing-tubes O, and the firing-plate L′ within said pipes with the trap N and the supplementary trap *d*, substantially as and for the purpose specified.

17. The combination of the inclosing pipe, with superimposed mixing-tubes O having studs or projections formed on their external surface and also provided at their base with depending arms, substantially as shown and described.

18. The combination of the pipe J having an upper flaring extremity in combination with mixing-tubes O, and their firing-plates L, substantially as and for the purpose described.

19. The two-part casing A in combination with the pipe J and mixing-tubes O, and pipes D and V for heating and supplying gas and air respectively to the tubes and pipe, substantially as and for the purpose specified.

20. The combination of the casing A, the air-pipe T, the pipe D, the gas-tip E, a series of mixing-tubes O above the tip, and the inclosing tube J, substantially as and for the purpose described.

21. The combination of the casing A with the gas-pipe D the gas-tip E, a series of mixing-tubes O above the tip and the inclosing pipe J, substantially as and for the purpose set forth.

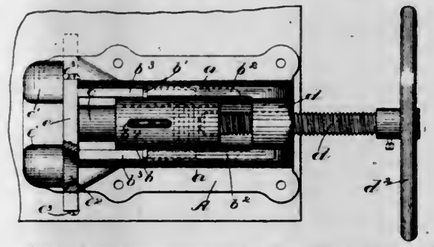
22. The casing A the air-pipe T the pipe V and the gas-pipe D provided with gas-tips E in combination with one mixing-tube O inclosed within the pipe J, substantially as and for the purpose described.

23. The casing A, the air-pipe T, the pipe V, the pipe W, in combination with the gas-pipe D, the gas-tip E and the burners above the tip but below the pipe V, all substantially as and for the purpose set forth

24. The combination of a series of injector-tubes superimposed one above the other within an inclosing air-supply chamber, whereby gases passing through said tubes are successively charged and mixed with quotas of air, with the air-valve for regulating the admission of air, the gas-supply jet below the tubes, and the firing-plate above the tubes, substantially as described.

25. The combination of a series of injector-tubes superimposed one above the other within an inclosing air-supply chamber, whereby gases passing through said tubes are successively charged and mixed with quotas of air, with a gas-supply jet for the first tube, and a burner or firing-plate above the tubes through which the mixed air and gas is discharged and fired, with the air-valve for regulating the admission of air, substantially as described.

569,985. SUPPOSITORY-MACHINE. JOHN G. BLOUNT, Everett, Mass., assignor to Clarence W. FOX, Saugus, Mass. Filed July 23, 1895. Serial No. 556,957. (No model.)



Claim.—1. In a suppository-machine, the combination of a cylinder having a mold removably connected therewith at one end, and a plunger adapted to enter its opposite end, and means for advancing said plunger to force the material into the mold, a frame which supports said cylinder against lateral displacement but permits free longitudinal movement thereof, said frame having a transverse guideway at the end, and a sliding bottom plate in said guideway against which the mold abuts, and which solely resists the longitudinal thrust of the cylinder, substantially as described.

2. In a suppository-machine, the cylinder *b* having a mold c at one end and having laterally-projecting lugs *b′* at opposite sides thereof, combined with the open-sided frame A adapted to receive said cylinder, having guideways b^3 which receive said lugs *b′*, and having entrances b^3 to said guideways for the passage of said lugs, and the bottom plate *e* supported by the frame A at the end of the mold *c* and abutments formed on the frame A against which said bottom plate is forced as it resists the longitudinal thrust of the cylinder, substantially as described.

3. In a suppository-machine, a cylinder having a mold at the end, a supporting-frame therefor, combined with the bottom plate *e*, a transverse guideway in said supporting-frame in which it is free to slide longitudinally, said bottom plate having an imperforate and a perforate portion, the perforate portion being of less diameter than the diameter of the mold, substantially as described.

4. In a suppository-machine, a cylinder having a mold at the end, a supporting-frame therefor, combined with the bottom plate *e*, a transverse guideway in said supporting-frame in which it is free to slide longitudinally, said bottom plate having an imperforate and a perforate portion, and also having stops e^3 at its ends, substantially as described.

DESIGNS.

26,191. CAMPAIGN-BADGE. WILLIAM F. BROCKWAY, Adel, Iowa.
Filed July 27, 1896. Serial No. 600,714. Term of patent 3½ years.



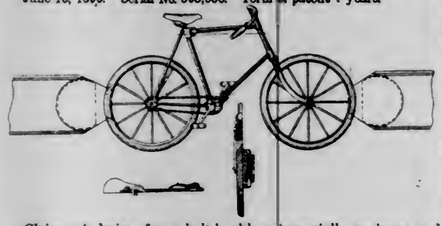
Claim.—The design for a campaign-badge, comprising a picture-frame bearing the representation of a rabbit's rear foot broadened and flattened and arranged to form a frame or background and two flat spaces at the central portion of the frame designed for the reception of portraits substantially as set forth.

26,192. BELT-PIN. STONEWALL J. THOMAS, Lovettsville, Va., assignor of two-thirds to Charles L. Wiley and Addison B. Housholder, same place. Filed Sept. 3, 1896. Serial No. 604,800. Term of patent 14 years.



Claim.—The design for a belt-pin, substantially as herein shown and described.

26,193. BELT-BUCKLE. RALPH SCHEUER, New York, N. Y. Filed June 10, 1896. Serial No. 595,038. Term of patent 7 years.



Claim.—A design for a belt-buckle substantially as shown and described.

26,194. TIE AND SCARF HOLDER. OTTO L. SETTLES, Argentine, Kans. Filed Sept. 8, 1896. Serial No. 605,196. Term of patent 14 years.



Claim.—The design for a combined tie and scarf holder herein shown and described.

26,195. BORDER FOR SILVERWARE. CHARLES D. GRAFF, New York, N. Y., assignor to Redlich & Co., same place. Filed Sept. 11 1896. Serial No. 605,538. Term of patent 3½ years.



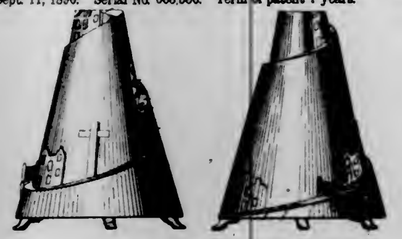
Claim.—The design for a border for silverware as herein shown and described.

26,196. BORDER FOR SILVERWARE. CHARLES D. GRAFF, New York, N. Y., assignor to Redlich & Co., same place. Filed Sept. 11, 1896. Serial No. 605,539. Term of patent 3½ years.



Claim.—The design for a border for silverware as herein shown and described.

26,197. TOY BANK. CHARLES F. CLARKE, Highlands, Del. Filed Sept. 11, 1896. Serial No. 605,536. Term of patent 7 years.

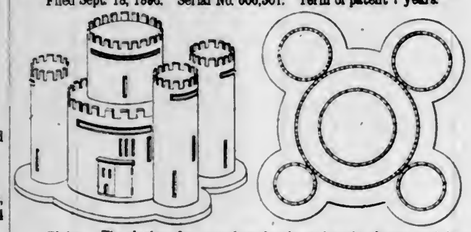


26,197.



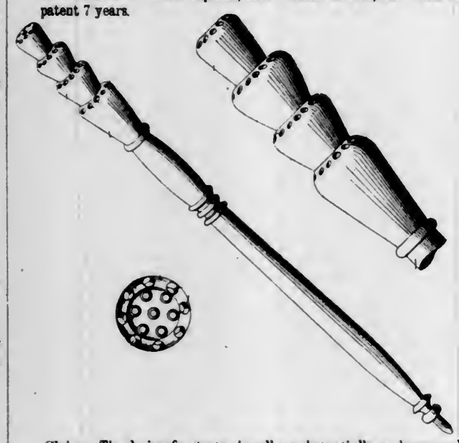
Claim.—The design for a combined game and toy bank, substantially as shown and described.

26,198. SAVINGS-BANK. JOSEPH F. LANGTON, Waltham, Mass. Filed Sept. 18, 1896. Serial No. 606,301. Term of patent 7 years.



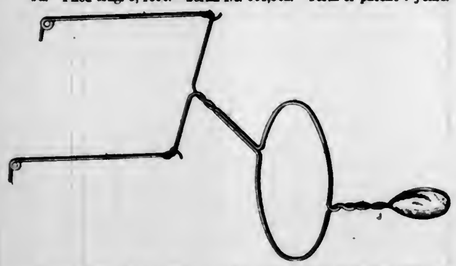
Claim.—The design for a savings-bank, as herein shown and described.

26,199. HANDLE FOR FEATHER DUSTERS. ISRAEL B. COHEN, New York, N. Y. Filed Sept. 15, 1896. Serial No. 605,949. Term of patent 7 years.



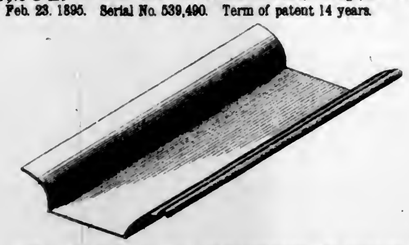
Claim.—The design for duster-handles, substantially as shown and described.

26,200. TORCH ATTACHMENT. OCTAVIA FRASHER, Pittsburg, Pa. Filed Aug. 3, 1896. Serial No. 601,562. Term of patent 7 years.



Claim.—The design for a torch attachment, or frame, substantially as herein shown and described.

26,201. ROOF-PLATE. WILLIAM W. TURNER, Chicago, Ill. Filed Feb. 23. 1895. Serial No. 539,490. Term of patent 14 years.



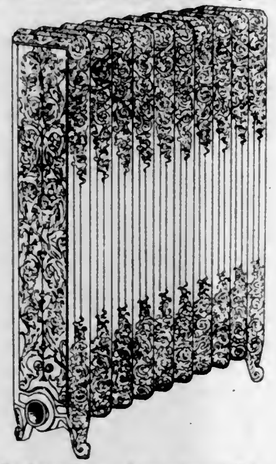
Claim.—The design for a roof-plate, substantially as herein shown and described.

26,202. HOOP-LUG. HORACE B. SEVERANCE, Lansing, Mich. Filed June 8, 1896. Serial No. 594,798. Term of patent 7 years.



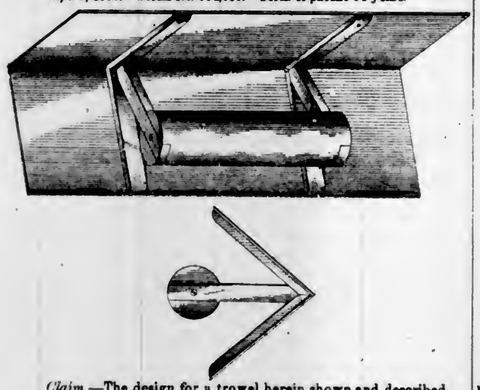
Claim.—The design for a hoop-lug substantially as described and shown.

26,203. LOOP-RADIATOR. HENRY A. SIEBERT, Detroit, Mich. Filed May 7, 1896. Serial No. 590,626. Term of patent 7 years.



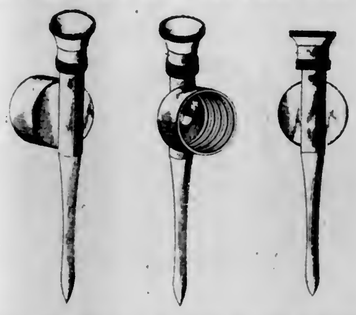
Claim.—The design for a radiator substantially as herein shown and described.

26,204. TROWEL. CHARLES H. SMITH, Newfield, N. J. Filed Sept. 2, 1896. Serial No. 604,689. Term of patent 14 years.



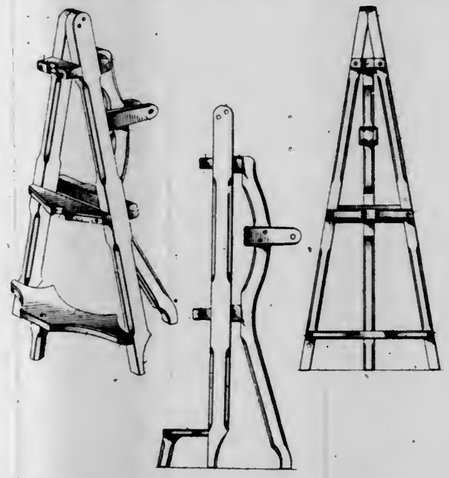
Claim.—The design for a trowel herein shown and described.

26,205. LAWN-SPRINKLER BODY. HORACE FALK NEUMEYER, Macungie, Pa., and JONAS FRANCIS YOUNG, Niagara Falls, N. Y. Filed Sept. 8, 1896. Serial No. 605,197. Term of patent 14 years.



Claim.—The design for a lawn-sprinkler body herein shown and described.

26,206. CHURN-STAND. WILLIAM J. WILLOUGHBY and WILLIAM Y. ANDERSON, Horatio, Ark. Filed Sept. 9, 1896. Serial No. 605,332. Term of patent 14 years.



Claim.—The design for a churn-stand herein shown and described.

26,207. CHAIR. HENRY M. KIMPORTS, Boston, Mass. Filed Sept. 11, 1896. Serial No. 605,537. Term of patent 3½ years.



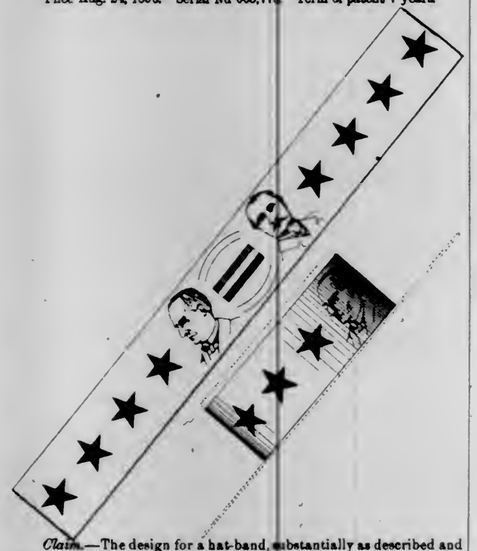
Claim.—The design for rattan or wicker chairs substantially as hereinbefore shown and described.

26,208. PRINT OR PATTERN FOR CIGAR-BOXES. NICHOLAS WITTICH, Jersey City, N. J., assignor to the American Lithographic Company, New York, N. Y. Filed Sept. 14, 1896. Serial No. 605,822. Term of patent 7 years.



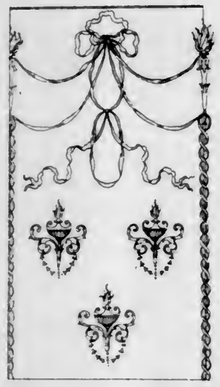
Claim.—The design for an ornamental print or pattern for cigar-boxes, substantially as shown and described.

26,209. HAT-BAND. FERDINAND M. JOHNSON, Philadelphia, Pa. Filed Aug. 24, 1896. Serial No. 603,778. Term of patent 7 years.



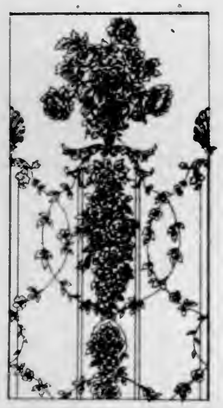
Claim.—The design for a hat-band, substantially as described and shown in the accompanying drawing.

26,210. WALL-PAPER. CHARLES BOOZ, Buffalo, N. Y., assignor to Henry M. Birge, same place. Filed Aug. 24, 1896. Serial No. 603,782. Term of patent 3½ years.



Claim.—The design for wall-paper herein shown and described.

26,211. WALL-PAPER. CHARLES BOOZ, Buffalo, N. Y., assignor to Henry M. Birge, same place. Filed Aug. 24, 1896. Serial No. 603,796. Term of patent 3½ years.



Claim.—The design for wall-paper herein shown and described.

TRADE-MARKS

REGISTERED OCTOBER 20, 1896.

29,011. HERB TEAS. WEBER'S MEDICAL TEA CO., Brooklyn, N. Y. Filed Sept. 19, 1896.

ALPINELLA

Essential feature.—The word "ALPINELLA." Used since August 15, 1896.

29,012. VEGETABLE COMPOUND FOR THE CURE OF LIVER, KIDNEY, AND OTHER COMPLAINTS. GEORGE W. HALSTED, Glidden, Iowa. Filed Sept. 24, 1896.

Oxidoda

Essential feature.—The word "OXIDODA." Used since April 1, 1895.

29,013. REMEDY FOR RHEUMATISM. HERBERT L. HANDY, Springfield, Mass. Filed Sept. 22, 1896.

H.L.H.

Essential feature.—The letters "H. L. H." Used since May 1, 1896.

29,014. INTERNAL REMEDY FOR THE BLOOD. SALVATION BLOOD PURIFIER COMPANY, Atlanta, Ga. Filed Sept. 8, 1896.



Essential feature.—The compound word "SYPHIL-I-CURE," accompanied by a representation of an angel delivering a bottle of medicine to an invalid. Used since August 20, 1896.

29,015. INTERNAL REMEDY FOR BLOOD AND SKIN DISEASES. SALVATION BLOOD PURIFIER COMPANY, Atlanta, Ga. Filed Sept. 8, 1896.



Essential feature.—The word "SALVATION," accompanied by a representation of an angel delivering a bottle of medicine to an invalid. Used since May 1, 1896.

29,016. CERTAIN NAMED REMEDIES. DAVID E. MAJOR, Ogden, Utah. Filed July 29, 1896.

DR. MARTIN'S.

Essential feature.—The abbreviation and word "DR. MARTIN'S." Used since June, 1884.

29,017. COMPOUNDS FOR EXTERMINATING BUGS, ROACHES, MOTHS, INSECTS, AND GERMS. EDWARD A. SACKET, Chicago, Ill. Filed Sept. 25, 1896.

DIE-BUGS

Essential feature.—The compound word "DIE-BUGS." Used since April 1, 1896.

29,018. SHELLAC. WADSWORTH, HOWLAND & COMPANY, INCORPORATED, Boston, Mass. Filed Sept. 26, 1896.

EUREKA

Essential feature.—The word "EUREKA." Used since October, 1895.

29,019. OLEO-OIL, STEARINE, AND TALLOW. G. & D. ISAACS, Brooklyn, N. Y. Filed May 26, 1896.

G AND D. ISAACS'

DUESETT

Essential feature.—The word "DUESETT" and the name "G. AND D. ISAACS." Used since May, 1896.

29,020. SOAP. RAWORTH, SCHODDE & CO., Chicago, Ill. Filed Sept. 12, 1896.



Essential feature.—A representation of two children standing somewhat closely together and partially nude. Used since June 15, 1895.

29,021. CAKES OF SOAP. WILLIAM H. BRYAN, Baltimore, Md. Filed Sept. 17, 1896.



Essential feature.—The words "SANTA WOOLEN" in combination with a figure of a sheep. Used since June 1, 1896.

29,022. LIQUID AND OTHER SOAPS. W. & F. WALKER, Liverpool, England. Filed Sept. 26, 1896.

CARBOLACENE

Essential feature.—The word "CARBOLACENE." Used since 1894.

29,023. PERIODICAL FASHION MAGAZINES. THE BUTTERICK PUBLISHING COMPANY, LIMITED, New York, N. Y. Filed Sept. 10, 1896.

THE Glass of Fashion up to Date.

Essential feature.—The words "THE GLASS OF FASHION UP TO DATE." Used since August 28, 1896.

29,024. WRITING-PAPER AND ENVELOPS. Z. & W. M. CRANE, Dalton, Mass. Filed Sept. 18, 1896.

DOE SKIN

Essential feature.—The words "DOE SKIN." Used since July 15, 1896.

29,025. COTTON LININGS USED IN DRESSES. LORD & TAYLOR, New York, N. Y. Filed Aug. 19, 1896.

ONYX

Essential feature.—The word "ONYX." Used since May 1, 1887.

29,026. DRESS-STAYS. THE ESTATE OF ROBERT N. BASSETT, Derby, Conn. Filed Mar. 27, 1895.

TRIUMPH

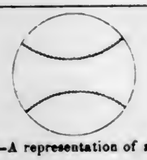
Essential feature.—The word "TRIUMPH." Used since March 1, 1893.

29,027. UMBRELLAS AND PARASOLS. DAHAN & BURCHELL BROS., New York, N. Y. Filed Sept. 26, 1896.

Economist.

Essential feature.—The word "ECONOMIST." Used since July 15, 1896.

29,028. ATHLETIC, BICYCLISTS', AND SPORTSMEN'S WEAR. A. G. SPALDING & BROS., Chicago, Ill. Filed Sept. 14, 1896.



Essential feature.—A representation of a base-ball. Used since 1884.

29,029. RUBBER SYRINGES AND ARTICLES OF LIKE CHARACTER. LANMAN & KEMP, New York, N. Y. Filed Sept. 25, 1896.



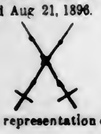
Essential feature.—The letters "B B B." Used since September 28, 1886.

29,030. WIRE. RUSSELL FRASER, Brooklyn, N. Y. Filed Sept. 23, 1896.



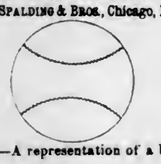
Essential feature.—The designation "STAR," expressed pictorially or verbally. Used since July 1, 1896.

29,031. NUT-LOCKS. GUSTAVUS E. STRAUSS and EMIL KLAHN, New York, N. Y. Filed Aug. 21, 1896.



Essential feature.—A representation of two crossed swords. Used since July 1, 1896.

29,032. VELOCIPEDES AND THEIR PARTS AND BICYCLE SUNDRIES. A. G. SPALDING & BROS., Chicago, Ill. Filed Sept. 14, 1896.



Essential feature.—A representation of a base-ball. Used since 1892.

29,033. BICYCLES. NATIONAL SEWING MACHINE COMPANY, Belvidere, Ill. Filed Sept. 25, 1896.



Essential feature.—A representation of a wheel and a sewing-machine head inclosed by the rim thereof. Used since May 4, 1896.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BRYANT.

Decided May 24, 1895.

REISSUE TO BROADEN CLAIMS—ACQUIESCING IN REJECTION OF ORIGINAL CLAIMS.

Where an applicant acquiesced in the limited construction put on his invention, and at no time during the prosecution of his original application suggested or intimated that the invention resided in the broad device now sought to be claimed in the reissue application, *Held* that the failure to make the claim in the original patent did not arise through inadvertence, accident, or mistake, and the reissue claim refused.

APPEAL from the Examiners-in-Chief.

BOOTS AND SHOES.

Application (reissue) filed October 31, 1893, No. 489,668.

Mr. A. P. Browne and *Messrs. Alexander & Davis* for the applicant.

SEYMOUR, *Commissioner:*

This is an appeal from the decision of the Examiners in-Chief sustaining the action of the Primary Examiner rejecting the following claim:

1. A boot or shoe having the front portion of the upper face of the inner sole provided with transverse grooves or channels extending across the same, for the purpose set forth.

The references are patents to Thomas, dated July 28, 1868, No. 80,518; Hill, dated September 14, 1875, No. 167,762; Knipe and Day, dated January 19, 1886, No. 334,668; Dalsheimer, dated March 13, 1888, No. 379,452.

The claim is refused substantially on the grounds, first, that the invention now sought to be patented is not the same invention as that of the original patent; second, that the failure to make the claim in the original patent did not arise through inadvertence, accident, or mistake, and, third, that the claim is anticipated by the references.

Considering first the pertinency of the references, the claim is for a boot or shoe having the upper face of the inner sole provided with transverse grooves extending across the same for the purpose of making the sole of the shoe flexible. The reference principally relied upon as an anticipation of the claim is the patent to Knipe and Day. This patent shows a shoe having an outer sole made of two thicknesses of leather, the upper thickness having grooves on its upper face, not extending, however, across the sole, and an ordinary inner sole on top of and fastened to the outer sole.

A shoe so made is not flexible like applicant's, the flexibility of the grooved sole being destroyed by the ordinary inner sole placed on top of and fastened to the outer sole.

The patent to Dalsheimer shows a shoe the inner sole of which has transverse incisions or cuts *f* across its under face. It has been stated that what applicant has done is to turn the insole shown by this patent the other side up. This may be true, yet applicant has by doing this made an improved shoe.

The references do not show an anticipation of the shoe covered by the claim, and the applicant is entitled to said claim in the reissue patent unless he has by his actions lost his right to it.

While the shoe or sole now sought to be covered by this claim is shown and described by the patent, yet from the record of the application on which said patent is granted I am led to believe that applicant did not consider this sole to be his invention nor attempt to cover it by said patent.

The invention actually covered by the patent is stated as follows:

My invention relates to certain improvements in the construction of boots and shoes; and it consists in forming the insole, to which the upper of the shoe is first fastened, with a series of transverse grooves or channels across the top front part of the insole and afterward securing to the shoe thus constructed one or more outer soles, similarly grooved or channeled, and in certain details of construction, which will be more fully explained by reference to the accompanying drawings.

After describing certain details of construction applicant further says:

The outer sole is stitched or fastened around the edges to the insole in the usual manner; but that portion between the lines of stitching or fastening which forms the whole bottom of the shoe is not in any way connected with the inner sole, and consequently in the action of walking the inner sole is free to move upon the outer one, and each sole retains the flexibility which is incident to its peculiar construction. It will be manifest that if these soles were cemented or otherwise fastened together the transverse grooving or channeling of the outer sole would be useless, as the outer sole could have no movement of flexure about itself, but would form a part of the insole and would have only such movement as would be permitted by the insole.

From this it appears that the invention is an inner and an outer sole, both grooved across the top and separated except at their edges, so that in bending upward each sole would retain the flexibility incident to its grooves, and this and this alone was what applicant considered to be his invention and what he intended to cover by his claims. To show that the Office considered the invention to be thus limited, reference may be made to the decision of the Examiners-in-Chief allowing the patented claims on appeal. In that decision it was said:

The Knipe and Day patent has a combined inner and outer layer, the inner layer of cheap material requiring transverse grooves to obviate its rigidity, and both attached together, and so claimed. Appellant's claim to invention is distinguished from this and limited to soles separated from each other except at the edges, and both soles grooved, forward of the center.

The applicant acquiesced in the limited construction thus put on his invention, and at no time during the prosecution of his application did he suggest or

intimate that the invention resided in the grooved insole only, the subject-matter of the appealed claim.

The appellant has made certain changes in the statement of invention and in the description of his patent upon which to support the appealed claim. It is stated by him that these changes were supposed to be mere verbal changes, and that he is willing to amend the specification by striking out such changes and restoring the specification to its exact original form. It is clear that the description in the patent will not support such a claim as that now made. The changes are material and are not warranted, and therefore the rejection on the ground that the invention now sought to be covered by the appealed claim is not the same invention was correct.

As to the second ground of rejection, on February 5, 1890, this applicant filed an application, Serial No. 339,308, for outer soles for boots and shoes, stating that his invention—

consists in forming transverse grooves or channels on the inner face of the sole, for the purpose of making the leather more flexible.

Claim 1 of this application is substantially for a sole, either inner or outer, having transverse grooves formed across the inner face, and claim 2 for an outer sole having such grooves. After repeated rejections of these claims on certain references applicant formally abandoned this application by letter of January 22, 1891. On February 24, 1891, he filed application, Serial No. 383,307, on which Patent No. 462,468, for which applicant is now applying for a reissue, was granted. This latter application and patent show and describe such a shoe-sole as applicant is now attempting to claim; but, as has been stated above, there is nothing in them to indicate that applicant considered the present broad device as his invention; but, on the other hand, as he acquiesced in the decision of the Examiners-in-Chief in giving a limited construction to the device when allowing the claims in the patent there are indications the other way.

Considering this second ground of rejection on these facts, the Examiners-in-Chief in their decision said:

Whether the grooves be so put on an outsole or on an insole, is immaterial, the action of the grooves is the same on either sole. The invention is the same when applied to either sole.

Having abandoned this application, if he had not abandoned its invention, he would have presented it in his next application, that which became his patent now sought to be reissued.

* * * * * * *

When the second application was presented to him for his oath and signature it did not state or claim either of these things to be its invention, but did everywhere state and describe and did claim a shoe having both the inner and outer soles grooved and free to move over each other, as now appears in the specification of the patent.

And it appears that this applicant after all this effort in one application, and according to his oath in the second application, to obtain a claim for a shoe with one sole only grooved, did not discover that he had not obtained a claim for such a simple matter until within a few days of two years after he obtained his patent.

The abandonment of the first application does not imply an abandonment of its invention. But the filing immediately after the abandonment of the first application of a second application showing the invention of the first application, but not claiming it, is a presumptive abandonment of that prior invention; and the prosecution of the narrower invention and taking of it in a patent and the holding of the patent for two years without questioning its invention, strengthens the presumption of abandonment and the presumption that the patent was intended to cover precisely what it describes and claims and nothing otherwise or broader than its claimed and described invention.

The facts of the record appear to us to negative any accident, inadvertence, or mistake in the wording of the claim of the patent.

Furthermore, a claim for this invention in substance was made in the prior application and was abandoned therein and it was not renewed in the original application of his patent, and it was only the limitations put on his claims by the decision of the Board allowing them that enabled him to obtain his patent with the limited claims. He cannot revive this abandoned claim by reissue. The omission to claim it was not mistake but a deliberate conclusion. (*Yale Lock Mfg. Co.* v. *Berkshire Natl. Bank*, C. D., 1890, p. 347, and the cases therein cited.)

In this conclusion I concur.

I am of the opinion, therefore, that although the appellant made such an invention as expressed by the claim, which is not anticipated by the references, yet owing to his conduct, as above stated, he is not now entitled to such claim in this reissue.

To the extent above indicated the decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Third Circuit.

TAYLOR *et al. v.* SAWYER SPINDLE COMPANY.

Decided June 30, 1896.

1. ATWOOD—SUPPORTS FOR SPINDLES FOR SPINNING-MACHINES—INFRINGEMENT—VALID.

Letters Patent No. 253,572, dated February 14, 1882, granted to John E. Atwood, for supports for spindles for spinning-machines, *Held* valid and infringed as to claims 3, 4, and 5.

2. SAME—CONSTRUCTION OF CLAIMS—OMISSION OF ELEMENTS.

In a claim for a particular form of spindle and support there is no necessity for expressing in terms the devices for revolving the spindle, since the appropriate means for operating it will be understood.

3. SAME—ANTICIPATION—DOUBLE USE.

A new combination and arrangement of old parts, whereby spinning-spindles instead of running in rigid bearings are flexibly mounted on the rails, so as to allow of greatly-increased speed of revolution, *Held* to involve invention and not to be anticipated by the use of similar devices in centrifugal machines for drying sugar or creaming milk. The two devices are so different in size, structure, and uses to which they are adapted that it is not a case of double use. (*Potts & Co.* v. *Creager*, 70 O. G., 494; 15 Sup. Ct., 194; 155 U. S., 607, applied.)

4. SAME—INFRINGEMENT.

Mere differences in form are not sufficient to avoid infringement.

5. INFRINGEMENT SUITS—LACHES.

Mere delay in prosecuting infringers, unaccompanied by circumstances amounting to equitable estoppel, will not prevent a patent owner from maintaining suits for equitable relief.

APPEAL from the Circuit Court of the United States for the District of New Jersey.

Before ACHESON, WALES, and GREEN, Judges.

Mr. Edward Q. Keasbey for the appellants.

Mr. Frederick P. Fish for the appellee.

WALES, *J.:*

This is an appeal from the decree of the United States Circuit Court for the District of New Jersey, made October 19, 1895, sustaining the validity of Letters Patent No. 253,572, issued to John E. Atwood, dated February 14, 1882, for improvements in the supports for spindles for spinning-machines, declaring that the defendant corporation had infringed the third, fourth, and fifth claims of the patent and ordering an accounting of profits from March 23, 1891, the date of the organization of the defendant company. The patented improvements pertain to what are known as "self-adjusting spindles" and relate "to that class of such spindles having step and bolster bearings within a supporting-tube." The specification gives the following description of the invention:

The characteristic feature of my present invention is a supporting-tube which is flexibly mounted with relation to the spindle-rail and contains the step and bolster bearings for the spindle, so that the latter and said tube may move together laterally in all directions during the self adjustment of the spindle, while carrying an unequally-balanced bobbin and its yarn, instead of relying upon the movement of the spindle and its bearings within and independently of the supporting-tube, as heretofore in this class of spindles. By reason of my improvement the means whereby the movable capacity or flexibility of the spindle is afforded are rendered openly accessible, and more easily renewed, if need be, than heretofore; and, further, elastic materials may be successfully employed, which would be liable to injury and rendered inelastic by oil if located within the supporting-tube, as heretofore. I am also enabled to readily graduate the degree of flexibility of the spindle with relation to the spindle-rail, so as to accommodate the self-adjusting capacity of the spindle to the various conditions incident to its use in working with bobbins materially differing in size and weight. All of these advantages are due to the novel characteristic feature before referred to.

The claims in issue are these:

3. The combination, substantially as hereinbefore described, of a spindle-rail of a spinning-machine, a spindle, and a supporting-tube flexibly mounted with relation to the spindle-rail and containing step and bolster bearings.

4. The combination, substantially as hereinbefore described, of a spindle-rail, a spindle, a supporting-tube containing step and bolster bearings, flexible connections between said tube and the spindle-rail, and adjusting devices for varying the degree of flexibility of the supporting-tube and spindle therein.

5. The combination of the spindle-rail, the spindle, the supporting-tube, loosely mounted with relation to the rail and containing the step and bolster bearings for the spindle, the spring, and the nut for compressing it, substantially as described.

The validity of the complainants' title is admitted. The first defense to the suit is that of laches, which was urged with much earnestness and is made on the ground that the complainants had deprived themselves of relief in a court of equity by neglecting to prosecute any one for infringement until more than seven years after the date of the patent, and that the defendant had no notice of their claims until more than ten years after that date. It is alleged that the complainants permitted the manufacture and sale of the spindles complained of to be carried on for many years by men who were ignorant of their claim and allowed the persons composing the defendant corporation to purchase the business without giving them notice; that spindles mounted flexibly, like those now complained of, were made and sold by the Cooke Locomotive and Machine Company continuously and to a large extent from August, 1881, until they sold the business to Mr. Taylor, Mr. Shaw, and Mr. Cocker, and that the latter continued to make and sell the same spindles until the defendant corporation was formed, March 23, 1891, the date from which infringement is charged in the bill. The first suit brought against any infringer of the Atwood patent was that of these complainants against W. G. & A. R. Morrison Company, September 2, 1889, in the district of Connecticut, (52 Fed. Rep., 590,) in which the validity of the patent was sustained, and there was a decree for the infringement of the second, third, and fifth claims and for an accounting. Subsequently another suit was brought by complainants against the Morrison Company for infringement of the same patent by types of modified spindles manufactured by them, in which, on motion for a preliminary injunction, the patent was upheld. (54 Fed. Rep., 693.) The theory of this defense is that there is no absolute right to an injunction on proof of infringement of a patent; that the complainant must present a case for equitable relief, and if it appears by the bill or by the evidence that by reason of his delay he is not entitled to the aid of a court of equity it will be refused on final hearing, as well as on motion for a preliminary injunction. It is insisted that if the Atwood patent has been infringed by the defendant the only remedy for the complainants would be by an action at law for damages, and that the only possible relief obtainable in the present suit would be an injunction against future infringement.

It has never been held that mere laches, unaccompanied by circumstances which amount to an equitable estoppel, shut out a party from all relief in a court of equity. Knowledge of and long-continued acquiescence by a complainant in an infringement may, in special cases, be fatal on a motion for a preliminary injunction, but will not on a final hearing prevent the court from granting such relief as may be just and equitable. This is the general rule which is recognized in the authorities which are cited in the briefs of counsel. There is a want of satisfactory proof that the defendant acted in ignorance of the rights of the complainants or that the latter had always had full knowledge of the alleged infringement. Notice was given to the public at large that the spindles were patented, and the defendant could not have been blind to the fact that the new spindles had gone into extensive use. The testimony of Mr. Taylor, of the defendant corporation, had reference to a time prior to the issue of the patent, when, as he says, Mr. Atwood saw the infringing spindles, or ones just like them, in operation in Paterson, and made no claim that the invention was his; but it is not pretended that Taylor, Shaw, and Cocker, or either of them, at the date of their incorporation in March, 1891, did not know of the complainants' claims, for the suit against the Morrison Company had then been pending for more than a year. In *Kittle* v. *Hall* (39 O. G., 707; 29 Fed. Rep., 508) it was held that while long acquiescence might defeat a bill for infringement no precedent had been discovered for the dismissal of a bill for so short a period as seven years, and that the defendants had not been misled, but knew of the plaintiff's rights. In *McLean* v. *Fleming* (13 O. G., 913; 96 U. S., 245) the Court said:

Equity courts will not, in general, refuse an injunction on account of delay in seeking relief, where the proof of infringement is clear, even though the delay may be such as to preclude the party from any right to an account for past profits.

To the same effect are the cases of *Menendez* v. *Holt*, (46 O. G., 961; 128 U. S., 514; 9 Sup. Ct., 143;) *Price* v. *Steel Co.*, (46 Fed. Rep., 107;) *New York Grape-Sugar Co.* v. *Buffalo Grape Sugar Co.*, (18 Fed. Rep., 638;) *Gilmore* v. *Anderson*, (38 Fed. Rep., 846;) *Brush Electric Co.* v. *Electric Imp. Co.*, (45 Fed. Rep., 241.) In the last-cited case the court remarked that the doctrine of laches is generally applicable to preliminary injunctions only. In *Menendez* v. *Holt*, *supra*, the Court, in discussing the question of laches, said:

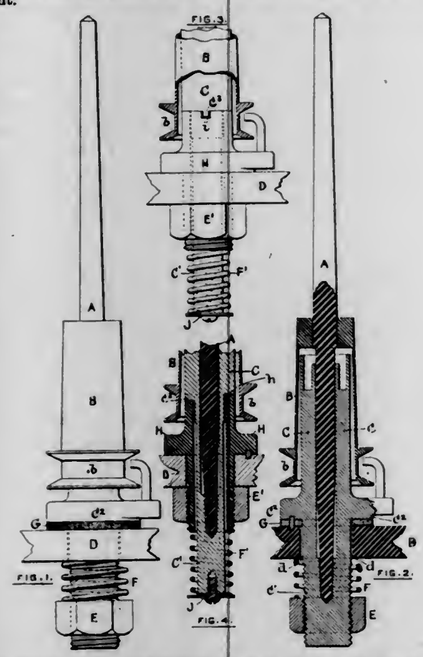
Mere delay or acquiescence cannot defeat the remedy by injunction in support of the legal right, unless it has been continued so long, and under such circumstances, as to defeat the right itself. Hence, upon an application to stay waste, relief will not be refused on the ground that, as the defendant had been allowed to cut down half the trees upon the complainants' land, he had acquired by that negligence the right to cut down the remainder [citing *Attorney General* v. *Eastlake*, 11 Hare, 205]. * * * Acquiescence, to avail, must be such as to create a new right in the defendant. Where consent by the owner * * * is to be inferred from his knowledge and silence merely, it lasts no longer than the silence from which it springs. It is in reality no more than a revocable license.

The defendant asserts that the complainants are not entitled to an accounting for profits; but the decree of the circuit court orders an accounting only from the

date of the defendant's incorporation, from and after which time there were no laches, as complainants had already begun their suit against the Morrison Company. This was sufficient notice to the defendant that the validity of the patent was in litigation, and thus takes away the excuse of ignorance for continuing the infringement. There is no proof of non-user or abandonment by the complainants nor of any act or omission of theirs which could have induced the defendant to believe that it would not be held liable for manufacturing and selling the infringing articles. The evidence falls far short of proving an estoppel or of proving such delay or acquiescence on the part of the complainants as should defeat the present suit.

Infringement is not seriously disputed, the defense on this point being that if the patent is sustained at all it must be confined to the precise form described and shown in the specification and drawings. The specification states:

The spindle chosen to illustrate my invention is of that well-known variety which is constructed with a sleeve attached to the spindle-blade, extending downwardly, so as to encompass a support containing the bolster-bearing, and which has a driving-whirl located at or near the base of such sleeve. Such spindles have their foot-rests in the base or closed end of the bolster-support, and the spinning-frame therefore requires only one spindle-rail. As shown in all the figures of the drawings, A represents the spindle, B the sleeve, and *b* the whirl thereon. As shown in Fig. 2, the spindle is mounted in a supporting-tube, C, which extends both above and below the spindle-rail D, and furnishes an upper or bolster bearing for the spindle in its portion *c* and a lower or step bearing in its portion *c'*. The supporting piece or tube C, containing as it does the bolster and step bearings for the spindle, constitutes a combined bolster and step, which moves laterally with the spindle in all directions during its self adjustment.



In order to permit the supporting-tube C to move with the spindle, as described, the spindle-rail D has a circular opening, as at *d*, Figs 1 and 2, which has a diameter slightly greater than the diameter of the lower portion, *c'*, of the tube C, so that between their coincident surfaces an ample annular space is afforded to allow of the desired lateral movement of said tube and the spindle contained therein. For so securing the supporting-tube and its spindle to the rail D that they will nevertheless be capable of the requisite lateral movement incident to the self-adjustment of the spindle, the lower end of the tube *c'* is screw-threaded and provided with a nut, E. A strong spiral spring, F, the tension of which may be variably regulated by said nut, surrounds said portion of the supporting-tube between the nut and the under side of the rail, and the base or flange portion *c* of said tube is seated upon a washer or annulus, G, of flexible or elastic material, placed between said base and the top of the rail.

The defendant's spindle is almost identical with the Atwood spindle, differing only in form, but containing all the elements, or their equivalents, of the latter. The differences between the two are immaterial. In defendant's spindle a collar and set-screw are substituted for the nut below the spring, and the whirl is attached directly to the shaft of the spindle, the supporting-tube being made in two parts and then rigidly fastened together by two arms, which bridge over the whirl, thus practically making one tube for the step and bolster bearings. The defendant has adopted the essential elements of the Atwood combination—namely, the flexibly-mounted supporting-tube, containing both step and bolster bearings, which is connected with the rail by a strong spiral spring and an adjusting-nut. The defenses chiefly relied on are want of invention, (as distinguished from mechanical skill,) anticipation, and because the claims are inoperative and void. Atwood had invented his spindle and put it into use as early as July, 1878, although he did not make application for a patent until February 27, 1880. Prior to his invention spindles had been run in rigid bearings, and their speed was limited on account of their tendency, under a high rate of revolution, to gyrate and cause severe pressure on the bearings, developing friction and throwing off the bobbins. The production of a spinning-frame is in direct ratio to the speed of the spindles, and every increase in speed at which the spindle can be practically run makes a proportionate increase in the production, and thus it was that inventors had long been endeavoring to mount a spindle in such a way as to obtain a greater rate of speed than was possible with the then existing machines. Numerous patents had been granted for improvements in these machines; but none of them contained the device of Atwood, who was the first to combine the step and bolster bearings of the supporting-tube with a flexibly-mounted spindle, whose rotary speed was only limited by relation to other parts of the machinery. Invention and patentability, however, are denied on the ground that Atwood's combination is only a new arrangement of well-known parts, which had already been combined to accomplish the same result, and that its only novelty consists in the location of the yielding attachments between the supporting-tube and the rail and the use of adjusting devices for varying the degree of flexibility—in substance, nothing more than putting a cushion or spring of some kind between the journal-box of a revolving shaft and the fixed base of support, and therefore showing only mechanical skill. In support of this proposition reliance is placed on the patent of F. J. Rabbeth, No. 227,129, dated May 4, 1880, for a spinning-spindle and bearing, and on certain prior patents for centrifugal machines. The essential difference between the Rabbeth spindle and the Atwood spindle is that the supporting-tube in the former is rigidly fixed in the rail, while in the latter it is loosely or flexibly mounted on the rail. This, it has been well said, is the gist of the Atwood improvement, the value and superiority of which have been proved by its general adoption and large use by silk-spinners. Its novelty and utility are thus placed beyond doubt, and that it required the exercise of inventive faculty to produce it appears from the prior history of the art.

It would require too much space to review the long list of patents set out in the answer as being suggestive of the one in suit, only a few of which, however, are referred to in the brief of defendant's counsel. It may be sufficient to say that, with all the information derived from the alleged anticipations, it does not appear that any one before Atwood had caught the idea, and reduced it to practice, of arranging and combining old elements in such a manner as to produce a flexibly-mounted spindle. He invented a new arrangement of parts, by which a new relation was formed between the rail and the supporting-tube, and by that means superseded the former rigid-bearing spindle. It was a decided advance over all other supports, and that it required more than mechanical skill is evidenced by the fact that it had escaped the notice and observation of numerous inventors whose attention had been directed for many years to the achievement of the same or a similar result as the one reached by Atwood. In coming to this conclusion we have not overlooked the contention that the use of yielding attachments with adjustable devices applied to the combined step and bolster bearings of a spinning-spindle was anticipated by the use of similar devices in centrifugal machines or hydroextractors for drying sugar or creaming milk. In this connection reference is made to four patents for centrifugal machines—namely, Weston's, (No. 82,049,) of September 8, 1886; Cramer's, (No. 144,319,) of November 4, 1873; English patent to Day, (No. 772,) of 1874, and Tolhurst's, (No. 199,) of January 8, 1878. It is claimed for the defendant that the Atwood spindle and the centrifugal machines contain the same combination of elements for the purpose of flexible adjustment to an unbalanced load, the only difference being that in the one case it is a spindle flexibly mounted upon a rail and in the other a larger revolving shaft flexibly attached to the floor. The argument deduced from this is that mere changes of use and dimensions without any change of function do not involve invention—in other words, that the Atwood adjustable device is only a "double use" of that made use of in the centrifugal machines for the same purpose. The Cramer patent is particularly relied on in support of this proposition, and may be taken as a fair representative of the class to which it belongs. The two classes of machines are so different in size, in structure, and in the uses to which they are adapted that, as Mr. Southworth, a witness for the complainants, said—

the inspection of a centrifugal machine would not lead a mechanic to use a flexible spindle, but would be likely to deter one from even experimenting in that direction.

The object of flexibly mounting the hydroextractor is to prevent the jar and concussion which arise from the great weight of the machine, and not to increase its speed. On the other hand, the flexible bearings in the spinning-spindle are made use of to increase its speed, for the spindle can run as well at a speed of five thousand revolutions in a rigid bearing. A careful examination of the specification and drawings of the Cramer patent does not induce the belief that Atwood could have derived any aid from that source in contriving his spindle. Centrifugal machines had been in use in many mills where yarn was spun and in shops where machinery was made for spinning yarn for years before the Atwood improvement was invented, and no one ever supposed that a similar construction could be applied to a spinning-spindle. One of the objects to be attained by loosely mounting the spindle in the rail was to maintain the spindle in a perpendicular position and to diminish its inclination to gyrate. It is obvious that the functions of the one machine are different from the functions of the other, and it is also apparent that the means adopted by Cramer to produce a flexible adjustment differ from those adopted by Atwood for a similar purpose. The specification of the Cramer patent states that—

bolts *b* are provided with large heads and a washer, and each is encircled for a portion of its length by a heavy elastic cushion, preferably resembling a rubber car-spring. These bolts are passed upward through holes in the platform, * * * and are provided with nuts at their upper ends, and which, on being screwed down, securely and safely fasten the machine to the platform.

In contrast to this the spiral spring in the Atwood patent pulls the supporting-tube down upon the rail, so as to prevent the tipping of the spindle, and, all parts of the machine being openly accessible, the degree of flexibility of the spindle with relation to the rail can be readily graduated. The Cramer patent is only "a paper patent," and has never been put into practical use, and may be considered as an abandoned experiment. It belongs, however, to the same class as the other centrifugal machines which have been referred to as anticipations of the flexible devices of Atwood to show that the latter are only reproductions of the former. As we have seen, they are very different. The clamping-nut and rubber spring used by Cramer have little or no analogy to the spiral spring and the provision made for regulating its tension as described in the Atwood patent. The centrifugal machine must have a strong foundation to rest upon, and to which it is "securely and safely" fastened, while the spinning-spindle is sustained in mid-air by the rail on which it is loosely mounted; but, admitting the existence of a closer resemblance and analogy between the two classes of machines than have been shown, it by no means follows that the Atwood spindle would come within the rule of "a double use," and thus fall short of invention and patentability. In the recent case of *Potts & Co* v. *Creager* (70 O. G., 494; 155 U. S., 607; 15 Sup. Ct., 194) Mr. Justice Brown, speaking for the Court, said:

Indeed, it often requires as acute a perception of the relations between cause and effect, and as much of the peculiar inventive genius which is a characteristic of great inventors, to grasp the idea that a device used in one art may be made available in another, as would be necessary to create the device *de novo*. And this is not the less true if, after the thing had been done, it appears to the ordinary mind so simple as to excite wonder that it was not thought of before; but the decisive answer is that with dozens, and perhaps hundreds, of others laboring in the same field, it had never occurred to any one before. * * * As a result of the authorities upon the subject, it may be said that, if the new use be so nearly analogous to the former one that the applicability of the device to its new use would occur to a person of ordinary mechanical skill, it is only a case of double use; but if the relations between them be remote, and especially if the use of the old device produce a new result, it may at least involve an exercise of the inventive faculty.

To the same effect are *Du Bois* v. *Kirk* (71 O. G.,

889; 158 U. S., 58; 15 Sup. Ct., 729) and *Tannage Patent Co.* v. *Zahn*, (71 O. G., 1161; 17 C. C. A., 552; 70 Fed. Rep., 1003) In *Topliff* v. *Topliff* (59 O. G., 1257; 145 U. S., 156; 12 Sup. Ct., 825) the Court held it—

not sufficient, in order to constitute an anticipation of a patented invention, that the device relied upon might, by modification, be made to accomplish the function performed by that invention, if it were not designed by its maker, nor adapted, nor actually used, for the performance of such function.

As a further defense it is contended that the claims sued on must be construed as containing the sleeve-whirl, in which case they are not infringed, because the defendant does not use the latter, or else they have no operative mechanism and are void. The law on this subject is too well settled to be open for discussion. A patentee is not required to claim the entire machine in each claim. Each of the claims at issue is for a complete combination of the spindle and its supporting-tube and devices, and there was no necessity for expressing in terms the devices for revolving the spindle. Any appropriate means for operating it will be understood. The omission of the sleeve-whirl does not affect the validity of either one of the claims, which belong to that class where reference may be made to the specification to supply in a claim what it is plain, to any one skilled in the art, is a necessary incident. (*Reece Buttonhole Mach. Co.* v. *Globe Buttonhole Mach. Co.*, 67 O. G., 1720; 10 C. C. A., 194; 61 Fed. Rep., 970; *Deering* v. *Harvester Works*, 155 U. S., 286; 15 Sup. Ct., 118.)

The decree of the circuit court is affirmed.

U. S. Circuit Court—District of Massachusetts.

ELECTRIC BOOT AND SHOE FINISHING COMPANY *v.* LITTLE *et al.*

Decided June 18, 1896.

1. CROOKER—BLACKING AND BURNISHING BOOTS OR SHOES—DEFECTIVE SPECIFICATION—VOID.

Reissue Letters Patent No. 11,144, issued February 10, 1891, to William W. Crooker, for blacking and burnishing boots or shoes, *Held* to be void, because the specification does not disclose the whole truth in relation to the invention.

2. DECEPTIVE SPECIFICATION—VOID PATENT.

Where the patentee at the time of his application considered that a dye to be used should be waterproof and that the yielding surface used in polishing must be an inflated air-cushion, neither of which facts was disclosed by the specification, *Held* that the patent is void because of implied purpose to deceive the public.

STATEMENT OF THE CASE.

This was a suit in equity by the Electric Boot and Shoe Finishing Company against Alexander E. Little and others for alleged infringement of a patent for blacking and burnishing boots or shoes.

Mr. Chas. A. Tuber for the complainant.

Mr. James E. Maynadier and *Mr. Oliver R. Mitchell* for the defendants.

CARPENTER, *J.*:

This is a bill in equity to restrain an alleged infringement of the first claim of Reissue Letters Patent No. 11,144, issued February 10, 1891, to William W. Crooker, for blacking and burnishing boots or shoes. The claim is as follows:

1. The improvement in the art of polishing and finishing sole and heel edges and other parts of boots or shoes, which consists in dyeing the said parts or surfaces black and treating the said surfaces with wax or other resinous or waterproof compound and polishing the same by contact with a rapidly-moving yielding surface, substantially as described.

The process in use before this invention was to blacken the leather with ink, the sediment of which was fixed to the fiber of the leather by buffing and then by rubbing the leather with a hard heated surface. In the use of a dye the surface of the leather is left smooth and may be polished by an instrument having a soft yielding surface. I do not find in the record evidence of the use of this process before the invention here patented.

It is objected that the patent does not sufficiently describe the process, and on this point the respondents strongly argue that the materials necessary to the process were not commonly known, and hence that the manner of preparing them should have been described in the patent. I have finally reached the conclusion that the materials used in the patented process were sufficiently known to those familiar with the art as it stood at the time of the invention, so that the patentee is not called on to describe the methods of preparing them. Those familiar with the art, I am persuaded, would understand the nature of the materials required, although it is true, as disclosed by the evidence, that there was at that time a practical difficulty in obtaining a supply in the market.

I am of opinion, however, that the specification was, for the purpose of deceiving the public, made to contain less than the whole truth relative to the invention, and hence that the patent must be held to be invalid. (Rev. Stats., sec. 4920.) The patentee had discovered previously to his application that the dye used should be waterproof and that the yielding surface used in polishing should be an inflated air-cushion. The use of a waterproof dye, he testifies, is "an important feature;" and as to the air-cushion, he testifies that it "is necessary to be practical," and that without this "it would not be my process." The specification, however, contains no reference to these requirements. The necessity of a waterproof dye is hardly even suggested, and the polishing-surface is described as formed of cotton cloth or chamois-skin covering a bed of "felt or any other suitable material." Since the great importance of the waterproof quality in the dye was well understood by the inventor, as well as the absolute necessity to his process of a certain specific yielding surface, I must hold that the purpose to deceive the public is necessarily implied from his failure even to suggest these requirements.

The bill will be dismissed, with costs to the respondents.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 4. TUESDAY, OCTOBER 27, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
PRICE OF PRINTED COPIES OF SPECIFICATIONS AND DRAWINGS.	457
PREPARATION OF SPECIFICATIONS AND AMENDMENTS FOR THE PRINTER	457
FOREIGN PATENTS AND PUBLICATIONS	457
NAMES OF APPLICANTS	457
EXTRACTS FROM THE RULES OF PRACTICE, ETC.	457
PRINTS	457
PRIVILEGES OF THE SCIENTIFIC LIBRARY	458
ISSUE OF OCTOBER 27, 1896	458
APPLICATIONS UNDER EXAMINATION	458
PATENTS GRANTED	459
REISSUES	None.
DESIGNS	623
TRADE-MARKS	627
LABELS	None.
COMMISSIONER'S DECISIONS—	
Phelps *v.* Hardy *v.* Gattman and Stern	631
DECISIONS OF THE U. S. COURTS—	
American Road Machine Company *et al.* v. Pennock & Sharp Company, Limited	633

Price of Printed Copies of Specifications and Drawings.

It is hereby ordered, pursuant to an amendment of section 493 of the Revised Statutes, entitled "An act amending the statutes relating to the sale of printed copies of patents," approved May 19, 1896, that the price to be paid for uncertified printed copies of specifications and drawings of patents shall be, for single copies, or any number of unclassified copies, five cents each; for copies by subclasses, three cents each; by classes, two cents each, and for the entire set of patents issued, in one order, one cent each.

This order will be in effect on and after July 1, 1896.

Preparation of Specifications and Amendments for the Printer.

The Examiners are directed before passing applications to issue to carefully examine all the papers and see that they are in such shape and condition as to avoid all possibility of error being made by the printers. Whenever interlineations or erasures have been made in the specifications or amendments which would lead to confusion and mistake, the Examiners should require the entire specification to be rewritten before passing the case to issue.

Foreign Patents and Publications.

The patents (if printed) and other official patent publications of the following governments may be found in the Scientific Library:

Austria-Hungary.
Barbadoes.
Belgium.
British Honduras.
Canada.
Ceylon.
Denmark.
Fiji.
Finland.
France.
Germany.
Great Britain.
Hawaii.
India.
Italy.
Jamaica.
Japan.
Leeward Islands.
Luxemburg.
Malta.
Mauritius.
Mexico.
Netherlands.
New South Wales.
New Zealand.
Norway.
Portugal.
Queensland.
Russia.
South Australia.
Spain.
Straits Settlements.
Sweden.
Switzerland.
Tasmania.
Trinidad.
Victoria.
West Australia.

Names of Applicants.

When the full first name of the applicant does not appear either in his signature or in the preamble to the specification, the Examiner will, in his first official letter, require an amendment supplying the omission, and he will not pass the application to issue until the omission has been supplied, unless an affidavit shall have been filed setting forth that the full first name of the applicant is the one originally given by him.

Extracts from the Rules of Practice in Relation to the Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

PRINTS.

27.—Title: "HARNESS LEATHER." *Abraham A. Myers*, Lancaster, Pa. Application filed September 26, 1893.
28.—Title: "CUT No. R. S." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
29.—Title: "CUT No. A. I." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
30.—Title: "CUT No. ¾ P." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
31.—Title: "CUT No. 12, G. V." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
32.—Title: "CUT No. 1¼ P. V." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
33.—Title: "CUT No. 567—B. V." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.
34.—Title: "CUT No. 34—S." *Isaac E. Palmer*, Middletown, Conn. Application filed July 17, 1896.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of October 27, 1896.

Patents	456	No. 569,986 to No. 570,441,	inclusive.
Designs	22	No 26,212 to No. 26,233	inclusive.
Trade-Marks	27	—No. 29,034 to No 29,060,	inclusive.
Prints	8	—No. 27 to No. 34,	inclusive.
Labels	None.		
Reissue	None.		
Total issue	513		

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States	Patents and Designs	Trade-Marks and Prints.
Alabama	2	..	New Hampshire	1	..
Arizona Territory	..	..	New Jersey	23	3
Arkansas	1	..	New Mexico Ter	1	..
California	9	1	New York	75	4
Colorado	2	..	North Carolina	1	..
Connecticut	35	7	North Dakota	2	..
Delaware	1	..	Ohio	35	2
District of Columbia	2	..	Oklahoma Ter	..	..
Florida	1	..	Oregon	2	..
Georgia	5	..	Pennsylvania	60	4
Idaho	..	..	Rhode Island	10	..
Illinois	36	2	South Carolina	..	..
Indian Territory	1	..	South Dakota	2	..
Indiana	12	..	Tennessee	2	1
Iowa	9	..	Texas	5	..
Kansas	4	..	Utah	..	..
Kentucky	6	..	Vermont	3	..
Louisiana	1	..	Virginia	2	..
Maine	..	1	Washington	4	..
Maryland	7	2	West Virginia	2	..
Massachusetts	35	6	Wisconsin	10	1
Michigan	17	..	Wyoming	..	..
Minnesota	7	..	U. S Army	..	..
Mississippi	1	..	U. S. Navy	1	..
Missouri	9	1			
Montana	..	..	Total to citizens of the United States	446	35
Nebraska	2	..			
Nevada	..	..			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina Republic	..	..	Japan	..	..
Austria-Hungary	..	..	Mexico	1	..
Bahama Islands	..	..	Netherlands	1	..
Belgium	..	..	Newfoundland	..	..
Bermuda	..	..	New South Wales	..	..
Brazil	..	..	New Zealand	..	..
Canada	7	..	Norway	..	..
Cape Colony	..	..	Porto Rico	..	..
Chile, Republic of	..	..	Portugal	..	..
Colombia	..	..	Queensland	..	..
Costa Rica	..	..	Russia	..	..
Cuba	..	..	San Salvador	..	..
Denmark	..	..	Scotland	..	..
Ecuador	..	..	South Australia	..	..
England	6	..	Spain	..	..
France	2	..	Sweden	..	..
Germany	13	..	Switzerland	1	..
Greece	..	..	Venezuela	..	..
Guatemala	..	..	Victoria	..	..
India	..	..	West Australia	..	..
Ireland	..	..			
Italy	..	..	Total to citizens of foreign countries	32	..
Jamaica	1	..			

APPLICATIONS UNDER EXAMINATION.

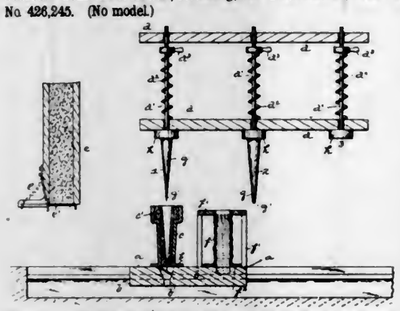
Condition at Close of Business October 20, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Sept. 21	Oct. 7	135
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Sept. 23	Oct. 2	172
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Sept. 21	Sept. 28	226
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Sept. 25	Sept. 25	181
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Sept. 22	Sept. 23	285
246	I. Tillage and Fences	Sept. 22	Sept. 21	229
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Sept. 21	Sept. 21	193
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Sept. 21	Sept. 21	224
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Sept. 22	Sept. 19	171
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Sept. 21	Sept. 13	222
253	X. Carriages and Wagons	Sept. 21	Sept. 5	446
	Between one and two months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Sept. 14	Oct. 7	255
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Sept. 10	Sept. 29	147
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Sept. 2	Sept. 23	228
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Sept. 2	Sept. 21	397
93	XXI. Textiles, etc.	Aug. 24	Sept. 18	209
120	IX. Hydraulics, Fire-Extinguishers, etc.	Sept. 14	Sept. 15	208
255	XII. Mechanical Engineering, Store-Service, etc.	Sept. 3	Sept. 10	279
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Aug. 27	Sept. 10	195
215	XVII. Paper Manufactures and Printing.	Sept. 1	Sept. 8	251
106	II. Farm Stock, Products, etc.	Aug. 20	Sept. 4	377
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Sept. 18	Sept. 2	179
248	XVIII. Steam-Engineering, etc.	Aug. 24	Aug. 31	182
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 24	Aug. 27	415
221	XXIII. Instruments of Precision, Acoustics, etc.	Sept. 8	Aug. 21	369
	Between two and three months.			
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 17	Sept. 8	487
240	VII. Harvesters, Games and Toys, and Velocipedes.	July 31	Sept. 3	1356
102	XIX. Stoves and Furnaces	Aug. 17	Sept. 1	301
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 1	236
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 17	Aug. 15	415
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 12	Aug. 12	412
	Between three and four months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 16	Sept. 12	601
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 4	Aug. 6	734
	Total number of applications awaiting action			10,717
	Under one month in arrears.			
	Designs	Sept. 23	Oct. 3	212
	Trade-Marks	Oct. 3	Oct. 13	47

PATENTS

GRANTED OCTOBER 27, 1896.

569,986. METHOD OF AND APPARATUS FOR FORMING CORES. STEPHEN J. ADAMS, Pittsburg, Pa. Filed Mar. 24, 1892. Serial No. 426,245. (No model.)



Claim.—1. The herein-described method of forming cores and molds, consisting in filling the core-box or flask with loose sand, forcing a long continuously tapering packer downwardly into the sand contained within the core-box so as to spread and pack the sand laterally against the core-box, filling the space formed by such packer with loose sand and repeating the operation, substantially as set forth.

2. The herein-described method of forming cores and molds, consisting in first coating a tapering pattern with plumbago or other antifriction substance, and then forcing such pattern downwardly into the body of sand contained within a core-box or flask, substantially as and for the purposes set forth.

3. The combination with a core-box or flask, of a long continuously-tapering packer of greater length than the core-box or flask, and mounted in guideways constructed so as to permit the packer to enter the sand and have a longer stroke than the length of the core-box, and thereby spread and pack the sand laterally against the core-box, substantially as set forth.

4. The combination with a core-box or flask, of a packer having a long continuously-tapering body portion and a head enlargement above the same corresponding substantially in diameter to the diameter of the upper end of the core-box or flask, substantially as and for the purposes set forth.

5. The combination with a core-box or flask, having a movable base portion, of a tapering pattern of greater length than the core-box or flask, and constructed to pass through the same and force aside or open said base, substantially as and for the purposes set forth.

6. A core-box or flask having an outwardly-yielding base extending over the end thereof in combination with a pattern entering the core-box and contacting with such base substantially as set forth.

7 A core-box or flask having a spring-operated movable base portion, in combination with a pattern entering the core-box and contacting with such base substantially as and for the purposes set forth.

8. A core-box or flask having two or more movable plates entering from the sides across the end thereof so as to close the same, in combination with a pattern entering the core-box and contacting with such plates and means for holding the plates normally inward substantially as and for the purposes set forth.

9. A core-box or flask having two or more plates entering from the sides across the end thereof and fitting one over the other, in combination with a pattern entering the core-box and contacting with such plates and means for holding the plates normally inward substantially as and for the purposes set forth.

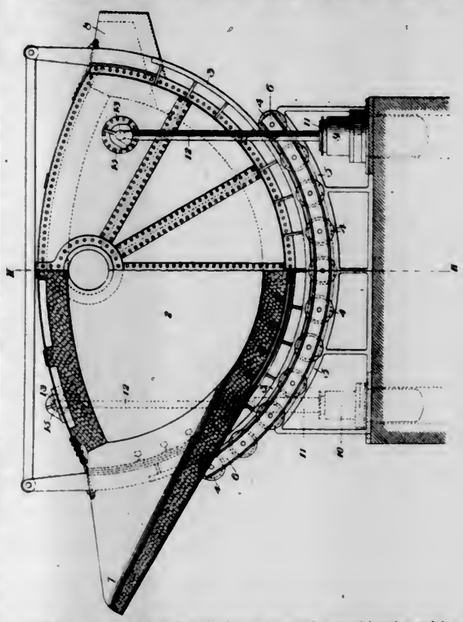
10. A core-box or flask having two or more plates pivoted at their outer ends and having their free ends entering across the end thereof and extending over each other, in combination with a pattern entering the core-box and contacting with such plates and means for holding the plates normally inward substantially as and for the purposes set forth.

11. A core-box or flask having movable plates entering from the sides thereof across the end thereof and fitting over each other, and springs pressing against said plates to force them across the end of the core-box or flask, and a pattern entering the flask and adapted to contact with such movable plates substantially as and for the purposes set forth.

12. In an apparatus for forming cores or molds, the combination of a core-box or flask, a packer constructed to enter the same, and a holder for plumbago or antifriction material in position for the packer to enter the holder before entering the core-box or flask, substantially as and for the purposes set forth.

13. In an apparatus for forming cores or molds, the combination of a core-box or flask, a packer constructed to enter the same, and a holder for plumbago or antifriction material in position for the packer to enter the holder before entering the core-box or flask, said holder having flexible or elastic side walls, substantially as and for the purposes set forth.

569,987. TIPPING METALLURGICAL VESSELS. HENRY AIKEN, Pittsburg, Pa. Filed Feb. 18, 1896. Serial No. 579,771. (No model.)



Claim.—1. In a metallurgical apparatus, the combination with a tipping vessel, of upright single-acting cylinders arranged on opposite sides of the center of rotation of the vessel, means for connecting the cylinders and vessel, and means for simultaneously applying pressure in the cylinders on opposite sides of the vessel; substantially as and for the purposes specified.

2. In a metallurgical apparatus, the combination with a tipping vessel, of a single-acting tipping-cylinder on one side of the center of rotation of the vessel, a single acting counterbalancing-cylinder on the opposite side of the vessel, and means for maintaining the latter cylinder in constant communication with the source of pressure during the operation of the apparatus; substantially as and for the purposes specified.

3. In a metallurgical apparatus, the combination with a tipping vessel, of two upright single-acting tipping-cylinders bearing thereon at the rear corners, two upright single-acting righting-cylinders bearing thereon at the forward corners, means for connecting the cylinders with the tipping vessel, and means for simultaneously applying

pressure in the cylinders on both sides of the vessel; substantially as and for the purposes specified.

4. In a metallurgical apparatus, the combination with a tipping vessel, of a single-acting tipping-cylinder, and a single-acting counterbalancing-cylinder, the tipping-cylinder being of greater diameter than the counterbalancing-cylinder, and means for maintaining the counterbalancing-cylinder in constant communication with the source of pressure; substantially as and for the purposes specified.

569,988. BOTTLE. SAMUEL ALEXANDER, Meriden, Conn. Filed Apr. 22, 1895. Serial No. 546,789. (No model.)



Claim.—1. In a bottle in combination a neck, a nipple within said neck, a vertically-adjustable cap in said neck adapted when the bottle is in its normal position to enter the annular space between said neck and said nipple and to form with said nipple an air-trap and when said bottle is inverted to drop out of said annular space and to break said trap, substantially as described.

2. In a bottle in combination a neck, a nipple within said neck, a vertically-adjustable cap in said neck provided with a projecting perforated flange and adapted when the bottle is in its normal position to enter the annular space between said neck and said nipple and to form with said nipple an air-trap and when said bottle is inverted to drop out of said annular space and to break said trap, substantially as described.

3. In a bottle in combination a neck, a nipple within said neck, a vertically-adjustable cap in said neck adapted when the bottle is in its normal position to enter the annular space between said neck and said nipple and to form with said nipple an air-trap and when said bottle is inverted to drop out of said annular space and to break said trap, a stopper secured within said neck and a tube passing through said stopper closed at its lower end and provided with lateral apertures, substantially as described.

4. In a bottle in combination a neck, a nipple within said neck, a vertically-adjustable cap in said neck adapted when the bottle is in its normal position to enter the annular space between said neck and said nipple and to form with said nipple an air-trap and when said bottle is inverted to drop out of said annular space and to break said trap, a tubed stopper in said neck and means as a body of cement for securing said stopper in said neck, substantially as described.

569,989. ELECTRIC-MOTOR REGULATOR. WILLIAM A. ANTHONY, Newark, N. J. Filed July 29, 1896. Serial No. 600,999. (No model.)

Claim.—1. In combination, a multipolar motor, and means for varying the strength of any pair or pairs of field-magnet poles.

2. In combination, a multipolar motor, having an odd number of pairs of poles, and means for varying the action of the coils which belong to diametrically opposite field-magnet poles.

3. In combination, an electric motor, whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the field-magnet poles in their order being north, south, north, south, &c., and the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and means for reversing the direction of the current in one or more said pairs of field-magnet coils.

6. In combination, an electric motor, whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and a circuit controller, both for cutting out and reversing the currents of those coils which belong to diametrically opposite field-magnet poles.

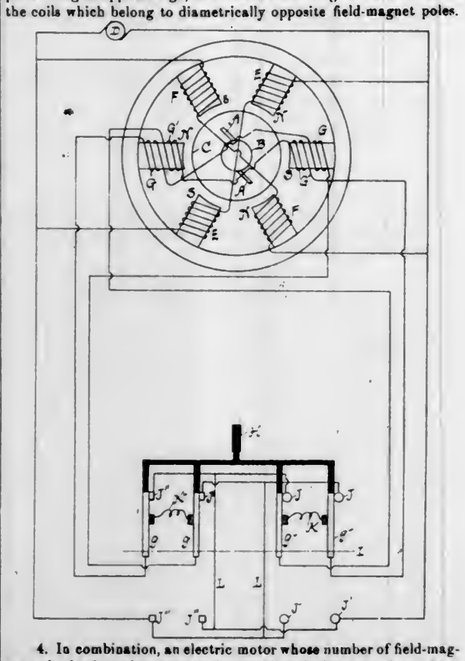
7. In combination, an electric motor, whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the field-magnet poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and one or more pairs of field-magnet poles having each a divided coil, and a circuit-controller adapted to cut out one pair of divided coils, then to short-circuit it, then to cut out another pair, and then to short-circuit it, then to reverse the direction of the current in one pair, and then in another pair, and then to repeat the above steps in the order opposite to that named.

8. The method of operating a multipolar motor, consisting in varying the total electromotive force of the armature by varying the strength of one or more pairs of field-magnet poles.

9. The method of operating a multipolar electric motor, having an odd number of pairs of poles, consisting in varying the total electromotive force of the armature by varying the magnetic strength of one or more of the pairs of the field-magnet poles.

569,990. GARBAGE OR RUBBISH RECEPTACLE. CLIFFORD ARRICK, Indianapolis, Ind. Filed Dec. 4, 1895. Serial No. 571,007. (No model.)

poles being of opposite sign, and means for cutting out the current of the coils which belong to diametrically opposite field-magnet poles.



4. In combination, an electric motor whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the field-magnet poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and a circuit-controller adapted to cut out any or every two coils of said pair of coils except one pair.

5. In combination, an electric motor whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the field-magnet poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and means for reversing the direction of the current in one or more said pairs of field-magnet coils.

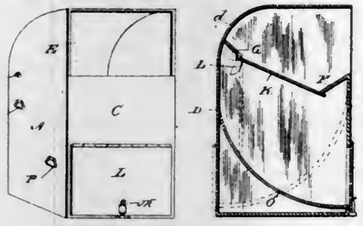
6. In combination, an electric motor, whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and a circuit controller, both for cutting out and reversing the currents of those coils which belong to diametrically opposite field-magnet poles.

7. In combination, an electric motor, whose number of field-magnet poles is that of any term of an arithmetical progression, whose common difference is "4," and whose first term is "6," the field-magnet poles in their order being north, south, north, south, &c., the polarity of every two diametrically opposite or pair of field-magnet poles being of opposite sign relatively to each other, and one or more pairs of field-magnet poles having each a divided coil, and a circuit-controller adapted to cut out one pair of divided coils, then to short-circuit it, then to cut out another pair, and then to short-circuit it, then to reverse the direction of the current in one pair, and then in another pair, and then to repeat the above steps in the order opposite to that named.

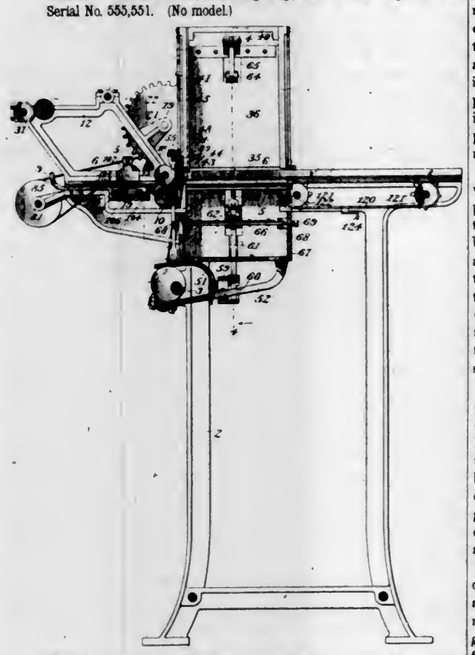
8. The method of operating a multipolar motor, consisting in varying the total electromotive force of the armature by varying the strength of one or more pairs of field-magnet poles.

9. The method of operating a multipolar electric motor, having an odd number of pairs of poles, consisting in varying the total electromotive force of the armature by varying the magnetic strength of one or more of the pairs of the field-magnet poles.

Claim.—A garbage-receptacle, consisting of a box or other receptacle having an opening in the front near the top, a plate fixed transversely between the sides of the box with its upper edge at the bottom of the said front opening and its lower edge extending inward and downward, a second inclined plate fixed transversely and against the back of the box on the inside thereof, a shaft or rod fixed transversely in the box at the front and lower edge of said second plate; a swinging plate secured to said shaft and a counterbalance weight or spring thereon adapted to hold said swinging plate normally closed with its front edge in contact with the rear edge of the first inclined plate; a door to close the discharge-openings in the box and a curved plate arranged to deflect or direct the contents of the box toward the door; all constructed and arranged as herein shown and described.



569,991. NEWSPAPER WRAPPING AND ADDRESSING MACHINE. WALTER A. BEEBE, King City, Cal. Filed July 10, 1895. Serial No. 555,551. (No model.)



Claim.—1. In a paper folding, addressing and wrapping machine, the combination with the folding mechanism, of intermittently-rotated feed-rollers, a delivery mechanism, a pair of gear-wheels mounted independently in axial alinement and operatively connected with, respectively, the intermittently-rotated feed-rollers and the delivery mechanism, an arm mounted in line with the axis of the said gear-wheels and carrying oppositely-disposed pawls to alternately engage with and operate the aforesaid gear-wheels, and actuating mechanism for vibrating the pawl-bearing arm, substantially as set forth for the purpose described.

2. In a paper folding, addressing and wrapping machine, the combination of the folding mechanism, a table having a horizontal pocket, a pair of continuously-rotating rollers in a higher plane than the table for drawing the wrapping-paper from the roll, a pair of intermittently-rotated rollers located in the length of the table and having the space between them corresponding with the plane of the said pocket, and adapted to feed the wrapping-paper in required lengths through the pocket to the folding mechanism, an address-printing mechanism arranged in the length of the table in advance of the intermittently-rotated rollers and comprising printing-type below the table and an impression-hammer above the table, a rock-shaft disposed at one side of the table, an arm extending horizontally from the rock-shaft and bearing the impression-hammer, a vertical arm pendent from the rock-shaft, and a pawl having pivotal connection with the pendent arm and adapted to move the printing-type, substantially as described.

3. In a paper folding, addressing and wrapping machine, the combination of a table having a horizontal pocket extending inward from one end and adapted to support the newspaper to be folded and wrapped upon the other end portion, an endless carrier having projections to engage with and feed the newspapers over the latter end of the table to a position over the inner end of the said pocket, means for feeding the wrapping-paper into and through the said pocket, a cutter operating across the aforesaid pocket for severing the wrapping-paper into the required length, a vertical folding-blade adapted to operate through a vertical slot extending through the table and intersecting with its pocket to force the newspaper across the latter, an address-printing mechanism comprising an impression-hammer operating across the said pocket and printing-type placed below the table, a rock-shaft, a lever for actuating the rock-shaft and cutter, and arms extending from the rock-shaft to operate the impression-hammer and the printing-type, substantially as set forth for the purpose described.

4. In a machine of the character specified, the combination of a table having a horizontal pocket extending therein from one end, a folding-blade arranged lengthwise of the table and operating through a longitudinal slot intersecting with the said pocket, a pair of intermittently-operated feed-rollers transversely arranged between the ends of the pocket and adapted to move the wrapping-paper therethrough, a type-galley parallel with the feed-rollers and bearing the address-printing type, and located below the plane of the pocket, an impression-hammer disposed above and adapted to operate across the pocket, a rock-shaft at the side of the table, a horizontal arm extending from the rock-shaft and bearing the impression hammer, and a pawl having adjustable connection with an arm pendent from the rock-shaft, substantially as set forth.

5. In combination, a table having an end portion curving upwardly, a plate fitted to the table and forming a pocket therewith, a pair of continuously-rotated rollers located above the curved end of the table, a pair of intermittently-rotated feed-rollers disposed in the length of the pocket, the one above, the other below the plane thereof, an address-printing mechanism located in advance of the intermittently-operated feed-rollers, a folding-blade adapted to operate across the pocket to one side of the intermittently-operated feed-rollers, a cutting mechanism placed between the folding-blade and the intermittently-operated feed-rollers, and a lever for transmitting motion to the address-printing and the cutting mechanisms, substantially as set forth for the purpose described.

6. In combination, a table having a slot, vertically-disposed bars grooved on their inner sides, a folding-blade mounted in the grooves of the said bars and operating through the slot of the table, stays having oppositely-disposed members for strengthening and bracing the grooved bars, a post having connection with one of the stays and having a laterally-extending projection, a cutter, converging bars secured at their separated ends to the cutter and having their converging ends connected by a head which is slotted to receive the projection of the said post, and actuating mechanism for the cutter, substantially as set forth.

7. In a paper folding, addressing and wrapping machine, the combination of a reciprocating cutter, a plate attached to the cutter and having a lateral stud, a rock-shaft, a lever connected with the rock-shaft and having a slot to receive the aforesaid stud, a type-galley slidably mounted and having a rack-bar, an arm extending from the said rock-shaft, and a pawl having pivotal and adjustable connection with the said arm and adapted to engage with the teeth of the said rack-bar to move the type-galley to bring the type in proper position, substantially as and for the purpose set forth.

8. In a paper folding, addressing and wrapping machine, the combination of a table having a horizontal pocket, a race extending laterally therefrom and closed at its top side, a type-galley slidably mounted in the race and having a rack-bar, a rock-shaft, arms extending from the rock-shaft at approximately right angles to each other, a pawl having pivotal and adjustable connection with the pendent arm and adapted to engage with the rack-bar to move the type-galley within the race, an impression-hammer having connection with the other arm and adapted to operate through an opening in the top of the race and across the pocket in the table so as to bring the wrapping-paper in engagement with the type of the galley, a cutting mechanism, and a lever having connection with the rock-shaft and cutting mechanism, substantially as and for the purpose set forth.

9. In combination, a slidable type-galley carrying the address-printing type and provided with a rack-bar, a rock-shaft, an arm extending horizontally from the rock-shaft and bearing an impression-hammer, a second arm pendent from the rock-shaft and having a vertical slot, a lever vertically slotted, a stud-bolt adjustably connecting the lever with the pendent arm and movable in the slots thereof, and a pawl having pivotal connection with the said lever and adapted to engage with the rack-bar to move the type-galley forward upon the ascent of the impression-hammer, substantially as set forth.

10. In combination, a type-galley carrying the address-printing type and provided with a rack-bar, a rock-shaft, a pendent arm longitudinally slotted and secured to the rock-shaft, a lever pivoted at one end and longitudinally slotted, a pawl having connection with the said lever and adapted to engage with the rack-bar, and an adjustable connection movable in the slots of the said arm and lever, whereby the pivotal connection between the two can be varied to regulate the throw of the said pawl, substantially in the manner set forth.

11. The combination with a slotted plate or wall, and a folding-blade to operate through the said slot, of two endless belts or aprons disposed with their adjacent sides in proximate relation and forming a passage opposite the slot of the said plate or wall, substantially as set forth.

12. In a machine of the character specified, the combination with the wrapping-paper-feeding mechanism, and an endless belt or apron for carrying the folded and wrapped paper from the machine, of a shaft having a tight and a loose pinion, two gear-wheels meshing with the respective pinions, a vibrating arm carrying two oppositely-disposed pawls to engage alternately with the teeth of the respective gear-wheels, and actuating mechanism for vibrating the pawl-carrying arm, the tight pinion being operatively connected with the said wrapping-paper-feeding mechanism and the loose pinion with the said belt or apron, substantially in the manner set forth.

13. In a paper folding, addressing and wrapping machine, the combination with a folder consisting of a flattened tube having its bottom side gradually increasing in width and gradually curving from a vertical to a horizontal position from the receiving to the discharge end of the folder, of a traveling belt operating in the upper portion of the folder and approximating the width thereof, substantially as set forth for the purpose described.

14. In combination, a folder for turning the marginal or projecting edge portion of the wrapper, consisting of a flattened tube having its bottom portion gradually widening and curving from the entrance to the delivery end of the holder, an endless belt having its upper portion about in the same plane as the bottom side of the folder, and a second endless belt having its bottom portion operating through the upper portion of the folder and corresponding in width thereto, and forming a passage with the first-mentioned belt to receive the folded and wrapped newspaper, substantially as set forth for the purpose described.

15. In combination, a vertically-disposed wall having a slot, a folding-blade operating through the said slot, two belts or aprons having their contiguous portions arranged to form a passage opposite the said slot, a deflector located at the rear end of the said slot for folding the horizontal marginal or projecting edge portion of the wrapper into a vertical position, and a folder in the rear of the deflector for turning the said marginal portion of the wrapper into a horizontal position, substantially as set forth for the purpose described.

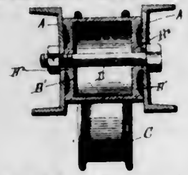
16. The herein-described folder, approximating the form of a flattened tube and having its lower portions overlapping and spaced apart, the upper overlapping portion being longitudinally fluted or corrugated, substantially as set forth for the purpose described.

17. The herein-described folder, appearing as a flattened tube and having an inwardly-extending ledge at one side which is widened at its rear portion, and having an inwardly-extending portion at the opposite edge which gradually increases in width and curves from the vertical to the horizontal, one of the overlapping bottom portions being longitudinally fluted, substantially as and for the purpose set forth.

18. The herein-specified folder, approximating the form of a flattened tube which is open on one side for a distance from one end, and having a projecting ledge which widens at the end opposite the open side, said widened portion being longitudinally fluted or corrugated, and having the portions opposite and in the plane of the open side overlapping, substantially as set forth for the purpose described.

19. A machine for the purposes described comprising a table having a pocket, a feeder continuously operated for advancing the newspapers into proper position, a pair of continuously-rotated rollers for drawing the wrapping-paper from the roll, a second pair of intermittently-operated rollers for feeding the paper in proper lengths into the said pocket, a cutting mechanism for severing the wrapping-paper, an address-printing mechanism located between the two pairs of feeding-rollers, a vertical folding-blade operating through the pocket, a horizontal folding-blade, a passage opposite the horizontal folding-blade and formed by the adjacent portions of two traveling belts or aprons, a deflector, a pasting device, a folder for turning the marginal edge of the wrapper, rollers for compressing the folded parts of the wrapper, and actuating mechanism for the operating parts, substantially as set forth for the purpose described.

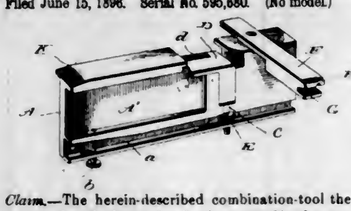
569,992. LUMBER-TRUCK. ALBERT T. BEMIS, Indianapolis, Ind., assignor to the Standard Dry-Kiln Company, same place. Filed Feb. 17, 1896. Serial No. 579,544. (No model.)



Claim.—1. In a truck for use in lumber-drying kilns, two parallel side pieces A, A, the wheels having their axles journaled in openings formed in said side pieces, the washers or separators B interposed at intervals of the length of the truck and serving to hold the side pieces at the required distance apart, the said washers B being hollow and having central openings for the passage of a securing-bolt, the thickness of the washer at the point at which the bolt passes through it being less than at the periphery of the washer, substantially as described and for the purpose specified.

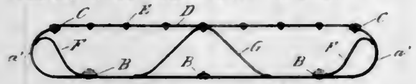
2. A washer designed for separating the channel-steel strip forming the frame of a lumber-kiln truck, of the character described, the said washer consisting of a hollow body portion having apertured ends for the passage of a securing-bolt, the ends being provided with a thickened portion surrounding the central bolt-opening and the length of the washer at the point at which the bolt passes through it being less than at the outer face of the washer, substantially as described.

569,993. SAW-TOOL. RICHARD BENNETT, Racket Lake, N. Y. Filed June 15, 1896. Serial No. 595,680. (No model.)



Claim.—The herein-described combination-tool the same comprising a stock or body portion having one of its faces provided with a tapering recess or depression A' within which a file may be adjustably seated, a set-screw for adjusting and securing the file in said recess, an independent narrow and tapering recess *a* within which the file is adjusted and held in position for convenient use in jointing saw-teeth, a racker tooth-gage D vertically adjustable within a dovetailed recess in the stock as described, means for vertically adjusting the gage-block, and the swinging setting member F, pivoted at a point adjacent to one of its ends to the stock, and having its opposite end notched as described substantially as described and for the purpose specified.

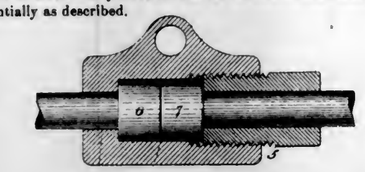
569,994. SPRING-BED. WILLIAM R. BOISVERT, Levis, Canada. Filed May 13, 1896. Serial No. 591,364. (No model.)



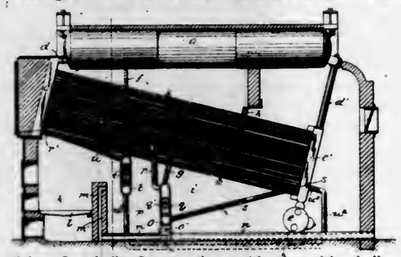
Claim.—In a spring-bed, the combination, with a series of longitudinal bars A provided with upwardly-curved ends, cross-pieces B secured to the said bars, and cross-pieces C secured to their said curved ends; of a series of spring bars D secured to the cross-pieces C, a series of spring cross-bars E secured to the outer bars D and interlaced with and slidable upon the intermediate bars D, and springs interposed between the bars A and their curved ends, and between the bars A and D, substantially as set forth.

569,995. ROD CONNECTION. HENRY P. BOYD, Bellevue, Pa., assignor of one-fourth to George A. Dickson, Pittsburg, Pa. Filed May 11, 1895. Serial No. 548,962. (No model.)

Claim.—A series of connected rods, each having at one end an integral enlarged head, an exteriorly-screw-threaded sleeve butting against the head, and engaging the larger innerly-screw-threaded cavity of the coupling-sleeve, and its other end pushed through the smaller hole of the next similar sleeve and then upset so as to form a head of substantially the same size as the head at the other end, substantially as described.



569,996. BOILER AND BOILER-FURNACE. WILLIAM BRAND, Pittsburg, Pa. Filed Jan. 23, 1896. Serial No. 576,487. (No model.)



Claim.—In a boiler-furnace, the combination with a boiler of a fuel-chamber at the front end thereof having a bridge-wall, a bridge-wall in the rear of said first-mentioned wall having a water-chamber therein, a depending wall between said bridge-walls having a water-chamber therein, and circulating-pipes connecting said water-chambers to the boiler, substantially as set forth.

569,997. WEIGHING-TRUCK. JOSEPH N. BROWN, Muskegon, Mich. Filed Sept. 8, 1893. Renewed Mar. 5, 1896. Serial No. 581,045. (No model.)



Claim.—1. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of the transported objects while the truck is in a variably-inclined position, consisting in the combination with the truck-frame, of a platform, hinges connecting the platform and frame, an indicator, and operating mechanism therefor connecting the platform and frame, substantially as described.

2. In a truck or vehicle of the character herein described, a truck-frame having wheels at one end and handles at the other so that it can be lifted for the purpose of transporting objects when it is in a variably-inclined position, in combination with the weighing-platform extending from end to end of the frame, hinging devices for connecting the platform and the truck-frame, and an indicator operative when a weight is upon the platform to ascertain the amount of such weight, substantially as described.

3. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of the transported objects while the truck is in a variably-inclined position, consisting in the combination with the truck-frame, of a platform, hinged links for connecting the platform and the frame, said links being inclined to both the frame and platform, and spring mechanism connecting the platform with the frame, and an indicator, substantially as described.

4. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of the transported objects, while the truck is in a variably-inclined position, consisting in the combination with the truck-frame, of a platform, hinges connecting the frame and platform, a device for movably connecting one end of the platform to the truck so as to limit the movement of the platform, a spring-leverage arrangement, and an indicator mechanism for noting the weight which may be placed upon the truck, substantially as described.

5. The combination of the truck-frame, the platform, the hinges connecting them, the levers pivoted to the frame and provided with a spring attached to the frame, an evener-bar connected to the platform and to the levers and an indicator operated by said levers, substantially as described.

6. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of transported objects while the truck is in a variably-inclined position, consisting in the combination with the truck-frame and the platform, of inclined hinges connecting the frame and the platform, a pair of spring-provided levers, an evener-bar linked thereto and connected to the platform, and an index-finger operated by said mechanism, substantially as described.

7. The combination with the truck-frame, of the platform, having a flange or foot, the pivoted links connecting the platform to the truck with the hinge connection, a bolt movably connecting one end of the platform to the truck so as to limit the movement of the platform, a spring-leverage arrangement and an indicator mechanism for noting the weight which may be placed upon the truck, all arranged to operate substantially as described.

8. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of the transported objects while the truck is in a variably-inclined position, consisting in the combination with the truck-frame of a platform and hinges, consisting of pivoted links which are pivoted to the platform and to the frame and which occupy an inclined position to both the frame and platform in order that the platform may have both an endwise movement and a downward movement, together with suitable indicator mechanism for noting the weight of the transported objects, substantially as described.

9. The combination with the truck-frame and the platform A, of the links P P, pivoted to the platform and to the truck-frame, the levers H H pivoted to the frame and connected to a spring I, which is attached likewise to the frame, an evener-bar G connected by links *h h* to the levers H H and by a bolt *g* to the platform, and an indicator K having an arm *k*, and connected by a link J with one of the levers H, substantially as described.

10. In a weighing-truck, the combination of the truck-frame, the platform and the hinges connecting them which are inclined to the frame and the platform, together with the weighing mechanism operated by the platform, substantially as described.

11. In a truck or vehicle for moving objects, a weighing mechanism for ascertaining the weight of the transported objects while the truck is in a variably-inclined position, consisting in the combination with the truck-frame, of a platform inclined hinges connecting the platform and the frame said hinges being located near each end of the platform, an indicator and operating mechanism therefor connecting the platform and frame, substantially as described.

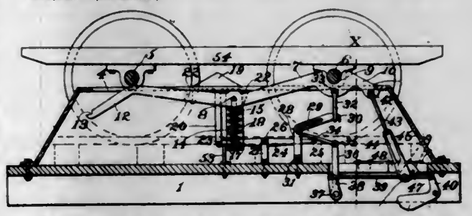
569,998. RING. SAMUEL BUCHSBAUM, Chicago, Ill. Filed Mar 11, 1896. Serial No. 582,747. (No model.)



Claim.—1. A finger-ring having a bezel with a rabbeted seat in its face and a cross-bar extending from side to side thereof, in combination with a setting the outlines of which conform to the contours of said seat, having a flat spring secured to its under side which engages said bar, as set forth.

2. A finger-ring having a bezel with an opening therethrough having its outer edges rabbeted and having a cross-bar extending from side to side thereof, in combination with a setting the outlines of which conform to the contours of said seat and having a flat spring one end of which is secured to its back near the edge of said setting so as to be at right angles to said bar, as set forth.

569,999. AUTOMATIC CAR-HOLDER FOR HOISTING-CAGES. JULIUS R. CAMPBELL, Litchfield, Ill. Filed Feb. 15, 1896. Serial No. 579,340. (No model.)



Claim.—1. In an automatic car-holder for hoisting-cages, the combination of a platform, a suitable casing provided with longitudi-

nal slots and adapted for attachment to said platform, a dog possessing a pivot and a recess near one end, said dog having an upper edge declining in both directions from said recess and from a point near the other end, the length of the dog exceeding that of the greater slot in said case, a coiled spring, means attached to said case for engaging and guiding said pivot and for supporting said spring, substantially as described.

2. In an automatic car-holder for hoisting-cages, the combination of a platform, a suitable casing provided with longitudinal slots and adapted for attachment to said platform, a dog possessing a pivot and a recess near one end, said dog having an upper edge declining in both directions from said recess and from a point near the other end the length of the dog exceeding that of the greater slot in said case, a coiled spring, means attached to said case for engaging and guiding said pivot and for supporting said spring, a trip having a head with inclined sides and adapted to pass through the lesser slot in said case, means for guiding said trip and for limiting its movement, a lever, one arm of said lever adapted for pivotal attachment to said trip, the remaining arm having a lateral projection and constructed to overbalance the weight of said trip, a pivoted bent arm having a hook end and a bent slot consisting of a shorter and a longer portion, means pivoted to said dog and constructed for separable connection with the hook end of said bent arm, a yoke normally engaging the shorter portion of said bent slot, and mechanism pivotally connected with said yoke whereby the recessed arm of said dog may be automatically depressed when said platform is supported from below, substantially as described.

3. In an automatic car-holder for hoisting-cages, the combination of a platform, a suitable casing provided with longitudinal slots and adapted for attachment to said platform, a dog possessing a pivot and a recess near one end, said dog having an upper edge declining in both directions from said recess and from a point near the other end, the length of the dog exceeding that of the greater slot in said case, a coiled spring, means attached to said case for engaging and guiding said pivot and for supporting said spring, a yoke pivoted to the recessed arm of said dog, a shaft suitably supported, an arm fixed upon said shaft and having a longitudinal slot adapted to admit said yoke, and a trip fixed at the outer end of said shaft, substantially as described.

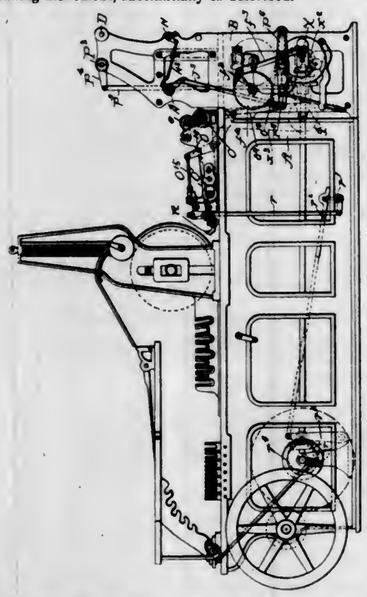
4. In an automatic car-holder for hoisting-cages, the combination of a platform, a suitable casing provided with longitudinal slots and adapted for attachment to said platform, a dog possessing a pivot and a recess near one end, said dog having an upper edge declining in both directions from said recess and from a point near the other end, the length of the dog exceeding that of the greater slot in said case, a coiled spring, means attached to said case for engaging and guiding said pivot and for supporting said spring, a yoke pivoted to the recessed arm of said dog, a shaft suitably supported, an arm fixed upon said shaft and having a longitudinal slot adapted to admit said yoke, a trip fixed upon said shaft, means for limiting the revolution of said shaft and attachments, a trip having a head with inclined sides and adapted to pass through the lesser slot in said case, means for guiding said trip and for limiting its movement, a lever, one arm of said lever adapted for pivotal attachment to said trip, the remaining arm having a lateral projection and constructed to overbalance the weight of said trip, a pivoted bent arm having a hook end and a bent slot consisting of a shorter and a longer portion, means pivoted to said dog and constructed for separable connection with the hook end of said bent arm, a yoke normally engaging the shorter portion of said bent slot, and mechanism pivotally connected with said yoke whereby the recessed arm of said dog may be automatically depressed when said platform is supported from below, substantially as described.

570,000. PAPER-FEEDING MACHINE. EDWARD T. CREATHERO, London, England, assignor of one-half to Edmund William Hornsey Walker, same place. Filed Apr. 11, 1894. Serial No. 507,131. (No model.) Patented in England May 17, 1890, No. 7,738, and Aug. 18, 1893, No. 15,678, and in Germany Mar. 7, 1894, No. 82,920.

Claim.—1. In combination, the frame, the vertically-movable feeding-table, the guide-blocks C′ moving in ways in the frame, the screws with means for operating the same, the half-nuts movable outwardly at the outer edges of the feed-table, means for operating the half-nuts extending below the table from side to side and connecting with the said half-nuts, the upper shaft D, the lifting means carried thereon, and the connection between the said lifting means and the guide-blocks of the table, substantially as described.

2. In combination in a paper-feeding device, the arm P' having the feeding roll, the swinging arm P^4 carrying the same pivotally, the rod P^8 arranged to move longitudinally for operating the arm P', the cross bar H' and the two adjustable stops P^9 P^{10} on the rod P^8 to raise or depress the arm P', substantially as described.

3. In combination, the paper-table, the spindles L^4 L^5, the oscillating fluffing-finger connected with the spindle L^5 to be operated thereby, the rotary feet M, M′ on the spindle L^4 and means including the cams for giving both the fluffing-finger and the feet their rising and falling movement, substantially as described.



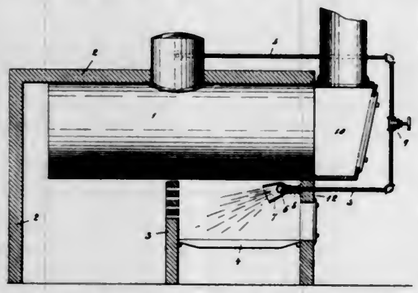
4. In combination in a paper-feeding machine, the paper-table, the fluffing-finger, the spindle connected thereto for operating the same, and the pivoted holding-down feet M M′ having the arms m m' and the cam acting thereon to raise or depress the feet, substantially as described.

5. In combination in a paper-feeding apparatus, the feed-board, the stop O^3, the pivoted foot O^2, the reciprocating shaft O^5 connected to the pivoted foot, the link O^7 and arm O^8 forming said connection and means for reciprocating the shaft O^5, substantially as described.

6. In combination in a paper-feeding apparatus, the feed-board with means for giving the same a vertical movement, the front stops carried pivotally by the feed-board and means for raising and lowering the front stops comprising the stop pins on the frame, and means to engage the same connected with the front stops, substantially as described.

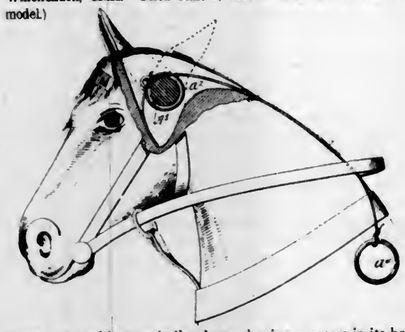
7. In combination in a paper-feeding apparatus, the feed-board, the front stops, said board being movable vertically and means for raising and lowering the front stops as the board is operated comprising the rack R^3, the segment R^2 and controlling devices therefor, substantially as described.

570,001. SMOKE-CONSUMER. WILLIAM E. COLE, Atlanta, Ga. Filed Mar. 6, 1896. Serial No. 582,162. (No model.)



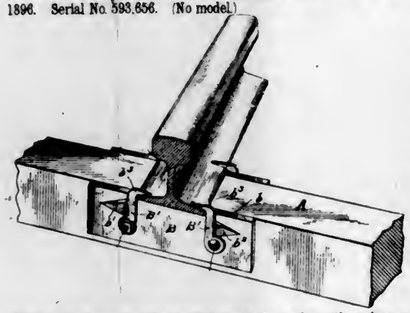
Claim.—In a smoke-consumer, a casting with its forward end open, openings made in its back end for the securing of air-induction pipe or pipes, another opening made in its rear end for the passage of a steam-pipe, a steam-chest located inside the mouth of said casting, uniting with said steam-pipe substantially as and for the purpose specified.

570,002. ROCKING OR SIMILAR HORSE. MERTON E. CONVERSE, Winchendon, Mass. Filed Mar. 2, 1896. Serial No. 581,604. (No model.)



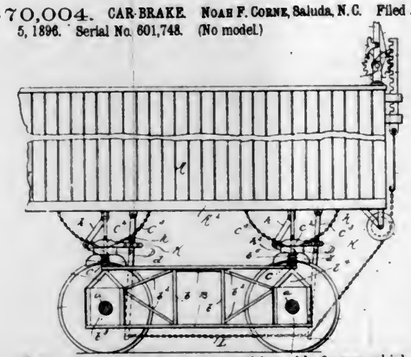
Claim.—A rocking or similar horse having a recess in its head portion and a channel extended along the top of the neck, the said channel communicating with the recess, a rock-bar extended across the recess, ears secured to the outer end of the rock-bar, a cord for moving the bar in one direction and a spring for moving it in the other direction, substantially as specified.

570,003. RAIL LOCK AND SUPPORT. WILLBER R. COOK, CYRUS R. STOUT, and ROBERT S. MORRIS, Siloam Springs, Ark. Filed May 29, 1896. Serial No. 593,656. (No model.)



Claim.—The combination with a cross-tie, and a rail resting upon the upper face of the cross-tie, of the longitudinally-disposed plates arranged vertically and secured to the opposite faces of the cross-tie and having their upper edges arranged flush with the upper face of the said tie and supporting the rail, the substantially L-shaped dogs arranged in pairs at opposite sides of the cross-tie at the outer faces of the plates and engaging the bottom flanges of the rail at both sides thereof, the transversely-disposed bolts passing through the cross-tie, the plates and the dogs, and the lugs rigid with the plates and engaging the shanks of the dogs at the outer edges thereof to prevent the dogs from swinging backward out of engagement with the rail, substantially as described.

570,004. CAR-BRAKE. NOAH F. CORNE, Saluda, N. C. Filed Aug. 5, 1896. Serial No. 601,748. (No model.)



Claim.—1. A brake for cars comprising side frames which are mounted on the axles outside of the wheels of the truck, said side frames being provided at each end with suitable boxes or housings through which the axles pass, and said boxes or housings being provided with upwardly-directed standards, brake-levers which extend transversely of the truck above the axles, and through the outer ends of which said standards pass, the inner ends of said brake-levers being overlapped, and being also vertically movable on hangers suspended from the car, and said brake-levers being also provided with brake-shoes which are adapted to be brought in contact with the wheels of the truck by depressing the inner ends of said levers and means for depressing said ends of said levers, substantially as shown and described.

2. A brake for cars comprising side frames which are mounted on the axles outside of the wheels of the truck, said side frames being provided at each end with suitable boxes or housings through which the axles pass, and said boxes or housings being provided with upwardly-directed standards, brake-levers which extend transversely of the truck above the axles, and through the outer ends of which said standards pass, the inner ends of said brake-levers being overlapped, and being also vertically movable on hangers suspended from the car, and said brake-levers being also provided with brake-shoes which are adapted to be brought in contact with the wheels of the truck by depressing the inner ends of said levers, consisting of a pair of toggle-levers pivotally connected with the car, and with a vertically-movable cross-head mounted on the hangers with which the inner ends of the levers are connected, and means connected with said toggle-levers for depressing said brake-levers, substantially as shown and described.

3. A brake for cars comprising side frames which are mounted on the axles outside of the wheels of the truck, said side frames being provided at each end with suitable boxes or housings through which the axles pass, and said boxes or housings being provided with upwardly-directed standards, brake-levers which extend transversely of the truck above the axles, and through the outer ends of which said standards pass, the inner ends of said brake-levers being overlapped, and being also vertically movable on hangers suspended from the car, and said brake-levers being also provided with brake-shoes which are adapted to be brought in contact with the wheels of the truck by depressing the inner ends of said levers consisting of a pair of toggle-levers pivotally connected with the car and with a vertically-movable cross-head mounted on the hangers with which the inner ends of the levers are connected, and means connected with said toggle-levers for depressing said brake-levers consisting of a bar which is pivotally connected therewith, and with a depending lever which is pivotally connected with the car, said lever being connected at its lower end with a chain which extends upwardly and passes over a pulley at the end of the car, and is connected with a vertically-movable rack-bar, substantially as shown and described.

4. A brake for cars comprising side frames which are mounted on the axles outside of the wheels of the truck, said side frames being provided at each end with suitable boxes or housings through which the axles pass, and said boxes or housings being provided with upwardly-directed standards, brake-levers which extend transversely of the truck above the axles, and through the outer ends of which said standards pass, the inner ends of said brake-levers being overlapped, and being also vertically movable on hangers suspended from the car, and said brake-levers being also provided with brake-shoes which are adapted to be brought in contact with the wheels of the truck by depressing the inner ends of said levers, consisting of a pair of toggle-levers pivotally connected with the car and with a vertically-movable cross-head mounted on the hangers with which the inner ends of the levers are connected, and means connected with said toggle-levers for depressing said brake-levers, consisting of a bar which is pivotally connected therewith, and with a depending lever which is pivotally connected with the car, said lever being connected at its lower end with a chain which extends upwardly and passes over a pulley at the end of the car, and is connected with a vertically-movable rack-bar, and means for operating said rack-bar consisting of a lever which is pivotally connected with the top of the car, and which is provided with a gear-wheel which operated in connection with said rack-bar, said lever being also provided with a pawl which operates in connection with said gear-wheel and with another pawl which operates in connection with said rack-bar, substantially as shown and described.

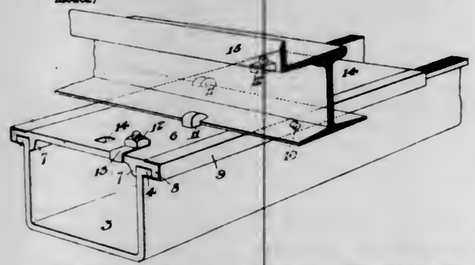
5. The combination with a car, and the truck thereof, of brake-levers which extend transversely of said truck, over each axle, said brake-levers being supported on frames mounted on the axles outside of the wheels, and provided with shoes which are adapted to be brought to bear upon the wheels, the inner ends of said brake-levers being movably connected with hangers which are connected with the car, and means for depressing the inner ends of said levers so as to bring the shoes in contact with the wheels, substantially as shown and described.

6. The combination with a car, and the truck thereof, of brake-levers which extend transversely of said truck, over each axle, said

brake-levers being supported on frames mounted on the axles outside of the wheels, and provided with shoes which are adapted to be brought to bear upon the wheels, the inner ends of said brake-levers being movably connected with hangers which are connected with the car, and means for depressing the inner ends of said levers so as to bring the shoe in contact with the wheels, consisting of a vertically-movable cross-head mounted on said hangers, and toggle-levers which are adapted to depress said cross-head and devices for operating said toggle-levers which are connected therewith, substantially as shown and described.

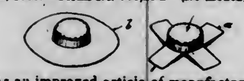
7. The combination with a car, and the truck thereof of brake-levers which extend transversely of said truck, over each axle, said brake-levers being supported on frames mounted on the axles outside of the wheels, and provided with shoes which are adapted to be brought to bear upon the wheels, the inner ends of said brake-levers being movably connected with hangers which are connected with the car, and means for depressing the inner ends of said levers so as to bring the shoe in contact with the wheels, consisting of a vertically-movable cross-head mounted on said hangers, and toggle-levers which are adapted to depress said cross-head, and devices for operating said toggle-levers which are connected therewith, both the outer and the inner ends of said brake-levers being supported by springs, substantially as shown and described.

570,005. METALLIC TIE. EDWARD CROHIN and HENRY P. SHIELDS, Homestead, Pa. Filed Feb. 6, 1896. Serial No. 578,182. (No model.)



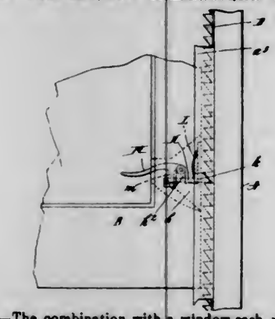
Claim.—A metallic railway-tie comprising a channel-beam having oppositely-extending upper flanges, said flanges having serrated upper faces, a cover-plate having downwardly-extending ribs arranged to fit over said flanges, and provided between the ribs with serrations adapted to interfit with those upon the flanges, and a trough-shaped clamp arranged to slide over the cover-plate and channel-flange and secure the cover-plate in position; substantially as described.

570,006. BILLIARD-CUE TIP. PAUL A. CURROT, Canton, Ohio. Filed Nov. 8, 1895. Serial No. 568,264. (No model.)



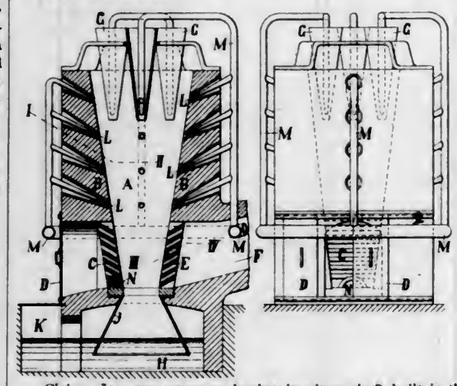
Claim.—As an improved article of manufacture, a blank for billiard-cue tips consisting of the tip *a*, and the annular flange *b*, substantially as and for the purpose specified.

570,007. WINDOW-SASH LOCK. EDWARD R. DALTON, Menominee, Mich. Filed Jan. 6, 1896. Serial No. 574,410. (No model.)



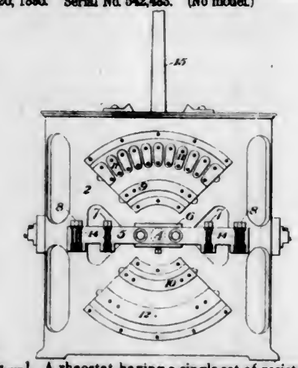
Claim.—The combination with a window-sash provided with a chamber formed in one side thereof and with a rack-bar secured on the window-frame of a sash-lock consisting of plate H provided with inwardly-directed arm *h* carrying an upwardly-directed standard h^3, sliding lock-bolt K, supported on arm *h*, and provided with head *k* and arm k^3, spring L secured on plate H, lever M having a depending arm *m*, all constructed arranged and adapted to operate substantially as herein shown and described.

570,008. GAS-GENERATOR. AUGUST DAUBER, Bochum, Germany. Filed July 17, 1896. Serial No. 599,468. (No model.) Patented in Germany Apr. 26, 1890, No. 54,995; in France June 2, 1890, No. 206,042; in Luxemburg Dec. 6, 1890, No. 1,385; in England Dec. 8, 1890, No. 20,002; in Switzerland Dec. 12, 1890, No. 2,965; in Italy Dec. 20, 1890, No. 28,844; in Norway Jan. 21, 1891, No. 2,085; in Belgium Nov. 29, 1891, No. 92,936, and in Austria-Hungary Dec. 12, 1891, No. 39,737 and No. 65,347.



Claim.—In a gas-generator having its pit or shaft built in the uniform shape of an inverted cone or pyramid from top to bottom and quite open at both ends, providing the lower part at two opposite sides near the bottom with grates C and E; the one C serving as an air-inlet into the furnace and having its communication with the open air intercepted by adjustable sliding doors D in front of it for regulating the air admission; the other E serving as an outlet for the gas produced in the furnace at such place nearest its foot, where the gas produced above has passed through highly-incandescent fuel, a flue or gas-channel F being arranged immediately behind said grate E for evacuating the produced gas; a cone or pyramid J below the grates and forming an ash-pit reaching into a sump H containing water to form a hydraulic seal at the bottom of said cone J, preventing air from entering the furnace at this place and without hindering the withdrawal of cinders and slags; and in combination herewith providing twyers G entering at the top and twyers L entering at the sides for blowing superheated steam, air and other materials in variable proportions into the furnace, thereby preventing fuel sticking to the side walls and obtaining complete gasification of all the carbon contained in the fuel; the whole as specified and for the purpose set forth.

570,009. RHEOSTAT. ALVA C. DINKEY, Munhall, Pa. Filed Mar. 20, 1895. Serial No. 542,483. (No model.)



Claim.—1. A rheostat having a single set of resistances provided with a single set of contact-plates, and a separate arc-shaped contact-plate, an arm arranged to move over said plates in either direction, and means for reversing the current through the resistance when the direction of movement of said arm is reversed, substantially as described.

2. A rheostat having a single set of resistances provided with a single set of contact-plates and a separate arc-shaped contact-plate, an arm arranged to move over said plates in either direction, and a double-throw switch arranged to reverse the current through the resistance whenever the direction of movement of the arm is reversed, substantially as described.

3. A rheostat having a series of resistance-coils, the opposite ends of which are connected to two separated contact-plates of a double-point switch, said switch having a third plate connected to the return-wire and provided with two swinging-arms connected to the motor; substantially as described.

4. A rheostat having a single series of resistance contact-plates, an opposite arc or segmental-shaped continuous contact-plate, an arm arranged to contact with said plates, wires leading from opposite ends of the resistances to two separated plates of a double-point switch, a third plate in said switch connected to the return-wire, and two arms arranged to contact with the switch-plates and connected to the armature; substantially as described.

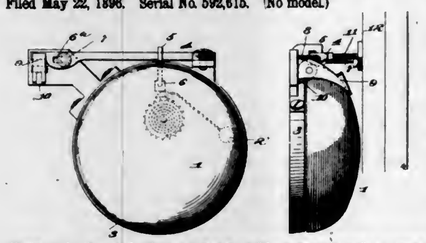
570,010. APPARATUS FOR SHAPING METALS. EDMUND M. FERGUSON, Pittsburg, Pa. Filed Apr. 7, 1896. Serial No. 586,542. (No model.)



Claim.—1. In apparatus for shaping metals by pressure, the combination with a cylinder for containing the metal, of a plunger for applying pressure thereto, a removable plug passing transversely through the cylinder across the bore thereof, and a separate die carried by the plug and registering with the cavity of the cylinder, substantially as described.

2. In apparatus for shaping metals by pressure, the combination of a cylinder for containing the metal, a plunger for applying pressure thereto, and a plug seated transversely in the cylinder and carrying a die, said plug being tapering and being fitted in a transverse tapering hole in the cylinder; substantially as described.

570,011. SAFE-ALARM. HERBERT H. FREEMAN, Pierre, S. D. Filed May 22, 1896. Serial No. 592,615. (No model.)

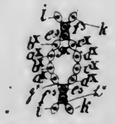


Claim.—1. In a safe-alarm, a gong and hammer therefor secured to the inside of the safe, in combination with a lever whose outward movement is arrested by a dog, a stop for the said hammer and suitable connections between said stop and said lever, and a release-finger attached to the outer door of the safe whereby, upon the closure of said door, the said dog will be disengaged, and upon the opening of said door said lever will be thrown outwardly and said stop will be moved from its engagement with said hammer, substantially as described.

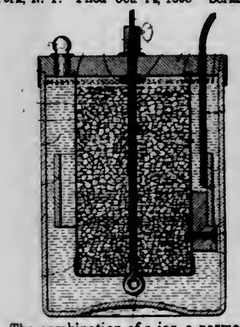
2. In a safe-alarm, a bell and a hammer therefor, secured to the inside of the safe, a lever fulcrumed to the bed-plate of the bell and having a slot near its outer end, a contacting portion or stop for preventing the vibration of said hammer connected to said lever, a guide and stop pin passing through a slot in said lever, a spring surrounding said pin and engaging the inner side of said lever, a dog engaging the outer end of said lever and a release-finger upon the outer door of the safe adapted to engage said lever when said door is in its closed position.

570,012. WOVEN TUBULAR FABRIC. OTTO FROWEIN and WILHELM OBERSTEBRINK, Barmen, Germany. Filed Dec. 10, 1895. Serial No. 571,632. (No model.)

Claim.—In a hollow-woven ribbon the combination with the warp threads $a^\times$ $b^\times$ of a separate weft-thread $g^\times$ binding said warp-threads to form the upper side of the fabric, of warp-threads $c^\times$ $d^\times$, special weft-thread $h^\times$ binding said warp-threads $c^\times$ $d^\times$ to form the lower side of the fabric, the weft-threads $g^\times$ and $h^\times$ being of different sizes, as described, the special warp-threads e^3, f^3 at both edges of the fabric and being bound also by the wefts $g^\times$, $h^\times$ connecting both surfaces of the ribbons together, and of two or more warp-threads *i* and *k* of same order as the threads $a^\times$, $b^\times$ and $c^\times$ $d^\times$ respectively bound separately by the weft-threads $g^\times$ and $h^\times$ respectively to form separate selvages for the upper and the lower side of the hollow-woven ribbon.



570,013. GALVANIC BATTERY. RALPH W. GORDON, New York, N. Y., assignor to the Gordon-Burnham Battery Company, Portland, Me., and New York, N. Y. Filed Oct. 14, 1895. Serial No. 565,548. (No model.)



Claim.—1. The combination of a jar, a permeable negative element suspended therein and adapted to contain a depolarizing agent, a positive element, and insulating-supports for said positive element secured to the walls of the negative element and projecting therefrom and interposed between and supporting the positive element, substantially as described.

2. The combination with a jar containing an exciting fluid, of a cover for the said jar; a negative element comprising a cylinder having perforated walls and adapted to contain a depolarizing agent, a rod secured to the bottom of said cylinder and extending upward therefrom through the said cover, and secured on the outside thereof; a positive element consisting of a cylinder of zinc concentric with said negative element, and insulating-supports secured to the negative element, said supports having shoulders upon which the positive element is supported and a portion above said shoulders interposed between said elements, substantially as described.

570,014. METALLIC ALLOY OR COMPOUND AND PROCESS OF PRODUCING SAME. CHARLES M. HALL, Oberlin, Ohio. Filed Apr. 18, 1885. Renewed July 5, 1887. Serial No. 243,443. (Specimens.)

Claim.—1. A metallic alloy or compound of copper and boron and a metal of the iron group, substantially as described.

2. The process of making an alloy or compound, consisting in mixing copper with a proper quantity of boracic acid, charcoal and an oxid of metal of the iron group, and making the whole into an intimate mixture (to which mixture borax may be added) and heating to a high temperature; substantially as described.

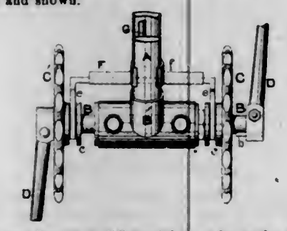
3. A metallic alloy or compound of copper, boron, iron and zinc, substantially as set forth.

4. The process herein described which consists in forming an alloy of copper, boron and iron, and adding zinc to such alloy when in a molten condition, substantially as set forth.

570,015. VELOCIPEDE. THOMAS HALL, Manchester, England. Filed June 4, 1895. Serial No. 551,690. (No model.)

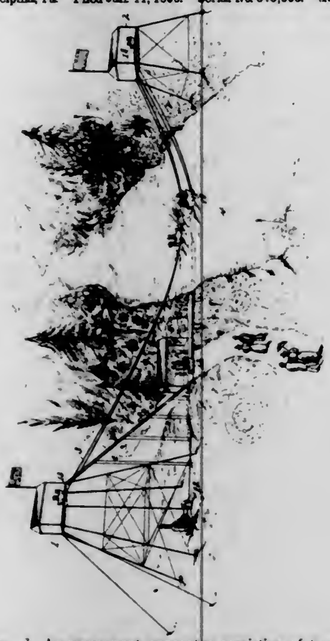
Claim.—1. A transformer or differential driving-gear for cycles comprising in combination with the pedals and cranks a driving-spindle B fitted with two keys *b* one at either end securely fixed thereto, two sprocket-wheels C C loose and capable of sliding thereon provided with a keyway to engage with the fixed keys on the driving-spindle, grooved bosses *c* on the sprocket-wheels C C, a sliding guide E slid-

ing longitudinally of the driving-spindle B provided with inclined or beveled edges and forked ends e which engage in the grooves in the bosses c by which the wheels are caused to move laterally on the spindle, the metal bracket F with a dovetail course or channel in which the guide E slides and by which it is supported the metal lugs *f* fitted to the bracket F which embrace the uprights of the frame A, the actuating-lever G, the two sprocket-wheels L L' attached to the back driving-wheel K and the driving-chains M M' connecting the sprocket-wheels C C' with the sprocket-wheels L L' substantially as described and shown.



2. In a transformer or differential gear for cycles the combination with the pedal-cranks D and driving-spindle B of the fast keys *b* the loose sprocket-wheels C C' provided with grooved bosses *c* and internal keyways to engage with the fixed keys *b*, the sliding guide E' made in two parts and sliding longitudinally of the driving-spindle B the links H pivoted thereto by which the parts are connected, the lever A pivoted to the links by which the forked ends are drawn together, the actuating-lever G for moving the guide E' to throw sprocket-wheels in and out of gear and the supporting-bracket F with lugs *f* by which it is attached to the frame A substantially as described.

570,016. **AMUSEMENT APPARATUS.** DANIEL M. HARMAN, Philadelphia, Pa. Filed Jan. 11, 1896. Serial No. 575,060. (No model.)



Claim.—1. An amusement apparatus consisting of two parallel cables suspended over a body of water, the lowest point of said cables being in close proximity thereto, two towers for supporting said cables, and a track leading from the water-level to the primary tower, and two cables leading from the secondary tower to said track as and for the purposes set forth.

2. In an amusement apparatus, a primary and a secondary tower, two parallel cables suspended therefrom in such manner as to bring the lowest point in the slack of said cables in proximity to the water-line, two parallel cables leading from the secondary tower to the water and terminating therein, a track placed below the surface of the water and arranged to receive a boat from the last-named cables, an incline track leading from the submerged track to the primary tower, suitable cars in the shape of boats adapted to travel upon said cables and tracks, and means for elevating said cars from the submerged track to the primary tower substantially as and for the purposes set forth.

3. The herein-described combination of a primary tower 1, and a secondary tower 2, a pair of parallel cables suspended between said towers, a pair of cables 5, leading from the secondary tower to a suitable water-surface, a submerged track 7, leading from the cables 5, an incline track 9, leading from said submerged track to the primary tower, suitable cars provided with rolls adapted to travel upon said cables and tracks, guard-rails 17, for preventing said cars from leaving either the cables or the track when passing from one to the other, semicircular tracks arranged upon each tower to make a continuous circuit, and a hoisting apparatus for elevating the cars from the submerged track to the primary tower as shown and described.

4. An amusement apparatus consisting of a primary tower and a secondary tower, parallel guideways leading from the first-named to the second-named tower, the lowest point of which is in close proximity to a water-surface, a semicircular track in each tower leading from the guideways, a secondary guideway leading from the secondary tower to the water-surface, a submerged track leading from the secondary guideway, an incline track leading from the submerged track to the primary tower and connecting with its semicircular track, cars adapted to travel upon said tracks and guideways, and a hoisting mechanism for elevating the cars from the submerged track to the primary tower substantially as and for the purpose set forth.

570,017. **DOOR-CLASP.** HENRY W. HARRIS, Detroit, Mich. Filed Feb. 28, 1896. Serial No. 581,215. (No model.)



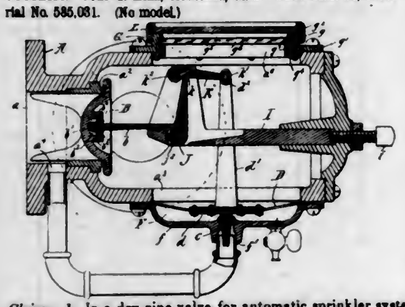
Claim.—1. In a door-clasp, the combination of the plate, the portion extending at an angle from said plate, the arm pivoted to said portion, a like arm pivoted on said first-named arm, and the spring for normally holding said arms apart, as set forth.

2. In a door-clasp, the combination of the plate, the integral portion extending at an angle from said plate, the arm pivoted eccentrically on said integral portion, the buffer-head on said arm, the arm pivoted on said first-named arm said last-named arm also having a head, and the coiled spring for normally maintaining said arms in an open position.

3. In a door-clasp, the combination of the plate, the integral portion extending at an angle therefrom, said integral portion having a nose or shoulder thereon, the arm pivoted on said integral portion, a lug or pin on said arm, the arm pivoted on said first-named arm, and the spring having the coils, for the purpose set forth.

4. In a door-clasp, the combination of the plate, the integral portion extending at an angle therefrom, said integral portion having a nose or shoulder thereon, the arm pivoted on said integral portion, the pin or lug on said arm, the arm pivoted on said first-named arm, the coiled spring, said arms adapted to be closed by an object bearing against either of them and to be opened by the operation of said spring, and the soft-material buffer on said plate, all substantially as and for the purpose set forth.

570,018. **DRY-PIPE VALVE FOR AUTOMATIC SPRINKLER SYSTEMS.** JOHN T. HILL, Cleveland, Ohio. Filed Mar. 26, 1896. Serial No. 585,031. (No model.)



Claim.—1. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings, a chamber separable from the interior of the casing, a pipe connecting

said chamber with the water supply, a valve movable into said chamber for closing the end of said pipe, a movable partition adapted to separate said chamber from the interior of the casing and to hold said valve closed, an inwardly-movable valve for closing the inlet-opening, and mechanism intermediate of said partition and inlet-valve for holding the latter closed and for releasing it, substantially as and for the purpose specified.

2. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings and a third opening through its walls, a cap for closing this last-named opening, a flexible diaphragm clamped at its edges between the casing and said cap, thereby forming a chamber between itself and the cap, with a pipe connecting the water supply with said chamber, an inwardly-movable valve closing the communication between said chamber and pipe, said diaphragm being adapted to hold said valve closed under the influence of air-pressure within the valve-casing, an inwardly-movable valve for closing the inlet-opening, and mechanism intermediate of said diaphragm and inlet-valve for holding the latter closed and for releasing it, substantially as and for the purpose specified.

3. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings, an inwardly-movable valve for closing said inlet-opening, a chamber separable from the interior of the valve-casing, a movable partition adapted to separate said chamber from the interior of the casing, a pipe connecting the water supply with said chamber, an inwardly-movable valve closing the communication between said chamber and pipe and adapted to be engaged and held closed by said partition when the valve-casing contains air under pressure, a strut engaging with the valve over the inlet-opening, a lever engaging with said strut, a trigger engaging with said lever, and an arm connected with said partition engaging with said trigger, substantially as and for the purpose specified.

4. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve casing having inlet and outlet openings, and a chamber at one side, an inwardly-movable partition for separating said chamber from the interior of the valve-casing, a pipe connecting the water supply with said chamber, an inwardly-movable valve for closing the communication between said pipe and chamber, which valve is adapted to be engaged and held closed by said movable partition, an inwardly-movable valve for closing the inlet-opening to said casing, an adjustable bar supported within said casing, a strut engaging with said valve, a lever pivoted to said bar and adapted to engage with said strut, a trigger pivoted to said bar and adapted to engage with said lever, and an arm connected with said movable partition for operating said trigger, substantially as and for the purpose specified.

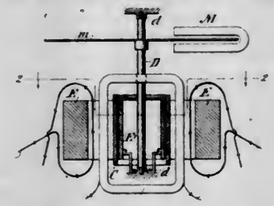
5. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings, a chamber at one side of said valve-casing, a pipe connecting said chamber with the water supply, and an inwardly-movable glass valve adapted to close the communication between said pipe and chamber, a movable partition for separating said chamber from the interior of the valve-casing and adapted to engage with said valve and hold it closed, an inwardly-movable valve for closing the inlet-opening, and mechanism intermediate of said valve and movable partition for holding the said inlet-valve closed, substantially as and for the purpose specified.

6. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings, an inwardly-movable valve for closing the inlet-opening, an adjustable support within the casing, a lever having a glass bushing pivoted to said support, a strut interposed between said lever and valve, and a trigger engaging with said lever pivoted to said support and having a glass bushing, and mechanism for controlling said trigger, substantially as and for the purpose specified.

7. In a dry-pipe valve for automatic sprinkler systems, the combination of a valve-casing having inlet and outlet openings, and a chamber at one side, with a movable partition for separating said chamber from the interior of the valve-casing, a valve for closing the inlet-opening, a strut engaging with said valve, an adjustable support within the casing, a lever pivoted thereto engaging with said strut, a trigger pivoted to said support engaging with said lever, an arm connected with the movable partition, and a slot-and-pin connection between said arm and pivot, substantially as and for the purpose specified.

8. In a dry-pipe valve for automatic sprinkler systems, the combination of a casing having inlet and outlet openings, and a chamber at one side of said casing, with a flexible diaphragm secured across the last-named opening, thereby separating the said chamber from the interior of the valve-casing, a pipe connecting said chamber with the water supply, a valve movable into said chamber for closing the opening to said pipe, which valve is engaged and held closed by said diaphragm, an inwardly-movable valve for said inlet-opening, a strut engaging therewith, a lever engaging with said strut, a trigger engaging with said lever, an adjustable support for said lever and trigger, and an arm secured to the diaphragm and engaging with said trigger, substantially as and for the purpose specified.

570,019. **WATTMETER.** GEORG HUMMEL, Munich, Germany. Filed Jan. 30, 1895. Serial No. 536,743. (No model.) Patented in Switzerland Dec. 27, 1894, No. 9,812; in Italy Feb. 14, 1895, XXIX, 38,094, LXXIV, 408; in France Apr. 30, 1895, No. 244,481; in Hungary June 22, 1895, No. 3,074, and in Austria Sept. 20, 1895, No. 45/3,422.



Claim.—1. An alternating-current motor provided with a stationary field-magnet having pairs of internally-projecting field-magnet poles surrounded with field-magnet windings connected directly to a source of alternating-current supply, an additional field-magnet winding of higher resistance than the first field-magnet winding and located in shunt relation thereto, and an induction device located in said shunt for shifting the current phase in combination with a rotary part consisting of diamagnetic material such as copper and a fixed stationary part concentric with said rotary part, said stationary part being of magnetic material, and both of said parts being located wholly in the inductive field of all of the pole-pieces, whereby the inducing and induced effect is substantially the same.

2. A wattmeter-motor provided with two sets of windings for the fixed or stationary portion thereof, one set of said windings being disposed upon a field-magnet core having internally-projecting pole-pieces and the other upon an independent frame or support in combination with a cylindrical diamagnetic rotary part and a fixed or stationary cylindrical magnetic part, both of said parts being concentric with the curvature of the inner ends of the field-poles and located wholly in the magnetic influence thereof.

3. An alternating-current motor provided with a rotary part of diamagnetic material, in combination with two sets of field-magnet poles surrounding said rotary part, and a fixed or stationary concentric cylinder of magnetic material located within said rotary part, said concentric cylinder lying wholly in the magnetic field of all of said poles whereby the inducing and induced effect is substantially the same.

4. A wattmeter-motor having a propelling part in the nature of a diamagnetic cylinder, a field-magnet or stationary part surrounding said cylinder and provided with energizing-coils connected in circuit with the current to be measured, and a stationary magnetic cylindrical part located within the diamagnetic cylinder and lying wholly within the magnetic field of all of the field-magnet poles, whereby the inducing and induced effect is substantially the same.

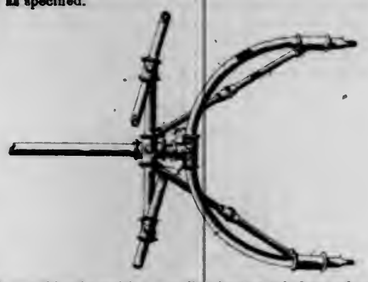
5. A wattmeter-motor having energizing-coils located in one branch of the circuit, the current of which is to be measured, a second energizing-coil located in multiple arc with the translating devices, said second coil being of higher resistance than the first-named coils; a rotary part consisting of a diamagnetic cylinder and a stationary cylindrical part of magnetic material located inside the rotary part, in combination with an induction device located in circuit with the second energizing-coil said cylindrical parts lying at all times wholly within the magnetic field, whereby the inducing and induced effect is approximately the same, substantially as described.

6. An alternating current motor provided with a field-magnet core of cylindrical form having pairs of internally-projecting pole-pieces, and coils or windings connected in circuit with a current-main; additional field-magnet windings of a relatively greater number of coils and connected in multiple with translating devices between the current-mains, a cylindrical rotary part of diamagnetic material having its exterior surface in close proximity to the magnetic field of both sets of field-magnet poles, a fixed or stationary cylindrical magnetic part concentric with the diamagnetic armature, the arrangement being such that the inducing and the induced effect is substantially the same.

570,020. **VEHICLE POLE AND COUPLING.** JOSEPH IMLER, Kendallville, Ind. Filed Nov. 26, 1895. Serial No. 570,164. (No model.)

Claim.—1. The combination with a coupling having a boss with a rectangular opening, of a coupling having a rectangular boss working in said opening, and a bolt passed through the two couplings to connect the parts together, substantially as specified.

2. The combination with a coupling having a boss with a rectangular opening, of a coupling having a depending rectangular boss arranged in said opening, a bolt passed vertically through the two to unite them, and tubes held in opposite sides of said coupling, substantially as specified.



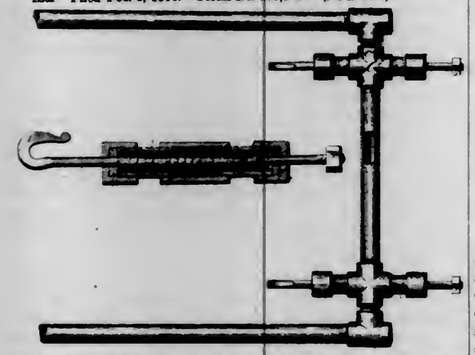
3. The combination with a coupling having tubular necks at its opposite ends and a boss and an opening in its upper face in line with said boss, the tubular portions detachably engaged in said necks of a stud passed through the boss and headed within the coupling and having a horizontal portion outside the coupling, and the pole attachment held on said horizontal portion, substantially as specified.

4. The combination with the pole and the coupling at the rear end thereof having curved and downwardly and rearwardly extending nipples, and the rearwardly-extending T-coupling of the curved tubular parts supported from said T-coupling, couplings on the rear ends thereof having curved downwardly and forwardly extending nipples, and the brace-rods connecting the said nipples with those on the coupling at the rear end of the pole, substantially as specified.

5. The combination with the pole and the coupling at the rear end thereof having curved and downwardly and rearwardly extending nipples, and the rearwardly-extending T-coupling of the curved tubular parts supported from said T-coupling, couplings on the rear ends thereof having curved downwardly and forwardly extending nipples, and the brace-rods connecting the said nipples with those on the coupling at the rear end of the pole, said brace-rods being formed of tubular sections, substantially as specified.

6. The combination with a coupling having tubular screw-threaded necks at opposite ends and a boss extending at right angles to said necks and provided with a rectangular opening, of a coupling having a rectangular boss working in said opening, a bolt passed through the two couplings to connect the parts together, and a washer around the rectangular boss and between the coupling and the upper face of the neck in which said boss works, substantially as specified.

570,021. CROSS-BAR FOR THILLS. JOSEPH IMLER, Kendallville, Ind. Filed Feb. 3, 1896. Serial No. 578,523. (No model.)



Claim.—1. A tubular cross-bar for thills formed of detachable sections and having tubular portions at right angles to its length and draft appliances mounted in said tubular portions; substantially as described.

2. A tubular cross bar for thills having tubular portions at right angles thereto near opposite ends with removable caps and draft appliances mounted for movement in said tubular portions and through said caps parallel with the thills; substantially as described.

3. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, rods mounted for movement in said couplings at right angles to the cross-bar, and springs around said rods; substantially as described.

4. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, rods mounted for movement in said couplings at right angles to the cross-bar, and springs around said rods, and means for adjusting the tension of said springs; substantially as described.

5. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, rods mounted for movement in said couplings at right angles to the cross-bar, and springs around said rods, and a packing within the coupling to prevent rattling; substantially as described.

6. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, rods mounted for movement in said couplings at right angles to the cross-bar, and springs around said rods, and means for adjusting the tension of said springs, and a packing within the coupling to prevent rattling; substantially as described.

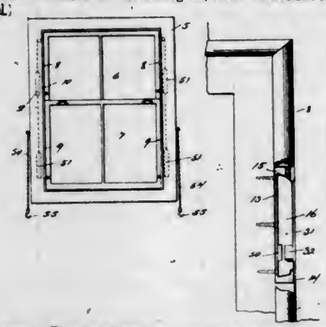
7. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, the tubular portions at opposite sides of the couplings at right angles to the cross-bar, removable caps at opposite ends of said coupling rods passed through said tubular portions and through said caps, and couplings and springs around said rods; substantially as described.

8. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, the tubular portions at opposite sides of the couplings at right angles to the cross-bar, removable caps at opposite ends of said coupling rods passed through said tubular portions and through said caps, and couplings and springs around said rods, and means for adjusting the tension of the springs; substantially as described.

9. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, the tubular portions at opposite sides of the couplings at right angles to the cross-bar, rods passed through said tubular portions, and couplings and springs around said rods, and means for adjusting the tension of the springs, and caps on the outer ends of said tubular portions and through which the rods pass; substantially as described.

10. The combination with the tubular cross-bar, of the couplings at the opposite ends thereof, the tubular portions at opposite sides of the couplings at right angles to the cross-bar, rods passed through said tubular portions, and couplings and springs around said rods, and means for adjusting the tension of the springs, and caps on the outer ends of said tubular portions and through which the rods pass, said rods being provided at the forward ends with hooks and at their rear ends with adjustable nuts; substantially as described.

570,022. SUPPORT FOR WINDOW-SASHES. GEORGE JOHNSTONE, New York, N. Y. Filed Aug. 13, 1896. Serial No. 602,599. (No model.)



Claim.—1. The combination with the frame of a window, and with window-sashes mounted therein, and supported by counterbalance-weights, of means for connecting the sashes with the cables, chains or ropes, by which the counterbalance-weights are supported, consisting of vertically-movable blocks, connected with the ends of said cables, chains or ropes, and corresponding plates secured to the sashes with which said blocks are adapted to be connected, said blocks being adapted to be connected with said plates, by moving the sashes backwardly into their proper position, and said blocks being also provided with locking devices, which are operated by said plates, when the sashes are pulled outwardly, so as to lock the blocks to the window-frame, and said locking devices being operated to release the blocks from the frame when the window-sashes are moved backwardly into position, substantially as shown and described.

2. The combination with the frame of a window, and with window-sashes mounted therein, and supported by counterbalance-weights, of means for connecting the sashes with the cables, chains or ropes, by which the counterbalance-weights are supported, consisting of vertically-movable blocks, connected with the ends of said cables, chains or ropes, and corresponding plates secured to the sashes with which said blocks are adapted to be connected with said plates, by moving the sashes backwardly, into their proper position, and said blocks being also provided with locking devices, which are operated by said plates, when the sashes are pulled outwardly, so as to lock the blocks to the window-frame, and said locking devices being operated to release the blocks from the frame when the window-sashes are moved backwardly into position, said frame and said sashes being also provided at their lower ends with pivotal or other supports, whereby the sashes may be swung outwardly, when disconnected from the locking-blocks by means of which they are connected with the counterbalance-weights, substantially as shown and described.

3. The combination with the frame of a window, and with window-sashes mounted therein, and supported by counterbalance-weights, of means for connecting the sashes with the cables, chains or ropes, by which the counterbalance-weights are supported, consisting of vertically-movable blocks, connected with the ends of said cables, chains or ropes, and corresponding plates secured to the sashes with which said blocks are adapted to be connected, said blocks being adapted to be connected with said plates, by moving the sashes backwardly, into their proper position, and said blocks being also provided with locking devices, which are operated by said plates, when the sashes are pulled outwardly, so as to lock the blocks to the window-frame, and said locking devices being operated to release the blocks from the frame when the window-sashes are moved backwardly into position, said frame and said sashes being also provided at their lower ends with pivotal or other supports, whereby the sashes may be swung outwardly, when disconnected from the locking-blocks by means of which they are connected with the counterbalance-weights, and the lower side portions of the beads or strips by which the sashes are held in place being removable, substantially as shown and described.

4. The herein-described means for connecting window sashes, with counterbalance-weights, which consists of locking-blocks which are connected with the ends of the cables, with which the counterbalance-weights are connected, and corresponding plates which are connected with the window-sashes, said blocks and said plates being provided with locking devices, and said sashes being adapted to be disconnected from said blocks by pulling the upper ends thereof, outwardly, the lower ends being provided with suitable supports, and said locking devices being adapted to operate so as to lock the locking-blocks connected with the cables to the window-frame, when the upper ends of the sashes are pulled outwardly, and to release said blocks from said frame when the sashes are moved backwardly into position therein, substantially as shown and described.

5. The combination with a window-frame, and a window-sash mounted therein, and adapted to be supported by counterbalance-weights, of locking devices by which the counterbalance-weights are connected with the sash, said devices consisting of vertically-movable blocks with which the cables by which the counterbalance-weights are supported, are connected, said blocks being adapted to operate in connection with plates secured to the sides of the sash, and said blocks being provided with locking devices which are operated by a shoulder or projection formed on said plates, and by which the blocks are locked, to the window-frame, when the sash is pulled outwardly, and at the same time disconnected from the sash or the plates secured thereto, said locking devices, consisting of transversely-movable locking-bars, mounted in said blocks, or in chambers formed therein, and a lug or projection formed on said plate, substantially as shown and described.

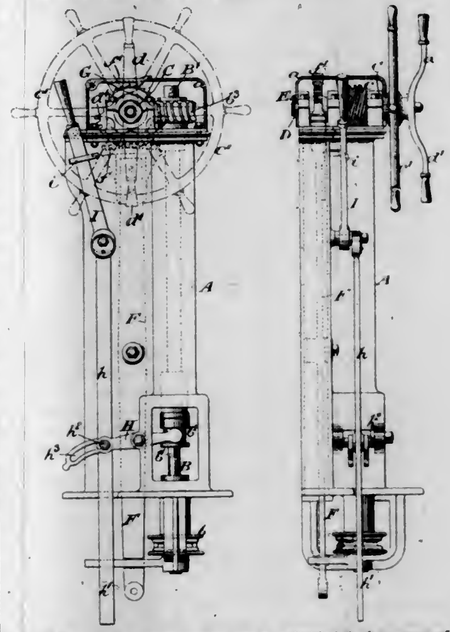
6. The combination with a window-frame, and a window-sash mounted therein, and adapted to be supported by counterbalance-weights, of locking devices by which the counterbalance-weights are connected with the sash, said devices consisting of vertically-movable blocks with which the cables by which the counterbalance-weights are supported, are connected, said blocks being adapted to operate in connection with plates secured to the sides of the sash, and said blocks being provided with locking devices which are operated by a shoulder or projection formed on said plates, and by which the blocks are locked, to the window-frame, when the sash is pulled outwardly, and at the same time disconnected from the sash or the plates secured thereto, said locking devices, consisting of transversely-movable locking-bars, mounted in said blocks, or the chambers formed therein, and a lug or projection formed on said plate, and with levers pivoted in said chambers, said levers and said locking-bars being adapted to be projected at each side of the locking-blocks, and to engage with suitable keepers at the sides thereof, substantially as shown and described.

7. The herein-described means for connecting the counterbalance-weights of a window-sash therewith, which consist of plates secured to the sides of the sash, and provided with outwardly-directed shoulders or projections at the ends thereof, locking-blocks connected with the ends of the cables with which the counterbalance-weights are connected, and adapted to be connected with said plates when the window-sash is moved backwardly into position, said blocks being provided with chambers in their upper ends, and with grooves or passages communicating therewith, and cam-blocks pivoted in said chambers, and the ends of the cables being adapted to be passed into said chambers, and around said cam-blocks, substantially as shown and described.

8. The herein-described means for connecting the counterbalance-weights of a window with the sashes thereof, which consists of locking-blocks connected with the ends of the cables with which the counterbalance-weights are connected, said locking-blocks being adapted to be detachably connected with said sashes, and to be locked thereto, when the sashes are moved backwardly into position, in the window-frame, and to be detached therefrom when the sashes are pulled outwardly, and at the same time locked to the frame, and the lower ends of the frames being provided with supports for the lower ends of the sashes, on which said sashes may be turned outwardly when disconnected from the counterbalance-weights, substantially as shown and described.

9. The herein-described means for connecting the counterbalance-weights of a window with the sashes thereof, which consists of locking-blocks connected with the ends of the cables with whicb the counterbalance-weights are connected, said locking-blocks being adapted to be detachably connected with said sashes, and to be locked thereto, when the sashes are moved backwardly into position, in the window-frame, and to be detached therefrom when the sashes are pulled outwardly, and at the same time locked to the frame, and the lower ends of the frames being provided with supports for the lower ends of the sashes, on which said sashes may be turned outwardly when disconnected from the counterbalance-weights, and the window frame being provided with supports for the upper ends of the sashes when the latter are disconnected from the counterbalance-weights, substantially as shown and described.

570,023. GRIP AND BRAKE OPERATING MECHANISM. JULIUS JONSON, New York, N. Y., assignor to the Jonson Engineering and Foundry Company and John H. Robertson, same place. Filed Nov. 7, 1895. Serial No. 568,159. (No model.)



Claim.—1. A grip-operating worm, a divided shaft one part of the shaft provided with a worm-wheel to engage the worm and the other part adapted to be connected with the grip, and means for locking the parts of the shaft to and releasing them from each other, substantially as set forth.

2. A divided shaft, a clutch for connecting the parts of the shaft to and releasing them from each other, an operating-shaft, worm-gear connecting the operating-shaft with the divided shaft and a clutch-operating lever arranged to be operated by hand and by means independently of the gripman, to move the clutch and release the parts of the divided shaft substantially as set forth.

3. In combination, a grip-operating shaft, a removable operating-wheel therefor, a removable brake-operating shaft extending through the grip-operating shaft and means for holding both the brake-operating shaft and the grip-operating wheel in removable adjustment, substantially as set forth.

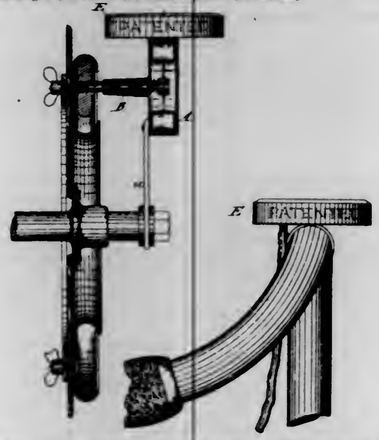
4. In combination, a grip-operating wheel, a brake-operating shaft mounted concentric therewith, and a latch for holding both the brake-operating shaft and the grip-operating wheel in removable adjustment, substantially as set forth.

5. The combination with the brake-operating shaft mounted in removable adjustment in a longitudinal direction, of means for holding it against unintentional displacement, the shaft and its support being provided the one with a stop and the other with a cut-away portion corresponding to the stop, the said stop and cut-away portion being arranged to register and permit the removal of the shaft only when the latter is in a predetermined rotary adjustment, substantially as set forth.

6. The combination with the divided grip-shaft, means for operating it and the clutch for locking its parts to and releasing them from each other, of the clutch-operating lever, the connecting-bar having a slotted engagement therewith and means for operating the bar, substantially as set forth.

7. In combination, the worm-shaft, its operating-wheel removably secured thereto, the brake-shaft extending through the worm-shaft, the grip-shaft provided with a worm-wheel, the brake-lever and segmental gear connecting the brake-lever with the brake-shaft, substantially as set forth.

570,024. SPEED-MEASURE. HARRY H. KELLEY, Elyria, Ohio. Filed Aug. 26, 1895. Serial No. 560,487. (No model.)

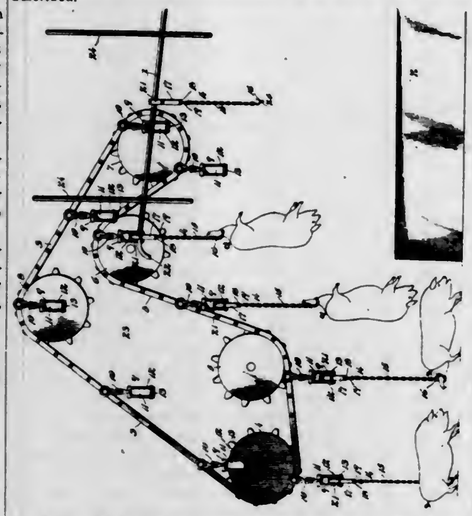


Claim.—1. In a pneumatic speedometer, the combination of a casing A, a hollow shaft entering the same, a friction-wheel secured to the outer end of said shaft, a flanged ring secured to the vehicle-wheel, and a fan-wheel secured to the shaft within the casing, with a casing E, a shaft journaled therein, a fan-wheel secured to said shaft, a tube connecting said casings, and terminating in a jet-nozzle in the casing E, an adjustable spring acting on said shaft against the air-blast, a pointer secured to said shaft, and a dial, substantially as and for the purpose specified.

2. In a pneumatic speedometer, the combination of a cylindrical casing A adapted to be secured to a vehicle, and having an air-inlet, a shaft entering said casing, a fan-wheel secured to the shaft within the casing, a driving-wheel secured to the shaft outside the casing, and a flanged ring secured to the vehicle-wheel, with a casing E a shaft journaled therein, a fan-wheel secured to said shaft, a tube connecting said casings and terminating in a jet nozzle in casing E, a pointer secured to said shaft, a graduated dial, and an adjustable spring acting against the air-blast, substantially as and for the purpose specified.

570,025. BUTCHERING APPLIANCE. THOMAS KENNEDY and THOMAS SLATTERY, Chicago, Ill. Filed Dec. 5, 1895. Serial No. 571,171. (No model.)

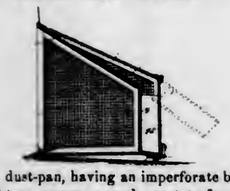
Claim.—1. In a butchering appliance of the character set forth, the combination of an endless conveyer provided at intervals in its length with carriers suspended therefrom, a system of supporting-wheels comprising a pair disposed a proper distance apart, the one in a slightly higher plane than the other to give the lower portion of the conveyer a rearward and upward inclination, a second pair disposed in a higher plane and in the rear of the first-mentioned pair, and having the wheels of the second pair properly spaced apart and at different elevations, and having the conveyer passing over the one and beneath the other, and a supporting-wheel arranged in a higher plane than the second pair of supporting-wheels and having the conveyer oppositely inclining therefrom, and shackles adapted to be coupled to the said carriers, substantially as set forth for the purpose described.



2. In a butchering apparatus, the combination of an endless conveyer, a system of supporting and guiding wheels therefor arranged in substantially the same vertical plane but at different elevations and distances apart so as to cause the front part of the lower portion of conveyer to travel rearwardly and upwardly at a gradual incline, the rear part downwardly and rearwardly at a steep incline, and the intermediate part upwardly and away from the vertical, a rod or bar located to one side of and extending about parallel with the plane of the said system of wheels and conveyer, and having its receiving-terminal just in the rear of the upper part of the lower intermediate portion of the conveyer and its receiving end portion opposite the extremities of the rear lower declining portion of the conveyer, and shackles attached at intervals to the said conveyer and adapted to be transferred to the rod or bar during the forward movement of the said rear lower declining portion of the conveyer, substantially as and for the purpose described.

3. In a butchering apparatus, the combination of an endless conveyer, a rod or bar extending about parallel therewith, carriers pendent from a side of the conveyer by flexible connections, and comprising a plate having tapering and parallel side flanges connected at their lower widened ends by a pin, and a shackle having oppositely-disposed open hooks, the outer hook being disposed to engage with the said rod or bar, and the inner hook engaging with the aforesaid pin of a carrier and entering the space formed between the said pin and the plate, substantially as shown and described.

570,026. DUST-PAN. ALBERT KOEHLER, Baker City, Oreg. Filed June 13, 1895. Serial No. 552,693. (No model.)

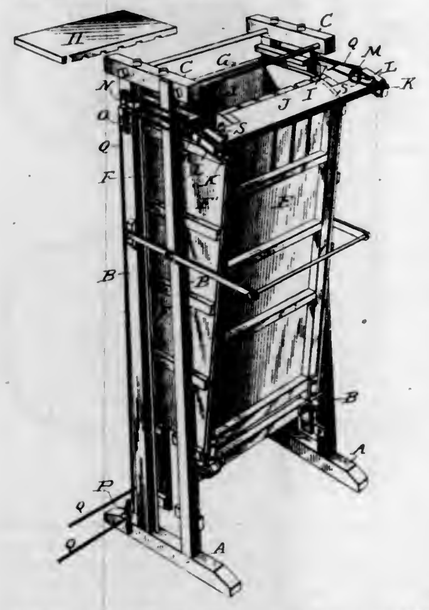


Claim.—1. A dust-pan, having an imperforate bottom and walls each composed of two screens spaced apart to form a chamber to receive the dust, one of said walls being hinged and adapted to be opened to permit the device to be emptied, substantially as set forth.

2. A dust-pan having an imperforate bottom and provided with fixed end and top walls each composed of two screens spaced apart to form a dust-chamber, the forward end of which is closed and the rear end of which is open, and a rear wall comprising an outer screen hinged to the outer screen of one of the fixed walls and of dimensions corresponding to the dimensions of the outer screens, and an inner screen secured to but spaced away from the said outer screen and of dimensions corresponding to the dimensions of the inner screens of the fixed walls, substantially as set forth.

3. A dust-pan, consisting of an imperforate bottom perforated sides and top mounted on said bottom, each being composed of two walls, the rear side walls being parallel with each other and the top and end portions being converged toward the front of the pan, substantially as described.

570,027. BALING-PRESS. ARTHUR LE ROY KOHLER, Geneva, N. Y. Filed July 31, 1896. Serial No. 601,244. (No model.)



Claim.—1. In a press, the combination of an initial compressing mechanism; a secondary compressing mechanism designed to complete the article; a power device for operating said parts; and means for causing the transfer of the power from one to the other of said mechanisms without stopping the power device.

2. In a press, the combination of an initial compressing mechanism; a secondary compressing mechanism designed to complete the article; a power device for operating said parts; means for causing the transfer of the power from one to the other of said mechanisms without stopping the power device; and means for relieving the initial compressing mechanism while the transfer is being made.

3. In a press, the combination of the frame; a compression-chamber provided with a movable side; power mechanism for operating the press; connections between said power mechanism and the movable side; means for automatically relieving the side from further action of the power mechanism when said side is brought to a closed position; and locking devices for the side.

4. In a press, the combination of the frame; a compression-chamber provided with a swinging side; links K pivoted to the upper free end of the side; links L pivoted to the links K; levers S also pivoted to the upper part of the gate and designed, as the side is closed, to abut against the frame and to throw the links out of line; and means for drawing the side to its closed position.

5. In a press, the combination of the frame; a compression-chamber provided with three fixed sides and a fourth side pivoted to the lower end of the press and designed to swing outwardly therefrom; wings or projections extending from the fixed sides of the press and designed, together with the swinging side, to form an enlarged chamber; links K connected to the outer upper end of the swinging side; links L pivoted to the outer end of links K; levers S also pivoted to the upper end of the swinging side and designed when the press closes to bear against the frame and force the links outwardly; and catches for holding the pivoted side when brought into its closed position.

6. In a press, the combination of the frame; a compression-chamber provided with three fixed sides and a fourth side pivoted to the lower end of the press and designed to swing outwardly therefrom; wings or projections extending from the fixed sides of the press and designed, together with the swinging side, to form an enlarged chamber; links K connected to the outer upper end of the swinging side; links L pivoted to the outer end of links K; levers S also pivoted to the upper end of the swinging side and designed when the press closes to bear against the frame and force the links outwardly: catches for holding the pivoted side when brought into its closed position; a plunger; a power mechanism; connections between the links and the power mechanism; and connections between the plunger and the power-mechanism, substantially as set forth.

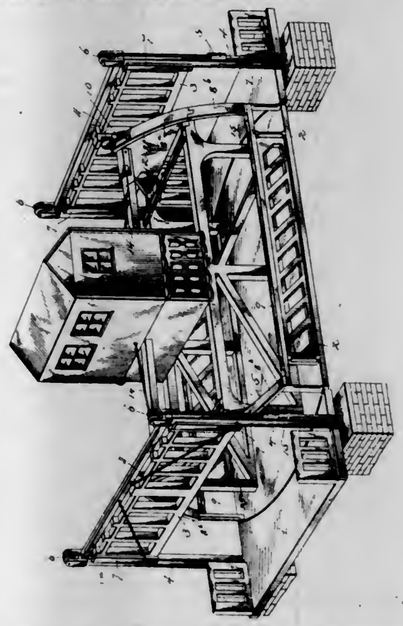
7. In a press, the combination of the pivoted side designed to give an initial compression to the material being worked upon; a plunger for obtaining the final compression; a windlass; connections between the pivoted side and the windlass; connections between the plunger and the windlass; and means carried by the windlass for disengaging the connections between the side and the windlass and bringing the plunger into action.

570,028. END ELECTRODE FOR ELECTRIC-POWER STORAGE BATTERIES. JACOBUS LANGELAAN, Cologne, Germany. Filed Dec. 10, 1895. Serial No. 571,626. (No model.) Patented in Germany July 5, 1895, No. 9,708, and in England Oct. 28, 1895, No. 20,306.



Claim.—The combination in electric storage batteries, having positive and negative plates provided with active material, alternately arranged therein, of end plates having openings therein, as described, and the plates intermediate the end section having unbroken surfaces, substantially as and for the purpose set forth.

570,029. DRAWBRIDGE-GATE. CURTIS J. LAVEY, Bristol, Wis. Filed May 19, 1896. Serial No. 592,162. (No model.)



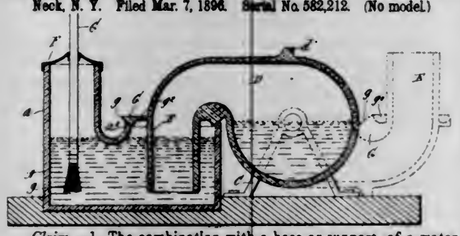
Claim.—1. The combination with a vertically-movable gate mounted between guide-posts upon a fixed portion of a drawbridge, and a swinging draw operating at one end contiguous to the plane of the gate, of a double inclined guide arranged upon the draw to engage a roller on the gate and thus elevate the latter to its open position, and a releasing-bolt normally closing an opening at the uppermost point of the guide to support the roller and adapted to be withdrawn to allow the gate to close by gravity before the draw is moved from its normal position, substantially as specified.

2. The combination with a gate mounted to slide vertically upon guide-posts arranged upon a fixed portion of a drawbridge, and a

swinging draw arranged to operate at one end contiguous to said gate, of a double inclined guide carried by the draw to engage a roller upon the gate and elevate the latter to its open position, and a releasing-bolt normally closing an opening to support said roller at the uppermost point of the guide and adapted to be withdrawn to allow the gate to close by gravity, said guide having a lower pivotal section adapted to ride over the roller during the opening of the draw to provide for a subsequent engagement of the guide with the under side of the roller, substantially as specified.

3. The combination with the fixed extremities of a drawbridge and a pivotal draw arranged therebetween, of vertically-movable gates mounted upon fixed guides at the extremities of said stationary portions of the bridge, counterbalancing-weights for the gates, the same being of less weight than the gates to allow the latter, when released, to descend to their closed positions by gravity, double inclined guides 8 located at opposite ends of the draw, each arm of the guides comprising upper fixed and lower swinging sections, and the fixed apexes of the guides being cut away to form openings through which the rollers upon the gates may pass, sliding bolts mounted upon the draw and normally arranged to close said openings at the apexes of the guides and support rollers on the gates, whereby when said bolts are withdrawn the gates are allowed to drop by gravity to their closed positions before the draw is moved from its normal or closed position, substantially as specified.

570,030. MUCILAGE-BOTTLE. JOSEPH S. L'HOMMEDIEU, Great Neck, N. Y. Filed Mar. 7, 1896. Serial No. 582,212. (No model.)



Claim.—1. The combination with a base or support, of a water vessel or receptacle, provided with a circular opening in the top thereof, and an extension at one side having a neck formed thereon, and a pivotally-supported mucilage bottle or receptacle adjacent thereto, said mucilage bottle or receptacle being provided with a curved neck or tube, which is adapted to enter the circular opening in the top of the water vessel or receptacle, substantially as shown and described.

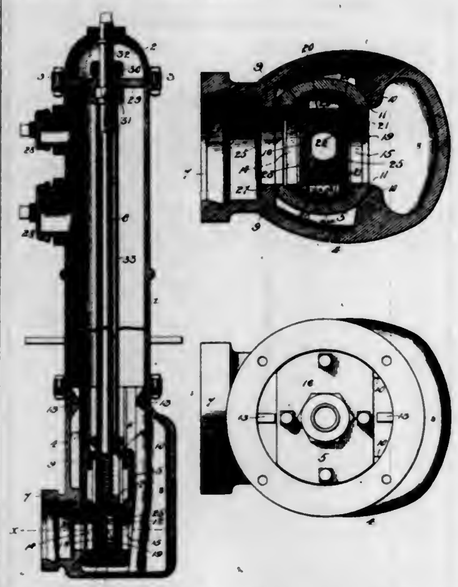
2. The combination with a base or support, of a water vessel or receptacle, provided with a circular opening in the top thereof, and an extension at one side having a neck formed thereon, and a pivotally-supported mucilage bottle or receptacle adjacent thereto, said mucilage bottle or receptacle being provided with a curved neck or tube, which is adapted to enter the circular opening in the top of the water vessel or receptacle, and the curved neck or tube of the mucilage bottle or receptacle being provided at its base with an annular rim or flange which is adapted to close the opening in the top of the water vessel or receptacle, substantially as shown and described.

3. The combination with a base or support of a water vessel or receptacle, provided with a circular opening in the top thereof, and an extension at one side having a neck formed thereon, and a pivotally-supported mucilage bottle or receptacle adjacent thereto, said mucilage bottle or receptacle being provided with a curved neck or tube, which is adapted to enter the circular opening in the top of the water vessel or receptacle, and the curved neck or tube of the mucilage bottle or receptacle being provided at its base with an annular rim or flange which is adapted to close the opening in the top of the water vessel or receptacle, said annular flange or rim being provided with an annular cup-shaped receptacle in one side thereof, and the neck of the water vessel or receptacle being provided with a removable cap through which is passed the handle of a mucilage-brush, substantially as shown and described.

570,031. FIRE-HYDRANT. CHRISTIAN E. LOSTER, Williamsport, Pa. Filed Nov. 16, 1895. Serial No. 569,208. (No model.)

Claim.—1. A fire-hydrant comprising a stand-pipe, a base connected with the lower end thereof and having a lateral opening, a frame fitted within the base and removable therefrom through the stand-pipe and having seats to register with the aforesaid lateral opening, means for pressing the frame laterally against the inner side of the base, gates located within the frame and adapted to close against the seats, and actuating mechanism for opening and closing the gates, substantially as set forth for the purpose described.

2. In a fire-hydrant, the combination of a stand-pipe, a base having an offstanding collar at its lower end for connection with the water-main and having inclined guides opposite to the said collar, a frame fitted within the base and removable therefrom through the stand-pipe and having a portion inclined to cooperate with the aforesaid inclined guides, and having openings to register with the opening through the collar, gates operating within the frame to close the openings thereof, and actuating mechanism for the said gates, substantially as set forth for the purpose described.



3. The combination of a stand-pipe, a base connected therewith and having vertical guides, the rearmost guides having inclined portions, a housing having oppositely-disposed openings and fitted in the base and properly positioned by the said inclined portions, and removable through the stand-pipe, and gates movable within the housing and constructed to close the openings therein, substantially as set forth for the purpose described.

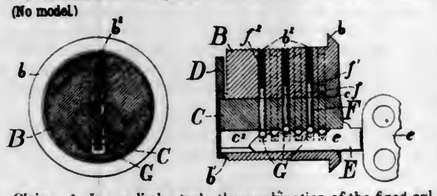
4. The combination with a case having an offstanding collar near the lower end of its front side and having its rear side swelled to form a waterway, of a housing removably fitted within the case and having openings in its front and rear side to register with the opening through the said collar, gates movable within the housing for closing against the inner ends of the openings therein, and provisions for operating the gates, substantially as and for the purpose set forth.

5. In combination, a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar, a housing removably fitted within the case and having openings to register with the opening through the said collar, gates operating within the housing for closing the openings thereof, a packing-plate at the upper end of the stand-pipe having a bearing on its lower side and a stuffing-box on its top side, a pipe interposed between the packing-plate bearing and the upper end of the housing to hold the latter in place, a stem operating through the last-mentioned pipe for operating the gates and having an enlarged portion or head journaled in the bearing of the packing-plate, and a rod making connection with the head of the stem and obtaining a bearing in the packing-plate and the stuffing-box thereof, substantially as set forth.

6. In combination, a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar, a housing removably fitted within the case and having openings in line with the opening through the said collar, gates operating within the housing to close the openings thereof, a dome fitted to the upper end of the stand-pipe, a packing-plate held in place by the dome, a pipe between the packing-plate and the top end of the said housing, a stem or rod located within the pipe and adapted to operate the gates, and an operating-rod journaled in the dome and the said packing-plate and making connection with the upper end of the said stem, substantially as and for the purpose set forth.

7. A fire-hydrant constructed substantially as herein specified, comprising a stand-pipe, a case fitted to the lower end thereof and having an offstanding collar at its front side and a swelled portion at its rear side to form a waterway, and having vertically-disposed guides, the rearmost guides having the portion opposite the collar inclined, a housing removably inserted within the case and having its rear side correspondingly inclined to the aforesaid inclined guides, and having openings in register with the collar, gates operating within the housing, a stem or rod for operating the gates, a packing-plate, a pipe interposed between the packing-plate and the top end of the housing, and means for operating the said stem for opening and closing the gates, substantially as and for the purpose set forth.

570,032. LOCK. JOHN LUEBBERS, Cincinnati, Ohio, assignor to J. B. Schroder & Co., same place. Filed Sept. 7, 1895. Serial No. 561,786. (No model.)



Claim.—1. In a cylinder-lock, the combination of the fixed cylinder, having longitudinal opening to receive the key-cylinder and two parallel rows of transverse perforations leading to the key-cylinder opening, a revoluble key-cylinder having two longitudinal key-grooves and transverse perforations extending from its periphery into the key-grooves and registering with the perforations in the fixed cylinder, pin-tumblers in the perforations in both cylinders, a locking-dog secured to the inner end of the key-cylinder, and a two-shank key to actuate the said tumblers to unlock the key-cylinder from the fixed cylinder, substantially as shown and described.

2. In a cylinder-lock, the combination of the fixed case, the key-cylinder revolubly secured therein, both case and key cylinder having two rows of transverse holes to receive pin-tumblers, said key-cylinder having also two longitudinal key-grooves crossing the tumbler-holes, ball-bearings in the bottom of said holes, pin-tumblers resting upon said balls, a locking-dog on the inner end of the key-cylinder, and a key to actuate the tumblers for the purpose of releasing the revoluble cylinder and turning it to throw the lock-bolt, substantially as shown and described.

3. The combination of the fixed cylinder or case transversely perforated to receive sliding pins, the revoluble key-cylinder therein slotted to receive the key and having transverse bores to receive pins, said bores registering with the transverse perforations in the fixed cylinder, a dog secured to the inner end of the revoluble cylinder to throw the lock-bolt when the cylinder is turned, the outer pin-tumblers, as *f'*, to lock the revoluble cylinder to the fixed cylinder when the key is removed, and the pins as F and *f*, both within the bores of the key-cylinder when the key is removed, whereby the revoluble cylinder is released by bringing either the outer or inner ends of the intermediate pins, *f*, flush with the periphery of the key-cylinder, substantially as shown and described.

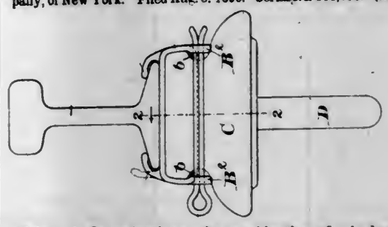
4. In a cylinder-lock, the combination of the case, A, having screw-threaded opening, *a*, the cylinder, B, screw threaded to enter said opening and having its end grooved, the pin, a^3, fitted to slide in the case, A, and the cone-pointed screw, *a'*, to force said pin, a^3, against the cylinder, B, and lock it from turning, substantially as shown and described.

570,033. SADDLE-COVER. ANTHONY F. MACHOLD, Philadelphia, Pa. Filed Feb. 5, 1896. Serial No. 578,093. (No model.)



Claim.—As a new article of manufacture, a reversible pad or cover for saddles consisting of a yielding pad of felted fibrous material having a thickened portion extending transversely over its entire rear and also extending forward along the longitudinal center of the pad to the front thereof, the sides of the pad on each side of said centrally-thickened portion being tapered or reduced in thickness, said pad being coated upon one side with a waterproof material, and means for securing the pad to the saddle, substantially as described.

570,034. INSULATOR. CHARLES R. MARTIN and EDWARD M. HEWLETT, Schenectady, N. Y., assignors to the General Electric Company, of New York. Filed Aug. 5, 1896. Serial No. 601,736. (No model.)



Claim.—1. In an insulator, the combination of a body of insulating material, a support therefor, a metal clamp for gripping the rail adapted to be slid upon the insulator when assembled, and means preventing the clamp from lifting.

2 In an insulator, the combination of a body of insulating material, a flange thereon, a rail-clamp adapted to be slid upon the insulator when assembled, means for preventing the clamp from lifting, and a pin for holding the clamp in place.

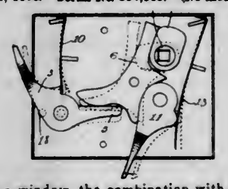
3. In an insulator, the combination of a body of insulating material, a flange thereon, a rail-clamp made in the form of a box with the bottom and one side missing, permitting it to be slid upon the body of insulating material when assembled, lugs on the clamp for securing the rail, and means for securing the clamp to the insulator.

4. In an insulator, the combination of a body of insulating material, a flange thereon angular in outline and provided with equal sides, and a rail-clamp made in the form of a box with the bottom and one side missing, its internal dimensions corresponding with the external dimensions of the flange so that it may be slipped upon the insulator from any side.

5. In an insulator, the combination of a body of insulating material, a flange on the insulation, a clamp provided with downwardly-extending sides, and curved portions on the sides engaging with the flange for preventing the clamp from lifting.

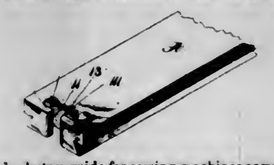
6. As an article of manufacture, a clamp for an insulator, made in the form of a box with the bottom and one side missing, provided with lugs on the top adapted to engage with the rail, and curved portions on the sides for gripping the insulator.

570,035. SASH-FASTENER. GEORGE MEHL, St. Paul, Minn. Filed Feb. 11, 1895. Serial No. 537,865. (No model.)



Claim.—In a window, the combination with the frame and the oppositely-sliding lapped sash, of the lock-case mortised into said frame adjacent the lapped edges of the sashes and in the pathway of the lower sash, the spring-controlled, vertically-swinging dogs pivoted in said case, each having a laterally-extending toe projecting outward through an opening in said case and respectively adjacent the face of said sashes, oppositely-inclined ratchet-toothed racks arranged upon the face of said sashes, and adapted to be engaged by said dogs, and thereby restraining the sashes from opening movement, the cam for operating both said dogs simultaneously against the tension of their springs, the second cam operating and locking said first-named cam, and arranged outside the path of the lower sash, so as to be engaged by a key or other means without regard to the position of said sash.

570,036. STAY-GUIDE FOR SEWING-MACHINES. FRANK W. MERRICK, Boston, Mass. Filed June 20, 1894. Serial No. 515,105. (No model.)



Claim.—1. A stay-guide for sewing-machines comprising a broad rest against which the stay-piece may lie in flat condition, and two

opposing arms between which and the said rest the stay-piece passes, the opening between the proximate portions of said arms being unobstructed in order to permit lateral introduction of the stay-piece and forming a throat, substantially as described.

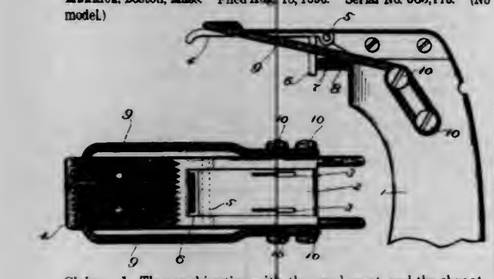
2. A stay-guide for sewing-machines comprising a broad rest against which the stay-piece may lie in flat condition, and two opposing arms between which and the said rest the stay-piece passes, the opening between the proximate portions of said arms being unobstructed in order to permit lateral introduction of the stay-piece, and forming a throat, and the inner ends of the said arms engaging with the surface of the stay-piece on opposite sides of the middle line thereof, substantially as described.

3. A stay-guide for sewing-machines comprising a yielding portion forming one side of the guide-opening and two opposing arms forming the other side of the guide-opening, the space between the proximate portions of the said arms forming a throat leading to the guide-opening, substantially as and for the purposes set forth.

4. A stay-guide for sewing-machines comprising a yielding portion, two curved guide-arms the free ends of which overlie the said spring portion, and means for rendering said curved arms adjustable toward and from each other, whereby the throat may be varied in width to suit stay-pieces of different widths, substantially as set forth.

5. A stay-guide for sewing-machines comprising an adjustable block B, a yielding portion secured to said block, and two curved adjustable guide-arms secured to said block with their free ends overlying said spring portion and in close proximity thereto, whereby when a stay-piece is in position in said guide it will be held with a yielding pressure at two points and prevented from lateral displacement as it is fed forward, substantially as set forth.

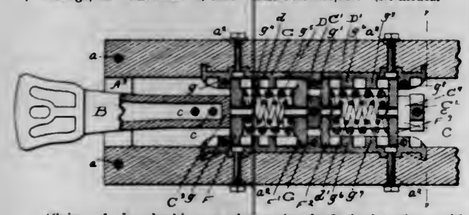
570,037. STAY-GUIDE FOR SEWING-MACHINES. FRANK W. MERRICK, Boston, Mass. Filed Aug. 18, 1896. Serial No. 603,118. (No model.)



Claim.—1. The combination with the work-post, and the throat-plate applied thereto, of the table A pivotally supported at the end thereof which is next adjacent to the throat-plate, the spring acting to press the said table upwardly, and the guide-arms 9, 9 having the free extremities thereof arranged to overlie the said table and engaging with the upper surface of the latter on lines parallel with the line of feed, substantially as set forth.

2. The combination with the work-post, and the throat-plate applied thereto, of the table pivotally supported at the end thereof which is next adjacent to the throat-plate, the said table having longitudinal grooves or corrugations therein to engage with the material of the stay-piece, the spring acting to press the said table upwardly, and the guide-arms 9, 9, having the free extremities thereof arranged to overlie the said table and engaging with the upper surface of the latter on lines parallel with the line of feed, substantially as set forth.

570,038. DRAFT-RIGGING FOR CARS. WILLIAM H. MINER, Chicago, Ill. Filed Mar. 2, 1896. Serial No. 581,513. (No model.)



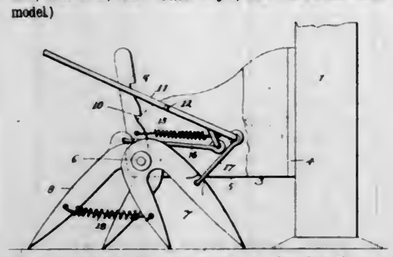
Claim.—1. In a double or tandem spring draft-rigging, the combination with a draw-bar and its extension and abutments to bear against the followers, of two tandem-arranged springs, a pair of followers for each of said springs, stops secured to the draft-timbers for the followers to abut against, there being a limited clearance or play space between the rear follower of one of said springs and the abutment bearing against said follower to cause the two springs to come successively into action under pulling strains, substantially as specified.

2. In a tandem spring draft-rigging, the combination with the draft-timbers, of the draw-bar stop-castings or side plates secured to the inner faces of said timbers, and provided each with three stops for the followers to abut against, of two tandem-arranged springs, four followers, one pair for each of said springs, and a draw-bar and its extension provided with abutments to bear against said followers, said abutments being spaced relative to the length of said springs substantially as described, so as to cause the two springs to come simultaneously into action and be simultaneously compressed under buffing strains, and to come successively into action and then be simultaneously compressed under pulling strains, substantially as specified.

3. In a draft-rigging, the combination with a draw-bar, its extension and abutments, four followers, stops for the followers to abut against and two tandem-arranged springs coming simultaneously into action under buffing strains and successively into action under pulling strains, substantially as specified.

4. The draw-bar stop-casting or side plate G having integral upper guide-flange G′ and guide G^2, and provided with integral stops g g^2, and integral supplemental stops g^3 g^4 g^5 g^6, substantially as specified.

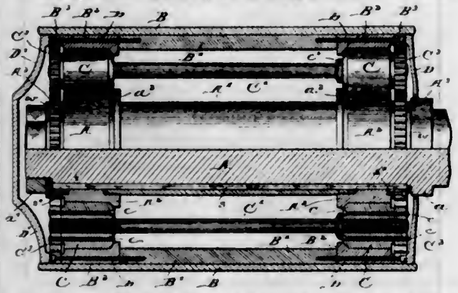
570,039. DOOR-CHECK. MELVIN MOORE and FRANK A. HOLLIDAY, Sciotoville, Ohio. Filed July 1, 1895. Serial No. 554,778. (No model.)



Claim.—1. A door-check comprising a bracket, floor-engaging devices loosely mounted on a bolt or shaft carried by said bracket, a spring connecting the said devices and adapted to draw and hold them in engagement with the floor, a lever fulcrumed at an intermediate point of its length on the bracket, connections between one end of said lever and the floor-engaging devices, and means for engaging and holding the pedal-lever when the same is depressed, substantially as specified.

2. A door-check comprising a bracket, floor-engaging devices loosely mounted on a bolt or shaft carried by said bracket, a spring connecting the said devices and adapted to draw and hold them in engagement with the floor, a lever fulcrumed at an intermediate point of its length on the bracket, connections between one end of said lever and the floor-engaging devices, a latch-bar loosely mounted on the bolt or shaft carried by the bracket and having a shoulder adapted to engage the lever, and a spring connecting said bar and the lever, substantially as specified.

570,040. SHAFT OR AXLE BEARING. FREDERICK A. MUELLER, Indianapolis, Ind. Filed Aug 4, 1896. Serial No. 601,657. (No model.)



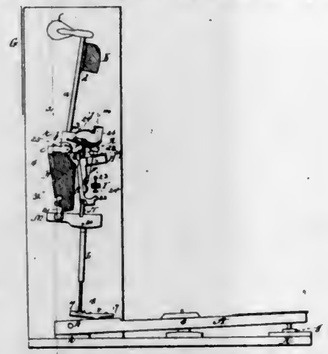
Claim.—1. The combination, in a bearing, of the axle; a sleeve on said axle composed of a central cylinder and two collars having screw-threaded connections, whereby they are adjustably attached to each other, and gears connected to the outer ends of said collars; an exterior hub structure composed of a central portion, and annular rings or tracks secured together, and provided with internally-toothed

gear-rings attached to the outer ends thereof; and rollers mounted on shafts and interposed between said collars and said annular tracks and adjustable upon their said shafts, with gears secured to the outer ends of said rollers and engaging with the gears on the collars and with the internally-toothed gear-rings, the whole being arranged and operating substantially as shown and described.

2. The combination, in a bearing, of a central sleeve having collars on the ends, said collars having flanges at their inner ends, an exterior structure having annular tracks at the ends thereof with flanges corresponding to those on the collars and registering therewith, and rollers mounted on shafts and located between said collars and said annular tracks and bearing against the flanges thereon, with gears connected to the ends of said several parts, whereby the relations between them are maintained, substantially as shown and described.

3. The combination, in a bearing, of an axle or shaft A having a collar a and a nut a' thereon, a sleeve on said axle collars A^3 at the ends of said sleeve, gears A^3 outside and connected to said collars, a casing or hub B having an interior sleeve B′ with annular tracks B^2 secured to the ends thereof, annular interiorly-toothed gear-rings B^3 secured to the ends of said annular tracks, interposed rollers, and means for adjusting the several parts, whereby the desired contact between their surfaces may be secured, substantially as shown and described.

570,041. UPRIGHT-PIANO ACTION. WILLIAM MUNROE, New York, N. Y. Filed Feb. 27, 1896. Serial No. 581,059. (No model.)



Claim.—1. In combination with the bracket H and hammer-butt b, a spring p having one end secured to the bracket, and a connection or ligature r extending from the other end of said spring to the hammer-butt, as set forth.

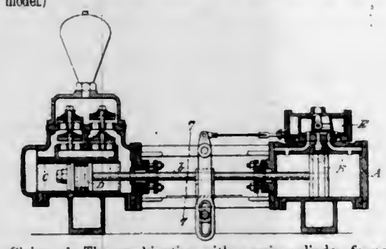
2. The jack B, bracket H, spring R seated upon the latter, and the hammer-butt b and its offset 26 combined, constructed and arranged to operate as specified.

3. The stop n in combination with the hammer-butt b, its offset 26 and shoulder l, the jack B and bracket H, as described.

4. The jack B, bracket H, spring R hammer-butt offset 26 with its shoulder l and the stop n, combined and operating as set forth.

5. The spring p, ligature or connection r, hammer-butt b, jack B and bracket H, in combination with the spring R, stop n and hammer-butt offset 26 with its shoulder l constructed to operate as specified.

570,042. VALVE MECHANISM FOR STEAM-PUMPS. JOHN L. MCGIFFIN, Scottdale, Pa. Filed Feb. 14, 1895. Serial No. 538,324. (No model.)



Claim.—1. The combination with a main cylinder formed of a casting having a flat upper face, a steam-chest formed of a separate casting and having a main-valve chamber containing a steam-operated valve, main-cylinder ports being formed in both of said castings and controlled by ports in the steam-operated valve, said steam-chest having at the side of the main-valve chamber an auxiliary-valve chamber, containing a tappet-valve having its valve-seat formed on the top face of the main-cylinder casting and tappet connections from the piston-rod to said tappet-valve substantially as set forth.

2. The combination with a main cylinder and steam-chest having a main-valve chamber, a steam-port communicating with the upper end of the valve-chamber, and a fluid-operated main-piston valve, said valve being formed hollow and having an opening in the upper part of the central portion thereof to permit of the entrance of steam and having supply-ports leading through the lower portion thereof forming communication with the cylinder-ports, substantially as set forth.

3. In steam-engine-valve apparatus, the combination with a steam-chest having a cylindrical valve-chamber with which the inlet-port f and with which the cylinder-ports c, d, e, communicate, and the fluid-operated hollow cylindrical valve G having the central opening g' communicating with the inlet-port f, the hollow chambers k, k' and supply-ports m m' passing through the same and forming direct communication with the cylinder-ports c, d, and the recess n, in the under face communicating with the main exhaust-port, the valve having also the central side opening g^3 and the pillars i, and the starting-lever f^3 supported between said pillars on the shaft f^3 entering through the opening g^3, on the same horizontal plane as the valve G, substantially as set forth.

4. In the combination with a main cylinder formed of a casting having a flat face, a valve-chest having a main cylindrical valve-chamber with an inlet-port entering centrally through the top thereof, an auxiliary-valve chamber at the side of the main chamber, and having the auxiliary valve seated on the top face of the main-cylinder casting, one or more ports in the wall between the valve-chambers and a hollow cylindrical valve fitting in the main-valve chamber, and having a central opening communicating with the inlet-port and an opening in the side providing for communication with the auxiliary valve chamber, through said port or ports, substantially as set forth.

5. In combination with a main cylinder formed of a casting with a flat upper surface, a valve-chest formed of a separate casting resting thereon and containing a main-valve chamber and an auxiliary-valve chamber at the side thereof containing a slide-valve seated in the upper face of the main-cylinder casting, and ports leading from the seat of said auxiliary valve down into the main-cylinder casting and thence to the under face of the valve-chest casting and to the end of the main-valve chamber, substantially as set forth.

6. In steam-engine-valve apparatus, the combination of a valve-chest having the valve-chamber H with ports p, p' and l therein, a slide-valve h having the central exhaust-recess l' and supply-ports r, r' formed of holes passing directly through the body of the slide-valve, and having the lugs q^2 q^3 and the tappet-rod having a tappet operating between said lugs, substantially as set forth.

7. The combination with a main cylinder having a piston sliding therein, of a valve-chest having the valve-chamber H and the tappet-valve h therein, the depending arm s having a sliding connection with the lever t, the tappet-rod q and connections between said lever and the tappet-rod q, and a tappet on the rod engaging with the valve, substantially as set forth.

8. The combination with a main cylinder having a piston sliding therein, of a valve-chest having the valve-chamber H and the tappet-valve h therein, the arm s having a sliding connection with the lever t, the tappet-rod q and a flexible strap connecting said lever and tappet-rod, and a tappet on the rod engaging with the valve, substantially as set forth.

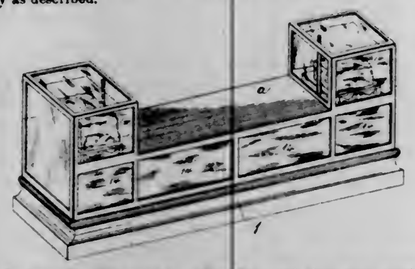
9. The combination, in a steam-operated apparatus, of valves or pistons in line with each other and a rod connecting the valves or pistons, said rod being made in two sections and flanged collars secured at the ends of the rod-sections, and a clamp fitting around said flanged collars, substantially as set forth.

570,043. DISPLAY REFRIGERATOR AND COUNTER. HEZEKIAH P. MCINTOSH, Denver, Colo. Filed Mar. 6, 1896. Serial No. 582,032. (No model.)

Claim.—1. A combination counter and refrigerator, embracing a storage-chamber, and ice-chambers extending above the same at either end thereof and communicating therewith by suitable air-passages, and a ventilating-tube extending from the upper part of the storage-chamber midway between said air-passages to the open air, substantially as described.

2. The combination with the storage-chamber of a counter, having double walls and an intermediate air-space, and ice-chambers at either end of the counter connecting with the storage-chamber of the ventilating-tube extending through the dead-air space at the top of the counter and having a downwardly-extending branch entering the center of the storage-chamber and vertical branches extending

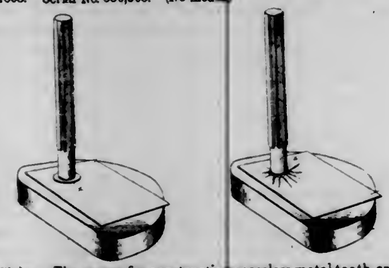
through the dead-air spaces of the refrigerating-chambers, substantially as described.



3. A combination counter, refrigerator, and show-case, consisting of a counter provided with a cold-storage chamber having non-heat-conducting walls, an ice-chamber having cold-air passages communicating with the bottom of the storage-chamber at either end thereof, and a warm-air passage midway between the outlets of said cold-air passages extending from the top of the storage-chamber to the open air substantially as described.

570,044. MEANS FOR CONSTRUCTING SEAMLESS METAL TOOTH-CROWNS.

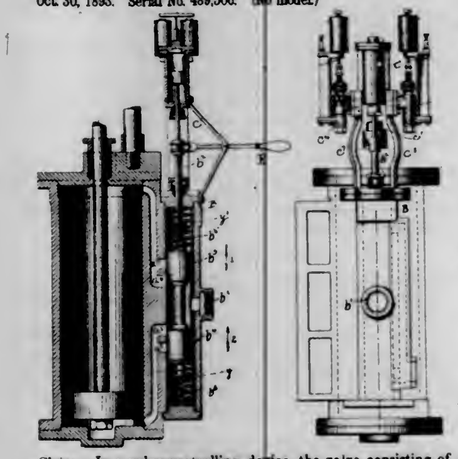
ANDREW T. McMILLIN, Paris, Tenn. Filed May 24, 1895. Serial No. 550,563. (No model.)



Claim.—The means for constructing seamless metal tooth-crowns substantially as herein set forth, the same comprising a bed of comparatively soft metal, a sheet of rubber to be placed upon the bed, and a series of male dies of graduated sizes adapted to be forced into the said bed in the order of their graduation so as to gradually conform the metal blank into the required finished shape, substantially in the manner set forth.

570,045. VALVE-CONTROLLING DEVICE.

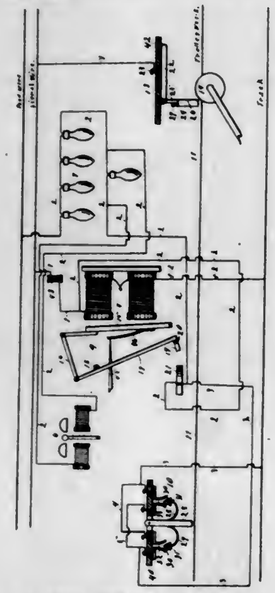
CHARLES E. ONGLEY, New York, N. Y., assignor to George J. Schoeffel, same place. Filed Oct. 30, 1893. Serial No. 489,506. (No model.)



Claim.—In a valve-controlling device, the valve consisting of a valve-chest having inlet and outlet ports and a valve-stem having two heads to control said ports and two springs bearing with equal tension upon the valve-stem heads, in combination with a motor to operate said valves, consisting of a cylinder having operative valves and piston-rod and electromagnets in circuit having armature secured to the valve-stems of said motor and means to control the circuit.

570,046. ELECTRIC SIGNAL FOR STREET-CAR CROSSINGS.

CHARLES A. PARRISH, Jackson, Mich. Filed Jan. 23, 1896. Serial No. 576,620. (No model.)



Claim.—1. A signal apparatus, comprising a circuit-maker adapted to be closed by contact of the trolley-wheel, a set of magnets, a circuit from the circuit-maker to the track or ground and including therein the signal-wire and said magnets, circuit-terminals, a contact-lever with contact-point and operated by the armature of the magnets to contact with said circuit-terminals when the trolley-wheel closes the circuit-maker thereby closing the signal-circuit and reenergizing the magnets, a signal a circuit from the feed-wire to the track or ground and including therein the signal the magnets and circuit-terminals, a circuit-maker for stopping the signal, and a shunt-circuit running to the track or ground and including the signal, substantially as set forth.

2. A signal apparatus, comprising a set of magnets, the contact-lever with contact-point, circuit-terminals in position to be contacted by said contact-point, the circuit-maker to be operated by the incoming car, the circuit-maker to be operated by the car in passing the crossing, a circuit from first-named circuit-maker through magnets and to track or ground, a circuit from feed-wire through signal and circuit-terminals thence through magnets and onto track or ground, and a shunt-circuit running to track or ground and including the signal, substantially as set forth.

3. In a signal, the combination of a set of magnets, circuit-terminals, a pivoted contact-lever provided with a contact-point for contacting the circuit-terminals, a bar pivotally connecting at one end with the upper end of the armature of the magnets, and at the other end with the upper end of the contact-lever, substantially as set forth.

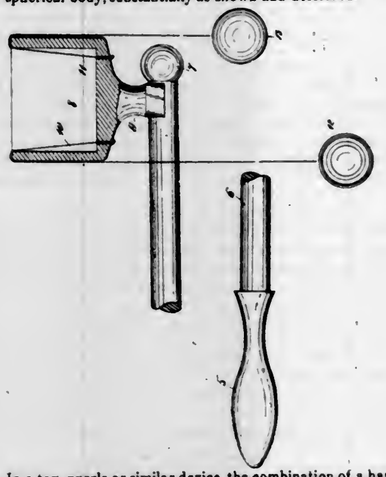
4. A circuit-maker, comprising a horizontal plate, and a vertically-swinging lever hinged to said plate, said lever composed of insulating material, having a metal plate on one side and composing the part of the hinge, said plate being adapted to be contacted by the trolley-wheel, substantially as set forth.

570,047. TOY OR PUZZLE.

THOMAS W. PATRICK, New York, N. Y. Filed May 25, 1896. Serial No. 593,019. (No model.)

Claim.—1. A toy, puzzle or similar device, comprising a handle, a cup-shaped receptacle secured to the outer end thereof, and two elastic cords connected with said receptacle, each of which is provided with a ball or spherical body, said cords being secured in the bottom of said receptacle, and one being longer than the other, substantially as shown and described.

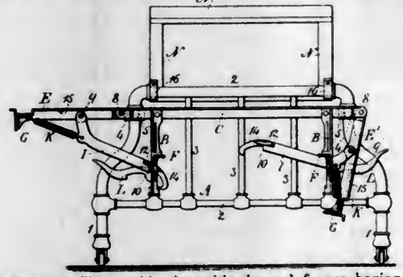
2. In a toy, puzzle, or similar device, the combination with a handle, provided with a shank or rod as 6, of a cup-shaped receptacle as 8, said cup-shaped receptacle being open at the top, and being secured to the outer end of said rod or shaft, and two, elastic bands secured in the bottom of said receptacle, each of which is provided with a ball or spherical body, substantially as shown and described.



3. In a toy, puzzle or similar device, the combination of a handle of a shaft connected therewith, the outer end of which is spherical in form, a cup mounted on the spherical portion of said shaft and which is open at its upper side, and provided on its lower side with a neck 9, by means of which it is secured to the neck of the shaft by two elastic cords 10 and 11 secured to the bottom of the cups, one of which cords is longer than the other, and balls 12 and 13 connected with said cords, whereby the puzzle is to be so manipulated as to deposit said balls in said receptacle, as set forth.

570,048. FOLDING BED AND COUCH.

EDMUND E. PECK, Brooklyn, N. Y. Filed Feb. 25, 1896. Serial No. 580,716. (No model.)



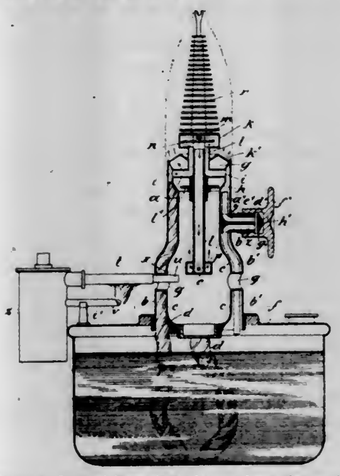
Claim.—1. The combination with the end frames having inwardly-projecting joint-blocks, of the angle-irons and tapering lugs fitting the joint-blocks, frame-bars connected to the angle-bars, and longitudinal connections extending from the frame-bars at one end to the frame-bars at the other end, hinges at the ends of the angle-bars and side frames united by the hinges, latches pivoted at their upper and outer ends to the side frames and engaging projections upon the frame-bars when the side frames are turned up in forming the bed-bottom, substantially as set forth.

2. The combination in a folding-bed bottom, of angle-bars at the ends, frame-bars extending downwardly from them, and longitudinal connections between the frame-bars, hinges at the ends of the angle-bars and side frames united by the hinges, pawls pivoted at their outer ends to the side frames and engaging projections upon the frame-bars for holding the side sections of the bed-bottom when swung up level for use, and a hook for each side frame for retaining it in position when swung down out of use, substantially as set forth.

3. The combination in a bed-bottom, of angle-irons at the ends, side frames composed of angle-bars and hinges for connecting them to the end angle-bars, pawls pivoted to the side frames, frame-bars and projections for engaging the pawls, springs between the pawls and the side frames, there being curved ends to the pawls for raising them when the side frames of the bed-bottom are raised above their normal position, and flanges upon the pawls passing above projections for keeping the pawls out of action as the side frames are turned down vertically, substantially as set forth.

570,049. LAMP FOR PRODUCING SPIRIT-GAS INCANDESCENT GAS-LIGHT.

ALBIN PERLICH, Dresden-Striesen, Germany. Filed Oct. 29, 1895. Serial No. 567,326. (No model.) Patented in France Aug. 28, 1895, No. 248,141; in Luxemburg Aug. 28, 1895, No. 2,359; in Norway Aug. 29, 1895, No. 4,550; in Italy Aug. 29, 1895, XXX, 39,624, LXXVII, 420; in England Aug. 30, 1895, No. 16,272; in Belgium Aug. 30, 1895, No. 117,205; in Hungary Sept. 5, 1895, No. 3,577; in Switzerland Sept. 7, 1895, No. 11,036; in Canada Sept. 13, 1895, No. 50,741, and in Austria Oct. 26, 1895 No. 45/4,061.



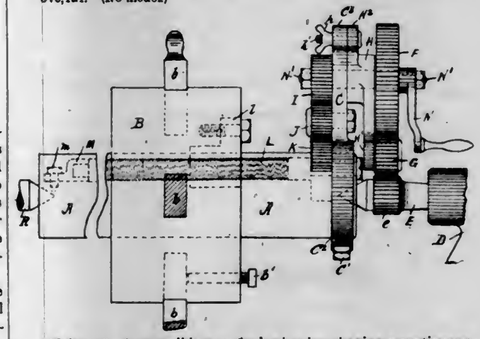
Claim.—1. In a spirit-gas incandescent lamp the combination of the burner-disk *k* with a ribbed body *r* which holds the incandescent mantle as and for the purpose set forth.

2. In the warming device the combination of a special spirit-receptacle *s*, a tube *t* filled with a wick and provided with small opening *u* and catch *x*, with burner-tube *v* beneath, by which the spirit in tube *t* is gasified, as set forth.

3. In a spirit-gas incandescent lamp the combination of the tubes *a'* and *b'* with the air-tight spirit-receptacle *f*, the piece *c'*, the channels *y z* of this piece *c'*, the socket *d'* and the cone-shaped stopper-plate *h'* inside the socket *d'*, as and for the purpose specified.

570,050. COMPOUND FEED-MOTION FOR BORING CYLINDERS.

WALTER S. PHELPS, Indianapolis, Ind. Filed Feb. 5, 1896. Serial No. 578,121. (No model.)

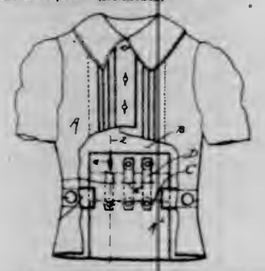


Claim.—1. A reversible gear for boring-bars having a continuous spiral or serpentine feed, comprising in combination a bar provided with a suitable slidable tool-head and a suitably-mounted screw to actuate said head, said screw having at or near one end a toothed wheel secured thereto, said wheel being situated near one end of said bar; a lathe center supporting revolubly one end of said bar and having gear-teeth surrounding its periphery; a main frame having at one end a ring or collar surrounding the end of said bar and adjustably and detachably secured thereto adjacent to said toothed wheel, the opposite end of said frame having a curved concentric slot; a revoluble shaft suitably journaled in said frame, extending therethrough and having secured at one end adjacent to one side of said frame a toothed wheel; a toothed wheel revolubly supported on a stud and operatively connecting said toothed wheel and said toothed wheel of the feed-

screw; an adjustable frame mounted at opposite side of said main frame by means of said shaft revolubly therein, said adjustable frame having at one end an opening registering with said curved slot and a securing-bolt therethrough, and at its opposite end a pair of studs having a revoluble toothed wheel on each, so situated that either wheel may be engaged with the gear-teeth of said center or both disengaged by the swinging of said adjustable frame; a toothed wheel secured to said shaft engaging one of said wheels on said pair of studs; a lever attached to said adjustable frame, and means for manually rotating said shaft, substantially as and for the purposes shown and described.

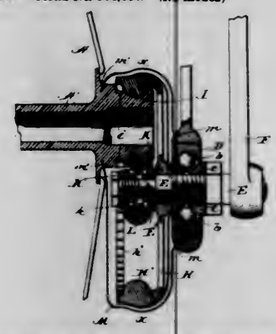
2. In a boring-bar, a reversible continuous feed mechanism comprising in combination with a bar having a feed-screw and the wheel K, the center E provided with the teeth *e*; the main frame C having at one end the ring or circular part C^3 and means for adjustably securing it to said bar, and having at the opposite end the slot A^3; the adjustable frame composed of the hub H, and arms H′ and H^3 mounted adjacent to said main frame, said arm H′ having the toothed wheels O and G revoluble on studs secured to said arm arranged so that either of said wheels may engage said teeth *e* or be disengaged by means of swinging the arm H′, and said arm H^3 having an opening registering with said slot A^3 and a binding-bolt therethrough; the shaft N′ passing through said frames revoluble in suitable openings therein; the toothed wheel F secured to said shaft and engaging with the said wheel O; the crank N secured to said shaft adjacent to said wheel F; the toothed wheel I secured to the opposite end of said shaft; the toothed wheel J mounted on a suitable stud and engaging said wheel I and said wheel K, and the lever P attached to said adjustable frame, substantially as shown and described.

570,051. SHIRT-WAIST. FRANK A. PLATZ, Brooklyn, N. Y., assignor of one-half to Michael Benedik, New York, N. Y. Filed Mar. 10, 1896. Serial No. 582,585. (No model.)



Claim.—As a new article of manufacture, an improved shirt-waist, consisting of a body portion having a lower portion of the back thereof cut away and in lieu thereof a supplemental piece stitched to the inner surface of back and having openings therein, and a plurality of straps secured to said piece and passed outwardly through said piece and the ends thereof being adapted to be secured to any desired object by means of buttons, substantially as shown and described.

570,052. BICYCLE-GEARING. ABEL F. PRICE, U. S. Navy. Filed Jan. 2, 1896. Serial No. 574,067. (No model.)



Claim.—1. The combination with the drive-wheel having the hub-bearing thereon, of the crank-shaft, the driving-disk rotating with said crank-shaft and having the internal bearing coöperating with the bearing on the hub of the driving-wheel and the locking-annulus; substantially as described.

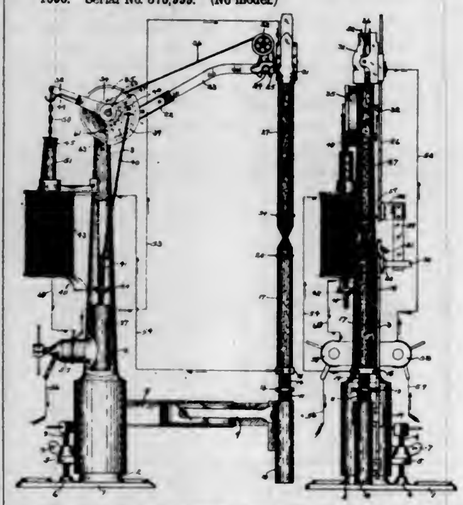
2. The combination with the drive-wheel having the hub-bearing thereon, of the crank-shaft, the driving-disk rotating with said crank-shaft and having the internal bearing coöperating with the bearing on the hub of the driving-wheel and the lock carried by the crank-shaft, said lock and hub having coöperating recesses and projections for preventing the separation of the parts, substantially as described.

3. In a bicycle-gearing the combination with the crank-shaft, the driving-disk mounted thereon and having the internal annular bearing, of the hub having the bearing coöperating with the driving-disk bearing and the locking-annulus journaled on the inner end of the crank-shaft and coöperating with the bearing on the hub the coöperating bearings on the disk, hub and annulus having recesses and projections respectively, whereby they are prevented from separating; substantially as described.

4. In a bicycle-gearing, the combination with the crank-shaft, the driving-disk mounted thereon and having the internal relatively smooth annular bearing convex in cross-section, of the driving-wheel hub having the annular concave end bearing and the locking-annulus journaled on the inner end of the crank-shaft and coöperating with said annular hub-bearing; substantially as described.

5. In a bicycle-gearing the combination with the crank-shaft the driving-disk journaled thereon and having the internal relatively smooth annular bearing with gear-teeth at one side of said bearing, of the driving-wheel hub having the relatively smooth bearing for coöperation with the smooth bearing on the disk and gear-teeth for coöperation with the gear-teeth on the disk and the locking-annulus for holding said bearings in engagement; substantially as described.

570,053. ELECTRIC-ARC LAMP. GEORGE C. PYLE, Indianapolis, Ind., assignor of one-half to Frank H. Ewers, same place. Filed Jan. 27, 1896. Serial No. 576,999. (No model.)



Claim.—1. In an arc-lamp, the combination of a gravity-fed upper electrode, a lower electrode, telescoping springs to support said electrode and feed it upward and a solenoid to regulate the arc.

2. In an arc-lamp, the combination with the lower electrode, and a lower arm to support the same, of a spring-supported tube carried in the lower arm, and a spring-supported electrode-holder carried in such tube.

3. In an arc-lamp, the combination with the lower electrode, and a lower arm to support it, of a vertical tube carried in such lower arm, a spiral spring coiled within the tube, a second tube within the spiral spring having a flanged top to support it on the spring, a second spiral spring within the second tube, and an electrode-holder within the second spiral spring having a cap on it to support it on the spring, substantially as set forth.

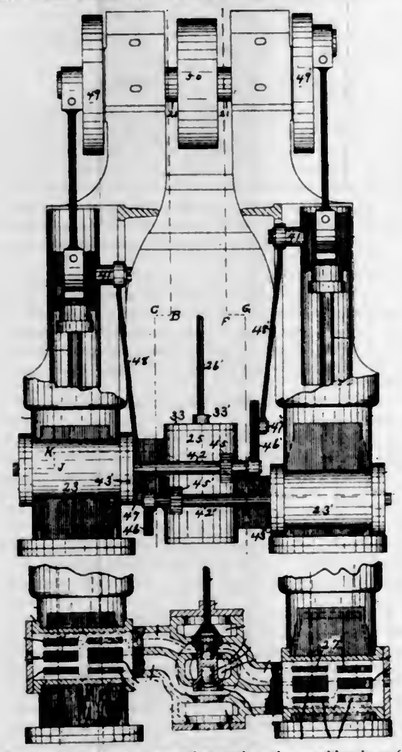
4. In an arc lamp, the combination with a lower electrode, an arm extending from the framework, a spring-support for the lower electrode mounted thereon, a guiding-bar extending parallel with the electrode, a guide-ring secured to such guiding-bar, and a screw or stop secured to the guiding-bar that engages the conical upper end of the electrode whereby the screw and guide-ring will cooperate to limit the upward movement of the spring-supported electrode and hold the upper end thereof in place.

5. In an arc-lamp, a framework, suitable upper and lower electrodes, a guiding-bar extending parallel to the lower electrode with a slotted lateral extension near its upper end, a guide-ring near its upper end, a guiding bar parallel to the upper electrode, a guide-ring secured to its lower end surrounding the upper electrode, and a downwardly-extending arm from the lower end of the upper guide-bar which extends loosely through the recesses in the laterally-extending bar in the upper end of the lower guide-bar.

6. In an arc-lamp, the clutch-wheel 35 provided with a laterally extending rim, a lever mounted adjacent to said rim having the enlarged end 39, a core and solenoid connected with said lever, a link 48 pivoted to the lever, the clutch 61 pivoted at one end to the link and at the other end provided with jaws which engage the laterally-extending rim on the clutch-wheel and a stop to engage such clutch and enlarged end of the lever to limit their movement.

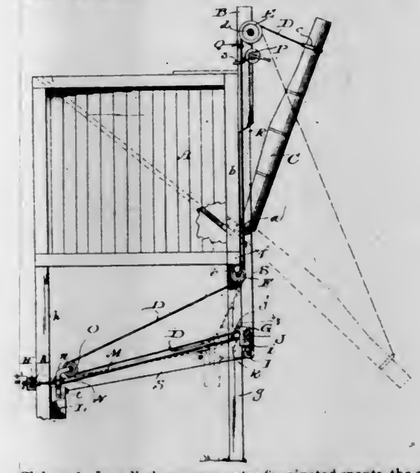
7. In an arc-lamp, the combination with a lamp-post, an arm extending from its upper end, a guide-bar held by such arm parallel with the upper electrode, means slidably mounted on the guide-bar for holding the electrode, a pulley mounted on the outer end of the arm from the lamp-post, a sprocket-wheel mounted rigidly on a shaft carried in the upper end of the lamp-post, a chain extending from the upper electrode-holder over the pulley and sprocket-chain to the weight, a lever loosely mounted on the shaft at the upper end of the lamp-post, an adjustable spring connected with one end of the lever, a dash-pot connected up with the other end of such lever, a solenoid also connected up with the other end of such lever, a drum mounted rigidly on the shaft at the upper end of the lamp-post, and a strap connected with such drum at one end and with said lever at the other end, whereby the solenoid and weight will tend to elevate the upper electrode while the dash-pot, spiral spring and gravity of the upper electrode will tend to depress it, substantially as set forth.

570,054. DUPLEX STEAM-ENGINE. GEORGE R. RAY, Manistee, Mich. Filed Mar. 2, 1896. Serial No. 581,579. (No model.)



Claim.—In a duplex reversing-engine, the combination of the steam-cylinders, the steam-pistons, the steam piston-rods, and means for connecting the said steam piston-rods to a crank-shaft common to both engines, the cylindrical main-valve chests with the port-openings arranged for rocker-valves, each having two ports communicating with opposite ends of their adjacent cylinders, the main rocker steam-valves having two cavity-ports in one end and one cavity-port in the other end of each, arranged to register with the ports in the main-valve chests, said ports in the main valves and main valve chests acting as the admission or exhaust ports according to the relative position of the reversing-valve in the reversing-valve chest, with the intermediate reversing-valve case having an exhaust-chamber in the center between the outer ports, the steam outer ports at each outside end of the reversing-valve chest, and the intermediate ports between the outer ports and the exhaust-ports, extending out through the main steam-valve seats in the main steam-valve chests between the ports therein that communicate with the cylinders, a reversing-valve controlling the communication between the said steam, intermediate, and exhaust ports that extend into the said reversing-valve chest, all operating to admit and exhaust the steam to and from the respective engine-cylinders, and to run the crank-shaft in either direction according to the relative position of the said reversing-valve in its chest, all substantially as and for the purposes set forth.

570,055. DISCHARGE APPARATUS FOR PIVOTED SPOUTS. EDWARD F. REYNOLDS, Ashland, Wis. Filed July 10, 1896. Serial No. 598,670. (No model.)



Claim.—1. In a discharge apparatus for pivoted spouts, the combination with a suitable support, of an inclined suspension-cable, a counterweight adapted to travel thereon, an additional free-running guide pulley mounted on said counterweight, a series of free running guide-pulleys mounted on said support at the front thereof, a spout pivoted to said support, and a cable secured to the outer end of said spout, and passing around said series of pulleys, and around the additional pulley on the counterweight, and thence brought forward and secured to the support at the front thereof, in line with the said series of pulleys, whereby the spout will be automatically raised by the downward travel of the counterweight on the inclined suspension-cable.

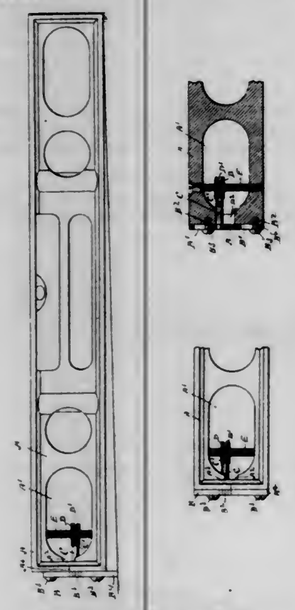
2. In a discharge apparatus for pivoted spouts, the combination with a suitable support, of inclined suspension-cables, counterweights adapted to travel thereon an extra guide-pulley on each counterweight, a spout pivoted to said support, free-running guide-pulleys on the support, cables connected to the outer end of the spout and to the support beneath the pivotal point of the spout, and passing around the free-running guide-pulleys on the support and counterweights, a winch on the support, and chain or cable connection between the drums of said winch and the traveling counterweights, whereby the winding of the chain or cable on the drums will draw the counterweights up the inclined plane of the suspension-cables, and permit the spout to automatically move forward and downward by gravity, as the said counterweights ascend.

3. In a discharge apparatus for pivoted spouts, the combination with a suitable support and a spout pivoted thereto, of inclined suspension-cables, and double-acting traveling counterweights moving thereon free-running guide pulleys mounted on the support and counterweights and cables connected at their forward ends to said spout and passing around said guide-pulleys, the other ends of said cables being secured to said support.

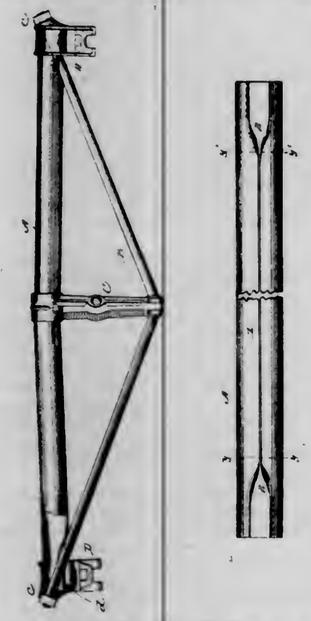
570,056. SPIRIT-LEVEL. CHARLES F. RICHARDSON, Athol, Mass. Filed Feb. 1, 1896. Serial No. 577,768 (No model.)

Claim.—The combination with the frame of a spirit-level, provided with an opening A′ near its end and a slot A^3 between said opening and the end, of a sliding plate capable of sliding vertically upon

the end of the level, an arm C projecting from said sliding plate through said slot into said opening, a fixed screw held in the frame of the level parallel with said sliding plate and passing through said opening and a grooved nut held in said screw and engaging said arm, substantially as described.



570,057. BRAKE-BEAM. HENRY B ROBISCHUNG, Kalamazoo, Mich. Filed Sept. 16, 1896. Serial No. 605,981. (No model.)



Claim.—1. A compression member for trussed brake-beams said member having flanged slots for the passage of the ends of the tension-rod; substantially as and for the purposes specified.

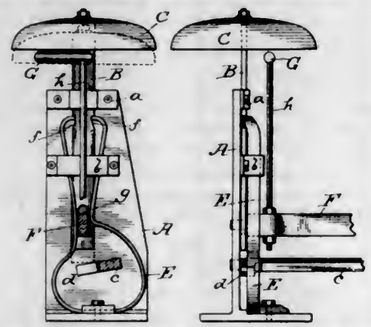
2. A compression member for trussed brake-beams, said member comprised of an open slotted tube having inwardly-projecting flanges adjacent to its ends; substantially as and for the purposes specified.

3. A compression member for trussed brake-beams, said member comprised of a longitudinally-slotted tube the edges of the slot being in apposition except at the ends of the member where the tension-rod enters, and at said points the edges of the slot turned inward to constitute flanges for the slot; substantially as and for the purposes specified.

4. In a trussed brake-beam the combination with a brake-head and tension member, of a compression member having flanged slots for the passage of the ends of the tension member; substantially as and for the purposes specified.

5. In a trussed brake-beam the combination with a tension member, and a cupped brake-head having a lug for engaging the compression member, of a longitudinally-slotted compression member having the edges of the slot turned in at the ends of the beam to constitute flanged slots for the tension member and means to engage the lugs in the brake-heads; substantially as and for the purposes specified.

570,058. RAILWAY-ALARM. FREDRICK P. ROSBACK, Chicago, Ill. Filed Mar. 11, 1896. Serial No. 582,745. (No model.)



Claim.—1. The combination with a bell, a vertically-movable bell-post to the top of which said bell is secured, a bell-hammer movable on a fixed center and capable of engaging said bell only when the latter is in its lowered position, and a rock-shaft engaging said bell-post so as to move the same vertically, of devices for connecting said bell-hammer to said track, track-levers placed alongside the nigh rail of said track so as to be depressed by the wheels of passing trains and wires connecting said track-levers to said rock-shaft and to the bell-hammer-operating devices.

2. The combination with a bell, a vertically-movable bell-post to the top of which said bell is secured, and a bell-hammer movable on a fixed center and capable of engaging said bell only when the latter is in its lowered position, of devices actuated by the approaching and receding trains, which ring said bell on the approach of the train, raise the bell when the train passes the bell, and lower it again as it recedes therefrom.

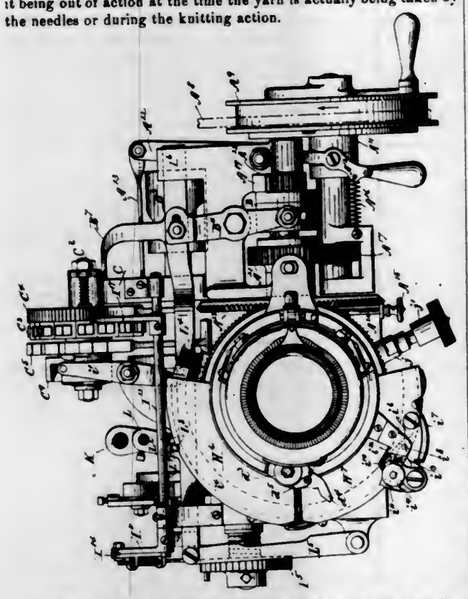
3. The combination with a bell, a vertically-movable bell-post to the top of which said bell is secured, a hammer, and rock-shaft to which the rod of the same is secured, and a transverse rock-shaft engaging the lower end of said bell-post, of two angle-shaped track-levers located next said rail and some distance on each side said bell the horizontal arms of which extend in the same direction, two angle-shaped track-levers, each located between said bell and the first-mentioned levers, and having their horizontal arms projecting in an opposite position thereto, a wire connecting the lower arms of said levers to the bell-hammer, rock-shaft, and a track-lever located near said bell and a wire connecting the same to the bell-post-actuating rock-shaft as set forth.

4. In a railway-alarm the combination with a suitable standard, a bell, a vertically-reciprocal bell-post to the top of which said bell is secured, having notches in its side edges, and a spring engaging said notches when said bell post is at the limit of its upper movement, of a rock-shaft F a vertical rod projecting therefrom, a bell-hammer on the upper end of said rod, and a rock-shaft *e*, journaled below said bell-post and adapted to engage and raise the same, said rock-shaft F when turned releasing said spring from the notches in said bell post, and dropping the same as set forth.

5. The combination with a bell, vertically-movable bell-post B, having notches *f* in its side edges and a vertically-elongated slot *g* in its lower portion, and a spring E, as described, of a rock-shaft F which when turned spreads the ends of said springs and releases said bell-post, and a rock-shaft *c* having an arm *d* and track devices consisting of levers and wires, said levers being depressed by the wheels of the cars passing over them and turning said rock-shafts as and for the purpose set forth.

570,059. KNITTING-MACHINE. JAMES E. ROWE, Pawtucket, R. I., assignor to the E. Jenckes Manufacturing Company, same place. Filed Nov. 20, 1895. Serial No. 569,583. (No model.)

Brief.—The needle-cylinder is gradually lowered to shape the leg, raised during the formation of the heel and toe, and again at the end of the toe to form a line of characteristic stitches between stockings to serve as a guide in cutting apart. The take-up is automatically thrown into and out of action at the beginning and end of reciprocating knitting and also intermittently during such knitting, it being out of action at the time the yarn is actually being taken by the needles or during the knitting action.



Claim.—1. In a knitting-machine, the combination with a motion-changing mechanism, and a speed-changing mechanism, of means operated from the motion-changing mechanism for locking the speed-changing mechanism, substantially as described.

2. In a knitting-machine, the combination with a motion-changing mechanism, and a speed changing mechanism, of a controller for controlling the speed-changing mechanism, and means operated by the motion-changing mechanism for locking the speed-changing mechanism, substantially as described.

3. In a knitting-machine, the combination with a motion-changing mechanism comprising a clutch-shifting lever, and a speed-changing mechanism comprising a belt-shifting lever, of an arm secured to the clutch-shifting lever and arranged to engage the belt-shifting lever, substantially as described.

4 In a knitting-machine, the combination with a motion-changing mechanism comprising a shifting-clutch member, of an independent speed-changing mechanism, a controller comprising a plurality of cams rigidly supported to revolve about their axis for controlling the shifting of said clutch and said speed-changing mechanism, a driving mechanism for said controller, and means for periodically throwing said driving mechanism into operation, substantially as described.

5. In a knitting-machine, the combination with a motion-changing mechanism, comprising a shifting-clutch member, an independent speed-changing mechanism, and mechanism for controlling the instep-needles of a controller comprising a plurality of cams rigidly supported to revolve about their axis for controlling said mechanisms, a driving mechanism for said controller, and means for periodically throwing said driving mechanism into operation, substantially as described.

6. In a knitting-machine the combination with a motion-changing mechanism comprising a shifting-clutch member, an independent speed-changing mechanism, a cam-cylinder carrying a needle-engaging cam, a controller comprising a plurality of cams rigidly supported to revolve about their axis, a driver for said controller and means for periodically throwing said driver into operation, substantially as described.

7. In a knitting-machine the combination with a cam-shaft a disk secured to revolve with the same and provided with notches, a reciprocating member carrying a sliding pin, and means for periodically projecting said pin into said notches, substantially as described.

8. In a knitting-machine, the combination with a fashioning mechanism comprising a cam for raising and lowering the needle-cylinder, of a driving mechanism for the cam comprising an intermittently-operating clutch, a controller for said driving mechanism, driving mechanism for said controller, and means for periodically throwing said controller-driving mechanism into operation, substantially as described.

9. In a knitting-machine, the combination with a motion-changing mechanism comprising a clutch-shifting cam, a disk secured to revolve with the cam and provided with notches, and a reciprocating member carrying a sliding pin, of means for periodically projecting the pin into said notches, substantially as described.

10. In a knitting-machine, the combination with a clutch of a lever for shifting the clutch, a cam secured to a shaft, a disk provided with notches on its face also secured to the shaft, an oscillating disk loosely mounted on the shaft adjacent said notched disk, a sliding pin carried by said oscillating disk, and a cam for projecting the pin into said notches, substantially as described.

11. In a knitting machine, the combination with a pattern carrier provided with lugs, of a controller, yielding lugs mounted on said controller adjacent to said pattern-carrier, and means for preventing the yielding of said lugs when engaged by the lugs on said carrier, substantially as described.

12. In a knitting-machine, the combination with a pattern carrier provided with lugs, of a controller adjacent said pattern-carrier, lugs pivoted to said controller, stops for said lugs, and a cam for holding said pivoted lugs in the path of the lugs on said pattern-carrier, substantially as described.

13. In a knitting-machine the combination with a motion-changing mechanism, an independent speed-changing mechanism, a cam-cylinder carrying a plurality of needle-engaging cams, a controller comprising a plurality of duplicate sets of cams rigidly supported to revolve about their axis, for controlling said mechanism and said needle-engaging cams, substantially as described.

14. In a knitting-machine, the combination with a motion-changing mechanism comprising a shifting-clutch member and an independent speed-changing mechanism, of a controller for said mechanisms comprising a plurality of duplicate sets of cams rigidly supported to revolve about their axis, substantially as described.

15. In a knitting-machine, the combination with a speed-changing mechanism, and a motion-changing mechanism comprising a shifting-clutch member, of a controller comprising a ratchet-disk provided with dwells and a plurality of duplicate sets of cams carried by said ratchet-disk, substantially as described.

16. In a knitting-machine, the combination with a cam-cylinder carrying a throw-out cam, a throw-in cam and widening-cams, of a device for controlling the operation of said cams, substantially as described.

17. In a knitting-machine, the combination with a cam-cylinder carrying a throw-out cam, a throw-in cam and widening-cams, of a device for controlling the operation of said cams also carried by the cam-cylinder, substantially as described.

18. In a knitting-machine, the combination with a cam-cylinder carrying needle-engaging cams, of a stud carried by the cam-cylinder, a series of cams mounted on said stud for controlling the operation of said former cams; and means for operating said latter cams, substantially as described.

19. In a knitting-machine, the combination with the cam-cylinder carrying a normally-inoperative needle-engaging cam, and a stud carried by said cylinder, of a cam on said stud for controlling the operation of said needle-engaging cam, a ratchet attached to said cam, an arm pivoted to the cam cylinder and carrying a pawl engaging said ratchet, and an abutment movable into and out of the path of said arm, substantially as described.

20. In a knitting-machine, the combination with the cam-cylinder carrying a normally-inoperative needle-engaging cam, and a stud carried by said cylinder, of a cam on said stud for controlling the operation of said needle-engaging cam, a ratchet attached to said cam, an arm pivoted to the cam-cylinder and carrying a pawl engaging said ratchet, an abutment movable into and out of the path of said arm, a slide for moving the abutment, and a cam for moving the slide, substantially as described.

21. In a knitting-machine the combination with a cam-cylinder, of a cam-carrier pivoted to said cam-cylinder, a needle-engaging cam carried by said carrier, and means for moving said cam radially of said cam-cylinder, substantially as described.

22. In a knitting-machine the combination with a cam-cylinder, of a cam-carrier pivoted to said cam-cylinder, needle-engaging cams carried by said carrier, and means for moving said cams radially of said cam-cylinder, substantially as described.

23. In a knitting-machine, the combination with a cam-cylinder, of a cam-carrier pivoted to said cam-cylinder, needle-engaging cams carried by said cam-carrier, and a spring for holding the cam-carrier at either limit of its throw and means for moving said cams radially of said cam-cylinder, substantially as described.

24. In a knitting-machine, the combination with a cam-cylinder, of a stationary cam and a needle-engaging cam carried thereby, and means for moving said needle-engaging cam radially of said cam cylinder whereby said needle-engaging cam passes back of the stationary cam, and the needle-butts are transferred from said needle-engaging to the stationary cam, substantially as described.

25. In a knitting-machine, the combination with a cam-cylinder, of a cam-carrier pivoted thereto, needle-engaging cams mounted to slide in said cam-carrier, and a stationary cam carried by the cam-cylinder, and to which the needle-butts are transferred, substantially as described.

26. In a knitting-machine, the combination with a cam-cylinder, of a cam-carrier pivoted thereto, needle-engaging cams consisting of notched pins mounted to slide in said cam-carrier, a stationary cam carried by the cam-cylinder to which the needle-butts are transferred, and a stationary cam for acting on said notched pins, substantially as described.

27. In a knitting-machine, the combination with a cam-cylinder, of a guide carried thereby, a needle-engaging cam arranged to slide in said guide and means for automatically throwing said cam into operation, substantially as described.

28. In a knitting-machine, the combination with a cam cylinder, of a movable guide carried thereby, a needle-engaging cam arranged to slide in said guide, and means for moving said guide to hold the said cam out of operative position, substantially as described.

29. In a knitting-machine, the combination with a cam-cylinder, of a cam-guide pivoted thereto, a needle-engaging cam arranged to slide in said guide, a spring for holding said guide in its raised position, and means for moving said guide against the tension of said spring to carry said needle-engaging cam out of operative position, substantially as described.

30. In a knitting-machine, the combination with a cam-cylinder, of a cam-guide pivoted thereto, a needle-engaging cam arranged to slide in said guide, a projection on said guide, a slide carried by said cam-cylinder and engaging said projection, and a cam for operating said slide, substantially as described.

31. In a knitting-machine, the combination with a knitting mechanism of a take-up independent thereof and means operative during reciprocating knitting for intermittently holding said take-up out of operation, substantially as described.

32. In a knitting-machine the combination with a take-up, of means for positively operating said take-up, and means for throwing said operating means out of operation during rotary knitting, substantially as described.

33. In a knitting-machine the combination with a take-up, of means comprising a cam for operating said take-up, and means for rendering said cam inoperative during rotary knitting, substantially as described.

34. In a knitting-machine the combination with a take-up, means operative during reciprocating knitting for intermittently holding said take-up out of operation, and independent means for holding said take-up out of operation during rotary knitting, substantially as described.

35. In a knitting-machine the combination with a spring actuated take-up, of means operative during reciprocating knitting for intermittently holding said take-up out of operation against the tension of the spring, substantially as described.

36. In a knitting-machine the combination with a take-up, of means operative during reciprocating knitting for intermittently holding said take-up out of operation, and means for rendering said holding means inoperative during rotary knitting, substantially as described.

37. In a knitting-machine, the combination with a take-up of a spring for moving the take-up to take up slack thread, and mechanism operative during reciprocating knitting for positively moving the take-up in the other direction, substantially as described.

38. In a knitting-machine, the combination with a take-up of a sleeve engaging said take-up, a cam, connections between the cam and sleeve for oscillating said sleeve, and independent means for oscillating said sleeve to hold the take-up out of operation during rotary knitting, substantially as described.

39. In a knitting-machine, the combination with a take-up of a spring for raising said take-up, a cam and connections between the cam and take-up said cam and connections being operative during reciprocating knitting, substantially as described.

40. In a knitting-machine, the combination with a take-up and means for intermittently holding the same out of operation comprising a cam and a lever engaging the cam, of means for holding the lever out of engagement with the cam during rotary knitting, substantially as described.

41. In a knitting-machine, the combination with a take-up independent of the knitting mechanism of a clamp, and means operative during reciprocating knitting for intermittently holding the take-up and clamp out of operation, substantially as described.

42. In a knitting-machine the combination with the knitting mechanism, of fashioning mechanism for controlling said knitting mechanism to knit fashioned stockings, and means carried and actuated by said fashioning mechanism for causing said knitting mechanism to knit a series of characteristic stitches between contiguous stockings, substantially as described.

43. In a knitting-machine, the combination with the needle-cylinder of means for raising the same to an unusual height after the completion of each stocking, and immediately lowering the same, whereby a series of unusually long stitches are inserted between contiguous stockings, substantially as described.

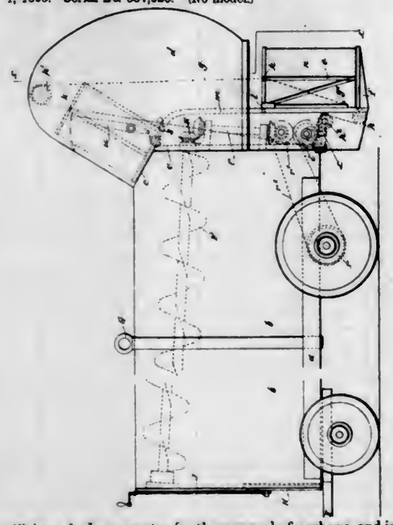
44. In a knitting-machine, the combination with the needle-cylinder of a cam for raising and lowering the same, and a short projection at the swell of said cam, substantially as described.

45. In a knitting-machine, the combination with a pattern chain or carrier, a ratchet-wheel for feeding the same, a pawl engaging said ratchet-wheel, an arm to which said pawl is pivoted, said arm being free at one end and a reciprocating member to which the other end of said arm is pivoted, substantially as described.

46. In a knitting-machine, the combination with a controller and a pawl for actuating the same, of a pattern-chain, a ratchet-wheel for feeding said pattern-chain, a pawl pivoted to said controller-pawl, and an oscillating disk to which said controller-pawl is pivoted, substantially as described.

47. In a knitting-machine, the combination with a cam-cylinder provided with a radially-yielding pin, of a sinker cam-ring provided with shoulders adapted to be engaged by said pin, substantially as described.

570,060. APPARATUS FOR REMOVAL AND TRANSPORTATION OF REFUSE. CARL A. E. DE LA SAUCE, Berlin, Germany. Filed Aug. 1, 1895. Serial No. 557,928. (No model.)



Claim.—1. In apparatus for the removal of garbage, and in combination with a tank having a charging-opening, an elevator composed of a support for a removable garbage-box, and means for lifting, tilting and returning the said elevator, said elevator and tank being arranged for the retention of the garbage-box in the elevator in the lifting tilting and returning operations, substantially as described.

2. In apparatus for the removal of garbage, and in combination with a tank provided with a charging-opening, a hood covering said opening and open below, and an elevator arranged to descend below the hood and provided with a truss *f* or garbage-box support so that a removable garbage-box may be slid onto the same and also provided with means for dumping the contents of the box into said tank and for returning the box with said elevator, substantially as described.

3. In apparatus for the removal of garbage, and in combination with a tank provided with a charging-opening, an elevator arranged to receive a removable garbage-box and to dump the contents into said tank, the path of said elevator extending to and terminating at the charging opening, which is arranged in a plane parallel with that occupied by the mouth of the garbage-box in dumping, so that the said box in emptying may fit against the mouth of said opening and thus be so retained in the elevator as to return therewith under the action of gravity without necessitating the fastening of the said box to said elevator, substantially as described.

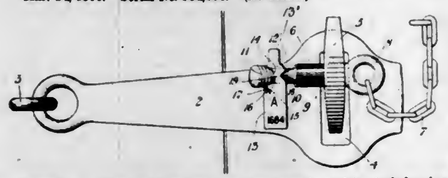
4. In apparatus for the removal of garbage, the combination of a conveying-wagon and a lifting-jack pivotally secured to the bottom of the wagon, the portion of the wagon to which the said jack is secured being fastened also to an axle at the front end of the wagon so as to be lifted at the rear and turned about said front axle; substantially as and for the purpose specified.

5. In apparatus for the removal of garbage, the combination of a conveying-wagon, an elongated tank mounted thereon and provided with a charging-opening at one end and a discharging-opening at the other, a hooded elevator at the charging end for emptying the garbage-box into said tank, and means whereby the said elongated tank may be lifted to discharge its contents; substantially as described.

6. In apparatus for the removal of garbage, the combination of a conveying-wagon, an elongated tank mounted thereon and provided with a charging-opening at one end and a discharging-opening at the other, a conveying-screw arranged longitudinally in said tank, a hooded elevator at the charging end for emptying the garbage-box into said tank, and means whereby the said elongated tank may be lifted to discharge its contents; substantially as described.

7. In apparatus for the removal of garbage, the combination of the elevator, the grooves in which pins on the elevator travel, the chains for raising the elevator, and the rollers on the elevator which bear against the chains; substantially as described.

570,061. SEAL-LOCK. JULIUS SCHIRRA, Pittsburg, Pa. Filed Mar. 24, 1896. Serial No. 584,598. (No model.)



Claim.—1. In a car-door seal, the combination with a bolt having a short threaded portion and a reduced neck back of such threaded portion, of a seal-plate adapted to be screwed upon the threaded portion and onto the reduced neck, with means for preventing the unscrewing of the plate, substantially as set forth.

2. A car-door seal comprising a securing-bolt having a short threaded portion and a reduced neck back of such threaded portion, and a thin metallic seal-plate having a circular opening, a recess in the side of the opening, and oppositely-deflected internal edges, substantially as set forth.

3. A car-door seal comprising a securing-bolt having a short threaded portion and a reduced neck back of such threaded portion, and a thin metallic seal-plate having a cup-shaped middle portion, a circular opening in such cup-shaped middle portion, a recess in the side of the opening, and oppositely-deflected internal edges, substantially as set forth.

4. A car-door seal comprising a securing-bolt having a short threaded portion and a reduced neck back of such threaded portion, and a thin metallic seal-plate having a cup-shaped middle portion, a circular opening in such cup-shaped middle portion, a recess in the side of the opening, oppositely-deflected internal edges and recesses in the edges of the plate, substantially as set forth.

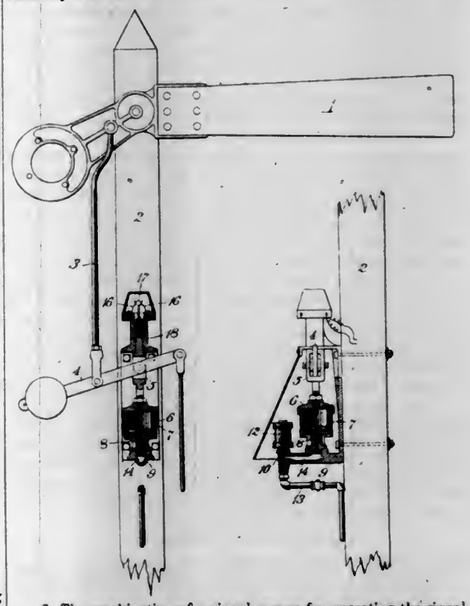
5. In combination with a securing-bolt provided with a bent end, a short threaded portion and a reduced neck back of such threaded portion; a thin metallic seal-plate having a cup-shaped middle portion, a circular opening in such cup-shaped middle portion, a recess in the side of such opening, oppositely-deflected internal V-shaped edges in spiral form, whereby the plate may be screwed upon the bolt, and recesses in the edges of the plate opposite the circular opening whereby the plate may be broken and removed from the bolt, substantially as set forth.

6. As a new article of manufacture, a seal-plate comprising a thin flat body portion, a cup-shaped middle portion, a circular opening in such cup-shaped middle portion, a recess in the side of the opening, oppositely deflected internal edges, recesses in the sides of the plate abreast of the circular opening, and a projecting tang integral with the plate, substantially as set forth.

570,062. SIGNAL APPARATUS. JENS G. SCHREUDER, Edgewood Park, Pa., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed May 21, 1896. Serial No. 592,413. (No model.)

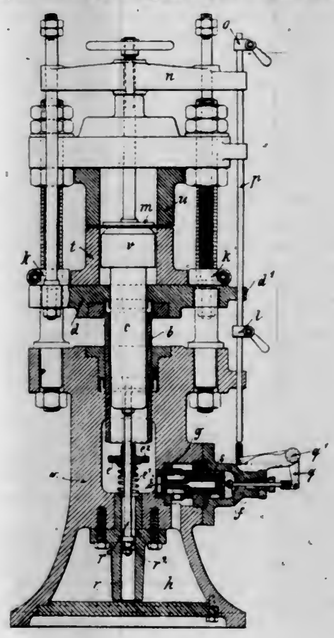
Claim.—1. The combination of a signal, mechanism for operating the signal, a lever connected to the signal and its operating mechanism, and mechanism independent of the signal-operating mechanism applied to the fulcrum of the lever for raising and lowering the fulcrum, substantially as set forth.

2. The combination of a signal, means for operating the signal, a lever connected to the signal and its operating means and a fluid-pressure cylinder and piston for shifting the fulcrum of the lever, substantially as set forth.



3. The combination of a signal, means for operating the signal, a lever connected to the signal and its operating means, a fluid-pressure cylinder and piston for shifting the fulcrum of the lever, and an electrically-controlled valve mechanism for controlling the flow of fluid-pressure to and from the cylinder, substantially as set forth.

570,063. HYDRAULIC DRAWING-PRESS. LOUIS SCHULER, Goeppingen, Germany. Filed Mar. 30, 1895. Serial No. 543,839. (No model.) Patented in Austria Oct. 31, 1894, No. 45/170; in Belgium Nov. 5, 1894, No. 112,562, and in England Nov. 13, 1894, No. 21,942.



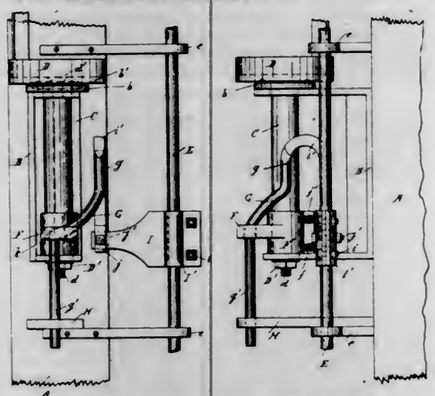
Claim.—1. A hydraulic drawing-press comprising the frame two pistons fitting the one into the other, a valve *e* closing the end of the outer piston and having an opening e^2 to allow the water to fill the space between the end of the inner piston and the end of the outer piston as closed by said valve, the matrix *u* fixed to the frame, the plate-holder *t* connected with the outer piston to move therewith and hold the edge of the plate between itself and the matrix, the die *v* carried by the inner piston and means for yieldingly holding the valve *e* against the end of the outer piston whereby said valve will leave its seat as a consequence of the inflow of sufficient water to the space between it and the end of the inner piston, substantially as described.

2. In combination, the inner and outer pistons, the frame carrying the same, the cylinder into which the pistons extend, the inlet and outlet valves *f*, *g*, arranged to be seated alternately whereby when the inlet-valve is closed the discharge-valve is opened, means for operating the inlet-valve and connections from both the inner and outer pistons whereby upon the end of the working stroke of the inner piston the inlet-valve will be closed and upon the return of the outer piston the inlet-valve will be opened, substantially as described.

3. A hydraulic press comprising a cylinder, an outer hollow piston, an inner piston, the perforated valve *e* for closing the end of the hollow piston a supplemental piston r^3 with its cylinder, said piston being connected with the inner piston by its rod and valves controlling the supply of water to the main and supplemental cylinders, said supplemental piston being arranged to return the inner piston to normal position, and having the valve *e* thereon substantially as described.

4. In combination, the cylinder, the outer hollow piston, with means for closing its end, the inner piston, the supplemental piston r^3 connected to the inner piston to return the same, the supplemental cylinder for the piston r^3 and valves controlling the liquid-pressure to the main and supplemental cylinders, said supplemental piston r^3 returning the inner piston while the hollow piston is closed by its closing means, substantially as described.

570,064. RAILROAD-SIGNAL. August J. Seifert, Alphege Bourek, and Frederick J. Wilken, Valparaiso, Ind. Filed July 25, 1896. Serial No. 600,504. (No model.)



Claim.—1. The combination, with a stationary bracket, and a vertical spindle journaled therein and provided with a lamp or signal holder and a projecting lug; of a spirally-arranged actuating-bar slidable in the said lug, and means for moving the said bar vertically, and thereby oscillating the said spindle, substantially as set forth.

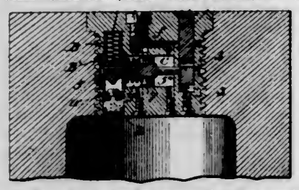
2. The combination, with a stationary bracket, and a vertical spindle journaled therein and provided with a lamp or signal holder and a projecting lug; of a spirally-arranged actuating-bar provided with vertical stems at its upper and lower ends, said bar and stems being slidable in the said lug, and means for moving the said bar and stems vertically, substantially as set forth.

3. The combination, with a stationary bracket provided with a plate at its upper end; of a vertical spindle journaled in the said bracket and provided with a lamp or signal holder above the said plate, said plate and holder having similar circular grooves in their adjacent surfaces, balls running in the said grooves, and means for oscillating the said spindle, substantially as set forth.

4. The combination, with a stationary bracket, and a vertical spindle journaled therein and provided with a lamp or signal holder and a projecting lug; of a vertically-slidable rod, a projecting bracket secured to the said rod, a spirally-arranged actuating-bar provided with stems *g* and *g'* at its upper and lower ends for engaging with the said lug and oscillating the said spindle, and a bent arm formed of a continuation of the stem *g* and secured to the said projecting bracket; and a stationary guide-bracket for the stem *g'* to slide in, substantially as set forth.

5. The combination, with a stationary bracket, of a vertical spindle journaled therein, a lamp or signal holder arranged at the top of the said spindle, and a clamping-bolt passing vertically through the center of the said spindle and holder and permitting the position of the said holder to be adjusted, substantially as set forth.

570,065. TIME-FUSE FOR SHELLS. William J. Smith, New Haven, Conn. Filed Oct. 5, 1894. Serial No. 525,012. (No model.)

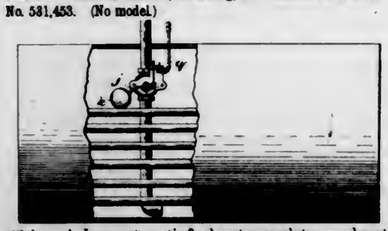


Claim.—1. In an exploder for projectiles, the combination with a spring-actuated hammer, a lock for the hammer, and a detent for the lock, of a passage-way for the fluid controlling the lock, and an adjusting-valve controlling the passage-way, the head of the valve having a slot and extending practically in line with the outer face of the case, whereby the valve may be adjusted, substantially as described.

2. In an exploder for projectiles, the combination with the case having a spring-actuated hammer, a lock for the hammer, and a detent for the lock, of a passage-way for the fluid controlling the lock, and an adjusting-valve controlling said passage-way, the valve having an opening in its side and end and a tapering slot leading to the opening in the side, the valve being adjustable from the outer face of the case whereby accurate adjustment may be attained, substantially as described.

3. An exploder for projectiles, comprising a cylindrical case having a longitudinal recess, a spring-actuated hammer, an igniter arranged in said recess, a lock for the hammer a transverse recess, a spring-actuated piston controlling the lock and mounted in said recess, a passage for the fluid controlling the piston, an adjusting-valve controlling the passage of the fluid and having its head extending to the outer face of the exploder, a second longitudinal recess, a detent therein, and a perforated disk closing said recess and protecting the detent, substantially as described.

570,066. FEED-WATER REGULATOR AND LOW-WATER ALARM. James S. Steele, Pittsburg, Pa. Filed Mar. 2, 1896. Serial No. 581,453. (No model.)



Claim.—1. In an automatic feed-water regulator, a valve attached to the feed-water pipe within the boiler, an arm having a boss adapted to engage on the plug of the valve, said arm having a float secured to its lower end and having an aperture in its upper end adapted to receive an upright rod provided with a pivotally-attached cross-arm secured to the operating-rod of the steam-valve, substantially as shown and described.

2. In a regulator for boilers, a valve secured to the feed-water pipe, said valve having a front plate which retains the plug in position and provided with an upwardly-projecting portion carrying an angle-plate, in combination with an operating-arm attached to the plug and having a float on its lower end and supporting an upright rod on its upper end, said rod having an adjustable collar, a cross arm pivotally attached to the upright rod and to the projecting portion of the plate and operating-rod of the steam-valve, substantially as shown and described.

570,067. BODY-ARMOR. Robert F. Stevenson, Silverton, Tex. Filed Jan. 7, 1896. Serial No. 574,586. (No model.)

Claim.—1. In plate-armor, the combination with a back piece, and side pieces flexibly united thereto, means for securing the side pieces in front, and shoulder-pieces pivotally united to the side pieces, and having overlapping ends above the back pieces, substantially as set forth.

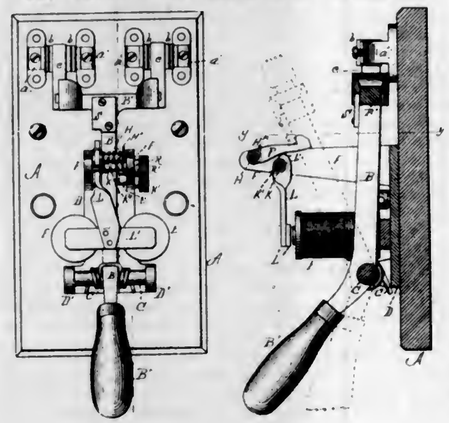


2. In plate-armor, the combination with a back piece, side pieces extending across the front and overlapping, of swiveled stems secured to the underlapping side pieces, oblong heads upon the respective stems, and slots in the outer overlapping side pieces adapted to admit the oblong heads for securing the parts together, substantially as set forth.

3. In body-armor, the combination with a back piece side pieces extending across the front and overlapping, of swiveled stems secured to the overlapped side piece, oblong heads upon the respective stems, and slots in the outer overlapping side piece adapted to admit the oblong heads for securing the parts together, the adjacent edges of the back piece and side pieces overlapping and being provided with correlative apertures, links passing through the correlative apertures, and heads flexibly connected to the opposite ends of the links and designed to constitute a flexible connection between the back piece and side pieces, substantially as specified.

4. In plate-armor, the combination with a back piece, side pieces extending across the front and overlapping, of swiveled stems secured to the overlapped side piece, oblong heads upon the respective stems, and slots in the outer overlapping side piece adapted to admit the oblong heads for securing the parts together, the adjacent edges of the back piece and side pieces overlapping and being provided with correlative apertures, links passing through the correlative apertures, and heads flexibly connected to the opposite ends of the links and designed to constitute a flexible connection between the back piece and side pieces, and shoulder-pieces permanently pivoted to the side pieces and having overlapping ends independently movable with respect to each other and to the back piece, whereby the movement of the shoulder of the wearer causes a pivotal movement of the adjacent shoulder-piece independently of any other part of the armor, substantially as specified.

570,068. ELECTRIC SWITCH. Samuel A. Stewart, Waltham, Mass. Filed Mar. 12, 1896. Serial No. 582,858. (No model.)



Claim.—1. In an electric switch of the character described, the combination of the arm or lever B carrying the contacts, and adapted to hold said contacts in circuit by a suitable spring; an electromagnet supported by a suitable frame; the rock-shaft K supported by said frame; the armature-arm L fast on said rock-shaft and supporting the armature and provided with the projection or cam L''; the rock-shaft H supported by said frame; the trip P on said shaft, bearing against said projection or cam and adapted to catch in a suitable projection extending from the arm or lever B; and a spring of sufficient power to hold said trip in engagement with said arm or lever by the aid of the power of the magnet upon the armature, but of insufficient strength to support the trip in such engagement without the aid of said magnet, substantially as described.

2. In an electric switch of the character described, in combination, the arm or lever B provided with the projection S and held normally in circuit by a spring; an electromagnet supported by a suitable frame; the armature-arm L supporting the armature, provided with the projection or cam L'', and supported by a shaft sustained by the frame; the spring K' acting on said armature-arm, and the tension-adjusting pin connected with said spring by a suitable cord; the trip P supported by the shaft H and adapted to catch under the said projection S and with its opposite sides bearing against the cam on the armature-arm; and a spring holding said trip normally against said cam and provided with a tension-adjusting mechanism comprising a suitable pin and connecting-cord, substantially as set forth.

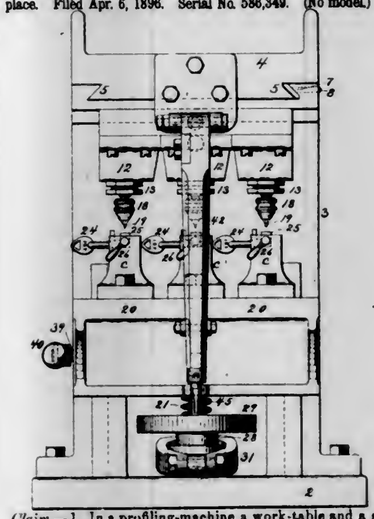
570,069. FASTENER-SOCKET. John D. Stricklen, Boston, Mass., assignor of one-half to Ebenezer Francis Bumpus, same place. Filed Sept. 19, 1895. Serial No. 562,981. (No model.)



Claim.—1. The herein-described combination with a slit socket having a neck; a spring-ring around said neck; and an extension beyond the ring; of a flanged post secured to said extension; and stock secured between said ring and flanged post.

2. The herein-described combination of a slit socket having a neck reduced in diameter to form a ring-seat, and having beyond the ring-seat a converged, apertured extension, with a post entered in said aperture and upset within the converged extension of the socket; said post being formed with a flange at its outer end and having a body portion between said socket extension and said flange.

570,070. ENGRAVING-MACHINE. Byron F. Stowell, Binghamton, N. Y., assignor to the Bundy Manufacturing Company, same place. Filed Apr. 6, 1896. Serial No. 586,349. (No model.)



Claim.—1. In a profiling-machine a work-table and a spring operative to normally maintain it in working position in combination with a pattern-table, a spring operative to maintain it also in normal working position and means to connect said tables so that they are elevated substantially simultaneously and a predetermined distance by their respective springs.

2. In a profiling machine a work-table and a spring operative to normally maintain it in working position in combination with a pattern-table, a spring operative to maintain it also in normal working position, and means to connect said tables so that they are elevated substantially simultaneously, by their respective springs, and a lever connected to the work-table and operative to depress both tables substantially simultaneously each a predetermined distance.

3. In a profiling-machine a work-table and a pattern-table so connected as to be vertically and sequentially reciprocated each a predetermined distance in combination with a tracer and a revolving cutter so connected thereto as to be guided thereby according to the contour of the pattern.

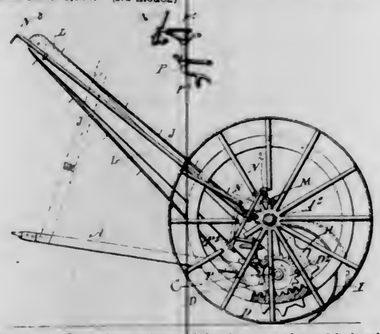
4. In a profiling-machine a base and a standard, a work-table and a pattero-table, separate springs under each to maintain them respectively in working position, a connection between them whereby the vertical movement of either table is transmitted to the other, and means to limit such vertical movements in either direction, as predetermined.

5. In a profiling-machine a base and a standard, a work-table, a spring under it normally maintaining it in a given position with reference to an adjustable stop, a pattern table, a spring under it normally maintaining it in a given position gaged by the work-table stop, a stop upon said standard, a lever connected to said work-table operative to depress both tables a predetermined distance and an adjustable stop-pin connected to said pattero-table, whereby the extent of the depression of both tables is gaged, in combination.

6. In a profiling-machine a base and a standard, a work-table, a spring under it normally maintaining it in a given position with reference to an adjustable stop, a pattern-table a spring under it normally maintaining it in a given position gaged by the work-table stop, a stop upon said standard, a lever connected to said work-table operative to depress both tables successively a predetermined distance, and an adjustable stop-pin connected to said pattern-table, whereby the extent of the depression of both tables is gaged, in combination with a rotating cutter and a tracer so connected thereto as to be guided thereby according to the contour of the pattern followed by said tracer.

7. In a profiling-machine a base, a standard and an arm thereon, a work-table and a pattern-table mounted upon said base, and means to successively reciprocate them vertically each a limited distance, in combination with a slide mounted upon ways upon said arm, a counter-slide mounted upon ways transverse to said slide, a rotating cutter-shaft journaled in said counter-slide, a cutter suitably mounted upon said shaft, and a tracer connected to said arm by a universal joint and to said counter-slide by a loose joint whereby the swing of said tracer in following the contour of the pattern is imparted to said cutter, to move it in any direction to reproduce said pattern upon the work-table.

570,071. **HAY RAKE AND LOADER.** THOMAS G. THRELKELD and JOHN H. THRELKELD, Liberty Centre, Iowa. Filed June 3, 1895. Serial No. 551,577. (No model.)



Claim.—1. In a hay rake and loader, a series of belt-wheels, each having a continuous toothed flange at each end or side face and all the said wheels fixed to a rotating shaft, at regular spaces apart, to move hay from a rake toward an elevator and to prevent hay from clogging on said wheels, and toothed belts on said wheels for elevating the hay, arranged and combined as shown and described.

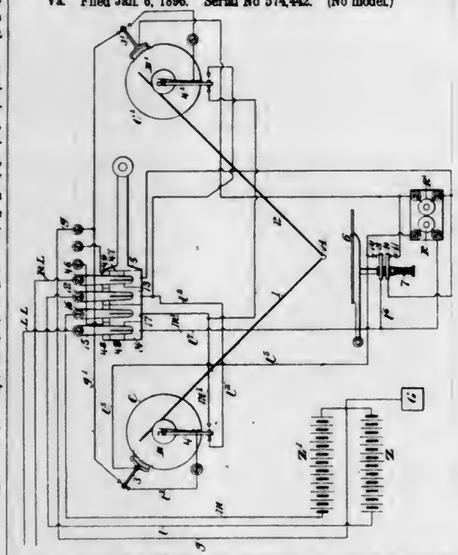
2. The combination of the jointed bar N, the rod N^3 the rake M having an arm N^3 at its end and an elevator-frame having a bearing for said rod at its side and top portion to raise and lower the rake-teeth in the manner set forth for the purposes stated.

3. The jointed bar N the rake-head M having an arm N^3 at its end, the rod N^3, the elevator-frame having a bearing for said rod at its side and top portion, the crank-shaft P' and the gear-wheel D and clutch F on the shaft C, arranged and combined in a hay rake and elevator to simultaneously adjust the rake and the gear-wheel in the manner set forth for the purposes stated.

4. An improved hay rake and loader, comprising a carriage-frame, a carriage-axle fixed to said frame, traction-wheels loose on the ends of said axle, a rotating shaft in bearings fixed to the same frame in a lower plane than the carriage-axle, a series of belt-wheels having toothed flanges at their sides fixed to said rotating shaft, a rake-head having fixed curved teeth and an arm projecting vertically from one of its ends pivoted to the carriage-frame, an elevator-frame pivotally connected with the carriage frame and axle and provided with a bearing for a sliding rod at its top portion, toothed endless belts placed on the belt-wheels having toothed flanges, an internal gear fixed to one of the carriage-wheels, a smaller gear-wheel on the rotating shaft, a jointed bar pivotally connected to the elevator-frame and the arm of the rake-head, and a rod connected with said jointed bar and extended through the bearing connected with the elevator-frame, all arranged and combined as set forth for the purposes stated

---

570,072. **TELAUTOGRAPH.** GEORGE S. TIFFANY, Highland Park, Ill., assignor to the Gray National Telautograph Company, Richmond, Va. Filed Jan. 6, 1896. Serial No. 574,442. (No model.)



Claim.—1. In a telautographic system, the method of operating two separate electromagnetic mechanisms over one line-wire which consists in placing one of said mechanisms in the main line and the other in a local branch and causing pulsations of successively opposite polarity to traverse the main line and groups of pulsations of successively similar polarity to traverse the branch line, the main-line mechanisms being operated by the changes in polarity of the successive pulsations, and the branch-line mechanism being operated by the changes in polarity of the successive groups, substantially as set forth.

2. In a telautographic system in which the escapement-magnet is operated by to-and-fro pulsations, the method of governing the escapement-magnet and the reversing-magnet over a single line-wire which consists in employing two sets of opposed generators to furnish pulsations of unequal strength, the two generators of each set being placed at opposite ends of the line-wire, the stronger generator of each set being at the transmitting end, and said two stronger generators being of opposite polarity, placing the escapement-magnet in the main line and the reversing-magnet in a branch of the main line, adjusting the resistances in the main line so that the polarity of the current traversing the branch shall be controlled by the generators at the transmitting end, and changing the connection of the line at the transmitting end from one set of generators to the other on each change in direction of movement of the transmitting-pen, whereby the reversing-magnet at the receiving instrument is operated in accordance therewith, substantially as set forth.

3. The method of sending telautographic messages which consists in sending to line impulses of successively the same polarity while the transmitting-pen is moving in a given direction, reversing the polarity of said impulses when the direction of movement of the transmitting-pen is reversed, reducing said impulses by a current of lesser strength and opposed polarity introduced into the line at the receiving-station, alternating said impulses from the transmitter with impulses of opposed polarity from the receiver and placing the reversing mechanism in a branch from the main line, the resistance being so adjusted that the branch is traversed only by currents having the same polarity as the impulses sent to line from the transmitting instrument, whereby the escapement-magnet at the receiving-station is operated by pulsations successively of reversed polarity, while the reversing mechanism responds only to the changes of polarity in the impulses sent from the transmittting-station, substantially as set forth.

4. The method of sending telautographic messages which consists in providing a constant current upon line applied at the receiving-station, transmuting the movements of the transmitting-pen into electrical intermittent pulsations applied to line at the transmitting-station of greater strength than the said coustant current and opposed thereto in polarity, changing the polarity of the impulses sent from the transmitting-station upon each change in direction of movement of the transmitting-pen, and controlling the action of the reversing mechanism by means of the changes in polarity of the impulses sent from the transmitting-station, substantially as set forth.

5. The method of operating the reversing-magnet of a telautographic mechanism which consists in providing a normal current on line applied at the receiving-station, causing line pulsations by alternately grounding the line at the transmitting end and connecting thereto an electrical generator furnishing a current opposed in polarity to the line-current and of sufficient strength to neutralize the line-current and furnish a pulsation of opposite polarity, changing the polarity of the predominating pulsations sent from the transmitting-station according to the direction of movement of the transmitting-pen, and controlling reversal of the receiving-pen through the agency of the changes of polarity of the said predominating pulsations, substantially as set forth.

6. The method of sending telautographic messages which consists in transmuting the movements of the transmitting-pen into intermittent pulsations, introducing to line from the receiver a constant normal current of lesser strength than said pulsations and of a polarity opposed thereto, transmuting the alternate pulsations so obtained into movements of the receiving-pen, reversing the polarity of said normal current on each reversal of direction of the movement of the transmitting-pen, and controlling the direction of movement of the receiving-pen through the changes in polarity of the said pulsations, substantially as set forth.

7. The method of sending telautographic messages, which consists in transmuting the movements of the transmitting-pen into alternate pulsations effected by the alternate action on line of opposed generators of unequal strength, transmuting said alternate pulsations into movements of the receiving-pen, changing the polarity of the predominating generator-current in accordance with changes in direction of movement of the transmitting-pen, and controlling the direction of movement of the receiving-pen through the agency of said changes in polarity, substantially as set forth.

8. In a telautographic system, the combination of line-wires, generators of unequal strength at the two terminals of said wires respectively, means for transmuting the movements in extent of the transmitting-pen into pulsations of alternately-opposite polarity through the alternate action on line of said generators, means for transmuting said alternately opposite pulsations into movements in extent of the receiving-pen, means for reversing the polarity of the dominating pulsations on reversal of the direction of movement of the transmitting-pen, and means for reversing the direction of movement of the transmitting-pen in accordance with said changes in polarity, substantially as set forth.

9. In a telautograph, the combination of two line-wires, generators of unequal strength and opposed polarity arranged at opposite terminals thereof, means for producing pulsations of successively opposite polarity by intermittently cutting out the stronger generator, means for transmuting said alternate pulsations into movements of the receiving-pen, means for reversing the polarity of the current from the stronger generator on reversing the direction of movement of the transmitting-pen, and means for reversing the direction of movement of the receiving-pen through the agency of said reversals of polarity, substantially as set forth.

10. In a telautographic system, the combination of means for causing the impulses of one polarity to traverse the line-wires from the transmitting-station and alternate pulsations of reversed polarity to traverse the line wire from the receiving-station, said pulsations varying in number with the extent of movemeot of the transmitting-pen and controlling the movements of the receiving-pen in extent, means for reversing the polarity of the pulsations sent from the transmitting-station in accordance with changes in direction of movement of the transmitting-pen, and means for causing the direction of movement of the receiving-pen to change in accordance with the polarity of the pulsations sent from the transmitting-station, substantially as set forth.

11. In a telautographic system, the combination of a transmitting-pen, a receiving-pen, mechanism for controlling the extent of movement of the receiving-pen situated in the main line, mechanism for controlling its direction of movement situated in a branch of the main line, means for causing pulsations of successively opposite polarity to traverse the main line and pulsations of successively like polarity to traverse the branch line, and means for reversing the polarity of the pulsations traversing the branch line upon a change in the direction of movement of the transmitting-pen, substantially as set forth.

12. In a telautographic instrument, the combination of a transmitting-pen, a receiving-pen, a line-wire, mechanism for controlling the extent of movement of the receiving-pen, mechanism for controlling the direction of movement of the receiving-pen, means for causing pulsations of like polarity to be sent to line from the transmitting-station dependent in number upon the extent of movement of the transmitting-pen, means operating in conjunction with said pulsations for producing on line alternate pulsations of reverse polarity and means for reversing the polarity of said pulsations sent from the transmitting-station upon a change in the direction of movement of said transmitting-pen, the direction of movement of the receiving-pen being controlled by the polarity of said last-mentioned pulsations, substantially as set forth.

13. In a telautograph, the combination of a transmitting-pen, a receiving-pen, a line-wire, mechanism for controlling the extent of movement of the receiving-pen, mechanism for controlling the direction of movement of the receiving-pen, a current of normal strength flowing over the line-wire from the receiving instrument, means for producing intermittent pulsations upon line from the transmitting-station, said pulsations being successively of like polarity but of polarity opposed to the normal line-current and of greater strength than the same, means for changing the polarity of said pulsations dependent upon change in the direction of movement of the transmitting-pen and means for changing the polarity of the normal current when the polarity of the said pulsations is changed, the mechanism for controlling the direction of movement of the receiving-pen being controlled by the polarity of the said pulsations, substantially as set forth.

14. In a telautograph, the combination of a transmitting-pen, a receiving-pen, a line-wire, mechanism for controlling the extent of movement of the receiving-pen in the main circuit, mechanism for controlling the direction of movement of the receiving-pen in a branch of the main circuit, a current of normal strength flowing over the line-wire from the receiving instrument, means for producing intermittent pulsations upon line from the transmitting-station, said pulsations being successively of like polarity but of polarity opposed to the normal line current and of greater strength than the same, means for changing the polarity of said pulsations dependent upon change in the direction of movement of the transmitting-pen and means for changing the polarity of the normal current when the polarity of the said pulsations is changed, the resistances of the main line on the two sides of the branch being such that the polarity of the current flowing through the branch will be controlled by the pulsations sent from the transmitting-station, substantially as set forth.

15. In a telautographic system, the combination of the batteries or equivalent generators Z, Z', z, z', a line-wire, an interrupter, a device for shifting the line connection from battery Z to Z', or vice versa, on a change in the direction of movement of the transmitting-pen, *e. g.* the Prony brake 4, mechanism controlled by the pulsations on line for controlling the step-by-step movements of the receiving-pen, and a reversing-magnet in a branch of the line-circuit taken therefrom at such a point that the polarity of the current flowing through the same is determined by the batteries Z, Z', substantially as set forth.

16. The combination of batteries or equivalent generators Z, Z', z, z', a line-wire, an interrupter, a device for shifting the line connection from battery Z to Z', or vice versa, on change of the direction of movement of the transmitting-pen, a magnetic escapement-controlling device, a reversing-relay, as F, in a branch of the main circuit, and circuit connections between these various parts, all substantially as set forth.

17. In a telautographic system, the combination of two line-wires, means for causing impulses of one polarity to traverse each of the line-wires from the transmitting-station and alternate pulsations of reverse polarity to traverse said line-wires from the receiving-station, said pulsations varying in number with the extent of movement of the transmitting-pen and controlling the movements of the receiving-pen in extent, means for reversing the polarity of the pulsations sent from the transmitting-station in accordance with change in direction of movement of the receiving-pen, and means for causing the movement of the receiving-pen to change in direction in accordance

with the polarity of the pulsations sent from the transmitting-station over each line-wire, substantially as set forth.

18. In a telautographic system, the combination of two main-line wires, a transmitting-pen, a receiving-pen, mechanism for controlling the movement of the receiving-pen in extent situated in each main line, mechanism for controlling its movement in direction situated in a branch from each main line, means for causing pulsations of successively alternate polarity to traverse the main lines and pulsations of successively like polarity to traverse the branch lines, and means for reversing the polarity of the pulsations traversing the branch lines on changes in the direction of movement of the transmitting-pen, substantially as set forth.

19. In a telautographic system, the combination of a transmitting-pen, two line-wires, a receiving-pen, mechanism for controlling the movement of the receiving-pen in extent connected with each line-wire, mechanism for controlling the movement of the receiving-pen in direction connected with each line-wire, means for causing pulsations of like polarity to be sent to each line from the transmitting-station dependent in number upon the extent of movement of the transmitting-pen, means for causing pulsations to traverse the lines from the receiving-station intermediate of the pulsations sent from the transmitting-station and opposed in polarity thereto, said alternate pulsations together operating the mechanism for controlling the movements of the receiving-pen in extent, and means for reversing the polarity of said pulsations sent from the transmitting-station upon a change in the direction of movement of the transmitting-pen, the direction of movement of the receiving pen being controlled by the polarity of said last-mentioned pulsations, substantially as set forth.

20. In a telautographic system, the combination of a transmitting-pen, a receiving-pen, two line wires, mechanism for controlling the movements of the receiving-pen in extent and direction connected with each line-wire, a current of constant strength flowing over each line-wire from the receiver, means for producing on each line intermittent pulsations from the transmitting-station, said pulsations being successively of like polarity but of polarity opposed to the normal line-current and of greater strength than the same, means for changing the polarity of said pulsations in accordance with changes in direction of movement of the transmitting-pen, and means for changing the polarity of the normal current when the polarity of said pulsations is changed, the mechanism for controlling the direction of movement of the receiving-pen being controlled by the polarity of said pulsations, substantially as set forth.

21. In a telautograph, the combination of a transmitting-pen, a receiving-pen, two line-wires, mechanism for controlling the movement of the receiving-pen in extent in each line-wire, mechanism for controlling the receiving-pen in direction in a branch from each line-wire, a current of normal strength flowing over each line-wire from the receiving instrument, means for producing intermittent pulsations on each line from the transmitting-station, said pulsations being successively of like polarity but of polarity opposed to the normal line-current and of greater strength than the same, means for changing the polarity of said pulsations in accordance with changes in direction of movement of the transmitting-pen, and means for changing the polarity of said normal currents when the polarity of said pulsations is changed, the resistances of the main line on the two sides of the branch being such that the polarity of the current flowing through the branch will be controlled by the pulsations sent from the transmitting-station, substantially as described.

22. In a telautographic instrument, the combination with a transmitting-pen, a receiving-pen, two line-wires, mechanism for controlling the extent of movement of the receiving-pen, mechanism for controlling the direction of movement of the receiving-pen, means for causing pulsations of like polarity to be sent to line from the transmitting-station dependent in number upon the extent of the movement of the transmitting-pen, means operating in conjunction with said pulsations for producing on line alternate pulsations of reverse polarity, means for reversing the polarity of said pulsations sent from the transmitting-station upon a change in direction of the transmitting-pen, the direction of movement of the receiving-pen being controlled by the polarity of said last-mentioned pulsations, means for performing supplemental operations at the receiver and means for electrically controlling the operation of the supplemental parts over the same line-wires, substantially as set forth.

23. In a telautographic instrument, the combination with a transmitting-pen, a receiving-pen, two line-wires, mechanism for controlling the extent of movement of the receiving-pen, mechanism for controlling the direction of movement of the receiving-pen, means for causing pulsations of like polarity to be sent to line from the transmitting-station dependent in number upon the extent of the movement of the transmitting-pen, means operating in conjunction with said pulsations for producing on line alternate pulsations of reverse polarity, means for reversing the polarity of said pulsations sent from the transmitting-station upon a change in direction of the transmitting-pen, the direction of movement of the receiving-pen being controlled by the polarity of said last-mentioned pulsations, means for performing supplemental operations at the receiver and means for varying the strength of the transmitting-current on one or both of the line-circuits to actuate the supplemental parts of the receiver, substantially as set forth.

24. In a telautographic system, the combination of two line-wires, means for transmitting currents over the said line-wires which control the movements of the receiving-pen in extent and direction by changes in the polarity thereof, and means for changing the resistance in one of said line-wires to raise the receiving-pen and in the other of said line-wires to lower the said receiving-pen, substantially as set forth.

25. In a telautographic system, the combination of two line-wires, means for transmitting currents over said line-wires which control the movements of the receiving-pen in extent and direction by changes in polarity thereof, a paper-shifting magnet, and a relay in each main line at the receiving-station, electrical connections for the paper-shifting magnets controlled by the two relays, and means for adjusting the resistance of said two line-wires to shift the paper at the receiver, substantially as set forth.

26. In a telautographic system, the combination of two line-wires, means for transmitting currents over said line-wires which control the movements of the receiving-pen in extent and direction, means for changing the resistance in one of said line wires to raise the receiving-pen, means for changing the resistance in the other of said line-wires to lower the receiving pen, and means for adjusting the resistances in the two line-wires simultaneously so as to cause the paper to be shifted at the receiver, substantially as set forth.

27. The combination of relays I and I', a switch magnetically controlled by two coils having opposed action thereon and circuit connections, the circuit of one of said coils passing through one of the relay-armatures and one of its contact-stops, and the circuit of the two coils passing through the other relay-armature and its front and back stops respectively, substantially as set forth.

28. The combination of relays I and I', a switch controlling local circuits, electromagnetic devices for controlling the switch and consisting in part of two coils producing opposed effects upon the switch when respectively excited, and circuit connections; the circuit of one of said coils passing through one of the relay-armatures and its front contact-stop and the circuits of the two coils passing through the other relay-armature and its front and back contact-stops respectively, substantially as set forth.

29. The combination of two telautographic line-wires, a switch controlling local circuits at the receiver, magnetic devices for operating the switch provided with two coils, which, when respectively excited, act oppositely upon the switch, relays I, I' one in each line-circuit, and circuit connections between the relays and the said two coils, one of said coils being in circuit with the armature of one of the relays in one of its positions and one or the other of said coils being in circuit with the armature of the other relay according as the latter is on its front or back stop, substantially as set forth.

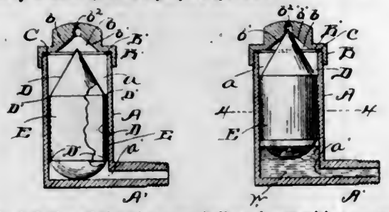
30. In a telautograph, the combination of two line-wires, a polarized magnet effecting the movements of the receiving-pen in extent in each line-circuit, a polarized magnet controlling the movements of the receiving-pen in direction in a branch from each line-circuit, and means for sending currents from the transmitter to operate said magnets, substantially as set forth.

31. In a telautograph, the combination of two line-wires, a polarized magnet effecting the movements of the receiving-pen in extent in each line-circuit, a polarized magnet controlling the movements of the receiving-pen in direction in a branch from each line-circuit, means for sending currents from the transmitter to operate said magnets, means for effecting supplemental operations in the receiver, and means for electrically controlling the supplemental parts of the receiver from the transmitting-station over the same line-wires, substantially as set forth.

32. In a telautograph, the combination of two line-wires, a polarized magnet effecting the movements of the receiving-pen in extent in each line-circuit, a polarized magnet controlling the movements of the receiving-pen in direction in a branch from each line-circuit, means for sending currents from the transmitter to operate said magnets, means for effecting supplemental operations in the receiver, and means for varying the strength of the currents sent over the two line-wires for controlling the supplemental parts of the receiver, substantially as set forth.

570,073. AIR-VALVE FOR HOT-WATER HEATING SYSTEMS. WILLIAM B. VAN SICKLE, Cleveland, Ohio. Filed Oct. 26, 1895. Serial No. 566,950. (No model.)

Claim.—1. A device of the character indicated, comprising an upright cylindrical chamber or case A provided, at its lower end, with an opening a'; a cap or head B engaging the upper end of said case and provided with an orifice b^3, an inflated float located within and somewhat smaller diametrically than the aforesaid case, a valve formed upon the upper end of said float and arranged in line with the aforesaid orifice, and the retaining-ring embracing the float, substantially as shown, for the purpose specified.



2. A device of the character indicated comprising an upright cylindrical chambered case A provided, at its lower end, with an opening a'; a cap or head engaging the upper end of said case and provided centrally with an air-discharge and air-vent orifice; a combined inflated float and valve located within and somewhat smaller diametrically than the aforesaid case, said combined float and valve comprising a cylindrical portion and a conical valve-forming member projecting above the cylindrical portion, and a retaining-ring embracing the cylindrical portion of the combined float and valve, substantially as shown, for the purpose specified.

3. A device of the character indicated comprising an upright cylindrical chambered case A provided, at its lower end, with an opening a'; a cap or head B engaging the upper end of said case and provided centrally with the orifice b^3; the inflated float D having a valve formed upon its upper end, said float having a cylindrical portion that is diametrically smaller than the chamber of the aforesaid case and is provided with the two external annular shoulders D', and the retaining-ring E embracing the float between said shoulders, and having a smooth external surface, all arranged and operating substantially as shown, for the purpose specified.

570,074. CAR-DOOR. ARTHUR M. WAITT, Cleveland, Ohio. Filed May 21, 1896. Serial No. 592,475. (No model.)



Claim.—1. The combination with a car, having a doorway provided with a projecting lintel-strip, a bracket-strip above and parallel therewith, and a projecting door-post having a continuous channel on its inner face, of a sliding door having on its upper edge a horizontal inwardly-projecting guard-plate which enters the space between the lintel and bracket strip, and a laterally-projecting guard-plate upon its front edge which enters the continuous channel in the door-post; substantially as and for the purposes specified.

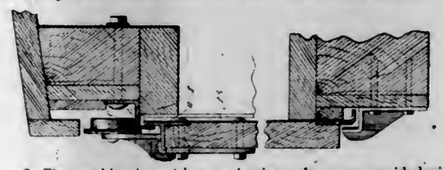
2. The combination with a car having a doorway provided with a projecting lintel-strip and projecting door-posts, one of said posts having a continuous channel on its inner face, and the other of said posts having a rearwardly-projecting guard-plate, of a bracket-strip above and parallel with the lintel-strip, a sliding door having on its upper edge a horizontal inwardly-projecting guard-plate, on one lateral edge a laterally-projecting guard-plate which enters the continuous channel of one of the door-posts, and on its other edge a sheath-plate which receives the guard-plate of the other door-post; substantially as and for the purposes specified.

3. The combination with a car, having a doorway provided with laterally-projecting lintel-strip, sill-strip, and door-posts, one of said posts having a continuous channel in its inner face, and the other of said posts having a rearwardly-projecting guard-plate, of a bracket-strip above and parallel with the lintel-strip, a door having on its upper edge a horizontal inwardly-projecting guard-plate, on its lower edge a guard-plate with horizontal inwardly-projecting flange, on one lateral edge a laterally-projecting guard-plate and on the other edge a U-shaped sheath-plate to receive the laterally-projecting guard-plate of the door-post; substantially as and for the purposes specified.

4. The combination with a car having a doorway provided with a projecting door-post and laterally-projecting guard-plate thereon, of a sliding car-door having a U-shaped sheath-plate to receive and house the laterally-projecting guard-plate of the door-post, said U-shaped sheath-plate having the outer face of one flange secured to the inner face of the door; substantially as and for the purposes specified.

570,075. CAR-DOOR. ARTHUR M. WAITT and HERMAN F. BALL, Cleveland, Ohio. Filed June 5, 1896. Serial No. 594,429. (No model.)

Claim.—1. The combination with a car having a doorway provided with a projecting lintel, of a trolley-track having a horizontal flange forming the tread which rests on the projecting lintel of the doorway and a guard-flange pendent from the outer edge of said tread, a sliding door provided with a vertical guard-plate which projects above the top of the door within the guard-flange of the trolley-track, and suitable hangers and trolleys for suspending the door from the trolley-track; substantially as and for the purposes specified.

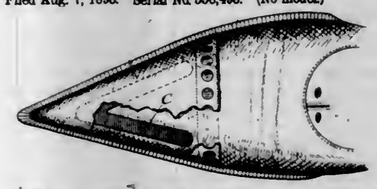


2. The combination with a car having a doorway provided with a projecting lintel, of a trolley-track substantially Z shape in cross-section providing a horizontal flange forming the tread which rests on the projecting lintel of the doorway, a pendent guard-flange, and a vertical bracket-flange for securing the trolley-track, a sliding door having its upper edge provided with a vertical guard-plate which projects above the top of the door within the pendent guard-flange of the trolley-track, and suitable hangers and trolleys for suspending the sliding door from the trolley-track; substantially as and for the purposes specified.

3. The combination with a car having a doorway, of a trolley-track of substantially Z shape cross-section providing a horizontal flange which constitutes the tread, a pendent guard-flange at the outer edge thereof, and a vertical bracket-flange at the inner edge thereof for securing the trolley-track to the car, and a sliding door having a top strip and guard-plate of substantially T cross-section the stem of the T constituting the top plate of the door and the vertically-projecting flange of the guard-plate arranged to be housed by the pendent guard-flange of the trolley-track; substantially as and for the purposes specified.

4. The combination with a car having a doorway of a trolley-track having a horizontal flange which constitutes the tread and a vertically-pendent guard-flange at the outer edge of the tread, and a sliding door having a top strip and guard-plate of substantially T shape in cross-section, the stem of the T constituting the top plat. of the door and the vertically-projecting flange of the guard-plate arranged to be housed by the pendent guard-flange of the trolley-track; substantially as and for the purposes specified.

570,076. SHOE-STAY. ALFRED WEIGAND, Milwaukee, Wis. Filed Aug. 7, 1895. Serial No. 558,493. (No model.)



Claim.—1. A shoe-toe stay of pliable elastic material cut to present a plurality of arms unequal as to length and divergent from that portion of said material constituting the outer end of the stay.

2. A stay of pliable elastic material cut to present a forward portion for insertion well up in a shoe-toe and a plurality of rearwardly-diverging arms each of which has independent yield to variable pressure.

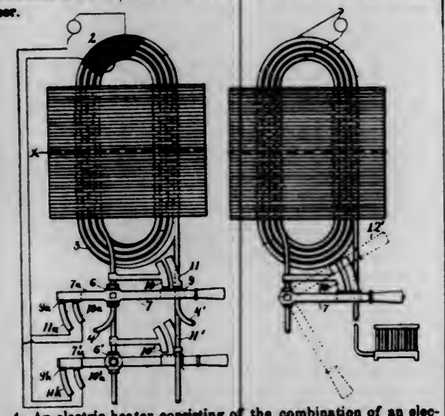
570,077. ELECTRIC HEATER. EARL P. WETMORE and CHARLES E. ROEHL, St. Joseph, Mo. Filed May 1, 1895. Serial No. 547,737. (No model.)

Claim.—1. An electric heater consisting of the combination of an electric converter having hollow secondary conductors thereon, and means for electrically closing each or all upon themselves, said means being provided with circuit-closers for opening and closing the primary conductor of the said converter.

2. An electric heater consisting of the combination of a converter having a hollow secondary conductor provided with a valve for feeding a liquid or gas into the conductor, and a circuit-closer for opening and closing upon itself that portion of the secondary conductor which passes through the converter.

3. An electric heater, consisting of the combination of an electric converter whose secondary conductor is hollow, a valve within the conductor, electric terminals attached respectively to different

portions of the hollow conductor and lying in the path of a given circuit-closer, and a single lever controlling the valve and the circuit-closer.



4. An electric heater consisting of the combination of an electric converter having a hollow secondary conductor thereon, provided with a valve, a circuit-closer for opening and closing said hollow conductor upon itself, and a single manual device attached to the valve and the circuit-closer the elements being so arranged relatively that the valve may be regulated while the said conductor is closed upon itself.

5. An electric heater, consisting of the combination of an electric converter whose secondary conductor is hollow, a valve within the conductor, a first pair of electric terminals attached as to its members respectively to different portions of the hollow conductor, a second pair of electric terminals, electrically connected to a given generator and to the primary conductor of the converter, both pairs of terminals lying respectively in the paths of different circuit-closers, and a single lever attached to said valve and to said circuit-closers.

6. An electric heater, consisting of the combination of an electric converter whose secondary conductor is hollow, a valve within the conductor, a first pair of electric terminals attached as to its members respectively to different portions of the hollow conductor, a second pair of electric terminals, electrically connected to a given generator and to the primary conductor of the converter, both pairs of terminals lying respectively in the paths of different circuit-closers, and a single lever carrying said circuit-closers and controlling said valve, the said terminals being so constructed that the said circuit-closers will connect them during the regulation of the valve within predetermined limits.

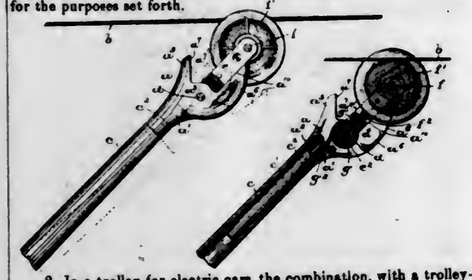
7. An electric heater, consisting of the combination of an electric converter having a hollow secondary conductor, a rotary valve in the conductor, a lever attached to and rotatable with the valve, circuit-closers carried upon respective arms of the lever, and arc-shaped pairs of terminals respectively for the hollow conductor and the primary conductor of the converter, of such length that for different predetermined positions of the valve, they will remain in contact with said circuit closers.

8. The combination of a radiator, a primary electric coil, a pipe a portion of which passes through the radiator and a portion within inductive action of said primary coil and hollow throughout its length, a valve in the pipe and means for regulating the valve and simultaneously opening and closing and maintaining closed electrically, a portion of the pipe upon itself.

9. An electric heater, consisting of the combination of an electric converter whose secondary conductor is hollow throughout its length, a valve within the conductor, electric terminals attached respectively to different portions of the hollow conductor and lying in the path of a given circuit-closer, a single lever controlling the valve and the circuit closer, and a radiator whose pipes and connecting-pipes form a continuous passage-way with the said hollow conductor for the circulation of fluids, the said lever being so adjusted that the valve is open when the circuit of the hollow conductor is closed.

570,078. TROLLEY FOR ELECTRIC RAILWAYS. WILLIAM M. WHITING, East Orange, N. J., assignor to Rachel M. Whiting, same place, and Christopher Richardson, New York, N. Y. Filed May 6, 1895. Serial No. 548,312. (No model.)

Claim.—1. In a trolley for electric cars, the combination, with a trolley-arm and trolley-head secured thereto, and fingers on said head, of a pivoted trolley-carrier having a trolley-wheel, and means coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and said fingers on the trolley-head being adapted to be brought against said carrier to act as stops, substantially as and for the purposes set forth.



2. In a trolley for electric cars, the combination, with a trolley-pole, of a pivoted trolley-carrier, comprising a sleeve like portion c^2 and arms c and c' having a trolley-wheel between them, and a spring encircling said sleeve-like portion, coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, substantially as and for the purposes set forth.

3. In a trolley for electric cars, the combination, with a trolley-pole, of a trolley-head a, comprising therein, forked sides or fingers, and a pivoted trolley-carrier having arms c and c' adapted to engage with said forked sides, and means coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and said fingers on the trolley-head being adapted to be brought against said carrier to act as stops, substantially as and for the purposes set forth.

4. In a trolley for electric cars, the combination, with a trolley-pole, of a trolley-head a, comprising therein forked sides or fingers, and a pivoted trolley-carrier having arms c and c' adapted to engage with said forked sides, and a spring coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and said fingers on the trolley-head being adapted to be brought against said carrier to act as stops, substantially as and for the purposes set forth.

5. In a trolley for electric cars, the combination, with a trolley-pole, of a trolley-head a, comprising therein, forked sides, a pivoted trolley-carrier, consisting of a sleeve like portion c^2 and arms c and c', having a trolley-wheel between them, and a spring encircling said sleeve-like portion, coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, substantially as and for the purposes set forth.

6. In a trolley for electric cars, the combination, with a trolley-arm, and a trolley-head, and fingers on said head, of a pivoted trolley-carrier having a trolley-wheel, and a spring coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and said fingers on the trolley-head being adapted to be brought against said carrier to act as stops, substantially as and for the purposes set forth.

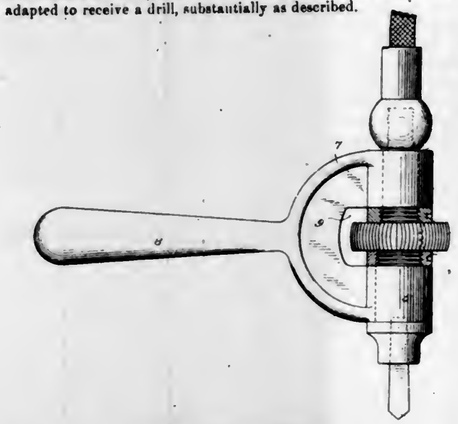
7. In a trolley for electric cars, the combination, with a trolley-pole, of a trolley-head, comprising therein, forked sides, a pivoted trolley-carrier having arms adapted to engage with said forked sides, and a spring coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and an adjusting device connected with said spring, substantially as and for the purposes set forth.

8. In a trolley for electric cars, the combination, with a trolley-pole, of a trolley-head, comprising therein, forked sides, a pivoted trolley-carrier having arms adapted to engage with said forked sides, a spring coöperating with said carrier to constantly and yieldingly force said trolley-wheel against the trolley-wire, irrespective of the movements of the trolley-pole, and an adjusting device connected with said spring, comprising therein, a grooved block or plate i and an adjusting screw or bolt i^3, substantially as and for the purposes set forth.

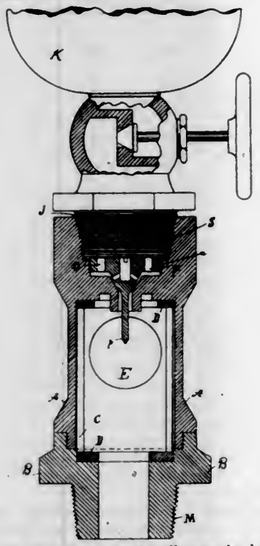
570,079. POWER-DRIVEN TOOL FOR DRESSING BARS AND INGOTS. FREDERICK J. WOOSTER, Waterbury, Conn., assignor to the Waterbury Brass Company, same place. Filed Aug. 15, 1896. Serial No. 602,850. (No model.)

Claim.—1. A tool for cleaning bars and ingots consisting of a handpiece having two hubs with an opening between them, a shaft journaled in the hubs and adapted to be connected with power driving mechanism, a bar carried by the shaft and lying in the opening between the hubs and a drill carried at one end of the shaft.

2. A tool for cleaning bars and ingots consisting of a handpiece having two hubs with an opening between them, a shaft journaled in the hubs and having a flexible power-shaft connected with one end thereof, a bar carried by the shaft and lying in the opening between the hubs, nuts on opposite sides of the bar to hold the latter in place, and a chuck at the opposite end of the shaft from the flexible shaft adapted to receive a drill, substantially as described.



570,080. SIGHT-FEED FOR LUBRICATORS. FRANK M. ASHLEY, Hawthorne, N. J. Filed July 22, 1892. Renewed Mar. 20, 1896. Serial No. 584,184. (No model.)



Claim.—1. In an attachment for oil-cups, the hollow cylinder made in two parts adjustably held together and having a recess containing a female thread at one end and an adjustable valve in said recess in combination with a glass tube arranged therein with washers of rubber or other material between the two parts of the cylinder and the ends of the glass tube, as and for the purposes set forth.

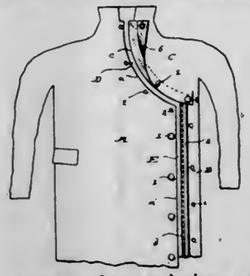
2. In a sight-feed attachment for lubricators, &c., the combination of a hollow cylinder formed with an oil-passage and valve-seat in said passage, a valve adjustably supported in the oil passage and consisting of a body having suitable inlet and downwardly-inclined divergent outlet passages and an extension p projecting freely through the oil-passage of the cylinder for the oil to drop from, substantially as set forth.

3. The combination of sections A and B, the former being provided with a sight-opening and a glass tube C, one section having a threaded recess and an adjustable valve located in said recess and provided with an extension p, a space being formed between the extension and the orifice through which it passes, substantially as and for the purposes set forth.

4. As a new article of manufacture, a sight-feed attachment for lubricators, &c., comprising a hollow cylinder having a sight opening and an oil passage leading to and from the cylinder, a valve located in one of the oil-passages of the cylinder for controlling the passage of lubricant therethrough, a screw-threaded socket at one end of the hollow cylinder, and a male screw at the other end of the cylinder substantially as set forth.

5. As a new article of manufacture, a sight-feed attachment for lubricators, &c., comprising a hollow cylinder having a sight-opening and formed with a tapered screw-threaded socket at one end and a tapered male screw-threaded portion at its other end, and a suitable valve located at one end of the cylinder for regulating the passage of a lubricant therethrough, substantially as set forth.

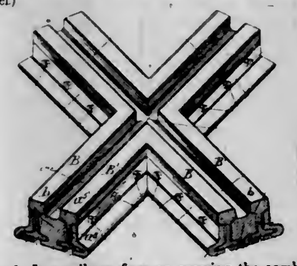
570,081. WATERPROOF GARMENT. MILO D. BEACH, Litchfield, Conn., assignor of one-half to Henry J. Hendey, Torrington, Conn. Filed July 30, 1896. Serial No. 601,033. (No model.)



Claim.—1. A waterproof garment having an opening the upper portion of which extends from the front of the neck to a point at one side of the body of the garment, and the lower portion extending from the said point down to the bottom of the garment, the edges of the upper portion of said opening being provided with fastening means to hold the upper edge overlapped upon the lower edge, and the edges of the lower portion of said opening being provided with fastening means to hold the front edge overlapped upon the rear edge, whereby water moving downward and rearward is prevented from entering the openings.

2. A waterproof garment comprising a front section A, a side B and a shoulder-section C, and having an opening between sections C and A commencing at the front of the neck and extending obliquely toward the side where it intersects with an opening between section A and the side, the edge c of section C overlapping the edge a of section A and the edge a' of section A overlapping the edge b of the side, edge b being provided with an outwardly-extending fly 5 which in the fastened position is covered by edge a' and prevents water from blowing into the opening when the wearer is sitting in the rain.

570,082. RAILWAY FROG AND CROSSING. LAWRENCE F. BRAINE, Ridgewood, N. J. Filed Jan. 24, 1896. Serial No. 576,650. (No model.)



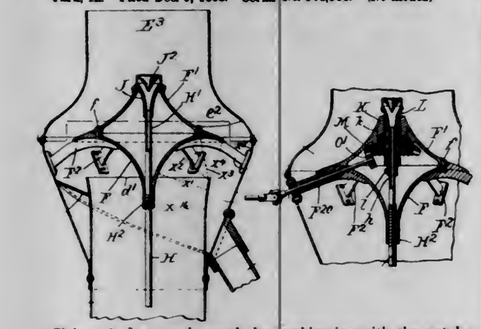
Claim.—1. In a railway frog or crossing the combination with the rails, of a continuous filling-piece having radiating arms integral one with another, each of said arms having a head to coöperate with the rails on opposite sides thereof and having a foot to support said rails, binders adapted to be secured to the outer surfaces of the rails and bolts adapted to secure all of the parts together, substantially as shown and described.

2. In a railway frog or crossing, the combination with the rails, of a continuous filling-piece having radiating arms integral one with another, each of said arms having a head to coöperate with the rails on opposite sides thereof and having a foot to support said rails, binders or angle-pieces shaped to fit in the angle between diverging rails

and to extend from one to the other and bolts to secure all of the parts together, substantially as shown and described.

3. In a railway frog or crossing, the combination with the rails, of a continuous filling-piece having radiating arms integral one with another, each of said arms having a head to coöperate with the rails on opposite sides thereof and having a foot to support said rails, binders adapted to be secured to the outer surfaces of the rails and having each a flange or lip to extend over and beneath the foot of the rails to support the same, and bolts to secure all of the parts together, substantially as shown and described.

570,083. LOCOMOTIVE SMOKE-STACK. CHARLES S. BURTON, Oak Park, Ill. Filed Dec. 9, 1895. Serial No. 571,508. (No model.)



Claim.—1. In a smoke stack, in combination with the uptake-pipe, a central inverted conical deflector and an outer inverted-cone frustum, the latter being joined to the uptake-pipe below the discharge-mouth of the same, and provided with a discharge-opening at the lower part of the chamber formed between said exterior frustum and uptake-pipe; the deflector being in radial section concave toward the margin of the uptake-pipe and extended to overhang the same, whereby the angle of deflection is slight at the apex and increases gradually to the periphery: substantially as set forth.

2. In a smoke stack, in combination with the uptake-pipe, a central inverted conical deflector and an outer inverted-cone frustum, the latter being joined to the uptake pipe below the discharge-mouth of the same and provided with a discharge opening at the lower part of the chamber formed between said exterior frustum and uptake-pipe; the deflector being in radial section concave toward the margin of the uptake-pipe; the lower point of the deflector being intruded into the uptake-pipe, and the discharge-mouth of the latter being flared to compensate for the space occupied by such intruded ends and the deflector being extended far enough to intercept all tangent, to the inner surface of said flared mouth.

3. In a smoke-stack, in combination with the uptake-pipe, the inverted conical deflector above the same, the exterior shell comprising an inverted frustum joined to the uptake-pipe below its discharge-mouth and having a discharge-opening at the lower part of the chamber thus formed between said exterior frustum and the uptake-pipe, said deflector being provided with a substantially conical water-shed or roof-piece secured above the same: substantially as set forth.

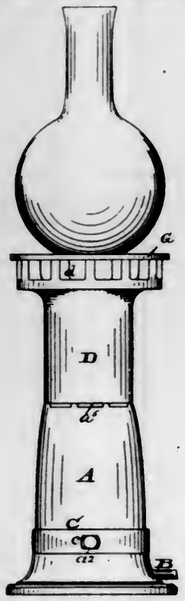
4. In a smoke-stack, in combination with the uptake-pipe, the inverted conical central deflector above the same; the exterior shell encompassing the deflector at the upper part of the uptake-pipe and joined to the latter below its discharge-mouth and expanded from such junction approximately to the plane of the greatest diameter of the deflector, and thence contracted upwardly; a steam-pipe which penetrates the apex of the deflector and a nozzle which terminates the steam-pipe within the upper reduced portion of the shell, said nozzle being adjustable in said reduced portion toward and from the discharge-mouth thereof.

5. In a smoke-stack, in combination with the uptake-pipe, the inverted conical central deflector, the shell which encompasses the deflector at the upper part of the uptake pipe and is secured to the latter below its discharge-mouth, the deflector being provided with supports extending and adapted to be secured to the outer shell, the deflector having a water-shed or roof-piece secured above the same; a nozzle which is mounted at the apex of such roof, and a steam-pipe which penetrates the downward apex of the deflector and leads to the nozzle: substantially as set forth.

6. In a locomotive smoke-stack, in combination with the uptake-pipe, the central inverted conical deflector and a shell which encompasses the same and is contracted above the plane of the greatest diameter of the deflector to the discharge-mouth; a nozzle above the deflector and a steam-pipe communicating therewith; the connection between the nozzle and steam pipe being such as to permit longitudinal movement of the nozzle; a rod or shaft which penetrates the stack from the exterior, and suitable connections from the shaft to the nozzle within the stack by which such shaft actuates the nozzle to adjust it longitudinally, whereby such adjustment may be effected from the exterior of the stack.

7. In a locomotive smoke stack, in combination with the uptake-pipe, the central inverted conical deflector and the shell which encompasses the deflector, said deflector being suitably connected rigidly; a shaft which penetrates the stack and the deflector and is suitably journaled thereon and adapted to be actuated from the exterior; intermeshing gears mounted on said shaft and on the deflector respectively; a nozzle which concentrically penetrates the gear on the deflector, and a steam-pipe coaxial with and extending within the nozzle, whereby the nozzle has guide-bearings on the gear and steam-pipe, one of said guide-bearings being threaded and the other feathered, whereby the rotation of the shaft actuates the nozzle longitudinally.

570,084. BUNSEN BURNER. WILLIAM H. CHADDOCK, Cleveland, Ohio. Filed Feb. 6, 1895. Serial No. 537,467. (No model.)



Claim.—1. In a gas-burner of the Bunsen type, the combination with a base portion composed of refractory material formed at its upper end with a reduced neck and with projections upon the shoulder formed by such neck, of a top portion of refractory material having its lower end fitted upon said neck and resting upon said projections whereby air-inlet openings are formed, and having at its upper end suitable means for supporting the vessels or objects to be heated, substantially as set forth.

2. In a gas-burner of the Bunsen type, the combination with a base composed of refractory material having a gas-tip at the lower end of its axial bore and having controllable air-inlets in its lower portion and formed with upwardly-projecting studs around the upper end of its axial bore and with radiating ribs upon its upper end, of a top portion of refractory material having its lower end fitted upon said studs and resting upon said ribs and having an annular series of lugs upon its widened upper end, substantially as set forth.

3. A flame-spreader for laboratory gas-burners, consisting of a doubled wire having metallic disks clamped upon its middle, substantially as set forth.

570,085. FRACTURE APPARATUS. OLE CLAUSSON, Nassau, Minn., assignor of one-half to William M. Cronan and Axel Larson, same place. Filed Apr. 10, 1896. Serial No. 586,998. (No model.)

Claim.—1. In a limb-setting device, the combination with a longitudinal base or bottom plate, of a pair of longitudinal side plates, of different lengths, securable to said bottom plate, head-pieces at the upper extremities of said side plates, applicable, one to the arm-crotch and the other to the leg-crotch, and a foot-block securable to the foot and longitudinally adjustable on the foot end of the channel-box formed by said bottom and side plates, to stretch and set said leg, substantially as described.

2. In a limb-setting device, the combination with a longitudinal base or bottom plate, of a pair of longitudinal side braces or thrust-plates of different lengths, securable to said bottom plate by the hook-and-slot engagement, head-pieces at the upper extremities of said side plates, applicable one to the arm-crotch and the other to the leg-crotch, and a foot-block securable to the foot and longitudinally adjustable on the foot end of the channel-box formed by said bottom and side plates, to stretch and set said leg, substantially as described.

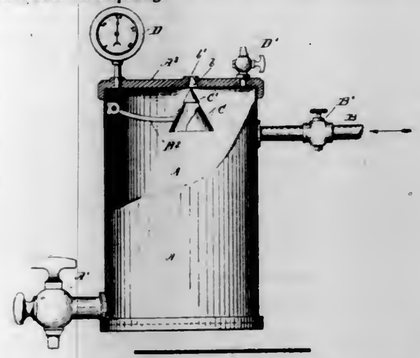
3. In a limb-setting device, the combination with a longitudinal base or bottom plate, of a pair of longitudinal side braces or thrust-plates of different lengths, interchangeably securable to said bottom plate, head-pieces at the upper extremities of said side plates, applicable, one to the arm-crotch, and the other to the leg-crotch, a foot-block securable to the foot and longitudinally adjustable on the foot end of the channel-box, formed by said bottom and side plates, and clamping devices comprising splint-plates and screw-clamps, for clamping the leg laterally on the device, substantially as described.

4. In a limb-setting device, the combination with a longitudinal base or bottom plate constructed in longitudinally-adjustable sections, of the pair of side plates also constructed in longitudinally-adjustable sections, said side plates being interchangeably secured to said bottom plate, head-pieces at the upper extremities of said side plates, applicable, one to the arm-crotch and the other to the leg-crotch, and a foot-block longitudinally adjustable on the foot end of the channel-box formed by said side and bottom plates, to stretch and set said leg, substantially as described.

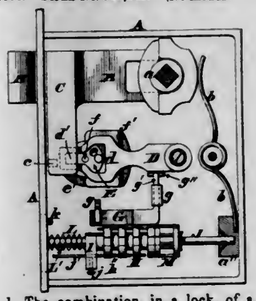
5. In a leg-setting device, the combination with the bottom plate formed by sections b b', b^3, b^4, adjustably united by the joints b^4 b^5, of the bracket b^9 with guideways b^{10}, the foot-block c with dovetailed guide-flanges c', working in said guideways b^{10}, the screw-rod c^3 swiveled to said foot-block c and working through said bracket b^9, the side or thrust plates made up of pivotally-connected sections f f' and interchangeably securable to said bottom plate by means of the joints f^3 b^3 b^6, and the longitudinally-adjustable head-pieces f^4 and f^5; the head f^5 being secured directly to its coöperating side plate and the head f^4 being indirectly secured to the coöperating side plate through the extension-plate f^7, substantially as described.

570,086. STEAM-BEER GOVERNOR. JEFFERSON D. DE GEAR, San Francisco, Cal. Filed Oct. 11, 1895. Serial No. 565,328. (No model.)

Claim.—In a governor for steam-beer, the combination of a reservoir having a conical valve-opening in its upper end, a pressure-gage and a vent-cock on the top of the reservoir, a lever fulcrumed on one side of the reservoir near the top thereof, and a conical valve secured to the free end of said lever and adapted to enter and close the conical valve-opening.



570,087. LOCK. WILLIAM F. FEISTNER, Newport, Ky. Filed May 27, 1896. Serial No. 593,243. (No model.)



Claim.—1. The combination, in a lock, of a spring-protruded bolt; a revolving gated tumbler; an external device that operates said tumbler; a fence adapted to engage with said gate; shiftable mechanism intermediate of said bolt and fence; and internal means for setting said mechanism, whereby said bolt may be used in conjunction with said tumbler, or be locked independently of it, or serve as a spring-bolt, substantially as herein described, and set forth.

2. The combination, in a lock, of a spring-protruded bolt; a series of reciprocating rotary gated tumblers; an external device that operates said tumblers; a fence adapted to engage with the coincident gates of said tumblers; shiftable mechanism intermediate of said bolt and fence; and internal means for setting said mechanism, whereby said bolt may be used in conjunction with said tumblers, or be locked independently of them, or serve as a spring-bolt, substantially as herein described, and set forth.

3. The combination, in a lock, of the spring-actuated bolt B, having a lateral arm C, provided with a lug c; a swinging lever D, having an opening d, and longitudinal slot d'; a disk E, having a pin e that traverses said opening and slot; means for turning said disk E; a fence G, that normally supports said lever D, a series of revolving gated tumblers with which said gate engages and means for operating said tumblers.

4. The combination, in a lock, of a series of gated tumblers journaled upon a shaft and having means for communicating motion from one to another; a vibrating arm carried by said shaft and serving to arrest the first tumbler; and a pair of springs coiled in reverse directions around said shaft and having their inner ends connected to said arm and their outer ends attached to a stationary part of the lock.

5. The combination, in a lock, of a shaft; a vibrating arm and a series of perforated gated tumblers journaled upon said shaft; a longitudinally-shiftable rod applied to said arm; and a pair of springs coiled in reverse directions around said shaft, and having their inner ends secured to said arm and their outer ends attached to a stationary part of the lock.

6. The combination, in a lock, of a tumbler mechanism; a non-rotatable shaft carrying said mechanism; a plate, as K, to which said shaft is fastened; an opening in the outer end of the lock-case to admit said plate; and a retainer, as k, that holds said plate in position, all as herein described, and for the purpose stated.

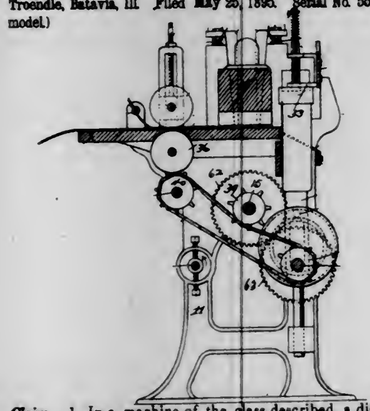
7. The combination, in a lock, of a shaft; a toothed wheel and a series of gated tumblers journaled upon said shaft a reciprocating stem having a pawl that actuates said wheel; and devices that permit said stem being turned, half-way around, and then arrested.

8. The combination, in a lock, of the toothed wheel M, a series of gated tumblers driven by said wheel; a tubular guide R projecting from the lock-case and having a chamber *r* at its inner end, and a pair of shoulders *t*, *t'*, and longitudinal slots T, T', at its outer end; a reciprocating push-stem P, traversing said guide; and furnished with a pawl N, knob *p*, and pin *p'*; and a spring S, coiled around said guide and serving to protrude said push-stem.

9. The combination, in a lock, of the reciprocating push-stem P, having at its inner end a head O provided with a diametrical groove *o*; a pawl N pivoted within said groove; and a plug V, coupled to said pawl and adapted to play back and forth within an axial bore of said stem.

10. The combination, in a lock, of the switch F, fastened to a shaft *f*; the disk E, secured to the inner end of said shaft, and having a pin *e*, and semiannular flange *e'*; the plate-spring *f'*, bearing upon said flange; and a stop *a*, for arresting the turning of said disk.

570,088. VENEER-DISH MACHINE. AIMELIE W. FERRER, Memphis, Tenn., assignor to William M. Van Nortwick and Theodore R. Troendle, Batavia, Ill. Filed May 25, 1895. Serial No. 550,647. (No model.)



Claim.—1. In a machine of the class described, a dish-forming mechanism comprising a recessed die and a plunger-die, said plunger-die being provided with vertical slots in its substance and bent arms projected into said slots and adapted to strip the dish from the die as the latter recedes with the finished dish, substantially as described.

2. In a machine of the class described, the combination with a blank cutting and forming mechanism, of stapling mechanism having reciprocating plungers and gearing for reciprocating said plungers comprising pitmen, toothed sleeves slidably mounted on said pitmen, a rack on the plunger and a gear interposed between the toothed sleeve and the rack, said sleeve being spring-supported, substantially as described.

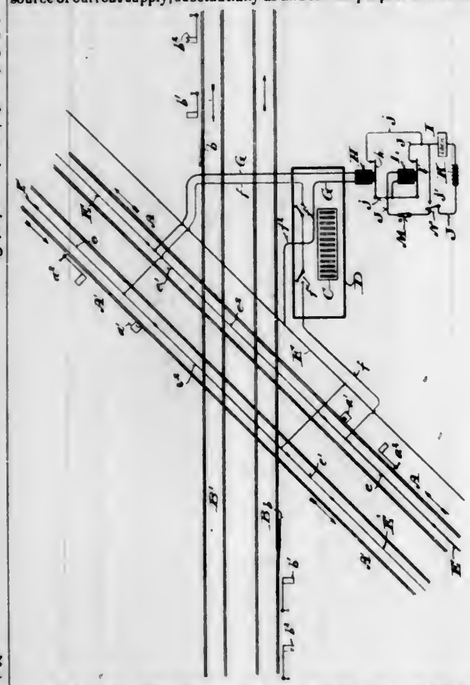
3. In a machine of the class described, the combination with a blank cutting and forming mechanism, of stapling mechanism having reciprocating plungers and gearing for reciprocating said plungers comprising a pitman for each plunger, a toothed sleeve slidably mounted on said pitman, a rack on the plunger and a gear interposed between the toothed sleeve and the rack, said sleeve being spring-supported and said gear having tooth-sections of different radii, substantially as and for the purposes described.

4. In a machine of the class described, the combination with blank-cutting and dish-forming mechanism, of a stapling mechanism embodying reciprocating plungers, pitmen and interposed gearing for reciprocating said plungers, cams for imparting movement to said pitmen, and a staple-wire-feeding mechanism comprising a pivoted lever operated by one of the pitmen-cams, a pawl actuated by said lever and wire-feeding mechanism intermittently actuated by the pawl, substantially as described.

570,089. SAFETY APPARATUS FOR RAILWAY-CROSSINGS. GEORGE GIBBS, Milwaukee, Wis. Filed Dec. 6, 1895. Serial No. 571,212. (No model.)

Claim.—1. In safety apparatus for railway-crossings, the combination with an electric line, of a manually-operated safety device for controlling the passage of cars thereon, a locking device for holding said safety device in a given position, a magnet controlling said locking device, an insulated section of trolley-conductor, and a conductor connecting said section through the winding of said magnet with the source of current supply, substantially as and for the purposes set forth.

2. In safety apparatus for railway-crossings, the combination with an electric line, of a manually-operated safety device for controlling the passage of cars thereon, a local circuit including a locking device for holding said safety device in a given position, a magnet controlling said local circuit, an insulated section of trolley-conductor electrically connected through the winding of said magnet with the source of current supply, substantially as and for the purposes set forth.



3. In safety apparatus for railway-crossings, the combination with an electric line, of a manually-operated safety device for controlling the passage of cars thereon, an automatic locking device for holding said safety device in a given position, a local circuit adapted to disengage said locking device and including the winding of a magnet and a contact-arm operated thereby, a relay in a branch tapping said local circuit on opposite sides of said magnet, an insulated section of trolley-conductor connected through the winding of the relay-magnet with the source of current supply, and means of breaking and closing said local circuit having operating connections with a safety device of the electric line, substantially as and for the purposes set forth.

4. In safety apparatus for railway-crossings, the combination with interlocking safety devices for the intersecting lines, of a trolley-conductor having an insulated releasing-section, an automatic locking device for holding said safety devices in a given position, a local circuit for operating said locking device, a relay controlling said circuit, a switch connected with one of said interlocking safety devices for opening and closing said local circuit independently of the relay, and a branch constantly connecting the insulated section of trolley-conductor through the winding of the relay-magnet with the source of current supply, substantially as and for the purposes set forth.

5. In safety apparatus for railway-crossings, the combination with interlocking safety devices for the intersecting lines, of a trolley-conductor having an insulated section, an automatic locking device for holding said safety devices in a given position, a local circuit for operating said locking device, a relay controlling said circuit, a branch conductor connecting said insulated section through the winding of the relay-magnet with the source of current supply, a switch connected with one of said interlocking safety devices for opening and closing said local circuit independently of said relay, and a manually-operated emergency-switch in said local circuit for short-circuiting said locking device and the source of current, substantially as and for the purposes set forth.

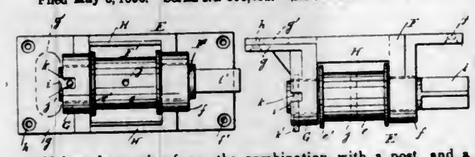
6. In safety apparatus for railway-crossings, the combination with interlocking safety devices for the intersecting lines, of a trolley-conductor having an insulated section, an automatic locking device for holding said safety devices in a given position, a local circuit for operating said locking device, including the winding of a magnet and

an armature-lever or contact-arm operated thereby, a relay in a branch tapping said local circuit on opposite sides of said magnet, a branch conductor connecting said insulated section through the winding of the relay-magnet with the source of current supply, a switch connected with one of the interlocking safety devices for breaking and closing said local circuit, and an emergency-switch in said local circuit adapted to short circuit said locking device and the source of current, and to cut out said magnets, substantially as and for the purposes set forth.

7. In safety apparatus for railway-crossings, the combination of an interlocking machine, safety devices for the intersecting lines connected with levers of the interlocking machine and comprising an insulated section in the trolley-conductor of an electric line on the approaching side of the crossing, connected through a branch conductor with the source of current supply, a switch in said branch conductor, and a derailing device on the electric line connected with a lever of the interlocking machine, a signal on the electric line connected with another lever of the interlocking machine, an insulated releasing-section in the trolley-conductor in advance of the first-mentioned insulated section, an automatic locking device for holding said switch and derail lever in "clear" position, a local circuit for operating said locking device, a relay controlling said local circuit, a branch conductor connecting the releasing-section of the trolley-conductor through the winding of the relay-magnet with the source of current supply, and a switch for opening and closing said relay-circuit independently of said relay connected with and operated by the lever of the interlocking machine which controls the signal on the electric line, substantially as and for the purposes set forth.

8. In safety apparatus for railway-crossings, the combination of an interlocking machine, safety devices for the intersecting lines connected with levers of the interlocking machine and comprising an insulated section in the trolley-conductor of an electric line on the approaching side of the crossing, connected through a branch conductor with the source of current supply, a switch in said branch conductor, and a derailing device on the electric line connected with a lever of the interlocking machine, a signal on the electric line connected with another lever of the interlocking machine, an insulated releasing-section in the trolley-conductor in advance of the first-mentioned insulated section, an automatic locking device for holding said switch and derail lever in "clear" position, a local circuit for operating said locking device, including the winding of a magnet, and a contact-arm actuated thereby, a relay in a branch of said local circuit, a branch conductor connecting the releasing-section of the trolley-conductor through the winding of the relay-magnet with the source of current supply, and a switch for opening and closing said relay-circuit independently of said relay connected with and operated by the lever of the interlocking machine which controls the signal on the electric line, substantially as and for the purposes set forth.

570,090. WIRE FENCE. BRINCKLE H. HALEY, West Chester, Pa. Filed May 8, 1896. Serial No. 590,732. (No model.)



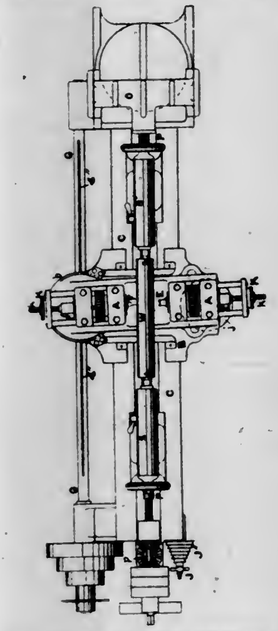
Claim.—In a wire fence, the combination, with a post, and a fence-wire, of a wire-tightener comprising a bracket provided with a lug *f* and side pieces, a lug G having a flange abutting against the said side pieces and a projection fitting into a hole in the bracket, said bracket and lug being secured to the post, a barrel journaled in the said lugs *f* and G, and means for securing the said barrel to the bracket, substantially as set forth.

570,091. SLOT-DRILLING MACHINE. JOHN C. HARRISON, Bowness, England. Filed Feb. 4, 1896. Serial No. 578,036. (No model.)

Claim.—1. In a slot-drilling machine the combination with a horizontal bed of a sliding saddle B resting thereon an oscillating drill-head pivoted to the sliding saddle, two drill-spindles E' and F' carried in journals in the drill-head and two drills E and F set opposite each other and operating on different sides of the work, substantially as described.

2. A drill-head for a slot-drilling machine comprising a sliding saddle B capable of moving to and fro on a horizontal bed and an oscillating head A carrying two drill-spindles placed opposite to each other and operating upon different sides of the work substantially as described.

3. In a slot-drilling machine the oscillating drilling-head A pivoted upon a sliding saddle and provided with two drill-spindles E' and F' the sliding saddle B upon which the drilling-head is pivoted and capable of sliding to and fro on a horizontal bed in combination with the longitudinal driving-shaft G and gear-wheels *g'* *e*, and *f* by which the drills are operated and the longitudinal shaft J' worm J worm-wheel *j* crank-shaft and crank H by which the oscillating motion is imparted to the drilling-head A substantially as described.



4. In a slot-drilling machine the combination with the drilling-head A and the sliding saddle B of the connecting-screw P by which they are moved to and fro on the bed C the cross-head O attached to the end of the screw the rotating disk N and the crank-pin *n* which traverses a slot in the cross head and gives a reciprocating movement thereto substantially as described.

5. In a slot-drilling machine the combination with the drilling-head A the two drill-spindles E' and F' rotating therein provided with drills E and F of the cam L on the crank-shaft H the vertical reciprocating rod *l* moving up and down in a hole in the casting the tappet *l'* on the tappet-shaft M with which the upper end of the rod *l* engages the tappet-shaft M projecting through both ends of the drill-head the levers *m* on the ends of the tappet-shaft the connecting-rods *m'* levers *m''* and pawls *k'* which actuate the ratchet-wheels K on the ends of the screws *k* and the right and left hand screws *k* connected to the drill-spindles E' and F' substantially as described.

6. In a slot-drilling machine the combination with the drilling-head A sliding saddle B and connecting-screw P of the cross-head O attached to one end of the screw the crank-disk N an adjustable crank-pin *n* traversing a slot in the cross-head the shaft J' the worm R thereon the worm wheel *r* connected to the crank and the removable pin *r'* passing through the disk of the crank and the worm-wheel *r* substantially as described.

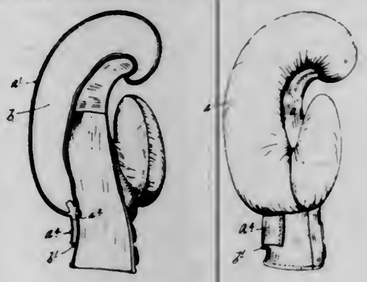
7. In a slot-drilling machine the combination with the drilling-head A the reciprocating saddle B and the connecting-screw P of the strap-driven shaft *p* projecting into the interior of the screw strap-pulleys thereon and bevel-gearing by which the screw may be rotated in either direction substantially as described.

8. In a slot-drilling machine the combination with the drilling-head A of the connecting-screw P the cross-head O attached to one end of the screw the crank-disk N and crank-pin *n* traversing a slot in the cross-head and at the other end of the screw the strap-driven shaft *p* over the end of which the screw slides whereby a short or long traverse may be given to the drill head substantially as described.

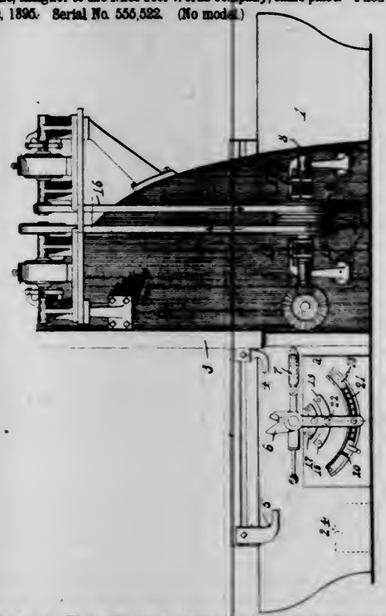
570,092. BOXING-GLOVE. FRANK A. HARVEY, Minneapolis, Minn. Filed May 22, 1896. Serial No. 592,554. (No model.)

Claim.—The combination with the glove proper, constructed with the cushion-back *a'*, cooperating as a bladder-cover, provided with the mouth-slit a^2 opening into the interior of the glove, the keeper a^4, formed on the back of the same, and the nipple-passage a^3 opening

outward of said keeper a^4, of the bladder b having the nipple b' and the check-valve b^3, substantially as and for the purpose set forth.



570,093. METAL-PLANING MACHINE. HENRY HESS, Hamilton, Ohio, assignor to the Niles Tool Works Company, same place. Filed July 10, 1895. Serial No. 555,522. (No model.)



Claim.— 1. The combination, substantially as set forth, of a driving mechanism adapted to impart motion at a minimum speed or at a maximum speed or at various selective intermediate speeds, a movable controlling device, as a tumbler, controlling by its position the speed of motion imparted by said driving mechanism, and a reciprocating machine part driven by said driving mechanism and adapted to engage said controlling device and move it first to a position corresponding with minimum speed of impartation, then to a position corresponding with a greater speed of impartation and eventually to a position corresponding with a predetermined one of the intermediate speeds.

2. The combination, substantially as set forth, of a motor, a reciprocating part to be moved in one direction thereby, connections between said motor and said reciprocating part to effect the transmission, means for initiating and gradually accelerating the speed of said motor, and a movable part, as a tumbler, controlling said means and moved by said reciprocating part.

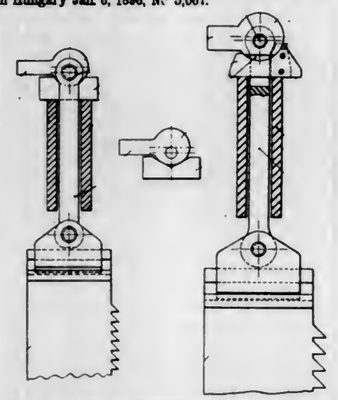
3. The combination, substantially as set forth, of a reciprocating machine part, a pair of motors to move said part in its respective directions of motion, a pair of clutches between said motors and said reciprocating part, a movable piece, as a tumbler, arranged to be moved by said reciprocating part, and connections between said movable piece and said motors and clutches for causing the movement of said reciprocating part to effect the throwing of the clutches and the control of the speed of the motors.

4. The combination, substantially as set forth, of a reciprocating machine part, a reversing-tumbler arranged to be moved thereby, a pair of electric motors, a pair of electromagnetic clutches connecting said motors with said reciprocating part, and electrical contact-points and connections controlled by said tumbler and serving to throw the clutches and regulate the speed of the motors.

5. The combination, substantially as set forth, of an electric motor, contact-points and resistances in series therewith, a movable piece in the motor-circuit and adapted to make contact with said contact-points selectively, and a movable suppresser adapted to make contact with a selected one of said contact-points and said movable piece and suppress such of said contact-points as are in the series beyond the selected one.

6. The combination, substantially as set forth, of a motor adapted to run at various selective speeds, a movable piece for controlling by its position the speed of said motor, and a reciprocating machine part driven by said motor and adapted to engage said controlling-piece and move it progressively to positions corresponding with increased motor speeds.

570,094. SAW-HANGING. JOHANNES HEYN, Stettin, Germany. Filed Jan. 2, 1896. Serial No. 574,018. (No model.) Patented in Germany May 1, 1894, No. 83,634; in Austria Nov. 30, 1895, No. 45/4,560, and in Hungary Jan. 6, 1896, No. 5,067.



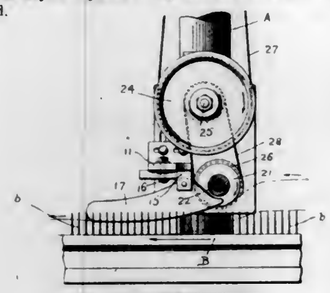
Claim.—1. In a saw, the combination with the tang of the blade, of a rotatable disk attached eccentrically to said tang, and adapted to put said blade under tension; a bearing-block adapted to hold said disk, and shaped so as to support the latter in two lines situated on opposite sides with regard to the line of connection of the said disk and tang, said bearing-block being itself supported by suitable parts of the frame, and being adapted to be displaced upon said parts in the plane of the said disk, and rectangularly to the direction of motion of the said tang, for the purpose as described.

2. In a saw, the combination with the tang of the blade, of a rotatable disk attached eccentrically to said tang, and having a segment cut off; a bearing-block adapted to hold said disk, and shaped so as to support the latter at least in two lines situated on opposite sides with regard to the line of connection of the said disk and tang, said bearing-block being itself supported by suitable parts of the frame, and being adapted to be displaced upon said parts in the plane of the said disk, and rectangularly to the direction of motion of the said tang, for the purpose as described.

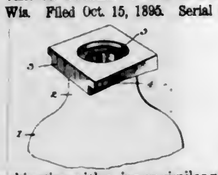
3. In a saw, the combination with the tang of the blade, of a rotatable disk attached eccentrically to said tang, and adapted to put said blade under tension; a bearing-block adapted to support said disk in at least two lines situated on opposite sides with regard to the line of connection of the said tang and disk; guide-pieces for the latter fixed to said bearing-block, the latter being itself supported by a suitable part of the frame, and being adapted to be displaced upon said part in the plane of the said disk, and rectangularly to the direction of motion of the said tang, for the purpose as described.

570,095. COMB-DABBING MECHANISM. THOMAS W. HICKEY, Worcester, Mass., assignor to William F. Hogg, Henry P. Happoldt, and James E. Cunningham, same place. Filed May 4, 1896. Serial No. 590,070. (No model.)

Claim.—In a wool-combing machine, the combination of an upright or post A, a base-plate 10 carried by said upright, a grooved roller 21 journaled on the base-plate, means for driving said grooved roller, a longitudinally-slotted bracket 11, independently-adjustable supporting-pieces 14 and 15 carried by said bracket, and guide wings or fingers mounted in said supporting-pieces in position to coöperate with the needles of the outer and inner rotating rings or "circles," the bracket 11 being adjustably connected to the base-plate 10 so that the depth to which the guiding rings or fingers extend down between the needles may be adjusted or regulated as desired, substantially as described.

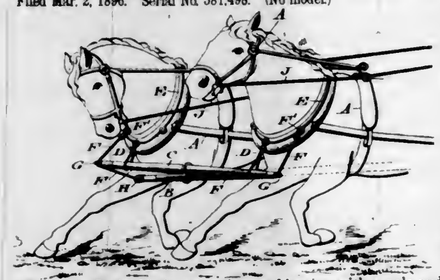


570,096. JAR OR BOTTLE. HIRAM A. HICOK and MARY M. HICOK, Viroqua, Wis. Filed Oct. 15, 1895. Serial No. 565,778. (No model.)



Claim.—The combination with a jar or similar vessel, the neck of which in its inner side is formed with a circular recess with a rounded or curved shoulder, and said neck formed with a rectangular head the sides of which project beyond the neck and formed with inclined rabbets, of the cylindrical stopper reduced at its inner end and formed with a curved or rounded peripheral shoulder and having a rectangular top and the bail consisting of the metal plate having two of its opposite sides bent downwardly and inwardly forming an inclined flange, and the circular washer, substantially as described.

570,097. REIN-GUARD. CHARLES JAKSON, Philadelphia, Pa. Filed Mar. 2, 1896. Serial No. 581,498. (No model.)



Claim.—1. In double harness, the combination with a pole and breast-bar of the cord or chain F, which passes from the harness through the side ends of said bar, and angularly from the latter, through the front end of said pole, and the supporting-straps D, which extend from the harness to said bar within the side portions of said cord or chain, substantially as described.

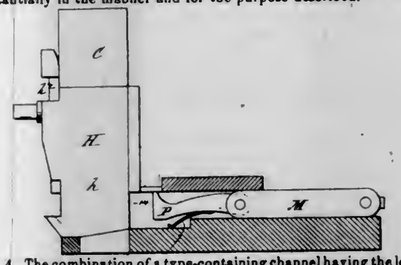
2. In double harness, a pole with an eye on its front and a breast-bar with eyes on its sides, the eye of the pole being set forward of the eyes of the bar, in combination with a rope or chain which is provided with harness-attaching devices and extends forwardly from the harness through the eyes of the said bar, and angularly from the latter through the eye of the pole, substantially as described.

570,098. TYPE-SETTING APPLIANCE. LOUIS K. JOHNSON and ABBOT A. LOW, Brooklyn, N. Y., assignors to The Alden Type Machine Company, New York, N. Y. Filed Mar. 11, 1896. Serial No. 582,713. (No model.)

Claim.—1. The combination with a type-channel and type-support of a pusher adjustable with relation to the number of types to be removed from the channel, substantially in the manner and for the purpose described.

2. The combination with a type channel and holder, and with a type-supporting platform, of a pusher which adjusts itself automatically to the number of types to be used in the channel, substantially in the manner and for the purpose described.

3. The combination of a type-containing channel, a channel-holder, a type-supporting platform, an upper guard adjustable with relation to the said type-supporting platform for the purpose of controlling the number of types to be removed from the channel, and an automatically-adjustable pusher controlled by said adjustable guard, substantially in the manner and for the purpose described.

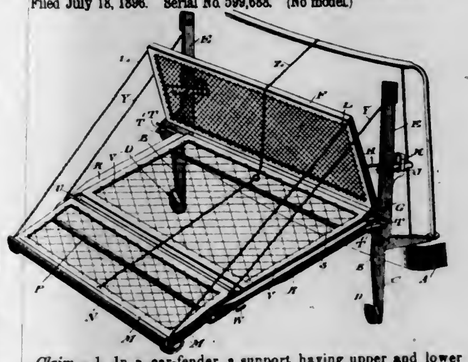


4. The combination of a type-containing channel having the lower end of its spine cut away, a channel-holder, an adjustable guard on said channel-holder having a lateral projection into the slot in the spine of the channel for the purpose of guiding the automatically-adjustable pusher accurately to the heels of the types, said automatically-adjustable pusher, and the type-supporting platform, the whole arranged and operating substantially in the manner and for the purpose described.

5. The combination with the type-channel, channel-holder, type-platform and automatically-adjustable pusher of an adjustable guard upon the holder having a horizontal extension into the channel in one direction and a horizontal extension in the opposite direction for controlling the automatically-adjustable pusher, substantially in the manner and for the purpose described.

6. The combination with the type-containing channel, channel-holder, type-platform, an adjustable gage for regulating the removal of the type by means of a horizontal surface, of the pivoted pusher held in contact with said adjustable gage by means of spring-pressure, substantially in the manner and for the purpose described.

570,099. CAR-FENDER. HENRY LOTZKELL, Philadelphia, Pa. Filed July 18, 1896. Serial No. 599,688. (No model.)



Claim.—1. In a car-fender, a support having upper and lower cross rods, a plurality of frames pivoted together, the forward frame being journaled on the lower cross-rod and the rear frame being guided on the upper cross-rod, which latter passes through slots therein, in combination with means for limiting the movement of said frames, substantially as described.

2. A car-fender consisting of a support, provided with means for detachably connecting it to a car, and having upper and lower cross-rods in combination with a plurality of frames pivotally mounted on said support, one of said pivoted frames having a buffer and provided with projecting stops adapted to abut against the sides of said first-mentioned frame, and the other pivoted frame having slots in its sides, through which passes the upper cross-bar of said arms, substantially as described.

3. In a car-fender, a set of hangers having a plurality of bearings, a support adapted to be mounted in said bearings, and consisting of side arms and upper and lower cross-rods, pins on said arms adapted to engage bearings on said hangers, and a plurality of movable frames, the forward one of the latter being journaled upon the lower cross-rod, and in pivoted connection with the rearward frames in combination with means for limiting the movement of the latter, substantially as described.

4. In a car-fender, hangers each having hooks on their lower ends and uprights attached thereto, a support having pins with bearings on said hangers, braces connected with said support and said hangers, and a plurality of frames pivotally mounted on said supports, one of said frames having slots in its sides through which a cross-rod of said frame passes, said parts being combined substantially as described.

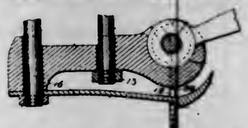
5. In a car-fender, the frames M and V, the guard F, the arms R with the slots X in their rear portion and provided with cross-rods, by means of which said frames M and V are supported and their movement limited, said guard F being pivotally supported and connections intermediate of said guard and frames, substantially as described.

6. In a car-fender, the guard F, the hangers B on which said guard is pivotally supported, the rack H by means of which the forward movement of said guard is limited, the side arms R having the cross-rods P and S, the frame M pivotally attached to said frame V, and having slots therein, through which the cross-rod S passes, and connections intermediate of said frames and guard, substantially as described

7. A car-fender consisting of a hanger with an upward extension, a guard-frame journaled in said hanger and having pivoted racks with teeth engaging catches on said extension, side arms having connecting cross-bars at front and rear, said side arms being slotted and journaled in said hanger, a frame provided with a buffer and mounted on the front connecting cross-bar of said side arms, a frame pivoted to the rear end of said buffer-frame, flexible connections from said buffer-frame to said guard and flexible connections from said arms to said extension.

8. A plurality of oscillating frames pivoted together, in combination with a support therefor, consisting of side arms and cross-rods, one of said rods forming the axis for the front oscillating frame, and the other rod passing through slots in the rear frame, whereby the latter frame is permitted both to oscillate and slide, substantially as described.

570,100. COMBINED THILL-COUPLING AND ANTIRATTLER. PETER LUTTKER, St. Louis, Mo., assignor of one-half to Peter J. Netzer, same place. Filed Feb. 24, 1896. Serial No. 580,561. (No model.)



Claim.—1. In a thill-coupling, a suitable body portion adapted to be secured to the axle of the carriage, a cavity or socket formed along the upper surface of the front end of the same, lateral walls bounding said cavity, a recess formed in each wall, a shaft-iron having a looped base, a pin passing through said base and adapted to project at each end beyond the walls of the cavity, a swinging tongue depending from the projecting ends of the pin, a notch cut in the tongue, a spring locking-latch having one end secured to the body portion and having a forward tapering end properly curved to ride freely in the notch formed in the tongue, and a shoulder formed at the base of the tapering end of the latch for snapping over or engaging the notch cut in the tongue, substantially as set forth.

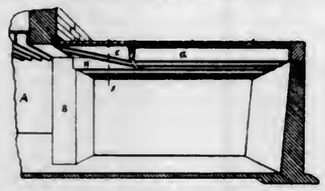
2. A shaft-coupling and anti-thill-rattler comprising a suitable body portion adapted to be secured to the axle of the carriage, a depending lug formed at the rear end thereof, a cavity or socket formed along the upper surface of the front end of the same, lateral walls bounding said cavity, a recess formed in each wall and inclined to the general axis of the body portion, a shaft-iron having a looped base, a pin passing through said base, said looped base being adapted to be inserted into the cavity of the body portion, the walls of the opening or passage formed in the looped base being slightly raised above the bases of the recesses formed in the lateral walls of the cavity of the body portion whereby the pin passing through the opening of the base of the shaft-iron is out of contact with the bases of said recesses, a swinging tongue having arms embracing the side walls of the cavity of the body portion suspended from the opposite ends of the pin, the arms being of sufficient depth to permit the tongue to swing freely about the forward end of the body portion, a notch formed or cut in the tongue on the line connecting the bases of the arms, a spring locking latch having one end secured to the depending lug and having a forward tapering end properly curved to ride freely in the notch cut in the tongue, and a shoulder formed at the base of the tapering end of the latch for snapping over or engaging the notch cut in the tongue whereby the several parts when assembled are securely locked and the looped end of the shaft-iron is drawn tightly into the base of the cavity of the body portion, substantially as set forth.

570,101. NUT-LOCK. OLOF A. NORLUND, Cedar Run, Pa., assignor of one-half to William B. Clark, same place. Filed Apr. 22, 1896. Serial No. 588,660. (No model.)



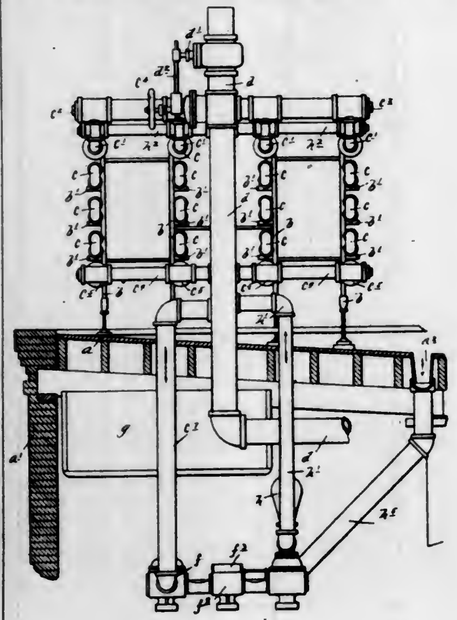
Claim.—The combination with a bolt of the ordinary construction, of a nut provided on its interior with a longitudinal groove terminating short of the inner face of the nut, tapering throughout its entire length and having its inner end curved toward the bolt, and a tapering key having a sharpened inner longitudinal edge arranged to engage and bite the threads of a bolt, whereby the nut is secured to the bolt without recessing or grooving the latter, said key having a reduced inner end adapted, when forced into the groove of the nut to be bent inward by the inner end of the same, and forced between two of the threads of the bolt to lock the key against accidental withdrawal, substantially as described.

570,102. ILLUMINATING-FLOOR. ERNEST L. RANSOME, Chicago, Ill. Filed Mar. 23, 1896. Serial No. 584,543. (No model.)



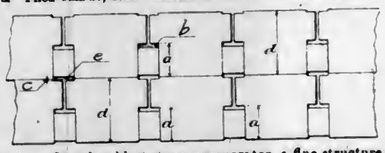
Claim.—In combination with the walls of an underground chamber, one of which also serves as the wall of a building and has an opening therethrough, of a sidewalk supported by said walls above the opening and having adjacent to it an illuminating portion not supported directly by the said walls, and cantalivers secured to the sidewalk and serving to support the illuminating portion thereof.

570,103. CONDENSER. GEORGE A. REICHARD, Minneapolis, Minn. Filed Oct. 6, 1894. Serial No. 525,075. (No model.)



Claim.—The combination with the exhaust-pipe d from the engine, of the steam-header c^2, receiving therefrom, the series of stacks of condensing-coils $c\ c'$, receiving from said header c^3, the return or discharge header c^4 receiving from said coils c, c', the air-pump exhausting from said coils through pipe f, and delivering the condensed water to the hot-well g, or other receptacle, through pipe f', the water-header A^3 receiving from pipe h', the slotted discharge pipe $h^3\ h^4$ leading from header A^3, directly over the stack of coils $c\ c'$, the water-pump, supplying water to said header A^3, and the drainage or collecting deck, under the stack of coils, and delivering to the inlet of the water-pump, all substantially as and for the purpose set forth.

570,104. HOT-BLAST STOVE. FRANK C. ROBERTS, Philadelphia, Pa. Filed Jan. 29, 1896. Serial No. 577,298. (No model.)



Claim.—In a hot-blast-stove regenerator, a flue structure composed of bricks provided with an offset or projection in each of their two ends extending across the breadth of the bricks and which offsets in their vertical direction are equal to less than one half the depth of the bricks and which offsets in their horizontal direction are equal to one-half or less than one-half the breadth of the bricks and which offsets have neither their upper nor lower surfaces in the same plane as respectively the upper and lower surfaces of the main body of the bricks.

570,105. GAME APPARATUS. THOMAS A. RYAN and ISAAC WHITNEY, Lowell, Mass., assignors to Charles F. Hatch, same place. Filed Sept. 13, 1895. Serial No. 562,411. (No model.)



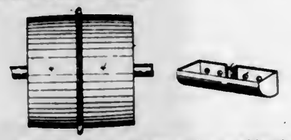
Claim.—1. The combination of the base, provided with pockets, the rear standard, having a transverse horizontal groove and having vertical grooves crossing said horizontal groove, the rods, having eyes arranged in said transverse groove, the loop, having legs arranged in said vertical grooves and passing through said eyes into said base, and the front standard, provided with a rest, as and for the purpose specified.

2. The combination of the base, provided with pockets, the rear standard, rods, pivoted to said rear standard, the front standard, having a removable head and having grooves to receive said rods, and a button, turning on said front standard, to retain said rods in said grooves, as and for the purpose specified.

3. The combination of the base, provided with pockets, the rear standard, rods, pivoted to said rear standard, the front standard, having a removable head and having grooves to receive said rods, and a button, turning on said front standard to retain said rods in said grooves, said removable head having a groove to receive said button when said head is in place on said front standard, as and for the purpose specified.

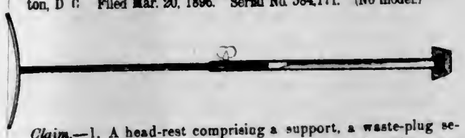
4. The combination of the base, provided with pockets, to receive balls, the rear standard, rods, pivoted to said rear standard, the front standard, having a removable head and having grooves to receive said rods, and a button, turning on said front standard, to retain said rods in said grooves, said head having ends, one of which is adapted to enter a notch with which said rear standard is provided, and the other end of which is adapted to be held down by a ball in one of said pockets, as and for the purpose specified.

570,106. CLAY-ELEVATOR. FRANK S. SLATTERY, Bradford, Pa., assignor of one-half to Lemuel W. Young, same place. Filed Nov. 22, 1895. Serial No. 569,843. (No model.)



Claim.—In a pulverized-clay elevator, the combination with an upper and a lower pulley, each provided on its periphery with an annular ridge, centrally located, of two belts passing around said pulleys, one on each side of said annular ridge, and elevator-buckets secured to said belts, each having a centrally-formed depression adapted to receive the ridge on the pulleys when said buckets pass over said pulleys, substantially as shown and described.

570,107. BARBER'S APPLIANCE. RICHARD B. SLEE, Washington, D. C. Filed Mar. 20, 1896. Serial No. 584,171. (No model.)



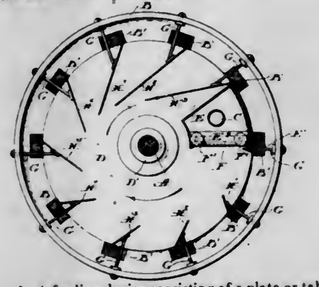
Claim.—1. A head-rest comprising a support, a waste-plug secured to the lower end thereof, and a head-rest secured to the upper end thereof.

2. A head-rest comprising an extensible support, a waste-plug secured to the lower end thereof and a head-rest secured to the upper end of same.

3. A head-rest comprising an extensible support, a flexible waste-plug secured to the lower end of same and a curved head-rest secured to the upper end of said support.

4. A head-rest comprising telescopic sections, means for locking the sections against independent movement, a yielding waste-plug secured around an enlarged head on one end of said standard and a curved rest on the other end of said standard.

570,108. MECHANISM FOR FEEDING GRANULATED SUBSTANCES. HENRY E. SNYDER, Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Filed Apr. 15, 1891. Renewed Aug. 23, 1894. Serial No. 521,131. (No model.)



Claim.—1. A feeding device consisting of a plate or table in combination with a device for spreading material upon it and a plurality of obliquely-set scrapers extending over the edge of the table, and reaching to different distances from the center of the table, the scrapers and table being movable the one relatively to the other, to scrape off a layer of material from the table and deliver it in a plurality of streams off the edge thereof.

2. A feeding device consisting of a plate or table in combination with a device for spreading material upon it and a series of obliquely-set scrapers extending over the edge of the table and each extending farther over its surface than the one in front of it, and the scrapers and table movable relatively to one another.

3. A feeding device consisting of a movable table D, in combination with a spreading device consisting of a stationary box E resting upon said table and having a gate or scraper F on one side, a feed-spout leading into said box, and a series of obliquely-set scrapers H' H^3, &c., extending over the edge of the table, all substantially as and for the purpose specified.

4. A feeding device consisting of a circular rotating table in combination with a scraper F arranged to spread material on its face in a uniform layer as the table revolves, and a series of obliquely-set stationary scrapers arranged around the periphery of the table and each extending farther toward the center of the table than the one preceding it.

5. The combination with a scale-pan and a spout leading into it, of a feeding device consisting of a movable table arranged with its edge over the mouth or hopper of the spout; a device for spreading material on its surface in a uniform layer; and a scraper extending obliquely over the edge of the table and over the mouth or hopper of the spout.

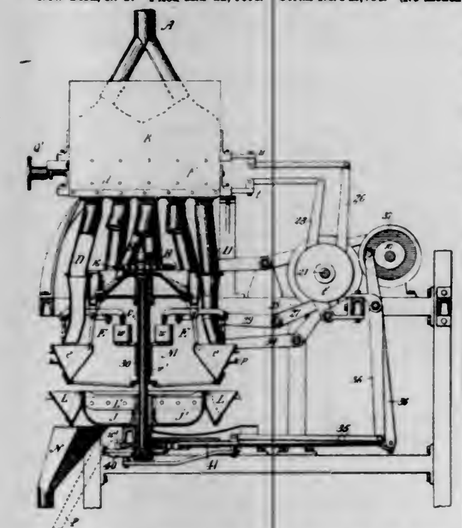
6. The combination with a scale-pan of a movable spout arranged to lead to the pan when in one position and to a point beyond the pan when the scale-beam is moved down; a hopper opening into said spout; a movable table the edge of which extends over said hopper; a device for spreading material on said table in a uniform layer; and

an obliquely-set scraper extending over the edge of said table and over the hopper, substantially as and for the purpose specified.

7. The combination with a series of scales, of pivoted spouts actuated by the movement of the beams to deliver into or exterior to the scale-pans, hoppers communicating with the respective spouts; a movable table the edge of which extends over the series of hoppers; a device for spreading material in a uniform layer on said table; and a series of obliquely-set scrapers extending over the hoppers and over the edge of the table, substantially as and for the purpose specified.

570,109. FEED MECHANISM FOR WEIGHING-MACHINES.

HENRY E. SNYDER, Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Filed Mar 22, 1895. Serial No. 542,761. (No model.)



Claim.—1. In a weighing-machine, the combination with its scale pan and beam of a measuring apparatus adapted to measure a given bulk of material and dump it into the scale to be weighed, comprising a measuring-box having an open top, a supply-chute for directing material into said box, terminating near to, and of less area than, the top of the box, so that material entering the box by gravity from said chute may assume its natural slope in the box without running over, a slide working beneath said chute for cutting off the pile of material, a movable bottom for the box adapted to open and dump its contents, a delivery-chute leading thence to the scale-pan, and driving mechanism for operating said slide and bottom, adapted to first close said bottom, then open said slide and leave it open long enough for the material to flow from the chute into the box and to fill the latter and cease flowing, standing in a pile under said chute, then to close said slide to cut off said pile, and finally to open said bottom.

2. In a weighing-machine having a plurality of scales, the combination of a measuring apparatus comprising a reservoir B for the material to be weighed, formed with a series of supply-chutes *a a*, slides *c c* working beneath said chutes for cutting off the supply, stationary measuring-boxes C C arranged beneath said chutes, having open tops of larger area than the bottoms of the chutes, bottom slides *b b* movable to close or open the bottoms of said boxes, a casing F inclosing said boxes and slides, having bottom openings under the respective boxes, and chutes D D leading from said bottom openings to the respective scale-pans.

3. In a weighing-machine of the described class, a supplemental feed mechanism consisting of a feed-box comprising an outer wall which is stationary with relation to the scales, and a relatively revolving bottom plate projecting beneath it with means for directing the material outwardly over said plate toward said wall, said wall having a series of openings, a series of scraping-blades projecting diagonally through said openings to remove material from the portion of the plate adjacent to said wall, and direct it through the openings and over the edge of the plate, and a series of chutes arranged to conduct the streams of material from said blades to the respective scales.

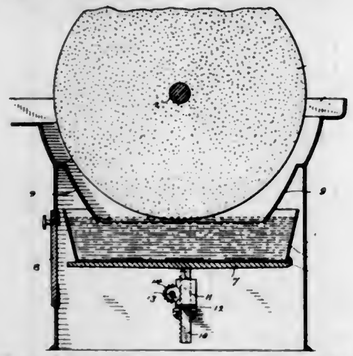
4. In a weighing-machine of the described class, a supplemental feed mechanism consisting of a feed-box H comprising a stationary wall *h*, having bottom openings *i i*, and a revolving feed-plate I coned to direct the material outwardly toward said wall and projecting beneath said wall, a series of scraping-blades K K projecting diagonally through said openings to direct material through the openings and over the edge of the plate, and a series of chutes *j j* arranged to conduct the streams of material to the respective scales.

5. In a weighing-machine of the described class, a supplemental feed mechanism consisting of a feed-box H comprising a stationary wall *h* having bottom openings *i i*, and a revolving feed-plate I, with means for directing the material outwardly toward said wall, a series of scraping-blades K K projecting diagonally through said openings, fastening devices for said blades constructed to permit adjustment of the blades in direction parallel with said wall *h*, so as to increase or reduce the effective area of the openings, and a series of chutes arranged to conduct the streams of material from said blades to the respective scales.

6. In a weighing-machine of the described class comprising a circularly-arranged series of scales E E and mechanisms for feeding material to the scale-pans, the combination therewith of means for dumping the scale-pans at intervals, and means for preventing any sudden upward movement of the scale-pans on being discharged of their load, the latter means consisting of a vertically-movable lifter M arranged beneath the counterweights *w* of the scales, mounted upon a vertically-movable slide, with a cam and intervening connections adapted to raise the lifter against the counterweights immediately before the dumping of the scale-pans, and to lower it slowly after the dumping of the pans.

570,110. GRINDING-MACHINE.

JOHN W. TERRY, Bridgeport, Conn., assignor, by mesne assignments, to Virgil H. Hewes, same place. Filed Jan. 8, 1896. Serial No. 574,694. (No model.)



Claim.—1. In a grinding-machine the combination with a trough and a table by which it is supported, of a vertical rack rigidly connected to the under side of the table and by which said table is carried, a guide in which the rack may slide freely, shaft 13 carrying a pinion which engages the rack and a ratchet-wheel 15 and a lever mounted on said shaft and carrying a pawl engaging the ratchet-wheel by which the trough may be raised or lowered.

2. The combination with the trough, the table, a rack 10 by which the table is carried and a guide in which said rack may slide, of a shaft 13 carrying a pinion which engages said rack and a ratchet-wheel, a lever mounted on the shaft and carrying a pawl engaging the ratchet-wheel and a rack 19 by which the lever and with it the shaft, rack 10 and the trough may be locked at any desired adjustment.

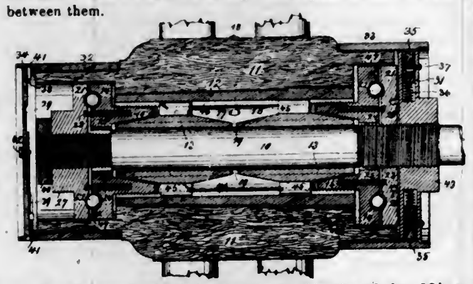
3. The combination with the grinding-wheel, the casing having a door 8, the trough and a table having ways in which the trough may slide, of a rack by which the table is carried and means for raising and lowering said rack and with it the table and trough and means for locking said parts at any desired adjustment so that more or less of the periphery of the grinding-wheel may be immersed in water and when at the lowered position the trough may be moved outward in the ways and through the door for the purpose of filling.

4. The combination with the grinding-wheel, the casing, the vertically-movable table and the trough, of a guard 9 secured to the casing and inclosing the sides and front and rear portions of the periphery of the wheel and extending below the bottom of the said wheel so that when the edge of the latter is immersed in the water waste of water within the casing is wholly prevented.

570,111. AXLE-BEARING.

ANDREW J. THEIRING, Cincinnati, Ohio. Filed Mar. 2, 1896. Serial No. 581,427. (No model.)

Claim.—1. In an improved axle-bearing, the combination of a box 12 having a straight bore, a sectional sleeve bored to receive the axle and having tapering ends, collars engaging with the interior of box 12 and the tapering ends of sleeve 13, thereby sustaining the latter in position within box 12 and disks 21 adjustably mounted on the axle at each end of the axle-bearing, confining box 12 with the sleeve between them.



2. In an improved axle-bearing, the combination of a box 12 having a straight bore, a sectional sleeve bored to receive the axle and having tapering ends, collars engaging with the interior of box 12 and the tapering ends of sleeve 13, thereby sustaining the latter in position within box 12, projections on one, engaging with depressions in the other whereby rotation of sleeve 13 within box 12 is prevented and disks 21 adjustably mounted on the axle at each end of the axle-bearing, confining box 12 with the sleeve between them.

3. In an improved axle-bearing, the combination of a box 12 having a straight bore, a sectional sleeve bored to receive the axle, having tapering ends, and longitudinal grooves 44 in its outside, collars adjustably secured within the interior of box 12 and surrounding the tapering ends of sleeve 13, thereby sustaining the latter in position within box 12 and permitting adjustment of its diameter.

4. In an improved axle-bearing, the combination of a box 12 having a straight bore, a sectional sleeve bored to receive the axle and having tapering ends, collars engaging with the interior of box 12 and the tapering ends of sleeve 13, thereby sustaining the latter in position within box 12, said box having grooves 46 and lugs 45 on sleeve 13 which reach into grooves 46 for the reasons specified.

5. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, collars engaging with the interior of box 12 and the tapering ends of sleeve 13 to hold the latter within box 12, the diameter of the former being less than the bore of the latter, thereby forming an oil-chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space which forms the oil-chamber and there being openings and passages in box 12 and sleeve 13 to admit the oil to the oil-chamber and to the axle-bearing.

6. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15, each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil-chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space forming the oil-chamber and packing between the opposing disks to prevent the escape of oil.

7. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15 each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil-chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space forming the oil-chamber and balls between the opposing disks to limit the contact and reduce friction between them.

8. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15 each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil-chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space forming the oil-chamber, packing and balls between the opposing surfaces of the disks, the first to prevent the escape of oil and the latter to limit the contact between the disks and reduce friction between them.

9 In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15 each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space forming the oil-chamber, packing and balls between the opposing surfaces of the disks, the first to prevent the escape of oil and the latter to limit the contact between the disks to reduce friction thereat and dust-caps to inclose the axle bearing.

10. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15, each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil-chamber 16 between the two, disks 21 at the ends of the axle-bearing to close endwise the space forming the oil-chamber, there being a groove in each disk 14, packing-rings 23 therein, a ring 24 by which this packing is supported and backed and springs 25 to hold the packing against the opposite disk.

11. In an improved axle-bearing, the combination of a box 12, a sectional sleeve bored to receive the axle and having tapering ends, disks 14 with collars 15, each collar having a threaded exterior and a smooth interior, the exterior engaging the interior of box 12 and the interior engaging the tapering ends of sleeve 13, thereby holding the latter within box 12, the outside diameter of sleeve 13 being less than the bore of box 12 to form an oil-chamber 16 between the two, disks 21, one at each end of the axle bearing and outside of disks 14, said disks 21 being adjustably mounted upon the axle, confining between them and determining the position of the hub and antifriction devices between the opposing surfaces of opposite disks.

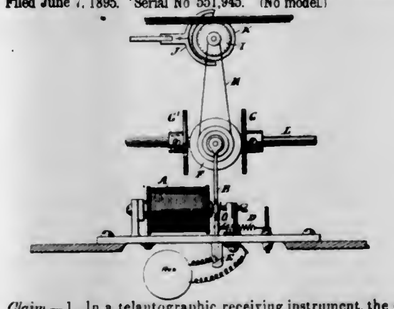
12. In an improved axle-bearing, the combination of a hub having disks 14 secured to its ends and rotating with it, disks 21 mounted on the axle against the outside of disks 14 and stationary with reference to the latter, balls between the opposing surfaces of opposite disks, being contained in a groove in the side of one of the opposite disks, such groove being of a depth to receive the balls beyond their halves whereby they are prevented from dropping out when the disks are separated, said grooves being further enlarged at one point to permit insertion of the balls one by one and a plate 47 whereby such enlarged space is closed to hold the balls in place.

13. In an improved axle-bearing, the combination with the hub and hub-bands, of lubricating means and a dust-cap 31 to close the space within the hub-band, said cap having its outside shaped to form a nut to permit its manipulation, packing in sections, springs 36 back of the latter to hold the packing out against the hub-band and screws 37 provided for the purpose described.

14. An improved axle-bearing, comprising the axle-journal having screw-threaded portions, a hub mounted on this journal, disks 14 secured to the hub ends, disks 21 mounted on the screw-threaded portions at the ends of the axle-journal and close against disks 14, dust-caps secured within the hub-bands of the hub, lock-nuts mounted on the screw-threaded portions of the axle to hold disks 21 to their position, dust-cap 31 being utilized to serve at the same time as such a lock-nut at one end of the hub.

570,112. TELAUTOGRAPH.

GEORGE S. TIFFANY, Highland Park, Ill., assignor to the Gray National Telautograph Company, Richmond, Va. Filed June 7, 1895. Serial No. 551,945. (No model.)



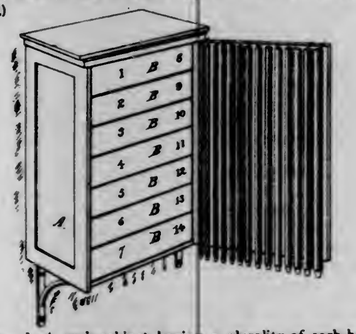
Claim.—1. In a telautographic receiving instrument, the combination of a friction-clutch for transmitting power from the motor-shaft to the receiving-pen, and a magnet for controlling the position of said friction-clutch to determine the direction of motion transmitted in accordance with the movement of the transmitting-pen; the parts of the clutch being in each of its positions held in contact by spring-pressure, substantially as described.

2. In a telautographic receiving instrument, the combination of a friction-clutch for communicating motion from the motor-shaft to the receiving-pen, a magnet for controlling the operation of said clutch in accordance with the direction of movement of the transmitting-pen, and a spring operating upon the magnet-lever through which the clutch is controlled to determine the pressure of the parts of the clutch in each of its positions, substantially as described.

3. In a telautographic receiving instrument, the combination of a friction-clutch for communicating motion from the motor-shaft to the receiving-pen, a magnet and its armature for operating said clutch, the armature-lever of said armature being free to move laterally in one direction at its pivoted end, and a spring applied to the armature-lever and exerting a pull thereon in a direction opposite to the direction in which the end of the lever is free to move, substantially as set forth.

4. The combination of a friction-clutch, the armature B carrying one member of the clutch having its outer end pivoted but free to move laterally under the pull of the magnet, magnet A, and the spring D exerting a pull on the armature in the direction opposite to that in which it is free to move for controlling the position of the armature, whereby the tension of the clutch in each of its positions is determined by the strength of the spring, substantially as set forth.

570,118. CORK-CABINET. GEORGE M. WILSON and HARRY J. NEELY, Wilbur, Wash. Filed Oct. 29, 1895. Serial No. 567,305. (No model.)

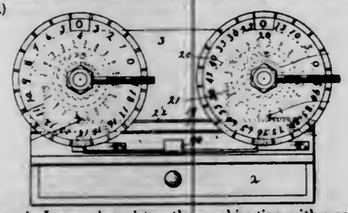


Claim.—1. A cork-cabinet having a plurality of cork-holding tubes secured to the inner face of its door with their lower ends projecting below the lower edge of the door, the said lower ends of the tubes being contracted to retain the smaller ends of the lowermost corks projecting therefrom, to permit them to be readily grasped and withdrawn, substantially as described.

2. The combination with a cabinet having a door for closing the same, of a plurality of cork-holding tubes secured to the inner face of the door, the said tubes having their lower ends crimped and projecting below the lower edge of the door, substantially as described.

3. A cork-cabinet, comprising a case provided with a plurality of drawers, a hinged door for closing the front of the case, and a plurality of slotted tubes for holding corks, said tubes being secured to the inner face of the door, and having their lower ends crimped and projecting below the lower end of the door, substantially as described.

570,114. CASH REGISTER AND INDICATOR. WILLIAM BASSETT, Kansas City, Mo. Filed May 31, 1895. Serial No. 551,072. (No model.)



Claim.—1. In a cash-register, the combination with a revoluble indicator, of means for retracting the said indicator to its starting-point after it has been revolved in the proper direction, a ratchet-wheel rotatable with the said indicator, a pawl adapted to engage the teeth of the ratchet-wheel, a push-rod adapted when depressed to disengage the pawl from the ratchet-teeth, a locking device adapted to engage the pawl when it is disengaged from the ratchet-teeth, and means by which the pawl is released from the locking device when the ratchet-wheel is properly rotated, substantially as described.

2. In a cash register, the combination with a revoluble indicator, of a ratchet-wheel rotatable with the said indicator, a pawl adapted to engage the ratchet-wheel, means for retracting the revoluble indicator to its starting-point after it has been rotated in one direction, means for holding the pawl disengaged from the ratchet-wheel, said holding means being released from the pawl when the indicator is retracted to its starting-point, a registering-wheel, a pawl-and-ratchet connection between the registering-wheel and the said ratchet-wheel, a second registering-wheel, and means by which the second registering-wheel is partially rotated after the first registering-wheel has been revolved a suitable distance, substantially as described.

3. In a cash-register, the combination with a revoluble indicator, of means for retracting the indicator to its starting-point after it has been revolved in the proper direction, a ratchet-wheel revoluble with the indicator, a pawl normally engaging the ratchet-wheel, means for temporarily disengaging the pawl from the ratchet-wheel, a locking device for holding the pawl thus disengaged but released therefrom upon the return of the ratchet-wheel to its starting-point, substantially as described.

4. In a cash-register, the combination with a revoluble indicator, of means for retracting the indicator to its starting-point after it has been revolved in the proper direction, a ratchet-wheel revoluble with the indicator, a pawl normally engaging the ratchet-wheel, a catch for holding the pawl when the pawl is disengaged from the ratchet-wheel, and means for releasing the pawl from the catch when the indicator has returned to its starting-point, substantially as described.

5. In a cash-register, the combination with a revoluble indicator, of means for retracting the indicator to its starting-point after it has been revolved in the proper direction, a ratchet-wheel revoluble with the indicator, a pawl normally engaging the ratchet-wheel, a cash-drawer, a locking device for holding the pawl disengaged from the ratchet-wheel when the drawer is opened but released therefrom upon the return of the indicator to its starting-point substantially as described.

6. In a cash-register, the combination with a revoluble indicator, of means for retracting the indicator to its starting-point after it has been revolved in the proper direction, a ratchet-wheel revoluble with the indicator, a pawl normally engaging the ratchet-wheel, a cash-drawer, a locking device for holding the drawer normally closed, and means for holding the pawl disengaged from the ratchet-wheel when the drawer is opened but released therefrom upon the return of the indicator to its starting-point, substantially as described.

570,115. PROCESS OF VAPOR-DYEING. VICTOR G. BLOEDE, Catonsville, Md. Filed Jan. 15, 1894. Serial No. 496,957. (No specimens.)

Claim.—1. The within-described process of dyeing or coloring fibers or fabrics consisting in subjecting the fibers or fabrics to the action of the vapors of volatile coloring-matters, or color-producing volatile compounds, instead of their application in aqueous solution.

2. The within-described process for bottoming, or preparing, fibers or fabrics for dyeing or coloring which consists in subjecting the fibers or fabrics to the action of the vapors of volatile coloring-matter, or color-producing volatile compounds, instead of their application in aqueous solution.

570,116. PROCESS OF VAPOR-DYEING. VICTOR G. BLOEDE, Catonsville, Md. Filed Jan. 15, 1894. Serial No. 496,958. (No specimens.)

Claim.—1. The process herein described for producing anilin-black on fibers or fabrics, which consists in first saturating the fiber with an oxidizing compound, then bringing the fibers or fabrics in contact with the vapors of anilin or its homologues, until the desired depth of color is developed.

2. The process herein described for producing anilin-black on fibers or fabrics, which consists in first saturating the fiber with an oxidizing compound, then bringing the fibers or fabrics in contact with the vapor of a volatile acid salt of anilin or its homologues until the desired depth of color is developed.

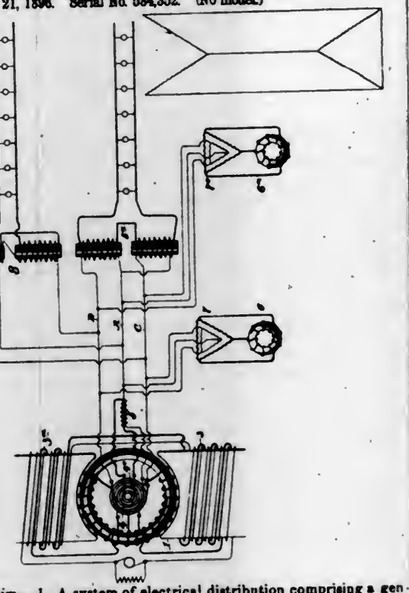
570,117. PROCESS OF DYEING ANILIN-BLACK. VICTOR G. BLOEDE, Catonsville, Md., assignor to the Victor G. Bloede Company of Baltimore City. Filed Nov. 22, 1892. Serial No. 452,844. (No specimens.)

Claim.—1. The process of producing anilin-black on fibers or fabrics, which consists in first saturating the fiber with a salt of anilin or its homologues, then without previous aging, bringing the fiber in contact with an oxidizer applied in such quantity that the fiber or fabric will not become supercharged with moisture until the color developed has become insoluble, substantially as set forth.

2. The process of producing anilin-black on fibers or fabrics consisting in first saturating the fiber with a salt of anilin or its homologues, then drying it, then without previous aging bringing the fiber in contact with an oxidizer applied in such quantity that the fiber or fabric will not become supercharged with moisture until the color developed has become insoluble, substantially as set forth.

3. The process of producing anilin-black on fibers or fabrics, which consists in first saturating the fiber with the salt of anilin or its homologues, combined in the usual manner with chlorates or metallic salts, then without previous aging bringing the fiber in contact with an oxidizer applied in such quantity that the fiber or fabric will not become supercharged with moisture until the color developed has become insoluble, substantially as set forth.

570,118. SYSTEM OF DISTRIBUTION FOR ALTERNATING CURRENTS. CHARLES S. BRADLEY, Avon, N. Y., assignor to the General Electric Company, of New York. Filed Apr. 3, 1895. Renewed Mar. 21, 1896. Serial No. 584,352. (No model.)



Claim.—1. A system of electrical distribution comprising a generator delivering a plurality of phasially-differing alternating currents, and a single-phase lamp-circuit supplied thereby through a transforming device provided with two magnetic circuits energized by two coils through which different current-phases are led and discharging in common into the lamp-circuit, the phases being reversely applied to the transformer-coils to bring the two electromotive forces operating on the lamp circuit closer in phase.

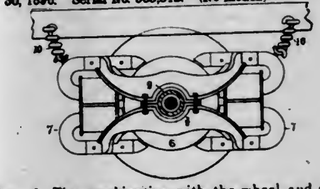
2. An alternating-current system comprising a generator provided with two coils or windings spaced one hundred and twenty degrees apart and connected in series relation and provided with three terminals connecting respectively with the junction and ends of the coils, whereby three electromotive forces equidistant in phase are delivered at the terminals, and three line-wires connecting with said terminals.

3. A system of distribution for alternating currents comprising a triphase generator, line-wires connected therewith, triphase alternating motors supplied thereby, a single-phase lighting-circuit, and a transforming device having a plurality of primary and secondary coils, the latter discharging in common into the lighting-circuit and the former to the several triphase supply-wires, the several coils being relatively reversed so as to bring the several electromotive forces in the secondaries closer in phase than the electromotive forces of the line-wires.

4. A system of distribution for alternating currents comprising a triphase generator having two generating-coils or groups of coils one hundred and twenty degrees apart and connected with three line-wires, triphase motors supplied from said line-wires, and a single-phase lighting-circuit inductively related through a transformer to both current-phases.

5. A system of distribution for alternating currents comprising a triphase generator having two generating-coils or groups of coils one hundred and twenty degrees apart and connected with three line-wires, triphase motors supplied from said line-wires, a single-phase lighting-circuit supplied by a transformer having its primary supplied with two currents one hundred and twenty degrees displaced in phase, and a compound coil on the generator supplied by the middle wire of the system.

570,119. ELECTRIC CAR-MOTOR. CHARLES S. BRADLEY, Avon, N. Y., assignor to the General Electric Company, of New York. Filed Mar. 30, 1896. Serial No. 585,312. (No model.)



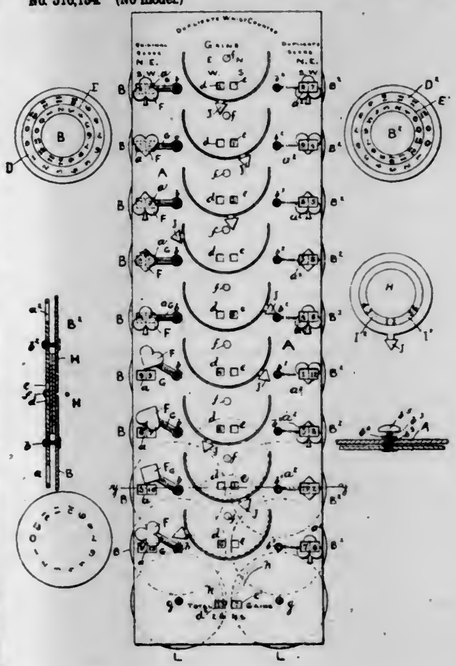
Claim.—1. The combination with the wheel and axle of a car-truck, of an electric motor mounted upon a sleeve surrounding the axle, said sleeve being supported by the car-wheels upon tangentially-arranged springs.

2. A car-motor consisting of an armature tending to produce direct rotation of the axle, and a multipolar field-magnet having its pole-pieces lying within substantially horizontal planes at the extremities of the vertical diameter of the armature, the armature being wound to develop a greater number of poles than are used in the field-magnet, the omitted poles of the field magnet being at the top and bottom of the armature.

3. A car-motor consisting of an armature tending to produce direct rotation of the axle, and a multipolar field-magnet having its pole-pieces less in number than the armature-poles and arranged at the sides of the armature, thereby dispensing with the vertical pole-pieces of the field-magnet and bringing the motor substantially within the vertical space occupied by its armature.

4. A car-motor comprising a multipolar armature tending to directly rotate the axle, and a multipolar field-magnet having its pole-pieces lying substantially within horizontal planes at the extremities of the vertical diameter of the armature, the space between adjacent pole-pieces at the top and bottom being at least twice as great as the space between adjacent pole-pieces at the sides.

570,120. GAME-COUNTER. EDWARD C. BULL, Edgewater, N. Y., assignor to Harcourt Bull, New York, N. Y. Filed May 5, 1894. Serial No. 510,134. (No model.)



Claim.—1. A game-counter consisting of a plate or board having therein four or more horizontal series of apertures, each series having four apertures each, combined with means carried by said plate or board for causing numbers to appear in or through said apertures, and designations consisting of words and letters at the top end of said plate or board to indicate that two apertures in each series are for scores made in play, and other designations, consisting of words and letters, likewise at the top end of said plate or board to indicate that the other two apertures in each series are for registering the difference between said scores, substantially as described.

2. A game-counter consisting of a plate or board having therein four or more horizontal series of apertures each series having four apertures, and means carried by said plate or board for causing figures to appear in or through said apertures, said means comprising separate indicators for each of two apertures in each series, each separate indicator showing figures behind or through each of said apertures respectively, and a single indicator for the other two apertures in each series, said single indicator being so arranged as to show figures behind or through either one or the other of said apertures but not behind or through both at the same time, substantially as described.

3. A game-counter comprising a plate or board having a column of apertures and a series of disks to appear through said apertures, said disks having two circular rows of oppositely-disposed figures, each row of figures being equal in value to indicate at once the number of tricks taken by each of two opposing sides respectively, substantially as set forth.

4. A game-counter comprising a plate or board having an aperture therein, an indicator carried behind said aperture and having figures thereon to appear in or through said aperture, said plate or board having also two other apertures in line or series with said first-mentioned aperture, and an indicator carried behind both of said two last-mentioned apertures and having figures thereon so arranged that each digit may appear in or through either of said two last-mentioned apertures but that when a digit appears in reading position in one of said last-mentioned apertures no digit to appears in the other of said last-mentioned apertures, substantially as described.

5. A game-counter comprising a plate or board having slots K, and two parallel columns of apertures *d*, *e*, and rotative disks to appear through said apertures, said disks having fingers or pointers to pass through the slots K, said disks also having figures arranged to appear one at a time through either of the openings *d* or *e*, substantially as described.

6. A game-counter comprising a plate or board having two parallel columns of apertures near opposite sides, rotative disks having figures to appear through said apertures, said plate or board also having two parallel columns of apertures located between the first-mentioned apertures and a series of disks having figures to appear through only one of said central apertures at a time, said figures being arranged to indicate the difference in value shown by the first-mentioned disks, substantially as set forth.

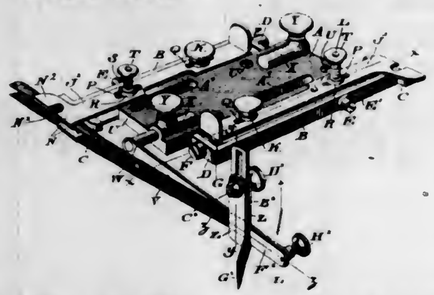
7. In a game counter, the combination of a plate or board having apertures, appropriate means for causing figures or significations to appear through said apertures and covers for said apertures carried by arms that are pivoted to said plate or board, to cover said apertures, substantially as described.

8. In a game-counter, the combination of a plate or board having two apertures *d* and *e* and an indicator or disk H carried behind both of said apertures, said indicator or disk having figures thereon so arranged that when a digit appears in reading position behind or through one of said apertures no digit so appears behind or through the other of said apertures, said plate or board also having two apertures d^3 and e^3 and indicators or disks L carried behind said apertures, with figures thereon to appear through said apertures d^3 and e^3, substantially as and for the purposes specified.

9. A game-counter comprising a plate or board having two parallel columns of apertures, rotative disks having figures to appear through said apertures, said plate or board also having two other parallel columns of apertures and series of disks having figures arranged to appear through said apertures, said figures being arranged to indicate the difference in value shown by the first-mentioned disks, substantially as described.

10. A game-counter consisting of a plate or board having therein one or more series of apertures combined with means carried by said plate or board for causing numbers to appear in or through said apertures said means consisting of a single indicator, with figures thereon arranged to show through either one of two apertures in each series, and other indicators, with figures thereon arranged to show through one only of each other aperture in each series, and designations consisting of letters and words on said plate or board adjacent to said apertures to indicate that two of the apertures in each series are for the purpose of registering gains or differences in the tricks taken by different sets of players and that the other apertures in said series are for the purpose of registering the tricks made or to be made in actual play by one or the other of said sets of players as a basis of comparison, substantially as described.

570,121. BINDING ATTACHMENT FOR SEWING-MACHINES. KARL BUXBAUM, Philadelphia, Pa., assignor to Walter S. Gans, Milton H. Gans, and John H. Andreas, same place. Filed Sept. 6, 1895. Serial No. 561,626. (No model.)



Claim.—1. In a binding attachment a plate, a gage having a slotted side arm with a limb at its end, an adjusting-screw in said limb and plate, and a clamping-screw in said arm, said parts being combined substantially as described.

2. In a binding attachment, a plate with a horizontal socket in its front end, an arm having a journal adjustably mounted in said socket, a guide secured to said arm, and a gage supported on said guide, said parts being combined substantially as described.

3. In a binding attachment, a plate with a horizontal socket in its front end, an arm journaled in said socket, a clamping-screw for the journal of said arm, a guide secured to said arm, a gage supported in said guide, a spring secured to said arm, and means for controlling said spring, said parts being combined substantially as described.

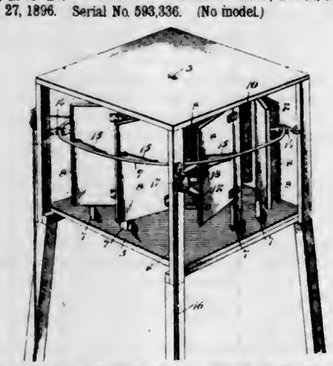
4. In a binding attachment, a main plate with a horizontal socket in its front end, folders on said plate, an arm with journal adjustable in said socket, a guide consisting of standards secured to said arm, a gage adjustable in said guide, and a spring with an end in said guide, said parts being combined substantially as described.

5. In a binding attachment, the arm V having the journal W mounted in the socket X, in the base thereof, the guide Z on said arm, the gage B', in said guide, the spring F' on said arm adjacent to said guide, and the set-screw H', in the arm and engaging said spring, substantially as described.

570,122. PAINTERS' SIZE. JOHN CLASEN, Hamburg, Germany, assignor of one-half to A. Hastrup & Co., same place. Filed July 17, 1894. Serial No. 517,807. (No specimens.) Patented in England July 4, 1894, No. 13,004.

Claim.—A method of producing tablet-size suitable for painters' use consisting in dissolving size in double its quantity of water at a temperature not exceeding 50° Celsius adding potato-meal thereto casting the mixture into molds and drying the same.

570,123. WINDMILL. HOMER CLINTON, Eldora, Iowa. Filed May 27, 1896. Serial No. 593,336. (No model.)

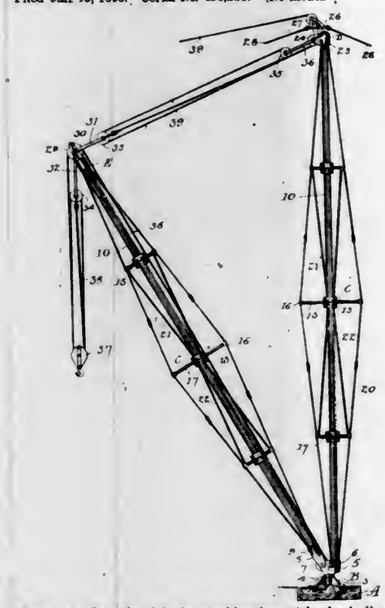


Claim.—1. In a windmill, the combination of a frame, a horizontal wind-wheel, an annular series of vertical posts mounted on the frame, an annular series of outwardly-opening doors hinged at one edge to the vertical posts and having their other edge free and arranged to abut against the adjacent post in closing a reciprocating horizontally-disposed ring mounted on the frame, encircling the doors and connected with the same, said ring being adapted to open and close the doors, and also forming a stop to limit their outward swing, and means for operating the ring, substantially as described.

2. The combination of a frame, a horizontal wind-wheel mounted thereon, horizontally-alined bearings mounted on the frame and located beneath the wind-wheel, one of the bearings being provided with a roller, a horizontally-disposed reciprocating bar slidingly mounted in said bearings, an eccentrically-arranged roller depending from the wind-wheel and engaging the reciprocating bar, and a bell-crank lever fulcrumed at its angle on the frame and having one arm connected with the reciprocating bar at a point intermediate with the ends thereof, substantially as described.

3. In a windmill, the combination of a frame provided with bearings, a horizontally disposed reciprocating bar slidingly mounted in the bearings, a horizontal wind-wheel located above the bar, the triangularly-arranged rollers depending from the wind-wheel and engaging the reciprocating bar, and a bell-crank lever fulcrumed at its angle on the frame and having one arm connected with the reciprocating bar, substantially as described.

570,124. SECTIONAL DERRICK. OLIVER CROSBY, St. Paul, Minn. Filed Jan. 13, 1893. Serial No. 458,228. (No model.)



Claim.—1. In a derrick, in combination with the hollow pivot-posts for the foot-block and guy-plate, and their sheaves for carrying the tackle through said posts along the axis of rotation of the derrick, the mast offset from and parallel with said axis of rotation.

2. In a derrick, the combination with the mast thereof, of the head-block, the hollow pivot-post thereon offset from the mast, and the guy-plate fitted to said pivot-post, substantially as described.

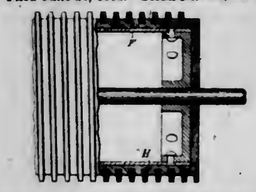
3. In a derrick, the combination with the mast thereof, of the head-block therefor, the sheave journaled in one side thereof, the hollow pivot-post carried by said head-block offset from the mast, the guy-plate turning upon said pivot-post, and the sheave carried by said guy-plate, said sheaves being so arranged that a rope passing from one to another, runs freely through the opening in said pivot-post, substantially as described.

4. In a derrick, the combination with the mast thereof, of the foot-block turning upon the offset hollow pivot-post, the head-block therefor having a similarly offset hollow pivot-post, and the guy-plate journaled upon the pivot-post of said head-block, substantially as described.

5. In a derrick, the combination with the mast thereof, of the guy-strut and the idler-sheaves at the top of the mast, the top of the guy-strut, and the base of the strut, for carrying the rope from the boom-tackle to the source of power, substantially as described.

6. In a derrick, the combination with its mast, of the guy-strut, the guy connecting the top of the mast and guy-strut, the guys extending laterally from said strut, the sheaves at the top of the mast and top of the strut, arranged above the guy and connecting the same to the sheave at the base of the strut, said sheaves being so arranged that the rope from the boom-tackle passes from mast to strut above the connecting-guy and downward between the lateral guys to the source of power, substantially as described.

570,125. APPARATUS FOR PRODUCING WIRE-BARS BY ELECTRODEPOSITION. JAMES B. FORSYTH and CHARLES R. FLETCHER, Boston, Mass. Filed June 27, 1892. Serial No. 438,099. (No model.)



Claim.—1. A cathode for electrolytic apparatus composed of a cylinder, with a surface of conducting material and a strip of non-conducting material laid in a spiral groove cut or formed in the surface of the cylinder and extending out beyond the surface of the cylinder, as set forth.

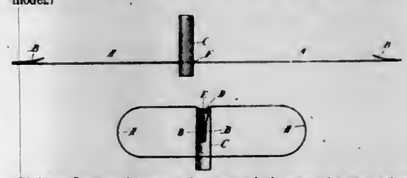
2. The combination with an electrolytic cathode having a beveled or dovetail groove cut or formed in its surface, of a beveled non-conducting strip inserted in said groove and extending above the surface to form a depositing-space with insulating and inclined side walls, as set forth.

570,126. SEAL. JOHN E. GOGLE, Middleville, Mich., assignor of two-thirds to Reginald T. French, same place, and John McQueen, Grand Rapids, Mich. Filed Nov. 5, 1894. Serial No. 527,915. (No model.)



Claim.—In a seal, a seal-case made in two telescopic sections each provided with alining slots or apertures in opposite ends thereof, in combination with a shackle, the ends of which are adapted to pass through said alined slots or apertures and to be engaged within the case and to hold the two parts of the case together, substantially as described.

570,127. CAR-SEAL. JOHN E. GOGLE, Middleville, Mich., assignor of two-thirds to Reginald T. French, same place, and John McQueen, Grand Rapids, Mich. Filed Feb. 7, 1896. Serial No. 578,430. (No model.)

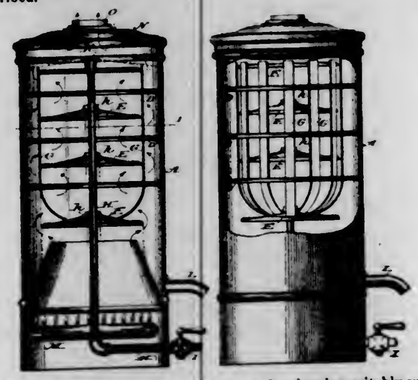


Claim.—In a seal for car-doors a tubular case having a head at one end provided with a slit, and transverse openings in the opposite sides, and a strip inserted in said openings to close the other end of said case and having a barbed end to pass through the slit in the end of the case and engage the inner surface of the head, substantially as described.

570,128. WATER-HEATER. HERMANN HAEBERLIN, Cleveland, Ohio, assignor to the Horix Manufacturing Company, same place. Filed Dec. 5, 1894. Serial No. 530,873. (No model.)

Claim.—In a water-heater the combination of a chamber adapted to be supported above a burner or equivalent source of heat, and having a conical centrally-open bottom directly above said burner, a deflecting-plate above the open conical bottom of the chamber for deflecting the heat peripherally, a series of centrally-disposed disks alternating with peripherally-disposed annular plates supported at a distance from each other above the deflecting-plate, for imparting a tortuous course to the heat-currents, a series of vertically-disposed

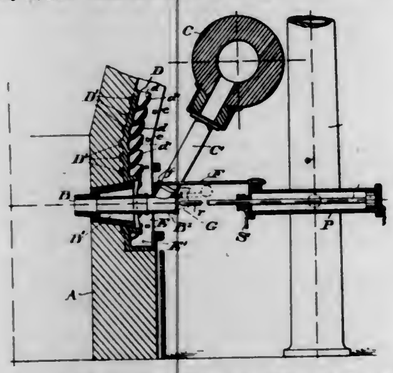
water-conducting strips passing through said annular plates and terminating on the deflecting-plate, and a water inlet pipe passing centrally up through said structure and discharging radially at the top of said chamber above the upper disk, substantially as shown and described.



2. In a water-heater the combination of a chamber suitably supported above a burner or equivalent source of heat, and having a conical centrally-open bottom directly above said burner, a deflecting-plate above the open conical bottom of the chamber for deflecting the heat peripherally, a series of centrally-disposed disks alternating with peripherally-disposed annular plates supported at a distance from each other above the deflecting-plate, for imparting a tortuous course to the heat-currents, a series of vertically-disposed water-conducting strips passing through said annular plates and terminating on the deflecting-plate, water-passages through said annular plates contiguous to said strips, and a water-inlet pipe passing centrally up through said structure and discharging radially at the top of said chamber above the upper disk, substantially as shown and described.

3. In a water-heater the combination of a chamber adapted to be supported above a burner or equivalent source of heat, and having a conical centrally-open bottom directly above said burner, a deflecting-plate above the open conical bottom of the chamber for deflecting the heat peripherally, a series of centrally-disposed disks alternating with peripherally-disposed annular plates supported at a distance from each other above the deflecting-plate, for imparting a tortuous course to the heat-currents, a series of vertically-disposed water conducting strips passing through said annular plates and terminating on the deflecting-plate, and a water-inlet pipe passing centrally up through said structure and having a deflecting-plate arranged above the open end of said pipe, for discharging the water in a radiating sheet or spray above the upper disk, substantially as shown and described.

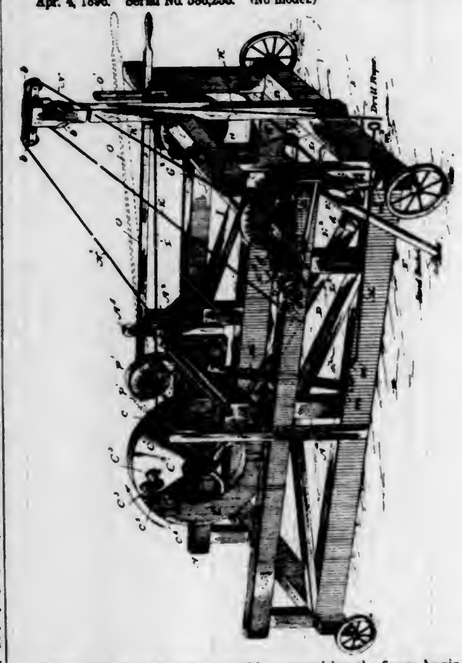
570,129. DEVICE FOR PREVENTING OBSTRUCTION OF BLAST IN BLAST-FURNACES. JOHN M. HARTMAN, Philadelphia, Pa. Filed July 31, 1894. Serial No. 519,108. (No model.)



Claim.—1. The combination with the furnace-wall of a jacket constructed in vertical sections; a series of internally-projecting flanges mounted upon said jacket above the twyer-breast; a series of open, horizontal water-troughs arranged upon the exterior of said jacket; and guard-pieces at each end of said troughs extending above the level of the remainder of the rim portion thereof, substantially as set forth.

2. The combination, with the blast-furnace, twyer-pipe and pricker-bar, of a valve mounted in the rear end of the twyer-pipe; a weighted lever normally supporting said valve in a closed position; and a rotatable pin carrying said lever, as and for the purposes specified.

570,130. WELL-DRILLING MACHINE. HENRY KELLY, Waterloo, Iowa, assignor to himself and Olin B. Taneyhill, same place. Filed Apr. 4, 1896. Serial No. 586,233. (No model.)



Claim.—1. A well-drilling machine comprising the frame having a mast at the front end, sheaves at the upper end of the mast, a drive-shaft at the rear end of the frame, a combined fly and power wheel on said shaft having a lateral cam or projection, a drill-rope drum on the upper portion of the frame near the mast, a let-out shaft geared to the shaft of the drill-rope drum and operatively connected with the drive shaft, a counterbalanced rock-shaft journaled below the drill-rope drum and provided with a treadle-beam extending rearwardly with its free end in the downward path of the cam or projection on said power-wheel to be depressed thereby and returned to its normal position by said counterbalance, a guide on the beam under which the drill-rope extends between its drum and the mast-sheave, a sand-rope drum above and in front of the drive-shaft and having a friction-wheel on its inner end adapted to be depressed into engagement with the periphery of the power-wheel, and a brake to engage said friction-wheel in its opposite movement, substantially as set forth.

2. In a well-drilling machine, a rocking weight socketed to receive the inner end of a treadle-beam, and means for journaling the weight to the frame of the machine; said weight serving to counterbalance the beam, substantially as set forth.

3. In a well-drilling machine, a treadle-beam rock-shaft provided on one side with a weight and on its opposite side with a socket for the rear end of the treadle-beam, substantially as described

4. The combination with the rock-shaft provided on one side with a weight, and on its opposite side with a socket, of a treadle-beam rigidly secured at its rear end in said socket, substantially as described.

5. In a well-drilling machine, a treadle-beam rock-shaft having a weight integral with one side and an integral socket opposite thereto, substantially as described.

6. In a well-drilling machine, the combination with the frame, the drive-shaft and the wheel thereon, of a sand-rope drum movably mounted at one end and having a friction-wheel at that end to engage the periphery of the wheel on the drive-shaft, means for moving that end of the drum, and a spring brake-band secured at one end to the frame with its free end in the form of a vertically-extending hook encircling the friction-wheel at its side opposite the drive-shaft wheel, substantially as set forth.

7. In a well-drilling machine, the combination with a frame, the mast at the front end thereof, having sheaves at its upper end for the drill-rope and the sand-bucket rope, respectively, the drill-rope drum at the front end of the frame, the drill-rope beam engaging the drill-rope, and the drive-shaft having a combined fly and power wheel operating the said beam, of a sand-rope drum above and in advance of the drive-shaft and having one end movable toward and from the fly-wheel and there provided with a friction-wheel to engage the periphery of the said fly-wheel, a spring brake-band in the form of a vertically-extending hook secured at its lower end to the frame with its open side next to the fly-wheel and embracing with its hooked free end the said friction-wheel, and a guide below and in front of the sand-rope drum, and under which the sand-bucket rope passes to the mast-sheave, substantially as described.

8. The combination with the drill-rope drum, of a shaft geared thereto to rotate the drum in either direction, and pawl-and-ratchet mechanism for locking the shaft to prevent unwinding of the drum, and a lever separate and independent from the said pawl having a pawl-releaser and brake to successively release the pawl and brake the said shaft substantially as described.

9. The combination with the drill-rope drum, of a shaft geared thereto to rotate the drum in either direction, a ratchet and brake-wheel on said shaft, a pawl pivoted on the frame and engaging the ratchet, and a lever having a cam at its inner end to engage and release the pawl and a brake-block to engage said brake-wheel when the pawl is so released, substantially as described.

10. The combination with the frame, the power-wheel and the drill-rope beam, operated by said wheel and having a pulley or sheave for the drill-rope, of the drill-rope drum, having a large gear, the drum-operating shaft having a small gear in mesh with said large gear; said shaft being adapted to be driven from the power-wheel shaft when the drum is to wind the drill-rope, a ratchet and brake-wheel, on the drum-operating shaft, a pawl pivoted on the frame and engaging said ratchet, a lever separated from and engaging said pawl to throw it out of engagement with the ratchet, and a brake on the said lever and engaging the brake-wheel when the pawl is so disengaged, substantially as described.

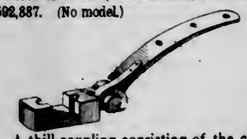
11. A well-drilling machine comprising the frame, the mast, the power cam-wheel journaled thereon, the treadle-beam extending at its free end into the path of said cam-wheel and having a guide-pulley, for the drill-rope between its ends, the drill-rope drum at the mast end of the frame, the spindle therebelow having a traveling pulley for the drill-rope, the drum-operating shaft geared to the drum and having a ratchet and a brake-wheel, a pawl engaging said ratchet, a lever separate from and engaging the pawl to release it, a brake on said lever and engaging the brake-wheel when the pawl is released, and mechanism for throwing the drum-operating shaft into and out of gear with the cam-wheel shaft, substantially as described.

12. A well-drilling machine comprising the frame, the mast, the cam-wheel, the weighted rock-shaft mounted in adjustable bearings, the treadle-beam extending from said rock-shaft into the path of the cam, and having a drill-rope guide-pulley on its upper side, the drill-rope drum, the operating-shaft thereof geared thereto, and having a combined brake and pawl-and-ratchet let-out mechanism, and mechanism for throwing the drum-operating shaft into and out of operative connection with the cam-wheel shaft, substantially as described.

13. A well-drilling machine, comprising a frame, a power-wheel provided with a wrist-pin having a removable roller, a treadle-beam in the lower portion of the frame in the path of the roller, a removable longitudinally-extending walking-beam on the top of the frame and having a connecting rod or pitman at its inner end adapted for connection with said wrist-pin upon the removal of the roller; whereby either beam may be operated upon directly by the same power-wheel, substantially as set forth.

14. A well-drilling machine comprising the frame having a mast provided with upper and lower pulleys or sheaves, a cam-wheel, a treadle-beam operated thereby and having a drill-rope guide-pulley, a drill-rope drum, a drum-operating shaft geared thereto and adapted to be thrown into and out of connection with the cam-wheel shaft, a combined pawl-and-ratchet and brake mechanism for the drum-shaft and having an operating-lever extending to the mast end of the machine, the drill-rope extending from the drum under the treadle-beam pulley thence up and over the lower mast-sheave, the sand-rope drum having a friction-wheel at one end over and adapted to engage the periphery of the cam-wheel, a pivoted, longitudinally-extending lever in which that end of said drum is journaled; the opposite end of the lever extending to the mast end of the frame and there provided with a locking or ratchet bar, a curved brake-band partially encircling the said friction-wheel at its upper portion, a guide roll or bar and the bucket-rope extending from the drum under said roll or bar and thence upwardly and over the top sheaves in the mast, substantially as described.

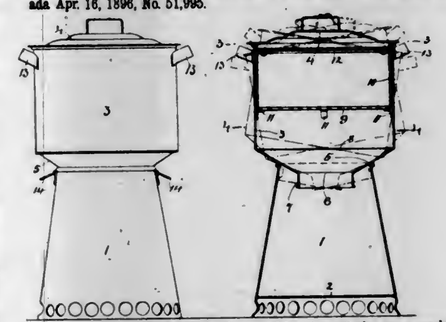
570,131. THILL-COUPLING. HOWARD KLAER, Orwigsburg, Pa., assignor to Jacob H. Weible, Strausstown, Pa. Filed May 23, 1896. Serial No. 592,887. (No model.)



Claim.—1. A thill-coupling consisting of the clip-iron having a forward extension provided with a hub and a hook so arranged that a slot is formed between them, said hub having a hole formed therein, and a thill-iron having a shank to fit in the slot between said hub and hook, said shank having a pin projecting from one side to fit in the hole in said hub, and a boss on the opposite side eccentric to the pin to engage the said hook, substantially as and for the purpose specified.

2. A thill-coupling consisting of the clip-iron having a forward extension provided with a hub and a hook so arranged that a slot is formed between them, said hub having a hole formed therein and the clip-iron having a shoulder formed thereon in rear of the hub and hook, a thill-iron having a shank to fit in the slot between the said hub and hook, said shank having a pin projecting from one side to fit in the hole in said hub, and a boss on the opposite side eccentric to the pin to engage the said hook, and a spring secured at one end to the thill-iron and having its free end curved and extending over the shank of the thill-iron to engage the said shoulder on the clip-iron, substantially as and for the purpose specified.

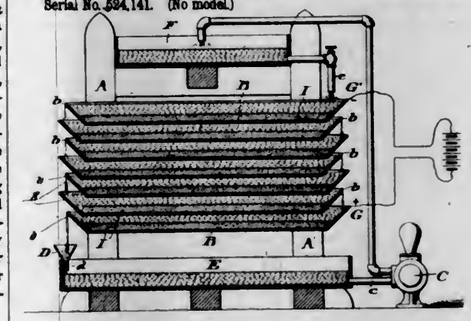
570,132. ASH-SIFTER. PAUL R. KRASEL, Montreal, Canada. Filed May 4, 1896. Serial No. 590,146. (No model.) Patented in Canada Apr. 16, 1896, No. 51,995.



Claim.—1. In an ash-sifter, the combination of the open-ended conical supporting-receptacle 1, the cylindrical rocking vessel 3 with suitable cover and hopper-shaped bottom 5 having opening 6 and flange 7; the fine screen 8 and the removable section 10 with screen 9 of larger mesh and suitably supported in said vessel 3, all substantially as and for the purpose set forth.

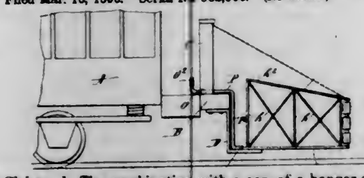
2. An ash-sifter comprising an open-ended annular support and a cylindrical rocking sifting-receptacle proper with an inverted conical-shaped bottom resting on such support and having an opening therein and provided with a flange, the latter adapted upon the rocking of such receptacle to strike against the support, for the purpose set forth.

570,133. APPARATUS FOR ELECTROLYTIC DEPOSITION. WILLIAM DE COURCY MAY, Niagara Falls, N. Y. Filed Sept. 26, 1894. Serial No. 524,141. (No model.)



Claim.—In an apparatus for electrolytic deposition the combination with a suitable source of electricity of a series of receptacles arranged vertically above one another, the bottom of each receptacle extending down into the immediately subjacent one, each of said receptacles being adapted to discharge its overflow into the next of the series; a supply-pipe leading into the first of the receptacles and means, substantially as set forth, whereby the overflow from the last receptacle of the series may be returned to the said supply-pipe, as and for the purposes specified.

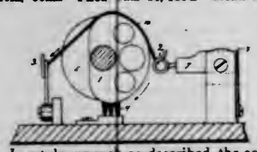
570,134. CAR-FENDER. JAMES S. MEREDITH, Philadelphia, Pa. Filed Mar. 10, 1896. Serial No. 582,566. (No model.)



Claim.—1. The combination with a car, of a hanger secured to the platform thereof, and the bottom portion of which projects slightly above the track, a fender or guard pivotally connected with said hanger, and the rear portion of which rests thereon, the front end thereof being supported by chains or similar devices at a slight distance above the track, said chains being connected with the dashboard or other support, and said fender or guard being composed of a bottom frame and side frames, and the forward ends of the side frames being provided with rollers which serve as buffers, substantially as shown and described.

2. The combination with a car, of a hanger secured to the platform thereof, and the lower portion of which projects forward thereof and above the track, a fender or guard, the rear end of which rests upon said hanger and is pivotally connected therewith at the center thereof, a lever pivotally connected with the platform of the car, the rear end of which projects upwardly and the forward end of which is passed through the dashboard and connects with a segmental arm, the ends of which are bent downwardly and forwardly and bear upon the opposite sides of the fender or guard at the bottom thereof, and the forward end of said fender or guard being supported by means of chains or other devices which extend therefrom backwardly and upwardly to the dashboard, substantially as shown and described.

570,135. TAKE-UP FOR SEWING-MACHINES. JOSEPH M. MERROW, Mansfield, Conn. Filed Jan. 11, 1894. Serial No. 496,541. (No model.)



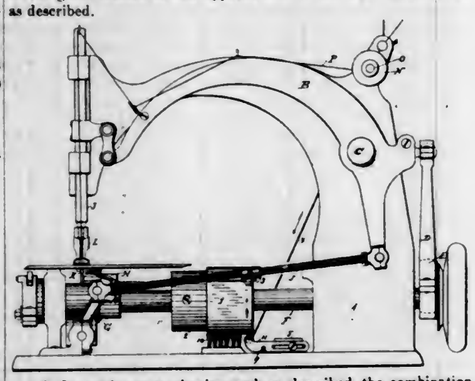
Claim.—1. In a take-up such as described, the combination with the rotating take-up cam and the thread-guides, of the brush contacting with the surface of the cam, substantially as and for the purpose specified.

2. In a sewing-machine, such as described, and in combination with the looper, a take-up comprising the two fixed thread-guides 2 and 3 and the rotating take-up cam 1, the latter interposed between the said thread-guides with its periphery intersecting a vertical plane passing through said guides, and its axis substantially at right angles to the path traversed by the thread in passing from one thread guide over the surface of the cam to the opposite thread guide, one of said thread guides ( ) being adjustably secured to its support to regulate the take-up action of the cam, and the surface of the cam, with which the thread contacts, moving in a direction the reverse of the feed of the thread, that is to say, from the guide nearest the looper toward the guide more remote from the looper; substantially as described.

3. In combination with the needle and looper, the cam 1, the rear thread-guide 2 pivotally supported and held in adjusted or working position by a spring, and the fixed front guide 3 movably connected to its support so as to vary the length of the looper-thread extending between guides 2 and 3 over cam 1; substantially as described.

570,136. TAKE-UP FOR SEWING-MACHINES. JOSEPH M. MERROW, Mansfield, Conn. Filed Jan. 11, 1894. Renewed Sept. 25, 1896. Serial No. 607,002. (No model.)

Claim.—1. In a sewing-machine, such as described, the combination of the looper, the longitudinally-reciprocating looper-driving rod, the revolving take-up cam engaging the thread, the thread-guide mounted upon the said driving-rod on one side the cam and the fixed thread-guide located on the opposite side of the cam; substantially as described.



2. In a take-up mechanism such as described, the combination of a rotary take-up cam, a thread-guide, mounted upon a fixed support on one side of said cam and a second thread-guide mounted upon a support reciprocating in a plane substantially parallel with the axis of the cam and the face of the latter; substantially as described.

3. In a machine, such as described, the combination with the needle, and its actuating mechanism and the reciprocating looper and its actuating mechanism including the driving-rod, of the driving-shaft, the take-up cam secured to said shaft in position to engage the thread, the fixed thread-guide and the reciprocating thread-guide, the latter mounted upon the looper-driving rod, substantially as described.

570,137. ENDLESS TUBULAR FABRIC. GEORGE C. MOORE, Worcester, Mass. Filed Feb. 29, 1896. Serial No. 581,293. (No specimens.)



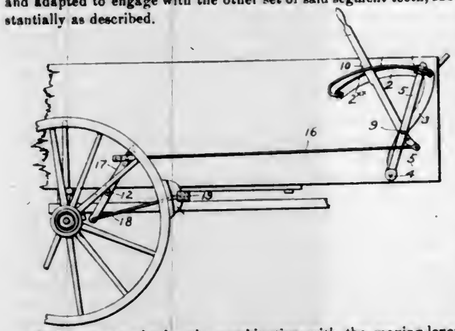
Claim.—1. An endless tubular fabric having a succession of continuous courses of threads extending around the circuit of the same, the component threads of a course extending oppositely in zigzag directions and each thread passing only part way around the transverse circumference of the fabric, the said component threads of each course interlooping with each other along lines extending longitudinally in the fabric, and each course overlying the preceding courses and gaining upon the preceding course, as stated, substantially as described.

2. An endless tubular fabric consisting of an elastic lining, and a succession of continuous courses of threads extending around the circuit of the same, the component threads of a course extending oppositely in zigzag directions and each thread passing only part way around the transverse circumference of the fabric, the said component threads of a course interlooping with each other along lines extending longitudinally in the fabric, each course overlying the preceding courses and gaining upon the preceding course as stated, and the said threads being united to each other and to the lining by elastic cement, substantially as described.

3. An endless tubular fabric having a succession of continuous courses of threads extending around the circuit of the same, the component threads of a course extending oppositely in zigzag directions and each thread passing only part way around the transverse circumference of the fabric, the said component threads of a course interlooping with each other along lines extending longitudinally in the fabric, and each course overlying the preceding courses and gaining upon the preceding course, as stated, and the thread or threads at the outer periphery of the fabric being of an elastic nature, substantially as described.

570,138. WAGON-BRAKE. GEORGE F. MOORS, Owensborough, Ky., assignor of one-half to William E. McFarland, same place. Filed Jan. 27, 1896. Serial No. 576,937. (No model.)

Claim.—1. In a wagon-brake, the combination with the segment-rack having a double set of oppositely-inclined teeth located continuously thereon, a moving-lever carrying a latch-plate at its upper end to engage with one set of said teeth at the forward end thereof and a power-lever fulcrumed upon the moving-lever geared to the brake and adapted to engage with the other set of said segment-teeth, substantially as described.



2. In a wagon-brake, the combination with the moving-lever adapted to be fulcrumed to the body of the wagon, a segment-plate having rack-teeth thereon, a latch-plate comprising a spur-plate and a spring-actuated abutment-plate hinged thereto, and a power-lever fulcrumed on the moving-lever and engaging with the latch-plate and with the rack-teeth of a segment-plate, substantially as described.

3. In a wagon-brake, the combination with the moving-lever adapted to be fulcrumed to the body of the wagon, a segment rack-plate, a latch-plate, a spring-actuated abutment-plate hinged thereto having a guide-plate, a segment guide-rod supporting said guide-plate, and a power-lever fulcrumed to the moving-lever and engaging with the latch-plate and segment rack-plate, substantially as described.

570,139. TOOL FOR PRICKING AND MARKING LINES OF STITCHES. EDWIN F. MOWER, Boston, Mass., assignor to Frank W. Whitcher, same place. Filed May 5, 1896. Serial No. 590,334. (No model.)

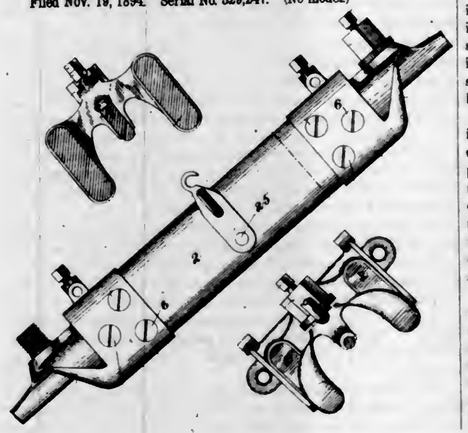


Claim.—1. A pricking and marking tool comprising a projecting portion to enter between the stitches to divide the same and a laterally-projecting marking portion, substantially as set forth.

2. A pricking and marking tool comprising a projection to enter between the stitches and divide the same and a laterally-projecting portion on each side of said pricking-up or dividing portion to mark the stock on each side of the line of stitches, substantially as described.

3. A pricking and marking tool comprising a projecting portion to enter between the stitches to divide the same and a laterally-projecting portion, the edges of said portions being inclined to adapt the tool to properly engage the surface of work held in an inclined position, substantially as set forth.

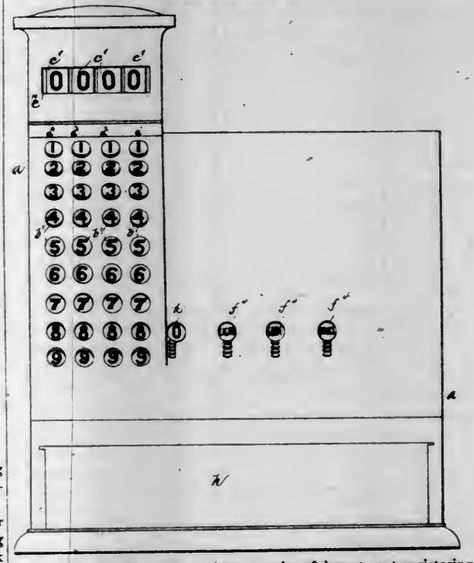
570,140. SECTION-INSULATOR. LOUIS MCCARTHY, Boston, Mass. Filed Nov. 19, 1894. Serial No. 529,247. (No model.)



Claim.—1. A section insulator comprising side bars and end pieces to which said side bars are attached, the said end pieces having means for securing the ends of section-wires and being provided with deflecting portions which diverge laterally and rearwardly, and also incline rearwardly, substantially as described.

2. The clamping device comprising a support having a hole or passage therethrough and grooved on opposite surfaces thereof, with the grooves leading into the said hole or passage, a divided screw having the parts thereof disposed on opposite sides of one of said grooves, a follower-block fitted to the opening between the parts of the said divided screw, a cap or nut working on said screw and engaging with said follower-block and a locking-screw fitted to the cap or nut and taking bearing against the follower-block, substantially as described.

570,141. CASH REGISTER AND INDICATOR. JOHN H. MCCORNICK, Columbus, Ohio, assignor to Henry S. Hallwood, same place. Filed Mar. 5, 1894. Serial No. 502,373. (No model.)



Claim.—1. In a cash-register, a series of department registering devices each consisting of registering wheels of different denominations, actuating-levers, one for each wheel pivoted concentric with said wheels, actuating-bars extending across the entire series of wheels so as to contact with said levers, a keyboard having denominational keys adapted to control the movement of said bars, locking means for holding the actuating-levers of each department, and special keys for operating said locking means, substantially as specified.

2. In a cash-register, a series of registering-wheels journaled in line with each other, said wheels being arranged in sets, an actuating device for each wheel of each set and means for normally locking said actuating devices, actuating-bars extending across the entire set of wheels and pivoted concentric therewith, cash-keys for releasing and determining the movement of said bars a connection from said bars to the actuating devices of the respective wheels and special keys for unlocking the said actuating devices, substantially as specified.

3. In a cash-register, cash-keys and registering devices, said registering devices being grouped into departments, each department comprising wheels of different denominations, actuating devices comprising hinged or pivoted bars concentric with said wheels and common to all the groups for operating the registering-wheels, one bar for each denomination, a total-adding register independent of the department-registers but actuated by the common actuating devices, and means for releasing the department-registering devices to cause one or more of them to operate in unison with the total-adding register, substantially as specified.

4. A cash-register, cash-keys arranged in series, each key of each series being adapted to release and determine the movement of a pivoted actuating-bar, registering-wheels of different denominations arranged concentric with said actuating-bar having pawl-levers to contact with and be moved by said bar, an intermediate supporting device for said actuating-bar, and a movable cash-receptacle, said supporting device being connected to and adapted to be operated by the opening and closing of said receptacle, substantially as specified.

5. In a cash-register a series of keys arranged on the arc of a circle as described, a swinging segment pivoted eccentrically on a shaft adjacent to said keys, said keys being of different lengths and adapted to be moved in line with said segment, means for limiting the movement of said keys and a series of steps on said segment to contact with the respective keys, substantially as specified.

6. In a cash-register a series of keys arranged on the arc of a circle as described, said keys having stems of varying lengths adapted to be moved so as to stand in line with a swinging segment having a series of teeth or steps thereon, means connected with said segment for determining the movement of registering devices and an engaging plate for holding the respective keys in their respective positions when one key is depressed, substantially as specified.

7. In a cash-register a series of keys and a series of registering devices each of said registering devices being adapted to register the amount indicated by said keys, means for normally holding the registering devices in an inoperative position, a normally-closed cash-receptacle and a locking device for said cash-receptacle adapted to be operated by the operation of a key, means for releasing the actuating devices of said registering mechanism and at the same time operating an additional locking device to said drawer whereby the drawer is held in a locked position until one of the registering devices is brought into position for operation, substantially as specified.

8. A series of cash-keys, and indicating devices connected thereto, an actuating device for each set of keys adapted to be released and controlled when one key of said series is depressed, a series of registering devices arranged in groups and each adapted to be operated by the common actuating device, locking means for retaining said registering devices in a normally inactive position, a total-adding register normally connected to said actuating device and independent of said normally inactive registers, and special keys for releasing said normally inactive registering devices to cause one or more of them to operate in unison with the total-adding device by the operation of said actuating devices or any one of them, substantially as specified.

9. Cash-keys arranged in series, each series corresponding to a different denomination, each key of said series representing a unit of said denomination, an actuating device for each denomination adapted to be released when any key of its series is depressed, registering devices arranged in groups, each group comprising registering-wheels representing denominations corresponding to the denominations of the actuating devices, locking means for retaining said registering devices in a normally inactive position, and a releasing device for each set of registering devices, a total-adding registering device comprising registering-wheels similar to the normally inactive registering devices, and normally connected to said actuating devices, and means, substantially as described, for releasing any group of registering devices to cause it to operate in unison with said total-adding device, substantially as specified.

10. A series of cash-keys having straight stems of different lengths, a swinging segment pivoted eccentrically on a shaft adjacent to said keys, and an actuating-bar connected to said segment, registering-wheels journaled in line with the center of said swinging segment, said registering-wheels being arranged in groups or sets, and connecting devices between said actuating-bar and one of said registering-wheels, locking means for holding said registering devices in a normally inactive position, and special keys for operating said locking means to cause said registering-wheels to be operated by the actuating-bar when a cash-key is depressed, substantially as specified.

11. A curved keyboard, cash-keys arranged in sets on said board, each set representing a different denomination and each key representing a unit of that denomination, a swinging segment eccentrically pivoted on a shaft adjacent to said keys, said keys each having a stem of different length communicating with said segment, a series of registering-wheels journaled in line with the center of said segment, and an actuating-bar on said segment extending across the faces of said wheels, and moving concentrically therewith, and connections between said actuating-bar and the registering-wheels corresponding thereto whereby said wheels are moved by said actuating-bar when one or more keys are depressed, substantially as specified.

12. In a cash-register, a series of keys having stems of different lengths, and an eccentrically-arranged segment having steps to contact with said key-stems, an actuating-bar connected to said segment, and registering-wheels arranged in different sets connected to said bar, and an indicating-wheel connected to said segment adapted to indicate the position of said actuating-bar, substantially as specified.

13. A series of cash-keys, and a series of registering-wheels, an actuating-bar extending across said wheels and controlled by said keys to determine the movement of said registering-wheels, an intermediate support for said actuating device operated by the opening and closing of a cash-receptacle, transferring mechanism to carry amounts from one registering-wheel to those of a higher denomination, and means, as described, connected with said support to operate said transferring mechanism when said support is returned to its normal position, substantially as specified.

14. In a cash-register, a series of cash-keys and a series of registering-wheels, actuating-bars extending across said wheels and controlled by said cash-keys connected to said wheels, said registering-wheels representing units of different denominations, and transferring mechanism for conveying amounts from one wheel to the wheel of the next higher denomination, a supporting device actuated by the opening and closing of a cash-receptacle and adapted to normally support said actuating devices, and means connected with said support to operate said transferring mechanism as the cash-receptacle is closed, substantially as specified.

15. In a cash-register, a normally-closed cash-receptacle having two independent locking devices therefor, a series of keys each adapted to operate one of said unlocking devices and at the same time set in operation an indicator to indicate the amount represented by said key, a department-key for releasing the registering devices of a certain group or set adapted to operate the unlocking device, and a connecting mechanism adapted to be moved by an independent operating-key to simultaneously move both of said locking devices and means as described for releasing said indicator to permit the same to return to zero when said locking devices are simultaneously operated, substantially as specified.

16. In a cash-register a normally-closed cash-receptacle having two independent locking devices each adapted to be operated by a separate mechanism essential to the operation of the registering devices and a separate independent drawer-opening device adapted to simultaneously operate both of said locking devices without affecting the registering devices, substantially as specified.

17. In a registering device a series of keys and a series of actuating devices, an auxiliary support for said actuating devices normally detained by a movable cash-receptacle, said support being held normally slightly removed from said actuating devices to permit an independent movement thereof when released by said keys, said support being adapted to return said actuating devices to their normal positions when the cash-receptacle is closed and means as described for permitting a limited backward movement of said support after the actuating devices have been returned to their normal positions, substantially as specified.

18. In a cash-register the combination with a series of registering-keys and an intermediate actuating device, a series of indicating-wheels each having a rack and pinion the respective racks being adapted to be operated by the actuating devices, a pivoted bar journaled in spring-actuated hinged arms adapted to engage in the teeth of all of said racks, said bar being adapted to be moved into a plane parallel with said racks and thus release all of said racks when one of said racks is moved in a forward direction and means as described for reversing the position of said bar causing it to retain the rack so elevated when the same reaches the limit of its forward movement, substantially as specified.

19. A series of keys and a series of actuating devices connecting said keys and a series of indicating-wheels for each set of keys, a rack and pinion connected to each of said indicating-wheels adapted to be operated by one of said actuating devices, a pivoted bar journaled in spring-actuated arms and adapted to engage the teeth of all of said racks, said bar being moved into a plane parallel with the racks so as to disengage the teeth thereof whenever one rack is moved in a forward direction, means for reversing said bar to cause it to engage said racks when the cash-receptacle is opened and means as described for releasing all of said racks by the depression of an independent operating-key, substantially as specified.

20. In a cash-register, a keyboard formed on the arc of a circle having a series of keys with stems of different lengths, and lateral projections on each of said key-stems, a frame having bearings for said key-stems, and a pivoted frame adjacent thereto, said frame being formed eccentric to the keyboard and provided on its periphery with hooks having beveled ends, as described, said hooks being adapted to stand opposite the lateral projections so as to engage the same as the keys are depressed, and an eccentrically-arranged contacting device adjacent to said keys adapted when released to engage the depressed keys, substantially as specified.

21. In a cash-register, the combination with a series of cash-keys having stems of different lengths and arranged on the arc of a circle, an eccentrically-arranged web or flange adjacent to said key-stems, and a series of slotted openings on said flange, one for each key, laterally-extending projections on said key-stems projecting through said slotted openings, and an eccentrically-arranged pivoted frame adjacent to said flange, having on its periphery hook-shaped projections with beveled ends to engage said key projections, substantially as specified.

22. In a cash-register, a normally-locked cash-receptacle, and a normally inactive registering mechanism, a series of keys adapted when depressed to determine the movement of said registering mechanism, a pivoted frame having hook-shaped projections adapted to engage laterally-extending projections on said key-stems when said keys are depressed, a normally-locked intermediate actuating device adapted when released to contact with said key-stems, a connection from said movable frame to the locking devices of said cash-receptacle and said intermediate actuating device, respectively, whereby a movement of said frame to lock the keys unlocks the cash-receptacle and the intermediate actuating devices, substantially as specified.

23. In a cash-register, a series of cash-keys, a normally-locked cash-receptacle, and a normally inactive registering mechanism, an intermediate actuating device adapted when released to contact with said keys and determine the movement of said registering mechanism, a movable frame having beveled projections to engage with said keys, and means connected with said movable frame for simultaneously unlocking said intermediate actuating device and said cash-receptacle, substantially as specified.

24. The combination with a series of indicating-wheels, and a rack and pinion for each of said wheels, a pivoted bar common to all of said racks and adapted to engage with the teeth of the same, said bar being journaled at each end in swinging arms to permit it to lie parallel with or at an angle to said racks, a movable cash-receptacle and means connected therewith for moving said swinging arms when the cash-receptacle is opened to cause the pivoted bar to engage with each of said racks, substantially as specified.

25. The combination with the indicating-wheels and their operating-racks, of a pivoted bar extending across said racks and common to all of the same, said bar being journaled in swinging arms as described, a normally inactive registering mechanism, and a connection from said registering mechanism to each of said racks, and means, substantially as described for operating the swinging arms to cause said pivoted bar to engage with each of said racks when the registering mechanism is set into operation, substantially as specified.

26. The combination with a series of keys having stems of different lengths, as described, and a swinging segment having a series of teeth or steps adapted to contact with said keys, register-operating mechanism connected to said segment, a locking-plate arranged adjacent to said keys adapted to engage with the projections thereon, a bell-crank lever connected to said locking-plate, a normally-locked cash-receptacle, and means, substantially as described, for unlocking said cash-receptacle and said segment by the operation of said bell-crank lever, substantially as specified.

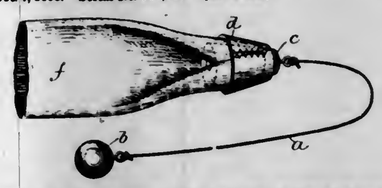
27. In a cash-register, a normally inactive registering mechanism comprising a series of wheels and concentric pivoted actuating-bars extending across said wheels, cash-keys for determining the movement of said bars when released, and an intermediate support for said bars actuated by the opening and closing of a cash-receptacle, transferring mechanism adapted to be set by but actuated independent of said registering mechanism, means connected with said bars for actuating the registering devices when the intermediate support is moved in one direction, and means connected with said support for operating the transferring mechanism when the intermediate support is moved in one direction, and means connected with said intermediate support for operating the transferring mechanism when said support is moved in the opposite direction, substantially as specified.

28 In a registering mechanism comprising two wheels representing units of different denominations, one of said wheels having a series of projections arranged at intervals corresponding to the unit of the next higher denomination, a lever pivoted concentric to said wheels and carrying a pawl, and a latch for said pawl, an arm connected to said latch and adapted to engage the projections on the wheel of lower denomination, said pawl being normally held by said latch out of engagement with but in line with the teeth of the wheel of the higher denomination, means for producing a limited movement of said pivoted lever after each movement of said registering-wheels, said pawl being adapted to engage the teeth of the wheel of the higher denomination if released by said latch but not otherwise, substantially as specified.

29. In a cash-register, a normally-closed cash-receptacle, normally-locked registering devices and special keys for unlocking the same, cash-keys for controlling the movement of said registering devices when unlocked, independent locking devices for the cash-receptacle connected to said cash-keys and said special keys, respectively, whereby the operation of a special key and a cash-key is made essential to the opening of the cash-receptacle in connection with a registration, and an independent drawer key adapted to simultaneously operate both of said locking devices without affecting the registering devices, substantially as specified.

30. A cash-register having a series of normally inactive registering devices, and cash-keys for determining the movement of the same, special keys for releasing such registering devices, a normally-closed cash-receptacle having independent locking devices, one of said devices being connected to said cash-keys and the other to said special keys whereby the opening of the cash-receptacle by the single operation of either a cash-key or a special key is prevented, substantially as specified.

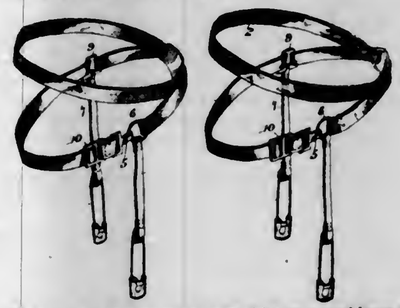
570,142. IMPLEMENT FOR REPLACING INNER TUBES OF PNEUMATIC TIRES. WILLIAM S. MCCUTCHEON, El Paso, Tex. Filed Oct. 7, 1895. Serial No. 564,913. (No model.)



Claim.—1. In an implement for replacing the inner tubes of pneumatic tires, a grip for the end of the inner tube consisting of the tapering plug *c* adapted for connection at its smaller end with a drawing-in cord, and the tapering sleeve *d* adapted to fit over the plug and clamp the tube end thereon; substantially as described.

2. An implement for replacing the inner tubes of pneumatic tires, consisting of the cord or string *a*, the weight *b* at one end of the same, the tapering plug *c* at the opposite end of the cord or string, and the tapering sleeve *d* adapted to fit over the plug and clamp the tube end thereon; substantially as described.

570,148. HOSE-SUPPORTER. ROBERT H. PAYNE, Roanoke, Va. Filed Apr. 15, 1896. Serial No. 587,670. (No model.)



Claim.—1. A hose-supporter, comprising upper and lower bands connected at the back and adapted to encircle the leg of the wearer, and a pair of depending hose-supports connected with the lower band at the opposite sides thereof, and adapted to engage a stocking, substantially as described.

2. A hose-supporter, comprising upper and lower bands constructed of a single piece of material, a link connecting the bands at the back and permitting the elastic to slide freely through it, whereby strain on the lower band will contract the upper band, and depending hose-supports arranged at opposite sides of the lower band and adapted to be connected with a stocking, substantially as described.

3. A hose-supporter, comprising upper and lower bands adapted to encircle the leg of the wearer and constructed of a single piece of material, a link comprising a pair of rings connected together and loosely receiving the elastic at the back of the bands, a pad located at the back of the hose-supporter and adapted to be interposed between the same and the leg of the wearer, and provided with a loop receiving the central portion of the link, and depending hose-supports located at opposite sides of the lower band and connected with the same, substantially as described.

570,144. SMOKE-STACK. CHARLES PICKERING, Richmond, Canada. Filed Mar. 24, 1896. Serial No. 584,672. (No model.)

Claim.—1. A smoke-stack or chimney having its inside face coated with sand, for the purpose set forth.

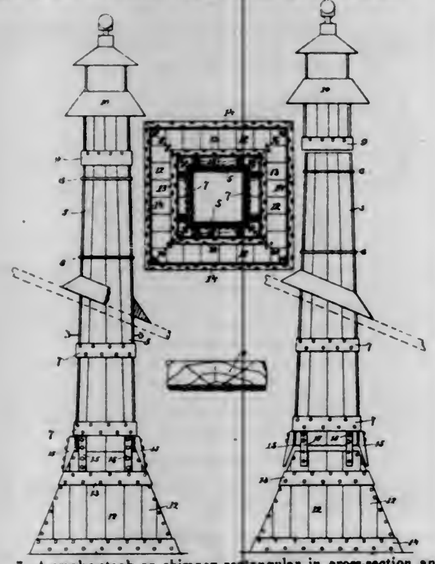
2. A smoke-stack or chimney formed of a combustible material presenting an approximately smooth inside surface and such surface coated with a petrifiable material, for the purpose set forth.

3. A smoke-stack or chimney formed of wood presenting an approximately smooth inside surface and such surface coated with a petrifiable material, for the purpose set forth.

4. A smoke-stack or chimney formed of a combustible material and coated on its inside surface with sand, for the purpose set forth.

5. A smoke-stack or chimney formed of wood and coated on its inside surface with sand for the purpose set forth.

6. A smoke-stack or chimney formed of wood and coated on its inside surface with paint and sand, for the purpose set forth.



7. A smoke-stack or chimney rectangular in cross-section and formed of a number of parallel wood boards with transverse straps holding same together, and coated on its inside surface with petrifiable material, for the purpose set forth.

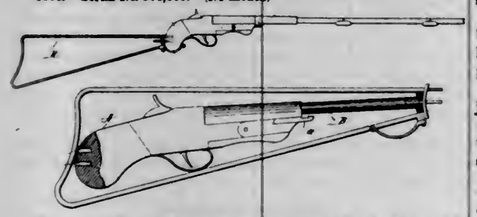
8. A wood smoke-stack comprising a body section, top section and flared bottom section with its inside surface fireproofed, for the purpose set forth.

9. A wood smoke-stack rectangular in cross-section and comprising a body-section, top section and flared bottom section with its inside surface fireproofed, for the purpose set forth.

10. A wood smoke-stack rectangular in cross section comprising a body-section, top section and flared bottom section with strips 15 for connecting the last-named sections together, for the purpose set forth.

11. A wood smoke-stack rectangular in cross-section comprising a body-section, top section and flared bottom section formed of a number of parallel wood boards with transverse straps holding same together, the top section overlapping the body-section and strips 15 for connecting the body and bottom sections together, for the purpose set forth.

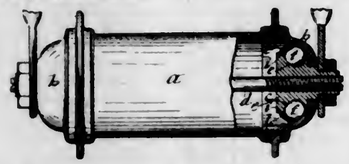
570,145. STOCK AND BARREL EXTENSION FOR PISTOLS OR REVOLVERS. GIOVANI B. PITTAVINO, New York, N. Y. Filed Nov. 14, 1895. Serial No. 568,885. (No model.)



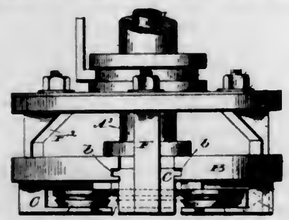
Claim.—A rifle or other gun constructed as herein shown and described, consisting of a stock provided with a pivoted spring-arm adapted to form an auxiliary support for the rifle-frame with a rigidly-attached barrel-section, and one or more movable barrel-sections, all of said sections being provided with a bayonet-lock device adapted to hold them firmly together in position, all constructed and arranged as herein shown and described.

570,146. BALL-RETAINER FOR ANTIFRICTION WHEEL-BEARINGS. EDMUND K. RICHTER, Jersey City, N. J. Filed Dec. 31, 1895. Serial No. 573,898. (No model.)

Claim.—In a ball bearing, the combination of the cone c provided with the circumferential groove i adjacent to the ball-race, and the cup-shaped annular spring-plate *l* slitted transversely to render it expansible and seated in the aforesaid groove by automatic contraction of said plate as set forth.



570,147. SEAMING SHEET-METAL VESSELS. JOHN A. STEWARD, Clarendon, Vt. Filed June 19, 1895. Serial No. 553,352. (No model.)



Claim.—1. The combination with a seaming-head, of a movable head and a series of seaming-tools mounted in non-pivoted supports and provided with a non-pivoted part in the path of the vertically-reciprocatory device to be engaged thereby whereby the tools may be reciprocated radially in fixed guides on the head, substantially as specified.

2. The combination with the seaming-head, of a rotatable head, rotary and radially-reciprocatory seaming-tools carried thereby, non-pivoted supports for said tools, and a vertically-reciprocatory head carrying means for engaging a non-pivoted part on said tools for giving the reciprocal motion thereto, substantially as specified.

3. The combination with the seaming-head, of a rotatable head, rotary and radially-reciprocatory seaming-tools carried thereby, non-pivoted supports for said tools, a vertically-reciprocatory head carrying means for engaging a non-pivoted part on said tools for giving the reciprocal motion thereto, and means for adjustment of the parts for different-sized cans, substantially as specified.

4. The combination with a head having radial slots, of the rotatable adjusting-disk having slots angularly disposed and openings for the passage of wedge-fingers, and vertically-movable wedge-fingers adjustable radially by the rotation of said disk, substantially as specified.

5. The combination with a head having radial slots, of the vertically-reciprocatory wedge-fingers, a rotatable adjusting-disk having slots angularly disposed, and openings for the passage of the wedge-fingers, and means carried by said disk adapted to be actuated by the rotation of the disk to adjust the wedge-fingers radially, and means for holding the parts in their adjusted positions, substantially as specified.

6. The combination with the cam-supporting shafts and the cam-blocks carried thereby, of the vertically-reciprocatory wedge-fingers having inclined portions and tapered projections between said inclined portions and the ends of said fingers, substantially as specified.

7. The combination with the cam-supporting shafts and the adjustable cam-blocks carried thereby, of the vertically-reciprocatory wedge-fingers having inclined portions, and double tapered projections between the inclined portions and the ends of the fingers, substantially as specified.

8. The combination with the cam-supporting shafts and the horizontally-reciprocatory carriages and seaming-tools, of the adjustable cam-blocks and vertically-reciprocatory wedge fingers having inclined portions near their upper ends and tapered projections on their inner faces between said inclined portions and the lower ends of the fingers, substantially as specified.

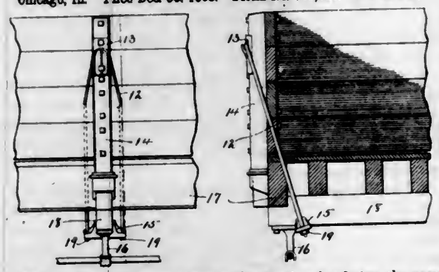
9. The combination with the rotary head and the radially-reciprocatory and rotary seaming-tools, of the cam-supporting shafts and adjustable cam-blocks and the vertically reciprocatory wedge-fingers having V-shaped projections, substantially as specified.

10. The combination with the rotary head and the radially-reciprocatory and rotary seaming-tools, of the cam-supporting shafts and adjustable cam-blocks, the vertically-reciprocatory wedge-fingers having V-shaped projections, and means for adjusting the same, substantially as specified.

11. The combination with the head having radial grooves with guideways, of the carriages mounted to slide in said ways, the seaming-tools rotatably mounted in said carriages, the cam-supports with their cam-blocks and the vertically-reciprocatory wedge-fingers mounted to work through openings in the head and provided with V-shaped projections, substantially as specified.

12. The combination with the head and the radially-reciprocatory carriages, of the rotary seaming-tools mounted in said carriages, the cam-supports, the adjustable cam-blocks thereon, the vertically-reciprocatory wedge-fingers having inclined portions, the head carrying the same, and the rotatable adjusting-disk for adjusting said fingers radially on the head, substantially as specified.

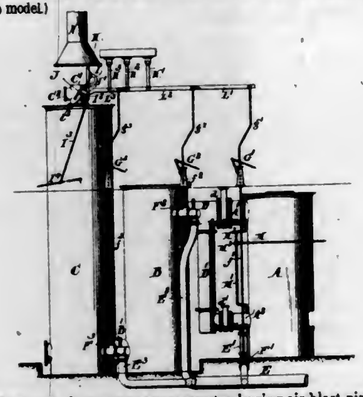
570,148. LATERAL SUPPORT FOR SIDES AND ENDS OF CARS. WESLEY A. THOMAS, Vicksburg, Miss., assignor of one-half to J. J. Casey, Chicago, Ill. Filed Dec. 30, 1895. Serial No. 573,715. (No model.)



Claim.—1. In a support for the sides and ends of cars, the combination with a stake 14, and beam 18, of a truss-seat 13, secured on said stake, and a truss-rod engaging at its upper portion said seat and having arms passing on both sides of said stake through said side or end, and means for securing the free ends of said truss rod in the plate or washer and on opposite sides of said beam.

2. A support for the sides and ends of cars, comprising a truss-seat adapted to be secured to a suitable portion of the car-frame, a truss-plate adapted to be secured beneath the car-frame, and a truss-rod provided at its upper end with a saddle to engage the truss-seat, and with parallel-disposed members to be secured to the truss-plate, the said truss-rod, when secured in place occupying a plane approximately bounded by the inner wall of the car-body, the two members disposed one on each side of the stake and needle beam.

570,149. SAFETY DEVICE FOR GAS-PRODUCERS. GEORGE E. WOODS, New York, N. Y., assignor to Alexander C. Humphreys and Arthur G. Glasgow, same place. Filed Mar. 16, 1896. Serial No. 583,276. (No model.)



Claim.—1. In a water-gas apparatus having air-blast pipes leading to various parts thereof for promoting combustion and effecting the proper heating thereof, said blast-pipes being provided with valves and said apparatus having also separate take-off pipes for products of combustion and for water-gas, and a valve for opening and closing the take-off pipe for products of combustion, the combination of the valves controlling the air-blast pipes and the valve controlling the take-off pipe with interlocking mechanism whereby the closing of the take-off valve locks and prevents the opening of the blast-valves so long as said take-off valve remains closed.

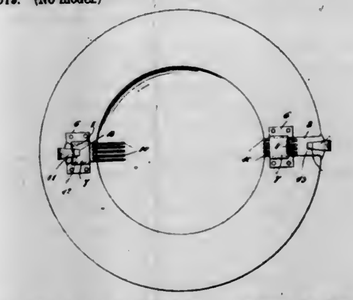
2. In a water-gas apparatus having air-blast pipes leading to various parts thereof for promoting combustion and effecting the proper heating thereof, said blast-pipes being provided with valves, and said apparatus having also separate take-off pipes for products of combustion and for water-gas and a valve for opening and closing the take off pipes for products of combustion, the combination of the valves controlling the air-blast pipes and the valve controlling the take-off pipe with interlocking mechanism whereby the opening of one or more of the blast-valves locks and prevents the closing of the take-off valve so long as said blast valve or valves remain open.

3. In a water-gas apparatus having air-blast pipes leading to various parts thereof for promoting combustion and effecting the proper heating thereof said blast-pipes being provided with valves and said apparatus having also separate take-off pipes for products of combustion and for water-gas and a valve for closing and opening the take off pipe for products of combustion, the combination of the valve controlling the air-blast pipes and the valve controlling the take-off pipe with interlocking mechanism whereby the opening of one or more of the blast-valves locks and prevents the closing of the take-off valve so long as said blast-valve is open and the closing of the take-off valve locks and prevents the opening of the blast-valves so long as said take-off valve is closed.

4. In a water-gas apparatus having air-blast pipes leading to various parts thereof for promoting combustion and effecting the proper heating thereof said blast pipes being provided with valves and said apparatus having also separate take-off pipes for products of combustion and for water-gas and a valve for opening and closing the take-off pipe for products of combustion, the combination of the take-off valve having an actuating-shaft as I' with a locking device as J secured to said shaft, a series of pivoted levers as $L' L^2 L^3$ connecting with the blast-valves, one connected to the end of each lever, said levers being arranged as specified so that their ends $l' l^2 l^3$ will engage with the locking device J and prevent the closing of the take-off valve when any blast-valve is open.

5. In a water-gas apparatus having air-blast pipes leading to various parts thereof for promoting combustion and effecting the proper heating thereof said blast-pipes being provided with valves, and said apparatus having also separate take off pipes for products of combustion and for water-gas and a valve for closing and opening the take-off pipe for products of combustion, the combination of the take-off valve having an actuating-shaft as I' with a locking device as J secured to said shaft, a series of pivoted levers as $L' L^2 L^3$, connecting with the blast-valves one connected to the end of each lever, said levers being arranged as specified so that their ends $l' l^2 l^3$ will engage with the locking device J and prevent the opening of the blast-valves when the take-off valve is closed.

570,150. HAT-FASTENER. LUCY A. BARBOUR, Providence, and JOHN J. EDWARDS, Pawtucket, R. I. Filed July 17, 1896. Serial No. 599,519. (No model.)

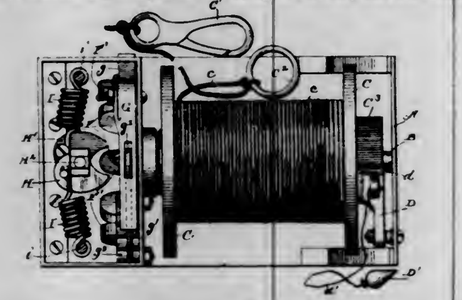


Claim.—The herein-described fastening device for hats, which consists of an attachment, adapted to be secured to the under side of the rim of the hat, and which is provided with a transverse keeper and a comb which is adapted to be passed through said keeper, said comb consisting of a head having a plurality of teeth formed thereon, which are adapted to enter the hair, and said head being provided with a backwardly-directed hook or loop which is adapted to engage with a lug or projection formed on said keeper so as to hold said comb in said keeper, substantially as shown and described.

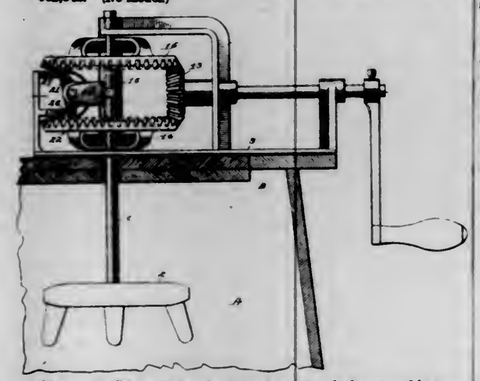
570,151. FIRE-ESCAPE. JOHN BERRS, Chicago, Ill. Filed Apr. 1, 1896. Serial No. 585,707. (No model.)

Claim.—The combination with the main frame A, of the shaft B, journaled therein, the drum C, mounted on said shaft, the cord or cable c, secured at one of its ends to the drum, the locking-cam C^3, on one end of the drum, the dog D, pivoted on the main frame and having the roller *d*, to contact with the cam C^3, the controlling-disk F, having in its periphery the recesses *f*, and on its outer surface the

rounded projections F', the spring-actuated cam projections H, and H', secured on the pivoted bar H^3, and adapted to engage the projections F', all constructed, arranged and operating substantially as described.



570,152. WASHING-MACHINE. HENRY F. BRANNER and MICHEAL J. KERNER, Davenport, Iowa. Filed Aug. 15, 1896. Serial No. 602,842. (No model.)



Claim.—1. The combination with two oppositely-rotatable gear-wheels having shoulders, of a shaft having a detent, and stationary projections situated in the path of the end portions of said detent to alternately throw its ends into engagement with the shoulders of said gear-wheels.

2. The combination with two oppositely-rotatable gear-wheels having shoulders, of a shaft having a detent, stationary projections situated in the path of the end portions of said detent to alternately throw its ends into engagement with the shoulders of said gear-wheels, and a spring bearing against the end portions of said detent and acting alternately.

3. The combination with the oppositely-rotatable gear-wheels, each of which is provided with a cam having a circular high part, incline, notch and shoulder, of a shaft having a detent situated to engage said cam, and stationary projections situated in the path of the end portions of said detent to alternately shift the same.

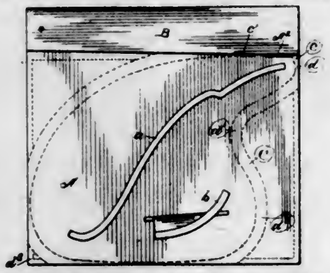
4. The combination with the oppositely-rotatable gear-wheels, each of which is provided with a cam having a circular high part, incline, notch and shoulder, of a shaft having a detent situated to engage said cam, stationary projections situated in the path of the end portions of said detent to alternately shift the same, and a spring bearing against the end portions of said detent and acting alternately.

5. The combination with the oppositely-rotatable gear-wheels mounted loosely upon a rotatable shaft and provided with cams, of a laterally-extending projection fixed to said shaft between said gear-wheels, a spring-actuated detent pivoted to said projection and having its end portions situated in the path of said cams and stationary projections situated in the path of the end portions of said detent to alternately shift the same.

570,153. PIANO SOUNDING-BOARD. JAMES H. BUTLER, Columbia Heights, Ill. Filed Feb. 20, 1896. Serial No. 579,963. (No model.)

Claim.—1. The combination with a sounding-board, of a strip made to form substantially a palette-shaped figure, secured on one surface of the board, and having its ends approximated on the treble part of the board, substantially as described.

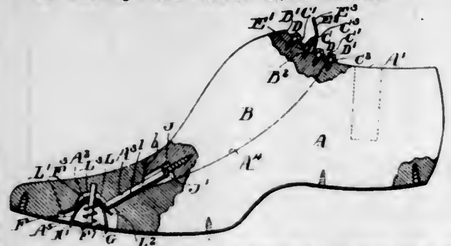
2. The combination with a sounding-board, of a strip made to form substantially a palette-shaped figure, secured on one surface of the board, said portion of the board being formed with a recess or opening between the ends of the strip, substantially as described.



3. The combination with a sounding-board provided in its treble portion, with an opening or slot, of a piece E, secured on the surface of the board along said opening, and a strip made to form substantially a palette-shaped figure, secured on one surface of the board, and having its ends approximated on the treble part of the board, substantially as described.

4. The combination with the sounding-board A, having the opening or slot A^2, in its treble portion, of the piece E, secured on the rear surface of the board along said opening, the bridges *a*, and *b*, located on the front surface of the board, the strip C, made to form substantially a palette-shaped figure, secured on the rear surface of the board, and having its ends approximated on the treble part thereof, so as to interpose the slot A^2, between its ends, and a series of ribs *e*, placed across the board within the figure formed by the strip C, substantially as described.

570,154. SHOEMAKER'S LAST. JESSE A. COLBY, Wilmington, Del. Filed Aug. 1, 1894. Serial No. 519,172. (No model.)



Claim.—1. A last having in combination a pronged plate, the prong or prongs whereof are adapted to extend through the sole of the last, and which is adapted to be retracted so that its prongs will be withdrawn into the body of the last, a rod extending through the body of the last so that one end projects into the block-recess while its other end is arranged to exert pressure as described against the prong-plate, and a block arranged, when seated in the block-recess, to press against said rod, and through it to force the prongs through the sole of the last.

2. A last having in combination a pronged plate, the prong or prongs whereof are adapted to extend through the sole of the last, and which is adapted to be retracted so that its prongs will be withdrawn into the body of the last, a spring arranged to normally press in and retract the prong-plate, a rod extending through the body of the last so that one end projects into the block-recess while its other end is arranged to exert pressure as described against the prong-plate, and a block arranged when seated in the block-recess, to press against said rod, and through it to force the prongs through the sole of the last.

3. A last having a cavity as A^3 formed in its sole in combination with a perforated metal plate H covering said cavity, a pronged plate situated in said cavity, a spring arranged to retract the plate and withdraw the prongs into the cavity, a rod extending from the said cavity into the block-recess and a block arranged to rest in said recess, and by pushing on said rod to force the prongs through the sole of the last.

4. In combination with a last having a spring-retracted prong-plate as described, and a rod arranged to force the prong-plate outward when acted on by the seated block, a block, and an adjustable rod-abutment secured thereto.

5. In combination with a last having a cavity in its sole, a dished plate having prongs on its edge situated in said cavity and arranged so that its prongs can extend beyond the last-sole, a spring arranged in the cavity of said plate to retract it, a rod arranged to push the pronged plate outward and a block arranged to thrust against the rod when seated on the last.

6. In combination with a last having a cavity in its sole, a pronged plate situated therein, a pivoted lever, as L, resting against said plate, a spring arranged to retract the plate, a rod arranged to rest against the lever, and acting through it to push the pronged plate outward, and a block arranged to press against said rod when seated.

7. In combination with a last having a cavity in its sole, a dished dome-shaped pronged plate situated in said cavity, a pivoted lever having a dished center which rests over the dome of the pronged plate, a spring arranged to retract the plate, a rod arranged to push against one end of the lever and through it to force the pronged plate outward and a block arranged to press against the rod when seated on the last.

8. In a last, the combination of a retractable pronged plate arranged in the sole thereof, a plate-actuating rod extending through the last-body into the block-recess, a block arranged to press against said rod when seated, and a sliding bolt-lock arranged on the top of the block and last to lock them together.

570,155. DEVICE FOR REPAIRING PNEUMATIC TIRES. LEVI M. DEVORE, Freeport, Ill. Filed Sept. 3, 1895. Serial No. 561,179. (No model.)



Claim.—1. A tool for repairing bicycle-tires, comprising two shanks, each having a point approximately at right angles to it, the shanks being adapted to be separably connected and thereby to bring the points into position to clasp between them a folded patch, the points when in such relation being adapted to be thrust through the wall of a bicycle-tire tool carrying with them the folded patch, and the angle between the points and shanks being adapted to limit the inward movement of the points.

2. A tool for repairing bicycle-tires comprising two shanks adapted to be separably connected and having points approximately at right angles to them and handles adapted to be interlocked when the shanks are brought into suitable relation, the points being adapted to clasp a folded patch between them, when the shanks are in their locked relation.

3. A tool for repairing bicycle-tires comprising two shanks having points approximately at right angles to them, one of said shanks being formed with an opening approximately at its angle, through which the point of the other shank may be passed, the points when in operative relation being adapted to clasp between them a folded patch and to carry the same through the wall of a bicycle-tire tube.

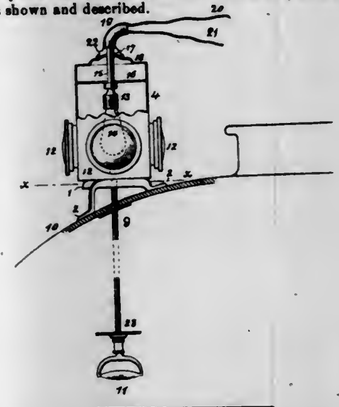
4. The combination with the shank, A, having the point, *a*, and opening, *d*, of the shank, A', having the point, *a'*, adapted to be passed through the hole, *d*, the shanks being formed with handles adapted to interlock when the points, *a*, *a'*, are brought together.

5. The combination with the shank, A, having the point, *a*, approximately at right angles to it and the opening, *d*, of the shank, A', having the point, *a'*, approximately at right angles to it and adapted to pass through the opening, *d*, the shank, A, being formed with a handle having a reentrant angle, and the shank, A', being formed with an offset, *b*, and handle, b^3, the offset, *b'*, being adapted to enter the reentrant angle in the handle of the shank, A, and thereby to lock the two shanks together.

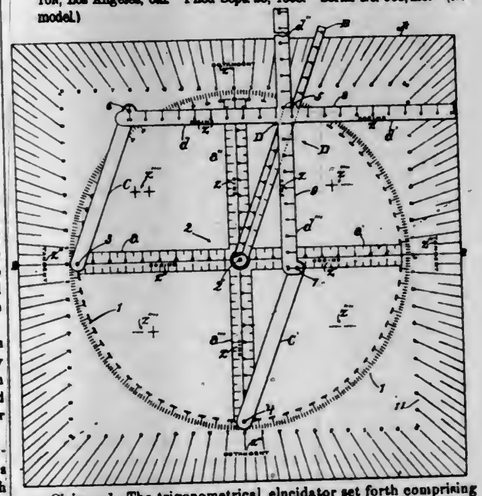
6. The combination with the shank, A, having the point, *a*, and opening, *d*, of the shank, A', having the point, *a'*, the shank, A, being formed with a handle made up of transverse bends, *b*, *b*, and the shank, A', being formed with the offset, *b'*, and handle, b^3.

570,156. CAR SIGNALING DEVICE. CHARLES H. DRESSEL, New York, N. Y. Filed June 20, 1895. Serial No. 553,422. (No model.)

Claim.—A revoluble deck signal-lamp in which is comprised a fixed lamp-supporting ring provided with feet or legs; a revoluble lamp-body bearing lenses, and having a downwardly-projecting manipulating-handle; a color-indicating plate located upon said handle, a non-rotatable suspended electric lamp within the lamp-body, a lamp-supporting extension-piece 15 passing loosely through the top of the lamp-body, and a loose ring 22 interposed between the top of the lamp-body and the extension-piece 15, the whole combined, substantially as shown and described.



570,157. TRIGONOMETRICAL ELUCIDATOR. ROBERT H. EDMISTON, Los Angeles, Cal. Filed Sept. 23, 1895. Serial No. 563,423. (No model.)



Claim.—1. The trigonometrical elucidator set forth comprising the diagram-card; the radial arm and guide-arm pivoted thereto, and the cross-bar pivoted to the radial arm and guide-arm substantially as set forth.

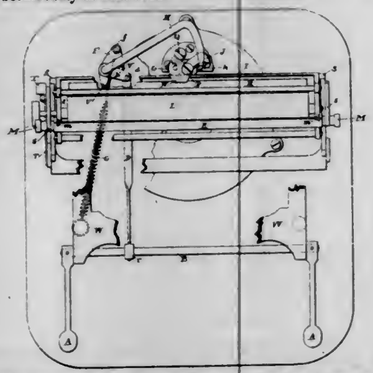
2. The combination of the diagram-card; the radial arm and the two guide-arms pivoted thereto; and the cross-bar pivoted to the radial arm and guide-arms substantially as set forth.

3. The trigonometrical elucidator set forth comprising the diagram-card; the guide-arm pivoted to such diagram-card: the radial arm pivoted to the diagram-card and countersunk into such card at its pivotal end to allow the end of the parallel arm to swing thereover without interference; and the cross-bar pivoted to the radial arm and the guide-arm.

4. The trigonometrical elucidator set forth comprising the diagram-card provided with a graduated circle and with a rectangular diagram-cross having its intersection at the center of the circle and its arms extending to the circumference of the circle: the radial arm pivoted to the card at the center of the circle, and extending to the circumference of the circle: the guide-arm pivoted at the junction of the circumference of the circle and one arm of the diagram-cross: and the rectangular cross-bar pivoted at its center to the radial arm at a point on said arm which touches the circumference of the circle, and having one of its arms pivoted to the free end of the guide arm: the pivots being so arranged that the interpivotal space on each arm is equal the radius of the circle.

570,158. TYPE-WRITING MACHINE. WILLIAM C. FARNUM, Arlington, Vt. Filed Mar. 19, 1895. Serial No. 542,342. (No model.)

Claim.—1. In a type-writer the combination with a traveling and swinging paper-roll frame, of an oscillating shift-block adapted to be operated from the keyboard, and carrying a roller in contact with the traveling paper-roll frame, and a vertical shaft which is interposed between the keyboard and the shifting-block and provided with a rigid horizontally-bent hooked end for engaging the said shifting-block substantially as described.



2. The combination with a traveling and swinging platen-carriage of an oscillating shift-block a coöperating arm a shaft with which it is rigid and means connected therewith for swinging it about a perpendicular axis whereby said block may be operated by the depression of one of the keys, substantially as specified.

3. The transversely-movable paper-holder of a type-writer and a pivoted shift-block arranged to shift the position of said holder, in combination with an arm having a downwardly and rearwardly inclined finger, arranged to move the said shift-block when the said finger is depressed a rock-shaft carrying the said arm, and one or more keys and intervening devices for rocking the said shaft and thereby depressing the said arm and finger, substantially as set forth.

4. The combination of a rock-shaft with a swinging arm, a key-shaft, direct crank connections between the said rock-shaft and the said key-shaft, and one or more keys attached to said key-shaft so arranged that the lifting of said keys will cause the said swinging arm to move forwardly and raise the paper-holder, and the depression of said keys will cause the said swinging arm to move backwardly and operate a carriage shift-block, substantially as specified.

5. In combination with a movable platen-roll, a pivoted shifting-block provided with a roll arranged to bear against an attachment of said platen-roll, said block having also a projecting hook J, an arm H, bent into hook form and provided with a terminal finger A, and means for rocking the said arm about an axis so as to make the said finger engage and operate the said hook, thereby moving the said platen-roll in order that it may be in position for the printing of the upper or the lower case of type substantially as set forth.

570,159. TYPE-WRITING MACHINE. WILLIAM C. FARNUM, Arlington, Vt. Filed Mar. 19, 1895. Serial No. 542,344. (No model.)

Claim.—1. The combination with the spring-actuated reciprocating scape-wheel, of the carriage-rack, the wheel-dog, the rack-dog and the link connecting said dogs provided with the lip which engages the rack-dog, substantially as described.

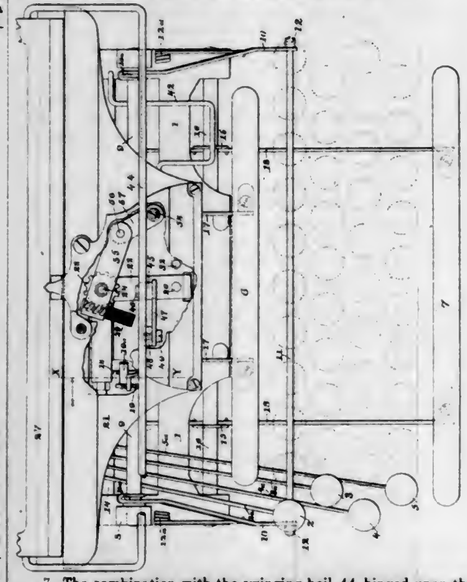
2. The combination with the spring-actuated scape-wheel and its reciprocating arm of the rack, the wheel-dog 30, the rack dog 34, the link 33 and the spring 35, substantially as described and for the purposes set forth.

3. The combination with the scape-wheel and its coiled operating-spring of the carriage actuated thereby, an oscillating device in which the said scape-wheel is mounted, an additional spring and means connected with the keys for moving it into position to be struck and put under tension by an attachment of the said oscillating device when a key is depressed, the latter spring aiding in restoring the key-actuated devices to their normal position when the pressure on the key is withdrawn substantially as set forth.

4. The combination with a reciprocating scape-wheel of an operating-spring coiled therein and secured at one end to the scape-wheel stud, a link 55 secured to the said stud, a fixed stud 58 and a link 57 pivoted thereon and hinged to the link 55, substantially as described.

5. The combination with the platen-carriage of a type-writer, of the scape-wheel the rack engaging with the cog of said scape-wheel, the coiled operating-spring the axial stud, the worm-wheel fixed upon the axial stud and the worm engaging the worm-wheel, substantially as specified.

6. The combination with the scape-wheel of the coiled operating-spring, the axial stud the worm-wheel 28 fixed upon said stud, the link 55 the worm-screw journaled therein and the pivoted link 57, substantially as described and for the purposes set forth.

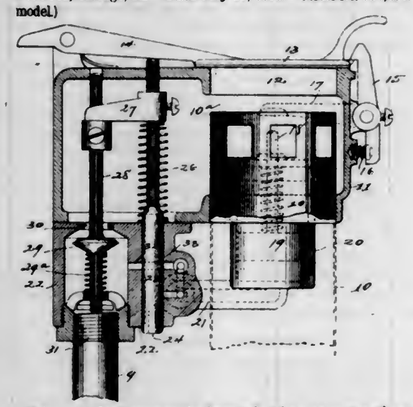


7. The combination with the swinging bail 44 hinged upon the moving carriage of the bell-crank lever 48, the connecting-rod 50 the pivot-pin 51, the link 33 and the dogs 30 and 34 arranged to be withdrawn by a depression of the bail and bell-crank lever, substantially as described.

8. A crank-arm formed of one flat bar bent upon itself at one end, in combination with a shaft fitted with a key-seat passing through the doubled end, and a key driven between the seating of the shaft and the loop of the arm, substantially as described and for the purposes set forth.

9. In a type-writer a key-spring as 42 pressing against a rocking key-lever and arranged to be swung about an axis perpendicular to the fulcrum of the key-lever in combination with a slot in the key-lever having notches for holding the spring on either side of the fulcrum the said spring engaging directly therewith, substantially as shown and for the purposes set forth.

570,160. PNEUMATIC-DESPATCH APPARATUS. EDMOND A. FORDYCE, Chicago, Ill. Filed July 29, 1895. Serial No. 557,497. (No model.)



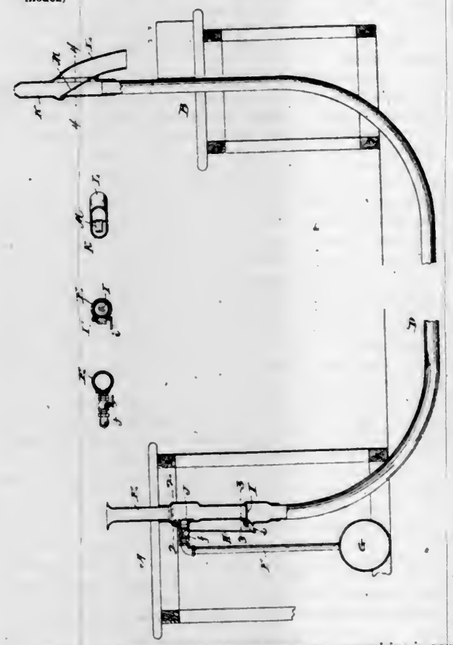
Claim.—1. In a pneumatic despatch-tube apparatus, the combination with a despatch-tube, of a terminal therefor to which air under pressure is admitted, an opening in the casing of the terminal and a door adapted to said opening, a catch for said door, a pressure-operated piston for controlling the catch and suitable air passages and valves whereby the motor fluid is controlled to despatch the carrier and to release the latch, substantially as described.

2. In a pneumatic-despatch apparatus, the combination with a despatch-tube, of a terminal therefor communicating with the opening of the tube and having an aperture in its wall, a door adapted to said aperture, a catch for holding the door closed, a motor fluid-supply pipe communicating with the interior of the casing, a pressure-chamber, a piston working therein and adapted to control the catch, and valves for controlling the air-passages whereby the air may be admitted to the despatch-tube and to the piston-chamber and an escape port or passage for relieving the piston-chamber of pressure, substantially as described.

3. In a pneumatic-despatch apparatus, the combination with a despatch-tube, of a terminal therefor communicating with the opening of the tube and having an aperture in its wall, a door adapted to said aperture and carried by a hinged arm, a catch for holding the door closed, a motor-fluid-supply pipe communicating with the interior of the terminal, a valve for controlling said pipe and having a projecting valve-stem, a pressure-chamber, a piston working therein, an air-passage communicating with the motor-fluid-supply pipe below its valve, a valve in said passage having a projecting valve-stem and adapted to be moved by the closing of the door, a piston working in the pressure-chamber and adapted to control the catch and an escape port or passage for relieving the pressure-chamber of pressure, substantially as described.

4. In a pneumatic-despatch apparatus, the combination with a despatch-tube, of a terminal therefor, a motor-fluid-supply pipe communicating with the interior of the terminal, a valve for controlling the passage of the supply-pipe, a catch for locking the door in the closed position, a pressure-chamber having a working piston therein adapted to operate the catch in one direction, an air-passage between the motor-fluid-supply pipe and the pressure-chamber, a valve controlling said passage, said valve being adapted to be moved in one direction by the closing of the door, an escape-aperture in the passage-way for relieving the pressure-chamber and springs for returning the valves and piston at the close of each actuation, substantially as described.

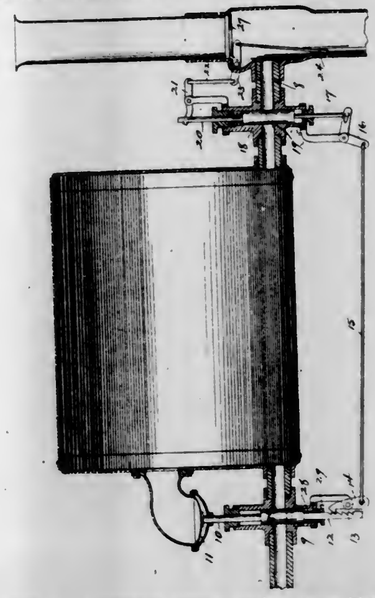
570,161. PNEUMATIC-DESPATCH APPARATUS. EDMOND A. FORDYCE, Chicago, Ill. Filed July 29, 1895. Serial No. 557,498. (No model.)



Claim.—1. A pneumatic-despatch apparatus, comprising in combination a despatch-tube having a valve controlled inlet for a motor fluid, a trip normally projecting into the bore of the tube and adapted to be actuated by the impact of the carrier and a connection between the trip and the valve, a check-valve between the motor-fluid inlet and the end of the tube and adapted to be seated by the pressure of the motor fluid, and means for arresting the carrier at the opposite end of the tube and a switch for diverting it when relieved of the motor-fluid pressure, substantially as described.

2. A pneumatic-despatch apparatus, comprising a despatch-tube, a motor-fluid reservoir, a pipe connecting the reservoir to the despatch-tube near the receiving end thereof, a valve in said pipe, a second valve interposed between the motor-fluid inlet and the receiving end of the despatch-tube, a trip normally sustained across the path of the carrier, a connection between the trip and the valve in the motor-fluid-supply pipe, means for arresting the carrier at the delivery end of the tube, a branch tube through which the carrier discharges by gravity and a switch arranged at the junction of the branch with the despatch-tube and adapted to be rocked out of the way of the carrier and to close behind the same whereby to divert it through the branch, substantially as described.

570,162. MEANS FOR CONTROLLING SUPPLY OF MOTOR FLUID. EDMOND A. FORDYCE, Chicago, Ill. Filed July 29, 1895. Serial No. 557,499. (No model.)



Claim.—1. A pneumatic-despatch apparatus, comprising in combination with the despatch-tube a main pressure-reservoir and an auxiliary reservoir, the latter being interposed between the main reservoir and the despatch-tube and in communication with both, valves controlling the communicating passages and a tripping device projecting into the despatch-tube and adapted to be moved by a passing carrier to operate to open the valve between the reservoir and the despatch-tube, substantially as described.

2. A pneumatic-despatch apparatus, comprising in combination with the despatch-tube a main reservoir and an auxiliary reservoir, the latter being located between the former and the despatch-tube and communicating with both, valves in the communicating passages, a tripping device located in the despatch-tube and adapted to be moved by a passing carrier, connections between said tripping device and the valve in the passage between the auxiliary reservoir and the despatch-tube and adapted when actuated to open the valve for controlling the passage from the main reservoir to the auxiliary reservoir and a locking mechanism for said valve in the passage-way between the reservoirs and actuated by the valve in the passage-way from the auxiliary reservoir to the despatch-tube, substantially as described.

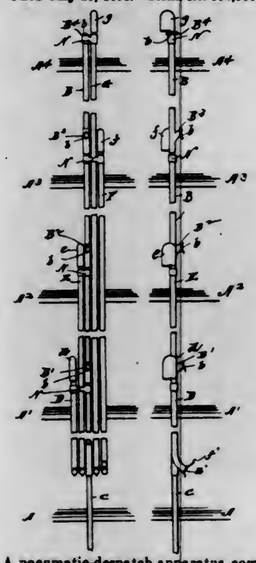
3. A pneumatic-despatch apparatus, comprising in combination with the despatch-tube a main reservoir for a pressure fluid and an auxiliary reservoir interposed between said main reservoir and the despatch-tube and communicating with both, valves controlling the passages, springs normally tending to move the valves in one direction and a diaphragm subject to auxiliary-reservoir pressure and normally tending to close the valve controlling the auxiliary-reservoir supply, substantially as described.

4. A pneumatic-despatch apparatus, comprising in combination a despatch-tube, a reservoir, a valve interposed in the passage-way between the reservoir and the despatch-tube, a valve in the despatch-

tube and a trip also arranged in the despatch-tube and adapted to be moved by a passing carrier and connections between the trip and the valves in the despatch-tube and in the passage-way, whereby when a carrier is deposited the valve controlling the supply-passage is opened, substantially as described.

5. A pneumatic-despatch apparatus, comprising in combination a despatch-tube, a reservoir, a valve interposed in the passage-way between the reservoir and the despatch-tube, a valve in the despatch-tube, a trip also arranged in the despatch-tube and adapted to be moved by a passing carrier, connections between the trip and the valves in the despatch tube and in the passage-way, whereby when a carrier is deposited the valve controlling the supply-passage is opened, and the valve in the despatch-tube being connected with the valve controlling the passage-way and adapted by its weight to close said valve upon the release of pressure in the despatch-tube, substantially as described.

570,163. STORE-SERVICE APPARATUS. EDMOND A. FORDYCE, Chicago, Ill. Filed July 29, 1895. Serial No. 557,500. (No model.)



Claim.—1. A pneumatic-despatch apparatus, comprising a sending-tube having a plurality of inlets and a plurality of return-tubes, one for each station and in pneumatic communication with the sending-tubes, and closures for the receiving ends of the return-tubes adapted to be operated singly and by their opening to close the one last previously opened, substantially as described.

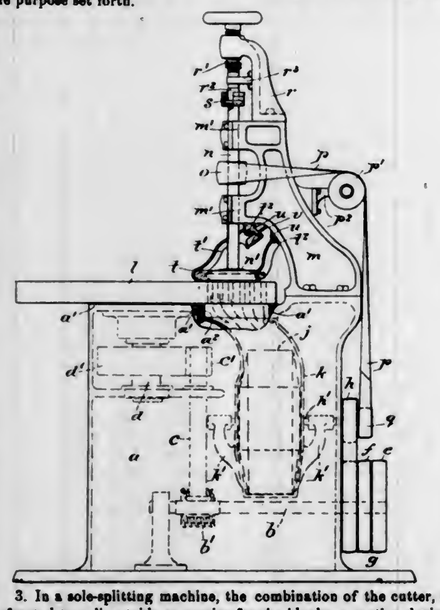
2. A pneumatic-despatch apparatus, comprising a sending-tube having a plurality of inlets and a plurality of return-tubes, one for each station and in pneumatic communication with the sending-tube, and closures for the receiving ends of the return-tubes, said closures each having a tripping device, a series of locks, one for each trip, and said locks being connected whereby when one of the closures is opened its trip releases the lock of the then open closure, substantially as described.

3. In a pneumatic-despatch apparatus, the combination with a sending-tube normally closed to the atmosphere, of a series of return-tubes, each of which is connected with the sending-tube and provided with a normally-closed hinged cover for its receiving end, a cam connected and moving with the hinged cover, a spring-controlled rock-shaft having a series of stop-arms, one for each cam, and adapted to engage such cam to hold the hinged lid open and to be depressed by the manual opening of another lid, substantially as described.

570,164. SOLE-SPLITTING MACHINE. FRANCIS J. FREESE, Montreal, Canada. Filed May 1, 1894. Serial No. 509,733. (No model.)

Claim.—1. In a a sole-splitting machine, the combination with the cutter or knife, of a feed device in the form of a horizontally-rotating perforated table or carrier, a yielding resistance device in the form of a plain roller with spring-controlled support therefor adapted to bear upon said blanks as they approach the cutter and a suction device acting upon a limited number of the perforations in the table with means for operating the cutter and feed, for the purpose set forth.

2. In a sole-splitting machine, the combination with the cutter and means for adjusting same, of a feed device in the form of a horizontally-rotating perforated table or carrier, a yielding resistance device in the form of a plain roller with spring-controlled support therefor adapted to bear upon said blanks as they approach the cutter, and a suction device acting upon a limited number of the perforations in the table, with means for operating the knife and feed for the purpose set forth.



3. In a sole-splitting machine, the combination of the cutter, a perforated traveling table or carrier for the blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table, and means for operating same, for the purpose set forth.

4. In a sole-splitting machine, the combination of the cutter, a perforated table or carrier revolving in a horizontal plane capable of carrying a number of blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table and means for operating same, for the purpose set forth.

5. In a sole-splitting machine, the combination of the cutter, means for adjusting same, a perforated traveling table or carrier for the blanks, a suction device having a single tube, the mouth of which acts directly beneath the perforations in said table communicating only with a limited number of the perforations at a point in advance of the cutter and means for operating same, for the purpose set forth.

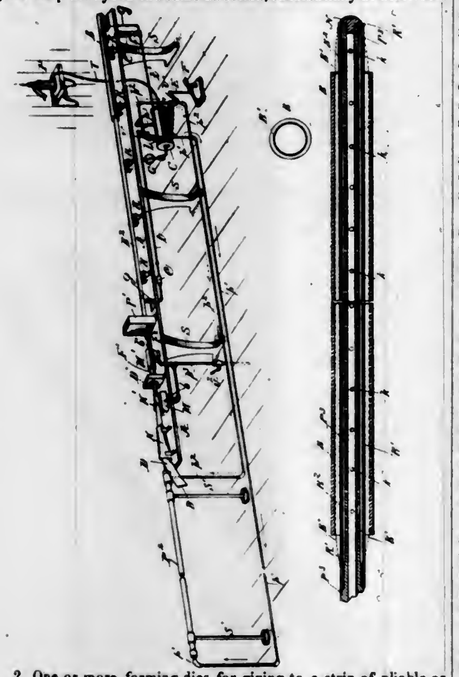
6. In a sole-splitting machine, the combination of the cutter, a perforated traveling table or carrier for the blanks, a suction device having a single tube the mouth of which acts directly beneath the perforations in said table, communicating only with a limited number of the perforations at a point in advance of the cutter, a yielding pressure device and means for operating the cutter, table and suction device for the purpose set forth.

7. In a sole-splitting machine, a feed device in the form of a perforated traveling table and a suction device having a single tube the mouth of which acts directly beneath the perforations in said table and only upon a limited number of the perforations therein.

8. In a sole-splitting machine, the combination with the inclosing casing having an opening in its upper side, of the cutter, the means for adjusting same, the revolving perforated feed-table above said casing and traveling across the opening in the upper side of the casing, the suction-conduit communicating at its upper end with said opening and at its lower end with the outer air, the suction-fan within said conduit; the yielding pressure device adapted to bear upon the blanks carried by the table as they approach the cutter and means for operating the whole as and for the purposes as set forth.

570,165. ART OF LINING METAL TUBES WITH FIBROUS MATERIAL. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed Mar. 2, 1896. Serial No. 581,582. (No model.)

Claim.—1. One or more forming-dies for giving to a strip of pliable or fibrous material, such as paper, a tubular form; means for heating said forming die or dies, in combination with means for drawing the strip always in the same direction, substantially as described.



2. One or more forming-dies for giving to a strip of pliable or fibrous material, such as paper, a tubular form; means for heating said forming die or dies, in combination with a compression-die and an additional heating-die and means for drawing the paper continuously forward, substantially as described.

3. Mechanism for forming a tube from a strip of pliable or fibrous material, such as paper, consisting of means for giving to the strip a tubular conformation and simultaneously heating and causing said tube to retain its tubular form, in combination with a source of heat and means for drawing the strip and the completed tube continuously in the same direction, substantially as described.

4. Mechanism for forming a tube from a strip of pliable or fibrous material, such as paper, consisting of one or more forming-dies for giving tubular conformation to the strip in the direction of its length; means for supporting the paper in its tubular form as it is drawn forward, and additional means in the nature of an ironing-die which surrounds the formed tube and its supporting means, in combination with means for heating the dies and additional means for drawing the tube and its support continuously forward, substantially as described.

5. Mechanism for lining a tube from a strip of pliable or fibrous material, such as paper, consisting of means for giving to a strip of such material a tubular form of substantially the same length as the tube to be lined but of an exterior diameter somewhat less than the interior diameter of said tube; means for carrying and supporting said completed tube within the tube to be lined and without touching the interior wall thereof as it is drawn in, in combination with means for coating the outer surface of said lining-tube with an adhesive agent, and additional means for expanding it against the inner wall of the outer tube after it is fully drawn therein, substantially as described.

6. Mechanism for lining a tube from a strip of pliable or fibrous material, such as paper, consisting of means for giving to a strip thereof a tubular form with overlapping edges and of a completed length substantially that of the tube to be lined; supporting means around which said tube is formed and adapted to carry it, the completed tube, within the tube to be lined in such manner that it does not touch the inner wall of the latter, and means for expanding the lining outwardly against the inner wall of the outer tube, substantially as described.

7. Mechanism for forming a tube from a strip of pliable or fibrous material, such as paper, consisting of an air-chamber for holding air under pressure; connections between the air-chamber and a piston operatively connected with a mandrel adapted to move backward and forward with the piston; means for giving to the strip of pliable or fibrous material a tubular form around the mandrel, and additional means for controlling the supply of air to the opposite sides of the piston-head in such manner that as the piston is forced in one direction the strip of paper is given a tubular form around the forming-mandrels and as it is forced in the other direction the mandrel is restored to its normal or starting position, substantially as described.

8. Means for expanding a tubular lining against the walls of a tube to be lined, consisting of an expansible tube adapted to be located within the tubular lining and expanded by air under pressure and then to be withdrawn after the lining is firmly set in place, substantially as described.

9. Means for lining a tube with pliable or fibrous material such as paper, consisting of a hollow perforated tube surrounded with an expansible tube, the hollow tube having connection with a source of air or liquid pressure, substantially as described.

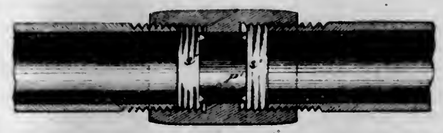
10. Mechanism for lining tubes with pliable or fibrous material such as paper, consisting of means for forming the tube-lining of the pliable material, and additional means consisting of an expansible tube for causing a previously-formed tube-lining to adhere to the inner walls of the tube to be lined, substantially as described.

11. Mechanism for lining tubes from a strip of pliable or fibrous material such as paper, consisting of means for furnishing air or gas under pressure; a piston-rod operatively connected with said air supply, one or more forming-dies and a heating-die surrounding the outer or exposed portion of the piston-rod; means for heating both of said dies, means for coating the lining-tube with an adhesive agent, and additional means for supporting the tube to be lined in alinement with the tubular lining; in combination with an expansible device carried by the exposed end of the piston for expanding the lining-tube against the inner wall of the tube to be lined and automatically-controlled mechanism for giving to said expanding device movement in opposite directions, substantially as described.

12 The described method of lining a tube with fibrous material such as paper, consisting in first forming by ironing with heat a completed tube of the fibrous material of lesser diameter than the inner diameter of the tube which is to be lined, then inserting or drawing said completed tube within the tube to be lined and finally expanding it outwardly by pneumatic pressure against the inner wall thereof.

13. The described method of lining a tube with pliable or fibrous material, such as paper, consisting in first forming a completed tube of a strip of the material and simultaneously ironing it by heat and pressure in such manner as to cause it to retain its tubular form, then drawing this completed tube inside of the tube to be lined and without touching the inner wall thereof and finally expanding it against the inner surface thereof.

570,166. INSULATING-JOINT FOR METAL OR ARMORED CONDUIT-TUBES. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed Apr. 6, 1896. Serial No. 586,427. (No model.)



Claim.—1. As a means for joining armored conduit-tubes, a collar which is interiorly screw-threaded at its opposite ends and provided with an interior thimble of insulating material, said thimble having V-shaped grooves at its opposite ends and being adapted to receive, under pressure, the ends of the insulating-linings as said conduit-tubes are bound together by the screw-threaded collar.

2. A joint for two metal armored conduit-tubes, consisting of a metal collar surrounding a thimble of insulating material having V-shaped grooves at its opposite ends, said collar and armored conduit-tubes being provided with means for uniting them firmly together under pressure so that the lining thereof and the opposite ends of the thimble constitute, in effect, one continuous insulating-tube.

570,167. METALLIC JUNCTION-BOX AND MEANS FOR UNITING METAL CONDUIT-TUBES THERETO. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed Apr. 6, 1896. Serial No. 586,428. (No model.)

Claim.—1. A junction-box provided with an integral screw-threaded neck, a screw-threaded locking-collar and means for firmly gripping or holding a tube in place in alinement with said neck, said gripping means being adapted to exert a wedging action between the neck and the locking-collar, substantially as described.

2. A junction-box provided with an integral screw-threaded neck, in combination with a tube adapted to fit snugly within said neck, and a cone shaped ring for gripping or holding the tube and the neck firmly together, substantially as described.

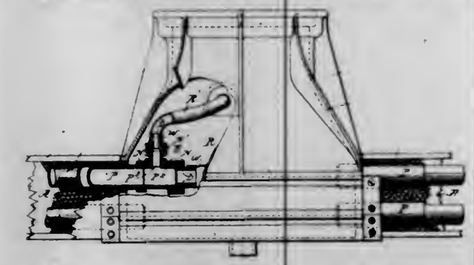
3. A junction-box provided with a series of integral screw-threaded necks, a series of tubes adapted to fit each snugly within one of said necks, and a locking-collar and wedging means for each neck adapted to unite said neck and tube together, substantially as described.



4. A junction-box provided with one or more exteriorly-screw-threaded necks, in combination with a screw-threaded locking-collar and a cone-shaped split ring for grasping or holding a pipe or tube in alinement with said neck, substantially as described.

5. A metallic junction-box provided with an insulating-lining and a series of hollow screw-threaded necks, an insulating-thimble for each neck extending within the box, an armored conduit-tube adapted to fit within each neck, a screw-threaded locking-collar for each neck, and a locking device controlled thereby, all of said parts being so arranged that when the collars are screwed home the parts are rigidly united together, substantially as described.

570,168. UNDERGROUND CONDUIT. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed May 11, 1896. Serial No. 591,090. (No model.)



Claim.—1. In a subway or conduit a series of conduit-tubes extending into a manhole or to a point of distribution, each of said conduit-tubes being provided with screw-threaded ends and corresponding screw-threaded locking-nuts attached to short sections of insulating-tubing for cross-connecting said tubes, substantially as described.

2. In a subway or conduit a series of conduit-tubes extending into a manhole or to a point of distribution, in combination with expansible cross-connecting tubes and means for securing said expansible tubes to any pair of said conduit-tubes, whereby the insulating continuity of said tubes is effected, substantially as described.

3. A pair of conduit tubes having their ends located in close proximity to each other, in combination with an expansible insulating connecting-tube provided with means for uniting the opposite ends thereof to said conduit-tubes, substantially as described.

4. In a subway or conduit a series of conduit-tubes extending into a manhole from opposite sides, in combination with a series of expansible cross-connecting tubes provided with means for connecting said expansible tubes to the ends of the oppositely-located conduit-tubes, substantially as described.

5. A subway or conduit provided with expansible means for joining two or more conduit-tubes and an expansible side or branch tube running therefrom to a service conduit-tube located aboveground, substantially as described.

6. In a subway a series of conduit-tubes extending into a manhole, in combination with a series of expansible cross-connecting tubes adapted to connect said conduit-tubes together in pairs and expansible branch connecting-tubes, one or more, for connecting said conduit-tubes to lateral or side branches, substantially as described.

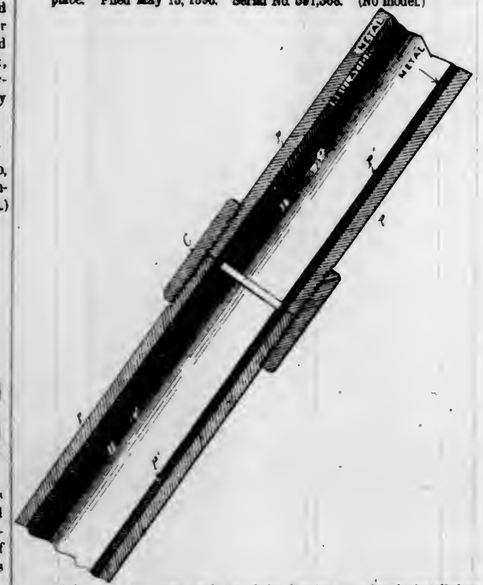
7. In a subway system a series of conduit-tubes extending into a manhole; a series of expansible cross connecting tubes for cross-connecting said conduit-tubes together in pairs, in combination with detachable means for securing said cross-connecting tubes to the ends of the tubes, substantially as described.

8. A subway consisting of a series of conduit-tubes located in a conduit-tube trough, the ends of said tubes extending into a manhole and being surrounded each by a short metallic sleeve and all embedded in asphalt which binds the tubes, the sleeves, the conduit-trough and the manhole firmly together, substantially as described.

9. A manhole consisting of a number of sections of substantially rectangular shape provided each with a rim, flange or extension and having lateral or side openings between said sections for receiving the ends of conduit-tubes whereby said sections may be placed the one upon another and thereby adapted to vary the number of conduit-tubes in proportion to the requirements, substantially as described.

10. A manhole constructed of a number of sectional parts provided each with a rim, flange or extension and semicircular openings in the opposite edges of the parts, the arrangement being such that when the separate sections of said manhole are placed the one upon the other the opposite semicircular parts constitute openings for the admission of conduit-tubes, substantially as described.

570,169. CONDUIT-TUBE. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed May 13, 1896. Serial No. 591,368. (No model.)



Claim.—1. An armored conduit having an insulating-lining composed either wholly or in part of a material which liquefies at abnormal temperatures, in combination with a non-combustible non-liquefying interior lining adapted to withstand temperatures greater than the fusing temperature of lead, substantially as described.

2. An armored conduit-tube consisting of a metal armor and an insulating-lining either in whole or in part liquefiable under abnormal temperatures, in combination with an interior lining of a metal which will not fuse for such temperatures as will fuse or liquefy either lead or the insulating-lining.

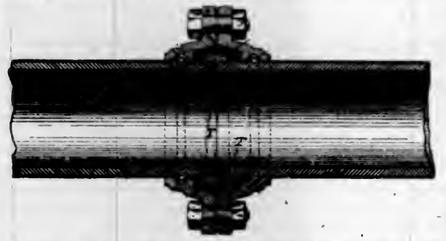
3. A series of armored conduit-tubes provided each with a lining which is either wholly or in part liquefiable at abnormal temperatures, in combination with internal tubular linings for said armored tubes of an inductive metal such as iron, said linings being separated from each other by definite spaces, substantially as described.

4. An armored conduit-tube having an iron armor and an insulating-lining composed of paper or fibrous material treated with liquid asphalt under heat, in combination with an internal tubular lining of non-combustible non-liquefiable material, adapted to withstand temperatures greater than the fusing temperature of lead substantially as described.

570,170. INSULATING-JOINT FOR CONDUIT-TUBES. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Interior Conduit and Insulation Company, same place. Filed July 25, 1896. Serial No. 600,571. (No model.)

Claim.—1. As a means of uniting two or more conduit-tubes a pair of collars provided with locking-bolts, said collars being so constructed as to constitute, when joined, an annular chamber around the ends of the tubes, in combination with an insulating annulus or ring which surrounds the ends of said tubes, and a mass of insulating material which fills the aforesaid annular chamber, substantially as described.

2. As a means of uniting a pair of conduit-tubes a cup-shaped locking-collar secured to one end of each tube, said cup-shaped collars being provided with means for securely uniting them together, and additional means for securing them to the ends of the tubes, the ends of said tubes, when in locked position, abutting against each other and surrounded by an insulating annulus or ring and a mass of insulating material, substantially as described.



3. A pair of armored conduit-tubes united together at their ends by locking-collars having an annular space for the insertion of liquid insulating material, in combination with an annulus or ring which surrounds the ends of the adjoining tubes, and a mass of insulating material which unites the tubes and the annulus or ring into one common mass, substantially as shown and described.

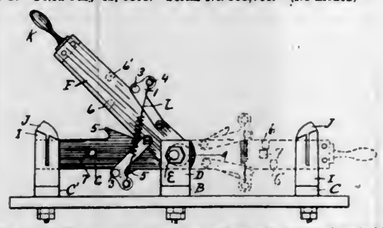
4. As a means for uniting conduit-tubes together two cup-shaped collars secured to the abutting ends of said conduit-tubes, said cup-shaped collars being provided with one or more openings for admitting molten or liquid insulating material into the annular chamber which surrounds the ends of the adjoining tubes, in combination with means for joining said collars together, substantially as described.

570,171. CAR-COUPLING. ALBERT F. GUHL, Landisville, Pa. Filed Feb. 14, 1894. Serial No. 500,168. (No model.)



Claim.—In a car-coupling of the character described, in combination: the draw-head A having the bull-nose A′ and the plate A^3 secured into a side thereof; the housing-chamber in the forward end of the draw-head with the circular rear end wall a^3 and the circular front end wall portions a^4 and a^5 joined by the inclined portion a^6, said circular portions having different radii from the common center 1, having also the link-aperture through the bull-nose end thereof opening into said chamber, and the side opening thereinto with the plate A^3 adapted to close said opening; the coupling-block B housed within the chamber and having the circular rear end portion b engaging the wall portion a^3 and the circular front end portions b' and b^2 engaging the wall portions a^4 and a^5 with the inclined portion b^3 resting on the inclined wall portion a^6, said block having in its forward end the link-socket B′ with the link-engaging hook b^4 and the link-lifting portion b^5; with mechanism provided to raise the forward end of said block, and a spring B^2 as shown to press said end normally down, all substantially as described and for the purpose hereinbefore set forth.

570,172. SNAP-SWITCH. ALBERT B. HERRICK, Jersey City, N. J., assignor to the General Incandescent Arc Light Company, New York N. Y. Filed July 12, 1895. Serial No. 555,703. (No model.)



Claim.—1. The combination, in a switch, of a pivoted main blade, a single snap-blade, contacts on different sides of the pivot in position to cooperate with the same main blade and with the same snap-blade, the snap-blade contacts being entirely distinct from the main-blade contacts, so that the main blade will not be roughened by sliding over the snap-blade contacts, and a spring connection between the main and the snap blades for throwing the latter from its contacts on either of the different sides.

2. The combination, in a double-throw switch, of pivoted main and snap blades side by side in different planes, contacts for the main blades and also contacts for the snap-blades on different sides of the pivot and cooperating with the blades, the same main and snap blades cooperating with the contacts on different sides.

3. The combination, in a double-throw snap-switch, of a main switch-blade, projections 6, 6′, thereon, a snap-blade beside the main blade in a different plane, a projection 7 thereon, and means for bringing projections 6 and 7 into cooperation when the switch is thrown to one side, and for bringing 6′ and 7 into cooperation when the switch is thrown to the other side.

4. The combination of a main switch-blade, projections 6, 6′, thereon on opposite edges and at different distances from the pivot, a snap-blade, a projection 7 thereon at or near its central part, said main and snap blades being eccentrically pivoted so that projection 7 will cooperate with projection 6 or 6′, according as it is thrown to one side or the other, and contacts cooperating with the switch-blades.

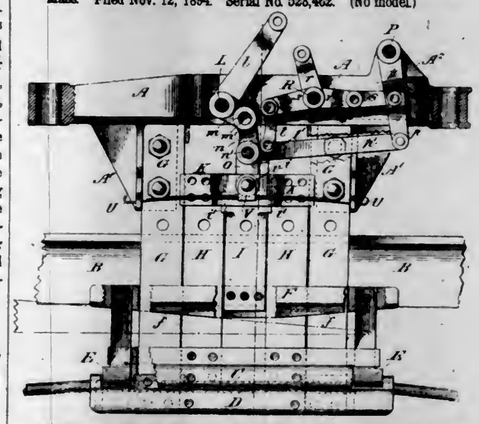
5. The combination of a main blade, levers 1, 1, pivoted thereto, a snap-blade having a lug or engaging device, as 5, on its rear edge, a spring connecting the free ends of said levers, and means carried by one of said levers to engage said lug when the main blade is thrown.

6. The combination of a main blade, a pivot therefor, a snap-blade having an opening in it larger than the main-blade pivot, a disk in said opening and serving as a pivot for the snap-blade, there being an opening through the disk at one side of its center for the passage of the main pivot, and engaging devices for the blades brought into cooperation by movement of the main and snap blades on different centers.

7. The combination of main and snap blades eccentrically pivoted, the pivot of the snap-blade consisting of a disk with means for holding it from rotation, and having an eccentric opening to receive the main pivot.

8. The combination of main blades, a snap-blade, levers 1, 1, pivoted to the main blades on opposite sides of the switch, pins 3 adapted to bear on the blades, and springs L connected to the free ends of the levers.

570,173. CABLE-RAILWAY GRIP. LOUIS J. HIRT, Brookline, Mass. Filed Nov. 12, 1894. Serial No. 528,462. (No model.)



Claim.—1. In a grip for cable-railways, in combination, a stationary grip-jaw, a movable grip-jaw, a cable-ejector, grip-jaw-actuating mechanism, cable-ejector-actuating mechanism, and means permanently connecting the two actuating mechanisms so as to render the jaw-actuating mechanism positively actuated from the ejector-actuating mechanism for the purpose of releasing the cable, the ejector-actuating mechanism operating the ejector to throw out the cable after it has set into operation the jaw-actuating mechanism, the connection between the two actuating mechanisms permitting the jaw-actuating mechanism to operate the grip and release the cable without operating the ejector-actuating mechanism when the latter is in its normal position, substantially as and for the purposes described.

2. In a grip for cable-railways, in combination, a stationary grip-jaw, a movable grip-jaw, a cable-ejector, grip-jaw-actuating mechanism, cable-ejector-actuating mechanism, a lever for operating the same, and means permanently connecting the two actuating mechanisms so as to render the jaw-actuating mechanism positively actuated from the ejector-actuating mechanism for the purpose of releasing the cable, the ejector-actuating mechanism operating the ejector to throw out the cable after it has set into operation the jaw-actuating mechanism, and the connection between the two actuating

mechanisms permitting the jaw-actuating mechanism to throw the ejector into its normal position without first restoring the ejector-actuating mechanism to its normal position through the instrumentality of its operating-lever, substantially as and for the purposes described.

3. In a cable-grip mechanism, in combination, a movable grip-jaw, mechanism for operating the same, a toggle-joint interposed between the grip-jaw and its operating mechanism, an ejector for throwing out the cable, mechanism for raising and lowering the ejector connected with the toggle-joint whereby the ejector mechanism operates the toggle-joint and opens the grip, substantially as described.

4. In a cable-grip mechanism, the combination with the movable jaw C, plates H, H, cross-plate K and toggle-joint n, n', o, of the ejector E, the bar F, plate I, rock-shaft R, rocker-arms r' and r^3 and link t for operating the ejectors, and the rock-shaft P, rocker-arm p and link p' connected with the toggle-joint, whereby the toggle-joint is operated and the grip opened as the ejector is raised, substantially as described.

5. In a cable-grip for railways, the grip-jaws provided with the recesses c', d', and the cheeks c, d, on each side of such recesses, substantially as described.

6. In a cable-grip mechanism, the ejectors E provided with the retaining-forks e, e, whereby the cable is guided into the grip by the descent of the ejector, substantially as described.

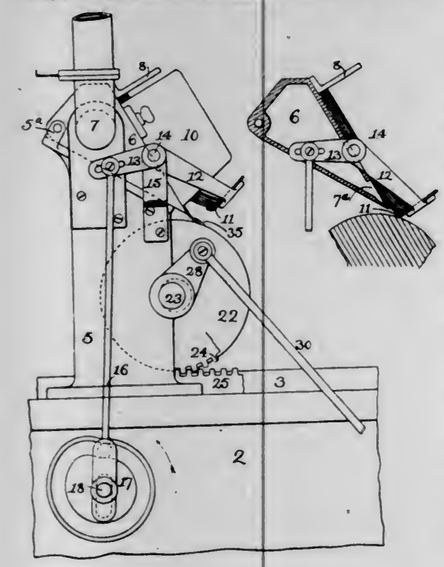
570,174. WOVEN BAG. JESSE A. KNIGHT, Enfield, R. I. Filed Oct. 4, 1895. Serial No. 564,664. (Model.)



Claim.—1. As an article of manufacture, a bag having the webs composing the same woven together along the sides and bottom, and the top thereof woven together for a portion of its width, whereby an open mouth is formed, substantially as described.

2. As an article of manufacture, a bag having the webs composing the same woven together along the sides and bottom, and the top thereof woven together for a portion of its width, whereby an open mouth is formed, the mouth being surrounded by a neck projecting from the top of bag, substantially as described.

570,175. SHEET-SEPARATING MACHINE. WILLIAM A. LORENZ, Hartford, Conn., assignor to the Consolidated S. O. S. Bag Company, New York, N. Y. Filed Jan. 28, 1895. Serial No. 536,401. (No model.)

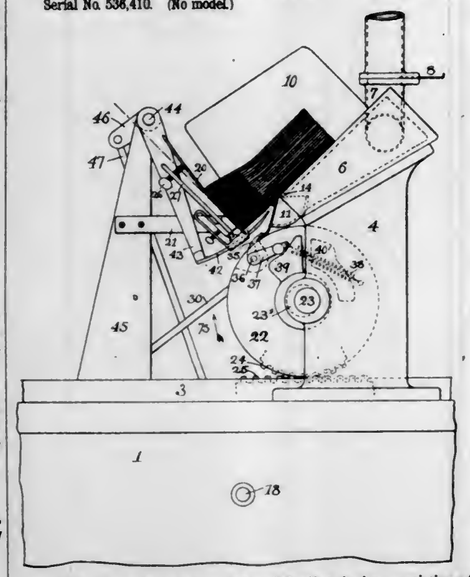


Claim.—1. A sheet separating device, consisting of a table adapted to support a pile of sheets, having an opening therein connected with air exhausting means, and a lifter having a lip adapted to catch under one end of the pile, with means for imparting a reciprocating motion to the lifter, all arranged and operating to separate the lower sheet from those above it, as the latter are raised by the lifter.

2. The combination of a sheet-supporting table, having an opening therein, with air exhausting means operating through the opening, an oscillating lifter pivoted substantially in the plane of the table and adapted to lift one end of the rest of the pile from the bottom sheet thereof, substantially as described.

3. The combination of the vacuum-box 6, having an inclined sheet-supporting wall provided with the opening 7^a, the oscillating lifter 11, provided with an angular lip, a carrier provided with a gripper, and means adapted to operate the lifter and the gripper in suitable time with each other, substantially as described.

570,176. SHEET-SEPARATING MACHINE. WILLIAM A. LORENZ, Hartford, and CASPER REISING, Southington, Conn., assignors to the Consolidated S. O. S. Bag Company, New York, N. Y. Filed Jan. 28, 1895. Serial No. 536,410. (No model.)



Claim.—1. A sheet separating and feeding device, consisting of a table adapted to support a portion of the under surface of a pile of sheets, and provided with a vacuum-chamber, and of an oscillating suction-feeder hinged upon the table adjacent to the unsupported portion of the pile, provided with an air-passage through its operating-surface, communicating with the vacuum within the chamber, substantially as described.

2. In a sheet separating and feeding machine, the combination of a table adapted to support a portion of the under surface of a pile of sheets, having an interior chamber in which a partial vacuum is maintained, with an oscillating suction-feeder located thereon, having a sector-shaped portion forming a telescoping extension of the vacuum-chamber to and through the operating-surface of the feeder, substantially as described.

3. In a sheet separating and feeding machine, the combination of a table adapted to support a portion of the under surface of a pile of sheets, having an interior chamber in which a partial vacuum is maintained, a stop-finger adapted to support an edge of the remaining portion of the pile, and an oscillating suction-feeder hinged upon the table, and having a sector-shaped portion forming a telescoping extension of the vacuum-chamber to and through the operating-surface of the feeder, substantially as described.

4. In a sheet separating and feeding machine, the combination of a table adapted to support a portion of the under surface of a pile of sheets, having an interior chamber in which a partial vacuum is maintained, with an oscillating suction-feeder located thereon, having a sector-shaped portion forming a telescoping extension of the vacuum-chamber to and through the operating-surface of the feeder, with a reciprocating separator adapted to pass above the operating-surface of the feeder, substantially as described.

5. In a sheet separating and feeding machine, the combination of a table adapted to support a portion of the under surface of a pile of sheets, having an interior chamber in which a partial vacuum is maintained, a stop-finger adapted to support an edge of the remaining portion of the pile, and an oscillating suction-feeder hinged upon the table, and having a sector-shaped portion forming a telescoping extension of the vacuum-chamber to and through the operating-surface of the feeder, with a reciprocating separator adapted to pass between the suction-feeder and the stop-finger, substantially as described.

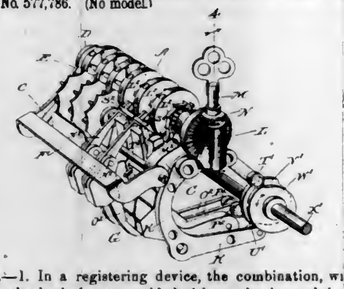
6. In a sheet separating and feeding machine, the combination of a table adapted to support a portion of the under surface of a pile of sheets, having an interior chamber in which a partial vacuum is maintained, a stop-finger adapted to support an edge of the remaining portion of the pile, and an oscillating suction-feeder hinged upon the table, and having a sector-shaped portion forming a telescoping extension of the vacuum-chamber to and through the operating-surface of the feeder, and a reciprocating separator adapted to pass between the suction-feeder and the stop-finger with operating means adapted to impart to the feeder and to the separator suitable relative movements, substantially as described.

570,177. SWIVEL-PLOW. CHARLES M. LUFKIN, Langdon, N. H. Filed Apr. 30, 1891. Serial No. 391,165. (No model.)



Claim.—In a swivel-plow, the combination of the fulcrum G, provided with inclined planes i, and chamber e, the spiral spring f, bolt g, and cap F, having inclined planes h and hooks $b\,b$, all constructed and arranged to operate substantially as set forth.

570,178. TRANSFERRING AND RESETTING MECHANISM FOR CASH-REGISTERS. ALEXANDER W. MARR, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Feb. 3, 1896. Serial No. 577,786. (No model.)



Claim.—1. In a registering device, the combination, with two registering-wheels, the lower provided with a projection and the higher with a ratchet, of a reciprocating transfer-pawl adapted to coöperate with said ratchet, and a latch for normally holding said pawl out of operative position, said latch coöperating with the projection upon the lower wheel to be tripped at each revolution of said wheel and permit the transfer-pawl to move into operative position, and reciprocating back and forth with the pawl throughout substantially the complete movements of the latter and maintaining its operative engagement with the pawl except when tripped by the projection upon the lower wheel, substantially as and for the purpose described.

2. In a registering device, the combination, with two registering-wheels, the lower provided with a projection as W^2, and the higher with a ratchet as L^2, of a reciprocating transfer-pawl N^2 adapted to coöperate with the ratchet L^2 and provided with a lateral projection S^2, and the spring-pressed latch T^2 provided at its upper end with the shoulder normally engaging the projection S^2 of the pawl and provided upon its rear side with a projection coöperating with the projection W^2 upon the lower registering-wheel, the adjustment of the parts being such that the upper end of the latch T^2, under the influence of its spring, is permitted to follow the pawl N^2 in its rearward movement to substantially the limit thereof, with its shoulder remaining in engagement with the projection S^2 of the pawl except when the latch is tripped by the projection W^2 on the lower registering-wheel, substantially as and for the purpose described.

3. In a cash-register or other device having a part to be acted upon by a cam, the combination of a rotary shaft, a cam loosely mounted thereon, a coiled spring surrounding the shaft and secured thereto at one end and acting upon the cam at its opposite end, and a stop for limiting the movement of the cam under the pressure of the spring, substantially as and for the purpose described.

4. In a cash-register or other device having a part to be acted upon by a cam, the combination of a rotary shaft as X', a sleeve A^3 loosely mounted thereon and provided with one or more cams, as R^2, a collar, as B^2, fast upon the shaft, a coiled spring C^2 surrounding the shaft and secured at one end to said collar and at its opposite end to the sleeve A^3, and a stop, as D^2, for limiting the movement of the sleeve A^3 under the pressure of the spring C^2, substantially as and for the purpose described.

5. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the housing L having the bore for the reception of the key, and the key M adapted to fit in said bore and having fast upon it the pinion N adapted to coöperate with the pinion I for the purpose described.

6. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the projecting flange J surrounding said pinion and having the notch or recess a, the housing L having the bore for the reception of the key, and the key M adapted to fit in said bore and having fast upon it the pinion N adapted to coöperate with the pinion I and flange J in the manner described.

7. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the housing L having the bore for the reception of the key, the pin O projecting into said bore, and the key M adapted to fit in said bore and provided with the longitudinal and circumferential groves coöperating with the pin O, and having fast upon it the pinion N adapted to mesh with the pinion I, substantially as described.

8. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the housing L having the bore for the reception of the key, the locking-arm Q spring-pressed into locking cooperation with the pinion I, and the key M adapted to fit in the bore in the housing L and to coöperate with the locking-arm Q, and having fast upon it the pinion N adapted to mesh with the pinion I, substantially as described.

9. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the housing L having the bore for the reception of the key, the pin O projecting into said bore, the spring-pressed locking-arm Q cooperating with the pinion I, the key M adapted to fit in the bore in the housing L and coöperate with the arm Q and provided with the longitudinal and circumferential grooves coöperating with the pin O, and the pinion N fast upon the key M and adapted to mesh with the pinion I, substantially as described.

10. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the projecting flange J surrounding the pinion I and having the notch or recess a, the housing L having the bore for the reception of the key, the spring pressed locking arm Q pivoted in said housing and coöperating with the notch b in the flange J, and the key M adapted to fit in the bore in the housing and coöperate with the arm Q, and having fast upon it the pinion N coöperating with the pinion I and flange J in the manner described.

11. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I and having the notch or recess a, the housing L having the bore for the reception of the key, the pin O projecting into said bore, the spring-pressed locking-arm Q pivoted in a recess in the housing at one end of said bore and adapted to coöperate with the notch b in the flange J, the key M adapted to fit in the bore in the housing L and coöperate with the arm Q, and provided with the longitudinal and

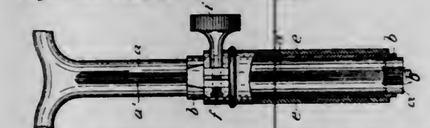
circumferential grooves cooperating with the pin O, and the pinion N fast upon the key M and adapted to cooperate with the pinion I and the flange J in the manner described.

12. In a registering device, the combination of the shaft B, the registering-wheels A mounted thereon, suitable means intermediate the wheels and shaft for causing the shaft to pick up the wheels and carry them with it when it is turned in one direction, the pinion I fast upon the shaft, the projecting flange J surrounding the pinion I and having the notches *a* and *b*, the housing L having the bore for the reception of the key, the spring-pressed locking-arm Q pivoted in said housing at the end of the bore and provided with the projection *c* adapted to cooperate with the notch *b* in the flange J, and the key M adapted to fit in the bore in the housing L and cooperate with said projection *c*, and having fast upon it the pinion N cooperating with the pinion I and flange J, substantially as and for the purpose described.

13. The herein-described detachable resetting-key for registers, consisting of the shank M adapted to fit in a suitable bore and having the thumb-piece for turning it, and the pinion N fast upon the shank M near enough its middle to leave a free projecting end to fit in the bore and adapted to cooperate with a pinion turning with the resetting-shaft, substantially as described.

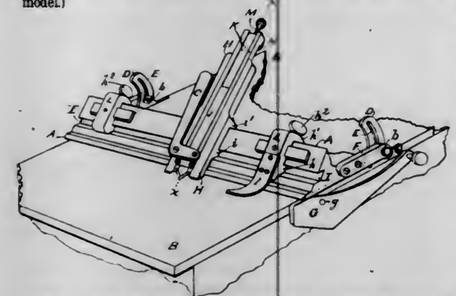
14. The herein-described resetting-key for registers, consisting of the shank M having the longitudinal and circumferential grooves at one end, adapted to cooperate with a projection in the bore or guide-way in which the key fits, and having at its other end the thumb-piece for turning it, and the pinion N fast upon the shank M and adapted to cooperate with a pinion turning with the resetting-shaft, substantially as described.

570,179. BICYCLE. THOMAS S. MILLER, Burlington, Iowa. Filed July 22, 1895. Serial No. 556,742. (No model.)



Claim.— The combination with a tubular holder and tubular fork-stem with divergent slots projecting above said holder and a thereto-fixed and conoidally-bored clamping-band, to hold said parts together, of a short interior rib at the upper end of said fork-stem and a tubular longitudinally-grooved handle-bar post within said fork-stem and rib in said groove, substantially as specified.

570,180. BEVEL-EDGE-CARDBOARD CUTTER. DONALD T. MCCALL, Jackson, Mich. Filed Mar. 29, 1894. Serial No. 505,579. (No model.)

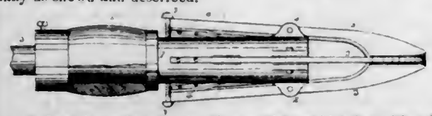


Claim.—1. In a cardboard-cutting machine, the combination with a bed B, and the arc-shaped slotted lugs D, D, fixed thereto, of the face-plate A provided with rearwardly-projecting arms F, F, adjustably pivoted in said slotted guides, a reciprocating knife J fitted to travel in ways on said face-plate, and pivoted levers for raising and lowering said face-plate, substantially as described.

2. In a cardboard-cutting machine, the combination with a bed B and the arc-shaped slotted lugs D, D, fixed thereto, of the face-plate A provided with rearwardly-projecting arms F, F, adjustably pivoted in said slotted guides, a reciprocating knife on said face-plate, stops longitudinally adjustable on said face-plate for limiting the travel of said knife, and pivoted levers, for raising and lowering the face plate, substantially as described.

570,181. JAPAN-BOARD-POINT CLEANER. HARRY F. MCGILL, Akron, Ohio. Filed June 23, 1896. Serial No. 596,599. (No model.)

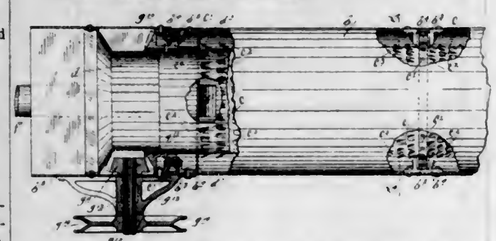
Claim.—1. In a japan-board-point cleaner, the combination with a tubular body having lugs, of jaws mediately pivotally mounted between said lugs, springs to force outward the inner ends of said jaws, a free sleeve on said body, and means for rotating said body, substantially as shown and described.



2. In a japan-board-point cleaner, the combination with a flexible shaft, of a tubular body adapted to be revolved by said shaft, said body having jaws pivotally mounted between lugs thereon, said jaws being each provided with springs to press against said body and force their inner ends outward: stop screws to limit the outward motion of said ends: said jaws extending beyond the end of said body substantially as shown and described.

3. In a japan board-point cleaner, a number of parallel jaws having serrated faces adapted to meet in a common line, pivotally mounted on a central tubular body, and adapted to approach and recede from each other in different planes: springs to severally cause said jaws to approach said common line, and means for rotating said central body, substantially as shown and described.

570,182. PNEUMATIC STACKER. DANIEL N. NESTER, St. Paul, Minn., assignor of one-half to Alice M. Vallee, same place. Filed Apr. 17, 1896. Serial No. 587,991. (No model.)



Claim.—1. In a pneumatic stacker, the combination with the exterior stacker tube or trunk, of an interior sifting-surface spaced apart from and mounted for agitating motion within said stacker-tube and means for producing an air-current through said tube, substantially as and for the purposes set forth.

2. In a pneumatic stacker, the combination with the exterior stacker tube or trunk, of a perforated interior tube spaced apart from and mounted for rotary motion within said stacker-tube and means for producing an air-current through said tube, substantially as described.

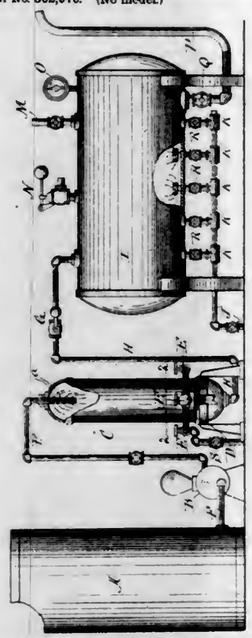
3. The combination with a separator, of a pneumatic stacker comprising an exterior stacker-tube, a perforated interior tube spaced apart from and mounted for rotary motion within the stacker-tube, a bell-mouthed tubular section fixed at its mouth end to said exterior stacker-tube and telescoping at its other end with said interior rotary tube, substantially as described.

4. In a pneumatic stacker, the combination with the exterior tube of the interior perforated tube, spaced apart from and mounted for rotary motion within said exterior tube, annular rings or flanges carried by said exterior tube, flanged rollers mounted in brackets secured to said exterior tube and engaging said annular flanges on said interior tube, and means for producing an air-current through said tube, substantially as described.

5. In a pneumatic stacker, the combination with the exterior tube, of the interior perforated tube, spaced apart from and mounted for rotary motion within said exterior tube, annular rings or flanges carried by said interior tube and resting on antifriction-rollers carried by said exterior tube, positive driving mechanism for imparting rotary motion to said interior tube, and means for producing an air-current through said tube, substantially as described.

6. The combination with the exterior tube *b* and the bell-mouthed fixed tube-section *d*, in the interior of the same, of the rotary perforated tube *c* provided with the annular flanges *c'* and the annular double gear b^{10}, the antifriction-rollers b^9 engaging the flanges *c'* and mounted, in brackets b^4 on the interior of the tube *b*, the annular bottom plate *b'* between the tube-sections *b* and *c*, the return feed-spout *f f''* exteading from the annular compartment between said tubes *b* and *c*, the beveled pinion g^{11} carried by shaft g^{12} and engaging said annular wheel b^{10} on the tube *c*, and intermediate driving mechanism between said shafts b^{12} and the thresher mechanism, substantially as described.

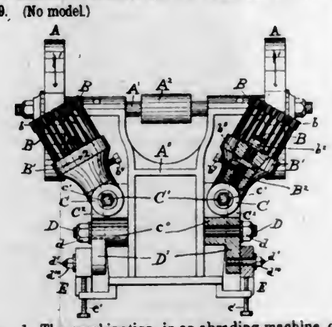
570,183. APPARATUS FOR MANUFACTURING GLUCOSE OR SUGAR FROM STARCH. CHARLES POPE, Chicago, Ill. Filed Sept. 19, 1895. Serial No. 562,976. (No model.)



Claim.—1. In an apparatus for making glucose, &c., from starch, a tank adapted to hold starch milk and acid, a liquefier adapted to receive the said starch-milk and acid, a pump adapted to pump the starch-milk and acid from the tank into the liquefier, suitable means for heating the liquefier and a converting tank or receptacle I connected with the discharge-pipe from the liquefier, with means for supplying heat to the converting-tank I.

2. In an apparatus for making glucose, &c., from starch, a mixing-tank for mixing the starch-milk and acid, a pump for pumping the mixture into a liquefier, a liquefier connected with said pump, means for heating the liquefier, a converting tank or receptacle I connected with the liquefier by pipe H provided with a pressure-regulating check-valve G, and means for heating the said converting-tank.

570,184. ABRADING-MACHINE. ALBERT R. PRITCHARD and JOHN M. SELLMAYER, Rochester, N. Y. Filed May 8, 1896. Serial No. 590,789. (No model.)



Claim.—1. The combination, in an abrading-machine, of a movable base, a series of holders set upon said base in position to be moved successively to an abrading position, and an abrading-wheel having its plane of revolution at an acute angle to the plane in which the movable base moves, whereby the holders are brought successively to the face of the wheel by the friction of said wheel on the articles upon said holders.

2. The combination, in an abrading machine, of a movable base, a series of revoluble holders set upon said base in positions to be moved successively to an abrading position and an abrading-wheel having its plane of revolution at an acute angle to the plane in which the movable base moves, whereby the holders are brought successively to the face of the wheel by the friction of said wheel on the articles upon said holders.

3. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of said wheel, and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, whereby the holders are brought successively to the face of the wheel by the friction of said wheel on the articles upon said holders.

4. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel, and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, whereby the holders are brought successively to the face of the wheel by the friction of said wheel on the articles upon said holders.

5. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, and a tilting supporting-frame for said revoluble base.

6. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, a tilting supportiug-frame for said revoluble base, and a weighted lever attached to said supporting frame for pressing said holders against said wheel.

7. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, and a sliding bar sliding on fixed guides on said supporting-frame whereby the holders are tilted to press against said wheel and are tilted away therefrom.

8. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel, a revoluble base, means for setting said base at different angles to the plane of the wheel, and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center.

9. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel, a revoluble base, means for setting said base at different angles to the plane of the wheel, and a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base.

10. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel, a revoluble base, means for setting said base at different angles to the plane of the wheel, a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, and a supporting-frame carrying said base and its connected parts and adapted to be tilted to and from the abrading-wheel.

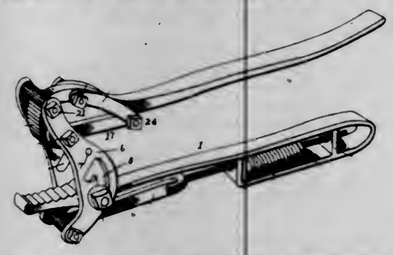
11. The combination of an abrading-wheel, a revoluble base set at an acute angle to the plane of revolution of the wheel, a revoluble base, means for setting said base at different angles to said plane of the wheel, a series of revoluble holders on said base set in a circle having the produced axis of the base as a center, each holder being revoluble on an axis parallel to the axis of the base, and a supporting-frame carrying said base and its connected parts and adapted to be tilted to and from the abrading-wheel, and a weighted lever connected to said tilting supporting-frame for pressing said holders against said wheel.

12. The combination, in an abrading-machine, of an abrading-wheel A, a revoluble base B', an axial pivot B^3 whereon said base revolves, a supporting-frame C^2 pivoted to the main frame of the machine on a pivot D parallel to the axis of the wheel A, a pivot C attached to said supporting-frame at right angles to the pivot D and bearing said axial pivot B^3, means for fixing said pivot B^3 at various angles with reference to the plane of revolution of the wheel A, a series of supports B upon said base B' and parallel to the pivot B^3 and at equal distances therefrom, and a chuck or holder *b* upon each support B and revoluble thereon on an axis parallel to the pivot B^3, substantially as described.

13. The combination, in an abrading-machine, of an abrading-wheel A, a revoluble base B', an axial pivot B^3 whereon said base revolves, a supporting-frame C^2 pivoted to the main frame of the machine on a pivot D parallel to the axis of the wheel A, a pivot C attached to said supporting-frame at right angles to the pivot D and bearing said axial pivot B^3, means for fixing said pivot B^3 at various angles with reference to the plane of revolution of the wheel A, a

series of supporting-posts B upon said base B^1 and parallel to the pivot B^2 and at equal distances therefrom, a chuck or holder *b* upon each post B and revoluble thereon on an axis parallel to the pivot B^2, guides, as the bolts *d'*, upon said supporting-frame C^3, a weighted bar sliding upon said guides for overbalancing said supporting-frame C^3 to hold the same in two positions, one to press the chucks or holders *b* against the abrading-wheel and the other to hold the same away from said abrading-wheel, and stops, as *e'*, for limiting the motion of said supporting-frame C^3, substantially as described.

570,185. HORSESHOE-NAIL CLENCHER. JOSEPH H. RANCK, Hustontown, Pa. Filed July 10, 1896. Serial No. 598,752. (No model.)



Claim.—1. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a rocking lever pivoted to the hand-lever, a spring-pressed plunger working in the hand-lever and pivotally connected to the rocking lever, a clenching-dog also pivoted to the rocking lever, and means for actuating said dog.

2. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a rocking lever pivoted to the hand-lever, a plunger working in the hand-lever, a link pivotally connecting the plunger to one end of the rocking lever, a plunger-actuated coil-spring encircling the plunger, a clenching-dog pivoted to the free end of the rocking lever, and means for actuating said dog.

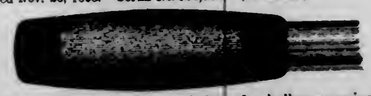
3. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a spring-retracted rocking lever pivoted to the hand-lever, a clenching dog provided with a foot and pivoted to the rocking lever, a second hand-lever also pivoted to the rocking lever, and a link pivotally connecting the clenching-dog with the second hand-lever.

4. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a rocking lever adjustably fulcrumed to the hand-lever, a clenching-dog pivotally connected to the rocking lever, and means for actuating the dog.

5. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a rocking lever provided with a curved and a straight slot in communication, a pivoted bolt passing through the hand-lever and the slot in the rocking lever, a clenching-dog pivoted to the rocking lever, and means for actuating said dog.

6. In a horseshoe-nail clencher, the combination with a hand-lever provided with a jaw, of a rocking lever adjustably fulcrumed to the hand-lever, a spring-pressed plunger movable in the hand-lever and pivoted to the rocking lever, a clenching-dog having a foot and pivoted to the rocking lever, a second hand-lever also pivoted to the rocking lever, and a link pivotally connecting the second hand-lever with the dog.

570,186. HANDLE. FREDERICK C. ROCKWELL, Hartford, Conn. Filed Nov. 20, 1895. Serial No. 569,501. (No model.)



Claim.—A bicycle-handle consisting of a hollow grasping body of molded and compressed broken particles of cork and shellac, perforated metallic sleeves encircling the outside of the ends of the body, and tips of molded and compressed plastic compound, that incase the metallic sleeves and extend through the perforations thereof, substantially as specified.

570,187. BICYCLE HANDLE-BAR. FREDERICK C. ROCKWELL, Hartford, Conn. Filed June 9, 1896. Serial No. 594,850. (No model.)

Claim.—1. As a new article of manufacture, a curved steering-bar for bicycles consisting of a stiff inner core formed to shape with its entire exterior surface composed of particles of cork and a binder united in a homogeneous mass by heat and pressure, substantially as specified.

2. As a new article of manufacture, a curved steering-bar for bicycles consisting of a core of wood of suitable cross-sectional outline formed to shape with its entire exterior surface composed of waterproofed particles of cork united by heat and pressure, substantially as specified.



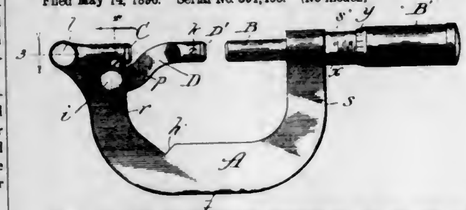
570,188. COMBINATION-TOOL. FRANK A. ROSEMAN, Lanham, Nebr. Filed Jan. 14, 1896. Serial No. 575,469. (No model.)



Claim.—1. The combination with a pair of handles and their hinge, of a pair of bowed nipper-jaws carried upon the respective handles upon the side of the hinge opposite the handles, impact-pieces upon the respective jaws and revoluble stop mechanism secured to one handle and adapted to operate against the other handle, and mechanism for adjusting the stop mechanism lengthwise upon the handle to which it is secured, substantially as set forth.

2. The combination with a pair of handles and their hinge, of a pair of bowed nipper-jaws carried upon the respective handles upon the side of the hinge opposite the handles, impact-pieces upon the respective jaws and revoluble stop mechanism secured to one handle and adapted to operate against the other handle, mechanism for adjusting the stop mechanism lengthwise upon the handle to which it is secured, the handles extending substantially in equal lengths and parallel to each other, and a wing projecting from one handle near its end so as to overlap the other handle, substantially as and for the purpose specified.

570,189. MICROMETER-GAGE. JOHN STROMBERG, Kenosha, Wis. Filed May 14, 1896. Serial No. 591,468. (No model.)



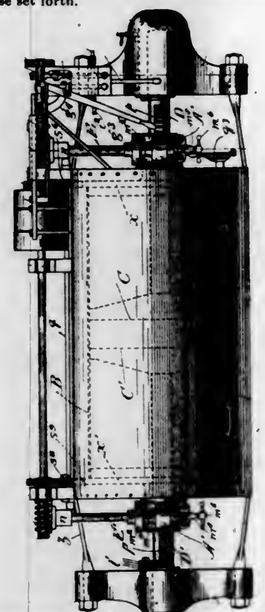
Claim.—1. In a micrometer, the combination with the frame and adjustable micrometer-screw, of a register on the frame in permanent alinement with said screw, and a swinging register-bar whose operative position is between said register and screw, supported on the frame to be moved on its pivot into and out of operative position, substantially as and for the purpose set forth.

2. In a micrometer, the combination of the frame A, having an arm *s* and bifurcated arm *r*, micrometer-screw mounted in the arm *s*, register C on the arm *r*, swinging register-bar D, pivotally supported between the forks of the arm *r*, and means for fastening the bar D in operative position, all arranged to operate substantially as and for the purpose set forth.

570,190. WASHING-MACHINE. JESSE W. SUNDERLAND, Chicago, Ill., assignor of one-half to Andrew J. McDuffee, same place. Filed Apr. 6, 1896. Serial No. 586 291. (No model.)

Claim.—1. The combination with a washing-machine provided with a washing-cylinder, movable perforated heads in said cylinder, plungers carrying said heads, and reciprocating means for said plungers, of wringer mechanism at the said machine comprising a movable plunger-engaging head, and pushing-jack mechanism at the said plunger-engaging head, substantially as and for the purpose set forth.

2. The combination with a washing-machine provided with a washing-cylinder, driving mechanism, movable perforated heads in said cylinder, plungers carrying said heads, and reciprocating means for said plungers actuated from the said driving mechanism, of wringer mechanism at the said machine comprising a movable plunger-engaging head, and pushing-jack mechanism at the said plunger-engaging head actuated from the said driving mechanism, substantially as and for the purpose set forth.



3. The combination with a washing-machine provided with a washing-cylinder, movable perforated heads in said cylinder, plungers carrying said heads, and reciprocating means for said plungers, of wringer mechanism at the said machine comprising a stop movable into and out of the path of one of said plungers, a movable plunger-engaging head at the other said plunger, and pushing-jack mechanism at the said plunger-engaging head, substantially as and for the purpose set forth.

4. The combination with a washing-machine provided with a washing-cylinder, movable perforated heads in said cylinder, plungers carrying said heads, and driving mechanism, of means for reciprocating said plungers comprising shafts rotated from the said driving mechanism and geared to the said plungers, the shafts being each formed of members in frictional engagement with each other, and means for regulating the frictional engagement, wringer mechanism at the said machine comprising a movable plunger-engaging head, and pushing-jack mechanism at the said plunger-engaging head, substantially as and for the purpose set forth.

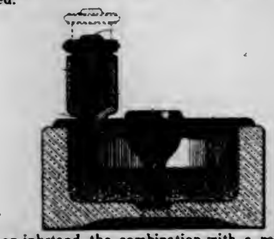
5. The combination with a washing-machine provided with a washing-cylinder, movable perforated heads in said cylinder, plungers carrying said heads, and reciprocating means for said plungers, of wringer mechanism at the said machine comprising a movable head provided with an opening through it for the passage of one of said plunger-rods, a stop on the head at said opening movable into and out of the path of the plunger-rod, pushing-jack mechanism at the said movable head, and a stop movable into the path of the other said plunger, substantially as and for the purpose set forth.

570,191. INKSTAND. JOHN THOMSON, Brooklyn, N. Y. Filed May 29, 1896. Serial No. 593,618. (No model.)

Claim.—1. An inkstand comprising a reservoir, an inclosing head, a dip-well, a cylinder mounted on the head, and a piston arranged in the cyliuder, having an air-passage whereby when the piston is down ink will be supplied to the dip-well and maintained therein and the air-passage mechanically closed, substantially as described.

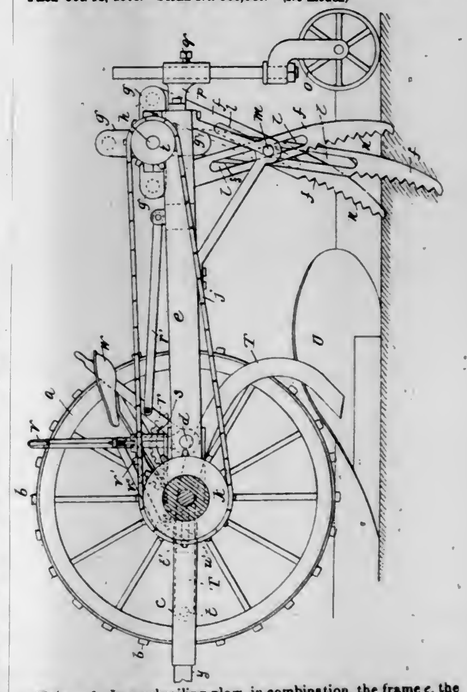
2. An inkstand comprising a reservoir, an inclosing head having a dip-well with a tube reaching toward the bottom of the reservoir, a cylinder mounted upon the head and provided with a piston or plunger, the cylinder having an opening and the plunger having a conical seat fitting the opening, and a vent extending through the plunger, substantially as described.

3. In an inkstand, the combination with a reservoir, of an inclosing head having integral therewith a dip-well and cylinder, and a plunger fitting the cylinder and provided with a vent, substantially as described.



4. In an inkstand, the combination with a reservoir and head having a dip-well and cylinder and provided with a conical opening, of a plunger having a conical projection fitting the opening, and an air-vent above the projection extending to the upper end of the plunger, substantially as described.

570,192. SUBSOIL-PLOW. FREDERICK D. TUCKER, St. Louis, Mo. Filed Oct. 18, 1895. Serial No. 566,040. (No model.)



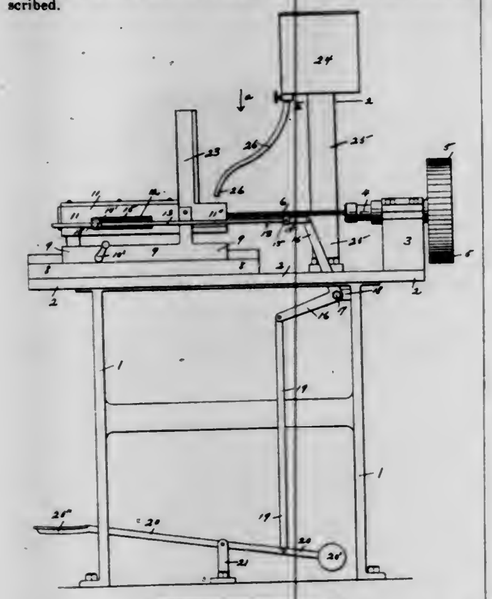
Claim.—1. In a subsoiling-plow, in combination, the frame *e*, the shaft *h* held on it, the cranks *g*, the knives *f* carried by said cranks, the bar *m* projecting through slots in said knives and the adjustable wheel *o* regulating the depth of cut of said knives, for the purpose specified.

2. In a subsoiling-plow, in combination, the supporting-wheels *a*, the axle-frame *c*, the frame *e* hinged thereto, the subsoiling-knives *f* carried by said frame *e*, means for transmitting motion from at least one of said supporting-wheels to said subsoiling-knives, and the wheel *o* limiting the depth of cut of said knives, for the purpose specified.

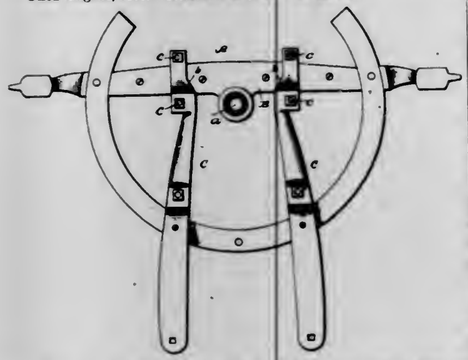
570,193. MACHINE FOR THREADING NUTS. GEORGE H. WEBB and JAMES CLARK, Pawtucket, R. I.; said Clark assignor to said Webb. Filed May 28, 1896. Serial No. 593,397. (No model.)

Claim.—In a machine for threading nuts, &c., the combination with a removable tap, and means for holding and revolving the same, of a slide adapted to be moved longitudinally on a track, and be secured in place thereon, said slide having a reservoir thereon for the blank nuts, and guides for holding the nuts while they are being

threaded, and carrying a reciprocating plunger, and said plunger, and a rod detachably connected therewith, said rod connected with treadle mechanism, and said treadle mechanism for operating the plunger, to communicate a positive forward motion thereto, and a spring for returning or moving back the plunger, substantially as shown and described.



570,194. FIFTH-WHEEL. DARIUS WILCOX, Mechanicsburg, Pa. Filed Aug. 14, 1895. Serial No. 559,349. (No model.)



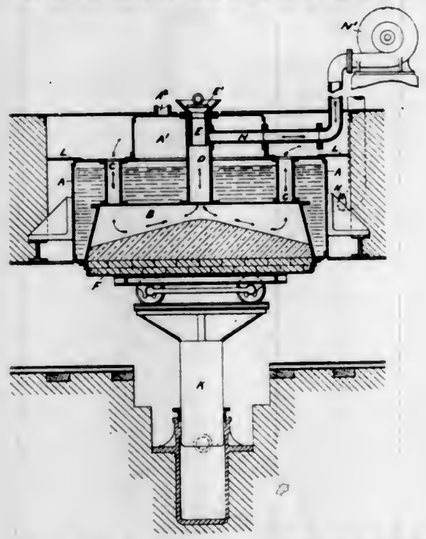
Claim.—1. In fifth-wheels, a head-block plate with a hole or aperture for the king-bolt, said plate secured to the under side of the head-block, in combination with reach or perch irons having two arms or members at the front end which extend entirely across the plate and are provided with perforated lugs for the attaching-bolts, on both sides of the plate and exterior thereto, and all secured together, substantially as described.

2. In fifth-wheels, a head-block plate secured to the under side of the head block and provided with a hole or aperture for the king-bolt and with transverse recesses, in combination with reach-irons, or perches having two arms constructed substantially as described, and adapted to fit in the recesses in the head-block plate, as specified

3. In fifth-wheels, a head-block plate secured to the under side of the head-block and with a hole or aperture for the king-bolt, and with transverse recesses the bases of which are convex, in combination with reach or perch irons having two arms, the under sides of the ends of said arms being concaved to fit the convex bases of the recesses in the head-block plate, substantially as described.

4. In fifth-wheels a head-block plate secured to the under side of the head-block and with a hole or aperture for the king-bolt, and with transverse recesses angular in form at the rear sides, in combination with reach or perch irons having two arms, which are shoul dered to fit the angular recesses in the head-block plate, substantially as described.

570,195. METHOD OF AND APPARATUS FOR GENERATING STEAM. EDGAR A. ASHCROFT, London, England. Filed Dec. 27, 1895. Serial No. 573,545. (No model.) Patented in South Australia June 19, 1894, No. 2,707, and in New South Wales June 25, 1894, No. 5,126.



Claim.—1. The herein-described method of heating a steam-boiler by molten slag or other hot material coming from a blast or other furnace, the said method consisting essentially in spreading the slag in thin superimposed layers on a hearth within the heating-chamber of the boiler, and at same time causing a current of air to circulate over the freshly-deposited layer of hot material, then in contact with the heating-surfaces of the boiler, then back over the hot material, and so on in a continuous cycle, as specified.

2. A steam-boiler adapted to be heated by hot or molten material having an internal heating chamber closed at bottom by a removable hearth, a central supply-pipe and flues leading up from the heating-chamber through the water-space of the boiler to a flue-space above, as specified.

3. A steam-boiler adapted to be heated by hot or molten material, and having an internal heating-chamber closed at bottom by a removable hearth, a central supply-pipe, flues leading up from the heating-chamber through the water-space of the boiler to a flue-space above, the said flue communicating with, a lower or outer flue around the boiler-shell, divided by a partition and communicating with an exhaust pipe, as specified.

4. The combination, with a boiler having an internal heating-chamber closed by a removable hearth, a central supply-pipe, and flues leading up from the heating-chamber through the water-space of the boiler to flues above and around the boiler-shell, of a fan and air-circulation pipes respectively connected with the central supply-pipe and the said outer flue whereby a continuous circulation of air is maintained in a cycle over the freshly-deposited layers of hot material and in contact with the heating-surfaces of the boiler, as specified.

5. An apparatus for utilizing slag, the apparatus having a track and a stationary setting above the track, a boiler-shell arranged in the setting and having a downwardly opening heating-chamber and also having air-circulating flues, a table capable of moving on the track and of elevating slag to the heating-chamber of the boiler, and means comprising part of the track by which the table may be raised, substantially as described.

6. An apparatus for utilizing slag, the apparatus having a track and a setting arranged above the track, a boiler shell held within the setting and having a downwardly-opening heating-chamber, a table mounted to move on the track, and means for raising the table into the heating-chamber, substantially as described.

7. An apparatus for utilizing slag, having a track and a setting stationary above the track, a boiler-shell held within the setting and having a downwardly-opening heating-chamber, air-circulating flues communicating with the heating-chamber, a table mounted to roll on the track, and means for raising the table to the heating-chamber, substantially as described.

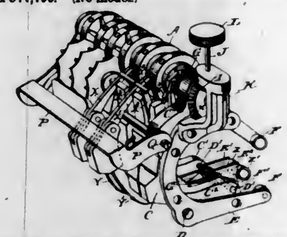
8. An apparatus for utilizing slag, having a track and a stationary setting above the track, the setting having a hollow space closed at its top, a boiler-shell supported within the space and having a heating-chamber, the boiler being of a size less than that of the said space and thus forming a chamber at the side and top of the shell, a plate projecting outwardly from the upper portion of the shell and forming the said chamber into two divisions having communication by an orifice in the plate and the lower division having an outlet, a partition-plate in the lower division, an air-inlet flue passing into the heating-chamber, and a second air-flue passing from the heating chamber to the upper division of the chamber in the setting, substantially as described.

9. An apparatus for utilizing slag, having a track and a setting above the track, the setting having a hollow space closed at its top, a boiler-shell held within the space and of a size decreased over that of the space so as to form a chamber at the sides of the top of the boiler-shell and the boiler-shell having a downwardly-opening heating-chamber, a mounted table capable of moving upwardly to close the lower end of the heating-chamber, a plate extending outwardly from the upper portion of the boiler-shell to form the said chamber into two divisions having communication by an opening in the plate, a partition-plate in the lower division and said lower division having an outlet-orifice, an air-inlet flue extending into the heating-chamber, and a second air-flue extending from the heating-chamber through the boiler and to the upper division, substantially as described.

10. An apparatus for utilizing slag, having a track, a table mounted to move on said track, means forming a portion of the track and on which means the table may pass to be raised from the track, and a boiler held above said means and having a downwardly-opening heating-chamber to which the table may move, substantially as described.

11. An apparatus for utilizing slag, having a setting with a hollow space, a covering plate closing the upper side of the said space, a boiler-shell smaller than the said space and supported within the space, the boiler thus leaving a chamber within the hollow space and the boiler having a heating-chamber, a slag feed tube passing through the said plate at the upper side of the hollow space in the setting and through the boiler to communicate with the heating-chamber thereof, an air inlet tube passing into the chamber between the boiler and the setting and communicating with the slag-feed tube, and an air-outlet tube passing from the heating-chamber through the boiler and communicating with the space between the boiler and the setting, such space having an outlet-orifice, substantially as described.

570,196. TRANSFERRING AND RESETTING MECHANISM FOR CASH-REGISTERS. FAYETTE BARNARD, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed Feb. 3, 1896. Serial No. 577,799. (No model.)



Claim.—1. In a registering device, the combination, with the resetting-shaft for the registering-wheels, of a movable stop coöperating with a projection turning with the shaft, and means actuated by the shaft but independent of the projection for moving the stop into the path of the projection after the shaft has been turned from normal position, for the purpose described.

2. In a registering device, the combination, with the resetting-shaft for the registering-wheels, of a movable stop coöperating with a projection turning with the shaft, and means actuated by the shaft but independent of the projection for moving the stop into the path of the projection after the shaft has been turned from normal position, and permitting it to move out of the path of the projection again after the latter has engaged it and the parts been arrested by it, for the purpose described.

3. The combination of a rotatable shaft, a disk fast thereon or turning therewith and provided with a notch in its periphery, a member bearing against the periphery of the disk and coöperating with the notch therein, and a movable stop adapted to be moved by said member into the path of a projection turning with the shaft, to arrest the latter.

4. The combination of a rotatable shaft, a disk fast thereon or turning therewith and provided with a notch in its periphery and with a lateral projection, a member bearing against the periphery of the disk and coöperating with the notch therein, and a movable stop adapted to be moved by said member into the path of the projection, and permitted to move out of the path of the projection after the latter has engaged it and been arrested by it.

5. The combination of the shaft B, the disk N fast thereon and having the notch in its periphery and provided with the projection W, the spring-pressed arm O bearing against the periphery of the disk and adapted to coöperate with the notch therein, and the stop-arm S coöperating with the arm O and with the projection W, for the purpose described.

6. The combination of the shaft B, the disk N fast thereon and having the notch in its periphery and provided with the projection W, the spring-pressed arm O bearing against the periphery of the disk and coöperating with the notch therein, the stop-arm S coöperating with the arm O so as to be moved in one direction with said arm but not in the other, and the resetting-spring V for the arm S, substantially as and for the purpose described.

7. The combination of the shaft B, the registering-wheels A mounted thereon, means intermediate the wheels and shaft for causing the latter to pick up the wheels and carry them with it when turned in one direction, the beveled pinion H fast upon one end of the shaft, the beveled pinion I meshing with the pinion H, means for turning the pinion I to rotate the shaft, the disk N fast upon the opposite end of the shaft and provided with the notch in its periphery and with the projection W, the spring-pressed frame P having the arm O bearing against the periphery of the disk N, the stop-arm S, the projection T intermediate the arm A and the frame P or parts moving with it, for causing the frame to carry the arm S with it in one direction but not in the other, and the resetting-spring V for the arm S, substantially as and for the purpose described.

8. In a registering device, the combination, with a registering-wheel provided with a ratchet, a reciprocating transfer-pawl adapted to coöperate with the ratchet, and actuating means for said pawl, of a locking device normally holding the pawl from movement and coöperating with the actuating means to release the pawl preparatory to its movement by said means.

9. In a registering device, the combination, with a registering-wheel provided with a ratchet, a reciprocating transfer-pawl adapted to cooperate therewith, and a cam for reciprocating said pawl, of a locking device normally holding the pawl from movement and coöperating with the cam to cause the latter to release the pawl preparatory to moving it.

10. In a registering device, the combination, with the registering-wheel A provided with the ratchet G, the lever Y', and the transfer-pawl X' actuated by said lever and adapted to coöperate with the ratchet G, of the spring-pressed pivoted locking-plate E^3 provided with a projection F' coöperating with a notch in the lever Y' in the manner and for the purpose described.

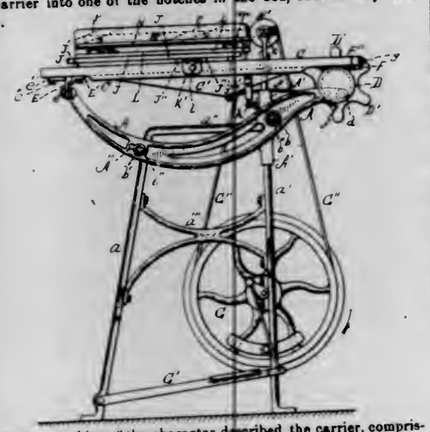
11. In a registering device, the combination, with the registering-wheel A provided with the ratchet G, the lever Y', and the transfer pawl X' pivoted to and carried by the upper end of said lever and adapted to coöperate with the ratchet G, of the spring-pressed locking-plate E^3 pivoted at D' above the rear end of the lever Y' and provided with the projection F' coöperating with the notch in the under edge of said lever, and the cam A^3 coöperating with the plate E^3 and rear end of the lever Y' in the manner and for the purpose described.

570,197. BORING-MACHINE. WILLIAM W. BLACK, Melrose, Mass., assignor of one-third to J. Hiram Black, Scarletown, Canada. Filed Mar. 18, 1896. Serial No. 583,735. (No model.)

Claim.—1. In a machine of the character described, the combination of the frame; the table-support A provided with the slide A' whereby it is moved vertically upon the frame; the table C provided on its under side near one end, with the stationary plate or leaf E'; the swinging leaf E secured to the corresponding end of the table-support and engaged by means of its knuckle with said stationary leaf, whereby the two said leaves constitute a hinge without a pintle; the button c' secured to the table and adapted to hold the knuckle of the leaf E in engagement with the socket of the leaf E'; the roll D supporting the opposite end of the table and provided with the peripheral groove E'', said roll being connected with the corresponding end of the table-support by the eccentric-pin d; and the horizontally-adjustable plate F secured to the table and provided with a finger which extends into said groove; whereby said table is swung vertically and adapted to be moved and adjusted horizontally, substantially as described.

2. In a machine of the character described, in combination, the table C; the bed J provided on its under side with the cleats or guide-strips J''; the guiding-band K secured to said table and extending between said guide-strips, said bed being provided with the curved slot n and the notches W; the carrier L provided with the longitudinal slot L'; a bolt extending from said carrier to said bed by means of

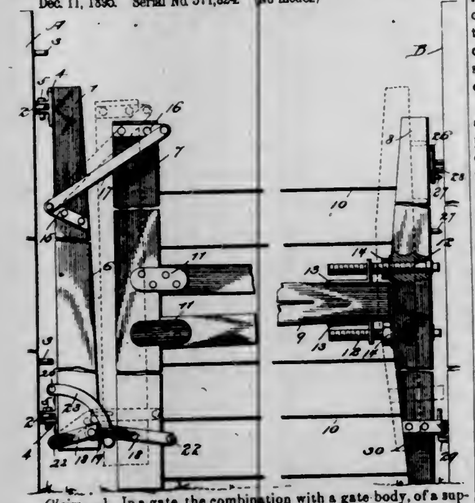
the said longitudinal and curved slots; and a bolt extending from the carrier into one of the notches in the bed, substantially as set forth.



3. In a machine of the character described, the carrier, comprising the substantially horizontal base L adapted to be adjustably secured to the bed, the portion N for supporting the work, said portion being hinged at one edge to the base L, and the gage or side portion N' extending up substantially at right angles with and from the portion N; the blocks or cleats P secured to the rear side of the portion N' and with their under edges formed on an incline; and a slide moving longitudinally on the base of the carrier and engaging the under side of said blocks or cleats; whereby the hinged portion N for sustaining the work is swung up from a horizontal position by the movement of said slide, substantially as described.

4. In a machine of the character described, the carrier comprising the substantially horizontal base L adjustably secured to the bed, the portion N for supporting the work hinged at one end to said base, and the gage or slide portion N' extending up from the portion N; the blocks or cleats P secured to the rear side of said portion N and with their under edges formed on an incline; the slide R engaged by and moving longitudinally on the base L; projections U extending from said slide and engaging the inclined under edges of said blocks or cleats; and springs bearing against the slides and pressing them into engagement with said blocks or cleats, substantially as set forth.

570,198. GATE. DELLA R. BURNHAM, Pullman, Wash. Filed Dec. 11, 1895. Serial No. 571,824. (No model.)



Claim.—1. In a gate, the combination with a gate-body, of a support therefor, and a connection between the two consisting of toggle-levers pivoted to the gate-body and to the support, and means for controlling the movement of the toggle-levers.

2. In a gate, the combination with a gate-body and a support therefor, of a link pivotally connecting the two, toggle-levers also connecting the gate-body and support, and means for controlling the movement of the toggle-levers.

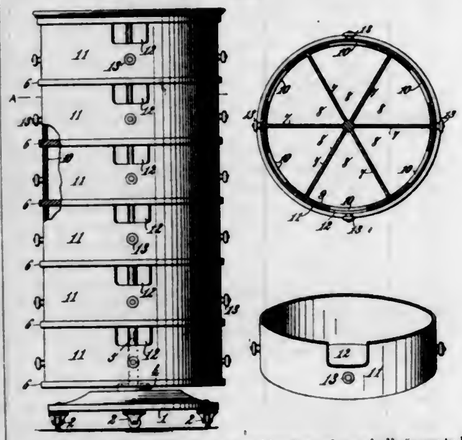
3. In a gate, the combination with a gate-body, and a support therefor, of a connection between the two consisting of toggle-levers, and a pivoted arm having its free portion adjustably connected to the toggle-levers.

4. In a gate, the combination with a gate-body and a support therefor, of a connection between the two consisting of toggle-levers, an eye carried thereby, and a pivoted segment having its free portion passing through said eye.

5. In a gate, the combination with a gate-body, and a support therefor, of a connection between the two consisting of a link, toggle-levers, an eye carried thereby, and a pivoted segment having its free portion passing through said eye.

6. A gate-fastener comprising a pin, a keeper provided with a substantially heart-shaped open face having an opening leading thereinto, and which is adapted to receive said pin, and an inverted crescent-shaped stop located inside the open face of the keeper.

570,199. CABINET. JOSEPH E. CAPLINGER, San Antonio, Tex., assignor of one-half to William J. Cain, Carrollton, Ky. Filed Jan. 31, 1896. Serial No. 577,570. (No model.)



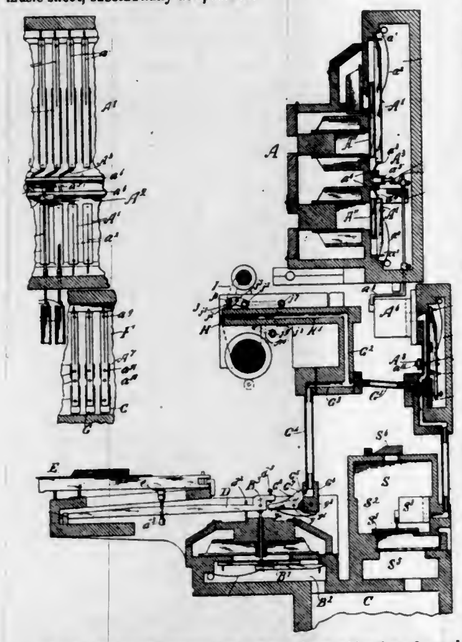
Claim.—1. In a cabinet, the combination of a spindle mounted on a suitable base, disks fixed on said spindle one above the other, radial partitions arranged between said disks and forming a plurality of compartments, a circumferential rim fixed between said disks about the ends of said partitions and having a series of apertures communicating with said compartments, and a rotatable sleeve arranged over said rim and having a single aperture adapted to register with any one of the apertures in the rim, substantially as described.

2. In a cabinet, the combination of a spindle mounted on a suitable base, disks fixed on said spindle one above the other, radial partitions arranged between said disks and forming a plurality of compartments, a circumferential rim fixed between said disks about the ends of said partitions and having a series of apertures formed in its upper edge and communicating with said compartments, and a rotatable sleeve arranged over said rim and having a single aperture formed in its upper edge adapted to register with any one of the apertures in the rim, substantially as described.

3. In a cabinet, the combination with the wheeled base 1 provided with a vertical pintle 3, of the spindle 5 having a tubular lower end journaled on the pintle 3, disks fixed on said spindle one above the other, radial partitions arranged between said disks and forming a plurality of compartments, a circumferential rim fixed between said disks about the ends of said partitions and having a series of apertures formed in its upper edge and communicating with said compartments, a rotatable sleeve arranged over said rim and having a single aperture formed in its upper edge adapted to register with any one of the apertures in the rim, a plurality of knobs attached to said sleeve, and index-characters affixed to the rim of the disks opposite each compartment, substantially as described.

570,200. ORGAN. JOSEPH H. CHASE, Meriden, Conn., assignor to the Æolian Company, New York, N. Y. Filed Dec. 31, 1894. Renewed Sept. 2, 1896. Serial No. 604,674. (No model.)

Claim.—1. In a mechanical musical instrument, the combination of sound-producing devices, a tracker-board comprised in mechanism for controlling said sound-producing devices, a music-sheet for traveling over the end of the tracker-board, mechanism for rewinding the music-sheet after playing, and a cover or stop for said tracker-board operated by said rewinding mechanism independently of the music-sheet, substantially as specified.



2. In a mechanical musical instrument, the combination of sound-producing devices, a tracker-board comprised in mechanism for controlling said sound-producing devices, a music-sheet for traveling over the end of the tracker-board, means for propelling the music-sheet, in one direction for playing, and in another direction for rewinding, and a cover or stop shifted at the commencement of the rewinding of the music-sheet to close or stop air-ducts of the said tracker-board, the said cover or stop being constructed to slide adjacent to one side of the tracker-board and to drop over the end of the tracker-board, substantially as specified.

3. In an organ, the combination of manual-keys, sound-producing devices controlled by said keys, an independent set of sound-producing devices, valves for controlling the independent set of sound-producing devices, and a rocking bar provided with valve-seats and supporting the valves for the independent set of sound-producing devices, substantially as described, whereby the independent set of sound-producing devices may be put out of or under control of the said keys.

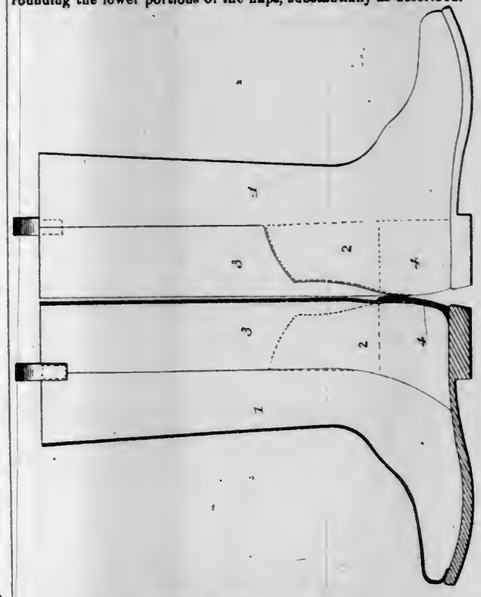
4. In an organ, the combination of manual-keys, sound-producing devices controlled by said keys, an independent set of sound-producing devices, valves for controlling the independent set of sound-producing devices, a rocking bar provided with valve-seats and supporting the valves for the independent set of sound-producing devices, substantially as described, and adjustable ducts leading from the valve-seats, and, by their adjustability, permitting the movement of the said rocking bar.

5. In an organ, the combination of manual-keys, sound-producing devices controlled by said keys, an independent set of sound-producing devices, valves for controlling the independent set of sound-producing devices, a rocking bar provided with valve-seats, and flexible tubes communicating with the valve-seats and extending from said rocking bar, substantially as specified.

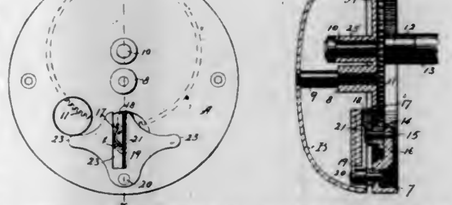
6. In an organ the combination with a tracker-board and a cover comprising a frame resting upon one side of the tracker-board, rods for shifting said frame, arms for shifting said rods and their rock-shaft carrying the said arms, substantially as specified.

570,201. BOOT. JASPER DOLLISON and SOLOMON RIMER, Salesville, Ohio. Filed Sept. 11, 1895. Serial No. 562,202. (No model.)

Claim.—In a boot, the combination with the sole, the front leg portion secured thereto, having its rear upper edges cut away forming rearwardly-extending flaps, of the rear leg portion the vertical edges of which are secured to the front leg portion by a row of stitches extending from top to bottom thereof, and the lower edges of said rear portion secured to the sole, and the said flaps overlapping the lower part of said rear portion and stitched at the edges thereto and the lower ends secured to the sole and the lower part of the rear edges of said flaps meeting and abutting against each other, while the upper portions spread apart leaving a space therebetween and the counter secured to the sole and stitched to said flaps and surrounding the lower portions of the flaps, substantially as described.



570,202. DOOR-BELL. GEORGE W. EDDY, Bristol, Conn., assignor to Americus J. Clayton and Horatio C. Clayton, same place. Filed Apr. 15, 1896. Serial No. 587,692. (No model.)



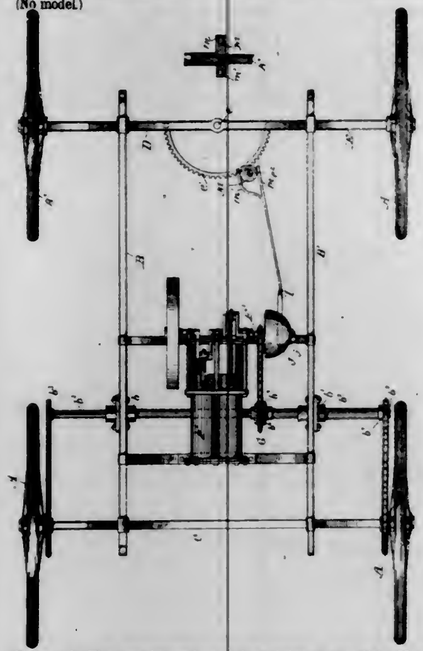
Claim.—1. The combination of a driving-gear, a pinion in engagement therewith, a crank-arm carried by said pinion, a slotted stud loosely mounted in said crank-arm and the oscillating hammer having a radial arm in engagement with said slotted stud, substantially as described.

2. The combination of the base A adapted to be secured to the inside of a door, a gong B mounted concentrically thereon, the driving-gear 11, having the hub 12 for connecting with the shank of an operating-handle, said gear being free to be rotated by hand in either direction, the pinion 14 in engagement with said driving-gear, a crank-arm carried by said pinion and arranged to revolve in either direction through said driving-gear, a hammer pivoted upon said base-plate near the outer edge thereof in a radial line with the axis of said crank-arm and operatively connected therewith, all within the circle of the gong substantially as described.

3. The combination of the driving-gear, a pinion driven thereby, a crank-arm carried by said pinion, the pivoted hammer in the form of a plate with the radial arm in the form of a flange, and a slotted post with which said radial arm engages substantially as described.

4. A door-bell having the base-plate with tubular post, the gear-wheel 11 mounted on the shaft 10 within said tubular post, a hammer and intermediate devices operatively connecting said hammer and gear-wheel, all mounted on the one base-plate and without any secondary movement-plate substantially as described.

570,203. GEAR FOR MOTOCYCLES. GEORGE H ELLIS and JOHN P. STEWARD, Chicago, Ill. Filed Jan. 23, 1896. Serial No. 576,543 (No model.)



Claim.—1. The continuously-running pinion *f*, the disks H and K supported concentrically relative to the said pinion, the said disk K forming an internal gear, and the said disk H having, upon suitable supports, the gear or gears h^3 adapted to mesh into the said pinion *f* and into the internal gear of the disk K, the friction-ring J, and means for clutching the disk H to the said ring or to the said disk K, at will, substantially as described.

2. The continuously-running pinion *f*, the disks H and K, supported concentrically relative to the said pinion, the said disk K forming an internal gear, and the said disk H having, upon suitable supports, the gear or gears h^3 adapted to mesh into the said pinion *f* and into the internal gear of the disk K, means for moving the said disk H laterally whereby it may be either held from rotation, may be clutched to the disk K or may be set free and thus set free the said disk K, at will, substantially as described.

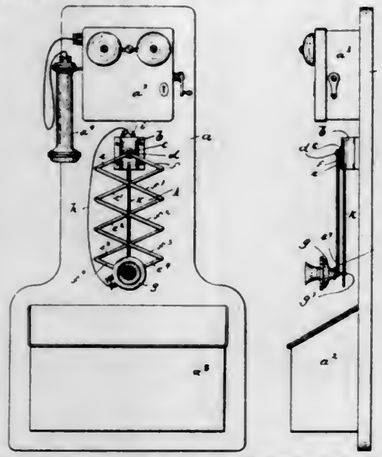
3. The continuously-running pinion *f*, the disks H and K supported concentrically relative to the said pinion, the said disk K forming an internal gear, and the said disk H having, upon suitable supports, the gear or gears h^3 adapted to mesh into the said pinion *f* and into the internal gear of the disk K, a wheel secured to the said disk K, the friction-ring for imparting motion to the machine to be actuated, and means for moving the disk H laterally whereby it may be held from rotation or may be held to the disk K or may be set free from both at will, substantially as described.

4. The continuously driven pinion *f*, the disk H, having an annular friction-flange and adapted to move laterally, a planet gear or gears suitably supported on said disk, the internal gear adapted to be held from lateral movement and having an annular friction-flange inside that of the disk H, a stationary friction ring outside of the said disk H and means for moving the said disk H laterally whereby it may frictionally clutch the said friction-ring or the said internal gear, or may be held free from both at will, substantially as described.

5. In a motor cycle and in combination, a motor having a driving-shaft, a driven wheel mounted loosely upon and concentrically with the driving-shaft, a pinion on said shaft, planetary gearing supported upon said driving-shaft and having a disk adapted to move laterally, the said planetary gearing constructed substantially as described, whereby the said driven wheel is rotated in either direction, means within reach of the operator for moving said disk, countershafts mounted on coincident axes, each shaft being suitably connected to the driving-wheels of the motor cycle and differential gearing mounted upon the adjacent ends of said counter-shafts and rotated by said driven wheel, substantially as described.

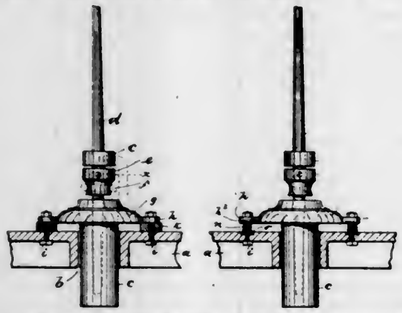
6. In a carriage a motor having a continuously-driven shaft, an internal gear K loosely supported on the shaft thereof, a pinion *f* keyed to the said shaft, the disk H loosely mounted on the said shaft and adapted to be moved in longitudinal directions, the intermediate gears upon the said disk H adapted to engage the pinion *f* and the intermediate gears of the disk K, a power-transmitting wheel as one piece with the said disk K, gearing adapted to transmit motion from the said power-transmitting wheel on the said disk K to the traction-wheels, and means under the control of the attendant for moving the said disk H longitudinally, substantially as described.

570,204. ADJUSTABLE TELEPHONE-TRANSMITTER. ALFRED GARTNER, Newark, N. J., assignor to Robert Baker and John Filmer, Brooklyn, and Edgar L. Ryder, Sing Sing, N. Y. Filed Feb. 15, 1896. Serial No. 579,410. (No model.)



Claim.—In a telephone-service the combination with the frame, of a bracket projecting from said frame, a telescopic skeleton pivotally secured to said bracket and consisting of a series of sets of crossing arms, pivotally connected at their centers and at their outer ends, the telephone-transmitter arranged at the free end of and at right angles to said skeleton, a loop or eye projecting from said transmitter, and a rod secured to the bracket and adapted to engage said loop or eye, substantially as and for the purposes described.

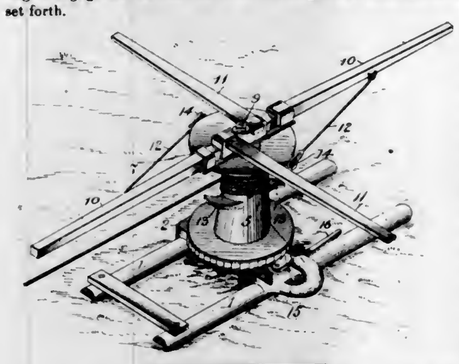
570,205. SPINDLE-SUPPORT. ALFRED GARTNER, Newark, N. J., assignor to the Sawyer Spindle Company of Maine, Portland, Me. Filed Mar. 16, 1896. Serial No. 583,350. (No model.)



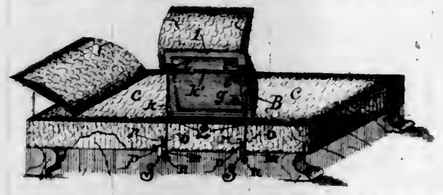
Claim.—The combination with the spindle-rail, the whirl-driven spindle and its driving-band, of a tube, containing step and bolster bearing for said spindle, loosely mounted in said rail, two lugs projecting horizontally from said tube and arranged diametrically opposite each other and at right angles to the driving band, each of said lugs being provided with an elongated slot, substantially parallel to the said driving-band, elastic means between each lug and the top of the rail, and a bolt passing through the slot of each lug, its elastic means and the rail, substantially as and for the purposes described.

570,206. WINDLASS. THOMAS W. HARDIN, Grant, Iowa. Filed Dec. 6, 1895. Serial No. 571,253. (No model.)

Claim.—A windlass comprising supporting-sills, a block bolted to said sills and provided with an upwardly-projecting tapering post, the extreme upper end of which is reduced, a winding-drum having a tapering bore adapted to said post and provided with a lower toothed rim and with hooks, a sweep-head consisting of a single casting loosely mounted upon the upper reduced end of the post and provided with sweep-sockets and lead-pole sockets, the former arranged at right angles to the latter, sweeps and lead-poles secured in their respective sockets, the inner ends of the sweeps projecting under the bottoms of the lead-pole sockets, links loosely connected to the sweeps and engaging the hooks of said winding-drum, and a pivoted spring-actuated dog to engage the toothed rim of the winding-drum, substantially as set forth.



570,207. MULTIFORM LOUNGE OR SETTEE. EDWARD HARRY, Buffalo, N. Y. Filed Nov. 12, 1895. Serial No. 568,687. (No model.)



Claim.—1. The combination, in a multiform lounge or settee, of a body or seat, a ⌊⌋-shaped clamping member connected to the frame of said body, and comprising a bottom plate and vertical side plates, said portions surrounding a lower edge of said frame, an elongated orifice in the bottom plate, a clamping-screw working inwardly through the outer side plate and carrying a clamp or presser-plate, means provided to the inner side plate for positive engagement thereof with the interior face of the frame, a vertically-erected standard passing along the outer face of the frame and adapted to rigid impingement therewith through pressure of the clamp-plate of the clamping-screw against said standard, a cross-bar terminating the upper extremity of the standard, and a pillow pivotally and detachably mounted upon said cross-bar, all arranged and operating substantially as described and for the purposes set forth.

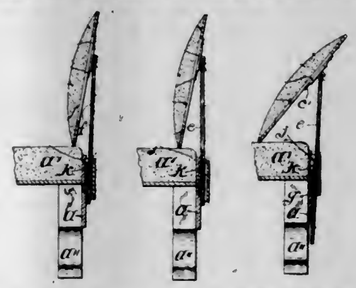
2. The combination, in a device of the class described, of a suitably-supported body or seat, a detachable clamping member secured to a lower edge of the body's frame, and comprising an apertured bottom and upstanding sides, a clamping-screw erected in the outer wall and carrying a clamping plate, means provided to the inner wall for connection thereof with the body's frame, a perpendicular standard passing between the outer face of the body's frame and the outer wall of the clamping member and downwardly penetrating the aperture in the bottom of the clamp member and adapted to longitudinal adjustment when released from impingement by the clamp-plate of the clamping-screw, a cross-piece at the upper end of the standard, and a pillow pivotally secured thereto, the lower edge whereof normally lies in abuttal with the upper surface of the body or seat, all arranged and operating substantially as described and for the purposes specified.

3. In a device of the class described, in combination, a body or seat suitably supported, a clamping member, of a ⌊⌋ shape, affixed to a lower edge of the frame of the body or seat and encompassing said part, an elongated standard extended along the outer face of the body's frame and contactingly therewith, a pressure-screw erected in the clamping member and impinging the standard, a cross-piece at the upstanding extremity of said standard, and a pillow fulcrumed on the cross-piece and pivotally adjustable thereon, said pillow being capable of bearing by its bottom edge upon the top of the body or seat, substantially as described.

4. In a device of the class described, a body or seat having a suitable frame, an angular standard upheld at a side of said body, a clamping member supporting the said standard, and consisting of a slotted bottom wall, a frame impinging rear wall, a manipulating-screw having a swiveled segment-shaped presser-plate located contiguous the frame, the angular standard passing closely between said plate and the body's frame and extending downwardly through the slot in the bottom wall of the clamp member, and provided with a protuberance at its lower portion, a pillow pivotally and detachably united to the upper transverse length of the standard, said pillow's bottom edge normally abutting the upper face of the body or seat, all combined and operating substantially as described and shown.

5. The combination, of a body or seat, ⌊⌋-shaped clamping members encompassing at a distance apart a bottom edge of the body's frame, and respectively comprising a slotted bottom portion and upright oppositely-facing front and rear walls, their rear walls detachably engaging the frame of the body, transversely-erected clamping-screws in the front walls, segment-like presser-plates swiveled thereto and in juxtaposition to the front face of the body's frame, ⌐⌐-shaped standards adjustably supported in front of the frame, vertical lengths to said standards extending respectively between the front side of the frame and the presser-plates of the screws and penetrating the slots of the clamping members, nuts operative on the extremities of said lengths, stiff-backed pillows, spring-holding plates on the backs thereof and pivotally engaging the horizontal tops of the standards, substantially as and for the purposes set forth.

570,208. CONVERTIBLE COUCH OR SETTEE. EDWARD HARRY, Buffalo, N. Y. Filed Jan. 29, 1896. Serial No. 577,253. (No model.)

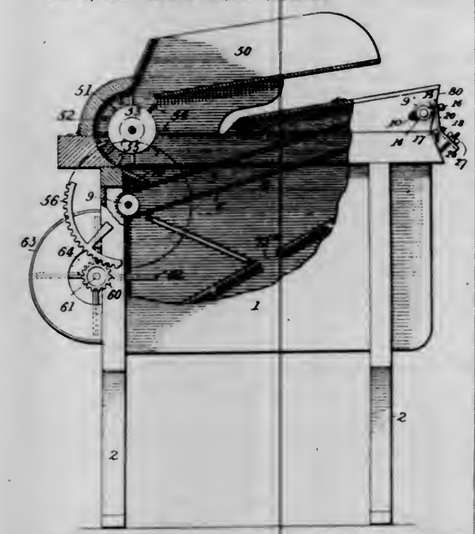


Claim.—1. The combination, in a convertible couch or settee, of a body or seat, a socket thereto, a serrated standard, provided with a cross-piece, entering and adjustably upheld in said socket, a dog or shoulder on the socket engaging a serration of the standard, a pillow adjustably mounted upon the cross-piece of the standard, a pivotal connection between said pillow and standard, the pillow's lower edge normally abutting the top of the body or seat, all arranged and operating substantially as described and for the purposes set forth.

2. The combination, in a device of the class described, of a body or seat, a rigid socket thereto, a vertically-rising notched standard entering said socket, a dog or shoulder on said socket entering a notch of the standard to adjustably retain the standard, a spring located in aforesaid socket and bearing against the standard to insure positive engagement of a notch with the dog, a horizontal top section terminating the upper extremity of the standard, a pillow, bifurcated holders thereon adjustably and detachably uniting same to the top section of the standard, the bottom edge of the pillow normally impinging the upper face of the body or seat, all arranged and operating substantially as described and for the purposes specified.

3. In a device of the class described, in combination, a body or seat suitably supported, a socket member secured to a side thereof, said socket having a rigid dog penetrating slightly the bore thereof, a spring erected in the socket at a point opposite to the location of the dog, and normally protruding outward, a notched standard adjustably seated at its lower extremity within said socket and upheld vertically by engagement of one of its notches with the dog of the socket, the spring therein pressing the engaging notch firmly against the dog, a cross-bar terminating the upper extremity of the standard, a pillow adjustably and removably pivoted thereto, stationary plates on the pillow having slotways, movable carrying-plates mounted in the slotways, bifurcated holders projecting from the plates and encircling portions of the cross-bar of the standard, the pillow being adapted to, at differential inclines, bear by its bottom edge upon the top surface of the body or seat, substantially as described and shown and for the purposes set forth.

570,209. PEA-THRESHER. JOHN F. RHODES, Athens, Ga. Filed Nov. 20, 1895. Serial No. 569,532. (No model.)



Claim.—1. The combination in a threshing or separating machine of a traveling separating-bed comprising elastic bands arranged relatively apart, and slats or strips joined transversely to said bands, and arranged relatively apart, means for operating the bed, and means for distending or stretching the bands, substantially as shown and for the purposes described.

2. The combination in a threshing or separating machine, of a traveling separating-bed comprising endless elastic bands arranged relatively apart, and slats or strips joined transversely to said bands, and also arranged relatively apart, means for operating the bands, and an adjustable belt-tightener for distending or relaxing said bands, substantially as shown and for the purposes described.

3. The combination in a threshing or separating machine of a traveling separating-bed comprising stretchable or elastic bands arranged relatively apart, transverse slats or strips connecting said bands and also arranged relatively apart, rollers by which said traveling bed is carried, one of which being provided with movable bearings, means for adjusting said bearings out or in and holding the same to the adjusted position, and means for operating the said traveling bed, substantially as described.

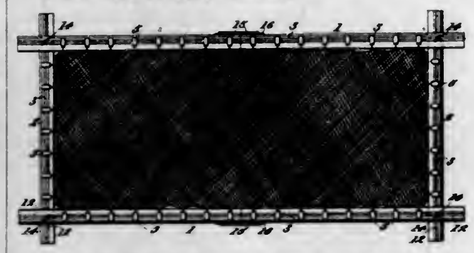
4. The combination in a threshing or separating machine of a traveling separating-bed, comprising elastic or stretchable bands arranged relatively apart, and slats or strips joined transversely to said bands, and means for distending said bands, substantially as shown and for the purposes described.

5. The combination in a threshing-machine, of a traveling separating-bed comprising elastic bands arranged relatively apart, and slats or strips joined to said bands transversely, and also arranged relatively apart, means for distending or relaxing said bands, and a fan or blower forcing a current of air upward through the said traveling bed, substantially as and for the purposes described.

6. The combination in a threshing or separating machine of a traveling separating-bed, comprising elastic bands arranged relatively apart, and slats arranged transversely to said bands, and also relatively apart, rollers for carrying the bands, a slotted bearing for one of said rollers, and means for tightening or relaxing the bands, the same comprising an arm on the shaft of the movable roller, a bracket having a movable fulcrum and loosely engaging said arm, and a screw and a nut for the adjusting said nut on its fulcrum, substantially as shown and for the purposes described.

7. The combination in a threshing or separating machine, of a traveling bed comprising elastic bands arranged relatively apart, and slats joined transversely to said band and also arranged relatively apart, a stationary roller and an adjustable roller for said traveling bed, and means for operating said adjustable roller comprising an angular bracket movably supported beneath the roller and provided with the slots 19 and 21, and opening 20, the arm mounted on the end of the shaft of the movable roller and engaging the slots 21, a fulcrum for said bracket entering the slot 19, and an adjusting-screw passing through the opening 20 and entering the frame of the machine, and a nut for adjusting the bracket on its fulcrum, substantially as shown and for the purposes described.

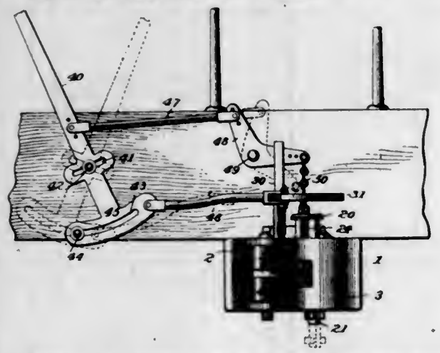
570,210. CURTAIN-STRETCHER. WILLIAM SIMON, Jr., St. Louis, Mo., assignor of one-half to Henry R. Hamley, same place. Filed July 13, 1896. Serial No. 599,008. (No model.)



Claim.—1. In a curtain-stretcher, the side and end rails forming a frame and provided with raised flanges or ribs on their upper surfaces forming dovetail grooves, blocks 5 having dovetail tenons 6 fitting in said grooves and portions 7 fitting at 8 and 9 against the upper faces of the rails and against the inner faces of the inner flanges respectively, and hooks made fast to said portions 7, substantially as and for the purpose set forth.

2. In a curtain-stretcher, the combination of a frame composed of end and side rails and having dovetail grooves formed by raised flanges, bolts connecting said rails together and which fit in slots made in the rails at the points of said grooves, and blocks having dovetail tenons 6 fitting in said grooves and portions 7 fitting at 8 and 9 against the upper faces of the rails and against the inner faces of the inner flanges respectively, and hooks made fast to said portions 7, substantially as and for the purpose set forth.

570,211. CAR-COUPLING. LOUIS N. SINGIN, Walla, Pa. Filed Aug. 14, 1896. Serial No. 602,808. (No model.)



Claim.—1. In a coupler of the class described, the combination with a squared shaft connected to a sector for moving the same, of a lever connected to said shaft, means for operating the lever, and connections between said means and the locking-pin, substantially as described.

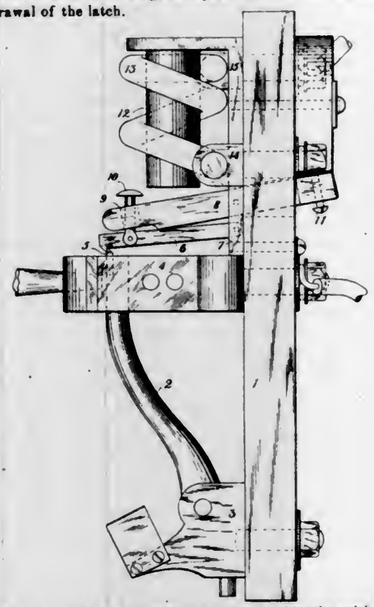
2. In a coupler of the class described, the combination with a squared shaft, of a lever connected to the shaft, a rod connected to the lever, a compound lever mounted on the car-platform, a bell-crank also mounted on the platform and connected to said compound lever, and a chain connecting the bell-crank with the locking-pin, substantially as described.

3. In a coupler of the class described, the combination with a squared shaft, of a lever, a compound lever having slots mounted on the platform, a connection between the lever and the lever on the squared shaft, another connection between the lever and the bell-crank, and a chain connecting the bell-crank to the locking-pin, substantially as described.

4. In a coupler of the class described, the combination with a squared shaft, of a compound lever, connections between one end of the compound lever and the squared shaft for rotating the same, a bell-crank, a connection having abutments for the bell-crank, and a chain between the bell-crank and locking-pin, substantially as described

570,212. CIRCUIT-BREAKER. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Aug. 31, 1895. Serial No. 561,118. (No model.)

Claim.—1. In an automatic circuit-breaker, the combination with a latch for the movable member, and means for withdrawing the same comprising an electromagnet and its armature, of a magnet acting in opposition to said electromagnet to prevent accidental or premature withdrawal of the latch.



2. In an automatic circuit breaker, the combination with a latch for the movable member and means for withdrawing the same comprising an electromagnet and an armature pivoted approximately at its center of gravity, of a magnet acting in opposition to said electromagnet to prevent accidental or premature withdrawal of the latch.

3. In an automatic circuit-breaker, the combination with a latch for the movable member, and means for withdrawing the same comprising an electromagnet and an armature pivoted approximately at its center of gravity, of a permanent magnet acting upon said armature in opposition to said first-named magnet to prevent accidental or premature withdrawal of the latch.

4. In an automatic circuit-breaker, the combination with a latch for the movable member and means for withdrawing same, comprising an electromagnet and an armature pivoted approximately at its center of gravity and having a lost-motion connection with the latch at one end and adjustable projections at the other end, of a magnet the poles of which are engaged by said adjustable projections.

5. In an automatic circuit breaker, the combination with a latch for the movable member and means for withdrawing the same comprising an electromagnet and a pivoted armature connected at one end to said latch, of a permanent magnet the poles of which are adjacent to the other end of the armature when the breaker is closed, and means for electrically energizing said magnet.

570,213. CHAIN WRENCH. GEORGE AMBORN, Jr., Brooklyn, N.Y., assignor to the J. H. Williams & Company, same place. Filed Apr. 6, 1896. Serial No. 586,316. (No model.)

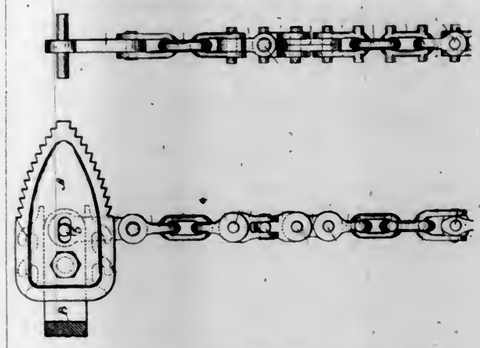
Claim.—1. The combination with the wrench having jaws and a lever, of a chain, an end link to the chain passing into a mortise between the jaws, and a cross pin passing through the end link, there being a cross-mortise through the jaws for receiving the cross-pin and allowing the same to be moved laterally in either direction, and means for engaging the chain after it has been passed around the pipe or other article, substantially as set forth.

2. The combination with the handle and jaws in a wrench, of a chain composed of cable-links and plate-links, substantially as and for the purposes set forth.

3. The combination in a wrench with the handle and jaws, of a chain having a cable-link, a plate-link and a clevis-link passing through the cable-link and riveted to the plate-link, substantially as set forth.

4. The combination with the handle and jaws in a wrench, of a chain having elliptical links one passing through the other, there being studs projecting from opposite sides of the link immediately adjacent to the rounded ends of such links and adapted to engage the projections upon the wrench, substantially as set forth.

5. The combination with the jaws and lever in a wrench, of a chain connected at one end to the lever and having links with universal joints between one link and the next and projections at opposite sides of the chain and in line with each other for engaging the hooks upon the wrench, substantially as set forth.

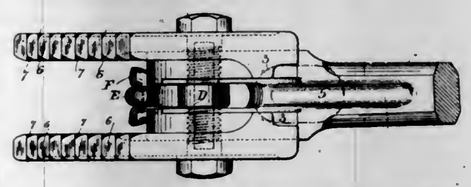


6. The combination in a chain for chain wrenches, of open clevis-links and complete links with similar ends having laterally-projecting studs at both sides and ends, substantially as specified.

7. The combination in a chain for chain wrenches, of open clevis-links with studs projecting from the sides adjacent to the end bends, and complete links with similar ends having laterally-projecting studs at both sides and ends, substantially as specified.

8. The chain for chain wrenches having clevis links standing in opposite directions with a universal-joint piece between their open ends, substantially as specified.

570,214. CHAIN WRENCH. GEORGE AMBORN, Jr., Brooklyn, N.Y. assignor to the J. H. Williams & Company, same place. Filed June 1, 1896. Serial No. 593,719. (No model.)



Claim.—1. The combination with the forked handle and the jaws at the sides thereof, of screw-bolts passing through the jaws and into the fork of the handle, such screw-bolts being tubular, a cross-pin received within and supported by the tubular bolts, and a chain with an end link received between the forks of the handle and through the end of which link the cross-pin passes, substantially as set forth.

2. The combination in a chain wrench with the chain, of a handle and jaws at the ends of the handle and having serrated edges and rounding surfaces at the ends of the teeth, substantially as set forth.

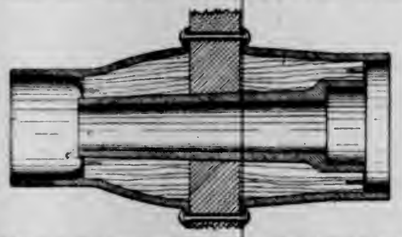
3. The combination in a chain wrench, of a handle-bar forked at the end, and a cable-chain fastened at one end of the fork, jaws connected at each side with the fork of the handle-bar and having teeth at both sides and recesses in the rear portions of each jaw adapted to receive the links of the cable chain, there being grooves in the surfaces of the handle-bar forming continuations of the fork for the links of the cable-chain, substantially as set forth.

4. The combination in a chain wrench, of a handle-bar forked at the end, jaws at the sides of the fork, tubular screws for connecting the jaws and fork, there being serrations upon the jaws with rounded corners to the teeth, a cross-pin and a cable-link chain one end of which passes into the fork of the handle-bar, and a cross-pin passing through such end link and into the tubular screws, substantially as set forth.

5. The combination in a pipe-wrench with a forked handle and jaws at the sides thereof, of tubular screw-bolts passing through the jaws and into the forked handle, and a cross-pin received within and supported by the tubular bolts, substantially as set forth.

6. The combination in a pipe-wrench, of a handle-bar forked at the end with jaws at the sides of the fork, tubular screw-bolts for connecting the jaws and fork, there being serrations upon the jaws, with rounded corners to the teeth and a cross-pin received within and supported by the tubular bolts, substantially as set forth.

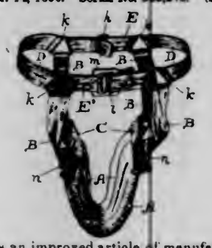
570,215. WOODEN HUB FOR VEHICLES. JOSEPH AUSTING, Cincinnati, Ohio. Filed Feb. 12, 1896. Serial No. 578,999. (No model.)



Claim.—1. The combination of the wooden hub, the axle-box fitted therein and having its ends projecting beyond the ends of said hub, and sheet-metal shells or boxes fitted in the hub ends and over the projecting ends of the axle-box and completely covering the wooden portions of the hub, substantially as shown and described.

2. A sheet-metal cap or case adapted to fit within the ends of the hub and centrally perforated to snugly fit over the projecting ends of the axle-box, substantially as shown and described.

570,216. CATAMENIAL SACK. MARY E. BALLARD, Indianapolis, Ind. Filed Mar. 14, 1896. Serial No. 583,273. (No model.)

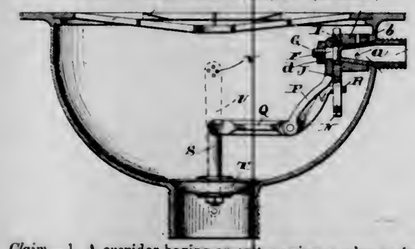


Claim.—1. As an improved article of manufacture a catamenial appliance consisting of the belt comprising the non-elastic strips D, E and E' and triangles *k*, having a slip-buckle *h*, and a buckle *i*; the elastic strips B, secured at the upper end to the triangles *k*, and connected at the lower ends by the non-elastic strip C, having fastening devices *n*, to secure a napkin, attached thereto, said fastening devices having V-shaped bends *o*, in the pins, and the point bent at *t*, as shown, to properly engage the holder, substantially as shown and described.

2. The combination in a catamenial appliance consisting of a belt composed of strips of non-elastic material attached to four triangles, four depending elastic strips secured to said triangles and connected in pairs to a horizontal non-elastic strip, and a horizontal non-elastic strip, of the fastening devices, having a V-shaped bend in the pin and a slight bend near its point, substantially as set forth.

3. The combination in a catamenial appliance of a belt composed of five sections of webbing secured to triangular holders *k*, and having a slip and a plain buckle *h* and *i*, to regulate its length, with the depending elastic strips B, secured to the triangles, and connected at their lower ends by non-elastic horizontal strips C, having fastening devices *n*, provided with a pin having a V-shaped bend *o*, and a slight bend *t*, near its point to enter the retaining-shield, substantially as set forth.

570,217. SELF-CLEANING CUSPIDOR. ELIE BENOIT, Pawtucket, R. I. Filed Mar. 26, 1896. Serial No. 585,003. (No model.)



Claim.—1. A cuspidor having an exit-opening, a valve, an intermediately-pivoted lever having one end connected with the valve, an operating-lever having one end adapted to depress the free end of the intermediately-pivoted lever, and the opposite end of the operating-lever adapted to elevate the lever whereby the valve is raised from and depressed upon its valve-seat, according to the direction the operating-lever is oscillated.

2. A cuspidor having a hollow stem extending within the same and having an opening within the cuspidor, a collar surrounding the stem, the cuspidor having an exit, a valve adapted to close the same, a lever connected with the valve, an operating-lever connected with the collar for operating the collar and constructed to operate the valve-lever for the purpose described.

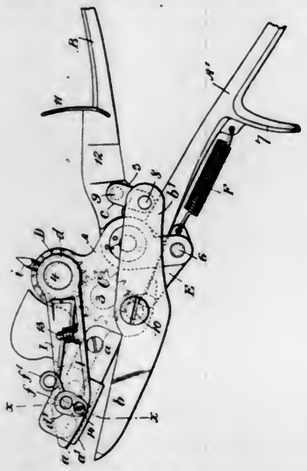
3. A valve-stem projecting within the cuspidor having an opening at a point inside thereof, a collar surrounding the inner end of the stem and having two openings adapted to register alternately with the openings of the stem, a lever connected with the collar, an exit for the cuspidor, a valve closing the same, and an operating connection between the collar-oscillating lever and the valve, the parts adapted to operate as described.

4. A cuspidor having an outlet, the valve-stem projecting in the same, a valve for the stem, an arm supported by the inner end of the stem, a lever pivoted to the opposite end of the arm and connected with the valve adapted to close the outlet of the cuspidor, and an operating means for the stem-valve and the outlet-valve.

5. A cuspidor comprising a hollow stem projecting within the cuspidor having an opening, a valve adapted to close the stem-opening, a lever intermediately supported upon said valve, the cuspidor having an outlet, a valve adapted to close the outlet, a lever connected with the outlet-valve and intermediately supported, the lever provided with a curve or cam adapted to depress the free end of the outlet-valve lever and the opposite end of the operating-lever having a shoulder or arm adapted to elevate the free end of the intermediately-pivoted outlet-valve lever, substantially as described.

6. A cuspidor having an outlet, a valve-stem projected within the same, a valve for the stem, a lever carrying a valve for the said outlet, an operating-lever carried by the valve of the stem and adapted to operate the same, the operating-lever also engaging the outlet-valve lever for the purpose of operating it simultaneous with the operation of the valve for the stem, substantially as described.

570,218. CORRUGATING AND CUTTING TOOL. JAMES BLUMER, Brooklyn, N. Y., assignor to the Blumer, Doscher Manufacturing Company, same place. Filed Mar. 16, 1896. Serial No. 583,322. (No model.)



Claim.—1. The combination in a shear having two pivotally-connected handles and cutting-blades, one of said blades being of ordinary character, and the other parallel-sided with two cutting edges, of a third cutting-blade and means for connecting the same directly with and adjacent and parallel to the cutting-blade of ordinary character so that the parallel sided blade can cut out a strip, substantially as set forth.

2. The combination in a shear having handles and two blades, one of which is of ordinary character and the other is parallel-sided forming two cutting edges, of a cutter and a pivoted arm to which such cutter is connected, and means for holding the cutter in position on the ordinary blade when in use, substantially as set forth.

3. The combination in a shear having handles and two blades, one of which is of ordinary character and the other is parallel-sided forming two cutting edges, of a cutter and a pivoted arm to which such cutter is connected, and a hook and bolt for holding the cutter in position on the ordinary blade when in use, substantially as specified.

4. The combination in a shear having handles and two blades, one of which is of ordinary character and the other is parallel-sided forming two cutting edges, of a cutter and a pivoted arm to which such cutter is connected, a hook and bolt for holding the cutter in position on the ordinary blade when in use, and a spring on the arm to actuate the bolt, substantially as specified.

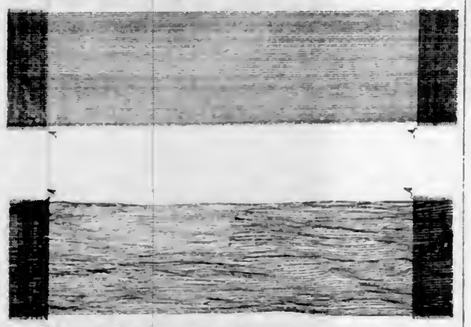
5. The combination in a shear having handles and two blades, one of which is of ordinary character and the other is parallel-sided forming two cutting edges, of a cutter and a pivoted arm to which such cutter is connected, and means for holding the cutter in position on the ordinary blade when in use, a stud connected with the arm and passing through the stock of the shear and forming an arbor, a corrugating-roll on such arbor and a second corrugating-roll and an arbor therefor, and means for rotating the corrugating rolls, substantially as specified.

6. The combination in a shear having handles and two blades, one of which is of ordinary character and the other is parallel-sided forming two cutting edges, of a cutter and a pivoted arm to which such cutter is connected, and means for holding the cutter in position on the ordinary blade when in use, a stud connected with the arm and passing through the stock of the shear and forming an arbor having an eccentric portion, a corrugating roll on such arbor and a second corrugating-roll and an arbor therefor, and means for rotating the corrugating-rolls whereby one corrugating-roll is moved toward the other by swinging the cutter and its arm from one position to the other, substantially as specified.

7. The combination with the stock, the handles, the corrugating-rolls and their arbors, of a stationary cutting blade upon the stock, a moving cutting-blade having parallel sides forming two cutting edges and an arm integral therewith and pivoted to the stock and a connection therefrom to the moving handle, an arm pivoted to the eccentric arbor of one corrugating-roll and having a hub surrounding said arbor, and a stud *i* secured in and projecting from said hub and having a penetrating-point to puncture the metal for the introduction of the point of the parallel-sided cutting-blade, substantially as set forth.

8. The combination with the stock, the handles, the corrugating-rolls and their arbors, of a stationary cutting-blade upon the stock, the moving blade having parallel sides forming two cutting edges and an integral arm pivoted to the stock and a connection therefrom to the moving handle, an arm pivoted to the eccentric arbor of one corrugating-roll, a hub *d'* formed integral with the said arm and having a recess, the yielding cutting-blade *a'*, a screw-pin 14 passing through the arm and said recess, and screwing into the blade *a'*, and a helical spring 15 within said recess and around the screw-pin 14 and bearing against said arm and yielding cutting-blade to apply the desired pressure thereto, as and for the purposes set forth.

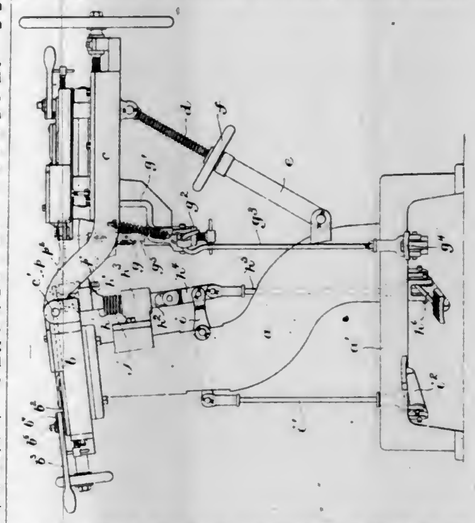
570,219. FILTERING MATERIAL OR FABRIC. LOUIS B. FIECHTER, Basle, Switzerland. Filed June 16, 1894. Serial No. 514,778. (Specimens.) Patented in Switzerland June 16, 1892, No. 5,455; in Germany July 5, 1892, No. 68,363; in England Jan. 6, 1893, No. 309, and in Austria-Hungary Aug. 30, 1893, No. 8,198 and No. 25,485.



Claim.—A filter having as its filtering material a woven fabric wherein one of the sets of threads is crossed by the other set of threads only at opposite margins of the fabric, thereby forming closely-woven selvages, the body of the fabric between said selvages being composed wholly of one set of the threads.

570,220. LASTING-MACHINE. WILLIAM S. HAMM, Newton, Mass., assignor to Augustus Seaver, Boston, Mass. Filed June 1, 1896. Serial No. 593,744. (No model.)

Claim.—1. In a lasting-machine, the combination with toe-lasting devices including movable toe-wipers, of a last-support, a toe-rest interposed between the said last-support and lasting devices, and means for reciprocating the toe-rest in a direction substantially at right angles with the direction of movement of the said toe-wipers.



2. In a lasting-machine, the combination of toe-lasting devices, a last-support, a toe rest interposed between the said last-support and lasting devices, means for raising and depressing the toe-rest, and an adjustable clamp movable with the toe-rest for holding the last upon the toe-rest.

3. In a lasting-machine, the combination of a fixed wiper-support, a pivoted last-supporting frame, and means for raising and lowering said frame, for the purpose described.

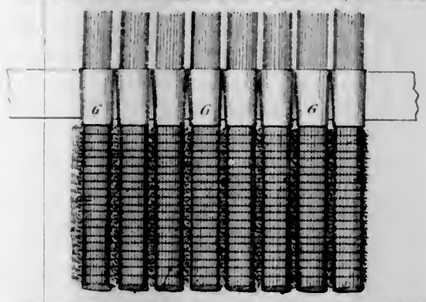
4. In a lasting-machine, the combination of a stationary support for toe-lasting devices, a frame pivoted to said support and having a bracket supporting a heel-pin, and means for raising and lowering the frame, for the purpose described

5. In a lasting-machine, the combination of a stationary support for toe-lasting devices, a frame pivoted to said support and having a bracket supporting a heel-pin for the last, a toe-rest adjacent to the pivot of the frame, and means for raising and lowering the frame, substantially as and for the purpose described.

6. In a lasting-machine, the combination of a stationary support for toe-lasting devices, a frame pivotally connected with said support and holding the last, a screw jointed to said frame, a sleeve or socket jointed to the stationary support, and a hand wheel or nut engaging the screw and bearing against the end of the sleeve.

7. In a lasting-machine, the combination of a toe-rest vertically movable in a suitable support, and two treadles connected with said toe rest through different means, whereby depression of one treadle lowers the toe rest, and depression of the other treadle elevates the same.

570,221. STAIR-PAD OR CARPET-LINING. FRANKO HAUBNER, New York, N. Y. Filed Aug. 22, 1896. Serial No. 603,563. (No model.)

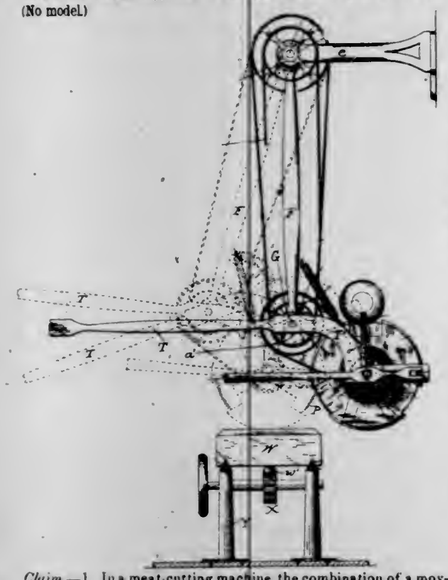


Claim.—1. A lining for stair and other carpets, consisting of strands of cotton-waste, intermediate parallel warp-threads between such strands, and weft-threads interlocked by the warp-threads by means of knitting-stitches, substantially as set forth.

2. A lining for stair and other carpets, consisting of strands of cotton-waste, intermediate parallel warp-threads, weft-threads interlocked by said warp-threads by means of knitting-stitches, and a series of extra looped warp-threads arranged at the ends, substantially as set forth

570,222. MEAT-CUTTER AND MEAT-CUTTING MECHANISM.

CHARLES F. JONES, Troy, Ohio. Filed Dec. 16, 1895. Serial No. 572,303. (No model.)



Claim.—1. In a meat-cutting machine, the combination of a movable meat-block, a cutter-head comprising segmental knives and segmental saws, said segmental saws being radially adjustable, means whereby said saws may be withdrawn within the circle of the edges of said knives, or projected beyond said circle, and means for operating said meat-block and cutter-head, substantially as shown and described.

2. The combination of a circular cutter, comprising segmental knives having grooved edges, segmental saws having edges fitting in said grooves and radially adjustable, and means substantially as described, whereby said saws may be withdrawn within the circle of the edges of said knives, or at will projected beyond said circle so as to alternate as desired between the functions of cutting and sawing.

3. The combination of a hollow mandrel, a circular cutter comprising a flanged disk, knives rigidly secured to the flange of the disk, said knives having V shaped grooves in their adjacent edges; segmental saws having V-shaped edges fitting in said grooves and radially movable therein, said saws having shanks, recessed lugs and stems; springs mounted on said stems and bearing against the inner surface of said flange; and the plunger sliding within the hollow mandrel and engaging the recesses of said lugs, substantially as set forth.

4. A machine for cutting and sawing meat, &c., comprising a hollow mandrel, a circular cutter comprising a flanged disk, knives rigidly secured to the disk and having V-shaped grooves in their adjacent edges, segmental saws having V-shaped edges fitting in said grooves and radially movable therein, said saws having shanks, lugs and stems; springs mounted on said stems and bearing against the inner surface of the flange on said disk; the plunger sliding within the hollow mandrel and engaging the recesses of the said lugs; meat-block provided with grooves and resting on rack-rails, support for said rails and block; and suitable mechanism for operating the meat-block and cutting and sawing devices, substantially as described.

5. In a meat-cutting apparatus, a combined cutting and sawing device, comprising a circular cutter having segmental knives and segmental saws, said saws being radially adjustable, and means whereby the saws are withdrawn within the circle of the edges of said knives or projected beyond said circle independently of the knives, substantially as described.

6. In a meat-cutting apparatus, a combined saw and cutter, and means whereby the saws are projected beyond the outer periphery of the cutters or withdrawn within the outer periphery of said cutters, while the said cutters remain fixed, substantially as described.

7. In a meat-cutting apparatus, a combined saw and cutter, made up of segmental portions, the saw edges being adapted to be projected beyond the periphery of the cutter-segments, and to recede within the circumference of said cutters, all substantially as shown and described.

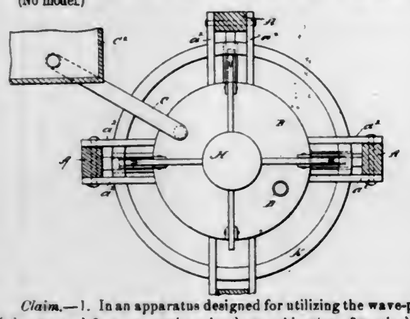
8. In a meat-cutting apparatus, a combined saw and cutter, composed of several segmental portions each, the saw-segments each having a shank portion, a spring secured to each shank portion, and means for projecting the saw-segments beyond the periphery of the cutters or cutting segments, substantially as shown and described.

9. A meat cutting apparatus, comprising a swinging frame, a revolving shaft carried thereby, a sleeve carrying a head at one end thereof and having secured thereto cutters and saw-segments; means for driving said shaft and sleeve, and a plunger for forcing the said saw-segments beyond the periphery of the cutter-segments; in combination with a movable meat-block, substantially as shown and described.

10. A meat-cutting apparatus, comprising a swinging frame, a revolving shaft carried thereby, a sleeve also supported by said frame provided with a head to which are secured segmental cutters, and saw-segments, means for driving said shaft and sleeve, a plunger for forcing the saw-segments beyond the periphery of the cutting-segments, a handle for operating the plunger, and a weight for balancing said swinging frame; in combination with a movable meat-block, substantially as and for the purposes shown and described.

570,223. APPARATUS FOR UTILIZING WAVE-POWER.

FRANCIS C. LITTLE, Portland, Oreg. Filed Apr. 22, 1896. Serial No. 588,599. (No model.)



Claim.—1. In an apparatus designed for utilizing the wave-power of the sea, and for compressing air, the combination of vertical posts or uprights, a hollow float arranged between the same, the top of which is closed and the bottom open, an air-supply pipe communicating therewith, and provided with an automatic valve which opens inwardly, and a compressed-air pipe communicating therewith, and with an air-tank and provided with a valve which opens outwardly, said float being adapted to rise and fall with the motion of the waves, substantially as shown and described

2. In an apparatus for utilizing the wave-power of the sea, by compressing air, the combination with suitable uprights or posts, of a hollow float which is mounted between said uprights, and which is held in position by guides connected therewith, and the top of which is closed and the bottom, open, of an air-supply pipe which communicates therewith, an air-discharge pipe also communicating therewith, and with an air-tank, and means connected with said float and said uprights or posts by which the float is adapted to rise and fall with the motion of the waves, substantially as shown and described.

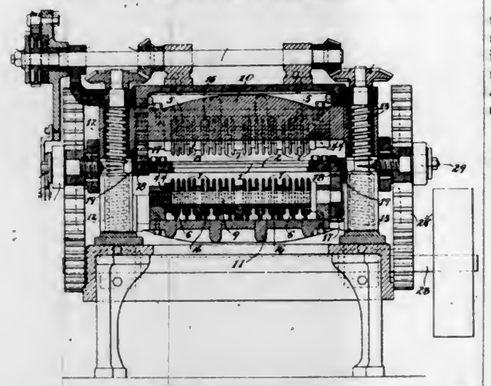
3. In an apparatus for utilizing the wave-power of the sea, by compressing air, the combination with suitable uprights or posts, of a hollow float which is mounted between said uprights, and which is held in position by guides connected therewith, and the top of which is closed, and the bottom open, of an air-supply pipe which communicates therewith, an air-discharge pipe also communicating therewith, and with an air-tank and means connected with said float and said uprights or posts by which the float is adapted to rise and fall with the motion of the waves, said float being also provided with a supplemental float which is arranged thereover, and with which are pivotally connected levers which extend in opposite directions, and which are fulcrumed to standards secured to the float, said levers being pivotally connected at their outer ends with depending rods or bars, the lower ends of which are provided with heads which are adapted to operate in connection with ratchet-levers which are adapted to operate in connection with rack-bars, formed on the uprights, or posts, substantially as shown and described.

4. In an apparatus for utilizing the wave-power of the sea, by compressing air, the combination with suitable uprights or posts, of a hollow float which is mounted between said uprights, and which is held in position by guides connected therewith, and the top of which is closed, and the bottom, open, of an air-supply pipe which communicates therewith, an air discharge pipe also communicating therewith, and with an air-tank and means connected with said float and said uprights or posts by which the float is adapted to rise and fall with the motion of the waves, said float being also provided with a supplemental float which is arranged thereover, and with which are pivotally connected, levers which extend in opposite directions, and which are fulcrumed to standards secured to the float, said levers being pivotally connected at their outer end with depending rods or bars, the lower ends of which are provided with heads which are adapted to operate in connection with ratchet-levers which are adapted to operate in connection with rack-bars, formed on the uprights or posts, and an auxiliary float which incloses the main float, and which is provided at its opposite sides with depending arms or rods with which are pivotally connected crank-levers which are pivotally supported by arms or projections, secured to said float and which are adapted to operate in connection with shoulders or projections formed on the rods or bars which are connected with the supplemental float, substantially as shown and described.

5. In an apparatus designed for utilizing the wave-power of the sea, by compressing air, the combination with vertical posts or uprights, of a hollow float arranged between the same, the top of which is closed, and the bottom open, and the top of which is provided with means for supplying air thereto, and with an air-tank which communicates therewith, and means connected with said float and said uprights for regulating the movement of the float, and for causing the same to rise and fall with the waves, substantially as shown and described.

570,224. MACHINE FOR MAKING GRIDS FOR SECONDARY-BATTERY PLATES.

ALBERT F. MADDEN, Newark, N. J., assignor to the Electric Storage Battery Company, Gloucester City, N. J. Filed Jan. 11, 1896. Serial No. 575,106. (No model.)



Claim.—1. A machine for making secondary-battery plates comprising the combination of, a holder for confining and supporting a blank at or near its edges, revoluble cutters disposed respectively on opposite sides of the holder, and means for shifting one of said elements or parts in respect to the other and for embedding the cutters into the respective faces of the blank to groove and roll it, substantially as described.

2. A machine for making secondary-battery grids, comprising the combination of, a blank-holder, cutters on each side of the holder, means for reciprocating one of said parts in respect to the other, devices for rotating the cutters, and mechanism for feeding the sets of cutters toward each other, substantially as described.

3. A machine for making secondary-battery grids, comprising the combination of, a blank holder provided with racks, cutters on each side of the holder, means for reciprocating one of said parts in respect to the other, pinions meshing with said racks and driving the cutters, and mechanism for feeding the cutters toward the holder, substantially as described.

4. In a machine for making secondary-battery grids, the combination of, a blank holder, a set of revoluble separated cutters and a cutter-carrier on each side of the holder, means for reciprocating one of said elements or parts in respect to the other, devices for feeding said sets of cutters and cutter-carriers toward each other, racks carried by and afforded a range of motion transversely of said holder, pinions for driving said cutters, and feet applied to said carriers and supporting said racks, substantially as described.

5. A machine for making secondary-battery grids comprising the combination of, a grid-holder, a cutter-carrier on each side of the holder, means for feeding said carriers toward each other, cutter-shafts carried by said carriers and provided with separated cutters, and bearing-pieces interposed between the cutters and detachably fitted to the carriers, substantially as described.

6. In a machine for making secondary-battery grids the combination of, a blank-holder, a cutter-carrier on each side thereof, means for shifting one of said elements or parts in respect to the other and for feeding the cutter-carriers toward each other, cutter-shafts carried by said carriers, and cutters with interposed washers splined and detachably clamped on said shafts, substantially as described.

7. In a machine for making secondary-battery grids the combination of, a holder for confining and supporting a blank, a cutter-carrier on each side thereof, means for shifting one of said elements or parts in respect to the other and for feeding the cutter-carriers toward each other, separated cutters having portions of their peripheries removed, and means for rotating said cutters, substantially as described.

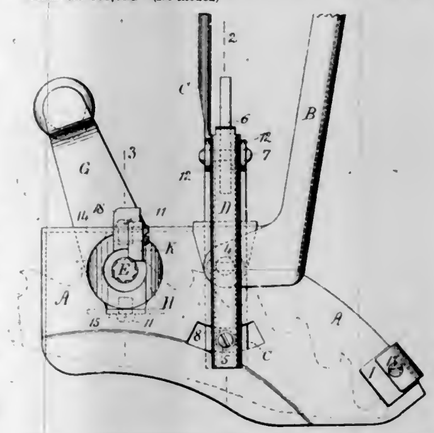
8. In a machine for making secondary-battery grids the combination of, a blank-holder, a frame supporting a cutter-carrier on each side thereof, means for shifting one of said elements or parts in respect to the other, right and left handed screws mounted in said frame and engaging nuts on said carriers, a feed-shaft and gearing for actuating said screws, positively-driven pawl-and-ratchet connections substantially as described, and a friction wheel fast on said shaft and actuated by said pawl-and-ratchet connections, for the purposes set forth.

9. In a machine for making secondary-battery grids the combination of, a blank-holder, a frame supporting a cutter-carrier on each side thereof, connecting-rods and crank-pins for reciprocating said holder, a feed-shaft, gearing and screws for feeding the cutter-carriers, pawl-and-ratchet connections for actuating said feed-shaft, a link having one end connected with said pawl-and-ratchet connections, and an arm pivotally connected with the other end of said link and secured to one of said crank-pins, substantially as described.

10. A machine for making secondary-battery grids comprising the combination of, a blank-holder, a frame supporting cutter-carriers and cutters on opposite sides of the holder, cranks and connecting-rods for reciprocating one of said parts in respect to the other, racks and pinions applied respectively to the holder and cutters, right and left hand screws and their feed-shaft, and pawl-and-ratchet connections for feeding the cutter-carriers, substantially as described.

570,225. SAW-SHARPENER.

WILLIAM H. MYERS, Brooklyn, N. Y., assignor to John G. Moore, New York, N. Y. Filed July 20, 1896. Serial No. 599,794. (No model.)



Claim.—1. The combination with a milling-tool and its shaft and stock, of a base-plate, a standing or rigid handle thereon projecting at one side of the base plate, a presser-lever and a pivot for connecting the same to the stock, a clamp lever pivoted to the presser-lever and adapted to act with such presser-lever in holding the saw, a cam for acting upon the clamping-lever and a screw for adjusting the pressure of the clamping-lever upon the saw, whereby the cam can be used in clamping or relieving the saw, independent of the adjusting-screw that adapts the tool to different thicknesses of saws, substantially as set forth.

2. The combination in a saw-sharpener, of a base-plate, a rigid handle extending out from the base-plate, a milling-tool for acting within the throat of the saw-tooth in sharpening the same, a compound lever having a handle and a clamp lever, a pivot for connecting the handle and clamp-lever to the base-plate, screws for adjusting the parts and adapting them to varying thicknesses of saws to be

sharpened, and a cam for applying pressure to the clamp-lever, substantially as set forth.

3. The combination with a base-plate and a presser-lever and clamp for acting upon the saw, of a milling-tool, a shaft and handle for actuating the same, a stock receiving the shaft, and pivots for supporting the stock and for allowing it to be moved with the milling-tool to any desired angular position to the face of the base-plate, substantially as set forth.

4. The combination with the base-plate having projecting bearings, of a stock having the ends beveled, a milling-tool and a tubular shaft for the same received within the stock, pivot-screws passing through the bearings and into the stock for connecting the stock to the base-plate, and a clamping-screw in a segmental slot for holding the parts at the desired angle substantially as set forth.

5. The combination with the base-plate having projecting bearings, of a stock having the ends beveled, a milling-tool and a tubular shaft for the same received within the stock, pivot-screws passing through the bearings and into the stock for connecting the stock to the base-plate, and a clamping-screw in a segmental slot for holding the parts at the desired angle, a standing shear and a supporting-lug upon the stock for acting with the milling-tool, substantially as set forth.

570,226. RINGED ROLLER FOR PRINTING-MACHINES, &c.

GEORGE F. MCADAMS, Brooklyn, N. Y. Filed Feb. 19, 1896. Serial No. 579,862. (No model.)

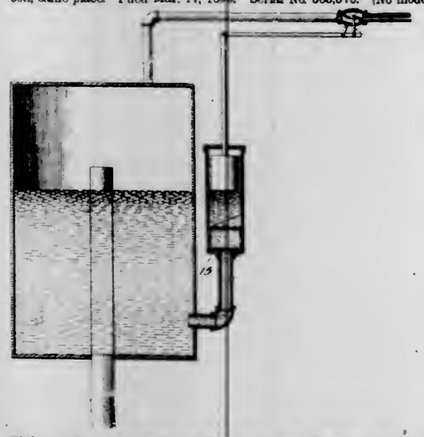


Claim.—1. In a ringed roller, the combination of a longitudinally-grooved cylindrical roller-body and rings having their inner circumferences composed of arc formed lands with intervening recesses, the said lands fitting the lands between the grooves in the roller-body, substantially as herein described.

2. In a ringed roller, the combination of a longitudinally-grooved cylindrical roller-body screw-threaded at its ends, rings having their inner circumference composed of arc-formed lands with intervening recesses, the said inner circumference being normally less than the circumference of the lands of the roller-body between the grooves thereof, spacing-rings between the first-mentioned rings, and nuts upon the screw-threads of the rollers whereby the several rings are clamped together on the body and tension is produced on the first-mentioned rings, substantially as herein described.

570,227. REGULATOR FOR FEED-WATER HEATERS.

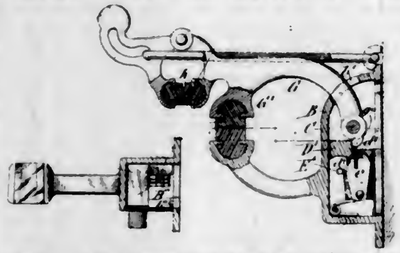
JOHN PERRY, Missouri Valley, Iowa, assignor of one-half to James W. Anderson, same place. Filed Mar. 17, 1896. Serial No. 583,573. (No model.)



Claim.—The combination with a feed-water heater, and a controlling-valve arranged in a supply pipe for said heater, of an exterior regulator in communication with the interior of the heater, a float arranged in said cylinder and operatively connected with the controlling-valve, and spaced disks disposed in the cylinder and each provided with a perforation, the perforations being out of alinement, substantially as specified.

570,228. COMBINED COAT AND HAT HANGER AND LOCK.

PAUL J. PIATTI, Woodside, N. Y., assignor of one-third to Otto A. Groeber, same place. Filed Apr. 11, 1896. Serial No. 587,162. (No model.)



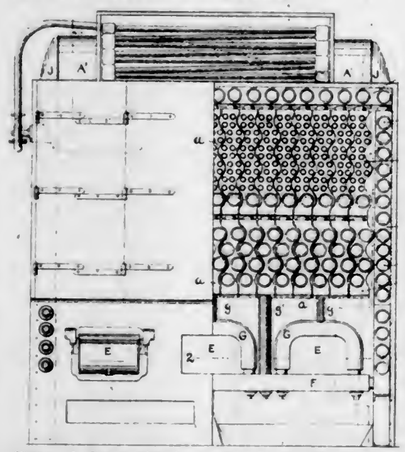
Claim.—1. In a combined coat and hat hanger and lock, the combination, with a lock-casing provided with an arm having a jaw, of an arm pivoted at its inner end within the lock-casing, and provided with a jaw opposite the aforesaid jaw, said pivoted arm also having an auxiliary jaw, an auxiliary arm pivoted to the pivoted arm and provided with a jaw opposing the said auxiliary arm, said arm and its jaw and the auxiliary jaw constituting a hat-holding device, and a link or connecting-piece connected loosely with the auxiliary arm and with the lock-casing, substantially as set forth.

2. In a combined coat and hat hanger and lock, the combination, with a lock-casing provided with a stationary arm having a jaw, of a movable arm pivoted at its inner end within the casing, and provided with a jaw opposing said stationary jaw, and also with an auxiliary jaw, an auxiliary arm pivoted to the main movable arm and provided with a jaw opposing said auxiliary jaw, mechanism for locking the main jaws together, and means connected with the casing of said locking mechanism for obtaining the closing of the auxiliary jaws, substantially as set forth.

3. In a combined coat and hat hanger and lock, the combination of a lock-casing provided with a stationary arm having a jaw, of a movable arm pivoted at its inner end within the lock-casing, and provided with a jaw opposing said stationary jaw and also with an auxiliary jaw arranged at an angle to the other jaw, an auxiliary arm pivoted to said main movable arm and provided with a jaw opposing the auxiliary jaw of the latter, said auxiliary arm being slotted, a hinged link passing through said slot, and locking mechanism within the lock-casing provided with a bolt, adapted to lock against a portion of the main movable arm, substantially as set forth.

570,229. STEAM-GENERATOR.

NAT W. PRATT, Brooklyn, N. Y., assignor to The Babcock & Wilcox Company, New York, N. Y. Filed Apr. 8, 1896. Serial No. 586,664. (No model.)



Claim.—1. In a sectional steam-generator of the type described, a transverse water-box connected to upright columns which support said box and to the front headers and drum by short tubes or nipples, whereby the boiler is suspended at the front to said box and columns, substantially as specified.

2. In a sectional steam-generator, a transverse water-box located at the front of the boiler and connected to the drum and to the front headers; a transverse water-box connected to the drum and to the rear headers of the boiler, and to front and rear upright columns respectively, by means of short tubes or nipples which support said boxes and thereby suspend the whole boiler, substantially as set forth.

3. A sectional steam-generator comprising front and rear upright water-columns, a series of water-tubes on each side of the boiler connected at their ends to said columns, and a transverse water-box at the front of the boiler, nippled to the drum and to the front water-columns, and having the front headers of the boiler nippled thereto, substantially as specified.

4. A sectional steam-generator of the type described, constructed with front and rear upright water-columns; a series of water-tubes on each side of the boiler having their ends connected to a front and a rear column respectively; a transverse water-box connected to the drum, and to the front water-columns and having the front headers of the boiler connected thereto; and a transverse water-box connected to the drum and to the rear water-columns and having the rear headers of the boiler connected thereto, substantially as specified.

5. A sectional steam-generator having front and rear upright water-columns which are connected with the drum; a series of water-tubes on each side of the boiler connected at their ends to said columns, the lower tubes of the series having flat inner faces which form the sides of the furnace; and a transverse water box connected to the drum, and to the front water-columns and to the front headers of the boiler, substantially as set forth.

6. In a sectional steam generator, a series of water-tubes located on each side of the boiler and connected at their front and rear ends to upright water-columns, which are connected to the drum, the lower tubes of said series being inclined upwardly from rear to front, having flat inner faces and forming the side walls of the furnace, substantially as set forth.

7. A sectional steam-generator having a series of water-tubes located on each side of the boiler and connected at their front and rear ends to upright water-columns, which are connected to the drum, the lower tubes of said series being inclined upwardly, having flat inner faces and forming the side walls of the furnace, substantially as set forth.

8. A sectional steam-generator constructed with front and rear upright water-columns which are connected with the drum; a series of water-tubes on each side of the boiler connected at their ends to said columns; and a transverse water-box located below the furnace-doorway; connected at its ends to the front water columns; and an arch-shape water-conduit extending along the sides and over the top of said doorway, and connected to said box and to a front header of the boiler, substantially as set forth.

9. In a steam-boiler having a series of water-tubes extending along each side of the boiler, outlying the main tubes thereof and connected with the steam-and-water drum, the combination of a siding composed of an outer metal sheet, an inner sheet, and an intermediate filling of non-heat-conducting material; and blocks or filling-pieces of such material located within the siding and between said side tubes, substantially as and for the purposes specified.

10. The combination, with a steam-boiler, of a siding composed of an outer metal sheet, an inner sheet of non-heat-conducting material made up of sectional parts, and an intermediate filling of non-heat-conducting material made up of blocks which break joints with those of the inner sheet-sections, substantially as set forth.

11. The combination, with steam-boiler, of a siding composed of an outer metal sheet, an inner sheet of non-heat-conducting material made up of sectional parts; an inner serpentine lining made up of sectional parts secured to the inner sheet; and a filling of non-heat-conducting material between the outer and inner sheets, substantially as set forth.

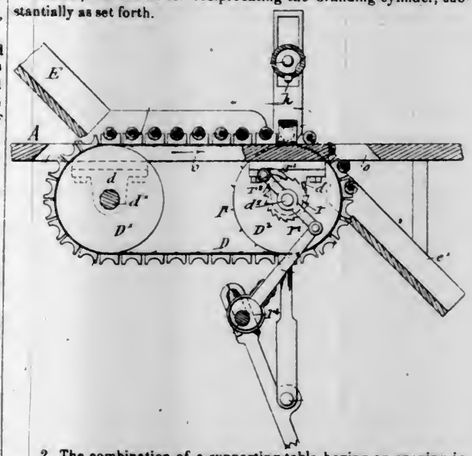
12. In a steam-boiler having a series of water-tubes extending along each side of the boiler, outlying the main tubes thereof and connected with the steam-and-water drums, the combination of a siding composed of an outer metal sheet, an inner sheet of non-heat-conducting material; an intermediate filling of non-heat-conducting material, an inner lining of serpentine form projecting inward between said side tubes, and a packing of non-heat-conducting material located in the spaces between the inner sheets and the inner lining, substantially as set forth.

13. In a sectional steam-generator, a series of water-tubes on each side of the boiler connected at each end with the drum; a transverse water-box located below the furnace-doorway, connected at its ends with said side tubes, and to a front header of the boiler by water-conduits extending up the sides of said doorway; and a filling of non-heat-conducting material located between said box and the front headers of the boiler, substantially as set forth.

570,230. CIGAR-BRANDING MACHINE.

AUGUST ROTTACH, New York, N. Y. Filed Jan. 29, 1896. Serial No. 577,275. (No model.)

Claim.—1. The combination of suitably-supported rollers or drums, an intermittently-movable endless apron guided over the drums and provided with concave or half-cigar-shaped forms, means for supplying cigars to said forms at one end of the apron, means for conducting them off at the other end of the apron, a branding-cylinder arranged above the rear drum, means for guiding the branding-cylinder in its movements to and from the forms arranged over the rear drum, and means for reciprocating the branding-cylinder, substantially as set forth.



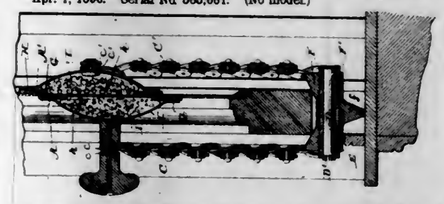
2. The combination of a supporting-table having an opening in the same, an intermittently-movable endless apron arranged in said opening and provided with concave or half-cigar-shaped forms, an inclined chute above the forward end of the apron, another inclined chute below the discharge end of the apron, a hollow branding-cylinder provided with type, a perforated gas-supply pipe extending into said cylinder, and a vertically-reciprocating standard to which the branding cylinder is adjustably attached, substantially as set forth.

3. The combination of a supporting-table, an endless intermittently-movable apron provided with forms, a reciprocating branding-cylinder arranged above said apron, and a spring-clearer attached to the table and extending over the forms, and adapted to prevent the cigars from adhering to the branding cylinder, substantially as set forth.

4. The combination of a supporting-table having an opening, an endless form carrying apron guided over rollers in said opening, means for imparting intermittent forward motion to said apron, a supply-chute arranged near the front of the apron, a discharge-chute arranged near the rear end of the apron, below the table, a vertically-guided standard arranged at one side of the endless apron, a branding-cylinder supported by said standard, means for imparting reciprocating motion to the standard, interchangeable type arranged in suitable ways at the lower part of the branding-cylinder, and a clearer-spring, arranged at the side of the apron, opposite to the reciprocating standard, substantially as set forth.

570,231. WINDOW-CLEANER.

JOHN RUCKSTUHL, East Providence, R. I., assignor of one-half to Julius Pegel, Philadelphia, Pa. Filed Apr. 1, 1896. Serial No. 585,681. (No model.)



Claim.—1. In a window-cleaner, the combination with the pads, of two sets of lazy-tongs to the upper ends of which are secured the pads, a shaft, a sleeve upon said shaft, one bar of the lower pair of bars of each set of lazy-tongs being fixedly connected with said shaft, the other bar of the lower pair of bars of each set of lazy-tongs being fixedly connected with said sleeve, said sleeve and shaft being adapted to turn upon each other, and a support for said shaft and sleeve made in two sections adapted to surround said shaft and sleeve and be secured together, substantially as described.

2. In a window-cleaner, the combination with the pads of two sets of lazy-tongs to the upper ends of which are secured the pads, a shaft, a sleeve upon said shaft, one bar of the lower pair of bars of

each set of lazy-tongs being fixedly connected with said shaft, the other bar of the lower pair of bars of each set of lazy-tongs being fixedly connected with said sleeve, said sleeve and shaft being adapted to turn upon each other, and a support for said shaft and sleeve made in two sections and adapted to fit upon and surround said sleeve, the lower section having a downwardly-projecting leg, each section having flanges adapted to abut against the flanges of the other section, said flanges being secured together, substantially as described.

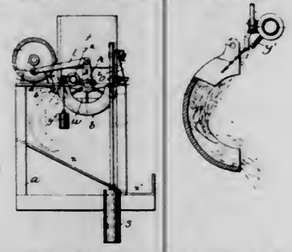
3. In a window-cleaner, the combination with the pads, of two sets of lazy-tongs to the upper ends of which are secured the pads, a connection between the lower ends of said two sets of lazy-tongs, and a support for said connection made in two sections adapted to surround said connection and be secured together, substantially as described.

4. In a window-cleaner, the combination with the pads of two sets of lazy-tongs to the upper ends of which are secured the pads, and a connection between the lower ends of said two sets of lazy-tongs, the bars or levers whereof are curved.

5. In a window-cleaner, the combination with the pads of two sets of lazy-tongs to the upper ends of which are secured the pads, and a connection between the lower ends of said two sets of lazy-tongs, the bars or levers of each set of lazy-tongs being curved and presenting to the other set their concave surfaces, substantially as described.

6. In a window-cleaner, the combination with the pads, of two sets of lazy-tongs, to the upper ends of which are connected the pads, and a connection between the lower ends of said two sets of lazy-tongs, the two upper bars of one or both sets of lazy-tongs having a common pivotal connection and being together of greater length than the length of the intermediate bars or levers of the corresponding set of lazy-tongs, substantially as described.

570,232. COAL-WASHER. WILLIAM L. SCAIFE, Allegheny, Pa. Filed Mar. 4, 1896. Serial No. 581,767. (No model.)



Claim.—1. In machines for washing coal, ores, &c., the combination with a suitable frame, of a trough mounted on said frame and hinged along one side, said trough being adapted to swing down transversely of its length, whereby the contents are dumped along the entire length of said trough and free access may be had to said trough, and mechanism for holding said trough in its normal position, substantially as set forth.

2. In apparatus for washing coal, ores, &c., the combination with a suitable frame, of an oscillating shaft carrying a series of stirrers, and a trough mounted on said frame and hinged along one side, said trough being adapted to swing down transversely of its length, whereby the contents are dumped along the entire length of said trough and free access may be had to said trough, substantially as set forth.

3. In apparatus for washing coal, ores, &c., the combination with a suitable frame, of an oscillating shaft carrying a series of stirrers, and a trough having ledges or stops secured thereto, said trough hinged along one side and being adapted to swing down transversely of its length, substantially as set forth.

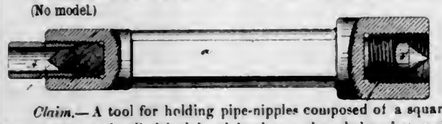
4. In apparatus for washing coal, ores, &c., the combination with a suitable frame, of a trough mounted thereon adapted to swing down transversely of its length, a weighted lever having one end thereof connected to said trough and means for locking said lever to said frame, substantially as set forth.

5. In apparatus for washing coal, ores, &c., the combination with a suitable frame, of a trough mounted thereon adapted to swing down transversely of its length, a weighted lever having one end thereof connected to said trough, said lever having an opening therein adapted to coincide with an opening in said frame, and a pin adapted to engage said openings, substantially as set forth.

6. In apparatus for washing coal, ores, &c., the combination with a transversely dumping trough, of a water-supply pipe extending longitudinally of the trough in position to flush said trough when in its dumping position, substantially as set forth.

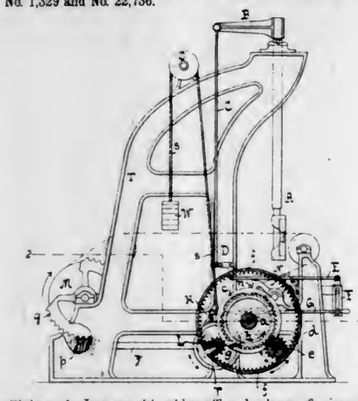
7. In apparatus for washing coal, ores, &c., the combination with a transversely-dumping trough, of a water-pipe extending longitudinally of the trough and having a series of outlets, a valve, and connections between said trough and said valve for opening same, whereby the water is discharged into said trough when in its dumping position, substantially as set forth.

570,233. TOOL FOR HOLDING PIPE-NIPPLES. THEODORE SCHULZE, New York, N. Y. Filed Feb. 20, 1896. Serial No. 580,001. (No model.)



Claim.—A tool for holding pipe-nipples composed of a squared stem, an integral cylindrical head having a threaded socket, and a plug having a threaded body that engages the threaded socket, said plug being provided with an annular pipe-seat and with a cylindrical horn that is adapted to engage the bore of the nipple, substantially as specified.

570,234. LOOM. CHRISTIAN SEYBOLD, Zweibrücken, Germany. Filed May 8, 1895. Serial No. 548,565. (No model.) Patented in Germany Feb. 6, 1894, No. 78,217, and in Austria-Hungary June 26, 1894, No. 1,329 and No. 22,736.



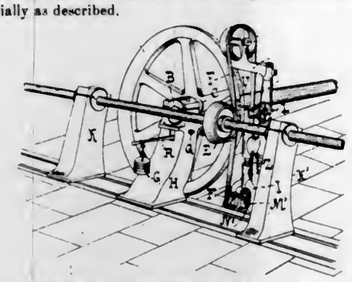
Claim.—1. In a combined let-off and take-up for looms, the combination with the warp-beam, the cloth-beam and the lay, of a ratchet-wheel, an operative connection between the lay and said ratchet-wheel, means for transmitting motion from the ratchet-wheel to the warp-beam, a pulley, means for subjecting the same to a constant turning stress, a planet-wheel carried by said pulley, and two toothed wheels meshing with the planet-wheel; a shaft; one of said wheels being fixed upon said shaft and geared to the cloth-beam, and the other wheel being loose on the same shaft and geared to the ratchet-wheel, substantially as and for the purpose set forth.

2. In a combined let-off and take-up for looms, the combination with the warp-beam M, the lay, and the cloth-beam N, of a rope-pulley *c*, a rope *s*, a weight W connected by said rope with said pulley, a ratchet-wheel *r*, an operative connection between the lay and said ratchet-wheel, means for transmitting motion from the ratchet-wheel to the warp-beam, a shaft *a* geared to the cloth-beam, a toothed wheel *f* geared to the ratchet-wheel shaft and loosely mounted on said shaft *a*, a toothed wheel *b* fixed to the shaft *a*, and a planet-wheel *e* carried by the rope-pulley *c* and meshing into the wheels *b* and *f*, substantially as and for the purpose specified.

3. In a combined let-off and take-up for looms, the combination with the warp-beam, the cloth-beam and the lay, of a ratchet-wheel, an operative connection between the lay and said ratchet-wheel, a wheel *q* on the warp-beam shaft between the end of the warp-beam and the frame, an operative connection between said wheel and the ratchet-wheel, a rope-pulley, a rope, a weight connected by said rope with said pulley and tending to turn the same, a planet-wheel carried by said pulley, a shaft *a*, two toothed wheels meshing with said planet-wheel, one of the said wheels being loose upon the shaft *a* and geared to the ratchet-wheel, and the other being fixed upon the same shaft *a*; a toothed wheel *n* fixed upon the cloth-beam shaft between the cloth-beam and frame, and a pinion *m* fixed on the shaft *a* and meshing with the wheel *n*, substantially as and for the purpose specified.

570,235. VARIABLE-SPEED FRICTION-GEAR. CHRISTIAN SEYBOLD, Zweibrücken, Germany. Filed Aug. 30, 1895. Serial No. 561,007. (No model.)

Claim.—1. A variable-speed friction-gear for shafts placed at an angle, consisting of two pulleys, the conical cooperating faces of which are respectively convex and concave, a friction-belt separately mounted and having its driving side placed between said cooperating faces and embracing the driving-pulley sufficiently to maintain the said belt in continuous contact with said driving-pulley when the driving and driven pulleys are disengaged for the purpose of containing the motion of said belt, and means for forcing the pulleys together, substantially as described.



2. A variable-speed friction gear for shafts placed at an angle, consisting of two pulleys, the conical cooperating faces of which are respectively convex and concave, guide rolls, a friction-belt placed about said guide-rolls and having its driving side placed between the said cooperating faces and embracing the driving pulley sufficiently to maintain the said belt in continuous contact with said driving pulley when the driving and driven pulleys are disengaged, for the purpose of continuing the motion of said belt, and means for forcing the pulleys together, substantially as described.

3. A variable-speed friction gear for shafts placed at an angle, consisting of two pulleys, the one being a conical male pulley, and the other a conical female pulley, the respective faces of which are convex and concave, a friction-belt placed between said cooperating faces, separate guide-rolls located above and below the driving-pulley and overlapping the same for supporting the belt and for conducting the same around a sufficient portion of the periphery of the driving-pulley to maintain the said belt in motion by its contact with said pulley when the pulleys are disengaged, and means for forcing the pulleys together, substantially as and for the purpose set forth.

4. A variable-speed friction gear for shafts placed at an angle, consisting of two conical pulleys, a friction-belt placed between said pulleys, a lower guide-roll for the friction-belt mounted to move freely both in the longitudinal direction of the belt and laterally with respect to the same, means for producing tension in the belt, an upper guide-roll for the belt hinged to turn laterally, and means for securing the latter roll, substantially as and for the purpose set forth.

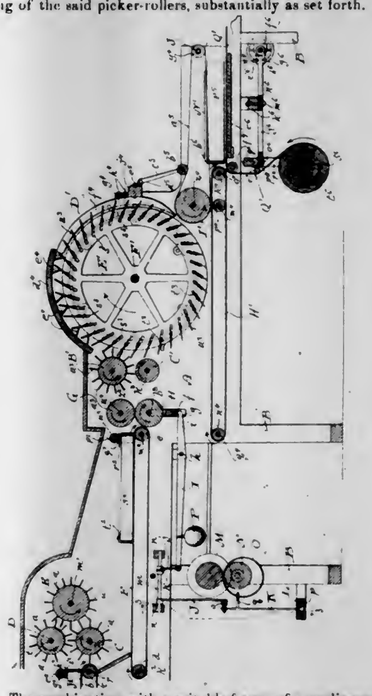
5. A variable-speed friction-gear for shafts placed at an angle, consisting of two pulleys, a friction-belt placed between said pulleys, a lower guide-roll for the belt, and an upper guide-roll mounted to turn laterally, substantially as and for the purpose set forth.

570,236. MACHINE FOR MANUFACTURING EXCELSIOR WRAPPERS OR PADS. HELON F. SHADBOLT, Sheboygan, Wis., assignor to the Excelsior Wrapper Company, same place. Filed May 1, 1896. Serial No. 589,830. (No model.)

Claim.—1. The combination, with a suitable frame, of a pair of horizontally-disposed endless feed-belts, arranged on different planes, two pairs of vertically-disposed endless guide-belts, each of said endless feed-belts being arranged between one of said pairs of guide-belts, a pair of picker-rollers, one of which is mounted on yielding bearings, arranged adjacent to the end of the first feed-belt and above the plane of the other feed belt, gearing and belting for operating all of said parts in conjunction with each other, and an independently-geared picker-roller arranged adjacent to the pair first named, and adapted to be revolved at a greater rate of speed than the first-named picker-rollers, substantially as set forth.

2. The combination, with a suitable frame, of a pair of horizontally-disposed endless feed-belts, arranged on different planes, a pair of picker-rollers arranged adjacent to the delivery end of the first feed-belt and above the plane of the second feed-belt, a pair of pressure-rollers arranged, one above the other, adjacent to the delivery end of the second feed-belt, and the lower of said pressure-rollers having yielding bearings on a transverse yoke, gearing and belting for operating all of said parts in conjunction with each other, a pivotally-suspended lever in engagement with said yoke, and a feed-regulating device connected to said lever and to the gearing of said picker-rollers, whereby, when the material passing between the pressure-rollers separates them too widely, the picker-rollers will revolve at a less rate of speed, substantially as set forth.

3. The combination, with a suitable frame, of a pair of horizontally disposed endless feed-belts, arranged on different planes, a pair of picker-rollers, one of which is mounted on yielding bearings, arranged adjacent to the delivery end of the first feed-belt and above the plane of the second feed-belt, a pair of pressure-rollers arranged one above the other adjacent to the delivery end of the second feed-belt, and the lower of said pressure-rollers having yielding bearings on a transverse yoke, gearing and belting for operating all of said parts in conjunction with each other, a pivoted lever suspended beneath the second feed belt, one end of said lever being in engagement with said yoke, a partly-revoluble rod journaled on the main frame and carrying a rigid crank arm, a link connecting said crank-arm to the other end of said lever, a pair of cone-pulleys journaled adjacent to each other, a flexible ring surrounding one cone pulley and in movable contact with both, a pair of levers adjustably shackled together, one of said levers being rigidly secured to the partly-revoluble rod and the other being pivoted to the frame, and carrying the described flexible ring, and the shaft of one of said cone pulleys being geared to the main driving-shaft of the machine while the shaft of the other cone pulley is connected by a system of belts and pulleys, with the gearing of the said picker-rollers, substantially as set forth.



4. The combination, with a suitable frame, of a carding-cylinder, comprising side pieces, having secured upon the inner surfaces thereof camways, consisting of single continuous tracks, and for about half the distance thereof, additional outer tracks, forming cam-grooves between, a pair of annular disks or wheels whose rims are provided with tangentially-disposed slots, a series of movable bars projecting through said slots and in engagement with said tracks and cam-grooves, said bars being provided with projecting teeth or pins, and a series of spring packers supported adjacent to said carding-cylinder, and arranged one between each two adjacent teeth or pins of said movable bars, substantially as set forth.

5. The combination, with a suitable frame, of side pieces provided with cam tracks and grooves, a carding-cylinder having annular disks or wheels, with tangentially-disposed slots in the rims thereof, and movable bars projecting through said slots and in engagement with said cam tracks and grooves, and carrying projecting teeth or pins, a toothed concave covering part of said cylinder, and spring-packers arranged in series between the teeth or pins on the movable bars, feeding-rollers one of which always revolves on the same plane and is provided with teeth or pins, and the other of which is mounted on yielding bearings, an endless carrying-belt below said cylinder, and a pressure and guide roller located above said belt and adjacent to the cylinder, at a point just beneath the packers where the described teeth or pins on the movable bars are retracted by the travel of said bars within the cam-groove, substantially as set forth.

6. The combination, with a suitable frame, of a former-tube suspended therefrom, a mandrel suspended within and projecting from the forward end of the former-tube, a small roller at the forward end, and another roller on the upper surface of said mandrel, a pair of feed-rollers arranged one above the other adjacent to one end of the former-tube and mandrel, and a pair of delivery-rollers, similarly arranged adjacent to the other end thereof, a continuous guiding-tape passing around and over the upper feed-roller, thence under the roller on the upper surface of the mandrel and around the roller on the forward end thereof, and back beneath the mandrel to the said feed-roller, and a glue pot spout interposed between the forward end of the mandrel and the said delivery-rollers, substantially as set forth.

7. The combination, with a suitable frame, of a pair of feed-rollers, arranged one above the other to receive between them the fabric and filling as they are fed forward, a transverse shaft adjacent to the upper feed-roller, and geared to the journal of the latter, bevel gear-pinions adjustably secured to said transverse shaft, a pair of movable upright frames carrying vertical shafts at their adjacent ends, bevel gear-pinions on said shafts in mesh with the pinions on the transverse shaft, vertical shafts at the other ends of said upright frames, vertical rollers on said vertical shafts at each end of said frames, and vertical guide-belts traveling around said vertical rollers, a transverse bar or beam extending across the main frame just above the tops of the movable upright frames, yokes straddling this bar or beam and secured to the tops of the said upright frames, and thumb-screws passing through screw-threaded perforations in the upper parts of said yokes, and bearing against the top of said bar or beam, substantially as set forth.

8. The combination, with a suitable frame, provided with slots or recesses in the side timbers thereof, and upward-projecting pins on the upper surfaces of said side timbers at some considerable distance from said slots or recesses, of a tapering former-tube provided with slots in its side walls adjacent to its rear or widest end, a removable cross bar inserted through said slots and having its ends dropped within the slots or recesses in the side timbers, a second cross-bar having perforations in its ends for removable engagement with the said upward-projecting pins on said side timbers, hooks depending downward from said second cross-bar, a pair of chains, the links of which are adjustably engageable with said hooks, and a spiral spring extending under the former tube at this point and the ends of which unite the adjacent ends of said pair of chains, substantially as set forth.

9. The combination, with a suitable frame provided with slots or recesses in the side timbers thereof, and upward-projecting pins on the upper surfaces of said side timbers at some considerable distance from said slots or recesses, of a removable cross-bar having its ends dropped within the said slots or recesses, and a second cross-bar having perforations in its ends for removable engagement with said upward-projecting pins of said side timbers, a removable tapering former-tube adjustably suspended from said cross-bars, a removable tapering mandrel suspended within said former-tube but free from contact therewith, one end of said mandrel being secured by a bolt to the first-named cross-bar, a yoke or clip straddling said mandrel, the lower ends of said yoke or clip coming flush with the bottom of the mandrel and secured thereto and said yoke or clip having an upward-projecting screw-bolt rigid therewith extending through a hole in the second cross-bar, an adjusting nut on said screw-bolt just beneath said bar, and a hand nut on the upper end of said bolt above said bar, substantially as set forth.

10. The combination, with a suitable frame, of a pair of rollers, arranged one above the other, the journal of the upper roller always revolving in the same plane, in suitable bearings in said frame, a pair of blocks hinged to the under surface of the side timbers of said frame and receiving the journal of the lower roller, said blocks being formed with vertical slots therethrough, lag-screws passed upward through said slots in the blocks, without contact with the walls of said slots, into the timbers of the frame above, and springs interposed between the heads of said lag-screws and the under surfaces of said timbers, substantially as set forth.

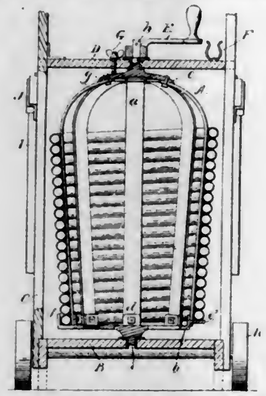
11. The combination, with a suitable frame, of a horizontally-disposed endless feed-belt passing over rollers, the journal of the roller at the delivery end carrying a toothed pinion at one end exterior to the frame, a pair of picker-rollers arranged one above the other, one of whose journals travels always in the same plane, and carries a large gear-wheel at one exterior end, and a small pinion at the other exterior end, while the journal of the other picker-roller of said pair rests upon yielding bearings within slots of the side pieces of the main frame, and carries at one exterior end a small pinion, the said journals of said pair of picker-rollers being united by link-straps carrying pinions in mesh with the said small pinions on said journals; a pair of studs projecting from the opposite side piece of the frame, carrying pinions in mesh with each other, one of said last-named pinions being in mesh with the pinion of the journal of the adjacent roller of the endless feed-belt, and the other of said pinions being in mesh with the large gear-wheel on the adjacent end of the journal of the first-named picker-roller; a stud on the same end piece of the main frame carrying a large pulley and a pinion integral therewith in mesh with said large gear-wheel of said first named picker-roller; a transverse shaft on the main frame having pulley-belt and gear connections with the main driving-shaft, and carrying a small independent pulley, and a belt extending from this last-named pulley to the described large pulley on the stud, substantially as set forth.

12. The combination, with a suitable frame, of a pair of horizontally-disposed endless feed belts arranged on different planes a pair of picker-rollers arranged one above the other adjacent to the delivery end of the first feed-belt, and the journal of one of said picker-rollers having a yielding bearing, a pair of pressure-rollers similarly arranged adjacent to the delivery end of the second feed-belt, and the journal of one of said pressure-rollers also having a yielding bearing; a pair of feed-rollers, similarly arranged, just beyond the pressure-rollers and the journal of one of said feed-rollers having also a yielding bearing, a feed-regulating device comprising a pair of cone-pulleys mounted on transverse shafts in a frame, so as to be almost, but not quite, in contact, and a movable flexible contact-ring around one of said cone-pulleys and in contact with both; a lever-and-link connection between the movable flexible contact-ring of the feed-regulating device, and the yielding bearing of the lower feed-roller; a main driving-shaft; a bevel-gear connection between the main driving-shaft and the shaft of the upper cone-pulley; a small independent pulley and a stepped cone-pulley on the shaft of the lower cone-pulley; a transverse shaft above the feed-regulating device carrying a small independent pulley, and a stepped cone-pulley; a belt connecting the said two stepped cone-pulleys; pinions on the journals of the rollers of the delivery ends of the feed-belts; a gear-wheel on one end of the upper picker-roller, a train of gears meshing therewith and with the pinion of the adjacent roller journal of the first feed-belt; a linked strap-and-pinion connection, on the other side of the machine, between the journals of the said pair of picker-rollers; a like linked strap-and-pinion connection between the journals of the pressure-rollers; a gear-wheel on the other end of the journal of the upper pressure-roller, in mesh with the pinion of the adjacent roller-journal of the second feed-belt, a stud on the frame carrying a large pulley and a pinion rigid therewith, said pinion being in mesh with the large gear-wheel of the journal of the upper pressure-roller; a like large gear-wheel on the adjacent end of the journal of the upper feed roller, in mesh with the pinion on the stud; a like stud carrying a large pulley and a pinion rigid therewith in gear with the large gear-wheel on the journal of the first-named picker-roller, a belt connecting the last-named large pulley with the small independent pulley on the transverse shaft above the feed-regulating device, and another belt connecting the small independent pulley on the shaft of the lower cone-pulley with the large pulley on the stud between the gear-wheels of the upper pressure and feed rollers, substantially as set forth.

13. The combination with a suitable frame, of a former-tube and mandrel supported thereby, a pair of delivery-rollers, arranged one above the other, the journal of the lower roller being mounted in yielding bearings, a glue-pot spout interposed between the forward end of the mandrel and the said rollers, a main driving shaft having a bevel-gear connection with the journal of the upper delivery-roller, a bracket provided with an arc slot, secured to the main frame, and through which bracket the main driving-shaft passes, a pair of compressing-rollers journaled near the end of the main frame, a train of gears connecting the said rollers with the upper delivery-roller; a stationary blade projecting from the end of the machine; a knife-shaft carrying a revolving knife at one end, and at its other end passing through said bracket and there carrying a pinion; a removable collar on the said knife-shaft between the bracket and pinion; an adjusting-lever mounted loosely on the main driving-shaft close to and on one side of the bracket, and a pinion rigid on said shaft on the other side of the bracket; a stud projecting from the bracket carrying a compound pinion loosely mounted thereon for engagement with the pinion on the main driving-shaft and the pinion on the knife-shaft; and a bolt passing through the adjusting-lever and through the arc slot in the bracket and carrying a tightening-nut on its end, substantially as set forth.

14. The combination, with a suitable frame, of a carding-cylinder provided with retracting teeth; an endless feed-belt located beneath the same, a pressure and guide roller having a journal mounted in oblique slots in the side pieces of the frame; an idler-roller beneath the last-named roller, within the endless feed-belt; a paper-supporting frame on a plane below said endless belt, carrying a roll of fabric, a transverse roller for said fabric beneath the delivery-end roller of said endless belt; a main driving-shaft; a pair of large rollers, arranged one above the other, and with the journal of the lower roller mounted in yielding bearings, and with the journal of the upper roller connected by bevel-gearing to the main driving-shaft; a transverse shaft adjacent to said rollers, and carrying a pair of pulleys; a belt connecting one of said pulleys to the upper of said rollers; another belt connecting the other pulley on said shaft with the first-named pressure and guide roller; a pair of movable upright frames, carrying vertical guide-belts, extending between the pair of large rollers named and the delivery end of the feed-belt; a cross-timber on the main frame adjacent to the carding-cylinder, and an arm pivotally attached to said cross-timber, and carrying a roller at its lower end resting on the last-named pulley-belt, substantially as set forth.

570,237. HOSE-CARRIAGE. VALENTINE SPINDLER, Saginaw, Mich. Filed Oct. 29, 1895. Serial No. 567,265. (No model.)



Claim.—1. In a hose carriage the combination with a truck, of a hose-reel comprising a lower end or head, an upper head, trunnions on said heads adapted to bearings in the truck, lugs *d* on the lower head, slats secured to said lugs and to the upper head, outwardly-extending lugs *e e* &c. on the lower head arranged on different planes to form a spiral support for the hose, and a clamp on the lower head, substantially as described.

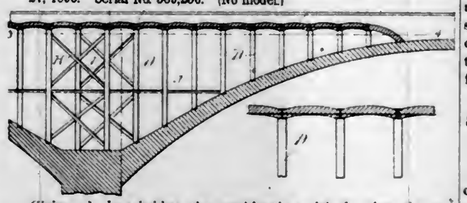
2. In a hose-carriage, the combination with a truck, of a reel journaled thereon comprising a lower end or head, an upper head, lugs *d* on the lower head, slats secured to said lugs extending upwardly and outwardly and bowed inwardly at their upper ends and secured to the upper head, and spirally-arranged outwardly-extending lugs on the lower head between said lugs *d*, substantially as described.

570,238. NON-REFILLING BOTTLE. SAMUEL TAYLOR, Houston, Tex. Filed Apr. 21, 1896. Serial No. 588,457. (No model.)



Claim.—In a non-refillable bottle a groove formed in the neck thereof, a keeper adapted to fit within said neck having a central opening and an annular groove, a spring bent in quadrangular shape adapted to fit in the groove of said keeper, said spring adapted to engage the groove in the bottle-neck when pressed into alinement therewith, a cork resting on said keeper, a tie-wire having its ends passed through holes formed in the keeper and twisted, the upper portion of said wire passing over the top of a cork.

570,239. BRIDGE. EDWIN THACHER, Detroit, Mich. Filed Apr. 27, 1896. Serial No. 589,256. (No model.)



Claim.—1. In a bridge, the combination with the piers the masonry arches, and the roadway over the spandrel-spaces, of a structural frame on the piers and the arches supporting such roadway.

2. In a masonry bridge, the combination with piers the arches between and supported by the piers and the roadway over the spandrel-spaces, of the spandrel-walls, and a structural frame or posts above the arches and piers supporting such roadway.

3. In a masonry bridge, the combination with the arches and the roadway over the spandrel-spaces, of the spandrel-walls, posts or bents supporting said roadway, and ties therefrom into the spandrel-walls.

4. In a masonry bridge, the combination with the arches, and the roadway and raised sidewalks over the spandrel-spaces of the supports for the roadway and sidewalks, comprising the beams E E' arranged as described and posts for supporting said beams.

5. In a bridge, the combination of masonry piers and abutments, masonry arches between and supported by said piers, posts or bents on said piers and arches, and a continuous road-bed over said arches and piers and supported by said posts or bents, substantially as described.

6. In a masonry bridge, the combination with the arches, roadway over the spandrel-spaces, the spandrel-walls and cornices thereon, of the metal viaduct in the spandrel spaces, and beams extending therefrom into the cornices for the purpose described.

570,240. BICYCLE-LAMP BRACKET. CHARLES F. WALKER, Chicago, Ill. Filed Nov. 14, 1895. Serial No 568,899. (No model.)

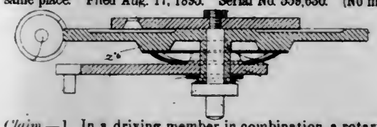


Claim.—1. A lamp-holding bracket, consisting of two clamping members detachably secured together, one of said members being adapted to be converted into a reverse position with reference to the other member, substantially as described.

2. A lamp holding bracket, consisting of two members hinged or pivoted together at one side, one of said members being capable of being converted into a reversed position with reference to the other member, so that when the reversible part is in one position it forms a clamp of one style, and when it is in the second position it forms a clamp of another style, and a clamping-bolt, locking said members in either position, substantially as described.

3. A lamp-holding bracket, consisting of two members, having a circular part, and a lateral extension part, terminating in hook ends, said members having a pivotal connection and one member adapted to be reversed in its position with reference to the other, and a clamping bolt inserted through said members, substantially as described.

570,241. WORKMAN'S TIME-RECORDER. EDWARD G. WATKINS, Gardner, Mass., assignor of one-half to Heywood Brothers & Co., same place. Filed Aug. 17, 1895. Serial No. 559,630. (No model.)



Claim.—1. In a driving member in combination, a rotary worm, a gear in mesh therewith, and adapted to be driven thereby, said gear being formed with a hollow hub, a spindle on which said hub is mounted, a crank-arm loosely mounted on said hub adjacent said gear, means for holding said crank-arm against movement away from said gear, a spring arranged upon said hub between said arm and gear, and adapted to yieldingly hold said gear and arm together.

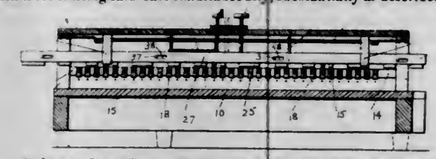
2. In a driving member, in combination, a rotary worm, a gear in mesh therewith, and adapted to be driven thereby, said gear being formed with a hollow hub and a friction-ring, a spindle on which said hub is mounted, a crank-arm having an apertured boss loosely mounted on said hub, means for retaining said boss on said hub, a spring interposed on said hub between said gear and arm, one portion of said spring being arranged to bear upon said boss, the other portion of said spring being arranged to engage and bear upon said friction-ring.

570,242. HARP. WILLIS E WHITCOMB, Worcester, Mass., assignor to Grace L. Tanner and Rufus P. Whitcomb, Jr., same place. Filed Apr. 17, 1896. Serial No. 587,977. (No model.)

Claim.—1. In a stringed instrument, the combination of a frame or table, comprising supporting-legs, and a cover or top plate, a carriage engaging grooves in said top plate, and a plurality of independently-depressible bars carried by the carriage, substantially as described.

2. In a stringed instrument, the combination of a frame, guide-rods mounted in said frame, and independently-depressible, longitudinally-movable bars mounted on said guide-rods, substantially as described.

3. In a stringed instrument, the combination of a frame, spring-supported guide-rods mounted in the frame, independently-depressible, longitudinally-movable bars mounted on said guide-rods, and means for shifting said bars simultaneously, substantially as described.



4. In a stringed instrument, the combination of a frame, a sliding carriage, spring-supported guide-rods mounted in the frame, and independently-depressible bars mounted on said guide-rods and carried by said carriage, substantially as described.

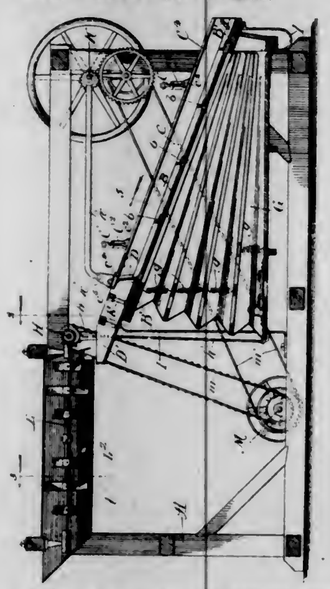
5. In a stringed instrument, the combination of independent, normally open dampers, and a plurality of independently-depressible bars for moving a portion of said dampers into engagement with the strings, said bars being arranged so that they can be shifted longitudinally to produce chords in different musical keys, substantially as described.

6. The combination of a frame extending over the strings of the instrument, a sliding carriage mounted in said frame, a series of normally open dampers, and a plurality of independently-depressible bars carried by the carriage and arranged to move a portion of the dampers into engagement with the strings, substantially as described.

7. In a stringed instrument, the combination of a frame, a series of normally open dampers, guide rods mounted in said frame, and independently-depressible bars mounted upon said guide-rods and arranged to move a portion of the dampers into engagement with the strings, substantially as described.

8. In a stringed instrument, the combination of a frame, a series of normally open dampers, a sliding carriage, spring-supported guide-rods mounted in the frame, and independently-depressible bars mounted on said guide-rods and arranged to move a portion of the dampers into engagement with the strings, substantially as described.

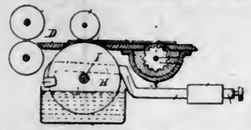
570,243. ORE-CONCENTRATOR. FRANK J. WOODS, Chicago, Ill. Filed Dec. 13, 1895. Serial No. 571,996. (No model.)



Claim.—1. In dry-ore concentrators, an organized machine in which there are combined an inclined riffle-box having an inclosed riffle-channel formed of a lower riffle-screen with transverse riffle-bars, adjustable side boards, a removable cover and a flap-valve, a bellows secured to the riffle-box directly under the riffle-screen for the purpose of furnishing a current of air to such riffle-screen and separate materials, flat spring mechanism for flexibly supporting the riffle-box and secured parts on the framework and permit longitudinal vibrations, but prevent lateral movement of the riffle-box, means for actuating the bellows, means for imparting a jigging or vibratory motion to the riffle-box, a disintegrating feeding mechanism consisting of at least two rotatable shafts arranged in a horizontal plane and provided with angular beaters or disintegrators for crushing and feeding the material forward in uniform condition and quantities into the riffle-box, and means for operating the mechanism, substantially as described.

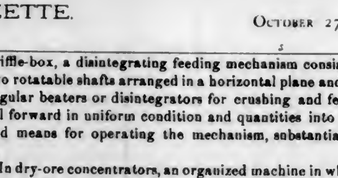
2. In dry-ore concentrators, an organized machine in which there are combined an inclined riffle-box composed of a lower riffle-screen having riffle-bars removably secured thereon, adjustable side boards, a removable cover and automatic flap-valve at the entrance, a bellows secured to the riffle-box beneath the riffle-screen to furnish a current of air to the same and separate materials, flat spring mechanism for flexibly supporting the riffle-box and secured parts on the frame and permit longitudinal vibrations, but prevent lateral movement of the riffle-box, means for vibrating the bellows, means for imparting a jigging or vibratory motion to the riffle-box, disintegrating feeding mechanism composed of at least two rotatable shafts arranged in a horizontal plane and provided with angular intermeshing beaters for crushing and feeding the material forward into the riffle-box in uniform quantities and condition, and means for imparting motion to the different mechanisms, substantially as described.

570,244. MACHINE FOR SANDING MATCH-BOXES. ANDREW ANDERSON, Detroit, Mich., assignor to the Improved Match Company, same place. Filed Oct. 14, 1895. Serial No. 565,646. (No model.)



Claim.—In a match-box-sanding machine, the combination with the table, a paste-pot, and a pasting-roll working in the paste-pot and having its periphery slightly above the table-top, of a scraper for the pasting-roll, a supporting-arm for said scraper extending from the scraper over the paste-pot to one end of the machine and having an offset at or near its end, a bearing in which said arm is supported and slides, and a set screw carried by said offset and engaging a stationary part of the machine for adjusting said arm, substantially as set forth.

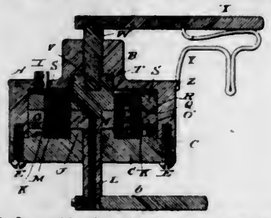
570,245. SYRINGE. DOZIER T. BENTLEY, Atlanta, Ga., assignor of one-third to Edward L. C. Ward, Fulton County, Ga. Filed Sept. 1, 1894. Renewed July 22, 1896. Serial No. 600,175. (No model.)



Claim.—1. A douche consisting of a tube, a bulb secured to one end of same, an elastic band secured near the other end thereof adapted to receive the finger and a strip passing from the end of said tube to said band and widened so as to form a guard for the finger-nail.

2. A douche consisting of a bulb and a tube leading therefrom, an elastic band adapted to receive the finger secured to near the end of said tube, and a strip passing from the end of said tube backwardly to the said band and being perforated at the end of the tube for the purpose specified.

570,246. VALVE FOR STEERING APPARATUS, ELEVATORS, &c. ALFRED R. BOLUSS, Jersey City, N. J., assignor of one-half to Clarence Linn, same place. Filed May 9, 1896. Serial No. 590,885. (No model.)



Claim.—1. In combination with the bottom seat C constructed as described, and casing A with inlet I, the central cut-off disk K with

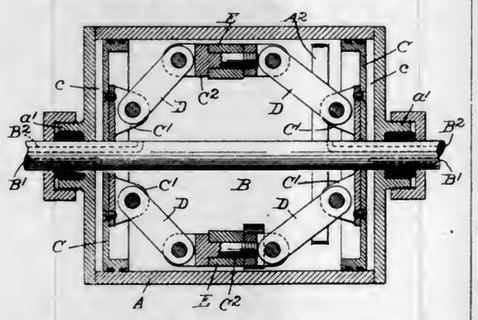
semicircumferential grooves O O', oblique passages P P', slot Q, and hollow stem L, the upper disk S with central hub *c*, radial passages *d*, *e*, ports *f*, *g*, stud R and bifurcated hub T, the vertical operating stem or rod W with T head V, and handle X, substantially as and for the purposes set forth.

2. In combination with the seat C, valve casing A, and contained disks K, S, constructed and arranged as described, the handle X and power-transmitting device *b*, or its equivalent, substantially as and for the purpose set forth.

3. In combination with the seat C and casing A constructed and arranged as described, the contained disks K and S and means substantially as described for controlling the axial movement of the disk K, as and for the purposes set forth.

4. In a valve such as described, the central disk K, provided with a motion-transmitting stem L, having the extent and direction of its rotation controlled through the medium of the disk S, and handle X, substantially as described.

570,247. CLUTCH. CARL F. BROSTRÖM, Chicago, Ill. Filed June 22, 1896. Serial No. 596,420. (No model.)



Claim.—In combination with a cylinder having outer fixed heads and inner fluctuating heads or pistons with air-spaces between the fixed and fluctuating heads, respectively, and air-spaces between the two fluctuating heads; a shaft axial with respect to said cylinder having ducts which open between the fixed and fluctuating heads, respectively, and other ducts which open between the fluctuating heads; links connected to the fluctuating heads, and spreaders connected to the links and adapted to bear against the inner surface of the cylinder, levers F and links E' and E^2, connecting corresponding ends of the spreaders, and the radial links F' and E^2 symmetrically disposed and constituting means of suspension respectively of the levers F and of the connecting-pivots of the links E' and E^2, whereby the approach of the fluctuating heads forcing the spreaders against the cylinder, tends to give them a tangential motion in one direction, and the levers G and K and parallel links H and I connecting the same, the lever G being pivoted at a fulcrum fixed with respect to the cylinder, and the radial link L, by which the lever K is pivotally suspended from the cylinder, the lever G being suspended by the radial link E^2, whereby the separation of the heads tending to withdraw the spreaders from the cylinder, causes the levers K to bear against the inner surface of the latter with a tangential tendency in the opposite direction.

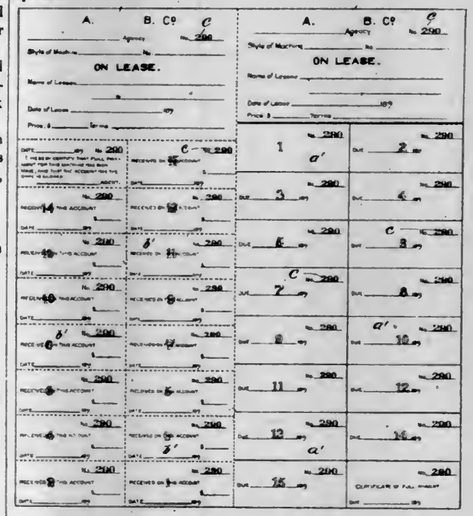
570,248. COMBINATION PENCIL-TIP. GEORGE E. EGGERT, Scranton, Pa. Filed July 17, 1896. Serial No. 599,460. (No model.)



Claim.—A pencil-tip consisting of a cylinder, a rubber eraser carried in one end, the opposite end of said cylinder being cut to produce prongs C, D and E of varying lengths, the first prong having curved edges with a rounded nose, the second having a long V-shaped point the third having a straight and a curved edge, one of which is sharpened, as and for the purpose described.

570,249. ACCOUNT-CARD. CHARLES ELKIN, Jersey City, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed May 4, 1896. Serial No. 590,107. (No model.)

Claim.—An account-card consisting of two parts one of which is to be detached from the other, and which two parts are provided with corresponding headings, one part being divided into spaces or sections and the other part being divided into removable coupons corresponding to the said sections, the said sections and coupons being provided with corresponding consecutive numbers, the said consecutive numbers of said sections into which one part of said card is divided running from the top downward, and the said coupons into which the other part of said card is divided running from the bottom upward.



570,250. BICYCLE WHEEL. RIMMON C. FAY, Ilion, N. Y., assignor to the Remington Arms Company, New York, N. Y. Filed Jan. 28, 1896. Serial No. 577,108. (No model.)

Claim.—1. In a wheel for bicycles or other vehicles, the combination of a rim and a tubular hub perforated at either end with a plurality of rows of holes, with spoke-wires extending through the hub between holes in adjacent rows, and having their opposite ends connected to the rim; substantially as described.

2. In a wheel for bicycles or other vehicles, the combination of a hub and a rim, with spoke-wires extending through two perforations in the hub, the portion of the wire included in the hub being bent out of alinement with the portions thereof outside of the hub, and the opposite ends of the wire connected to the rim; substantially as described.

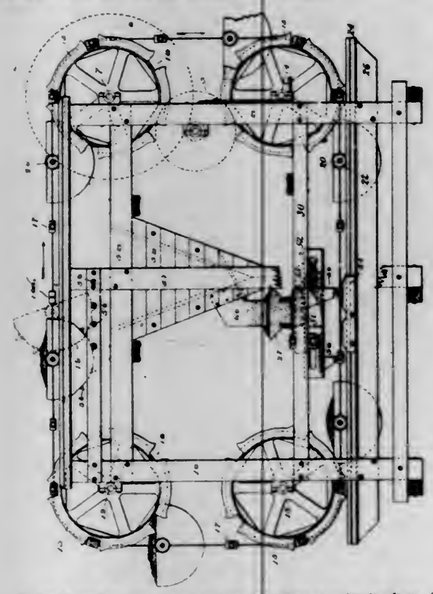
3. In a wheel for bicycles or other vehicles, the combination of a tubular hub provided with a plurality of rows of holes at either end, with a plurality of spoke-wires, each extending through two perforations in the hub and having the portion of its length which is included in the hub out of alinement with the portions of its length which are outside of the hub; substantially as and for the purposes described.

570,251. BUCKET CONVEYER. ARTHUR J. FRITH, New York, N. Y. Filed Feb. 11, 1895. Serial No. 537,880. (No model.)

Claim.—1. In a bucket conveyer, the combination of the following-named elements: horizontal rails; gravity-buckets suspended between said flexible connections; wheels for supporting said buckets on said rails; a stationary hopper or chute; a reciprocating valve located beneath the mouth of said chute and above said buckets' line of travel; and toes or projections connected to said valve and adapted to be struck by each of the traveling buckets; whereby said valve is reciprocated positively in one direction to load each bucket in turn, and positively in the opposite direction to cut off the supply of material when the bucket has been loaded.

2. In a bucket conveyer, the combination of the following named elements: traveling gravity-buckets; a hopper or chute; a bucket-loader having two movable members; and means for reciprocating

both of said members; whereby, when said members are reciprocated, the buckets are loaded with material from the chute, and the supply of material is cut off from the buckets when loaded.



3. In a bucket conveyer, having traveling gravity-buckets, in combination with a hopper or chute, means for automatically loading said buckets, consisting of a loading device having a top plate and a bottom plate and means for reciprocating said plates, through which plates the supply of material is run into the buckets, and cut off therefrom, by said plates, when the buckets are loaded.

4. In a bucket conveyer, having traveling gravity-buckets, in combination with a hopper or chute, means for automatically loading said buckets, consisting of a loading device having a top plate and a bottom plate and an interposed rack-and-pinion gearing for reciprocating said plates, whereby said plates are caused to open and close at the proper times to load each bucket in succession with material from said chute.

5. In a bucket conveyer, having traveling gravity-buckets, in combination with a hopper or chute, means for automatically loading said buckets, consisting of a reciprocating bucket-loader provided with a plate hinged thereto, as and for the purposes set forth.

6. In a gravity bucket conveyer, the combination of a bucket-loader and a yielding stop or piece for preventing choking of said loader.

7. In a bucket conveyer, in combination with a reciprocating bucket loader having a loading-plate, a flexible or yielding end piece or stop, as and for the purposes set forth.

8. In a gravity-bucket conveyer, the combination of a bucket-loader and a vertically-movable hopper or chute, for the purposes set forth.

9. In a gravity-bucket conveyer, the combination of a bucket-loader, a yielding stop or piece, and a vertically-movable hopper or chute, for the purposes set forth.

10. In a gravity-bucket conveyer, the combination of the following-named elements: endless flexible connections; horizontal rails; gravity-buckets suspended between said flexible connections; wheels for supporting said buckets on said rails; a stationary supply source of material; a bucket-loader, located outside of the line of buckets and beneath said source of supply; means connected with the conveyer for horizontally reciprocating said bucket-loader positively in each direction; and a yielding piece for preventing choking of said loader.

11. In a bucket conveyer, the combination of traveling gravity-buckets, a bucket-loader, and short rails or castings superposed on track-rails, whereby said buckets are elevated to operate the bucket-loader, substantially as described.

12. In a bucket conveyer, the combination of traveling gravity-buckets and a reciprocating bucket-loader provided with toes, as 34, 38, whereby the bucket loader is adapted to be reciprocated as each bucket travels past the same.

13. In a bucket conveyer, the combination of traveling gravity-buckets; a reciprocating bucket-loader, provided with toes, as 34, 38; and short rails or castings superposed on track rails, whereby said buckets are elevated to operate the bucket loader.

14. In a conveyer, the combination with a traveling wire rope of a metal stop or clamp formed in one piece and provided with a curved groove in one of its surfaces, by means of which, and a bight in said rope within said groove, the stop or clamp is secured to the rope.

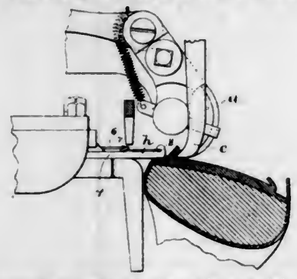
15. In a bucket conveyer, the combination of an endless traveling wire rope; a metal stop or clamp formed in one piece and provided with a curved groove in one of its surfaces, by means of which, and a bight in said rope within said groove, the stop or clamp is secured to the rope; and a traveling bucket suspended to said rope by said clamp

16. In a bucket conveyer, the combination of an endless traveling wire rope, a traveling bucket; and a metal stop or clamp, for suspending said bucket to said rope, formed in one piece and provided with a curved groove in one of its surfaces and with bolts, by means of which groove and bolts and a bight in said rope within said groove, the stop or clamp is secured to the rope so as to prevent slippage of the clamp.

17. In a gravity-bucket conveyer, the combination of an endless traveling wire rope; a traveling bucket; and a metal stop or clamp, for suspending said bucket to said rope, formed in one piece and having a hole therethrough for the shaft of the bucket, said stop or clamp being also provided with a curved groove in one of its surfaces and with a bolt at each side of said hole, by means of which groove and bolts and a bight in said rope within said groove, the clamp is secured to the rope so as to prevent slippage of the clamp and lateral displacement of the rope from the clamp.

570,252. SEWING-MACHINE FOR LASTING BOOTS OR SHOES.

WILLIAM S. HAMM, Newton, Mass., assignor to Augustus Seaver, Boston, Mass. Filed June 1, 1896. Serial No. 593,743. (No model.)



Claim.—1. In a machine for lasting boots and shoes, the combination of a sole guide or gage, stitch-forming mechanism including a curved oscillating needle, and a reciprocating upper clamp for opposing the pressure of the needle against the upper, said clamp being adapted to surround the path of the needle and having a movable side.

2. In a machine of the character specified, the combination with stitch-forming mechanism, of the slide *h* comprising the plate 1 having tongue 2, the arm 4 pivoted to the plate 1, the spring 6, and the projection at the end of arm having an inclined side extending across the space between the tongue 2 and arm 4.

3. In a machine of the character specified, the combination with stitch-forming mechanism, of the slide *h* comprising the plate 1 having tongue 2, the arm 4 pivoted to the plate 1, the spring 6, and the ear 8 extending across the space between the tongue and arm and having inclined inner side 9, and inclined under side 10, substantially as and for the purpose set forth.

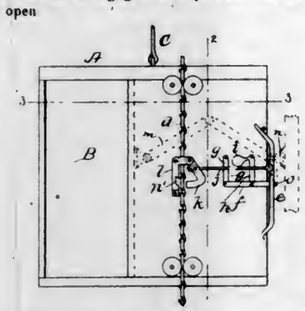
570,253. ELEVATOR. CHARLES A. HARKNESS, Providence, R. I. Filed Feb. 8, 1895. Serial No. 537,711. (No model.)

Claim.—1. In an elevator apparatus, a flexible valve-controlling line, provided with stops supported solely by said line, a latch or lock for said stops, a horizontally-movable door, and means yieldingly connected with said latch or lock and coacting with said door for causing the latch or lock to engage said stops when the door is partially or entirely open.

2. In an elevator apparatus, a flexible valve controlling line provided with stops supported solely by said line, a latch or lock for said stops, a horizontally-sliding door, and means yieldingly connected with said latch or lock and coacting with said door for causing the latch or lock to engage said stops when the door is partially or entirely open.

3. In an elevator apparatus, a flexible valve-controlling line provided with stops supported solely by said line, a latch or lock for said

stops, a horizontally-sliding corridor-door, and means yieldingly connected with said latch or lock and coacting with said door for causing the latch or lock to engage said stops when the door is partially or entirely open



4. In an elevator apparatus, a flexible valve-controlling line provided with stops supported solely by said line, a latch or lock for said stops, a horizontally-sliding door, and means yieldingly connected with said latch or lock and coacting with and operated by said door for causing the latch or lock to engage said stops when the door is partially or entirely open.

5. In an elevator apparatus, a flexible valve-controlling line provided with stops supported solely by said line, a horizontally-movable door, a latch or lock out of the path of the door and adapted to enter between the stops to lock the line, and normally held out of engagement with said stops, and means coacting with the door for allowing the latch to enter between the stops when the door is open and until it is closed.

6. In an elevator apparatus, a flexible valve-controlling line provided with stops supported solely by said line, a horizontally-movable door, a latch or lock out of the path of said door, means for throwing the latch or lock into engagement with said stops, and means coacting with said door for holding the last-said means from operating to throw the latch or lock into engagement with said stops except when the door is partially or entirely open.

7. In an elevator apparatus, a horizontally-movable door, a flexible valve-controlling line having a portion inside the walls of the elevator shaft or hatchway and provided with stops, a latch or lock in the shaft or hatchway to enter between the said stops to lock the line, and out of the path of the said door, and means yieldingly connected to the latch or lock and operated by the said door, for allowing the latch or lock to enter between said stops when the door is partially or entirely open.

8. In an elevator apparatus, a car, a door, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and provided with stops coacting with the door to hold the car against movement after it is stopped.

9. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and connected to said valve-controlling line so as to move in the same direction as that part of said valve controlling line which is directly acted upon by the operator and provided with stops supported solely by said auxiliary or supplemental line, a latch or lock for said stops, a door, and means coacting with said door for causing the latch or lock to positively engage said auxiliary or supplemental line when the door is partially or entirely open.

10. In an elevator apparatus, a flexible valve-controlling line having two or more stops for each landing, a latch or lock for said stops, a horizontally-sliding door, and means yieldingly connected with said latch or lock and coacting with said door for causing the latch or lock to engage said stops when the door is partially or entirely open.

11. In an elevator apparatus, a valve-controlling line part of which is constructed in the form of a chain, latching or locking means to engage the links of the said chain, a door, and means coacting with said door for causing the latch or lock to engage the chain part of the line when the door is partially or entirely open.

12. In an elevator apparatus, a valve-controlling line, part of which is constructed in the form of a chain with open links, latching or locking means to enter and engage said open links, a door, and means coacting with said door for causing the latching or locking means to enter and engage the said links when the door is partially or entirely open.

13. In an elevator apparatus a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and being so connected to said valve-controlling line as to move in the same direction as that part of said valve-controlling line which is directly acted upon by the operator and said auxiliary or supplemental line being provided with stops, a latch or lock for said stops, a door, and means coacting with said door for causing said latch or lock to engage said stops when the door is partially or entirely open.

14. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and constructed in the form of a chain, a latch or lock for said chain, a door, and means coacting with said door for causing the latch or lock to positively engage said chain when the door is partially or entirely open.

15. In an elevator apparatus, a flexible valve-controlling line provided with stops, a car, a latch or lock on the car for said stops, a door, and means coacting with and operated by said door for causing said latch or lock to engage said stops when the door is partially or entirely open.

16. In an elevator apparatus, a valve-controlling line provided with stops, a car, a movable latch or lock on the car for said stops, a door, and means coacting with and operated by said door for causing the latch or lock to move into engagement with said stops when the door is partially or entirely open, and to move out of engagement with said stops when the door is closed.

17. In an elevator apparatus, a flexible valve-controlling line provided with stops, a car, a latch or lock on the car for said stops, a corridor-door, and means coacting with and operated by said door for causing the latch or lock to engage said stops when the door is partially or entirely open.

18. In an elevator apparatus, a flexible valve-controlling line provided with stops, a car, a latch or lock on the car for said stops, means on the car for throwing the latch or lock into engagement with the said stops, a door, and means coacting with said door for holding the last-said means from operating to throw the latch or lock into engagement with the said stops except when the door is partially or entirely open.

19. In an elevator apparatus, a flexible valve-controlling line provided with stops, a car, a latch or lock on the car for said stops, means on the car for throwing the latch or lock into engagement with the said stops, a door, and means coacting with and operated by said door for holding the last-said means from operating to throw the latch or lock into engagement with the said stops except when the door is partially or entirely open.

20. In an elevator apparatus, a flexible valve-controlling line provided with stops, a car, a latch or lock on the car for said stops, means on the car for throwing the latch or lock into engagement with the said stops, a corridor-door, and means coacting with said door and holding the last-said means from operating to throw the latch or lock into engagement with the said stops except when the door is partially or entirely open.

21. In an elevator apparatus, a valve-controlling line constructed in the form of a chain, a car, a latch or lock on said car for said chain, a door, and means coacting with said door for causing said latch or lock to positively engage said chain when the door is partially or entirely open.

22. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the motor and being so connected to said valve-controlling line as to move in the same direction as that part of said valve-controlling line which is directly acted upon by the operator and said auxiliary or supplemental line being provided with stops, a car, a latch or lock on the car for said stops, a door, and means coacting with and operated by said door for causing said latch or lock to positively engage said stops and so lock the operative line against movement and the car against creeping when the car is stopped and the door partially or entirely open.

23. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor, and provided with stops, a car, a latch or lock on the car for said stops, a door, and means coacting with and operated by said door for causing said latch or lock to engage said stops when the door is partially or entirely open.

24. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and constructed in the form of a chain, a car, a latch or lock on the car for said chain, a door, and means coacting with and operated by said door for causing said latch or lock to engage said chain when the door is partially or entirely open.

25. In an elevator apparatus, a valve-controlling line part of which is provided with openings, a car, a latch or lock on the car movable relative to said car and adapted to enter and engage said openings, and so hold the car against movement after it is stopped, and means in the hatchway for operating said latch or lock.

26. In an elevator apparatus, a valve-controlling line part of which is constructed in the form of a chain with open links, a car, a latch or lock on the car adapted to enter and engage the links of said chain, and so hold the car against movement after it is stopped.

27. In an elevator apparatus, a valve controlling line part of which is constructed in the form of a chain with open links, a car, a

latch or lock on the car adapted to enter and engage the links of said chain, and so hold the car against movement after it is stopped, and a handle on the car for controlling said latch or lock.

28. In an elevator apparatus, a valve-controlling line part of which is constructed in the form of a chain with open links, a car, a latch or lock on the car adapted to enter and engage the links of said chain, and so hold the car against movement after it is stopped, and means upon the car for operating said latch or lock to engage the links of said chain to stop the car.

29. In an elevator apparatus, a valve-controlling line part of which is constructed in the form of a chain with open links, a car, a latch or lock on the car adapted to enter and engage the links of said chain, and so hold the car against movement after it is stopped, and means in the hatchway for operating said latch or lock.

30. In a elevator apparatus, a valve-controlling line provided with stops, a car, a latch or lock on the car movable relative to said car and adapted to engage said stops, and so hold the car against movement after it is stopped, means upon the car for controlling the latch or lock to cause the same to engage said stops to stop the car, and means coacting with the last-said means for preventing the operation of the same except at landings or other predetermined points.

31. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and provided with stops supported solely by said auxiliary or supplemental line, a car, a latch or lock on the car adapted to positively engage said stops, and so hold the car against movement after it is stopped.

32. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the movements of the motor and provided with stops supported solely by said auxiliary or supplemental line, a car, a latch or lock on the car adapted to positively engage said stops, and so hold the car against movement after it is stopped, and means upon the car for causing said latch or lock to engage said stops while the car is moving, and so bring said car to a state of rest.

33. In an elevator apparatus, a flexible valve-controlling line, an auxiliary or supplemental line also controlling the motor and being so connected to said valve-controlling line as to move in the same direction as that part of said valve-controlling line which is directly acted upon by the operator and said auxiliary or supplemental line being provided with stops supported solely by said auxiliary or supplemental line, a car, a latch or lock on the car adapted to positively engage said stops, and so hold the car against movement after it has stopped, whereby creeping is prevented.

34. In an elevator apparatus, a valve-controlling line, part of which is constructed in the form of a chain extending substantially the length of the elevator shaft or well, combined with latching or locking means to engage the links of the said chain to hold the line against movement after the car is stopped, and devices in the hatchway for operating said latching or locking means.

35. In an elevator apparatus, a valve controlling line, part of which is constructed in the form of a chain with open links, combined with latching or locking means to enter and engage the links of the said chain to hold the line against movement after the car is stopped, and means upon the car for controlling the latching or locking means to engage the same with the chain part of the line to stop the car.

36. In an elevator apparatus, a valve controlling line, part of which is constructed in the form of a chain extending substantially the length of the elevator shaft or well, combined with latching or locking means to engage the links of the said chain to hold the line against movement after the car is stopped, means within the car for controlling the latching or locking means to engage the same with the chain part of the line to stop the car, and means coacting with the last-said means whereby they may be operated only at landings or other predetermined points.

37. In an elevator apparatus, the combination of the valve-controlling line, an offset or auxiliary line connected therewith, and movable means under the control of the operative and mounted on the car for positively engaging the offset or auxiliary line

38. In an elevator apparatus, the combination with a valve-controlling line adapted to be shifted by the attendant, and an auxiliary line outside the car, of latching or locking means mounted on the outside of the car for engaging the auxiliary line when the car is stopped, and a door coacting with the said latching or locking means to cause it to engage the auxiliary line.

39. An elevator-car and its controlling-line, combined with latching or locking means for engaging the line to stop the car, a device on the car to actuate the said latching or locking means, and means for preventing the actuation of the said device until the car has reached a predetermined point in its travel.

40. An elevator-car and its controlling-line, combined with means for engaging the line to stop the car, a lever on the car to actuate the said means, a handle also on the car to move the said lever, and a rod provided with offsets at desired points to prevent the lever from being operated excepting when its free end shall have reached the offsets of the rod.

41. An elevator-car and its controlling-line provided with stops, combined with a latch to positively engage the said stops, a lever on the car to control the said latch, a handle also on the car to move the said lever, and a rod provided with offsets at desired points to prevent the said lever from being operated excepting when the free end thereof shall have reached the offsets of the rod.

42. An elevator-car, and its controlling-line provided with stops, combined with a door, a latch to positively engage the said stops, means coacting with the door to actuate the latch upon opening the same, and a handle on the car to operate the said latch when the door is closed.

43. An elevator-car, and its controlling-line provided with stops, combined with a door, a latch to positively engage the said stops, means coacting with the door to actuate the latch upon opening the same, a handle on the car to operate the said latch when the door is closed, and means for preventing the actuation of the said handle until the car has reached a predetermined point in its travel.

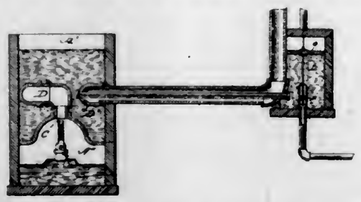
44. An elevator car, and a controlling-line under the control of the operative and connected with the motor, in combination with an auxiliary or supplemental line formed as a chain and connected with the motor, latching or locking means to engage the links of the said chain to stop the travel of the car, and means for operating said latching or locking means.

45. An elevator-car, and a controlling-line under the control of the operative and connected with the motor, in combination with an auxiliary line arranged parallel with the controlling-line and having its ends secured thereto, a latch on the car adapted to engage said auxiliary line to stop the car, and a handle under the control of the operative for operating said latch to stop the car and to prevent creeping of the same when it is stopped.

46. An elevator-car, and a controlling-line under the control of the operative and connected with the motor, in combination with an auxiliary line formed as a chain with open links and arranged parallel with the controlling-line and having its ends secured thereto, a latch on the car adapted to enter any one of the open links of the auxiliary line to stop the car, a handle, and devices for connecting said handle with the latch for operating said latch to stop the car and to prevent creeping of the same when it is stopped.

47. In an elevator apparatus, a valve-controlling line, an auxiliary or supplemental line also controlling the motor and provided with stops, a car, a latch or lock on the car movable relative to said car and adapted to engage said stops, and so hold the car against movement after it is stopped, means upon the car for controlling the latching or locking means to cause the same to engage said stops to stop the car, and means coacting with the last-said means for preventing the operation of the same except at landings or other predetermined points.

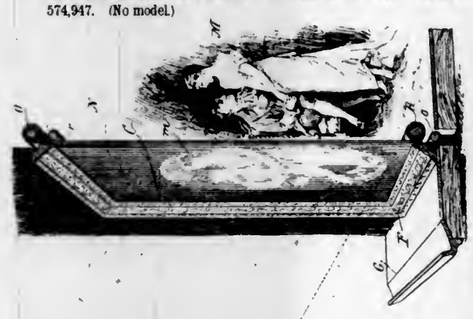
570,254. STOCK-WATERING TANK. ISAAC J. HARTFORD, Kirksville, Mo. Filed Dec. 19, 1895. Serial No. 572,650. (No model.)



Claim.—1. The herein-described stock-watering apparatus, consisting of the watering tank or trough having the division-wall, the heater below said wall, the heat-circulating pipes leading from the wall, the feed-pipe in one branch of the pipe, the supply-tank adjacent to the heat-pipe, and the inlet-pipe leading to the supply-tank and having a valve.

2. The herein-described stock-watering apparatus, consisting of the watering-tank, the horizontal division-wall in said tank having the central opening, the heater below the opening, the heat-circulating pipes leading from the opening of the wall around the tank, the feed-pipe leading to the tank and inclosing the heating-pipes, the supply-tank, the supply-pipe leading to said tank, the casing connected to said pipe and having a valve seat and guide, the valve in said casing having a cushion or packing, the stem connected to the valve having its lower end guided in the casing, the float connected to the upper end of the stem, the rod leading from the upper face of the float, the tube in which said rod is arranged and the set-screw for engaging said rod.

570,255. APPARATUS FOR PRODUCING TABLEAUX VIVANTS. MARION H. KERNER, New York, N. Y. Filed Jan. 10, 1896. Serial No. 574,947. (No model.)

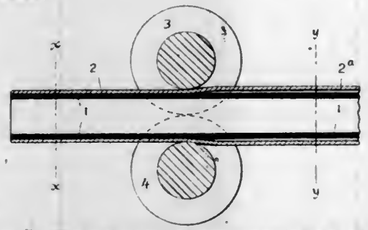


Claim.—1. An adjustable gauze curtain for intercepting direct vision in theatrical or stage effects, said curtain consisting of two or more sections of gauze fabric united into a continuous sheet, of respectively different colors calculated to vary the opacity thereof, and means for moving the curtain gradually and practically imperceptibly, substantially as described.

2. The combination of two sectional sheets of gauze located upon rollers in parallel planes at opposite sides of a frame or opening, corresponding sections of each curtain being of similar color and successive sections of both curtains being of a color effective to increase the opacity thereof, substantially as described.

3. The combination of two curtains located upon rollers and moving in parallel planes approaching from opposite sides of a frame or opening, the meeting edges of both curtains being notched or cut to form complementary parts of a gradually-contracting characteristic outline, serving to graduate a dissolving effect, substantially as described.

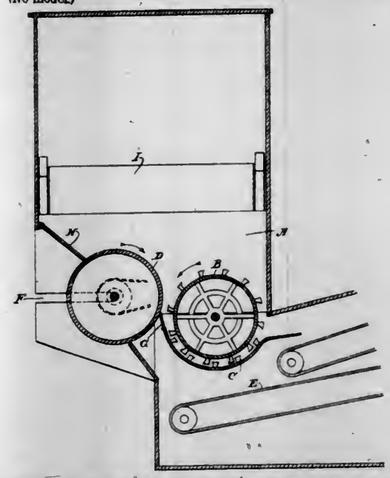
570,256. ART OF MAKING INTERIOR CONDUITS. ERWIN LAVENS, Brooklyn, N. Y. Filed Mar. 16, 1896. Serial No. 583,488. (No model.)



Claim.—1. The herein-described improvement in the art of making interior conduits, consisting in inserting a tubular lining formed of soft pliable and resilient insulating material within a protective armor, and then effecting close union of the armor and insulating-lining by drawing down or otherwise reducing the diameter of the external tube.

2. The herein-described improvement in the art of making interior conduits, consisting in inserting a tubular lining formed of soft pliable and resilient insulating material within a protective armor-tube, and then effecting close union of the armor and insulating-lining, by externally compressing the armor.

570,257. FEEDER FOR THRESHING-MACHINES. JOHN W. LIVERMORE, Kingsburg, Cal. Filed Mar. 16, 1896. Serial No. 583,305. (No model.)



Claim.—1. A feed apparatus for threshing-machines, consisting of a smooth-faced cylinder journaled in front of the threshing-cylinder, with means for rotating it, a feeder-belt adapted to deliver the straw above the feed and threshing cylinders, an inclosed box or house within which the two cylinders rotate and within which the discharge end of the feeder-belt is contained, a flexible plate extending from the front end of the threshing-concave and forming contact with the periphery of the feed-cylinder, a corresponding inclined plate extending from the front side of the feeder-house and forming contact with the upper front portion of the feed cylinder.

2. In a threshing-machine, a threshing cylinder and concave, a smooth-faced feed-cylinder adapted to rotate in front of the threshing-cylinder, a feeder-belt, the discharge end of which is situated above the two cylinders, flexible contact-plates extending from the edge of the threshing-concave to the face of the feed-cylinder on one side, and from the side of the inclosing box to the feed-cylinder surface upon the opposite side, horizontal slots or channels within which the journal-boxes of the feed-cylinder are movable to adjust it to or from the threshing-cylinder.

570,258. FIRE AND BURGLAR ALARM. BENJAMIN J. LOWMAN, Bridgeport, Ala., assignor to himself and Edward L. C. Ward, same place. Filed Dec. 27, 1894. Serial No. 533,089. (No model.)



Claim.—1. The combination of a push-button, a supplemental or second push-button adapted to engage with the first named button, said supplemental button being adapted to be moved independently of the other button, and a spring arranged to hold the two buttons out of engagement with one another and adapted to permit the operation of the supplemental button, substantially as set forth.

2. The combination of a push-button, a supplemental or second push-button adapted to engage the first-named button, said supplemental button being adapted to be moved independently of the other button, and a spring arranged to hold the two buttons out of engagement with one another and adapted to permit the operation of the supplemental button, substantially as set forth.

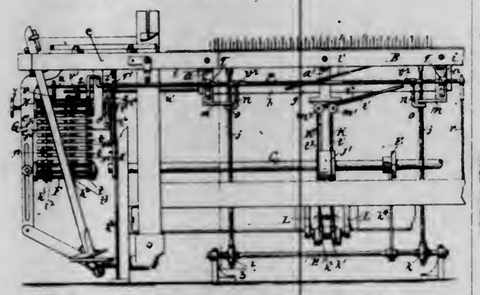
3. The combination, with the push-button, of a second button adapted to engage the push-button, a spring encircling the shank or pin of the second button and adapted to press it against the push-button, and a fusible wire extending from the free end of the spring to suitable supports, substantially as described.

4. The combination, with the push-button, of a striking-pin forming a second button to engage the push-button, the pin having a collar thereon, a spring having its free end adapted to engage the collar, and

a fusible wire connected with the free end of the spring and extending outward over a suitable guide, substantially as described.

5. The combination, with the push-button, of a second button having an inwardly-extending pin or shank to engage the push-button, a spring fastened at one end to a support and having its free end encircling the pin, a fusible wire connected with the spring to hold it out of engagement with a collar on the pin, and a casing covering the apparatus and provided with a hole for the second button, substantially as described.

570,259. LAPPET-LOOM. JAMES R. MACCOLL, Pawtucket, R. I. Filed Oct. 9, 1894. Serial No. 525,425. (No model.)



Claim.—1. In a pattern-chain for lappet-looms, the combination of the bar-links, with adjustable pattern screws or pins, the varying positions of which relatively to the bar-links govern the form and position of the lappet-pattern, substantially as described.

2. In a pattern-chain for lappet-looms, the combination of the bar-links, with screws or pins adjustable longitudinally of said bar-links to form the pattern, and screw-pins arranged at right angles to the said bar-links, to govern the lifting of the needles, substantially as described.

3. In a lappet-loom, the combination of the front needle-bar, and the attached needles, with the row of shuttle-guide pins arranged between and slightly in front of the line of the needles, substantially as described.

4. In a lappet-loom, the combination of a pattern-chain, with a needle-bar, an intermediate connection between the needle-bar and pattern-chain, means for holding the intermediate connection against the pattern-chain and means for withdrawing said holding means, from its action upon the intermediate connection, preparatory to the forward movement of the pattern-chain, substantially as described.

5. In a lappet-loom, the combination of a pattern-chain, with a needle-bar, a cam connected with the needle-bar and bearing against the pattern-chain, means for holding the cam against the pattern-chain, and means for withdrawing said holding means from its action upon the cam, preparatory to the forward movement of the pattern-chain, substantially as described.

6. In a lappet-loom, the combination of a needle-bar, and pattern-chain mechanism, with intermediate engaging mechanism for causing the desired movement of the needles into the shed, the pattern-chain mechanism being adapted to govern the longitudinal position of the needle-bar, and control the operative connection of the needle-bar with the engaging mechanism, whereby the said engaging mechanism may be caused to remain inoperative at any desired point in the pattern, substantially as described.

7. In a lappet-loom, the combination of the needle-bar, with the lifting-rod for raising the needle-bar, the cam for vertically operating the lifting-rod, and the pattern-chain operatively connected with the lifting-rod to cause the engagement or disengagement with the needle-bar, substantially as described.

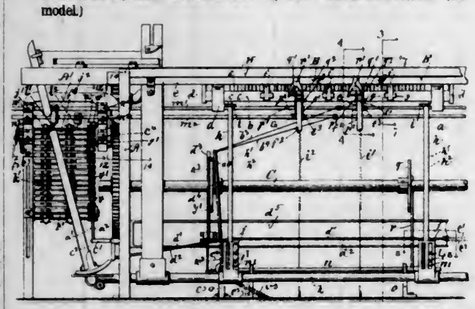
8. In a lappet-loom, the combination of a pattern-chain with the needle-bar, and the needle-bar frame, spring means for forcing the end of the needle-bar against the needle-bar frame, to prevent backlash, the connections intermediate of the needle-bar frame, and the pattern-chain, and yielding pressure means for holding the intermediate connections against the pattern-chain, substantially as described.

9. In a lappet-loom, the combination of the lay, with the sprocket-roll having its axis directed lengthwise of the lay, the pattern-chain upon the sprocket-roll, the ratchet-wheel for actuating the sprocket-roll, and the pawl provided with a yielding end piece adapted to impart a progressive forward movement to the pattern-chain, substantially as described.

10. In a lappet loom, the combination of a needle-bar, and a vibrating lever for causing the movement of the needles into the shed, with pattern-chain mechanism adapted to govern the longitudinal position of the needle-bar and control the operative connection of the needle-bar with the vibrating lever, and a bar provided with the shuttle-guide pins, arranged in continuous operative connection with said lever, substantially as described.

11. In a lappet loom, the combination of a needle-bar frame connected with the lay, and adapted for movement longitudinally of the lay, with a needle-bar adapted for sliding up and-down movement in the guides of the needle bar frame, pattern-chain mechanism for imparting direct movement to the needle-bar and frame in one direction longitudinally of the lay, reacting means for imparting movement to the needle-bar and frame in the opposite direction, and engaging means controlled by the pattern-chain mechanism for causing the desired movement of the needle-bar for carrying the needles into the shed, substantially as described.

570,260. LAPPET-LOOM. JAMES R. MACCOLL, Pawtucket, R. I. Filed June 25, 1895. Renewed Mar. 14, 1896. Serial No. 583,265. (No model.)



Claim.—1. In a lappet-loom, the combination of the lay and the needle bar carried by the lay, with the pattern pins or projections and the engaging rod held independently of the lay, and a sliding connection between the needle-bar and the engaging rod, substantially as described.

2. In a lappet-loom, the combination of the lay, and the needle-bar carried by the lay, with the pattern pins or projections and the engaging rod held independently of the lay, means for holding the engaging rod against the pattern pins or projections and a sliding connection between the needle-bar and the engaging rod, substantially as described.

3. In a lappet-loom, the combination of the lay, and the needle-bar carried by the lay, with the pattern pins or projections and the engaging rod held independently of the lay, means for holding the engaging rod against the pattern projections, a sliding connection between the needle-bar and the engaging rod, and means for preventing backlash at the sliding connection, substantially as described.

4. In a lappet-loom, the combination of the lay, the needle-bar, and the lifting-rods carried by the lay, with the lifting-arms, and means independent of the lay, for causing the proper engagement and disengagement of the lifting-rods with the lifting-arms, substantially as described.

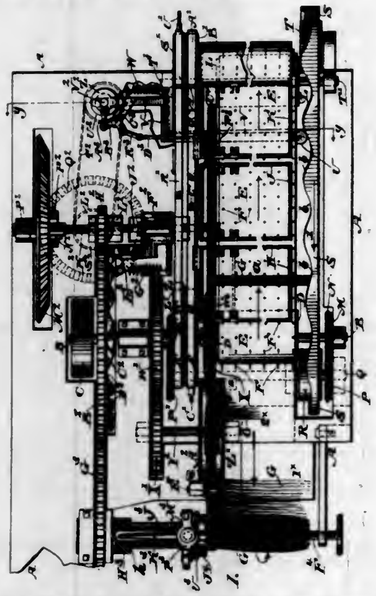
570,261. BRUSH-MACHINE. JOSEPH F. MUMFORD, Camden, N. J. Filed Aug. 10, 1895. Serial No. 558,875. (No model.)

Claim.—1. In a machine for manufacturing brushes a suitable frame, an endless apron, means for actuating the same, projections on said apron, a hopper located above the latter, a series of gates in the lower portion of said hopper, and means for automatically opening and closing the same, substantially as described.

2. In a machine for manufacturing brushes a suitable frame, an endless apron, means for actuating the same, pins or projections thereon, a hopper located above said apron, and adapted to receive bristles or brush-stock, a series of movable plates in the lower portion of said hopper, levers attached to said plates, connections from the levers to an arm or bar pivotally mounted, and means for opening and closing said gates alternately, the same consisting of traveling aprons moving in opposite directions, and having projections thereon adapted to contact at proper intervals with the gate actuating mechanism, substantially as described.

3. In a machine for manufacturing brushes a suitable frame, an endless apron E, means for actuating the same, projections F thereon, a hopper above said apron, gates K in the lower portion thereof, rods H′ attached to said gates, a bar G attached to said rods and suitably guided and supported, and a bar D′ having connections to said bar G, in combination with endless aprons R′ and A′ adapted to actuate said bar D′ at proper intervals and means for actuating said aprons, substantially as described.

4. In a machine for manufacturing brushes a suitable frame, an endless apron, means for actuating the same, a series of warp-threads, means for feeding bristles or brush stock upon said apron, and between said warp-threads, means for stitching the latter transversely to the line of movement thereof, and means for applying adhesive material to the web thus formed, substantially as described



5. In a machine for manufacturing brushes a suitable frame, an endless apron, a series of warp threads, means for feeding brush-stock upon said apron between said warp threads, means for stitching the latter transversely, and means for cutting off the outer ends of said brush-stock adjacent said warp-threads, substantially as described.

6. In a machine for manufacturing brushes a suitable frame, an endless apron, means for feeding bristles or brush-stock therenpon, a beater for causing the ends of the same to assume a wavy or corrugated outline and means for actuating said beater, substantially as described.

7. In a machine of the character described a suitable frame, an endless apron, mechanism for actuating the same, a series of warp-threads between which bristles or brush-stock is adapted to be fed, a beater for causing the extremities of such brush-stock to assume a wavy or corrugated outline, and means for stitching said warp-threads transversely to their line of movement and for actuating said beater, substantially as described.

8. In a machine for manufacturing brushes a frame or housing, an endless apron suitably actuated and supported, a series of warp-threads, mechanism for feeding brush-stock therebetween, means for stitching said warp threads transversely to their line of movement, and means for supplying adhesive material thereto, substantially as described.

9. In a machine for manufacturing brushes a suitable frame, an endless apron, and a corrugated endless belt adjacent thereto, in combination with a beater, and actuating mechanism for the above parts, substantially as described.

10. In a machine for manufacturing brushes a suitable frame, a series of warp-threads, means for inserting the bristles or brush-stock therebetween, a sewing-machine mounted adjacent thereto, and means for imparting a reciprocating motion to said sewing-machine, substantially as described.

11. In a machine for manufacturing brushes, means for supporting a brush-handle, a bar mounted adjacent thereto, jaws pivoted to said bar, and means for causing said jaws to approach and recede from each other, the meeting ends of said jaws being recessed, substantially as described.

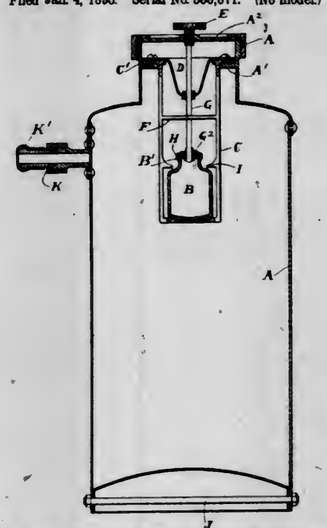
12. In a machine for manufacturing brushes the brush-holding device consisting of a ring M^3, a threaded screw passing through the lower portion thereof, a bar P^3 fulcrumed to a suitable portion of said ring, the threaded screw passing through said bar, but out of engagement with said ring, and a catch-dog common to said ring and bar, and means for holding the same in position, substantially as described.

13. In a machine for manufacturing brushes, a supporting-frame, a series of threads or warps, means for feeding bristles or brush-stock therebetween, in combination with means for stitching transversely to said warps, means for cutting off the butt of the brush-stock, and means for applying size or adhesive material thereto, substantially as described.

14. In a machine of the character described, a suitable frame or housing, a series of warp threads, means for actuating the same, means for inserting brush-stock therebetween, a sewing-machine, mechanism for imparting a reciprocating motion thereto, in combination with means for applying size to the web thus formed, and means for wrapping said web around the brush-handle, substantially as described.

15. A machine for manufacturing brushes, a frame having warp-threads suitably supported and actuated, means for inserting brush-stock therebetween, means for causing the same to be retained in position, and means for wrapping the same about the handle of a brush, substantially as described.

570,262. FIRE-EXTINGUISHER. MARCELLA R. OGDEN, Newark, N. J. Filed Jan. 4, 1895. Serial No. 533,871. (No model.)



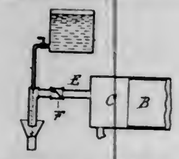
Claim.—1. In a fire-extinguisher, the combination of a receptacle as A, provided with a contracted neck, and a removable cover, of a frame supported therein, by means of an annular inwardly-directed flange located in the neck of the receptacle, said frame comprising a bottom portion and vertical side bars, having inwardly-directed shoulders or projections, formed therein, an acid-receiver supported in said frame, and adapted to be closed by a cap or valve, as H; a vertically-adjustable rod, passing through the removable cap or cover of the receptacle, and through the cap or valve of the acid-receiver, said vertically-adjustable rod being also passed through a flexible expansive rubber hollow flexible diaphragm, the apex of which is directed downward, and the base of which is directed upward, and provided with an annular flange or rim which is secured in position above the annular flange formed in the neck of the receptacle, so as to close said neck, substantially as shown and described.

2. In a fire-extinguisher, the combination of a receptacle as A, provided with a contracted neck, and a removable cover, of a frame supported therein, by means of an annular, inwardly-directed flange located in the neck of the receptacle, said frame comprising a bottom portion and vertical side bars, having inwardly-directed shoulders or projections, formed therein, an acid-receiver supported in said frame and adapted to be closed by a cap or valve as H, a vertically-adjustable rod, passing through the removable cap or cover of the receptacle, and through the cap or valve of the acid-receiver, said vertically-adjustable rod being also passed through a flexible expansive rubber hollow flexible diaphragm, the apex of which is directed downward, and the base of which is directed upward, and provided with an annular flange or rim which is secured in position above the annular flange formed in the neck, said receptacle being also provided with a discharge-orifice, and with a handle, substantially as shown and described.

570,263. COMBINED GAS AND STEAM ENGINE. RANSOM E. OLDS, Lansing, Mich. Filed Aug. 13, 1895. Serial No. 559,160. (No model.)

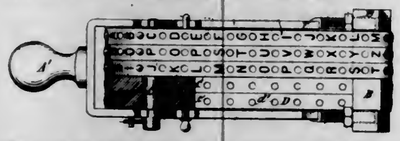
Claim.—1. In combination with a cylinder of a gas engine, an attachment comprising an induction pipe provided with a check-valve

and leading into the cylinder, a vertically-disposed offset-pipe out of which the induction pipe leads and having an air-opening therein, means for discharging a liquid into the vertical pipe from a point above the plane of the induction-pipe, and an overflow-pipe below the offset-pipe, substantially as described.



2. In a gas-engine, the combination with a cyliuder, its piston, and a gas supply leading to the cylinder, of an induction-pipe leading into the cylinder, a valve therein, a vertical pipe with which the induction-pipe communicates, having an opening for the admission of air, and means for introducing a liquid into the vertical pipe comprising a pipe of a diameter at its discharge less than that of the vertical pipe.

570,264. HAND-STAMP. JOHN C. OTTESON, Brooklyn, N. Y. Filed June 27, 1896. Serial No. 597,222. (No model.)



Claim.—1. In a hand-stamp, the combination with a frame of a series of disks or rollers and type-bands passing around the same and over an impression-surface forming part of the frame, means for adjusting the length of the frame between the rollers and the impression-surface, and a shaft with eccentric bearings on which said rollers are mounted, whereby the tension of the printing-bands is regulated by two independent adjustments, as set forth.

2. In a hand-stamp, a series of parallel endless type bands in combination with a frame supporting disks therein and a stationary impression-surface around which the said bands pass, the frame adjacent to the impression-surface being formed with paths for said bands on different levels, the higher paths being formed or provided with flanges or guides to retain the bands in alinement, and serving themselves as guides or flanges for the paths on lower levels, as and for the purpose set forth.

3. The combination with the series of disks or rollers, the type-bands passing around the same and over the impression-surface, of a shaft for said rollers with eccentric bearings, and a pin or stop in position to engage with an arm on said shaft and prevent the same from rotating during the movement of the bands, as set forth.

4. The combination in a hand-stamp of a series of disks or rollers for supporting and moving the type-bands, the said rollers being normally in engagement, whereby the rotation of one rotates all in the series, and a key or separator for separating or disengaging any one or more of the rollers from the others of the series, as set forth.

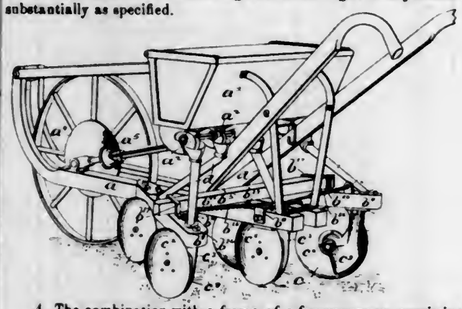
5. The combination in a hand-stamp of a series of disks or rollers for supporting and moving the type-bands, the disks being formed with radial grooves on one side and projections on the other and held normally in engagement by spring action, and a key or separator adapted to be inserted into any of said grooves and when turned to disengage the contiguous disks between which it is placed, as set forth.

570,265. SEEDING-MACHINE. FRANK R. PACKHAM, Springfield, Ohio, assignor to the Superior Drill Company, same place. Filed July 1, 1896. Serial No. 597,737. (No model.)

Claim.—1. In a seeding-machine, a frame having adjustable wings or frame-pieces, furrow-openers secured to said frame-pieces, each of said furrow-openers consisting essentially of a conduit and a sleeve-support on which is journaled a rotating disk, said conduit being connected to said frame so as to be adjustable thereon to change the angle of said furrow-opening disk to compensate for the adjustment of said frame or wing, substantially as specified.

2. In a seeding-machine, the combination with the frame having an adjustable wing or support, and a furrow-opener having a hollow tubular portion forming a seed-conduit, and means for securing said furrow-opener to said wing in line with an opening or perforation through said wing, and adjustable connections between said furrow-opener and said wing or support which will permit an axial adjustment of said furrow-opener about said hollow or tubular portion, substantially as specified.

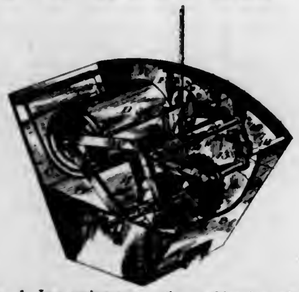
3. The combination with a main frame and a pivoted wing, a furrow-opener consisting essentially of a supporting-conduit fitted to said wing, an angularly-arranged disk on said conduit, and means for connecting said conduit to said wing in different angles of adjustment, substantially as specified.



4. The combination with a frame, of a furrow-opener consisting of a conduit formed integral with a sleeve, and rotating disk journaled to said sleeve, a tubular portion on said conduit journaled in a suitable opening in the supporting-frame, and means for securing said conduit in different positions of adjustment about said tubular portion, substantially as specified.

5. The combination with a main frame and side wings, the adjustable supporting-conduits having the furrow-opening disks thereon secured to said side wings, and the adjustable yielding connections between said side wings and the main frame, substantially as specified.

570,266. SPRING-MOTOR. GEORGE W. PARKER, Bainbridge, N. Y. Filed Mar. 4, 1896. Serial No. 581,826. (No model.)



Claim.—1. In a spring-motor, the combination, with a bicycle, of a spring-actuated driving wheel, a two-part shaft carrying a gear-wheel on the outer end of each respective part, said gear-wheels meshing respectively with the driving-wheel and with a gear-wheel on the bicycle, a bevel gear-wheel secured on the inner end of each part of said shaft, a bevel-pinion meshing with the bevel gear-wheels and causing the respective parts of the shaft to be revolved in opposite directions, said bevel-pinion being adapted to be thrown out of mesh with the bevel gear-wheels, and means for automatically locking the two parts of the shaft together during the unwinding of the spring.

2. In a spring-motor, the combination, with a bicycle, of a fixed frame, a swinging frame pivotally secured in the fixed frame, a spring-actuated driving-wheel mounted in the swinging frame, a two-part shaft mounted in the swinging frame, one part of said shaft carrying a gear-wheel which meshes with the driving-wheel, the other part carrying a wheel adapted on movement of the swinging frame to mesh with a gear-wheel on the bicycle, and means for causing the two parts of the shaft to be revolved in opposite directions while the spring is being wound and in the same direction during the unwinding of the spring.

3. In a spring-motor, the combination, with a bicycle, of a fixed frame, a swinging frame pivotally secured in the fixed frame, a two-part shaft mounted in the swinging frame, mechanism for driving the respective parts of said shaft in opposite directions, said mechanism being adapted to be thrown out of operation, and means for automatically locking the two parts of the shaft together when said mechanism is out of operation.

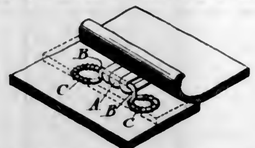
4. In a spring-motor, the combination, with a bicycle, of a fixed frame, a swinging frame, a shaft rigid in the swinging frame and loosely mounted in the fixed frame, a sleeve loose on said shaft and carrying a driving-wheel on its outer end, a mainspring secured to said sleeve and to the fixed frame, a two-part shaft mounted in the swinging frame and carrying gear-wheels meshing respectively with

the driving-wheel and with a gear-wheel on the bicycle, bevel-gearing for causing the respective parts of said two-part shaft to be revolved in opposite directions while the mainspring is being wound, ratchet-and-pawl mechanism for locking the two parts of the shaft together during the unwinding of the spring, and means for automatically registering the number of coils in which said spring is wound.

5. In a spring-motor, the combination, with a bicycle, of a fixed frame, a swinging frame, a shaft rigid in the swinging frame and loosely mounted in the fixed frame, a sleeve loose on said shaft and carrying a driving-wheel on one end, a mainspring secured to said sleeve and to the fixed frame, a two-part shaft mounted in the swinging frame and carrying gear-wheels meshing respectively with the driving-wheel and with a gear-wheel on the bicycle, bevel-gearing for causing the respective parts of said two-part shaft to be revolved in opposite directions while the mainspring is being wound, ratchet-and-pawl mechanism for locking the two parts of the shaft together during the unwinding of the spring, a shaft journaled in the swinging frame and carrying an indicator-wheel provided on its periphery with a series of consecutive numerals, and means for operating said indicator-wheel to register the number of coils in which said mainspring is wound.

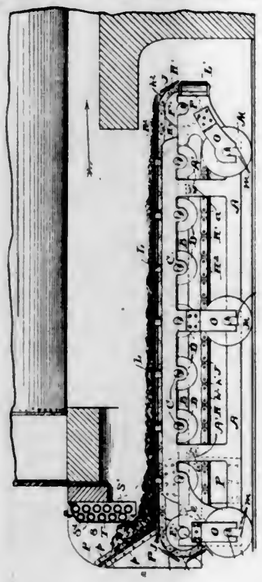
6. In a spring-motor, the combination, with a bicycle, a mainspring, a driving-wheel, a two-part shaft carrying gear-wheels meshing respectively with the driving wheel and with a gear-wheel on the bicycle, mechanism for causing the respective parts of the shaft to be driven in opposite directions while the spring is being wound, and means for automatically throwing said mechanism out of operation, whereby the mainspring is prevented from being wound beyond a predetermined tension.

570,267. FASTENING FOR GARMENTS. WALTER F. PEET, Philadelphia, Pa. Filed Nov. 27, 1893. Serial No. 492,107. (No model.)



Claim.—In a garment-fastener, an eye member constructed of a cross-bar, depending legs on the ends thereof, and a single eye on the base of each leg, the bodies of the two eyes being wholly outside of the space between said legs, and the termini of said eyes facing the bases of the legs in opposite directions, the parts named being combined substantially as described.

570,268. MECHANICAL-STOKER FURNACE. GEORGE PLAYFORD, Jr., Cleveland, Ohio. Filed Mar. 30, 1896. Serial No. 585,375. (No model.)



Claim.—1. A mechanical-stoker furnace comprising two or more endless-chain grate-carriers operated by suitably-driven sprocket-wheels, said chains being composed of alternate one-piece and two-piece links, said links provided, at their upper ends or faces with upwardly-extending ledges, the one-piece links connected to and supporting the grate-bars, and the two-piece links having apertures for the teeth of the sprocket-wheel, substantially as and for the purpose shown and described.

2. In a mechanical-stoker furnace, the combination with the frame supporting the operative mechanism, of two or more endless chains carrying grate-bars, and vertical guide-rollers located along the full length of said frame and adapted to engage the outer ends of the grate-bars and keep them in line, substantially as and for the purpose shown and described.

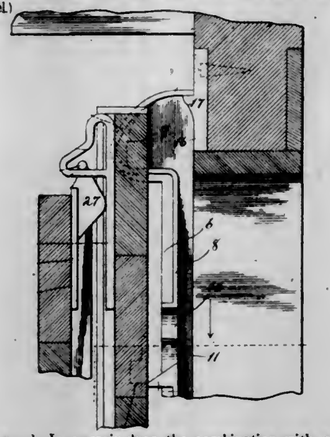
3. In a mechanical-stoker furnace, the combination with a single-piece link provided with a central opening and upwardly-projecting lugs at either side of said opening, of a grate-bar provided at its end with a projecting lug adapted to enter the opening in the single-piece link, and means, such as a pin, for securing the lug therein, substantially as shown and described.

4. In a mechanical-stoker furnace, the combination with a frame and its traveling grate, of trucks located outside of said frame and mounted upon short axles, the outer end of said axles being located or journaled in open bearings, substantially such as described whereby said trucks may be easily removed, substantially as and for the purpose shown and described.

5. In a mechanical-stoker furnace, the combination with the supporting-frame and endless traveling grate, of the vertical guide-rollers located at the rear end of the frame and acting to guide the grate-bars as they descend around the rear wheel, substantially as and for the purpose shown and described.

6. In a mechanical stoker furnace, the combination with the hopper of the same, of a gate comprising two headers and a series of tubes communicating with said headers, and an apron covering the front of said gate, all operating substantially as and for the purpose shown and described.

570,269. GRAIN-DOOR. HERMAN PRIES and JOHN W. MEYER, Michigan City, Ind. Filed June 29, 1896. Serial No. 597,451. (No model.)



Claim.—1. In a grain-door, the combination with guides provided with interior outwardly extending channels provided with pockets at their upper ends and recesses below said pockets, of a plate adapted to be secured to the door and provided with guide-lugs adapted to enter said guides, projections on the ends of said guide-lugs adapted to enter said channels in said guides, projections in said pockets adapted to engage the uppermost of said guide lugs and cause the same to enter said pockets and at the same time cause the lowermost of said guide-lugs to leave said guides through said recesses.

2. In a grain-door, the combination with a door provided with guide-lugs provided with projections at their ends, of guides secured to the door-posts and provided with interior channels adapted to receive said projections on said lugs, pockets at the upper end of said guides adapted to receive the uppermost of said guide-lugs, recesses in said guides, and inclined outwardly and downwardly extending flanges at the lower ends of said recesses, the lowermost lugs being adapted to leave said guides through said recesses and abut against said flanges to prevent their reentering the same until desired.

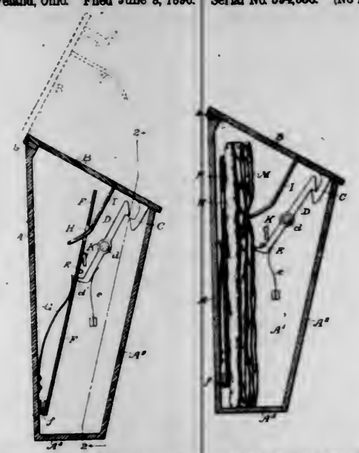
3. In a grain-door, a hinge between the main and auxiliary doors comprising a member having a projection provided with pivot-lugs at

its ends and a member having a bifurcated end provided with loops adapted to receive said pivot-lugs, said loops having a portion in which said lugs are longitudinally movable and a portion in which said lugs are longitudinally and transversely movable whereby said auxiliary door is enabled to make a grain-tight joint with said main door when in use and to lie flat upon said main door when not in use.

4. In a grain-door, a hinge between the main and auxiliary doors comprising a member having a projection provided with pivot-lugs at its ends, and a member provided with loops adapted to receive said pivot-lugs, said lugs being transversely and longitudinally movable in said loops in one position thereof and longitudinally movable only in another position thereof whereby said auxiliary door is enabled to make a grain-tight joint with said main door when in use and to lie flat upon said main door when not in use.

5. In a grain-door, a hinge comprising a member having a bifurcated end and loops on said end, said recess in said end being enlarged to permit the insertion of the end of a projection on the other member of said hinge, and lugs on said projection on said other member, adapted to enter said loops through said enlarged portion of said recess.

570,270. MAIL-BOX. HERMAN J. RICHNER and JOHN L. FONTAINE, Cleveland, Ohio. Filed June 8, 1896. Serial No. 594,638. (No model.)



Claim.—1. A mail box, having an opening for the insertion of mail matter, a lid or door to close said opening, a locking mechanism to engage and lock the door, a movable partition in the box, independent of but normally bearing against the locking mechanism to hold said mechanism out of engagement with the lid, until mail-matter which is inserted in the box rests upon or against said partition and forces it out of contact with the locking mechanism which is thereby released and left free to engage the door when it is closed.

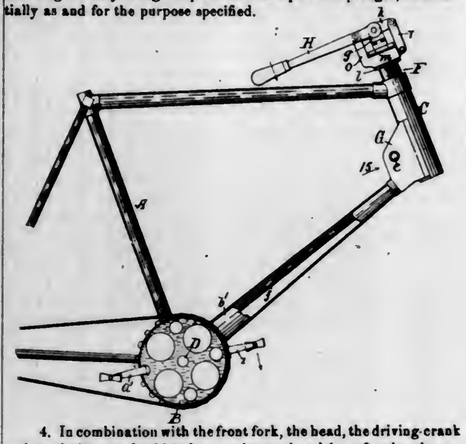
2. A mail-box, having an opening for the insertion of mail-matter, a lid or door to close said opening, locking mechanism to engage and secure the door when it is closed, a movable partition in the box spring-pressed against the locking mechanism to hold said locking mechanism out of engagement with the door, an aperture or slot in the movable partition, and a projection from the door the path of which lies through the slot in the partition, which slot is closed by the presence of mail-matter so that the closing of the door when mail-matter is in the box forces back the partition and releases the locking mechanism so that it may engage and lock the door.

570,271. BICYCLE. GEORGE H. SEARS, Rochester, N. Y., assignor of one-half to George Hahn, same place. Filed Jan. 18, 1896. Serial No. 576,007. (No model.)

Claim.—1. In combination with the frame of a bicycle, the head of which is hollow, and one of the parts, *b'* is also hollow and taperingly enlarged, of a crank shaft, a pitman within the enlarged part, a reciprocating driver within the head, and a connector between the driver and the pitman, substantially as set forth.

2. In combination with the handle-bars and the axle of a bicycle, a driving-plunger for the axle, held by the head of the bicycle, and connectors for the plunger and the axle and the handle-bars respectively, the latter being adapted to move simultaneously in opposite directions, one of the handles operating as a lever of the first class, and the other one as a lever of the second class substantially as specified.

3. In combination with the handle-bars and the axle of a bicycle, a driving-plunger for the axle, held by the head of the bicycle, and connectors for the plunger and the axle, and a ring or body on the plunger, and connectors for said ring or body and the handle-bars, said ring or body being adapted to turn upon the plunger, substantially as and for the purpose specified.



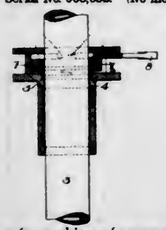
4. In combination with the front fork, the head, the driving-crank axle and pitman of a bicycle, a reciprocating driver for the pitman, in said head, and a centering-piece for the fork, held by the head, occupying openings in said pitman-driver, substantially as described.

5. In combination with the head of a bicycle provided with a housing, a crank-axle pitman, and a reciprocating driver therefor held by the frame, a bell-crank within the housing connecting said driver and the pitman, and means to operate the driver, and a swivel part for the bell-crank, substantially as shown and described.

6. In combination with the head, the handle-bars and the crank-axle of a bicycle, a reciprocating driver for said axle, held by the head, and connectors for said driver and the axle, and a ring or part adapted to turn upon the driver, crank-arms actuated by the handle-bars, a rigid standard and a pivoted standard connecting said crank-arms respectively with said ring, substantially as and for the purpose specified.

7. In combination with the head, the handle-bars and the crank-axle of a bicycle, a reciprocating driver for said axle, held by the head, and connectors for said driver and the axle, and a ring or part adapted to turn upon the driver, crank arms actuated by the handle-bars, a rigid standard and a pivoted standard connecting said crank-arms respectively with said ring, and swivel-jaws or parts between said standards and the crank-arms, substantially as set forth.

570,272. FURNACE-VALVE. RICHARD STEVENS, Braddock, Pa. Filed Apr. 17, 1896. Serial No. 588,052. (No model.)



Claim.—1. As means for packing a furnace valve stem, the combination with the hot-gas-valve stem of a surrounding packing-ring, a follower or gland adapted to be moved to compress the same tightly and to clamp the stem, and adapted also to be moved in a reverse direction to loosen the packing and release the stem, and means for so moving the gland or follower at each motion of the stem; substantially as described.

2. As means for packing a furnace-valve stem, the combination with the hot-gas valve stem of a surrounding packing-ring, a follower or gland adapted to be moved to compress the same tightly and to clamp the stem, and adapted also to be moved in a reverse direction to loosen the packing and release the stem, and mechanism extending to the position of the operator of the furnace-valve; substantially as described.

3. As means for packing a furnace-valve stem, a surrounding metallic packing-ring, a rotatory follower or gland adapted to compress the same, and a projecting arm for turning the follower or gland; substantially as described.

4. The combination with the valve-stem, of a bushing through which it passes a concave seat at the end of the bushing, a packing-ring, a rotatory follower or gland on the bushing bearing on the ring, and a cap-ring fixed to the bushing and bearing on the follower or gland; substantially as described.

570,273. NON-REFILLABLE BOTTLE. JOSEPH S. WOOD, Sr., Brooklyn, N. Y. Filed Feb. 11, 1896. Serial No. 578,960. (No model.)



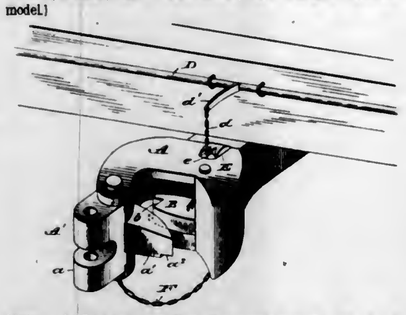
Claim.—1. The combination with a bottle having an interior annular valve-seat and an annular channel above the same, of a cup-valve having a closed bottom and orifices in its cylindrical wall, and means extending through the orifices into said channel for retaining said valve in the neck of the bottle, but permitting it to slide outward and inward therein, substantially as described.

2. The combination with a bottle having an interior annular valve-seat and an annular channel above said seat, of a cup valve having orifices in its cylindrical wall and springs projecting through said orifices into said channel for holding said cup in the neck and permitting it to move back and forth above its seat, substantially as described.

3. The combination with a bottle having an interior annular valve-seat and an annular channel above said seat, of a cup-valve having orifices in its cylindrical wall and springs secured to the wall of said cup, and having outwardly-bent ends projecting through said orifices into the channel, substantially as and for the purpose described.

4. In combination with a bottle having an interior annular valve-seat and an annular channel in the body of the bottle above said seat, of a cup-valve having orifices in its wall, means extending through the orifices into said channel for retaining the valve in the neck, but permitting it to slide outward or inward and an interior tube adapted to slide in said cup, substantially as described.

570,274. CAR-COUPLING. ELRA A. YOCUM and MORTIMORE O. NICHOLS, Mendon, Ohio. Filed June 30, 1896. Serial No. 597,582. (No model.)

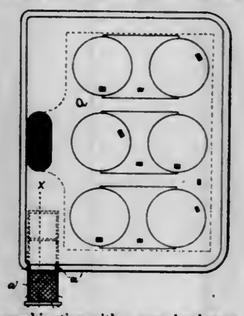


Claim.—1. In a car coupling, the combination with the draw-heads each having a locking catch and operating-chain extending therefrom, of a plate having V-shaped recesses the edges of which are beveled or sharpened, and chains F carried by the draw-heads, said chains being adapted to support the draw-heads against vertical movement upon each other, substantially as shown and for the purpose set forth.

2. In a car coupling, the combination, of the draw-head carrying a swinging head and having an opening in its top, a plate provided with cutting edges which partially overlie said opening, a locking-catch adapted to engage the swinging head, and a chain attached to the locking-catch and passed through the opening in the top of the draw-head to operating means; together with means for supporting the coupled draw-heads against excessive vertical movement upon each other, substantially as shown and for the purpose set forth.

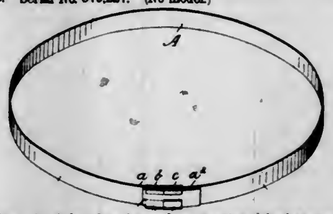
3. In a car-coupling, the combination with the draw-heads A, of a locking-catch recessed to present a shoulder *b*, a swinging head composed in part of a coupling-arm adapted to be engaged by said shoulder, an operating-chain attached to the locking-catch, and a plate having sharpened edges which engage the operating-chain; together with chains F carried by the draw-heads, said chains being adapted to support the draw-heads against vertical movement upon each other, substantially as shown and for the purpose set forth.

570,275. UTENSIL-RECEPTACLE FOR STOVES. ELIAS M. BREWSTER, Norwich, Conn. Filed Jan. 17, 1896. Serial No. 575,920. (No model.)



Claim.—In combination with a stove having an overhanging top plate provided with perforations *a'* substantially as set forth, a drawer having longitudinal side rods fitted to slide in said perforations, all being substantially as and for the purpose specified.

570,276. METAL BAND FOR SECTIONAL JACKETS OR STEAM-PIPE COVERINGS. WILLIAM C. BULL, Camden, N. J., assignor to William A. Macan and Robert W. Lysle, Philadelphia, Pa. Filed Feb. 14, 1896. Serial No. 579,227. (No model.)



Claim.—1. A band or hoop for a sectional jacket or steam-pipe covering, consisting of a single strip of metal, one end of which is bent down upon itself to form a double strip, the other end being provided with two series of side wings, one series being adapted to be bent down between the doubled strips of the other end and to rest against the bend thereof, while the other series of wings is adapted to be bent down to inclose both strips of the doubled end, substantially as and for the purposes described.

2. A band or hoop for a sectional jacket or steam-pipe covering, consisting of a single strip of metal, one end of which is bent down upon itself to form a double strip, the other end being provided with two series of wings, one series being adapted to be bent down between the doubled strips of the other end and to rest against the bend thereof, the other series of wings being adapted to be bent down to inclose both strips of the doubled end, and a spur projecting from that end of the strip whereon the side wings are formed in a direction opposite to that in which said wings are bent, substantially as and for the purposes described.

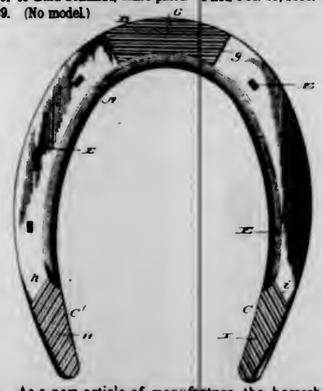
570,277. COMBINED SNAP HOOK AND BUCKLE. JOHN W. CRANDALL, Jeffersonville, Ind. Filed Jan. 22, 1896. Serial No. 576,443. (No model.)



Claim.—In a combined snap hook and buckle, the cast-metal frame consisting of the bars *a*, *b*, the hook B joined to the converging ends of the side bars *a* and forming an opening or space between the tongue-bar *c* and the base of the hook, the stud-bar *d* having the inclined stud *d'* and the tongue-bar *c* arranged on a plane above the plane of the bars *a*, *b*, *d*, of said frame, combined with the tongue and spring bent from a continuous length of wire to form the coils or

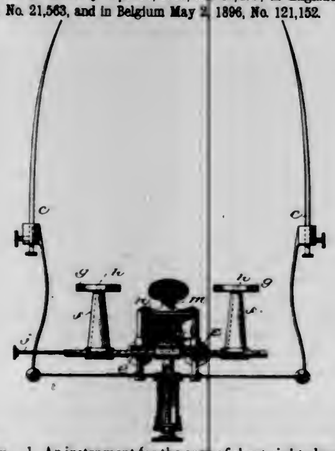
eyes *e* between the spring-arms *f* and the tongue C, said coils or eyes being held on the raised tongue-bar *c* and spring-arms *f* bearing against the base of the hook B, as and for the purposes described.

570,278. **HORSESHOE.** THOMAS G. DELLINGER, Bremond, Tex., assignor to Lulu Schmidt, same place. Filed Feb. 25, 1896. Serial No. 580,629. (No model.)



Claim.—As a new article of manufacture, the horseshoe herein shown and described provided with the solid toe and heel calks B and C, the deep nail-receiving grooves D in the lower face of the shoe and extending from the sides of the toe-calk to the heel-calks, the shallow grooves F lying within the nail-grooves D and extending from the sides of the toe-calk to the heel-calks, the lower wearing-face of the shoe between the two grooves D and F being flush with that part of the shoe at the outer margin thereof and also flush with the lower faces of the toe and heel calks, the transverse ribs G on the top of the shoe at the toe portion, and the reversely-inclined ribs H and I on the top of the shoe at the heel thereof, as and for the purposes described.

570,279. **DEVICE FOR TREATING NEAR-SIGHTEDNESS.** CHARLES DION, Paris, France, assignor of one fourth to Oliver D. Barrett, Washington, D. C. Filed July 10, 1896. Serial No. 598,758. (No model.) Patented in France June 1, 1895, No. 247,859, and Mar. 31, 1896, No. 255,197; in Germany Sept. 17, 1895, No. 87,422; in England Nov. 13, 1895, No. 21,563, and in Belgium May 2, 1896, No. 121,152.



Claim.—1. An instrument for the cure of short-sightedness, which consists of a pair of eye pads, adjustable by screw mechanism to and from the eyes, and to and from a point between the eyes, substantially as described.

2. An instrument for the cure of near-sightedness which consists of a pair of eye-pads adjustable by mechanical means to and from the eyes, and adjustable independently to and from a point between the eyes, substantially as described.

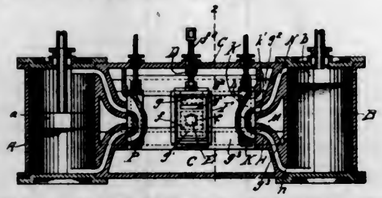
3. An instrument for the cure of near-sightedness, which consists of a pair of eye-pads having perforations, in combination with mechanical means for adjusting them simultaneously to and from a point between the eyes, and means for adjusting them to and from the eyes in front, substantially as described.

4. An instrument for the cure of near-sightedness which consists of a main plate, in combination with eye-pads, and means for adjusting the eye-pads to and from the eyes and adjusting them to and from a point between the eyes, and bows at the side provided with loops for clasping the ears of the patient, substantially as described.

5. An instrument for the cure of near-sightedness which consists of one or more eye-pads adjustable with respect to the eye; in combination with a gage adapted to indicate the pressure being applied on the cornea of the eye, substantially as and for the purpose specified.

6. An instrument for the cure of near-sightedness which consists of a main plate provided with eye-pads adapted to be adjusted to and from the eyes and from a central point between the eyes, and provided with means for holding the plate in front of the eyes, and means for determining the amount of pressure being applied to the eyes, substantially as and for the purpose specified.

570,280. **ENGINE.** HUGO W. FORSLUND, Chicago, Ill. Filed Mar. 20, 1894. Serial No. 504,456. (No model.)



Claim.—1. The combination with a steam-engine, of change or reversing valve mechanism constructed substantially as described, and adapted when brought into one position to open the engine to the pressure and to the exhaust; when brought into a second position, to close the chambers upon both sides of the piston; and when brought into a third position, to open the chambers upon both sides of the piston so that the piston is free to move between a balance of pressure.

2. The combination with a steam-engine, of change or reversing valve mechanism, constructed substantially as described, and adapted when brought into one position to open the engine to the pressure and to the exhaust; when brought into a second position, to close the chambers upon both sides of the piston; and when brought into a third position, to open communication between said chambers whereby their fluid contents may be transferred from one of said chambers to the other as the piston reciprocates.

3. The combination with a rotative reciprocating engine and its cylinder-valves, of a change-valve adapted to simultaneously close the exhaust and to open both ends of the cylinder to the pressure through the cylinder or engine valve.

4. The combination with a rotative reciprocating engine and its cylinder-valves, of a change-valve adapted to simultaneously close the exhaust and open the induction and eduction ports of the cylinder-valve to the pressure.

5. The combination with a rotative reciprocating engine, service and exhaust passages, and a cylinder valve interposed between such passages and the cylinder, of a change or reversing valve for controlling such passages and being so disposed that it may be shifted to simultaneously open them both to the source of pressure.

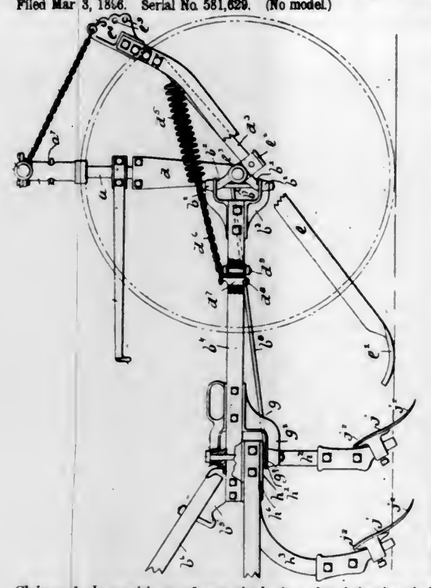
6. The combination with a rotative reciprocating engine having a cylinder valve, of a change or reversing valve substantially as shown, adapted when in one position to cut off the cylinder from both the pressure and the exhaust; when in a second position to bring the cylinder into communication with both the pressure and the exhaust; and when in a third position to provide an equal pressure upon both sides of the piston.

7. In a rotative reciprocating engine, the combination of a cylinder having ports leading to both ends, and an exhaust chamber, a piston adapted to reciprocate in the cylinder, a valve for opening the cylinder-ports alternately to the exhaust-chamber and to the pressure, a steam-chest inclosing the cylinder-valve, and having a duct, g^1, leading to the exhaust-chamber of the cylinder, and a duct, g^2 leading to the cylinder-valve and adapted to communicate with the cylinder-ports through such valve, a pressure-pipe entering the steam-chest, an exhaust-pipe leading from the steam-chest, a change-valve within the steam-chest and adapted to open the duct g^2 to the pressure and open the duct g^2 to the exhaust-pipe or to close the ducts g^2 g^2 simultaneously, or to close the exhaust-pipe and open the ducts g^2 g^2 simultaneously to the pressure, substantially as described and for the purpose specified.

8. The combination in a reciprocating engine, with a cylinder having steam-passages leading to its interior, a piston adapted to reciprocate within the cylinder, a steam-chest, and an exhaust passage, of reversing-valve mechanism constructed substantially as described for controlling such passages and adapted when in one position to close the passages leading to the cylinder; when in a second position to open communication between the passages leading to opposite ends of the cylinder; and when in a third position to cut off communication between the opposite ends of the cylinder and to open communication between the cylinder and both the steam-chest and the exhaust-passages.

9. In a steam-engine the combination with a cylinder, a piston, and a cylinder-valve, of a steam chest, an exhaust-port, passages leading to the cylinder, and reversing-valve mechanism, constructed substantially as described, for controlling such passages, said valve mechanism being capable of assuming three different positions, to wit: first, to open one of the passages to the steam-chest and another to the exhaust-port; second, to close all the passages; and, third, to open the passages entering opposite ends of the cylinder to uniform pressure.

570,281. **CULTIVATOR.** DANIEL D. FUNK, Springfield, Ohio. Filed Mar 3, 1896. Serial No. 581,629. (No model.)



Claim.—1. In a cultivator-frame, the L-shaped rods having their vertical stems journaled in vertical bearings on a connecting-bar, said L-shaped rods forming journals for the carrying-wheels, and a separate rod or bar forming a parallel connection between the horizontal portions of said frame-pieces, substantially as specified.

2. In a cultivator, carrying-wheels, frame-pieces having trunnions for said carrying-wheels, and suitable parts or stems connected to said trunnions, bearing-supports for said stems, and a cross-bar connecting said bearing-supports, said bearing-supports being journaled on said cross-bar as well as on said vertical stems, and a separate bar or connection between said frame-pieces and parallel with said connecting cross-bar, substantially as specified.

3. In a cultivator having carrying-wheels, the L-shaped frame-pieces journaled thereon, T-shaped bearing-supports journaled on said frame-pieces, and a connecting-bar journaled in said T-shaped bearing-supports, runner-bars supported on sleeves or trunnions on said frame-pieces, and a connection from said connecting-bar to said runner-bars, substantially as specified.

4. A cultivator-frame consisting of a transverse bar, and L-shaped rods journaled thereon by bearing-supports in which said L-shaped bars are also journaled, runner-bars connected by flexible connections to said transverse bar, and a parallel connecting bar between said runner-bars, and a connection from said runner-bars to the horizontal portions of said L-shaped rods, substantially as specified.

5. The combination with the transverse bar and the T-shaped bearings thereon, of the L-shaped rods having a limited movement in said bearings, runner-supports having bearings on said L-shaped rods, and a connection between said runner-supports parallel with the transverse bar, substantially as specified.

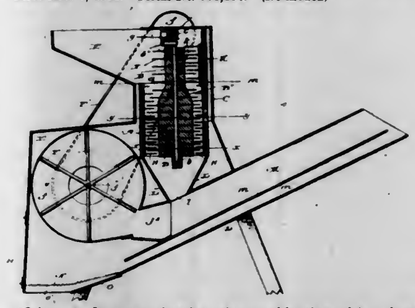
6. The combination with a bearing-support and a beam pivoted thereto, a cross-head pivoted in said beam, and a parallel rod extending from said bearing-support to said cross-head, said rod being extended at an angle to the beam and connected at one end substantially opposite the horizontal axis of said beam and at the other to the bottom of the cross-head so as to form a draft connection therefor, substantially as specified.

7. In a cultivator, a cultivator-shovel, substantially as described, which has a plain front surface formed with a double or ogee curve, substantially as and for the purpose specified.

8. In a cultivator, a frame, pivoted beams extending rearwardly from the frame, of a forwardly-extending support in front of and in line with the pivoted connection of each of said beams, a spring extending from the support to the beam at a point behind the pivotal connection, and a movable device for connecting said spring to said beam and in line with the pivoted support therefor, substantially as specified.

9. The combination with a beam, a bifurcated support on the beam having concave or tapered bearings, and a cross-head having cone-shaped trunnions to fit in said bearings, the bifurcated support being formed of two parts with overlapping and interlocking portions, and means for securing the fastening device which secures said support to the beam and the overlapping portions of said support, substantially as specified.

570,282. **PEA-THRESHER.** JOHN H. GARDNER, Dalton, Ga. Filed Nov. 7, 1895. Serial No. 568,196. (No model.)



Claim.—1. In a pea-thresher, the combination with a hopper, and a concave, of the cylinder having a reduced upper part which extends across the throat of the hopper, two series of teeth on the opposing faces of the cylinder and the concave, and the toothed bars K fixed in the upper part of the concave on the side thereof opposite to the throat of the hopper.

2. In a pea-thresher, a vertical concave, one side of which is cut away, with the opposite side extending above said cut-away portion, and teeth secured within the concave, combined with a toothed vertical cylinder extending through said concave and above the cut-away portion thereof, and toothed bars secured within the upwardly-projecting side of said concave, as and for the purposes described.

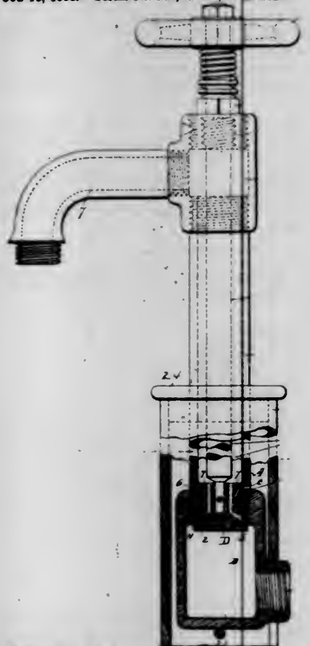
3. In a pea-thresher, the combination with a casing having a hopper, as E, of a vertical concave, one section or portion of which terminates on a plane below the throat of said hopper and the remaining portion of which concave projects upwardly into the casing opposite said hopper, toothed bars in the upper projecting portion of the concave, teeth secured in the concave and increasing in length and number from a plane below the toothed bars to the bottom of said concave, and a vertical cylinder having teeth which increase in number toward the bottom of the cylinder, substantially as and for the purposes described.

4. In a pea-thresher, the combination with a casing having a hopper, as E, of a vertical concave, one section or portion of which terminates below the plane of the throat of said hopper, and the remaining side of which concave protrudes upwardly into the casing opposite to the hopper thereof, an upright cylinder having the reduced upper end which extends across the throat of the hopper and opposite to the upwardly-extending portion or side of said concave, and annular rows of teeth on said cylinder and concave, the teeth on the concave being increased in length and number beginning at the line of the hopper-throat and extending substantially to the lower end of said concave, and the teeth on the cylinder also increased in number from the upper, substantially, to the lower portion of said cylinder, as and for the purposes described.

5. In a pea-thresher, the combination with a casing having a hopper as E, of the vertical concave within said casing, toothed bars arranged opposite to said hopper, the annular rows of teeth on the concave which rows of teeth are grouped closely together as they approach the lower end of the concave and increase in number and length from a line below the toothed bars toward the bottom of the concave, a cylinder extending through said concave and having a reduced portion opposite to the hopper, and annular rows of teeth

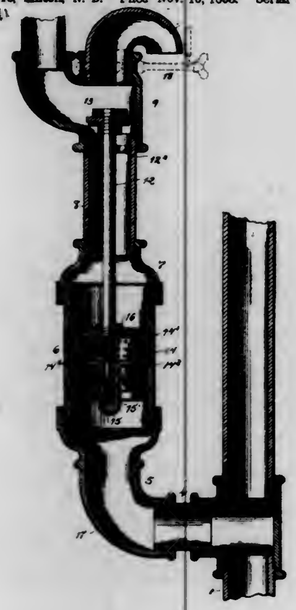
arranged on said cylinder so as to lie closer together, and increase in number radially, as they approach the lower end of the cylinder, as and for the purpose specified.

570,283. HYDRANT. WILLIAM A. GRAHAM, Carlisle, Pa. Filed Oct. 18, 1895. Serial No. 566,105. (No model.)



Claim.—In a hydrant, the combination with a pipe and a coupling, of a casing surrounding the said parts and a key extending through the latter beneath the coupling to lock the casing in position, substantially as set forth.

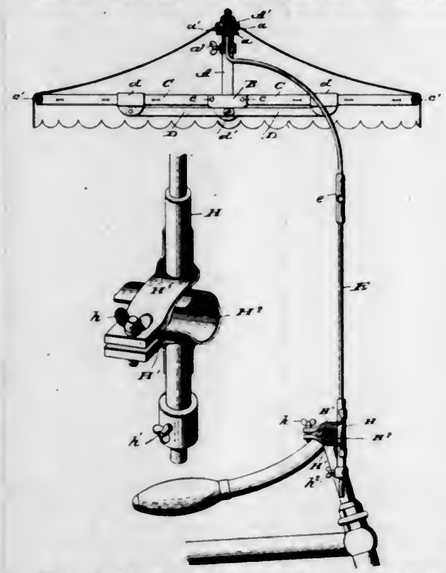
570,284. ANTIFREEZING PUMP ATTACHMENT. DANIEL F. HUMPHREYS, Milton, N. D. Filed Nov. 16, 1895. Serial No. 569,228. (No model.)



Claim.—1. In an antifreezing pump attachment, the combination with a discharge-pipe having a bend therein and an opening formed in said discharge pipe on the upper side of said bend, of a valve stationed in said discharge pipe, adapted, when water is being drawn, to rise and close said opening, and when the drawing of water ceases to fall and close the mouth of the discharge-pipe below said opening, a valve-rod attached thereto, an apertured valve-head therein, and a closure for said valve-head operated automatically by the pressure of the water, substantially as described.

2. In an antifreezing pump attachment, the combination with a discharge-pipe having a bend therein and an opening formed in said discharge-pipe on the upper side of said bend, of a valve stationed in said discharge-pipe, adapted, when water is being drawn, to rise and close said opening, and when the drawing of water ceases, to fall and close the mouth of the discharge-pipe below said opening, a valve-rod attached thereto, an apertured interiorly-chambered valve-head thereon, a spring-pressed valve held within the chamber of said valve-head, and an aperture in the discharge-pipe below said valve-head, substantially as described.

570,285. FOLDING CANOPY FOR BICYCLES. JOHN KAUFMAN, Philadelphia, Pa. Filed July 30, 1896. Serial No. 601,074. (No model.)



Claim.—1. The combination in a canopy for bicycles, of the frame for the covering consisting of curved side bars or stripe C pivoted to each other and to plates B, as shown, curved transverse stripe A A pivoted to said plates and to an intermediate fixture having a socket and thumb-screw; together with a sectional supporting-rod adapted to engage the socket, substantially as described.

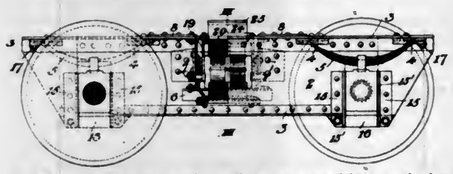
2. The combination in a canopy for bicycles, of the frame for the covering consisting of curved side bars or stripe C pivoted to each other and to plates B, as shown; curved transverse stripe A A pivoted to said plates and to an intermediate fixture having a socket and thumb screw; brace-rods D connected to thumb-screws carried by the plates B and in sliding engagement with the side bars or strips C; together with a sectional supporting-rod adapted to engage the socket of the intermediate fixture, substantially as described.

3. The combination in a canopy for bicycles, of the frame for the covering consisting of curved side bars or strips C pivoted to each other and to plates B, as shown; curved transverse stripe A A pivoted at their outer ends to said plates; plates *a a* between which the inner ends of the stripe A are pivoted, said plates being separated by a block *a'* forming stops; a tube or socket secured centrally to the plates *a* and provided with a thumb-screw; together with brace rods D pivoted to thumb-screws carried by the plates B, the outer ends of said rods being in sliding engagement with the curved side bars or strips C, and a sectional supporting-rod engaging the socket carried by the plates *a a*, substantially as shown and for the purpose set forth.

4. A rod or bar support for bicycles, consisting of a sleeve or tube having a set-screw, spring members H' H' apertured to receive the sleeve or tube, the inner ends of the members being turned up against the tube and brazed or otherwise secured thereto, a curved plate

located between the members H' H', and a thumb-screw for drawing the outer ends of said members toward each other, substantially as shown and described.

570,286. CAR-TRUCK. FREDERICK H. KINDL, Pittsburg, Pa. Filed May 14, 1896. Serial No. 591,513. (No model.)



Claim.—1. In a car-truck, a side frame comprising a web-plate having along its upper edge a pair of horizontal angle-irons extending over both the intermediate portion and over the journal-boxes, substantially as described.

2. In a car-truck, a side frame having a web-plate provided along its entire upper edge with a pair of horizontal angle-irons, and a pair of springs bearing upon the angle-irons and upon the journal-box, substantially as described.

3. In a car-truck, the combination with a side frame having horizontal angle-irons secured in pairs to its upper and lower edges and extending over the journal-boxes, of an inner angle-iron riveted to an intermediate portion of the plate, and a transom having its end resting upon and secured to said inner angle-iron, substantially as described.

4. In a car-truck, a side frame comprising a flat web-plate having parallel pairs of horizontal angle-irons riveted along its upper and lower edges, said web-plate having a central opening to admit the ends of the bolster-springs; substantially as described.

5. In a car-truck, the combination with a side frame having an inner angle-iron riveted thereto, of a transom consisting of channel-bars, the flanges of which are riveted to the projecting flange of the angle-iron, vertically-extending angle-irons riveted to the transom-channels and the web-plate, and gusset-plates secured to the transom-channels, and to angle-irons riveted to the upper flanges of the side frame; substantially as described.

6. In a car-truck, a transom having depending hanger-bars, a spring-channel supported on the pins passing through said hanger-bars, and angle-irons secured to the channel on either side of the pins, substantially as described.

7. In a car-truck, a transom having hanger-bars provided with pins supporting a spring-channel, transverse angle-irons riveted through the channel on each side of the pins, and plates secured to the upper face of the channel above the pins, and spaced apart to receive the bolster springs; substantially as described.

8. In a car-truck, a bolster having on its top face Z-bars arranged in pairs, said Z-bars being secured by rivets passing through the web of the bolster-channel, and through separated supplemental plates secured to its lower face, and spaced apart to receive the central portion of the bolster-springs, substantially as described.

9. In a car-truck, a bolster consisting of a horizontal channel having side plates riveted to its flanges, said side plates having a transverse strengthening-strip connecting them, substantially as described.

10. In a car-truck, a bolster consisting of an upper horizontal channel having side plates riveted to its flanges, transverse angle-irons riveted to the lower face of the channel, and a center plate secured to the channel above the transverse angles, substantially as described.

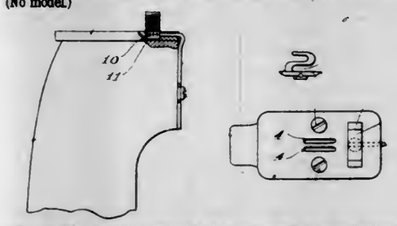
570,287. ROPE-CLAMP. JOHN M. LOGUE, Belle Vernon, Pa. Filed Mar. 7, 1896. Serial No. 582,253. (No model.)



Claim.—1. In a rope-clamp, the combination of the cone-shaped clamps having beveled edges; one of said clamps having a hook portion and the other provided with a jaw in which the hook portion is pivotally secured, a series of screw-threaded apertures in one of the clamps, a cone shaped sleeve adapted to fit on the clamps; said sleeve being retained in position by a screw in one of the threaded apertures, substantially as shown and described.

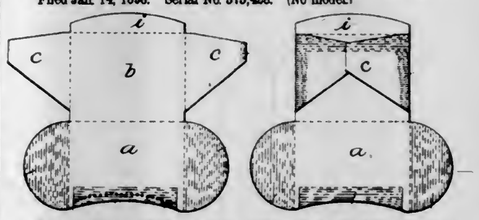
2. In a rope clamp, the combination of the cone-shaped clamps, terminating in a hinged loop portion, at the large end a sleeve adapted to fit on the clamps, said sleeve and clamps having beveled ends, one of said clamps provided with screw-threaded apertures for the reception of a screw to retain the sleeve in position, substantially as shown and described.

570,288. LAP-SEAM GUIDE FOR SEWING-MACHINES. FRANK W. MERRICK, Boston, Mass. Filed Dec. 26, 1895. Serial No. 573,291. (No model.)



Claim.—The combination with the work-post, the work-plate having a depression therein, and the locking-spring having the free end thereof projecting into the said depression, of the S-shaped lap-seam guide having a symmetrically-shaped base portion fitted to the said depression and reversible therein, the said base portion having also the hole to receive the said free end of the locking-spring, substantially as described.

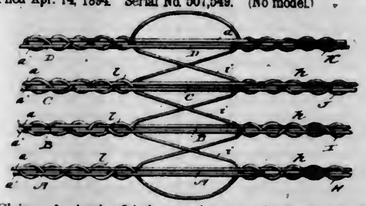
570,289. ENVELOP. ALEXANDER MCCANCE, White Ash, Pa. Filed Jan. 14, 1896. Serial No. 575,428. (No model.)



Claim.—1. In a safety-envelop, consisting of the front and back portions, wings on the back portions, and flaps on the front portion, said front portion having slits forming a flap provided with perforations, all of said flaps being gummed on the same side, substantially as shown and described.

2. In an envelop, consisting of the front and back portions, wings arranged on the back portion, and flaps on the front portion, one of said wings having a gummed tip, and being gummed on the reverse side, slits in the front portion forming a flap said flap being perforated, the perforated flap and the end flaps being gummed on the same side, and a tongue on the top of the back portion, all parts being arranged, substantially as shown and described.

570,290. WIRE FENCE. DONALD H. MCPHERSON, Le Roy, N. Y. Filed Apr. 14, 1894. Serial No. 507,549. (No model.)



Claim.—1. A wire fabric or web comprising longitudinal strands having pairs of wires provided with bends arranged to cross each other in a plane transversely to the plane of the fabric or web and forming loops or eyes, and filling wires threaded or interlaced in the plane of the fabric or web through such loops or eyes of the wires forming the strands and serving to bind or lock the wires of the strands against straightening under longitudinal strain on the fabric or web, as and for the purposes described.

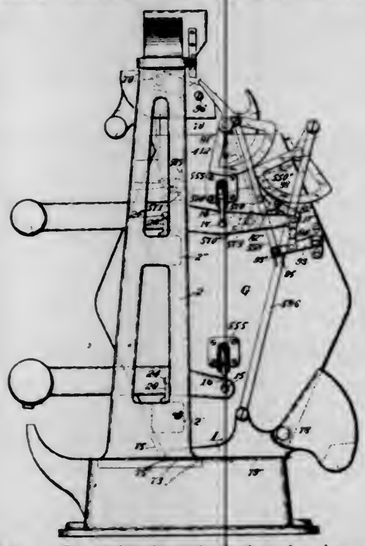
2 A wire fabric or web comprising longitudinal strands made up of pairs of wires which are provided with bends that cross each other in zigzag order transversely to the plane of the fabric and form the eyes or loops, and continuous zigzag filling wires, each of which is devoted to two adjacent longitudinal strands, said filling-wires being interlaced at certain intervals and in the plane of the fence fabric with the bends and loops of the wires forming the strand in a manner to bind and lock the strand against straightening of its bends under

longitudinal strain on the fabric, substantially as and for the purposes described.

3. In a wire-fence fabric or web, the longitudinal strands composed of pairs of wires having bends that cross each other and form loops which lie transversely to the plane of the fabric or web, combined with filling-wires which are interlaced, in the plane of the fabric or web, with the loops formed by the bends in the wires of a longitudinal strand and serving to bind or lock said strand-wires against tension or strain longitudinally on said longitudinal strands, as and for the purposes described.

4. A wire fabric or web comprising longitudinal strands each made up of a pair of wires which have the bends arranged to cross each other and form loops which lie transversely across the plane of the web or fabric, and double filling-wires which are interlaced or threaded in reverse order and in the plane of the fabric or web with the loops of the wires forming the longitudinal strands, as and for the purposes described.

570,291. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 6, 1896. Serial No. 586,346. (No model.)



Claim.—1. The combination with a bucket, of a valve; two independent bucket-supporting scale-beams, one of which is disposed above the other; and connections between one of said scale-beams and the valve.

2. The combination with bucket mechanism embodying a shiftable bucket-discharge member, of a chute, a stream-controlling valve therefor; an independent gravity-closing drip-valve normally held out of contact with the flowing stream of material and projectable across the line of flow thereof; and reciprocally effective stops operative, respectively, with said drip valve and bucket-discharge member.

3. In a weighing-machine, the combination with bucket mechanism embodying a shiftable bucket-discharge member; of a chute; a stream-controlling valve for said chute; a drip-valve supported by the bucket mechanism; and reciprocally effective stops operative, respectively, with said drip-valve and bucket-discharge member.

4. In a weighing-machine, the combination with bucket mechanism embodying a shiftable bucket discharge member; of a valve supported by said bucket mechanism; and reciprocally effective stops operative, respectively, with said valve and shiftable bucket-discharge member.

5. The combination with a bucket and with beam mechanism therefor embodying a scale-beam; a valve; a relatively short lever supported by the bucket and having a projection; a link connecting said lever and scale-beam; and a rod operatively connected with said valve and having a bifurcation adapted to straddle the projection on said lever.

6. The combination with a chute, of a valve therefor; a second valve provided with a device for operating said first-mentioned valve, two scale-beams, one of which is disposed above the other; and connections between said second valve and one of said scale beams.

7. The combination with a bucket and with a chute, of a counterweighted stream-controlling valve therefor having a projection; a gravity-closing drip-valve supported by the bucket and provided with an arm adapted to engage said projection on the opening movement of the drip-valve; and means for opening said drip-valve.

8. The combination with a bucket, of a valve; a bucket-supporting scale-beam; a lever supported independently of and operatively connected with said scale-beam; and connections between said lever and valve.

9. The combination with a bucket, of a valve; a bucket-supporting scale-beam; a lever connected to the bucket and operatively connected to said scale-beam by a link; and connections between said valve and lever.

10. The combination with a chute, of a stream-controlling valve therefor; a drip-valve; means for intercepting one of said valves at a predetermined point in the closing movement thereof; and means operative with the other valve for releasing said first-mentioned valve.

11. The combination with a chute, of a stream-controlling valve therefor; a drip-valve; a stop-rod connected to said stream-controlling valve; a device operative for engaging said stop-rod at a predetermined point in the closing movement of said stream-controlling valve; and means operative with the drip-valve for disengaging said device from said stop-rod.

12. In a weighing-machine, the combination with a pair of valves; of a pair of stop-rods operative therewith; a latch for engaging one of said stop rods; and a projection on the other stop-rod for engaging said latch.

13. In a weighing-machine, the combination with a pair of valves; of a stop-rod operative with each of said valves; a latch for engaging one of said stop-rods; a scale-beam; and a stop carried by said scale-beam for engaging the other of said rods.

14. The combination with a chute; of a valve therefor; a projection on said valve; a bucket; a valve having an arm for engaging said valve projection and supported by the bucket; and means for actuating said last-mentioned valve.

15. In a weighing-machine, the combination with a chute; of a valve therefor; a bucket; a connecting rod carried by said valve; a scale-beam; a lever for engaging said connecting-rod; and a link operatively connecting said scale-beam and lever.

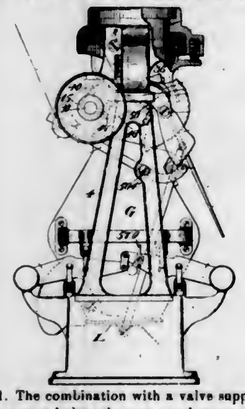
16. In a weighing-machine, the combination with a chute; of a stream-controlling valve therefor; a rod operative with said valve; a bucket; a valve supported by said bucket; a latch having two arms, one of which is operative for engaging said valve-operative rod; and a rod operative with the other valve and having a projection for engaging the other arm of the latch.

17. In a weighing-machine, the combination with a bucket; of a guard plate carried thereby, said guard-plate having an oblique guide-face; and a closer embodying a resilient plate which impinges against said oblique face as said closer returns to its normal position.

18. In a weighing-machine, the combination with a chute; of a valve therefor; a bucket and its closer; means embodying a latch for holding said closer against opening movement; a valve supported by said bucket; and a latch-actuator operative with said last-mentioned valve.

19. In a weighing machine, the combination with a valve having a projection; of a bucket; a valve supported by said bucket and having an arm for engaging said projection; a bifurcated connecting-rod; a scale-beam; and a lever operatively connected with said scale-beam and having a projection which is embraced by the bifurcation of said connecting-rod.

570,292. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 14, 1896. Serial No. 587,536. (No model.)



Claim.—1. The combination with a valve supported for lateral movement to open and close the same, and supported for reciprocatory movement in a direction crosswise of its opening and closing movements; of a reciprocator free of the valve when in its closed position; and means for effecting an operative connection between the valve and the reciprocator on the opening movement of said valve.

2. The combination with a valve supported for lateral movement to open and close the same, and for reciprocatory movement in a direction crosswise to its opening and closing movements; of a reciprocator free of the valve when the latter is closed; and connecting means operative with the valve, and carried thereby into engagement with said reciprocator on the opening movement of the valve, and out of engagement with said reciprocator on the closing movement of said valve.

3. The combination with an oscillatory valve supported for reciprocatory movement longitudinally of its axis; of a reciprocator; and means for throwing the reciprocator into engagement with the valve on its opening movement, and for throwing said reciprocator out of action on the complete closure of the valve.

4. The combination with a valve horizontally disposed for supporting a stream of material; of a supply-spout for the valve supported for lateral movement relatively thereto; a valve-actuating mechanism; a spout-vibrator; and means for throwing said vibrator out of action on the closing of the valve.

5. The combination with a valve horizontally disposed for supporting a stream of material, of a supply-spout for the valve supported for lateral movement relatively thereto; means for opening and closing the valve; and means for continuously vibrating said spout during the opening movement of the valve.

6. The combination with a valve and with a supply-spout therefor movably supported for lateral movement relatively to the valve; of means for opening and closing the valve; and a spout-vibrator free of the spout; and means operable with the valve for throwing said vibrator into action.

7. The combination with a valve supported for opening and closing movements; of means for operating the valve to open and close the same; a supply-spout for the valve; a vibrator for said spout; and means for throwing said vibrator out of action when the valve is closed.

8. The combination with a valve and means for opening and closing the same; of a supply-spout over the valve and supported for reciprocatory movement; a spout actuator located adjacent to the spout; means carried with the spout for engaging said actuator, and thereby imparting to the spout a reciprocatory movement; and means operable with the valve and located to throw said spout actuating means out of action on the closing of the valve.

9. The combination with a chute; of a valve; and means for vibrating said valve in a direction coincident with its axis of movement.

10. The combination with a chute; of a valve; means for vibrating said valve in a direction coincident with its axis of movement and means for transversely vibrating said chute.

11. The combination with a chute; of a valve therefor having opening and closing movements; valve-actuating mechanism; and means for vibrating said valve while in its open position, and for stopping the same when the valve is closed.

12. The combination with beam mechanism and with a bucket supported thereon, of a supply-spout having an arm; a driven shaft provided with a cam for engaging said arm; and a valve for said spout.

13. The combination with beam mechanism and a bucket supported thereon, of a supply-spout having an arm; a driven shaft having a cam for engaging said arm; a movably-supported valve; and means for vibrating said valve.

14. The combination with beam mechanism and with a bucket supported thereby, of a pivotally-supported spout having an arm; a driven shaft having a cam for engaging said arm; a valve for said spout; and valve-actuating mechanism.

15. The combination with beam mechanism and with a bucket supported thereby, of a spout supported for reciprocatory movement; a shaft having a cam for reciprocating said spout in one direction; a spring actuator for oppositely moving said spout; and a valve for said spout.

16. The combination with a valve supported for reciprocatory movement in two directions, said valve having projections thereon; and a valve-reciprocating lever operative between said projections.

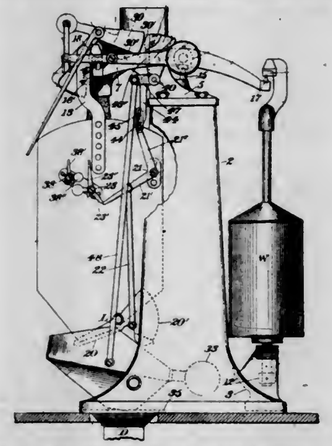
17. The combination with a pivotally-supported valve having a balance-weight provided with two projections; of a lever operative between said projections; and a shaft having a lever-operating cam.

18. The combination with a pivotally-supported spout having an arm; of a pivotally-supported valve having a balance-weight provided with two projections; a lever operative between said projections; a shaft; and cams supported on said shaft for operating said lever and arm.

19. The combination with a chute; of a valve supported for opening and closing movements; valve-actuating mechanism; means for reciprocating said valve in a direction transversely of its opening and closing movements; a depending stop-rod carried by said valve; and a stop operable for engaging said rod at a predetermined point, and for also releasing the same.

20. The combination with a pivotally-supported chute having an arm; of an annular ring for supporting said chute; a coil-spring connected with said ring and chute; a pivotally-supported valve having a balance-weight provided with projections; a lever operative between said projections; a shaft; and cams on said shaft for operating said lever and arm.

570,293. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed May 8, 1896. Serial No. 590,692. (No model.)



Claim.—1. The combination with a bucket having a closer, of a valve provided with a stop; and a coacting stop supported by the framing and operatively connected with said closer.

2. The combination with a bucket having a closer, of a lever operatively connected to said closer; a valve having a stop; and a coacting stop in sliding engagement with said lever.

3. The combination with a bucket having a closer, of a hopper located to receive a load of material discharged by said bucket; a valve provided with a stop; and a pair of stops operative, respectively, with the closer and hopper and coacting with said first-mentioned stop.

4. The combination with a valve and with bucket mechanism embodying a shiftable load discharge member, of means normally operative for holding said member against movement; a stop operative with said valve; and a coacting stop in sliding engagement with said holding means.

5. The combination with a bucket having a closer, of an angle-lever operatively connected with said closer; and a stop in sliding engagement with said angle-lever.

6. The combination with a closer, of an angle-lever connected thereto by a link; a latch for engaging one of the arms of said angle-lever; and a stop provided with an arm in sliding engagement with the other arm of said angle-lever.

7. The combination with a bucket having a closer, of a valve; closer-supporting means; a stop connected to said valve; and a coacting stop in sliding engagement with said closer supporting means.

8. The combination with a bucket having a closer, of an angle-lever supported by the bucket and having one of its arms connected to said closer by a link and the other provided with a longitudinal slot; a latch for engaging said first mentioned arm; a suitably-supported stop having an arm provided with a pin passing through said longitudinal slot; and a valve having a stop coacting with said first-mentioned stop.

9. The combination with a bucket having a closer, of a hopper movably supported beneath said bucket; a suitably-supported rock-shaft operatively connected with said hopper and provided with a stop; and a second stop sleeved on said shaft and operatively connected with the bucket-closer; and a valve provided with a stop coacting with said first mentioned stops.

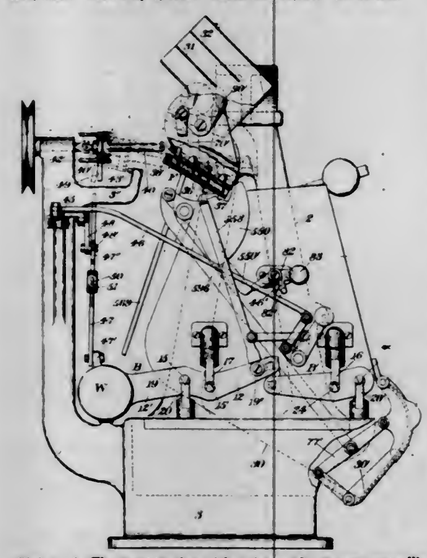
10. The combination with a bucket having a closer, of an angle-lever connected thereto; a hopper movably supported beneath said bucket and adapted for receiving a load discharged thereby; a rock-shaft having a crank-arm and provided with a stop; a rod operatively connected with said crank-arm and hopper; a stop sleeved on said shaft and operatively connected to the closer; and a valve provided with a stop coacting with said first-mentioned stops.

11. The combination with a valve and with a bucket having a closer, of a lever operatively connected to said closer; a rod rigidly attached to said valve; a stop on the bucket positioned for engaging said rod at a predetermined point in the closing movement of the valve, and for also releasing said rod; and a two-armed latch, one of the arms of which normally engages said lever, the other arm being disposed in the path of movement of said rod, whereby the latch will be tripped by said rod on its release.

12. The combination with a bucket having a closer, of a closer-supporting means embodying a latch; a valve provided with a depending rod movable therewith; and a stop operable for engaging said rod and for also releasing the same, whereby on the release of said rod it is adapted for tripping said latch.

13. The combination with a valve having a depending rod, of a bucket having a closer; a device operatively connected to the closer; a latch having two arms, one of which is operable for engaging said device and the other of which is disposed in the path of movement of said depending rod; and a stop for engaging said rod and for releasing the same, whereby it may be carried into contact with said arm of the latch to thereby trip the same.

570,294. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed May 9, 1896. Serial No. 590,926. (No model.)



Claim.—1. The combination with a chute, of a stream-controlling valve; a feeder supported thereby; and feeder-actuating mechanism.

2. The combination with a chute, of a valve therefor having a concavity formed therein; a feeder supported by said valve and operable in said concavity; and feeder actuating mechanism.

3. The combination with a chute, of an oscillatory valve; a feeder supported by said valve; a power device; and a clutch operatively connected with said power device and feeder, whereby at a predetermined point in the movement of said valve the clutch members will be uncoupled.

4. The combination with a valve, of a feeder supported by said valve; a power device; and an extensible feeder-operating shaft connecting said feeder and said power device.

5. The combination with a valve, of a feeder supported by said valve; a tubular member connected to the feeder; a power device; and a shaft connected to said power device and sliding in said tubular member.

6. The combination with a bucket and with a chute for supplying a stream of material thereto, of stream-controlling means consisting of a valve and a feeder supported by said valve; and a power device operatively connected with said feeder by a universal joint.

7. The combination with a feeder, of a power device; and an extensible member between said parts and attached to one of said parts by a universal connection.

8. The combination with a valve, of a feeder supported thereon; a power device; and an extensible connection between said feeder and power device.

9. The combination with a valve, of a feeder supported by said valve; a power device; an extensible shaft connected, respectively, with said power device and feeder and comprising two sections; and a clutch, each of the members of which is attached to one of said shaft-sections.

10. The combination with a valve, of a power device; a feeder supported by said valve; an extensible shaft connected, respectively, to said power device and feeder by a universal joint and comprising a tubular section, the other section sliding therein; and a clutch embodying two members, each of which is attached to one of said shaft-sections.

11. The combination with a chute, of an oscillatory valve therefor having a concavity; a feeder supported by the valve operable in said concavity; a pulley; a telescopic shaft comprising two sections connected, respectively, with said pulley and feeder by a universal connection; and a clutch embodying two members, each of which is attached to one of said shaft-sections.

12. The combination with a chute having an inclined bottom and a series of plates in parallelism therewith, of a valve for said chute; and valve-actuating mechanism.

13. The combination with a chute having an inclined bottom and a series of plates in parallelism thereto, and having also a front plate disposed at an angle to said series of plates; of a stream controlling valve; and valve-actuating mechanism.

14. The combination with bucket mechanism comprising a shiftable bucket-discharge member normally held against movement; of feeder mechanism embodying a feeder operable for supplying a stream of material to the bucket; and means operated by said feeder mechanism for releasing said shiftable bucket-discharge member.

15. The combination with a bucket having a closer, of a latch normally operative for holding the same against opening movement; feeder mechanism comprising a feeder operable for feeding a stream of material into said bucket; and latch-tripping means operated by said feeder mechanism.

16. The combination with a bucket mechanism comprising a shiftable bucket-discharge member, of a latch normally operative for holding said member against movement; a shaft having a device rotative therewith and provided with an arm; latch tripping means; and a member operatively connected with said latch-tripping means and interposable into the path of movement of said arm.

17. The combination with bucket mechanism comprising a shiftable bucket-discharge member, of a latch normally operative for holding the same against movement; a latch-tripping device; a shaft comprising a projecting arm; and a movably-supported member operatively connected with said latch-tripping device and interposable into the path of movement of said projecting arm.

18. The combination with a scale-beam, of bucket mechanism supported thereby and embodying a shiftable bucket-discharge member normally held against movement; a device operable for releasing said shiftable member; a rod carried by the scale-beam and operatively connected with said device; and means for operating said rod.

19. The combination with a scale-beam, of bucket mechanism supported thereby and comprising a shiftable bucket-discharge member normally held against movement; a device for releasing said shiftable member; a rod operatively connected to the scale-beam; an angle-lever connecting said rod and releasing device; and means for operating said rod.

20. The combination with bucket mechanism comprising a shiftable bucket discharge member, of a latch normally operative for holding the same against movement; a latch-tripping device; a counterweighted rod operatively connected with said latch-tripping device; and means for operating said rod.

21. The combination with a scale-beam, of bucket mechanism comprising a shiftable bucket-discharge member normally held against movement; means for releasing said shiftable bucket-discharge member; a rod connected to said scale-beam; a link in sliding engagement therewith and operatively connected to said releasing means; and means for operating said rod.

22. The combination with a scale-beam, of a bucket supported thereby having a closer; a latch normally operative for holding the same against opening movement; a thrust-rod having a projection for tripping said latch; a rod operatively connected with said scale-beam; and operative connections between said last-mentioned rod and the thrust-rod.

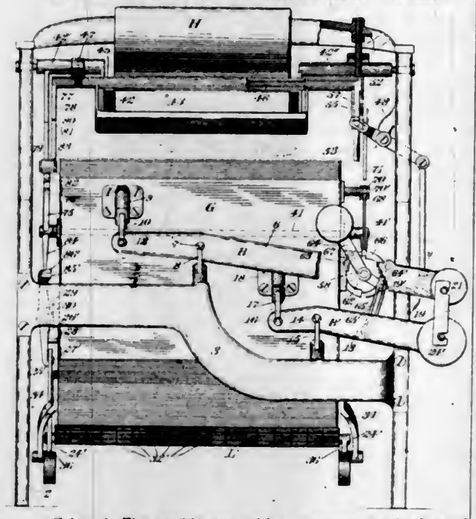
23. The combination with a scale beam, of a bucket supported thereby and having a closer; a latch normally operative for holding the same against opening movement; a thrust-rod having a projection for tripping said latch; a rod operatively connected to said scale-beam; an angle-lever connected to said thrust-rod; and a link connected, respectively, to said angle-lever and to the scale-beam connected rod.

24. The combination with a feeder, of a power device; connections between said members embodying a clutch, one of the members of which is provided with an arm; bucket mechanism comprising a shiftable bucket discharge member normally held against movement; means for releasing the same; a rod operatively connected with said releasing means, and interposable into the path of movement of said arm.

25. The combination with a bucket having a discharge-outlet, or two overlapping closers therefor, one of which is provided with a rock-arm; a link connected to said rock-arm and to the other closer; a rod attached to said link; a rocker connected with the rod; and means for holding said rocker against movement.

26. The combination with a scale-beam, of a bucket therefor having an inclined bottom wall leading toward its discharge-outlet, a pair of overlapping closers for said outlet, one of which is provided with a rock-arm; a link connecting said rock-arm with the other closer; a rod connected to said link; a rocker connected with the rod; and means for holding said rocker against movement.

570,295. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed May 21, 1896. Serial No. 592,395. (No model.)



Claim.—1. The combination with a compartment bucket, of closers, one for each of the compartments; and a stop operative with each of said closers, said stops blocking each other.

2. The combination with a compartment bucket, of closers, one for each of the compartments of the bucket; and arms cooperative with said closers, each of which arms constitutes a stop device for the other.

3. The combination with a compartment bucket, of closers, one for each of the compartments; means for shutting said closers; and arms cooperative with the closers, each of which arms constitutes a stop device for the other.

4. The combination with a compartment bucket, of closers, one for each of the compartments; shafts supporting said closers; counterweighted levers operative with said closers; and arms also connected to said closers, each of which arms constitutes a stop device for the other.

5. A bucket-closer consisting of a series of loosely-movable slats or bars with their edges normally in contact.

6. A bucket-closer consisting of a series of independently-movable hinged slats or bars.

7. The combination with a compartment bucket, of closers, one for each of the compartments, one of which closers consists of a series of slats; and stops operative with each of said closers, each of which constitutes a stop device for the other.

8. The combination with a bucket, of a closer; a stop operative with said closer; a latch engaging the stop and normally holding said closer against opening movement, said latch having a by-pass device; and a stream-diverter and its supporting-shaft provided with an arm adapted to engage said by-pass device.

9. The combination with a bucket, of a closer; a latch operative to hold said closer against opening movement; a by-pass pawl carried by the latch; and a stream-diverter provided with an arm for engaging said pawl.

10. The combination with a bucket having a closer, of a latch operative for holding said closer against opening movement and having an inclined shoulder provided with a spring-actuated by-pass pawl; a stream-diverter; and an arm operative with said stream-diverter for engaging said pawl.

11. The combination with a bucket having a closer, of an arm connected to said closer; a laterally-movable latch provided with a hook for engaging said arm; a latch-retracting spring; a by-pass pawl; a stream-diverter; and an arm operative with the stream-diverter and adapted to engage said pawl.

12. The combination with a bucket, of a stream-diverter; an arm operative therewith; a shaft having a cam adapted to engage said arm; and means for rotating said shaft.

13. The combination with a bucket, of a stream-diverter; an arm operative therewith; a rotatively supported shaft having a cam for engaging said arm; and means normally operative for preventing rotation of said shaft.

14. The combination with a compartment bucket, of a stream-diverter; an arm operative therewith, a rotatively-supported shaft having a cam for engaging said arm, said shaft also having a peripherally-recessed stop-wheel; and a detent for controlling the movement of said wheel.

15. The combination with a compartment bucket, of a stream-diverter therefor; a shaft provided with a cam for shifting said stream-diverter and having also a ratchet; a pawl in engagement with said ratchet; and means for operating said pawl.

16. The combination with a compartment bucket, of a stream-diverter; a shaft provided with a cam for shifting said diverter and having also a ratchet; a counterweighted lever provided with a pawl; and means normally operable for preventing the rotation of said shaft.

17. The combination with a compartment bucket, of a stream-diverter; a rotative shaft provided with a cam for shifting said diverter and having also a ratchet; a lever provided with a pawl for engaging said ratchet; means for operating said lever; a stop-wheel connected to said shaft; and a detent for engaging said stop-wheel.

18. The combination with a compartment bucket, of a stream-diverter; rotative shaft provided with a cam for shifting said diverter; a ratchet on said shaft; a suitably-operated pawl for engaging said ratchet; a stop-wheel on said shaft; and a counterweighted lever provided with a detent adapted to engage said stop-wheel.

19. The combination with a scale-beam having a longitudinally-slotted link connected thereto, of a compartment bucket provided with a stream-diverter; a shaft having a cam for shifting said stream-diverter; a ratchet on said shaft; and a counterweighted lever provided with a pin projecting through the slot of said link and having a pawl adapted to engage said ratchet.

20. The combination with a scale-beam, of a compartment bucket supported thereby; a valve opening device operatively connected with said scale-beam; a stream-diverter; a rotatively-supported shaft provided with a cam for shifting said diverter; and means normally operative for preventing the rotation of said shaft.

21 The combination with a compartment bucket having a stream-diverter, of a shaft provided with a cam for shifting said diverter; a detent normally operative for preventing the rotation of said shaft; a valve; and a valve-actuating device provided with means for releasing said shaft.

22. The combination with a compartment bucket and with a valve, of a stream-diverter; a shaft provided with a cam for shifting said diverter; means comprising a counterweighted lever for normally preventing the rotation of said shaft; and a valve-actuating device provided with a rod for tripping said lever.

23. The combination with a compartment bucket and with a valve, of a stream-diverter; a shaft provided with a cam for shifting said diverter; means comprising a counterweighted lever for normally preventing the rotation of said shaft; and a valve-actuating device provided with an adjustable rod for tripping said lever.

24. The combination with a compartment bucket provided with a stream diverter, of a rotative shaft having a member comprising a series of cams for actuating said shifter, the effective surfaces of which are disposed in opposing planes.

25. The combination with a scale-beam, of a lever operatively connected to said scale-beam; a valve having a cam operative therewith; and a device operatively connected with said lever and adapted to ride in contact with the face of said cam.

26. The combination with a scale-beam, of a lever operatively connected to said scale-beam; a valve having a cam operative therewith provided with two cam faces; and a device operatively connected with said lever and adapted to ride successively in contact with the faces of said cam.

27. The combination with a scale-beam, of a lever; a rod operatively connected to said lever and scale-beam; a pair of valves, one of which is provided with a cam and the other of which has a counterweighted arm; and a device having a pair of laterally-extending arms adapted to come into contact, respectively, with said cam and counterweighted arm.

28. The combination with a compartment bucket having a stream-diverter, of a rotatively-supported shaft having a cam for shifting said diverter, means normally operative for preventing the rotation of said shaft; a scale-beam; a lever operatively connected thereto;

a valve and its actuating device, the last mentioned of which is operatively connected with said lever and is provided also with means for releasing said shaft.

29. The combination with a bucket, of supporting-beams therefor, the bucket-supports of which are located at each side of a vertical central line passing through said bucket and also located at each side of a horizontal line passing through the center of gravity of the loaded bucket.

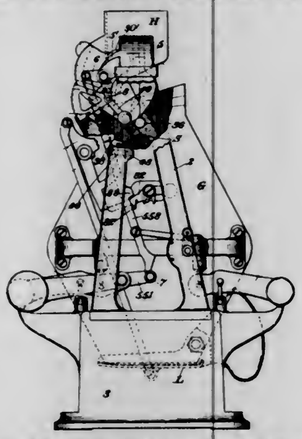
30. The combination with a bucket, of supporting-beams therefor, each of which is provided with a counterweight, and having the bucket-supports of said beams located at each side of a vertical central line passing through said bucket and also located at each side of a horizontal line passing through the center of gravity of the loaded bucket, and a link operatively connecting the weights of said scale-beams.

31. The combination with a compartment bucket, of a valve having a stop device operative therewith; a stream-diverter operable for alternately directing a stream of material into any one of the compartments of the bucket; and having a stop device operative therewith; and a third stop device operable between said first-mentioned devices for alternately governing the movements thereof.

32. The combination with a compartment bucket, of a pair of valves; a stream-diverter operable for alternately directing a stream of material into any one of the compartments of the bucket; stops operative with said valves; a stop operative with the stream-diverter; and a three arm device operable for coacting with said stops for reciprocally limiting the movements thereof.

33. The combination with a compartment bucket having a closer, of a latch normally operable for holding said closer against opening movement; a stream-diverter alternately operable for directing a stream of materal into the compartments of the bucket; a valve; reciprocally effective means for governing the movements of said valve and stream-diverter; and a device operative with said stream-diverter for tripping said latch.

570,296. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 4, 1896. Serial No. 594,249. (No model.)



Claim.—1. The combination with a chute having an inclined stream directing wall, of a valve therefor having a bottom plate provided with a drip-opening situated at a point forward of the plane of inclination of said stream-directing wall, and a valve operable for controlling a stream of material issuing from said drip opening.

2. The combination with a chute, of a main valve therefor, said valve having a bottom plate provided with a drip-opening; and a supplemental valve supported adjacent to the discharge edge of said main valve.

3. The combination with a chute, of a main valve, said valve having a bottom plate provided with an opening; a supplemental valve supported adjacent to the discharge edge of said main valve; and a drip-valve operable for controlling a stream of material issuing from said opening.

4. The combination with a chute having an inclined stream-directing wall, of a valve for said chute, said valve having a drip-opening located forward of the plane of inclination of said wall.

5. The combination with the framework, of a chute; a valve therefor, said valve having a drip-opening; a drip valve operative for controlling a drip stream issuing from said opening; and a toggle operatively connected to said drip valve and to said framework.

6. The combination with a framework having a chute supported thereby and also having a projection, of a valve for said chute having a drip-opening; a drip-valve; and a toggle operatively connected to said drip valve and projection.

7. The combination with a chute, of a main valve therefor, said valve having a drip-opening; a drip-valve; and a toggle operatively connected to said drip-valve and having one of the toggle members also connected with said main valve.

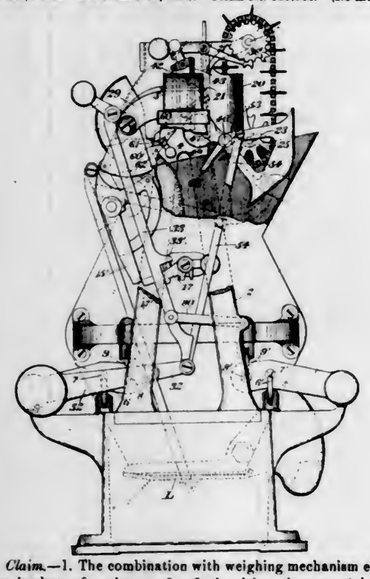
8. The combination with a chute, of a main valve therefor having a drip-opening in the bottom plate thereof; a supplemental valve supported adjacent to the discharge edge of said main valve; a drip-valve operable for controlling a stream of material issuing from said opening; and a toggle operatively connected to said drip-valve.

9. The combination with a chute, of a valve therefor having a drip-conduit provided with a regulable wall.

10. The combination with a chute, of a valve therefor having a drip-conduit provided with a regulable wall; and means for maintaining said wall in an adjusted position.

11. The combination with a chute, of a valve therefor; a drip-conduit provided with a regulable wall; a slide to which said wall is attached; and means for securing said slide in its adjusted position.

570,297. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 13, 1896. Serial No. 595,381. (No model.)



Claim.—1. The combination with weighing mechanism embodying a bucket, of a chute; of a feeder driven by material passing through said chute and operable for supplying material to said bucket.

2. The combination with weighing mechanism embodying a bucket, of a chute having a drip stream opening; and a feeder driven by material passing through said chute and operable for supplying material to the bucket.

3. The combination with weighing mechanism embodying a bucket, of a chute; a feeder driven by material passing through said chute and operable for supplying material to said bucket; and means for holding said feeder against movement.

4. The combination with weighing mechanism embodying a bucket, of a chute having a main-stream outlet; and a feeder driven by material passing through said chute and operable for supplying material to the bucket.

5. The combination with weighing mechanism embodying a bucket, of a chute having a main stream outlet and a drip opening; and a feeder located adjacent to said drip-opening and driven by material passing therethrough, said feeder being controlled by the weighing mechanism

6. The combination with weighing mechanism embodying a bucket, of a chute; and a feeder bodily movable through said chute and driven by descending material within said chute and controlled by means operative with the weighing mechanism.

7. The combination with weighing mechanism embodying a bucket, of a chute having a main-stream outlet and a drip-chamber; and a feeder bodily movable through said chamber and operable for supplying material to said bucket.

8. The combination with weighing mechanism embodying a bucket, of a chute having a main-stream outlet and a drip-chamber; and a feeder bodily movable through said drip-chamber and driven by material descending therein, said feeder being operable for supplying material to the bucket.

9. The combination with a bucket, of a chute; a feeder located adjacent to, and driven by material passing through, said chute; and a cut-off valve.

10. The combination with weighing mechanism embodying a bucket, of a chute having a main-stream opening and provided also with a drip-opening, of a feeder located adjacent to said chute and driven by material passing through one of said openings, said feeder being also operable for supplying material to the bucket.

11. The combination with weighing mechanism embodying a bucket, of a chute having an opening; a feeder located adjacent to said chute and driven by material passing through said opening, said feeder being also operable for supplying material to said bucket; and means for regulating the volume of the material passing through said opening.

12. The combination with weighing mechanism, of a chute; a feeder located adjacent to said chute and driven by material passing therethrough; and means operative with said weighing mechanism for controlling the action of said feeder.

13. The combination with a chute having a main-stream outlet and a conduit, said chute also having an inclined plate leading therefrom to said conduit; of a feeder operable in said conduit and driven by material passing through said conduit.

14. The combination with weighing mechanism embodying a bucket, of a chute and a valve therefor; a feeder located adjacent to said chute and driven by material passing therethrough, said feeder being also operable for supplying such material to the bucket; and means operative with the valve for controlling the action of said feeder.

15. The combination with a chute having a main-stream outlet and provided also with a drip-opening, of a feeder located adjacent to said chute and driven by material passing through said chute and operable also for conveying the same therefrom; and a valve movable below said feeder.

16. The combination with weighing mechanism embodying a bucket, of a chute having a main-stream outlet and provided also with a drip-opening; a feeder operated by material passing through said chute and operable for supplying material to the bucket; and a gate slidable across said opening for regulating the volume of a stream of material flowing through said drip-opening.

17. The combination with a chute having a main-stream outlet and provided also with a drip-opening, of a valve operable for controlling the main stream; a feeder driven by material passing through said drip-opening; and a valve movable below said feeder.

18. The combination with a chute having a tubular conduit, of a feeder bodily movable through said conduit; and weighing mechanism controlling the action of said feeder and comprising a valve having a movement below said feeder.

19. The combination with weighing mechanism embodying a bucket, of a chute having a tubular conduit; a feeder comprising a chain having a series of floats, said feeder being driven by material passing through said conduit and controlled in its action by means operative with the weighing mechanism.

20. The combination with a chute, of a feeder; a detent for holding the same against movement; a lever for actuating said detent, said lever having a pair of depending rods; and means for operating said rods and thereby actuating the same.

21. The combination with a chute, of a feeder; a detent for holding said feeder against movement; an actuator for said detent; and a valve provided with a device for operating said actuator.

22. The combination with a chute, of a feeder; a detent for holding said feeder against movement; an actuator for said detent; and a valve provided with a by-pass device for operating said actuator.

23. The combination with a chute, of a feeder; a counterweighted detent device for holding said feeder against movement; an actuator for said detent device; and a valve provided with a device for operating said actuator.

24. The combination with a chute, of a feeder; a detent device for holding said feeder against movement; a compound lever for actuating said detent device, said compound lever having a pair of depending rods; and weighing mechanism provided with means for operating said rods.

25. The combination with a chute, of a feeder; a detent device therefor; a compound lever for actuating said detent device, said lever having a pair of depending rods; and a pair of valves provided with means for operating said rods.

26. The combination with a chute, of a feeder consisting of an endless chain provided with a series of floats; supporting-shafts for said feeder, one of which is provided with a stop-wheel; a detent for engaging said stop-wheel; and weighing mechanism embodying means for throwing said detent into an inoperative position.

27. The combination with a chute, of a feeder consisting of an endless chain provided with a series of floats; supporting-shafts for said feeder, one of which is provided with a stop-wheel; a detent operative for engaging said stop-wheel; a compound lever for actuating said detent and furnished with a pair of depending rods; and a pair of valves provided with means for operating said rods.

28. The combination with a chute, of a chain-feeder; supporting-shafts for said feeder, one of which is provided with a stop-wheel; a detent for locking said stop-wheel; and means for actuating said detent.

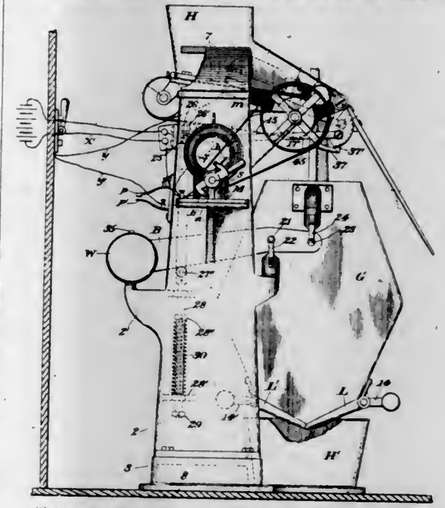
29. The combination with a feeder operated by a stream of material, of a cut-off valve; a rod connected to said valve; and a shiftable lever also connected to said rod.

30. The combination with weighing mechanism and a bucket supported thereby, of a supply-chute; a feeder operated by material issuing from said chute; a cut-off valve; a rod connected to said valve; and means for actuating said rod.

31. In a weighing-machine, the combination with beam mechanism and with a bucket supported thereby, of a hopper having main and drip stream openings and valves for controlling the passage of material through said openings; of a drip-stream feeder actuated by material passing through the drip-opening; and mechanism actuated by one of the valves for controlling the action of said feeder.

32. The combination with weighing mechanism embodying a bucket, of a feeder driven by material delivered to said bucket and controlled by the weighing mechanism.

570,298. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 22, 1896. Serial No. 596,395. (No model.)



Claim.—1. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; and a circuit-controller governed by said weighing mechanism.

2. The combination with a scale-beam and a bucket supported thereby, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; and a circuit-controller governed by said scale-beam.

3. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; and a spring-actuated circuit-controller governed by said weighing mechanism.

4. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having terminals thereon also located in said circuit; and a switch adapted to bridge said terminals, said switch being controlled by the weighing mechanism.

5. The combination with a feeder, of an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having terminals also located in said circuit; a switch adapted to bridge said terminals; and a valve operatively connected to said switch.

6. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard hav-

ing terminals thereon also located in said circuit; and a laterally-movable switch adapted to bridge said terminals, said switch being controlled by the weighing mechanism.

7. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having thereon two sets of terminals; and a switch adapted to bridge either of said sets of terminals to thereby complete an electric circuit, said switch being controlled by the weighing mechanism.

8. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; an electric generator; and means governed by said weighing mechanism for varying the strength of the current supplied to said motor.

9. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having terminals thereon also located in said circuit; and a pair of coöperative bars, one of which is provided with a switch for bridging said terminals, the other bar being governed by the weighing mechanism.

10. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having terminals thereon also located in said circuit; a pair of coöperative bars, one of which has a switch for bridging said terminals; and means for actuating the other bar.

11. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having terminals thereon also located in said circuit; a pair of pivotally connected bars, one of which is provided with a switch for bridging said terminals; means for actuating the other bar; and a valve operatively connected to one of said bars.

12. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having thereon terminals also located in said circuit; a bar having a switch adapted to bridge said terminals; a second bar provided with a switch-actuator disposed about the same; and a valve operatively connected with said first-mentioned bar.

13. The combination with weighing mechanism, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switchboard having thereon terminals also located in said circuit; a bar having a switch adapted to bridge said terminals; a second bar pivoted to said first-mentioned bar; a valve; and a rod operatively connected to said valve and first-mentioned bar.

14. The combination with a scale-beam and with a bucket supported thereby, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switch-board having terminals also located in said circuit; a switch having means connected thereto for moving the same out of contact with said terminals and having thereon a projection adapted to bear against said scale-beam, by which said scale-beam is limited.

15. The combination with weighing mechanism embodying a bucket, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating the feeder; a solenoid; a valve operated by said solenoid; and means for controlling the current supplied, respectively, to the motor and solenoid, said means being governed by the weighing mechanism.

16. The combination with a bucket and with a scale-beam for supporting the same, of a feeder; an electric circuit having a motor therein, said motor being operable for actuating the feeder; a switchboard having two sets of terminals in said circuit; a valve; a solenoid also located in said circuit and adapted to operate said valve; and circuit-controlling means governed by said scale-beam.

17. The combination with a bucket and with a scale-beam for supporting the same, of an electric circuit having a motor therein, said motor being operable for actuating said feeder; a switch located in said circuit and having two sets of terminals; a switch controlled by the scale-beam and adapted to bridge either of said sets of terminals; a valve; a solenoid adapted to operate said valve; and a pair of terminals, one of which is operated by the scale-beam, whereby they are caused to come in contact.

18. The combination with a bucket having a closer, of stream-supply means; a valve having a stop; a rod connected to the closer, said rod being provided with an offset against which the valve-stop member is adapted to bear normally; a latch located to engage a projection on said rod; and a lever normally operative for limiting the movement of said latch, said lever being connected to the valve-stop member.

19. The combination with a bucket having a closer, of stream-supply means; a valve having a stop member; a rod connected to the closer and provided with an offset against which said stop member is adapted to bear normally; a latch located to engage a projection on said rod; a lever normally operative for limiting the movement of said latch, said lever being operatively connected to said member; and a latch-tripping device attached to said valve.

20. The combination with a bucket having a closer, of means embodying a latch for holding said closer against movement, said latch having a pair of arms; a lever normally approximately in contact with one of said arms; means for operating said lever; and a tripping device operable for engaging the other arm of said latch to thereby trip said latch.

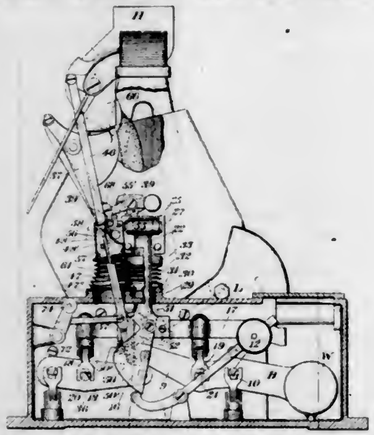
21. The combination with a bucket having a closer, of means embodying a latch for holding said closer against movement, said latch having a pair of arms; a valve having a lever operatively connected thereto and in position to approximately engage one of said latch-arms; and a tripping device connected to said valve and operable for engaging the other arm of said latch.

22. The combination with a bucket having a closer, of means embodying a latch for holding said closer against movement; a scale-beam for supporting said bucket; a valve having a latch-tripping device; a solenoid for actuating said valve; and means operated by said scale-beam for energizing said magnet.

23. The combination with a bucket and with a valve, of a closer for said bucket; a relatively long rod connected to said closer and normally held against movement, said rod having a stop; and a coacting stop operative with said valve and normally bearing against said first-mentioned stop.

24. The combination with a bucket having a pair of closers, of a rod operatively connected to said closers by links, said rod having a projection and provided also with a stop; a latch having a hook adapted to engage said projection; a valve having a stop normally bearing against said first-mentioned stop; and a latch-tripping device.

570,299. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 23, 1896. Serial No. 596,590. (No model.)



Claim.—1. The combination with a valve, of a rod operatively connected thereto; and a pair of actuators, each effective for transmitting a valve-operating thrust to said rod.

2. The combination with a shiftable bucket-discharge member, of means embodying a latch for normally holding the same against movement; a valve having a rod operatively connected thereto, said rod being provided with a device for tripping said latch; and a pair of actuators, each effective for transmitting a valve-operating thrust to said rod.

3. The combination with a bucket, of a closer therefor; means embodying a latch for normally holding the same against movement; a valve having a rod operatively connected thereto, said rod being provided with a device for tripping said latch; and a pair of actuators, each effective for transmitting a valve-operating thrust to said rod.

4. The combination with a valve, of a rod operatively connected thereto; a bucket and a supporting scale-beam, the latter being in position for transmitting the thrust in one direction to said rod; a counterweighted lever in position for imparting an opposite thrust to said rod; and devices intermediate said lever and rod.

5. The combination with a shiftable bucket-discharge member, of means embodying a latch for normally holding the same against movement; a valve having a rod operatively connected thereto, said rod being provided with a device for tripping said latch; a pair of actuators, each effective for transmitting a valve-operating thrust to said rod; and shifting means operatively connected to said rod.

6. The combination with weighing mechanism embodying a rod a section of which is tubular, of a valve; a rod operative with said valve; a device supported on said first-mentioned rod for intercepting the valve-operative rod at a predetermined point; and means located within said tubular section for controlling said intercepting device.

7. The combination with weighing mechanism embodying a rod a section of which is tubular, of a valve; a rod operative with said valve; a by-pass device supported on said first-mentioned rod and adapted for intercepting the valve-operative rod at a predetermined point in the closing movement of the valve; and means located within said tubular section for controlling said by-pass device.

8. The combination with a valve, of a rod having a tubular section; an actuator for said rod; a valve-intercepter; and a controller for said intercepter operatively connected with said actuator.

9. The combination with a valve, of a rod connected thereto and having a tubular section; a device for intercepting said valve at a predetermined point in its closing movement; and a reciprocating controller for said device, said controller being located within the tubular portion of said rod.

10. The combination with a valve, of a rod operatively connected thereto and having a tubular section; a scale-beam adapted to engage said rod; a valve-intercepter supported on said rod; and means for controlling the action of said intercepter, said means being located within the tubular section of said rod and operatively connected with said scale-beam.

11. The combination with weighing mechanism, of a valve; a rod operatively connected to said valve and having a casing; a by-pass-valve-intercepting device supported by said casing; and means operative with the weighing mechanism for controlling the action of said by-pass device.

12. The combination with weighing mechanism, of a valve; a rod operatively connected thereto, said rod embodying a casing; a by-pass valve-intercepting device supported by said casing and having a projection; and a shouldered rod located within said casing for controlling the action of said by-pass device, said shouldered rod being governed by the weighing mechanism.

13. The combination with a valve, of a rod operatively connected thereto; a scale-beam operative for engaging said rod; a cam connected to said rod by a link; and a counterweighted lever for actuating said cam.

14. The combination with a valve, of a rod operatively connected thereto and having a tubular section; a pair of actuators, each effective for transmitting a valve-operative thrust to said rod; a valve-intercepter supported by said rod; and means located within the tubular section of the rod for controlling the action of said valve-intercepter.

15. The combination with a chambered supporting-base, of a valve; a rod operatively connected to said valve and extended through an opening in said base; an actuator located within said base and operable for transmitting a valve operating thrust to said rod; and an extensible guard connected to said rod and base.

16. The combination with a chambered supporting-base, of a valve; a rod operatively connected to said valve and extended through an opening in said base; an actuator located within said base and operable for transmitting a valve-operating thrust to said rod; and an extensible and laterally-movable guard connected to said rod and base.

17. The combination with a chambered supporting-base and beam mechanism located within the same, of a frame sustained by the beam mechanism and having risers passing through the base between which the bucket is mounted; means for supplying a stream of material to said bucket; a stream-controlling valve having a depending rod pivoted thereto and extending through an opening in said base, said rod being in operative relation with the beam mechanism; a cam situated in said base and operatively connected with said rod; a counterweighted lever also located within said base and adapted to actuate said cam and thereby the rod and valve; and extensible envelops or guards disposed about said rod and risers and connected, respectively, thereto and to the base.

18. The combination with a chambered supporting-base, of a scale-beam supported for movement within said base and carrying a yoke; hangers mounted on said yoke and passing through openings formed in said base; a bucket sustained by said hangers; and extensible guards extending about said hangers and connected to said base.

19. The combination with a chambered supporting-base, of a scale-beam supported for movement within said base and carrying a yoke; hangers mounted on said yoke and passing through openings formed in said base; a bucket sustained by said hangers; and adjustable guards extending about said hangers and connected to said base.

20. The combination with a valve, of a rod operatively connected thereto, said rod having a tubular section; a valve-intercepter supported by said rod; and means located within said tubular section for controlling the action of said intercepter.

21. The combination with a chambered supporting-base and beam mechanism located within the same, of framing mounted on said base and carrying a supply-chute; a bucket supported by the beam mechanism and having a closer; means including a latch for holding said closer against movement; a stream-controlling valve for said supply-chute, having a depending rod pivoted thereto and extending into said base, said rod being in operative relation with the beam mechanism and provided also with a latch tripper; a cam situated in said base and operatively connected to said rod; a counterweighted lever adapted to actuate said cam and thereby the rod and valve; an extensible and laterally-movable envelop or guard disposed about said rod and connected thereto and to the base; and a rock-shaft supported by a wall of said base, one of its ends being connected by a crank and link to said rod, the other end being furnished with an actuating handle or crank.

22. The combination with a chambered dust-proof casing having an opening therein, of weighing mechanism supported within said casing; a valve having a rod connected thereto and extended through an opening formed in said base, said rod being in operative connection with said weighing mechanism; and an actuator for said rod.

23. The combination with a chambered dust-proof casing having an opening and embodying also a removable plate or plates, of a valve having a rod connected thereto and extending through said opening; and a pair of alternately-acting actuators in operative connection with said rod.

24. The combination with a chambered dust-proof casing, of weighing mechanism supported therein; a thrust-rod passing through an opening formed in said casing and in operative connection with said weighing mechanism; and a dust-proof guard extending about said rod at its point of entrance to said casing and connected, respectively, thereto and to said base.

25. The combination with a chambered dust-proof casing, of weighing mechanism supported therein; a valve having a rod connected thereto and passing through an opening formed in said casing and in operative connection with said weighing mechanism; and a laterally-movable extensible envelop disposed about said rod approximately at its point of entrance to said casing and connected, respectively, thereto and to said base.

26. The combination with a chambered supporting-base, of a scale-beam supported for movement within said base and having hangers connected thereto, said hangers passing through openings formed in said base; a bucket supported for movement between said hangers; a valve; a rod passing through an opening formed in said base and operatively connected to said valve and positioned for receiving a thrust from said scale-beam; a cam located within said base and connected to said rod by a link; and a counterweighted lever for engaging said cam.

27. The combination with a chambered dust-proof supporting-base, of a scale-beam supported for movement within said base; a bucket carried by said beam; a closer for said bucket; closer-holding means embodying a latch normally operative for maintaining said closer in its shut position; a valve having a rod operatively connected thereto and in operative connection with said scale-beam, said rod having a latch-tripper; and means for throwing said latch-tripper into an inoperative position.

570,300. SUPPLY APPARATUS FOR WEIGHING-MACHINES. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 1, 1896. Serial No. 597,679. (No model.)

Claim.—1. The combination with stream-supplying means, of an automatically-operating, reactive, gravitative stream-chute movable back and forth on variations in the force of the stream of material passing therethrough.

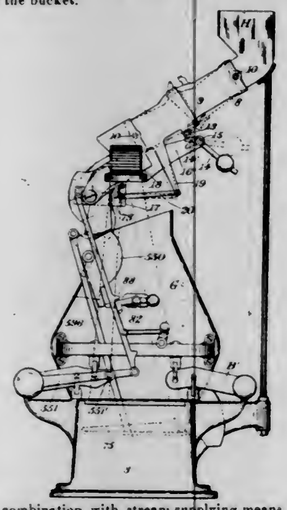
2. The combination with stream supplying means, of an automatically-operating, counterweighted, gravitative stream-chute movable back and forth proportionally to variations in the specific gravity of the stream of material passing therethrough.

3. The combination with stream-supplying means, of a reactive gravitative stream-chute movable back and forth on variations in the force of the stream passing therethrough, and chute-operated stream-controlling means in position and adapted for regulating the flow of the stream.

4. The combination with stream-supplying means, of a reactive gravitative stream-chute movable back and forth on variations in the force of the stream passing therethrough; a main valve controlling the efflux of the stream from said chute; and a chute-operated drip-regulator.

5. The combination with stream-supplying means, of a reactive gravitative stream-chute movable back and forth on variations in the force of the stream passing therethrough; a supply-spout at the discharge end of said chute and having a drip-opening in its front wall; a main valve controlling the flow from said spout; and a chute-operated drip-regulator controlling the drip-opening in said supply-spout.

6. The combination with an automatic weighing-machine having a bucket, of stream-supplying means; a reactive gravitative stream-chute movable back and forth on variations in the force of the stream passing therethrough; and chute-operated stream-controlling means in position and adapted for regulating the flow of the stream from the chute to the bucket.



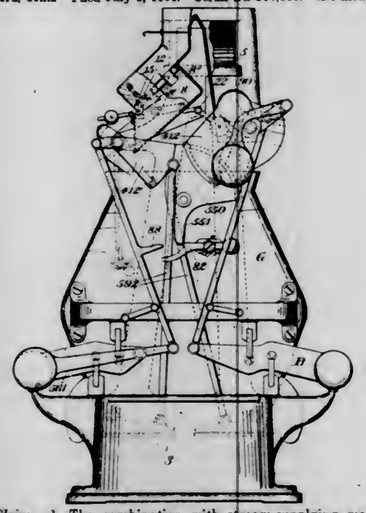
7. The combination with stream-supplying means, of an automatically-operating reactive gravitative stream-chute oscillatory on variations in the force of the stream passing therethrough.

8. The combination with stream-supplying means, of an automatically-operating reactive gravitative duplex stream-chute oscillatory on variations in the force of the stream passing therethrough and comprising a pair of hinged sections.

9. The combination with stream-supplying means, of an automatically-operating reactive gravitative duplex stream chute oscillatory on variations in the force of the stream passing therethrough and comprising a pair of hinged sections having coacting stops for limiting the descent of said sections.

10. The combination with stream-supplying means, of an automatically-operating reactive gravitative duplex stream-chute oscillatory on variations in the force of the stream passing therethrough and comprising a pair of tubular hinged sections.

570,301. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 3, 1896. Serial No. 597,966. (No model.)



Claim.—1. The combination with stream-supplying means, of an automatically-operating stream-controlling valve; and a reactive gravitating stream-chute delivering material directly to the valve and movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve.

2. The combination with stream-supplying means, of an automatically-operating stream controlling valve; and a reactive gravitating stream-chute delivering material directly to the valve and oscillatory at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve.

3. The combination with stream-supplying means, of an automatically operating stream-controlling valve; and a reactive gravitating stream-chute delivering material directly to the valve and oscillatory at its discharge end about an axis between its ends, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve.

4. The combination with stream supplying means, of an automatically-operating delivery-valve; a reactive gravitating stream-chute movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve; and a stream-operated reactive check-valve controlling the discharge end of the stream-chute.

5. The combination with stream-supplying means, of an automatically-operating delivery-valve; a reactive gravitating stream-chute movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve; and an oscillatory stream operated reactive check valve carried by the stream-chute and controlling the discharge end thereof.

6. The combination with stream-supplying means, of a delivery-valve; a reacting gravitating stream-chute movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the valve; and an oscillatory stream-operated counter-weighted check-valve carried by the stream-chute and controlling the discharge end thereof.

7. The combination with a pair of supply-spouts, of a reactive gravitating stream-chute in position to receive material from said supply-spouts and movable proportionally to variations in the force of the stream passing through said chute; and chute-operated stream-controlling means for regulating the efflux of material from one of said supply-spouts.

8. The combination with a pair of supply-spouts, of a reactive gravitating stream-chute in position to receive material from said supply-spouts and movable proportionally to variations in the force of the stream passing through said chute; and chute-operated stream-controlling means for reducing and increasing the flow of material from one of said supply-spouts proportionally to the movements of the stream chute.

9. The combination with a pair of supply spouts, of a reactive gravitating stream chute in position to receive material from said supply-spouts and oscillatory about an axis in advance of the rear spout proportionally to variations in the force of the stream passing through said chute; and chute-operated stream-controlling means for regulating the efflux of material from the forward supply-spout.

10 The combination with a pair of supply-spouts, of a reactive gravitating stream chute in position to receive material from said supply-spouts and movable proportionally to variations in the force of the stream passing through said chute; and a chute-operated valve in one of said supply spouts for regulating the efflux of material therefrom.

11. The combination with a pair of supply-spouts, of a reactive gravitating stream chute in position to receive material from said supply spouts at different points in its length and movable proportionally to variations in the force of the stream passing through said chute.

12. The combination with a pair of supply-spouts, of a reactive gravitating stream chute in position to receive material from said supply-spouts and oscillatory about an axis in the path of the stream delivered from the forward spout proportionally to variations in the force of the stream passing through said chute.

13. The combination with a pair of supply-spouts, of a delivery-valve at the discharge end of the stream-chute; a reactive gravitating stream-chute movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from said valve; and an oscillatory stream-operative reactive check-valve between the stream-chute and the delivery-valve and controlling the discharge end of said chute.

14. The combination with an automatic weighing mechanism embodying a bucket, of a main valve; a drip-valve; stream-supplying means; and a reactive gravitating stream-chute movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the drip-valve.

15. The combination with an automatic weighing mechanism embodying a bucket, of a main valve; a drip-valve; a pair of supply-spouts, one for each valve; and a reactive gravitating stream-chute between the drip-valve and its spout and movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the drip-valve.

16. The combination with an automatic weighing mechanism embodying a shiftable load-discharging member, of a main valve; a drip-valve; a pair of supply-spouts, one for each valve; means for releasing the shiftable member on the completion of a load; a pair of stops operative, respectively, with said respective valves; and valve-stopping means operative with the load-discharging member and in position and adapted for engaging said stops and preventing the opening of the valves while the closer is open.

17. The combination with an automatic weighing mechanism embodying a shiftable load-discharging member, of a main valve; a drip-valve; a pair of supply-spouts, one for each valve; means for releasing the shiftable member on the completion of a load; a pair of stops operative, respectively, with said respective valves; and a valve opening-movement limiter operative with the load-discharging member and in position and adapted for engaging said stops and preventing the opening movement of the valves while the closer is open.

18. The combination with a main supply-spout, of a pair of branch spouts leading therefrom; and a reactive gravitative tubular stream-chute having openings in its upper side for receiving the delivery ends of the branch spouts and movable proportionally to variations in the force of the stream passing through the chute.

19. The combination with a main supply-spout, of a pair of branch spouts leading therefrom, substantially at right angles thereto, to reduce the force of the supply stream; and a reactive gravitative stream chute movable proportionally to variations in the weight of the stream passing therethrough.

20. In an automatic weighing-machine, the combination with a chute and with a valve therefor; of a valve-opening actuator carried by, and movable relatively to, the valve.

21. In an automatic weighing-machine, the combination with a chute and a valve therefor; of an oscillatory valve-opening actuator carried by, and movable relatively to, the valve.

22. In an automatic weighing-machine, the combination with a chute and with a valve therefor; of an oscillatory valve opening actuator pivoted to the valve in the rear of the axis of the valve and oscillatory relatively to said valve.

23. In an automatic weighing-machine, the combination with a shiftable load discharging member; of a main valve; a drip-valve; a pair of supply-spouts, one for each valve; a reactive gravitative stream-chute between the drip-valve and its spout and movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the drip-valve; valve actuating means; and reciprocally effective valve opening-movement and load discharging-movement limiters operative, respectively, with the load-discharging member and with the drip-valve.

24. In an automatic weighing-machine, the combination with a shiftable load-discharging member; of a main valve; a drip-valve; a pair of supply-spouts, one for each valve; a reactive gravitative stream-chute between the drip-valve and its spout and movable at its discharge end, proportionally to variations in the force of the stream passing therethrough, in a path intersecting the flow line of the stream discharged from the drip-valve; valve-actuating means; and reciprocally effective valve-opening-movement and load-discharging-movement limiters, the former operative with the load-discharging member and controlling both of the valves and the latter operative with the drip-valve.

570,302. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 14, 1896. Serial No. 599,075. (No model.)

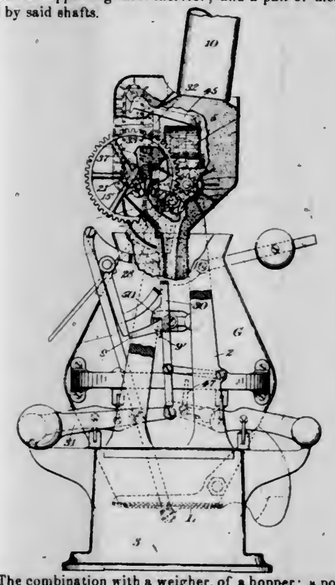
Claim.—1. The combination with a hopper, of a power-transmitting member driven by a gravitating mass of material passing through said hopper, and a device for storing a drip supply actuated by said power-transmitting member.

2. The combination with a hopper, of a rotary power-transmitting member driven by a gravitating body of material passing through said hopper, and a device for storing a drip supply actuated by said power-transmitting member.

3. The combination with a hopper, of a power-transmitting member located therein and driven by a gravitating mass of material passing through said hopper, and a device for storing a drip supply actuated by said power-transmitting member.

4. The combination with a hopper, of a power-transmitting member driven by a gravitating mass of material passing through said hopper; a drip-supply device; and operative connections between the latter and said power-transmitting member.

5. The combination with a hopper, of a power-transmitting member and its supporting-shaft, said member being driven by a gravitating mass of material passing through said hopper; a drip-supply device and a supporting shaft therefor; and a pair of meshing gears carried by said shafts.



6. The combination with a weigher, of a hopper; a power transmitting member driven by a gravitating mass of material passing through said hopper; and a device for storing a drip supply actuated by said power-transmitting member.

7. The combination with a hopper, of a bucket-wheel driven by a gravitating mass of material passing through said hopper, and a device for storing a drip supply actuated by said bucket-wheel.

8. The combination with a hopper, of a bucket-wheel located therein and driven by a body of material passing through said hopper; an adjacent device actuated thereby; and means for throwing said bucket-wheel out of action, whereby it constitutes a stream cut-off.

9. The combination with a hopper having a storage-chamber, of a power-transmitting member, and a drip supply device actuated by the latter and operative for elevating a body of material to said storage-chamber.

10. The combination with a hopper, of a power-transmitting member; and a combined drip elevator and feeder having movements in two directions, it being operated in one direction by said power-transmitting member and in the opposite direction by the material passing from the hopper.

11. The combination with a hopper, of a power-transmitting member, a combined drip elevator and feeder having a movement in two directions, being operated in one direction by said power-transmitting member and in the other by a supply of drip material thereon.

12. The combination with a hopper having a storage chamber, of a drip supply device; means for operating the same in one direction; and means for throwing said drip-supply device out of operative relation with its operating means, whereby it may be reversely driven by a gravitating body of material from said storage-chamber.

13. The combination with a hopper, of a power-transmitting device; a drip-supply device; operative connections between the latter and said power-transmitting device, whereby said drip supply device is caused to store material in a chamber of the hopper; and means for blocking the movement of one of said devices.

14. The combination with a hopper, of a power-transmitting member driven by a body of material passing from said hopper; a drip-supply device; operative connections between said drip-supply device and said power-transmitting member; and means of blocking the movement of the drip-supply device, whereby the power-transmitting member will also be held stationary.

15. The combination with a power-transmitting device, of a drip-supply device; actuating-gearing interposed between said devices; a detent in position to be thrust between the teeth of one of the gears; and means for normally holding said detent in an ineffective position.

16. The combination with a hopper, of a bucket-wheel located therein; a drip-supply device also located in said hopper; and operative connections between the latter and the bucket-wheel.

17. The combination with a hopper having a drip-storage chamber, of a bucket-wheel located in said hopper; a drip-supply device also located therein and having two movements, on one of which it is adapted for elevating a body of material to said drip-storage chamber; and operative connections between said bucket-wheel and the drip-supply device for moving the latter in one direction; said device being moved in the opposite direction by material passing from the storage chamber.

18. The combination with a hopper, of a bucket-wheel located in said hopper and driven by a body of material passing therethrough; a deflecting-plate located over said bucket-wheel; and a device for storing a drip supply actuated by said bucket-wheel.

19. The combination with a hopper having main and drip compartments, of a bucket-wheel located in said main compartment, and a device for storing a drip supply located in the other compartment and actuated by said bucket-wheel.

20. The combination with a hopper having main and drip compartments separated by a partition having an inclined portion, which latter forms with a wall of the chute a drip-storage chamber; of a bucket-wheel located in said main compartment and driven by a body of material passing through the hopper; a drip-supply device located in the other compartment; connections between the latter and the bucket-wheel for operating said drip-supply device in one direction; means for releasing said drip-supply device from its actuating mechanism, whereby it may be reversely operated by a body of material gravitating from said storage-chamber.

21. The combination with weighing mechanism embodying a bucket, of a hopper; a power-transmitting device driven by a body of material passing through said hopper; a device for storing a drip supply actuated by said bucket-wheel; and controlling means for one of said devices operative with the weighing mechanism.

22. The combination with weighing mechanism embodying a bucket and a valve, of a hopper; a bucket-wheel driven by a body of material passing through said hopper; a device for storing a drip supply actuated by said bucket-wheel; and controlling means for one of said devices operative with said valve

23. The combination with weighing mechanism embodying a bucket, of a hopper; a bucket wheel driven by a body of material passing through said hopper; a device for storing a drip supply actuated by said bucket-wheel; and controlling means for said drip-supply device operative with the weighing mechanism.

24. The combination with a hopper having main and drip compartments, of a bucket-wheel located in said main compartment; a deflecting-plate disposed above said bucket-wheel; and a device for storing a drip supply actuated by said bucket wheel.

25. The combination with a hopper having main and drip compartments, of a bucket-wheel located in said main compartment; a deflecting-plate disposed above said bucket-wheel; a device for storing a drip supply actuated by said bucket wheel; and a supply-pipe leading into said hopper.

26. The combination with weighing mechanism embodying a bucket, of a hopper; a bucket-wheel and its supporting-shaft; a drip-supply device also provided with a shaft; meshing gears carried by said shafts; a detent in position to be thrust between the teeth of one of said gears; and means operative with the weighing mechanism for normally limiting the movement of said detent.

27. The combination with weighing mechanism embodying a bucket, of a hopper; a bucket-wheel and its supporting shaft; a drip-supply device also provided with a shaft; meshing gears carried by said shafts; a counterweighted detent in position to be thrust between the teeth of one of said gears; and means operative with the weighing mechanism for normally limiting the movement of said counterweighted detent.

28. The combination with weighing mechanism, of a hopper; a power-transmitting member driven by a body of material passing through said hopper; a drip-supply device; operative connections, embodying a clutch, between the power-transmitting member and the drip-supply device; and means operative with the weighing mechanism for uncoupling the clutch members.

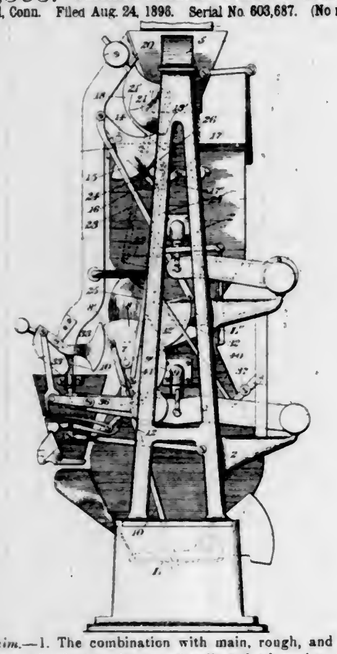
29. The combination with a hopper, of a power-transmitting member; a drip-supply device; operative connections, embodying a clutch, between the latter and the power-transmitting member; a sleeve disposed about said clutch and having a cam-slot; a rotary band on said sleeve provided with a clutch actuator passing through said cam-slot; and means for rotating said band.

30. The combination with weighing mechanism, of a hopper; a power-transmitting member; a drip-supply device; operative connections, embodying a clutch, between the latter and the power-transmitting member; a sleeve disposed about said clutch and having a cam-slot; a rotary band having a clutch passing through said cam-slot and provided also with a crank-arm; and a reciprocating rod operative with the weighing mechanism and connected to said crank-arm.

31. The combination with weighing mechanism, of a hopper; a power-transmitting member driven by a body of material passing through said hopper; a drip-supply device; supporting-shafts for said members; meshing gears carried by said shafts; a clutch on one of the latter; a reciprocating rod connected to, and operable for uncoupling, the clutch members; and a detent in position to block the actions of one of the gears and normally held in its ineffective position by said reciprocating rod.

32. The combination with a hopper, of a bucket-wheel located therein and driven by a body of material passing through said hopper, the plates of said bucket-wheel running approximately in contact with a wall of said hopper; an adjacent device for storing a drip supply driven by said bucket-wheel; and means for throwing the said device out of action.

570,303. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 24, 1896. Serial No. 603,687. (No model.)



Claim.—1. The combination with main, rough, and auxiliary weighing mechanisms, each comprehending a load-receiver; of means for effecting the discharge of the load-receivers of the rough and auxiliary weighing mechanisms into the load-receiver of the main weighing mechanism.

2. The combination with main, rough, and auxiliary weighing mechanisms, each comprehending a load-receiver; of a single scale-beam for supporting the load-receivers of the main and auxiliary weighing mechanisms; a scale-beam for supporting the load-receiver of the rough weighing mechanism; and means for effecting the discharge of the contents of the load-receiver of the rough weighing mechanism into the load-receiver of the main weighing mechanism, and for also effecting the discharge of the main and auxiliary load-receivers.

3. The combination with two weighing mechanisms, each embodying a load-receiver; of means for effecting the discharge of the contents of the first load-receiver into the load-receiver of the second weighing mechanism on the closing of the load-receiver of said second weighing mechanism.

4. The combination with two weighing mechanisms comprehending load-receivers, each of said load-receivers being supported by a scale-beam; of means for effecting the discharge of the first load-receiver into the second on the closing of the second load-receiver; and auxiliary load-supply means for said last-mentioned load-receiver.

5. The combination with weighing mechanism comprehending a load-receiver, of a bucket or meter; means for effecting the discharge of the contents of said bucket or meter into said load-receiver to form the major part of the true load to be weighed; and auxiliary weighing mechanism, also comprehending a load-receiver, for supplying the balance of said true load.

6 The combination with main and auxiliary buckets and beam mechanism for supporting the same, of a bucket or meter; means for effecting the discharge of the contents of the latter into the main bucket to form the major part of a true load to be weighed; and instrumentalities for blocking the action of the main bucket while such major supply is being delivered thereto.

7. The combination, with main and auxiliary buckets and beam mechanism for supporting said buckets; of a bucket or meter embodying a closer; means for effecting a discharge of the contents of said bucket or meter into said main bucket to form the major part of the true load to be weighed; and instrumentalities operative with the closer of said bucket or meter, for blocking the action of the main bucket while the contents of the former are being delivered thereto.

8. The combination with framework, of main and auxiliary buckets and beam mechanism for supporting said buckets; a bucket or meter comprehending a closer; means for effecting the discharge of the contents of said bucket or meter into the main bucket to form the major part of a true load to be weighed; and a lever mounted on the framework and operatively connected to said closer and having a projection adapted to ride along the beam mechanism, said lever being operatively connected with said closer.

9. The combination with framework, of main and auxiliary buckets; beam mechanism for supporting said buckets; a bucket or meter having a closer; means for effecting the discharge of the contents of said bucket or meter into the main bucket to form the major part of a true load to be weighed; a lever mounted on the framework and having a projection adapted to ride along the beam mechanism on the opening of said closer; and a rod operatively connected to said closer and lever.

10. The combination with two weighing mechanisms, each comprehending a bucket, said buckets being supported by independent scale-beams, and each provided with a closer; of reciprocally effective stops operative with said closers.

11. The combination with two weighing mechanisms, each embodying a bucket, one of said buckets having a spout; of means for effecting the discharge of the other bucket thereinto to form the major part of a true load to be weighed; an auxiliary weighing-bucket; and means for discharging the contents of the latter into said spout.

12. The combination with main and auxiliary welghing mechanisms, each comprehending a bucket, and beam mechanism for supporting said buckets, each of said buckets having a closer normally held against movement by means comprehending a latch; of a bucket or meter; means for effecting the discharge of the contents of said bucket or meter into the main bucket; and instrumentalities operative with the main weighing mechanism for tripping the latch of the auxiliary weighing mechanism, the latch of the main weighing mechanism being tripped by means operative with the auxiliary weighing mechanism.

13. The combination with main and auxiliary buckets supported by beam mechanism, of a bucket or meter; means for effecting the discharge of the contents of the bucket or meter into said main bucket to form the major part of a true load to be weighed; a chute or hopper for delivering material to said bucket or meter and controlled by a valve; a spout for supplying material to the auxiliary bucket and also controlled by a valve; valve-actuating mechanism; and means for effecting the discharge of said main and auxiliary buckets.

14. The combination with main and auxiliary buckets, each comprehending a closer, each of said closers being held against movement by means comprehending a latch; of a rough weighing-bucket, also supported by a scale-beam and comprehending a closer held against movement by means comprehending a latch; a tripper for said latch, operatively connected with the closer of the main bucket; and means for tripping the latches of the main and auxiliary buckets.

15. The combination with main and auxiliary buckets supported by beam mechanism, of a bucket or meter; means for effecting the discharge of the contents of the latter into said main bucket; a spout for supplying a stream of material to the auxiliary bucket; a valve for said spout; a rod operatively connected to, and depending from, said valve and operated by a lever shiftably supported by the beam mechanism; instrumentalities for discharging the contents of said main bucket; and means operative with the main bucket for maintaining said valve in its shut position while such main bucket is discharging its contents.

16. The combination with main and auxiliary buckets supported by beam mechanism, each of said buckets having a closer held against movement by means comprehending a latch; of a bucket or meter; means for effecting the discharge of the contents of said bucket or meter into the main bucket; a spout for supplying a stream of material to the auxiliary bucket; a valve for said spout; a depending rod connected to said valve and operated by a lever shiftably supported by the beam mechanism, said rod being also operative for tripping the latch of the main bucket; and means operative with the main bucket for maintaining said valve in its shut position while such main bucket is discharging its contents.

17. The combination with main and auxiliary buckets, each embodying a closer normally held against movement; of beam mechanism for supporting said buckets; a rough-weighing-bucket supported by a scale-beam and embodying a closer normally held against movement; means for releasing the closer of said rough weighing-bucket; instrumentalities for releasing the closers of the main and auxiliary buckets; a spout for supplying a stream of material to the auxiliary bucket, said spout being controlled by a valve; valve actuating mechanism; and means operative with the closer for the main bucket for maintaining said valve and the closer for the rough weighing-bucket shut while the closer for the main bucket is open.

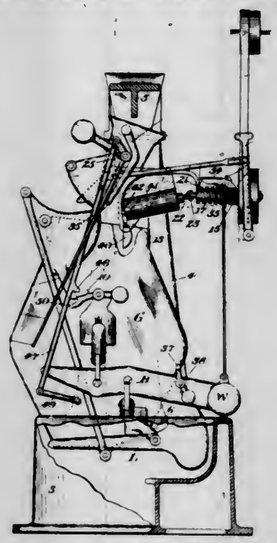
18. The combination with a bucket having a discharge outlet controlled by a closer, said bucket also having a spout provided with an inclined wall leading toward said outlet; of a bucket or meter; means for effecting the discharge of the contents of said bucket or meter into said main bucket; an auxiliary bucket; means for effecting the discharge of the contents of said auxiliary bucket into the spout of the main bucket; and beam mechanisms for supporting the several buckets.

19. The combination with main and auxiliary buckets, each comprehending a closer, said closers each being held against movement by means embodying a latch; of a rough weighing-bucket, also having a closer; means, including a latch, for holding said last-mentioned closer against movement; a rod operatively connected with the closer of the main bucket and carrying a pivotally-mounted tripper for the latch of the rough weighing-bucket.

20. The combination with main and auxiliary buckets, each of said buckets having a closer, each of which is held against movement by means comprehending a latch; of a rocking stop mounted on the main bucket and operatively connected to its closer, said rocking stop having a rod connected thereto; a rough weighing-bucket having a closer held against movement by means including a latch; a tripper on said rod for the last-mentioned latch; and a stop operative with the closer for the rough weighing-bucket and coöperative with said first mentioned stop.

21. The combination with a main bucket having a closer normally held against movement, of closer-releasing means; a shaft mounted on said bucket and carrying a pair of stops, one of which is connected to said closer; an auxiliary bucket; a supply-spout for delivering a stream of material to said auxiliary bucket and controlled by a valve; a rough weighing-bucket furnished with a closer, said closer having a stop which is coöperative with one of said pair of stops, the effective period of the other of said pair of stops alternating with a stop which is operative with said valve.

570,304. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 29, 1896. Serial No. 604,272. (No model.)



Claim.—1. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout adapted to deliver the

supply-stream to the cut-off; a feeder located between said spout and cut-off; and driving mechanism for said feeder.

2. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off, the floor of which is concaved; a swinging stream-controlling spout adapted to deliver the supply stream to the cut off; a feeder mounted in the concavity of said cut-off; and driving mechanism for said feeder.

3. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a spout adapted to deliver the supply stream to said cut off; a feeder located between said cut-off and spout; driving mechanism for said feeder; and means operated by said driving mechanism for actuating said spout.

4. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; and a device connected to said spout and having a tooth adapted to engage said worm to thereby actuate said spout.

5. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; a device connected to said spout, having a tooth adapted to engage said worm; and means for disengaging said tooth from the worm.

6. The combination with a scale beam and with a bucket supported thereby, of means for supplying a stream of material to said bucket; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; a spout-actuating device having a tooth adapted to engage said worm; and means operative with the scale-beam for disengaging said tooth from the worm.

7. The combination with a scale-beam and with a bucket supported thereby, of means for supplying a stream of material to said bucket; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; a link connected to said spout and having a tooth adapted to engage said worm; and a lever connected to the scale-beam and adapted to engage a projection on said link, to thereby elevate the tooth thereof above the plane of the worm.

8. The combination with a scale-beam and with a bucket supported thereby, of means for supplying a stream of material to said bucket; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; a link connected to said spout and having a tooth adapted to engage said worm; a lever connected to the scale beam and adapted to engage a projection on said link, to thereby elevate the tooth thereof above the plane of the worm; and a guideway on which said projection is deposited.

9. The combination with a scale-beam and with a bucket supported thereby, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout; a worm; means for rotating said worm; a link connected to said spout and having a tooth adapted to engage said worm; and a lever connected to the scale-beam by a rod and adapted to engage under a projection on said link, to thereby elevate the tooth thereof above the plane of the worm.

10. The combination with a scale beam and with a bucket supported thereby, of means for supplying a stream of material to said bucket; a swinging stream-controlling spout; a cut-off; a worm; means for rotating said worm; a bifurcated link connected to said spout and having a tooth adapted to engage the worm; a fixed bracket having a guideway; and a lever operatively connected to the scale-beam and adapted to engage under a projection on said link, to thereby elevate the tooth thereof above the plane of the worm and to deposit said projection on the guideway.

11. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a swinging stream-controlling spout; a cut-off; a feeder located between the spout and cut-off; driving mechanism for the feeder, including a worm; and a device connected to said spout and having a tooth adapted to engage said worm.

12. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a swinging stream-controlling spout; a cut-off; a feeder located between said cut-off and spout; driving mechanism for said feeder, including a worm and also having fast and loose pulleys; a belt shiftable from one of said pulleys to the other; a device connected to said spout and having a tooth adapted to engage said worm; and automatically-operated belt-shipping means.

13. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a stationary cut-off; a swinging stream-controlling spout adapted to deliver the supply stream to the stationary cut-off; and a drizzle-catching valve and its actuating means.

14. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a stationary cut-off; a swinging stream-controlling spout adapted to deliver the supply stream to the stationary cut-off; and a drizzle-catching valve operated by said spout.

15. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a stationary cut-off; a swinging stream-controlling spout adapted to deliver the supply-stream to the stationary cut-off and having a rigid arm; and a drizzle-catching valve provided with a crank-arm, the pin of which is adapted to be engaged by the rigid arm of said spout.

16. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout; a feeder located between said spout and cut-off; driving mechanism for said feeder; a shaft having a depending rod, said shaft being limited in its movement by means operative with the spout; means for actuating said shaft; a stop adapted to engage said depending rod and also to release the same; and feeder-throw-out means controlled by said shaft.

17. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout, a feeder located between said spout and cut-off; driving mechanism for said feeder; a counter-weighted shaft supported for movement independently of said spout and provided with a depending rod, said shaft being limited in its movement by means operative with the spout; holding and releasing means for said shaft; and feeder-throw-out means controlled by said shaft.

18. The combination with weighing mechanism embodying a bucket, of means for supplying a stream of material thereto; a cut-off; a swinging stream-controlling spout; a feeder located between said spout and cut-off; driving mechanism for said feeder, including fast and loose pulleys; a belt shiftable from one of said pulleys to the other; a shaft supported for movement independently of said spout and limited in its movement thereby; actuating means for said shaft; instrumentalities for holding and releasing said shaft successively at predetermined points; and belt-shipping means controlled by said shaft.

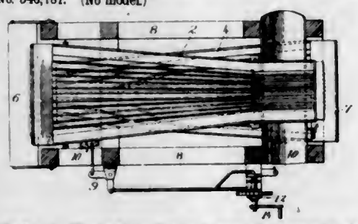
19. The combination with a scale-beam and with a bucket supported thereby, of means for supplying a stream of material to said bucket; a cut-off; a swinging stream-controlling spout; a feeder located between said spout and cut-off; driving mechanism for said feeder; a shaft supported for movement independently of said spout, said shaft also having a depending rod provided with a projection; a scale-beam having a by-pass stop provided with a cooperating projection adapted to engage the other and also release the same; means for actuating said shaft; and feeder-throw-out means controlled by said shaft.

20. The combination with a bucket having a closer and with instrumentalities for normally holding the same against movement, of a scale-beam for supporting said bucket; a cut-off; a swinging stream-controlling spout; a feeder; a shaft supported for movement independently of said spout, said shaft having a stop thereon and also having a depending rod; means for engaging and for also releasing said rod; feeder-throw out means controlled by said shaft; and a stop operative with the closer and coacting with said first-mentioned stop.

21. The combination with a bucket having a closer and instrumentalities, including a latch, for normally holding said closer against movement; of a scale beam for supporting said bucket; a cut-off; a swinging stream-controlling spout; a feeder; a shaft supported for movement independently of said spout and having a latch-tripper; holding and releasing means for said shaft; and feeder-throw-out means controlled by said shaft.

570,305. MACHINE FOR GRADING POTATOES OR ONIONS.

GEORGE W. SNYDER, Orangeville, Ohio. Filed Apr. 22, 1895. Serial No. 546,781. (No model.)



Claim.—1. The combination, in a screen for vegetable-graders, of a screening-surface formed with wires of the same diameter throughout its length placed parallel to each other in a section formed at one end, thence to its opposite end, said wires and the sides of said screen diverging uniformly from each other, said screen provided with an upwardly-extended brim at each of its sides and the narrow end thereof, a downwardly-extended flange on each side and the broad end thereof, the wide end of said screen having rigidly secured to each side thereof a hood extending across the top of said screen and turned down over the end thereof at a distance therefrom, said screen provided with a bracket on its under side at the point of divergence of said wires therein for pivotally supporting one end of said screen, means for attaching hangers to the broad end of said screen and means for connecting said end with oscillating mechanism, substantially as shown and described.

2. A vegetable-grader consisting of a supporting-frame and hopper and having a series of reversely-inclined screens one above another therein each of said screens having a section of its upper end formed of wires placed close together and parallel, from said section to the lower end of said screen, the wires therein diverging uniformly, said screens pivotally supported at the junction of the two sections therein and supported by hangers at the lower ends and having means connected therewith for oscillating said screens whereby a lateral rubbing and retarded movement is imparted to the vegetables in the upper ends of said screens to remove the dirt therefrom before said vegetables enter the diverging portion of said screens, substantially as shown and described.

3. In a vegetable-grader, the combination of a series of reversely-inclined screens, one above another, supported at their lower ends by hangers and resting on pivotal supports at an intermediate point from the middle of the screen and the upper end thereof, the screen from the upper end thereof to the point where pivotally supported having the wires of the surface thereof placed parallel to each other, thence to the lower end of said screen diverging uniformly and means for oscillating the lower ends of said screens laterally, substantially as shown and described.

4. In a vegetable-grader having a supporting-frame having a series of screens therein reversely inclined one above another, each of said screens resting on pivotal supports at a point intermediate of the upper end and the middle of said screen, the lower ends of said screen supported by hangers, the screens between the upper end and the point of pivotal support having the wires therein parallel to each other, thence to the lower end diverging from each other uniformly and the upper end of the top screen slightly bent downward to the point of pivotal support in a plane nearly horizontal, in combination with a hopper located over the upper end of the top screen of the series, a transverse inclined chute located thereunder and means for oscillating the lower ends of said screens laterally, substantially as shown and described.

5. In a vegetable-grader, the combination in a frame provided with a hopper, of a screen having a screening-surface formed of wires of the same diameter throughout their length extending longitudinally therein, a section of the screen at one of its ends having the wires therein placed parallel to each other, thence to the opposite end of the screen the wires therein diverging uniformly, each side and the narrow end of said screen provided with an upwardly-turned brim, its wide end formed with a hood covering the screen near its end and turned down over the end at a distance therefrom, one end of said screen pivotally supported by a bracket formed on the bottom thereof at a point between the end and the middle of said screen, its opposite end supported by hangers and provided with means for oscillating said end laterally, substantially as shown and described.

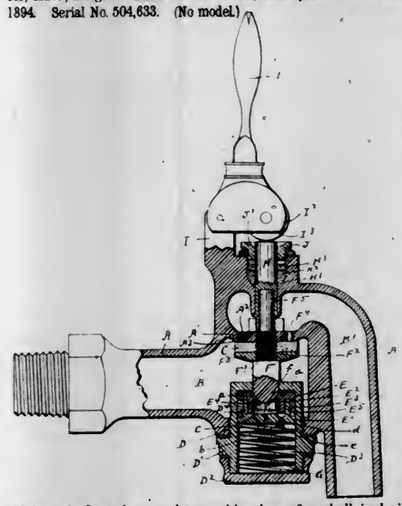
6. In a vegetable-grader, the combination with a supporting-frame, a series of reversely-inclined screens, each of said screens diverging laterally from a point intermediate of the middle and upper end thereof, one beneath another, transverse downwardly-projecting brackets on the under side of said screens at the point where the screens begin to diverge supporting said screens over cross-beams carrying pins adapted to pass through apertures in said brackets to pivotally support the upper ends of said screens, hangers for supporting the lower ends of the screens and means for oscillating the lower end thereof laterally, substantially as shown and described.

7. In a vegetable-grader, the combination with a supporting-frame and a series of screens reversely inclined one above another and resting on pivotal supports on cross-beams in said frame by pins in transverse brackets at a point intermediate of the middle and the upper ends of said screens, the lower ends of said screens adjustably supported by hangers, wires forming the screening-surface of said screens diverging from each other from the point where pivotally supported to the lower end thereof, of means for imparting a laterally-oscillating motion to the lower ends of said screens consisting of a gear-wheel, means for revolving the same, a smaller gear-wheel meshed therewith, a shaft carrying said smaller gear-wheel, a disk mounted on the other end of said shaft, a rod eccentrically connected to said disk, a bell-crank lever to which said rod is connected at its other end, a rod connecting the other arm of said lever with one of the screens at the lower end thereof, a shaft on which said lever is mounted, an arm carried by said shaft, a second bell-crank lever, a rod connecting said shaft-arm and lever, and a rod connecting said lever with the other of the screens at its lower end, substantially as shown and described.

8. A vegetable grader consisting of the frame 1, the hopper 2, the reversely-inclined screens 3 and 13, said screens being supported by pivots at a point intermediate the upper end of the screen and the middle thereof and by hangers at the lower ends thereof, said screens having at their lower ends open bottomed hoods, the transverse chute 22, and means for imparting a laterally-oscillating motion to the lower ends of said screens, substantially as shown and described.

570,306. SELF-CLOSING FAUCET.

WILLIAM A. TURNER, Worcester, Mass., assignor to Edmund Converse, same place. Filed Mar. 22, 1894. Serial No. 504,633. (No model.)



Claim.—1. In a faucet, the combination of a shell inclosing a water-passage and having a partition dividing said water-passage, said partition having a circular opening, a valve-seat surrounding said opening, a screw-threaded opening D in said shell having its axis in alinement with the axis of the circular opening in said partition, a detachable shell D′ screwed into said screw-threaded opening and having its upper end closed and provided with a rectangular opening to receive a rectangular piston rod, a detachable cap D^3 closing the lower end of said shell D′, a piston-rod F provided with a rectangular section fitting the opening in said shell, whereby said rod is rotated by the rotation of said shell, a piston carried by said rod and inclosed in said shell D′ said piston consisting of a head E provided with openings *a*, *a*, and a head E' provided with openings *b*, and *d*, said openings communicating with a chamber inclosed between said heads and a valve-disk carried by said rod and means for reciprocating said rod, substantially as described.

2. In a faucet, the combination of a shell inclosing a water-passage, a circular valve-seat arranged in said water-passage, a reciprocating piston rod, a valve-disk carried by said rod, a shell D′ with its axis in alinement with the axis of said valve-seat and inclosing a piston-chamber, a piston carried by said rod and consisting of a head E provided with openings *a*, *a*, head E' provided with an opening *b*, an annular groove *c* and a screw-threaded opening *d* communicating with said groove, an adjusting-screw *e* having a groove *e′* and held in said screw-threaded opening, said heads E and E' having screw-threaded flanges E^2 and E^3 by which they are united in closing a chamber E^4 and a valve *f* held in said chamber and arranged to close said opening *b*, substantially as described.

570,307. GOVERNOR FOR STEAM-ENGINES.

EDWIN J. ARMSTRONG, Oswego, N. Y. Filed Dec. 26, 1895. Serial No. 573,350. (No model.)

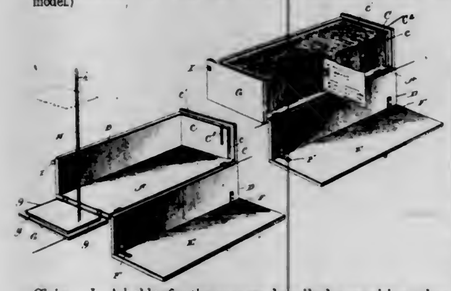


Claim.—1. In a centrifugal governor, the combination, with a pivoted fly-weight, of a secondary weight adapted to move toward

and from the pivotal point of the fly-weight, said movement being in such an arc that for each position of the fly-weight there will be a corresponding point of equilibrium which the secondary weight will seek, substantially as described.

2. In a centrifugal governor, the combination, with a pivoted fly-weight, of a secondary weight adapted to move in an arc toward and from the pivotal point of the fly-weight, and means for retarding the movement of said secondary weight, substantially as described.

570,308. DRUGGIST'S PRESCRIPTION-FILE. CHARLES L. GRAF, Allegheny, Pa. Filed Feb. 19, 1896. Serial No. 579,908. (No model.)



Claim.—1. A holder for the purpose described, comprising a box having a hinged end and cover, said hinged end being adapted to open outward and carrying a file-rod, substantially as shown and described.

2. A file-holder comprising a box, having a fixed side, bottom and end member, a hinged end member having a file-rod secured thereto to extend longitudinally of the box when folded down, and a side member hinged to the bottom member having a fixed top-member secured thereto, substantially as shown and described.

3. A holder as described, comprising a bottom, side and end member the end member having a guide, a hinged end having a file-rod adapted when closed down to engage the aforesaid guide and a hinged cover member all arranged substantially as shown and described.

4. A holder, having a bottom, an end and a side member fixedly connected, an end member binged to the bottom, a file-pin secured to such member near one edge, adapted when folded down to form a longitudinal keeper disposed at one side of the box, and a cover formed of a side and a top portion hinged to the bottom at the keeper side as set forth.

5. The combination with the bottom A, side B, end C, of the hinged end G, having a file pin or rod a detent for holding such end G, in a closed position, and the combined side and top member hinged to the bottom and catch member for holding such cover closed as set forth.

570,309. FASTENING FOR BICYCLE-POSTS. FREDERICK I. JOHNSON, Fitchburg, Mass., assignor to the Iver Johnson's Arms and Cycle Works, same place. Filed July 26, 1895. Serial No. 557,286. (No model.)



Claim.—In a bicycle, the combination of a tube split at its end and provided with a recess, a post held in said tube and having one side flattened, an elastic clamping-ring inclosing the end of said split tube, a bolt having a flattened surface, held in said ring and entering the recess in said tube, with its flattened surface in contact with said post, said bolt being held from turning about said tube by the walls of said recess and a tightening-nut carried by said bolt, substantially as described.

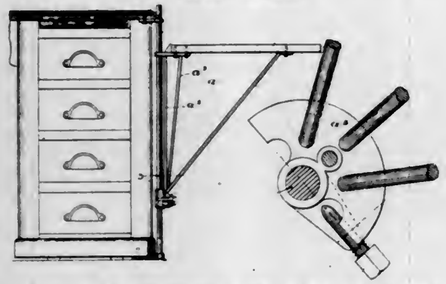
570,310. ELECTRICAL APPARATUS. JOHN F. KELLY, Pittsfield, Mass. Filed June 23, 1896. Serial No. 596,340. (No model.)

Claim.—1. In an electrical apparatus having when in operation a varying magnetic flux, a laminated iron core traversed by said varying flux having in its composition an alloy preventing hysteresis growth, substantially as described.

2. In an electrical apparatus having when in operation a varying magnetic flux, a laminated iron core traversed by said varying flux having in its composition an abnormal proportion of silicon, substantially as described.

3. In electrical apparatus having when in operation a varying magnetic flux, an annealed laminated iron core traversed by said varying flux having in its composition sufficient silicon to prevent hysteresis growth at temperatures to which transformers are subjected when in use, substantially as described.

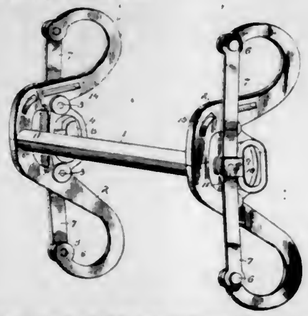
570,311. DESK. WELLINGTON P. KIDDER, Boston, Mass. Filed Nov. 20, 1895. Serial No. 569,594. (No model.)



Claim.—1. The combination of a desk, table or the like with a swinging corner-shelf; a supporting bracket therefor having perforated hinge-plates; a post secured to the table by brackets attached to the under side of the top and bottom of the desk and passing loosely through said perforations; means for adjusting the position of the bracket on the post and means for automatically retaining the shelf in an adjusted position, substantially as described.

2. The combination of a desk, table, or the like with a swinging corner-shelf; a supporting-bracket therefor; a post secured to the table by brackets; means for adjusting the position of the bracket on the post, and means for automatically retaining the shelf in an adjusted position, substantially as described.

570,312. BRIDLE-BIT. AUGUST F. KIEHL, Norfolk, Nebr., assignor of one-third to Frederick O. Kiehl, Reedsville, Wis. Filed Apr. 30, 1896. Serial No. 589,728. (No model.)



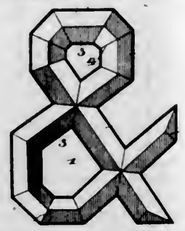
Claim.—1. In a bridle bit, the combination with snaffle-bars arranged in pairs each carrying a section of the bit-bar and pivotally connected, as described, of lock-bars pivoted to the snaffle-bars and connected pivotally at their adjacent ends, substantially as specified.

2. In a bridle-bit, the combination with snaffle-bars arranged in pairs each carrying a section of the bit-bar, of loops interposed between said snaffle-bars and pivotally connected thereto in rear of the bit-bar and adapted to receive the reins, means for holding the bit normally closed or straight, and a pair of lock-bars pivotally connected to the extremities of the snaffle-bars and connected pivotally at their adjacent inner ends to a loop to which a rein is adapted to be attached, substantially as specified.

570,313. SIGN LETTER OR CHARACTER. ROBERT G. LAKE, Corona, N. Y. Filed Aug. 9, 1895. Serial No. 558,722. (No model.)

Claim.—1. A sign letter or character having a transparent base, to the rear surface of which, and visible therethrough, is attached gold-leaf in the form of the letter or character, a portion of the visible surface of the gold-leaf, as upon the lines of shade, being clouded or partially concealed, by a coating of semitransparent material interposed between the gold-leaf and the base, the fully-exposed and partially-concealed portions of the gold-leaf forming contrasting polished and shaded surfaces, substantially as specified.

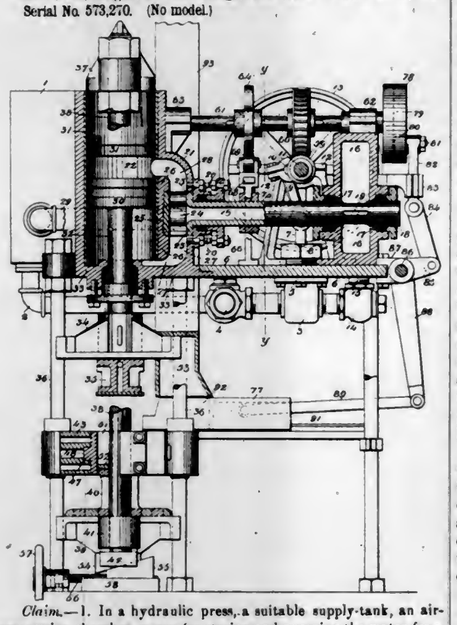
2. A sign letter or character, having contrasting polished and shaded surfaces, the same consisting of a transparent base corresponding in contour with the letter or character, a semitransparent or translucent coating attached to the base upon the lines of shade, and gold-leaf attached to the rear surface of the transparent base and visible therethrough, a portion of the gold-leaf surface being covered by said semitransparent or translucent coating.



3. A sign letter or character, having contrasting polished or shaded surfaces, the same consisting of a transparent base corresponding in contour with the letter or character, gold-leaf in the form of the sign letter or character attached to the rear surface of and visible through the transparent base, and a semitransparent or translucent coating attached to the surface of the base upon the lines of shade to cloud or partially conceal a portion of the surface of the gold-leaf.

4. A sign letter or character, having contrasting polished and shaded surfaces, the same consisting of a transparent base corresponding in contour with the letter or character, a semitransparent or translucent coating attached to the rear surface of the base upon the lines of shade, and gold-leaf in the form of the letter or character attached to the coated and uncoated portions of the rear surface of the transparent base and visible therethrough, said coating consisting of varnish and white lead.

570,314. HYDRAULIC BRICK-PRESS. GOTTHOLD LANGER, St. Louis, Mo., assignor to Otto Kulage, same place. Filed Dec. 26, 1895. Serial No. 573,270. (No model.)



Claim.—1. In a hydraulic press, a suitable supply-tank, an air-compression chamber, means for storing and pumping the water from said tank into said chamber, a suitable cylinder, operating-pistons located in said cylinder, a hollow tube closed at its outer end, and having peripheral openings establishing communication between the air-compression chamber and said cylinder, and a valve cooperating with said hollow tube and adapted to control the path of the water operating the pistons in said cylinder, substantially as set forth.

2. In a hydraulic press, a suitable supply-tank, an air-compression chamber, means for storing and pumping the water from said tank into said chamber, a suitable cylinder, operating-pistons located in said cylinder, an oscillating or rotatable hollow tube closed at one end and having peripheral openings establishing communication between the air-chamber and said cylinder, and a valve carried at the opposite end of the tube for properly directing the water from the air-chamber into the cylinder and operating the pistons therein, substantially as set forth.

3. In a hydraulic press, a suitable cylinder, a valve-casing having passages leading to the same, a waste-pipe leading from said casing, a hollow tube closed at one end, means for oscillating said tube, a valve at the open end thereof controlling the communication between said tube and the passages and waste-pipe, an air-compression chamber communicating with the interior of the tube and cylinder the closed end of said tube passing through the compression-chamber, and a suitable pump or pumps for delivering water to said chamber, substantially as set forth.

4. In a hydraulic press, a suitable cylinder, a hollow oscillating tube communicating therewith, an air-compression chamber also in communication with said tube, a valve controlled by said tube, a cam-plate having a series of sections formed by radii of different lengths, shoulders separating the several sections, means for imparting rotation to said cam-plate, intermediate connections between said cam-plate and tube for imparting an oscillating motion to the tube in one direction by a definite number of the shoulders, and means for oscillating the tube back in the reverse direction, substantially as set forth.

5. In a hydraulic press, a suitable cylinder, a valve-casing having passages in communication with said cylinder, a discharge-pipe leading from said casing, an air-compression cylinder, a hollow tube closed at one end and having peripheral openings establishing communication between the air-chamber and valve casing, means for oscillating said tube, a valve carried by the tube in the casing, said valve having ports leading to the interior of the tube, and a peripheral groove adapted to establish communication between the said passages and the waste-pipe, substantially as set forth.

6. In a hydraulic press, a suitable cylinder, an air-chamber, a hollow tube establishing communication between the two, a controlling-valve carried by said tube, a segmental gear-wheel carried by said tube, a rack-bar having teeth cooperating with said gear-wheel, bearings for said rack-bar, a roller carried by said rack-bar, a cam-plate having a series of shoulders located at variable distances from the center of rotation of said cam plate and adapted to move the rack-bar in one direction, and a spring-controlled pinion cooperating with the rack-bar and adapted to move the latter in the opposite direction, substantially as set forth.

7. In a hydraulic press, a cam-plate having sections *a*, *b*, *c*, and *d*, shoulders separating the several sections, the shoulders between sections *d a*, and *a b*, being positively impelling in character upon the rotation of the cam-plate in one direction, and the shoulders between sections *b c*, and *c*, *d*, being releasing in character with respect to the direction of the said rotation of the cam-plate, substantially as set forth.

8. In a hydraulic brick-press, a supply-tank, pipes leading therefrom and communicating with suitable pumps, a suitable transverse drive-shaft for said pumps, an air-chamber into which the water is forced by said pumps from said tank, a cylinder, a hollow rotatable or oscillating tube establishing communication between the air-chamber and cylinder, a discharge-pipe leading from the tube back to the tank, a valve controlled by said tube, passages leading to the cylinder controlled by said valve, a longitudinal shaft operated from the transverse shaft, intermediate connections between said longitudinal shaft and hollow tube for oscillating the latter, pistons operating within the cylinder, plungers connected to said pistons, a mold-box for said plungers, a charger operated by the longitudinal shaft, and a clay-hopper for said charger, substantially as set forth.

9. In a hydraulic press, a suitable cylinder, pistons operating within the same, an air-chamber, a hollow oscillating tube closed at its outer end and mounted within suitable stuffing-boxes on said air-chamber and extending through said chamber, said tube having suitable peripheral openings formed along that portion thereof which is confined within the air-chamber for establishing communication between said chamber and the cylinder, and a valve adjacent to the cylinder controlled by said tube, substantially as set forth.

570,315. SMOKE AND CINDER CONVEYER. WILSON H. LARIMORE, Girard, Kans. Filed Apr. 8, 1896. Serial No. 586,634. (No model.)

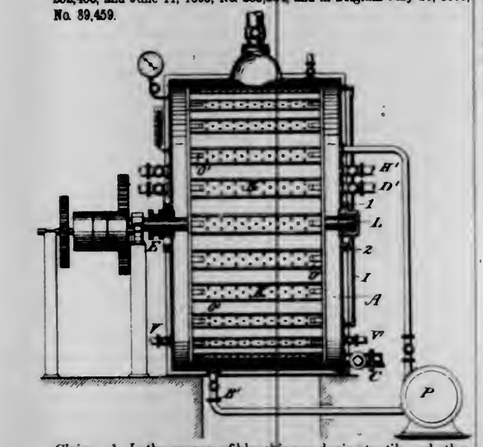
Claim.—1. A smoke conveyer for railway-coaches, comprising a flaring-mouthed hood having an inwardly-projecting flange, and downwardly-extending side wings provided with inwardly-projecting flanges, substantially as shown and described.

2. A smoke-conveyer for railway-coaches, comprising a flaring-mouthed hood and downwardly-extending side wings, in combination with the longitudinally-extending top and bottom chutes, located respectively on the sides of the car above and below the windows thereof, substantially as and for the purpose set forth.

570,315.



570,316. PROCESS OF AND APPARATUS FOR DYEING. LEOPOLD LE BLOIS and GAETAN PICENI, Elbeuf, France. Filed Jan. 23, 1896. Serial No. 576,583. (No model.) Patented in France Feb. 19, 1895, No. 232,400, and June 11, 1895, No. 235,244, and in Belgium July 29, 1895, No. 89,459.



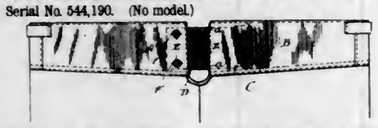
Claim.—1. In the process of bleaching or dyeing textile and other materials, the method consisting in rotating the material through the bleaching or dyeing bath and creating a partial vacuum above the bath and alternately passing air through it.

2. In the process of bleaching or dyeing textile and other materials, the method consisting in rotating the material through the bath and at the same time creating a rapid and continuous circulation of the bath through the material, creating a partial vacuum above the bath and alternately passing air through it, substantially as described.

3. An apparatus for bleaching or dyeing textile and other materials, comprising a closed vat having a rotary wheel or wheels therein with receptacles for the material to be treated, a valved pipe at the upper part adapted to be connected with a vacuum-pump and a valved pipe or pipes at the lower part adapted to be opened to the air.

4. An apparatus for bleaching or dyeing textile and other materials comprising a closed vat having at its upper part a valved pipe adapted to be connected with a vacuum-pump and at its lower part a valved pipe or pipes adapted to be opened to the air, with a rotary wheel or wheels within the vat provided with receptacles for containing the material to be treated and piping connected to different parts of the vat and to a pump whereby the liquid in the vat may be caused to circulate, substantially as described.

570,317. WAISTBAND FOR NETHER GARMENTS. STEPHEN B. LEWIS and FRANKLIN F. LEWIS, Janesville, Wis. Filed Apr. 2, 1895. Serial No. 544,190. (No model.)



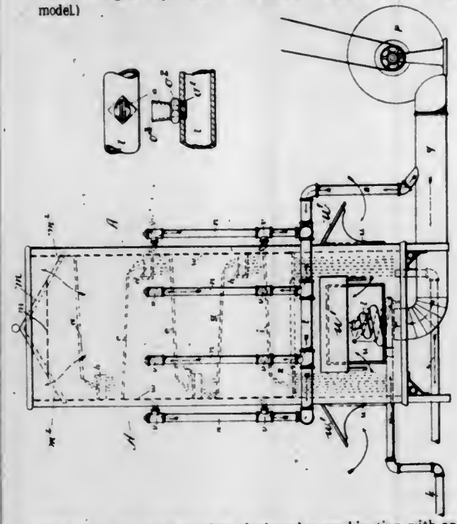
Claim.—1. In a garment, the combination with a divided waistband the approximated end portions of which are provided, one or both, with fastening appliances, of a short strap or gusset fastened to one of said end portions, and having thereon independent sets of fastening devices, each set of such devices being arranged to coact with the fastening device of the other of said end portions, whereby the length of the waistband may be adjusted, substantially as specified.

2. In a garment, the combination with a waistband portion divided at the back, and having at its end portions, between its thicknesses, slips or pockets which open toward each other, of a short strap or gusset whose end portions are arranged to be inserted in said slips or pockets, and fastening devices for adjustably securing said strap or gusset therein, substantially as specified.

3. In a garment, the combination with a waistband divided at the back and left unstitched at the end portions, except at the upper and lower edges, whereby pockets or slips are formed between the band and the material of the garment, of a single connecting-strap having its end portions inserted in said pockets or slips, and means for connecting said strap adjustably to the waistband-sections, substantially as specified.

4. In a garment, a divided waistband having its meeting end portions unstitched from the material of the garment except at the upper and lower edge portions, whereby slips or pockets are formed between the band-sections and the material of the garment, and a strap or gusset having one end portion inserted and permanently secured in the slip or pocket at one side and its opposite end portion inserted in the slip or pocket at the opposite side, said strap or gusset having independent sets of fastening devices each set of which is arranged to engage complementary fastening devices of the band, substantially as specified.

570,318. WATER-COOLING APPARATUS. WILLIAM J. LOUGHRIDGE, Lexington, Ky. Filed Nov. 9, 1895. Serial No. 568,475. (No model.)



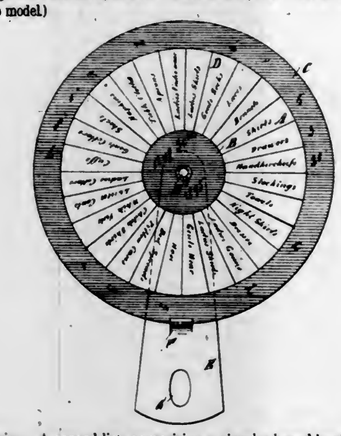
Claim.—1. In a water-cooling device, the combination with an outer casing, of a water-spraying device located within the same, a blower having an inlet into said casing below said spraying device and discharging vertically through the spray thrown therefrom, pipes in communication with the blower-pipe proper and with the outer casing, and air-passages in the sides of said casing for admitting air drawn into the casing by the forced current produced by the blower; said latter air passing laterally through the finely-divided water as it descends in said casing after being thrown up by said spraying device, substantially as described.

2. In a water-cooling apparatus, the combination with an outer casing, of an inner screen-casing, troughs arranged within the latter and adapted to discharge one into the other, a perforated trough into which the lower of said troughs discharges, a water-spraying device within said casing and a blower discharging into said casing, substantially as described.

3. In a water-cooling apparatus, the combination with an outer casing, of an inner screen-casing, a water-spraying device in said casing, a blower, a pipe from said blower discharging below said spraying device, and a series of branch pipes connected to the blower and discharging into the outer casing and through the screen-casing at different points therein, substantially as described.

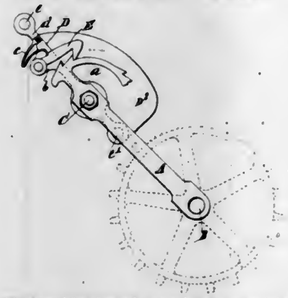
4. In a water cooling apparatus, the combination with an outer casing, a baffle-plate located at its upper end, a series of troughs discharging one into the other and arranged along the sides of said casing, a spiral spraying-pipe in the lower part of said casing, flat discharge-nozzles in said pipe, and a blower discharging up through said spiral and the spray thrown therefrom, substantially as described.

570,319. LAUNDRY-LIST INDICATOR. RICHARD LUNDQVIST, Laguna de Terminos, Mexico. Filed Dec. 19, 1895. Serial No. 572,640. (No model.)



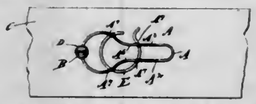
Claim.—A record-list, comprising a circular board having a central circular inscribing-surface, an annular marginal inscribing-surface and radial panels in the space between the said inscribing-surfaces, the said panels having the names of the articles produced thereon, and a handle to the upper end of which the board is pivoted, said handle having a lug projecting over the margin of the board, substantially as herein shown and described.

570,320. BICYCLE. EDWIN Y. MACKENZIE, Kingston, Jamaica. Filed Oct. 16, 1895. Serial No. 565,911. (No model.)



Claim.—The combination of a crank-arm, a pedal-shaft secured between the ends of the crank arm, said ends of the crank-arm extending on opposite sides of the pedal shaft, a pedal eccentrically pivoted on the pedal-shaft, a ratchet-bar secured to and extending from the outer end of the crank-arm beyond the pedal-shaft and having at each end teeth, and between the said teeth a central plain portion, and a spring-pawl pivoted on the longer end of the pedal and normally held in engagement with said teeth on the ratchet-bar, substantially as set forth.

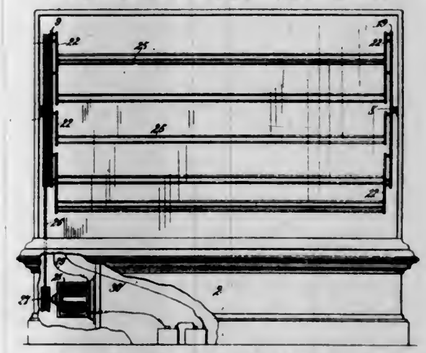
570,321. PICK-HOLDER. ADAM G. MAHLER, New York, N. Y., assignor of one-half to Isaac Heiberger, same place. Filed June 4, 1896. Serial No. 594,255. (No model.)



Claim.—1. As a new article of manufacture, a pick-holder consisting of a single piece of spring-wire doubled up to form side arms and a downwardly-bent end, the side arms being formed at their rear ends into eye parts whereby the holder can be fastened to a fixed part of the instrument, the middle portion of each of said side arms being bent upward forming seats at each side of the upwardly-bent portion to receive and hold the pick, substantially as shown and described.

2. A pick holder formed of a single piece of wire, bent up to form side arms formed with seats for the pick, the ends of the wire terminating in segmental eye parts adapted to receive a screw for fastening this end of the holder in place on a fixed part of the instrument, substantially as shown and described.

570,322. SHOW-CASE. FREDERICK W. R. MANSFELD, Louisville, Ky. Filed June 25, 1896. Serial No. 596,924. (No model.)



Claim.—1. In a show-case for displaying ribbons in bolts and other merchandise, a shaft carrying disks having hangers pivotally mounted upon their adjacent faces, rods or bars parallel with the axis and having their ends rigidly attached to opposite hangers, the points of attachment being in an arc struck upon the lower part of each hanger from a point below the pivotal support, a motor for rotating said shaft and disks, and means operated by the opening and closing of a rear door for stopping and starting said motor, substantially as described.

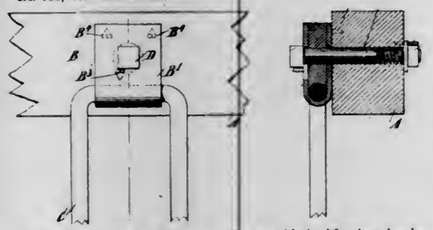
2. In a show-case for displaying goods, the combination with a rotating shaft carrying a series of supports for the articles displayed, of a motor geared to a pulley on the shaft, a circuit for said motor including two insulated contact-posts upon the frame of the show-case, and a spring-plate mounted upon a door to make contact with both posts when the door is closed, substantially as described.

3. In a show-case for displaying goods, a rotary support having disks at its ends, an annulus provided with projecting teeth, two annular plates arranged at opposite sides of said annulus and having a diameter greater than the latter, an annular plate arranged between one of the end disks of the rotating support and one of the said annular plates, and bolts extending through all of said annular plates and the annulus and engaged with one of the disks of the rotating support, whereby the plates and annulus are rigidly connected together and are united to said disk, substantially as and for the purposes described.

4. In a show-case for exhibiting goods, the combination with a horizontal shaft having its ends supported at the ends of a transparent inclosing case, of disks having central openings for the shaft, hubs mounted on said shafts and locked therewith by set-screws, and provided with flanges rigidly fastened to the disks, hangers of nearly triangular form having prolongations at an apex provided with slots open at the edges of the prolongations to receive pivots projecting from the adjacent faces of the disks at or near the periphery, three

rods parallel with the shaft, their ends rigidly secured to the lower members of each pair of hangers, the points of attachment being in curved lines struck from points below said pivots to provide three points of support for a series of bolts of ribbon arranged on said rods, a motor in the base belted to a sprocket on one of the disks, a circuit for the motor including electrically-isolated contact-posts, and a spring-plate of conducting metal carried by a sliding door and making electrical contact with said posts when the door is closed, substantially as described.

570,323. HANGER FOR BRAKE-BEAMS. EPHREM MARCOTTE, Las Vegas, N. Mex., assignor of one-half to Richard Bohrisch, East Las Vegas, N. Mex. Filed Dec. 26, 1895. Renewed Sept. 23, 1896. Serial No. 606,779. (No model.)



Claim.—A hanger for brake-beams, provided with a bearing having a U shaped metallic yoke, a block fitted in the yoke and forming with the latter an opening for the hanger-arm, a bolt passing through the yoke and block and adapted to engage the car-sill, and a lip formed on said yoke and adapted to engage the head of the bolt to prevent the latter from turning, substantially as shown and described.

570,324. MOLD FOR CASTING HOLLOW ARTICLES. HEINRICH MESSING, Offenbach, Germany. Filed June 5, 1895. Serial No. 552,096. (No model.) Patented in France Apr. 22, 1895, No. 246,804, and in Germany Aug. 19, 1895, No. 83,385.



Claim.—1. A mold for casting hollow bodies provided with a gate and with one or more air-channels extending from the exterior of the mold and projecting into the interior of the mold and means for closing the air channels, substantially as described.

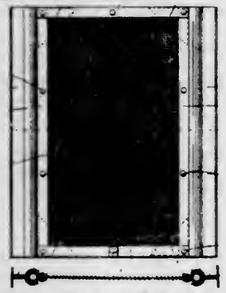
2. A mold for casting hollow bodies provided with a gate and an opening formed substantially opposite the gate, a tube extending through said opening from the exterior and projecting into the interior of the mold, and means for closing the passage of the tube, substantially as described.

570,325. FOOT FOR PITCHERS, &c. WILLIAM MCAUSLAND, Taunton, Mass. Filed May 2, 1896. Serial No. 590,048. (No model.)



Claim.—A foot for a pitcher or like article made of cast metal of globular external shape with a central chamber opening through its bottom and its lower edges tapered with an increasing thinness downwardly to a marginal knife-edge which may be easily spun or swaged inwardly, in combination with a block of cork fixed in said chamber and having a spherical projection below the metal of the foot, the lower knife-edge of the foot being turned into and embedded in the cork to conceal the joint and compress and hold the cork substantially as and for the purpose described.

570,326. WINDOW-SCREEN. ALEXANDER MCCANDLESS, Moberly, Mo. Filed Apr. 22, 1896. Serial No. 588,582. (No model.)



Claim.—1. A supporting-guide for a window-screen, consisting of a hollow cylinder formed of a single piece of sheet metal, said cylinder provided with a T-head base for attachment to the window-casing and with a longitudinal slot opposite the flange of said base to receive a window-screen, substantially as shown and described.

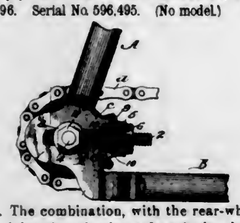
2. In a window-screen, the combination with a screen provided with a hollow cylindrical rib on each side of the frame formed of sheet metal and integral therewith, of a hollow cylindrical guide having a longitudinal slot therein, said guide provided with a T-head base and adapted to receive the cylindrical rib of the screen-frame therein, substantially as shown and described.

3. The combination with a window-casing, of a window-screen having a cylindrical rib formed integral with each side of its frame, cylindrical guides attached to each side of said casing by a T-head base, each of said guides having a longitudinal slot opposite the flange of said base and adapted to receive said cylindrical ribs and permit of a vertical movement therein, substantially as shown and described.

4. A guide for attachment to the casing of a window for holding a sliding screen therein, consisting of a hollow cylinder formed of a single piece of sheet metal folded back on itself at two points, the edges of said folded parts brought into proximity to each other to form a longitudinal slot, said sheet metal constricted at a point diametrically opposite said slot to form a flange and the edges of said metal then spread to form a base for supporting said guide, substantially as shown and described.

5. A window-screen consisting of a wire-netting supported in a frame formed of sheet metal folded over the margin of the netting and riveted or soldered together thereon, each side of said frame made of a single piece of sheet metal having a hollow cylindrical guide formed integral with said frame on the outer edge thereof, the folded margins of the sides of said frame constricted to contact with said netting, the corners of said frame braced with triangular pieces of sheet metal having their right-angled margins inserted between the folded sides and ends of said frame and riveted or soldered therewith and a lift attached to the lower end of said frame, substantially as shown and described.

570,327. BICYCLE. JOHN J. NAREGANG, Leesport, Pa. Filed June 22, 1896. Serial No. 596,495. (No model.)



Claim.—1. The combination, with the rear-wheel axle, and the frame union or joint-piece having a lengthwise slot, of the axle-adjusting screw, the adjusting-nut applied to the latter and engaging the union as specified, the guide-washer for said screw and a clamp-nut working in contact with the washer, substantially as shown and described.

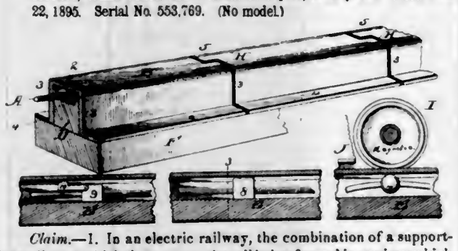
2. The combination, with the rear-wheel axle and the frame union or joint-piece having a lengthwise slot which opens on the inner side which is nearest the crank-shaft, of the union and between the divergent arms of the latter, of the axle-adjusting screw, and means for adjusting and locking it, the lower arm of said union having a lateral bend or offset, substantially as shown and described.

3. A bicyle frame whose rear angle-piece or union is provided with with a lengthwise slot, and an outward bend or offset located below said slot, for facilitating removal of the wheel-axle, substantially as shown and described.

4. The combination of the removable screw, adjusting-nut, and guide-washer, and clamp-nut with the rear-wheel axle, and the joint-piece or union of a bicycle-frame having a lengthwise slot which opens on the inner side and a lateral bend or offset below said slot, as shown and described.

5. The combination with the rear union or joint-piece of a bicycle-frame having a lengthwise slot, and the rear-wheel axle, of the cone-bearing having an octagonal hub fitting in said slot, and a circumferentially-grooved portion having parallel plane sections that adapt it for application of a wrench, as and for the purpose specified.

570,328. ELECTRIC RAILWAY. ADDISON NORMAN, Toronto, Canada, assignor, by direct and mesne assignments, of a part to William McCabe, Willis Jones, and William B. Taylor, same place. Filed June 22, 1895. Serial No. 553,769. (No model.)



Claim.—1. In an electric railway, the combination of a supporting-rail upon which the cars run, the rail being formed in sections which are insulated from each other, and with a central cavity, a main conductor mounted within the cavity of the said rail, insulating-supports for the conductor also arranged within the said cavity, and means for bringing the main conductor and the sections of the rail into electric engagement successively, substantially as set forth.

2. In an electric railway, the combination of a supporting-rail upon which the cars run, the rail being formed in sections which are insulated from each other, and with a central cavity, one end of each section being reduced in size and extended beyond the bearing-face for the car-wheels, whereby the rail sections telescope one into the other, a main conductor mounted within the cavity of the rail, insulating-supports for the conductor, and means for bringing the conductor and the rail-sections successively into electric connection, substantially as set forth.

3. In an electric railway, the combination of a supporting-rail upon which the cars run the rail being formed of sections of substantially inverted-U shape, in cross section, a main conductor mounted within the cavity formed within the rail, insulating-supports for the conductor also mounted in the said cavity, and means for bringing the conductor and the rail-sections successively into electric connection, substantially as set forth.

4. In an electric railway, the combination of a main conductor, a closed conduit therefor formed of sections which are insulated from each other, the insulating supports within the conduit for the conductor, and a series of pendulum like connecting-pieces hung upon the conductor and free to vibrate thereon to make contact with the side of the conduit when attracted by a magnet, substantially as set forth.

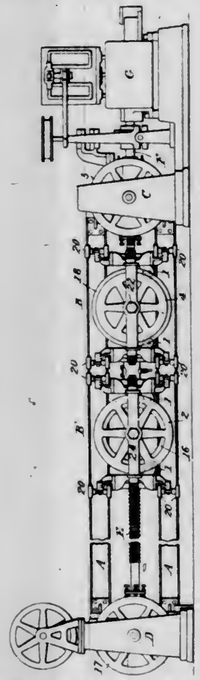
5. In an electric railway, the combination of a supporting-rail upon which the cars run, the rail being formed of sections of substantially inverted U shape in cross-section, whereby there is formed a cavity within the rail, a main conductor mounted in the cavity of the said rail, insulating-supports therefor, and a series of pendulum-like connecting-pieces hung upon the conductor and free to vibrate thereon to make connection with the side of the rail when attracted by a magnet.

6. In an electric railway, the combination of a supporting-rail upon which the cars run, the rail being formed of sections of substantially inverted-U shape, in cross-section, a main conductor mounted within the cavity formed within the rail, and insulating-supports for the conductor also mounted in the said cavity, substantially as set forth.

570,329. SCREW ELEVATOR. NORTON P. OTIS and RUDOLPH C. SMITH, Yonkers, N. Y., assignors to the Otis Brothers & Company, New York, N. Y. Filed Jan. 28, 1895. Serial No. 536,487. (No model.)

Claim.—1. In an elevator apparatus a screw-shaft turning in stationary bearings and sheaves for the hoisting-cables also turning in stationary bearings, combined with movable carriage-sections connected to travel together, each provided with a nut engaging the said shaft and carrying the traveling sheaves of the hoisting-cables, substantially as set forth.

2. The combination in an elevator apparatus, of a hoisting-cable, a screw-shaft, sheaves for the hoisting-cable turning in stationary bearings, and a carriage consisting of connected sections each provided with a nut engaging the shaft and sheaves on the carriage for the hoisting-cable, said sheaves being of different diameters, substantially as set forth.



3. The combination in an elevator apparatus of a screw-shaft, sheaves having inclined shafts turning in stationary bearings, and a carriage driven by said screw-shaft carrying sheaves arranged upon horizontal axes, substantially as set forth.

4. The combination of a screw-shaft, sheaves turning in stationary bearings, a carriage provided with nuts engaging said screw-shaft, guides arranged above and below the shaft upon the same vertical plane and rollers upon the carriage bearing upon said guides, substantially as set forth.

5. The combination with the screw-shaft of a screw elevator apparatus, of a series of nuts engaging said shaft, and a carriage with which all of said nuts are connected and carrying movable sheaves, substantially as described.

6. The combination with the screw-shaft of a screw elevator, of a carriage consisting of connected sections carrying the sheaves, and an independent nut upon each section engaging the screw-shaft, substantially as set forth.

7. In an elevator apparatus, a screw-shaft turning in stationary bearings combined with sheaves turning in stationary bearings and connected carriage-sections each having a nut engaging said screw-shaft and sheaves carried by the carriage-sections, substantially as described.

8. The combination with the guide-sheaves for hoisting and counterbalancing cables of an elevator, of a screw-shaft and connected carriage-sections intermediate the guide-sheaves carrying the traveling sheaves of said elevator, and a nut connected with each carriage-section engaging the screw-shaft, substantially as set forth.

9. The combination with the horizontal screw-shaft and carriage carrying the traveling sheaves of an elevator, of a nut jointedly connected with the said carriage, substantially as and for the purpose set forth.

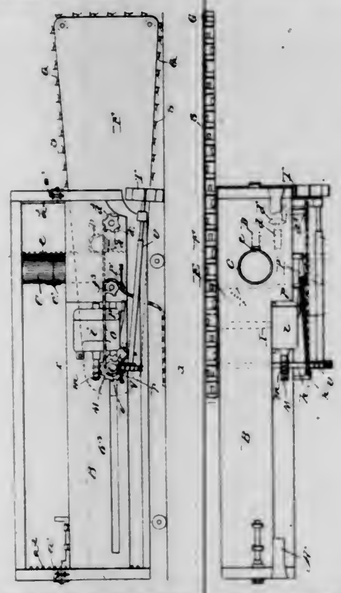
10. The combination of the screw-shaft, carriage and nut engaging the said shaft provided with an oil-reservoir with openings extending from the reservoir to the threaded bearing of the nut, substantially as set forth.

11. The combination of the screw-shaft and nut having a casing containing an oil-reservoir and a spiral packing at each end of the nut confined within the space between the threads of the screw, substantially as set forth.

12. The combination of the screw-shaft, nuts therefor having the threads cut away at each end, a spiral packing arranged between the threads of the screw and caps with bearings for the ends of the said packing, substantially as set forth.

13. The combination of a screw-shaft, and a nut having a casing with an oil-reservoir, a threaded sleeve adapted to the shaft, spiral packings 35, caps P, and annular packings 37, all substantially as described.

570,330. MINING-MACHINE. EDWARD PATTERSON, Oakland, Cal., and WILLIAM PATTERSON, Scranton, Pa. Filed Apr. 7, 1896. Serial No. 586,626. (No model.)



Claim.—1. In a mining-machine, the combination with the main frame, having vertical guideways and a supplemental frame mounted on said guideways to move vertically, of a cutter-frame mounted on the supplemental frame and guides interposed between the cutter-frame and supplemental frame for guiding the cutter-frame longitudinally of the supplemental frame in a direct line and an endless cutter carried by the cutter-frame; substantially as described.

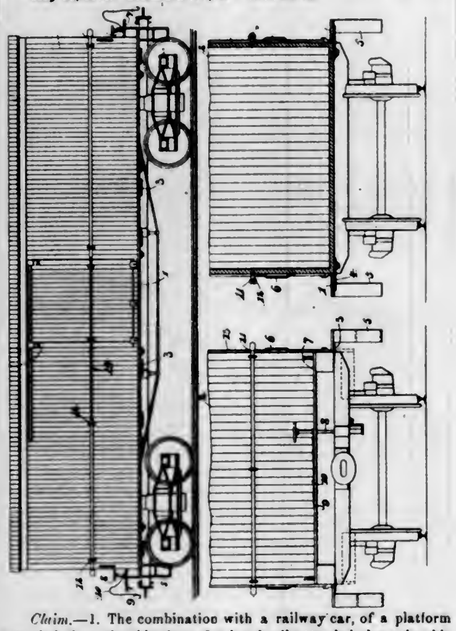
2. In a mining-machine, the combination with the main frame and supplemental frame guided therein to move transversely, of the cutter-frame carried by the supplemental frame on one side and adapted to project beyond the main frame, the longitudinally-movable motor-base mounted on the opposite side of said supplemental frame, connections between the motor-base and cutter-frame, whereby said parts advance in unison and a motor for driving the cutter mounted on the motor-base; substantially as described.

3. The combination in a mining-machine, of the main frame and supplemental frame guided therein to move transversely and having longitudinal guides on opposite sides thereof, of the cutter-frame supported by the guides on one side of said supplemental frame, the longitudinally-movable motor-base supported in the guides on the opposite side of said supplemental frame, connections between said supplemental base and cutter-frame, whereby they move in unison, a drive-shaft for the cutter extending from side to side of the supplemental frame, a motor for rotating said shaft and an endless cutter carried by the cutter-frame and driven from said shaft; substantially as described.

4. In a mining-machine, the combination with the main frame, a longitudinally-movable cutter-frame arranged on one side thereof and a motor for driving the cutter movable longitudinally with said cutter-frame, of a transversely-arranged conveyer located at the front of the main frame for transferring the debris from the cutter-frame to the opposite side of the main frame and an extensible connection interposed between the conveyer and motor, whereby the same motor may be employed for driving the cutters and conveyers; substantially as described.

5. In a mining-machine, the combination with the main frame, the vertically-arranged and longitudinally-movable cutter-frame mounted on one side thereof, and the motor movable longitudinally with said cutter-frame, of the transversely-arranged conveyer for transferring the debris from the cutter-frame to the opposite side of the main frame and a telescoping shaft interposed between the motor and conveyer; substantially as described

570,331. FREIGHT-CAR. JAMES M. PELT, Pittsburg, Pa. Filed May 29, 1896. Serial No. 593,566. (No model.)



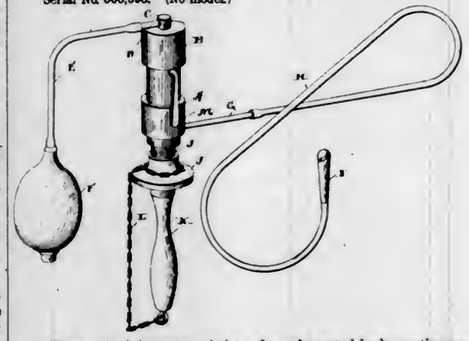
Claim.—1. The combination with a railway car, of a platform extended along the side thereof, a hand-rail extended along the side of the car and comprising a section secured to the car-door and adapted to slide relatively to another section of the hand-rail, substantially as specified.

2. The combination with a railway car, of a platform extended along the lower portion of the car-body, and a hand-rail attached to the side of the car and comprising a section attached to a sliding door and adapted to telescope into another section of the rail, substantially as specified.

3. The combination with a railway-car, of platforms extended along both its sides, platforms extending across its ends, the said end platforms being projected substantially to the end of a coupling head or section, brake-rods extended through said end platforms, and a hand rail extending entirely around the car, substantially as specified.

4. The combination with a freight-car, of platforms extending along the lower portion of the sides of the car, hinge connections between the platforms and the car-body whereby the platforms may swing downward, means for supporting the platforms in a horizontal position, and steps secured to the ends of the platform, substantially as specified.

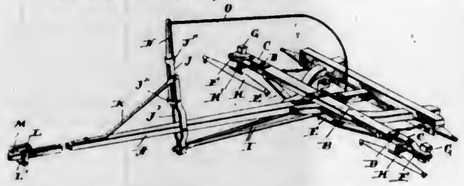
570,332. VETERINARY SMOKE-INJECTOR. THOMAS H. PENDERGAST and BERNARD H. BUETER, Louisville, Ky. Filed Aug. 27, 1895. Serial No. 560,693. (No model.)



Claim.—An injector consisting of an elongated body portion as A, with a detachable cap as B, for the purpose described, an inlet-pipe to said cap, and an outlet-pipe at the lower end of the body portion, and a stem portion J having a base as J' adapted to support the

device, and a socket-opening in the stem J below and out of communication with the bottom of the receptacle, and a detachable handle as K connected with the stem, substantially as described.

570,333. WAGON-BRAKE. WILLIAM PENDLEY, Hinton, Ga., assignor of one-half to Robert L. Franklin, Calhoun, Ga. Filed Mar. 3, 1896. Serial No. 581,664. (No model.)

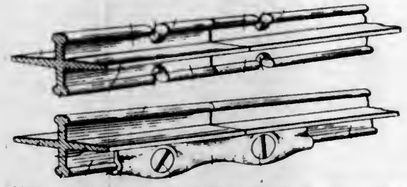


Claim.—1. The combination of the doubletree, the brake-levers each formed of a piece of metal doubled upon itself with the doubled ends of the levers extended outward, the levers being fulcrumed to the doubletree, the brake-shoes carried by the doubled outer ends of the levers, and means for operating the levers, substantially as shown and described.

2. The combination of tongue A, lever J fulcrumed between its ends to the pole rearward from the front end of the latter, rings J" carried by the lever, hand-lever N secured in said rings, a brake mechanism connected to one end of the lever, and the neck-yoke connection at the opposite end of the lever, substantially as shown and described.

3. The combination of the tongue, the doubletree, the brake-levers fulcrumed to the doubletree ends, brake-blocks carried by the outer ends of said levers, the singletrees also secured to the outer ends of the levers, the neck-yoke, a holdback connection between the neck-yoke and the inner ends of the levers whereby when the yoke is drawn backward the inner ends of the levers will move forward, shaft I' secured to and adapted to turn upon the tongue and at one end formed with a crank to engage the inner end of one of the levers for the purpose stated, and a spring for holding the crank-shaft normally out of engagement with the lever, substantially as shown and described.

570,334. RAIL FOR HAY-CARRIERS, &c. JOSEPH E. PORTER, Ottawa, Ill. Filed Aug 12, 1896 Serial No. 602,537. (No model.)



Claim.—1. A suspension double-beaded rail, provided with transverse notches through its lower bead and web, for the passage of joint clamp bolts, substantially as described.

2. A double-beaded rail provided with transverse notches in its lower bead and web for the passage of joint-clamp bolts, and transverse notches in its upper bead and web, substantially as and for the purpose described.

3. A double-beaded rail, provided with notches in one of its beads and webs, in combination with joint coupling pieces, and clamping bolts, substantially as and for the purpose described.

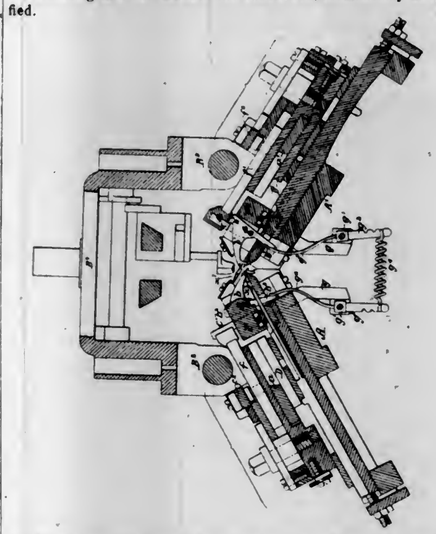
4. A double-beaded rail, provided with notches in its upper and lower beads and webs, in combination with joint coupling pieces and clamping bolts, substantially as described.

5. The new article of manufacture herein described, consisting of a rail provided with upper and lower beads and horizontal, intermediate wheel supporting flanges, and constructed with transverse notches in its bead or beads, substantially as herein described.

570,335. KNITTING-MACHINE JOHN G. POWELL, Philadelphia, Pa., assignor of one-half to Edward Powell, same place. Filed Sept. 24, 1894. Serial No. 523,935. (No model.)

Claim.—1. The combination of the slotted needle-beds and their needles, with the web-holders having tongues projecting through the slotted needle-bed, cams for moving the web-holders in one direction and spring-fingers located beneath the needle-bed and acting upon said tongues on the web-holders for moving them in the opposite direction, substantially as specified.

2. The combination of the slotted needle-beds and their needles, web-holders having tongues projecting through the slotted needle-bed, cams for acting upon said web-holders to move them in one direction, a bar having a series of spring-fingers for acting upon said tongues on the web-holders to move them in the opposite direction, and means for mounting said bar beneath the needle bed, substantially as specified.



3. The combination of the slotted needle-beds and their needles, the web-holders having tongues projecting through the slotted needle-bede, cams acting on said web-holders to move them in one direction, rock-bars having spring-fingers acting upon said tongues on the web-holders to move them in the opposite direction, arms on said rock-bars, and springs connecting the arms of the opposite bars, substantially as specified.

4. The combination of the needle bed and its needles, with a needle-guard and latch-turner consisting of a thin strip of sheet metal having a sharpened edge and placed flatwise above the needles and opposing the sharpened edge to the advancing latches, and means for imparting longitudinal tension to said strip, substantially as specified.

5. The combination of the needle-bed and its needles, with the needle-guard and latch-turner consisting of a strip of thin sheet metal, blocks carrying the same, and adjusting means for one of said blocks comprising adjusting-screws and locking-screws substantially as specified.

6. The combination of the needle-bed and its needles, the detachable web-holder bar, the needle-retainer bar carried thereby, springs for pressing said needle-retainer bar downward and set-screws for limiting said downward movement and preventing the detaching of the retainer-bar from its carrier, substantially as specified.

7. The combination of the needle bed and its needles, with the spring-pressed retainer-bar extending over the needle-bed and serving to retain the needles in the grooves thereof, said bar having beveled ends, substantially as specified.

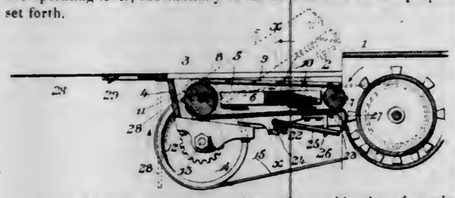
8. The combination of the cam-carriages having movable slides with knitting-cams thereon, with a supplementary cam on one of said cam-carriages movable into operative position when the knitting-cams of said slide are inoperative, and out of operative position when said knitting cams are moved into action, said supplementary cam serving to slightly raise the needles when their stitches are subjected to the draft of the needles of the opposite bed.

9. The combination of the opposite needle-beds and their needles, the opposite cam-carriages having movable slides carrying the knitting-cams, a supplementary needle-operating cam pivoted to one of the cam-carriages, and a slide-bar having a pin for acting upon said cam to move it into operative position or permit it to be moved out of operative position, substantially as specified.

570,336. FEEDER FOR THRESHING-MACHINES. ARTHUR E. PRATT, Andover, S. D. Filed Nov 16, 1895. Serial No. 569,215. (No model.)

Claim.—1. In a feeder for threshing-machines, the combination of a main frame, a carrier-frame, a shaft journaled to the outer end portion of the main frame and pivotally supporting the carrier-frame, means for supporting the carrier-frame at its delivery end, a crank at

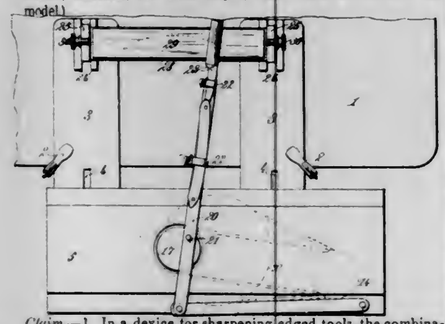
one end of the aforesaid shaft, a pan or plate supported by and movable with the carrier-frame and located immediately below the delivery end thereof, a lever fulcrumed to the main frame and having connection with the crank of the shaft pivotally supporting the carrier-frame, and an arm operatively connected with the pan or plate for imparting a shaking or reciprocating movement thereto, and movable with the carrier-frame and having detachable connection with the operating-lever, substantially in the manner and for the purpose set forth.



2. In a feeder for threshing-machines, the combination of a main frame, a carrier-frame having pivotal connection at its outer end with the main frame, means for supporting the carrier frame at its delivery end, a shaking pan or plate having connection with the carrier-frame and supported immediately below the delivery end thereof, a shaft having a crank portion to which the front end of the shaking pan or plate is connected, and having a pendent arm, a substantially L-shaped lever fulcrumed to the main frame and having its horizontal portion apertured to receive the pendent arm of the said shaft, and having its vertical member formed with a series of openings, a crank connected with a journal of a carrier-supporting roller, and a pitman adjustably connecting the said crank with the vertical member of the L-shaped lever, substantially in the manner set forth for the purpose described.

3. In a feeder for threshing-machines, the combination of a main frame, a carrier-frame having pivotal connection at its receiving end with the main frame by extensions of the front roller journals, stops applied to the main frame and supporting the rear or free end of the carrier-frame, a rod having its ends bent vertically and secured to the carrier frame, a shaft journaled to the carrier-frame and having a crank portion and a pendent arm, a pan or plate having connection with the said crank portion and supported by and movable on the aforesaid rod, a substantially L-shaped lever fulcrumed to the main frame and having its horizontal portion apertured to receive the pendent arm, a crank applied to one of the pivotal journals, and a pitman adjustably connecting the crank with the vertical member of the L-shaped lever, substantially as shown for the purpose described.

570,337. DEVICE FOR SHARPENING EDGED TOOLS. WALTER PURDY, Somerset, Pa. Filed July 2, 1896. Serial No. 597,840. (No model.)



Claim.—1. In a device for sharpening edged tools, the combination with a frame, and a hone in fixed relation thereto, of an arm mounted on said frame and adapted to carry the tool to be sharpened in contact with the hone, and means for imparting to the end of said arm carrying the tool an oval or elliptical motion over the surface of the hone, substantially as described.

2. In a device for sharpening edged tools, the combination with a supporting-base, a frame mounted thereon, and a hone also mounted thereon, said frame and hone being adjustable with respect to each other, of an arm mounted on said frame and adapted to carry the tool to be sharpened in contact with the hone, and means for imparting to the end of said arm carrying the tool an oval or elliptical motion over the surface of the hone, substantially as described.

3. In a device for sharpening edged tools, the combination with a frame, and a hone in fixed relation thereto, of a lever pivoted at one end to said frame, an arm pivoted at one end to the free end of said lever and adapted to carry at its other end the tool to be sharpened in contact with the hone, a wheel in said frame to which said arm is eccentrically connected intermediate its length, and means for rotating said wheel, substantially as described.

4. In a device for sharpening edged tools, the combination with a frame, an arm mounted on said frame and adapted to carry the tool to be sharpened, and means for imparting to the end of said arm carrying the tool an oval or elliptical motion, of a hone with which said tool is adapted to contact in its motion, a hone-support, set-screws in the ends of said support, slotted uprights through which said set-screws pass, and springs in the bottoms of said slots upon which said set-screws rest, whereby a yielding support is afforded for the hone, substantially as described.

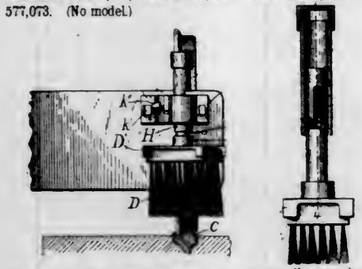
570,338. PHOTOGRAPHIC-CARD DRIER. NORMAN H. REED, Santa Barbara, Cal. Filed July 10, 1896. Serial No. 598,717. (No model.)



Claim.—1. A case for holding photograph card-mounts, comprising in its construction a suitable frame having top, bottom and end portions, the top and bottom portions being provided with transverse groves or corrugations, and removable partitions in said grooves or corrugations, one face of a partition being smooth and the other face provided with transverse grooves or corrugations, substantially as and for the purpose described.

2. A photograph card-mount holder, consisting of a case provided with partitions which form receptacles having one frictionally-holding side and one grooved side, substantially as described.

570,339. TRACK-CLEANER OR CURRENT-COLLECTOR. WILLIAM M. ROBERTS, Jr., Cumberland, Md. Filed Jan. 27, 1896. Serial No. 577,073. (No model.)



Claim.—1. In a track-cleaner or current-collector, the combination with a brush and a hollow casing secured to the back thereof, and provided with a longitudinal slot extending along one side of said casing and a lateral slot connected therewith, of a pin fastened to the car and projecting into said slot, a spring held under pressure between said pin and the back of said brush, and a guide for said casing adapted to permit the vertical movement thereof, substantially as described.

2. In a track-cleaner or current-collector, the combination with a brush and hollow casing secured to the back thereof and provided with a longitudinal slot extending along one side of said casing and a lateral slot connected therewith, of a pin fastened to the car and projecting into said slot, a spring inclosed in said casing and held between said brush and said pin, and a guide for said hollow casing adapted to permit the motion thereof in a vertical direction, substantially as described.

3. In a track cleaner or current-collector, the combination with a brush and a hollow casing secured to the back thereof, and provided with a longitudinal slot extending along one side of said casing and a lateral slot connected therewith, of a sleeve inclosing said casing, and permitting a vertical play of said casing therein, a pin fastened to the sleeve and projecting into said slot, and a spring held under pressure between said pin and the back of said brush, substantially as described.

4. In a track-cleaner, the combination with a brush and a hollow casing secured to the back thereof, and provided with a longitudinal slot extending along one side of said casing and a lateral slot connected therewith, of a sleeve inclosing said casing, and permitting a vertical play of said casing therein, means for adjusting the position of said sleeve relative to the track, a pin fastened to the sleeve and projecting into said slot, and a spring held under pressure between said pin and the back of said brush, substantially as described.

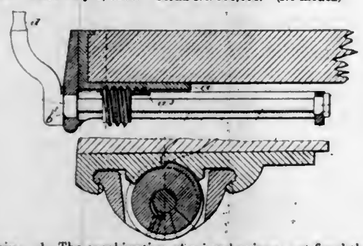
5. In a track-cleaner, the combination with a brush and a hollow casing secured to the back thereof, and provided with a longitudinal slot extending along one side of said casing and a lateral slot connected therewith, of a sleeve inclosing said casing, and permitting a vertical play of said casing therein, a bracket adapted to hold said sleeve; means for adjustably securing said sleeve in said bracket, a pin fastened to the sleeve and projecting into said slot, and a spring held under pressure between said pin and the back of said brush, substantially as described.

6. In a track-cleaner, the combination with a brush and a hollow casing secured to the back thereof, and provided with oppositely-disposed longitudinal slots extending along opposite sides of said casing and lateral slots connected with said longitudinal slots, of a pin fastened to the car and projecting through said casing and into said slots, a spring held under pressure between said pin and said brush, and a guide for said casing adapted to permit the vertical movement thereof, substantially as described.

7. In a track-cleaner, the combination with a brush and hollow casing secured to the back thereof and provided with oppositely-disposed longitudinal slots extending along opposite sides of said casing and lateral slots connected with said longitudinal slots, of a pin fastened to the car and projecting through said casing and into said slots, a spring inclosed in said casing and held between said brush and said pin, and a guide for said hollow casing adapted to permit said casing to move in a vertical direction, substantially as described.

8. In a track-cleaner, the combination with a brush and a hollow cylindrical casing secured to the back thereof, and provided with longitudinal slots extending along the opposite sides of said casing and lateral slots connected with said longitudinal slots, of a sleeve inclosing said casing, and permitting a vertical play of said casing therein, a pin fastened to the sleeve and projecting through said casing and into said slots, and a spring held under pressure between said pin and said brush, substantially as described.

570,340. VISE. DAVID C. SABOURIN and JOSEPH SABOURIN, Lowell, Mass. Filed July 6, 1896. Serial No. 598,090. (No model.)

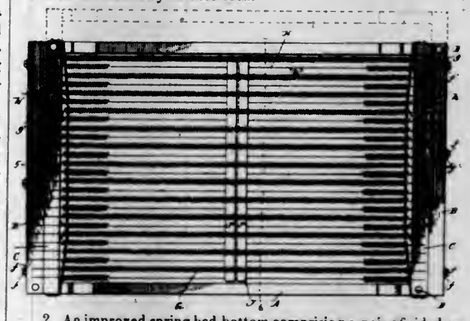


Claim.—1. The combination of a jaw having a nut fixed thereon, another jaw movable with respect to said first-named jaw, a rod rotary in said movable jaw and having a row of projections, and an externally-threaded screw having a longitudinal opening which surrounds said rod and in which said rod, in one position relatively to said screw, slides freely in either direction longitudinally, said opening having grooves, to engage said projections, when said rod is turned slightly in said screw from said position, to prevent a longitudinal movement of said screw and rod with reference to each other.

2. The combination of a jaw having a nut fixed thereon, another jaw movable with respect to said first-named jaw, a rod rotary in said movable jaw and having a row of projections, and an externally-threaded screw having a longitudinal opening which surrounds said rod and in which said rod, in one position relatively to said screw, slides freely in either direction longitudinally, said opening having grooves, to engage said projections, when said rod is turned slightly in said screw from said position, to prevent a longitudinal movement of said screw and rod with reference to each other, said opening having also a stop-surface, in contact with said projections, when the latter are out of said grooves to enable the motion of said screw to to be reversed.

579,341. BED-SPRING FRAME. RICHARD S. SAMPLE, Huntington, W. Va. Filed June 24, 1896. Serial No. 596,722. (No model.)

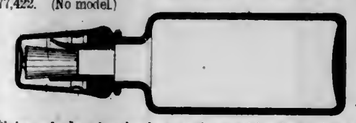
Claim.—1. The combination of the side bars, the cross-bars arranged in pairs at each end of the side bars and adjustably connected together, one bar of each pair being secured to one side bar and the other bar being attached to the other side bar, the parallel supporting coil-springs secured at their terminals at one side of the bed-bottom to the inner bar of one pair of cross bars and to the outer bar of the other pair and reversely arranged at the opposite side of the bed-bottom the truss-wires H extending the entire length of the bed-bottom, located between the supporting-springs and connected to the cross-bars in the same manner, and the spring-braces interposed between the supporting-springs and the truss-wires and supported by the latter substantially as described.



2. An improved spring bed-bottom comprising a pair of side bars A A a pair of cross-bars B B a second pair of cross-bars C C a pair of said bars B and C being disposed at each end of the frame and beld for longitudinal adjustment, the bar B at one end being fixedly connected to one of the side bars, the bar B at the other end being fixedly connected with the other side bar, the bars C being similarly connected to such side bars but in a reverse manner to the bars B, the coil-springs G having one end connected with the cross-bar B at one end and the other end connected with the bar C at the opposite end of the frame, the truss-wires K connected similarly to the cross-bars B and C and the sprig-braces J consisting of a pair of slats J′ held spaced apart by springs J^3 all arranged substantially in the manner shown and described.

3. An improved spring bed-bottom comprising the side bars A, a pair of cross-bars B and C at each end of cross-bars B being fixedly connected at one end to the side bar A at one side, the cross-bar C being fixedly connected at one end to the opposite side bar A, the bars B, having horizontal slots, the bolt connections F the coil-springs G having one end connected with the cross-bar B at one end and the other end connected to the cross-bar C at the other end, the truss-wires H connected similarly to the cross-bars B and C, and the spring-braces J consisting of a pair of slats J′ held spaced apart by springs J^3, all being arranged substantially in the manner shown and for the purposes described.

570,342. BOTTLE-CLOSURE. WILHELM SCHEERER, Tuttlingen, Germany, assignor to the Actien-Gesellschaft fur Fein Mechanic, vormals Jetter & Scheerer, same place. Filed Jan. 30, 1896. Serial No. 577,422. (No model.)



Claim.—1. In a bottle-closure, the combination, with a cap having a recess in its periphery, of an elastic hood connected to the cap and projecting below the same, said hood having an enlargement at its lower end arranged to engage the neck of the bottle and to hold the projecting portion of the hood in the recess in the cap when said portion is rolled up, substantially as set forth.

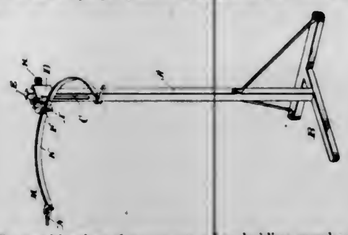
2. In a bottle-closure, the combination, with a cap having a pair of recesses in its periphery, of an elastic hood provided with an enlargement arranged to enter the upper recess and hold the hood to said cap, said hood also having an enlargement at its lower end arranged to engage the neck of the bottle and to roll up into the lower recess in the cap, substantially as set forth.

570,343. BAG-HOLDER. HANS A. SKREBERG, Milan, Minn. Filed May 26, 1896. Serial No. 593,152. (No model.)

Claim.—1. The combination of a support, a bag-holding clamp, and a spring actuated bolt for holding the clamp normally closed and also for securing the clamp to the support, substantially as shown and described.

2. The combination of a support, a socket adapted to embrace the same, a leaf hinged to the upper portion of the front side of the socket and depending therefrom, a bag-holder secured to the leaf, the

bolt extended through the leaf the socket and the support, the rear side of the support being recessed, the washer arranged upon the bolt within the recess and adapted to bear against the vertical support, and the spring arranged upon the bolt between its head and the said washer, whereby pressure is exerted upon the support and the socket held to proper position, substantially as shown and described.



3. The combination of a support, a bag-holding member, a carrier on the support to which the said bag-holding member is hinged, the bag being adapted to be confined between the said bag-holding member and the carrier, and the yielding spring-held bolt projected through the support as well as the carrier and the bag-holding member, whereby the clamp formed by the bag-holder and carrier is held normally closed, substantially as shown and described.

4. The combination of an upright, a socket embracing the same and recessed upon one side, the washer arranged in the recess and adapted to bear against the support, the securing-bolt extended through the socket the support and the washer, and the spring arranged upon the bolt between the washer and the bolt-head, whereby the socket is held to position upon the support, substantially as shown and described.

5. The combination of the vertically-slotted support, the socket embracing the same and recessed upon one side, the bolt projected through the socket and support, the washer upon the bolt within the recess of the socket and bearing against the support, the spring arranged between the bolt head and the washer, and a bag holding device held to position upon the socket by the opposite end of the bolt, substantially as shown and described.

6. The combination of a support, a bag holding and expanding device a bolt uniting the support and the said device, and a yieldable spring arranged as a washer upon the bolt for holding the bag-holding and spreading device normally in engagement with the support, substantially as shown and described.

570,344. TROLLING-HOOK. ALLEN H. SMITH, Snoqualmie, Wash. Filed Apr. 21, 1896. Serial No. 588,459. (No model.)



Claim.—1. In a trolling-hook, the combination, with a casing having slots therein near one of its ends and openings adjacent to the said slots, of a plunger having sliding movement in the said pockets, hooks pivotally attached to the said plunger, the shanks of the hooks passing out through the openings in the casing, and a locking device whereby the plunger may be secured at intervals in its movement to the aforesaid casing, as and for the purpose specified.

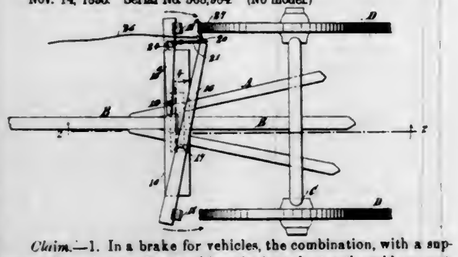
2. The combination, with a casing having an enlarged head and an inclined neck connecting the head with the body, the head being provided with slots and the neck with corresponding openings, of a plunger having sliding movement in the casing, and hooks the shanks of which are passed through the slots in the head of the casing and pivotally attached to the plunger, the shanks having an angular formation, as and for the purpose specified.

3. The combination, with a casing, having an enlarged head and an inclined neck connecting the head with the body, the head being provided with slots and the neck with corresponding openings, of a plunger having sliding movement in the casing, hooks the shanks of which are passed through the slots in the head of the casing and pivotally attached to the plunger, the shanks having an angular formation, and a locking device, whereby the plunger may be rigidly secured to the casing, as and for the purpose specified.

4. The combination of a tube having two openings therein, a rod slidable within the tube and a hook having its shank pivotally connected to the rod and passed through one of the openings in the tube, the point of the hook being forced into the remaining opening of the tube upon movement of the rod, substantially as described.

5. The combination of a tube having an opening therein, a member slidable longitudinally through the tube, and a hook having its shank pivotally connected to the said member, the hook being at all times located out of the tube and having its point forced into the opening of the tube upon the movement of the member within the tube, substantially as described.

570,345. VEHICLE-BRAKE. CLARK SNOW, Oxford, Ala. Filed Nov. 14, 1895. Serial No. 568,984. (No model.)



Claim.—1. In a brake for vehicles, the combination, with a support, and two levers of unequal length pivoted upon the said support, extending one beyond the other, and their pivot-points being at opposite sides of the center of the support, and brake-shoes secured to the outer end portions of the said brake-levers, of an arched bar pivotally connected with the inner end of the longer lever, adapted when the levers are in braking position to extend over and beyond the shorter lever, a shifting lever having hinged connection with the said shorter brake lever and a pivotal coonection with the arched bar, the pivotal connection of the arched bar being lower than its fulcrum when the arched bar is in its braking position, and a weight connected with the outer end of the said shifting lever, the said weight being adapted for attachment to a hand-lever, substantially as and for the purpose set forth.

2. The combination of two mounted brake levers, a bar pivotally connected to one lever and capable of extending over the remaining lever, a shifting lever fulcrumed on the said remaining lever, the length of the shifting lever being approximately equal to that of the bar and the shifting lever being capable of moving downwardly in approximate parallelism with the said bar, and a weight hung pendent from the free end of the shifting lever, the weight being capable of assisting in the throwing of the lever, substantially as described.

570,346. CUTLERY-HANDLE. WILLIAM B. STEELES, New Britain, Conn. Filed Apr. 25, 1896. Serial No. 589,067. (No model.)



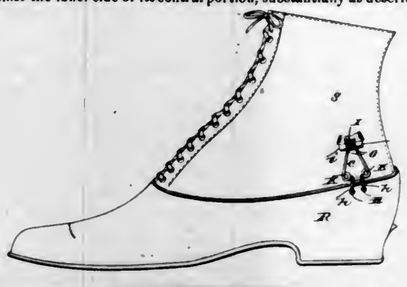
Claim.—1. A cutlery-handle, having a kerf at one end to receive the butt portion of a blade and having a longitudinal perforation extended from the inner end of said kerf through the entire length of the handle, a tube in said perforation consisting of a wire wound spirally, the said tube being adapted to have its outer surface pressed into the interior of the handle by the insertion of the tang of a blade and a plug for the perforation at the butt-end of the handle, substantially as specified.

2. The combination of a handle having a kerf at one end to receive the butt portion of a blade, the walls of said kerf being inclined to engage the transverse taper of the blade, the said handle also having a longitudinal perforation extending from the base of the kerf through the opposite end of the handle, a tube in said perforation consisting of spirally-wound wire the spirals bearing one against another, and a non-rotary blade having a tang portion inserted in said tube, and by its pressure forcing the outer ridges of said tube into the materal of the handle, substantially as specified.

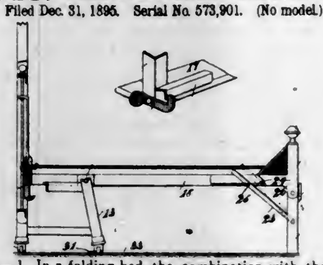
570,347. OVERSHOE-FASTENER. MARSENA ST. JOHN, Ottawa, Kans. Filed Apr. 6, 1896. Serial No. 586,368. (No model.)

Claim.—1. In a rubber-fastener, the combination with an eye member attached to the shoe and having two separated cylindrical eyes; of a catch member comprising a substantially U-shaped body of spring material with coils between its base and side arms and whose base is attached at a point between said coils to the rubber, the arms being bent into handles projecting outwardly from the shoe and terminating in points projecting laterally outward from each other and adapted to be sprung into said eyes, substantially as described.

2. In a rubber fastener, the combination with an eye member attached to the shoe, and a substantially U-shaped catch member the extremities of whose arms are removably connected with said eye member; of an attaching-wire whose center lies against the inner face of the rubber near its upper edge, the ends thereof being then passed over the base of the catch member and carried downward on the outer face of the rubber, thence passing through holes in the latter, and the extremities of this wire being bent upward and resting against the inner side of its central portion, substantially as described.



570,348. FOLDING BED. ROBERT J. STUART, New Hamburg, N. Y. Filed Dec. 31, 1895. Serial No. 573,901. (No model.)



Claim.—1. In a folding bed, the combination with that face of the folding section which is the under face when the said section is down and the front face when the section is up, of a curtain-rod fixed at one end of said section and an adjustable curtain-rod located at the opposite end of the section as and for the purpose specified.

2. In a folding bed, the combination with the folding section of the same and the supporting legs at the foot portion of said section, of a curtain rod constituting the pivot points of said legs, adjustable brackets located at the head portion of the folding section of the bed, and a curtain pole supported by the said brackets, substantially as shown and described.

3. In a folding bed, the combination with the folding section of the bed and the support for the same, of a gravity latch carried by the support and having its pivot placed eccentrically to the path of the head of said section, said latch being adapted for engagement with the head of the folding section when the latter is in its lower position and a lug on the lower end of the latch adapted to engage with the support for limiting the movement of the latch, substantially as shown and described.

4. In a folding bed, the combination, with the supporting-frame, comprising a stationary head-board and legs connected with the front portion of the said head board, of a bed fulcrumed upon the said legs, a latch pivoted at its center on the head portion of the said bed, and having a weighted end opposite the latch end and a keeper bar connected with the said legs and adapted to be engaged by the latch when the bed is in its elevated position, as and for the purpose set forth.

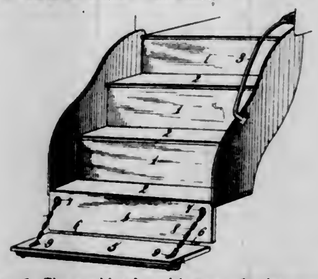
570,349. ADJUSTABLE CURTAIN-FIXTURE. JOSEPH R. THOM, Girard, Kans. Filed May 2, 1896. Serial No. 590,002. (No model.)



Claim.—1. A curtain-support, comprising vertical guides for attachment to a window-frame, a hanger-bar, a pair of sliding clutches thereon consisting of flat bars having their outer ends recurved to form hooks for engaging said guides whereby the hanger-bar may be slidingly and detachably mounted on the guides, a spring interposed between and connecting the inner ends of said clutches, and stops on the hanger-bar for guiding and limiting the movements of said clutches, substantially as described.

2. A curtain-support, consisting of vertical guides adapted to be secured to a window-frame, a hanger-bar having laterally-projecting pins or stops, a pair of sliding clutches formed with longitudinal slots for engaging said pins or stops and having their outer ends recurved to form hooks for embracing and engaging the vertical guides, and a spring interposed between and connecting the adjacent ends of said clutches, whereby the hanger-bar may be slid up and down on the vertical guides and detached therefrom, substantially as described.

570,350. DROP-STEP ATTACHMENT FOR RAILWAY PASSENGER-CARS. ROSALIE P. THOMAS, Martinsburg, W. Va. Filed Aug. 3, 1896. Serial No. 601,537. (No model.)



Claim.—1. The combination with steps, of a riser connected with the lower tread of the steps and having guide openings at or near its ends, a drop-step hinged or pivoted to the riser, and chains connected with the drop step, passing through the guide-openings of said riser and provided with stop-blocks and with fastening devices at their extremities, said stop-blocks serving as stops to support the drop-step when unfolded, and said fastening devices being adapted to be connected in front of the drop-step when the latter is folded, substantially as described.

2 The combination with car steps, of a riser secured to the outer lower end of the steps and provided with guides at or near its ends, a drop-step hinged or pivoted to the lower edge of the riser, and chains connected with the drop-step, passing through the guides of said riser, and provided with stop-blocks and with a hook and an eye at their extremities, said stop-blocks serving as stops to support the drop-step when unfolded, and said hook and eye being adapted to be connected when the drop step is folded upward, substantially as described.

3. The combination with car-steps, of a riser secured at the lower end of the steps, a drop-step hinged or pivoted to the lower edge of the riser, and chains having stop-blocks and fastening devices at their extremities, said chains serving to support the drop-step when unfolded and adapted to have their ends connected for the purpose of securing the drop-stop in its unfolded position.

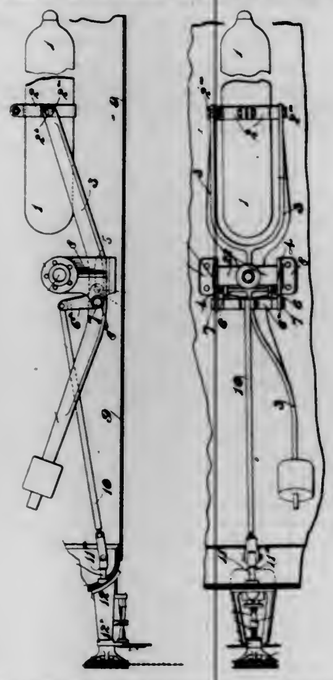
4. The combination with car-steps, of a riser secured at the lower end of the steps and having guide-openings at or near its ends, a drop-step pivoted to the riser and provided with an attached rod, and chains connected with the rod of the drop-step, passing through the guide-openings of said riser, and provided with stop-blocks and with fastening devices at their extremities, substantially as and for the purposes described.

570,351. AUTOMATIC FEED-WATER REGULATOR. JOHN I. THORNYCROFT, London, England. Filed Nov. 22, 1894. Serial No. 529,678. (No model.)

Claim.—1. The combination with a steam-boiler, of feed-water-regulating apparatus comprising a feed-water valve having its casing fixed within said boiler and its inlet and outlet pipes or passages located within said boiler, a balanced float-lever carried by and external to said valve-case and connected with said valve, regulating mechanism also located within the boiler, and capable of varying the distance between said float lever and the seat of said valve, and means for adjusting said regulating mechanism from the exterior of said boiler substantially as herein described for the purpose specified.

2. The combination with a steam-boiler, of feed-water-regulating apparatus located within said boiler and comprising a feed-water valve, arranged to discharge direct into said boiler, a float subject to the action of the varying water-level in the boiler, a balanced lever of the first order connected with said valve and float, a second lever upon one arm of which said float-lever is fulcrumed, and means capable of being operated from the exterior of the boiler so as to operate said second lever and vary the position of the fulcrum of said float-lever, substantially as described.

3. Feed-water-regulating apparatus comprising a feed-water valve adapted to discharge direct into a boiler, a float, a balanced lever of the first order connecting said valve and float, a second lever upon one arm of which the float-lever is directly fulcrumed, and adjusting mechanism connected with said second lever and capable of being operated from the exterior of the boiler so as to vary the position of the fulcrum of said float-lever, substantially as herein described.



4. The combination with a steam-boiler, of feed-water-regulating apparatus located within said boiler and comprising a feed-water valve arranged to discharge direct into said boiler, float-operated mechanism arranged externally to the valve-case and adapted to control said valve, a lever upon which said float-operated mechanism is pivoted, an adjusting device external to said boiler and connected with said lever, and an indicating device also external to said boiler and operated by said adjusting device, substantially as herein described for the purpose specified.

5. The combination with a steam-boiler, of feed water-regulating apparatus located within said boiler and comprising a standard or support fixed within said boiler and carrying the casing of a feed-water valve, a feed-water valve located within said casing, float-operated mechanism carried by said standard or support and connected with said feed-valve, and means for adjusting said float-operated mechanism from the exterior of the boiler, substantially as herein described for the purpose specified.

6. The combination with a steam-boiler, of feed-water-regulating apparatus located within said boiler and comprising a feed-water valve having its casing fixed within said boiler, a lever pivoted to said valve-casing or an extension thereof, float operated mechanism fulcrumed upon said lever and connected with said feed-valve, and means for adjusting said lever from the exterior of said boiler, substantially as described for the purpose specified.

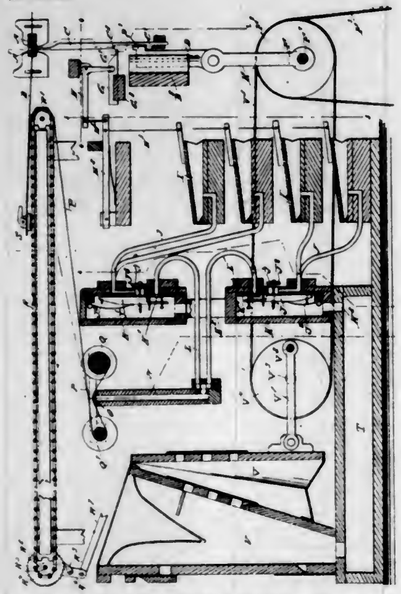
7. The combination with a steam-boiler, of feed-water-regulating apparatus located within said boiler and comprising a valve-case fixed within said boiler and having inlet and outlet passages and a nearly-balanced feed-valve arranged to open downward by gravity, float-operated valve-controlling mechanism connected to said valve, and an adjusting device connected with said valve-controlling mechanism and adapted to be operated from the exterior of the boiler, substantially as described.

8. The combination with a steam-boiler, of feed-water-regulating apparatus located within said boiler and comprising a valve-case fixed within said boiler and having inlet and outlet passages and a nearly-balanced feed-valve arranged to open downward by gravity, float-operated valve-controlling mechanism comprising a lever carried by an extension of said valve-case, a connecting pin or link freely jointed to said valve and controlling-lever but so as to have no endwise motion relatively to either, and means for adjusting the action of said mechanism, substantially as described for the purpose specified.

9. The combination with a steam-boiler, of feed-water-regulating apparatus comprising a valve-case fixed within said boiler and having inlet and outlet passages and a nearly-balanced valve arranged to open downward by gravity, a float-lever connected to said valve by a link articulated to both, a bell crank lever in one arm of which said float lever is pivoted, a longitudinally movable adjusting rod arranged to work through a stuffing-box on the boiler-shell and connected with the other arm of said bell-crank lever, and means for moving said rod in an endwise direction, substantially as described.

10. The combination with a steam-boiler, of feed-water-regulating apparatus comprising a valve-case fixed within said boiler and having inlet and outlet passages and a nearly-balanced valve arranged to open downward by gravity, a float-lever connected to said valve by a link articulated to both, a bell-crank lever in one arm of which said float-lever is pivoted, a longitudinally-movable adjusting-rod arranged to work through a stuffing-box on the boiler-shell and connected with the other arm of said bell-crank lever, means for moving said rod in an endwise direction, and means for indicating the extent of endwise movement of said rod substantially as herein described.

570,352. APPARATUS FOR PRODUCING MUSIC-ROLLS. JAMES B. TRACY, MERIDEN, CONN. Filed Mar. 28, 1895. Serial No. 543,497. (No model.)

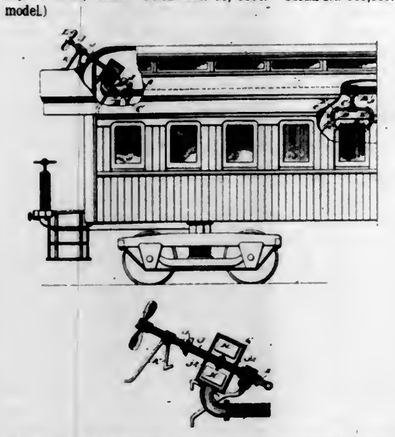


Claim.—1. In an apparatus for producing music rolls, the combination with a perforated tracker-board over which passes a perforated pattern-sheet, which moves in unison with the sheet to be perforated, and reciprocating punches by which the sheet is perforated, of slides controlling the movement of the punches, a bellows for each punch, bell crank levers each having one end engaging a slide, and a pivoted and spring-pressed lever connected with the other end of the bell-crank lever and with the bellows, substantially as described.

2. An apparatus for producing music-rolls, comprising dies between which passes the sheet to be perforated, reciprocating punches in conjunction with the said dies, to perforate the sheets, each punch being provided with two shoulders, a cross-head having a reciprocating motion, and adapted to engage one of the said shoulders, a slide adapted to move in engagement with the other shoulder to be engaged by the said cross-head, and a bellows connected with the said slide to move the latter in and out of engagement with the said shoulder, substantially as shown and described.

3. An apparatus for producing music-rolls, comprising dies between which pass the sheet to be perforated, reciprocating punches in conjunction with the said dies, to perforate the said sheets, each punch being provided with two shoulders, a cross head having a reciprocating motion, and adapted to engage one of the said shoulders, a slide adapted to move in engagement with the other shoulder to be engaged by the said cross-head, a bellows connected with the said slide to move the latter in and out of engagement with the said shoulder, a valved bellows connected with the first-named bellows, an exhauster connected with the valved bellows, and a tracker-board over which passes the perforated pattern-sheet, the said tracker-board being connected with the said valved bellows, to control the action of the valve therein, substantially as shown and described.

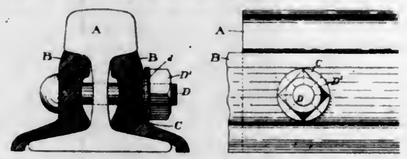
570,353. CAR-VENTILATING MECHANISM. WILLIAM J. TULLY, Crystal Falls, Mich. Filed Mar. 18, 1896. Serial No. 583,809. (No model.)



Claim.—1. An improved car-ventilating mechanism, comprising air-distributing means, a fan-casing communicating with the same, a hollow fan-shaft disposed longitudinally of a car and having its outer end open and arranged on the exterior of the car, whereby the motion of the same will drive air through it, said shaft forming an air-supply pipe and communicating with the interior of the fan casing, a fan carried by the shaft and located within the fan-casing, and a propelling wind-wheel fixed to the shaft and arranged on the exterior of the case substantially as and for the purposes described.

2. The combination with a car, of the hollow inclined shafts located at the ends of the car, disposed longitudinally of the ends thereof and having open outer ends arranged above the plane of the top of the car, fans carried by said shaft fan-casings surrounding said fans, communicating with the interior of the shafts and receiving their supply of air from the same, and exteriorly-arranged propelling wind-wheels fixed to the shafts and extending above the top of the car, substantially as described.

570,354. NUT-LOCK. WILLIAM TURNER, Wilkinsburg, Pa. Filed May 12, 1896. Serial No. 591,234. (No model.)

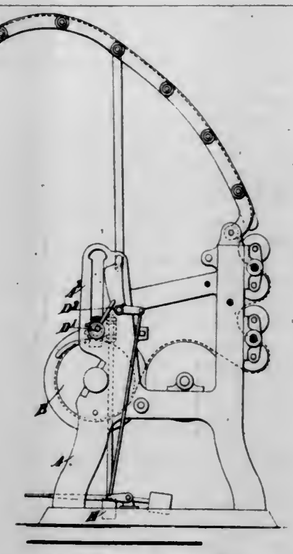


Claim.—In a washer nut-lock, the combination of a series of spurs arranged equidistant from each other throughout one side, with their sharp edges radially located, said edges being formed by the intersection of a surface at or about right angles to the median plane of said washer, and a surface at a lesser angle thereto; similar spurs on the opposite side of said washer located between those of the first-named side, the adjoining spurs on each side being connected by concave surfaces, substantially as set forth.

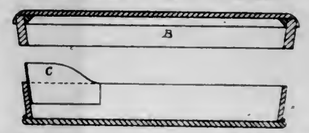
570,355. REELING-MACHINE FOR PAPER OR OTHER FABRICS. WILLIAM H. WALDRON, New Brunswick, N. J. Filed Jan. 15, 1896. Serial No. 575,639. (No model.)

Claim.—In a reeling-machine, the combination with a driving-roll, of a winding-roll, sliding bearings in which said winding-roll is journaled to move toward and from the driving-roll, one of the bearings receiving the journal of the winding-roll eccentrically, and means for turning said bearing for shifting said end of the winding-roll transversely to the direction of the slideways, substantially as described.

570,355

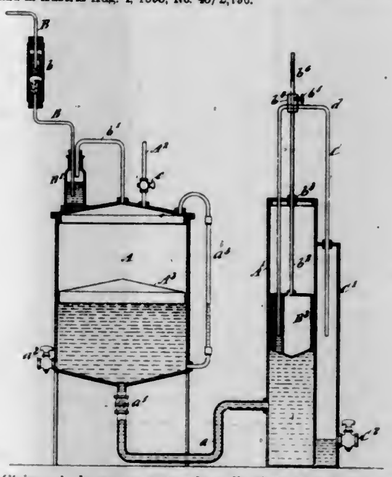


570,356. CASKET. JOSEPH H. WALKER, Grand Rapids, Mich. Filed Mar. 12, 1896. Serial No. 582,937. (No model.)



Claim.—In a casket, the combination of the lower part or body having substantially a horizontal upper surface, a shell or case at the head of the casket and within the body thereof, projecting above the body and adapted to retain the head-cushion substantially as described, a lid or cover adapted to fit over the said head-piece and to make a close-fitting joint with the body, substantially as and for the purpose described.

570,357. APPARATUS FOR COLLECTING GASES. FRANCOIS G WALLER, Delft, Netherlands. Filed June 11, 1895. Serial No. 552,491. (No model.) Patented in Germany June 28, 1894, No. 80,832; in Belgium July 11, 1894, No 110,937; in England Jan. 16, 1895, No. 1,040, and in Austria Aug. 4, 1895, No. 45/2,796.



Claim.—1. In an apparatus for collecting gases, two communicating tanks, a float in one of the tanks, a siphon carried by said float, a float in the other tank, a gas-inlet pipe comprising a filter, and a gas-outlet, substantially as specified.

2. In an apparatus for collecting gases, a gas container or tank, a float therein, a siphon-tank having communication with the first-named tank, a float in the siphon-tank, a siphon carried by the float, and gas inlet and outlet pipes communicating with the first-named tank substantially as specified.

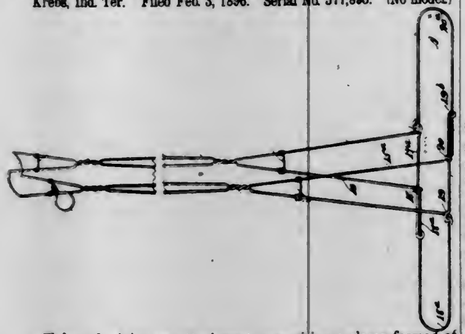
3. In an apparatus for collecting gases, a gas-tank, gas supply and discharge pipes connected therewith, a liquid-inlet, a float in the gas-tank, and means comprising a siphon for automatically controlling the flow of liquid from said tank, substantially as specified.

4. In an apparatus for collecting gases, two communicating tanks, a float in one of the tanks, a siphon carried by said float and having one leg extended into a well provided with a valve-controlled outlet, a float in the other tank, a gas inlet pipe comprising a liquid-sealed valve, and a gas-outlet, substantially as specified.

5. The combination with a gas and liquid tank, of a siphon-tank, a float therein and a siphon carried by the float and adjustable relatively thereto, substantially as specified.

6. The combination with two tanks, substantially as shown and described, of a siphon in one of said tanks, a float carrying the siphon, a well into which one leg of the siphon extends and a valve-controlled outlet for the well, by means of which the operation of the apparatus may be controlled, substantially as specified.

570,358. ATTACHMENT FOR BROOMS. JOHN S. WILLIAMS, Kreba, Ind. Ter. Filed Feb. 3, 1896. Serial No. 577,895. (No model.)



Claim.—1. A broom attachment, comprising a clamp formed of two sections, sliding one upon the other, arms rigidly secured to the said sections, and means for drawing the arms together or allowing them to spring apart to contract or expand the clamp, substantially as described.

2. A broom attachment, comprising a clamp formed of two sections sliding one upon the other, bifurcated arms rigidly secured to the sections, and slides on the members of the arms whereby the sections of the clamp can be adjusted by moving the slides up or down on the arms, substantially as described.

3. A broom attachment, comprising two arms having bifurcated lower ends, a clamp integral with the members of the arms and formed of two sections sliding one upon the other, each section being formed by two members, one of each arm, and means for contracting and expanding the clamp, substantially as described.

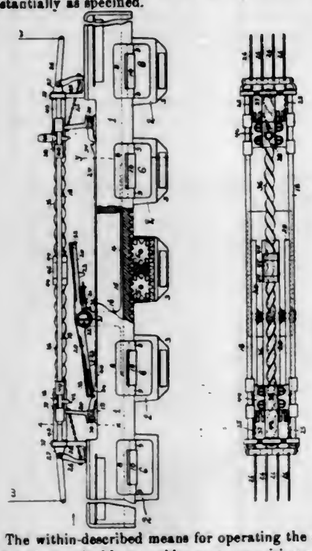
4. A broom attachment, comprising two arms having bifurcated lower ends, a clamping-section formed on the lower ends of the members of each arm, said sections having an interlocking and sliding connection with each other, and slides on the members of the arms, substantially as described.

5. In a broom attachment, a clamp adapted to embrace the brush-section of the broom, arms connected with the said clamp adapted to receive between them the handle of the broom, means, substantially as shown and described, for increasing or decreasing the size of the clamp, adjustable jaws attached to the said arms, and a suspension device whereby the clamp and the broom carried thereby may be hung from a common support, as and for the purpose specified.

6. The combination, with a clamp constructed in adjustable sections, of arms bifurcated at their lower ends and provided with extensions at said ends, forming adjustable sections of the clamp, slides to draw the bifurcated portions of the arms together, and adjustable jaws connected with the said arms, as and for the purpose set forth.

570,359. SWIVEL-LOOM. HERMANN WILLMUNDER, Philadelphia, Pa. Filed Mar. 8, 1895. Serial No. 540,929. (No model.)

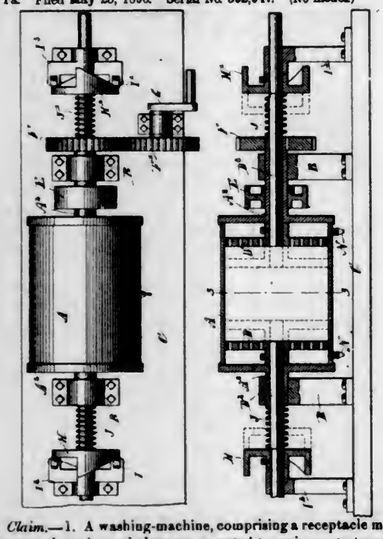
Claim.—1. The combination of the swivel-batten and the shuttle-operating racks thereon, with a duplex screw-rod, pushers adapted to the opposite threaded portions of the same, rock-levers connected to the shuttle-operating racks, and means for adjusting said levers so as to bring either end of either lever into line with one of the pushers, substantially as specified.



2. The within-described means for operating the shuttle-actuating pushers in a swivel-loom, said means comprising a duplex screw-rod mounted in bearings on the batten, and having a right-hand thread extending from the center to one end and a left-hand thread extending from the center to the other end, and pushers adapted to the threaded portions of said rod, and guided so as to prevent them from turning thereon, whereby movement of one of said pushers will cause rotating motion of the rod and reverse movement of the other pusher, substantially as specified.

3. The combination of the swivel-batten and its shuttle-operating bar, a rock-lever carried by said bar, reciprocating pushers for acting upon the lever so as to move the same and its bar in either direction, lifter-levers acting upon the rock-lever and having lugs for locking said lever against longitudinal movement when in either of its extreme positions, and means for operating said lifter-levers, the rock-lever being recessed at each end so as to straddle the lifter lever and prevent lateral displacement, substantially as specified.

570,360. WASHING-MACHINE. WILLIAM ACHESON, Pittsburg, Pa. Filed May 25, 1896. Serial No. 592,947. (No model.)



Claim.—1. A washing-machine, comprising a receptacle mounted to be turned, perforated plungers mounted to reciprocate toward and from each other in the said receptacle, shafts carrying the said plungers and mounted to turn with and to slide in the hubs of the said receptacle, and cams fixed on the shafts and engaging suitable abutments or rollers on the framework for imparting a reciprocating motion to the said shafts, substantially as shown and described.

2. A washing-machine, comprising a base, intermediate and end standards mounted thereon, the closed receptacle having tubular hubs mounted in said intermediate standards and provided with a driving means, plungers within the receptacle and having shafts extending outwardly through and rotating with said hubs, cams H H′ on the outer ends of said shafts, brackets mounted on the end standards and provided with antifriction-rollers engaged by the cams to force the shafts inwardly, and springs on the shafts and forcing them outwardly, substantially as described.

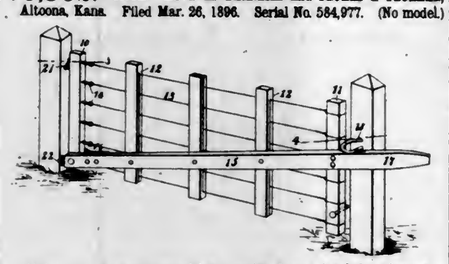
570,361. COMPOSITION OF MATTER AS SUBSTITUTE FOR WOOD, &c. GEORGE ARCHBOLD, New York, N. Y., assignor of one-half to William Seton Gordon, same place. Filed July 13, 1896. Serial No. 598,988. (No specimens.)

Claim.—1. A composition of matter, consisting of a mixture of wood fiber, hydrate of alumina, sulfate of ammonia, and a binding substance, substantially as described.

2. A composition of matter, consisting of a mixture of wood fiber, gibbsite, sulfate of ammonia, and a binding substance, substantially as described.

3. A composition of matter, consisting of a mixture of wood fiber, gibbsite, sulfate of ammonia, and glue as a binding substance, substantially as described.

570,362. GATE. ALVA H. BARNHILL and THOMAS I. THURMAN, Altoona, Kans. Filed Mar. 26, 1896. Serial No. 584,977. (No model.)



Claim.—1. A gate comprising a swing-bar, a latch-bar, intermediate bars, and wires attached to the swing and latch bars, being passed loosely through the intermediate bars, and a diagonal bar pivotally connected at one end with the lower portion of the swing-bar, engaging with the intermediate bars, being attached to the latch-bar near a central point thereon, whereby the diagonal bar constitutes a portion of the gate proper and serves to bind the several parts together, as and for the purpose specified.

2. A gate, consisting of a swing-bar, a latch-bar, intermediate bars, wires extending from the latch-bar loosely through the intermediate bars to the swing-bar, tension devices carried by the swing-bar and attached to the said wires, and a diagonal bar pivotally connected at one end to the lower portion of the swing-bar, being secured to the intermediate bars and to the latch-bar at a point near the center of the latter, as and for the purpose set forth.

3. The combination, with a keeper post, a latch-post, a keeper located on the keeper-post, and hinges located on the swing-post the said hinges being out of vertical alinement, of a tension-gate comprising a swing-bar, a latch-bar, intermediate bars, wires attached to the swing and latch bars, being loosely passed through the intermediate bars, and a tension bar pivotally connected to the lower end of the swing-bar of the gate and to the central portion of the latch-bar, the said keeper-bar extending beyond the latch-bar, and adapted for engagement with the said keeper, whereby the tension-bar is entirely disconnected from the swing-post, being solely a portion of the gate proper, as and for the purpose specified.

4. The combination, with a swing-post, a keeper post, and a tension-gate hung upon the said swing-post, of a keeper secured to the keeper-post, the said keeper being of staple-like construction, having the lower portion of its under face beveled in a downwardly direction, and a tension-bar controlling the gate and extending beyond the swing-bar thereof, the extension of the tension-bar being adapted for engagement with the beveled surface of the aforesaid keeper, as and for the purpose specified.

570,363. PUZZLE. THOMAS J. BARRETT, New Orleans, La. Filed July 17, 1896. Serial No. 599,530. (No model.)

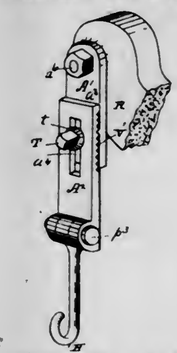
Claim.—1. A puzzle, comprising a diagram of the shape formed joining together a number of spaces to form a rectangle and adding to each end of the said rectangle an equal number of spaces similar to those composing the rectangle, and adding a row of spaces to and above the upper row of spaces forming said rectangle; and two sets of movable men or figures arranged upon the said spaces, and adapted to be moved from one space to another, substantially as described.



2. As an improved article of manufacture, a puzzle-board consisting of a plane surface having upon said surface a number of spaces so disposed as to form a central rectangle having an extension at each end composed of equal numbers of similar spaces, and a row of similar spaces adjoining the central and adjacent spaces, forming the top row of said rectangle, in combination with two sets of movable figures or men arranged upon a number of said spaces in sets on opposite sides of a vertical central row of vacant spaces, substantially as described.

3. As an improved article of manufacture a puzzle board composed of two flat members so joined together that they may be folded one upon the other and when opened present a continuous surface on one side; a number of rectangles so disposed on said surface as to form a larger rectangle having an extension at each end composed of equal numbers of rectangles and a row of similar rectangles adjoining the central and adjacent rectangles forming the top row of the larger rectangle; in combination with two sets of figures or men so arranged that the two sets of men occupy a number of the rectangles on each side of a central vertical row of vacant rectangles, said men being adapted to move or jump from one rectangle to another, substantially as described.

570,364. ROCKER AND SHOE CONNECTION FOR LOOM PICKER-STICKS. ALEXANDRE BARSELOU, Cohoes, N. Y., assignor of one-half to L. N. Marcil, same place. Filed Mar. 6, 1896. Serial No. 582,018. (No model.)



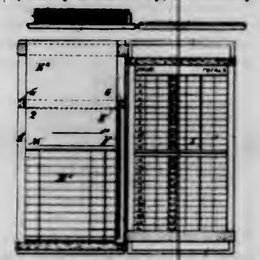
Claim.—The combination with the shaft B, provided with the cam C, of the shoe S, pivoted at one of its ends to the machine-frame, and at its other end provided with an eye E, and between its ends having the friction-roller r^3, mounted on a standard I; the rocker R, having the up-cast picker-stick P, and return-spring M; the plate A′, pivotally connecting with said rocker, and provided with the projecting rib V′; and the plate A^2, being cross-ribbed on its inner face and having a hook H, pivoted thereto at p^2, and made to adjustably connect with the plate A′, by means of a slot formed in said plate A^2, and a set-screw, substantially as and for the purposes set forth.

570,365. MANIFOLD SALES-BOOK. WILLIAM D. BATES, Grafton, N. D., assignor of one-half to John L. Cashel, same place. Filed May 20, 1896. Serial No. 592,321. (No specimens.)

Claim.—1. A book, comprising two covers, pairs of crossed bands connecting the same and forming a double hinge as described, and a pad one end whereof is at a suitable distance from the adjacent pair of bands so that said pair of bands will engage the leaves of the pad when the leaves are folded upwardly or outwardly, substantially as set forth.

2. A book, comprising two covers, pairs of crossed bands connecting the same and forming a double hinge as described, and a pad one end whereof is engaged by one pair of bands, while the other end of the pad is at a suitable distance from the other pair of bands so that

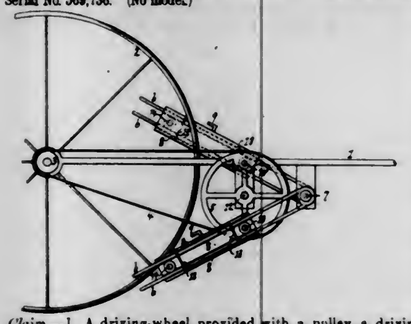
said second pair of bands will engage the leaves of the pad when said leaves are folded upwardly or outwardly, substantially as set forth.



3. A manifold-book, comprising two covers, pairs of crossed bands connecting the same and forming a double hinge as described, and a pad whose upper end is at a suitable distance from the upper pair of bands so that the leaves when folded upwardly or outwardly will be engaged by the said pair of bands, the pad comprising sales-slips or the like, duplicate slips alternating with the sales-slips, and a transfer-sheet adapted to be inserted between a sales-slip and the corresponding duplicate slip, substantially as set forth.

4. A manifold sales-book, comprising a cover, a back, and sets of hinged bands for connecting the back and cover together to permit the cover to swing to either side, one of the bands in the upper set being of longitudinally-extensible material, a pad secured on the said back a suitable distance from the uppermost band thereon and formed with sales-slips, duplicate slips and a transfer-sheet, substantially as shown and described.

570,366. MECHANISM FOR TRANSMITTING MOTION. ADOLPH BECKER Jersey City, N. J., assignor of six twenty-fifths to Charles Joselin, Brooklyn, and Orlando B. Reed, New York, N. Y. Filed Nov. 21, 1895. Serial No. 569,736. (No model.)



Claim.—1. A driving-wheel provided with a pulley, a driving-pulley, and a connection between the pulleys, combined with a lever having a sliding pedal, and a crank connection between the driving-pulley and pedal substantially as described.

2. A driving-wheel provided with a pulley, a driving-pulley, and a connection between the pulleys, combined with a lever having a sliding pedal, and a crank connection between the driving-pulley and pedal, said pedal being provided with a toe-catch substantially as described.

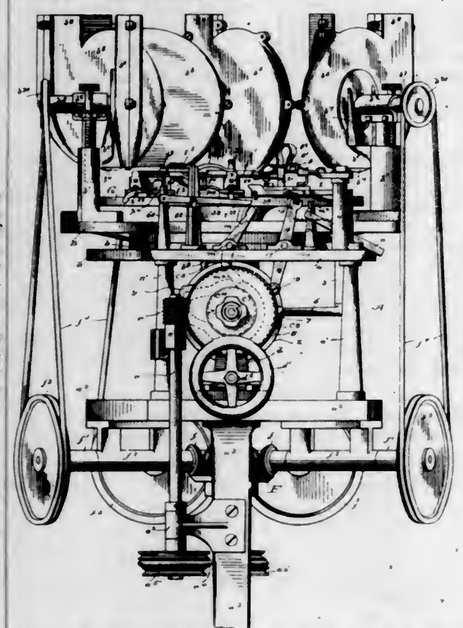
570,367. MACHINE FOR SLABBING NEEDLES. PHILO M. BEERS, Bridgeport, Conn. Filed Feb. 10, 1896. Serial No. 578,660. (No model.)

Claim.—1. In a machine of the character described, the combination with a carrier having needle-holding jaws and mounted on a rotary table, of a transferrer having means for temporarily holding a needle and delivering it to said carrier, said transferrer having a point for engaging the eye of the needle.

2. A machine for slabbing needles, comprising in its construction a series of carriers and mechanism for imparting thereto a step by-step rotary motion, a series of grinders past which the carriers move, and a pivoted oscillatory transferrer for delivering a needle to each carrier.

3. A machine for slabbing needles, comprising in its construction a series of carriers and mechanism for imparting thereto a step-by-step rotary motion, a series of grinding-wheels mounted on a table, mechanism for imparting a rotary reciprocating motion to said table, and a pivoted oscillatory transferrer for delivering a needle to each carrier.

4. The combination with the table G having a series of needle-carriers, of the table B having standards b, the vertically-adjustable bearings b^3 in said standards, the grinding-wheels having their shafts mounted in said bearings, and the wheel casings b^4 provided with outlet-flues b^6, said casings having the vertical slots b^7 for the passage of the shafts off the grinding-wheels.



5. The combination with the table G having a series of needle-carriers and provided with a series of recesses g^7 in its edge, of a needle-transferring device adapted to swing into said recesses g^7.

6. The combination with the table G, of a series of carriers for the needles, each of said carriers having a pivoted jaw and a fixed jaw, and a needle rest plate between said jaws.

7. The combination with the table G, of a series of carriers for the needles, each of said carriers having a pivoted jaw and a fixed jaw, each of said jaws being composed of a block having a jaw-plate adjustable thereon.

8. The combination with the table G, of a series of carriers for the needles each of said carriers having a pivoted jaw and a fixed jaw, and a needle-rest plate between said jaws, said jaws having portions adjustable, toward and from each other.

9. The combination with the table G, of a series of carriers for the needles each of said carriers having a pivoted jaw and a fixed jaw, having adjustable clamping portions and a needle-rest plate between said jaws, said needle rest plate being vertically adjustable between said jaws.

10. The combination with the carrier-base I, of the stationary jaw i^{17}, the pivoted jaw i^9 i^{18}, the needle-rest i^5 provided with a vertical slot, and the bolt i^6 passing through said slot and through the jaw i^{17}.

11. The combination with the carrier-base I, of the stationary jaw i^{17}, the pivoted jaw i^9 i^{18}, the needle rest i^5 provided with a vertical slot, the bolt i^6 passing through said slot and through the jaw i^{17}, and means for vertically adjusting said plate i^5.

12. The combination with the carrier-base I, of the stationary jaw i^{17}, the pivoted jaw i^9 i^{18}, the needle-rest plate i^5 provided with a vertical slot, the bolt i^6 passing through said slot and through the jaw i^{17} the lower edge of the plate i^5 being inclined, and the wedge-plate i^8 on which the plate i^5 rests and means for adjusting said plate i^8 longitudinally.

13. The combination with the carrier-base I, of the stationary jaw i^{17}, the pivoted jaw i^9 i^{18}, the needle-rest plate i^5 provided with a vertical slot, the bolt i^6 passing through said slot and through the jaw i^{17} the lower edge of the plate i^5 being inclined, the wedge-plate i^8 on which the plate i^5 rests, and having the angle end i^9, and the adjusting-screw i^{11} having a groove i^{10} receiving said end i^9.

14. The combination with the pivoted jaw of the carrier having the heel i^{24}, of the shaft i^{10} provided with the cam i^{22} and having the crank i^{20}.

15. The combination with the pivoted jaw of the carrier having the heel i^{24}, of the shaft i^{10} provided with the cam i^{22} and having the crank i^{20}, the said shaft having a groove i^{21}, and a fixed pin i^{30} engaging said groove.

16. In a machine of the character specified, the combination with a grinding-wheel, of a needle-carrier movable past said grinding-wheel and having a finger to press the point of the needle out of the plane of the periphery of the grinder.

17. The combination with a carrier having needle clamping jaws, of the shaft k' provided with a depressor-finger k and a spring k^4 for normally pressing said finger against the needle held by said jaws.

18. The combination with a carrier having needle-clamping jaws, of the shaft k' provided with a depressor-finger k and a spring k^4 for normally pressing said finger against the needle held by said jaws, and means for automatically elevating said finger k.

19. The combination with the table G having carriers, each of which is provided with needle-clamping jaws and with the depressor-finger k having the arm k^4, of the fixed cam-track l supported above said table.

20. The combination with the table G having carriers each of which is provided with needle-clamping jaws and with the spring-operated depressor k having the arm k^4, of the fixed cam track supported above said table.

21. The combination with the table G having carriers each of which is provided with needle clamping jaws and with the spring-operated depressor k having the arm k^4, of the fixed cam-track l supported above said table, and the cam-track section l^3 below the track l.

22. The combination with the table G having a series of needle-carriers, each of said carriers having a spring-actuated depressor provided with an arm k^4, of the center post C, the arm L supported by said post, and the cam-track l^3 supported by said arm L.

23. The combination of the table G having a series of needle-carriers, of the center post C, the arm L supported by said center post, and the cam-track supported by said arm, each of said carriers having a rock-shaft k' provided with a finger k and with the arm k^4 provided with a roll k^7 adapted to engage said cam-track, and the spring k^4.

24. The combination with the table G having a series of needle-carriers, each of said carriers having a spring-actuated depressor provided with an arm k^4, of the center post C, the arm L supported by said center post, and the cam-track supported by said arm L, said cam-track having a horizontal central portion l', the inclined ends l^2, and the inclined lower section l^3 connected to one of the end portions l^2.

25. The combination with the intermittently-rotary table having a series of carriers, each of said carriers being provided with needle-clamping jaws and with a jaw-operating crank i^{23}, of the lever m for operating said crank, and the cam y having a cam-groove m^3 for operating said lever.

26. The combination with the intermittently-rotary table having a series of carriers, each of said carriers being provided with needle-clamping jaws and with a jaw-operating crank i^{23}, of the lever m, for operating said crank, the cam y having a cam-groove m^3 for operating said lever, and the fixed stop m^4 against and over which the crank i^{23} is adapted to pass to open the jaws.

27. The combination with the intermittently rotary table having a series of carriers, each of said carriers being provided with needle-clamping jaws and with the cam-shaft i^{19} for operating the jaws, said shaft having a crank i^{22}, of the lever m, for operating said crank, the cam y having a cam-groove m^3 for operating said lever, and the fixed stop m^4 against and over which the crank i^{23} is adapted to pass to open the jaws.

28. The combination with the intermittently-rotary table having a series of carriers, each of said carriers being provided with needle-clamping jaws and with a jaw-operating crank i^{23}, of the lever m for operating said crank, means for operating said lever, a fixed stop m^4 against and over which the crank i^{23} is adapted to pass and open the jaws, and a transferrer located at a suitable point to transfer a needle to the jaws of the carrier after they have released the preceding needle

29. The combination with a rotary table having a series of carriers, each of said carriers being provided with needle clamping jaws and a jaw-operating crank i^{23}, of the lever m, for operating said crank, in one direction, a fixed stop for operating the crank in the opposite direction, and the discharger-pin o located in the path of movement of the needles.

30. The combination with a rotary table having a series of carriers, each of said carriers being provided with needle-clamping jaws and a jaw-operating crank i^{23}, of the lever m for operating said crank in one direction, a fixed stop for operating the crank in the opposite direction, and the discharger-pin o, located in the path of movement of the needles, said discharger-pin being carried at the end of the curved bracket o^3.

31. The combination with the table G and its series of carriers having needle-clamping jaws and an adjustable rest-plate between said jaws, of means for pressing the needle to its seat between said jaws.

32. The combination with the table G and its series of carriers having needle-clamping jaws, of means for pressing the needle to its seat between said jaws, said means comprising the lever p and devices for automatically operating said lever at predetermined times.

33. The combination with the table G and its series of carriers having needle-clamping jaws, of the lever p, the tubular standard p^4, the rod p^5 fitting said tubular standard and connected with said lever and means for operating said rod.

34. The combination with the table G and its series of carriers having needle-clamping jaws, of the lever p, the tubular standard p^4, the rod p^5 fitting said tubular standard and connected with said lever, the spring p^6 between the top of the standard and the lever, the spring p^6, the bell-crank lever p^4, and the cam z

35. In a machine of the character specified, the combination with the intermittently-movable carriers having needle-clamping jaws, of the transferrer mounted on a swinging arm and having a slide provided with means for temporarily holding the needle, means for moving said arm to a position to carry the needle in line with the jaws of the carrier, and means for advancing the slide to pass the needle to said jaws.

36. In a machine of the character specified, the combination with the intermittently-movable carriers having needle-clamping jaws, of the series of grinding-wheels set at varying elevations above the carriers, the transferrer mounted on a swinging arm and having a slide provided with means for temporarily holding the needle, means for moving said arm to a position to carry the needle in line with the jaws of the carrier, and means for advancing the slide to pass the needle to said jaws.

37. In a machine of the character specified, a needle-transferrer comprising a swinging arm, a slide movable on said arm, a tapered eye-locating point carried by said slide, and means for holding a needle with its eye fitting said point.

38. In a machine of the character specified, a needle-transferrer comprising a swinging arm, a slide movable on said arm, a yieldingly-supported tapered eye-locating point carried by said slide, and means for holding a needle with its eye fitting said point.

39. The combination with the vertical rock-shaft 4 having the arm 2 provided with ways and with the slide 10, of needle-holding devices carried by said slide, the crank-arm 6 at the lower end of the shaft 4, the cam 8 for acting on said crank-arm, the lever 16 for operating said slide, and the operating-cam y.

40. The combination with the swinging arm 2, of the slide 10 having the plate 12 provided with the pin or roll 14 below said arm 2, the lever 16 provided with the elongated yoke 15, and means for operating said lever.

41. The combination with the swinging arm 2, of the slide 10 provided with needle-holding devices and having the plate 12 provided with the pin or roll 14 below said arm 2, adjustable connections between said slide 10 and plate 12, and a lever engaging said pin or roll.

42. The combination with the slide 10 having the standard 21, of the head 22 provided with the block 23, the piston or plunger 25 having the tapered point 26, and means for holding the needle with its eye on said point.

43. The combination with the slide 10 having the standard 21, of the head 22, the block 23 carried by said head and having a socket 24, the plunger 25 provided with the point 26, and a spring 27 located in said socket.

44. The combination with the slide 10 having the standard 21, of the head 22, the block 23 carried by said head and having a socket 24, the plunger 25 provided with the point 26, a spring 27 located in said socket, the rod 28 extending through the bottom of the socket and provided with a stop 29, the lever 30 engaging said stop, and means for operating said lever to depress the plunger and point.

45. The combination with the slide 10 having the standard 21, of the head 22, the block 23 carried by said head and having a socket 24, the plunger 25 provided with the point 26, a spring 27 located in said socket, the rod 28 extending through the bottom of the socket and provided with a stop 29, the lever 30 engaging said stop, the arm 52 pivoted to the arm 2 and having a surface 54 over which the lever 30 is adapted to ride, and means for lifting said arm 52 at predetermined times.

46. The combination with the slide 10 having the standard 21, of the head 22, the block 23 carried by said head and having a socket 24, the plunger 25 provided with the point 26 a spring 27 located in said socket, the rod 28 extending through the bottom of the socket and provided with a stop 29, the lever 30 engaging said stop, the arm 52 pivoted to the arm 2 and having a surface 54 over which the lever 30 is adapted to ride, the tappet-lever 58 adapted to engage the arm 52, the vertically-movable rod 61, the lever 63 adapted to lift said rod 61, and the cam y' for operating said lever 63.

47. The combination with the arm 2, the slide 10, the standard 21, and the head 22 provided with the block 23, of the plate 36 longitudinally adjustable on said block 23 and the plate 34 provided with a notch 35 and adjustable on said plate 36.

48. The combination with the arm 2, the slide 10, the standard 21, and the head 22 provided with the block 23, of the plate 36 longitudinally adjustable on said block 23 and the plate 34 provided with a notch 35 and adjustable on said plate 36, the said head 22 and its attached parts being rotatively adjustable.

49. The combination with the arm 2, of the slide 10, the standard 21, the head 22 provided with the needle-supporting block 23 and with the ear 40, the lever 39 provided with the pressing-arm 41, the rod 42 connected to said lever and having the collar 45, the spring 44 on said rod, the bell-crank lever 46, and means for operating said bell-crank lever to advance the rod against the action of the spring.

50. The combination with the arm 2, of the slide 10, the standard 21, the head 22 provided with the needle-supporting block 23 and with the ear 40, the lever 39 provided with the pressing-arm 41, the rod 42 connected to said lever and having the collar 45, the spring 44 on said rod, the bell-crank lever 46, means for operating said bell-crank lever to advance the rod against the action of the spring, and the standard 49 having the bracket 50 provided with a roll for contact with said bell-crank lever.

51. The combination with the slide 10 having the standard 21, of the head 22 rotatively adjustable in said standard and provided with means for locating and holding the needle.

52. The combination with the slide 10, of the standard 21 provided with a circular opening and with the slit 67, the head 22 fitted to said circular opening and having needle supporting and locating devices, and the screw 68 connecting the sides of the standards for clamping the head 22.

53. The combination with the slide 10 and standard 21, of the block 23, supported by said standard and having the vertically-movable eye-locating point 26, and the side gage 71 adjacent to said point 26.

54. The combination with the slide 10 and standard 21, of the block 23, supported by said standard and having the vertically-movable eye-locating point 26, a movable arm 41 adapted to rest on the needle, and a spring 72 normally resting on said needle.

55. A machine for slabbing needle shanks, comprising in its construction the frame having the plates a a^2, the radial shafts f' f' supported by the plate f^3 and having pinions f' and pulleys f^2, the main shaft E having beveled gear F, means for operating said main shaft, the table B mounted above the frame-plate a, and having means for imparting thereto a rotary reciprocating motion, a series of grinding-wheels having their bearings carried by said table B and having their shafts provided with pulleys b^{30}, the belts f^4 connecting the pulleys b^{30} and f^2, the table G having a series of needle-carriers and having means for imparting thereto an intermittent rotary motion, means for transferring a needle to each of the carriers and means for discharging each needle from its carrier after passing the grinding-wheels, substantially as described.

56. A needle-shank-slabbing machine, comprising in its construction a carrier or holder for the needle and a grinding-wheel having its shaft at an acute angle relatively to the line of the shank of the needle, and means for oscillating said grinding-wheel while its periphery is acting upon the needle.

57. A needle-shank-slabbing machine comprising in its construction a rotary reciprocating table having a series of grinding-wheels mounted thereon, and an intermittently-rotating table having a series of needle-carriers, the shafts of the grinding-wheels being arranged at an acute angle to the shanks of the needles operated upon by them.

570,368. PIPE-PLATE. GEORGE S. KEITH, New York, N. Y. Filed July 25, 1896. Serial No. 600,473. (No model.)



Claim.—1. A pipe-cover, for covering holes in pipes, consisting of a metallic plate fitting over the pipe, a clamp having a threaded bolt attached thereto beyond the line of the center of gravity of said clamp, said bolt passing through an aperture in said metallic plate, and a nut engaging with said bolt, whereby the cap-plate is clamped to the pipe, substantially as set forth and described.

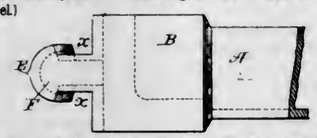
2. In a pipe-cover, the combination of a cap-plate having a central dome thereon, a clamp having a slot longitudinally formed on one side of the center of gravity of said clamp, a threaded bolt passing through the slot in said clamp and through an aperture in the cap-plate dome, and a nut engaging with said bolt for clamping the cap-plate on the pipe, substantially as set forth and described.

3. In a pipe-cover, the combination of a cap-plate with central dome thereon, and a central aperture in said dome, a clamp supported by a threaded bolt to one side of the center of gravity of said clamp, said bolt passing through the slot in said clamp and through the apertures in the cap-plate dome, and a nut for engagement with said clamping-bolt, substantially as set forth and described.

4. In a pipe-cover, the combination of a cap-plate with central dome thereon, a clamp having a longitudinal slot therein, said slotted portion raised or arched above the surface plane of said clamp, a threaded bolt passing through said slot and through the cap-plate, and a nut engaging said bolt, substantially as set forth and described.

5. In a pipe-cover, the combination of cap plate B, having central dome B', clamp C, having slotted arch C', threaded bolt D, with head E thereon, said bolt passing through said slotted clamp and held therein by the bolt-head, and through the cap-plate dome, and nut F, engaging with said bolt, substantially as set forth and described.

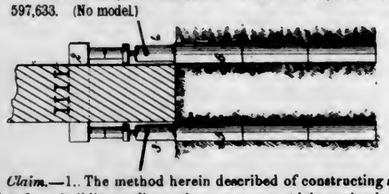
570,369. RAIL GRIP-JOINT FOR IRON BEDSTEADS. GEORGE BRAND, Brooklyn, N. Y. Filed Aug. 22, 1896. Serial No. 603,564. (No model.)



Claim.—1. A slip-joint consisting of the members B and D, the former being provided with a head F, having central bearing-surfaces and with a face abutting against the second member, and the second member having wedge-shaped portions entering between said bearing-surface and said abutting face, substantially as and for the purpose set forth.

2. A grip-joint for rails of iron bedsteads, consisting of the member B, provided with the bearing-surfaces z, z', and with the head F, having the bearing-points x, located intermediate of said bearing-surfaces, and the coöperating member D, having the socket G, larger than said head, and forming by its outward surface with the abutting face of the member D, wedge-shaped portions for entering between said head and the bearing-surfaces of member B, substantially as set forth.

570,370. CONSTRUCTION OF SUPPORTS FOR WALLS, &c. JULES BREUCHAUD, New York, N. Y. Filed June 30, 1896. Serial No. 597,633. (No model.)



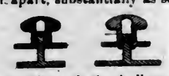
Claim.—1. The method herein described of constructing a foundation for a building-wall, or other structure, which consists in inserting a beam transversely into the wall, or other structure, arranging hydraulic jacks in engagement with said beam outside the vertical plane of the wall and successively driving column-sections perpendicularly into the earth until a column is formed which reaches bed-rock, or other firm substrata, substantially as described.

2. The combination with a building-wall, or other structure, of a beam inserted transversely into the wall and projecting laterally therefrom, and a hydraulic jack engaged with the laterally-projecting end of the beam and arranged perpendicularly to successively drive the sections of tubular columns into the earth until a column is formed which reaches bed-rock, or other firm substrata, substantially as described.

3. The combination with a building-wall, or other structure, of a beam inserted transversely into the wall and having its ends projecting from opposite sides thereof, and hydraulic jacks arranged at opposite sides of the wall, or other structure, and engaged with the projecting ends of said beam to successively drive column-sections perpendicularly into the earth until columns are produced which reach bed-rock, or other strata, and are located at opposite sides of the wall or other structure, substantially as described.

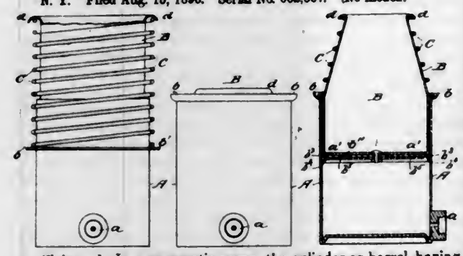
570,371. COLLAR-BUTTON. BERRY A. BROWN, Franklin, Ohio, assignor of one-half to Rudolph J. Meiser, Cincinnati, Ohio. Filed Feb. 24, 1896. Serial No. 580,418. (No model.)

Claim.—1. A button-stud formed of two pieces, one piece bearing a button-plate and a stem having an enlarged head fitting with a screw-thread in the hollow stem of the other piece the other piece having a bottom plate and a head and a depending sleeve about the entrance to such hollow stem below the plate, adapted to be turned up after the insertion of the first piece, to prevent their separation while leaving them free to move by means of the screw to bring the two plates together or apart, substantially as set forth.



2. A button-stud part formed of a hollow stem bearing a head and a plate, on its ends, and a depending sleeve below the plate around the opening to such stem, and adapted to be spun or bent up to partly close such opening after the insertion of the stem of the other part to prevent its separation, substantially as set forth.

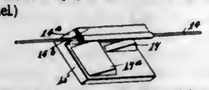
570,372. PNEUMATIC PUMP. WILLIAM F. BROWNE, New York, N. Y. Filed Aug. 15, 1896. Serial No. 602,867. (No model.)



Claim.—1. In a pneumatic pump, the cylinder or barrel, having a circumferential flange and the hollow piston or plunger having a conical upper end and an outwardly-turned flange at or near its top, in combination with an outer spiral spring interposed between and bearing on said flanges and the coils thereof lying adjacent to said conical portion of the plunger, substantially as and for the purpose described.

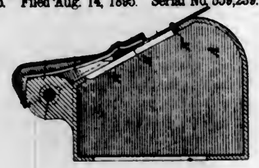
2. In a pneumatic pump, the cylinder or barrel, having a circumferential flange at, or near, its top and the hollow piston or plunger having a conical upper end, provided with an outwardly-turned flange; and with a perforated bottom plate, a clamping-disk and an interposed pliable packing-disk having an inwardly-turned edge, in combination with the spiral spring C, interposed between and bearing upon said flanges on the cylinder and plunger, and lying adjacent to the conical portion of the plunger, substantially as and for the purpose described.

570,373. ELECTRICALLY-ACTUATED SWITCH MECHANISM. WALRAM S. BROWNE, Brooklyn, N. Y. Filed Dec. 5, 1895. Serial No. 571,131. (No model.)



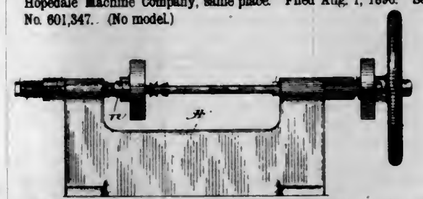
Claim.—An electrical-railway system, comprising a main line and a branch line, a switch-point at the junction of the branch line with the main line, electrically-operated devices for moving the switch-point in opposite directions, two series of contacts supported by the trolley-wire, one contact of each series being adjacent to the switch-point, the contacts of one series being of less width than and being arranged at different elevations with respect to the contacts of the other series, circuit connections between the contacts and the devices for operating the switch-point, and contacts carried by a car for engaging successively with the first-named contacts, and operating first to place or hold the switch point in engagement with the main-track line and then operating to move the switch-point into engagement with the branch line, substantially as specified.

570,374. LID FOR CAR-AXLE BOXES. ALBERT O. BUCKIUS, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed Aug. 14, 1895. Serial No. 559,239. (No model.)



Claim.—The combination of the car-axle box lid, a leaf-spring having at one end a bearing at the pivot part of the lid, and at the other end connected with the inner side of the lid by a recess on the one and a projection on the other; said recess and projection interfitting with each other and preventing the spring from moving lengthwise toward the said pivot, the lid being imperforate at the place of interfitting, and having on the interior a bridge fitting over the end of the spring opposite to the recess and coacting therewith to hold the spring in place; substantially as described.

570,375. APPARATUS FOR ASSEMBLING SPINDLE-BLADES AND WHIRLS. GEORGE M. BURGESS, Hopedale, Mass., assignor to the Hopedale Machine Company, same place. Filed Aug. 1, 1896. Serial No. 601,347. (No model.)



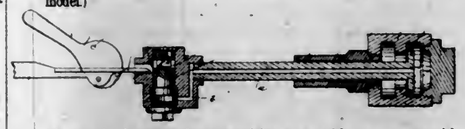
Claim.—1. In an apparatus of the class described, a hollow, externally-tapering holder for the whirl and to receive the spindle blade loosely, a presser movable in the axial line of said holder, to engage and press the blade into the whirl, and means to limit the relative movement of the spindle-blade and whirl, substantially as described.

2. In an apparatus of the class described, a hollow, tapering holder for and to center the sleeve-whirl, a presser to engage the tip of the spindle-blade and force the latter into the whirl, and a sleeve to loosely surround the blade between the whirl and presser, to fix the position of the whirl on the blade and prevent deflection of the latter, substantially as described.

3. In an apparatus of the class described, a centering-holder for the sleeve-whirl, a support for the tip of the spindle-blade, in axial alinement with the holder, means to cause relative longitudinal movement of the blade and whirl, to rigidly secure them together, and a stripper to release the whirl from the holder, substantially as described.

4. In an apparatus of the class described, a centering-holder for the sleeve-whirl, means to adjust it, a longitudinally-movable presser in axial alinement with the holder, to engage the spindle-blade and force it into the whirl, and a stripper, controlled by retractive movement of the presser, to release the whirl and its attached blade from the holder, substantially as described.

570,376. DISCHARGE-VALVE FOR GAS-ENGINES. WILLIAM BURGER, Delphos, Ohio. Filed Sept. 10, 1895. Serial No. 562,065. (No model.)



Claim.—1. A gas-engine comprising a movable part actuated by the engine, a discharge-valve having a stem channeled for the passage of pressure from within the working cylinder, and means actuated by said pressure so as to be interposed between the stem and the movable part to operate the discharge-valve, substantially as specified.

2. A gas-engine, comprising a spring-pressed exhaust-valve having a longitudinally-channeled stem, a casing held on the said stem and provided with a port, a piston in the said casing, and adapted to be acted on by pressure passing through the said channel and port from the cylinder, and a block carried by the said piston, and adapted to be engaged by the actuating mechanism for the valve-stem, substantially as shown and described.

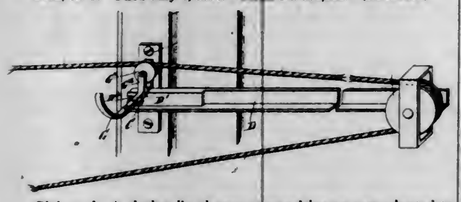
3. A gas-engine, comprising a spring-pressed exhaust-valve having a longitudinally-channeled stem, a casing held on the said stem and provided with a port, a piston in the said casing, and adapted to be acted on by pressure passing through the said channel and port from the cylinder, a block carried by the said piston, and adapted to be engaged by the actuating mechanism for the valve-stem, and a pawl mounted to slide, and adapted to engage the said block when the latter is in an uppermost position, substantially as shown and described.

4. A gas-engine, comprising a spring-pressed exhaust-valve having a longitudinally-channeled stem, a casing held on the said stem and provided with a port, a piston in the said casing, and adapted to

be acted on by pressure passing through the said channel and port from the cylinder, a block carried by the said piston, and adapted to be engaged by the actuating mechanism for the valve-stem, a pawl mounted to slide, and adapted to engage the said block when the latter is in an uppermost position, and a spring-pressed cap for holding the said block and piston normally in a lowermost position, substantially as shown and described.

5. A gas-engine, comprising a spring-pressed exhaust-valve having a longitudinally-channeled stem, a casing held on the said stem and provided with a port, a piston in the said casing, and adapted to be acted on by pressure passing through the said channel and port from the cylinder, a block carried by the said piston, and adapted to be engaged by the actuating mechanism for the valve-stem, a pawl mounted to slide and adapted to engage the said block when the latter is in an uppermost position, and a cam-lever for engaging the said casing and moving with the said pawl, substantially as shown and described.

570,377. CLOTHES-LINE HANGER. JACOB H. BURLICH, New York, N. Y. Filed July 7, 1896. Serial No. 598,335. (No model.)

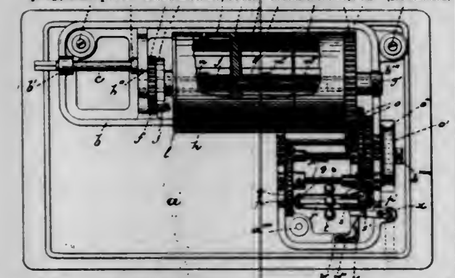


Claim.—1. A clothes-line hanger, comprising an arm adapted to be pivoted to a suitable support and carrying at its free end a pulley, the said arm being provided at its fulcrum end with notches, and a locking-lever adapted to engage the said notches to lock the lever in a horizontal or vertical position, the said lever also forming a guide for the clothes-line passing over the said pulley, substantially as shown and described.

2. A clothes line hanger, comprising a bracket adapted to be fastened to a support, an arm pivoted on the said bracket and carrying at its free end a pulley for the clothes-line, the said arm being provided at its fulcrum end with notches, a lever pivoted on the said bracket and adapted to engage the said notches, and a second pulley journaled on the said lever and forming a guide for the said clothes-line, substantially as shown and described

3. A clothes-line hanger having an arm adapted to be pivoted at one end to a fixed support and having means for guiding the rope near its remaining end, and a lever adjacent to the pivoted end of the arm, the lever engaging and holding the arm when the arm is in two positions and having means for guiding the clothes-line, substantially as described.

570,378. SPRING-MOTOR FOR PHONOGRAPHS, &c. FRANK L. CAPPS, Newark, N. J., assignor to the United States Phonograph Company, same place. Filed Dec. 20, 1895. Serial No. 572,744. (No model.)



Claim.—1. A speed-governor for motors, comprising a shaft which is driven by the motor, a disk or flange rotating with said shaft, centrifugal devices for moving said disk or flange laterally, a brake device with which said disk or flange engages, means for adjusting the position of the brake device whereby the disk or flange may be moved into frictional engagement therewith at varying rates of speed produced by the centrifugal devices, and independent means for moving said brake device into engagement with said disk or flange with sufficient friction to prevent rotation thereof, substantially as set forth.

2. A speed-governor for motors, comprising a shaft which is driven by the motor, a sleeve rotating with but movable laterally on said shaft, a disk or flange carried by said sleeve, centrifugal devices for moving said sleeve laterally, a brake device with which said disk or flange engages, means for adjusting the position of the brake device, whereby the disk or flange may be moved into frictional engagement therewith at varying speeds produced by the centrifugal devices, and independent means for moving said brake device into contact with said disk or flange with sufficient friction to prevent rotation thereof, substantially as set forth.

3. In a motor for operating phonographs, the combination of a bed-plate adapted to receive the phonograph, a frame beneath said plate and supported therefrom, a motor and speed-governing device carried on said frame, an adjusting-screw for regulating said speed-governing device, said screw passing through an opening in said plate, a belt-wheel for said motor to which power is applied, said belt-wheel being adapted to receive the belt to the phonograph, and means for adjusting said frame in its relation to said bed-plate, whereby said belt may be tightened or loosened, substantially as set forth.

4. In a motor for operating phonographs, the combination of the bed-plate to receive the phonograph, a frame beneath said bed-plate and supported therefrom, a motor and speed-governing device carried on said frame, an adjusting-screw for regulating the speed-governing device, a controlling-arm for stopping and starting the motor, said screw and said arm passing through openings in said plate, a belt-wheel for said motor to which power is applied, said belt-wheel being adapted to receive the belt to the phonograph, and means for adjusting said frame in its relation to said bed-plate, whereby said belt may be tightened or loosened, substantially as set forth.

5. In a motor, the combination with the sliding flange or disk and centrifugal means for operating the same, of a bed-plate, a lever pivotally mounted on said bed-plate and adapted to cant to one side or the other of its pivot-point, and having a frictional arm to engage the said disk or flange, and means for holding said lever in either of its canting positions to throw the arm to or from frictional relation to the disk or flange, substantially as set forth.

6. In a motor, the combination with the sliding flange or disk and centrifugal means for operating the same, of a bed-plate, a lever pivotally mounted on said bed-plate, and having a frictional arm to engage the said disk or flange, and a spring engaging said lever and adapted to cant the same to one side or the other of its pivot-point, substantially as set forth.

7. In a motor, the combination with the sliding flange or disk and centrifugal means for operating the same, of a bed-plate, a lever pivotally mounted on said bed-plate, and having an arm to engage said flange or disk, and an adjustable spring adapted to force said lever so that it will change its direction of inclination and cant to one side or the other of its pivot-point, and a finger-piece for operating said spring, substantially as set forth.

8. The improved spring-motor, comprising a bed-plate, springs and means for transmitting movement from said springs, and a governor comprising a shaft receiving power from said springs, a disk or flange sliding on said shaft, centrifugal devices governing the sliding movement of said disk or flange, a lever having an arm movable from or toward the side of the said flange or disk, an adjusting-screw, and a hand-operable spring adapted to be adjusted in its relation to said lever to bear on said lever at one side of the fulcrum thereof, or the other, all of said parts being arranged and adapted to operate, substantially as and for the purposes set forth.

9. The improved spring-motor, comprising a bed-plate, springs, means for transmitting motion from said springs, and a governor comprising a shaft, springs rotating therewith, weights on said springs, a sliding flange or disk, an adjustable lever having a friction-arm, and a spring pivoted upon the bed-plate and adjustably arranged with relation to said lever, whereby said spring may press upon said lever upon either side of the fulcrum, all of said parts being arranged and combined, substantially as and for the purposes set forth.

10. In a spring-motor, the governor having a laterally-movable disk or flange, and a pivoted friction-lever having a ridge or bearing across the axial line, and a spring adapted to slide on said ridge or bearing to throw said lever to or from frictional relation to said disk or flange, substantially as set forth.

11. In a spring-motor, the governor having a laterally-moving disk or flange, operable under centrifugal force, a friction-lever having a ridge or bearing across the axial or fulcrumal line of said lever, a pivoted spring, and a finger-piece for operating said spring, substantially as set forth.

12. In a spring-motor, the governor having a laterally-moving disk or flange, a lever pivotally mounted adjacent to said disk or flange, a friction-arm carried by said lever near one end for engaging said disk or flange, an arm secured to said lever near its other end, and an adjusting-screw cooperating with the last-mentioned arm for regulating the lever and moving the friction-arm toward and away from said disk or flange, substantially as set forth.

13. In a spring-motor, the governor having a laterally-moving disk or flange, a friction-lever having a rib u''' and arms u', u'''', an adjusting-screw w, and an arm x, and a finger-piece 5 for turning said arm x in its relation to said lever, substantially as set forth.

14. In a spring-motor, the governing lever having a frictional arm, an arm to receive an adjusting-screw, a ridge across the fulcrumal line of said lever, in combination with said adjusting-screw, a spring-arm adapted to be adjusted in its relation to said ridge, and governing devices adapted to receive said frictional arm, substantially as set forth.

15. In a spring-motor, the combination with the centrifugal device, of a bed-plate having two bearings, a lever fulcrumed thereon and having a ridge or bearing crossing the fulcrumal line of the bearings for the lever, an arm at one end of said lever engaging or adapted to engage said centrifugal device, and control its rotary movement, an arm at the other end of said lever, an adjusting-screw cooperating with the last-mentioned arm, a spring-arm cooperating with said ridge or bearing, and a finger-piece for operating the same, substantially as and for the purposes set forth.

16. In a motor, the combination with the sliding flange or disk and centrifugal means for operating the same, of a bed-plate having fulcrumal projections, a lever seated on said projections and adapted to cant to one side or the other of the same and having a frictional arm to engage the said disk or flange, and means for holding said lever in either of its canting positions and throw the arm to or from frictional relation to the disk or flange, substantially as set forth.

17. In a motor, the combination with the sliding flange or disk, and centrifugal means for operating the same, of a bed-plate having a fulcrum, a lever seated on said fulcrum and having a frictional arm to engage the said disk or flange, and a spring holding said lever on said fulcrum and adapted to cant said lever to one side or the other of the same, substantially as set forth.

18. In a motor, the combination with the sliding flange or disk and centrifugal means for operating the same, of a bed-plate having a fulcrum, a lever seated on said fulcrum, and having an arm to engage said flange or disk, and an adjustable spring adapted to force said lever so that it will change its direction of inclination and cant to one side or the other of said fulcrum, and a finger-piece for operating said spring, substantially as set forth.

19. The improved phonograph-motor herein described, comprising a bed-plate adapted to receive the phonograph, an integral frame hinged upon said bed-plate and having a limited movement thereon, said frame having hangers, motive devices arranged on said hangers and having a belt-wheel which is adapted to receive the belt to the phonograph, a governor for controlling or regulating the movements of the motor and phonograph, and means for adjusting said frame in its relation to the bed plate, whereby said belt may be tightened or loosened at will, said parts being combined, substantially as set forth.

20. The improved phonograph-motor comprising a bed-plate adapted to receive the phonograph, an adjustable frame hinged upon said bed-plate and having a limited movement thereon, motive devices supported on said frame and having a belt-wheel adapted to receive the belt which communicates power to the phonograph, a governor also carried by said frame, an adjusting screw or device, and elastic springs or cushions disposed between the frame and bed-plate, said parts being combined, substantially as set forth.

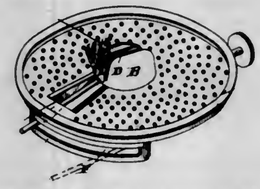
21. The combination with a phonograph bed-plate, of a supplemental plate having a hinge-like movement, cushions being interposed between said plates, motive devices and a governor, and means for adjusting said plates and thus tightening or loosening the belt conveying power from the motor to the phonograph, substantially as set forth.

22. The improved phonograph-motor herein described, comprising a bed-plate, an integral L-shaped frame adjustable in its relation to said plate, interposed cushions and means for adjusting said frame, a spring-barrel arranged on the longer arm of the L-shaped frame, springs and means for winding the same, governing devices arranged on the shorter arm of the frame, gearing for transmitting power from the springs to the governor and phonograph, the said L-shaped frame and the parts supported thereby being all disposed between the plane of the bed-plate, and said parts being all combined, substantially as set forth.

23. The combination of a bed-plate having projecting bearings at the rear, an adjustable frame having corresponding sockets, and interposed elastic cushions, screws holding the parts together and admitting a limited hinge action, means for adjusting said frame in its relation to the bed-plate, motive and governing devices carried by said frame, and means for transmitting power adjustable with said frame, substantially as set forth.

570,379. LANTERN-LIGHTER. CHARLES E. CASE, Fenton, Mich., assignor of one-half to Walter F. Sluyter, same place. Filed Apr. 13, 1896. Serial No. 587,374. (No model.)

Claim.—1. The combination of a burner having an opening leading toward the wick, and an elongated horizontally-disposed casing communicating with and extended laterally from the burner-opening, said case having an elongated horizontally-disposed strike-surface, substantially as described.

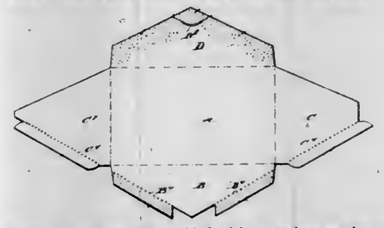


2. The combination of the chimney-supporting base provided with a vertical opening, an elongated casing on the under side of the base communicating with said opening, and provided with a longitudinal slot in its front side and the strike-surface upon the rear side of the casing, substantially as shown and described.

3. The combination of the burner, the chimney-supporting base, said base being provided with an opening which communicates with the burner, the casing secured to the under side of the base and communicating with said opening in the base, said casing having the elongated horizontal slot in its front surface, and the serrated or roughened surface at the rear of the casing and leading to the opening in the said base, substantially as shown and described.

4. The combination of a burner having an opening leading to a point adjacent the wick, the elongated casing secured to the under side of the burner and at one end communicating with the burner-opening and extended laterally therefrom, the front of said case formed with the elongated slot through which the match is adapted to move, and the scratcher formed by roughening the inner rear wall of the case, substantially as shown and described.

570,380. ENVELOP. ALEXANDER McL. CHALMERS, Nanaimo, Canada. Filed Apr. 26, 1895. Serial No. 547,288. (No model.)



Claim.—1. An envelop provided with extensions on three of its flaps, the extensions on the opposite flaps being folded thereon and gummed on their front faces, and the extensions of the other flap being gummed on their rear faces, substantially as and for the purpose set forth.

2. An envelop provided with two extensions on its bottom flap said extensions terminating short of the apex of the flap and an extension on each side flap, the extensions of the side flaps being folded upon said flaps and gummed on their front faces, and the extensions of the bottom flap being gummed on their inner faces, substantially as shown and described.

3. An envelop having its top flap slotted at its apex and provided with two extensions on its bottom flap, and an extension on each of its side flaps, the extensions of the side flaps being folded on said flaps and gummed on their front faces, and the extensions of the bottom flap being gummed on their inner faces, substantially as herein shown and described.

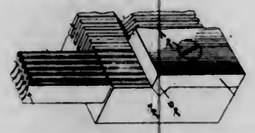
4. An envelop provided with a bottom flap having gummed extensions and united with the said bottom flap by creases, side flaps each provided with a gummed extension united with its flap by a crease, the said extensions being provided with a second extension gummed at its front face and united by a crease with the other extension, substantially as shown and described.

570,381. LOOM-REED. JOHN A. CLARK and CHARLES CLARK, Worcester, Mass., assignors to the Crompton Loom Works, same place. Filed Jan. 6, 1896. Serial No. 574,415. (No model.)

Claim.—1. The herein-described loom-reed, containing reed-dents provided at or near their upper ends and back of the face of the reed with converging portions, to thereby contract the reed-spaces back of the face of the reed, to present relatively-flaring entrances to the contracted portions of the reed-spaces, substantially as described.

2. The described loom reed composed of reed-dents, provided at or near their upper ends with central converging portions serving to

contract the middle upper portions of the reed-spaces leaving opposite relatively-flaring entrances to the contracted portions of said reed-spaces, substantially as described.



3. The described loom-reed composed of reed-dents formed to present for a greater part of their length reed spaces of substantially the same width from one to the opposite side of the reed, said reed-dents being constructed at or near their upper ends to present relatively-flaring entrances to the adjacent portions of the intervening reed-spaces, substantially as described.

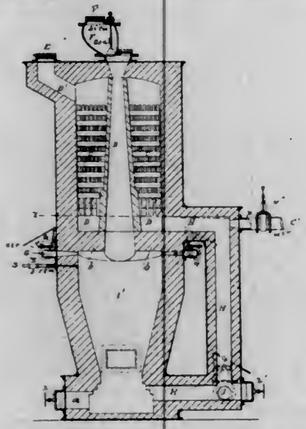
4. The described loom-reed composed of a plurality of ∩-shaped members and a support to which they are secured, said ∩-shaped members being contracted at or near their crown ends and back of the face of the reed to present reed-spaces having contracted top portions with relatively-flaring entrances to said contracted top portions, substantially as described.

5. The described loom-reed composed of a plurality of ∩-shaped members and a support to which they are secured, said ∩-shaped members being contracted at their crown ends and intermediate the front and back faces of the reed, to thereby present reed-spaces having contracted upper portions with opposite relatively-flaring entrances to said contracted upper portions, substantially as described.

6. The described loom-reed containing U-shaped members and a support to which they are secured, the said ∩-shaped members being contracted at or near their crown ends and back of the face of the reed, to thereby form reed-spaces having contracted upper portions with flaring entrances to said contracted upper portions, said reed-dents being also depressed at their crown ends and back of the reed-face, whereby said entrances are made vertically as well as laterally flaring, substantially as described.

570,382. APPARATUS FOR MANUFACTURING FUEL-GAS.

CARL DELLWIK, Rogers Park, Ill. Filed Aug. 14, 1890. Serial No. 362,038. (No model.)

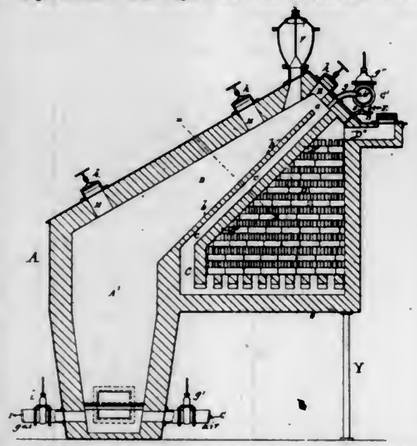


Claim.—1. In an apparatus for manufacturing gas, the combination with the fuel and decomposing chamber A', of the distilling and coking retort B, chamber C, filled with brick checker-work, surrounding said retort, a closed partition *b*, around the lower end of said retort and between chamber A' and C, the flue H, connecting the base of chamber A' with the bottom of chamber C above the partition a pipe admitting air to burn the waste gases and an air-supply pipe connecting with the top of chamber A', below said partition, substantially as and for the purpose described.

2. In an apparatus for manufacturing gas the combination with the fuel and decomposing chamber A', of the distilling and coking retort B, chamber C, filled with brick checker-work, surrounding said retort, solid partition *b*, around said retort flue H, connecting the base of chamber A' with the bottom of chamber C, an air-supply pipe G, and steam-supply pipe S, connecting with the top of chamber A', and a gas-take off pipe I, connecting with the base of chamber A', substantially as and for the purpose described.

570,383. GAS-GENERATING APPARATUS.

CARL DELLWIK, Rogers Park, Ill. Filed Aug. 14, 1890. Serial No. 362,039. (No model.)

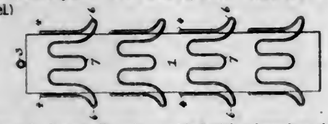


Claim.—1. In an apparatus for manufacturing gas, the combination with a fuel and generating chamber A', having at its base the air-supply pipe G, of a coking-chamber B, opening freely into the top thereof and having a solid inclined floor, one or more flues C, connecting at their upper ends with coking-chamber B, and extending below the inclined floor thereof and connecting at their lower ends with an escape-flue, and an air-supply pipe connecting with the upper ends of flue C, substantially as described.

2. In an apparatus for manufacturing gas, the combination with a fuel and generating chamber A', having at its base a gas-take-off pipe I, and an air-supply pipe G, of a coking-chamber B opening freely into the top of chamber A', and having a solid inclined floor, one or more flues C, connecting with the upper end of chamber B, and extending below the inclined floor, an air-supply pipe, connecting with said flue, a superheater D, below and connecting with flue C, and a steam-supply pipe connecting with such superheater, substantially as described.

570,384. WALL-RACK.

ALLEN T. DEMOREST, Belding, Mich., assignor of one-half to Mary L. Wilson, Alvin T. Dimmick, and Willis D. Sinclair, same place. Filed Jan. 25, 1896. Serial No. 576,863. (No model.)



Claim.—1. In a wall-rack provided with a base-board, the combination with said base board, of a series of resilient open-sided pockets formed with arms provided with extensions 5 pivotally held in the edges of the base-board at each side thereof and supporting said pockets out of contact with the face of said base-board, substantially as shown and described.

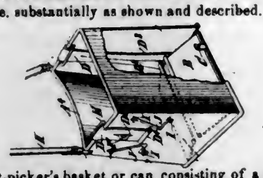
2. In a wall-rack, the combination with a base-board having two longitudinal grooves in its back surface one near each longitudinal edge thereof, of a series of pockets each formed of wire bent into U shape on each side to form an open-sided receptacle and loosely engaged at its ends with apertures in the sides of the base-board passing therethrough into the grooves in the back thereof and turned abruptly therein to prevent withdrawal and to limit the movement of said pockets toward the base-board, but permitting movement away from said base-board, substantially as shown and described.

570,385. FRUIT-PICKER'S BASKET OR CAN.

AUGUSTUS M. DENIG, Riverside, Cal. Filed Dec. 9, 1895. Serial No. 571,518. (No model.)

Claim.—1. A fruit-picker's basket or can, comprising a receptacle having a bottom made in two hinged sections, straps connected with the free ends of said sections, and each formed with an enlarged end, and loops held on the sides of the receptacle for the passage of said straps, said loops also forming seats for the enlarged ends of the straps at the time the bottom sections are open, substantially as shown and described.

2. A fruit-picker's basket or can, consisting of a receptacle having a hinged bottom, and rests held on the sides of said receptacle, and adapted to be seated on the box to be filled with the contents of said receptacle, substantially as shown and described.

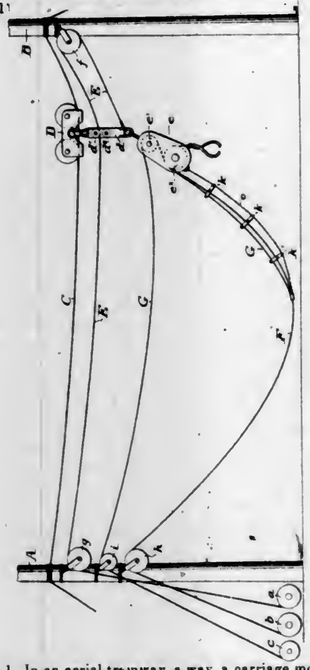


3. A fruit-picker's basket or can, consisting of a receptacle, and stops hinged on the sides of said receptacle, and adapted to be folded thereon or extended therefrom at right angles to said sides, and rest on the top edge of the box to be filled with the contents of said receptacle, substantially as shown and described.

4. A fruit-picker's basket or can, comprising a receptacle having a bottom made in two sections hinged to opposite edges of the receptacle, straps having branches at their lower ends, said branches being connected with the free ends of the respective sections of the bottom, loops at the upper part of the receptacle through which said straps pass, said straps being provided with apertures in their upper ends, and stops on the outer sides of the receptacle adapted to pass through the apertures in the upper ends of the straps, to hold the sections of the bottom in a raised position, substantially as set forth.

570,386. AERIAL TRAMWAY.

JOSEPH H. DICKINSON, Trenton, N. J. Filed Nov. 2, 1893. Renewed Aug. 1, 1896. Serial No. 601,401. (No model.)

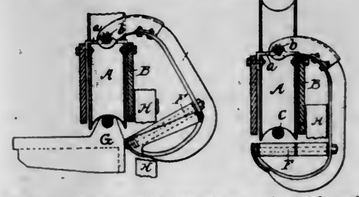


Claim.—1. In an aerial tramway, a way, a carriage mounted to travel on said way, a tail-rope attached at one end to said carriage and having its other end wound upon an operating-drum, a frame, flexibly attached to the lower end of said carriage, said frame embodying two sheaves, a hoisting-rope operated by a drum and passing over one of said sheaves in said frame, a branch rope attached to said hoisting-rope at a point thereon between the said frame and the drum operating said hoisting-rope and passing over the other sheave in said frame and having a free end, and one or more supports sustained on the branch rope and on which said hoisting-rope travels; substantially as shown and described.

2. In an aerial tramway, a way, a carriage mounted to travel on said way, a tail-rope attached at one end to said carriage and having its other end wound upon an operating-drum, a frame flexibly attached to the lower end of said carriage, said frame embodying two sheaves, a hoisting-rope operative by a drum and passing over one of said sheaves in said frame, a branch rope attached to said hoisting-rope at a point thereon between the said frame and the drum operating said hoisting-rope and passing over the other sheave in said frame and having a free end, one or more supports sustained on the branch rope and on which said hoisting-rope travels, and a flexible connection between said supports and said frame; substantially as shown and described.

570,387. AERIAL TRAMWAY.

JOSEPH H. DICKINSON, Trenton, N. J. Filed Sept. 1, 1896. Serial No. 604,551. (No model.)

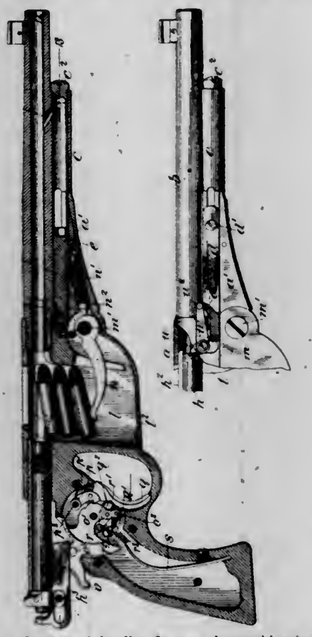


Claim.—1. In an aerial tramway, a carriage adapted to travel thereon, in combination with a guard normally extending beneath the tram-rope, and a bowed or tapered frame adapted to contact with the supports of the tram-rope, and deflect the guard laterally and upwardly during the period of contact; substantially as shown and described.

2. In an aerial tramway, a carriage adapted to travel thereon, in combination with a laterally-deflectable guard normally extending beneath the tram-rope, and provided with a roller and a bowed or tapering frame; substantially as shown and described.

570,388. GAS-OPERATED MAGAZINE-GUN.

CARL J. EBERTS, Hartford, Conn., assignor to the Colt's Patent Fire Arms Manufacturing Company, same place. Filed Oct. 29, 1894. Serial No. 527,328. (No model.)



Claim.—1. In a breech-loading firearm, the combination with the barrel and a cylinder located alongside of said barrel, of an inclined vent leading from the bore of said barrel into said cylinder, said inclined vent being so located that its outward prolongation would extend through the end opening of the cylinder, a plug closing the end opening of said cylinder, said plug having a concave inner surface, whereby gases are directed by said inclined vent against said concave surface of the plug, and are reflected by said surface, and a movable device for utilizing the force of the gases thus reflected, substantially as set forth.

2. In a breech-loading firearm, the combination with the barrel, of a cylinder located alongside of said barrel and integral therewith, and an inclined vent leading from the bore of said barrel into said

cylinder, said inclined vent being so located that its outward prolongation would extend through the end opening of the cylinder, and a plug closing the end of said cylinder whereby gases are deflected by said inclined vent against the inner surface of said plug and are reflected rearwardly by said inner surface of the plug, and a piston in said cylinder in rear of said vent, substantially as set forth.

3. In a breech-loading firearm, the combination with the barrel and receiver, of a breech-bolt, a lock-bolt for locking said breech-bolt in closed position, a longitudinally-moving actuating-rod, and a cam slot and pin connection between the lock-bolt and rod, whereby the said rod in its rearward movement will first move the lock-bolt out of locking position and thus unlock the breech-bolt, and in its further rearward movement the said rod acting through the cam slot and pin and lock-bolt will move the breech-bolt rearward; and the forward movement of the rod will move the lock-bolt and breech-bolt forward and then actuate the lock-bolt and lock the breech-bolt in forward and closed position, substantially as set forth

4. In a breech-loading firearm, the combination with the barrel having an aperture in rear of the muzzle and with a suitable receiver, of a breech-bolt, a lock-bolt for locking said breech-bolt in closed position, a longitudinally-moving rod, and a cam slot and pin connection between the lock-bolt and rod, whereby the said rod in its rearward movement will first move the lock-bolt out of locking position and thus unlock the breech-bolt, and in its further rearward movement the said rod acting through the cam slot and pin and lock-bolt will move the breech-bolt rearward; and the forward movement of the rod will move the lock-bolt and breech-bolt forward and then actuate the lock-bolt and lock the breech-bolt in forward and closed position; and means operated by the gases escaping through said aperture in the barrel for causing the rearward movement of the rod and suitable retracting means for returning said rod to forward position, substantially as set forth.

5. In a breech-loading firearm, the combination with the barrel and receiver, of a breech-bolt, a longitudinally-moving rod having a slotted connection with said breech-bolt near the rear end of the breech-bolt, a lock-bolt for locking said breech-bolt in closed position, said lock-bolt being located near the forward end of said breech bolt and a cam slot and pin connection between the rod and lock-bolt, whereby said lock-bolt is moved out of locking position during the first part of the rearward movement of the rod and while the slotted connection between the rod and breech-bolt permits the rod to move independently of the breech-bolt, and the breech-bolt after having been thus unlocked is moved rearward by the rod, substantially as set forth.

6. In a breech-loading firearm, the combination with the barrel having an aperture in rear of the muzzle, and with a suitable receiver, of a breech-bolt, a longitudinally-moving rod having a slotted connection with said breech-bolt, a lock-bolt for locking said breech-bolt in closed position, and a cam slot and pin connection between the rod and lock-bolt, whereby said lock-bolt is moved out of locking position during the first part of the rearward movement of the rod and while the slotted connection between the rod and breech-bolt permits the rod to move independently of the breech-bolt, and the breech-bolt after having been thus unlocked is moved rearward by the rod, and means operated by the gases escaping through said aperture in the barrel for causing the rearward movement of the rod, substantially as set forth.

7. In a breech-loading firearm, the combination with a barrel having an aperture in rear of the muzzle, and with a suitable receiver, of a breech bolt, a cartridge-extractor upon said breech-bolt, a longitudinally-moving rod connected with said breech-bolt so as to move independently thereof at the beginning of its rearward movement, a lock-bolt for locking said breech bolt in closed position, said lock-bolt being connected to said rod so that said rod in the first part of its rearward movement moves said bolt out of locking position and thus unlocks the breech-bolt, and a shell-starter actuated by said rod to engage the cartridge-shell in the barrel and start the said shell rearward after the breech-bolt has been unlocked and before the breech-bolt is moved rearward by the rod, whereby successively the breech-bolt is unlocked, then the empty cartridge-shell is started rearward carrying with it the breech-bolt and remaining in the grasp of the extractor thereon, and then the breech-bolt is moved rearward by the rod and the cartridge-shell completely withdrawn from the barrel; and means operated by the gases escaping through said aperture in the barrel for causing the rearward movement of the rod, substantially as set forth.

8. In a breech-loading firearm the combination with the barrel and receiver, of a breech-bolt, a cylinder alongside of and below the barrel, a vent leading from the bore of the barrel into said cylinder, a piston in said cylinder in rear of said vent, a retracting-spring on one side of said piston and connected to said piston and a longitudinally-moving rod on the other side of said piston also connected to said piston, said rod being also connected to the breech-bolt, whereby the rearward movement of said piston by the gases of explosion and the forward movement of said piston by the retracting-spring cause the breech-bolt to be moved rearward and forward, substantially as set forth.

9. In a breech-loading firearm, the combination of a spring-actuated hammer, a sear adapted to engage with the hammer when the hammer is cocked, a trigger loosely connected to the sear, and a movable fulcrum for the trigger, and a tripping device actuated by the hammer whereby in its fall the hammer removes the fulcrum of the trigger, substantially as set forth.

10. In a breech-loading firearm, the combination of a spring-actuated hammer, a sear adapted to engage with the hammer when the hammer is cocked, a trigger loosely connected to the sear, a normally-engaged movable fulcrum for said trigger and a tripping device actuated by said hammer whereby in its fall the hammer removes the fulcrum of the trigger, said trigger holding the removed fulcrum out of engaging position until the trigger is released, substantially as set forth.

11. In a breech-loading firearm the combination of a spring-actuated hammer, a sear adapted to engage with the hammer when the hammer is cocked, a trigger loosely connected to the sear, a normally-engaged movable fulcrum for said trigger and a tripping device actuated by the hammer whereby in its fall the hammer removes the fulcrum of the trigger, said trigger holding the removed fulcrum out of engaging position until the trigger is released, and means actuated by the discharge of the arm for cocking the hammer, substantially as set forth.

12. In a breech loading firearm the combination of a spring-actuated hammer, a sear hung upon a pivot and adapted to engage with the hammer when the hammer is cocked, a trigger hung upon the sear, a trip-lever having a fulcrum for the trigger, said trip lever normally tending to hold said fulcrum in position to engage with the trigger, and said hammer and trip-lever having engaging parts whereby in its fall the hammer actuates the trip-lever and removes the fulcrum of the trigger, and a shoulder upon said trigger for holding said movable fulcrum out of engaging position until the trigger is released, substantially as set forth

13. In a breech-loading firearm the combination with the barrel and receiver, of a breech-bolt, a lock-bolt for locking said breech-bolt in closed position, said lock-bolt extending transversely through said breech-bolt and carried by said breech-bolt and protruding into a recess in the wall of the receiver at one side of the breech-bolt, and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, said receiver having a longitudinal slot in its wall contiguous to said shoulder whereby said breech-bolt is rigidly supported at both sides against recoil, and means for actuating said lock-bolt and breech-bolt, substantially as set forth.

14. In a breech-loading firearm the combination with the barrel and receiver of a breech-bolt, a longitudinally-moving rod, a lock-bolt for locking said breech-bolt in closed position, said lock-bolt extending transversely through said breech-bolt and carried by said breech-bolt and protruding into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, said receiver having a longitudinal slot in its wall contiguous to said shoulder whereby said breech-bolt is rigidly supported at both sides against recoil, and a cam slot and pin connection between the lock-bolt and the longitudinally-moving rod, substantially as set forth.

15. In a breech-loading firearm the combination with the barrel and receiver of a longitudinally-moving breech-bolt, a longitudinally-moving rod having a longitudinally-slotted connection with said breech-bolt near the rear end of said breech-bolt, a lock-bolt fitted transversely in said breech-bolt near the front end thereof, said lock-bolt extending into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, whereby said breech-bolt is rigidly supported against recoil at points near the front end of the breech-bolt and at both sides thereof, and a cam slot and pin connection between the lock-bolt and longitudinally-moving rod, substantially as set forth.

16. In a breech-loading firearm the combination with the barrel having an aperture in rear of the muzzle and with a receiver, of a longitudinally-moving rod and means actuated by the gases of explosion escaping through said aperture in the barrel for actuating said rod, a longitudinally-moving breech-bolt, said breech-bolt having a longitudinally-slotted connection with said rod near the rear end of said breech bolt, a lock-bolt fitted transversely in said breech-bolt near the front end thereof, said lock-bolt extending into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, whereby said breech-bolt is rigidly supported against recoil at points near the front end of the breech-bolt and at both sides thereof, and a cam slot and pin connection between the lock-bolt and longitudinally-moving rod, substantially as set forth.

17. In a breech-loading firearm the combination with the barrel and receiver of a cylinder located alongside of said barrel and a vent leading from the bore of the barrel to the cylinder, a piston in said cylinder in rear of said vent, and a power-storing device operating to return the piston to forward position after the piston has been moved rearward by the gases of explosion, a rod connected with said piston, a breech-bolt, said breech-bolt having a longitudinally-slotted connection with said rod near the rear end of said breech-bolt, a lock-bolt fitted transversely in said breech bolt near the front end thereof, said lock-bolt extending into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, whereby said breech-bolt is rigidly supported against recoil at points near the front end of the breech-bolt and at both sides thereof, and a cam slot and pin connection between the lock-bolt and said rod, substantially as set forth.

18. In a breech-loading firearm the combination with the barrel and receiver of a cylinder located alongside of said barrel and a vent leading from the bore of the barrel to the cylinder, a piston in said cylinder in rear of said vent, a retracting-spring on one side of said piston and connected to said piston and a rod on the other side of said piston also connected to said piston, a breech-bolt, said breech-bolt having a longitudinally-slotted connection with said rod near the rear end of said breech-bolt, a lock-bolt fitted transversely in said breech-bolt near the front end thereof, said lock-bolt extending into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, whereby said breech-bolt is rigidly supported against recoil at points near the front end of the breech-bolt and at both sides thereof, and a cam slot and pin connection between the lock-bolt and said rod, substantially as set forth.

19. In a breech-loading firearm the combination with the barrel and receiver, of a cylinder located alongside of the barrel and a forwardly and downwardly inclined vent leading from the bore of the barrel to the cylinder, a piston in said cylinder in rear of said vent, a tube alongside of said cylinder, a retracting-spring within said tube, a cross-head upon said piston including a follower for said spring, said follower extending within and guided by said tube, a rod joined to said cross head at the side thereof opposite said retracting-spring, a breech-bolt, said breech-bolt having a longitudinally-slotted connection with said rod near the rear end of said breech-bolt, a lock-bolt fitted transversely in said breech-bolt near the front end thereof, said lock-bolt extending into a recess in the wall of the receiver at one side of the breech-bolt and having an angular part locked by a shoulder of the receiver at the opposite side of the breech-bolt, whereby said breech-bolt is rigidly supported against recoil at points near the front end of the breech-bolt and at both sides thereof, and a cam slot and pin connection between the lock-bolt and said rod, substantially as set forth.

20. In a breech-loading firearm the combination with a frame including a receiver of a barrel secured thereto, a cylinder alongside of and below the barrel, the front portion of said cylinder being integral with the barrel and the rear portion of said cylinder being integral with the frame, a piston fitted to slide in said cylinder, a tube alongside of the rear portion of said cylinder, a retracting-spring in said tube, a cross-head on said piston extending into said tube and constituting a follower for said spring, and a rod connecting said cross-head to the breech mechanism, substantially as set forth.

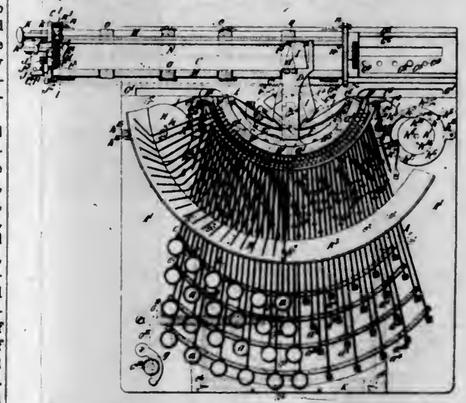
21. In a breech-loading firearm the combination with the barrel and receiver of a breech-bolt, a cartridge extractor upon said breech-bolt, a lock-bolt transversely fitted in said breech-bolt, a longitudinally-moving rod, a cam slot and pin connection between said rod and lock-bolt, a shell-starter engaging the cartridge-shell in the barrel, and an arm of said shell-starter engaged by a cam-surface on said rod, substantially as set forth.

22. In a breech-loading firearm the combination with the barrel having an aperture in rear of the muzzle, and with a suitable receiver, of a breech-bolt, a longitudinally-moving rod having a slotted connection with said breech-bolt whereby said breech-bolt and rod are held together vertically and laterally, a lock-bolt for locking said breech-bolt in closed position, said lock-bolt having a slot formed therein with an inclined portion, said slot also having a portion at its forward end parallel to the direction of movement of the rod, a pin on said rod entering said slot in the lock-bolt, a piston-cylinder arranged alongside of the barrel and a piston therein, said rod being connected at its forward end to said piston, substantially as set forth.

23. In a breech-loading firearm the combination with the barrel and receiver of a breech-bolt, a transverse lock-bolt in said breech-bolt, a cartridge-extractor upon said breech-bolt, a longitudinally-moving rod, a cam slot and pin connection between said rod and lock-bolt, said breech-bolt having a slotted connection with said rod near the rear ends of said rod and breech-bolt, a shell-starter engaging with the cartridge-shell in the barrel and an arm of said shell-starter engaged by a cam-surface on said rod, a longitudinally-arranged cylinder alongside of the barrel, a vent leading from the bore of the barrel into said cylinder, and a piston in said cylinder in rear of said vent, said piston being connected to said longitudinally-moving rod, substantially as set forth.

24. In a breech-loading firearm the combination with a receiver of a barrel secured thereto, a cylinder alongside of said barrel, the front portion of said cylinder being integral with said barrel and the rear portion of said cylinder being integral with the receiver, a piston fitted to slide in said cylinder, a tube alongside of the rear portion of said cylinder, a retracting spring in said tube, a cross-head on said piston extending into said tube and constituting a follower for said spring, a rod connected to said cross-head at the side opposite the said tube, a breech-bolt, a transverse lock-bolt in said breech-bolt, a cartridge-extractor upon said breech-bolt, a cam slot and pin connection between said rod and lock-bolt, said breech-bolt having a slotted connection with said rod near the rear ends of said breech-bolt and rod; and a shell-starter engaging the cartridge-shell in the barrel, and an arm of said shell-starter engaged by a cam-surface on said rod, substantially as set forth.

570,389. TYPE-WRITING MACHINE. EUGENE FITCH, East Molesey, England. Filed June 18, 1895. Serial No. 553,224. (No model.) Patented in England Nov. 10, 1894, No. 21,743.



Claim.—1. In a type-writing machine, the combination of a series of horizontally-arranged type-arms whose ioner ends are pivotally supported, a paper-cylinder adapted to move in the same horizontal plane as that in which the type-arms lie when at rest, means for actuating the type-arms to bring their type in contact with the paper on said paper-cylinder, and a single resilient cushion for returning all the type-arms to normal position, substantially as described.

2. In a type-writing machine, the means for actuating the type-arms without their being connected to the finger-key levers, consisting of curved shoulders formed on the type-arms near their pivotal ends, a series of vertically-moving pins located immediately below and disconnected from the said curved shoulders and operated by the inner ends of the finger-key levers, and a single resilient cushion for returning all the said type-arms to their normal position, substantially as described.

3. The combination with a type-arm consisting of a thin metal blade having a slot formed near its outer end, of a saddle-piece bearing the type and adapted to slide on the outer end of said type-arm and of a tightening-screw passing through said slot and the saddle-piece, substantially as described.

4. In a type-writing machine the combination of a series of horizontally-arranged type-arms having laterally-bent outer ends and curved shoulders near their pivotal ends, a segmental support to which the type-arms are pivotally connected, vertical pins situated immediately below the aforesaid shoulders, finger key levers for operating said pins, a single resilient cushion for returning all the type-arms to their normal position, a frame for supporting the type-arms horizontally, and a forked guide located centrally with respect to the aforesaid segmental support, substantially as described.

5. In a type-writing machine provided with horizontally-arranged and pivoted type-arms, the means for alternately winding the ink-ribbon from one spool to the other, consisting of a pair of uprights e^3 connected together by a curved rod e^2 located above the inner ends of the finger-key levers, pins e^4 projecting transversely from said uprights, crank-arms h^{11} adapted to be operated by the said pins e^4, movable plates h^8 with which the lower ends of the said crank-arms h^{11} engage, ratchet-wheels K located above said plates, retaining-

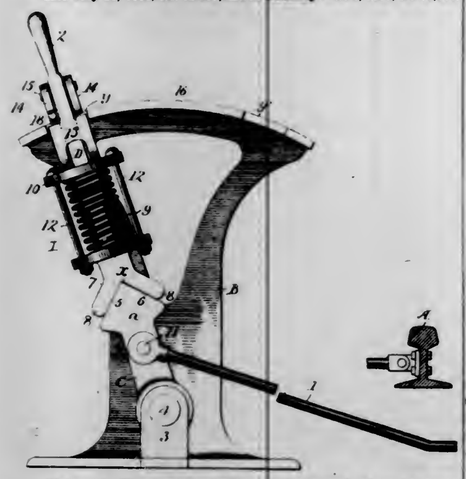
pawls A^3 and driving-pawls A^4 gearing with the ratchet-wheels, and means for throwing these pawls out of gear when the aforesaid plates A^6 are turned in a direction to shift the crank-arms A^{11} out of the reach of the pins c^4, substantially as described.

6. In a type-writing machine provided with horizontally-arranged and pivoted type-arms, the movable and detachable under frame consisting of a transverse portion upon which the carriage C travels, guide-bars G′ adapted to enter recesses G^2 in the base of the machine, a longitudinal bar G^3 adapted to enter a socket G^4, a forked piece G^{13} carried by the bar G^3, and a spring-controlled rocking shaft provided with radial arms G^{15} G^{17} the former of which engages with a push-button G^{16} and the latter with the aforesaid forked piece G^{13} substantially as described and for the purpose specified.

7. The combination with the curved rod c^7 extending over the inner ends of the finger-key levers and adapted to be operated by the spacing-bar and the finger-key levers, of a depending link c^8 whose lower end is in detachable engagement with a tail f carried by the escapement, and of a frame G in which the said escapement is pivotally mounted, substantially as described and for the purpose specified.

8. In a type-writing machine provided with horizontally-arranged and pivoted type-arms, the line-spacing device consisting of a spring-controlled pivoted lever K having an extension k engaging with a segmental plate l mounted on the axis of the paper-cylinder, a spring-controlled pawl l' carried by the plate l, a ratchet-wheel m on the paper cylinder, a pin l^3 which acts to keep the said pawl l' normally out of engagement with the said ratchet-wheel m, a transverse projection l^4 on said segmental plate, an end plate c having a series of holes l^5 in its edge, and a removable pin l^6 that can be inserted in one or other of the aforesaid holes l^5, substantially as described and for the purpose specified.

570,390. SWITCH-STAND. CHARLES E. FOSTER, Washington, D. C., assignor to the Standard Equipment Company, Jersey City, N. J. Filed June 2, 1891. Serial No. 394,821. (No model.) Patented in England July 20, 1891, No. 12 309, and in Germany June 2, 1893, No 68,860.



Claim.—1. The combination in a switch-stand, of an arm connected with the switch-rod, a switch-operating lever, an intermediate spring-clutch one part thereof connected with the said arm and the other carried by said lever, substantially as set forth.

2. The combination with an arm connected with the switch-rail, and with a switch-operating lever, of an intermediate spring-clutch the parts of which are carried by the arm and lever, and means for locking the lever in its different positions, substantially as set forth.

3. The combination with the arm connected with the switch-operated rod and with a switch-lever, said arm being movable independently of the switch-lever, a spring-clutch intermediate of the arm and switch-lever, and means for holding the parts of the clutch in engagement and relatively stationary positions when the lever is swung by hand, substantially as set forth.

4. The combination with the arm connected with the switch and the switch-lever, of a two-part spring-clutch the parts of which are carried by the arm and switch-lever, said clutch having inclined engaging faces arranged substantially as described to secure a movement of one part by the other to complete the throw of the switch-rail, substantially as set forth.

5. The combination of the switch-operating arm, switch-lever, two part clutch, the parts of which are carried by the arm and switch-lever, a spring for holding the said parts together, of means for shifting the position of one of the parts without compressing the spring and means for preventing the movement of said part without compressing the spring, substantially as set forth.

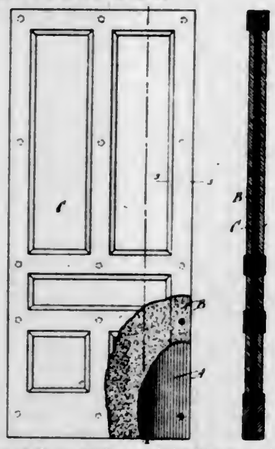
6. The combination with the switch-lever of a switch-stand, of a sliding clutch-section, a spring arranged to slide with said section on the lever, a pivoted handle connected with the lever and with the detent for limiting the movement of the spring and for permitting said movement according to the position of the handle, substantially as set forth

7. The combination with the lever, handle, and switch-arm, a two-part clutch carried by said lever and switch-arm, and a detent for controlling the movement of one part of the clutch, of a frame having notches for receiving one of the movable parts when the lever is at the limit of its position in either direction, substantially as set forth.

8. The combination with the switch-lever, of an independent arm connected with the switch-rail and having oppositely-inclined faces 5, 6, and a clutch-section carried by the lever, with a notch for receiving the end of said arm, and a spring for retarding the movement of the clutch-section, substantially as described.

9. The combination with the clutch-section connected with the switch-rail and the clutch-section carried by the switch-lever, of a spring for resisting the movements of one section independently of the other and a spring 30, for counterbalancing the weight of one of said sections, substantially as set forth.

570,391. FIREPROOF DOOR. GEORGE FOX, 2d, New York, N. Y., assignor of one-half to Garret S. Wright, same place. Filed Mar. 31, 1896. Serial No. 585,560. (No model.)



Claim.—1. A fireproof door and the like, comprising a sheet-metal center piece, layers of fireproof material covering the sides of said center piece, a wooden facing for covering each layer of fireproof material, a layer of fireproof material passed around the edge of the door, and a strip of sheet metal covering said layer, substantially as shown and described.

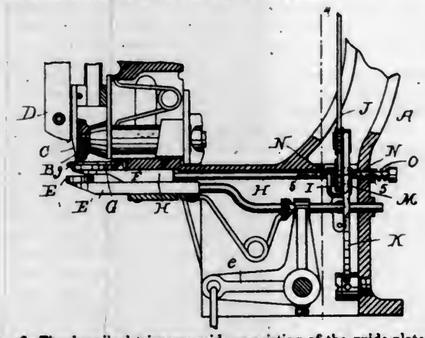
2. A fireproof door and the like, comprising a sheet-metal center piece, layers of fireproof material covering the sides of said center piece, a wooden facing for covering each layer of fireproof material, and means for fastening the center piece and layers together and independent of the fastening for the facings, substantially as shown and described.

3. A fireproof door and the like, comprising a sheet-metal center piece, layers of fireproof material covering the side of said center piece, a wooden facing for covering each layer of fireproof material, and bolts passing through the said center piece, layers and facings, each bolt being provided with two inner nuts screwing up on the layers, and two outer nuts screwing up on the facings, substantially as shown and described.

4. A fireproof door and the like, comprising a sheet-metal center piece, layers of fireproof material covering the sides of said center piece, a wooden facing for covering each layer of fireproof material, and a panel of translucent or transparent fireproof material set in an opening in the center piece and covered on its faces by an open framework, substantially as shown and described.

570,392. TRIMMER-GUIDE. FRANCIS J. FREESE, Lowell, Mass. Filed Mar. 23, 1896. Serial No. 584,412. (No model.)

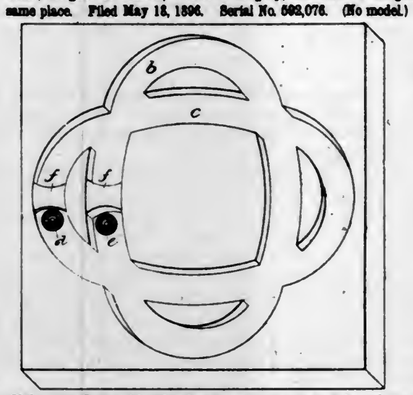
Claim.—1. The improved trimmer-guide described, comprising the fixed guide-plate F f and the horizontally-movable edge-guide G with its rotatable rim g, substantially as set forth.



2. The described trimmer-guide, consisting of the guide-plate F fixed to the frame of the machine and slotted to receive the tip of the reciprocating cutter, in combination with the edge-guide having the circular body G and the rotatable rim g surrounding said body, and with the arm H supporting said edge-guide and adapted to move it laterally with relation to the guide-plate while the machine is in operation, substantially as set forth.

3. In trimmer-guide mechanism, the guide-plate F fixed in position and slotted to receive the tip of the cutter, and the edge-guide G g having a lateral movement relatively to said guide-plate, in combination with the arm H supporting such edge-guide, and with means controlled by the operator for imparting a slight longitudinal movement to said arm during the trimming and stops limiting such movement, substantially as set forth.

570,393. GAME APPARATUS. JOHAN G. GREGORY, Norwalk, Conn., assignor to himself, Walter I. Gregory, and Giles A. Gregory, same place. Filed May 18, 1896. Serial No. 592,076. (No model.)



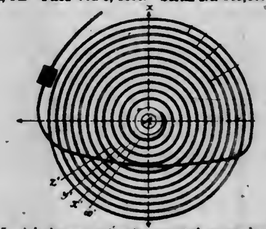
Claim.—1. In combination in a game apparatus, a board, overlapping and intersecting paths of curved form following the same general direction at intersecting points and throughout their entire length adjacent to each other, and spherical runners adapted to travel along said paths, all substantially as described.

2. In combination in a game apparatus, a board, overlapping and intersecting paths formed in the board and extending in the same general direction at intersecting points and throughout their entire length adjacent to each other, blocks located in each path adjacent to each other, and spherical runners adapted to travel along said paths, all substantially as described.

3. In combination in a game apparatus, a board, overlapping and intersecting paths made in the board each of oval form and with a central line lengthwise of each of the paths intersecting the opposite line at right angles, and spherical runners adapted to travel along said paths, all substantially as described.

4. In combination in a game apparatus, a board, overlapping and intersecting paths made in the board each of oval form and with a central line lengthwise of each of the paths intersecting the opposite line at right angles, blocks located in each path adjacent to each other, and spherical runners adapted to travel along said paths, all substantially as described.

570,394. HAIR-SPRING FOR WATCHES. WILLIAM W. GIBSON, Haverford, Pa. Filed Oct. 9, 1895. Serial No. 565,183. (No model.)



Claim.—1. A balance-spring for a watch or analogous instrument a portion of whose metal has been removed thereby bringing the resultants of its pendulum and metronome effects to or toward zero.

2. A balance-spring for a watch or analogous instrument a portion of whose metal has been removed from the exterior spires or coils of the spiral as and for the purpose specified.

3. A balance-spring for a watch or analogous instrument, a portion of whose metal has been removed from the interior spires or coils of the spiral as and for the purpose specified.

4. A watch or analogous instrument the balance-spring of which has a portion of its metal removed for the purpose of bringing the resultants of its pendulum and metronome effects to or toward zero, substantially as and for the purpose specified.

5. A watch or analogous instrument the balance-spring of which has had a portion of the outer coils of the spiral removed as and for the purpose specified.

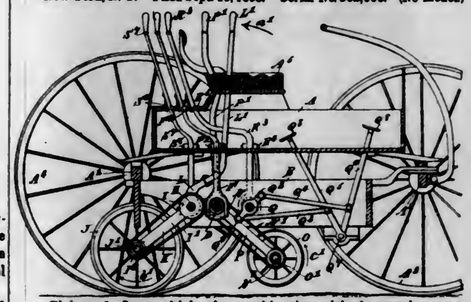
6. A watch or analogous instrument the balance-spring of which has had a portion of the inner coils of the spiral removed as and for the purpose specified.

7. A balance-spring for a watch or analogous instrument, a portion of whose metal has been removed from the exterior spires, and another portion from the interior spires substantially as and for the purpose specified.

8. A watch or analogous instrument the balance-spring of which has had a portion of the metal of the exterior spires removed and another portion of the metal of the interior spires removed, substantially as and for the purpose specified.

9. The method, substantially as hereinbefore set forth, of locating the maximum resultant metronome or pendulum effect in an oscillating vertical spiral spring, which consists first in timing the watch in the four vertical positions and then from the results of these timings locating the position where the weight of the spring should be varied.

570,395. VEHICLE DRIVING-GEAR. FRANK W. HAVILAND, New York, N. Y. Filed Sept. 16, 1895. Serial No. 562,660. (No model.)



Claim.—1. In a vehicle, the combination with the running-gear, of pivoted propelling devices adapted to be swung alternately into contact with the ground or track, and means for simultaneously swinging one propelling device out of contact with the ground or track when the other is swung into contact, substantially as shown and described.

2. In a vehicle, the combination with the running-gear, of swinging wheels adapted to alternately engage the ground or track, means for operating said wheels when in engagement with the ground or track, and means for simultaneously swinging one wheel out of contact with the ground when the other is swung into contact, substantially as described.

3. In a vehicle, the combination with the running-gear, of two pivoted arms, a propelling device carried by each arm and adapted to engage the ground, means for operating the propelling devices, and a lever for operating each arm, said levers having an interlocking engagement, substantially as and for the purpose set forth.

4. In a vehicle drive-gear, the combination with a shaft, and means for operating said shaft, of a second shaft, means for operating the said shaft, an arm hung on the second shaft, a wheel journaled in the free end of the said arm, means for driving the wheel from the said second shaft, and a lever for swinging the said arm to raise or lower the wheel, substantially as described.

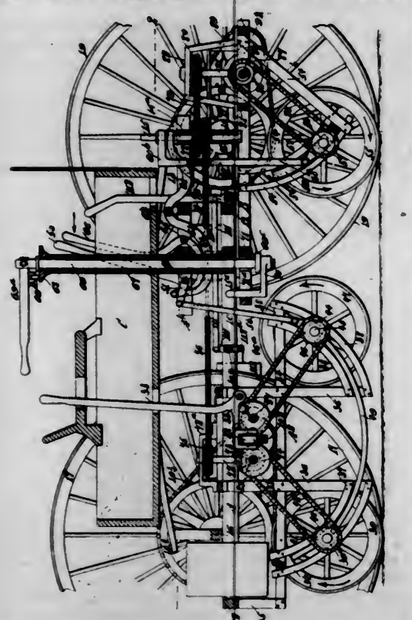
5. In a vehicle driving-gear, the combination with a shaft, and means for operating the shaft, of a second shaft, means for operating the said shaft, an arm hung from the second shaft, an arm hung from the first shaft, wheels mounted in the free ends of the said arms, means for operating the said wheels, and levers for swinging the said arms, said levers having an interlocking engagement, substantially as described.

6. In a vehicle driving-gear, the combination with a shaft, and means for operating the shaft, of a second shaft, means for operating the said shaft, an arm hung on the second shaft, a wheel mounted in the free end of the arm, means for operating the wheel from the second shaft, an arm hung on the first shaft, a wheel mounted in the free end of the arm, means for operating the wheel from the first shaft, and levers for operating the said arms, substantially as described.

7. A vehicle driving-gear, comprising a driven shaft, an arm fulcrumed loosely on the shaft, a wheel journaled on the free end of the said arm and driven from the said shaft, a lever for imparting a swinging motion to said arm to move said wheel into or out of engagement with the ground, and means, substantially as described, for imparting a varying speed to said shaft, as set forth.

8. In a vehicle driving gear, the combination with a shaft, graduated gears fitted to slide on the shaft, and means for operating said shaft, of a second shaft provided with graduated gears, an arm pivoted on said second shaft, a wheel mounted in the free end of the arm, means for operating the wheel from the said second shaft, a lever for sliding the graduated gears, and a lever for swinging the said arm, substantially as described.

570,396. VEHICLE DRIVING-GEAR. FRANK W. HAVILAND, New York, N. Y. Filed Dec. 4, 1895. Serial No. 571,045. (No model.)



Claim.—1. In a vehicle, propelling-wheels, segmental guides in which the boxes of the said wheels have movement, the said guides being fixed and curved in direction of the wheels which they govern, a motor, a driving connection between each wheel and the motor, the driving mechanism for one wheel operating in a reverse direction to that of the opposing wheel, and a connection between the two wheels, whereby when one is carried into engagement with the ground the other is removed from engagement therewith, as and for the purpose set forth.

2. In a vehicle, a propelling and a repelling wheel, a mechanism, substantially as described, for operating the wheels in opposite directions, fixed guides curved in direction of the rotation of the wheels, the boxes of the said wheels having movement in the said guides, and a connection between the said boxes, and a shifting device connected with one of the boxes, whereby either the propelling or the repelling wheel may be brought to an engagement with the ground, one ascending as the other descends, as and for the purpose set forth.

3. In a motor-propelled vehicle, supporting or running wheels and propelling-wheels operating independent of the running-wheels, a motor, and a driving connection between the running-wheels and the propelling-wheels, substantially as described.

4. In a vehicle, the combination, with the rear axle and the running-gear attached thereto, and a frame secured to the forward axle, the said axle being pivotally connected with the rear portion of the running-gear, of a yoke attached to the forward frame, a tubular support located upon the rear portion of the running-gear, a shaft held to turn and slide longitudinally within the said support, and provided with an arm extending upward in the said yoke, and a handle pivoted to the said shaft, having a projection capable of frictional engagement with the aforesaid tubular support, as and for the purpose specified.

5. In a vehicle, the combination, with the forward and rear axles, running or supporting wheels loosely mounted thereon, and a running-gear constructed in two sections, one section being connected with the rear and the other with the forward axle, the forward axle having pivotal connection with the rear portion of the running-gear, of a motor, shafts driven from the motor and carried one by the forward portion of the running-gear and the other by the rear portion of the said running-gear, a speed-regulating gearing carried by both sections of the running-gear, the said speed-regulating gears being each set in driving connection with the running-wheels of the vehicle, and a shifting-gear regulating each set of running-gears, and operated by the steering movement of the forward axle, as and for the purpose set forth.

6. In a vehicle, the combination, with the forward axle, a reach connected therewith, a forward axle pivotally connected with the said reach, and a frame supported from the forward axle, and running or supporting wheels loosely mounted on the said axles, of a motor, shafts located one in the forward frame and the other on the reach, being driven from the said motor, speed-regulating gears driven from the said shafts, each speed-regulating gear being in driving connection with a supporting or running wheel, a shifting-gear operating to increase or decrease speed, forming a portion of each set of regulating-gears, shifting arms connected with the shifting-gears of the forward frame and likewise connected with the said reach, and shifting-arms likewise connected with the shifting-gears in the reach, the said arms being also attached respectively to the forward axle and forward cross-bar, or a support operating in connection therewith, as and for the purpose specified, whereby in turning a corner the outer wheel will be automatically made to travel faster than the inner one, as and for the purpose specified.

7. In a vehicle, the combination, with the running-gear, of a forward and a rear propelling-wheel independent of the supporting or running wheels of the vehicle, and a repelling-wheel located between the propelling-wheels, segmental fixed guides for the said wheels, receiving the boxes thereof, the guides being curved in direction of the rotation of said wheels, a motor, a driving connection between the motor and the said propelling and repelling wheels, the propelling-wheels being driven in a direction the reverse of the repelling-wheel, and shifting devices, substantially as described, whereby either the propelling-wheel or the repelling-wheel may be brought into or carried out of engagement with the ground, the bearing of one of the propelling-wheels being connected with the bearing of the repelling-wheel, as specified.

8. In a traction vehicle, the combination of a motor, two oppositely-driven traction-wheels capable of alternately engaging the ground, carrying-wheels, a shaft geared with each carrying-wheel, a shaft driven from the motor, variable-movement-transmitting mechanism connecting the three shafts, and a cramping-axle by which said movement-transmitting mechanism is controlled, substantially as described.

9. In a traction vehicle, the combination of a motor, two traction-wheels, means for oppositely driving the traction-wheels, two carrying-wheels, a cramping-axle on which the wheels are carried, gearing for independently driving the carrying-wheels from the motor, and means controlled by the cramping-axle for varying the movements imparted to the carrying-wheels, substantially as described.

10. In a traction vehicle having a cramping-axle, the combination of a motor, a traction-wheel driven from the motor, a carrying-wheel geared with the motor, and means for varying the movement applied to the carrying-wheel, said means being controlled by the cramping-axle, substantially as described.

11. In a vehicle, the combination with a frame, of a cramping-truck, a steering-shaft, a crank carried on said shaft and connected to the truck, a sleeve in which the steering-shaft is contained the sleeve having a circular way, and a lever fulcrumed to the steering-shaft and having a fulcrum moving on the way, substantially as described.

12. In a traction vehicle, the combination of a motor, a traction-wheel driven by the motor, a guide in which the traction-wheel is movable, a rod connected to the traction-wheel for moving the same, a shaft, a link fixed to the shaft and connected to the rod, a second link fixed to the shaft, and a lever connected to the free end of the second link, substantially as described.

13. The combination of a cramping-axle, a rotary shaft in connection with and capable of operating the axle, a lever fulcrumed to the shaft and capable of turning and locking the shaft and means on which the lever may bear, substantially as described.

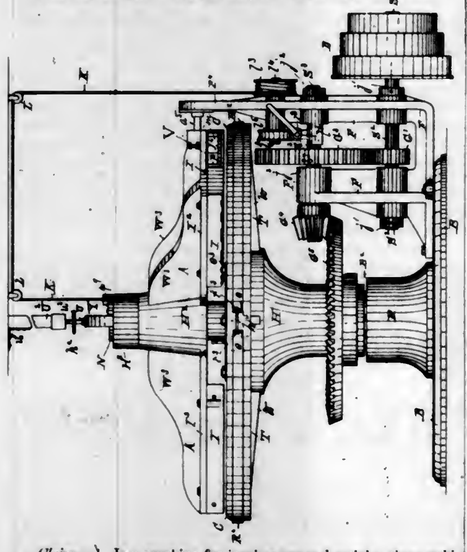
14. In a vehicle, the combination of a motor, two arc-shaped guideways, a traction-wheel movable in each guideway, a rod rigidly connecting the two traction-wheels whereby they are capable of alternate engagement with the ground, gearing for oppositely driving the two traction-wheels, a third rigid guide, a traction-wheel movable in the guide, gearing for driving said traction-wheel, and means for raising and lowering the traction-wheels, substantially as described.

15. In a traction-wheel, the combination of a motor, two traction-wheels, means for rigidly connecting the traction-wheels, gearing for oppositely driving the traction-wheels from the motor, a link connected to one traction-wheel, a shaft to which the link is connected, and a lever connected to the shaft and capable of rocking the same to raise or lower the traction-wheels, substantially as described.

16. In a traction vehicle, the combination of a motor, a traction-wheel driven by the motor, two carrying-wheels, two shafts respectively geared with the carrying-wheels, a shaft driven from the motor, movement-transmitting mechanism connecting the three shafts, a cramping-axle on which the carrying-wheels are held, and a connection between the cramping-axle and the movement-transmitting mechanism, substantially as described.

17. In a traction vehicle, the combination with a frame, of two curved guideways, traction-wheels respectively mounted and movable in said guideways, means for independently raising and lowering the traction-wheels, and gearing by which they may be oppositely driven, substantially as described.

570,397. IRONING-MACHINE. WENDELL HESS, Jr., Troy, N. Y. Filed May 25, 1895. Serial No. 550,591. (No model.)



Claim.—1. In a machine for ironing apparel articles, the combination with a holder having radial arms A, each provided with an iron on its under surface having a flat ironing-face with slightly-rounded side edges; of a table provided with an elastic covering and operated to be rotated beneath said holder with the under flat surface of the irons in contact with apparel articles placed thereon; and gore-shaped heating-chambers *m*, arranged between said irons by which the heat coming from the sides of the irons may be utilized to dry the articles being ironed, substantially in the manner as and for the purposes set forth.

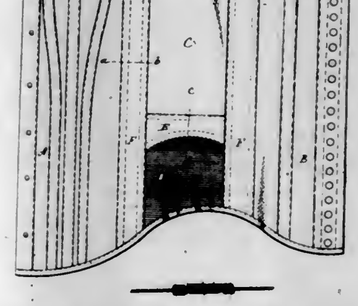
2. The combination with a series of stationary irons I, each adapted to be heated interiorly substantially as described of a heating-chamber *m* arranged between said irons and connected thereto to receive heat radiated from the sides of said irons; and the table T, having an elastic covering C, and operated to be rotated beneath and in contact with the under surface of said irons substantially in the manner as and for the purposes set forth.

3. The combination with the stationary iron-holder I^3, having the radial arms A, of the irons I, adapted to be heated interiorly substantially as described, and each attached to the under side of one of said arms; of the gore-form hot-air chambers *m*, arranged between said irons and connected thereto; and the table T, having the covering C, adapted to be rotated with its surface in contact with the under surface of said irons when passing beneath them substantially in the manner as and for the purposes set forth.

4. The combination with the table T, having an elastic covering C, and provided with means to be rotated with continuous motion in a horizontal plane substantially as described; of a stationary holder or carrier I^3, arranged above said bed, provided with radial arms A; irons I, having flat under surfaces attached to the under side of said arms; and heating-chambers arranged between said irons, adapted to be heated by the latter, substantially in the manner as and for the purposes set forth.

5. The combination with the circular table T, having the pins *p*, projected from its perimetral edge, and the centrally-arranged recess w^3, provided with upwardly-projected bolts d^3, of the rubber covering R, cut to coincide with the outer edge of the table, and the edge of the recess; a covering of felt f^3, overlapping the perimeter of the table, the rubber and the edge of said recess; the ring R^3, provided with passages for said bolts and having the downwardly extended pins p^3, and the clamping-ring R^3, having the ears *e*, *e*, and a tightening-bolt h^3, constructed and arranged substantially in the manner as and for the purposes set forth.

570,398. CORSET. FRANKLIN K. HICKOK, New Haven, Conn. Filed June 19, 1896. Serial No. 596,103. (No model.)



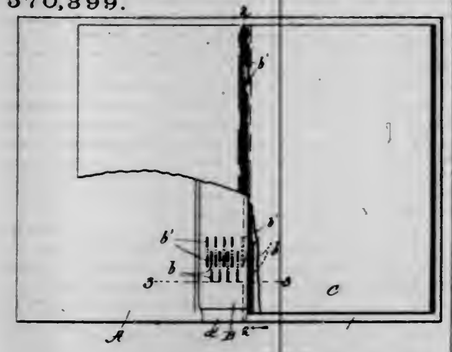
Claim.—The herein-described corset comprising a front and back section and a hip-section composed of a central portion shorter than the front and back sections, and curved at its lower end, an elastic section secured to the lower edge of said central section and connected thereto by a reinforce overlapping said two sections, said combined hip section connected to the front and rear sections by double stay-strips, substantially as described.

570,399. BINDER. RUDOLPH HILDEBRANDT, Chicago, Ill., assignor to Arvid Song, same place. Filed Nov. 7, 1895. Serial No. 568,192. (No model.)

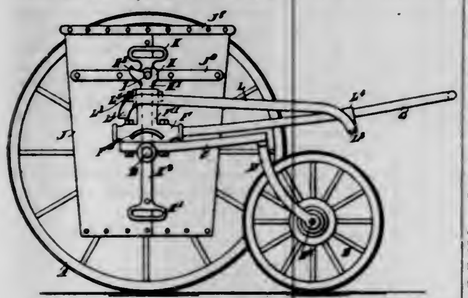
Claim.—1. In a binder, the combination with the boards A, A', and the flexible back, *a*, of the lining B, secured within the back and the wire staples projecting inwardly through the lining, such staples being set in series arranged longitudinally as to the back and with the plane of each staple coinciding with the alinement of its series, substantially as described and for the purpose set forth.

2. The combination with a book-cover having a limp back or joint of staples secured in the back and having their ends projecting inwardly through the inner surface thereof, such staples being set in series arranged longitudinally as to the back and with the plane of each staple coinciding with the alinement of its series, the adjacent members of the several series being set staggered, substantially as described and for the purpose set forth

570,399.



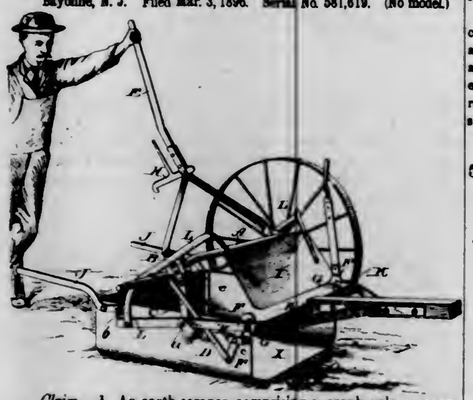
570,400. CART. THOMAS HILL, Jersey City, N. J. Filed Nov. 21, 1895. Serial No. 569,639. (No model.)



Claim.—1. In a cart, a supporting-frame having horizontally-extended sockets, a handle having its ends engaged in said sockets, vertical sockets on the first-named sockets, and a broom-holder consisting of a single strip of metal having hook portions at its ends, one end of said metal strip being secured to a vertical socket and the other end to the handle, substantially as shown and described.

2. A cart-body formed of a single sheet of metal folded substantially as shown and described, vertical and horizontal strengthening-plates riveted on opposite sides of the body, and handles formed on the ends of the vertical plates, substantially as shown and described.

570,401. WHEELED EARTH-SCRAPER. JOSEPH W. HOBSON, Bayonne, N. J. Filed Mar. 3, 1896. Serial No. 581,619. (No model.)

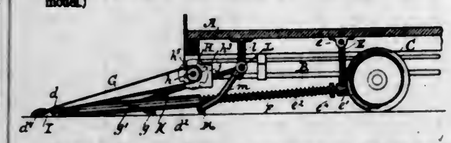


Claim.—1. An earth-scraper comprising a crank-axle, a scoop, hounds having a pivoted connection to the sides thereof and extending rearwardly beyond their pivots, bent arms pivoted or hinged to the rear ends of these hounds in rear of their pivots and extending over the axle and provided with a front end-gate at their forward ends substantially as and for the purpose described.

2 In an earth scraper the combination with the scoop and crank-axle; of an end gate having its arms resting on top of the axle, and their rear ends pivoted to the hounds in rear of the axle substantially as and for the purpose described.

3. In an earth-scraper the combination with the scoop having lever-hooks on the front ends of its sides, a pair of hounds, a crank-axle, and a pair of connecting-rods anchored at one end to an eccentric point on the axle and at the other end to the lower end of each hook-lever substantially as and for the purpose described.

570,402. CAR-FENDER. LOUIS A. HUFSCHMIDT and ROBERT STYLER, San Francisco, Cal., assignors to themselves and Henry Hufschmidt, same place. Filed Mar. 27, 1896. Serial No. 585,129. (No model.)



Claim.—1. In a car-fender, a spring-actuated endwise-moving frame, a roller carried thereby, an apron connected to and wound upon this roller, a second roller upon the car, and to which the opposite end of the apron is secured, and an automatic releasing mechanism whereby the frame is released and the apron unrolled, substantially as shown.

2. A car-fender, consisting of a supporting-frame attached to the car, a roller journaled under the end of the car, and an apron that is passed around the roller, combined with the telescoping frame for shooting the apron forward, and a roller upon which the apron is rolled, substantially as described.

3. In a car-fender, the combination of a suitably-supported apron, an elliptical roller adapted to fold and unfold said apron from the outer edge thereof and actuating mechanism, substantially as described.

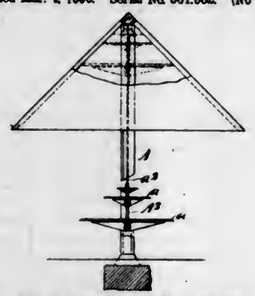
4. In a car-fender, the combination of a suitably-supported apron, a spring-pressed frame fastened to one end thereof, a roller carried by said frame secured to the other end of said apron, and means for rolling up the apron on said roller oppositely to the frame, substantially as described.

5. In a car-fender, the combination of a spring-pressed frame, an oscillating hanger supporting the rear end thereof, an apron fastened by one end in said frame, a roller carried by the frame secured to the other end of said apron, means for holding up the apron, and a winding mechanism connected with said roller, substantially as described.

6. In a car-fender the combination of a spring-pressed frame suitably supported at the rear end, a roller-shaft, an apron passed over said shaft and secured in said frame, a roller also secured in the frame and adapted to furl said apron, means, such as ropes and drums, for turning said roller from said shaft, a catch for checking the backward movement of the shaft, spring-arms adapted to pull out said catch, and a flap connected with the apron and holding said arms, substantially as described.

7. In a car-fender, the rock-shaft L, extending across under the car, and provided with the forwardly-bent rods *m*, carrying rollers, and the spring arms K, K', and the catch J, connected to one of the arms, combined with the spring-actuated frame, a roller upon the front end of the frame, a second roller upon the car and provided with a ratchet, and the apron which is fastened to both of the rollers, substantially as specified.

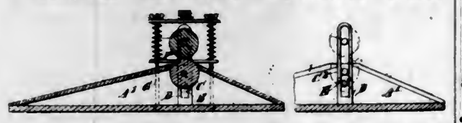
570,403. BOOTH. ALBERT P. HUNT, Jr., and GEORGE L. WALKER, New York, N. Y., assignors of one-third to Thomas Hill, Jersey City, N. J. Filed Mar. 4, 1896. Serial No. 581,802. (No model.)



Claim.—1. A booth comprising hollow columns, a roof supported thereon, plates movable vertically on said columns, weights movable in the columns flexible connections between the weights and plates, and shelves on the plates, the said shelves being of varying widths and conforming substantially to the pitch of the roof, substantially as specified.

2. A booth, comprising hollow columns, a roof supported on the upper end of said columns, rollers journaled in the upper ends of said columns, a plate movable between guides arranged vertically on said columns, weights within the columns, flexible connections extending over the rollers and connecting the said weights and plate, and a series of shelves on the plate of varying widths all conforming substantially to the pitch of the roof, substantially as specified.

570,404. MANGLE. JOHN A. JACKSON and GEORGE S. WHITE, Toronto, Canada. Filed Oct. 22, 1895. Serial No. 566,482. (No model.)

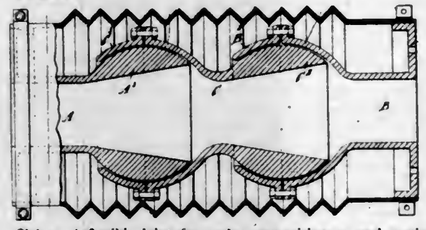


Claim.—1 In a mangle, the combination with a supporting-frame, of slotted guides projecting upwardly from the frame, rollers geared together and having their shafts projecting through the said guides, parallel rods projecting from the frame, two plates on each pair of rods, springs on the rods between the plates, saddles carried by the lower plates and through which the shaft of the upper roller loosely extends, and a cross piece connecting the upper plates, substantially as described.

2. A mangle, comprising a base having oppositely-inclined tables, the upper edges of the tables being spaced apart to form a longitudinal opening, two rollers geared together and located one above the other, the lower roller being below and projecting into the longitudinal opening slotted guides for the shafts of said rollers, antifriction-rollers, on the peripheries of which is journaled the shaft of the lowermost roller, saddles through which the shaft of the uppermost roller loosely extends, each saddle being secured to and projecting upwardly from a plate, fixed rods on which is fitted to slide the said saddle-plate, springs coiled on said rods and pressing on said saddle-plate, and a top plate held on said rods and engaged by nuts screwing on said rods, substantially as shown and described.

3. A mangle, comprising a base having oppositely-inclined tables, the upper edges of the tables being spaced apart to form a longitudinal opening, two rollers geared together and located one above the other, the lower roller being below and projecting into the longitudinal opening slotted guides for the shafts of said rollers, antifriction-rollers, on the peripheries of which is journaled the shaft of the lowermost roller, saddles through which the shaft of the uppermost roller loosely extends, each saddle being secured to and projecting upwardly from a plate, fixed rods on which is fitted to slide the said saddle-plate, springs coiled on said rods and pressing on said saddle-plate, a top plate held on said rods and engaged by nuts screwing on said rods, and a bar connecting the top plates with each other, as set forth.

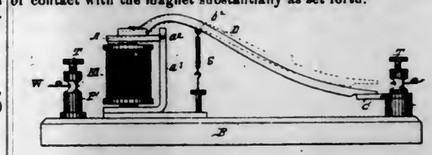
570,405. FLEXIBLE PIPE-JOINT. ANDREW P. JERGUSON and WILLIAM W. HUFF, Hull, Fla. Filed Apr. 18, 1896. Serial No. 588,126. (No model.)



Claim.—A flexible joint for a pipe, comprising an end section having a spherical inner end, a tubular section having a ball shaped end to engage in said spherical end of the end section and having a spherical end, another end section having a ball-shaped end to engage in the spherical portion of the central section, the said end sections on their outer ends being provided with annular flanges, and a tubing of flexible material having its ends connected to said flanges, substantially as specified.

570,406. AUTOMATIC LIGHTNING-ARRESTER. GEORGE P. JOHNSON, Gloversville, N. Y. Filed Jan. 9, 1896. Serial No. 574,796. (No model.)

Claim.—In combination with the circuit-wires and the magnet, a fixed stud a^3, an armature A pivoted to the said stud, a lever D attached at one end to the said armature a removable stationary contact-plate C provided with an opening and normally supporting the free end of the said lever, a shouldered post on which the said plate fits and by which it is supported, means for clamping the said plate on the said post and a spring connected to the said lever which normally holds it in contact with said plate and the said armature out of contact with the magnet substantially as set forth.



570,407. BABY-CARRIAGE. JOHN A. JOHNSON, Hoquiam, Wash. Filed June 2, 1896. Serial No. 593,973. (No model.)



Claim.—1. A child's carriage the body of which is provided at front and rear with chambers, rockers located in the said chambers, and means for holding the rockers within the chambers or below the sections to which they are applied, as and for the purpose set forth.

2. In a child's carriage, a body provided with a chamber at the back, open at oneside and partially at the bottom, being also provided with a chamber at the front open at one side and partially at the bottom, rockers pivotally located in the said chambers, and locking devices located on the body, arranged for engagement with the rockers when carried beneath the body, converting the body into a cradle, as and for the purpose specified.

3. A child's carriage the body of which is made in a seat and a foot section, the foot-section having a hinged connection at its bottom with the bottom portion of the seat section, a brace attached to one section and adapted for engagement with the other section when the two sections are brought at angles to each other, legs secured upon the forward portion of the foot-section, and arms projected from the inner end portion of the foot-section, having sliding movement in segmental slideways made in the sides of the seat-section of the carriage-body, as and for the purpose set forth.

4. In a child's carriage, a body-section provided with fixed legs at the lower portion of its front end and having a chamber formed in its seat portion and legs arranged to fold upward within the said chamber and drop downward through slots made in the bottom thereof, the legs being connected by a pivot-rod, as and for the purpose specified.

5. In a child's carriage, a body constructed in a hinge connected seat and foot section, the foot-section being provided at its forward end with attached legs, guide-arms projected from the foot-section, having locking and sliding engagement with the head-section, whereby the two sections may be brought at an angle to each other, forming a high chair, a table removably connected with the seat-section, and a foot-rest detachably supported by the foot-section of the body when the two sections are at an angle to one another, as and for the purpose set forth.

6. A baby carriage having a seat-section, the sides of which are formed with curved slots, a foot-section pivotally connected to the head-section, two arms fixed to the foot-section and having knobs respectively sliding in the slots of the seat-section, a hook pivotally connected to the foot-section, and a staple fixed to the seat-section, the staple being capable of having the hook connected thereto and also of passing through an opening in the foot-section when the hook is disconnected with the staple, substantially as described.

7. A baby-carriage having a seat portion, a foot portion for the baby-carriage, a rear bottom extension for the foot portion, said bottom extension being rigid with the foot portion and pivoted to the under side of the seat portion and the length of the extension being

equal to the distance between the front end of the seat portion and the pivot by which the extension is connected with the seat portion, an arm fixed to the foot portion and slidably connected with the seat portion, and means for holding the foot portion at right angles to or in alinement with the seat portion, substantially as described.

8. A baby-carriage having a seat and a foot portion pivotally connected to each other, means for holding the said portions at an angle to or in alinement with each other, the seat portion having its inner edges adapted to match with the inner edges of the foot portion, and a foot-rest adapted to rest on the inner edges of the foot portion when the same is held at an angle to the seat portion, substantially as described.

570,408. DISPLAY-CARD AND HOLDER. WILLIAM F. JONES, Baltimore, Md. Filed Apr. 3, 1896. Serial No. 586,091. (No model.)

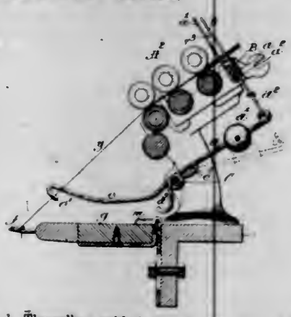


Claim.—1. A display-card and holder for packages of medicines and other small articles, which is composed of a card having an integral cut-out portion that is in the form of a loop, and serves as a clamp, adapted, when bent outward, to embrace and hold a package, substantially as shown and described.

2. A display-card and holder consisting of a card having an elastic or spring loop tending to close upward when drawn out, and a base-support arranged beneath it, and also adapted to be turned outward, both such loop and support being integral with the card, and lying normally flat and flush with its surface, as shown and described.

3. As an improved article of manufacture, the display-card and holder composed of a thin flexible piece of cardboard or equivalent material, having cut-out semicircular loop portions that serve as package-clamps, and base-supports for articles, both loops and said supports lying normally flat, and a backing of rigid or semirigid material to which such flexible piece is secured flatwise, as shown and described.

570,409. SPINNING-MACHINE. JOHN T. MEATS, Taunton, Mass., assignor to the Mason Machine Works, same place. Filed July 15, 1896. Serial No. 599,210. (No model.)



Claim.—1. The rolls, a guide-bar, and a loop shaped roving guide attached to said bar, combined with a roving-clamp also made as a loop and a connected stop-lever, to operate, substantially as described.

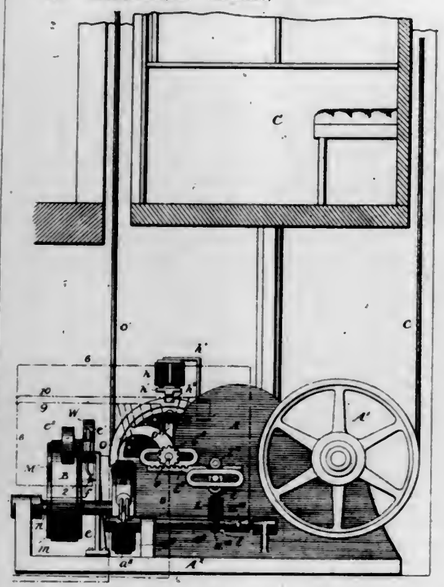
2. A set of rolls, a roving-bar, two roving-guides attached thereto, and arranged one behind the other, and a stop-lever, combined with a loop shaped roving clamp arranged between the said two roving-guides and adapted to be moved to clamp and break the roving passing from one to the other of said guides when the stop-lever is not held by the thread between the front rolls and guide eye, substantially as described.

3. In a spinning-machine, a set of rolls, a roving-bar provided with a roving-guide, and a seat, and a two-part stop lever, one of which is provided with an adjustable weight, combined with a roving-clamp made as a loop and jointed to the weighted part of said stop-lever, to operate, substantially as described.

4. A set of rolls, a thread-guide, and a two-part stop-lever, one of said parts having a hook combined with a locking device to engage said hook and render inoperative one part of the said stop-lever leaving the other part free to be moved as required for doffing the yarn, substantially as described.

5. The roving-bar, the seat *h*, and main and auxiliary roving-guides, arranged one in front of the other, all attached to said bar, combined with a loop-like clamp arranged between said guides and cooperating with said seat, and a connected stop-lever, to operate, substantially as described.

570,410. ELECTRIC ELEVATOR. FRANCIS B. PERKINS, Boston, Mass., assignor to the National Company, Chicago, Ill. Filed Sept. 7, 1895. Serial No. 561,862. (No model.)



Claim.—1. The combination with a motor, an elevator mechanism actuated thereby, a starting and stopping mechanism, and a brake mechanism for said elevator mechanism, of an electrically-controlled connection in circuit with said motor and connecting said brake mechanism with said starting and stopping mechanism, and an electrically-controlled locking device to lock said starting and stopping mechanism, substantially as described.

2. The combination with a motor, an elevator mechanism actuated thereby, and a starting and stopping mechanism, of an electrically-controlled locking device for said starting and stopping mechanism in circuit with said motor, substantially as described.

3. The combination with a motor, an elevator mechanism actuated thereby, and a starting and stopping mechanism therefor, of an electrically controlled locking device for said starting and stopping mechanism arranged to hold said starting and stopping mechanism in its mid-position when the motor-current is insufficient to operate the elevator mechanism, substantially as described.

4. The combination with a motor, an elevator mechanism actuated thereby, and a starting and stopping mechanism therefor, of a belt connecting the motor and elevator mechanism, an arm supported in its normal position by said belt, a circuit-controller operated by said arm, and an electrically-controlled locking device for the starting and stopping mechanism in circuit with said motor, substantially as described.

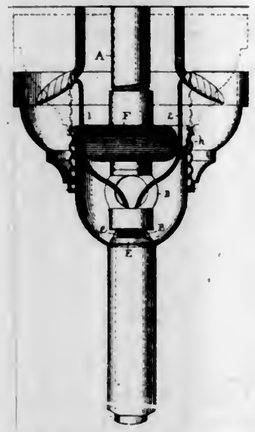
5. The combination with a motor, an elevator mechanism actuated thereby, and a shipper-wheel for controlling said mechanism, of a belt connecting the motor and elevator mechanism, an arm supported in its normal position by said belt, a circuit-controller operated by said arm, and a locking device in circuit with said circuit-controller, substantially as described.

6. An elevator mechanism having a shipper-wheel provided with a recess, and a locking mechanism for said shipper-wheel comprising an electromagnet, its armature and detent, substantially as described.

7. An elevator mechanism, having a shipper-wheel provided with a recess, a motor connected with and to operate said mechanism by a belt, combined with an arm supported by said belt, a movable contact controlled by said arm and controlling the motor-circuit, and an electromagnet in said circuit having an armature and detent to engage said shipper-wheel, substantially as described.

8. The combination with a motor, an elevator mechanism actuated thereby, a starting and stopping mechanism therefor, and a brake mechanism for said elevator mechanism, of a belt connecting the motor and elevator mechanism, an arm held in its normal position by said belt, an electrically-controlled locking device for the starting and stopping mechanism in circuit with said motor, and an electrically-controlled brake mechanism also in circuit with said motor, substantially as described.

570,411. ELECTRIC-LIGHT FIXTURE. GEORGE A. SCHMIDT, Brooklyn, N. Y., assignor to Alanson Trask Enos, Englewood, N. J. Filed Dec. 10, 1895. Serial No. 571,718. (No model.)



Claim.—1. In an electric-light fixture, the combination with the stem of the fixture and its ornamental shell, of a canopy made in two parts, one being cup shaped and secured between the upper end of the ornamental shell and a collar or nipple on the fixture-stem, and the other part being adjustable longitudinally on the stationary part, substantially as and for the purpose set forth.

2. A canopy for electric-light fixtures, comprising a stationary cup-shaped part of larger diameter than the stem of the fixture, and a shell adjustable longitudinally on said stationary part, substantially as and for the purpose set forth.

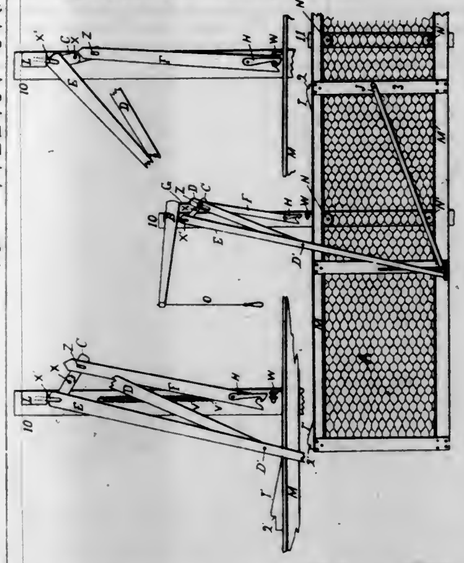
3. A canopy for electric-light fixtures, comprising a stationary cup-shaped part, and a movable shell provided with a screw-threaded sleeve on its interior, which sleeve is adapted to engage with projections on the stationary part to adjust the movable part longitudinally thereon, substantially as set forth.

570,412. DEVICE FOR OPENING OR CLOSING GATES, BARN-DOORS, &c. ALBERT J. SHROPE, Mechanicsville, Iowa, assignor of one-half to Joseph K. Milbourne, same place. Filed Mar. 30, 1896. Serial No. 585,499. (No model.)

Claim.—1. The combination with a gate or door formed to slide sidewise, bar J pivoted to the same and vertical lever E, the lower end pivoted to bar J and the upper end fulcrumed on rod X'; of hanging bar C fulcrumed on same rod; bar D pivoted at its lower end to lever E and through a slot in its upper end to the free end of hanging bar C by pin Z; slotted push-bar F pivoted by its slot within the bifurcation of bar C and the operating chain G connected to said push-bar near its lower end, substantially as described.

2. The combination with the vertical lever E, and the bifurcated hanging bar C, of the slotted bar D, pivoted at its lower end to lever E, and through its slot to the hanging bar; the slotted push-bar F, beveled at its upper end, and pivoted by its slot within the bifurcation of bar C; pin X crossing the upper end of said bifurcation; guide-rod V, and eye-pin Q at the lower end of bar F, engaging said guide and coil-spring V' around guide-rod V, substantially as described.

3. The combination with the hanging bar C, bar D, lever E, bar J, push-bar F, eye-pin Q secured to lower end of said bar, post 10, the guide-rod V secured at both ends thereto and the coil-spring V' around the guide rod V; of a bifurcated chain G secured at its lower end to neck of eye-pin Q and its upper ends secured to the short ends of working levers B and B', substantially as described.



4. The combination with a gate formed to slide sidewise, the push-bar F and the upright post 10; of the shouldered and beveled blocks I and I' secured to top rail of said gate; and the catch H suspended from lower end of push-bar F and the lock W stapled to gate-post, substantially as described.

570,413. CRIMPING-TONGS. GEORGE L. THOMPSON, Chicago, Ill. Filed July 25, 1892. Serial No. 441,140. (No model.)



Claim.—1. A crimping implement comprising a member having two or more tines and a second member having one or more tines, said second member being inserted between the tines of the first member and being pivotally connected therewith by a pivot-pin inserted through the tines of said first member.

2. A crimping implement comprising a member having two or more tines and a second member having one or more tines, the shank of said second member being inserted between the tines of the first member, and pivotally connected with the same by a pivot-pin inserted through said tines and said shank.

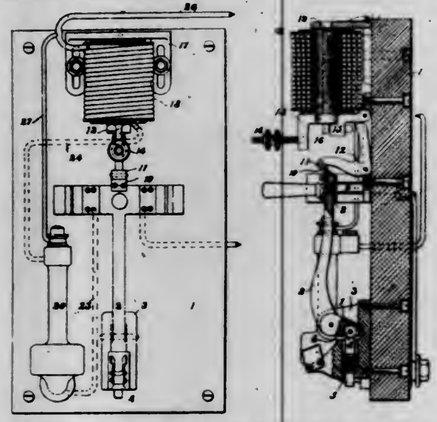
3. A crimping implement comprising a forked shank having two tines provided with arches at their inner ends, and a second forked shank pivoted between the tines of the first-named shank, said second shank having three tines, of which the outer ones are bent to form shoulders to rest within the said arches when the tines are brought together, substantially as described.

570,414. WITHDRAWN.

570,415. CIRCUIT-BREAKER. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Aug. 31, 1895. Serial No. 561,119. (No model.)

Claim.—1. In an automatic circuit-breaker, a controlling magnet having a coil in the circuit to be interrupted, in combination with circuit closing means for rendering said magnet inactive, said circuit-closing means being independent of said magnet and located in and forming a part of the main circuit, whereby an excessive current in said circuit serves to actuate said means.

2. In an automatic circuit-breaker, a controlling-magnet having a main coil permanently included in the circuit to be interrupted and a secondary coil in inductive relation to said main coil and in a normally open circuit, in combination with means for automatically closing said secondary circuit, said means being actuated by excessive current in the main circuit.



3. In an automatic circuit-breaker, a controlling-magnet having a main coil included in the circuit to be interrupted and a secondary coil in inductive relation to said main coil and included in a normally open circuit, in combination with means for closing said secondary circuit included in the main circuit and operating automatically a predetermined interval after the occurrence of an excessive current in the main circuit.

4. In a circuit-breaker, stationary and movable contacts, a latch engaging said movable contact and means for moving the latter when the latch is withdrawn, in combination with a gravity-actuated armature for withdrawing said latch, an electromagnet normally supporting said armature and means for rendering the magnet inactive when the current in the main circuit becomes excessive.

5. The combination with an automatically-opening switch and a latch therefor, of an armature for withdrawing said latch, an electromagnet normally supporting said armature and circuit-closing means energized by an excessive current in the circuit to render the magnet inactive, whereby the armature is released to effect the withdrawal of the latch.

6. In an automatic circuit-breaker, the combination with the main contacts, a latch and a latch-releasing device, of an electromagnet for holding the releasing device in its inactive position when the main circuit is carrying a normal current, and circuit-closing means actuated by an excessive current in said circuit to render said magnet inactive, whereby the releasing device is put in motion to effect the withdrawal of the latch.

7. An automatic circuit-closing device comprising a receptacle formed of conducting material and a body of mercury therein, said receptacle and mercury forming part of an electric circuit, a stationary contact projecting into and insulated from said receptacle, the expansion of the mercury by the heat generated by an abnormal current passing through it and its receptacle serving to close the circuit between the same and the stationary contact.

8. A circuit-closing device comprising a receptacle provided with a stationary contact at or near the upper end thereof, a body of liquid partially filling said receptacle and a movable contact device in said receptacle which is moved into engagement with said stationary contact when an abnormally-heavy current flows through the main circuit.

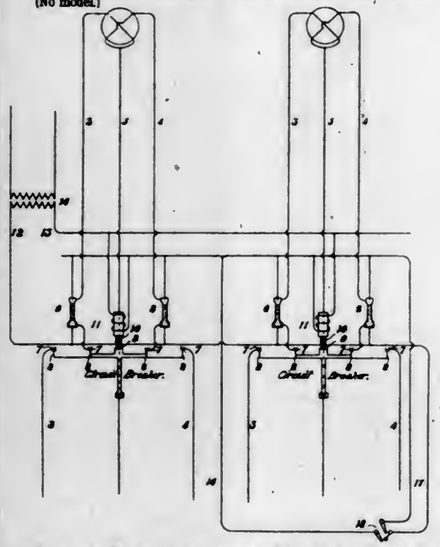
9. A circuit closing device comprising a metal tube connected in an electric circuit, a body of expansible liquid partially filling said receptacle, a stationary contact projecting into said receptacle at or near the top thereof, and a contact device movable into engagement with said stationary contact by the expansion of said liquid.

10. In an automatic circuit-breaker, the combination with the main circuit separable contacts, a latch and an armature for withdrawing the same, of an electromagnet for holding the armature out of engagement with the latch when the circuit is carrying a normal current, and means operating at a predetermined interval after the occurrence of an abnormally heavy current in the circuit to render the magnet inactive.

11. In an automatic circuit breaker, the combination with stationary and movable contacts, and a latch for normally retaining the latter in engagement with the former, of an electromagnet, a latch-withdrawing armature supported by said magnet in an invariable fixed position while a normal current is flowing in the main circuit and means actuated by an excessive current to effect the release of the armature, whereby its movement in one direction away from the magnet and into engagement with the latch is insured, both when the current in the main circuit becomes excessive and when it fails.

12. In an automatic circuit-breaker, the combination with stationary and movable contacts, and a latch for fastening the latter in closed position, of an electromagnet, a latch withdrawing armature supported by said magnet in an invariable, fixed position while a normal current is flowing in the main circuit, and means actuated by an excessive current to effect the release of the armature, said armature being movable away from the magnet and into engagement with the latch by gravity when released either by the failure of the current in the main circuit or by reason of an excessive main current, and means for actuating the movable contact device when the latch is withdrawn.

570,416. CIRCUIT-INTERRUPTING DEVICE. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Aug. 31, 1895. Serial No. 561,120. (No model.)



Claim.—1. In a multiphase system of distribution, the combination with a circuit-interrupter common to all the phases of the system, a normally open local circuit and a controlling-magnet included therein, of circuit-closers for the local circuit, one for each phase of the system, an overload upon any one of the main circuits serving to actuate its circuit closing device and thus close the local circuit.

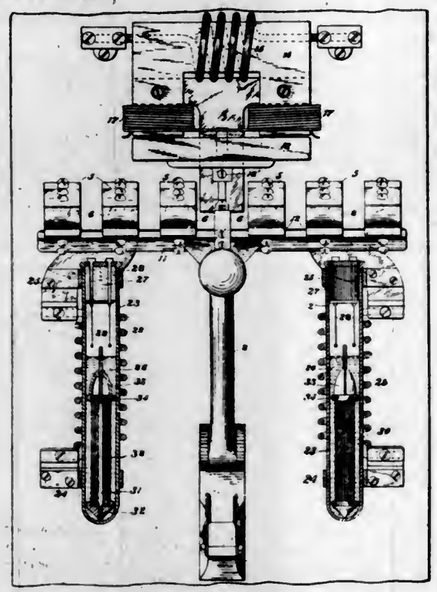
2. In a multiphase system of distribution, the combination with a circuit-interrupting device common to all the phases, a normally open local circuit and a controlling magnet included therein, of a device included in the circuit for each phase of current and operated by an excess of current therein to close the local circuit a predetermined interval of time after the occurrence of such excessive current.

3. The combination with a plurality of systems of electrical distribution provided with circuit-interrupting devices, controlling-magnets and normally open local circuits therefor fed by an independent source of current, of means actuated by an excessive current in any one of the main circuits for closing the corresponding local circuit, and a plurality of circuit-closing devices located at a distant point and each operated at will to close the corresponding local circuit.

4. The combination with a plurality of systems of multiphase electrical distribution provided with circuit-interrupting devices, one for all of the phases of each system, and controlling-magnets therefor, of a local circuit for each of said magnets, means actuated by an excessive current of any phase to close the corresponding local circuit, and a plurality of switches independently operated at will to close any one of said local circuits.

570,417. AUTOMATIC CIRCUIT-BREAKER. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Jan. 10, 1896. Serial No. 574,999. (No model.)

Claim.—1. In a time-limit circuit-breaker for alternating-current multiphase circuits, the combination with a plurality of pairs of stationary contact-terminals, one pair for each line conductor and a plurality of bridging contacts having a single movable support, of a latch, an armature for effecting the withdrawal of the same, primary and secondary armature-controlling coils the latter being in a normally open circuit and a plurality of devices respectively actuated by excessive current of the corresponding phase to close the secondary circuit a predetermined interval of time after the occurrence of such excessive current.



2. In a time-limit circuit-breaker for alternating-current multiphase circuits, the combination with a plurality of pairs of stationary contact-terminals, one pair for each line conductor, and a plurality of bridging contacts having a single movable support, of a latch, an armature for effecting the withdrawal of the same, a primary controlling coil, a normally open secondary circuit having a portion in inductive relation to said primary coil and a plurality of devices respectively actuated by excessive current of the corresponding phase to close the secondary circuit.

3. In a time-limit circuit breaker for alternating-current multiphase circuits, the combination with a plurality of pairs of stationary contact-terminals, one pair for each line conductor, and a plurality of bridging contacts having a single movable support, of a latch, an armature for effecting the withdrawal of the same, a primary coil for each phase of current, a normally open secondary circuit having a portion located in inductive relation thereto and serving when energized to actuate the armature, and devices actuated by excessive current of either phase to close the secondary circuit a predetermined interval after such current becomes excessive.

4. In a circuit-breaker for alternating-current multiphase circuits, the combination with separable contact-terminals, a latch therefor and an armature for effecting the withdrawal of the same, of a plurality of primary coils respectively traversed by the different phases of current, a normally open secondary circuit having a coil in inductive relation to said primary coils and a magnetizing-coil adjacent to said armature and means actuated by excessive current of either phase to close the secondary circuit.

5. The combination in an electric circuit, of a tube of non conducting material having a body of non-conducting liquid partially filling the same and a pair of terminals at or near its upper end, with a solenoid surrounding said tube and a core inside the tube provided at or near its upper end with means for closing a circuit through said terminals, the liquid in said tube serving to retard the movement of said core.

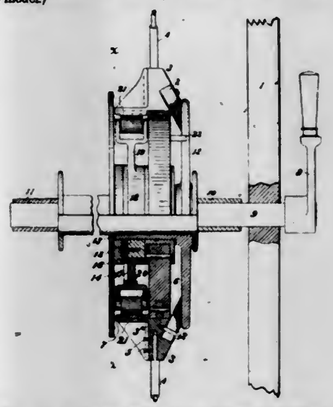
6. The combination with a tube partially filled with non-conducting liquid and a conducting-coil surrounding the same, of a pair of terminals in the upper end of said tube and a magnetizable core movable upwardly through said liquid under the action of current in said coil and provided with means for closing a circuit through said terminals.

7. A circuit-closing device comprising a receptacle provided with stationary contacts at or near its upper end, a body of liquid partially filling said receptacle, a magnetizable body in said liquid, provided with means for closing the circuit through said stationary contacts when brought into engagement therewith and a main-circuit coil surrounding said receptacle, and serving, when sufficiently energized to raise said magnetizable body against the resistance of the liquid in which it is located.

8. An automatic circuit closing device comprising a glass tube partially filled with liquid and having a stopper provided with a pair of contacts, a main-circuit coil surrounding said tube and a subdivided core located in the body of liquid and provided with means for closing a circuit through said contacts, when drawn upward by the action of the current in said coil.

9. A circuit closing device comprising a longitudinally-adjustable non-conducting tube, having a stopper provided with secondary-circuit terminals and partially filled with liquid, a bundle of iron wires in said liquid, provided with means for closing the circuit through said terminals, a main-circuit coil surrounding said tube and means for clamping the tube in the position to which it may be adjusted.

570,418. SWITCH FOR ELECTRIC CIRCUITS. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed May 8, 1896. Serial No. 590,662. (No model.)



Claim.—1. A switch for electric circuits comprising main contacts, auxiliary contacts in shunt thereto, and a single operating-handle, the movable contacts having a limited movement independent of each other, and the shunt-contacts having a retarding connection with a stationary part of the switch, whereby the circuit is closed through the main contacts and opened at the shunt-contacts.

2. In a switch for electric circuits, the combination with stationary and movable metal contacts, of corresponding shunt-contacts of substantially infusible conducting material, and a single operating-handle, said movable contacts having a limited movement independent of each other, and the shunt-contact having a frictional retarding connection with a stationary portion of the switch, whereby the circuit may be closed through the metal contacts and opened at the shunt-contacts.

3. In a switch for electric circuits, the combination with movable and stationary circuit-closing metal contacts and corresponding circuit-breaking contacts of substantially infusible conducting material, the movable members of the two sets being loosely connected, of a single operating device for both movable members, and retarding means for the movable circuit-breaking contact, said means being operative for every movement of the switch.

4. In a switch for electric circuits, the combination with movable and stationary metal contacts, of corresponding carbon contacts in shunt thereto, a lost-motion connection between the movable metal and carbon contacts, a constantly-acting retarding means for the movable carbon contact, and a single operating handle for the said parts.

5. A switch for electric circuits comprising two electrically-connected stationary contact-terminals, one of which has a contact portion composed of substantially infusible material, two electrically-connected movable contacts one of which has an engaging portion composed of substantially infusible material, said movable contacts having a pivotal engagement with each other and having limiting-stops and a frictional retarding connection between the infusible contact and a stationary part of the switch whereby the former will be caused to

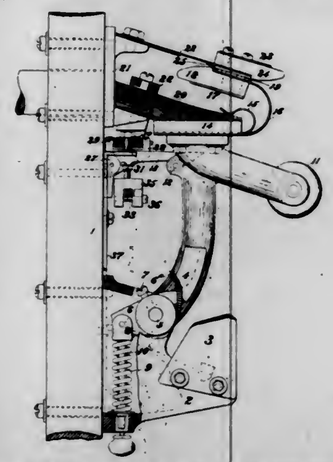
drag behind the member with which it is pivotally connected both when the switch is closed and when it is opened.

6. In a switch for electric circuits, the combination with stationary main and shunt contacts, of a movable shunt-contact and a corresponding main contact having a limited movement independent of said shunt-contacts, a single actuating-handle rigidly connected to the movable main contact and retarding means for the movable shunt-contact acting thereon to cause the same to drag behind the main contact both in opening and in closing the switch.

7. In a switch for electric circuits, the combination with sliding main contacts, of a stationary shunt-contact plate, a coöperating contact-roller having lost motion with reference to the main movable contact, and a constantly-acting retarding means for said roller which causes it to drag behind the main contact, whereby the opening of the circuit by means of the shunt-contacts and the closing of it by means of the main contacts is effected.

8. The combination with a switchboard, of stationary and movable main contacts, and corresponding shunt-contacts, the main and shunt movable members having a lost-motion connection between them, a single operating-handle and a constantly-acting retarding means for the movable shunt-contact, said contacts and handle being located upon opposite sides of the switchboard.

570,419. CIRCUIT-BREAKER. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed May 29, 1896. Serial No. 593,623. (No model.)



Claim.—1. In a circuit breaker or switch, the combination with main contact-terminals of a shunt around the same provided with separable contacts each of which has a metal portion and an infusible conducting portion so arranged that the current will be first shunted through the metal and then through the infusible portions.

2. In a circuit-breaker, the combination with a pair of stationary main circuit metal contacts and a bridging movable contact, of a pair of auxiliary stationary contacts and a pair of electrically-connected contacts coöperating therewith to form a shunt around the main contacts, said auxiliary contacts having metal portions which are in engagement when the switch is closed and which do not move out of engagement until the main terminals have become separated, also having infusible conducting portions, which engage with each other after the metal portions become separated, and the separation of which interrupts the current.

3. In a circuit-breaker or switch, the combination with stationary and movable main-circuit contact-terminals, of a pair of spring-supported contact devices electrically connected with the stationary main circuit-terminals and a movable pair of spring-supported contact devices electrically connected together and supported by the movable main circuit-terminal, both sets of spring-supported contacts having metal engaging portions and carbon engaging portions, the separation of said carbon portions serving to interrupt the current.

4. In a switch or circuit-breaker, the combination with a pair of stationary main-circuit contact-terminals, of a movable main-circuit contact-terminal bridging said stationary contact-terminals and provided with detachable pieces for making final contact therewith, and a shunt around said main-circuit contact-terminals provided with separable contacts the engaging portions of which are partially of metal and partially of infusible conducting material.

5. In a switch or circuit-breaker, the combination with a pair of stationary main-circuit contact-terminals, of a movable main-circuit contact-terminal bridging said stationary contact-terminals and provided with detachable contact-springs for making final contact therewith, and a shunt around said main circuit-terminals provided with separable contacts the engaging portions of which are partially of metal and partially of carbon.

6. In an automatically-opening switch or circuit-breaker, the combination with separable main circuit-contacts, of combined metal and carbon contacts provided with spring-supports and located in a shunt around the main circuit-contacts, means for releasing the movable contacts and means for separating the same from the stationary contacts.

7. A circuit-breaker having a pair of main stationary contacts and a single bridging movable contact, in combination with a pair of stationary shunt contacts and a pair of coöperating movable contacts connected by a single spring-plate conductor.

8. In an automatic circuit-breaker, the combination with a pair of stationary contacts, an iron band partially surrounding each of them, a bridging movable contact and a latch therefor, of a pivoted armature having an adjustable projection at one end normally bearing against the adjacent iron band, and a longitudinally-adjustable weight on the other end.

9. In an automatic circuit-breaker the combination with the separable contacts and a locking device therefor, of a releasing-armature, and a body of magnetizable metal adjacent to said armature and partially surrounding one of the circuit-terminals.

10. In an automatic circuit-breaker the combination with the separable contacts, a latch and means for separating the contacts when the latch is withdrawn, of a pivoted armature having a lost-motion connection with said latch and a body of magnetizable metal partially surrounding one of the circuit-terminals and having an air-gap adjacent to said armature.

11. In an automatic circuit breaker, the combination with a pair of stationary contacts and iron bands partially surrounding the same, of a movable bridging contact, means for locking the same in closed position, a pivoted releasing-armature and an adjusting means interposed between one end of the same and the adjacent iron band.

12. In an automatic circuit-breaker, the combination with a pair of stationary contacts, a movable contact bridging the same, a latch, and means for separating said contacts upon the withdrawal of the latch, of a latch-withdrawing armature, bodies of magnetizable metal partially surrounding the respective stationary contacts and acting upon the armature in opposition to each other, said parts being so constructed and arranged that the pull exerted by one magnet may be overcome by that of the other, when the current in the circuit exceeds a predetermined limit.

13. A circuit-breaker having separable main contacts and auxiliary shunt contacts located side by side above the main contacts, the outer ends of the stationary members of said shunt contacts being beveled or inclined inward toward each other, whereby the circuit will be finally interrupted at the outer corners of said contacts.

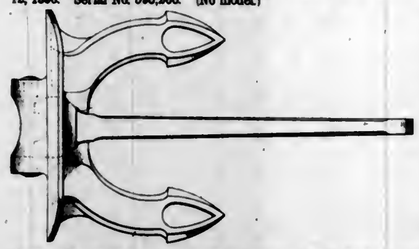
14. In a circuit-breaker, the combination with the main stationary and movable contacts, of a pair of stationary shunt-contacts, and coöperating contacts carried by and movable with the corresponding main contact member, the engaging faces of said shunt-contacts having a curvature of substantially the arc of a circle struck from the pivotal support of the movable member as a center.

15. In a switch or circuit-breaker, a solid movable contact-terminal in combination with a coöperating stationary terminal consisting of a bundle of conductors the contact ends of which are in a plane which is inclined with reference to the position of the individual conductors and which are engaged by the contact-face of the movable terminal in succession beginning with the outermost ones in closing the breaker, whereby said ends are successively deflected slightly from their normal positions and a lateral pressure is exerted against them.

16. In an automatic circuit breaker, the combination with a pair of stationary contacts each consisting of a bundle of conductors the contact ends of which lie in a plane inclined with reference to the position of the individual conductors, of a solid bridging contact bar or plate movable into and out of contact with said contact ends, the engagement being made successively with said ends, beginning with the outermost ones, whereby they are successively deflected from their normal positions, means for locking said movable contact in its closed position and means actuated by an excessive current in the circuit to unlock said movable contact.

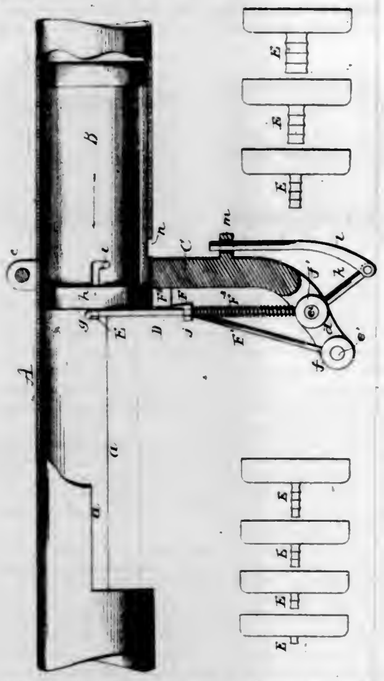
17. In an automatic circuit-breaker, the combination with a movable contact bar or plate, and a pair of laminated stationary contacts, substantially perpendicular to the supporting-base and having inclined contact-faces along which the movable contact-bar has a limited sliding movement, whereby the ends of the laminæ are successively deflected from their normal positions, of means for locking said contacts in engagement and means actuated by an excessive current for unlocking the same.

570,420. ANCHOR. FREDERICK BALDT, Chester, Pa. Filed June 12, 1896. Serial No. 595,260. (No model.)



Claim.—In an anchor, a rectangular shank, a ball integral with and on one end of said shank, a groove having a curved bottom, formed on the bottom of the said ball, a crown-piece having integral flukes, a central longitudinal opening in the fluke side of the crown-piece, and a cup-shaped opening on the rear side, lugs extending from the crown-piece and provided with openings, a pin adapted to pass through said openings and work in the groove in the bottom of the ball.

570,421. PNEUMATIC-DESPATCH APPARATUS. SAMUEL W. BARR, Mansfield, Ohio, assignor to the Barr Cash and Package Carrier Company, same place. Filed Apr. 12, 1893. Serial No. 470,045. (No model.)



Claim.—1. The combination with a pneumatic-despatch tube having an outlet-opening formed therein, and a box or car fitted and adapted to slide in the tube, of a yieldingly supported trip projecting into the path of the box or car and provided with a loop adapted to receive a pin on one of the boxes or cars whereby the box or car is caused to pass out of the opening when the pin enters the loop, substantially as set forth

2. The combination with a pneumatic-despatch tube having an opening therein for the escape of a car or box, and a car or box adapted to travel through said tube, of an ejecting arm or lever made in the form of a bail or loop, and a device on the car or box of a size sufficient to operate with the said arm or lever to eject the box, substantially as set forth.

3. The combination with a pneumatic-despatch tube having an opening therein for the escape of a car or box, and a car or box adapted to travel through said tube, of an ejecting arm or lever made in the form of a bail or loop and having an arm at its free end projecting at an angle thereto, and a device carried by the car or box adapted to act in conjunction with said free end of the arm or lever to eject the car or box, substantially as set forth.

4. The combination with a pneumatic tube and a car adapted to travel through said tube, of a bracket or hanger, an arm or lever pivotally connected to said bracket or hanger, a device carried by the car or box adapted to act in conjunction with said arm or lever to eject the box from the tube, and a wedge adapted to automatically release said arm or lever from the device carried by the car or box, substantially as set forth.

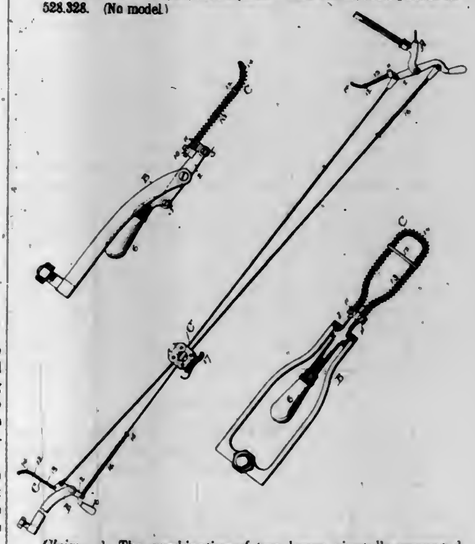
5. The combination with a pneumatic tube and a car or box adapted to travel through said tube, of a bracket or hanger, an ejecting arm or lever pivotally connected to said bracket or hanger, a device carried by the car or box and adapted to coöperate with said arm or lever to eject the car or box, a wedge mounted to slide on said arm or lever, and a rod connected at one end to said wedge and at the other end pivotally connected with the bracket or hanger, said wedge being adapted, when the device is operated, to release the arm or lever from the device carried by the car, substantially as set forth.

6. The combination with a pneumatic tube and a car or box adapted to travel therein, of a bracket or hanger, an arm or lever pivotally supported by said bracket or hanger, a device carried by the car or box adapted to coöperate with said arm or lever to eject said car or box, a wedge for releasing said arm or lever from the device carried by the bracket, a spring for returning said arm or lever to its normal position, and a buffer to receive the ejecting devices, substantially as set forth.

7. The combination with a pneumatic tube and a car or box adapted to travel therein, of a hanger, an ejecting arm or lever pivotally supported by said bracket or hanger devices carried by the car or box and adapted to coöperate with said arm or lever to eject the car or box, and a stop adapted to prevent the escape of more than one box or car at a time at a station, substantially as set forth.

8. The combination with a pneumatic tube a car or box adapted to travel therein, and a bracket or hanger, of an ejecting arm or lever carried by a hub mounted in said bracket or hanger, a device carried by the car or box and adapted to coöperate with said arm or lever to eject the car or box, an arm projecting from said hub, a bar pivotally connected to said arm, a loop carried by the bracket or hanger for guiding said bar, said bar being adapted to pass through the tube and thus prevent the escape of a box or car following the one being ejected, until the parts assume their normal positions, substantially as set forth.

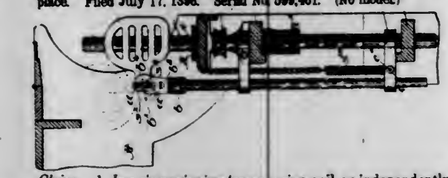
570,422. CASH AND PACKAGE CARRIER. SAMUEL W. BARR and HENRY M. WEAVER, Mansfield, Ohio, assignors to the Barr Cash and Package Carrier Company, same place. Filed Nov. 9, 1894. Serial No. 528,328. (No model.)



Claim.—1. The combination of two levers pivotally supported at different elevations, and two wires connected with these levers, the distance between the point of connection of the wires and the pivot being greater in the lower lever than in the upper lever, substantially as set forth.

2. The combination of two levers pivotally supported at different elevations, and two wires connected with these levers, the connection with the lower lever being twice the distance from the pivot that the connection of the wires of the upper lever is from its pivot, substantially as set forth.

570,423. SEPARATOR FOR RING SPINNING FRAMES. HOWARD W. BRACKEN, Hopedale, Mass., assignor to George Draper & Sons, same place. Filed July 17, 1896. Serial No. 599,461. (No model.)



Claim.—1. In a ring-spinning frame, a ring-rail, an independently-supported carrier, a series of separator-blades mounted thereon, and a yielding connection moving in unison with the ring-rail and connected operatively with said carrier, whereby the carrier and the said separator-blades are started with a strain which is gradually exerted by or through the ring-rail as the latter rises, substantially as described.

2. In a ring-spinning frame, a ring-rail, means to traverse it, a blade-carrier, a series of separator-blades secured thereto, means controlled by the ring-rail to raise the blades with a gradually-accelerated speed until they move in unison with the ring-rail, the blades moving downwardly uniformly to a predetermined point, and a fixed stop to arrest the movement of the blades at such point, the strain upon the ring-rail being gradually decreased after stoppage of the blades as the ring-rail continues its descent, substantially as described.

570,424. ELECTRIC MOTOR. SEBASTIAN G. BRINKMAN, New York, N. Y., assignor to The New York Electric Motor and Ventilator Company, same place. Filed June 27, 1895. Serial No. 554,176. (No model.)



Claim.—1. The combination in an electromotor of the armature-shaft with a pair of heads or spiders supported thereon, a jacket supported by the heads or spiders and armature plates and coils inclosed by the jacket, the ends of the jacket being in contact with the outer edges or teeth of the spiders, substantially as specified.

2. The combination in an electromotor, of an armature-shaft having threaded sections with a pair of heads or spiders having tapped eyes adapted to engage said sections, a soft-metal jacket supported by said heads or spiders and armature-plates inclosed by and in contact with said jacket, the ends of the jacket being in contact with the outer edges or teeth of the spiders, substantially as specified.

3. In an electromotor the combination of field-magnet plates and armature-plates composed of soft-metal bodies, with a soft-metal jacket inclosing the armature-plates, heads or spiders for supporting the jacket and an armature-shaft for supporting the heads or spiders, the ends of the jacket being in contact with the outer edges of the teeth of the spiders, substantially as specified.

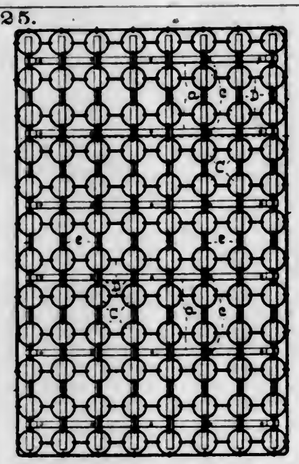
4. In an electromotor, the two frames *a*, bolts *c*, for connecting them and which pass through the field magnets, the shaft *b* journaled in said frames; the tubular soft-iron jacket *e*, and the non-conducting closed heads applied to the ends of the jacket, combined with the plates *f*, and winding *g*, placed in the closed chamber, the field-magnet plates *i*, the winding *j*, suitable connecting-wires, and armature, substantially as described.

570,425. SPRING BED-BOTTOM. FRANK DE WITT COLVIN, Baltimore, Md., assignor of one-half to The Foster Brothers Manufacturing Company of Baltimore City, of Maryland. Filed July 6, 1896. Serial No. 598,126. (No model.)

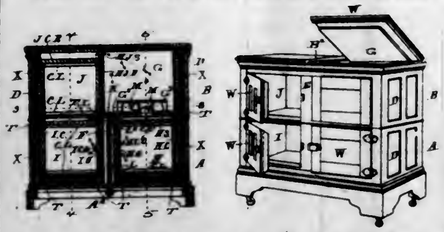
Claim.—1. In a spring bed-bottom, the combination of a series of arched trusses tied together to form the base, the ends of the arched members of the trusses being turned up and outward, and a series of inverted conical volute springs erected on the said trusses, the springs at the lateral edges of the bottom being mounted on the offset ends of the trusses, substantially as specified.

2. In a spring bed-bottom, the base thereof formed of a series of arched trusses in two parts hinged together, substantially as specified.

570,425.



570,426. REFRIGERATOR. EDWARD H GIESY, Wyoming, Ohio, assignor to Alfred M. Stearns, same place, and Henry H. Giesy, Lancaster, Ohio. Filed Feb. 26, 1896. Serial No. 580,863. (No model.)



Claim.—1. In a refrigerator, the combination of the four compartments, two below and two above, and of which latter one is an ice-compartment, and the crocks, open at each end (otherwise solid) and respectively located in each provision-compartment, the ice-compartment having the air outlet in its bottom and a space being present between the ice-compartment and the roof of the crock of the compartment below, and space being present at one end of the last-named crock, communicating with the space above the crock, substantially as and for the purposes specified.

2. In a refrigerator, the combination of the upper ice-compartment, and a compartment below containing a crock open-ended, a space over and in contact with the top of the crock, a passage from the ice-chamber into said space, and a passage from the said space around an end of the crock into the interior thereof, substantially as and for the purposes specified.

3. In a refrigerator, the combination of the upper ice-compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice-compartment, and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, substantially as and for the purposes specified.

4. In a refrigerator, the combination of the upper ice-compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice compartment, and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, and the left-hand lower compartment I, and upper compartment J, and the open-ended crocks therein and the passage-spaces at front and rear of the said crocks I C and J C, and the adjacent openings in the sides of the crocks H C and I C, and means for enabling the air after circulating through the several crocks to return to the ice-compartment, substantially as and for the purposes specified.

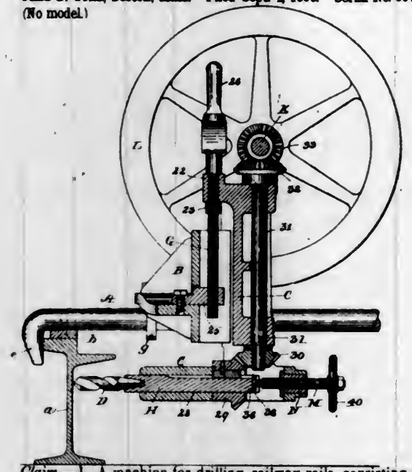
5. In a refrigerator, the combination of the upper ice compartment, and a lower provision-compartment, containing an open-ended crock, the bottom of the ice compartment and the top of the crock forming respectively the top and bottom portions of said space, and the space H S from the same at and around the end of the crock into the interior thereof, and the left-hand lower compartment I, and upper compartment J, and the open-ended crocks therein, and the passage-spaces at front and rear of the said crocks I C and J C, and the adjacent openings in the sides of the crocks H C and I C, and space above the crock J C, and the partition H J F, and opening H J S thereover, from the latter space to the ice-chamber, substantially as and for the purposes specified.

6. In a refrigerator, the combination of the four compartments G, H, I and J, arranged as described, the compartments H, I and J having open-ended crocks therein, the ice compartment G having the bottom opening M and the space H S between the ice-compartment and the crock H C, and the passages in front and rear of said crock H C, communicating with said space H S, and with the interior of crock H C, openings in adjacent sides of crocks H C and I C communicating with each other, and the passages in front and rear of the crocks I C and J C of compartments I and J communicating with space above crock J C, and the latter space communicating with the ice-chamber, substantially as and for the purposes specified.

7. In a refrigerator, the combination of the four compartments G, H, I and J, arranged as described, each of the compartments H, I and J having open-ended crocks, space at end of crock H C, and the passage M of the ice-chamber communicating with said space, the crocks H C and I C having passages through their adjacent sides, and passages in front and rear of crocks H C and I C, and space above crock J, communicating with the ice-chamber, substantially as and for the purposes specified.

8. In a four-compartment refrigerator, the ice-chamber, and a compartment H below, and two left-hand compartments I and J, the compartments H and I receiving air in turn from the ice-chamber, and the compartment J having passages in front and rear of it receiving air from compartment I, and in turn communicating with an overhead space over compartment J, and communicating with the ice-chamber, substantially as and for the purposes specified.

570,427. MACHINE FOR DRILLING RAILWAY-RAILS. ALFRED D. GORE, Boston, Mass. Filed Sept. 4, 1896. Serial No. 604,902. (No model.)

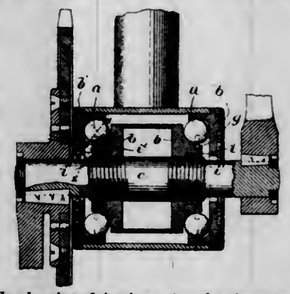


Claim.—1. A machine for drilling railway-rails, consisting of a standard, means for adjustably supporting the same between the rails of the track, a drill-frame sliding vertically on the standard, a screw provided with a handle for vertically adjusting the drill-frame, a horizontal drill spindle carrying a drill and rotating in a bearing at the lower end of the drill-frame, a horizontal driving-shaft at the upper end of the drill-frame provided with crank-handles, a vertical shaft connected by bevel-gears with the driving-shaft and drill-spindle, and a hand-operated feed-screw connected with the drill-spindle for producing the feed of the drill, all constructed to operate substantially as described.

2. In a drilling-machine, the combination with a pair of parallel supporting-bars connected together and adapted to be laid transversely upon the two rails of a railway-track, of a standard provided with feet adapted to be clamped to said bars, a drill-frame sliding vertically on the standard between said bars, a screw provided with a handle for vertically adjusting the drill frame, a horizontal drill-spindle, carrying a drill and rotating in a bearing at the lower end of the drill-frame, a horizontal driving-shaft at the upper end of the drill-frame provided with crank-handles, a vertical shaft connected by bevel-gears with the driving-shaft and drill spindle, and a hand-operated feed-screw connected with the drill spindle for producing the feed of the drill, all operating substantially as described.

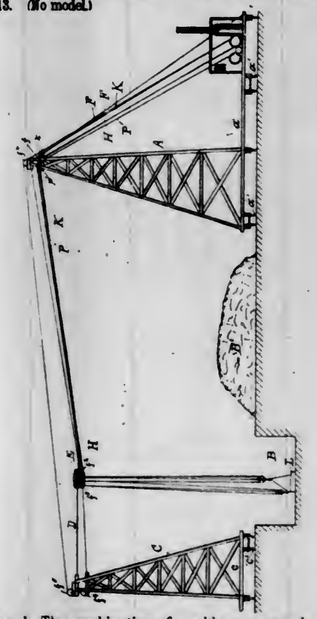
3. In a drilling-machine, the combination with a pair of parallel supporting bars connected together and adapted to be laid transversely upon the two rails of a railway track, of a standard provided with feet adapted to be clamped to said bars, a drill-frame sliding vertically on the standard between said bars, a screw provided with a handle for vertically adjusting the drill-frame, a horizontal drill-spindle, carrying a drill and rotating in a bearing at the lower end of the drill-frame, a horizontal driving-shaft at the upper end of the drill-frame provided at its opposite ends with balance-wheels L, L, having operative crank-handles, said wheels being so located as to permit the machine when turned over to be trundled thereon by taking hold of the ends of the supporting-bars to which it is clamped, a vertical shaft connected by bevel-gears with the driving shaft and drill spindle, and a hand-operated screw connected with the drill-spindle for producing the feed of the drill, all operating substantially as set forth.

570,428. BALL-BEARING FOR BICYCLES. ELMER C. HOWE, Waltham, Mass., assignor to the American Waltham Manufacturing Company, same place. Filed Dec. 23, 1895. Serial No. 572,980. (No model.)



Claim.—In a bearing of the class referred to, in combination with a cup and cone, balls mounted to travel in the annular space between said cup and cone, and a separator-plate notched to receive said balls, said plate being revolubly mounted at the small end of the cone.

570,429. CABLEWAY FOR DUMPING PURPOSES. CHARLES H. LOCKER, Rockbridge County, Va. Filed Nov. 1, 1894. Serial No. 527,613. (No model.)



Claim.—1. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket sustained by the carriage, a rope controlling the movements of the skip sustained by the carriage, both

ends of said rope extending from the carriage to the end of the way and connected to separate moving means, substantially as set forth.

2. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a rope having both ends extending from the carriage to the ends of the way, and connected to separate winding means, a skip or bucket, and a loop-rope connected to said latter rope and supporting the skip or bucket from the carriage, substantially as set forth.

3. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a hoisting-rope and a dump-rope each extending from the end of the way to the carriage and winding means therefor, said ropes each having a loop-rope connected thereto and supporting the skip or bucket from the carriage, substantially as set forth.

4. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a hoisting rope and a dump-rope, each extending from the end of the way to the carriage and having both ends of said ropes connected to winding means, and loop-ropes connected to said hoisting-rope and dumping rope, respectively, and supporting the skip or bucket from the carriage, substantially as set forth.

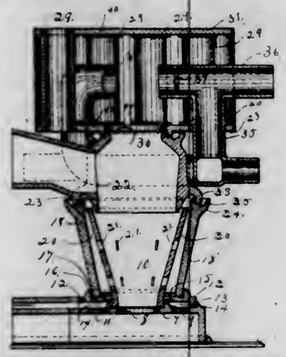
5. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a hoisting-rope and a dumping-rope each having winding means at the end of the way, and extending thence to the carriage, said ropes being then united and extending to winding means at the end of the way, said hoisting and dumping ropes controlling the skip, substantially as set forth.

6. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a rope extending from the end of the way to the carriage and thence around a pulley on the carriage and back to the end of the way and connected to winding means, substantially as set forth.

7. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a hoisting-rope and a dumping-rope each extending from the end of the way to the carriage and passing around a pulley on the carriage and thence back to the end of the way and connected to a winding means, substantially as set forth.

8. The combination of a cableway or track, a carriage traveling thereon and a drive-rope for moving said carriage and winding means therefor, a skip or bucket, a rope extending from the end of the way to the carriage and thence around a pulley on the carriage and back to the end of the way and having both ends connected to winding means, and a loop-rope connected to said rope and sustaining the skip or bucket from the carriage, substantially as set forth.

570,430. HOT-AIR FURNACE. LEROY S. PROUTS, Canton, Ohio, assignor to Frank M. Wyant, same place. Filed Feb. 29, 1896. Serial No. 581,412. (No model.)



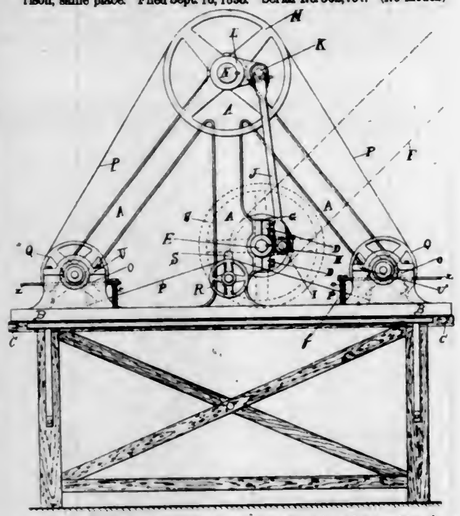
Claim.—1. The combination of the base-plate 1, provided with a series of apertures located between the outer periphery of the fire-pot and the outer casing of the heater, a cold-air conduit located below the floor, a fire-pot consisting of the sections 10, and 18, located one within the other, and apertures located in the flange supporting the outer section of the fire-pot and between the outer and inner sections of the fire-pot, a chamber located below the base or flange supporting the outer section of the fire-pot, and a dome located upon the outer section of the fire-pot and supported to form a space between the upper end of the inner section of the fire-pot and the lower end of the dome, substantially as and for the purpose specified.

2. The combination of a base supporting a fire pot, the fire-pot consisting of the sections 10, and 18, located one within the other, the outer section extended upward beyond the inner section, apertures formed through the walls of the inner section, and air-passages formed between the outer and inner sections of the fire-pot, said passages formed tapering from their bottom or lower ends to their top or upper ends, and a dome located above the top or upper end of the inner section, substantially as and for the purpose specified.

3. The combination of a base supporting a fire-pot, the fire-pot consisting of inner and outer sections, air-passages located between the sections, said air-passages formed tapering radially from their bottom or lower ends to their top or upper ends, and circumferentially tapering from their upper ends to their bottom or lower ends, substantially as and for the purpose specified.

4. The combination of a fire-pot, a dome located above the fire-pot, a radiating-drum located above the dome, a secondary radiating drum or pipe located below the radiating-drum, the pipe 36, located upon the top or upper end of a pipe communicating with the secondary radiating-pipe, and pipes 38, connected at their bottom or lower ends to the secondary radiating-pipe and extended upward and into the radiating-drum, and their top or upper ends bent or curved inward, having vertical open ends above the opening in the top of the dome, substantially as and for the purpose specified.

570,431. MACHINE FOR GRINDING COCKS OR TAPS. LEMUEL D. BIDDLE, Los Angeles, Cal., assignor of one-half to Andrew David Garrison, same place. Filed Sept. 16, 1895. Serial No. 562,707. (No model.)

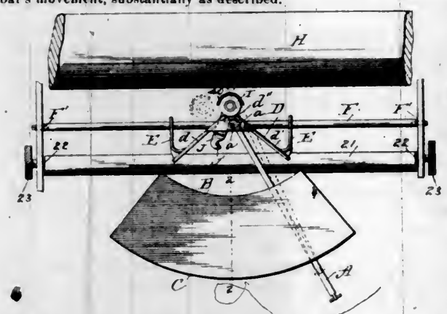


Claim.—1. In the tap or cock grinding machine, the combination of the hollow cylindrical sleeve, having a clutch-piece at its outer end, a mandrel passing through each of said sleeves, a pulley carried upon said sleeve for reciprocating it and the mandrel, the mandrel carrying the other half of the clutch, the clutch engaging and disengaging lever for the purpose of throwing the mandrel into and out of gear, the chuck at the outer end of said mandrel for holding the attachment-piece, the attachment-piece connecting the plug with or disconnecting the plug from said mandrel, the inner stop in the head-stock, all operating together in the manner and for the purposes, substantially as set forth.

2. The machine for grinding taps or cocks consisting of the combination of a continuously-revolving crank-shaft, the attachment connecting the crank to another crank of larger radius, the crank of larger radius and shaft reciprocated by the attachment, the belt-pulley upon the shaft which carries the crank of larger radius, the belt operated by the pulley upon the reciprocating crank-shaft, the pulleys upon the sleeves which drive the mandrels actuated by the reciprocating belt, the clutches and gear for engaging and disengaging the said mandrels with the operating clutches and the said stops, all operating together in the manner and for the purposes, substantially as set forth.

570,432. TYPE-WRITING MACHINE. BERNARD GRANVILLE, Chicago, Ill., assignor to Albert G. Corre, Cincinnati, Ohio. Filed Dec. 8, 1894. Serial No. 531,258. (No model.)

Claim.—1. In a type-writing machine, the combination of the movable type-bars arranged to converge toward the platen and having lateral play, the platen and the guide having unyielding flaring sides to receive the type-bars, said guide having rocking movement as a whole toward and from the platen in the direction of the type-bar's movement, substantially as described.



2. In a type-writing machine, the combination of the movable type-bars arranged to converge toward the platen and having lateral play and the guide having flaring sides to receive the type bars and the rocking arm pivoted at its lower end and carrying the guide at its upper end, said guide swinging horizontally toward and from the platen substantially as described.

3. In a type-writing machine, the combination of the type bars having lateral play, the platen and the guide with flaring walls movable toward and from the platen in the direction of movement of the type-bars and a stop for limiting the movement of the guide toward the platen, said guide having unyielding guiding-walls and movable as a whole toward and from the platen substantially as described.

4. In combination in a type-writing machine, the type-bars, the platen, the guide movable toward and from the platen, the rocking arm carrying the guide and the stops consisting of the eccentric-shaft and the extensions on the arm to engage therewith and also to engage with the frame to limit the movement of the rocking arm in both directions, substantially as described.

5. In combination in a type-writer, the platen, the type-bars, the guide movable toward and from the platen in the direction of movement of the type-bars and the adjustable stop for limiting the movement toward the platen consisting of the eccentric, substantially as described.

6. In combination in a type-writing machine, the type-bars and the guide with flaring walls movable in the direction of movement of the type-bars, said type-bars having shoulders in rear of the type-beads, to contact with the guide and move it forward.

7. In combination, the platen, the converging type-bars, the guide having flaring sides to receive and direct the type-bars and the guide-frame consisting of the front and rear plates through which the type-bars pass, said front plate being slotted laterally to allow lateral play of the front ends of the type-bars and the rear plate being perforated, substantially as described.

8. In combination, the platen, the type-bars having lateral play, the guide-frame therefor having the flaring walls and movable toward and from the platen in line with the movement of the type-bars, and the inking-ribbon carried and guided by the movable guide at the apex of its flaring walls, substantially as described.

9. In combination the platen, the ratchet, the push-pawl, the line-space frame to which the push-pawl is pivoted and the detent-lever arranged to be operated by contact with the extended end of the pawl's pivot-pin, substantiallly as described.

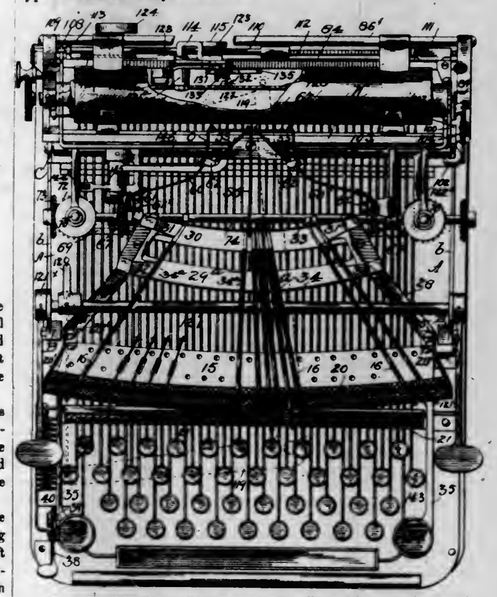
10. In combination, the platen, the push-pawl, the detent, said push-pawl having a portion contacting with the detent to release the same when said pawl is operated to turn the ratchet and having a portion also to contact with and throw the detent out of action when said pawl is thrown out of operation, substantially as described.

11. In combination, the platen, the ratchet, the push-pawl and the detent arranged to be operated by contact with the extended end of the pivot of the push-pawl and by contact with a projection on the push pawl when the same is thrown out of action.

12. In combination the platen, the ratchet, the push-pawl, the detent 45, the spring for drawing the same to engage the ratchet the said push-pawl having a pin to engage the detent and lift the same out of action said detent and its spring being arranged to hold the push-pawl out of action when the pin engages the end of the detent, substantially as described.

570,433. TYPE-WRITER. BERNARD GRANVILLE, Chicago, Ill., assignor to Albert G. Corre, Cincinnati, Ohio. Filed July 9, 1895. Renewed Oct. 5, 1896. Serial No. 607,967. (No model.)

Claim.—1. In combination, the longitudinally-movable converging type-bars, converging fixed guides therefor, a platen, and a swinging guide between the fixed guides converging therewith and adapted to be thrown from side to side of the guideway by the impact of the type-bars, substantially as described.



2. In combination with the longitudinally-moving type-bars and the fixed guides near the platen, an auxiliary movable guide arranged between the walls of the fixed guide and adapted to divide the space thereof and to form with either guiding-wall a smaller guiding-space, substantially as described.

3. In combination with the converging type-bars having their heads arranged squarely to the platen, the converging guide plates having their rear ends near the platen with an open space between the said ends adapted to receive the head of the type-bars and an auxiliary guide supported at its front end upon the cradle-frame with its rear end arranged between the front end of the converging guides and converging therewith to divide the space of the main guide up and to make a small tapering guide-space, the said auxiliary guide being adapted to shift freely from side to side of the main guides, substantially as described.

4. The cradle-frame composed of a single casting carrying guide-plates for the type-bars and having integral arms extending to the front and to the side of the keyboard and upwardly-extending standards pivoted at their upper ends, arms extending rearward from the central portion of the upright standards, said forwardly-extending arms being connected to the lower ends of the upright standards, substantially as described.

5. The reciprocating type-bars having pins and the bell-crank levers for operating said type bars having pins and combined with connecting-links having a rigid center and spring ends on each side thereof, said ends being perforated to fit over the pins of the type-bars and levers, substantially as described.

6. The connecting-link for the levers and type-bars formed of a single piece of sheet metal having a central connecting part bent as described into U form in cross-section and elastic ends in combination with said levers and bars, said ends embracing the levers and the type-bars substantially as described.

7. In combination, the reciprocating type-bars, the levers and the links having U shaped central portions embracing the upper edges of the bars and having spring ends embracing the bars and levers and sprung into connection therewith, substantially as described.

8. In combination, the platen, the type-bars of the upper and lower case, the key-levers with connections thereto, the rocking cradle-frame, and the stops therefor, consisting of the eccentric disks, and the buffers held thereby, with means for clamping the disk in any adjusted position, substantially as described.

9. In combination, the platen, the sliding type-bars, the guide-plates 34, 33, said plate 33 having the plain slots and the plate 34 the notched slots, said notches having lateral extensions to receive rios on the type-bars to hold the bars against vertical movement while

the plain slots allow the bars to move laterally, substantially as described.

10. In combination, the platen, the converging type-bars, the converging guides for directing the type laterally, and the shifting tongue working from side to side intermediate of said guides and converging therewith, substantially as described.

11. In combination, the platen, the converging type-bars, the guide-plate having the slots for the bars, and the shifting tongue for guiding the type bars said tongue having notches engaging the guide-plate, substantially as described.

12. In combination, the type-bars, the cradle-frame having the arm 35 extending forwardly therefrom and having the downwardly-projecting lug 44, the lever 38 having an arm 39 to bear on the under side of the lug 44 to move the arm 35 of the cradle-frame downwardly, and the spring 40 arranged to hold the lever 38 in either position, substantially as described.

13 In combination, the platen, the end frames carrying the same, the ratchet-wheel, the pawl-lever operating vertically, the line-space frame carrying the pawl-lever and journaled in the end frames, said end frame having a laterally-extending arm at its upper part, having two stops between which the upper end of the vertically-moving pawl-lever operates, and the spring for drawing the pawl-lever laterally into contact with the ratchet wheel.

14. In combination, the platen, the end frames carrying the same, the ratchet, the pawl-lever for engaging the same, the laterally-extending arm 104 on the end frame having stops on its inner side to engage and control the pawl lever and the line-space regulator pivoted on the inner side of the end frame and having a portion to shield the ratchet from the pawl lever, said line-space regulator being bent over the arm to its outer side and terminating in stops embracing the said arm, substantially as described.

15. In combination, the type-levers, the carriage and platen, the line-space mechanism including the line space frame 105 on the front of the carriage, connections therefrom to one of the keys, the pawl carried thereby, said space frame having a rearwardly-extending arm 108, an adjustable stop in rear of the carriage on the main frame, the bar 110 movable longitudinally of the carriage and adapted to strike the stop, and the lever 109 between the bar 110 and the extension 108 of the space-frame, substantially as described.

16. In combination, the platen, the carriage, and the escapement mechanism comprising the rack-bar, the two pawls arranged side by side extending in the same direction and having pins projecting laterally therefrom at different distances from the pivot of the pawls and a single wiper-arm pivoted at its lower end to swing longitudinally of the pawls and having its upper end in the form of a broad blade the upper edge of which is of cam form and engages the projecting pins of both pawls, substantially as described.

17. In combination, the platen, the carriage, the escapement comprising the two pawls and a single wiper, having cams to operate both pawls, a carriage-releasing key-lever arranged to operate the wiper to cause the high part thereof to release both pawls, substantially as described.

18. In combination, the platen, the carriage, means for returning the carriage to normal position when released, the escapement comprising the pawls, and the cam wiper for operating and releasing both pawls, said pawls being yielding under the impact of the released carriage, substantially as described.

19. In combination, the platen, the carriage, means for moving the carriage automatically when released and the escapement comprising the pawl and stop-dent and the yielding standard carrying the same to give under the impact of the carriage, substantially as described.

20. In combination, the bell-crank levers and the pins held therein, said pins having a recessed body portion into which the metal of the lever is pressed, substantially as described.

21. In combination, the type-bars and the links U-shaped in cross-section having a pair of spring arms at each end, substantially as described.

22. In combination, the platen, the type-bars for the upper and lower case letters, the swinging frame pivoted to the main frame, the bell-crank levers the key-levers and the links connecting the same with the bell-crank levers, said links extending in a direction substantially radial from the pivot of the swinging frame, substantially as described.

23. In combination, the carriage-frame, the platen, the paper-clips and the paper-shelf, engaging the end frames of the carriage and held by the paper-clips against the same, substantially as described.

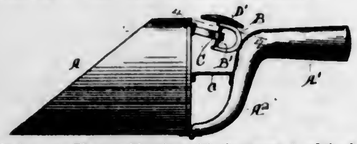
24. In combination, the carriage, the escapement-pawls and rack, the rock shaft 142, the arm 141 extending therefrom connections to the escapement-pawls, the key-levers, the frame 142^a operated thereby, the connection therefrom to the rock-shaft consisting of the link $144^\times$ and the arm $142^\times$, the paper-clip on the carriage, and the arm 161 of the rock-shaft to engage the paper clip.

25. In combination, in a type-writer, the platen, the carriage, the adjustable paper-clips, the key-levers and the lock-arm 161, operated by the key-levers to engage the clip and lock the key-levers against action when the clips come opposite the said arm, substantially as described.

26. In combination, the carriage, a rack-bar in rear thereof held with a space between it and the carriage and a stop on the rack-bar consisting of the channel-piece having its upper and lower flanges embracing the rack-bar, the rear end of the upper flange being bent down to form the pawl-tooth of the stop, and a spring between the lower flange and the lower edge of the rack-bar, said channel-piece being retained in place by the rack fitting into its channeled face and by the rear side of the carriage between which and the rack-bar the channeled piece extends, substantially as described.

27. In combination, with the carriage and rack, the escapement-pawls and the eccentric screw-pin for holding and adjusting the same, substantially as described.

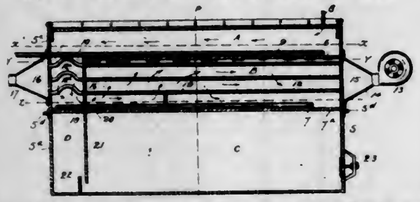
570,434. **WEIGHING-SCOOP.** CHARLES A. JOHNSON, Chicago, Ill. Filed Feb. 21, 1896. Serial No. 580,193. (No model.)



Claim.—1. The combination with the scoop A, of the handle A', having the downward extension A^3, hinged to the bottom of the scoop, the clevis B, secured to the handle and lying in an approximately vertical plane, a spindle B', journaled in the arms of the clevis, the indicating-needle, *b*, secured upon said spindle, the disk, D, and the volute spring C, one end of which is secured upon the spindle the other end being secured to the scoop, the downward movement of said scoop being adapted to unwind said spring thereby rotating the indicating-needle substantially as described.

2. The combination with the scoop, A, of the handle A', having the downward extension A^3, hinged to the bottom of the scoop, the stop *a*, limiting the upward movement of the scoop, the clevis, B, secured to the handle and lying in an approximately vertical plane, the spindle B', journaled in said clevis, the indicating-needle, *b*, the disk, D, and the volute spring C, one end of which is secured upon the spindle the other end being attached to the scoop, the downward movement of said scoop being adapted to uncoil said spring thereby overcoming a certain amount of the tension of said spring and rotating the indicating-needle; substantially as described.

570,435. **FEED-WATER HEATER AND CONDENSER.** JAMES M. KELLER, Denver, Colo., assignor of one-half to Asahel O. Bassett, Chicago, Ill. Filed Oct. 25, 1895. Serial No. 566,923. (No model.)



Claim.—1. In an apparatus of the character described, the combination of the casing with horizontal plates dividing the space inclosed by the casing, into three compartments, namely, the steam-chamber A, the condensing-chamber B and the water chamber C, the chamber A being uppermost and provided with an inlet for the exhaust-steam which enters chamber A before passing to the condensing-chamber, the superheated pipe coil located in the chamber A, the air-pipes located in the chamber B, means for forcing the air through said pipes, the apparatus being provided with a passage-way for the exhaust-steam from chamber A to chamber B, and an outlet for the water of condensation to allow it to pass from chamber B to chamber C; and means for transferring the water from chamber C and forcing it through the superheated pipe-coil in the chamber A prior to its passage to the boiler.

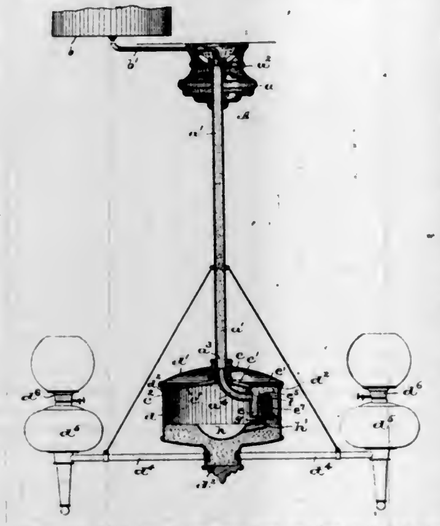
2. In an apparatus of the character described, the combination of the casing, the horizontal, or approximately horizontal, plates dividing the space inclosed by the casing, into three horizontal compartments A, B and C, the apparatus being provided with an inlet for the exhaust-steam to chamber A, an outlet for the exhaust-steam from chamber A to chamber B, and an outlet for the water of condensation from chamber B to chamber C; the superheated pipe-coil located in chamber A, the air-pipes located in chamber B, means for forcing cold air through said pipes, the feed-water pipe-coil also located in chamber B, and means for transferring the water from chamber C and forcing it through the superheated coil in chamber A before it passes to the boiler.

3. In an apparatus of the character described, the combination of the casing, the horizontal, or approximately horizontal, partition-plates dividing the space inclosed by the casing, into three compartments, A, B and C, the apparatus being provided with a passage-way for the exhaust-steam from chamber A to chamber B, and a passage-way for the water of condensation from chamber B to chamber C; the superheated pipe located in chamber A, the air-pipes located in chamber B, said pipes having bends near their exit extremities, means for forcing cold air through said pipes, and means for transferring the water from chamber C and forcing it through the superheated pipe in chamber A.

4. In an apparatus of the character described, the combination of the casing, the horizontal, or approximately horizontal, plates dividing the space inclosed by the casing, into three compartments A, B, and C, the chamber A being uppermost and adapted to receive the exhaust-steam from the engine, the apparatus being provided with a passage-way for the exhaust-steam from chamber A to chamber B, and a passage-way for the water from chamber B to chamber C; the superheated coil located in chamber A, the open-ended cold-air pipes located in chamber B, means for forcing air through said pipes, the feed-water pipe-coil also located in chamber B, the oil-trap comprising a depending plate located near the extremity of the chamber C, but not reaching to the bottom of said chamber, and a short upwardly-projecting plate attached to the bottom of said chamber and extending a short distance above the lower extremity of the depending plate; and means for transferring the water from chamber C to the superheated pipe in chamber A and forcing it therethrough.

5. In an apparatus of the character described, the combination of the casing having a compartment A, a steam-pipe entering said compartment, a condensing-compartment B in communication with the compartment A, a compartment C located below, and being in communication with the compartment B, pipes passing through the compartment B, means for forcing air through said pipes, the pipe-coil located in the chamber A, and means for pumping liquid from the chamber C through said pipe-coil which is superheated by direct contact with the steam which first enters the compartment A and passes thence to the condensing compartment B.

570,436. **MEANS FOR CONTROLLING FLOW OF LIQUIDS.** GEORGE C. MCEWEN, Newark, N. J. Filed June 4, 1895. Serial No. 551,640. (No model.)

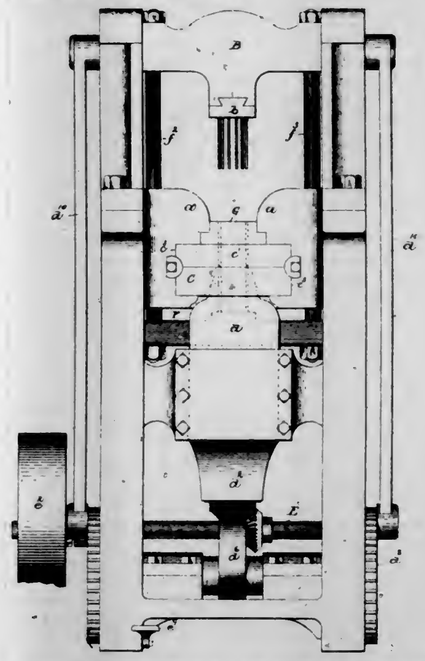


Claim.—1. In a device for controlling the flow of liquids, the combination with a service-tank and means for conducting liquid into the same; of a separate chamber or reservoir arranged within said tank; a stand-pipe in said chamber or reservoir leading from the same into said service-tank; a valve at the top of said stand-pipe held closed by the pressure of the column of liquid; and means connected with said valve and operated by the rise and fall of the liquid in the service-tank to control the movement of said valve.

2. In a device of the class described, the combination with a service-tank and means for conducting liquid into the same; of a chamber separate from and within said tank; a stand-pipe in said chamber communicating with the service-tank; a valve for said stand-pipe held closed by the pressure of the column of liquid; a float; and means connecting said float with the valve.

3. In a device of the class described the combination with a burner of a service-tank connected therewith; a chamber separate from and within the service-tank; a stand-pipe in said chamber; a valve held closed by the pressure of the column of liquid; a stem connected to said valve; and a float and lever connected to the stem.

570,437. **HEEL NAILING AND COMPRESSING MACHINE.** FREEBORN F. RAYMOND, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Feb. 4, 1890. Serial No. 339,167. (No model.)



Claim.—1. The combination in a heel-nailing machine of a templet having holes c^3, a former or work-support having holes *d'* which register with the holes c^3, and a gang of awls movable in the holes of the former or work-support, the parts being provided with mechanism for moving them in relation to each other whereby the heel is caused to be compressed between the former or work-support and the templet and while held compressed pricked by the movement of awls from the former or work-support toward the seat-surface of the heel, as and for the purposes described.

2. The combination in a heel-nailing machine of the templet *c'* having the holes c^3, the former or work-support having perforations *d'*, the reciprocating gang of awls *f'* movable in the holes *d'* of the former or work-support as specified, and a head carrying a gang or group of drivers *b'* to work through the holes c^3 of the templet whereby the heel blank is compressed against the templet, the awls caused to enter the same from the heel seat-surface to prick it, and the nails driven into the pricked holes from the tread-surface of the heel, substantially as described.

3. The combination in a heel-nailing machine of the templet having the holes c^3, the die C, the former or work-support D having the holes *d''*, the gang *f''* of awls operated through the holes of the former or work-support, and the gang *b'* of drivers operated through the holes of the templet, as and for the purposes described.

4. In a heel-nailing machine in combination with a templet having holes c^3 a side-molding die C, a perforated pressure-head or work-support to move the heel-blank against the templet and to mold it in conjunction with a die, a gang of awls movable through the former

or work support to prick the heel from its seat-surface, a nail-carrier to feed nails to the holes of the templet, and a gang of drivers to drive the nails through said templet-holes into the heel-blank while held by the former or work-support, as and for the purposes described.

5. The combination of a templet having the holes c^3, a perforated former or work-support, an upper reciprocating cross-head, a gang of drivers supported or carried thereby to enter the holes c^3 of the templet, a lower reciprocating cross-head carrying a gang of awls operating through the perforations of the former or work-support and connected with the upper cross-head whereby upon the movement of the heads in one direction the awls are caused to enter the heel and upon the movement of the cross-heads in the opposite direction the drivers are moved toward the heel to drive nails into the holes previously pricked by the awls, substantially as described.

6. The combination of the templet having holes c^3, a perforated former or work-support, a cam for moving and holding the same in operative relation to the templet, a lower cross-head carrying a gang of awls operating through the perforations of the former or work-support, an upper cross-head carrying a gang of drivers operating through the holes of the templet and connected with the lower cross-head, as and for the purposes described.

7. The combination of the templet having holes c^3, the die C having the die-cavity c, a perforated former or work-support a cam for moving and holding the same in operative relation to the templet, a lower cross head carrying a gang of awls operating through the perforations of the former or work-support, an upper cross-head carrying a gang of drivers operating through the holes of the templet and connected with the lower cross head, as and for the purposes described.

8. The combination of the cross-head B, the shaft d^7, the cranks d^8 d^9, connecting-rods connecting the crank-pins with the cross-head B the pressure cam d^6 carried by said shaft d^7, a pressure-head operated by said cam, a former or work-support mounted upon said pressure-head, a templet having the holes c^3, a lower cross-head having a gang of awls which work through the perforations of the former or work-support connected with the upper cross-head to be reciprocated thereby, and a gang of drivers carried by the upper cross-head to operate through the holes of the templet, substantially as described.

9. The combination of the cross-head B, the shaft d^7, the cranks d^8 d^9, connecting rods connecting the crank-pins with the cross head B, the pressure-cam d^6 carried by said shaft d^7, a pressure-head operated by said cam, a former or work-support mounted upon said pressure head, a templet having the holes c^3, a lower cross-head having a gang of awls which work through the perforations of the former or work-support connected with the upper cross-head to be reciprocated thereby, a gang of drivers carried by the upper cross head to operate through the holes of the templet, and a die C having the cavity c, substantially as described.

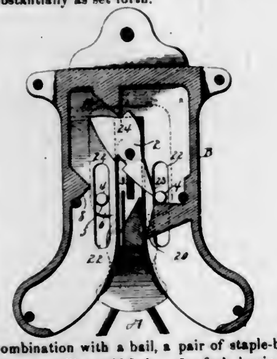
10. The combination of the cross-head B, the shaft d^7, the cranks d^8 d^9, connecting-rods connecting the crank-pins with the cross-head B, the pressure-cam d^6 carried by said shaft d^7, a pressure-head operated by said cam, a former or work-support mounted upon said pressure-head, a templet having the holes c^3, a lower cross-head having a gang of awls which work through the perforations of the former or work-support connected with the upper cross-head to be reciprocated thereby, a gang of drivers carried by the upper cross-head to operate through the holes of the templet, and a nail-carrier G, substantially as described.

11. The combination of the cross-head B, the shaft d^7, the cranks d^8 d^9, connecting-rods connecting the crank-pins with the cross-head B, the pressure-cam d^6 carried by said shaft d^7, a pressure-head operated by said cam, a former or work-support mounted upon said pressure-head, a templet having the holes c^3, a lower cross-head having a gang of awls which work through the perforations of the former or work-support connected with the upper cross-head to be reciprocated thereby, a gang of drivers carried by the upper cross-head to operate through the holes of the templet, a die C having the cavity c, and a nail-carrier G, substantially as described.

12. The combination of two perforated templets between which the heel-blank is compressed and held, a gang of awls operating through one of said templets, a gang of drivers operated through the other of said templets, the slide-block or cross-head for supporting the awls, a slide-block or cross-head for supporting the drivers, and connected with each other, the means for reciprocating the cross-heads and for moving one templet in relation to the other, and a start-and-stop motion to actuate the cross-heads to be first moved to cause the awls to operate and to be withdrawn, and the drivers to be then operated, as and for the purposes described.

570,438. BASKET BAIL OR FORK. Henry M. Weaver, Mansfield, Ohio, assignor to the Barr Cash and Package Carrier Company, same place. Filed June 2, 1896. Serial No. 594,025. (No model.)

Claim.—1. The combination with a fork having openings or slots therein, of a bail, slide-bolts therein, and latches loosely connected with the bolts and in position to be operated by the hook in raising the basket, substantially as set forth.

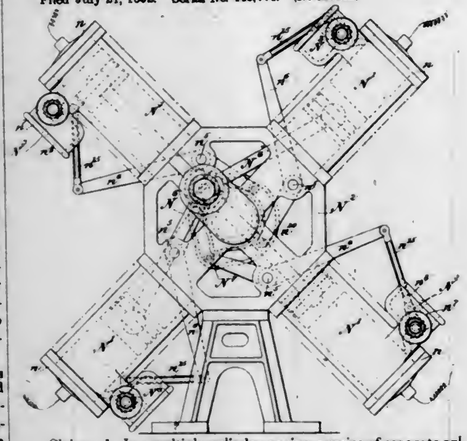


2. The combination with a bail, a pair of staple-bolts, and pivoted latches for controlling said bolts, of a fork having openings to receive said bolts, substantially as set forth.

3. The combination with a bail having guards or flanges with holes therein, staple-bolts arranged to slide in said holes and spring-actuated pivoted latches loosely connected with the bolts, of a fork having openings therein in its sides to receive these bolts, substantially as set forth.

4. The combination with a fork having projections therein and elongated slots in the sides, of a bail, a pivoted toggle or tumbler which engages and is controlled by the projections, slide-bolts and spring-actuated latches connected with the bolts for sliding them, substantially as set forth.

570,439. ENGINE. Edward J. Pennington, Mount Carmel, Ill. Filed July 21, 1892. Serial No. 440,771. (No model.)



Claim.—1. In a multiple-cylinder engine, a series of separate cylinders mounted radially upon an open frame, each having a valve-casing and ports as described, a central crank-shaft, pistons, and rods connecting the pistons and crank-shaft, combined with a grooved cam mounted upon the shaft, valve-levers or bell-cranks operated by the grooves of said cam, tapering ported valve barrels and connections between said barrels and the valve-levers or bell-cranks, substantially as set forth.

2. In a multiple-cylinder engine, the combination of a series of cylinders, a frame, an armed support secured to the frame and constituting a bearing for the crank-shaft, said armed frame being provided with bearings for the pivotal supports of the valve-operating levers, substantially as set forth.

3. In a multiple-cylinder engine, a series of cylinders each having a valve-casing containing an inlet-nozzle, an exhaust-branch and a support for a ported valve arranged transversely of the inlet-nozzle, and a frame constituting a bearing for the crank-shaft, and pivotally sustaining the valve-operating levers, combined with a grooved cam mounted upon the shaft, valve-levers or bell-cranks operated by the grooves of said cam, tapered ported valve-barrels, connections between said barrels and the valve-levers or bell-cranks, and crossed-pipe connections uniting, respectively, the several inlet-nozzles and exhaust-branches, substantially as set forth.

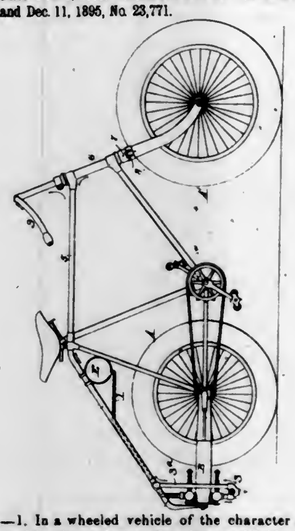
570,440. MOTOR VEHICLE. Edward J. Pennington, Chicago Heights, Ill., assignor to the Motor Cycle Company, Chicago, Ill. Filed Mar. 21, 1893. Serial No. 467,044. (No model.) Patented in England Dec. 11, 1895, No. 23,771.



Claim.—1. In a wheeled vehicle, an explosive propelling-engine comprising a cylinder open at the lower end and closed at the upper end and provided at the lower end with extensions constituting bearings for the engine-shaft, said cylinder being secured to the vehicle-frame and the engine-shaft geared to a supporting-wheel of the vehicle, substantially as described.

2. In combination with a vehicle-frame having a vertical and upper and lower bars, an explosive-engine secured to said frame parallel with the vertical bar in the space between the upper and lower bars and having its shaft geared to a supporting-wheel of the vehicle, substantially as described.

570,441. MOTOR VEHICLE. Edward J. Pennington, Cleveland, Ohio. Filed Feb. 6, 1895. Serial No. 537,676. (No model.) Patented in England Dec. 11, 1895, No. 23,771.

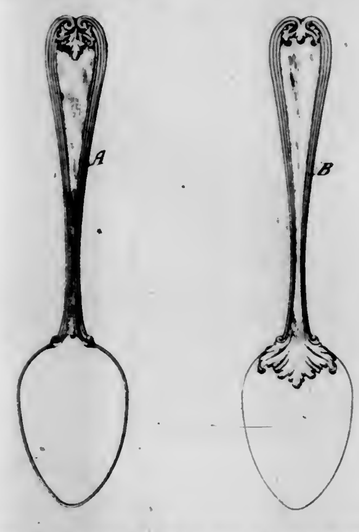


Claim.—1. In a wheeled vehicle of the character described, a motor operated by the explosion of a mixture of fluid and air, and a tubular framework constituting exhaust-pipes for said motor, combined with a hollow fork-post and a hollow handle bar, each in communication with said exhaust-pipes, and having, respectively, apertures near the foot-rests and handles for the escape of products of combustion, substantially as and for the purpose set forth.

2. In a wheeled vehicle of the character described, a motor operated by the explosion of a mixture of combustible fluid and air, tubular framework constituting exhaust-pipes for said motor, a hollow fork-post, and a hollow handle-bar, said post and bar having communication with said exhaust-pipes, and provided, respectively, with apertures near the foot-rests and handles for the escape of products of combustion, combined with a cock whereby said products may be directed to said exhaust-pipes or allowed to escape to the open atmosphere, substantially as and for the purposes set forth.

DESIGNS.

26,212. SPOON. Paulding Farnham, New York, N. Y., assignor to the Tiffany & Company, same place. Filed June 15, 1895. Serial No. 552,957. Term of patent 7 years.



Claim.—1. In a design for spoons, forks and other utensils, the front face A, substantially as shown.

2. In a design for spoons, forks and other utensils, the back face B, substantially as shown.

3. The design for spoons, forks and other utensils, consisting of the front face A and back face B, substantially as shown.

26,213. CANE OR UMBRELLA HANDLE. Albert Rosenstein, Lancaster, Pa. Filed July 22, 1896. Serial No. 600,172. Term of patent 3½ years.



Claim.—The design for a cane or umbrella handle, as shown and described.

26,214. HANDLE FOR BUTTON-HOOKS OR SIMILAR ARTICLES. Theodore W. Foster, Providence, R. I. Filed June 11, 1896. Serial No. 595,219. Term of patent 7 years.



Claim.—The design for handles for button-hooks and similar articles herein shown and described.

26,215. BRUSH. JOHN M. KERR, Camden, N. J. Filed Aug. 29, 1896. Serial No. 604,337. Term of patent 7 years.



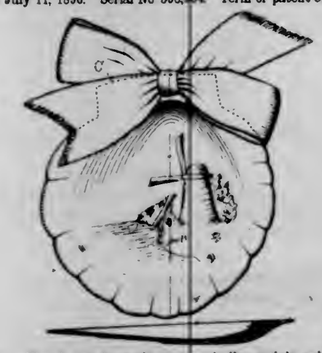
Claim.—The design for a brush herein shown and described, the same comprising a brush of rectangular outline, a handle at right angles therewith and a brush on the end of said handle round in outline and tapered from its center toward both ends, as set forth.

26,216. BACK FOR BRUSHES OR SIMILAR ARTICLES. CHARLES D. GRAFF, New York, N. Y., assignor to Redlich & Co., same place. Filed Sept. 11, 1896. Serial No. 605,540. Term of patent 3½ years.



Claim.—The design for a back for brushes or similar articles, as herein shown and described.

26,217. PIN-TRAY. CORINNA THACHER ROGERS, Ansonia, Conn. Filed July 11, 1896. Serial No. 598,304. Term of patent 3½ years.



Claim.—The design for a pin-tray or similar article, substantially as shown and described.

26,218. BOX. GEORGE MILLER, Baltimore, Md. Filed Aug. 20, 1896. Serial No. 603,420. Term of patent 14 years.



Claim.—The design for a box the upper portion of which is cylindrical in form on its exterior and the lower portion of which is rounded off on its exterior at the corners for a distance rising from the bottom approximately to the vertical center of the box, substantially as set forth.

26,219. CIGAR-LIGHTER. GEORGE F. KRIEGER, Chicago, Ill. Filed Mar. 23, 1896. Serial No. 584,555. Term of patent 3½ years.



Claim.—The design for a cigar-lighter herein shown and described.

26,220. SHOULDER-REST FOR VIOLINS. HENRY O. PEABODY, Boston, Mass. Filed Aug 5, 1896. Serial No. 601,817. Term of patent 14 years.



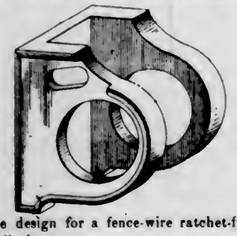
Claim.—The design for a shoulder rest or support for violins substantially as herein shown and described.

26,221. SUPPORT FOR CARBOY-STANDS. HENRY J. GRELL, Johnson's Creek, Wis. Filed Mar. 7, 1896. Serial No. 582,269. Term of patent 7 years.



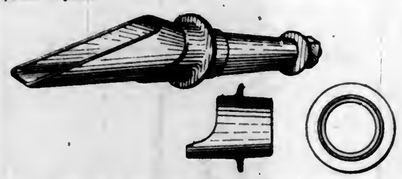
Claim.—The design for a supporting-frame for carboys, substantially as shown and described.

26,222. FENCE-WIRE RATCHET-FRAME. OLIVER P. SCHRIVER, Newport, Ky. Filed Apr. 30, 1896. Serial No. 589,733. Term of patent 7 years.



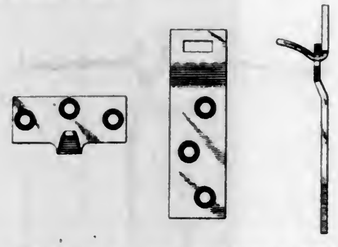
Claim.—The design for a fence-wire ratchet-frame, as herein shown and described.

26,223. COLLAR FOR AXLE-SKEINS. JOHN M. STUDEBAKER, South Bend, Ind. Filed Apr. 25, 1896. Serial No. 589,128. Term of patent 14 years.



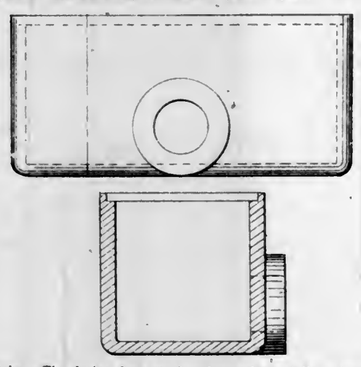
Claim.—The design for collars for axle-skeins as hereinbefore set forth.

26,224. SEPARABLE HINGE. WILLIAM ROMUNDER and EDWARD J. FELLMAN, Milwaukee, Wis. Filed Feb. 13, 1896. Serial No. 579,181. Term of patent 14 years.



Claim.—The design for a hinge, substantially as shown and described.

26,225. STRAINER-BOX. IRA BRINDLE, Markes, Pa. Filed July 10, 1896. Serial No. 598,756. Term of patent 7 years.



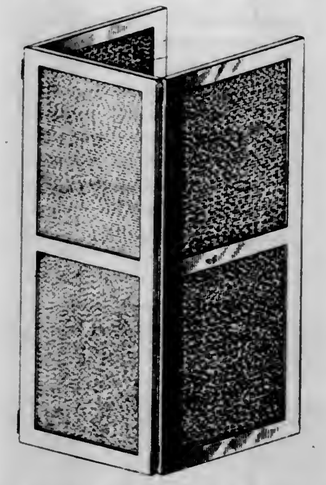
Claim.—The design for a strainer-box substantially as herein described and shown.

26,226. ROOF-CAP. WILLIAM W. TURNER, Chicago, Ill. Filed Feb. 23, 1895. Serial No. 539,439. Term of patent 14 years.



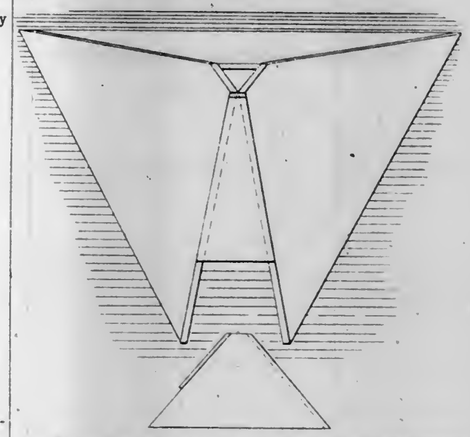
Claim.—The design for a roof-cap substantially as herein shown and described.

26,227. VOTING-BOOTH. ALEXANDER A. SELKIRK, St. Louis, Mo. Filed Sept. 14, 1896. Serial No. 605,833. Term of patent 3½ years.



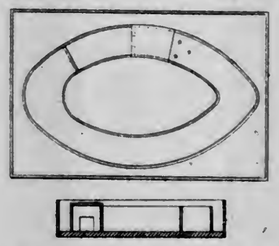
Claim.—The design for voting-booths, substantially as herein shown and described.

26,228. HOG-PEN. JAMES LOGAN GILMORE, Sharpsburg, Iowa. Filed Aug. 6, 1856. Serial No. 601,929. Term of patent 14 years.



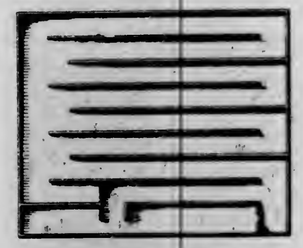
Claim.—The design for a hog-pen substantially as hereinbefore described and shown.

26,229. PUZZLE-BOX. HENRY SCHNEIDER, Tottenville, N. Y. Filed Aug. 5, 1896. Serial No. 601,814. Term of patent 3½ years.



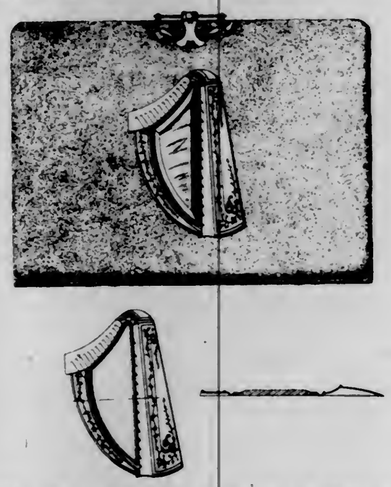
Claim.—The design for puzzle boxes or cases, herein shown and described.

26,230. PUZZLE-BOX. HAROLD WILSON, New York, N. Y. Filed Aug. 17, 1896. Serial No. 603,068. Term of patent 3½ years.



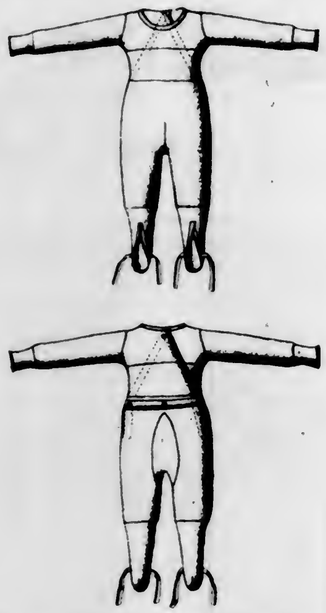
Claim.—The design for a puzzle box, substantially as shown and described.

26,231. MOUNTING FOR BOOK OR ALBUM COVERS. WILLIAM A. HOLMAN, Philadelphia, Pa. Filed Aug. 19, 1896. Serial No. 603,276. Term of patent 7 years.



Claim.—The design for a mounting for book and album covers, substantially as herein shown and described.

26,232. UNDERGARMENT. IGNATZ GOLDBERGER, Cleveland, Ohio. Filed July 21, 1896. Serial No. 600,071. Term of patent 14 years.



Claim.—The design for an undergarment, substantially as herein shown and described.

26,233. BADGE. GEORGE W. MAC KENZIE, Beaver, Pa. Filed Aug. 31, 1896. Serial No. 604,473. Term of patent 3½ years.



Claim.—The design for a badge as herein shown and described.

TRADE-MARKS

REGISTERED OCTOBER 27, 1896.

29,034. WRITING-PAPER AND ENVELOPS. SOUTHWORTH COMPANY, Mittineague, Mass. Filed Sept. 29, 1896.

PEARL

Essential feature.—The word "PEARL." Used since 1892.

29,035. SMOKING-TOBACCO. THE AMERICAN TOBACCO COMPANY, Newark, N. J., and New York, N. Y. Filed Mar. 20, 1896.

ENSIGN

Essential feature.—The word "ENSIGN." Used since July, 1886.

29,036. SMOKING-TOBACCO. THE AMERICAN TOBACCO COMPANY, Newark, N. J., and New York, N. Y. Filed Mar. 20, 1896.

Maryland Club

Essential feature.—The words "MARYLAND CLUB." Used since September, 1894.

29,037. WHISKY. ALEX. D. SHAW & Co., New York, N. Y. Filed Sept. 15, 1896.

Genuine. Attest

Alex. D. Shaw & Co.

Essential feature.—A facsimile signature of the registrant, the words "GENUINE ATTEST," and the initials "A. D. S. & Co." Used since August 15, 1896.

29,038. JAPAN TEAS. E. B. MILLAR & COMPANY, Chicago, Ill. Filed Sept. 23, 1896.

ROSE

Essential feature.—The word "ROSE." Used since 1876.

29,039. SUBSTITUTE FOR EGGS. THE FRENCH MANUFACTURING CO., Philadelphia, Pa. Filed Aug. 31, 1896.

Nutrine

Essential feature.—The word "NUTRINE." Used since July 1, 1896.

29,040. BUTTER. BARTRAM BROS., New York, N. Y. Filed Sept. 8, 1896.

BB

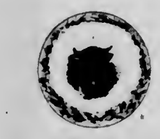
Essential feature.—The letters "B B," arranged as a monogram. Used since August 1, 1896.

29,041. CANNED FOOD. CHARLES S ALDEN and CHARLES F. NICHOLSON, Rochester, N. Y. Filed Sept. 10, 1896.

HILL

Essential feature.—The word "HILL." Used since May 1, 1896.

29,042. PRESSED CORNED BEEF. A. H. ATWOOD COMPANY, Boston, Mass. Filed Sept. 4, 1896.



Essential feature.—A representation of a wreath composed of ears of corn encircling the head of a steer. Used since August 21, 1896.

29,043. EXTERNAL REMEDY FOR HEADACHE. JOSEPH B. GOTTHELF, Memphis, Tenn. Filed Aug. 25, 1896.

"GOTTHELF'S SURE RELIEF"
S.H.C.

Essential feature.—The words "GOTTHELF'S SURE RELIEF" and the letters "S. H. C." Used since July, 1894.

29,044. REMEDIES FOR RHEUMATISM AND ALL BLOOD DISEASES. HARRY H. HYAMS, Cincinnati, Ohio. Filed Sept. 14, 1896.



Essential feature.—A representation of three men in a canoe, one of whom is holding a bottle aloft, while in the distance is the setting sun inclosed by the words "PURITAN BLOOD PURIFIER ABOVE THEM ALL." Used since June 15, 1893.

29,045. CHEWING-GUM. FOREST CITY CHEMICAL GUM CO., Portland, Me. Filed Sept. 12, 1896.

BROMO-PEPSIN CHEWING GUM

Essential feature.—The words "BROMO-PEPSIN CHEWING GUM," together with a monogram composed of the letters "F C C G Co." Used since November 20, 1895.

29,046. TONIC STIMULANT AND REMEDY FOR NERVOUSNESS. WILLIAM R. WARNER, Philadelphia, Pa. Filed Sept. 11, 1896.

TONO

Essential feature.—The word "TONO." Used since June 1, 1896.

29,047. EFFERVESCENT POWDERS, SALTS, AND TABLETS. WILMER L. KELLER, Baltimore, Md. Filed Sept. 19, 1896.

BROMIX.

Essential feature.—The word "BROMIX." Used since 1891.

29,048. GELATIN CAPSULES OF SANDALWOOD AND OTHER OILS. SHARP & DOHME OF BALTIMORE CITY, Baltimore, Md., New York, N. Y., and Chicago, Ill. Filed Aug. 20, 1896.

SANTALETS

Essential feature.—The word-symbol "SANTALETS." Used since July 25, 1896.

29,049. AMMONIA. THE NATIONAL AMMONIA COMPANY, St. Louis, Mo. Filed Aug. 17, 1896.



Essential feature.—The words "AMERICAN, ANHYDROUS, AND, AQUA, AMMONIA," arranged with one common capital letter "A" of a height equal to the other letters of the words and forming the initial to each of them. Used since May 15, 1896.

29,050. MUCILAGE, PASTE, AND GLUE. DIAMOND INK CO., Milwaukee, Wis. Filed June 10, 1895.

DIAMOND

Essential feature.—A representation of a diamond-shaped figure and the word "DIAMOND." Used since 1876.

29,051. COMPOSITION FOR REPAIRING PNEUMATIC TIRES. BOSTON WOVEN HOSE AND RUBBER COMPANY, Boston, Mass., New York, N. Y., Chicago, Ill., San Francisco, Cal., and Cleveland, Ohio. Filed Sept. 18, 1896.

VIMOID

Essential feature.—The word "VIMOID." Used since July, 1896.

29,052. PNEUMATIC OR SOLID-RUBBER TIRES. L. C. CHASE & Co., Boston, Mass. Filed Sept. 19, 1896.

"CHASE"

Essential feature.—The word "CHASE." Used since July 1, 1896.

29,053. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 3, 1896.

ANCHOR BRAND

Essential feature.—The words "ANCHOR BRAND" and a representation of an anchor. Used since September 29, 1896.

29,054. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO A. ALDEN & Co., Boston, Mass. Filed Oct. 3, 1896.

29,054.

SUN BRAND

Essential feature.—The words "SUN BRAND" and a representation of the sun. Used since October 1, 1896.

29,055. CERTAIN APPARATUS FOR TENNIS, CROQUET, GOLF, AND OTHER GAMES AND SPORTS. A. G. SPALDING & BROS., Chicago, Ill. Filed Sept. 14, 1896.



Essential feature.—A representation of a base-ball. Used since 1876.

29,056. LENSES AND LENSE-CASES AND ALL OPTICAL GOODS USING LENSES. JAMES W. PATTERSON, New York, N. Y. Filed Mar. 31, 1896.

XRAY

Essential feature.—The word "XRAY." Used since March 30, 1896.

29,057. CAMERAS, BOXES, PLATE-HOLDERS, AND PACKING-CASES. SCHOENFELDER & KEHLE, Newark, N. J. Filed July 25, 1896.

SELF TONING

Essential feature.—The words "SELF TONING." Used since May 1, 1896.

29,058. METALS FOR LINOTYPING STEREOTYPING, AND ELECTROTYPING. JOHN J. FROWEIN, Cleveland, Ohio. Filed Sept. 8, 1896.

FLUX



Essential feature.—The word "FLUX" and a pictorial representation of a melting-pot and furnace. A man stands beside the furnace engaged in stirring the contents of the pot. The furnace and man are surrounded by a ring border, and at the sides of the picture are scrollwork designs, and the whole is surrounded by straight border-lines. Used since June 1, 1893.

29,059. CUTLERY AND EDGE-TOOLS. MILLER, SLOSS & SCOTT, San Francisco, Cal., and New York, N. Y. Filed June 8, 1896.

STILETTO

Essential feature.—The word "STILETTO" and a representation of a stiletto either separately used or associated together. Used since January, 1896.

29,060. LAMP-CHIMNEYS. THOMAS EVANS COMPANY, Pittsburg, Pa. Filed July 13, 1896.

TIP TOP

Essential feature.—The words "TIP TOP." Used since July 6, 1896.

PHOTO-LITH. THE NORRIS PETERS CO. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

PHELPS *v.* HARDY *v.* GATTMAN AND STERN.

Decided July 30, 1896

1. DIVISIONAL APPLICATION—ORIGINAL DISCLOSURE—DETAILS.

In a divisional application the addition of mere details, such as braces for a frame, does not affect the status of such application as properly divisional, especially when such details were shown in other figures of the original not included in the divisional application.

2. INTERFERENCES—PURPOSE OF RULE 116—DIVISIONAL APPLICATION—ORIGINAL APPLICATION AS EVIDENCE.

The sole purpose of Rule 116 is to determine the position of parties as plaintiff and defendant, in order to determine who shall first take testimony. Failure of junior party to bring motion to shift the burden of proof raises no presumption that his application involved is not a division of an earlier one. In any case he may introduce his earlier one to show that he made the invention of the issue before the date of the application involved.

3. REDUCTION TO PRACTICE—EXECUTION OF SPECIFICATION—INCOMPLETE APPLICATION.

Neither an executed specification nor an incomplete application nor anything except a complete allowable application can be regarded as a constructive reduction to practice.

APPEAL from Examiners-in-Chief.

CAR-FENDERS.

Application of Abel M. Phelps filed April 21, 1894, No. 508,477. Application of John M. Hardy filed January 10, 1894, No. 496,442. Application of Jesse I. Gattman and Solomon Stern filed November 18, 1893, No. 491,305.

Messrs. Lawyer & Edwards for Phelps.
Mr. V. M. Dorsey for Hardy.
Mr. Solomon Stern for Gattman and Stern.

SEYMOUR, *Commissioner:*

This is an appeal by Hardy from the decision of the Examiners-in-Chief awarding priority of invention to Phelps on the following issue:

The combination with a car, of a fender, comprising a frame secured to the running-gear, independent of the body of the car, and a body of yielding material extending between the frame and the body of the car, whereby the fender-frame is not affected by the rocking of the car-body, substantially as shown and described.

Gattman and Stern took no appeal from the decision of the Examiners-in-Chief adverse to them.

Neither of the two present contestants has ever actually reduced the invention to practice. Phelps's case is that he conceived the invention and made two sketches in May, 1892, while he was in Burlington, Vt. These sketches he showed to Turke, Allen, and Pater, directors of the Burlington Street Railway. These parties are not called as witnesses for Phelps; but he produces the two sketches—"Phelps's exhibit, sketch No. 2" and "Phelps's exhibit, sketch No. 3." Soon after these sketches were made he started for Europe and did not return until October, 1892. About the last of December, 1892, he made another sketch, "Phelps's exhibit, drawing No. 1," which he showed to Greene in January, 1893, and to Clement in the early spring of this year. During the larger part of January, February, and March, 1893, he was confined to his house with the grippe and did not do much work until early spring. In May, 1893, he went to Burlington to deliver lectures on surgery in the University of Vermont, and about July 10, 1893, he again sailed from New York to Europe, returning in September, when he called in Magee to do such detail work as to make measures, weights, and adjustments to carry out the practical part of the work on this and other fenders that he had invented. During the first week of December, 1893, at the dinner-table with Harriott and Hardy, he explained to them by a pencil-sketch made on an envelop his idea of a car-fender. This sketch is not produced, but it is stated to show a fender substantially in principle like that shown in "Exhibit drawing No. 1" and almost identical with "Exhibit No. 3." During the early part of December, 1893, he handed to his attorney all material relating not only to the specific invention under consideration, but to other fenders, with instructions that proper drawings be made for an application for a patent. On January 8, 1894, an application was filed in this Office. Upon requirement and suggestion of the Office certain matter was eliminated from that application, and the application under consideration was filed April 21, 1894.

Hardy's alleged date of conception is September, 1893. A sketch—"Hardy's exhibit, No. 1"—was made the latter part of September or the first part of October, 1893, and it, together with a sketch which was given to his attorney to prepare his application for patent, was shown to Beasley and Lake soon after. He explained his invention to Phelps after the dinner in December, 1893, at which Phelps had shown him by the envelop-sketch his own invention, and during this explanation Phelps claimed that the two inventions were the same in principle. The sketch given by Hardy to his attorney is not produced, as it has been lost. The application was filed complete January 10, 1894.

There seems to be no question about Hardy's having a full conception of the invention at the time set up in his preliminary statement, and that some time

in December, 1893, he explained it to Phelps, after dinner, in Phelps's room, where Phelps had invited him to look at a more elaborate illustration of his invention than had been shown by the sketch on the envelop at dinner. While Hardy concedes that Phelps showed and explained to him a car-fender in December, 1893, yet he contends that it was entirely different from the one forming the subject of this controversy, and in his testimony he attempts to convey the impression that Phelps was not an inventor of the issue at all, but got his idea of the invention from Hardy's explanation. From the testimony of the parties, however, it is believed that both are independent inventors, Phelps having a conception of the invention and having described it as early as January, 1893, while Hardy's earliest date is September, 1893.

At the taking of the testimony notice was given that at the hearing the application of Phelps, filed January 8, 1894, Serial No. 496,086, would be introduced as evidence to show that the application in interference is a division of the prior application. The records in the two applications show clearly that the latter is a division of the former. When the application of January 8, 1894, was filed, it showed and described two species, one illustrated by Figs. 6 and 6^a, and the other by the remaining figures. In Figs. 6 and 6^a, in the general statement of invention, especially count 6, and in original claim 9, the subject-matter of the issue of this interference is substantially set forth. The original application also contained generic claims to cover both species and specific claims to the species shown by other figures than 6 and 6^a. The Office action of March 27, 1894, notified applicant that this application—

will support no claim generic enough to cover the construction in Figs. 6 and 6^a, along with the rest, (claims 3, 4, 12, and 14 having been allowed.) Referring to said Figs. 6 and 6^a, as at present advised, "The combination with a car, of a fender, comprising a frame secured to the running-gear, independent of the body of the car, and a body of yielding material extending between the frame and the body of the car, whereby the fender-frame is not affected by the rocking of the car-body, substantially, etc.," is new and allowable, and if applicant desires to secure such matter a separate application should be made for it at once.

The Office thus held that both species were allowable, and while it required applicant to remove from this case the species which is in the present issue, yet at this time applicant had made no election between the species, and he could, if he had desired, have removed from the original application the species covered by Figs. 1 to 5 and allowed the species shown by Figs. 6 and 6^a to remain in the parent case. Had he done so the original application would have been put in interference and by virtue of its filing date Phelps would have been the senior party. He chose, however, to adopt the suggestion of the Office and file a separate application for the subject-matter illustrated by Figs. 6 and 6^a; but in doing this the record clearly shows that he considered the second application as a division of the first. On April 10, 1894, he filed a paper, saying:

In response to Examiner's letter of the 27th ult., calling for a division of this application, applicant desires to state that a divisional application is now being prepared and will be filed on or before the 15th inst.

On April 16, 1894, he said:

It is respectfully requested that applicant be allowed five days from the 15th inst. to file a divisional application in this case, according to the requirements of the Examiner's letter of the 27th March, 1894.

On April 21, 1894, he made the following action:

This application is amended as follows: First, by canceling the description of Figs. 6 and 6^a, page 5, lines 5 and 6 from the bottom; second, by canceling that part of the specification beginning with paragraph 3, page 12, and ending with paragraph 2, page 14, inclusive; third, by canceling Figs. 6 and 6^a of the drawings. The above canceled parts form the subject of a divisional application bearing even date and filed herewith.

It seems clear, therefore, that the two applications are continuous and the latter takes date for the purposes of this interference as that of the original.

Hardy contends that the present application shows braces for the frame which do not appear in original Figs. 6 and 6^a, and that therefore there is matter shown in this application not shown in the original, and that this application cannot be regarded as a true division of the earlier one. In the species illustrated by the other figures of the original drawings than Figs. 6 and 6^a braces are shown. These are, however, mere matters of minor detail that do not affect the scope of the subject-matter of the second application, which is the same and no more than what was carved out of the original application. Applying all the tests laid down by the Office decisions, this application is a true division of the earlier one.

Hardy contends also that, giving Phelps the benefit of his earlier application and considering the present application as a division, his date of constructive reduction to practice cannot be carried back to the date of his original application, because he did not make the claim in issue in his first application, and cites Rule 116 in support of this contention. It has been repeatedly held that the sole purpose of this rule is to determine the relation of the parties as plaintiff and defendant—*i. e.*, to fix a rule as to who should first take testimony. As the interference was declared, the burden was on Phelps to first take testimony to establish his case. Had Phelps chosen to do so he could have brought a motion to shift the burden of proof; but, having failed to do this, there is no presumption that the present case is not a division of the first. But whether or not it is a division of the earlier application is immaterial and does not prevent him from introducing the first application as evidence to show that he made the invention prior to April 21, 1894, the date of the present case. (*O'Shaughnessy* v. *Van Depoele*, 62 O. G., 1063.)

Hardy also contends that, giving Phelps the date of his application of January 8, 1894, his own application should be regarded as a constructive reduction to practice on January 5, 1894, the date he filed parts of it, and that the fact that his specification was executed by oath and signed December 21, 1893, should be considered.

The rule is that only a complete allowable application can be considered as a constructive reduction to practice. His executed specification of December 21, 1893, and the incomplete application of January 5, 1894, are neither of them that.

Phelps being the first to conceive the invention and the first to constructively reduce to practice by filing a complete allowable application clearly describing the invention, is the first inventor, and the question as to diligence need not be considered.

The decision of the Examiners-in-Chief in awarding priority of invention to Phelps is affirmed.

DECISIONS OF THE U. S. COURTS.

Supreme Court of the United States.

AMERICAN ROAD MACHINE COMPANY *et al.* *v.* PENNOCK & SHARP COMPANY, LIMITED.

Decided October 19, 1896.

1. TAFT—MACHINE FOR MAKING, REPAIRING, AND CLEANING ROADS—INVALID.

Claims 4, 10, 11, and 13 of Letters Patent No. 331,920, granted December 8, 1885, to G. W. Taft, for a machine for making, repairing, and cleaning roads, construed in connection with the prior art and *Held* to be invalid.

2. ESTOPPEL—ACQUIESCING IN REJECTION BY OFFICE

Where the patentee acquiesced in the ruling of the Patent Office that the application of hand-wheels to a road-grading machine for imparting motion to the devices for raising and depressing the scraper-blade was old, and, for the purpose of obtaining his patent, restricted his claims in this particular to momentum or balance wheels, *Held* that he is bound by such restriction.

APPEAL from the Circuit Court of the United States for the Eastern District of Pennsylvania.

Mr. F. P. Fish for the appellants.

Mr. J. L. Jackson, *Mr. L. L. Bond*, *Mr. A. H. Adams*, and *Mr. C. E. Packard* for the appellee.

Mr. Chief Justice FULLER delivered the opinion of the Court.

This was a bill for infringement of claims 4, 10, 11 and 13 of Letters Patent No 331,920, issued to G. W. Taft, December 8, 1885, for a "machine for making, repairing and cleaning roads." The defenses were want of patentable novelty; anticipation; and non-infringement. On hearing the circuit court, held by Judge Butler, entered a decree dismissing the bill. (45 Fed. Rep., 252.)

The application was filed May 6, 1885, and the specification declared:

The objects of my present invention are to provide an efficient and convenient "stiff-angled" or non-reversible road-machine in which the ends of the blade are positively sustained against the working strain, while permitted vertical adjustment by means of push-bars extending from the rear of the machine to the back of the blade; also, to provide in a non-reversible road-machine a vertically-swinging thrust-frame and push-bar arrangement that will permit the required adjustments of the scraper in relation to the plane of the road; also, to provide in a road-machine a hand-wheel-operating device for imparting motion to the blade-elevating mechanism, whereby the respective ends of the blade can be raised and depressed in a quick, easy, and convenient manner; also, to provide an improved lifting mechanism for elevating and depressing the blade; also, to afford facilities in a road-machine, in connection with hand-wheel-operating devices, of a brake or stop device for retaining the hand-wheel, lifting mechanism, and blade at position of adjustment.

Then followed the drawings and the description, omitting a part of which, the specification thus continued:

The front end of the blade D is suspended by a bar or link, G, from the arm of a lever, H, that is arranged along the side of the machine and fulcrumed at *h* on a support, A^3, that projects from the carriage-frame. The rear arm of said lever is provided with a gear-segment, H', that meshes with an actuating-pinion, I, by which the arm of the lever may be moved up and down for raising and depressing the front end of the lever and blade. The rear end of the blade is connected by a link, G', to a vertically-sliding rack, J, that meshes with an actuating-pinion, I', and is guided by a flanged friction-roll, K, pivoted on a suitable bracket or support connected to the carriage-frame A. The pinion I that operates the lever H may be provided with flanges *i i'*, for embracing the sides of the internally-toothed segment H', and thus serving to guide and retain said segment and its lever H in proper relation therewith as it is moved up and down by the rotation of the hand-wheel M. The rack J and its guide-roll K are *preferably* fitted to each other by intermatching grooved and flanged surfaces, as indicated in Figs. 3 and 3^a, and the operating-pinion I' is provided with flanges *j* to embrace the sides of the rack, so that said rack is confined and guided in proper relations as it slides up and down, and works with but little friction or resistance when adjusting the blade.

Hand-wheels M and M' are provided for imparting motion to the respective pinions I I' or operating-gear of the blade-lifting mechanism when elevating and depressing the blade or adjusting the blade to differently-inclined positions in relation to the plane of the road. These wheels may be made some three feet in diameter, (more or less,) with round or other formed rims that can be conveniently grasped by the hand at any part of their periphery. In the present instance the hand-wheels and their pinions are respectively attached to each other or formed on the same hub. They are mounted on a shaft, L, that extends across the carriage A and is supported in bearings on suitable standards, *l l'*. One of the wheels (M or M') is arranged to turn loose on shaft L, so that the two wheels can be revolved independently of each other for separately adjusting either end of the blade required. The rims of the hand-wheels are made sufficiently heavy to act as a balance against the weight of the blade-lifting devices, so that the momentum of the wheel will greatly assist the operator in the manipulation of the machine Short shafts or studs may be used in lieu of shaft L as journals for the hand-wheels and gears, if desired. I prefer, however, to have the shaft extend across the machine, as it makes a stronger and more rigid construction.

Brake mechanism is arranged in connection with the carriage for stopping and retaining the hand-wheels to hold the blade at any position of adjustment. Said brake mechanism may be made, as indicated, with levers *n*, having one end fulcrumed beneath the platform at *n'*, and the other provided with a pad or shoe, N, to press against the rim of the hand-wheel, a suitable spring, *s*, being connected therewith to give the required holding pressure. A foot piece or pedal, P, arranged at a convenient position enables the attendant to depress the lever and brake-shoe by placing his foot thereon when he desires to throw off the brake for releasing the hand-wheel.

In lieu of connecting the hand-wheel and blade-lifting bar or lever by means of a toothed pinion and rack, said parts may be connected by a strap or chain, (one or more,) one end whereof connects with the lift bar or lever, while the other end is arranged to wind onto the pinion or hub on the hand-wheel, or onto a sheave geared to the hand-wheel hub.

The operation of this road-machine is obvious from the drawings and foregoing description. The operator, standing upon the platform A, when he desires to raise or depress either end of the blade, places his foot upon the brake-pedal P corresponding to the end to be adjusted, and grasping the rim of the wheel where it is most convenient to his hand, swings it backward or forward (accordingly as required) with a free and easy action, and to a greater or less extent, as desired, then releases the pedal and the brake or stop is automatically applied by its spring *s*.

A hand-wheel, in combination with and for imparting motion to mechanism for elevating and depressing the scraper or blade in a road-machine, is of great practical utility and advantage, as it enables the operator to handle and control the machine with greater ease and facility than with a lever handle or crank, and does not necessitate his taking an awkward or constrained position at any part of the action. The rim of the wheel, acting by its momentum as a balance-wheel, also enables the operator by a quick movement to suddenly throw the blade completely up from the ground to avoid contact of large stones or other obstructions while the machine is in motion. Said rim also serves as a continuous seat for the stop or brake, so that the adjustment can be held with the blade at any degree of elevation desired.

A hand-wheel *adapted to act by its peripheral momentum, or as a balance-wheel, for assisting or augmenting the throw or movement when adjusting the scraper*, in combination with *the scraper-blade and* blade-adjusting mechanism, for the purpose specified, is an important feature of my invention.

Hand-wheels may be employed for elevating and depressing the scraping-blade in a road-machine, in combination with connections or lifting devices of other construction and arrangement from those herein shown, with beneficial results, and I so intend to employ said hand-wheels; and I have in other applications (see Serial Nos. 167,212 and 173,968) for Letters Patent described and claimed certain combinations in which other forms of lifting mechanism are employed for effecting the vertical adjustment of the blade.

I am aware that a railroad snow-plow or track-clearer has heretofore been patented, in which the plow was braced from the car-axle by parallel braces rigidly connected to the plow; and that a swinging transverse scoop or shovel pivoted between the ends or rearwardly-extending braces of equal length, and in connection with a wheeled carriage, has also been shown in another patent. I am also aware that other patents exhibit road scrapers wherein braces or links are shown which connect blade-supporting standards in rear of the blade, with one of the side bars of the carriage-frame. Such devices I do not therefore herein claim, as neither of them attain the results incident to my improvement—viz., perfect flexibility of adjustment with direct support or thrust under all conditions of use and positions of adjustment.

[The foregoing words in italics were inserted by way of amendment, the disclaimer being preceded by the statement: "Regarding the first claim for recognition of the state of the art, insert at the end of the descriptive part of the specification, page 9, the following clause, viz."]

Of the fifteen claims, the first, fourth, fifth, tenth, eleventh and twelfth were:

1. In a machine for grading and clearing roads, the combination, with a scraper bar or blade suspended from the carriage be-

tween its front and rear wheels, of thrust-bars extending from the axle or rear of said carriage and attached to the back of said scraper near its ends by connecting-joints that permit upward and downward adjustment at each end of the scraper-blade independent of the other, substantially for the purpose set forth.

4. In a road-grading machine, a hand-wheel in combination with the blade-elevating devices, for imparting motion to said devices, when raising and depressing the blade, substantially as hereinbefore set forth.

5. In a machine for grading and cleaning roads, the combination, with the scraper-blade, supported by a push-frame at the rear of said blade, and blade-elevating mechanism connected therewith, of a hand-wheel for imparting motion to said elevating mechanism for effecting the upward and downward adjustment of the blade, substantially as hereinbefore set forth.

10. In a road-machine the standards *l l'* and shift L in combination with the carriage, blade-lifting devices, and operating wheels and pinions, as and for the purposes set forth.

11. The flanged guide-roll K and flanged pinion *l'*, in combination with the rack J, blade D and carriage-frame A, and hand-wheel M', substantially as and for the purpose set fo th.

12. In combination with the blade-elevating lever H having the internally-toothed segment H', of an operating-pinion I, provided with flanges, *i*, for guiding said segment, substantially as set forth.

The application was examined by the Patent Office, and the following objections were made:

If claim 1 is to stand, the state of the art as shown in Patents 226,686, Sweatt, Apr. 20, 1880 (self-load'g carts); 52,028, Carncross, Jan. 16, 1866; 191,287, Jefferson, May 29, 1877, and 288,261, Raab, Nov. 13, 1883 (wheeled scrapers), must be recognized.

Claim 4 is met in Patent 220,812, Day, Oct. 21, 1879 (same). Furthermore the devices of patents 297,861, Smith, April 29, 1884; 275,614, Edwards and Durkee, April 10, 1883, and 135,475, Ham, Feb'y 4, 1873 (ex. carrier).

As to claim 5, in view of the Patents 160,535, McCall, Watkins, Scott, M'ch 9, 1875, and 296,138, Cook, Apr. 1, 1884 (wheeled scrapers), the claim does not present patentable novelty, these, with the patent of Day, showing that, broadly considered, a hand-wheel and a lever are equivalent substitutes.

Claims 10, 11 and 12 are met in patent of Cary, 152,072, June 16, 1874 (self-load'g carts).

Patent 145,736, Humphreys, Dec. 23, 1873 (ex. carrier), may also be referred to as showing the state of the art in connection with claim 11.

Claim 13 is met in patent of Carncross above cited.

Thereupon the specification was amended as before pointed out, and applicant further said:

Regarding the fourth and fifth claims, in the references cited, Patent No. 220,812, it is shown that a small hand-wheel mounted on a vertical shaft and adapted for winding up a rope or chain in manner similar to a car-brake has been used for bodily lifting a diagonal scraper or snow-plow on a railroad-car, both ends of the scraper being lifted simultaneously; further, in other patents it is shown that wheels having a series of projecting handles or pins are employed in connection with means for lifting the plow and conveyer in ditching-machines. Neither of these devices, it is thought, embody the features which applicant desires to secure, and while there is no question but that the present wording of said claim is met by these references, yet it is believed that applicant has a point to which these former inventions have not attained.

The claims are hereafter amended with this feature in view, viz., that in applicant's invention the wheel is designed and adapted to be worked in combination with a diagonal blade and as a balance or momentum wheel, so that a quick throw of the wheel with the hand will, by the weight of the periphery of the wheel, augment the action, or carry the blade mechanism up or down to a greater extent than the mere movement of the hand.

The fourth and fifth claims were amended the tenth, eleventh and twelfth canceled and two others substituted; and the fifteenth was erased.

The fourth, tenth, eleventh and thirteenth claims of the patent as issued read:

4. The combination, with a diagonal scraper supported in connection with a wheeled carriage and adapted for upward and downward adjustment independently at either of its ends, of an operating-wheel (or wheels) for effecting such adjustment, adapted to act as a momentum or fly wheel, as set forth, whereby the peripheral weight of said wheel is utilized to assist in the adjustment of the blade, substantially as hereinbefore explained.

10. In a road-machine, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating hand-wheel (or wheels) connected therewith for effecting such adjustment, and a brake (or brakes) acting against said wheel to arrest movement thereof and retain the parts, substantially as set forth.

11. In a wheel road-scraper, the combination of a scraper-blade adapted for upward and downward adjustment at its respective ends, an operating-wheel (or wheels) connected therewith for effecting such adjustment and adapted for developing peripheral momentum for throwing the blade up or down, and a brake acting against said wheel to arrest the movement thereof and retain the parts in position, substantially as set forth.

13. In a road-machine, the combination, with an oblique scraper suspended beneath a carriage or body mounted on front and rear wheels, of means for imparting independent upward and downward adjustment at the respective ends of said scraper provided with hand-wheel and pinion devices for imparting movement thereto, and stops or brake devices acting in connection with said hand-wheels for retaining the parts at positions of adjustment, substantially as described.

Thus it appears that the patentee acquiesced in the ruling of the Patent Office that the application of hand-wheels to a road-grading machine, for imparting motion to the devices for raising and depressing the scraper-blade, was old, and, for the purpose of obtaining his patent, restricted his claims in this particular to momentum or balance wheels. And it is with reference to the momentum feature, treated as an element in all the claims, that the case must be disposed of.

Momentum is the quantity of motion in a moving body, and is proportioned to the quantity of matter multiplied into its velocity. All revolving wheels possess momentum, but "momentum-wheels," so called, as balance or fly wheels, are wheels whose momentum is utilized in the operation of machinery by a sufficient accumulation of force, through the weight and velocity of the wheel combined, to overcome the effects of temporary loss of power.

The knowledge was common that when a continuous power is applied, but the resistance to be overcome is unequal, a fly or balance wheel will store some of the power expended during the operation and not needed at one stage, and give it out at another. This familiar principle is thus expressed in the specification:

The rims of the hand-wheels are made sufficiently heavy to act as a balance against the weight of the blade-lifting devices, so that the momentum of the wheel will greatly assist the operator in the manipulation of the machine.

The momentum-wheel of the patent is described in appellant's brief as being—

a wheel having such peripheral weight, in relation to the weight of the scraper-blade to be lifted, that it will continue in rotation after the hand of the operator is removed, so as to enable him to secure a new grasp of the wheel to continue the lifting process.

Appellant's expert, Mr. Brevoort, puts it thus:

In the case of the Taft invention, the peripheral momentum was relied upon to continue the blade of a road-scraper in its upward motion so that the operator could again grasp the wheel to give further rotative force thereto without the blades falling and without the necessity of locking the wheel to enable him to get another grip thereon.

And the patentee testifies:

The object of making the wheel with the heavy rim was that there might be sufficient momentum generated in the hand-wheel to make a continuous rotary motion of the wheel when it was desired to raise the blade over an obstacle, like a rock or a "thank-you-ma'am," or when approaching a cross-walk on a street. This we could not do with levers, if the lever had sufficient leverage to give this operation; and by making the rim of these wheels heavy I secured that ability to cause a continuous motion of the hand-wheel. After giving it one impulse from the hand, I could reach forward and give it a second without applying a brake or stop to the wheel, thus keeping up a continuous motion of the hand-wheel until I had raised the blade as high as desired.

In short, as the ordinary hand-wheels used for the same or analogous purposes in similar constructions were old, the claim of patentable novelty rests on the proposition that Mr. Taft was the first to increase their weight and apply them as momentum-wheels in a common device for regulating road-scrapers to secure the well-known result attendant on the use of such wheels. Was he the first to do this, and, if so, did such increase of weight involve patentability?

The record contains a number of prior patents of road-machines in which the vertical adjustment of the scraper-blade is effected by levers on each side of the machine, with connecting mechanism to each end of the blade, the actuation of either lever raising one end of the blade, and of both, raising the blade as a whole.

The patent of Read of November 25, 1873, shows a reversible scraper-blade adjustable up and down at either end; adjustable laterally in respect of side projection of its blade; susceptible of being raised quickly at either end or as an entirety; carried by a four-wheeled frame; and directly controlled by levers through suspending cords or bars, the rear ends of the levers being adapted to be held by catches or uprights projecting up from the frame of the machine.

The McCall, Watkins and Scott patent of March 9, 1875, has a push-bar reversible scraper, with hand-levers and stops for the vertical adjustment of the scraper-blade and hand-wheels for steering.

The Cook patent of September 22, 1885, has a scraper supported by a wheeled frame and moved by push-bars, and capable of being raised and lowered at either end independently by means of racks connected to the scraper, and pinions, operated by levers, which engage the racks and move them up and down.

These lever-machines were all operative, and these and other patents were introduced in evidence as showing that wheeled frames; reversible and non-reversible blades; levers of various forms for adjusting either or both ends of the blade; stops for locking the levers in place; stops and various other devices for connecting the levers with the blades; were all well known; but as this is conceded we need spend no time upon them. It should, however, be observed that broadly considered a hand-wheel and a lever are substantial equivalents in these devices. The wheel is a continuous lever. The rim enables the operator to lay hold at any point desired, and takes the place of a number of levers. But it is denied that momentum hand-wheels are the equivalents of levers.

Other prior patents adduced illustrate the use of hand-wheels, cranks and momentum-wheels.

Dyson's patent of June 2, 1868, for a "street-scraper," has a triangular frame, D, having slots in which the bars slip up and down freely, to which the scraper-blades are pivoted. The dirt is gathered up within this triangle and deposited by the operation of the rear part of a frame, E. The triangular frame D is raised by a crank-wheel with a crank connected by cords with two wheels in such manner as to revolve both wheels simultaneously, and the whole scraper is thereby raised and retained by the engagement of the crank with a catch. The experts differ as to whether these wheels can be used as hand-wheels if so desired as well as by means of the cords as described in the patent.

The Carey patent of June 16, 1874, for an improvement in scrapers, has a scraper or dirt-scoop; a rack attached to a lever which carries the scraper; a pinion engaging the rack to raise and lower the scraper; a crank-handle, as an equivalent for a hand-wheel, to turn the pinion, and a lock to hold the devices in their adjusted position. The Taft machine seems to embrace the connecting devices of this patent, but it has a shaft with a hand-wheel instead of with a crank.

April 10, 1883, Edwards and Durkee obtained a patent for an improvement in grading and ditching machines, in which all the adjustments are made by hand-wheels. This has a plow-beam and a carrying apron or belt, and, "by arranging the several hand-wheels, as shown and described," the operator "can raise and lower either end of the plow-beam independent of the other, and raise or lower the apron as required."

The patent of Elmer H. Smith of April 29, 1884, for a ditching-machine, shows a plow "consisting of an inclined flat plate," supported by a wheeled frame, and raised and lowered by means of a hand-wheel and pinion acting upon a rack connected to the lever which carries the blade. The blade is operated by a single hand-wheel, in this resembling the fourth, tenth and eleventh claims under consideration, which call for "an operating-wheel (or wheels)," although it is testified that "in no case could the adjustments described in the patent be effected by a single wheel."

May 28, 1878, Letters Patent No. 204,205, for an "improvement in track-clearers," were issued to Augustus Day. This was a device "for effectually clearing street-railways from snow and ice, so arranged that the snow will not only be cleared away from the face of the rails, but also from between the rails and a suitable distance on each side of the track," it being so spread and packed as not to be left "in ridges or snowbanks along the street." It has a diagonal scraper suspended beneath a wheel-carriage and provided with a lifting mechanism consisting of a chain or rope wound upon the shaft by means of a hand-wheel, there being several hand-wheels for effecting the different adjustments of the scraper-blade, which is raised at either end at the will of the operator. This concurs with the mechanism thus described in the Taft specification:

In lieu of connecting the hand-wheel and blade-lifting bar or lever by means of a toothed pinion and rack, said parts may be connected by a strap or chain, (one or more,) one end whereof connects with the lift-bar or lever, while the other end is arranged to wind onto the pinion or hub on the hand-wheel, or onto a sheave geared to the hand-wheel hub.

Day's patent of October 21, 1879, No. 220,812, for "snow-plows," has a diagonal scraper suspended beneath a wheeled carriage and capable of being raised and lowered by a chain or cord wound upon a shaft turned by a hand-wheel, the shaft having a locking device consisting of a ratchet-wheel and a dog. There is but one hand-wheel which raises and lowers both ends of the scraper together, while the previous Day patent had two hand-wheels and chains for raising and lowering the two ends of the scraper independently. The substance to be dealt with was snow, and rails and their bed, with some distance on each side, the surface to be cleared, but so as not to encumber the circumjacent highway. In view of the work to be done, light hand-wheels might be sufficient, yet if momentum as a positive aid were found necessary, their weight could be increased.

The Boone patent of October 21, 1851, shows a windlass with drums for winding up cords to raise weights, with a wheel and pinion and suitable gearing for turning the drums, and a brake-stop.

The Lyon patent of August 6, 1878, for improvement "in combined ship's pump and windlass," has very heavy momentum hand-wheels for operating either pumps or a winding-drum. Apparently these wheels are heavier for the same diameter than the Taft hand-wheels.

The Tyler patent of February 14, 1882, for "friction-

brake for steering-wheels," shows a momentum hand-wheel for operating the rudder of a vessel, and a pedal-brake for holding the wheel in any desired position. The wheel is not described in the specifications as a momentum-wheel, but, as it is such in fact, this is not material.

Appellee's expert Bates testifies that such wheels—

are commonly used as momentum-wheels and have been as long ago as 1871. The operator gives them an impulse and their momentum carries them on.

It is not controverted that a heavy wheel with a crank-pin at the side, such as shown, was a common and very well-known form of construction for the specific purpose of applying momentum to a crank. The wheels employed in landing ferry-boats and the ancient spinning-wheels, instanced by the district judge, readily recur as illustrations of the use of momentum in the continuance of motion. Indeed, it is admitted that all wheels for raising, winding up and hoisting, if the load is light enough, "are capable of performing some movement after the hand of the operator has left them," and the principle does not depend upon the extent of the aid thus given to propulsion.

We find then that hand-wheels in the regulation of scraper-blades for ditching, grading, street and road clearing were old, and that this was true of the utilization of momentum when required by the exigencies of the case, as in capstan-wheels, crank-shaft wheels, rudder-regulating wheels, pump-operating wheels, and so on. Every one knew that momentum propelled the capstan-wheel, the rudder-wheel, the pump-wheel, the spinning-wheel, after the hand of the operator was withdrawn. The law of nature was familiarly understood that any moving body tends to continue in motion with a force proportionate to its speed and weight; and it was well known that the function of fly-wheels and balance-wheels was, in the language of Mr. Brevoort—

to absorb energy when the machine is moving at greater speed with the least resistance, and to give it out again when the parts meet with greater resistance.

The circuit court was of opinion that the use in road-machines of wheels made heavier in the adjustment of momentum to resistance was not a new use of momentum-wheels in working machinery, and that the difference in weight in hand-wheels performing the service of rotary levers was a difference in degree and not in kind. And the contention as to infringement confirms this view.

Mr. Bates describes appellee's machine as—

composed of a wheeled frame or carriage, beneath which is suspended a turn-table and to this turn-table the scraper-blade is attached. The turn-table is suspended by rods from the ends of a bar which extends across the machine and is capable of vertical motion between uprights. The bar is supported by being pivoted near each end to the lower end of a rack-bar. The rack-bars are moved up and down by pinions on horizontal shafts, the shafts extending back toward the rear of the machine. At their rear ends are bevel-gears which mesh with pinions on cross-shafts, and there is a hand-wheel on each cross-shaft to turn it. There is also a band-wheel on each cross-shaft, which is embraced by a friction-band or band-brake. The band is connected to a spring-treadle so that the operator can loosen it by putting his foot on the treadle. The hand-wheels are small wheels comparatively similar to those used on car-brakes, and are certainly much too light to act as fly-wheels or momentum-wheels against such a weight as that of the scraper and turn-table and attachments. Besides this, the strain on this weight is a constant one, always acting in the same direction upon the hand-wheels. The scraper is moved forward by means similar to ordinary plow-beams, which are connected with the turn-table, the turn-table being connected with the front of the machine, or rather to the king-bolt by a draft-ring and link. There is no device for acting with a thrust upon the scraper-wheel.

Without subjecting the evidence to critical examination, it is enough that it is admitted that these hand-wheels are smaller and lighter than those of appellant, and that to make out infringement it is requisite to construe the patent in suit as covering all wheels whose momentum can be utilized in operating a road-making machine.

On the one hand it is contended that appellee's hand-wheels are not momentum-wheels at all and that the continued motion of the blade is due to earth-pressure and not to momentum, while, on the other, this is denied, and it is insisted that these wheels are to be treated as momentum-wheels because they will store up "a useful amount of energy to make them continue their further movement, when the hand of the operator is taken therefrom," provided "the operator shall give to the wheel a rapid and vigorous pull, moving it while his hand is upon it at a greater speed than it afterward maintains."

We can hardly doubt that similar manipulation of many of the old wheels would produce the same result, and if there could be infringement if this were not so, there would be anticipation if it were.

But the decision of the circuit court rested on the want of invention, and in that conclusion we concur.

"The whole essence of the Taft invention," says appellant's counsel, is the application of momentum to carry the wheel along "sufficiently to enable the operator to take a new grasp, (as explained by Mr. Brevoort,) without clamping the wheel to prevent its running backward."

Did increasing the weight of the hand-wheels in this class of road-machines, in order to correct the tendency of smaller wheels to reverse, involve patentable novelty? We do not think so. The use of hand-wheels as a substitute for straight levers in this class of machinery was old, and, whether the wheels were light or heavy, (and heavy wheels were old,) they alike performed the service of rotary levers.

The patentee had acquiesced in the rejection of his claim for a road-machine with a blade that was elevated or depressed by a hand-wheel operating through suitable gearing, and could not claim the benefit thereof, or of an equivalent construction of the claims allowed. To make the hand-wheels heavier was to increase their capacity, but the same end was accomplished by substantially the same means. The means were old, and their enlargement by a common method to attain a better result in the particular instance merely carried forward the original idea, and was nothing more than would occur to the experienced mechanic.

It appears to us that it being seen that the tendency to reverse would prove objectionable in the proposed machine, the suggestion that the hand-wheels should be made heavier in order, by greater momentum, to correct that tendency, as it was well known increase in weight coupled with adequate rotative force would, sprang naturally from the expected skill of the maker's calling, and that this use of the heavier wheel did not make the mechanism in any proper sense a new thing evolved by the inventive faculty.

The substitution of the heavier wheel was not the product of a creative mental conception, but merely the result of the exercise—

of the ordinary faculties of reasoning upon the materials supplied by a special knowledge, and the facility of manipulation which results from its habitual and intelligent practice.

Decree affirmed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 5. TUESDAY, NOVEMBER 3, 1896. PRICE—$5 per year

CONTENTS.

	Page.
OFFICIAL GAZETTE	637
PRICE OF PRINTED COPIES OF SPECIFICATIONS AND DRAWINGS	637
INDEXES TO FOREIGN PATENTS	637
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	637
AMENDMENT TO THE RULES OF PRACTICE	637
PUBLISHERS' CATALOGUES	637
WITHDRAWAL OF CASES FROM ISSUE	638
ISSUE OF NOVEMBER 3, 1896	638
APPLICATIONS UNDER EXAMINATION	638
PATENTS GRANTED	639
REISSUES	None.
DESIGNS	803
TRADE-MARKS	806
LABELS	None.
DECISIONS OF THE U. S. COURTS—	
Standard Elevator Company *et al. v.* Crane Elevator Company *et al*	811

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. Terms: To subscribers within the United States, Canada, and Mexico, $5 per annum; to foreign subscribers, $10; single copies, 10 cents; if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume. *Payment in advance.* No subscription will be received for less than three months. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Price of Printed Copies of Specifications and Drawings.

(ORDER No. 1,094.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 25, 1896

It is hereby ordered, pursuant to an amendment of section 493 of the Revised Statutes, entitled "An act amending the statutes relating to the sale of printed copies of patents," approved May 19, 1896, that the price to be paid for uncertified printed copies of specifications and drawings of patents shall be, for single copies, or any number of unclassified copies, five cents each; for copies by subclasses, three cents each; by classes, two cents each, and for the entire set of patents issued, in one order, one cent each.

This order will be in effect on and after July 1, 1896.

JOHN S. SEYMOUR,
Commissioner.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth	$10 00
INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pages—	
Bound half-turkey	2 50
Bound in cloth	1 25
Paper covers	1 00

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

Issue of November 3, 1896.

Patents	453	No. 570,442 to No. 570,894, inclusive.
Designs	16	No. 26,234 to No. 26,249, inclusive.
Trade-Marks	53	No. 29,061 to No. 29,113, inclusive.
Labels	None.	
Prints	None.	
Reissues	None.	
Total issue	522	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	....	New Hampshire	1	....
Arizona Territory	....	....	New Jersey	18	1
Arkansas	1	....	New Mexico Territ'y	....	....
California	22	....	New York	69	12
Colorado	4	1	North Carolina	2	1
Connecticut	11	2	North Dakota	....	....
Delaware	1	....	Ohio	41	2
District of Columbia	6	....	Oklahoma Territory	....	....
Florida	1	....	Oregon	1	....
Georgia	3	....	Pennsylvania	49	2
Idaho	1	....	Rhode Island	5	....
Illinois	31	2	South Carolina	1	1
Indian Territory	....	....	South Dakota	....	1
Indiana	9	3	Tennessee	6	....
Iowa	9	....	Texas	11	1
Kansas	5	....	Utah	1	....
Kentucky	2	....	Vermont	....	....
Louisiana	4	....	Virginia	5	....
Maine	5	....	Washington	7	....
Maryland	3	3	West Virginia	....	....
Massachusetts	39	3	Wisconsin	13	2
Michigan	23	....	Wyoming	....	....
Minnesota	8	4	U. S. Army	....	....
Mississippi	1	....	U. S. Navy	....	....
Missouri	10	....			
Montana	2	....	Total to citizens of the United States	435	41
Nebraska	2	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Mexico	....	....
Australia	....	....	Netherlands	....	....
Austria-Hungary	2	1	Newfoundland	....	....
Barbadoes	....	....	New South Wales	1	....
Belgium	....	....	New Zealand	....	....
Bermuda	....	....	Norway	....	....
Brazil	....	....	Orange Free State	....	....
Canada	6	....	Portugal	....	....
Canary Islands	....	....	Queensland	....	....
Cape Colony	....	....	Russia	....	....
Ceylon	....	....	Scotland	2	....
Chile, Republic of	....	....	South African Republic	....	....
Colombia	....	....	South Australia	....	....
Cuba	....	....	Spain	....	....
Denmark	....	....	Straits Settlements	....	....
England	14	6	Sweden	....	1
France	1	4	Switzerland	....	....
Germany	8	....	West Australia	....	....
Guatemala	....	....			
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	34	12
Italy	....	....			

APPLICATIONS UNDER EXAMINATION.

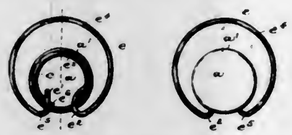
Condition at Close of Busi. October 27, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears.—Under one month.			
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Sept. 28	Oct. 12	141
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Sept. 30	Oct. 6	149
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Oct. 2	Oct. 1	171
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Sept. 28	Oct. 1	200
246	I. Tillage and Fences	Sept. 29	Sept. 29	213
120	IX. Hydraulics, Fire-Extinguishers, etc.	Sept. 28	Sept. 28	183
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Sept. 28	Sept. 28	193
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Sept. 28	Sept. 28	193
158	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Sept. 28	Sept. 28	257
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Sept. 28	Sept. 21	217
	Between one and two months.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Sept. 25	Oct. 16	288
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Sept. 22	Oct. 10	139
93	XXI. Textiles, etc.	Sept. 18	Oct. 2	213
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Sept. 12	Sept. 26	396
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Sept. 2	Sept. 24	272
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Sept. 10	Sept. 21	122
255	XII. Mechanical Engineering, Store-Service, etc.	Sept. 3	Sept. 21	221
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Sept. 14	Sept. 15	198
253	X. Carriages and Wagons	Aug. 31	Sept. 12	431
215	XVII. Paper Manufactures and Printing	Sept. 1	Sept. 8	204
106	II. Farm Stock, Products, etc	Aug. 31	Sept. 8	311
248	XVIII. Steam-Engineering, etc	Sept. 1	Sept. 4	179
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Sept. 25	Sept. 2	171
102	XIX. Stoves and Furnaces	Aug. 31	Sept. 1	353
221	XXIII. Instruments of Precision, Acoustics, etc.	Sept. 21	Aug. 28	377
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Aug. 28	Aug. 28	414
	Between two and three months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	July 31	Oct. 1	551
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 20	Sept. 9	517
240	VII. Harvesters, Games and Toys, and Velocipedes.	July 31	Sept. 3	1407
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 1	219
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Aug. 21	Aug. 26	409
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 12	Aug. 12	377
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 2	Aug. 13	740
	Total number of applications awaiting action			10,426
	Under one month in arrears.			
	Designs	Sept. 28	Oct. 12	167
	Trade-Marks	Oct. 12	Oct. 10	67

PATENTS

GRANTED NOVEMBER 3, 1896.

570,442. KEY-RING OR THE LIKE. GEORGE R. ADAMS, Newark, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed June 4, 1896. Serial No. 594,200. (No model.)



Claim.—1. A shell or casing, having an inwardly-projecting marginal rim or bead a' forming a chambered part in the back thereof, in combination, with a bar e having one end bent to form a holding portion adapted to be secured in said chambered part and beneath said rim or bead a' of the shell or casing, and a hook, on the other end of said bar, substantially as and for the purposes set forth.

2. A shell or casing, having an inwardly-projecting marginal rim or bead a' forming a chambered part in the back thereof, in combination, with a collet or ring in said chambered part of the shell or casing, a bar e having one end bent to form a holding portion adapted to be secured in said chambered part and beneath said rim or bead a' of the shell or casing, and a hook, on the other end of said bar, substantially as and for the purposes set forth.

3. A shell or casing a having a marginal rim or bead a' and a chambered part in the back thereof, in combination, with a bar e, having the curved portions e^3 and e^4, said portion e^4 being arranged in said chambered part of said shell or casing, and secured beneath said bead a', and said bar having a hook e', substantially as and for the purposes set forth.

4. A shell or casing a having a marginal rim or bead a' and a chambered portion in the back thereof, in combination, with a bar e, having the curved portions e^3 and e^4, said portion e^4 being arranged in said chambered part of said shell or casing, and secured beneath said bead a', and said bar having the curved portions e^4 and e^3, and a hook e', substantially as and for the purposes set forth.

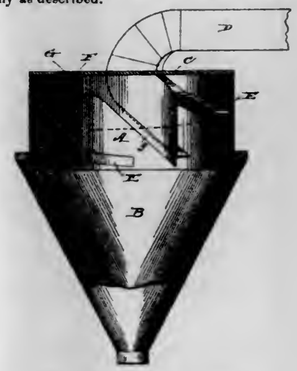
5. A shell or casing a having a marginal rim or bead a' and a chambered part in the back thereof, in combination, with a collet or ring c, secured in said chambered part of the shell or casing, and a bar e, having the curved portions e^3 and e^4, said portion e^4 being arranged in said chambered part of the shell or casing, and secured beneath said bead or shell a', and a hook e' on said bar, substantially as and for the purposes set forth.

6. A shell or casing a having a marginal rim or bead a' and a chambered part in the back thereof, in combination, with a collet or ring c, secured in said chambered part of the shell or casing, and a bar e, having the curved portions e^3 and e^4, said portion e^4 being arranged in said chambered part of the shell or casing, and secured beneath said bead a', curved portions e^4 and e^3 on said bar, and a hook e' thereon, all, substantially as and for the purposes set forth.

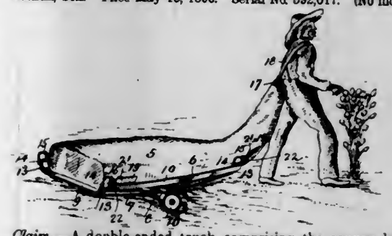
570,443. DUST-COLLECTOR. WILLIAM E. ALLINGTON, East Saginaw, Mich. Filed Sept. 7, 1894. Serial No. 522,346. (No model.)

Claim.—1. A dust-collector comprising a separating-chamber formed by a casing having a head applied to one end thereof, said head being closed or imperforate at its central portion and provided with an air-outlet between the axis of the machine and its peripheral wall, an air inlet entering the separating-chamber tangentially at a point on the opposite side of the axis from the air-outlet and a dust-discharge opening at the end of the casing opposite the air-outlet, substantially as described.

2. A dust-collector comprising a separating-chamber formed by a casing having a head applied to one end thereof, said head being closed or imperforate at its central portion and provided with an air-outlet between the axis of the machine and its peripheral wall, an air-inlet entering the separating-chamber tangentially at a point on the opposite side of the axis from the air-outlet, a dust-discharge opening at the end of the casing opposite the air-outlet and a flange depending from said head between the peripheral wall and the air-outlet, substantially as described.



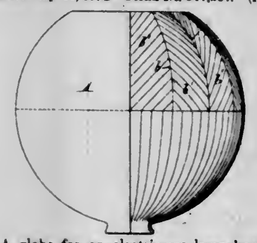
570,444. COTTON-PICKING MACHINE. HENRY T. ARMSTRONG, Joshua, Tex. Filed May 18, 1896. Serial No. 592,017. (No model.)



Claim.—A double-ended truck comprising the convex body 6, consisting of a series of slats 7 secured midway to the axle 8 and bowed upwardly at each end, a cross-brace 9 connecting the converging ends of said slots, and having integral right-angular extensions 13 having strap-eyes 14, a square link 15 hinged to said eyes, in combination with the sack having an open mouth and a shoulder-strap, and having its body portion provided with a series of straps 19 in which are secured the snap-hooks 22, substantially as shown and described.

570,445. WITHDRAWN.

570,446. GLOBE FOR ELECTRIC-ARC LAMPS. MARCUS B. BAILEY, Chicago, Ill., assignor of one-third to Paul W. Heermans, Brooklyn, N. Y. Filed July 11, 1894. Serial No. 517,207. (No model.)



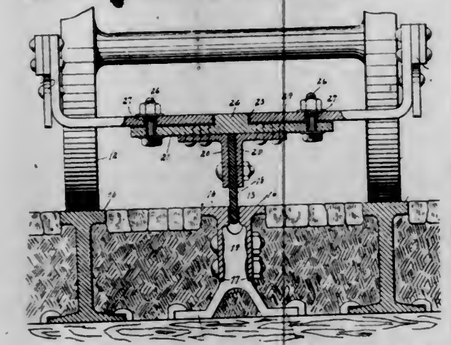
Claim.—1. A globe for an electric-arc lamp having one part thereof opaque and provided with series of reflecting-corrugations divided by meridian lines, the alternate series of corrugations being

angularly arranged in opposite directions between the meridian dividing-lines, and having the other part opposite the opaque part of such material and form as to permit the passage of the reflected light, substantially as set forth.

2. A globe for an electric-arc lamp, having one part thereof opaque and provided with series of reflecting-corrugations divided by meridian lines, the alternate series of corrugations being arranged at angles of about forty-five degrees in opposite directions between the meridian dividing-lines, the ends of the corrugations of the adjacent series meeting together at the meridian lines, and having the other part opposite the opaque part of such material and form as to permit the passage of the reflected light, substantially as set forth.

3. A globe for electric-arc lights, having one side or portion formed of uncorrugated glass, and the other side or portion opaque and having reflecting corrugations, the upper half of the latter portion being provided with series of corrugations divided by meridian lines from which the corrugations run at an angle of about forty-five degrees, the corrugations in one series running in the opposite direction from those in the adjoining series, and meeting them at the meridian lines, and the lower half of said portion being formed with meridian corrugations coinciding at the top with the meridian dividing lines and corrugations of the upper half.

570,447. RAILWAY SYSTEM. GEORGE D. BALDWIN, Passaic, N. J. Filed [illegible] 17, 1896. Serial No. 575,821. (No model.)

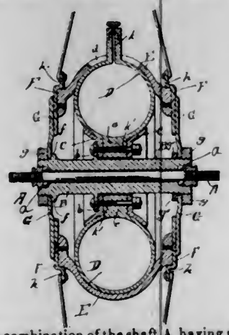


Claim.—1. The combination with the road-bed having a guide-slot therein and the car, of the hanger-plate held to oscillate horizontally beneath the car, and a guide-arm dropped from the hanger-plate to enter the slot, substantially as described

2. The combination with the road-bed having a guide-slot therein and the car, of the cross-hanger secured to the truck-frame of the car, the hanger-plate having a limited oscillating motion on the hanger, and the guide-arm secured to the hanger-plate and running in the slot, substantially as described.

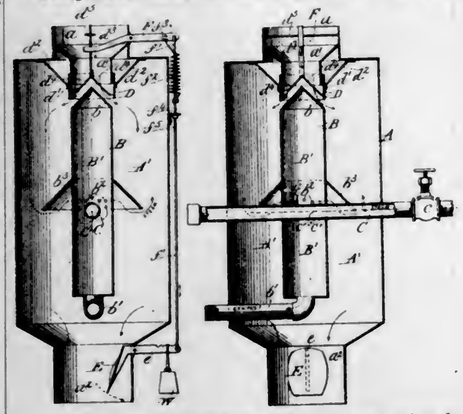
3. The combination with the road-bed having a guide-slot therein and the car, of the cross-hanger on the car, the hanger-plate pivoted on the hanger, means as the slots in the hanger and the bolts in the hanger-plate to limit the oscillation of the hanger plate, and a guide-arm rigidly secured to the hanger-plate, substantially as described.

570,448. VEHICLE-HUB. LORENZO D. BALL and EWING S. BARNES, Canton, Ohio. Filed Sept. 7, 1895. Serial No. 561,747. (No model.)



Claim.—The combination of the shaft A, having mounted thereon the hollow hub B, provided with the integral flange *b*, the collars C formed concaved upon their peripheries, the tube D provided with the radial flange *c*, the clamping bolts *K* passed through the collars C and the flange *c* and secured to the flange *b*, the outer band or ring E located upon the outer periphery of the tube D, and the plates or disks G located upon the hub B, and the plates F provided with the shoulders *h*, substantially as and for the purpose set forth.

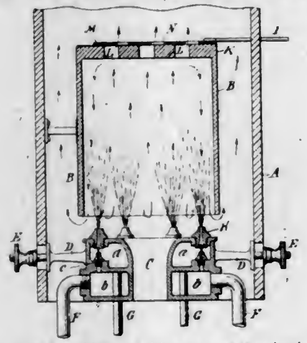
570,449. GRAIN-TEMPERING MACHINE. ELBERT BLODGETT, Muskegon, Mich. Filed Mar. 10, 1896. Serial No. 582,571. (No model.)



Claim.—1. In a grain-tempering machine, the combination of a casing, mechanism for conveying steam into the same, a grain-induction pipe connected with said casing, a conical deflector mounted immediately beneath the opening of said pipe, a guide-band encircling the end of said pipe, a valve-band mounted on the end of said pipe between the same and the said guide-band and adapted to control the opening between the said pipe and the conical deflector, and mechanism for automatically moving said valve-band, substantially as described.

2. In a grain-tempering machine, the combination of a casing, mechanism for conveying steam into the same, grain induction and eduction pipes connected with said casing, a conical deflector mounted immediately beneath the opening of the induction-pipe, a guide-band encircling the end of said induction-pipe, a valve-band movably mounted on the end of said induction-pipe between the same and said guide-band and adapted to control the opening between the said pipe and the deflector, a lever pivoted to the casing and projecting into the grain eduction pipe, the valve mounted on said lever within said eduction-pipe, and the intermediate mechanism connecting the outer end of said lever with the valve-band, substantially as described.

570,450. HYDROCARBON-BURNER. HENRY A. BRADLEY, New York, N. Y. Filed Mar. 25, 1896. Serial No. 584,732. (No model.)



Claim.—1. The combination with a gas-generator having a steam-chamber and a fuel-chamber in which the fuel and steam are mixed, and from which they issue through nozzles or burners opening from the said chamber, of a hood placed in front of the burners and into which the ignited gases are projected, and by which such gases are deflected backward upon the generator, as set forth.

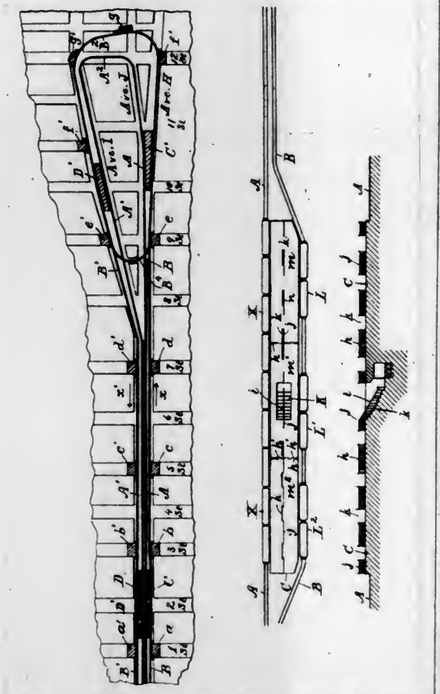
2. The combination with a hydrocarbon gas generator having a steam-chamber and a gas chamber in which the gas and steam are mixed, and from which they issue through nozzles or burners in the wall of said chamber, of a hood placed in front of the burners and into which the ignited gases are projected, and by which such gases are deflected backward upon the generator, the hood having a perforated end or top, as set forth.

3. The combination with a hydrocarbon-gas generator with nozzles or burners thereon, of a hood supported in front of the burners so as to deflect the ignited gases issuing from the burners backward upon the generator, the hood and generator being adjustable with respect to each other, whereby the distance of the generator from the opening of the hood may be varied, as set forth.

4. The combination with a hydrocarbon-gas generator with nozzles or burners thereon, of a hood supported in front of the burners for deflecting the ignited gases issuing therefrom backward upon the generator, the top or end of the said hood being provided with passages or perforations, and a slide or damper for varying the apertures of said passages, whereby more or less of the ignited gases may be permitted to pass through the hood, as set forth.

5. The combination of a combustion chamber or fire-box, a gas-generator having nozzles or burners thereon located within said combustion chamber, a hood also within said chamber supported in front of the burners and adapted to deflect a portion of the ignited gases issuing therefrom back upon the generator into passages between the walls of the combustion-chamber and the hood, as set forth.

570,451. BITRANSIT RAILWAY SYSTEM. BENJAMIN F. CARPENTER, Roselle, N. J. Filed Oct. 7, 1895. Serial No. 564,877. (No model.)



Claim.—1. The bitransit railway system comprising two local tracks having stations at frequent intervals throughout their length with trains running in opposite directions thereon at small headway, two adjacent express tracks with trains running thereon at greater headway in the same direction as upon the said adjacent local tracks, and transfer-platforms constituting express-stations located at less frequent intervals than the local stations, between the express and local tracks upon which the trains are running in the same direction, the whole arranged and operated substantially as set forth, to first receive passengers upon the local trains at frequent intervals, to then transfer such passengers to the express-trains, and finally from the express-trains back again to advanced local trains for delivery to their destination, substantially as herein set forth.

2. The bitransit railway system comprising a local track with local stations at frequent intervals and trains running at small headway, an express-track with trains running at greater headway in the same direction as upon the local track, the length of the trains being substantially in proportion to their headway, and transfer-platforms located between the express and local tracks at greater intervals than the local stations, said platforms being divided transversely into successive sections to receive and separate the passengers moving to and from successive portions of the express-train, substantially as herein set forth.

3. The bitransit railway system comprising a local track with local stations at frequent intervals and trains running at small headway, an express track with trains running at greater headway in the same direction as upon the local track, the length of the trains being substantially in proportion to their headway, and transfer-platforms located between the express and local tracks at greater intervals than the local stations, said platforms being divided transversely into successive sections of the same length as the local train, as and for the purpose set forth.

4. The bitransit railway system, comprising two local tracks located upon a given route with two express-tracks between the same, with local trains upon the local tracks running at small headway, and express-trains upon the express tracks running at greater headway in the same direction as the trains upon the adjacent local tracks, local stations at frequent intervals upon the outer sides of the local tracks, the said local tracks being deflected from the express-tracks at less frequent intervals, with island transfer-platforms constituting express-stations arranged between the local and express tracks at such deflected portions, the whole arranged and operated substantially as set forth, to first receive passengers upon the local trains at frequent intervals, to then transfer such passengers to the express-trains, and finally from the express-trains back again to advanced local trains for delivery to their destination, substantially as herein set forth.

5. The bitransit railway system, comprising two local tracks located upon a given route with two express-tracks between the same, with local trains upon the local tracks running at small headway, and express-trains upon the express-tracks running at greater headway in the same direction as trains upon the adjacent local tracks, local stations at frequent intervals upon the outer sides of the local tracks, the said local tracks being deflected from the express tracks at less frequent intervals, with island transfer-platforms constituting express stations arranged between the local and express tracks at such deflected portions, and a loop connecting the local tracks intermediate to their ends, the whole arranged and operated to run the express-trains throughout the given route, and to run the local trains in part throughout the given route, and in part around the said loop, to furnish greater transportation facilities upon a given portion only of the local tracks, substantially as herein set forth.

6. In a bitransit railway system, the combination, with two tracks for local traffic, with two tracks, for express traffic running between the same in substantially the same direction throughout a given route, with local stations at frequent intervals upon the local track and transfer-platforms connecting the express and local trains running in the same direction at less frequent intervals, of a loop connecting the local tracks intermediate to their ends, and crossing the express-tracks at a different grade from the same, the whole arranged and operated by running the express-trains throughout the given route, and the local trains in part throughout the said route and in part around the said loop, to furnish greater transportation facilities upon one end or portion of the given tracks, substantially as set forth.

7. In a railway system, a transfer-platform divided by suitable means across its entire width into sections of suitable length to receive the passengers from a given portion of a railway-train, and having such sections provided with longitudinal partitions and gates therein, as herein set forth.

8. In a bitransit railway system, the combination, with express and local tracks with trains running in the same direction, of an island-platform arranged between the said tracks and divided by partitions into successive sections adapted to receive passengers from successive portions of such trains, and a staircase connecting the said platform with the street, and forming the sole means of access thereto, substantially as herein set forth.

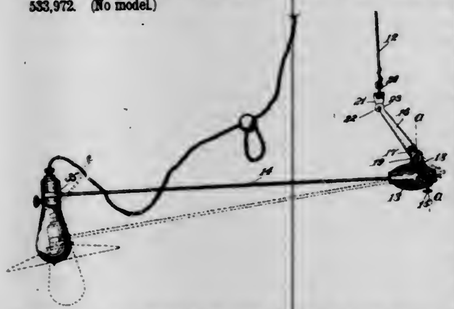
9. In a bitransit railway system, the combination, with express and local tracks with trains running in the same direction, of a transfer-platform arranged between the said tracks and divided by partitions into successive sections adapted to receive passengers from successive portions of such trains, a staircase connecting one of the said sections with the street, and gates or doors in the said partitions to connect all the sections at will with such staircase, as and for the purpose set forth.

10. In a bitransit railway system, the combination with express and local tracks with trains running in the same direction, of a transfer-platform arranged between the said tracks and divided by partitions into sections adapted to receive passengers from certain cars only of such trains, such sections having longitudinal partitions and gates therein, and a staircase communicating with the platform upon

both sides of such longitudinal partition, as and for the purpose set forth.

570,452. BRACKET FOR PENDENT ELECTRIC-LIGHT GLOBES.

JOHN CHRISTIANSEN and REINHART W. PITTMAN, Hartford, Conn.; said Christiansen assignor to said Pittman. Filed Jan. 5, 1895. Serial No. 533,972. (No model.)



Claim.—1. In a device of the class specified, the combination of a pendulous suspension member; a weight adjustably secured thereto; and a holding member transversely adjustable substantially its entire length relatively to said weight and suspension member, and adapted to carry a lamp adjacent to one end thereof.

2. In a device of the class specified, the combination of a pendulous suspension member; a weight adjustably secured thereto; and a holding member transversely adjustable relatively to said weight and suspension member and adapted to carry a lamp; and a clamping device carried by said weight for clamping the holding member in its adjusted position.

3. In a device of the class specified, the combination of a pendulous suspension member; a coupling secured thereto; a weight adjustably secured to said coupling, whereby said weight is adapted for movement in a circular path; and a holding member transversely adjustable substantially its entire length relatively to said weight and suspension member, and adapted to carry a lamp.

4. In a device of the class specified, the combination of a suspension member; a weight; means for adjustably securing said weight to the lower end of said suspension member and embodying means, whereby it is adapted for circular movement relatively thereto; and a rod transversely adjustable its entire length in said weight and adapted to support a lamp adjacent to one end thereof.

5. In a device of the class specified, the combination of a suspension member; a coupling secured thereto and embodying a swivel; a weight adjustably secured to said swivel and movable in a circular path therewith; and a holding member transversely adjustable substantially its entire length relatively to said weight and suspension member, and adjustable in a circular path with said weight, without exerting torsional movement of the suspension member.

6. In a device of the class specified, the combination of a weight adapted to receive a horizontally adjustable sliding rod adapted to carry a lamp; a flexible suspension-wire, and a coupling, embodying a swivel, connecting said flexible suspension-wire and weight, whereby the rod supported by said weight can be adjusted in lateral position and whereby the weight and rod can be adjusted in a circular horizontal path relatively to said flexible suspension-wire.

7. A device of the class specified, consisting of a pendulous suspension member; a weight having an upwardly-extending arm joined to said weight, and secured to said pendulous suspension member, said weight having a lateral adjustment relatively to said suspension member; and a lamp-holding member transversely adjustable substantially its entire length relatively to said weight.

8. In a device of the class specified, the combination of a suspension member; a weight having an arm adjustably secured thereto and also to said suspension member, whereby said weight can be adjusted into position directly below or laterally of the suspension member; and a holding member supported for transverse adjustment relatively to said weight.

9. In a device of the class specified, the combination of a suspension member; a weight secured thereto for adjustment directly below or laterally of said suspension member, and means carried by said weight and adapted to support a lamp.

10. In a device of the class specified, the combination of a suspension member; a weight secured thereto for adjustment directly below or laterally of the suspension member and for movement in a circular horizontal path relatively thereto; and means carried by said weight and adapted to support a lamp.

11. In a device of the class specified, the combination of a suspension member; a coupling secured thereto; a weight, having an arm adjustably secured to said weight and also adjustably secured to said coupling whereby said weight can be adjusted into position directly below or laterally of the suspension member; and a lamp-holding member supported by said weight for adjustment.

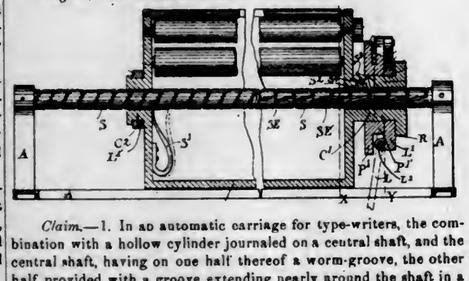
12. In a device of the class specified, the combination of a suspension member; a coupling secured thereto and embodying a swivel; a weight having an adjustable arm and supported by said swivel for movement in a circular horizontal path relatively to said suspension member; and a lamp-holding member longitudinally adjustable transversely of said weight.

13. In a lamp-holding device, the combination of a pendulous suspension member; a weight having an ear or projection; an arm having a bifurcated lower end adjustably secured to said projection; a clamping device for clamping said arm and weight rigidly in position relatively to each other, said arm having its upper end adjustably secured to said suspension member, whereby said weight is adjustable relatively to said suspension member; and a lamp-holding member transversely adjustable relatively to said weight, and having means at its outer end for the attachment of a lamp.

14. In a device of the class specified, the combination of a pendulous suspension member; a weight adapted to support a lamp, and adjustably connected to said pendulous suspension member for adjustment directly below or laterally of said suspension member.

15. In a lamp-holding device, the combination of a suspension member comprising an incandescent-electric-lamp conducting-cord; a weight adjustably secured thereto, and a holding member supported by said weight and adapted to carry the lamp secured to said incandescent-lamp cord.

570,453. TYPE-WRITER. Louis K. Cox, Saginaw, Mich. Filed Aug. 22, 1895. Serial No. 560,116. (No model.)



Claim.—1. In an automatic carriage for type-writers, the combination with a hollow cylinder journaled on a central shaft, and the central shaft, having on one half thereof a worm-groove, the other half provided with a groove extending nearly around the shaft in a vertical plane, then slanting to the left at an angle thereto for the proper distance, then nearly around the shaft in a vertical plane, then slanting as before in a line parallel with the first slant, and so on to the middle of the shaft, of a spring secured within the cylinder and adapted to travel within the worm-groove, a pawl in the bearing of the cylinder adapted to travel in the circular slanting groove, whereby when the cylinder completes one revolution it will be pushed to the left by the spring until the pawl has traveled the length of the slant, thereby spacing the lines on the cylinder, and means as described for moving the cylinder in the opposite direction, as desired, substantially as and for the purpose set forth.

2. In a carriage for type-writers, the combination with means for automatically spacing the lines on the writing-cylinder as it revolves, of means for revolving the cylinder comprising the handle-bar adapted to be tipped by the spacing-bar, the handle-bar journaled on the collar of the cylinder, a rod carried by the handle-bar and pivotally secured to a pinion also jonrnaled on the collar of the cylinder at the side of the handle-bar, a pawl, carried by the pinion, adapted to engage a ratchet-wheel on the end of the cylinder-collar, whereby as the handle-bar is tipped the pawl will engage the ratchet-wheel and revolve it and the cylinder the distance of one tooth, as described.

3. In an automatic carriage for type-writers, a writing-cylinder journaled on a central shaft, and means for revolving the cylinder as the spacing-bar is operated, in combination with automatic means for moving the cylinder longitudinally a regular distance after each revolution comprising a central shaft having a groove commencing at one end and extending nearly around the shaft in a vertical plane then obliquely to the left the proper distance then nearly around the shaft in a vertical plane then to the left obliquely parallel with the former oblique slant, and so on to the middle of the shaft, thence to the end of the shaft in a worm-groove, a pawl, adapted to travel in the circular oblique slant, secured in one end of the cylinder, and a spring adapted to travel in the worm groove at the other end of the cylinder, whereby when the pawl has traveled through the circular part of the groove it will be forced into the slant by the spring at the other end of the cylinder and travel across it, thus moving the cylinder longitudinally the distance of the slant, substantially as and for the purpose set forth.

4. In an automatic carriage for type-writers, a hollow cylinder having bearings on a central shaft, and having a longitudinal slot, and having at the inner edges of this slot small steel rollers, and just back of the rollers, and bearing against them, a large rubber roller, all having their bearings in the cylinder, the large roller extending through the cylinder and having upon its outer right-hand end a pinion, a bobbin within the cylinder carrying the paper to be used in writing, and means for revolving the cylinder and winding the paper over the outside thereof, and into the cylinder, substantially as described.

5. In an automatic carriage for type-writers, a hollow cylinder having a longitudinal slot through which the paper to be written upon is passed from the bobbin placed upon the inside thereof, the paper wound over and into the cylinder, means turning the cylinder the space between the written letters as the space bar is operated, whereby the written letters will extend around the cylinder, and means for moving the cylinder longitudinally at the end of each line and revolution the distances between the lines, as specified.

6. In an automatic carriage for type-writers, a cylinder upon a central shaft, the cylinder adapted to be revolved and to move automatically at each revolution along the shaft, a uniform distance, a bobbin within the cylinder carrying type-writing paper, and means for winding the paper over the cylinder and back into it, and means for revolving the cylinder.

7. In an automatic carriage for type-writers comprising a cylinder carrying within it upon proper bobbins paper for type-writing, means for unwinding the bobbins and winding the paper automatically over and into the cylinder, and means for revolving the cylinder comprising a ratchet-wheel on the end of the cylinder-collar, a pawl engaging the ratchet-wheel and operated by the spacing-bar, and means as described for moving the cylinder along the central shaft a uniform distance at each revolution of the cylinder, thereby forming spaces between the lines, substantially as specified.

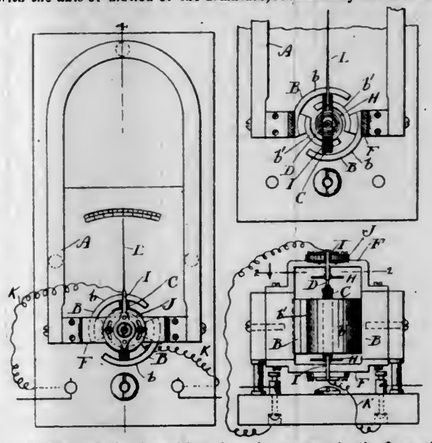
8. In an automatic carriage for type-writers, a cylinder upon a central shaft having a collar around the shaft for its bearing, a large pinion having its bearing on the collar and adapted to slide thereon, and means for sliding it thereon, a spiral groove on the central shaft, a spring secured within the cylinder and running in the groove on the central shaft, a bobbin carrying type-writing paper within the cylinder, a rubber roller by means of which the type-writer paper is drawn out of the cylinder, a pinion on the outside of the cylinder connected to the rubber roller and meshing into the large pinion on the collar of the cylinder, whereby when the cylinder is revolved by means of the spring running in the groove the paper may be drawn out, substantially as described.

9. An automatic carriage for type-writers, comprising a shaft having upon its right hand a groove commencing near its end and running circularly nearly around the shaft, thence obliquely to the left for the proper distance, thence circularly nearly around the shaft, thence obliquely to the left the same distance in lines parallel to the former-mentioned oblique lines and in the same plane, thence circularly and obliquely as before to the middle of the shaft, and having upon the other half of the shaft a spiral groove commencing near the left end and extending spirally toward the middle, a hollow cylinder having its bearing on the shaft and having a longitudinal slot across its face provided with two rollers near the edges thereof, and a large roller pressing against the two smaller rollers, and having a bobbin within the cylinder carrying type-writing paper, a pawl in the right-hand collar of the cylinder adapted to follow in the circle of the oblique groove described, a spring within the cylinder on the left hand side thereof adapted to engage and follow in the spiral groove and to be depressed as the cylinder is revolved until the pawl on the opposite end reaches the oblique part of the groove, when the spring forces the pawl through the oblique groove thus carrying the cylinder along the shaft, a large pinion upon the right-hand collar of the shaft, the pinion carrying upon an extension thereof a pawl adapted to engage the ratchet-teeth on the rib of the collar, and means as described for sliding the large pinion on the collar, whereby the pawl engaging the circular oblique groove will be forced out of the groove, thereby allowing the spring to control the revolution of the cylinder, a small pinion upon the end of the rubber roller adapted to mesh into the large pinion when the latter is moved as described.

570,454. GALVANOMETER. Clyde Coleman, Chicago, Ill., assignor of two-thirds to Albert L. Deane and James W. Donnell, same place. Filed June 9, 1896. Serial No. 594,839. (No model.)

Claim.—1. The combination of a pivoted armature and a magnet having pole-pieces provided with overlapping portions whose opposing surfaces are parallel and concentric with the axis of motion of the armature, substantially as set forth.

2. The combination of a pivoted armature and a magnet having pole-pieces each of which has an extension overlapping the other, the opposing surfaces of the pole-pieces being parallel and concentric with the axis of motion of the armature, substantially as set forth.



3. The combination with a pivoted armature in the form of a ring, of a magnet having pole-pieces each of which is provided with an extension which overlaps the other and is surrounded by the armature, the opposing surfaces of the pole-pieces being parallel and concentric with the axis of motion of the armature, substantially as set forth.

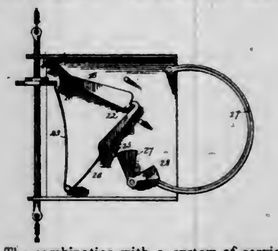
4. The combination with a pivoted armature and a magnet, of an auxiliary armature connected to the main armature and so related thereto that the magnetic force acting upon the auxiliary armature will resist its movement and consequently the movement of the main armature from normal position, substantially as set forth.

5. The combination with a pivoted armature, and a magnet, of an auxiliary armature connected to the main armature, the magnet being provided with auxiliary pole-pieces between which the auxiliary armature is located so as to be held normally parallel with the lines of magnetic force and returned thereto when the main armature is deenergized, substantially as set forth.

6. The combination with a shaft, of a part having a socket occupied by the shaft, the diameter of the socket being slightly greater than the diameter of the shaft, and a film of mercury filling the space between them, substantially as set forth.

7. In an electrical appliance the combination with a shaft, of a part having a socket occupied by the shaft, the diameter of the socket being slightly greater than the diameter of the shaft, and a film of mercury filling the space between them and electrically connecting them, substantially as set forth.

570,455. PLUMBING SYSTEM. Thomas S. Coleman and William P. Coleman, Marshall, Tex. Filed Apr. 30, 1895. Serial No. 547,701. (No model.)



Claim.—1. The combination with a system of service pipes for supplying water to a building or dwelling, of a self-closing stop and waste cock located at substantially the lowest point of the system of pipes, a movable bar or rod operatively connected with the said cock, a trigger having a hook to engage with and hold the bar or rod in check and having a projection to be engaged by a portion of the said bar to reset the trigger, and a thermal contrivance adapted to release the trigger when a temperature approximating the freezing-point is reached, substantially as described for the purpose set forth.

2. The combination with a system of service-pipes for supplying water to a building or dwelling, and a self-closing stop and waste cock

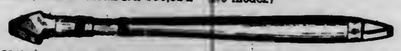
located at substantially the lowest point in the system of pipes, of a movable bar or rod having a stop and operatively connected with the said cock, a pull chain or cord having direct connection with the bar and extending within convenient reach, a trigger to engage with the stop on the movable bar and hold the cock open under normal conditions, and having a projection to be engaged by the stop on the said movable bar so as to reset the parts when the said pull-chain is drawn upon, and a thermal appliance for releasing the trigger when a temperature approximating the freezing-point is reached, substantially as and for the purpose set forth.

3. In a system of pipes for supplying water to a dwelling or building, the combination of a self-closing stop and waste cock located at the lowest point of the system, a movable bar operatively connected with the said cock and having a stop, a trigger having a hooked end to engage with the said stop and a projecting portion to limit the movement of the said bar in one direction, a trip to maintain the trigger in working position, and a thermostat for actuating the trip to release the trigger, substantially as described for the purpose set forth.

4. The combination with a system of pipes for supplying water to a building or dwelling, of a self-closing stop and waste cock located in the system, a movable bar operatively connected with the said cock, a pull chain, or cord, having attachment with the said bar and extending within convenient reach, a trigger having a hooked end to engage with a stop on the movable bar and having a projecting portion to engage with and limit the movement of the said bar in one direction, a trip having a hooked end to engage with the end of the trigger and having a projecting butt portion, and a thermostat constructed to operate upon the projecting butt portion of the trip and release the latter from the trigger, whereby the movable bar is liberated and the said cock free to operate, substantially in the manner set forth for the purpose specified

---

570,456. ERASER. HIRAM B. COLLINS, Frankfort, Ind. Filed Dec. 1, 1894. Serial No. 530,524. (No model.)



Claim.—An eraser consisting of a handle having a heart shaped head formed on its end, notches cut into the sides of the neck under said head, a strip of abrasive material mounted on said head with its ends extending around the corners thereof and down alongside the neck, over said notches, clamping-jaws secured at one end to the sides of said handle, and arranged so that their points, or jaws proper, will enter said notches in said neck, and a sliding ring mounted on said handle over said jaws, by the operation of which said jaws are forced in to impinge tightly upon said strip and force it tightly and securely into said notches, substantially as set forth.

570,457. CUFF-LINK. OSBORN CONGELTON, New York, N. Y. Filed Feb. 18, 1896. Serial No. 579,777. (No model.)



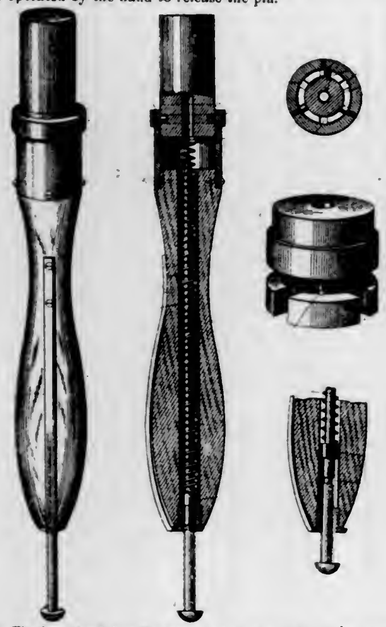
Claim.—1. An improved cuff-link, comprising oppositely-arranged buttons having rigid shanks, the shank of one terminating in a hollow slotted ball and the shank of the other terminating in a head adapted to enter the slot but of a width greater than the width of the slot, substantially as described.

2. An improved cuff-link, comprising a button having a rigid shank and a hollow slotted ball thereon, the slot being parallel with the greatest width of the shank, and a second button having a rigid shank with a head thereon arranged at right angles to the greatest width of the shank, the said head being adapted to enter the slot of the hollow ball, substantially as described.

570,458. PYROTECHNIC-SIGNAL HOLDER. WILLIAM F. COSTON, New York, N. Y. Filed June 26, 1893. Serial No. 478,798. (No model.)

Claim.—1. In a signal the combination with the handle constructed to hold a signal-cartridge at one end, of a manually-operated longitudinally-sliding firing-pin mounted in said handle with its rear end exposed, a spring acting on said pin and tending normally to retract the same, and an automatic locking device in position to engage and hold the pin in a retracted position, said locking device constructed to be operated by the hand to release the pin.

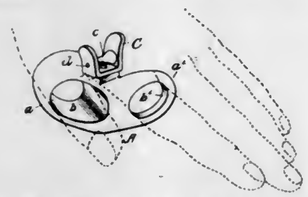
2. In a signal the combination with the handle constructed to hold a signal-cartridge at one end, of a manually-operated longitudinally-sliding firing-pin mounted in said handle with its rear end exposed and provided with a notch, a coiled spring encircling said pin bearing at its front end against the handle and at its rear end against the pin, thereby acting to normally retract the same, and a locking device tending to constantly engage the exposed portion of the pin and arranged to enter the notch therein when the pin is retracted and to hold the same in its retracted position, said locking device constructed to be operated by the hand to release the pin.



3. The improved handle for a signal cartridge of the type described comprising a body portion adapted to be grasped by the hand and formed to receive and retain a signal-cartridge, a longitudinally-sliding firing-pin mounted in said body with its rear end exposed and provided with a notch, a spring arm fixed at one end to the body portion extending longitudinally along the side of the same and having its opposite free end bent laterally at the rear of the body portion, perforated to receive the firing-pin and tending normally to engage the same and enter the notch therein when retracted; whereby the firing-pin is held in a retracted position by the spring-arm, and the latter is adapted to be included in the grasp when the handle is held and thereby enabled to be conveniently operated to unlock the pin and permit its advance

---

570,459. CUE-REST. WILLIAM D. CRONIN, Philadelphia, Pa., assignor to George L. Horn, same place, and Max Senger and Charles A. Baake, Atlantic City, N. J. Filed Feb. 10, 1896. Serial No. 578,657. (No model.)

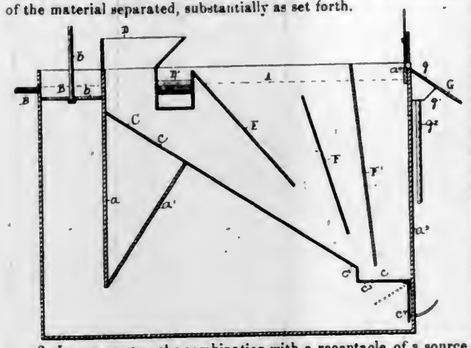


Claim.—The combination of the integral thumb and forefinger rings shaped to conform to the contour of the hand, a flat base on said rings, a bracket C swiveled on top of said rings, and a cue-holding roller *c*, carried by the side arms of said bracket, substantially as specified.

570,460. SEPARATOR. GEORGE W. CROSS, Pittston, Pa. Filed Mar. 12, 1896. Serial No. 582,878. (No model.)

Claim.—1. In a separator, the combination with a receptacle, a source of water supply communicating with the interior thereof, means

for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, means for feeding upon the upper part of said way the material to be treated, a guide-partition located in said receptacle above said inclined way and inclined in substantially the same general direction, a discharge at the upper end of said guide-partition for receiving a part of the material separated, and another discharge from said receptacle for the remainder of the material separated, substantially as set forth.



2. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle means for feeding upon the upper end of said perforate way the material to be treated, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, and a discharge from said receptacle for the remainder of the material separated, substantially as set forth.

3. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, and an approximately vertical imperforate partition arranged in said receptacle, with its lower end adjacent to the lower end of said perforate way and between which and the end of the receptacle is formed a passage for the discharge of the remainder of the material separated, substantially as set forth.

4. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way above said receptacle, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, an imperforate partition in said receptacle forming between the same and the end of the receptacle a passage for the discharge of the material separated, and a perforate partition in said receptacle located between said guide-partition and the imperforate partition, substantially as set forth.

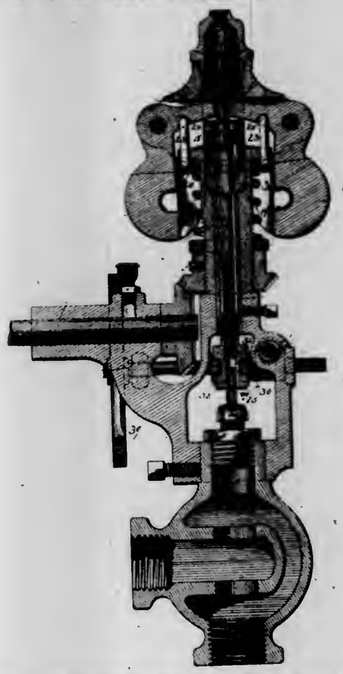
5. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, an imperforate partition in said receptacle between which and the end of the receptacle is formed a passage for the discharge of the material separated, and a perforate pocket in the lower end of said perforate way in which the heavier material accumulates before being discharged through said passage, substantially as set forth.

6. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, an imperforate partition in said receptacle between which and the end of the receptacle is formed a passage for the discharge of the material separated, a perforate pocket in the lower end of said perforate way in which the heavier material accumulates before being discharged through said passage, and means for varying the discharge through said perforate pocket, substantially as set forth.

7. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, a guide-partition above said perforate way and inclined in substantially the same general direction, a chute at the upper end of said guide-partition for receiving a part of the material separated, and drainage-openings in said chute for draining the material discharged into the same, substantially as set forth.

8. In a separator, the combination with a receptacle, of a source of water supply communicating with the interior thereof, means for passing the water through the receptacle under pressure, an inclined perforate way in said receptacle, a guide-partition in said receptacle above said perforate way and inclined in substantially the same general direction, means at the upper end of said guide-partition for receiving a part of the material separated, a discharge-chute for receiving the remainder of the material separated, and means for draining the material discharged through said chute, substantially as set forth.

570,461. GOVERNOR. WILLIAM T. DAVIS, Battle Creek, Mich. Filed Jan. 16, 1896. Serial No. 575,721. (No model.)



Claim.—1. In a governor, the combination with a revoluble head and a valve-stem, of angular arms pivotally connected to the revoluble head, a ball at the end of one member of each angular arm, the other member of each angular arm being made to project into the revoluble head and connected with the valve-stem, a spring encircling the revoluble head, a collar against which the upper end of said spring bears, and pins disposed between said collar and the inwardly-projecting members of the angular arms, substantially as set forth.

2. In a governor, the combination with a revoluble head, and a valve-stem, of a pair of balls, arms thereon hinged to the head and engaging the stem, a spring surrounding the revoluble head, and pins held between the spring and the arms at a point between their hinged points and the point where they engage the valve-stem, substantially as set forth.

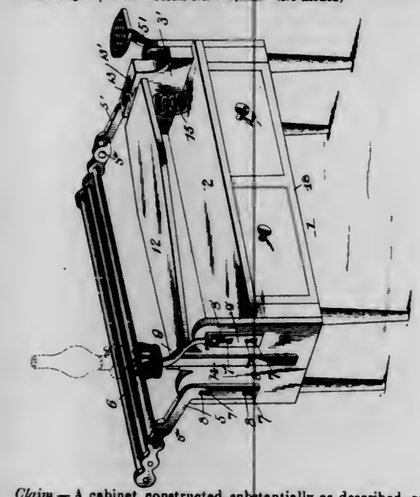
3. In a governor, the combination with a revoluble head, a valve-stem, and weights hinged to the head and having arms which engage the valve-stem, of pins extending loosely through holes in the head and engaging the arms at one end, and spring which operates against the other ends of the pins, substantially as set forth.

4. The combination with the frame of a governor, a rock-shaft supported therein, a sleeve on the shaft, means for setting it in place thereon, said sleeve having an integral arm projecting in one direction and an integral lug projecting in another direction, of valve-stem, shoulders thereon between which the free end of the arm extends, a perforated boss formed in the frame, a spring in the boss, a head in

the boss adapted to bear on the lug and against which the spring bears, and means for regulating the tension of the spring, substantially as set forth.

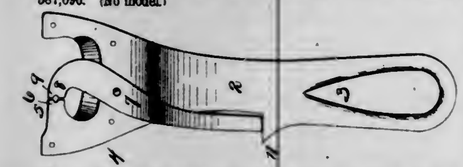
5. In a governor, the combination with a frame and a revoluble head, of L-shaped arms pivoted to the revoluble head, one member of each L-shaped arm being weighted and the other member projecting into the head, a valve-stem to which said inwardly-projecting members of the L-shaped arms are connected, a pinion secured to the revoluble head, a collar bearing against said pinion, a spring encircling the revoluble head and bearing against said collar, a collar near the upper end of the revoluble head, against which said spring also bears, and pins between the last-mentioned collar and the inwardly-projecting members of the L-shaped arms, substantially as set forth.

570,462. IRONING-TABLE. LYDIA E. DAWSON, Downing, Wis. Filed May 27, 1896. Serial No. 593,522. (No model.)



Claim.—A cabinet constructed substantially as described, comprising the side 3' formed with the vertical T-shaped slot 13', in combination with the removable ironing-board 12, having the T-shaped arm 13 and spring 15, substantially as and for the purpose set forth.

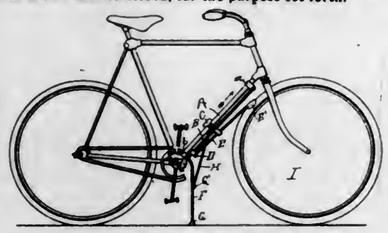
570,463. COMBINED CARPET-STRETCHER AND TACK-HOLDER. JAMES DETRICK, King's Ferry, N. Y. Filed Apr. 11, 1896. Serial No. 587,096. (No model.)



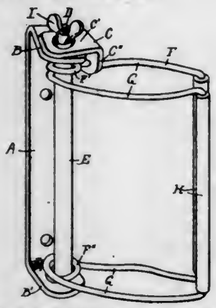
Claim.—A carpet-stretcher and tack-holder consisting of a handle having a head at one end provided with a downwardly-projecting point for stretching the carpet and a central recess, a jaw 5, projecting into the recess from one side of the head, and having a semicircular aperture in its face, a lever pivoted to the head and having a curved jaw for bearing against the jaw 5, and provided with a corresponding aperture to hold a tack, the arm of the lever extending at the side of the handle, and a guard 11, projecting outward from the side of the handle for protecting the end of the lever-arm, substantially as described.

570,464. BICYCLE-SUPPORT. ZENA J. DILLEY and HECTOR J. HAYES, Muir, Mich. Filed Mar. 12, 1896. Serial No. 582,968. (No model.)

Claim.—In a bicycle-support, the combination of the clips *a* and *b*, the guide-rod B supported by said clips, the brake-rod E pivoted by a clip D to the lower end of the guide-rod, the spoon E' mounted on the free end of said brake-rod, the head C embracing said brake-rod and adapted to slide upon said guide-rod, the supporting-rod F universally pivoted to clip *b* and an engaging device at the lower end of said supporting-rod, the brace-rod H pivoted at one end to the head C and at the opposite end to said supporting-rod, the spring-tongue C" mounted upon the head C, said head adapted to be moved along the guide-rod to raise and lower the free end of the brace-rod and its spoon and to swing the supporting-rod down to a vertical position, and said supporting-rod adapted to be engaged by the spring C" as the head C is moved to the upper extremity of the guide-rod, and all of said parts adapted to be mounted upon a bicycle-frame, substantially as shown and described, for the purpose set forth.



570,465. WALL ATTACHMENT FOR SUPPORTING BICYCLES. ZENA J. DILLEY and HECTOR J. HAYES, Muir, Mich. Filed Mar. 23, 1896. Serial No. 584,425. (No model.)



Claim.—1. In a device for the purpose set forth, the combination of the plate, the angled portions extending therefrom, the tube extending between said angled portions, the bail having coils that surround said tube, the rod passing through said tube, the arms of the bail standing adjacent to each other, and the nut for removably holding said rod in place, as set forth.

2. In a device for the purpose set forth, the combination of the plate, the angled portions extending therefrom, the tube extending between said angled portions, the bail, said bail having coils surrounding said tube, the rod passing through said tube, the thumb-nut on the end of said rod, the arms on said bail, said arms extending at an angle to said rod and extending parallel with each other, and the angled plate C attached to said bail.

3. In a device for the purpose set forth, the combination of the plate A, the angled portions B, B' extending therefrom, the tube extending between said angled portions, the bail, the coils in said bail surrounding said tube, the rod passed through said tube the thumb-nut on the threaded end of said rod, the arms on the bail, said arms extending approximately parallel with each other, said arms having vertical portions, said portions being surrounded by tubes of suitable material, for the purpose set forth, and the angled plate C for limiting the swing of the arms in one direction, substantially as and for the purpose set forth.

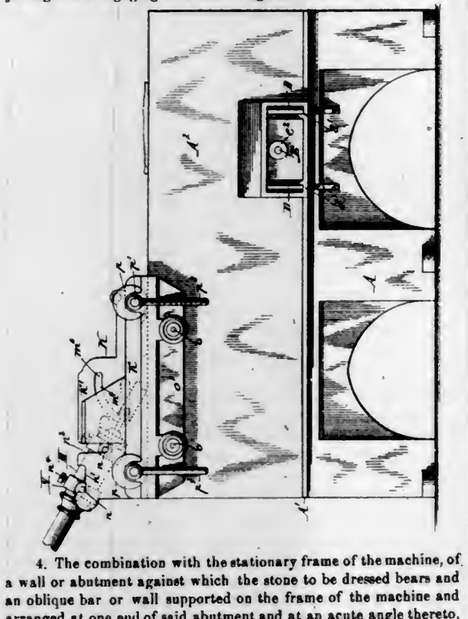
570,466. STONE-DRESSING MACHINE. OLIVER T. DUTRO, Buffalo, N. Y. Filed Dec. 31, 1894. Serial No. 533,418. (No model.)

Claim.—1. In a stone-dressing machine, the combination with the stationary frame having guideways, of a stone clamp or holder, a carriage moving on said ways, a cutter or chisel mounted on said carriage and having a V-shaped notch forming converging cutting edges, an actuating-cylinder also mounted on said carriage and a piston arranged in said cylinder and having a rod or hammer arranged to operate against said chisel substantially as set forth.

2. The combination with the stationary frame and the tool-carriage, of an upright wall or abutment against which the stones bear, a wedge movable toward and from said abutment and having its incline trending toward the same, and a vertically-movable table having an inclined under side resting loosely on said wedge and bearing at its front edge against said abutment whereby the table is prevented from moving away from the wedge and compelled to rise when the wedge is advanced, substantially as set forth.

3. The combination with the stationary frame of the machine and the tool-carriage, of an upright longitudinal wall or abutment

for the stones, a stone-clamp arranged opposite said abutment, a transverse supporting-wedge movable toward and from said abutment and having its incline trending toward the same, a vertically-movable table having an inclined under side resting loosely on the wedge and bearing at its front edge against said abutment, whereby the table is prevented from moving away from the wedge and an adjusting-screw engaging with said wedge, substantially as set forth.



4. The combination with the stationary frame of the machine, of a wall or abutment against which the stone to be dressed bears and an oblique bar or wall supported on the frame of the machine and arranged at one end of said abutment and at an acute angle thereto, whereby the stone resting against said abutment is prevented from tipping away therefrom by the oblique bar or wall, substantially as set forth.

5. The combination with the stationary frame of the machine, having an abutment for the stone, of an oblique bar arranged in rear of said abutment, and an adjustable clamping-block having an oblique rear face bearing against said oblique bar and a transverse front face adapted to impinge against the rear side of the stone, substantially as set forth.

6. The combination with the stationary frame of the machine having an abutment for the stone, of an oblique bar arranged in rear of said abutment, an adjustable clamping-block having an oblique rear face bearing against said oblique bar and a transverse front face adapted to impinge against the rear side of the stone, and an oblique adjusting-screw engaging with said clamping-block, substantially as set forth.

7. The combination with the stationary frame and an upright wall or abutment against which the stone is adapted to bear, of a vertically-adjustable table arranged adjacent to said wall and supporting the stone, a clamp arranged opposite said wall and adapted to impinge against the side of the stone, an oblique bar arranged in rear of said wall, and an adjustable clamping-block guided on said oblique bar and adapted to impinge against the rear side of the stone, substantially as set forth.

8. The combination with the stationary frame, the tool-carriage and upright abutment for the stones, of a main supporting-table arranged adjacent to said abutment, and a supplemental table or platform removably arranged on the main table and sloping toward said abutment, whereby the stones are caused to hug the abutment, substantially as set forth.

9. The combination with the stationary frame of the machine having guideways, of a stone clamp or holder, and a tool-carriage supported on said guideways and having cams or eccentrics for elevating it, substantially as set forth.

10. The combination with the stationary frame of the machine having guideways, of a stone clamp or holder, a tool-carriage supported on said guideways, transverse rotary shafts journaled in the front and rear portions of said carriage, and eccentrics secured to said shafts and adapted to bear against said guideways for elevating the carriage, substantially as set forth.

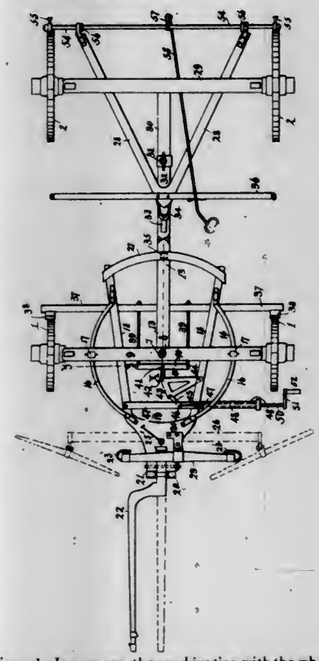
11. In a stone-dressing machine, the combination with the main frame, a stone-holder and a tool-carriage arranged to traverse the stone-holder, of a supporting-ring mounted on said carriage, an actuating-cylinder reversibly supported in said ring and a clamping device for securing the cylinder in place in said ring, substantially as set forth.

12. The combination with the main frame and the carriage, of a cutter-plate or chisel mounted therein, an actuating-cylinder and piston supported on said carriage, and an impact-block interposed between the rear end of the cutter-plate and the rod of said piston and extending across the width of the cutter-plate, whereby the strain upon said plate is equalized, substa itially as set forth.

13. The combination with the tool carriage having slotted side plates, of an actuating-cylinder mounted on the carriage and an impact-block having supporting studs arranged in the slots of said side plates, substantially as set forth.

14. The combination with the side plates of the tool carriage having horizontal slots provided with upwardly and rearwardly curved branches, of an actuating-cylinder mounted on said carriage, and an impact-block having supporting-studs arranged in the slots of said side plates, substantially as set forth.

570,467. WAGON. FERDINAND FISCHER, Chesaning, Mich. Filed Apr. 11, 1896. Serial No. 587,109. (No model.)



Claim.—1. In a wagon, the combination with the wheels, the axle, the pulley 11, and the reach 13, of the rear reach 30 and hounds and clamps securing the rear reach and hounds together, and a hook on the front reach and a loop on the rear hounds engaging the hook, as specified.

2. In a wagon, the combination with the front and rear truck of a reach extending from engagement with a pulley on the front axle, to the rear hounds, and a reach extending from the rear axle frontward and engaging the front reach and held thereto by clamps, and a hook on the front reach engaging a loop on the front end of the rear hounds, as specified.

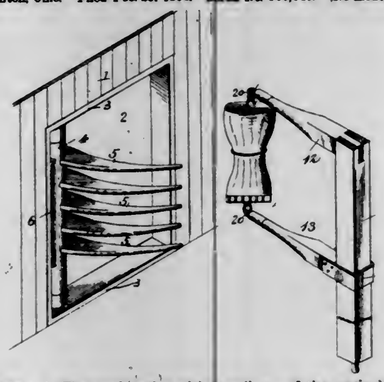
3. In a wagon, a brake for the wagon, comprising shoes carried on a transverse bar at the rear of the front truck a screw-threaded crank-shaft in front of the axle, a traveling nut on the screw-threaded crank-shaft, connecting to a series of pivoted levers, the levers connected to the transverse bar carrying the shoes, whereby the crank-shaft is turned, the nut will travel in one direction and draw the shoes to the wheel, and when turned in the opposite direction will push them away, as specified.

4. In a wagon-brake, the combination with a series of levers arranged in front of the front axles, two parallel levers extending back of the front axle and connected to a rod carrying brake-shoes adapted to engage the front wheels, and the brake shoes, and a threaded crank-shaft in front of the front axle carrying a traveling

nut connected to one of the series of levers, and a crank for turning the shaft, as specified.

5. In a wagon-frame, the combination of a shaft journaled in the rear extension of the hounds of the rear truck, rods connected to the shaft and adapted to be turned down just at the rear of each wheel of the rear truck and having forked ends adapted to engage the earth, and a lever connected to a crank on the shaft and extending upward and frontward so as to be engaged by the operator and adapted to turn the shaft, substantially as and for the purpose set forth.

570,468. MAIL-BAG CATCHER. EPHRIAM A. FOSTER, Port Clinton, Ohio. Filed Feb. 25, 1896. Serial No. 580,640. (No model.)

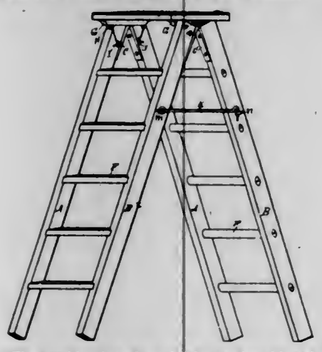


Claim.—1. The combination with a mail-car, of the vertical rotatable standard, the curved arms secured thereto and the pins also secured to said standard at an angle to said curved arms, substantially as described.

2. The combination with a mail-car, of the door-frame, the vertical rotatable standard, the arms secured thereto at an angle, the pins and the elastic stop secured to said standard; substantially as described.

3. The combination with a mail-car, of the door-frame, the vertical rotatable post, the curved arms, the pins at an angle thereto, and the elastic stop secured to said standard, of the spring-catch secured to said frame; substantially as described.

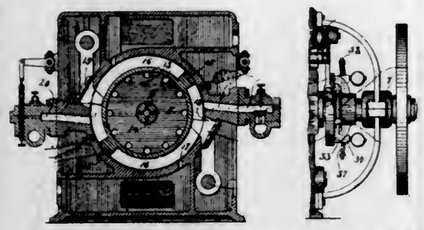
570,469. COMBINATION-LADDER. JAMES FURGASON, Odessa, N. Y. Filed Mar. 2, 1896. Serial No. 581,460. (No model.)



Claim.—The combination of two ladder-sections hinged together at their adjacent ends, a platform, and means whereby said platform is adapted to be adjusted to be used as such at the tops of the folded sections or to be placed across the meeting ends of the sections when straight and brace them together, substantially as described.

570,470. ROTARY GAS-ENGINE. LOUIS GATHMANN, Chicago, Ill., assignor to Daniel T. McMullen, same place, James B. McMullen, New York, N. Y., George W. McMullen, Picton, Canada, and David S. McMullen and Roger B. McMullen, Evanston, Ill. Filed June 1, 1895. Serial No. 551,427. (No model.)

Claim.—1. In a rotary gas-engine wherein explosive charges are employed as a source of power, a cylinder, and a piston of less diameter than said cylinder situated and supported within the same and capable of rotation therein without contact with the said cylinder, substantially as described.



2. In a rotary gas-engine, a passage in communication with the induction-port and with a means for supplying air under constant pressure, and with a means for intermittently supplying gas or oil at a pressure greater than that of the air, and a valve in the air-supply passage constructed and arranged to be controlled by differences of pressure in the air-supply pipe and the passage to the inlet-port, as and for the purpose set forth.

3. In a rotary gas-engine, a cylinder having induction and exhaust ports, a revoluble piston situated within said cylinder and having a chamber or valve-seat and abutments, a valve passing through an opening in said cylinder and adapted to enter said chamber or valve-seat, and situated between said exhaust and induction ports, means for opening and closing the valve before and after the passage of an abutment, an exploding device, and means constructed and arranged to supply to the induction-port air and gas or oil before explosion and air after explosion, substantially as described.

4. In a rotary gas-engine, a cylinder having induction and exhaust ports, a revoluble piston situated within said cylinder, and having a valve-seat and abutment, a valve passing through an opening in said cylinder and entering said valve-seat, in the gas or oil supply passage, and situated between said exhaust and induction ports, means for opening and closing the valve before and after the passage of an abutment, and an air-supply, and a gas or oil supply communicating with said induction-port, a valve for controlling the admission of gas or oil to said induction-port operated by means of said piston, and a check-valve situated in the air-supply passage, substantially as described.

5. In a rotary gas-engine, a cylinder having induction and exhaust ports, a revoluble piston situated within said cylinder, and having a valve-seat and abutment, a valve passing through an opening in said cylinder and entering said valve-seat, and situated between said exhaust and induction ports, an air and gas or oil supply communicating with said induction-port, a valve for controlling the admission of gas or oil to said induction-port operated by said piston, and means for admitting air to said induction port after the abutment passes said exhaust-port and until the explosion occurs, substantially as described.

6. In a rotary gas-engine, the combination with a cylinder having induction and exhaust ports, of a piston rotatably mounted therein, valves pivotally mounted upon one of said parts and adapted to enter valve-seats, said valve-seats being formed in the other of said parts and having inclined side walls and transverse abutments, and said valves having inclined ends adapted to enter said valve-seats, with devices for admitting the propelling charge and for operating the valves, substantially as described.

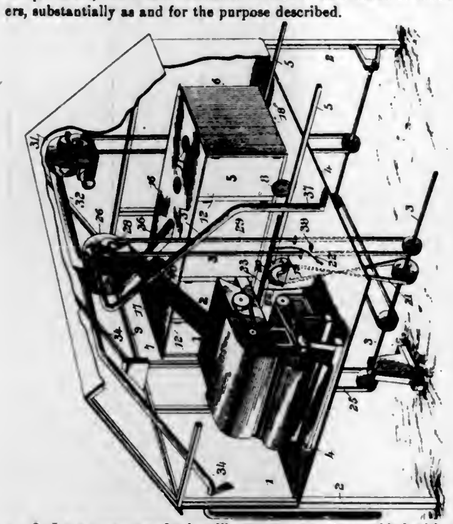
7. In a rotary gas-engine, the combination with a cylinder having induction and exhaust ports, of a piston rotatably mounted therein and having a groove or chamber and transverse abutments, said abutments being wider than said induction-ports, and valves for said groove or chamber, substantially as described.

8. In a rotary gas-engine, wherein explosive charges are employed as a source of power, a cylinder and a piston cooperating therewith, one of said parts having an explosion-chamber and the other part having a clearance extending into the explosion-chamber, and said parts rotating without frictional contact and a valve or movable abutment adapted to be projected at regular intervals into the explosion-chamber to confine the explosive force, substantially as described.

570,471. MACHINERY FOR HANDLING COTTON. RICHARD M. GILL, Ruston, La. Filed Sept. 24, 1895. Serial No. 563,547. (No model.)

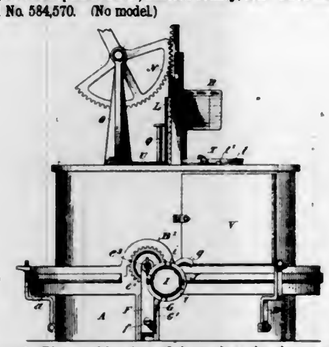
Claim.—1. In an apparatus for handling cotton, the combination with a separator comprising two separating-chambers, of an exhaust-fan, and an exhaust-tube interposed between and communicating with said separator and fan, the said tube being provided with a central web or partition extending longitudinally thereof and dividing the tube into separate and independent air-passages, one of which communicates with one chamber of the separator, and the other with the remaining chamber, substantially as and for the purpose described.

2. In an apparatus for handling cotton, a box-car provided with a series of compartments, a false back or follower located within each compartment, and a cable attached to each of said backs or followers, substantially as and for the purpose described.



3. In an apparatus for handling cotton, a car provided with a series of compartments, and a false back or follower located in each of said compartments, in combination with a revoluble shaft or windlass, and a cable running around said shaft or windlass and adapted to be connected with said back or follower, substantially as and for the purpose specified.

570,472. CHEESE-CUTTER. WILLIAM R. GORRELL, Carsin's Run, Md., assignor, by direct and mesne assignments, of two-thirds to Edward O. Bayles and Septimus Davis, Harford County, Md. Filed Mar. 23, 1896. Serial No. 584,570. (No model.)



Claim.—1. The combination of the casing, the cheese-supporting table, a series of rows of annular teeth around the edge of the table, a pinion adapted to gear with said teeth, means for adjusting the pinion from one series of teeth to the other, mechanism for actuating the pinion, and a vertically-reciprocating slicing-knife.

2. The combination of the casing, the cheese-supporting table, a series of rows of teeth around the edge of the table, a pinion adapted to gear with said rows of teeth, a shaft on which said pinion is mounted, a supporting-arm for the shaft, an adjusting-screw for moving the pinion from one series of teeth to another, and a vertically-reciprocating slicing-knife.

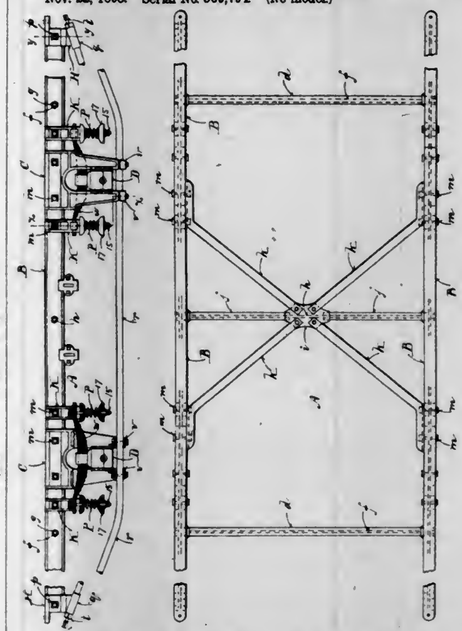
3. The combination of the casing, the cheese-supporting table, a series of rows of teeth at the periphery of the table, a pinion adapted to gear with said teeth, a cog-wheel secured to the shaft carrying the pinion, a pinion gearing with this cog-wheel, a hand-wheel on the shaft of the pinion, an index in proximity to the hand-wheel, and a vertically-reciprocating slicing-knife.

4. The combination of the casing, the cheese-supporting table, an annular row of teeth secured thereto, a pinion gearing with said teeth, a cog-wheel on the shaft of said pinion, a pinion gearing with said cog-wheel, means for turning said last-mentioned pinion, and a swinging arm on which the shaft of said pinion is mounted.

5. The combination of the casing, the cheese-supporting table, an annular series of teeth secured thereto, a pinion gearing with said teeth, a cog-wheel on the shaft of said pinion, a pinion gearing with said cog-wheel, an arm on which the shaft of the pinion is mounted, a spring for pressing the arm toward the cog-wheel, and a vertically-reciprocating slicing-knife.

6. The combination of the casing, the cheese-supporting table, means for revolving it, a glass in the top of the casing a series of curved scale-bars above the glass, a pointer adjustable longitudinally relatively to the scale-bars, and also transversely relatively thereto, and a vertically-reciprocating slicing-knife.

570,473. CAR-TRUCK. JOHN H. GRAHAM, Boston, Mass. Filed Nov. 22, 1895. Serial No. 569,794. (No model.)

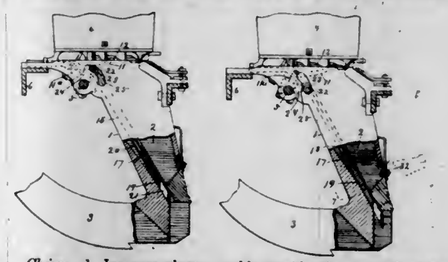


Claim.—1. In a car-truck, the I-beam, side bar in combination with the tubular arch-bar and the clips, H, bolted to said side bar and in which said arch-bar is secured.

2. The frame, A, comprising the I-beams, B, connected by tubes, *d*, and rods, *f*, *h*, the plate, *i*, and the radiating braces, *k*, connecting said plate and beams.

3. In a car-truck the axle, in combination with the axle-box, D, having a flange, 29; collar, 26, provided with the convex portion, 28, and the flexible washer, 30, in engagement with said flange, substantially as described.

570,474. CHECK-ROW CORN-PLANTER. FREDRICK GUNTHER, Kewanee, Ill. Filed July 25, 1896. Serial No. 600,569. (No model.)



Claim.—1. In a corn-planter, and in combination, a standard having a seed-duct, a seed measuring and delivering valve in the seedbox, an endwise-reciprocating valve in the seed-duct having a seed-chamber near its lower end, and an inclined forward side of the seed-duct which serves to close said seed-chamber when in its highest position, substantially as described.

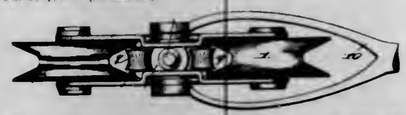
2. In a corn-planter, and in combination, a standard having a seed-duct, a seed measuring and delivering valve in the seedbox, an endwise-reciprocating valve in the seed-duct having a through seed-chamber in its lower end, an inclined forward side of the seed-duct which serves to close said seed-chamber when in its highest position, and an intermediate valve located in rear of the seed-chamber of the reciprocating valve, substantially as described.

3. In a corn-planter, and in combination, a standard having a seed-duct, a seed measuring and delivering valve in the seedbox, an endwise-reciprocating valve in the seed-duct having a through seed-chamber in its lower end, an inclined forward side of the seed-duct which serves to close said seed-chamber when in its highest position, and an intermediate valve located in rear of the seed-chamber of the reciprocating valve, and pivoted or hinged to the standard to permit of swinging it outwardly at its lower end, substantially as described.

4. In a corn-planter, and in combination, a standard having a seed-duct, a seed measuring and delivering valve in the seedbox, an endwise-reciprocating valve in the seed-duct having a through seed-chamber in its lower end, an inclined forward side of the seed-duct, an intermediate valve located in rear of the seed-chamber of the reciprocating valve and pivoted or hinged to the standard, and a spring for pressing the intermediate valve with a yielding spring-pressure toward the reciprocating valve, substantially as described.

5. In a corn-planter, and in combination, a standard having a seed-duct, a seed measuring and delivering valve in the seedbox, an endwise-reciprocating valve in the seed-duct having a substantially vertical seed chamber in its lower end, means for simultaneously opening and closing both of said valves, and an inclined forward side of the seed-duct adapted to close the discharge side of the seed-chamber in the reciprocating valve when said valve is moved to its higher position, and to permit the seed to discharge therefrom when the valve is moved to its lower position, substantially as described.

570,475. TROLLEY. JAMES A. HANCE, St. Louis, Mo., assignor of one-half to Andrew B. Lail, same place. Filed Feb. 26, 1896. Serial No. 580,891. (No model.)



Claim.—In a trolley-truck, two grooved wheels mounted for rotation in a frame, two smaller grooved wheels mounted for rotation in said frame and between the first two wheels, all of said wheels being in a running line and the top of the two intermediate wheels being slightly below the line of the top of the two outer wheels, and a rocking and swivel connection between said frame and the trolley-pole.

570,476. DOOR OPENING OR CLOSING APPARATUS FOR ELEVATORS. FRANK E. HERDMAN, Winnetka, Ill. Filed Sept. 27, 1895. Serial No. 563,887. (No model.)

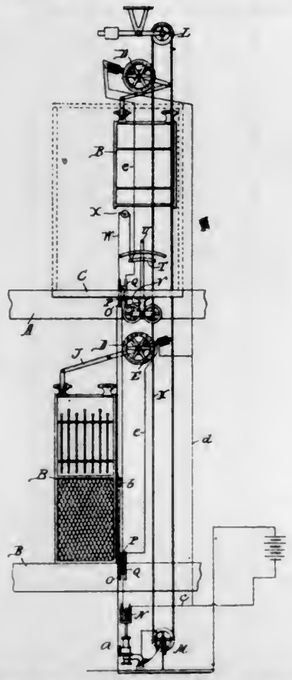
Claim.—1. In a door opening and closing apparatus for elevators, the combination with an elevator-car, a door-opening mechanism, an operating-cable therefor, and a motor, of an electric circuit, an electromagnet in said circuit operating the valve of said motor, and means upon the elevator-car for making and breaking said electric circuit, substantially as described.

2. In a door opening and closing apparatus for elevators, the combination with an elevator-car, a door-opening mechanism, an operating-cable therefor, and a motor for said cable, of an electric circuit, an electromagnet included in said circuit for operating the valve of said motor, and means carried by the car for automatically making and breaking said circuit, substantially as described.

3. In a door opening and closing apparatus for elevators, the combination with an elevator-car, a door opening and closing mechanism comprising an electromagnetic clutch, an operating-cable for such mechanism, and a motor for said cable, of an electric circuit in which is included the magnet of the said clutch, an electromagnet for operating the valve of the motor, and means carried by the car for making and breaking said circuit, substantially as described.

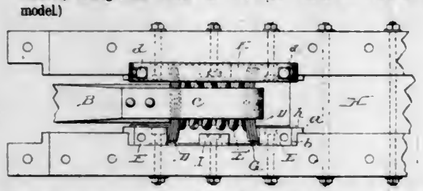
4. In a door opening and closing apparatus for elevators the combination of a door-opening mechanism, a motor at the bottom of the elevator-shaft adapted to actuate said mechanism, and lever-control devices upon the car connected in electric circuit with the motor and adapted to set the latter in operation, substantially as described.

5. In a door opening and closing apparatus for elevators the combination with an elevator-car, a door-opening mechanism, an operating-cable therefor, and a motor for said cable, of an electric circuit, an electromagnet included in said circuit for operating the valve of said motor, contact-blocks secured in the elevator-shaft and contact-plates carried by the car and adapted to close the circuit through engagement with said contact-blocks, substantially as described.



6. In a door opening and closing apparatus for elevators the combination with an elevator-car, a door opening and closing mechanism comprising a clutch, an operating cable for such mechanism and a motor for said cable, of an electric circuit including the magnet of said clutch, an electromagnet for operating the valve of the motor, three contact-blocks secured in the elevator-shaft and two contact-plates carried by the car and adapted to engage said contact-blocks and close the circuits, substantially as described.

570,477. DRAFT-RIGGING FOR CAR-COUPLINGS. JAMES A. HIXSON, Chicago, Ill. Filed Mar. 12, 1896. Serial No. 582,959. (No model.)



Claim.—1. A stop-block, for draft-riggings for car-couplers, consisting of a single block of metal having an end flange and an end shoulder, transverse shoulders at each end of said flange and a recess or pocket formed in the rear face of said block, substantially as described.

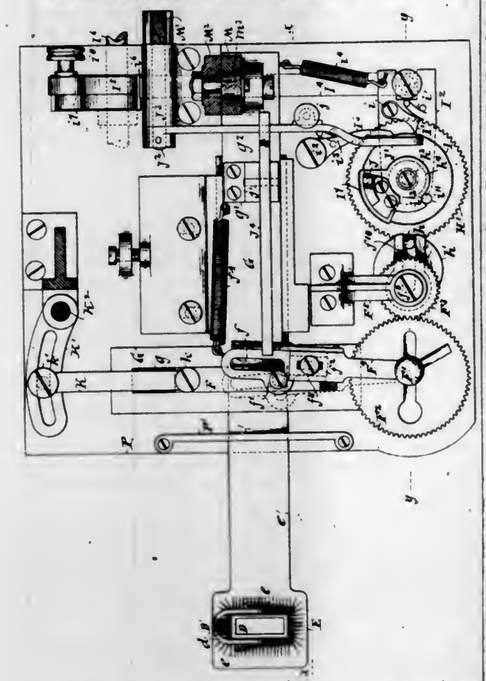
2. The combination, in a draft-rigging for car-couplers of blocks having end flanges adapted to overlap the draft-timbers, end shoulders adapted to abut against the ends of the recess or pocket, and connecting-straps bolted to said blocks and forming ways for the follower-plates of a car-coupler to slide on, substantially as described.

3. The combination, in a draft-rigging for car-couplers, of the stop-blocks having recesses or pockets in their rear faces, straps connecting said blocks, and chafing or wear plates having their ends extending into said pockets, substantially as described.

4. The combination, in a draft-rigging for car-couplers of stop-blocks having shoulders at one end, and connecting-straps having their ends bent at right angles to engage said shoulders, substantially as described.

5. The combination, in a draft-rigging for car-couplers, of draft-timbers recessed to receive stop-blocks and the ends of follower-plates, stop-blocks formed with recesses on their rear faces, and having one end formed with flanges to overlap the draft-timbers vertical recess, shoulders formed on said blocks transversely of the end flanges, straps having bent ends adapted to engage said transverse shoulders, and wear or chafing plates having their ends extending into the recesses on the rear of the blocks, substantially as described.

570,478. SEWING-MACHINE. JAMES T. HOGAN, Jersey City, N. J., assignor to the National Machine Company, of New York. Filed Feb. 17, 1894. Serial No. 500,543. (No model.)



Claim.—1. In a sewing-machine, the combination of a plate for the fabric to be sewed, mechanism for imparting to the plate a zigzag to-and-fro movement and a longitudinally-reciprocating movement, a presser foot for holding the fabric upon said plate, a presser-foot bar, and supports for the bar comprising a ball and ball-bearing at the upper portion of the bar through which the latter is movable longitudinally, and a spring-pressed block at the lower portion of the bar along which the bar may slide, said block being movable transversely to its length to admit of the corresponding movement of the bar, substantially as specified.

2. In a sewing-machine the combination of a plate for the fabric to be sewed, a support for the plate carrying it in the direction of the length of a row of stitches to be made, a crank for imparting to said support the necessary feeding movement in making a row of stitches, a connecting-rod connecting said support with said crank, mechanism for independently imparting to said support a longitudinal reciprocating movement in the direction of the feeding movement, and means for disconnecting said connecting-rod from said support and rendering the aforesaid mechanism operative, and for connecting said connecting-rod with said support and rendering said mechanism inoperative, substantially as specified.

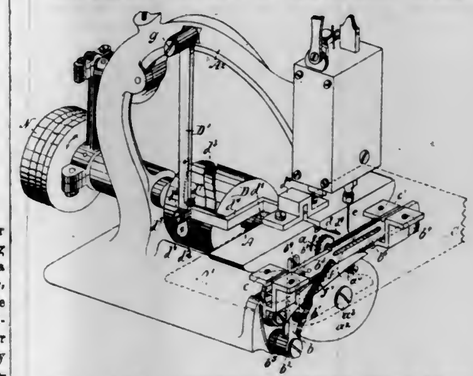
3. In a sewing-machine, the combination of a plate for the fabric to be sewed, a support for the said plate carrying it in the direction of the length of a row of stitches which are to be made, a crank and connecting-rod, the latter having an L-shaped slot for engaging and disengaging the said connecting-rod with and from a stud for imparting to said support the necessary movement for the feed in making said row of stitches, a mechanism for imparting to said support independently of said crank and connecting-rod a long movement necessary for making a long stitch lengthwise of the said row of stitches, and means for engaging the said connecting-rod with the said support and simultaneously rendering the said mechanism inoperative and for disengaging the said connecting-rod from the said support and rendering the said mechanism operative, substantially as specified.

4. In a sewing-machine, the combination of a plate for the fabric to be sewed, a support for the said plate carrying it in the direction of the length of a row of stitches to be made, a crank for imparting to said support the necessary feeding movement in making a row of stitches, a connecting-rod connecting said support with said crank, mechanism for independently imparting to said support a longitudinal reciprocating movement in the direction of the feeding movement, a lever for disconnecting the connecting-rod from said support, and a cam for tilting the lever, substantially as specified.

5. In a sewing-machine, the combination of a plate for the fabric to be sewed, a support for the said plate carrying it in the direction of the length of a row of stitches which are to be made, mechanism for imparting to said support the necessary movement for the feed in making said row of stitches, a connecting-rod connected with said support, a lever K', K², K³, with which said connecting-rod is connected, an arm L for actuating said lever, a lever M for imparting motion to said arm L, a cam C for actuating said lever M, and means for engaging and disengaging said arm L and the levers K', K², K³ and M and also for controlling the operation of the first said mechanism whose function it is to operate said support for the feed necessary in making the row of stitches, substantially as specified.

6. In a sewing-machine the combination of a plate for the fabric to be sewed, a support for the said plate carrying it in the direction of the length of a row of stitches to be made, a crank for imparting to said support the necessary feeding movement in making a row of stitches, the throw of the crank being made adjustable, a connecting-rod connecting said crank with said suppport with which latter it is adjustably engaged, mechanism for independently imparting to said support a longitudinal reciprocating movement in the direction of the feeding movement, a lever for disconnecting the connecting-rod from said support, and a cam for tilting the lever, substantially as specified.

570,479. SEWING-MACHINE. THOMAS J. HOLTON and FRANK MALSOM, Philadelphia, Pa., assignors to John Shoemaker and Thomas J. Holton, same place. Filed Sept. 3, 1888. Serial No. 284,455. (No model.)



Claim.—1. The combination in a crochet-machine of the stitching-needle, the latch-needle, the presser-foot, the feed bar having a longitudinal slot for the passage of the latch-needle, the feed-lever, the spiral feed-cam, the gear-wheel and pinion and a device for regulating the length of stroke of the feed-bar substantially as described and set forth.

2. The combination in a crochet-machine, of a stitching-needle, the vertically-movable and longitudinally-reciprocating latch-needle, the presser-foot, the feed-bar provided with a longitudinal slot through which the latch-needle is adapted to reciprocate, the feed-lever, the spiral feed cam, the pinion and the gear-wheel, substantially as described.

570,480. MANUFACTURE OF CYANOGEN COMPOUNDS. JOHN J. HOOD and ALFRED G. SALAMON, London, England. Filed Feb. 17, 1896. Serial No. 579,625. (No specimens.) Patented in England Mar. 25, 1891, No. 5,354, and in Germany Feb. 28, 1892, No. 72,644.

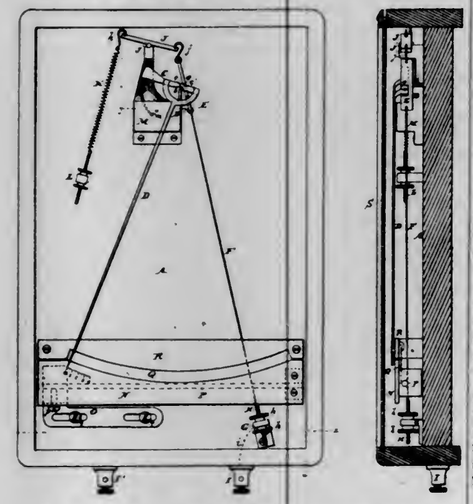
Claim.—1 The herein-described process which consists in heating together in a closed vessel, carbon bisulfid, ammonia and a fixed base or bases, in such proportions that the products of the reaction of the carbon bisulfid and ammonia combine with the fixed base or bases forming sulfocyanid and sulfid of the said base or bases.

2. The herein described process, which consists in heating together in a closed vessel, carbon bisulfid, ammonia, peroxid of manganese and lime in about the following proportions: seventy-six parts carbon bisulfid, 17.5 to eighteen parts ammonia (H_3N), forty-seven parts MNO_2

in the form of Weldon mud, twenty parts slaked lime containing seventy-six to eighty per cent. of $C_2H_2O_2$, causing the products of the reaction of the carbon bisulfid and ammonia to combine with the peroxid of manganese and lime and thereby form sulfocyanid and sulfid of the base.

570,481. INSTRUMENT FOR MEASURING ELECTRIC CURRENTS.

RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to the Thomson-Houston Electric Company, of Connecticut. Filed Oct. 4, 1892. Serial No. 447,790. (No model.)



Claim.—1. In a measuring instrument for measuring electric currents, the combination of an expansion-wire over which the current is caused to flow, a movable pointer or indicator movable thereby, a dial-plate over which the pointer is moved, a firm support for the dial-plate having a coefficient of expansion relative to that of the expansion-wire whereby normal changes of temperature surrounding the meter will cause the zero-point to be shifted automatically in the same direction as the shifting of the pointer due to the same changes, a cup containing a liquid, and a paddle carried by the pointer or indicator and working in the liquid in the cup for the purpose of making the meter dead-beat in its action.

2. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upon the fulcrum, an expansion-wire connected at one end to an immovable abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer terminals and circuits for causing the current to traverse the expansion-wire, and a dial-plate over which the pointer or indicator moves.

3. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upon the fulcrum, an expansion-wire connected at one end to an immovable abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer, terminals and circuits for causing the current to traverse the expansion-wire, a dial-plate over which the pointer or indicator moves, and means to adjust the tension of the expansion-wire.

4. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upon the fulcrum, an expansion wire connected at one end to an immovable abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer, terminals and circuits for causing the current to traverse the expansion-wire, a dial-plate over which the pointer or indicator moves, and means to adjust the tension of the expansion-wire at its connection with the abutment.

5. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upoo the fulcrum, an expansion-wire connected at one end to an immovable abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer, terminals and circuits for causing the current to traverse the expansion-wire, a dial-plate over which the pointer or indicator moves, means to adjust the tension of the expansion-wire at its connection with the abutment, and means to adjust the tension of the tension device for putting the expansion-wire under any desired degree of tension.

6. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upon the fulcrum, an expansion-wire connected at one end to an abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer, terminals and circuits for causing the current to traverse the expansion-wire, a dial-plate over which the pointer or indicator moves, and an expansible support for the dial-plate consisting of an expansible bar connected at one end with the dial-plate and at the other with a part secured to the main frame whereby the dial-plate is moved laterally in the same direction as the pointer or indicator to correspond in direction to the shifting of the pointer or indicator due to variations in temperature of the surrounding atmosphere.

7. In a measuring instrument for measuring electric currents, the combination of a stationary fulcrum, an indicator or pointer having a fulcrum-block pivoted upon the fulcrum, an expansion-wire connected at one end to an abutment and at the other end to a tension device and having a part acting upon the fulcrum-block of the indicator or pointer, terminals and circuits for causing the current to traverse the expansion-wire, a dial-plate over which the pointer or indicator moves, an expansible support for the dial-plate consisting of an expansible bar connected at one end with the dial-plate and at the other with a part secured to the main frame whereby the dial-plate is moved laterally in the same direction as the pointer or indicator to correspond in direction to the shifting of the pointer or indicator due to variations in temperature of the surrounding atmosphere and means to adjust the length of the expansion-bar.

8. In a measuring instrument for measuring electric currents, a pointer and actuating devices therefor, a dial over which the pointer moves, an expansion-wire to move the pointer over which the current to be measured passes, a vessel or cup to contain glycerin or other fluid, and a paddle carried by the pointer moving in the liquid contained in the vessel or cup to make the pointer move with a dead-beat action.

9. In a measuring instrument for measuring electric currents, the combination of a movable pointer, an expansion-wire over which the current to be measured passes adapted to actuate the said pointer, and a dial-plate over which the pointer travels made of two parts one of which is stationary and provided with a mirror and the other of which is movable and carried by a compensating support for moving the zero-point transversely to the length of the pointer.

10. In a measuring instrument for measuring electric currents, the combination of the fulcrum B and movable plate E having the knife-edge *e*, the fulcrum-block C having notches *c c'*, the expansion-wire F connected to the plate E, a spring acting upon the plate E to keep the wire F under tension, a rigid abutment G for holding one end of the expansion-wire, a pointer D moved by the fulcrum-block C, and a dial over which it moves.

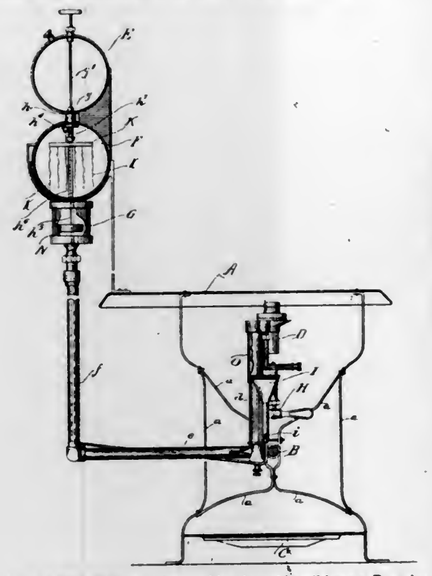
11. In a measuring instrument for measuring electric currents, the combination of a fixed fulcrum, a pointer having a fulcrum-block pivoted upon said fulcrum but having greater weight upon one side of the fulcrum than on the other so as to move the pointer by the action of gravity, and an expansion-wire over which the current to be measured passes acting upon the fulcrum-block to oppose the action of gravity and permit it to move in accordance with the expansion of said expansion-wire due to the current.

570,482. GASOLENE-STOVE.

ABNER R. HUTCHINS, New York, N. Y., assignor to James D. Luther and Charles Lederhos, same place. Filed Oct. 29, 1894. Serial No. 527,233. (No model.)

Claim.—1. In a gasolene-stove, the combination of an oil-burner D, an auxiliary or carbureted-air burner, a carbureter-chamber supplying carbureted air to the auxiliary burner, a supply-tank E communicating with the oil-burner through the carbureter-chamber, a transparent chamber interposed between the carbureter-chamber and the oil-burner and in communication with the carbureter-chamber, a valve controlling the exit of fluid from the tank, a float contained within the transparent chamber, and a connection between the valve and the float, whereby the flow of liquid from the tank may be regulated by the height of the liquid in the transparent chamber, substantially as described.

2. In a gasolene-stove, the combination of a carbureter-chamber, a perforated trough mounted in the upper portion of said chamber and having depending therefrom curtains of absorbent material, means for supplying oil to said trough, bellows communicating with the carbureter-chamber at the upper portion thereof, a pipe in open communication with the lower portion of the chamber and leading therefrom at a level considerably lower than the air-inlet at the upper portion of said carbureter to conduct carbureted air to the carbureted-air burner, and an independent pipe also leading from said chamber to the main burner for conveying the oil which is passed through the carbureter to the main burner, substantially as described.



3. In a gasolene-stove, the combination of an oil-burner D, a pipe (*f e d*) communicating therewith and serving to bring oil thereto, a carbureter-chamber F communicating with the pipe and having an air-inlet and carbureted-air outlet therefor, a tank E mounted upon and communicating with the chamber F and with the supply-pipe (*f e d*), a valve h^3 controlling the supply of oil to the carbureter-chamber F, a transparent chamber G interposed between the carbureter-chamber and the oil-burner D and in communication with the supply-pipe, and a float N contained within the chamber G and controlling the valve h^3, whereby the flow of fluid to the oil-burner D may be self-regulating, substantially as described.

4. In a gasolene-stove, the combination with an oil-burner and carbureted-air burner, of a chamber F communicating with the oil-burner and carbureted-air burner, means for forcing air to said chamber F, a perforated trough K located therein, curtains *f* of absorbent material depending therefrom, an oil-tank E, a pipe *h'* serving to conduct oil from the oil-tank E into the chamber F, a pivoted valve h^3 for controlling the flow of oil from the pipe *h'*, a transparent chamber G communicating with the chamber F, a float contained within the said transparent chamber G, and a connection between the float and pivoted valve, whereby the influx of oil to the chamber F is controlled by the rate of efflux of the liquid from the chamber G, substantially as described.

570,483. AUTOMATIC AIR-BRAKE RETAINER.

CHRISTIAN W. JUUL, Ellensburg, Wash. Filed May 7, 1894. Serial No. 510,556. (No model.)

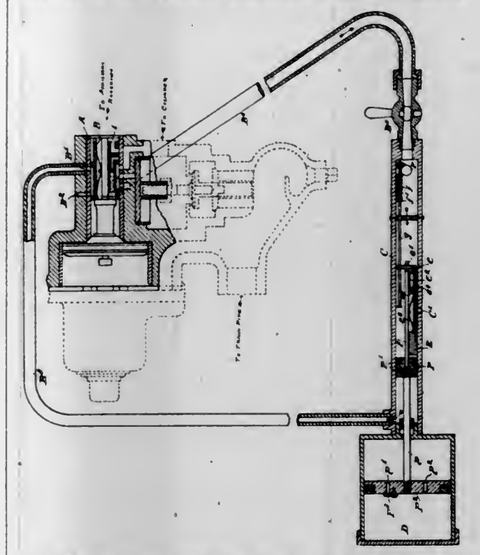
Claim.—1. An air-brake retainer operated by the exhaust from the triple valve to secure a delayed final discharge of the same, substantially as shown and described.

2. An air-brake retainer operated by the exhaust from the triple valve to secure a delayed release of the said exhaust and by the application of the brakes to reset the same in operative position, substantially as shown and described.

3. The combination with the ordinary mechanism of an automatic air-brake, of a valve covering the exhaust-port, means for moving it to uncover said port by the exhaust-pressure, and means for graduating the rapidity of said movement so as to slightly delay the final exhaust release, substantially as shown and described.

4. The combination with the ordinary mechanism of an automatic air-brake, of a valve covering the exhaust-port, means for moving said valve to uncover the port by the exhaust-pressure, and a dash-pot connected to the valve so as to slightly delay the final exhaust release, substantially as shown and described.

5. The combination with the ordinary mechanism of an automatic air-brake, of a slide-valve covering the exhaust-port, means for moving it to uncover said port by means of the exhaust-pressure, and a device connected to the valve for securing a gradual movement thereto so as to slightly delay the final exhaust release and mechanism actuated by the application of the brakes to return this valve to its place covering the exhaust-port, substantially as shown and described.



6. The combination with the ordinary mechanism of an automatic air-brake, of a slide-valve covering the exhaust-port, means for moving it to uncover said port by means of the exhaust-pressure, and a device connected to the valve for securing a gradual movement thereto so as to slightly delay the final exhaust release and mechanism actuated by the air-pressure from the auxiliary reservoir to return this valve to its place covering the exhaust-port, substantially as shown and described.

7. The combination with the ordinary mechanism of an automatic air-brake, of a slide-valve covering the exhaust-port, means for moving it to uncover said port by means of the exhaust-pressure and a device connected to the valve for securing a gradual movement thereto so as to slightly delay the final exhaust release and mechanism consisting of a cylinder and piston and connections therefrom to the auxiliary reservoir to operate this valve by air and return it to its position covering the exhaust-port whenever the brakes are applied, substantially as shown and described.

8. The combination with the ordinary mechanism of an automatic air-brake, of a chamber through which the exhaust from the brake-cylinder passes and having an exhaust-port therein, a valve within said chamber moved by the exhaust from the triple valve to uncover said port and a device connected to said valve to cause a gradual movement thereof so as to cause a delayed but free final exhaust, substantially as shown and described.

9. The combination with the ordinary mechanism of an automatic air-brake, of a chamber having an exhaust-port therein which is closed during applications, through which chamber and port the exhaust from the triple valve must pass, and means actuated by the ordinary releasing mechanism to cause a slightly delayed but free final opening of the said exhaust-port, substantially as shown and described.

10. The combination with the ordinary mechanism of an automatic air-brake of means, other than the triple valve, whereby the exhaust-port is closed during applications and means actuated by the movement of the ordinary releasing mechanism for causing a slightly delayed but free final opening of said exhaust-port, substantially as shown and described.

11. The combination with the ordinary mechanism of an automatic air-brake, of a chamber connected at one end to the exhaust from the brake-cylinder and having an exhaust-port therein, a valve within said chamber moved by the exhaust from the brake-cylinder to uncover the said exhaust-port, means connected with the valve for securing a gradual movement thereto, and means operated by applying the brakes to return the said valve to a position covering the exhaust-port, substantially as shown and described.

12. The combination with the ordinary mechanism of an automatic air-brake, of a cylinder connected at one end to the exhaust from the brake-cylinder and having an exhaust-port therein, a valve closing said port, a piston in said cylinder actuated by the exhaust from the brake-cylinder and by its movement opening said valve, and a device connected to said piston to secure a gradual movement thereto

and a delayed opening of the valve, substantially as shown and described.

13. The combination with the ordinary mechanism of an automatic air-brake, of a cylinder connected at one end to the exhaust from the brake-cylinder and having an exhaust-port therein, a valve closing said port, a piston in said cylinder actuated by the exhaust from the brake-cylinder and by its movement opening said valve, and a dash-pot connected to said piston to secure a gradual movement thereto, substantially as shown and described.

14. The combination with the ordinary mechanism of an automatic air-brake, of a cylinder connected at one end to the exhaust from the brake cylinder and having an exhaust-port therein, a valve closing said port, a piston in said cylinder actuated by the exhaust from the brake-cylinder and by its movement opening said valve, a dash pot connected to said piston to secure a gradual movement thereto, connections from the opposite end of the cylinder to the operating or triple valve whereby the working pressure of air is admitted behind the piston to return it and its connected valve to a position to cover the exhaust port when the brakes are applied, substantially as shown and described.

15 The combination with the ordinary mechanism of an automatic air-brake, of a chamber through which the brake-cylinder exhaust must pass, and having an exhaust-port therein, a valve therein which permits a free passage through the exhaust-port when the brake is not in use, means actuated by the application of the brakes for moving the valve to cover the exhaust-port, and means actuated by setting the triple valve in a release position for uncovering the exhaust-port and means connected to this valve whereby its speed of motion is regulated so that the final release is slightly delayed, substantially as shown and described.

16. The combination with the ordinary mechanism of an automatic air-brake, of a retainer-cylinder having an exhaust-port therein and connections from one end of the retainer-cylinder to the triple-valve exhaust-port, two supplementary ports in the triple-valve cylinder, one connected with the outside air and the other with the other end of the retainer-cylinder, a supplementary valve operated by the triple valve to control these ports, a slide-valve in the retainer-cylinder, a piston therein connected to the slide-valve to operate it and means connected to this piston to cause a slow movement of the piston and connected valve by the air-brake exhaust, thus delaying the final exhaust, substantially as shown and described.

17. The combination with the ordinary mechanism of an automatic air-brake, of a retainer-cylinder having an exhaust-port therein, connections from one end of the retainer-cylinder to the triple-valve exhaust-port, mechanism operated by the triple valve whereby connection is made from the brake-cylinder supply to the opposite end of the retainer-cylinder when the brakes are applied, and from the same end of the retainer-cylinder to the outside air when the triple valve is set at release, a valve closing the exhaust-port in the retainer-cylinder, a piston in this cylinder for operating said valve, and a dash-pot connected to this piston to cause a slow movement of the piston against the exhaust air, substantially as shown and described.

18. The combination with the ordinary mechanism of an automatic air-brake of a retainer-cylinder having an exhaust-port therein, connections from one end of the retainer-cylinder to the triple-valve exhaust-port, mechanism operated by the triple valve whereby connection is made from the brake-cylinder supply to the opposite end of the retainer-cylinder when the brakes are applied and from the same end of the retainer-cylinder to the outside air when the triple valve is set at release, a valve closing the exhaust-port in the retainer-cylinder, a piston in this cylinder for operating said valve, a retarding-cylinder or dash-pot and a piston therein connected to the retainer-piston, said dash-pot piston having a small by-pass when moved by the exhaust-air but a large by-pass when moved in the opposite direction, substantially as shown and described.

19. The combination with the ordinary mechanism of an automatic air-brake, of a retainer-cylinder having an exhaust-port therein, connections from one end of this cylinder to the exhaust-port of the triple valve, two supplementary ports in the triple-valve cylinder, connections from one of these to the other end of the retainer-cylinder and from the other port to the outer air, a supplemental valve operated by the triple valve to uncover the first supplemental port when the brakes are applied and to connect the two ports when the triple valve is set at release, a valve in the retainer-cylinder controlling its exhaust-port, a piston therein operating the valve and operated in opposite directions by the exhaust-pressure and the application-pressure, and means for making the motion under exhaust-pressure much slower than in the opposite direction, substantially as shown and described.

20. The combination with the ordinary mechanism of an automatic air-brake, of a retainer-cylinder having an exhaust-port therein, connections from one end of this cylinder to the exhaust-port of the triple valve, two supplementary ports in the triple-valve cylinder, connections from one of these to the other end of the retainer-cylinder and from the other port to the outer air, a supplemental valve operated by the triple valve to uncover the first supplemental port when the brakes are applied and to connect the two ports when the triple valve is set at release, a valve in the retainer-cylinder controlling its exhaust-port, a piston therein operating the valve and operated in opposite directions by the exhaust-pressure and the application-pressure, a retarding cylinder or dash-pot and a piston therein connected to the retainer-piston, said dash-pot having a small by-pass when moved by the exhaust-pressure but a large by-pass when moved in the opposite direction, substantially as shown and described.

21. In an air-brake retainer the combination of a cylinder having an exhaust-port therein through which the brake-cylinder exhaust must pass, a valve in said cylinder controlling the port and means for operating this valve to cover or uncover said port, of a relief port and valve in the said retainer-valve and operated by the same mechanism to connect the exhaust-port and exhaust end of the retainer-cylinder during the travel of the piston toward that end and to close this connection as soon as motion is commenced in the opposite direction, substantially as shown and described.

22. The combination with the ordinary mechanism of an automatic air-brake, two additional ports in the triple-valve cylinder and a valve within the same and operated by the triple valve to control these extra ports, of a retainer device for delaying the brake cylinder exhaust after the action of the triple valve and connections therefrom to the exhaust-port and to one of the extra ports whereby it is alternately and oppositely operated by the exhaust-air and the brake-cylinder air, substantially as shown and described.

23. The combination with the ordinary mechanism of an automatic air-brake, two supplemental ports in the triple-valve cylinder, a slide-valve in the said cylinder and operated by the triple valve to uncover one port when in the application position and to connect the two ports when in the release position, of an exhaust-delaying device connected with the triple-valve exhaust and the first or supply port of the supplemental ports so as to be alternately and oppositely operated thereby, substantially as shown and described.

24. The combination with the ordinary mechanism of an automatic air-brake, of an exhaust-delaying device alternately and oppositely operated by the exhaust-air and the brake-cylinder air, connections therefrom to the exhaust-port of the triple valve, and to a supplemental supply-port in the triple-valve cylinder, said supplemental supply-port and a cooperating exhaust-port in the triple-valve cylinder, a valve within said cylinder and operated by the triple valve to uncover the supplemental supply-port when the triple valve is set at the application position and to connect the two ports when the triple valve is set at the release position, substantially as shown and described.

25. In an air-brake retainer the combination of a cylinder having an exhaust-port therein through which the exhaust must pass, a slide-valve for controlling said port and having an exhaust-port in its face, a piston connected to and operating said valve and a relief port and valve in the said slide-valve connecting said exhaust-valve port and exhaust end of the retainer-cylinder and operated by the piston to open the relief-port when moving toward the exhaust end of the retainer-cylinder, and to close it when moving in the opposite direction, substantially as shown and described.

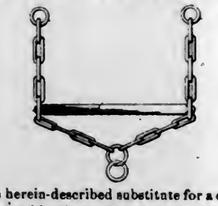
26. In an air-brake pressure-retainer the combination with a cylinder having an exhaust-port therein through which exhaust must pass, a slide-valve therein for controlling this port and a piston operated by air-pressure and operating the said slide-valve, of a relief port and valve adapted to be opened by and during the movement of the piston while closing the exhaust-port and to be closed thereby while moving in the opposite direction, substantially as shown and described.

27. In an air-brake pressure-retainer the combination with a cylinder having an exhaust-port therein through which the exhaust must pass, a piston therein operated alternately and in opposite directions by air-pressure mechanism operated by the triple valve to change the air-pressure to opposite sides of this piston, of a slide-valve within the retainer-cylinder connected to and moved by the piston to control the exhaust-port and a relief valve and port in the said slide-valve controlled by the piston and held open thereby during motion of the valve to cover the exhaust-port, substantially as shown and described.

28. The combination with the ordinary mechanism of an automatic air-brake of a retainer-cylinder having an exhaust-port therein through which the exhaust must pass, connections from one end thereof to the triple-valve exhaust-port, a slide-valve in said cylinder for regulating the opening of the exhaust-port, a piston connected thereto and operated to move the valve to uncover the port by the exhaust from the triple valve, a dash-pot connected to the piston to secure a gradual motion thereof, and a spring resisting the motion of the piston just before uncovering said port, substantially as shown and described.

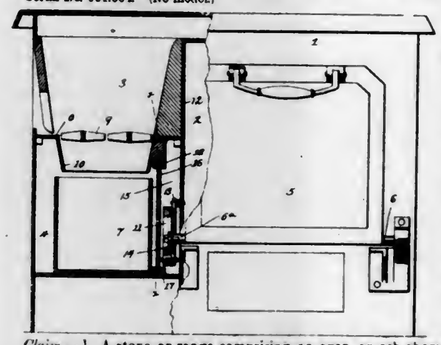
29. The combination with the ordinary mechanism of an automatic air-brake, of a retainer-cylinder having an exhaust-port therein through which the exhaust must pass, connections from one end thereof to the triple-valve exhaust-port, a slide valve in said cylinder for regulating the opening of the exhaust-port, a piston connected thereto and operated to move the valve to uncover the port by the exhaust from the triple valve, a dash-pot connected to the piston to secure a gradual motion thereof, and a spring resisting the motion of the piston just before uncovering said port, and means whereby it may be thrown out of action when desired, substantially as shown and described.

570,484. DRAFT APPLIANCE. JONATHAN R. KENNEDY, Collins, Ga. Filed May 21, 1896. Serial No. 592,428. (No model.)



Claim.—The herein-described substitute for a common singletree, consisting of the combination with a chain provided with a ring at the center thereof for attachment to a plow-beam, rings in the ends of the chain for attachment with the traces, and a spreader-bar provided with tapered ends having wear-plates secured thereto and slightly curved at the extreme ends, said ends being loosely inserted in the links of the chain, substantially as described.

570,485. STOVE OR RANGE. MAX M. KOCH and JOHN ERBEN, Cleveland, Ohio; said Erben assignor to said Koch. Filed July 30, 1896. Serial No. 601,084. (No model.)



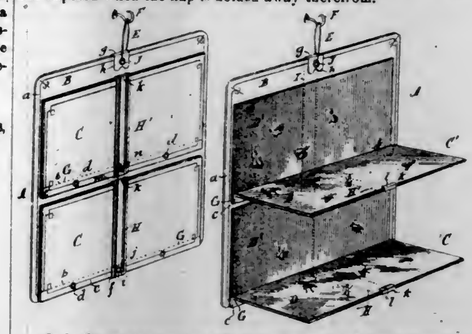
Claim.—1. A stove or range comprising an oven, an ash-chamber arranged at the side of the oven, a weight-box arranged intermediate of the oven and ash-chamber and having a removable wall, a door for closing the oven, and a weight arranged in the weight-box and connected with the door, substantially as and for the purpose set forth.

2. A stove or range comprising an oven, an ash-chamber arranged at the side of the oven, a weight-box arranged intermediate of the oven and ash-chamber and having a slidable and removable wall contiguous to the ash-chamber and arranged at its upper and lower edges in guideways, a door for closing the oven, and a weight arranged in the weight-box and connected with the door, substantially as and for the purpose set forth.

3. A stove or range comprising an oven, a fire-box and an ash-chamber arranged at the side of the oven; the said chamber being adapted to receive a removable ash-receptacle, a grate-frame arranged at the base of the fire-box and having inwardly-inclined depending flanges or chutes and also having the flange or chute contiguous to the oven provided with a guideway, a slidable and removable wall arranged in said guideway and in a guideway at the bottom of the stove or range and serving in conjunction with the grate-frame, the oven walls and bottom, front and rear walls of the stove to form a box, a door for closing the oven, and a weight arranged in the said box and connected with the door, substantially as and for the purpose set forth.

570,486. FLY-CATCHER. CLINTON H. LEGGETT, New York, N. Y. Filed Sept. 5, 1896. Serial No. 604,942. (No model.)

Claim.—1. In fly-catchers and like articles, a body of relatively stiff material, in combination with a folding flap carried thereby and adapted to be folded toward and from the face of said body, and an adhesive material for catching insects carried by said body opposite said flap and concealed when the latter is folded toward the body, and exposed when the flap is flolded away therefrom.



2. In fly-catchers and the like, a relatively stiff body in combination with a flap carried thereby and folding toward and from the face thereof, and an adhesive material for catching insects carried by said flap on its side toward said body and concealed when the flap is folded toward the body and exposed when the flap is folded away therefrom.

3. In fly-catchers and other articles, a stiff body and a stiff flap carried thereby and folding toward and from the body, in combination with an adhesive material on the adjacent faces of the flap and body exposed when the flap is folded away from the body.

4. In fly-catchers, a stiff body adapted to be suspended in a vertical position, in combination with an adhesive material at the face of said body, and a cover for said material carried by said body, concealing such material when in the closed position, and exposing it when moved therefrom.

5. In fly-catchers and the like, a body B in combination with a flap C, having a portion *c* fixed to the body, a free portion beyond said portion *c*, and a folding-line *b* between said portions, and an adhesive material inclosed between the faces of the body and flap and exposed when the flap is folded from the body.

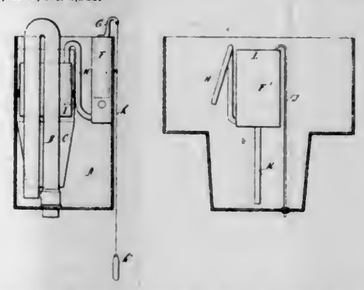
6. In fly-catchers, a paper body B having a brace I, in combination with a flap C hinged to said body, and adhesive material between said flap and body.

7. In fly-catchers, a stiff body, in combination with a flap connected thereto by a folding connection, and a brace H holding said flap in position.

8. In fly-catchers, a body B having a border *a*, in combination with a flap C carried on the face of said body within said border, and adhesive material between said flap and body.

9 In fly-catchers, a body B having a brace I, a flap C carried by said body and having a brace H, fly-paper *c* on said body and flap, and means whereby said body can be suspended.

570,487. APPARATUS FOR REGULATING WATER SUPPLY TO CLOSETS, URINALS, &c. ALFRED LONG, London, England. Filed Nov. 2, 1895. Serial No. 567,741. (No model.) Patented in England Jan. 13, 1895, No. 2,209.

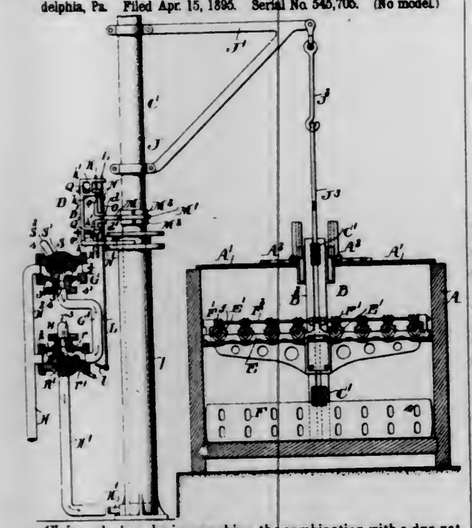


Claim.—1. The combination with a flushing-tank of an apparatus for controlling the flow of water therethrough for the purposes set forth, consisting of an inner cistern or tank; a tipping reservoir within said inner cistern; a water-displacer in the main tank outside of the inner tank, a siphon connecting the tipping reservoir and the water-displacer; and pipes and valve constructed and arranged, substantially as herein shown and described.

2. In a flushing apparatus, the combination of a main flushing-tank, a cistern or receptacle placed therein, a main flushing-siphon which communicates with said cistern or receptacle, a tilting cistern or receptacle placed within the cistern with which the flusing-siphon communicates, a ball-float for controlling the communication between said cistern and the flushing-siphon, and a cistern also placed within the main flushing-tank, and provided with a smaller siphon which communicates therewith near the bottom thereof, and with a tilting cistern or receptacle, and means connected with said last-named tank or receptacle for operating the same, substantially as shown and described.

3. In a flushing apparatus, the combination with a main flushing-tank, a cistern or receptacle placed therein, a main flushing-siphon which communicates with said cistern or receptacle, a tilting cistern or receptacle placed within the cistern with which the flushing-siphon communicates, a ball-float for controlling the communication between said cistern and the flushing-siphon, and a cistern also placed within the main flushing-tank, and provided with a smaller siphon which communicates therewith near the bottom thereof, and with a tilting cistern or receptacle, and means connected with said last-named tank or receptacle for operating the same, consisting of a displacer located therein, and a depending cord or other device connected therewith, substantially as shown and described.

570,488. APPARATUS FOR DYEING. JOSEPH H. LORIMER, Philadelphia, Pa. Filed Apr. 15, 1895. Serial No. 545,706. (No model.)



Claim.—1. In a dyeing-machine, the combination with a dye-vat, and yarn-frame, of a hydraulic lift carrying the yarn-frame and adapted to raise and lower it in the vat, and valve mechanism for automatically controlling the motor fluid in the lift at a predetermined point in the upward and downward movements of the yarn-frame, whereby the lift operates to automatically reciprocate the yarn-frame up and down in the liquor, and a valve, independent of the automatic valve devices, which control the reciprocation of the yarn-frame, for independently controlling the motor fluid in the lift and raising the yarn frame from the vat or lowering it therein.

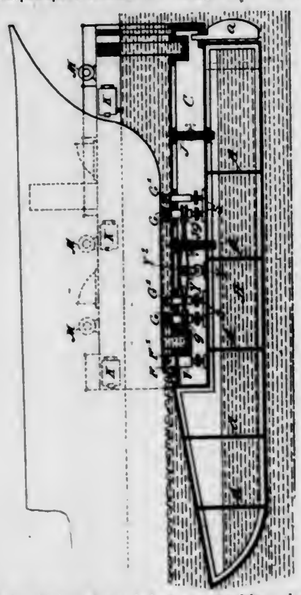
2. In a dyeing-machine, the combination with the dye-vat, of a yarn-frame, a door or cover for the vat and slides connecting the door or cover and the yarn-frame, whereby the yarn-frame may be reciprocated without lifting the door or cover.

3. In a dyeing-machine, the combination with a dye-vat, of a yarn frame, a door or cover for the vat, and a hinge between the door or cover and the frame, having a loose connection with the frame, whereby the frame may reciprocate in said hinges without lifting the doors.

4. In a dyeing-machine, the combination with the dye-vat, yarn-frame and covers, of the hinges A^3 between the yarn-frame and the covers having the leaf A^3 provided with the groove *a*, and the guide-pieces A^3 on the yarn-frame engaging the grooves *a* and free to slide therein when the yarn-frame is reciprocated.

570,489. FLOATING DRY-DOCK AND SHIP CLEANING DEVICE. MARK W. MARSDEN, Philadelphia, Pa. Filed Dec. 6, 1895. Serial No. 571,332. (No model.)

Claim.—1. A dry-dock and vessel-cleaner, comprising a hull, water-compartments in said hull, casings along each side of hull forming a U-shaped space, transverse form-sections at one or both ends of said U-shaped space between said casings, substantially as described.



2. A dry dock and vessel-cleaner, comprising a hull, water-compartments in said hull, means for emptying or filling said compartments, casings along each side of the hull forming a substantially U-shaped space, form-sections and packings at one or both ends of said U-shaped space between said casings, substantially as described.

3. A dry-dock and vessel-cleaner, comprising water-compartments in the hull, means for filling and emptying said water-compartments, casings along each side of the hull, form-sections supporting the yielding packings transversely located at one or both ends of the space between said casings.

4. A floating dry-dock and vessel-cleaner, comprising a hull, water-compartments in said hull, means for filling or emptying said compartments, casings along each side of the hull, form-sections and packings supported thereby, and recesses for retaining said form-sections at each end of the space between the said casings, all substantially as and for the purpose described.

5. A floating dry-dock and vessel-cleaner, comprising a hull, water-compartments in said hull, means for filling or emptying said compartments, hollow casings along each side of the hull, form-sections and hollow packing-tubes resting thereon, and means for supporting or retaining the same at each end of the space between said casings, and means for draining the space between said sections and packings and said casings, when said dry-dock is in place for operation under the hull of a vessel.

6. A floating dry-dock provided with form-sections detachably held thereby and extending transversely with respect to an imaginary line extending fore and aft through the hull, said form-sections engaging the bottom and sides of the vessel operated upon and acting as a dam to prevent the passage of water, substantially as described.

7. A dry-dock and vessel-cleaner, comprising a hull supporting casings along each side thereof, means for partially submerging said dry-dock, adjustable scrapers or knives extending into the space between said casings, substantially as and for the purpose specified.

8. A dry-dock and vessel-cleaner, comprising a hull, water-compartments in said hull, means for flooding or draining said compartments, hollow casings along each side of said hull, said casings extending upwardly and forming a U-shaped space between the same through which space the vessel to be operated upon passes or is passed, longitudinally-adjustable scrapers or knives extending into said space, and rollers adjacent to said knives to prevent the same from contacting directly with the hull of the vessel to be cleaned.

9. A dry-dock and vessel cleaner, comprising a hull, water-compartments in said hull, means for flooding or draining said compartments, hollow casings along each side of said hull forming a substantially U-shaped space through which the vessel to be operated upon passes or is passed, longitudinally-adjustable scrapers or knives, rollers to the rear of said knives projecting into a plane above the plane determined by the edge of the knives adjacent thereto, and means for automatically regulating the position of the knives and rollers, substantially as described.

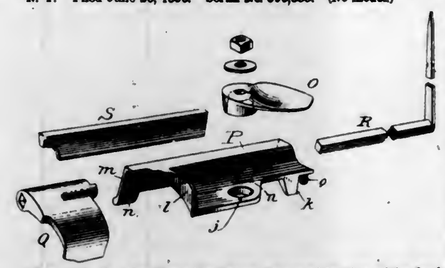
10. A dry-dock and vessel-cleaner, comprising a hull, water-compartments therein, means for flooding or draining said compartments, hollow casings along each side of said hull forming substantially a U-shaped space above said hull and between said casings, revoluble brushes projecting into said U-shaped space, and means for revolving said brushes, substantially as described.

11. A dry-dock and vessel-cleaner, comprising a hull, water-compartments therein, means for flooding or draining the same, hollow casings along each side of said hull forming a substantially U-shaped space above said hull and between said casings, longitudinally-adjustable brushes revolubly mounted, and projecting into said U-shaped space, rollers adjacent to said brushes, all substantially as and for the purpose specified.

12. A floating dry-dock and vessel-cleaner, comprising a hull, water-compartments therein, means for flooding or draining said compartments, hollow casings along each side of said hull forming a substantially U-shaped space above the center of said hull and between said casings, longitudinally-adjustable scrapers or knives extending into said space, longitudinally-adjustable rotary brushes projecting into said space, and means for operating the same, substantially as described.

13. In a dry-dock and vessel-cleaner, a hull having hollow casings extending along the opposite sides thereof, separate water-compartments located along the lower part of the hull, means for flooding and draining said compartments, longitudinally-adjustable scrapers or knives, and rotary brushes, extending into the space between the said casings, means for operating the same, said means being contained within the space C and the hollow casings, substantially as described.

570,490. FERTILIZER-DISTRIBUTER. EDWIN D. MEAD, Phelps, N. Y. Filed June 20, 1896. Serial No. 596,335. (No model.)



Claim.—1. In a fertilizer-distributer, the combination of the feed-cup, a feed-wheel seated within said cup, and a packing interposed between said parts.

2. In a fertilizer-distributer, the combination of the feed-cup, a feed-wheel seated within the cup and provided with a recess formed on its periphery; and a packing-ring seated within said recess.

3. In a fertilizer-distributer, the combination of the feed-cup provided with an inwardly-projecting flange; a feed-wheel seated within said cup and provided with a recess on its periphery; and a packing-ring fitting within said recess and bearing against the cup.

4. In a fertilizer distributer, the combination of the feed-cup provided with a discharge-opening; a feed-wheel mounted within the cup; a scraper-wheel secured above the feed-wheel; a gate; a guard-plate above the discharge-opening; and a wedge fitting between said plate and the hopper.

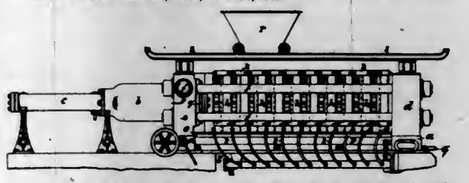
5. In a fertilizer-distributer, the combination of the feed-cup provided with a discharge-opening; a feed-wheel mounted within said cup; a scraper-wheel mounted above said feed-wheel; a gate; and a guard-plate secured above the feed-opening, and provided with a projection *k* to fit between the scraper-wheel and the periphery of the cup, substantially as and for the purpose set forth.

6. In a fertilizer-distributer, the combination of the feed-cup provided with a discharge-opening; a feed-wheel mounted within said cup; a scraper-wheel mounted above said feed-wheel; a gate; and a guard-plate secured above the feed-opening, and having toes *n* adapted to fit into openings in the bottom of the hopper or plate B, and a lug *o* also adapted to fit within the base of the hopper or plate B.

7. In a fertilizer-distributer, the combination of the feed-cup provided with a discharge-opening; mechanism for causing the material to travel toward said opening; a gate; and a guard-plate provided with a lip *l* designed to fit against the side of the gate, substantially as described.

8. In a fertilizer-distributer, the combination of the feed-cup; a spider-frame extending across the lower end of said cup, provided with an opening having seats or sockets formed in the side thereof; a feed-wheel seated within the cup, and also provided with a central opening; and a crank-axle provided with a downwardly-projecting arm, a curved finger L secured to the lower end thereof, and lugs or ears *f f*, the parts being designed to fit together substantially as described when the arm is passed through the openings aforesaid, and brought into a vertical position.

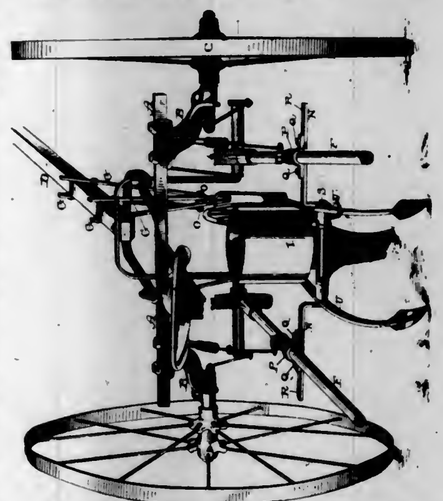
570,491. PRESS FOR EXTRACTING OIL OR OTHER LIQUIDS. GEORGE MITCHELL, London, England. Filed June 1, 1895. Serial No. 551,395. (No model.) Patented in England Sept. 10, 1892, No. 16,259, and in France June 16, 1893, No. 230,897.



Claim.—1. In a press for the expression of oil or other liquids from substances containing the same, and which is arranged to work horizontally, the combination of a framing, one or more rams worked by hydraulic means, a number of press-boxes each having a projecting lip or flange at top which fits into a corresponding recess in the next adjacent press-box, a hopper at the top, a perforated sole-plate and a removable plate, all arranged and operating together in such manner as to allow the substances to be fed in, pressed, the oil to flow into channels, and the cakes from which the oil has been expressed to drop out at the bottom of the apparatus substantially as described and shown.

2. In a press for the expression of oil or other liquids from substances containing the same, and which is worked horizontally, the combination of a framing, one or more rams worked by hydraulic or other means, two or more hollow press-boxes each of which has a projecting lip or flange at top, which fits into a corresponding recess (forming an oil-channel) in the next adjacent press-box, a hopper at the top, a perforated sole-plate, and a removable plate sliding over the same, and closing the spaces between the press-boxes, oil-channels, two or more draw bars or links attached to each press-box, and passages for supplying suitable liquid or fluid to the interior of the hollow press-boxes, substantially as described and shown.

570,492. ATTACHMENT FOR CULTIVATORS. THOMAS R. MORRIS, Billington, Tex., assignor of one-half to Jordon G. Davis, same place. Filed Aug. 3, 1896. Serial No. 601,447. (No model.)

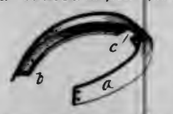


Claim.—1. As an attachment for a planter, plow, or other implement to a wheel-cultivator frame, supporting rods or braces secured to the tongue at their upper ends and to the implement at its front end, and lateral braces that are secured to the implement near its rear end and to the cultivator-beams, substantially as shown.

2. As an attachment to a wheel cultivator frame, the brace-rods G, which are clamped at their upper ends to the tongue, combined with an agricultural implement, the beams, to which the lower ends of the rods are fastened, and means for preventing the implement from having a lateral movement except in connection with the cultivator-beams, substantially as described.

570,493. HORSESHOE. FRANK B. MCCARTHY, Allegheny, Pa.

Filed Feb. 29, 1896. Serial No. 581,315. (No model.)



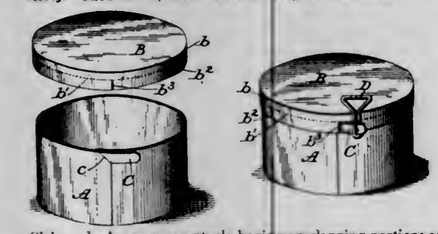
Claim.—1. In a horseshoe, the combination of the spring-band shaped to conform with the hoof, and an inner flange at the base of said band forming a support for the shoe, cut-away portions in said flange to receive the calks and toes, plates secured to the ends of the spring-band and carrying an adjustable locking-rod having a right-hand thread on one end and a left-hand thread on the reverse end, and a thumb-nut for adjusting, substantially as shown and described.

2. In a horseshoe, the combination of the spring-band and flange supporting the shoe proper, said shoe being provided with removable calks and toes secured therein by screws through the shoe, an adjustable locking-bolt supported at one end by a plate secured to one end of the band and at the other end connected to a bolt pivotally attached to a locking-lever, said lever being pivotally attached to the plate secured to the spring-band, substantially as shown and described.

3. In a horseshoe, the combination of the spring-band supporting-flange and shoe proper, said shoe proper having removable calks and toe, an adjustable locking-bar supported in a plate secured to the spring-band and provided with a catch, the other end of the locking-bar supported in a pivotally-attached bolt pivoted to the locking-lever, which is also pivoted to the plate secured to the end of the spring-band, all parts being arranged and operating substantially as shown and described.

570,494. METAL CAN. FRANCIS P. MCCOLL, Brooklyn, N. Y., assignor to the Franco-American Patent Can Opening Company, of New Jersey.

Filed Oct. 18, 1895. Serial No. 566,049. (No model.)



Claim.—1. A can or receptacle having overlapping portions and a tongue or projection secured to the inner surface of the outer of said overlapping portions but readily separable from the other and passing from between the two portions, the can or receptacle having a backing for said tongue or projection from which it may be torn without mutilating the can or receptacle, substantially as set forth.

2. A can or receptacle having overlapping portions secured together by cement or solder, the one of said parts which overlaps the other having predetermined lines of weakness and the other part being unweakened and capable of resisting the tendency to tear, in combination with a tongue projecting from between the overlapping portions and secured to the inner surface of the outer of said overlapping portions but readily separable from the inner portion and having its edges corresponding with said predetermined lines of weakness, substantially as set forth.

3. A can or receptacle having overlapping portions secured together by cement or solder, the one of said parts which overlaps the other having a predetermined line of weakness, substantially parallel with its edge and substantially coinciding with the edge of the inner portion and the other of said parts being unweakened and capable of resisting the tendency to tear, in combination with a tongue projecting from between the overlapping portions and secured to the inner surface of the outer of said overlapping portions but readily separable from the inner portion and having its edges corresponding respectively with the edge of the overlapping portion and with the predetermined line of weakness in said portion, substantially as set forth.

4. A can or receptacle having overlapping portions secured together by cement or solder, the one of said parts which overlaps the other having a predetermined line of weakness, substantially parallel with its edge and substantially coinciding with the edge of the inner portion and having an incision formed wholly between said predetermined line of weakness and the edge of the overlapping portion, the other portion being unweakened and capable of resisting the tendency to tear, in combination with a tongue projecting from between the overlapping portions through said incision and secured to the inner surface of said overlapping portion but readily separable from the inner portion and having its edges corresponding respectively with said line of weakness and with the edge of the overlapping portion, substantially as set forth.

570,495. ARTIFICIAL FUEL. JOHN D. OLIGNY, St. Henry, Canada.

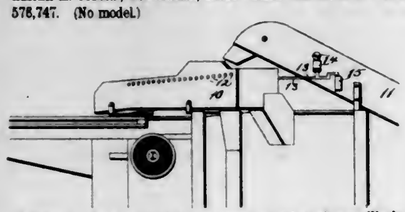
Filed Apr. 3, 1896. Serial No. 586,096. (No specimens.)

Claim.—1. A new composition of matter, comprised of gas-oil, tar-oil, soda, cream of tartar, combustible absorbent material, and lime, substantially as and in the proportions hereinbefore set forth.

2. The method of making artificial fuel, which consists in first forcing air through a mixture of gas-oil, tar-oil, soda, and cream of tartar, and then incorporating the aerated mixture with combustible absorbent material mixed with lime, substantially as set forth.

570,496. MAGNETIC SEPARATOR FOR THRESHING-MACHINES. ELISHA H. OSBORN, Des Moines, Iowa.

Filed Jan. 24, 1896. Serial No. 576,747. (No model.)



Claim.—1. In a threshing machine, a series of metallic bars located in the path of travel of the tailings from the machine to the cylinder and forming a bottom over which the tailings must pass to the cylinder, and an electric bell-circuit connected with said metallic bars, which bell-circuit is normally open and is closed by the contact with said bars of a foreign metallic body.

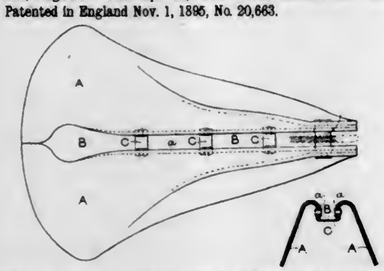
2. In a threshing-machine, a magnet located in the path of travel of the tailings from the machine to the cylinder and a bell-circuit electrically connected with said magnet and operated by the contact of a metallic body with said magnet.

3. In a threshing-machine, a shoe through which the tailings past from the machine to the cylinder, a series of metallic bars arranged in juxtaposition to each other within said shoe and forming a bottom over which the tailings must travel to the cylinder, and an alarm connected with said bars and so arranged relative thereto as that said alarm will be sounded when a metallic body engages two or more of said bars.

4. In a threshing-machine, a shoe through which the tailings pass from the machine to the cylinder, a series of metallic bars arranged transversely of the shoe parallel with and in juxtaposition to each other and forming a bottom over which the tailings must pass to the cylinder, an electric alarm-circuit, connections between one line of said circuit and alternate individuals of the series of bars, and connections between the remaining line of the alarm-circuit and the remainder of the series of bars.

570,497. SADDLE FOR VELOCIPEDES. SIDNEY PATTISSON, London, England.

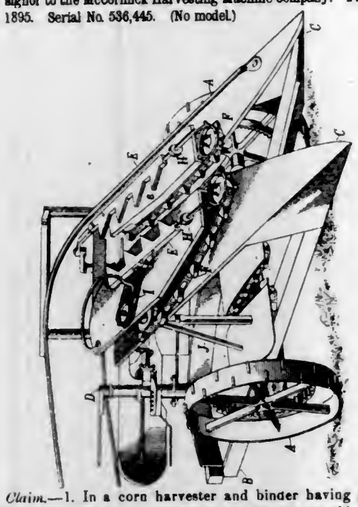
Filed Apr. 25, 1896. Serial No. 589,021. (No model.) Patented in England Nov. 1, 1895, No. 20,663.



Claim.—The combination, with a saddle having a central longitudinal opening, of a trough-shaped stay secured to the saddle under the said opening between the pommel and the cantle-plate, and operating to prevent the width of the said opening from changing, substantially as set forth.

570,498. CORN-HARVESTER. ALBERT S. PECK, Geneva, Ill., assignor to the McCormick Harvesting Machine Company.

Filed Jan. 28, 1895. Serial No. 536,445. (No model.)



Claim.—1. In a corn harvester and binder having gathering-prongs projecting forwardly on each side of the row and inclining upwardly toward the rear, the combination of fingers traveling in a rearwardly and upwardly inclined direction, said fingers adapted to seize the body portion of the stalks below the ears and straighten, lift, and forward the same, and an auxiliary, rearwardly-traveling, tops-forwarding device, said device being bodily located in relation to the traveling fingers so that the front and rear limits of its path are respectively in rear of the corresponding limits of the path of the fingers, whereby the tops are held erect and prevented from falling forward and their movement toward the binder is continued after the fingers have ceased to act.

2. In a corn harvester and binder having gathering-prongs projecting forwardly on each side of the row and inclining upwardly toward the rear, the combination of a butts-forwarding device, fingers traveling in a rearwardly and upwardly inclined direction, said fingers adapted to seize the body portion of the stalks below the ears and straighten, lift, and forward the same, and a tops-forwarding device, said device being bodily located in relation to the traveling fingers so that the front and rear limits of its path are respectively in rear of the corresponding limits of the path of the fingers, whereby the tops are held erect and prevented from falling forward and their movement toward the binder is continued after the fingers and butts-forwarding device have ceased to act.

570,499. MECHANISM FOR MANUFACTURING CAR-AXLES. DAVID W. PORTER, Allegheny, Pa.

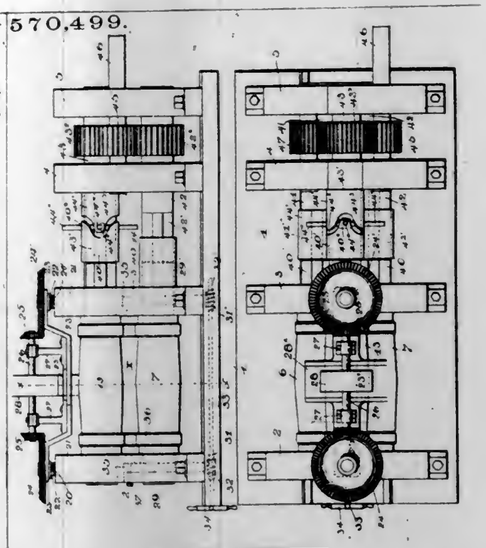
Filed Aug. 5, 1896. Serial No. 601,739. (No model.)

Claim.—1. In a car-axle rolling-mill, the standards 2 and 3, the stationary rollers 6 and 7 and the vertically-adjustable roller 13 journaled therein, in combination with the adjusting-screws 20—20′ mounted in said standards and provided with gear-wheels 24—24′, the pinions 25—25′ mounted on the shaft 26 and connecting said gear-wheels, the pulley 28 and the friction-pulley 23′ intermediate the roller 13 and the pulley 28, and the gage-screws 29—29′ mounted in the standards below the roller 13, substantially as and for the purpose set forth.

2. A car-axle rolling-mill, comprising a frame provided with standards in which are journaled the stationary rollers 6 and 7 and the adjustable roller 13, in combination with the gage-screws 29—29′ adapted to limit the adjustment of said roller, and mechanism for adjusting said gage-screws, substantially as and for the purpose set forth.

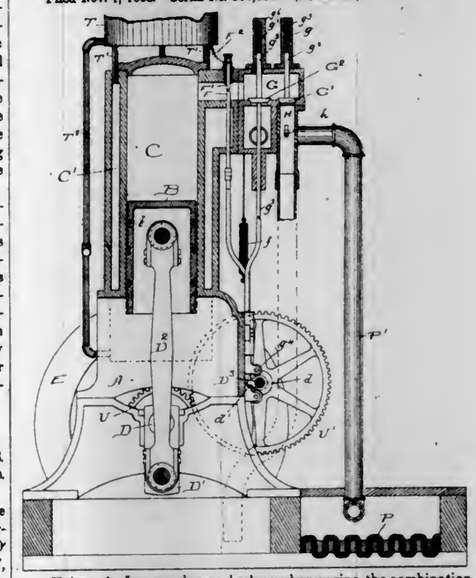
3. A car-axle rolling-mill, comprising a frame provided with standards 2 and 3 in which are journaled the stationary rollers 6 and 7, the adjustable roller 13, the adjusting-screws 20—20′, gear-wheels 24—24′, pinions 25—25′, pulley 28 and friction-pulley 23′ in combination with the gage-screws 29, 29′ provided with the worm-gears 31, 31′ and the worm-screws 32, 32′ mounted on the shaft 33 connecting said gears 31, 31′ so as to simultaneously operate them, substantially as and for the purpose set forth.

570,499.



570,500. GASOLENE OR VAPOR ENGINE. ENOCH PROUTY, Chicago, Ill., assignor to Olive S. Prouty and Enoch Prouty, same place.

Filed Nov. 1, 1895. Serial No. 567,600. (No model.)



Claim.—1. In a gasolene or hydrocarbon engine, the combination with a vaporizing chamber, of a feed-pipe leading into the same provided with a plug furnished with a central bore and a radial bore, and a pin or valve reciprocating in said central bore for closing the feed-passage, substantially as specified.

2. In a gasolene or hydrocarbon engine, the combination with a vaporizing-chamber, of a feed-pipe leading into the same provided with a plug furnished with a central bore and a radial bore, a pin or valve reciprocating in said central bore for closing the feed-passage, a spring for holding said valve closed, and a feed-pump, substantially as specified.

3. In a gasolene or hydrocarbon engine, the combination with a vaporizing-chamber, of a feed-pipe leading into the same provided with a plug furnished with a central bore and a radial bore, a pin or valve reciprocating in said central bore for closing the feed-passage, a spring for holding said valve closed, a feed-pump, and a sleeve surrounding said plug and forming in connection therewith an annular discharge orifice or nozzle, substantially as specified.

4. In a gasolene or hydrocarbon engine, the combination with a vaporizing-chamber or feed pipe or passage leading into the same, a positive shut-off, gate or valve for closing said feed-passage, a feed-pump, a governor for controlling the action of the feed-pump, a sliding beveled or taper-faced cam operated by said governor, and a bevel or cone-shaped roller connected with the piston of the feed-pump and adapted to engage said cam, substantially as specified.

5. In a gasolene or hydrocarbon engine, the combination with a vaporizing-chamber or feed pipe or passage leading into the same, a positive shut-off, gate or valve for closing said feed-passage, a feed-pump, a governor for controlling the action of the feed-pump, a sliding beveled or taper-faced cam operated by said governor, and a bevel or cone-shaped roller connected with the piston of the feed-pump and adapted to engage said cam, said governor comprising a rotating disk-carrying weight, arms connected by links to an oscillating lever on the cam-shaft and having slides engaging the sleeve of said sliding cam by which the pump is operated, substantially as specified.

6. In a gasolene or hydrocarbon engine, the combination with a feed-pump and a governor with a sliding bevel-faced cam actuated or controlled by the governor, and a bevel or cone-shaped roller connected to the piston of the feed-pump, so that the very slight movement of the cam by the governor will serve to throw said cam into engagement with said roller and thus sensitively and perfectly control the engine said cam being further moved by contact with said roller itself after the knife-edges of said cam-roller have been moved past each other by the governor, substantially as specified.

7. In a gasolene or hydrocarbon engine, the combination with a governor and a feed-pump, of a sliding cam having a beveled face so that it may be moved by said governor partially into position for operating the feed-pump and then be moved by the inclination of the cam-face itself completely into position for operating the feed-pump and a beveled roller connected to the piston of the feed-pump and adapted to engage said cam, substantially as specified.

8. In a gasolene or hydrocarbon engine, the combination with a governor and a feed-pump, of a sliding cam having a beveled face so that it may be moved by said governor partially into position for operating the feed-pump and then be moved by the inclination of the cam-face itself completely into position for operating the feed-pump and a beveled roller connected to the piston of the feed pump and adapted to engage said cam, a vaporizing-chamber, a feed pipe or passage leading from said pump to said chamber, and a valve or positive shut-off for closing said feed pipe or passage near its discharge-orifice, substantially as specified.

9. In a gasolene or hydrocarbon engine, the combination with a governor and a feed-pump, of a sliding cam having a beveled face so that it may be moved by said governor partially into position for operating the feed-pump and then be moved by the inclination of the cam-face itself completely into position for operating the feed-pump and a beveled roller connected to the piston of the feed-pump and adapted to engage said cam, a vaporizing-chamber, a feed pipe or passage leading from said pump to said chamber, a valve or positive shut-off for closing said feed pipe or passage near its discharge-orifice, and a spring for holding said valve or shut-off normally closed, substantially as specified.

10. In a gasolene or hydrocarbon engine, the combination with the feed-pump of a sliding cam for operating it, a spring for moving said sliding cam in one direction and a governor for moving said sliding cam in the opposite direction, comprising a rotating disk, weighted arms pivoted thereto, an oscillating lever, links connecting the arms of said oscillating lever with said weighted arms, springs for counteracting the centrifugal action of said weighted arms, and radial slides connected to said weighted arms and engaging the sleeve of said sliding cam, substantially as specified.

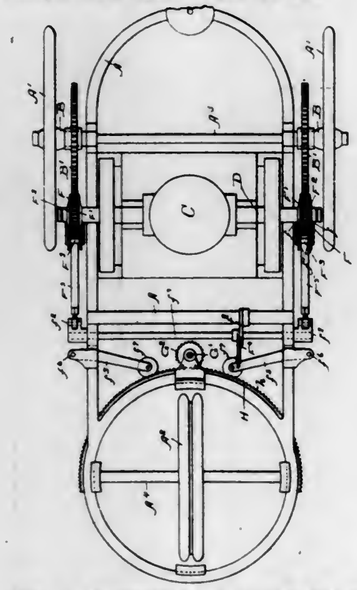
11. In a gasolene or hydrocarbon engine, the combination with a feed-pump, mechanism for operating the pump and a governor for controlling the pump-operating mechanism, consisting of a rotating disk having spring-held weighted arms pivoted thereto and connected together by an intermediate lever and links and provided with one or more radial slides and mechanism connecting said radial slides with said pump-operating mechanism, substantially as specified.

12. In a gasolene or hydrocarbon engine, the combination with a feed-pump of a rotatable cam d^2 for operating it, having a cone-faced sleeve d^3, a cam-shaft D^3, a rotating governor-disk N', weighted arms N^2 N^3, oscillating lever N^4 on said cam-shaft, connecting-links N^5 N^6, springs N^8 N^9 and slides N^7 N^7, engaging the cone-faced sleeve of said cam, substantially as specified.

13. In a vapor-engine, the combination with a cylinder and piston, of a powder-charge starting device therefor comprising a charger or cartridge R, a socket or receiver R' fixed to the cylinder at the opening therein, and a cap R^2 fitting over said receiver to hold the cartridge or charger therein, said cartridge, receiver and cap having radial openings through the same for igniting the powder, said radial opening in said cartridge R being a longitudinal slit adapted to hold a priming of quick-firing powder, and thus ignite a slow-firing powder in the cartridge simultaneously throughout the length of the cartridge and prevent the powder being blown into the cylinder before ignition, thereby enabling a small amount of slow-firing powder to start the engine substantially as specified.

14. In a vapor-engine, the combination with a cylinder and piston, of a powder-charge starting device therefor comprising a charger or cartridge R, a socket or receiver R' fixed to the cylinder at the opening therein, and a cap R^2 fitting over said receiver to hold the cartridge or charger therein, said cartridge, receiver and cap having radial openings through the same for igniting the powder, said receiver and cap being furnished with screw-threads to hold the cap in place, said radial opening in said cartridge R being a longitudinal slit adapted to hold a priming of quick-firing powder, and thus ignite a slow-firing powder in the cartridge simultaneously throughout the length of the cartridge and prevent the powder being blown into the cylinder before ignition, thereby enabling a small amount of slow-firing powder to start the engine substantially as specified.

570,501. POWER-TRANSMITTER FOR ROAD-WAGONS. ENOCH PROUTY, Chicago, Ill., assignor of one-half to Olive S. Prouty, same place. Filed Apr. 27, 1896. Serial No. 589,286. (No model.)



Claim.—1. The combination with a driving-shaft and a driven shaft, of a loose pulley or gear on the driving-shaft connected to the driven shaft, two friction disks, one on each side of said gear or pulley, furnished with beveled outer faces, one of said disks being adapted to slide on said shaft, and a rotating spool or flanged wheel, the flanges of said spool or wheel being beveled or cone-faced, and a lever and connections for moving said spool or flanged wheel into contact with said disks, substantially as specified.

2. The combination with a driving-shaft, of a gear or pulley loose on said shaft, two friction disks keyed to the shaft, one adapted to slide thereon and both provided with beveled outer faces, a clutch-lever F^4, hanger-bar F^5, links F^6 F^7, one connecting said hanger-bar with the clutch-lever and one with the frame, and two spools or flanged rollers mounted on said hanger-bar and engaging said friction-disks, substantially as specified.

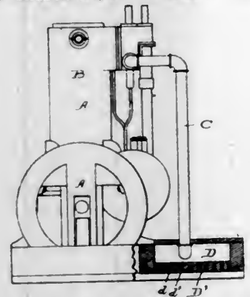
3. In a road-wagon or other conveyance, the combination with a driving-shaft and two driven shafts, one for a wheel on each side of the conveyance, two loose pulleys or gears on said driving-shaft, two pairs of friction-disks embracing said loose pulleys or gears on the driving-shaft, one of each pair of said friction-disks being adapted to slide on said shaft, two rotatable spools or flanged wheels adapted to embrace said pairs of friction-disks, an operating-lever and a rock-shaft having arms connected to said spools or flanged wheels, a steering-wheel, movable bearings in which said rock-shaft is mounted, and mechanism connecting said movable bearings with the steering-wheel to enable the pressure and friction to be relieved between one pair of said friction-disks and one of said pulleys or gears when the conveyance is turned by the steering-wheel, substantially as specified.

4. In a conveyance, the combination of two driven shafts B B, with a driving-shaft D, having loose gears F F, and two pairs of friction disks F' F' having bevel-faces, two spools F^3 F^3 having bevel-flanges, a lever-arm F^4 and rock-shaft f^3, having arms f^3 f^3 connected by links to said spools, a steering-wheel H, having tracks h' h', movable bearings f^4 f^4 for said rock-shaft f^3, and levers f^5 f^5 having friction-rollers f^7 f^7 riding in said tracks h' h', substantially as specified.

5. The combination with steering-wheel H having two cam tracks h' h' of a rock-shaft f^3 having movable journals f^4 f^4, levers f^5 f^5 operated by said cam-tracks h' h' and serving to hold said movable journals in position, and two friction-clutch power-transmitting devices actuated by arms on said rock-shaft, substantially as specified.

6. A power-transmitting device comprising in combination a shaft D, a wheel F loose on said shaft and two friction-disks F' F^2 mounted on said shaft and adapted to turn therewith one of said disks being also adapted to slide on said shaft, and a rotatable flanged wheel or spool adapted to embrace said friction disks and force them against said wheel F, substantially as specified.

570,502. MUFFLER FOR ENGINES. ENOCH PROUTY, Chicago, Ill., assignor to Olive S. Prouty and Enoch Prouty, same place. Filed May 18, 1896. Serial No. 591,934. (No model.)



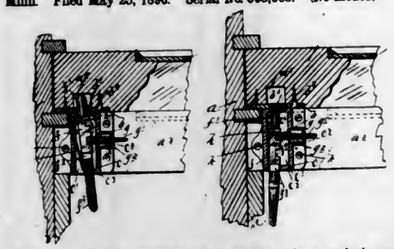
Claim.—1. A sound-muffler for gas or other engines, consisting in a chamber furnished with a number of slats, having interposed between them a number of thicknesses or strips of wire screen placed edgewise or parallel to the slats, substantially as specified.

2. In a sound-muffler, the combination with slats d of a series of strips or thicknesses of wire screen or netting d', clamped between the slats, substantially as specified.

3. In a sound-muffler, the combination with slats d of a series of strips or thicknesses of wire screen or netting d' clamped between the slats, and screws for clamping each successive slat to the preceding one, substantially as specified.

4. A sound-muffler for gas or other engines, consisting in a chamber furnished with a number of slats, having interposed between them a number of thicknesses or strips of wire screen placed edgewise or parallel to the slats, and an exhaust-pipe leading into said chamber and being provided with a series of long narrow slits around its periphery to divide the exhaust-blast as it is discharged into said chamber, substantially as specified.

570,503. WINDOW-LOCK. THOMAS ROBERTSON, Minneapolis, Minn. Filed May 25, 1896. Serial No. 593,003. (No model.)



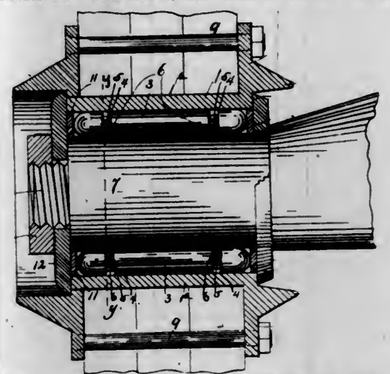
Claim.—1. A lock comprising a locking piece or bolt, and two or more independent retaining devices, for holding said locking-piece in its locking position, requiring simultaneous disengagement from said locking-piece, to permit the unlocking movement thereof, substantially as described.

2. A lock comprising a locking piece or bolt, and two or more independent retaining devices, for holding said locking-piece in its locking position, requiring simultaneous disengagement from said locking-piece, to permit the unlocking movement thereof, and springs tending to render both of said retaining devices, operative, substantially as described.

3. A lock comprising a lock-case, a locking-bolt mounted in said case, for both longitudinal and lateral movements, a fixed catch on said case, with which a coöperating catch on said bolt is engageable and disengageable, by lateral movement of said bolt, and an independently-releasable spring-held retaining device adapted to keep engagement with said bolt under its lateral movement, substantially as described.

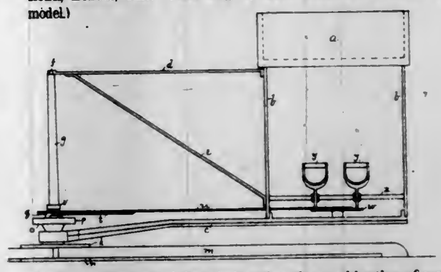
4 A lock comprising a lock-case, a locking-bolt, mounted in said case for both longitudinal and lateral movements, and provided with two pairs of notches, a fixed catch on said case, with which one pair of said notches is engageable, by lateral movement of said bolt, and an independently-releasable spring-held retaining device coöperating with the other of said pair of notches and adapted to keep engagement with the engaged notch under the lateral movement of said bolt, substantially as and for the purpose set forth.

570,504. ANTIFRICTION-BEARING. CHARLES W. ROBINSON, Florence, Ala. Filed Dec. 20, 1895. Serial No. 572,823. (No model.)



Claim.—In a bearing for wheels, the combination, with a skein and an axle-box, of washers contained within the opposite ends of the said box and mounted upon the skein, rings provided with notches in their peripheries, and mounted on the skein intermediate of the said washers, and cylindrical rollers, having rounded ends of the same size as the bodies of the rollers, the cylindrical portion of such rollers being separated by necks contained within the said notches, and the rounded ends of the rollers bearing on the said washers, substantially as described.

570,505. REVOLVING-CHAIR SWING. JOHN N. ROHR and HENRY ROHR, Kenton, Ohio. Filed Aug. 6, 1896. Serial No. 601,866. (No model.)



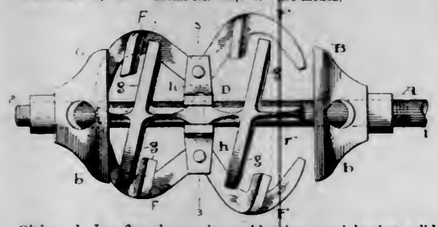
Claim.—1. In a revolving-chair swing the combination of a central mast mounted on radial supporting legs, a horizontal arm pivoted at the top of the mast another pivoted with ball-bearings at the bottom of the mast, said arms supporting a seat and frame provided with foot-pedals and means for connecting to and operating an oscillating crank, a reciprocating bar with bifurcated end extending from said crank to central mast, rods connecting said reciprocating bar to revolving clutches having tapering grooves in their outer ends, balls traveling in said grooves and alternately engaging with a flanged disk near the base of the mast substantially as shown and described for purposes stated.

2. In a revolving-chair swing the combination of a central mast g having the flanged base k attached to and mounted on the horizontal

supporting-legs *m*, the revolving horizontal arm *d* pivoted at the top of the mast *g*, the revolving horizontal arm *c* attached near the base of the mast *g* by the ball-bearings *h*, the seat *a* and frame *b* attached to, and supported by the arms *c* and *d*, the pedals *y* attached thereto and operating the crank *w* by the rod *x*, the bar *u* having the bifurcated end *u'* connecting from the crank *w* to the mast *g*, the rods *t* connecting the bar *u* to the ends of the clutches *q* and *q'*, the disk *o* attached to and forming a part of the mast *g* and having the annular flange *p*, the clutches *q* and *q'* rotating on the mast *g* and having tapering grooves *r* in their ends and the friction balls *s*, substantially as shown and described for purposes stated.

3. In a revolving chair swing the combination of a central mast *g* mounted upon and supported by horizontal radial legs *m*, horizontal arms *c* and *d* attached to, and revolving on said mast *g*, a seat mounted on said arms, means for operating the bar *u* having the bifurcated end *u'* the rods *t* connecting the bar *u* to clutches *q* and *q'* which revolve on the mast *g* and having the tapering grooves *r* in their outer ends, the balls *s* traveling in said grooves *r* and alternately engaging with the flange *p* of the disk *o* attached to the mast *g* substantially as shown and described for purposes stated.

570,506. FLUE-CLEANER. THOMAS D. S. RUGGLES, Kent, Ohio. Filed June 12, 1896. Serial No. 595,371. (No model.)



Claim.—1. In a flue-cleaner, in combination, a rod, having a sliding collar provided with scraping arms or blades adapted to engage the flue on either side of the collar and having convergent ends, the arms on either side of the sliding collar being adapted to be thrown into contact with the flue by the engagement of the opposite convergent ends with a fixed collar attached to the rod, substantially as shown and described.

2. In a flue-cleaner, in combination with a central rod provided with collars B and C, scraping arms or blades pivoted to a sliding collar, the scraping-arms being provided with diagonal cross-arms and having convergent ends and being adapted to engage the inner surface of the flue on either side of the pivot, substantially as shown and for the purposes described.

3. In a flue-cleaner, the central rod A, the collars B and C attached to the rod, the sliding frame or collar D having arms *h*, and the scraping-arms F pivoted to the collar D substantially as shown and described.

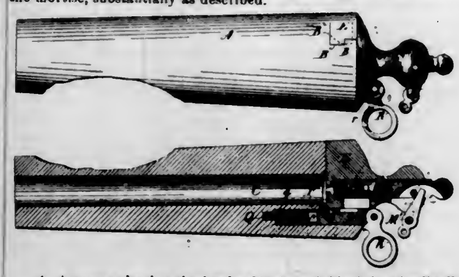
4. In a flue-cleaner, the rod A, the collars B and C attached to the rod A and having bell-shaped extensions *b*, *b*, the sliding collar D having arms *h*, and the scraping-arms F pivoted to the collar D, substantially as shown and described.

570,507. YACHT-CANNON. WILLIAM W. SCOTT, New Haven, Conn., assignor to the Lavigne & Scott Manufacturing Company, same place. Filed Aug. 2, 1893. Serial No. 482,141. (No model.)

Claim.—1. A cannon having an open transverse mortise in its breech, an elliptical breech-block hung on a pivot located within the mortise at one side of a vertical line passing through the center of the bore of the gun, and a handle located at the outer end of the block and weighting the same, substantially as described, and whereby the block is caused to draw and tighten in closing and to let go and relieve in opening.

2. A cannon having in its breech an open transverse mortise, the floor of which is constructed with a groove widening from its inner to its outer end, an elliptical breech-block hung in the said mortise on a stud located at one side of a central line passing through the bore of the gun, and provided upon its lower edge with a rib widening from its inner to its outer end, substantially as set forth, and whereby the breech-block draws and tightens in closing and lets go and relieves in opening, and whereby also it is crowded forward in closing.

3. A cannon having in its breech an open transverse mortise, the floor of which is constructed with a groove, the rear wall whereof is inclined rearward, and an elliptical breech-block pivoted within the mortise on a stud located to one side of a vertical line passing through the center of the bore of the gun, and having its lower edge constructed with a rib, the inner wall of which is pitched rearward in accordance with the rearward pitch of the rear wall of the groove of the mortise, substantially as described.

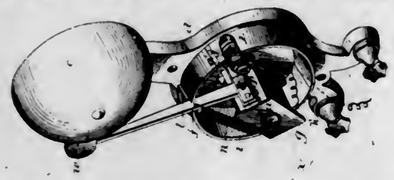


4. A cannon having the knob of its breech-block longitudinally chambered, a firing-hammer located in the said chamber, and a firing-lever pivotally connected with the knob at a point below its longitudinal center, so that its inner end is longer than its lower end, and having its said inner end arranged to engage with the hammer for projecting the same inward, and its outer end adapted for the attachment of a firing-cord, substantially as described, and whereby by employing a firing-lever and pivoting the same below its longitudinal center, and engaging its longer inner end with the firing-hammer, the impulse of the firing-cord is multiplied on the hammer.

5. A breech-loading cannon having a longitudinal chamber formed in its breech at a point below its bore, an extractor-slide located in the said chamber, longitudinally movable therein, and having a spring-chamber formed in its forward end, an extractor attached to the upper face of the said slide, a spring located in the said spring-chamber, and connected at its rear end with the slide at the bottom of the said spring-chamber, a screw located at the forward end of the said longitudinal chamber, and having the forward end of the spring connected with it, and an operating-piece attached to the outer end of the slide, whereby it is moved outward against the tension of the spring which draws it inward, substantially as described.

6. A breech-loading cannon having a longitudinal chamber formed in its breech below its bore, an extractor-slide located in the said chamber and longitudinally movable therein, an extractor attached to the said slide, an operating-piece attached to the outer end of the slide for moving it longitudinally outward, a spring located in a chamber formed in the forward end of the slide with which the rear end of the spring is connected, and a screw connected with the forward end of the spring, adapted to be screwed into the gun at the forward end of the said chamber, and provided with a wing which is engaged by the slide, by means of which it is turned in and out, substantially as described.

570,508. ELECTRIC ALARM-BELL. RUDOLPH SEGERDAHL, Chicago, Ill. Filed June 27, 1892. Serial No. 438,226. (No model.)

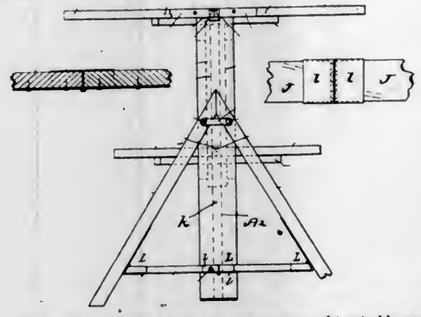


Claim.—1. In an electric bell (or signaling device), a striker-lever consisting of a lever of the first class having the weight *w*, the shaft *f*, and the projections *a a'* formed integral, and an armature *p* which is formed separate and secured to the said lever, substantially as and for the purpose described.

2. In an alarm-bell (or signaling device), the combination with a striker-lever consisting of a lever of the first class, of the base-plate *d* having a sounding-piece *c* and a suitable actuating mechanism for the said lever mounted thereon; the fulcrum of the said lever being located to permit the same to assume a position diagonally across the said base-plate, also adapted to permit of a suitable inclosing case for the said actuating mechanism to assume a position in reference to the said striker-lever as described, whereby the aperture required in the said inclosing case to accommodate the action of the said striker-lever may be reduced to a minimum.

3. In an alarm-bell (or signaling device), the combination with its base-plate and an actuating mechanism mounted thereon, of a circular inclosing case for the said actuating mechanism, a striker lever fulcrumed in close proximity to the aperture in the said inclosing case and arranged to assume a position diagonally across the said base-plate, and means adapted to support the said inclosing case and to retain its proper position in reference to the said striker-lever, substantially as and for the purpose described.

570,509. FOLDING TABLE. HENRY SELDERS, Lodi, Ohio. Filed Mar. 12, 1896. Serial No. 582,861. (No model.)

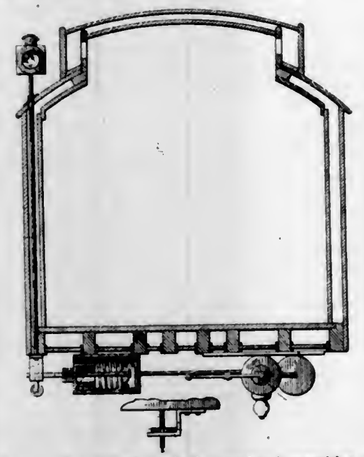


Claim.—1. In a folding table, the combination with suitable standards or uprights provided with vertical ways, of slides operating in said ways, said slides being provided at their upper end, with leaves hinged to said slides, substantially as and for the purpose shown and described.

2. In a folding table, the combination with standards or uprights provided with vertical ways, and slides operating in said ways, said slides having leaves hinged to their upper ends which leaves form the table-top and at a lower point leaves hinged thereto which form the table-shelf, the upper and lower pair of leaves adapted to fold up when the table is not in use substantially as and for the purpose shown and described.

3. A folding table comprising in its construction standards or uprights provided with vertical ways and slides operating in said ways, leaves hinged to the slides substantially as shown, cross-braces for connecting the standards, and folding legs for supporting the whole, substantially as and for the purpose shown and described.

570,510. CAR-SIGNAL. JOHN W. SHAFER, Chicago, Ill., assignor of one-half to Cary P. Patterson, same place. Filed Dec. 19, 1895. Serial No. 572,707. (No model.)



Claim.—1. An automatic air-brake car-signal comprising a horizontal cylinder located transversely beneath the car-body, a piston located within the cylinder and having a rod, a spring located within the cylinder between the outer cylinder-head and the piston for pressing the latter normally inward, a bracket having an offset and secured to the car-body, a shaft extending vertically of the car-body, provided with a visible signal, and supported on the bracket, means whereby the lower end of the shaft is operatively connected with the piston-rod, and a pipe connecting the cylinder with a brake-cylinder; substantially as described.

2. An automatic air-brake car-signal comprising a horizontal cylinder located beneath the car-bottom, a piston located within the cylinder and having a rod provided with a rack, a spring located in the cylinder between the cylinder-head and the piston, a vertical shaft extending vertically of the car-body and provided with a visible signal, a bracket secured to the car-body, a pinion secured to the lower end of the shaft and meshed by the rack, and a pipe connecting the cylinder with a brake cylinder; substantially as described.

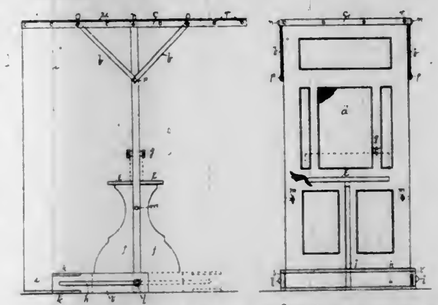
570,511. RASP. WILLIAM SHAW, Detroit, Mich., assignor to the Shaw Electric Rasp Company, same place. Filed Feb. 24, 1896. Serial No. 580,310. (No model.)



Claim.—1. An article of manufacture comprising the headed rods, the plates or blades, having cutting edges, mounted to snugly fit on said rods, the washers between said plates and mounted on said rods, and the plates having the operating-handles mounted thereon all adapted to be closely united by means on the ends of said rods, when arranged as shown and described.

2. A rasp, comprising the headed rods, angled plate B, provided with a handle, the washers, plate C, provided with a handle, the series of plates D and D' strung upon said headed rods, and means for securely holding the several plates upon the rods, all arranged substantially as shown.

570,512. FOLDING PORTABLE CONFESSIONAL. ANTHONY S. SIEBENFOERCHER, Kenton, Ohio. Filed Apr. 10, 1896. Serial No. 587,056. (No model.)



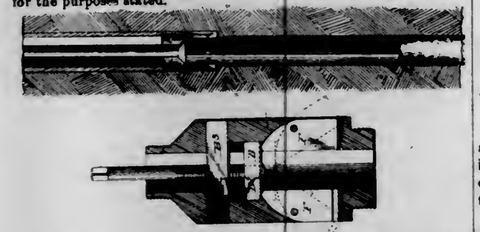
Claim.—1. In a folding portable confessional the combination of a main vertical body having folding curtain-frames pivoted to its edges at the top, the pivoted braces for holding them in a horizontal position and buttons for attaching curtains to the frames, a communicating open panel protected by a screen or lattice, horizontal folding arm-rests hinged to each side of the main body, buttons for holding the arm-rests in a folded position, vertical folding brackets for supporting the arm-rests and retaining the main body in a vertical position, the reversible kneeling-bench with slotted sides connected to and supporting the main body by means of pins passing through slots into the base of the main body at its edges, and sliding bolts to engage the kneeling-bench in a folded position, substantially as shown and described for purposes stated.

2. In a folding portable confessional the combination of a main vertical body with an open communicating panel therein protected with a screen or lattice, folding curtain-frames pivoted thereto and supported by pivoted braces having notched ends for engaging with pins in the edges of the main body, the buttons on the curtain-frames for attaching curtains at the sides, ends and top, the hinged folding brackets vertically attached to each side of the main body for supporting it in a vertical position, the hinged folding arm-rests attached horizontally to each side of the main body and resting on supporting-brackets, means for retaining the arm-rests in a folded position, a reversible kneeling-bench with slotted sides attached to and supporting the main body, and sliding bolts therein for retaining the kneeling-bench in a folded position substantially as shown and specified for purposes stated.

570,513. APPARATUS FOR BORING AND TUBING WELLS. CYRUS M. SMITH, Lake City, Iowa. Filed Mar. 23, 1896. Serial No. 584,569. (No model.)

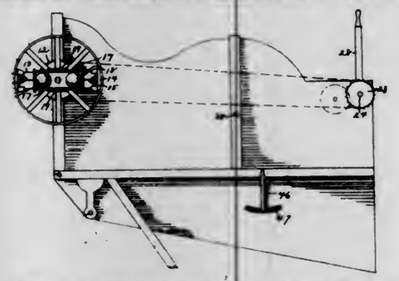
Claim.—1. A reamer adapted to enlarge and tube a bore from top to bottom, comprising a cylinder having screws at its ends for detachably connecting tube-sections therewith, a screw-seat fixed in the

top portion of the cylinder, grooves in the inside of the cylinder extending downward from the screw-seat, a sliding block fitted in said grooves, radial slots extending downward and outward through the cylinder below said grooves, a rod having an angular top and a screw-threaded portion extended through said screw-seat and rotatably connected with the sliding block, cutters having curved outer corners at their top ends and cutting edges across their bottom ends pivoted in said slots, arranged and combined to operate in the manner set forth, for the purposes stated.



2. An apparatus for tubing a well, comprising a reamer adapted to enlarge and tube a bore from top to bottom, comprising a cylinder having screws at its ends for detachably connecting tube-sections therewith, a screw-seat fixed in the top portion of the cylinder, grooves in the inside of the cylinder extending downward from the screw-seat, a sliding block fitted in said grooves, radial slots extending downward and outward through the cylinder below said grooves, a rod having an angular top and a screw-threaded portion extended through said screw-seat and rotatably connected with the sliding block, cutters having curved outer corners at their top ends and cutting edges across their bottom ends pivoted in said slots, a tube adapted to be detachably attached to the bottom of said cylinder, a tube adapted to be attached to the top of said cylinder and mechanism for rotating said tube and cylinder, all arranged and combined to operate in the manner set forth for the purposes stated.

570,514. BAND-CUTTER AND FEEDER. WILLIAM H. SPRINKLE, Lincoln, Ind. Filed Dec. 26, 1895. Serial No. 573,326. (No model.)

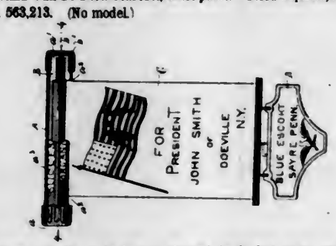


Claim.—1. A band-cutter and feeder consisting of a revolving shaft, suitable cutting-blades mounted on said shaft, a wheel loosely mounted on said shaft, a gripping device mounted on said shaft, said gripping device consisting of a plate, laterally-sliding blocks mounted on said plate, weights pivoted to said plate and extending in the same general direction as the shaft said weights being connected to the blocks, spring connections connecting together the weights, said weights adapted to be spread by centrifugal force and press the said blocks against the wheel, the last said wheel adapted to transmit motion.

2. In a band-cutter and feeder having a wheel loosely mounted on a shaft, a gripping device mounted on said shaft, said gripping device consisting of a plate, laterally-sliding blocks mounted on said plate, weights pivoted on said plate and being connected to the blocks, bars secured to the weights said bars extending laterally beyond the sides of the weights, spring connections directly connecting said bars together, said weights adapted to be spread by centrifugal force and press the said blocks against the wheel, the last-said wheel adapted to transmit motion.

3. In a band-cutter and feeder having a wheel loosely mounted on a shaft, a gripping device mounted on said shaft, said gripping device consisting of a plate, weights pivoted on said plate and being connected to the blocks, bars secured behind the weights, said bars extending laterally beyond the sides of the weights, spring connections directly connecting said bars together, said weights adapted to be spread by centrifugal force and press the said blocks against the wheel, the last-said wheel adapted to transmit motion.

570,515. BADGE. NATHAN F. STARTZEL, Sayre, Pa., assignor to Lavinia Van-Be-Dora Startzel, same place. Filed Sept. 21, 1895. Serial No. 563,213. (No model.)



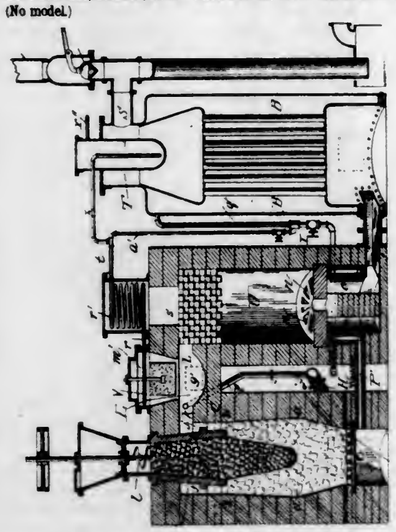
Claim.—1. In a badge, a slotted inclosing case, and a spring-actuated roller placed therein, combined with a banner attached at its upper edge to said roller and provided at its lower one with a catch or hook to engage the wearer's garment for the purpose of keeping the banner extended, substantially as shown.

2. In a badge, the slotted inclosing case provided with a cap at one end and a rod which extends entirely through the case, combined with an inclosing roller, a spring placed in the roller around the rod, and a banner secured to the roller at its upper edge, and provided with a hook or catch at its lower one to engage the wearer's garment, substantially as described.

3. In a badge, a hollow bar provided with a lengthwise slot, and having one end closed and the other open, means for fastening the bar in position, a spindle having one end supported by the closed end of the hollow bar, and a cap applied to the open end of the bar and forming a support for the other end of the spindle, combined with a roller encircling the spindle, a spiral spring having one end fixed to the roller and its opposite end fastened to the spindle, and a flexible ribbon wound around the roller, movable through the slot, and provided with means at its lower end for holding the ribbon extended, substantially as set forth.

4. In a badge, the hollow bar A, having an enlarged closed end *a*, and a contracted open end *a'*, and also provided with a longitudinal slot a^3; a removable cap *b* applied to the open end of the bar, a spindle extending through the bar and secured to the cap at one end and having its other end journaled in the closed end of the bar, a spring encircling the spindle and having one end secured thereto, and the roller B, inclosing the spring and the spindle, and having one end of the spring secured thereto, combined with the ribbon C, fastened at its upper end to the roller a bar secured to the lower end of the ribbon, an eye *c'* projecting from this bar, and the hook *c*, loosely connected to the eye and adapted to catch in the wearer's garment, substantially as specified.

570,516. PROCESS OF AND APPARATUS FOR MAKING GAS. LEVI STEVENS, Trenton, N. J. Filed Dec. 13, 1895. Serial No. 572,023. (No model.)

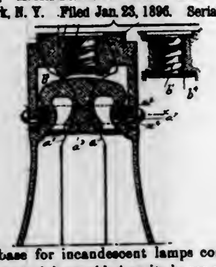


Claim.—1. In the manufacture of gas, the method herein described consisting in forcing the bituminous coking-coal, or other carboniferous material into the center of a gas-generator by mechanical pressure applied to the coal through a magazine, thereby causing an outward and downward pressure on the material in the generator, expelling the gases and causing them to pass through the outer mass of coal.

2. In a gas-producing apparatus, a generator, combined with a central magazine having passages between said magazine and the walls of the generator with a mechanical feeding device, constructed to feed the coal under pressure to the magazine and generator, substantially as described.

3. In a gas-producing apparatus, the combination of a generator, and retort, with a connecting-passage between them, forming a combustion, carbureting and vaporizing chamber, said passage having an outlet at the top, a coil for the oil supply, a loose cover for said carbureting-chamber and coil, and a weighted block of refractory material suspended from the cover which makes a relief or safety valve in case of an explosion, substantially as described.

570,517. INCANDESCENT LAMP AND SOCKET. ALFRED SWAN, New York, N. Y. Filed Jan. 23, 1896. Serial No. 576,537. (No model.)



Claim.—1. A base for incandescent lamps consisting of a cup made of insulating material, provided on its lower outer edge with a metallic ring and having a cylindrical cavity containing a metallic shell, the conductors of the lamp being respectively connected with the ring and the shell.

2. An incandescent-lamp base consisting of a cup made of insulating material having a cylindrical cavity or perforation formed centrally in its lower end, in combination with a cylindrical metallic shell fitting into said cavity or perforation and held in place by flanges on its extremities resting against shoulders on the insulating-cup; substantially as described.

3. An incandescent-lamp base consisting of a cup made of insulating material having a cylindrical cavity or perforation formed centrally in its lower end, in combination with a cylindrical metallic threaded shell fitting into said cavity or perforation and provided on one end with a polygonal flange fitting into a correspondingly-shaped countersink around the edge of the cavity in the cup; for the purpose set forth.

4. An incandescent-lamp socket having a body or shell of insulating material in the shape of a cup, a central metallic post projecting from the bottom of the cup, and an annular spring-contact surrounding said post in combination with a lamp-base consisting of a cup made of insulating material provided on its lower end only with contact-pieces adapted to connect respectively with said post and spring, the insulating-walls of the base being surrounded by the insulating-walls of the socket.

5. In an incandescent-lamp socket, a block or body of insulating material provided with a hole in which a metallic post or block is located, said post having a longitudinal passage for the conducting-wire, and the body of insulating material being further provided with a hole laterally intersecting the other, and two screws located in said lateral hole, one of which holds the post in place, and the other binds the conducting-wire, substantially as described.

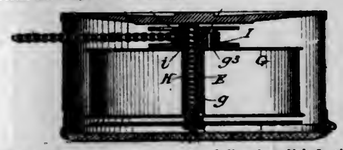
6. In an incandescent-lamp socket, a cylindrical shell closed by a disk across one end and made integrally of insulating material, said disk being the thicker on one side than on the other thereby forming a depression in one side of the bottom of the shell, in combination with a metallic post located in a perforation in the thicker side of the bottom, a ring-spring secured to the end of the post and conforming in general shape to the depressed bottom of the shell and a key-shaft projecting through the shell and carrying a contact-block adapted to engage with the ring; substantially as described

7. In an incandescent-lamp socket, the combination of a key-shaft, a circuit-closing block carried thereby the block having a slot through which the shaft passes and two contact-pieces with which the ends of the block are adapted to make connection.

8. The combination of an incandescent-lamp socket and means for attaching it to an electrolier consisting of a comparatively thin metal cap having means for attaching it to the socket and provided with a nozzle or neck reinforced by two internal semicircular strips, one of said strips provided with a threaded hole for the tightening-screw, and a threaded bushing secured inside of the neck; substantially as described.

9. The combination with an incandescent-lamp socket provided with an exterior bead around one end, of a threaded ring *l* surrounding the socket and held in place by said bead, and a cap threaded to said ring and provided with means for attachment to a fixture, substantially as described.

570,518. APPARATUS FOR DELIVERING DISINFECTING MATERIAL, &c. EMIL TAUSSIG, New York, N. Y. Filed Dec. 24, 1895. Serial No. 573,223. (No model.)



Claim.—1. In an apparatus for delivering disinfecting material, &c., the combination of a suitable support, a reservoir or holder mounted to oscillate upon said support, a spool or drum also mounted on said support and connected to said reservoir or holder to oscillate therewith, a chain connected to said drum to effect a partial rotation of said reservoir or holder in one direction and a spring to restore said reservoir or holder to normal position when the pull upon the chain is relaxed, said reservoir or holder having a discharge-orifice which is normally at the highest point, substantially as shown and described

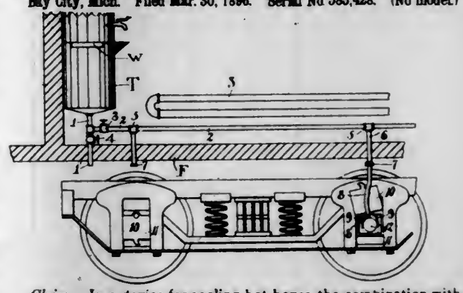
2. In an apparatus for delivering disinfecting material, &c., the combination of a supporting-stud, a reservoir or holder mounted to oscillate upon said stud, a spool or drum also mounted upon said stud and connected to said reservoir or holder to oscillate therewith, a chain connected to said drum or spool to oscillate said reservoir or holder in one direction and a spring connected to said drum or spool to oscillate said reservoir or holder in the opposite direction, substantially as shown and described.

3. In an apparatus for delivering disinfecting material, &c., the combination of a supporting-stud, a spiral spring sleeved upon said stud and formed to engage the same at one end, a spool or drum mounted upon said stud and engaged by the other end of said spring, a reservoir or holder also mounted upon said stud and engaged by said drum or spool and a chain secured to said drum or spool, substantially as shown and described.

4. In an apparatus for delivering disinfecting material, &c., the combination with a shell or casing having a discharge-pipe and having a lip or flange formed on the lower portion of the inner periphery near the front edge thereof, a reservoir or holder mounted to oscillate within said shell or casing and having a discharge-orifice and means to oscillate said reservoir or holder to cause the same to deliver its contents into the lower portion of said shell or casing, substantially as shown and described.

5. In an apparatus for delivering disinfecting material, &c., the combination of a cylindrical shell or casing having a supporting-back and a removable front or door, a stud centrally secured to said back, a spool or drum mounted upon said stud, a chain secured to said drum or spool, a cylindrical reservoir or holder mounted upon said stud and having a discharge-orifice and connected to said drum or spool and a spring having one end secured to a fixed support and having the other end connected to said spool or drum, substantially as shown and described.

570,519. DEVICE FOR COOLING HOT BOXES. GEORGE C. TOBEY, Bay City, Mich. Filed Mar. 30, 1896. Serial No. 585,428. (No model.)



Claim.—In a device for cooling hot boxes, the combination with the water-fountain in the car and the drip-reservoir underneath, and

a discharge-pipe therefrom having a stop-cock, and laterally-extending pipes connected to the discharge-pipe above the stop-cock and having also a stop-cock thereon, the pipe extending along the floor of the car and the pipes passing through the car-floor above the car-axles and connected to the lateral pipes, and a tubing connected to the end of the pipes below the car and extending into the car-axle boxing, a nozzle on the end of the tubing, two spring-tines secured to the end of the nozzle and extending beyond the same upon opposite sides thereof and adapted to pass upon each side of the car-axle and clamp themselves around it and hold the nozzle above the axle, substantially as and for the purpose set forth.

570,520. BOOK-CARRYING DEVICE. JULIUS I. TORNEY, Milwaukee, Wis. Filed Mar. 12, 1896. Serial No. 582,966. (No model.)



Claim.—The combination, with an outer case having an opening and a cover for said opening, the bottom piece of said case provided with grooves, of one or more holders adapted to fit within the case, each holder consisting of a bottom piece, a back piece, and at opposite ends oblique connecting brace-arms, said bottom piece provided on its under side with rails fitting the grooves of the bottom piece of the case, and also provided at its front edge with a handle or handles, and the back piece provided with a handle or handles, whereby a holder can be readily removed from the case whether placed therein with its back piece innermost or outermost.

570,521. BICYCLE LOCK. JAMES E. TURTON, Washington, D. C. Filed Feb. 15, 1896. Serial No. 579,386. (No model.)

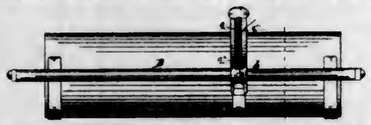


Claim.—1. The combination with two forks of a bicycle and a keeper attached to one fork, of a bolt pivotally connected to the other fork and adapted to slide endwise and means for automatically sliding the bolt endwise on its pivotal bearing when in horizontal position, substantially as set forth.

2. The combination with a bolt having an elongated slot therein, a pivot-pin passing through said slot, and a spring for sliding it in one direction, of a spring-actuated slide-tumbler for engaging and locking the bolt, and means for withdrawing the tumbler, substantially as set forth.

3. The combination with a bolt having an elongated slot therein, a pin extending through the hole and a spring connected with the bolt and pin for sliding the bolt in one direction, of a spring-actuated slide-tumbler adapted to engage one end of the bolt when in one position and a shoulder thereon when in another position and means for operating said tumbler, substantially as set forth.

570,522. TYPE-WRITING MACHINE. HENRY H. UHL, Philadelphia, Pa. Filed Nov. 16, 1889. Serial No. 330,538. (No model.)



Claim.—1. In combination, a platen, a paper-guide, and a bracket on which said guide is adapted to move in a path eccentric to the platen to and over the printing-point on said platen.

2. In combination, a platen, a paper-guide, and a bracket on which said guide is adapted to move in a path eccentric to the platen to and over the printing-point of said platen, said guide being capable of a lateral movement along said platen.

3. In combination, a platen, a paper-guide, a bracket on which said guide is adapted to move for a portion of its movement in a path concentric to the platen, and in a path eccentric to the platen for the remainder of its movement, to and over the printing-point on said platen.

4. In combination, a platen, a paper-guide, a bracket on which said guide is adapted to move for a portion of its movement in a path concentric to the platen, and in a path eccentric to the platen for the remainder of its movement, to and over the printing-point on said platen, said paper-guide being capable of a lateral movement along the platen.

5. In combination, a cylindrical platen, a bracket or frame supported in proximity thereto, and a guide-finger carried by said frame and movable in the general direction of its length and about circumferentially of the platen, substantially as described.

6. In combination, a cylindrical platen, a frame in proximity thereto, and a curved guide movable in said frame in the direction of its length, and about circumferentially of the platen, substantially as described.

7. In combination, the platen, the frame near the same, and the guide moving about the platen in a direction generally circumferential and slightly eccentric to its surface, substantially as described.

8. In a type-writing machine, in combination, a platen, a frame secured to said machine, a slot in said frame, a thumb-piece adapted to work in said slot, the lower portion of inner face of said frame or bracket being eccentric or at an angle to the platen, and metallic strips secured to said thumb-piece.

9. In a type-writing machine, in combination, a platen, a frame or bracket secured to said machine, a slot in said frame or bracket, a thumb-piece adapted to travel in inner face of said slot, the lower portion of said frame or bracket being eccentric or at an angle to the platen, and a curved metallic strip secured to said thumb-piece.

10. In a type-writing machine, in combination, a platen, a frame or bracket secured to said machine, a slot in said frame or bracket, a thumb-piece adapted to travel in inner face of said slot, the lower portion of said bracket or frame being eccentric or at an angle to the platen, a metallic strip secured to said thumb-piece, a metallic strip secured to the last-mentioned strip at a point at or near its end, a portion of the second metallic strip extending up beyond the point of juncture of the two strips.

11. In a type-writing machine, in combination, a platen, a frame or bracket secured to said machine, a slot in said frame or bracket, a thumb-piece adapted to travel in inner face of said slot, the lower portion of said frame or bracket being eccentric or at an angle to the platen, a curved metallic strip secured to said thumb-piece, a curved metallic strip secured to the last-mentioned strip at a point at or near its end, a portion of the second curved metallic strip extending up beyond the point of juncture of the two curved strips.

12. In a type-writing machine, in combination, a platen, a platen-carrier, a frame or bracket adjustably secured to a rod a portion of said platen-carrier, a slot in said frame or bracket, a thumb-piece adapted to travel in said slot, the lower portion of inner face of said frame or bracket being eccentric or at an angle to the platen, and a metallic strip secured to said thumb-piece.

13. In a type-writing machine, in combination, a platen, a platen-carrier, a frame or bracket adjustably secured to a rod a portion of said platen carrier, a slot in said frame or bracket, a thumb-piece adapted to travel in said slot, the lower portion of inner face of said bracket or frame being eccentric or at an angle to the platen, and a curved metallic strip secured to said thumb-piece.

14. In a type-writing machine, in combination, a platen, a frame or bracket secured to said machine, a slot in said frame or bracket, a thumb-piece adapted to travel in said slot, said thumb-piece being of greater width than the slot in one direction, but narrower than the slot in the other, the lower portion of inner face of said frame or bracket being eccentric or at an angle to the platen, and a metallic strip secured to said thumb-piece.

15. In a type-writing machine, in combination, a platen, a frame or bracket secured to said machine, a slot in said frame or bracket, a thumb-piece adapted to travel in said slot, said thumb-piece being of greater width than the slot in one direction, but narrower than the slot in the other, the lower portion of inner face of said frame or bracket being eccentric or at an angle to the platen, a metallic strip secured to said thumb-piece, a metallic strip secured to the last-mentioned metallic strip at a point at or near its end, a portion of the second metallic strip projecting up and beyond the soldered point.

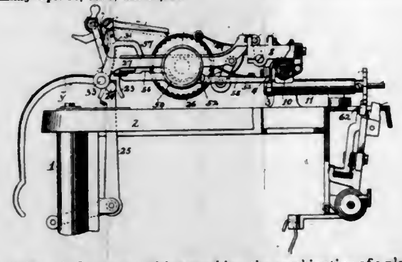
16. In combination with a platen of a device independent of the platen supported in proximity thereto, and a guide-finger movable upon said device, said device forming a guideway defining the movement of the finger.

17. In combination with a platen, of a device independent of the platen supported in proximity thereto and movable longitudinally thereof, and a guide-finger movable upon said device, said device forming a guideway defining the movement of the finger.

18. In combination with a platen, of a device independent of the platen supported in proximity thereto, and a curved guide-finger movable upon said device, said device forming a guideway defining the movement of the finger.

19. In combination with a platen of a device independent of the platen supported in proximity thereto, and a resilient guide-finger movable upon said device, said device forming a guideway defining the movement of the finger.

570,523. TYPE-WRITING MACHINE. GEORGE B. WEBB, New York, N. Y., assignor to The Wyckoff, Seamans & Benedict, same place. Filed Nov 6, 1894. Serial No. 528,017. (No model.) Patented in England Feb. 6, 1892, No. 156; in France Apr. 12, 1892, No. 218,600; in Austria-Hungary Aug. 28, 1892, No. 4,144 and No. 16,769, and in Germany Apr. 11, 1893, No. 67,836.



Claim.—1. In a type writing machine, the combination of a platen having a ratchet-wheel, a platen-check, a line-space lever, a driving-pawl pivoted thereto and having a downwardly-projecting arm, and a cam having a series of faces arranged at different distances from its pivot or arbor, adapted to regulate the throw of the line-space lever and also to hold the driving-pawl normally out of engagement with the ratchet-wheel.

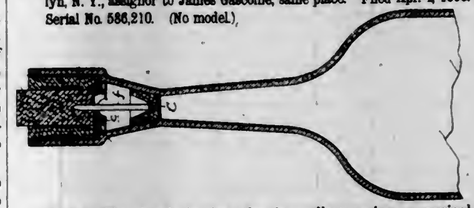
2. In a type-writing machine, the combination of a platen having a ratchet-wheel, a platen-check, a line-space lever, a driving-pawl pivoted thereto and provided with an arm, and a combined line-space regulator and driving-pawl lifter.

3. In a type-writing machine, the combination of a platen having a ratchet-wheel, a platen-check, a line-space lever carrying a pivoted driving-pawl provided with an arm, a cam having a plurality of faces and mounted on a shaft or arbor, a disk having a plurality of faces also mounted on said arbor, and a spring-catch for engaging the disk-faces.

4. In a type-writing machine, the combination of a platen having a ratchet-wheel, a platen-check, a line-space lever carrying a pivoted driving-pawl provided with an arm, a standard projecting upwardly from the side bar of the paper carriage, a shaft or arbor mounted to turn in said standard, a cam and a disk having each a plurality of faces mounted on said shaft or arbor, and a spring-catch for engaging the faces of the disk.

5. In a type-writing machine, the combination of a platen-carrier, an escapement mechanism, a pinion connected therewith, a lifting feed-rack, a platen provided with a ratchet-wheel, a line-space lever provided with a driving-pawl, and a release-key lever pivoted to an end bar of the platen carrier having one free arm extended rearwardly and to raise said feed-rack and having its other free arm extended forwardly to the front of the platen-carrier and adapted to be engaged by a depending arm of the line-space lever.

570,524. NON-REFILLABLE BOTTLE. ALBERT R. WEBER, Brooklyn, N. Y., assignor to James Gascoine, same place. Filed Apr. 4, 1896. Serial No. 586,210. (No model.)



Claim.—The bottle having the inwardly-tapering or conical throat and the shoulder in the base of the mouth thereof, in combination with the valve, the annulus having the grooves or channels at its base, a cork, and the peg inserted in and depending from the cork and bearing at its lower end upon the valve, substantially as specified.

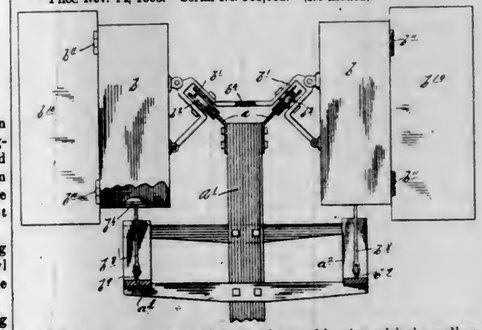
570,525. CAR-WHEEL. JONATHAN B. WEST, Rochester, N. Y. Filed Aug. 31, 1895. Serial No. 561,106. (No model.)



Claim.—1. The herein-described improved railway-wheel, consisting of a metallic center trued on its outer edge, and having a continuous rolled flanged tire provided with an internal flange on the outside of the center and with another internal flange or recess, and attached to the center by compression, substantially as described.

2. The herein described improved railway-wheel, consisting of a metallic center trued on its outer edge, and having attached thereto by compression a continuous rolled flanged tire provided with an internal flange on the outside of the center and an internal rib on the inside of the wheel formed by the compression of the tire, substantially as described.

570,526. WATER-ELEVATOR. MOSES H. WHITE, Wanatchee, Wash., assignor of one-half to Solomon Saunders, Minneapolis, Minn. Filed Nov. 14, 1895. Serial No. 568,932. (No model.)



Claim.—1. In a water-elevator, the combination with the endless track or runway extending from the water supply to a distant elevation, of the inclined camways located at said water supply and said elevation, and the endless traveler formed by a series of pivotally-connected buckets provided with valves which are normally closed, but which are adapted to be opened by said inclined camways when the buckets are passed therecver, substantially as described.

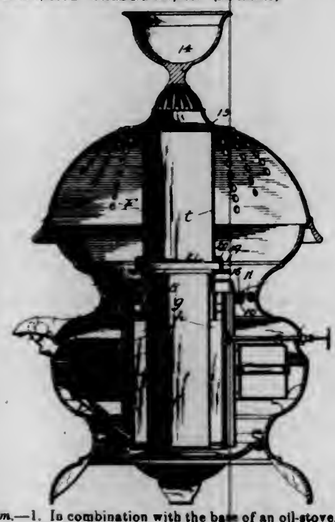
2. In a water-elevator, the combination with the endless track or runway extending from the water supply to a distant elevation, of valve-tripping devices, located one at the said water supply, and the other at the said distant elevation, and the endless traveler, formed by the series of pivotally-connected buckets provided with valves that are normally closed, but which are adapted to be opened by said valve-tripping devices as said buckets pass the same, substantially as described.

3. In a water-elevator, the combination with the endless track or runaway extending from the water supply to a distant elevation,

of the valve-tripping devices, located one at said water supply and the other at said distant elevation, and the endless traveler, comprising the pivotally-connected trucks movable over said track, the buckets supported, one pair by each truck, and provided with pivoted or folding propelling-wings and with valves that are normally closed, but which are adapted to be opened by said valve-tripping devices, said parts operating substantially as described.

4. In a water-elevator, the combination with the endless track or runaway comprising the parallel flaring rails a, of the inclined camways a^3, located respectively at the water supply and at a distant elevation, and the endless traveler, comprising the pivotally-connected trucks b' b^3 b^3 b^4 b^3, the buckets b carried by said trucks, the laterally pivoted or folding wings b^{10} carried by said buckets b, and the valves b^4 in the bottoms of said buckets b provided with depending trip-stems b^3, subject to the action of said inclined camways a^3, said parts operating substantially as described.

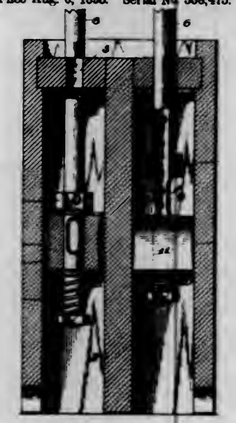
570,527. LAMP-STOVE. WILLIAM H. WILDER, Florence, Mass. Filed Nov. 2, 1894. Serial No. 527,769. (No model.)



Claim.—1. In combination with the base of an oil-stove, a dome-shaped shell forming the upper part of the combustion-chamber, the said dome having a series of perforations arranged in the upper part of the dome between the middle zone and the top and adapted to permit the passage of the heated air and light, substantially as described.

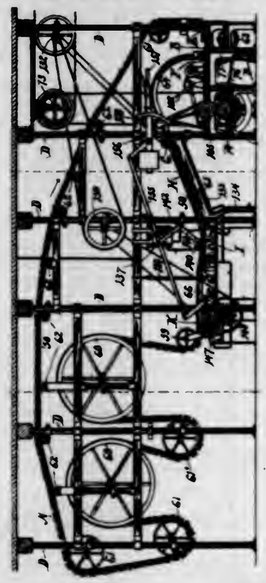
2. In combination with the dome having a central ventiduct and with the deflector, the slip-joint connecting the deflector and the ventiduct, substantially as described.

570,528. DOUBLE-ACTING PUMP. HENRY M. WYETH, Salt Lake City, Utah. Filed Aug. 6, 1895. Serial No. 558,415. (No model.)



Claim.—In a pump, the combination with a double submerged cylinder provided at its upper end with inlet openings and controlling inwardly-opening valves, of pistons operating in the cylinder, each piston having a tubular piston-rod provided near its lower end with outlet-ports and above and below the outlet-ports with upper and lower stops, a piston-head mounted to slide upon the piston-rod between said stops and adapted when in contact with the upper stop to close said outlet-ports, and a spring interposed between the piston-head and the lower stop to normally hold the piston-head in position to close the outlet ports and return it to said position after displacement by pressure in the cylinder, substantially as specified.

570,529. MATCH-MAKING MACHINE. WILLIAM H. WYMAN, Oshkosh, Wis., assignor to the Oshkosh Match Works, same place. Filed May 2, 1894. Serial No. 509,864. (No model.)



Claim.—1. The combination with a flexible endless match-carrier consisting of a series of plates hinged together, which carrier has a ratchet-toothed rack thereon coextensive with its length in which a portion of the teeth at regular intervals are higher and wider than the other teeth, of a reciprocating pawl having a regular constant throw as great as or greater than the width of the larger teeth, the pawl being disposed at an oblique angle to the plane of motion of the carrier and so guided as at each reciprocation to engage successively all the teeth of the rack both large and small, and advance the carrier intermittingly variantly, substantially as described.

2. In a machine for manufacturing matches, the combination with an endless carrier having means at varying distances apart for receiving and holding match-sticks and provided with a ratchet-toothed rack coextensive with its length which rack includes both large and small teeth, of a device for advancing the carrier intermittingly and variantly comprising an actuated rock-shaft, a crank thereon, a pawl pivoted to the crank at an oblique angle to the carrier, and adapted at each reciprocation to engage successively the several teeth of the rack, the throw of the pawl being sufficient to retrieve it past the large teeth, an adjustable guide on which the pawl rides medially, and means for holding the pawl to its work, substantially as described.

3. In a machine for manufacturing matches, the combination with an endless carrier having means at varying distances apart for receiving and holding match-sticks and provided with a ratchet-toothed rack coextensive with its length which rack includes both large and small teeth, of a device for advancing the carrier intermittingly and variantly, comprising an actuated rock shaft, a crank thereon, a pawl pivoted to the crank at an oblique angle to the carrier and adapted at each reciprocation to engage successively the several teeth of the rack, the throw of the pawl being sufficient to retrieve it past the large teeth, and an adjustable guide on which the pawl rides medially, and spring-actuated clicks 67 located near to and just ahead of the pawls, adapted to pass and engage the rack-teeth of varying widths with equal certainty and prevent backlash when the pawls are being retrieved, substantially as described.

4. In a match-machine, the combination with an endless match-carrier so mounted as to have plates thereof disposed parallel with each other at two opposite points of its travel, and a series of fixed stick-cutters in front of one line of said plates, of a reciprocating carriage opposite said plates in the carrier at the points aforesaid, and adapted by its forward motion to force a wood block against the cutters and thrust the sticks cut therefrom into one of the plates and to eject matches from another plate at the other of the two points aforesaid, substantially as described.

5. In a match-machine, the combination with a permanent frame, of a cutter-bar secured rigidly thereto, said cutter-bar being provided with a series of transverse grooves disposed at an oblique angle to carriage-ways on the frame, and a plurality of tubular match-stick cutters each provided with a stem or stock at an oblique angle to the axis of the cutter, the stock being adapted to fit in one of said grooves of the cutter-bar, and means substantially as described for securing the stocks severally rigidly but detachably in the cutter-bar, as set forth.

6. In a match-machine, the combination with a frame, a series of cutters fixed therein, and grooves or ways for match-sticks leading rearwardly therefrom, of a reciprocable carriage and dogs pivoted on the carriage in the rear of the cutters adapted to drop behind the match-sticks and by the movement of the carriage to push them forward toward and into a carrier, substantially as described.

7. In a match-machine, the combination with a frame, a series of cutters fixed therein and a material-carrying carriage reciprocable over the cutters, of dogs pivoted to the carriage adapted to drop behind the match-sticks and by the movement of the carriage to push them forward, and springs arranged to hold the dogs yieldingly to their work, substantially as described.

8. In a match-machine, the combination, with a reciprocable carriage adapted to insert rows of match sticks in an intermittingly-moving carrier, of a nose-piece secured to the head of the carriage, adapted to hold down rows of match-sticks in front of the head, being pushed into the carrier, substantially as described.

9. In a match-machine, the combination with a relatively slow moving stick-carrier, of a revoluble head, and knives mounted thereon transversely of and near to the carrier, the knives by their rapid revolution being adapted to cut off and clear the carrier of match-sticks or fragments of them, at the rear thereof, substantially as described.

10. In a match-machine, the combination with a flexible match-stick carrier, and a tank for holding melted paraffin located below, but near to the carrier, of a device for depressing the carrier into the tank, comprising rollers mounted in swinging arms fixed in a rock-shaft, and means for oscillating the rock-shaft whereby the rollers can be thrown against and made to depress the carrier and hold it steadily down, or the rollers can be raised from the carrier permitting the raising of the carrier, substantially as described.

11. In a match-machine, the combination with permanent supports, of a tank or chamber 147 fixed thereon, a hot-water box 146 set removably in the fixed tank so as to form a steam or hot-water chamber between them, a composition-roller 145 set removably in the hot-water box, and a composition-roller journaled in the brackets fixed on the hot water box and so disposed as to dip into and rotate in the contents of the pan, the pan and the hot-water box with the roller mounted thereon being severally removable from the steam-tank and from each other, substantially as described.

12. In a match-machine, the combination with ways pivoted on a permanent support and wheels mounted on the tilting ways at a distance from the axis thereof, of an endless flexible and normally taut traveling match-carrier, the parts being so disposed that the carrier runs on its ways and turns at substantially a right angle on and about the wheels mounted on the ways and so that by the tilting of the ways the wheels are carried inwardly from the angle of the turn of the carrier about the wheels whereby slack is provided in the carrier permitting of the lifting or deflecting of the carrier from its course, substantially as described.

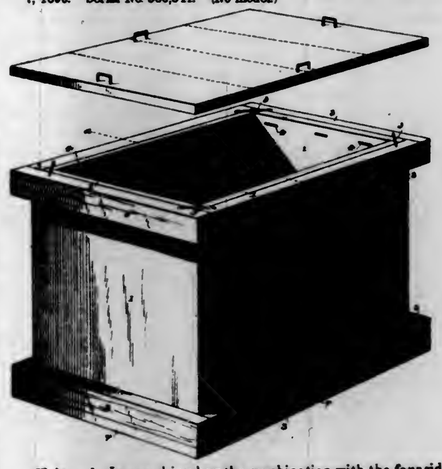
13. In a match-machine, the combination with an endless flexible carrier, of tilting ways, wheels mounted on one arm of the tilting ways about which the carrier runs turning substantially at a right angle about the wheels, the wheels and ways being so disposed as to tilt inwardly from the angle, other wheels adjacent thereto over which the carrier runs, and gravity-acting wheels movable vertically riding on the carrier adapted to lift the carrier from the angle aforesaid when the ways are uptilted, substantially as described.

14. In a match-machine, a rock-shaft, tilting carrier-ways fixed on the shaft, another rock-shaft, carrier-depressing rollers mounted in crank-arms fixed on the last-mentioned rock-shaft, other crank-arms on both said rock-shafts, a third rock-shaft having a crank-arm, a rod connecting the crank-arms on said three shafts, and a crank-handle fixed on the third rock-shaft, adapted to simultaneously tilt the carrier-ways and swing the depressing-rollers, combined substantially as described.

15. In a match-machine, the combination with an endless carrier, and a composition-roller, of tilting ways on which the carrier runs near to the composition-roller, wheels mounted on an arm of the tilting ways about which wheels the carrier runs at an angle the strain of the carrier on the wheels tending to tilt the ways upwardly, and a spring adapted to hold the ways to position against said strain of the carrier, substantially as described.

16. In a match-machine, the combination with a frame, a carriage reciprocative on the frame, and means in the carriage for holding a wood block and presenting it to cutters in the frame at an oblique angle to the plane of the cutters, of said cutters fixed in a plane in the frame, and a knife fixed in the frame at the end of the series of cutters, said knife being adapted to cut off the wedge-shaped edge of the block, substantially as described.

570,530. BOX. MCCLINTOCK YOUNG, Frederick, Md., assignor to the Palmetto Fibre Company, same place and Chicago, Ill. Filed Apr. 7, 1896. Serial No. 586,541. (No model.)

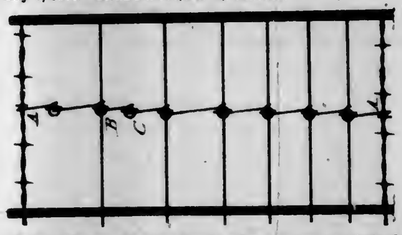


Claim.—1. In a packing-box the combination with the four sides, of two rectangular frames only surrounding their upper and lower ends and leaving the corners of the box exposed, fastening devices securing the sides of the box to the frames and the top and bottom applied and secured to said frames.

2. In a packing-box the combination with the four sides assembled to form a rectangular inclosure, of the rectangular frames surrounding the same at the top and bottom, with their outer surfaces flush with the ends of the sides, each frame comprising four strips extending along the sides of the box and secured together at their ends by staples engaging the meeting ends of the strips and extending diagonally across the corners of the frames inward of their inner sides.

3. The improved box for packing &c., consisting of four sides assembled to form a rectangular inclosure, two rectangular frames only each consisting of the four connected strips secured together at their ends and surrounding and secured to the sides of the box at the top and bottom, flush with the ends of the box, thereby leaving the corners of the same free the single sheet or board applied and fastened to the under side of the lower frame and forming the bottom of the box and a board or boards applied to the upper side of the upper frame and forming the top of the box.

570,531. WIRE-FENCE STAY. BOYD ZOCK, Lanark, Ill. Filed May 6, 1896. Serial No. 590,490. (No model.)



Claim.—The combination in a wire fence having any desired number of horizontal fence-wires, and provided with top and bottom barb-

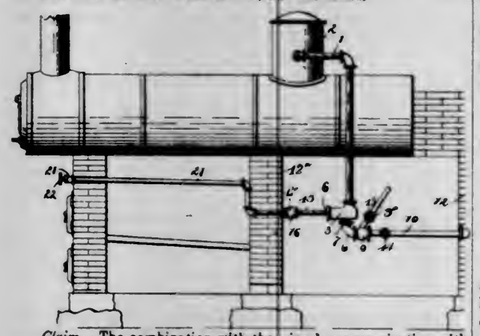
wires, of a stay provided at its terminals with eyes entirely encircling said wires, the barbs on the wires preventing all but little longitudinal movement, said stay comprising a series of links, each link having an eye at each end, formed of more than one complete turn, so that a long point extends out from the eye, the two eyes being similar but at approximately right angles to each other, the upper eye of one link engaging the lower eye of adjacent link and some of the eyes engaging also the horizontal wires, said eyes when engaged with intermediate wires, fitting tightly, thereby preventing the stay from being easily moved when coming in contact with any movable object.

570,532. ROLLING HARROW. AUGUST R. ANDERSON, Cameron, Idaho. Filed June 22, 1896. Serial No. 596,477. (No model.)



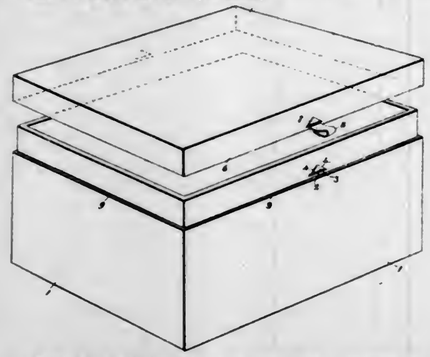
Claim.—The rectangular frame comprising the side pieces upon which are mounted the bent axles, the carrying-wheels mounted on said axles, and the levers adapted to adjust the wheels on one side independently of the wheels on the opposite side, in combination with the toothed shafts 16 17 and 18, the opposite ends of which are provided with sprocket-wheels connected by sprocket-chains, and having their said ends, their sprocket wheels and chains protected by hinged covers secured to the said side pieces 2 and 3, substantially as and for the purpose set forth.

570,533. SMOKE-CONSUMER. CHARLES M. ARMSTONG, Barry, Ill., assignor of one-half to John Weber and John Day, same place. Filed July 18, 1896. Serial No. 599,694. (No model.)



Claim.—The combination with the pipe 1, communicating with the steam-dome of the boiler and connecting to the coupling 3, formed with an integral ejector-jet 5 and an outlet 6, the pipe 8, having a coupling 9, provided with a pipe 9ª having valve 13, and opening into the atmosphere, and a pipe 10 having valve 14 communicating with the combustion-chamber, the T-coupling 16 connected to the coupling 3 by a pipe 15 and provided with the branch pipe closed at its inner end and having a series of perforations or orifices 19 in line with the openings 18 in the bridge-wall, and a pipe 21 connected to said T-coupling and provided with branch pipes 23 24, and the cross-pipes 23' 24' extending into the front of the furnace, substantially as shown and described.

570,534. CIGAR-BOX. HENRY F. BENTE, St. Louis, Mo., assignor to the Wm. A. Stickney Cigar Company, same place. Filed May 8, 1896. Serial No. 590,726. (No model.)



Claim.—1. A display cigar-box comprising a transparent box having rigid imperforate walls, suitable lugs formed integrally with the walls and disposed along the outer surfaces of two opposite walls at a suitable distance below the upper edge of said walls, a cover for the box having yielding sides adapted to be passed over the walls of the box, and suitable openings formed in the said sides of the cover through which the lugs carried by the walls are adapted to be passed and retain the cover in place, substantially as set forth.

2. A display cigar-box comprising a box having rigid imperforate walls, a continuous ledge disposed along the walls at a suitable distance below the upper edge of the box, suitable lugs formed integrally with the walls and disposed along the outer surfaces of the walls adjacent to the ledge and between said ledge and the upper edge of the box, a cover for the box having yielding sides adapted to be passed over the walls of the box, and suitable openings formed in the said yielding sides of the cover through which the lugs carried by the walls are adapted to pass and retain the cover in place, the lower edge of the cover being adapted to rest on the ledge, substantially as set forth.

3. A display cigar-box, comprising a suitable transparent rectangular glass box, suitable wedge-shaped rigid lugs carried by the outer surfaces of the walls thereof, inclined sides and an inclined base for each lug, a metallic cover having yielding sides adapted to pass over the walls at the open end of the box, suitable triangular openings cut in the sides of the cover, said openings conforming approximately to the general form of the wedge-shaped lugs whereby the bases and sides of the openings can freely ride over the inclined faces and bases and sides of the lugs, and suitable straps carried by the sides of the cover adjacent to or in proximity to the openings cut in said sides, substantially as set forth.

4. In a display cigar-box, a suitable box, rigid lugs carried by the same having inclined faces, an inclined base for each face, and inclined sides meeting the face and base of each lug, and a cover for the box having suitable openings formed in the yielding sides thereof and cooperating with the lugs, substantially as set forth.

570,535. AUTOGRAPHIC REGISTER. GEORGE D. BOND, Hillsborough, Tex. Filed Jan. 10, 1896. Serial No. 575,020. (No model.)

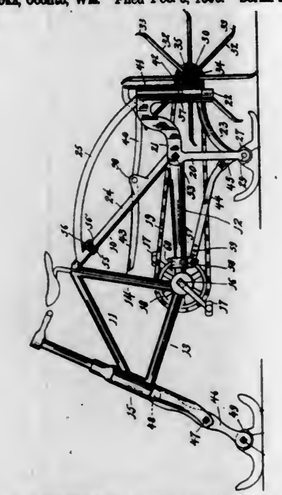


Claim.—1. The combination with a case, a lid securable thereon and having a transverse aperture near one end, a table in the case below said aperture, and a carbon strip held by its ends on said table, of a transverse roller adapted to hold a rolled ticket strip, that extends one end therefrom through an end of the case over the carbon strip, a tension device at said end of the case through which the ticket-strip is drawn, two other rollers holding a record-strip which passes between the carbon strip and the table, and gearing adapted to transmit motion from the ticket-holding roller to one of the record-holding rollers, substantially as described.

2. In a registering device of the described construction, the tension device for a ticket-strip and which is also a guard and ticket-cutter, comprising two plates, respectively secured on an edge of the register-case and on an opposed end of the case-lid, said plates having adjacent edges within the register-case respectively curved toward the body and lid of the case, the curved edge of the plate on the lid nearly contacting with the concave side of the curved edge on the other plate, as specified.

3. In an autographic register, the combination of a case having a lid and a recess in one side wall, said recess being adapted to be covered by the lid when the lid is closed and having in its bottom a scallop, a roller having a journal at one end engaging the scallop in the bottom of the recess, and a filling-block hinged at one end to the casing and adapted to fit down in said recess in the side of the casing, said filling-block having a scallop in its under side to engage the upper surface of the journal of the roller, and being adapted to be held in engagement with said journal by the lid of the casing when said lid is closed, substantially as set forth.

570,536. ATTACHMENT FOR BICYCLE-FRAMES. CLARENCE M. BROOKS, Oconto, Wis. Filed Feb. 6, 1896. Serial No. 578,216. (No model.)



Claim.—1. In combination with a bicycle-frame, of an auxiliary frame, consisting of legs having runners at their lower ends, an axle journaled on projecting parts of the legs, a propelling-wheel mounted on said axle, means for driving said wheel from the driving-axle of the bicycle, and means for securing the auxiliary frame to the bicycle frame.

2. An attachment for bicycle-frames, consisting of legs having runners at their lower ends, vertical guideways, extending downwardly from projecting parts of the legs, journal-boxes mounted slidingly in the guideways, means for sliding said boxes in the ways, an axle mounted in the boxes, and a propelling-wheel mounted on the axle.

3. An attachment for bicycle-frames, consisting of an auxiliary frame provided with depending legs, said legs having runners at their lower ends, a lever pivoted to the auxiliary frame, vertical guideways forming a part of the auxiliary frame, journal boxes slidingly mounted in the guideways, a connection between the end of the lever and the boxes, an axle journaled in the boxes, and a propelling-wheel mounted on the axle.

4. An attachment for bicycle-frames, consisting of an auxiliary frame, comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-projecting arms, a rear axle mounted in said rearwardly-projecting arms, and a propelling wheel on said rear axle.

5. An attachment for bicycle-frames, consisting of an auxiliary frame, comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms adapted to be secured to the rear inclined braces of a bicycle-frame, a forwardly-extending pivoted brace, the forward end thereof adapted to be secured to the lower portion of the bicycle frame, rearwardly-projecting arms, a rear axle mounted on said rearwardly-projecting arms, and a propelling-wheel on said rear axle.

6. An attachment for bicycle-frames, consisting of an auxiliary frame, comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-extending arms having guideways depending therefrom, journal-boxes mounted slidingly on said guideways, means for sliding said boxes, a rear axle mounted in the boxes, and a propelling-wheel on the rear axle.

7. An attachment for bicycle frames consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-extending arms having guideways depending therefrom, braces connecting these guideways with the vertical legs, other braces connecting the upper portion of the guideways with the forwardly-extending upwardly-inclined arms, journal-boxes slidingly mounted on the guideways, a rear axle journaled in the boxes, and a propelling-wheel mounted on the axle.

8. An attachment for bicycle-frames, consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-extending arms having guideways depending therefrom, journal-boxes slidingly mounted on the guideways, a rear axle journaled in the boxes, a propelling-wheel mounted on the axle, and a forwardly-extending brace having a forked rear end connected to the vertical legs.

9. An attachment for bicycle-frames, consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-extending arms having guideways depending therefrom, journal-boxes slidingly mounted on the guideways, a rear axle journaled in the boxes, a propelling-wheel mounted on the axle, a hub or shaft mounted between the forwardly-extending upwardly inclined arms, arms extending rearwardly from this hub or shaft, chains connecting the rear ends of these arms with the journal-boxes, and a foot-treadle extending forwardly from the hub or shaft.

10. In combination with the frame of a bicycle, of an attachment consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms adjacent to the rear inclined braces of a bicycle-frame, rearwardly-extending arms a rear axle mounted thereon, a propelling-wheel mounted on the axle, a bolt for connecting the auxiliary frame to the bicycle-frame, said bolt adapted to pass through the frames, a clamp for connecting the forwardly-extending upwardly-inclined arms of the auxiliary frame to the rear inclined brace or braces of the bicycle-frame, and a connection between the driving-axle of the bicycle and the propelling-wheel.

11. In combination with the frame of a bicycle, of an attachment consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly-extending arms, a rear axle mounted thereon, a propelling-wheel mounted on the axle, a clamp for connecting the forwardly-extending upwardly-inclined arms of the auxiliary frame to a brace or braces of the bicycle-frame, a pivoted forwardly-extending arm connected to the auxiliary frame, a clamp for connecting this arm to the bicycle-frame, a bolt for connecting the auxiliary frame to the bicycle-frame, and a connection between the driving-axle of the bicycle and the propelling-wheel.

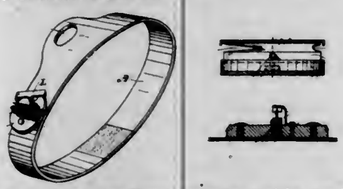
12. In combination with the frame of a bicycle, of an attachment consisting of an auxiliary frame comprising vertical legs having runners at their lower ends, forwardly-extending upwardly-inclined arms, rearwardly extending arms, a rear axle mounted thereon, a propelling-wheel mounted on the axle, a clamp for connecting the forwardly-extending upwardly-inclined arms to a brace or braces of the bicycle-frame, a pivoted forwardly-extending arm connected to the auxiliary frame, a clamp connected to a part of the bicycle-frame and adjustably connected to this forwardly-extending pivoted arm, a bolt for connecting the auxiliary frame to the bicycle-frame, and a connection between the driving-axle of the bicycle and the propelling-wheel.

13. The combination, of a front bar or rod of a bicycle-frame, provided with a bifurcated lower end, said rod or bar also provided with a lug projecting downwardly between the upper ends of the furcate parts, a leg passing upwardly between the furcate parts, and having its upper end recessed to receive the downwardly-extending lug, a pivot-pin passing through the lower ends of the furcate parts of the front bar or rod and through a medial point of the leg, and a runner at the lower end of the leg.

570,537. CLOTH OR TWINE CUTTER. JAMES BRUSIE, Oakland, Cal. Filed Mar. 2, 1896. Serial No. 581,478. (No model.)

Claim.—1. A cloth and twine cutting device consisting of a band to be fitted to the hand, a bar pivotally carried by the band and capable of being reversed, a cutting-blade carried by the bar having a cutting edge at both ends, and means for holding the bar in operative position.

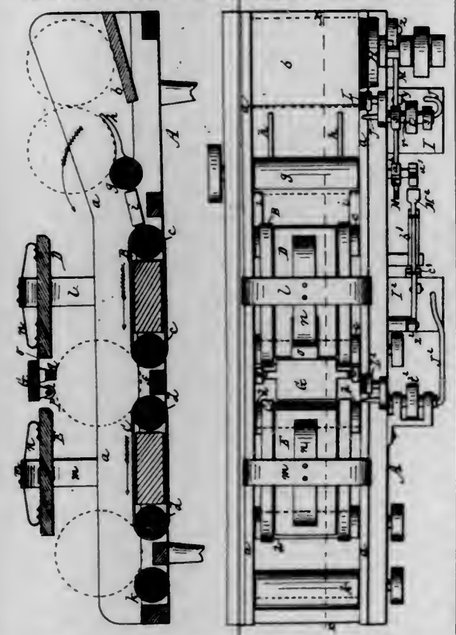
2. A device for cutting fibrous goods and other articles consisting of a flexible band to be fitted upon the hand, a disk fixed upon said band having a groove or channel transversely across its outer face, a central hole therethrough, and a countersunk depression on the inner side concentric with the hole, a bar fitting the exterior groove or channel having a shank extending through the hole a head fitting the depression beneath, and a spring whereby the bar is securely held in its place in the groove, said spring yielding so that the bar may be drawn up and reversed therein, and a cutting-blade fixed to the exterior surface of the bar.



3. A device for cutting fibrous and other articles, consisting of a band to be fitted to the hand, a disk secured to said band having a transverse groove or channel in its outer face and a chambered depression on the inner face, a bar fitting the transverse depression having a shank extending through a central hole in the bottom thereof, a spring-actuated head in the chamber beneath whereby the bar may be lifted and reversed in the channel, a blade secured in a groove in the outer face of the bar, said blade having one end formed with a beveled interior cutting edge and the other with a concave cutting edge.

4. A device for cutting fibrous and other articles, consisting of a band to be secured upon the hand, a disk fixed upon the band having a reversible bar attached thereto, a cutting-blade removably attached to the bar with cutting edges as shown, and a pivoted guard adapted to cover the blade or swing clear thereof.

570,538. MACHINE FOR LACQUERING CANS. ALBERT J. BURNS, Fairport, N. Y. Filed Feb. 1, 1896. Serial No. 577,715. (No model.)

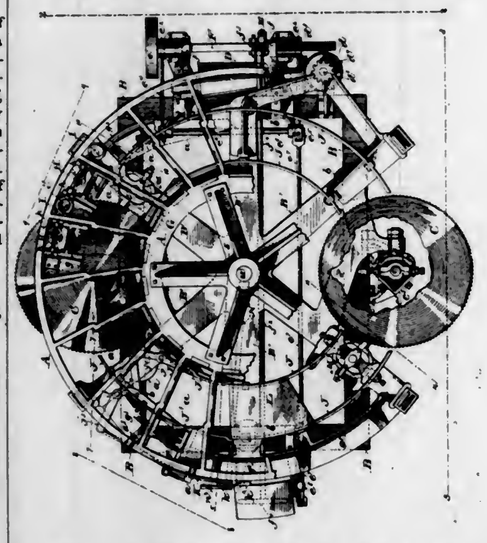


Claim.—1. In a lacquering-machine, the combination of a frame, two pairs of endless belts located therein, two spring presser-plates above the belts, the belts and presser-plates arranged to feed the cans forward and rotate the same, a tank for containing liquid located below the belts, a force-pump in the tank, an ejecting-pipe leading from the pump to a point opposite which the cans pass, and adapted to eject the liquid against the end of the cans, a revolving brush adapted to brush the end of the cans where the liquid is ejected, and mechanism adapted to intermittently operate the pump coincidently with the movement of the cans, as herein shown and described.

2. In a machine for lacquering cans, the combination of a frame, two sets of endless belts located therein, and two spring-presser plates above the belts and in coincidence therewith, the belts and presser-plates being adapted to feed the cans forward and the two sets of each being located at such a distance apart that the cans when resting in the space between the sets receive only rotary and not longitudinal motion, as and for the purpose specified.

3. In a machine for lacquering cans, the combination of a frame, two sets of endless belts located therein, two spring-presser plates above the belts and in coincidence therewith, the two sets of belts and plates being separated by an intervening space that allows a can to fall therein and free from the presser-plates, and a brush-block and brush attached to one of the presser-plates and adapted to bear upon the end of the can while the same is between the two sets of belts, as herein shown and described

570,539. SHINGLE-SAWING MACHINE. FRANK CHALLONER, Oshkosh, Wis. Filed Mar. 31, 1892. Serial No. 427,304. (No model.)



Claim.—1. In a shingle-sawing machine, the combination with a rotary carriage, of a cone-pulley geared therewith, a driving-shaft supported parallel with the adjacent face of said cone-pulley in eccentric boxes, which are provided with crank-arms, a rock-shaft parallel with said driving-shaft and provided with arms connected by rods with the arms on said boxes, a lever connected with said rock-shaft and arranged to turn said eccentric boxes and thereby move said driving-shaft toward and from said cone-pulley, a friction-driver mounted upon and movable lengthwise of said driving-shaft, a rack parallel with said driving-shaft and connected by a pivoted arm with said friction-driver, and a hand-wheel or crank-shaft, provided with a pinion working with said rack, whereby said driver is shifted to engage with different parts of said cone-pulley, substantially as and for the purposes set forth.

2. In a shingle-sawing machine, the combination with the carriage of a fixed and a movable dog, a rock-shaft parallel with the movable dog and provided with arms linked to opposite ends of said dog, a spring bent into one or more coils with its ends projecting therefrom substantially at right angles to each other, one being rigidly secured to said carriage and the other pivotally connected with the movable dog, a friction-roller journaled on a vertical stud or pin on said movable dog, and a fixed incline adapted to engage with said roller and open said dog at the desired point in the rotation of said carriage, substantially as and for the purposes set forth.

3. In a shingle-sawing machine, the combination with the rotary carriage provided with a series of bolt-receptacles, each receptacle having a trip movable by the operator into abnormal position, of oppositely-opening ways located below said bolt receptacles on one side of the carriage and adapted to turn horizontally about the longitudinal axes of vertical spindles which are supported in bearings in the frame of the machine, and a lever fulcrumed to the frame of the machine, connected with said ways and provided with an incline which is located in the path of said trips when the same are projected into abnormal position so as to simultaneously swing said ways away from each other when a trip engages said incline, substantially as and for the purposes set forth.

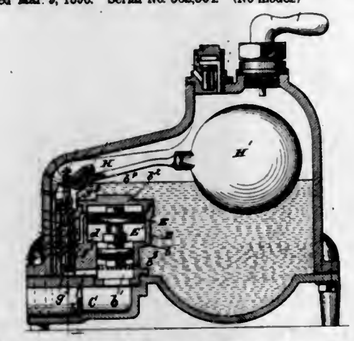
4. In a shingle-sawing machine, the combination with a rotary carriage having a series of bolt-receptacles, each receptacle being provided with a trip movable by the operator into abnormal position, of ways located below said receptacles on one side of the carriage, and carried by vertical spindles which turn on vertical axes and are provided with arms connected by a link, so as to cause the opening and closing of one way to simultaneously open and close the other, a spring connected with one of said spindles and arranged to close and hold said ways in their normal positions, and a lever connected with an arm on one of said spindles, and provided with an incline located in the path of said trips when they are projected into abnormal position, substantially as and for the purposes set forth.

5. In a shingle-sawing machine, the combination with the carriage and a vertical saw-arbor, of a box-support pivoted at one side to the frame of the machine and connected therewith above its pivot by a horizontal adjusting-screw, and boxes for said arbor having universal-joint connections, one with the frame and the other with said support, whereby said carriage may be raised or lowered by turning said box-support on its pivot by means of said adjusting-screw and said arbor prevented from binding in its boxes, substantially as and for the purposes set forth.

6. In a shingle-sawing machine, the combination with the saw-arbor and the box in which it bears at its lower end, of a box-support pivoted at one side in a horizontal line with the frame of the machine and connected therewith above said pivotal connection by a horizontal adjusting-screw, whereby said box may be raised or lowered, and the arbor adjusted vertically, substantially as and for the purposes set forth.

7. In a shingle-sawing machine, the combination with the frame comprising a base and a top section, of a tilt-table supported upon the upper end of a vertical bar having a jointed connection at or near its upper end with the frame, and a vertically-adjustable pivoted supporting-step at its lower end, a hollow post constituting a supporting member of the top frame-section and a housing for said bar and its connections, and adjusting screws threaded in opposite sides of said post and serving as stops for said bar, substantially as and for the purposes set forth.

570,540. HYDRAULIC AIR-COMPRESSOR. JOSEPH H. CHAMP, Cleveland, Ohio, assignor to the Bishop & Babcock Company, same place. Filed Mar. 9, 1896. Serial No. 582,304. (No model.)



Claim.—1. In a hydraulic air compressor, the combination with a main-valve chamber having a water connection with the air and water chamber, and a primary-valve chamber, of a water-channel between said two valve-chambers, such channel being independent of said water connection between the main-valve chamber and the air and water chamber, substantially as set forth.

2. In a hydraulic air-compressor, the combination with a main-valve chamber, and a primary-valve chamber, of a water-channel between the two; such channel connecting with the main-valve chamber at a point of the latter nearer the waste-water outlet than is the water connection of the main-valve chamber with the air and water chamber, substantially as set forth.

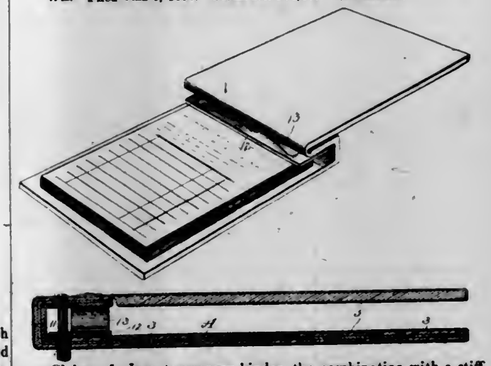
3. In a hydraulic air-compressor, the combination with a main-valve chamber, and a primary-valve chamber, of a water-channel between the two; such channel connecting with the main-valve chamber at a point of the latter farther from the supply-water inlet than is the water connection of the main-valve chamber with the air and water chamber, substantially as set forth.

4. In a hydraulic air compressor, the combination of an air and water chamber, a main valve chamber with its main valve, a piston-chamber with its piston connected to such valve, a primary-valve chamber with its primary valve, and a supply-water inlet between such main valve and its connected piston; together with a water-channel connecting one end of the primary-valve chamber with the main-valve chamber at a point of the latter nearer the waste-water outlet and farther from the supply-water inlet than is the water connection of such main-valve chamber with the air and water chamber, substantially as set forth.

5. In a hydraulic air-compressor, the combination of an air and water chamber, a main-valve chamber with its main valve, a piston-chamber with its piston connected to such valve, a primary-valve chamber with its primary valve, said valves and piston having reciprocating vertical movement; together with a water-channel connected at its upper extremity with said piston-chamber at a point constantly above the piston, a constant-supply water-inlet between the piston and the main valve, water connection between the main-valve chamber and the air and water chamber, an independent water channel connecting together the lower portions of the two valve-chambers at a point of the main-valve chamber below its water connection with the air and water chamber, and a waste-water outlet leading from the main-valve chamber below said independent water-channel, substantially as set forth.

6. In a hydraulic air compressor, the combination of an air and water chamber, a valve-casing formed with a large piston-chamber having communication at its lower end with the water-inlet, and a smaller valve-chamber having a port which communicates with the air and water chamber, and a water-outlet at its bottom, said piston-chamber and valve-chamber being axially alined and communicating with each other; a primary-valve chamber having a distributing-port at its middle which communicates with the upper end of the piston-chamber, and an outlet-port at its upper portion, and an inlet-port at its lower portion, and having a channel which extends from the bottom of the primary-valve chamber to the main-valve chamber beneath the distributing-port in the latter; a main controlling-valve having play in the main controlling-valve chamber, and provided with a valve-actuating piston having play in the piston-chamber; a primary valve having three pistons, the middle one of which has play at both sides of the distributing-port in the primary-valve chamber, and the end pistons of which are permanently to the outside of the inlet and outlet ports; and a suitable float mechanism connected to the primary valve, to actuate the latter at the extremes of the rise and fall of water within the air and water chamber, substantially as set forth.

570,541. TEMPORARY BINDER. LOUIE H. CLARK, Fond du Lac, Wis. Filed Jan. 6, 1896. Serial No. 574,471. (No model.)



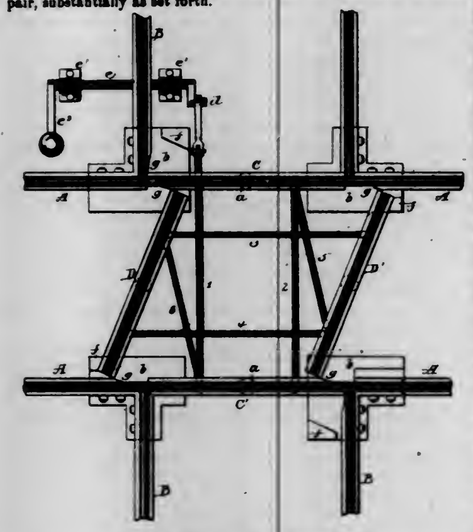
Claim.—1. In a temporary binder, the combination with a stiff base bent into hook shape at one end, of pins projecting loosely through said hook-shaped portion, the heads of said pins projecting beyond the under face of said base, and a spring-pressed clamping-plate secured to said pins, substantially as set forth.

2. In a temporary binder, the combination with a stiff base bent into hook shape at one end, said hook-shaped end having alined perforations, of pins passing freely through said perforations and beyond the same, said pins having screw-threaded portions intermediate of their ends, and a spring pressed clamping-plate having screw-threaded perforations for the reception of the screw-threaded portions of said pins, substantially as set forth.

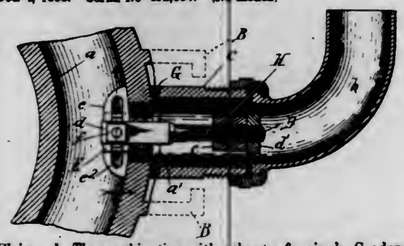
570,542. RAILROAD-CROSSING. WILLIAM R. COCHRAN, Jr., Delphos, Ohio. Filed May 24, 1895. Serial No. 550,549. (No model.)

Claim.—In a railroad-crossing, the combination with two pairs of pivoted rails, of parallel rods connecting the rails of each pair, said rods being pivotally connected with said rails at opposite sides of the fulcrums thereof, a crank-shaft connected with one of said rods, and

parallel rods connecting the rails of one pair to the rails of the other pair, substantially as set forth.



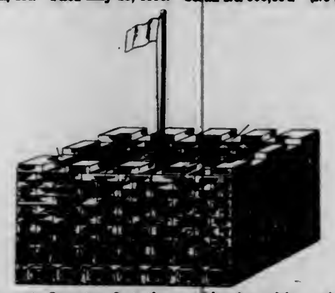
570,543. WATER-CLOSET. WILLIAM G. COLES and FRANK A. BARKER, Chicago, Ill., assignors to Hermann Verbeck, same place. Filed Dec. 4, 1893. Serial No. 492,697. (No model.)



Claim.—1. The combination with a closet, of a nipple, C, adapted to cover the intake-orifice, an apertured bar across the nipple, a bolt extending through the aperture and the orifice and having an extensible T head and having its outer end screw-threaded, and a nut adapted to fit the outer end of the bolt, substantially as described and for the purpose specified.

2. The combination, with a water-closet and with a nipple adapted to cover its intake-orifice and having an apertured cross-bar, of a bolt extending through the bar-aperture and into the orifice and having its outer end screw-threaded, a cross-head for the inner end of the bolt comprising two members, e, e^3, capable of longitudinal adjustment, and a nut adapted to fit the outer end of the bolt, substantially as described and for the purpose specified.

570,544. TOY OR GAME DEVICE. WINFIELD W. FLYE, East Hiram, Me. Filed May 25, 1896. Serial No. 593,084. (No model.)



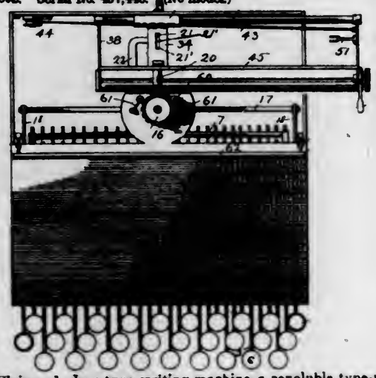
Claim.—1. In a toy fort, the combination with a suitable base or bottom, of walls composed of bricks or blocks, target slides or plungers which pass through said walls, levers connected with said slides or plungers, and adapted to be operated thereby to knock out portions of the walls of the fort from within, a flagstaff mounted in said fort, and provided with suitable pulleys at its top, and near its bottom, around which passes a cord or rope, and devices connected with said flagstaff, and with two of said slides or plungers, whereby when the latter are hit, they are forced inwardly against the action of a spring mounted thereon and thus the cord or rope is operated to raise and lower flags connected therewith, substantially as shown and described.

2. In a toy fort, the combination with a suitable base, and bricks or blocks from which the walls are constructed, of spring-operated target slides or plungers, which pass through the sides of said fort, and are mounted on the bottom thereof, levers connected with said spring-operated target slides or plungers, and adapted to knock out portions of the walls from within when the slides or plungers are hit, a flagstaff mounted in said fort and provided at its base with gear-wheels, said flagstaff being also provided at its top and near its bottom, with suitable pulleys, on which a rope or cord is mounted, and which are adapted to be operated by said gear-wheels, said gear-wheels being also in operative connection with two of the target slides or plungers, whereby when they are driven inwardly the inner ends thereof trip a lever and release a spring-actuated gear-wheel to operate the rope, substantially as shown and described.

3. In a toy fort, the combination with a suitable base, and bricks or blocks from which the walls are constructed, of spring-operated target slides or plungers, which pass through the sides of said fort, and are mounted on the bottom thereof, levers connected with said spring-operated target slides or plungers, and adapted to knock out portions of the walls when the slides or plungers are hit, a flagstaff mounted in said fort, and provided at its base with gear-wheels, said flagstaff being also provided at its top and near its bottom, with suitable pulleys, on which a rope or cord is mounted, and which are adapted to be operated by said gear-wheels, said gear-wheels being also in operative connection with two of the target slides or plungers, said target slides or plungers being also located on opposite sides of the fort, each side being provided with the same number thereof, and the central slides or plungers being adapted to operate the gear-wheels connected with the flagstaff, substantially as shown and described.

4. In a toy fort, the combination with a suitable base, and bricks or blocks from which the walls are constructed, of spring-operated slides or plungers, which pass through the sides of said fort, and are mounted on the bottom thereof, levers connected with said spring-operated target slides or plungers, and adapted to knock out portions of the walls when the slides or plungers are hit, a flagstaff mounted in said fort, and provided at its base with gear-wheels, said flagstaff being also provided at its top and near its bottom, with suitable pulleys, on which a rope or cord is mounted, and which are adapted to be operated by said gear-wheels, said gear-wheels being also in operative connection with two of the target slides or plungers, said target slides or plungers being also located on opposite sides of the fort, each side being provided with the same number thereof, and the central slides or plungers being adapted to operate the gear-wheels connected with the flagstaff, the construction and arrangement being such, that in order to operate the gear-wheels connected with the flagstaff, the slides or plungers at each side of the central slides or plungers must first be hit or operated, substantially as shown and described.

570,545. TYPE-WRITING MACHINE. WILLIAM FREDRICK and HARRY W. WAGNER, Toledo, Ohio, assignors, by direct and mesne assignments, to R. C. Faulconer, trustee, Detroit, Mich. Filed June 21, 1892. Serial No. 437,440. (No model.)



Claim.—1. In a type-writing machine, a revoluble type-wheel, a type-wheel-positioning frame, connections between the type-wheel and type-wheel-positioning frame, a printing-hammer, a toggle-joint for reciprocating the same, a rod connected with the toggle-joint, key-levers pivoted to contact with and actuate the type-wheel-positioning frame and also the rod of the toggle-joint.

2. In a type-writing machine, a plurality of key-levers, a frame pivoted beneath the same having at one end a universal bar extending the entire width of the levers, and at the opposite end a lever, a printing-hammer, a spring-actuated toggle-joint for actuating the plunger, a rod connected with the toggle-joint and the frame-lever for releasing and retracting the toggle-joint.

3. In a type-writing machine, a revoluble type-wheel, in combination with a printing-hammer in alinement therewith, a toggle-arm connected at one end to the frame, a like arm connected with the printing-hammer, said arms being pivotally connected at one end to the frame, a rod connected with the arms at their pivotal point and with a key-lever, and a resilient connection between the toggle-arms and frame, whereby when the rod is raised to release the toggle the resilient connection will straighten the same and project the printing-hammer.

4. In a type-writing machine, a type-wheel, an impression device in alinement therewith, comprising a framing, a sleeve movably secured therein, means for holding the sleeve from rotary movement, a printing-hammer adjustably secured in the sleeve, a spring-actuated toggle for reciprocating the printing-hammer, and a lever and rod for initially raising the toggle and lowering the same.

5. The combination with a frame, of a horizontal revoluble type-wheel, a horizontal reciprocating printing-hammer adapted to operate in alinement with the type wheel, a transversely-movable carriage, a retractile device connected therewith to feed the said carriage and actuated by the reciprocating movement of the printing-hammer.

6. The combination of the frame and type-wheel, of the reciprocating printing-hammer and carriage, said carriage having a rack-bar thereon, a reciprocating casing surrounding the hammer, a rigid pawl carried by the casing and a spring-pawl also carried thereon and a retractile device connected between the frame and carriage to feed the carriage.

7. In a type-writing machine, a type-wheel, a plunger in alinement therewith, a spring-actuated toggle for advancing the plunger, comprising arms secured with the frame and plunger respectively and to each other at an angle, a rod connected with the toggle, collars upon the rod, a lever movable upon the rod to contact with the collars and means for raising and lowering the lever.

8. In a type-writing machine a shaft journaled in the frame, a type-wheel secured thereon, a ratchet-wheel on the shaft, a spring-pressed pawl pivoted upon the frame a catch for engaging the pawl when retracted, and mechanism for retracting the pawl and means for releasing the catch to allow the pawl to engage with the ratchet-wheel.

9. In a type-writing machine, a carriage, a printing-hammer, a toggle joint for actuating the plunger, means for actuating the toggle-joint, a feeding device for the carriage actuated by the plunger and means for locking the mechanism for actuating the toggle-joint.

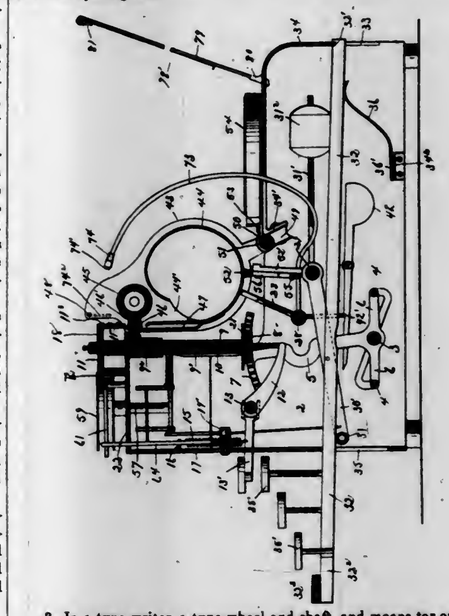
10. In a type-writing machine, the combination with a type-wheel, a printing-hammer, and toggle-joint connected to the hammer, of a rod adapted to actuate the toggle-joint mechanism for actuating the rod, a collar near the upper end of the rod, a movable carriage and a bifurcated arm attached to said carriage adapted to engage the rod beneath the collar when the carriage has reached the limit of the movement to prevent the further movement of the rod.

11. The combination of a type-wheel, a hammer, the toggle lever, and rod for operating the hammer, said rod carrying a collar near its upper end, a movable carriage and a bifurcated arm attached to said carriage to engage the rod and prevent a further action of the parts.

570,546. TYPE-WRITING MACHINE. WILLIAM FREDRICK, Toledo, Ohio, assignor to R. C. Faulconer, trustee, Detroit, Mich. Filed May 31, 1893. Serial No. 476,189. (No model.)

Claim.—1. In a type-writer, the case and key-levers, a rock-shaft journaled in the case, a frame rigidly connected with said rock-shaft and adapted to be operated upon by the key-levers, said frame comprising longitudinal bars parallel with the rock-shaft upon opposite sides of the same and connected thereto at each end, said bars being inclined with reference to their length, each bar having an opposite inclination, a vertical arm secured to the rock-shaft and each longitudinal bar and carrying a segmental tooth-bar upon its upper end and a type-wheel having a shaft provided with a pinion adapted to mesh with the segmental tooth-bar.

2. In a type-writer, the type-wheel, and ribbon-spools, the ratchet-wheels connected with said spools, a double reversible pawl pivoted between the ratchet-wheels, a weighted lever connected with the reversible pawl, a U-shaped lever pivoted between the spools and adapted to contact therewith, an elbow-lever pivotally connected with the pawl, the spacing-bail and the link connecting the elbow-lever and spacing-bail.



3. In a type-writer, a type-wheel and shaft, and means for operating the same, a notched wheel mounted upon the end of the type-wheel shaft, a spring-actuated hammer-shaft, a hammer carried thereon, and a locking-arm also carried by said shaft and in advance of the hammer, adapted to engage the notched wheel prior to the stroke of the hammer, and thus hold the type-wheel rigid during said stroke.

4. In a type-writer, a type-wheel and means for operating the same through the medium of a series of keys and key-levers, a hammer-shaft, a hammer carried thereby, a spring for driving the hammer, a shaft parallel to said hammer-shaft carrying levers 30 and 30′ having a shaft 31 secured to the ends of the same, said shaft normally bearing against the under side of the key-levers, a lever 37 connecting the lever 30 and a ratchet-wheel 37′ upon the hammer-shaft, a pin 42² projecting downwardly from the hammer-shaft normally in engagement with a lever 42 and a pin carried by the lever 30′ in the path of travel of lever 42, whereby when a key-lever is depressed the type-wheel is first revolved and tension put upon the spring and the lever 42 is then depressed releasing the hammer-shaft and allowing it to be projected under the action of the spring.

5. In a type-writer, a case and a rock-shaft arranged therein below the key-levers, a segmental toothed arm connected with and operated by said shaft, the type-wheel and shaft, said shaft carrying a gear adapted to mesh with the toothed arm and a spring connected with the toothed arm at one end and to the case whereby the tension of the spring is to normally hold the arm in alinement with the spring or the segment in an intermediate position as regards the pinion.

6. In a type-writer, the ribbon-spools carrying ratchet-wheels upon the lower ends of the shafts, a double pawl, a lever for shifting said pawl to reverse the ribbon-feed, said lever having an arm extending above the pawl, and a U-shaped lever pivoted between the ribbon-spools, and adapted to alternately contact therewith, whereby as one spool is filled the U-shaped lever is moved, operating the arm of the lever and reversing the movement of the pawl.

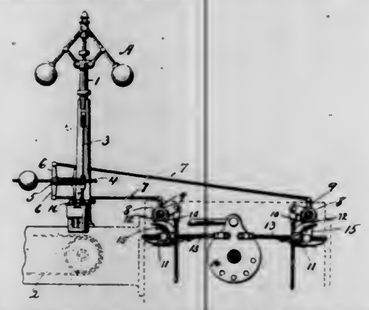
7. In a type-writer, a guide for the paper, a stop for the hammer adjustable thereon, a bell, the hammer-lever of which is in the path of travel of the impression-hammer to raise the same.

570,547. ATTACHMENT FOR STEAM-ENGINES. ROBERT FREER, Providence, R. I. Filed Apr. 29, 1896. Serial No. 589,490. (No model.)

Claim.—1. The combination with the governor, of a stop for arresting the fall of the governor, and means controlled by the governor for automatically moving said stop out of and into operative position, substantially as described.

2. The combination with the governor, of a stop for arresting the fall of the governor and means operated by the governor for moving

said stop in one direction and means for returning said stop to its normal position, substantially as described.



3. The combination with the governor, of a stop for arresting the fall of the governor, and means operated by the fall of the governor at an abnormal speed for moving said stop out of operative position, substantially as described.

4. The combination with the governor, of a stop for arresting the fall of the governor, a cylinder, a piston in said cylinder for operating said stop, a second cylinder communicating with said former cylinder, a piston in said second cylinder operated by said governor, and an escape for the fluid in said second cylinder, substantially as described.

5. The combination with the governor, of a stop for arresting the fall of the governor, a cylinder, a piston in said cylinder for operating said stop, a second cylinder communicating with said former cylinder, a piston in said second cylinder operated by said governor, and means for controlling the escape of fluid from said second cylinder, substantially as described.

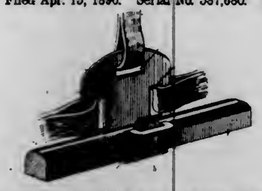
6. The combination with the governor, of a stop for arresting the fall of the governor, a cylinder, a piston in said cylinder for operating said stop, a second cylinder communicating with said former cylinder, a piston in said second cylinder operated by said governor, and a passage communicating with said second cylinder on opposite sides of the piston in said cylinder, substantially as described.

7. The combination with the governor, of a stop for arresting the fall of the governor, a cylinder, a piston in said cylinder for operating said stop, a second cylinder communicating with said former cylinder, a piston in said second cylinder operated by the governor, a passage connecting the opposite ends of said second cylinder, substantially as described.

8. The combination with the governor, of a stop for arresting the fall of the governor, a cylinder, a piston in said cylinder for operating said stop, a second cylinder communicating with said former cylinder, a piston in said second cylinder operated by the governor, a passage connecting the opposite ends of said second cylinder and an adjustable valve in said passage, substantially as described.

9. The combination with the governor, of a stop 17, a cylinder 21, a piston 20 connected to said stop, a cylinder 26, a piston 25 connected to said governor, a passage 28 and a valve 34, substantially as described.

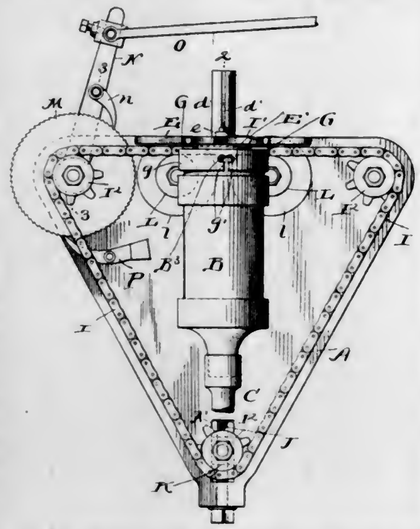
570,548. HARNESS ATTACHMENT. JAMES F. GAMBRELL, Honea Path, S. C. Filed Apr. 15, 1896. Serial No. 587,680. (No model.)



Claim.—In combination, thills, approximately U-shaped irons secured to the thills and having their closed ends outwardly deflected, a harness having divided traces, a tug secured to the inner or opposing ends of the trace-sections and having a hook to engage with an iron of the thills, and a girth secured to the thills and comprising parts to be buckled together, substantially in the manner set forth for the purpose described.

570,549. LUBRICATOR. WILLIAM F. GREGORY, Buffalo, N. Y. Filed June 27, 1896. Serial No. 597,194. (No model.)

Claim.—1. The combination with the internally-screw-threaded shell and engaging externally-screw-threaded piston of the dope cup, said piston having an upwardly-extending stem; of a suitably-supported star-wheel or spider operatively and slidably mounted upon said stem, a suitably-actuated and suitably-guided endless belt provided with an arm or projecting member arranged to engage and actuate the arms of the aforesaid wheel or spider during the operation of the belt, and means for preventing displacement of the belt laterally and away from the wheel or spider during the latter's actuation by the aforesaid arm or projecting member, substantially as set forth.



2. The combination with the internally-screw-threaded shell and engaging externally-screw-threaded piston of the dope-cup, said piston having an upwardly-extending stem, a suitably-supported star-wheel or spider operatively and slidably mounted upon said stem, and a suitably-actuated and suitably-supported endless belt provided with an arm or projecting member arranged to engage and actuate the arms of the aforesaid wheel or spider during the operation of the belt; of two suitably-supported guide-rollers having flanges suitably arranged to prevent displacement of the belt laterally and away from the aforesaid wheel or spider during the latter's actuation by the belt's arm or projecting member, substantially as set forth.

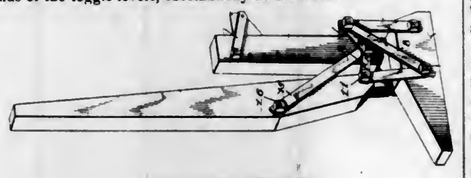
3. In a lubricator of the character indicated, the combination of the upright stationary plate A; the dope-cup arranged at the forward side of and suitably supported from said plate and comprising the internally-screw-threaded shell B and the engaging correspondingly externally-screw-threaded piston D provided with the upright stem *d*; two sprocket-wheels arranged at opposite sides, respectively, of the upper end of the cup, and one of said sprocket-wheels being positively driven; another sprocket-wheel arranged a suitable distance below and centrally between the two upper sprocket-wheels; a chain I leading over said wheels and provided with the arm or projecting member I'; and a star-wheel or spider operatively and slidably mounted upon the piston-stem at the upper end of the dope-cup and having the path of the revolving arms extending into the path of the aforesaid arm or projecting member of the chain, substantially as and for the purpose set forth.

570,550. LIFTING-JACK. WILLARD L. HALL, Spokane, Wash. Filed July 20, 1896. Serial No. 599,884. (No model.)

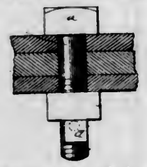
Claim.—1. In a lifting-jack, the combination of a base fixed supports at opposite sides thereof, toggle-levers located at opposite sides of the base, pivoted to the fixed supports, movable supports located at opposite sides of the base and pivotally connected with the adjacent ends of the toggle-levers, a vertically-movable standard located between the toggle-levers and connected at the inner terminals of the same, and an operating-lever fulcrumed at its lower end on the movable supports between the adjacent ends of the toggle-levers, and connected at a point intermediate of its ends with the inner terminals of the toggle-levers, substantially as described.

2. In a lifting-jack, the combination of a base fixed and movable supports, a standard, toggle-levers connected with the fixed and movable supports and centrally connected with and carrying the standard, said movable support and the adjacent toggle-levers being arranged to swing beneath the standard to form a brace for supporting the standard in its elevated position, and an operating-lever connected with the centers of the toggle-levers, substantially as described.

3. In a lifting-jack, the combination of a base, fixed supports composed of bars located at opposite sides of the base, secured at their lower terminals to the same and connected at their upper terminals, movable supports located at opposite sides of the base and pivoted at their lower ends to the same, a vertically-movable standard, toggle-levers located at opposite sides of the base, centrally connected with the standard and pivoted to the fixed and movable supports, an operating-lever fulcrumed at its lower end at the upper terminals of the movable supports, and link-bars connected at their upper ends with the operating-lever, and at their lower terminals with the inner ends of the toggle-levers, substantially as described.

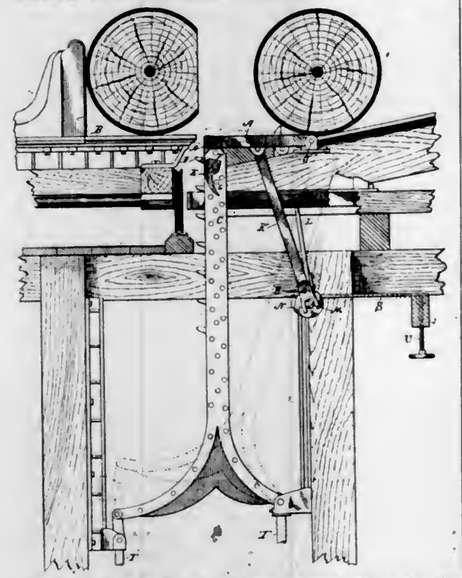


570,551. NUT-LOCK. ANDREW J. HARRELL, New Orleans, La. Filed Mar. 12, 1896. Serial No. 582,920. (No model.)



Claim.—The combination with a bolt having a transverse hole in its stem; of a tap or nut, and a pin or key having a flexible stem and an integral head with flat sides, the sides being disposed at various distances from the axial point of the pin, whereby the nut may be locked at different points on the bolt, substantially as and for the purpose set forth.

570,552. LOG LOADER AND TURNER. WILLIAM E. HILL, Kalamazoo, Mich. Filed Apr. 19, 1895. Serial No. 546,346. (No model.)



Claim.—1. In a log loader and turner, the combination with the tooth-bar and suitable means of manipulating the same as tipping it backward and forward and raising and lowering it; of the skids, A, pivoted toward the front of the log-deck; a shaft, M, below said skids; arms, K, pivotally connected to the under side of said skids and engaging the shaft, M, by a suitable forked end; cams, N, on said shaft, M, by each arm, K; pins, R, to rest in said cams; an adjustable spring, S, for putting torsion on said shaft, M; and a lever, L, secured to said shaft and located to the rear of said tooth-bar to be operated by the same to rock the rock-shaft, M; to elevate the skids to hold the log or timber above the sawmill head-blocks until it is pushed upon the same, all coacting together substantially as described for the purpose specified.

2. In a log loader and turner, the combination with the tooth-bar and suitable means of manipulating the same; of the skids, A, pivoted toward the front of the log-deck; a shaft, M, below said skids; arms, K, pivotally connected to said skids and engaging the shaft, M, by a suitable forked end; cams, N, on said shaft, M, by the arms, K, to actuate said arms; suitable means of holding said shaft yieldingly in position; a lever on said shaft to be acted upon by the tooth-bar to raise the skids when the log or timber is being loaded, as specified.

3. In a log loader and turner, the combination of the tooth-bar and suitable means of manipulating the same; of skids pivoted to the front of the log-deck and independent of said tooth-bar; suitable means of elevating the skids adapted to be operated by the tooth-bar when it is thrown back to engage a log or timber, for the purpose specified.

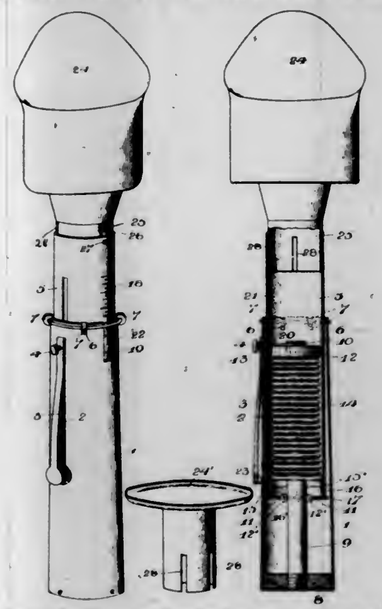
4. In a log loader and turner, the combination of an upright tooth-bar having upwardly-pointing, pivotal receding teeth; a downwardly-pointing, pivotal receding tooth at the upper end of said tooth-bar; a stop on said bar in position to hold said tooth in the downwardly-pointing position, so that it will engage a log on its downstroke; and means for reciprocating said tooth-bar vertically and swinging it from side to side, as and for the purpose specified.

5. In a log loader and turner, the combination of an upright log loader and turner bar; a downwardly-pointing, pivotal receding tooth at the upper part of the same; a suitable stop on said bar positioned to hold said tooth in the downwardly-pointing position; and means for reciprocating said bar vertically and swinging it from side to side, as specified.

6. In a log loader and turner, the combination of an upright tooth-bar; a downwardly-pointing curved pivotal receding tooth at the upper part of the same, weighted to hold the point from the bar; a stop on said bar positioned to engage said tooth and hold it in the downwardly-pointing position; and means for reciprocating said bar vertically and swinging it from side to side, as specified.

7. In a log loader and turner, the combination of a log loader and turner bar, with a cross portion at the bottom; a downwardly-pointing, pivotal receding tooth at the upper part thereof; a stop to hold said tooth in the downwardly-pointing position; and upright steam-engine cylinders, below, the piston-rods of which are connected by suitable joints to the cross portion of the bar, as specified.

570,553. PORTABLE WEIGHING-SCALE. JOHN W. HUNTER, Tabor, Iowa. Filed July 2, 1896. Serial No. 597,854. (No model.)



Claim.—A portable scale and scoop combined, comprising the hollow cylindrical handle 1 having a longitudinal slot 2 in the upper

end of which is secured a spring-lever 3 by a thumb-screw 4, having an inwardly-projecting end 20, the free end of said lever being provided with an inwardly-projecting toe 23, said handle being provided at its upper end with a longitudinal slot 19 and a series of recesses 6, in each of which is mounted a radially-projecting antifriction-roller 7, a disk 8 secured in the lower end of said handle and provided with a rigid central shaft 9, an adjustable screw-threaded nut 12 mounted on the screw-threaded end 10 of said shaft, and provided with a recess 13, a spiral spring 14 encircling said shaft and having its upper end secured in said recess 13, a socket 16, provided with integral ears 15 15' to which the lower end of the spring 14 is secured, and having a projecting flange 17 and a central orifice 16' and a series of radial recesses 11, in each of which is mounted a radially-projecting roller 12', in combination with the sliding tube 5 having its lower end secured in said socket 16, and provided with a longitudinal slot 21, which receives the projecting end 20 of the thumb-screw 4, a graduated scale 18 and an inwardly-projecting stud 27, and the removable scoop 24 formed with a cylindrical handle 25, having a longitudinal groove 26 and the longitudinal slits 28, substantially as and for the purpose set forth.

570,554. ELECTRODEPOSITION. EDUARD JORDIS, Munich, Germany. Filed June 29, 1896. Serial No. 597,462. (No specimens.) Patented in England June 8, 1895, No. 11,298, and in France June 8, 1895, No. 243,008.

Claim.—1. In the art of electrolysis, the process which consists in preparing a bath containing a compound of the metal to be deposited with an acid radical of the series $C_nH_{2n}O_3$ excepting carbonic acid, and then precipitating the metal from said bath by an electric current.

2. In the art of electrolysis, the process which consists in preparing a bath containing the lactate of the metal to be deposited, and then precipitating the metal by means of an electric current.

3. In the art of electrolysis, the process of making the bath which consists in adding to a salt of the metal to be deposited, a compound containing an acid radical of the series $C\,H_{2n}O_3$ excepting carbonic acid, thereby forming in the bath a compound of the metal to be deposited with said acid radical, and then depositing the metal by means of an electric current.

4. In the art of electrolysis, the process of making the bath which consists in adding to the salt of the metal to be deposited a compound containing a lactic-acid radical, thereby forming in the bath a lactate of the metal to be deposited, and then depositing the metal by means of an electric current.

5. In the art of electrolysis the process of preparing the bath which consists in adding to the solution of a salt of the metal to be deposited the lactate of an alkali base, thereby forming a bath of the lactate of the metal to be deposited, and then depositing the metal by means of an electric current.

6. In the art of electrolysis, the process of preparing the bath which consists in adding to a solution of a salt of the metal to be deposited a lactate of an alkali base, thereby forming in the bath a lactate of the metal to be deposited, and making the bath alkaline.

7. In the art of electrolysis, the process of preparing the bath which consists in adding to a salt of the metal to be deposited, a compound containing an acid radical of the series $C_nH_{2n}O_3$ excepting carbonic acid, thereby forming in the bath a compound of the metal to be deposited with said acid radical, and further adding the salt of a more electropositive metal which will not be deposited under the conditions which cause the electrodeposit of the first metal, for the purpose of varying the color and appearance of the deposit, substantially as described.

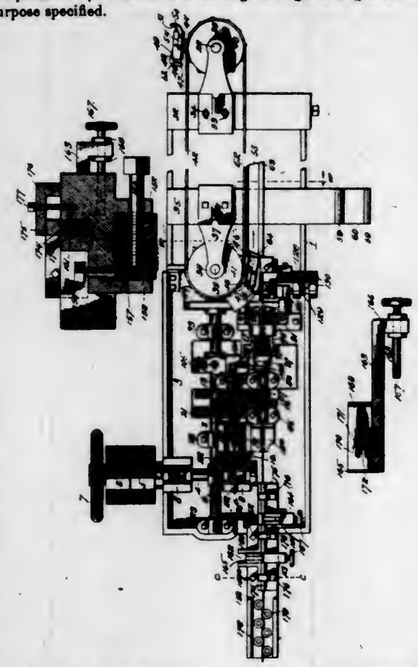
8. In the art of electrolysis, the process of preparing the bath which consists in adding to a salt of the metal to be deposited a compound containing a lactic-acid radical, thereby forming in the bath a lactate of the metal to be deposited and further adding the salt of another more electropositive metal which will not be deposited under the conditions which cause the deposit of the first metal.

9. In the art of electrolysis, the process of preparing the bath, which consists in adding to the lactate of the metal to be deposited the lactate of an alkali base, for the purpose of varying the color and nature of the deposit.

570,555. BALE-TIE MACHINE. SAMUEL KIMBALL, Lawrence, Kans. Filed Apr. 25, 1896. Serial No. 589,137. (No model.)

Claim.—1. In a bale-tie machine, a plate provided with longitudinal wire-guides, and slotted plates provided with wear-plates for bearing against opposite sides of the wire between said wire-guides, for the purpose specified.

2. In a bale-tie machine, a plate provided with longitudinally-alined wire-guides, transverse sliding plates between said guides and provided with wear-plates at opposite sides of the wire, and means to adjust said sliding plates to cause the wear-plates to exert more or less pressure upon the wire extending through said guides, for the purpose specified.



3. In a bale-tie machine, a plate provided with longitudinally-alined wire-guides, transverse sliding plates between said guides and provided with wear-plates at opposite sides of the wire, means to adjust said sliding plates to cause the wear-plates to exert more or less pressure upon the wire extending through said guides, set-screws engaging the plate and extending through the sliding plates, and collars upon the set-screws embracing the sliding plates, for the purpose specified.

4. In a bale-tie machine, a plate provided with longitudinally-alined grooves and intersecting transverse grooves, grooved tubes fitted in the longitudinal grooves through which the wire for forming the bale-tie extends, sliding plates arranged in the transverse grooves and provided with upwardly-projecting wear-plates, and set-screws for causing said sliding plates to bear more or less firmly upon opposite sides of the wire where it bridges the transverse grooves, substantially as described.

5. In a bale-tie machine, a plate provided with longitudinally-alined grooves and intersecting transverse grooves, grooved strips fitting in said longitudinal grooves, cap-strips upon the grooved strips, clamping-plates bearing upon said cap-strips, sliding plates in the transverse grooves provided with upwardly-projecting parallel flanges, wear-plates adjustably secured between said flanges and bearing against opposite sides of the wire where it bridges the transverse grooves, and set-screws for adjusting the sliding plates, substantially as shown and described.

6. In a bale tie machine, the combination of a suitable supporting-frame or bed-plate provided with an arm or extension, with a plate pivotally mounted upon said arm or extension, and provided with longitudinal guide-grooves and with eccentrically-arranged grooved rollers through which the wire passes, and means to pivotally adjust said plate, substantially as described.

7. In a bale tie machine, the combination of a suitable supporting-frame or bed-plate provided with an arm or extension, with a plate pivotally mounted upon said arm or extension, and provided with longitudinal guide-grooves and with eccentrically-arranged grooved rollers through which the wire passes, and screw-bolts extending through said plate and bearing upon said arm or extension, substantially as described.

8 In a bale-tie machine, a wire-bending shaft provided with a pair of pins projecting from its end eccentrically of its axis, and means to partially rotate said shaft and cause one pin to bend back the free end of the wire over the other, substantially as specified.

9. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a guide-plate, secured to one end of said plate and opposite one of the bearings so as to form an intervening space, of a wire-bending shaft journaled in said bearings, and provided with pins projecting from its end into said intervening space, and means for partially rotating said shaft and thereby causing the free end of the wire interposed between said pins in said spaces to be bent by one back over the other, substantially as described.

10. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a guide-plate opposite the same and one of said bearings; said plate being longitudinally and circularly grooved at its opposing side, and a wire-bending shaft journaled in said bearings and provided with pins which project from one end of the shaft into the grooves of said guide-plate, substantially as described.

11. In a bale-tie machine, the combination of a suitably-supported plate, provided with bearings, a guide-plate secured to said plate at one end and opposite one of said bearings; said plate being of diminished thickness above the axis of said bearing in order to provide an intervening space of just sufficient width for the bale-tie wire to be vertically bent, and provided also with a longitudinal and a circular groove, and a wire-bending shaft journaled in said bearings and provided with pins which project from one end across said intervening space and into the grooves of the guide-plate, substantially as described.

12. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a guide-plate arranged opposite one end of the same and one of its bearings, of a wire-bending shaft journaled in said bearings and provided with pins projecting from its end across the intervening space between the same and said guide-plate; one of said pins forming the fulcrum and the other the lever for bending the free end of the bale-tie wire back upon itself in the process of forming the loop or eye, and means after the formation of the loop or eye is completed, to withdraw said pins from engagement with the loop, substantially as described.

13. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a guide-plate arranged opposite one end of the same and one of its bearings, of a wire-bending shaft journaled in said bearings and provided with pins projecting from its end across the intervening space between the same and the said guide-plate; one of said pins forming the fulcrum and the other the lever for bending the free end of the bale-tie wire back upon itself in the process of forming the loop or eye, means, after the formation of the loop or eye is completed, to withdraw said pins from engagement with the loop, and means for again advancing said pins across said intervening space one above and the other below the plane of the wire extending longitudinally through, substantially as described.

14. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a disk rotatably mounted in one of said bearings, of a wire-bending shaft journaled in said bearings and provided with pins projecting from one end and through said disk whereby and whereon the wire is bent in the process of forming the loop or eye, and means for adjusting said shaft and thereby withdrawing the pins through said disk, for the purpose set forth.

15. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a disk rotatably mounted in one of said bearings, of a wire-bending shaft journaled in said bearings and provided with pins projecting from one end and through said disk whereby and whereon the wire is bent in the process of forming the loop or eye, means for adjusting said shaft and thereby withdrawing said pins through said disk, and means for readjusting said shaft and thereby again projecting said pins through said disk, at the proper time, substantially as described.

16. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings and with an opposing guide-plate, of a wire-bending shaft journaled in said bearings and provided with pins projecting from its ends across the spaces between it and said guide plate, a cog-pinion upon the shaft, a rack-bar engaging the same, a lever suitably mounted and connected at one end to said rack-bar, a rotatable shaft, and a cam-wheel thereon for engaging and pivotally operating said lever once in each revolution, and thereby partially rotating and causing the wire-bending shaft to bend the wire by means of said pins, and a second cam-actuated lever connected to said shaft for longitudinally moving it once in each revolution of the cam and thereby withdrawing said pins from engagement with the loop or eye in the wire after its formation is completed, substantially as described.

17. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings and with an opposing guide-plate, of a wire-bending shaft journaled in said bearings and provided with pins projecting from its end across the space between it and said guide-plate, a cog pinion upon the shaft, a rack-bar engaging the same, a lever suitably mounted and connected at one end to said rack-bar, a rotatable shaft, and a cam-wheel thereon for engaging and pivotally operating said lever once in each revolution, and thereby partially rotating and causing the wire-bending shaft to bend the wire by means of said pins, a second cam-actuated lever connected to said shaft for longitudinally moving it once in each revolution of the cam and thereby withdrawing said pins from engagement with the loop or eye in the wire after its formation is completed, means for reversing the operation of the first cam-operated lever and thereby rotating the shaft back to its original position, and means for reversing the operation of the second cam-operated lever, and thereby again projecting said pins across said intervening space between the end of the shaft and the guide-plate, substantially as described.

18. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a wire-bending shaft journaled therein and provided with pins upon and by which the wire is bent in the formation of the loop or eye, of means for operating said shaft to bend said wire back upon itself, a rotating tubular twister-shaft through which the wire extends, clamping-jaws connected to said shaft to rotate therewith, and means to cause said clamping-jaws to engage the body and the free end of the wire when thus bent back by the bending-shaft and twist the same together, substantially as described.

19. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a wire-bending shaft journaled therein and provided with pins upon and by which the wire is bent in the formation of the loop or eye, of means for operating said shaft to bend said wire back upon itself, a rotating tubular twister-shaft through which the wire extends, clamping-jaws connected to said shaft to rotate therewith, means to cause said clamping-jaws to engage the body and the free end of the wire when thus bent back by the bending-shaft and twist the same together, and means to longitudinally adjust said bending shaft and thereby withdraw said pins from engagement with the complete eye or loop in the end of the wire, substantially as described.

20. In a bale-tie machine, the combination of a suitably-supported plate provided with bearings, a longitudinally-slotted guide-plate arranged opposite one end of said plate and one of the bearings, pins extending from the corresponding end of the shaft which are engaged by the eye or loop formed in the end of the bale-tie wire, an endless chain and a carrier secured thereto and provided with a hook for passing through said slot and engaging the eye or loop of the bale-tie wire to draw the wire longitudinally through the machine, substantially as described.

21. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a shaft journaled therein provided with pins projecting from one end, a slotted guide-plate arranged opposite the bearing beyond which said pins project whereby the eye or loop of the bale-tie wire will be arranged vertically, an endless chain, a carrier secured thereto and provided with a hook which entering said slot engages the eye or loop and draws the wire longitudinally through the machine, and a knife to sever the wire at the rear end of said slotted plate at the proper time in order to complete the formation of the bale-tie.

22. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a shaft journaled therein provided with pins projecting from one end, a slotted guide-plate arranged opposite the bearing beyond which said pins project whereby the eye or loop of the bale-tie wire will be arranged vertically, an endless chain, a carrier secured thereto and provided with a hook which entering said slot engages the eye or loop and draws the wire longitudinally through the machine, a knife to sever the wire at the rear end of said slotted plate at the proper time in order to complete the formation of the bale-tie, and means to disengage the hook of the carrier from the loop or eye of the bale-tie at the instant before it is cut by the knife, substantially as described.

23. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a shaft journaled therein and provided with pins projecting at one end and engaged by the eye or loop of the wire, a slotted guide-plate arranged adjacent to said bearing to hold the eye or loop vertical, an endless traveling chain, a carrier secured thereto and provided with a spring-repressed hook, and a strip arranged in the path of said carrier to repress said spring and advance said hook through the slot of the guide plate and the registering eye or loop that the wire may be pulled or fed longitudinally by the carrier through the machine, and a knife for cutting said wire at the instant after the said strip releases the pressure upon said spring and permits it to withdraw the hook from engagement with the eye or loop of the completed bale-tie.

24. In a bale-tie machine, the combination with a suitably supported plate provided with bearings, a shaft journaled therein and provided with pins projecting at one end and engaged by the eye or loop of the wire, a slotted guide-plate arranged adjacent to said bearing to hold the eye or loop vertical, an endless traveling chain, a carrier secured thereto and provided with a spring-repressed hook, and a strip arranged in the path of said carrier to repress said spring and advance said hook through the slot of the guide-plate and the registering eye or loop that the wire may be pulled or fed longitudinally by the carrier through the machine, a knife for cutting said wire at

the instant after the said strip releases the pressure upon said spring and permits it to withdraw the hook from engagement with the eye or loop of the completed bale-tie, and a trip-block for actuating and making positive the withdrawal of the hook from engagement with the eye or loop, substantially as described.

25. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, a shaft journaled therein and provided with pins projecting at one end and engaged by the eye or loop of the wire, a slotted guide-plate arranged adjacent to said bearing to hold the eye or loop vertical, and endless traveling chain, a carrier secured thereto and provided with a spring-repressed hook, and a strip arranged in the path of said carrier to repress said spring and advance said hook through the slot of the guide-plate and the registering eye or loop that the wire may be pulled or fed longitudinally through the machine, a knife for cutting said wire at the instant after the said strip releases the pressure upon said spring and permits it to withdraw the hook from engagement with the eye or loop of the completed bale-tie, and a hook secured to the carrier and superposed relative to the first-named or movable hook whereby when said hook is withdrawn said last-named hook will in conjunction with the said strip prevent the withdrawing of the hook from pulling the loop or eye of the completed bale-tie with it but will absolutely insure their instantaneous disconnection, substantially as described.

26. In a bale tie machine, the combination with a suitably-supported plate provided with bearings, a shaft journaled therein and provided with pins projecting at one end and engaged by the eye or loop of the wire, a slotted guide-plate arranged adjacent to said bearing to hold the eye or loop vertical, an endless traveling chain, a carrier secured thereto and provided with a spring-repressed hook, and a strip arranged in the path of said carrier to repress said spring and advance said hook through the slot of the guide-plate and the registering eye or loop that the wire may be pulled or fed longitudinally by the carrier through the machine, a knife for cutting said wire at the instant after the said strip releases the pressure upon said spring and permits it to withdraw the hook from engagement with the eye or loop of the completed bale-tie, the trip-block for actuating and making positive the withdrawal of the hook from engagement with the eye or loop, and a hook secured to the carrier and superposed relative to the first-named or movable hook whereby when said hook is withdrawn said last-named hook will in conjunction with the said strip prevent the withdrawing of the hook from pulling the loop or eye of the completed bale-tie with it but will absolutely insure their instantaneous disconnection, substantially as described.

27. In a bale-tie machine, the combination of a suitably-supported plate provided with bearings, a slotted guide-plate arranged opposite one of said bearings and one end of said plate, a wire-bending shaft journaled in said bearings to form the loop between its corresponding end and said guide-plate a longitudinally-exteuding table or plate suitably supported, longitudinal strips projecting upwardly from its opposite margins, a longitudinal strip secured upon one of said strips to determine the length of the bale-tie to be formed, a longitudinally-extending traveling chain, a carrier secured thereto and guided between the first-named strips of said table, and consisting essentially of a block, and a bar pivoted therein and terminating at one end in an outwardly-projecting hook and at its opposite end in an inwardly or rearwardly projecting arm, said arm being in the plane of the strip which determines the length of the bale-tie, and the hook occupying the plane of the axis of the wire-bending shaft and above said strip, whereby when said carrier comes opposite said slotted plate, its arm engages and is pivotally operated by said strip and its hook is thereby advanced through said slotted plate and the registering eye or loop of the wire which is thus fed longitudinally through the machine against the front or working face of said strip, and a spring secured to the block and bearing against said pivoted bar, in order to advance its arm when it clears or is no longer opposed by the strip and thereby withdraws the hook end from engagement with the eye or loop of the bale-tie, which bearing against the front or working face of said strip is easily and reliably accomplished.

28. In a bale-tie machine, the combination of a suitably-supported plate provided with bearings, a slotted guide-plate arranged opposite one of said bearings and one end of said plate, a wire-bending shaft journaled in said bearings to form the loop between its corresponding end and said guide-plate, a longitudinally-extending table or plate suitably supported, longitudinal strips projecting upwardly from its opposite margins, a longitudinal strip secured upon one of said strips to determine the length of the bale-tie to be formed, a longitudinally-extending traveling chain, a carrier secured thereto and guided between the first named strips of said table, and consisting essentially of a block, and a bar pivoted therein and terminating at one end in an outwardly-projecting hook and at its opposite end in an inwardly or rearwardly projecting arm, said arm being in the plane of the strip which determines the length of the bale-tie, and the hook occupying the plane of the axis of the wire-bending shaft and above said strip, whereby when said carrier comes opposite said slotted plate, its arm engages and is pivotally operated by said strip and its hook is thereby advanced through said slotted plate and the registering eye or loop of the wire, which is thus fed through the machine against the front or working face of said strip, a rigid hook above the movable hook and having its front end in the plane of the front or working face of said strip and thereby against the upper portion of the eye or loop of the wire, and a spring secured to the block and bearing against said pivoted bar, in order to retract the hooked end of said bar from engagement with the eye or loop of the wire immediately the rear end of the strip is cleared by the arm of said bar, substantially as described.

29. In a bale-tie machine, the combination with a suitably-supported plate provided with bearings, and a guide-plate arranged opposite one of said bearings and longitudinally slotted from its rear end to a point opposite or in advance of the axis of said bearing, of a wire-bending shaft provided with pins which project across the intervening space between said bearing and said guide-plate at opposite sides of the wire extending therethrough, means to rotate said shaft and bend said wire back upon itself, means to clamp the body and the free end of the wire thus bent back together, and twist the same, means to withdraw said pins from engagement with the completed eye or loop thus formed, and a traveling carrier provided with a hook which passes through the slot of the guide-plate and engaging the loop or eye feeds the wire longitudinally through the machine, substantially as described.

30. In a bale-tie machine, the combination of a suitably-supported frame and mechanism for manufacturing bale-ties carried thereby, with a series of transverse bars secured to the frame and upon which the completed ties fall, a longitudinally-extending rod journaled below said cross-bars, a series of tie-distributing levers mounted thereon, and means for periodically operating said levers and thereby forcing forward upon said cross-bars all the ties which have previously dropped thereon, in order to automatically distribute said ties in separate bunches, each bundle containing a predetermined number of ties, substantially as described.

31. In a bale-tie machine, the combination of a suitably-supported frame and mechanism for manufacturing bale-ties carried thereby, with a series of transverse bars secured to the frame and upon which the completed ties fall, a longitudinally-extending rod journaled below said cross-bars, a series of tie-distributing levers mounted thereon, and comprising a body portion which is normally horizontal, and an arm which normally extends downwardly and rearwardly, and means for periodically causing said levers to assume a position approximately vertical and with said arms extending upwardly and rearwardly therefrom to the plane of or rearward of the point from which the completed ties fall, substantially as and for the purpose set forth.

32. In a bale-tie machine, the combination of a suitable frame-work, a rotating shaft thereon, a cam-wheel thereon, cross-bars secured to the frame a longitudinal rock-shaft below said cross-bar, tie-distributing levers mounted rigidly upon said rock-shaft, a lever suitably mounted, a link connecting said lever to one of said tie-distributing levers, which thus forms a crank-arm for the shaft upon which it is mounted, a stub-shaft, a sleeve journaled thereon and provided at one end with a large ratchet-wheel and at the other with a small cog-pinion, a spring-elevated arm mounted loosely thereon and in the path of the cam-wheel, a spring-actuated pawl carried by said lever and engaging said ratchet, a second stub-shaft, a large cog-wheel mounted thereon and meshing with said pinion, and one or more dogs projecting from said wheel and adapted to engage and operate the said lever, and thereby operate the tie-distributing levers, substantially as and for the purpose set forth.

33. In a bale-tie machine, the combination of a suitable frame-work, a rotating tubular twister-shaft journaled in bearings thereon, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collars and provided with clamping-jaws beyond the corresponding end of the shaft, and a spring surrounding said shaft and bearing against said collars so as to hold the toggle normally expanded and the clamping-jaws open, and means at times, that is after the wire is bent back in the process of forming the loop or eye, of sliding said clutch-collar upon the shaft and causing the clamping-jaws to engage the wire and twist it by the rotation of the shaft, substantially as described.

34. In a bale-tie machine, the combination of a suitable frame-work, a rotated tubular twister-shaft journaled in bearings thereon, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collars and provided with clamping-jaws carried thereby and beyond the corresponding end of the shaft, a spring surrounding said shaft and bearing against said collars so as to hold the toggle normally expanded and the clamping-jaws open, means at times, that is after the wire is bent back in the process of forming the loop or eye, of sliding said clutch-collar upon the shaft and causing the clamping-jaws to engage the wire and twist it by the rotation of the shaft, and a spring for repressing said clutch-collar and thereby opening the clamping-jaws to release the wire, substantially as described.

35. In a bale-tie machine, the combination with a suitable frame-work, a rotating twister-shaft journaled in bearings thereon, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collars and provided at one end with clamping-jaws, an expansion-spring interposed between said collars and holding them normally apart and the clamping-jaws open, a swinging frame suitably mounted and connected to the clutch-collar, and means to rock it back and forth in order to alternately cause the clamping-jaws to engage and release the wire before and after the twisting operation respectively, substantially as described.

36. In a bale-tie machine, the combination with a suitable frame-work, a rotating twister-shaft journaled in bearings thereon, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collars and provided at one end with clamping-jaws, an expansion-spring interposed between said collars and holding them normally apart and the clamping-jaws open, a swinging frame suitably mounted and connected to the clutch-collar, a pin or antifriction-roller depending from said frame, a rotating shaft, and a cam-wheel mounted thereon and comprising an inclined face which terminates at one end in a short vertical face and at its opposite end in an abrupt shoulder; which cam engages said pin or antifrictional roller and thereby at times swings the frame and causes the clamping-jaws to engage the wire and hold it firmly while being twisted, and then permit said jaws by the action of the expansion-spring to release the wire, substantially as described.

37. In a bale-tie machine, the combination with a suitable frame-work, a rotating twister-shaft journaled in bearings thereon, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collars and provided at one end with clamping-jaws, an expansion-spring interposed between said collars and holding them normally apart and the clamping-jaws open, a swinging frame suitably mounted and connected to the clutch-collar, a pin or antifriction-roller depending from said frame, a rotating shaft, and a cam-wheel mounted thereon and comprising an inclined face which terminates at one end in a short vertical face and at its opposite end in an abrupt shoulder; which cam engages said pin or antifriction-roller and thereby at times swings the frame and causes the clamping-jaws to engage the wire and hold it firmly while being twisted, and then permit said jaws by the action of the expansion-spring to release the wire, and a retractile spring suitably connected to the fixed pin at one end and to the swinging frame, whereby when said roller clears the abrupt shoulder of the cam, the swinging frame is brought back to its original position, substantially as described.

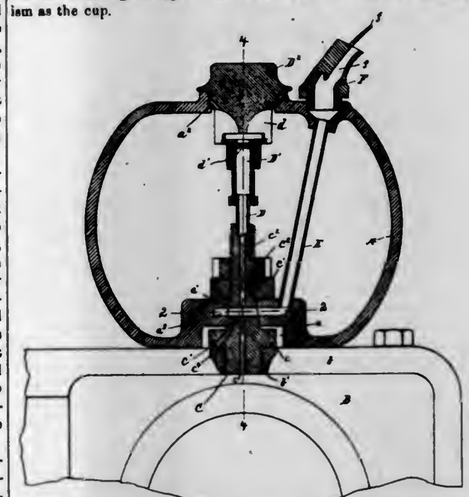
38. In a bale-tie machine, the combination with a suitable supporting-frame, a rotating tubular twister-shaft journaled therein, a gear-wheel mounted rigidly thereon to which motion is imparted to operate said shaft, a collar slidingly mounted upon said shaft at one side of said gear-wheel and bearing against one of the bearings of the shaft, a clutch-collar mounted to slide upon and rotate with said shaft, a second collar mounted to slide upon and rotate with said shaft, a toggle connecting said collar and provided with clamping-jaws at one end to engage the body and free end of the wire which is bent back upon the body in the process of forming the loop or eye, a spring interposed between said collars to normally hold the clamping-jaws apart, and means to advance said collars and thereby cause the clamping jaws to tightly impinge upon or clamp between them the body and free end of the wire, and then to twist the same by the rotation of the shaft, and a spring interposed between the first-named collar and the gear-wheel, whereby the slight contraction in the length of the wire due to the twisting of the same, may be accommodated by a slight longitudinal movement of the twister-shaft, substantially as and for the purpose set forth.

570,556. LUBRICATOR. LOUIS MERTENS and CHARLES F. BOSTWICK, Erie, Pa. Filed Feb. 19, 1896. Serial No. 579,958. (No model.)

Claim.—1. In a lubricating apparatus, the combination with the bearing mechanism having a screw-threaded socket therein; of the pin C having a collar c and extension above said collar and having a duct leading through it; a cup having a cavity as *a* in which is placed the collar *c;* and an opening into the cup through which said pin passes; and a nut on said extension.

2. In a lubricating apparatus, the combination with the bearing; of a cup carried by said bearing and communicating therewith; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism carried by the cup and communicating with said bearing.

3. In a lubricating apparatus, the combination with the bearing mechanism; of a cup carried with said bearing and communicating therewith through an opening in said bearing mechanism; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism carried by said cup and communicating with said bearing through the same opening in the bearing mechanism as the cup.



4. In a lubricating apparatus, the combination with the bearing mechanism having a pin-socket therein communicating with the bearing; of a pin in said socket; a cup on said pin and communicating with said bearing through said pin; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism carried by said cup and communicating with said bearing through said pin.

5. In a lubricating apparatus, the combination with the bearing mechanism having a pin-socket therein communicating with the bearing; a pin in said socket having a duct therein leading from the bearing; a cup on said pin in communication with said duct; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism carried by said cup and communicating with said bearing through said duct.

6. In a lubricating apparatus, the combination with the bearing mechanism having a pin-socket therein in communication with said bearing; of a pin in said socket having a duct therein leading from said bearing; a cup on said pin and in communication with said pin-duct, and having an annular groove a^3 in the shell thereof in communication with said pin-duct; a duct leading from said annular groove; and a wiper mechanism in communication with said duct leading from said annular groove.

7. In a lubricating apparatus, the combination with the bearing mechanism; of a cup carried with said bearing and communicating therewith through an opening in said bearing mechanism; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism communicating with said bearing through the same opening in the bearing mechanism as the cup.

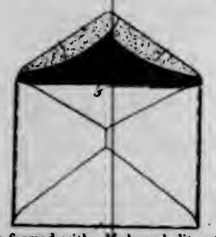
8. In a lubricating apparatus, the combination with the bearing mechanism having a pin-socket therein communicating with said bearing; of a pin in said socket; a cup on said pin and communicating with said bearing through said pin; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism communicating with said bearing through said pin.

9. In a lubricating apparatus, the combination with the bearing mechanism having a pin-socket therein communicating with the bearing; a pin in said socket having a duct leading from the bearing; a cup on said pin in communication with said duct; said cup being inclosed and adapted to contain an independent supply of lubricant; and a wiper mechanism communicating with said bearing through said duct.

570,557. ENVELOP. PAUL G. MUENCHINGER, Newport, R. I. Filed Dec. 6, 1895. Serial No. 571,296. (No model.)

Claim.—1. An envelop having applied to the inner surface of its sealing-flap, a reinforcement, the latter being removed from the edge of the flap and reaching from the center to the opposite corners of the sealing-flap the center of the reinforcement being extended toward the point of the flap, and said flap being formed with a slit coincident with the edge of the central portion of the reinforcement whereby the flap may be torn in such manner as to leave the gummed portion

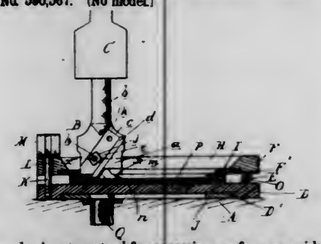
thereof adhering to the main body of the envelop, substantially as described.



2. An envelop formed with a V-shaped slit extending parallel to the point of the sealing-flap and constituting an angular lip, and a reinforcement applied to and covering the inner surface of said angular lip and extending thence in opposite directions to the opposite corners of said flap and envelop, substantially as described.

3. An envelop having applied to the inner surface of its sealing-flap, a triangular reinforcement, the latter being removed from the edge of the flap and having two of its angles or corners extended to the opposite corners of the sealing-flap and the remaining corner or angle extended toward the point of the flap, the said flap being formed with a V-shaped slit coincident with the point or vortex of the reinforcement and adapting the flap to tear in such manner as to leave the gummed portion thereof adhering to the main body of the envelop, substantially as described.

570,558. MACHINE FOR RECESSING LEATHER. ROBERT MCKAY, Detroit, Mich., assignor, by direct and mesne assignments, to the McKay Neverslip Sole Company, same place. Filed May 7, 1896. Serial No. 590,567. (No model.)



Claim.—1. A rotary tool for recessing surfaces provided with an undercutting edge and a work-bearing surface above said edge.

2. In a rotary recessing-tool, the combination with a head, of a knife-bar inclined to the axis of said head, and longitudinally adjustably secured thereto, the lower projecting end of said bar forming an undercutting edge, and a work-bearing surface on said head above said undercutting edge.

3. In a rotary recessing-tool the combination with a head, of knife bars oppositely inclined to the axis of said head and longitudinally adjustably secured on opposite sides thereof the lower projecting ends of said bars forming undercutting edges, and a work-bearing surface on said head above each of said undercutting edges.

4. In a rotary recessing-tool, the combination with the head *a*, provided with the inclined recess *c* having the overhanging sides *f* of the clamping-plate *e* in said recess, the inclined edge *g* the knife-bar *d* of wedge-shape cross-section between said clamping-plate and the overhanging side *f*, the screw-threaded stud *h* secured to the head and projecting through an aperture in said clamping-plate and the nut *j* on said stud.

5. In a rotary recessing-tool, the combination with the head *a* provided with the inclined recess *c* having the overhanging side *f*, of a knife-bar of wedge-shape cross section, and the clamping-plate *e* in said recess, the screw-threaded stud *h* projecting from said head through an aperture in the clamping-plate, the nut *j* thereon and the flange *m* on the lower end of the clamping-plate, the lower face of which forms a work-bearing surface over the inclined undercutting edge *n* on the projecting end of the knife-bar.

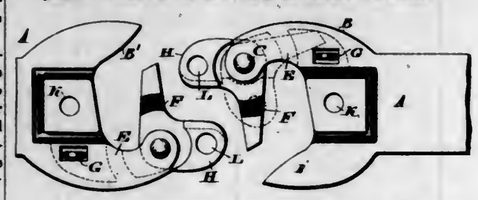
6. The combination with a rotary recessing-cutter, a table below the same and means for moving said cutter and table toward or from each other, of a guide-pin projecting from said table in axial line with said cutter, and a work-holding clamp having its upper member cut away for the tool to work in, and its lower member provided with a recessed pattern on its lower face adapted to engage with said guide-pin.

7. The combination with a rotary recessing-tool, a table below the same having a projecting guide-pin in axial line with said cutter and means for moving said table and cutter toward or from each other, of a work-holder comprising an upper and a lower clamping-plate, the upper plate being apertured for the cutter to work in, a bearing-plate and a pattern-plate detachably secured respectively to said upper and lower clamping-plates on the under face thereof, said plates being correspondingly apertured.

8. A work-holder comprising the plate D, the apertured plates F, the bifurcated clamping-lever N and the correspondingly-apertured plates I and J detachably secured respectively to the lower faces of the plates F and D, substantially as and for the purpose described.

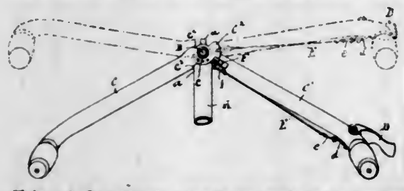
9. In a rotary recessing-tool, the combination with a head, of a knife-bar secured to the head and having a cutting edge inclined to the axis of said head, and a cutting edge at its end, and a work-bearing surface on said head above said inclined cutting edge.

570,559. CAR-COUPLING. CHARLES H. MCLAUGHLIN, Philadelphia, Pa. Filed Feb. 16, 1894. Serial No. 500,338. (No model.)



Claim.—In a car-coupling, a draw-head having a knuckle pivoted thereto, the projection B′ on said head opposite said knuckle, said knuckle having two limbs, one of which is provided with transverse grooves in its upper and lower faces, and the other limb having horizontal grooves and tongues, on its sides, said draw-head having a chamber with vertical tongues adapted to enter said transverse grooves and the locking-pin G entering an opening in said draw-head, said projection B′ preventing lateral movement of the knuckle locked or coupled with said pivoted knuckle, said parts being combined substantially as described.

570,560. HANDLE-BAR FOR BICYCLES. THOMAS H. MCQUOWN, Somerville, Mass. Filed Oct. 24, 1895. Serial No. 566,697. (No model.)



Claim.—1. In a bicycle a handle-bar made in two sections fulcrumed upon a bolt passing through the head or shank of the post, one of said sections having stops to abut against the shank and at its outer end a projecting plate in combination with a locking-bar operated from a trigger on one of said handle-bar sections substantially as set forth.

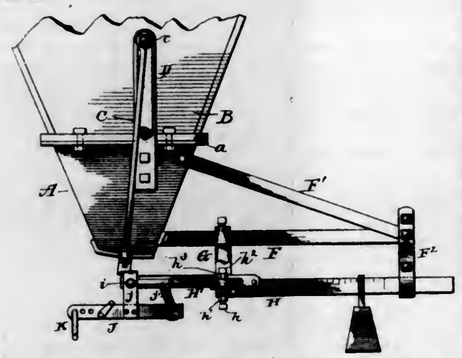
2. In a bicycle a handle-bar made in two sections fulcrumed upon a bolt passing through the head or shank of the post, the upper end of which extends up beyond said handle-bars, one section of said handle-bars having stops on one side of the post and a projecting plate on the other side of said post in combination with a locking-bolt, adapted to fit over or under the said projecting plate, and means for operating said bolt without removing the hand from the handle substantially as set forth.

3. In a handle-bar the combination of the post the handle-bar made in two sections pivotally mounted upon a bolt passing through the head or shank of the post at right angles to said handle-bar sections and post one of said sections having a projection on one end thereof and a locking-bar in the other handle-bar section free to pass over or under said projection to hold the handle-bar sections in place substantially as set forth.

570,561. COMBINED BAG-HOLDER AND SCALE. ANDREW P. O'BRIEN, Richmond, Va., assignor of one-half to Aug. D. Ledoux, same place. Filed May 6, 1895. Serial No. 548,335. (No model.)

Claim.—1. The combination of with a spout, brackets projecting upwardly above the spout and arms pivoted to the brackets near the upper ends of the latter, of a gate having a V-shaped beveled front edge and a flanged rear edge, and a handle for swinging the gate, substantially as set forth.

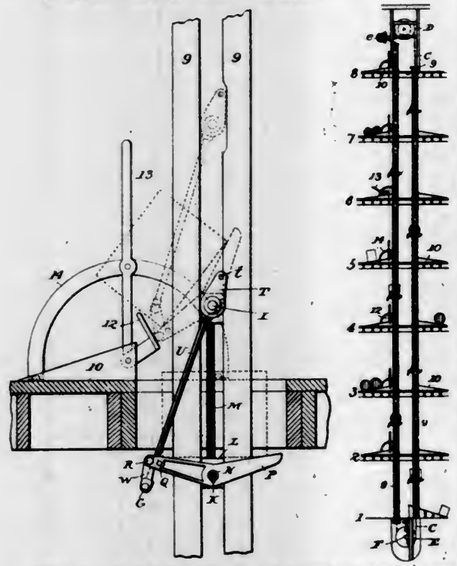
2. In a combined bag-holder and scale the combination with a spout and a frame extending outwardly from said spout of a yoke adjustably mounted on said frame, a scale-beam supported by said yoke and a bag-holder carried by the scale-beam, substantially as set forth.



3. In a combined bag-holder and scale the combination with a support carrying bearings for the scale-beam and a loop to receive the free end of the beam, of a scale-beam having a slot adapted to receive a lip on said support and bag-holder pivotally carried by said scale-beam, substantially as set forth.

4. The combination with a scale-beam having a bifurcated end, of a U-shaped bag-holder pivotally supported by said bifurcated end, plates secured to said bag-holder and the upper ends of said plates projecting above said holder, projections located near the curved end of the holder for supporting the bag, and a crank carried by the ends of said holder for locking the bag in position, substantially as set forth.

570,562. PACKAGE-ELEVATOR. STAUNTON B. PECK, Chicago, Ill., assignor to the Link-Belt Machinery Company, same place. Filed Jan. 26, 1892. Serial No. 419,321. (No model.)



Claim.—1. In a package-elevator, the combination of two endless chains or cables, suitable wheels about which they are banded, hanger-arms borne by said chains or cables and pivotally suspended between them, a package-carrier borne by said hanger-arms and free to rock in either direction, and tripping mechanism whereby the carrier is partially rotated on its axis to discharge its load, substantially as set forth.

2. In a package-elevator, the combination of two endless chains or cables banded about suitable wheels, hanger-arms pivotally suspended from said chains or cables, a carrier pivotally borne by said hanger-arms, and toggle mechanism connected with said carrier and arranged to tilt the same under the influence of a tripping device, substantially for the purpose set forth.

3. In a package-elevator, the combination of two endless chains or cables banded about suitable wheels, a carrier pivotally borne by said chains or cables, toggle mechanism connected with said carrier and provided with a stud projecting laterally at or near the joint of the toggle-links, and a tripping-surface adapted to be placed at will in the path of the said stud, substantially for the purpose set forth.

4. In a package-elevator, a pivotally-suspended package-carrier provided with toggle mechanism which is arranged to hold said carrier normally in a substantially horizontal position and to tilt the same for discharge when tripped, substantially as set forth.

5. In combination, chains C, hangers M, a package-carrier pivotally borne by said hangers, toggle-links, as U and W, connected with said carrier and a trip adapted to operate the said toggle-links, substantially as and for the purpose set forth.

6. In combination chains C, hangers M, a package-carrier pivotally borne by said hangers, and toggle-links, as U and W, connected with said carrier and provided with a stud, as G, adapted to engage with an inclined tripping-surface, as 12, substantially as shown and described.

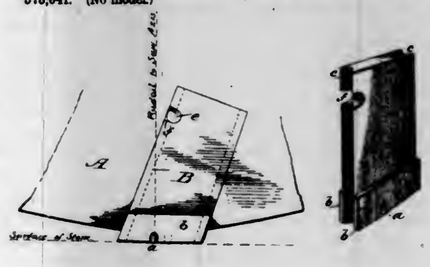
570,563. COMBINATION BED AND SOFA. JOHN A. PETERSON and GUS SODERSTROM, Sturgis, Mich. Filed Apr. 18, 1896. Serial No. 588,082. (No model.)



Claim.—1. In a combination bed and sofa, the combination with rectangular frame A consisting of ends high back and wooden bar in front connecting the ends at bottom recesses cut in the top of the ends thereof; of head-rests hinged to the tops of said ends metallic stripe pivotally connecting said head-rests to the back of frame A, a slot therein a step moving vertically in and projecting through said slot and connected pivotally with said metallic stripe and to said head-rests thereby, substantially as set forth.

2. In a combination bed and sofa the combination with rectangular frame A of ends and high back with wooden bar in front connecting the ends at bottom recesses cut in the top of the ends thereof and head-rests hinged to said ends and pivotally connected by metallic stripe to the back of frame A and to a step movable vertically in a slot and projecting through said back of frame A of the rectangular frame B frame C inclosed therein and secured thereto, the blocks A attached to the ends of B and seated in said recesses *b* cut in the ends of frame A metallic bars pivoted alternately to said blocks and recesses and metallic racks pivoted on the inside of the front and back of said frame B and engaging on the inside of said back of frame B curved bars terminating in bolts at right angles thereto the cavities and slots cut in the said back of frame B and coincident apertures in the ends of frame A to receive said bolts substantially as described and set forth.

570,564. CIRCULAR DIAMOND SAW AND SAW-TOOTH. HUBBARD C. POTTER, New York, N. Y. Filed Dec. 28, 1895. Serial No. 573,641. (No model.)

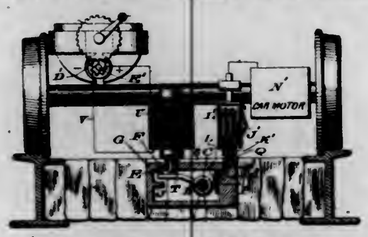


Claim.—1. A tapering saw-tooth of increased thickness at its outer end so as to present a point and shoulders which will project beyond the circumference and side faces of the saw-disk when connected thereto, and diamond or carbon points mounted upon the end of the tooth, substantially as and for the purpose set forth.

2. A circular saw having oblique tapering openings or recesses, and tapering teeth secured and fitted solidly therein, the inner ends of the teeth resting against the bottom of the openings or recesses, the outer end of the tooth having shoulders upon its sides which project beyond the surfaces and periphery of the saw, and diamond or carbon points upon the teeth, substantially as and for the purpose specified.

3. The combination with a circular-saw disk having its peripheral line interrupted only by tapering openings or recesses oblique to the radii of the saw, of a saw-tooth of a size and form corresponding to and fitting solidly within one of said openings or recesses and made of increased thickness at its outer end so as to present a point and shoulders projecting beyond the circumference and side faces of the saw-disk, and diamond or carbon points mounted upon the ends of the teeth, substantially as described.

570,565. ELECTRIC RAILWAY. HARRY C. REAGAN, Jr., Philadelphia, Pa. Filed Mar. 11, 1896. Serial No. 582,704. (No model.)



Claim.—1 In an electric railway, a feed-wire, a conduit, a conductor supported therein, a contact movably mounted on said feed-wire, said contact having a suitable body portion, a sleeve surrounding the feed-wire and engaged by said body portion, said sleeve having a resilient arm extending therefrom, and adapted to complete the circuit between said feed-wire and conductor at proper intervals.

2. In an electric railway, a feed-wire, an oscillatory contact mounted on the latter and provided with a magnetic arm or armature, and a resilient non-magnetic arm also attached to said contact.

3. In an electric railway, a conduit of non-conducting material, a feed-wire suitably supported therein, a conductor passing through the top of said conduit, an oscillatory contact mounted on said feed-wire and having an arm or armature of magnetic material, a resilient non-magnetic arm also mounted on said contact, and a spring for actuating said armature so as to break the contact between said resilient arm and the conductor.

4. In an electric railway, a feed-wire, an oscillatory contact mounted thereupon, and provided with a magnetic arm or armature, a resilient non-magnetic arm also attached to said contact, a conductor located in the path of said resilient arm, means for causing a contact between said resilient arm and conductor, and means for conveying the electricity from said feed-wire to the car-motor.

5. In an electric railway, a collector-wheel composed of a plurality of rings, a hub on which said rings are mounted, and yielding devices intermediate said hub and rings.

6. In an electric railway, a collector-wheel composed of a plurality of rings, a hub on which said rings are mounted, sockets in the latter and said rings, and springs seated in said sockets and adapted to form yielding spokes.

7. In an electric railway, a closed conduit of non-conducting material, a conductor supported therein, a feed-wire located in said conduit, oscillatory contacts mounted on said feed-wire, and having washers of insulating material therebetween, one arm of said contacts being of magnetic material, and the other arm being of resilient and non-magnetic material, in combination with a collector-wheel and connections therefrom to a car-motor.

8. In an electric railway, a conduit of non-conducting material, a feed-wire suitably supported therein, an oscillatory contact mounted thereupon, and having a resilient arm, an angular-shaped conductor located in said conduit, and having depending portions adapted to complete the circuit when the contact is made, and a stop for said contacts.

9. In an electric railway, a car, a car-motor, a feed-wire, a conduit therefor, an oscillatory contact mounted thereon having a resilient arm, a conductor-wheel, and a magnet mounted on said car, connections from said conductor-wheel to said car-motor, an auxiliary charging motor, and connections therefrom to said magnet.

10. In an electric railway, a closed conduit, a feed-wire supported therein, oscillatory contacts mounted on said feed-wire, and having a resilient arm, a magnet adapted to be supported on the car, a conductor, means for making a circuit between said conductor and the car-motor, a charging-motor, a battery, and connections intermediate said battery, motor and magnet.

11. In an electric railway, a magnet, a non-conducting conduit, a feed-wire supported therein, an oscillatory contact mounted thereupon, and having an armature and a resilient arm attached thereto, an angular-shaped conductor located in said conduit, means for holding said conductor in position, and a pin of magnetic material located in said conduit for the purpose of producing a short magnetic path between said magnet and armature, in combination with means for oscillating said contact.

12. In an electric railway, a car, a magnet carried thereby, a conduit, a conductor located in the side of said conduit, a feed-wire supported therein, a contact device mounted thereon and provided with a resilient arm and an armature, and pins of suitable magnetic material projecting into the interior of said conduit in proximity to said armature, for the purpose of producing a short magnetic path between said magnet and armature.

13. In an electric railway, a car, a car-motor, a conduit, a conductor located partially within and partially without the same, a feed-wire supported within said conduit, an oscillatory contact mounted upon said feed-wire, and provided with a resilient arm, a magnet supported on said car, means for conveying the electricity from said conductor to said car-motor, an auxiliary motor and connections from the latter to said magnet, in combination with pins of suitable magnetic material located in proximity to said contact, for the purpose of producing a short magnetic path between said contact and the exterior of said conduit.

14. In an electric railway, a collector-wheel composed of a plurality of rings separated from each other, and a hub therefor, each ring having spokes composed of springs common to said rings and hubs.

15. In an electric railway, a car, a car-motor, a conduit, a feed-wire located within said conduit, an oscillatory contact mounted on said feed-wire, and having a resilient arm, means for conducting electricity from said conductor to the car-motor, a magnet carried by said car, an auxiliary charging-motor and connections from the latter to said magnet, whereby the latter can be energized when desired.

16. In an electric railway, a car, a magnet carried thereby, a car-motor, a conduit, a conductor located in a side thereof, means for conveying electricity from said conductor to said car-motor, a feed-wire supported in said conduit, an oscillatory contact device mounted on said feed-wire and provided with a resilient arm and an armature, and pins of suitable magnetic material projecting into the interior of said conduit, in proximity to said armature, for the purpose of producing a short magnetic path between said magnet and armature, in combination with an auxiliary charging-motor and connections therefrom to said magnet.

17. In an electric railway, a conduit, a conductor located in a side of said conduit, a feed-wire supported in said conduit, an oscillatory contact device mounted on said feed-wire and provided with a magnetic armature and a resilient non-magnetic arm, pins of suitable magnetic material located in proximity to said armature for the purpose of producing a short magnetic path between said magnet and armature, a magnet carried by the car, means for conveying electricity from the feed-wire to the car-motor, an auxiliary charging-motor and connections therefrom to said magnet.

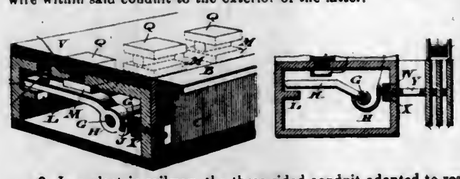
18. In an electric railway, a car, a car-motor, a feed-wire, a conduit therein, an oscillatory contact mounted on said feed-wire and having a resilient arm, a conductor located adjacent to said conduit, means for conveying electricity from said conductor to the car-motor, a magnet carried by said car, an auxiliary charging motor and connections from the latter to said magnet.

19. In an electric railway, a conduit, a feed-wire supported therein, an oscillatory contact mounted on said feed-wire and having a resilient arm, a conductor located in proximity to said conduit, against which said arm is adapted to contact, and means for conveying electricity from said conductor to a car-motor, in combination with a magnet, a battery, an auxiliary charging-motor, and conductors common to the latter and to said battery and magnet.

570,566. MAGNETIC PATH FOR UNDERGROUND ELECTRIC RAILWAYS. HARRY C. REAGAN, Jr., Philadelphia, Pa. Filed Apr. 21, 1896. Serial No. 588,470. (No model.)

Claim.—1. In an underground railway, a conduit containing a plurality of contacting devices, suitable protecting or paving material adapted to cover the top of said conduit, a series of independent magnetic paths, separated from each other and embedded in said material, and extending from the surface thereof toward but not into the interior of said conduit and over said contacting devices, and said magnetic paths being out of electrical connection with the interior of the conduit.

2. In an underground railway, a closed non-conducting conduit, and a series of blocks located above the same, and embedded in the top of the paving material, covering said conduit, in combination with a series of plates or strips suitably attached to the under side of the top of the conduit, and means for conducting electricity from the feed-wire within said condnit to the exterior of the latter.



3. In a electric railway, the three-sided conduit adapted to rest upon and be embedded in a paving material, a series of blocks embedded in the top of said conduit, a series of plates attached to the interior of the latter, a bolt projecting through a side of said conduit and having a carbon button in its head, and an angle-iron secured to a side of said conduit, said bolt serving as a conductor of electricity, and to hold said angle-iron in position.

4. In an electric railway, a collector-wheel consisting of an inner glass or non-conducting-shell, a coating of silver thereupon, a metallic shell surrounding the whole, coils of high resistance embedded in asbestos contained within said non-conducting shell, and means for conducting electricity to and from said coils.

5. In an electric railway, a conduit, a feed-wire supported therein, oscillatory contact devices mounted on said feed-wire, means for conducting electricity from said devices to a car-motor, and paving material covering the top of said conduit, in combination with a series of independent magnetic paths separated from each other and embedded in said paving material, and extending from the surface thereof toward, but not into, the interior of said conduit, said paths being located over said contacting devices and being out of electrical connection with the interior of the conduit.

6. In an electric railway, a non-conducting conduit having its sides and top hermetically joined to each other, a feed-wire, a contact having an oscillatory resilient arm mounted thereon, a series of plates attached to the top of said conduit, a series of blocks located in the top of said condnit over said plates, an angle-iron located adjacent a side of said conduit, a bolt having a carbon button in its head common to a side of said conduit and a limb of said angle-iron, means for holding said bolt in position, and devices for magnetically operating said contact.

7. In an electric railway, a conduit, a feed-wire supported therein, oscillatory contact devices mounted on said feed-wire, paving material covering the top of said conduit and a series of independent magnetic paths, embedded in said paving material, and extending from the surface thereof toward, but not into, the interior of said conduit, said paths being located over said contacting devices and out of electrical connection with the interior of the conduit, in combination with a car-motor, and supplemental poles provided with soft-iron shoes inserted in the poles of said car-motor, said shoes being adapted to travel over said magnet paths.

8. In an electric railway, a feed-wire, a condnit therefor, an oscillatory contact mounted on said feed-wire, means for conducting electricity from said contact to the car-motor, a series of supplemental poles inserted in the poles of the car-motor, shoes of soft iron attached to said poles, and devices for producing a magnetic path to the interior of the conduit located in the path of said poles.

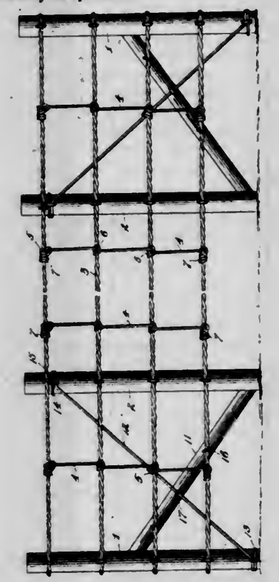
9. The herein-described collector-wheel, consisting of a glass, porcelain or other non-conducting shell, coated interiorly with silver, a metal shell surrounding said glass or non conducting shell, the interior of said wheel being filled with asbestos, and having a series of coils of wire of high resistance embedded in said asbestos, and means for conducting electricity to said wires.

10. In an electric railway, a conduit, a casing therefor, a series of independent magnetic paths, supported above said conduit, and a magnet having soft-iron shoes attached to each pole thereof, said shoes extending over one or more magnetic paths.

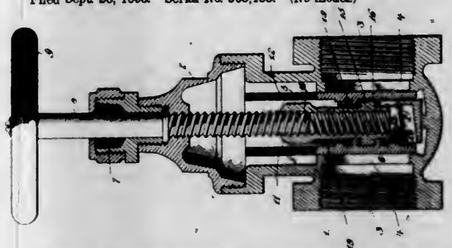
570,567. WIRE FENCE. LEWIS M. RUNYON, Allamuchy, N. J. Filed Aug. 26, 1896. Serial No. 604,007. (No model.)

Claim.—1. A fence comprising supporting-posts, runners secured to said posts, and stays intersecting and connecting the runners at intermediate points, each stay consisting of a continuous wire blank provided with a plurality of coils embracing each runner and a loop formed by carrying the stay-wire around the contiguous straight portion of the stay and held taut by strain upon the portion by which the loop is formed, the extremities of the stay-wire, after forming said loops, being coiled around the contiguous portions of the terminal runners, substantially as specified.

2. A fence having terminal and intermediate posts, runners secured to the posts, continuous wire stays intersecting the runners at intervals and provided at each point of intersection with a lock consisting of a plurality of coils engaging the runner and a loop engaging the contiguous straight portion of the stay, an inclined strut-brace interposed between a terminal and the contiguous intermediate post, and an oppositely-inclined tension-brace connecting said terminal and intermediate posts and extending through the stay-lock which engages one of the intermediate runners at a common point of intersection, substantially as specified.



570,568. VALVE. FREDRICK H. SHARAR, Williamsport, Pa. Filed Sept. 20, 1895. Serial No. 563,135. (No model.)



Claim.—1. The combination with a valve-casing having opposite seats, of valve-disks, a valve-stem arranged between the planes of the valve-seats, and a sectional wedge-block supporting the disks and having coacting inclined faces, one of the sections of the wedge block being connected to the valve-stem for movement parallel with the valve-seats and being provided with opposite projections to fit loosely in sockets in the facing sides of the valve-disks, whereby motion parallel with the axis of the valve-stem may be communicated to the valve-disks, and the other section of the wedge-block being provided with an elongated opening closed at both ends through which one of the lateral projections of the first-named section extends to engage its socket in the valve-disk, whereby when the first-named section is operated to unseat the valve disks the second section of the wedge-block is loosely suspended upon the first-named section and in alinement therewith, substantially as specified.

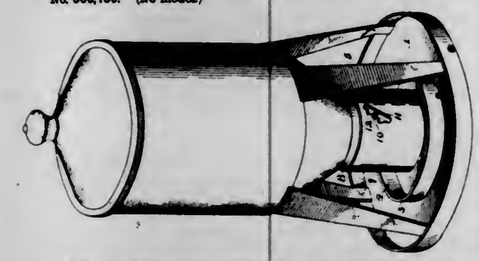
2. The combination with a valve-casing having opposite valve-seats, of valve-disks, a rotary threaded valve-stem, and a sectional wedge-block comprising an operating member threaded upon the valve-stem and adapted to receive linear movement, said operating member being provided with opposite projections and the valve-disks being provided upon their inner or facing sides with bosses having sockets for the reception of said projections, whereby lateral movement of the disks, or movement transverse to the axis of the valve-stem, may be attained without disengaging the projections of the

operating member from the sockets of the valve-disks, and a loose member recessed to receive the lower end of the operating member and provided with an elongated opening 19 through which the projection at one side of the operating member extends, said opening being closed at its upper end to form a support for the loose member when the valve-disks are unseated, a fixed stop being arranged in the path of the loose member to limit its movement in one direction, and said operating and loose members being provided with coacting inclined faces to cause lateral movement in opposite directions when the linear movement of the loose member is checked, substantially as specified.

3. The combination with a casing having opposite valve-seats, of valve-disks, a sectional wedge-block having members provided with coacting inclined faces, one of the members being hollow to receive the contiguous portion of the other member, means for elevating one of the members and checking the downward movement of the other or hollow member, and interlocking connections between the members of the wedge-block and the valve-disks, said connections at one side of the block having engagement with the hollow member and serving to support the same when the other member is elevated, substantially as specified.

4. The combination with a valve-casing having opposite valve-seats, valve-disks adapted to fit said seats, and a valve-stem, of a sectional wedge-block comprising an operating member connected to the valve-stem to receive linear movement therefrom, said operating member having opposite parallel flat faces, lateral projections 15 on said flat faces to engage sockets in the inner faces of the valve-disks, the width of said operating member in the opposite direction being reduced at its lower end to form shoulders having inclined faces 14, and a loose member recessed to form opposite side cheeks 20 which bear against the opposite cut-away sides of the operating member and having upper inclined faces 15 to coact with the inclined faces 14 of the operating member, said cheeks 20 being connected at one edge by a web provided with an opening 19 through which extends the projection on the contiguous side of the operating member, substantially as specified.

570,569. **STOCK-FEEDER.** JOHN P. SMITH, Kahoka, Mo., assignor of one-half to John Douglass, Millport, Mo. Filed Oct. 24, 1895. Serial No. 566,759. (No model.)



Claim.—A stock-feeder comprising a flat horizontal floor provided with a peripheral upstanding flange or guard and a separate inner concentric flange 3 inclosing within its circle a feed-receptacle, and between the same and the peripheral flange or guard a waste-receptacle, said peripheral and inner flanges being provided at the plane of the floor with drain-openings, a feed-reservoir supported centrally above the floor and provided at its lower end with a cylindrical discharge-neck disposed within and concentric with the inner upstanding flange, said cylindrical discharge-neck being provided with an offstanding lateral stud, and a vertically-adjustable cut-off sleeve slidably mounted on said neck and provided with an inclined slot receiving said stud and having in its upper side a series of catch-notches to adjustably engage with the stud, substantially as set forth.

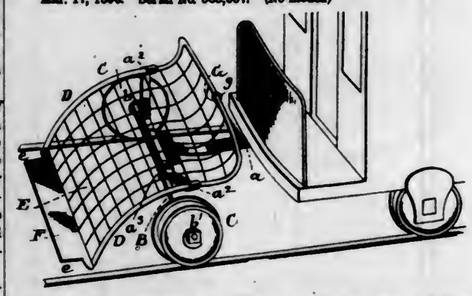
570,570. **SLATE-PENCIL SHARPENER.** LUCRETIA P. SPENCER, Dover, Del. Filed July 21, 1896. Serial No. 599,999. (No model.)



Claim.—1. As a new article of manufacture, a pencil sharpener comprising a conical guide-shield, a circular spring-handle, and a jaw having retaining-flanges, the whole formed of a single piece of spring metal, in combination with a file-blade secured between the flanges on said jaw, substantially as shown and described.

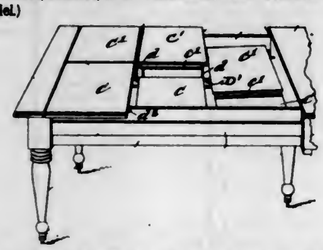
2. As a new article of manufacture, a pencil sharpener, comprising the conical guide-shield B, having projecting ears *a a*, the spring-handle C, and the jaw D having the retaining-flanges *e* and *c*, and the file-blade E secured to said jaw opposite the conical shield B, substantially as shown and described.

570,571. **CAR-FENDER.** JAMES M. STALEY, Reading, Pa. Filed Mar. 17, 1896. Serial No. 583,607. (No model.)



Claim.—In a car-fender, a reach pivoted to the center of front truck-frame and having spring-arms secured to axle at the lower ends, a frame D attached to the upper ends of said springs and supported elastically, a wire frame E, the projecting plate F attached to the front of frame D and the vertical standard G attached rigidly at its lower end to the reach and curved at its upper end to form the hook *g*, said hook being adapted to engage the frame D as and for the purpose set forth.

570,572. **EXTENSION-TABLE.** JAMES STEPHENS and GILBERT DE MARCH, Canisteo, N. Y. Filed Jan. 3, 1896. Serial No. 574,764. (No model.)

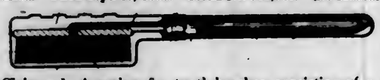


Claim.—1. An extension table, comprising two sections slidably connected with each other and capable of moving one partly beneath the other, the section which moves beneath the other being provided with two longitudinal rods which move with said section, links pivotally connected to said rods, folding top sections respectively pivoted to the links, the top sections being capable of moving inwardly and downwardly on said links, and a third rod carried by the section which carries the first rod, said third rod being adapted to have the folding top sections partly rested thereon, substantially as described.

2. An extension-table, comprising two sections slidably connected with each other and capable of moving one partly beneath the other, a stationary top for the upper section, a series of folding top sections for the remaining section, two longitudinal rods carried by the said remaining section, links pivotally connected to said rods and to the respective top sections, and a third rod carried by the section which has the first two rods, said third rod being capable of partly supporting the top sections, substantially as described.

3. An extension-table, consisting of two sections having relative sliding movement, one section having a stationary top and the remaining section having a series of movable top sections, two longitudinal rods carried by said remaining section, and links pivotally connected to the rods and to the movable top sections, said movable top sections being thereby capable of swinging downwardly and inwardly so as to move beneath the stationary top of the first section, substantially as described.

570,573. **TOOTH-BRUSH.** DANIEL W. TOWER, Grand Rapids, Mich. Filed Sept. 19, 1895. Serial No. 562,945. (No model.)



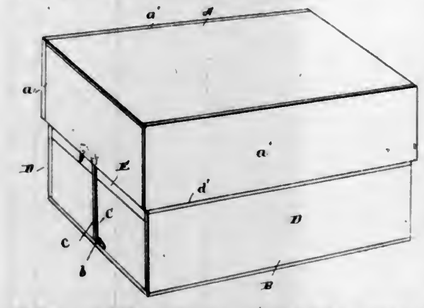
Claim.—1. A casing for tooth-brushes, consisting of a part to inclose the stem and a separate part to inclose the brush proper, said latter part being formed of hinged sections, whereby the brush proper may be uncovered without uncovering the stem, as specified.

2. A casing for tooth-brushes, consisting of a part to inclose the stem and a separate part to inclose the brush proper, said latter part being constructed of hinged sections having perforations.

3. In a tooth-brush, the combination with the tubular stem having a brush at one end, and a collapsible tube attached to the other end of said stem, of a sleeve encircling the latter end of the stem, and a casing inclosing said tube and detachably secured to said sleeve, substantially as described.

4. The combination with a fountain tooth-brush, having a tube to contain the dentifrice and provided with a sleeve, of a detachable casing for said tube, engaging said sleeve and provided with a bead, and a detachable casing for the brush proper, said latter casing having a groove to receive said bead and being formed of sections hinged together at one side and provided with a catch at the other side of the casing.

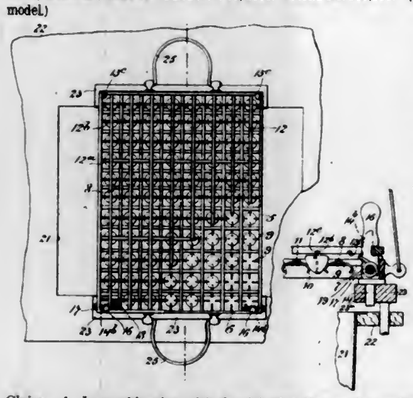
570,574. **FOLDING EGG-CRATE.** CLINGER TUCKER, Best, Ohio. Filed Apr. 7, 1896. Serial No. 586,574. (No model.)



Claim.—1. A folding egg-crate, consisting of the crate proper, having removable partition, fillers and filler-partitions and hinged ends and sides, the former provided with staples *b*, in combination with the cover A, provided with the double-end hook C, having integral springs c^3, substantially as and for the purpose specified.

2. A folding egg-crate, consisting of the folding body portion A, the rigid ends of which are provided with staples *b*, in combination with the pivoted hook C, having shanks of unequal length, the forward end *c* of each hook portion being beveled and provided with inwardly-projecting integral springs c^3, substantially as and for the purpose specified.

570,575. **CHOCOLATE-COATING APPARATUS.** CHARLES T. VIAU, Montreal, Canada. Filed Nov. 18, 1895. Serial No. 569,368. (No model.)



Claim.—1. In combination with the dripping-frame of a coating apparatus, such dripping-frame being formed of a rectangular frame having longitudinal and transverse bars disposed to provide subdivisions or open spaces throughout the frame, a series of supports formed in pairs each pair of a separate piece of curved wire having its ends bent toward each other and such supports being carried by the longitudinal and transverse bars of such frame, so that one support of a pair will project on one side of a bar into one space and the other support of such pair, into another space, for the purpose set forth.

2. In coating apparatus, a dipping-frame provided with corner-posts and holders to receive the articles to be coated, a cover for such dipping-frame, adapted to receive such corner-posts and means for detachably connecting said cover to said corner-posts, for the purpose set forth.

3. In coating apparatus, a dripping-frame adapted to receive and support the articles to be coated, and provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon and means carried by said last-mentioned posts for detachably retaining such cover against displacement for the purpose set forth.

4. In coating apparatus, a dipping-frame, adapted to receive and support the articles to be coated, and provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon, and a spring-operated latch carried by each of said last-mentioned posts, for detachably retaining such cover against displacement, for the purpose set forth.

5. In coating apparatus, a rectangular dipping-frame adapted to receive and support the articles to be coated, and provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon, a bracket-piece carried by the end frame-bar of said dipping-frame in close proximity to each of such last-mentioned posts, a bolt carried between each bracket-piece and the side frame-bar adjacent thereof of the dipping-frame, a latch pivoted upon each of said bolts and provided with a shoulder adapted to engage the end of the cover, and a coiled spring carried by said bolt, having one end bearing against the end frame-bar of the dipping-frame and its other end bearing against said latch to keep same normally in a position to engage the end of said cover, for the purpose set forth.

6. In coating apparatus, a dipping-frame having a number of holders each composed of a number of supports carried by such frame and extending partially across openings therein and having their ends rounded, adapted to receive and support the articles to be coated; and such frame being provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon, and means, carried by said last-mentioned posts, for detachably retaining such cover against displacement, for the purpose set forth.

7. In coating apparatus, a dipping-frame, having a number of holders each composed of a number of supports carried by such frame and extending partially therein and having their ends rounded, adapted to receive and support the articles to be coated; and such frame being provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon and a spring operated latch carried by each of said last-mentioned posts, for detachably retaining such cover against displacement, for the purpose set forth.

8. In coating apparatus, a rectangular dipping-frame having a number of holders each composed of a number of supports carried by such frame and extending partially across openings therein and having their ends rounded, adapted to receive and support the articles to be coated, and such frame being provided with posts at the corners thereof, two of which posts are recessed to receive one end of a cover, the other two posts being each provided with a shoulder to receive the other end of such cover thereon, a bracket-piece carried by the end frame-bar of said dipping-frame in close proximity to each of such last-mentioned posts, a bolt carried between each bracket-piece and the side frame-bar adjacent thereto of the dipping-frame, a latch pivoted upon each of said bolts and provided with a shoulder adapted to engage the end of the cover, and a coiled spring carried by said bolt, having one end bearing against the end frame-bar of the dipping-frame and its other end bearing against said latch to keep same normally in a position to engage the end of said cover, for the purpose set forth.

9. In coating apparatus, a rectangular dipping-frame having longitudinal and transverse bars disposed to provide subdivisions or holders throughout the frame, a series of supports formed in pairs, each pair of a separate piece of curved wire having its ends bent toward each other and such support being carried by the longitudinal and transverse bars of such frame, so that one support of a pair will project on one side of a bar into one space and the other support of such pair into another space, and such frame being provided with posts coated at the corners thereof and having their lower ends extending below such dipping-frame, two of such posts are recessed to receive one end of a cover, the body portion of which is formed with bars adapted when placed upon such dipping-frame, to coincide with the centers of the holders thereof, the other two posts being each provided with a shoulder to receive the other end of such cover thereon, a bracket-piece carried by the end frame-bar of said dipping-frame

in close proximity to each of such last-mentioned posts, a bolt carried between each bracket-piece and the side frame-bar adjacent thereto of the dipping-frame, a latch pivoted upon each of said bolts and provided with a shoulder adapted to engage the end of the cover, and a coiled spring carried by said bolt, having one end bearing against the end frame-bar of the dipping-frame and its other end bearing against said latch to keep same normally in a position to engage the end of said cover, for the purpose set forth.

570,576. SEPARABLE BUTTON. FRANK B. WADELL, Clinton, Mo. Filed Mar. 20, 1896. Serial No. 584,153. (No model.)

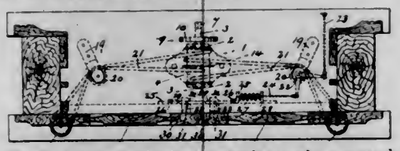


Claim.—1. A two-part or separable button comprising a chambered plate having a central depression and having an opening in its rim and a depression in the said rim about diametrically opposite to the said opening, a locking-plate slidably mounted in the chamber and guided in its movements, and having an end portion to project through the said opening in the rim and formed in its edge with a notch, and having a keyhole-shaped slot, a spring having one end fitted in the depression of the rim and its opposite end entering the notch in the edge of the locking-plate, and a back-plate having a shank formed with a neck which is adapted to be engaged by the contracted portion of the keyhole-shaped slot in the said locking-plate, substantially in the manner set forth.

2. In a separable button, the combination of a plate having a rim, a second plate separate from the first plate and secured within its rim and having direction-lugs, a locking-plate slidably fitted between the direction-lugs and having an end portion operating through an opening in the said rim, and formed with a keyhole-shaped slot, a spring for holding the outer end of the locking plate normally projected, a covering-plate having a central opening and secured within the said rim, and a plate bearing a shank having a neck portion which is adapted to be thrust through the opening of the covering-plate and be engaged with the locking-plate by entering the contracted portion of its keyhole-shaped slot, substantially as set forth.

3. The herein-described separable button, comprising a plate having a central depression and a rim, the latter formed with an opening and a depression at about diametrically opposite points, a plate secured within the rim and having direction-lugs of unequal length, a locking-plate having a keyhole-shaped slot, an edge notch, and a reduced end portion, the latter operating through the opening in the said rim, a spring curving around the shorter of the direction-lugs and having one end entering the depression in the said rim and its opposite end fitted into the notch of the locking plate, a covering-plate bearing against the direction-lugs and secured within the aforesaid rim, and having a central opening in register with a corresponding opening in the lug-bearing plate and with the central depression in the first-mentioned plate, and a plate bearing a shank having a neck, which latter is adapted to be engaged by the contracted portion of the keyhole-shaped slot in the aforesaid locking-plate, substantially in the manner set forth.

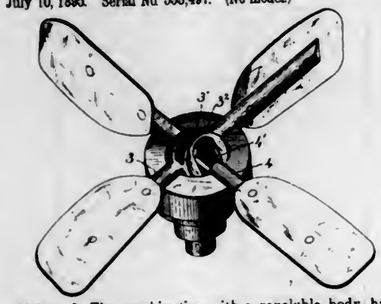
570,577. SHUTTER-WORKER. CHRISTIAN WAGNER, Reading, Pa., assignor of one-half to John E. Everline, same place. Filed Apr. 20, 1896. Serial No. 588,269. (No model.)



Claim.—1. In a mechanism to simultaneously operate double shutters, the combination of a drum journaled in bearings in the boxing of the window-frame, below and in rear of the shutters, said boxing having an opening into which one of the journals of the drum projects, pulleys connected to the hinged edges of the shutters, cables to transmit movement from the drum to the pulleys, intermediate guide-pulleys between the drum and the shutter-pulleys, a device to engage the projecting journal of the drum to operate the latter, a disk mounted on one of the drum-journals to revolve therewith, said disk having recesses in its periphery, and a locking-pin to enter one of the recesses in the disk to lock the drum and shutters in position, substantially as described.

2. In a mechanism to simultaneously operate double shutters, an intermediate drum journaled in bearings in the boxing of the window-frame, below and in rear of the shutters, a pulley connected to the hinged edge of each shutter, guide-pulleys intermediate of the drum and the shutter-pulleys, cables leading in opposite directions from one end of the drum, one over and the other under the drum, round the guide-pulleys to the shutter-pulleys and thence back around the guide-pulleys to the other end of the drum to which they are attached, and a device to operate the drum, substantially as described.

570,578. MECHANICAL MOVEMENT. JOHN J. WATERS, Saginaw, Mich., assignor of one-half to E. J. Fitzharris, same place. Filed July 10, 1895. Serial No. 555,497. (No model.)



Claim.—1. The combination with a revoluble body, having an inclined pin formed on one face thereof, of a revoluble body having a slot formed therein, supported over said face, with the pin passing through the slot thereof, and means for supporting said slotted body so as to permit it to have an axial movement, whereby revolution of said slotted body results in the same having an oscillatory as well as a rotary motion, substantially as described.

2. The combination with a revoluble body having an inclined pin formed on one face thereof, of a plurality of revoluble bodies, arranged at right angles to each other and so as to have independent movement, supported over said face with the pins passing through the slots thereof, whereby revolution of said slotted bodies results in the same having independent oscillatory movements as well as a rotary motion, substantially as described.

3. The combination with a body having an inclined pin formed on one face thereof, of a plurality of revoluble slotted bodies arranged so that some portion of all of their slotted portions come in the plane of the pin, supported over said face with the pin passing through the slots thereof, whereby revolution of said slotted bodies results in their having independent oscillatory movements as well as a rotary motion, substantially as described.

4. The combination with a body having a spherically-chambered face with an inclined pin formed thereon, of a revoluble shaft having a slotted rounded hollow portion, a second revoluble slotted shaft placed through said hollow portion, both shafts being arranged with the pin passing through the slots thereof, whereby revolution of said shafts results in their having independent oscillatory movements as well as a rotary motion, substantially as described.

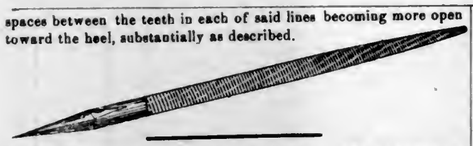
5. The combination with a casting having an aperture formed therein, and a revoluble slotted shaft supported transversely of said aperture, of a shaft, having a centrally-inclined pin formed on the end thereof, stationed in said aperture, the pin passing through the slot in the shaft, whereby rotation of said slotted shaft results in the same having an oscillatory as well as a rotary motion, substantially as described.

6. The combination with a casting having an aperture formed therein, and a plurality of slotted shafts supported thereby transversely of said aperture, a portion of all of said slotted portions being in one plane, of a revoluble shaft having a centrally-inclined pin formed on one end thereof stationed in said aperture, the pin passing through the slots in the shafts, whereby revolution of said slotted shafts results in their having independent oscillatory movements as well as a rotary movement, substantially as described.

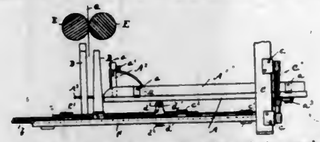
7. The combination with a casting having an aperture formed therein, and a plurality of slotted shafts revolubly supported in said casting at an angle to each other, of a shaft having a centrally-inclined pin formed on one face thereof stationed in said aperture, the pin being passed through the slots in the different shafts, whereby revolution of said slotted shafts results in their having independent oscillatory movements as well as a rotary movement, substantially as described.

570,579. ROUND FILE. ALFRED WEED, Anderson, Ind. Filed Feb. 27, 1895. Serial No. 539,890. (No model.)

Claim.—A round tapering-pointed file having several series of teeth cut upon spiral lines extending from the point to the heel the spaces between the teeth in each of said lines becoming more open toward the heel, substantially as described.



570,580. PACKER FOR FOLDING-MACHINES. FREDRICK H. WENDT, Erie, Pa., assignor to The Brown Folding Machine Company, same place. Filed Aug. 8, 1895. Serial No. 558,595. (No model.)



Claim.—1. In a packer the combination of the packer-board; means of adjusting said board to different heights; side guides on said board; means of adjusting said guides to different widths of folded sections; a packer-head having inclined sides and means which said packer-head passes for stopping a return movement of the paper.

2. In a packer the combination of the packer-board; means of adjusting said board to different heights; side guides on said board; means of adjusting said guides to different widths of folded sections; a packer-head having inclined sides; and automatically-actuated and normally-inclined stop-fingers which said packer-head passes.

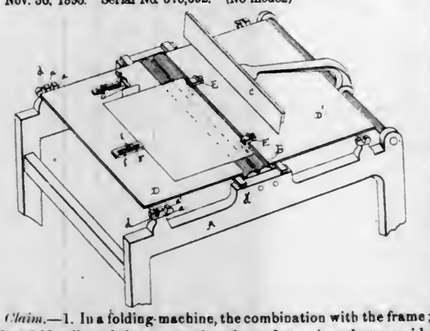
3. In a packer the combination of the packer-board; the packer-head; means of imparting motion to said head; stop-fingers between which said head passes; and means for automatically actuating said fingers independently of the action of the fold-section being packed the movement of said head and fingers being timed for the fingers to open, the head to pass through said fingers while open, the fingers to close after the head has passed through but before its return movement, the head to return through the closed fingers.

4. In a packer the combination of the packer-board; means of adjusting said board to different heights; the packer-head means of actuating said head; normally-inclined stop-fingers automatically actuated toward and from each other between which said head passes and means of supporting and actuating said fingers independently of said packer-board.

5. In a packer the combination of the packer-board; means of adjusting said board to different heights; the packer-head; means of supporting and reciprocating said head independently of said board; stop-fingers inclined toward each other; and means of actuating said stop-fingers out and in as the head passes them for the purposes set forth.

6. In a packer the combination with the board; the packer-head and means for imparting movement to said head; of the stop-fingers D D; rods *d d*; means of actuating the rods *d d* to rock in opposite directions; and means for rocking said rods *d* in time relative to the movement of said packer-head.

570,581. FOLDING-MACHINE. FREDRICK H. WENDT, Erie, Pa., assignor to The Brown Folding Machine Company, same place. Filed Nov. 30, 1895. Serial No. 570,692. (No model.)



Claim.—1. In a folding-machine, the combination with the frame; the first fold-rolls and the starter therefor; of a top board at one side of said rolls for supporting the paper to be folded immediately at the folding-rolls; and means of adjusting said board at different distances from the fold-line of said rolls to change the overhang of the paper for the purposes set forth.

2. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top board D; a support at the roll end thereof; the notched bracket *a*; and the supporting-rod *d* adapted to enter the notches in said bracket for the purposes set forth.

3. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top board at one side of said rolls; and the shouldered knee-pieces secured to said board for the purposes set forth.

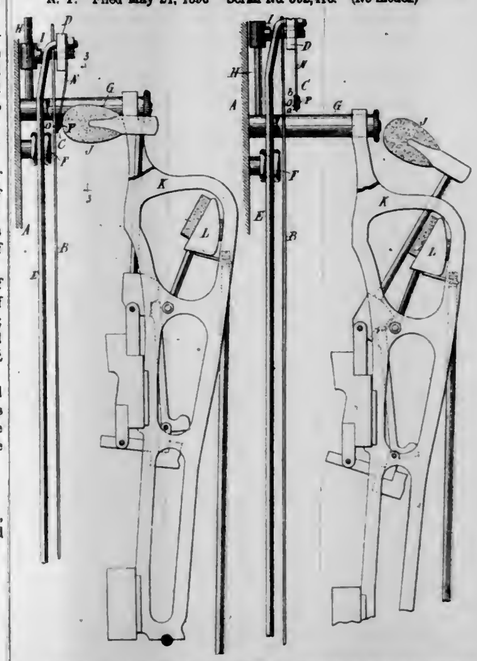
4. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top board at one side of said rolls; the shouldered knee-pieces E attached to said top board and having the receding under part *e* thereon.

5. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top boards at the sides of the rolls; the shouldered knee-pieces attached to one of said boards; and the adjustable stop attached to the opposite board for the purposes set forth.

6. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top board D'; the shouldered knee-pieces attached to said board; and the adjustable top board D.

7. In a folding-machine, the combination with the frame; the first fold-rolls; and the starter therefor; of the top board D'; the shouldered knee-pieces attached to the top board D'; the adjustable top board D; and the adjustable stop F on the top board D.

570,582. MUSICAL INSTRUMENT. JOHN A. WEBER, New York, N. Y. Filed May 21, 1896 Serial No. 592,410. (No model.)



Claim.—1. For string instruments, a harmonic device consisting of a flexible support and a striker having a plurality of resonant striking portions carried thereby for contacting with the strings of an instrument, and an integral connecting part uniting said striking portions.

2. A harmonic device for string instruments consisting of a support and a ring-like striker carried on and with its flat side toward said support, having separated resonant striking portions and an intermediate non-resonant portion for contacting with the strings of an instrument.

3. A harmonic device for string instruments consisting of a swinging support, and a ring-like striker, having a plurality of striking portions spaced apart, and connected together by an integral part, for contacting with the strings of an instrument, said portions disposed to successively contact with such strings when moved thereagainst

4. A harmonic device for string instruments having an annular swinging striker, having its axis coincident with its direction of swing and a flat striking portion for contacting with the strings of the instrument.

5. A harmonic device for string instruments having an elastic ring-like striker, having its axis at right angles to the strings, and having a striking portion of resonant material for contacting with the strings of such instrument.

6. A harmonic device for string instruments comprising the combination with the strings of the instrument, of a convolution of spring-wire in proximity to such strings, and means supporting the wire in position to strike the strings of such instrument.

7. A harmonic device for string instruments consisting of two convolutions of wire and a support therefor passing between said convolutions.

8. A harmonic device for string instruments consisting of two convolutions of spring-wire and a flexible support compressed between said convolutions.

9. A harmonic device for string instruments consisting of a resonant striking portion and a support therefor, said striking portion having two separated points for contacting with the strings of an instrument, an intervening part connecting and integral with said points, and an intermediate space between said points.

10. A harmonic device for string instruments consisting of a resonant part having projecting points for contacting with the strings of an instrument, an intervening part connecting and integral with said points, a depression between said points, a non-resonant portion between said points for contacting with the strings, and means for supporting said parts.

11. A harmonic device for string instruments consisting of a flexible strip having on one face in the path of the hammer a plurality of hard striking portions separated and spaced apart and permitting said strip to flex between them, adapted to contact with the strings, and having on its other face a soft cushioning portion between said striking portions and adapted to receive the blow from the hammer, and thereby to bend said strip outwardly between said striking portion and against the strings.

12. A striker for pianofortes consisting of a felt strip, a metal ring thereon, with its axis angular to the longitudinal extension of the strip, and a cushioning-pad thereon.

13. A striker for pianofortes consisting of a flexible strip suspended in front of the strings and having on its face adjacent thereto two striking portions, the one annular and surrounding an axis angular to the longitudinal extension of said strip, and the other within said annular portion, one of said portions being resonant and the other non-resonant.

14. In pianofortes and the like, a harmonic device suspended opposite the strings of the instrument and consisting of a plurality of ring-like objects contacting with the strings to modify the tones produced thereby, said objects differentiated in construction for different strings of the instrument.

15. In pianofortes and the like, the strings, a striker-rail, and means for moving it, in combination with a plurality of strikers C and C' carried by said rail opposite the strings, the striker C acting against certain of the strings and having resonant portions first striking the latter and non-resonant portions subsequently contacting therewith, and the strikers C' acting against other of the strings and having each a non-resonant portion first striking the strings and a resonant portion subsequently acting against the latter.

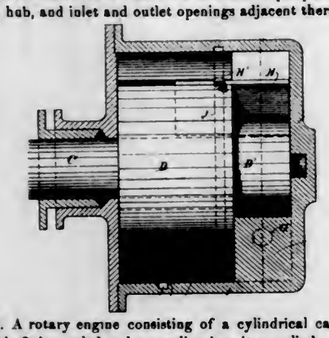
570,583. FOUNTAIN MARKING-BRUSH. CHARLES Z. WHITAKER, Durham, N. C. Filed Jan. 12, 1895. Renewed Mar. 12, 1896. Serial No. 582,984. (No model.)



Claim.—In a fountain marking-brush, the combination with the tube having the upper end open and the lower end contracted and provided with a short tube having a valve-opening at its lower end, the small tube connected with said short tube, the sleeve, the bristles confined between said sleeve and small tube, the guide-bar formed with a central opening and the curved spring secured to the upper part of said first-mentioned tube and having an aperture therein, of the valve rod, the lower end of which engages with the valve-opening and its upper end provided with pins which engage with the spring, and the rotatable cap fitting on the upper end of the fluid-receptable having a screw-threaded socket with which the correspondingly-threaded upper end of said rod engages, and the slidable sleeve fitting on the lower end of the fluid-receptacle and adapted to be pushed outwardly when not in use to inclose the bristles, substantially as described.

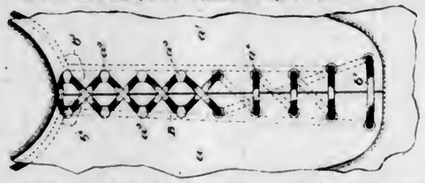
570,584. ROTARY ENGINE. CHARLES G. WHITE, Woodland, Cal., assignor of one-half to J. F. Hink, same place. Filed Mar. 11, 1896. Serial No. 582,311. (No model.)

Claim.—1. In a rotary engine, a cylinder case, a drum or cylinder fitting one end of the same having a central shaft extending outwardly through the stuffing-box in the case, upon which shaft the cylinder is carried, radial grooves or channels formed in the cylinder, and rectangular blades or pistons slidable in said grooves, a hub extending from the cylinder to the end of the open space in the casing having corresponding grooves in which the inner edges of the pistons are guided when projected into the space, a cam-shaped groove or channel formed in the interior periphery of the case, lugs projecting from the outer edges of the pistons and engaging with said groove whereby the rotation of the cylinder alternately projects and retracts the piston, and a segmental abutment extending across one side of the open chamber of the case from the interior periphery of the case, to the hub, and inlet and outlet openings adjacent thereto.



2. A rotary engine consisting of a cylindrical case having an axial shaft journaled and extending into it, a cylinder fixed to said shaft fitting rotatably within one end of the casing, leaving an open space at the opposite end, grooves or channels formed in the cylinder, a hub projecting from the end of the cylinder to the opposite interior end of the casing with corresponding grooves formed in its periphery, rectangular plates or pistons slidably fitting said grooves and having lugs projecting from the outer edges, a curved circumferential groove or channel cut into the interior periphery of the casing into which said lugs project, and by the curvature of which the pistons are alternately projected and retracted in lines parallel with the axis, inlet and outlet openings connecting with this open portion of the case, a fixed segmental abutment fitting this portion of the case between the end of the cylinder and the inner end of the casing, longitudinal channels formed in the cylinder connecting with the channels in which the pistons slide and corresponding ribs formed upon the pistons projecting into said channels.

570,585. BOOT OR SHOE LACING. HORATIO O. WEYMAN, Norfolk, Nebr., assignor of one-fourth to Everett A. Houston, Niobrara, Nebr. Filed Jan. 3, 1896. Serial No. 574,240. (No model.)

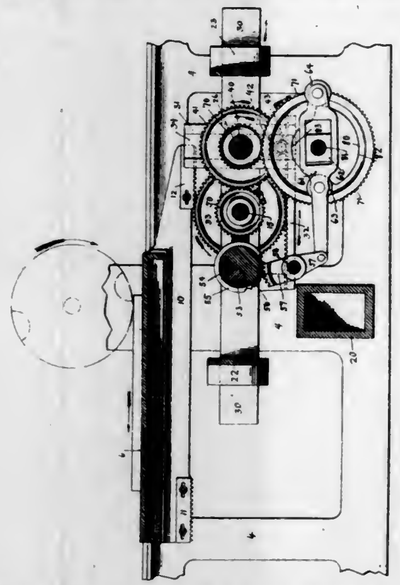


Claim.—1. A boot or shoe having a series of eyelets arranged along the contiguous edges of its vamp and a series of hooks arranged along said edges above said eyelets, as is usual, and provided with a frictional securing device or clamp on its vamp, with a lacing having a loop of sufficient length to engage said series of hooks in the usual manner of cross-lacing a shoe and leave a slack, and having a portion extending from one leg of said loop through an upper eyelet and thence through other eyelets in the usual manner of overlacing, and having a portion extending from the other leg of said loop through an opposite upper eyelet; whereby when the shoe is applied to the foot the loop may be made to engage the series of hooks by passing alternately from hook to hook on opposite sides of the vamp and may be tightened about the hooks and held taut by drawing upon the latter portion of the lacing and by its engagement with said securing device, substantially as described.

2. A boot or shoe having a series of eyelets arranged along the contiguous edges of its vamp and a series of hooks arranged along said edges above said eyelets, as is usual, and provided with a frictional securing device or clamp on the vamp, and with a lacing having a loop of sufficient length to engage said series of hooks in the usual manner of cross-lacing a shoe and leave a slack, and having a portion extending from one leg of said loop through an upper eyelet and

thence through other eyelets in the usual manner of overlacing, and having a portion extending from the other leg of said loop through an opposite upper eyelet, thence through other lower eyelets; whereby when the shoe is applied to the foot the said loop may be made to engage the series of hooks by passing alternately from hook to hook on opposite sides of the vamp and may be tightened about the hooks and be held taut by drawing upon the latter portion of the lace and by its engagement with said securing device, substantially as described.

570,586. MECHANICAL MOVEMENT. HENRY A. W. WOOD, New York, N. Y., assignor to the Campbell Printing Press and Manufacturing Company, of New York. Filed July 9, 1892. Serial No. 439,524. (No model.)



Claim.—1. The combination with the reciprocating bed or member and mechanism for reciprocating the same, of a reversing mechanism consisting of a gear having a fixed axis means for oscillating the same, and a rack carried by the bed with which said gear is adapted to engage to reverse the movement thereof, substantially as described.

2. The combination with a reciprocating bed or member, of mechanism for reciprocating the same, a member reciprocating back and forth, a gear having an axis oscillated from said reciprocating member, and a rack carried by the bed with which said oscillating gear may engage to reverse the movement of the bed, substantially as described.

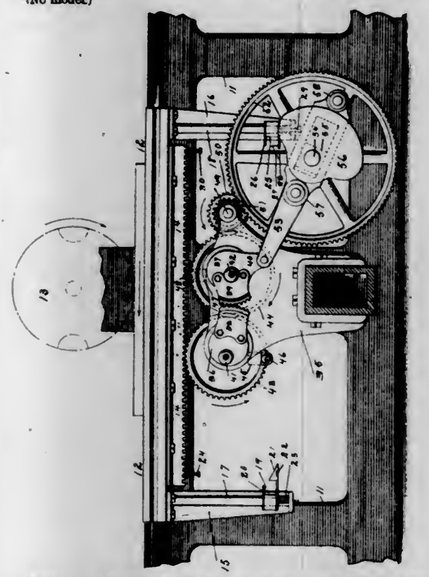
3. The combination with the reciprocating bed or member, of mechanism for reciprocating the same, a member reciprocating back and forth, and carrying a rack, a gear engaging said rack, and a rack carried by the bed with which the gear is adapted to engage to reverse the movement of the bed, substantially as described.

4. The combination with the reciprocating bed or member, of mechanism for reciprocating the same, a reciprocating slider, a crank connected to reciprocate the same, an oscillating gear actuated from said slider, and a rack carried by the bed with which said oscillating gear is adapted to engage, whereby said oscillating gear may reverse the movement of the bed, substantially as described.

5. The combination with the reciprocating bed or member, of a mechanism for reciprocating the same, and a reversing mechanism consisting of a slider, a crank connected to actuate the same, a gear oscillated by said slider, and two racks on the bed with which said oscillating gear is adapted to engage, whereby the bed may be reversed in either direction, substantially as described.

6. The combination with the reciprocating bed or member and mechanism for reciprocating the same, of a reversing mechanism consisting of a slider, a crank mechanism for actuating the slider, a rack carried by the slider, an oscillating gear which said rack engages, and two racks on said reciprocating bed or member with which said oscillating gear is adapted to engage whereby said oscillating gear may reverse the movement of said reciprocating bed or member in either direction, substantially as described.

570,587. MECHANICAL MOVEMENT. HENRY A. W. WOOD, New York, N. Y., assignor to the Campbell Printing Press and Manufacturing Company, same place. Filed Oct. 19, 1892. Serial No. 449,394. (No model.)



Claim.—1. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism comprising a crank element, a depending bracket or part carried by the bed against which the crank element is adapted to bear, a latch mounted thereon vertically movable, independently of, and adapted to engage said crank element, and to keep the same against said bracket during the reversing movement, substantially as described.

2. The combination of the reciprocating bed or member with a rack-and-pinion mechanism adapted to reciprocate the same, and a reversing mechanism comprising a crank element, a depending bracket or part carried by the bed, against which the crank element is adapted to bear, a latch mounted thereon vertically movable, independently of, and adapted to engage said crank element, and to keep the same against said bracket during the reversing movement, substantially as described.

3. The combination of the reciprocating bed or member with a rack and-pinion mechanism for reciprocating the same, and a reversing mechanism comprising a crank element, a depending bracket or part carried by the bed against which the crank element is adapted to bear, and a latch mounted thereon vertically movable, independently of, and adapted to engage said crank element, to keep the same against said bracket, when the rack-and-pinion mechanism is becoming inoperative as the driver, substantially as described.

4. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of a crank element, a depending bracket or part carried by the bed, against which the crank element is adapted to bear, and a latch mounted thereon vertically movable, independently of, and adapted to engage said crank element, to keep the same against the said bracket during the reversing movement, and a projection against which the latch is adapted to strike as the same is vertically moved by the crank element, whereby said latch will release said crank element, substantially as described.

5. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of a crank element, a depending bracket or part carried by the bed, against which the crank element is adapted to bear, and a vertically-movable latch adapted to engage said crank element, to keep the same against the said bracket during the reversing movement, said latch being normally held in one position, and adapted to return to its normal position when the same is released from the crank element, substantially as described.

6. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of a crank element, a depending bracket or part carried by the bed, against which the crank element is adapted to bear, and a vertically-movable latch adapted to engage said crank element to keep the same against the said bracket during the reversing movement,

the lowest position of said latch being its normal position, whereby said latch will fall to its normal position when disengaged from said crank element, substantially as described.

7. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of a crank element, a depending bracket or part carried by the bed, against which the crank element is adapted to bear, a vertically-movable latch adapted to engage said crank element, to keep the same against said bracket during the reversing movement, said latch being adapted to normally remain in one position, and adapted to return to this position when disengaged from said crank element, and means for setting or adjusting the normal position of said latch, whereby the crank element can accurately engage with the same, substantially as described.

8. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism comprising two crank elements, and a vertically-movable block carried at each end of the bed with which said crank elements are adapted to cooperate to reverse the bed in either direction, substantially as described.

9. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of two crank elements, depending brackets or parts carried by the bed, against which the crank elements are adapted to bear, and a latch mounted on each of said brackets, adapted to keep one of said crank elements against the proper bracket during the reversing movement, substantially as described.

10. The combination of the reciprocating bed or member with a rack-and-pinion mechanism adapted to reciprocate the same, and a reversing mechanism consisting of two crank elements, a depending bracket or part carried at each end of the bed, and a vertically-movable latch carried by each of said brackets adapted to engage the proper crank element, during the reversing movement, substantially as described.

11. The combination of the reciprocating bed or member with a rack-and-pinion mechanism adapted to reciprocate the same, and a reversing mechanism consisting of two crank elements, a depending bracket or part carried at each end of the bed, against which, one of the crank elements is adapted to bear, and vertically-movable latches carried by said brackets, adapted to keep said crank elements against said brackets during the reversing movement of the bed, said latches being adapted to engage the crank elements, when the rack-and-pinion mechanism is becoming inoperative as the driver, substantially as described.

12. The combination of the reciprocating bed or member a rack carried by the same, two intermeshing pinions, means for alternately raising and lowering said pinions so that they will alternately engage said rack, and a reversing mechanism comprising two crank elements, and a vertically-movable block carried at each end of the bed, with which said crank elements are adapted to cooperate, to reverse the bed in either direction, substantially as described.

13. The combination of the reciprocating bed or member, a rack mounted on the same, two intermeshed pinions, means for alternately raising and lowering said pinions so that they will alternately engage with said rack, and a reversing mechanism consisting of two crank elements, depending brackets carried by the bed, and vertically-movable latches mounted on said brackets, substantially as described.

14. The combination of the reciprocating bed or member, with mechanism for reciprocating the same, and a reversing mechanism consisting of two crank elements, depending brackets or parts carried at each end of the bed, vertically-movable latches mounted on said brackets, adapted to hold the crank elements in proper engagement with the brackets, and projections adapted to strike said latches as the same are vertically moved by the crank element, and to release the same from the crank element, substantially as described.

15. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of two crank elements, depending brackets or parts carried at each end of the bed, and a vertically-movable latch mounted on each of said brackets, adapted to engage the proper crank element, the normal position of both of said latches being at the lowest extremes, whereby, when they are released from the crank element, they will drop, or return to their normal positions, substantially as described.

16. The combination of the reciprocating bed or member, with mechanism for reciprocating the same, and a reversing mechanism comprising two crank elements, depending brackets or parts carried at each end of the bed, vertically-movable latches carried by said brackets, and means for adjusting the normal position of said latches, whereby the crank elements can accurately engage with the same, substantially as described.

17. In a reversing mechanism, substantially as described, the combination with the crank element, of the latch mechanism consisting of the vertically-movable block 19, having a latch as 21, and a part or projection as 20 adapted to hold the crank element in place, so that the crank element will vertically raise the latch mechanism, substantially as described.

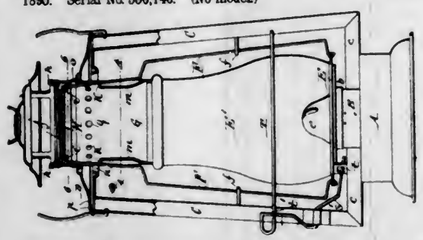
18. The combination of the reciprocating bed or member, with mechanism for reciprocating the same, and a reversing mechanism comprising two crank elements each revolving continuously in one direction, and means whereby one of said crank elements will engage said bed to reverse its movement in one direction and whereby the other of said crank elements will engage said bed to reverse its movement in the opposite direction, substantially as described.

19. The combination of the reciprocating bed or member with mechanism for reciprocating the same, and a reversing mechanism consisting of two crank elements geared together so as to revolve oppositely, and means whereby one of said crank elements will engage said bed to reverse its movement in one direction and whereby the other of said crank elements will engage said bed to reverse its movement in the opposite direction, substantially as described.

20. The combination of the reciprocating bed or member, a rack carried by the same, two oppositely-revolving pinions, means whereby said pinions will be caused to alternately engage said rack, and a reversing mechanism comprising two revolving crank elements and means whereby one of said elements will engage the bed to reverse the same in one direction and the other crank element will engage the bed to reverse the same in the opposite direction, substantially as described.

21. The combination of the reciprocating bed or member, a rack carried by the same, two intermeshed pinions, means for alternately raising and lowering the same to engage said rack and a reversing mechanism comprising two crank elements and means whereby one of said elements will engage the bed to reverse the same in one direction and the other crank element will engage the bed to reverse the same in the opposite direction, substantially as described.

570,588. TUBULAR LANTERN. FREDERICK K WRIGHT, Syracuse, N. Y., assignor to the Steam Gauge and Lantern Company, same place, and the R. E. Dietz Company, New York, N. Y. Filed July 18, 1896. Serial No. 556,146. (No model.)



Claim.—1. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, a globe-collar capable of movement toward and from said globe-plate, a spring arranged within said collar, and lift wires or rods connecting said globe-plate with said spring, substantially as set forth.

2. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, lift wires or rods connected with their lower ends to said globe-plate, a globe-collar capable of vertical movement with said lift wires or rods and also independently of the same, and a spring carried by said globe-collar and connected with the upper portions of said lift wires or rods, substantially as set forth.

3. The combination with a tubular-lantern frame, of a vertically-movable globe-frame composed of a globe-plate, lift wires or rods connected with their lower ends to said globe-plate, a globe collar provided with upright slots through which the upper portions of said lift wires or rods pass, and a spring arranged within said globe-collar and exerting an upward pressure against said lift-wires, substantially as set forth.

4. The combination with a tubular-lantern frame having in its upper portion an annular air-chamber, of a globe-collar capable of vertical movement in said air-chamber, a spring arranged within said globe collar, lift wires or rods connected with said spring and capable of vertical movement with said globe-collar and also independently of the same, and a globe-plate connected with the lower ends of said lift wires or rods, substantially as set forth.

570,589. LANTERN-FRAME. FREDERICK K. WRIGHT, Syracuse, N. Y., assignor to the Steam Gauge and Lantern Company, same place. Filed Mar. 2, 1896. Serial No. 581,449. (No model.)

Claim.—1. In a lantern-frame, the combination with the lower collar, of upper and lower frame-bars arranged in pairs which cross each other opposite said collar and which are secured with their inner ends to said collar, substantially as set forth.



2. In a lantern-frame, the combination with the lower collar, of upper and lower frame-bars arranged in pairs which cross each other opposite said collar, and a connecting-ring passing through said bars at their crossing-points, substantially as set forth.

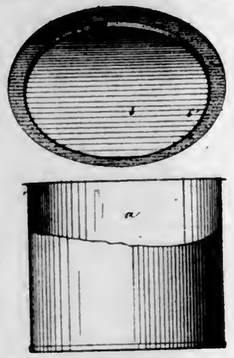
570,590. NEEDLE. JOSEF ZIMMERMANN, Aachen, Germany. Filed July 1, 1896. Serial No. 597,700. (No model.)



Claim.—1. A sewing-needle having a rounded body and a flattened eye portion and having its central portion flattened in the same plane as the flattened eye portion, substantially as and for the purposes described.

2. A sewing-needle, having a rounded body and a flattened eye portion, and having its central portion flattened in the same plane as the flattened eye portion, and having said central flattened portion connected with the rounded portions by outwardly-curved planes, substantially as and for the purposes described.

570,591. SHEET-METAL CAN. MAX AMS, New York, N. Y. Filed July 28, 1896. Serial No. 600,738. (No model.)

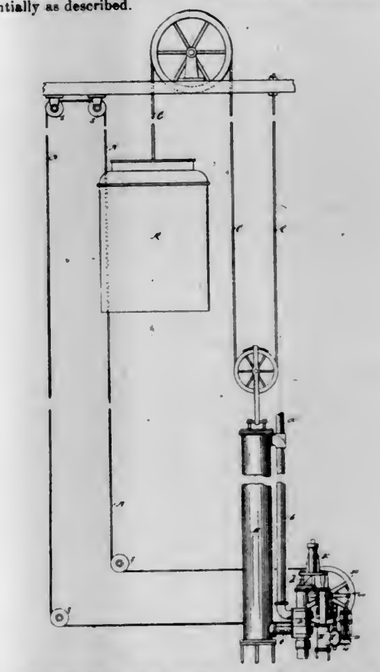


Claim.—The combination of a sheet-metal can with a flanged and countersunk cover and with an adhesive coating secured to the cover, and consisting of rubber cement and an asbestos film, substantially as and for the purpose specified.

570,592. ELEVATOR. NORMAN C. BASSETT, Chicago, Ill., assignor to The Hydraulic Elevator Company, of Illinois. Filed July 6, 1888. Serial No. 279,190. (No model.)

Claim.—1. The combination with the mechanism for controlling the movements of the elevator-car and the auxiliary cylinder and piston H *g* for operating the same, of the auxiliary valve, the primary cylinders and pistons 13 46 for operating the valve, the loose rings 17 acted on by the water upon the induction side of the valve and abutting against shoulders in the primary cylinders and flanges upon the primary pistons to hold the valve in its mid-position, substantially as described.

2. The combination with the mechanism for controlling the movements of the elevator-car and the auxiliary cylinder and piston H *g* for operating the same, of the auxiliary valve, the loose rings 17 acted on by the water upon the induction side of the valve and abutting against shoulders in the primary cylinders and flanges upon the primary pistons to hold the valve in its mid-position, and the primary valves 19 controlling the admission and exhaust of the water to and from the primary cylinders and normally maintaining an open exhaust, substantially as described.



3. The combination with the elevator-car, the mechanism for controlling its movements, the auxiliary piston connected to and operating said mechanism, the auxiliary valve for controlling said piston the primary valves 19 for controlling the auxiliary valve and the electro-magnets for operating the primary valves, of mechanical connections for operating both the controlling mechanism and the auxiliary valve from the car, substantially as described.

4. The combination with the elevator-car, the mechanism for controlling its movement, the auxiliary piston connected to and operating said mechanism, the auxiliary valve for controlling said piston, the primary valves 19 for controlling the auxiliary valve, and means for operating the primary valves from the car, of mechanical connections for operating both the controlling mechanism and the auxiliary valve from the car, substantially as described.

5. The combination with the elevator-controlling mechanism and the shaft 29, of the pulley 30 having a limited lateral and rotary movement upon the shaft, the auxiliary valve, connections between the pulley and auxiliary valve for imparting the lateral movement of the pulley to said valve, means for clutching the pulley to the shaft to rotate the shaft, connections between said shaft and the controlling mechanism for operating the latter, and the hand-rope N for operating the pulley from the car, substantially as described.

6. The combination with the elevator-controlling mechanism and the shaft 29, of the pulley 30 having a limited lateral and rotary movement upon the shaft, the auxiliary valve, the arms 34, 36 connecting the hub of the pulley to the auxiliary valve with a limited lost motion between the two, means for clutching the pulley to the shaft to rotate the shaft, connections between said shaft and the controlling mechanism for operating the latter, and the hand-rope N for operating the pulley from the car, substantially as described.

7. The combination with the shaft 29 connected to operate the elevator-controlling mechanism, of the pulley 30, yieldingly connected to and free to move laterally upon the shaft, the arms 40 and ribs 42 for moving the pulley laterally, the auxiliary valve and connections for imparting the lateral movement of the pulley to the valve, substantially as described.

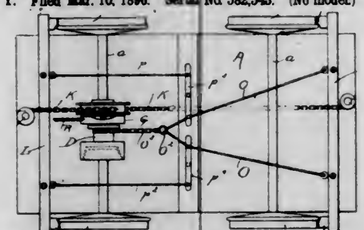
570,593. MEAT-PUNCTURING INSTRUMENT. THOMAS A. BRAY, Kansas City, Mo. Filed Feb. 24, 1893. Serial No. 580,610. (No model.)



Claim.—1. A meat-puncturing instrument, comprising a shank having a handle at one end and tapered to a point at its opposite end and also tapered at such end to form sharpened side margins which project slightly beyond the sides of the shank, and provided furthermore with a recess in its upper side and with a hook projecting upwardly and inwardly of said recess, substantially as described.

2. A meat-puncturing instrument, comprising a shank having a handle at one end and tapered to a point at the other, the latter end being slightly wider than the shank and beveled to form sharpened side margins, and recessed also in the upper side of such portion so as to form a shoulder at one end, and a hook projecting upwardly and inwardly of said recess and lying slightly below the plane of the upper side of the shank, in combination with a tag which occupies said recess and is provided with an aperture or hole at one end through which projects said hook, substantially as described.

570,594. CAR-BRAKE. WILLIAM J. CARTWRIGHT, New York, N. Y. Filed Mar. 10, 1896. Serial No. 582,543. (No model.)



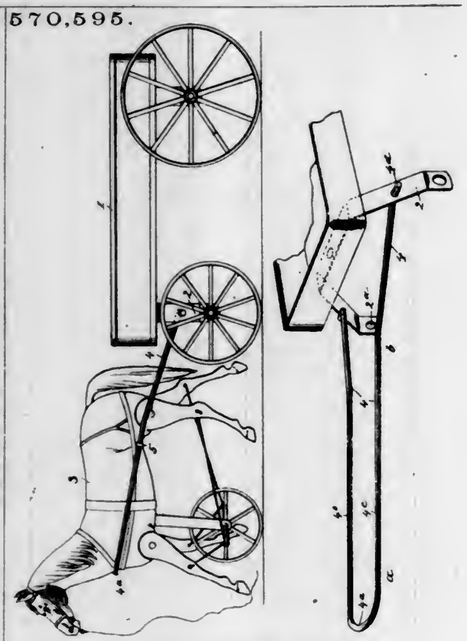
Claim.—1. The combination with the truck or frame of a car, and with one of the axles thereof, of a circular brake-head rigidly connected with said axle, a clutch-sleeve provided with a clutch-head which is movably mounted on said axle, a disk adjacent to said sleeve, and a drum adjacent to said disk, said drum and said disk being provided with means whereby when the drum is revolved, the disk is forced in the direction of the clutch, and said drum being provided with means for revolving the same, consisting of chains which are connected therewith, and which extend in opposite directions to each end of the car, and brake-bars pivotally suspended beneath each end of the car, one of which is connected with the sleeve of the clutch by means of a chain and rods which are connected with the inner ends of levers, with the outer ends of which are connected rods which connect with the opposite brake-bar, substantially as shown and described.

2. The combination with the axle of a car of a supplemental brake device consisting of a tube mounted on said axle and rigidly secured thereto, and upon said tube a rigidly-mounted brake-head with beveled perimeter; and movably mounted upon said tube a tubular sleeve provided at one end with a recessed head adapted to engage by friction with the brake-head and upon the opposite end of said sleeve a disk having upon its outer side two inclined surfaces diametrically opposite to each other, and adjacent to said disk and rigidly mounted upon the axle a drum carrying a wheel having on one side rollers adapted to engage with the inclined surface of the disk and force the sleeve outwardly, said wheel being provided with a double flanged periphery and the device as a whole operated by means of chains and levers connected with a power-shaft and brake-bars provided with brake shoes, substantially as shown and described.

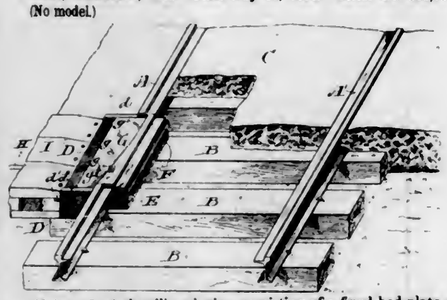
570,595. TOY. JOSIAH J. DEAL, Canton, Ohio. Filed Feb. 26, 1896. Serial No. 580,917. (No model.)

Claim.—The combination with a toy wagon and a toy figure, and hanger-arms composed of a single piece of material pivoted to the bottom of the wagon and carrying a wheeled axle and provided with holes, of shafts fixedly secured to the toy figure and provided with spring ends having laterally-projecting studs or pins to engage the holes in the hanger-arms, substantially as set forth.

570,595.



570,596. DERAILING DEVICE FOR RAILWAYS. GEORGE GIBBS, Milwaukee, Wis. Filed July 18, 1896. Serial No. 599,714. (No model.)



Claim.—1. A derailing device, consisting of a fixed bed-plate or base, a plate movably mounted thereon and formed or provided on its upper side with a rib constituting in the normal or closed position of the device a continuation of the inner and upper sides of the head of a rail, and having on its outer side an incline or turnout adapted in the abnormal or open position of the device to engage the inner sides of wheel-flanges and turn them from their course off from the track-rails, substantially as and for the purposes set forth.

2. A derailing device consisting of a base composed of two parts adapted to be clamped to opposite sides of the rail-web, a laterally-movable plate mounted upon said base and formed or provided on the upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, said rib constituting in the normal or closed position of the device a continuation of the inner and upper sides of the rail-head, and a connection for moving said plate laterally on said base, substantially as and for the purposes set forth.

3. A derailing device consisting of a base, adapted to be secured to a railway-track, and a laterally-movable plate mounted to slide thereon and provided on its upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, said plate having beveled edges adapted to clear obstructions from the face of the base upon which it slides, substantially as and for the purposes set forth.

4. A derailing device consisting of a hollow or recessed base, having a transverse slot in the upper side, a laterally-movable plate mounted thereon and provided on its upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, and on the under side with a projection which is adapted to traverse the slot in said base and by engagement with the ends of said slot to limit the movement of said plate in either direction, substantially as and for the purposes set forth.

5. In a derailing device the combination with a railway-rail having its head cut away for a certain length, of a base composed of two blocks clamped to opposite sides of the rail-web from which the head is removed, a laterally-movable plate mounted upon said base and formed or provided on its upper side with a rib which is straight on the inside and inclined or turned outwardly on the outside, said rib normally filling the break in the rail-head and constituting a continuation thereof, substantially as and for the purposes set forth.

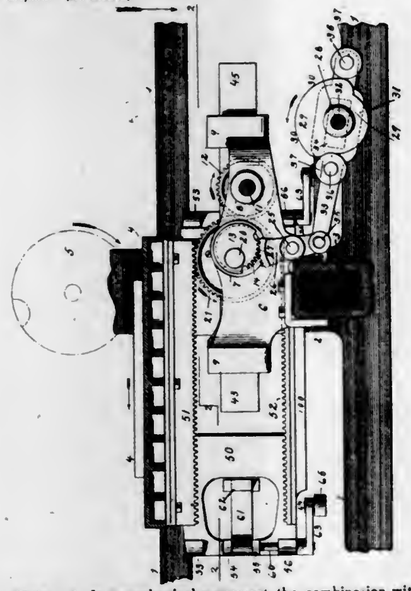
6. A derailing device consisting of a base, a plate provided on its upper side with a rib straight on the inside and for a portion of its length outside, which from the termination of its straight portion is inclined or turned outwardly, said rib being adapted to serve in its normal position as a part or continuation of the head of a railway-rail, substantially as and for the purposes set forth.

7. In a derailing device the combination with a railway-rail having its head cut away for a certain length, of a laterally-movable plate or bar, forming in normal position a continuation of the rail-head over the break therein, and presenting in abnormal position an incline or turnout on the outside and an opening in the path of the wheel-flanges substantially as and for the purposes set forth.

8. The combination with a railway-rail having its head cut away for a certain distance, the web and flange being left continuous and unbroken, of a derailing device secured to that part of the rail web and flange from which the head is removed and comprising a laterally-movable plate or bar adapted in normal position to close the break in the rail head and form a continuation thereof on the inside, and in abnormal position presenting an incline or turnout for engaging the wheel-flanges on the inside and forcing them out of their course off from the rail, substantially as and for the purposes set forth.

9. A derailing device consisting of a railway-rail having a portion of its head cut away and continuous unbroken web and flange, and a part movably connected therewith so as to constitute in normal position a continuation of the head which is integral with the web and flange, and in abnormal position to present an incline or turnout and an opening through the rail-head in the path of the wheel-flange, substantially as and for the purposes set forth.

570,597. MECHANICAL MOVEMENT. WINFIELD S. HUSON, Taunton, Mass., assignor to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed Mar. 31, 1892. Serial No. 427,151. (No model.)



Claim.—1. In a mechanical movement, the combination with a reciprocating bed or member, of a controlling member adapted to be periodically connected to the bed to control the motion thereof, and means for imparting a positive to and-fro motion to this controlling member, substantially as described.

2. In a mechanical movement, the combination with the reciprocating bed or member, and a mechanism for reciprocating the same, of a controlling member adapted to be periodically connected to the bed to control the motion thereof, and a crank connected to actuate said controlling member, substantially as described.

3. The combination with a reciprocating bed of a controlling member adapted to be periodically connected to the bed to control the motion thereof, and, also, to have a to-and-fro motion at times different from that of the bed, substantially as described.

4. In a mechanical movement, the combination with the reciprocating bed or member, and a mechanism for reciprocating the same operating to drive it during the principal extent of its reciprocation only, of a controlling member, and means acting to connect said controlling member and reciprocating member while the operating mechanism of the reciprocating member is becoming inoperative as the driver, substantially as described.

5. In a mechanical movement, the combination with the bed, and a rack-and-pinion mechanism operating to drive the bed during the principal extent only of its movement in either direction, of a crank-actuated controlling member moved to and fro, periodically engaging with, and operating to rapidly diminish the movement of the bed, arrest the same, then start and accelerate the bed in the reverse direction, together with means acting to bring said controlling member into operative relation to the bed, while the rack-and-pinion mechanism is becoming inoperative as the driver, substantially as described.

6. In a mechanical movement, the combination with a rack-and-pinion mechanism operating to drive the bed during the principal extent of its run, of an independently-actuated controlling member, periodically engaging with the bed, and operating to slow down and arrest the bed, then to start and accelerate it in the reverse direction, and a locking device for coupling said member to the bed, substantially as described.

7. In a mechanical movement, the combination with the moving bed, and a crank-actuated controlling member that operates to slow down and arrest its movement in one direction, and to start the same in the opposite direction, of a latch and a cam for operating the same, whereby said latch will automatically connect the bed and the crank-actuated member, substantially as described.

8. In a mechanical movement, the combination with a reciprocating member, of means for reciprocating the same, and a stopping and starting mechanism for reversing the reciprocating movement, consisting of a revolving wrist-pin, a slider to which said pin is connected, and means for connecting and disconnecting said slider and said reciprocating member, substantially as described.

9. In a mechanical movement, the combination with a reciprocating member, of means for reciprocating the same, and a stopping and starting mechanism for reversing the movement, consisting of a revolving wrist or crank pin, a slider or yoke, having a slot which said pin engages, and means for connecting and disconnecting the reciprocating member and the yoke, substantially as described.

10. The combination in a mechanical movement of the reciprocating member, the gear driven continuously in one direction, means whereby the gear reciprocates the moving member, and means whereby this reciprocating movement is gradually stopped and reversed, consisting of a wrist-pin mounted on said gear, the slider or yoke, with which said pin engages, and means for connecting and disconnecting said slider and said reciprocating member, substantially as described.

11. The combination in a mechanical movement with the reciprocating bed provided with a frame and upper and lower racks, of a driving-pinion lying between said racks, and adapted to engage them alternately, means for raising and lowering said pinion for the purpose of bringing it into such engagement, a horizontally-reciprocating yoke, a wrist-pin on said driving-pinion engaging said yoke, and imparting a varying reciprocating movement thereto, means for locking said yoke to the respective ends of said rack-supporting frame, and for unlocking the yoke from said ends at predetermined intervals, substantially as described.

12. The combination in a device of the character described, of the bed having the top and bottom racks, the gear disposed between the same, means for rotating said gear, the eccentric bushing which carries said gear, and means for oscillating said bushing, whereby the gear may engage either of the said racks, substantially as described.

13. The combination with bed 4, having top and bottom racks of the gear 21 disposed between the racks and mounted on shaft 20, of the eccentric bushing suitably journaled in a frame or bracket, and carrying the shaft 20, of the cam 29, and connections between said cam and bushing, whereby the same will be oscillated to cause the gear to alternately engage said racks, substantially as described.

14. The combination with the bed 4 having the top and bottom racks, of the gear disposed between said racks, and mounted on a shaft 20, of the eccentric bushing in which said shaft is journaled, of the cam 29, and the link 33, engaging said cam, and connections between said link and bushing, whereby as the cam revolves, the gear will be raised and lowered to alternately engage said racks, substantially as described.

15. In a machine of the class described, the combination with a reciprocating bed provided with a frame and upper and lower racks, of a driving-pinion lying between said racks, means for raising and lowering the pinion to bring it into engagement with said racks alternately, a horizontally-reciprocating yoke provided with catches adapted to engage coacting latches on the opposite ends of the rack-supporting frame and formed with a vertical slot, a wrist-pin mounted on the driving-pinion and carrying a wrist-pin block seated in said vertical slot, and means, substantially as shown and described, for securing the engagement and disengagement of the catches on said yoke with the coacting parts on the ends of the rack-supporting frame at predetermined intervals in the movement of the machine, substantially as showu and described.

16. The combination of the reciprocating bed, the frame attached to the same and upper and lower racks, of the pinion adapted to engage said racks alternately, of means for raising and lowering said pinion, the horizontally-reciprocating yoke provided with catches and a slot, the wrist-pin on said pinion, and wrist-pin block lying within said slot, and imparting a varying reciprocating motion to the yoke, the latches pivoted to the opposite ends of the rack-frame, and adapted to engage the catches on the yoke, and means for moving the latches out of engagement with said catches at predetermined intervals, substantially as described.

17. The combination with a reciprocating bed provided with a rack-carrying frame and having upper and lower racks, of a driving-pinion lying between said racks, means for raising and lowering the pinion, whereby it may engage said racks alternately, a horizontally-reciprocating yoke receiving from the pinion a varying reciprocating movement, locking devices on the yoke and the ends of the rack-frame, whereby the yoke may be connected with either end of the rack-frame, and bumper-lugs on the yoke and ends of the rack-frame adapted to lie in close contact when the yoke is locked to either end of the frame, whereby when the yoke is in connection with either end of the rack-frame its movement in either direction is communicated directly to the rack-frame and governs the motion thereof, substantially as shown and described.

18. In a mechanical movement, the combination of the gear, the reciprocating member carrying the racks with which said gear is adapted to engage, of the wrist-pin carried by said gear, the yoke having a slot which said wrist-pin engages, of the lugs or projections carried by the reciprocating member, and latches as 62 and means for bringing the latches into engagement with the yoke, substantially as described.

19. In a mechanical movement, the combination of the reciprocating member, a frame 50 secured to the same, having projections as lugs on the ends of the same, of two racks mounted, so as to be engaged by said gear, the gear 21 disposed between said racks, and means for causing said gear to alternately engage said racks, of a wrist-pin carried by said gear, a slider or yoke, which said wrist-pin engages, and swinging latches as 62 carried by frame 50, and means for causing the latches to properly engage the slider, substantially as described.

20. In a mechanical movement, as described, the combination of the reciprocating member, the gear having a wrist-pin, means whereby the said gear will move said reciprocating member alternately in opposite directions, the stationary bracket, the slider mounted in the same, said slider being connected to the wrist-pin on said gear, whereby as said gear revolves, the slider will be reciprocated, and means for connecting and disconnecting the reciprocating member to the slider, whereby the slider may reverse the movement of the reciprocating member, substantially as described.

21. In a device of the character described, the bracket 6 having arms 9, 9, said arms having holes as 10, 10, said bracket being adapted to carry the slider, substantially as described.

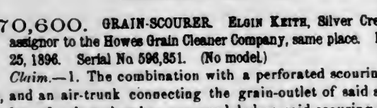
22. In a device of the character described, the bracket 6 having arms 9, 9, said arms having holes as 10, 10, and a bearing as 7, whereby said bracket is adapted to carry both the slider and the driving-gear, substantially as described.

23. The combination with bed 4 having racks 51 and 52, of the gear 21, having wrist-pin 43, of yoke 46 having slot 47 which wrist-pin 43 engages, of lugs as 53, 54, 55, and 56 carried by the bed, and latches as 62 adapted to engage yoke 46, of the arms 63 adapted to move said latches, and cam 70 which said arms are adapted to engage, substantially as described.

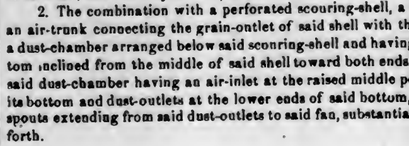
24. The combination in a device of the character described with the gear 21 having the slot 40, of the piece 41, fitting in said slot, and carrying the wrist-pin 43, and having the projection 42 fitting into gear 21 of means as a screw for holding said parts together, substantially as described.

570,598. RAZOR ATTACHMENT. MORRIS S. JACOBSON, New York, N. Y. Filed Apr. 14, 1896. Serial No. 587,471. (No model.)

Claim.—The combination with the blade of a razor of the herein-described guard adapted to be detachably connected therewith, and consisting of a guard-bar D, the outer end of which is bent inwardly and provided with jaws d^3, separated by a triangular notch d^3, in which is pivoted the head of the screw-threaded bolt d^4 connected with the spring-clamp d^5, adapted to be slid upon the back of the razor, the inner end of said guard-bar being also inwardly curved and provided with an inwardly-directed arm g pivotally mounted in the head g^2 of a clamp g^3 having spring-jaws g^4 adapted to be detachably connected with the shank of the razor-blade, and having pivotally connected therewith a supplemental clamp g^6, whereby the bar D is adapted to move to either side of the edge of the razor, and regulate the cutting-angle of the same, by means of a triangular recess d^3, as set forth.



570,599. RETURN-CIRCUIT FOR ELECTRIC RAILWAYS. GILBERT KAPP, Berlin, Germany. Filed Dec. 31, 1895. Serial No. 573,882. (No model.)



Claim.—1. In electric railways using the track as return-conductor, the combination with insulated return feeders connected to the track at points remote from the power-station, of auxiliary sources of electromotive force inserted into the said return feeders, substantially as described and for the purpose specified.

2. In electric railways using the track as return-conductor, the combination with insulated return feeders connected to the track at points remote from the power-station, of auxiliary dynamos inserted into the said return feeders and excited by the currents of the outgoing feeders, these outgoing feeders being connected with the trolley-wire at or near the points of the track which are served by the return feeders, and means for driving the said dynamos, substantially as described and for the purpose specified.

3. In electric railways using the track as return-conductor, the combination with insulated return feeders connected to the track at points remote from the power-station, of auxiliary dynamos inserted into the said return feeders and special electromotors for driving the said dynamos, excited partly by shunt-coils and partly by coils through which the outgoing feeder-currents pass, the latter coils being connected in such manner that the strength of motor-field is reduced when the feeder-current increases, substantially as described and for the purpose specified.

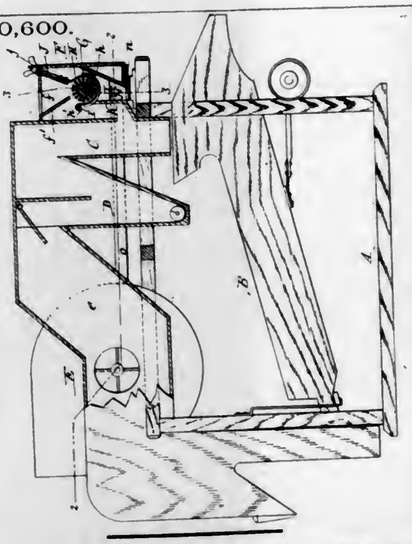
4. In electric railways using the track as return-conductor, the combination with insulated return feeders, connected to the track at points remote from the power-station, of auxiliary dynamos inserted into the said return feeders and excited by the currents of the outgoing feeders connected with the trolley-wire at or near the points which are served by the return feeders, and special electromotors for driving the said dynamos excited partly by shunt-coils and partly by coils through which the outgoing feeder-currents pass, the latter coils being connected in such a manner that the strength of the motor-field is reduced when the feeder-current increases, substantially as described and for the purpose specified.

570,600. GRAIN-SCOURER. ELGIN KEITH, Silver Creek, N. Y., assignor to the Howes Grain Cleaner Company, same place. Filed June 25, 1896. Serial No. 596,851. (No model.)

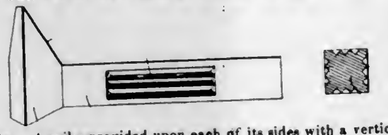
Claim.—1. The combination with a perforated scouring-shell, a fan, and an air-trunk connecting the grain-outlet of said shell with the fan, of a dust-chamber arranged below said scouring-shell and having its bottom inclined, said dust-chamber having an air-inlet at the upper end of said inclined bottom and a dust-outlet at the lower end thereof, and a separate air-spout extending from said dust-outlet to said fan, substantially as set forth.

2. The combination with a perforated scouring-shell, a fan, and an air-trunk connecting the grain-outlet of said shell with the fan, of a dust-chamber arranged below said scouring-shell and having its bottom inclined from the middle of said shell toward both ends thereof, said dust-chamber having an air-inlet at the raised middle portion of its bottom and dust-outlets at the lower ends of said bottom, and air-spouts extending from said dust-outlets to said fan, substantially as set forth.

570,600.

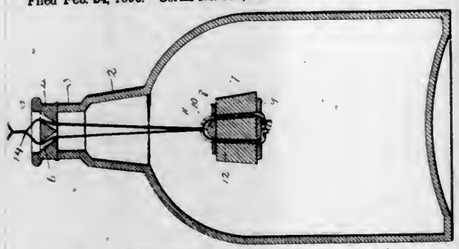


570,601. RAILWAY-SPIKE. EDWARD E. KNIGHT, San Francisco, Cal. Filed Dec. 21, 1895. Serial No. 572,944. (No model.)



Claim.—A spike provided upon each of its sides with a vertical or longitudinal cavity, the sides and ends of which are beveled inwardly, said cavity having longitudinal ribs extending its entire length, each rib being triangular in cross-section, and projecting outwardly even with the surface of the spike-body, substantially as described.

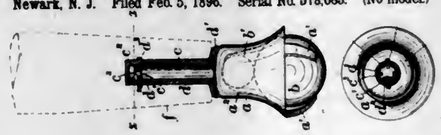
570,602. BOTTLE-STOPPER. GEORGE W. MASON, Sharon, Pa. Filed Feb. 24, 1896. Serial No. 580,540. (No model.)



Claim.—1. In combination with a bottle-stopper for the purpose described, the washer 8, provided with a elevated portion 10 on the top surface and a transverse groove or depression 11, as and for the purpose set forth and described.

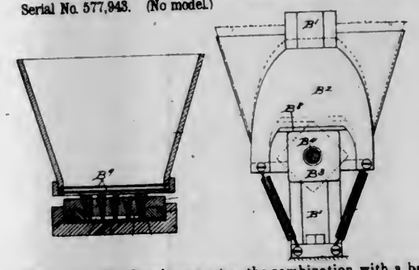
2. In a bottle-stopper adapted to be drawn upward into the neck of the bottle, consisting of the flexible body portion 7, the lower washer 9, having openings 13, the top washer 8, having a semispherical portion 10, and on the top surface a transverse groove or depression 11, formed in said semispherical portion with openings terminating at the extremities of said groove, and a wire fastening 12, to clamp the parts together, substantially as described.

570,603. BALL-CASTER. RICHARD MASON and FREDERICK ELY, Newark, N. J. Filed Feb. 5, 1896. Serial No. 578,083. (No model.)



Claim.—The combination, with a caster provided with a socket or holder *a* formed with axial shank *c* with annular bead c^3 notched as described, and the spherical ball *b* retained in said socket or holder by its dependent prongs *a'*, of the fastening sleeve or sheath *d* provided at one end with the internal locking-stud d^3 adapted to enter a notch in and engage the under side of the bead c^3 upon the shank *c* and formed externally at the opposite end with a flange *d'* fitted to and adapted to bear upon the body of the socket or holder, as and for the purpose set forth.

570,604. BRUSH-MACHINE. WILLIAM MORRISON, Lansingburg, N. Y., assignor to Emma Morrison, same place. Filed Feb. 3, 1896. Serial No. 577,943. (No model.)



Claim.—1. In a brush apparatus, the combination with a bristle-feeding hopper having a reticulated bottom, and mechanism for agitating the hopper, of a bristle-receiving plate having a plurality of bristle-recesses and a stationary support for the plate below the hopper, substantially as described.

2. In a brush apparatus the combination with a bristle-feeding hopper, having a reticulated bottom, and means for agitating the hopper, of a bristle-receiving plate having a plurality of downwardly-tapering apertures; and a stationary support for the plate below the hopper, substantially as described.

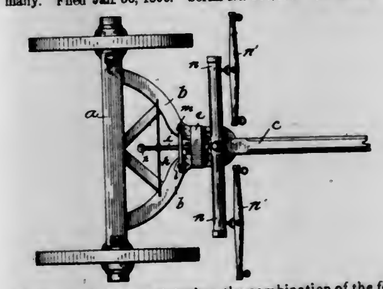
570,605. LUBRICATOR. JAMES MCGINLEY, Kingston, Pa., assignor of two-thirds to James H. Broderick and James H. Kenney, Parsons, Pa. Filed Jan. 2, 1896. Serial No. 574,144. (No model.)



Claim.—1. In a device of the character described, a cup, a post secured within the cup having an oil-passage passing therethrough and a valve-seat intersecting said passage, a valve journaled in the valve-seat and having a flange on one end and a pendulum on the other, said valve and post having an oil-outlet which is adapted to be opened and closed by the action of the pendulum and a set-screw threaded in the post to regulate the flow through the oil-passage, as and for the purpose described.

2. In a device of the character described, a cup, a post therein having an oil-passage and a valve intersecting the oil-passage and having a flange on one end and a pendulum on the other, as and for the purpose described.

570,606. HORSE-DETACHER. EMIL NAUMANN, Alten Essen, Germany. Filed Jan. 30, 1896. Serial No. 577,451. (No model.)



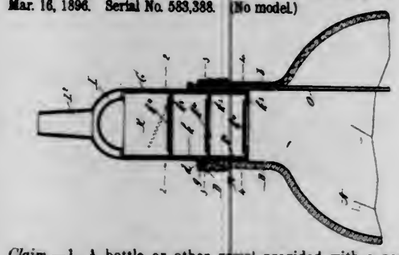
Claim.—1. In a horse-detacher, the combination of the foot-lever carrying a plate, a king-bolt connected to the lever, a plate *d* carry-

ing on its inner end a band, hounds encircled by the band, a tongue, an eye secured in the end of the tongue to engage the king-bolt, and a keeper for the lever, as and for the purpose described.

2. In a horse-detacher, the combination of the foot-lever, a king-bolt connected therewith, a plate *d*, carrying on its inner end a band, a tongue having an eye fitting in an aperture in the end of the plate, said eye receiving the king-bolt, and a lock for holding the lever inoperative, as and for the purpose described.

3. In a horse-detacher, the combination of a foot-lever, a king-bolt connected therewith, a plate carrying on its inner end a band encircling a portion of the hounds, flanges *f*, arranged on the band an eyebolt secured in the end of a tongue, a bolt for holding the lever, and apertured lugs to receive the bolt, as and for the purpose described.

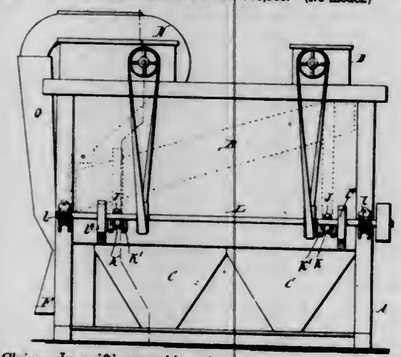
570,607. BOTTLE. MICHAEL J. NOLAN, New York, N. Y. Filed Mar. 16, 1896. Serial No. 583,388. (No model.)



Claim.—1. A bottle or other vessel provided with a neck, in which is placed a neck attachment, comprising a tube, which is provided with a plurality of inwardly-directed annular flanges, each of which is provided with a hinged valve, said attachment being also provided with a conical upper end, within which is placed, a conical partition, by means of which an annular chamber is formed, said attachment being also provided at one side with a vent-tube, which is secured thereto, and to the neck, and which projects downwardly into the bottle between the lower end of said attachment, and the neck, and said attachment being also provided with an annular flange which is adapted to bear upon the end of the neck or a packing ring placed thereon, and an annular screw-threaded cap which is provided with an annular inwardly-directed flange, and which is adapted to be secured to the neck by a screw-thread, substantially as shown and described.

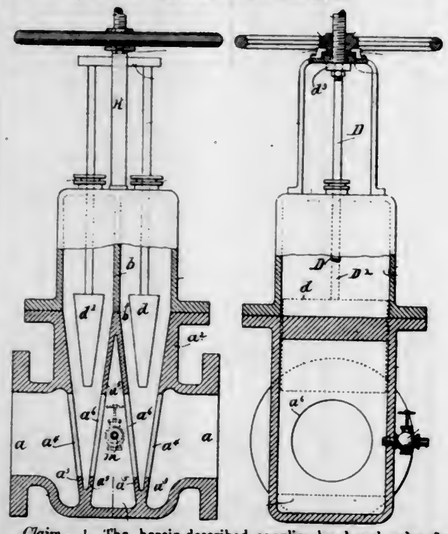
2. The combination with a bottle, the neck of which is provided with exterior screw-threads, of an antifilling attachment adapted to be secured in the upper part thereof, of an annular cap D adapted to be secured upon the neck of the bottle and engage the screw-threads upon the same, a tube G secured within the bottle-neck and extending upwardly therefrom, the upper portion of which is restricted and provided with a tubular extension, an interior tube provided with annular inwardly-directed flanges adapted to be closed by disk-valves, the upper portion of which is closed with a dome-shaped formation around the base of which are formed radial slots, and a capillary tube extending from the neck of the bottle in the interior thereof, all constructed, combined and arranged as herein set forth and described.

570,608. SEPARATING-MACHINE. RICHARD J. OLIVEY, Buffalo, N. Y. Filed Nov. 11, 1895. Serial No. 568,569. (No model.)



Claim.—In a sifting-machine, the combination with an inclined sieve, of a shaking-frame having transverse rectilinear ways on which said sieve is loosely mounted and on which it is capable of a limited transverse rectilinear movement within said shaking-frame, mechanism whereby a rectilinear transverse reciprocating movement is imparted to said shaking-frame, and means for delivering the material upon the upper portion of the inclined screen, whereby the material, in flowing downwardly over the inclined screen, is subjected to the long transverse rectilinear movement of the main frame and at the same time to the short transverse rectilinear movement of the screen-frame, both movements taking place horizontally in a line transverse to the inclination of the sieve, substantially as set forth.

570,609. STEAM-VALVE. CHARLES SCHNEIDER, New York, N. Y. Filed Jan. 31, 1896. Serial No. 577,554. (No model.)



Claim.—1. The herein-described coupling-head and valve for steam pipes or fittings which consists of a tubular coupling-head having tubular openings at each side with which steam-pipes may be connected and being also provided with a tubular extension on the upper side thereof, said tubular extension and said coupling-head being provided with partition-plates which connect with the side walls of the tubular extension and extend downwardly and inwardly to the bottom of the coupling-head, and with two other partition-plates which are located centrally of the tubular extension and which extend downwardly and outwardly and connect at the bottom with the first-named partition-plates whereby two vertical chambers or spaces are formed which are triangular in vertical section, and each of said partition-plates being provided with ports or openings and said chambers or spaces being provided with a vertically-movable valve which is adapted to close said ports or openings and said coupling-head being also provided with a central chamber formed by said central partition-plates and an exhaust-pipe which communicates therewith, substantially as shown and described.

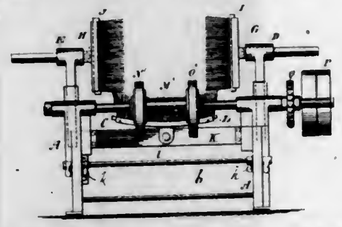
2. The herein-described coupling-head and valve for steam pipes or fittings which consists of a tubular coupling-head having tubular openings at each side with which steam-pipes may be connected and being also provided with a tubular extension on the upper side thereof, said tubular extension and said coupling-head being provided with partition-plates which connect with the side walls of the tubular extension and extend downwardly and inwardly to the bottom of the coupling-head, and with two other partition-plates which are located centrally of the tubular extension and which extend downwardly and outwardly and connect at the bottom with the first-named partition-plates whereby two vertical chambers or spaces are formed which are triangular in vertical section, and each of said partition-plates being provided with ports or openings and said chambers or spaces being provided with a vertically-movable valve which is adapted to close said port or openings and said coupling-head being also provided with a central chamber formed by said central partition-plates and an exhaust-pipe which communicates therewith and the tubular extension of said coupling-head being provided with a cap or cover having a vertical central partition and through the top of which are passed two valve rods, one of which is connected with each valve, and means for operating the same, substantially as shown and described.

3. The herein-described coupling-head and valve for steam pipes or fittings which consists of a tubular coupling-head having tubular openings at each side with which steam-pipes may be connected and being also provided with a tubular extension on the upper side thereof, said tubular extension and said coupling-head being provided with partition-plates which connect with the side walls of the tubular extension and extend downwardly and inwardly to the bottom of the coupling-head, and with two other partition-plates which are located centrally of the tubular extension and which extend downwardly and outwardly and connect at the bottom with the first-named partition-plates whereby two vertical chambers or spaces are formed which are triangular in vertical section, and each of said partition-plates being provided with ports or openings and said chambers or spaces being provided with a vertically-movable valve which is adapted to close said ports or openings and said coupling-head being also provided with a central chamber formed by said central partition-plates and an exhaust-pipe which communicates therewith, substantially as shown and described.

4. The herein described coupling-head and valve for steam pipes or fittings, which is provided with two transverse valve-chambers, and a central chamber between the same, said valve-chambers being each provided with a valve, and said central chamber being provided with an exhaust-pipe, substantially as shown and described.

5. The herein-described coupling-head and valve for steam pipes or fittings, said coupling-head being provided with two transverse valve-chambers which are formed as herein described, and with a central chamber between said valve-chambers, said central chamber being provided with an exhaust-pipe and said valve-chambers being each provided with a valve and means for operating said valves, substantially as and for the purpose set forth.

570,610. BARREL-WASHER. GUSTAV SCHOCK, New York, N. Y. Filed Jan. 16, 1896. Serial No. 575,688. (No model.)

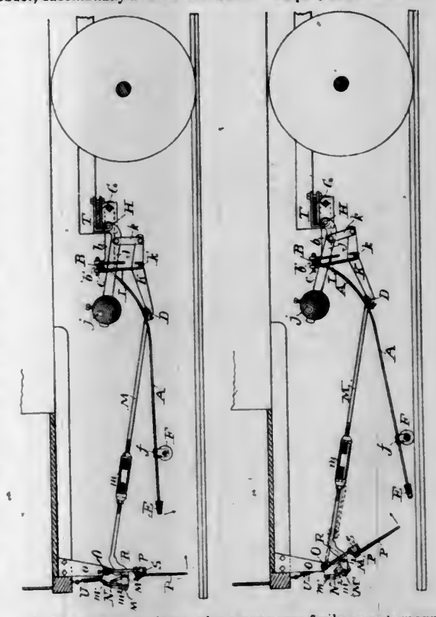


Claim.—In a keg-scrubbing machine, the combination of a framing pivoted end brushes freely movable around the pivots thereof and horizontally and vertically adjustable in said framing, shafts B, C, eccentrically-mounted rollers N, O, N', O', carried upon said shafts, the highest portions of the eccentric wheels upon the shafts at one end being opposite to the lowest portion of the eccentric wheels at the opposite end, a pivoted vertically-adjustable brush freely movable around its pivot, said brush being mounted in said framing between the eccentric wheels and on a lower plane than the side brushes, and toggle mechanism for adjusting said brush vertically and for holding the brush in its adjusted position, whereby the amount of pressure exerted by the brush upon the keg may be increased or decreased at will, substantially as described.

570,611. CAR FENDER. ANSON D. SIMPSON, West Troy, and AUGUSTUS BICKLMAN, Troy, N. Y. Filed Oct. 3, 1895. Serial No. 564,509. (No model.)

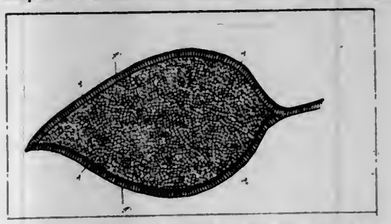
Claim.—1. The combination of a fender secured at its rear end to the truck of a car, compensating weights arranged to support said fender, with a gate depending from the body of the car beneath the platform forward of the fender, said gate near each end provided with a sleeve adapted to move vertically upon a rod, said rod connected with a spindle extending across the car, a cam-block attached to each end of said spindle, an operating-rod connecting the cam-shaped openings in said cam-blocks with the fender in such a manner that as the gate is moved backward the fender is depressed, substantially as described and for the purpose set forth.

2. In a car-fender, a means for lowering the fender, consisting of a rod extending across the forward part of the car, a block provided with cam-shaped slots said block attached to each end of said rod, a gate depending from said rod capable of movement in a vertical position, with rods carrying bolts adapted to reciprocate in said slots extending from each of said blocks to said fender, all so connected up that the backward movement of the gate will tend to depress the fender, substantially as described and for the purpose set forth.



3. In a means for depressing a street-car fender, a gate mounted on a rod, a block placed at the end of each rod provided with cam-shaped slots therein, one end of the gate adapted to be raised without appreciably elevating the other end, a spring connected with said gate, its resiliency tending to prevent the gate from moving forward, with rods carrying bolts adapted to reciprocate in said slots connecting the fender with said blocks, all substantially as described and for the purpose set forth.

570,612. DECORATION FOR TEXTILE FABRICS. ERNEST SIRON, New York, N. Y., assignor of one-half to Thomas Cooper Byrnes, same place. Filed Dec. 9, 1895. Serial No. 571,524. (No specimens.)



Claim.—1. As an article of manufacture, a fabric having stitched thereto a continuous raised outline of a design, substantially all of the inclosed surfaces of which are covered with metal cemented to such fabric, substantially as and for the purposes described.

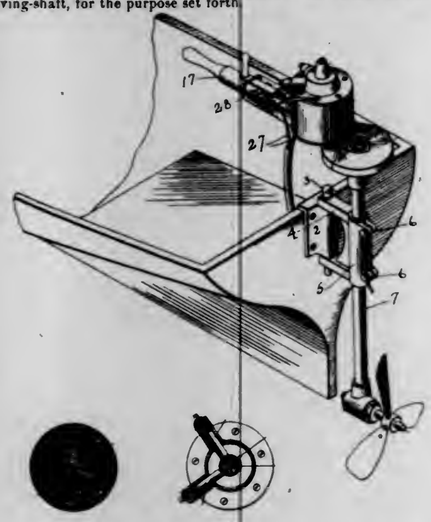
2. The method of ornamenting textile fabrics, which consists in stitching thereon a continuous raised outline or inclosure of a desired design, flowing over the inclosed surfaces, cement in a plastic condition, and, before such cement hardens, introducing into the same metallic particles, substantially as and for the purposes described.

3. The method of ornamenting textile fabrics, which consists in stitching thereon a continuous raised outline or inclosure of a desired design, flowing over the entire inclosed surfaces, cement in a plastic condition, and, before such cement hardens, applying to the same, metal, substantially as and for the purposes described.

570,613. BOAT-PROPELLING ATTACHMENT. SAMUEL N. SMITH, Minneapolis, Minn. Filed Nov. 16, 1895. Serial No. 569,151. (No model.)

Claim.—1. The combination, with an arm or bracket, pivotally secured to the boat, of an upright tube adjustably secured to said

arm or bracket, a driving-shaft arranged within said tube, a propeller and propeller-shaft supported by said tube, said propeller-shaft being connected by suitable gearing to said driving-shaft, a motor also supported upon said tube and means connecting said motor and said driving-shaft, for the purpose set forth.



2. The combination, with a pivotal arm or bracket, secured to the boat, of an upright supporting-tube, adjustably secured upon said arm or bracket, a driving-shaft arranged in said tube, a propeller and propeller-shaft supported upon said tube, gearing connecting said propeller-shaft and said driving-shaft, a motor arranged above said arm or bracket and supported upon said tube, suitable gearing connecting said motor with said driving-shaft, all of said parts being arranged to swing or turn upon the pivotal connection between said arm or bracket and the boat, for the purpose specified.

3. The combination, with the pivotal arm or bracket to be secured to the boat, of a vertically-arranged tube adjustable thereiu, a vertical shaft provided within said tube, a box provided upon the lower end thereof, the propeller-shaft having bearings therein, gears upon said vertical shaft and the propeller-shaft, the same meshing with one another, a propeller, a bracket provided upon the upper end of said tube, the motor supported upon said bracket, gears connecting the shaft thereof and said vertical shaft, and steering means also provided upon said bracket, substantially as described.

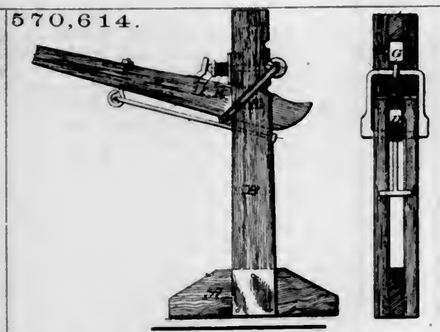
4. The combination, with the pivotal arm or bracket to be secured upon the boat, of a vertical supporting-tube, secured upon said bracket, a propeller having a longitudinal shaft, a vertical driving-shaft geared thereto, a motor geared to said driving-shaft above said arm or bracket, and the axes of said motor and said pivotal arm or bracket being substantially coincident, as and for the purpose specified.

5. The combination, with the pivotal arm or bracket to be secured upon the boat, of a vertical supporting-tube, means for adjustably locking said tube upon said arm or bracket, wherein the same is vertically adjustable, a propeller having a longitudinal shaft, a vertical driving-shaft geared thereto, a motor geared to said driving-shaft above said arm or bracket, and the axes of said motor and said pivotal arm or bracket being substantially coincident, as and for the purpose specified.

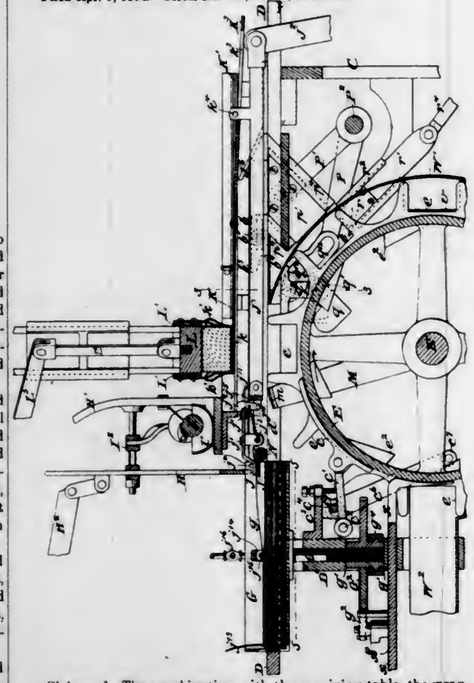
6. The combination with the boat of the block 2 secured thereto, the swinging arm 4, provided with a split sleeve 5 at its outer end and pivoted to the block 2 by the pin 3, a vertical tube 7 passing through said split sleeve, screws 6 for tightening said sleeve upon said tube, the propeller and propeller-shaft, a shaft passing through said vertical tube and connected with said propeller-shaft, a motor supported upon said vertical tube, and means connecting said motor with said vertical shaft, for the purpose specified.

570,614. LIFTING-JACK. HARVEY S. SPENCE, Jewett, Ohio. Filed Jan. 4, 1896. Serial No. 574,335. (No model.)

Claim.—In a lifting-jack, the combination with the supporting-frame, of a lifting-lever, carrying a knob, the rectangular fulcrum-bail, the slidable block, the bolt connected at its forward end to the upper member of the bail, a nut or cap upon the rear end of the upper member of the bail and the spring surrounding said bolt between the block and cap, substantially as shown and described.



570,615. MACHINERY FOR WRAPPING AND SECURING WRAPPERS AROUND BOXES, &c. ALBERT STEARNS, Brooklyn, N. Y. Filed Apr. 3, 1894. Serial No. 506,162. (No model.)



Claim.—1. The combination with the receiving-table, the wrapper-feed box arranged and working through an opening in said table and the wrapper-placer consisting of grippers entering the forward end of the said box to take the wrappers therefrom, of an elastic cam consisting of a spring having an inclined face affixed to the said table and entering said box through an opening in the rear thereof for pressing forward the upper wrappers therein toward the grippers by the act of raising the said box, substantially as herein set forth.

2. The combination with the wrapper-feed box and means for pushing the wrappers forward therein, of a wrapper-lifter for lifting the so pushed-forward wrappers, a wrapper-placer provided with grippers for taking the wrapper from said lifter and a gage attached to said placer for pushing back the wrappers prior to the closing of its grippers thereon, substantially as herein set forth.

3. The combination with the rotary carrier, of wing-tuckers q and shafts for the said tuckers arranged at the sides of said carrier with their axes parallel with the axis of the carrier and having both oscillating movements about their own axis and longitudinal movements toward and from the carrier, substantially as and for the purpose herein set forth.

4. The combination with the rotary carrier, the wing tuckers q, the shafts q' carrying said tuckers arranged on opposite sides of and parallel with the axis of the said carrier, stationary bearings for said shafts, cam-actuated mechanism for producing the oscillation of said shafts, and pins in said stationary bearings entering oblique grooves

in said shafts for the purpose of producing from the rotary movement of said shafts a longitudinal movement of said shafts and their attached tuckers toward and from said carrier, substantially as herein set forth.

5. The combination with the rotary carrier and the curb W' partly inclosing the circumference and sides of the said carrier, of the bottom tuck-closers consisting of stationary tongues projecting outward from openings in the sides of the said curb, substantially as herein set forth.

6. The combination with the delivery-table onto which the wrapped packages are delivered in successive rows, of a point-holder consisting of an endless chain and a series of boards attached to said chain for entering between the successive rows of wrapped packages, substantially as herein set forth.

7. The combination with the delivery-table and the row-dresser consisting of a reciprocating bar arranged on said table for pushing aside the wrapped packages as they are delivered in successive rows upon said table, of a point-holder consisting of an endless chain and boards attached to said chain for entering between the successive rows of packages, the said point-holder being operated by the pressure of the row-dresser against it, substantially as herein set forth.

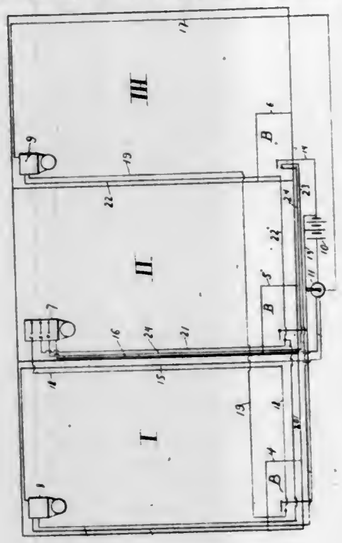
8. The combination with the point-holder consisting of a chain having boards pivoted thereto, of the row-dresser f provided with a stop l^3 for temporarily detaining the said boards, substantially as herein described.

9. The combination with the tuckers p', the rock-shaft P^2 carrying the said tuckers p', the wing tuckers q and the rock-shafts q' carrying the said tuckers q, the slotted arm P' on the rock-shaft P^2 and the crank q^{13} on one of the rock-shafts q' engaging with said slotted arm for transmitting motion to the top tuckers from one of the rock-shafts of the wing tuckers, substantially as herein described.

10. The combination with the reciprocating wrapper-placer and the sliding side tuckers r, of the cam J^3, the lever J^3, the rod J^3 for transmitting motion from said cam to said lever, the rod J' connecting said lever with the wrapper-placer, the slotted cam-yoke R on said rod J^3, and the rock-shaft r^7 having an arm r^8 which engages with said cam-yoke and arms r^8 connected with the said tuckers, all substantially as herein described, whereby the wrapper-placer and the side tuckers are operated by one cam as herein set forth.

11. The combination with the reciprocating wrapper-placer and the pressing and gluing dies U, of the cam J^8, the lever J^3, the rod J^3 for transmitting motion from said cam to said lever, the rod J' connecting said lever with the wrapper-placer, the oscillating shafts U^3 which carry the pressing and gluing dies, the toothed segments on said shafts U^3, the rack-bar U^{10} gearing with said toothed segments, and the upright shaft U^5 having one arm U^6 engaging with said rod J^3 and having another arm U^9 engaging with said rack-bar, all substantially as herein described, whereby the reciprocating wrapper-placer and the pressing and gluing dies are operated by one cam as herein set forth.

570,616. BURGLAR-ALARM. FRED STEINKOENIG, Sioux City, Iowa. Filed June 12, 1896. Serial No. 595,343. (No model.)



Claim.—1. The combination with a series of apartments, of an indicating apparatus in each apartment, a mechanism in each apartment actuated by the entrance of a burglar, and connections between the mechanism and the indicating apparatuses in the other rooms, whereby such indicating apparatuses are operated, but the indicating apparatus in the room entered is not operated by the mechanism.

2. The combination in a series of apartments, of an electrical indicator in each apartment, an electrical device in each apartment actuated by the entrance of a burglar, and electrical connections between the contact devices and the indicators in the other rooms, whereby such indicating apparatuses are operated, but the indicating apparatus in the room entered is not operated.

570,617. PENCIL-SHARPENER. LEONA A. STOUGH, Durango, Colo. Filed Oct. 22, 1894. Serial No. 526,656. (No model.)



Claim.—1. In a pencil-sharpener, the combination of a screw, a rotary vertical movable pencil-holder provided with a nut engaging the screw, a blade mounted on the pencil-holder and arranged to discharge pencil shavings exteriorly of the holder, and a receptacle receiving the screw, open at its top and adapted to receive such shavings, substantially as described.

2. A pencil-sharpener comprising a base, a screw mounted on the base, a pencil-holder having a tubular shank and provided with a nut engaging the screw and adapted to be rotated by the same, a blade carried by the pencil-holder, a spring for raising the pencil-holder, and a receptacle mounted on the base and provided with a central tubular portion receiving the screw and nut and forming a casing for the same, substantially as described.

3. A pencil-sharpener comprising a base, a vertical screw mounted on the base, a pencil-holder provided with a tubular shank and having a nut at the lower end thereof and provided at its top with an inverted conical cavity open at one side, an adjustable blade mounted on the pencil-holder at the opening of the cavity, a receptacle mounted on the base and open at the top and surrounding the screw and adapted to receive the shavings, said receptacle being provided with a central tubular portion housing the screw and the nut and forming a stop for the nut, and a spring disposed on the screw and engaging the nut, substantially as described.

570,618. RAIL-JOINT. MAHLON W. WAMBAUGH, Galveston, Tex. Filed June 13, 1896. Serial No. 595,452. (No model.)

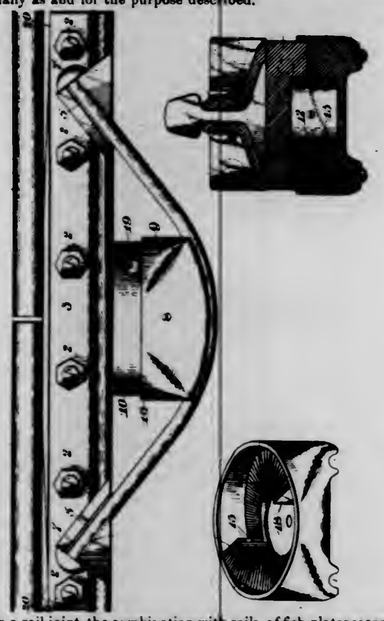
Claim.—1. In a rail-joint, the combination with a pair of rails, of fish-plates connecting the rails and provided with lugs having downwardly-converging slots, curved truss-bars depending below the rails, located at opposite sides thereof and provided at their terminals with heads, the ends of the truss-rods being arranged in said slots and the heads engaging the lugs, and an adjustable supporting-block or strut interposed between the rails and the truss-rods and provided at its lower face with grooves for the reception of the latter, substantially as described.

2. In a rail-joint, the combination with rails, of fish-plates secured to the rails and provided at their outer faces, adjacent to their ends with substantially triangular lugs having transversely-slanted downwardly-converging slots, curved truss-rods disposed in pairs having their ends arranged in the slots and provided with heads engaging the lugs at the outer edges or faces thereof, and an adjustable supporting-block or strut interposed between the rails and the truss-rods and provided at its bottom with grooves receiving the latter, substantially as described.

3. In a rail-joint, the combination with rails and fish-plates, of depending truss-rods connected at their ends with the rails, and an adjustable supporting-block interposed between the truss-rods and the rail and comprising upper and lower portions having curved tapering flanges forming helically-inclined surfaces, one of the portions of the block being movable to cause the inclined surfaces to ride on each other, substantially as and for the purpose described.

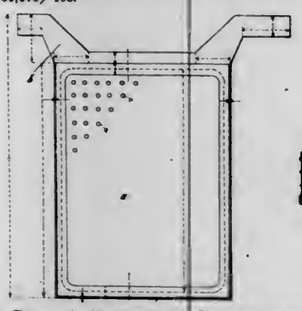
4. In a rail-joint, the combination with rails and fish-plates, of depending truss-rods connected at their ends with the rails and an adjustable supporting-block interposed between the rails and the truss-rods and composed of a stationary lower section or base pro-

vided with curved tapering flanges forming helically-inclined surfaces, the latter being serrated, and an upper rotary section provided with depending tapering curved flanges forming helically-inclined surfaces serrated similar to said flanges and engaging the inclined faces thereof, substantially as and for the purpose described.



5. In a rail joint, the combination with rails, of fish-plates secured to the rails and provided with slotted lugs, depending truss-rods arranged at opposite sides of the rails and having their ends interlocked with the slotted lugs, and an adjustable supporting-block comprising a stationary lower secton or base mounted on the truss-rods, provided with a circular rim and having opposite semicircular tapering flanges provided with upper helically-inclined serrated faces, and a circular rotary upper portion fitting within the rim of the lower section or base and provided with depending tapering curved flanges having helically-inclined serrated surfaces engaging those of the stationary section or base, substantially as and for the purpose described.

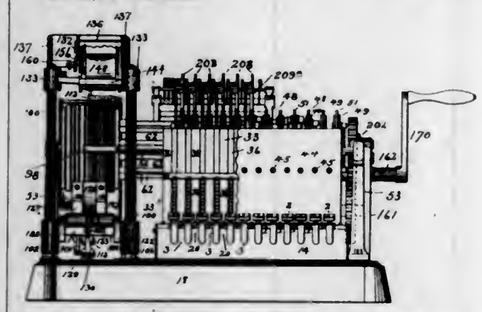
570,619. PROCESS OF MANUFACTURING PLATES FOR SECONDARY BATTERIES. CARL H. WEISS, Poesneck, Germany. Filed Apr. 4, 1895. Serial No. 544,437. (No specimens.) Patented in France Oct. 10, 1894, No. 241,977; in Hungary Mar. 4, 1895, No. 2,814; in Belgium June 22, 1895, No. 116,220; in Switzerland June 24, 1895, No. 10,619; in Spain June 26, 1895, No. 17,645; in England June 27, 1895, No. 12,420; in Portugal July 10, 1895, No. 2,031, and in Italy Oct. 2, 1895, No. 39,878/163.



Claim.—1. The herein-described method of forming accumulator-plates, which consists in confining a pasty mass of lead compound in an acid-proof frame or vessel having perforated sides, passing cellulose threads through the perforations of the frame, placing the same in an acid-bath, passing an electric current through the same, and finally exposing the formed hardened plate to the action of the air to destroy the chemically-changed cellulose, as and for the purpose set forth.

2. The herein-described process of forming accumulator-plates, which consists in lining a perforated frame or receptacle with lead-foil or equivalent material, placing and confining a pasty mass of lead compound therein, passing cellulose threads through the perforations, foil and mass, subjecting the same to the action of an electric current in an acid-bath, and finally exposing to the air to destroy the chemically-changed cellulose, as set forth.

570,620. MACHINE FOR BOOKKEEPING AND REGISTERING CASH. LEICESTER ALLEN, Brooklyn, N. Y. Filed Oct. 15, 1895. Serial No. 565,773. (No model.)



Claim.—1. The combination of movable type wheels or rings, a support therefor a keyboard provided with stops for key-pawls and ribs for separating and guiding the key-slides, the key-slides, one for each type-wheel, all of them arranged to act in a single plane, and each having consecutively-arranged keys provided with tilting key-pawls pivoted to the key-slides, key-buttons attached to the key-pawls, pawl-springs attached to the key-pawls, and springs, 22, attached to the key-slides and to the keyboard substantially as and for the purposes set forth.

2. The combination with the transversely-grooved keyboard and and the key-slides having one or more tilting keys pivoted thereto and springs for holding said keys in their normal or inoperative positions relative with said keyboard and key-slides, said keys also having key-pawls for engaging the front side of the grooves on the keyboard and key-buttons attached to shanks or stems extending upwardly from the key-pawls, all substantially as herein described, of a spring attached to each key-slide and also to said keyboard for restoring the key-slide and parts supported by it to their normal positions, a ratchet, 29, and pawl, 30, for retaining the key-slide and its attachments in any one of its specific numerical positions, substantially as and for the purposes set forth.

3. The key-slides, each having the general form of a rectangular parallelepiped with one side removed, and having tilting key-pawls pivoted thereto with shanks protruding through holes in the upper side of the slide, a tang, 3, extending downward at the front end with an attachment for a spring, and a block, 4, of steel or other suitable material fitted and attached to the rear end, substantially as and for purposes described.

4. In combination with the key-slides, each having key mechanism for stopping and holding it in a definite position when operated by its key, stepped drop-slides, 36, each positively connected with a correlated printing-ring or type-wheel, for actuating said ring, and drop-slide guides, 33, each drop-slide being also correlated with a separate particular key-slide, and the steps on each of the drop slides being respectively and successively correlated with the successive definite numerical positions of its corresponding key-slide, and movable type wheels or rings successively and respectively correlated with said drop-slides and key-slides, substantially as and for purposes specified.

5. The combination with each of the key-slides having key mechanism positively attached thereto and a spring, 22, for restoring the slide and its attached keys to their first or normal position, and with the corresponding drop-slide, the block, 4, the ratchet, 29, on the under side of the block, 4, the pawl, 30, pivoted to the keyboard, and the toe, or lifting-tappet, 42, substantially as and for the purposes explained.

6. The combination with a printing-head composed of a fixed barrel or drum, movable type rings or wheels having diametrically-arranged duplicate types, the combs, 98, for holding the type-rings in specific lateral relation, a reciprocatory book-holder on one side of the head, and a reciprocatory tape-box containing a concealed tape and tape-feeding mechanism on the side of the head opposite that of the book-holder, of mechanism for bringing any of the types on the type-rings into position for printing, and mechanism for impressing diametrically upon the types in the position for printing a book or

sheet on one side and a concealed tape on the other, substantially as described and for the purposes set forth.

7. The combination of a fixed, slotted shell, barrel, or drum, 69, type-rings having internal teeth fitted to slide and revolve upon the periphery of said shell, barrel, or drum, shafts, 62, pinions 65, spur-gears, 66, fixed spiders, 54, and their friction-rollers, dead-spindle, 52, and its supports, internally-toothed wheels or rings, 48, fitted to bear and revolve upon said friction-rollers, drop-slides, drop-slide guides, and a positive connection between each drop slide and its correlated type-ring, 48, substantially as and for purposes specified.

8. In a printing head, having type-rings with duplicate types placed diametrically for printing therewith on opposite sides, the adjustable rings for printing dates and other matter, said rings being internally notched as described, the combination therewith of said adjustable rings, a barrel or drum having apertures through its wall or shell under said rings, and curved springs attached to the interior of the shell or barrel and having bits fitted through said apertures for engaging the notches in said adjustable date rings for holding types on said date rings in fixed alinement with the lines of the printing positions of types of the rings having the diametrically-arranged duplicate types, substantially as and for the purposes specified.

9. The combination with the drop-slides, of the lifter, 192, 193, 194, the rotating tappet-arm, 196, the cam-shaft, 163, spur-wheel, 167, crank-shaft, 162, and the pinion, 166, substantially as described and for the purposes set forth.

10. In a bookkeeping-machine, the tape-box constructed substantially as herein described, consisting of a movable box and its cover, a lock for holding the cover to the box, a feed roll or spool, a take-up roll or spool, a ratchet-and-pawl mechanism for actuating the take-up roll or spool, a printing-roll pivoted to the box, and a tension mechanism, substantially as and for the purposes set forth

11. In a bookkeeping-machine, the combination of the sliding platen, the carriage for supporting the platen, the guide for regulating the lateral position of the book while printing it, and a book-holder, substantially as described and for the purpose set forth.

12. The combination with the drop-slides, 36, of the lifter, 192, 193, 194, the rotating tappet-arm, 196, the cam-shaft, 163, and spur-gear, 167, and the friction-roller, 195, substantially as and for the purpose described.

13. The combination with the carriage, the platen and the printing-head, of an inking mechanism consisting of supports attached to the platen, rock-levers pivoted to the supports, ink-rolls pivoted to the rock-levers, spring-dogs pivoted to the said rock-levers, and springs for pressing the ink-rolls toward and upon the types to be inked, substantially as and for the purposes specified.

14. A combination of mechanism for setting up on the type-rings of the printing-head the types representing amounts on that side of the printing-head that prints the pass-book, and for simultaneously setting up like types on the opposite side of said head on the same rings, mechanism for setting up on the side of the head opposite that for printing the book the number of the book upon which such amount is to be printed, a movable platen for supporting the book to be printed and presenting it to the types so set up, a movable tape-box on the side opposite the platen for holding and presenting a concealed tape to the types on that side of the printing-head, adding mechanism for successively adding to the previous totals the amounts so printed on the pass-book and the concealed tape, mechanism for moving and operating the platen and the tape-box, and mechanism for moving the register, substantially as and for the purposes set forth.

15. The combination of an adding mechanism having number-wheels actuated by ratchets and rocking levers each of which has a pawl at one end and a toothed sector at the other, a second set of rock-levers, 208, having also toothed sectors with teeth meshed in the teeth of the sectors on the rocking levers of said adding mechanism, a dead spindle forming a fulcrum for the rock-levers, 208, a cam-shaft, 163, cams, 206, drop-slides, 36, and the crank-shaft and stop-bar, 162, for limiting the upward movements of the longer arms of said rock-levers, 208, substantially as and for purposes set forth.

16. The combination of the rock-levers, 208, provided at the front ends of their longer arms, with fingers, 209*, and provided, at the rear ends of their shorter arms, with friction-rollers and toothed sectors, a dead-spindle forming a fulcrum for said rock-levers, adding mechanism connected with said toothed sectors for imparting motion to the number-wheels of the adding mechanism, a cam-shaft and series of cams attached to said cam-shaft for actuating said rock-levers in one direction, a stop-bar for limiting the motion of the rock levers in the direction wherein they are actuated by the cams, and mechanism for rotating said cam-shafts, substantially as and for the purposes described.

17. The combination of one or more printing rings or wheels, each having types for printing significant figures, zero, and an arbitrary character, mechanism for bringing the zero types into printing position, adding mechanism, correlated with the said printing mechanism for adding to a previous total the amounts represented by the types of significant figures placed in printing position, and mechanism for automatically preventing the operation of the adding mechanism correlated with said printing rings or wheels whenever the zero characters thereon are moved into the printing position, substantially as described, and for the purpose set forth.

18. In combination with a series of type-rings for printing figures, each of which has engraved thereon types for the nine digits and the zero character, and in some of which the zero type follows the "9" type in regular sequence of arrangement, one or more type-rings in which a type of arbitrary form follows the "9" type in regular succession of arrangement, while the zero type precedes the "1" type in the order of arrangement, and mechanism for bringing the zero types into position for printing substantially as and for the purpose set forth.

19. In combination with the printing-head and type-rings, key mechanism, drop-slide mechanism, and mechanism for converting the reciprocating motion of the drop-slides into rotary motion of the type-rings, the notches, 188, in the type-rings and the straight-edged alining-plate, 189, substantially as and for the purpose set forth.

20. The combination with the printing-head and type-rings, the key mechanism, drop-slide mechanism, mechanism for converting the reciprocating motion of the drop-slides into rotary motion of the type-rings, notches, 188, in the type-rings, and straight-edged alining-plate, 189, of mechanism for moving said alining-plate into and out of said notches, substantially as specified.

21. The combination of the alining-plate and the specific mechanism for moving it herein described, consisting of the box, 189*, the eccentric, rod, 190, and the eccentric, 180, on the printing shaft, substantially as specified.

22. In a bookkeeping machine, the combination with rings or wheels having types thereon for printing, horizontally-movable key-slides, vertically and automatically movable drop-slides positively connected with the type rings or wheels, and tilting keys attached to the key-slides for operating said key-slides, of key-buttons attached to and forming part of said keys, each button having an inclined facet presented to the rear for application of the operator's fingers, substantially as and for the purposes set forth.

23. In a bookkeeping-machine, the combination with rings or wheels having types thereon for printing, horizontally-movable key-slides, vertically and automatically movable drop-slides positively connected with the type rings or wheels, and tilting keys attached to the key-slides for operating said key-slides, of key-buttons attached to the keys as part of said keys, each key-button having two inclined facets one presented to the front with a figure or character indicated upon it and one presented to the rear for application of operator's fingers, substantially as and for the purpose set forth.

24. The combination of the slotted shell of the printing-head, movable and internally-toothed type rings or wheels fitted to said head, drop-slides, drop-slide guides, internally-toothed gears positively connected with said drop-slides, shafts provided with pinions meshed with the teeth of said internally-toothed gear and provided at their opposite ends with spur-gears meshed with the internal teeth of said type rings, fixed bearings for the ends of said shafts, and the lifters, marked for indicating to the operator the positions of the type-wheels and attached to said drop-slides for separately and independently restoring to zero position, before the act of printing, any type rings or wheels that may have been wrongly set by inadvertency of the operator, substantially as and for the purposes described.

25. The combination of the slotted shell of the printing-head, movable and internally-toothed type rings or wheels fitted to said head, drop-slides, drop-slide guides, internally-toothed gears positively connected with said drop-slides, shafts provided with pinions meshed with the teeth of said internally-toothed gears and provided at their opposite ends with spur-gears meshed with the internal teeth of said type-rings, fixed bearings for the ends of said shafts, and lifters attached to said drop-slides for separately restoring to zero position, before the act of printing, any type rings or wheels that may have been wrongly set by inadvertency of the operator, substantially as and for the purposes described.

26. The combination of a tape-box, a platen, a book-holder, a main driving-shaft, printing, adding and restoring mechanisms connected with said main shaft, housings supporting said shafts and printing, adding, and restoring mechanisms, a toothed idle-wheel, 168, and a pawl, 171, pivoted to the housing in relation with the toothed idle-wheel and preventing retrograde movement of said main driving-shaft and mechanism therewith connected, substantially as and for purposes described.

27. The combination of a reciprocatory tape-box for containing and concealing a tape, movable type-wheels or type-rings for printing said tape, and means for moving said tape-box toward and away from and impressing said tape upon the types of said type rings or wheels, and a second reciprocatory printing-mechanism having a holder for gaging and retaining an inserted book or sheet in positions for pro-

ducing on said book impressions in successive lines each like an impression printed during the same operation of the machine on the tape, substantially as herein described and for purposes set forth.

28. The combination with the reciprocatory tape-box having mechanism for feeding a tape and mechanism for printing amounts on said tape, of a separate reciprocatory printing mechanism provided with a holder for receiving, gaging, and retaining books or sheets separately and successively inserted for printing amounts in successive lines thereon, each of said amounts respectively corresponding to the amounts printed in the same operation of the machine on the tape, and adding mechanism for adding each amount so printed to a previously-registered total at each printing of the tape and inserted book or sheet, substantially as herein described and for the purposes set forth.

29. In combination with the hand-crank shaft, and the system of gearing for operating the printing, registering and restoring mechanism, a lug, 200, on the cam-shaft gear and the automatic gravity locking-hook stop, 199, and rod pivoted to it and extending toward the front for manually unlocking the mechanism for printing and adding, substantially as and for the purposes described.

30. The combination of type wheels or rings engraved with the nine digits and an arbitrary character and with the zero character, adding mechanism, rock-levers for operating said adding mechanism, said rock-levers having thereon double inclined planes, 215, and being correlated with said printing rings or wheels, guides for said drop-slides, and rocking latch-bars pivoted to said guides for inhibiting the action of said rock-levers when the zero types on said rings or wheels are brought into position for printing, substantially as and for the purposes described.

31. In a bookkeeping-machine wherein books or books opened at any particular page are separately and successively placed in and taken out of the machine for printing as described, the combination of a printing-head, movable ranks of type supported on said head, means for moving said ranks of type into positions for printing and for setting up matter to be printed, a book-holder or book-support in relation with the printing-head for receiving, holding and alining books to be successively printed, reciprocatory mechanism positively connected with said book holder or support for pressing the page, leaf, or sheet to be printed upon, and taking it off from, the faces of said types, and automatic mechanism for materially and directly varying the amplitude of the motion of said reciprocatory mechanism, in accordance with the variation of thickness of the book or the part thereof upon which the impression is made, without material alteration of pressure upon the type, substantially as described and for purposes specified.

32 The combination of the printing-head supporting movable type rings or wheels, the reciprocatory platen and book-holder, the rock-lever, 129, fitted to have some play on its bearing, 178, the rock-lever, 131, and the spring, 191, attached to and connecting said rock-lever to the other rock-lever which actuates the tape-box said spring being also attached to both said rock-levers near their fulcrums substantially as and for the purposes specified.

33. The combination of the key-slides, key-pawls, the key-pawl pivots 71, having an easy fit in the lateral walls of said key-slides, the keyboard, 14, and the rib bars, 20, fast to said keyboard for retaining said pivots in the key-slides when the said slides are in their working position, substantially as described, and for the purpose set forth.

34. the combination with the key-slides having tangs, 3, the keyboard, having the transverse rib, 16, and the rib-bars, 20, attached to the keyboard, of plates, 21, fastened to said rib-bars, and springs, 22, attached to said ribs, 16, on the keyboard, and to the tangs on the key-slides for holding said key-slides in working position, substantially as described.

35. The combination with the printing-head and the three groups of movable type wheels or rings supported side by side thereon—one group for printing numbers of books, a second group for printing amounts received or paid out, and a third group for printing dates and other inscriptions—of a reciprocatory book holder arranged on one side of said head for receiving, retaining, and superimposing a book over the second and third of said groups, and a reciprocatory tape box on the opposite side of said head for superimposing a contained tape over the said first and second groups of type wheels or rings and for printing on said tape only the amounts deposited and book-numbers during the printing upon the book of dates and other inscriptions together with amounts deposited substantially as and for purposes herein set forth.

36. The combination with the printing-head having the slotted shell, 69, supporting internally-toothed movable type-rings, and the dead-spindle which supports said head, of the drop-slides and the drop-slide guides, the four-armed spiders fast on said dead-spindle, each having friction-rollers on the arms whose radial axes are one hundred and twenty degrees apart and a bearing for a laterally-extending shaft in the other arm, the laterally-extending shafts, 62, each having at one end a pinion, 65, and at the other end a spur-wheel, 66, the teeth of which project through one of the slots in said slotted shell and there mesh with the internal teeth of a superimposed type-ring, and the internally-toothed gears, 49, supported by and working upon said friction-rollers, each meshing with one of said pinions and having a positive connection with a correlated drop-slide for transmitting the vertical rectilinear motion of the drop-slides to the type-rings and converting such vertical motion into a greater rotary motion in said type-rings, substantially as and for purposes described.

37. In a bookkeeping-machine the combination with the printing-head, type-wheels or type-rings fitted upon and supported by said head, the movable platen for supporting and holding a book to be printed on one side of said head, the carriage which supports said platen and the mechanism for printing a tape on the side of the head opposite that on which the book is printed, of inking-rollers for inking rows of type diametrically opposite each other, supports attached to said platen, spring rocker-arms pivoted to said supports, the ink-rolls being pivoted to and supported by said rocker-arms on opposite sides of said head, and mechanism for preventing the inking of the types during the movement of the platen which withdraws the book from under the printing head, substantially as and for the purposes specified.

38. In a bookkeeping-machine and cash-register the combination with the printing-head and type wheels or rings supported thereby, of the movable platen, a reciprocatory support for said platen on which it is fitted to slide horizontally, upright supports attached to the platen, spring rocker-arms pivoted to said upright supports, ink-rollers pivoted to and supported by said rocker-arms and the spring-dogs one pivoted to the front end of each pair of said rock-levers for engaging the margin of the head during the forward movement of the platen and preventing the ink-rollers from coming in contact with the type during said forward movement substantially as and for the purposes set forth.

39. In a bookkeeping-machine the combination with a printing-head and movable type-rings supported on said printing-head, of inking-rolls on opposite sides of said head, rock-levers to the ends of the longer arms of which said inking-rolls are pivoted, a movable platen having uprights attached to it provided with bearings for the said rock-levers, springs, one of which is attached to each pair of rock-levers and one of its upright supports for rocking the levers toward said type wheels or rings, and adjustable screw-stops for limiting the motion of said rocker-arms in the direction of the type wheels or rings, substantially as and for the purposes described.

40. In a machine for keeping books the combination of movable type wheels or rings, a reciprocatory carriage having intermittent motion in a vertical plane, a reciprocatory platen supported by said carriage and adapted to move in a horizontal plane relatively with the motion of said carriage and independently of the operation of all other parts of the machine for bringing the platen into position for receiving the book to be printed and subsequently carrying said book into the position for printing, mechanism for holding said platen in relation with said carriage, and mechanism for first moving the carriage and platen simultaneously toward the type wheels or rings for making the imprint upon the book, and afterward moving it away from said type wheels or rings after printing, substantially as and for the purposes described.

41. In a bookkeeping-machine, the combination with type wheels or rings and a platen for supporting the book to be printed, of a book-holder attached to the platen for holding the book firmly upon said platen, a longitudinal guide also attached to said platen for aiding the lateral alinement of the book, and mechanism for moving the platen, its attached book holder and guide first toward and then away from said type wheels or rings, substantially as and for the purpose specified.

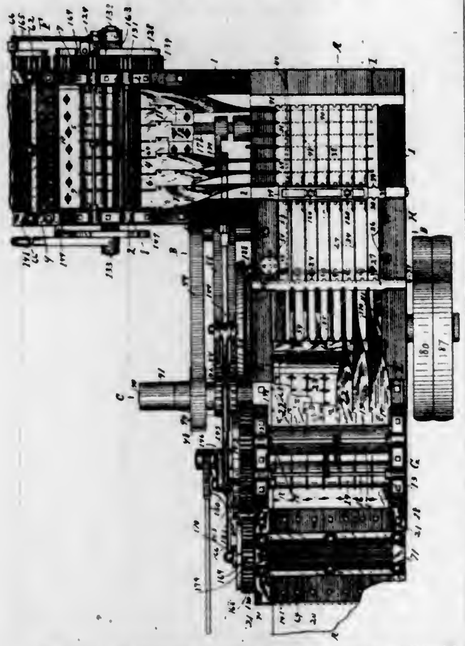
42. The combination with the type wheels or rings, and with the body of the tape-box cast open at the top, having the transverse groove, 140, and containing a tape, tape-feeding mechanism, and mechanism for printing said tape upon said type wheels or rings, of a detachable cover, 136, fitted to the top of said body and having its rear margin fitted into said groove, an eyebolt, 142, in the front of the bottom of said body and extending through the front margin of the cover, and a padlock whose hasp is fitted into the eye of said eyebolt, substantially as and for the purposes specified.

43. The combination with the type wheels or rings, of a reciprocating tape-box having slots, 150 and 151, formed in its sides, a take-up spool and a let-off spool whose spindles are fitted in said slots, tape-feed mechanism for transferring the tape from the let-off spool to the take-up spool, and the V-shaped friction-tension attached to the inside of one of the walls of the tape-box in relation with one or other of the slots, 150, and in relation with one of the heads of the let-off spool, substantially as described and for the purposes specified.

44. The combination, in a machine for keeping books, with a printing-head supporting types for printing, a reciprocatory platen provided with mechanism for successively receiving, retaining and alining separately-inserted books or sheets to be printed, and with a tape-box containing a concealed tape and feed mechanism whereby the said tape is presented also to the types of the printing-head for printing substantially as herein described, of rock-levers, 129 and 131, having their shorter arms bifurcated, the upright support, 177, provided with bearings for said rock-levers, the adjustable stud bearings, 186 and 187, fitted to be clamped in the bifurcated ends of said arms, 131 and 129, the toggle-links, 182 and 183, each fitted at one end to one of the said stud-bearings, the link, 184, pivoted to the joint of said toggle-links and having the other end pivoted to said upright, the link, 181, pivoted at one end to the joint of said toggle-links and at the other end pivoted to the crank-pin of the eccentric, 180, the eccentric, 180, fast on the shaft, 165, the shaft, 165, having bearings in said upright and in the housings, 161, and mechanism for driving said shaft substantially as and for the purposes set forth.

570,621. CELL-CASE MACHINE. ALBERT J. BATES, Joliet, Ill.

Filed Feb. 8, 1896. Serial No. 578,469. (No model.)



Claim.—1. The herein-described cell-case machine provided with cutting, punch and die and feeding mechanism for shearing, shaping and feeding forward the two series of cell-forming strips, as set forth; with compartment-guides and mechanism for receiving, retaining and severing sets of sections of said series of strips; with wrapping-shafts arranged to receive and wrap thereabout one set of said section of strips to convey the same through the perforations of the opposite set of sections of said series of strips while within the perforations of said opposite set of sections of strips, thereby interlocking said two sections of strips together and thus forming the sets of cells as shown, and with mechanism for discharging said cells from the machine, substantially as specified.

2. The cell-case machine comprising punch and dies for forming and shearing, and feeding forward two series of cell-forming strips; guides for conducting said series of strips forward at right angles to each other; one series direct to a cell-forming compartment, and one series to a primary severing and wrapping compartment; slotted wrapping-shafts for receiving within their slots said latter series of strips; cutters for severing said series of strips from their infeeding portions; blades for delivering said series of strips to within the slots of said wrapping-shafts; means for rotating said shafts to wrap said strips thereabout for conveying the same from said primary compartment to the said cell-forming compartment through perforations of said former infed series of strips, for unwrapping said wrapped series of strips and thereby interlocking them with said former infed strips and for withdrawing said shafts from said cell-forming compartment; cutters for severing said former infed series of strips from their infeeding portions, blades for discharging the interlocking strips or formed cells from said cell-forming compartment, and the means substantially as shown and described for operating the parts in the manner set forth.

3. In the cell-case machine described in combination, the two sets of punches and dies and shearing and feed rolls, arranged at stations to form and feed forward two series of cell forming strips; one series at right angles to the other series; the spiral guides for conducting said strips from said rolls and for spirally turning them from a horizontal to a vertical side position; the cell-forming compartment comprising the series of equidistant blocks, having ways between them and cross-slitted at their under side as shown; the primary compartment comprising the series of parallel equidistant blocks, having ways between them in line with those of said cell-forming compartment blocks, the slotted wrapping-shafts arranged to operate in said ways in said compartments; the cell-strip cutters arranged to operate at the strips' entrance to said compartments; the blades arranged to operate vertically between said compartment-blocks and the means substantially as shown and described for operating said operative parts in the manner, and for the purpose set forth.

4. In the cell-case machine, the cell-forming compartment comprising the series of parallel equidistant blocks removably seated at their ends, cross-slitted in their under side at right angle to their length, and provided with passage-ways for wrapping-shafts and cell-strips wrapped thereabout, and the strip-wrapping shafts adapted to be entered into said compartment in said passage-ways, substantially as and for the purpose specified.

5. In the cell-case machine in combination with the cell-forming compartment, the primary cell-strip compartment comprising the series of parallel equidistant blocks removably seated at their ends and provided with the longitudinal hollows forming passage-ways between them; and the wrapping-shafts arranged in said passage-ways, and adapted to receive, and be actuated to wrap thereabout, the series of cell-strips, substantially as and for the purpose specified.

6. In the machine described the primary cell-strip-compartment division blocks 24 provided with the separable bottom portions 37, and placed to provide spaces between them for the reception of the cell-strips, and shaped to provide longitudinal ways between them for the operation and passage of the cell-strip-wrapping shafts; and wrapping-shafts arranged and operated in said ways, substantially as and for the purpose specified.

7. In the machine described, the cell-forming-compartment division-blocks 38 shaped to provide wrapping-shaft ways to admit the strip-wrapping shafts and accommodate the unwrapping of the strips from said shafts, and provided with cross-strip ways; the strip-wrapping shafts adapted to be operated to deliver strips wrapped thereabout into said compartment; and means for operating said shafts to unwrap the strips therefrom, substantially as and for the purpose specified.

8. In the machine described, the cell-forming-compartment division-blocks 38 shaped to provide the wrapping-shaft ways, and provided with the stripping-edges 42 and 43 adjacent said ways; the wrapping shafts adapted to be operated in said ways and deliver sets of cell-forming strips therein, and means for operating said shafts to unwrap said strips, substantially as and for the purpose specified.

9. In the machine described in combination with the cross-beams 27 28 and 41 respectively provided with side-extending tongues as shown; the compartment division-bars 24 and 38 respectively provided with end vertical recesses, and adapted to be removably seated between said cross-beams and held so the spaces between them will be equidistant by said tongues resting in said recesses, substantially as set forth.

10. In the cell-case machine described in combination with the cell-forming compartment and the cell-strip guides leading to within said compartment; the cutter-blocks 47 arranged adjacent said guides at the entrance to said compartment; the cutter-bar 45 provided with the cutter-sections 46 adapted to shear with said cutter-blocks, the head 54 provided with the arm 56 arranged connecting said cutter-bar, and the means for intermittently oscillating said head, substantially as and for the purpose specified.

11. In the cell-case machine described, in combination with the primary cell strip compartment and the guides leading thereto, the compartment division-blocks 24 provided with the shear plates 33 attached thereto adjacent said guides at the entrance to said compartment; the cutter-bar 31 provided with the cutter-sections 32 adapted to shear with said plates 33; the head 54 provided with the arm 55 arranged connecting said cutter-bar, and the means for intermittently oscillating said head, substantially as and for the purpose specified.

12. In the machine described in combination with the cell-strip-cutter bars 31 and 45, and the driven cam 85; the vertical shaft 127, the arm 128 fixed to the lower end portion thereof, and provided with a wrist operating in the channel of said cam and with the head 54 at its upper end; and the arms 55 and 56 arranged respectively engaging said cutter-bars substantially as and for the purpose specified.

13. In the cell-case machine, in combination with the cell-form-

ing compartment comprising the parallel equidistant and cross-slitted blocks, the blades adapted to be operated between said blocks, to discharge finished cells from said compartment, and the means for operating said blades, substantially as set forth.

14. In the cell-case machine, in combination with the primary cell-strip compartment, comprising the parallel equidistant blocks, as shown, and with the slotted traveling wrapping shafts, arranged in way between said blocks; the blades adapted to be operated to deliver the cell-strips fed into the upper portion of said compartment-stripways, down into the slots of said shafts; the cell-strip stop-bars arranged across the under portion of said compartment for arresting said strips and the means for operating said blades, substantially as set forth.

15. In the machine described, in combination with the cell-strip and cell-forming compartment blade and head 49 thereof provided with the down-extending rods 120, and with the driven cam 84; the pivoted lever 117 provided with a wrist-roller 119 operating in the channel of said cam the connecting-rod 122 and cross-head 121 arranged connecting said lever with said blade-head rods, substantially as and for the purpose specified.

16. In the cell-case machine in combination with the primary and cell-forming compartments, the slotted rotatable and traveling wrapping-shafts, substantially as and for the purpose specified.

17. In the cell-case machine in combination with the primary and cell-forming compartments, provided with guideways substantially as set forth; the slotted rotatable traveling wrapping-shafts arranged to traverse the ways extending jointly across said compartments, substantially as and for the purpose set forth.

18. In the cell-case machine in combination with the primary and cell-forming compartments, provided with the guideways substantially as set forth; the slotted rotatable traveling wrapping-shafts arranged to traverse the ways extending jointly across said compartments and reduced in diameter throughout their strip-contacting section, substantially as and for the purpose specified.

19. In the cell-case machine in combination with the primary and cell-forming compartments, provided with the guideways substantially as set forth; the slotted rotatable traveling wrapping-shafts, arranged to traverse the ways extending jointly across said compartments, reduced in diameter throughout their strip contacting section and provided with segmental flanges at said reduced sections, substantially as and for the purpose specified.

20. In the cell-case machine in combination with the primary cell-strip compartment and the cell-forming compartment comprising the series of parallel equidistant division-blocks shaped to provide ways between them; the reciprocating carriage, the slotted wrapping shafts boxed thereto and provided with pinions, as shown, the cross-toothed rack arranged in mesh with said pinions; and the means for reciprocating said carriage, and actuating said rack, substantially as specified.

21. In the machine described, the wrapping-shafts 35, slotted longitudinally to receive therein the cell-strips, and provided with the segmental flanges, substantially as and for the purpose specified.

22. In the cell-case machine, in combination with the drive-shaft thereof, the latch-arm and peripheral cam fixed on said shaft, and the reciprocating carriage; the cell-strip wrapping-shafts provided with the pinions, as shown, and boxed to said carriage; the toothed rack arranged in a cross guideway, of said carriage and in mesh with said pinions and provided with the pin depending from its end portion; the cross-recessed bar arranged extending under the end portion of said rack; the bell-crank lever carried by said carriage and connected with said rack; the pivoted latch-arm and hooked lever arranged in line and adapted to engage with the side extending branch of said bell-crank and adapted to be actuated respectively by said latch-arm and peripheral cam to throw said bell-crank and actuate said rack and pinions, substantially as and for the purpose described.

23. In the cell-case machine, in combination with the reciprocating carriage and rack-actuating lever thereof; the pivoted arm; the rotary latch-arm adapted to engage said pivoted arm for engaging and throwing said lever in one direction; the pivoted hooked lever; the rotary peripheral cam, of the machine-driving mechanism, arranged to engage and operate said hooked lever, to in turn engage and throw said rack-actuating lever in the opposite direction, substantially as and for the purpose specified.

24. In the machine described in combination with the rotary latch-arm 82, and the reciprocating carriage 60; the pivoted arm 109, the lever 108, the toothed rack 61 and the wrapping-shafts 35 provided with the pinions 59 arranged in mesh with said rack, substantially as and for the purpose specified.

25. In the machine described in combination with the reciprocating carriage 60, and toothed rack 61 thereof, provided with the depending pin 112; the stationary horizontally-extending bar 110 provided with the cross-recess 111, substantially as and for the purpose specified.

26. In the machine described, in combination with the rotary cam 83, and the reciprocating carriage 60; the pivoted hooked lever 114 and spring-arm 115 thereof, the lever 108, the toothed rack 61, and the wrapping-shafts 35 provided with the pinions 59 arranged in mesh with said rack, substantially as and for the purpose specified.

27. In the cell-case machine, in combination with the traveling rotatable wrapping-shafts and carriage thereof, and with the drive-shaft, the latch mechanism for imparting rapid rotary movement in one direction, to said wrapping shafts at one junction of said carriage, and the lever mechanism for imparting reverse rotary movement to said shafts at the opposite junction of said carriage substantially as and for the purpose set forth.

28. In the cell-case machine, in combination with the reciprocating carriage, provided with the horizontally-extending push-rod, the pivoted holding-arm adapted to be engaged and operated by said push-rod, to assume a horizontal position, substantially as and for the purpose specified.

29. In the machine described in combination with the driven segment 88; the ratchet-wheels 138 and 142; the arms 139 and 146; the shafts 178 and 133, the gears 136 and 137, the arms 163, the pawls 143 and 164; and the connecting-rods 144 and 145, substantially as and for the purpose specified.

30. In the cell-case machine, the combination with the intermittent reciprocating wrapping-shaft carriage, and segment-arm for operating said carriage of the driven oscillating toothed segment, the loose toothed gear-wheel arranged in mesh therewith, the shaft carrying the crank connecting said carriage-operating segment-arm, the pawl-and-ratchet mechanism, whereby said cranked shaft is driven during the time of movement one way of said oscillating segment and permitted to remain idle during the time of movement the opposite way of said segment, and mechanism for locking said shaft against movement while idle, substantially as set forth.

31. In the machine described, in combination with segment-arm 88, the head 94 provided with the oppositely-facing peripheral offsets the spring-arm 98 arranged to engage one of said offsets to prevent reverse movement of said head; the pivoted arm 99 arranged to engage the other of said offsets to arrest rotary movement of said head, and the stop 100 of said segment-arm arranged to engage and lift said pivoted arm from such engagement, substantially as and for the purpose specified.

32. In the machine described in combination with the driven segment-arm 88 provided with the stop 100, the crank-shaft 90 the gear 92 sleeved thereon in mesh with said segment-teeth; the head 94 fixed on said shaft, and provided with a spring-pawl 95 arranged to engage a tooth of a hub-flange of said gear; the spring-arm 98 arranged to engage a peripheral offset of said head to prevent reverse rotation thereof, and the pivoted arm arranged to engage an oppositely-facing offset of said head to arrest movement thereof and to be lifted from such engagement by the stop of said segment, substantially as and for the purpose specified.

33 In the machine described in combination with the drive-shaft and cranked disk 85; the segment-arm 88 provided with the stop 100 the shaft 90, the spur-gear 92 sleeved on said shaft, arranged in mesh with the teeth of said segment, and provided with the toothed hub-flange 93; the head 94 provided with the peripheral offset and fixed on said shaft, and provided with the spring-pawl arranged to engage said flange-tooth, the crank 105 fixed on the inner end of said shaft, the toothed segment-arm 102 arranged to be operated by said crank, and the stop-arms 98 and 99 arranged to engage the offsets of said head and the arm 99 to be engaged by said stop 100, substantially as and for the purpose specified.

34. In the cell-case machine, the spiral cell-strip guides reduced in width at their strip-receiving end, and provided with the notch at their opposite end for registering with up projections of their supports, substantially as set forth.

35. In a cell-case machine, the combination with a series of holders or devices for holding a series of transverse strips in position to form a cell-case, of a slotted shaft or spindle for rolling or folding a longitudinal cell-strip about its longitudinal axis, and a guideway or chamber the wall of which surrounds said slotted shaft or spindle to prevent the rolled or folded strip from unwinding and to guide the same into and through the holes or openings in the transverse strips and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

36. In a cell-case machine, the combination with a series of holders or devices for holding a series of transverse strips in position to form a cell-case, of a slotted shaft or spindle for rolling or folding a longitudinal cell-strip about its longitudinal axis, and a guideway or chamber the wall of which surrounds said slotted shaft or spindle to prevent the rolled or folded strip from unwinding and to guide the same into and through the holes or openings in the transverse strips, and means for feeding the longitudinal strip into the slot of such shaft or spindle, substantially as specified.

37. In a cell-case machine the combination with a series of transverse cell-strip holders, of a series of reciprocating slotted shafts or spindles about which the longitudinal strips are wound or folded, and a series of guideways surrounding said shafts and extending between the transverse strips to guide the longitudinal strips, when wrapped about such shafts or spindles, through the holes or openings in the transverse strips, substantially as specified.

38. In a cell-case machine the combination of a series of transverse cell-strip holders, of a series of reciprocating slotted shafts or spindles about which the longitudinal strips are wound or folded, and a series of guideways surrounding said shafts and extending between the transverse strips to guide the longitudinal strips, when wrapped about such shafts or spindles, through the holes or openings in the transverse strips, said transverse cell-strip holders and said guideways for the longitudinal strips being bottomless or having an open passage downward to permit the finished cell-case to be discharged therefrom when said slotted shafts or spindles are withdrawn, substantially as specified.

39. In a cell-case machine the combination with a series of transverse cell-strip holders, of a series of reciprocating slotted shafts or spindles about which the longitudinal strips are wound or folded, and a series of guideways surrounding said shafts and extending between the transverse strips to guide the longitudinal strips, when wrapped about such shafts or spindles, through the holes or openings in the transverse strips, said transverse cell-strip holders and said guideways for the longitudinal strips being bottomless or having an open passage downward when said slotted shafts or spindles are withdrawn, and delivering blades or devices for discharging the finished cell-case, substantially as specified.

40. In a cell-case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

41. In a cell-case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, said slotted shafts being reversely rotatable for the purpose not only of rolling or folding the cell-strips about them but also for unrolling or folding the same and interlocking the longitudinal strips after the former are inserted through the latter, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

42. In a cell-case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, said means for feeding or delivering said transverse cell strips to their holders, having a device for turning or twisting each of said strips from a horizontal to a vertical plane, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

43. In a cell-case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

44. In a cell case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, and means for threading the longitudinal strips through the perforations in the transverse strips and devices for cutting said transverse strips to length, substantially as specified.

45. In a cell-case machine, the combination with a series of transverse cell strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding and delivering said longitudinal cell-strips to said slotted shafts, and devices for cutting said longitudinal cell-strips to length, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

46. In a cell-case machine, the combination with a series of transverse cell-strip holders, of mechanism for forming and slitting or shearing a series of transverse cell-strips from a continuous web of strawboard or paper, means for feeding or delivering said transverse cell-strips into said transverse cell-strip holders, a series of reciprocating slotted shafts or spindles for receiving, holding and rolling or folding a series of longitudinal cell-strips about their longitudinal axes, a series of guideways surrounding said reciprocating slotted shafts and extending between the transverse cell-strips, mechanism for forming and slitting or shearing said series of longitudinal cell-strips from a web of strawboard or paper, and means for feeding or delivering said longitudinal cell-strips to said slotted shafts, and devices for cutting said longitudinal cell-strips to length, devices for cutting said longitudinal strips to length, and means for threading the longitudinal strips through the perforations in the transverse strips and means for discharging or ejecting the completed cell-case, substantially as specified.

47. In a cell-case machine, the combination with two horizontal strawboard-web feed tables or beds at right angles to each other, mechanism for feeding said webs along, mechanism for forming and dividing one of said webs into transverse cell-strips, mechanism for forming and dividing the other of said webs into longitudinal cell-strips, a series of holders for receiving the transverse cell-strips, devices for turning the transverse cell-strips from a horizontal to vertical planes as they are fed forward into said holders, devices for severing the transverse cell-strips into lengths, a series of reciprocating slotted shafts for receiving the longitudinal cell strips, a series of devices for turning the longitudinal cell-strips from a horizontal to vertical planes and guiding them into position over said slotted shafts, a series of devices for severing said longitudinal cell-strips to length, a series of blades or devices for pushing said longitudinal cell-strips into the slots of said shafts, and a series of guideways surrounding said reciprocating shafts and extending between the transverse cell-strips in said transverse cell-strip holders, and means for threading the longitudinal strips through the perforations in the transverse strips, substantially as specified.

48. In a cell-case machine, the combination with two horizoutal strawboard-web feed tables or beds at right angles to each other mechanism for feeding said webs along, mechanism for forming and dividing one of said webs into transverse cell-strips, mechanism for forming and dividing the other of said webs into longitudinal cell-strips, a series of holders for receiving the transverse cell-strips, devices for turning the transverse cell-strips from horizontal to vertical planes as they are fed forward into said holders, devices for severing the transverse cell-strips into lengths, a series of reciprocating slotted shafts for receiving the longitudinal cell-strips, a series of devices for

turning the longitudinal cell-strips from horizontal to vertical planes and guiding them into position over said slotted shafts, a series of devices for severing said longitudinal cell-strips to length, a series of blades or devices for pushing said longitudinal cell-strips sidewise into the slots of said shafts, a series of guideways surrounding said reciprocating shafts and extending between the transverse cell-strips in said transverse cell-strip holders, and means for rotating said slotted shafts first in one direction to roll or fold said longitudinal strips about the same and then, after said longitudinal strips have been inserted in said transverse strips by the forward reciprocating movement of said shafts, in the opposite direction for the purpose of unwinding or unfolding said longitudinal strips and causing the same to interlock with the transverse strips, substantially as specified.

49. In a cell case machine, the combination with two horizontal strawboard-web feed tables or beds at right angles to each other, mechanism for feeding said webs along, mechanism for forming and dividing one of said webs into transverse cell-strips, mechanism for forming and dividing the other of said webs into longitudinal cell-strips, a series of holders for receiving the transverse cell-strips, devices for turning the transverse cell-strips from horizontal to vertical planes as they are fed forward into said holders, devices for severing the transverse cell-strips into lengths, a series of reciprocating slotted shafts for receiving the longitudinal cell, a series of blades or devices for pushing said longitudinal cell-strips sidewise into the slots of said shafts, a series of guideways surrounding said reciprocating shafts and extending between the transverse cell-strips in said transverse cell-strip holders, and means for rotating said slotted shafts first in one direction to roll or fold said longitudinal strips about the same and then after said longitudinal strips have been inserted in said transverse strips by the forward reciprocating movement of said shafts in the opposite direction for the purpose of unwinding or unfolding said longitudinal strips and causing the same to interlock with the transverse strips, and means for discharging the finished cell-case in a direction at right angles to its plane, substantially as specified.

50. In a cell-case machine, the combination with a slotted reciprocating rotatable shaft, of a guide surrounding said shaft and in which it reciprocates, and means for pushing or delivering the longitudinal cell-strip sidewise into the slot of said shaft, substantially as specified.

51 In a cell-case machine, the combination with devices for forming and slitting in the direction of its length a continuous web of strawboard or paper into longitudinal cell-strips, of devices for twisting or turning said strips from horizontal to vertical planes and bringing them edgewise over and into registry with a series of slotted wrapping shafts or spindles, a series of devices for severing said longitudinal cell-strips into lengths, a series of slotted wrapping shafts or spindles, and a series of blades for pushing said series of longitudinal strips into said slotted shafts, substantially as specified.

52. In a cell-case machine, the combination with devices for forming and slitting in the direction of its length a continuous web of strawboard or paper into longitudinal cell-strips, of devices for twisting or turning said strips from horizontal to vertical planes and bringing them edgewise over and into registry with a series of slotted wrapping shafts or spindles, a series of devices for severing said longitudinal cell-strips into lengths, a series of slotted wrapping shafts or spindles, and a series of blades for pushing said series of longitudinal strips into said slotted shafts, and a series of guideways surrounding said slotted shafts, substantially as specified.

53. In a cell-case machine, the combination with a reciprocating slotted wrapping-shaft, a guideway surrounding it, having a slot or passage for the admission of a cell-strip into the slot of said shaft in a direction at right angles to the shaft, and a reciprocating blade for pushing the cell-strip into the slot of the shaft, substantially as specified.

570,622. LIFTING AND CARRYING DEVICE. DANIEL BRODERICK, Laurel Hill, N. Y. Filed June 27, 1896. Serial No. 597,121 (No model.)



Claim.—1. In a lifting and carrying device, the combination of two levers and a shackle all pivoted together by one pivot and a pair of grappling-hooks pivoted to the shackle, substantially as herein described.

2. In a lifting and carrying apparatus, the combination of two levers one end of each of which is adapted to bear upon the body to be lifted, a shackle to which said levers are pivoted by one common pivot, and a pair of grappling-hooks pivoted to said shackle and provided with horns projecting upward through and beyond the shackle, substantially as herein described.

570,623. SHIFTING APPARATUS. ANDRE CHAVANNE, Grass Valley, Cal. Filed Mar. 11, 1896. Serial No. 582,818. (No model.)



Claim.—1. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, guides upon said rod through which the shaft slides freely, a collar or stop on the shaft at a point between the guides and shorter than the distance by which they are separated, and springs on the shaft, one on each side of the collar or stop and lying in the paths of movement of and adapted to be contacted by said guides.

2. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, guides upon said rod through which the shaft slides freely, a collar or stop on the shaft at a point between the guides and shorter than the distance by which they are separated, springs on the shaft, one on each side of the collar or stop and lying in the paths of movement of and adapted to be contacted by said guides, and removable tappets to be fitted to said collar or stop, to vary its length and thereby to vary the length of the transmitted stroke.

3. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, guides upon said rod through which the shaft slides freely, a collar or stop on the shaft at a point between and lying in the path of movement of the guides and removable tappets adapted to be fitted to said collar or stop to vary its length and thereby to vary the length of the transmitted stroke.

4. A shifting and transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, separated pillow-blocks on said rod in which the shaft is mounted and adapted to slide freely, a base-plate or frame to which the pillow-blocks are secured, said plate or frame being secured to the reciprocating rod from which the stroke is to be taken, and a collar or stop on the shaft at a point between the pillow-blocks and lying in the path of said blocks.

5. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, separated pillow-blocks in which the shaft is mounted and adapted to slide freely, a base-plate or frame to which the pillow-blocks are secured, said plate or frame being secured to the reciprocating rod from which the stroke is to be taken, a collar or stop on the shaft at a point between the pillow-blocks and lying in the path of said blocks, and removable tappets adapted to be fitted to said collar or stop, to vary its length and thereby to vary the length of transmitted stroke.

6. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, separated pillow-blocks in which the shaft is mounted and adapted to slide freely, a base-plate or frame to which the pillow-blocks are secured, said plate or frame being secured to the reciprocating rod from which the stroke is to be taken, a collar or stop on the shaft at a point between the pillow-blocks, and springs on the shaft one on each side of the collar or stop and lying in the paths of movement of and adapted to be contacted by said pillow-blocks.

7. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, separated pillow-blocks in which the shaft is mounted and adapted to slide freely, a base-plate or frame to which the pillow-blocks are secured, said plate or frame being secured to the reciprocating rod from which the stroke is to be taken, a collar or stop on the shaft at a point between the pillow-blocks, springs on the shaft one on each side of the collar or stop and lying in the paths of movement of and adapted to be contacted by said pillow-blocks, and removable tappets adapted to be fitted to said collar or stop to vary its length and thereby to vary the length of transmitted stroke.

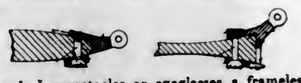
8. A shifting or transmitting mechanism comprising a shaft connected with and adapted to operate the device to which the stroke is to be transmitted, a separate reciprocating rod adapted to operate another device, and from which the stroke is to be taken, separated pillow-blocks in which the shaft is mounted and adapted to slide freely, a base plate or frame to which the pillow-blocks are secured, said plate or frame being secured to the reciprocating rod from which the stroke is to be taken, a collar or stop on the shaft at a point between the pillow-blocks, springs on the shaft one on each side of the collar or stop and lying in the paths of movement of and adapted to be contacted by said pillow-blocks, removable tappets adapted to be fitted to said collar or stop to vary its length and thereby to vary the length of transmitted stroke, and a removable key to prevent the movement of the shaft through the pillow-blocks whereby the shaft and movable part are locked together to transmit the full stroke.

570,624. PROCESS OF MAKING CHLORIN. WILLIAM DONALD, Saltcoats, Scotland, assignor of one-half to Robert Main, Stevenston, Scotland. Filed Feb. 21, 1896. Serial No. 580,240. (No specimens.) Patented in England May 30, 1895, No. 10,713.

Claim.—1. The process of manufacturing chlorin, consisting in treating, under heat, an alkaline chlorid and manganic oxid with nitric acid and water, peroxidizing and recovering the manganese by roasting the residual product dissolving in water, blowing in air and finally separating the manganic oxid by deposition, substantially as set forth.

2. The herein-described process of treating alkaline chlorids for the production of chlorin, and the recovery as by-products of nitric acid and the alkalies contained in the chlorids, the said process consisting in decomposing by heat, a mixture of the chlorid and manganic oxid with nitric acid and water to produce chlorin gas, evaporating and roasting the residual product to decompose the nitrates and evolve oxids of nitrogen which are by oxidation converted into nitric acid, dissolving the furnaced residual product in water and blowing in air to peroxidize the manganese and recovering the caustic alkali by separation from the manganese, substantially as described.

570,625. FRAMELESS SPECTACLES OR EYEGLASSES. WALTER S. ESSICK, Reading, Pa., and CHARLES S. REES, Selma, Ala., assignors, by mesne assignments, to the Interchangeable Frameless Spectacle Co., Limited, Reading, Pa. Filed May 4, 1896. Serial No. 590,095. (No model.)



Claim.—1. In spectacles or eyeglasses, a frameless lens and a metallic fitting thereto having one clamping-ear only contacting with one face of the lens and a clamping-screw passing through a perforation in the lens and engaging said ear substantially as set forth.

2. A fitting for frameless spectacle-lens, having one clamping-ear only adapted to bear against one face of the lens, a shoulder forming a stop against the edge of the lens, and a perforation in said ear for a clamping-screw, substantially as set forth

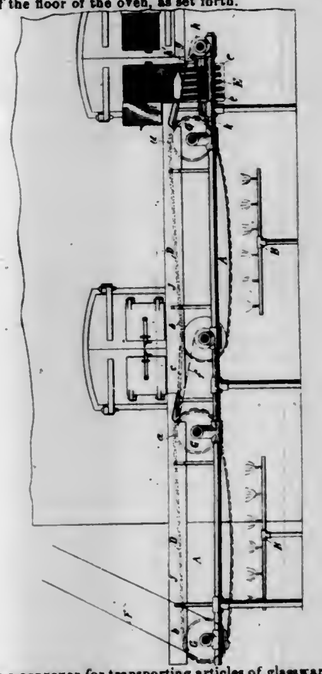
3. In spectacles or eyeglasses, a frameless lens and a metallic fitting thereto having one clamping-ear only to contact with one face of the lens, a clamping-screw passing through a perforation in the lens and engaging said ear, and a washer interposed between the head of the screw and the opposite face of the lens and in which said head is socketed, substantially as set forth.

4. A perforated spectacle-lens having a fitting clamped against one face thereof only by means of a clamping-screw passing through the perforation in the lens and a washer for said screw adjustably seated against the opposite face of the lens, substantially as set forth.

570,626. CONVEYER FOR ARTICLES OF GLASS. EDWARD H. EVERETT and ALEXANDER SAMUELSON, Newark, Ohio. Filed Jan. 4, 1896. Serial No. 574,341. (No model.)

Claim.—1. A device for transferring glass articles from the molder's table or blower's bench to the annealing-ovens of glass manufactories consisting in the combination with a main mechanical conveyer leading from the desired point to and in front of said ovens, but on a different level from the doors thereof, of an auxiliary conveyer adapted to receive the articles carried by the main conveyer and extending into the oven obliquely to the main conveyer, and having its delivery end above the level of the floor of the same, as set forth.

2. A device for transferring glass articles from the molder's table or blower's bench to and into the annealing-ovens in glass manufactories consisting in the combination with a main mechanical conveyer leading from the desired point to and in front of a series of said ovens, but on a different level from its doors thereof, said conveyer being composed of separate sections, each extending from the door of one oven to that of the next, of an auxiliary conveyer adapted to be mounted at the end of a section so as to receive the articles carried thereby and extending into the oven adjacent to the end of such section obliquely to the said section, and having its delivery end above the level of the floor of the oven, as set forth.



3. In a conveyer for transporting articles of glassware and delivering them to the annealing-oven or leer, the combination of a main conveyer extending to the door of the leer, with an auxiliary or oven conveyer extending therefrom into the leer to a point above the floor of the same, and an inclined plane leading from the delivery end thereof to the oven-floor, as set forth.

4. A device for conveying articles of glassware into an annealing-oven or leer comprising a mechanical conveyer, such as an endless belt, supported in front of said oven and entering the same so that its delivery end within said oven is above the level of the floor, in combination with an inclined plane extending from the delivery end of the conveyer to the floor of the oven, as set forth.

5. A device for transporting heated articles of glassware composed of a series of endless-belt conveyers, the receiving end of one section being on a lower level than the delivery end of the section adjacent thereto, in combination with inclined planes bridging the said ends whereby the articles conveyed will roll from one section of the conveyer to the next, as set forth.

6. The combination with a series of annealing-ovens or leers, each having a door of a sectional conveyer extending along in front of the same, each section being pivotally mounted on a support in front of a door, and means for supporting the free ends of the sections above and out of the way of the door adjacent thereto, as set forth.

7. The combination with a series of annealing-ovens or leers, each having a door, of a sectional conveyer extending along in front of the leer and composed of removable sections extending between adjacent doors, a removable transverse conveyer, and power-actuating devices arranged in front of each door, for actuating the transverse conveyer, as set forth.

570,627. HAT-PIN GUIDE OR RETAINER. ISAIE FRECHETTE, Montreal, Canada, assignor to Henri Beaudry and Joseph Beaudry, same place. Filed June 2, 1896. Serial No. 594,043. (No model.)

Claim.—1. A guide for a hat-pin comprising a straight tubular portion, an open bearing-surface and an inclined portion, for the purpose set forth.

2. A guide for a hat-pin comprising a straight end portion, an inclined end portion, and an intermediate curved portion presenting an open bearing-surface, substantially as shown and described.



3. A guide for a hat-pin comprising a straight tubular portion, an open bearing-surface and an inclined portion, the outer end of the inclined portion being closed, for the purpose set forth.

570,628. LETTER-BOX. FREDERICK G. GASCHLIN, San Francisco, Cal., assignor of one-third to Jacob Maas, same place. Filed Apr. 17, 1896. Serial No. 587,898. (No model.)



Claim.—1. A letter or other receiving box comprising a casing or box having a receiving-opening and a ledge *a'*, a curved front guard-plate swinging within the box and adapted to successively expose and cover said opening, a receiver centrally pivoted within the box, connections between said guard-plate and the rear end of the receiver, adapted as the former uncovers the receiving-opening of the box, to bring the receiver into position so that its open end will aline with said opening, and as the guard-plate covers said opening to turn the receiver so that its contents may be discharged, and a means carried by the receiver adapted to temporarily cover the receiving-opening of the box preceding the alinement of said open front therewith.

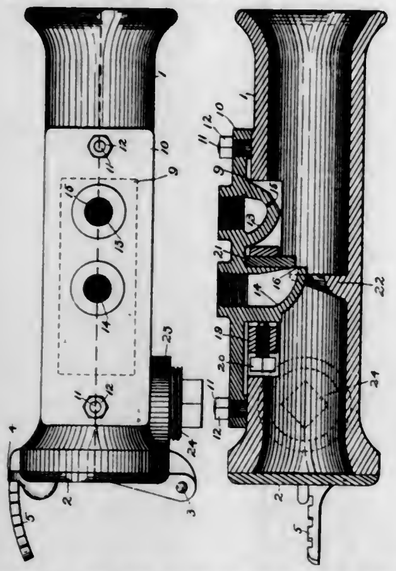
2. A letter or other receiving box comprising a casing or box having a receiving-opening, a tilting receiver pivoted within the box and having an open front adapted to be brought into alinement with the receiving-openiug of the box, a swinging guard-plate adapted to cover and to uncover said opening successively, a curved flange on the front end of the receiver adapted to temporarily cover the box-opening preceding the alinement of the open front of said receiver therewith, and connections between said guard-plate and the tilting receiver adapted as the former uncovers the receiving-opening of the box to bring the latter up to position to cause its open front to aline with said opening, and as the front guard-plate covers said opening to turn the receiver downwardly within the box to discharge its contents therein, said connections consisting of levers pivoted in the box at points between their ends, links connecting the rear ends of said levers with the receiver, and links connecting the forward ends of said levers with the front guard-plate.

3. In a letter or other receiving box, the combination of a box having a receiving-opening, a tilting receiver pivoted within said box and having an open front adapted to be brought into alinement with the opening of said box, said receiver having also a guard-flange at its open front adapted to temporarily cover the opening of the box preceding the alinement of the front of the receiver therewith, a front guard-plate adapted to alternately expose and to cover said opening, said guard-plate having arms extending into the box and swinging from the same pivotal center as that of the receiver, and connections between the front guard-plate and the receiver adapted as the former uncovers the receiving opening of the box, to bring the latter up to position to cause its open front to aline with said opening, and as the front guard-plate descends to cover said opening to turn the receiver downwardly within the box to discharge its contents therein.

4. In a letter or other receiving box, the combination of a box having a receiving-opening, a tilting receiver pivoted within said box, and having an open front adapted to be brought into alinement with the opening of said box, a front guard-plate adapted to alternately expose and to cover said opening, said guard-plate having arms extending into the box and swinging from the same pivotal center as that of the receiver and connections between the front guard-plate and the receiver adapted as the former uncovers the receiving-opening of the box to bring the latter up to position to cause its open front to aline with said opening, and as the front guard-plate descends to cover said opening, to turn the receiver downwardly within the box to discharge its contents therein, said connections consisting of levers pivoted in the box at points between their ends, links connecting the rear ends of said levers with the receiver at points in rear of its center of movement, and links connecting the forward ends of said levers with the side arms of the front guard-plate.

5. In a letter or other receiving box, the combination of a box having a receiving-opening, a tilting receiver mounted within said box and having an open front adapted to be brought into alinement with the receiving-opening, a front guard-plate swinging within the box and adapted to successively expose and cover said opening, connections between the front guard-plate and the receiver whereby they work reciprocally as described, and the guard-flange on the receiver adapted to temporarily cover the receiving-opening of the box preceding the alinement of the open front of the receiver therewith.

570,629. BURNER FOR LIQUID FUEL. ALBERT L. GLADWIN, Boston, Mass., assignor to the Astor Manufacturing Company, same place. Filed Nov. 12, 1895. Serial No. 568,737. (No model.)



Claim.—1. In a burner for the combustion as fuel of petroleum or other liquid hydrocarbons used for fuel, the combination substantially as described, of a hollow open cylinder; having an opening in the side of the cylinder to provide access to the interior thereof; a plate covering this opening and removably attached to the cylinder, and nozzles for the respective supply of steam and oil, or other liquid hydrocarbon used as fuel, attached to the under side of the plate and projecting into the cylinder.

2. In a burner for the combustion as fuel of petroleum or other liquid hydrocarbon used for fuel, the combination substantially as described, of a hollow open cylinder; having an opening in the side of the same to provide access to the interior of the cylinder; a plate covering this opening and removably attached to the cylinder; a nozzle for the supply of oil, or other liquid hydrocarbon used as fuel, attached to the under side of the plate and projecting into the cylinder; a nozzle for the supply of steam, attached to the under side of the plate and projecting into the cylinder and having its orifice directed toward the front part of the cylinder and nearer the central longitudinal axis of the same than the orifice of the oil-nozzle, and the longitudinal orifices in the nozzles at right angles to the axis of the cylinder.

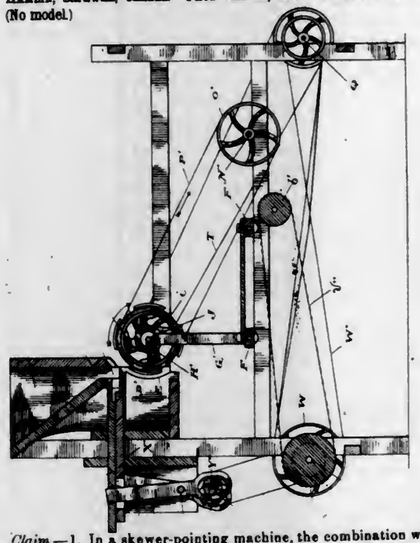
3. In a burner for the combustion as fuel of petroleum or other liquid hydrocarbon used for fuel, the combination substantially as described, of a hollow open cylinder; having a rectangular and oblong opening in the side of the same to provide access to the interior of the cylinder; a rectangular and oblong plate covering this opening and removably attached to the cylinder; a nozzle for the supply of steam, attached to the under side of this plate and projecting into the cylinder and of rectangular form in its upper part within the cylinder and curved at its bottom toward its orifice; said nozzle having a longitudinal orifice opening toward the front of the cylinder and at right angles to the axis of the cylinder; a nozzle for the supply of oil, or other liquid hydrocarbon used as fuel, attached to the plate and projecting into the cylinder to a less extent than the steam-nozzle, said nozzle being in the form of a prism, having its parallel sides parallel with the axis of the cylinder, its side toward the front of the cylinder truncated, and an orifice formed by a longitudinal slit in the truncated face at right angles to the axis of the cylinder and inclined toward the front of the cylinder.

4. In a burner for the combustion as fuel of petroleum or other liquid hydrocarbon used as fuel, the combination substantially as described, of a hollow open cylinder; having an opening in the side of the same; a plate covering the opening and removably attached to the cylinder, and nozzles for the supply of oil and steam, cast or otherwise formed in the same piece with the plate.

5. In a burner for the combustion as fuel of petroleum or other liquid hydrocarbon used as fuel, the combination, substantially as described, of a hollow open cylinder; having an opening in the side of the same; a plate covering the opening and removably attached to the cylinder; nozzles for the supply of oil and steam attached to the under side of the plate and means within the cylinder for regulating the size of the orifice in the steam-nozzle.

6. The combination substantially as described, of the covering-plate recessed upon its under side; the steam-nozzle attached to the plate; an orifice opening under the front side of the nozzle; a frame encircling the nozzle; an adjustable plate bearing against the front side of the nozzle and placed between the frame and this front side, and the set-screw for clamping the frame to the nozzle.

570,630. MACHINE FOR POINTING SKEWERS. THOMAS W. HAMLIN, Sarawak, Canada. Filed Jan. 22, 1896. Serial No. 576,470. (No model.)

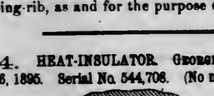


Claim.—1. In a skewer-pointing machine, the combination with the hopper of a feeding apparatus consisting of two slides one located above the other, a shaft journaled in the frame, cams mounted on the shaft, levers operated by the cams, arranged to work the slides alternately, to allow of the delivery only of one skewer blank at a time from the hopper, skewer-supporting tables, a concaved face for each of the tables, a horizontal shaft opposed to the tables journaled in the frame, pillow-blocks opposite the interval between the tables, sleeves supported by the pillow-blocks encircling the shaft, idlers mounted on the sleeves opposed to and concentric with the concaved faces of the tables, cutter-heads mounted on the shaft on the sides of the said idlers, a second shaft, pulleys mounted on the second shaft, belts passing around the said pulleys and idlers, and means for imparting motion to the machine, substantially as specified.

2. In a machine for pointing skewer-blanks, the combination of a hopper, an opening through the bottom of the hopper, two alternately-working slides one located above the other, adapted to permit of the delivery of one skewer-blank at a time from the said hopper, a rock-shaft, two levers mounted on the rock-shaft, each lever engaging with its respective slide, an eye in the lower end of each of the said levers, a shaft passing through the eyes, cams mounted on the said shaft operating the said levers, and means for imparting motion to the said shaft, substantially as specified.

570,631. SASH-CORD HOLDER. CHARLES U. HANNUM, Philadelphia, Pa. Filed June 22, 1896. Serial No. 596,475. (No model.)

Claim.—A rope-clamp consisting of two halves stamped from sheet metal and hinged together at one end to form a tapering ferrule, the ends of said halves being flared at the hinged end, said ferrule being corrugated in concavo convex form to form a screw, said corrugations extending through to the inner surface of the ferrule forming concave corrugations and being of a pitch to match the convolutions of the strands of the rope, a nut threaded to match the convex corrugations and adapted to clamp the two halves together, a link passed over the pintle of the hinge, as and for the purpose described.



570,632. FISH-HOOK. JAMES T. HASTINGS, Chicago, Ill., assignor of one-half to Charles A. Crane, same place. Filed July 24, 1895. Serial No. 556,968. (No model.)

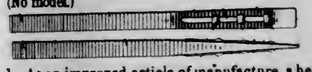


Claim.—1. As a new article of manufacture an artificial bait for fish-hooks, consisting of a single piece of sheet metal folded upon a central line extending through it longitudinally, the two halves upon opposite sides of said line being of corresponding shape and means for detachably uniting together the edges that are remote from the line upon which it is folded, substantially as set forth.

2. As a new article of manufacture an artificial bait for fish-hooks, consisting of a single piece of sheet metal folded upon a central line extending through it longitudinally, the two halves upon opposite sides of said line being of corresponding shape and flexible tongues proceeding from one and engaging the other of said halves, whereby their edges are detachably united, substantially as set forth.

3. As a new article of manufacture an artificial bait for fish-hooks, consisting of a single piece of sheet metal folded upon a central line passing through it longitudinally, the two halves upon opposite sides of said line being of corresponding shape and each of said halves being provided with a longitudinal depression, which depressions come together and form a socket and means for securing together the two halves, substantially as set forth.

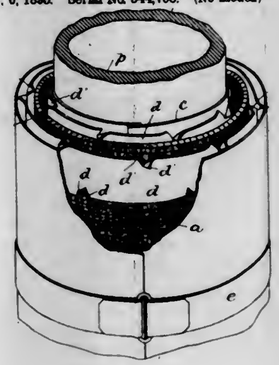
570,633. NAIL. CHARLES HATCH, Jr., Revere, Mass., assignor, by mesne assignments, to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Jan. 13, 1890. Serial No. 336,749. (No model.)



Claim.—1. As an improved article of manufacture, a headless nail having a shank corrugated transversely and an elongated, drawn, swaged or rolled chisel-shaped point with a vertical reinforcing rib or ribs on the point only, to stiffen the same and a clenching extension beyond the end of said rib or ribs, as and for the purpose described.

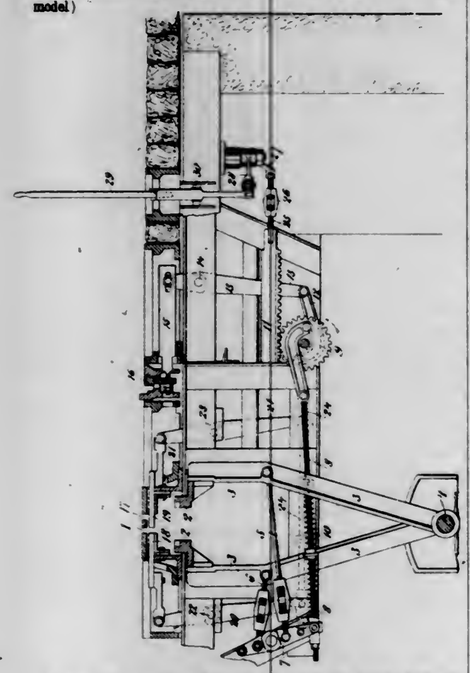
2. A nail having an elongated drawn or rolled chisel-shaped point, the surfaces of which are corrugated transversely and also provided with a reinforcing-rib, as and for the purpose described.

570,634. HEAT-INSULATOR. GEORGE C. HIGGS, Boston, Mass. Filed Apr. 6, 1895. Serial No. 544,706. (No model.)



Claim.—A heat-insulator comprising in its construction a flexible inner sheet or member of bright metal tightly inclosing the pipe, a flexible wrapper composed of a filling of mica flakes and sheets of wire-netting inclosing and secured to said filling and exposing the bright reflecting-surfaces thereof, two sets of separating-bands, one engaged with the outer and the other with the inner surface of the wrapper, each band having oppositely-projecting pointed teeth, and a flexible metal inclosing sheet supported by the outer set of separating-bands, the said wrapper being supported and separated from the inner sheet by the inner set of bands.

570,635. MECHANISM FOR CABLE-RAILROADS. LOUIS J. HIRT, Brookline, Mass. Filed Jan. 24, 1896. Serial No. 576,624. (No model.)



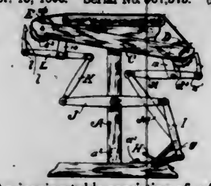
Claim.—1. In a cable-railway system, movable tripper bars, arranged and adapted to be thrown into operation and open the cable-grip, and mechanism whereby the tripper-bars are operated from the surface of the road, substantially as described.

2. In a switch system for cable-railways, in combination with the switch, movable tripper-bars, adapted to be thrown into operation with the switch to open the grip, substantially as described.

3. In a switch system for cable-railways, in combination, a switch, movable tripper-bars, whereby the grip on the car is opened, and mechanism by which the switch and tripper-bars are operated together, substantially as described.

4. In a switch system for cable-railways, in combination, a switch; movable tripper-bars, whereby the grip on the car is opened; grip-slot guards by which the grip-slots are controlled; and mechanism by which the switch, tripper bars and slot-guards are operated together, substantially as described.

570,636. IRONING TABLE. CHARLES L. HOFWOLT, Santa Rosa, Cal. Filed Apr. 15, 1896. Serial No. 587,575. (No model.)



Claim.—1. An ironing-table consisting of a frame, having a suitable ironing-board at its top, a readily-removable and transferable roller at one side of the frame on which the article to be ironed is initially wound and from which it is paid out as the work proceeds, a readily-removable and transferable roller on the opposite side upon which said article is wound as the ironing progresses, and pawls ratchet-wheels and a power device for operating the rollers.

2. An ironing-table consisting of a frame having a suitable ironing-board at its top, a roller on each side of said table adapted to pay out and to wind up the article being ironed, over the intervening board, and means for operating said rollers consisting of a rock-shaft with a treadle and suitable connections between said shaft and the rollers.

3. An ironing-table consisting of a frame having a suitable ironing-board at its top, a roller on each side of said table adapted to pay out and to wind up the article being ironed, over the intervening board, and means for operating said rollers consisting of a rock-shaft with a treadle, and cranks, levers, links and pawls and ratchet-wheels by which the movement of the shaft is transmitted to the rollers.

4. In an ironing-table and in combination with the board thereof, a roller at one side having a ratchet-wheel upon its end, a rock-shaft with a treadle and a crank, a pivoted lever, a link connecting the crank of the rock-shaft with said lever, a second lever, a link connecting the two levers, and a pawl carried by said second lever and engaging the ratchet-wheel of the roller.

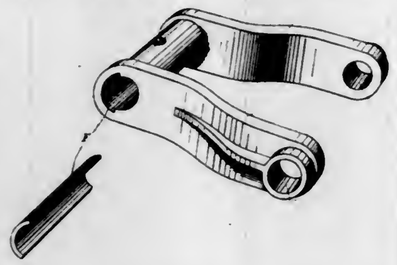
5. In an ironing table and in combination with the board thereof, a roller at one side having a ratchet-wheel upon its end, a rock-shaft with a treadle and a crank, a pivoted lever, a link connecting the crank of the rock-shaft with said lever, a second lever, a link connecting the two levers, a pawl carried by said second lever and engaging the ratchet-wheel of the roller, and means for holding said pawl out of engagement

6. In an ironing-table and in combination with its board, a roller on one side thereof having a ratchet-wheel upon its end, a rock-shaft with a treadle and a crank, a swinging lever having a pawl engaging the ratchet-wheel of the roller, and a link connecting the crank with said lever.

7. An ironing-table consisting of a frame having a suitable ironing-board, rollers removably mounted in said frame, one on each side of the board, said rollers having means for clamping the end of the article to be ironed, a rock shaft below having a treadle and cranks, swinging levers having connections with said cranks, pawls carried by the levers and ratchet-wheels on the rollers with which said pawls engage whereby the rollers are operated from the rock-shaft.

8. In an ironing-table the combination of a frame, a table-top to which the frame ends are hinged whereby they may fold, detachable braces to hold the frame extended, removable rollers for holding the article to be ironed, and separable power-transmitting connections to operate the rollers, the whole being arranged and adapted to permit the folding of the device into small compass.

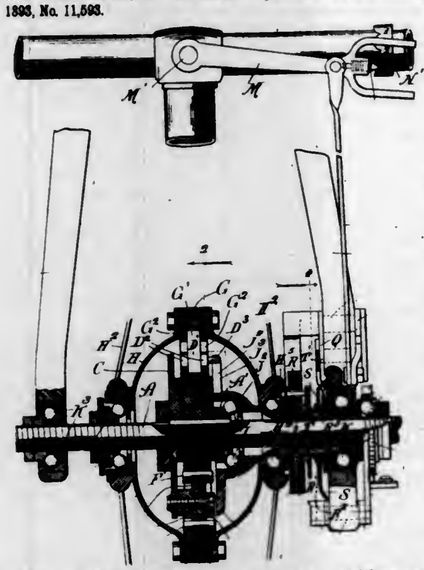
570,637. LINK FOR DRIVING-CHAINS. BENJAMIN HOLT, Stockton, Cal. Filed Feb. 20, 1896. Serial No. 579,992. (No model.)



Claim.—1. The improvement in drive-chain links, consisting of a link having side bars more widely separated at one end than the other and having a sleeve or barrel cast with and extending between the narrower ends, a pin or bolt, the ends of which are fixed in openings in the wider end of the link, said sleeve or barrel being a complete cylinder and having its pin-hole offset upon the side against which the pressure and wear are brought, with the offset extending from end to end of the barrel, and a segmental wear-plate fitted to said offset and removable endwise therefrom.

2. The combination, with a link carrying a pin, of a companion link having a sleeve or barrel to receive said pin, said barrel being a complete cylinder and having in the inner wall against which the pressure and wear are brought, a segmental channel or recess, offset from the pin-pole and extending from end to end of the barrel, and a separate segmental wear-plate fitting said offset and removable endwise therefrom.

570,638. SPEED-GEAR. MESHACH HOPKINS, London, England, assignor of one-half to William H. Cork, Chicago, Ill. Filed Sept. 16, 1895. Serial No. 562,670. (No model.) Patented in England June 13, 1893, No. 11,593.



Claim.—1. The combination with the driving and driven parts of a speed-gear, and an eccentric-bearing and chain-carrier, comprising antifriction-rollers on one part, a chain-wheel on the eccentric-bearing and a chain-wheel on the other part, and chain gearing with both chain-wheels, of a pin on the eccentrically-mounted chain-wheel, a slotted flange engaging the pin, a toothed flange rigid with the slotted flange, a detent for the toothed flange, a lever for operating the detent, and link mechanism in operative connection with the detent and lever substantially as set forth.

2. The combination with the driving and driven parts of a speed-gear and an eccentric-bearing and chain-carrier on one part, a chain-wheel on the eccentric-bearing, a chain-wheel and clutch projection on the other part, a chain gearing with both chain-wheels, a flange, a pin-and-slot connection between this flange and the eccentrically-mounted chain-wheel, and a disk rigid with the flange, of a clutch permanently engaged with the disk for engaging with the clutch projection, a clutch-lever and link-and lever mechanism in operative connection with the clutch and clutch-lever, substantially as set forth.

3. The combination with the driving and driven parts of a speed-gear and an eccentric-bearing and chain-carrier on one part, a chain-wheel on the eccentric-bearing, a chain-wheel and clutch projection on the other part, a chain gearing with both chain-wheels, a flange, a pin and-slot connection between this flange and the eccentrically-mounted chain-wheel, and a disk rigid with the flange, of a clutch permanently engaged with the disk for engaging with the clutch projection, a sleeve carrying the clutch, a cam for moving the sleeve, and a crank-pin, lever-arms, links and a clutch-lever all operatively connected together, substantially as set forth.

4. The combination with the driving and driven parts of a speed-gear and an eccentric-bearing and chain-carrier on one part, a chain-wheel on the eccentric-bearing, a chain-wheel and clutch projection on the other part, a chain gearing with both chain-wheels, a flange, a pin-and-slot connection between this flange and the eccentrically-mounted chain-wheel, and a disk rigid with the flange, brake-shoes adapted to bear on the disk, lever-arms carrying the brake-shoes, a clutch permanently engaged with the clutch projection, a sleeve carrying the clutch, a cam for moving the sleeve, a crank-pin for moving the cam, and a brake and clutch lever and lever-and-link mechanism in operative connection with the brake and clutch devices, substantially as set forth.

5. The combination with the driving and driven parts of a speed-gear, of an eccentric-bearing and chain-carrier on one part, a chain-wheel on the eccentric bearing, a chain-wheel and clutch projection on the other part, a chain gearing with both chain-wheels, a pin on the eccentrically-mounted chain-wheel, a slotted flange engaging the pin, a toothed flange and a disk rigid with the slotted flange, a clutch permanently engaged with the disk, a detent to engage the toothed flange, brake-shoes to bear on the disk, a cam to move the clutch into engagement with the clutch projection, an operating-lever and link-and-lever mechanism in operative connection with this lever and the detent, brake-shoes and cam, substantially as set forth.

6. The combination with the driving and driven parts of a speed-gear, an eccentric-bearing and a chain-carrier upon one of said parts, a chain-wheel upon said eccentric bearing, a chain-wheel concentric with the shaft, and a chain upon said carrier confined between and engaging said chain-wheels of a pin upon the eccentrically-mounted chain-wheel, a sleeve upon said shaft provided with a slotted flange engaging said pin, a toothed flange rigid with said sleeve, a detent for the toothed flange, and link-and-lever mechanism in operative connection with the detent, substantially as set forth.

7. In a speed-gear, the combination of a shaft, an eccentric-bearing rigid therewith, a chain-wheel loosely mounted on the eccentric, a brake for the chain-wheel, an annular gear mounted concentrically with and capable of independent rotation upon said shaft, an arm rigid with the shaft, a chain-carrier attached thereto to rotate about said chain-wheel, and an endless chain upon the carrier confined between said annular gear and chain-wheel, free to revolve about the carrier under the action of the chain-wheel when the shaft is turned and the chain-wheel retarded, substantially as and for the purpose set forth.

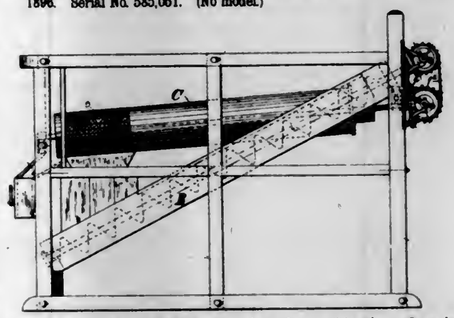
8. In a speed-gear, the combination of a shaft, a chain-wheel loosely mounted thereon, a brake for said wheel, an annular gear mounted concentrically with and capable of independent rotation upon said shaft, an arm rigid with the shaft, a chain-carrier attached to the arm between said chain-wheel and annular gear, and an endless chain upon the carrier between the chain wheel and annular gear, substantially as and for the purpose set forth.

9. In a speed gear, the combination of a shaft, a chain-wheel loosely mounted thereon, a brake for said wheel, an annular gear mounted concentrically with and capable of independent rotation upon said shaft, an arm rigid with the shaft, a chain-carrier attached to the arm, an endless chain upon the carrier confined between said annular gear and chain-wheel and free to rotate about said chain-carrier under the action of the chain-wheel, and means for locking the parts together, substantially as and for the purpose set forth.

10. In a speed-gear, the combination with the driving and driven parts, of an eccentric-bearing and chain-carrier on one part, a chain-wheel on the eccentric-bearing, a chain-wheel on the other part, and an endless chain upon said carrier confined to rotate between and geared to said chain-wheels as it is itself carried around one of said chain-wheels in the operation of the gear, substantially as described.

11. In a speed-gear, the combination of a shaft an eccentric-bearing rigid therewith, a chain-wheel on said bearing, a chain-wheel mounted concentrically with and capable of independent rotation upon said shaft, an arm rigid with the shaft, a chain-carrier upon the arm, a chain upon said carrier engaging the chain-wheels, a sleeve upon the shaft having a flange provided with a radial slot, a pin upon said eccentrically-mounted chain-wheel engaging said slot, brake-shoes engaging said sleeve, lever-arms carrying the brake-shoes, a brake lever and link-and-lever mechanism in operative connection with the lever-arms and brake-lever, substantially as set forth.

570,639. POLISHING-MACHINE. ROBERT W. JESSUP, Los Angeles, and FAIRFAX H. WHEELAN, San Francisco, Cal. Filed Mar. 27, 1896. Serial No. 585,061. (No model.)



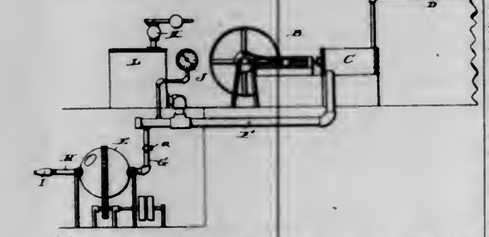
Claim.—1. In a polishing-machine, the combination, of an inclined conveyer adapted to receive the material at its lower end, and an inclined separator adapted to receive the material from the upper end of the conveyer, said separator constructed to discharge the polishing material from the screen into the receiving end of the conveyer and to deliver the polished material separately

2. A polishing-machine consisting of an inclined conveyer or elevator adapted to receive the materials at its lower end, an inclined screen adapted to receive the materials from the upper end of the conveyer or elevator, and a means for discharging the polishing ma-

terial from the screen into the lower end of the conveyer or elevator, and for delivering the polished material separately.

3. A polishing-machine consisting of an inclined conveyer or elevator adapted to receive the materials at its lower end, an inclined receiver adapted to take the materials from the upper end of the conveyer or elevator, said receiver being impervious to the material for a portion of its length and having at its lower end a screen portion adapted to discharge the polishing material into the lower end of the conveyer or elevator, and to deliver the polished material separately.

570,640. **APPARATUS FOR COOKING PAPER-STOCK.** MARBLE D. KENNEY, Antioch, Cal. Filed July 17, 1895. Serial No. 556,243. (No model.)

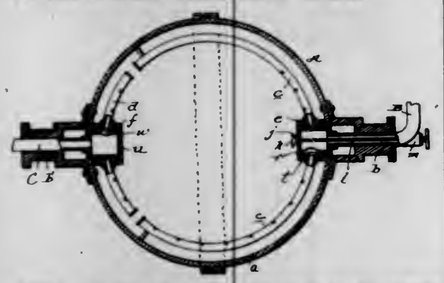


Claim.—1. In an apparatus for cooking paper-stock with steam, a paper-stock cooker substantially as and for the purpose described, having a continuously-open induction-passage and a continuously-open eduction-passage for steam; the said eduction-passage being reduced as compared to the induction-passage so as to retard the passage of steam through the cooker without discontinuing the said passage.

2. An apparatus for cooking paper-stock with steam, comprising a steam-generator, a steam-engine, a pipe connecting the generator and the piston-cylinder of the engine, a paper-stock cooker having a continuously-open induction-passage and a continuously-open eduction-passage for steam; the said eduction-passage being reduced as compared to the induction-passage so as to retard the passage of steam through the cooker without discontinuing the said passage, and a conduit connected with the piston-cylinder of the engine so as to receive steam therefrom after it has acted upon the piston and also connected with the induction-passage of the cooker, substantially as specified.

3. An apparatus for cooking paper-stock with steam comprising a steam-generator, a steam-engine, a pipe connecting the generator and the piston-cylinder of the engine, a paper-stock cooker having a continuously-open induction-passage and a continuously-open eduction-passage for steam; the said eduction passage being reduced as compared to the induction-passage so as to retard the passage of steam through the cooker without discontinuing the said passage, a conduit connected with the piston-cylinder of the engine so as to receive steam therefrom after it has acted upon the piston and also connected with the induction-passage of the cooker, a valve device for regulating the pressure in said conduit, and a feed-water heater interposed between said valve device and the conduit, all substantially as specified.

570,641. **PAPER-STOCK COOKER.** MARBLE D. KENNEY, Antioch, Cal. Filed Jan. 18, 1896. Serial No. 575,967. (No model.)



Claim.—1. A rotary closed paper-stock cooker having a continuously-open induction passage or opening and a continuously-open eduction passage or opening for steam, substantially as specified.

2. A closed paper-stock cooker having a continuously-open induction passage or opening and a continuously-open eduction passage or opening for steam, conduits for conducting a portion of the steam from the induction-opening into the stock, and a conduit for conveying or discharging a portion of the steam, from the induction passage or opening, directly into the space above the stock, so as to render the mass of stock much hotter and maintain a high degree of heat in the cooker and thus accelerate the cooking of the stock, substantially as specified.

3. A rotary paper-stock cooker having continuously-open induction and eduction passages or openings, conduits for conducting the steam admitted through the inlet-passage into the stock, conduits for conducting the steam from the interior of the cooker to the discharge opening or passage, a valve device adapted to effect communication between the inlet passage or opening and each of the conduits for leading the steam to the stock, when said conduits are passing through the stock, and also adapted to close communication between the inlet-opening and each of the conduits, when said conduits are above or out of the stock, and a valve device adapted to effect communication between the outlet-opening and each of the conduits for conducting the steam from the interior of the cooker, when said conduits are above or out of the stock, and also adapted to close communication between the outlet-opening and each of the latter-named conduits, when said conduits are in the stock substantially as and for the purpose set forth.

4. A rotary paper-stock cooker having continuously-open induction and eduction passages or openings for steam, conduits for conducting the steam admitted through the inlet-passage into the stock, conduits for conducting the steam from the interior of the cooker above the stock to the discharge opening or passage, a valve device adapted to effect communication between the inlet opening or passage and each of the conduits for leading steam into the stock, when said conduits are passing through the stock, and also adapted to close communication between the inlet opening or passage and each of said conduits, when the conduits are above or out of the stock, a conduit for effecting direct communication between the induction passage or opening and the interior of the cooker above the stock, and a valve device adapted to effect communication between the outlet-opening and each of the conduits for conducting the steam from the interior of the cooker, when said conduits are above or out of the stock, and also adapted to close communication between the outlet-opening and each of the latter-named conduits, when said conduits are in the stock, whereby the steam is enabled to pass continuously and without cessation through the stock and through the cooker above the stock, substantially as specified.

5. A rotary paper-stock cooker comprising the hollow body having the hollow trunnions, conduits movable with the hollow body and adapted to lead steam into the stock, conduits also movable with the hollow body and adapted to lead steam out of the cooker, a hollow cylinder *e*, connected and adapted to move with the first-named series of pipes, a hollow cylinder *f*, connected and adapted to move with the second-named series of pipes, the steam-inlet pipe, the hollow, stationary valve connected with the steam-inlet pipe and arranged within the cylinder *e*, and having the peripheral aperture *t*, adapted to communicate with the pipes *c*, and also having the aperture *j*, in its inner end, a valve for controlling the passage of steam through said aperture *j*; the aperture *t*, of the valve being so arranged as to effect communication between the steam-inlet pipe and the conduits for leading steam into the stock, when said conduits are in the stock and close communication between the inlet-pipe and said conduits when the conduits are above or out of the stock, the steam-discharge pipe, and the hollow stationary valve connected with the steam-discharge pipe and arranged within the cylinder *f*, and having the peripheral aperture *w*, adapted to communicate with the pipes *d*; the said aperture *w*, being so arranged as to effect communication between the steam discharge pipe and the conduits for leading steam out of the stock, when said conduits are above the stock, and close communication between the steam discharge pipe and the conduits when the conduits are in the stock, substantially as and for the purpose specified.

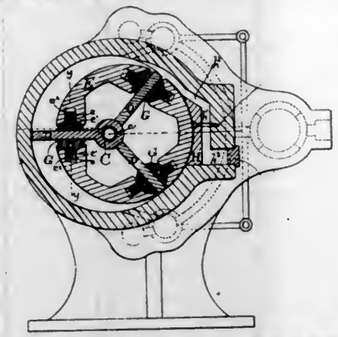
6. A rotary closed paper-stock cooker having a continuously-open induction passage or opening and an eduction passage or opening for steam; the said eduction opening or passage being continuously open to the atmosphere, substantially as and for the purpose set forth.

570,642. **HAT-IDENTIFYING MARK.** DAVID A. KELLER, Louisville, Ky. Filed Apr. 10, 1896. Serial No. 587,006. (No model.)



Claim.—The herein described hat-identification mark, constructed as a tag or label, having upon one and the same side or face a portion to receive identification-marks and a gummed portion by which it may be secured to a hat or cap, substantially as set forth.

570,643. **ROTARY PUMP.** JOHN D. KELLER, Santa Clara, Cal., assignor of one-half to Otto Leu, same place. Filed Oct. 21, 1895. Serial No. 566,406. (No model.)



Claim.—1. In a rotary pump, a combination of the shell, the rotating pistons operating concentrically within said shell, the eccentrically-located cylinder or carrier through which the pistons operate, and an abutment in said shell against the cylinder or carrier, said abutment having a downwardly-extending back passage joining the water-space within the shell and adapted to receive the sand and other foreign matters at the beginning of the abutment and to dispose of them.

2. In a rotary pump, a combination of the shell, the rotating pistons operating concentrically within said shell, the eccentrically-located cylinder or carrier through which the pistons operate, and an abutment in said shell against the cylinder or carrier, said abutment having a downwardly-extending back passage joining the water-space within the shell adapted to receive the sand and other foreign matters at the beginning of the abutment and to dispose of them, and a discharge-way communicating with the base of said passage.

3. In a rotary pump, the combination of the shell, the pistons rotating concentrically therein, the eccentrically-located cylinder or carrier within the shell and through which the pistons operate, and the adjustable abutment-piece within the shell having a hollow back passage communicating at the top of the abutment with the water-space.

4. In a rotary pump, the combination of the shell, the pistons rotating concentrically therein, the eccentrically-located cylinder or carrier within the shell and through which the pistons operate, and the abutment-piece within the shell having a hollow back passage communicating and joining at the top of the abutment with the water-space by a sharp lip, whereby the sand or other foreign matter is readily delivered into the top of said passage.

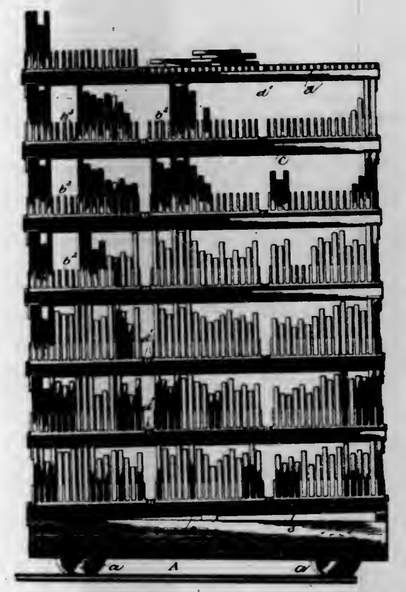
5. In a rotary pump, the combination of the shell, the pistons rotating concentrically therein, the eccentrically-located cylinder or carrier within the shell and through which the pistons operate, the abutment-piece within the shell having a hollow back passage communicating and joining at the top of the abutment with the water-space by a sharp lip, whereby the sand or other foreign matter is readily delivered into the top of said passage, and a controllable discharge-passage communicating with the base of said back passage.

6. In a rotary pump having pistons and a carrier or cylinder through which said pistons slide, the adjustable bearings between said pistons and cylinder or carrier consisting of the oscillating or rocking bearings through which the pistons pass, said bearings having sockets, the wearing-plates in said sockets and springs by which they are controlled, and the wearing-plates in a socket in the bearing-wall of the cylinder or carrier and springs for holding them to contact with the opposing wearing-plates in the oscillating bearings.

7. In a rotary pump having rotating pistons moving about a common center, a hollow pin or axle upon which said pistons are mounted, said pin or axle having discharge-holes from its interior to supply lubricant to the bearings of the pistons, a tubular exteriorly-threaded extension to the exterior of said pin or shaft, a spring-controlled valve controlling a communication between the cavity of the pin or shaft and that of the tubular extension, and an interiorly-threaded nut engaging the threaded extension and provided with a plunger operating upon and in the tubular extension to force the lubricant past the valve into the cavity of the pin or shaft upon which the pistons are mounted.

570,644. **DRIER-TRUCK.** WILLIAM A. LEARY, Norfolk, Va. Filed Oct. 1, 1895. Serial No. 564,315. (No model.)

Claim.—1. A frame or support for boards or lumber while being dried in which the boards are stacked on their edges in independent tiers or pallets, and supports for each board and tier or pallet forming spaces between all of said boards and also between said tiers or pallets, substantially as set forth.



2. A frame or support for boards or lumber while being dried in which the boards are stacked in tiers of pallet-like form, having a series of supporting posts or studs interposed between each tier and forming the supports for the boards composing the latter, said posts or studs separating said boards, whereby vertical and horizontal passages throughout the stack are obtained, substantially as set forth.

3. A frame or support for boards while being dried, in which the boards are stacked in tiers of pallet-like form, having series of posts or studs located between each tier, and supports for said posts or studs resting on the upper edges of the boards of the next lower tier, said posts or studs separating the boards comprising each tier, as set forth.

4. A truck or supporting-frame for a stack of boards to be dried, having a series of short posts or studs with intervening spaces in which boards to be dried are placed on their edges, and upper corresponding series of posts or studs extended transversely over said stacked boards and supported by the edges thereof, as set forth.

5. A truck or supporting-frame for a stack of boards to be dried, having a series of short posts or studs with intervening spaces in which boards to be dried are placed on their edges, upper corresponding series of posts or studs, and base-boards upon which said posts or studs are mounted, said base-boards being extended transversely over the next lower tier of boards by which they are supported, as set forth.

6. A truck or supporting-frame for a stack of boards to be dried, having a series of short posts or studs with intervening spaces in which the boards to be dried are placed on their edges, upper corresponding series of posts or studs and base-boards upon which said posts or studs are mounted, said base-boards being extended transversely over the next lower tier of boards by which they are supported, and having angular portions at their ends for engaging the end boards of said tier, as set forth.

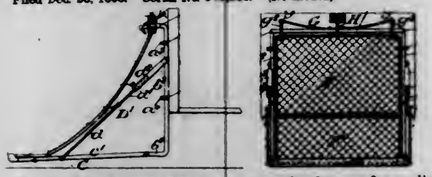
7. The combination with a truck or frame, of a base-board, a series of short posts or studs, and a base connecting said posts or studs and mounted on said base-board, as set forth.

8. The combination with a truck or frame, of a base-board and a row or series of short posts or studs mounted thereon and arranged in independent disconnected movable sections, as and for the purpose set forth.

9. The combination with a truck or frame, of a base-board, and a row or series of short posts or studs arranged in independent sections and capable of being turned on said base-board so as to occupy horizontal and vertical positions, as and for the purpose set forth.

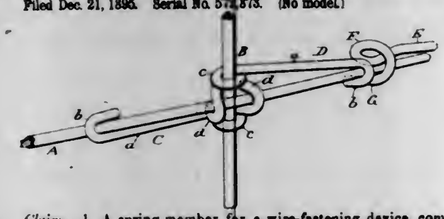
10. The combination with a truck or frame, of a base-board, a row or series of short posts or studs and a base formed in independent sections movably mounted on said base-board, said posts or studs projecting from or formed with said base, as set forth.

570,645. CAR-FENDER. ALBERT A. LYDECKER, Paterson, N. J. Filed Dec. 26, 1895. Serial No. 573,251. (No model.)



Claim.—A fender comprising a net-supporting frame, a forwardly-extended buffer-frame pivoted at its rear to the net-supporting frame, a tilting plate pivoted near the front of the buffer-frame in such position that the front end of the plate normally rests upon the front of said frame and a net secured at its bottom to the rear edge of the tilting plate and at its top connected to spring-supports attached to the net supporting frame, substantially as set forth.

570,646. WIRE FENCE. SAMUEL A. NIELSON, Madison, Wis. Filed Dec. 21, 1895. Serial No. 573,873. (No model.)



Claim.—1. A spring member for a wire-fastening device, comprising a wire having a coiled section, and hooked ends on opposite sides of said coil, said hooked ends standing at approximately right angles to one another, substantially as described.

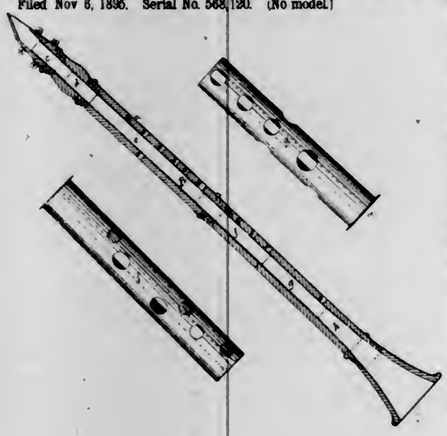
2. In combination with the wires A and B, two spring locking arms or members, each having a coiled section and hooked ends on opposite sides of said coil; said coils embracing the wire B, and the hooked ends engaging the wire A on opposite sides of said wire B.

3. In combination with the wire A and the cross-wire B, two spring clamping members, one located above and the other below wire A, said members each comprising a coil and hooked ends upon opposite sides of said coil, said hooked ends engaging the wire A upon opposite sides of wire B after said wire has been passed through the coils

4. In a wire fence or fabric in combination with the cross-wires thereof, the clamp or stay comprising two spring members provided with hooked ends, and coils intermediate of said ends, the hooked ends engaging one wire and the coils embracing the other.

5. In combination with the wire A and the cross-wire B, two spring clamping members, each provided with hooks at their ends, and an intermediate coil; said coils embracing the wire B; the hooked ends engaging the wire A; and the inner hooks also bearing against the coil of the opposite clamping member when said parts are in their clamped position.

570,647. CLARINET. GIUSEPPE OLIVERI, Washington, D. C. Filed Nov 6, 1895. Serial No. 568,120. (No model.)



Claim.—1. A lining inserted in clarinets, &c. provided with a longitudinal cut, which forms a space when in place, and having the proper apertures, required for the instruments, and serving to change the tone from a high to a low pitch, as specified.

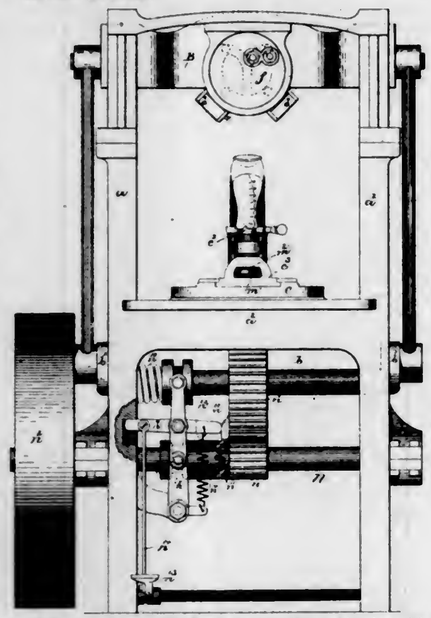
2. In musical instruments, such as clarinets and the like, a lining made of resonant material, in one or more pieces, provided with a longitudinal cut forming a space when in place, and having the proper apertures to correspond with those in the tube, required for said instruments, as set forth.

3. As a new article of manufacture, a removable and adjustable lining of resonant material, provided with proper apertures as required for the instrument, and having a longitudinal cut to form a space as and for the purpose specified.

4. An adjustable lining, having a longitudinal cut *a* and sprung in place and provided with proper apertures to correspond with those in the tube of the instrument, made of light resonant material, and held in place by its own elasticity, as set forth.

5. An adjustable and removable lining for instruments made of resonant material, and provided with the proper apertures required, having a longitudinal cut to form a space between the adjacent edges, and sprung in its place by its own elasticity, as shown and specified.

570,648. HEEL-NAILING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Dec. 17, 1889. Serial No. 334,110. (No model.)



Claim.—1. In a heel-nailing machine, the combination with two jacks and a rotary support upon which said jacks are mounted back to back whereby they may be interchangeable in position of a reciprocating head a heel-blank holding and applying device and a top-lift holding and applying device with or without a slugging attachment the said applying devices being mounted adjacent to each other upon said reciprocating head and adapted for simultaneous use with said jacks, substantially as described.

2. The combination, in a heel-nailing machine, of a single reciprocating cross head, two rotary heads carried thereby, one of which supports a device for holding and attaching a loaded heel-blank and the other of which rotary heads has a number of arms each of which supports a top-lift spanker and centering device with or without a slugging attachment and one or more jacks movable from operative position with the heel-blank-attaching device to operative position with the top lift-attaching device, as and for the purposes specified.

3. The top-lift holder comprising the gages e^{11} e^{12} movable toward and from each other and the back-stop plate e^{14} having the V-recess and springs for moving or drawing said plate toward the said gages, substantially as described.

4. The combination, in a heel nailing machine, of a reciprocating head, the heel holding and attaching and top-lift-applying devices arranged thereon and carried thereby as specified, and the jack

comprising a movable plate supporting two lasts or work-supports in position for the simultaneous operation of the heel-attaching and top-lift-applying devices, and also arranged to interchange the positions of the said lasts or work-supports, and a shoe-holding device for each jack, as and for the purposes described.

5. The combination, in a heel-attaching machine, of a rotary plate, two jacks supported back to back thereon immediately adjacent to each other, and a shoe holder and centerer for each jack, as and for the purposes described.

6. The combination, in a heel-nailing machine, of a movable plate supporting two jacks back to back immediately adjacent to each other, and the said jacks having a horizontal or sliding movement upon said plate, as and for the purposes described.

7. The combination, in a heel-nailing machine, of a movable plate or jack-support, two jacks carried by said plate back to back immediately adjacent to each other and arranged to be moved horizontally thereon for the purposes of adjustment, and stops for adjusting the position of said jacks upon said plate, as and for the purposes described.

8. The combination, in a heel-nailing machine, of the last or work-support, the jack-post *m*, the jack-spindle having a lower threaded end m^3, the adjusting-nut *m'*, the shoe centerers or holders connected with the jack-spindle to be moved vertically therewith, substantially as described.

9. The combination, in a heel-nailing machine, of the single cross-head, the heel-attacher and top-lift attacher carried thereon in position for simultaneous operation, interchangeable jacks or work-supports for conjoint operation of the heel-attaching and top-lift-applying devices, and a stop-motion mechanism for stopping the machine at the end of each reciprocation of the cross-head, substantially as described.

10. The combination, in a heel-nailing machine, of a heel-attaching device at one point, a top lift attaching and nailing device at another point, and two lasts or work supports one for use in connection with the heel attaching devices and the other for use in connection with the top-lift attaching and nailing devices and arranged back to back, and immediately adjacent to each other, as and for the purposes described.

11. In a heel nailing machine, a movable head carrying two or more arms each of which arms supports a top-lift attaching and slugging device comprising the perforated spanker block movable upon said arm, a top-lift holder carried by said spanking-block, and a gang of drivers, substantially as described.

12. In a heel nailing machine, a single reciprocating head carrying two movable heads, each of which heads has two or more arms, and every arm of one of which heads supports the templets e^9 movable upon said arms and the drivers e^8, and every arm of the other of which heads supports the top-lift spanker and a top-lift holder and centerer secured to said spanker, substantially as described.

13. In a heel-attaching machine, a single movable head having two or more arms, each of which arms carries a top-lift spanking-block and said top lift carrying blocks independently adjustable laterally upon said arms, as and for the purposes described.

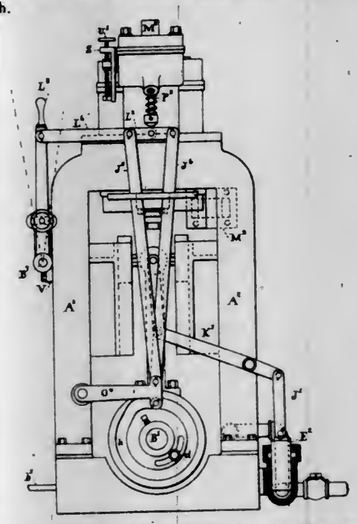
14. The combination, in a heel-nailing machine, of a head, two movable heads carried thereby, having two or more arms, the arms of one of which heads supporting only heel-attaching devices, and the arms of the other of which heads supporting top-lift or top-lift-nailing devices, and a common actuator for simultaneously moving the arms of both heads into and out of operative position, as and for the purposes described.

15. The combination, in a heel-nailing machine, of a heel-attacher at one point, a heel-slugger at another point, and two lasts or work-supports arranged back to back, and adjacent to each other and for simultaneous use with the heel-attacher and heel-slugger, as and for the purposes described.

570,649. GAS-ENGINE. ROLF J. ROLFSON, San Francisco, Cal., assignor of one-half to Samuel S. Simrak and Albert R. Herman, same place. Filed May 16, 1895. Serial No. 549,522. (No model.)

Claim.—1. In a reversible gas-engine, a main cylinder and double-acting piston therein, a combustion-chamber and inlet-valve for compressed air and fuel, in the manner described, a hinged electrode engaged by the inlet-valve or its stem, and reversible valve-gearing that closes the valve and causes an igniting spark at the end of the stroke when the engine is running in either direction, in the manner substantially as described.

2. In a gas-engine the combination with the main cylinder and piston therein, of a combustion-chamber connecting therewith, an inlet-valve for air and fuel operated by eccentrics on the main crank-shaft, a hinged or oscillating electrode coming in contact with and moved by the inlet-valve or its stem and forming poles for electrical ignition of the charge, and external mechanism provided with an adjusting-screw, by means of which the point of ignition may be regulated when the engine is running in either direction, substantially as set forth.



3. In a reversible gas-engine, the combination with the main cylinder having a piston therein, of the combustion-chamber connected therewith, a main inlet-valve for air and fuel, an exhaust-valve for spent gases, double cams on the crank-shaft to operate said valves, an oscillating electrode coming in contact with and moved by the inlet-valve or its stem and forming poles for electrical ignition of the charge, and external mechanism provided with a spring and adjusting-screw to regulate the range and time or point at which the inlet-valve will engage and release the oscillating electrode, in the manner substantially as described.

4. In a reversible gas-engine, a cylinder, piston and combustion-chamber connected therewith, in combination with an inlet-valve for air and fuel and forming a contact with a pivoted or oscillating electrode in the combustion-chamber, the latter supported on an insulated stem and connected with a conducting-wire, the insulated stem provided with a cross-lever, a spring and adjusting-screw outside the combustion-chamber to adjust the range, contact and point of release between the valve and hinged electrode, and a double cam on the crank-shaft having connection with a movable trip-bar to operate the inlet-valve.

5. In a reversible gas-engine, a cylinder and a piston therein, the latter acting for an air-compressor on its downward or outward stroke; an inlet-valve communicating with the external air, and an outlet-valve communicating with the engine inlet-valve for air and fuel and also with a passage formed in the main frame leading to cells in the bottom thereof, fuel inlet and exhaust valves and reversing-gearing to change the motion of the valves so a store of compressed air will be accumulated when the engine is running in either direction, substantially as described.

6. In a reversible gas engine, a cylinder mounted on a double-leg frame, consisting of two tubular columns or supports set on and communicating with a hollow base, passages through the vertical columns or supports for air, cooling-water and also the exhaust-gases of the engine, in the manner substantially as described.

7. In a reversible gas-engine frame, a hollow base having chambers to contain compressed air, two vertical tubular columns mounted thereon and connected to the engine-cylinder; a pump and ducts for cooling-water that passes into the hollow base, up one of the vertical columns and around the cylinder and combustion-chamber of the engine, such passages all within the contour of the engine-frame, in the manner substantially as described.

8. In a reversible gas-engine, a hollow frame, consisting of a base and two hollow columns thereon, the latter containing ducts or passages for air, water and waste gases, also having guides for the engine cross-head made integrally therewith, in the manner substantially as described.

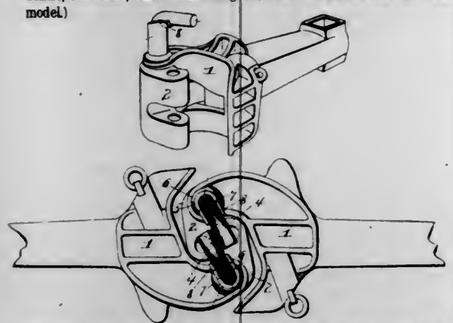
9. In a reversible gas-engine, a cylinder and piston therein; an inlet-valve for air and fuel, and an exhaust-valve for spent gases, in the manner described; double cams on the crank-shaft, and double connections therefrom connecting to movable trip bars L', L^3, to operate the engine inlet and exhaust valves in the same relation to the piston when the engine is running in either direction, in the manner substantially as described.

10. In a reversible gas-engine, double eccentrics or cams on the crank-shaft at each side of the engine, the pairs of cams set oppositely or at coincident angles each way, connections from each cam to movable vibrating bars that open and release the inlet and exhaust valves of the engine by means of a lever L^2, so the engine may be reversed and run in either direction by shifting the vibrating bars or links L', L^3, in the manner substantially as described.

11. In a gas-engine, a cylinder, piston, inlet and exhaust valves therefor, the latter operated by double eccentrics or cams on the crank-shaft, and a shifting trip-bar that will open the valve at the proper point to run the engine in either direction, and a ledge thereon that will hold the exhaust-valve open when the trip-bar is in its central or neutral position, in the manner substantially as described.

12. In a gas-engine, the combination of a cylinder, an impelling and air-compressing piston therein, and a combustion-chamber connecting therewith, the cubic contents of the cylinder and the combustion-chamber being in proportion to the respective volumes of the air when free and compressed, and a hollow base and two hollow columns thereon connecting with the main cylinder, and ducts for air, water and waste gases in said base, columns and cylinders, all in the manner substantially as described.

570,650. SAFETY ATTACHMENT FOR CAR-COUPLINGS. JAS. TIMES, Columbus, Ohio. Filed Aug. 28, 1896. Serial No. 604,192. (No model.)



Claim.—1. In a car coupling, the combination with a draw-head, of a pivot-pin for pivotally securing the knuckle to the draw-head, the pin having a horizontal portion which rests over the knuckle of the companion coupler, and means independent of the pin bearing beneath the said horizontal portion for holding said pin in an elevated position and preventing it from turning, substantially as set forth.

2. In a car-coupler, the combination with a draw-head, of a pivot-pin for pivotally securing the knuckle to the draw-head, the upper end of said pin being bent horizontally so as to rest over the knuckle of the companion coupler and a sleeve for holding the horizontal portion of the pin elevated and for locking it against rotary motion, substantially as set forth.

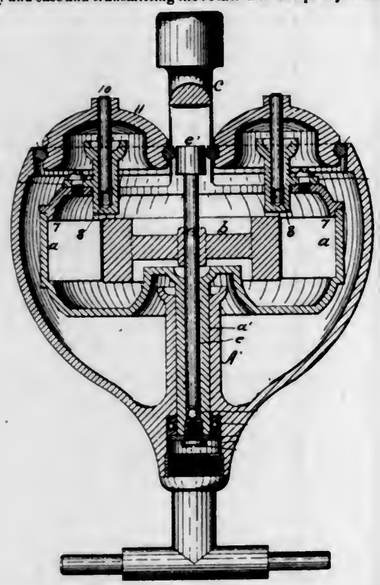
3. In a car-coupler, the combination with a draw-head, of a pivot-pin provided with an outwardly-extending arm and means for locking said pin against withdrawal, and a sleeve provided on its lower end with a flange and downwardly-projecting lip and on its upper end with an outwardly-projecting flange having a concaved upper face adapted to receive the horizontal portion of the pin, whereby the latter is held against rotary movement, substantially as set forth.

570,651. MOTOR-DRIVEN FAN. SAMUEL O. TUERK, Fulton, N. Y. Filed Apr. 27, 1896. Serial No. 589,156. (No model.)

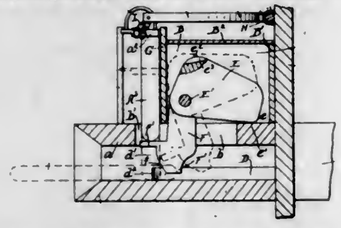
Claim.—1. The combination with a supporting-yoke, a motor-box, secured thereto, and provided with a stem, a motor in said box, of a case inclosing said box and provided with a tubular shank receiving said stem and bearing rotatably upon a washer secured to said stem whereby said yoke carries all of said parts.

2. The combination with a supporting-yoke, a motor-box secured thereto, and provided with a stem, a drive-shaft journaled in said stem, a motor in said box secured to said shaft a pulley secured upon said shaft, shafts journaled in bearings upon said box parallel to each other and to said drive-shaft, and drive-wheels secured upon said shafts and engaging with said pulley and with a case, a case inclosing said motor-box, and fan-arms secured to said case and driven by its rotation.

3. The combination with a supporting-yoke, a motor-box secured thereto and provided with a tubular stem, a motor in said box, a motor-shaft journaled in said stem of a case inclosing said box and provided with a tubular shank receiving said stem and connected thereto in such manner that said case is supported by said yoke and revolves around said stem, a drive-pulley upon said shaft, vertical bearings mounted upon said box, shafts journaled in them, and drive-wheels upon said shafts and engaging with and supported by said pulley and case and transmitting the rotation of said pulley to said case.



570,652. CAR-COUPLING. THEOPHILUS P. WEIDLER, Glenola, Pa. Filed Aug. 19, 1896. Serial No. 603,184. (No model.)



Claim.—1. The combination, in a draw-head, of a chamber on the draw-head, having a slot in the bottom thereof, a weighted lever-arm having its front end fulcrumed in said chamber, a bearing back of said slot, adapted to limit the downward movement of said lever-arm, and a tongue on the front of said lever arm and projecting down into the draw-head and constructed to support the coupling-pin in an elevated position, the tongue projecting across the line of travel of the coupling-link, for the purpose specified.

2. The combination, in a draw-head, of a chamber on the draw-head, having a slot in the bottom thereof, a weighted lever-arm having its front end fulcrumed in said chamber, a bearing back of said slot, adapted to limit the downward movement of said lever-arm, a tongue on the front of said lever-arm and projecting down into the draw-head, a lip on the tongue, adapted to project beneath the coupling pin opening, the portion of the tongue below said lip projecting across the line of travel of the coupling-link, for the purpose specified.

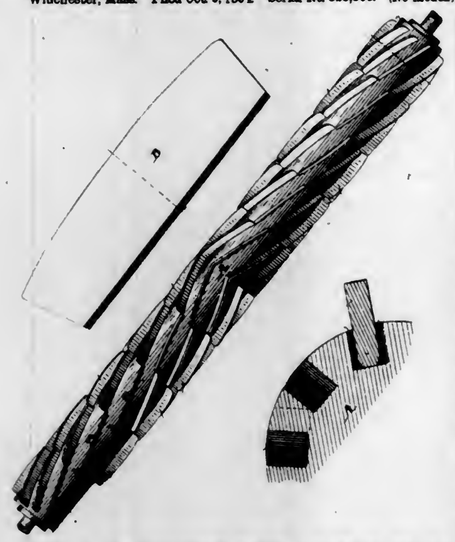
3. The combination, in a draw-head, of a chamber on the draw-head, having a slot in the bottom thereof a weighted lever-arm pivoted in said chamber, ribs on the bottom of the draw-head and forming a groove ranging with the slot in the bottom of the chamber, said ribs lying in the path of travel of the coupling-pin, and a tongue on the lever-arm, extending down through said slot into said groove, said tongue being constructed to support the coupling-pin in an elevated position, for the purpose specified.

4. The combination, in a draw-head, of a chamber on the draw-head, having a slot in the bottom thereof, a weighted lever-arm having its front end fulcrumed in said chamber, a bearing back of said slot, adapted to limit the downward movement of said lever-arm, ribs on the bottom of the draw-head and forming a groove ranging with the slot in the bottom of the chamber, said ribs lying in the path of travel of the coupling-link, and a tongue on the front of the lever-arm and extending down through said slot into said groove, said tongue being constructed to support the coupling pin in an elevated position, for the purpose specified.

5. The combination, in a draw-head, of a chamber on the draw-head, having a slot in the bottom thereof, a weighted lever-arm having its front end fulcrumed in said chamber, a bearing back of said slot, adapted to limit the downward movement of said lever-arm, ribs on the bottom of the draw-head and forming a groove ranging with the slot in the bottom of the chamber, said ribs lying in the path of travel of the coupling-link and having their front ends beveled, a tongue on the front of the lever-arm and extending down through said slot into said groove, a lip on the tongue, adapted to project beneath the coupling-pin opening, the front edge of the portion of the tongue below the lip being inclined backward from said lip to the lower end thereof, substantially as and for the purpose specified.

6. The combination, in a draw-head, of a post on one side of the coupling-pin opening and having a vertical groove therein, a post on the opposite side of said opening, a coupling-pin head having a lip constructed to engage the groove in the first post and a groove adapted to embrace the second post, a rock-shaft, outwardly-projecting arms on the rock-shaft, and a slack chain attached to said arms and passing through a ring on the coupling pin, substantially as and for the purpose specified.

570,653. HIDE-WORKING CYLINDER. ARTHUR E. WHITNEY, Winchester, Mass. Filed Oct. 9, 1894. Serial No. 525,368. (No model.)

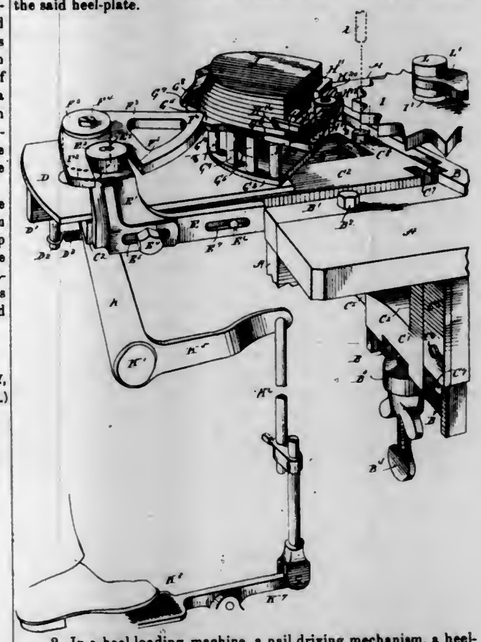


Claim.—1. In a hide-working cylinder, a cylindrical body provided with two series of rows of rough-sided cored mortises or recesses, arranged obliquely to the axis of said body in opposite and generally helical directions, each mortise or recess having its sides and bottom in the form of flat planes and adapted to receive and hold flat blades of glass, slate or non-metallic material, substantially as described.

2. In a hide-working cylinder the combination of a cylindrical body provided with two series of rows of rough-sided cored mortises or recesses, arranged obliquely to the axis of said body in opposite and generally helical directions, each mortise or recess having its two sides in the form of flat planes, and its bottom a flat plane tangent to a circle concentric with the axis of said body, and a blade having flat sides and a straight inner edge and a curved outer edge set in each of said mortises or recesses and secured therein by any suitable packing, substantially as described.

570,654. MACHINE FOR LOADING HEELS WITH NAILS. ERASTUS WOODWARD, Somerville, Mass., assignor to the Woodward Manufacturing Company, Saco, Me. Filed Sept. 21, 1895. Serial No. 563,197. (No model.)

Claim.—1. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, and mechanism coöperating with said movable plate adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism and to cause engagement of said locking device and the said heel-plate.



2. In a heel loading machine, a nail driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, a movable plate on which said heel-plate is mounted; feeding mechanism for operating said heel-plate, a locking device on said movable plate adapted to engage with said heel-plate when said heel-plate is moved from engagement with said feeding mechanism and to hold said heel-plate with the first feeding-point of the said series in line with the feeding mechanism, mechanism coöperating with said movable plate adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism and to cause the engagement of said locking device and said heel-plate, and means acting on said movable plate for moving the first feeding-point of the said series on said heel-plate into engagement with the feeding mechanism upon the release of said heel-plate from engagement with said locking device.

3. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, and mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism and to cause the engagement of said locking device and said heel-plate.

4. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism, and means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

5. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, and mechanism adapted when actuated by the operator to move the heel-plate from

engagement with said feeding mechanism, and means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

6. In a heel-loading machine, a nail driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, a vertically-adjustable bracket carrying the said movable plate and adapted to be adjusted to different heights for heels of varying thicknesses carried by said heel plate, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel plate from engagement with said feeding mechanism, and means located on said vertically-adjustable bracket coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

7. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, a vertically-adjustable bracket carrying the said movable plate and adapted to be adjusted to different heights for heels of varying thicknesses carried by said heel-plate, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism, and an adjustable bracket located on said vertically-adjustable bracket coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

8. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, a series of feeding-points on said heel-plate with which said feeding mechanism coöperates, mechanism for engaging with said heel-plate upon the disengagement of said heel-plate and feeding mechanism and adapted to locate the first feeding-point of said series adjacent to and in line with said feeding mechanism, and means for moving said first feeding-point on said heel-plate into engagment with said feeding mechanism.

9. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, a series of feeding-points on said heel-plate with which said feeding mechanism coöperates, mechanism adapted when actuated by the operator to move the said heel-plate from engagement with said feeding mechanism, mechanism for engaging with said heel-plate upon the disengagement of said heel-plate and feeding mechanism and adapted to locate the first feeding-point of said series adjacent to and in line with said feeding mechanism, and means for moving said first feeding-point on said heel-plate into engagement with said feeding mechanism upon the release of said actuated mechanism.

10. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, a series of feeding-points on said heel plate with which said feeding mechanism coöperates, mechanism for moving the heel-plate from engagement with said feeding mechanism, a locking device for engaging with said heel-plate upon the disengagement of said heel-plate and feeding mechanism and adapted to locate the first feeding-point of said series adjacent to and in line with the said feeding mechanism, and means for moving said first feeding-point on said heel-plate into engagement with said feeding mechanism..

11. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel blanks to be loaded, a movable plate on which said heel plate is mounted, an adjustable bracket carrying the said movable plate, feeding mechanism for operating said heel-plate, a series of feeding-points on said heel-plate with which said feeding mechanism coöperates, and each point representing the position of a nail to be driven into the heel-blanks, a lug on said adjustable bracket in vertical alinement with said nail-driving mechanism and over which each feeding-point in turn is located, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move said heel-plate from engagement with said feeding mechanism, and means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

12. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, and a locking device adapted to engage with said heel-plate upon the disengagement of said heel-plate and feeding mechanism.

13. In a heel loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device adapted to engage with said heel plate upon the disengagement of said heel-plate and feeding mechanism, and means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

14. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, mechanism for moving said heel-plate from engagement with said feeding mechanism, a locking device adapted to engage with said heel-plate upon the disengagement of said heel-plate and feeding mechanism, means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism, and means for moving said heel-plate into engagement with said feeding mechanism.

15. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, a series of feeding-points on said heel-plate with which said feeding mechanism coöperates, mechanism for locating the first feeding-point of said series in line with said feeding mechanism upon the disengagement of said heel-plate and feeding mechanism, and means for moving said heel-plate into engagement with said feeding mechanism.

16. In a heel loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, a heel-holding device on said heel-plate for holding the heel-blanks thereon and consisting of a yielding front plate and a rear adjustable plate, means for holding said rear adjustable plate in its adjusted positions, two movable arms located on said front plate and movable therewith and adapted to be adjusted laterally for heels of varying widths at the breast, and pins for guiding said movable arms in the lateral movements thereof.

17. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism.

18. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism and consisting of a front plate and a rear adjustable plate, and means for holding said rear adjustable plate in its adjusted positions.

19. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, a heel-holding device on said heel plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism and consisting of a yielding front plate and a rear adjustable plate, and means for holding said rear adjustable plate in its adjusted positions.

20. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the beel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to said nail-driving mechanism and to move each point in turn in the line of motion of said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said feeding-points and to said nail-driving mechanism.

21. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel plate to move the heel-blank thereon relatively to said nail-driving mechanism and to move each point in turn in the line of motion of said nail-driving mechanism, a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said feeding-points and to said nail-driving mechanism and consisting of a yielding front plate and a rear adjustable plate, and means for holding said rear adjustable plate in its adjusted positions.

22. In a heel-loading machine, a nail driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism and consisting of a yielding front plate and a rear adjustable plate, means for holding said rear adjustable plate in its adjusted positions, and two laterally-movable arms located on said front plate and movable therewith and adapted to be adjusted laterally to accommodate heels of varying widths at the breast.

23. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to said nail-driving mechanism, a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks relatively to the said nail-driving mechanism and consisting of a yielding front plate and a rear adjustable plate, means for holding said rear adjustable plate in its adjusted positions, two laterally-movable arms located on said front plate and movable therewith, means for simultaneously operating said movable arms laterally in opposite directions to accommodate heels of varying widths at the breast, and means for holding said laterally-movable arms in their adjusted positions.

24. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and consisting of a front plate having two arms which are adapted to be laterally adjusted to accommodate heels of varying widths at the breast and a rear plate which is adapted to be adjusted lengthwise of the heel-plate to vary the position of the heel-blanks on the said heel-plate relatively to the said nail-driving mechanism.

25. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to the said nail driving mechanism and to move each feeding-point in turn in the line of motion of the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and consisting of a front plate having two arms which are adapted to be laterally adjusted to accommodate heels of varying widths at the breast and a rear plate which is adapted to be adjusted lengthwise of the heel-plate to vary the position of the heel-blanks on the heel-plate relatively to said feeding-points and to said nail-driving mechanism.

26. In a heel loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel blanks on said heel-plate relatively to the said nail-driving mechanism and consisting of a rear plate and a front plate which is provided with means adapted to be adjusted to accommodate heels of varying widths at the breast.

27. In a heel-loading machine, a nail driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and consisting of a front plate provided with means adapted to be adjusted to accommodate heels of varying widths at the breast and a rear plate which is adapted to be adjusted lengthwise of the heel-plate to vary the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism.

28. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel plate for holding the heel-blank thereon and consisting of a front plate and a rear plate which is adapted to be adjusted lengthwise of the heel-plate to vary the position of the heel-blanks on the heel-plate relatively to the said nail-driving mechanism.

29. In a heel-loading machine, a nail driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating the said heel plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel plate for holding the heel-blank thereon and adapted to be adjusted lengthwise of the heel-plate for varying the position of the heel-blanks on the said heel-plate relatively to the said nail-driving mechanism and adapted to be laterally adjusted to accommodate heels of varying widths at the breast.

30. In a heel-loading machine, a nail-driving mechanism, a heel-plate for carrying the heel-blanks to be loaded and having a series of feeding points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism and to move each feeding-point in turn in the line of motion of the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted lengthwise of the heel-plate for varying the position of the heel-blanks on said heel-plate relatively to said feeding-points and to said nail-driving mechanism and adapted to be laterally adjusted to accommodate heels of varying widths at the breast.

31. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device adapted to engage with said heel-plate, and means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism and adapted to be adjusted for varying the distance of travel between said locking device and heel-plate.

32. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of the said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device adapted to engage with said heel plate, means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism and adapted to be adjusted for varying the distance of travel between said locking device and said heel-plate, and mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism and to cause the engagement of said locking device and said heel-plate.

33. In a heel loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the beel-blanks to be loaded, a movable plate on which said heel-plate is mounted, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device on said movable plate adapted to engage with said heel-plate, means coöperating with said locking device for moving said locking device into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism and adapted to be adjusted for varying the distance of travel between said locking device and said heel-plate, and mechanism coöperating with said movable plate adapted when actuated by the operator to move the beel-plate from engagement with said feeding mechanism and to cause the engagement of said locking device and said heel-plate.

34. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, a series of feeding-points located on said heel-plate at different distances from the axis on which said heel-plate turns and representing the positions of the nails to be driven into the heel-blanks, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the nail-driving mechanism, a heel holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks relatively to the said feeding-points and to said nail-driving mechanism, and means for holding each feeding-point in turn in engagement with said feeding mechanism and in vertical alinement with said nail driving mechanism.

35. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, a series of feeding-points located on said heel-plate at different distances from the axis on which said heel-plate turns and representing the positions of the nails to be driven into the heel-blanks, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the nail driving mechanism, a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted for varying the position of the heel-blanks relatively to the said feeding-points and to said nail-driving mechanism, and yielding means for holding each feeding-point in turn in engagement with said feeding mechanism, and in vertical alinement with said nail-driving mechanism.

36. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, a series of feeding-points located on said heel-plate at different distances from the axis on which said heel-plate turns and representing the positions of the nails to be driven into the heel-blanks, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, a heel-holding device on said heel-plate for holding the heel-blanks thereon and adapted to be adjusted for varying the position of the heel-blanks relatively to the said feeding-points and to said nail-driving mechanism and yielding means connected to said movable plate for holding each feeding-point in turn in engagement with said feeding mechanism and in vertical alinement with said nail-driving mechanism.

37. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to said nail-driving mechanism and to move each feeding-point in turn in the line of motion of said nail-driving mechanism, means for holding the heel-plate in engagement with said feeding mechanism, and means for causing the first feeding-point of said series to engage with said feeding mechanism upon the engagement of said heel-plate and feeding mechanism.

38. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to said nail-driving mechanism and to move each feeding-point in turn in the line of motion of said nail-driving mechanism, means for holding said heel-plate in engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism, and means for causing the first feeding-point of said series to engage with said feeding mechanism upon the engagement of said heel-plate and feeding mechanism.

39. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to the said nail driving mechanism and to move each feeding-point in turn in the line of motion of said nail-driving mechanism, a locking device adapted to engage with said heel plate upon the disengagement of said heel-plate and feeding mechanism and to hold said heel-plate with the first feeding-pin of said series in line with the feeding mechanism, mechanism adapted when actuated by the operator to move said heel-plate from engagement with said feeding mechanism and to cause the engagement of said locking device and said heel-plate, and means for moving the first feeding-pin of said series on said heel-plate into engagement with the said feeding mechanism upon the release of said heel-plate from engagement with said locking device.

40. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, means for holding the said heel-plate in engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism, and means for causing the first feeding-point of said series to engage with said feeding mechanism upon the release of said actuated mechanism.

41. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel blank thereon relatively to the said nail-driving mechanism, means for holding the said heel-plate in engagement with said feeding mechanism, and means for causing the first feeding-point of said series to engage with said feeding mechanism upon the engagement of said heel-plate and feeding mechanism.

42. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and adapted to be adjusted to accommodate heels of varying widths at the breast and to vary the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism.

43. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded, feeding mechanism for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and consisting of a front plate and a rear plate which is adapted to be adjusted on said heel-plate to vary the position of the heel-blanks on said heel-plate relatively to the said nail-driving mechanism.

44. In a heel-loading machine, a nail-driving mechanism, a heel-plate in the line of motion of said nail-driving mechanism for carrying the heel-blanks to be loaded and having a series of feeding-points representing the positions of the nails to be driven into the heel-blanks, feeding mechanism adapted to engage with said feeding-points for operating said heel-plate to move the heel-blank thereon relatively to the said nail-driving mechanism and to move each feeding-point in turn in the line of motion of said nail-driving mechanism, and a heel-holding device on said heel-plate for holding the heel-blank thereon and consisting of a front plate provided with means adapted to be adjusted to accommodate heels of varying widths at the breast and a rear plate which is adapted to be adjusted on said heel-plate to vary the position of the heel-blanks on said heel-plate relatively to said nail-driving mechanism.

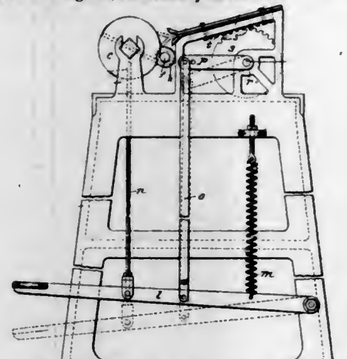
45. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device consisting of a cam-plate mounted on said movable plate and adapted to engage with a recess in said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism, and means cooperating with said cam-plate for moving said cam-plate into engagement with said heel-plate upon the movement of said heel-plate from engagement with said feeding mechanism.

46. In a heel-loading machine, a nail-driving mechanism, a heel-supporting plate for carrying the heel-blanks to be loaded, a movable plate on which said heel-plate is mounted, a vertically-adjustable bracket carrying the said movable plate and adapted to be adjusted to different heights for heels of varying thicknesses carried by said heel-plate, feeding mechanism for operating said heel-plate, means for holding said heel-plate in engagement with said feeding mechanism, a locking device consisting of a cam-plate mounted on said movable plate and adapted to engage with a recess in said heel-plate when the same is moved from engagement with said feeding mechanism, mechanism adapted when actuated by the operator to move the heel-plate from engagement with said feeding mechanism and means consisting of a pin provided on its upper end with a friction-roller located within a recess in said cam-plate and located on said vertically-adjustable bracket and adapted to cooperate with said cam-plate for moving said cam-plate into engagement with said heel-plate upon the movement of said heel plate from engagement with said feeding mechanism.

570,655. BENDING-MACHINE. JOHN W. ABRAHAMS, Allegheny, Pa., assignor of one-half to Harry A. Marlin, Pittsburg, Pa. Filed Jan. 13, 1896. Serial No. 575,264. (No model.)

Claim.—1. In a bending-machine the combination of a bending-roll, brackets arranged at suitable intervals along said roll, said brackets having hook-shaped ends, the beading-roll fitting within said brackets and adapted to rotate independently of said bending-roll, substantially as set forth.

2. In a bending-machine, the combination of a bending-roll, mechanism for locking said bending-roll, brackets arranged at suitable intervals along said roll, said brackets having hook-shaped ends, a beading-roll fitting within said brackets adapted to rotate independently of said bending-roll, substantially as set forth.



3. In a bending-machine, the combination of a bending-roll, brackets on said bending-roll having bolts extending through the same, said brackets having hook-shaped ends and a beading-roll fitting within said brackets and adapted to rotate independently of said roll, substantially as set forth.

4. In a bending-machine, the combination of a bending-roll, a beader carried thereby adapted to rotate independently of said bending-roll, and a reciprocating presser having a forked edge adapted to bear against said roll, substantially as set forth.

5. In a bending-machine, the combination of a bending-roll, a beader carried thereby adapted to rotate independently of said bending-roll, and a reciprocating presser, substantially as set forth.

6. In a bending-machine, the combination of a bending-roll, a beader carried thereby adapted to rotate independently of said bending-roll, a reciprocating presser, and mechanism for locking said bending-roll and releasing the same and for operating said presser at the same time, substantially as set forth.

7. In a bending-machine, the combination with a suitable frame, of a bending-roll mounted therein, a beader carried thereby adapted to rotate independently of said bending-roll, a lever, connections between said lever and bending-roll for locking the same, a reciprocating presser, and connections between said lever and presser, substantially as set forth.

8. In a bending-machine, the combination with a suitable frame of a bending-roll mounted therein, a beader carried thereby adapted to rotate independently of said bending-roll, a lever, connections between said lever and said roll for locking the same, a presser having racks thereon, pinions engaging said racks, and connections between said pinions and said lever, substantially as set forth.

9. In a bending-machine, the combination with a suitable frame, of a bending-roll mounted therein, a beader carried thereby adapted to rotate independently of said bending-roll, a lever, connections between said lever and said roll for locking the same, a presser having racks thereon, a shaft carrying pinions engaging said racks, a crank on said shaft, and a rod connecting said crank and lever, substantially as set forth.

10. In a bending-machine, the combination with a suitable frame, of a bending-roll mounted therein, a beader carried thereby adapted to rotate independently of said bending-roll, a lever, a rod extending from said lever into a recess in said bending-roll, a reciprocating presser, and connections between said lever and said presser for operating the same, substantially as set forth.

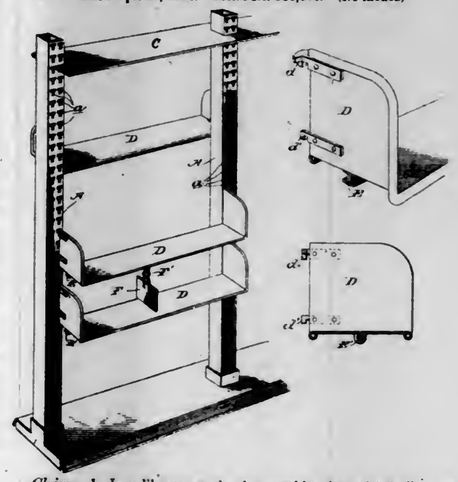
570,656. BLOWPIPE. ADDISON D. BARRETT, Norfolk, Va. Filed Sept. 9, 1896. Serial No. 605,342. (No model.)



Claim.—1. The device described for forcing a jet of flame against articles to be heated comprising a tube, a nozzle C, secured upon one end of the tube and disposed at an angle thereto and having its opposite ends open, a blowpipe having a nozzle inserted in the nozzle C, and also having a collar-flange, and a keeper bifurcated at one end so as to straddle the blowpipe above its collar-flange and having a collar at its opposite end loosely mounted on the tube, substantially as specified.

2. The device described for forcing a jet of flame against articles to be heated comprising a compressible tube, a metallic tube connected therewith, a nozzle C, secured upon one end of the metallic tube and disposed at an angle thereto and having its opposite ends open, a socket-sleeve arranged in said nozzle and connected thereto, a blowpipe having a nozzle inserted in the socket-sleeve and also having a collar-flange, and a keeper bifurcated at one end so as to straddle the blowpipe above its collar-flange and having a collar at its opposite end loosely mounted on the metallic tube, substantially as specified.

570,657. LIBRARY-STACK. DRAN A. BECKWITH, New York, N. Y. Filed Apr. 18, 1896. Serial No. 588,078. (No model.)



Claim.—1. In a library-stack, the combination with hollow uprights having keyhole-apertures, of shelves of substantially elongated U shape which are provided with T-shaped projections at the upper edges of their vertical members coöperating with the apertures in the uprights, notched projections on the lower edges of said vertical members which also coöperate with said apertures but at a point beneath those engaged by the T-shaped projections, and bases into which said uprights are socketed; substantially as described.

2. In a library-stack, the combination with hollow uprights having keyhole-apertures, of shelves of substantially elongated U shape which are provided with T-shaped projections at the upper edges of their vertical members said T-shaped projections being notched on their under sides and coöperating with the apertures in the uprights, notched projections on the lower edges of the vertical members of the shelves which also coöperate with said apertures, a top or cover adjustably arranged on the uprights for protecting books on the top shelf, and bases into which said uprights are socketed; substantially as described.

3. The herein-described compressor, comprising a plate, clamping-jaws, and springs extending from the plate, said jaws being mounted upon the free ends of said springs; substantially as described.

570,658. SCISSORS OR SHEARS. JOHN G. BESTGEN, Somerville, Mass. Filed May 22, 1896. Serial No. 592,514. (No model.)



Claim.—Scissors or shears comprising the blade *a* provided with a threaded opening, and the blade *b* provided with a smooth opening, combined with a pivot-screw for said blades consisting of a threaded shank adapted to engage the threaded opening, and an enlarged head adapted loosely to engage said smooth opening, the said shank and head being slotted and normally separated longitudinally throughout their entire length, and a spring bow or loop connecting the separated parts of the shank and head, and a wedge or spreader adapted to be inserted in the slotted head whereby the slotted shank is expanded in the threaded opening, substantially as and for the purpose described.

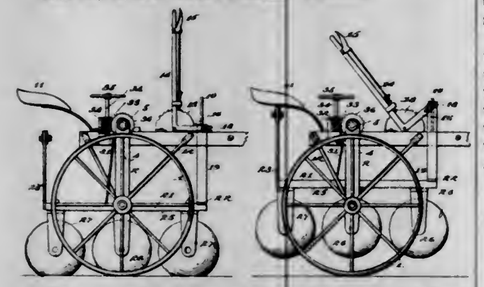
570,659. BICYCLE-SUPPORT. ALVIN J. BRANHAM, Springfield, Mo. Filed Nov. 11, 1895. Serial No. 568,583. (No model.)

Claim.—The combination with a bicycle, of blocks secured to the rear fork thereof one above the other, the lower block being bored vertically, a rod mounted for movement through the opening in the lower block and its upper end provided with a flattened spring portion engaged beneath the upper block, legs of spring material hinged to opposite sides of the lower end of said rod, rollers on the lower ends of said legs, and a spring arranged between the legs near their connection with the rod, all substantially as herein shown and described.



570,660. DISK CULTIVATOR. ANDREW L. BROCK, Lockhart, Tex.

Filed May 22, 1896. Serial No. 592,620. (No model.)



Claim.—In a disk cultivator, the combination with the framework mounted upon suitable wheels, of a pole pivotally mounted therein, a sector secured to the upper side of said pole, a lever fulcrumed in said sector having right-angled extensions thereto, a disk-supporting frame loosely connected to the ends of said extensions, a worm mounted in a bracket secured to the rear ends of said pole, a worm gear-wheel meshing therewith, a sleeve mounted upon a suitable shaft to which said gear-wheel is connected, projections on said sleeve and cords connecting said projections and the rear end of said disk-supporting frame, substantially as and for the purpose described.

570,661. STEP OR EXTENSION LADDER. WILLIAM B. CANTRELL, Seattle, Wash., assignor to Roy J. Cantrell, San Francisco, Cal. Filed Aug. 11, 1893. Serial No. 482,887. (No model.)

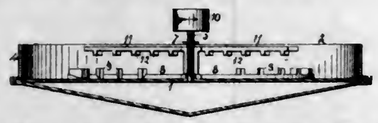


Claim.—1. In a hinged extension or step ladder the combination of two members each provided with metal plates having flanges embracing the side and edges of each member and radial teeth on the face of each plate, with a bolt passing through the sides of the two members and through their toothed plates, and a cam-lever pivoted on one end of said bolt substantially as described.

2. The combination of the sides and rounds of a ladder with a shelf securely mounted upon said rounds and removable therefrom, the fastening for said shelf consisting of wire springs having their ends secured to said shelf, and coils of said wire adjacent to said shelf substantially as described.

570,662. GRAIN-DRIER. GEORGE H. CORMACK, Rockford, Ill.

Filed May 27, 1896. Serial No. 593,360. (No model.)

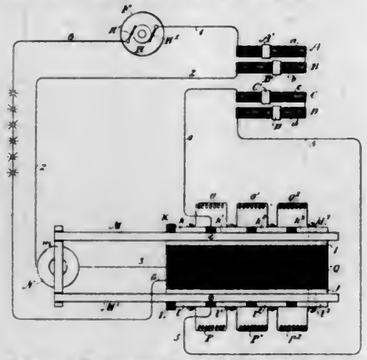


Claim.—1. In a grain-drier, the combination of a cylindrical dish-shaped receptacle, an agitator located therein having a rotary movement, its upper face provided with projections set at an angle to the length of the agitator in order that the bottom strata of grain may be conveyed to the center of the drier.

2. In a grain-drier, the combination of a cylindrical dish-shaped receptacle, an agitator located therein having a rotary movement, its upper face provided with projections set at an angle to the length of the agitator in order that the bottom strata of grain may be conveyed to the center of the drier, and a rotary agitator located above the bottom of the drier having depending projections set at an angle to the length of the agitator in order that the upper strata of grain may be conveyed to the periphery of the drier.

570,663. METHOD OF AND APPARATUS FOR REGULATING DYNAMO-ELECTRIC GENERATORS OR MOTORS. JAMES W. EASTON, Brooklyn, N. Y., assignor, by direct and mesne assignments, to Lewis H. Slaght, Waterford, Canada, and Samuel G. Metcalf, New York, N. Y.

Filed Apr. 1, 1892. Serial No. 427,366. (No model.)



Claim.—1. The combination with a dynamo or motor having a plurality of pole-pieces arranged in sets or divisions, of a circuit-controlling device actuated by variations in the output or load of the machine for varying or changing the power or polarity of one set of pole pieces independently of the others, substantially as shown and described.

2. The combination of a dynamo-electric generator or motor having a plurality of poles arranged in sets, the coils of which are all in the main circuit, with means for varying or changing the current in the coils of one set of poles independently of the others, substantially as shown and described.

3. The combination of a dynamo-electric generator or motor having a plurality of poles arranged in sets, the coils of which are all in the main circuit, with mechanism actuated by variations in the output of the machine for varying or changing the current in the coils of one set of poles independently of the others, substantially as shown and described.

4. The combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets of mechanism actuated by variations in the output or load of the machine for varying the magnetizing effect and changing the polarity of one set of poles independently of the others, substantially as shown and described.

5. The combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets, the coils of which are all in the main circuit, of resistances arranged in a shunt-circuit around the coils of one set of poles and mechanism substantially as described, for opening and closing said shunt-circuit, substantially as shown and described.

6. The combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets, of a shunt-circuit around one set of poles, and of mechanism actuated by variations in the output or load of the machine for varying the resistance of said shunt-circuit, substantially as shown and described.

7. The combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets, of a shunt-circuit around one set of poles and a circuit-controlling device, actuated by variations in the output or load of the machine, for controlling the volume of the current in the shunt-circuit and the direction of the current in the coils of one set of poles, substantially as shown and described.

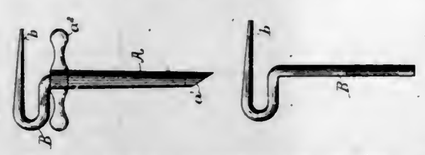
8. In combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets, of a series of resistances in shunt relation to the coils of one set of poles, a movable circuit-closer for throwing said resistances into and out of circuit successively, an electromagnet in the main circuit of the machine and arranged to actuate said circuit-closer by variations in the volume of the current passing through the coils, substantially as shown and described.

9. In combination with a dynamo-electric generator or motor having a plurality of poles arranged in sets, of a series of resistances in shunt relation to the coils of one set of poles, a movable circuit-closer for throwing said resistances into and out of circuit successively, an electromagnet arranged to actuate said circuit closer, and an automatic switch arranged to vary the volume of current in the coils of the electromagnet in accordance with variations in the output or load of the machine, substantially as shown and described.

10. In an electric-current regulator the combination of a series of resistances, curved connector-blades arranged to make and break connections between the external circuit and the resistance-coils, an electromagnet N connected with said blades, and an automatic switch arranged in the main circuit of the machine to vary the strength of the current flowing through the coils of N in accordance with variations in volume of current in the main circuit, substantially as shown and described.

570,664. TOOL FOR MENDING PUNCTURES IN PNEUMATIC TIRES. ARTHUR HEYWOOD and ARTHUR T. HEYWOOD, Chicago, Ill.

Filed Mar. 16, 1895. Serial No. 542,064. (No model.)



Claim.—1. A repair-tool for pneumatic tires, comprising a rigid tube, bevel-pointed at one end and adapted to receive a headed plug, and a plunger for expelling the plug from the tube, substantially as described.

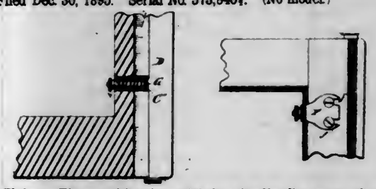
2. A repair-tool comprising a bevel-pointed tube open from end to end and adapted to receive at the beveled end a headed repairing-plug, in combination with a plunger operating to expel the plug into the tire, whereby the puncture may be first expanded and the plug then introduced into the puncture, as set forth.

3. A repair-tool for pneumatic tires comprising in combination a bevel-pointed tube open from end to end and adapted to receive at the beveled end a headed plug, and a plunger shorter in length than the tube and having at its outer end a handle, whereby the puncture may be expanded by introducing the bevel-pointed tube containing the repair-plug, and the plug may then be expelled from the tube and into the tire, and whereby on the withdrawal of the tube from the tire the plug will be retained in the puncture, substantially as described.

4. A repair-tool for pneumatic tires, comprising in combination a bevel-pointed tube open from end to end and adapted to receive at its beveled end a headed repair-plug, and a plunger comprising the straight bore B and the hook-pointed handle portion *b*, whereby the plug may be introduced into the beveled end of the tube and forced into the same by pressure exerted through the hook-pointed end of the plunger, the puncture may be expanded by introducing the beveled point of the tube therein and the plug expelled out of the tube and into the tire through the medium of the plunger B, substantially as and for the purpose set forth.

570,665. SASH-FASTENER. CHARLES HOFFMAN, Spokane, Wash.

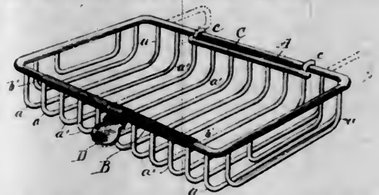
Filed Dec. 30, 1895. Serial No. 573,840. (No model.)



Claim.—The combination with longitudinally-grooved sash and jamb, of a friction-plate fitted in the sash-groove, springs adapted to press the same outwardly, and a lateral lip at the end of said plate adapted to bear close to the jamb and crosswise thereof, to exclude air, as described.

570,666. SOAP-HOLDER. OTTO H. HUEBEL, Brooklyn, N. Y.

Filed Feb. 26, 1896. Serial No. 580,794. (No model.)



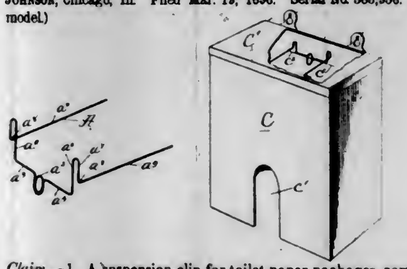
Claim.—1. The combination with a soap holder or receptacle, of an ejector pivoted to the holder or receptacle and reaching approximately across the bottom of the latter, said ejector supported in its normal position by the holder or receptacle and constructed to lift the entire cake of soap and swing it over the upper edge of the holder or receptacle when the ejector is swung out of its normal position, substantially as set forth.

2. A soap-holder comprising a rim and bent wires the latter constituting the body of the holder, of an ejector composed of wire, and pivoted to the rim, and a thumb-piece attached to the ejector.

3. The combination with a rim, of a sleeve mounted thereon, bent wires attached to the sleeve and constituting the bottom of the holder, and a finger-piece for rotating the sleeve.

4. The combination with a rim, of a sleeve mounted thereon, bent wires constituting the bottom of the holder, a strip connected to the free ends of the wires and provided with hooks for overlapping the rim, and means for rotating the sleeve, substantially as set forth.

570,667. CLIP FOR TOILET-PAPER PACKAGES. GEORGE T. JOHNSON, Chicago, Ill. Filed Mar. 19, 1896. Serial No. 583,958. (No model.)



Claim.—1. A suspension-clip for toilet-paper packages, comprising a wire bent to outline or partially outline a plane so as to form a back-support against which the back of the package may rest, an engaging device formed on said back-support, and the terminal end portions of the wire bent to form two parallel arms arranged to project at right angles from the back-support, said arms being located at points vertically between the upper and lower boundaries of the plane outlined or partially outlined by the said back-support.

2. A suspension-clip for toilet-paper packages, composed of a single piece of wire having its middle portion formed into two concentric and opposed loops, the parts of the wire adjacent to said loops carried outwardly in opposite or divergent relation, and in approximately the same plane with the loops, and bent so as to partially outline a plane surface, and the free end portions extended outward at right angles to the plane thus partially outlined.

3. A suspension-clip for toilet-paper packages, composed of a single piece of wire having its middle portion formed into two opposed

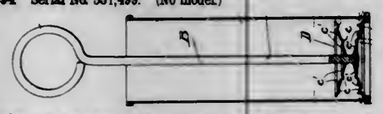
loops adapted to receive between them and embrace the edge of a sheet of pasteboard or the like, the ends of the wire being extended outwardly oppositely in horizontal alinement with each other, then deflected upwardly in the same plane with each other, and with the opening between said loops, then formed into a return-bend also in the same plane, and finally bent outwardly at right angles and extended parallel with each other in the same direction.

4. The combination with a toilet-paper package, composed of a plurality of superposed sheets, of a wire suspension-clip composed of a single piece of wire having its middle portion formed into two opposed loops adapted to receive between them and embrace the edge of a sheet of pasteboard or the like, the ends of the wire being extended outwardly oppositely in horizontal alinement with each other, then deflected upwardly in the same plane with each other and with the opening between said loops, then formed into a return-bend also in the same plane, and finally bent outwardly at right angles and extended parallel with each other and in the same direction through the package and the extreme ends bent in opposite directions.

5. The combination with a toilet-paper holder provided on one of its vertical walls with a clip-support comprising a relatively thin supporting edge with which the clip is adapted to be engaged, of a suspension-clip for toilet-paper packages formed of a single piece of wire having its middle portion formed into two opposed loops, the parts of the wire adjacent to said loops carried outwardly in opposite or divergent relation and in approximately the same plane with the loops so as to partially outline a plane surface, and the free end portions extended outward at right angles to the plane thus partially outlined.

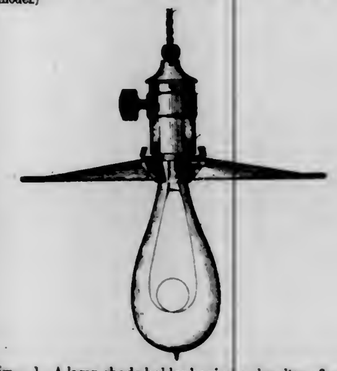
6. A suspension-clip for toilet-paper packages composed of a single piece of wire having a plurality of loops formed between its ends adapted for engagement with a suitable support, a back-support, and two parallel arms arranged to extend outwardly at right angles to the back-support.

570,668. EGG-BEATER. FERDINAND KOHLENBERG, Albany, N. Y., assignor of one-half to Eugene E Howe, same place. Filed Dec. 11, 1894. Serial No. 531,499. (No model.)



Claim.—As an improved article of manufacture an egg-beater, substantially as herein shown and described, consisting of a cylinder having an external reinforcing-bead formed on one end thereof, and an inwardly-directed annular flange connected with the lower end thereof above which are formed apertures or openings through which the material to be beaten is discharged, said cylinder extending slightly into said flange and a plunger-rod carrying concavo-convex dashers provided with apertures having the convex portion directed inwardly, said flange being adapted to limit the downward motion of the dashers and prevent the disengagement thereof from the cylinder, all arranged and operating as and for the purpose set forth.

570,669. LAMP SHADE OR REFLECTOR HOLDER. CHARLES A. LAPWORTH, Hopedale, Mass. Filed May 1, 1896. Serial No. 590,666. (No model.)



Claim.—1. A lamp-shade holder having a plurality of spring-clips bent outwardly to form a wedge-shaped series of inclined surfaces against which the inner edges of the shade or reflector may be wedged in adjusting the same to retained position, said inclined surfaces terminating in suitable holding-jaws, substantially as described.

2. A lamp-shade holder having a plurality of spring-clips bent outwardly to form a wedge-shaped series of inclined surfaces against which the inner edges of the shade or reflector may be wedged in adjusting the same to retained position, said inclined surfaces terminating in suitable holding-jaws, said clips having their free ends extended beyond said jaws to constitute finger-holds, substantially as described.

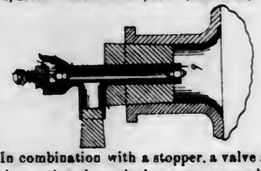
3. A lamp-shade holder, consisting of a socket-body, and integral spring-clips formed by slits therein, said clips being bent outwardly at their free ends, and thence inwardly and outwardly to form outwardly-facing jaws beyond said first-mentioned bend, said jaws being adapted to spring over the inner edges of a shade or reflector, to hold the same, substantially as described.

570,670. SASH-LOCK. DARWIN O. LIVERMORE, Los Gatos, Cal. Filed Sept. 24, 1894. Serial No. 523,924. (No model.)



Claim.—A sash-fastener comprising a fixture for one sash, consisting of a base-plate having standing lugs, a gravity-catch pivoted eccentrically in said lugs with the longer part thereof below such pivot and provided with angular teeth or notches on the front face, and a standing fulcrum-plate on said base-plate in front of the gravity-catch; and a fixture for the other sash consisting of a base-plate having a recessed bearing on the top, a locking-lever attached thereto by a spring-hinge, and having a shank or body with diverging arms on the outer end that are adapted to admit the gravity-catch of the other fixture between them when the lever is turned down, and the projections on the back of the lever, one of which is adapted to engage the notched face of the gravity-catch, and the other projection the fulcrum-plate, substantially as described for operation set forth.

570,671. VALVE-STOPPER. CLINTON E. LONG, Williamsport, Pa. Filed Oct. 2, 1895. Serial No. 564,448. (No model.)



Claim.—In combination with a stopper, a valve attachment consisting of a tube passing through the stopper, an enlargement at the upper end of the tube, said enlargement having an outlet; a rod passing through said tube and enlargement, the upper end of the rod extending above the enlargement; a bib located on said rod at the upper end of the tube; and a bib located on said rod at the lower end of the tube; said bibs adapted alternately to close the upper and lower ends of the tube; the lower bib normally closing the lower end of the tube; a cavity extending laterally from the tube and located between the points where the bibs come in contact with the tube; an adjustable side located in said cavity; said tube and cavity in conjunction with the bibs forming a measuring-chamber.

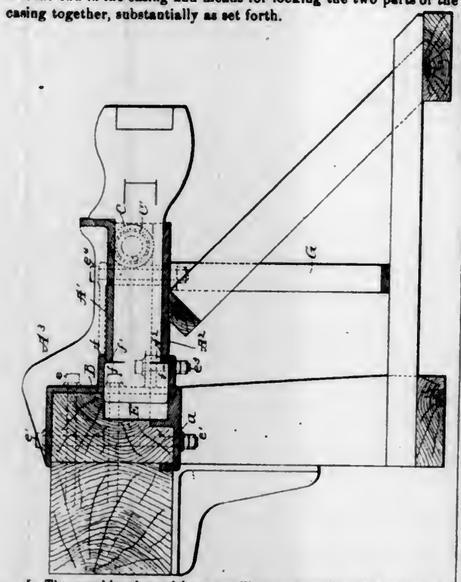
570,672. ENGINE-COUPLING. JOHN MACKENZIE, Cleveland, Ohio, assignor to The Buckeye Malleable Iron and Coupler Company. Filed June 6, 1896. Serial No. 594,579. (No model.)

Claim.—1. The combination with an auxiliary sectional casing having internal shoulders, of an ordinary draw-bar having projecting shoulders near its rear end adapted to engage the internal shoulders of the casing, and means for locking the two parts of the casing together.

2. A device for attaching car-couplings to a car comprising an auxiliary sectional casing having internal shoulders adapted to be engaged by shoulders on the ordinary draw-bar and means for locking the parts of the casing together and the coupling to the casing, substantially as set forth.

3. The combination with an auxiliary sectional casing having internal convex shoulders, of an ordinary draw-bar having projecting shoulders near its rear end adapted to engage the internal shoulders of the casing, and means for locking the two parts of the casing together.

4. The combination with an auxiliary sectional casing having a flaring chamber and springs located at the sides and adjacent to the open outer end of said chamber, of an ordinary draw-bar secured at its rear end in the casing and means for locking the two parts of the casing together, substantially as set forth.



5. The combination with an auxiliary sectional casing having a flaring chamber, spring-seats formed in said casing at the sides and near the front end thereof, and springs located within said seats, of an ordinary draw-bar secured in said casing and means for locking the two parts of the casing together, substantially as set forth.

6. The combination with an auxiliary casing having a flaring chamber, spring-seats formed in said casing at the sides and near the front end thereof, springs located within said seats, and side braces for preventing lateral deflection of the casing, of an ordinary draw-bar secured at its rear end within said casing and adapted to have a lateral movement therein, substantially as set forth.

7. The combination with an auxiliary casing having a flaring chamber, spring-seats formed in said casing at the sides and near the front end thereof, springs located within said seats and a brace for supporting the casing against vertical movement at its free end, of an ordinary draw-bar secured within said casing and adapted to have a lateral movement therein, substantially as set forth.

8. A device for attaching couplings to the front of an engine consisting of a two-part casing, each part having lateral and end flanges for engagement with the end sill of the engine, and an internal shoulder for engaging projections on the draw-head and means for locking the parts of the casing together and to the sill of the engine, substantially as set forth.

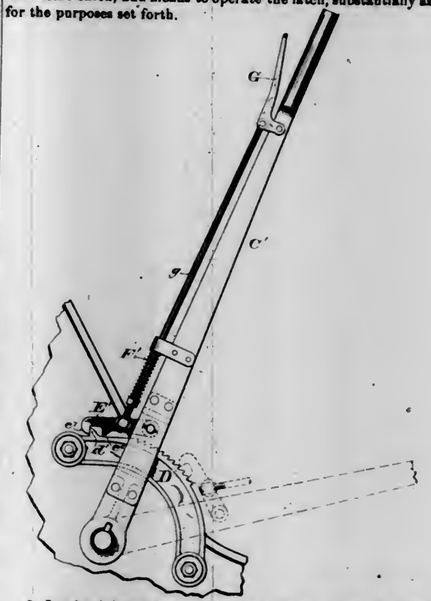
570,673. PLOW-POINT. FRANK A. MARTIN, Harrison, Ohio. Filed June 3, 1896. Serial No. 594,073. (No model.)



Claim.—As a new article of manufacture, the within described specific construction of plowshare-point, which construction includes a plate whose cutting edge has a series of scalloped or wave-shaped projections formed of reverse circular arcs that gradually increase, in depth, as they proceed rearwardly, all as set forth, and for the purpose stated.

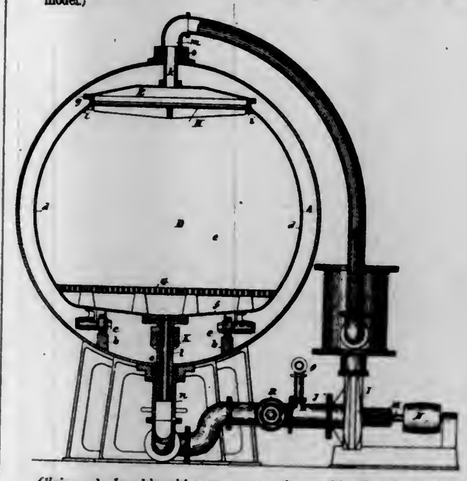
570,674. LATCH-LEVER. ERNST J. MULLER, Butte, Mont. Filed Nov. 6, 1893. Serial No. 490,063. (No model.)

Claim.—1. In a latch-lever, the combination with a quadrant having notches or teeth beveled on one side, and a home-catch, of a handle-bar fulcrumed concentrically with said quadrant, a latch pivoted to said handle-bar and provided with a tooth to ride freely over said teeth when moved away from said home-catch and with means to positively engage said catch and hold the lever when it is in its home position, a spring arranged to hold said latch in engagement with the ordinary notches in said quadrant and in positive engagement with said home-catch, and means to operate the latch, substantially as and for the purposes set forth.



2. In a latch-lever, the combination with a quadrant having inclined notches and provided at one end with a tooth constituting a home-catch, of a handle-bar fulcrumed concentrically with said quadrant, a latch pivoted to said handle-bar provided with a beveled tooth to slide over the notches of the quadrant and having a hook to engage the home-catch tooth of the quadrant, an operating-rod connected to said latch, and a spring for holding the latch in engagement with the quadrant and positively locking the lever in its home position, substantially as and for the purposes described.

570,675. APPARATUS FOR BLEACHING. HERBERT G. MCKEROW, Medford, Mass. Filed Nov. 20, 1895. Serial No. 569,576. (No model.)



Claim.—1. In a bleaching apparatus, the combination of an outer vessel and means for closing the same, a receptacle within said outer vessel to receive the material to be bleached, and means for forcing

liquid through said receptacle, said receptacle being sufficiently smaller than, and closed with reference to, said vessel, so that there is a space between the interior surface of said outer vessel and the inner receptacle into which said liquid cannot enter, substantially as set forth.

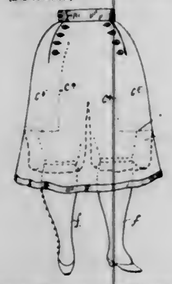
2. In a bleaching apparatus, the combination of an outer vessel, means for closing the same, a receptacle within said outer vessel to receive the material to be bleached, means for forcing liquid through said receptacle from the upper to the lower part thereof, and a perforated plate in the upper part of said receptacle through which the liquid must pass, said receptacle being sufficiently smaller than, and closed with reference to, said vessel, so that there is a space between said receptacle and the interior of said vessel into which said liquid cannot enter, substantially as set forth.

3. In a bleaching apparatus, the combination of an outer vessel, means for closing the same, a receptacle within said outer vessel to receive the material to be bleached, means for forcing liquid through said receptacle from the upper to the lower part thereof, a perforated plate in the upper part of said receptacle and another perforated plate in the lower part of said receptacle, said liquid being caused to pass through the openings in said plates, and said receptacle being sufficiently smaller than, and closed with reference to, said vessel, so that there is a space between said receptacle and the interior surface of said vessel into which said liquid cannot enter, substantially as set forth.

4. The combination of a vessel provided with a door, a truck to enter said vessel through the doorway on ways, a cover for said truck, means for closing the cover closely onto the truck, a pump, pipes leading from the upper and lower parts of said truck to said pump, and clamping devices operated outside of said vessel to clamp said pipes to the truck, thus preventing any opening from the truck into the space outside of the truck and within said vessel, substantially as set forth.

5. The combination of a vessel provided with a door and ways, a truck to enter said vessel on said ways, means for filling the space between the interior surface of said vessel and said truck with steam, a cover for the truck, screws extending to the outside of said vessel for closing down said cover onto the truck, a perforated plate or secondary bottom in said truck, a perforated plate in the upper part of said truck, a pump, a pipe provided with a slip or flexible joint extending from the upper part of said truck to said pump, a pipe provided with a slip or flexible joiut extending from the bottom of said truck to said pump, and a screw extending to the outside of said vessel for causing the pipe leading from the lower part of the truck to make a tight joint therewith, substantially as described.

570,676. BICYCLE-SUIT. ALICE C. NASH, Minneapolis, Minn., assignor of one-half to Frank L. Darrow, same place. Filed Aug. 29, 1895. Serial No. 560,362. (No model.)

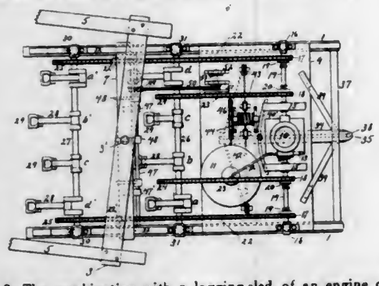


Claim.—A bicycle-habit, comprising the outer skirt and the trousers within the skirt, the said trousers comprising the body and leg portions, the leg portions being free from the skirt from their lower ends to a point about midway the length of the skirt, the outer or hip portion of the body of the trousers and the skirt being in one piece, whereby there is but a single thickness of fabric at the hip portion of the garment, substantially as described.

570,677. LOGGING-SLED. JOSEPH L. NYLANDER, Duluth, Minn. Filed Nov. 25, 1895. Serial No. 570,140. (No model.)

Claim.—1. The combination with a logging-sled, of a steering-runner pivoted at its forward end to said sled, a spring for forcing the forward end of said runner downward, a vertical extension at or near the rear end of said runner, engaging beneath the sled-frame but movable with respect to the same, and a spring on said extension for forcing the rear end of the runner downward, substantially as set forth.

2. The combination with a logging-sled, of a steering-runner pivoted at its forward end to said sled, a spring for forcing the forward end of said runner downward, a vertical extension at or near the rear end of said runner, engaging beneath the sled-frame but movable with respect to the same, a spring on said extension for forcing the rear end of the runner downward, and a rolling bearing between said connection and the sled frame, substantially as set forth.



3. The combination with a logging-sled, of an engine carried thereby, a main driving shaft, connections between said engine and said shaft, one or more driven shafts carried by the sled, a series of pushing-arms operated by said driven shafts, connections between said main driving-shaft and said driven shaft or shafts, and clutches for disengaging said connections with the main driving-shaft, substantially as set forth.

4. The combination with a logging-sled, of an engine carried on said sled, a main shaft, connections between said shaft and said engine, two or more driven shafts mounted on the sled, a series of pushing-arms operated by said driven shafts, and independent connections between said driven shafts and said main shaft, substantially as set forth.

5. The combination with a logging-sled, of an engine mounted on said sled, a main driving-shaft, connections between said engine and said shaft, two or more driven shafts mounted on the sled, a series of pushing-arms operated by said shafts, independent connections between said driven shafts and said main shaft, and a separate clutch for each of said connections whereby said driven shafts may be operated independently of each other, substantially as set forth.

6. The combination with a logging-sled, of an engine mounted on said sled, a main shaft 14, eprocket-wheels 17 and 18 on said main shaft, two or more driven shafts 26, 27, mounted on the sled, sprocket-wheels 24 and 25, on said driven shafts sprocket-chains 22 connecting the sprocket-wheels 17 and 25, and sprocket chains 23 connecting the sprocket-wheels 18 and 24, substantially as set forth.

7. The combination with a logging sled, of an engine mounted on said sled, a main shaft 14, sprocket-wheels 17 and 18 on said main shaft, clutches 19 and 20, for throwing said sprocket-wheels into and out of engagement with said shaft, two or more driven shafts 26 and 27 mounted on the sled, a series of pushing-arms operated by said driven shafts, a sprocket-chain 22 connecting the sprocket-wheels 17 and 25, and a sprocket-chain 23 connecting the sprocket-wheels 18 and 24, substantially as set forth.

8. The combination with a logging-sled, of an engine mounted on said sled, a main shaft 14 flexibly mounted on said sled, connections between said engine and said main shaft, and mechanism operated from the main shaft for propelling the sled, substantially as set forth.

9. The combination with a logging-sled, of an engine mounted on said sled, a main shaft 14 mounted in ball-and-socket bearings on said sled, connections between said shaft and said engine, and mechanism operated from said shaft for propelling the same, substantially as set forth.

10. The combination with a logging-sled, of an engine mounted on said sled, a driven shaft mounted in flexible bearings on the sled, a series of pushing-arms connected with said driven shaft, and connections between said driven shaft and said engine, substantially as set forth.

11. The combination with a logging-sled, of an engine mounted on said sled, a driving-shaft mounted in ball-and-socket bearings on said sled, a series of pushing-arms operated by said driving-shaft, and connections between said driving-shaft and said engine, substantially as set forth.

12. The combination with a logging-sled, of an engine mounted on said sled, a main driving-shaft 14 mounted in flexible bearings on the sled, connections between said engine and said main driving-shaft, a driven shaft mounted in flexible bearings on the sled, a series of pushing-arms operated by said driven shaft, and connections between said main driving-shaft and said driven shaft, substantially as set forth.

13. The combination with a logging-sled, of an engine mounted on said sled, a main driving shaft mounted in ball-and-socket bearings on said sled, connections between said engine and said main driving-shaft, a driven shaft mounted in ball-and-socket bearings on said sled, a series of pushing-arms operated by said driven shaft, and connections between said main driving-shaft and said driven shaft, substantially as set forth.

14. The combination with a logging-sled, of an engine mounted on said sled, two or more driven shafts mounted in flexible bearings on said sled, a series of pushing-arms operated by said driven shafts, and connections between said engine and said driven shafts, substantially as set forth.

15. The combination with a logging-sled, of an engine mounted on said sled, two or more driven shafts mounted in ball-and-socket bearings on said sled, a series of pushing-arms operated by said driven shafts, and connections between said engine and said driven shafts, substantially as set forth.

16. The combination with a logging-sled, of an engine mounted on said sled, a main driving-shaft flexibly mounted on said sled, connections between said engine and said driving-shaft, two or more driven shafts flexibly mounted on said sled, a series of pushing-arms operated by said driven shafts, independent connections between each of said driven shafts and said main driving-shaft, and an independent clutch for each of said connections for throwing said driven shafts into and out of engagement with said driving-shaft independent of the others, substantially as set forth.

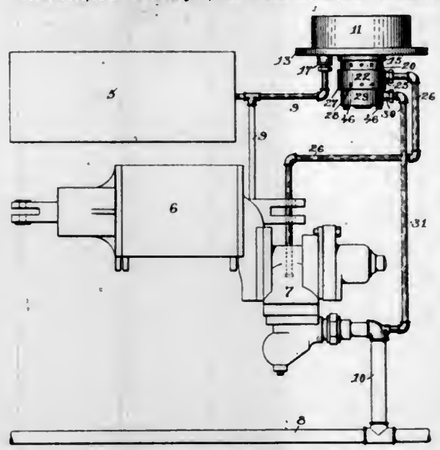
17. The combination with a logging-sled, of a shaft mounted on said sled, means for operating said shaft, one or more cranks on said shaft, a pushing-arm connected with said cranks, a shoe at the lower end of each pushing-arm for engagement with the snow or ice, said shoe being provided with a vertical opening, substantially as set forth.

18. The combination with a logging-sled, of a shaft mounted on said sled, means for operating said shaft, one or more cranks on said shaft, a pushing arm engaging with each of said cranks, an open frame pivoted to the lower end of each pushing-arm, and an open shoe removably secured to said open frame, substantially as set forth.

19. The combination with a logging-sled, of a shaft flexibly mounted on said sled, means for operating said shaft, and means operated by said shaft for propelling the sled, substantially as set forth.

20. The combination with a logging sled, of a shaft carried by said sled, two or more arms keyed to said shaft, a hand-wheel mounted on the sled, and connections between said hand-wheel and said shaft for partially rotating said shaft whereby said arms will be forced into engagement with the snow or ice for stopping or retarding the movement of said sled, substantially as set forth.

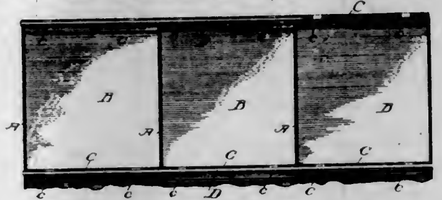
570,678. FLUID-PRESSURE BRAKE. WILLIAM H. O'CONNOR, Providence, R. I. Filed May 20, 1896. Serial No. 592,256. (No model.)



Claim.—1. In a fluid-pressure brake, the combination with the auxiliary reservoir, the operating-valve, and the train-pipes, of a supplemental reservoir connected with the auxiliary reservoir to receive fluid under pressure therefrom, a valve-chamber mounted adjacent to said supplemental reservoir, a valve-spindle working through this chamber and having diaphragms secured above and below the valve, suitably inclosed and secured, the upper diaphragm being subjected to the pressure of the fluid in the reservoir and the lower diaphragm to the pressure of the fluid in the train-pipe.

2. The combination with the reservoir 11 having the post 12, the opening 14, the inlet 16 and the flange 15, the valve-casing 17 furnished with the valve 18 secured in the inlet, the member 20 having the perforations 21, the valve-chamber 22 having the partition 23 with the valve-seat 24, the inlet 25 and perforated flange 27, the chamber 29 having the inlet 30 all secured together and to the flange 15 by bolts, the bearing 32 in the chamber 29, the spring 33 embracing this bearing, the valve-spindle 34 reciprocal in said bearing, and a bearing in the post 12 having the valve 35, suitable spacing blocks and plates and the nuts 36 and 45, and the diaphragms 39, 40 and 44 mounted on said spindle and secured at their centers and edges, as and for the purpose described.

570,679. FILE-RACK. PETER J. PAULY, Sr., and JAMES C. MCQUILKIN, St. Louis, Mo., assignors to the St. Louis Art Metal Company, same place. Filed Apr. 23, 1896. Serial No. 588,763. (No model.)

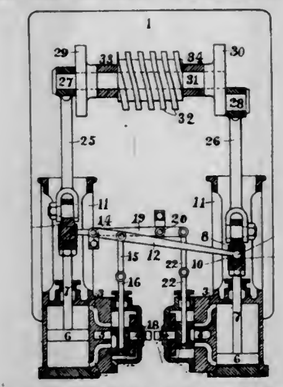


Claim.—1. In a file-case, the combination with the vertical partitions, which are formed with alining openings, of horizontal partitions formed with offsets in line with the openings in the vertical partitions, straps which are threaded through said openings and between the offsets and horizontal partitions, and means for securing the straps in position; substantially as described.

2. The combination with vertical partitions, of horizontal partitions arranged therebetween, said horizontal partitions being provided with offset or depressed portions, and straps which pass through the vertical partitions, under the horizontal partitions and over the offsets; substantially as described.

3. The combination with the vertical partitions A, formed with horizontally-alining openings, of horizontal partitions C, formed with offset or recessed portions c, and having single flanges at their backs, straps D which support the horizontal partitions by passing through the openings in the vertical partitions, and the openings formed by the offets c, and a back B which is riveted to back flanges on the horizontal partitions; substantially as described.

570,680. STEAM STEERING APPARATUS. CHAUNCY B. PERLEY, Port Huron, Mich., assignor to the Jenks Ship Building Company, same place. Filed June 12, 1896. Serial No. 595,310. (No model.)



Claim.—1. In a steam steering apparatus, the combination of a suitably-supported worm-wheel shaft, a wheel held revoluble upon said worm-wheel shaft, said wheel having an eccentric or cam groove, a pilot-wheel, connections whereby the conditions of rest or motion of said pilot-wheel may be imposed upon said grooved wheel, a block fashioned to travel said eccentric groove, a bell-crank lever having a fulcrum attached to said shaft and adapted to be revolved therewith, devices pivotally joining said block and bell-crank lever, a reversing-valve, pivotal and revoluble connections between said bell crank lever and reversing-valve, steam engines arranged to rotate said worm-wheel shaft, steam and exhaust ports governed by said reversing-valve, said steam-ports arranged to serve steam to said engines caus-

ing them to rotate said worm-wheel shaft in a direction similar to that imposed upon said grooved wheel by said pilot-wheel, substantially as described.

2. In a steam steering apparatus, the combination of a suitably-supported worm-wheel shaft, a wheel held revoluble upon said shaft, said wheel having an extended hub, the said extension provided with a helical slot, a pilot-wheel, connections whereby the conditions of rest or motion of said pilot-wheel may be imposed upon said slotted wheel, a block having a lug fashioned to travel said helical slot, means for guiding said block, a reversing-valve, a valve-stem connecting said block and said reversing-valve, steam-engines arranged to rotate said worm-wheel shaft, steam and exhaust ports governed by said reversing-valve, said steam-ports arranged to serve steam to said engines causing them to rotate said worm-wheel shaft in a direction similar to that imposed upon said slotted wheel by said pilot-wheel, substantially as described.

3. In a steam steering apparatus, the combination of a suitably-supported worm-wheel shaft, a wheel revoluble upon said shaft, said wheel having an eccentric or cam groove, a pilot-wheel, connections whereby the conditions of rest or motion of said pilot-wheel may be imposed upon said grooved wheel, a block fashioned to travel said eccentric groove, a bell-crank lever having a fulcrum attached to said shaft and adapted to be revolved therewith, devices pivotally joining said block and bell-crank lever, a second or auxiliary wheel revoluble upon said worm-wheel shaft and having an extended hub, the said extension provided with a helical slot, the said grooved wheel and said auxiliary slotted wheel being attached to each other and arranged to be revolved together, a block having a lug fashioned to travel said helical slot, means for guiding said block, a reversing-valve consisting of two independent slide-valves of different superficial area, pivotal and revoluble connections between said bell-crank lever and the greater of said reversing slide-valves, a valve-stem joining the lesser of said reversing slide-valves and the block cooperating with said helical slot, steam-engines arranged to rotate said worm-wheel shaft, steam and exhaust ports governed by said reversing-valve, said steam-ports arranged to serve steam to said engines causing them to rotate said worm-wheel shaft in a direction similar to that imposed upon said grooved wheel by said pilot-wheel, and means for retaining said grooved and slotted wheels upon said shaft, substantially as described.

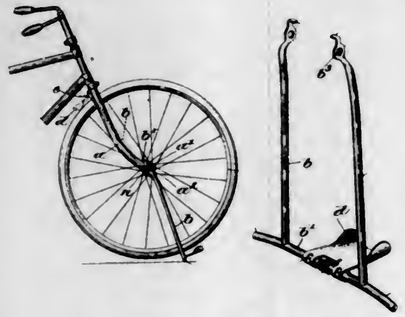
4. In a steam steering apparatus, the combination of a suitably-supported worm-wheel shaft having a bore extending axially from one end and a longitudinal slot, a wheel revoluble upon said shaft and provided with an eccentric or cam groove, a pilot-wheel, connections whereby the conditions of rest or motion of said pilot-wheel may be imposed upon said grooved wheel, a block fashioned to travel said eccentric groove, a bell-crank lever having a fulcrum fixed upon said shaft and adapted to revolve therewith, devices for pivotally joining said block and bell-crank lever, said lever having one leg possessing elasticity and constructed to enter said bore through the slot in said shaft, an auxiliary wheel revoluble upon said worm-wheel shaft and having an extended hub provided with a helical slot, said grooved and slotted wheels being attached to each other and arranged to revolve together, means for retaining said attached wheels upon said shaft, a reversing-valve consisting of two independent slide-valves of different superficial area, a block movably fitting said bore and pivotally attached to the elastic leg of said lever, a block movably fitting said bore and provided with a lug fashioned to travel said helical slot, a solid valve-stem forming a revoluble connection between the first-mentioned block in said bore and the greater of said reversing slide-valves, a hollow valve-stem movably inclosing said solid stem and joining the second-mentioned block in said bore with the lesser reversing slide-valve, and mechanism governed by said reversing-valve whereby said worm-wheel shaft may be rotated in a direction similar to the rotation imposed upon said grooved wheel by said pilot-wheel, substantially as described.

570,681. BICYCLE ATTACHMENT. EDWIN R. PIKE, Haverhill, N. H. Filed Dec. 21, 1895. Serial No. 572,352. (No model.)

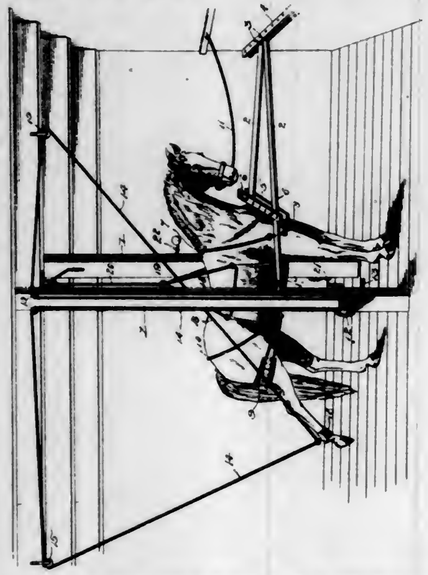
Claim.—1. In a bicycle, a stand pivotally mounted thereon and adapted to form a support therefor when swung downwardly, a detent to retain the stand in inoperative position, and a brake shoe mounted on the free end of the stand and adapted to brake the adjacent wheel when the stand is held by the detent, the brake-shoe at such time being located above the wheel-tire, substantially as described.

2. In a bicycle, a stand pivotally mounted thereon and adapted to form a support therefor when swung downwardly, a detent to retain the stand in raised, inoperative position, laterally-extended foot-rests on the free end of said stand, and a brake carried by the stand between the foot-rests, said foot-rests and brake being operative when the stand is held by the detent, substantially as described.

3. In a bicycle, a stand adapted to be pivotally mounted upon the front axle, a laterally-extended base for the stand, to serve as foot-rests when the stand is inoperative, a detent to retain the stand inoperative, and a brake carried by said stand, to cooperate with and brake the front wheel when the stand is held by the detent, substantially as described.



570,682. HORSESHOEING-RACK. JOHN L. REAM, Axtell, Kans., assignor of one-half to James C. Briggs, same place. Filed Nov. 30, 1895. Serial No. 570,682. (No model.)

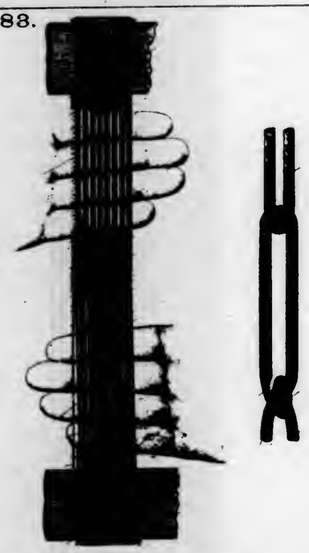


Claim.—In an apparatus for shoeing horses, the combination with uprights and connected means for preventing movement of the body of an engaged horse, of a windlass, an endless cable wound at an intermediate point upon the windlass, overhead pulleys through which the ends of the cable are reeved to extend in opposite directions, said cable depending to form a loop between the outermost pulleys, and a shackle or fetter rigidly secured to said looped portion of the cable for engagement with the leg of a horse, whereby the leg may be elevated either forwardly or rearwardly by turning the windlass in opposite directions, substantially as specified.

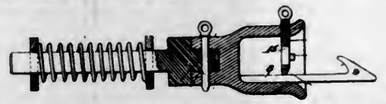
570,683. METHOD OF UTILIZING PARTIALLY-WORN FIBROUS HARNESS. JOSHUA ROBINSON, Lawrence, Mass. Filed Nov. 18, 1895. Serial No. 569,271. (No specimens.)

Claim.—The herein-described method of utilizing partially-worn fibrous harnesses for looms, whereby both ends of the eyes may be used, which consists in reversing the warp-beam, drawing in the warp ends from the under side of the beam, with the harness-leases down and mounting the drawn-in beam and harnesses in the loom with the warp-yarns leading from the top of the beam and the harness-leases up, whereby the previously upper ends of the harness-eyes are reversed in position, substantially as described.

570,688.



570,684. CAR-COUPLING. GEORGE K. RUSSELL, New York, N. Y. Filed June 22, 1896. Serial No. 596,440. (No model.)



Claim.—1. In a car-coupling, the combination with draw-heads provided with hooks having hook-heads which are notched at their rear portions, of gravity-operated locking-plates having openings, thereby providing lower cross pieces, said cross-pieces of the locking-plates being adapted for reception in the notched portions of the hook-heads of the hooks, and the openings receiving the rear upper portions of said hook-heads.

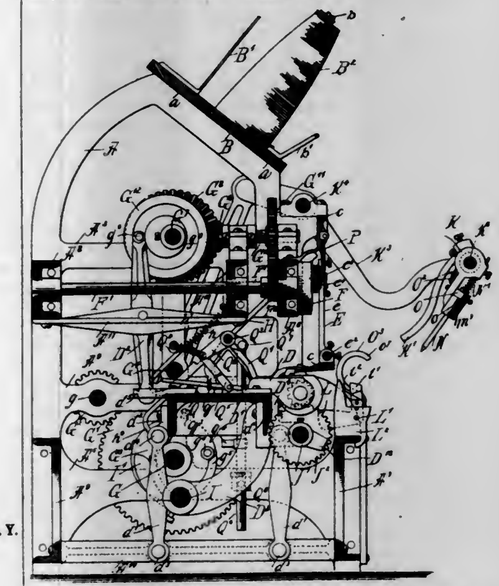
2. In a car-coupling, the combination with draw-heads, of individual coupling-hooks having shanks secured to the draw-heads within the same and their hook-heads projecting out from said draw-heads, and locking-plates having their lower edges resting on the shanks of the coupling-hooks, thereby forming openings between the lower edges of said locking-plates and the bottoms of the draw-heads, said openings being adapted to receive the coupling-heads.

3. In a car-coupling, the combination with draw-heads, of individual coupling hooks having their respective shanks secured to the floors of the draw-heads, being located at one side of the latter, the hook-heads of said hooks projecting out in front of the draw-heads, and vertically-slidable gravity-operated locking-plates normally resting on the shanks of the coupling-hooks, thereby providing openings between the lower edges of the locking-plates and the floors of the draw-heads, which openings are adapted to receive the respective hook-heads so that the locking-plates and hook-heads will be brought into engagement.

4. In a car coupling, the combination with draw-heads, of coupling-hooks having their shanks secured to the floors of the draw-heads and at one side thereof, and provided with outwardly-projecting hook-heads having front upwardly and rearwardly inclined faces and rear notched portions, and vertically-slidable gravity-operated locking-plates having lower beveled edges resting on the shanks of the coupling-hooks, thereby providing openings between said edges and the floors of the draw-heads, said locking-plates being also provided with openings in alinement with the aforesaid openings, thereby providing cross-pieces, said cross-pieces being adapted for reception in the notches of the hook-heads and the rear upper portions of said hook-heads being received in the openings in the locking-plates.

570,685. MACHINE FOR MAKING TUFTS. JONAS SCHUCHAT and DANIEL G. BUTTS, Chicago, Ill.; said Butts assignor to said Schuchat. Filed June 29, 1895. Serial No. 554,498. (No model.)

Claim.—1. A machine for making tufts from yarn or the like, comprising a holder, mechanism for winding a series of parallel coils thereon, mechanism for winding the yarn transversely upon the parallel coils and mechanism for automatically changing the tension on the yarn when the direction of winding is changed.



2. A machine for making tufts from yarn and the like, comprising a holder, mechanism for winding a series of parallel coils thereon, mechanism for winding the yarn transversely upon the parallel coils, and mechanism for automatically increasing the tension on the yarn during the winding of the transverse coils.

3. In a machine for forming tufts, the combination with a divided holder, the proximate ends of which extend adjacent to each other and act as thread guides and are normally together, with mechanism for winding a series of coils on said holder in a direction to extend across the line of division thereof, means whereby the divided holder has its parts separated and is then revolved or rotated to wind the yarn transversely around a series of coils, mechanism for severing the tuft from the strand and a needle adapted to pierce the tuft and carry the severed yarn end through the body thereof to draw the last coil taut, substantially as set forth.

4. A machine for making tufts from yarn, or the like, comprising a divided holder, mechanism for winding a series of coils upon the holder so as to extend across the line of division thereof, mechanism for winding the yarn between the two parts of the holder and around the series of coils, automatic thread-engaging devices adapted to engage and hold the yarn away from the body of the tuft, and a reciprocatory needle arranged to pierce the body of the tuft, engage the yarn at a point beyond and draw it through the tuft in its return movement, substantially as set forth.

5. A machine for making tufts from yarn, or the like, comprising a transversely-divided winding-head, skein-holding device carried by said head, a thread-guide arranged adjacent to the skein-holding device, mechanism for rotating said thread-guide in an orbit about the skein-holder so as to wind a skein extending across the line of division of the head, mechanism for revolving said head in a direction transverse to the direction of rotation of the guide in winding the skein, so as to wind the yarn between the winding-heads and about the skein, thread-engaging devices, a thread-cutting device, and a needle adapted to pierce the body of the tuft, engage the thread and draw the severed end through the tuft on its return movement, substantially as set forth.

6. The combination in a machine for making tufts from yarn, or the like, a frame, a two-part separated winding-head mounted in said frame to rotate on its own longitudinal axis, a skein-holding stud arranged to project laterally from each of said parts, a gripping-bolt adapted to engage the thread at a point between the adjacent ends of the separated head, a thread-guide revoluble in an orbit about said skein-holding studs, so as to form a skein thereon extending across the line of separation of the two parts of the head, mechanism for rotating the head on its own axis while said thread-guide is held stationary, mechanism adapted to retract the gripping-bolt to leave the throat-opening between the adjacent ends of the separated head

unobstructed, a knife adapted to be projected into the said throat-opening and a needle adapted to pierce the tuft, engage the thread and draw the thread across the knife and through the tuft, substantially as set forth.

7. The combination in a machine for making tufts from yarn, or the like, of a frame, a two-part separated winding-head mounted in said frame to rotate on its own longitudinal axis, a skein-holding stud arranged to project laterally from each of said parts, a gripping bolt adapted to engage the thread at a point between the adjacent ends of the separated head, a thread-guide revoluble in an orbit about said skein-holding studs, so as to form a skein thereon extending across the line of separation of the two parts of the head, mechanism for rotating the head on its own axis while said thread-guide is held stationary, mechanism adapted to retract the gripping-bolt to leave the throat-opening between the adjacent ends of the separated head unobstructed, a knife adapted to be projected into the said throat-opening and a needle adapted to pierce the tufts, engage the thread and draw the thread across the knife and through the tuft, and means for ejecting the tuft from the head, substantially as set forth.

8. The combination in a machine for making tufts from yarn, or the like, of a frame, a two-part separated winding-head mounted in said frame to rotate on its longitudinal axis, a skein-holding stud arranged to project laterally from each of said parts, a gripping bolt adapted to engage the thread at a point between the adjacent ends of the separated head, a thread-guide revoluble in an orbit about said skein-holding studs, so as to form a skein thereon extending across the line of separation of the two parts of the head, mechanism for rotating the head on its own axis while said thread-guide is held stationary, mechanism adapted to retract the gripping-bolt to leave the throat-opening between the adjacent ends of the separated head unobstructed, a knife adapted to be projected into the said throat-opening and a needle adapted to pierce the tuft, engage the thread and draw the thread across the knife and through the tuft, means for ejecting the tuft from the head, and means for effecting the release of the yarn from the needle, substantially as set forth.

9. A machine for making tufts from yarn, or the like, comprising a main frame, a secondary frame movably mounted upon the main frame, a winding head mounted on the secondary frame and provided with skein-holding studs projecting therefrom, a thread-guide mounted to revolve in an orbit about said studs, and means for reciprocating the secondary frame and winding-head mounted thereon in a direction transverse to the plane of the orbit of the thread-guide during the revolution of the latter and means for rotating the winding-head bodily on its own axis, substantially as set forth.

10. A machine for making tufts from yarn, or the like, comprising a main frame, an auxiliary frame mounted to reciprocate upon the main frame, a divided winding-head, provided with skein-holding devices on each side of the point of separation thereof, a thread-guide revoluble in an orbit about the skein-holding device, a stop arranged to arrest the guide in a determined position, means for rotating the head upon its own axis, a tension device arranged to act on the thread during the rotation of the winding-head, and a reciprocating needle adapted to engage and carry the thread through the body of the tuft, substantially as set forth.

11. A machine for making tufts from yarn, or the like, comprising a main frame, an auxiliary frame mounted to reciprocate upon the main frame, a divided winding-head, provided with skein-holding devices upon each side of the point of separation thereof, a thread-guide revoluble in an orbit about the skein holding devices, a stop arranged to arrest the guide in a determined position, means for rotating the head upon its own axis, a stop arranged to arrest the said head in a determined position, a tension device arranged to act on the thread during the rotation of the winding-head, and a reciprocating needle adapted to engage and carry the thread through the body of the tuft, substantially as set forth.

12. In combination with a tuft-machine, or the like, a two-part needle, the parts of which are movable longitudinally with relation to each other and are provided with opposing shoulders adapted to clamp an interposed thread.

13. In combination with a tuft-machine, or the like, a two-part telescoping needle, provided with opposing shoulders upon the several members adapted to clamp and hold a thread, and a spring acting to force said shoulders yieldingly toward each other, substantially as set forth.

14. In combination with a tuft-machine, or the like, a two-part needle comprising an inner, pointed needle proper and an outer sleeve, opposing shoulders on the respective parts adapted to clamp and hold a thread and a spring arranged to force the shoulder of one part yieldingly toward that of the other, substantially as set forth.

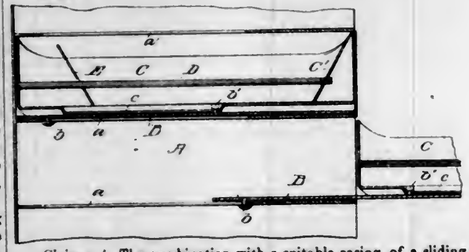
15. In combination with a tuft-machine, or the like, a two-part reciprocatory needle comprising an inner needle proper provided with an enlarged pointed end, a sleeve arranged to slide upon said inner needle and to abut at its end against the enlarged part thereof, and a coiled spring arranged to act upon the sleeve to force it yieldingly toward the said enlargement, substantially as described.

16. In a tuft-forming machine, the combination with winding mechanism adapted to form a tuft, of a two-part reciprocatory needle adapted to engage and pass the yarn through the body of the tuft, comprising an inner needle proper provided with an enlarged pointed end, a sleeve of the same cross-section as the said enlarged end, arranged to slide upon said needle and to abut at its end against said enlargement, a spring arranged to force the sleeve yieldingly toward the point of the needle, and means for retracting the sleeve, substantially as set forth.

17. A machine for making tufts from yarn, or the like, comprising a main frame, a main driving-shaft mounted therein, a winding-frame carrying a thread-guide, driven from said main driving-shaft by connections including an oscillatory segment having ratchet engagement with the connecting mechanism driven by said segment, a winding-head also driven from said main shaft by connections including an oscillatory segment having ratchet engagement with the connecting mechanism driven thereby and a needle reciprocated by means of connections from the main shaft, substantially as set forth.

18. In a machine for making tufts from yarn, or the like, the combination of a frame, a two-part winding-head mounted in said frame to rotate on its longitudinal axis, a skein-holding stud arranged to project laterally from each part of the winding-head, a gripping-bolt adapted to engage the thread at a point between the adjacent ends of the separated head, a cutter-blade movable with the gripping-bolt, a thread-carrier revoluble in an orbit about said skein-holding studs, so as to form a skein thereon, mechanism for rotating the winding-head on its own axis, mechanism adapted to retract the gripping-bolt and cutter-blade to leave the throat-opening between the ends of the cutter-head unobstructed, thread-engaging studs arranged to be projected across said throat-opening to engage and carry the thread into position to be engaged by the gripping-bolt and needle, and a reciprocating needle adapted to transfix the tuft, engage the strand at a point beyond the tuft and in its return movement draw the strand across the knife and the severed end thereof through the body of the tuft, substantially as set forth.

570,686. SUSPENSION CARD-INDEX. FRANCIS A. SMITH, St. Louis, Mo., assignor, by mesne assignments, to the St. Louis Art Metal Company, same place. Filed Feb. 24, 1896. Serial No. 580,452. (No model.)



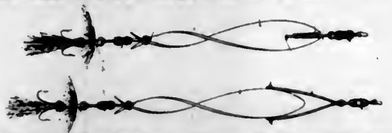
Claim.—1. The combination with a suitable casing, of a sliding drawer-support arranged therein, a drawer mounted upon said support, and means for limiting the outward movement of said drawer and its support, said means permitting the drawer to be revolved horizontally upon its suppport when in an outer position; substantially as described.

2. The combination with a suitable casing, of a drawer slidingly arranged therein, a drawer-support slidingly arranged in the casing and interposed therebetween and the drawer, said drawer and its support having a limited outward movement whereby when the drawer is in such outer position it may be revolved horizontally upon its support for the purpose of disengagement therefrom; substantially as described.

3. The combination with a drawer having a raised bottom and a depressed portion in said raised bottom, in which is formed a slot, a drawer-support having a T-headed lug which coöperates with said slot, a suitable shelf for said support, said shelf being formed with a slot, and a headed lug on said support which coöperates with the slot in the shelf; substantially as described.

4. The combination with a drawer having an inclined front wall, of a rod which passes through the rear wall of said drawer, its front end being supported by said inclined wall, a drawer-support, and a case for said drawer and its support, said parts having sliding connections permitting the drawer to occupy a forward position outside of the casing whereby the drawer may be swung on its support to enable access to be gained to the rear end of the rod; substantially as described.

570,687. ARTIFICIAL MINNOW. HENRY O. STANLEY, Dixfield, Me. Filed Mar. 4, 1896. Serial No. 581,844. (No model.)

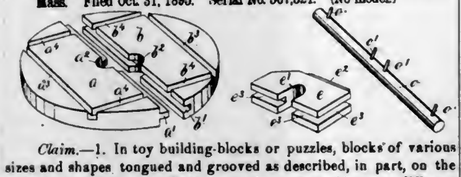


Claim.—1. An artificial minnow provided with means for insuring rotation when drawn through the water and having a pivotal connection with its draft device at a point in its length back of the head and with the excess of area at the rear of the pivotal point, and free to vibrate relatively to said draft device at said point, whereby the water-pressure against the surface at the rear of such point is enabled to limit the extent of the vibration and to operate to bring its length again into the line of draft after divergence therefrom, substantially as shown and described.

2. An artificial minnow provided with means for insuring rotation when drawn through the water and having a longitudinal slot or opening extending rearwardly from the nose thereof, a hole directly at the rear of the inner end of said opening, said hole being located at a point back of the head and with the excess of area at the rear of said hole, and a link or line-attaching device secured to said hole and free to play through said opening, substantially as set forth.

3. An artificial minnow having the body thereof formed from a flat strip of material cut to the proper contour and twisted upon itself to cause rotation, and having a longitudinal opening or slot extending rearwardly from the nose thereof and having a hole for securing a line or draft device at a point back of the head and with the excess of area at the rear of said hole.

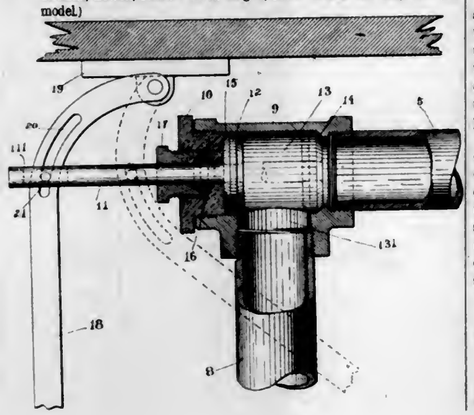
570,688. TOY BUILDING-BLOCK. HENRY W. STRATTON, Boston, Mass. Filed Oct. 31, 1895. Serial No. 567,521. (No model.)



Claim.—1. In toy building-blocks or puzzles, blocks of various sizes and shapes tongued and grooved as described, in part, on the ends sides and edges to allow them to be connected in many different relations to each other and having circular perforations and semicircular grooves in part for the purpose set forth, combined with blocks circular in cross-section throughout as the blocks *o p* and *q*, having firmly-attached pins at different positions on the same, as the pins *o' p'* and *q'*, whereby the grooved blocks can be placed upon the circular blocks and their positions on the same can be determined by said pins, as and for the purpose set forth.

2. In toy building-blocks and puzzles the semicircular blocks *a* and *b*, having respectively the tongue *a'* and the groove *b'*, and both having semicircular grooves or openings at their centers, and grooves upon the flat surfaces thereof for the purpose set forth.

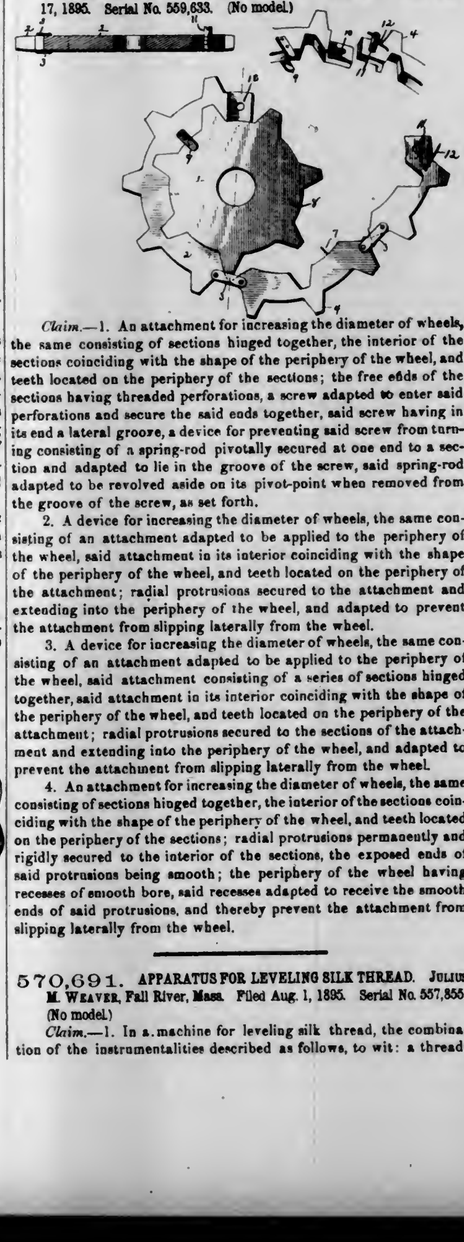
570,689. FIRE-EXTINGUISHING SYSTEM. EDWARD W. THOMAS, Lowell, Mass. Filed Aug. 7, 1893. Serial No. 482,557. (No model.)



Claim.—1. The combination with a fire-extinguishing system of connected pipes including horizontal leaders having applied thereto discharge-pipes equipped with automatic extinguishers, of individual valves controlling the communication between the leaders and the individual discharge-pipes, each of such valves having a chamber with valve-seats therein at opposite sides of the inlet, and a disk movable past the inlet and adapted to be held by the water-pressure in contact with each of said seats according to the position into which it is shifted by hand, substantially as described.

2. The combination with a fire-extinguishing system of connected pipes including horizontal leaders having applied thereto discharge-pipes equipped with automatic extinguishers, of individual normally-open valves controlling the communication between the leaders and the individual discharge-pipes, each of such valves having a chamber with valve-seats therein at opposite sides of the inlet, and a disk movable past the inlet and adapted to be held by the water-pressure in contact with each of said seats according to the position into which it is shifted, and levers for moving the respective disks occupying conspicuous positions when the valves are closed and thereby signaling the closed condition of the valves, substantially as described.

570,690. ATTACHMENT FOR INCREASING DIAMETER OF SPROCKET-WHEELS. WILLIAM E. WARREN, Victor, N. Y. Filed Aug. 17, 1895. Serial No. 559,633. (No model.)



Claim.—1. An attachment for increasing the diameter of wheels, the same consisting of sections hinged together, the interior of the sections coinciding with the shape of the periphery of the wheel, and teeth located on the periphery of the sections; the free ends of the sections having threaded perforations, a screw adapted to enter said perforations and secure the said ends together, said screw having in its end a lateral groove, a device for preventing said screw from turning consisting of a spring-rod pivotally secured at one end to a section and adapted to lie in the groove of the screw, said spring-rod adapted to be revolved aside on its pivot-point when removed from the groove of the screw, as set forth.

2. A device for increasing the diameter of wheels, the same consisting of an attachment adapted to be applied to the periphery of the wheel, said attachment in its interior coinciding with the shape of the periphery of the wheel, and teeth located on the periphery of the attachment; radial protrusions secured to the attachment and extending into the periphery of the wheel, and adapted to prevent the attachment from slipping laterally from the wheel.

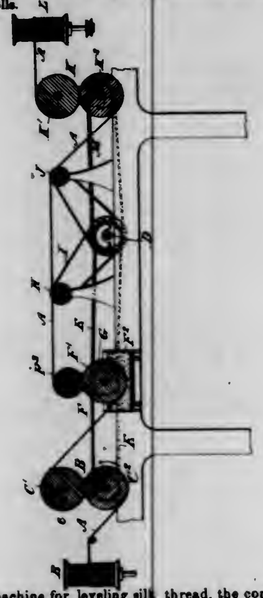
3. A device for increasing the diameter of wheels, the same consisting of an attachment adapted to be applied to the periphery of the wheel, said attachment consisting of a series of sections hinged together, said attachment in its interior coinciding with the shape of the periphery of the wheel, and teeth located on the periphery of the attachment; radial protrusions secured to the sections of the attachment and extending into the periphery of the wheel, and adapted to prevent the attachment from slipping laterally from the wheel.

4. An attachment for increasing the diameter of wheels, the same consisting of sections hinged together, the interior of the sections coinciding with the shape of the periphery of the wheel, and teeth located on the periphery of the sections; radial protrusions permanently and rigidly secured to the interior of the sections, the exposed ends of said protrusions being smooth; the periphery of the wheel having recesses of smooth bore, said recesses adapted to receive the smooth ends of said protrusions, and thereby prevent the attachment from slipping laterally from the wheel.

570,691. APPARATUS FOR LEVELING SILK THREAD. JULIUS M. WEAVER, Fall River, Mass. Filed Aug. 1, 1895. Serial No. 557,355. (No model.)

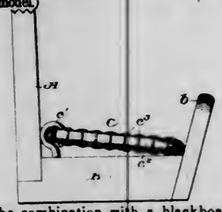
Claim.—1. In a machine for leveling silk thread, the combination of the instrumentalities described as follows, to wit: a thread-

feeding roll and means for driving the same, a thread-drawing roll and means for driving the same peripherally faster than the thread-feeding roll, and a thread-drying device between the thread feeding and drawing rolls.



2. In a machine for leveling silk thread, the combination of a thread-feeding roll, a thread-moistening device, a thread smoothing roll over which the silk thread is drawn, means for driving the smoothing-roll in the same direction as, but peripherally faster than the thread is drawn thereover, so as to smooth and dry the thread, a thread-drawing roll, and means for driving the thread-drawing roll peripherally faster than the thread-feeding roll.

570,692. CHALK-SCREEN FOR BLACKBOARD-TROUGHS. GEORGE A. WHITE, Potsdam, N. Y. Filed June 8, 1896. Serial No. 594,749. (No model.)



Claim.—1. The combination with a blackboard-trough or the like, having a ledge, of a screen comprising a web, and securing members attached thereto at the side opposite the ledge, said securing members being also attached to the trough and the point of connection between the web and the securing members being above the body of the trough, whereby the web will be raised at one edge and at the other rest upon the trough below the ledge.

2. The combination with a blackboard-trough or the like having a ledge, of a screen comprising a web, and screw-eyes attached thereto at the side opposite the ledge, said screw-eyes being also attached to the trough and the point of connection between the web and the screw-eyes being above the body of the trough, whereby the web will be raised at one edge and at the other rest upon the trough below the ledge; substantially as described.

3. The combination with a blackboard-trough or the like having a ledge, of a screen comprising a plane-surfaced web, and screw-eyes attached thereto at the side opposite the ledge, said screw-eyes being also attached to the trough and the point of connection between the web and the screw-eyes being above the body of the trough, whereby the web will be raised at one edge and at the other rest upon the trough below the ledge; substantially as described.

570,693. DRUM. GEORGE W. BENIS, Worcester, Mass. Filed Mar. 15, 1893. Serial No. 466,028. (No model.)

Claim.—1. A drum consisting of a drum-body having two heads arranged thereon, and a set of snares arranged on the inside of each head, whereby either head of the drum may be used as a beating-head, as desired, substantially as described.



2. A drum consisting of a drum-body having a thick and a thin head on opposite ends thereof, and a set of snares arranged on the inside of each of said heads, either head being adapted to be used as a beating-head, substantially as described.

3. A drum consisting of the drum-body 10, having a collar 11 loosely fitted thereon, said collar being recessed as at 13, a ring 14 fitting into this recess, and being slabbed off as at 140, and the drum-head 15, the edge of which is wound around the ring 14, and the end tucked into the slabbed portion 140 of the ring, substantially as described.

4. In a drum, the combination of the drum-body, the drum-head, a set of snares, and a snare-tightener, consisting of a piece of spring metal, to which the ends of the snares are secured, of a screw tapped into this piece of spring metal, adapted to adjust the same, the piece of spring metal normally tending to spring toward the body of the drum, whereby the adjusting-screw will be pressed tightly against the drum body, substantially as described.

5. The combination in a drum having two sets of snares, of the tightener consisting of the piece of spring metal 35 secured to the drum, and to the ends of which, the ends of the two sets of snares are secured, the two screws 23 tapped in the ends of said tightener 35, and bearing on the drum-body or a suitable plate secured thereto, substantially as described.

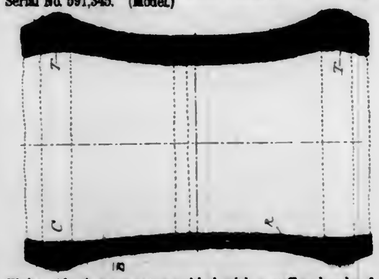
6. The combination in a drum of the drum body and head, a set of snares bearing on the inside of the head, and means for moving and holding said snares away from the drum-head, substantially as described.

7. The combination in a drum of the drum-body having two heads arranged thereon, a set of snares arranged on the inside of each head, and means for positively holding said snares away from the heads, whereby the drum can be muffled, substantially as described.

8. The combination in a drum of the drum-body, the head, the set of snares arranged on the inside of the head, the shaft mounted in the drum-body, and having a cord attached thereto, which cord passes around the snares, whereby, by turning said shaft, the snares can be pulled away from the head, substantially as described.

9. The combination in a drum of the drum-body having two heads arranged on the ends thereof, a set of snares arranged on the inside of each of said heads, the shaft 40 mounted in the drum-body, and the cord connected to this shaft 40, and passing around each set of snares, whereby, by turning the shaft 40, the snares can be pulled away from their heads, and the drum muffled, substantially as described.

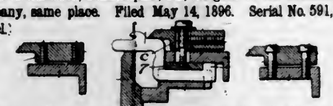
570,694. CUFF OR BORDER FOR UNDERGARMENTS. JOHN A. BENNETT and WILLIAM B. CLARK, Cohoes, N. Y. Filed May 13, 1896. Serial No. 591,345. (Model.)



Claim.—1. A garment provided with a cuff or border formed of double thickness, and having a bell-shaped upper portion adjacent the point where it is secured to the garment, said upper portion being formed with a widening or tuck stitch; substantially as described.

2. A knitted cuff comprising the fabric B formed adjacent either end with a tuck-stitch portion, said fabric being adapted to be folded end to end and longitudinally to form the double bell-shaped tube or cuff; substantially as described.

570,695. SINKER MECHANISM FOR KNITTING-MACHINES. JAMES L. BRANSON, Philadelphia, Pa., assignor to the Branson Machine Company, same place. Filed May 14, 1896. Serial No. 591,489. (No model.)



Claim.—1. The combination, of the needle-cylinder, the sinker-bed, the radially-reciprocable sinkers therein, the cam-ring provided with a groove and cam to actuate said sinkers, and a plate projecting inwardly beyond the cam and cam-ring and providing a guiding and steadying surface for the forward portions of the upper edges of the sinkers during their reciprocation by said cam, substantially as described.

2. The combination, with the sinkers and their supporting parts, of means provided with a cam to actuate said sinkers, and a detachable inwardly-extending plate on said means adjacent to the cam and providing a guiding and steadying surface for the forward portions of the upper edges of the sinkers during their reciprocation by said cam, substantially as described.

3. The combination, with the sinkers and their supporting parts, of means provided with a cam adapted to actuate said sinkers, and a vertically-adjustable inwardly-extending plate on said means adjacent to the cam and providing a guiding and steadying surface for the upper edges of the sinkers during their reciprocation by said cam, and means for adjusting said plate, substantially as described.

4. The combination, with the needle-cylinder, the sinker-bed, the angular sinkers therein, a cam-support, and a cam thereon for actuating said sinkers, of an inwardly-extending plate overhanging the upper members of said sinkers and serving as a guiding and steadying surface therefor during their reciprocation by said cam, substantially as described.

5. The combination, with the needle-cylinder, the sinker-bed, the angular sinkers therein, a cam-support, and cams thereon for actuating said sinkers, of an inwardly-extending plate overhanging the upper members of said sinkers and serving as a guiding and steadying surface therefor during their reciprocation by the cam, and means for vertically adjusting said plate, substantially as described.

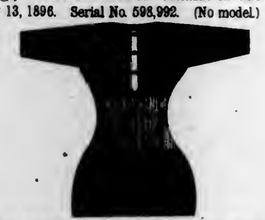
6. The combination, with the sinkers and their supporting parts, of a cam-support, a cam thereon adapted to actuate said sinkers, a vertically-adjustable plate on said support providing a guiding and steadying surface for the upper edges of the sinkers, vertically-disposed screws extending through said plate and bearing upon the said support, and means for fixing said plate in positions of vertical adjustment, substantially as described.

7. The combination, with the sinkers and their supporting parts, of a cam-support, an adjustable cam thereon for actuating said sinkers, a set-screw rising therefrom, a sinker-steadying plate on said support, through which plate the said screw extends, and a horizontal screw in said plate bearing against the said set-screw, substantially as described.

8. The combination, with the sinkers and their supporting parts, of a cam-support, oppositely-disposed cams thereon for actuating said sinkers, and plates mounted on said support above the cams, and provided with overhanging inner edges that afford guiding and steadying surfaces for the forward or stitch-engaging portions of the sinkers during their reciprocation by said cams, substantially as described.

9. The combination, with the needle-cylinder, the sinker-bed, the angular sinkers therein, a cam-support, and cams thereon for actuating said sinkers, of plates mounted on said support above the cams, each of said plates comprising a base portion recessed and laterally extended on its forward edge to provide an overhanging bearing-surface for the forward upper edges of the sinkers during their reciprocation by said cams, substantially as described.

570,696. UNDERGARMENT. CHARLES A. BROWN, Troy, N. Y. Filed July 13, 1896. Serial No. 598,992. (No model.)



Claim.—An undergarment having a body part knitted from a plurality of threads, in which the waist portion has a less number of threads, and is relatively lighter, than the contiguous upper and lower portions, substantially as described.

570,697. VEHICLE-WHEEL. ALBERT F. CHACE, Boston, Mass. Filed Jan. 4, 1896. Serial No. 574,317. (No model.)

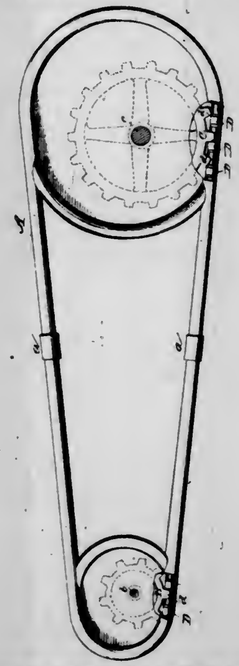


Claim.—1. A wheel comprising a rim or felly; a hub; a series of independent telescopic spokes, each composed of two members, one member being a tube rigidly secured to the rim, and the other member a rod rigidly secured to the hub and having an elongated sliding fit in the said tube; normally-closed springs attached to said members and held under tension thereby, each spring exerting a shortening or contracting strain on the telescopic spoke to which it is attached; and means for adjusting the tubular members of the spokes to vary said strain.

2. A wheel comprising a rim or felly; a hub and a series of telescopic spokes each composed of an internally-threaded sleeve attached to the rim, an externally-threaded tubular member adjustably engaged with said sleeve, an elongated member attached at one end to the hub, its other end having a sliding fit in the tubular member, and a normally-closed helical spring attached at one end to the tubular member and at its other end to the elongated member, said spring being held extended by the spoke members, hub and rim.

3. As an article of manufacture a telescopic spoke composed of a tubular member externally screw-threaded at its outer end, an internally-screw-threaded sleeve or socket adjustably engaged with said tubular member and adapted for attachment to a wheel-rim, an elongated member formed at its inner end for attachment to a hub, its outer end having a sliding fit in the tubular member, and a normally-closed spring attached at its ends to said members and yieldingly connecting the same.

570,698. GEARING. FREDERIC A. CURTIS, Anderson, Ind., assignor to the Wheel Company, same place. Filed Dec. 21, 1895. Serial No. 572,915. (No model.)



Claim.—An inclosing casing, and the sprocket-wheels revolving therein, provided with teeth *d*, having the grooves *e* in their outer ends, combined with a series of links having enlarged ends and a straight central connecting part *f*; one of the ends being made convex on its outer end and the other concave, and both ends beveled on their inner sides where they come in contact with the grooved teeth, substantially as shown.

570,699. LAWN-MOWER. HENRY DECK, Philadelphia, Pa., assignor to John Braun, William P. M. Braun, and John F. Braun, same place. Filed Jan. 31, 1894. Serial No. 498,568. (No model.)



Claim.—1. The combination with the side frames, of the stationary cutter-bar or cutter bearing against the side frames at its ends and having the adjacent faces of the bar and frames cut away or offset so as to permit the bar adjacent to the places at which it bears against the frames to be drawn toward the side frames, and fastening devices securing the bar to the side frames adjacent to said cut-away or offset faces provided with means for drawing the ends of the bar toward the frames and thereby causing the bar to bend and its middle portion to be thrown upward, whereby the fastening devices which secure the bar to the frame may be used to bend the bar, and the bending of the bar may be accomplished without the employment of independent or additional devices for that purpose.

2. The combination with the side frames, of the cutter-bar or cutter bearing against the side frames at its ends, the adjacent faces of the bar and frame being cut away or offset to form intermediate openings *f*, and the fastening bolts G having adjustable nuts J whereby the ends of the bar or cutter may be drawn toward the side frames thus bending the bar and throwing the middle of the cutter upward, whereby the bar may be bent by the fastening devices without the employment of independent or additional means.

3. The combination with the side frames, of a cutter-bar or cutter having its ends fastened to the side frames with intermediate spaces between the faces of the cutter or bar and the side frames, and fastenings for securing the ends of the cutter or bar to the side frames and bending the bar to force its central portion upward to take up wear, whereby the bar may be bent by the fastening devices without the employment of independent or additional means.

4. In a lawn-mower, the combination of the side frames, the cutter-bar provided with inwardly-projecting flanged ends F', F' fastened to the side frames with an intervening space between the faces of the flanges F', F' and the side frames, the fastening devices being adapted when tightened to bend the flanges outwardly and thus bend the bar and the cutter carried by the cutter-bar.

570,700. TRACK INSTRUMENT. THOMAS B. DIXON, Henderson, Ky. Filed Sept. 12, 1895. Serial No. 562,263. (No model.)



Claim.—1. In a track instrument, the combination, with a magnet producing a magnetic field adapted to influence a magnetically-operated signal-controlling device, said magnet having pole-pieces so arranged that when a train passes over the track a portion of the magnetic circuit is diverted from said field by being shunted through magnetic portions of the train, and the magnetic field is thereby weakened, of an armature movably mounted in said magnetic field and arranged to be influenced thereby, a retractile device opposing the action of said magnetic field on said armature, whereby when said magnetic field is weakened said armature is retracted, and a signal-controlling device operated by the movement of the armature, substantially as described.

2. In a track instrument, the combination, with a magnet producing a magnetic field adapted to influence a magnetically-operated signal-controlling device, said magnet having pole-pieces so arranged that when a train passes over the track a portion of the magnetic circuit is diverted from said field by being shunted through magnetic portions of the train, and the magnetic field is thereby weakened, of a lever of magnetic material, movably mounted and arranged to be influenced by the said field of said magnet, a retractile device opposing the action of said magnetic field on said lever, whereby when said magnetic field is weakened said lever is retracted, and a signal-controlling device operated by the movement of the lever, substantially as described.

3. In a track instrument, the combination, with a magnet having pole-pieces arranged to produce a magnetic field in the line of motion of a train passing over the track, whereby when a train passes over the track the magnetic field is caused to pass through magnetic portions of the train and a path for the magnetic field of less resistance than the normal path is thereby provided, of a second set of pole-pieces for said magnet producing a magnetic field, and a lever of magnetic material, movably mounted in said magnetic field, and having a retractile device opposing the action of the magnetic field thereon, and arranged to draw the lever away from its normal position when the strength of the field of said last-named pole-pieces is diminished, substantially as described.

4. In a track instrument, the combination, with a magnet having pole-pieces arranged to produce a magnetic field in the line of motion of a train passing over the track, whereby when a train passes over the track the magnetic field is caused to pass through magnetic portions of the train and a path for the magnetic field of less resistance than the normal path is thereby provided, of a second set of pole-pieces for said magnet and a lever of magnetic material, connected to one of said last-named pole-pieces and arranged to be attracted to the other, but to swing away therefrom when the strength of the field of said last named pole-pieces is diminished, substantially as described.

5. In a track instrument, the combination, with a magnet having its poles connected with the track-rails, of magnetic conductors connected with said magnet-poles, a lever of magnetic material connected with one of said conductors and arranged to be attracted by the other conductor, and a retractile device for drawing said lever away from said second conductor, whereby, when the magnetic circuit through said conductors is short-circuited by wheels passing over the track, said lever is operated, substantially as described.

6. In a track instrument, the combination, with a magnet having its poles connected with the track-rails, of flexible magnetic conductors connected with said magnet-poles, a lever of magnetic material connected with one of said conductors and arranged to be attracted by the other conductor, and a retractile device for drawing said lever away from said second conductor, whereby, when the magnetic circuit through said conductors is short-circuited by wheels passing over the track, said lever is operated, substantially as described.

7. In a track instrument, the combination, with a magnet having its poles connected with the track-rails, of magnetic conductors connected with said magnet-poles, a lever of magnetic material connected with one of said conductors and arranged to be attracted by the other conductor, a retractile device for drawing said lever away from said second conductor, whereby, when the magnetic circuit through said conductors is short-circuited by wheels passing over the track, said lever is operated, and signal-controlling devices operated by said lever, substantially as described.

8. In a track instrument, the combination, with a track-magnet, having its cores connected to opposite track-rails, thereby constituting the rails poles of the magnet and producing a magnetic field extending across the track which will pass through the wheels and axles of a train passing over the track, of a signal-controlling device operated by the passage of said magnetic field through the wheels and axles, substantially as described.

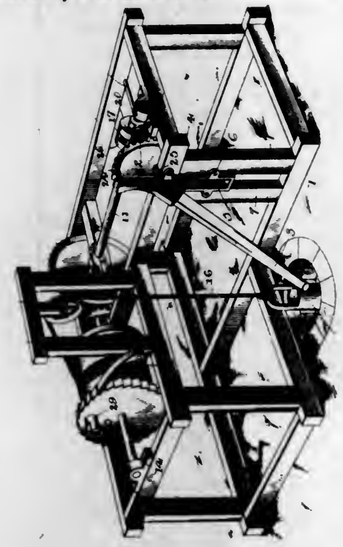
570,701. WINDOW-FRAME. JOSEPH P. DORAY, Worcester, Mass. Filed Mar. 12, 1896. Serial No. 582,901. (No model.)



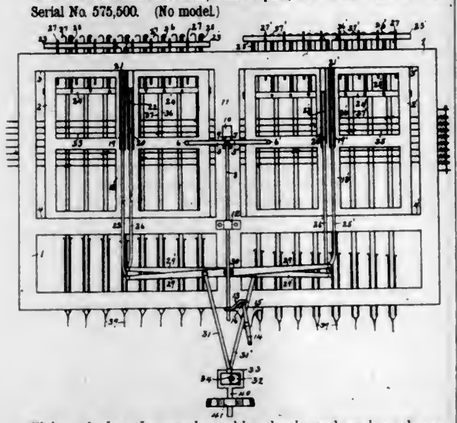
Claim.—In a window-casing, the combination, with one side, the inner surface of which is provided with a groove extending its entire length, one side of said groove being undercut and the opposite side being inclined or beveled, of a strip within the groove, one edge of which is provided with an extension and the opposite edge is inclined, and a casing-strip projecting over the inclined edge of the strip, substantially as set forth.

570,702. WINDLASS WATER-ELEVATOR. RICHARD W. FARIS, Murfreesborough, Tenn., assignor of one-fourth to William A. Ransom, Jr., same place. Filed Jan. 16, 1896. Serial No. 575,754. (No model.)

Claim.—In a water-elevating apparatus, the combination of a framework having an angular indentation or recess at one corner and comprising parallel longitudinal beams and vertical posts, one of the longitudinal beams being intercepted near the extremity bordering upon the recess, and having vertical posts located upon opposite sides of the space formed between the intercepted parts, a U-shaped casting interposed between and firmly attached to the intercepted parts of the beam and the vertical posts contiguous thereto, and having outstanding ears which are apertured, tie-bars passing through the upper apertured ears and connecting the casting to the opposite longitudinal beam so as to brace the framework, a windlass journaled to the end portion of the framework upon the opposite side of the recess, an operating-lever fulcrumed in the open end of the U-shaped casting and operating between the side pieces of the latter, and intermediate mechanism actuated by the lever for rotating the windlass, substantially in the manner set forth.



570,703. JACQUARD MECHANISM FOR LOOMS. EDWARD W. FRANCE and JAMES BUCKLER, Philadelphia, Pa. Filed Jan. 14, 1896. Serial No. 575,500. (No model.)



Claim.—1. In a Jacquard machine, hooks and neck-cords connected therewith, a pair of griffs adapted to reciprocate vertically and in opposite directions, and also adapted to reciprocate horizontally and in opposite directions, independently of the said vertical reciprocations, and mechanism for effecting the respective reciprocations of the said griffs, substantially as shown and described.

2. In a Jacquard machine, hooks and neck-cords connected therewith, a pair of griffs adapted to reciprocate vertically and in opposite directions, a second pair of griffs adapted to reciprocate vertically and in opposite directions, in combination with means for effecting the simultaneous horizontal reciprocation of the two pairs of griffs and means for reciprocating the griffs vertically, substantially as shown and described.

3. In a Jacquard machine, in combination, hooks and neck-cords connected therewith, a pair of griffs and a carriage adapted to move horizontally, a second pair of griffs and a carriage adapted to move horizontally, and a toggle connecting the two carriages, substantially as shown and described.

4. In a Jacquard machine, in combination, two pairs of griffs adapted to reciprocate both horizontally and vertically, means for effecting their respective reciprocations, a needle and two pairs of hooks and neck-cords connected therewith, substantially as shown and described.

5. In a Jacquard machine, in combination, hooks and neck-cords connected therewith, a lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, a second lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, and means for operating the levers simultaneously, substantially as shown and described.

6. In a Jacquard machine, in combination, hooks and neck-cords connected therewith, a lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, a second lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, and means for oscillating the said levers simultaneously and in opposite directions, substantially as shown and described.

7. In a Jacquard machine, in combination, hooks and neck-cords connected therewith, a lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, a second lever and a pair of griffs connected therewith and adapted to be reciprocated thereby, and an eccentric connected with each of said levers, substantially as shown and described.

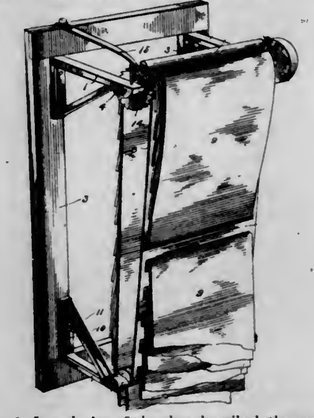
8. In a Jacquard machine, hooks and neck-cords connected therewith, a carriage adapted to reciprocate horizontally, a pair of vertically-reciprocating griffs carried by the said carriage, and means for imparting horizontal movement to the carriage and vertical movement to the griffs, substantially as shown and described.

9. In a Jacquard machine, hooks and neck-cords connected therewith, a carriage adapted to reciprocate horizontally, and a pair of vertically-reciprocating griffs carried by the said carriage, in combination with a second carriage adapted to reciprocate horizontally, a second pair of vertically-reciprocating griffs carried by the said second carriage, and means for imparting horizontal movement to the carriage and vertical movement to the griffs, substantially as shown and described.

10. In a Jacquard machine, in combination, hooks and neck-cords connected therewith, a carriage and a pair of griffs carried by the said carriage, a second carriage and a pair of griffs carried by the said second carriage, and a toggle connecting the two carriages, substantially as shown and described.

11. In a Jacquard machine, hooks and neck-cords connected therewith, a pair of carriages, a toggle connecting the said carriages, a pair of griffs supported by each carriage, a rod connected to the knee of the said toggle, an inclined arm secured to the said rod, and a lever adapted to engage the said inclined arm and elevate the said rod, substantially as shown and described.

570,704. DISPLAY-RACK. WILLARD HAGER, Athol Centre, Mass. Filed May 23, 1896. Serial No. 592,767. (No model.)



Claim.—1. In a device of the class described, the combination with a support, of upper and lower brackets, the lower bracket being adjustably secured to the support and capable of upward and downward movement to regulate the tension of the device, upper and lower horizontal rolls journaled in the bearings, an endless belt or apron arranged on the rolls and adapted to receive pieces or samples to be displayed, a ratchet-wheel mounted on the upper roll, and a resilient pawl engaging the top of the ratchet-wheel, substantially as described.

2. In a device of the class described, the combination with a support, of upper and lower brackets provided with bearings, the upper and lower horizontal rolls journaled in the bearings, an endless belt or apron arranged on the rolls and adapted to receive pieces or samples to be displayed, guides mounted on the upper brackets and provided with openings, a roller located above the upper roll and having

journals arranged in the openings of the guides, a ratchet-wheel mounted on the upper roll, and a resilient pawl extending outward from the top of the supports and engaging the top of the ratchet-wheel, substantially as described.

570,705. SMOKELESS POWDER. FRANCIS A. HALSEY, San Rafael, Cal. Filed Apr. 16, 1896. Serial No. 587,846. (No specimens.)

Claim.—A compound consisting of an ammonium picrate, potassium bichromate and potassium permanganate substantially as described.

570,706. LUBRICATOR. FRIEDRICH LOOS, Nuremberg, Germany. Filed May 21, 1895. Serial No. 550,113. (No model.) Patented in England Mar. 9, 1895, No. 5,049.

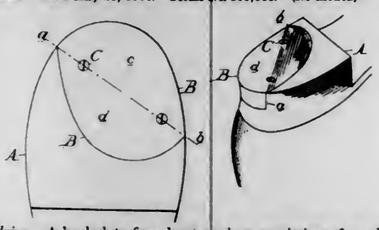


Claim.—1. The combination with a lubricator having a curved upper surface and an oil-opening formed therein, a hood or frame movable freely thereover in substantially the arc of a circle, a spring-valve carried by said hood or frame and adapted to be moved therewith over the curved surface of the lubricator to open or close the oil-opening, substantially as described.

2. The combination with a lubricator having a curved upper surface and an oil-opening formed therein, a hood or frame movable freely thereover in the arc of a circle and substantially in a plane therewith, a spring-valve carried by and movable with said hood or frame and adapted to spring automatically into and close said oil-opening as the hood or frame is moved thereover, substantially as described.

3. The combination with a lubricator having a curved upper surface and an oil-opening formed therein, a hood or frame movable freely thereover in substantially the arc of a circle and provided with the sheath or casing adapted to receive and carry the spring-valve and to serve as a handle or thumb-piece for moving the hood or frame, said valve adapted to spring automatically into and close the oil-opening as the hood or frame is moved thereover, substantially as described.

570,707. HEEL-PLATE FOR BOOTS OR SHOES. ROBERT MCKAY, Detroit, Mich., assignor to the McKay Neverslip Sole Company, same place. Filed May 25, 1896. Serial No. 593,018. (No model.)



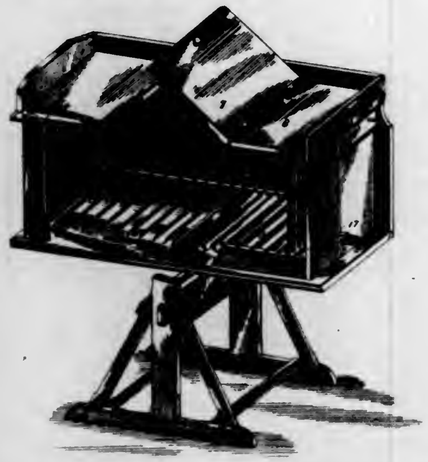
Claim.—A heel-plate for a boot or shoe, consisting of an oblong plate having its opposite edges each curved differentially in relatively reverse order, and fashioned to conform to the contour of the rear and a portion of one side of the heel.

570,708. PROCESS OF MAKING PIPE-CORES. ANDREW H. MCNEAL, Burlington, N. J. Filed Sept. 19, 1896. Serial No. 606,450. (No specimens.)



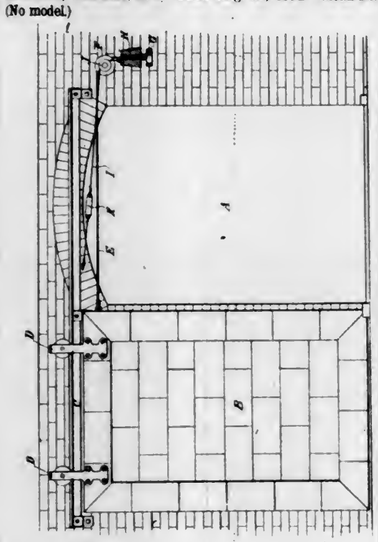
Claim.—The herein described process of manufacturing cores for the casting of internally-grooved pipes, said process consisting in first forming the main body of the core of the proper diameter and partially baking or drying the same; second, forming in a core-box the ribs for the internal grooves of the pipe, in sections, and partially baking said sectional ribs; third, securing said partially-baked ribs to the partially-baked main body of the core; and finally, baking the finished core in readiness for the casting operation.

570,709. WASHING-MACHINE. WILLIAM R. MCPHERRON, Jacksonville, Ill., assignor of one-half to William F. Davis, same place. Filed Aug. 5, 1895. Serial No. 558,266. (No model.)



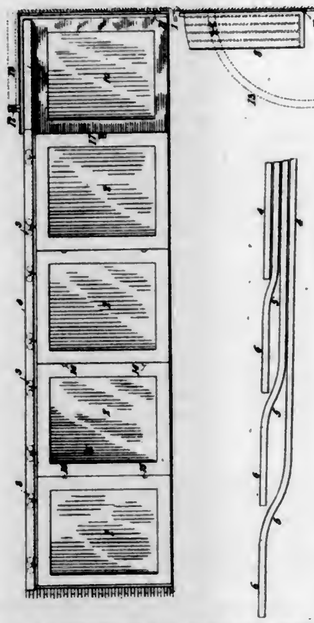
Claim.—The combination with the oscillatory tub, of an inner frame consisting of longitudinal side bars secured on the bottom of the tub, transverse slats secured in the upper edges of said side bars, the slats on opposite sides of the transverse medial line of the tub being inclined downward toward the opposite ends of the tub, a solid transverse bar or breakwater secured between the longitudinal side bars on the medial transverse line of the tub and extending to the bottom of the tub, cross-bars secured upon and between the longitudinal side bars near the ends thereof, similar cross-bars secured in the tub at or near the top of the same, a series of vertical rods at both ends of the tub secured in and extending between the said cross-bars, and horizontal transverse bars or breakwaters secured to the ends of the tub near the top thereof and projecting toward the vertical rods.

570,710. THERMAL DOOR-CLOSING MECHANISM. HENRY B. NEWHALL, Plainfield, N. J. Filed Aug. 23, 1894. Serial No. 521,090. (No model.)



Claim.—In a thermal door-closing mechanism, the door B, hung so as to be opened and closed, the rope E, and weight G, attached to and traveling with the door, the safety-weight, and a fusible plug adapted to hold the safety-weight in suspended position and out of operative connection with the rope, said safety-weight being freely movable upon said rope E, substantially as and for the purposes hereinbefore set forth.

570,711. TROLLEY-DOOR SYSTEM. HENRY B. NEWHALL, Plainfield, N. J. Filed Sept. 3, 1895. Serial No. 561,204. (No model.)



Claim.—1. In combination in a trolley-door system, a series of separate doors, and a series of separate tracks, arranged parallel to each other at one end, of the system, and successively terminating in a common line, and an interlocking device carried by said doors to prevent lateral or swinging movement yet permitting them to be actuated simultaneously and to automatically disengage themselves as they slide on the different tracks, substantially as set forth.

2. In combination with a series of tracks, and a series of doors, adapted when closed to come edge to edge, of lugs arranged upon said doors to mesh with sockets provided for the next adjoining door of said series, said lugs and sockets being so formed and arranged as to prevent lateral or swinging movement, yet permit the automatic disengagement of said doors as they slide on the different tracks, substantially as and for the purposes set forth.

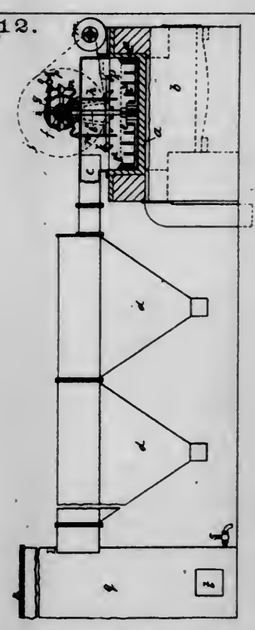
3. In combination in a trolley-door system, a series of separate doors, a series of separate tracks arranged parallel to each other at one end of the system and successively extending to and ending in a common line, whereby the separate doors can be closed together edge to edge or in a common plane and can be in open position arranged face to face, and a movably-supported pocket or door-receiving structure, substantially as set forth.

570,712. METHOD OF AND MEANS FOR PRODUCING LEAD OXID. JAMES NOAD, London, England. Filed Aug. 11, 1896. Serial No. 602,401. (No model.) Patented in Belgium May 7, 1896, No. 121,232.

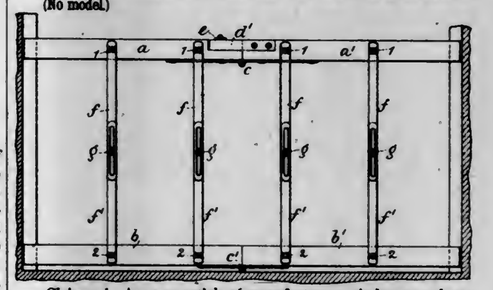
Claim.—1. The process of producing lead oxid from metallic lead, consisting in subjecting lead, in a molten condition, in a closed lead-melting tank, to the combined influences of water (as such) and of air injected or fed thereonto, while the mass of the metal and the surface thereof are kept in turbulent motion, substantially as described.

2. The described means of producing lead oxid from metallic lead, the same consisting in a lead-melting tank connected by a hood with a series of depositing-hoppers and a condenser, and fitted with an agitator adapted to keep the mass and the surface of the molten metal in turbulent motion, and with means respectively serving to direct jets of water and of air onto the molten metal, substantially as described.

570,712.



570,713. WINDOW-GUARD. GEORGE W. PARDEE and BERNARD MCALEER, Hoboken, N. J. Filed Aug. 21, 1896. Serial No. 603,459. (No model.)



Claim.—1. As a new article of manufacture, a window-guard consisting of top and bottom bars hinged together centrally or nearly so, and bars at each side of the joint to strengthen the same laterally, and vertical bars pivotally connected to the top and bottom bars, substantially as specified.

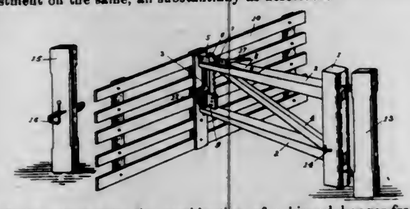
2. As a new article of manufacture, the window-guard consisting of the members *a a'* forming the top bar and hinged together, the members *b b'* forming the bottom bar and hinged together and parallel to the members forming the top bar, the side bars *d d'* for strengthening the top bar, the turn button *e* for locking the same in position, and the intermediate vertical bars pivotally connected to the top and bottom bars, substantially as set forth.

3. As a new article of manufacture, the window-guard consisting of the members *a a'* forming the top bar and hinged together, the members *b b'* forming the bottom bar and hinged together and parallel to the members forming the top bar, the side bars *d d'* for strengthening the top bar, the turn-button *e* for locking the same in position, and the intermediate vertical bars pivotally connected to the top and bottom bars and each composed of the members *f f'*, the one member having a mortise near its free end, and the other a threaded stud passing through said mortise and having a nut or other clamping device for holding the bars together, substantially as set forth.

4. As a new article of manufacture, a window-guard consisting of top and bottom bars hinged together centrally, or nearly so, and two-part vertical bars pivotally connected to the top and bottom bars and adjustable in their lengths, substantially as specified.

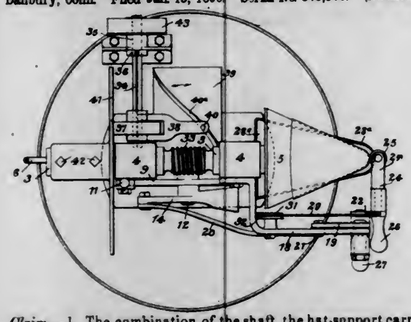
570,714. FARM-GATE. JOHN W. PUTT, Nine Mile, Ind. Filed Aug. 22, 1896. Serial No. 603,579. (No model.)

Claim.—1. In a farm-gate, the combination of a post; a hanger-frame hinged to said post and provided at its free end with a vertical pintle-rod; a gate-supporting bracket 11 having lateral perforated ears 12 by which it is pivotally mounted on said rod; a vertical rack-bar 6 mounted as described, in the said hanger-frame, provided upon its lower end with the perforated bracket 9 adapted to loosely receive the said rod 3 and arranged thereon between the ears of said bracket 11, as shown; a spring-pressed pivoted holding-pawl 7, arranged on said hanger-frame as described, and adapted to normally engage the said rack-bar, and a gate centrally pivoted on the bracket 11 and capable of a vertical swinging movement on said bracket, a horizontal swinging movement on the vertical pintle-rod, and also a vertical adjustment on the same, all substantially as described.



2. In a farm-gate, the combination of a hinged hanger-frame provided at its free end with a vertical rod for the purpose specified; a gate-supporting bracket 11 pivoted on said rod, a laterally-swinging and vertically-adjustable gate pivoted on said bracket, as described; a rack-bar 6 vertically mounted in suitable bearings in said hanger-frame, pivotally connected at its lower extremity with said rod, and engaged with the said bracket 11, whereby elevating the forward end of said gate will simultaneously elevate the said rack-bar, as described, and a pivoted spring-pressed holding-pawl 7 mounted on said hanger adjacent to said rack-bar and adapted to engage therewith, whereby the said gate will be supported in any desired position of vertical adjustment, all substantially as described.

570,715. HAT-PINNING-OUT MACHINE. CHARLES H. REID, Danbury, Conn. Filed Jan. 15, 1896. Serial No. 575,576. (No model.)



Claim.—1. The combination of the shaft, the hat-support carried thereby, and the tool which operates upon the hat from tip to base or from base to tip as the case may be, with means for revolving the hat-supporting shaft and for moving said tool at such relatively varying speeds that the entire surface of the hat will be passed beneath said tool always at a uniform speed, substantially as set forth.

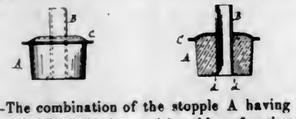
2. The combination of the shaft carrying the conical-shaped hat-support, the power-shaft, the tool which operates upon the hat, means for carrying said tool along the surface of the hat at a speed which uniformly varies in direct proportion to the diameter of the hat, and connections between said shafts whereby the shaft which carries the hat-support is revolved at a variable speed which is directly proportionate to the variable speed at which the tool is carried along the hat, substantially as set forth.

3. The shaft carrying the hat-support, the worm and the disk, in combination with the power-shaft carrying the friction-wheel having contact with said disk and capable of adjustment along the face of the latter, the worm-wheel which engages said worm, the cam carried by the worm-wheel, connections between said friction-wheel and cam whereby the former is caused to travel along the face of said disk, the tool which operates upon the hat, and a system of lever connections between said tool and worm-wheel whereby the tool is carried automatically along the hat at a speed controlled by and directly proportionate to the variable movement of said wheel, substantially as set forth.

4. The combination of the shaft carrying the worm, the friction-disk and the hat-support, the worm-wheel which engages said worm and carries a groove-cam, the power-shaft carrying the friction-wheel whose periphery is in contact with the face of said disk, said wheel capable of a sliding movement along the power-shaft, the lever one end of which embraces the friction-wheel while the other end is provided with a roll which extends within the groove-cam, the tool which operates upon the hat, and a system of lever connections between said tool and worm-wheel whereby the tool is carried automatically along the hat at a speed controlled by and directly proportionate to the variable movements of said wheel, substantially as set forth.

5. The combination of the shaft carrying the worm, the friction-disk and the hat-support, the worm-wheel which engages said worm and carries a groove-cam, the power-shaft carrying the friction-wheel which is capable of a sliding movement and whose periphery is in contact with the face of said disk, the lever having forks at one end which loosely extend around the power-shaft on opposite sides of the friction-wheel and having at the other end a roll which extends within the groove-cam, the tool which operates upon the hat, and connections between said tool and worm-wheel whereby the tool is caused to travel along the hat at a speed directly proportionate to the speed of said wheel, substantially as set forth.

570,716. SPRINKLING DEVICE FOR STOPPLES. ALEXANDER G. SANFORD, Warren, R. I. Filed Feb. 19, 1896. Serial No. 579,814. (No model.)



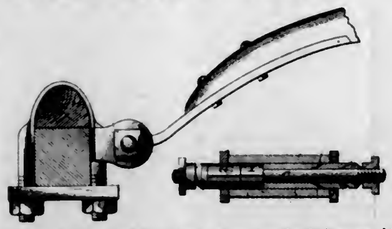
Claim.—The combination of the stopple A having the central perforation, a metallic tube inserted in said perforation and having the circumferential groove *a* and the centrally-perforated cap-piece C having the annular lip or flange *c*, which is adapted to be swaged into engagement with said tube in the groove thereof, substantially as specified.

570,717. FOUNTAIN-PEN. WILLIAM C. SHERMAN, Orlando, Fla. Filed Feb 20, 1896. Serial No. 580,097. (No model.)



Claim.—A fountain-pen, substantially as herein shown and described consisting of a tubular reservoir A, in one end of which is removably mounted a tubular penholder B, adapted to receive a pen D, the outer end of said reservoir A, being provided with a screw-threaded cap E to close said end and also having a pin *a* projecting from one side thereof adjacent to the cap E, and a sliding cover F provided with a longitudinal slot extending to near the ends thereof, and one end of which communicates with a segmental slot a^3 said slot being adapted to receive the pin *a* on the casing A to regulate the movement of the casing F, said casing being provided with a restricted portion G, from which extends a rod H which passes through a central opening in the cap E, said rod carrying a plunger K adapted to operate in the enlarged bore of the reservoir A, all designed, constructed and arranged as and for the purpose specified.

570,718. THILL-COUPLING. JOHN N. STOWE, Jr., Galveston, Tex. Filed Nov. 4, 1895. Serial No. 567,897. (No model.)

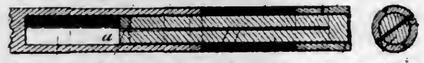


Claim.—1. In a thill-coupling, an antirattler-bolt comprising a bolt proper with the usual tightening-nuts, a sliding cone at each end of the bolt operated by the tightening-nuts, and a bearing-sleeve formed in two or more independent, longitudinal sections adapted to fit and rest upon the bolt and having their ends beveled to fit the incline of the cones and bear thereon, as and for the purpose set forth.

2. An expansible bolt for thill-couplings, comprising a pin, a bearing inclosing said pin, cones located at the ends of the bearing, for expanding the same, and adapted to slide upon the pin, and means for operating the cones, the said bearing being formed into sections by transverse divisions, each of which sections is divided longitudinally into two or more independent parts, which parts are beveled at their ends, whereby the ends of one section will fit that of its adjoining section, and the outer ends of the outer sections will receive the sliding cones, as and for the purpose set forth.

3. An expanding-bolt for thill-couplings, comprising a pin, a bearing inclosing said pin divided longitudinally into two or more independent sections, a sliding cone mounted upon the pin at each end of the bearing and adapted to enter between the said section of the bearing, said cones having a beveled or tapering head, and adjusting-nuts on said pin adapted to bear against the beveled heads of the cones, as and for the purpose set forth.

570,719. EXTENSION CURTAIN-ROLLER. ANSEL F. TEMPLE, Muskegon, Mich., assignor to the Stewart Hartshorn Company, Newark, N. J. Filed Mar. 27, 1896. Serial No. 585,093. (No model.)



Claim.—1. The herein-described extension-roller, consisting in the combination with the bored sections, of a slotted dowel inserted in said bored sections and a metallic connection carried by the dowel and engaging the sections.

2. The herein-described extension-roller, consisting of the bored sections, the inserted dowel, and a Z-shaped metallic connection carried by the dowel, said connection having overlapping edges which engage the sections.

3. In an extension curtain-roller, the combination of the roller-sections, an inserted dowel having a longitudinal slot therein, and a Z-shaped connection carried by the slotted dowel and engaging the roller-sections.

4. The combination in an extension-roller, of the roller parts having bored and slotted ends, a slotted dowel inserted in said bored parts, and a Z-shaped metallic connection carried by the dowel and engaging the slotted sections.

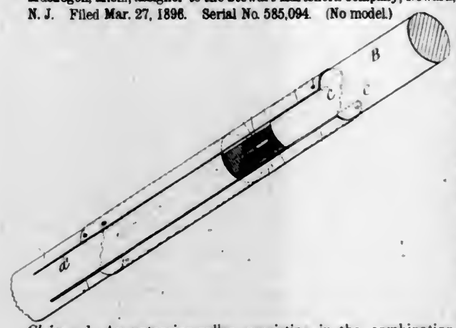
5. In an extension-roller, the combination of the sections having bored and slotted extremities, a dowel provided with a longitudinal cut, a Z-shaped connection inserted in said cut and having its curved arms adapted to overlap the surface of the roller-sections when the several parts are brought into engagement, substantially as described.

6. In an extension-roller, the bored sections having slots, a slotted dowel inserted in said bored sections, a Z-shaped metallic strip carried by the slotted dowel and engaging at each end the roller-sections, to which it is secured by means of tacks or pins, substantially as described.

7. In an extension-roller, the combination of the bored sections, the slotted dowel, the Z-shaped metallic connection carried by said dowel, and having curved arms, the extremities of which are shaped with inturned flanges, substantially as described.

8. The combination of the bored roller-sections having slots, a slotted dowel, a Z-shaped metallic connection carried by said dowel, and the lateral insertible pieces for completing the cylindrical roller, substantially as described.

570,720. EXTENSION CURTAIN-ROLLER. ANSEL F. TEMPLE, Muskegon, Mich., assignor to the Stewart Hartshorn Company, Newark, N. J. Filed Mar. 27, 1896. Serial No. 585,094. (No model.)



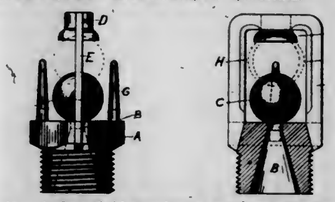
Claim.—1. An extension-roller, consisting in the combination with the sections having longitudinal, diametrical slots, of the Z-shaped metallic connection inserted into said slots, said connection having overlapping reversely-bent curved edges which externally engage the sections.

2. An extension-roller, consisting of a pair of sections, and an intermediate Z-shaped metallic connecting-strip having a central corrugated portion and overlapping curved and flanged parts which engage slots in the external surface of the roller-sections, substantially as described

3. An extension-roller, consisting of the roller-sections having longitudinal slots, and a Z-shaped corrugated connection inserted within said slots and having overlapping flanged portions that engage grooves in the roller-sections.

4. An extension-roller, consisting of the slotted sections, a Z-shaped connection having a central corrugated and slotted portion, and the reversely-bent curved overlapping portions that embrace the external face of the roller-sections, substantially as described.

570,721. FLUID-ATOMIZER. JAMES A. TILDEN, Hyde Park, Mass., assignor to the Hersey Manufacturing Company, Boston, Mass. Filed June 5, 1896. Serial No. 594,438. (No model.)



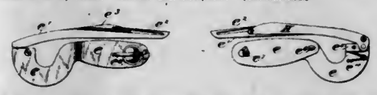
Claim.—1. In a fluid-atomizer a nozzle, a cup opposed to the nozzle, and a ball loosely interposed between the nozzle and the cup, substantially as set forth and described.

2. In a fluid-atomizer a nozzle, a ball loosely restrained in line therewith, a cup also in line with said nozzle and against which the said ball bears when in operation, the radius of said cup being greater than that of the ball, substantially as set forth and described.

3. In a fluid-atomizer a nozzle, a cup and a ball, said cup and ball being in line with said nozzle, the cup being supported by a frame attached to said nozzle, substantially as set forth and described.

4. In a fluid-atomizer a nozzle, a cup and a ball in line with said nozzle, said ball being loosely restrained from accidental dislodgment by a frame attached to said nozzle, substantially as set forth and described.

570,722. SEWING-MACHINE. EDWIN J. TOOF, New Haven, Conn. Filed Feb. 3, 1890. Serial No. 339,051. (No model.)



Claim.—1. In a sewing-machine, the combination with the vertically-reciprocating needle, the raceway and a horizontally-vibrating carrier, of a looper, consisting of a supporting-shank having means for connection with said carrier, and an arm, provided with a loop-engaging hook and with a loop-spreader located adjacent to the end of said hook, movably connected with said supporting-shank so as to be horizontally movable relative to the latter and the wall of the raceway, and means for holding said arm with its hook in proper operative position relative to the wall of the raceway and the path of the needle, substantially as described and for the purpose set forth.

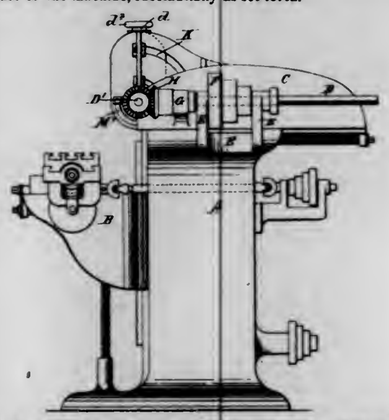
2. In a sewing-machine, the combination with the vertically-reciprocating needle, the raceway and the horizontally-vibrating carrier, of a looper, consisting of a supporting-shank having means whereby it may be detachably connected with said carrier in a fixed operative position, an arm, provided with a loop-engaging hook at one end thereof and with a loop-spreader, having a hinged connection with said shank so as to be horizontally movable relative to the latter and the wall of the raceway, and means for holding said hinged arm with its hook in proper operative position relative to the wall of the raceway and the path of the needle, substantially as described and for the purpose set forth.

3. In a reciprocating-shuttle sewing-machine, the combination with the shuttle-carrier having two openings therein, of a looper, adapted to be carried by said carrier, provided with a pin or projection extending at an angle therefrom and with a hook device, both being adapted to extend through said openings in the carrier and engage with the latter, substantially as described and for the purpose set forth.

570,723. MILLING-MACHINE. CHARLES E. VAN NORMAN, Springfield, Mass. Filed Nov. 13, 1895. Serial No. 568,783. (No model.)

Claim.—1. In a milling-machine, a main head horizontally adjustable on the machine, an auxiliary head attached for rotatable adjustment to the side of said main head, a tool-carrying spindle sup-

ported to rotate in said auxiliary head, a shaft supported in said main head at right angles to said spindle, gear connections between said spindle and shaft, combined with a driving-shaft moving horizontally with said main head, and a driving-pulley on said shaft supported on the base of the machine, substantially as set forth.



2. In a milling-machine, a main head horizontally adjustable on the machine, an auxiliary head attached for rotatable adjustment to the side of said main head, a tool-carrying spindle supported to rotate in said auxiliary head, a shaft supported in said main head at right angles to said spindle, gear connections between said spindle and shaft, combined with a second driving-shaft D, supported in bearings fixed to the base A, of the machine, having geared connection with the shaft in said main head, a driving-pulley on said shaft D, having a spline-and-groove connection therewith, and an arm on said main head engaging said driving-shaft D, whereby the latter and said main head have coinciding horizontal movements, substantially as set forth.

3. In a milling-machine, a main head horizontally adjustable on the machine, an auxiliary head attached for rotatable adjustment to the side of the main head in a plane at right angles to the movement of the work-holding table and parallel with the movement of the main head to which it is attached, a tool carrying spindle supported to rotate in said auxiliary head, a shaft supported in said main head at right angles to said spindle, and extending through the side wall on which the auxiliary head is pivoted, gear connections between said shaft and spindle combined with driving mechanism for rotating said shaft, substantially as described.

4. A main horizontally-adjustable head provided with a vertical wall upon one side, and suitable bearings in or upon its front end for the driving-shaft for the tool-spindle, combined with a rotatable head pivoted upon the said vertical wall, means for securing the rotatable head in place, the driving-shaft for the tool-spindle journaled upon the front end of the main head and having one end extend through both the vertical wall and the rotatable head and provided with a gear, and a tool-carrying spindle mounted upon the rotatable head and provided with a gear to engage with the one on the end of the driving-shaft, substantially as shown.

5. In a milling-machine, a base, a table for the work vertically adjustable thereon, and a horizontally-adjustable main head placed upon the top of the base, and provided with a slotted vertical wall, upon one side, and suitable bearings upon its front end for the driving-shaft for the spindle, combined with driving-shaft D', having one of its ends project through both the side wall and the rotatable head and provided with a gear; the rotatable head pivoted on the outer side of the vertical wall and provided with means to hold it in position; and the spindle provided with a gear to engage with the one on the end of the driving-shaft; the pivot of the rotatable head being formed around the end of the driving-shaft, substantially as described.

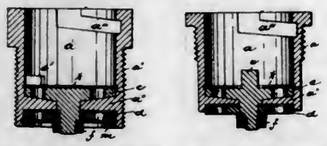
570,724. HAND-STAMP. FRANK VENN, Malden, Mass. Filed Apr. 16, 1896. Serial No. 587,754. (No model.)



Claim.—1. In a marking and stamping device of the character described, the frame A; an axle supported by said frame; the wheels E, E' on said axle and on opposite sides of the frame, said wheels being provided with means for rotating the same; the arms K, K' extending from the outer end of said frame and having their outer surfaces beveled as above described; the width-band H extending from the wheel E to and over the beveled surface of the arm K; and the size-band H' extending from the wheel E' to and over the beveled surface of the arm K', substantially as set forth.

2. In a marking or stamping device of the character described, the frame A provided with the bore L; the shank P and head P' within said bore, said head being provided on its outer end with raised characters indicating half-sizes; a spring within said bore holding the shank and head normally outward and forward; a pin extending from the shank through the frame and adapted to lock said shank in a rearward position; wheels supported on opposite sides of said frame; and bands passing from said wheels over arms extending from the forward end of the frame, said bands being provided with characters indicating sizes and widths, substantially as set forth.

570,725. FAUCET-BUNG. DILLON BEEBE Newark, N. J. Filed Apr. 3, 1895. Serial No. 544,221. (No model.)



Claim.—1. The combination with the bung-body having an interior valve-seat and a valve arranged at the upper outer side thereof, and adapted to be turned thereon to open or close the bung, of a plate, *k*, covering and protecting the opening in the said outer valve from outside interference and dirt, substantially as set forth.

2. The combination with the bung-body, having interiorly, inclined faucet-bearings and a valve seat, a valve having outflow passages or ports and a transverse plate, secured at its opposite ends to the interior of the bung-body, and adapted to cover the ports of the valve when the latter is closed, substantially as set forth.

3. The combination with the bung-body having a valve-seat and an interior valve arranged on the inner side of said valve-seat, and a covering-plate fixed to the bung-body and covering the closed valve-passage and preventing the entrance of pitch or similar coating material when the barrel to which the bung is applied is rendered impermeable by such coating material, substantially as herein set forth.

4. The combination with the bung-body, having a valve-seat and a valve lying against the outside of said seat, said bung-body being interiorly recessed, of a transverse protecting-plate having its ends in the recesses of said body and its face covering the ports in the valve when the valve is closed, substantially as set forth.

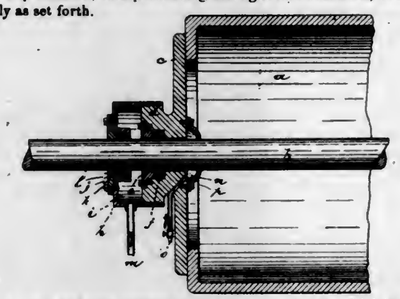
5. The improved faucet bung herein described comprising the bung-body exteriorly threaded and interiorly provided with inclined bearings, a^w, and a valve seat, a^x, disk-valves arranged on opposite sides of said valve-seat and held against the same by a nut, *f*, the forward valve-seat having a projection, *d'*, hugging the walls of said bung, and a transverse protecting-plate for covering the ports of the interior disk-valve, all combined, substantially as set forth.

6. The improved faucet-bung herein described comprising a bung-body having interior inclined bearings for the faucet-key and a valve-seat, disk-valves arranged on opposite sides of said seat, with ports exteriorly and interiorly exposed, and plates, *k*, *m*, against the interior and exterior faces of said valves for covering said exposed ports, substantially as set forth.

7. The combination with the bung-body having a valve-seat with ports, a seat for the faucet-key and means for fastening said faucet-key upon said bung-body, a valve engaging said valve-seat and hub-like projection central to said valve and means for actuating said valve by the faucet-key and means for holding said valve to its seat, and a protecting-plate lying against the valve and centrally perforated to provide for the hub-like projection and covering the ports in the valve to protect the same when closed, substantially as set forth.

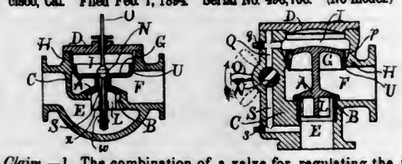
570,726. STUFFING-BOX FOR PUMPS, &c. EDWARD C. BUTTS, Belleville, N. J. Filed Aug. 26, 1895. Serial No. 560,479. (No model.)

Claim.—1. The improved reciprocating or plunger pump, comprising a reciprocating piston and cylinder having a stuffing-box *d*, with a follower and loose packing, of a supplemental box forming a drip-chamber *i*, with the stuffing-box *d*, and having at its rod perforation a packing-chamber *j*, and a gland or follower for producing a tight-joint around the rod, a supply-pipe opening at and supplying the bearing for the rod between the drip-chamber and cylinder with clean water, and a duct or pipe *m*, for carrying the drippings away from the drip-chamber, said parts being arranged and combined, substantially as set forth.



2. The improved plunger-pump herein described in which is combined with a longitudinally-reciprocating piston-rod, and cylinder having a stuffing-box *d*, with a gland or follower and packing, of a supplemental box *d*, forming a drip-chamber *i*, with said box *d*, and having at its rod perforation a packing-chamber and a gland or follower, a concaved ring fastened within said cylinder, around said piston-rod, forming a clean-water chamber, a water-supply pipe communicating with said clean-water chamber and a drip-pipe *m*, communicating with the drip-chamber, whereby the clean water may be forced both out into the cylinder to prevent the entrance of gritty matter and through the packing, *f*, to lubricate the rod, into the drip-chamber, and be from thence carried away through the drip-pipe *m*, all said parts being arranged and combined substantially as set forth.

570,727. VALVE MECHANISM. HORACE B. GALE, San Francisco, Cal. Filed Feb. 1, 1894. Serial No. 498,768. (No model.)



Claim.—1. The combination of a valve for regulating the flow of a fluid through a port or passage, a piston, plunger, or equivalent device, adapted to operate the said valve, a fluid-chamber on one side of said piston or equivalent device, an auxiliary passage connecting the said chamber constantly with the main passage on one side of the main valve, tapering grooves at the sides of the piston, or equivalent devices, adapted to produce a gradual enlargement of the said passage as the main valve is opened, a second auxiliary passage connecting the said chamber with the main passage on the other side of the main valve, and an auxiliary valve adapted to open or close the latter auxiliary passage, by operating which the fluid-pressure in the said chamber may be adjusted, and the opening and closing of the said main valve controlled in the manner described, all substantially as set forth.

2. In a valve mechanism for regulating the flow of a fluid through a passage, the combination of a main valve, its port, actuating device, and pressure-chamber, arranged as described in said passage, a second similar valve, port, actuating device, and pressure-chamber, placed in series with the first in the same main passage, and facing the opposite way as regards the flow of the fluid, auxiliary passages connecting the said pressure-chambers with the main passage on each side of the main valves, and an auxiliary valve mechanism, regulating the flow through the auxiliary passages, and which may be set either so as to hold the main valves closed against any tendency of the fluid to flow through the main passage in either direction, or so as to enable both main valves to be opened simultaneously by a flow in either one or the other direction, as determined by the setting of the auxiliary-valve mechanism, both automatically closing, or remaining closed, against a contrary flow, substantially as set forth, and for the purposes described.

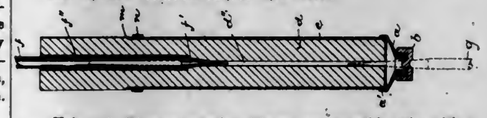
3. In a valve mechanism substantially as herein described, the combination of the main and auxiliary valves and passages, the pressure-chamber, the actuating piston or plunger, and tapering grooves or slots in the sides of the cylinder surrounding the same, or equivalent means, whereby the area of the opening for the passage of fluid into or out of the said pressure-chamber around the actuating piston or plunger, is made to vary with the movement of the latter, in a manner corresponding approximately with the extent of opening of the main valve, substantially as set forth, and for purposes described.

4. In a valve mechanism substantially as herein described, the combination of the main and auxiliary valves and passages, the pressure-chamber, the actuating-piston, or equivalent thereof, by-pass passages communicating with the auxiliary valve and with the main fluid-passage on each side of the main valve or pair of main valves, and check-valves controlling the flow of the fluid through the said by-pass passages, substantially as set forth, and for purposes described.

5. In a valve mechanism substantially as herein described, the combination of the main and auxiliary valves and passages, the pressure-chamber, the actuating piston or plunger, a fixed ring surrounding the same, and a piece of flexible material adapted to lie across and cover the opening between the piston or plunger and the fixed ring, when the valve is shut, for the purpose of preventing leakage, substantially as set forth.

6. In a valve mechanism substantially as herein described, the combination of the main and auxiliary valves and passages, the pressure chamber, the actuating-plunger G, the piston *d* fitting the plunger G internally, the ledge *e*, on the plunger G, or an equivalent device, adapted to lift the piston *d*, the disk *g*, adapted to limit the movement of the piston *d*, the central hollow stud *h*, and the regulating-cock *k* controlling the passage through the stud *h*, all substantially as set forth, and for purposes described.

570,728. PROCESS OF AND APPARATUS FOR MAKING TUBES FOR ARTISTS' COLORS, &c. HANNIBAL GOODWIN, Newark, N. J. Filed Mar. 19, 1895. Serial No. 542,304. (No model.)



Claim.—1. The process of making a compressible tube with a metallic end piece which consists in attaching a metallic end piece to the end of a former, coating the end piece and former exteriorly with a continuous film of a liquid solution of a flexible material, evaporating from the said film the solvent of said solution to form a non-fluid residual film which covers both end piece and former, stripping said film and metallic end piece together from the former, said end piece and residual film remaining fast together in permanent relation, substantially as set forth.

2. The process of making tubes for viscid materials, which consists in applying a metallic end piece forming a portion of the tube, to the open end of a collapsible form, covering the form and its end piece with a solution capable of drying and leaving a pellicular covering and drying said solution, substantially as set forth.

3. The combination of the longitudinally-split support, means for expanding said split support, and a collapsible sheet-metal former, all arranged and combined, substantially as and for the purposes set forth.

4. The combination of a resilient sheet like former turned edge to edge, and having an advertising figure upon its outer side, and a support for holding said sheet into holding relation to the end piece, substantially as and for the purposes set forth.

5. The combination of the collapsible former, split support and wedge all arranged and operating, substantially as and for the purposes set forth.

6. The combination of the collapsible former, split support which is centrally and longitudinally bored out and shouldered at *f'*, and a wedge expanding said support, substantially as and for the purposes set forth.

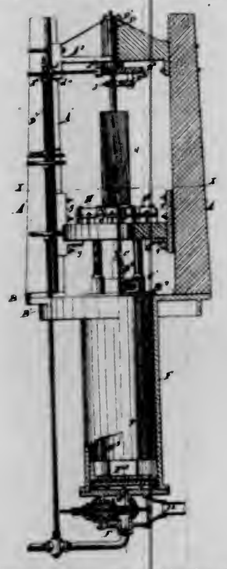
7. The combination of the collapsible sheet-metal former, a split and centrally and longitudinally bored out or cored expander having an exterior shoulder, *m*, and a wedge *f*, all said parts being arranged and adapted to operate, substantially as and for the purposes set forth.

570,729. CORRUGATING-MACHINE. THOMAS W. GRAHAM, Dubuque, Iowa. Filed May 14, 1895. Renewed Sept. 10, 1896. Serial No. 605,445. (No model.)

Claim.—1. In a corrugating-machine, the combination with means for supporting and holding the roll in a fixed position, of a vertically-reciprocating carriage through which the roll passes, a circular series of horizontally-pivoted tool-holders mounted on the upper face of the carriage, means for adjusting the holders radially, and means for forcibly moving the carriage upward across the surface of the roll, substantially as described.

2. In a corrugating-machine, the combination with means for fixedly supporting the roll and means for holding the roll in position, of a carriage having a central bore greater than the diameter of the roll, means for forcibly moving the carriage upward across the face of the roll, guides for the carriage throughout its entire movement, a radially-arranged series of horizontally-pivoted tool-holders mounted on the upper face of the carriage, tools in the holders, and means for radially adjusting the holders, substantially as described.

3. In a corrugating-machine, the combination with vertical standards and roll-supporting means at opposite ends and between the same, of a ring-shaped carriage between the standards, guide-blocks on the carriage engaging the standards, a hydraulic cylinder below the standards, a piston in the cylinder, posts on the piston supporting the carriage at their upper ends, and a circular series of horizontally-pivoted tool-holders on the upper face of the carriage having tools projecting into the open center of the carriage, substantially as described.



4. In a corrugating-machine, the combination with roll supporting and holding means, of a ring-shaped carriage through which the roll passes, means for guiding the carriage, means for forcibly moving the carriage in one direction, and a circular series of horizontally-pivoted tools pivotally supported to have a vertical movement on the carriage projecting into the opening of the center thereof, substantially as described.

5. In a corrugating-machine, the combination with a plurality of vertical standards, a fixed base, a centering-pin in the base, a cross-bar at the top of the standards, a centering-pin carried thereby, a roll-adjuster, a ring-shaped carriage between the standards, guides between the carriage and standards, means for forcibly moving the carriage vertically upward, and a series of tool-holders pivoted to swing in a vertical plane mounted on the carriage and having tools projecting radially inward beyond the same, substantially as described.

6. In a corrugating-machine, the combination with a plurality of vertical standards, a fixed base, a centering-pin in the base, a cross-bar at the top of the standards, a centering-pin carried thereby, a roll-adjuster, a ring-shaped carriage between the standards, guides between the carriage and standards, adjustable packing between the guides and standards, carried by the guides, means for forcibly moving the carriage vertically, and a series of tool-holders on the carriage having tools projecting radially inward beyond the same, substantially as described.

7. In a corrugating-machine, the combination with a reciprocating carriage, of a tool-holder thereon comprising a fixed member and an adjustable member, means for longitudinally adjusting the adjustable member, means for vertically adjusting the inner end thereof, and adjustable tools carried by the movable member, substantially as described.

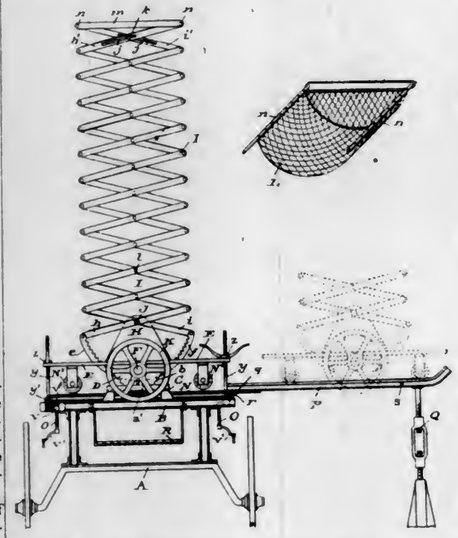
8. In a corrugating-machine, the combination with a tool-carrier, of a tool-holder comprising a stationary member having an open center and a transverse shaft spanning the opening, and a movable member pivoted on the shaft and formed with a recess in its outer end and an inclined recess at its inner end, a removable tool in the inclined recess, means for securing the tool in position, and means for longitudinally adjusting the movable member, substantially as described.

9. In a corrugating-machine, the combination with a tool-carrier, of a tool-holder thereon comprising a stationary member having a channel therein and a slotted inner end, and a movable member loosely fitted in the channel having an inclined recess at its inner end open at its upper end and closed at its lower end, a set-screw passing through the lower wall of the recess into the slot of the stationary member, a tool clamped in the recess, and resting on the screw, and means for longitudinally adjusting the movable member, substantially as described.

10. In a tool-holder for corrugating-machines, a stationary member and a vertically-movable member pivoted thereto, and means for longitudinally adjusting the movable member on the stationary member engaging the pivot, substantially as described.

11. In a corrugating-machine, a tool-holder comprising a stationary member and a movable member located within the stationary member and formed with a recess in its outer end, a horizontal shaft on the stationary member passing through the recess, a screw in the movable member held from independent longitudinal movement therewith and engaging the shaft, and a tool in the opposite end of the movable member, substantially as described.

570,730. **EXTENSION-LADDER AND FIRE-ESCAPE.** SAMUEL C. KINDIG, Baltimore, Md. Filed May 18, 1896. Serial No. 592,042. (No model.)



Claim.—1. The combination of the wagon bed or frame having at each end a grooved pillow, C, provided with rack-teeth; a ladder-base having rockers which set in said grooved pillows and provided with teeth which engage the said rack-teeth; a lazy-tongs extension-ladder mounted on said ladder-base; and mechanism for operating said ladder, whereby the ladder, the mechanism, and the base may all be tilted sidewise in either direction and the ladder raised and lowered while in the tilted position.

2. The combination of the wagon bed or frame having at each end a grooved pillow, C, provided with rack-teeth; a ladder-base having rockers which set in said grooved pillows and provided with teeth which engage the said rack-teeth, and said base having side notches; and screw-bolts whose ends are pivoted to the bed or frame and swing into said side notches and carry lever-nuts which engage the top surface of the ladder-base.

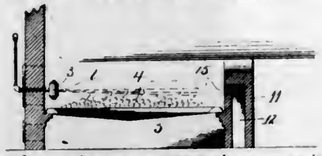
3. The combination of the ladder-base; two rockers on the under side of said base; a main shaft, F, and a supplemental shaft, F', both having bearings in said rockers; gear-wheels on said two shafts which engage each other; a longitudinal bar, G, connecting the rockers and having position below said shafts and said bar provided on its top edge with four slots; a lazy-tongs extension-ladder mounted on a shaft, J, upon said base; and four segment rack-bars, each of which has one end pivoted to one of the lowermost bars of the lazy-tongs and each engaging with a different one of said gears on the shafts and fitting and sliding in one of the said top slots on the bar as shown and described.

4. The combination of the lazy-tongs extension-ladder having the two top bars, *k'*, *i'*, at both the front and rear of the ladder provided with longitudinal slots, *j*, and the said bars which cross each other having a floating pivot-bolt, *k*, in said slots and connected by a horizontal stretcher-bar, *m*; the said two stretcher-bars connected by two side rods, *n*, thereby forming at the top of the ladder a rectangular frame; and a flexible platform hung with said frame, as shown and described.

5. The combination of a wagon bed or frame; a crosswise track on said bed or frame; a ladder-base supported on said frame free of the said crosswise track; a lazy-tongs extension-ladder mounted on said ladder-base; mechanism for operating said ladder; a lateral track connected with said bed or frame, and rollers on the lower side of the ladder-base to take upon the said crosswise track, whereby the ladder-base, ladder and attached parts may be shifted laterally from the ladder bed or frame.

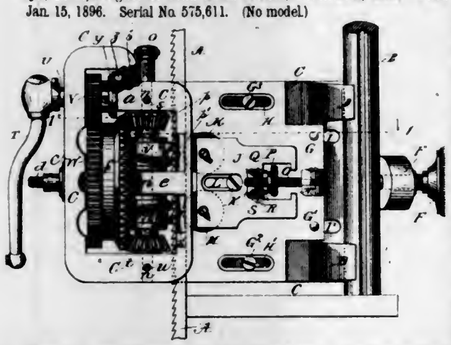
6. The combination of the wagon bed or frame having at each end a grooved pillow, C, provided with rack-teeth; a ladder-base having rockers which set in said grooved pillows and provided with teeth which engage the said rack-teeth; a lazy-tongs extension-ladder mounted on said ladder-base; mechanism for operating said ladder; a cross-track on said bed or frame and movable longitudinally of said bed or frame; rollers on the lower side of the ladder-base to take on said cross-track; and mechanism to elevate the cross-track and lift the ladder-base and disconnect the rockers from the said pillows.

570,731. **SMOKE-CONSUMER.** JOHN M. KOHNE, Toledo, Ohio. Filed Apr. 8, 1896. Serial No. 586,669. (No model.)



Claim.—In a smoke-consumer, a superheater comprising a hollow chamber located within the fire-chamber in the forward side of the same and formed with a jet-orifice arranged horizontally thereto, the walls of the orifice being parallel with the grate-bars, a hollow bridge-wall having egress-ports upon the front side in alinement with the jet-orifice and means for inducing air into the hollow bridge-wall, whereby the superheated steam and air are projected toward each other from opposite directions, and in horizontal alinement.

570,732. **SAW-FILING MACHINE.** HENRY L. MORRELL, Brooklyn, N. Y., assignor to John M. E. Morrill, Dorchester, Mass. Filed Jan. 15, 1896. Serial No. 575,611. (No model.)



Claim.—1. The combination of a rigid frame, a clamp to rigidly attach the same to the guide-bar of a band-saw frame, a sliding frame adjustably secured to said rigid frame, and provided with right and left spiral, rotary files, means to rotate the files and another sliding frame adjustably secured to the rigid frame, provided with grooved wheels adapted to support the band-saw, for the purposes set forth.

2. The combination of a frame, a clamp to rigidly hold the same to the guide-bar of a band-saw, a sliding frame adjustably secured to said rigid frame, and provided with a pair of right and left rotary, spiral files, driven pinions for the files, the files being located between them, and means to support the teeth of the saw, located opposite the files, for the purposes set forth.

3. The combination of a frame, a clamp to rigidly hold the same to the guide-bar of a band-saw, a sliding frame adjustably secured to said rigid frame, continuous, spiral files supported by the sliding frame, and located between the driven pinions therefor, said driven pinions themselves, a gear to drive the pinions, means to support the rear edge of the saw, and other means located opposite the files to support the teeth thereof against the lateral stress of the files, for the purposes set forth.

4. The combination of a frame, a clamp to rigidly attach the same to a stationary part of a band-saw frame, a sliding frame adjustably secured to the rigid frame, right and left spiral files, having continuous file-surfaces located between said driven pinions, and another sliding frame adjustably secured to the rigid frame, provided with means to support the back edge, and also the teeth of the saw, for the purposes set forth.

5. In a saw-filing apparatus, the combination of a movable frame having adjustable anvils or supports for the teeth of the saw, composed of flat plates, located upon the front edge of the movable frame, and an additional support for the back edge of the saw, also connected with said frame, for the purposes set forth.

6. The combination in a saw-filing machine of a frame which supports a gear-wheel, a section whereof is adapted to be removed radially, pins attached to the movable section, and which engage in holes in the body of the gear, for guiding and supporting said section, pinions which mesh into said driving-gear, and two rotary spiral files, right and left handed respectively, located between said pinions, and connected with them, for the purposes set forth.

7. The combination in a saw-filing apparatus of a beveled driving-gear, a section whereof is radially removable, said section being guided and supported upon pins which enter recesses in the body of the gear, two pinions which mesh into said gear, rotary, spiral files attached to said pinions, and located between them, and means to revolve the several devices, for the purposes set forth.

8. A filing device for saw-filing machines, consisting in a metallic sleeve adapted to slip over and be supported upon an interior block and having a continuous, spiral file attached to its exterior surface, for the purposes set forth.

9. A filing device for saw-filing machines, consisting in a metallic sleeve adapted to slip over and be supported by an interior block, and having upon its exterior, a continuous, spiral file, the ends of said file being tapered, for the purposes set forth.

10. A filing device for saw-filing machines, consisting in a metallic sleeve, adapted to slip over and be supported by an interior block, a continuous, spirally-wound file attached to its exterior, and supported between its ends by projections from the sleeve, for the purposes set forth.

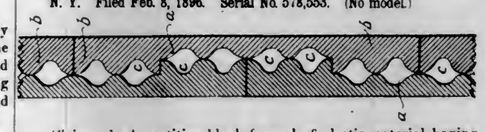
11. In a saw-filing machine, the combination of two file-supporting blocks, each having a pin whereby it is connected with its driving-pinion, and a slot in each of the driving-pinions, adapted to receive said pin, the pin of one of said blocks being located in a movable part thereof, said movable part itself, and means to clamp the movable part to its block, for the purposes set forth.

12. In a saw-filing machine, a block for the support of a file, an independently-movable part connected with said block, means to lock said independently-movable part to the block, and a pin on said movable part adapted to connect the block with its driving mechanism, for the purposes set forth.

13. In a saw-filing machine, the combination of removable blocks for the support of the file, pinions which engage with the said blocks, and a driving-gear engaging with said pinions, a section whereof is laterally movable for the removal of said blocks, for the purpose set forth.

14. The combination in a saw-filing machine of two blocks for the support of the files, driven pinions with which said blocks engage, and a movable part upon one of the blocks which carries the device which locks it to the pinion, and means for locking the said part to the block, for the purposes set forth.

570,733. **PARTITION-BLOCK.** WILLIAM V. PETTIT, New York. N. Y. Filed Feb. 8, 1896. Serial No. 578,553. (No model.)



Claim.—1. A partition-block formed of plastic material, having a longitudinally-disposed central groove in one of its faces of a width equal to the combined width of the outer flanges formed by the groove, and longitudinally-disposed flanges formed in the grooved face, substantially as specified.

2. A partition-block having on its inner face a central groove, *a*, corrugations, *c*, and upper and lower rims or flanges, *b*, the groove, *a*, being of a width equal to the combined width of the two flanges, *b*, substantially as specified.

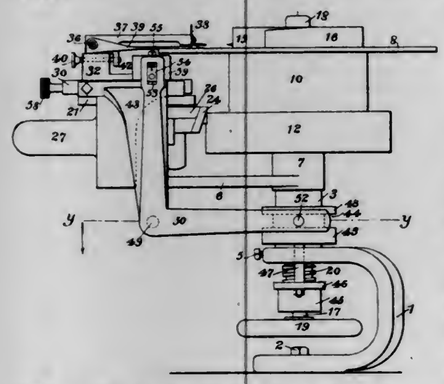
3. A partition-block formed of plastic material having longitudinally-disposed flanges formed along the outer edges, and a longitudinally-disposed central groove of a width equal to the combined width of the raised portion forming the two longitudinally-disposed flanges and ventilating spaces or corrugations provided on that face of the block which is provided with the flanges, substantially as described.

4. A partition-block formed of plastic material having a longitudinally-disposed central groove in one of its faces of a width equal

to the combined width of the extreme breadth of the outer flanges formed by the groove, longitudinally-disposed flanges formed in the grooved face and longitudinally-disposed corrugations formed in the grooved face forming the air-passages, substantially as described.

5. A partition formed of a series of corrugated blocks each having a grooved inner face such groove being centrally provided, and raised flanges, *b*, provided on each of the upper and lower sides of said block above and below the said groove, said flanges, *b*, interlocking with the flanges of the blocks on the opposite side of the partition and fitting in the grooves in a number of oppositely-disposed blocks, all of the blocks being so arranged as to afford to each block the support of the largest number of adjacent blocks, and longitudinally-disposed grooves provided in the flanged face of each block forming air-spaces between the respective blocks, substantially as described.

570,734. HAND-OPERATED HAT-ROUNDING MACHINE. CHAS. H. REID, Danbury, Conn. Filed Aug. 7, 1895. Serial No. 558,504. (No model.)

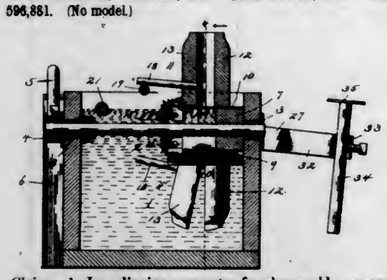


Claim.—1. In a hand-operated rounding-machine, the combination of the main slide, the knife-carriage capable of sliding in ways in said main slide, the block 59 rigid with said carriage as to the general sliding movements of the latter, the slide 61 having a vertical reciprocation within ways in said block and provided with circular stud 62, the bell-crank 50 pivoted to an extension from the main slide and having near the extremity of its upper leg an elongated slot, the block 54 capable of sliding freely within said slot and having a circular aperture within which the stud 62 extends, the adjusting-screw 55 connected to the block 54, the spindle for operating the hat-clamping mechanism, and operative connections between the lower leg of the bell crank and said spindle whereby said knife-carriage and clamping mechanism will move in harmony, substantially as set forth.

2. The combination of the standard having secured thereto the hollow bushing 4, the swinging frame loosely journaled around said bushing, the rotatory spindle 17 within said bushing and carrying the screw 20, the hat-supporting platform and the templet secured around said bushing at the upper end thereof, the clamping mechanism supported on said platform and operatively connected to said spindle, the nut engaging said screw, the grooved collar 43 loose around the spindle and capable of a reciprocatory sliding movement, connections between said nut and collar whereby sliding movements are communicated to the latter from the former, the main slide adapted to reciprocate in suitable ways in the swinging frame, mechanism for imparting reciprocation to said slide directly from said templet, the carriage capable of reciprocation within said slide, the head-block supported on said carriage, the knife-supporting carrier properly mounted on said block, the block 56 within suitable ways in said carriage, the head-block 59 secured to the block 56, the slide 61 capable of reciprocation in vertical ways in the block 59 and having a laterally-extending round stud 62, the bell-crank 50 pivoted to an extension from the main slide and having near the extremity of its upper leg an elongated slot and provided with a shoe which is pivoted to the extremity of its lower leg and extends within the groove in the collar 43, the block 54 capable of sliding freely within said slot and having a circular aperture within which the stud 62 extends, and the adjusting-screw 55 swiveled to the block 54, substantially as set forth.

3. The combination of the sliding carriage 30 having ways 57, the block 56 within said ways, the head-block 59 secured to the block 56, the slide 61 capable of reciprocating within vertical ways in the block 59 and having a laterally-extending circular stud 62, the sliding grooved collar 43, the main slide within which said carriage is adapted to reciprocate, the bell-crank lever pivoted to said slide and provided with a pivoted shoe at its lower leg extending within a groove in said collar and having a vertically-disposed slot in its upper leg, the adjustable block within said slot and having a circular aperture within which the stud 62 extends the clamping mechanism, the spindle for operating the clamping mechanism, and means automatically operated and controlled by said spindle for effecting the sliding movements of said collar whereby the bell-crank lever is rocked and the sliding carriage reciprocated, substantially as set forth.

570,735. DIPPING APPARATUS FOR PASTE GLASS-MOLDS. EDWIN ROBINSON, Zanesville, Ohio. Filed June 25, 1896. Serial No. 596,881. (No model.)



Claim.—1. In a dipping apparatus for glass-molds, an open cooling-tank, a horizontal rock-shaft journaled transversely within the tank and carrying oppositely-located mold-supports, a pair of molds arranged respectively on the oppositely-located mold-supports, and means for oscillating the shaft to carry the molds singly in and out of the liquid within the tank, substantially as set forth.

2. In an apparatus of the class described, an open cooling-tank, a horizontal shaft supported by the tank and carrying a pair of molds having normally open movable sections, means for rocking said shaft, to carry the molds singly in and out of the liquid within the tank, and means for closing the movable section of the uppermost mold, substantially as set forth.

3. In an apparatus of the class described, an open cooling-tank, a horizontal rock-shaft journaled transversely within the tank, means for rocking said shaft, and a pair of molds supported by the shaft and disposed at an obtuse angle to each other whereby the lowermost mold acts in the capacity of a weight to hold the uppermost mold in a proper upright position, substantially as set forth.

4. In an apparatus of the class described, an open cooling-tank, a horizontal rock-shaft journaled centrally and transversely within the tank near the top and carrying a supporting-collar, a pair of oppositely-disposed mold-supporting plates fitted on said collar, glass-molds mounted on said plates and each having a movable section hinged directly to the supporting-plate, a spring connection with the movable sections of both molds to hold the same normally open, and means for closing the movable or hinged section of the uppermost molds, substantially as set forth.

5. In an apparatus of the class described, an open cooling-tank, a horizontal rock-shaft journaled within the tank and carrying a pair of obliquely-disposed molds, each having a hinge-section provided with an offstanding trip pin, a spring connection with the hinged sections of both molds to hold the same normally open, a mold-closing shaft journaled within the tank and carrying a tappet-arm working under the trip-pin of the uppermost mold, normally spring-depressed rock-arms attached at one end to the extremities of the mold-closing shaft, a U-shaped yoke-lever pivotally embracing one side of the tank and having the terminals of its opposite side portions working under the free ends of said rock-arms, and a tread-post adjustably fitted to the outer portion of said yoke-lever, substantially as set forth.

570,736. UNIVERSAL CHUCK. VICTOR A. SALLOT, Fort Wayne, Ind. Filed Nov. 11, 1895. Serial No. 568,573. (No model.)

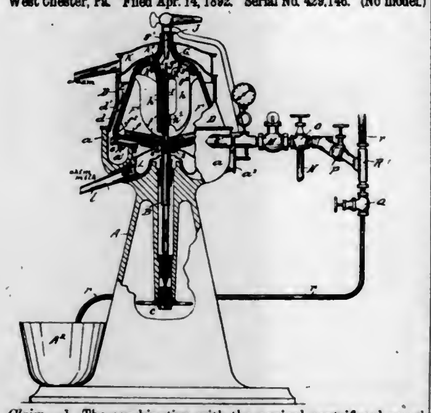
Claim.—1. In a universal chuck, the combination of a centrally-apertured disk 1, having upon one face thereof a plurality of radial guideways 7, a plurality of radial jaws 10 slidingly mounted in said guideways and adapted to grip the perimeter of a vehicle-rim for the purpose specified, a radially-slotted hub 17 loosely mounted upon the supporting-mandrel adjacent to the means for adjusting said jaws and in concentric relation to the said disk, provided with a detachable base-plate 18 and a common fulcrum-ring 19 loosely mounted therein as shown, for the purpose specified, a pivotal connection with the said hub comprising a pair of screw-threaded eyebolts arranged as shown in an internally-screw-threaded sleeve 30 for the purpose specified, and having the outer ends pivotally connected with the said hub and the said jaws respectively, and the operating hand-wheel 20 having a screw-threaded connection with the supporting mandrel 3, and a

rotatable connection with the said hub, and adapted to radially adjust the said jaws, whereby all adjustments of said jaws can be made upon the same side of the said disk, substantially as described.



2. In a universal chuck, the slotted hub 17 having a radially-slotted base provided with a detachable portion 18, and having a common fulcrum-ring 19 loosely mounted therein, as described, and having an annular recess 23 for the connecting-plates 21, the said hub being rotatably connected with means for adjusting the same, and being loosely mounted upon the supporting-mandrel, substantially as described.

570,737. CENTRIFUGAL SEPARATOR. PHILIP M. SHARPLES, West Chester, Pa. Filed Apr. 14, 1892. Serial No. 429,146. (No model.)



Claim.—1. The combination with the conical centrifugal vessel having the cream-outlet at the smaller end thereof and a fixed receptacle loosely surrounding said cream-outlet, of the fixed casing having a corresponding conical portion inclosing the vessel and forming a conical air-passage around the latter, said casing having an opening below the conical portion, and means for varying the area of the air-passage to regulate the flow of air around the vessel, substantially as and for the purpose set forth.

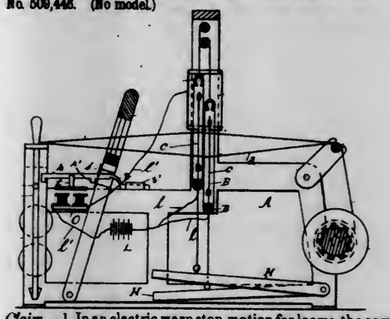
2. The combination of the separator vessel of the removably-secured top or cover G provided with feed-cup *g*, wing *h* and cream-channel *h'*, substantially as set forth.

3. The combination with the separator vessel of the removable top or cover G provided with feed-cup *g* having a small neck with central inlet, and cream channel *h'* and wing *h* extending below the cup on opposite sides of the center, and the central bolt I having its head seated in the cup and its opposite end secured to the bottom of the vessel, substantially as set forth.

4. The combination with the separator vessel of the movably-secured top or cover G formed with feed-cup *g* having a small neck with central inlet, vanes g^3 within said cup and outlet g^2 therefrom into the vessel, and the cream-channel extending through the top or cover, all substantially as set forth.

5. The combination with the separator vessel having a bottom discharge and the steam-nozzle for operating the same, of the cylindrical casing *a* formed with a central chamber a^2 for a liquid-receptacle, and an annular exhaust-chamber *a* surrounding said central chamber and provided with an outlet for the steam and a partition-plate A' all substantially as and for the purpose set forth.

570,738. ELECTROMAGNETIC WARP STOP-MOTION FOR LOOMS. ALPHEUS C. SHUTTLEWORTH, Philadelphia, Pa., assignor to George Draper & Sons, Hopedale, Mass. Filed Apr. 30, 1894. Serial No. 509,446. (No model.)



Claim.—1. In an electric warp stop-motion for looms, the combination with a heddle-frame, of a permanent magnet carried thereby, a series of heddles normally held out of contact with said permanent magnet by the tension of the warp threads, a source of electrical energy with which said permanent magnet and heddles are in circuit, an electromagnet in circuit with said permanent magnet and heddles, and a shipper-lever controlled by said electromagnet so that when tension on any one of the series of heddles is relaxed so as to allow contact with said permanent magnet the circuit is completed and the loom stopped.

2. In an electric warp stop-motion for looms, the combination with a heddle-frame, of a permanent magnet carried thereby, a series of heddles normally held out of contact with said permanent magnet by the tension of the warp-threads, a source of electrical energy with which said permanent magnet and heddles are in circuit, an electromagnet in circuit with said permanent magnet and heddles, a spring knock-off lever controlled by said electromagnet, a shipper-lever actuated by said knock-off lever, so that when tension on any one of the series of heddles is relaxed so as to allow contact with said permanent magnet the circuit is completed and the loom stopped.

3. In an electric warp stop-motion for looms, the combination with a heddle-frame, of a permanent magnet carried thereby, a series of heddles normally held out of contact with said permanent magnet by the tension of the warp-threads, a source of electrical energy with which said permanent magnet and heddles are in circuit, an electromagnet in circuit with said permanent magnet and heddles, a spring knock-off lever controlled by said electromagnet, a shipper-lever actuated by said knock-off lever, connection between said knock-off lever and the lathe by means of which the said knock-off lever is moved at the forward movement of the lathe so as to throw the shipper-lever and stop the loom when tension on any one of the heddles is relaxed so as to allow contact with the permanent magnet and completion of the circuit.

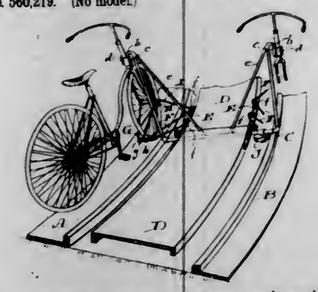
4. In an electric warp stop-motion for looms the combination with a heddle-frame, of a permanent magnet carried thereby, a series of heddles normally held out of contact with said permanent magnet by the tension of the warp-threads, a source of electrical energy with which said permanent magnet and heddles are in circuit, a shipper-lever, a knock-off lever to actuate the shipper-lever mounted on the loom-frame so as to be normally out of the path of movement of the lathe, and an electromagnet in circuit with said permanent magnet and heddles to attract said knock-off lever and throw it into the path of said lathe when the circuit is completed by the slackening of a warp-thread and the resultant movement of a heddle into contact with the permanent magnet.

5. In an electric warp stop-motion for looms, the combination with a heddle-frame, of a permanent magnet carried thereby, a heddle-shaft insulated on its bottom and two sides, a series of heddles normally held out of contact with said magnet by the tension of the warp-threads, a source of electrical energy with which said permanent

magnet and heddles are in circuit, a conductor-plate on the loom-frame with which said heddle-frame contacts at each shed, a spring knock-off lever to actuate the shipper-lever mounted in a slide on the loom-frame normally out of the path of movement of the lathe, an electromagnet in circuit with the permanent magnet and the said heddles in close proximity to said spring knock-off lever to attract the same and throw it into the path of movement of the lathe when said electromagnet is energized by the completion of the circuit through the slackening of the tension of any one of the warp-threads and the resultant movement of a heddle, and a projection on the lathe to engage said knock-off lever and force it forward to actuate the shipper-lever and stop the loom.

6. In an electric warp stop-motion for looms, the combination with a heddle-frame, of one or more permanent magnets carried thereby, a series of heddles normally held out of contact with said permanent magnets by the tension of the warp-threads, a source of electrical energy with which said magnets and heddles are in circuit, an electromagnet in circuit with said heddles and said permanent magnets, a spring knock-off lever controlled by said electromagnet, a projection on the lathe which engages the said knock-off lever when the latter is thrown into the path of movement of the lathe by the action of the electromagnet, a shipper-lever which is actuated by said knock-off lever to stop the loom, a conductor-plate on the loom frame, spring-arms on the heddle-frame which contact with said conductor-plate at the end of each shed and complete the circuit when any one of the heddles is thrown from its normal position by the slackening of the tension of a warp-thread.

570,739. ROUNDABOUT. ALFRED A. SUSTINS, ARTHUR F. SUSTINS, and ERNEST G SUSTINS, Stevens Point, Wis. Filed Aug. 23, 1895. Serial No. 560,219. (No model.)



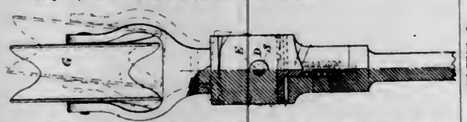
Claim.—1. A roundabout comprising concentric stationary endless tracks, practical bicycles mounted on the tracks, clamps attachable to head-tubes of the bicycles, yokes connecting the clamps in pairs, and antisteering guards for the front wheels of said bicycles.

2. A roundabout comprising concentric stationary endless tracks, practical bicycles mounted on the tracks, clamps attachable to head-tubes of the bicycles, yokes connecting the clamps in pairs, a platform supported by the yokes, and antisteering-gurds for the front wheels of said bicycles.

3. A roundabout comprising concentric stationary endless tracks, practical bicycles mounted on the tracks, clamps attachable to head-tubes of the bicycles, yokes connecting the clamps in pairs, a platform supported by the aforesaid yokes, other yokes attachable at their ends to front axles of said bicycles and having their bends provided with lug extensions, rods bent to form eyes engaging said extensions of the latter yokes, edge plates on the platform provided with apertured lugs engaged by the ends of the rods, brackets also attachable to said front axles, and braces connecting the brackets and said rods.

4. A roundabout comprising concentric stationary endless tracks, practical bicycles mounted on the tracks, clamps attachable to head-tubes of the bicycle, yokes connecting the clamps in pairs, and rollers suspended from the yokes to bear against the inner edge of the outer track.

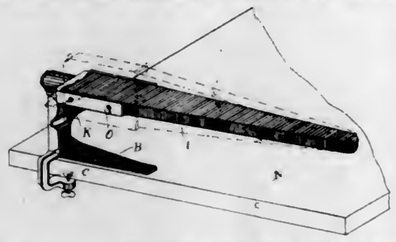
570,740. TROLLEY. FREEMAN T. WALTON, Portland, Me. Filed May 23, 1896. Serial No. 592,740. (No model.)



Claim.—1. In a trolley in combination, a suitable shank divided in two sections the upper part thereof being provided with a tongue, the lower part provided with a groove, a socket in the bottom of said groove, a spring-actuated T-post seated in said socket, and means for pivotally fastening said tongue in said groove, substantially as and for the purposes set forth.

2. In a trolley in combination, a head, a divided shank, a tongue rigidly attached to the upper portion thereof, a groove in the lower section thereof the edges of which are crowned, a socket in the bottom of said groove, a spring-actuated T-post seated in said socket, and means for pivotally fastening said tongue in said groove, substantially as and for the purposes set forth.

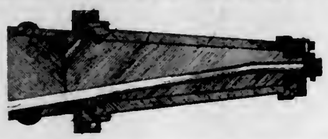
570,741. PRESSING OR IRONING BOARD. MELVILLE C. AYER, Biddeford, Me. Filed Dec. 30, 1895. Serial No. 573,808. (No model.)



Claim.—1. In a pressing and ironing board, a standard having on one end a clamp and in the other end a socket having a tapering bore, a groove in the face of the upright portion of the standard and a rotatable pressing and ironing board mounted in said socket and having spurs thereon adapted to enter the groove in the face of the standard, substantially as and for the purposes set forth.

2. In an ironing and pressing board, a standard having a clamp on one end, a socket in the opposite end and a flange on the upright portion thereof, said flange having a groove or recess therein, in combination with a press-board having a journal adapted to enter and turn in said socket, the diameter of said journal being somewhat less than the diameter of said socket and spurs on the edges and one side of the inner end of said board adapted to enter said groove to support the board and lock it against rotation and lateral movement, substantially as and for the purposes set forth.

570,742. WHEEL AND AXLE CONNECTION. JOHN F. BIBLE, Ionia, Mich. Filed June 24, 1896. Serial No. 596,713. (No model.)



Claim.—1. The combination with an axle and plurality of retaining-grooves thereon, and openings into each, respectively, of a thimble-skein and lugs thereon, fitted to and adapted to enter the openings into the respective grooves upon the axle, substantially as set forth.

2. The combination with an axle and flanges thereon defining opposite grooves, of a thimble-skein provided with lug-sweeps upon its opposite sides adapted to enter, respectively, the grooves upon the axle, substantially as set forth.

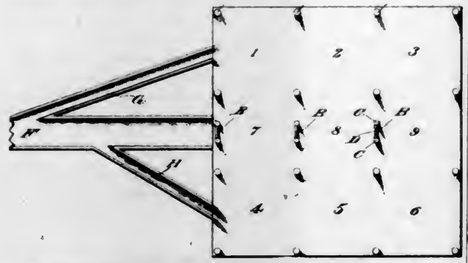
3. The combination with an axle, flange-defined groove, an opening into the groove, and dust-discharge opening coincident therewith, of a thimble skein or box and lug upon the same adapted to enter the opening in the groove and working in the groove to constitute a sweep for discharging dust toward the discharge-opening, substantially as set forth.

4. The combination with a spindle and lock-nut, of a nut adapted to be secured to the end of the spindle, a latch working across the face of the nut and adapted to engage with the lock-nut, and means for securing the latch in engagement with the lock-nut, substantially as set forth.

5. The combination with a spindle, truss and lock-nut on the end of the truss, of a nut screwing upon the end of the spindle, a latch pivoted upon the face of the nut, and adapted to engage with the lock-nut, and means for securing the latch in engagement with the lock-nut, substantially as set forth.

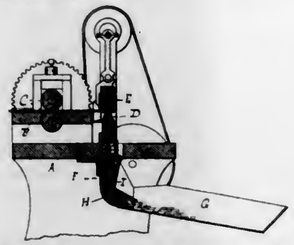
570,743. GAME APPARATUS. JOHN E. BROOKS, Calumet, Pa. Filed Jan. 17, 1896. Serial No. 575,917. (No model.)

Claim.—1. A game apparatus consisting of a square board constituting a field, of pegs located at each corner of the field, two pegs upon each side of the field and dividing such side into three equal divisions and four pegs located within the field in such manner as to divide the field in conjunction with the other pegs into nine squares, a main alley leading to the center of one side of the field, and branch alleys springing from the main alley and three wickets located in alinement with the alley and located upon the side of the squares of the middle tier nearest the alley, and pendants swinging from the wickets, substantially as specified.



2. The combination with a square board constituting a field, of pegs secured to the board and dividing the field into three rows of houses, wickets located in each of the houses of the middle row, a main alley leading to an end house of the middle row, and branch alleys springing from the main alley and leading to the end houses of each of the side row, substantially as specified.

570,744. RECEIVING AND DELIVERING SPOUT FOR TOOTH-PICK-MACHINES. HENRY P. CHURCHILL, Deering, Me., assignor to Alvin S. Wilcox and John M. Adams, same place. Filed Jan. 10, 1896. Serial No. 574,940. (No model.)

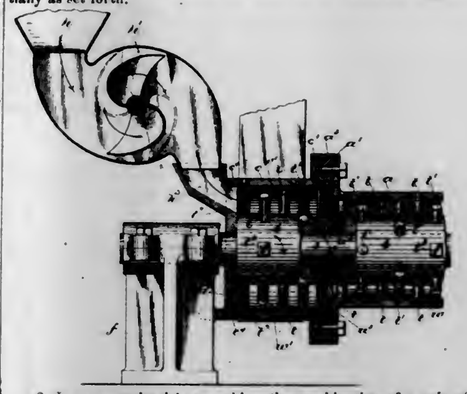


Claim.—1. The herein-described delivery-spout for toothpick-machines, consisting of a spout having an angular yielding plate mounted therein adapted normally to close the spout and hold the picks from falling by gravity alone but capable of being forced open by the picks under pressure when said closed portion of the spout is full of picks to permit egress of the picks from the spout and to admit others from above, the angle of said plate lying opposite the point where the spout changes from the vertical to the horizontal, whereby the spout is kept full and a continuous and even flow of picks is secured, substantially as and for the purposes set forth.

2. In a receiving and delivering spout for toothpick-machines, a spout having vertical and horizontal sections, an angular yielding pressure-plate mounted in said spout, the angle of the plate being opposite the angle of the spout and the free end of the angular plate serving to regulate and afford a uniform height for the delivery of the picks into the horizontal part of the spout, substantially as and for the purposes set forth.

570,745. ORE-PULVERIZING MACHINE. GEORGE A. CLEVELAND, Providence, R. I., assignor of one-third to Edgar G. Durfee, same place. Filed Feb. 17, 1896. Serial No. 579,585. (No model.)

Claim.—1. In an ore-pulverizing machine, the combination of an outer cylindrical casing having inwardly-extending teeth or pins secured thereto, a revoluble inner cylinder mounted within and concentric with said outer cylinder having radially-extending teeth adapted to travel in circular paths and at the same time passing between and coacting with the said teeth of the other cylinder, an enlarged feeding chamber or head formed by the continuation of said cylinders, a mechanically-operated feeding device communicating with said feeding-chamber and a suitable hopper or reservoir, whereby the material or ore is conducted from the latter into the feeding-chamber, and a stationary head or member, communicating with the rear end of the cylinders, into which head the material is discharged, substantially as set forth.



2. In an ore-pulverizing machine, the combination of a pair of toothed cylinders mounted one within the other and capable of being revolved in opposite directions, a driving-pulley secured to the front end of the outer cylinder having teeth extending inwardly from its rim, and having the toothed portion of the inner cylinder prolonged to coact with the teeth of said pulley, substantially as described.

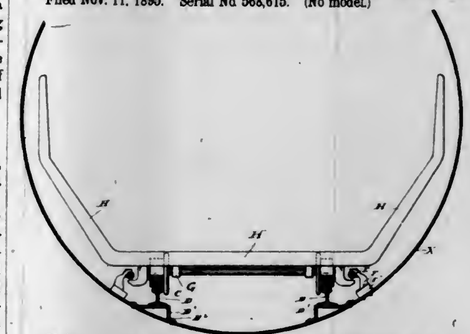
3. In an ore-pulverizing machine, the combination with the outer toothed cylinder and an apertured head member secured thereto provided with a central hub, of a toothed cylinder mounted within and arranged to coact with said outer cylinder, the said head member supporting the adjacent part of the inner cylinder and forming a bearing for the same, substantially as hereinbefore described.

4. The combination with the revoluble outer cylinder *a* and driving-head member *c* secured thereto provided with inwardly-extending teeth, of the oppositely-revoluble inner cylinder *b* provided with teeth adapted to coact with said teeth of the outer cylinder, and further provided with driver-teeth arranged at an angle to the axis of rotation, for the purpose specified.

5. In an ore-pulverizing machine, the combination with a suitably-arranged revoluble inner cylinder provided with teeth, of a toothed cylinder surrounding the said inner cylinder and forming an annular space between them, and having the front portion of said annular space enlarged to form an initial treating-chamber, and means for feeding the disintegrated ore from the front to the rear end of the machine while being acted upon by the teeth, substantially as set forth.

6. In an ore pulverizing machine, the combination with suitably-supported inner and outer revoluble toothed cylinders arranged to form an annular space between them, of a stationary hollow casting located between the cylinders and communicating with said annular space and having a discharge-outlet, and a revoluble clearer member mounted in said casting, substantially as hereinbefore described and for the purpose set forth.

570,746. CAR AND RETORT FOR WOOD-PRESERVING PLANTS. WILLIAM G. CURTIS and JOHN D. ISAACS, San Francisco, Cal. Filed Nov. 11, 1895. Serial No. 568,615. (No model.)



Claim.—1. In a wood-preserving plant, the combination of a retort provided with suitable tracks for the introduction of the loaded trucks, and having guard-rails mounted rigidly upon the sides of the retort and parallel to the said tracks, and hangers mounted on the

axles of the trucks and adapted to extend under the said guard-rails, substantially as described.

2. In a wood-preserving plant, the combination of a retort provided with suitable tracks for the introduction of loaded trucks, and having the guard-rails, E, rigidly attached to the sides of the retort and parallel to the said trucks, and trucks to run on said tracks and provided with hangers, A, having the extension, A', to extend under the said guard-rails, substantially as described, whereby the trucks are prevented from being floated off the said tracks.

570,747. STREET-CAR SIGN. EDWARD L. DWYER, Cambridge, Mass. Filed Apr. 24, 1896. Serial No. 588,900. (No model.)



Claim.—1. A sign for street-cars and the like, comprising a case having fixed upon its front a plurality of destination-signs thereon one above the other, a screen pivoted between said signs and adapted to cover one or the other, and means to move the screen to conceal one of the signs at a time, substantially as described.

2. In an apparatus of the class described, a case having a front of glass, upon which two destination-signs are fixed, one above the other, a screen pivoted centrally between and to conceal one or the other sign, means to operate the screen, and a translucent backing located behind the glass, substantially as described.

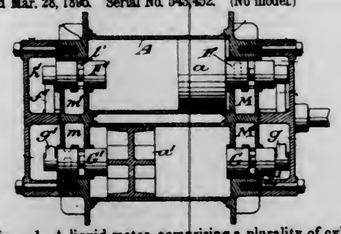
3. In an apparatus of the class described, a case having an open front, convex corner-pieces secured to the ends of the case and supporting a transparent sign-plate, upon which are indicated the route-terminals, a translucent backing of starched linen located behind the sign-plate, a screen horizontally pivoted in the corner-pieces, and means to swing the screen to cover one or other of the terminal-signs, substantially as described.

4. In an apparatus of the class described, a fixed sign-plate having the route-terminals displayed thereupon, a screen pivoted between said terminal-signs, to cover one or the other, a rigid arm on one of the journals of the screen, a flexible connection attached thereto, and a guide-arm for said connection, mounted loosely on the journal, whereby a pull on the flexible connection will raise the screen, substantially as described.

5. In an apparatus of the class described, a sign plate having the route-terminals displayed thereon, a pivotally-mounted screen to conceal one or other sign, a spirally-grooved stud, its seat, and a flexible connection attached to the screen and to the stud, whereby rotation of the latter into its seat will unwind said connection, and vice versa, to lower or raise the screen, substantially as described.

6. In an apparatus of the class described, a fixed sign-plate, a screen pivoted in front thereof, means to raise the screen, and a spring on the upper part of the sign-plate, to engage and throw the said screen over center when released, substantially as described.

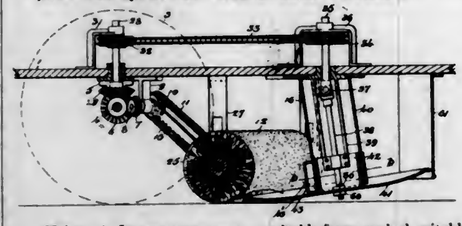
570,748. LIQUID-METER. WILLIAM M. FOWLER, Stamford, Conn. Filed Mar. 28, 1895. Serial No. 543,452. (No model.)



Claim.—1. A liquid-meter, comprising a plurality of cylinders, a piston for each cylinder free to move within said cylinder, valves at the opposite ends of each cylinder, an inlet-conduit in communication with the opposite ends of each cylinder, an outlet-conduit in communication with the opposite ends of each cylinder, a connection between the valves and the opposite end of one cylinder and extending along the inlet-conduit, a connection between the valves of a companion cylinder, the said connection extending along the outlet-conduit, the valves at the ends of each cylinder being under the control of the piston in that cylinder to admit liquid to the companion cylinder and means for recording the strokes of the pistons, substantially as set forth.

2. A liquid-meter comprising a plurality of cylinders each provided with a piston free to move within the cylinder, cylinder-heads provided with ports and passage-ways for interconnecting the ends of the cylinders, chambered caps exterior to the heads and having their interiors in communication with the said interconnecting passage-ways in the heads, an inlet-conduit in communication with said chambered caps and heads, an outlet-conduit in communication with said chambered caps and heads, valves at the opposite ends of one of the cylinders, a connection between said valves extending along the inlet-conduit, valves at the opposite ends of the companion cylinder, a connection between said valves extending along the outlet-conduit and a registering device engaged with one of said valve connections, substantially as set forth.

570,749. STREET-SWEEPER. OTTO GOSCHEL and BENJAMIN SUTTER, St. Louis, Mo., assignors of one-third to Henry Muselmann, same place. Filed Apr. 23, 1896. Serial No. 588,699. (No model.)



Claim.—1. In a street-sweeper, a suitable frame or bed, suitable driving-wheels, a series of revolving brooms or brushes, a rotating dirt-receiver depending from the bed and having a depositing-surface located in proximity to the brushes, suitable gearing between the several parts for operating the same simultaneously, and a scraping device coöperating with the depositing-surface of the receiver for removing the dirt therefrom, substantially as set forth.

2. In a street-sweeper, a suitable bed, driving-wheels for the same, a series of rotary brushes depending from the bed, an inclined rotatable dirt-receiver of dish-shaped construction located in proximity to the brushes and adapted to receive the dirt swept by the same, a scraping-arm coöperating with the receiving-surface of the dirt-receiver, a suitable conveyer for taking up the dirt from the receiver, and suitable gearing for operating the several parts, substantially as set forth.

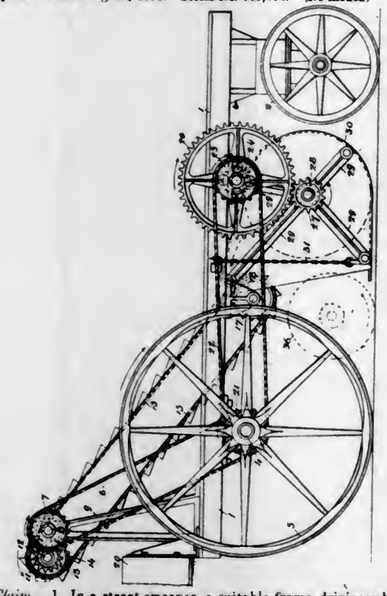
3. In a street-sweeper, a suitable bed or frame, driving-wheels for the same, a suitable rotating cup-shaped dirt-receiver, a scraping-arm for the same, a series of revolving brushes disposed about the periphery of the receiver for sweeping dirt thereinto, and suitable gearing between the several parts for operating the same simultaneously, substantially as set forth.

4. In a street-sweeper, a suitable bed or frame, a suitable cup-shaped revolving dirt-receiver, a series of revolving brooms or brushes disposed about the periphery of the same for sweeping dirt thereinto, a scraping-arm for the receiver, a bucket-conveyer having its lower end in proximity to the periphery of the receiver and the free end of the scraping-arm, a box or receptacle at the upper end of the conveyer, a hinged bottom for said box or receptacle, driving-wheels and suitable gearing for operating the several parts simultaneously, substantially as set forth.

5. In a street-sweeper, a suitable bed, a vertical operating-shaft mounted therein, an inclined shaft depending from said vertical shaft, a universal joint between the two shafts, an inclined frame depending from the bed and forming a bearing for the inclined shaft, a hollow tube or cylinder surrounding the frame, a circular dirt-receiver carried at the lower end of the inclined shaft, a tubular or hub portion forming a part of the receiver and confined within and guided by the inner walls of the lower end of the tube or cylinder, a scraping-arm for the receiver carried by the tube and extending radially along the receiving-surface of the receiver, one face of the arm being outwardly convex and being substantially tangent to the periphery of the tube, and a suitable series of revolving brushes in proximity to the periphery of the dirt receiver, substantially as set forth.

6. In a street sweeper, a bed plate or frame, driving-wheels for the same, a suitable inclined revolving dirt-receiver, a series of brushes in proximity thereto for sweeping dirt thereinto, means for removing the dirt from said receiver, suitable gearing for operating the several parts, and a stationary shield in front of the receiver, substantially as set forth.

570,750. STREET-SWEEPER. OTTO GOSCHEL and BENJAMIN SUTTER, St. Louis, Mo., assignors of two-thirds to Henry Muselmann, same place. Filed Aug. 24, 1896. Serial No. 603,737. (No model.)

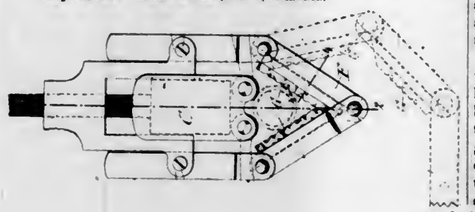


Claim.—1 In a street sweeper, a suitable frame, driving-wheels for the same, a dirt-receptacle depending from the frame into which the dirt from the street is adapted to be swept, a series of brushes mounted in the dirt-receptacle, an endless conveyer having the lower end located in proximity to the brushes, and intermediate gearing between the drive-wheels and the brushes and conveyer for operating the several parts, substantially as set forth.

2. In a street-sweeper, a suitable frame, driving-wheels for the same, an open dirt-receptacle depending from the frame into which the dirt from the street can be swept, said receptacle having a concave bottom, a series of brushes mounted in said receptacle and adapted to sweep along the said concave bottom, an endless conveyer having the lower end located in proximity to the brushes in the receptacle, and intermediate gearing between the drive-wheels and the brushes and conveyer for operating the several parts, substantially as set forth.

3. In a street-sweeper, a suitable frame, driving-wheels for the same, a dirt-receptacle depending from the bottom of the frame, into which the dirt from the surface passed over by the machine is adapted to be swept, said receptacle having a concave bottom, a shaft mounted between the opposite ends or walls of the receptacle, intermediate gearing between said shaft and the driving-wheels for imparting rotation in proper direction to said shaft, a series of radiating arms carried by the shaft within the receptacle, said arms being separated by sufficient spaces, brushes carried by the free ends of the arms, said brushes being adapted to sweep along the concave bottom of the receptacle, an endless conveyer having its lower end projecting a suitable distance into the receptacle and below the upper rear edge of the open end thereof, and in proximity to the series of rotating brushes confined within the receptacle, suitable gearing between the driving-wheels and the conveyer for imparting rotation to the latter in proper direction, the parts operating substantially as and for the purpose set forth.

570,751. PIPE-CUTTER. WILLIAM HAAS, New York, N. Y. Filed May 19, 1896. Serial No. 592,101. (No model.)

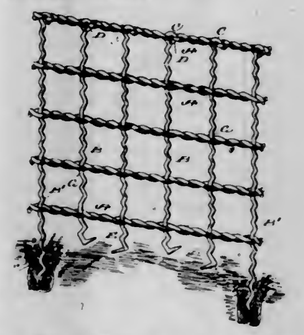


Claim.—1. A pipe-cutter, consisting of a U-shaped holder, a block guided in the same and provided with rollers at the outer end, a screw-threaded handle turning in the holder and bearing on the inner end of the block, side pieces attached alongside of the holder, jaws pivoted to each other and to the side pieces, and cutters inserted into said jaws and abutting at their lower ends, substantially as set forth.

2. A pipe-cutter, consisting of a U-shaped holder provided with a screw-threaded hole and outwardly-projecting ears, a block guided in said holder and provided with rollers, a screw-threaded handle passing through the hole of the holder and acting on the inner end of the block, side pieces arranged alongside of the holder, screw-bolts connecting said side pieces to the ears of the holder, recessed converging jaws pivoted to each other and to the side pieces and cutters inserted into the recesses of said jaws and provided with mitered ends abutting against each other, while the opposite ends abut against the pivot-pins connecting the jaws with the side pieces, substantially as set forth.

3. In a pipe-cutter, two cutting-knives arranged at an angle to each other, so as to abut at one end, and provided with undulating or corrugated cutting edges, substantially as set forth.

570,752. WIRE FENCE. JACOB HAISS, De Kalb, Ill., assignor to the Haish Manufacturing Company, same place. Filed Sept. 5, 1896. Serial No. 604,930. (No model.)



Claim.—1. In a wire fence, the combination of the cables A, and vertical stays B intertwisted therewith, and projected through the lower cable A and turned horizontally from the latter and perpendicularly thereto, substantially as shown and for the purpose described.

2. As an article of manufacture, a wire fence composed of horizontal cables A, and vertical stays B intersecting, and intertwisted with said cables, the upper ends of said stays projecting through the upper cable A and turned downward through an adjacent interval in the latter, and extended alternately in and out from the line of said fence, and suitably sharpened at their extremities, and said stays B being also projected through the lower cable A and extended horizontally in and out therefrom and having pointed extremities, and the interspersed longer stays B' adapted to be inserted at their lower ends in the earth, substantially as shown and for the purpose described.

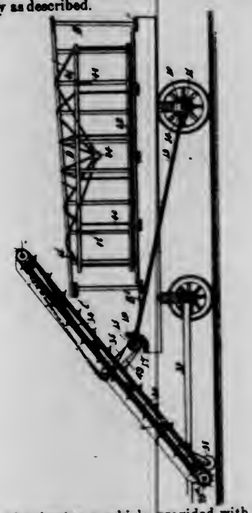
570,753. HAY-LOADER. JOHN T. HARE, Fresno, Cal. Filed Nov. 26, 1895. Serial No. 570,165. (No model.)

Claim.—1. In a hay-loader, a vehicle, an elevator located in front of the same, and constructed in hinged sections, one section being capable of folding on the other and both sections of folding on the vehicle, and driving mechanism for the elevator, and operated from the running-gear of the vehicle, substantially as and for the purpose specified.

2. A hay-loader, comprising a vehicle having a basket-body portion and a forwardly-extending platform, an elevator having two hingedly-connected sections, one section being hingedly mounted on the platform of the vehicle and the elevator being capable of folding so that its sections will lie parallel and the elevator when folded being also capable of movement to stand vertically from the platform, and means for moving the elevator, substantially as described.

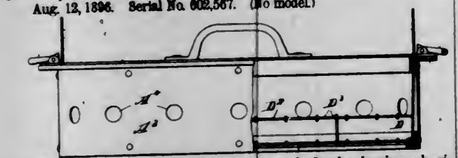
3. A hay-loader, consisting of a vehicle having a platform, an elevator-section having arms, a driven shaft on the platform of the vehicle to which shaft the arms are pivoted, a second elevator section hingedly connected to the inner end of the first section, a shaft extending transversely on the elevator and at its hinge, said shaft being geared with the shaft on the platform, a shaft at the outer end of each elevator-section, one of said shafts being connected with the shaft at the hinge of the elevator-sections, and a carrier-belt driven by the shafts at the ends of the elevator sections, substantially as described.

4. A hay-loader having an elevator, the elevator consisting in a frame having two hingedly-connected sections, one of which is pivotally mounted on the hay-loader, a carrier-belt for the elevator, and two plates fixed one at each side portion of one section of the elevator and adjacent to its hinged end, the plates being capable of engaging the carrier-belt and of holding the same in place as the elevator folds, substantially as described.



5. A hay-loader having a vehicle provided with a basket-body portion and a forwardly extended platform, a longitudinal shaft geared with an axle of the vehicle and projected to the platform, a transverse shaft journaled on the platform and geared with the longitudinal shaft, two arms pivoted to the transverse shaft, two elevator-frame sections pivotally connected with each other and one of which is rigidly connected to the arms, an elevator carried on the sections, and gearing connecting the elevator and the transverse shaft, substantially as described.

570,754. BROILER. ALFRED HERZ, New York, N. Y. Filed Aug. 12, 1896. Serial No. 602,567. (No model.)



Claim.—A broiler having a casing formed of a ring having a horizontal and vertical portion, the horizontal portion forming a flange adapted to rest on the top of the stove and the casing also having a perforated side wall secured to the vertical portion of the ring and carrying at its lower portion a second and internally-located ring with an inwardly-extending horizontal flange, a grate consisting in two sections pivotally connected with each other and in a handle pivoted to each end of the grate, the grate fitting snugly within the casing and resting on the flange of the internal ring and the handles of the grate extending upwardly through recesses in the first-named ring of the casing, and a cover for the casing, the cover fitting over and closing the upper side thereof and holding the handles of the grate in vertical position, substantially as described.

570,755. BURGLAR-ALARM. FREDERICK HESSEMER and COMLY S. SMITH, Philadelphia, Pa. Filed Mar. 26, 1896. Serial No. 584,934. (No model.)



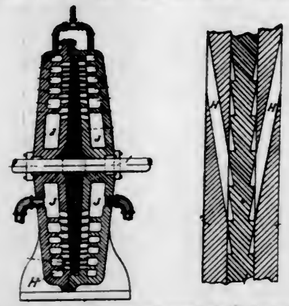
Claim.—1. In an alarm, an arm adapted to be secured to a door-knob, a plate pivoted to said arm, a double cam formed on the end of the arm, a spring-pressed detent slidably connected to the plate and having its heel end bearing against the cam and bell mechanism adapted to be locked by said detent.

2. In an alarm, an arm adapted to be secured to a door-knob, a plate pivoted to said arm, a double cam formed on the end of the arm, a pin secured to the plate, a detent slidable on the pin, a spring secured to the pin, adapted to press the detent into engagement with the cam, a guide secured to the plate and adapted to confine the movements of the detent and bell mechanism adapted to be governed by said detent, as and for the purpose described.

3. In an alarm, an arm adapted to be secured to a door-knob, a plate pivoted to said arm, a cam formed with said arm, a detent attached to said plate and having its heel end in engagement with said cam, and bell mechanism adapted to be locked by said detent, substantially as shown and described.

4. An alarm consisting of an arm adapted to be attached to the knob of a door in a vertical position above said knob, a plate pivoted to said arm, bell mechanism carried by said plate, a bell supported upon said plate, a detent engaging said bell mechanism to hold it against revolution when the plate is in its normal position, a cam formed upon the upper end of the arm adapted to engage with the heel end of said detent, a spring for holding said detent into engagement with said cam, whereby the center of gravity of said plate may be held over the arm and when disturbed the plate will swing to one side or the other and disengage said detent from the bell mechanism, as shown and described.

570,756. STEAM-TURBINE. ROBERT HEWSON, San Francisco, Cal. Filed Mar. 30, 1896. Serial No. 585,433. (No model.)



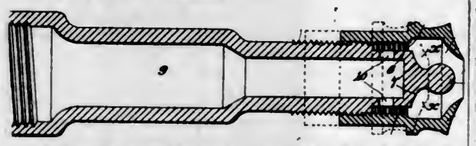
Claim.—1. A wheel mounted upon a shaft adapted to rotate upon its axis, U-shaped buckets formed concentrically upon the faces of the wheel, and having central dividing-webs, a casing having annular steam-chambers corresponding in position with the annular buckets in the wheel, and separated therefrom by a closed diaphragm against which the face of the wheel rotates, inclined passages made through said diaphragm from the steam-chamber and adapted to deliver steam into the outer leg of the U-shaped bucket, correspondingly-inclined discharge-passages connecting the inner legs of the buckets with the next interior steam-chambers whereby the steam delivered into the outer leg passes around the curvature with a reactionary force and is discharged from the inner leg.

2. A wheel mounted to rotate upon a central shaft, annular concentric series of U-shaped buckets formed in the face of the wheel, the legs of said buckets standing approximately parallel with intermediate webs and in the direction of rotation of the wheel, a casing against which the face of the wheel is adapted to rotate, an annular series of concentric chambers therein, corresponding in position with the rows of buckets in the wheel-face, inclined passages opening through the sides of the chambers and coinciding with the outer leg of each bucket in the wheel as they pass, other inclined passages through the sides of the chamber connecting with the inner leg of each series and discharging into the next interior chamber of the casing, whereby the steam acts successively and expansively upon each set of buckets from the outside toward the center of the wheel.

3. A wheel consisting of a disk mounted to rotate upon a central shaft, annular rows of U-shaped buckets formed upon opposite faces concentric with the axis and having central dividing-webs, each row increasing in size over the next exterior one, a stationary casing fitting against the opposite faces of the wheel having annular chambers upon opposite sides, said chambers corresponding with the annular rows of buckets upon the wheel, inclined passages formed in the faces of the chambers so as to discharge into the outer arms of the U-shaped buckets, corresponding passages coinciding with the inner arms of said buckets in each annular row, and discharging therefrom into the next interior chambers of the case successively, an exhaust chamber surrounding the shaft or hub of the apparatus into which the steam is finally delivered, and means for discharging it therefrom, a steam pipe or pipes connecting with the exterior chambers of the case whereby steam is admitted thereto under a high and equal pressure and thence passes successively through each row of buckets and chambers, upon opposite sides of the wheel simultaneously.

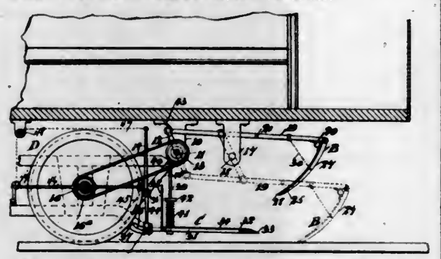
4. A disk mounted upon a shaft and revoluble between annular chambered casings which fit against its opposite faces and have steam-passages made through them, said disk being made thickest at the center, with its faces converging to the periphery, and having buckets coinciding with the steam-passages and increasing in size from the periphery toward the center.

570,757. HOSE-NOZZLE. CHARLES HIRSCH, Buffalo, N. Y., assignor of one-half to Samuel L. Altman, same place. Filed Jan. 2, 1896. Serial No. 574,065. (No model.)



Claim.—In a nozzle, the combination with a tubular body having a screw-threaded end portion and provided with a reduced integral extension beyond said screw-threaded portion, said extension having its outer end beveled or inclined inward at the edges forming a valve-seat, and a spherical lug projecting centrally from said end, of a nipple adjustable on the screw-threaded portion of the body and having an opening of greater diameter than the reduced extension whereby a space is formed for the passage of the water, the said space being connected by openings with the interior of the tubular body, the said nipple being formed at its outer end with an annular inwardly-projecting flange having a forward inclination and tapering toward its margin forming a central exit-opening for the water and through which the said spherical lug of the extension is adapted to pass, the inclined inner face of said flange being shaped to correspond with the valve-seat on the said reduced extension and adapted when the nipple is moved inward to engage the said valve-seat and cut off the flow of water, substantially as set forth.

570,758. CAR-FENDER. RUDOLPH C. HOYER, Memphis, Tenn. Filed Apr. 29, 1896. Serial No. 589,493. (No model.)



Claim.—1. In a fender attachment for cars, a lower fender having pivotal movement, and a second fender mounted to reciprocate to and from the lower fender, one fender being set in operation by the other, as and for the purpose specified.

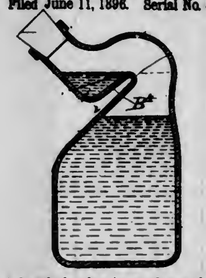
2. In a fender attachment for cars, a lower pivotal fender, an upper fender mounted to have rotary reciprocating movement to and from the lower pivoted fender, driving mechaniem for the upper fender, and means for setting the said driving mechanism in operation by the movement of the lower fender, as and for the purpose specified.

3. In a fender attachment for cars, a lower fender, a spring-support for the same, an upper fender mounted to rotarily reciprocate to and from the lower fender, a driving mechanism connecting the axle of the car with the upper fender, and a shifting device controlled by the movement of the lower fender and controlling the driving mechanism for the upper fender, as and for the purpose specified.

4. In a fender attachment for cars, a lower fender adapted to receive an object, an upper fender mounted to reciprocate to and from the lower fender, latches arranged to hold the upper fender in an upper inactive position, a driving device for the upper fender, and a trip mechanism operated from the lower fender and operating the aforesaid driving mechanism, as and for the purpose specified.

5. In a fender attachment for cars, the combination, with a fixed portion of the running-gear extending forwardly of the wheels of the truck, a receiving-fender having sliding movement in the projection of the running-gear, hangers pivoted to a support and connected with the aforesaid fender, a second fender located above the lower or sliding fender, the upper fender comprising arms mounted to laterally reciprocate, and a body portion carried by the arms and curved rearwardly and downwardly in direction of the receiving-fender, the upper fender having a rake-like action, substantially as described, a latch device for the said upper fender, a driving connection between the upper fender and an axle of the car, and a shifting device operated by the movement of the lower or receiving fender and operating to place the driving mechanism in operation, as and for the purpose specified.

570,759. DOSE-MEASURING BOTTLE. ALFRED A. LAW, New York, N. Y. Filed June 11, 1896. Serial No. 595,176. (No model.)



Claim.—1. A bottle having its neck provided between its mouth and its juncture with the bottle-body with a dose-measuring pocket, and an inlet connecting said pocket with the body of the bottle, said pocket being depressed below the level of said inlet, whereby the dose will be retained in said pocket when the bottle is in normal upright position, and the mouth being so arranged relatively to said pocket that the dose may be discharged from the pocket before the contents of the body are discharged into the pocket, substantially as shown and described.

2. A bottle having a neck provided with an inner bend extending downwardly toward the free end of the neck, and an outer bend extending upwardly toward the free end of the neck, said bends being at right angles to each other and at a considerable angle to the longitudinal axis of the bottle and forming a pocket for the retention of the liquid when the bottle is in upright position, substantially as described.

3. A bottle having the upper end wall inclined toward one side of the bottle, an opening at the apex of this incline to which the neck is connected and a neck which is bent downwardly parallel to the incline, and then upwardly at right angles to the incline, substantially as described.

570,760. REDUCING-DIE FOR CARTRIDGE-CASES. WILLIAM MASON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed June 15, 1896. Serial No. 595,580. (No model.)



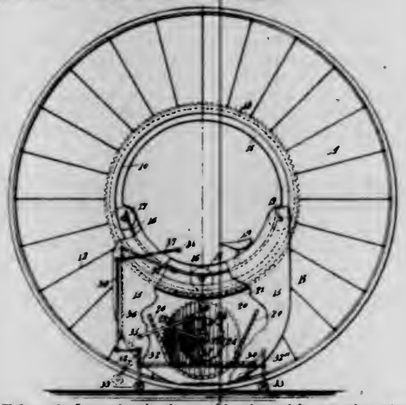
Claim.—1. A die for reducing cartridge-cases to tapering form, consisting of a series of steel rings hardened separately built up one above another the lower edge of one resting on the upper edge of the one below and secured together, to form a continuous tapering tube, substantially as described.

2. A die for reducing cartridge-cases to tapering form, consisting of a series of steel rings hardened separately built up one above another, the lower edge of one resting on the upper edge of the one below to form a continuous tapering tube, and surrounded by a tubular casing, substantially as described.

3. A reducing-die for cartridge-cases consisting of a series of hardened steel rings built up one above another; a tubular casing surrounding said rings; and nuts at both ends of said casing, adapted to be secured to said casing and hold said rings in contact with each other, substantially as described.

4. A reducing-die for cartridge-cases consisting of a series of hardened steel rings built up one above another, the uppermost and lowermost rings being provided with annular flanges; a tubular casing surrounding said rings, and adapted to be connected to the press; and nuts hollowed axially, adapted to be secured to the ends of said casing, surrounding said uppermost and lowermost rings and bearing against the flanges thereof, substantially as described.

570,761. VELOCIPEDE. AUGUST MILLER, Lindsborg, Kans. Filed Nov. 9, 1895. Serial No. 568,478. (No model.)



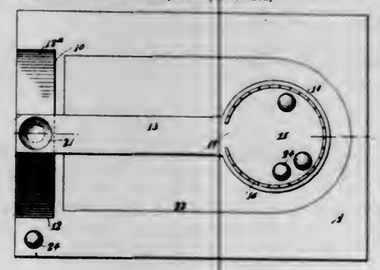
Claim.—1. In a unicycle, the combination, with a traction-wheel, the said wheel being provided with a ring-hub and a toothed surface on the hub, of a frame having rolling connection with the hub of the wheel, being supported thereby, pedal-shafts journaled in the said frame, gears mounted on the said pedal-shafts, having belt connection with the teeth on the hub of the traction-wheel, ratchets connected with the said gears, crank-arms attached to the said pedal-shafts, dogs engaging with the ratchets, being moved by the crank-arms in one direction and spring-controlled in the opposite direction, and levers pivoted on the frame, each lever being provided with a pedal and having pivotal connection with an arm of the pedal-shaft, as and for the purpose set forth.

2. In a unicycle, the combination, with the traction-wheel and a frame supported thereby, of arms pivoted to the front and rear of said frame at each side of the traction-wheel, being of sufficient length to extend downward below the tire of the wheel, each arm being provided at its lower end with a small wheel, and a connecting-bar uniting the two arms, a hand-lever fulcrumed upon the forward portion of the frame, one end whereof extends within the hub section of the traction-wheel, and links pivotally connected at angles to each other, one of the links being pivotally attached to the hand-lever and the other to one of the wheel-carrying arms, as and for the purpose set forth.

3. In a unicycle, the combination, with the traction-wheel thereof, having paddle-like spokes, of a pontoon provided with a central channel to receive the said traction-wheel, and a locking connection between the pontoon at each side of its channel and a portion of the frame of the unicycle in which the traction-wheel revolves, said connection consisting of lips extended from the frame and keepers on the pontoon-sections to engage therewith, as and for the purpose set forth.

4. In a unicycle, the combination, with the traction wheel thereof, and a frame supported by the said wheel, being adapted to contain the driving mechanism of the same, the frame being provided with lips extending outwardly therefrom, of a pontoon constructed in two water-tight sections, the inner wall of each section being adapted for engagement with a portion of the said frame of the unicycle, the wheel entering the space between the two pontoon-sections, keepers located upon the pontoon-sections, adapted to receive the lips of the unicycle-frame, and means, substantially as described, for connecting the pontoon-sections, as and for the purpose set forth.

570,762. PUZZLE. WILLIAM F. MOORE, Plainfield, N. J. Filed Dec. 26, 1895. Serial No. 573,406. (No model.)



Claim.—1. A puzzle, the same consisting of a box-like structure, an inclosure on the base thereof, a bridge extending from and communicating with an opening in the inclosure, approaches at right angles to the bridge and leading thereto, a depression in the bridge between the approaches, and rolling objects adapted to travel over the approaches, enter the depression and travel along the bridge, substantially as and for the purpose specified.

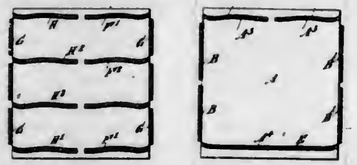
2. A puzzle, the same consisting of a box-like structure, an inclosure on the base thereof and representing a castle, a bridge extending from and connected with an opening in the inclosure, inclined planes leading from the base to opposite sides of the bridge and representing approaches, the bridge being provided with a depression or cavity between the said inclined planes, and rolling objects adapted to be carried up the inclined planes along the bridge to the inclosure, substantially as shown and described.

3. In a puzzle, the combination with a box-like structure, of a block secured transversely to one end of the base of the structure and having beveled or inclined ends, a second block arranged longitudinally of the base and having one end secured to the first block with its upper surface flush therewith and provided with a cavity therein, the other end of the said block being provided with a circular enlargement, the portion of the said block between the first block and its enlargement representing a bridge, and a circular wall on the said circular enlargement and having an opening at one side, the said enlargement and wall representing a castle, substantially as described.

4. A puzzle, consisting of a box-like structure, a block arranged longitudinally of the base of the structure and having an enlargement at one end, the portion of the block between the enlargement and its other end representing a bridge, a wall on the enlargement and having an opening opposite that portion of the block representing a bridge, the enlargement of the block and wall representing a castle, a block arranged transversely of the base and having beveled or inclined ends forming approaches leading to opposite sides of the bridge, and rolling objects adapted to travel up the approaches and along the bridge to and through the opening in the said wall, substantially as described.

5. A puzzle, consisting of a base, a cover resting on the base a block arranged longitudinally of the base and having a circular enlargement at one end and provided with a concavity in the upper surface of its other end, the portion of the block between its ends representing a bridge, a circular wall having an opening in its side opposite the bridge, the wall and enlargement representing a castle, a second block arranged transversely of the base and having beveled or inclined ends, to form approaches, and a recess in its upper surface to receive the end of the longitudinal block, and balls on the base and adapted to travel over the approaches and along the bridge to and through the opening of the said wall, substantially as herein shown and described.

570,763. FRUIT-BOX. EBEN R. MORRILL, Truckee, Cal. Filed Nov. 1, 1895. Serial No. 567,597. (No model.)



Claim.—1. A fruit-box, comprising ends formed on their inner faces with undulating grooves, sides rigidly attached to the said ends, and straight tops and bottoms adapted to be pushed in and drawn out of said undulating grooves, substantially as shown and described.

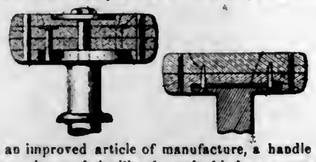
2. A fruit-box, comprising ends formed on their inner faces at top and bottom with a series of undulating grooves, sides made in pieces and rigidly attached to said ends, tops and bottoms made in pieces and adapted to engage said undulating top and bottom grooves, and partitions adapted to engage the undulating grooves in said ends between the top and bottom grooves, substantially as shown and described.

3. A fruit-box, comprising ends formed at their inner faces with undulating grooves extending from one end to the other, sides rigidly connected with said ends, and tops and bottoms engaging said undulating grooves, substantially as shown and described.

4. A fruit-box, comprising ends formed on their inner faces with undulating grooves, sides connecting the ends together, and a thin strip having its end portions removably held in the undulating grooves of the ends of the box, substantially as set forth.

570,764. HANDLE FOR STEAM-VALVES. ROBERT MCKEEVER, Alburtis, Pa. Filed Feb. 3, 1896. Serial No. 577,925. (No model.)

Claim.—1. As an improved article of manufacture, a handle for gage-cocks, steam-valves and the like, formed of indurate material in layers secured together, and provided with rivets held within the body of the handle and extending through one side thereof and having a socket to receive a plate on a valve-stem; substantially as described.

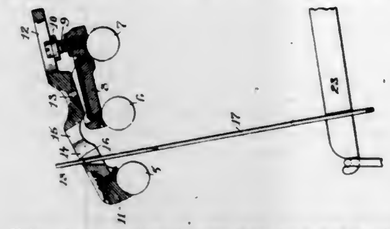


2. As an improved article of manufacture, a handle for gage-cocks, steam-valves and the like, formed of indurate material in layers secured together, and having a socket to receive a plate on a valve-stem, and rivets held within the body of the handle extending into said socket and a layer of asbestos interposed between said plate and the bottom wall of the socket; substantially as described.

3. As an improved article of manufacture, a handle for gage-cocks, valve stems and the like, formed of layers of leather held together by pins, and having means held within the body of the handle for connecting the same to a valve-stem and having a socket to receive a plate on a valve stem; substantially as described.

4. As an improved article of manufacture, a handle for gage-cocks, valve-stems and the like, formed of layers of leather held together by pins, and having a socket to receive a plate on the valve-stem, and rivets having their heads held within the body of the handle, and projecting into said socket for attachment of the plate of the valve-stem; substantially as described.

570,765. TOP-ROLL SADDLE FOR SPINNING-MACHINES. HENRY A. OWEN, Whitinsville, Mass., assignor to the Whitin Machine Works, same place. Filed Feb. 26, 1896. Serial No. 580,866. (No model.)



Claim.—1. A top-roll saddle, comprising a lower member adapted to bear on the intermediate and rear top rolls, a post adjustably mounted at the rear portion thereof, having a supporting-flange and an engaging portion above the flange, and an upper member adapted to bear on the front roll and having a slotted extension adapted to rest on the supporting-flange of the post.

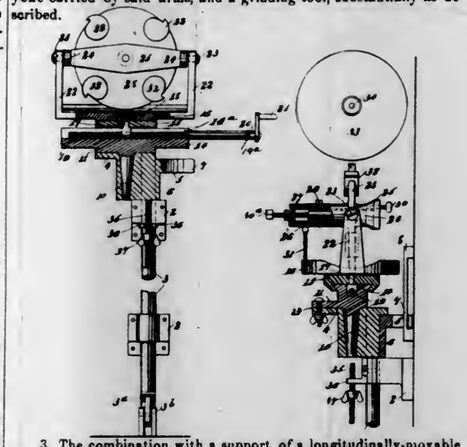
2. The combination with the saddle 8, and the post 9 adjustably secured in the rear portion of the saddle and having the flange 9 and a portion of reduced diameter above the flange, of the upper saddle member 11 having an extension furnished with the slot 12 adapted to receive the upper reduced end of the post 9 while said extension is supported by the flange 10.

3. The combination with the saddle member 11 having the opening 14 with its inclined front wall, the slot 15 having the rearwardly-inclined end wall and an open end to which the side walls of the opening 14 contract, and the depressions 16 in the upper surface of the member, of the stirrup 17 having the head 18, the neck 20 and the arm 21, the head 18 having the shoulders 19 19 and an outline above the shoulders which is rectangular at one side and inwardly curving at the opposite side, as herein shown and described.

570,766. GRINDING-MACHINE. FRANK PARSONS, Montgomery, Miss. Filed Nov. 27, 1895. Serial No. 570,270. (No model.)

Claim.—1. The combination with a support, of a longitudinally-movable shaft, a treadle connected with the lower end of the shaft, a table carried on the shaft, a guide-block axially adjustable on the table, a carrier sliding on the guide-block, a yoke supported on the carrier, and a grinding-tool, substantially as described.

2. The combination with a support having alined bearings, of a longitudinally-movable shaft in the bearings, a treadle connected to the shaft, a table carried on the shaft, an arm fixed to the table, a guide on the support with which the arm is slidably connected, a guide-block axially adjustable on the table, a slide movable on the guide-block, a screw carried by the guide-block and connected with the slide, a carrier fixed to the slide-arms rising from the carrier, a yoke carried by said arms, and a grinding-tool, substantially as described.



3. The combination with a support, of a longitudinally-movable shaft, a treadle connected with the shaft, a table carried by the shaft, a carrier supported on the table, arms rising from the carrier, a yoke pivotally mounted in the arms, a mandrel on the yoke, a screw supported on the carrier and capable of adjusting the yoke, and a grinding-tool, substantially as described.

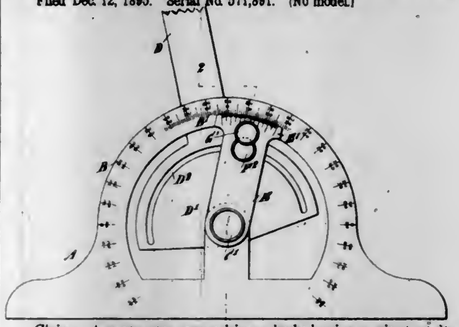
4. The combination with a support having alined bearings, of a shaft longitudinally movable in the bearings, a treadle, a carrier supported on the shaft, a grinding tool, a screw moving with the shaft and having a nut thereon, and two lugs rigid with the support and adapted to be engaged by the nut, substantially as described.

5. The combination of a longitudinally-movable shaft, means for moving the shaft, a carrier supported on the shaft, arms rising from the carrier, a yoke rockably held on the arms and a grinding-tool, substantially as described.

6. The combination with a support, of a carrier, a yoke pivotally mounted on said carrier, a mandrel carried by the yoke, and a screw supported on the carrier and capable of adjusting the yoke, substantially as described.

7. The combination with a support, of a carrier, a yoke pivotally mounted on said carrier, and a screw supported on the carrier and capable of adjusting the yoke, substantially as described.

570,767. PROTRACTOR. WALTER W. PENNINGTON, Butte, Mont. Filed Dec. 12, 1895. Serial No. 571,891. (No model.)

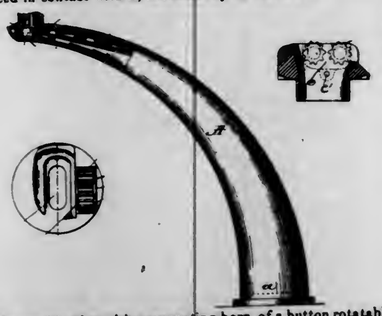


Claim.—A protractor, comprising a body having a pivot at its center, a blade carrying said pivot and provided with an enlarged end having a segmental slot, a vernier-arm fulcrumed on the said pivot, means for clamping the said vernier-arm to the said blade, and means for fastening the vernier-arm to the said body, substantially as shown and described.

570,768. MACHINE FOR ATTACHING UPPERS TO SOLES OF BOOTS OR SHOES. JOSEPH E. PROCTOR, Marlborough, Mass., assignor of five-eighths to Simon Herbert Howe, same place. Filed Apr. 17, 1896. Serial No. 587,956. (No model.)

Claim.—1. The combination with a supporting-horn, of a button rotatably mounted therein and provided with a freely-adjustable sup-

port capable of adapting itself to inequalities or angularities in the stock placed in contact with it, substantially as described.



2. The combination with a supporting-horn, of a button rotatably mounted therein and provided with a swingingly-mounted work-support, substantially as described.

3. The combination with a supporting-horn, of a button rotatably mounted therein and provided with a freely-adjustable work-support and means to rotate said button and its work-support in and with relation to said horn, substantially as described.

4. The combination with a supporting-horn, of a button rotatably mounted therein and provided with one or more rolling devices, substantially as described.

5. The combination with a supporting-horn, of a button rotatably mounted therein and provided with one or more rolling devices freely adjustable in said button, substantially as described.

6. The combination with a supporting-horn, of a button rotatably mounted therein and provided with one or more rolling devices and a swinging support for the latter on said button, substantially as described.

7. The combination with a supporting-horn, of a button rotatably mounted therein and provided with one or more rolling devices having roughened surfaces to insure rolling of the same by the stock passed in contact therewith and thereby prevent crinkling of the said stock, substantially as described.

8. The combination with a supporting-horn, of a button rotatably mounted therein and provided with one or more rolling devices having longitudinal corrugations in their respective surfaces, substantially as described.

9. The combination with a supporting-horn, of a button rotatably mounted therein, having a working aperture, means to rotate said button in said horn, and one or more rolling devices journaled in said button adjacent said aperture, substantially as described.

570,769. CAST-METAL ARTICLE. JOHN C. REED, Allegheny, Pa. Filed Nov. 29, 1895. Serial No. 570,563. (No model.)



Claim.—1. A cast-metal article having a hollow rim integral with the body of the article, forming in cross-section a completely-closed tube.

2. An article of cast-metal ware having a cast rim and a tube around which said rim is cast.

3. An article of cast-metal ware having a cast rim and an included hollow lining.

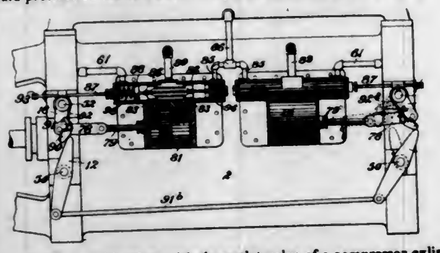
4. An article of cast metal having a rim cast integral with the article and a hollow body, tube or other lining included in said rim and constituting a part of the completed article.

5. An article of cast metal having a rim cast integral with the article and a hollow body, tube or other suitable lining embraced by said rim, substantially as described.

570,770. FLUID-COMPRESSOR. FRANCIS M. RITER, Pittsburg, Pa. Filed Sept. 7, 1895. Renewed Oct. 13, 1896. Serial No. 608,743. (No model.)

Claim.—1. The combination, with a compressor-cylinder, of a governing device for the control of the release of fluid from the cylinder, and a direct connection to the reciprocating parts of the compressor for controlling the closure of the outlet-valve, substantially as set forth.

2. The combination with a compressor-cylinder, in a governing device for controlling the release of fluid from the cylinder, of a chamber, communications from the chamber to the interior of the compressor-cylinder and to the outlet-passage, or reservoir, of the compressor, a piston in the chamber which is exposed on opposite sides to the pressures in the cylinder and in the outlet-passage, or reservoir, a piston connected to the outlet-valve, and a valve in the chamber connected to the first-mentioned piston and controlling the action of fluid pressure on the last-mentioned piston, substantially as set forth.



3. The combination, with the outlet-valve of a compressor-cylinder, of a cylinder, a valve-operating piston in the cylinder which is connected to the outlet-valve and which is adapted by its movement to open and close the outlet-valve, a connected piston and governing-valve located in a chamber which communicates with the interior of the compressor cylinder and with the outlet passage or reservoir of the compressor and which controls the distribution of fluid to the cylinder of the valve-operating piston, and direct connections from the governing-valve and its connected piston whereby they may be operated by a reciprocating part of the compressor to close the outlet-valve, substantially as set forth.

4. The combination, with a compressor-cylinder, of an outlet-valve, a governing device operated by the opposing pressures in the cylinder and outlet-passage or reservoir of the compressor, for controlling the opening of the outlet-valve, and a connection from the governing device which is adapted to be operated by the piston of the compressor, substantially as set forth.

5. In an elastic-fluid compressor, the combination, with a positively-operated valve, of a piston for actuating the valve, a governing-piston subjected to opposing pressures from within and without the compressing-cylinder, and controlling the distribution of fluid by which the valve-actuating piston is operated, and an elastic cushioning device offering a yielding resistance to movement of the governing-piston, substantially as set forth.

6. In an elastic-fluid compressor, the combination, with a positively-operated valve, of a piston for actuating the valve, a governing-piston subjected to opposing pressures from within and without the compressing-cylinder, and controlling the distribution of fluid by which the valve-actuating piston is operated, and springs offering a yielding resistance to movement of the governing-piston, substantially as set forth.

7. In an elastic fluid compressor, the combination, with the outlet-valves of the compressing-cylinder, of an independent valve-operating mechanism for opening and closing the outlet-valves, and inlet-valves at opposite ends of the compressing-cylinder which are simultaneously operated by the independent valve-operating mechanism, substantially as set forth.

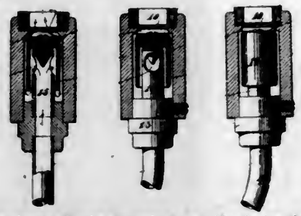
8. In an elastic-fluid compressor, the combination, with an outlet-valve of the compressing-cylinder, of an independent valve-operating mechanism for closing the outlet-valve and simultaneously operating the inlet-valve at the same end of the cylinder, substantially as set forth.

9. In an elastic-fluid compressor, the combination, with an outlet-valve of the compressing-cylinder, of a valve-operating mechanism connected to the outlet-valve, but disconnected from the inlet-valves, connections between the inlet-valves at opposite ends of the compressing-cylinder, and means whereby the valve-operating mechanism closes the outlet-valve and opens the inlet-valve at one end of the compressing cylinder, and by the same movement closes the inlet-valve at the opposite end of the cylinder, substantially as set forth.

10. In an elastic-fluid compressor, the combination, with the outlet-valves at opposite ends of the compressing-cylinder, of separate valve-operating mechanisms connected to each of the outlet-valves, connected inlet-valves at opposite ends of the compressing-cylinder which are disconnected from the valve-operating mechanisms, and means whereby each of the separate valve-operating mechanisms alternately operates both of the inlet-valves, substantially as set forth.

570,771. HEATING-BURNER. HERMAN ROSENTHAL, New York, and LUDWIG KRAMER, Brooklyn, N. Y.; said Kramer assignor to said Rosenthal. Filed Apr. 28, 1896. Serial No. 589,423. (No model.)

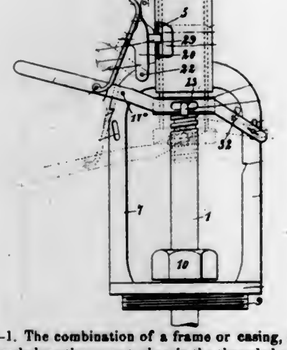
Claim.—1. A gas-burner having a casing, one end of which serves for the discharge of the gas, an orificed plug fitting in the remaining end, a tube held by the plug and communicating with the orifice, the tube being located within the casing and extending upwardly to a point near the discharge end thereof, the tube also having an orifice near its upper end, a plug-valve fitting within the upper end of the tube and capable of regulating the discharge from the orifice thereof, and a cylinder located within the casing and embracing the tube, the upper end of the cylinder being secured to the upper end of the tube and the cylinder inclosing the orificed portion of the tube, substantially as described.



2. A gas-burner having a casing, an orificed plug fitting in one end of the casing, a tube communicating with the orifice of the plug and projecting into the casing, the tube having its inner end closed and having an orifice in its side adjacent to said closed end, and a cylinder within the casing, the cylinder having its upper end closed and connected to the closed end of the tube, the lower end of the cylinder being open to communication with the interior of the casing and the cylinder extending below the orifice in the tube, substantially as described.

3. A gas-burner having a casing, a tube held within the casing and communicating at one end with a gas supply, a plug fitting in and closing the opposite end of the tube, the tube having an orifice at its side and at a point adjacent to the plug and a cylinder within the casing, the cylinder having its upper end closed and connected to the upper end of the tube, the lower end of the cylinder being open and the cylinder receiving the gas from the orifice of the tube and conducting the gas downward to the interior of the casing, substantially as described.

570,772. VALVE. SIDNEY W. SAMPSON, Hudson, Mass. Filed Mar. 10, 1896. Serial No. 582,516. (No model.)



Claim.—1. The combination of a frame or casing, a valve-stem having a threaded portion, a nut wherein the threaded portion of the valve-stem screws, and a lever carrying the nut and arranged when moved, to move the nut in the direction of the axis of the valve-stem, substantially as set forth.

2. The combination of a frame or casing, a valve-stem having a threaded portion, a nut in which the threaded portion of the valve-stem is arranged to screw, a lever pivoted on the frame of the casing and connected with the nut, and means to hold the lever adjustably in position, said lever carrying the nut and being arranged when moved to move the nut in the direction of the axis of the valve-stem, substantially as set forth.

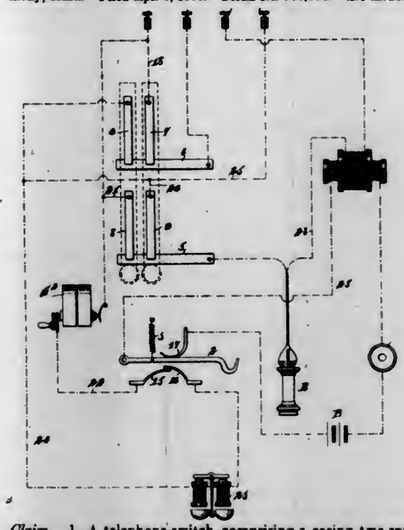
3. The combination of a frame or casing, a valve-stem having a threaded portion, a nut in which the threaded portion of the valve-stem is arranged to screw, a bearing on the frame or casing in which the nut is movable longitudinally, a dog having engagement with the nut and arranged to hold the same against longitudinal movement, and a lever operatively connected with the dog and arranged when moved, to move the same out of engagement with the nut, to permit the nut to be moved longitudinally in its bearing, substantially as set forth.

4. The combination of a frame or casing, a valve-stem having a threaded portion, a nut in which the threaded portion of the valve-stem is arranged to screw, a bearing on the frame or casing in which the nut is longitudinally movable, a dog having engagement with the nut to hold the same against longitudinal movement, and a lever connected to and arranged to move the dog out of engagement with the nut, said lever being also connected to the nut and arranged to move the same longitudinally when released from said dog, substantially as set forth.

5. The combination of a frame or casing, a valve-stem having a screw-threaded portion, a nut in which the threaded portion of the valve-stem is arranged to screw, a bearing on the frame or casing in which the nut is arranged to move longitudinally, a dog arranged to engage the nut to hold the same against movement, a pivoted lever connected to and arranged to move the nut longitudinally, and a keeper carried by the lever arranged to engage said dog and move the same out of engagement with the keeper, substantially as set forth.

6. The combination of a frame or casing having frame-bars, a valve-stem arranged between the frame-bars and having a threaded portion, a nut in which the threaded portion of the valve-stem is arranged to screw, a bearing carried on the frame or casing between the frame-bars, in which bearing the nut is longitudinally guided and movable, a lever having forks pivotally connected with one of the frame-bars and embracing and pivotally connected to the lower end of said nut, and means for securing said lever adjustably in position, substantially as set forth.

570,773. TELEPHONE-SWITCH. CHRISTIAN N. SANDBECK, Harmony, Minn. Filed Apr. 8, 1896. Serial No. 586,651. (No model.)



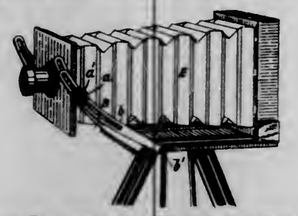
Claim.—1. A telephone switch, comprising a casing, two spring-contacts arranged therein, contact-fingers adapted for engagement with one of the spring-contacts, plates movable to engage the other of said spring-contacts and to move the contact fingers to close a circuit, and electrical connections, substantially as specified.

2. A telephone-switch, comprising a casing, a pivoted lever therein, adapted to close electric connections, contact-springs extended transversely in the box, contact fingers adapted for engagement with one of said contact-springs, spring-plates in the casing adapted for engagement with the other of said contact-springs, and to force the fingers into contact with their contact-spring, and pins extended outward from said spring-plates.

3. A telephone-switch, comprising a casing, a lever pivoted therein, a spring-finger having connection with a line-wire and with a bell-magnet, another spring-finger having connection with said bell-magnet, a contact-spring having connection with a ground-wire and adapted to be engaged by the spring-fingers, a spring-plate having connection with the bell-magnet and with the line-wire mentioned, and other spring-plates having connection with another line wire and with the bell-magnet, a contact-spring with which said plates are

adapted to engage, an induction-coil, having connection with the last-named contact-spring, with the pivoted lever and with a ground-wire, and a receiver and transmitter located in the circuit, substantially as specified.

570,774. PHOTOGRAPHIC CAMERA. FREDERICK H. SANDERSON, Cambridge, England. Filed Oct. 22, 1895. Serial No. 566,481. (No model.)

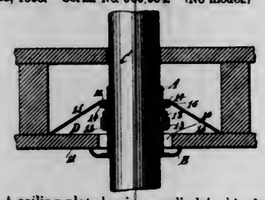


Claim.—1. The combination, with a camera-front having side gudgeons, of a pair of swinging arms or cantalivers each formed of two longitudinally-slotted members whose ends are respectively pivoted at a distance apart to a suitable support, the two slotted members crossing each other and the corresponding gudgeon passing through the slots of both members at their crossing-point said gudgeon having pivotal engagement with both of the slotted members and being secured thereto by a binding-nut whereby the camera-front is supported wholly by the said arms and can be adjusted in the fore-and-aft and up-and-down directions and likewise about a horizontal axis, substantially as specified.

2. The combination with a fixed camera-bed, and a camera thereon, of two pairs of longitudinally-slotted arms, one pair on each side of the camera, each pair of arms being pivoted to the front of the camera-bed at a distance apart, and clamping-pivots for adjustably securing the arms to the camera-front, said pivots being secured to opposite sides of the camera-front and each projecting through the slots of a pair of the arms, whereby the camera-front will be supported wholly by the said arms, can be adjusted up or down, and extended beyond the camera-bed, substantially as described.

3. The combination with a fixed camera-bed, and a camera thereon, of two pairs of longitudinally-slotted and curved arms, one pair on each side of the camera, each pair of arms being pivoted to the front of the camera-bed at a distance apart, screw-threaded pivots on opposite sides of the camera-front and each projecting through the slots of a pair of the said arms, and nuts on the said pivots, substantially as herein shown and described.

570,775. CEILING-PLATE. JOHN SCRINGEOUR, Jr., Pittston, Pa. Filed Nov. 23, 1895. Serial No. 569,954. (No model.)



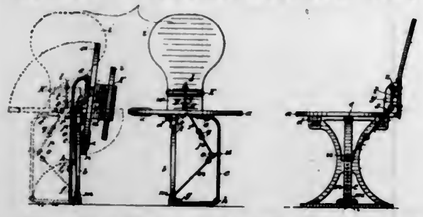
Claim.—1. A ceiling-plate having a cylindrical body portion with an outwardly-projecting flange at its lower end, and a spring-arm secured to the body portion and capable of movement from the flange upwardly to a position approximately parallel with the body portion, the tendency of the spring-arm being to engagement with the flange, substantially as described.

2. A ceiling-plate having a cylindrical body portion and a spring-arm secured to the body portion, the spring-arm being capable of movement above and below the point of its attachment to the body portion and of extending approximately parallel with the body portion when moved above the said point of attachment, substantially as described.

3. A ceiling-plate having a cylindrical body portion having at its lower end a flange, the body portion having a loop formed therein, a spring-arm having one terminal secured in the loop, the spring-arm being passed upwardly from the loop and formed with a coil and thence extended from said coil to form a ceiling-engaging portion, said ceiling-engaging portion being capable of movement from the flange upwardly to a point approximately parallel with the body portion, the tendency of the ceiling-engaging portion being to the flange, substantially as described.

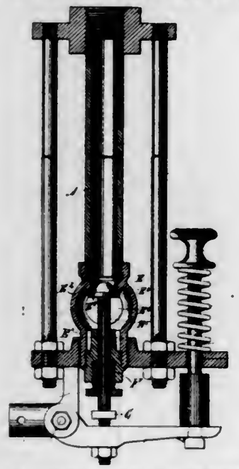
4. A ceiling-plate formed of two semicylindrical sections, one section having a tongue and the second section having a plate with which the tongue is capable of locking, the sections having a circular flange at their lower portion, and a spring-arm secured to each section, the spring-arms having a tendency to the flange and being capable of moving upwardly to a position approximately parallel with the body portion, substantially as described.

570,776. FOLDING CHAIR. WILHELMINE SEMLER, Vienna, Austria-Hungary. Filed Jan. 14, 1893. Serial No. 458,426. (No model.)



Claim.—In a folding chair, a fixed leg, a seat hinged to the upper end of said leg to fold sidewise thereon, a link hinged to the lower end of said fixed leg, a movable leg hinged respectively to said link and seat, a projection secured to the seat, a back hinged to said projection, eyes attached to the projection and movable leg and a chain passing through the eyes and secured at its opposite ends to the fixed leg and back.

570,777. EXPANSION STEAM-TRAP. HUBERT F. SMURTHWAITE, Coatesville, Pa. Filed May 7, 1896. Serial No. 590,596. (No model.)

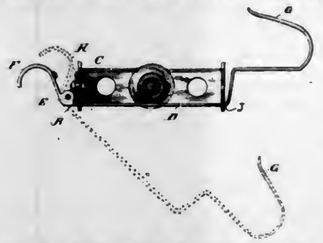


Claim.—1. An expansion steam-trap comprising a frame, an expansion-tube secured at one end in the said frame and having connection at said end with the steam supply, a discharge-valve secured on the other free end of the said tube and provided with a valve having its stem fitted to slide in a stuffing box attached to the valve-body, the latter being fitted to slide in the said frame, a lever fulcrumed on the said frame, a bolt held on the free end of the said lever, and a spring engaging the said bolt to give the desired tension to the bolt, lever and valve, substantially as shown and described.

2. An expansion steam-trap comprising a frame, an expansion-tube secured at one end in the said frame and having connection at said end with the steam supply, a discharge-valve secured on the other free end of the said tube and provided with a valve having its stem fitted to slide in a stuffing-box attached to the valve-body, the latter being fitted to slide in the said frame, a lever fulcrumed on the said frame, a bolt held on the free end of the said lever, and a spring engaging the said bolt to give the desired tension to the bolt, lever and valve, the tension of the spring being regulated by a nut on the said bolt, substantially as shown and described.

3. An expansion steam-trap comprising a frame, an expansion-tube secured at one end in the said frame and having connection at said end with the steam supply, a discharge-valve secured on the other free end of the said tube and provided with a valve having its stem fitted to slide in a stuffing-box attached to the valve-body, the latter being fitted to slide in the said frame, a lever fulcrumed on the said frame, a bolt held on the free end of the said lever, a spring engaging the said bolt to give the desired tension to the bolt, lever and valve, and a stop-collar held on the said bolt intermediate of the said lever and the said frame, to limit the swinging motion of the lever, substantially as shown and described.

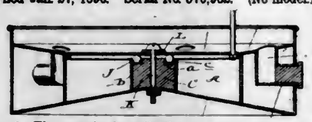
570,778. BICYCLE-PEDAL CLIP. JOHN E. STANNARD, Springfield, Mass. Filed Feb. 12, 1896. Serial No. 578,987. (No model.)



Claim.—1. In a device of the character described, a bracket adapted to be removably secured to a pedal, a clip pivoted to said bracket, having one end normally extended above one side of the pedal and the other adapted to be swung up into position on the other side when the first-mentioned end is depressed and a lug on the first adapted to strike against the bracket to limit its downward movement, as and for the purpose described.

2. In a combination with the pedal, a bracket A, detachably secured thereto, by means of a bolt and nut, a clip formed of a strip of metal pivoted to said bracket, and having a heel-piece F formed integrally with said clip, a projection from said heel-piece adapted to strike against the bracket and to arrest the downward movement of the clip, a hook under which the toe of the rider may be passed and holes or notches in the clip adapted to pass over the prongs of the pedal, whereby the foot is prevented from slipping when the reversed side of the pedal is used, substantially as described.

570,779. GAME APPARATUS. BENJAMIN W. TAYLOR, Evansville, Ind. Filed Jan. 27, 1896. Serial No. 576,982. (No model.)



Claim.—1. The herein described game apparatus, comprising a stationary annular portion having one or more pockets in its upper side and also having said upper side inclined downwardly and inwardly, a rotatable disk mounted within the annular portion and resting in the same plane as the inner edge of the upper side thereof, and a ball or plurality of balls, substantially as and for the purpose specified.

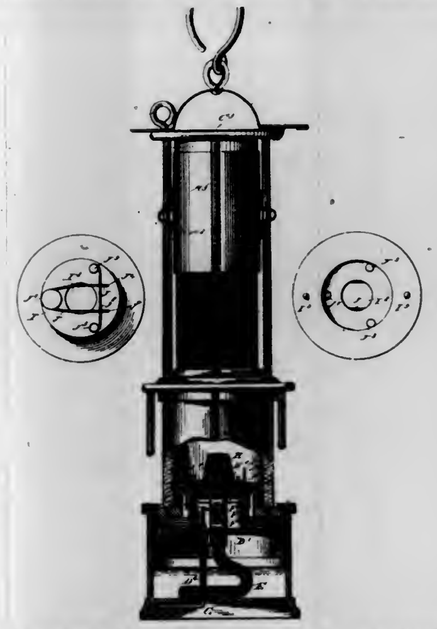
2. The herein-described game apparatus, comprising a stationary annular portion having one or more pockets in its upper side and also having said upper side inclined downwardly and inwardly and further having the upwardly-extending wall or flange and the outwardly-extending passages communicating with the pockets and adapted to receive stoppers, a rotatable disk mounted within the annular portion and resting in the same plane as the inner edge of the upper side thereof, and a ball or plurality of balls, substantially as specified.

3. The herein-described game apparatus comprising a stationary annular portion having one or more pockets in its upper side, a base or pedestal arranged within and connected with the annular portion and having a circular race or way at its upper side, antifriction-balls arranged in said race or way, and a rotary disk mounted on a post or bolt rising from the pedestal or base and bearing on the antifriction-balls and adapted to throw a ball or balls onto the annular portion, substantially as specified.

4. A game apparatus comprising a frame having its top inclined inwardly and provided with one or more pockets and also having a central, circular opening therein, a rotatable disk arranged in said opening and disposed horizontally and in the plane of the upper edge of the opening, and a ball or balls, whereby the balls whirled by the disk may be discharged into the holes of the frame or allowed to return to the disk, substantially as specified.

570,780. MINER'S SAFETY-LAMP. THOMAS H. WILLIAMS, Mount Carmel, Pa. Filed Nov. 15, 1895. Serial No. 569,072. (No model.)

Claim.—1. A miner's safety-lamp, comprising a lamp-body, an inverted cup having an aperture in its bottom and formed at its lower end with an outwardly-extending flange screwing into the said body, a sleeve having a beveled or tapered exterior surface and formed with a flange at its lower end to engage the bottom of the cup, the said sleeve extending through the aperture in the cup and adapted to form a passage for the wick-tube, and a locking device held on the cup to engage the said sleeve, substantially as shown and described.



2. A miner's safety-lamp, comprising a lamp-body, an inverted cup formed with an aperture and provided at its lower end with an outwardly-extending flange screwing into the said lamp-body, a sleeve formed with a flange at its lower end to engage the bottom of the inverted cup, the sleeve extending through the aperture and projecting above the top of said cup, a locking device to engage the said sleeve, a fount screwing into the lower end of the lamp-body and provided with a chamber on its top adapted to extend within the inverted cup and a wick-tube supported by the fount and adapted to pass through the said sleeve, substantially as shown and described.

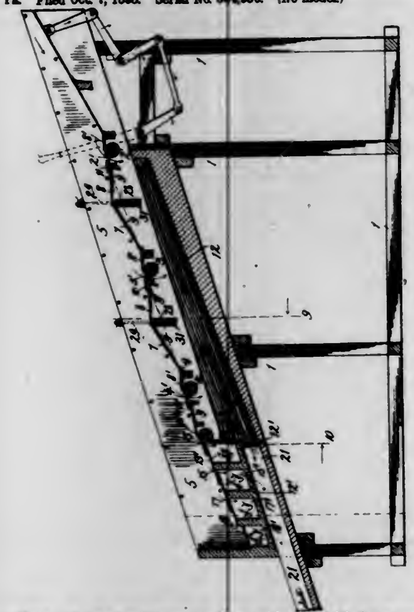
3. A miner's lamp, comprising a lamp-body, an inverted cup screwing into the said body, a sleeve formed with a flange to engage the under side of the cup, the said sleeve projecting through an aperture in the cup, a locking device to engage the said sleeve, a fount screwing in the lower end of the lamp-body and provided with a separate chamber on its top adapted to extend within the said inverted cup, a wick-tube supported on the said chamber and adapted to pass through the said sleeve, the said wick-tube being provided within the chamber with a slot to receive the wick-raising device, and an apertured cap closing the top of the said chamber and through which the wick-tube extends, substantially as shown and described.

4. A miner's lamp, comprising a lamp-body, an inverted cup formed at its lower edge with an outwardly-extending annular flange screwing into the said body, the said cup being provided with an aperture in its bottom, a sleeve formed with a flange at its lower end to engage the under side of the bottom of the cup, the said sleeve extending through the aperture in the bottom of the inverted cup and projecting above the same, a locking device held on the said cup to engage the said sleeve, a fount screwing in the lower end of the said lamp-body and provided with a separate chamber on its top, a wick-tube provided with a disk or flange adapted to rest on the top of the said chamber, and an apertured cap closing the top of said chamber and holding the disk or flange on the wick-tube in place, the said flange on the sleeve resting between the top surface of the apertured cap and the under surface of the bottom of the cup, the said wick-tube being adapted to pass through the said chamber, apertured cap, and sleeve, substantially as shown and described.

5. A miner's safety-lamp, comprising a lamp-body, an inverted cup screwing in the lamp-body and provided in its bottom with an aperture, a sleeve having a beveled or tapered exterior surface and formed with a flange at its lower end to engage the under side of the bottom of the cup, the sleeve extending through the aperture and projecting above the cup, and provided with an annular recess located

directly above the bottom of the cup when the sleeve is in position, and a locking device, comprising a spring secured to the surface of the cup and provided with arms located at opposite sides of the aperture in the cup, the beveled exterior surface of the sleeve engaging said spring-arms and pressing them apart when the sleeve is inserted in the aperture in the cup, and the annular recess in said sleeve receiving said spring-arms when the sleeve is in position, substantially as shown and described.

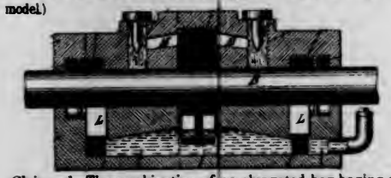
570,781. COAL-SEPARATOR. CHARLES W. ZIEGLER, Scranton, Pa. Filed Oct. 7, 1895. Serial No. 564,956. (No model.)



Claim.—1. In a coal separator, the combination with the supporting-frame, frames secured thereto, the transverse stationary cylinders located in different vertical planes, the perforated plates secured to said frame, and the short imperforate plates upon which said plates rest, of the adjustable slides located in front of said cylinders forming openings or passages therebetween, substantially as described.

2. In a coal-separator, the combination with the frames, the inclined perforated plates and the short imperforate plates upon which said plates rest, the stationary cylinders in different vertical planes, of the adjustable slides located in front of said cylinders with an opening between said plates and cylinders, the receiving chutes and means for adjusting said slides, substantially as described.

570,782. SELF-OILING JOURNAL-BEARING. DAVID L. ALTMAN, Eau Claire, Wis. Filed Dec. 26, 1895. Serial No. 573,287. (No model.)

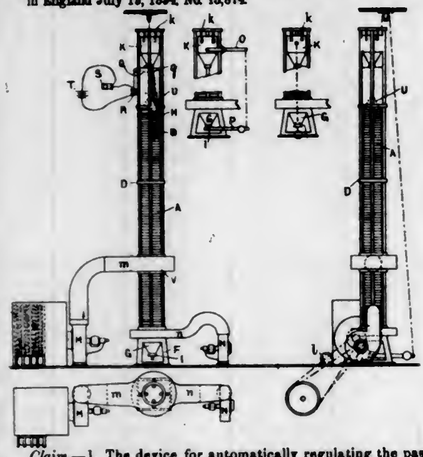


Claim.—1. The combination of an elongated box having an oil-well extending vertically in the box, said box having a horizontal channel communicating with the lower end of the oil-well, the upper portion of the oil-well communicating with two outwardly-extending passages in turn respectively communicating with filtering-chambers, the box also having a bore with which the filtering-chambers directly communicate, the box also having two dust chambers out of direct communication with the channel and communicating with the bore and the box having two end chambers respectively in communication with the ends of the channel, a shaft revolubly mounted in the bore, a wheel fixed to the shaft and revolving in the oil-well, and two spring-pressed scrapers located adjacent to the two end chambers and bearing against the shaft, substantially as described.

2. The combination of an elongated box having an oil-well extending vertically in the box, the box also having a horizontal channel communicating with the lower end of the oil-well, the box also having a longitudinal bore with which the oil-well communicates and the box having two end chambers communicating with the bore and with the respective ends of the channel, the upper end of the oil well being in communication with oppositely-extending passages, in turn respectively communicating with filtering-chambers, a shaft revolubly mounted in the bore, a wheel fixed to the shaft and revolving in the oil-well, and spring-pressed scrapers located adjacent to the end chambers and engaging the shaft, substantially as described.

3. A journal-box longitudinally elongated and having a vertically-extending oil-well, the box having a horizontal channel communicating with the lower end of the oil-well and also having a bore extending horizontally and communicating with the oil-well, the box also having two end chambers in communication with the bore and respectively in communication with the ends of the channel, two dust-chambers directly communicating with the bore and out of direct communication with the end chambers, and two filtering-chambers in communication with the bore and with the oil-well, substantially as described.

570,783. GRAIN-DRIER. JOHN BACKHOUSE, Jr., Liverpool, England. Filed June 15, 1896. Serial No. 595,594. (No model.) Patented in England July 19, 1894, No. 13,874.



Claim.—1. The device for automatically regulating the passage of material through grain-treating apparatus such as described, which consists in the combination of the hopper receiving the grain from a spout, a valve below for regulating the exit and a line connecting the valve with the hopper in such manner that when the hopper becomes too heavy and sinks the valve is caused to open wider and thus allow more to escape and vice versa, always keeping the column full of grain.

2. In an apparatus for treating grain, the combination of the spring-supported hopper K, a device for admitting a current of grain thereto; a valve I located at the bottom of the apparatus; levers O O connected to the hopper and to the valve; and a connection between the outer ends of the levers.

3. The combination in an apparatus for treating grain, of a hopper K capable of limited vertical movement produced by the weight in the hopper; an electric contact R; a source of electricity T; an electric alarm S; and a device Q connected to a second contact and placed immediately below the exit of the hopper, whereby as long as the grain falls on said device the two electric contacts are held apart, but the moment the grain ceases to fall they touch and cause an alarm.

4. In an annular apparatus for treating grain with hot or cold air or steam, the combination with the annular chamber having perforated walls, of an annular passage for the fluid round the said chamber and a series of long deep narrow passages connecting the annular passage with the interior of the perforated chamber, whereby the passage of the grain is impeded as little as possible and the treating fluid is introduced equally to all parts of the circumference of the interior.

570,784. FENCE-POST. LEVI M. BROCK, Mackinaw, Ill. Filed Sept. 10, 1896. Serial No. 605,346. (No model.)

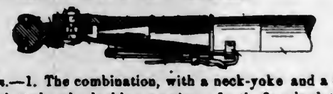
Claim.—1. A post formed of a sheet of metal shaped as a tube, and having and outwardly-turned spiral flange integral therewith formed upon one end, substantially as described.

2. A post formed of a sheet of metal shaped as a tube, and having an outwardly-projecting spiral flange upon the lower end thereof, and a wood core extending from the upper end to about the ground-level, substantially as described.



3. A post formed of a sheet of metal shaped as a tube, and having an outwardly-projecting spiral flange formed integral therewith upon its lower end, in combination with a wooden core extending from the upper end to the ground-level only, and a cap fixed to and covering its upper end, substantially as described.

570,785. NECK-YOKE. JAMES S. BROWN, Eureka, Cal. Filed Feb. 1, 1896. Serial No. 577,684. (No model.)



Claim.—1. The combination, with a neck-yoke and a clip comprising a slotted and a locking member, of a tip-ferrule slotted at its extremity and provided with a bolt adapted to enter the slot in the slotted member of the clip, the upper portion of the tip-ferrule being adapted for engagement with the locking member of the clip, as and for the purpose specified.

2. The combination, with a neck-yoke and a clip provided with a long and short member, one located over the other, the longer member having a keyhole-slot produced therein and the shorter member being provided with a downwardly-extending rib, of a tip-ferrule having its outer extremity horizontally slotted, forming an upper and a lower member, the upper member having a flange adapted for locking engagement with the rib on the shorter member of the clip, and a bolt passed through both members of the tip-ferrule and arranged to enter the slot in the longer member of the clip, as and for the purpose specified.

3. The combination, with a neck-yoke, and a clip provided with a long member and a short member horizontally disposed, one being above the other, the shorter member having a downwardly-extending segmental rib, the longer member being provided with a slot of substantially keyhole shape, of a tip-ferrule terminating in two members at its outer extremity, the upper member having a segmental flange upon its upper face for engagement with the rib on the clip, and a bolt passed through both members of the tip-ferrule, the said bolt being flattened between the members of the tip-ferrule and adapted to enter the slot in the longer member of the clip, as and for the purpose specified.

4. The combination of a vehicle-pole, a tip-ferrule held on the vehicle pole, the tip-ferrule having a slotted portion and a curved flange, a flattened bolt passed through the slot of the tip-ferrule, a neck-yoke, and a clip secured to the neck-yoke and having a slotted portion, the slot of which terminates in an enlarged orifice, the tip also having a curved flange capable of locking with the flange on the tip-ferrule, substantially as described.

5. The combination of a vehicle-pole, a tip-ferrule held on the vehicle pole, the tip-ferrule having a curved rib, a bolt carried by the tip-ferrule, a neck-yoke, and a clip held on the pole and having two projections, one of which is capable of pivotal connection with the bolt and the remaining projection engaging the rib on the tip-ferrule, substantially as described.

6. A vehicle-pole having a series of removable tip-ferrules, each of which comprises a hollow tapering portion, the outer side of which is provided with an annular rib and an outer tapering portion, the outer tapering portion being adapted to enter the hollow tapering portion of the contiguous ferrule, and means for holding the ferrules on the pole, substantially as described.

7. The combination of a vehicle-pole, a tip-ferrule removably held on the pole, a neck-yoke, and a clip secured to the neck-yoke, the clip being capable of pivotal and removable connection with the tip-ferrule, substantially as described.

570,786. EXPANSION-BOLT. ISAAC CHURCH, Toledo, Ohio. Filed Mar. 16, 1896. Serial No. 583,328. (No model.)



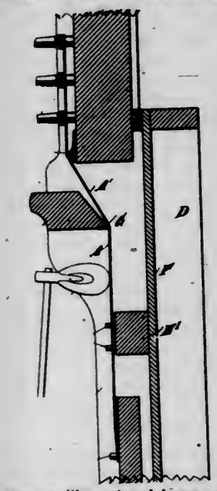
Claim.—1. In an expansion-bolt, a bolt provided with a threaded end, a sleeve encircling the same formed with oppositely-arranged slits extending past the longitudinal center of the sleeve and means for expanding both ends of the sleeve radially.

2. In an expansion-bolt, an expansible sleeve having a plurality of slits extending from each end in opposite directions beyond the longitudinal center of the sleeve, a bolt of a diameter to enter the sleeve and provided with oppositely-disposed conical portions to enter the sleeve with means on the bolt to cause the conical expanders to approach.

3. In an expansion-bolt, a bolt provided with a conical expansion-body extending from the head toward the threaded end, a conical winged nut on the bolt and an oppositely-slitted expanding sleeve arranged between the two conical portions with the wings of the nut entering the slits of the sleeve and means for drawing the conical expander portions into the sleeve.

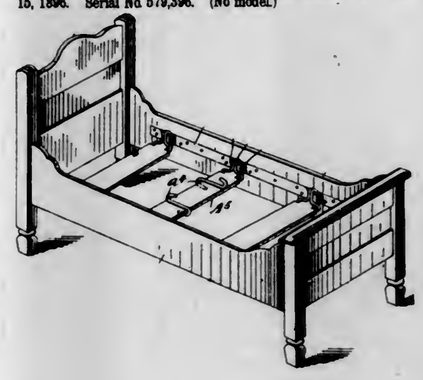
4. In an expansion-bolt, a bolt formed with a shoulder, and a threaded portion extending therefrom of less diameter, an expander upon the bolt abutting against the shoulder and provided with radial projections, an expanding sleeve upon the threaded end of the bolt having oppositely-disposed slits and a conical nut run upon the threaded end of the bolt entering the outer end of the sleeve.

570,787. UPRIGHT PIANO. JUSTUS DIEHL, New York, N. Y. Filed Jan. 24, 1896. Serial No. 576,700. (No model.)



Claim.—A piano or like stringed instrument, provided with a lower bridge engaging the front faces of the strings above the hammers, an upper bridge secured to the wrest-plank and engaging the rear faces of the strings, said upper bridge being located in advance of the lower bridge so that the strings pass obliquely upward from the lower bridge to the upper bridge, and a sounding-board extending upwardly beyond said bridges, the upper end of said sounding-board extending behind the wrest-plank and being spaced therefrom and secured independently thereof, substantially as described.

570,788. BEDSTEAD. MELBERT DUMAS, Ripon, Wis. Filed Feb 15, 1896. Serial No. 579,396. (No model.)



Claim.—A bedstead, comprising side rails longitudinally channeled on their inner side, metal strips secured in said channels, the said strips being bent outward at intervals to form sockets open at the top and bottom, and stirrup-hangers having hook portions to engage in said sockets, substantially as specified.

570,789. NUT-LOCK. EMILE FLOEHR, Sprague, Wash. Filed July 15, 1896. Serial No. 599,244. (No model.)

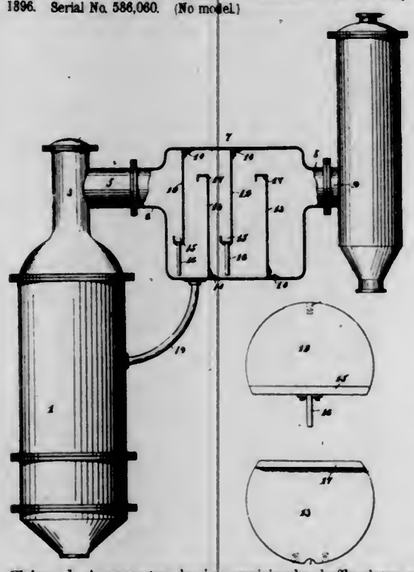


Claim.—1. A nut-lock, comprising a nut recessed on one end and grooved across its thread, the sides of the groove and converging sides of the recess joining at adjacent ends, and a locking-bar having a sharp edge and two angularly-diverging spring-limbs occupying the recess, said limbs bearing against the side walls of the recess, whereby the locking-bar is adapted to rock in the groove of the nut and engage its sharp edge transversely with the thread of a screw-bolt whereon the nut is screwed, substantially as described.

2. A nut-lock, comprising a nut having a groove across its thread and a shallow recess in one end of said nut, the groove and recess being located at one corner of said nut, and a locking-bar having a sharp edge and adapted to laterally rock in the groove of the nut, said bar being furnished with two spring-limbs that diverge and contact respectively with sides of the recess, the edge of the bar being adapted to press on the thread of a bolt having the nut thereon, when said nut is unscrewed from the bolt, substantially as described.

3. A nut-lock, comprising a nut having a groove across its thread, a shallow recess in one end of the nut embracing a corner thereof, and having divergent sides, a detent-catch projecting from the bottom of the recess intermediate of its side walls, and a locking-bar having a sharp edge, said bar being rounded on its opposite edge and thus adapted to rock in the groove of the nut, two spring-limbs on one end of the bar diverging so as to contact with the sides of the recess in the nut when located therein, one longer straight limb on the locking-bar causing said bar to rock its sharp edge into locking engagement with the thread of a bolt whereon the nut is screwed when diverged from the other limb, and be released when said limb is hooked over the detent-catch of the nut, substantially as described.

570,790. SEPARATOR. ALPHONSE F. GAIENNIE, Lafourche, La., assignor of one-third to John V. Teche, Thibodeaux, La. Filed Apr. 3, 1896. Serial No. 586,060. (No model.)

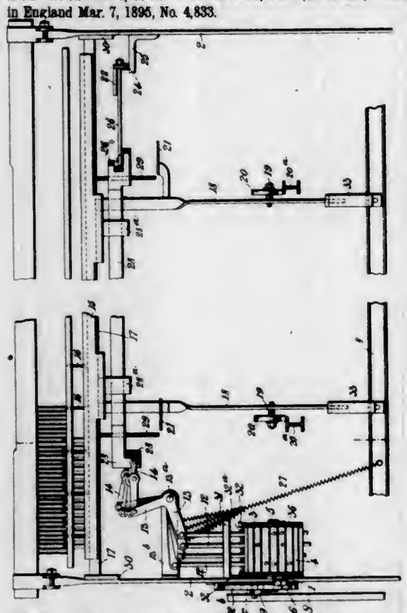


Claim.—1. A separator, having semicircular baffle-plates provided with brackets for securing them in place in the drum of the separator, and having angular bends at their free edges forming a passage extending transversely across the drum of the separator when the plates are in place therein, said passages having open ends adapted to be closed by the walls of the drum and being provided with discharge-pipes, substantially as set forth.

2. A separator having a drum provided with an orifice in each end and with a liquid-discharge orifice in one side, a series of baffle-plates secured to the inner sides of the drum and extending partly across the same, the baffle-plates being oppositely arranged so as to form a circuitous passage from one end of the drum to the other, the free edge of each baffle-plate being provided with a flange all of which are bent toward the same end of the drum and form channels running parallel with said free edges, a portion of said channels opening upward and a portion opening downward, and a drip-pipe extending downward from each upwardly-opening channel and discharging into the lower portion of the drum, the lower edges of the baffle-plates which are secured to the lower side of the drum, being formed with orifices providing passages through which liquid may pass to the liquid-discharge orifice, substantially as described.

3. A separator having a drum provided with an orifice adjacent to each end and having a liquid-discharge orifice at a lower portion of the drum, two baffle-plates respectively secured to opposite inner sides of the drum and projecting past each other and partly across the interior of the drum, each baffle-plate having at its free edge a flange both of which are bent toward the same end of the drum and both of which form channels running along said free edges, a drip-tube extending from the channel of one baffle-plate, and an opening in the remaining baffle-plate through which the liquid from the channel of the first baffle-plate may pass to the liquid-discharge orifice, substantially as described.

570,791. LAPPET-LOOM. JOSEPH GALLOWAY, Blackburn, England. Filed Mar. 9, 1896. Serial No. 582,396. (No model.) Patented in England Mar. 7, 1895, No. 4,833.



Claim.—1. In a lappet-motion loom, the combination with the slay-swords, of a pattern carried by one of the said slay-swords, means for operating the pattern, fallers controlled by the said pattern, bell-crank levers with one arm of each connected to the said fallers, bars connected to the other arms of the said bell-crank levers and means for imparting reciprocating motion to the said bars, needle-bars connected to said reciprocating bars, and means for raising and lowering the said needle-bars, substantially as described.

2. In a lappet-motion loom, the combination with the slay-swords, of a pattern carried by one of the said slay-swords, means for operating the pattern, fallers controlled by the said pattern, bell-crank levers with one arm of each connected to the said fallers, bars connected to the other arms of the said bell-crank levers and means for imparting reciprocating motion to the said bars, needle-bars and pins carried thereby, said pins being engaged by the said reciprocating bars, and means for raising and lowering the said pins and needle-bars, substantially as described.

3. In a lappet-motion loom, the combination with the slay-swords, of a pattern-barrel carried by one of the said slay-swords, a peg-lattice carried by the said barrel, means for operating the barrel, fallers controlled by the said pegs, bell-crank levers with one arm of each connected to the said fallers, bars connected to the other arms of the said bell-crank levers and means for imparting reciprocating motion to the said bars, needle-bars and pins carried thereby, said pins being engaged by the said reciprocating bars, and means for raising and lowering the said pins and needle bars, substantially as described.

4. In a lappet-loom, the combination with the slay-swords, of a pattern-barrel carried by one of the said slay-swords, peg-lattice carried by the said barrel, means for revolving the said barrel in one direction and preventing its revolving in the opposite direction, fallers controlled by the pegs of the aforesaid lattice, needle-bars and pins carried thereby, bell-crank levers with one arm connected to one end of the said fallers, sliding bars engaging the pins of the needle-bars and connected to the other arm of the said bell-crank levers, means for imparting reciprocating motion to the said bars and transmitting the same to the needle-bars, and means for raising and lowering the said needle-bars, substantially as described.

5. In a lappet-loom, the combination with the slay-swords, of a pattern carried by one of the said slay-swords, fallers controlled by the aforesaid pattern, needle-bars and pins carried thereby, bell-crank levers with one arm connected to one end of the said fallers, sliding bars engaging the pins of the needle-bars and connected to the other arm of the said bell crank levers, means for imparting reciprocating motion to the said bars and transmitting the same to the needle-bars, vertical rods carrying plates over which the pins of the needle-bars may be brought, and means for raising and lowering the said vertical rods and plates, substantially as described.

6. In a lappet loom, the combination with the slay-swords, of a pattern-barrel carried by one of the said slay swords, peg-lattice carried by the said barrel, means for revolving the said barrel in one direction and preventing its revolving in the opposite direction, fallers controlled by the pegs of the aforesaid lattice, needle-bars and pins carried thereby, bell-crank levers with one arm connected to one end of the said fallers, sliding bars engaging the pins of the needle-bars and connected to the other arm of the said bell crank levers, means for imparting reciprocating motion to the said bars and transmitting the same to the needle-bars, vertical rods carrying plates over which the pins of the needle-bars may be brought, and means for raising and lowering the said vertical rods and plates, substantially as described.

7. In a lappet-motion loom, the combination with the slay-swords, of a pattern carried by one of the said slay-swords, means for operating said pattern, fallers controlled by the said pattern, the needle-bars and pins carried thereby, means for operating the fallers and shifting the pins of the needle-bars, vertical rods provided with plates over which the pins of the needle-bars may be brought, and means for raising and lowering the said needle-bars, substantially as described.

8. In a lappet-motion loom, the combination with the frame and the slay-swords, of a pattern carried by one of the said slay-swords, means for operating said pattern, fallers controlled by the said pattern, the needle-bars and pins carried by the said needle-bars, means for operating the fallers and shifting the pins of the needle-bars, vertical rods provided with plates over which the pins of the needle-bars may be brought, rollers carried by the said vertical rods and cam-groove brackets mounted on the loom-frame and engaging said rollers, substantially as described.

9. In a lappet-motion loom, the combination with the frame and the slay-swords, of a pattern-barrel carried by one of the said slay-swords, a peg-lattice carried by the said barrel, means for operating said barrel, fallers controlled by the pegs of the said lattice, the needle-bars and pins carried thereby, means for operating the fallers and shifting the pins of the needle-bars, vertical rods provided with plates over which the pins of the needle-bars may be brought, rollers carried by the said vertical rods and cam-groove brackets mounted on the loom-frame and engaging said rollers, substantially as described.

10. In a lappet-motion loom, the combination with the slay-swords, of a bracket carried by one of the said slay-swords, a drum carried by said bracket and provided with a ratchet and pawl, a second drum adjustably mounted in the said bracket, a peg-lattice apron passing over both of the said drums, means for operating the said drums, fallers controlled by the pegs of the said lattice, bell-crank levers with one arm connected to the said fallers, sliding bars connected to the other end of the said bell-crank levers, means for imparting reciprocating motion to the said bars, needle-bars connected to the aforesaid sliding bars and means for raising and lowering the said needle-bars, substantially as described.

11. In a lappet-motion loom, the combination with the slay-swords, of a bracket carried by one of the said slay-swords, a drum carried by said bracket and provided with a ratchet and pawl, a second drum adjustably mounted in the said bracket, a peg-lattice apron passing over both of the said drums, means for operating the said drums, fallers controlled by the pegs of the said lattice, bell-crank levers with one arm connected to the said fallers, sliding bars connected to the other end of the said bell-crank levers, means for imparting reciprocating motion to the said bars, needle-bars and pins carried thereby, the said pins engaging the aforesaid sliding bars, vertical rods with plates over which the pins of the needle-bars may be brought, and means for imparting motion to the said vertical rods and plates, substantially as described.

12. In a lappet-motion loom, the combination with the slay-swords and frame, of a bracket carried by one of the said slay-swords, a drum carried near one end of said bracket and another drum adjustably mounted near the other end of said bracket, a pattern carried by the said drums, means for operating the said drums, fallers controlled by the said pattern, bell-crank levers with one arm connected to the said fallers, sliding bars connected to the other arm of the said bell crank levers, means for imparting motion to the said sliding bars, the needle-bars connected to the said sliding bars, vertical rods for raising and lowering said needle-bars, rollers carried by said vertical rods, and cam-grooved brackets mounted on the said loom-frame and engaging said rollers, substantially as described.

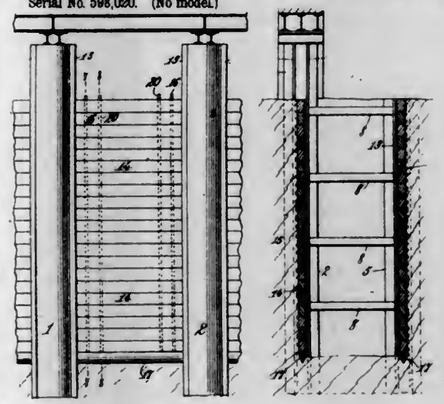
13. In a lappet-motion loom, the combination with the slay-swords and frame, of a bracket carried by one of the said slay-swords, a drum carried near one end of said bracket and another drum adjustably mounted near the other end of said bracket, a pattern passing over the said drums, means for operating the said drums, fallers controlled by the said pattern, bell-crank levers with one arm connected to the said fallers, sliding bars connected to the other arm of the said bell crank levers, means for imparting motion to the said sliding bars, the needle bars provided with pins extending through the said sliding bars, vertical rods and plates carried by said rods, over which the pins of the needle-bars may be brought, rollers carried by said vertical rods, and cam grooved brackets mounted on the said loom-frame and engaging the said rollers, substantially as described.

14. In a lappet-motion loom, the combination with the frame and slay-swords, of a bracket 1 carried by one of the said slays, a pattern-barrel 3 mounted on said bracket, a second barrel 36 also mounted on the said bracket, a peg-lattice 4 carried by the said barrels, means for revolving the said barrels, the fallers 12 actuated by said pegs, the bell-crank levers 13 with one arm connected to the said fallers, flexible connection between said levers and the loom-frame, the bars 28 connected to the other arm of the said bell-crank levers, links 26 connected to the said bars, the bell-crank lever 22 for operating said links and bars, means for actuating said bell-crank lever 22, the needle-bars 15 and pins 29 carried thereby, and engaging the aforesaid bars 28, vertical rods 18, plates 21 carried by said vertical rods, rollers carried by the said rods, and a cam-grooved bracket 20 engaging the said rollers and carried by the loom-frame, substantially as described.

15. In a mechanism for actuating the needle-bars of a loom, the combination with the said needle-bars, of a vertical rod for actuating the same, a roller carried by said rod, and a cam-grooved bracket engaging said roller, substantially as described.

16. The combination with a loom provided with needle-bars, of vertical rods provided with plates for actuating the needle bars of said loom, rollers carried by said rods and cam-grooved brackets engaging said rollers, substantially as described.

570,792. CONSTRUCTION OF SUPPORTS FOR BUILDING-WALLS. RICHARD S. GILLESPIE, New York, N. Y. Filed July 3, 1896. Serial No. 598,020. (No model.)



Claim.—1. The combination of a plurality of columns buried or sunk perpendicularly into the earth and provided with pairs of lateral flanges and sheathings sunk into the earth in engagement with said flanges, and each provided at the lower end with a water-jet head, and means for supplying the said head with water to facilitate sinking the sheathings, substantially as described.

2. The combination of a plurality of columns buried or sunk perpendicularly into the earth and provided with pairs of lateral flanges with sheathings each made up of sections coupled together by tie-bolts, the lowermost section having a hollow water-jet head for distributing water to facilitate sinking the sheathings, and water-supply pipes extending through the sheathings and communicating with the water-jet head, substantially as described.

3. The combination of a plurality of columns buried or sunk perpendicularly into the earth, sheathings sunk into the earth between the columns and having their perpendicular edges engaged with the latter to successfully resist earth-pressure at one side while permitting a deep excavation to be made at the opposite side, a water-jet head applied to the lower portion of the sheathing, and means for supplying the water-jet head with water, substantially as described.

4. The combination of a plurality of columns buried or sunk perpendicularly into the earth under the wall of an existing building, a plurality of columns buried or sunk at one side of the said wall, and water-jet sheathings sunk into the earth between the columns and having their vertical edges engaged therewith, and connecting-braces between the two sets of columns, substantially as and for the purposes described.

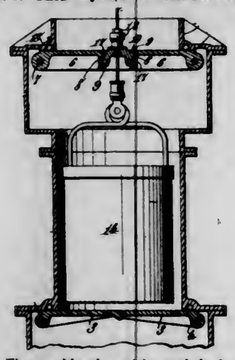
5. The combination of a plurality of columns buried or sunk perpendicularly into the earth under the wall of an existing building, a plurality of columns buried or sunk at one side of the said wall, all the columns having lateral flanges, transverse or cross tie rods or bars connecting the two sets of columns so that one set serves to brace the other set, and sheathings sunk into the earth between the columns and having their vertical edges engaged with the lateral flanges thereof, substantially as and for the purposes described.

6. In a foundation or support for the wall of a building or other structure, a sheathing sunk perpendicularly in the earth and composed of boards or planks arranged one above the other in the same vertical plane, tie-bolts extending vertically through said boards or planks, a water-jet shoe located at the lower edge of the sheathing, and a water-supply pipe communicating with said shoe, substantially as described.

7. In a foundation or support for the wall of a building or other structure, a sheathing sunk perpendicularly into the earth and composed of sections arranged one above the other in the same vertical plane, tie-bolts and nuts firmly connecting the said sections together and the bolts extending vertically through the same, a water-jet shoe having converging sides and located at the lower edge of the sheathing, and a water-supply pipe communicating with the said shoe, substantially as described.

8. In a foundation or support for the wall of a building or other structure, a sheathing sunk perpendicularly into the earth and composed of sections arranged one above the other in the same vertical plane, tie bolts and nuts firmly connecting the said sections together and the bolts extending vertically through the same, a water-jet shoe having converging sides and located at the lower edge of the sheathing, and a water-supply pipe extending through the bodies of the said sections and communicating with said water-jet shoe, substantially as described.

570,793. AIR-LOCK FOR CAISSONS, &c. RICHARD S. GILLESPIE, New York, N. Y. Filed July 29, 1896. Serial No. 600,944. (No model.)

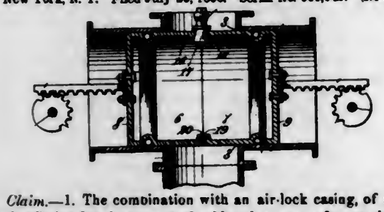


Claim.—1. The combination with an air-lock casing, of a cross-bar or plate detachably connected with the casing and constructed with concavities in its opposite longitudinal edges, and swinging doors having convex inner edges to fit into the concavities of the cross-bar or plate when the doors are closed, substantially as described.

2. The combination with an air-lock casing, of a frame mounted on the top portion thereof, a cross-bar or plate detachably engaging the under side of the said frame and constructed with concavities in its opposite longitudinal edges, and swinging doors having convex inner edges to fit into the concavities of the cross-bar or plate when the doors are closed, substantially as described.

3. The combination with an air-lock casing, of a cross-bar or plate detachably connected with the casing and constructed with concavities in its opposite longitudinal edges, a stuffing-box attached to and carried by the cross-bar or plate, and swinging doors having convex inner edges to fit into the concavities of the cross-bar or plate when the doors are closed, substantially as described.

570,794. AIR-LOCK FOR CAISSONS, &c. RICHARD S. GILLESPIE, New York, N. Y. Filed July 29, 1896. Serial No. 600,945. (No model.)



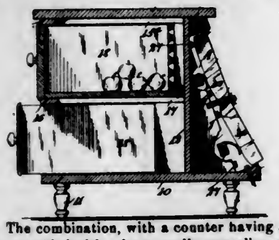
Claim.—1. The combination with an air-lock casing, of a horizontal cylinder forming a part of said casing, means for opening and closing the air-lock casing, composed of two pistons movable to and from each other within said cylinder and adapted to come together approximately at the center of the air-lock casing, and suitable means for operating the two pistons, substantially as and for the purposes described.

2. The combination of an air-lock casing having a horizontal cylinder mounted on its upper or outer end, means for opening and closing the air-lock, composed of two pistons movable to and from each other within said cylinder, and suitable means for operating the pistons, substantially as and for the purposes described.

3. The combination with an air-lock casing, of a horizontal cylinder mounted upon said casing and provided at its center with upper and lower passage-ways, two pistons movable toward and from each other between said upper and lower passage-ways of the cylinder and adapted to open and close the air-lock casing, and means for operating the pistons, substantially as and for the purposes described.

4. The combination with an air-lock casing, of a horizontal cylinder connected with said casing and provided with upper and lower passage-ways, two hollow cylindrical pistons movable back and forth in said cylinder and provided at their inner edges with recesses to engage a stuffing box and with recesses for the passage of the bucket-hoisting cable of the air-lock, and means for operating the two pistons, substantially as and for the purposes described.

570,795. COMBINED COUNTER AND SHOW-CASE. JOSEPH H. GIMBICH, Red Wing, Minn. Filed Feb. 18, 1896. Serial No. 579,733. (No model.)



Claim.—1. The combination, with a counter having an exterior display-chamber, provided with a downwardly extending upper flange and an upwardly-extending lower flange, of display boxes or trays of slightly less length than the height of the display-chamber, the said boxes being slidably and removably located in the said display-chamber at the rear of its flanges, and means for raising the boxes to clear the lower flanges of the display-chamber, as and for the purpose specified.

2. The combination, with a counter provided with an exterior display-chamber having a downwardly-extending upper flange and an upwardly-extending lower flange, of springs located in the said chamber, exerting tension in an outwardly direction, and display trays or boxes removably located within the said chamber at the rear of its flanges, compressing the aforesaid springs, the boxes being of less length than the height of the chamber, as and for the purpose specified.

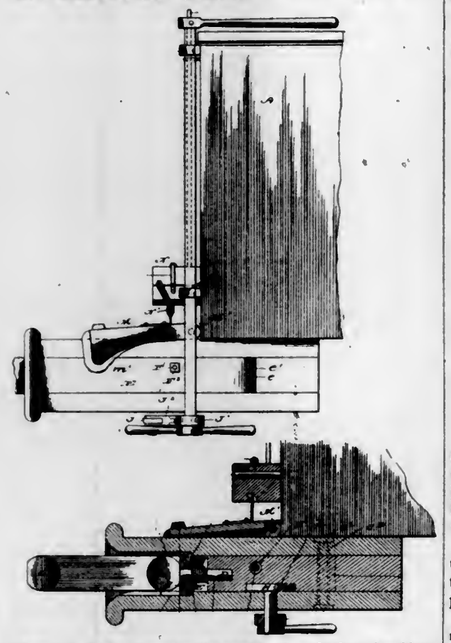
3. The combination, with a supporting-rack for display purposes, having a top and a bottom and rear supports, the top support having a downwardly-extending flange and the lower support an upwardly-extending flange, of display trays or boxes removably located in the said rack, engaging with said supports, the boxes being at the rear of the flanges of the rack and of less length than the space between the top and bottom bearing-surfaces of the rack, and springs secured within the rack, compressed by the boxes when placed in position in the rack, as set forth.

4. A counter, having a display-chamber provided with oppositely-arranged flanges extending along its front edges, boxes arranged in the chamber with their edges adapted to engage the flanges, said boxes being removable from the front of the chamber and springs to hold the boxes engaged with the flanges, substantially as set forth.

5. A counter, having a display-chamber provided with oppositely-arranged flanges, a box removable between the flanges, and adapted when inserted in the chamber to engage the flanges with its opposite edges, means to force the box out of the chamber, and a pin to move the box in the chamber to disengage one edge thereof from one of the flanges, substantially as set forth.

6. A counter, having a display chamber provided with oppositely-arranged flanges extending along its front edges, boxes arranged in the chamber with their edges adapted to engage and slide along the flanges, and springs to hold the boxes engaged with the flanges, substantially as set forth.

570,796. CAR-COUPLING. JOHN G GREEN, Union City, Tenn., assignor of one-half to Andrew J. Harpole, same place. Filed July 23, 1896. Serial No. 600,263. (No model.)



Claim.—1. In a car-coupler, the combination of a draw-head having open sides, laterally-movable jaws mounted in said open sides of the draw-head to lie substantially flush therewith when closed, a jaw-shaped safety-lock mounted externally on the draw-head to embrace the same and the laterally-movable jaws, and means for raising or lowering said safety-lock, as and for the purposes described.

2. In a car-coupler, the combination with a draw-head, and the coupler-jaws, of a pivoted jaw-shaped safety-lock, a cam-formed operating-piece having operative connections with said safety-lock, and means for moving the operative piece to adjust the safety-lock, as and for the purposes described.

3. In a car-coupler, the combination with a draw-head, and the coupler-jaws, of a jaw-shaped safety-lock pivoted on said draw-head to embrace the latter and the coupler-jaws when lowered, an operating-piece pivoted above the safety-lock and having a cam groove formed therein, and a finger attached to the safety-lock and fitted in the cam-groove of the operating-piece, as and for the purposes described.

4. In a car-coupler, the combination with a draw-head and the coupler-jaws, of a pivoted cam formed operating-piece provided with projecting handles, a jaw-shaped safety-lock, and connections between the safety-lock and the operating-piece, as and for the purposes described.

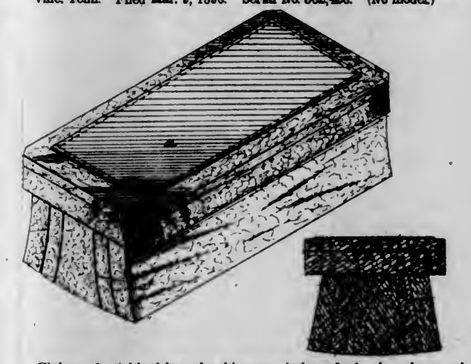
5. The combination with laterally-movable coupler-jaws, of a safety-lock arranged to engage with said jaws, a cam-formed operating-piece, a finger attached to said safety-lock and engaging with the operating-piece, and means for shifting the operating-piece, as and for the purposes described.

6. The combination with a draw-head, of the coupler-jaws provided with the thickened and flared front ends, which form the shoulders f', and with the recesses f^3 which are curved or rounded in vertical planes, and a coupling-bar having the enlarged heads thereof formed with rounded or curved rear edges which are adapted to fit in the recesses f^3 of the coupler-jaws, whereby the head of the coupler-bar is adapted to rock or oscillate in a vertical plane when confined between and within the front ends of said coupler-jaws, as set forth.

7. The combination with a draw-head, and twin jaws hung therein, of a cam-shaft having a cam arranged to act on the jaws, a rock-shaft, the levers attached to the cam shaft and the rock-shaft and connected together by a link, and a double-armed lever fastened to the cam-shaft, as and for the purposes described.

8. The combination of a draw-head having in its upper and lower sides the longitudinal grooves terminating in stop-shoulders, the spring-controlled jaws hung in said draw-head, the longitudinal guides within the draw-head, and the spring-pressed ejector fitted in the grooves of the draw-head and between the longitudinal guides therein, substantially as and for the purposes described.

570,797. BLACKBOARD-RUBBER. CHARLES E. GREGORY, Nashville, Tenn. Filed Mar. 9, 1896. Serial No. 582,428. (No model.)



Claim.—1. A blackboard-rubber consisting of a back and several strips secured thereto to form the face, which strips are arranged with their edges to form the rubbing-face, their contiguous faces being joined to each other by adhesive material to a point not quite to said face, whereby longitudinal ways or channels with open ends are provided in said face to take up the chalk-dust, substantially as set forth.

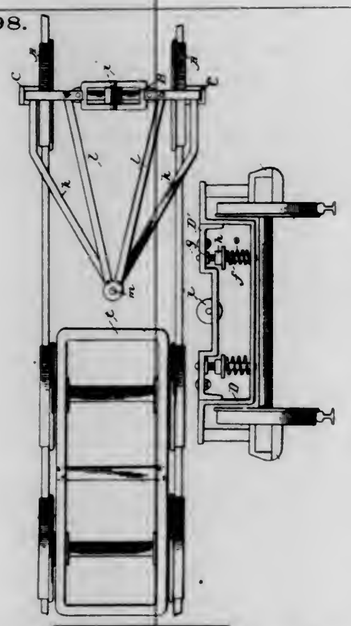
2. A blackboard-rubber having a face composed of strips of material secured together to a point near their edges which constitute the rubbing-face by an adhesive material of a character which will permit of their gradual separation, substantially as set forth.

3. A blackboard-rubber, consisting of a back of non-resonant material, and a rubbing-face secured thereto by adhesive material, which rubbing-face is composed of strips of similar material arranged with their edges to form the operating-face and stock to each other with adhesive material, substantially as set forth.

570,798. CAR-TRUCK. HERMAN HAUPT, Washington, D. C., assignor to the General Compressed Air Company, of New Jersey. Filed Jan. 30, 1896. Serial No. 577,340. (No model.)

Claim.—In combination with the main frame, and central motor-truck, the supporting wheels and axle under the end of the frame, the frame D having its outer ends supported from the axles outside the wheels, said frame D having its portion between the wheels depressed, the supplemental frame guided vertically in said depressed portion, springs interposed between said supplemental frame and frame D, and the rolling contact carried upon said supplemental frame for supporting the end of the main frame.

570,798.

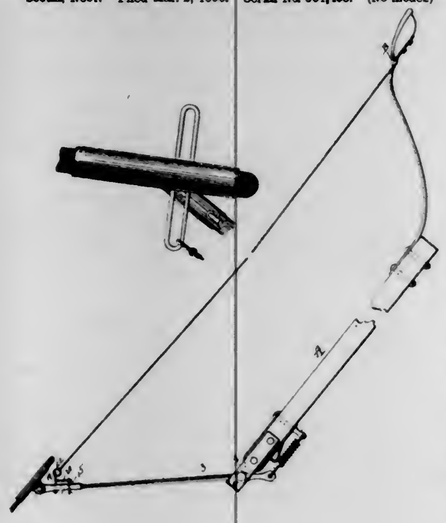


570,799. BUNG FOR BARRELS. JOHN HENN, San Francisco, Cal. Filed June 30, 1896. Serial No. 597,614. (No model.)



Claim.—The combination with a sleeve or ring permanently secured in the bunghole of a cask or barrel, having an internal shoulder thereon and inwardly-projecting lugs having toothed or notched inner ends and a packing-ring of rubber or other suitable material resting upon said shoulder, of a closing-plug or bung proper adapted to fit within said ring having recesses in its upper surface within which a key may be inserted for turning the same, an annular flange having a groove upon its under surface resting upon said packing-ring and angularly arranged peripheral grooves within which said lugs fit, substantially as and for the purpose described.

570,800. DEVICE FOR OPERATING WHIPS. JOHN M. HERMAN, Scotia, Nebr. Filed Mar. 2, 1896. Serial No. 581,495. (No model.)



Claim.—1. The combination with a vehicle tongue, of a pole or rod pivotally connected thereto, means for projecting said pole or rod forwardly and a whip-holder attached to said pole or rod in such manner as to permit the whip carried by said holder to have a lateral movement axially relative to the rod, substantially as set forth.

2. The combination with a vehicle-tongue, of a pole or rod pivotally connected thereto, a spring for projecting the free end of said pole or rod forwardly, a sleeve axially swiveled to said pole or rod, a whip-holder attached to said sleeve, and means for simultaneously withdrawing said pole or rod and turning said sleeve, substantially as set forth.

3. The combination with a vehicle-tongue, of a pole or rod pivotally connected thereto, a spring for projecting the free end of said pole or rod forwardly, a sleeve carried by said pole or rod and adapted to turn axially a limited distance thereon, a whip-holder attached to said sleeve, and means for withdrawing the free end of the pole or rod and turning the sleeve in one or the other direction, substantially as set forth.

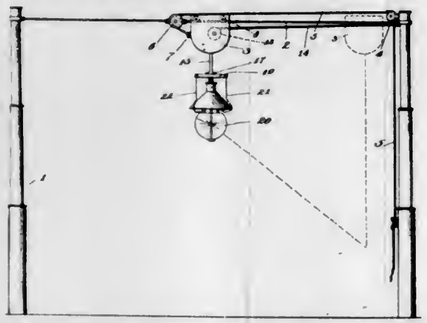
4. The combination with a pivoted pole or rod, of a sleeve swiveled thereon, said sleeve having an enlarged end and said enlarged end having notches therein, a whip-holder having ears to embrace the enlarged end of the swiveled sleeve, a bolt passing through said ears and the enlarged end of the sleeve, and ribs on said ears to enter the notches in the enlarged end of the sleeve, substantially as set forth.

5. The combination with a vehicle-tongue, of a pole or rod pivotally connected thereto, a spring for projecting the free end of said pole or rod forwardly, a sleeve axially swiveled to said pole or rod, a whip-holder attached to said sleeve, a transverse bar or loop attached to said sleeve, and a cord having a movable connection with said transverse bar or loop, substantially as set forth.

6. The combination with a vehicle-tongue, of a pole or rod pivotally connected thereto, a spring for projecting the free end of said rod forwardly, a sleeve swiveled to said pole or rod, a whip-holder attached to said sleeve, an eyebolt passing through the sleeve and rod or pole, a transverse loop or bar, said transverse loop or bar having an arm to pass through said eyebolt and another arm to pass through the sleeve in advance of the pole or rod, a ring on said transverse loop or bar adapted to move from end to end thereof and a cord attached to said ring and terminating at its other end within reach of the driver of the team, substantially as set forth.

7. The combination with a pivoted pole or bar, of a sleeve axially swiveled thereto, an eyebolt passing through the sleeve and pole or bar, a whip-socket attached to said sleeve, a spring bar or loop attached to said sleeve and to said eyebolt, and a cord attached to said spring bar or loop, substantially as set forth.

570,801. STREET-LAMP HANGER. HALLY P. HILL, Washington, D. C., assignor of one-half to George P. Phillips, Evansville, Ind. Filed Dec. 6, 1895. Serial No. 571,282. (No model.)



Claim.—1. The combination with opposite supports, the wire or cable suspended therebetween, the traveling hanger, the pulley secured to said wire at one side of the hanger, the pulley connected with the support at the opposite side of the hanger, the rope secured to the hanger and passing over said pulleys, the pulley connected with the hanger, the rope secured to said support and passing over said pulley, the inclined tracks, and the pawl pivoted to said hanger, of the lamp secured to said rope the weight of which bears such a relation to that of the hanger that it is adapted to move the hanger to the side of the thoroughfare when the lamp is released, and the sleeve embracing said rope and provided with a head, substantially as described.

2. The combination with the traveling hanger, the pulley connected therewith, the rope secured to one of the supports and passing around said pulley, the inclined tracks, and the bifurcated pawl, embracing said rope, of the lamp connected with said rope the weight of which bears such a relation to that of the hanger that it is adapted to move the hanger to the side of the thoroughfare when the lamp is released, the sleeve through which said rope passes and the head thereof, substantially as described.

3. The combination with the traveling hanger, of the pulley connected therewith, a lamp-rope provided with an enlargement, a bifurcated pawl, embracing said rope, and the inclined tracks adapted to direct the enlargement upon said lamp-rope away from the pawl, substantially as specified.

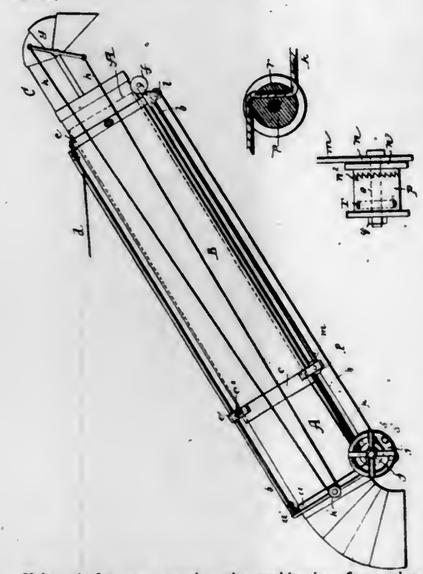
4. The combination with a lamp-hanger, of the pulley connected therewith, the lamp-rope passing over said pulley and provided with an enlargement, a bifurcated pawl pivotally connected with said hanger and embracing said rope, and the inclined tracks adapted to direct the enlargement upon said lamp-rope away from the pawl, substantially as and for the purpose described.

570,802. NAPKIN-HOLDER. NICHOLAS P. HORTON, Owen Sound, Canada. Filed Dec. 26, 1895. Serial No. 573,411. (No model.)



Claim.—As a new article of manufacture, a device of the character described, consisting of a body having slots slightly inclined and forming a central tongue on its lower edge, and having an irregular upper edge forming shoulders D, D; springs B, at each end of the body, and a hook secured to the body, as and for the purpose described.

570,803. STRAW-STACKER. EDWARD HUBER and JACOB W. MILLER, Marion, Ohio. Filed May 8, 1895. Serial No. 548,558. (No model.)



Claim.—1. In a straw stacker, the combination of two telescoping tubes or trunks, one stationary and the other movable, a frame extending parallel with these tubes or trunks and comprising two bars, the lower one having a roller at the outer end for the support of the movable tube or trunk, and a roller connected with the inner upper end of the movable section and bearing beneath one of the bars, substantially as set forth.

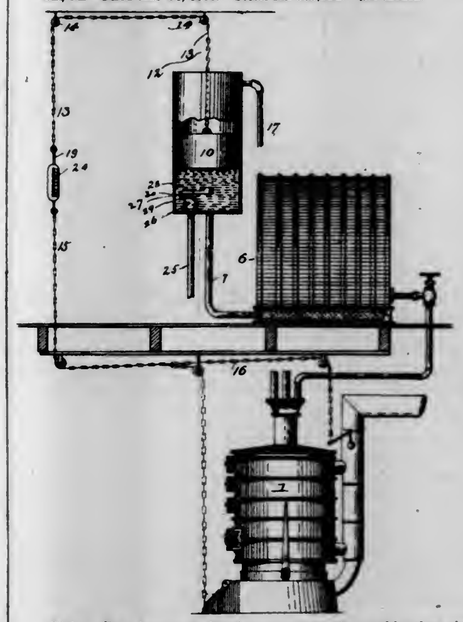
2. In a straw stacker, the combination with telescoping sections, a windlass and a cable passing over said windlass, of an adjustable drum supported by a movable section of the stacker and having a perforation for the passage of said cable, substantially as set forth.

3. In a pneumatic straw-stacker, the combination with telescoping sections, one stationary and the other movable and a frame secured to the stationary section, of a windlass supported by the stationary section at one end thereof, a pulley at the outer end of said frame, a cable passing over said windlass and pulley, an arm depending from the movable section, a toothed disk secured to said arm, a bolt passing through said disk and arm, a drum having teeth to mesh with the teeth of the disk, mounted on said bolt, a nut on said bolt, said drum having a perforation for the passage of said cable, substantially as and for the purpose set forth.

4. In a straw-stacker, the combination with a frame, and two telescoping tubes one stationary and the other movable, the lower outer end of the frame having a bearing for the support of the movable tube, of a roller connected with the inner end of the movable tube and bearing beneath one of the bars of the frame, substantially as set forth.

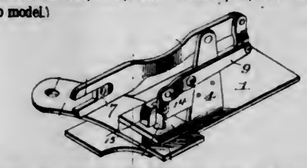
5. The combination with two telescoping tubes, one stationary and the other movable, and a frame comprising two bars parallel with each other and extending outward from the stationary tube, of a ring connecting the outer ends of these bars together and encircling the movable tube, a bracket connected with the inner end of the movable tube, and a roller held by the bracket and arranged to bear beneath one of the bars of the frame, substantially as set forth.

570,804. DAMPER-REGULATOR. JOHN B. HUTCHINSON, Columbia, Pa. Filed Mar 31, 1896. Serial No. 585,588. (No model.)



Claim.—In a hot-water heating apparatus the combination with the furnace, the damper at the lower end thereof, the smoke-flue and the damper therein, of the radiator, the expansion-tank, the pipe connecting the same with the radiator, the supply-pipe connected with the lower end of the expansion-tank, the valve at the upper end thereof, the valve stem, the pivoted weighted arm adapted to be operated by the fall of the float to open the lever, the overflow-pipe at the upper end of said tank, the float located in said tank and the chains connected therewith and with the dampers, substantially as described.

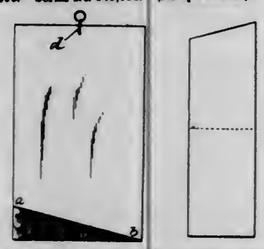
570,805. TRIMMING ATTACHMENT FOR SEWING-MACHINES. ALVAN B. JACOBUS, Udall, Kans. Filed Sept. 9, 1895. Serial No. 561,988. (No model.)



Claim.—In a sewing-machine attachment, the combination with the plate having an extension formed with a screw-hole, the cutting-plate secured to said plate and formed with a triangular aperture,

the guide-plate located above the cutting-plate, and formed with a registering aperture, the bracket, and the arm secured thereto formed at the outer end with a beveled offset, of the punch, the link connected therewith, the lever pivotally connected with said link, and the link and lever adapted to be connected with the needle-bar of a sewing-machine, substantially as described.

570,806. TOILET-PAPER. EDGAR JEROME, Norwalk, Conn. Filed Jan. 15, 1896. Serial No. 575,631. (No specimens.)



Claim.—A package of toilet-paper, consisting of composite sheets or units which are formed of one of smaller area, imposed upon one of larger area, substantially as described.

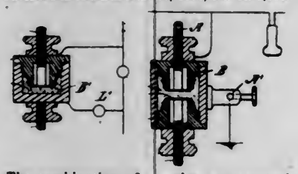
570,807. STOCKING. JACOB H. JESSEN, San Francisco, Cal. Filed July 31, 1896. Serial No. 601,241. (No model.)



Claim.—1. A stocking, having a double thickness of material at the upper side of the toe portion thereof, the inner ply being provided with a series of openings or perforations in which the toes of the wearer are adapted to fit, as and for the purpose set forth.

2. A stocking, having a double thickness of material at the upper side of the toe portion thereof, the inner ply being provided with a series of openings or perforations in which the toes of the wearer are adapted to fit, and the outer ply having an enlarged opening therein into which the hand may be passed, as and for the purpose set forth.

570,808. SAFETY-SWITCH. EDMUND JOKL and WILHELM M. CHRISTIAN, Vienna, Austria-Hungary, assignors of one-third to George Kemp, New York, N. Y. Filed Aug. 14, 1896. Serial No. 602,774. (No model.) Patented in Austria Mar. 27, 1896, No. 46/1,209.



Claim.—The combination of a casing or receptacle filled with mercury, one or more plugs secured to such casing and dipping into the mercury therein, conducting pins or bolts insulated from the mercury and entering into such plugs the diameter of their inner ends being smaller than the diameter of the bore of the plugs designed to receive such ends, insulating films or membranes tightly closing the ends of the bores of the plugs such films or membranes being in contact with the inner ends of the pins or bolts and insulating them from the mercury in the casing or receptacle and a terminal permanently connected with the mercury substantially as described and for the purpose set forth.

570,809. TRAVELING-BAG. GRANVILLE LOWTHER, Winfield, Kans. Filed Mar. 30, 1896. Serial No. 585,324. (No model.)

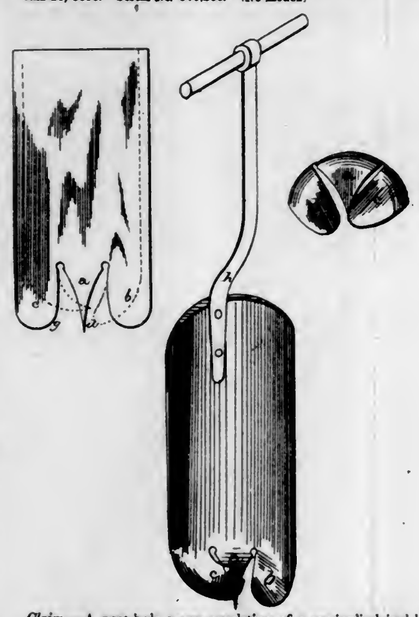
Claim.—1. A traveling-bag composed of a lower or main portion having grooves or ways in its ends extending up from a point near the bottom, and a top or upper portion made in sections, the sections being provided with pins or projections entering the grooves, substantially as described.



2. A traveling-bag composed of a lower or main portion having grooves extending upward from a point near the bottom thereof then diverging and extending to points near the upper outer edges of the lower or main portion, and a top or upper portion composed of sections, the sections being provided at each end with pins or projections entering the grooves of the lower or main portion, substantially as described.

3. A traveling-bag composed of a lower or main portion having a plate attached to the same beneath its outer covering, a second plate arranged outside the first, and provided with grooves having overhanging edges, an upper or top portion made in sections provided at each end, and at its lower inner corner with pins or projections entering the grooves in the lower or main portion, substantially as described.

570,810. EARTH-AUGER. AUGUST H. MEIER, Marble Rock, Iowa, assignor of one-half to Lucius H. Langworthy, Dubuque, Iowa. Filed Jan. 20, 1896. Serial No. 576,208. (No model.)

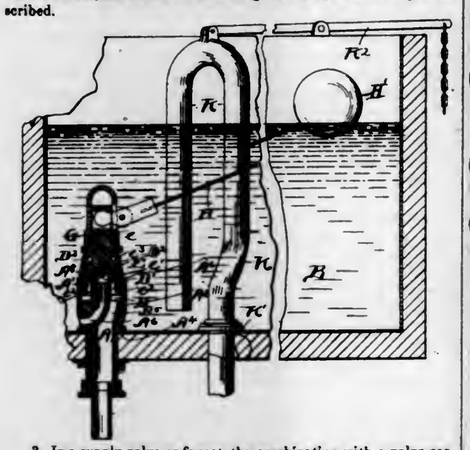


Claim.—A post-hole auger consisting of a semicylindrical body having three inwardly-curved blades formed upon its lower end, one of the blades being adapted to make an advance cut, a second blade curved inwardly to a smaller distance and adapted to follow cutting a hole of larger diameter than the first, and the third curved further inward and upward to retain the soil cut by the two advancing blades, substantially as described.

570,811. SUPPLY VALVE OR FAUCET. HARRY C. MONTGOMERY, Cleveland, Ohio. Filed Aug. 5, 1895. Serial No. 558,275. (No model.)

Claim.—1. A supply valve or faucet comprising a valve-casing provided with an induction-port and an eduction port, a valve-seat at the receiving end of the said eduction-port, and a valve provided with a skirt extended around the eduction port to a point intermediate the discharge end of the induction-port and receiving end of the eduction-port and having water-impinged surfaces facing in the direction in which the valve closes and other like surfaces of greater area facing in the direction in which the valve opens, substantially as and for the purposes described.

2. A supply valve or faucet comprising a valve-casing provided with an induction-port and with a centrally-located tubular extension having an eduction-port therein and surrounded by an annular chamber, the receiving end of said eduction-port being provided with a valve-seat and located above the discharge extremity of the induction-port, a valve having a gradually-flaring skirt extended into said annular chamber to a point intermediate the discharge end of the induction-port, and receiving end of the eduction-port and dividing said chamber into two concentric annular spaces communicating with the induction-port, whereby both the inner and outer surfaces of said valve-skirt are subjected to water-pressure within the valve-casing, the outer surfaces of said valve-skirt being of greater area than the inner surfaces, and means for actuating the valve, substantially as described.



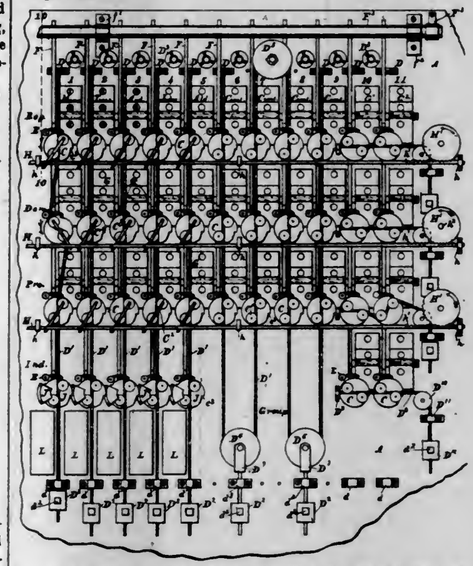
3. In a supply valve or faucet, the combination with a valve-casing comprising a lower member having an induction-port and provided with a centrally-located tubular extension having therein an eduction-port leading downward from the upper end of said extension to a point on the lower outer surface of the valve-casing, the receiving end of said eduction-port being provided with a valve-seat above the discharge extremity of the induction-port, and an upper casing member having an annular chamber surrounding said tubular extension of the lower casing member, of a valve having a skirt surrounding the eduction-port and extended into said annular chamber to a point intermediate the discharge extremity of the induction-port and receiving end of the eduction-port and forming concentric annular spaces within the said annular chamber, whereby the said valve-skirt is provided both on its outside and inside with surfaces exposed to fluid-pressure from the induction port, substantially as and for the purposes described.

570,812. VOTING-MACHINE. LOUIS Y. MCCONNELL, Rochester, N. Y. Filed July 31, 1895. Serial No. 557,799. (No model.)

Claim.—1. In a voting-machine, the combination of a flexible band normally held in tension and capable of being flexed only to a fixed degree, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator adapted to flex said band to a definite extent in order to operate its register, said band being located directly in the path of movement of each actuator, but free from fixed connection therewith, whereby, when said band is flexed to said fixed degree by the operation of a predetermined number of said actuators, the unoperated registers are prevented from being operated, and means for preventing a second actuation of any operated actuator until every operated actuator is returned to its initial position.

2. In a voting-machine, the combination of a flexible band normally held in tension and capable of being flexed only to a fixed degree, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator adapted to flex said band to a definite extent, in order to operate its register, said band being located directly in the path of movement of each actuator, but free from fixed connection therewith, whereby, when said band is flexed to said fixed degree by the operation of a predetermined number of said actuators, the unoperated actuators are held against operative movement, retaining means for holding each actuator when operated and said band and means for releasing said retaining means.

3. In a voting-machine, the combination of a flexible band normally held in tension and capable of being flexed only to a fixed degree, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator adapted to flex said band to a definite extent, in order to operate its register, said band being located directly in the path of movement of each actuator, but free from fixed connection therewith, whereby, when said band is flexed to said fixed degree by the operation of a predetermined number of said actuators, the unoperated actuators are held against operative movement, retaining means for holding each actuator when operated and said band, means for releasing said retaining means, and means for automatically returning every operated actuator to its initial position.



4. In a voting machine, the combination of a flexible band, devices cooperating with said band for limiting the amount of the possible flexing thereof, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent, in order to operate its register, whereby, when said band is flexed to its full limit by the operation of a predetermined number of said actuators, the unoperated actuators are held against operative movement, a key and a fixed indicator for each actuator, a pawl for engaging each actuator and for holding the same when operated, means for releasing each operated pawl, and tension apparatus for actuating said band, to return each operated actuator when released, to its initial position.

5. In a voting-machine, the combination of a flexible band, devices cooperating with said band for limiting the amount of the possible flexing thereof, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent, in order to operate its register, whereby, when said band is flexed to its full limit by the operation of a predetermined number of said actuators, the unoperated actuators are held against operative movement, a key and a fixed indicator for each actuator, a pawl for engaging each actuator and for holding the same when operated, means for releasing said pawl, and means, of which said band is an element, for returning each operated actuator when released, to its initial position.

6. In a voting-machine, the combination of a flexible band, adjustable devices cooperating with said band for limiting and varying the amount of the possible flexing thereof, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent, in order to operate its register, whereby, when said band is flexed by a predetermined number of said actuators to the full extent predetermined by said adjustable devices, the unoperated actuators are held against operative movement, and means for preventing a second actuation of any operated actuator until it is returned to its initial position.

7. In a voting-machine, the combination of a flexible band, adjustable devices cooperating with said band for limiting and varying the amount of the possible flexing thereof, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent, in order to operate its register, whereby,

when said band is flexed by a predetermined number of said actuators to the full extent predetermined by said adjustable devices, the unoperated actuators are held against operative movement, retaining means for holding each actuator when operated, means for releasing the operated retaining means, and means for automatically returning each operated actuator to its initial position.

8. In a voting-machine, the combination of a flexible band, a fixed stop, a stop moving with said band and adapted to engage said fixed stop for limiting the amount of the possible flexing of said band, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent in order to operate its register, whereby, when said band is flexed by a predetermined number of said actuators to the full extent predetermined by said stops, the unoperated actuators are held against operative movement, and means for preventing a second actuation of any operated actuator until its return to its initial position.

9. In a voting machine, the combination of a flexible band, a fixed stop, a stop moving with said band and adapted to engage said fixed stop for limiting the amount of the possible flexing of said band, a series of independent registers, a corresponding series of register, actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent in order to operate its register, whereby, when said band is flexed by a predetermined number of said actuators to the full extent predetermined by said stops, the unoperated actuators are held against operative movement, retaining means for holding each actuator when operated, means for releasing the operated retaining means, and means for automatically returning each operated actuator to its initial position.

10. In a voting-machine, the combination of a flexible band, a fixed stop, a stop moving with said band and adjustable thereon and adapted to engage said fixed stop for limiting and varying the amount of the possible flexing of said band, a series of independent registers, a corresponding series of register actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent in order to operate its register, whereby, when said band is flexed by a predetermined and variable number of said actuators to the full extent predetermined by said stops, the unoperated actuators are held against operative movement, and means for preventing a second actuation of any operated actuator until its return to its initial position.

11. In a voting-machine, the combination of a flexible band, a fixed stop, a stop moving with said band and adjustable thereon and adapted to engage said fixed stop for limiting and varying the amount of the possible flexing of said band, a series of independent registers, a corresponding series of register actuators, one for each register, each actuator engaging said band and adapted to flex said band to a definite extent in order to operate its register, whereby, when said band is flexed by a predetermined and variable number of said actuators to the full extent predetermined by said stops, the unoperated actuators are held against operative movement, retaining means for holding each operator when actuated, means for releasing the operated retaining means, and means for automatically returning each operated actuator to its initial position.

12. In a voting-machine, the combination of a flexible band, means for yieldingly holding said band under tension, devices coöperating with said band for limiting the amount of the possible flexing thereof, a series of independent registers, a corresponding series of register-actuators, one for each register, each actuator engaging said band and capable of flexing said band to a definite extent, in order to operate its register, whereby, when said band is flexed to the limit of the possible flexing thereof by a predetermined number of said actuators, the unoperated actuators are held against operative movement, a key and a fixed indicator for each actuator, retaining means for holding each actuator when operated, and means for releasing the operated retaining means, whereby the means for holding said band under tension returns each operated actuator to its initial position upon release of the retaining means.

13. In a voting-machine, the combination of a flexible band, capable of being flexed only to a fixed degree, a series of independent registers, a corresponding series of rotary register-actuators, one for each register, each actuator having means for engaging said band at two separated points and thereby adapted to flex said band to a definite extent when operated, whereby, when said band is flexed to said fixed degree by a predetermined number of said actuators, the unoperated actuators are held against operative movement, retaining means for holding each operated actuator, means for releasing said retaining means, and means for rotating each operated actuator to its initial position.

14. In a voting-machine, the combination of a flexible band capable of being flexed only to a fixed degree, a series of independent registers, a corresponding series of rotary register-actuators, each having a pair of pulleys, as C, thereon, one being at one side of the center of rotation of said actuator, and having said flexible band between said pulleys, whereby, when said band is flexed to said fixed degree by the rotation of a predetermined number of said actuators, the unoperated actuators are held against operative movement.

15. In a voting-machine, the combination of a series of independent registers, a corresponding series of register-actuators, each having means of engaging with a retainer, a retainer attached to each register and adapted to engage the corresponding actuator, a lock-out and returning mechanism engaging each actuator of said series and adapted to permit the operation of a predetermined number of said actuators and to prevent the operation of the unoperated actuators in excess of said predetermined number and to return said actuators to initial position, a bar or band adapted to engage said retainers to release the same from said actuators, and operating mechanism for moving said bar or band.

16. In a voting-machine, the combination of a series of independent registers G, a corresponding series of pawls or retainers, as E', each having a tail e' and each pivoted to its register, a corresponding series of register-actuators having means, as a notch, for engaging, when operated, with said pawl or retainer, a bar or band e^3 passing through perforations in the tails e' and carrying adjustable stops e^3, means for moving said bar or band to cause said stops to engage said tails and to release said pawls or retainers from said notches, means for preventing the operation of all except a predetermined number of actuators in said series and means for returning the operated actuators to initial position.

17. In a voting-machine, the combination of a series of registers, a corresponding series of register-actuators, a flexible band engaged and flexed by each actuator when operated to actuate its register, and means for yieldingly holding said band under longitudinal tension, whereby, upon releasing an operated actuator, the actuator is automatically returned to its initial position by said band and tension device.

18. In a voting-machine, the combination of a series of registers, representing all the candidates of the different parties for election to an office, a corresponding series of register-actuators, and an automatic lock-out and returning device engaging each actuator in said series, said lock-out and returning device being adapted to return all the operated actuators of the series to their initial positions upon release of said actuators and before any other actuator can be operated.

19. In a voting-machine, the combination of a series of registers, representing all the candidates of the different parties for election to an office, a corresponding series of register-actuators, an automatic lock-out and returning device engaging each actuator in said series, the lock-out and returning device being adapted to return all the operated actuators of the series to their initial positions upon release of said actuators and before any other actuator can be operated, devices for holding each actuator when operated and means for releasing said holding devices.

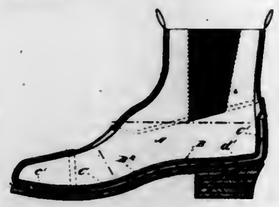
20. In a voting-machine having a supporting plate-bearing voting apparatus and provided with a series of apertures for the insertion of ballot-cases, an independent balloting mechanism consisting of a rotary actuator on one side of said plate, having a shelf thereon normally registering with one of said apertures and adapted, when the actuator is in normal position, to receive a single ballot-case and when rotated to discharge said case, a handle or key on the other side of said plate attached to said actuator, means, as a plate rotating with said actuator, for closing said aperture when the actuator is rotated, a receiver for said ballot-cases, and means for automatically returning said actuator to its normal position.

570,813. INOCULATION OF THE SOIL FOR CULTIVATING LEGUMINOUS PLANTS. FRIEDRICH NOBBE and LORENZ HILTNER, Tharand Germany. Filed Aug. 9, 1895. Serial No. 558,771. (No model.)

Claim.—For the inoculation of seed with purely-cultivated bacteria, the process essentially consisting in wetting the seed with an emulsion of pure cultures, mixing therewith while continuously stirring a nourishing material adapted to facilitate the augmentation of the bacteria and then adding dry earth, sand or a similar small grained material in such an amount that the seed-grains cease to agglomerate and become adapted to be sown.

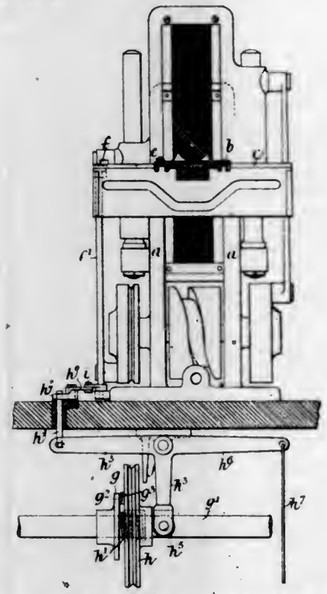
570,814. BOOT OR SHOE. WILLIAM OWEN, Petersham, New South Wales. Filed Mar. 30, 1896. Serial No. 585,465. (No model.)

Claim.—1. A ventilated boot or shoe having an outer imperforate, and an inner perforated sole, and two ventilating-soles interposed between the same, said ventilating-soles being formed of thin, semi-elastic material the upper ventilating-sole being provided with openings which communicate with those in the perforated inner sole, and the lower ventilating sole having risers on its upper surface, the upper ventilating-sole normally lying a little above the ends of said risers and adapted to be depressed by weight and to rise by its elasticity when the weight is removed, and a passage to the exterior air communicating with the space between said ventilating-soles, substantially as described.



2. A ventilating device for boots and shoes, consisting of an upper and lower sole of semielastic material, the upper perforated and the lower sole having risers on its upper surface above the ends of which the perforated upper sole normally lies by its own elasticity and against which it may be depressed by weight, each of said soles having a rearward extension at the heel, that upon the lower sole being the shorter and being provided with a central corrugation forming an air-passage communicating with the space between the two soles which are rigidly united at the toe and at the heel and adapted to lie between the perforated inner sole and imperforate outer sole of a boot, or shoe, the upwardly bent heel extensions taking the place of and forming part of the heel-stiffening, substantially as described.

570,815. WEFT-STOPPING MECHANISM FOR LOOMS. JOHN POYSER, Mansfield, England. Filed Feb. 24, 1896. Serial No. 580,463. (No model.) Patented in England Jan. 2, 1895, No. 144; in France July 25, 1895, No. 249,170; in Belgium July 25, 1895, No. 116,704; in Italy Sept. 30, 1895, XXX. 39,439, and LXXVII. 227; in Spain Oct. 12, 1895, No. 17,785; in Austria Nov. 21, 1895, No. 45/4,406, and in India Nov. 23, 1895, No. 261.



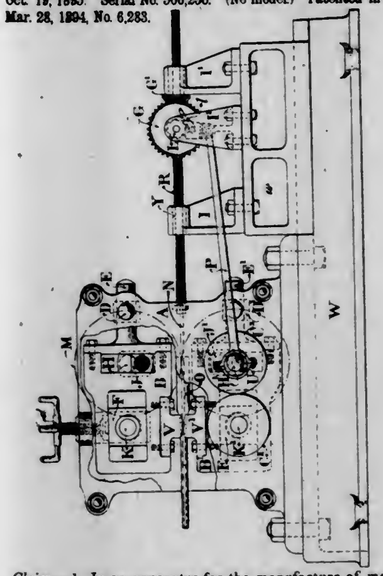
Claim.—1. In combination in a loom, the driving-shaft, the pulley, the clutch mechanism connecting the same, the shuttle, the take-up lever carried thereby, and the projection rigidly attached to said lever and independent mechanism operated by said projection for releasing said clutch, substantially as described.

2. In combination, in a loom, the driving shaft, the shiftable pulley, means for holding the same in engagement with said shaft, comprising the bell-crank lever h^3, the bolt h^4, the centrally-pivoted arm having one end engaging said bolt, the spindle f'', the arm i carried thereby having its end pivoted to the end of said centrally-pivoted arm and means for rocking said spindle to disengage said pulley and shaft, substantially as described.

3. In combination, in a loom, the driving-shaft, the pulley, the clutch mechanism, the shuttle, the pivoted take-up lever under spring-tension carried thereby, the projection formed integral with said lever independent mechanism operated thereby for releasing said clutch mechanism and the stop carried by said shuttle adapted to limit the movement of said projection, substantially as described.

4. In combination in a loom, the shuttle, the take-up lever pivoted thereon, the sliding bolt also carried by the shuttle and in connection with the said lever, the lever f and shaft f'' carrying the same, the lever i also carried by the shaft f'', the pivoted catch having the oppositely-arranged arm connected to the lever i, the bolt h^4 engaging the catch, the driving-shaft, the pulley, the means for holding the said pulley and shaft in engagement, the said pulley being adapted to disengage from the said shaft by the breaking of the weft-thread through the said sliding bolt operating the lever f, to rock the shaft f'' and release bolt h^4, through the arms i, h^2, h^3, and thereby disengaging the clutch mechanism between the pulley and driving-shaft, substantially as described.

570,816. APPARATUS FOR MANUFACTURING METAL TUBES. BENJAMIN PRICE, Morriston, England, assignor of two-thirds to Richard Laybourne and Charles William Earle Marsh, Newport, England. Filed Oct. 19, 1895. Serial No. 566,250. (No model.) Patented in England Mar. 28, 1894, No. 6,283.



Claim.—1. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages mounted in a frame; means for reciprocating said swages longitudinally of said frame, and means for causing said swages to approach and to recede from each other simultaneously; of means for holding the ingot while being operated upon; and means for intermittently advancing and turning said ingot, substantially as described.

2. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages mounted in a frame; means for reciprocating said swages simultaneously in the direction of the length of the ingot; and means for causing said swages to simultaneously approach and recede from each other; of a mandrel for holding the ingot, a screw and means for advancing and retiring the same, whereby said ingot is simultaneously fed forward and turned, substantially as described.

3. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages mounted in a frame, and each having a tapering groove on its operating-face; means for reciprocating said swages longitudinally of said frame and means for causing said swages to approach and to recede from each other simultaneously; of means for holding the ingot while being operated upon; and means for simultaneously advancing and turning said ingot, substantially as described.

4. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages mounted in a frame, and each having a tapering groove on its operating-face; means for reciprocating said swages simultaneously in the direction of the length of the ingot, and means for causing said swages to simultaneously approach or recede from each other; of a mandrel for holding the ingot while being operated upon; a screw, and means for turning said screw whereby said ingot is simultaneously fed forward and turned, substantially as and for the purposes described.

5. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of slides mounted in a frame; swaging devices mounted in the opposite faces of said slides; means for reciprocating said slides simultaneously, and means for causing said slides to approach and recede from each other simultaneously; of means for holding the ingot while being operated upon; and means for simultaneously feeding forward and turning said ingot, substantially as and for the purposes described.

6. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of slides mounted in a suitable frame; swaging devices mounted upon the opposite faces of said slides, said slides each having an elongated slot therein at right angles to its length; sliding blocks working in said slots; crank-shafts journaled in said frame and rotating in said sliding blocks, and means for simultaneously rotating said crank-shafts and thereby reciprocating said slides simultaneously; and means for causing said slides to approach and to recede from each other simultaneously; of means for holding the ingot while being operated upon by said swages; and means for simultaneously advancing and turning said ingot, substantially as and for the purposes described.

7. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of slides mounted in a suitable frame and having swaging devices mounted upon the opposite faces thereof; a pair of crank-shafts journaled in said frame; a block mounted upon each of said crank-shafts and working in a slot in each of said slides at right angles to the length thereof, and adapted to impart a reciprocating motion to said slide; means for rotating said crank-shafts simultaneously; another pair of shafts journaled in said frame; an eccentric on each of said shafts; a block mounted upon each eccentric, and working in slots in the said slides and adapted to cause said slides to approach and recede from each other; and means for simultaneously rotating said shafts; of means for holding the ingot while being operated upon; and means for simultaneously advancing and turning said ingot, substantially as and for the purposes described.

8. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages and means for simultaneously operating the same mounted in a suitable frame; of a mandrel for holding the ingot; a screw attached to the rear end of said mandrel; brackets supporting said screw, one of said brackets being screw-threaded, and the other of said brackets being provided with a smooth hole therethrough; a gear-wheel splined upon said screw and journaled in said latter bracket; and means for rotating said gear-wheel, substantially as and for the purposes described.

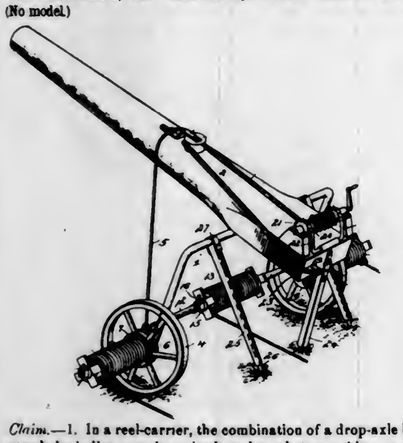
9. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of swages and means for simultaneously operating the same mounted in a suitable frame; of a mandrel for holding the ingot; a screw attached to the rear end of said mandrel; brackets supporting said screw, one of said brackets being screw-threaded and the other of said brackets being provided with a smooth hole therethrough; a gear-wheel splined upon said screw and journaled in said latter bracket; another gear-wheel mounted upon suitable supports and meshing with the first gear-wheel; a ratchet and pawl connected with said second gear-wheel; a rod operating said ratchet and pawl; and means for operating said rod, substantially as and for the purposes described.

10. In an apparatus for the manufacture of metal tubes from hollow ingots, the combination with a pair of slides mounted in a frame; of curved swaging devices each mounted on a shaft or axle journaled in the said slides; means for reciprocating said slides simultaneously, means for causing said curved swaging devices to rotate on their said axes in said slides; means for holding the ingot while being operated upon; and means for intermittently feeding forward and turning said ingot substantially as and for the purposes described.

11. In apparatus for the manufacture of metal tubes from hollow ingots, the combination with a slide mounted in a frame; of curved swaging devices each mounted on a shaft or axle journaled in said slide; curved swaging-surfaces on each said device eccentric to the axis on which said device turns; means for reciprocating said slide; means for causing a partial revolution of said shafts or axles and thereby causing said curved swaging devices to simultaneously and equally rotate on their said axes respectively in said slide; means for holding said ingot and means for intermittently advancing and turning said ingot, substantially as and for the purposes described.

12. In apparatus for the manufacture of metal tubes from hollow ingots, the combination with a slide mounted in a frame, of curved swaging devices each mounted on a shaft or axle journaled in the said slide; curved swaging-surfaces on said devices eccentric to said axes; means for causing the said swaging devices mounted on their respective shafts or axles to reciprocate parallel with the longitudinal axis of the said ingot; and means for causing a partial revolution of said shafts or axles and thereby causing said curved swaging devices to to those named above for preventing a return movement of the arbor or sleeve upon the return of either of said dials.

570,817. WIRE-STRETCHER AND REEL-CARRIER. ANDREW L. PRUITT, Hico, Tex., assignor of one-half to James Meriwether, Pearsall, Tex. Filed June 8, 1894. Renewed Sept. 1, 1896. Serial No. 604,585. (No model.)



Claim.—1. In a reel-carrier, the combination of a drop-axle having extended spindles, carrying-wheels, end spools removably arranged on the spindles and located at the outer sides of the wheels, a shaft located between the wheels and extending across the bend of the drop-axle, and a central spool carried by the shaft, substantially as described.

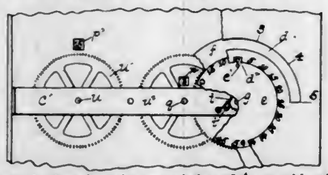
2. In a reel-carrier, the combination of a drop-axle having extended spindles and provided at opposite sides of its bend with sockets, a transverse shaft removably fitted in the sockets, and spools mounted on the spindle and the shaft, substantially as described

3. In a reel-carrier and wire-stretcher, the combination of a drop-axle, carrying-wheels, a beam secured to the axle and extending in rear thereof, a wire-stretcher mounted on the beam, and a brace hingedly connected with the beam to prevent the front end of the latter from swinging upward, substantially as and for the purpose described

4. In a wire-stretcher and reel-carrier, the combination of an axle, wheels, a beam secured to the axle and provided with a socket, a windlass shaft journaled on the beam, a pulley mounted on the beam and arranged in advance of the windlass-shaft, and a windlass-chain connected with the shaft extending around the pulley and provided with a pin adapted to fit the said socket, substantially as described.

5. In a wire-stretcher and reel-carrier, the combination of a drop-axle having extended spindles, carrying-wheels, end spools arranged on the spindles and located at the outer sides of the carrying-wheels, a transverse shaft extending across the bend of the drop-axle, a central spool arranged on the shaft, a beam secured to the shaft and extending in rear thereof, means for stretching a wire mounted on the beam, and hinged braces secured to the axle and to the beam, substantially as described.

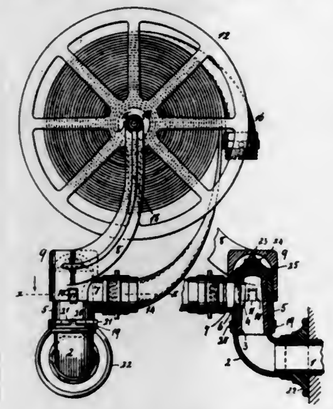
570,818. CASH-REGISTER. JOHN W. REHILL, Somerville, N. J. Filed Nov. 19, 1895. Serial No. 569,393. (No model.)



Claim.—1. A cash-register consisting of the combination of concentric dials, the one dial being arranged to rotate through half a circle only, but both in a forward and backward direction and past given equal division-marks located concentrically with said dial and the other dial being rotary forward and backward past equal division-marks located concentrically with said dial, through a whole circle, and continuously and repeatedly through said circle, an arbor to which the second dial is connected, through the medium of a pawl and ratchet-wheel, and provided with a registering-dial *o*, having registering-train *o'* and *o''*, and a gear-wheel *n*, and adapted by the pawl and ratchet-wheel movement, to be propelled continuously in one direction only, a sleeve to which the first dial is connected through the medium of a pawl and ratchet-wheel and rotary in one direction only, and carrying a wheel *l* having two sets of teeth *l'* at or about diametrically opposite points, and an arbor *m'* having two pinions, one of which gears into the wheel *n*, and the other of which is adapted to gear intermittently with the sets of teeth *l'*.

2. A cash-register consisting of the combination of concentric dials, the one dial being arranged to rotate through half a circle only, but both in a forward and backward direction and past given equal division-marks located concentrically with said dial and the other dial being rotary forward and backward past equal division-marks located concentrically with said dial, through a whole circle, and continuously and repeatedly through said circle, an arbor to which the second dial is connected, through the medium of a pawl and ratchet-wheel, and provided with a registering-dial *o*, having registering-train *o'* and *o''*, and a gear-wheel *n*, and adapted by the pawl and ratchet-wheel movement, to be propelled continuously in one direction only, a sleeve to which the first dial is connected through the medium of a pawl and ratchet-wheel and rotary in one direction only, and carrying a wheel *l*, having two sets of teeth *l'*, at or about diametrically opposite points, and an arbor *m'* having two pinions, one of which gears into the wheel *n*, and the other of which is adapted to gear intermittently with the sets of teeth *l''*, the said arbor and the said sleeve each being provided with a pawl-and-ratchet movement, in addition to those named above for preventing a return movement of the arbor or sleeve upon the return of either of said dials.

570,819. SUPPORT FOR REELS OR HOSE. CHARLES W. RUBY, Brooklyn, N. Y. Filed Mar. 12, 1896. Serial No. 582,953. (No model.)



Claim.—1. The combination with a conduit having a discharging-nipple, of a hood rotatably mounted upon the nipple to open and close the same and provided with means to connect with a hose, and a hose-support detachably fitted upon, solely supported by, and serving to rotate the hood to open and close the nipple, substantially as described.

2. A conduit having a stop-cock and a reel or hose support having a clasping or engaging portion made to straddle the cock, said engaging portion and cock being provided with interlocking grooves and tongues (one or more) substantially as described.

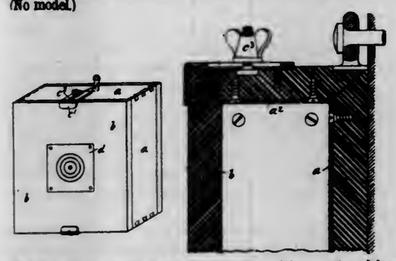
3. The combination with a conduit having a water-discharging nipple, of a hood rotatably mounted on the nipple to open and close the same and having means to connect with a hose, and a hose-support having a cap or socket fitted over and engaging the hood and serving to rotate the same to open and close the discharge-nipple, substantially as described.

4. The combination with a conduit, of a flanged discharge-nipple connected therewith, a rotatable hood having means to connect with a hose and mounted upon the said nipple to open and close the same, and a hose-support having a cap or socket fitted over and engaging the rotatable hood to turn the latter and thereby open and close the nipple, substantially as described.

5. The combination with a water-conduit having a water-discharging nipple, of a hood rotatably mounted on the nipple to open and close the same and having means to connect with a hose, a hose-support having a cap or socket fitted over the hood and serving to turn the latter to open and close the nipple, and stops for limiting the turning motion of the hood, substantially as described.

6. The combination with a conduit having a rotary stop-cock, of a cap or socket having laterally-extended hose-supporting arms and fitted over the stop-cock to turn and thereby open and close the same, substantially as described.

570,820. PORTABLE SAFETY-TARGET. EDWARD J. R. SCRATTON, St. Andrews, Scotland. Filed Apr. 28, 1896. Serial No. 589,447. (No model.)



Claim.—A portable safety-target comprising a closed box lined with armor-plating, and a penetrable front cover carrying the bull's-eye, with adjustable clips removably securing the said front cover in place upon the box, substantially as described.

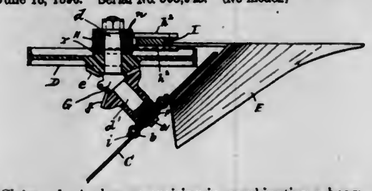
570,821. COMBINED GOLF-TEE AND SCORE-CARD. PROSPER L. SENAT, Philadelphia, Pa. Filed Dec. 16, 1895. Serial No. 572,343. (No model.)



Claim.—1. The herein-described blank for forming a golf-tee, consisting of a piece of flexible material in the shape of a portion of an annulus, having at one end a tongue and at the other end means for engaging said tongue, whereby the blank may be formed in the shape of a frustum of a cone whose small end is adapted to support the ball, substantially as described.

2. The herein-described blank for forming a golf-tee, consisting of a piece of flexible material in the shape of a portion of an annulus, having at each end a hooked tongue whereby the two ends may be locked together to form a golf tee in the shape of a frustum of a cone, the small end of which is adapted to support the ball, substantially as described.

570,822. PLOW. SAMUEL G. SEVIER, Oenaville, Tex. Filed June 18, 1896. Serial No. 595,945. (No model.)



Claim.—1. A plow comprising in combination a beam, a standard connected therewith to the lower end of which are attached the plowshare and fixed moldboard, the handles secured at their lower end to said standard, the lever pivoted to said standard, and means whereby said lever may be secured at its free end, the axle adjustably secured to said lever, the driving-wheel revolubly mounted on said axle, the bevel gear-wheel secured to said driving-wheel, the bevel gear-wheel revolubly mounted on said axle and meshing with said first-mentioned gear-wheel and having the elongated hub provided with the flange having bolt-holes, the revolving moldboard secured to said flange, the scraper adapted to cleanse said driving-wheel, the scraper adapted to cleanse said revolving moldboard, and means for securing said scraper, substantially as and for the purpose shown and described.

2. In a plow, the combination with a driving-wheel, of the adjustable lever having the axle G secured thereto on which is revolubly mounted said driving-wheel, said lever being pivoted at its lower end to the standard or lower end of the plow-beam, the movable end of the lever being provided with means for adjustably securing it with relation to the plow-handles; the scraper for said driving-wheel secured to said lever; the bevel gear-wheel *e* driven by said driving-wheel; the bevel gear-wheel *f* mounted on the opposite end of said axle and engaging said first gear-wheel, and having secured to it the circular revolving moldboard C, set by means of the bend in said axle at an angle to the axis of said driving-wheel; a plowshare having a portion of a fixed moldboard adapted at its rear to the circular

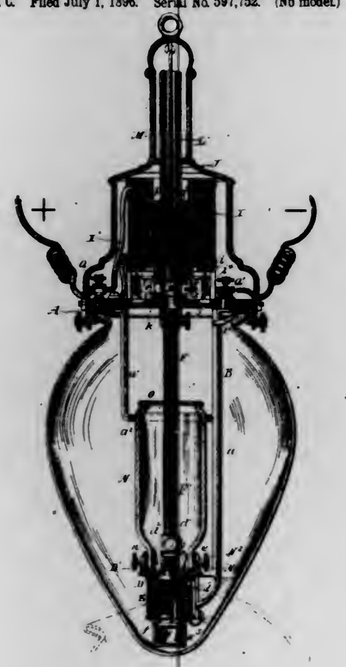
form of said revolving moldboard, and means for retaining said revolving moldboard and bevel gear-wheel, substantially as and for the purposes shown and described.

3. The combination with the beam and handles, of the standard I attached to the top thereof to the beam; the plowshare attached to the lower end of said standard; the lever pivoted at its lower end to the standard; the binding-bolt securing said lever adjustably to said handles; the bent angular axle G secured to said lever; the driving-wheel D having the bevel gear-wheel *e* revoluble on said axle; the bevel gear-wheel *f* provided with the flange i having bolt-holes therein revoluble on the angular end of said axle; the disk C secured to said flange, and suitable means whereby said bevel gear-wheel and disk may be retained revolubly, substantially as and for the purposes shown and described.

4. In a plow the combination with a beam and a fixed moldboard and plowshare connected thereto, of the standard I connected to said beam; the plowshare E attached to the foot I′ of said standard; the lever H having the slot *h* and lower arm h^2, the latter pivoted at h^3 to said standard; the handles B secured at their lower ends to said standard; the binding screw-bolt passing through said slot and through suitable holes in said handles; the scraper N attached to said lever; the axle G having the end *d* rigidly secured to said lever; the driving-wheel D revoluble on said axle; the bevel gear-wheel *e* attached to said driving-wheel; the bevel gear-wheel *f* revoluble on the end *d′* of said axle and meshing with the wheel *e*; the flange i integral with said wheel *f*; the disk C secured to said flange; the bolt *a* seated in the end of said axle *d′*; the scraper F secured by means of said bolt, said scraper having the plate end retaining said disk on said axle, all arranged and operating substantially as and for the purposes shown and described.

5. In a plow of the character described, the combination with the beam and standard, of the pair of handles converging at the lower ends and attached to said standard; the lever H of bell-crank form having two arms and a suitable hole to receive an axle through or near the intersection of said arms, a jaw at the end of the lower arm pivoted to said standard, and a curved slot in the upper arm; the bent axle G having a journal at each end thereof, one of said ends being secured to said lever in the hole therein; the driving-wheel D having the bevel gear-wheel *e* mounted on said journal adjacent to said lever; the bevel gear-wheel *f* having the flange i on the hub thereof; the revoluble moldboard C, secured to said flange, and the scraper F secured to said axle by means of the bolt seated in the end of said axle, substantially as and for the purposes shown and described.

570,823. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C. Filed July 1, 1896. Serial No. 597,752. (No model.)



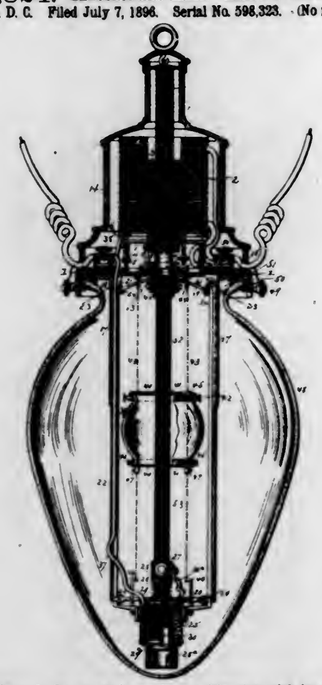
Claim.—1. In an arc-lamp the combination with its upper and feeding carbon, and regulating mechanism comprising a coarse-wire magnet included in series with the arc, for raising and lowering and feeding the upper carbon, of the lower and non-feeding carbon and a magnet and dash-pot associated therewith and constructed and adapted to slowly and gradually separate the lower carbon from the upper carbon when the lamp is switched into circuit and thereby draw the arc to any desired length, and to maintain the lower carbon at the limit of its downward movement throughout the normal operation of the lamp in burning its carbons, substantially as set forth.

2. In an arc-lamp the combination with its upper and feeding carbon and regulating mechanism comprising a magnet in series with the arc, and a friction-clutch, said parts being constructed to grip and uphold the carbon-holder when the lamp is switched into circuit, of the lower and non-feeding carbon and a magnet and dash-pot associated therewith and constructed and adapted to slowly and gradually separate the lower carbon from the upper carbon and thereby slowly draw the arc to any desired length and to maintain the lower carbon at the limit of its downward movement throughout the normal operation of the lamp in burning its carbons.

3. In an arc-lamp the combination with its carbons, a solenoid and a dash-pot for gradually and slowly separating the non-feeding carbon from the feeding carbon, of an arc-inclosing globe mounted on a support provided with an opening in which the core of said solenoid snugly fits and through which it is free to move, substantially as set forth.

4. In an arc-lamp, the combination with a depending frame comprising a long arm and a short arm, and a guide-ring connecting them, of an arc-inclosing globe supported at its lower end in a socket, and having its upper end maintained against lateral displacement by said guide-ring, substantially as set forth.

570,824. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C. Filed July 7, 1896. Serial No. 598,323. (No model.)



Claim.—1. In an arc-lamp the combination with its carbons and regulating mechanism for feeding the carbons simultaneously and thereby maintaining the arc at a fixed point, of means acting independently of the regulating mechanism and associated with the lower carbon for slowly and gradually separating it from the upper carbon when the lamp is switched into circuit and thereby slowly drawing the arc to any desired length, substantially as set forth.

2. In an arc-lamp the combination with its carbons; regulating mechanism for feeding the carbons simultaneously and thereby maintaining the arc at a fixed point, and an arc-inclosing globe provided with openings at each end through which the carbons pass and within which they snugly fit, of means associated with the lower carbon for slowly and gradually separating it from the upper carbon when the lamp is switched into circuit, and thereby slowly and gradually drawing the arc to any desired length, substantially as set forth.

3. In an arc lamp, the combination with its carbons and means for feeding them simultaneously and thereby maintaining the arc at a fixed point, of an arc-inclosing globe provided at each of its ends with a cover having an opening through which one of the carbons is fed and within which it snugly fits, the parts being constructed to permit of the lateral adjustment of the openings through which the carbons are fed, substantially as set forth.

4. In an arc-lamp the combination with its carbons and means for feeding them simultaneously, of an arc-inclosing globe provided at each of its ends with a cover having an opening through which one of the carbons is fed and within which it snugly fits, and means for permitting of the lateral adjustment of said globe, substantially as set forth.

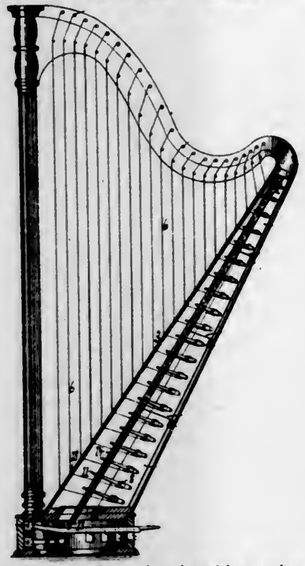
5. In an arc-lamp the combination with its carbons and means for feeding them simultaneously, of an arc-inclosing globe provided at each of its ends with a cover having an opening through which one of the carbons is fed and within which it snugly fits and means for permitting of the lateral adjustment in all directions of either end of the globe, substantially as set forth.

6. In an arc-lamp, the combination with its carbons and means for feeding them simultaneously, of an arc inclosing globe provided at each of its ends with a cover having an opening through which one of the carbons is fed and within which it snugly fits, and means for maintaining the globe at any desired vertical adjustment and means for permitting the globe to adjust itself laterally in all directions, substantially as set forth.

570,825. CARBON FOR ARC-LAMPS. DANIEL A. SHESLER, Toledo, Ohio. Filed Feb. 13, 1896. Serial No. 579,169. (No model.)

Claim.—A composition for carbons for electric-arc lights, consisting of graphitoid silicon, asbestos, carbon, and a binder, in the proportions and prepared substantially as set forth.

570,826. HARP. ERNST P. STARK, Markneukirchen, Germany. Filed July 30, 1896. Serial No. 601,072. (No model.)



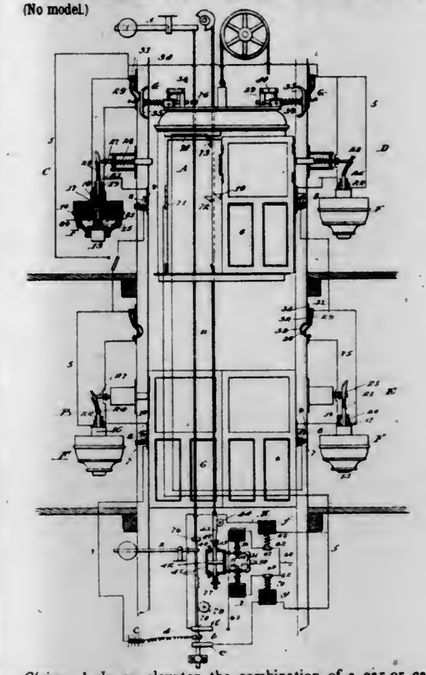
Claim.—1. In a harp, the combination with a carrier supported in the harp-casing, of a lever fulcrumed at one end on said carrier, a fixed pulley on the fulcrumed end of said lever and connected to one end of the harp-string, a slide engaging the free end of said lever, and a pedal for actuating said slide, substantially as described.

2. In a harp, the combination with a carrier supported in the harp-casing, of a series of levers each fulcrumed at one end on said carrier, a fixed pulley on the fulcrumed end of each of said levers, a series of slides each engaging the free end of one of said levers, and a plurality of pedals, one for each slide, for actuating the slides, one end of each of the harp-strings being connected to one of said pulleys, substantially as described.

3. In a harp, the combination with a carrier supported in the harp-casing, of a series of levers fulcrumed near one end on said carrier, a fixed pulley on the fulcrumed end of each lever, a series of slides each provided with a projection engaging the free end of one of said levers, and a plurality of pedals, one for each slide, for actuating the slides, one end of each of the harp-strings being connected to one of said pulleys, substantially as described.

4. A harp having its casement provided with a string tightening or stretching rod or slide, a lever actuated by the slide and connected to a string, a guide for the rod, and a carrier for the fulcrum, said guide and carrier being supported or mounted in the casement clear or out of contact with the latter substantially as described.

570,827. ELECTRICALLY-CONTROLLED ELEVATOR. SAMUEL D. STROHM, Philadelphia, Pa., assignor to the Strohm Elevator Safety Device Company, same place. Filed Apr. 4, 1896. Serial No. 586,211. (No model.)



Claim.—1. In an elevator, the combination of a car or cage, means for operating the same, mechanism for controlling said operating means, a solenoid or magnet for operating said controlling means, a safety-circuit extending through the landings for operating said solenoid or magnet, a push-button at each landing for closing or breaking the safety-circuit, a shunt around each push-button, and a closer or breaker in said shunt operated by the elevator-car, substantially as set forth.

2. In an elevator, the combination of a car or cage, means for operating the same, mechanism for controlling said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid and extending adjacent to the elevator-shaft, a push-button at each landing for making or breaking said safety-circuit, a shunt around each push-button, a closer or breaker in said shunt, and a shoe carried on the elevator for operating said closer or breaker, substantially as set forth.

3. In an elevator, the combination of a car or cage, means for operating the same, mechanism for controlling said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid or magnet and extending adjacent to the elevator-shaft, a push-button at each landing for closing or breaking said safety-circuit, a shunt around each push-button, a closer or breaker in each shunt, a shoe carried on the elevator-car for operating said closers or breakers, and means for withdrawing said shoe and for holding the same in a retracted position, substantially as set forth.

4. In an elevator, the combination of an elevator car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said controlling mech-

anism, a safety-circuit including said solenoid or magnet and extending adjacent to the elevator-shaft, a push-button at each landing for closing or breaking said safety-circuit, means controlled by the landing-doors for locking said push-buttons in their retracted positions, to maintain the safety-circuit closed or broken through the same, a shunt around each push-button, a closer or breaker in each shunt, and means carried by the car for operating said circuit closers or breakers, substantially as set forth.

5. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid or magnet and extending adjacent to the elevator-shaft, a push-button at each landing for breaking or closing the safety-circuit, a latch controlled by each landing-door for maintaining the push-button thereat in its retracted position to maintain the safety-circuit closed or broken, a shunt around each push-button, a closer or breaker in said shunt, and means carried by the car for operating said closer or breaker, substantially as set forth.

6. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid or magnet, and extending adjacent to the elevator-shaft, a push-button at each landing for closing or breaking the safety-circuit, a shoe pivoted to the moving elements of said push-button, a spring-pressed plunger for engaging said shoe when the latter is moved to make or break the safety-circuit at each landing, said plunger being retracted from such engagement when the landing-door is opened, a shunt around each push-button, a closer or breaker in each shunt, and means carried by the car for operating said closer or breaker, substantially as set forth.

7. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said operating mechanism, a safety-circuit including said solenoid or magnet and extending adjacent to the elevator-shaft, and a push-button mechanism, at each landing, comprising a casing a spring-pressed push-button, a separate plunger engaged by said push-button for making or breaking the safety-circuit, a shoe pivoted to said plunger, a second plunger with which said shoe engages, normally held in position to be engaged by said shoe by the closing of the landing-door, and adapted to be disengaged from said shoe when the landing-door is opened, substantially as set forth.

8. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid or magnet and extending adjacent to the elevator-shaft, and a push-button mechanism at each landing comprising a casing, a push-button mounted in said casing, an annunciator-circuit operated by said push-button, a separate plunger also operated by said push-button and adapted to break the safety-circuit, a shoe carried by said plunger, a second plunger with which said shoe is engaged, normally held in a position to be engaged by said shoe by the closing of the landing-door, but adapted to be withdrawn from said shoe when the landing-door is opened, and a shunt around said push-button, substantially as set forth.

9. In an elevator, the combination of a car or cage, means for operating the same, controlling means for said operating mechanism, a solenoid or magnet for operating the said controlling mechanism, a safety-circuit including said solenoid or magnet, and push-button mechanism at each landing comprising a casing, a push-button mounted in said casing, a separate plunger operated by said push-button, insulated buttons on said plunger, a pair of contact-springs with which the plunger normally engages, a shoe carried on said plunger, a second plunger with which said shoe engages but adapted to be withdrawn from the shoe on the opening of the landing-doors, and a shunt around said push-button, substantially as set forth.

10. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a solenoid or magnet for operating said controlling mechanism, a safety-circuit including said solenoid or magnet and passing through circuit closers or breakers controlled by the latches of the landing-doors, and mechanism for each landing for controlling said solenoid or magnet, substantially as set forth.

11. In an elevator, the combination with a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, a pipe or pipes for normally supplying liquid under pressure to both ends of said cylinder, a valve at each of said pipes, a solenoid or magnet for controlling each valve, and means under the control of the operator on the car for energizing either of said solenoids or magnets, substantially as set forth.

12. In an elevator, the combination of a car or cage, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, means for normally centering said piston for maintaining the controlling mechanism in an inactive condition, pipes leading to both ends of the cylinder, a valve in each pipe, a solenoid or magnet for controlling each valve, and means under the control of the operator for energizing either end of said solenoids or magnets, substantially as set forth.

13. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and controlling means pipes leading to both ends of said cylinder, and normally supplying a liquid under pressure thereto, a valve in each pipe adapted to shut off the supply of liquid to either end of the cylinder and put the same in communication with a discharge-pipe, a solenoid or magnet for operating each valve, and means under the control of the operator on the car for energizing either one of the solenoids or magnets, substantially as set forth.

14. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, pipes connecting with both ends of said cylinder, a valve in each pipe, a solenoid or magnet for operating each valve, a switch in the circuit to each solenoid, a relay-magnet or solenoid for operating each switch, and a safety-circuit including said relay-magnets or solenoids, said safety-circuit extending through circuit closers or breakers controlled by the landing-doors, substantially as set forth.

15. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, pipes connecting with both ends of said cylinder, a valve in each pipe, a solenoid or magnet for operating each valve, a switch in the circuit to each solenoid, a relay-magnet or solenoid for operating each switch, and a safety-circuit including said relay-magnets or solenoids, said safety-circuit extending through circuit closers or breakers controlled by the latches of the landing-doors, substantially as set forth.

16. In an automatic elevator, the combination of means for causing an elevator to travel continuously up or down in an elevator shaft or well, and mechanism at each landing controlling the operating mechanism of the elevator, whereby the elevator may be stopped at any landing, substantially as set forth.

17. In an elevator, the combination of means for causing the elevator to continuously travel up and down in an elevator shaft or well, a push-button at each landing controlling the operating mechanism for the elevator, and a circuit breaker or closer at each landing controlled by a shoe carried on the elevator car or cage and adapted to coact with the said push-button, whereby when said push-button is operated the movement of the car in actuating said circuit closer or breaker will bring the car to rest, substantially as set forth.

18. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, pipes leading into said cylinder at both ends thereof, a valve in each pipe, a solenoid or magnet for operating each valve, a stationary contact-plate in circuit with each solenoid or magnet, a contact-plate movable between said stationary plates and controlled by the operator on the car, and a safety-circuit including said contact-plates extending through circuit closers or breakers controlled by the landing-doors, substantially as set forth.

19. In an elevator, the combination of a car or cage, means for operating the same, controlling mechanism for said operating means, a cylinder, a piston in said cylinder, connections between said piston and the controlling mechanism, pipes leading into said cylinder at both ends thereof, a valve in each pipe, a solenoid or magnet for operating each valve, a stationary contact-plate in circuit with each solenoid or magnet, a contact-plate movable between said stationary plates and controlled by the operator on the car, and a safety-circuit including said contact-plates extending through circuit closers or breakers controlled by the latches of the landing-doors, substantially as set forth.

20. In an elevator, the combination of a car or cage, a hydraulic cylinder, pipes connecting the ends of said cylinder with the pressure supply, a three way valve in each of said pipes normally conveying the pressure to both ends of the cylinder, a solenoid or magnet for operating each valve for cutting off the pressure to either end of the cylinder and connecting the same with the discharge, and a switch controlled from the car or cage for energizing said solenoid or magnet, substantially as set forth.

21. In an elevator, the combination of a car or cage, a hydraulic cylinder, pressure and discharge pipes connected with said cylinder, a valve on each of said pipes, a solenoid or magnet for operating each of said valves, a switch carried on the car for energizing either of said solenoids or magnets, a switch in the circuit of said solenoids or magnets, a relay-magnet or solenoid for operating said switch, and a safety-circuit including said solenoid or magnet and extending through closers or breakers controlled by the landing-doors, substantially as set forth.

22. In an elevator, the combination of a car or cage, a hydraulic cylinder, pressure and discharge pipes connected with said cylinder, a valve on each of said pipes, a solenoid or magnet for operating each of said valves, a switch carried on the car for energizing either of said solenoids or magnets, a switch in the circuit of said solenoids or magnets, a relay-magnet or solenoid for operating said switch, and a safety-circuit including said solenoid or magnet and extending through closers or breakers controlled by the latches of the landing-doors, substantially as set forth.

23. In an elevator, the combination of a car or cage, hydraulic mechanism for operating the elevator, a valve in the main supply-pipe, a cylinder, a piston in said cylinder, connections between said piston and said valve, a pipe supplying water under pressure to said cylinder on one side of said piston, a valve in the latter pipe, a solenoid or magnet for operating the latter valve, and a safety-circuit extending through said solenoid or magnet and including closers or breakers controlled by the landing-doors, substantially as set forth.

24. In an elevator, the combination of a car or cage, hydraulic mechanism for operating the elevator, a valve in the main supply-pipe, a cylinder, a piston in said cylinder, connections between said piston and said valve, a pipe supplying water under pressure to said cylinder on one side of said piston, a valve in the latter pipe, a solenoid or magnet for operating the latter valve, and a safety-circuit extending through said solenoid or magnet and including closers or breakers controlled by the latches of the landing-doors, substantially as set forth.

25. In an elevator, the combination of a car or cage, hydraulic mechanism for operating the elevator, a main supply-pipe, a valve in said pipe, a pinion on said valve, a cylinder, a piston in said cylinder, a rack connected to said piston and engaging said pinion, a spring for normally keeping said piston at one end of said cylinder, a pipe leading into said cylinder at the same end, a valve in said pipe, a solenoid or magnet for operating said valve, a circuit for said solenoid or magnet, a switch in said circuit, a relay-magnet or solenoid for operating said switch, and a safety-circuit including said relay-magnet or solenoid extending through the closers or breakers formed by the landing-doors, substantially as set forth.

26. In an elevator, the combination of a car or cage, hydraulic mechanism for operating the elevator, a main supply-pipe, a valve in said pipe, a pinion on said valve, a cylinder, a piston in said cylinder, a rack connected to said piston and engaging said pinion, a spring for normally keeping said piston at one end of said cylinder, a pipe leading into said cylinder at the same end, a valve in said pipe, a solenoid or magnet for operating said valve, a circuit for said solenoid or magnet, a switch in said circuit, a relay-magnet or solenoid for operating said switch, and a safety-circuit including said relay-magnet or solenoid extending through the closers or breakers formed by the latches of the landing-doors, substantially as set forth.

27. An improved circuit closer or breaker operated by a latch comprising a pivoted shoe, an insulating button or knob carried on said shoe, and a contact-spring engaged by said button or knob when the shoe is moved to one position and engaged by the shoe itself when in another position, substantially as set forth.

28. An improved circuit closer or breaker operated by a latch comprising a shoe, an insulated face on said shoe with which the latch engages, an insulating knob or button on said shoe, and a spring engaged by said knob or button when the shoe is in one position, and by the shoe itself when in another position, substantially as set forth.

29. An improved push-button for the purpose mentioned, comprising a casing, a push-button 13 in said casing, a spring 15 for said push-button, a sleeve 16 secured to said casing, a plunger 17 mounted within said sleeve, a spring 18 for said plunger, a rod 21 carried by said plunger, insulating buttons or knobs on said rod, contact-springs 19 and 20 normally engaging said rod, and a shoe 23 pivoted to said rod, substantially as set forth.

30. An improved valve, comprising a valve-casing, pipes 106, 107, entering the same at opposite sides, a discharge-pipe connecting with the same between the pipes 106, 107, a valve centrally located in said valve-casing and having a piston on one of its ends, a cylinder for receiving said piston and formed integral with the valve-casing, a pipe 115 connecting the pipes 106, 107 with said cylinder, and an auxiliary valve in said pipe, substantially as set forth.

31. An improved electric valve, comprising a valve-casing, a cylinder connected to said casing, a valve in said casing, a piston mounted in said cylinder and connected with said valve, a stop-screw for adjusting the supply of said valve, a branch pipe for normally supplying pressure to said cylinder, a valve in said branch pipe, and a solenoid or magnet for operating the latter valve, substantially as set forth.

32. In an improved electric valve, the combination of a valve-casing K, pipes 106, 107 leading to and from said casing, a valve 109 in said casing, the exit-pipe 108 normally connected to the pipe 107, the cylinder 112 integral with the valve-casing, the piston 111 in said cylinder integral with the said valve, the branch pipe 115 connecting the pipe 106 with the cylinder 112, the valve 116 in said branch pipe, the discharge-pipe 117, and a solenoid or magnet connected to said valve 116, substantially as set forth.

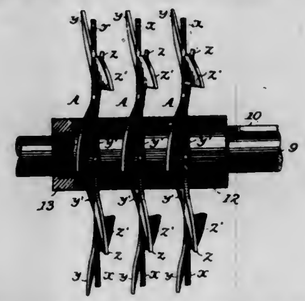
33. In an improved electric valve, the combination of the valve-casing K, pipes 106 and 107 leading to and from said casing, the valve 109 in said casing, the exit-pipe 108 normally connected to the pipe 107, the cylinder 112 integral with the valve-casing, the piston 111 in said cylinder integral with the said valve, the stop-screw 114, the branch pipe 115 connecting the pipe 108 with the cylinder 112 and the valve 116 in said branch pipe, the discharge-pipe 117, and the solenoid or magnet connected to said valve 116, substantially as set forth.

34. An improved solenoid, comprising a coil, a core movable in said coil, and a magnetized disk or plate parallel with the rear end of the coil and magnetized by the same, said disk or plate attracting the core during its final movements, substantially as set forth.

35. An improved solenoid, comprising a coil, a core movable in said coil, a disk or plate at the rear of the coil and adjustably secured thereto and magnetized by the coil, said disk or plate attracting the core during its final movements, substantially as set forth.

36. An improved solenoid, comprising a coil, a core movable in said coil, a disk or plate at the rear of the coil and adjustably secured thereto and magnetized by the coil, said disk or plate attracting the core during its final movements, and a non-magnetic plate interposed between said magnetized disk and the core, substantially as set forth.

570,828. CIRCULAR CUTTER. JOHN D. TRACY, Sterling, Ill. Filed Sept. 6, 1895. Serial No. 561,661. (No model.)



Claim.—1. A circular cutter comprising a body portion and a number of series of teeth arranged around the periphery thereof, a portion of the teeth of each series extending in the plane of the cutter-body and other teeth of each series extending alternately on opposite sides of said plane, substantially as described.

2. A circular cutter, comprising a body portion and a number of series of teeth arranged around the periphery thereof, a portion of the teeth of each series extending in the plane of the body portion of the cutter, and other teeth of each series extending alternately upon opposite sides of and at different distances from said plane, substantially as described.

3. A circular cutter, comprising a body portion and a number of series of teeth arranged around the periphery thereof, a portion of the teeth of each series extending in the plane of the body portion of the cutter, while others extend alternately upon opposite sides of and at different distances from said plane, the distances between the planes of the points of said teeth being equal, substantially as described.

4. A circular cutter, comprising a body portion and a number of series of teeth arranged around the periphery thereof, a portion of the teeth of each series extending in the plane of the body portion of the cutter, and others extending alternately on opposite sides of and at different distances from said plane, the teeth of one series being arranged diametrically opposite the similar teeth of the other series, substantially as described,

5. A circular cutter, comprising a body portion provided at its periphery with a successively-recurring series of teeth, a portion of the teeth of each series extending in the plane of the cutter-body, while others extend alternately upon opposite sides of and at different distances from said plane, substantially as described.

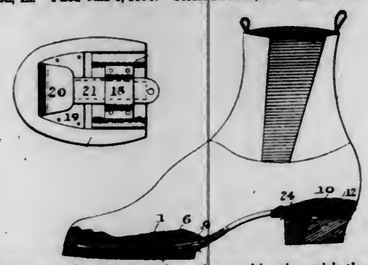
570,829. MECHANISM FOR DRIVING TRAVELING FLATS. EDMUND TWEEDALE, SAMUEL TWEEDALE, and JOSEPH SHALLEY, Manchester, England. Filed Apr. 30, 1896. Serial No. 589,736. (No model.)

Claim.—1. In a carding-machine, and in combination, the chain of flats, and a star-wheel for driving the same, a worm-wheel operating said star-wheel, a worm driving said worm-wheel, a shaft carrying the worm, a long key on said shaft, a second worm-wheel also carried by said shaft, grooves for the key in both the worm and worm-wheel, whereby the shaft may rotate with both worm and worm-wheel or when drawn out longitudinally may be used to rotate by hand the worm only, means for holding the shaft in either position, a second worm which engages with the second worm-wheel and means for driving the latter worm substantially as described.



2. In a carding-engine, and in combination, the chain of flats, and a star-wheel for driving the same, a worm-wheel operating said star-wheel, a worm driving said worm-wheel, a shaft carrying the worm, a long key on said shaft, a second worm-wheel also carried by said shaft, grooves for the key on both the worm and worm-wheel, whereby the shaft may rotate with both worm and worm-wheel or when drawn out longitudinally may be used to rotate by hand the worm only, means for holding the shaft in either position, a second worm with which engages the second worm-wheel, means for driving the latter worm and a casing covering both of the worms and their worm-wheels and adapted to contain lubricating material substantially as described.

570,830. DETACHABLE HEEL. MANLY R. VANDERVOORT, Clinton, Ill. Filed Jan. 6, 1896. Serial No. 574,509. (No model.)



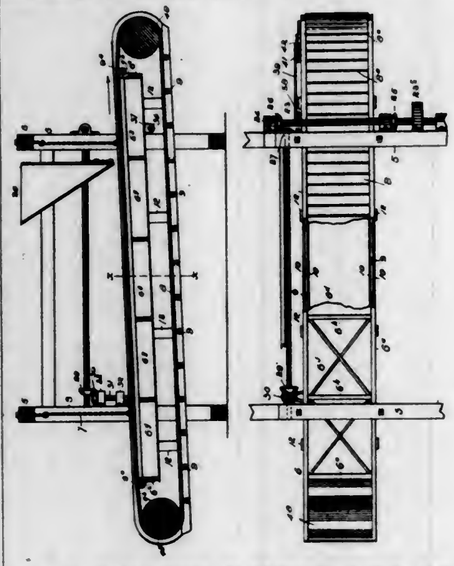
Claim.—1. In a boot or shoe, the combination with the permanent sole having a recess at the rear, and the plate secured thereto having inwardly-turned flanges at the ends, and a transverse plate at the rear of the removable heel, the strip secured thereto, the spring-plate secured to said strip, and its edges engaging with said flanges, and the plate at the rear formed with a tongue projecting between said transverse plate and the plate secured to the sole; substantially as described.

2. In a boot or shoe, the combination with the permanent sole, having a recess near the rear end and the plate seated therein, formed with inwardly-turned flanges at the front ends and with a transverse plate at the rear, of the removable heel, the strip secured thereto, the spring-plate secured to said strip engaging with said flanges, the cross-piece secured to said plate, the rear plate provided with an inwardly-turned tongue engaging between the said transverse plate and the plate to which it is secured, and the spring-slide secured to the sole and passing under said cross-piece, and projecting into said slot; substantially as described.

570,831. DRY ORE CONCENTRATOR AND SEPARATOR. ROBERT R. WAUGH, EUGENE WAUGH, and CHARLES S. OLDER, Colorado Springs, Colo., assignors of nine-twentieths to Jesse S. Waugh and William R. Hitchcock, Omaha, and Merriweather J. Waugh and Freemont A. Warren, Lincoln, Nebr., and N. C. Robbins, St. Louis, Mo. Filed Dec. 1, 1894. Renewed May 1, 1896. Serial No. 589,913. (No model.)

Claim.—1. In an ore concentrator and separator the combination of the endless apron, the end drums or rollers therefor and the frame supporting said rollers and apron, the main frame, a shaft journaled thereto and having a crank connected with the apron-frame, a gear on said crank, a gear on the apron-frame and meshing the gear on the crank and connections between the gear on the apron-frame and the apron drums or rollers whereby to drive the apron substantially as set forth.

2. In an ore-concentrator the combination of a main frame, a box-frame supported in said frame, and having an air-chamber, and an apron extended over said air-chamber and adapted to permit the passage of air through it mechanism for moving said apron, a mechanism by which to produce air-pressure within the air-chamber and means by which the box is given a circular movement substantially as described whereby the material as it is agitated by the mechanical movement will be lightened and opened up by the air-pressure all substantially as and for the purposes set forth.



3. In a dry ore separator and concentrator an apron through which air may freely circulate means by which said apron may be caused to travel a support for said apron capable of a limited circular movement, mechanism by which to give such apron support a horizontal circular motion and means by which to produce an air-blast through the apron substantially as set forth.

4. In a dry ore-separator the combination with the apron and its support having a limited oscillatory motion of the gear carried by said support and having operative connection with the apron, the main frame, a shaft journaled to said main frame and having a crank-wrist, a gear on said wrist meshing with the gear on the apron-support and a connection between said support and the crank-wrist substantially as set forth.

5. An apparatus substantially as described comprising suitable supporting devices an apron of fibrous material set at an incline and having its upper ore-supporting surface provided with a nap lying flat upon the surface of the fabric with its free ends toward the lower end of the apron and means by which to produce an air-blast through the apron whereby to form a trap or check-valve for the air-blast from below substantially as set forth.

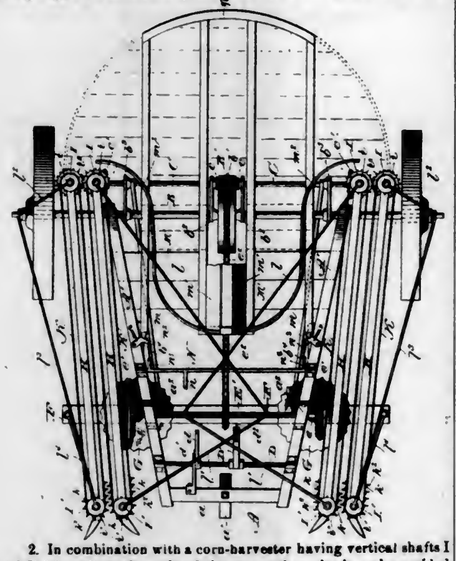
6. The combination of the main frame, the box suspended therein and provided with apron-supporting drums and with an air-chamber, a transverse shaft journaled to said box and having at one end a gear-wheel and at its other end a crank, connections between said crank and one of the apron-supporting drums a shaft journaled to the main frame and having a crank-wrist, connected with the suspended box, and a gear on said crank-wrist and meshing with the gear on the transverse shaft of the suspended box all substantially as set forth.

7. In a dry ore-concentrator the combination of a suitable support or frame an apron on which to support the ore to be concentrated and having a normally flat lying nap and means by which to produce an air-blast through the apron substantially as described and shown.

570,832. CORN-HARVESTER. MASON O. WERT, Poplar, Ohio. Filed Oct. 5, 1895. Serial No. 564,726. (No model.)

Claim.—1. In a corn-harvester, the combination, of a wheel-frame, a tilting frame or platform carried by the axle and adapted to be placed in locked engagement with the wheel-frame; cutting and gathering mechanism mounted on a vertically-adjustable frame which is pivoted on the axle and connected to a rock shaft supported on the wheel-frame; shafts C C in swinging connection with the axle and geared thereto by a gear-wheel thereon having internal teeth; rods

M extending from the adjustable frame to the shafts C C; together with two sets of parallel beams H having upright shafts carrying endless belts with projecting fingers, said upright shafts being geared to the shafts C C; and brace-rods extending from the upright shafts of the gathering mechanism to the axle and adjustable frame, the parts being organized substantially as shown and for the purpose set forth.



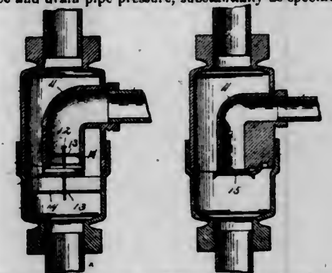
2. In combination with a corn-harvester having vertical shafts I and I' driven from the axle of the supporting-wheels and provided with sprocket-wheels, of sprocket-chains K each alternate link of which is provided with a projecting portion to which the slats are attached and with a projecting finger, the projections and fingers being formed on the upper plate of one of the sprocket-chains and on the lower plates of the adjacent sprocket-chain, substantially as shown and for the purpose set forth.

3. In a corn-harvester, the combination of the main frame having a transverse axle upon which are mounted the supporting-wheels and a combined sprocket-wheel and gear-wheel, substantially as shown, transverse shafts C C in swinging connection with the main axle and provided at their inner ends with pinions in mesh with said gear-wheel on said axle; parallel beams H H on each side of the machine, and vertical shafts supported by said beams and carrying endless conveyers, said vertical shafts being geared to the shafts C C; together with a vertically-adjustable frame carrying rotary cutters driven from the sprocket-wheel on the main axle, a transverse shaft mounted on the main frame and provided with a segment connected by chain to the adjustable frame, and a lever and rack for holding said shaft in an adjusted position, the shafts C C being connected to the adjustable frame by rods, the parts being constructed and organized substantially as shown and for the purpose set forth.

4. In a corn-harvester, the combination of the main frame having a transverse axle upon which are mounted the supporting-wheels and a combined sprocket-wheel and gear-wheel, substantially as shown; transverse shafts C C in swinging connection with the main axle and provided at their inner ends with pinions in mesh with said gear-wheel on said axle; a vertically-adjustable cross-bar carrying rotary cutters mounted on vertical shafts; a transverse shaft E' geared to said vertical shafts and by sprocket-chain to the sprocket-wheel on the main axle, inclined and slotted bearings for the transverse shaft E', and means for holding the cross-bar in an adjusted position; together with parallel beams H H located at each side of the machine, upright shafts supported on said beams and geared to the shafts C C, said upright shafts carrying endless conveyers, rods connecting the shafts C C to the adjustable cross-bar, and rods connecting the upper ends of the upright shafts to the adjustable cross-bar and to the ends of the main axle, the parts being constructed and arranged substantially as shown and for the purpose set forth.

570,833. AUTOMATIC VALVE FOR SERVICE-PIPES. WILLIAM M. WILLIAMS, Opelika, Ala., assignor to George R. Driver, same place. Filed Nov. 21, 1895. Serial No. 569,670. (No model.)

Claim.—1. The combination with a service-pipe provided with a controlling-cock and drain-outlet, of a drain-pipe communicating with the service-pipe above said controlling cock, and a check-valve for normally closing the drain-pipe, exposed at opposite sides respectively to service and drain pipe pressure, substantially as specified.

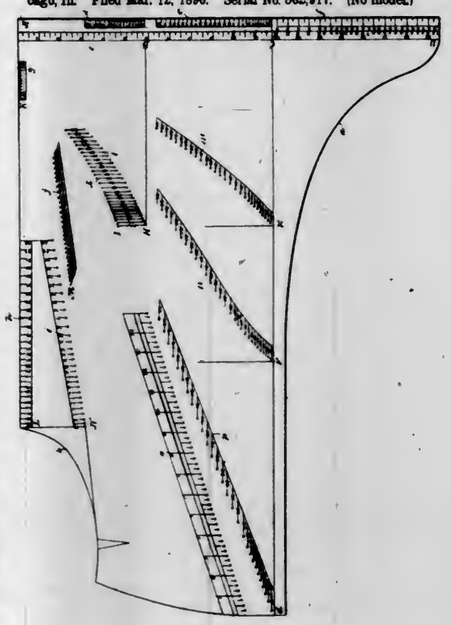


2. The combination with communicating drain and service pipes, the former terminating within the latter and the latter having a controlling-cock and drain-outlet, of a check-valve seated in the end of the drain-pipe to cut off communication between said pipes, the check-valve having an exterior surface exposed to service-pipe pressure exceeding in area its interior surface which is exposed to drain-pipe pressure, to normally hold the valve seated, substantially as specified.

3. The combination of a casing in communication with a service-pipe having a controlling-cock and drain-outlet, a nozzle in communication with a drain-pipe and having a downturned extremity arranged within and communicating with the interior of the casing above the controlling-cock, and a check-valve having a seat at the extremity of the said nozzle and exposed permanently at opposite sides to service pipe and drain-pipe pressure, the former normally exceeding the latter to hold the valve seated and cut off communication between the nozzle and the casing, substantially as specified.

4. The combination of a casing in communication with a service-pipe having a controlling-cock and drain-outlet and constructed of detachable sections, a nozzle piercing the casing and carried by one of said sections and connected to a drain-pipe, said nozzle being provided within the casing with a terminal valve-seat, and a check-valve exposed at opposite sides to service-pipe and drain-pipe pressure, and having a surface of greater area exposed to the service-pipe pressure, whereby it is normally held seated by service-pipe pressure and is adapted to be unseated by drain-pipe pressure upon the reduction of pressure in the service-pipe, to allow the drain-pipe to discharge into the service-pipe and from thence through the drain-outlet, substantially as specified.

570,834. TAILOR'S CUTTING-CHART. WILLIAM BAASEL, Chicago, Ill. Filed Mar. 12, 1896. Serial No. 582,917. (No model.)

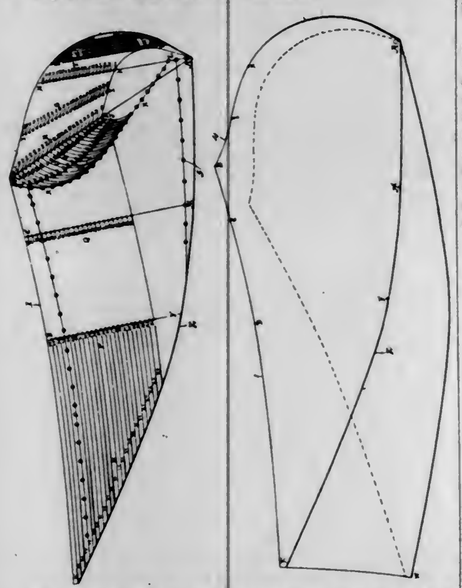


Claim.—1. In a tailor's measure, the combination of a chart having a straight edge, a scale *e* at the said straight edge, and other scales *m*, *n* and *p* disposed in horizontal alinement with the scale *e* and in different relative vertical planes, all the scales being similarly graduated and of corresponding vertical extent or depth, substantially as and for the purpose set forth.

2. In a tailor's measure, the combination of a chart having straight edges arranged relatively at right angles, scales *d* and *e* at one edge, scales *m*, *n* and *p* alining horizontally with and of equal vertical depth to the scale *e*, scale *l* alining horizontally with and equal in vertical depth to the scale *d*, and scale *k* alining vertically with the scales *l* and *m* and of equal lateral extent, substantially as and for the purpose set forth.

3. A tailor's chart having right-angularly-disposed straight edges, scales *h* and *g* at one edge for determining the neck-points, scales *d*, *e* and *f* at the other edge for indicating the half-back, depth of back, and waist-line, scales *m*, *n* and *p* in horizontal alinement with and of the same vertical depth as the scale *e* and coöperating therewith to determine the breast-measure, arm-scye, and width of back, scale *l* in horizontal alinement with the scale *d* and of equal depth therewith, scale *k* about parallel with and equal in lateral extent to the scale *l* and coöperating therewith to indicate the height of shoulder, and horizontally-alining scales *i* and *j* of like vertical depth for determining the depth of neck-gore and front shoulder, respectively, the scale *i* being equal in lateral extent to the scale *h* and corresponding therewith vertically, and the scales *k*, *l* and *m* alining vertically and of equal lateral extent, the parts being combined, arranged and operating substantially as shown for the purpose described.

570,835. SLEEVE-CHART. WILLIAM BAASEL, Chicago, Ill. Filed July 24, 1896. Serial No. 600,425. (No model.)



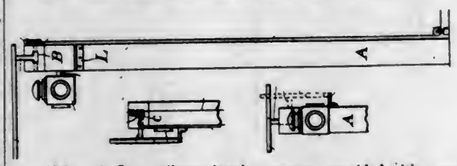
Claim.—An article of manufacture, a tailor's chart for laying off the upper and lower parts of sleeves of stock sizes, of tapering form, having one edge inwardly curved throughout its length, the opposite edge outwardly curved between its ends, and the edge of the larger end curved outwardly and inwardly, and having a line of perforations adjacent to the inwardly-curved edge and a line of perforations contiguous to the outwardly-curved edge, and having the two lines of perforations connected at one end by a line of perforations formed on an ogee curve, and having a series of perforate graduated scales intermediate the ogee line of perforations and the wide end of the chart, and having perforate scales intermediate of the ogee line of perforations and the smaller end of the chart, the wide end and the outwardly-curved edge of the chart for a short distance from the smaller end and the various scales being similarly graduated, substantially as shown and for the purpose described.

570,836. HAIR-CURLER. CHARLES H. BALDWIN, Auburn, N. Y. Filed May 28, 1896. Serial No. 593,417. (No model.)

Claim.—A hair-curler comprising a pliable non-resilient metal body wider at the central portion than at the ends and having a U-shaped cut in said central portion to form a tongue integral therewith, said tongue running lengthwise of the body, whereby the hair may be clamped beneath the tongue and rolled over the body to form a curl and the ends of the body folded over to secure the same, substantially as described.



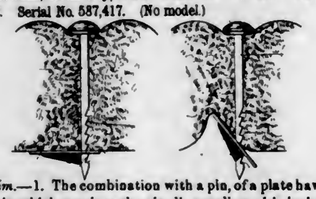
570,837. RAILWAY-SIGNAL. ADOLPH BALSCHUH, Jr., New York, N. Y. Filed Feb. 10, 1896. Serial No. 578,743. (No model.)



Claim.—1. In a railway-signal, a support provided with a vertical recess, in combination with a spindle, a bell-crank adapted for attachment to said spindle, an arm adapted for attachment to said spindle and capable of being arranged to swing in a vertical arc within said recess, a plate constructed for attachment broadside to one end of said arm, means for limiting the movement of said arm, a disk or lens of transparent material, devices for attaching said lens to said plate, a suitably-supported lantern, and mechanism for operating said bell-crank, substantially as described.

2. In a railway-signal, a support provided with a vertical rectangular recess, in combination with a spindle, a bell-crank adapted for attachment to said spindle, an arm adapted for attachment to said spindle and capable of being arranged to swing in a vertical arc within said recess, one vertical wall of the recess arranged to limit the movement of said arm, a plate adapted for attachment broadside to one end of said arm, the said plate having an overbalancing-weight, a bracket adapted for attachment to said support and to limit the movement of said plate, a frame adapted for attachment to said plate, a disk or lens of transparent material constructed to fit said frame, a suitably-supported lantern, and means for operating said bell-crank, substantially as described.

570,838. UPHOLSTERING-PIN. JAMES M. BOLTON and GEORGE H. HOWELL, Sioux City, Iowa. Filed Jan. 15, 1895. Renewed Apr. 13, 1896. Serial No. 587,417. (No model.)



Claim.—1. The combination with a pin, of a plate having an opening therein which receives the pin diagonally and is locked to the pin when disposed at or approximately at right angles thereto, substantially as set forth.

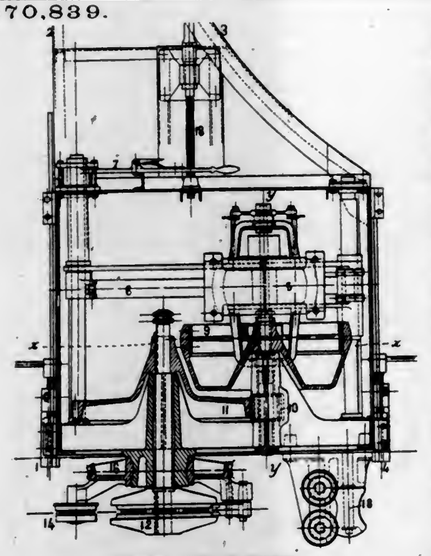
2. The combination with a pin having notches on its shank, of a lock-plate having an opening therein adapted to receive the pin and an edge thereof to enter a notch and an offset adapted to engage the pin at a point opposite to hold the lock-plate in a position approximately at right angles to the shank of the pin, substantially as set forth.

3. The combination with a pin the shank of which has notches formed therein, of a lock-plate having a slot therein and an inclining offset leading to the slot, one edge thereof adapted to abut against the shank at a point opposite the teeth, substantially as set forth.

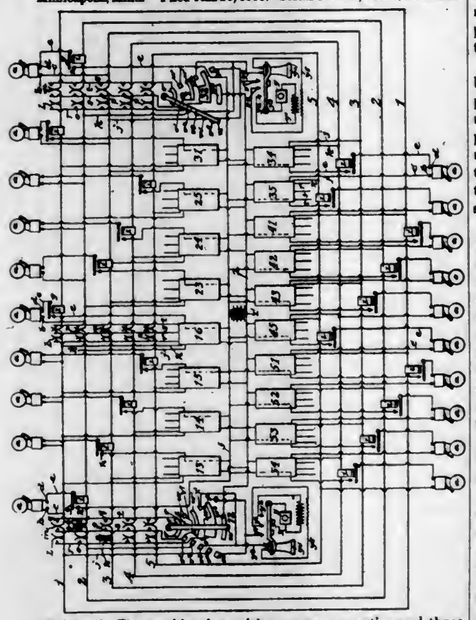
570,839. TOWING APPARATUS. ARMAND DE BOVET, Paris, France. Filed Apr. 5, 1894. Serial No. 506,451. (No model.) Patented in France May 25, 1892, No. 211,852.

Claim.—In a towing apparatus, the combination of an elastically-supported electric motor, a magnetized friction-pulley connected with and adapted to be actuated from said motor, a fly-wheel with which said pulley is in elastic contact, a towing-wheel, and gearing intermediate said towing-wheel and fly-wheel shaft, substantially as described.

570,839.



570,840. AUTOMATIC TELEPHONE SYSTEM. MORGAN BROOKS, Minneapolis, Minn. Filed Jan. 26, 1895. Serial No. 536,295. (No model.)



Claim.—1. The combination, with a return connection and three or more lines or circuits normally distinct, of translating devices, each represented by two of said lines, a source or sources of energy, and means for energizing any combination of two lines, and means connected with the energized lines whereby the circuit of the translating device represented by said two lines will be closed through one of said lines to said return connection, substantially as and for the purpose specified.

2. The combination in an automatic telephone-exchange, of a number of normally distinct main lines or circuits with a number of telephone instruments, each connected with two of the main lines or circuits, a calling device for each instrument, and means for impressing distinct currents upon any two lines, whereby the calling device represented by the instrument connected to said two lines is energized.

3. A selective calling system which consists in a series of three or more main lines, in combination with a series of calling devices therein, adapted to be influenced by electrical impulses on one or another of said lines respectively, and relays or electromagnetic circuit-closers included in said main lines, but each in a different line from that whereto its respective calling device is connected and by which the circuits of said calling devices may be completed individually, whereby one device may be operated without disturbing another which may be on the same line or another, substantially as described.

4. A selective calling system comprising three or more lines or circuits in combination with means for energizing either and any of the same, calling devices connected with said lines, a return or ground leg extending from each said calling device, respective relays for said calling devices but each in a different line from that wherewith its said calling device is connected and said relays when energized adapted to close the return connections of the calling devices whereby two lines being selected and energized will result in the operation of that calling device which is connected with one of the same and whose relay or circuit-closer is contained in the other, substantially as described.

5. The combination, in a telephone system, of three or more main lines or circuits with a number of telephone instruments, each having its terminals permanently connected with two of said lines respectively, different combinations being adopted in the connections of different instruments, and switches included in said lines at each telephone instrument whereby such instrument may be temporarily connected with the two lines wherewith the desired distant instrument is permanently connected, substantially as described and for the purpose specified.

6. The combination, in a telephone system, of a number of main lines or circuits, a number of telephone instruments, each permanently connected with two of said lines, different combinations being adopted in such permanent connections, a switch or switches at each station whereby its instrument may be temporarily connected with the two lines wherewith the desired distant instrument is permanently connected, and calling and circuit-closing devices in said lines and each pair of said devices adapted to be operated by the use of combinations of said main lines in a similar manner, substantially as described.

7. The combination, in an automatic telephone system, of a number of main wires or circuits with telephone-stations, each having permanent connections with two of said wires, said connections being made in different combinations, switches in the lines near each telephone instrument, whereby connections may be made for that instrument with any of the said main wires or circuits in combinations of two corresponding to the wires or number of the instrument or station with which it is desired to make talking or calling connections, substantially as described.

8. The combination, in an automatic telephone system, of a number of main wires or circuits, with a number of telephone stations or instruments, each connected with two of the main wires, a calling device for each station and connected with one of the wires representing said station, a ground or return connection for such calling device, a circuit-closing device operatively connected in the other line representing the station and adapted to complete the circuit of said calling device, looping-in switches at each station and in each main wire, whereby the station may be connected with the wires representing any other station, and means whereby a battery or other source of electricity may be connected with the selected wires to operate a distant circuit-closer and calling device, and further means for cutting out the battery and connecting the calling subscriber's telephone instrument with the selected lines, in order that conversation may be carried on over the same, substantially as described.

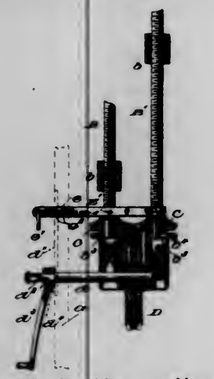
9. The combination, in an automatic telephone-exchange, of a number of main wires or circuits, with a number of telephone stations or instruments, each connected with two of the main wires, a calling device for each station and connected with one of the wires representing said station, a ground or return connection for such calling device, a circuit-closing device operatively connected in the other line representing the station and adapted to complete the circuit of said calling device, looping-in switches at each station and in each main wire, whereby the station may be connected with the wires representing any other station, and means whereby a battery or other source of electricity may be connected with the selected wires to operate a distant circuit-closer and calling device, further means for cutting out the battery and connecting the calling subscriber's telephone instrument with the selected lines in order that conversation may be carried on over the same, the induction-coil of each subscriber's set and an extra winding provided about the same and always in circuit when calling is being done, and whereby the operation of the distant calling device is indicated in the calling subscriber's telephone instrument, substantially as described.

10. The combination, in a telephone system, of a main circuit, a telephone instrument to be connected therewith, calling devices for said instruments, means for operating the calling device of one from

the other, the device belonging to the calling subscriber adapted to remain silent, and an extra winding included in the circuit and arranged about the induction-coil of each instrument, whereby the operation of the distant calling device is indicated to the calling subscriber through his telephone instrument, substantially as described.

11. The combination, in a telephone system, of three or more main lines, with a number of telephone instruments or stations each permanently connected with two of said lines, different combinations being adopted in such permanent connections, a switch or switches at each station whereby its instrument may be temporarily connected with the two lines wherewith the desired distant instrument is permanently connected, and a calling or signaling apparatus provided in connection with the foregoing, substantially as described.

570,841. DEVICE FOR OPERATING WINDOWS. MORTIMER M. CANFIELD, Seattle, Wash. Filed Mar. 17, 1896. Serial No. 583,614. (No model.)



Claim.—1. The combination with upper and lower window-sashes having arms provided with interiorly-threaded hubs or sleeves, of two screw-rods each engaging the hubs or sleeves of one of said sashes, beveled pinions on the lower ends of said screw-rods, an operating gear-wheel with which said pinions are designed to intermesh, a crank-shaft, and means for disengaging said beveled pinions from said gear-wheel, substantially as set forth.

2. The combination with upper and lower sashes having outwardly-projecting arms provided with interiorly-threaded hubs or sleeves, of two screw-rods each engaging the hubs or sleeves of one sash, beveled pinions on the lower ends of said screw-rods, slotted bearing-plates for said screw-rods, shifting-arms connected to said screw-rods, and an operating gear-wheel with which said pinions are designed to engage, substantially as set forth.

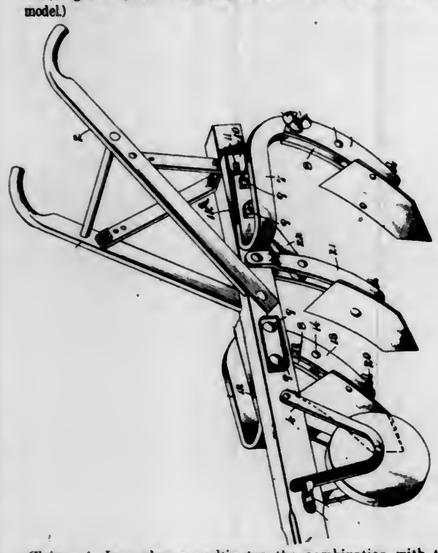
3. The combination with upper and lower window-sashes having slotted plates attached to their longitudinal edges, of arms having their inner ends extended through the slots of said plates, and interiorly-threaded hubs or sleeves on the outer ends of said arms, screw-rods engaging said hubs or sleeves, the beveled pinions on the lower ends of said screw-rods, a gear-wheel with which said pinions engage, and an operating crank-shaft, substantially as set forth.

4. The combination with upper and lower window-sashes having slotted plates attached to their longitudinal edges, of arms having their inner ends extended through the slots of said plates, interiorly-threaded hubs or sleeves on the outer ends of said arms, screw-rods engaging said hubs or sleeves, and having beveled pinions on their lower ends, slotted bearing plates for said screw-rods, a beveled gear-wheel with which said pinions are designed to engage, a plate having slots, and shifting-arms secured at their inner ends to said screw-rods, and having grooves in their lower edges and extended through the slots of said plate, substantially as set forth.

5. The combination with upper and lower window-sashes having projecting arms, and interiorly-threaded hubs or sleeves on the outer ends of said arms, of the screw-rods engaging said hubs or sleeves, the beveled pinions on the lower ends of said screw-rods, the bearing-plates for said screw-rods, the beveled gear-wheel located between said bearing-plates with which said pinions are designed to engage, the shaft supported by said plates, and having an outer squared portion, a plate through which said shaft projects provided with lugs on its outer face, and a crank-handle movable on said squared portion of said shaft designed to fit between said lugs, substantially as set forth.

6. The combination with upper and lower sashes having slotted plates secured to their longitudinal edges, of outwardly-projecting arms extended at their inner ends through the slots of said plates, brace-plates connecting said arms, interiorly-threaded hubs or sleeves on the outer ends of said arms, screw-rods, upper supporting-plates therefor, lower angular slotted plates, beveled pinions on the lower ends of said screw-rods, shifting-arms connected to said screw-rods and having grooves in their lower edges, a plate having slots therein through which said shifting-arms project, a beveled gear-wheel with which said pinions are designed to engage, a shaft supported by said lower angular plates and upon which said beveled gear-wheel is secured, said shaft having an outer squared portion, a crank-handle movable on said squared portion, and lugs on the outer face of said plate between which said handle is designed to fit, substantially as set forth.

570,842. CULTIVATOR. JOB R. COLLARD and HIRAM J. HEMBARLING, Rogersville, Tex. Filed Aug. 22, 1895. Serial No. 560,144. (No model.)



Claim.—1. In a plow or cultivator, the combination with the beam thereof, of a standard comprising a rigid horizontally-disposed upper portion which is U-shaped or recurved, a rigid depending arm or portion, a shovel secured thereto, and means for adjustably fastening the inner arm of said U-shaped upper portion to the beam, substantially as specified.

2. In a plow or cultivator, the combination with the standard thereof having a curved depression in the advance edge of its foot, of a shovel, a curved cuff on said shovel seated in said depression, and a clamping device for binding said cuff in the depression of the standard, whereby the shovel may be adjusted, substantially in the manner and for the purpose described.

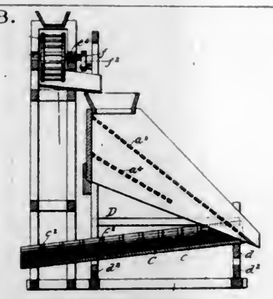
3. In a plow or cultivator, a standard having its forward face concaved or recessed, as described, in combination with a shovel provided upon its rear face with a curved or substantially semicircular cuff formed with a slot extending transversely of the shovel, and a T-headed bolt engaging said cuff, substantially as and for the purpose specified.

4. In a plow or cultivator, the combination with a standard, of a pivoted foot member formed from a metal blank bent or recurved upon itself to form substantially parallel side portions embracing said standard, said side portions having concaved forward edges, a shovel having secured to its rear face a curved or substantially semicircular and slotted cuff fitting said concaved edges, and a bolt engaging said cuff and having its shank extended between the parallel side portions of said pivoted foot, substantially as and for the purpose specified.

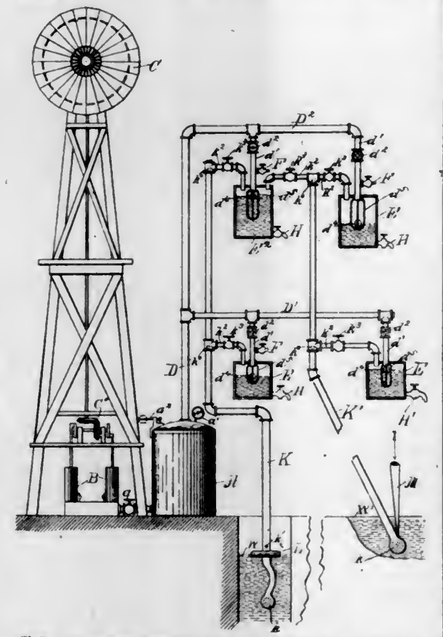
570,843. ORE-SEPARATOR. HENRY M. COPLAND, Scottsburg, Oreg. Filed Jan. 8, 1896. Serial No. 574,740. (No model.)

Claim.—In an ore-separator, the combination with a rocking frame supporting a hopper, of two riddles, the upper one of which inclines downward from the head of the frame to the lower end thereof, and the other from the head of the frame to a point about midway of the length of the upper riddle and at a less angle than the same, and operating to retard or check the flow of water and sand escaping from the upper riddle, and a riffle having its head located under the lower end of the upper riddle and reversely inclined with relation thereto, substantially as described.

570,843.



570,844. LIQUID-SUPPLY SYSTEM. JOHN B. G. DONATO, Opelousas, La., assignor of one-tenth to Cornelius Donato and Theophile S. Fontenot, same place. Filed Aug. 22, 1895. Serial No. 560,096. (No model.)



Claim.—1. A liquid-supply system comprising an air-chamber, and means for diminishing the pressure of the air in the same, suction-pipes connected to said air-chamber, a plurality of liquid chambers connected to said suction-pipes, a float-valve in each of said liquid-chambers, and adapted to shut off the suction-pipe when the level of the liquid rises to a predetermined height in the liquid-chamber, and liquid-supply pipes leading from a source of liquid supply to the said liquid-chambers, substantially as described.

2. A liquid-supply system comprising an air-chamber, and a windmill and air-pump operated thereby for diminishing the pressure of the air in the same, a plurality of liquid-chambers, suction-pipes connecting said air-chamber and said liquid-chambers, a float-valve in each of said liquid-chambers, and adapted to shut off the suction-pipe when the level of the liquid rises to a predetermined height in the liquid-chamber, and liquid-supply pipes leading from a source of liquid supply to the said liquid chambers, substantially as described.

3. A liquid-supply system comprising an air-chamber, and means for diminishing the pressure of the air in the same, a plurality of suction-pipes connected to said air-chamber, a plurality of liquid-chambers connected to said suction-pipes, a float-valve in each of said liquid-chambers, and adapted to shut off the suction-pipe when the level of the liquid rises to a predetermined height in the liquid chamber, a plurality of liquid-supply pipes leading from a plurality of sources of liquid supply to the said liquid-chambers, and means for admitting air into and drawing liquid from each of said liquid-chambers, substantially as described.

4. A liquid-supply system comprising an air-chamber, and means for diminishing the pressure of the air in the same, a plurality of suction-pipes connected to said air-chamber, a plurality of liquid chambers connected to said suction-pipes, a float-valve in each of said liquid-chambers, adapted to shut off the suction-pipe when the level of the liquid rises to a predetermined height in the liquid-chamber, liquid-supply pipes leading from a source of liquid supply to the said liquid-chambers; and a cock attached to each liquid chamber having a longer liquid-passage and a shorter air-passage therein for drawing liquid from said liquid-chamber, substantially as described.

570,845. SUBSTANCE FOR TELEPHONE-ELECTRODES. DANIEL DRAWBAUGH, Eberly's Mill, Pa. Filed Jan. 10, 1896. Serial No. 575,013. (No specimens.)

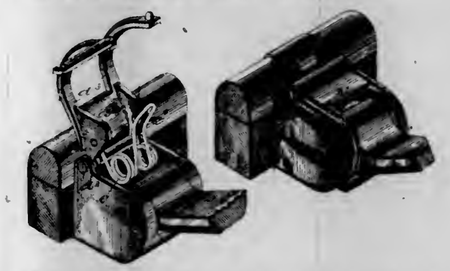
Claim.—1. A microphonic element composed of a substance having its surface covered with platinum-black, substantially as described.

2. A microphonic element composed of a granular substance having its surface covered with platinum-black, substantially as described.

3. A microphonic element composed of granular, finely-divided, or comminuted metal having its surface covered with platinum-black, substantially as described.

4. A microphonic element composed of granular, finely-divided, or comminuted platinum having its surface covered with platinum-black, substantially as described.

570,846. THILL-COUPLING. FRED G. ENGLISH, Rochester, N. Y. Filed Apr. 14, 1896. Serial No. 587,481. (No model.)



Claim.—1. A thill-coupling, comprising a box or casing open at its top and front and a pivoted cover for the top of said box having depending ears, a spring within said box connected at its ends to said ears and adapted to normally hold said cover closed, said spring having coiled portions and a central curved looped portion, and the thill-iron pivotally mounted in said box and extended through the front opening thereof, the curved looped portion of said spring bearing against the thill-iron when said cover is closed and acting as an anti-rattler, as set forth.

2. The herein-described thill-coupling, comprising the box or casing open at its top and front, the cover pivoted thereto having arms designed to extend down over the front edges of said box, means for preventing said arms from being raised, the thill-iron pivotally mounted in said box and extended through the front opening thereof, the cushion on the bottom of said box, and the spring within said box connected at its ends to said cover and having a curved looped portion bearing down on said thill-iron, said spring serving to hold said cover over the top of said box and acting as an antirattler, substantially as set forth.

3. The herein-described thill-coupling, comprising the box open at its top and front and having inner inclined grooves, the cover for said top opening pivoted to said box and having arms extending therefrom, the thill-iron, the pivot-bolt therefor having its ends fitting in said grooves, the spring within said box secured at its ends to said cover and having a central loop which bears against said thill, and the cross-plate connecting the free ends of the arms of said cover, substantially as set forth.

4. The herein-described thill-coupling comprising the box open at its top and front and having inner opposite grooves, the cover pivoted to said box, the thill-iron having an apertured eye, the removable bolt in said eye having conical ends fitted in said grooves, and the spring in said box bearing against said eye and connected to said cover, and serving to hold the latter closed down over said top opening, substantially as set forth.

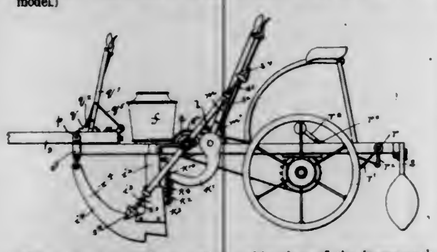
5. The herein-described thill coupling comprising the box open at its top and front and having inner opposite inclined grooves, the thill iron having an apertured eye, the bolt in said eye having a conical head, a cone like nut on the other end of said bolt, said head and nut fitting in said grooves, and the spring in said box bearing

against said thill eye and connected to said cover, substantially as set forth.

6. The herein-described thill-coupling comprising the box open at its top and front, and having inner inclined grooves, the thill-iron, the pivot-bolt therefor fitted at its ends in said grooves, the cover pivoted to said box and having depending apertured ears, the spring in said box having its ends secured to said apertured ears, and also having a central loop bearing against the inner end of said thill-iron, substantially as set forth.

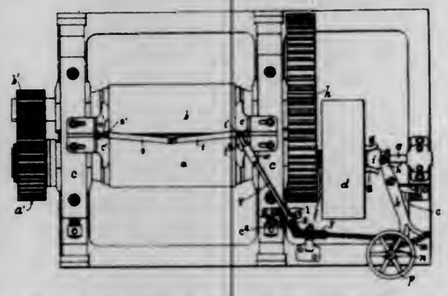
7. The herein-described thill-coupling comprising the box open at its top and front and having inner inclined grooves, the thill-iron having an apertured eye, the bolt fitted in said eye having a cone-like head and a cone-like nut, said head and nut fitting in said grooves, the cover pivoted to said box and having forward downwardly-curved arms, the cross-plate designed to connect said arms, the apertured ears depending from said cover, and the spring connected at its ends to said ears and having a central loop bearing against said thill-eye, substantially as set forth.

570,847. CORN-PLANTER. CHARLES FLORENCE, Columbus, Ohio. Filed May 1, 1893. Renewed Aug. 25, 1896. Serial No. 603,648. (No model.)



Claim.—In a corn-planter, the combination of the framework, the ground-wheels and shaft therefor, a dropping mechanism in the forward portion of said frame, a transverse operating-shaft journaled in said frame, means for operating the dropping mechanism from said operating shaft, a shoe-supporting shaft journaled in rear of said operating-shaft, hook-shaped arms k' on said shoe-supporting shaft, planter-shoes suspended from the framework at their forward ends, rods connecting the hook-shaped arms and said shoes, said rods having a sliding and pivotal connection with said hook-shaped arms and coil-springs surrounding said rods, substantially as and for the purpose specified.

570,848. SAFETY STOP DEVICE FOR GRINDERS, &c. JAMES B. FORSYTH, Boston, Mass. Filed Feb. 1, 1896. Serial No. 577,721. (No model.)



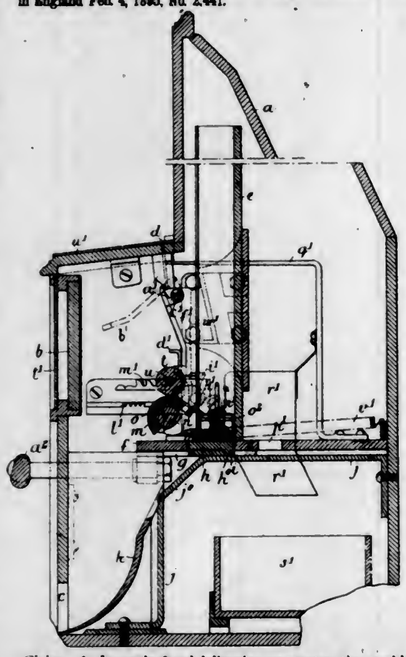
Claim.—1. In a safety stop device as herein described the combination of the rocking arms s and t, hook t^3, lug w', sleeve w, guide y, weight 3, chains 2 and 4, shipping-lever k for the purpose of releasing the power as herein set forth.

2. In a safety stop device substantially as described, the combination of the lever k, sheaves 1 and 5, weight 3, sleeve w, guide y, detent w', hook t^3 with the releasing-levers s and t, the movement of which releases the weight 3 for the purpose herein set forth.

3. In a stop mechanism for machines as herein described, weight-releasing arms s and t in combination with the hook t^3, detent w' chains 2 and 4, weight 3, lever k substantially as and for the purpose set forth.

4. In a stop mechanism the combination of the releasing-levers s and t, hook t^3, chains 2 and 4 sheaves 1 and 5, lever k for the purpose set forth.

570,849. COIN-FREED APPARATUS FOR DELIVERING TICKETS, SWEETMEATS, &c. JOHN FOTHERINGHAM, London, England, assignor to the Sweetmeat Automatic Delivery Company, Limited, same place. Filed Dec. 10, 1895. Serial No. 571,672. (No model.) Patented in England Feb. 4, 1895, No. 2,441.



Claim.—1. In a coin-freed delivering apparatus, the combination with the vertically-disposed magazine, of a delivering-slide moving in straight horizontal guides, and having an aperture therein corresponding to the magazine a door in said aperture completely closing the same, and pivoted to the slide and a rigid support for said door directly beneath the delivery end of said magazine, said slide having a portion in rear of said aperture adapted to be drawn beneath the magazine when the slide is drawn out, substantially as described.

2. In a coin-freed delivering apparatus, the combination with the magazine, of a delivering-slide having a discharging aperture therein beneath the magazine and a horizontal supporting portion in the rear of said aperture, adapted to support the articles in the magazine when the slide is drawn out, a pivotally-mounted door normally closing said aperture and having its upper face below the plane of said horizontal supporting portion and a support for said door in line with the magazine having a downwardly-extending part out of line with the magazine for supporting the door in open position, substantially as described.

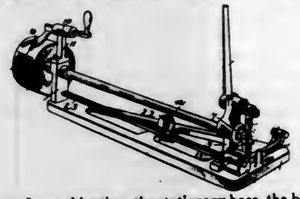
3. In a coin-freed delivering apparatus, the combination with a magazine, of a delivery-slide having a discharging-aperture beneath the magazine, a pivotally-mounted door closing said aperture, a tray, supports for said slide and an independent support for said door, in line with the magazine, having an inclined part out of line with the magazine extending toward the said tray, whereby the articles delivered through said aperture will be discharged directly into said tray, substantially as described.

4. In coin-freed apparatus for delivering tickets and wherein a drop-door is employed, a printing device consisting of a segmental type-plate mounted on a spindle operated by a rack on the delivery slide, substantially as hereinbefore described.

5. In a coin-freed vending apparatus, the combination with a magazine, of a weight adapted to move in the same, having a flat bottom portion, a gravity-pin carried by said weight and having a vertical movement in respect to said weight, a delivery-slide provided with an aperture, adapted to be engaged by the gravity-pin when the magazine is empty to prevent further operation of the device, substantially as described.

6. In a coin-freed delivering apparatus, the combination with a magazine, a delivery-slide and means for operating the same, of a coin-chute, means for arresting the downward movement of the coin, and a series of horizontal teeth in said chute adjacent to the said arresting means for preventing a backward movement of the coin, substantially as described.

570,850. MACHINE FOR CUTTING BICYCLE-TUBING. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Filed Sept. 18, 1895. Serial No. 562,911. (No model.)



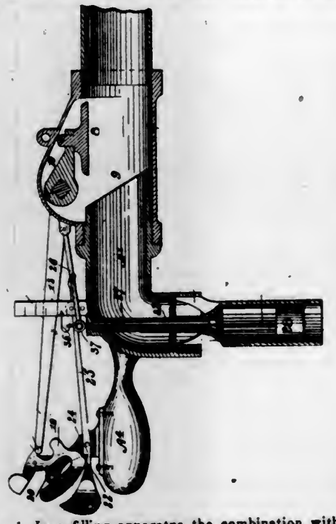
Claim.—1. In combination, the stationary base, the bed, the cutting-disk, the pivoted arm carrying the bed, the lever, and the link connected at one end to said arm, and at its opposite end to the journal of said lever, substantially as described.

2. In a tube-cutting machine, in combination, the cutting-disk, the bed, the pivoted arm carrying the same, the lever, the link comprising the two sections connecting said arm and lever, and the means for adjusting said sections in relation to each other whereby the bed is adjusted in relation to the cutter, substantially as described.

3. In a tube-cutting machine, the flat base, the standard support therefrom, the cutting-disk, the shaft carrying the same with means for driving said shaft, the bearing for said shaft projecting from said standard, the bearing-rolls, the pivoted arm carrying the same, the operating-lever, the journal extending therefrom and the link eccentrically pivoted at one end to said journal and connected at its opposite end to said arm, substantially as described.

4. In combination, the base, the bearing-rolls, the pivoted arm carrying the same, the rotary cutter, the front standard, the lever journaled therein and the connection between said arm and lever whereby said bearing-rolls can be raised, substantially as described.

570,851. BARREL-FILLING MACHINE. JOHNSTON E. J. GOODLETT, Memphis, Tenn. Filed Nov. 30, 1894. Serial No. 576,226. (No model.)

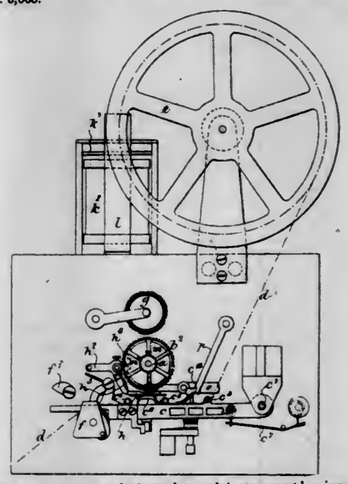


Claim.—1. In a filling apparatus, the combination with tube, gooseneck, valve-float, float-rod, pivoted trigger, and valve-lever, of the compound float-lever formed of two parts, which are pivoted together and also separately at fixed points, one part being connected with the float-rod and the other having a shoulder that engages the trigger, as shown and described.

2. In a filling apparatus, the combination, with the discharge-tube, of a valve arranged in a chamber of the same, a transverse axis for said valve, a coiled spring attached to one end of said axis, a screw-rod and nut for adjusting the tension of the spring, the valve-lever and short slotted sector mounted on the valve alongside the lever, the one being fast and the other loose thereon; a clamp-screw which connects the lever and sector, and trip and float mechanism, arranged substantially as specified.

3. In a filling apparatus, the combination, with the tube, the valve, valve lever, trigger, float, rod, and trip-lever, of a fixed graduated gage-bar, a pointer for the latter, and a clamp for holding it secured in any required adjustment, as shown and described.

570,852. TYPE-PRINTING TELEGRAPHIC APPARATUS. FREDERICK H. W. HIGGINS, London, England. Filed Oct. 11, 1895. Serial No. 565,358. (No model.) Patented in England Oct. 6, 1891, No. 16,991; in Victoria June 7, 1892, No 9,706, and in New South Wales June 10, 1892, No. 3,805.



Claim.—1. A type-printing telegraph instrument having two type-wheels, a shifting shield adapted to cover or be brought in front of either type-wheel and leave the other type-wheel exposed, two impression-pads, one for each type-wheel, the impression-lever on which the pads are mounted, a single line-circuit, electromagnetic devices in the line-circuit for actuating the impression-lever, and electromagnetic devices also in the line-circuit, independent of those actuating the impression-lever, for shifting the shield to interpose it between either type-wheel and its impression-pad and leave the other type-wheel exposed to its pad so that an impression may be taken therefrom, substantially as set forth.

2. A printing telegraph instrument, having two type-wheels, an impression-lever, two impression-pads, one for each wheel, mounted on the impression-lever, means for actuating the impression-lever, a shield adapted to be interposed between either type-wheel and its pad, means for operating the shield, and a rocking lever pivoted on the impression-lever and operatively connected with and supporting each pad, whereby when one pad strikes against the shield the other one is thrown up into operative position.

3. A type-printing telegraph instrument having two type wheels or rings and a shield which allows one only to print at a time, an electromagnetic device in the line-circuit serving to shift the shield and notched disks rotating with the type wheels which at the proper time permit the shield to be moved.

4. In a type-printing telegraph instrument the combination of parts as follows: the type wheel axis a, the type wheels or rings b' b^3; the notched disks m m the shield h with its projection h^6 and the magnet and coil k and l serving to move the shield.

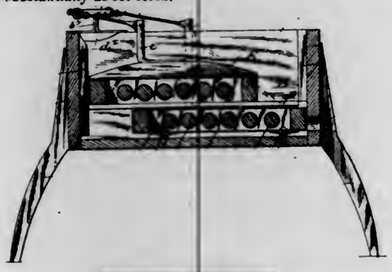
5. In a type-printing telegraph instrument, the combination of parts as follows: the type-wheel axis a; the type wheels or rings b' b^3; the shield h; the impression-lever c; and the two impression-pads c^6 c^6, these pads being carried by and independently mounted upon the impression-lever and supported by a rocking lever on opposite sides respectively of its pivot so that in the act of printing they move inversely, the pad which comes against the shield yielding and the other pad rising as it carries the paper into contact with the type.

6. An electromagnet having two windings, one superposed upon the other, which, electrically considered, are respectively wound from the inside to the outside, and from the outside to the inside, and connected so that the current will pass around the core in the same direction, substantially as and for the purpose set forth.

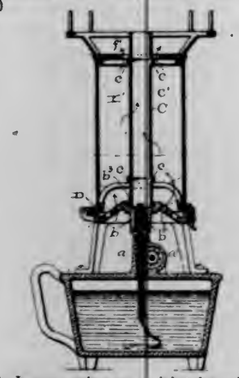
570,858. WASHING-MACHINE. JAMES S. HILYARD, Columbus, Ohio. Filed July 25, 1895. Serial No. 557,101. (No model.)

Claim.—The herein-described washing-machine, comprising a tub or water-chamber, a male rubber mounted on rollers and resting on the bottom of said tub or chamber, grooved brackets secured to

the end walls of said tub or water-chamber, longitudinal guides removably mounted in said brackets and having flanges projecting from their lower longitudinal edges, an independent supplemental rubber adapted to rest on said flanges, arms projecting upwardly from said main rubber between said guides and the walls of said tub, an arm projecting upwardly from said supplemental rubber, a crank-shaft, and connections between said arms and said crank-shaft, whereby an opposite reciprocal movement is given to said rubbers, said guides also serving to prevent lateral motion of said supplemental rubber substantially as set forth.



570,854. VAPOR-BURNER. JOHN A. LANNERT and WILLIAM R. JEAVONS, Cleveland, Ohio. Filed June 23, 1896. Serial No. 596,619. (No model.)



Claim.—1. In a vapor-burner, a wick-tube and a vaporizer above said tube adapted to receive the wick and substantially insulated from said tube, substantially as set forth.

2. In vapor-burners, a wick-tube, and a vaporizer constructed to receive the top of the wick and arranged above said tube in such position as to prevent extreme heating of the tube from the vaporizer, and means to withdraw the wick from the vaporizer into said tube, substantially as set forth.

3. A vapor-burner having a suitable combustion-chamber, a wick-tube, and an oil vaporizer between said chamber and tube and substantially insulated from said tube, substantially as set forth.

4. A vapor-burner in which a wick is used, comprising a vaporizer constructed to receive the top of the wick when combustion takes place, a wick-tube, means to carry the wick into and out of the vaporizer, and a combustion-chamber, substantially as set forth.

5. In a vapor-burner using a wick, a vaporizer adapted to receive the top end of the wick when combustion takes place, and means to carry the wick into the vaporizer and to withdraw it wholly therefrom, substantially as set forth.

6. In a vapor-burner, a vaporizer having an opening to receive the wick flared outwardly at its bottom, and a wick-tube substantially insulated from said vaporizer, substantially as set forth.

7. In a vapor-burner, a wick-tube, a combustion-tube, and a member above said wick tube having a walled passage for the wick and a seat for the combustion-tube and means to withdraw the wick from the passage in said member, substantially as set forth.

8. In the burner described, the combination with the wick-tube and the perforated combustion-tube, of a vaporizer provided with a wick-passage and a seat about its top for the combustion-tube, said wick-tube and vaporizer being substantially out of heat-conducting contact with each other, substantially as set forth.

9. In a vapor-burner, a combustion-tube provided with perforations so arranged with reference to the flame that more air relatively is supplied to the sides than to the edges of the flame, substantially as set forth.

10. In a vapor-burner, a perforated combustion-tube having relatively broad sides and narrow edges, and a larger area of air-openings in the middle portion than at the edges thereof, whereby the inflow of air at the edges is limited, substantially as set forth.

11. In a vapor-burner, a perforated combustion-tube of greater width than depth and having imperforate portions at the immediate edges of the tube exteoding from top to bottom, whereby air is excluded at said edges, substantially as set forth.

12. In a vapor-burner of the kind described, the wick-tube, the perforated combustion-tube seated above said wick-tube, the casing forming an air-chamber about said combustiou-tube, and a cover closing the top of said air-chamber having one or more openings for the passage of a limited quantity of air, substantially as set forth.

13. The burner described having a perforated combustion-tube, a casing about said tube forming an air-chamber between said parts, and a plate over the top of said chamber about said combustion-tube having a passage for the escape of air from said chamber, substantially as set forth.

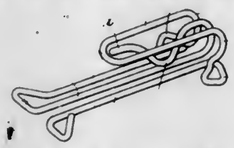
14. The combination of the perforated combustion-tube, the casing about the same, a perforated part forming a support for said tube and casing, and a plate across the top of said casing having an opening for the combustion-tube, and an outlet for air from the chamber between said casing and tube, substantially as set forth.

15. The perforated combustion-tube and the casing about the same, in combination with a perforated part forming a bottom for said tube and casing and a plate about the top of said top constructed to check and limit the outflow of air from the air-chamber, substantially as set forth.

16. The perforated combustion-tube and casing about the same, in combination with plate D provided with projections to support said tube against lateral movement, substantially as set forth.

17. The perforated combustion-tube and the casing about the same, in combination with a perforated part forming a bottom for said tube and said casing, substantially as set forth.

570,855. HOOK. CAROLINE L. LEWIS and CHARLES E. MIXER, Boston, Mass. Filed Oct. 17, 1895. Serial No. 565,937. (No model.)

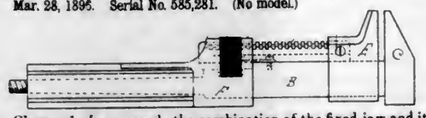


Claim.—1. A hook of the character described composed of two outer parallel bars, forming a shank and bent to form a hook, and a centrally-arranged spring member extending from the base of the shank and coincident therewith as to position, to a point just inside the point of the hook, and being formed intermediately with a pendent detent, said spring member having a portion i extending forward from the detent to the point of the hook, said forwardly-extending part i lying normally in a plane parallel with the body part of the hook, whereby the free end of the spring member is prevented from catching into the fabric when the detent is raised in the operation of fastening the hook, all as is herein shown and described.

2. A hook of the character described, composed of a shank formed of two outer parallel bars bent into a hook, and a centrally-arranged spring member extending from the base of the shank and coincident therewith as to position, to a point just inside the point of the hook, and being formed intermediately with a portion i extending forward from the detent to the point of the hook, said forwardly-extending part i lying normally in a plane parallel with the body part, and said parallel bars being formed at their ends and at the bend of the hook into fastening-eyes independent of any other features or elements of service whereby the shank may be sewed into place without affecting the action of the spring member, substantially as shown and described.

3. A hook of the character described composed of a shank formed of two outer parallel bars bent into a hook, and a centrally-arranged spring member extending from the base of the shank and coincident therewith as to position, to a point just inside the point of the hook, and being formed intermediately with a portion i extending forward from the detent to the point of the hook, said forwardly-extending part i lying normally in a plane parallel with the body part, and said parallel bars being formed at their ends and at the bend of the hook into triangular fastening-eyes independent of any other features or elements of service whereby the shank may be sewed into place without affecting the action of the spring member, and without the liability of the fastening-stitches slipping around in the fastening eyes so as to displace the hook from its position, substantially as shown and described.

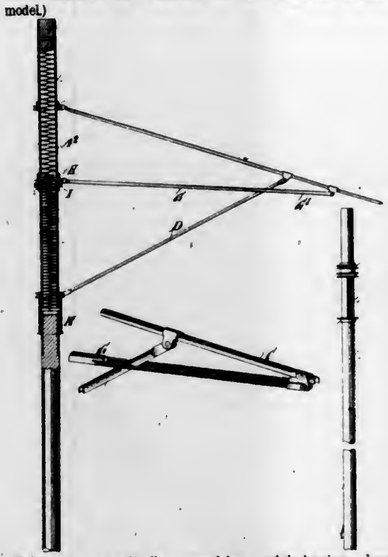
570,856. WRENCH. GEORGE W. MCELROY, Adrian, Mich. Filed Mar. 28, 1895. Serial No. 585,281. (No model.)



Claim.—1. In a wrench, the combination of the fixed jaw and its handle, the movable jaw and its rack, said handle having seated therein, between wings thereon, the loose ring-shaped nut with internal screw-threads thereon engaging said rack, and the spring secured to the fixed-jaw shank, and within a recess in the facing side of the movable-jaw rack and having its free end bearing upon the inner circumference of said nut, normally holding the nut in engagement with said rack, substantially as set forth.

2. In a wrench, the combination of the fixed jaw and its handle, the movable jaw and its rack, the loose ring-shaped nut arranged between wings formed on the handle of said fixed jaw, and engaging said rack the spring secured to the fixed-jaw shank and bearing upon the inner circumference of said nut, said handle proper comprising a skeleton section fitting over an extension of the fixed-jaw shank and cheek-pieces held in said skeleton section, substantially as specified.

570,857. UMBRELLA. HENRY PLACK, Jr., and CHARLES H. PINLOTT, Johnstown, Pa. Filed Feb. 7, 1896. Serial No. 578,319. (No model.)

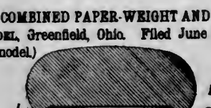


Claim.—1. An umbrella, comprising a stick having a longitudinally-slotted tubular portion, a runner mounted to slide on the stick, ribs carried on the stick, braces connecting the runner and ribs, an auxiliary runner mounted to slide on the tubular portion of the stick, a cross-piece carried by the auxiliary runner and playing in the slotted portion of the stick, auxiliary braces connecting the auxiliary runner with the ribs, and springs arranged in the hollow of the tubular portion of the stick and engaging the cross-piece, substantially as set forth.

2. An umbrella, comprising a stick, a main runner and an auxiliary runner movable on the said stick, and under the control of springs, as set forth, ribs connected to the stick, main braces secured to the ribs and to the main or lower runner, and auxiliary braces secured to the auxiliary or upper runner and to the ribs at points nearer to the free ends of the ribs than the connection with the main braces, the two sets of braces crossing each other, and each brace of one set being forked to allow the corresponding brace of the other set to pass between the members of the fork, substantially as described.

3. An umbrella comprising a stick having a longitudinally-slotted portion, a runner mounted to slide on the stick, ribs carried on the stick, braces connecting the runner and the ribs, an auxiliary runner mounted to slide on the tubular portion of the stick, a cross-piece carried by the auxiliary runner and playing in the slotted portion of the stick, auxiliary braces connecting the auxiliary runner with the ribs, and a spring arranged in the hollow of the tubular portion of the stick and extending beyond the said cross-piece, so that said cross-piece divides the spring into an upper and lower portion, substantially as described.

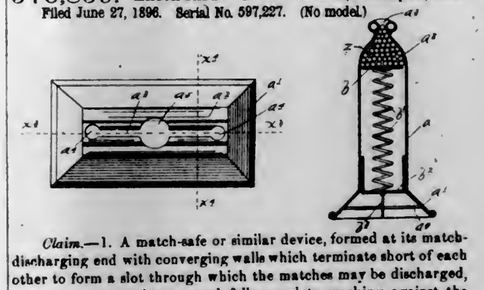
570,858. COMBINED PAPER-WEIGHT AND GAME OR PUZZLE. JOHN M. WADDELL, Greenfield, Ohio. Filed June 5, 1893. Serial No. 476,614. (No model.)



Claim.—1. The combination of the base A, the peripherally notched and numbered disk a' projecting centrally from the floor of the chamber, the crown B secured to the base, forming the chamber between the base and crown, said base and crown being both formed of glass, and the globes c confined within the chamber when the parts are secured together, substantially as shown and described.

2. The combination of the circular base A, made of transparent material and having its upper surface or floor formed with inclined surfaces leading to recesses or depressions, the disk a^2 secured underneath the base and having numbers or characters to designate the depressions in the floor of the base, the crown B secured to the base and forming a chamber between the base and crown, the crown being also formed of glass, and the globes c confined within the chamber and adapted to be thrown by agitation or centrifugal force from the settling depressions and returned and settled in said depressions when the weight is at rest.

570,859. MATCH-SAFE. GEORGE WEIGAND, Minneapolis, Minn. Filed June 27, 1896. Serial No. 597,227. (No model.)

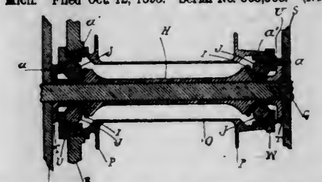


Claim.—1. A match-safe or similar device, formed at its match-discharging end with converging walls which terminate short of each other to form a slot through which the matches may be discharged, one by one, a spring-pressed follower-plate working against the matches in said safe, a removable resistance plate or bar in the open end of said safe, and one or more springs compressed between said follower-plate and said resistance-plate, substantially as described.

2. A match-safe or similar device formed at its match-discharging end with converging walls which terminate short of each other to form a slot and are provided with finger-notches, a spring-pressed follower-plate working against the matches in said safe, a removable resistance plate or bar closing the open end of said safe, and a pair of springs secured to and compressed between said follower-plate and said resistance-plate, substantially as described.

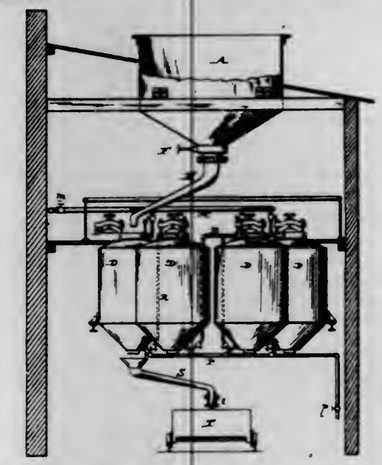
3. The combination with the body-section a formed with curved converging walls a^3 terminating short of each other to form the slot a^3 and provided with finger-notches a^4, the base a' having cross-rods a^6, the follower-plate b, the resistance plate or bar b^3, the springs b' secured to said plates b and b^3, and the spring b^3, b^4 cooperating with said bars a^6, substantially as described.

570,860. BICYCLE BALL BEARING. MELVIN L. WILCOX, Bay City, Mich. Filed Oct. 12, 1895. Serial No. 565,508. (No model.)



Claim.—The hub O provided with flanges P, and the shaft Q, combined with the sleeve H applied to the shaft and provided with enlarged ends, the balls J, the flanged sleeves T placed upon the shaft and having their inner ends to bear against the outer ends of the races; the races I, and the adjusting cups U, secured into the ends of the hub and provided with flanges upon their outer end, substantially as shown.

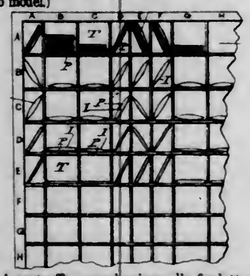
570,861. APPARATUS FOR LEACHING. LEWIS D. ARMSTRONG, Lock Haven, Pa.; Mylert M. Armstrong, administrator of said Lewis D. Armstrong, deceased, assignor to the New York and Pennsylvania Company, of Pennsylvania. Filed June 25, 1891. Serial No. 397,411. (No model.)



Claim.—1. In apparatus for leaching, the combination of a large elevated receiving tank or vessel, a series of leaching-tanks arranged at a lower elevation than the receiving-tank provided at the top with removable covers for charging, and valves at the bottom for discharging, means for delivering the material from the receiving-tank to either one of the series of leaching-tanks, pipes for supplying leaching liquid to the tanks and the independent swiveled discharge-pipe S located below the tanks and having its receiving end adapted to be brought under the discharge-outlet of any one of them.

2. In a leaching apparatus the combination of a series of leaching-tanks having removable covers at the top and discharge-valves at the bottom, a liquid-supply main M having valved branches N at the top of each of the tanks for supplying liquid to any tank of the series, the discharge-main P having valved branches O leading to the bottom of each of the tanks, the valved pipes R connecting the valved branch N of each tank with the valved branch O of the next tank, an elevated tank or vessel above the series of leaching-tanks, and means for delivering the material from the elevated tank to any one of the leaching-tanks of the series.

570,862. POST-OFFICE LETTER-BOX CASE AND MEMORANDUM. DAVID J. AYRES, Keokuk, Iowa. Filed Jan. 2, 1895. Serial No. 533,575. (No model.)



Claim.—1. A post-office case having cells, for letters or packages, each provided with an indicator adapted to be handled with its letters and bearing *indicia* of the names or classes of letters the cell is devoted to, on one face, and on another face a surface prepared for writing and erasing memorandums, and intermediately a pocket for cards or slips, and having notches on its edges to receive elastic straps for letters, substantially as set forth.

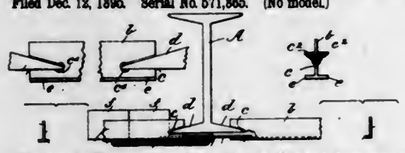
2. A post-office case having cells for letters or packages each provided with an indicator adapted to be handled with its letters and to remain permanently therewith in the absence of letters to avoid mistakes.

3. A post-office case having cells for letters or packages, each cell provided with an indicator adapted to be handled with its letters and bearing *indicia* of the names or classes of letters to which the cell is devoted on one face, and a surface on the other face adapted for the writing and erasure of memorandums, and intermediately a pocket to retain memorandum cards or slips.

4. A post-office case having cells for letters or packages each cell provided with an indicator adapted to be handled with its letters and to remain permanently with it, and bearing initial letters or *indicia* of the names or classes of letters to which the cell is devoted.

5. A post-office case having cells for letters or packages each cell provided with an indicator adapted to be handled with its letters and to remain permanently with it and bearing on one face a label or index of the names or class of letters to which the cell is devoted, and on another face a prepared surface adapted for the writing and erasure of names.

570,863. FIREPROOF FLOOR. THOMAS BAILEY, New York, N. Y. Filed Dec. 12, 1895. Serial No. 571,865. (No model.)



Claim.—1. The combination with the flanged floor-supporting beams, of flanged filling-supporting bars notched in the ends of the main web and secured to the lower flanges of the beams by the notched ends, said notches formed with the enlarged circular inner terminals substantially as described.

2. The combination with the flanged floor-supporting beams, and the flanged filling-supporting bars secured on the lower flanges of the beams, with the flanges of said bars pendent below the lower edges of the beams, of the plaster-holding plates supported on the flanges of the bars below the beams and an air-space between said plates and beams substantially as described.

3. The improved article of manufacture consisting of a supporting-bar having notches in the ends of the main web adapted to embrace the edges of flanged beams for its support, said notches formed with the enlarged inner terminals and the material displaced to form the notches disposed for bearing-flanges substantially as described.

570,864. DENTAL PLUGGER. FREDERICK S. BELYEA, Brookline, Mass. Filed Dec. 21, 1895. Serial No. 572,856. (No model.)



Claim.—1. In an instrument of the class described, a spindle, a two-part hammer longitudinally movable thereon, a hammer-actuating spring, and means to rotate one of the hammer members upon the other to thereby adjust the tension of the spring, substantially as described.

2. In an instrument of the class described, a tool-carrier, a longitudinally-movable hammer comprising a sleeve and a concentric collar, an actuating-spring for said hammer, and means to adjust said collar longitudinally on the sleeve to regulate the tension of the spring, substantially as described.

3. In an instrument of the class described, a tool-carrying spindle, a longitudinally-movable two-part hammer, an actuating-spring for the hammer, and means to move one of the hammer members on and relatively to the other, to adjust the tension of the spring, substantially as described.

4. In an instrument of the class described, a casing, a tool-carrier, a rotatable support therefor carried by the casing, in which said carrier is longitudinally movable, a sleeve movable on said carrier and forming one member of the hammer, and a hammer-spring, combined with a spring-controller carried by and rotatable relative to the sleeve, and constituting the other member of the hammer, and connections between said sleeve and carrier-support, to rotate the former, substantially as described.

5. In an instrument of the class described, a tool-carrier, a tool mounted in one end thereof, spring-actuated means to impart either a direct or a reverse blow to the carrier and its said tool, and means under the control of the operator for determining at will the direction of the blow to be delivered by said tool, substantially as described.

6. In an instrument of the class described, a tool, spring-actuated means to impart a direct or a reverse blow to said tool, a detent to maintain said means locked preparatory to delivery of the blow, devices to regulate the force of the blow, and means under the control of the operator to determine the direction of the blow and to move the detent into inoperative position, substantially as described.

7. In an instrument of the class described, a tool, independent actuating-springs to impart a direct or a reverse blow to said tool, a detent for each spring, and means under the control of the operator to compress one or other of the springs at will to determine the direction of the blow, and to thereafter release the detent of the compressed spring, substantially as described.

8. In an instrument of the class described, a tool-carrier adapted to receive a tool at each end, spring-actuated means to impart a direct or a reverse blow to either tool held in the carrier, and means controlled by the operator to determine the direction of the blow at will, substantially as described.

9. In an instrument of the class described, a tool-carrier adapted to receive a tool at each end, spring-actuated means to impart a direct or a reverse blow to either tool held in the carrier, means controlled by the operator to determine the direction of the blow at will, and a centering device including two oppositely-acting springs to return the tool-carrier to normal position after delivery of the blow, substantially as described.

10. In an instrument of the class described, a casing, a tool-carrier, means, including two oppositely-acting springs, to impart a direct or reverse blow to the tool-carrier, and a locking device for each of the springs when compressed, relative longitudinal movement of the tool-carrier and casing compressing one of said springs and thereafter releasing it, substantially as described.

11. In an instrument of the class described, a casing, a tool-carrier therein, independent hammer-springs located at opposite ends of the casing and adapted to be compressed one at a time, a yieldingly-supported, tipping detent to coöperate with the compressed spring, means intermediate said springs and tool-carrier, to impart a blow thereto when the compressed spring is released, and a releasing device for the detent, controlled by relative longitudinal movement of the casing and tool-carrier, to tip said detent out of engagement with the compressed spring, substantially as described.

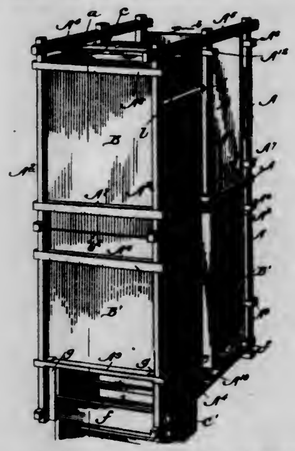
12. In an instrument of the class described, a tool-carrier, its tool, means, including a plurality of actuating-springs, to impart a direct or a reverse blow to the carrier and its tool, devices to independently regulate the tension of each spring, and means controlled by the operator, to determine the direction of the blow delivered by said tool, substantially as described.

13. In an instrument of the class described, a casing, a tool-carrier, supports therefor rotatable in the casing, a plurality of hammers and their actuating-springs, to impart to the carrier a direct or a reverse blow, means controlled by rotation of said carrier-supports, to regulate the tension of the springs, and hammer-detents, relative longitudinal movement of the casing and tool-carrier compressing a hammer-spring and thereafter releasing its detent, to impart a blow to the tool-carrier, substantially as described.

570,865. BALING-PRESS. ELIAS H. BUTTS, Oriental, N. C., assignor of one half to William H. Lewis, Merritt, N. C. Filed July 31, 1896. Serial No. 601,130. (No model.)

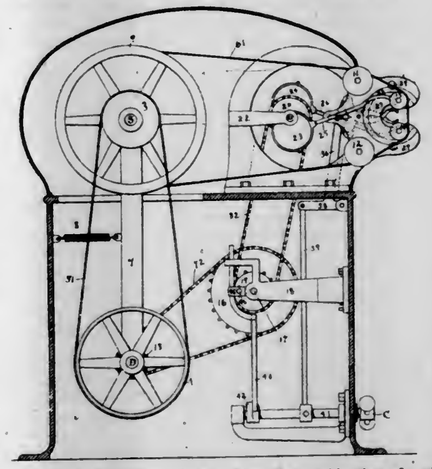
Claim.—1. A baling-press comprising an upper box within which the baling is effected, a lower box for receiving the material, a platen arranged within the lower box and having downward side extensions lying against and of the same size as the interior end walls of the press-box and provided with a series of ladder-like connecting-bars extending from side extension to side extension entirely across the box and forming a follower, a stationary fulcrum-bar arranged beneath the filling-box, and separate detached hand-levers adapted to fulcrum upon the fulcrum-bar and operate alternately upon the series of ladder-like bars of the follower, substantially as and for the purpose described.

2. A double baling-press having on each side an upper box within which the baling is effected, a lower box for receiving the material, a platen arranged within the lower box and having downward side extensions lying against and of the same size as the interior end walls of the press-box and provided with a series of ladder-like connecting-bars extending from side extension to side extension entirely across the box and forming a follower, a stationary fulcrum-bar arranged beneath each lower box, and separate and detached hand-levers substantially as and for the purpose described.



3. A double baling-press comprising four corner-posts A A A¹ A¹ with end cross-bars A⁴ A⁹ A² and side bars A³ A⁷ A⁸ A⁹, the dividing-bars A¹⁰ A¹¹ A¹², vertical middle bars A′ between the baling-boxes, the cover *a* with cross bar *c*, the fulcrum-bars *f* arranged beneath each filling-box, a follower for each filling-box consisting of a platen with downwardly-extending side bars fitting against the interior side walls of the box and connected by a series of ladder like bars extending across the box, and separate and detached hand-levers substantially as and for the purpose described.

570,866. BURNISHING-MACHINE. MERRILL E. CLARK, Worcester, Mass. Filed Jan. 7, 1896. Serial No. 574,610. (No model.)



Claim.—1. In a burnishing-machine, the combination of a plurality of pulleys mounted upon a rotatable plate, a burnishing-surface adapted to be moved by the rotation of said plate, mechanism for rotating said plate and for returning it to its initial position, substantially as described.

2. In a burnishing-machine, the combination of a pulley upon a shaft mounted on a swinging arm, a spring supporting said arm, a plurality of pulleys mounted upon a rotatable plate, a burnishing belt encircling all of said pulleys, mechanism for rotating said plate, and for returning it to its initial position, and mechanism for imparting motion to the pulley on the shaft mounted upon the swinging arm, substantially as described.

3. In a burnishing-machine, the combination of a pulley upon a shaft mounted on a swinging arm, a spring supporting said arm, a plurality of pulleys mounted upon a rotatable plate, intermediate idler-pulleys, a burnishing-belt encircling all of said pulleys, mechanism for rotating said plate, and for returning it to its initial position, and mechanism for imparting motion to the pulley on the shaft, mounted upon the swinging arm, substantially as described.

4. In a burnishing-machine, the combination of a driving-shaft, two swinging arms mounted thereon, each carrying a shaft adapted to receive motion from the first-named shaft, a pulley on each of said last-named shafts, springs for supporting said swinging arms, two pulleys on each of the faces of a rotatable plate, a burnishing-belt encircling the pulley on each of said swinging arms and each pair of pulleys upon the faces of said rotatable plate, and mechanism for rotating said plate and for returning it to its initial position, substantially as described.

5. In a burnishing-machine, the combination of a driving-shaft, two swinging arms mounted thereon, each carrying a shaft adapted to receive motion from the first-named shaft, a pulley on each of said last-named shafts, springs for supporting said swinging arms, two pulleys on each of the faces of a rotatable plate, a burnishing-belt encircling the pulley on each of said swinging arms and each pair of pulleys upon the faces of said rotatable plate, a third shaft adapted through suitable mechanism to receive motion from the driving-shaft, and to transmit motion to a fourth shaft, and two eccentrics mounted on said fourth shaft and arms connecting them with said rotatable plate, whereby the plate may be rotated and the burnishing-belts brought into contact with the work, and the plate returned to its initial position, and the work disengaged from the machine, substantially as described.

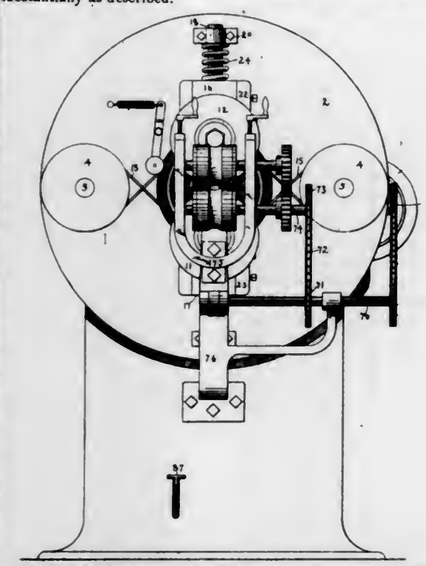
6. In a burnishing-machine, the combination of a driving-shaft, two swinging arms mounted thereon, each carrying a shaft adapted to receive motion from the first-named shaft, a pulley on each of said last-named shafts, springs for supporting said swinging arms, two pulleys on each of the faces of a rotatable plate, a burnishing-belt encircling the pulley on each of said swinging arms, and each pair of pulleys on the opposing faces of said rotatable plate, a sprocket-wheel on said driving-shaft, a third shaft provided with a sprocket-wheel, connected with the driving-shaft by a sprocket-chain, a second sprocket-wheel on said third shaft, connected by a clutch mechanism with the other sprocket-wheel on said third shaft, a fourth shaft provided with a sprocket-wheel and adapted to receive motion through a sprocket-chain, from a sprocket-wheel on said third shaft, two eccentrics loosely mounted on said fourth shaft, and rigidly connected with the sprocket-wheel on said fourth shaft, and arms connecting the eccentrics with said rotatable plate, whereby the plate may be rotated and the burnishing-belts brought into contact with the work, and the plate returned to its initial position, and the work disengaged from the machine, substantially as described.

7. In a burnishing-machine, the combination of a driving-shaft, two swinging arms mounted thereon, each carrying a shaft adapted to receive motion from the first-named shaft, a pulley on each of said last-named shafts, springs for supporting said swinging arms, two pulleys on each of the faces of a rotatable plate, a burnishing-belt encircling the pulley on each of said swinging arms and each pair of pulleys on the faces of said rotatable plate, a sprocket-wheel on said driving-shaft, a third shaft provided with a sprocket-wheel and connected with the driving shaft by a sprocket-chain, a second sprocket-wheel on said third shaft, connected by a clutch mechanism with the other sprocket-wheel on said third shaft, a fourth shaft provided with a sprocket-wheel and adapted to receive motion through a sprocket-chain from a sprocket-wheel on said third shaft, two eccentrics loosely mounted on said fourth shaft and rigidly connected with the sprocket-wheel on said fourth shaft, and arms connecting the eccentrics with said rotatable plate, feeding mechanism actuated by a pulley on said third shaft, a supporting device for holding the work in contact with the burnishing-belts, a controller-arm and intermediate connecting and operating mechanism, whereby the clutch mechanism and the supporting device may be operated, the burnishing-belts applied to the work, the work released from the supporting device, and the burnishing-belts restored to their initial positions, substantially as described.

8. In a burnishing-machine, a plurality of pulleys mounted upon a reciprocatingly-rotatable plate, a burnishing-belt encircling said pulleys, mechanism for imparting motion to said belt, and mechanism for rotating said plate, substantially as described.

570,867. MACHINE FOR FINISHING STOCK. MERRILL E. Clark, Worcester, Mass. Filed Mar. 4, 1896. Serial No. 581,758. (No model.)

Claim.—1. In a finishing-machine, the combination of a revoluble disk, mechanism, secured to said disk, for finishing stock, and mechanism adapted to be operated while the machine is running, whereby the distance between the finishing-surfaces may be varied, substantially as described.



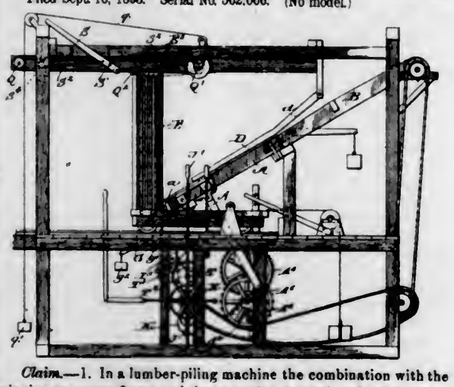
2. In a finishing-machine, the combination of a revoluble disk, a plurality of abrading-surfaces secured to said disk, and mechanism adapted to be operated while the machine is running, whereby the distance between the abrading-surfaces may be varied, substantially as described.

3. In a finishing-machine, the combination of a revoluble disk, a plurality of abrading-surfaces secured to said disk, means for rotating said abrading-surfaces, and mechanism adapted to be operated while the machine is running, whereby the distance between the abrading-surfaces may be varied, substantially as described.

4. In a finishing machine, the combination of a revoluble disk, a plurality of abrading-surfaces, radially-movable frames secured to said disk, a roll secured to each of said frames, a suitably-shaped body mounted within the frame of the machine, and adapted to move horizontally between said rolls, and mechanism for moving said body whereby the distance between the abrading-surfaces may be varied, substantially as described.

5. In a finishing-machine, the combination of a revoluble disk, a plurality of abrading-surfaces, radially-movable frames, secured to said disk, a roll secured to each of said frames, a tube with tapering sides suitably mounted within the frame of the machine, between said rolls, and adapted to move horizontally, and mechanism for moving said tube, whereby the distance between the abrading-surfaces may be varied, substantially as described.

570,868. LUMBER-PILING MACHINE. HOWARD DANIELS, Atlanta, Ga., assignor of one half to James H. Simonson, Fort Wayne, Ind. Filed Sept. 10, 1895. Serial No. 562,066. (No model.)



Claim.—1. In a lumber-piling machine the combination with the swinging conveyer-frame and the operating-gears therefor of the connections between said gears and frame, said connections uniting with the frame at a point above the pivot or hinge thereof substantially as set forth.

2. In a lumber-piling machine the combination with the swinging conveyer-frame of the pile-retaining bar movable into and out of position in rear of the lumber pile as the successive courses are applied thereto substantially as set forth.

3. In a lumber-piling machine the combination with the swinging conveyer-frame and means for supplying the stakes thereto of the pile-retaining bar substantially as set forth.

4. In a lumber-piling machine a movable pile-retaining bar dropping by gravity out of position for use combined with means by which to positively move such bar into position for use substantially as set forth.

5. In a lumber-piling machine the combination of the swinging conveyer-frame means by which to operate said conveyer-frame including stop mechanism by which such frame may be stopped at the end of its feed stroke and the retaining-bar substantially as set forth.

6. In a lumber-piling machine, the combination of the pile-retaining bar, vertical guides in which said bar is longitudinally movable whereby it may return by gravity and gearing by which said bar may be lifted substantially as set forth.

7. In a lumber-piling machine the combination with the pile-retaining bar of the yielding presser adjacent to the path of such bar whereby to deflect the same when moved from alongside one course to position to move alongside the next course substantially as set forth.

8. In a lumber-piling machine the combination with the longitudinally-movable retaining-bar of the yielding presser consisting of a pivoted bar having at one end a weight and at its other end a bearing pressing against the retaining-bar substantially as and for the purposes set forth.

9. In a lumber-piling machine the combination of the retaining-bar, the shaft having a drive friction-pulley, the counter-shaft having a spool connected with the retaining-bar and a pulley movable into and out of contact with the drive pulley and a brake-seat with which the counter-shaft pulley may be engaged substantially as set forth.

10. In a lumber-piling machine the combination of the conveyer-frame, the stake-feeder consisting of an endless carrier and means whereby the movement of the conveyer-frame imparts movement to the stake feeder substantially as set forth.

11. The combination of the conveyer-frame, the stake-feeder consisting of the endless carrier and devices whereby said carrier is given a step-by-step movement relative to the movement of the conveyer-frame substantially as set forth.

12. The combination of the stake-feeder comprising an endless carrier a ratchet-wheel connected with said carrier a pawl engaging said ratchet-wheel, a bar or carrier for said pawl, and the conveyer-frame movable into engagement with said pawl carrier or bar substantially as set forth.

13. The combination in a lumber-piling machine of the framing, the belt or chain having portions to engage the truck-stanchion, and a weight actuating said belt whereby to cause the same to exert a stress upon the truck-stanchion substantially as set forth.

14. The combination in a lumber piling machine with the truck-stanchions of the rings fitted thereto and having hook-like portions for engagement by the binding-chains substantially as set forth.

15. The combination in a lumber-piling machine of the framing the load-pressing lever pivoted thereto and the chains or connections secured to said lever and having hooks by which to engage the truck-stanchions substantially as set forth.

570,869. LUMBER-PILER. HOWARD DANIELS, Atlanta, Ga., assignor of one-half to James H. Simonson, Fort Wayne, Ind. Filed Mar. 30, 1896. Serial No. 585,418. (No model.)

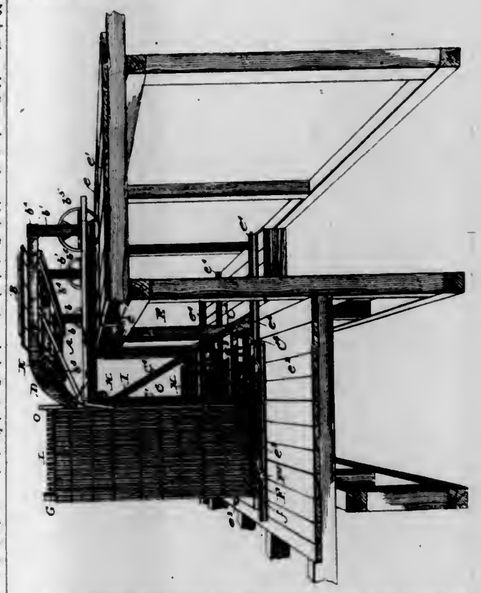
Claim.—1. In a lumber-piling apparatus, a carriage having an upper lumber-receiving portion and an upright piling portion connected with and below said receiving portion, the receiving and piling portions being movable bodily, substantially as shown and described.

2. In a lumber piling machine, the combination with the truck and means whereby the truck is held from moving back as the successive courses are applied, of a carriage having a piling portion which is movable bodily backward as the successive courses are applied substantially as shown and described.

3. A lumber-piling apparatus having a piling portion which is movable bodily from the accumulating pile, substantially as shown and described.

4. A lumber-piling machine comprising a carriage having an upper receiving portion and a piling portion connected with and arranged below the receiving portion and platforms or supports on which said receiving and piling portions are movable, substantially as shown and described.

5. A lumber-piling machine comprising a car and a piling-carriage, such carriage being movable bodily back from the car and the car and carriage being arranged to interlap substantially as shown and described.



6. A lumber-piling machine comprising the carriage having an upper receiving portion provided with a platform for the operator, a lower connected piling portion, such carriage being movable bodily and a support on which said carriage is movable, substantially as set forth.

7. In a lumber-piling machine, a carriage having upper receiving and lower piling portions connected and movable together as described, wheels upon said upper and lower portions and supports upon which said wheels rest, substantially as shown and described.

8. In a lumber-piling machine, a carriage having an upper receiving portion or loading-bench and a piling portion connected with said receiving portion, a curved guiding portion being provided by which to direct the lumber to the piling portion, substantially as set forth.

9. In a lumber-piling machine, a carriage-support having an upper portion and a lower portion projecting forward beyond the upper portion and the carriage having an upper and lower portion resting respectively on the upper and lower portions of the support, substantially as set forth.

10. In a lumber piling machine, a carriage having an upper loading-bench or receiving portion, an upright piling portion depending from the front end of said receiving portions, a base-truck and brace devices between said truck and piling portion, substantially as shown and described.

11. In a lumber-piling apparatus, a carriage having the receiving portion curved downward at its delivery end provided with wheels below its opposite end and having a platform adapted to support the operator, substantially as shown and described.

12. The combination with the car or support for the piled lumber, of the piling-carriage movable bodily back and forth with respect to said car or support and means by which to forcibly move said carriage in the use of the apparatus, substantially as set forth.

13. In a lumber-piling machine, the combination with the pile-support and the piling portion movable with relation to said pile support, of the stake retaining springs by which the stakes are held to the pile as the piling portion is retracted, substantially as shown and described.

14. The combination with the piling portion, of the brackets having guides for the stakes and the springs having their free ends arranged with relation to said stake-guides, substantially as shown and described.

15. The combination with the piling-carriage, of the retracting-levers pivoted to said carriage and operating substantially as and for the purpose set forth.

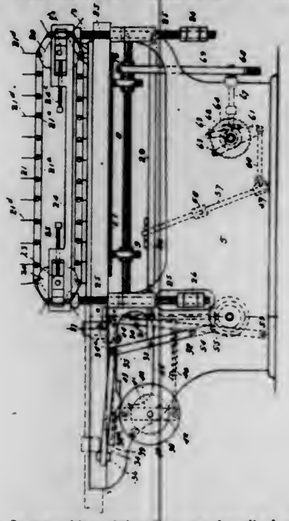
16. A lumber-piling machine comprising a piling-carriage having a piling portion and a receiving portion or bench connected therewith, and means for actuating said carriage toward the pile, substantially as shown and described.

17. In a lumber-piling machine, the combination of the car or truck and the stanchions thereof, of the chain connecting said stanchions and the lever fulcrumed on one of the said stanchions and connected with the other stanchion whereby to strain the two stanchions toward each other, substantially as shown and described.

18. In a lumber-piler, the combination with the piling portion adapted to hold the lumber courses in forming the same, of devices on said piling portion by which to hold the stakes to the pile when the parts are being adjusted to position to receive another course, substantially as shown and described.

19. In a lumber-piler, a piling portion having stake-guides arranged slightly back from the piling face or edge whereby the stakes may be inserted without interfering with the applied courses, substantially as shown and described.

570,870. CUTTING AND PANNING MACHINE. LE GRAND R. DAVIDSON, Denver, Colo., assignor of one-half to William C. Allen, Philadelphia, Pa. Filed June 26, 1895. Serial No. 554,171. (No model.)



Claim.—1. In a machine of the character described, the combination with a suitable supporting-frame, of a reciprocating receptacle, a vertically-adjustable knife belt located above the receptacle, and a pan conveyer or carrier located below the receptacle, and having a movement at right angles to the movement of the receptacle, substantially as described.

2. In a machine of the character described, the combination with the frame, of the reciprocating receptacle, a vertically-adjustable knife-belt located above the receptacle, and a pan-conveyer located below the receptacle and having an intermittent movement at right angles to the movement of the box, substantially as described.

3. In a machine of the character described, the combination with a suitable frame, of a reciprocating receptacle, the knife-belt located above the receptacle, the vertically-movable knife-belt frame, the toggles, one member of each being attached to the stationary frame, and the other member to the knife-belt frame, a suitable bar connecting the toggles, and suitable means actuated by the reciprocating receptacle for actuating the toggles whereby the knife-belt is raised and lowered, substantially as described.

4. In a machine of the character described, the combination with a suitable stationary frame, of the reciprocating receptacle, the knife-belt located within the receptacle, a vertically-movable frame supporting the knife-belt, operating-toggles connected with the knife-belt frame, actuating-levers connected with the toggles, and intermittently operated by the reciprocating receptacle, substantially as described.

5. In a machine of the character described, the combination with the stationary frame, of the reciprocating receptacle mounted thereon, the knife-belt located above the receptacle, a vertically-movable frame supporting the knife-belt, operating-toggles connected with the movable knife-belt frame, levers for actuating the toggles, arms connected with the levers and normally occupying a position below the path of the reciprocating receptacle, and mechanism operated from the receptacle for periodically raising the arms into the path of the receptacle, whereby the toggles are operated through the medium of the levers, and the knife-belt raised and lowered at suitable intervals, substantially as described.

6. In a machine of the character described, the combination with a suitable stationary frame, of the reciprocating receptacle mounted on said frame, the knife-belt located above the receptacle, the vertically-movable frame supporting the knife-belt, the operating-toggles connected with said frame, a suitable bar connecting the two toggles, a yoke 31 directly connected with one of the toggles, two levers connected with said yoke, and suitable means connected with the levers whereby the movement of the receptacle while traveling in the same direction imparts reverse movements to the toggles and raises and lowers the knife-belt, substantially as described.

7. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle suitably mounted thereon, a knife-belt located above the receptacle, a vertically-movable frame supporting the knife-belt, toggles connected with said frame, a suitable bar connecting the toggles, a yoke 31 directly connected with one toggle, two levers, 30 and 54, connected with the yoke 31, an arm connected with the lever 30, another lever connected with lever 54, another arm connected with the last named lever, the two arms normally occupying a position out of the path of the reciprocating box, and suitable means actuated by the reciprocating receptacle for periodically, and at different times, bringing the said arms into the path of the box whereby the toggles are actuated in both directions, and the knife-belt raised and lowered, substantially as described.

8. In a machine of the character described, the combination with a suitable stationary frame, of the reciprocating receptacle, the knife-belt located above the receptacle, a vertically-movable frame supporting the knife-belt, toggles connected with said frame and with each other, a yoke 31 connected with one of the toggles, two levers, 30 and 54, connected with the yoke, an arm 34 connected with the lever 30, a lever 30^a connected with the lever 54, an arm 34^a connected with the lever 30^a, and means for raising the arms 34 and 34^a periodically, but at different times, into the path of the reciprocating receptacle, said means compriaing a pair of cam-wheels actuated by the receptacle and having their cams arranged at relatively different points, substantially as described.

9. In a machine of the character described, the combination with a stationary frame, of a reciprocating receptacle, the knife-belt located above the receptacle, a vertically-movable frame supporting the knife-belt, toggles connected with said frame and with each other, a yoke 31 connected with one of the toggles, two levers, 30 and 54, connected with the yoke, an arm 34 connected with the lever 30, a lever 30^a connected with the lever 54, an arm 34^a connected with the lever 30^a, cam-wheels having their cams arranged at relatively different points whereby the arms 34 and 34^a are brought into the path of the reciprocating receptacle periodically, and at different times, and means for actuating the cam-wheels, comprising a ratchet-wheel fast on the shaft of the cam-wheels, and an arm pivoted on the shaft and carrying a pawl engaging the ratchet-wheel, said arm projecting into the path of the reciprocating receptacle, substantially as described.

10. In a machine of the character described, the combination with a stationary frame, of a reciprocating receptacle, the knife-belt located above the receptacle, a vertically-movable frame supporting the knife-belt, toggles connected with said frame and with each other, a yoke 31 connected with one of the toggles, two levers, 30 and 54, connected with the yoke, an arm 34 connected with the lever 30, a lever 30^a connected with the lever 54, an arm 34^a connected with the lever 30^a, cam-wheels having their cams arranged at relatively different points whereby the arms 34 and 34^a are brought into the path of the reciprocating receptacle periodically, and at different times, and means for actuating the cam-wheels, comprising a ratchet-wheel fast on the shafts of the cam-wheels, an arm pivoted on the shaft and carrying a pawl engaging the ratchet-wheel, said arm projecting into the path of the reciprocating receptacle, and means for returning the pawl-arm to its normal position after each engagement with the receptacle, consisting of a spring-held rod connected with the pawl arm, substantially as described.

11. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle suitably mounted thereon, a knife belt located above the receptacle, the vertically-movable frame supporting the knife belt, toggles connected with said frame and with each other, a yoke 31 connected with one toggle, levers 30 and 54 connected with said yoke, an arm 34 connected with the lever 30, a lever 30^a connected with the lever 54, an arm 34^a connected with the lever 30^a, cam-wheels having their cams arranged at relatively different points, a ratchet-wheel fast on the shaft of the cam-wheels, an arm pivoted on said shaft and carrying a pawl engaging the ratchet-wheel, a swinging cam attached to the reciprocating receptacle and adapted to actuate the pawl-arm when the receptacle is moving in one direction, and a spring-held rod for returning the pawl-arm to its normal position after each engagement with the swinging cam, substantially as described.

12. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle suitably mounted thereon, a vertically-movable knife-belt located above the receptacle, pivoted driving-lugs attached to the receptacle, and means for periodically lowering the knife-belt to the path of said lugs, substantially as described.

13. In a food preparing machine, the combination with a suitable stationary frame, of a reciprocating receptacle for receiving the food material, said box being suitably mounted on the frame, means operated from the receptacle for periodically cutting the material therein into cakes, and holding the cakes until the receptacle moves away, and a conveyer located below the reciprocating receptacle and adapted to support the pan for the reception of the cakes, said conveyer having a movement at right angles to that of the receptacle, substantially as described.

14. In a food-preparing machine, the combination with a suitable supporting-frame, of a reciprocating receptacle suitably mounted thereon and adapted to receive the food material, means actuated from the receptacle for periodically cutting the material therein into cakes and holding them until the receptacle moves away, a conveyer located below the box and adapted to hold a pan for receiving the cakes as the box leaves them, and means operated from the reciprocating receptacle for imparting an intermittent movement to the conveyer at right angles to the movement of the receptacle, substantially as described.

15 In a machine of the character described, the combination with a suitable frame, of a reciprocating receptacle mounted thereon, a knife-belt located above the receptacle and supported on a movable frame, and suitable means for raising and lowering the knife-belt, as and for the purpose set forth.

16. In a machine of the character described, the combination with a suitable frame, of a reciprocating receptacle mounted thereon, a vertically-movable knife-belt located above said receptacle, and means actuated by the movement of the receptacle for raising and lowering the knife-belt, substantially as described.

17. The combination with a suitable stationary frame, of a vertically-movable frame mounted thereon, wheels journaled on said frame, the knife-belt mounted upon the wheels, said belt being composed of parallel chains, pins connecting the chains and engaging the wheels, and blades attached to the pins, and a reciprocating receptacle occupying a plane below the knife-belt, substantially as described.

18. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle mounted on the frame, a knife-belt located above said receptacle and comprising two parallel chains suitably separated, pins connecting said chains and radial blades attached to the pins; a vertically-movable frame, and wheels journaled on said frame and engaged by the knife-belt, substantially as described.

19. The knife-belt comprising two parallel chains suitably separated, pins connecting the chains, and blades attached to the pins, substantially as described

20. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle suitably mounted on said frame, a knife belt located above said receptacle and comprising two parallel chains, pins connecting the chains and radial blades attached to the pins; a vertically-movable frame mounted on the stationary frame, wheels journaled on said frame and adapted to carry the knife-belt, and grooved guides attached to the frame and engaging the protruding extremities of the knife-belt pins, substantially as described.

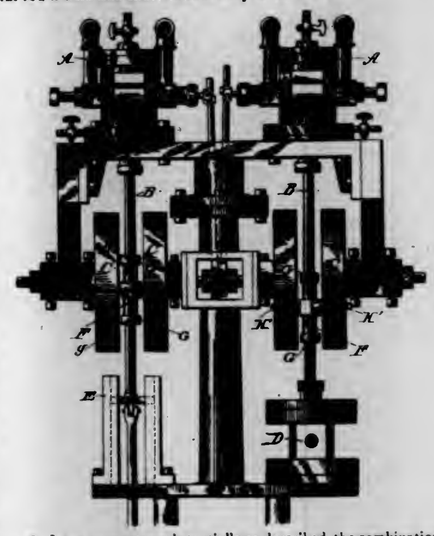
21. In a machine of the character described, the combination with a suitable stationary frame, of a reciprocating receptacle mounted thereon, a knife-belt located above the reciprocating receptacle, the knife-belt frame comprising vertical posts movable on the stationary frame, bars attached to the posts and wheels journaled on the bars; yokes to which the posts are attached, toggles attached to the yokes at one extremity and to the stationary frame at the opposite extremity, and suitable means for actuating the toggles whereby the knife-belt is raised and lowered, substantially as described.

22. In a machine of the character described, the combination of a stationary frame, a reciprocating receptacle mounted thereon, a knife-belt located above said receptacle, a frame supporting the knife-belt and having posts vertically movable on the stationary frame, yokes attached to the posts, a toggle connected with the yokes and actuated by the movement of the reciprocating receptacle for operating the toggle and raising and lowering the knife-belt, substantially as described.

570,871. MEANS FOR TRANSMITTING MOTION. WILLIAM C. DOUTHETT, Pittsburg, Pa. Filed Feb. 15, 1896. Serial No. 579,421. (No model.)

Claim.—1. In an apparatus substantially as described, the combination of a pulley or wheel, a reciprocating rod, a sleeve on said rod having a lateral projection, a guide-ring in which said projection is movably held, a second ring to which said first ring is pivoted and pivot connections between said second ring and the pulley or wheel, substantially as set forth.

2. In an apparatus substantially as described, the combination of the pulley or wheel, a reciprocating rod, a lateral rod or projection connected with said reciprocating rod and a universal joint carried by the pulley or wheel and having a guide-opening in which said lateral rod is held and slides substantially as set forth.



3. In an apparatus substantially as described, the combination of the pulley or wheel a reciprocating rod, a sleeve free to turn thereon, means by which said sleeve is held from longitudinal movement along the reciprocating rod, a lateral rod carried by the sleeve, a ring having an opening in which said lateral rod plays, a second ring to which said first ring is pivoted and pivot connections between said second ring, and the pulley or wheel, substantially as shown and described.

4. The combination of the pulley or wheel, a ring pivoted to said wheel, with the line of the pivots radial to said wheel, a second ring pivoted in the first ring on a line at right angles to the pivots of said ring, the reciprocating rod and a lateral rod connected with the reciprocating rod and playing within the said second ring substantially as shown and described.

5. The combination of the rod, the pulley or wheel alongside the same on an axis which intersects the line of the rod, a sleeve turning upon said rod and held from movement along the same, a lateral rod carried by said sleeve and a universal connection between said lateral rod and wheel, substantially as shown and described.

570,872. BUTTON. JOSEPH N. GARDNER, Tuckerman, Ark., assignor of one-half to Crawford West, same place. Filed May 21, 1896. Serial No. 592,426. (No model.)



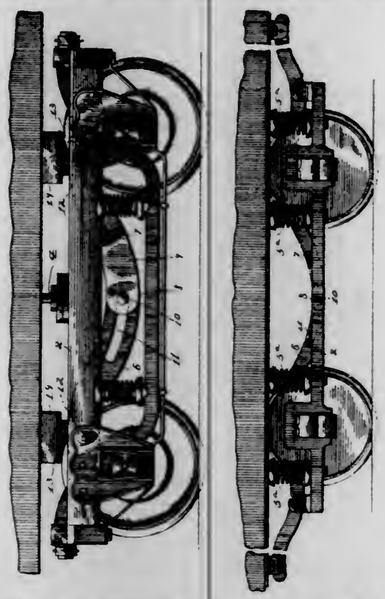
Claim.—1. As an article of manufacture, a button, made up of a base having a rectangular extension thereon, forming a shoulder between it and said extension, a head having a rectangular opening therein through which said extension projects, and a screw applied to the upper end of said extension, engaging the outer surface of said head, whereby the cloth to which said button is applied is tightly gripped between the lower end of said head and the shoulder formed on said base, substantially as described.

2. As an article of manufacture, a button, made up of a base having a rectangular extension thereon forming a shoulder between it and said extension, a head having a rectangular opening therein through which said extension projects, and a circular recess in its upper surface, and a screw whose head fits within said circular recess and whose shank engages the extension on said base, whereby the cloth to which said button is applied is tightly gripped between the lower end of said head and the shoulder formed on said base, substantially as described.

570,873. WITHDRAWN.

570,874. WITHDRAWN.

570,875. EQUALIZER FOR CAR-TRUCKS. JAMES H. HOUSMAN, Clifton Forge, Va. Filed July 25, 1895. Serial No. 600,508. (No model.)



Claim.—1. The combination of a car-body, a car-truck having rails across its ends outside of the wheels, a pair of vertically-rigid bearings carried by said end rails, a pair of rigid pivoting-bearings secured to the under side of the car-body, and a pair of doubly-curved equalizing-levers having their ends secured in one of the pairs of bearings and having corresponding intermediate points fitted in the other pair of bearings; said equalizing-bars having their meeting ends curved downwardly and connected together by means of the fork and slot-and-pin connection, of which the slot follows the curve of the bar in which it is formed, substantially as herein explained and for the purposes set forth.

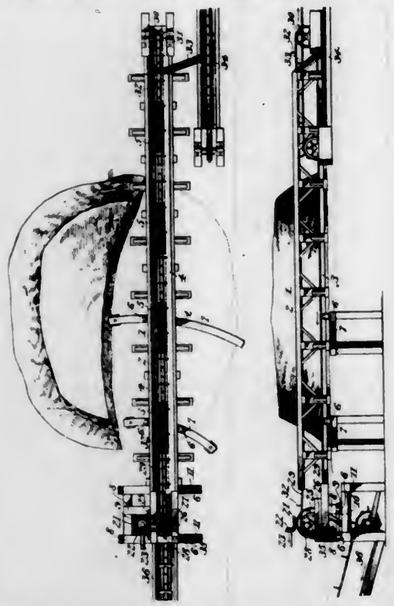
2. The combination of a car-body having a pair of pivot-bearings on its bottom, a car-truck having end rails carrying another pair of bearings, and a pair of doubly-curved equalizing toggle-levers having downwardly-curved meeting ends connected together by a fork and slot-and-pin connection of which the slot follows the curve of the end in which it is formed; said levers having their ends fitted in one pair of the bearings and corresponding intermediate points fitted in the other pair of bearings and the curves of said levers being disposed so that the levers will properly extend from the point of their connection to the respective bearing-points in different planes and so as to bring the parts of said levers at their bearing-points substantially transverse to the direction of the load, substantially as and for the purposes set forth.

3. The combination of a car-body having hangers, a car-truck having slotted end rails and a pair of doubly-curved equalizing toggle-levers having a fork and pin-and-slot connection and pivoted to the hangers of the car-body and secured at their outer ends to the slotted rails of the car-truck; substantially as described.

4. In combination with a car-body and a truck for supporting said body, having end rails formed with horizontal slots, the herein-described equalizing-levers having fixed bearings upon the under side of the car-body, having a yielding connection at their meeting ends, and having their other ends working in the slots in the end rails, substantially as and for the purpose set forth.

570,876. CONVEYING APPARATUS. AUGUSTUS L. LE GRAND, Pittston, Pa., assignor to the Exeter Machine Works, same place. Filed July 9, 1895. Serial No. 555,389. (No model.)

Claim.—1. In a conveying apparatus for removing banked material, a pair of horizontal horizontally-swinging upper and lower conveyer-troughs, the upper of said troughs being provided in its bottom with screens whereby part of the material introduced therein at any point will be screened into the lower trough, and a flighted conveyer having the upper and lower portions thereof traveling respectively in the upper and lower troughs, substantially as set forth.



2. In a conveying apparatus for removing banked material, a pair of horizontal horizontally-swinging upper and lower conveyer-troughs pivoted or fulcrumed at one end, the upper of said troughs being provided with screen-sections at points along its entire length, whereby part of the material introduced therein at any point will be screened into the lower trough, and a conveyer arranged to work in each of said troughs, substantially as set forth.

3. In a conveying apparatus for banked material, a horizontal horizontally-swinging conveyer-frame carrying conveying mechanism having means for separating different grades of the material removed from the embankment, and adapted to respectively convey to different points of deposit the different graded portions of the material, substantially as set forth.

4. In a conveying apparatus for removing banked material, a pair of horizontal horizontally-swinging upper and lower conveyer-troughs pivoted or fulcrumed at one end and open at their top sides throughout their lengths to receive material therein at any point, the upper of said troughs being provided with screen-sections at points along its entire length to provide for the separation of the material introduced therein at any point, and a flighted conveyer having the upper and lower portions thereof traveling respectively in the upper and lower troughs, substantially as set forth.

5. In a conveying apparatus for removing banked material, a turn-table, a horizontal horizontally swinging conveyer-frame provided at one end with a lateral extension fastened to the turn-table said frame also carrying a pair of upper and lower conveyer-troughs, the upper of said troughs being provided with screen-sections at points along its entire length, a horizontally-disposed head-shaft mounted at the turn-table end of the frame and carrying a vertically-disposed sprocket-wheel, a vertically-disposed foot-wheel mounted at the swinging end of the frame, a flighted conveyer passing over the sprocket and foot wheels and through the conveyer-troughs, and a driving-gear connection with said head-shaft, substantially as set forth.

6. In a conveying apparatus, a turn-table provided centrally on its upper side with a bearing-step, a swinging conveyer-frame provided at one end with a lateral extension fastened to the turn-table said frame also carrying a conveyer-trough, a chain conveyer traveling in said trough, a shaft mounted at one end of the conveyer-frame and carrying a sprocket-wheel engaging with the chain of the conveyer, and a suitably-rotated vertical pivot-shaft stepped at its lower end in said bearing-step and suitably geared with said shaft at one end of the conveyer frame, substantially as set forth.

7. In a conveying apparatus, the combination with the swinging conveyer-trough, of the turn-table for said trough consisting of a stationary bearing-plate provided with an upwardly-disposed circular bearing flange, a circular bottom track on its upper side, and a circular side track on the inner side of the bearing-flange, and a rotary turn-table plate having a short depending rim loosely embracing the upper edge of said bearing-flange said rotary plate carrying a series of vertically-disposed supporting-wheels traveling on said bottom track and a series of horizontally-disposed side wheels or rollers traveling on said circular side track, substantially as set forth.

8. In a conveying apparatus for removing banked material, a pair of horizontal horizontally-swinging upper and lower conveyer-troughs, the upper of which troughs is provided with screen-sections at points along its entire length, a hinged drop-door fastened to the bottom of the upper trough under each of the screen-sections thereof, and a conveyer working in each of said troughs, substantially as set forth.

9. In a conveying apparatus, the combination with a swinging conveyer-trough, of the turn-table for said trough consisting of a stationary bearing-plate provided with an upwardly-disposed circular bearing flange, and a rotary turn-table plate inclosing the space within the circular bearing-flange and carrying a series of vertically-disposed wheels traveling on top of the stationary bearing-plate, and a series of horizontally disposed wheels traveling against the inner side of the circular bearing-flange, substantially as set forth.

570,877. AWNING-FRAME. JULES MOREIN, Norfolk, Va. Filed Aug. 1, 1896. Serial No. 601,343. (No model.)

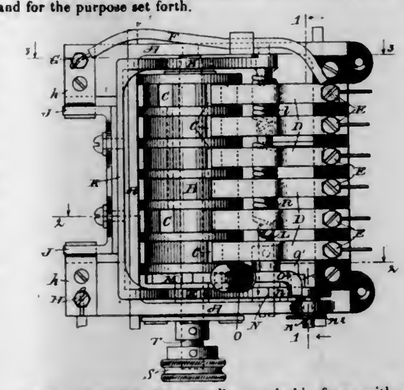
Claim.—1. In an awning-frame, the combination with the upper and lower supporting or wall brackets, of the flanged bar B hinged or pivoted to the upper of said brackets, a brace C pivoted to the lower of said brackets, and a combined clamp and slide to which the opposite end of said brace is pivoted, said clamp and slide having lips or flanges which engage the flanges of the bar B, together with means for securing said slide in any desired adjustment, substantially as specified.

2. In an awning-frame, the combination with the hinged or pivoted bar B, having laterally-projecting flanges, of the two-part clamp and slide having grooved lips or flanges which embrace the said flanges of the bar B and are arranged to slide thereon, a clamping-bolt therefor, and a brace pivoted to said slide substantially as specified.

3. In an awning-frame, the combination with upper and lower supporting and wall brackets A, A', of the bar B whose upper end is hinged or pivoted to the bracket A, and which is formed with lateral ribs or flanges, the two clamps having a sliding engagement with the ribs or flanges of said bar, and the two braces C and H whose inner ends are pivoted to the bracket A' and their outer ends to the respective clamps, substantially as specified.

570,878. MULTIPLE-SERIES CONTROLLER. JAMES F. MCELROY, Albany, N. Y. Filed Aug. 28, 1894. Serial No. 521,534. (No model.)

Claim.—1. In a multiple-series controller, a cylinder suitably mounted, metallic contact-points in the surface of said cylinder, fingers suitably mounted to rest on said cylinder, a means for conveying the current from the positive pole to one of said fingers, contact-posts adapted to connect the positive with the negative pole of the controller, a means for locking the connecting-posts in contact with poles of the controller by means of a locking device operating upon the frame carrying the post, tending to prevent the elevation of the frame and simultaneously locking the cylinder to the post-carrying frame by means of suitable engagement therewith, substantially as described and for the purpose set forth.



2. In a multiple-series controller, a suitable frame with positive and negative poles, a cylinder mounted in said frame, contact-points arranged on the surface of said cylinder, a means for revolving said cylinder in said frame, contact fingers secured to said frame and resting upon the surface of said cylinder, the positive pole of said frame connected with one of said contact-fingers, a metallic connection between the positive and negative poles of said frame, said metallic connection adapted to be raised and lowered by means of a spring set in operation by a lever so arranged that by the movement of the lever, the metallic connection between the poles may be broken abruptly and forcibly, substantially as described and for the purpose set forth.

3. In a multiple-series controller, a frame provided with positive and negative poles, a spindle mounted in said frame, contact-posts adapted to connect said poles mounted in arms secured to said spindle, a spiral spring mounted on said spindle, the resiliency of said spring adapted to break the contact, a lever mounted on said spindle, a cylinder, metallic points thereon, metallic fingers connected therewith, a means for preventing the revolution of said cylinder when said contact is made, so adjusted that by the operation of said lever, the cylinder is unlocked, and the contact broken simultaneously and forcibly, substantially as described and for the purpose set forth.

4. In a multiple-series controller, a frame having a positive and negative pole, a means for conducting the electricity in multiple series, a means for breaking the circuit forcibly and abruptly and simultaneously unlocking the controller, substantially as described and for the purpose set forth.

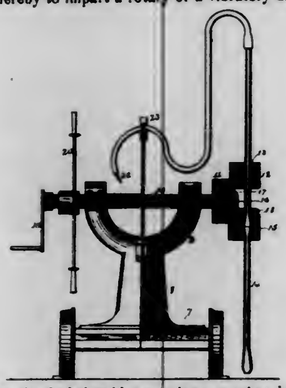
5. In a multiple-series controller, a frame provided with a positive and negative pole, a cylinder mounted therein, provided with metallic contact-points, contact-fingers mounted thereon, connecting-posts for the purpose of engaging said poles, said connecting-posts secured to arms mounted on a spindle operated by a spiral spring, the resiliency of which tends to break the circuit, a catch mounted on said frame adapted to lock the connecting-posts in contact with the poles, a notched wheel secured to said cylinder, a lug on the arm of one of said connecting-posts adapted to engage with the notches in said notched wheel, a lever arranged to remove said catch from contact with said arm, to revolve the spindle to which said arm is attached, to withdraw said lug from said notches in said wheel and to set in operation said spring, the resiliency of which causes the contact to be broken, substantially as described and for the purpose set forth.

6. In a multiple-series controller, two switches in series, one an adjustable, the other a make-and-break switch, a handle-piece adapted to operate the make-and-break switch, means for breaking the circuit abruptly with a quick exaggerated or enlarged motion, and means for simultaneously unlocking said adjusting-switch, substantially as described.

7. In a multiple-series controller, the combination of two switches in series, one of which is a make-and-break switch, the other an adjusting switch, a handpiece so connected to the make-and break switch as to open the circuit abruptly and to simultaneously unlock the adjusting-switch, substantially as described.

570,879. MECHANICAL GLASS-BLOWER. MICHAEL J. OWENS, Toledo, Ohio. Filed June 11, 1894. Serial No. 514,194. (No model.)

Claim.—1. In a mechanical glass-blower, a base or pedestal, a tubular shaft journaled therein, a block secured on this shaft, and having coincident openings, a blowpipe loosely mounted in these openings, a shaft fitting in the tubular shaft, and means for operating the two shafts whereby to impart a rotary or a vibratory motion to the blowpipe.

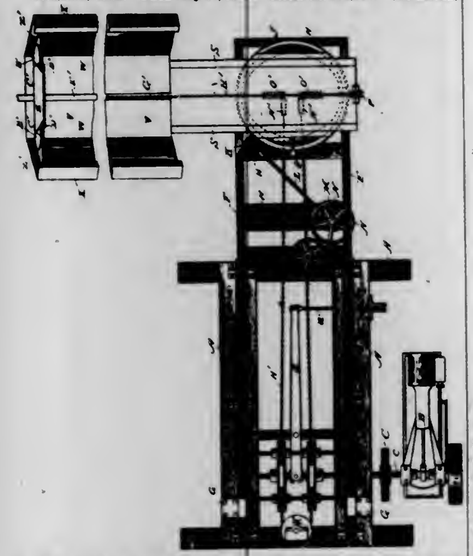


2. In a mechanical glass-blower, a base or pedestal, a shaft journaled therein having a block secured upon one end having coincident perforations, one of which is recessed with an inverse double cone, and a blowpipe journaled therein having a double inverse conical bearing.

3. In a mechanical glass blower, a movable base or pedestal, a mechanically-operated blowpipe, and a vertically-movable shaping block.

4. In a mechanical glass-blower, a car, a pedestal mounted thereon, the hollow shaft 10, projecting beyond the car on one side and having the block 12 secured to its projecting end; the blowpipe 14, secured in the block, and a tube 21 connected to one end of the blowpipe, combined with the shaft which extends through the hollow one, and is provided at one end with the crank 19, and at the other with a gear 17; the gear 18 secured to the blowpipe; and suitable handles or levers 20, secured to the hollow shaft, substantially as shown.

570,880. CAR-LOADER. HENRY PHILLIPS and WILLIAM HUNT, Ottumwa, Iowa. Filed July 27, 1895. Serial No. 600,697. (No model.)



Claim.—1. In a car-loader, a hopper or conveyer provided with a reciprocatory slide or scraper, the conveyer mounted on a track or frame longitudinally movable upon a revoluble pedestal or support secured to one end of a reciprocatory main frame traveling upon a suitable support, in combination with a suitable operating belt chain or rope arranged as described, and a driving-engine or other motor, substantially as hereinbefore set forth.

2. The hopper U longitudinally movable upon the reciprocatory I-beam frame S, and provided with a sliding scraper Z adapted to be moved in either direction, whereby the contents of the hopper may be delivered from either end thereof at will, as hereinbefore described.

3. The I-beam frame S adapted to support the hopper U as described, mounted on antifriction-rollers on the frame Q, and adapted to be turned at different angles through the medium of worm H and gear J, substantially as hereinbefore set forth.

4. In combination with the hopper U, I-beam frame S, frame Q, revoluble pedestal I, frame F, and support A, the drive-chain H' traversing the pulleys as described and secured to the sliding bar F' of the scraper Z, in combination with a clutch mechanism *d*, and a suitable engine or motor B, substantially as and for the purposes hereinbefore set forth.

5. The hopper U composed of the bottom V, hinged sides W, with roller channels or boxes X, in combination with a sliding scraper Z having pivoted contractible wings Z' and antifriction-rollers Y, substantially as and for the purpose set forth.

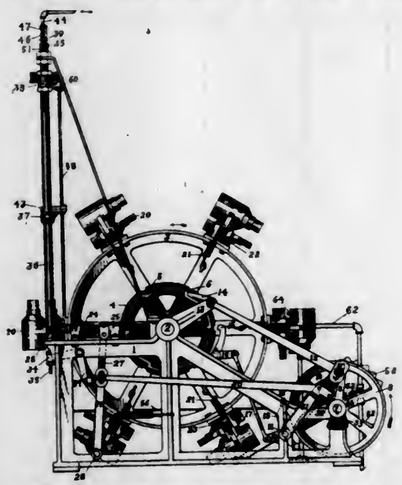
6. The scraper Z provided with the antifriction-rollers Y traveling in the channels X of the hopper, and secured at its bottom edge to the reciprocating bar F' sliding in the slot G' in the bottom V of the hopper, whereby the scraper is held in vertical operative position, substantially as hereinbefore described.

7. In combination with the frame Q mounted on the pedestal I and the reciprocating I-beam frame S provided with locking-holes E', the locking device *a*, *b*, whereby the frames Q and S may be locked in any given relation or released, as hereinbefore explained.

8. The I-beam frame S traveling on rollers on the frame Q, and located between the exterior flanges of the I-beams, and the hopper U mounted upon antifriction-rollers located and traveling between the interior flanges of the I-beams, thus securing telescopic relation between the parts as shown and described.

9. In combination with the frame Q and reciprocating I-beam frame S, stops R' located at each end of the frame S, whereby the movement of said frame in either direction is limited, as hereinbefore described.

570,881. GLASS-BLOWING MACHINE. SOLON O. RICHARDSON, Jr., Toledo, Ohio. Filed Apr. 8, 1895. Serial No. 544,915. (No model.)



Claim.—1. In a glass-blowing machine, a vertical rotatory wheel or frame and a series of flasks mounted upon the edge thereof, and which are normally open, in combination with means for imparting to such wheel or frame an intermittent motion, whereby said flasks are caused to pause during the operation of blowing glass within said flasks, substantially as and for the purpose specified.

2. In a glass-blowing machine, a rotatory vertical frame or wheel, and a series of flasks mounted on the edge thereof, and which are normally open, in combination with means for imparting an intermittent motion to said frame or wheel, and means for securing said frame or wheel against accidental motion during the pause in its rotation, substantially as and for the purpose specified.

3. In a glass-blowing machine, a rotatory vertical frame or wheel, and a series of flasks mounted on the edge thereof, and which are normally open, and means for imparting an intermittent motion to said frame or wheel, in combination with a blowpipe, and means for admitting air to the blowpipe of said machine during the pause in the rotation of said frame or wheel, substantially as and for the purpose specified.

4. In a glass-blowing machine, a rotatory vertical frame or wheel and a series of flasks mounted on the edge thereof, and which are normally open, and means for imparting an intermittent motion to said frame or wheel, in combination with a rotatory or oscillatory blowpipe, and means for rotating or oscillating the blowpipe of such machine during the pause of said frame or wheel in its rotation, substantially as and for the purpose specified.

5. In a glass-blowing machine, a rotatory vertical frame or wheel, a series of flasks mounted on the edge thereof, and which are normally open and means for imparting an intermittent motion to said frame or wheel, in combination with means for steaming or spraying the flasks of said machine during the pause in the rotation of said frame or wheel, substantially as and for the purpose specified.

6. In a glass-blowing machine, a suitable framework, a rotatory vertical frame or wheel mounted therein, a series of flasks mounted on the edge thereof, and which are normally open; a driving-shaft provided with cams, suitable intermediate devices, operated by the cams, for imparting an intermittent motion to said vertical frame or wheel; and means for opening and closing the flasks; combined with a rotatory blowpipe, and means for imparting thereto a rotary or oscillatory motion; and means for admitting air to the blowpipe at predetermined times, substantially as showu.

7. In a glass-blowing frame, a suitable framework, a vertical rotatory wheel mounted therein, a series of flasks, each formed of two parts, mounted on the edge thereof; a spring applied to the movable part of each flask for opening and holding it open; and a means for closing each flask as it is raised into position, combined with a means for imparting an intermittent rotatory motion to the flask-carrying wheel, and a means for locking the wheel in position at the same time that the flask is closed, substantially as described.

8. In a glass-blowing machine, a frame or table having journaled thereon, a rotatory vertical wheel, a series of flasks mounted on the edge thereof, in combination with a shaft journaled on said frame, and a cam on said shaft connected with and adapted to impart to said frame or wheel an intermittent motion, whereby said flasks are caused to pause during the operation of blowing glass within the flasks, substantially as and for the purpose specified.

9. The cross-head 38, having a longitudinal slot, a rod 35 extending above the cross-head, and a mechanism for giving the rod a vertical movement, combined with the lever 39, connected at one end to the rod 35, a clutch which extends up through the slot in the cross-head and is operated by the lever, and which clutch is provided with jaws to clamp the blowpipe, a blowpipe, a vertical air-pipe, upon which the clutch is suspended, and a suitable mechanism for imparting to the clutch a rotary or reciprocating motion, substantially as shown.

10. In a glass-blowing machine, an air-pipe 44, provided with a cock for controlling the passage of air to the blowpipe, and which is operated by the lever 39, a clutch having its sliding upper portion or head applied to the pipe, and operated by the lever 35, the blowpipe, and means for making a tight connection between the lower end of the air-pipe and the upper end of the blowpipe, combined with the lever 39, for operating the clutch, a vertically-operating rod 35, connected at its upper end with the lever, and a mechanism for imparting to the rod a vertical movement at predetermined times, substantially as described.

11. In a glass-blowing machine, suitable supports or standards, a slotted cross-head connecting the upper ends of the standards, an air-pipe, passing down through the head, a clutch placed upon the pipe, and extending down through the cross-head, a lever connected to the clutch for opening and closing it, and means for operating the lever at predetermined periods, combined with a cock in the air-pipe, and that is operated by the said lever, a spindle which forms an extension upon the end of the air-pipe, and has the bar 51* connected to its lower end to form a support for the clutch, a partially-revolving rod 58, provided with an arm 59, a connecting-link, and the blowpipe, substantially as set forth.

12. In a glass-blowing machine, a frame or table having journaled thereon a flask-carrying frame or wheel, in combination with a shaft journaled on said frame, and a rotatory blowpipe, combined with a cam on said shaft connected with and adapted to impart to the blowpipe of said machine a rotary or oscillating motion, substantially as and for the purpose specified.

13. In a glass-blowing machine, a suitable framework, standards rising from one end thereof, a cross-head connecting said standards at a point between their ends, and having a horizontal recess to receive the blowpipe, combined with a spring holder to support the blowpipe, a rotatory blowpipe, and a suitable mechanism for imparting to the blowpipe a rotatory or reciprocating motion, substantially as shown.

14. In a glass-blowing machine, the frame or table thereof, having standards mounted upon and secured to the front end thereof, in combination with a cross-head connecting said standards near their upper end, and provided with means for controlling the admission of air to the blowpipe of said machine, means for clamping said blowpipe in position, and means for rotating or oscillating said blowpipe, substantially as and for the purpose specified.

15. In a glass-blowing machine, a series of two-part flasks, the two parts of each of said flasks being hinged together, one part of each of said flasks being rigidly secured to a flask-carrying wheel or frame, in combination with stops on said flasks limiting the throw of the swinging parts of said flasks, and lugs on said swinging parts, adapted to be engaged by the flask opening and closing mechanism of said machine, substantially as and for the purpose specified.

16. In a glass-blowing machine, an air-pipe, a rotatory blowpipe connected at one end thereto, a clamp for grasping the upper end of the blowpipe, and an operating mechanism for opening and closing the clamp at regular predetermined times, combined with a suitable mechanism for imparting to the air pipe, clamp, and blowpipe a rotary or reciprocating motion, substantially as shown.

17. In a glass-blowing machine, a vertically-rotating wheel and a mechanism for imparting thereto an intermittent motion, combined with a series of flasks secured to the edge of the wheel, each flask consisting of two parts which are hinged together, the swinging portion being provided with a stop 22, and lug 23; a spring-actuated push-rod, and a mechanism for operating it at regular predetermined times, a jaw 26, upon the push-rod for engaging with the lug 23, and a spring for opening and holding the flask open, substantially as described.

18. In a glass-blowing machine, a wheel or frame having an intermittent rotary motion, a ratchet-wheel having stop-teeth in its edge; a driving-shaft provided with a cam-wheel 8, a cam-roller 9, riding upon the cam-wheel 8, and a pivoted lever 10, carrying said roller, combined with the rod 12, connected at one end to the lever 10, an oscillating arm 13, pivoted upon the shaft of the wheel, and serving to support the end of the rod 12, the pawl 14, operated by the rod 12; a locking-dog 15, and a mechanism for operating it, so as to lock the wheel just as a flask is presented to the blowpipe, substantially as set forth.

19. In a glass-blowing machine, the driving-shaft 7, provided with a cam 33, the swinging arm 31, operated by the cam, the rod 30, connected at one end to the swinging arm, and the two swinging arms or levers 29 and 27, connected by a short shaft, and operated by the rod 30, combined with a push-rod which is operated by the arm or lever 27; a crank-lever 34, connected to and operated by the arm or lever 29, a vertically-moving rod, operated by the crank-lever, and a clamp operated by said vertically-moving rod, whereby the push-rod and the clamp for the blowpipe are operated at the same time and from the same source, substantially as shown.

20. In a glass-blowing machine, the driving-shaft, the driving-pulley secured thereto, and provided with a zigzag sector, a pivoted spring-actuated lever 55, provided with a roller to engage said sector, and a connecting-rod 56, connected at one end to the lever 55, combined with a partially-revolving rod 58, provided with an arm to which the rod 56 is connected, an arm or crank connected to the upper end of the rod, and a mechanism connected thereto for rotating or reciprocating the blowpipe, substantially as described.

21. In a glass-blowing machine, the driving-shaft, a cam or arm 65 secured thereto, a water or steam pipe provided with a cock 63, that is operated by the cam or arm, and a spraying-nozzle connected to the pipe, combined with a rotating wheel having an intermittent motion, and a series of flasks, which are normally open, secured to its edge, substantially as set forth.

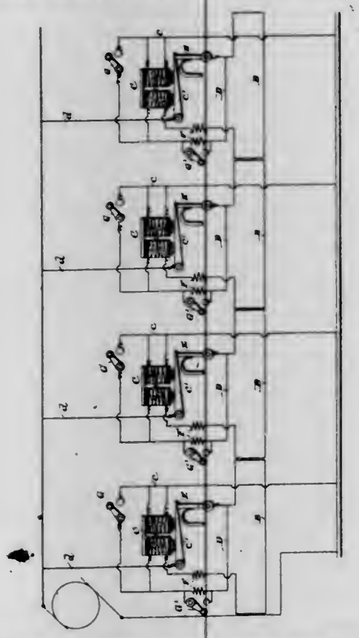
570,882. AUTOMATIC SAFETY DEVICE FOR ELECTRIC CIRCUITS. LEWIS G. ROWAND, Camden, N. J., assignor to the Universal Fire Alarm Company, same place. Filed Sept. 13, 1895. Serial No. 562,380. (No model.)

Claim.—1. Two circuits in multiple having a common connection with the source of current supply, and a normally-closed switch controlling said common connection, an electromagnet having reverse windings creating a normally ineffective field, one winding being in one circuit and the other winding in the other circuit, said magnet controlling the operation of the switch, and adapted when its field becomes effective to open said switch.

2. Two circuits in multiple having a common connection with the source of current supply, and a normally-closed switch controlling said common connection, an electromagnet having reverse windings creating a normally ineffective field, one winding being in one circuit and the other winding in the other circuit, said magnet controlling the operation of the switch and adapted when its field becomes effective to open said switch and a switch adapted when operated to cut off the current from one of the magnet-windings.

3. The combination with a main electric circuit, a secondary circuit, an electromagnet included in both circuits, said magnets having reverse windings creating a normally ineffective field, one winding

being included in the main circuit and the other in the other circuit, and a normally-closed switch controlling the current in the main circuit controlled by said magnet, said magnet being adapted when its field becomes effective to open said switch.



4. Two circuits in multiple having a common connection with the source of current supply, and a switch controlling said common connection, an electromagnet having reverse windings, creating a normally ineffective field, one winding being in one circuit, and the other winding in the other circuit, said magnet controlling the operation of the switch and adapted, when its field becomes effective, to open said switch, resistances in both circuits, and means when said magnet-field becomes effective to shunt the current about one of said resistances.

5. The combination with a main electric circuit, a secondary circuit, an electromagnet included in both circuits, said magnet having reverse windings creating a normally ineffective field, one winding being included in the main circuit, and the other in the other circuit, and a switch controlling the current in the main circuit controlled by said magnet, said magnet being adapted, when its field becomes effective, to open said switch, resistances in both circuits, and means, when the magnet becomes effective, to shunt the current about one of said resistances.

6. Two circuits in multiple having a common connection with the source of current supply, and a switch controlling said common connection, an electromagnet having reverse windings, creating a normally ineffective field, one winding being in one circuit, and the other winding in the other circuit, said magnet controlling the operation of the switch and adapted, when its field becomes effective, to open said switch, resistances in both circuits, and means independent of the magnet to shunt the current about one of said resistances.

7. The ombination with the main electric circuit, a secondary circuit, an electromagnet included in both circuits, said magnet having reverse windings, creating a normally ineffective field, one winding being included in the main circuit, and the other in the other circuit, and a switch controlling the current in the main circuit controlled by said magnet, said magnet being adapted, when its field becomes effective, to open said switch, resistances in both circuits, and means independent of the magnet to shunt the current about one of said resistances.

8. Two circuits in multiple having a common connection with the source of current supply, and a normally-closed switch controlling said common connection, an electric device having double windings, making said device normally ineffective, one winding being in one circuit, and the other winding in the other circuit, said electric device controlling the operation of the switch and adapted when rendered effective to open said switch.

9. Two circuits in multiple having a common connection with the source of current supply, and a normally-closed switch controlling said common connection, an electric device having double windings, making said device normally ineffective, one winding being in one circuit, and the other winding in the other circuit, said electric device controlling the operation of the switch, and adapted when rendered effective to open said switch, and a switch adapted to cut the current from one of said windings.

10. The combination with a main electric circuit, a secondary circuit, an electric device included in both circuits, said device having double windings making said device normally ineffective, one winding being included in the main circuit, and the other in the other circuit, and a normally-closed switch controlling the current in the main circuit controlled by said electric device, said device, when rendered effective, being adapted to open said switch.

11. Two circuits in multiple having a common connection with the source of current supply, and a switch controlling said common connection, an electric device having double windings, making said device normally ineffective, one winding being in one circuit, and the other winding in the other circuit, said electric device controlling the operation of the switch, and adapted, when rendered effective, to open said switch, resistances in both circuits, and means controlled by said electric device to shunt the current about one of said resistances.

12. The combination with a main electric circuit, a secondary circuit, an electric device included in both circuits, said electric device having donble windings, making said device normally ineffective, one winding being included in the main circuit, and the other in the other circuit, and a switch controlling the current in the main circuit, controlled by said electric device, said electric device being adapted, when rendered effective, to open said switch, resistances in both circuits, and means controlled by the electric device to shunt the current about one of said resistances.

13. Two circuits in multiple having a common connection with the source of current supply, and a switch controlling said common connection, an electric device having double windings, making said device normally ineffective, one winding being in one circuit, and the other winding in the other circuit, said electric device controlling the operation of the switch, and adapted, when rendered effective, to open said switch, resistances in both circuits, and means independent of the electric device to shunt the current about one of said resistances.

14. The combination with a main electric circuit, a secondary circuit, an electromagnet included in both circuits, said magnet having reverse windings, creating a normally ineffective field, one winding being included in the main circuit, and the other in the other circuit, and a normally-closed switch controlling the current in the main circuit controlled by said magnet, and adapted when its field becomes effective to open said switch, and means to open one of said circuits independent of the magnet-switch.

15. The combination with a main electric circuit, a secondary circuit, an electric device included in both circuits, said device having double windings, making said device normally ineffective, one winding being included in the main circuit, and the other in the other circuit, and a normally-closed switch controlling the current in the main circuit controlled by said electric device, said device when rendered effective being adapted to open said switch, and means to open one of said circuits independent of the electric-device switch.

16. Two circuits having a common source of current supply, a switch controlling the admission of current from the source of current supply to said circuits, an electric device having double windings, making said device normally ineffective, one winding being in one circuit, the other winding in the other circuit, said electric device controlling said switch and adapted when rendered effective, to open said switch.

17. In an electric railroad, the combination of a source of current supply, a main feeder-wire, trolley-section wires each having connection with the main feeder-wire, a normally-closed switch controlling the admission of current from the feeder-wire to each trolley-section, an electric device having double windings, one winding in the trolley-section-wire circuit, the other in a circuit independent of the trolley-section, said electric device controlling the operation of the switch, and adapted when the trolley-wire breaks to operate to open said switch.

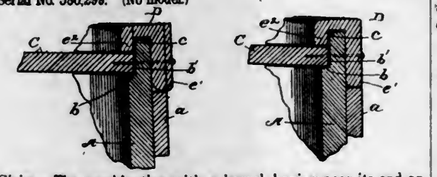
18. In an electric railroad, the combination of a source of current supply, a main feeder-wire, a trolley-section wire having connection with the said main feeder-wire, a normally closed switch controlling the admission of current from the feeder-wire to said trolley-section, an electric device having double windings, one winding in the trolley-section-wire circuit, the other in a circuit independent of the trolley-section wire, said electric device controlling the operation of the switch and adapted when the trolley-section wire breaks to open said switch.

19. In an electric railroad, the combination of a source of current supply, a trolley-section having connection with the trolley-section wire, a normally-closed switch controlling said connection, an electric device having double windings, one winding in the circuit including the trolley section, the other in the circuit independent of the trolley-section, said electric device controlling the operation of the switch and adapted when the trolley-section is broken to operate to open said switch.

20. In combination, an electric circuit, a source of current supply, a normally-closed switch controlling the admission of current from the source of supply to said circuit, an electric device on a circuit independent of the first-mentioned circuit, adapted when its field is effective to open said switch, and an electric device on the first-mentioned circuit acting against said first-mentioned electric device and adapted with the normal resistance of the main circuit to neutralize the action of the first-mentioned electric device.

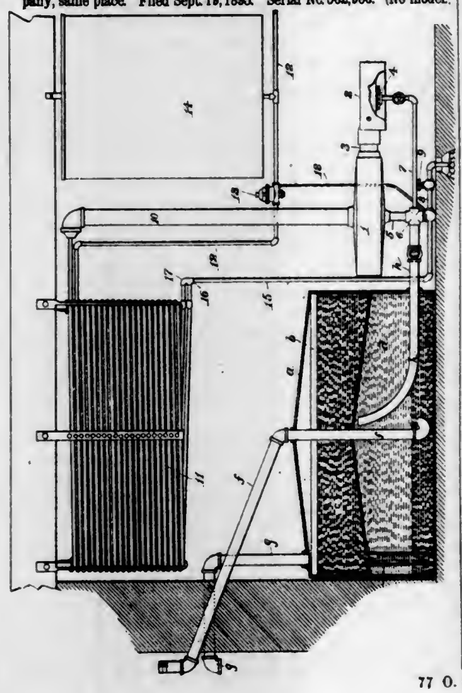
21. In combination, an electric circuit, a source of current supply, a normally-closed switch controlling the admission of current from the source of supply to said circuit, an electric device on a circuit independent of the first-mentioned circuit but having the same source of current supply adapted when its field is effective to open said switch, and an electric device on the first-mentioned circuit acting against said first-mentioned electric device and adapted with the normal resistance of the main circuit to neutralize the action of the first-mentioned electric device.

570,883. BARREL. FRANK J. SLAKER, Chicago, Ill., assignor of one-half to Frederick A. Obenauer, same place. Filed Feb. 24, 1896. Serial No. 580,299. (No model.)



Claim.—The combination with a barrel, having near its end an interal annular ledge, having a vertical wall, of a head-piece adapted to rest on said ledge, a securing-hoop formed of one piece, having a groove to receive the chimes of the staves, an inner flange to rest on the head-piece, an outer flange adapted to be secured to the staves, one of the meeting ends of the said hoop being provided with projections or steps d^3, d^4, and d^4, to engage the recesses d^5, and d^6, and projections d^7, and d^8, on the other meeting end, substantially as described.

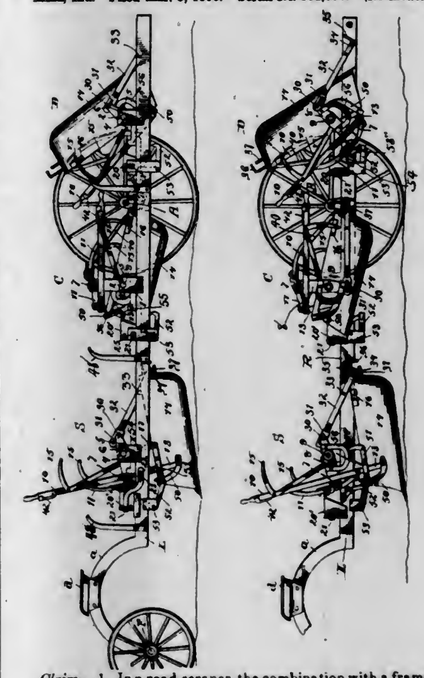
570,884. RECEPTACLE FOR HOLDING HYDROCARBON OR OTHER VOLATILE LIQUIDS. JAMES W. TALLMADGE, Bridgeport, Conn., assignor, by mesne assignments, to the Bridgeport Gas Machine Company, same place. Filed Sept. 19, 1895. Serial No. 562,986. (No model.)



Claim.—1. A receptacle for holding hydrocarbon or other volatile liquid, the same comprising a tank permanently divided into upper and lower compartments by a transverse partition, a pipe leading from the floor of the upper compartment down to a point near the floor of the lower compartment whereby communication is established between said compartments, a supply-pipe for both the oil and water leading into the lower compartment and independent of the said pipe which establishes communication between the compartments, a vent in the upper compartment, and a delivery-pipe extending laterally through the side wall of the lower compartment and projecting at its upper extremity to a point at or about the top center of said compartment, substantially as set forth.

2. A receptacle for holding hydrocarbon or other volatile liquid, the same comprising a tank permanently divided into upper and lower compartments by a transverse partition, a pipe leading from the floor of the upper compartment down to a point near the floor of the lower compartment whereby communication is established between said compartments, a supply-pipe for both the oil and water leading down through the tank independent of the said pipe which establishes communication between the compartments and terminating at its lower end near the bottom of the lower compartment in a U-shaped trap, a vent in the upper compartment, and a delivery-pipe extending laterally through the side wall of the lower compartment and projecting at its upper extremity to a point at or about the top center of said compartment, substantially as set forth.

570,885. ROAD-SCRAPER AND CARRIER. JAMES A. TAYLOR, Lima, Ind. Filed Mar. 5, 1896. Serial No. 581,997. (No model.)



Claim.—1. In a road-scraper, the combination with a framework, blocks carried by the side bars thereof and having transverse notches in their upper ends forming bearings and also provided with longitudinal notches in their upper ends, a catch pivoted at one extremity in the latter notch at one side of the bearing and having its body passing across the bearing, and a pin holding the tip of the catch removably in place; of an arch having stub shafts journaled in said bearings, a lever connected with said arch, a scoop also connected with the arch, and means for holding the scoop in any one of several positions, as and for the purpose set forth.

2. In a road-scraper, the combination with a framework having bearings, an arch extending across the framework and having upright portions at its extremities, stub shafts carried by said upright portions and journaled in the bearings, and a lever rigidly secured across one end of the arch longitudinally of the machine; of an arm projecting forward from the opposite end of the arch, a scoop beneath the latter, links connecting the front end of the scoop with said arm and with the front end of the lever, a brace extending from the rear portion of

the lever obliquely across the arch and secured to the opposite arm, and detachable connections substantially as described between the center of the arch and the rear of the scoop, as and for the purpose set forth.

3. In a road-scraper, the combination with a framework, a transverse arch pivotally mounted thereon, a lever secured across one end of the arch longitudinally of the machine, an arm projecting forward from the other end of the arch, a scoop below the latter, links connecting the front ends of the arm and lever with the scoop, and detachable connections between the rear end of the scoop and the center of the arch; of tongues projecting to the rear and downward from said arm and from the lever, sockets in the sides of the scoop for engaging these tongues, other tongues projecting upward from the sides of the scoop, and sockets in the first tongue and in the main lever for receiving these tongues, as and for the purpose set forth.

4. In a road-scraper, the combination with a framework, an arch pivotally mounted thereon, a lever projecting to the rear from said arch, a scoop below the latter, and pivotal connections between the arch and forward end of the scoop; of a long hook projecting forward from the rear of the scoop, a catch carried by the center of the arch and with one side of which said hook engages, a thumb-lever on the main lever, and a rod connected at one end to the thumb-lever and having its other end standing opposite the free end of the catch, as and for the purpose set forth.

5. In a road-scraper, the combination with a framework, an arch pivotally mounted thereon, a lever projecting to the rear from said arch, a scoop below the latter, and pivotal connections between the arch and forward end of the scoop; of a hook projecting forward from the rear end of the scoop, a catch supported by the center of the arch and with one side of which said hook engages, a thumb-lever mounted on the main lever, a pawl pivoted within the catch with its tip opposite the free end of the hook, and a rod connecting the thumb-lever with the other end of the pawl, as and for the purpose set forth.

6. In a road-scraper, the combination with the framework, an arch having upright end portions provided with stub-shafts journaled in the framework, laterally-projecting pins at the lower extremities of said end portions, a U-shaped bail pivoted in the framework and having its front ends provided with slots engaging said pins, and guide fingers rising from said bail; of a scoop pivotally connected at its forward end with said arch, a lever for moving the latter, and hooks near the rear corners of the scoop engaging the transverse portion of the bail adjacent said guide-fingers thereon, as and for the purpose set forth.

7. In a road-scraper, the combination with a framework, an arch having end portions pivotally connected therewith and provided with inwardly-projecting pins at their lower extremities, and a U-shaped bail whose side arms are pivoted within the framework and whose front ends are provided with slots engaging said pins; of a scoop pivotally connected at its forward end with said arch, a lever for moving the latter, and hooks near the rear corners of the scoop engaging the transverse portion of the bail, as and for the purpose set forth.

8. In a road-scraper, the combination with a framework, an arch having upright end portions pivotally connected therewith and provided with inwardly-projecting pins at their lower extremities, and a U shaped bail whose side arms are pivoted within the framework and whose front ends are provided with slots engaging said pins; of a scoop pivotally connected at its forward end with said arch, a lever for moving the latter, upright guide-fingers on the transverse portion of the bail, and at each rear corner of the scoop a rearwardly-projecting loop engaging one of said guide-fingers and a hook below the loop passing under the bail, as and for the purpose set forth.

9. In a road-scraper, the combination with a framework, an arch pivotally supported thereby, a lever for turning the arch, a scoop below the latter, and links pivotally connecting the scoop with the arch; of a bail mounted across the framework in rear of the scoop and having upright guide-fingers, supports projecting rearward from the scoop over the bail adjacent said fingers, a rigid member beneath each support adapted to pass under the bail and shorter in length than its corresponding support, and means substantially as described for moving the scoop bodily to the rear as it is lowered, as and for the purpose set forth.

10. In a road-scraper, the combination with a framework, a scoop pivotally supported therein, and means for moving the scoop on its pivots; of an upright transverse guard-plate standing across the mouth of the scoop when the latter is at a carry and having its extremities turned to the rear, and means for adjustably supporting this plate upon the framework, as and for the purpose set forth.

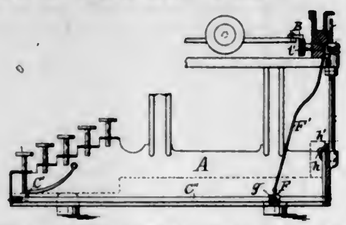
11. In a road-scraper, the combination with a framework, a scoop pivotally supported therein, and means for moving the scoop on its pivots; of an upright transverse guard-plate standing across the mouth of the scoop when the latter is at a carry, rods secured to said plate and passing over the side bars of the framework, their outer ends being slotted, and bolts through said slots and side bars, as and for the purpose set forth.

12. In a road-scraper, the combination with a framework, an arch pivotally mounted therein, and a lever for moving the arch; of a scoop below the arch having hooks at its front corners, links connecting the arch with the scoop, means for supporting the rear end of the latter, and other links carried by the side bars of the framework and engaging those on the scoop when the latter is in a scraping position, as and for the purpose set forth.

13. In a road scraper, the combination with a framework, an arch having depending ends pivotally mounted therein, cams carried by said ends around such pivots, and a lever for moving the arch; of a scoop below the latter and having hooks at its front corners, pivotal connections between the arch and scoop, means for supporting the rear end of the latter, other hooks pivotally supported by the side bars of the frame and adapted to engage those on the scoop when the latter is lowered, springs pressing these hooks to operative position, and slides moved by said cams to throw these hooks out of engaging position as the scoop is being dumped, as and for the purpose set forth.

14. In a road-scraper, the combination with a framework, longitudinally slotted blocks raising from opposite side bars and having bearings, a transverse arch having stub-shafts journaled in said bearings, a lever for moving the arch, a scoop below the latter having hooks at its front corners, links pivotally connecting the arch with the scoop, and means for supporting the rear end of the scoop; of L-shaped hooks pivoted at their angles in said framework, slides moving through the slots in said blocks and pivotally connected with the upper arms of the L-shaped hooks, pins in the slides, and cams carried by the arch and engaging such pins, as and for the purpose set forth.

570,886. TYPE-WRITING MACHINE. EUGENE TERRY, Rhaca, N. Y., assignor of one-half to Charles H. Duell, Syracuse, N. Y. Filed May 25, 1895. Serial No. 550,631. (No model.)



Claim.—1. In a type-writing machine having a rack-bar mounted on a paper-carriage, an escapement comprising an escape-wheel, geared to the rack, movable means carrying a fixed detent and a shifting detent to engage the wheel, said shifting detent having two projections to engage the escape-wheel, a space-key, and suitable connections between the space-key and the shifting detent to allow the escape-wheel to move a greater distance when the space-key is operated, as set forth.

2. In a type-writing machine, the combination of the rack-bar, an escape-wheel geared to the rack-bar, a shaft carrying detents engaging the escape-wheel, one of said detents having a pair of projections to engage the teeth of the escape-wheel, a space-key connected to and adapted to operate the shaft, a lever engaging one of the said detents and a connection between the space-key and the said lever, as and for the purpose set forth.

3. In a type-writing-machine, the combination of the rack-bar mounted on the paper carriage, an escape-wheel geared to the rack-bar, a shaft carrying a fixed detent and a shifting detent, means for operating said shaft when a key is depressed, a releasing lever engaging the shifting detent, an arm on the oscillating rod of the space-key, and a rod connecting the free end of said arm with the releasing-lever, as set forth.

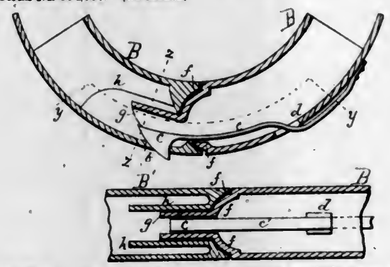
4. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a shaft carrying a fixed detent and a shifting detent, means for operating said shaft when a key is depressed, a releasing-lever engaging the shifting detent, an adjustable arm mounted on the oscillating rod of the space-key, a rod connecting said arm with the releasing-lever, and a spring connected to the releasing-lever to retract the same, substantially as set forth.

5. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, a sliding universal space-bar connected to the vertical shaft to operate it, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

6. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, a sliding universal space-bar connected to the vertical shaft to operate it, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a projection on the shifting detent forming a supplementary detent, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

7. In a type-writing machine, the combination of the rack-bar mounted on the paper-carriage, an escape-wheel geared to the rack-bar, a vertical shaft adapted to oscillate, an arm extending from the said shaft, a universal space-bar carrying means to engage said arm, a fixed detent and a shifting detent on the upper end of the said shaft and engaging the wheel, a spring to raise the shifting detent, a pin on said detent, a releasing-lever provided with a hook to engage the pin, a spring to raise the releasing-lever, and a rod connecting the releasing-lever with the space-key, as and for the purpose described.

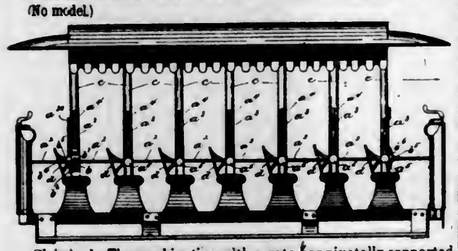
570,887. HORSE-COLLAR. JOHN A. WEIDER, Rochester, N. Y., assignor to S. Wallace Hagaman, same place. Filed June 10, 1896. Serial No. 594,959. (No model.)



Claim.—1. In a horse-collar, the combination of the two coupling-sections B B', the hook c c' attached to one section engaging with the catch *b* of the other, the projecting shield *g* of one section inclosing the hook, and the flanges *h h* of the opposite section serving to guide and hold the shield as herein shown and described.

2. In a horse-collar, the combination of the two coupling-sections B B', one provided with a convex bearing *f*, the other with a concave bearing *f'*, the hook c c' attached to one section engaging with a catch *b* of the other, the projecting shield *g* inclosing the hook, and the flanges *h h* for centering and holding the shield, as herein shown and described.

570,888. SAFETY APPLIANCE FOR STREET-CARS. WILLIAM WIGGINS, Brockton, Mass. Filed Jan. 16, 1895. Serial No. 535,137. (No model.)



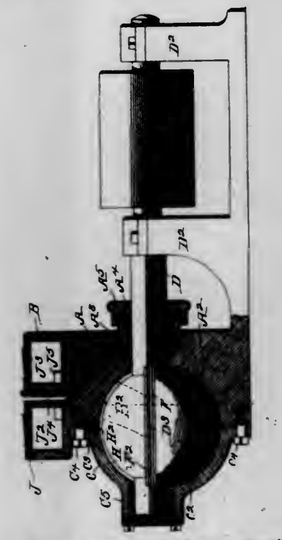
Claim.—1. The combination with a gate-bar pivotally supported at right angles to its length in the post or upright of an open car, of a seat-back having a bearing concentric with the pivot-spindle of said gate-bar, and a pin or projection from said pivot-spindle adapted to be engaged by shoulders formed in said bearing, when said seat-back is turned to reverse the seat, as set forth.

2. The combination with the gate-bar mounted on a spindle at right angles to its length in a bearing in the post or upright of an open car, of a seat-back having a bearing on said spindle, a recess in said seat-bearing forming shoulders therein, and a pin extending from said spindle into the space between said shoulders, as and for the purpose described.

3. A safety appliance for open cars comprising a series of gate-bars pivotally supported opposite the ends of the seats, and adapted to be moved from a horizontal to a vertical position or vice versa, substantially as described, and means for interlocking the ends of adjacent gate bars when in their horizontal position to form practically a continuous gate-bar the whole length of the car, substantially as described.

4. The combination with a bar for closing the space between the end seat of an open car and the seat next adjacent, and connecting mechanism substantially as described between the movable or reversible portion of said seat and said bar for moving said bar from a substantially upright position parallel to the said seat-post, to a substantially horizontal position in which it extends from said seat-post to the seat-post of the adjacent seat, of a supplemental bar connected by a spur-gear with said first-named bar and thus adapted to be moved from a substantially upright position parallel to the seat-post to a substantially horizontal position in which it extends from said seat-post to the dasher of the car, as set forth.

570,889. ROTARY ENGINE. ALONZO T. WILSON and ANNA R. WILSON, Houston, Tex. Filed Feb. 4, 1896. Serial No. 577,986. (No model.)



Claim.—1. A rotary engine, comprising an approximately spherical chamber, a rotatable shaft extended eccentrically through said chamber, an approximately spherical piston seat on said shaft with its surface in contact with the chamber at a point extending longitudinally of the shaft, induction and exhaust ports on opposite sides of said contact-point and a disk-shaped piston, of a size to normally engage the inner surface of the chamber at all times, slidingly mounted in a central longitudinal slot in the shaft and an expansion-ring in the periphery of said disk-shaped piston.

2. A rotary engine comprising an approximately spherical chamber, a semicircular flat bar on the interior of said chamber extended longitudinally thereof at its top, yielding pressure devices to normally force the bar downwardly, a rotatable shaft extended longitudinally of the chamber, and slightly above its center, an approximately spherical piston-seat on said shaft with its top surface in contact with said flat bar, and a disk-shaped piston of a size to normally engage the interior of the chamber on all sides, extended through a central longitudinal slot in the piston-seat, and an expansion-ring mounted in the periphery of the said disk piston.

3. In a rotary engine having induction and exhaust openings on opposite sides and so arranged that steam may be admitted in either opening and discharged at the other, to reverse the movement of the engine, the combination of a reverse box on top of the engine having ports on its opposite sides communicating with said openings, a double valve rotatably mounted in the box having two disks thereon arranged to cover both of the said ports and a vertical partition to divide the box centrally, and a lever attached to said valve, substantially as and for the purposes stated.

570,890. DEVICE FOR WASHING VEHICLES. JOHN P. BAIRD, Lockport, N. Y., assignor of one-third to Jonas Stetler, Philadelphia, Pa. Filed June 2, 1896. Serial No. 594,057. (No model.)

Claim.—1. In combination with a device for washing carriages and the like, a stationary section having a flange formed thereon said flange being threaded, a convexed shoulder also formed upon said flange, a tapering nipple, a revolving section adapted to fit over said nipple, a flange formed with the revolving section having a concaved recess and a coupling adapted to engage the last-named flange and be threaded upon the first-named flange, substantially as shown and described.



2. In combination with a coupling consisting of a stationary section having a threaded flange, a convexed shoulder formed upon said flange, a tapering nipple, a revolving section adapted to fit over said nipple, a flange formed with the revolving section, having a concaved recess a coupling adapted to engage the last-named flange and be threaded upon the first-named flange, a reach-pipe connected with the joint, a bracket for suspending the same and a flexible hose attached to the reach-pipe, substantially as described.

570,891. MATCH RECEPTACLE OR HOLDER.

Oscar F. Brinkman, Lancaster, Pa., assignor to Amos B. Hostetter, same place. Filed Apr. 16, 1895. Serial No. 545,864. (No model.)



Claim.—1. In a match receptacle, in combination, the case, A, with the slots, a a, and the central strip, a'; the strip, A', with the roughened faces on the sides thereof, and the screws, a^3; the side wings, A^3 and A^3, with the roughened portions on their inner faces, and the pivot-pins or gudgeons, a^3; the springs, A^3, with the outwardly-turned ends as shown; and the sliding back, A^4, with the beveled side edges, a^4, all arranged and secured in position, substantially as described and for the purpose hereinbefore set forth.

2. The combination in a match-receptacle of the character described, with the case, A, having the vertical slots, a, the central strip, a', separating said slots, and the partition-wall, A', having the roughened side faces as shown, and the forward edge thereof secured to the back of said central strip, of the swinging wings, A^3, having the oppositely-disposed and roughened side faces, as shown, with the rearward end gudgeons, a^3, pivoted to the top and bottom of said case, and springs, such as indicated by, A^3, secured between the side walls of the case and the adjacent faces of said wings, with means provided such as the slide-piece, A^4, as described, to close the back of said case, as shown, all substantially as described and for the purpose hereinbefore set forth.

570,892. THERMOSTAT-ACTUATED FIRE-ALARM.

Percy G. Howe, Boston, Mass., assignor of one-half to Henry J. Howes, Hyde Park, Mass. Filed Mar. 28, 1896. Serial No. 585,304. (No model.)



Claim.—1. As a new article of manufacture, a portable fire-alarm comprising in its construction, a gong, a standard, and a concavo-convex casing all secured together, whereby the gong and casing form a closed chamber, said gong and said casing being rotatable relatively to each other, in combination with a striker, clockwork for actuating said striker, a spring-held pivoted detent normally locking the striker against movement, and a thermostat connected with said detent for moving it to release the striker when a predetermined temperature is reached.

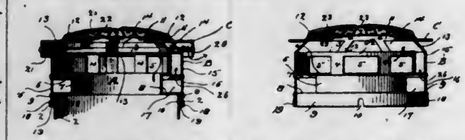
2. A portable fire-alarm, comprising a supporting-ring, a clockwork supported on said ring, a standard rotatably connected with the said ring, a casing secured to the ring, and an inverted gong secured to the standard, forming with the casing an inclosing chamber, in combination with a striker in said chamber operated by the clockwork, and a thermostat supported on the ring for releasing the striker when a predetermined temperature is reached.

3. A portable fire-alarm comprising in its construction a base, a standard, a gong, a supporting-ring connected to said standard, and a perforated casing, in combination with a striker supported by the ring, clockwork for actuating the striker, a spring-held rod pivoted to the ring and normally engaging the striker to hold it against movement, a bridge mounted on the ring, and a thermostat secured to the said bridge and in operative relation to said rod, to move it and release the striker when a predetermined temperature is reached.

4. A portable fire-alarm comprising a striker, clockwork for actuating the striker, a pivoted detent for the striker, a thermostat for actuating said detent at a given temperature, a supporting-ring on which the said parts are all supported, a casing mounted on said ring, and an inverted gong connected to said ring, and forming with said casing a chamber in which all the foregoing parts are completely confined.

570,893. BICYCLE-LANTERN.

Frank Reind, Bridgeport, Conn., assignor to The Bridgeport Brass Company, same place. Filed Aug. 7, 1895. Serial No. 558,526. (No model.)



Claim.—1. In a bicycle-lantern the combination with a body, of a removable outer shell having openings 14 to permit free escape of the products of combustion, openings 17 to permit free entrance of outside air and a ring 15, and an independently-removable inner shell having openings 5 to permit free escape of the products of combustion and a non-perforated top plate, said ring 15 covering the openings in the inner shell and leaving an opening 26 between the inner shell and the outer shell.

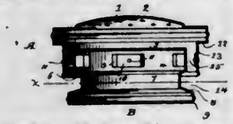
2. In a bicycle-lantern the combination with a body, of a removable outer shell having openings 14 to permit free escape of the products of combustion, openings 17 to permit free entrance of outside air and a ring 15, an independently-removable inner shell having openings 5 to permit free escape of the products of combustion and a non-perforated top plate, said ring 15 covering the openings in the inner shell and leaving an opening 26 between the inner shell and the outer shell, and a cap-plate secured to the outer shell and having openings 23 permitting free passage of air for the purpose of cooling the parts.

3. In a bicycle-lantern the combination with a cylindrical body, of a removable inner shell having a flange 9 which engages the top of the body and openings for the escape of the products of combustion, a removable outer shell having a flange 18 which engages flange 9, openings 14 to permit free escape of the products of combustion and openings 17 to permit free entrance of outside air, and a ring covering the openings in the inner shell but leaving an opening 26 between said inner shell and said outer shell, and a cap-plate secured to the outer shell and having a depending flange 20 leaving an opening 21 between said cap-plate and said outer shell.

4. In a bicycle-lantern the combination with a body and a removable inner shell having a non-perforated top plate and openings below said top plate for the escape of the products of combustion, an inwardly-turned wall 6, a wall 7 and an outwardly-turned wall 8, of a removable outer shell having openings 14 for the free escape of the products of combustion and openings 17 to permit free entrance of outside air and a ring 15 covering the openings in the inner shell but leaving an opening 26 between said inner shell and said outer shell and a cap-plate secured to the outer shell and having openings 23 permitting free passage of air for the purpose of cooling the parts, the two shells being independently removable.

570,894. BICYCLE-LAMP.

Frank Reind, Bridgeport, Conn., assignor to The Bridgeport Brass Company, same place. Filed Feb. 20, 1896. Serial No. 580,078. (No model.)

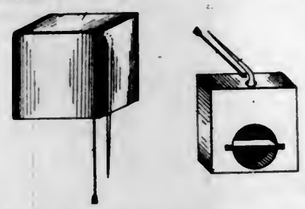


Claim.—A wind-guard for bicycle-lamps comprising an inner part having openings 5 to permit free passage of air from the body of the lamp, and a non-perforated top plate, and an outer part having a top plate provided with perforations 2 to permit passage of air in either direction, openings 12 to permit passage of air outward, an opening 14 to permit entrance of outside air, and a ring 13 which covers the openings in the inner part leaving an opening 15 between said inner part and said outer part for free passage of the current of air which enters at opening 14 and passes out at openings 12.

DESIGNS.

26,234. CAMPAIGN PIN OR BUTTON.

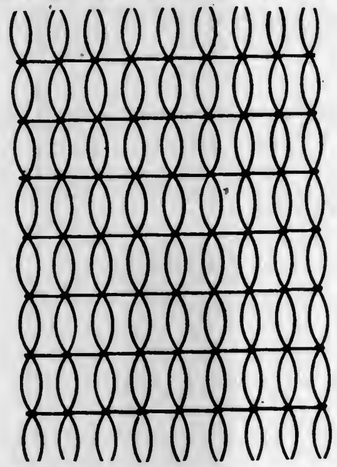
Frederick W. Coyne, Toronto, Canada. Filed Sept. 8, 1896. Serial No. 605,200. Term of patent 3½ years.



Claim.—The design for a button or campaign-pin as herein shown and described.

26,235. PATTERN FOR WIRE FABRIC.

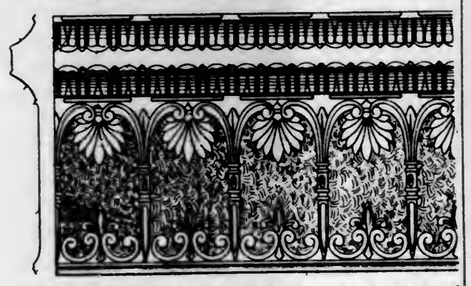
James M. Martin, Knoxville, Tenn., assignor of one-half to Edward W. Kirby, same place. Filed Oct. 3, 1895. Serial No. 564,554. Term of patent 14 years.



Claim.—The design for a pattern for wire fabric herein shown and described.

26,236. MOLDING-PLATE.

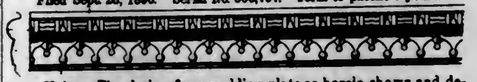
Edward A. Langenbach, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,781. Term of patent 7 years.



Claim.—The design for a metallic border as herein shown and described.

26,237. MOLDING-PLATE.

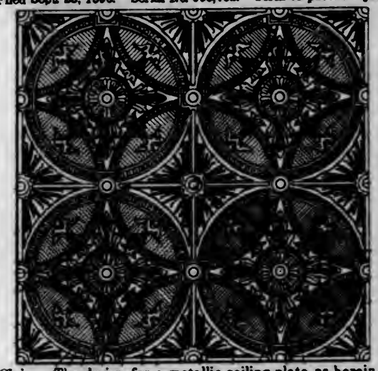
Edward A. Langenbach, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,787. Term of patent 7 years.



Claim.—The design for a molding-plate as herein shown and described.

26,238. CEILING-PLATE.

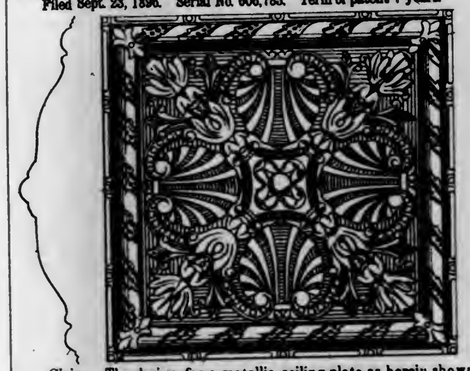
Edward A. Langenbach, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,782. Term of patent 7 years.



Claim.—The design for a metallic ceiling-plate, as herein shown and described.

26,239. CEILING-PLATE.

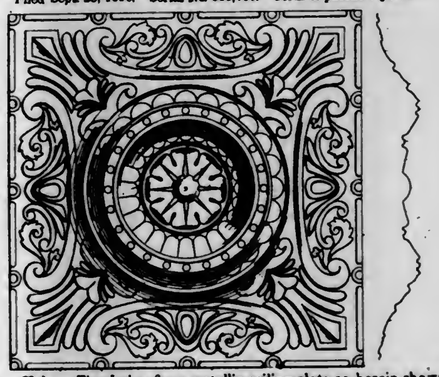
Edward A. Langenbach, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,783. Term of patent 7 years.



Claim.—The design for a metallic ceiling-plate as herein shown and described.

26,240. CEILING-PLATE.

Edward A. Langenbach, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,786. Term of patent 7 years.



Claim.—The design for a metallic ceiling-plate as herein shown and described.

26,241. BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,780. Term of patent 7 years.



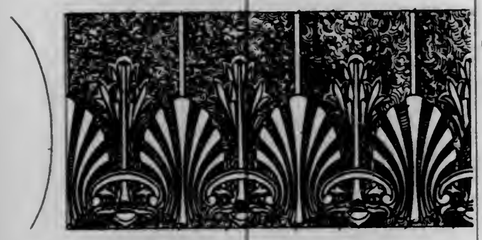
Claim.—The design for a metallic border as herein shown and described.

26,242. BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,784. Term of patent 7 years.



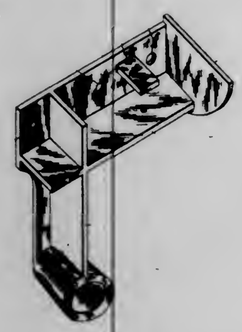
Claim.—The design for metallic borders, as herein shown and described.

26,243. BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Sept. 23, 1896. Serial No. 606,785. Term of patent 7 years.



Claim.—The design for a metallic border as herein shown and described.

26,244. CORNER-BLOCK FOR MATTRESS-FRAMES. WINFIELD H. TABER, Boston, Mass. Filed Aug. 7, 1896. Serial No. 602,090. Term of patent 7 years.



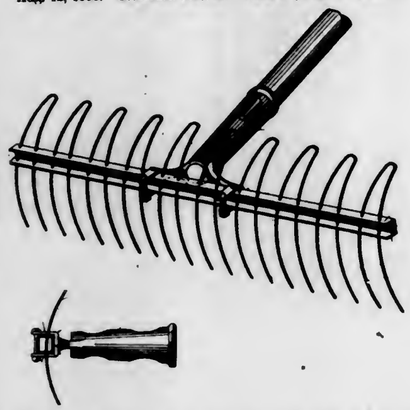
Claim.—The design for corner-blocks for mattress-frames herein shown and described.

26,245. CORNER-BLOCK FOR MATTRESS-FRAMES. WINFIELD H. TABER, Boston, Mass. Filed Aug. 10, 1896. Serial No. 602,367. Term of patent 7 years.



Claim.—The design for corner-blocks for mattress-frames herein shown and described.

26,246. LAWN-RAKE. FREDERICK R. KOHLER, Canton, Ohio. Aug. 12, 1896. Serial No. 602,580. Term of patent 3½ years.



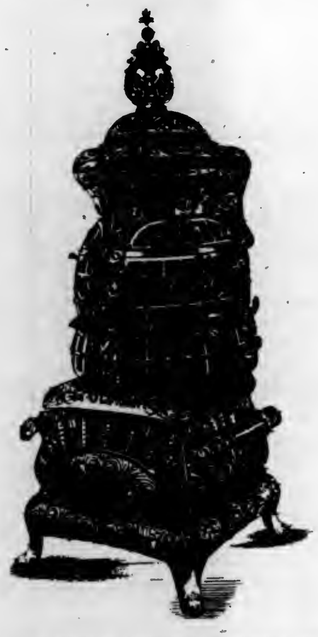
Claim.—The design for lawn-rakes, as herein shown and described.

26,247. RADIATOR-LOOP. HENRY A. SIEBERT and FREDERICK W. HODGES, Detroit, Mich. Filed Mar. 30, 1896. Serial No. 585,491. Term of patent 7 years.



Claim.—The design for a radiator-loop, substantially as shown and described.

26,248. HEATING-STOVE. JOHN W. HERRICK, Milwaukee, Wis., assignor to the Fuller-Warren Company, same place. Filed July 8, 1892. Serial No. 439,420. Term of patent 7 years.



Claim.—The design for a heating-stove, as shown and described.

26,249. HEATING-STOVE. GEORGE M. COCKE, Milwaukee, Wis., assignor to the Fuller-Warren Company, of Wisconsin. Filed July 27, 1894. Serial No. 518,768. Term of patent 7 years.



Claim.—The design for a stove, as shown and described.

TRADE-MARKS

REGISTERED NOVEMBER 3, 1896.

29,061. BOYS' AND MEN'S FUR HATS. BELTAIRE, LUBCH & Co., New York, N. Y. Filed June 23, 1896.

PRIMROSE

Essential feature.—The word "PRIMROSE." Used since June 1, 1895.

29,062. YARNS, UNDERWEAR, AND KNIT GOODS, INCLUDING HOSIERY. COMMONWEALTH COTTON MANUFACTURING COMPANY, Durham, N. C. Filed June 25, 1896.

FAST BLACK

Essential feature.—The words "FAST BLACK" and a representation of a black horse with a jockey mounted thereon. Used since May 2, 1896.

29,063. SHEETINGS, DRILLINGS, SHIRTINGS, AND YARNS. PIEDMONT MANUFACTURING COMPANY, Greenville and Anderson Counties, S. C. Filed June 29, 1895.



Piedmont Manufacturing Co.

Essential feature.—A representation of a running horse and the words "PIEDMONT MANUFACTURING CO." Used since 1876.

29,064. SILK RIBBONS. ADOLPHE OPENHYM, New York, N. Y. Filed Sept. 12, 1896.



Essential feature.—The word "MYTHEPO" in connection with the picture or representation of the half-length figure of a young woman, including the head, neck, shoulders, arms, bust, and waist, and wearing a dress cut low in the neck and with short sleeves, looking at a ribbon which she holds in her two hands and which she is in the act of unrolling. Used since July, 1893.

29,065. HOOKS AND EYES. ALVIN EDMOND HEWITT, Derby, Conn. Filed June 6, 1896.

UNIQUE

Essential feature.—The word "UNIQUE" and a perspective view of a hook and eye, accompanied by an arrow and the words "PROTECTED POINT." Used since August 1, 1894.

29,066. WATCHES. LOUIS MANNHEIMER, Chicago, Ill. Filed July 27, 1896.

ATLAS

Essential feature.—The word "ATLAS." Used since July 25, 1896.

29,067. AMMUNITION. THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Sept. 21, 1896.

LEAGUE

Essential feature.—The word "LEAGUE." Used since August, 1896.

29,068. ROOF-PAINT. THOMAS B. WALL, Newark, N. J. Filed Feb. 18, 1896.

ARP

Essential feature.—A monogram of the letters "A R P." Used since June 1, 1894.

29,069. PREPARATIONS FOR CLEANING AND RENOVATING CARPETS AND DESTROYING MOTHS. EDGAR THOMPSON, New York, N. Y. Filed Sept. 4, 1896.

MARVELINE

Essential feature.—The word "MARVELINE." Used since March 27, 1894.

29,070. SOAP. CURTIS DAVIS & Co., Cambridge, Mass. Filed Sept. 28, 1896.

TRUSTY

Essential feature.—The word "TRUSTY." Used since August 1, 1896.

29,071. SOAPS, PERFUMES, OILS, AND LIKE TOILET ARTICLES. VICTOR KLOTZ, Paris, France, and New York, N. Y. Filed Oct. 2, 1896.

EXULTIS

Essential feature.—The word "EXULTIS." Used since March 1, 1896.

29,072. SOAPS, PERFUMES, OILS, AND LIKE TOILET ARTICLES. VICTOR KLOTZ, Paris, France, and New York, N. Y. Filed Oct. 2, 1896.

AMBRETTA

Essential feature.—The word "AMBRETTA." Used since March 1, 1896.

29,073. SOAPS, PERFUMES, OILS, AND OTHER TOILET ARTICLES. VICTOR KLOTZ, Paris, France, and New York, N. Y. Filed Oct. 2, 1896.

MUSCARA

Essential feature.—The word "MUSCARA." Used since March 1, 1896.

29,074. PERFUMERY. THE FIRM OF ALFRED WRIGHT, Rochester, N. Y. Filed Oct. 3, 1896.

GRAND DUCHESS

Essential feature.—The words "GRAND DUCHESS." Used since March, 1877.

29,075. ALE. ALBANY BREWING COMPANY, Albany and New York, N. Y. Filed Sept. 19, 1896.

ARCTIC

Essential feature.—The word "ARCTIC." Used since June 15 1896.

29,076. COFFEE AND TEA. COOPER COOPER & COMPANY, LIMITED, London, England. Filed June 15, 1896.



Essential feature.—A representation of a tea-shrub, the words "TEA SHRUB," and the words "COOPER COOPER & Co." Used since August 13, 1874.

29,077. COFFEE AND TEA. COOPER COOPER & COMPANY, LIMITED, London, England. Filed June 15, 1896.



Essential feature.—A representation of a spray of the tea-plant, the words "TEA PLANT," and the words COOPER COOPER & Co." Used since April 15, 1874.

29,078. JAPAN TEA. IRWIN, MCBRIDE, CATHERWOOD & Co., Philadelphia, Pa. Filed Aug. 29, 1896.

AMERICAN BEAUTY

Essential feature.—The words "AMERICAN BEAUTY." Used since January 1, 1896.

29,079. TEAS. TETE BROS., Philadelphia, Pa. Filed May 12, 1896.



Essential feature.—The compound word "TÊTE-À-TÊTE," a representation of a cup and saucer, two birds, and a wreath. Used since August 1, 1896.

29,080. DATES AND PREPARATIONS AND EXTRACTS OF DATES, INCLUDING VINEGAR MADE THEREFROM. VICTORIA DATE COMPANY, LIMITED, London, England. Filed Aug. 28, 1896.



Essential feature.—A representation of a sexagon divided into six divisions and having three date-trees, one in each of three divisions, and one of the capital letters "V" "D" "V" in each of the other three divisions. Used since August 13, 1895.

29,081. CONDIMENTS CONTAINING MEXICAN CHILLI-PEPPER. MEXICAN CHILE SUPPLY COMPANY, Fort Worth, Tex. Filed Sept. 21, 1896.

Chiltomaline

Essential feature.—The word "CHILTOMALINE." Used since August 15, 1896.

29,082. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, (LIMITED,) Minneapolis, Minn. Filed June 17, 1895.

CARLETON

Essential feature.—The word "CARLETON." Used since 1874.

29,083. WHEAT-FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, (LIMITED,) Minneapolis, Minn. Filed June 17, 1895.

KANABEC

Essential feature.—The word "KANABEC." Used since 1874.

29,084. PATENT WHEAT-FLOUR. WILLIAM H. STOKES, Watertown, S. D. Filed Aug. 4, 1896.

VOCE

Essential feature.—The word "VOCE." Used since June 1, 1896.

29,085. CRANBERRIES. A. D. M. CRANBERRY CO., Wareham, Mass. Filed July 2, 1896.

CAPE COD CRANBERRIES FROM A. D. M. CO. A. D. MAKEPEACE. MANAGER. WAREHAM, MASS.

Essential feature.—An oval band containing the words "CAPE COD CRANBERRIES" following its upper curve, below which is the word "FROM" and in a horizontal central line the letters "A. D. M. Co.," and below these "A. D. MAKEPEACE" in one line, the word "MANAGER" below it, with "WAREHAM, MASS." following the contour of the inclosing band below. Used since January 1, 1896.

29,086. TOMATO MUSTARD. A. J. WEBBER'S SONS, Cleveland, Ohio. Filed Aug. 31, 1896.

EUCLID

TOMATO MUSTARD

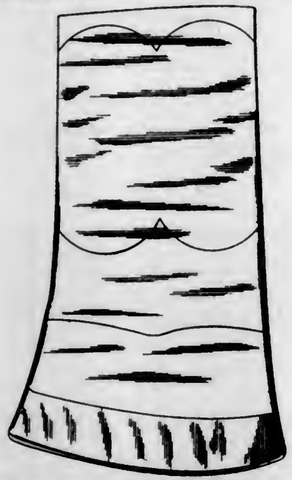
Essential feature.—A representation of a tomato or tomatoes having associated therewith the words "EUCLID" and "TOMATO MUSTARD." Used since February 1, 1896.

29,087. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y. Filed July 1, 1896.



Essential feature.—A representation of a box with a comparatively wide band thereon. Used since June 25, 1896.

29,088. AXES. KELLY AXE MANUFACTURING COMPANY, Alexandria, Ind., Louisville, Ky., and New York, N. Y. Filed July 21, 1896.



Essential feature.—A surface the cutting edge whereof is left of the "temper" color, while the portion immediately adjacent thereto is given a bright polish. Used since March, 1895.

29,089. BADGES. MILWAUKEE NOVELTY CO., Milwaukee, Wis. Filed June 4, 1896.

RUBBER NECK.

Essential feature.—The words "RUBBER NECK." Used since May 2, 1896.

29,090. SOLID-BRAIDED CORDS FOR WINDOWS AND THE LIKE. SILVER LAKE COMPANY, Boston, Mass. Filed Oct. 1, 1896.



Essential feature.—A design composed of scrollwork and the words "THE SILVER LAKE COMPANY." Used since 1869.

29,091. MEDICAL COMPOUND OF ANTIPYRETIC AND ANTINEURALGIC PROPERTIES. BASLE CHEMICAL WORKS BINDSCHEDLER, Basle, Switzerland. Filed Oct. 3, 1896.

KRYOFINE

Essential feature.—The word "KRYOFINE." Used since May 1, 1896.

29,092. PREPARATION FOR SORE THROAT, HOARSENESS, COUGHS, COLDS, AND EARACHE. JOHN A. UHLAND, Denver, Colo. Filed Sept. 1, 1896.



Essential feature.—The compound word "ANTI-CORYZA" and a fanciful scroll, within which are printed the affections for which the preparation is a remedy. Used since September, 1894.

29,093. LAXATIVE MEDICINES. TARRANT & COMPANY, New York, N. Y. Filed Oct. 1, 1896.

SELTZER APERIENT

Essential feature.—The words "SELTZER APERIENT." Used since 1844.

29,094. EMBROCATION. ELLIMAN SONS & Co., Slough, England. Filed Oct. 5, 1896.



Essential feature.—The words "ELLIMAN'S UNIVERSAL EMBROCATION" and a distinctive label. Used since September 28, 1887.

29,095. SALVE. LEERBURT T. REDDEMAN, Sun Prairie, Wis. Filed Sept. 30, 1896.



Essential feature.—A circular band, a representation of an eagle, and the words "AMERICAN WONDER." Used since January, 1895.

29,096. FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, (LIMITED,) Minneapolis, Minn. Filed Apr. 10, 1895.

Pillsbury's PATENT

Essential feature.—The words "PILLSBURY'S PATENT." Used since March 4, 1895.

29,097. FLOUR. PILLSBURY-WASHBURN FLOUR MILLS COMPANY, (LIMITED,) Minneapolis, Minn. Filed Apr. 10, 1895.

PATENT

Essential feature.—A diamond or square arranged in each letter of the word "PATENT." Used since March 4, 1895.

29,098. CHEESE. J. BERNARD DU PARC ET CIE., Jort, France. Filed Sept. 30, 1896.



Essential feature.—A representation of a French dairymaid holding a cheese in her hand. Used since July 1, 1888.

29,099. TEAS. BRYAN, MINER & READ, New Haven, Conn. Filed Sept. 30, 1896.



Essential feature.—A representation of Vishnu, the Lotus God. Used since August 1, 1896.

29,100. LAGER-BEER. BARTHOLOMAY BREWERY COMPANY, Rochester, N. Y. Filed July 17, 1896.



Essential feature.—A representation of a female holding a sheaf of barley in one arm and a twig of hops in the other and riding on a winged wheel. Used since January 1, 1882.

29,101. CIGARS, CIGARETTES, AND CHEROOTS AND MANUFACTURED TOBACCO. LEOPOLD MILLER & SONS, New York, N. Y. Filed Sept. 21, 1896.

Society Smoke

Essential feature.—The words "SOCIETY SMOKE." Used since September 15, 1894.

29,102. CIGARS, CIGARETTES, AND CHEROOTS AND MANUFACTURED TOBACCO. LEOPOLD MILLER & SONS, New York, N. Y. Filed Sept. 21, 1896.

Pocket Angel

Essential feature.—The words "POCKET ANGEL." Used since September 15, 1894.

29,103. CHEWING-GUM AND BREATH-PERFUMES. HONEY DEW GUM COMPANY, New York, N. Y. Filed Sept. 24, 1896.

CAFÉ

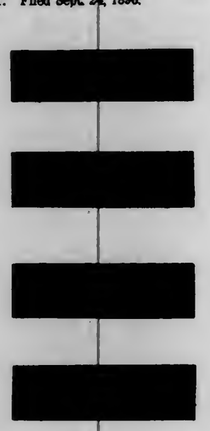
Essential feature.—The word "CAFÉ." Used since September, 1894.

29,104. PREPARATION FOR WASHING, SCOURING, AND CLEANSING. JOHN J. THOMSEN'S SONS, Baltimore, Md. Filed Sept. 23, 1896.

LAVOL

Essential feature.—The word "LAVOL." Used since September 1, 1896.

29,105. POLISHING MATERIAL FOR METALS. BORSUM BROS., New York, N. Y. Filed Sept. 24, 1896.



Essential feature.—A label having a series of vertically-arranged parallel stripes separated by intervening stripes of a lighter color. Used since May 6, 1895.

29,106. OZOKERITE. KAIS. KÖN. PRIVILEGIERTE OSTERREICHISCHE LÄNDERBANK, Vienna, Austria-Hungary. Filed Sept. 25, 1896.



Essential feature.—A representation of the sun and of two crossed miners' sledge-hammers. Used since August 15, 1896.

29,107. PAINTS. J. B. ORR & CO., LIMITED, London, England. Filed May 31, 1895.

ONRESCO

Essential feature.—The word "ONRESCO." Used since January 1, 1893.

29,108. GUANO. ROBERT W. L. RASIN, Baltimore, Md. Filed Apr. 23, 1896.



Essential feature.—The word "CAIRO" inclosed in a border. Used since 1879.

29,109. GUANOS, PHOSPHATES, MANURES, AND SUPERPHOSPHATES. ROBERT W. L. RASIN, Baltimore, Md. Filed Apr. 23, 1896.

"POTOMAC"

R. W. L. Rasin & Co.

Essential feature.—The word "POTOMAC," used in connection with the name "R. W. L. RASIN & Co." Used since 1879.

29,110. HIGH-RESISTANCE ELECTRICAL CONDUCTORS. W. T. GLOVER & Co., London, England. Filed Sept. 29, 1896.

REOSTENE

Essential feature.—The word "REOSTENE." Used since July 1, 1896.

29,111. TELEPHONES. PETER C. BURNS, Kokomo, Ind. Filed Sept. 30, 1896.

"Kokomo-Hunnings Telephone."

Essential feature.—The words "KOKOMO-HUNNINGS TELEPHONE." Used since January, 1894

29,112. TRANSMITTERS. PETER C. BURNS, Kokomo, Ind. Filed Sept. 30, 1896.

"Kokomo-Hunnings"

Transmitter.

Essential feature.—The words "KOKOMO-HUNNINGS TRANSMITTER." Used since January, 1896.

29,113. EXERCISING DEVICES AND APPLIANCES. A. G. SPALDING & BROS., Chicago, Ill. Filed Sept. 14, 1896.



Essential feature.—A representation of a base-ball. Used since 1878

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

OFFICIAL GAZETTE, vol. 77, No. 2, October 13, 1896, page 314, in the case of *Drawbaugh* v. *Seymour, Commissioner of Patents*, the name of Mr. Levin H. Campbell should appear as counsel for the Commissioner.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Seventh Circuit

STANDARD ELEVATOR COMPANY *et al. v.* CRANE ELEVATOR COMPANY *et al.*

Decided October 15, 1896.

1. REYNOLDS—MEANS FOR CONTROLLING THE OPERATION OF ELEVATORS—VALID—INFRINGD.

Letters Patent No 456,122, granted July 14, 1891, to G. H. Reynolds, for means for controlling the operation of elevators, *Held* to be valid and infringed.

2. SAME—HYDRAULIC ELEVATOR—VALIDITY—INFRINGEMENT.

Claims 2, 4, and 6 of Letters Patent No 348,64 4, granted October 20, 1885, to George H. Reynolds for improvements in hydraulic elevators, *Held* to be valid and claims 2 and 4 infringed, but claim 6 not infringed.

3. ASSIGNMENTS—RECORDING—SECTION 4898—PRIMA FACIE INFERENCE OF RECORD OR OFFICIAL COPY OF AN ASSIGNMENT.

Section 4898 does not require that any instrument in the chain of title to a patent shall be recorded; but all such assignments may be recorded. The sense, the essential significance and intent, of this section is that the record or official copy of any assignment shall give to any person interested the *prima facie* assurance that an original assignment was made in terms as shown in the record; that such instrument was subscribed as shown; that it was delivered; that the signature thereto is the genuine signature of the assignor, and that such assignor had an assignable interest according to the purport of the instrument.

4. SAME—RECORD OF—"BELONGING TO THE PATENT OFFICE," IN SECTION 892, REVISED STATUTES.

The record of assignments in the Patent Office is a record "belonging to the Patent Office" within the literal terms of section 892; but in the absence of that section and on the general principles of evidence a paper purporting to be a copy of a record in the Patent Office could be proven to be such copy by the sworn testimony of the person who made it or of a person who had compared it with the original record in the Patent Office.

5. RECORDING ASSIGNMENTS—SPURIOUS INSTRUMENTS—DUTY OF COMMISSIONER.

The statute makes it the duty of the Commissioner of Patents to record assignments, meaning assignments that are genuine. He has no authority to record a spurious instrument. A spurious assignment recorded in the Patent Office would not be in law a record of that Office. The record of an assignment is in law tantamount to a finding or certificate by the Commissioner that the original is genuine. It matters not that the Commissioner may act on the mere assumption that whatever paper of this kind is presented for record is genuine. He is a public officer charged by law with the duty of recording only such as are genuine. The law attaches to his act in making the record the *prima facie* presumption that the instrument copied upon his record-book is entitled to record—that is to say, is genuine. (The view announced in *Mayor of New York et al.* v. *American Cable Railway Company* not acceded to.)

6. APPEALS—"INTERLOCUTORY ORDER OR DECREE" OF AMENDED SECTION 7, ACT MARCH, 1891—STATE OF RECORD.

The "interlocutory order or decree" made appealable by section 7 of act of March 3, 1891, for the organization of the Courts of Appeal, as amended February 18, 1895, must be one which leaves the cause pending on the issues in the court of original jurisdiction. The state of the record or progress of the cause must be such when said appealable "interlocutory order or decree" is entered that a "final decree" upon the matter with which said "interlocutory order or decree" has to do may yet be made.

7. SAME—SAME—"FINAL DECREE" OF SAME ACT.

The contrast suggested by the words "interlocutory order or decree" and "final decree," as used in the first paragraph of amended section 7, is between a decree which is preliminary to a hearing on the merits, and hence discretionary in the court, and one which follows a hearing on the merits, and is hence final, conclusive, and as of right in the prevailing party—between a decree which is meant to preserve the subject-matter of the litigation or prevent irreparable injury till a hearing on the merits can be had and a decree which follows the hearing on the merits and ultimately determines the rights of the litigants.

8. APPEAL FROM PRELIMINARY INJUNCTION—"FINAL DECISION" OF SECTION 6, SAME ACT

By providing an appeal from a preliminary or *pendente lite* injunction and in an adjoining section of the same act giving an appeal from any "final decision" the law-makers indicated that a perpetual injunction decreed as the outcome of a final hearing on the merits in a patent case was appealable as a "final decision."

9. SAME—PERFECTING APPEAL—STAY OF PROCEEDINGS.

The words "the proceedings in other respects in the court below shall not be stayed unless otherwise ordered by that court during the pendency of such appeal," in section 7, seem to imply that the mere perfecting the appeal shall not in legal effect stay the suit.

10. FINAL DECREE OF CIRCUIT COURT—POWER OF THE COURT OF APPEALS.

There is no power in the Court of Appeals whereby its affirmance or approval on review of a decree of the circuit court can give a finality to that decree which it did not have when entered of record in the circuit court.

11. SAME—SAME.

The power incidental to appellate jurisdiction is the power to direct the circuit court to enter such a decree as on the showing of the record ought to have been entered by that court. What is done by a court of original jurisdiction pursuant to a mandate from a court of review on reversal is precisely what ought to have been done by the court of original jurisdiction in the first instance.

12. DISSENTING OPINION.

Dissenting opinion by Judge Woods.

ON appeal from the Circuit Court of the United States for the Northern District of Illinois.

STATEMENT OF THE CASE.

On December 1, 1891, appellees filed their bill of complaint against appellants, alleging, among other mat-

ters not in controversy on this appeal, the issuance to one Reynolds of Letters Patent of the United States Nos. 317,202, 328,614, and 456,122; to one Baldwin of Letters Patent Nos. 248,908 and 456,107, and to one Moore of Letters Patent No. 309,865; that by assignment appellees had become owner of all the rights originally vested by force of said patents in said patentees; that appellants had infringed said patents and each of them, and that "gains and profits to a large sum of money," "the full amount of which is unknown to" appellees, "had accrued to" appellants "from the use of" appellees' "exclusive rights aforesaid," whereby appellees were entitled to an accounting. They asked that an injunction and an accounting be adjudged in their favor.

After a hearing upon the bill, answer, and replication, and proofs duly taken on the issue so made, and on March 12, 1895, a decree was made and duly entered of record. As to Letters Patent numbered 317,202 and 309,865 the bill was by this decree dismissed for want of equity. As to Letters Patent numbered 248,908 and 456,107 the bill was dismissed without prejudice. As to claims 2, 4, and 6 of Letters Patent No. 328,614, there being no controversy touching the other claims of that patent, and as to the two claims of Letters Patent No. 456,122, the court found and decreed, without reserving any further consideration of that subject, that appellants had infringed. An injunction (without limitation in time and without reservation on that matter) was therefore awarded. Appellees' claim to an accounting was not resisted on any ground other than non-infringement. The cause was therefore referred to a master to take proofs and report thereon—

as to the complainants' damages and as to the defendants' profits or savings resulting from the infringement by the defendants of said—

five claims. The decree closes with the statement that—

the question of costs in this cause is reserved till the entry of a final decree herein in this court.

Appellants, after the entry of the decree, filed their petition in words following:

The defendants, Standard Elevator Company, Herbert A. Beidler and Wm. H. Wells, Jr., jointly and severally pray an appeal to the United States Circuit Court of Appeals for the Seventh Circuit, from the order of his honor, Judge Jenkins, granting an injunction against the defendants under the 2nd, 4th and 6th claims of Patent No. 328,614, granted to G. H. Reynolds, Oct. 20, 1885, and Patent No. 456,122, granted to G. H. Reynolds, July 14, 1891.

We assign the following reasons for appeal, viz:

First. The honorable judge erred in deciding that the construction of the defendants was an infringement of the 2nd, 4th and 6th claims of the Reynolds patent, No. 328,614, and of the claims of the Reynolds patent, No. 456,122.

Second. The honorable judge erred in deciding that the said Reynolds patents, No. 328,614 and No. 456,122, are good and valid in law, notwithstanding the evidence adduced against them in the cause.

Third. The honorable court erred in deciding that the complainants had made out and proved a valid title to the patent, No. 328,614, mentioned aforesaid, or that such complainants had such property or right under such patents as would justify them in maintaining their bill of complaint.

These defendants further pray that pending the determination of this appeal the injunction may be stayed upon the filing by such defendants with the clerk of this court of a supersedeas bond to the complainants in such sum as the court shall direct. They also pray such other and further order as may be deemed necessary to perfect this appeal and stay the injunction.

The order of the court on this petition is in words following:

Now comes the Standard Elevator Company, by its solicitor, Frank T. Brown, and files its petition for appeal to the United States Circuit Court of Appeals for the Seventh Circuit, from the decree entered herein on the 12th day of March, 1895, and also files its assignment of errors.

The court being advised in the premises, it is ordered, that said appeal be allowed upon the defendants filing an appeal bond in the sum of one thousand dollars with surety to be approved by the court.

It is further ordered that a supersedeas be granted upon said defendants filing a bond in the sum of fifteen thousand dollars, conditioned to abide and perform any final decree herein, if the appellant fail to make good its plea, with security to be approved by the court. It is further ordered that the proceedings under said decree be stayed for ten days.

The bonds were thereupon made by the three defendants, they being named therein appellants and principals, with sureties, as required by law. These bonds, each reciting that the "appeal" was "from the order granting such injunction," were duly approved and the record brought to this court.

Section 692 of the Revised Statutes of the United States is in words following:

SEC. 692. An appeal shall be allowed to the Supreme Court from all final decrees of any circuit court, or of any district court acting as a circuit court, in cases of equity, and of admiralty and maritime jurisdiction, where the matter in dispute, exclusive of costs, exceeds the sum or value of two thousand dollars, and the Supreme Court is required to receive, hear, and determine such appeals.

Section 6 of the act of March 3, 1891, for the organization of the Federal Courts of Appeal is in part in words following:

SEC. 6. That the Circuit Courts of Appeals established by this act shall exercise appellate jurisdiction to review by appeal or by writ of error final decisions in the district courts and the existing circuit courts in all cases other than those provided for in the preceding section of this act, unless otherwise provided by law, and the judgments or decrees of the Circuit Courts of Appeals shall be final in all cases in which the jurisdiction is dependent entirely upon the opposite parties to the suit or controversy being aliens and citizens of the United States or citizens of different States; also in all cases arising under the patent laws, under the revenue laws, and under the criminal laws and in admiralty cases, excepting that in every such subject within its appellate jurisdiction the Circuit Court of Appeals at any time may certify to the Supreme Court of the United States any questions or propositions of law concerning which it desires the instruction of that Court for its proper decision.

Section 7 of the last-named act was amended February 18, 1895, to read as follows:

That where, upon a hearing in equity in a district court or a circuit court, an injunction shall be granted, continued, refused, or dissolved by an interlocutory order or decree or an application to dissolve an injunction shall be refused in a case in which an appeal from a final decree may be taken under the provisions of this act to the Circuit Court of Appeals, an appeal may be taken from such interlocutory order or decree granting, continuing, refusing, dissolving, or refusing to dissolve an injunction to the Circuit Court of Appeals:

Provided, that the appeal must be taken within thirty days from the entry of such order or decree, and it shall take precedence in the appellate court; and the proceedings in other respects in the court below shall not be stayed unless otherwise ordered by that court during the pendency of such appeal:

And provided further, that the court below may in its discretion require as a condition of the appeal, an additional injunction bond.

This last paragraph was added and the first made to comprehend the refusal or dissolution of a *pendente lite* injunction by the amendment of 1895.

Section 701 of the Revised Statutes of the United States is in words following:

SEC. 701. The Supreme Court may affirm, modify, or reverse any judgment, decree, or order of a circuit court, or district court acting as a circuit court, or of a district court in prize causes, lawfully brought before it for review, or may direct such judgment, decree or order to be rendered, or such further proceedings to be had by the inferior court, as the justice of the case may require. The Supreme Court shall not issue execution in a cause removed before it from such courts, but shall send a special mandate to the inferior court to award execution thereupon.

Section 11 of the act of March 3, 1891, for the organization of the Federal Courts of Appeal is in part in words following:

All provisions of law now in force regulating the methods and system of review, through appeals or writs of error, shall regulate the methods and system of appeals and writs of error provided for in this act in respect of the Circuit Court of Appeals, including all provisions for bonds or other securities to be required and taken on such appeals and writs of error, and any judge of the Circuit Courts of Appeals, in respect of cases brought or to be brought to that court, shall have the same powers and duties as to the allowance of appeals or writs of error, and the condition of such allowance, as now by law belong to the justices or judges in respect of the existing courts of the United States respectively.

Section 10 of the act of March 3, 1891, above mentioned, is in part in words following:

Whenever on appeal or writ of error, or otherwise, a case coming from a district or circuit court shall be reviewed and determined in the Circuit Court of Appeals in a case in which the decision of the Circuit Court of Appeals is final, such cause shall be remanded to the said district or circuit court for further proceedings to be there taken in pursuance of such determination.

Before WOODS, SHOWALTER, and BUNN, Judges.

Mr. Benjamin Harrison and *Mr. Frank T. Brown* for the appellants.

Mr. James H. Raymond and *Mr. Edwin H. Brown* for the appellees.

SHOWALTER, *J.*, after the foregoing recital:

Counsel in their printed argument have discussed the jurisdiction or province of this court on this appeal. What may be said touching the function of this court, the scope of the review which may be had here, the form and effect of an adjudication here either of reversal or affirmance as bearing on the status of the cause in the circuit court, comes logically first in any pronouncement to be made on this record.

In England, as I understand, the right of appeal in chancery cases was developed by the courts—possibly out of analogies from the civil law. In this country the appeal is by statute, and ordinarily only from a final decree; but, whether from a decree which is final or interlocutory, statutory limitations control. (*Stephens* v. *Clark et al.*, 63 Fed. Rep., 321.) Whether or not a decree be final, and on that ground appealable, depends in one sense on the nature of the adjudication as affecting the party against whom it is made. In Illinois there can be no appeal in a chancery case except from a final decree. In *Blake* v. *Blake* (80 Ill., 523) the supreme court of that State said:

It is apprehended there can be no decree against a party that will work a deprivation of his property or liberty from which no appeal or writ of error will lie.

See, also, the opinion of the Supreme Court of the United States by Mr. Justice Miller in *Farmers' Loan and Trust Co.*, petitioner, (129 U. S., 213.) In *Forgay* v. *Conrad* (6 How., 202) Judge Taney noticed that there might be two or more successive final decrees and as many successive appeals in the course of a single litigation. The power of a court of original jurisdiction over a final decree, or over that portion of a decree which is final, ceases (barring the matter of rehearing or bill of review) with the close of the term at which such decree was entered of record. (*Trust Co.* v. *Grant Locomotive Works*, 135 U. S., 207, 224.) Where no appeal is pending, a bill of review, which is a new suit, may doubtless be entertained after the term, showing error of law on the face of the record, or some new matter of fact occurring after the decree, or some matter of fact extant when the decree was rendered, but not then, and without fault on the part of the petitioner, brought to the notice of the court. In Federal practice, under equity rule 88, a rehearing (presumably if the application be made during the term at which the decree was entered) can be had not later than the following term, and not after the term in which the decree was entered of record in any case where an appeal could have been taken. What may be done by bill of review after an appeal is not here considered. The point here is that a decree may be final, and on that ground appealable, in a case where, if no appeal be taken, a rehearing (*Roemer* v. *Simon*, 91 U. S., 149; Desty's Fed. Pro., 729) or bill of review would be available remedies in the court of original jurisdiction. It may not be out of place to add that a decree may be none the less final because it is incomplete in failing to provide for its own execution and to so end the litigation. If no reservation be made in such decree, the power of the court over it ceases with the term at which it was recorded and a new bill must be filed, if need be, in order to carry into execution the adjudications in such final decree. (Hindes Chy., 68; 1 Harr. Prac. in Chy., 148; Lubes Eq. Plead., 204.)

When a decree does not adjourn the consideration of the cause, it is said to be a final decree. (2 Daniels Chy. Prac., 6th Am Ed., 994.)

The foot-note to this text contains the following:

A decree which disposes of a cause, without reserving anything for further consideration, is, of course, final. (*Mills* v. *Hoag*, 7 Paige, 18; *Cook* v. *Bay*, 4 How., Miss., 485; *Britton* v. *Johnson*, C. W. Dud., 24; *Tennent* v. *Patton*, 6 Leigh, 196; *Talbot* v. *Todd*, 7 J. J. Marsh. 456, *Johnson* v. *Everett*, 9 Paige, 636; *Ex parte Crittenden* 5 English, 333; see per Sutherland, J., in *Kane* v. *Whitman*, 8 Wend., 224; *Harvey* v. *Branson*, 1 Leigh, 108; *Longfellow* v. *Longfellow*, 1 Clarke, 344; *Hey* v. *Schooley*, 7 Ohio, 373; *Brewer* v. *Connecticut*, 9 Ohio, 117; *Newark Plank Road Co.* v. *Elmer*, 9 N. J. Eq., 754, 787; *Webster* v. *Hitchcock*, 11 Mich., 50.) So, if it decides the rights of the parties on the merits, although it may make a reference to ascertain the amount due from one party to the other on the basis of the adjudication, reserving nothing except to determine that the report is strictly in conformity with the decree. (*Jones* v. *Wilson*, 54 Ala., 50; *Quackenbush* v. *Leonard*, 10 Paige, 131; see *Story* v. *Hawkins*, 8 Dana, 14; *Michoud* v. *Girod*, 4 How., 503; *Forgay* v. *Conrad*, 6 How., 203.) And such a decree is final, both as to an original and cross bill, that the equity of the case is with the complainant in the original bill, although leave is given to either party to apply, at the foot of the decree, for such further order as may be necessary to the due execution of the same, or as may be required in relation to any matter not finally determined by it. (*French* v. *Shoemaker*, 12 Wall., 98; and see *Wyatt* v. *Garlington*, 56 Ala., 576.)

Strictly speaking, every decree settling rights upon a hearing on the merits of the original cause, or upon the equity reserved, is *pro tanto* a final decree; but where an appeal is only allowed by statute from a final decree the courts have not agreed as to what decree shall be considered final within the meaning of the statute. The United States Supreme Court, under such a statute, has decided that if the decree decides the right of property, and orders it to be delivered up or sold, or adjudges a sum of money to be paid, and the party is entitled to have such decree carried into immediate execution, it is a final decree, under the act Congress, from which an appeal lies, although there is a reference for an account between the parties upon the basis of the decree, and the cause is retained for the purpose of adjudicating these accounts. (*Forgay* v. *Conrad*, 6 How., 203.)

In *Winthrop Iron Co.* v. *Meeker* (109 U. S., 180, 182) it is expressly decided that a reservation as to the matter of costs does not make a decree in other respects any the less final and appealable.

In a patent case there can be no right to an accounting unless the infringement be made out; but the infringement may be found and the injunction awarded in favor of a complainant who, upon the proofs, has no right to an accounting. Upon the issue whether or not the complainant is entitled to the accounting it may not appear that the defendant used or sold the patented device, but merely that he made it; or it may otherwise appear that there were, in fact, no profits or that an account had already been stated, conditionally or otherwise, by the parties themselves, and that for want of notice, as provided in section 4900 of the Revised Statutes of the United States, no damages could be recovered. In such event there could be no award of an accounting in the decree, although the perpetual injunction would be awarded. (*Whittemore* v. *Cutter*, 1 Gall., 478; *Elizabeth* v. *Pavement Co.*, 97 U. S., 127, 144.) In a patent case on the equity side the primary and essential contention relates to the ownership of the patent by complainant, the validity of the claims, and the infringement. The final adjudication in favor of complainant on this contention is a perpetual injunction.

In the decree of March 12, 1895, the question of costs, as already stated, was expressly reserved, and the determination of the amount for which on the accounting appellees were to have execution against appellants awaited the report on the reference. One portion of a given decree may be final, and for that

reason reviewable on appeal, while the remainder may be interlocutory, and for that reason not appealable. (*Forgay* v. *Conrad*, 6 How., 202; *Winthrop Iron Co.* v. *Meeker*, 109 U. S., 180; *McFarland* v. *Hall*, 17 Texas, 691; *Malone* v. *Marriatt*, 64 Ala., 486; *Williamson* v. *Field*, 2 Barb. Chy., 281; *Dickinson* v. *Codwise*, 11 Paige Chy., 187.) This appeal on the face of the record comprehends very clearly as the matter presented for review the ownership of the five claims, their validity, the infringement, and the perpetual injunction. If this portion of the decree of March 12, 1895, wherein the property right as between the litigants was adjudged and the sentence of the court carried into immediate execution, be not in itself an "interlocutory order or decree" such as is identified in amended section 7 of the act of March 3, 1891, this appeal, if not authorized by section 6, should be dismissed, for, be it noticed, it is not any "interlocutory order or decree," but only one which comes specifically within the terms of amended section 7, that is appealable.

In this case and as to that portion here appealed from of the decree there was no reservation of any further hearing. It would have been within the power of the circuit court, though such a proceeding would have been exceptional, to retain the cause for further consideration as to the ownership, validity, and infringement of the patents. Such a reservation would have meant that the injunction was still within the control of the court, merely extant until further order, or subject to vacation on any change of view by the court or upon additional evidence which the court might choose to hear. It would have been within the power of the court also, upon such reservation, to require a bond from complainants conditioned to answer all damages in case the court should actually see fit at a later day to dissolve the injunction; but no such case is presented.

The "interlocutory order or decree" made appealable by amended section 7 must be one wherein the court grants, continues, refuses, dissolves, or refuses to dissolve an injunction. The state of the record or progress of the cause must be such when said appealable "interlocutory order or decree" is entered that a "final decree" upon the matter with which said "interlocutory order or decree" has to do may yet be made. The contrast suggested by the words "interlocutory order or decree" and "final decree," as used in the first paragraph of amended section 7, is between a decree which is preliminary to a hearing on the merits, and hence discretionary in the court, and one which follows a hearing on the merits and is hence final, conclusive, and as of right in the prevailing party—between a decree which is meant to preserve the subject-matter of the litigation or prevent irreparable injury till a hearing on the merits can be had and a decree which follows the hearing on the merits and ultimately determines the rights of the litigants. The "interlocutory order or decree" made appealable by amended section 7 must be one which leaves the cause pending on the issues in the court of original jurisdiction. "The proceedings in other respects in the court below shall not be stayed unless otherwise ordered by that court during the pendency of such appeal." Upon entering an "interlocutory order or decree" for an injunction the court may, and ordinarily does, require the complainant to give a bond which will protect the defendant against loss in case such injunction be dissolved. If another "interlocutory order or decree" be afterward made on defendant's motion dissolving said injunction and the complainant appeal, "the court below may in its discretion require as a condition of the appeal an additional injunction bond." In other words, no "order or decree" for an injunction can be appealable under amended section 7 unless it would have been competent for the court to require an injunction bond when such order or decree was entered.

Can that portion of the decree which constitutes the adjudication specifically appealed from in the case at bar be crowded into the limitations fixed in amended section 7 for the "interlocutory order or decree" there made appealable? The injunction here is perpetual How can a perpetual injunction where no power over the same is reserved be the subject of an interlocutory order? (See 2 Daniels Chy. Prac., 1683.) On the face of the decree now here no further action was to be taken by the court in the matter of the injunction or of the ownership, validity, or infringement of the patents. On the face of the decree the injunction without limitation went as of right in the complainants and not as of discretion in the court. On the face of the record this decree, so far as concerns the adjudication appealed from, was not preliminary; it was technically and essentially on the merits and after the parties had had in the fullest sense their day in court. This was a decree in which, as a condition of the injunction, no bond was or could without error have been exacted from complainants, they being on the face of this decree entitled to the perpetual injunction as of right. The hearing which resulted in this decree was of such kind that if the court had found no infringement and an injunction previously issued against defendants had been dissolved no "additional injunction bond" could have been required as the condition of an appeal by complainants. The hearing which resulted in this decree was of such kind that if the court had found no infringement the decree must have been a dismissal for want of equity as to all the patents sued on, and such a decree, whether it dissolved a prior injunction or not, could not have been interlocutory within the sense of section 7. Furthermore, this appeal would not seem entitled to precedence in this court. The statutory requirement of precedence in appeals under amended section 7 is senseless when applied to this appeal. The precedence is given because the decree to be appealed from under that section awards or dissolves an injunction against the alleged right of the appellant before he has had his day in court upon the merits of that right, or, if the appeal be from a refusal to grant an injunction, because the appellant may be irreparably injured before his case can be heard on the merits.

On the reversal of an order or decree granting a *pendente lite* injunction, an order which would be strictly interlocutory within the sense of amended section 7, this court must, if in the opinion of the judges here the record call for such action, issue its mandate, directing the trial court to dismiss the bill for want of equity. The general rule that a court of review may, whether the adjudication appealed from be interlocutory or final, direct the court of original jurisdiction to enter whatever decree ought to have been entered in the first instance, as in *Le Guen* v. *Governeur*, (1 Johns. Cas., 436,) *Richmond* v. *Atwood*, (61 O. G., 1655; 52 Fed. Rep., 10,) *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, (72 Fed. Rep., 545,) and *Green* v. *Mills*, (69 Fed. Rep., 852,) the opinion in the last-named case being by Chief Justice Fuller, need not be dwelt on. Section 701 of the Revised Statutes of the United States, quoted in connection with appropriate provisions from the act of March 3, 1891, in the statement which precedes this opinion, seems to be law for the Federal courts in such a case. The order when entered by the circuit court pursuant to the mandate would be the final decree in the cause. This court would not by such mandate exercise original jurisdiction. The mandate would be the logical and necessary outcome of the review by this court of what had been done in the court of original jurisdiction. The words "the proceedings in other respects in the court below shall not be stayed unless otherwise ordered by that court during the pendency of such appeal," in section 7, seem to imply that the mere perfecting the appeal shall not in legal effect stay the suit. In view of the decisions of the Federal Courts of Appeal above cited those words are not deemed a limitation on the appellate power of these courts. A judgment of reversal in the case at bar would therefore be the same in form and effect whether the matter here appealed be a "final decision" within the meaning of section 6 or an "interlocutory order or decree" within the meaning of amended section 7.

If, however, we find no error in the record, the stress of the situation will become manifest. This is a court of review. It may, on the one hand, reverse, in whole or in part, the decree appealed from, or, on the other, approve and affirm. In the latter event, barring the rule that no subsequent appeal on the same question can be entertained, since this court has no power to review its own adjudications, the decree would stand in the lower court precisely as though no appeal had been taken. This court has not original jurisdiction. It may not usurp or repress the judicial power of the circuit court. Whatever of force or virtue there may be in a decree of the circuit court is attributable to the judicial power vested by law in that court. There is no power in the Court of Appeals whereby its affirmance or approval on review of a decree of the circuit court can give a finality to that decree which it did not have when entered of record in the circuit court. If the matter here appealed be an "interlocutory order or decree," a judgment of affirmance—that is to say, a refusal to reverse—by this court cannot make it a final decree. If, so far as concerns the ownership of the claims, their validity, the infringement, and the injunction, the decree entered in the circuit court on the 12th day of March, 1895, be an interlocutory order or decree, then, as pointed out by Judge Jackson in *Illinois Watch Co.* v. *Robbins*, (52 Fed. Rep., 337,) all questions concerning such ownership, validity, infringement, and injunction (the hypothesis for the present being that no error is well assigned) are still within the judicial power of that court. If to the order on the master's report and the costs yet to be made in the circuit court there shall be added a recital whereby that portion of the decree of March 12 brought here by this appeal is reëntered or "confirmed" by the circuit court, that order, on the hypothesis now in question, will be the "final decision" or "final decree," and by the statute an appeal can again be taken to this court, and this court will be bound by the statute to rehear, reconsider, and render a judgment upon the very questions which must be decided on the present appeal, and that without any change whatever in the record so far as concerns said questions. In view of this impossible and absurd result, enlarged upon by the Court of Appeals of the Sixth Circuit in the case next below cited, either the adjudication brought up by this appeal was not "an interlocutory order or decree" within the meaning of amended section 7, when entered of record in the circuit court, or it will cease to be interlocutory and become final as the legal result of affirmance (or a refusal to reverse) by this court.

In *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, (72 Fed. Rep., 545,) after a full hearing on the merits in the circuit court, a decree was made and recorded wherein was adjudged the validity of the patent, complainant's ownership, the infringement by defendant, and a perpetual injunction. It was also found in this decree that complainant was entitled to an accounting, and a reference to a master was made on that matter. The defendant appealed, and the Court of Appeals affirmed. After the judgment of affirmance and long after the close of the term in the circuit court at which the decree was recorded, but prior to the report on the accounting, the judge in the circuit court, conceiving the decree to be in all respects still within his control, on motion of complainant vacated the injunction so far as to permit the defendant to complete and sell certain of the infringing devices, the sales so made to be accounted for before the master. From this order complainant appealed, and the Court of Appeals reversed, declaring that the circuit court had no power to change or modify the injunction; that the decree was final and conclusive so far as concerned the patent property, the validity of the patent, the infringement, and the perpetual injunction; but learned writer of the opinion (Lurton, circuit judge) in the line of reasoning whereby he reached this conclusion said that the finality of the decree in the respects mentioned was due to the affirmance in the Court of Appeals; that the decree in the respects mentioned was an interlocutory decree till so affirmed, and then and as the legal result of such affirmance became final. The rule whereby on the reversal of an interlocutory decree a mandate may direct a final decree to be entered in the circuit court was dwelt on in the opinion; but the learned judge failed to note the contradiction involved in the proposition that an affirmance can alter the essential character of the decree affirmed. The decree which the circuit court attempted to change was, so far as concerned the pro-

nouncements therein which were executed by the perpetual injunction, either a "final decision," when entered of record, or it remained after as before affirmance, interlocutory. The want of power in the circuit court over that portion of the decree, if that court were foreclosed at all, dated not from the order of affirmance, but from the end of the term at which such decree was recorded.

In *Columbus Watch Company et al.* v. *Robbins et al.*, (62 O. G., 1963; 52 Fed. Rep., 837,) also in the Court of Appeals of the Sixth Circuit, which was an appeal by the defeated defendant in a patent case from a decree of the kind already described, counsel for both sides joined in a motion whereby the Court of Appeals was asked to "hear and finally determine the merits of the controversy relating to the validity of the patent in suit and the infringement of the same," as though a decree which had been made pursuant to a final hearing on the merits could be reviewed otherwise than on the merits and as though the consent of counsel (*Stephens* v. *Clark et al.*, 62 Fed. Rep., 321) could give to the Court of Appeals a jurisdiction which by their application they seemed to concede was not given by law. The Court of Appeals assumed without question that the decree was in all parts interlocutory. From this assumption it seemed to follow, as in effect pointed out in the opinion by Judge Jackson, that the ownership, validity, and infringement of the patent were still open questions in the circuit court; in other words, that the Court of Appeals was powerless to make any adjudication (of affirmance) which on the theory of the motion would have force in the circuit court. The matter was thereupon certified to the Supreme Court of the United States. The latter tribunal dismissed the certificate for want of form. The Court of Appeals thereupon heard the appeal and delivered a second opinion. (64 Fed. Rep., 384.) The record was fully considered and the decree affirmed. The opinion contains the statement that on the then present appeal the Court of Appeals could—

> hear and finally determine the merits of the controversy as to the validity of the patent and its infringement.

The Court of Appeals had no original jurisdiction. The decree affirmed, it would seem, was no more conclusive as the result of the affirmance than it would have been if no appeal had ever been taken. The import of the opinion is that no appeal could be again entertained upon "the validity of the patent and its infringement." This means that the circuit court had exhausted its power in making the decree appealed from so far as concerned "the validity of the patent and its infringement"—in other words, that to this extent the decree already of record in the circuit court and under review in the Court of Appeals was final.

In *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co. supra*, it is said:

> The doctrine of *res adjudicata* rests upon the maxim that there should be an end to litigation. No doctrine rests upon sounder principles of public policy or is more entitled to a wide application. If under an appeal from a decree awarding an injunction this court obtains such a record as to enable it, with justice to the parties to the appeal, to hear and consider the merits of the cause, it would be most anomalous if we have not the power to decide. The judicial function of considering involves the function of determining. The decision of an appellate court is final, and no second appeal is maintainable, except as to matters reserved, or proceedings subsequent to the first appeal.
>
> These considerations lead us to the conclusion that inasmuch as it was decided upon the former appeal that the patent of the complainant was valid, and that the defendant had infringed it, and a perpetual injunction had been properly awarded, there was no power in the circuit court to dissolve, modify, or suspend the injunction. There was no room for the exercise of judicial discretion. The complainant was entitled to the remedy by injunction which had been accorded him, and that relief had been affirmed by this court.

If the ultimate judgment of the Court of Appeals in the last-named case, that the circuit court could not change the decree, as was attempted, be sound, then, since the Court of Appeals had no original jurisdiction in such a case, since in affirming that court merely approved or declined to reverse or modify the decree appealed from, that decree, so far as the quality of conclusiveness or finality attached at all, must have been final and conclusive when entered of record in the circuit court. The determining consideration in the opinion seemed to be that by the affirmance the decree appealed from became the decree of the Court of Appeals; but in the nature of things, as well as by the terms of section 701, the Court of Appeals can merely direct a decree "to be rendered" in the circuit court, and that only when the decree appealed from is reversed or modified. Upon an affirmance and after the remanding order the cause stands in the court of original jurisdiction as though no appeal had been taken. The power incidental to appellate jurisdiction is the power to direct the circuit court to enter such a decree as on the showing of the record ought to have been entered by that court. What is done by a court of original jurisdiction pursuant to a mandate from a court of review on reversal is precisely what ought to have been done by the court of original jurisdiction in the first instance. The legal force as *res adjudicata*, of a final decree entered in a circuit court pursuant to a mandate from a Court of Appeals is the same as though such decree had been entered originally and in place of the erroneous decree which was annulled on appeal.

If, for instance, and to take an extreme and exceptional case, after the hearing, as shown by this record, the circuit court had incorporated in its decree a reservation whereby the defendants were at liberty to present further evidence or further argument on the ownership, validity, or infringement of the patents or given liberty to move, at or before the coming in of the master's report, to vacate the decree for the injunction, it would then have been within the authority of this court, upon approval here of the holdings below touching the ownership, validity, and infringement of the two patents in question on this appeal, to reverse such decree so far as concerned the reservation specified and direct that a final and perpetual injunction without reservation or condition be ordered in the circuit court—in other words, to reverse or modify the decree of the circuit court and direct to be entered in that court the decree that ought to have been originally entered there. It may be here added that in each of the following cases—*Bouchier* v. *Taylor*, (7 Brown Parl. Cas., 1st ed., 414;) *Governors of St. Stephens Hospital* v. *Swan*, (5 Brown Parl. Cas., 1st ed., 454;) *Ellis* v. *Seagrave*, (Id., 478;) *White* v. *Lightburns*, (2 Brown Parl. Cas., 1st ed., 405;) *Scribblehill* v. *Brett*, (1 Brown Parl. Cas., 1st ed., 57;) *Rous* v. *Barker*, (3 Brown Parl. Cas., 1st ed., 80;) *McCan* v. *O'Ferrall*, (8 Clark & F., 30;) *Le Guen* v. *Gouverneur*, (1 Johns. Cas., 437;) *Bush* v. *Livingston*, (2 Caines Cas., 66,) and *Beboe* v. *Bank*, (1 Johns., 529)—the decree of the court of original jurisdiction was reversed and another decree, such as ought to have been rendered by that court on the showing of the record, was directed to be rendered in that court by the mandate of the court of error. These and one other—*Dale* v. *Roosvelt*, (6 Johns. Chy., 257,) which does not appear to concern the question—are the citations in *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, *supra*, from which more distinctly than from any other was evolved the proposition that an affirmance by a court of error can add finality to a decree which, when entered of record in the court of original jurisdiction and up to the time of such affirmance, was not final.

It is true, indeed, as stated by Judge Lurton, that—

> the judicial function of considering involves the function of determining;

but what a court of error considers is the soundness of the decree appealed from and the legal sufficiency of that decree to meet the showing of the record on which it rests. What it determines is either that such decree is not the appropriate conclusion from the record, but that some other decree would have been, in which event the decree which ought to have been originally entered is directed by the mandate, or, on the other hand, that the decree appealed from was the just conclusion of law and fact, in which event that decree as originally made by the circuit court is affirmed. The effect, the decree in question being one on the merits, is that the power of the court of error is exhausted—the possibility of further consideration of the same matter by the court of error, the possibility of reversal or modification on appeal, is extinguished. The status of the case becomes the same, so far the law of *res adjudicata* is involved, as though no appeal had been taken, but the time limit for an appeal had expired. The argument and conclusion of Judge Lurton, if addressed to the proposition that the decree when entered in the circuit court was final on the ownership, validity, and infringement of the patent and the injunction, would seem unimpeachable—in other words, from his proposition, as applied to the Court of Appeals, that—

> the judicial function of considering involves the function of determining—

and from the further proposition that the Court of Appeals on the prior appeal was bound by law to hear and determine—in other words, had jurisdiction—it followed, as the matter appears to the writer of this opinion, not that finality was given by the affirmance to a decree which had not that quality when entered, but that such decree was really final when entered in the circuit court, and so continued from that date.

In *Richmond* v. *Atwood* (61 O. G., 1655; 52 Fed. Rep., 10) the decree in favor of the complainant patentee was reversed and the cause remanded, with the direction that the order of reference be vacated and the bill dismissed for want of equity. Whether the appeal in that case were by section 6 or by section 7, it was, as already suggested, entirely competent for the Court of Appeals upon reversal, to direct a decree which, when entered of record by the circuit court, would be final. (See, also, *Green* v. *Mills*, 69 Fed. Rep., 852.)

By section 6 of the act of March 3, 1891, this court is required to review any "final decision" of the circuit court in a patent suit. That portion of a decree in such a case which formulates on the record of the court what is in truth a "final decision" is expressly made appealable. In *Potter* v. *Mack* (Fed. Cas., No. 11, 331) Judge Swayne declared that the portion—such as is here appealed from—of a decree in a patent case is a final decision. If in a decree in a land case it be declared that certain premises held by defendant, and which defendant claimed as his own, is the property of complainant, and that the possession thereof be turned over from defendant to complainant, or that a writ of possession forthwith issue, and if in the same decree it be found that complainant is entitled to an accounting as to the rents and profits and a reference be made to a master on such accounting, such decree, apart from the accounting, is final and appealable. (*White et al.* v. *Ross*, 147 Ill., 427; *Forgay et al.* v. *Conrad*, 6 How., 202.)

In the case at bar the bill was dismissed for want of equity as to certain of the patents in suit. So far as concerned other patents, and by that portion of the decree which constitutes the matter of this appeal, the property in contention was, after a final hearing, not only adjudged in favor of complainants, but in effect taken from defendants and actually and finally put into the exclusive possession of complainants. The adjudication appealed from was not only made but executed. The business of defendants, so far as it depended on their ownership and use of the devices in suit, was stopped at once and forever. Their liberty in that regard was taken away. Their property rights, or what they supposed to be their property rights, were annulled or transferred to complainants as distinctly as though land or money, being the subject of contention, had been taken from their possession and delivered to complainants.

Section 6 should be considered in connection with amended section 7. The latter section has been made the subject of comment in this opinion. The words "final decision" in section 6 may include a perpetual injunction decreed against a defendant after a full hearing on the merits in a patent case. Said words certainly must be held so inclusive if the legislative policy to that effect appear affirmatively and by reasonable intendment. By providing an appeal from a preliminary or *pendente lite* injunction and in an adjoining section of the same act giving an appeal from any "final decision" the law makers indicated that a perpetual injunction decreed as the outcome of a final hearing on the merits in a patent case was appealable as a "final decision." The proposition that a defeated defendant in a patent case must submit to the perpetual injunction decreed against him without any right of appeal during the interval of months or years which may elapse between the entry of such decree and the order on a master's report touching the amount of money for which complainant shall have execution is not to be entertained in view of the legislation now current.

The assumption that section 6 of the act of March 3, 1891, must be deemed the equivalent of section 692 of the Revised Statutes of the United States, as construed by the Supreme Court in *Barnard* v. *Gibson*

(7 How., 650) and *Humiston* v. *Stanthorp*, (2 Wall., 106,) has been the source of perplexity in the Federal Courts of Appeals; but the two statutes are not the same. Section 6, so far as concerns a perpetual injunction in a case like the one here, must be read in connection with amended section 7. It was competent for the law-makers to declare that a defendant in a patent suit can have an instant appeal from an adjudication on the merits whereby he is perpetually enjoined. It was competent for them to declare that the portion—such as here appealed from—of a decree in a patent suit is and shall be deemed final. Section 6 and amended section 7, when read together, seem to carry this meaning. To construe these statutes otherwise, assuming jurisdiction in this court over an appeal like the one here, would lead, as suggested, to exceptional and impossible results.

This controversy is waged most strenuously as to Letters Patent No. 456,122. The invention of that patent is an improvement in "means for controlling the operation of elevators" used for carrying passengers to and from the upper floors of city buildings.

A three-armed lever fixed at the bottom of the elevator-shaft—that is to say, a straight beam placed normally horizontal and pivoted in the center, with an arm extending from the pivotal point downward—was at the time of this invention a known means of controlling, through pulleys and cables, with suitable attachments, the movements up or down of the car of a hydraulic elevator by the attendant in charge of such car. The downward arm is attached at its point to a rod connecting with a valve which, when such arm is perpendicular and the beam horizontal, closes the opening or openings whereby water passes to and from the cylinder. When one side of the beam is depressed, the water passage or inlet is uncovered, so that the water is pumped into the cylinder. The piston is at the same time driven or pushed forward in the cylinder, pulling down the lifting-cables, and the car rises. When the other side of the beam is depressed, the valve shuts off the water from entering the cylinder and uncovers the opening for the exit and the car descends by its own weight, driving the piston backward and expelling the water through said place of exit.

The problem before the patentee Reynolds was to devise a means of operating from the moving car the three-armed lever which would be different and superior to any means already known. As shown by the patent in question, he fixed under the car and pivoted to a downward projection from the floor of the car a second three-armed lever or horizontal cross-beam, with an arm projecting upward through a slot in the floor of the car. From one end of this second beam a rope extended downward around a pulley on the corresponding end of the beam first described, thence upward along the side of the car and the elevator-shaft to the top of the shaft, thence over a second pulley and down to the roof of the car adjoining that side of the shaft where it was secured to the car. From the other end of said secondly-described arm passed another rope downward and around a like pulley at the other end of the beam first mentioned, thence upward along the opposite side of the car to a second pulley at the top of the shaft, and thence down said opposite side of the shaft to the roof of the car, where it also was secured. The two ropes or cords were of equal length and they and the pulleys were arranged symmetrically. In this construction, assuming the car to be stationary at any position in the shaft, the handle or arm of the lever projecting through the car-floor will be vertical and the tension of the two ropes or cables will be the same. If the attendant move this handle to the left, the end of the rope to the right will be pulled upward, bringing with it the right end of the lower beam. The left end of the lower beam will at the same time be correspondingly depressed. By this action the car will be set in motion, and so continue till the attendant move the handle again to the vertical position, when the car will stop. By a movement of the handle to the right the car will go in the opposite direction. The tension of the two cords remains at all times substantially the same and the force which must be exerted by the attendant to shift the handle is subject to only slight variation. Moreover, the movement of the car is steady and uniform and always within easy control of the attendant.

The patent, the invention thereof being described in appropriate specifications and illustrated by drawings, had two claims. They are in words following:

1. In a controlling device for elevators, the combination of a car, two cables attached positively at each of their ends to travel with the car and connected with the controlling device, and an operating device upon the car to positively take up and pay out said cables to shift positively the controlling device, substantially as set forth.

2. In controlling devices for elevators, the combination of a car, traveling cables connected positively at each of their ends to the car and passing over stationary pulleys at one end of the well and around movable pulleys connected to the controlling device at the other end of the well, and means for positively contracting and relaxing the bights of the cables, substantially as set forth.

It is strongly urged that this device is anticipated by a German patent to one Lampe, published June 3, 1882. This publication discloses a control device for an elevator. The drawing which is part of said publication exhibits the device as applied to a platform or freight elevator. A single cord attached to a fixture (marked *g*) on said platform passes downward to and around a pulley firmly secured at the bottom of the elevator-shaft, thence up through or alongside the car or platform to and over a pulley at the top of the elevator-shaft, thence back to the fixture aforementioned on the said platform, where it also is secured. The upper pulley is in a slotted or forked lever or arm hinged or fulcrumed at one end, so that such pulley may be moved downward by a pull from the person on the platform, who seizes for that purpose a handle or stirrup (marked *h*) attached to the cord three or four feet above the point, *g*, where the two ends are fastened, as already mentioned. The downward movement of the lever shifts the valve whereby motion is imparted to the car or platform. A counteracting-weight is depended on to lift, by means of another cord running over pulleys, the end of said lever when the pull on the rope by the attendant or person using the elevator ceases. Said counterweight is also depended on to reset the valve in its normal position, and it must be sufficiently heavy for that purpose.

In using this device as the downward pull of the handle is made the cord becomes slack between *h* and *g*. When the car or platform is stopped at the bot-

tom of the shaft, the counterweight pulls up the lever, (marked *d*,) thus raising the cable, which in that position hangs the full length of the shaft on one side and nearly the full length on the other, and also resets the valve. When the car or platform is stopped at the top of the shaft, the counterweight is opposed, apart from the force necessary to reset the valve, by the weight of that side of the cable which extends to the pulley at the bottom of the shaft. The difference in weight between the cable as suspended over the upper pulley and the counterweight therefore varies with the position of the car, being least at the bottom and greatest at the top. The force which the attendant must use in pulling down the handle *h* must overcome this excess of weight, together with that resistance which, when the pull ceases, resets the valve. This force therefore varies in like manner as described. The pull when the elevator is at the top is stronger by the weight of nearly one entire side or half of the cable than when at the bottom, and the variation is continuous between these extremes. Upon the showing of the evidence here this variation in the force required from the attendant might be so great in a tall building as to render the operation of the Lampe control device impractical.

It is said in this publication respecting the Lampe device that—

for moving * * * valves * * * that have not the tendency to return to the closed position the mechanism is doubled, whereby the loose pulleys are placed on a two armed lever that can then act directly as a cock-key or beam.

No suggestion is made in said publication touching any method or means of doubling or duplicating the "mechanism." The matter quoted is all that is shown on that subject. If we suppose the two-armed lever to be a beam, such as is shown in the Reynolds device, pivoted in the center and having a pulley at each end, then, assuming each of the cords to have both ends fastened to the car, as shown with respect to the one cord in the diagram accompanying said publication, the device would be manifestly inoperative. The handle *h* could not be pulled down, since the cord over the adjacent and opposive pulley would resist the pull—in other words, both cords must, under such conditions, necessarily remain taut.

If one of the cords or ropes in the Reynolds device be discarded and in place of the pulley at the end of the lower rocking beam, around which said discarded rope would pass, a spring or weight be made use of to act automatically in bringing said beam back into the position where the handle L will be vertical—in other words, to react against the force used by the attendant in handling the car—then the Reynolds device would be analogous to that of Lampe. It would then also be subject to the objections already noticed with respect to the Lampe patent. The attendant must use force enough to overcome the resistance of the weight or spring, and also the varying resistance of that portion of the cord or rope which, having its attachment underneath the car, lengthens as the car rises. In the Reynolds patent there is no weight or spring to be overcome by the attendant and the two cords pendent from the ends attached to the lever under the car, and which lengthen equally as the car rises, counterbalance each other in weight, so that the movement of the handle L by the attendant is not affected by any difference in weight between the two.

The arrangement of the two cables "substantially as described" in the specification and illustrated in the diagram of the Reynolds patent whereby they counterbalance each other and secure substantial steadiness and uniformity of force in the movement by the attendant of the control device is the characteristic feature—the point upon which the invention centers—in that patent. There is nothing in the Lampe publication which could have suggested the Reynolds device; nor, for reasons already given, does the arrangement of the single rope, as shown in the specification of Patent No. 456,107, to Baldwin, anticipate the Reynolds patent in suit. The last-named invention is not a doubling or duplication of cables or of "mechanism," as shown by Lampe or by Baldwin. The "two cables attached positively at each of their ends, * * * substantially as set forth" in the specification and diagrams, is an essential element of the invention in suit. With the Lampe publication or the Baldwin patent before him it would have still called for invention in Reynolds to arrange two cables as shown in Patent No. 456,122.

There was, it seems, an interference proceeding in the Patent Office between Baldwin and Reynolds. The issue there concerned a claim framed in words following:

1. In controlling devices for elevators, the combination of a car, flexible means attached to the car to travel therewith and connected to the operating mechanism, and a device on the car to take up or pay out said flexible means to shift the operating mechanism.

The "flexible means" in Baldwin's patent was, as already stated, a single rope. The feigned claim, as applicable to his patent, implies any kind of device which upon analysis turns out to be a mere multiplying of that invented by him. So far as the mere idea of two cables being essentially a duplicate of his one cable is concerned, Baldwin is doubtless prior to Reynolds; but the method of combining the two cables, which, as has been suggested, is the essential point in the Reynolds patent, is not comprehended in said feigned claim; nor is it material that Reynolds, as against Baldwin, would not be entitled to a claim as framed in the interference proceeding.

In the course of this interference Reynolds made a concession to Baldwin in words following:

I hereby concede priority of invention to C. W. Baldwin in the matter of the above interference, so far as the invention contained therein is set forth in the single-rope device in the application of said C. W. Baldwin, No. 179,554.

This concession, which concerns the patent already spoken of and afterward issued as No. 456,107, in view of what has been said, amounts to nothing as against the validity of the Reynolds patent.

The application for the Reynolds patent was filed January 26, 1887. The patent was finally granted July 14, 1891. On December 15, 1885, one Rudolph C. Smith filed an application and on January 26, 1886, there was issued to him a patent showing a device which, as counsel for appellees apparently concede, would have been an anticipation of the Reynolds patent; but appellees meet the point with the insistance that Reynolds was, in fact, the prior inventor. An original sketch or free-hand pen-and-ink drawing on

paper was put in evidence by appellees. It is not seriously contended and this court cannot hold on the evidence here that this drawing was not made by Reynolds, that it was not made in September, 1884, and that it was not an original conception, so far as Reynolds was then advised. Appellants say that such drawing shows the invention of another patent applied for by Reynolds in January, 1885, wherein the two cables pass from the car down to the pulleys, as hereinbefore described, thence up the sides of the shaft and over the upper pulleys and down to weights pendent at their ends. This latter device plainly appears in the sketch and as the principal subject-matter thereof; but lines are also indicated from each of the upper pulleys to opposite points of attachment in the roof of the car. These lines show unmistakably the conception of the patent in suit, though it is obvious that at the time of making the sketch Reynolds regarded the plan of the pendent weights as preferable to that of fastening the upper ends of the cables to the car; but in February, 1885, he reduced the invention of the patent in suit to practice by detaching the weights from the ends of the cables—in the case of an elevator in a building in Chicago equipped with his pendent-weight device and fastening the ends to the top of the car.

Appellants contend that the sketch of September, 1884, does not show the conception of the device in suit. We think, as did the trial judge, that it does beyond reasonable question. This original sketch and the proof concerning it being in the case, it became necessary for appellants to prove that the invention by Smith was prior to September, 1884. They attempted to prove by the recollection of witnesses that Smith had sketched the device in question in 1881. Rebutting testimony was introduced by appellees. From all the testimony on the subject it is plausibly contended that what Smith then sketched was a different device forming the subject-matter of an application for a different patent. If the sketch then made by Smith did show the conception of the Reynolds invention, such sketch was not preserved, nor was there any reduction to practice by Smith. If the idea of the invention were present in Smith's mind in 1881, he apparently regarded it as of no practical value. It was not for him to place an embargo on invention by conceiving and merely retaining the idea without taking steps to put it in practice or secure a patent.

In December, 1884, Reynolds and Smith, who were intimate acquaintances, met and conversed with each other. In the course of their conversation they talked of the invention sketched by Reynolds in September. Reynolds, as he testifies, then made a pencil drawing showing his plan of the pendent weights. He swears also that Smith then made a pencil drawing showing the cables attached to the car. These pencilings by the two were not put in evidence or preserved. It may be that Smith conceived the invention prior to this talk. It is possible, however, that he conceived it during the talk and from what was then disclosed to him by Reynolds himself. But Reynolds evidently received at that conversation, and, for a time at least, retained the impression that Smith had anticipated him in the plan of attaching the upper ends of the cables to the car. Admissions subsequent to this conversation, express or implied, by Reynolds, are urged in aid of the showing that Smith was the prior inventor; but these admissions were evidently based on the conversation of December, 1884, and the impression already referred to then made on Reynolds. They cannot raise any estoppel as against these appellees and in favor of these appellants; nor do they have any efficiency as proof against the sketch of September, 1884. That memorial of the Reynolds invention, with the testimony concerning it, is substantially unassailed. The showing of the record would not justify a pronouncement from this court that the trial judge ought to have declared the priority of Smith's invention as a ground for invalidating the Reynolds patent.

Assuming the validity of this patent, it is not contended that appellants do not infringe The three claims of the Patent No. 328,614, together with the two claims of Patent No. 456,122, all concern portions of the equipment of a hydraulic elevator. The assignments of error are three in number and are set forth in the statement which precedes this opinion. The first assignment is not distributive or severable as between the five claims. The proposition to which appellants commit themselves is that their construction is not an infringement of any one of the five claims. This court cannot sustain the assignment in form and effect as made without declaring that no one of the claims is infringed. So also as to the second assignment. The proposition therein put forward by appellants is that neither of the patents is valid. This court cannot sustain this assignment without holding that both are invalid. But two of the claims were infringed, and one of the patents—namely, that numbered 456,122—is valid. Assuming that the two assignments of error meet the technical rules of this court—a matter not here decided since a court of error may of its own motion reverse for an error not assigned—this court must necessarily overrule said assignments. The situation here is plain enough without elaboration. It has been law time out of mind that a demurrer to an entire declaration must be overruled if there be one good count. Such demurrer asserts that no cause of action is shown. It therefore raises no further question if one count be good. The argument in such case may properly cover all the counts, but the ruling is complete with the determination that one count is good.

Since this court may reverse for an error not assigned and in view of misunderstandings as to the scope and effect of this appeal, the validity and alleged infringement of the three claims of Patent No. 328,614 have been considered. Claims 2 and 4 are in words following:

2. The combination, with a hydraulic cylinder and piston and a change or reversing valve for controlling the flow of water to and from the cylinder, of an air-escape pipe leading from the top of the cylinder to the valve-casing and controlled by said change or reversing valve, substantially as and for the purpose herein described.

4. The combination, with the horizontal cylinder A, its piston, piston-rod, and cross-head, of two sets of sheaves, B B', the change or reversing valve whereby the flow of water to and from the cylinder is controlled, and the water-passage H^3, leading from said valve to the bottom of the cylinder at the rear end thereof, whereby the discharge of any foreign matter from the cylinder will be facilitated, substantially as and for the purpose herein described.

Reading these claims in connection with the drawings and specification, the matter to be noted as bearing upon the infringement in dispute is the provision whereby at each backward full stroke of the piston the accumulated air is expelled from the cylinder through one opening or passage-way and the water by another, these two passage-ways uniting after they have ceased to be integral with the interior space of the cylinder and thence constituting a common passage-way to a common exit on an elevation with the uppermost surface of the cylinder. "The flow of water" spoken of in claim 2 and means therefor—namely, the large pipe from the bottom of the cylinder or some other separate means for "the flow of water"—must be thought of in order that the air-escape pipe can be an air-exit as contrasted with a water-exit. By fair implication from the terms of the claim the change or reversing valve controls a flow of water which leaves the cylinder at one point and also a flow of air which leaves the cylinder at another point.

Claim 4 contains factors other than and in addition to factors shown in claim 2. The emphatic feature is the large pipe or water-passage H^3. This exit from the cylinder is a water-exit connected at the lowest plane of the cylinder, so that the water-flow may carry with it hard substances which might otherwise remain in the cylinder and interrupt the free movement of the piston; but it is described as a water-passage, not an air-exit or an exit for water and air, and in the invention of this patent described in the specification a passage intended for air and a passage for water, the two passages being separate and distinct from each other where they leave the cylinder, is a feature. The "cylinder A" and "the change or reversing valve," constructed "substantially as and for the purpose herein described," are a cylinder with a hole in or near the upper surface, through which the accumulated air escapes at each backward stroke of the piston, and a valve with a hole in the upper casing or some other means of ingress whereby the air from the cylinder enters. A closed passage from one hole to the other, or from the hole in the cylinder to the interior of the valve-casing, is shown as part of the invention and is necessary to make the combination operative as intended. The air-escape pipe or some means other than the water-passage H^3 for the escape of air must be assumed in view of the specification and drawings in order that the passage H^3 may be in fact what it is called and evidently intended to be—a water-passage and not the common and sole passage for water and air.

In the construction of appellants the water is expelled from the cylinder through an opening along the lowest portion of its rear end into a compartment the lower internal level of which is not above the lowest portion of the cylinder. It is thence carried upward to the highest elevation of the cylinder, where it is joined by the air driven into the same compartment by the same movement of the piston through a hole or passage-way in the end and near or adjoining the extreme upper surface of the cylinder, such water and air thus driven through these two exits being from their place of junction, as indicated, carried together and expelled through the main change-valve. The air is forced out of the cylinder at one place of exit, the water mainly at another, at each backward stroke of the piston, and the air-exit opens into the water-passage, so that the two elements finally pass out at a common place of exit through the main change-valve and on an elevation with the upper surface of the cylinder. It may be added that the water-exit from the cylinder is apparently so constructed that the outward flow or wash through said exit may carry with it deposits of foreign matter on or near the bottom of the cylinder.

We do not understand from the record that either of the combinations set forth in these claims, as read in connection with the drawings and specification, was contained in the prior art. These two claims were held valid and the infringement declared as well by Judge Blodgett, who was so sure upon both points that he granted a preliminary injunction, as by the learned circuit judge from whose decree this appeal was taken. Apart from niceties of construction and in view of the invention, as shown and described in the patent, it does not seem appropriate on the state of this record to reverse the ruling of the circuit court on either of these claims.

Following are the words of claim 6:

6. The combination, with the cylinder and piston of a hydraulic elevator and a passage for liquid to and from the cylinder, of a shut-off or safety valve arranged in said liquid-passage, an unbalanced piston for holding said valve normally open, and appliances through which said valve is moved automatically against the pressure of water on said piston to close the valve as the main piston approaches the end of its movement, substantially as herein described.

As shown by the drawings and specification of this patent, the secondary or limit stop-valve, called in the claim the "shut-off" or "safety" valve, is placed in the water-passage between the main or change valve and the cylinder. Through this passage the water is driven to the cylinder from the main valve and from the cylinder to the main valve. In or across this passage is the safety-valve. Its purpose is to stop, when the car is at the top or bottom of the shaft, the flow of water, whether it be coming in toward the cylinder or going out from the cylinder. It is in operation and effect a single valve, and its action "against the pressure" of the water or in returning to its normal position by means of the unbalanced piston is the same whether the flow be toward or from the cylinder. The unbalanced piston, together with leakage-holes through the disks which form the valve, is the means whereby the flow of water to or from the cylinder is gradually stopped and started in the reverse direction through the passage H^3 when the car is at the bottom or top of the shaft. A passage for liquid to and from the cylinder wherein is arranged a shut-off or safety valve held normally open by the expedient of an unbalanced piston, substantially as shown in the drawings and described in the specification, is the important factor in this claim. When a hydraulic cylinder is constructed so that there is one water-passage for the flow toward such cylinder and another for the outward flow, a safety-valve in either to stop the flow was in the prior art. The idea of the patent in suit, so far as concerned the matter of claim 6, was a single water-passage for the flow to and from the cylinder, and in that passage a single valve to stop the flow in either direction when the car was about

to pass the proper limit at the top of the shaft in going up or at the bottom in going down. Apart from anything in the prior art this would seem to be the sense of the claim in view of its terms and of the drawings and specification.

In the construction of appellants there is no passage for water to and from the cylinder which contains any shut-off or safety valve. In that construction there are two valves operated by a common stem or a double valve one part of which closes a passage for the exit of water from the cylinder, while the other part is adapted to close another passage for the flow to the cylinder. While the flow through the inlet-passage is stopped by one of these valves, the outlet-passage is unobstructed. The inlet-passage is closed by the valve appropriate to it when the car is at the top of the well, the other valve being meantime withdrawn, so that so far as that valve is concerned the outlet-passage is entirely open. The reverse of this occurs when the car is at the bottom of the well. Neither an unbalanced piston nor any instrumentality other than the main change-valve is needed or used to start the flow of water to the cylinder when the car is at the bottom or from it when the car is at the top. In this construction the safety or shut-off valves are not in the water-passage from the main valve to the cylinder. In this construction, as already said, there is no passage for the flow of water to and from the cylinder in which is arranged a safety or shut-off valve; nor is there apparently anything answering to the leakage-holes, which seem to be functional in the shut-off or safety parently anything which has a function equivalent to that of the unbalanced piston, as described in the valve, as shown in the patent in suit; nor is there appatent in suit. These latter suggestions seem not inappropriate in connection with the important point of distinction—namely, that appellants have not arranged a shut off or safety valve in a passage through which the water flows in both directions between the main valve and the cylinder. Construing claim 6 with reference to the invention described, the construction of appellants, so far as concerns that claim, would not appear to be within the monopoly of the patent in question.

The third error alleged by appellants concerns the title of appellees to the patent numbered 328,614. The title comes to them by divers assignments. Copies of the record in the Patent Office of such assignments were put in evidence, and no other proof of the original instruments or the signatures thereto was made. It is the want of such additional proof, rather than the incompetency, for any purpose, of the copies from the record in the Patent Office, which appellants insist on. Section 4898 of the Revised Statutes of the United States is in words following:

SEC 4898. Every patent or any interest therein shall be assignable in law, by an instrument in writing; and the patentee or his assigns or legal representatives may, in like manner, grant and convey an exclusive right under his patent to the whole or any specified part of the United States. An assignment, grant, or conveyance shall be void as against any subsequent purchaser or mortgagee for a valuable consideration, and without notice, unless it is recorded in the Patent Office within three months from the date thereof.

Section 892 is in words following:

SEC. 892. Written or printed copies of any records, books, papers, or drawings belonging to the Patent Office, and of Letters Patent authenticated by the seal and certified by the Commissioner or Acting Commissioner thereof, shall be evidence in all cases wherein the originals could be evidence; and any person making application therefor, and paying the fee required by law, shall have certified copies thereof.

Section 4898 does not require that any instrument in the chain of title to a patent shall be recorded; but all such assignments may be recorded. The sense, the essential significance and intent of this section, is that the record or official copy of any assignment shall give to any person interested the *prima facie* assurance that an original assignment was made in terms as shown in the record; that such instrument was subscribed as shown; that it was delivered; that the signature thereto is the genuine signature of the assignor, and that such assignor had an assignable interest according to the purport of the instrument. These are the inferences, the *prima facie* inferences, which any person interested is authorized, and authorized by law—that is to say, by the section itself—to draw. The laws of thought are not suspended when the inquiry arises in a court of justice. The self-same interferences spring up *prima facie* when a litigant in a patent case, being called on to prove that A assigned to B, produces a writing purporting to show on its face an assignment from A to B, which is proven to be a copy of a record in the Patent Office. The record of assignments in the Patent Office is a record "belonging to the Patent Office" within the literal terms of section 892; but in the absence of that section and on the general principles of evidence a paper purporting to be a copy of a record in the Patent Office could be proven to be such copy by the sworn testimony of the person who made it or of a person who had compared it with the original record in the Patent Office. The view here stated as to the *prima facie* probative force of a copy from the record of an assignment in the Patent Office has been substantially taken in many reported decisions. (*Brooks et al.* v. *Jenkins et al.*, 3 McLean, 432; *Parker* v. *Haworth*, 4 McLean, 370; *Lee* v. *Blandy*, 1 Bond, 361; *Diedrich* v. *Agricultural Company*, 26 Fed. Rep., 763; *National Folding Box & Paper Co.* v. *American Paper Pail & Box Co.*, 55 Fed. Rep., 488.)

The same theory as to the probative force of records made by authority of law in the case of alienations of other property is recognized with more or less definiteness in the following cases: *Sudlow* v. *Harshing*, (108 New York, 522;) *Chamberlin* v. *Bradley*, (101 Mass., 188;) *Ward* v. *Fuller*, (15 Pickering, 185;) *Lane* v. *Bommelmann*, (17 Ill., 95;) *Seeley* v. *Wells*, 53 Ill., 120;) *People* v. *Lee*, (112 Ill., 113;) *Sucker* v. *The People*, (117 Ill. App., 126;) *Sampson* v. *Noble*, (14 La. An., 347;) *Evanston* v. *Gunn*, (99 U. S., 660;) *Merchants' Navigation Company* v. *Amsden*, (25 Ill. App. 307.)

Said the Supreme Court of Massachusetts, speaking of the probative force of a copy of a deed from the public registry of deeds, in *Chamberlin* v. *Bradley*, *supra*:

Between natural persons the production of a copy is evidence of the execution of the deed by the person whose deed it purports to be; of its delivery; of its due acknowledgment; and, in the absence of other evidence, of the seizin of the grantor. This involves the presumption or inference of fact, first, that the seal was the seal of the grantor; second, that it was affixed by him or by his authority; third, that he signed his name or authorized it to be signed by him or in his presence; fourth, that it was the grantor who made the acknowledgment; fifth, that the certificate of the magistrate is genuine; and sixth, that the grantor was seized of the land which the deed purports to convey.

It is not here meant that a plaintiff in ejectment could make out a *prima facie* case by putting in evidence a copy from the record of the last deed in his chain of title. The presumption that the assignor of a patent, for instance, was vested with the interest assigned on the face of the instrument or that the grantor in a land conveyance was seized of the estate transferred on the face of the deed, in the the absence of other proof tracing *prima facie* the title of such assignor to the original source or to a source which was common to the contending litigants, would, doubtless, be sufficiently rebutted, in the case of a patent by the adverse user, in the case of land by the adverse possession.

In *Merchants' Navigation Co.* v. *Amsden* (25 Ill. App., 307) and in *Sampson* v. *Noble* (14 La. An., 347) records in the collector's office were used as *prima facie* proof to show the ownership of a vessel. In a case where the litigant against whom the copy is offered was himself the assignee in the assignment to be proved, and may, for that reason, be assumed to have the custody of the original, an objection that no notice was given to him to produce the original will be good, but such objection must specify the want of notice as its ground. On the other hand, if a litigant should offer a copy from the Patent Office to prove an assignment wherein he himself is assignee and presumptively in possession of the original an objection specifically on the ground that he should produce or show the loss of or account for the original would likewise be good. (*Draper* v. *Hatfield*, 124 Mass., 53; *Stockwell* v. *Silloway*, 105 Mass., 517; *Samuels* v. *Borrowscale*, 104 Mass., 207; *Blanchard* v. *Young*, 11 Cush., 345; *Palmer* v. *Stevens*, 11 Cush., 147; *McNichols* v. *Wilson*, 42 Iowa, 385.)

The record in the case at bar shows the following note of the objection made when the copy from the Patent Office of the first in the chain of assignments was introduced in evidence before the Commissioner:

Counsel for defendants objects to the introduction of the said paper as an exhibit for its admission in evidence, on the ground that the original of which it is certified to be a copy, so far as the purposes of the suits which defendants' counsel represents, is immaterial, indefinite, incompetent, and not proven.

This objection in terms is that the record in the Patent Office is "immaterial, indefinite, incompetent, and not proven." "The original of which" the paper put in evidence was "certified to be a copy" is the record in the Patent Office, not the original writing of assignment. The meaning of the objection is that the record in the Patent Office is "immaterial," etc. This objection was repeated or, rather, referred to in connection with each succeeding assignment in the chain of title, as the copy from the Patent Office was put in evidence. There was no call for any original writing of assignment; nor was any objection made on the ground that any original writing of assignment was not produced or its loss accounted for. The matter was not brought in any way to the attention of the circuit judge; nor is it asserted as error that any copy from the Patent Office was admitted over the objection that the original writing was not produced or its loss accounted for. The only question presented by the record is the *prima facie* probative force of the Patent Office record of an assignment.

In *Mayor of New York et al.* v. *The American Cable Railway Co.* (60 Fed. Rep., 16) the Federal Court of Appeals at New York, following an *obiter dictum* by the Federal Court of Appeals at Boston in *Paine* v. *Trask*, (65 O. G., 298; 56 Fed. Rep., 233,) decided that under the sections above quoted from the Revised Statutes of the United States a certified copy from the records in the Patent Office would not *prima facie* prove the assignment without a further showing as to the execution of the original instrument. It is argued by the learned writer of the opinion that the statute does not require an assignment to be recorded, that the original is not left in the custody of the Patent Office, and that no certificate of acknowledgment or proof of execution is required by the statute to be made in connection with such instrument; but the line of reasoning upon which the courts have developed the rule already stated does not involve any one of the conditions named.

The statute makes it the duty of the Commissioner of Patents to record assignments, meaning assignments that are genuine. He has no authority to record a spurious instrument. A spurious assignment recorded in the Patent Office would not be in law a record of that Office. The record of an assignment is in law tantamount to a finding or certificate by the Commissioner that the original is genuine. It matters not that the Commissioner may act on the mere assumption that whatever paper of this kind is presented for record is genuine. He is a public officer charged by law with the duty of recording only such as are genuine. The law attaches to his act in making the record the *prima facie* presumption that the instrument copied upon his record-book is entitled to record—that is to say, is genuine. The argument that a spurious assignment may be mistakenly put upon the record might be urged against the policy of the statute, but not against the obvious sense of it. Such an argument might also be urged against the ordinary statutes for recording deeds, for it would be no more difficult to secure the recording of an instrument with a spurious certificate of acknowledgment than an instrument with no acknowledgment at all, but with a spurious signature. All such enactments proceed upon the assumed integrity of men on the average, as civil institutions in general in this country assume a fair degree of integrity and intelligence in the average man. This court cannot accede to the view announced in *Mayor of New York et al.* v. *American Cable Railway Company*, *supra*. The rule as understood and acted upon prior to that decision is considered by this court to be law. For fifty-two years (*Brooks et al.* v. *Jenkins et al.*, *supra*, was decided in in 1844) that rule has prevailed. As pointed out by Judge Coxe in *National Folding Box & Paper Co.* v. *American Paper Pail & Box Co.*, *supra*, a holding that the Patent Office record of an assignment shall have no force as *prima facie* proof of the original writing would often entail great and useless expense, if not an entire defeat of the rights of the complainant, in a patent case. A spurious or counterfeit assignment put of record in the Patent Office would be easily and certainly detected by any person interested in the inquiry, especially in the case

of any patent of real value. The possible gain from such a rascality would not be worth the risk. The complainant in a patent suit is ordinarily making actual use of the patent. What may be called his "possession" of the patent property is usually open and notorious. It is no hardship upon an infringer who, claiming no right in himself, proposes to dispute the showing of the Patent Office on the matter of title to require from him such proof as might at least raise a fair presumption that the original of some assignment shown of record in the chain of title is spurious.

In accordance with the prevailing opinion of the judges on this hearing the adjudication appealed from is affirmed in all respects, except as to the sixth claim of Patent No. 328,614, and as to that claim the decree is reversed, with the direction that the order of reference be to that extent vacated and the bill to that extent dismissed for want of equity, and the cause is remanded to the circuit court.

BUNN, *J.*:

In my view the question whether or not the decree appealed from be interlocutory or final is not necessarily involved. I therefore express no opinion on that point. In other respects I concur in the foregoing opinion and in the conclusion above announced.

WOODS, *J.*, dissenting:

There is manifestly no present necessity for considering whether the decree appealed from is final or interlocutory; but that it is interlocutory only has been determined too often to admit of further question. (*Barnard* v. *Gibson*, 7 How., 650; *Humiston* v. *Stainthorp*, 2 Wall., 106; *Iron Co.* v. *Martin*, 132 U. S., 91; *McGourkey* v. *Toledo & Ohio Ry.*, 146 U. S., 536; *Latta* v. *Kilbourn*, 150 U. S., 524; *David Bradley Mfg. Co.* v. *Eagle Mfg. Co.*, 66 O. G., 315; 6 C. C. A., 661; 18 U. S. App., 349; *Jones* v. *Munger, etc., Co*, 1 C. C. A., 668; 2 U. S. App., 188; *Richmond* v. *Atwood*, 61 O. G., 1655; 2 C. C. A., 596; 5 U. S. App., 151; *Marden* v. *Campbell, etc., Co.*, 15 C. C. A., 26; 33 U. S. App., 123; *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, 72 Fed. Rep., 545; *Lockwood* v. *Wickes*, eighth circuit, 75 Fed. Rep., 118; *Brush Electric Co.* v. *Western Electric Co.*, this court, October 5, 1896; *Raymond* v. *Royal Baking Powder Co.*, this court, October 12, 1896.)

What shall be the effect of the affirmance or reversal of an interlocutory order can properly be considered when the question arises out of subsequent action of the court, of which an instance is found in the case of *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, *supra*, where, after affirmance by the Court of Appeals, the circuit court, without proof or suggestion of any change in the situation after the decree was entered or after it was affirmed, modified the injunction in material respects, and on a second appeal it was held that the modification ought not to have been made. That, I think, is the extent of the ruling, though there are *dicta* in the opinion to the effect that after the affirmance the circuit court had no power to alter the decree, which when appealed from was conceded to be only interlocutory. I agree with the writer of the principal opinion in this case that—

there is no power in the Court of Appeals whereby its affirmance, or approval on review, of a decree of the circuit court, can give a finality to that decree which it did not have when entered of record in the circuit court.

In the case of *Andrews* v. *National Foundry and Pipe Works* (24 U. S. App., 81; S. C. 10 C. C. A., 60, 67) this court, in an opinion concurred in by Justice Harlan, said:

Notwithstanding the rule in respect to final judgments, that on a mandate from the Supreme Court affirming a decree the circuit court must execute its decree as affirmed (*Durant* v. *Essex Company*, 101 U. S., 555), it has been decided that the affirmance of an interlocutory order of injunction does not operate to deprive the circuit court of its inherent power to suspend the injunction whenever the ends of justice call for the exercise of such power (*United States Electric Lighting Company* v. *The Edison Electric Light Company* 2, 11 U. S. App., 600); and by the same principle, we think, a decision on appeal reversing or modifying such an order should be deemed conclusive only in respect to the particular order reviewed, and in the further progress and upon final hearing of the case in the circuit court the opinion and ruling on the appeal should be regarded as advisory only,—more or less controlling according to the circumstances. In this case the circuit court looked upon the mortgage of the appellants as a nullity. For the reasons given in the opinion this court reached the opposite conclusion; but if, instead of the positive conviction declared, we had entertained grave doubt upon the point on which the question turned, it would have been our duty to rule just as we did, because an injunction before final hearing should be allowed only when the right to it is clear. (*Standard Elevator Company* v *Crane Elevator Company*, 64 O. G., 488; 9 U. S. App., 556.) It is plain, therefore, that our decision did not involve and should not be regarded as a technical and final adjudication, for the purposes of the case, of the points which we considered in reaching our conclusion that the order of the circuit court was wrong, or of the questions propounded in the petition for a rehearing.

While in that case the order appealed from was only a temporary one, the decision suggests what it seems to me must become the practice in respect to interlocutory injunctions or orders which result from a hearing on the merits. Indeed, that is the scope of the decision in *United States Electric Lighting Company* v. *The Edison Electric Light Company*, *supra*. Such orders, being interlocutory, if not appealed from, it is certain, remain subject to modification or revocation, and if appealed from and affirmed it must still be true from their very nature that they remain interlocutory and, technically speaking, not beyond the power of modification by the circuit court until made final by a further order or decree; but as a matter of practice the right of the circuit courts to make such modifications, without new proofs showing the necessity or propriety of so doing, on grounds not presented and considered on the appeal, ordinarily will not be recognized, and on a second appeal the original order as affirmed, if modified or set aside after affirmance, will be summarily reinstated unless the Court of Appeals shall choose to reconsider the merits, as unquestionably it would have the power to do. On the other hand, if an interlocutory order is reversed because upon the face of the bill or upon the proofs the suit cannot be maintained for want of equity, the mandate, as in *Richmond* v. *Atwood* and in *Jones* v. *Munger*, *supra*, may be that the order for an accounting be set aside and that the bill be dismissed; but it was not decided in those cases and does not follow that the circuit court, notwithstanding such a mandate, may not upon request permit an amendment of the bill, if that be necessary and possible, or upon proper showing allow the introduction of new or additional evidence. All this seems to me to be the logical outcome of the legislation whereby Congress has authorized appeals from interlocutory orders, and instead of involving an "impossible and absurd result" the practice, under limitations always within the discre-

tion of the courts, will prove in the highest degree salutary, because in every suit, so long as it remains pending, it will be possible, in the light of later decisions of other courts, and especially of the Supreme Court, or of further investigation by the same court, to correct any error of law which may have intervened, and likewise to give the parties the benefit of the discovery of new evidence, without formal proceedings to review or to open the decree for that purpose. The practice suggested involves no undue prolongation or increase of litigation to the injury of the public.

It is said that "this court has no power to review its own adjudications;" but, while true in respect to adjudications upon appeals from final decrees or judgments, except upon petitions for rehearing, the proposition is not and cannot reasonably be deemed applicable to decisions upon appeals from interlocutory orders. The same is true of the proposition, taken from the opinion in the case of the Bissell Carpet Sweeper Company, that "the judicial function of considering involves the function of determining." That is unquestionable; but it does not follow, under a statute authorizing the review of interlocutory orders pending further proceedings in the court below, that in such cases "the decision of an appellate court is final." The determination of a final matter is final, but a decision upon an interlocutory matter *ex vi termini* must be interlocutory.

Coming to the merits of the appeal, the third specification of error presents the question whether the complainants had proved title to Patent No. 328,614. The proof made consisted in certified copies of the record in the Patent Office of assignments purporting to have been made by Reynolds, the patentee, to the Crane Brothers Manufacturing Company, and by that company to the Crane Elevator Company, and by the last-named company to James H. Raymond, trustee. For the purpose of showing that the alleged assignments had been recorded in the Patent Office, as provided in section 4898 of the Revised Statutes, the copies were admissible in evidence over the objection of incompetence and irrelevancy; but that they constituted no proof of the execution or genuineness of the original instruments seems clear both on principle and authority. It has been so declared in well-considered cases by the Courts of Appeals in both the first and second circuits. (*Paine* v. *Trask*, 65 O. G., 298; 5 C. C. A., 497; 5 U. S. App., 283; *City of New York* v. *Am Cable Ry. Co*, 67 O. G., 1334; 9 C. C. A., 336;) and even if those decisions were doubtful this court ought not now to assert a different rule. But it is to be observed in this instance that the assignments of which copies were put in evidence were in the possession of the complainants or their trustee, and, that being so, even under the rule in respect to office copies of conveyances of real estate under the registry laws the production of the originals or an excuse for the failure was necessary. As the rule is stated in *Ward* v. *Fuller*, (15 Pick., 185, 187,) cited in *Chamberlain* v. *Bradley*, (101 Mass., 188)—

where the party relying upon a deed of conveyance is the grantee, or person who is entitled to the possession of it, he must produce the original, or lay a foundation, in the usual manner, for the production of secondary evidence.

I am of opinion that claim 2 of Patent No. 328,614 shows no invention. An exactly similar construction, it is admitted, existed in the prior art, and if it be true, as said, that the prior device "was at once an air and water pipe," it was no less an anticipation. It is not shown that air and water both do not pass off through this pipe. They certainly would but for the presence of the bottom connection, covered by claim 4, and the fact that the escaping water is diverted through a new channel does not make of the unchanged old device a new invention.

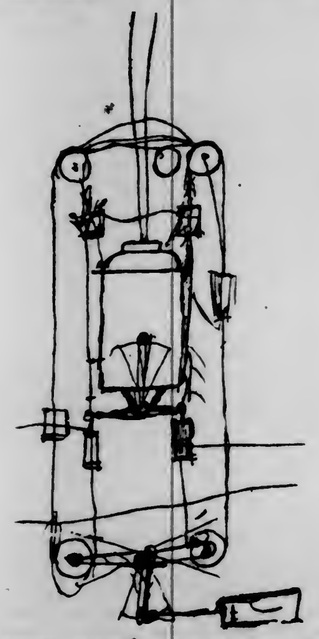
That claim 4 contains nothing patentable is so evident that counsel for appellees are constrained to insist that while claim 2 is for the air-escape *per se*, claim 4 is for the combination of the bottom discharge and air-escape with the reversing-valve. The wording of the claim admits of no such interpretation. (*Lehigh Valley R. R. Co.* v. *Mellon*, 20 O. G., 1819; 104 U. S., 112; *Day* v. *Railway*, 49 O. G., 1364; 132 U. S., 98, 102; *Wollensak* v. *Sargent*, 66 O. G., 1007; 151 U. S., 221, 227.)

The third claim, for the stop-valve, if not anticipated by the prior art, as I am inclined to think it is, especially by the Curtis patent, No. 314,167, is certainly subject to a narrow construction and is not infringed by the valve of the appellants, which is different both in construction and mode of operation.

In respect to Patent No. 456,122 it is agreed that the invention is covered by the Smith patent, No. 334,907, and is anticipated thereby, unless it has been established that Reynolds was in fact the first inventor. The burden of proof in that respect was upon the appellees, and, unless the proof is clear and convincing, the prior patent should prevail. Smith's application was filed December 15, 1885, and the patent issued January 26, 1886. Reynolds filed his application January 26, 1887, and obtained his patent July 14, 1891. The evidence is not only not conclusive that Reynolds was the first inventor, but, as I view it, preponderates in favor of Smith's priority. Reynolds's own testimony on the point, together with that of Smith, is the most direct and satisfactory. As witnesses they were both inclined to favor the appellees, and whatever there is in their testimony favorable to the appellants should be given full credence. They agree that in December, 1884, Reynolds made a statement to Smith of his invention for which Patent No. 317,202, in which one end of the cables is connected with weights, was afterward issued, upon an application filed January 5, 1885, and that at the same time Smith explained to Reynolds that he had invented a similar device in which both ends of the cables were to be connected with the car. Smith also told Reynolds, as the latter testifies, that he had sent drawings of his design to his attorney and wondered that he had heard nothing from the Patent Office. This strongly corroborates the testimony of Smith that he had sent such drawings to the attorney; but whether he had done so in fact is a collateral and comparatively immaterial question. Smith and Reynolds in December, 1884, were under no mistake in respect to what each claimed to have invented, their devices being substantially alike in respect to levers and in the fact that the cables of both were to run with the cars, but different in that the cables of Reynolds were attached at the upper end to weights and those of Smith were attached at both ends to the car. With this proposition the subsequent conduct of both Reynolds and Smith is consistent. In the belief of both, probably, and certainly in the mind of Reynolds, the chief feature of invention in both designs was the double cable attached to the double lever in the car and running with the car, and in that view Reynolds feared conflict between them, and obtained of Smith a written agreement not to prosecute, without Reynolds's consent, an application for a patent upon his design. His own application for a patent Reynolds promptly presented, claiming the cables with weights, but making no claim for cables attached at both ends to the car nor any suggestion, either in the specification or drawings, that they could be so attached: and on that application he accepted the patent awarded him, (No. 317,202,) though he knew by practical experiments made as early as February or March, 1885, that the preferable method was to attach both ends of the cables to the car. Had he not been conscious that that mode of construction was not his, but was the conception of Smith, it is incredible that he would not have described and claimed it as his own, either by an amendment of his application, after the value of the conception had been demonstrated by experiment, or

by a new and independent application. On the contrary, through a period of two years or more he made repeated statements, in some instances to parties proposing to invest money on the faith thereof, to the effect that Smith was the first inventor, and not until persuaded thereto by others interested did he make the application wherein he claimed as his own the idea of attaching both ends of the cables to the car, and in respect to that application he afterward made affidavit disavowing his right in that particular. He testifies that that affidavit contains the language of another and not his own; but the force of that assertion is removed by the further statement and admission "I then believed and now believe the statements were true."

It is not a sufficient or satisfactory explanation of his repeated declaration, contrary to his testimony, that they were made on the faith of what Smith had told him. What he had done and when he had done it were facts within his own knowledge, and when in December, 1884, he was told by Smith of the latter's mode of attaching the cables he knew whether that conception was then new to him, and if in fact in the September before he had thought it out and, as now asserted, had produced a drawing wherein it was illustrated in connection with weights he would have so asserted to Smith at the time and would not in silence then and by repeated declarations afterward have conceded Smith's priority in that particular, and certainly would not have gone so far as to pay a price for an option to buy Smith's patent when issued and to bargain for delay by Smith until he could patent his own conception.



The drawing which is produced as an illustration of Reynolds's first conception is not the original, but an alleged copy made after the date of Smith's patent. If conceded to be a true copy of a genuine original, it is of obscure meaning and falls far short of showing an attachment of the cables to the upper parts of the car; and upon the entire evidence I am satisfied that if in September, 1884, Reynolds, as he has testified, made a drawing like the alleged copy, there was then in his mind no conception beyond what is shown in his Patent No. 317,202, for which he applied within a few days after his talk with Smith. The rule is that a drawing may be the foundation of a claim of priority of invention "if it be sufficiently plain to enable those skilled in the art to understand it." (*Webster Loom Co.* v. *Higgins*, 21 O. G., 2031; 105 U. S., 580, 594.) There is in the drawing in question, as the facsimile in the margin demonstrates, no sign of a connection between the end of one of the cables and the top of the car, and if the lines or scratches which are said to indicate such attachment of the ropes to the upper end of the car can be said to indicate anything more than other meaningless lines apparent in the drawing they may fairly be said to suggest ropes extending from one of the weights to the car and from one weight to the other, designed rather for the purpose of steadying the weights than to indicate that they may be dispensed with and the cables connected directly with the car. If Reynolds, when he produced the drawing, intended to illustrate such direct connection, and so explained to members of his family, there is no evidence of the facts, unless it can be found in his own uncertain testimony, and manifestly he is not a witness whose unsupported word, however explicit, should prevail against a patent which in numerous instances and once upon deliberate oath he has declared entitled to preference over the later patent granted to himself.

The testimony of Smith is clear and by reason of his avowed and evident friendliness to the appellees is the more convincing. Besides, he is strongly corroborated by Wells, Cartwright, and others, and by circumstances of which there can be no doubt, and, as it seems to me, there can be no other reasonable conclusion upon the entire contention over these patents than that Smith first conceived the idea of cables attached at both ends to the car, that he communicated the idea to Reynolds, and that when in February and March, 1885, the conception was reduced to practice in the shops of the Crane Company, in whose service both Smith and Reynolds were then employed, and in the Memory Building, in Chicago, it was the idea of Smith and not of Reynolds, and was so understood at the time by Reynolds himself. To that effect is the explicit testimony of Wells, who gives a detailed and clear account of the facts, showing that it was upon his insistance that Smith's idea, illustrated by drawings which Smith produced, was put to the practical test. That Smith's design was, in fact, so used the circumstances make probable, and the only evidence to the contrary is the testimony of Reynolds, discredited by his prior conduct and statements and by his affidavit.

Stress has been laid upon the decision against Smith in the interference with Baldwin; but aside from the lack of relevancy of that matter to the present issue it is clear enough that the contest in behalf of Smith's patent was purposely allowed to go by default—Smith himself refusing to testify in support of it—because his employers, who owned the patent, had on the other side an equal or greater interest. Besides, if in respect to the matter now in dispute Baldwin was prior to Smith, he was also prior to Reynolds.

But if Reynolds's priority were conceded it would be a grave question whether the holders of the patent are entitled to relief in equity. Their rights, I suppose, are not better than Reynolds's would be if he had made no assignment of his title, and, it being clear that he entered into an arrangement with Smith the evident purpose of which was to enable each to obtain a patent on similar devices without an interference with the other, ought either of them or the assignee of either to be allowed a standing in equity? I think not. In respect to the public and to the assignees of either the agreement which they made was essentially fraudulent. Letters in evidence demonstrate that solicitors so understood when prosecuting Reynolds's application for a patent, and but for the fact of the agreement and the subsequent manipulation by which a declaration of interference between Reynolds's application and Smith's patent was improperly prevented it is probable that this litigation would not have occurred.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 6. TUESDAY, NOVEMBER 10, 1896. PRICE—$5 per year

CONTENTS.

	Page.
ATTORNEYS	827
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	827
PREPARATION OF SPECIFICATIONS AND AMENDMENTS FOR THE PRINTER	827
MEXICAN PATENT LAW	827
PUBLISHERS' CATALOGUES	827
NOTICE	828
PRINT	828
ISSUE OF NOVEMBER 10, 1896	828
APPLICATIONS UNDER EXAMINATION	828
PATENTS GRANTED	829
REISSUES	None.
DESIGNS	966
TRADE-MARKS	968
LABELS	None.
COMMISSIONER'S DECISIONS—	
Jenkins *v.* Burke	973
DECISIONS OF THE U. S. COURTS—	
Tuttle, Trustee, Etc., *v.* Claflin *et al*	973

Attorneys.

(ORDER No. 1,105.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., October 9, 1896.

Order No. 1,028, dated January 12, 1895, disbarring from practice before this Office Robert A. Kellond, now of Toronto, Canada, is hereby rescinded, and with the approval of the Secretary of the Interior he is hereby restored to practice before this Office

JOHN S. SEYMOUR,
Commissioner.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Preparation of Specifications and Amendments for the Printer.

The Examiners are directed before passing applications to issue to carefully examine all the papers and see that they are in such shape and condition as to avoid all possibility of error being made by the printers. Whenever interlineations or erasures have been made in the specifications or amendments which would lead to confusion and mistake, the Examiners should require the entire specification to be rewritten before passing the case to issue.

MEXICAN PATENT LAW.

Amendment of June 2, 1896, to Article 33 of the Law of June 7, 1890. (*See* 57 *O. G.*, 412.)

PORFIRIO DÍAZ, Constitutional President of the United States of Mexico, to its inhabitants, know ye:

That the Congress has thought it well to decree the following:

The Congress of the United States of Mexico decrees:

Single Article. Article 33 of chapter V of the law of June 7, 1890, concerning patents of invention, is reformed in the following terms:

ART. 33. The possessor of a patant of invention or improvement is obliged to prove before the Ministry of Public Works, at the end of each five years of the duration of a patent and in order to preserve it for five years more, that he has made to the General Treasury of the Federation, at the conclusion of the first five years, a payment of fifty dollars; at the end of ten years a payment of seventy-five dollars, and at the end of fifteen years a payment of a hundred dollars. All these payments must be made in Mexican dollars.

The delay within which these payments must be proven will be two months, after the conclusion of the period of five years, and will have the character of being non-prorogable.

TRANSITORY PROVISION.

Interested persons who shall have incurred, up to the date of the promulgation of this law, the penalty of the lapse established in the third section of Article 37 of the law of June 7, 1890, may have recourse to the dispositions of this law to exempt themselves from the penalty of lapse, always provided they verify the corresponding payment of taxes within the three months following the date of its promulgation, and without prejudice to the rights which third parties may have acquired since the declaration of lapse.

Mexico, May 27, 1896.

TRINIDAD GARCÍA,
President of the Deputies.
RAFAEL DONDÉ,
President of the Senate.
JOSÉ MARÍA GOMBOA,
Secretary of the Deputies.
GUILLERMO DE LANDA Y ESCANDÓN,
Secretary of the Senate.

Therefore let it be printed, published, circulated, and given due force.

Given in the Palace of the Executive Power of the Union, in Mexico, June 2, 1896.

PORFIRIO DÍAZ.

To C. Manuel Fernández Leal, Secretary of State for Public Works, Colonization, and Industry.

I communicate this to you for your information and other purposes.

Liberty and Constitution, Mexico, June 2, 1896.

FERNÁNDEZ LEAL.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Notice.

It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

PRINT.

35.—Title: "A GALLERY OF CELEBRITIES." *The United States Playing Card Company*, New York, N. Y. Application filed September 19, 1896.

Issue of November 10, 1896.

Patents	429	No. 570,895 to No. 571,323, inclusive.
Designs	14	No. 26,250 to No. 26,263, inclusive.
Trade-Marks	43	No. 29,114 to No. 29,156, inclusive.
Prints	1	No. 35.
Labels	None.	
Reissues	None.	
Total issue	487	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	...	New Hampshire	5	1
Arizona Territory	...	...	New Jersey	12	...
Arkansas	3	...	New Mexico Territ'y	...	...
California	11	...	New York	64	14
Colorado	4	...	North Carolina	...	...
Connecticut	15	4	North Dakota	1	...
Delaware	...	...	Ohio	33	1
District of Columbia	4	...	Oklahoma Territory	1	...
Florida	3	...	Oregon	...	...
Georgia	4	...	Pennsylvania	57	4
Idaho	...	...	Rhode Island	6	...
Illinois	44	1	South Carolina	1	...
Indian Territory	...	...	South Dakota	1	...
Indiana	5	...	Tennessee	2	...
Iowa	6	...	Texas	4	...
Kansas	5	1	Utah	1	...
Kentucky	8	...	Vermont	1	...
Louisiana	4	...	Virginia	5	...
Maine	...	...	Washington	...	1
Maryland	3	1	West Virginia	2	...
Massachusetts	44	4	Wisconsin	6	...
Michigan	5	2	Wyoming	1	...
Minnesota	3	...	U. S. Army	...	...
Mississippi	2	...	U. S. Navy	...	...
Missouri	10	2			
Montana	2	...	Total to citizens of the United States	395	36
Nebraska	6	...			
Nevada	...	...			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	...	...	Mexico	...	...
Australia	...	...	Netherlands	1	...
Austria-Hungary	1	...	Newfoundland	...	...
Barbadoes	...	...	New South Wales	1	...
Belgium	2	...	New Zealand	...	...
Bermuda	...	...	Norway	...	...
Brazil	...	...	Orange Free State	...	...
Canada	4	...	Portugal	...	...
Canary Islands	...	...	Queensland	...	...
Cape Colony	...	...	Russia	...	...
Ceylon	...	...	Scotland	...	...
Chile, Republic of	...	...	South African Republic	...	...
Colombia	...	...	South Australia	...	...
Cuba	...	...	Straits Settlements	...	...
Denmark	...	...	Sweden	2	...
England	17	3	Switzerland	1	...
France	4	1	Victoria	1	...
Germany	13	4	West Australia	...	...
Guatemala	...	...			
India	...	...			
Ireland	...	...	Total to citizens of foreign countries	48	8
Italy	1	...			

APPLICATIONS UNDER EXAMINATION.

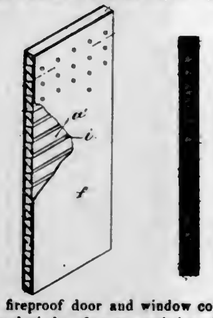
Condition at Close of Business November 3, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month			
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Oct. 9	Oct. 17	164
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes. Needles and Pins, Cutlery, etc	Oct. 5	Oct. 15	112
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Oct. 5	Oct. 10	202
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats and Glue, etc.	Oct. 3	Oct. 9	339
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro Chemistry, etc.	Oct. 5	Oct. 8	153
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Oct. 3	Oct. 8	193
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Oct. 7	Oct. 7	194
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Oct. 5	Oct. 5	213
120	IX. Hydraulics, Fire-Extinguishers, etc.	Oct. 3	Oct. 5	183
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Oct. 3	Oct. 5	250
246	I. Tillage and Fences	Oct 3	Oct. 2	218
221	XXIII. Instruments of Precision, Acoustics, etc.	Oct. 3	Sept. 12	332
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Oct. 6	Sept. 10	197
	Between one and two months.			
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Sept. 25	Oct. 27	90
250	VIII. Furniture, Beds, Store Furniture, etc.	Oct. 2	Oct. 16	207
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Sept. 30	Oct. 6	171
93	XXI. Textiles, etc	Sept. 24	Oct. 3	197
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Sept 15	Oct. 2	181
255	XII. Mechanical Engineering, Store-Service, etc.	Sept. 23	Sept. 30	244
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Sept. 12	Sept. 29	274
248	XVIII. Steam-Engineering, etc	Sept. 4	Sept. 28	155
253	X. Carriages and Wagons	Sept. 8	Sept. 23	4 8
215	XVII. Paper Manufactures and Printing	Sept. 16	Sept. 18	176
106	II. Farm Stock, Products, etc	Sept. 5	Sept. 11	305
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Sept. 3	Sept. 8	287
	Between two and three months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 13	Oct. 23	500
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Aug. 28	Sept. 2	499
240	VII. Harvesters, Games and Toys, and Velocipedes.	Aug. 10	Sept 10	1399
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 3	250
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Sept. 1	Sept. 2	442
102	XIX. Stoves and Furnaces	Aug. 31	Sept. 1	406
96	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 12	Aug. 12	397
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 2	Oct. 1	788
	Total number of applications awaiting action			10,235
	Under one month in arrears.			
	Designs	Oct. 3	Oct. 15	152
	Trade-Marks	Oct. 24	Oct. 29	44

PATENTS

GRANTED NOVEMBER 10, 1896.

570,895. **FIREPROOF DOOR, DOOR-FRAME, AND WINDOW FRAME AND SHUTTER COMBINATION.** THOMAS BAILEY, New York, N. Y. Filed Jan. 16, 1896. Serial No. 575,672. (No model.)

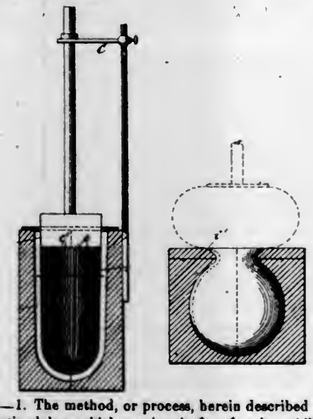


Claim.—1. In fireproof door and window construction, doors, shutters, and door and window frames, consisting of an inner portion composed of a sheet or plate of fireproof material, a covering of asbestos board and an outer finish of wood glued or otherwise secured to said asbestos board, substantially as described.

2. In fireproof door and window construction, doors, shutters and door and window frames, consisting of an inner fireproof portion of corrugated sheet metal with wood strips in the grooves, and a covering of asbestos board, said asbestos board glued, nailed, or bolted to the wood strips and having an exterior protective coating substantially as described.

3. In fireproof door and window construction, doors, shutters, and door and window frames, consisting of an inner fireproof portion of dovetail corrugated sheet metal, a covering of asbestos board, and an exterior wood finish on the asbestos board substantially as described.

570,896. **LAMP-GLOBE.** GEORGE W. BALLOU, New York, N. Y., and AUGUSTUS SEAVER, Boston, Mass., assignors to the United States Prism Glass Globe Company, of New York. Filed June 24, 1896. Serial No. 596,690. (No model.)



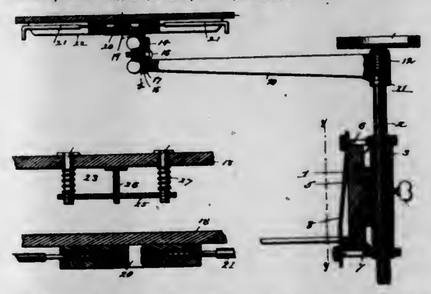
Claim.—1. The method, or process, herein described of making glass prismatic globes, which consists in first forming chilled prisms upon the inner surface of a hollow blank of glass, and then drawing the glass between the prisms by blowing the blank to finished form; substantially as and for the purposes set forth.

2. The method, or process, herein described of making glass prismatic globes, which consists in first forming a blank of glass having a substantially smooth exterior surface and a central cylindrical cavity formed with a series of longitudinal prisms chilled at their edges from contact with a plunger, and then by successively blowing and externally reheating the blank drawing the glass between the prisms and enlarging and fashioning the same to finished form; substantially as set forth.

3. As a new article of manufacture a prismatic spherical globe, made in one piece of glass, and having a smooth exterior surface and having interior alternate prisms and concave lenses which prisms and lenses are also periscopic convex lenses from base to apex of the globe; substantially as described.

4. As a new article of manufacture a prismatic spherical globe, open at one end only, and made in one piece of glass, and having a smooth exterior surface and having interior alternate prisms and concave lenses which prisms and lenses are also periscopic convex lenses from base to apex of the globe; substantially as described.

570,897. **TABLE.** EDWARD E. BENNETT, Lincoln, Nebr. Filed June 6, 1896. Serial No. 594,557. (No model.)



Claim.—1. In a table, the combination of a support, a headed projection on said support, a top having a socket receiving said projection, and a spring-pressed bolt connected with the top and extending into the socket and engaging the projection and also extending to a point adjacent to one edge of the top and provided at such point with a finger-piece, substantially as and for the purpose specified.

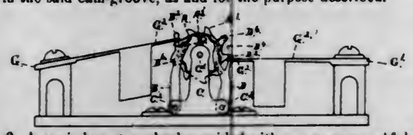
2. In a table, the combination of a bed-rail, a post or upright, an arm connected to the post or upright and extending laterally therefrom and carrying a top, a sleeve arranged at the side of the bed-rail and receiving the post or upright and having exterior threads, a lateral arm connected to said sleeve and having its free end threaded, an arm having a threaded aperture receiving the threaded portion of the sleeve and also having its free end threaded, a slotted strap arranged on the opposite side of the rail with respect to the sleeve and receiving the threaded ends of the arms and nuts mounted on said arms, substantially as specified.

3. In a table the combination of a post or upright, a horizontal arm loosely mounted and supported upon the post or upright and adapted to be swung in a horizontal plane and having the vertically-disposed and apertured branch 14, at its free end, the angle-plate having the headed projection on its horizontal branch and also having the curved slot 17, in its vertical branch, a screw extending through the aperture in the branch 14, of the horizontal arm and the curved slot 17, of the angle-plate, a nut mounted on said screw, and a table-top having a socket adapted to receive the headed projection of the angle-plate and also having a spring-pressed bolt extending into the socket and adapted to engage the projection of the angle-plate and also extending to a point adjacent to one edge of the top and provided at such point with a finger-piece.

570,898. **MUSIC-BOX DAMPER.** FRANK J. BERNARD, West New York, N. J. Filed Mar. 6, 1896. Serial No. 582,158. (No model.)

Claim.—1. A music-box having reeds G^3, with beveled points G^4 and star-wheels A, provided with a cam-groove A^3, having a corre-

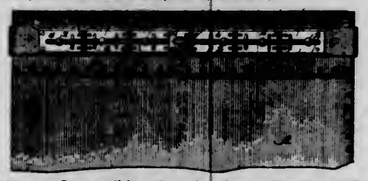
sponding number of elevations A^5, and depressions A^4, as there are teeth on said star-wheel to positively operate a damper without a spring, in combination with a pivoted damper provided with a lug to run in the said cam-groove, as and for the purpose described.



2. A music-box star-wheel provided with a cam-groove A^3, having a corresponding number of elevations A^5, as there are teeth on the said star-wheel, to positively operate a damper, in combination with a pivoted damper, provided with a lug B^3, and a U-yoke, the said U-yoke having a lug B^4, which presses against the opposite side of the grooved star-wheel and holds the lug B^3, in the groove A^3, as and for the purpose described.

3. A music-box star-wheel provided with a cam groove A^3, having a corresponding number of elevations A^5, as there are teeth on said star-wheel to positively operate the dampers B, and D, against and from the reeds G^3, and G^3, in combination with the pivoted dampers B, and D, provided with fingers B^2, and D^2, and having lugs B^3, and D^4 to engage with the cam-groove A^3, on the star-wheel as and for the purpose described.

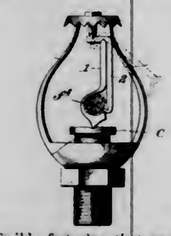
570,899. MAIL-BAG. FRED L. BOYNTON, Kingfisher, Okla. Filed Nov. 25, 1895. Serial No. 570,111. (No model.)



Claim.—1. In a mail-bag fastening the combination with a mail-bag having a series of bolts secured to one part and provided with enlarged heads that project through holes in another part, of two series of flat metal plates flexibly connected and separated by a narrow slot which is of less width than the diameter of the heads of said bolts, save at the free end of the series, where the slot is enlarged to receive the bolt-heads, and means for rigidly connecting the two series, substantially as shown and described.

2. The combination with a mail-bag having a folding flap and a series of bolts with enlarged heads adapted to pass through holes in said flap, of two straps which are secured to the back of the sack and slotted lengthwise, two series of flat metal plates secured to the straps on the opposite sides of such slot, and separated by a narrow space that terminates in an enlargement at the free end of the straps, metal arches rigidly connecting the plates transversely, and a staple adapted to project through the lapped ends of the straps, as shown and described.

570,900. AUTOMATIC FIRE-EXTINGUISHER. CHARLES E. BUELL, North Plainfield, N. J. Filed Dec. 26, 1895. Serial No. 573,333. (No model.)

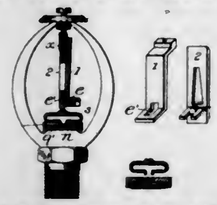


Claim.—1. A fusible fastening that comprises a support and a member pivoted thereon that has its free end of elastic material and with its free end held interlocked with the supporting member by a mass of fusible substance interposed in the path in which the released member would move.

2. An easily-fusible fastening for automatic sprinklers that comprises a support 1 having its lower end rounded and tapered to rest in the groove in valve-plate c and provided with a deflected and protruding portion, a lever 2 pivoted upon said support with its short arm at a right angle thereto and its long arm bent at its terminal to conform to the deflected and protruding portion of the said support, and a fusible substance securing the said lever to the said support.

3. An automatic sprinkler having its outlet held normally closed by a valve resting upon a rigid seat, a fusible fastening forcing said valve to its seat that consists of a two-part strut formed of the support 1 with its lower end resting in the groove in valve-plate c, and provided with a deflected and protruding portion, a lever 2 pivoted upon said support with its short arm at a right angle thereto, and the terminal of the long arm bent to conform to the deflected and protruding portion of said support, the said support and said lever being secured together by a fusible substance, means for forcing said fusible fastening firmly against said valve-plate, and an elastic portion in the assembled structure for giving a thrust to the movable parts of the said two-part strut when the same is released by the action of heat.

570,901. AUTOMATIC SPRINKLER. CHARLES E. BUELL, North Plainfield, N. J. Filed May 25, 1896. Serial No. 593,063. (No model.)



Claim.—1. A sprinkler having its outlet held normally closed by a valve that is held to its seat by a strut consisting of two members, an upright member and a supported member pivoted thereon out of line of the longitudinal axis of the upright member, the said members being soldered together along their contacting surfaces, and a projection upon the deflected portion of one member entering into a slot in the other member, and fusible material interposed in the path of said projection.

2. A sprinkler having a fusible fastening comprising an upright member and a supported member pivoted thereon, deflected portions for each member, and a projection upon the deflected portion of one of said members that registers with a slot in the other member, and a fusible material interposed in the path of the members through which they would move in being separated.

3. A sprinkler having a valve covering its outlet, a fusible fastening comprising interlocked members having fusible material interposed in the path through which said members move when released, and a spring in the structure for giving a thrust to the released fusible fastening that is composed of a strip of metal bent back upon itself and adapted to interlock with the valve.

4. An automatic sprinkler comprising a fusible fastening consisting of a supporting member having a portion thereof removed for reducing the mass to be heated, a deflected portion having a projection struck up thereon, a second member pivoted thereon, a deflected portion, a slot in the upright and deflected portions thereof through which the said projection passes, and fusible material interposed in said slot.

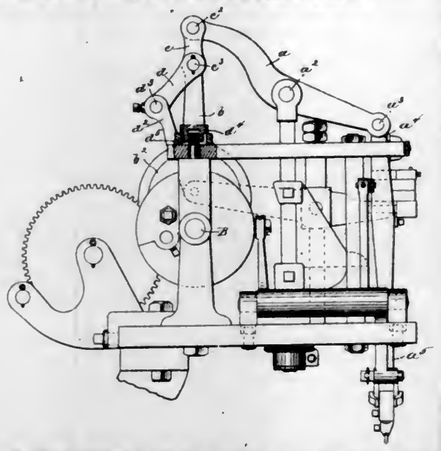
5. An automatic sprinkler comprising a fusible fastening consisting of a supporting member and a supported member pivoted thereon, a deflected portion on each of said members, a projection on one of said members protruding into and through a slot in the other of said members, fusible material in the path of the interlocked members where the projection passes through the slot and also at the point where the supported member is pivoted upon the supporting member.

6. A strut consisting of a supporting member and a supported member pivoted thereon, a deflected portion on each member, a slot in the deflected portion of the supported member, and a struck-up projection on the deflected portion of the supporting member registering with said slot and entering in and passing through said slot at a point slightly in front of the upright portion of the slotted member, and, fusible material between the projection and the upright portion of the slotted member.

570,902. SEWING-MACHINE. HERBERT H. BUFFUM, Abington, Mass., assignor to the Steam Heated Horn Company, Portland, Me. Filed June 24, 1895. Serial No. 553,837. (No model.)

Claim.—1. The combination with the needle-bar-actuating lever of a sewing-machine; of the main shaft and pitman actuated thereby; and means for operatively connecting said pitman and needle-bar lever; and a guide-link pivotally connected at one end with the said pitman and pivotally connected at its other end with the framework at a point on the opposite side of said pitman from the fulcrum of said needle-bar-actuating lever, and at a distance from said main shaft approximately equal to the length of said pitman, whereby the movement of the needle-bar lever is retarded near both ends of the stroke and accelerated in the middle part of its stroke relative to the

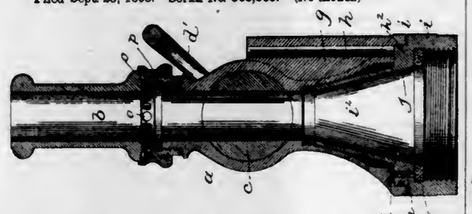
speed that would be produced if the pitman were directly connected therewith, substantially as and for the purpose described.



2. The combination with the needle-bar-actuating lever; of the main shaft and pitman actuated thereby; a link pivotally connected at one end with the pitman, and at the other end with the needle-bar lever; and a guide-link or radius-bar pivotally connected at one end with the joint between the pitman and link, and pivotally connected at its other end with the frame of the machine, as set forth, said guide-link causing the joint between the pitman and link to be carried toward the fulcrum of the needle-bar lever during the movement from the end to the middle part of its stroke, and to be carried from said fulcrum during the movement from the middle to the end of the stroke in both directions, substantially as described.

3. The combination of the needle-bar lever *a*, and its fulcrum a^2; and links *c* pivotally connected to one end thereof; with the main shaft, and actuating-pitman *b*, connected by a pivotal joint with said links *c*; the forked guide-link *d* pivotally supported at one end on the framework, and pivotally connected at the other end with the joint between the pitman *b* and links *c*, substantially as and for the purpose described.

570,903. HOSE-NOZZLE. CORNELIUS CALLAHAN, Canton, Mass. Filed Sept. 23, 1895. Serial No. 563,385. (No model.)



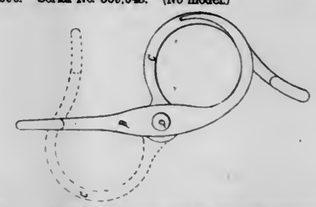
Claim.—1. A nozzle for a fire-hose, comprising an integral body part provided with a full-stream port controlled by a plug, and a limited-stream port, combined with a coupling to which the hose is secured and having a port adapted to register with the limited-stream port, said nozzle being adapted to be revolved on said coupling to turn on or shut off the limited stream, as set forth.

2. A nozzle for fire-hose, comprising in its construction a body part having a full-stream port, a plug or valve for said port, a boss on the body part provided with a small or limited stream port, in combination with a coupling adapted to be secured to the hose and to be threaded into the body part, said coupling having an aperture adapted to register with the limited-stream port, and means interposed between the coupling and the body part of the nozzle to limit the movement of one relatively to the other.

3. A nozzle for fire-hose, comprising an integral body part having a valve-controlled full-stream port, and a duct with converging walls leading thereto, and also formed with a boss through which extends a limited stream port, in combination with a rotatable female frusto-conical coupling adapted to be secured to the hose extending into said duct and having its inner end threaded therein, said coupling having an aperture or duct adapted to register with the limited-stream port, and means for limiting the movement of the body relatively to the coupling.

4. A nozzle for fire-hose, comprising an integral body part having a valve-controlled full-stream port, and a boss formed with a limited-stream port, in combination with a coupling adapted to be secured to the hose, and having a port *j* adapted to register with the limited-stream port, said body part having a slot, and the coupling having a pin extending into the slot, whereby the movements of the body relatively to the coupling are limited.

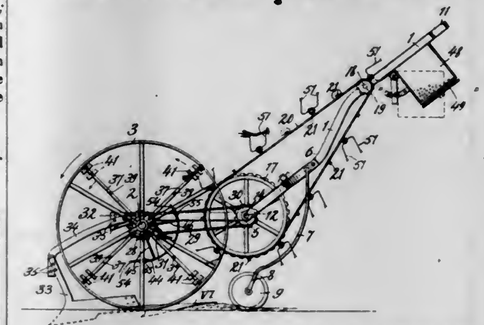
570,904. THILL-TUG. WILLIAM R. CHAPIN, Wyoming, Pa., assignor, by direct and mesne assignments, of two-thirds to Archibald L. Lindsay, same place, and John W. Howarth, Scranton, Pa. Filed Apr. 30, 1896. Serial No. 589,643. (No model.)



Claim.—1. A shaft-tug consisting of the combination of a carrying-hook and a guard-lever pivoted at one end to the shank of the hook and curved outward and downward and means to attach the hook to the back-band and the lever to the belly-band, substantially as described and set forth.

2. A shaft-tug consisting of the combination of a double carrying-hook and a guard-lever pivoted at one end to the shank of the hook and curved outward and downward and means to attach the upper end of the hook to the back-band and the free end of the lever to the belly-band, substantially as described and set forth.

570,905. PLANTING-MACHINE. WILLIAM E. CHEESEMAN, Monroe, N. J. Filed Jan. 30, 1896. Serial No. 577,370. (No model.)



Claim.—1. In a planter, the combination with the axle and traveling belt-carrier, of a revoluble sleeve on the axle, a pair of revoluble hubs, a series of radially-arranged springs on said hubs, clamps on the ends of said springs, and a spreader for separating the springs, substantially as described.

2. The combination with the frame, of a sleeve on the axle provided with a ratchet-wheel and a hub, a second revoluble hub on the axle, pairs of springs radially arranged on said hubs and provided with clamping devices, means for engaging the members of each pair of springs, a spreader for the springs, and an endless carrier provided with prongs or needles, substantially as described.

3. The combination with the frame comprising the bent beam, axle and wheels, of the plow and coverers, a pair of revoluble hubs on the axle, pairs of springs provided with clamps to engage the set, a spreader, and an endless carrier provided with equidistant prongs or needles coinciding with the clamps of the springs, substantially as described.

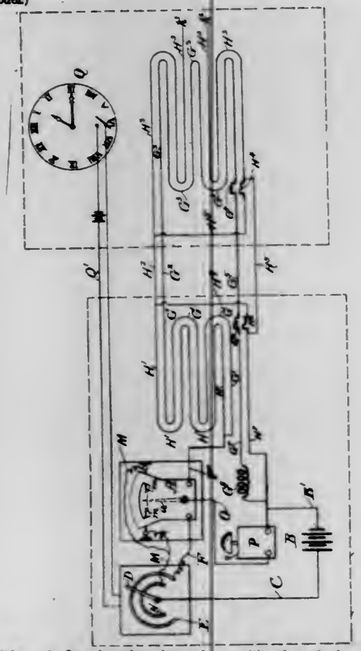
4. The combination with the endless carrier, springs and spreader, of set-grasping devices consisting of oppositely-arranged reversible plates 42 and 43, substantially as described.

5. The combination with the endless carrier and spreader provided with adjustable ends, of a removable planting device comprising two sections of radially-disposed spring arms secured to a central hub or band, and provided with clamps for grasping the sets, substantially as described.

6. The combination with the axle and its adjustable curved spreader, of the endless carrier and the sectional onion-planter com-

prising hubs or bands 53, arms or rods 52, springs 56 and clamps 57, all removably secured upon the hubs 24 and 25, substantially as described.

570,906. **ELECTRIC BURGLAR-ALARM.** CLYDE COLEMAN, Chicago, Ill., assignor of two-thirds to Albert L. Deane and James W. Donnell, same place. Filed Dec. 21, 1895. Serial No. 572,851. (No model.)



Claim.—1. In a burglar-alarm the combination of a local alarm-circuit, a main circuit extending from the alarm-station to the guarded structure, a meter electrically connected with the main circuit and adapted to complete the alarm-circuit upon a variation in the condition of the main circuit, and a switch for electrically throwing in first the main circuit and then the alarm-circuit and electrically throwing out first the alarm circuit and then the main circuit, substantially as set forth.

2. The combination of a local alarm-circuit, a main circuit extending from the alarm-station to the guarded structure, a meter electrically connected with the main circuit and adapted to complete the alarm-circuit upon a variation in the condition of the main circuit, a switch common to both of said circuits so arranged that it throws in first the main circuit and then the alarm-circuit, and throws out first the alarm-circuit and then the main circuit, and suitable time mechanism for operating said switch, substantially as set forth.

3. The combination of a local alarm-circuit, a main circuit extending from the alarm-station to the guarded structure, a meter electrically connected with the main circuit and adapted to complete the alarm-circuit, a revoluble switch common to both of said circuits, a contact-plate located in the path of the switch and included in the alarm-circuit, and a longer contact-plate located in the path of the switch and included in the main circuit said contact being so arranged that the switch reaches first the longer one and then the shorter one and leaves first the shorter one and then the longer one, substantially as set forth.

4. The combination of a local alarm-circuit located at the alarm-station, a main circuit extending from the alarm-station to the guarded structure, a meter electrically connected with the main circuit and adapted to complete the alarm-circuit upon a variation in the condition of the main circuit, a switch located at the alarm-station, electrically-operated mechanism for operating said switch, a circuit including said mechanism and extending to the guarded structure, and means located at the guarded structure for controlling said circuit, substantially as set forth.

5. The combination of a local alarm-circuit, located at the alarm-station, a main circuit extending from the alarm station to the guarded structure, a meter electrically connected with the main circuit and adapted to complete the alarm-circuit upon a variation in the condition of the main circuit, a switch located at the alarm-station, electrically-operated mechanism for operating said switch, a circuit including said mechanism and extending to the guarded structure, and time mechanism located within the guarded structure and having a part arranged in said last-named circuit for controlling it, substantially as set forth.

6. The combination with a structure to be guarded and a housing, of an electrical alarm system having its parts so disposed as to protect both the structure to be guarded and the housing and cause an alarm to be sounded if either of them is entered, the alarm proper being arranged within the protected housing and all other parts of the system that may be manipulated or injured so as to cripple the system being arranged within either the structure to be guarded or the protected housing, substantially as set forth.

7. The combination with a structure to be guarded, of a closed main circuit including closed contacts arranged at the guarded structure, an open main circuit including in multiple open contacts arranged at the guarded structure, a meter electrically connected with both of said circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, substantially as set forth.

8. The combination with a structure to be guarded and an alarm-station, of a closed main circuit including closed contacts arranged at the guarded structure and at the alarm-station, an open main circuit including in multiple open contacts arranged at the guarded structure and at the alarm-station, a meter electrically connected with both of said circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, substantially as set forth.

9. The combination with a structure to be guarded and an alarm-station, of a closed main circuit including closed contacts arranged at the guarded structure, an open main circuit including open contacts arranged at the guarded structure, the wires of said circuits between the alarm-station and guarded structure being insulated from each other and braided together, a meter electrically connected with both of said circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, substantially as set forth.

10. The combination with a structure to be guarded and a housing located at the alarm-station of a closed main circuit including closed contacts arranged at the guarded structure and housing, an open main circuit including in multiple open contacts arranged at the guarded structure and housing, the wires of said circuits between the alarm-station and guarded structure being insulated from each other and braided together, a meter electrically connected with both of the main circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, the alarm mechanism at the alarm-station being inclosed by the guarded housing, substantially as set forth.

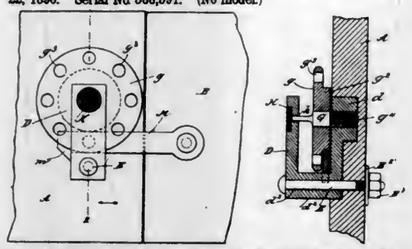
11. The combination with a structure to be guarded, and an alarm-station, of a closed main circuit including closed contacts arranged at the guarded structure, an open main circuit including open contacts arranged at the guarded structure, a resistance arranged in one of said circuits, a meter electrically connected with both of said circuits, and a local alarm-circuit adapted to be closed by the meter upon a variation of the condition in either of the main circuits, substantially as set forth.

12. The combination with a structure to be guarded and a housing located at the alarm station, of a closed main circuit including closed contacts arranged at the guarded structure and housing, and a resistance located at the alarm-station, an open main circuit including in multiple, open contacts arranged at the guarded structure and housing, a meter electrically connected with both of the main circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, substantially as set forth.

13. The combination with a structure to be guarded, and a housing located at the alarm-station, of a closed main circuit including a portion of a barrier arranged at the guarded structure and a portion of a barrier arranged at the housing, an open main circuit including a portion of the barrier arranged at the guarded structure and a portion of the barrier arranged at the housing, a meter electrically connected with both of said main circuits and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition of either of the main circuits, the vital parts located at the alarm-station being all inclosed by the housing, substantially as set forth.

14. The combination with a structure to be guarded and a housing located at the alarm-station, of a closed main circuit including closed contacts located at the guarded structure and housing and portions of barriers located at the guarded structure and housing, an open main circuit, including in multiple, open contacts arranged at the guarded structure and housing and portions of the barriers aforesaid, a meter electrically connected with both of said circuits, and a local alarm-circuit including the meter and adapted to be closed thereby upon a variation in the condition in either of the main circuits, the parts at the alarm-station being included in the guarded housing, substantially as set forth.

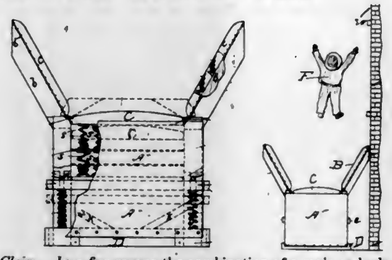
570,907. **SEAL-LOCK.** DAVID COMFORT, Albany, Ga. Filed Apr. 22, 1896. Serial No. 588,591. (No model.)



Claim.—1. In a seal for cars, the combination with a yoke one side of which is provided with a head which is countersunk in the body of the car, and the other side, in its outer surface, with a cavity or recess and a perforation or opening therethrough, of a screw-threaded shaft which is passed through said head, and provided with a wheel or disk which is mounted thereon, and an extension which passes through the perforation or opening in the other arm, said circular cavity or recess being adapted to receive a spiral coil of lead, and a latch or lock-bar which is secured to the door and provided with a head which is adapted to engage with said yoke, substantially as shown and described.

2. In a car-seal, the combination of a yoke, of a cross-head at the lower end of said yoke and at right angles thereto, of a head extending upwardly and integral with said cross-head, said cross-head having a transverse circular opening therein, a shaft adjustably secured in said head, a wheel having openings therein circularly arranged, mounted on said shaft said yoke having a chamber therein, an opening in its central portion through which said shaft G is adapted to pass, a spiral-coil seal adapted to snugly fit in said chamber and a lock-bar pivotally secured at one end to said car and having at its other a head adapted to engage said yoke, substantially as and for the purposes described.

570,908. **FIRE-ESCAPE.** JONATHAN S. CRAWFORD, Scranton, Pa. Filed Feb. 26, 1896. Serial No. 580,789. (No model.)

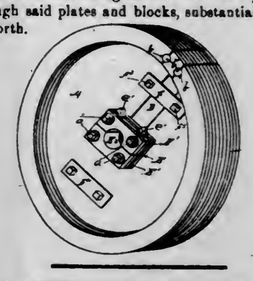


Claim.—In a fire-escape the combination of a main or body portion consisting of a plurality of spring-mattresses disposed above one another, textile-fabric layers between them, cross-beams, large coil-springs supporting said mattresses and cross-beams, slotted corner-posts designed to permit vertical movement of the end of the beams, and a pair of upholstered wings hinged to opposite sides of the said main portion, the said wings being adapted to be folded inward for the purpose of easy transportation and to be folded outward in order to secure greater area for the landing of an escaping person, substantially as shown and described.

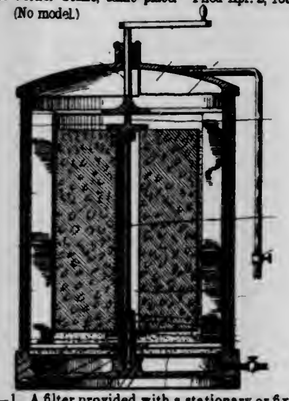
570,909. **WOOD PULLEY.** HILEN C. CROWELL, Dunkirk, N. Y. Filed Jan. 6, 1896. Serial No. 574,523. (No model.)

Claim.—1. In a wood pulley, the combination, with a web and a rim provided with a radially-slidable section permitting the pulley to be placed on a shaft; of plates extending across the said section, clamping-bolts for securing the said plates to the main portions of the web, and inclined guides engaging with the said plates and web and operating to contract the main portion of the pulley upon the said section when the said clamping-bolts are tightened up, substantially as set forth.

2. In a clamp for securing the sections of a wood pulley together, plates, there being inclined openings in the pulley-web and in said plates, cylindrical blocks fitting into said inclined openings, and bolts passing through said plates and blocks, substantially as and for the purpose set forth.



570,910. **FILTER.** JOHN M. DAVIDSON, Allegheny, Pa., assignor to James Verner Scaife, same place. Filed Apr. 2, 1896. Serial No. 585,948. (No model.)



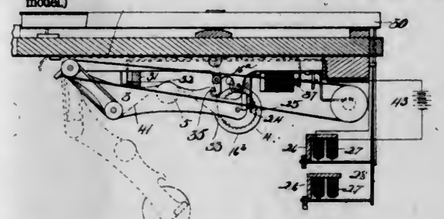
Claim.—1. A filter provided with a stationary or fixed casing and tubular filtering-body and a granular bed of filtering material surrounding said body, in combination with a revoluble cage in said granular bed surrounding said tubular body, out of contact with its periphery.

2. A filter provided with a stationary or fixed casing and tubular filtering-body and a granular bed of filtering material surrounding said body, in combination with a revoluble cage in said granular bed supported by and surrounding said tubular body, out of contact with its periphery.

3. A filter provided with a stationary or fixed casing and tubular filtering-body and a granular bed of filtering material surrounding said body, in combination with a cage in said granular bed having connected upper and lower spiders and surrounding said tubular body, out of contact with its periphery.

4. A filter provided with a stationary or fixed casing and tubular filtering-body, a granular bed surrounding said body and a discharge-chamber above the filtering material having a foraminous bottom, in combination with a cage in said granular bed having means for agitating the granular bed and surrounding said tubular body, out of contact with its periphery.

570,911. **ELECTRICAL SELF-PLAYING PIANO.** GEORGE H. DAVIS, New York, N. Y. Filed Sept. 14, 1895. Serial No. 562,477. (No model.)



Claim.—1. In a self-playing musical instrument or the like, a music-sheet holder normally acting to move out of operative position, suitable latches for retaining said music-sheet holder in operative position, and electromagnets arranged to operate the latches to release them from engagement with the music sheet holder, whereby the lat-

ter is allowed to move out of operative position, substantially as described.

2. In an electrical self-playing musical instrument or the like, the combination with a music-sheet holder retained in operative position by means of suitable latches, of a rotary contact-roller journaled upon the music-sheet holder, and an electromagnet arranged to operate the latches to release them from their engagement with the music-sheet holder whereby the latter is free to move automatically out of operative position, substantially as described.

3. In an electrical self-playing piano, the combination with the hinged note-sheet holder normally acting to move out of operative position and means for advancing the note-sheet, of latches for retaining said holder in operative position, and means thrown into operation by the movement of the note-sheet holder for automatically rewinding the note-sheet, substantially as described.

4. In an electrical self-playing piano, the combination with a hinged note-sheet holder adapted to be swung downward out of operative position, of a music-sheet spool and a receiving-roller carried by the note-sheet holder, a driving shaft and pulley, gearing intermediate the pulley and music-sheet spool for rewinding the note-sheet, a clutch on the driving-shaft, and means actuated by the movement of the note sheet holder to throw the clutch into and out of engagement with the driving-pulley, as and for the purpose described.

5. In a self-playing musical instrument, the combination with a hinged note-sheet holder adapted to be swung downward out of operative position, of a music-sheet spool and receiving-roller carried by the note-sheet holder, a driving shaft and pulley, gearing intermediate the pulley and music-sheet spool for rewinding the note-sheet, a sliding clutch on the drive-shaft, a rocking rod engaging the sliding clutch, and an arm or projection carried by the note-sheet holder, said arm engaging with the rocking rod when the note-sheet holder is moved, as and for the purpose described.

6. In a music sheet holder for electrical self-playing pianos, the combination with a base-plate having a latch or latches pivoted thereto, of a note sheet holder hinged to the base-plate and acting normally to drop downward out of operative position, keepers carried by the note-sheet holder and adapted to be engaged by the latches, an electromagnet carried by the base-plate, and an armature having a connection with the latches and adapted when attracted to release the music-sheet holder and allow the same to drop downward out of operative position, substantially as described.

7. In a note-sheet holder for self-playing musical instruments, the combination with a base plate, of a note-sheet holder hinged to the base-plate and carrying a delivering and a receiving roller, a gear-wheel mounted on the receiving-roller, and a pinion mounted upon a shaft carried by the base-plate, said gear-wheel being thrown into and out of mesh with the pinion by the upward and downward movement of the music-sheet holder, substantially as described.

8. In a note-sheet holder for self-playing musical instruments, the combination with a base-plate, of a note-sheet holder hinged to the base-plate and carrying a delivery and a receiving roller, a gear-wheel mounted upon the receiving-roller, a pinion mounted upon a shaft carried by the base-plate and meshing with the gear-wheel, a large cone-pulley also mounted upon said shaft, a drive-shaft, a small cone-pulley mounted upon the drive-shaft, a belt passing over said cone-pulleys, and a belt-shifter adapted to move said belt upon the pulleys to regulate the speed of the receiving-roller, substantially as described.

9. In a music-sheet holder, for electrical self-playing pianos, the combination with a base-plate secured to the piano and provided at each side with a pivoted latch, of a note-sheet holder hinged at one end to said base-plate and adapted to be swung downward out of operative position, keepers mounted upon the hinged holder and adapted to be engaged by said latches, an electromagnet carried by the base-plate in rear of the latches, and an armature having a connection with the latches and adapted, when attracted by its electromagnet, to release said music-sheet holder and allow the same to drop downward out of operative position, substantially as described.

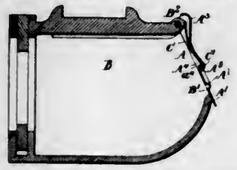
10. In an electrical self-playing piano, the combination with a suitable music-sheet holder, of keepers carried by said holder, latches adapted to engage with the keepers to retain the holder in operative position, and an electromagnet connected in circuit and controlled by the music-sheet and adapted to automatically operate the latches to release the same from the keepers whereby the music-sheet holder is allowed to move out of operative position, substantially as described.

11. In an electrical self-playing piano, the combination with a suitable music-sheet holder normally acting to move out of operative position, means for retaining said holder in operative position, and mechanism thrown into operation by the movement of the note-sheet holder for automatically rewinding the note-sheet, substantially as described.

12. In a note-sheet holder for self-playing musical instruments, the combination with a suitable base-plate carrying a plurality of electrical contact-fingers, of a note-sheet holder hinged to the base-plate and carrying delivery and receiving rollers and a contact-roller which bears against the contact-fingers when the said holder is in operative position, a gear-wheel mounted on the receiving-roller, a pinion mounted upon a shaft carried by the base-plate, said gear-wheel being thrown into and out of mesh with the pinion by the upward and downward movement of the music-sheet holder, substantially as described.

570,912. AXLE-BOX LID. NATHAN H. DAVIS, Philadelphia, Pa.

Filed Mar. 14, 1896. Serial No. 583,213. (No model.)

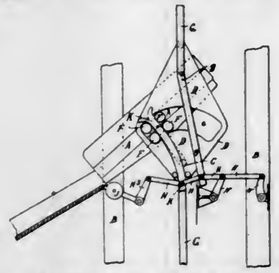


Claim.—1. An axle-box lid having a deep central groove as A^4 and trunnion-like bosses a^4 formed integral with the lid extending inward from the walls of said groove at a distance from the end wall of the groove sufficient to afford room for the hooked end of a spring-plate between said bosses and said end wall.

2. An axle-box lid formed of struck-up wrought metal having a corrugation forming a deep central groove as A^4 and indentations forming trunnion-like bosses a^4 integral with the lid and extending inward from the walls of said groove A^4 at a distance from the end wall of the groove sufficient to afford room for the hooked end of a spring-plate between said bosses and said end wall.

3. An axle-box lid having a deep central groove as A^4 and trunnion-like bosses a^4 formed integral with the lid and extending inward from the walls of said groove at a distance from the end wall of the groove sufficient to afford room for the hooked end of a spring-plate between said bosses and said end wall in combination with hooked ended spring-plate as C adapted to hook onto the bosses a^4 and lie in the groove A^4.

570,913. LIFT OR HOIST FOR WAREHOUSES. HAY F. DONALDSON, London, England. Filed July 15, 1895. Serial No. 556,066. (No model.)



Claim.—1. In a lift or hoist a platform supported on arms such as E and having guide-rollers such as F engaging with guide-rails G, *g* and K whereby said platform when operated may be caused to be swung and tilted substantially as set forth.

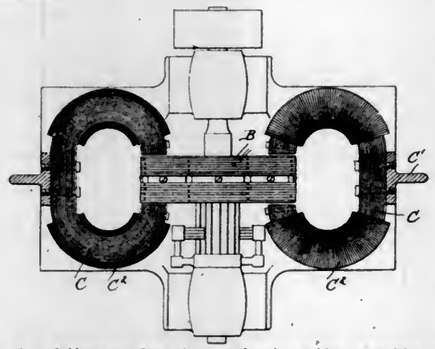
2. In a lift or hoist the combination of a platform A, rollers F, arms E, cross-bar C, guide-rails G, *g* and K, rods H, bell-crank lever H^3 and counterpoise J, all for the purposes and substantially as set forth.

3. In a lift or hoist the combination with a platform A supported on arms E and having guide-rollers F adapted to engage with guide-rails, of guide-plates D provided with apertures *e* and carrying the cross-bar C all for the purposes and substantially as set forth.

570,914. DYNAMO-ELECTRIC MACHINE. GEORGE E. DORMAN, Chicago, Ill., assignor to John Ehrenfried Dorman, same place. Filed Feb. 4, 1896. Serial No. 578,069. (No model.)

Claim.—1. An armature comprising a wheel having a rim and a central hub joined together by spokes or a solid flange, said rim overhanging the hub and being provided with slots which extend from the edges to the spokes or flange, a series of projecting parts or arms of laminated iron fastened to said rim and separated by spaces or slots which register with the slots in said rim, said projecting arms each composed of a series of insulated plates of iron or lamination, substantially as described.

2. An armature for dynamo electric machines comprising a wheel having a central hub and an outer rim, said hub and rim joined together by spokes or a solid flange, said rim overhanging the hub and being provided with a number of slots and a series of projecting arms or parts connected with said rim and consisting of a series of strips of sheet-iron or the like, said arms or parts being separated by slots which register with the slots in the flange of the wheel, and a series of coils adapted to be placed in these slots so as to encircle or embrace one or more of said projecting arms or parts, substantially as described.



3. A field-magnet for a dynamo-electric machine comprising a core made up of a series of elliptically-bent strips of iron, an iron trough into which said strips are placed and which holds them in position, said strips of iron being cut away at one point so as to provide an opening in which the armature rotates, one or more coils of wire adapted to be slipped over the ends of said plates, said strips bolted to a cast-iron, steel, or wrought-iron frame forming part of the frame of the machine.

4. A dynamo-electric machine forming an armature consisting of a wheel having a rim and a central hub joined together by spokes or a solid flange, said rim being provided with slots extending to or near said spokes or flange, a series of projecting parts or arms fastened to said rim and separated by openings or slots which register with the slots in said rim, said projecting arms composed of a series of iron plates connected together, a series of coils of wire adapted to be placed into said slots so as to surround said projecting arms, a series of fields consisting of a number of plates or sheets of iron cut away at one side so as to form an opening for the armature, said field-magnets provided with a series of coils adapted to be slipped on the ends thereof, a circular frame forming part of the dynamo-frame, and having said field-magnet plates bolted thereto substantially as described.

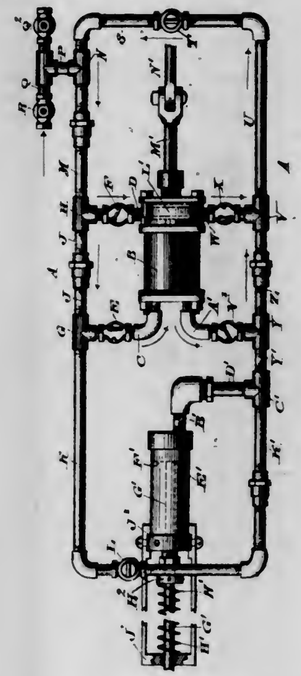
570,915. FLUID-PRESSURE BRAKE. DENNIS DUNN, Mahanoy City, Pa. Filed Dec. 21, 1895. Serial No. 572,841. (No model.)

Claim.—1. A fluid-pressure brake, consisting of a main cylinder having a piston therein, means for operating said piston from the running-gear of a car, a system of piping open to the atmosphere, and communicating with air inlet and discharge pipes connected with said cylinder, a valve in said piping for preventing a discharge of air therefrom to the atmosphere, a brake cylinder having a piston therein, means for returning said piston to normal position after the application of the brake, a pipe connecting said brake-cylinder with one of the pipes of said system, and a valve in the latter for effecting the application and release of the brake, substantially as described.

2. In a fluid-pressure brake, a main cylinder having a piston therein, means for actuating the same from the running gear of the car, a pipe Q having check-valves therein substantially as shown, the inlet pipes C and D connected with said pipe Q and opposite ends of said cylinder, and having check-valves therein, the pipes A′ and W, leading from said cylinder and having check-valves therein, a pipe Z in communication with said pipes A′ and W, and a brake-cylinder having a conduit leading therefrom to said pipe Z, said pipes Z, U and S connecting said pipes A′ and W with said pipe Q, and said pipe S having a valve therein, substantially as described.

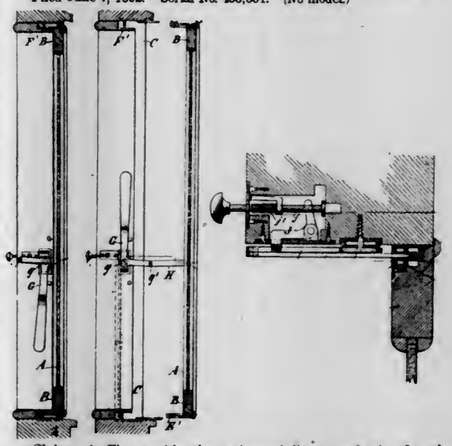
3. In a fluid-pressure brake, a main cylinder with a piston connected to a rotating axle, a system of pipes for receiving and discharging air through said cylinder from and to the atmosphere, a brake cylinder with a piston connected to a brake, a cage containing a spring for releasing said brake, a pipe connecting said brake-cylinder and said system of pipes, and a valve in the latter for shutting off the air from the atmosphere which is discharged from the said main cylinder, said parts being combined substantially as described.

4. In a fluid-pressure brake, a main cylinder having a piston therein, means for actuating the latter from the running-gear of a car, a system of pipes for continuously receiving and discharging air to and from said main cylinder, a brake-cylinder having its piston connected with the brake-rigging, a connection from said system of pipes to said brake-cylinder, and a plurality of valves in said system of pipes, one of said valves being located between the discharge of the main cylinder and the air-exhaust, and when closed being adapted to direct the air from said main cylinder into said connection, and thence into said brake-cylinder, substantially as described.



570,916. WINDOW. OLIVER M. EDWARDS, Syracuse, N. Y.

Filed June 7, 1892. Serial No. 435,831. (No model.)



Claim.—1. The combination, substantially as set forth, of a window-sash and two double-pivoted hinges which are pivoted to opposite edges of the sash and to opposite sides of the sash opening of the car, the pivotal point of each hinge on the sash being in close proximity to the pivotal point of the other hinge on the car when the sash is closed into its opening, the two pivotal points on the sash being separated from each other a distance less than the width of the sash, whereby the sash is free to swing or turn on its hinges to the required extent to open at either of its edges, and the opposite edge of the sash is adapted to contact with the window-frame on the car beyond the pivotal point of its hinge.

2. The combination, substantially as set forth, of a window-sash, a hinge, a movable abutment and a stationary abutment arranged in the path of the movable one, and both abutments being arranged adjacent to the hinge side of the sash, whereby the two abutments are brought into engagement with each other upon the swinging of the window-sash upon the hinge and thereby assist in supporting the weight of the sash when the same is swung open.

3. The combination, substantially as set forth, of a window-sash, a hinge, an abutment attached to the sash and a second abutment attached to the car and arranged in the path of the one on the sash, whereby the two abutments are brought into engagement with each other upon the swinging of the window-sash upon the hinge and thereby assist in supporting the weight of the sash when the same is swung open.

4. The combination, substantially as set forth, of a window-sash, a hinge, a movable locking-abutment, and a stationary locking-abutment arranged in the path of the movable one, whereby the two abutments are brought into locking engagement with each other upon the swinging of the window-sash upon the hinge and thereby both lock the unopened edge or side of the sash to the car and assist in supporting the weight of the sash when the same is swung open.

5. The combination, substantially as set forth, of a window-sash, a hinge, a locking-abutment attached to the sash and a locking-abutment on the car arranged in the path of the one on the sash, whereby the two abutments are brought into locking engagement with each other upon the swinging of the window-sash upon the hinge and thereby both lock the unopened edge or side of the sash to the car and assist in supporting the weight of the sash when the same is swung open.

6. The combination, substantially as set forth, of a window sash, two hinges, one for each of the two opposite sides or edges of the sash, two abutments, one of each attached to the opposite sides or edges of the sash and two abutments on the car, one of each at the opposite sides of the window-sash opening and arranged in the path of one of the abutments attached to the sash, whereby each one of the abutments on the window-sash is adapted by its movement to alternately engage with one of the abutments on the car and assist in supporting the weight of the sash when swung on the hinge at either one of its two edges or sides.

7. The combination, substantially as set forth, of a window-sash, two hinges, one for each of the two opposite sides or edges of the sash, two locking-abutments, one of each attached to the opposite sides or edges of the sash and two locking-abutments on the car, one of each at the opposite sides of the window-sash opening and arranged in the path of one of the abutments on the sash, whereby each one of the abutments on the window-sash is adapted by its movement to alternately be brought into locking engagement with one of the abutments on the car, thereby both locking the unopened side or edge of the sash to the car and assisting in supporting the weight of the sash when swung open on the hinge at either one of its two edges or sides.

8. The combination, substantially as set forth, of a window-sash, two double-pivoted hinges which are pivoted to opposite edges of the sash and to opposite sides of the sash-opening of the car, the pivotal point of each hinge on the sash being in close proximity to the pivotal point of the other hinge on the car when the sash is closed into its opening, the two pivotal points also being separated from each other a distance less than the width of the sash, and means attached to both the sash and the car which are adapted to move the sash, whereby the sash is opened or closed at either one of its edges.

9. The combination, substantially as set forth, of a window-sash, two double-pivoted hinges which are pivoted to opposite edges of the sash and to opposite sides of the sash-opening of the car, the pivotal point of each hinge on the sash being in close proximity to the pivotal point of the other hinge on the car when the sash is closed into its opening, the two pivotal points also being separated from each other a distance less than the width of the sash, two abutments, one of each attached to the opposite edges of the sash, and two abutments on the car, one of each at the opposite sides of the window-sash opening, whereby each one of the abutments on the window-sash is adapted by its movement to alternately engage with one of the abutments on the car and assist in supporting the weight of the sash when swung on the hinges at either one of the two edges of the sash.

10. The combination, substantially as set forth, of a window-sash, hinges at two of its opposite edges or sides adapted to allow the sash to yield or move at both of its edges simultaneously and means connected to the sash with a yielding connection and adapted to open or close the sash at either of its opposite edges or sides, whereby the sash is permitted to yield or move at one of its edges or sides when the opposite edge or side is swung open on its hinge.

11. The combination, substantially as set forth, of a window-sash, hinges at two of its opposite edges or sides adapted to allow the sash to yield or move at both of its two edges simultaneously and means connected to the two opposite edges or sides of the sash with a yielding connection and adapted to open or close the sash at either of its opposite edges or sides, whereby the sash is permitted to yield or move at one of its edges or sides when the opposite edge or side is swung open on its hinge.

12. The combination, substantially as set forth, of a window-sash, two double-pivoted hinges which are pivoted to opposite edges of the sash and to opposite sides of the sash-opening of the car, the pivotal point of each hinge on the sash being in close proximity to the pivotal point of the other hinge on the car when the sash is closed into its opening, and means attached to the car and to the sash with a yielding connection between the two and adapted to open or close the sash at either of its two opposite edges, whereby the sash is permitted to yield or move at one of its edges while its opposite edge is swung open on its hinge.

13. The combination, substantially as set forth, of a window-sash, two double-pivoted hinges which are pivoted to opposite edges of the sash and to opposite sides of the sash-opening of the car, the pivotal point of each hinge on the sash being in close proximity to the pivotal point of the other hinge on the car when the sash is closed into its opening, and means connected to the two opposite edges or sides of the sash with a yielding connection and adapted to open or close the sash at either of its opposite edges or sides, whereby the sash is permitted to yield or move at one of its edges while its opposite edge is swung open on its hinges.

14. The combination, substantially as set forth, of a window-sash, hinges at two of its opposite edges, adapted to allow the sash to yield or move at both of its edges simultaneously, and extensions on the same edges of the sash as the hinges, and adapted to engage with the exterior of the car adjacent to the sash-opening.

15. The combination, substantially as set forth, of a window-sash, hinges at two of its opposite edges or sides adapted to allow the sash to yield or move at both of its edges simultaneously, extensions on the same edges or sides of the sash as the hinges, and adapted to engage with the exterior of the car adjacent to the sash-opening, and means connected to the sash with a yielding connection adapted to open or close the sash, whereby the extension on the sash is held in close contact with the exterior of the car when the sash is open with the force required to overcome the yielding connection.

16. The combination, substantially as set forth, of a window-sash, hinges at the opposite edges of the same, means independent of the hinges connected to the sash and the car and adapted to open the sash, and a locking device adapted to be self-locking and engage with the means for opening the sash, and also to be operated independently of such means, whereby the sash and the means for opening the same are both locked in the closed position until both the means and locking device are simultaneously operated.

17. The combination, substantially as set forth of a window-sash, hinges at the opposite edges of the same, a locking device attached to the car and adapted to be self locking and to engage with a connection attached to the sash independent of the hinges by means of which the sash is opened and closed, and a second locking device adapted to engage with the first one and prevent its unlocking until the second one is operated, whereby the first locking device can be locked by the second locking device to prevent the sash being opened on that side of the same.

18. The combination, substantially as set forth, of a window-sash, hinges at the opposite edges of the same, a locking device adapted to be self-locking and engage with a connection attached to the sash independent of the hinges, and a second locking device adapted to engage with the first one and connect with a part attached to the sash and be operated, whereby the movement of the sash in opening and closing operates the second locking device to lock or unlock the first locking device.

19. The combination, substantially as set forth, of a window-sash, hinges at the opposite edges of the same, an abutment attached to the sash, a locking device adapted to be self locking and engage with a connection attached to the sash indepeodent of the hinges, and a second locking device adapted to engage with the first one and connect with the abutment on the sash and be operated, whereby the movement of the abutment when the sash is opened and closed operates the second locking device to lock and unlock the first locking device.

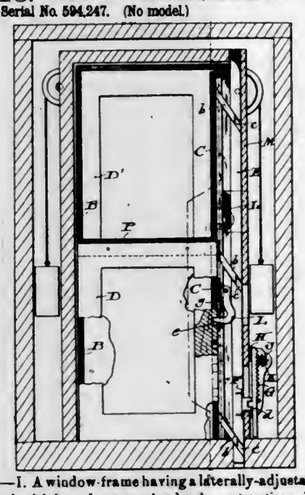
570,917. NUT-LOCK. STEPHEN A. RIEGLE, San Antonio, Fla. Filed Oct 31, 1896. Serial No. 567,549. (No model.)

Claim.—1. The combination with the nuts to be locked and the separated bolts on which said nuts are turned of the clasp-plate having openings fitted on said bolts and held beneath the nuts and provided between the said nuts with a longitudinal seat and opposite the same with a spring retaining portion having an opening or notch between its ends and the lock-plate fitted at one edge to the seat, sprung at its other edge into engagement with the spring portion and bearing at its ends against the nuts to be locked substantially as and for the purposes set forth,

2. The nut-lock herein described consisting of the clasp-plate having near its ends openings for the bolts and having slits leading from the said openings to the edge of the plate forming tongues which are deflected substantially as described, such clasp-plate having at one side a seat for one edge of the locking-plate and at the opposite side or edge a spring portion and the locking-plate fitted at one edge to the seat of the clasp-plate and having its other edge sprung into engagement with the spring portion of the clasp-plate all substantially as and for the purposes set forth.



570,918. WINDOW. JOHN ENDRES, Madison, Wis. Filed June 4, 1896. Serial No. 594,247. (No model.)



Claim.—1. A window-frame having a laterally-adjustable parting-stop provided with lugs, lug-opposing latches retractive with the parting stop, and the window-sash having the stiles thereof adjacent to said parting stop provided with recesses for the engagement of the latches.

2. A window-frame having a loose parting stop, a staff in such connection with the stop as to effect lateral adjustment of the same coincident with longitudinal movement of itself, lugs extending from the parting-stop, lug-opposing latches retractive with the parting-stop, and the window-sash having stiles thereof adjacent to said parting-stop provided with recesses for the engagement of the latches.

3. A window-frame having a recessed jamb, hook-like pivotal latches hung in the jamb-recesses, a laterally-adjustable parting-stop provided with lugs opposed to the latch-hooks, and the window-sash having the stiles thereof provided with recesses for engagement of said latch-hooks.

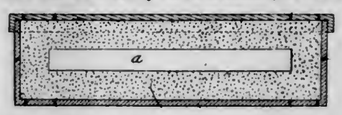
4. A window-frame having a removable inside stop, a laterally-adjustable parting-stop provided with lugs, lug-opposing latches retractive with the parting-stop, and the window-sash having stiles thereof adjacent to said parting-stop provided with recesses for the engagement of the latches.

5. A window-frame having a laterally-adjustable parting-stop, a sash having one of its rails provided with a rabbet, and a rail-lapping tilting-strip in the rabbet operative incidental to outward movement of said parting-stop to close the intervening space between said rail and the meeting-rail of another sash.

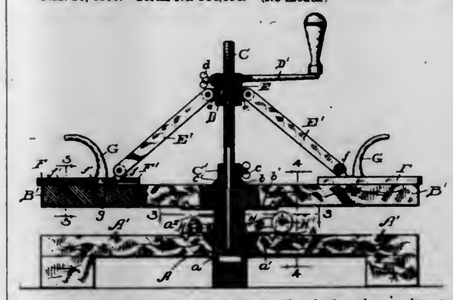
6. A window-frame having a laterally-adjustable parting-stop, a sash having a rabbeted rail, a rail-lapping tilting-strip in the rabbet having a stop-engaging recess provided with a contact-surface for projection into the path of said stop when the latter is retracted, the strip being operative incidental to outward movement of the aforesaid stop to close intervening space between said rail and the meeting-rail of another sash.

570,919. PROCESS OF ANNEALING METAL CASTINGS. JAMES EVETTS and FRANCIS C. SCHURS, Chicago, Ill. Filed July 11, 1896. Serial No. 598,788. (No specimens.)

Claim.—The process of annealing metal castings, which consists in enveloping the castings to be annealed in fibrous or finely-divided asbestos, which is tightly packed about the castings in a perforated or porous chamber or casing, the whole being exposed to an annealing heat and allowed to slowly cool, substantially as described.



570,920. WIRE-REEL. CHARLES H. FAUT, Palestine, Ind. Filed Mar. 20, 1896. Serial No. 584,051. (No model.)



Claim.—1. In a reel for handling coils of wire, the combination, with a revolving frame consisting of a plurality of radial arms, of slides having outwardly-curved fingers and mounted on each of said arms near the outer ends of said arms, a pivotal bolt around which the arms revolve, said bolt having a screw-threaded upper end, a head having a screw-threaded opening therethrough and adapted to work on the threaded end of said bolt, a crank whereby said head will be rotated on the bolt and bars connecting the head with the slides, substantially as described and specified.

2. In a reel for handling coils of wire, the combination, with a revolving frame consisting of a plurality of radial arms, of slides having fingers to engage the coil of wire, said slides being secured, one to each arm near the end of said arm and having adjustment longitudinally of said arm, and means for imparting an equal and simultaneous movement to all of said slides, substantially as described and for the purposes specified.

3. In a wire-reel, a base consisting of two bars crossed at right angles to form four equal arms and held together at the joint by outside plates of metal one of said plates having a hub projecting at right angles from the arms, a revolving reel-frame consisting of two bars crossed in like manner and reinforced at the joint with metal plates, the inner of which has a projected hub to hold the reel-frame and base a suitable distance apart and to give engagement for a friction-brake, a friction-brake pivoted to the base and contacting with the hub, said hub and reel-frame having an opening through which the hub extension from the base-frame is projected, a bolt passing through the base-frame and the reel-frame and secured by means of an adjustable collar said bolt having its outer end threaded, a head having a screw-threaded opening therethrough and adapted to work on the threaded end of the bolt and having a crank by which the head will be rotated, slides having outwardly and upwardly curved fingers, said slides being mounted on the outer ends of the revolving arms, and bars hinged at one end to the head on the screw-bolt and at the other end to the slides whereby the slides will be given a simultaneous adjustment longitudinally of the said arms, all of said above-mentioned parts being combined and arranged substantially as described and for the purposes specified.

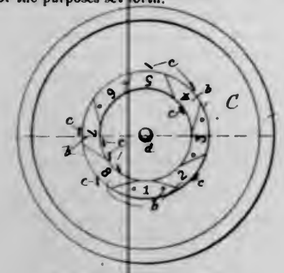
570,921. PUZZLE. WALTER F. FELDHOFF, Chicago, Ill. Filed Apr. 20, 1896. Serial No. 588,355. (No model.)

Claim.—1. The combination, with an inclosing case having a grooved bottom or base, of a series of blocks or sections, and stops around the groove or channel preventing the ready placing of the blocks or sections in position, substantially as specified.

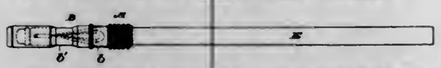
2. The combination, with an inclosing case having a grooved bottom or base, of a series of blocks or sections, a ball, and stops around the groove or channel preventing the ready placing of the blocks or sections in position, substantially as specified.

3. The combination of a base or block having a groove or channel on its face, a wall around the base or block and a transparent face held by the wall, with a series of blocks or sections, a ball and

a series of stops around the groove or channel of the base, substantially as and for the purposes set forth.

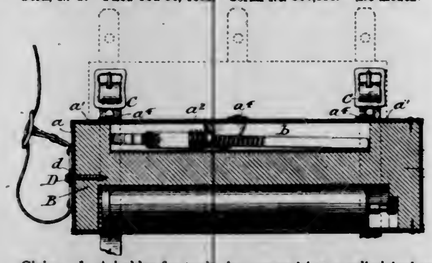


570,922. COMBINATION PENCIL-POINT PROTECTOR. CHARLES S. FREER, Brooklyn, N. Y., assignor to Edward Todd & Co., New York, N. Y. Filed Mar. 18, 1896. Serial No. 583,739. (No model.)



Claim.—An improved pencil-point protector, comprising a sharpener A having a base *a* provided with an internal yielding sleeve *a'*, a tube B having a portion *b* adapted to fit over the body *a³* of the sharpener and a reduced portion *b'* of the same diameter as the sleeve *a'* and having a longitudinal slot *b²*, a rubber eraser C held in the end of said tubular portion *b'*, and a sleeve D sliding upon said portion *b'* and adapted to cover or expose the eraser C, said sleeve being guided and limited in its movement by a pin *d* entering the slot in the tubular portion *b'*, substantially as described.

570,923. HOLDER FOR TOOLS. CHARLES E. GOODSPEED, New York, N. Y. Filed Oct. 30, 1895. Serial No. 567,338. (No model.)



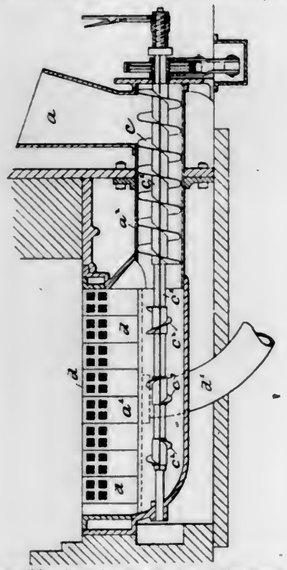
Claim.—1. A holder for tools, &c., comprising a cylindrical casing or envelop having one end closed and its other end open and having in its side an opening, and a cylindrical receiver rotatably secured and fitting in said envelop or casing and projecting beyond the open end thereof and having recesses or compartments adapted to receive the tools, &c., and to be brought by rotation of the receiver into registration with said opening, substantially as shown and described.

2. A holder for tools, &c., comprising a cylindrical casing or envelop having one end closed and its other end open and having in its side an opening, a cylindrical receiver rotatable in said envelop or casing and projecting beyond the open end thereof and having recesses or compartments adapted to receive the tools, &c., and to be brought by rotation of the receiver into registration with said opening, and a retaining device passed through the center of the closed end of the envelop or casing and engaging the receiver, substantially as shown and described.

3. A holder for tools, &c., comprising a cylindrical casing or envelop having one end closed and the other end open and having in its side an opening, a door to close said opening and fastening devices for said door, a cylindrical receiver rotatably secured and fitting in said envelop or casing and having recesses or compartments adapted to receive the tools, &c., and to be brought by rotation into registration with said opening, and straps attached to the closed end and side of said envelop or casing by which the holder may be secured in desired position, substantially as shown and described.

570,924. UNDERFEED STOKER. DAVID F. GRAHAM, Springfield, Mass., assignor to the American Stoker Company, Dayton, Ohio. Filed Oct. 28, 1895. Serial No. 567,134. (No model.)

Claim.—1. The combination with a fuel-magazine having a curved bottom, and a conduit leading laterally therefrom, said conduit consisting of a pipe of uniform diameter whose axis corresponds to the axis of the curved portion of the magazine, a hopper connected with said conduit, and a screw conveyer extending from said hopper centrally through said conduit into said magazine, said conveyer being formed of a uniform carrying capacity within said conduit and of a reduced carrying capacity within the magazine, substantially as specified.



2. The combination with a magazine, a fuel-hopper, and a horizontal conduit, as described, said conduit being of a uniform diameter and located between the hopper and magazine so as to form a substantial continuation of the bottom of each, a screw conveyer extending from said hopper through said conduit into said magazine and adapted to fit said conduit, said conveyer being provided with a uniform carrying capacity through the conduit and of a reduced carrying capacity in the magazine, substantially as specified.

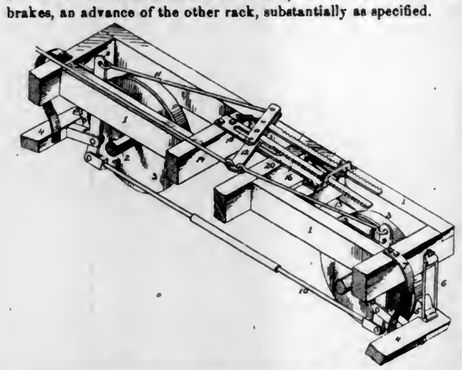
3. The combination with a fuel-magazine having a curved bottom and tapered sides a conduit leading horizontally from said magazine and consisting of a pipe whose axis also forms the axis of the curved portion of said magazine, said conduit being of a uniform diameter and cut away on one side near its outer end to form a fuel-opening, and a hopper above said fuel opening, a screw conveyer extending through said conduit and the curved portion of said magazine, said conveyer being formed of a uniform carrying capacity through said conduit and adapted to fit the same, and of a reduced carrying capacity within the bottom portion of said magazine, substantially as specified.

4. The combination with a fuel-magazine having a curved bottom, and a conduit leading laterally therefrom, said conduit consisting of a pipe of uniform diameter whose axis corresponds with the axis of the curved portion of said magazine, a hopper connected with said conduit, and a screw conveyer extending from said hopper centrally through said conduit into said magazine, said conveyer being formed of a uniform diameter and pitch within said hopper and conduit, and being tapered to form a gradually-reduced diameter within the magazine, substantially as specified.

5. The combination with a magazine constructed of a substantially uniform width and having tapered sides and a concave bottom as described, a horizontal conduit leading from one end of said magazine, and a hopper arranged above said conduit so as to discharge therein, a square shaft extending centrally through said conduit and magazine, the bottom of said magazine forming a substantial continuation of said conduit, and conveyer-flights on said shaft, said conveyer-flights being formed to fit said conduit and having a uniform carrying capacity within the same and a reduced carrying capacity within the magazine, substantially as specified.

570,925. SLACK-ADJUSTER FOR RAILWAY-CAR BRAKES. MATTHEW J. GRIER, Philadelphia, Pa. Filed Mar. 9, 1896. Serial No. 582,384. (No model.)

Claim.—1. Slack-adjusting mechanism for railway-car brakes, consisting of a lever independent of the brake-beams or brake-beam levers of the car but having connection therewith so as to be operated on each application of the brakes, said lever being combined with a pair of racks and having two alternately-acting fulcrums whereby, in case of undue slack in the gear, there is on the application of the brakes an advance of one rack, and on the release of the brakes, an advance of the other rack, substantially as specified.

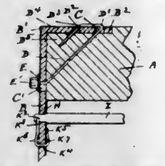


2. Slack-adjusting mechanism for car-brakes, consisting of a lever independent of the brake beams or brake beam levers, but having connection therewith, whereby it is operated on each application of the brakes, said lever having alternately-acting fulcrums and being combined with a pair of racks, one of which, in case of undue slack in the gear is advanced when the brakes are applied, and the other when the brakes are released, said lever being guided so that its advance movements are in straight lines, substantially as specified.

3. Slack-adjusting mechanism for car-brakes, consisting of a lever independent of the brake-beams or brake-beam levers but having connection therewith, and carrying a pair of racks each engaging with a suitable retainer, said racks being constructed and disposed as described whereby the connection of first one rack and then that of the other rack with the lever constitutes the fulcrum on which said lever swings, substantially as specified.

4. Slack-adjusting mechanism for car-brakes, consisting of a lever connected at one end to the brake-beam lever at one end of the truck, and at the other end to the brake-beam lever at the opposite end of the truck, said lever having alternately-acting fulcrums and being combined with racks engaged by suitable retainers and so disposed in respect to the lever that, in case of undue slack in the gear one rack will be advanced by movement of the lever in one direction and the other by movement of the lever in the opposite direction, substantially as specified.

570,926. HARNESS-FRAME FOR LOOMS. HUDSON W. HAKES, Millbury, Mass. Filed Mar. 6, 1894. Serial No. 502,600. (No model.)

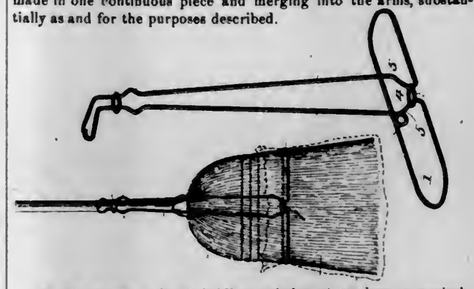


Claim.—1. In a harness-frame for looms, the combination of side rails A, A, metallic end straps B, B, bent at B' to inclose the ends of said side rails, said side rails having diagonal holes and said metallic straps having elongated holes C and C' and wires D passing diagonally through said side rails and said metallic straps and bent at one end to bring said wire at right angles with the metallic strip and bent at the opposite end to re-enter said strap and rail, as at D^5 and hold said rail from rocking on said wire, substantially as described.

2. In a harness-frame, the combination with side rails A, A, end straps B, B, and bar I held by said end straps, and provided with a hole K^2, of a latch K^3, adapted to engage the hole K^2, and consisting of a bent elastic wire pivotally held in the end strap as at K^4, and bearing against the outer side of said end strap, and an elastic prong K^2 bearing against the inner side of said end strap and opposite to said latch, whereby said end strap is pinched between said latch and said elastic prong, substantially as described.

570,927. BROOM OR BRUSH BRIDLE. FRANCIS S. HANN, York, Pa., assignor to William R. Hamilton, Indiana, Pa., and Orlando W. Crampton, Hampstead, Md. Filed Mar. 10, 1896. Serial No. 582,596. (No model.)

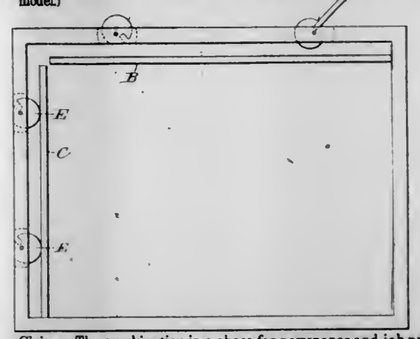
Claim.—1. The broom or brush bridle consisting of the loop to encircle the straws or bristles, the arms to extend along the handle, and means for clamping the loop to the broom or brush head and adjustable means for clamping the arms to the handle, the loop being made in one continuous piece and merging into the arms, substantially as and for the purposes described.



2. The broom or brush bridle consisting of the loop to encircle the broom or brush head, the arms forming a continuation of said loop, and adapted to lie along the handle, and formed with offsets next to the loop and also with offsets next to the outer ends of the arms, a ring to bind the loop around the broom or brush head, and a ring to bind the outer ends of the arms to the handle, substantially as and for the purposes described.

3. The broom or brush bridle consisting of the loop to encircle the broom or brush head and formed with a coil to stiffen the same and constitute means for suspending the broom or brush, the arms formed as a continuation of the loop and made with offsets at opposite ends and having a loop at its outer end to encircle the broom or brush handle, and rings adapted to be moved over the offsets at opposite ends of the arms to clamp the loop to the broom or brush head and the arms to the handle in various adjustments of the bridle, substantially as and for the purposes described.

570,928. PRINTER'S CHASE. HORACE J. HARDING and BEN A. OSBORN, Albion, N. Y. Filed Dec. 31, 1895. Serial No. 574,274. (No model.)



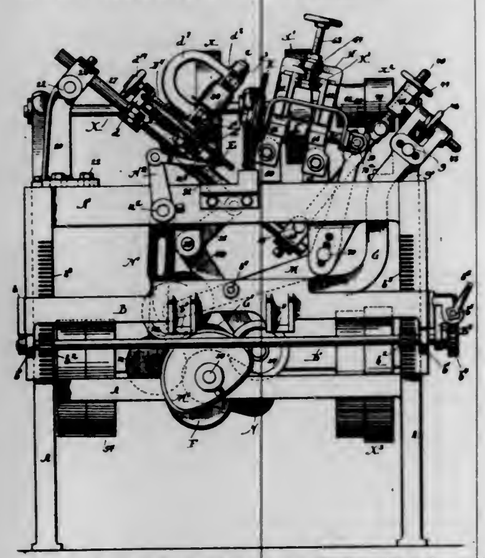
Claim.—The combination in a chase for newspaper and job printing having slots in the frame, eccentrics pivoted in the slots with the segment of the eccentrics which is opposite the part of the greatest eccentricity, being cut away whereby, when the chase is locked no part of the eccentrics projects outside the frame and when unlocked no part projects inside same, and the eccentrics each being provided with a slot in which to insert an operating-lever, substantially as described.

570,929. SAW-SHARPENING MACHINE. SEYMOUR H. HOLLEY and SAMUEL V. RAWLINGS, Marquette, Mich. Filed June 19, 1895. Serial No. 553,315. (No model.)

Claim.—1. In a saw-grinding machine, the combination with suitable mechanism for advancing and holding the saw to be ground, of a throat-grinding wheel and mechanism for operating the same, and an independent wheel for grinding the backs of the saw-teeth and mechanism for operating the same, and suitable mechanism for sustaining said wheels in close proximity and means whereby said wheels are caused to conjointly act upon the same tooth between the movements of the saw necessary to bring successive teeth in position to be ground,

2. In a saw-grinding machine, the combination with a throat-grinding wheel and with a sustaining-frame for said wheel, of pivoted levers for reciprocating and vibrating said sustaining-frame, cams for

operating said pivoted levers, a second wheel for grinding the backs of the saw-teeth and arranged in close proximity to the throat-grinding wheel, mechanism for sustaining said grinding-wheels so placed and whereby they are permitted to act upon the same tooth to be ground between the movements of the saw, a lever for effecting the shift of said second grinding-wheel and a cam for operating said lever, and a shaft whereon said several cams are mounted.



3. In a saw grinding machine, the combination with a throat-grinding wheel, of a reciprocating frame for sustaining said wheel, said frame extending transversely of the machine, suitable guide mechanism whereon said frame is mounted in manner free to slide, a pivotal support for said guide mechanism and mechanism for vibrating said guide mechanism and for reciprocating said frame.

4. In a saw-grinding machine, the combination with a throat-grinding wheel, of a sustaining-frame for said wheel extending transversely of the machine, suitable guide mechanism for said sustaining-frame, a pivotal support for said guide mechanism, adjustable brackets to which said pivotal support is connected and mechanism connected to said sustaining-frame and its guide mechanism and serving to reciprocate and vibrate said frame.

5. In a saw-grinding machine, the combination with a throat-grinding wheel, of a frame for sustaining said wheel, said frame extending transversely of the machine, mechanism for vibrating and reciprocating said frame and a forwardly-projecting extension upon said frame whereby the arbor of the grinding-wheel is sustained.

6. In a saw-grinding machine, the combination with a throat-grinding wheel, of a frame D for sustaining said wheel, suitable guides 26 and 27 whereon said frame is mounted in manner free to slide, pivoted supports 24 and 25 for the outer ends of said guides, and suitable mechanism for reciprocating said frame D and for vibrating said guides.

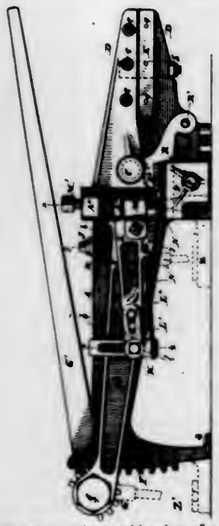
7. In a saw-grinding machine, the combination with a throat-grinding wheel E, a sustaining-frame D for said wheel, guides 26 and 27 whereon said frame is mounted in manner free to slide, pivoted supports 24 and 25 for said guides and brackets 20 and 21 whereby said supports are carried.

8. In a saw-grinding machine, the combination with a throat-griading wheel E and with a reciprocating and vibratory frame for sustaining said wheel and suitable guide mechanism whereon said frame is mounted, of mechanism for operating said frame comprising a pivoted lever connected with said frame for reciprocating the same, a cam for operatiog said lever, a pivoted lever connected with the guide mechanism of said frame and serving to vibrate the same and a cam for operating said last mentioned lever.

9. In a saw-griading machine, the combination with a throat-grinding wheel and with a reciprocating and vibratory frame for sustaining said wheel, and with guide mechanism for said frame, of means for reciprocating said sustaining-frame and means for vibrating said guide mechanism comprising a pivoted adjustable lever G suitably connected with said guide mechanism.

10. In a saw-grinding machine, the combination with a throat-grinding wheel and with a reciprocating and vibratory frame for sustaining said wheel, of suitable means for reciprocating said sustaining-frame and means for vibrating said sustaining-frame comprising a pivoted lever G, an adjustable rod 43 connected to said lever G at its upper end and an adjustable rod 39 connecting said rod 43 with said guide mechanism.

570,930. COMBINED SHEARING OR CUTTING TOOL. RUDOLPH M. HUNTER, Philadelphia, Pa. Filed Oct. 19, 1887. Serial No. 252,775. (No model.)



Claim.—1. In a shears the combination of a stationary frame A having a rack F at one end and a shear-blade E on its other end and a shelf O on one side and to the rear of the shear-blade, the pivoted lever B having a shear-blade corresponding to the blade E and fulcrumed to the frame A immediately to the rear of the shear-blades and also provided with a projection A^3 having a screw M′ somewhat to the rear of the fulcrum, a hand-lever G′ journaled at the rear end of the lever B and having a pinion G meshing with the rack F, a rectangular punch-plate N resting upon the shelf, a punch Q, a pivoted holder for said punch arranged under the screw M′, and a clamp P and screw *p* to hold the punch-plate in position upon the shelf in proper adjustment under the punch.

2. A metal-cutting tool or shear consisting of the combination of a stationary frame A and a lever B fulcrumed thereto, shear-blades E secured to said parts A and B on one side of the pivot or fulcrum and forming a bearing between the two parts, the shear-blades of a bar or rod cutter arranged upon the opposite side of the pivot or fulcrum, and a punching mechanism located to one side of the plane of the bearings formed by the several shear-blades and at a point intermediate of them and consisting of a punch-plate or female die held by the frame A and the punch or male die Q operated by the other or lever B, and power devices to cause the lever B to have a movement upon the frame A simultaneously operating the bar-cutter, shear and punching mechanism.

3. In a shears the combination of the frame A, a lever B pivoted thereto, power-applying mechanism consisting of a rack carried upon the frame and a lever and pinion meshing with the rack and pivoted upon the lever B, with a punching device consisting of a die-plate N and a punch Q arranged upon said parts A and B between the fulcrum or pivot thereof and power-applying mechanism and in which the punch is operated by the lever B and the punch-plate is carried by the frame A, and bar-cutting shear-blades H and I secured respectively to the parts A and B and arranged between the fulcrum or pivot and the power-applying mechanism.

4. The combination of a frame A, a lever B pivoted to the frame at C, a cutter-blade H secured to the frame and having an opening H′ of greater height at its end next to the fulcrum C than at the other end, a cutter or blade I working in contact with the plate H and secured to the lever B, and a guide R for the bar or rod to be cut carried by one of said parts H and B.

5. The combination of a frame A, a lever B pivoted to the frame at C, a cutter-blade H secured to the frame and having an opening H′ of greater height at its end next to the fulcrum C than at the other end, a cutter or blade I working in contact with the plate H and secured to the lever B, a guide R for the bar or rod to be cut carried by one of said parts H and B, and shear blades E, E secured respectively to the frame A and lever B so as to work in contact with each other upon the side of the fulcrum or pivot C farthest from the plate H and blade I whereby there are bearings upon each side of the pivot for the movable lever B.

6. The combination of a frame A, a lever B pivoted to said frame A, shear-blades E, E respectively secured to the free ends of the parts A and B, a smooth bearing-face *b* upon the side of the lever B of its long arm and directed away from the frame A, and an overhanging guide-arm K from the frame A having a smooth guide-face *k* against which the smooth face *b* of lever B works.

7. The combination of the frame A, the lever B pivoted to the frame at C, shear-blades upon the free ends of said frame and lever, a shelf or table O secured to the frame to the rear of the blades E and to one side of the said frame, a removable punch-plate N adjustably secured to said shelf, a punch Q for said plate operated by the lever B, and a removable stripper R for the punch carried by the frame A.

8. The combination of a frame A, a lever B pivoted to the frame, a shelf projecting laterally from the frame, a rectangular punch-plate N fitted to the shelf and adjustable in all directions thereupon, a clamp P secured to said shelf or its frame to clamp the plate in position, an adjusting-screw *p* carried by the frame to limit the lateral adjustment of the punch-plate, and a movable punch Q operated by the lever B.

9. The combination of a frame A, a lever B pivoted to the frame, a shelf projecting laterally from the frame, a rectangular punch-plate N fitted to the shelf and adjustable in all directions thereupon, a clamp P secured to said shelf or its frame to clamp the plate in position, an adjusting-screw *p* carried by the frame to limit the lateral adjustment of the punch-plate, a movable punch Q operated by the lever B, and a removable stripper R arranged above the punch-plate and carried upon the frame therefor.

10. The combination of a frame A, a lever B pivoted to the frame, a shelf projecting laterally from the frame, a rectangular punch plate N fitted to the shelf and adjustable in all directions thereupon, a clamp P secured to said shelf or its frame to clamp the plate in position, an adjusting-screw *p* carried by the frame to limit the lateral adjustment of the punch-plate, a movable punch Q operated by the lever B, a pivoted arm pivoted to the stationary frame A and provided with a clamp at its free end for detachably holding the punch, and a laterally-projecting part movable with the lever B to directly operate upon the pivoted arm.

11. The combination of the frame A, the lever B pivoted thereto at C, a punch-plate N secured to the frame, an arm L pivoted to the frame at a point above the punch-plate and having a punch-holder M, a punch Q carried by said holder, a projecting part of the lever B above the arm L to depress it, and a projection U upon the lever B below the arm L to raise it positively.

12. The combination of the frame A, a lever B pivoted to the frame A at C, a punch-plate N secured to the frame, an arm L pivoted to the frame and provided with a punch-holder M, a punch for said holder, a projection A^3 extending laterally from the lever, a screw M′ carried by said projection and directly operating upon the arm L to force the punch toward the punch plate, and a spring N to force said arm L away from the punch-plate.

13. The combination of the frame A, the lever B pivoted thereto at C, a punch-plate N secured to the frame, an arm L pivoted to the frame at a point above the punch-plate and having a punch-holder M, a punch Q carried by said holder, a projecting part of the lever B above the arm L to depress it, a projection U upon the lever B below the arm L to raise it positively, and a spring to force the arm L away from the punch-plate.

14. The combination of a frame A, a lever B pivoted to the frame A, a punch-plate secured to the frame A below the lever B, a punch-carrying arm pivoted to the frame A at the rear of the pivot-point of the lever B, a punch carried by the said arm working in connection with the punch-plate, and an adjustable pressure-screw M′ carried by the lever B to the rear of the pivot adapted to press upon the punch-carrying arm.

15. The combination of a frame A, a lever B pivoted to the frame A, a punch-plate secured to the frame A below the lever B, a punch-carrying arm pivoted to the frame A at the rear of the pivot-point of the lever B, a punch carried by the said arm working in connection with the punch-plate, an adjustable pressure-screw M′ carried by the lever B to the rear of the pivot adapted to press upon the punch-carrying arm, and a spring to force said arm up against the screw.

16. The combination of a frame A, a lever B pivoted to the frame A, a punch-plate secured to the frame A below the lever B, an extensible punch-carrying arm pivoted to the frame A at the rear of the pivot-point of the lever B, a punch carried by the said arm working in connection with the punch-plate, and an adjustable pressure-screw M′ carried by the lever B to the rear of the pivot adapted to press upon the punch-carrying arm.

17. The combination of a frame A, a lever B pivoted to the frame A, shear-blades E, E, respectively secured to the free ends of the frame A and lever B, a laterally-projecting shelf or table O extending from the frame A at a lower level than the lever B, an adjustable punch-plate N secured to said shelf, a punch Q for said plate supported independently of but movable by the lever B, and a stripper R for the punch held by the frame A and maintained in position between the shelf and pivot of the lever B and forming a clearance above the punch-plate.

18. The combination of a frame A, a lever B pivoted to the frame A, shear-blades E, E respectively secured to the free ends of the frame A and lever B, a laterally-projecting shelf or table O extending from the frame A at a lower level than the lever B, an adjustable punch-plate N secured to said shelf, a punch Q for said plate supported independently of but movable by the lever B, and a stripper R having a vertical face provided with a scale arranged longitudinally or parallel to the lever for the punch held by the frame A and maintained in position between the shelf and pivot of the lever B and forming a clearance above the punch-plate.

19. The combination of a frame A having a base or support for attachment to the table or floor and a stationary rack-segment F at its rear end, a lever B pivoted to the frame A at C, shear-blades secured to the free ends of the frame A and lever B, a hand-lever G′ having a pinion G pivoted to the rear end of the lever B and adapted to mesh with the rack F of the frame A whereby the pinion and hand-lever rise and fall with the movable lever B.

20. The combination of a frame A having a base or support for attachment to the table or floor and a stationary rack-segment F at its rear end, a lever B pivoted to the frame A at C, shear-blades secured to the free ends of the frame A and lever B, a hand-lever G′ having a pinion G pivoted to the rear end of the lever B and adapted to mesh with the rack F of the frame A whereby the pinion and hand-lever rise and fall with the movable lever B, a punch-plate N secured to one side of the frame A, a vertically-movable punch Q, and an arm carrying the punch pivoted to the frame A and operated by the lever B.

21. The combination of a stationary frame, a lever pivoted thereto, a punch-plate secured to the frame, an arm pivoted to the frame and provided with punch-holders consisting of a head L^3 having a V-shaped groove and a clamp M and clamping-screws *m*, and a projection from the lever to press upon said arm to force the punch toward the punch-plate.

570,931. DRESSMAKER'S STAND. ANNA L. JONES, Philadelphia, Pa. Filed Oct. 22, 1895. Serial No. 566,488. (No model.)



Claim.—1. In a dressmaker's table, a folding top provided with longitudinal and transverse grooves, apertures in the end and side of said top, a folding rule having lugs adapted to engage the apertures on either the side or the end of the table and thereby secure the fabric to the table said rule being foldable at such distances as to allow its ends to be bent down when it is attached to the end of the table, as and for the purpose described.

2. In a dressmaker's table, a folding top provided with longitudinal and transverse grooves, apertures in the end and side of said top, a folding rule having lugs adapted to engage the apertures on either the side or the end of the table and thereby secure the fabric to the table, said rule composed of sections corresponding in length to the length of the sections of the top, as and for the purpose described.

3. In a device of the character described, a folding table top, apertures in the end and side of said top, a folding strip having lugs adapted to engage apertures on either side or the end of the top, said strip composed of sections corresponding in length to the length of the sections of the top and being hinged so as to allow its ends to be bent down when it is attached to the end of the top, as and for the purpose described.

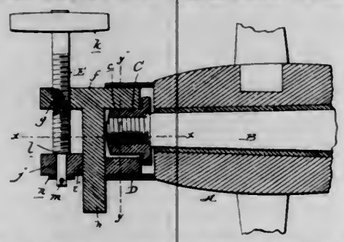
570,932. COMBINED PENCIL AND PENHOLDER. JASPER D. KLOUS, Momence, Ill., assignor to Will C. Curtis, Grant Park, Ill. Filed Jan. 24, 1896. Serial No. 576,706. (No model.)

Claim.—As a new article of manufacture, an attachment for pencils, pen-staffs, or the like, consisting of an elongated slidable holder

bent or coiled from a single piece or blank of elastic sheet metal into a convolute tube with overlapping side edges, forming a clasp to receive a pen at one end and adapted to hold itself in place upon a suitable staff, said tube or holder provided at the pen-receiving end with the angular lip or flange and further provided, at an intermediate point of its length, with a longitudinal slot, substantially as and for the purposes described.



570,933. AXLE-NUT WRENCH. WILLIAM E. KLECKNER, Hicksville, Ohio. Filed Mar. 6, 1896. Serial No. 582,124. (No model.)



Claim.—1. The axle-wrench comprising the fixed jaw carrying the nut seat or socket, and having the lug or branch provided with the screw-tapped aperture, and the slidable branch extending therefrom, the slidable jaw arranged on said slidable branch, and both jaws adapted to engage the inner side of a hub-band, and the operating-screw connecting said jaws, substantially as specified.

2. The fixed or stationary jaw having its outer side beveled and carrying the nut seat or socket provided with friction-springs, and having the lug or branch provided with the screw-tapped aperture *g*, and also having the slidable branch or bearing *h*, the slidable jaw *b*, having the slot *i*, and also beveled on its outer side, and the screw E, bearing in the threaded aperture *g*, and secured at one end in the aperture *j*, of the slidable jaw, substantially as specified.

570,934. COMBINATION-TOOL FOR PIPE-FITTERS. DAVIS KRITCHER and CHARLES WEINSTEIN, Worcester, Mass. Filed June 15, 1896. Serial No. 595,526. (No model.)



Claim.—1. In a device of the class described, the combination of a body portion, wrench-jaws pivotally mounted therein, an operating-handle threaded into the body portion, links for connecting the operating-handle and the wrench-jaws, said parts being arranged so that the wrench-jaws will be moved simultaneously when the operating-handle is turned, substantially as described.

2. In a device of the class described, the combination of a body portion, wrench-jaws pivoted in said body portion, said wrench-jaws being formed to engage near their outer ends so that they may be employed as pliers or pincers, an operating-handle threaded into the body portion, and links for connecting said handle with the wrench-jaws, substantially as described.

3. In a device of the class described, the combination of a body portion, wrench-jaws movably mounted in said body portion, a die-holder or frame, and handles secured in the body portion and die-holder respectively, said parts being constructed so that the body portion and die-holder may be detachably secured together to form a double-handle die-stock, substantially as described.

4. In a device of the class described, the combination of a pipe-wrench comprising a body portion, wrench-jaws mounted in said body portion, and means for operating said wrench-jaws, a secondary body portion or die-holder, said parts being provided with oppositely-extending handles, and means for detachably securing said parts together to form a double-handled die-stock, substantially as described.

5. In a device of the class described, the combination of a body portion, wrench-jaws movably mounted in said body portion, a handle for operating the wrench-jaws, a holder for threading-dies, a handle secured to said holder, and means for securing the body portion and holder together, so that said devices may be united to form a double-handled die-stock, substantially as described.

6. In a device of the class described, the combination of a pipe-wrench comprising a body portion, wrench-jaws mounted therein, an operating-handle threaded into the body portion, and links for connecting the operating-handle with the wrench-jaws, and a holder for threading-dies adapted to fit over the body portion of the pipe-wrench, said holder and body portion being formed with supporting ribs and grooves, and said holder having a spring-catch for detachably securing the parts together, substantially as described.

7. In a device of the class described, the combination of a body portion, wrench-jaws movably mounted in said body portion, a handle for operating the wrench-jaws, a holder for threading-dies, a spring catch or pawl mounted therein, means for adjusting said spring catch or pawl so that it may ratchet or turn a threading-die in either direction, a spring-catch for securing the bushing or guide in said die-holder, a handle secured to said holder, and means for detachably fastening the body portion and holder together so that said devices may be united to form a double-handled die-stock, substantially as described.

570,935. RESERVOIR FOR LIQUID SOAP. ELMER LEE, Chicago, Ill. Filed Mar. 31, 1894. Serial No. 505,857. (No model.)

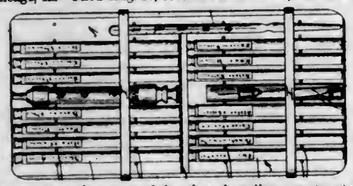


Claim.—1. A reservoir for liquid soap, comprising a glass body constricted at its ends to provide annular necks, a cap or closure applied to the upper neck and a second cap having a perforation in its bottom applied to the lower neck, and a valve to control the discharge-aperture supported by the cap, the valve-stem protruding through the aperture thereof, substantially as described.

2. In a reservoir for dispensing liquid soap, the combination with a containing-body having a filling-opening and a neck at its lower end providing a discharge-aperture, a thimble supported within the neck and having a perforated closure at its upper end and a discharge-opening at its lower end whereby there is provided a subchamber below the closure and a valve whose stem has a bearing in the closure and its lower end provided with a discharge-aperture, substantially as described.

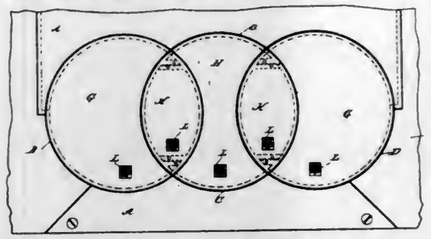
3. In a reservoir for dispensing liquid soap, the combination with a containing-body having a filling-opening and a neck at its lower end a thimble applied interiorly of the neck, a perforated closure for the upper end of said thimble, a valve applied to the discharge-aperture and the valve-stem entering the aperture and having a bearing toward its lower end against the walls of the discharge-aperture, said valve-stem having a score or channel to provide an inlet to and an outlet from the subchamber, substantially as described.

570,936. CASE FOR SURGICAL INSTRUMENTS. ELMER LEE, Chicago, Ill. Filed Aug. 12, 1895. Serial No. 559,002. (No model.)



Claim.—A pocket-case of the class described constructed from a single thin sheet of metal having its ends upturned, its side margins beaded and provided with a transverse partition dividing it into compartments, and rows of pins fixed in the sheet and extending transversely thereof and providing spaces longitudinally of the sheet to receive articles, substantially as and for the purpose described.

570,937. STOVE-LID. GEORGE B. LITTLEFIELD, San Francisco, Cal. Filed Mar. 25, 1896. Serial No. 584,790. (No model.)

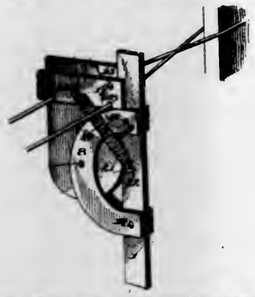


Claim.—1. A stove or range provided with three circular removable covers, in the top thereof, which are arranged in line, said covers being composed of five separate pieces, and parts of the two side covers forming corresponding parts of the central cover, and the openings to which said covers are applied being similarly arranged, substantially as shown and described.

2. A stove or range provided with three circular removable covers, in the top thereof, which are arranged in line, said covers being composed of five separate pieces and parts of the two side covers forming corresponding parts of the central cover, and the openings to which said covers are applied being similarly arranged, and the parts of the side covers which also form parts of the central covers being removable with either the central or the side covers, substantially as shown and described.

3. A stove or range provided with two circular side openings in the top thereof, and the space between which is also cut out by segmental lines which form arcs of a circle of the same diameter as the side openings and the openings thus formed being provided with circular covers which consist of five separate parts, the adjacent sides of the cover being cut out forming elliptical sections or parts which also form part of the central cover, and said parts being combined in such manner that the elliptical sections or parts are removable with the covers of the side openings or with the cover of the central opening, as may be desired, substantially as shown and described.

570,938. FENCE-MACHINE. JAMES D. LOVING, Bowling Green, Ky. Filed July 28, 1896. Serial No. 600,829. (No model.)



Claim.—1. In a fence-machine, the combination of a frame, a plate having pivotal connection with the frame and adapted to have the wires applied thereto, and a spring connection between the plate and frame to throw the plate to one side or the other when turned to and moved slightly beyond a position in which a straight line will pass through the pivotal support of the plate and the points of attachment of the spring connection with the plate and frame, substantially as set forth.

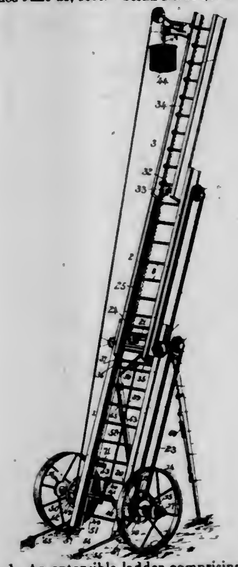
2. In a fence-machine, the combination of a plate having inclined slideways, a clamp having pivotal connection with the plate, and dogs pivoted upon the clamp and adapted to move upon the slideways, substantially as and for the purpose described.

3. A fence-wire twister consisting of a frame, a notched plate rockingly mounted thereon, a clamp having a notched lower edge and having rocking bearing on said rocking plate, and a spring connecting said clamp, rocking plate, and frame, substantially as and for the purpose set forth.

4. A fence-wire twister consisting of a frame, a plurality of bridge-pieces mounted thereon, plates rockingly pivoted on said bridges and having curved inner ends and notched edges, clamp-plates having notched under edges and having rocking bearing on said rocking plates, springs connecting said rocking plates, clamp-plates, and frame, and an operating-handle for vertically reciprocating said frame, substantially as and for the purpose set forth.

5. A fence-wire twister consisting of a frame, a plurality of curved bridge-plates connected therewith, plates having rocking bearing on said bridge-plates and having curved rear ends and at their upper portions notched edges and inclined ways, dogs adapted to reciprocate along said ways, plates located on opposite sides of said dogs and having notched under edges and rockingly connected with said dogs, eyed rods or links having rocking bearing in slots or holes in said frame and notched plates, respectively, springs connected with said eyed rods or links, and an operating-handle attached to the frame for vertically reciprocating the same, substantially as and for the purpose set forth.

570,939. EXTENSION-LADDER. JOHN F. MACK, Little Valley, N. Y. Filed June 25, 1895. Serial No. 554,007. (No model.)



Claim.—1. An extensible ladder comprising a series of sections, actuating mechanism for extending the sections, and comprising pinions disposed at opposite ends of adjacent sections and brought together when the said sections are extended, a cross-shaft provided with short arms to engage with the section after it has been extended, and a lever operatively connected with the said shaft to turn the same, whereby its short arms are brought in positive engagement with the said extended ladder-section to move the latter up to insure the engagement of the said pinions and maintain them in meshing relation, substantially as set forth.

2. In combination, slidable ladder-sections, actuating mechanism comprising a rack and pinion for moving the first adjustable section of the series and for carrying the same beyond its operating mechanism when fully extended, a rack and pinion for the second adjustable ladder-section of the series brought into gear with the said actuating mechanism, and means for elevating and supporting the first adjustable ladder-section when moved to a point beyond its actuating mechanism and at the same time bringing the second adjustable ladder-section in gear with the actuating mechanism and maintaining the parts in operative relation, substantially as set forth.

3. In combination, a series of slidable ladder-sections, the first section provided with a shaft near its upper end having a pinion, the next section having a shaft provided with a corresponding pinion at its lower end, and means for elevating or extending the movable section and throwing its operating mechanism out of gear when the said section is fully extended and bringing the said pinions into mesh, substantially as set forth.

4. In an extensible ladder, the combination with a bracket provided with a guide, of a basket, or car, having rigidly secured thereto a vertical rod to engage with the said guide and hold the car, or basket, in a fixed relative position when elevated, substantially as set forth.

5. In combination, an extensible ladder, a bracket secured to the upper end thereof and provided with a pulley and a guide, a basket having a vertically-extending rod adapted to enter and cooperate with the said guide, a hoisting-rope, a drum provided with means for its rotation, a toothed wheel having connection with the drum, a lever to engage with the toothed wheel to hold the drum against rotation in either direction, and a band-brake adapted to be applied to a head of the drum to control the speed of the latter during the descent of the basket, substantially as described.

6. In combination, a series of ladder-sections slidably related, the relatively-movable sections provided with rack-bars, shafts journaled in the opposite ends of the sections and provided with pinions to mesh with the rack-bars, by means of which the said sections are extended, pinions on the shafts of adjacent sections and adapted to be brought into mesh when said sections are relatively extended to the limit of their movement, and a support adapted to be engaged with the section and hold it at the limit of its upward movement and maintain the said pinions in meshing relation and the operating mechanism out of gear, substantially as set forth.

570,940. EMBROIDERY-HOLDER. WILLIAM C. MAYNARD, Canton, Ohio. Filed Apr. 27, 1896. Serial No. 589,137. (No model.)



Claim.—1. An embroidery-frame comprising a holder, a clamping-band formed with loops and a cord or braid laced through said loops and provided with kinks to engage the work and prevent the band coming in contact therewith.

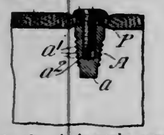
2. An embroidery-frame composed of a holder, a clamping-band having vertical loops the inner sides of which extend parallel with the holder, and a cord or braid laced through said loops and formed with kinks to engage the work placed upon the holder.

3. An embroidery-frame comprising a holder, a clamping-band formed with loops, and a cord or braid laced through said loops and formed with kinks and having free ends by which the band may be tightened about the holder.

4. In an embroidery-frame, a clamping-band having its interior face provided with a fabric whereby the band when in use will not be brought into contact with the work.

5. In an embroidery-frame, the clamping band formed with vertical loops and a cord or braid laced through said loops around said band and formed with kinks to engage the work.

570,941. DEVICE FOR CLOSING TUBE PUNCTURES. WILLIAM B. MERRITT, Braintree, Mass., assignor of two-thirds to George W. Arnold and Edward H. Kinney, Brooklyn, N. Y. Filed Apr. 23, 1896. Serial No. 588,720. (No model.)

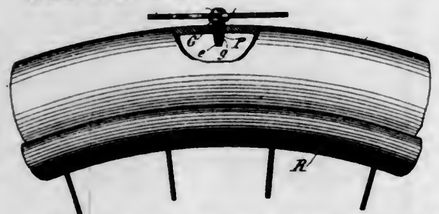


Claim.—1. A device for closing tube punctures consisting of a piece or nut of tapering section having a helical groove in its surface, a second piece or disk having a surface formed to cooperate with the base of said tapering section and a screw uniting the two sections, substantially as described.

2. A device for closing tube punctures consisting of a piece or nut of tapering section having a helical groove or thread in its surface, a disk having a surface formed to cooperate with the base of said tapering section and means for removably uniting said sections, substantially as described.

3. A device for closing tube punctures consisting of a piece or part of tapering longitudinal cross-section having a screw-thread on its surface, a ring or washer having a surface formed to cooperate with the base of said tapering piece and means for uniting said tapering piece and ring or washer, substantially as described.

570,942. DEVICE FOR CLOSING TUBE PUNCTURES. WILLIAM B. MERRITT, Braintree, Mass., assignor of two-thirds to George W. Arnold and Edward H. Kinney, Brooklyn, N. Y. Filed May 19, 1896. Serial No. 592,108. (No model.)



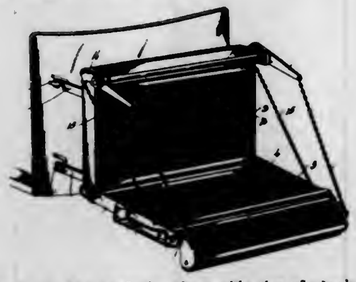
Claim.—1. A device for closing the aperture in a punctured tube consisting of a single integral piece of inflexible material having a head, disk or enlargement at one extremity and tapering to a small diameter at the other extremity, to form an entering end, a circular groove or channel in the surface near said head to form a seat for the edge of the tube-wall and a helical groove in the tapering surface extending from said channel to a point at or near the entering end, substantially as described.

2. A device for closing the aperture in a punctured tube consisting of a single integral piece having a concave head disk or enlargement at one extremity and tapering to a small diameter at the other extremity to form an entering end, a circular groove or channel in the surface near said head to form a seat for the edge of the tube-wall, a helical groove in the tapering surface extending from said channel to a point at or near the entering end, and a means for receiving, attaching or engaging a driving or turning tool at said head, substantially as described.

3. The combination of a perforated rubber tube and an air-tight plug for the puncture or perforation, said plug consisting of a tapering portion having a helical groove in its surface, a head or enlargement and a circular groove at the junction of the head and tapering portion, substantially as described.

4. The combination of a perforated rubber tube and an air-tight plug for the puncture or perforation, said plug consisting of a tapering part or portion, a disk like head or enlargement therefor having means for connecting with a driving-tool and a helical groove in the surface of said tapering portion extending from a point at or near said head to a point at or near the opposite extremity, substantially as described.

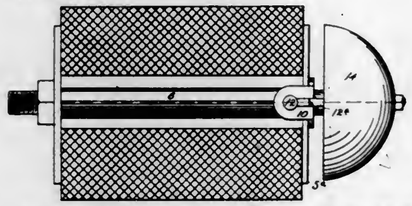
570,943. CAR-FENDER. THOMAS M. MILLER, Bethlehem, Pa., assignor of one-half to Charles G. Nickum, same place. Filed Feb. 14, 1896. Serial No. 579,312. (No model.)



Claim.—1. In a car-fender, the combination of a back, a hinged bottom extending forward from the back and disposed substantially horizontally, a hinged front section located in advance of the bottom, a pair of levers fulcrumed intermediate of their ends and located above the bottom, front and rear chains connecting the terminals of the levers with the front section and with the hinged bottom, a lug carried by the front section and located adjacent to the point of hinging of the same, a resilient catch mounted on the hinged bottom and arranged to engage the lug automatically when the front section is swung upward, and a releasing-lever fulcrumed intermediate of its ends on the hinged bottom and arranged to engage and depress the resilient catch, substantially as and for the purpose described.

2. In a car-fender, the combination of a back, a hinged bottom, a hinged front section arranged in advance of the bottom, a pair of levers fulcrumed intermediate of their ends on the back at opposite sides thereof, front and rear chains connecting the terminals of the levers with the front section and with the hinged bottom, and a catch for locking the front section in its raised position, substantially as described.

570,944. BICYCLE-BELL. JOSEPH R. MOORE, Denver, Colo., assignor to Blanche L. Kuykendall, same place. Filed Apr. 13, 1896. Serial No. 587,377. (No model.)

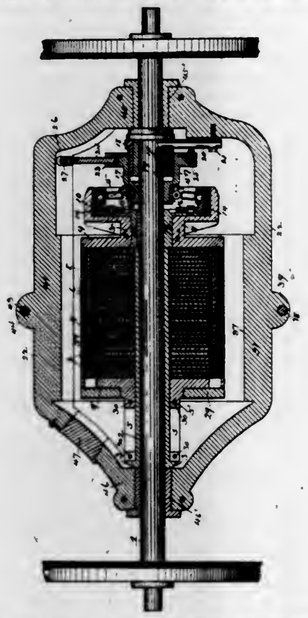


Claim.—1. The combination with the pedal, of suitable alarm mechanism mounted on the pedal-pin, and a movable device mounted on the pedal-frame and adapted to operate the alarm mechanism, as and for the purpose set forth.

2. The combination with the pedal, of suitable alarm mechanism attached to the pedal-pin, and comprising a gong and one or more spring-clappers, and a suitable device mounted on the pedal-frame, and adapted to be moved into the path of the clappers, as and for the purpose set forth.

3. The combination with the pedal, of suitable alarm mechanism mounted on the pedal-pin, and comprising a gong and one or more spring-clappers, and a push-button mounted on the pedal-frame and carrying an arm adapted to be moved into the path of the clappers, as and for the purpose set forth.

570,945. ELECTRIC LOCOMOTIVE. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed June 24, 1891. Serial No. 397,336. (No model.)



Claim.—1. An electric motor comprising a field-magnet shell with inwardly-projecting pole-pieces and outwardly-opening recesses for receiving the field-energizing coils, an armature and commutator inclosed within the field-magnet shell, and a clutch for coupling the armature to the work, also inclosed within the field-magnet shell, substantially as described.

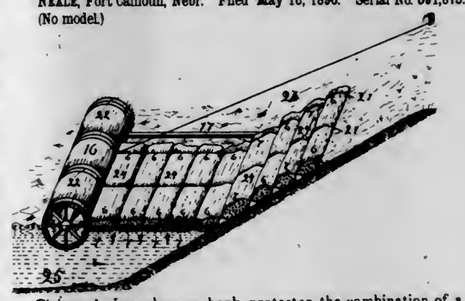
2. In an electric locomotive, the combination with the driving-axle of the car; of an electric motor composed of a two-part armature and field-magnet, the latter completely inclosing the former; and a two-part friction clutch for connecting the armature with the car-axle, substantially as described.

3. In an electric locomotive, the combination of an electric motor and friction clutch combined mounted upon a car-axle and having all operative parts inclosed by a field-magnet shell, with a slot in said shell; a slide covering said slot and a clutch-operating rod connected with the slide and passing through the slot, substantially as described.

4. In an electric motor, a field-magnet having in its body outwardly-opening annular recesses, and energizing-coils upon the cores within the recesses, substantially as described.

5. In an electric motor, a field-magnet shell completely enveloping the armature, said shell having in its body outwardly-opening annular recesses, and energizing-coils upon the cores within the recesses, substantially as described.

570,946. SHORE OR BANK PROTECTOR AND METHOD OF AND APPARATUS FOR CONSTRUCTING AND PLACING SAME. DAVID NEALE, Fort Calhoun, Nebr. Filed May 16, 1896. Serial No. 591,875. (No model.)



Claim.—1. In a shore or bank protector the combination of a mattress anchored at its upper or inner edge to the bank, with a hollow fascine having a permeable envelop, attached to the lower or outer edge substantially as described.

2. In a shore or bank protector the combination of a mattress consisting of suitable filling, and warp-lines running up and down the bank their inner ends anchored to the bank and their outer ends fastened to a hollow fascine having a permeable envelop, substantially as described.

3. In a river-bank protector the combination of a mattress anchored at its inner edge to the bank, its outer edge attached to a hollow fascine having a permeable envelop, and the upstream end of said mattress and said fascine anchored to a nest of like fascines placed against the bank and bed of the stream substantially as described.

4. The method of constructing and placing shore or bank protectors consisting in holding a floating body on the water above where the outer edge of the facing will come, attaching thereto and constructing on the water between said floating body and the bank a mattress anchored to the bank, and then sinking said floating body with the mattress attached, substantially as described.

5. The method of constructing and placing shore or bank protectors consisting in anchoring and floating a sinkable body above where the outer edge of the facing is desired, attaching thereto warp-lines and extending and anchoring them to the bank, placing in the warp-lines a filling and then sinking the anchored floating body substantially as described.

6. The method of constructing and placing shore or bank protectors consisting in anchoring a floating body on the water above where the outer edge of the facing is desired, attaching thereto warp-lines extending to and up the bank, and weaving into said warp-lines filling to form a mattress, and for that part of the mattress between the floating body and the bank, continuing one set of warp-lines under the filling and the opposite set on top of the filling and quilting it with stitches embracing opposite top and bottom warp-lines, and for that part above the water on the bank, crossing the warp-lines between instalments of the filling, then anchoring the inner ends of the warp-lines in the bank and then sinking the floating body substantially as described.

7. The method of constructing and placing shore or bank protectors consisting in floating and anchoring along the line of the outer edge of the facing a hollow fascine having a permeable envelop, then constructing on the water between the fascine and the bank a mattress attaching its outer edge to the fascine and anchoring its inner edge to the bank and then allowing the mattress and fascine to sink by the accumulation therein of alluvial deposits substantially as described.

8. A quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, consisting of a pointed shank having a hook formed by a barb having an eye near its point substantially as described.

9. A quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, consisting of a pointed shank having an eye and having a hook near its point formed by a barb having an eye, substantially as described.

10. A quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress consisting of a shank having a hook to engage a line on one side of the mattress and a sliding spur to engage a line on the opposite side substantially as described.

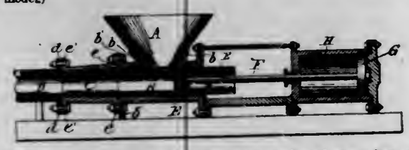
11. In a quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, the combination of a shank having a hook and hooked notches along its edge extending into the hook, with a spur to slide on the shank to and from the hook across the notches, substantially as described.

12. In a quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, the combination of a handled shank having a hook to engage one line and a foot-operated sliding spur to engage an opposite line substantially as described.

13. In a quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, the combination of a shank having a hook, with a spur connected to a thimble to loosely slide on the shank and carry the spur toward and from the hook, and a hooked notch on the shank to engage the thimble to temporarily hold the spur away from the hook substantially as described.

14. In a quilter for inserting stitches to embrace binding-lines on opposite sides of a mattress, the combination of a shank having a hook and along the shank notches hooking reversely toward the hook, with a thimble to slide on the shank and carry an inclined spur to and from the hook across the notches substantially as described.

570,947. APPARATUS FOR COMPRESSING AND AGGLOMERATING ROASTED ORES OR OTHER MATERIALS. JAMES W. NEILL, Salt Lake City, Utah. Filed Feb. 15, 1895. Serial No. 538,538. (No model.)



Claim.—1. In machines for compressing and agglomerating red-hot and incandescent ores, or other materials, the combination of the receiving-chamber B, provided with an opening in the upper side thereof, an integral flange surrounding the said opening, hopper A, having inclined or slanting sides, rigidly secured within the said integral flange, the plunger E, of the engine adapted to reciprocate within the receiving-chamber, the compression-chamber C, larger at its inner, than at its outer end, in horizontal alinement with, and attached to the said chamber B, and the cooling-pipe D, attached to the outer end of the said compression-chamber C, substantially as herein shown and described.

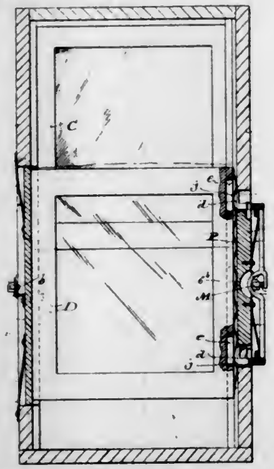
2. In machines for compressing and agglomerating red-hot and incandescent ores, or other materials, the combination of the receiving chamber B, provided with an opening in the upper side thereof, integral flange *b*, surrounding the said opening, and flange *b'*, at its outer end for attaching the same to the compression-chamber C, the hopper A, having inclined or slanting sides, rigidly secured within the said integral flange *b*, the movable plunger, E, adapted to reciprocate within the chamber B, the compression-chamber C, with flanges *e e'* at its ends, forming parts thereof, for the purpose of attaching the same, and the cooling-pipe D, provided with the flange *d*, surrounding its inner end, substantially as shown and described.

570,948. WINDOW. MICHAEL W. NEUENS, Port Washington, Wis., assignor of one-half to Reinhard Stelling, same place. Filed June 4, 1896. Serial No. 594,238. (No model.)

Claim.—1. The combination of a window-frame stile having a section less in width and thickness than the remainder thereof this section being of a length at least equal to that of sash adjustable in the frame of which said stile forms a part, sash-clearing sections of an inside stop and a parting-rail carried by said frame-stile section, and suitable means for effecting lateral adjustment of the aforesaid frame-stile section.

2. The combination of a window-frame stile having a section less in width and thickness than the remainder thereof this section being of a length at least equal to that of sash adjustable in the frame of which said stile forms a part, upper and lower spring-plates connecting said section with the other portion of the stile, sash-clearing sections of an inside stop and a parting-rail carried by the stile-section, and suitable means for retracting said stile-section against resistance of the spring plates.

3. The combination of a window-frame stile having a laterally-retractive section provided with sash-clearing sections of a stop and parting-rail, the opposite stile of the frame provided with a hinged section, a spring-controlled hook-plate carried by the latter stile-section for engagement with sash-stile recesses, and suitable means for holding the plate-hooks clear of said recesses.

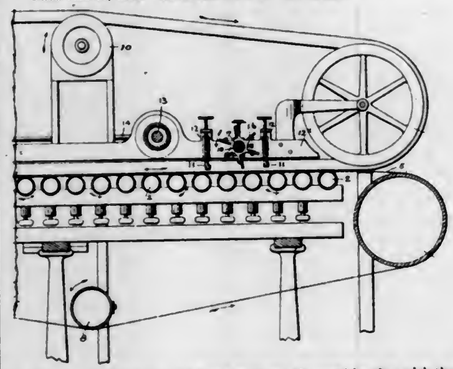


4. The combination of a window-frame stile having a laterally-retractive section provided with sash-clearing sections of a stop and parting-rail, the opposite stile provided with a hinged section, a spring-controlled hook-plate carried by the latter stile section for engagement with sash-stile recesses, a tongue overlapping a transverse depression in the plate, and a crank-rod rotarily adjustable in suitable bearings to be brought into the plate depression in opposition to said tongue.

5. The combination of a window-frame stile having a laterally-retractive section provided with sash-clearing sections of a stop and parting rail, the opposite stile provided with a hinged section, a spring controlled hook-plate carried by the latter stile-section for engagement with sash-stile recesses, suitable means for holding the plate hooks clear of said recesses, and indented hook-opposing friction-plates attachable to the recessed sash-stiles.

6 The combination of a window-frame stile, a spring-controlled plate having angular extremities extended through recesses in the stile, and sash having stiles thereof provided with indented friction-plates coöperative with the angular extremities of the spring-controlled plate as a means for holding the sash in vertically-adjusted position.

570,949. PAPER-MACHINE. FRANK P. NICELY, South Bend, Ind. Filed Jan. 20, 1896. Serial No. 576,064. (No model.)



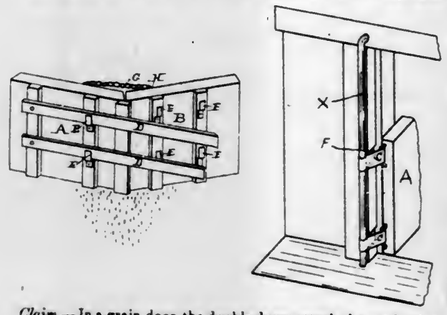
Claim.—1. In a paper-making machine, the combination with the frame of the machine, the endless wire-cloth, the deckles, the adjustable slice and a longitudinally-adjustable reel, comprising a shaft, hub-plates having radial arms and blades supported and secured to said arms, all adapted to operate and be adjusted conjointly for the purpose specified.

2. In a paper-machine of the Fourdrinier type, the combination with the frame of the machine, the endless wire-cloth, the slices, and a reel longitudinally and vertically adjustably supported between said slices to agitate the pulp upon the wire-cloth and between the slices, substantially as described.

3. The reel-mixer for paper-making machines comprising the three-part shaft, the end hubs carrying radial arms, the middle hub carrying slotted arms, and blades made of two sections dovetailed and overlapping each other at their inner ends, secured to the outer hub arms and adapted to slide in the slotted arms of the intermediate hub or hubs, substantially as described.

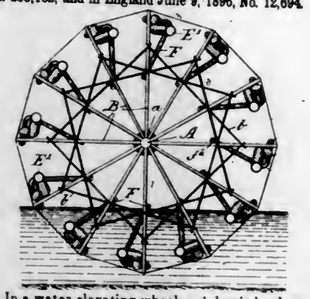
4. In a paper-making machine, the combination with the frame, of the endless wire-cloth supported upon a breast-roller thereon, the deckle and deckle-frame, the reel adjustably supported upon brackets on the deckle-frame, the vertical and horizontal shafts geared together and to the reel-shaft by miter-wheels, a cone-pulley on the horizontal shaft, a breast-roller and shaft, a similar pulley on the breast-roller shaft and a connecting-belt, substantially as described.

570,950. GRAIN-DOOR FOR GRAIN-CARS. THEODORE R. PARKER, Binghamton, N. Y. Filed Apr. 7, 1894. Serial No. 506,784. (No model.)



Claim.—In a grain-door, the double doors attached to and swinging laterally upon hinges, one end of which is secured to the outer edge of the door loosely in a staple, and the other end secured in the same loose manner around the vertical iron rod X inside of the car parallel with the door-jamb so that when the door is opened it can swing outwardly, inwardly, and laterally or when inside can be slid upward upon the rod X to the top of the car; the door when closed fitting behind the stop of the jamb and flush with the inside of the door-jamb; the jambs recessed to receive the hinges when the door is closed, preventing the lifting of the door by pressure of the grain; as described and for the purpose specified.

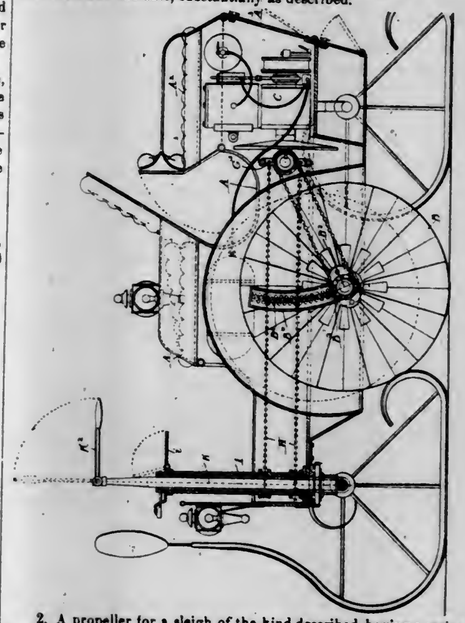
570,951. WATER-WHEEL. ANDRÉ MARC PASCAULT and JACQUES FRANÇOIS MARIE HENRY DE COURSAC, Vivonne, France. Filed July 14, 1896. Serial No. 599,181. (No model.) Patented in France Jan. 15, 1896, No. 253,182, and in England June 9, 1896, No. 12,694.



Claim.—In a water-elevating wheel, a siphonic bucket consisting of a horizontal tube closed at one end, an elbow secured to the open end of the tube and constituting the discharge orifice of the bucket, and a double-U shaped siphon in communication with the closed end of said tube, substantially as described.

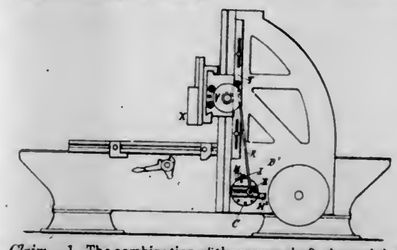
570,952. SELF-PROPELLING VEHICLE. REUBEN H. PLASS, Brooklyn, N. Y. Filed Apr. 20, 1895. Serial No. 546,555. (No model.)

Claim.—1. A self-propelling sleigh comprising an engine mounted thereon, a propeller-wheel, a connection between the propeller-wheel and the engine, and means for governing the connection between the engine and the propeller-wheel comprising a shifting friction-wheel, chains connected to the shifting friction-wheel and passing around a vertical hollow shaft arranged in the front of the sleigh, front runners mounted on a pivoted axle and a shaft provided with a handle and arranged in the hollow shaft, and gears for connecting the vertical shaft and the axle, substantially as described.



2. A propeller for a sleigh of the kind described, having a series of wings arranged at angles to each other and connected at their edges forming a continuous tread, and braces extending from the hub of the wheel outward and formed with or attached to the wings, substantially as described.

570,953. FEED-OPERATOR FOR METAL-PLANING MACHINES. ALBERT M. POWELL, Worcester, Mass. Filed Apr. 25, 1896. Serial No. 589,012. (No model.)



Claim.—1. The combination of the power-shaft, the peripherally-toothed head or wheel fixed thereon, the feed-box mounted loose on said shaft, right and left pawls pivoted within the feed-box and having points that engage with said head, as described, the oscillating cam-plate mounted upon the annular central portion of the feed-box concentric with the power-shaft, and provided at its peripheral edge with cam lugs for alternately disengaging said pawls, and also provided with a radial striker arm that projects through an opening in the side of the feed-box for exterior contact with the stops, the feed-box cap carrying the crank or wrist-pin, and exterior stationary stops that arrest the movement of said arm, substantially as set forth.

2. In combination, substantially as described, the feed power-shaft, the toothed head or wheel fixed thereon, the feed-box rotative about said shaft and head, the pawls pivotally supported within the feed-box and disposed at the right and left for engagement with said toothed head, said pawls having studs projecting from their sides, the cam-plate having cams for lifting the pawls, and a striker or arm projecting from the feed-box, the guard-plate having protuberant guards for holding up said pawls, means for limiting the movement of said

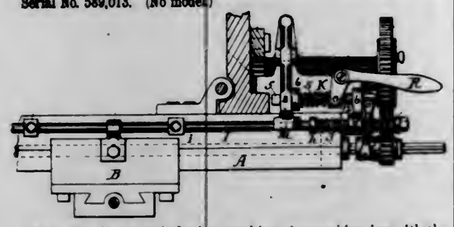
guard-plate relatively to the feed-box, the frictional engaging surfaces or disk between said head and guard-plate, and external arresting-stops, for the purposes set forth.

3. The combination, in a feed-operating mechanism, comprising the shaft, the toothed head, the feed-box, the right and left engaging pawls, the cam-plate, its striker-arm and external stationary stop-lugs for engaging said arm; of the frictionally-controlled guard-plate having protuberances for holding off said pawls, a stop for limiting the action of said guard-plate, and an adjusting-disk and nut for regulating the frictional tension on said guard-plate, substantially as set forth.

4. In feed-operating mechanism of the character described, the feed-box having on its rim integral internal projections S with seating-cavities therein for sustaining the hubs of the pawls; in combination with the pawls externally fitting said seating-cavities, the pivoting-screws *f*, and the toothed operating head or wheel that engages said pawls, as set forth.

5. The combination of the ratchet-head, the box surrounding said head, oppositely-directed spring-pressed pawls pivoted to said box and adapted for engagement with the ratchet-head, a cam-plate having projections for alternately throwing off the pawls, a striker for shifting the cam-plate, and means for retaining said cam-plate at positions of adjustment, when released from the striker, substantially as set forth.

570,954. AUTOMATIC FEED-STOP FOR METAL-PLANING MACHINES. ALBERT M. POWELL, Worcester, Mass. Filed Apr. 25, 1896. Serial No. 589,013. (No model.)



Claim.—1. In a metal-planing machine, the combination with the tool-carrying head, cross-rail, feed-screw, and feed-gearing; of the feed-gear clutch, the spring-pressed slide-bar carrying a catch-lug and connected for operating said clutch, the latch-lever, the trip-rod having a lug that operates said latch-lever, the adjustable collars on said trip-rod, and a tappet for striking said collars, connected with the saddle or tool-carrier, for the purposes set forth.

2. An automatic stop mechanism, comprising the endwise-movable trip-rod provided with an actuating-lug and adjustable collars thereon, the slide-bar having a catch-lug, a pressure-spring acting on said slide-bar, the clutch-lever and hand-lever connected with said slide, a latch-lever adapted for engaging the catch-lug of said slide-bar, and provided with inclined surfaces that work in conjunction with the actuating-lug on said trip-rod, the latch-lever spring and means for imparting motion to said trip-rod, for the purposes set forth.

3. In a feed-stop mechanism for metal-planing machines, the combination, with the trip-rod having the adjustable collars for right and left engagement by the tool-carrying mechanism; of the oppositely-acting springs arranged on said rod at the right and left of its guide-bearing, for normally maintaining said rod at central position and permitting movement in either direction, substantially as set forth.

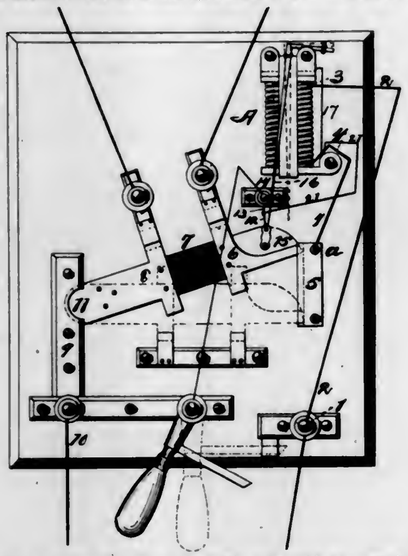
4. In combination with the cross rail, the tool-carrying head, its feed-screw, and the gearing by which said feed-screw is operated, in a metal-planing machine, a clutch for connecting and disconnecting said gears in their operation of the feed-screw, means for automatically releasing said clutch, and trip devices for controlling the same, said releasing and trip devices carried upon and movable up and down with said cross-rail.

570,955. AUTOMATIC SAFETY CIRCUIT-CLOSER. WALTER L. PRATT and FREDRICK E. RIPLEY, Adams, N. Y.; said Ripley assignor to Ruben F. Steele, same place. Filed Jan. 20, 1896. Serial No. 576,165. (No model.)

Claim.—1. An automatic cut-out, comprising a hinged arm carrying the loop connections, said arm being held normally in circuit by a fuse-wire, an electromagnet and an armature for fusing said wire when the circuit upon the loop is broken.

2. An automatic cut-out, comprising a movable arm carrying the loop connections, said arm being held normally in circuit by a fuse-wire, means for fusing said wire when the circuit upon the loop is broken an electromagnet, and an armature for drawing said arm into electrical contact so as to continue the circuit as set forth.

3. An automatic cut-out, comprising a movable arm carrying the loop connection, said arm being held normally in circuit by a fuse-wire, an electromagnet, and a pivoted armature adapted to come in contact with said wire when the circuit upon the loop is broken, as set forth.

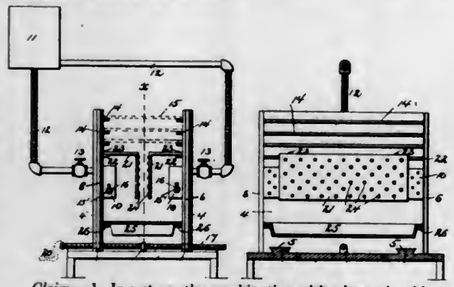


4. An automatic cut-out, comprising a movable arm carrying the loop connection, said arm being held normally in circuit by a fuse-wire, an electromagnet, a wire running from said magnet to a point in close proximity to said fuse-wire, and an armature adapted to draw said wire into electrical connection with said fuse-wire, as set forth.

570,956. ELECTROLYSIS OF IRON. ALEXANDER S. RAMAGE, Cleveland, Ohio, assignor to Joseph C. Gilchrist, same place. Filed Nov. 4, 1895. Serial No. 567,928. (No specimens.)

Claim.—In a compound for use in electrolyzing iron the following elements in substantially the proportions set forth: sulfate of iron, two hundred and seventy-eight pounds; sulfate of soda, one hundred and forty-two pounds; sulfate of ammonia, one hundred and thirty-two pounds, and the whole diluted with water to form a solution substantially twenty per cent. strong.

570,957. GAS OR OIL STOVE. SIERRA L. RICHARDS, Baltimore, Md., assignor to Dora Love Richards, same place. Filed Sept. 7, 1895. Serial No. 561,805. (No model.)

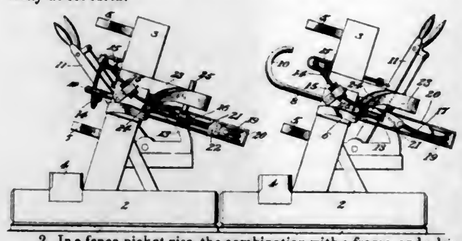


Claim.—1. In a stove, the combination with a base, the sides secured thereto and having a sliding engagement therewith toward and from each other, the detachable end pieces, a top, burners secured to the sides on their inner faces, and fuel-supply pipes leading to said burners, substantially as set forth.

2. The combination with a base, sides connected therewith, means for moving the sides toward and from each other, burners secured to the inner faces of said sides, and broiling-irons suspended from said sides between said burners, substantially as set forth.

570,958. FENCE-PICKET VISE. FRANK A. ROSEMAN, Lanham, Nebr. Filed Jan. 14, 1896. Serial No. 575,468. (No model.)

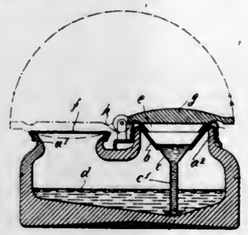
Claim.—1. In a fence-picket vise, the combination with a frame, of a longitudinally-movable, partially-revoluble, vise-arm and actuating mechanism adapted to operate the vise-arm in a longitudinal direction, and to impart to it a simultaneous partial rotation, substantially as set forth.



2. In a fence-picket vise, the combination with a frame, and a longitudinally-movable, partially-revoluble, vise-arm, of a lever operatively connected with the vise-arm to actuate it longitudinally in both directions, a guide-frame and spiral slot therein, and a pin secured to the vise-arm, and working in the slot, substantially as set forth.

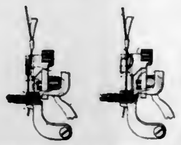
3. In a fence-picket vise, the combination with a frame, of a longitudinally-movable, partially-revoluble vise-arm, a lever, flexible bands connecting the lever with the vise-arm, to operate it in both directions, guide mechanism for the flexible bands, and means for adjusting the tension of the bands, substantially as set forth.

570,959. INK-WELL. EMIL RUDOLPH, Berlin, Germany, assignor of one-half to Hermann Hurwitz & Co., same place. Filed June 10, 1895. Serial No. 552,328. (No model.)



Claim.—In an ink-well having a special dipping-cup inserted into an opening of the ink vessel, and a diaphragm placed over another opening of said vessel, the combination with the said two parts, of a heavy cover or lid arranged to be put over from said dipping-cup to said diaphragm, and having a projecting portion adapted to press the said diaphragm down into the respective opening under the weight of said cover or lid, substantially as described.

570,960. SEWING-MACHINE. WILLIAM D. RUNDLETT, North Andover, Mass., assignor to William H. Haskell, Pawtucket, R. I. Filed May 6, 1893. Serial No. 473,210. (No model.)



Claim.—1. The combination with means for feeding the work, of a thread-eye and a thread-arm having the hook so arranged with relation to said thread-eye that the feeding movement of the work will carry the thread toward said thread-arm and into line with the hook thereon, substantially as described.

2. The combination with means for feeding the work, of a thread-eye, a thread-arm having its hook so arranged with relation to the thread-eye that the feeding movement of the work will carry the thread toward said thread-arm and into the paths of the hook thereon, and means for actuating said thread-arm, substantially as described.

3. The combination of a thread-eye, a thread-arm, means for moving the standing thread into line with the hook of said thread-arm, an awl-head and awl, and means for moving said awl-head and awl to feed the work, said awl-head being in such relation to the thread-arm that when said awl-head has been moved to feed the work, it will serve to hold the thread in the hook of the thread-arm, substantially as described.

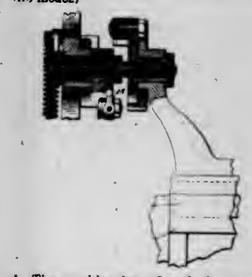
4. The combination of means for feeding the work, a thread-eye, a thread-arm so arranged with relation to said thread-eye that the feeding movement of the work will carry the thread toward said thread-arm and into the path of the hook thereon, and means for holding the thread in said hook, substantially as described.

5. The combination of a thread-eye, a thread-arm, an awl-head and awl, means for moving said awl-head and awl to feed the work and for moving said awl-head into close proximity to the hook on said thread-arm, whereby said awl-head serves to hold the thread in said hook, substantially as described.

6. The combination of a thread-eye, a thread-arm, an awl-head and awl, and means for moving said awl-head and awl to feed the work, said awl-head being in such relation to the thread-arm that when said awl-head is moved to feed the work it will serve to directly move the thread into line with the hook of said thread-arm, substantially as described.

7. The combination of a thread-eye, a thread-arm, an awl-head and awl, means for moving said thread-arm to draw out a loop of thread, means for oscillating said awl-head and awl, and means for moving said awl-head and awl to feed the work, said awl-head being in such relation to the thread-arm that when said awl-head has been moved to feed the work it will serve to hold the thread in the hook of the thread-arm, and the said means for oscillating the awl-head operating simultaneously with the means for moving the thread-arm, whereby said awl-head will continue to hold the thread in the hook of the thread-arm during a portion of the oscillation of said awl-head, substantially as described.

570,961. SEWING-MACHINE. WILLIAM D. RUNDLETT, Providence, R. I., assignor to William H. Haskell, Pawtucket, R. I. Original application filed June 24, 1892, Serial No. 437,876. Divided and this application filed Feb. 20, 1893. Renewed Aug. 6, 1896. Serial No. 601,925. (No model.)



Claim.—1. The combination of a shaft, a needle-carrier loosely mounted on said shaft and capable of being oscillated thereon, but having no lengthwise movement in relation thereto, an awl-carrier likewise loosely mounted on said shaft and capable of oscillating thereon and also of being moved lengthwise with relation to said shaft, both said needle and awl carriers being provided with elongated hubs surrounding said shaft, and an exterior support for each of said hubs, the support for the needle carrier hub being fixed and immovable, and the support for the awl-carrier hub being capable of lengthwise movement to move said awl-carrier and the awl held therein to feed the work, substantially as described.

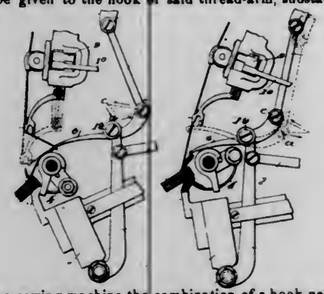
2. The combination of a shaft free to oscillate, but incapable of lengthwise movement, a needle guide secured to said shaft, a needle-carrier loosely mounted on said shaft and capable of being oscillated thereon, but having no lengthwise movement in relation thereto, an awl-carrier likewise loosely mounted on said shaft and capable of oscillating thereon and also of being moved lengthwise with relation to said shaft, both said needle and awl carriers being provided with elongated hubs surrounding said shaft, and an exterior support for each of said hubs, the support for the needle-carrier hub being fixed and immovable, and the support for the awl-carrier hub being capable of lengthwise movement to move said awl-carrier and the awl held therein to feed the work, substantially as described.

570,962. SEWING-MACHINE. WILLIAM D. RUNDLETT, North Andover, Mass. Filed Aug. 29, 1895. Serial No. 560,872. (No model.)

Claim.—1. In a sewing-machine the combination with a hook-needle and a thread-eye, of a thread-arm, and mechanism for moving the hook of said thread-arm in the arc of a circle described from the point of junction between the thread and the work as a center, substantially as described.

2. In a sewing-machine the combination with a hook-needle and thread-eye, of a thread-arm, and mechanism for moving the hook of said thread-arm in a triangular path, substantially as described.

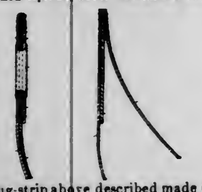
3. In a sewing-machine the combination with a hook-needle and a thread-eye, of a thread-arm, two levers for operating said arm, one of said levers being pivoted to said arm intermediate of its ends, and the other of said levers being connected to one end of said thread-arm, and means for operating said levers, whereby a compound movement will be given to the hook of said thread-arm, substantially as described.



4. In a sewing machine the combination of a hook-needle and a thread-arm, mechanism for moving the hook of said thread-arm in the arc of a circle described from the point of junction between the thread and the work as a center, a thread-eye, and means for giving to said thread-eye a movement substantially in the line of the standing thread as and for the purpose specified.

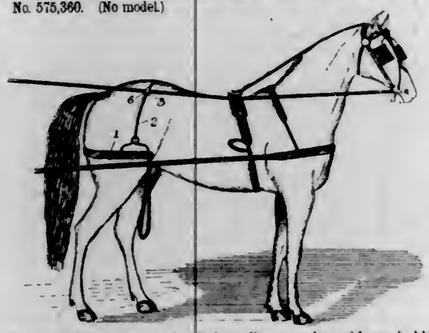
5. In a sewing-machine the combination with a hook-needle and a thread-arm, of mechanism for moving the hook of said thread-arm in a triangular path, a thread-eye and mechanism for giving to said thread-eye a movement substantially in the line of the standing thread as and for the purpose specified.

570,963. LACING-STRIP FOR LACED SHOES. JOHN SABINE, Taunton, Mass. Filed Apr. 24, 1896. Serial No. 588,904. (No model.)



Claim.—The lacing-strip above described made up of a top piece with skived edges a facing-strip and a lining sewed together along their edges the top piece and the facing-piece being placed with their finished surfaces in contact and the top piece being turned over to form a finished edge and secured in that position by sewing through the three pieces and eyelets or lacing-hooks secured to the strip all substantially as described.

570,964. HARNESS ATTACHMENT. WILLIAM A SEIBEL, Independence, Iowa, assignor, by mesne assignments, of one-half to Hans Heinrich Wilhelm Heitmann, same place. Filed Jan. 13, 1896. Serial No. 575,360. (No model.)



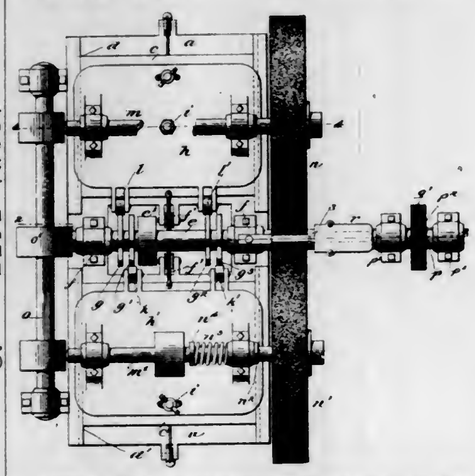
Claim.—As an improved article, a line or rein guide or holder adapted to be connected with the hip-strap of a harness, consisting of a metal plate having the ends inclined outwardly and then extended outwardly in a straight line and the inclined portions formed with rectangular slots, and one of said ends bent backwardly forming a curved hook, and the inwardly-extending tongue formed integral with said plate, substantially as described.

570,965. COMPOUND FOR GREASE-PROOFING ARTICLES. WILL B. SHOBER, Cumberland, Md., and HARRY M. ULLMANN, Springfield, Mo. Filed Feb. 21, 1895. Serial No. 539,226. (No specimens.)

Claim.—1. The herein-described compound for rendering articles grease-proof consisting of a solution of glue and water, a solution of aluminium sulfate or its equivalent and water, the two solutions being mixed in equal proportions; substantially as described.

2. The herein-described compound composed of a solution of one part of glue and eight to twelve parts of water, and one part of alum to ten parts of water, the two solutions being mixed in equal proportions; substantially as described.

570,966. KNIFE-GRINDING MACHINE. CHARLES B. SNOW and CHAUNCEY A. SHERMAN, Norwich, Conn. Filed June 19, 1895. Serial No. 553,355. (No model.)



Claim.—1. In a grinding-machine in combination with a frame having guideways, a cam-shaft mounted transversely of the frame, reciprocating slides borne on the frame, a table pivotally supported on the respective slides and having bearings in contact with the cams, means for holding the tables in contact with the cams, grinder-shafts supported in bearings on each table and having a lengthwise and rotary motion in the bearings, grinding-wheels supported on each shaft, means for reciprocating the grinder-shafts, a rotary knife-holding clamp adapted to hold the knife with a portion extending between the opposing grinding-surfaces, and means for driving the respective shafts, all substantially as described.

2. In a grinding-machine in combination with a frame, guideways on the frame, a cam-shaft mounted transversely of the guideways on the frame, reciprocating slides mounted on opposite sides of the cam-shaft and each supporting a table, a table pivotally supported on each slide and having bearings in contact with cams on the cam-shaft, means for holding the tables normally in contact with the cams, grinder-shafts supported on bearings on the respective tables, a rotary knife-holding clamp adapted to hold the knife with a portion extending between the opposing grinding-surfaces, a yielding rest arranged between the grinding-wheels and below the work, a cam mounted in contact with the work-rest and means for driving the several shafts, all substantially as described.

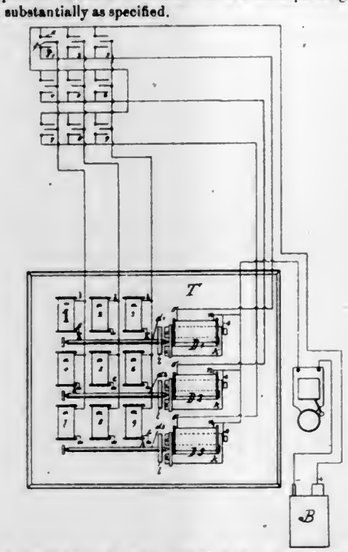
3. In a grinding-machine in combination with grinder-shafts and grinding-wheels borne thereon, the grinder-shafts supports, means for automatically imparting a lengthwise and also a sidewise swinging movement of the grinder shafts, a working rest arranged between the grinding-wheels, the cam forming a positive support for the yielding rest and springs supporting the moving part of the work-rest, the work-holding clamp, and means for rotating the same, all substantially as described.

570,967. ELECTRIC ANNUNCIATOR. JACOB STAMM, Stuttgart, Germany. Filed July 10, 1895. Serial No. 555,515. (No model.)

Claim.—1. An electric annunciator composed of central station, push-buttons, wire connections, a series of electromagnets *a*, and electromagnetic circuit-closers D, adapted to switch the electromagnets *a*, in groups into the circuit, substantially as specified.

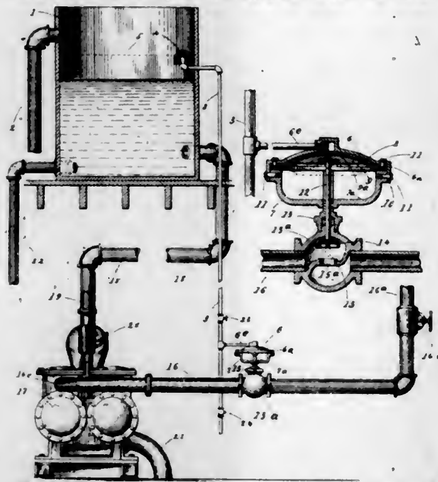
2. An electric annunciator composed of central station, push-buttons, having three contact-springs *e*, *f*, *g*, wire connections, electromagnets *a*, having drops, and electromagnetic circuit-closers D, all

being so constructed that the two uppermost springs are adapted to conduct the current to electromagnets *a*, while the lowermost spring *g*, is adapted to conduct the current to the corresponding circuit-closer D, substantially as specified.



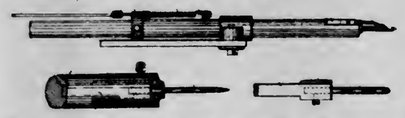
3. An annunciator having central station, push-buttons with springs *e*, *f*, *g*, electromagnets *a*, electromagnetic circuit-closers D, and a series of conducting-wires so arranged that the springs *f*, are connected to each other to correspond to the connected electromagnets *a*, to which they lead, while the springs *g*, are connected in groups and conduct the current to the corresponding circuit-closers D, substantially as specified.

570,968. AUTOMATIC PUMP-REGULATOR. JULIUS C. STERNS, Buffalo, N. Y. Filed July 15, 1895. Serial No. 555,944. (No model.)



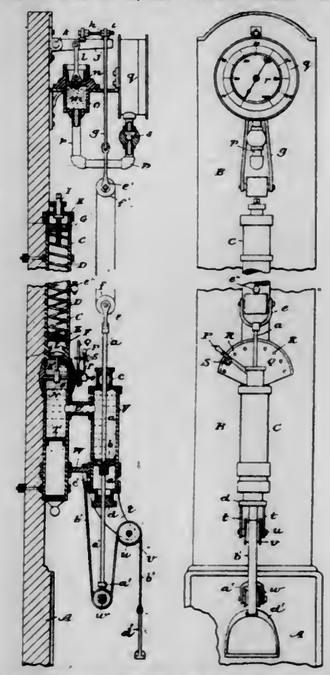
Claim.—In a pump-regulator, the combination with a hydraulic elevator of an upper reservoir, a steam-pump for supplying it with water, means for drawing water therefrom, a pipe provided with a cover of wire-netting and having its upper end extend into the water-reservoir and then up to a point near the normal level of the water therein, and having a regulating-valve at or near its lower end, a diaphragm located on the steam-pipe and secured in a holding-case and communicating with said pipe by a horizontal branch pipe connected above the diaphragm at the top of the diaphragm-case, a valve-stem centrally connected to the diaphragm and extending down through a stuffing-box into a valve-chamber, a steam-valve attached to the lower end of the valve-stem adapted to be forced down and close the valve by the pressure of water on top of the diaphragm and valve-stem, and to be opened by the pressure of steam lifting the valve, valve-stem and diaphragm, when the pressure of water on top of the diaphragm is released, whereby, when the water is at its normal level in the upper reservoir, the water flowing down said pipe being restricted at its outlet will exert sufficient pressure on the top side of the diaphragm to close the steam-valve against the pressure of the steam and stop the pump, and when below its normal level it will flow out of said pipe and relieve the diaphragm from pressure, thereby allowing the steam-pressure to force the valve and diaphragm upward, thus opening the valve and operating the pump until the water reaches its level again, substantially as described.

570,969. SEWING-MACHINE. DANIEL W. STEVENSON, Brockton, Mass., assignor of one-half to Edwin L. Sprague, Boston, Mass. Filed Mar. 30, 1896. Serial No. 585,439. (No model.)



Claim.—The combination with the needle-bar provided with a longitudinal guide-groove, of the cast-off slide fitting in said groove and longitudinally movable therein; an undercut recess in the side wall of said groove, and a tongue or projection from the said slide extending into the said recess, substantially as and for the purpose described.

570,970. YARN-TESTING MACHINE. MARK H. TOMKINS, New York, N. Y. Filed Feb. 15, 1896. Serial No. 579,423. (No model.)



Claim.—1. The combination in a testing-machine of a cylinder containing a piston, a spring interposed between one end of the cylinder and the piston, a hydraulic piston contained within a cylinder, a passage connecting the two cylinders, and means whereby the liquid may be initially expelled from the cylinder containing the hydraulic piston into the other cylinder, and the tension of the said spring thus increased, for the purposes set forth.

2. The combination in a testing-machine, of a spring-actuated piston, a hydraulic piston, a cylinder for each, a passage connecting the cylinders, means whereby the liquid may be initially expelled from the cylinder containing the hydraulic piston into the other cylinder, and the tension of the spring thus increased, a valve for controlling the spring, and means for regulating the said valve, for the purposes set forth.

3. The combination in a testing-machine, of a spring-actuated piston and a hydraulic piston, a cylinder for each, a passage connecting the cylinders, means whereby the liquid may be initially expelled from one into the other, and the tension of the spring thus increased, a valve for controlling the spring, and adjustable means for regulating the valve, for the purposes set forth.

4. The combination in a testing-machine of a spring-actuated piston contained in a cylinder, a chamber for liquid beneath the piston, means to force liquid into the cylinder in front of the piston, thus putting the spring under tension, and a valve for controlling the operation of the spring, for the purposes set forth.

5. The combination in a testing-machine, of a hydraulic cylinder, a piston, a piston-rod which projects beyond both ends of the cylinder, a wheel on one end of the rod, and a device for holding the material to be tested upon the other, for the purposes set forth.

6. The combination of a spring-actuated piston contained within a cylinder, a hydraulic cylinder, means to expel the liquid from the latter into the former, in front of the piston, and thus increase the tension of the spring, a valve to control the action of the spring, and means to support the material being tested, one connected with the hydraulic piston and the other acting upon a registering device, for the purposes set forth.

7. In a testing-machine, the combination of two cylinders, one containing a spring-actuated piston and the other a hydraulic piston, a valve controlled from the exterior, for regulating the action of the spring, a piston-rod for the hydraulic piston projecting from both ends of the cylinder, one end having means for independently moving the said piston, and the other carrying one of the supports for the material to be tested, for the purposes set forth.

8. In a testing-machine, a holding device for the material to be tested, embodying angular surfaces for engagement with the material, a slotted body part and a flap of flexible material, arranged substantially as described, for the purposes set forth.

9. In a testing-machine, a holding device for the material to be tested, embodying a slotted body-piece having a curved exterior surface, a flap of flexible material attached thereto, and prick-points for initially holding the material, for the purposes set forth.

570,971. UNDERGARMENT. ADOLPH G. VELASKO, Philadelphia, Pa. Filed Dec. 17, 1895. Serial No. 572,383. (No model.)

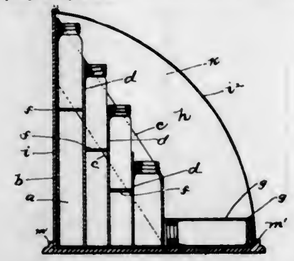


Claim.—1. A knitted undershirt or suit, composed of a knitted body portion, having the front flap D and the back cut away to form a back-piece, and the sleeves, having their ends extended to form shoulder-pieces H, having the edges at the back secured to the back-piece and the diagonal front flaps J adapted to be folded over upon the front flap D.

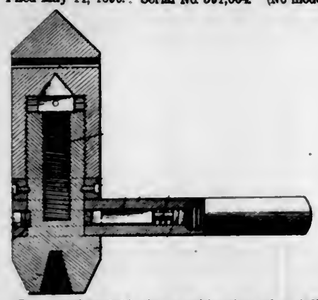
2. A knitted undershirt or suit composed of a knitted body portion having the front flap D and the back cut away diagonally at B, B, to form a back-piece C, and the sleeves having their ends extended to form shoulder-pieces H having diagonal edges at the back secured to the diagonal edges B, B, of the piece C, and the front flaps J, J, adapted to be folded over upon the front flap D.

570,972. BOTTLE-DISPLAY CASE. ADELBERT J. WALLIS, Columbus, Ohio. Filed Oct. 9, 1895. Serial No. 565,145. (No model.)

Claim.—In a display-case for bottles and similar articles the combination with an oblong rack *a* consisting of the substantially triangular rear portion *b* and horizontal forward portion *b'*, parallel inclined partitions *c*, transverse partitions *d* arranged in steps between said partitions *c* and horizontal receptacles *g'* arranged in said forward portion *b'*, of a base adapted to support said rack, flanged sides to said base, of a cover for said rack having transparent ends and a transparent and convex front and top plate, said cover adapted to fit about said rack and within the flanges of said base, substantially as and for the purpose specified.

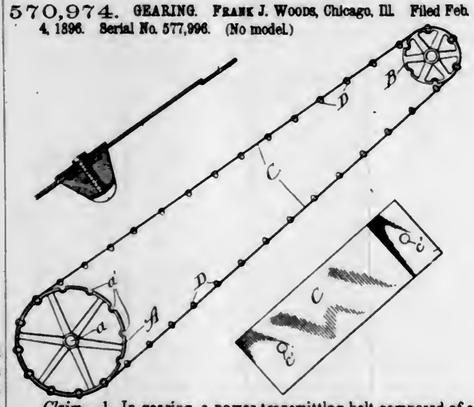


570,973. RATCHET-DRILL. MARENE M. WATKINS, Fernwood, Miss. Filed May 11, 1896. Serial No. 591,064. (No model.)



Claim.—In a ratchet-drill, the combination of a drill-stock, reversible driving means therefor, an outer removable right-hand feed-nut and an inner left-hand feed-screw, substantially as set forth.

570,974. GEARING. FRANK J. WOODS, Chicago, Ill. Filed Feb. 4, 1896. Serial No. 577,996. (No model.)



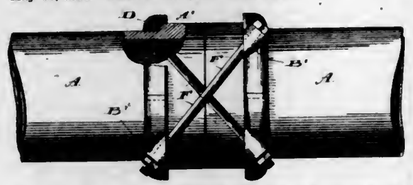
Claim.—1. In gearing, a power-transmitting belt composed of a series of flexible metallic links having their overlapping edges on one end offset to receive the adjacent edges of the engaging links and of a uniform outer surface, and provided with projections on the inner surface at the points where the links engage with each other, substantially as described.

2. In gearing, a power-transmitting belt composed of a series of flexible metallic links having their overlapping edges on one end adapted to receive the adjacent edges of the engaging links and form a uniform outer surface, a series of projecting sprockets secured to the links at the points where they engage, and a series of reinforcing-strips secured to the links opposite the projecting sprockets, substantially as described.

3. In gearing, a power-transmitting belt composed of a series of flexible metallic links having one end depressed to form a seat to receive the engaging link, a series of projecting sprockets provided with recesses to receive the depressed ends of the link secured to the belt at the points where the links engage and provided with concave recesses on their inner surface to assist in positioning the belt, and a series of reinforcing-strips secured to the belt at the points opposite the projecting sprockets, substantially as described.

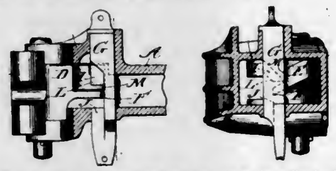
4. In gearing, a power-transmitting belt, composed of a series of flexible metallic links having one end depressed to form a seat to receive the engaging link, a series of projecting sprockets provided with recesses to receive the depressed ends of the link secured to the belt at the points where the links engage and provided with concave recesses on their inner surface to assist in positioning the belt, a series of reinforcing-strips secured to the belt at the points opposite the projecting sprockets, and a sprocket wheel or wheels adapted to be engaged by the transmitting-belt and provided with a series of indentations or recesses to receive the projecting sprockets, the bottom of such recesses being convex to receive and assist in holding the sprockets and belt in position, substantially as described.

570,975. PIPE-CLAMP. FREDRICK ANDERSON, Lantz, Pa. Filed May 28, 1896. Serial No. 593,407. (No model.)



Claim.—In a detachable coupling for pipe, the combination with the two-part rings having dovetailed connections, the said sections annularly recessed, projections B' on said sections, of the tightening-bolts F diagonally disposed in inclined apertures between the said ring-sections, and flattened shoulders on which the heads of the bolts and the nuts thereon, are adapted to rest, substantially as shown and described.

570,976. CAR-COUPLING. FRANK D. BAKER, Knoxville, Iowa. Filed July 22, 1895. Serial No. 556,696. (No model.)

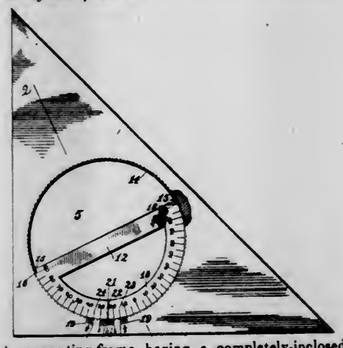


Claim.—1. In a car-coupling of the class described, the combination of a pivoted knuckle, a tailpiece on said knuckle provided with parallel upper and lower beveled faces and having a flat surface directly in the rear of the upper beveled face, said upper beveled face terminating with a locking-shoulder and the lower beveled face extending beyond the upper bevel, and a locking-pin having a notch of a length substantially equal to the distance between the upper and lower beveled faces of the tailpiece said notch having an upper and lower wall, the upper wall of the notch having a beveled face arranged in the path of the upper or flat surface of the tailpiece and the lower wall arranged in the path of the lower beveled face of the tailpiece, whereby the locking-pin is first raised and then forced to its seat by the swinging movement of the tailpiece, substantially as shown and described.

2. In a car-coupling of the class described, the combination with a locking-pin having a notch therein and a beveled face at the upper side thereof, of a pivoted knuckle, a tailpiece provided with parallel upper and lower beveled faces and having a flat surface directly in the rear of the termination of the upper beveled surface, the lower beveled surface extending beyond the vertical plane of the upper beveled face, and a locking-shoulder between the forward ends of said beveled parallel faces to engage the locking-pin, said locking-pin also having a shoulder arranged in the path of the lower beveled face of the tailpiece, whereby the said pin is forced to its seat or locked position by the swinging movement of the said tailpiece, substantially as shown and described.

570,977. COMBINED TRIANGLE AND PROTRACTOR. WARREN J. BELCHER, Hartford, Conn. Filed Aug. 5, 1896. Serial No. 601,741. (No model.)

Claim.—1. The combination with a triangle having a circular opening the wall of which is grooved throughout its entire circumference, of a semicircular protractor having a cross-bar recessed at each end; and a loose bow-spring fitted into the unoccupied part of said opening and having its ends engaging the recesses of said cross-bar, said spring being movable with the protractor and serving to hold the same in its adjusted position.



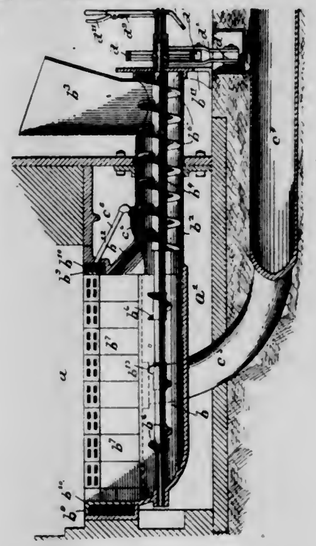
2. A supporting-frame having a completely-inclosed circular opening provided with a grooved wall; a protractor having a convex edge disposed in said opening and movable entirely around the same; and a spring loosely engaging the protractor and movable therewith, said spring serving to hold the protractor in position.

3. A supporting-frame having an inclosed circular opening provided with a groove in the edge thereof bounding said opening; a protractor having a part thereof shaped to fit said groove; and a spring fitting into the unoccupied portion of said groove and operable to hold the protractor in position.

4. A triangle having an inclosed circular opening having a groove in the edge thereof bounding said opening; a protractor having a semicircular protractor-bar with its outer edge shaped to fit within said groove; and a bow-spring also fitting in the unoccupied portion of said groove and having its ends engaging said protractor, said spring being adjustable simultaneously with the protractor entirely around the opening.

5. A triangle having a circular opening and provided with a groove in the edge thereof bounding said opening; a protractor having a semicircular member with its outer edge shaped to fit into a part of said groove; and a bow-spring fitting in the unoccupied part of said groove and having its ends engaging the ends of the protractor for holding the same in position.

570,978. UNDERFEED STOKER. ARTHUR F. BROWN, Dayton, Ohio, assignor to the American Stoker Company, same place. Filed Oct. 28, 1895. Serial No. 567,129. (No model.)



Claim.—1. In an underfeed stoker, a fuel hopper, a horizontal conduit leading from said hopper, and a feeding chamber or magazine having a curved bottom forming a substantial continuation of said conduit and provided with inclined sides and of a substantially uniform width, a screw conveyer extending from said hopper through said conduit and through the bottom portion of said magazine, and an angularly-arranged passage formed in said conduit and extending upwardly therefrom so as to communicate with the front of said magazine above the mouth of said conduit, substantially as specified.

2. In an underfeed stoker, a feed-magazine having air-trunks formed on each side thereof and removable twyer-blocks with openings at the top, said twyer-blocks being cored out and formed substantially L-shaped in cross-section so as to extend over and protect the inner side and top of said air-trunks, substantially as specified.

3. The combination with a feeding chamber or magazine having the air-trunks on the sides thereof, and devices for feeding the fuel into the bottom of said magazine, of removable plates surrounding said magazine at or near the top, said plates being formed in the nature of twyer-blocks and adapted to extend over the top and inner sides of said air-trunks, substantially as specified.

4. The combination with the fuel-hopper and a conduit, a conveyer extending through said conduit, a ratchet-wheel on the conveyer-shaft and a bearing-support for said shaft, a hand-lever journaled concentric with said shaft and carrying at one end a circular track adapted to project over said ratchet-wheel, and a stationary notched segment connected to said bearing support, and a holding-pawl on said lever for engaging said notched segment so as to hold said track in different positions of adjustment, substantially as specified.

5. The combination with a fuel-magazine, a conduit leading thereto, and a conveyer in said conduit, said conveyer having flights of varying carrying capacity in the length thereof, and means, substantially as described, for moving said conveyer-shaft longitudinally through said conduit and magazine so as to vary the distribution caused by the varying carrying capacity of said conveyer, substantially as specified.

6. The combination with a fuel-magazine and a conduit leading thereto, a conveyer in said conduit, said conveyer having a substantially uniform carrying capacity through said conduit and having flights with a reduced carrying capacity within said magazine, and a movable sleeve for supporting the end of said conveyer-shaft, and means, substantially as described, for adjusting said sleeve in different positions to change the longitudinal position of said shaft, substantially as specified.

7. The combination with a conveyer-shaft having conveyer-flights of different carrying capacity, a conduit in which said shaft operates, and a magazine connected to said conduit, of a screw-threaded sleeve, a supporting-bearing for said sleeve, and antifriction bearing-plates in said sleeve, said sleeve being adapted to form a bearing for the front end of said shaft, substantially as specified.

8. The combination with a fuel-chamber, and a conduit leading thereto, said fuel-chamber being formed with inclined sides and a curved bottom which forms a substantial continuation of said conduit, a conveyer extending through said conduit and fuel-magazine and having a substantially uniform carrying capacity in said conduit and a reduced carrying capacity in said magazine, and an angularly-arranged passage-way formed in said conduit and leading from the top thereof so as to open into the front of said magazine and above said conduit, substantially as specified.

9. The combination with a fuel-magazine, and a conduit leading horizontally into the same, said magazine being formed of a substantially uniform width with inclined sides, and a curved bottom adapted to form a substantial continuation of said conduit, a conveyer extending through said conduit and magazine and having a substantially uniform carrying capacity in said conduit and provided with flights of a reduced carrying capacity in said magazine, a vertical angular passage-way formed at the top of said conduit of a width less than the diameter of said conduit and adapted to extend into the front of said magazine, substantially as specified.

10. The combination with a fuel-magazine, and a conduit leading horizontally into the same, a conveyer shaft extending through said conduit and through the bottom of said magazine, said shaft having a conveyer of substantially uniform carrying capacity through said conduit, and of a reduced carrying capacity within said magazine, an angularly-arranged passage from the top of said conduit into the front of said magazine, and means as described for adjusting the shaft and conveyer longitudinally through said conduit and magazine, substantially as specified.

11. The combination of a fuel-magazine, and a conduit leading into the same, a conveyer in said conduit, and twyer-openings in said magazine, an air-trunk connected to said twyer-openings, and an air-passage from said air trunk communicating with said conduit in front of said magazine so as to form a draft from said conduit into said magazine, substantially as and for the purpose specified.

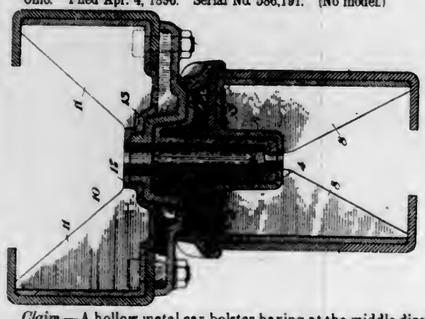
12. The combination with a magazine, and a conduit having feeding devices therein, twyer-openings in said magazine, and an air-trunk communicating with said twyer-openings, an air-passage communicating with said conduit at an angle thereto, and a connection from said air-passage to said air-trunk, substantially as specified.

13. The combination with a magazine and a conduit leading thereto, a conveyer in said conduit, and twyer openings in said magazine, an air-trunk communicating with said twyer-openings, and an air-passage from said trunk to the conduit, said air-passage being adapted to enter said conduit at an angle thereto and into a concave pocket formed in said conduit, substantially as specified.

14. The combination with a fuel-magazine and a conduit leading thereto, said conduit being provided with a circular concave pocket therein, twyer-openings in said magazine, and an air-trunk communicating therewith, a passage from said air-trunk to said concave pocket in said conduit, substantially as specified

---

570,979. METAL BOLSTER FOR CARS. WILLIAM CASE, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed Apr. 4, 1896. Serial No. 586,191. (No model.)



Claim.—A hollow metal car-bolster having at the middle directly opposite to the position of the center plate, a supporting-filler fixed to the bolster and made of a hollow piece with its base next to the center plate.

570,980. DRAFT-IRON FOR RAILWAY-CARS. WILLIAM CASE, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed Apr. 23, 1896. Serial No. 588,726. (No model.)

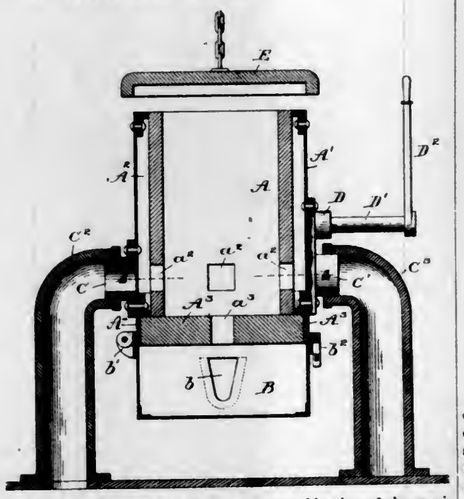
Claim.—1. The combination with a draft-rigging for cars, comprising a spring and spring-followers, of draft-irons set at the sides of the draft-rigging and fixed to the draft-timbers, said draft-irons being adapted to confine and guide the draft-rigging, and one of the draft-irons having a window in its side from which the spring mechanism of the draft-rigging is removable.

2. A draft-iron having a lateral window through which the spring mechanism of a draft rigging is removable, and a removable cover for said window.

3. A draft-iron having a lateral window through which the spring mechanism of a draft-rigging is removable, and a removable cover having an opening therein.

4. The draft-iron having at its end a seat for a draft-timber open at the top and at one side and having a wall at the bottom, and a wall at one side, adapted to fit against the draft-timber and to receive the bolts.

570,981. SMELTING-FURNACE. HENRI CHARLIER, Paris, France, assignor to Joseph G. Hendrickson, Philadelphia, Pa. Filed Aug. 24, 1895. Serial No. 560,334. (No model.)



Claim.—1. In a smelting-furnace, the combination of the crucible A, having air-inlets a^2, and bottom A^3, hinged to the crucible A provided with the opening a^2, the air-space A^2 surrounded by the casing or jacket A', having attached thereto the handle D^2, the trunnions C, C', the supports C^2, and C^3, one of said supports being tubular and connected with an air-blast, the reservoir B, provided with a spout b, and hinged to the bottom of the crucible and the movable top or cover E, substantially as shown and for the purpose described.

2. In a smelting-furnace the crucible A having a bottom A^3 hinged thereto and an opening a^3 therein, a metallic jacket A^2 surrounding said crucible A, air-space between said jacket and crucible, and openings a^2 connecting said air space with the interior of the crucible, in combination with a metallic receiving-reservoir B hinged to the hinged bottom A^3 and held in position by the latch b^2, spout b in said reservoir B, and means for tilting the said crucible and reservoir, as set forth.

570,982. VENTING DEVICE FOR WATER-CLOSET BOWLS. CHARLES H. COOK, Trenton, N. J. Filed Feb. 11, 1893. Serial No. 461,895. (No model.)

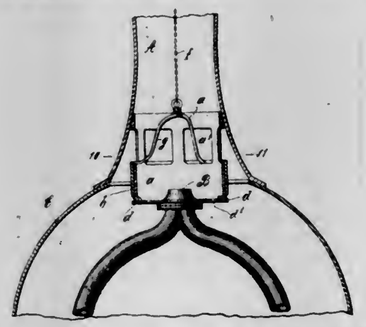


Claim.—1. In combination in a one-piece closet, the hopper or bowl, the overflow or siphon formed with the wall of said hopper or bowl, the discharge leading therefrom, and the rear vent-channel extending rearward and lying against or formed with the said wall, substantially as set forth.

2. In combination in a closet, the hopper or bowl thereof, the overflow or siphon, the discharge E, the descending passage or leg D extending downward from the said overflow or siphon into the said discharge, and the rear vent extending rearward from a point adjacent to the junction of the said passage D and the said discharge beneath the said hopper or bowl, substantially as set forth.

3. In combination in a closet, the siphon or trap at the front of the bowl, the discharge E, the descending passage or leg D conforming to the said bowl and extending downward and rearward into the said discharge, and the rear vent F extending rearward from the junction of the said passage D and the said discharge E, and lying against and substantially conforming to the said bowl, substantially as set forth.

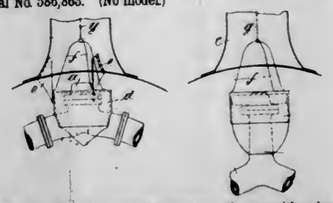
570,983. DRAFT-REGULATOR FOR LOCOMOTIVES. HEINRICH DEGENER, Rummelsburg, and ROBERT DEISSLER, Treptow, Germany; said Degener assignor to said Deissler. Filed June 27, 1895. Serial No. 554,228. (No model.) Patented in Germany July 8, 1894, No. 79,758, and in England Nov. 7, 1894, No. 21,386.



Claim.—1. In a locomotive-engine, the combination with the chimney, and with a blast-nozzle arranged in the proximity of said chimney, of a vertical slide surrounding said nozzle, and a guide for said slide; said guide extending from the nozzle up into the chimney, and having a few large apertures the combined free sections of which are at least as great as the free horizontal section of the said guide; said slide being adapted to narrow said apertures, for the purpose as described.

2. In a locomotive-engine having a portion of its chimney contracted, the combination with a blast nozzle arranged in close proximity to said chimney, of a vertical slide surrounding said nozzle, and a guide for said slide; said guide extending up to the contracted portion of the chimney, and forming a few large apertures the combined free sections of which are at least as great as the free horizontal section of the said guide; said slide being adapted to narrow said apertures, for the purpose as described.

570,984. COMBINED SPARK-ARRESTER AND DRAFT-REGULATOR. ROBERT DEISSLER, Treptow, Germany. Filed Apr. 9, 1896. Serial No. 586,863. (No model.)



Claim.—1. In a locomotive-engine, the combination with the chimney, and the blast-nozzle, of a fixed body surrounding said nozzle, and arranged so as to leave an annular space between itself and said chimney; said body being adapted to deflect the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

2. In a locomotive-engine, the combination with the chimney, and the blast-nozzle, of a fixed body surrounding said nozzle, and having a diameter at least equal to that of the narrowest horizontal section of said chimney; said body being arranged so as to leave an annular space between itself and the said chimney, and being adapted to deflect the fire-gases to said space, and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

3. In a locomotive-engine, the combination with the chimney, and the blast-nozzle, of a fixed body surrounding said nozzle, and arranged so as to leave an annular space between itself and said chimney; said body being reduced toward its lower end; and adapted to deflect the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

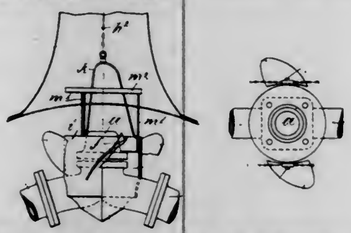
4. In a locomotive engine, the combination with the chimney, and the blast nozzle, of a fixed body surrounding said nozzle, and arranged so as to leave an annular space between itself and said chimney; said body having a deepened bottom terminating into an edge or point, and being adapted to deflect the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

5. In a locomotive-engine, the combination with the chimney, and the blast-nozzle, of a fixed body surrounding said nozzle, and arranged so as to leave an annular space between itself and said chimney; said body having its upper end situated in or below the plane of the opening of the said nozzle, and being adapted to deflect with its lower end the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

6. In a locomotive engine, the combination with the chimney, the blast-nozzle, and the exhaust-pipes, of a fixed body surrounding said nozzle as well as the adjacent portions of said exhaust-pipes, and arranged so as to leave an annular space between itself and said chimney; said body being adapted to deflect the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

7. In a locomotive-engine, the combination with the chimney, the blast-nozzle, and the exhaust-pipes, of a fixed body surrounding said nozzle as well as the adjacent portions of said exhaust-pipes, and having a diameter at least equal to that of the narrowest horizontal section of said chimney; said body being arranged so as to leave an annular space between itself and the said chimney, and having its upper end situated in or below the plane of the opening of the said nozzle, and having its lower end reduced so as to deflect the fire-gases to said space; and a vertical slide encompassing the said body, and adapted to narrow the said space, for the purpose as described.

570,985. **COMBINED DRAFT-REGULATOR AND SPARK-ARRESTER.** ROBERT DEISSLER, Treptow, Germany. Filed Apr. 9, 1896. Serial No. 586,864. (No model.)



Claim.—1. In a locomotive-engine, the combination with the blast nozzle, of a movable inclined wing or wings situated near to said nozzle, and arranged similar to a part or parts of the plane of a screw, for the purpose as described.

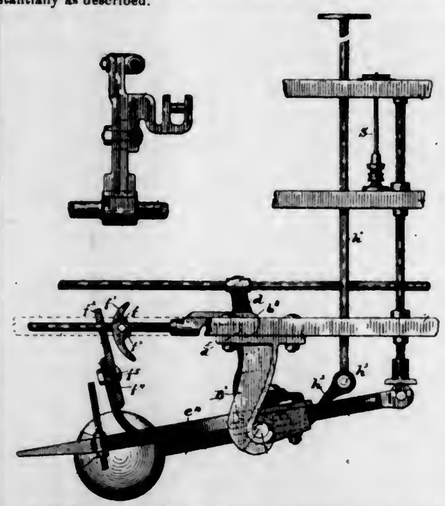
2. In a locomotive-engine, the combination with the blast-nozzle, of a movable inclined wing or wings situated near to said nozzle below the plane of the opening of the same, and arranged similar to a part or parts of the plane of a screw, for the purpose as described.

3. In a locomotive-engine, the combination with the blast-nozzle, of a slide surrounding said nozzle, and adapted to be moved in a vertical direction; an inclined wing or wings situated near to said slide, and arranged similar to a part or parts of the plane of a screw; and a guide or guides for the said slide, for the purpose as described.

4. In a locomotive-engine, the combination with the blast-nozzle, of a slide surrounding said nozzle, and adapted to be moved in a vertical direction; an inclined wing or wings attached to said slide, and arranged similar to a part or parts of the plane of a screw; and a guide or guides for the said slide, for the purpose as described.

570,986. **RING-SPINNING FRAME.** SAMUEL H. DUBOIS, Fall River, Mass. Filed July 15, 1896. Serial No. 599,241. (No model.)
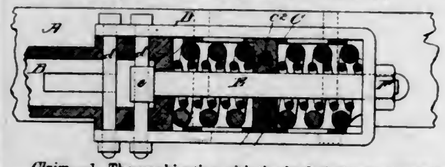
Claim.—1. In a ring-spinning frame, the ring-rail, means, including a rocker-arm provided with a pin, to traverse said rail, and a reciprocating hooked draw-bar to normally engage the pin, combined with independent means to move the rocker-arm, and a manually-operated device having a sliding connection with and to move said draw-bar longitudinally and laterally, to remove the hook of the said draw-bar from the pin, to thereby release the traversing means, substantially as described.



2. In a ring-spinning frame, traverse mechanism, a reciprocating hooked draw-bar detachably connected therewith, and provided with a cam-surface, means to manually move the traverse mechanism, and an independent releasing device to disconnect said draw-bar from the traverse mechanism and maintain it disconnected, said device comprising a lever the upturned end of which has a sliding connection with the draw-bar, the said end of the lever engaging the cam-surface to move the draw-bar longitudinally, substantially as described.

3. In a ring spinning frame, traverse mechanism, a reciprocating, hooked draw-bar to actuate it, a cam-block on said bar, a lever having thereon a slotted plate, to engage said block and thereafter to disengage the hooked draw-bar from the traverse mechanism, and a manually-operated controlling-bar for said lever, substantially as described.

570,987. **DRAFT-RIGGING.** THOMAS EUBANK, Little Rock, Ark., assignor to the American Railway Equipment Company, East St. Louis, Ill. Filed Aug. 20, 1896. Serial No. 603,327. (No model.)



Claim.—1. The combination with the draft-timbers and shank, of a double-pocketed housing arranged between the timbers, draft-springs in said pockets, a yoke secured to the shank, and a tail-bolt; substantially as described.

2. The combination with the draft-timbers and shank, of a double-pocketed housing arranged between the timbers, draft-springs in said pockets, a yoke secured to the shank by means of through-bolts, and a tail-bolt having its head arranged in the shank, through which head passes the yoke-securing bolt; substantially as described.

3. The combination with the draft-timbers and shank, of a housing arranged between the timbers, draft-springs in said housing, a yoke, and a tail-bolt having a nut on its rear end which is adapted to impinge the yoke and compress the draft-springs; substantially as described.

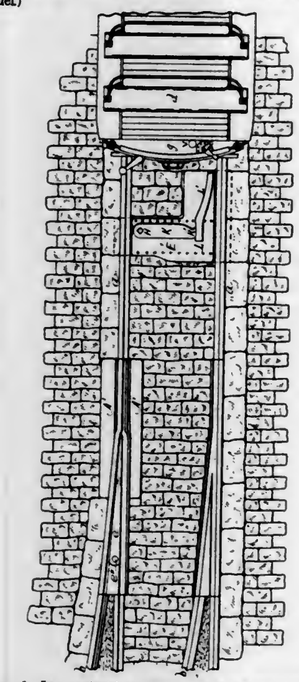
4. The combination with the draft-timbers and shank, of a housing arranged between the timbers, draft-springs in said housing, a tail bolt having a head which engages the shank, said tail-bolt passing through the springs, housing, and yoke, a nut on the rear end of the tail-bolt which is adapted to be turned up to impinge against the yoke and compress the draft-springs, and bolts for securing the yoke in place on the shank; substantially as described.

5. The combination with the draft-timbers and shank, of a housing arranged between the timbers, draft-springs in said housing, a tail-bolt having a head which engages the shank, said tail-bolt passing through the springs, housing, and yoke, a nut on the rear end of the tail-bolt which is adapted to be turned up to impinge against the yoke and compress the draft-springs, and bolts for securing the yoke to the shank when said draft-springs are compressed, one of said yoke-securing bolts passing through the head of the tail-bolt; substantially as described.

6. The combination with the draft timbers and shank, of a housing arranged between the timbers, draft-springs in said housing, a yoke secured to the shank and passing around the housing, said housing being provided with lugs or projections which afford seats for the yoke to guide the same in its longitudinal movement, and a tail-bolt; substantially as described.

7. The herein-described housing for draft-gearing, the same consisting of top, bottom, and side walls, a vertically-disposed central partition within the walls, ears at the ends of the side walls, lateral wings extending from the bottom wall, and lateral projections forming vertical ribs on the side walls, which ribs are substantially continuations of the central partition, all of said parts being integral; substantially as described.

570,988. **RAILWAY SWITCHING APPARATUS.** AVARD E. FINLEY, Everett, Mass. Filed Mar. 14, 1896. Serial No. 583,225. (No model.)



Claim.—1. In a switching apparatus of the character described, the disk or cam-wheel B set horizontally beneath the switch-rail and provided with the upper and lower hubs or axles B′, B″; a suitable box A supporting said wheel; the pin *c′* set eccentrically on and extending up from the upper surface of the upper hub; and the switch-tongue pivoted to the track and engaged at a suitable distance from its pivot by said pin, substantially as described.

2. In a switching apparatus of the character described, the disk or cam-wheel B set horizontally beneath the switch-rail and provided with the upper and lower hubs or axles B′, B″; a suitable box A supporting said wheel; the pin *c′* set eccentrically on and extending up from the upper surface of the upper hub; the switch-tongue pivoted to the track and engaged and adapted to be operated by said pin; the actuating arm K adapted to be engaged by mechanism connected with the car; and mechanism intermediate with said arm and cam-wheel whereby the latter is sufficiently rotated to swing the switch-tongue, substantially as set forth.

3. In a switching apparatus of the character described, the box A; a disk or wheel supported therein and provided with an eccentrically-located pin which extends up into engagement with the switch-tongue; the horizontally-reciprocating rod or bar D supported by said box and held normally forward, that is to say, toward the switch-tongue, by a spring; the link C″ connecting said bar and wheel; the box E; the shaft H supported therein; the actuating-arm K adapted to be engaged from the car; the arm H′ extending from said shaft; and a suitable connection extending from said arm H′ to said rod D whereby motion is communicated from the former to the latter, substantially as described.

4. In a switching apparatus of the character described, the box A; the cam B provided with the upper and lower hubs B′ B″, said upper hub engaging the switch-tongue by means of an eccentrically-located pin, said hubs being cut away or recessed at B″ as described, and said cam-wheel being provided with the cam-slot C; the horizontally-reciprocating bar D supported in said box; the spring D′ on said bar; the link C″ connecting said bar and cam-wheel; the box E provided with the stop *t*; the vertical shaft H having rigidly secured to it the actuating arm K and the arm H′; the conduit F connecting the boxes A and E; and connecting mechanism extending from said arm H′ through the conduit to said bar D, substantially as described.

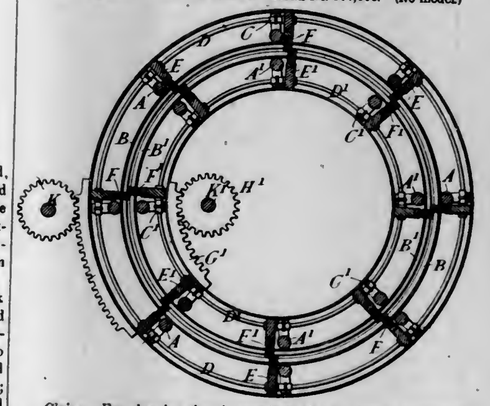
5. In a switching apparatus of the character described, in combination, a switching mechanism; the horizontally-swinging arm K set transversely with the track, provided upon the edge next the approaching car with the engaging notch K′ and adapted to actuate said mechanism; and the guide L set substantially longitudinally with the track and at right angles with said arm K and extending to the outer or free edge of said arm, substantially as set forth.

6. In a switching apparatus of the character described, the combination of the tube N extending down from the under side of the car and slotted at N″; the plunger P moving vertically in said tube; the vertical rod R supported by said tube and surrounded by a spiral spring; the pin *m* extending through the slots N″ and the plunger P and into engagement with said spring; and a cord or chain extending from said pin to mechanism within reach of the motorman, whereby the said pin is moved downward in the slots for the purpose of bringing the plunger into engagement with said actuating-arm and returned by said spring, substantially as set forth.

7. In a switching apparatus of the character described, the combination of the tube N pivotally hung at N′ to the under side of the car-bottom so as to swing transversely but not longitudinally with the car; the flanking-springs *n*, connected with the car-body and with the opposite sides of the tube N whereby said tube is allowed a limited amount of movement but held normally in a vertical position; and a plunger supported by said tube and adapted to be moved down into engagement with the actuating-arm, substantially as described.

8. In a switching apparatus of the character described, the disk or cam-wheel B set beneath the switch-rail and adapted to operate the switch-tongue by means of a suitable connection therewith, said wheel being provided with the cam-slot C of substantially the shape shown and formed with the shoulders *c*; and mechanism engaging with said cam-slot whereby the wheel is partially rotated, substantially as set forth.

570,989. **GRAIN-DRYING APPARATUS.** THOMAS G. FROST, Chester, England. Filed July 1, 1896. Serial No. 597,666. (No model.)

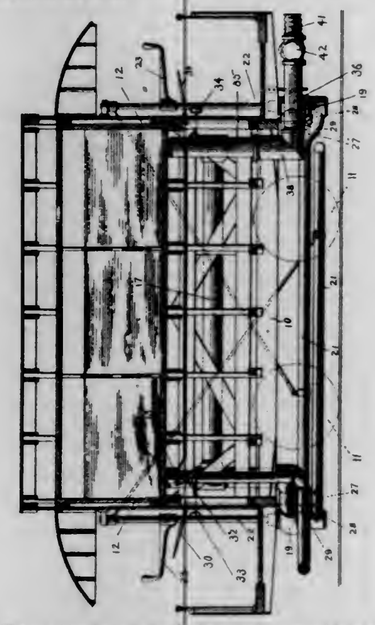


Claim.—For cleaning the air-openings of grain-drying apparatus consisting of uprights caused to move to and fro, these uprights carrying brushes which enter the air-openings, clearing them, substantially as described.

570,990. **RAILWAY STREET-SPRINKLER.** JOHN R. GATHRIGHT and JOSIAH B. GATHRIGHT, Louisville, Ky., assignors to the American Street Car Sprinkler Company, Worcester, Mass. Filed Mar. 20, 1896. Serial No. 584,033. (No model.)

Claim.—1. The combination of a car-body having wheels arranged to run on a track in the ordinary manner, a tank mounted in said

car-body, a vertical pipe extending down from the tank near one end of the car-body, and a horizontal filler-pipe pivotally mounted on said vertical pipe, whereby said filler-pipe may be swiveled or turned to coöperate with sources of water supply at either side of the track, substantially as described.



2. The combination of a car-body, a tank mounted in said car-body, a pivoted sprinkler-pipe, shut-off slides, and connections for actuating the same, said shut-off slides and their actuating connections being mounted to swivel or turn with the sprinkler-pipe, whereby the flow of water through the perforations in the sprinkler-pipe may be accurately controlled, substantially as described.

3. The combination of a car-body, a tank mounted therein, a pivoted sprinkler-pipe, a vertical operating-shaft therefor, shut-off slides carried by the sprinkler pipe, and a handle mounted upon and turning with the vertical shaft, and connected to actuate the shut-off slides, substantially as described.

4. The combination of a car-body, a tank mounted in said car-body, a pivoted sprinkler-pipe connected to said tank and having perforations along one side, a shut-off slide mounted inside of the sprinkler-pipe and having perforations corresponding with the perforations in the sprinkler-pipe, a vertical operating-shaft for the sprinkler-pipe, a handle carried by the vertical shaft, and connections from said handle to actuate the shut off slide, substantially as described.

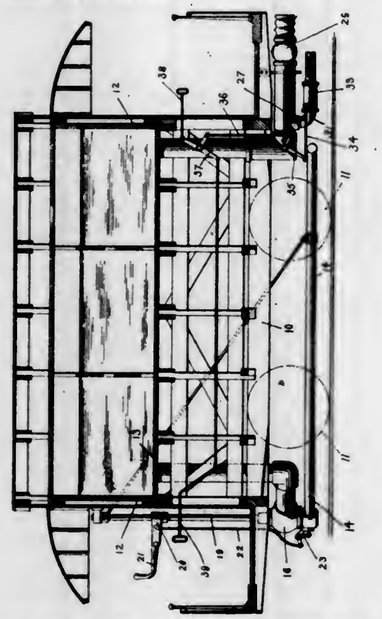
5. The combination of a supply-pipe, a casing carried by said supply-pipe, a piece pivotally mounted in said casing, a shaft extending from the upper end of said piece, a perforated sprinkler-pipe connected to the lower end of said plug, a shut-off slide adapted to cover the perforations in said sprinkler-pipe, and a handle pivotally mounted on said shaft, and connected to actuate said shut-off slide, substantially as described.

6. The combination of a car body, a tank, a pivoted sprinkler-pipe connected to said tank and having perforations along one side, a shut-off slide adapted to cover the perforations in said sprinkler-pipe, and toggle levers or links connected to actuate said shut-off slide, said toggle levers or links being mounted upon and turning with the sprinkler-pipe, substantially as described.

7. The combination of a supply-pipe, a casing carried by said supply-pipe, a piece pivotally mounted in said casing, a shaft extending from the upper end of said piece, a perforated sprinkler-pipe connected to the lower end of said plug, a shut-off slide adapted to cover the perforations in said sprinkler-pipe, toggle levers or links connected to said shut-off slide, and a handle pivotally mounted on said shaft, and connected to actuate said toggle levers or links, substantially as described.

570,991. RAILWAY STREET-SPRINKLER. JOHN R. GATHRIGHT and JOSIAH B. GATHRIGHT, Louisville, Ky., assignors to the American Street Car Sprinkler Company, Worcester, Mass. Filed Mar. 20, 1896. Serial No. 584,034. (No model.)

Claim.—1. In a device of the class described, the combination of a car-body, a tank thereon, a pivotally-mounted, perforated sprinkler-pipe supplied from said tank, a valve for controlling the flow of water through the sprinkler-pipe, and an operating-handle mounted so that it may be swung or turned horizontally to move the sprinkler-pipe to the desired position, and so that it may be depressed to operate the valve, substantially as described.



2. In a device of the class described, the combination of a car-body, a tank thereon, a pivotally-mounted, perforated sprinkler-pipe, supplied from said tank, a vertical shaft for turning the sprinkler-pipe, a valve for controlling the flow of water through said sprinkler-pipe, and an operating-handle pivotally mounted on the vertical shaft and connected to actuate the valve, substantially as described.

3. In a device of the class described, the combination of a supply-pipe, a casing located at the end of said supply-pipe, a piece pivotally mounted in said casing, a sprinkler-pipe carried by said piece, a valve mounted in said piece in line with said sprinkler-pipe, and means for actuating said valve, substantially as described.

4. In a device of the class described, the combination of a supply-pipe, a casing carried by said supply-pipe, a hollow piece pivotally mounted in said casing, a sprinkler-pipe connected to said piece, a valve located in line with said sprinkler-pipe, and a single handle connected to turn said sprinkler-pipe and to actuate said valve, substantially as described.

5. In a device of the class described, the combination of a supply-pipe, a casing carried by said supply-pipe, a piece pivotally mounted in said casing, a shaft connected to the upper end of said piece, a sprinkler-pipe leading from the lower end of said piece, a spring-pressed valve located in said piece in line with said sprinkler-pipe, and a handle pivotally connected to said shaft, for simultaneously turning said shaft and actuating said valve, substantially as described.

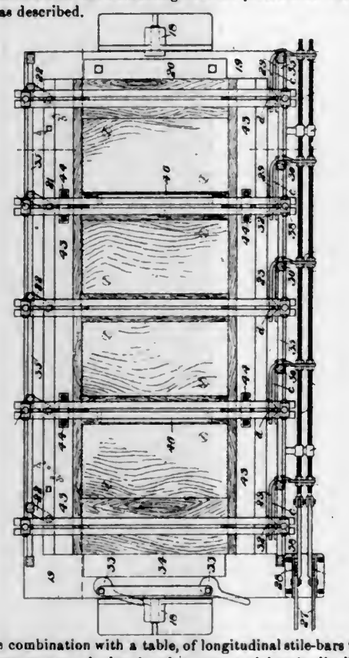
6. The combination of a car-body, a tank mounted thereon, and a filler-pipe leading to said tank, said filler-pipe being provided with sprinkling devices, substantially as described.

7. The combination of a car-body, a tank mounted thereon, and a filler-pipe leading to said tank, said filler-pipe being provided with sprinkling devices, a coupling or nozzle at its end, and a check-valve adjacent to said coupling, substantially as described.

8. The combination of a car-body, a tank mounted thereon, a filler-pipe leading to said tank, a perforated track-sprinkler pipe carried by and secured to said filler-pipe, a sleeve for covering the perforations in the track-sprinkler pipe, and connections for actuating said sleeve from the platform at either end of the car, substantially as described.

570,992. APPARATUS FOR MANUFACTURING DOORS, &c. WILLIAM W. GRIER, Hulton, Pa. Filed Aug. 5, 1893. Serial No. 482,428. (No model.)

Claim.—1. The combination with a table, of longitudinal stile-bars thereon, transverse pressure devices resting upon and arranged to press down said bars, and blocks arranged to press upon the door between the stile-bars and contacting with the pressure devices; substantially as described.



2. The combination with a table, of longitudinal stile-bars thereon, transverse pressure devices bearing upon and longitudinally adjustable along said bars, and blocks arranged to press upon the door between the stile-bars and acted upon by the pressure devices; substantially as described.

3. The combination with a table, of longitudinal stile-bars thereon, transverse pressure devices resting upon and arranged to press down said bars, and blocks secured to the pressure devices and arranged to press upon the door between the stile-bars; substantially as described.

4. The combination with a table or bed, of pressure devices acting at right angles thereto to press the assembled parts against the bed, and other pressure devices arranged to act against both the side and end edges and force the parts together laterally; substantially as described.

5. The combination with a table or bed, of longitudinal stile-bars thereon transverse clamping-bars resting upon and longitudinally adjustable along the stile-bars and arranged to press the door down upon the table, and depending clamping-levers bearing on these bars and having their lower ends engaging the table; substantially as described.

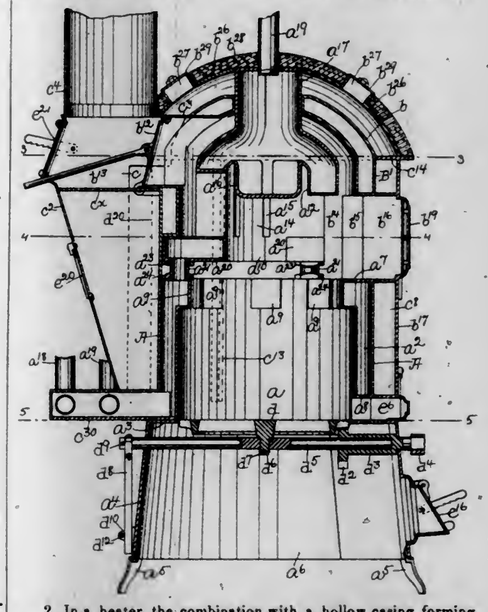
6. The combination with a table, of longitudinal stile-bars thereon, transverse clamps adjustable longitudinally upon the stile-bars, and clamping-levers bearing upon the transverse clamps and having depending hooked ends arranged to engage longitudinal rods secured to the table; substantially as described.

7. The combination with a table, of longitudinal stile-bars thereon, transverse clamps adjustable longitudinally upon the stile-bars, laterally-acting side and end clamps for the article, and clamping-levers bearing upon the transverse clamps and having depending hooked ends arranged to engage longitudinal rods secured to the table; substantially as described.

8. The combination with a table or bed, of pressure devices acting at right angles thereto to press the assembled parts against the bed, and other pressure devices arranged to act against both the side and end edges, the side pressure devices having separated bearings upon different portions of the edge of the article; substantially as described.

570,993. HEATER. ELIJAH C. HALL, Braintree, Mass. Filed Aug. 28, 1896. Serial No. 604,209. (No model.)

Claim.—1. In a heater, the combination with a hollow casing forming the walls of a fire-pot, of a hollow chamber supported above the said hollow casing and communicating therewith and provided with an outlet for the products of combustion, and a second hollow chamber surrounding the first hollow chamber and supported by and communicating with the hollow walls of the fire pot and provided with a direct-outlet opening and with a separate indirect-outlet opening for the products of combustion, and an inclosing shell forming with the second hollow chamber a heat-circulating passage with which the indirect-outlet opening communicates, substantially as described.



2. In a heater, the combination with a hollow casing forming the walls of the fire-pot, of a hollow dome-shaped chamber supported by and communicating with said hollow casing, means to detachably secure said chamber to the said hollow casing, and a second dome-shaped chamber surrounding the first dome-shaped chamber and separated therefrom to leave a passage for the heat about the said first chamber, and means to detachably secure said second dome-shaped chamber to the hollow casing to communicate therewith, and outlet-pipes for each of said chambers, substantially as described.

3. In a heater, the combination with a hollow casing forming the walls of a fire-pot, of a hollow chamber of less diameter than the said hollow casing supported above the same and communicating therewith, and a second hollow chamber of larger diameter than the first chamber and surrounding the same to leave a passage for the circulation of heat around the outside of the first chamber, and means to connect the said second chamber with the hollow casing, substantially as described.

4. In a heater, the combination of the hollow casing A provided with inwardly-projecting arms, and forming the walls of a fire-pot, of a hollow dome-shaped casting B of smaller diameter than the casing A and supported upon the said inwardly-projecting arms, and a hollow dome-shaped casting B′ of larger diameter than the casting B to form a passage for the circulation of heat about the outside of the casting B, and means to connect the hollow casting B′ with the hollow casing A, substantially as described.

5. In a heater, the combination of the hollow casing A provided with inwardly-projecting arms and forming the walls of a fire-pot, of a hollow dome-shaped casting B of smaller diameter than the casing A and supported upon the said inwardly-projecting arms, and provided with the substantially central depending portion a^{15} and with an upwardly-extended neck portion a^{17}, and a hollow dome-shaped casting B′ surrounding the casting B and separated therefrom by a heat-circulating passage and provided with an opening in its top through which the neck portion of the casting B exteods, substantially as described.

6. In a heater, the combination of the following instrumentalities, an inclosing shell, a hollow casing located therein and forming the walls of a fire-pot, a hollow chamber supported by said hollow casing and consisting of a hollow bottom portion a^{19}, a hollow top or dome a^{18} and intermediate separated hollow columns a^{16}, means to connect the hollow bottom portion with the hollow casing, and a second hollow chamber surrounding the first hollow chamber and separated therefrom to leave a heat-circulating passage, and also separated from the inclosing shell to form a heat circulating passage on the outer side of the said second hollow chamber, and means to connect the second

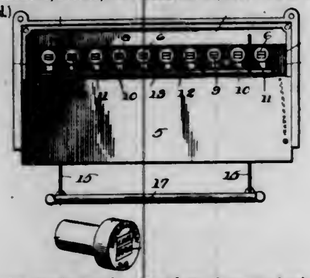
hollow chamber with the hollow walls of the fire-pot, substantially as described.

7. In a heater, the combination of the following instrumentalities, an inclosing shell provided with a fire door, a hollow casing located therein and forming the walls of a fire-pot, a hollow chamber provided with a top, sides and bottom supported upon the hollow casing and communicating therewith, and having an opening b^{14} in line with said fire-door, and a second hollow chamber supported upon the said hollow casing and surrounding the first hollow chamber and provided with an inlet-opening b^{13} in line with the opening b^{14} and with the fire-door, and having an outlet-opening c^{10}, substantially as described.

8. In a heater, the combination with an inclosing shell, of a hollow casting located therein and forming therewith a heat-circulating passage outside of the said casting and provided with a direct-outlet opening b^{7} and with an indirect-outlet opening c^{10} for the products of combustion, a partition-wall c^{12} extended from the top to near the bottom of the said circulating-passage, and a second hollow casting of smaller diameter than the first casting and located therein to form therewith a heat-circulating passage between the said castings and provided with an opening to form a passage for the products of combustion from one to the other side of the said smaller casting, substantially as described.

570,994. PRINTING ATTACHMENT FOR LETTER-BOXES.

BYRON L. HARGROVE, Bottom, Tex. Filed Jan. 20, 1896. Serial No. 576,172. (No model.)



Claim.—An attachment for street letter-boxes and other depositories for mail-matter, comprising a casing having a pocket, a series of dating-stamps adapted to be selected and projected across the pocket for dating and postmarking the letter or package, an inking-pad located within the said pocket, springs for supporting the pad and returning it to a normal position in the pocket after being actuated, and a handle operatively connected with the pad through a slot in the casing, substantially as set forth for the purpose described.

570,995. BOILER-FURNACE.

SAMUEL S. HORNER, Conemaugh, Pa. Filed July 6, 1896. Serial No. 598,176. (No model.)



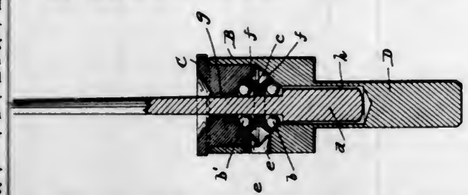
Claim.—1. In a boiler-furnace, the combination of a course of brick built into the walls of the fire-box a proper distance above the grate-bars, and having an opening therethrough, and a water-pipe located in the opening of the course of brick, substantially as and for the purpose set forth.

2. In a boiler-furnace, the combination of a course of brick located a distance above the grate-bars and built into the walls of the fire-box, and having an opening therethrough, the end of one brick having a socket and the opposing end of the adjacent brick having a corresponding projection to enter the said socket, and a pipe extending through the opening in the said course of brick, substantially as and for the purpose set forth.

3. In a boiler-furnace, the combination of a course of brick built into the walls of the fire-box a distance above the grate-bars, and having an opening therethrough, the corner-bricks being divisible on a line corresponding with the opening, and a pipe located in the opening of the said course of brick, substantially as and for the purpose set forth.

570,996. SPINDLE.

HENRY E. HUGHES, Pawtucket, R. I., assignor of one-half to Thomas J. Risk, Central Falls, R. I. Filed June 27, 1896. Serial No. 597,265. (No model.)



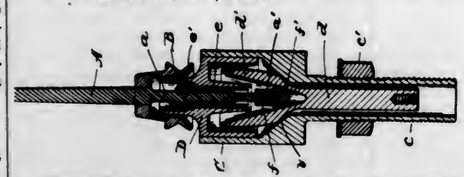
Claim.—1. A spindle for yarn-spinning and other like purposes consisting of the balls b and b', the whirl c having its upper and lower faces ground to form seats for the said balls, the shaft A upon which said whirl is fixed, said shaft having the enlargement d upon the lower extremity thereof so that its center of gravity will be below the whirl, in combination with the case B and the cap C respectively ground interiorly so as to form conical bearings for the balls b and b', substantially as described for the purpose specified.

2. In a ball-bearing spindle of the type specified the interiorly-coned case B, the compensating-cap C also coned interiorly at f, said cap C sliding easily in the case B, and adapted by its weight to restore the shaft of the spindle to a perpendicular position when the same has been deflected therefrom, in combination with the shaft A and the balls b b', all substantially as set forth.

3. A spindle for the spinning of yarn and other similar uses consisting of the shaft A having an enlarged extremity d of such a weight as to bring the center of gravity of the shaft below the line of support, the whirl c fixed upon said shaft, an upper and lower set of balls in contact with the upper and lower faces of said whirl, the slotted and interiorly-coned base B bored out to accommodate the lower end of said shaft; the whole in combination with a compensating-cap C coned interiorly and adapted by its weight to restore said shaft to a perpendicular position when the same has been deflected, all as described for the purpose specified.

570,997. SPINDLE.

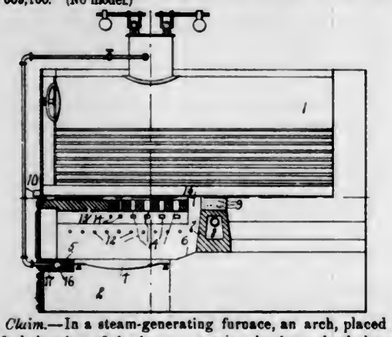
HENRY E. HUGHES, Pawtucket, R. I., assignor of one-half to Thomas J. Risk, Central Falls, R. I. Filed July 22, 1896. Serial No. 600,141. (No model.)



Claim.—In a spindle for cotton-spinning and the like, a case C c, coned interiorly to furnish a seat for the step-support d d', in combination with said step-support d d', a ball-ended step and bolster, a shaft and whirl; and a cap D perforated for the admission of said shaft, and having a depression in the upper portion thereof, with a conical bottom for the support of said ball-topped bolster, all substantially as shown and specified.

570,998. BOILER-FURNACE.

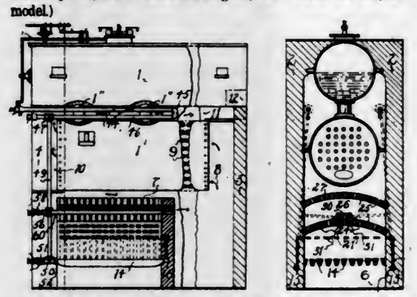
SAMUEL P. HUTCHINSON, Philadelphia, Pa. Filed Dec. 23, 1895. Renewed Oct. 16, 1896. Serial No. 609,160. (No model.)



Claim.—In a steam-generating furnace, an arch, placed above the fuel chamber of the furnace, a grate, having a dead-plate at the front end, below said fuel-chamber; series of gradually-increasing-sized openings in said arch, a large discharging-aperture through the rear of said arch; channels in the sides of said furnaces, means of heating air, and discharging the same above the fuel in the fuel-chamber, in combination with a perforated heating bridge-wall, and means of supplying heated air thereto and means of supplying steam or vapor of water with the air supply from the ash pit, arranged substantially as and for the purpose set forth.

570,999. STEAM-FURNACE.

SAMUEL P. HUTCHINSON and S. LLOYD WIEGAND, Philadelphia, Pa.; said Wiegand assignor to said Hutchinson. Filed Sept. 18, 1894. Renewed Aug. 31, 1896. Serial No. 604,463. (No model.)

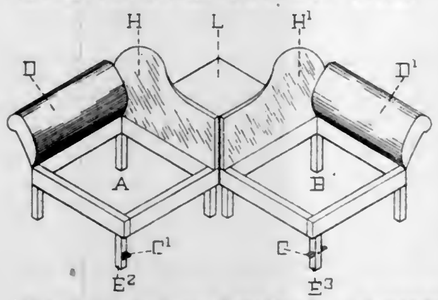


Claim.—1. In a steam-boiler furnace, a fuel-chamber having walls of refractory material, containing air-inlets connected with a heated air steam supply, a perforated arch covering said fuel-chamber, a second chamber above said fuel-chamber, also covered by a perforated arch, in combination with a central conduit in said second chamber arranged to discharge previously-heated steam and air into the central portion of the fuel-chamber as set forth and described.

2 In a steam-boiler furnace, the combination of steam-jets, an automatically-regulated steam supply connected therewith, air-inlet funnels provided with air-flow-regulating disks tubes and return-bends, and pipes located in the flue of a connected boiler-furnace, pipes protected from radiation in the breast of the furnace, connecting said tubes and return-bends with the channels for distributing heated air and steam in the furnace, and valves arranged to adjust the relative flow of heated steam and air to different parts of said furnace substantially as set forth.

571,000. COMBINATION-DIVAN.

PERCY B. JACKSON, Newburyport, Mass. Filed Apr. 2, 1896. Serial No. 585,972. (No model.)



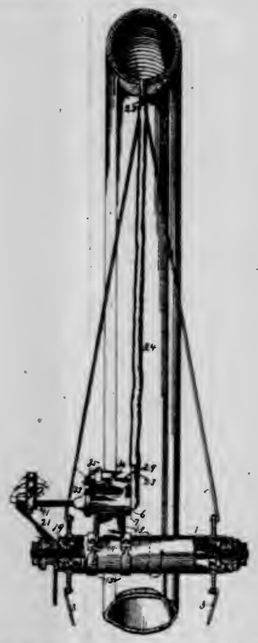
Claim.—1. As a new article of manufacture, a divan composed of two equal rectangular sections, connected by the hinges T on their backs, and provided with the hooked catch and socket C and C', on the middle front legs, the locking-shelf L attached by hinges P, to one of said sections and provided with a hasp S, for securing it to the adjoining section, when said sections are swung apart, substantially in the manner described.

2. As a new article of manufacture, the combination of a divan composed of two substantially equal rectangular sections, connected by hinges T at their backs, the locking-shelf L attached by hinges P, to one of said sections, and provided with means for attachment to the adjoining section, for securing said sections when they are adjusted to the proper angle.

571,001. AUTOMATIC PUMP FOR PNEUMATIC TIRES.

THOMAS M. JENKS, Galesburg, Ill., assignor of one-fourth to Edward W. Jenks, Chicago, Ill. Filed June 12, 1896. Serial No. 595,297. (No model.)

Claim.—1. In combination, a wheel and hub, an axle on which the hub rotates, an air-pump having a piston-rod with an extended outer end, a disk or cam-wheel fixed to the axle in such position that one of its sides will act on the outer end of the piston-rod, and a follower mounted on the piston-rod and adapted to engage the cam-wheel on its opposite side from its side engaged with the end of the piston-rod, substantially as described.



2. In combination, a wheel and hub, an axle on which the hub rotates, an air-pump having a piston rod with an extended outer end, a disk or cam-wheel fixed to the axle, a standard fixed to the piston-rod, and a follower pivotally mounted on said standard and adapted to engage the cam-wheel on its opposite side from the piston-rod substantially as described.

3. In combination, a wheel and hub, an axle on which the hub rotates, an air-pump having a piston-rod with an extended outer end, a disk or cam-wheel fixed to the axle, a standard fixed to the piston-rod, a follower pivotally mounted on said standard, and a dog also pivotally mounted on said standard, and adapted to engage with a notch in the follower to lock or hold said follower in working position, substantially as described.

4. In combination a wheel and hub, an axle on which the hub rotates, an air-pump having a piston-rod with an extended outer end, a disk or cam-wheel fixed to the axle, a standard fixed to said piston-rod, a follower pivotally mounted on said standard, a dog also pivotally mounted on said standard, a pipe connecting the air-pump with the pneumatic tire, a cylinder communicating with the interior of said pipe, a valve in said cylinder, a spring holding it to its seat, and a valve stem projecting from said cylinder and adapted to trip said dog and follower and thereby stop the action of the cam-disk on the air-pump, substantially as described.

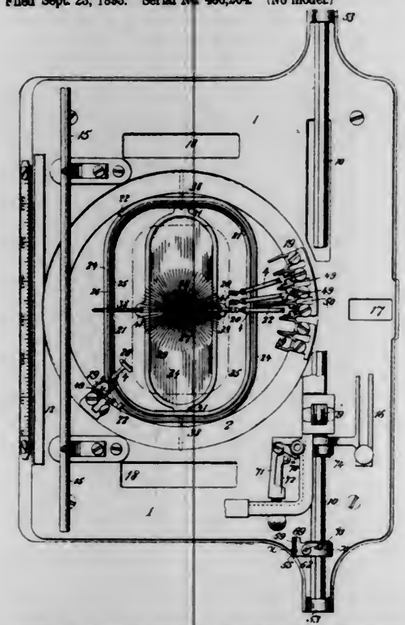
5. In combination, a wheel and hub, an axle on which the hub rotates, an air-pump having a piston-rod with an extended outer end, a disk or cam-wheel fixed to the axle, a standard fixed to the piston-rod, a follower pivotally mounted on said standard, a dog also pivotally mounted on said standard, a pipe connecting the air-pump with the pneumatic tire, a cylinder communicating with the interior of said pipe, a valve in said cylinder, a spring, an adjustable head for regulating the tension of said spring, a valve-stem, and a spring-actuated dog for locking said valve-stem and valve, substantially as described.

6. In combination, a wheel and hub, an axle on which the hub rotates, an air-pump having a piston-rod with an extended outer end, a disk or cam-wheel fixed to the axle, a standard fixed to said piston-rod, a follower pivotally mounted on said standard, a dog also mounted on said standard, a pipe connecting the air-pump with the pneumatic tire, a cylinder communicating with the interior of said pipe, a valve in said cylinder, a spring, an adjustable head for regulating the tension of said spring, a valve-stem, a spring-actuated dog for locking

said valve-stem, and an air-release comprising a short pipe communicating with the pipe leading from the pump to the tubular tire, a valve seated therein, a spring, and an adjustable head for regulating the tension of said spring, substantially as described.

7. In combination, the wheel, air-pump with extended piston-rod, cam disk, a follower pivotally connected indirectly with said piston-rod, and a spring for holding the follower out of engagement with the cam-disk, substantially as described.

571,002. TYPE-WRITING MACHINE. WILLIAM K. JENNE, Ilion, N. Y., assignor to The Wyckoff, Seamans & Benedict, New York, N. Y. Filed Sept. 23, 1893. Serial No. 486,264. (No model.)



Claim.—1. In a type-cleaning attachment for type-writers, the combination with the base or support adapted to rest upon the key-levers, the vertically-adjustable stem thereon, the coiled spring, and the brush.

2. In a type-writing machine, the combination of the base resting upon the key-levers, the vertically-adjustable stem screwed into said base, the coiled spring on the same, the support thereon, and the brush-bristles, held together by twisted wires, the lower ends of which are attached to said support.

3. In a type-writing machine, the combination with a series of type-bars connected to a series of key-levers, of a dust-receptacle resting on and supported by said key-levers and provided with a type-cleaning brush.

4. In a type-writing machine, the combination with the type-bars and their connected key-levers, of a dust-receptacle arranged over said key-levers and provided with means extending downwardly between the key-levers to prevent endwise movement of the dust-receptacle.

5. In a type-writing-machine, the combination with the type-bars and their connected key-levers, of a dust-receptacle arranged upon said key-levers and provided with guiding-pins.

6. In a type-writing machine, the combination with a series of type-bars and their connected key-levers, of a dust-receptacle having a type-cleaning brush and supported on said key-levers and provided with means for preventing the dust-receptacle and the type-cleaning brush from moving laterally.

7. In a type-writing machine, the combination with a series of type-bars, their converging connecting-rods, and their key levers, of a dust-receptacle having a type-cleaning brush and mounted upon said key-levers and fitting the space formed at the lower end of the connecting-rods and provided with means extending downwardly between the key-levers, whereby the dust receptacle and the brush are prevented from materially moving either backwardly, forwardly, or laterally.

8 In a type-writing machine, the combination of the type-rest, the dust-receptacle, the brush mounted thereon, and arms connecting the dust-receptacle with the type-rest.

9. In a type-writing machine, the combination of the type-rest, the dust-receptacle supported by the key-levers, the brush mounted thereon, and the spring-wires connecting the dust-receptacle to the type-rest.

10. In a type-writing-machine, the combination of the type rest, the dust receptacle supported by key-levers, and the spring-wires adjustable on said dust-receptacle and bearing at their upper ends against the type-rest.

11. In a type-writing machine, the combination with a series of type-bars, a type rest, a series of connecting-rods, a series of key-levers, a dust-receptacle mounted on said key-levers within the lower ends of the series of connecting-rods and provided with means engaging with the key-levers, the adjustable spring-wires connecting the dust-receptacle with the type-rest, and the elastically-mounted type-cleaning brush mounted adjustably upon said dust-receptacle.

12. In a type-writing machine, the combination with the type-bars and their key-levers, of a dust-receptacle provided on its under side with a cushion which rests directly upon said key-levers.

13. In a type-writing machine, the combination with a type-bar having a transverse hole or bearing, and a connecting-rod provided at its upper end with a hook 45, of an intermediate coupler consisting of a rigid shank or stem 47, a hook or eye 48 at its lower end, a transverse hook or pin 49 at its upper end, and a flat spring 50 arranged parallel with the shank or stem and perforated at its upper end in line with said hook or pin 49, all of the parts of said coupler being made integral or from a single piece of metal; as shown.

14. In a type-writing machine, the combination with a paper-carriage, a rod provided with a series of notches or teeth at letter-space distances apart, a stop collar on said rod adapted to be adjusted longitudinally thereon, a catch arranged within a housing in said stop-collar and adapted to slide independently therein at right angles to the movement of said stop-collar for adjustment on said rod, a finger-piece on said catch projecting beyond said stop-collar for sliding the catch in one direction and out of engagement with said notches or teeth, and a spring within said housing for sliding said catch in the opposite direction when pressure is removed from said finger-piece.

15. In a type-writing machine, the combination with a paper-carriage, of a guide-rod therefor attached to the machine-frame and notched or perforated, and a collar or abutment surrounding said rod and provided with an independent spring-catch to engage said notches or perforations, said spring-catch being mounted to slide in a housing within said collar or abutment, and having at one end an engaging tooth and at the other end a finger-piece which projects beyond said collar, whereby when said finger-piece is pressed toward said collar said tooth or catch portion is moved away from and out of engagement with the said rod.

16. In a type-writing machine, the combination with a paper-carriage, of a stationary rod provided with a series of notches or teeth, and a stop-collar mounted on said rod and provided with a spring-pressed J-shaped catch having a projecting finger-piece which when pressed upon will free the catch from the rod and enable the collar or abutment to be slid thereupon.

17. In a type-writing machine, the combination with a lifting paper-carriage, of a pivotally-mounted hinge and guide rod having on its under side a series of teeth or notches corresponding to the graduations of the machine-scale, and a movable abutment on said rod provided with a spring-catch having a projecting finger-piece which when pressed upon will free the catch from the rod and enable the collar or abutment to be slid thereupon.

18. A type-writer-carriage abutment consisting of the collar 55 perforated transversely as at 57, and vertically as at 60 and provided with a spring-pressed catch made substantially in the form of the letter J, one end thereof having a finger-piece and the other end an engaging portion, the latter extending into the transverse perforation 57.

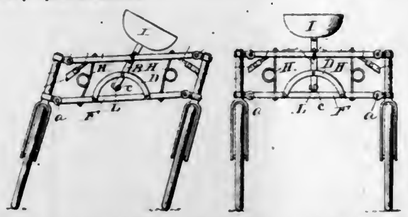
19. A type-writer-carriage abutment consisting of the collar 55 having a transverse perforation 57, a vertical perforation 60, and a cut-away 64, and provided with a catch consisting of a vertical stem which passes through the perforation 60, a horizontal member which occupies the cut-away 64, a shorter vertical upturned engaging member which enters the perforation 57, a finger-piece projecting above the collar, and a coiled spring encircling the vertical stem within the perforation 60 and bearing at one end against a shoulder therein, and at its other end against the under side of the finger-piece.

571,003. SULKY. ELISHA S. KEELER, New Albany, Pa. Filed Mar. 2, 1896. Serial No. 581,556. (No model.)

Claim.—1. In a vehicle of the character described, in combination with the wheels and wheel-supports, a flexible frame having upper and lower cross-pieces, separately connecting and pivoted to said supports, and a seat and seat-bar, said seat-bar pivotally connected to both said cross-pieces of the frame, substantially as described.

2. The combination with side wheel-frames, of a coupling-frame pivoted thereto, a seat-bar pivoted to said frame, a lever-frame also pivoted to said coupling frame, and thills to which the lever-frame is secured, substantially as described.

3. The combination with the wheel-frame, of the flexible coupling-frame pivoted thereto, a spring connection for holding said frame upright, the seat-bar carrying the seat, pivoted to said flexible frame, and a foot-lever pivoted to said flexible frame, substantially as and for the purpose described.



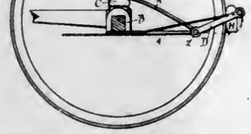
4. In combination with the wheel-frame, a coupling-frame composed of cross-bars and a spring connection, said frame pivoted to the wheel-frame, the lower one of said cross-bars provided with a rigid arch, and a seat-bar carrying the seat pivoted to both the upper cross-bar and to said arch, substantially as described.

5. In combination with the wheel-frame and seat and seat-bar, a flexible connecting frame, the thills rigidly connected to said flexible frame, brace-bars rigidly connected to said thills and to the flexible frame, and a foot-lever pivoted to said braces and to the seat-bar, substantially as described.

6. In combination with the wheel-frame, the flexible coupling-frame having cross bars pivoted to the wheel-frame, the upper cross-bar provided with diagonal braces extending toward the wheel-frame, and adjustable slides on said braces, substantially as described.

7. The combination with the wheel-frame, of the coupling-frame pivoted to the wheel-frame, the thills and the thill-braces rigidly secured to the said coupling-frame, a lever-frame secured to said braces, and a locking-catch pivoted to one of the thill-braces and adapted to engage with the foot-lever to hold the said lever from swinging, substantially as described.

571,004. BRAKE. FREDERICK W. KRUSE and CHRISTIAN HOLSTEIN, Millard, Nebr. Filed Mar. 23, 1896. Serial No. 584,428. (No model.)

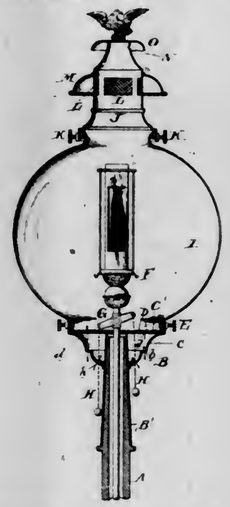


Claim.—A brake adapted to be used in conjunction with the forward wheels of a vehicle and comprising the following instrumentalities, to wit: a two-part pivoted neck-yoke each of said two-part neck-yoke bars being provided with laterally-extending stub-arms, brackets secured to the forward axle, knuckle-bars pivotally secured to said brackets an extension-bar revolubly held within said knuckle-bars and brake-shoes secured to said extension-bar and a strand connecting said extension-bar to said two-part neck-yoke, said brake-shoes being so arranged that they tightly grind against the outer periphery of said wheels while revolving in one direction and loosely ride against said wheels while revolving in an opposite direction, all substantially as and for the purpose set forth.

571,005. STREET-LAMP. CHARLES R. LINDSAY, Jr., Philadelphia, Pa., assignor to the Pennsylvania Globe Gas Light Company, of Pennsylvania. Filed June 25, 1896. Serial No. 596,828. (No model.)

Claim.—1. In a street lamp, a base having a socket adapted to fit on the upper part of a lamp-post and a supporting structure provided with a series of large ventilating-apertures in its upper surface, combined with a flat annular screen covering the apertures through the base, a glass globe secured to and supported by the base, a ventilating-cap supported upon and secured to the upper end of the glass globe and furnished with screened ventilating-apertures for the products of combustion, and a suitable burner arranged within the glass globe.

2. In a street lamp, a base having a socket adapted to fit on the upper part of a lamp-post and a supporting structure provided with a series of large ventilating-apertures in its upper surface, combined with a flat annular screen covering the apertures through the base, a glass globe secured to and supported by the base, a ventilating-cap wholly supported upon and secured to the upper part of the glass globe and consisting of an upward-extending cylindrical portion having large screened ventilating-apertures protected upon the outside by a downwardly-extending hood and also furnished with a small igniting-aperture through which a match may be inserted for lighting the burner, and a gas-burner arranged within the glass globe and below the igniting-aperture.



3. In a street-lamp, a base provided with a socket having an annular chamber clamps at its perimeter and screened air passage-ways through the walls of the annular chamber, in combination with a glass globe having flanged apertures at top and bottom adapted to be clamped to the base, and a metallic cap detachably clamped to and directly supported upon the upper flanged end of the globe and furnished with screened ventilating-apertures.

4. In a street-lamp, the base B comprising a socket B', a top plate C', a casing C and suitable apertures through the plate C' and case C, in combination with a globe I having flanged apertures at top and bottom, suitable clamps between the globe and the base, a ventilating-cap J secured to the upper flanged aperture of the globe, a gas-burner arranged within the glass globe, and means extending through the base for operating the valve of the gas-burner.

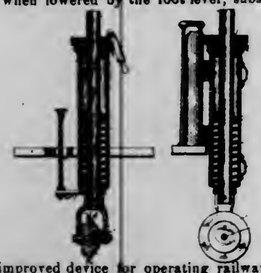
5. In a street-lamp, the base B comprising a socket B', a top plate C', a casing C and suitable apertures through the plate C' and case C, in combination with a globe I having flanged apertures at top and bottom, a screen D resting upon the plate C' of the base and adapted to form a screen to the apertures through the same, suitable clamps between the globe and the base, a ventilating-cap J secured to the upper flanged aperture of the globe and provided with screened apertures protected by a downwardly-extending hood, a gas-burner arranged within the glass globe, and means extending through the base for operating the valve of the gas burner.

6. In a street lamp, a base consisting of a socket portion B' having at its upper end a flat annular portion C' of sheet metal provided with apertures *d* and at its side with the molded annular part C having apertures *b* thereby forming an annular chamber in combination with an annular screen D loosely resting upon plate C' and adapted to screen the apertures *d*.

571,006. DEVICE FOR OPERATING RAILWAY-SWITCHES. JOHN A. MARSH, St. Louis, Mo. Filed Feb. 17, 1896. Serial No. 579,636. (No model.)

Claim.—1. In an improved device for operating railway-switches composed of a shell, movably secured to the car, said shell being provided at its upper portion with a movable head, said movable head adapted to turn the vertical tube, by means of a feather or key, formed on said tube, a handle or lever hinged to said head which turns the head and locks the same when lowered in the slots formed in the stationary part of the head which is held to the shell by a set-screw or other means, said tube being guided up and down, and reversed by the handle of said head, and said tube carrying with it a wheel, which is for the purpose of operating or throwing the switch when lowered by a foot-lever, substantially as shown and described.

2. In an improved device for operating railway-switches composed of a tube guided in a shell, a spring placed around said tube, said tube carrying a wheel, said wheel having its one side inclined, and its other side with a right-angular depression, said wheel provided with a bore, a spiral spring placed in said bore, and resting upon the hub of said wheel, said spring pressing against the wheel and bearing, for the purpose of allowing said wheel to adjust itself to the switch when lowered by the foot lever, substantially as set forth.

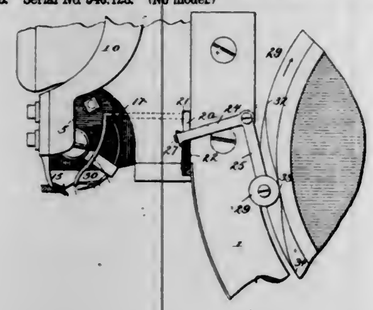


3. In an improved device for operating railway-switches composed of a shell, said shell being provided with steel castings, which fit in the steel castings secured to the car, handles mounted upon said shell, for handling the same, a tube placed through said shell, said tube provided with a feather, or key, which rides in a keyway formed in the movable head, said head operated or moved by a lever hinged thereto, said head movably guided in a collar firmly secured to the shell, for the purpose of setting the wheel at any angle, slots formed in said collar in which the lever rests to hold said wheel said lever moving the wheel around bringing the incline on the other side, and a spring placed in said wheel, for the purpose of allowing its adjustment, substantially as set forth.

4. In an improved device for operating railway-switches composed of a shell provided with inclined dovetail steel castings which fit in inclined dovetail recesses formed in a steel casting secured to the car, for holding the same, said shell provided at its upper portion with a head, movable in a collar, said collar secured to the shell by a set-screw or other means, the movable head provided with a keyway, said keyway provided for the insertion of a feather formed on the tube, and for the purpose of moving said tube, a collar secured to said tube and which rests upon a spring for the purpose of raising the wheel when the foot is released, said rod lowered by an arm placed around said tube on which is placed the foot-rod, a wheel mounted on a shaft held by said tube, said wheel having inclined and right-angular-depressioned faces, a bore formed in said wheel for the insertion of a spring, said spring adapted for the purpose of providing for the lateral motion of the car, substantially as set forth.

5. In an improved device for operating railway-switches composed of a shell, detachably secured to a car, said shell being carried and held in dovetailed steel castings carried by the car, a tube or rod located in said shell, said tube guided in and reversed by a movable head, a key secured to the said tube which rides in a keyway formed in the movable head, and the said head and tube or rod reversed by a lever or handle hinged to the head, said handle or lever adapted to rest or lock itself in slots formed on the stationary portion of said head, which is adjusted to place the wheel at any desirable angle to the rails or switch, a wheel carried by said tube or rod, and provided with a bore or depression, a spring placed in said bore or depression, and resting upon the hub of said wheel for the purpose of allowing said wheel to adjust itself to the switch, and provide for the vibration or lateral movement of the car, substantially as shown and described.

571,007. SEWING-MACHINE. FRANCIS A. MILLS, Philadelphia, Pa., assignor of one-half to James Mundell, same place. Filed Apr. 17, 1895. Serial No. 546,128. (No model.)

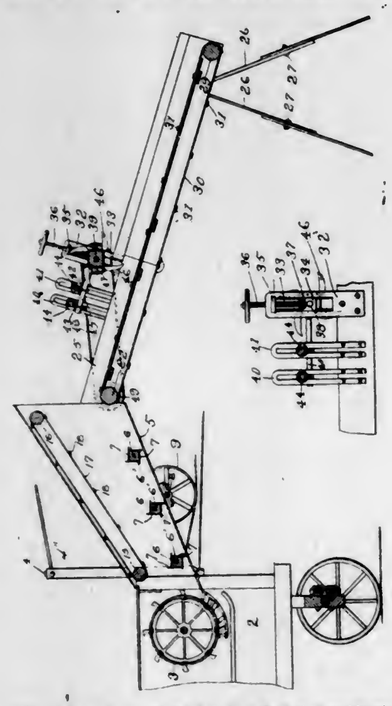


Claim.—1. In a loop-stitch sewing-machine, the combination, with a curved barbed needle, a looper device and operating mechanism therefor, of a loop-deflecting finger arranged to operate upon the loop within the radius of the needle and to hold the loop within such radius during the formation of the stitch.

2. In a loop-stitch sewing-machine, the combination, with a curved barbed needle, a looper device and operating mechanism therefor, of a finger device arranged to operate upon the loop within the radius of the needle, a spring and a cam for operating said finger and suitable intermediate connections for the spring and cam whereby the loop is held within the radius of the needle during the formation of the stitch.

3. In a loop or chain stitch sewing-machine, the combination of a barbed needle, a looper device and operating mechanism therefor, with a loop-kinking or side deflecting device consisting of a finger depending in position to engage the side of the loop, a rock-rod supporting said finger having a crank-arm, a spring connecting the latter and the frame, a crank-lever having an adjustable connection with said rod-arm and a cam adapted to move said finger away from the loop against the tension of the spring, for the purpose stated.

571,008. BAND-CUTTER AND FEEDER. HERBERT D. MYERS, Bowdle, S. D. Filed Jan. 27, 1896. Serial No. 576,928. (No model.)

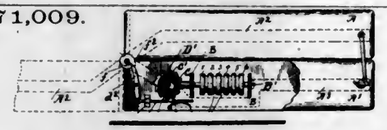


Claim.—In a device of the class described, the combination, with the conveyer-frame and the conveyer belt or apron arranged thereon, means for operating the same, of the upright parts 32 secured to the opposite sides of said frame, and provided with the slots 33, the block 34 slidable within said slots, the screw mechanism for raising and lowering said block, the knives arranged at intervals upon the faces thereof, said knives consisting of plates having projecting tines or blades, the U shaped parts 40 and 41, the slats 42 and 43 adjustably secured thereto, and the fingers carried by said slats and extending laterally therefrom into the space provided between the tines or blades of said knives, for the purpose set forth.

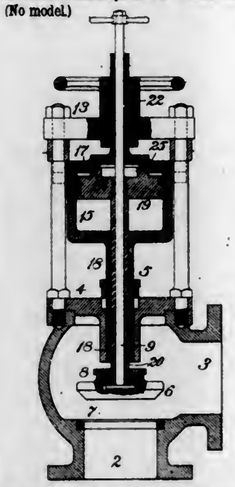
571,009. REGISTER FOR FOLDING MATTRESSES. HERBERT S. MCCORMICK, Oakland, Cal. Filed July 17, 1895. Serial No. 556,207. (No model.)

Claim.—The combination with a mattress composed of two or more sections suitably united, of registering mechanism located within one of the sections, and of devices connected with another section for automatically operating said registering mechanism as the sections of the mattress are opened.

571,009.



571,010. STEAM STOP-VALVE. ROBERT MCLAUGHLIN and WILLIAM MCLAUGHLIN, Philadelphia, Pa. Filed July 9, 1896. Serial No. 598,571. (No model.)



Claim.—1. The combination of a valve for controlling the flow of fluid through a pipe, two pistons which are normally and coincidently subject to pressure upon unequal areas respectively, rods connected to said pistons and adapted to impart the differential pressures acting thereon, in opposite directions, to said valve, and means for applying a preponderance of pressure to the smaller piston area.

2. The combination of a valve for controlling the flow of fluid through a pipe, a piston which is normally subject to unequal pressures on opposite sides, a rod connected to said piston and adapted to impart pressure to said valve, a normally-closed pipe through which a variation of the degree of pressure on one side of said piston may be effected, and a frangible or detachable member for opening communication through said pipe.

3. The combination of a valve for controlling the flow of fluid through a pipe, a piston which is normally subject to unequal pressures on opposite sides, a rod connected to said piston and adapted to impart pressure to said valve, a normally-closed pipe through which a variation of pressure on one side of said piston may be effected, a frangible or detachable member for opening communication through said pipe, and a pressure tight safety-box inclosing said frangible or detachable member.

4. The combination of a valve for controlling the flow of fluid through a pipe, a piston which is normally subject to unequal pressures on opposite sides, a rod connected to said piston and adapted to impart pressure to said valve, a normally-closed pipe through which a variation of the degree of pressure on one side of said piston may be effected, and a series of frangible or detachable members for opening communication through said pipe at any one of a number of points variously located relatively to the valve.

5. The combination of a valve for controlling the flow of fluid through a pipe, a differential-piston mechanism, which normally permits the valve to remain open, and means for effecting the closure of the valve by said differential-piston mechanism by changing the direction of preponderance of pressure thereon.

6. The combination of a valve for controlling the flow of fluid through a pipe, a cylinder or pressure-chamber fitted to traverse toward and from said valve on guides on the body or casing thereof, a differential piston fitting said pressure-chamber and held normally by pressure therein in position to permit the valve to be open, a rod on said differential piston extending into the valve-body and adapted to impart pressure to the valve, pipes for the supply of fluid under pressure to opposite sides of said differential piston, and means for releasing pressure from the larger area of said differential piston.

571,011. CORNET. HERBERT G. NEELY, South Salem, Ohio. Filed Sept. 2, 1896. Serial No. 604,605. (No model.)

Claim.—1. A valve for cornets or other musical instruments of its class, comprising a pair of plates in parallel arrangement, rigidly connected at their extremities by proper cross-pieces, a pair of parallel pipe-sections transversely fixed in coincident openings in the upper portion of said plates for the purpose specified, a curved pipe-section whose ends are fixed in adjacent openings in the forward end of one of said plates as shown, the said parallel and curved pipe-sections to alternately register with the adjacent pipes, a valve-stem mounted in suitable bearings and operatively connected with said valve, the said valve thus constructed being mounted in a containing box or case and supported by a proper coil-spring, adapted to automatically return the valve to its seat after each operation thereof all arranged as described and shown.

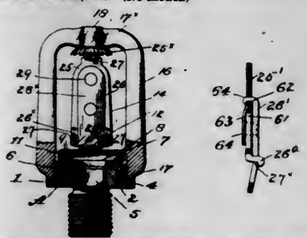


2. In a cornet, the valve-boxes 11, 12 and 13, each having a detachable end slide and having fixed to the front and rear sides the adjacent air-pipes as shown, and having mounted in the box a spring-pressed valve, having a bent section of air-pipe secured in the lower part between parallel side plates, adapted to register at the open ends with the adjacent air-pipes, and also having straight air-pipe sections secured between said side plates in the upper part of said valve adapted to register with the adjacent air-pipes leading into the box when the valve is pressed down and thereby forming a continuous free air-passage through the pipes, and said valve being operated by a suitable stem mounted in proper bearings and operatively connected with said valve.

3. In a cornet or other musical instrument of its class, a valve-box having connected in alinement with its opposite sides the air-pipe of the instrument communicating with the valve in said box, and having mounted in said box a vertically-movable valve, mounted upon a coiled spring and having opposite side plates properly connected by cross-pieces and also having a bent air-pipe section adapted to register at the forward end with the adjacent air-pipes when in its normal position, and also having straight air-pipe sections secured to said valve sides and adapted to register with the said adjacent air-pipes when said valve is pressed downward and the said valve being operated by means of a suitable stem mounted in proper bearings and operatively connected with said valve.

4. In a cornet or other musical wind instrument of its class a valve-box with the air-pipe leading to and communicating with the same, a vertically-movable valve mounted in said valve-box upon a spiral spring, and having a detachable stem with finger button for operating the valve, operatively connected with the said valve, a bent section of air-pipe fixed in said valve adapted to register at its open ends with the air-pipes leading into the forward end of the valve-box, when the valve is in its normal position, and straight sections of pipes also fixed in said valve adapted to register at each end with the air-pipes when said valve is pressed down and thereby forming a continuous air-passage without increasing the number of turns in the air-passage, in combination with the mouthpiece, the air pipes and bell of said instrument all arranged as described and shown.

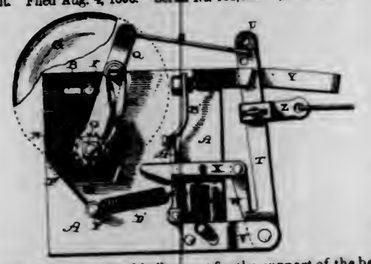
571,012. SPRINKLER. CHARLES NERACHER, Cleveland, Ohio; Otto J. Frey administrator of said Neracher, deceased. Filed Feb. 23, 1894. Serial No. 501,245. (No model.)



Claim.—1. A sprinkler comprising a valve-seat, the hollow expansible valve having upper and lower flexible walls and a flanged mouth in one flexible wall engaging the valve-seat and of the full diameter thereof and a bearing on the opposite wall for engaging the holding-strut, the yielding body portion of said valve extending laterally and annularly about the central bearings and free from contact with the sprinkler frame or base along its yielding walls, substantially as described.

2. In combination in a sprinkler, the frame, the distributer, the valve and the strut consisting of the two parts 25' 26' pivotally engaging each other at their lower ends, the part 25' having the shoulders 61 at its upper part and the part 26' the hooks 64, and the key having fingers 62 fitting over the shoulders 61 and held by the hooks 64, said parts being soldered together, substantially as described.

571,013. SIGNAL-BELL. ENGLEBRECHT OLSEN, Walkerville, Mont. Filed Aug. 4, 1896. Serial No. 601,636. (No model.)



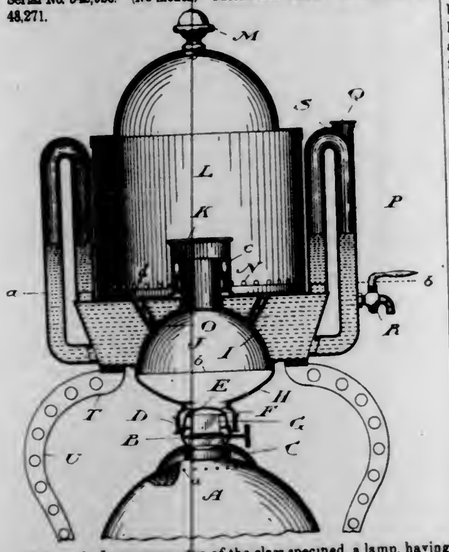
Claim.—1. In a signal-bell, a post for the support of the bell, and which is adjustable back and forth in relation to the hammer, combined with suitable means for operating the hammer, substantially as shown.

2. In a signal-bell, a slotted supporting-plate, a post for the support of the bell, and which is adjustable back and forth in the slot, and the bell which is removably secured to the post, combined with means for operating the hammer of the bell, substantially as described

3. In a signal-bell, a supporting plate provided with a slot B, and an opening C, at one end of the slot, the post F, having the reduced portion J to fit in the slot B, and a sleeve applied to the post, combined with the bell G, nut I, and a means for operating the hammer substantially as set forth.

4. In a signal-bell, the supporting-plate, provided with the slot B, C, the post F, that is adjustable therein, and the bell which is clamped upon the post combined with the spring-actuated lever Q, carrying the spring-pawl R; the ratchet O, spring N, connecting-rod S, levers T, X, hammer B', and the springs C' D', all combined and arranged to operate substantially as specified.

571,014. APPARATUS FOR LIGHTING, HEATING, AND COOKING. JAMES G. PENNYCUICK, Toronto, Canada. Filed Mar. 23, 1895. Serial No. 542,920. (No model.) Patented in Canada Feb. 21, 1895, No. 43,271.



Claim.— 1. In an apparatus of the class specified, a lamp, having a flat transparent chimney, a water-chamber having a dome-shaped opening therein forming the top of said flat chimney, the said dome-shaped opening receiving the direct heat of the lamp and having its surface substantially equidistant from the lamp-wick, a hot-air chamber above said water chamber arranged to receive articles to be heated and having communication with said dome shaped opening in the water-chamber, and openings near the lower end of said hot-air chamber, whereby the light emanates from the flat transparent part of the chimney and the direct heat of the lamp acts directly on said dome-shaped opening, heating the water in the water-chamber, and then passes into said hot-air chamber and out of the openings near the bottom thereof, substantially as described.

2. In an apparatus of the class described, a water-chamber, a cover resting on said chamber and forming a hot-air chamber arranged to receive articles to be heated, the said water-chamber having a dome shaped flue therein forming the top of the lamp-chimney and receiving heat directly from the lamp-burner, and a deflector in said hot-air chamber forming a continuation of said dome-shaped flue and arranged to support a vessel to be heated, and openings in the side of said deflector arranged to radially deflect the heated air, substantially as described.

3. In an apparatus of the class specified, the combination of the water-chamber I, having a funnel-shaped flue J, extending through it; the deflector K; the water-tubes P; the water-inlet Q; the tap R, and the cover L, held in place by the flange *d*, and provided with holes N, substantially as and for the purpose specified.

4. In an apparatus of the class specified, the combination of the water-chamber I, having a funnel-shaped flue J, extending through it; the deflector K; flues O; the water-tubes P; the water-inlet Q; the tap R, and the cover L, provided with holes N, substantially as and for the purpose specified.

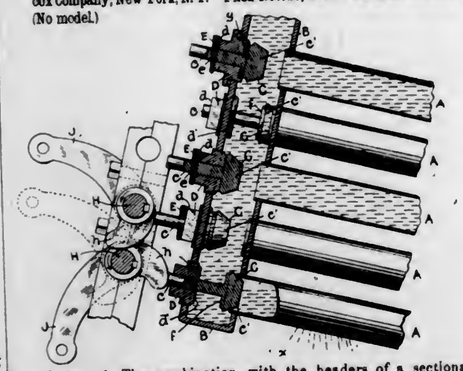
5. A combined water-heating, cooking and lighting apparatus, comprising a lamp, a chimney having its lower part transparent, a water-heater having a central dome-shaped portion forming the upper section of the chimney and receiving heat directly from the lamp-burner, a cooking-chamber above the water-heater having apertures near its bottom for the escape of the waste heat, and a cover for the cooking-chamber to hold the heat in the upper part for cooking purposes, substantially as described.

571,015. MECHANICAL TOY AND ADVERTISING-MACHINE. CAROLINE S. POCOCK, London, England. Filed Mar. 30, 1896. Serial No. 585,466. (No model.) Patented in England Jan. 11, 1895, No. 686.



Claim.—In a mechanical toy and advertising-machine, the combination of the two disks or cams *a* and *a'*, with the two levers *n* and *p* having the peg *o* and bend *q* on them for pressing against the cams and the two springs *s* together with the various other levers and bars for communicating the motion given to the levers by the cams to the pencil-bar *i*, and with a means of causing the cams to revolve such as a worm and wheel, substantially as described.

571,016. MEANS FOR CLOSING TUBES OF STEAM-GENERATORS. NAT W. PRATT, Brooklyn, N. Y., assignor to The Babcock & Wilcox Company, New York, N. Y. Filed Nov. 23, 1895. Serial No. 569,893. (No model.)



Claim.—1. The combination, with the headers of a sectional steam-generator, of valves or plugs loosely mounted in the outer faces of said headers and in alinement with the longitudinal axes of the water-tubes of the generator and adapted to slide inwardly and close the ends of the pipes, substantially as and for the purpose specified.

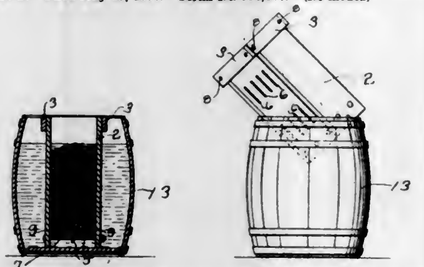
2. The combination, with the headers of a sectional steam-generator, of valves or plugs loosely mounted in the outer faces of said headers in alinement with the longitudinal axes of the water-tubes and adapted to slide inwardly and close the ends of the pipes and means for holding said valves or plugs in rearward, normal position, substantially as set forth.

3. The combination, with the headers of a sectional steam-generator, of bushings or plates secured to their outer faces; valves or plugs passing through said bushings or plates in alinement with the longitudinal axes of the water-tubes; and keys passing through said valves, for holding the same in normal position, substantially as set forth.

4. The combination, with the headers of a sectional steam-generator, of valves or plugs loosely mounted in the outer faces of said headers in alinement with the longitudinal axes of the water-tubes of the generator, and means for forcing a series of said valves inward at the same time, substantially as and for the purpose specified.

5. The combination, with the headers of a sectional steam-generator, of valves or plugs loosely mounted in the outer faces thereof in alinement with the longitudinal axes of the water-tubes of the generator; a series of shafts bearing levers or cams in alinement with the valves; and means for rotating said shafts, substantially as and for the purpose specified.

571,017. MEANS FOR TREATING SEED. BUDD REEVE, Buxton, N. D. Filed May 15, 1896. Serial No. 591,670. (No model.)



Claim.—1. The herein-described receptacle 2, provided with the open top and bottom and having the transverse rods 5 near its lower end, with the slotted or perforated bottom 7 secured upon said rods, for the purpose specified.

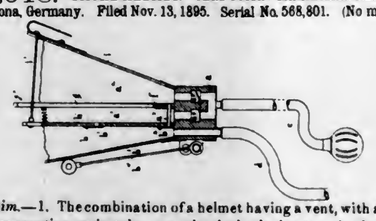
2. The combination, with the barrel or receptacle 13 having the open top, of the rectangular receptacle 2 adapted to set into said barrel and having the open upper and lower ends and provided with the slotted or perforated plate arranged in said receptacle above the bottom thereof, said receptacle 2 being adapted to be supported in an inclined position upon the top of said receptacle 13.

3. The combination, with the receptacle 2, open at its upper and lower ends, of the rods or bolts 5 extending across said receptacle above the lower end thereof, the slotted or perforated plate 7 resting upon said bolts, and the bolts 9 extending across said receptacle above said plate 7, in a direction at right angles to said bolts 5, for the purpose specified.

4. The combination, with the receptacle 2, formed of the separable sides and having the open upper and lower ends, the removable slotted or perforated plate 7, the bolts 5 and 9, and the screws 8, substantially as described.

5. A device for treating seed, comprising a receptacle open at its upper and lower ends and having a slotted or perforated plate extending transversely across the receptacle at a point above the bottom thereof, and means for securing said plate in position, for the purpose specified.

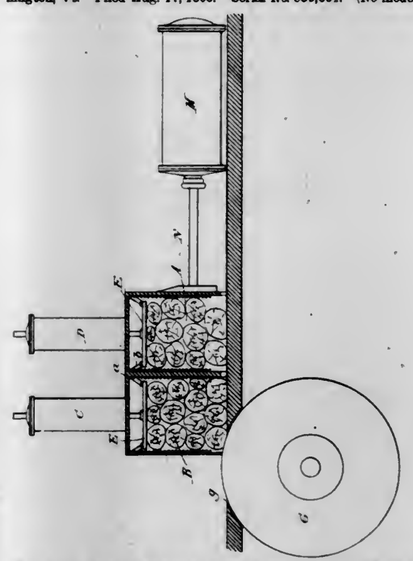
571,018. SMOKE-HELMET. CARL GUSTAV MAXIMILIAN REICHEL, Altona, Germany. Filed Nov. 13, 1895. Serial No. 568,801. (No model.)



Claim.—1. The combination of a helmet having a vent, with a bellows, a connecting main tube, a mechanical telephone, and a branch tube secured to the mechanical telephone and having a nozzle that enters the main tube, substantially as specified.

2. The combination of a helmet, with a bellows having a pair of compression-chambers, an intermediate movable partition, a wind-chest having a hinged wall, and a pivoted spring-arm having a friction-roller that bears against said hinged wall, substantially as specified.

571,019. APPARATUS FOR PULPING. CHARLES W. ROBERTS, North Bennington, Vt., assignor to the Roberts Grinder Company, Bennington, Vt. Filed Aug. 17, 1895. Serial No. 559,601. (No model.)



Claim.—1. In a pulping organism, the combination of the following coöperating elemental devices in coöperative relation, to wit: a moving pulping agent, a stationary table, through which the pulping agent extends, a pocket, means for continuously pressing pulpable material through the pocket and against the table and against the pulping agent, and means for simultaneously moving the pocket across the pulping agent substantially in the plane of movement of the said pulping agent until the material in the said pocket is clear of the pulping agent and in contact with the table, as specified.

2. In a pulping apparatus, the combination of a pulping-stone, a traverse-table apertured for the passage of the stone therethrough, a pocket sliding upon the traverse-table and provided with a piston for pressing the wood forward in the pocket, the said pocket being also provided with brackets and rollers carried in the brackets, the said rollers bearing beneath the edge of the traverse-table so as to hold the pulpable material against the traverse-table, together with means for traversing the pockets over the table.

3. The combination of a pulping-stone, a traverse-table apertured for the passage of the stone, pockets carried upon the traverse-table and provided with brackets and rollers engaging beneath the edge of the table, the said pockets being also recessed for the passage of the stone, and means for traversing the pockets over the table and for continuously pressing the contents of the pocket against the table and against the pulping agent as specified.

4. The combination with a pulping-stone, of a traverse-table apertured for the passage of the stone, a base J supporting the table, slotted lugs *j l* on the table and base, said lugs coöperating with bolts *m* passing therethrough, a lug or lugs *k* and an adjusting-screw *i* intervening between the base and table, whereby the table may be adjusted with respect to the stone, a pocket carried upon the traverse-table and means for traversing the pocket over the table and also over the pulping agent and means for continuously feeding the contents of the pocket, as specified.

5. The combination with a pulping-stone, of a traverse-table apertured for the passage of the stone, a base J supporting the table, slotted lugs *j l* on the table and base, said lugs coöperating with bolts *m* passing therethrough, a lug or lugs *k* and an adjusting-screw *i* intervening between the base and table, whereby the table may be adjusted with respect to the stone, a pocket carried upon the traverse-table and provided with means for holding the same down to the said table and with a piston for pressing the pulpable material through the pocket, together with a power-cylinder M and piston N entering the power-cylinder and connected to the pocket whereby the pocket may be traversed over the traverse-table, substantially as described.

6. The following elements combined together substantially as shown and described, to wit: a stone, an apertured traverse-table, together with means for adjusting the traverse-table to and from the stone, a pocket carried upon the traverse-table and provided with rollers engaging with the side of the table opposite to the side upon which the pocket is carried, together with means in the pocket for continuously pressing the wood forward in the pocket and with means for reciprocating the pocket entire across the stone so as to free the wood from contact with the stone in order that a fresh planer-grind may be taken at each vibration.

571,020. BICYCLE-MITTEN. THOMAS H. ROYCE, Brooklyn, N. Y., assignor to Benjamin Altman, New York, N. Y. Filed Jan. 4, 1896. Serial No. 574,314. (No model.)



Claim.—1. As a new article of manufacture a bicycle-mitt comprising a muff portion and a gauntlet portion, the said muff portion having a longitudinal passage extending entirely through the muff and open at both ends for the passage of the handle-bar, a hand-receiving recess between the outer envelop of the muff portion and the walls of the longitudinal passage and an opening in the periphery of the muff communicating with the hand-receiving recess, the gauntlet portion being secured to the periphery of the muff portion and forming a continuation of the opening therein, substantially as described.

2. As a new article of manufacture a bicycle-mitt comprising a muff portion and a gauntlet portion, the said muff portion having a longitudinal passage extending entirely through the muff and open at both ends for the passage of the handle-bar, a hand-receiving recess between the outer envelop of the muff portion and the walls of the longitudinal passage, a digit-opening in the end of the muff portion in open communication with the said hand-receiving recess, and an opening in the periphery of the muff communicating with the hand-receiving recess, the gauntlet portion being secured to the periphery of the muff portion and forming a continuation of the opening therein, substantially as described.

571,021. PARALLEL-JAW PLIERS. ADOLF SCHATZ, New Haven, Conn. Filed Jan. 16, 1896. Serial No. 575,753. (No model.)



Claim.—1. Parallel-jaw pliers, having jaws, pivoted to the forked ends of crossed handles, the inner ends of the jaws, having rounded and appropriately-curved backs, and adapted to glide between guides, provided in the handles, and the edge of the arc, connecting the tines of the forked handles.

2. In parallel-jaw pliers, the combination with hollow handles and with hollow jaws, pivoted to the forked ends of the hollow handles, of guiding-blocks secured in the handles and engaging respectively the corresponding inner edges of the hollow jaws, thereby guiding the jaws in parallel motion.

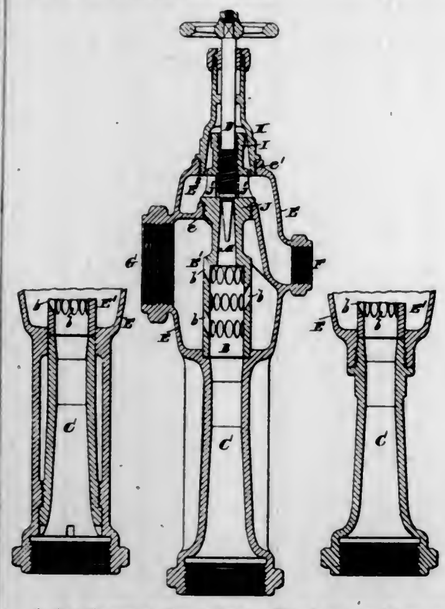
3. In parallel-jaw pliers, having jaws rounded on suitably-curved backs of their inner ends, and these inner ends being adapted to glide between the edge of the arc, connecting the tines of the forked handles and between the guides, provided in the handles, the combination with the jaws, of hollow handles having suitable dents produced by depression of the edges of the handles, the edges of the dents guiding the jaws in parallel motion.

571,022. EXHAUSTER. LOUIS SCHUTTE, Philadelphia, Pa. Filed Sept. 30, 1896. Serial No. 607,395. (No model.)

Claim.—1. An exhauster having in combination with a chamber E′ and a discharge-tube C, an actuating-nozzle A screwing into the walls of chamber E′ opposite tube C and a combining-tube B secured to and removable with nozzle A said combining-tube being formed with a series of openings *b* leading obliquely into it from chamber E′.

2. An exhauster having in combination with a chamber E′ and a discharge-tube C an actuating-nozzle A and a combining-tube B cast in one piece and the combining-tube formed with a series of openings *b* leading obliquely into it from chamber E′.

3. An exhauster having a chamber E′ and chamber E² formed of a single casting and having a threaded opening *e* between them and threaded opening *e′* leading into chamber E² above opening *e* in combination with a combining-tube B and actuating-nozzle A also formed of a single casting and adapted to screw into opening *e* and a cap H adapted to screw into and close opening *e′*.



4. An exhauster having a chamber E′ and chamber E² together with a discharge tube C formed of a single casting and having a threaded opening *e* between them and a threaded opening *e′* leading into chamber E² above opening *e* in combination with a combining-tube B and actuating-nozzle A also formed of a single casting and adapted to screw into opening *e* and a cap H adapted to screw into and close opening *e′*.

5. An exhauster having a chamber E′ and chamber E² formed of a single casting and having a threaded opening *e* between them and a threaded opening *e′* leading into the chamber E² above opening *e* in combination with a combining-tube B and actuating-nozzle A also formed of a single casting and adapted to screw into opening *e* said casting having a threaded extension I adapted to extend above opening *e′* when in position and to receive a spindle, and a cap H adapted to screw into and close opening *e′*.

571,023. TANK-SUPPLY VALVE. WILLIAM SCOTT, Medford, Mass. Filed Dec. 30, 1895. Serial No. 573,792. (No model.)



Claim.—1. A tank-supply valve comprising a valve-chamber having an external valve-seat and the valve proper coöperating with said seat and arranged to operate in response to differentiated pressures, combined with an actuator for imparting an initial closing movement to said valve, and a loose connection between said actuator and valve whereby the final movement of said valve may be completed by fluid-pressure without a corresponding movement of said actuator, substantially as described.

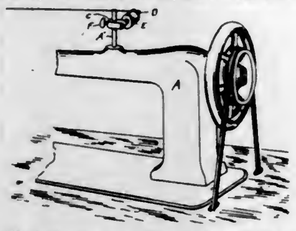
2. In a tank-supply valve, the combination with a valve-seat, of a valve at the inlet side of said seat, a piston connected to said valve, a chamber for said piston communicating directly with the source of liquid controlled by said valve, a ball or float adapted to actuate said valve, and a loose connection between said ball and said valve, substantially as described.

3. The combination with a valve-chamber, of an inlet-opening to said chamber and an external valve-seat at said opening, a valve-stem longitudinally movable in said chamber, a valve mounted on said stem outside of said chamber and coöperating with said valve-seat, a piston on said stem movable in a chamber communicating with the source of supply controlled by the valve, the area of said piston being less than that of the valve, a ball or float adapted to actuate said valve, and a loose connection between said ball and said valve, substantially as described.

4. The combination with a valve-chamber provided with an external valve-seat, of a valve coöperating with said seat and arranged to operate in response to differentiated pressures, of a pivoted actuating arm or lever for producing an initial movement of said valve, a ball or float connected with said actuating-arm, and an engaging portion of said arm movable between corresponding engaging portions of said valve, the width of said engaging portion of said arm being less than the width of the space between the said engaging portions of said valve substantially as and for the purpose described.

5. The combination with the valve-seat *b* and the valve *c* movable to and from the inlet side of said valve seat and having the stem c^3 provided with the piston c^3 of smaller area than said valve, and the duct c^4; of the chamber a^4; and the means for giving an initial actuating impulse to said valve, substantially as described.

571,024. SPOOL-HOLDER FOR SEWING-MACHINES. LOUIS E SMITH, Denver, Colo. Filed Jan. 17, 1896. Serial No. 576,361. (No model.)



Claim.—The base piece provided with an opening for the reception of a spool-pin of a sewing-machine, provided with the thumb-screw F, the said base-piece being provided in the end opposite the spool-pin opening with a bearing at a right angle thereto in which is mounted the mandrel D, adapted to carry the spool whereby the spool is permitted to rest horizontally upon the arm of the sewing-machine, substantially as specified.

571,025. REMOVABLE COVER FOR BICYCLE HANDLE-BARS. ELIZA M. SPANER and RICHARD F. SPANER, St. Louis, Mo. Filed July 22, 1895. Serial No. 556,802. (No model.)

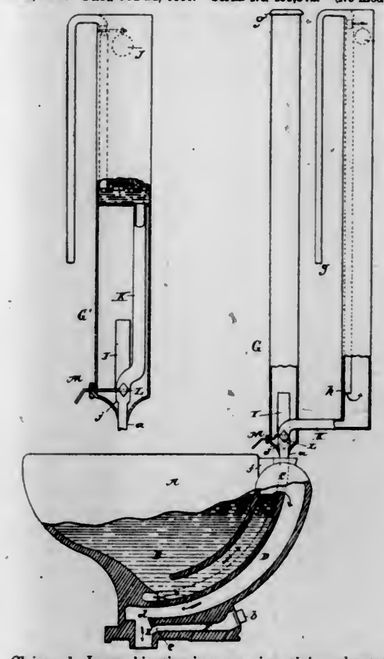


Claim.—1. A removable cover for bicycle handle-bars, comprising a body having its opposite edges provided with lacing-holes, and adapted to form a tube extending over the post-head for embracing the handle-bars between the handles, and flaps having lacing-holes, located at opposite sides of the body, and adapted to form a short pendent tube for embracing the post beneath the post-head and preventing the longitudinal displacement of the cover; substantially as described.

2. A removable cover for bicycle handle-bars comprising a body having its opposite edges provided with frictional facing-strips and lacing-holes, and adapted to form a tube extending over the post-head for embracing the handle-bars between the handles and prevented from twisting on the handle-bars by the contact of the facing-strips therewith, and flaps provided with frictional facing-strips and lacing-holes, located on opposites sides of the body and adapted to form a short pendent tube for embracing the post beneath the post-head and thus preventing the longitudinal displacement of the cover and prevented from twisting on the post by the contact of the facing-strips of the flaps therewith; substantially as described.

3. The combination, with the handle-post, post-head, handle-bars, and handles of a bicycle; of a removable cover for the handle-bars comprising a body having its opposite edges provided with lacing-holes and forming a tube extending over the post-head and embracing the handle-bars between the handles, flaps having lacing-holes, located at opposite sides of the body and forming a short pendent tube embracing the post beneath the post-head and preventing the longitudinal displacement of the cover, and lacings extending from the short tube to the opposite ends of the cover; substantially as described.

571,026. SIPHON WATER-CLOSET. EDWARD C. STOVER, Trenton, N. J. Filed Oct. 21, 1891. Serial No. 409,372. (No model.)

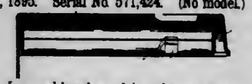


Claim.—1. In combination in a one-piece siphon-closet, the long leg of the siphon consisting of a continuous run or sweep extending downward parallel with and adjoining the surface of the hopper, the discharge pipe leading therefrom, and the rear vent leading from the said discharge-pipe, the said long leg of the siphon being flattened or reduced at its junction with the said discharge-pipe to throw the water in a horizontal sheet into and across the mouth of the said discharge-pipe, substantially as set forth.

2. In combination in a one-piece closet, the hopper, the overflow or siphon formed with the wall of said hopper, the discharge leading therefrom, and the rear vent-channel extending rearward and lying against and formed with the said wall and turning downward where it enters the said discharge, substantially as shown and described.

3. In combination in a one-piece closet, the overflow or siphon of said closet, the discharge leading therefrom, and the rear vent-channel extending backward and upward from below the junction of the said overflow or siphon and said discharge and forming an integral part of the wall of the bowl of the said closet, substantially as set forth.

571,027. RIM-LOCK. WARREN H. TAYLOR, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Dec. 7, 1895. Serial No. 571,424. (No model.)



Claim.—1. In combination with a rim-case, carrying a locking or latching mechanism, an outer case adapted to fit over and inclose said rim-case, substantially as described.

2. In combination with a rim-case carrying a locking or latching mechanism, an outer case adapted to fit over and inclose said rim-case, and provided with openings, arranged so that the casing is applicable to the lock and the lock mechanism may be operated through it when applied to either a right or a left hand door, as described.

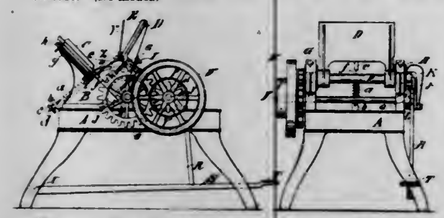
3. The combination of a rim-case carrying a locking and latching mechanism which is fastened to a door, an outer case adapted to fit over and inclose the rim case, and suitable means for providing an

engagement between the rim case and outer case, substantially as shown and described.

4. In a rim lock or latch, the combination of an inner and an outer case, provided with means for engagement between the two, the outer case being also provided with means for fastening it to the door, so that it cannot normally be removed except when the door is open.

5. An outer case, adapted to fit over a rim lock or latch, said outer case being provided with means for fastening it to the door, which are not accessible when the door is closed, substantially as described.

571,028. PRINTING-MACHINE FOR DUPLICATING TYPE-WRITTEN WORK. GARRY P. VAN WYK, Chicago, Ill., assignor to Frank H. Cross, Grand Rapids, Mich. Filed Nov. 1, 1894. Serial No. 527,619. (No model.)



Claim.—1. In a printing-press, a platen supported by a pivoted arm, a cam shaft and means for rotating the same, a cam on said shaft adapted to engage said arm and suddenly release the same, and a spring to move said arm toward the type.

2. In a printing-press, a movable platen, a spring to move said platen toward the type, and a cam to move said platen away from the type and suddenly release the same, substantially as described.

3. In an organized printing-machine for producing imitation of type written work, the combination of a printing-couple consisting of an impression-surface and a printing-form constructed to hold lines of type, an inking-ribbon, and mechanical devices acting on one member of the printing-couple whereby the said members are brought together with a blow movement to produce an impression, all substantially as and for the purpose described.

4. In a printing-machine, the combination of the shaft N, adapted to be turned by foot or other power, the gear-wheel P attached to the shaft N which meshes with the gear-wheel O, attached to shaft M, the cam J attached to the shaft M, the arm K attached to the shaft F, the plate D attached to the shaft F, the arm *e* on the plate D, the spring *a* attached to the arm *e*, with suitable means for adjusting the tension of the spring *a*, all substantially as set forth.

5. In a printing-machine, the combination of the shaft N, the gear-wheel P on the shaft N which meshes with the gear-wheel O on the shaft M, the cam J on the shaft M, the arm K on the shaft F, the plate D on the shaft F, the platen E on the plate D, the arm *e* on the plate D, the spring *a* attached to the arm *e* with means for adjusting the tension of the spring *a* and having a suitable device for holding the paper to be printed against the platen E while the plate D and arm K are in motion.

6. In a printing-machine, the combination of the shaft N, the gear-wheel P on the shaft N which meshes with the gear-wheel O on the shaft M, the cam J on the shaft M, the arm K on the shaft F, the plate D on the shaft F, the platen E on the plate D, the shaft X on the plate D, the spring *q* on the shaft X, the arms Y Y held on the shaft X by the collars Z^3 and the set-screw Z^3, the arm Z′ on the shaft X, the cord Z attached to the arm Z′ the other end of which is attached to the frame A, the plate D having the arm *e*, the spring *a* in connection with the arm *e*, with a suitable means for adjusting the tension of the spring *a* all substantially as and for the purpose set forth.

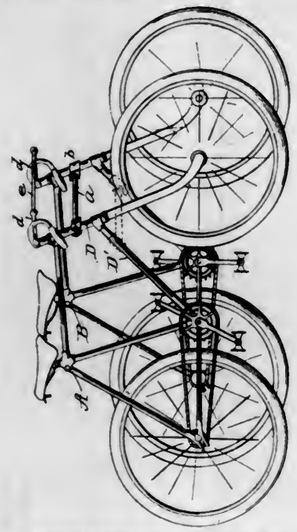
7. In a printing-machine, the combination of the plate D on the shaft F, the platen E on the plate D, with a suitable device for compelling the platen E to impinge upon the form C with a blow movement, an inking-ribbon and suitable means for drawing the same across the form C.

8. In a printing-machine, the combination of the plate D on the shaft F, the arm K on the shaft F, the platen E on the plate D, with a suitable device for compelling the platen E to impinge upon the form C with a blow movement, the ribbon-spools *g* in the bearings *h* on the frame B with a suitable device for operating the ribbon-spools, substantially as and for the purpose set forth.

9. In a printing machine, the combination of the plate D on the shaft F, the arm K on the shaft F, the platen E on the plate D, with a suitable device for compelling the platen E to impinge on the form C, with a blow movement, the ribbon-spools *g* in the bearings *h* on the frame, the wheel *i* on the shaft bearing the ribbon-spools *g*, the pawl *j* to engage the teeth of the wheel *i*, the casing *k* attached in a suitable manner to the frame B between the wheel *i* and the plate D so that plate D shall impinge on the end of the pawl *j* in descending, the spring *n* on the pawl *j*, the pin *t* on the pawl *j* working in the slot *m*, all substantially for the purpose set forth.

10. In a printing-machine, the combination of the shaft N journaled on the frame A and adapted to be turned by foot or other power, the gear wheel P on the shaft N, which meshes with the gear-wheel O on the shaft M, the cam J on the shaft M, the arm K on the shaft F, the wheel L on the arm K adapted to rock the arm K in connection with the cam J, the guides G on the frame B, the blocks H in the guides G, the thumb-screws I working in the guides G and blocks H, the shaft F journaled in the blocks H, the plate D on the shaft F, the platen E on the plate D, the rod X on the plate D, the spring *g* on the shaft X, the arms Y held on the shaft X by the collars Z^3 and the set-screws Z^3, the arm Z′ on the shaft X, the cord Z attached to the arm Z′ and attached to the frame in a suitable manner so as to raise the arms Y for removing and inserting the paper, the inked ribbon *r* fed over the form C, the ribbon-spools *g* held on the frame B by bearings *h*, the wheel *i* on the shafts holding the ribbon-spools *g*, the pawl *j* to engage the wheel *i*, the spring *n* on the pawl *j*, the casing *k* attached in a suitable manner to the frame B so that the plate D shall impinge on the end of the pawl *j* in descending, the pin *t* on the pawl *j* working in the slot *m* all substantially for the purpose set forth.

571,029. BICYCLE. ANDREW WARREN, St. Louis, Mo. Filed July 27, 1895. Serial No. 557,367. (No model.)



Claim.—The combination with two bicycles, of the arms extending forward centrally of each handle-bar, the sockets carried on the outer ends of said bars and the connecting-bar having the heads on each end thereof fitted to said sockets and a bar *a* extending between the heads D of the bicycles and having ball-and-socket connection therewith, substantially as described.

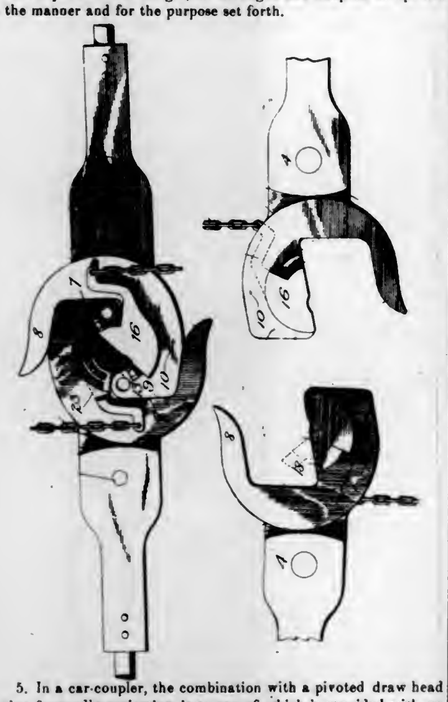
571,030. CAR-COUPLING. MICHAEL I. WELCH, Cordele, Ga., assignor of one-half to William H. Barnett, Atlanta, Ga. Filed Sept. 22, 1896. Serial No. 606,637. (No model.)

Claim.—1. In a car-coupler, the combination with a pivoted draw-head, of a semicylindrical locking-section secured to rock therein and provided with flanges, concentric guide-lugs on the head under the flanges, a righting spring in one of the lugs, and having one end in engagement with the locking-section and the other with the draw-head, substantially as described.

2. In a car-coupler, the combination with a draw-head having a concaved socket, of a semicylindrical locking-section secured to rock therein, means for retaining the section in place on the head, and a righting-spring disposed longitudinally in an arc concentric with that in which the section turns, substantially as described.

3. In a car-coupler, a draw-head having a concaved socket, in combination with a semicylindrical locking section entirely filling said socket and movable therein and provided with a vertical concavity extending across its flat face, and a righting-spring, substantially as described.

4. In a car-coupler, the combination with a pivoted draw-head having a concaved socket, a semicylindrical locking-section movable therein, lateral flanges on the section which overlap the top and bottom edges of the socket, guide-bosses for retaining and guiding the movements of the section, and a righting spring having its extremities in connection with the section and head respectively, and being covered by one of the flanges, all arranged and adapted to operate in the manner and for the purpose set forth.



5. In a car-coupler, the combination with a pivoted draw head having forwardly-projecting jaws one of which is provided with an inturned arm and link-and-pin openings, of a semicylindrical locking-section secured to turn within one of the jaws, means for holding and guiding said section during its movement, and a righting-spring disposed longitudinally in an arc concentric with that in which the locking-section turns, with its opposite ends in engagement with the jaw portion and the section, substantially as described.

6. In a car-coupler, the combination with a draw-head having the usual forwardly-projecting jaws, of a semicylindrical locking-section secured to turn in one of the jaws, segmental guide-bosses on the head at the top and bottom edges of the socket, laterally-extending flanges on the top and bottom of the locking-section to overlap and engage the guide-bosses, a compressible spiral spring located within a groove in one of the bosses, and having its opposite ends in engagement with the head and section portions, as and for the purposes set forth.

7. In a car-coupler provided with the usual forwardly-projecting jaws, the combination with the semicylindrical locking-section movable in one of the jaws and having laterally-extending flanges projecting over the top and bottom faces of the jaw, guide-bosses on the jaw adapted to engage the flanges, one of said bosses being provided with a longitudinal groove, a compressible righting-spring within the groove, and a removable plug in the end of the groove, substantially as described.

8. In a car-coupler provided with the usual forwardly-extending jaws, one of which is provided with a concaved socket, a movable semicylindrical locking-section adapted to fit within the socket, means for retaining the section on the jaw, a concentrically-disposed righting-spring confined within a corresponding groove in the draw-head portion, and a plug at the end of the groove by means of which the latter is opened and closed for the insertion and removal of the spring, substantially as described.

9. In a car-coupler having the usual forwardly-projecting jaws, a movable semicylindrical locking-section retained on one of the jaws, in combination with a righting-spring located within a concentric groove, said groove being provided with an enlargement at one end, and a removable plug closing the end of the groove near the enlargement, substantially as described.

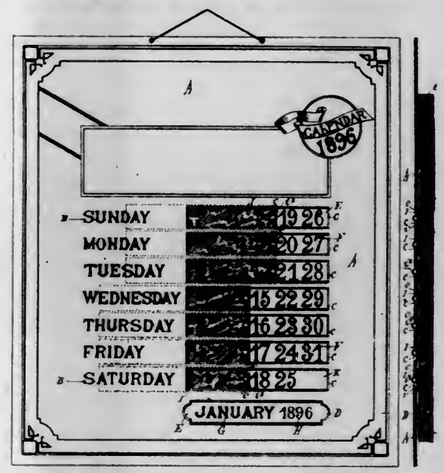
10. In a car coupler of the character described, a jaw provided with a semicylindrical locking-section, and a righting-spring located within a groove having an enlargement in its side near one end, and a wedge shaped plug closing the end of the groove, and arranged and adapted to be held therein by the pressure of the spring, and to be removed and inserted through said enlargement, substantially as described.

11. In a car-coupler of the character described, a semicylindrical locking section, in combination with a righting-spring located in a groove in one of the jaws of the coupler, said groove being closed at the end by a wedge-shaped plug placed base inward and being provided with an inward projection adapted to enter the coils of the spring, substantially as described.

12. In a car-coupler, a coupling-head provided with the usual forwardly-projecting jaws one of which has a concaved socket, in combination with a semicylindrical locking-section provided with a safety-catch consisting of a downwardly-projecting arm on the lower end of said section and a laterally-projecting shelf on the arm arranged and adapted to overlap the opposite draw-head member, substantially as described.

13. In a car-coupler, the herein-described locking-section provided with a downwardly-projecting arm cast integral with the section and having on its lower end an outwardly-extending shelf arranged and adapted to overlap the opposite member to catch the same in the event of one of the couplers accidentally pulling out, substantially as described.

571,031. SHEET CALENDAR. WILLIAM T. WILSON, London, England. Filed Jan. 29, 1896. Serial No. 577,301. (No model.) Patented in England Nov. 30, 1895, No. 22,940.



Claim.—1. The combination of slotted foundation; calendar behind it, and a series of independent shutters adapted to obscure the ordinal figures on the calendar otherwise visible through the slotted foundation.

2. The combination of foundation; a series of slots in it; a calendar behind it; a provision for making the calendar present the proper portion of it at the said slots; and an adjustable shutter to each slot capable of being moved along it.

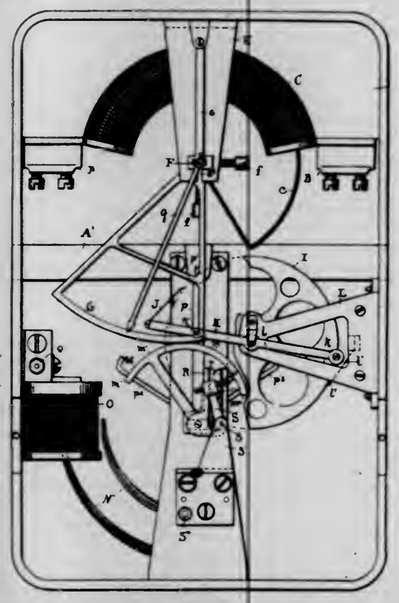
3. The combination of slotted foundation, a calendar behind it; and an adjustable shutter to each slot capable of being moved along it in front of the respective ordinal numbers in the said calendar.

4. The combination of foundation; calendar-sheets held detachably to the back thereof; a backing held to the back calendar-sheet; provision consisting of a hinge in the said backing and rows of perforations through the said calendar-sheets, for the removal of each front calendar-sheet from its fellows, slots in the foundation respectively opposite the rows of or columns of ordinal figures on the calendar sheets; names of the days of the week on the face of the foundation; shutters movable to and fro along the respective slots in the foundation and adjustable in front of the calendar-sheet; name of the respective month on each calendar-sheet and a slot in the foundation opposite such name.

5. The combination of foundation-sheet; slots therein; names of the days of the week against the said slots respectively; changeable calendar-sheet behind the foundation and held thereto in a proper position for presenting the ordinal numbers on it behind the said slots

respectively and adjustable shutters capable of being adjusted in front of the ordinal numbers on the calendar-sheet for the time being exhibited.

571,032. ELECTRIC METER. CHARLES WIRT, GEORGE R. GREEN, and HERMAN BURGER, Philadelphia, Pa., assignors, by mesne assignments, to the American Electric Meter Company, same place. Filed Mar. 7, 1896. Serial No. 582,295. (No model.)



Claim.—1. In an electric meter, the combination with a pendulum, an actuating-solenoid and an overbalanced circuit-controller, forming an oscillating electric motor having a uniform rate of oscillation, of a register-train, a driving device actuated by said motor and adapted to intermittently drive said register-train, a current-indicator, and a cam whose position is controlled by said current-indicator and varying the extent of movement of said driving device, substantially as set forth.

2. In an electric meter, the combination with an oscillating motor having an overbalanced circuit-controller for controlling its circuit, whereby its rate of oscillation is made uniform, of a register-train, a driving device for said train, an oscillating cam carried by the motor and moving said registering device in one direction with a gradually-diminishing rate of movement, and a cam moved by the current-indicator and controlling the extent of movement of the register-driving device in the other direction, substantially as set forth.

3. In an electric meter, the combination of a current-indicator, a register, an actuating device for said register, means controlled by said current-indicator for limiting the movement of said actuating device in one direction, a motor for driving said actuating device, and a circuit-controller for said motor, comprising an oscillating fork and a weighted arm carrying a contact device, said arm being pivoted eccentrically to said fork, whereby the motor-circuit is opened and closed at predetermined points, substantially as set forth.

4. In an electric meter, the combination with the oscillating motor, of the circuit-controller, comprising the independently-pivoted arm S and the fork R carried by the motor-shaft, having conducting and insulating surfaces, substantially as set forth.

5. In an electric meter, the combination with an oscillating electric motor, of an overbalanced circuit-controller having a variable length of contact controlled by the speed of the movement, substantially as set forth.

6. In an electric meter, the combination of an oscillating electric motor, a register-train, a driving device actuated by said motor and adapted to intermittently drive said register-train, means controlled by a current-indicator for varying the extent of movement of said driving device, and an overbalanced circuit-controller having a length of contact varying with the speed of movement of the motor, substantially as set forth.

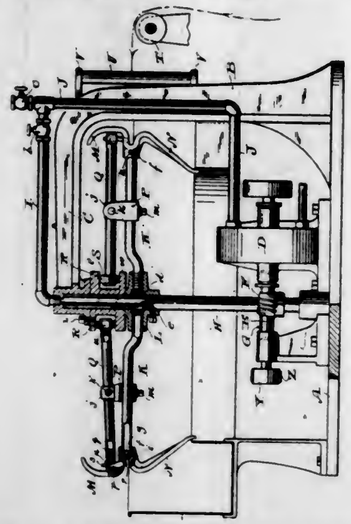
7. In an electric meter, the combination with a pendulum, of a solenoid operating the pendulum, and a circuit-controller moved by the pendulum and closing the circuit on its forward swing, said solenoid being associated with a body of non-magnetic metal which receives the discharge and lessens the spark, substantially as set forth.

8. In an electric meter, the combination with an oscillating electric motor, of a retarding device retarding the movement of the motor at the extreme limits of the swing, substantially as set forth.

9. In an electric meter, the combination with an oscillating electric motor, of a frictional retarding device retarding the movement of the motor at the extreme limits of the swing, substantially as set forth.

10. In an electric meter, the combination of the oscillating motor, the controlling-solenoids, and the counter, the motor-armatures and the controlling-solenoids being located at opposite ends of the case and the mechanism of the meter being located between them, substantially as set forth.

571,033. NET-LIFTING MACHINE. WILLIAM F. AHEARN, Two Rivers, Wis., assignor of one-half to Peter Gagnon, same place. Filed Feb. 17, 1896. Serial No. 579,490. (No model.)



Claim.—1. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, and reciprocative net-gripping plungers operative in conjunction with the guards.

2. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed on said arms, plungers that being connected to the levers operate in conjunction with the net-guards, and suitable means for automatically rocking said levers at predetermined intervals.

3. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed on said arms, plungers that being connected to the levers operate in conjunction with the net-guards, and fixed cams arranged to cause a rock of said levers at predetermined intervals.

4. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net guards that are carried by the arms and comprise fingers radiating in opposite direction from a groove, levers fulcrumed on said arms, plungers that being connected to the levers extend through the guards into the grooves of the same, and suitable means for rocking said levers at predetermined intervals.

5. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed on said arms, suitable means for rocking the levers at predetermined intervals, and plungers consisting of bosses at the outer ends of said levers, sleeves that being set in the bosses reciprocate in the net-guards, grip plugs arranged in the sleeves to extend therefrom, and screws arranged to adjust the plugs.

6. A net-lifting machine comprising a rotative shaft, arms radiating from the shaft, net-guards carried by the arms, levers fulcrumed on said arms, plungers that being connected to onter ends of said levers operate in conjunction with the net-guards, antifriction-rollers on the inner ends of the aforesaid levers, and cams arranged to oppose the antifriction-rollers in opposite directions, the rise of one cam being opposite the depression of the other.

7. A net-lifting machine comprising a hollow rotative shaft, a steam-supply pipe in communication with the shaft, a series of hollow radial arms also in communication with the shaft, net-guards that being carried on the arms have steam-outlets in register with similar outlets pertaining to said arms, and reciprocative grip-plungers operative in conjunction with the net-guards.

8. A net-lifting machine comprising a hollow rotative shaft, a valve-controlled pipe for exhaust steam from an engine employed to drive said machine, a valve-controlled branch of said pipe communicating with the hollow shaft, a series of hollow radial arms also communicating with said shaft, net-guards that being carried on the arms have steam-outlets in register with similar outlets pertaining to said arms and reciprocative grip-plungers operative in conjunction with the net-guards.

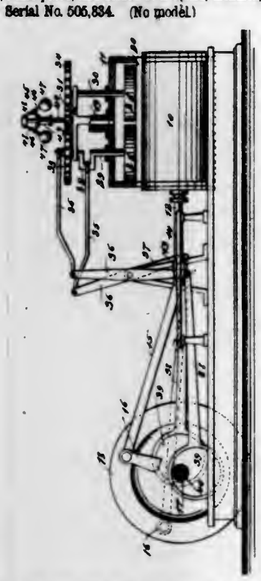
9. A net-lifting machine comprising a series of rotative arms, net-guards carried by the arms, reciprocative net-gripping plungers operating at predetermined intervals in conjunction with the net-guards, and a wind-guard trough for the slack of an incoming net.

10. A net-lifting machine comprising a series of rotative arms, net-guards carried by the arms, reciprocative net-gripping plungers operating at predetermined intervals in conjunction with the net-guards, guide-rollers for an incoming net, and a wind-guard trough for the slack of said net.

11. A net-lifting machine comprising a series of rotative arms, net-guards carried by the arms, reciprocative net-gripping plungers operating at predetermined intervals in conjunction with the net-guards, a trough for the slack of an incoming net, and a conveyer arranged to receive said net from the trough.

12. A net-lifting machine comprising a suitable frame, a rotary steam-engine, a shaft in gear with the engine, arms radiating from the shaft net-guards carried by the arms, levers fulcrumed on said arms, plungers carried by the levers to operate in conjunction with the net-guards, suitable means for rocking the levers at predetermined intervals, guide rollers for an incoming net, and a trough for the slack of said net.

571,034. STEAM-ENGINE. JAMES BARTON, Clearwater, Mont., assignor, by direct and mesne assignments, to himself and Hiram S. Blanchard, same place, and Simon J. Morriss, Atlanta, Tex. Filed Mar. 31, 1894. Serial No. 505,834. (No model.)



Claim.—1. The combination, with the cylinders, the steam-chest having ports leading to the cylinders, and the valves controlling the said ports, of slide-valves arranged to move beneath the controlling-valves and regulate the flow of steam through the ports, a ball-governor, and means for moving the slide valves by the shifting of the governor-balls, substantially as described.

2. The combination, with the cylinders, the steam-chest having ports leading to the cylinders, and the revoluble valves controlling the steam-ports, of a ball-governor geared to the valves, slide-valves arranged between the controlling-valves and the steam ports, and means for shifting the slide-valves by the swinging of the governor-balls, substantially as described.

3. The combination, with the cylinders, the steam-chest having ports leading to the cylinders, and the valves moving over the ports, of a ball-governor, slide valves moving over the ports and beneath the controlling valves, a vertically-movable sleeve on the governor, actuated by the swinging of the governor-balls, and the lever mechanism operatively connecting the sleeve with the slide-valves, substantially as described.

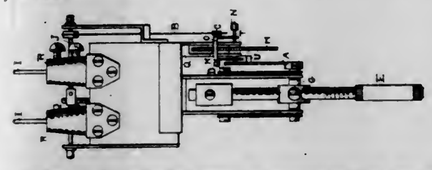
571,035. BOTTLE. ROBERT G. BIDWELL, Orlando, Fla. Filed Apr. 10, 1896. Serial No. 586,902. (No model.)



Claim.—1. A bottle or other vessel provided with a neck, in the side walls of which are formed cavities or chambers the bottoms of which are thin, said neck being also provided on its inner walls with inwardly and downwardly directed prongs or projections which are secured to the bottoms of said cavities or chambers, substantially as shown and described.

2. A bottle or other vessel provided with a neck, in the side walls of which are formed cavities or chambers the bottoms of which are thin, said neck being also provided on its inner walls with inwardly and downwardly directed prongs or projections which are secured to the bottoms of said cavities or chambers, and which are adapted to enter a plug or stopper when inserted into the neck, and by means of which the bottoms of said cavities or chambers are broken out when the plug or stopper is withdrawn, substantially as shown and described.

571,036. ELECTRIC METER. HERMAN BURGER and WILLIAM H. MCFALL, Philadelphia, Pa., assignors to the American Electric Meter Company, same place. Filed Mar. 7, 1896. Serial No. 582,292. (No model.)



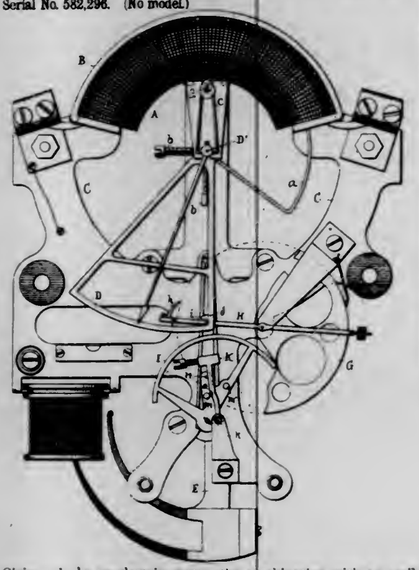
Claim.—1. In an electric meter, the combination with the current-indicator and a cam adjusted thereby, of a register actuating device whose movement in one direction is controlled by said cam, a motor, and an oscillating cam driven by said motor, the working surface of said cam being constructed so as to move the register-actuating device in the other direction with a gradually-decreased speed of movement, substantially as set forth.

2. In an electric meter, the combination with a current-indicator and a cam adjusted thereby, of a register-actuating device whose movement in one direction is controlled by said cam, an oscillating electric motor, and an oscillating cam driven by said motor the working surface of said cam being constructed so as move the register-actuating device in the other direction with a gradually-decreasing speed of movement, substantially as set forth.

3. In an electric meter, the combination with a current-indicator and a cam adjusted thereby, of a register-actuating device whose movement in one direction is controlled by said cam, a motor, and an oscillating cam driven by said motor and moving the register-actuating device in the other direction, the working surface of said cam having an eccentric and a concentric portion whereby the register will be driven with a gradually-decreased speed of movement, substantially as set forth.

4. In an electric meter, the combination with a current-indicator, of a cam in the form of an inverted arch adjusted by said indicator, a pawl for actuating a register-train having a projection engaging with said cam to limit the downward movement of the pawl, a motor, and a cam moved thereby having an eccentric and a concentric portion, and arranged to engage with the actuating-pawl and impart thereto a forward stroke of gradually-decreasing speed of movement, substantially as set forth.

571,037. ELECTRIC METER. HERMAN BURGER and WILLIAM H. MCFALL, Philadelphia, Pa., assignors, by mesne assignments, to the American Electric Meter Company, same place. Filed Mar. 7, 1896. Serial No. 582,296. (No model.)



Claim.—1. In an electric meter, the combination with an oscillating electric motor and a register, of a driving device for driving the register, which operates only on the backward or unattracted swing of the motor, substantially as set forth.

2. In an electric meter, the combination with a pendulum and an operating-solenoid forming an oscillating electric motor, of a register-train, a cam carried by the pendulum and driving the register-train on its backward or unattracted swing, a current-indicator, and means controlled by the current-indicator for determining the extent of movement of the register produced by the driving-cam, substantially as set forth.

3. In an electric meter, the combination with an oscillating electric motor, and a contact-pin carried thereby, of an overbalanced eccentrically-pivoted lever cooperating with said contact-pin and closing the motor-circuit when the motor is at rest and throughout a portion only of its forward movement, substantially as set forth.

4. In an electric meter, the combination with an oscillating electric motor, a register and a driving-cam, of a contact-pin carried by said driving-cam and an overbalanced eccentrically-pivoted lever cooperating with said contact-pin and closing the motor-circuit when the motor is at rest and throughout a portion only of its forward movement, substantially as set forth.

5. In an electric meter, the combination with an oscillating electric motor of an overbalanced circuit controller consisting of insulating and metallic pins carried by the oscillating motor, and a lever pivoted eccentrically and provided with a shoulder cooperating with one of the insulating-pins to prevent closing the circuit on the backward swing of the motor, substantially as set forth.

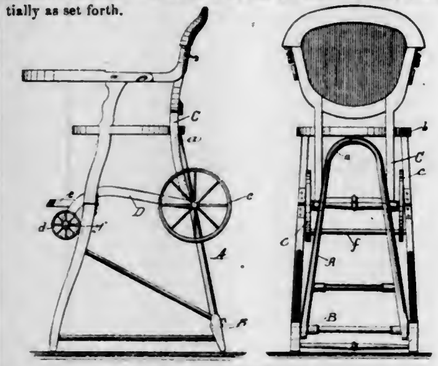
6. In an electric meter, the combination with an oscillating electric motor, a register-train and an oscillating driving-cam carried by the motor and driving the register-train intermittently, of pins *m*, *m'*, *n* on the driving-cam, and the eccentrically-pivoted lever K having a shoulder *o*, substantially as set forth.

7. In an electric meter, the combination with an oscillating electric motor, of the plate *e* on the motor-shaft, and the friction-disk *f* for producing a frictional retardation of the motor at the extreme limits of its swing, substantially as set forth.

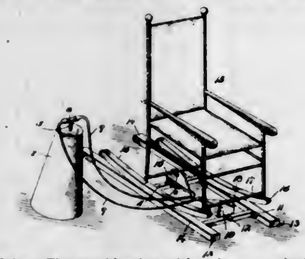
8. In an electric meter, the combination with the current-indicator, the oscillating electric motor, and the register, of the flat supporting-plate C, upon the opposite sides of which the motor and register are supported, and the upwardly-curved metal shield B at the top of the plate C and supporting the indicator-coils substantially as set forth.

571,038. CONVERTIBLE CHAIR. LEMUEL A. CHICHESTER, Phœnicia, N. Y., assignor to the Chichester Manufacturing Company, New York, N. Y. Filed June 20, 1890. Serial No. 356,143. (No model.)

Claim.—In combination in a convertible chair having a folding base: the through-braces secured to the front and back posts and projecting forward and downward from the front posts, the wheels journaled at or near the ends of these said through-braces, and the foot-rest secured to the said braces above the front wheels substantially as set forth.



571,039. CHURN. WILLIAM R. CULLISON, Chicago, Ill. Filed Aug. 22, 1894. Renewed Aug. 8, 1896. Serial No. 602,194. (No model.)



Claim.—The combination with a base or platform comprising parallel pillow-beams and cross-bars, and strips of gum or like substance placed upon the pillow-beams, of two bellows inversely disposed and firmly attached to the cross-bars of the said base, separate tubes extending from each bellows and adapted to be used in the manner set forth, and a rocking-chair mounted upon the pillow-beams of the base and having its front and rear lower rungs firmly attached to the respective bellows, whereby the said rocking-chair is maintained upon its base and the bellows are positively and alternately actuated in the rocking movements of the chair, substantially as set forth.

571,040. BONE-FORCEPS. ALLEN DE VILBISS, Toledo, Ohio. Filed Apr. 17, 1896. Serial No. 588,024. (No model.)



Claim.—1. A bone-cutting instrument consisting of the pivoted members E and F, plunger J having an offsetting cutter upon the lower extremity thereof and adapted to act in conjunction with a cutter H upon and actuated by handle F substantially as shown.

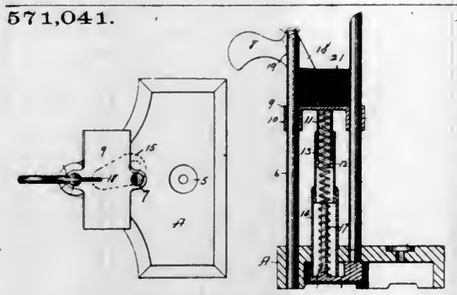
2. A bone-cutting instrument consisting of the pivoted members E and F, spring M, and plunger J, being provided with an offsetting cutter upon its lower extremity and adapted to act in conjunction with a corresponding cutter H, attached to the pivotal member F substantially as shown.

3. In a bone-cutting instrument consisting of the pivotal handle-levers F and E, plunger J, and the angular connection K and K', substantially as shown.

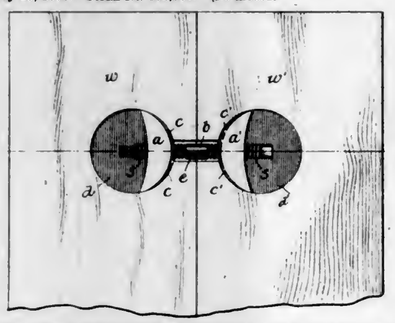
571,041. HOLDER FOR POWDER-PAPERS. CHARLES DICKINSON, New Britain, Conn. Filed July 6, 1896. Serial No. 598,127. (No model.)

Claim.—A holder for powder-papers consisting of a base, the guide-posts, the pivoted latch at the upper end of one of said guide-posts, and the spring-actuated table arranged to slide on said posts between the nose of said latch and the said base, substantially as described.

571,041.

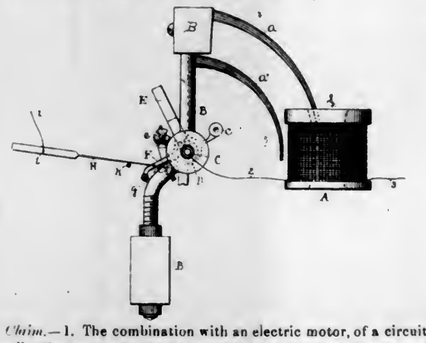


571,042. CLAMP-JOINT. ANDREW EDQUIST, Denver, Colo. Filed May 25, 1896. Serial No. 592,967. (No model.)



Claim.—The combination of a joint clamp and holder having convex jaws and means for drawing the jaws together with the boards to be joined having concave recesses adapted to receive the jaws, the curve of the recesses being of less radius than the curve of the jaws, substantially as described.

571,043. ELECTRIC MOTOR. GEORGE R. GREEN, Philadelphia, Pa., assignor to the American Electric Meter Company, same place. Filed Mar. 7, 1896. Serial No. 582,293. (No model.)



Claim.—1. The combination with an electric motor, of a circuit-controller therefor comprising a contact movable therewith, a second contact movable with the first-named contact and capable of movement independently of the motor, and an overbalanced device for periodically separating said contacts and maintaining them separated for definite periods, substantially as set forth.

2. The combination with an oscillating electric motor, of a circuit-controller therefor comprising a contact movable therewith, a second contact movable with the first-named contact and capable of movement independently of the motor, and a weight oscillating with the motor but capable of independent movement for periodically separating said contacts and maintaining them separated for definite periods, substantially as set forth.

3. The combination with an oscillating electric motor, of a circuit-controller therefor comprising a contact movable therewith, a second contact movable with the first-named contact and capable of movement independently of the motor, and a weight supported below its center of gravity oscillating with the motor but capable of independent movement for periodically separating said contacts and maintaining them separated for definite periods, substantially as set forth.

4. The combination with an electric motor, of an oscillating shaft, and a circuit-controller for said motor, comprising a contact movable with said shaft, a second contact movable with the first-named contact and capable of movement independently of said shaft, and a weight pivoted on said shaft below its center of gravity and oscillating with said shaft but capable of independent movement for controlling the position of one of said contacts by its overbalanced movement, substantially as set forth.

5. The combination with an electric motor, of an oscillating shaft, and a circuit-controller for said motor, comprising a contact movable with said shaft, a contact-lever movable with the first-named contact and capable of movement independently of said shaft, and a weight pivoted on said shaft below its center of gravity and oscillating with said shaft but capable of independent movement for controlling the position of said contact-lever by its overbalanced movement, substantially as set forth.

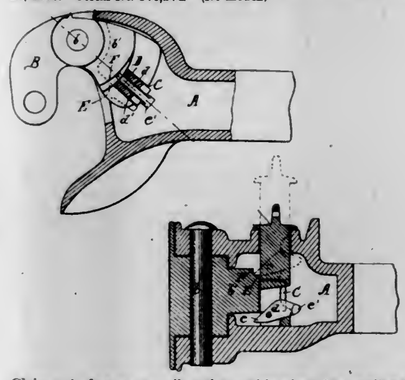
6. The combination with an oscillating electric motor, of a circuit-controller therefor, comprising an oscillating contact moving with the motor, a second contact engaging with said oscillating contact, and an overbalanced weight for separating said contacts by its overbalanced movement, said weight being adjusted to permit the engagement of said contacts for a short interval during the movement of the motor in one direction, substantially as set forth.

7. The combination with an oscillating electric motor, of a circuit-controller therefor, comprising an oscillating contact moving with the motor, a second contact engaging with the oscillating contact, an overbalanced weight for separating said contacts by its overbalanced movement, and means for adjusting said weight whereby when the motor comes to rest the said contacts will remain in contact, substantially as set forth.

8. The combination with an oscillating electric motor, of a circuit-controller comprising two stops moving with the motor, a contact also moving with said motor, a second contact engaging with said first-named contact and capable of independent movement, and a weight pivoted below its center of gravity and having an arm playing between said stops, said arm engaging the second contact to move the same out of contact with the first-named contact by the overbalanced movement of said weight, substantially as set forth.

9. In an electric motor, the combination with a pendulum and an operating-solenoid, of a circuit-controller comprising a contact oscillating with the pendulum, a second contact engaging with said oscillating contact and capable of independent movement, and a weight supported below its center of gravity, oscillating with said pendulum and having an overbalanced movement independent of the movement of the pendulum for controlling the position of the second contact, substantially as set forth.

571,044. CAR-COUPLING. PHILLIP HIEN, Chicago, Ill. Filed Jan. 21, 1896. Serial No. 576,274. (No model.)



Claim.—1. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, and a locking device adapted to be supported after it is raised into an unlocked position and automatically arranged in position upon the tailpiece for locking as the tailpiece swings outward when the coupling is uncoupled, substantially as described.

2. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a locking device adapted to engage the tailpiece to lock the coupling, and means carried by said locking device, arranged to support the locking device upon the tailpiece after it is raised into an unlocked

position and automatically throw the locking device, when the tailpiece swings outwardly, into position upon the tailpiece for automatically locking the coupling again when the tailpiece resumes its normal position within the coupling-head, substantially as described.

3. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a locking-pin adapted to enter a socket in the tailpiece to lock the coupling, and a dog pivotally secured in a slot in said locking-pin and adapted to swing into position to support the locking-pin upon the upper face of the tailpiece when the locking-pin is raised into an unlocked position, whereby said locking-pin is arranged in position to be supported upon the tailpiece when the latter is swung outwardly, substantially as described.

4. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece, a shoulder E upon the upper face of the tailpiece, a locking device adapted to engage the tailpiece to lock the coupling, and a dog carried by said locking device and adapted to engage the shoulder when the locking device is raised into an unlocked position to support the locking device on the upper face of the tailpiece, substantially as described.

5. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece having a shoulder thereon, a locking device adapted to engage the tailpiece to lock the coupling and provided with a slot, and a dog pivotally secured in said slot and adapted to engage the shoulder on the tailpiece when the locking device is raised into an unlocked position, substantially as described.

6. In a car-coupling, the combination of a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece having a shoulder thereon, a locking device adapted to lock the coupling and having a slot in the lower portion thereof, and a dog pivotally secured in said slot and having a weighted end, said dog being adapted to engage the shoulder of the tailpiece when the locking device is raised substantially as and for the purposes described.

7. In a car-coupling, the combination with a coupling-head, a knuckle pivotally supported therein and provided with a tailpiece having a shoulder thereon, a gravity-pin adapted to engage a socket in the tailpiece to lock the coupling and having a slot in the lower portion thereof, and a dog pivotally secured in said slot and having a pivoted end adapted to engage the shoulder of the tailpiece and a weighted end to normally hold the pointed end in a position beyond the walls of the slot, substantially as described.

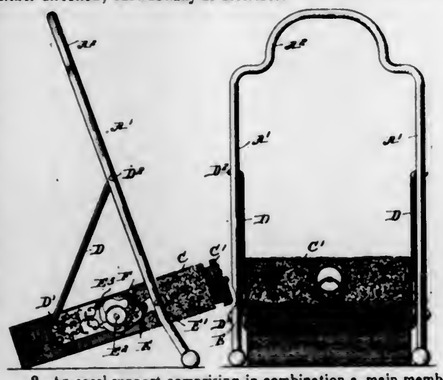
8. In a car-coupling, the combination of a coupling-head, a locking device arranged in said coupling-head, a dog carried by said locking device, a knuckle pivotally supported in the coupling-head and provided with a tailpiece, a shoulder on said tailpiece adapted to be engaged by the dog when the locking device is raised into an unlocked position, and a cam-face adjacent to the shoulder adapted to disengage the dog from the shoulder as the tailpiece swings outward into an open position, substantially as described.

9. In a car-coupling, the combination of a coupling-head, a gravity locking device arranged therein and carrying means for supporting the same in an unlocked position, a knuckle pivotally supported in the coupling-head and provided with a tailpiece, a shoulder on said knuckle adapted to be engaged by said supporting means, and means for releasing said supporting means from engagement with the shoulder as the tailpiece swings out of its normally locked position in the coupling-head and automatically arranging said locking device in position for locking the coupling when the tailpiece is again swung back into the coupling-head, substantially as described.

10. In a car-coupling, the combination of a coupling-head, a gravity locking-pin operating therein and provided with a slot in its lower portion, a dog pivotally secured in said slot and provided with a pointed end and a weighted end, a knuckle pivoted in the coupling-head, a tailpiece provided with a socket to receive the locking-pin, a shoulder on said tailpiece, and a cam-face adjacent to the shoulder adapted to release the pointed end of the dog from engagement with the shoulder as the tailpiece swings out of the coupling-head and throw the said pointed end of the dog into engagement with the vertical side of the shoulder so that the locking-pin will enter the socket in the tailpiece when the latter is swung back into the coupling-head, substantially as described.

571,045. EASEL-SUPPORT FOR BOOKS, &c. WILLIAM A. HOFFMAN, Philadelphia, Pa. Filed Aug. 19, 1896. Serial No. 603,189. (No model.)

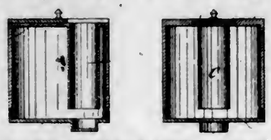
Claim.—1. An easel support comprising a main member or frame having supporting-legs and a normally-inclined base-support adapted to be pivotally swung between them, in combination with a pair of link-arms arranged one on each side of the base-support and pivoted at one end to the legs of the main frame near the basal end thereof and at the other end to the side of the base support near the center thereof, with means to limit the partial rotation of said link-arm in either direction; substantially as described.



2. An easel-support comprising in combination a main member or frame having legs A' A', a normally-inclined base-support C; a pair of link-arms E E, pivotally arranged at one end to the side of the base-support and at the other end to legs of the supporting-frame, the links being provided with offsets E^3, and the box with a stop-pin F; said parts being combined and operating substantially as and for the purposes described.

3. An easel-support comprising in combination a main frame provided with legs A' A', a normally-inclined box or base-support C, and a pair of doubly-pivoted links E between the lower ends of the main frame and the sides of the base-support, means to limit the movement of the said link-arms in both directions, and a pair of rear link-arms D pivotally connecting the main frame at or about its center, with the base-support at or near its rear end; substantially as described.

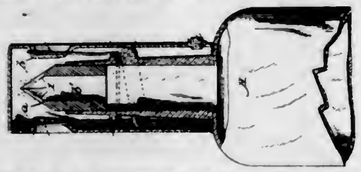
571,046. INKSTAND. JAMES W. JACOBUS, Great Neck, N. Y. Filed Feb. 14, 1896. Serial No. 579,211. (No model.)



Claim.—1. The herein-described ink stand or bottle, which is provided with a removable bottom in which is formed at one side thereof, a chamber or depression, said ink stand or bottle being also provided with a closed top, at one side of which is an open tube, the lower end of which projects downwardly, to near the bottom and immediately over said chamber or depression and said top being provided with a sliding plate which is adapted to close the upper end of said tube, substantially as shown and described.

2. The herein-described ink stand or bottle, which is composed of a body portion provided with a closed top, and a removable bottom, said removable bottom being provided at one side with a circular chamber or depression and said top being provided with an open tube, at one side, the lower end of which extends downwardly, to near the bottom, and immediately over said circular chamber, or depression, and said top being also provided with a sliding plate, which is adapted to close the open upper end of said tube, substantially as shown and described.

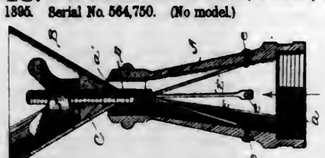
571,047. NON-REFILLABLE BOTTLE. JOHN F. KRIES, Charleston, W. Va. Filed May 18, 1896. Serial No. 591,954. (No model.)



Claim.—1. In combination with a bottle, a cap sealing the neck thereof, wire bails on the bottle-neck engaging the cap said bails being located within the cap, a stopper fitted to the bottle and adapted to allow the egress of the fluid and an opening in the cap with a closure for said opening, substantially as described.

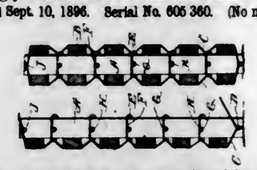
2. In combination with a bottle, a cap sealing the neck thereof, and secured thereto, a stopper fitted to the bottle within the cap and adapted to allow the egress of the fluid, a projecting rib around the neck and between it and the inner wall of the cap having a passage through it and an exit-opening in the cap on the side opposite the said passage, substantially as described.

571,048. HOSE-NOZZLE. JOHN J. LEDDEN, Baltimore, Md. Filed Oct. 5, 1895. Serial No. 564,750. (No model.)



Claim.—The combination of the hose-pipe A, the connecting-legs E, E, having their outer ends threaded and their inner ends secured to the interior of the hose-pipe by screws *e*, the stem D, exteriorly threaded and having in its inner end a threaded bore to receive the threaded ends of legs E, the spreader B, having its apex-base C, threaded upon the stem D, and projecting into the hose-pipe A, and the thumb-nut F, threaded upon stem D, and serving to lock the spreader in any desired position on the stem, substantially as and for the purposes set forth.

571,049. FENCE. JAMES T. LEE and URIAH P. SAWYER, Camilla, Ga. Filed Sept. 10, 1896. Serial No. 605,360. (No model.)



Claim.—1. A fence formed of posts, rails and fastening-wire, with stays having hooked ends, said stays being secured to said posts and said wires being passed around said rails and in the hooked ends of said stays, said parts being combined substantially as described.

2. A panel fence consisting of posts, rails, and fastening-wires with stays, having hooked ends the rails of each panel having their opposite ends secured to opposite faces of adjacent posts, said stays being secured to said posts and the wire on each post being doubled and secured at its center near the bottom of the post and then passed successively around and above each rail and through a hooked end of a stay, said parts being combined substantially as described.

3. In a fence, fastening means for the rails thereof, consisting of the stays F having hooked ends, and a central loop and a wire C adapted to be engaged with said hooked ends, substantially as described.

4. In a fence-fastening, a stay having hooked ends and a central loop, substantially as described.

571,050. DETENT FOR RATCHET-WHEELS. WILLIAM D. MARKS, Philadelphia, Pa., assignor to the American Electric Meter Company, same place. Filed Aug. 22, 1896. Serial No. 603,591. (No model.)

Claim.—1. The combination with a ratchet-wheel and an actuating device therefor, of a pivotal resilient detent for the ratchet-wheel adapted to slightly follow the wheel through friction and thereby reduce the effects of inertia on the actuating device, and a device for regulating the pressure of said detent on the ratchet-wheel, substantially as set forth.

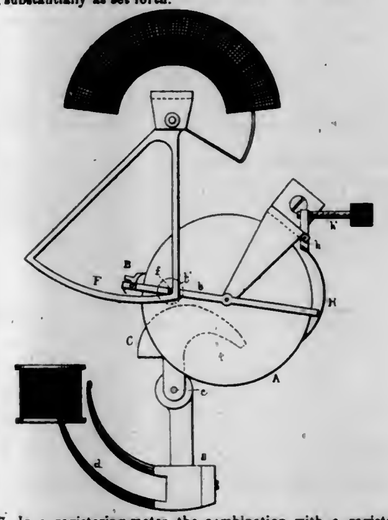
2. The combination with a ratchet-wheel, of a spring-detent therefor, and an adjustable weight for regulating the pressure of the detent, substantially as set forth.

3. The combination with a ratchet-wheel, of a blade-spring detent therefor, and an adjustable weight for regulating the pressure of the detent, substantially as set forth.

4. The combination with a ratchet-wheel, of a blade-spring detent carried by a pivoted arm, and an adjustable weight carried by said arm to regulate the pressure of the detent, substantially as set forth.

5. In a registering-meter, the combination with a register or counter, of a primary driving or ratchet wheel, an actuating-pawl engaging therewith, a motor for driving said actuating-pawl, and a resilient detent for the ratchet-wheel, adapted to slightly follow the wheel through friction and thereby reduce the effects of inertia on the actuating device, substantially as set forth.

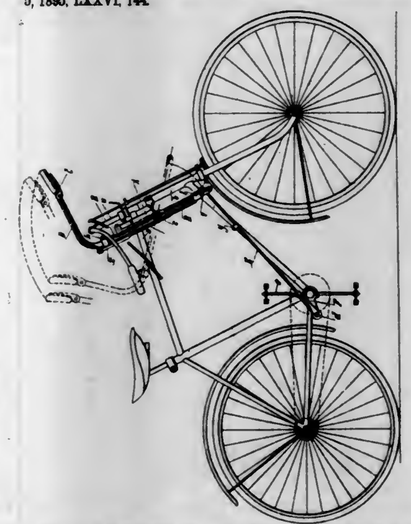
6. In a registering-meter, the combination with a register or counter, of a primary driving or ratchet wheel, an actuating-pawl engaging therewith, a motor for driving said actuating-pawl, and a detent for said ratchet-wheel consisting of a spring engaging therewith and an adjustable weight for regulating the pressure of the detent, substantially as set forth.



7. In a registering-meter, the combination with a register or counter, of a primary driving or ratchet wheel, an actuating-pawl engaging therewith, a chrono-electric motor for driving said actuating-pawl, and a detent for said ratchet-wheel consisting of a spring engaging therewith and an adjustable weight for regulating the pressure of the detent, substantially as set forth.

8. In a registering-meter, the combination with a register or counter, of a primary driving or ratchet wheel, an actuating-pawl engaging therewith, a motor for driving said actuating-pawl, and a detent for said ratchet-wheel consisting of a blade-spring carried by a pivoted arm, and an adjustable weight carried by said arm to regulate the pressure of the spring-detent, substantially as set forth.

571,051. BICYCLE. ANTONIO PETTINATI, Rome, Italy. Filed July 10, 1895. Serial No. 555,512. (No model.) Patented in Italy June 5, 1895, LXXVI, 144.



Claim.—1. In combination with a bicycle, a hand-lever pivotally connected to the head thereof, a rod having one end pivotally connected with the crank and at the other end a sliding connection with

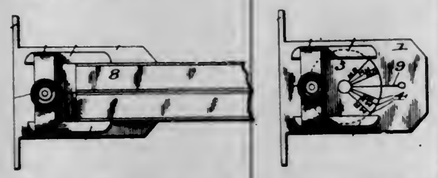
said lever, and means for changing the sliding connection into a fixed connection at will, substantially as described.

2. In combination with a bicycle, the bracket removably clamped to the head thereof, the hand-lever pivoted to said bracket, the rod having one end pivoted to the crank and having its other end sliding in a recess in the hand-lever, a catch for connecting and disconnecting said rod and lever, and operating connections from said catch to the handle of said hand-lever, substantially as described.

3. In combination with a bicycle, the hand-lever pivoted to the frame thereof, the handle adjustably connected therewith, the rod having one end pivoted to the crank and having at its other end a sliding connection with said lever, and means for changing said sliding connection into a fixed connection at will, substantially as described.

4. In combination with a bicycle, a hand-lever pivotally connected with the head thereof, a rod having one end pivoted to the crank and at its other end having a sliding connection with the lower end of said lever, a collar sliding on the hand-lever and arranged to slide over the end of the rod to confine it against movement, and means for operating the collar, substantially as described.

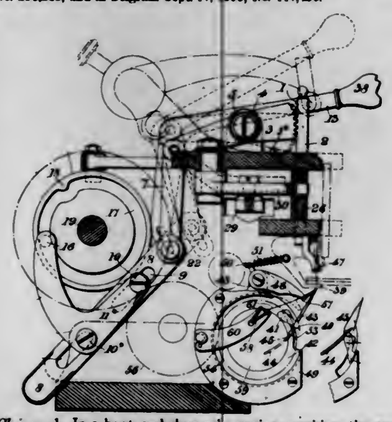
571,052. MITER-GAGE ATTACHMENT FOR RULES. FREDERICK REISSMANN, West Point, N. Y. Filed Apr. 17, 1896. Serial No. 587,974. (No model.)



Claim.—1. The herein-described rule attachment made up of a plate, having a flange at right angles thereto, a disk rotatably mounted in said plate and provided with graduations indicating the miters for different polygons and a suitable clamp for a rule secured to said disk, substantially as described.

2. The herein-described rule attachment made up of a plate having a flange at right angles thereto, a disk rotatably mounted in said plate and provided with a series of graduations indicating the miters for different polygons, a pair of bars secured to said disk, a cross-bar connecting the same and a thumb-screw in said cross-bar whereby a rule may be conveniently attached to and detached from said disk, substantially as and for the purpose described.

571,053. SEWING-MACHINE. GEORGE H. SCETRINI and HERBERT K. BRIDGER, London, England; said Scetrini assignor to said Bridger. Filed Sept. 12, 1895. Serial No. 562,300. (No model.) Patented in England Sept. 17, 1894, No. 17,683; in France Sept. 11, 1895, No. 250,213, and in Belgium Sept. 17, 1895, No. 117,456.



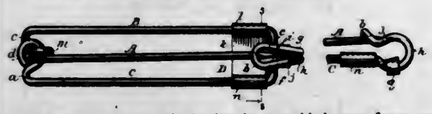
Claim.—1. In a boot and shoe sole sewing machine, the means for operating and imparting the required pressure to the presser-foot whatever the thickness of the work consisting of a cam, of mechanism for transmitting the motion of the cam to the presser-foot, of a lever in the said mechanism made in two parts, one part being free to slide on the other against a resistance so that when resistance to the motion of the lever exceeds a certain amount the parts slide and thus prevent its increase, and of a means tending to return the said lever parts to their normal position when the said resistance is removed.

2. In a boot and shoe sole sewing machine, the means for operating and imparting the required pressure to the presser-foot whatever the thickness of the work, consisting of a cam, of mechanism for transmitting the motion of the cam to the presser-foot, of a lever in said mechanism made in two parts, one part being free to slide on the other and transmitting the motion at an angle to the direction of its slide, and of a means tending to return the said part to its normal position.

3. In a boot and shoe sole sewing machine, the means for operating and imparting the required pressure to the presser-foot whatever the thickness of the work, consisting of a cam, of mechanism for transmitting the motion of the cam to the presser-foot, and of a sliding piece in the said mechanism adapted to transmit the required motion and to slip in its guides when the resistance to the motion attains the required amount to prevent further motion of the presser-foot and consequent increase of its pressure, of a hand-lever for operating the sliding piece to raise the presser-foot by hand and of a means tending to return the sliding piece to its normal position when the resistance is removed.

4. In a boot and shoe sole sewing machine, the means for operating and imparting the required pressure to the presser-foot whatever the thickness of the work, consisting of a cam, of mechanism for transmitting the motion of the cam to the presser-foot, of a sliding piece in the said mechanism adapted to transmit the required motion and to slip in its guides when the resistance to the motion of the presser-foot attains the required amount to prevent further motion of the presser-foot and consequent increase of its pressure, of a spring tending to return the sliding piece to its normal position when the said resistance is removed, and of a counterweighted lever opposing the motion of the spring substantially as described.

571,054. SAFETY-PIN. ARTHUR T. SHELL, Santa Barbara, Cal. Filed Aug. 25, 1893. Serial No. 484,054. (No model.)



Claim.—1. A safety-pin having its two sided open frame, central pin-shank, and pin guard and catch, composed of a single piece of wire, and having a tie at the guard end of the open frame which prevents the spreading apart of the sides of the open frame and of the guard, substantially as set forth.

2. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch composed of a single piece of wire, and having a brace between the two sides of the open frame at the guard end thereof to prevent the same from collapsing, and a tie at the guard end of the open frame to prevent the spreading apart of the sides of the open frame and of the guard, substantially as set forth.

3. A safety-pin having its two-sided open frame, central pin-shank, and pin guard and catch, composed of a single piece of wire, and having a sheet-metal brace and tie extending between the sides of the open frame and bent around the same, substantially as set forth.

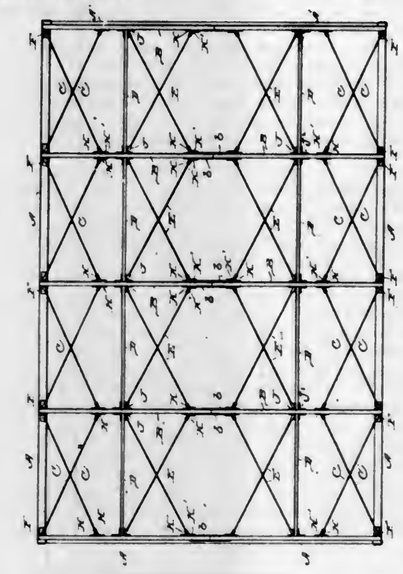
4. A safety-pin having its two sided open frame, central pin-shank, and pin guard and catch composed of a single piece of wire, said pin-guard having two sections or bends lying adjacent to each other, and said safety-pin having a sheet-metal brace and tie extending between the sides of the open frame, said brace and tie having flanges bent around the sides of the open frame and having ears bent around the adjacent sections of the pin-guard, substantially as set forth.

5. A safety-pin, having its two sided frame B, C, central pin-shank A, and pin guard and catch composed of a single piece of wire, said guard and catch being composed of converging sections *e f* which extend from the respective sides B, C, to and into contact with each other, two upwardly-arching and contiguous parallel sections *g h* extending from said sections *e f* respectively, the downwardly-extending and diverging sections *i j* extending from said sections *g h* respectively, and the upwardly-arching crosswise-extending section *b* uniting the said sections *i j*, substantially as set forth.

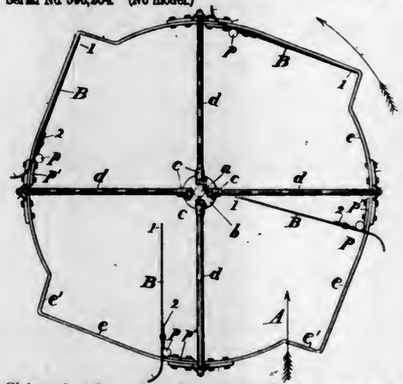
6. A safety-pin having its two-sided open frame, central pin-shank and pin guard and catch composed of a single piece of wire, and having a combined tie and tongue at the guard end of the open frame connecting the two sides of the open frame and providing a directing-tongue for the pin-point, substantially as set forth.

571,055. ROOF-TRUSS. OLIVER J. STOUFFER, Logansport, Ind. Filed June 12, 1896. Serial No. 595,302. (No model.)

Claim.—In a truss for hip-roofs the combination of the rafters, the wall-plates, the ties C and E, the braces D, the angle-irons F and J having sockets formed at the vertexes of their angles, the oblique angle-irons H and K, and the acute angle-irons K′ and H′, substantially as shown and described.



571,056. WIND-WHEEL. JOHN L. THOMPSON, Cincinnati, Ohio, assignor to Margraf, Fricke & Co., same place. Filed June 19, 1896, Serial No. 596,204. (No model.)

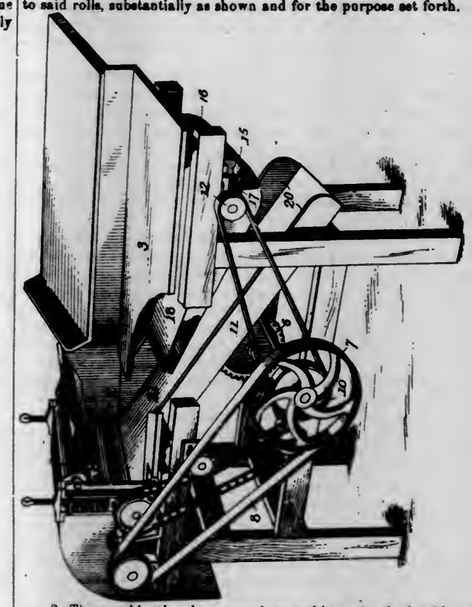


Claim.—1. A knockdown horizontal wind-wheel composed of a pair of hubs keyed to a vertical shaft; a series of horizontal V-shape brackets or open, skeleton rod-frames detachably secured at their inner, divergent ends to said hubs; a series of segmental rim-sections having receptacles or bent, recessed portions made therein and detachably jointed together in a circle, and detachably mounted, also, at the outer, convergent ends of said V-brackets; and a series of blades or fan-paddles pivotally mounted on said segmental rim-sections; substantially as herein set forth.

2. In a horizontal wind-wheel, a blade or fan-paddle composed of a plate having its outer pivotal or hinged end curved or flared toward the wind, whereby a prolonged impingement of the wind, and a ready, quick opening or clearing of the blade against the wheel-rim are effected in the revolutions of the wheel, substantially as herein set forth.

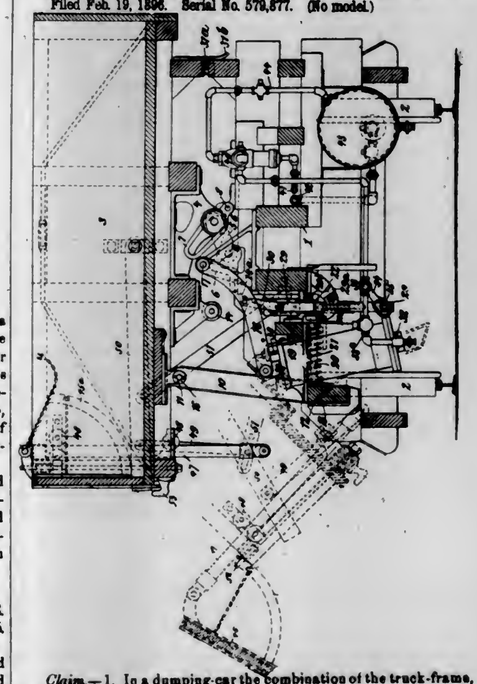
571,057. CORNSTALK-SHREDDER AND SNAPPING-MACHINE. JOHN D. TRACY and JAMES F. PLATT, Sterling, Ill. Filed Dec. 26, 1895. Serial No. 573,337. (No model.)

Claim.—1. The combination in a snapping-machine, of a feed table or guide, a pair of snapping-rolls, and an air-conduit arranged to direct a blast of air in the direction of the travel of the cornstalks toward the rolls to thereby carry the leaves and other loose material to said rolls, substantially as shown and for the purpose set forth.



2. The combination in a snapping-machine, of a feed table or guide, a pair of snapping-rolls, an inclined chute leading downward from said rolls, and a blower or fan located beneath said feed-table and above the chute and provided with a spout or conduit inclined upwardly and pointing toward or in the direction of said rolls, substantially as described.

571,058. DUMP-CAR. EDWARD A. TRAPP, New York, N. Y. Filed Feb. 19, 1896. Serial No. 579,877. (No model.)



Claim.—1. In a dumping-car the combination of the truck-frame, the car-body pivotally connected thereto so that it dumps by its own

weight, a cylinder and piston mounted in said truck frame and connections by which the piston returns the car-body to its normal position when said piston is forced up, together with pipe connections by which fluid under pressure is admitted to the cylinder beneath the piston, substantially as described.

2. In a dumping-car the combination of the truck-frame, the car-body pivotally connected thereto so that it dumps by its own weight, locking apparatus which normally supports said car-body in a horizontal position, a cylinder and piston mounted in said truck-frame and connections by which the piston trips said locking device on its first stroke and returns the car-body to its normal position on its second stroke in the same direction, together with pipe connections by which fluid under pressure is admitted to the cylinder beneath the piston, substantially as described.

3. In a dumping-car the combination of the truck-frame, the car-body pivotally connected thereto so that it dumps by its own weight, a cylinder and piston mounted in said truck-frame and connections by which the piston returns the car-body to its normal position when said piston is forced up, together with pipe connections by which fluid under pressure is admitted to the cylinder beneath the piston, a throttle-valve in said pipe which is automatically closed at a determinable point in the upward travel of the piston and an exhaust-valve for the cylinder which is automatically opened at the end of the piston's stroke, substantially as described.

4. In a car-dumping apparatus the combination of the cylinder, the piston, the exhaust-valve opening downward in said piston, and the overhanging stop at the upper end of the cylinder which opens said exhaust-valve at the end of the stroke, a swinging car-body which dumps by its own weight, and a connection from car-body to piston such that the piston, with exhaust-valve open, is forced down by the weight of the car-body and cushions its fall, substantially as described.

5. In a car-dumping apparatus the combination of the cylinder, the piston, the pipe connections which supply fluid under pressure to the cylinder beneath said piston, the throttle-valve in said connections, and mechanism operated by the piston to close said throttle at a given point in the upward travel of the piston and open the throttle again at approximately the same point in its downward travel, a swinging car-body and connections from the car-body to the piston, substantially as described.

6. In a car-dumping apparatus the combination of the cylinder, the piston, a swinging car-body and connections from the car-body to the piston, the pipe connections which supply fluid under pressure to the cylinder beneath said piston, the throttle-valve in said connections, the mechanism operated by the piston to close said throttle at a given point in the upward travel of the piston and open the throttle again at approximately the same point in its downward travel, together with an exhaust-valve opening downward in the piston, and the overhanging stop at the upper end of the cylinder which opens the exhaust valve at the end of the piston-stroke, substantially as described.

7. In a car-dumping apparatus the combination of the truck-frame, the car-body pivotally connected thereto so as to dump by its own weight, one or more supports pivoted to said car-body on the dumping side, said supports having their lower ends beveled, sockets in the truck-frame for the lower ends of said supports beveled at a corresponding angle, and locking apparatus which normally retains said supports in said sockets but which may be manipulated to release said supports from said sockets and thereby dump the car, substantially as described.

8. In a car-dumping apparatus the combination of the truck-frame, the car-body pivotally connected thereto so as to dump by its own weight, one or more supports pivoted to said car-body on the dumping side, said supports having their lower ends beveled, sockets in the truck-frame for the lower ends of said supports beveled at a corresponding angle, and locking apparatus which normally retains said supports in said sockets but which may be manipulated to release said supports from said sockets and thereby dump the car, said locking apparatus consisting of one or more spring-buffers mounted in the truck-frame, which press said supports into their sockets, a sliding locking-plate behind each buffer, which plate has an opening therein that registers with the rear end of said buffer when the plate is slid into proper position, and mechanism operated by the dumping apparatus to slide said locking-plates into such position, substantially as described.

9. In a car-dumping apparatus the combination of the truck-frame, the cylinder mounted therein, the operating-lever pivoted thereto, the piston and piston-rod connected to said lever, the spring-pressed buffers, the sliding locking-plates for said buffers, the pipe connections to the cylinder and the throttle-valve therein, together with the connections from the operating-lever to the throttle-valve and to the locking-plates, whereby both are automatically controlled by said operating-lever, substantially as described.

10. In a dumping-car the combination of the truck-frame, the car-body pivoted thereto, the sliding posts in said car-body and the swinging door hinged to said posts, connections from the posts to the truck-frame whereby the posts are lifted relatively to the car-body and the swinging door released as the car-body descends, and the arc-shaped guides for the door which engage with the head-boards of the car-body and guide the door back into position when the car-body is lifted, substantially as described.

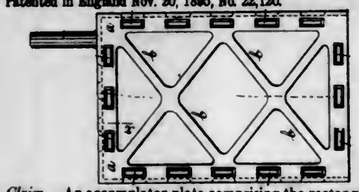
11. In a dumping-car the combination of the truck-frame, the car-body pivotally supported on such truck-frame, at a point to one side of its center of gravity when loaded, an elastic supporting-buffer on the same side adapted to both check the return movement of the car-body and assist in supporting it in a horizontal position, and the removable supports for the car-body located on the other side of its center of gravity, substantially as described.

12. In a dumping-car the combination of the truck-frame, the recessed casting thereon, the swinging car-body and the casting thereon which rests in the recess of said first-mentioned casting when the car-body is in its normal position, together with the link pivoted at opposite ends to said two castings, substantially as described.

13. In a dumping-car the combination of the truck-frame the recessed casting thereon, the swinging car-body and the casting thereon which rests in the recess of said first-mentioned casting, together with the link pivoted at opposite ends to said two castings, and the slotted link pivoted to the recessed casting and limiting the vibration of the first link, substantially as described.

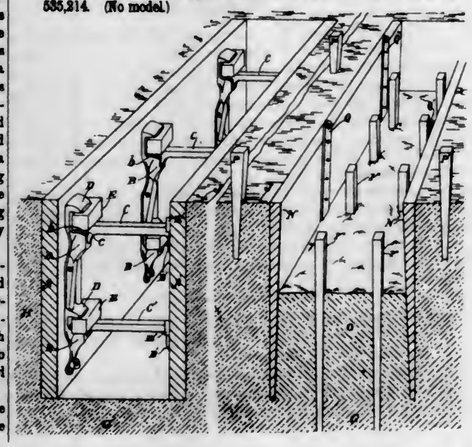
14. In a car-dumping apparatus the combination of the truck-frame, the car-body pivotally connected thereto so as to dump by its own weight when loaded, one or more pivotal supports for said car-body located under its dumping side, and locking apparatus which normally retains said supports in operative position, but which may be manipulated to release said supports and thereby dump the car, together with a stationary supporting-buffer for the car-body under the side opposite to that under which the above-mentioned pivotal supports are located, adapted to both check the return movement of the car-body and assist in supporting it in a horizontal position, substantially as described.

571,059. ELECTRIC STORAGE BATTERY. THOMAS W. ALLAN, London, England. Filed Feb 19, 1896. Serial No. 579,927. (No model.) Patented in England Nov. 20, 1895, No. 22,120.



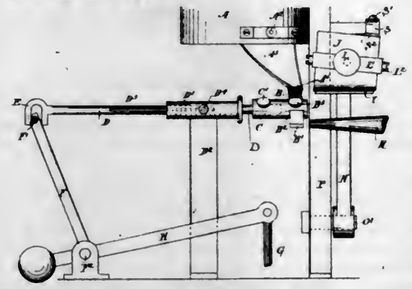
Claim.—An accumulator-plate comprising the rectangular frame having the integral inwardly-extending flanges, and a set of stays upon each face of the frame connecting the edges of the flanges, said frame having beveled edged perforations in three of its edges and in the flanges and having one edge left open for the removal of the core in casting, substantially as described.

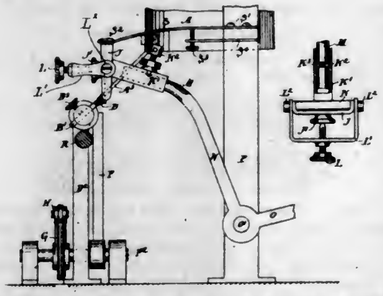
571,060. COLLAPSIBLE AND ADJUSTABLE MOLD-PATTERN. MILO A. BAKER, Los Angeles, Cal. Filed Jan. 17, 1895. Serial No. 535,214. (No model.)



Claim.—A collapsible mold-former consisting of cheek-pieces; stay-brackets provided with tapering stay-seats and respectively secured to the cheek-pieces; the wedge-bearings secured to the cheek-pieces; the separator-stays provided with the tapering recesses fitted upon the stay-seats; and the wedges respectively arranged between the wedge-bearings and the stays to hold the stays in place.

571,061. PASTING MECHANISM FOR CIGARETTE-MACHINES. JOSEPH S. BERMAN, Melbourne, Victoria. Filed Nov. 26, 1895. Serial No. 570,224. (No model.)





Claim.—1. In combination, the mandrel, the paster having a paste-applying edge extending longitudinally of the mandrel, a reciprocating support for the paster to which said paster is connected by a swivel and a paste-conveyer reciprocating endwise in line parallel with the axis of the mandrel and between the same and the paster, substantially as described.

2. In combination in a pasting-machine, the conveying distributer as B means for supplying B with paste or water the lever N O sleeve K' plates K and J hinged piece L' and screw L substantially as and for the purposes set forth.

3. In a pasting-machine and in combination, the conveying-distributer as B means for supplying B with paste or water the sleeve K' and plate K with means for supporting the sleeve and plate the spring S and the regulating-screw S^3 substantially as and for the purposes set forth.

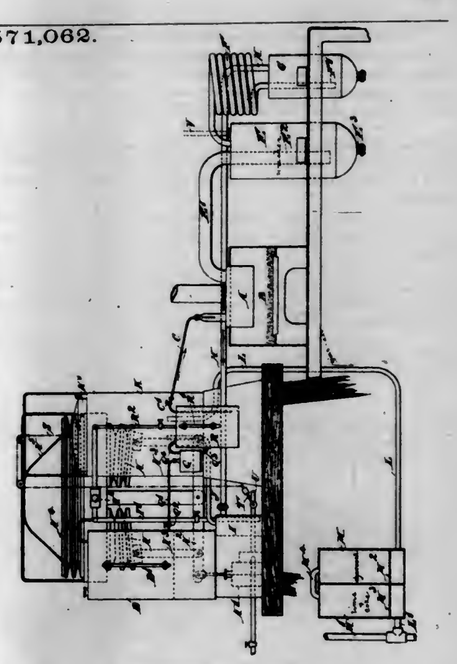
4. In combination, the mandrel, the paste-applying strip, the reciprocating lever, the carrier for the paste applying strip swiveled to the lever and the reciprocating paste-conveyer moving to the paste-applying strip when the same is retracted from the mandrel, substantially as described.

5. In combination, the mandrel, the paster with its reciprocating support, a paste-applying edge extending lengthwise of the mandrel, and a paste-conveyer reciprocating endwise and longitudinally of the paster when the same is retracted from the mandrel, said conveyer moving in between the mandrel and paster, substantially as described.

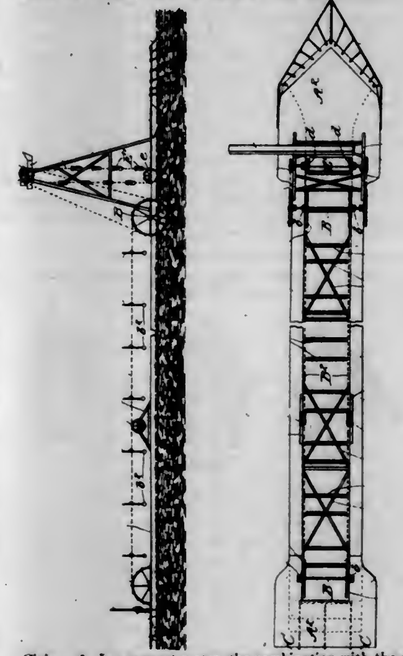
571,062. APPARATUS FOR MANUFACTURING GAS. PETER BERETTINI, London, England. Filed Feb. 10, 1896. Serial No. 578,768. (No model.) Patented in England Feb. 15, 1895, No. 3,354.

Claim.—A gas-making apparatus comprising the vaporizing retort or crucible, the washers connected therewith, a hydrocarbon-liquid holder connected with the retort, means for regulating the supply of liquid to the retort, the air and gas mixing chambers connected with the washers, means for forcing air into the mixing vessel and into the holders for the hydrocarbon liquid, a motor for actuating the air-forcing apparatus, a gas holder or receiver with connections to the mixer, and devices connected with the gas-holder for regulating the speed of the motor, substantially as described.

571,062.



571,063. CURRENT-MOTOR. MORTON G. BUNNELL, Chicago, Ill., assignor to Frederick C. Austin, same place. Filed Jan. 30, 1895. Renewed Oct. 8, 1896. Serial No. 608,304. (No model.)



Claim.—1. In a current-motor, the combination with the motor-chains, of paddles provided with floats which serve to hold the paddles upright when in the water, substantially as described.

2. In a current-motor, the combination with the motor chain or chains, of the paddles provided with floats having perforations in their tops to discharge the water, substantially as in the manner set forth.

3. In a current-motor, the combination with the motor-chains, of paddles pivoted thereto upon their transverse axes and provided with floats so that the water-current causes the floats of the paddles to point downstream in their initial entrance therein and also as they are withdrawn therefrom, substantially as described.

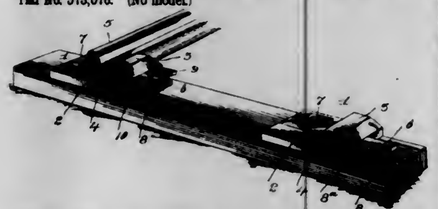
4. In a current-motor, the combination with the motor-chains, of paddles pivoted thereto and having floats connected to the paddles so as to allow the paddles to enter the stream with a half-revolution and be withdrawn with a reverse half-revolution, substantially as described.

5. In a current-motor the combination with the motor-chains of paddles pivoted thereto having air chambers or floats at their upper edges.

6. In a current-motor the combination with the motor-chains of paddles pivoted thereto and floats of overbalancing weight attached to the upper ends of the paddles whereby the paddles are inverted when traveling along the upper ply of the chains.

7. In a current-motor the combination with the motor-chains of paddles pivoted thereto and provided with overbalancing floats perforated through the top to discharge leakage when inverted.

571,064. RAIL-CHAIR. WILLIAM CAMPBELL, Houtzdale, Pa., assignor of one-third to Ferd Todd, same place. Filed Dec. 23, 1895. Serial No. 573,076. (No model.)



Claim.—The combination of a metal cross-tie having a flat upper face, chairs formed integral with the cross-tie and comprising parallel bottom portions 2 located on the upper face of the tie at opposite sides thereof and provided at their inner longitudinal edges with grooves, and a transverse jaw 3 formed integral with the parallel bottom portions 2, located at one end of the chair and having its engaging face beveled to conform to the configuration of the bottom flange of a rail, the adjustable clamps composed of a flat shank arranged on the upper face of the cross-tie between the bottom portions 2 of the chair, extending the entire length of the same and provided with longitudinal flanges interlocked with the grooves of the said bottom portions, said shank being extended beyond the chair at the transverse jaw 3 and provided with a horizontal opening, and the jaw 7 located at the other end of the shank and formed integral with the same, and the horizontally-disposed wedge-shaped keys arranged in the openings of the shanks, located beyond the chairs and abutting against the adjacent ends thereof, substantially as described.

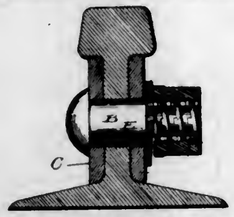
571,065. FAUCET. ALEXANDER CLARKE, Brooklyn, N. Y. Filed Apr. 7, 1896. Serial No. 586,562. (No model.)



Claim.—The combination in a faucet, of a tubular portion having a vertical opening in one side thereof, and constructed at its upper end with a valve-seat formed with a port eccentric to the axis of said tubular portion, a hinged valve closing down on said seat and having a valve-stem bent or curved to one side in a part of its length, and notched vertically at its lower end, a swinging bifurcated lever working through the opening in the side of the tubular portion and supported in lugs projecting from the latter, a movable sliding connection between the lower end of the lever and the notched end of the valve-stem, and a float having a rod connecting with the upper end of said swinging lever, substantially as shown and described.

571,066. NUT-LOCK. OCTAVIUS S. EBERT, Galesburg, Ill. Filed Jan. 24, 1896. Serial No. 576,704. (No model.)

Claim.—1. The combination with a bolt, cylinder or other member having a threaded portion with lugs out of the plane of its threads, of a head cap-nut having broken threads, a spring interposed between the outer end of the bolt and the inner wall of the end of the nut, and a locking device interposed between the inner end of the nut and the fish-plate, substantially as shown and described.



2. The combination with a bolt, cylinder or other member having a threaded portion with lugs out of the plane of its threads, combined with a nut having broken threads, means for yieldingly forcing the nut in the direction of the length of the bolt, and a U shaped wedge for permanently locking the nut, substantially as described.

3. In a nut lock, the combination with a bolt passed through a railway-rail and a fish-plate and threaded a portion of its length, a series of lugs in rows on the same side of the thread of the bolt, and a nut provided with a series of broken threads designed to work on the threads of the bolt and to be locked thereto in the manner described, of a U-shaped washer designed to be interposed between the nut and the fish-plate, substantially as shown and described.

571,067. AXLE-NUT LOCK. OCTAVIUS S. EBERT, Galesburg, Ill. Filed Jan. 24, 1896. Serial No. 576,705. (No model.)



Claim.—1. The combination with a bolt, cylinder or other member having a threaded portion with lugs out of the plane of its threads of a headed cap-nut having broken threads, and a spring interposed between the outer end of the bolt and the inner end of the head of the cap-nut, substantially as and for the purpose specified.

2. In an axle-nut lock, the combination with the spindle having a portion of its length screw-threaded with integral lugs on said threads, a shouldered portion of the spindle hexagonal in outline, a washer having a similarly-shaped aperture adapted to fit upon the said shoulder, an axle-box mounted on the spindle, and a nut having a series of broken-thread portions and a spring carried within the nut and adapted to bear against the end of the spindle, substantially as shown and described.

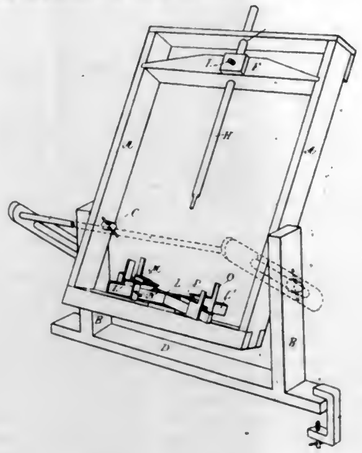
3. In an axle-nut lock, the combination with a spindle, threaded a portion of its length and having offsets or lugs on the same sides of the threads and in rows, a shouldered portion of the spindle, a washer having a hexagonal aperture therein, and a recessed portion adapted to be seated over the edge of the shoulder, an axle-box, a nut having the broken threads as described and the spring interposed between the inner end of the nut and a portion of the spindle, all substantially as shown and described.

571,068. EASEL. THOMAS FILLEBROWN, Boston, Mass. Filed Oct. 23, 1895. Serial No. 566,585. (No model.)

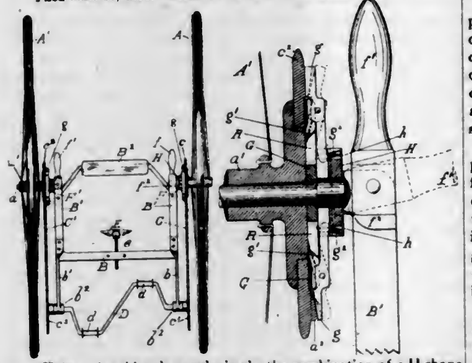
Claim.—1. In a china-decorator's easel, in combination, a base, standards rigidly attached to said base, a swinging rectangular frame mounted between said uprights, a revolving table mounted in said frame said table consisting of radial arms upon which are adapted to slide clamping-jaws with their inner ends cut under and having on their outer ends upright posts, and a hand-rest having two arms adjustably attached to each of the rigid standards and a rod connecting said arms, substantially as and for the purposes set forth.

2. In a china decorator's easel, in combination, a revolving table mounted in a suitable swinging frame said table consisting of radial jaws, suitable clamping-jaws sliding thereon and having their inner faces cut under, upright posts attached to the outer extremities of said sliding clamping-jaws, means for adjusting and holding said clamping-jaws and posts on said radial arms in any desired position, substantially as and for the purposes set forth.

3. In a china-decorator's easel, in combination, a base, vertical standards rigidly attached thereto, a rectangular frame attached to said standards and adapted to swing therein, a revolving table mounted in said rectangular frame, said table consisting of radial arms upon which are adapted to slide suitable clamping-jaws, the inner ends of said jaws being cut under, posts made integral with said cut-under clamping-jaws, a cross-head attached to said swinging rectangular frame, a pressure-rod having a suitable bearing-surface and inserted through the rectangular frame and cross-head, means for holding said presser-rod in position and a hand-rest adjustably attached to said standards, substantially as and for the purposes set forth.



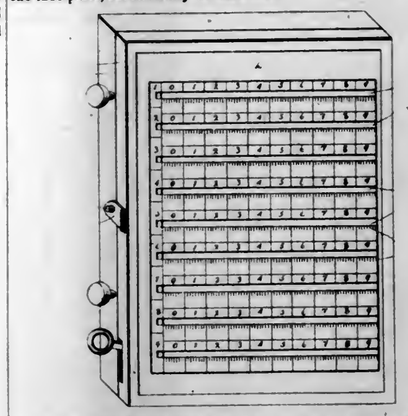
571,069. VELOCIPEDE. ERASMUS HUMBRECHT, Cincinnati, Ohio. Filed June 29, 1896. Serial No. 597,270. (No model.)



Claim.—In a bicycle or velocipede, the combination of a U-shape frame or reach A; a pair of axles *a*, *a*, projecting laterally from the opposite upper ends thereof; a pair of supporting-wheels journaled on said axles above the plane of the cross-bar B of said reach; a seat or receptacle E mounted on said cross bar B in a plane below that of the journals or axes of both said wheels; a pair of bracket-arms *b*, *b'*, projecting downwardly and forwardly from the lower, opposite corners of said reach; a horizontal crank-shaft having foot pedals or spools mounted thereon and journaling in the outer ends of said bracket-arms *b*, *b'*; a pair of drive-chains connecting a pair of rigid sprockets on said crank-shaft with a pair of loose sprockets on the hubs of the supporting-wheels; a back-rest B^3 for the rider; and a suitable clutch mechanism, comprising a pair of handles *f*, *f''*, disks G, R, spring latches or pawls *g*, *g'*, g^3, and notched sliding disks H, *h*; the whole being constructed, arranged, and adapted to be operated for the propulsion and guidance of the machine, substantially as herein set forth.

571,070. TAX-CALCULATING MACHINE. JONATHAN L. KNIGHT, Topeka, Kans., assignor of one-half to the Crane & Company. Filed Mar. 20, 1896. Serial No. 584,134. (No model.)

Claim.—1. In a calculating-machine, the combination with a face-plate provided with suitable inscriptions on its front side, and having a series of transverse slots therethrough, of a casing in which the face-plate is secured, a chart-holder vertically and laterally movable within the casing, a plate or chart having suitable inscriptions on its face and adapted to be held by the said holder in the rear of the face plate, and means by which the chart-holder is moved vertically or laterally, whereby the inscriptions on the chart-plate may have their relative positions changed with reference to the slots in the face-plate, substantially as described.



2. In a calculating-machine, the combination with a face-plate suitably inscribed on its front side, and having a series of transverse slots therethrough, of a casing in which the face-plate is secured, a chart-holder movably mounted within the casing, a chart, one or more transversely-movable slides mounted in the casing, and adapted to receive the chart-holder, means for moving the slides laterally, and means for vertically moving the chart-holder within the slides, whereby the relative position of the chart-holder and the slots in the face-plate may be varied, substantially as described.

3. In a calculating-machine, the combination with a face-plate provided with suitable observation-openings, of a chart-holder located in the rear of the face-plate and adapted to receive an inscribed chart, a casing in which the face-plate is mounted, vertical guides located within the casing for the chart-holder, a lever pivoted to the casing, a link connecting the chart-holder and one end of the lever, and means for laterally moving the said guides, substantially as described.

4. In a calculating-machine, the combination with a face-plate provided with suitable observation-openings, of a casing in which the face-plate is secured, a chart or card holder located in the rear of the observation-openings, one or more guiding-plates movably mounted within the casing, a thumb-screw revoluble in an opening in the casing-wall and having a screw-threaded connection with one end of the guiding-plate, a lever pivoted to the casing, and a link pivotally connected at one end to the chart-holder and at the other end to the inner end of the lever, substantially as described.

5. In a calculating-machine, the combination with a face-plate having suitable observation openings, of a chart-holder located in the rear of the said observation-openings, one or more guiding-plates in which the chart-holder is vertically movable, a spring located between the said guiding-plates and the rear of the chart-holder and adapted to press the holder against the rear of the face-plate, and means for vertically and laterally adjusting the chart-holder with reference to the said openings, substantially as described.

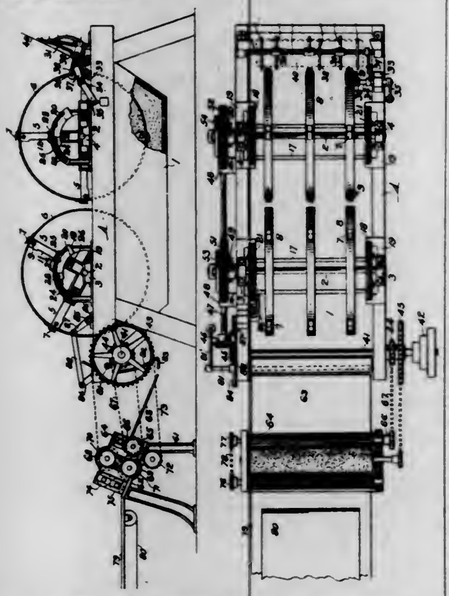
571,071. MACHINE FOR POLISHING TIN AND TERNE PLATES. NATHANIEL D. LEWIS, Joliet, Ill. Filed June 4, 1896. Serial No. 594,260. (No model.)

Claim.—1. In a machine for cleaning tin-plate, the combination with cleaning mechanism, of polishing mechanism, a table leading to the polishing mechanism, a pivoted delivery-rack adapted to receive the tin-plate after it has been cleaned, mechanism for swinging the rack so that it will deliver the tin-plate to the table, and mechanism for reswinging the rack so that it will lift the tin or terne plate and pass it along the table and deliver it to the polishing mechanism.

2. In a machine for cleaning tin-plate, the combination with cleaning mechanism, of polishing mechanism an inclined table leading to the polishing mechanism, a pivoted delivery-rack normally in horizontal position and adapted to receive the tin or terne plate after it has been cleaned, mechanism for swinging the rack so that it will deliver the tin-plate to the inclined table, and mechanism for reswinging the rack so that it will be lifted along the table and delivered to the polishing mechanism.

3. In a machine for cleaning tin-plate, the combination with a rotary drum adapted to hold the tin-plate and clean it, of polishing mechanism, a table, a delivery-rack, adapted to receive the tin-plate

after it has been cleaned, mechanism operated by the drum to move the rack after the tin-plate has been delivered thereon so that the latter will be deposited on the table, and mechanism for removing said rack to lift the tin-plate along the table and deliver it to the polishing mechanism.



4. In a machine for cleaning tin-plate the combination with a rotary drum and gripping mechanism carried thereby for holding the tin or terne plate during the cleaning operation, of a gear-wheel carried loosely on the shaft of the drum, a clamping member having a slotted head and fixed securely on the shaft, a bolt passing through the slot in the clamping member and connected to the gear-wheel, whereby the clamping member and gear-wheel may be adjusted relatively, a second gear meshing with the gear-wheel, and mechanism for driving the gear.

5. In a machine for cleaning tin or terne plate, the combination with a bracket having a cam portion, of a cam member forming a continuation of the cam portion, and adjustable in relation thereto.

6. In a machine for cleaning tin or terne plate, the combination with a bracket having a cam portion and provided with a slot, of a cam member forming a continuation of the cam portion, and a clamping-bolt passing through the slot and secured to the cam member.

7. In a machine for cleaning tin or terne plate, the combination with a bifurcated bracket having a cam portion and provided with slots, of a cam member slidable in the bifurcation between the slots, and bolts passing through the cam member and slots.

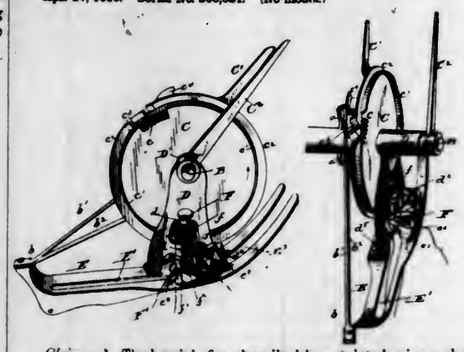
8. In a machine for cleaning tin or terne plate, the combination with a gripping-wheel having a spoke which is provided with a hollow plunger-box, of a plunger working in said plunger-box, a plunger-rod and gripping-bolt connected to the outer end of said rod, and a spring interposed between the gripping bolt and plunger-box.

9. In a machine for cleaning tin or terne plate, the combination with a gripping-wheel having a spoke which is provided with a hollow plunger-box, of a plunger in said box, a plunger-rod and gripping-bolt connected to the outer end of the rod, a spring encircling the rod between the plunger and bolt, a gripping-finger on the wheel, and a cam adapted to engage with the plunger.

10. In a machine for cleaning tin or terne plate, a feeding-rack comprising the combination with a stationary rack or rest adapted to receive the tin or terne, of a pivoted arm adapted for removing the tin or terne from the rest, a pivoted weighted arm adjustably connected to the foregoing arm and rotary gripping-wheel, and a trip connection actuated by the wheel which operates the feeding mechanism.

11. In a machine for cleaning tin or terne plate, a feeding-rack comprising the combination with a stationary rest adapted to receive the tin or terne, of a pivoted arm for removing the tin or terne from the rest, said arm having a slot, a pivoted and weighted arm, a bolt connected to the latter and movable in the slot, a tripping-arm connected to the weighted arm, a gripping-wheel, and means carried thereby adapted for engagement with the tripping-arm.

571,072. GRAIN-BINDER. LEWIS MILLER, Akron, Ohio. Filed Apr. 27, 1886. Serial No. 200,331. (No model.)



Claim.—1. The hereinbefore-described breastplate having a slot E', for the passage of the needle and cord, extending to a point within the circuit of the nose of the knotter, a shoulder e^4 on the front wall of the slot; a guide-finger e^3 projecting from the rear wall athwart the slot and past the shoulder; an enlarged eye or loop e^2 by the side of the finger; a bridge e^1; an opening E^2 to receive the cord-holding mechanism, and a second bridge e^5 to support a branch of the knotter stand or frame D, as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of a breastplate having a slot for the passage of the needle and cord, extending to a point within the circuit of the nose of the knotter; a guide-finger extending athwart said slot; an enlarged eye or loop by the side of said finger; a bridge e^1 at one side of the eye, a guide-bar e^5 above and parallel with the bridge, a knotter adapted to sweep first over the finger with its jaws closed to wind the knot around its bill, and then to open its jaws to traverse the guide-bar, and grasp the strands resting thereon just before they are severed, and mechanism substantially such as described for actuating the knotter.

3. The knotter-stand located on one side only of the plane of the needle constructed substantially as described with a plate-shaped body having feet projecting away from the needle-slot; bearings for a knotter-shaft substantially perpendicular to the breastplate, and bearings for a cord-holder, substantially parallel with the breastplate, but oblique to the plane of the needle, as set forth.

4. The combination, substantially as hereinbefore set forth, of a breastplate having a needle-slot therein; a stand mounted thereon; a cord-holding disk turning in bearings therein, practically parallel with the breastplate, but obliquely inclined relatively to the slot; a trough in which the disk turns; a knife; a rock-shaft with which it vibrates, concentric with the disk; and a stop on the trough to limit the movement of the knife.

5. The combination, substantially as hereinbefore set forth, of the cord-holding disk; the knife; the rock-shaft with which it vibrates, concentrically with the disk; the trough in which the disk turns, and the lug or guard i^3, which removes the cut ends of the cord from the disk.

6. The combination, substantially as hereinbefore set forth, of the driving-cam O; the knife; its shaft inclined obliquely to the face of the cam; the lever L^2, thereon; the wiper c^4, on the cam, which strikes this lever to vibrate the knife, and the knife-retracting spring inclosed in the lever.

571,078. GRAIN-BINDING HARVESTER. LEWIS MILLER, Akron, Ohio. Filed Apr. 30, 1896. Renewed Aug. 18, 1892. Serial No. 443,432. (No model.) Patented in England Dec. 22, 1888, No. 18,739.



Claim.—1. A compressor rock-shaft on one side of the grain-passage, provided with a radially-vibrating trip-arm, acting directly on the pawl of a clutch controlling a driving-pinion gearing directly with a gear wheel on the cam and gear wheel shaft of the binder-

actuating mechanism, on the opposite side of said passage, substantially as hereinbefore set forth.

2. The combination, substantially as hereinbefore set forth, of the binder-gear standard, the cam and gear wheel and knotter-actuating shaft mounted on the upper arm thereof; the driving-pinion gearing therewith, and carrying clutch mechanism; the binder-arm and compressor-shaft on the lower arm of the binder-gear standard; the pitman or driving connections between the binder-arm and compressor and cam and gear wheel, and the stop-arm on the compressor-shaft acting directly on the pawl of the clutch.

3. The combination, substantially as hereinbefore set forth, of the binder-gear standard; the cam and gear wheel mounted in bearings therein; the actuating-pinion meshing therewith; its clutch and pawl-arm; the rock-shaft carried by the lower member of the binder-gear standard; the compressor-arm on the inner end of said shaft, and the rigid, radially-moving locking and tripping arm on the other end of this shaft, acting directly on the pawl-arm.

4. The combination, substantially as hereinbefore set forth, of the binder-gear standard; the knotter-driving mechanism on the upper arm thereof; the compressor-shaft on its lower arm, actuated from the knotter-driving mechanism a driving-pinion gearing with a pinion on the cam and gear wheel shaft; a clutch controlling this mechanism, and a trip-arm on the compressor-shaft acting directly on the pawl of the clutch, normally to hold the driving mechanism out of gear.

5. The combination, substantially as hereinbefore set forth, of the binder-gear standard; the knotter-actuating shaft mounted in bearings therein; the cam and gear wheel carried thereby; the rocking arm actuated by the cam; the spring-arm connecting the rocking arm and crank on the rock-shaft I; the stop or trip arm on said shaft; the driving-clutch; its radial arm, and the driving-pinion, meshing directly with the cam and gear wheel.

6. The combination substantially as hereinbefore set forth, of the binder-gear standard; the knotter-actuating shaft mounted in bearings in the upper member thereof; the discharge-arms on one end of this shaft; the cam and gear wheel on its other end; the compressor; its rock shaft carried by the lower member of the binder-gear standard; the stop or trip arm carried by the rock-shaft; the rocking arms actuated by the cam; the spring-arm connecting them with the rock-shaft; the actuating-pinion, meshing with the cam and gear wheel; its clutch, and pawl-arm.

571,074. SLING-TRIP. HENRY NADLER and BEN C. LE BLANC, Plaquemine, La. Filed Mar. 9, 1896. Serial No. 582,444. (No model.)



Claim.—1. A sling-trip comprising a supporting-bar, a trip-bar arranged in parallel relation with the supporting-bar and having recesses in one of its edges, and sling-carrying hooks or pawls adapted to engage a fixed part of the supporting-bar and the recesses of the trip-bar, and to be released by the trip-bar, substantially as described.

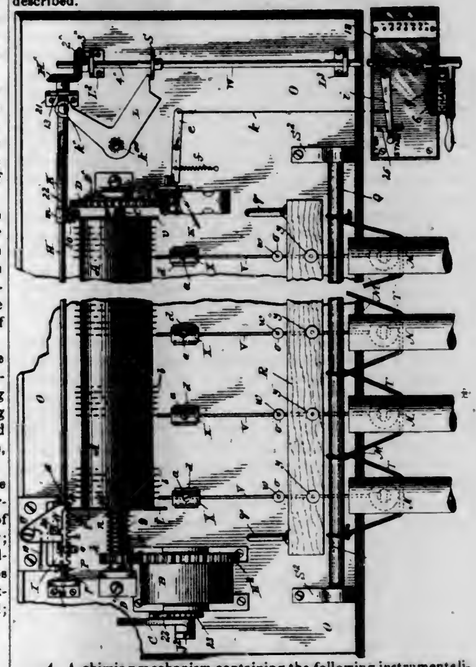
2. A sling-trip comprising a supporting-bar, plates secured thereto, a trip-bar working between the plates, and sling-carrying hooks or pawls adapted to engage a fixed part of the supporting-bar and to be released by the trip-bar, substantially as described.

571,075. CHIMING MECHANISM. ALLAN R. OLNEY, Holyoke, Mass., assignor to Thomas J. Flanagan, same place. Filed Feb. 27, 1896. Serial No. 581,029. (No model.)

Claim.—1. A chiming mechanism containing the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel thereon, provided with a plurality of groups of hammer-operating pins and having a plate and lip; a plurality of hammers, a movable controlling device having rack-teeth and coöperating with said plate and lip, to effect the sliding of the barrel on its shaft intermittingly, and a spring to return the said barrel into its operative position, to operate, as set forth.

2. A chiming mechanism containing the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel thereon, provided with a plurality of groups of hammer-operating pins and having a plate and lip, a plurality of hammers, a movable controlling device coöperating with said plate and lip, to effect the sliding of the barrel on its shaft intermittingly, to operate, as set forth.

3. A chiming mechanism containing the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel mounted thereon, and provided with a plurality of hammer-operating pins, and having a head, a plurality of hammers, and a barrel-sliding device to engage the edge of said head to slide the barrel on its shaft, substantially as described.



4. A chiming mechanism containing the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel mounted thereon, and provided with a plurality of hammer-operating pins, and having a head, a plurality of hammers, a barrel sliding device to engage the edge of said head to slide the barrel on its shaft, and a spring to move the said barrel in the opposite direction, substantially as described.

5. A chiming mechanism containing the following instrumentalities, viz: a rotatable actuating-shaft, a chiming-barrel thereon provided with a plurality of hammer-operating pins, and having at one end a plate, a plurality of hammers, and a pivoted controlling device coöperating with said plate to slide the chime-barrel intermittingly on its actuating-shaft, and a spring to return said barrel, substantially as described.

6. A chiming mechanism including the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel thereon provided with a plurality of hammer-operating pins, and having at one end a plate provided with a lip, a plurality of hammers, a movably-mounted controlling device having a cam-finger and coöperating with said plate and lip to slide the chime-barrel, the said lip by its contact with the said finger elevating the said controller, substantially as described.

7. A chiming mechanism including the following instrumentalities, viz: a rotatable actuating-shaft, a chime-barrel thereon provided with a plurality of hammer-operating pins, and having at one end a plate provided with a lip, a plurality of hammers, a movably-mounted controlling device having a cam-finger and coöperating with said plate and lip to slide the chime-barrel, the said lip by its contact with the said finger elevating the said controller, and a spring to move the barrel in the opposite direction, substantially as described.

8. In a chiming mechanism, a chime-barrel, having at one end a plate, a controlling-device having teeth and spaces to be engaged by said plate, and a pin; combined with a latch having a finger and a shouldered slot coöperating with said pin, to operate, substantially as described.

9. A chime-barrel having a plurality of groups of hammer-operating pins and provided at one end with a plate having its edge extended radially, a shaft on which said chime-barrel is mounted to slide, a movably-mounted controlling device having teeth and spaces to coöperate with said plate, combined with a shaft, means to rock it, and devices between said shaft and controlling device to move the latter and release the controlling device from the said plate, substantially as described.

10. In chiming mechanism, the following instrumentalities, viz: a pivoted barrel-controlling device having a series of teeth thereon, a chime-barrel having one or more groups of hammer-operating pins thereon and having a plate fixed thereto and engaging by its periphery with the teeth of said controlling device, and means for rotating said barrel, and for swinging said controlling device toward and from the periphery of said plate, combined and operating substantially as set forth.

11. In chiming mechanism, the following instrumentalities, viz: a chime-barrel having one or more groups of hammer-operating pins thereon, and having a plate whose periphery projects beyond the plane of the surface of the barrel and has a laterally-extending cam-lip, a pivoted barrel-controlling device having a series of teeth thereon for engagement with the periphery of said plate, a cam-finger adjustably secured on said rack for engagement with said cam-lip, and means for rotating said barrel, and for swinging said controller toward and from said barrel, to operate, substantially as set forth.

12. In chiming mechanism, the following instrumentalities, viz: a pivoted barrel-controller having teeth and provided with a pin; a pivoted latch cooperating therewith and having a lip 10 and a shouldered slot in which said pin is made movable, and a spring to move said latch and cause the said shoulder to engage said pin, combined with the chime-barrel having a plate whose periphery engages said teeth periodically, and also said lip 10, substantially as set forth.

13. In a chiming mechanism, a pivoted barrel-controller having teeth and a pin, a pivoted latch having a lip, and a slot having a shoulder, a spring to move said latch to enable the shoulder to engage said pin, combined with a chime-barrel having a plate whose periphery engages said teeth and periodically said lip, a shaft, and devices between it and the said controller to lift the latter, whereby at desired times the controller may be lifted and cause the pin thereon to engage the shoulder of the latch and hold the controller in its inoperative position, substantially as set forth.

14. The barrel-controller, the shaft having an arm thereon to engage said controller, and means for rocking said shaft whereby said controller may be lifted when desired, combined and operating substantially as described.

15. The barrel-controller, a shaft having an arm thereon to engage said controller, a vertical rod, gearing between said rod and shaft, and an operating-handle for said rod whereby the latter may be rotated, substantially as set forth.

16. In chiming apparatus, a chime-barrel having one or more groups of hammer-operating pins thereon, and a plate whose periphery projects beyond the plane of the surface thereof, and a head, a shaft for said barrel on which the same has a longitudinal movement, a spring for sliding said barrel in one direction, a pivoted barrel-controller having a series of teeth thereon for engagement with the periphery of said plate, and a pin 24, a pivoted latch cooperating with said controller, said latch having a lip thereon for engagement with the side of said plate, and a spring for swinging said latch, combined with means for rotating said barrel, and for lifting said rack and latch, and for engaging said head to slide said barrel on said shaft against the action of said spring, whereby the periphery of said plate is brought to different positions under the tooth-bearing border of said rack member, substantially as set forth.

17. In a chiming mechanism, the following instrumentalities, viz: a chime-barrel, provided with pins and having a plate and a head, a barrel-controller engaged by said plate, a rock-shaft cooperating with said controller to move the latter, a sleeve sliding on said rock-shaft and engaging the head of said barrel, a rocking and endwise-moving rod having a pinion engaging a pinion on said shaft, an elbow-lever L, engaging said sleeve, and a handle for operating said rod, substantially as described.

18. The rocking and sliding rod W, a handle fixed to said rod, and a locking device to hold said handle, a flange, a rock-shaft, bevel-gears between said shaft and rod, a sleeve on said shaft, combined with an elbow-lever L, engaging by one arm said sleeve, and by its other arm said flange, substantially as set forth.

19. In a chiming mechanism, the following instrumentalities, viz: a rotatable chime-barrel having a plurality of groups of hammer-operating pins, a barrel-controller adapted to be engaged by a plate connected with said barrel to move the latter longitudinally in one direction, a plurality of bells, a plurality of hammers operated by said pins, means to effect the automatic disengagement of said controller from the plate of said barrel, and a spring to return the barrel to its starting point, substantially as set forth.

20. In a chiming mechanism, a hammer, and shank to carry the hammer, a clip and a holder pivoted thereon and in which the hammer-shank is adjustably secured, substantially as described.

21. In a chiming mechanism, a hammer, a hammer-shank, a hammer-holder in which the said shank is adjustably mounted, a clip on which the hammer-holder is pivoted, a bell, and a spring connected at one end to said hammer-shank, and adjusting devices connected to the opposite end of said spring to regulate the blow of the hammer, substantially as described.

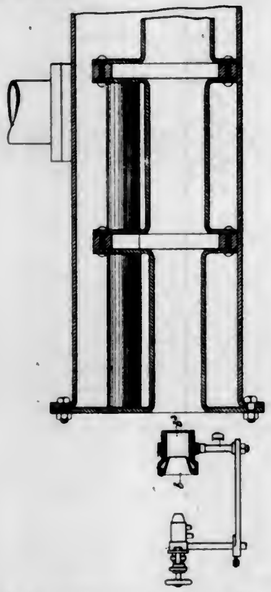
22. In a chiming mechanism, a hammer, a hammer-shank, a hammer-holder in which the said shank is adjustably mounted, a clip on which the hammer-holder is pivoted, a bell, and a spring connected at one end to said hammer-shank, adjusting devices connected to the opposite end of said spring to regulate the blow of the hammer, and an adjustable damper against which the hammer-shank swings, substantially as described.

23. A chiming mechanism containing the following instrumentalities, viz: a rotating shaft, a chime-barrel splined thereon having a plate and lip, devices controlled by the hand of the operator to slide the barrel on the said shaft in one direction, and a barrel-controller having teeth and cooperating with the said plate and lip to automatically slide the barrel intermittingly on the said shaft, substantially as described.

24. A chiming mechanism containing the following instrumentalities, viz: a rotating shaft, a chime-barrel splined thereon, a device to engage a head of the barrel, a lever connected therewith, and a slide-rod having a flange, combined with a locking device to retain the said rod in any one of several positions in which it may be placed to thereby insure the repetition of any tune during the rotation of the barrel, substantially as described.

25. A chiming mechanism containing the following instrumentalities, viz: a chime-barrel, a barrel-controller to automatically slide the barrel intermittingly on its operating-shaft, means to lift said controller, a spring to move the barrel in a direction opposite that in which it is moved by the controller, a device connected with and moved by the head of the barrel, a flange or plate changeable in its positions to arrest the said device connected with the head of the barrel in one or another position according to the number of tunes which it is desired to repeat from the whole number of tunes represented by the barrel, substantially as described.

571,076. AUTOMATIC REIGNITION APPARATUS FOR HYDROCARBON-FURNACES. ADOLPHE SEIGLE, Paris, France, assignor to Compagnie Internationale des Procédés Adolphe Seigle, same place. Filed May 9, 1896. Serial No. 590,829. (No model.) Patented in England Mar. 10, 1896, No. 5,409.



Claim.—1. In combination with a sprayer and combustion flues, of a hydrocarbon-furnace, a hollow double-walled tube or duct arranged in alinement with the sprayer and flues, a funnel shaped hood adapted to inject air and flame into the interior of the duct, and a layer of heat-non-conducting material located between the double walls of the duct to confine the heat of the flame from the sprayer to the interior wall of said duct, substantially as and for the purposes described.

2. In an apparatus of the character described, a double-walled hollow cylinder or duct, a layer of heat non-conducting material located between the walls of the duct, and an air-injector located at one end of the duct, in combination with a sprayer located in alinement with the duct in front of the injector and adapted to highly heat the interior of the duct prior to the passage of its flame to the combustion-flues, substantially as and for the purposes described.

571,077. MEANS AND CONSTRUCTION FOR INSERTING FITTINGS UNDER PRESSURE. FRANK SHERIDAN, Covington, Ky., assignor of one-half to William R. Yager, same place. Filed June 6, 1896. Serial No. 594,504. (No model.)



Claim.—1. In a stop-fitting adapted to be applied under pressure and detachably connected to the pipe by unions and couplings, a stop 16 adapted to be passed through the passage-way of the stop-fitting after the same is rendered accessible by disconnection from the pipe at one side and capable of closing the open end of the pipe or coupling at the other side and a cap to close the disconnected end of the stop-fitting.

2. An implement for connecting stop-fittings to pipes while charged and where such fittings are detachably connected to the pipe by couplings or otherwise, such implement consisting of a stop 16 carried by a shank 18 and a cap 17 both adapted to be temporarily connected, the first for the purpose of closing the open end of the pipe, the other to close the open end of the stop-fitting and all to be applied in the manner described.

3. In a construction to insert fittings in pipes while charged, the combination of a cock or similar stop-fitting detachably connected to its pipe by couplings 9 and unions 11, the inner ends of the couplings being screw-threaded, a stop 16 threaded to fit the threaded end of the couplings and adapted to be passed through the passage-way controlled by the stop-fitting after the same is disconnected at one side and thus opened for access, a cap 17 to temporarily close the open end of the stop fitting and a shank on stop 16 and passing through cap 17 to manipulate it.

4. An implement for inserting stop-fittings into pipes while charged and where such fittings are detachably connected to the pipe by couplings or otherwise, such implement consisting of a stop 16 carried by a shank 18 and screw-threaded to fit the correspondingly-threaded end of one of the permanently-connected couplings for the purpose of closing thereby the open pipe, and a cap 17 fitted to close the open end of the stop-fitting while stop 16 is being inserted to close the open end of the pipe and a shank passing through cap 17 to manipulate stop 16.

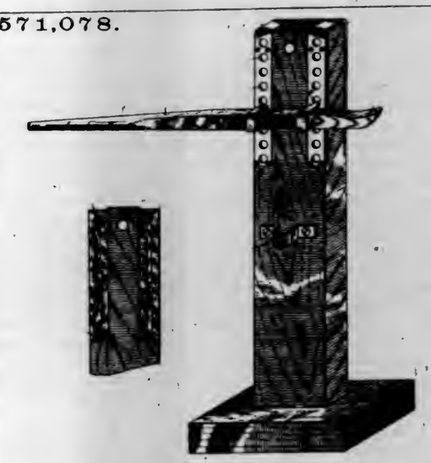
5. An implement for inserting stop-fittings into pipes while charged and where such fittings are detachably connected to the pipe by couplings or otherwise, such implement consisting of a stop 16 carried by a shank 18, a cap 17, having projections 25, fitted to close the open end of the stop-fitting while stop 16 is introduced, a shank 18 on stop 16 passing through cap 17, a brace 24 adapted to be temporarily connected to projections 25 on cap 17 and a screw-shank 26 supported in the end of brace 24 and adapted for connection to shank 18 for the purpose of manipulating stop 16.

571,078. WAGON-JACK. JOSEPH J. ADGATE, Liberty, N. Y. Filed June 25, 1896. Serial No. 596,854. (No model.)

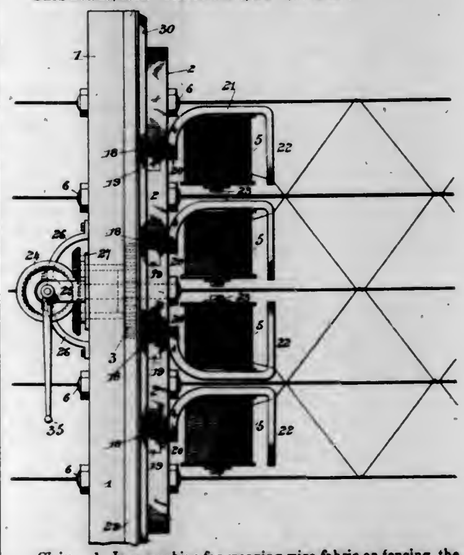
Claim.—1. The combination of an upright wooden standard, metallic straps along opposite edges of the same side thereof, there being a series of holes in each of said straps, and recesses in the standard beneath said holes, a wooden lever, two interchangeable collars each provided with a hook thereupon, said collars being placed upon the lever with the hooks upon the same side thereof and relatively reversed, the forward hook near the upper edge of the lever, and the rear hook near the lower edge thereof, said hooks being adapted to engage in the opposite series of holes by lateral movement substantially as described.

2. The combination of an upright wooden standard, provided with vertical rabbets along opposite edges of both of its sides, there being vertical grooves in said rabbets formed of separate round holes joined by narrower channels, metallic straps straddling the top of said standard and fitting in said rabbets, each of said straps having a series of round holes corresponding with the round holes in the grooves beneath, a wooden lever, and two interchangeable collars, each having a hook of less width than the collars, said collars being placed upon the lever with the hooks relatively reversed upon the same side thereof, and adapted to engage in the opposite series of holes, substantially as specified.

571,078.



571,079. WIRE-FABRIC MACHINE. WILLIAM C. AVERY, Springfield, Mo., assignor of one-third to William A. Cox, same place. Filed Dec. 23, 1895. Serial No. 573,096. (No model.)



Claim.—1. In a machine for weaving wire fabric or fencing, the combination with a series of twister-disks having segmental notches at diametrically opposite points, and actuating mechanism for operating the alternate and intermediate twister-disks alternately, of spool-carriers arranged between the twister disks and having segmental butt-pieces to fit within the segmental notches of adjacent twister-disks and interlock with the latter when the machine is in alinement, substantially as set forth for the purpose described.

2. In a machine for weaving wire fabric or fencing, the combination of a series of twister-disks, each having segmental notches disposed at diametrically opposite points, and having grooves extending parallel with the segmental notches, actuating mechanism for alternately operating the intermediate and alternate twister-disks, and spool-carriers having segmental butt-pieces to enter the segmental notches of adjacent twister-disks and capable of rotating with either, and having the peripheral edge portions of the said butt pieces interlocking with the grooves extending parallel with the segmental notches of the twister-disks, substantially as set forth for the purpose described.

3. In combination, a series of twister-disks, spool-carriers operated thereby, a train of gearing, ratchets carried by the individual gear wheels of the train of gearing for driving the intermediate and alternate twister-disks at different periods, and detents disposed to engage with the alternate twister-disks and hold them stationary

during the active period of the intermediate twister-disks, and vice versa, substantially as set forth.

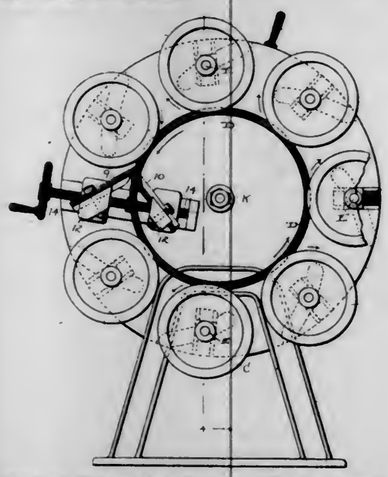
4. In a machine for weaving wire fabric or fencing, the combination with a series of twister-disks, and actuating mechanism therefor, each twister-disk comprising plates disposed in different planes and in parallel relation, and having an intermediate connecting portion, the plates having segmental notches at diametrically opposite points, of spool-carriers comprising segmental butt-pieces disposed in different relative planes and corresponding with and filling the segmental notches in the inner plates of the twister-disks, and neck portions of corresponding shape to and filling the segmental notches in the outer plates, substantially as set forth for the purpose described.

5. A machine of the character and for the purpose set forth, comprising a frame, a series of twister-disks journaled at intervals in the length of the frame, each having segmental notches at diametrically opposite points, a train of gearing, driving ratchets and detents disposed to operate at the same period upon the alternate and the intermediate twister-disks, whereby when the alternate twister-disks are in active operation the intermediate twister-disks are stationary, and vice versa, and spool-carriers having segmental butt-pieces to enter the segmental notches of adjacent twister-disks when the machine is in alinement, and capable of two possible centers of rotation, substantially in the manner set forth for the purpose described.

6. In a machine for weaving wire fabric or fencing, the combination of a series of spool-carriers, and a series of intermediate twister-disks, the parts being in alinement and disposed to form a fabric or fencing of regular or irregular mesh, each twister-disk having segmental notches 15 and 16 and grooves 17 parallel therewith, the radial point of all of the notches and grooves on any side of either twister disk being the center of rotation of the adjacent twister-disk on that side when in alinement, the notches 15 and 16 and the grooves 17 of the stationary twister-disks acting as guides to the adjacent rotating parts and combining and interlocking with the adjacent parts when actuated or rotated, substantially as set forth.

7. In a machine for weaving wire fabric or fencing, the combination of a series of twister-disks arranged in a straight line, each having segmental notches and corresponding grooves in its opposite sides, spool-carriers arranged between the twister-disks and having butt-pieces to enter and fill the segmental notches in the sides of adjacent twister-disks when the spool carriers and said notches are in alinement, and mechanism for rotating each alternate twister-disk simultaneously to operate the spool carriers, the intermediate twister-disks forming guides for the rotating elements, substantially in the manner set forth for the purpose described.

571,080. MACHINE FOR MAKING RIMS FOR PNEUMATIC WHEELS. JAMES BARWELL, Cleveland, Ohio, assignor of two-thirds to George Caunter and Frank R. Wall, same place. Filed May 4, 1896. Serial No. 590,161. (No model.)



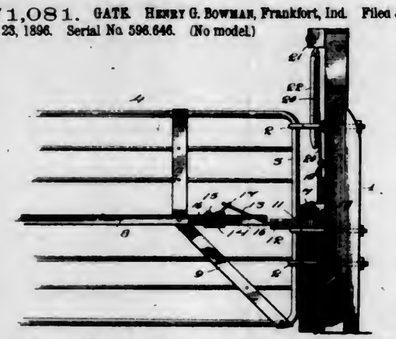
Claim.—1. The main frame having fixed disks with slots in their edges, and the two rotating disks having inclined slots in their edges, in combination with shafts and bearings for said shafts constructed to pass through the slots of both sets of disks, rim-engaging wheels on one end of said shafts and power-transmitting wheels on the other ends thereof and a pair of adjustable cutters arranged to engage the rim operated upon, substantially as described.

2. The frame having a set of fixed disks with corresponding radial slots in their edges, and a series of shafts and bearings for said shafts constructed to slide in said slots, in combination with a shaft fixed centrally in said disks, and a set of rotatable disks on said shaft having each diagonal slots engaging said bearings and provided with means to rotate the said disks, and wheels on the ends of said series of shafts outside said disks, substantially as described.

3. The means described for adjusting the rim-carrying wheels consisting of the stationary disks having radial slots in their periphery, the rotatable disks having slots crossing said radial slots at an angle thereto, the shafts and bearings for the shafts engaged in both sets of said slots and rim-engaging wheels on one end of said shafts and power-transmitting wheels on the other ends thereof, substantially as described.

4. The two sets of disks having slots in a circle at an angle to each other and shafts supported in said slots, in combination with a series of circularly-arranged channeled supporting and rotating wheels on the corresponding ends of said shafts and a set of turning-blades adjustably arranged on the inner circle between said wheels, whereby wooden rims for wheels are rotated and turned to shape, substantially as described.

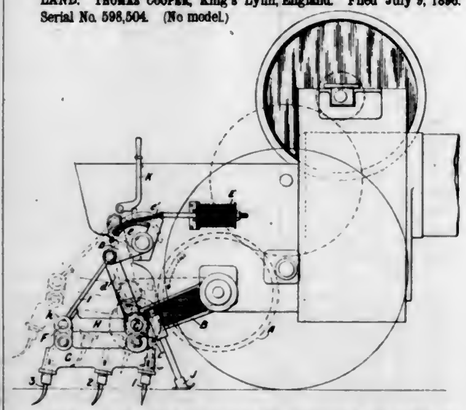
571,081. GATE. HENRY G. BOWMAN, Frankfort, Ind. Filed June 23, 1896. Serial No. 596,646. (No model.)



Claim.—1. The combination with a swinging gate, of a latch pivoted at an intermediate point, a rocker mounted coaxially with the gate and below the plane of the pivotal point of the latch and having lateral arms connected respectively with the latch in rear of its pivotal point, whereby swinging movement of the rocker will communicate downward pressure to the rear end of the latch, and means for operating the rocker, substantially as specified.

2. The combination with a swinging gate, of a latch pivoted at an intermediate point, a rocker mounted coaxially with the gate and provided with lateral arms, a slide adjustably mounted upon the latch in rear of its pivotal point, links respectively connecting the arms of the rocker with said slide, and means for operating the rocker, substantially as specified.

571,082. MACHINERY FOR CULTIVATING AND CLEARING LAND. THOMAS COOPER, King's Lynn, England. Filed July 9, 1896. Serial No. 598,504. (No model.)



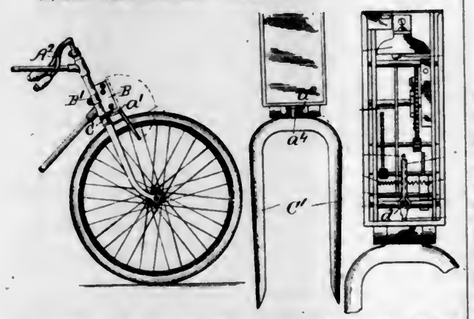
Claim.—1. In a digging-machine for cultivating and tilling the soil wherein the digging mechanism is elastically suspended, the combination with said digging mechanism of driving-gear substantially as herein described which by its own action tends to depress the said mechanism and hold the diggers in position to operate on the ground, as herein set forth.

2. The means hereinbefore described for maintaining the diggers at an even working depth, consisting of an elastic suspension device for the digger mechanism, driving-gear which, when in action, depresses the diggers into contact with the ground, and a stop or stops bearing on the ground-surface, to control the working position of the diggers, as set forth.

3. The elastically-suspended digging mechanism hereinbefore described, wherein are arranged parallel crank-shafts, operated in unison, and carrying rows of digging-forks of different forms adapted to break up the soil and to clean the weeds from the loosened ground, in a single operation, as set forth.

4. In digging-machines having rows of forks mounted one behind the other, the described arrangement wherein the first row of forks is made suitable for breaking up the ground, while the succeeding forks are more or less bent or curved, so as to rake or comb the loosened soil, and bring the weeds to the surface, as set forth.

571,083. ALARM-LOCK FOR BICYCLES. JOHN P. DANIELS, Chicago, Ill., assignor to Flora Belle Meek, Davenport, Iowa. Filed Aug. 14, 1895. Serial No. 559,213. (No model.)



Claim.—1. The combination with a bicycle-frame, of a case, secured thereto, the clockwork-movement, inclosed thereby, a chambered cap, pivotally attached to said case, a fork member, having both a hinged and pivotal connection with reference to said cap, and means for retaining said fork in a locked engagement, substantially as described.

2. The combination with a bicycle-frame, of a case, secured thereto, a chambered cap, pivotally secured to said case, a fork member, hinged to said cap, a locking-bolt, adapted to engage with a groove in the hinge-knuckle and lock said fork in engagement with a bicycle-wheel, and means for retracting said bolt, substantially as described.

3. The combination with a case, secured to a bicycle-frame and provided with a curved slot, a chambered cap, pivoted to said case, a locking-bolt, a spring for retaining said bolt in its normal position, a post, projecting through said curved slot, a rotatable disk, loosely mounted on the pivot-bolt of the chambered cap and provided with a notch with which said post loosely engages, and the series of pins, fixed in said disk for the engagement of the unlocking-key, substantially as described.

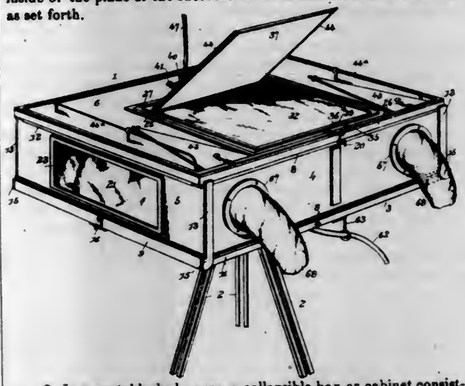
4. The combination with a bicycle-frame, of a case, secured thereto, a chambered cap, pivoted to said case, a fork member, having both a hinged and pivotal connection with said cap, a locking-bolt, seated in said cap and provided with a toothed segment, the alarm mechanism, located in said case, and means for connecting said toothed segment with the alarm mechanism, substantially as described.

571,084. COMPOSITION OF MATTER FOR MANUFACTURING CALCIUM CARBID. HILLIARY ELDRIDGE, DANIEL J. CLARK, and MARION W. WAMBAUGH, Galveston, Tex. Filed Apr. 30, 1896. Serial No. 589,758. (No specimens.)

Claim.—A compound for the manufacture of calcium sodic carbid composed of quicklime, carbon, soda, and borax, substantially as described.

571,085. PORTABLE PHOTOGRAPHIC DARK ROOM. WALTER T. FERGUSON, Bickley Mills, Va. Filed Dec. 27, 1895. Serial No. 573,430. (No model.)

Claim.—1. In a portable dark room, a collapsible box or cabinet consisting of a flat bottom board, inwardly-folding side boards hinged to opposite side edges of the bottom board, inwardly-folding end boards hinged to the opposite end edges of the bottom boards and provided on their opposite end edges with corner-cleats having at one end short laterally-extending feet, and a removable top board provided in its under side with a peripheral annular groove to receive the projecting top edges of the side and end boards, said top board being also adapted to rest on the side and end boards, when folded inside of the plane of the short feet of the corner-cleats, substantially as set forth.



2. In a portable dark room, a collapsible box or cabinet consisting of a flat bottom board provided at its opposite side and end edges with joint-strips and at its opposite ends with end cleats, inwardly-folding side boards hinged to the opposite side edges of the bottom board and provided on their outer sides with flanged strips the lower of which are adapted to bear on said joint-strips, inwardly-folding end boards hinged to said opposite end cleats of the bottom board and provided on their outer sides with flange-strips the lower of which bear against said joint-strips, and at their opposite end edges with corner-cleats adapted to overlap the ends of the side boards when in their upright positions, said corner-cleats being provided at one end with short laterally-extending feet, and a removable top board provided on its under side with a peripheral annular groove adapted to receive the projecting top edges of the side and end boards, said top board being also adapted to rest on the side and end boards, when folded, inside of the plane of the short feet of the corner-cleats, said box or cabinet being provided with handles at one edge of its top and bottom boards, suitably-arranged light-openings, and a pair of light-protected armboles, substantially as set forth.

3. In a portable dark room, a collapsible box or cabinet consisting of a bottom board, oppositely inwardly-folding side and end boards, and a removable top board, one of said side boards having a pair of light-protected armholes, and said end boards being provided therein with light-openings having in their top edges slide-openings, and colored-glass panes slidably fitted in said light-openings and adapted to be moved in either direction through the slide-openings in the top edges of said end boards said slide-openings being covered by the top board when the box or cabinet is set up, substantially as set forth.

4. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armholes and in the top with a window-opening, a window-frame working over said opening and hinged at one side of the same, said window frame having a glass covered light-opening, a shade-door hinged at one edge to one side of the window-frame and working over said light-opening, and a suitable support for holding the shade-door in an elevated position when the window-frame is lowered, substantially as set forth.

5. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armboles and in the top with a flanged window-opening, a window-frame working over said window-opening and hinged at one side of the same, said window-frame being provided with a light-opening and in its unhinged edge with a slide-opening communicating with said light-opening, a colored glass pane removably fitted in said light-opening, a flanged plug-strip removably fitted in said slide-opening, and an adjustable shade-door hinged to said window-frame, substantially as set forth.

6. In a portable dark room, a box or cabinet provided in one side with a pair of light-protected armboles and in the top with a flanged window-opening, a window-frame working over said opening and hinged at one side of the same, said window-frame having a glass-covered light-opening, a shade-door working over and within said light-opening and hinged at one edge to one side of the window-frame, a suitable support for holding the shade-door in an elevated position, and triangular side shades adapted to be removably fitted under the opposite ends of the shade-door at opposite ends of the light-opening of said window-frame, substantially as set forth.

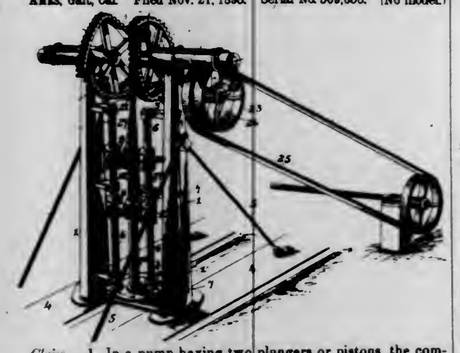
7. In a portable dark room, the combination of the box or cabi-

net having suitable armholes and light-openings, a swinging frame hinged at its upper end to the under side of the top board of the box or cabinet and provided with a lower perforated bar, a water tube fitted in the top board of the box or cabinet and having its lower end extended through the perforation in the lower bar of said frame, and a suitable overflow-pipe connection with the bottom of said box or cabinet, substantially as set forth.

8. In a portable dark room, a collapsible box or cabinet provided in its bottom with an opening, a bath-box hinged to the bottom of the box or cabinet below the opening therein, and fastening means for securing the bath-box against the bottom of the box or cabinet and in an upright position directly below said opening, substantially as set forth.

9. In a portable dark room, a collapsible box or cabinet provided with suitably-arranged light-openings and a flanged opening in its bottom, a flanged drip-collecting tray fitted in the bottom of the box or cabinet and of an area equaling the same, a bath-box hinged at one edge to the bottom of the box or cabinet below said flanged opening, a cover adapted to removably register in said flanged opening, and fastening means for securing the bath-box against the bottom of the box or cabinet, and also in an upright position directly below said flanged opening, substantially as set forth.

571,086. PUMP-POWER. SAMUEL M. FULTON and ALDEN T. AMES, Galt, Cal. Filed Nov. 21, 1895. Serial No. 569,658. (No model.)

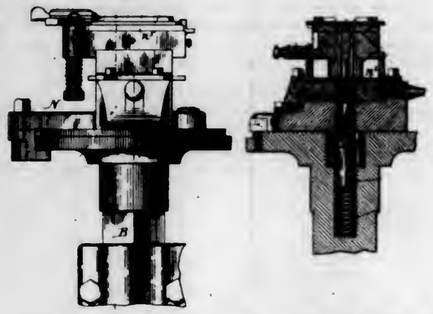


Claim.—1. In a pump having two plungers or pistons, the combination of actuating mechanism for alternately operating the plungers, the same consisting of two drive-gears, each operatively connected with a plunger and comprising a circular toothed portion of less length than half the perimetal distance and a cam toothed portion, the driving-gears being disposed so that the circular and cam portions will be disposed approximately in inverse order, and driving-pinions of different diameter, the smaller pinion being concentrically mounted upon its shaft and adapted to mesh with the circular toothed portion of the drive-gear, and the larger pinion being eccentrically mounted and arranged to mesh with the cam portion of the drive-gear, whereby in the operation of the pump the lower plunger will begin its ascent prior to the completion of the upward stroke of the upper plunger, substantially as set forth for the purpose described.

2. In a pump having two plungers or pistons, the combination of actuating mechanism for alternately operating the plungers, the same consisting of independent drive-gears, each operatively connected with its respective plunger and comprising a circular toothed portion and a cam toothed portion arranged in different relative planes, the corresponding parts of the drive-gears being disposed approximately in inverse order, and driving-pinions secured upon a counter-shaft and of different diameters, the smaller pinions being concentrically mounted and adapted to mesh with the circular portions of the drive-gears and the larger pinions being eccentrically disposed and adapted to engage with the cam portions of the said drive-gears, the parts being proportioned and disposed so that in the operation of the pump the lower piston or plunger will take the load prior to the completion of the upward stroke of the upper plunger, substantially as set forth for the purpose specified.

3. The herein shown and described pump-power, comprising a tubular plunger-rod, a second plunger-rod operating through the tubular plunger-rod, cross heads mounted upon guide-rods and having the plunger-rods connected therewith, the upper cross-head having an offset portion, independent drive-gears each comprising a circular and a cam toothed portion and provided with a wrist-pin, the different toothed parts of the drive-gears being in different relative planes, and the drive-gears being arranged so that the corresponding parts will be disposed approximately in inverse order, pitmen connecting the wrist-pins of the drive-gears with the cross-heads, a counter-shaft, and driving-pinions mounted upon the counter-shaft and of different diameter, the smaller pinions being concentrically mounted and adapted to mesh with the circular portions of the drive-gears, and the larger pinions being eccentrically disposed and adapted to engage with the cam portions of the drive gears, whereby in the operation of the pump one plunger will take the load prior to the completion of the stroke of the other plunger, substantially as set forth for the purpose described.

571,087. HEEL-NAILING MACHINE. JOHN E. GLIDDEN, (administrator of Charles W. Glidden, deceased,) Lawrence, Mass., assignor to James W. Brooks, Petersham, principal trustee, and John Brooks, Cambridge, Mass., associate trustee. Filed Feb. 10, 1896. Serial No. 578,658. (No model.)



Claim.—1. In a heeling-machine, the combination with a nail-supporting head, of a nail-box pivotally mounted eccentrically upon the said head, substantially as described.

2. In a heeling-machine, the combination with a supporting-head, of a carrier pivotally mounted thereupon for bodily lateral movement relative thereto, and a nail-box mounted upon and movable with the said carrier, substantially as described.

3. In a heeling-machine, the combination with a supporting-head, of a carrier pivotally mounted thereupon, and a vertically-movable nail-box on and adapted to swing with the said carrier, substantially as described.

4. In a heeling-machine, the combination with a supporting-head, of a nail-box pivotally mounted thereupon eccentrically to said head, and means to limit the swinging movement of the said nail-box, substantially as described.

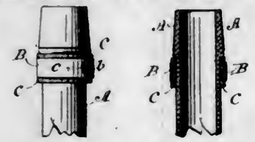
5. In a heeling-machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, and guides for the said nail-box acting upon the outer surfaces of the latter, substantially as described.

6. In a heeling-machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, guides for the said nail-box acting upon the outer surfaces of the latter, and means acting directly upon the nail-box to limit the vertical movement thereof, substantially as described.

7. In a heeling machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, guides for the said nail-box acting upon the outer surfaces of the latter, and a stop on one of the said guides to limit the vertical movement of the nail-box, substantially as described.

8. In a heeling-machine, the combination with a supporting-head, a swinging carrier thereon, of a nail-box vertically movable on the said carriage, guides for the said nail-box acting upon the outer surfaces of the latter, and a spring-controlled stop on one of the said guides to limit the vertical movement of the nail-box, substantially as described.

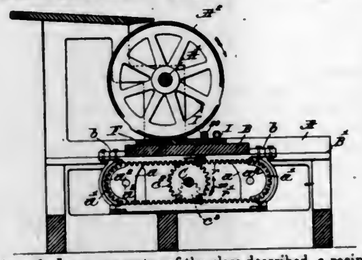
571,088. BOTTLE-COLLAR. MARK K. HAMILTON, New York, N. Y. Filed Apr. 29, 1896. Serial No. 589,529. (No model.)



Claim.—1. The combination of the bottle A, flexible band B, padding C, teeth *a*, tongue *b*, and slot *c*, substantially as shown and described and for the purposes above set forth.

2. A new article of manufacture, a device designed to take up and absorb drip from the neck of a bottle or other receptacle, consisting of a flexible band padded preferably with wood-wool, the padding being held in place by means of teeth cut into both edges of the band and bent over on the padding and provided with a slot at one end and at the other end with a tongue intended to enter and be clenched into said slot when attached to the neck of a bottle or other receptacle, substantially as shown and described.

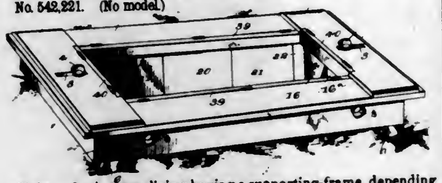
571,089. PRINTING-PRESS. BERTHOLD HUBER, Taunton, Mass., assignor to the Huber Printing Press Company, same place. Filed Apr. 28, 1896. Serial No. 589,417. (No model.)



Claim.—1. In an apparatus of the class described, a reciprocating frame, racks movable therewith and each having two series of teeth, a rack-pinion having two series of teeth, means to effect a relative movement of said racks and pinion in the direction of the axis of the latter, to thereby cause engagement of the pinion and one of the racks, one of the racks having one of its series of teeth opposite the space between the series of teeth of the other rack, substantially as described.

2. In an apparatus of the class described, a reciprocating frame, racks movable therewith and each having two series of teeth, a rack-pinion having two series of teeth, means to effect a relative movement of said racks and pinion in the direction of the axis of the latter, to thereby cause engagement of the pinion and one of the racks, one of the racks having one of its series of teeth opposite the space between the series of teeth of the other rack, and means for completing, stopping, and reversing the motion of the frame, substantially as described.

571,090. GRAVE-LINING. JOHN A. KNARR, Punxsutawney, Pa., assignor to Henrietta Knarr, same place. Filed Mar. 18, 1895. Serial No. 542,221. (No model.)



Claim.—1. A grave lining having a supporting-frame, depending side and end walls comprising inflexible sections detachably connected to the frame, and means for detachably connecting the wall-sections at their contiguous edges, substantially as specified.

2. A grave-lining having a horizontal frame, and a series of depending detachably-connected inflexible sections combining to form side and end walls, in combination with a box to cover the bottom of the grave and fitted between the lower extremities of the sections to hold the latter in place, substantially as specified.

3. An adjustable grave-lining having inflexible side sections mounted for inward and outward adjustment, inflexible end sections mounted between the planes of the side sections for inward and outward adjustment, the end sections being constructed for expansion and contraction in width, whereby the space inclosed by the walls may be varied in length and width, and means for securing said parts at the desired adjustment, substantially as specified.

4. A grave-lining having a rectangular frame, lining-sections depending from the inner edge of the frame, an apron depending from the outer edge of the frame, adjustable supports or rests arranged respectively at the corners of the frame between the planes of said lining-sections and apron, and independent means for securing the supports or rests at the desired adjustment, substantially as specified.

5. The combination with a frame, and lining-sections depending from the inner edge thereof, of an apron depending from the outer edge of the frame, segmental slotted supports or rests 6 arranged between the planes of the lining-sections and apron and projecting at their lower extremities under the lower edge of the apron, and locking-bolts engaging the slots in the supports or rests to secure the latter at the desired adjustment, whereby the apron bears upon the supports or rests at intermediate points to hold the frame at the desired elevation, substantially as specified.

6. In a grave-lining, a frame adapted to be arranged around the mouth of the grave and provided with spaced pins or studs, side and end lining-sections provided at their upper ends with openings to engage said pins or studs, and means for securing the lining-sections from disengagement, substantially as specified.

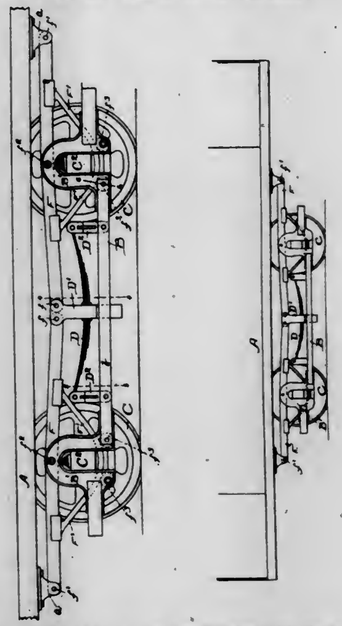
7. The combination of a frame adapted to be arranged around the mouth of the grave, and provided with depending strips, inwardly-extending pins or studs carried by said strips, side and end lining-sections provided at their upper ends with openings to engage the pins or studs, and hinged leaves on the frame adapted to fold over and conceal the upper ends of the lining-sections and hold the same in engagement with the pins or studs, substantially as specified.

8. The combination of a horizontal frame having movable end bars, means for securing the end bars at the desired adjustment, inflexible side and end lining-walls each comprising relatively adjustable sections, and means for detachably securing said lining-sections to the frame, substantially as specified.

9. The combination of a frame, end lining-sections comprising relatively adjustable members, means for securing said members at the desired adjustment, central and auxiliary side lining-sections, tie-rods engaged at their outer ends with the end lining-sections and connected at intermediate points with the auxiliary side sections, means for securing said rods at the desired adjustment to the central side sections, and connections between said side and end lining-sections and the frame, substantially as specified.

10. The combination of a frame, end lining-sections supported by the frame, central and auxiliary side lining-sections supported by the frame, tie-rods provided at their outer ends with hooks engaging eyes on the end lining-sections, keepers on the central and auxiliary side lining-sections for engagement with said tie-rods, and means carried by the central side lining-sections for securing the tie-rods at the desired adjustment, substantially as specified.

571,091. STREET-CAR TRUCK. THOMAS H. LOVEJOY, Chicago, Ill. Filed Mar. 20, 1896. Serial No. 584,189. (No model.)



Claim.—1. In a street-car, the combination with the car-body, truck and spring, of a pair of equalizers or pivoted levers connecting the car-body, spring and truck-frame, said spring being between the said equalizers or levers and said truck-frame, and opposing hangers bearing against said spring and connected to the inner ends of said equalizers or levers and to the truck-frame respectively, whereby both ends of the car-body are caused to move up and down together and teetering or tilting of the car-body on the truck prevented, substantially as specified.

2. In a street-car, the combination with the car-body, truck and spring, opposing hangers or seats bearing against said spring, one of the same being movable, of a pair of equalizers fulcrumed near their middle on the truck-frame, pivotally connected at their two outer ends to the car-body, and at their inner or adjacent ends to said movable hanger or seat for the spring, said spring being between said equalizers and truck-frame substantially as specified.

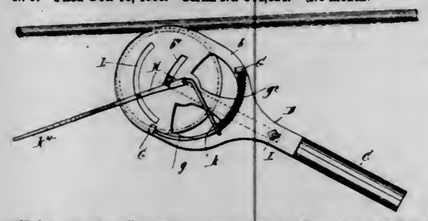
3. The combination with a car-body, of a pair of equalizers F F upon the outer ends of which the car-body rests, a truck-frame upon which the equalizers are fulcrumed, and a spring and its movable hanger to which the equalizers are pivotally connected at their inner or adjacent ends, said spring being a flat or leaf spring, and the truck-frame having hangers or bearings acting against the ends of said spring, substantially as specified.

4. The combination with a car-body, of a pair of equalizers F F upon the outer ends of which the car-body rests, a truck-frame upon which the equalizers are fulcrumed, and a spring and its movable hanger to which the equalizers are pivotally connected at their inner or adjacent ends, said equalizers being provided with curved braces, and said truck-frame being provided with rollers against which the curved portion of said braces rest or ride, substantially as specified.

5. The combination with a car-truck frame B, having pedestals B' B', of equalizers F F fulcrumed upon said pedestals, a spring D and a movable hanger or seat D' for the spring to bear against connected to said equalizers, said spring being a flat or leaf spring and said truck-frame having hangers D^2 D^2 to bear against the ends of the spring, substantially as specified.

6. The combination with a car-truck frame B, having pedestals B' B', of equalizers F F fulcrumed upon said pedestals, a spring D and a movable hanger or seat D' for the spring to bear against connected to said equalizers, said equalizers having each a curved brace F' F', and said truck-frame being provided with rollers f^2 f^2 to bear against the curved portion of said brace, substantially as specified.

571,092. TROLLEY FOR ELECTRIC RAILWAYS. PETER C. MACIVOY, Brooklyn, N. Y., assignor of one-half to Charles F. Canfield, Newark, N. J. Filed Dec. 10, 1895. Serial No. 571,621. (No model.)



Claim.—1. A trolley-support comprising a frame, provided with side plates, and adapted to be connected with a trolley-arm, a depressible yoke, one end of which is pivotally connected with said frame and the other end of which is provided with a shaft on which the trolley-wheel is mounted, and spring-operated side or guide arms connected with said frame, said side or guide arms being adapted to be thrown upwardly when the pressure on the trolley-wheel by the conductor-wire is removed, substantially as shown and described.

2. A trolley-support, comprising a main frame provided with circular side plates, and adapted to be connected with a trolley-arm, a supplemental frame or yoke one end of which is pivotally connected with said main frame, and the outer end of which is provided with a shaft on which the trolley-wheel is mounted, said shaft being extended through curved or segmental slots formed in said side plates at each side, and spring-operated side or guide arms which are pivotally connected with each of said side plates and which are adapted to be depressed by said shaft, said side or guide arms being adapted to be depressed by the pressure of the conductor-wire on the trolley-wheel, and to be thrown upward, when said pressure is removed, substantially as shown and described.

3. A trolley-support, comprising a frame composed of a head, and side plates connected therewith, a yoke one end of which is pivotally connected with said head and the outer end of which is provided with a shaft, on which the trolley-wheel is mounted, the ends of said shaft being projected through curved or segmental slots formed in said side plates, and side or guide arms pivotally connected with said side plates and provided with depending portions through which are passed curved or segmental rods on which are mounted spiral springs, said segmental rods being supported upon the side plates and said side or guide arms being projected beyond said plates, and being adapted to be depressed by the trolley-wheel, when it comes in contact with the conductor-wire, and being also adapted to be raised so as to inclose said conductor-wire when the pressure thereof, is removed from the trolley-wheel, substantially as shown and described.

4. A trolley-support, comprising a head, which is adapted to be connected with a trolley-arm, and side plates which are secured thereto, a frame or yoke pivotally connected with said head and provided with a shaft, which projects through slots formed in said side plates, a trolley-wheel mounted on said shaft, and side or guide arms pivotally connected with said plates, and adapted to be depressed by said shaft, and means for returning said side or guide arms into an upwardly-directed position when the pressure on the trolley-wheel is removed, substantially as shown and described.

5. A trolley-support comprising a frame which is adapted to be connected with a trolley-arm, and provided with side plates, which form a part thereof, a depressible yoke or frame mounted between said side plates, a trolley-wheel mounted in said depressible yoke or frame, side or guide arms pivotally connected with said side plates, and adapted to be depressed by said depressible yoke or frame, and means for returning said side or guide arms into an upwardly-directed position, when the pressure on said depressible frame is removed, comprising curved rods or bars which pass through projections formed on said side or guide arms and on which are mounted spiral springs, said curved rods being supported by the side plates, substantially as shown and described.

571,093. MULTIPLE FUSE-BLOCK. EDWIN H. MONTGOMERY, St. Paul, Minn., assignor of one-third to Mathias Thommes, same place. Filed Aug. 10, 1895. Serial No. 558,860. (No model.)

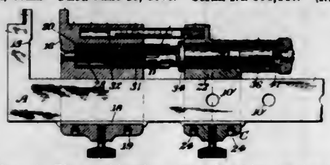


Claim.—1. In a multiple fuse-block and switch, the combination of the base, the annular ring at the center thereof connected to one terminal, the spring-contact at one edge connected to the other terminal, the rotary block fitted to said base, its annular ring bearing upon the first-named annular ring, the ratchet steps or teeth adapted to be engaged by the spring-contact, the series of contact-strips upon the inclines of alternate teeth, and the fuses severally connecting said strips with the annular ring upon said block.

2. In a multiple fuse-block and switch, the combination with the fixed and rotary parts, of their constantly-bearing contacts, the contact upon the fixed part being connected to one of the line-terminals, the contact-spring also upon the fixed part connected to the other line-terminal, the circumferentially-arranged notches or sockets upon said rotary part, the series of contacts arranged in the alternate notches or sockets, and adapted to be engaged by said contact-spring, and the fuses severally connecting said circumferentially-arranged contacts with the constantly-bearing contacts.

3. In a multiple fuse-block and switch, the combination with the base and the rotary block fitted thereto, of the constantly-bearing contacts arranged respectively upon said base and block, the contact upon said base being connected to one of the line-terminals, the teeth arranged upon said rotary block, the series of contact-strips upon alternate teeth, the fuses connecting said strips with said constantly-bearing contact upon said block, and the contact arranged upon said base and connected to the other line-terminal, and adapted to successively engage said contact-strips in the rotation of the block.

571,094. MICROMETER-BEAM GAGE. JOHN J. MCINTYRE, Hartford, Conn. Filed June 19, 1896. Serial No. 596,147. (No model.)

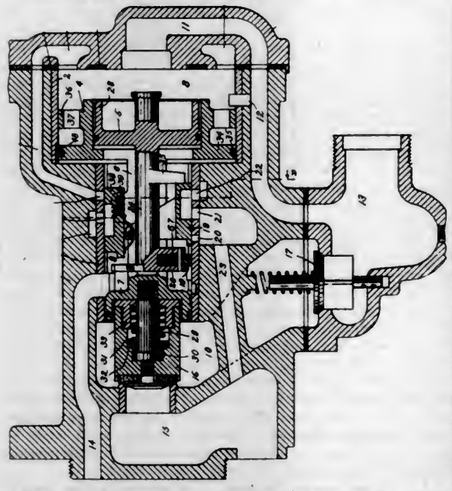


Claim.—1. The combination with a fixed jaw having a laterally-projecting stem; of a movable jaw provided with an enlarged bore mounted on said stem; a micrometer-screw fixedly secured in said movable jaw; a supplemental member having a smooth bore; a rotary sleeve having a smooth periphery mounted in the bore of said supplemental member, said sleeve having a flange bearing against a side of said supplemental member and being also slitted, externally beveled, and exteriorly and internally threaded at its inner end; an internally-threaded cap having a smooth internally-beveled end mounted on said sleeve; and means for rotating said sleeve and thereby adjusting the movable jaw.

2. The combination with a fixed jaw having a long, lateral extension; of a movable jaw provided with bores of different diameters; a screw fixedly secured within the larger bore; a supplemental member having a socket and a bore, the latter extending entirely through said member; a graduated bar secured in said socket; a rotary sleeve having a smooth periphery mounted in the bore of said member, said sleeve being provided with a flange fitting against a wall of the supplemental member and being externally and internally threaded and exteriorly beveled at its forward end; a threaded, interiorly-beveled cap secured on said sleeve; a thimble attached to the sleeve; and a screw carried by the thimble and entering a threaded bore in the rear end of the sleeve.

3. A measuring instrument comprising a jaw bar or beam having a series of transverse, equidistantly-disposed apertures; an adjustable member mounted thereon and having removable means for engaging one of said transverse apertures and also having means for clamping the same in position relatively thereto and comprising a sliding jaw having a pair of longitudinal bores of different diameters, said sliding jaw having a micrometer-screw disposed in that bore thereof having the largest diameter, and a supplemental member also having a longitudinal bore in alinement with the micrometer-screw bore of the sliding jaw; a rotary member carried by said supplemental sliding member and having an interiorly and exteriorly threaded, slotted, tubular end provided with a plane exteriorly-beveled face and adapted to engage the micrometer-screw for actuating said sliding jaw; an interiorly-threaded cap having a plane interiorly-beveled end adapted to engage the exteriorly threaded and beveled end of the rotary member to compress the same; a graduated sleeve or thimble fixedly secured to said rotary member for actuating the same; and a graduated bar fixedly secured to the supplemental member and sliding in the smaller bore of the sliding jaw.

571,095. AIR-BRAKE. HENRY F. NOYES, Elgin, Ill., assignor to the Westinghouse Air Brake Company, Pittsburg, Pa. Filed Nov. 29, 1895. Serial No. 570,530. (No model.)



Claim.—1. In a triple-valve device, the combination of a casing provided with the usual connections with a train-pipe, an auxiliary reservoir and a brake cylinder, a piston working within such casing, a chamber which is completed by such piston when at the limit of its stroke in the direction necessary to apply the brakes, an auxiliary valve adapted to effect the release of pressure from such chamber, and an emergency-valve adapted to effect the direct admission of pressure from the train-pipe to the brake-cylinder, substantially as described.

2. In a triple-valve device, the combination of a casing provided with the usual connections with a train-pipe, an auxiliary reservoir, and a brake-cylinder, a main and an emergency piston directly connected with each other and operating within such casing, and an auxiliary valve, directly controlled by said emergency-piston and adapted to effect the release of pressure from the chamber in which said piston operates, and an emergency-valve actuated by said piston to effect the admission of pressure from the train-pipe to the brake-cylinder, substantially as described.

3. In a triple-valve device, the combination of a casing provided with the usual connections with a train-pipe, an auxiliary reservoir and a brake-cylinder, two pistons working within such casing, one of such pistons operating in a chamber which is completed by the other piston when the latter is at the limit of its stroke in the direction necessary to apply the brakes, an auxiliary valve adapted to effect the release of pressure from such chamber, and an emergency-valve adapted to effect the direct admission of pressure from the train-pipe to the brake-cylinder, substantially as described.

4. In a triple-valve device, the combination of a casing provided with the usual connections with a train pipe, an auxiliary reservoir and a brake-cylinder, a main and an emergency piston working within such casing, the emergency-piston operating in a chamber which is completed by the main piston when the latter is at the limit of its stroke in the direction necessary to apply the brakes, an auxiliary valve actuated by the emergency-piston to effect the release of pressure from such chamber, and an emergency-valve actuated by the emergency-piston to effect the direct admission of pressure from the train-pipe to the brake-cylinder, substantially as described.

5. In a triple-valve device, the combination of a casing provided with the usual connections with a train-pipe, an auxiliary reservoir and a brake-cylinder, two pistons working within such casing, one of such pistons operating in a chamber which is completed by the other piston when the latter is at the limit of its stroke in the direction necessary to apply the brakes, an auxiliary valve which controls a port leading from such chamber to the brake-cylinder, and an emergency-valve which controls a port leading from the train-pipe to the brake-cylinder, substantially as described.

6. In a triple-valve device, the combination of a casing, provided with the usual connections with a train-pipe, an auxiliary reservoir and a brake-cylinder, a main and emergency piston directly connected with each other and working in such casing, an emergency-valve actuated by the emergency-piston to control a port leading from the train-pipe to the brake-cylinder, an auxiliary valve actuated by the emergency-piston to control a second port leading from the train-pipe to the brake-cylinder, the opening of said auxiliary valve adapted to take place prior to and to effect the opening of such emergency-valve, substantially as described.

7. In a triple-valve device, the combination of a casing provided with the usual connections with a train-pipe, an auxiliary reservoir and a brake-cylinder, a chamber in such casing, which chamber is completed by the walls of a main piston when the latter is at the limit of its stroke in the direction necessary to apply the brakes, an emergency-piston operating in such chamber, an auxiliary valve actuated by such emergency-piston to control a port leading from such chamber to the brake-cylinder, and an emergency-valve actuated by such emergency-piston to control a port leading from the train-pipe to the brake-cylinder, substantially as described.

8. In a triple-valve device, the combination of a casing, having the usual connections with a train-pipe, an auxiliary reservoir and a brake-cylinder, a main and an emergency piston working within such casing, a chamber which is completed by the wall of said main piston when the latter is at the limit of its stroke in the direction necessary to apply the brakes, a port connecting such chamber with the train-pipe, said emergency-piston adapted to effect the opening and closing of such port, an auxiliary valve actuated by said emergency-piston to control a port leading from said chamber to the brake-cylinder and an emergency-valve controlling a port leading from the train-pipe to the brake-cylinder, substantially as described.

9. In a triple-valve device, the combination of a casing having the usual connections to a train-pipe, an auxiliary reservoir and a brake cylinder, a main piston, working within such casing and adapted, when at the limit of its stroke in the direction necessary to apply the brakes, to complete a chamber confining a certain volume of pressure, and a means of effecting the release of pressure from such chamber, and a means whereby the release of pressure from such chamber effects an independent release of pressure from the train-pipe, substantially as described.

10. In a triple-valve device, the combination of a casing having the usual connections to a train-pipe, an auxiliary reservoir and a brake-cylinder, a main piston working within such casing and adapted, when at the limit of its stroke in the direction necessary to apply the brakes, to form a chamber confining a certain volume of pressure, and a means of effecting a release of pressure from such chamber, and means whereby the release of pressure from such chamber, effects an independent release of pressure from the train-pipe to the brake-cylinder, substantially as described.

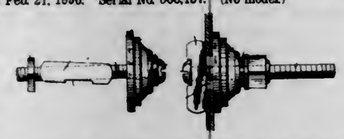
11. In a triple-valve device, the combination of a casing, a main and an emergency piston working within such casing, said main piston provided with a cylindrical flange, a chamber which is formed when the main piston is at the limit of its stroke in the direction necessary to apply the brakes, by the contact of said cylindrical flange with an inner face of the casing, an auxiliary valve actuated by the emergency-piston to control a port leading from such chamber to the train-pipe, and an emergency-valve actuated by the emergency-piston

to control a port leading from the train-pipe to the brake-cylinder, substantially as described.

12. In a triple-valve device, the combination of a casing provided with the usual connections to a train-pipe, an auxiliary reservoir and a brake-cylinder, a main piston, an emergency-piston operating an emergency-valve, and an auxiliary valve, independent of and unconnected with the emergency-valve and actuated by the emergency-piston to effect the release of pressure from the chamber in which said emergency-piston works, substantially as described.

13. In a triple-valve device, the combination of a casing provided with the usual connections with an auxiliary reservoir, a train-pipe and a brake-cylinder, a main and emergency piston directly connected with each other and working in a chamber of such casing, and an auxiliary valve actuated by such emergency-piston to control a port leading from the chamber in which said emergency piston operates, and an emergency-valve actuated by such emergency-piston to control a port leading from the train-pipe to the brake-cylinder, substantially as described.

571,096. BOILER-PATCH. CORNELIUS J. PHILLIPS, New York, N. Y. Filed Feb. 21, 1896. Serial No. 580,157. (No model.)

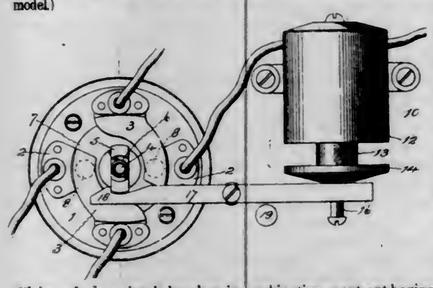


Claim.—1. The combination with a bolt, of a bridge provided with a central opening for the passage of the bolt and with overlapping longitudinal grooves on opposite sides, substantially as and for the purpose set forth.

2. The combination with a bolt, of a bridge provided with an opening for the passage of the bolt and with longitudinal, overlapping grooves on opposite sides, a compression-disk, and suitable packing, substantially as described.

3. The combination with a bolt, of a bridge provided with an opening for the passage of the bolt and with longitudinal grooves on opposite sides, and a depressed seat, substantially as and for the purpose set forth.

571,097. AUTOMATIC CIRCUIT-BREAKER. WILLIAM H. POWELL, Hartford, Conn. Filed June 15, 1896. Serial No. 595,546. (No model.)

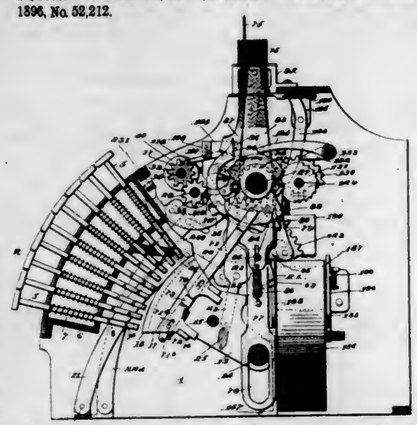


Claim.—1. In a circuit-breaker, in combination, a cut-out having stationary contacts adapted to be connected with circuit-wires, a rotary spindle, rotary connecting and disconnecting parts supported by the spindle, a spring for rotating the spindle in one direction and a handle for rotating the spindle in the opposite direction, a latch adapted to engage the spindle for holding the spindle with the spring under tension, an electromagnet with its coils adapted to be connected in series with the circuit-wires, and an armature loosely connected by an adjustable connection with the latch in such manner that the connection can be regulated so the armature will move independently of the latch for a predetermined portion of its travel and for the predetermined remainder of its travel engage with and pull the free end of the latch-lever toward the magnet, said armature being normally held down by gravity and adapted to be drawn upward by the pull of the magnet, substantially as specified.

2. In a circuit-breaker, in combination, a cut-out having stationary contacts adapted to be connected with circuit-wires, rotary connecting and disconnecting parts, a spring for rotating the connecting and disconnecting parts in one direction and a handle for rotating them in the opposite direction, a gravity latch for holding the connecting and disconnecting parts with the spring under tension, and an armature with a recess for receiving non-magnetic metal, said armature being loosely connected with the gravity-latch by an adjustable connection, and an electromagnet with its coils adapted to be connected in series with the circuit-wires, substantially as specified.

3. In a circuit-breaker, in combination, a rotary cut out having stationary contacts adapted to be connected with circuit-wires, a stationary post supporting a rotary block with a disk of insulating material bearing connecting and disconnecting parts, a spring connected with the post and with the rotary block, a handle connected with the block, a latch arranged to engage and hold the block with the spring under tension, a hollow armature with a screw loosely connecting the armature and the latch-lever, and a solenoid with its coils adapted to be connected in series with the circuit-wires, substantially as specified.

571,098. CASH-REGISTER. JOHN SHARPE and JOHN A. BANFIELD, Ottawa, Canada, assignors to David MacLaren, same place. Filed Dec. 24, 1895. Serial No. 573,198. (No model.) Patented in Canada May 7, 1896, No. 52,212.



Claim.—1. In a combined cash indicator, register and recorder, the combination of a main rotary shaft, a bank of depressible keys, having key-rods provided with laterally-projecting pins, a rock-lever arranged in the path of movement of the said pins, a toothed segmental lever with which the said rock-lever is connected, an indicator mechanism deriving a primary motion from the first movement of the rock-lever and an ultimate motion, to expose the indicator, from the rotation of the main shaft, a registering mechanism comprising rotary digit-wheels and pinions connected therewith, an idler-pinion for each wheel interposed between the respective pinions and segmental toothed levers, a slide upon which the segmental toothed lever is carried, means upon the main shaft to raise said lever into engagement with the idler-pinions, a rocking mechanism for such segmental lever actuated by the rotation of the said main shaft to move said segmental lever and thereby rotate the idler-pinions, a printing mechanism, a train of mechanism interposed between the printing mechanism and the main shaft and deriving motion from the latter and serving to select the printing mechanism in accordance with the keys depressed in the several banks and to impress the thus-selected printing mechanism upon a suitable band, strip or ribbon, the ultimate movements of the registering mechanism, the indicators and the recording mechanism being effected essentially simultaneously and by the same single rotation of the main shaft, substantially as described.

2. In a combined cash register, indicator and recorder, a registering mechanism capable of registering from the unit of lowest value upward indefinitely to the highest values, an indicator mechanism for exhibiting the value registered, and a recording mechanism capable of permanently inscribing the individual transactions indicated, combined with a bank of depressible keys having key-rods provided with laterally-projecting pins, rock-levers arranged in the paths of movement of the said pins, toothed segmental levers with which the said rock-levers are connected, a registering mechanism comprising rotary digit-wheels and pinions connected therewith, an idler-pinion for each wheel interposed between the respective pinions and segmental toothed levers, a slide for each of the segmental toothed levers, a main rotary shaft, and means upon said shaft to raise each of said levers as desired into engagement with its appropriate idler-pinion, and a rocking mechanism for each of such segmental levers, actuated by the rotation of the said main shaft to move said segmental lever and thereby rotate the idler-pinions, substantially as described.

3. The combination with a bank of depressible keys having key-rods provided with laterally-projecting pins, a rock-lever arranged in the path of movement of the said pins, a toothed segmental lever with which the said rock-lever is connected, a registering mechanism

comprising rotary digit-wheels and pinions connected therewith, an idler pinion for each wheel interposed between the respective pinions and segmental toothed levers, a slide upon which the segmental toothed lever is carried, a main shaft and means upon said shaft to raise said lever into engagement with the idler-pinions, and a rocking mechanism for such segmental lever actuated by the rotation of the said main shaft to move said segmental lever and thereby rotate the idler-pinions, substantially as described.

4. A bank of depressible keys having key-rods provided with laterally-projecting pins, means for transmitting the motion of the depressed keys to a distant part, such as a rock-lever, a slide carrying a locking-tooth, a main shaft, means interposed between the main shaft and the slide for placing the locking-tooth in position, a series of indicator-tablets, and tablet-selecting devices actuated by the slide-actuating mechanism and simultaneously with the movement of the slide, and means actuated by the main shaft to raise the indicator-selecting device and the indicator-tablet to expose the latter to view, substantially as described.

5. A series of indicator-tablets, a settable selecting device, a slide upon which it is mounted, a second slide with which the first-named slide is yieldingly connected and having a locking-tooth to engage the selecting device and hold it in given position, a main shaft, a cam on said main shaft acting upon the second slide to disconnect its locking-tooth from the selecting device, and adapted upon the further rotation of the said main shaft to release the second slide, and thereby permit the engagement of its locking-tooth with the selecting device after the said selecting device has been placed in position for use, and thereafter to raise both slides together with the selecting device and elevate the indicator-tablet into view, substantially as described.

6. The combination of a prime mover, a secondary mover, such as a rotary shaft, a registering mechanism, and an indicating mechanism, a toothed segment interposed between the prime mover and the registering mechanism, and adapted to be elevated into mesh with the registering mechanism, a slide upon which the toothed segment is mounted, a main shaft embraced by said slide, a cam on the main shaft coöperating periodically with said slide to lift it in order to bring the toothed segment into mesh with the registering mechanism, a vibrating three-armed lever pivoted to the slide, with one of its arms connected to the toothed segment, another of its arms extending into the path of movement of an indicator-selecting device, and its third arm arranged in the path of movement of a cam on the main shaft, the said selecting device, a locking-tooth for said selecting device operated to lock the said selecting device in the position to which it was moved by the three-armed lever, and a cam on the main shaft to elevate said selecting device to expose the selected indicator to view, substantially as described.

7. In a cash-indicator, the combination with the main rotary shaft the indicator-tablets and means to move them into position and to release them, of a locking mechanism comprising a locking-slide provided with a spring for normally projecting the same into engagement with the said tablets, a cam on the main shaft and a releasing device for said locking-slide actuated by said cam, substantially as described.

8. In a cash-indicator, a series of tablets arranged in a supporting-frame, guides in said supporting-frame to receive and space said tablets, the said tablets having one edge provided with a pair of notches, parallel locking-slides arranged upon the said supporting-frame and normally engaging one or the other of the notches in the tablets, and means to release the said tablets from the engagement of the said locking-slides, substantially as described.

9. In a cash register, a series of rotary registering-wheels each capable of independent movement and all of successive or progressive movement so as to carry from one representing a low value to another representing a higher value; combined with a prime mover, a rotary shaft serving as an ultimate mover and a carrying mechanism for the wheels, comprising a ratchet connected with the wheels, a pawl for such ratchet, a pawl-carrier, a tripping device coöperating with such pawl-carrier, means to actuate such tripping device as its appropriate wheel completes a revolution, and a cam on the main shaft to restore the tripped pawl-carrier to normal and thereby actuate the registering-wheel of next higher value, substantially as described.

10. In a cash-register, a series of rotary registering-wheels successively representing units of increasing values and connected to turn progressively, combined with a prime mover, a secondary and ultimate mover including a rotary main shaft, pinions connected with the registering-wheels and periodically-active gearing interposed between the main shaft and the pinions of the registering-wheels, and including idler-pinions, an auxiliary tooth or lug on the idler-pinions, and a carrying mechanism comprising a pawl-carrier, a pawl thereon, a tripping-lever pivoted to the pawl-carrier and having its nose extended into the path of movement of the auxiliary tooth or lug on the idler-pinion to be engaged thereby at each complete revolution of such idler-pinion, and means to restore the pawl-carrier to normal, substantially as described.

11. In a cash-register, the combination with a series of rotary registering devices, and means to rotate them, of a carrying device consisting of a fixed frame, a pawl-carrier pivoted thereon, a spring-pawl on said carrier which is normally in engagement with the registering mechanism, a tripping-lever pivoted to the bracket and adapted normally to hold the said pawl-carrier in position to effect the normal engagement of the pawl with the registering mechanism and means for periodically vibrating the pawl-carrier, substantially as described.

12. In a cash-register, the combination with the main rotary shaft and a cam thereon, of a series of depressible keys, a pivoted segmental detent having the projecting beveled end for engaging the depressed keys, normally held in the path of movement of the said depressed keys, and a slide for releasing the said detent and actuated by the cam upon the main shaft, substantially as described.

13. In an apparatus of the class described, having a series of banks of depressible keys, and a prime mover connected therewith of a series of type-frames, and types in said frames representing the keys and other arbitrary marks, an ultimate mover, and means interposed between it and the said frames to impart to all of said frames simultaneously a primary movement to bring into printing position such arbitrary marks, which may be the dollar-sign and the zeros, and other means actuated by the rotation of the shaft to advance the frames so as to present in printing position the types corresponding with the keys depressed, and other means also actuated by the rotation of the said shaft to cause the type so set to be impressed, substantially as described.

14. In an apparatus of the class described, having a series of banks of depressible keys, a prime mover, a main shaft and a recording apparatus deriving motion from the main shaft under the control of the keys depressed and comprising a check-strip or fugitive record-slip and a permanent record-slip and suitable means to advance them after the making of each successive record, and a printing mechanism for recording the transactions and any other facts in connection therewith, and including a series of duplicate type-frames each containing a duplicate set of types, means to impart an initial movement to all of said type-frames simultaneously, and means, deriving motion from the main shaft, for setting the type-frames in accordance with the keys depressed, and means to impress the types so set upon the respective record mediums, substantially as described.

15. In a machine of the class described, a series of banks of keys, and a recording mechanism controlled by the operation of the said keys, the recording mechanism comprising a series of type-frames containing types, and one of the banks of keys containing two sets of keys, between which and the series of type-frames is interposed a double or two-fold selecting mechanism either or both portions of which double or two-fold selecting mechanism may be operated at any given time for the purpose of selecting and assigning to position the type-frames containing the type which it is desired to impress, substantially as described.

16. In a machine of the class described, containing a main shaft, a cam thereon, and a printing mechanism of substantially the character described, by which a continuous slip may be printed in sections which are successively fed beyond the printing mechanism, combined with shears arranged just beyond the printing mechanism, and comprising a fixed blade and a pivoted blade, and a plunger having a forked end and interposed between said pivoted blade and the cam on the main shaft, whereby the said pivoted blade is caused to rise and descend at predetermined intervals and sever the printed card or ticket or check from the slip, substantially as described.

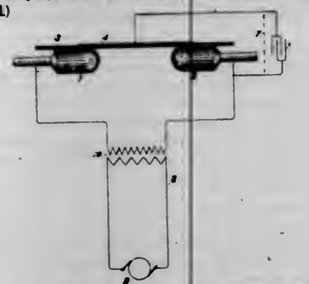
17. In a machine of the class described, a recording mechanism comprising a printing mechanism and a slip-feeding device which includes an intermittently-rotating printing-cylinder provided with a series of fixed printing-surfaces adapted to print upon the back of the slip, ticket, or check, substantially as described.

18. In a machine of the class described, the combination with a dating and numbering apparatus, of an inking mechanism comprising an inking-pad, an elbow-lever in which said pad is pivoted, a reciprocating yoke to which said elbow-lever is pivoted, a main shaft, and a cam on said main shaft coöperating with said yoke to move it beneath and from under the said printing device, the elbow-lever coming in contact with the printing device as the yoke is moved beneath it and thereby lifting the inking-pad into contact with the printing-surface and insuring the inking of the same, substantially as described.

19. In a cash register, indicator and recorder, the combination of the registering mechanism, which includes a spindle or shaft and gearing thereon by which the registering mechanism is rotated, the said gearing having the capacity of being shifted by bodily movement of the spindle or shaft into and out of operative position relatively to the registering device, an indicating mechanism, and a recording mechanism, and a series of banks of keys by operation of which a prime movement is instituted with relation to these several mechanisms, a shifting mechanism for the registering mechanism, and means

to operate said shifting mechanism interposed between said gearing and some of the keys, substantially as described.

571,099. ELECTRICAL-DISCHARGE DEVICE. CHARLES E. SKINNER, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed May 21, 1896. Serial No. 594,208. (No model.)



Claim.—1. An electrical-discharge device comprising a non-conducting body having a comparatively smooth surface, a pair of separated electrodes located in close proximity thereto, and means for repelling the air from said surface whereby the passage of electrical discharges between the electrodes is facilitated.

2. An electrical-discharge device comprising a non-conducting body having a conducting-coating upon one face and two electrodes in contact with the other face one of which is electrically connected with the conducting-coating.

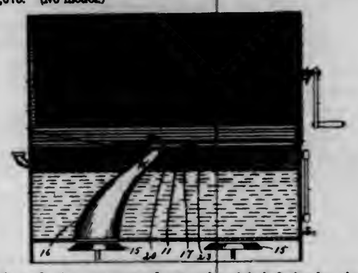
3. An electrical-discharge device comprising two separated electrodes, a body of conducting material electrically connected with one of said electrodes, and a body of non-conducting material interposed between said electrodes and said body of conducting material.

4. An electrical-discharge device comprising an elongated body of non-conducting material, an elongated body of metal in close proximity to one side of the non-conducting body, electrodes in engagement with the other side, one of which is electrically connected with said body of metal.

5. An electrical discharge device comprising a non conducting plate, a sheet of metal upon one side of the same, a pair of electrodes upon the other side and an electrical connection between one of said electrodes and said metal sheet.

6. An electrical discharge device having widely-separated electrodes in contact with one side of a non-conducting body, a conducting-body of a length equal to or greater than the distance between said electrodes and located at the opposite side of said non-conducting body and electrically connected with one of said electrodes.

571,100. APPARATUS FOR TREATING DRIED FRUITS. HOWARD A. TURNER, Jr., Urbana, Ohio. Filed Dec. 10, 1895. Serial No. 571,673. (No model.)



Claim.—1. An apparatus for treating dried fruits &c. the same consisting of a perforated receptacle adapted to hold the fruit, an inclosure incasing said receptacle, a heater located below the receptacle, a water tank located above the heater, a conduit leading from the heater through the water-tank and having an outlet in the receptacle-inclosure, said conduit being surrounded by the water in the tank.

2. In an apparatus for treating dried fruits &c. the same consisting of a receptacle adapted to hold the fruit, a hot-air conduit and a steam-outlet located below the said receptacle; a valve adapted to close either or both said conduit or outlet, said valve consisting of a plate adapted to slide over the conduit or outlet, said plate having a rack, a gear-wheel engaging said rack and adapted to operate the plate as it is turned.

3. An apparatus for treating dried fruits, &c. the same consisting of a perforated receptacle adapted to hold the fruit, an inclosure incasing said receptacle, a tank adapted to hold water, said tank having a steam-outlet leading into the receptacle-inclosure, a hot-air conduit passing through the water and having an outlet in the receptacle-inclosure, a valve common to both and adapted to close either or both outlets leading into the receptacle-inclosure, a heater adapted to heat the water in the tank and thereby generate steam, and to heat the air passing through the hot-air passage.

571,101. LAMP-BRACKET FOR VELOCIPEDES. ROBERT C. WHEATHE, Louisville, Ky. Filed Nov. 16, 1895. Serial No. 569,141. (No model.)



Claim.—1. As a new and useful article of manufacture, a lamp-bracket having means for the attachment thereto of the lamp in combination with an arm having a laterally-elongated slot for the passage of the axle or bolt of the wheel and a lug for engaging with the rear side of the fork, said slot being extended across an arc struck from said lug as a center, whereby the angle of inclination of the bracket may be varied and the weight of the lamp will be supported by the pressure of said lug against the fork and the pressure of the edge of said slot upon the axle-bolt, substantially as set forth.

2. As a new and useful article of manufacture a lamp-bracket having means for the attachment thereto of the lamp in combination with an arm or member having a slot enlarged at one end for the passage of the axle-nut and the reception of the axle, said arm being provided with a laterally-projecting lug or flange for engagement with the wheel-fork, substantially as set forth.

3. As a new and useful article of manufacture a lamp-bracket consisting of a plate having the upright angle 1 for the reception of the lamp-socket, the horizontal arm or angle 2 provided with a slot having an enlargement extending through the bend of said arm and partially into the main body of the plate, said arm 2 being provided at its rear end with a lateral lug or flange for engagement with the fork, substantially as set forth.

571,102. MOLD FOR SHAPING METALLIC TOOTH-CROWNS. LOUIS L. WHITE, Oakland, Cal., assignor of one-half to Walter F. Lewis, same place. Filed Feb. 25, 1896. Serial No. 580,730. (No model.)



Claim.—1. A mold for shaping seamless metallic tooth-crowns, consisting of a casing or shell and a core of soft metal seated in said shell and having a receiving-hole for the metallic die and its fitted metallic cap to be shaped into the crown.

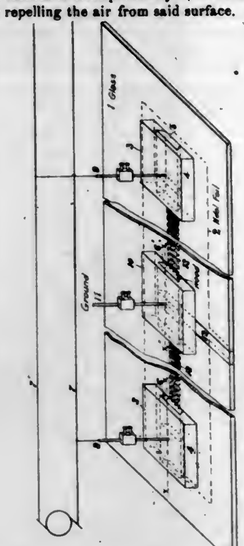
2. A mold for shaping seamless metallic tooth-crowns, consisting of a casing or shell, and a core of soft metal readily separable into sections, and having a hole for the reception of the metallic die and its fitted metallic cap to be shaped into the crown.

3. A mold for shaping metallic seamless tooth-crowns consisting of a casing or shell formed of a centrally-perforated lower section, an upper section removably fitted thereto and having a conical hole, the lower end of which alines with the hole in the lower section, and a core of soft metal having a conical shape to fit in the conical hole of the upper section of the casing or shell, and a central hole to receive the metallic die with its metallic cap to be shaped into the crown.

4. A mold for shaping metallic seamless tooth-crowns, consisting of a casing or shell formed of a centrally-perforated lower section, an upper section fitted removably thereto and having a conical hole alining with the hole of the lower section, and a core of soft metal formed in readily-separable sections and fitting in the conical hole of the upper section of the casing or shell, said core having a hole to receive the metallic die with its metallic cap to be shaped into the crown.

571,103. LIGHTNING-ARRESTER. ALEXANDER J. WURTS, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Mar. 11, 1896. Serial No. 582,792. (No model.)

Claim.—1. A lightning-arrester comprising a non-conducting body and a pair of separated terminals, provided with arc-suppressing means, and located in close proximity to one surface of said body, and means for repelling the air from said surface.



2. A lightning-arrester comprising a non-conducting body, a pair of separated terminals located in close proximity to one surface thereof, and a thin conducting-film between said terminals, and means for repelling the air from said surface.

3. A lightning-arrester comprising a non-conducting body having a comparatively smooth surface, a pair of separated terminals in contact therewith and provided with arc-suppressing means, a thin, conducting-film between the same, and means for repelling the air from said surface whereby the passage of electrical discharges is facilitated.

4. A lightning-arrester comprising a non-conducting plate, a pair of terminal blocks upon one side thereof, each of which embodies a metal terminal and an adjacent discharge-wedge, a thin metal sheet upon the opposite side of the non-conducting plate and a metal strip connecting said metal sheet with one of said metal terminals.

5. A lightning-arrester comprising a non-conducting body, a pair of separated terminals in contact with one face thereof, a conducting-film on said face between the terminals, a conducting-body upon the opposite face of the non-conducting body and spanning the distance between the terminals and electrically connected with one of them.

6. A lightning-arrester comprising a conducting and a non-conducting body in contact with each other, a pair of separated terminals in contact with the side of the non-conducting body opposite said conducting-body, a thin coating of plumbago between said terminals and a metal connection between one of said terminals and the conducting-body.

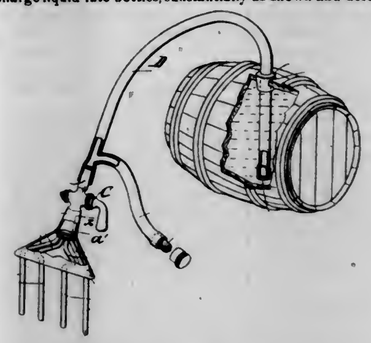
7. A lightning-arrester for high-potential circuits comprising a non-conducting plate, a pair of terminal blocks cemented to one face thereof each having a metal terminal piece and an adjacent discharge-wedge, conducting-film between said terminal blocks and a coating of metal foil upon the opposite side of said non-conducting plate and an electrical connection between the same and one of the terminal blocks.

8. A lightning-arrester comprising a plate formed of glass or analogous material, a pair of discharge-wedge terminal blocks cemented to one side thereof and a coating of metal foil upon the opposite side and an electrical connection between the same and one of the terminals, the surface of said plate between the terminal blocks being ground and provided with a thin coating or film of plumbago.

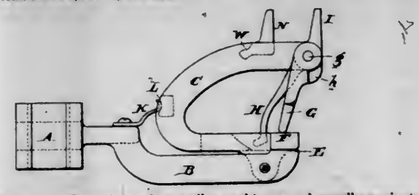
9. A lightning-arrester comprising a plate formed of non-conducting material, two terminal blocks for connection with the respective sides of an electric circuit and an intermediate block for connection to the ground, all cemented to one side of the plate and provided with arc-suppressing means, a metal coating on the opposite side of the plate and an electrical connection between the same and the middle terminal block.

571,104. BOTTLE-FILLING APPARATUS. HYMAN BLUMBERG and LEON JACOBSON, New York, N. Y. Filed Jan. 2, 1896. Serial No. 574,034. (No model.)

Claim.—In a bottle-filling apparatus, the combination of a flexible siphon having a capped branch and a tubular valved outlet leading therefrom, which outlet engages with a partition in the contracted upper portion of a closed triangular compartment, said partition having leading therefrom a plurality of block-tin tubes which are all of the same length and which are spread apart at their lower ends and extended through the lower wall of the said triangular compartment and respectively joined to depending tubes of equal length adapted to discharge liquid into bottles, substantially as shown and described.



571,105. AUTOMATIC CLAMP FOR CLOTH-STRETCHING MACHINES. HARRY W. BUTTERWORTH, Philadelphia, Pa., assignor to the W. Butterworth & Sons Company, of Pennsylvania. Filed June 8, 1896. Serial No. 594,696. (No model.)



Claim.—1. In a clamp for textile machinery, a laterally-projecting arm or frame adapted to project from a suitable conveyer, in combination with a cloth-clamp having two jaws pivoted as an entirety thereto and adapted to be moved about a longitudinal axis.

2. In a clamp for textile machinery, a laterally-projecting arm or frame adapted to project from a suitable conveyer, in combination with a cloth-clamp having a stationary jaw and a movable jaw pivoted thereto and adapted to be moved about a longitudinal axis, whereby the pivot of the movable jaw always remains at a fixed distance from the stationary jaw, means for limiting the movement of the clamp as an entirety in one direction, and a spring to hold the clamp as an entirety in operative position when acting upon the cloth.

3. In a clamp for textile machinery, a laterally-projecting arm or frame adapted to project from a suitable conveyer, in combination with a U-shaped frame having one leg thereof pivoted to the laterally-projecting frame and constituting one jaw of a cloth-clamp, and a movable jaw pivoted to the other leg of the U-shaped frame and movable to or from the other jaw.

4. In a clamp for textile machinery, a laterally-projecting arm or frame adapted to project from a suitable conveyer, in combination with a U-shaped frame having one leg thereof pivoted to the laterally-projecting frame and constituting one jaw of a cloth-clamp, a movable jaw pivoted to the other leg of the U-shaped frame and movable to or from the other jaw, and a controlling-finger arranged at the rear of the movable jaw and carried by the U-shaped frame for holding the movable jaw out of gripping action until the proper moment.

5. In a clamp for textile machinery, a laterally-projecting arm or frame adapted to project from a suitable conveyer, in combination with a U-shaped frame having one leg thereof pivoted to the laterally-projecting frame and constituting one jaw of a cloth-clamp, a movable jaw pivoted to the other leg of the U-shaped frame and movable to or from the other jaw, a controlling-finger arranged at the rear of the movable jaw and carried by U-shaped frame for holding the movable jaw out of gripping action until the proper moment, and projections extending from the U-shaped frame and the controlling-finger adapted to be operated upon by suitable cams for imparting movement to these parts at definite times.

6. In a cloth-clamp, a laterally-projecting frame adapted to be attached to and moved by a suitable conveyer, in combination with

a cloth-clamp proper comprising a fixed jaw and a movable jaw pivoted in a fixed bearing relatively to the fixed jaw, and a movable connection between the said clamp and the laterally-projecting frame whereby the clamp may be moved as an entirety upon the said frame so as to be capable of being thrown into or out of operative position.

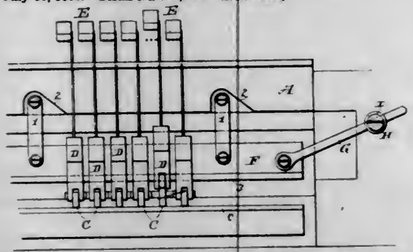
7. In a cloth clamp, a laterally-projecting frame adapted to be attached to and moved by a suitable conveyer, in combination with a cloth-clamp proper comprising a fixed jaw and a movable jaw pivoted in a fixed bearing relatively to the fixed jaw, and a movable connection between the said clamp and the laterally-projecting frame whereby the clamp may be moved as an entirety upon the said frame so as to be capable of being thrown into or out of operative position, means for limiting the movement of the clamp proper, and a projection upon the clamp adapted to be actuated for the purpose of moving the clamp upon the laterally-projecting frame.

8. In a cloth-clamp, a laterally-projecting frame adapted to be attached to and moved by a suitable conveyer, in combination with a cloth-clamp proper comprising a fixed jaw and a movable jaw pivoted in a fixed bearing relatively to the fixed jaw, a movable controlling-finger also pivoted upon a fixed axis relatively to the fixed jaw and adapted to sustain the movable jaw out of gripping action relatively to the fixed jaw by resting upon the cloth, and a movable connection between the said clamp and the laterally-projecting frame whereby the clamp may be moved as an entirety upon the said frame so as to be capable of being thrown into or out of operative position.

9. In a cloth-clamp the combination with the lateral frame B, the pivoted frame C having the fixed jaw F and jointed to the frame B at D, the pivoted gripping-jaw G pivoted at *g* to the frame C at a fixed distance from the jaw F and a controlling-finger H for holding the movable jaw G out of action when the cloth is arranged under both the jaw G and controlling-finger H.

571,106. PIANO.

William A. Byrne, Boston, Mass., assignor to The Wm. Knabe & Co. Manufacturing Company, Baltimore, Md. Filed July 18, 1896. Serial No. 599,681. (No model.)



Claim.—1. In a piano, the combination with the dampers of a piano and their levers, of a vertically-adjustable bar disposed over said levers and means for moving said bar and securing it in the position to which it is moved, substantially as set forth.

2. In a piano, the combination with the dampers, of a longitudinally-movable and vertically-adjustable bar located over and adapted to regulate the movement of the damper-levers, substantially as set forth.

3. In a piano, the combination with the damper-levers, of a longitudinally-movable and vertically-adjustable bar located over the damper-levers and pivotally attached to the piano-frame by means of two or more links and provided at one end with means whereby to move said bar, substantially as set forth.

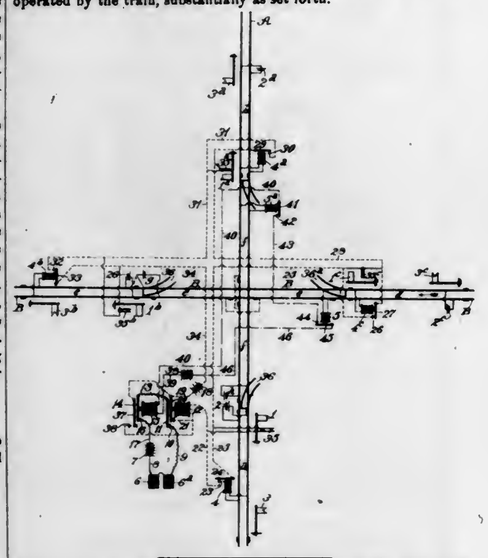
4. In a piano, the combination with the damper-levers of a longitudinally-movable and vertically-adjustable bar located over the damper-levers and supported by pivoted links and provided at its end with an adjusting-rod, a guide for said rod and a fastening device for securely holding said adjusting-rod in the guideway, substantially as set forth.

571,107. ELECTRICALLY-CONTROLLED DERAILS FOR RAILWAY-CROSSINGS.

John P. Coleman, Edgewood Park, Pa., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed June 1, 1896. Serial No. 593,735. (No model.)

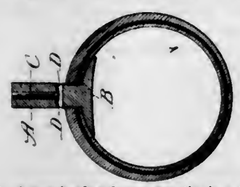
Claim.—1. The combination of two intersecting tracks, derail-switches arranged in said tracks on opposite sides of their intersection, levers for operating said switches, electrically-controlled locks for said levers, make-and-break mechanisms included in the circuit controlling said locks and located at points outside the derail-switches, an auxiliary lock-controlling circuit, and make-and-break mechanisms included in said circuits and located inside the derail-switches, the make-and-break mechanisms in the main and auxiliary circuits being adapted to be operated by the passage of trains along the tracks, substantially as set forth.

2. The combination of two intersecting tracks, signals controlling the movement of trains along said tracks, derail-switches arranged in said tracks on opposite sides of their intersection, levers for operating said switches, electrically-controlled locks for said levers, a circuit for controlling said locks, make-and-break mechanisms operated by the passage of a train and arranged in said circuit outside of the derail-switches, make-and-break mechanisms controlled by the signals and adapted, when closed, to shunt the make-and-break mechanisms operated by the train, substantially as set forth.



571,108. REPAIR-PLUG FOR PNEUMATIC TIRES.

Daniel W. Colhaff, Chicago, Ill. Filed Aug. 7, 1896. Serial No. 601,971. (No model.)



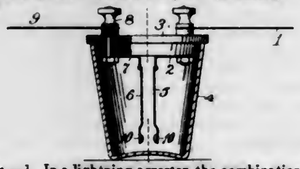
Claim.—1. A repair-plug for pneumatic tires, &c., having a head and shank, the shank being provided with a duct for the passage of solution through the shank to the interior of the tube being repaired, substantially as described.

2. A repair-plug for pneumatic tires, &c., comprising the head B and shank A, said shank having the central passage C and lateral passage D, substantially as and for the purpose described.

3. The repair-plug for pneumatic tires, &c., comprising a head B and shank A, said shank having the central passage C terminating at a point distant from the head as described, and transverse passage D leading from the central passage to the exterior of the shank, all as set forth.

571,109. LIGHTNING-ARRESTER.

John P. Culgan, Swissvale, Pa., assignor to the Union Switch and Signal Company, same place. Filed June 1, 1896. Serial No. 593,760. (No model.)

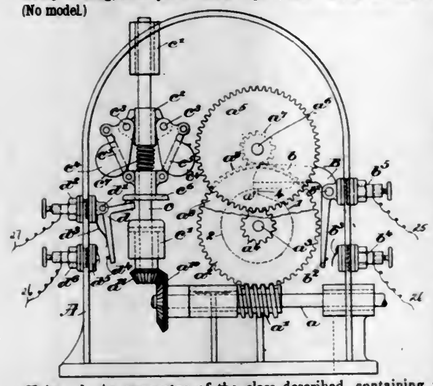


Claim.—1. In a lightning-arrester, the combination of two members, each provided with a carbon contact face or point, one of which is movable, one member being adapted to be connected to the ground, and the other to the line-wire, said members being arranged in such relation to each other that when the line-wire is normally charged, they will be separated one from the other, but will be drawn toward each other when the line-wire is abnormally charged, substantially as set forth.

2. In a lightning-arrester, the combination of two tongues movable toward and from each other and provided with carbon buttons, said tongues being insulated from each other, and adapted to be connected to ground, and to a line-wire, respectively, substantially as set forth.

571,110. APPARATUS FOR RECORDING OUTPUT OF MACHINERY.

Peter Dillon, Lawrence, Mass., assignor of one-half to Henry C. King, same place. Filed Sept. 7, 1894. Serial No. 522,372. (No model.)



Claim.—1. An apparatus of the class described, containing a prime actuator, journal-bearings therefor, product-measuring mechanism operated by and during movement of the said prime actuator, and a stop-recording mechanism normally inactive, but operated upon and by stopping of the said prime actuator, substantially as described.

2. In an apparatus of the class described, a prime actuator; a product-measuring marker; connections intermediate the same and said prime actuator, whereby the former is moved by the latter at the completion of predetermined measurements of product; and an independent stop-marker, and connections between it and the said prime actuator, whereby said marker is actuated only upon stopping of the said prime actuator and again upon its resumption of movement, substantially as described.

3. An apparatus for recording the operations of a web-producing machine containing the following instrumentalities, viz: a rotating prime actuator in contact with and rotated by the traveling web, a circuit-changing device actuated by and at the end of a predetermined number of rotations of said prime actuator, a receiver containing a moving recording-sheet, a coöperating recorder, and a receiving-magnet therefor electrically connected with and controlled by said circuit-changing device, substantially as described.

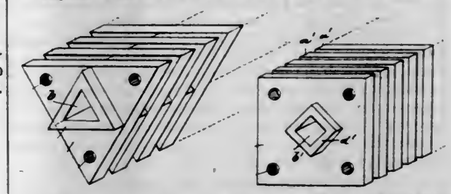
4. An apparatus of the class described containing the following instrumentalities, viz: a rotating prime actuator, a circuit changing device actuated by and at the end of every predetermined number of rotations of the said actuator, a receiver containing a recording-sheet, a coöperating recorder, and a magnet for said recorder and means to produce a uniform relative movement of said sheet and recorder in circuit with and controlled by said circuit-changing device, and a stop-marker and its actuating-magnet electrically connected with and controlled by the stopping of said prime actuator, substantially as described.

5. An apparatus of the class described containing the following instrumentalities, viz: a prime actuator, a measuring circuit-changing device connected with and operated at the end of every predetermined number of movements of the said actuator, and a stop-indicator operated by stopping of the said actuator, and a circuit-changing device operated by said stop-indicator, a receiver containing a recording sheet, measuring and stop markers and actuating-magnets therefor connected in circuits respectively with the said measuring and stop circuit-changing devices and means to impart a uniform relative movement to said recording-sheet and markers independent of the movement of the latter by said magnets, substantially as described.

6. In an apparatus of the class described, a receiver containing a plane recording-sheet, a measuring-marker adapted to make a series of independent marks upon the said sheet and in a circle thereon, the distance between successive marks indicating variations in operating of the machine or mechanism, a stop-marker adapted by its marks made at different radial distances from the axis of said sheet to indicate stopping of the machine or mechanism, transmitting devices connected with and operated by the machine the record of which is to be kept, said transmitting devices being connected with and to operate the said markers and means to impart to said recording-sheet and markers a relative circular movement, substantially as described.

571,111. FURNACE-GRATE.

Guillaume Dupmeyer, Antwerp, Belgium. Filed July 13, 1896. Serial No. 598,971. (No model.)



Claim.—1. A grate-bar, consisting of a series of polygonal-shaped leaves, each of said leaves being provided substantially in its center with a polygonal-shaped opening, the corners of the opening facing the centers of the sides of its respective leaf, each leaf being also provided in each of its corners with an opening, a flange surrounding the central opening of each leaf, and a polygonal-shaped bar penetrating the central openings to thus support the leaves, all said parts, substantially as and for the purposes described.

2. A grate-bar, consisting of a series of polygonal-shaped leaves having their edges outwardly flaring, each of said leaves being provided with a central polygonal-shaped opening, the corners of the opening facing the centers of the sides of its respective leaf, each leaf being also provided in each of its corners with an opening, a flange surrounding the central opening of each leaf and a bar penetrating the said central openings to thus support the leaves, all said parts, substantially as and for the purposes described.

3. A grate-bar, consisting of a series of polygonal-shaped leaves, each of said leaves being provided with a polygonal-shaped central opening, the corners of the opening facing the centers of the sides of its respective leaf, each of said leaves being also provided in each of its corners with an opening, means on one or both sides of each leaf to separate them, a bar penetrating the central openings of the leaves, and means on each end of the bar for securing the latter to a grate-bar frame, all said parts, substantially as and for the purposes described.

4. A grate-bar, consisting of a series of polygonal-shaped leaves having their edges outwardly flaring, each of said leaves being provided with a central polygonal-shaped opening, the corners of the opening facing the centers of the sides of its respective leaf, each leaf being also provided in each of its corners with an opening, a flange surrounding the central opening of each leaf and a bar penetrating the said central openings to thus support the leaves, and means on each end of the bar for securing the latter to a grate-bar frame, all said parts, substantially as and for the purposes described.

571,112. AIR-TIGHT PACKAGE.

Moses Falk, New York, N. Y. Filed Jan. 16, 1896. Serial No. 575,668. (No model.)



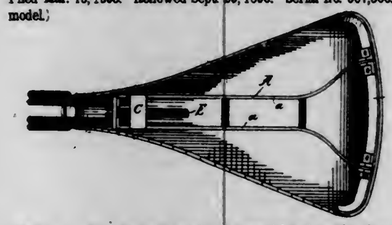
Claim.—1. A storage package or receptacle, consisting of a receptacle provided on its inner walls with a support for an internal cover, said inner wall being vertical upward from said internal support, in combination with an internal cover having a vertical flange extending upward from said cover and a handle on its top, said vertical flange fitting snugly against the inner wall of said receptacle and said cover being adapted to be pushed into place against said internal support with a piston-like movement, and an exterior cover with a depending flange adapted to slide down and fit snugly over the top of the receptacle as herein set forth.

2. As a new article of manufacture, a storage package or receptacle, consisting of a receptacle of sheet metal formed with an internal bead on its inner wall adjacent to the top of the receptacle, serv-

ing as a support for an internal cover, said inner wall being vertical upward from said internal bead, in combination with an internal cover formed with an upturned vertical flange and a handle on its top, said vertical flange fitting snugly against the inner wall of said receptacle and said cover being adapted to be pushed into the receptacle against said bead, and a cover having a depending flange adapted to fit snugly over the top of the receptacle and with the internal cover form an air-chamber as herein set forth.

3. A storage package or receptacle, consisting of a receptacle having a straight, open, vertical end or top, in combination with an internal cover having an upturned vertical flange fitting snugly against the internal wall of the receptacle, and a handle on its top, said cover being adapted to be pushed into the receptacle with a piston-like movement, and an external cover formed with a depending flange and fitting snugly over the top of the receptacle and forming with the internal cover, an air chamber, as herein set forth.

571,118. BICYCLE-SADDLE. ARTHUR L. GARFORD, Elyria, Ohio. Filed Mar. 18, 1895. Renewed Sept. 29, 1896. Serial No. 607,366. (No model.)

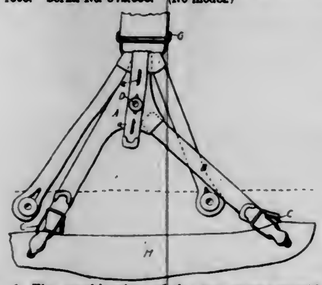


Claim.—1. In a bicycle-saddle, the combination of a rear seat-support having two parallel arms, the front ends of which are provided with eyes, and a block movable upon said arms, with a front seat-support having two parallel arms which pass backward through said eyes and are connected with said block, means for preventing the spreading of said parallel arms, an adjustment screw which engages in a threaded hole in said block, and an abutment for the head of said screw, substantially as and for the purpose specified.

2. In a bicycle saddle, the combination of a rear seat-support having parallel arms the ends of which are bent toward each other and are provided with eyes, and a sliding block lying between said arms, and having grooves in its sides to receive said arms, with a front seat-support having two parallel arms which pass backward through said eyes and enter sockets in said block, a yoke to prevent the spreading of said parallel arms, a screw which engages in a threaded opening in said block, and an abutment for the head of said screw, substantially as and for the purpose specified.

3. In a bicycle-saddle, the combination of a rear seat support having two parallel arms, the front ends of which are turned toward each other and are provided with eyes, a sliding block lying between said arms, and a yoke-bar lying against the front ends of said arms, with a front seat-support having two parallel arms which pass backward through holes in the yoke-bar and through the said eyes and enter sockets in the sliding block, and a screw which passes through a hole in said yoke-bar and engages in a threaded opening in said block, and has a head which abuts against the front side of said yoke-bar, substantially as and for the purpose specified.

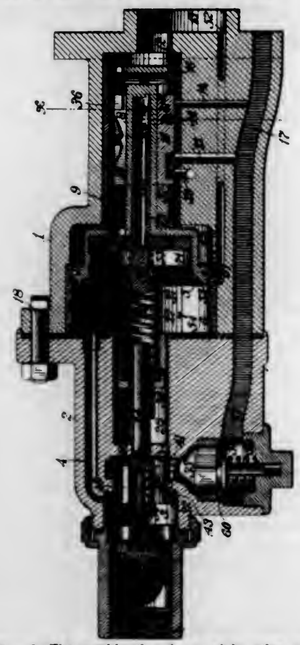
571,114. SUSPENDERS. HUGO P. GEISLER, Saginaw, Mich. Filed Dec. 13, 1895. Serial No. 572,053. (No model.)



Claim.—1. The combination of the two straps provided with clasps at their ends for attachment to an undergarment, one of said straps provided with an integral upper extension having suitable adjusting devices for attachment to a suspender, the other strap being elastic, substantially as described.

2. The combination of the straps A and B provided with clasps, the strap A having an upper extension provided with a series of buttonholes and having a button near the center thereof whereby the device may be adjustably attached to a portion of a suspender, substantially as described.

571,115. AIR-BRAKE. FRANÇOIS L. GUILLEMET, San Francisco, Cal., assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed Apr. 29, 1896. Serial No. 589,522. (No model.)



Claim.—1. The combination, in a quick-action triple-valve device, of a main piston, a supplemental piston, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a valve operated by one of the pistons and controlling the release of fluid under pressure from the other piston through a passage in the stem of one of the pistons, substantially as set forth.

2. The combination, in a quick action triple-valve device, of a main piston, a supplemental piston exposed on its opposite sides to auxiliary-reservoir pressure, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a valve operated by the main piston and controlling the release of fluid under pressure from the supplemental piston through a passage in the stem of the main piston, substantially as set forth.

3. The combination, in a quick-action triple-valve device, of a main piston, a supplemental piston, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a valve operated by the main piston and controlling the release of fluid under pressure from the supplemental piston through a passage in the stem of the main piston, substantially as set forth.

4. The combination, in a quick-action triple-valve device, of a main piston, a supplemental piston fitted in a chamber in the main piston and exposed to fluid under pressure, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a valve operated by a reduction of train pipe pressure for releasing fluid under pressure from one side of the supplemental piston to effect an emergency application of the brakes, substantially as set forth.

5. The combination, in a quick-action triple-valve device, of a main piston, a supplemental piston fitted in a chamber in the main piston and exposed to fluid under pressure on its opposite sides, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a main valve operated by the main piston and controlling the release of fluid under pressure from one side of the supplemental piston, substantially as set forth.

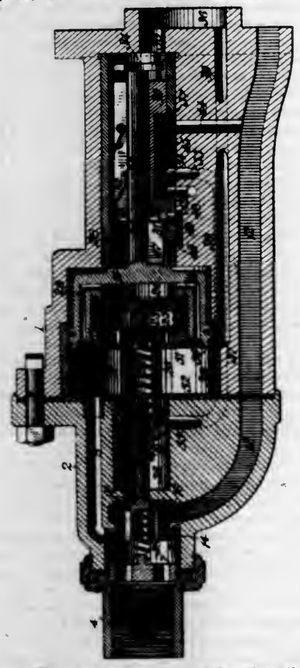
6. The combination, in an automatic fluid-pressure brake apparatus, of a release-valve for releasing fluid under pressure from the train-pipe, a main piston, a supplemental piston fitted in the main piston and adapted by its movement to operate the release-valve, a main valve, and a passage in the main valve through which fluid under pressure may be released from one side of the supplemental piston, substantially as set forth.

7. The combination, in a quick-action triple-valve device, of a main piston, a supplemental piston fitted in a chamber in the main piston and adapted to operate a local-exhaust valve, a passage in the stem of the main piston in which the stem of the supplemental piston is fitted, a passage in the stem of the supplemental piston through which fluid under pressure may be released to actuate the supplemental piston, and a valve controlling the release of fluid under pressure from one side of the supplemental piston, substantially as set forth.

8. The combination, in a quick-action triple-valve device, of a main piston and a supplemental piston, fitted one within the other and normally exposed to fluid under pressure, a local-exhaust valve adapted to be operated by the movement of the supplemental piston, and a valve operated by a reduction of train-pipe pressure for releasing fluid under pressure from one side of the supplemental piston to effect an emergency application of the brakes, substantially as set forth.

9. The combination, in a quick-action triple-valve device, of a main piston and a supplemental piston, fitted one within the other and normally exposed to fluid under pressure, a valve operated by the movement of the main piston for effecting a service application of the brakes on a slight or gradual reduction of train-pipe pressure and a valve, operated by a greater or more rapid reduction of train-pipe pressure, for releasing fluid under pressure from one side of the supplemental piston to effect an emergency application of the brakes, substantially as set forth.

571,116. AIR-BRAKE. FRANÇOIS L. GUILLEMET, San Francisco, Cal., assignor to the Westinghouse Air Brake Company, Wilmerding, Pa. Filed Apr. 29, 1896. Serial No. 589,523. (No model.)



Claim.—1. The combination, in a quick-action triple valve device, of an emergency-valve, a main piston, a supplemental piston located in a chamber in the main piston and exposed on its opposite sides to pressure in the train-pipe, and a valve operated by the main piston for releasing fluid under pressure from one side of the supplemental piston to effect an emergency application of the brakes, substantially as set forth.

2. The combination, in a quick-action triple-valve device, of a local-exhaust valve for releasing fluid under pressure from the train-pipe, a main piston, a supplemental piston engaging with the main piston and exposed on its opposite sides to the pressure in the train-pipe, and a valve for releasing fluid under pressure from one side of the supplemental piston, to cause opening movement of the local-exhaust valve, substantially as set forth.

3. The combination, in a quick-action triple-valve device, of a local-exhaust valve for releasing fluid under pressure from the train-pipe, a main piston, a supplemental piston which is normally exposed to train-pipe pressure, means whereby the movement of the main piston is adapted to cut off communication between the train-pipe and one side of the supplemental piston, and a valve for releasing fluid under pressure from one side of the supplemental piston to cause opening movement of the local-exhaust valve, substantially as set forth.

4. The combination, in a triple-valve device, of a piston, a main valve, a graduating-valve, a port in the seat of the main valve which is controlled by the graduating-valve and a passage in the main valve which is adapted to be connected with the port to permit fluid under pressure to flow to the brake-cylinder, substantially as set forth.

5. The combination, in a triple-valve device of a casing, a piston working in a chamber in the casing, a main valve operated thereby, a passage in the main valve adapted to connect with a passage in the casing, and a graduating valve, located between the piston and the main valve, and controlling the passage in the casing, substantially as set forth.

571,117. COMPOSITION OF MATTER. FRANK R. HALL, Boston, Mass. Filed Mar. 6, 1896. Serial No. 582,116. (No specimens.)

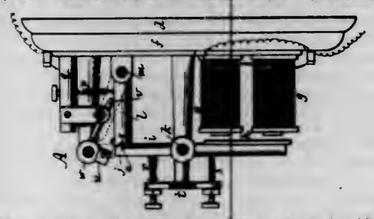
Claim.—A composition of matter comprising roofing-pitch which has been distilled until a portion of the oil which it contains has been driven off and its melting-point raised, asbestos and gum-kauri in substantially the proportions named, mixed and incorporated together by the aid of heat, substantially as set forth.

571,118. LOCOMOTIVE-BOILER. CHARLES O. HEGGEM, Massillon, Ohio, assignor to the Russell & Company, same place. Filed July 9, 1896. Serial No. 598,528. (No model.)

Claim.—In a locomotive-boiler for alternately burning straw and solid fuel, the following instrumentalities; an outer casing, an inner shell constituting the sides and top, the front, rear and bottom of the furnace, an inclined baffle-wall forming a partition in said inner shell, and having passages, a combustion-chamber above the baffle-wall with a door-opening, a fire-box proper beneath the said wall with a door-opening, grate-bars extending from the front to the rear wall of said inner shell, an ash-pit constituting also a draft-passage beneath the grate-bars, a door-controlled draft-passage in the front wall leading through the ash-pit to that end of the grate-bars, and a door-controlled draft-passage in the rear wall leading through said ash-pit to that end of said grate-bars, whereby in burning straw air is introduced

through the forward passage while the latter is closed, and in burning coal the latter is opened while the former is closed.

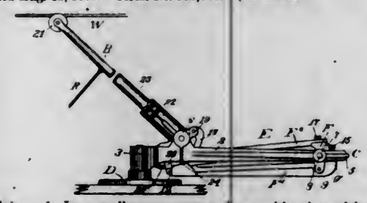
571,119. ELECTRIC SWITCH. WILLIAM W. HIBBARD, Rochester, N. Y. Filed Nov. 21, 1893. Serial No. 491,581. (No model.)



Claim.—1. In combination with an electromagnet of a side circuit, an armature provided with an arm projecting beyond the pivot, an arm forming a circuit-closer with which the armature-arm engages and locks, and a swinging stop so arranged as to fall over and lock the circuit-closer in place, as herein shown and described.

2. In combination with an electromagnet, an armature provided with an arm projecting beyond the pivot, an arm forming a circuit-closer with which the armature-arm engages, a swinging stop so arranged as to lock the circuit-closer down, and a contact-arm provided with electrodes with which the circuit-closer connects when raised, as herein shown and described.

571,120. ELECTRIC-RAILWAY TROLLEY. HENRY D. HINCKLEY, Hartford, Conn., assignor of one-half to Howard N. Hinckley, same place. Filed Aug. 12, 1895. Serial No. 558,972. (No model.)



Claim.—1. In a trolley apparatus, the combination with a suitable frame; of a trolley-pole pivotally supported on said frame for movement toward and away from an electric conductor; a shiftable trolley-pole actuator having a spring acting on the lower end of the trolley-pole, to normally maintain said trolley-pole in its working position relatively to the conductor; a latch carried on the frame and normally engaging and locking the actuator in effective relation with the trolley-pole; an independent tripping device carried on the trolley-pole in position and adapted for engaging and throwing the latch out of engagement with the actuator at a predetermined point in the advancing movement of the trolley-pole, to thereby temporarily nullify the effective relation between the actuator and trolley-pole; and a resetting cam carried by the trolley-pole and controlled by the retractive movement of said trolley-pole for engaging the actuator, and for effecting a reengagement between the actuator and latch, and to thereby reestablish an effective relation between said trolley-pole and actuator.

2. In a trolley-pole apparatus, the combination with a trolley-pole; of a shiftable actuating device having a resilient member connected with the trolley pole and adapted for normally elevating the pole, and also adapted, in one position of said device, for holding the pole in an intermediate, inoperative position; a cam for setting, and a latch for locking, the actuating device in its operative position, when the pole is forcibly lowered below its said inoperative position; and an adjusting device in connection with, and adapted for regulating the effective tension of, the resilient member relatively to the pole, substantially as described.

3. In a trolley apparatus, the combination with a trolley-pole supported for movement toward and from an electric conductor; of a shiftable actuator comprehending two independent, longitudinally-disposed members connected together for adjustment, one relatively to the other, and one of which members is resilient and is connected to the trolley-pole, and is adapted for normally maintaining said trolley-pole in working relation with the conductor; means controlled by the trolley-pole for automatically and temporarily nullifying the effective action of the resilient member upon the trolley-pole concurrently with a movement of the trolley-pole in advance of its working position, to thereby inaugurate a retractive movement of said trolley-pole; and means controlled by the trolley-pole for engaging one member of the actuator, and for resetting the resilient member in active relation with the trolley-pole, substantially as described.

4. In a trolley apparatus, the combination with a suitable frame; of a trolley-pole pivotally supported upon said frame to swing toward and away from an electric conductor; a trolley-pole actuator pivotally supported at its outer end on the frame, and in shiftable connection at its inner end with the trolley-pole; a latch carried on the frame and normally engaging and locking the actuator in effective relation with the trolley-pole; a tripping device carried by the trolley-pole in position for engaging the latch and releasing the same from the actuator at a predetermined point in the advancing movement of the trolley-pole, to temporarily nullify the effective relation between the actuator and trolley-pole, and inaugurate a retractive movement of said trolley-pole; and a resetting-cam carried upon, and controlled by the retractive movement of, the trolley-pole, for effecting a reengagement between the latch and actuator upon a movement of the trolley-pole below its normal, idle position, to thereby reestablish an effective relation between said actuator and trolley-pole.

5. In a trolley apparatus, the combination with a suitable frame, and with a trolley-pole pivotally supported on said frame for movement toward and away from an electric conductor; of a trolley-pole actuator in normal, effective relation with the trolley-pole, and comprehending two independent members adjustably connected together at one end and pivotally carried at this end upon the frame, and having their opposite ends separated and movable toward and from each other, and one of which members is connected with the trolley-pole; and an adjusting device in operative connection with, and adapted for relatively adjusting, said members to increase or decrease the effective tension thereof relatively to the pole.

6. In a trolley apparatus, in combination, a trolley-pole supported for movement toward and from an electric conductor; an actuator in normal, active relation with the trolley-pole, and adapted for normally maintaining said trolley-pole in working position relatively to the conductor; means carried by the trolley-pole for temporarily nullifying the active relation between the actuator and trolley-pole concurrently with a movement of the trolley-pole in advance of its working position; and a combined limiting and resetting cam fixedly carried by the trolley-pole in position for frictionally engaging the actuator at predetermined points in the retractive movement of the trolley-pole, and adapted at one point in the said retractive movement of the trolley-pole for retarding and temporarily holding the same in an intermediate idle position, and upon a further retractive movement of the trolley-pole for resetting the actuator in active relation with the trolley-pole.

7. A trolley apparatus comprising a suitable frame; a trolley-pole supported on said frame for movement toward and from an electric conductor; a trolley-pole actuator embodying two members supported for movement one toward the other, and one of which members is resilient and is operatively connected with the trolley-pole, and the other of which members is substantially rigid and is normally locked against movement relatively to the frame; a latch carried on the frame in normal locked engagement with the substantially rigid member; a tripping device carried by the trolley-pole in position and adapted for engaging and throwing the latch out of engagement with the rigid member at a predetermined point in the advancing movement of the trolley-pole; and a resetting-cam fixedly carried by the trolley-pole in position for engaging and throwing the rigid member into position to be engaged by said latch, to reset the actuator and effect an active relation between said actuator and trolley-pole, substantially as described.

8. A trolley apparatus, comprising in combination a suitable frame; a trolley-pole pivotally supported on said frame for movement toward and from an electric conductor; a trolley-pole actuator having a fixed connection at one end with the frame, and in normal, effective engagement with the trolley-pole at its opposite end, and embodying two independent longitudinally-disposed members connected together for adjustment relatively to each other at the fixed end of the actuator and having their opposite ends relatively separated and movable toward and from each other; a latch carried by the frame, and adapted for locking one of said members in fixed relation with the frame; a connection between the other member and the trolley-pole; means controlled by the trolley-pole for releasing the latch from the actuator member, to temporary nullify the effective action of said actuator upon the pole, and to inaugurate the retractive movement of said pole; and a resetting-cam fixedly carried by the trolley-pole in position and adapted for frictionally engaging one of the actuating members, and for effecting a locked engagement between said member and the latch, to re stablish an active relation between the actuator and trolley-pole, substantially as described.

9. A trolley-pole apparatus, comprising in combination a suitable frame; a trolley-pole pivotally supported on said frame for movement toward and from an electric conductor; a trolley-pole actuator in normal, effective relation with the trolley pole, and comprehending two ledependent, longitudinally-disposed members adjustably connected together at one end, and pivotally carried at this end upon the frame, and having their opposite ends separated and movable toward and from each other, and one of which members is shiftably connected with the trolley-pole; means for normally locking one of said members relatively to the frame, to effect an operative relation between the actuator and trolley-pole; means controlled by the trolley-pole for automatically releasing the normally-locked member, to nullify the operative relation between the actuator and the trolley-pole; and means carried by the trolley-pole for automatically resetting the actuator in operative relation with the trolley-pole, substantially as described.

10. The combination with the trolley-pole-carrying frame and the trolley-pole carried thereon; of a trolley-pole actuator in normally effective engagement with the trolley-pole, and embodying two members, one of which is resilient and is operatively connected with the trolley-pole, and the other of which members is substantially rigid and is fixed at one end relatively to the other member, and is adapted for movement at its opposite end toward and from said other member; means carried by the trolley-pole for automatically nullifying the effective operation of the actuator; and a cam carried by the trolley-pole in position for spreading the two members of the actuator relatively to reset the actuator in effective operative relation with the trolley-pole.

11. A trolley apparatus comprising, in combination, a swiveled frame; a trolley-pole pivotally supported on said frame to swing toward and away from an electric conductor; a trolley-pole actuator carried on said frame, and having a spring normally in tension with the trolley-pole, and adapted for normally maintaining the trolley-pole in a working position relatively to the actuator; a spring-actuated latch carried upon the frame and in normal locked engagement with the actuator; means carried by the trolley-pole in position for engaging the latch and disengaging the same from the actuator, to temporarily nullify the tension of the spring upon the trolley-pole, when said trolley-pole is advancing beyond its working position, and to thereby inaugurate the retractive movement of said trolley-pole; and a combined limiting and resetting cam carried and controlled by the trolley-pole, and effective at one stage in the retractive movement of said trolley-pole for engaging the actuator-spring, and for holding said trolley-pole in an intermediate, idle position; and also effective at another stage in the retractive movement of the trolley-pole for resetting the actuator in locked engagement with the latch to reestablish the effective tension of said spring relatively to the trolley-pole.

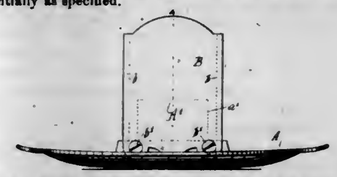
12. In a trolley apparatus, the combination with a frame and the trolley-pole pivotally carried on said frame; of a trolley-pole actuator comprising a carrier pivotally supported on said frame; one or more springs fixed at one end to said carrier and operatively connected at their opposite ends by means of links to the trolley-pole; and a lever-arm pivotally supported at one end on the carrier; a latch carried by the frame in position and adapted for engaging and normally holding the free end of the lever-arm against movement to normally maintain the actuator in effective relation with the trolley-pole; a trip carried by the trolley-pole in position and adapted to nullify the effective relation between the actuator and trolley-pole; and a cam carried by the trolley-pole in position for engaging and effecting a relocking movement of the lever-arm to reestablish an effective relation between the actuator and the trolley-pole, substantially as described.

13. In a trolley apparatus, the combination with a frame, and with a trolley-pole supported on said frame; of an actuating spring in operative connection with the trolley-pole; a lever operatively connected with the spring; a latch for normally locking the lever in fixed relation with the frame to normally hold the spring in operative tension with the trolley-pole; a trip carried by the trolley-pole for releasing the latch at a predetermined point in the advancing movement of the trolley-pole to nullify the tension of the actuating-spring; and a resetting-cam fixedly carried by the trolley-pole in position for engaging the lever at a predetermined point in the retractive movement of the trolley-pole to spread said lever relatively to the spring, and effect a locked engagement between the latch and lever, and to thereby reestablish the tension of the spring relatively to the trolley-pole, substantially as described.

571,121. MATCH-SAFE. OTTO H. HUEBEL and FREDERICK W. MAISER, Brooklyn, N. Y., assignors to William Bernard and Leo Frank, New York, N. Y. Filed Nov. 16, 1893. Serial No. 491,135. (No model.)

Claim.—1. In a match-safe, or similar article, the combination of a base-plate provided with an opening or recess in its lower surface, a block adapted to fit within and be secured in said opening and carrying at its outer lower portion a piece or pieces of a non-scratching material, and means for securing the block within the opening so that the edges of the non-scratching material will extend below the base-plate, substantially as specified.

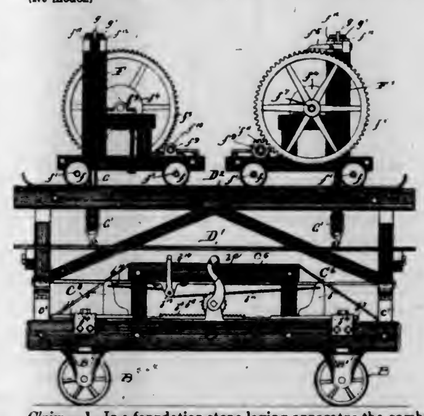
2. As a new article of manufacture, a match-safe, or similar article, having a groove formed in its base in which is inserted non-scratching material with its lower edge projecting below the lower surface of the base, said material being secured in place by forcing one side of the groove toward the opposite side to pinch the material, substantially as specified.



3. In a match-safe, the combination of a base-plate having an opening through it, a hollow block having its bottom edges resting on the upper surface of the base-plate and having integral lugs turned into inclined recesses in the walls of the opening through the base-plate, side pieces secured to the block and having inwardly-turned flanges, and a non-scratching material secured to the block and having its edge projected beyond the bottom plane of the base-plate, substantially as specified.

4. In a match-safe or similar article the combination of a base-plate having an opening or recess therein, a block fitting within the recess or opening and secured to the base-plate, a piece or pieces of non-scratching material projecting below the block and base-plate, and means for securing said non scratching material in position, substantially as set forth.

571,122. HOISTING AND STONE-LAYING APPARATUS. GRIFFITH HUNTER, Chicago, Ill. Filed Dec. 24, 1891. Serial No. 416,069. (No model.)



Claim.—1. In a foundation-stone laying apparatus the combination with a network of right-angle tracks of a truck-frame furnished with a crab and windlass and having wheels journaled in caster frames or blocks, so that the same may be turned at the junction of said tracks, substantially as specified.

2. In a foundation-stone-laying apparatus the combination with a network of right angle tracks of a truck-frame furnished with a crab and windlass and having wheels journaled in caster frames or blocks, so that the same may be turned at the junction of said tracks, said caster frame or blocks having gears for turning the same and a rack for operating said gears, substantially as specified.

3. In a foundation stone-laying apparatus the combination with a network of right-angle tracks of a truck-frame furnished with a crab and windlass and having wheels journaled in caster frames or blocks, so that the same may be turned at the junction of said tracks, said caster frame or blocks having gears for turning the same, and a rack for operating said gears, and a crank-shaft furnished with a gear for operating said rack, substantially as specified.

4. In a foundation-stone-laying apparatus the combination with a network of right-angle tracks of a truck-frame furnished with a crab and windlass and having wheels journaled in caster frames or blocks so that the same may be turned at the junction of said tracks, and locking-bolts engaging said caster frames or blocks for holding the wheels in position, substantially as specified.

5. The combination with a truck-frame of a crab and windlass mounted adjustably thereon, of wheels B for said truck-frame jour-

naled in caster-blocks upon said truck-frame and an angle-track upon which said wheels travel, substantially as specified.

6. The combination with truck-frame C having double longitudinal beams c c with a space between the members of said double beams, caster-sockets B^3 secured to said double beams and projecting between them, caster-blocks B' journaled in said sockets and wheels B journaled in said caster-blocks, substantially as specified.

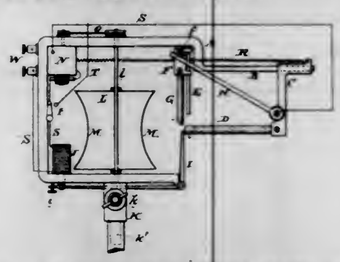
7. In a foundation-stone-laying apparatus, the combination with a truck-frame C furnished with wheels B, of a removable frame D having tracks D' and a crab-frame and windlass, and a removable supplemental transverse frame K also furnished with track-rails adapted to receive said crab-frame, substantially as specified.

8. The combination of the truck-frame C furnished with wheels journaled in caster-blocks, said caster-blocks having gears for operating the same, and a rack the teeth of which mesh with the gears of two of said wheels so as to operate the same simultaneously, substantially as specified.

9. The combination of the truck-frame C furnished with wheels journaled in caster-blocks, said caster blocks having gears for operating the same, and a rack the teeth of which mesh with the gears of two of said wheels so as to operate the same simultaneously, and locking-bolts for holding said caster-blocks in place and mechanism for operating said locking-bolts simultaneously, substantially as specified.

571,123. ELECTRIC LAMP. RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to the Thomson-Houston Electric Company, of Connecticut.

Filed Oct. 5, 1893. Serial No. 487,230. (No model.)



Claim.—1. The combination of a focusing arc-lamp, with a reflector having a series of reflecting-surfaces and located to one side of the lamp, and means to move the said reflector rapidly so as to bring the different surfaces successively into and out of reflecting position.

2. The combination of a focusing arc-lamp, with a reflector having a series of reflecting-surfaces, and means consisting of an electric motor arranged in series circuit with the carbons of the lamp to move the said reflector rapidly so as to bring the different surfaces successively into and out of reflecting position

3. The combination of an arc-lamp, a reflector structure pivoted at one side of the arc-lamp and provided with one or more reflecting-surfaces, and means to rapidly move the reflecting-surfaces into and out of reflecting position and shift them bodily relatively to the lamp.

4. The combination of a focusing arc-lamp, a reflector structure pivoted at one side of the arc of the lamp and provided with a reflecting device, and an electric motor to rapidly move the reflecting device into and out of reflecting position.

5. The combination of an arc-lamp, a reflector structure pivoted at one side of the arc of the lamp and provided with one or more reflecting-surfaces made parabolic in vertical cross-section and substantially straight in transverse cross-section, and means to rapidly move the reflecting-surfaces into and out of reflecting position.

6. The combination of an arc-lamp, with a pivoted reflector having its periphery provided with a series of independent reflecting-surfaces, and means to rapidly revolve the reflector so as to bring the same side of the reflecting-surfaces successively into and out of reflecting position with respect to the arc.

7. The combination of a focusing-lamp, with two or more parabolic-shaped reflectors directed in different directions, a movable support common to said parabolic reflectors and adapted to shift them into different positions relatively to the lamp to bring them successively into and out of reflecting position with respect to the arc of the lamp, and means for moving the said support.

8. The combination of a focusing-lamp, with two or more parabolic-shaped reflectors directed in different directions, a movable support common to said parabolic reflectors and adapted to shift them into different positions relatively to the lamp to bring them successively into and out of reflecting position with respect to the arc of the lamp, and means for moving the said support consisting of an electric motor in series with the lamp.

9. The combination of an arc-lamp, with a movable frame journaled upon a vertical axis at one side of the lamp, an electric motor to revolve the frame, a reflecting device carried by the frame, and a common support for the electric lamp electric motor and revolving frame.

10. The combination of an arc-lamp, with a movable frame journaled in a vertical axis at one side of the lamp, an electric motor to revolve the frame, a reflecting device carried by the frame, a common support for the electric lamp electric motor and revolving frame, and means to adjust the said common support so as to project the reflected beam of light in various directions.

11. In an arc-lamp, the combination of a horizontal guide, a movable frame movable upon said guide and adapted to carry one of the carbons, a second guide arranged at an angle to the first-mentioned guide, a carbon-holder for the other carbon movable upon said second guide, an oblique guide carried upon the movable frame supporting the first-mentioned carbon for controlling the movement of the carbon-holder for the second-mentioned carbon, and electrical devices controlled by the arc for moving the movable frame so as to establish and maintain the arc between the carbons.

12. In an arc-lamp, the combination of a horizontal guide, a movable frame movable upon said guide and adapted to carry one of the carbons, a second guide arranged at an angle to the first-mentioned guide, a carbon-holder for the other carbon movable upon said guide, an oblique guide carried upon the movable frame supporting the first-mentioned carbon for controlling the movement of the carbon-holder for the second-mentioned carbon, a spring to move the movable frame, a movable part acting upon the carbon of said movable frame to limit its movement under the action of the spring, and an electromagnetic device in circuit with the arc for operating the movable part, whereby the movable frame may be moved so as to establish and maintain the arc between the carbons.

13. The combination with an arc-lamp adapted to emit direct diverging rays of light upon the objects whereby they are constantly illuminated, of a reflector wholly at one side of the carbons of the arc-lamp for spreading the reflected rays of light, means for imparting a rapid movement to the reflector whereby the reflected rays of light are always projected upon the objects which are constantly illuminated by the direct rays and the direction of said reflected rays are continually being changed and the illumination of the objects thereby increased, an electric motor to operate said movable reflector, and means for cutting the electric motor out of circuit while maintaining the electrical circuit through the lamp.

14. The herein-described method of continually lighting a large or extended area with a given consumption of electric energy consisting in maintaining an arc and directly projecting diverging rays of light therefrom continuously upon the area to be illuminated, reflecting the rays of light of the arc which project away from the area to be illuminated into a diverging reflected beam of light, and causing said diverging reflected beam of light to rapidly travel over the area which is continually illuminated by the directly-projected diverging rays of light whereby the illumination by the direct rays is reinforced or intensified by the reflected rays at rapid intervals.

15. The herein-described method of lighting a large or extended area with a given consumption of electric energy, consisting in maintaining an arc and directly projecting diverging rays of light therefrom continuously upon the area to be illuminated, reflecting the rays of light of the arc which project away from the area to be illuminated into a beam of light and upon the area to be illuminated, and causing said reflected beam of light to be intermittently projected at rapid intervals and caused to rapidly travel over the extended area continuously illuminated by the direct rays.

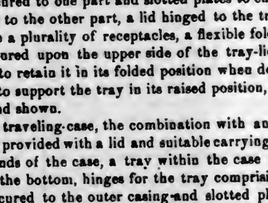
16. The herein described method of lighting a large or extended area with a given consumption of electric energy consisting in maintaining an arc and directly projecting diverging rays of light therefrom upon the area to be illuminated, projecting the rays from said arc which extend backward simultaneously into two or more independent reflected beams of light, and causing said reflected beams of light to rapidly travel in the same direction over the extended area which is constantly illuminated by the direct rays.

17. The herein-described method of lighting a large or extended area with a given consumption of electric energy consisting of maintaining an arc, causing the rays of light therefrom to be reflected in a series of successive intermittent beams of light, and causing said intermittent beams of light to be moved sufficiently rapidly over the area to be illuminated in the same direction as to cause the illumination of the entire area by direct and reflected rays to be constant.

571,124. TRAVELING-CASE. OSCAR P. HURD, Syracuse, N. Y.

Filed Jan. 10, 1896. Serial No. 574,952. (No model.)

Claim.—1. In a traveling-case, the combination with an oblong rectangular casing provided with a lid and carrying means, of an expansion-pocket on the outside of the lid, a pocket at each end of the case below the lid, a tray within the case supported at its ends above the bottom, a lid for the tray carrying on its inner side a plurality of pockets and loops, a flexible wrapper below the lid of the case containing rows of loops, and suitable means to retain the tray in a raised position, substantially as described and shown.



2. In a traveling-case, the combination with an oblong rectangular casing provided with a lid and carrying means, of an expansion-pocket on the outside of the lid, an expansion-pocket on the outside of each end of the case below the lid, a tray within the case supported at its ends above the bottom, a lid for the tray carrying on its inner side a plurality of pockets and loops, a flexible wrapper below the lid of the case containing rows of loops, and suitable means to retain the tray in a raised position, substantially as described and shown.

3. In a traveling-case, the combination with a rigid, oblong, rectangular casing provided with a lid and suitable carrying means, of pockets at the ends of the case below the lid, a tray within the case supported at its ends above the bottom, a lid for the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper secured to the upper side of the lid of the tray with means to retain it in its folded position, said wrapper containing receptacles on its inner side, and suitable means to retain the said tray in its raised position when desired, as set forth.

4. In a traveling-case, the combination with an oblong, rectangular casing provided with a lid and suitable carrying means, of pockets at the ends of the case, a tray within the case supported at its ends above the bottom, a lid hinged to the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper removably secured upon the upper side of the tray-lid and provided with means to retain it in its folded position when desired, and suitable means to support the tray in its raised position, substantially as described and shown.

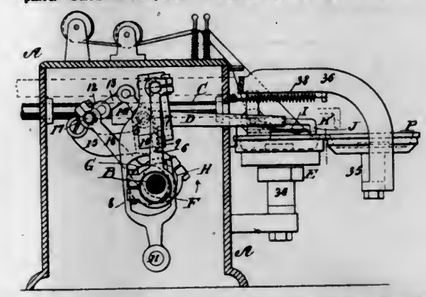
5. In a traveling-case, the combination with an oblong, rectangular casing provided with a lid and suitable carrying means, of pockets at the ends of the case, a tray within the case supported at its ends above the bottom, a lid hinged to the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper removably secured upon the upper side of the tray-lid and provided with means to retain it in its folded position when desired, and means to support the tray in its raised position consisting of a slotted brace pivoted to one end of the tray and engaging a screw on the case, as set forth.

6. In a traveling-case, the combination with an oblong, rectangular casing provided with a lid and suitable carrying means, of pockets at the ends of the case, a tray within the case supported at its ends above the bottom, hinges for the tray comprising hook-shaped members secured to one part and slotted plates to engage said members secured to the other part, a lid hinged to the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper removably secured upon the upper side of the tray-lid and provided with means to retain it in its folded position when desired, and suitable means to support the tray in its raised position, substantially as described and shown.

7. In a traveling-case, the combination with an oblong, rectangular casing provided with a lid and suitable carrying means, of pockets at the ends of the case, a tray within the case supported at its ends above the bottom, hinges for the tray comprising hook-shaped members secured to the outer casing and slotted plates on the rear side of the tray to engage the said members, a lid hinged to the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper removably secured upon the upper side of the tray-lid and provided with means to retain it in its folded position when desired, and suitable means to support the tray in its raised position, substantially as described and shown.

8. In a traveling-case, the combination with an oblong, rectangular casing provided with a lid and carrying means, an expansion-pocket on the outside and on each end of the case below the plane of the lid, said pockets being provided with covers and fastening devices, a tray within the case supported at its ends above the bottom, hinges for the tray comprising hook-shaped members secured to one part and slotted plates secured to the other part, a lid hinged to the tray carrying on its inner side a plurality of receptacles, a flexible folded wrapper removably secured to the lid, and means to support the tray in its raised position consisting of a slotted brace pivoted to one end of the tray and engaging means on the case to work in the slot, as and for the purpose set forth.

571,125. OVEREDGE SEWING-MACHINE. HERMANN A. KLEMM, New York, N. Y., assignor of one-half to Christian Engelhardt, same place. Filed June 16, 1896. Serial No. 595,741. (No model.)



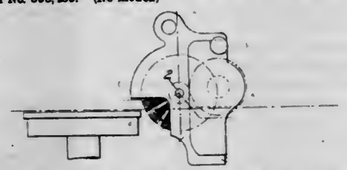
Claim.—1. A looper for an overedge sewing machine having a vertical eye near the point of the spear, an eye below the spear at the heel, and a concavity upon the upper side of the spear between the shank and said vertical eye, in combination with a reciprocating needle, and means for actuating the looper horizontally and vertically so that the same is depressed under the line of the needle on one side of the goods with said concavity in the path of the needle, and carried over and depressed above the line of the needle on the other side of the goods, to form the stitch described.

2. In an overedge sewing-machine, the combination of a reciprocating needle, and a looper having a concaved upper side, and means for actuating the looper horizontally and vertically so that the same is depressed under the line of the needle on one side of the goods, and carried over and depressed above the line of the needle on the other side of the goods to form the stitch described.

3. In an overedge sewing-machine, the combination of horizontal feed disks, a horizontal needle reciprocating across the line in which the goods are fed by the disks, means for supplying thread to the needle under tension, a looper movable into positions adjacent to the path of the needle on both sides of the said line of feed of the goods, means for supplying thread to the looper under tension, and means of operating the looper in such relation to the needle that on one side of the goods the looper-thread is introduced by the point-eye of the looper through the loop formed in the needle-thread on the upper side of the needle by the retracting movement of said needle after it has punctured the goods, and on the other side of the goods the needle-thread is introduced by the point-eye of the needle through the loop carried by the eye of the looper when said looper is presented under the line of the needle and the looper is retracted and raised from the needle forming a twist in its loop when taken by the needle, adapted to lock the stitch when it is bound off.

4. In an overedge sewing-machine, the combination of a drive-shaft, an eccentric thereon and a yoke actuated thereby carrying the looper-bar-actuating mechanism consisting in a movable supporting-carrier and guide therefor parallel to the length of said shaft and actuated by an eccentric on said shaft, the looper-bar being pivoted to said carrier, and a toggle-lever mechanism substantially as shown pivoted to said carrier and said looper-bar and having its members centrally jointed together, and connected to an eccentric on said shaft.

571,126. HAIR-DIVIDING ATTACHMENT FOR OVEREDGE SEWING-MACHINES. HERMANN A. KLEMM, New York, N. Y., assignor of one-half to Christian Engelhardt, same place. Filed July 8, 1896. Serial No. 598,439. (No model.)

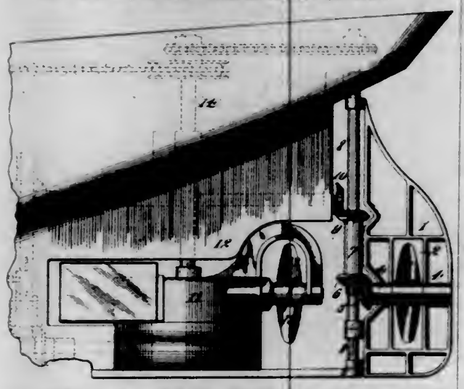


Claim.—1. In a hair-dividing attachment for overedge sewing-machines, the combinationof a hollow divider, guide-plates forming passage-ways for the furs at each side or surface of the divider, a rotary dividing wheel or brush inclosed in the hollow divider and ex-

posed to said passage-ways on one side of a vertical plane through its axis, and means for rotating said wheel in a descending direction at said exposed portion.

2. In an overedge sewing-machine, the combination of a suitable feed device, a hollow divider, guide-plates forming passage-ways for the furs at each side or surface of the divider, a rotary dividing wheel or brush inclosed in the hollow divider and exposed to said passage-ways on the side of a vertical plane through its axis from which the goods are drawn by said feed device.

571,127. PROPULSION OF VESSELS. JOHN H. MOSLEY, St. Louis, Mo. Filed May 18, 1896. Serial No. 592,035. (No model.)



Claim.—1. In a vessel, the combination of a screw-propeller mounted on the rudder and steering mechanism therefor, of twin screw-propellers mounted on a pivotal framework, and connecting devices whereby said pivotal framework is controlled by the steering mechanism and a casing inclosing said connecting devices and comprising said framework as a part thereof, substantially as and for the purpose set forth.

2. In a vessel, the combination of a vertical shaft having a loose collar thereon provided with two bevel-gears, a bevel-gear on the engine-shaft meshing with one of said gears and a pivotally-mounted framework having one or more horizontal shafts journaled thereon and each carrying a screw-propeller and being connected to and driven by said vertical shaft, and a casing inclosing such connecting mechanism and consisting of two horizontal sections, one of said sections being fixed and the other section being fastened to the vertical shaft and comprising the pivotal framework above mentioned, substantially as and for the purpose set forth.

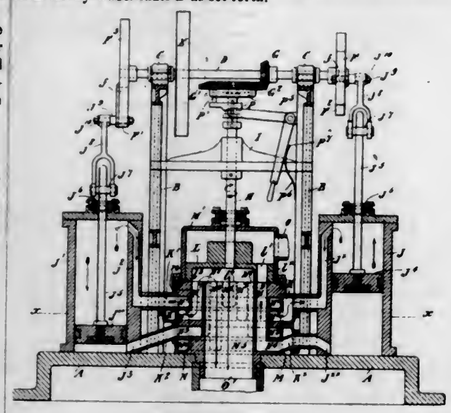
571,128. PAINT COMPOUND. CARL V. PETRAEUS, Joplin, Mo., assignor to Oliver H. Picher, same place. Filed June 29, 1892. Serial No. 438,417. (No specimens.)

Claim.—A paint compound made of sublimed lead, oil in excess of that necessary to form a mixture of proper consistency, and water substantially as and for the purpose specified.

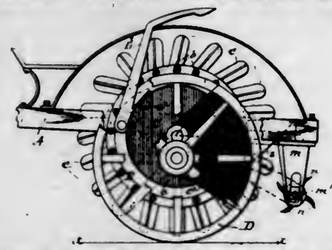
571,129. HYDRAULIC OR OTHER ENGINE. JAMES E. SCHUMACHER, York, England. Filed Sept. 24, 1894. Serial No. 524,010. (No model.)

Claim.—1. In an engine, the combination with a bed-plate, cylinders mounted on said bed-plate, a valve-case arranged adjacent to said cylinders, and communicating therewith, a valve-seat within the casing, circumferential grooves formed on the valve-seat, each groove communicating with a single port of one cylinder, and with one or more openings in the face of the valve-seat, a hood covering the face of the valve-seat a rotating valve mounted within the hood, perforations within the valve connecting the hood and circumferential grooves, and recesses on the face of the valve, connecting the grooves with the central orifice, substantially as set forth.

2. In an engine such as described the combination of the outer casing M perforated as described, the valve-seat N fitted within said outer casing having a number of circumferential grooves $N' N^2 N^3 N^4$ cut in its periphery, valve-ports $N^6 N^7 N^8 N^9$ communicating with said circumferential grooves as described, an orifice N^5 in the center of said valve-seat, a valve L working in the hood M' and upon the valve-seat N, and having a number of openings $l' l^2 l^3$ for inlet purposes, and recesses $l^3 l^4 l^5$ communicating with a central circular recess l^4 over the central orifice N^5 for exhaust, said valve receiving a continuous rotary motion through gear-wheels G, G', and shaft H from the fly-wheel shaft D as set forth.



571,130. CULTIVATING IMPLEMENT. JEREMIAH DARLING, Erianger, Ky. Filed Oct. 9, 1895. Serial No. 565,188. (No model.)



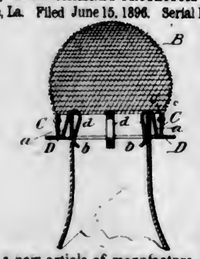
Claim.—1. An agricultural implement embodying a hollow cylinder or drum adapted to roll in contact with the ground, provided with a series of blades pivoted within the peripheral wall of the drum and projecting through apertures permitting a limited oscillation of the blades, substantially as set forth.

2. An agricultural implement, of the character indicated, embodying a roller with projecting teeth, bearing-wheels journaled upon a cranked axle extending centrally through the drum, and segmental extensions of the cranks adapted to roll upon the ground and lift the roller and frame while bringing the bearing-wheels into position, provided with stops and an engaging lever pivoted to the frame, substantially as set forth.

3. In an implement of the character indicated, the hollow drum provided with blades—the latter being formed of two intersecting blades, one of which extends into the drum as a shank to engage the pivot, and the other projects its shoulders against the outside of the drum, substantially as set forth.

4. In an implement of the character indicated, the combination of the hollow perforated cylindrical drum, the end caps, the fixed bolt-rods extending from end to end through, and securing the caps to the drum, and the blades pivotally hung on the bolt-rods and projecting through the peripheral wall of the drum, substantially as set forth.

571,131. LAMP-CHIMNEY PROTECTOR. ANTHONY DOHERTY, Jr., Baton Rouge, La. Filed June 15, 1896. Serial No. 595,632. (No model.)



Claim.—As a new article of manufacture, a chimney-protector, comprising the wire-gauze hood B, formed with a flange C, a sheet-metal flange C' secured to said flange C by rivets c and provided with a horizontal flange D, having integral spring-arms *d*, substantially as shown and described.

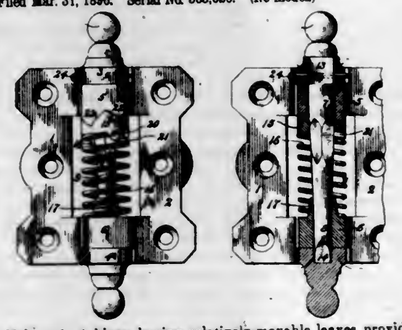
571,132. PACKAGE-CARRIER FOR BICYCLES. GEORGE J. HISE, Chicago, Ill. Filed June 24, 1896. Serial No. 596,669. (No model.)



Claim.—1. A package-carrier for bicycles consisting of a plate having holes, straps attached to the plate so as to extend around a tube and through the holes, and means at the ends of the straps to secure a cord or string; substantially as described.

2. A package-carrier for bicycles consisting of a plate having holes, straps attached to the plate so as to extend around a tube and through the holes and hooks on the ends of the straps; substantially as described.

571,133. SPRING-HINGE. HENRY A. HOFFMAN, Lancaster, Ohio. Filed Mar. 31, 1896. Serial No. 585,628. (No model.)



Claim.—1. A hinge having relatively-movable leaves provided respectively with registering eyes and collars, the former being interposed between the latter, a hinge-pin engaging said registering eyes and collars, and a spring-actuated clutch member arranged in operative relation with a clutch-face on one of said eyes and held by the hinge-pin from rotary movement and to slide thereon, substantially as specified.

2. In a hinge, the combination of leaves provided with registering eyes and collars, the former having round and the latter angular openings, a stationary hinge-pin provided with angular portions engaging the openings of the collars and round portions engaging the openings of the eyes, the eyes being interposed between the collars, a clutch member coöperating with a clutch-face on one of said eyes and having an angular opening fitted for axial movement upon an intermediate angular portion of the hinge-pin, and an actuating-spring interposed between and terminally seated upon said clutch member and the other or remote eye, substantially as specified.

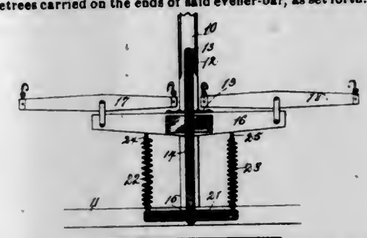
3. A hinge having relatively-movable coaxially-mounted leaves, one of which carries a rotary clutch member, and an axially-movable non-rotatable spring-actuated clutch member coöperating with the rotary clutch member, said clutch member being provided with coöperating faces having alternately-disposed and oppositely-inclined long and short bevels, the combined lengths of a long and a contiguous short bevel being equal to one-half or one hundred and eighty degrees of the circumference of the clutch to provide for swinging a door through an arc exceeding ninety degrees without engaging the short bevels, substantially as specified.

571,134. EVENER FOR TWO-HORSE VEHICLES. JAMES HOOK, Jr., Manilla, Iowa. Filed Mar. 26, 1896. Serial No. 584,989. (No model.)

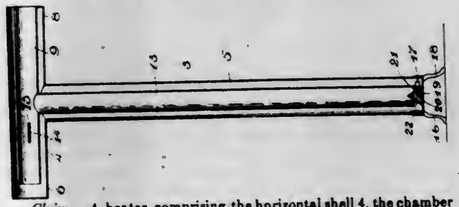
Claim.—1. An evener, comprising an evener-bar mounted to slide and oscillate on a tongue, singletrees carried by the ends of said evener-bar, an evener mounted adjacent to said evener-bar and yielding pressure devices connecting said evener and evener-bar, as set forth.

2. An evener comprising an evener-bar carrying singletrees and provided with a bridle whereby the bar is mounted for reciprocation and oscillation on a vehicle-tongue, an evener, and springs connecting said evener and evener-bar.

3. In a device of the class described, the combination of a vehicle-tongue, a clip mounted on said tongue, bolts traversing said clip and tongue, an evener-bar mounted between said clip and tongue and between the bolts, a bridle on said evener-bar inclosing the forward bolts, an evener mounted in the rear of the evener-bar, retractile coil-springs connecting the ends of said evener with the evener-bar and singletrees carried on the ends of said evener-bar, as set forth.

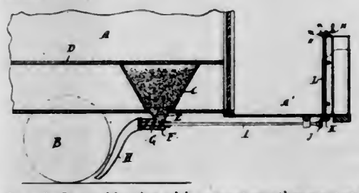


571,135. HEATER. JAMES MAHEDY, Kellerton, Iowa. Filed July 29, 1896. Serial No. 600,895. (No model.)



Claim.—A heater, comprising the horizontal shell 4, the chamber 5, connected therewith, the horizontal pipe 9 located in said shell 4, and provided with the damper 15, the vertical pipe 13 located in said chamber and communicating with said horizontal pipe, and the cover 17, removably secured to the lower end of said chamber, and provided with the orifice 19, the conical perforated hood 22, and the lever 21 mounted in the side of said hood and provided with the disk 20, substantially as shown and described.

571,136. SAND-DEPOSITING APPARATUS FOR CARS. JOHN OLDFIELD, Medford, Mass. Filed Mar. 18, 1896. Serial No. 583,713. (No model.)



Claim.—1. In combination with a street or other car a sand-box, a sand-feeding device consisting of a screw having its end formed with two quadrantal flat surfaces and a casing inclosing said screw the delivery end of said casing being formed with two quadrantal openings, means for operating said screw and a pipe or tube for conducting the sand to the rail, substantially as set forth.

2. In a sand-depositing apparatus for street or other cars a screw having its delivery end formed with two quadrantal flat surfaces and a casing having two quadrantal openings substantially as set forth.

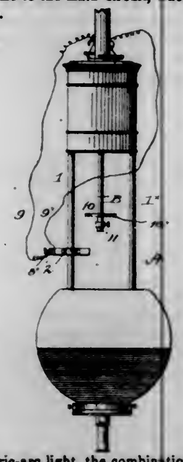
3. In a sand-depositing apparatus for street or other cars a screw tapering from the receiving end to its delivery end, said delivery end being formed with two quadrantal flat surfaces in combination with a casing substantially as set forth.

4. In a sand-depositing apparatus for street or other cars a screw having a varying pitch, the pitch at its receiving end being greater than at its delivery end, each turn of said screw being on a proportionate pitch, the delivery end having two quadrantal flat surfaces and a casing inclosing said screw, the end of said casing having two quadrantal openings through which the sand is delivered substantially as set forth.

571,137. ELECTRIC-ARC LAMP. HARRY R. PALMER, Norfolk, Va. Filed Mar. 25, 1896. Serial No. 584,825. (No model.)

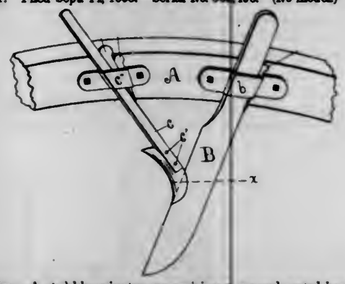
Claim.—1. In an electric-arc light, the combination of the movable carbon-rod of the upper carbon, a contact piece on the said rod,

a contact-frame adjustably clamped to and insulated from the frame-bar of the lamp, and a shunting-circuit leading from the outer ends of the contact-frame to the main circuit, whereby the circuit is cut out of the carbons.



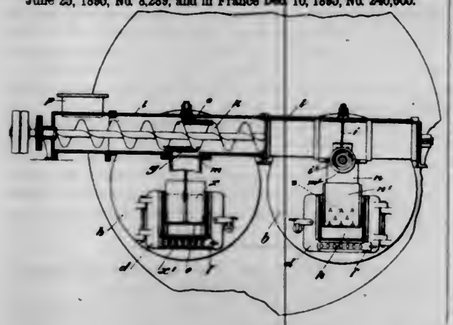
2. In an electric-arc light, the combination of the movable carbon-rod of the upper carbon, a contact-piece on the said rod formed with a serrated downward-extending edge flange, a contact-frame adjustably secured to the lamp-bar and comprising two bars insulated from the lamp-bar to which it is secured, and having their inner ends arranged in the path of the contact-piece on the carbon-rod, and a shunt-circuit leading from the outer end of the contact-frame to the main circuit, substantially as set forth.

571,138. STUBBLE-REJECTER. HARVEY PEARSON, De Peyster, N. Y. Filed Sept. 14, 1895. Serial No. 562,490. (No model.)



Claim.—A stubble-rejecter comprising a curved metal horn, having a wedge-shaped front edge and bifurcated rear portion adapted to straddle and fit over the sharpened edge of the ordinary plow-colter.

571,139. FUEL-FEEDER FOR FURNACES. WILHELM RUHL, Berlin, Germany. Filed Dec. 27, 1895. Serial No. 573,467. (No model.) Patented in Germany Dec. 30, 1893, No. 82,919; in Austria Dec. 1, 1894, No. 44/3,190; in Hungary Feb. 5, 1895, No. 2,126; in Italy Mar. 15, 1895, XXX, 38,753; in Belgium June 15, 1895, No. 115,884; in England June 25, 1895, No. 3,289, and in France Dec. 10, 1895, No. 240,605.



Claim.—1. In a device of the character described a conveyer, a telescopic pipe connecting the conveyer to a furnace-door, means for distributing the fuel within said pipe, a draft-tube connected to the lower end of said pipe and means for regulating the cross-section of said draft-tube, as and for the purpose described.

2. In a device of the character described, a feeding-conveyer, a parallel return-conveyer, means for transferring the contents from one conveyer into the other and feed-pipes leading from the feed-conveyer to furnace-doors, as and for the purpose described.

3. In a device of the character described, a feed-conveyer, a telescopic pipe leading from the feed-conveyer to a furnace-door, distributers arranged in said pipe and a draft-tube having an adjustable top attached to the lower section of the telescopic pipe and means for operating the top of the draft-tube, as and for the purpose described.

4. In a device of the character described, a conveyer, pipes leading from the conveyer to furnace-doors, brushes attached to the conveyer over said pipes and means for regulating the flow through said pipes, as and for the purpose described.

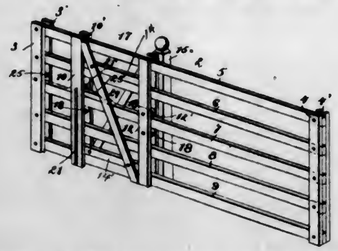
5. In a device of the character described, a feed-conveyer, a return-conveyer, telescopic pipes leading from the feed-conveyer to furnace-doors, brush attachments on the feed-conveyer over the pipes means for regulating the passage of said pipes, draft-tubes attached to said pipes and having adjustable tops connected to said telescopic pipes means in the pipes for distributing and deflecting the fuel toward the fire-box and means for regulating the passage in the draft-tube and pipes.

6. In a device of the character described, a feed-conveyer, a return conveyer, means for transferring the contents from one conveyer to the other, telescopic pipes leading from the feed-conveyer to furnace-doors, inverted-V-shaped slanting plates within said pipes draft-tubes having adjustable tops and funnel-shaped mouths secured to the lower section of said pipes, slides in said pipes, brushes on the conveyer over said slides and means for operating the slides and tops of the draft-tubes, as and for the purpose described.

7. In a device of the character described, a conveyer, a swinging furnace-door beneath said conveyer a draft-tube leading to the door, an overlapping top to said draft-tube, slidably connected to the door a telescopic pipe connecting the top of the draft-tube to the conveyer, whereby the said pipes may be disconnected to allow the door to be swung open, as and for the purpose described.

8. In a device of the character described, a funnel-mouthed draft-tube, a feed-pipe entering the draft-tube, and slanting inverted-V-shaped plates in the feed-pipe adapted to distribute and deflect the fuel, as and for the purpose described.

571,140. GATE. JOHN W. SHOWALTER and JACOB N. CARVER, Altoona, Kans. Filed Apr. 21, 1896. Serial No. 588,475. (No model.)

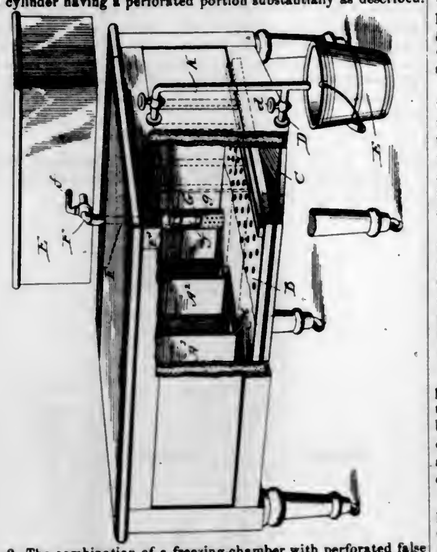


Claim.—1. A sliding gate, supported in the frame 17 hinged to the post 15, and having one of its rails 7 provided with a block having an inclined end 24 and a plane surface 23', in combination with gravity-operated bolt 21, having an upper angular end 21', and the shoe 19, heel 20 and recess 22, substantially as and for the purpose set forth.

2. A gate of the class described, consisting of the frame 17 hinged to the post 15, provided with the gravity-bolt 21, the upper end of which extends at a right angle through the guide-slots 102, 103, in the uprights 10, 10', and with friction-rollers 18, a gate-panel 2 mounted to slide longitudinally thereon, one of the rails 7 of which is provided with a block 23, having an inclined end 24, and a plane surface 23', in combination with the shoe 19, having heel 20 and recess 22, substantially as and for the purpose set forth.

571,141. APPARATUS FOR MANUFACTURING ICE. WILLIAM F. SINGER, Nashville, Tenn., assignor to the Home Ice Maker Company, same place. Filed Feb. 16, 1895. Renewed Mar. 30, 1896. Serial No. 585,498. (No model.)

Claim.—1. The combination with a freezing-chamber with perforated false bottom, of molds in said chamber, a pipe and a cylinder extending into said chamber for supplying water to the refrigerant, said cylinder having a perforated portion substantially as described.

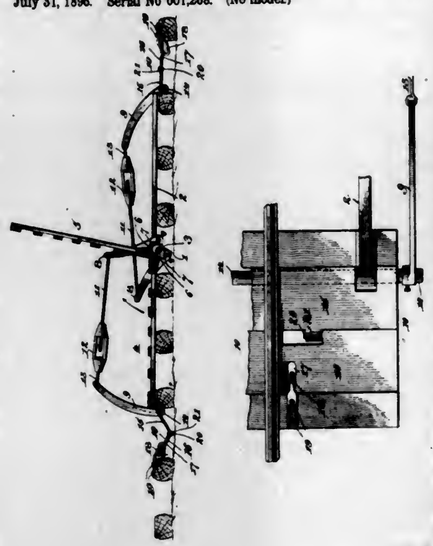


2. The combination of a freezing-chamber with perforated false bottom, of molds in said chamber, a pipe and a cylinder extending into said chamber for supplying water to the refrigerant, said cylinder having a perforated portion and sheets of percolating material in said pipe, substantially as described.

3. The combination of a freezing chamber with perforated false bottom, of molds in said chamber, a pipe and a cylinder extending into said chamber for supplying water to the refrigerant, said cylinder having a perforated portion, sheets of percolating material in said pipe and a screw-coupling so arranged as to permit of varying the number of said sheets, substantially as specified.

4. The combination with the freezing-chamber, of the tank and its pipe, the cylinder extending into the chamber for supplying water to the refrigerant and having perforations near its lower end, a flexible portion to said pipe, a detachable pipe and coupling, and sheets of blotting-paper or similar material held thereby, substantially as described.

571,142. AUTOMATIC CATTLE-GUARD. SLAUGHTER L. SPENCER, Roanoke, Va., assignor of one-half to Tidal A. Taylor, same place. Filed July 31, 1896. Serial No 601,268. (No model.)



Claim.—1. In a railway cattle-guard, the combination of a pintle-rod, a pair of gates composed of sections and arranged on the said pintle-rod, transversely-disposed rods connecting the sections of the gates and downwardly offset from the pintle-rod, arms carried by the connecting-rods, and tilting platforms connected with said arms, substantially as and for the purpose described.

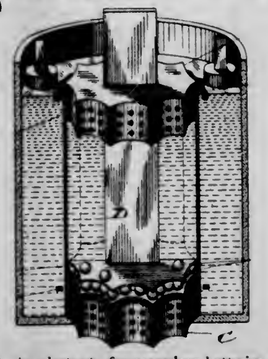
2. In a railway cattle-guard, the combination of a transverse pintle-rod, a pair of upwardly-extending gates composed of sections and mounted on the said pintle-rod, transverse rods connecting the sections of the gates and downwardly offset from the pintle-rod, arms mounted on the connecting-rods, tilting platforms provided with arms and located at opposite sides of the gates, and adjustable connections between the said arms of the gates and the platforms, substantially as and for the purpose described.

3. In a railway cattle-guard, the combination of a transverse pintle-rod, a pair of independently-swinging gates mounted on the said pintle-rod and composed of sections, the downwardly-offset rods connecting the sections of the gates, the diverging arms mounted on the connecting-rods and inclined upward and outward, tilting platforms provided with inwardly-inclined upwardly-extending arms, and turn-buckle connections between the arms of the platforms and the arms of the connecting-rods, substantially as and for the purpose described.

4. In a railway cattle-guard, the combination of a transverse pintle-rod, the oppositely-disposed gate-sections provided with eyes mounted on the pintle-rod, said eyes having depending lugs extending below the pintle-rod, the transversely-disposed connecting-rods secured to the lugs of the eyes, arms mounted on the connecting-rods, and tilting platforms provided with arms connected with those of the connecting-rods, substantially as described.

5. In a railway cattle-guard, the combination of a gate, a tilting platform comprising two sections detachably hinged at their adjacent edges and extending entirely across the space between two cross-ties, one of the sections being provided, adjacent to its outer edge, with slots, loops mounted on the cross-ties and linked into the said slots and supporting the adjacent section, and connections between the other section and the gate, substantially as described.

571,148. ELECTRODE FOR SECONDARY BATTERIES. HENRY WOODWARD, Toronto, Canada. Filed Mar. 23, 1896. Serial No. 584,526. (No model.)



Claim.—1. An electrode for secondary batteries comprising a perforated tube; a central ribbon of lead forming a core; a filling of pellets of red oxid of lead, and plates dividing the filling of pellets into a series of layers, substantially as and for the purpose specified.

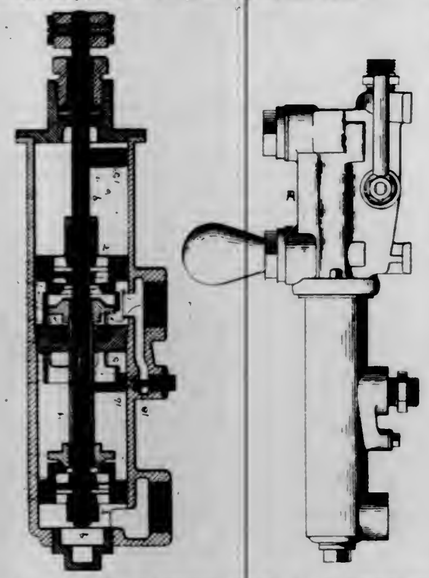
2. An electrode for secondary batteries comprising a perforated leaden tube; a central ribbon of lead forming a core; a filling of pellets of red oxid of lead, and leaden plates dividing the filling of pellets into a series of layers, substantially as and for the purpose specified.

3. An electrode for secondary batteries comprising a perforated leaden tube with corrugated walls; a central ribbon of lead forming a core; a filling of pellets of red oxid of lead, and leaden plates shaped to fit the inside of the corrugated tube and dividing the filling of pellets into a series of layers, substantially as and for the purpose specified.

571,144. ENGINE. MELVIN A. YEAKLEY, Cleveland, Ohio, assignor of two-thirds to Thomas Austin, Massillon, and W. T. Lewis, Columbus, Ohio. Filed Oct. 3, 1895. Serial No. 564,499. (No model.)

Claim.—1. In an engine as described, the pistons provided with fluid-passages, and reciprocating valves between said pistons arranged to open and close said passages during the stroke of each piston successively, substantially as described.

2. The engine described having a casing with two fluid-connected chambers, and a wall between said chambers, and single inlet and exhaust ports, connected pistons with openings through them, and connected valves arranged to reciprocate between said pistons and open and close the pistons alternately, substantially as described.



3. An engine having connected pistons with fluid passages and connected valves to close said passages, and fixed hoods between the pistons for the valves constructed to reverse the valves by the fluid which drives the engine, substantially as described.

4. The casing having two chambers and an inlet-port to one chamber and an outlet-port to the other chamber and a fluid-passage between said chambers, connected pistons and connected valves in said chambers and hoods at the center of the casing for said valves, substantially as described.

5. The casing described having a partition between its chambers and a hood or housing on each side of said partition with a fluid-opening at its base, in combination with the pistons and the connected valves in said chambers, said valves constructed to enter and close said hoods from their front, substantially as described.

6. The casing having two chambers and single inlet and outlet ports and a fluid-passage from one chamber to the other, the central partition of said casing having hoods on its sides with fluid-openings at their base, in combination with a piston and a valve for each chamber, said valves constructed to enter said hoods, and the pistons having seats for said valves and water-passages through them, substantially as described.

7. The casing constructed with ports and passages substantially as described, and having hoods serving as housings for the valves and cut-offs for the pistons, in combination with the pistons in said casing having extensions to enter said hoods, and valves for said pistons entering said hoods, substantially as described.

8. The engine described having a piston-rod extending out through the same in position to make power connection, power-pistons rigid with said rod, and connected valves between said pistons and sliding on said rods, said pistons having openings controlled by said valves, substantially as described.

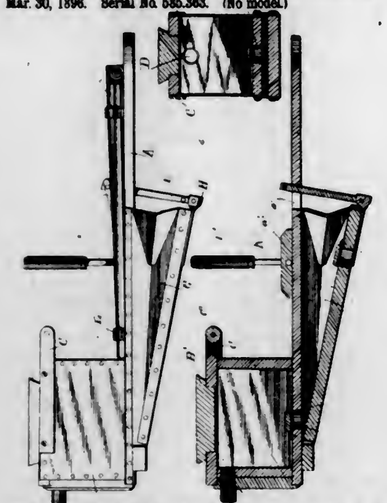
9. The casing having fluid-passages, a pair of rigidly-connected reciprocating pistons in the casing, and a pair of rigidly-connected reciprocating valves located between said pistons, said parts arranged and operating substantially as described.

10. The casing having a pair of chambers divided by a partition and a fluid-passage connecting the said chambers, in combination with a piston for each of said chambers and a valve for each of said pistons, and a fluid-inlet to one of said chambers and a fluid-outlet from the other chamber, substantially as described.

11. The casing divided into chambers by a fluid-tight partition-wall, a fluid-inlet to one chamber and a fluid-outlet from the other chamber, and a fluid-passage from one chamber to the other, in combination with pistons in said chambers having water-passages through them and valves to open and close said passages, substantially as described.

12. The combination substantially as described, of the casing, the pistons with water-passages through them and the valves for said pistons, the said casing having a water-tight wall separating the same into two chambers, two fluid-passages opening into each of said chambers and the said pistons rigidly connected and arranged to operate between the fluid-passages in their chambers, respectively, whereby the said fluid-passages are kept constantly open, substantially as described.

571,145. POWDER-DISTRIBUTER. CHRISTOPHER M. ARTHUR, Bethany, Mo., assignor of one-half to James H. Hillis, McFall, Mo. Filed Mar. 30, 1896. Serial No. 585,363. (No model.)



Claim.—1. The combination with the base, the receptacle thereon having a discharge-opening and a valve in its bottom, of a bellows mounted on the back of said base and connected with the opening controlled by the valve, and means for operating the bellows comprising a crank-arm with a connection between one end thereof and the bellows, the upper end of the base having a curved portion, substantially as described.

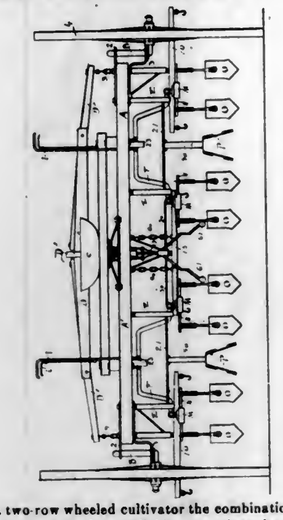
2. The combination with the base, the box with discharge-opening and valve, and the bellows mounted on the back of the base connected with an opening beneath said valve, of an arm pivotally mounted on the bellows, a crank-arm mounted for oscillation on the base, having one end extended to form a lever, and a connection between the other end and the arm connected with the bellows, substantially as described.

571,146. TWO-ROW CULTIVATOR. SILAS I. BAILOR, Geneva, Nebr. Filed June 13, 1894. Renewed Apr. 9, 1896. Serial No. 586,880. (No model.)

Claim.—1. In a steering mechanism for cultivators, the combination of the colter-frame, A, A', A^2, A^3, provided with the shackle-bars, 2, 2, and 3, 3, of the pivoted stub crank-axles, B, B, provided with the wheels, 4, said axles being provided with the downwardly-extending arms, *b*, *b*, of the transverse rod, B', securing said arms, *b*, *b*, of the lever, C, above said colter-frame and connected centrally to said transverse rod, B', of the pedal-bars, 61, 61, pivotally secured to the colter-frame and connected by means of chains, 60, to said transverse rod, said wheels being actuated by means of said pedal-bars and main operating-lever, all substantially as and for the purpose set forth.

2. In a wheeled cultivator the arrangement of a three-horse draft-equalizer comprising the combination of the following instrumentalities: the upwardly-extending shackle D^3, secured to the colter-frame, the movable bar, D, pivotally held within said shackle and provided at each end with the auxiliary pivoted bars, D', secured approximately one-third the distance from their ends to the ends of said main bar, D, the brackets, 17, 17, secured below the colter-frame, one centrally and the other two one at each end, the pulleys, 16, 16, working within said brackets, the bars, 12, 12, secured to said auxiliary bars at their inner ends and being united by means of a union, 13, provided with the chain, 14, and the chains, 9, 9, at the outer ends of said bars, D', D', said chains, 9 and 14, being provided with the single-trees, 10, 10, and 15, all substantially as and for the purpose set forth.

3. In a two-row two-wheeled cultivator the combination with a suitable colter-frame of two adjustable two-armed share-frames secured to said colter-frame, said two-armed share-frames being adjustably held and provided with a spring-arm extending outward, an adjusting-lever movably secured to said spring-arm, each arm of said share-frame being provided with an adjustable sleeve, said sleeve being longitudinally and radially adjustable upon the arm of said share-frame, each sleeve being provided with a bar extending at an angle to said sleeve and provided at each end with a plowshare adjustably held upon said bar so that each share-frame gives support to four adjustable shares, a bar securing the arms of said share-frame and provided with a suitable clod-fender positioned between said arms, all substantially as and for the purpose set forth.



4. In a two-row wheeled cultivator the combination with a suitable supporting-frame and controllable supporting-wheels, of the two-armed share-frames, F, F, suspended by means of the bars, E, of the spring arm, 23, secured centrally to said share-frames, the adjusting-lever, I, secured to said arm, 23, and controlling the adjustment of said share-frames, F, F, in a vertical plane, the operating-bar, 32, provided with the stub-arms, 31, 31, and the connecting-bars, 30, 30, securing said arm, 31, and one of the bars, E, and the operating-lever, 33, secured to said bar, 32, so that said share-frames, F, F, can be adjusted in a horizontal plane relative to one another, all substantially as and for the purpose set forth.

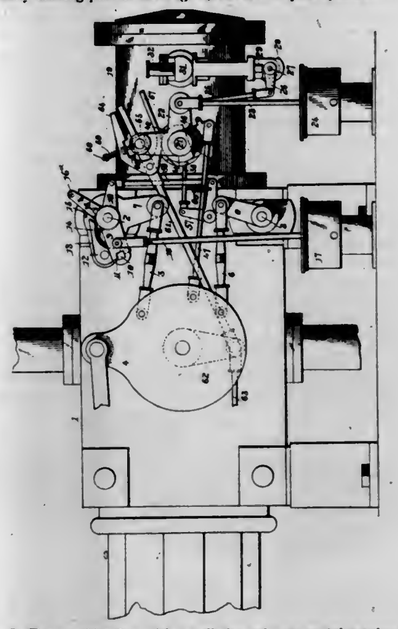
571,147. COMBINED STEAM AND EXPLOSION ENGINE. WALTER BARNSDALE, Plover, Wis. Filed May 11, 1895. Serial No. 548,968. (No model.)

Claim.— 1. An attachment adapted to be substituted for the head of a steam-engine cylinder and having an explosion-chamber, a controlling-valve for a port connecting the explosion-chamber with the cylinder, operating connections between said controlling-valve and the steam-inlet valve of the cylinder whereby the inlet-valve is closed and the controlling-valve opened simultaneously, and means for igniting the contents of the explosion-chamber simultaneously with the opening of the controlling-valve.

2. An attachment adapted to be substituted for the head of a steam-engine cylinder and having an explosion-chamber, a controlling-valve for a port connecting the explosion-chamber with the cylinder, an ignition-chamber having a port in communication with the explosion-chamber, a controlling-valve to normally close said port, and connections between said valves and the steam-inlet valve of the cylinder, whereby the simultaneous opening of the controlling-valves is accompanied by the closing of the steam-inlet valve, substantially as specified.

3. The combination with a cylinder having steam inlet and exhaust valves, of an explosion-chamber having valved connection with the cylinder, an ignition-chamber in communication with the explosion-chamber and normally cut off from the same by a controlling-valve, a lever secured to the valve controlling the communication between the explosion-chamber and the cylinder and operatively connected with the valve controlling the communication between the explosion-chamber and the ignition-chamber, and means for operating said lever at intervals to actuate the valves, substantially as specified.

4. The combination with a cylinder having inlet and exhaust valves, of an explosion-chamber and a communicating ignition-chamber, valves controlling the communication between the explosion-chamber and the cylinder and ignition-chamber, means for disconnecting the inlet-valve from the valve-operating mechanism, an arm operatively connected with said means, a clutch mechanism having a rotary member adapted to engage and impart motion to said arm at intervals, and connections between said rotary member and a continuously-moving part of the engine, substantially as specified.



5. The combination with a cylinder, of a steam-inlet valve having a fixed arm, a coaxially loose arm operatively connected with valve mechanism, a latch for connecting said loose and fixed arms whereby motion is communicated from the former to the valve, a lever for tripping said latch, and connections between said lever and the piston operating in the cylinder whereby the lever is operated to trip the latch at intervals, substantially as specified.

6. The combination with a cylinder, a steam-inlet valve, and means including a lever for disconnecting said valve from the valve mechanism, of a swinging arm operatively connected with said lever, a rotary clutch-disk mounted coaxially with said arm and provided with a notch to engage a pin carried by the arm, a ratchet-wheel, a pawl-carrying arm mounted coaxially with the ratchet-wheel and operatively connected with the piston operating in said cylinder, the pawl carried by said arm being adapted to engage the ratchet-wheel, and means for disconnecting the notch of the clutch-disk from the pin at the limit of a prescribed swinging movement of the arm which is connected with said lever, substantially as specified.

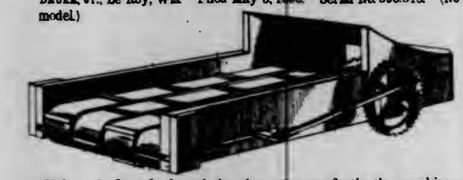
7. The combination with a cylinder, a steam inlet valve, and means including a shifting-lever for disconnecting the valve from the valve mechanism, of a swinging arm operatively connected with said lever, a spring-pressed pin carried by the swinging arm, a clutch-disk having a notch to engage said pin, a ratchet-wheel fixed to the sleeve of the clutch-disk, an oscillating arm operatively connected with the piston to receive a continuous movement, a spring-pressed pawl carried by the last named arm to engage the ratchet-wheel and impart a step-by-step movement thereto, and a fixed cam arranged in the path of said pin to raise the latter out of engagement with the notch in the clutch-disk at the limit of a prescribed movement of the swinging arm which is connected with the shifting-lever, substantially as specified.

8. The combination with a cylinder, a steam-inlet valve, and means including a shifting-lever for disconnecting the valve from the valve mechanism, of an explosion-chamber, a valve controlling the communication between the explosion-chamber and the cylinder, an arm fixed to the spindle of the last-named valve, a reciprocating bar, a clutch carried by the reciprocating bar and adapted when depressed to engage a stud on said arm, a cam-disk adapted to normally support the clutch out of engagement with said stud, means for imparting motion to the cam whereby the clutch is brought into operative relation with the stud at intervals, and means for operating the shift-

ing-lever to disconnect the steam-inlet valve from the valve mechanism simultaneously with the engagement of the clutch with the arm on the valve controlling communication between the explosion-chamber and the cylinder, substantially as specified.

9. The combination with a cylinder, of an explosion-chamber in communication with the cylinder and an ignition-chamber in communication with the explosion-chamber, valves 21 and 30 controlling the communication between the explosion-chamber and the cylinder and between the explosion-chamber and the ignition-chamber, respectively, a bell-crank lever fixed to the spindle of the valve 21, means including a shifting-lever for disconnecting the steam-inlet valve from the valve mechanism, an arm 49 mounted coaxially with the bell-crank lever and operatively connected with the shifting-lever, a clutch-disk having a notch to engage a spring-pressed pin carried by the hub of the arm 49, a cam-disk, means for imparting a step-by-step movement in a uniform direction to the clutch-disk and the cam-disk, a reciprocating bar carrying a clutch to engage a stud on the bell-crank lever, the clutch being normally held out of engagement with said stud by the cam-disk, a fixed cam for raising the spring pressed pin out of engagement with the notch in the clutch-disk, and connections between the bell-crank lever and the valve controlling communication between the explosion-chamber and the ignition-chamber, whereby simultaneously with the opening of the valve 21 the steam-inlet valve is disconnected from the valve mechaniam and communication between the explosion and ignition chambers is established, substantially as specified.

571,148. FEEDER FOR CORN-HUSKING MACHINES. JOSEPH BAUER, Jr., Le Roy, Wis. Filed May 5, 1896. Serial No. 590,318. (No model.)



Claim.—1. In a feeder of the character set forth, the combination of a cooperating series of endless carriers or belts spaced apart, a supporting-roller for an end of the carriers having a series of annular grooves corresponding in position to the spaces between the carriers, and reciprocating toothed or notched bars operating in the spaces formed between the carriers and entering the annular grooves, substantially as shown for the purpose described.

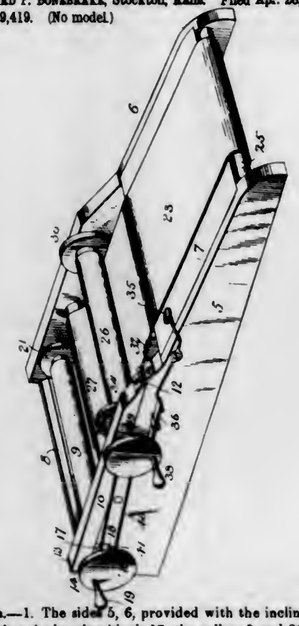
2. In a feeder for the purpose set forth, the combination of a cooperating series of endless carriers or belts spaced apart, a supporting-roller for one end of the carriers having a series of annular grooves corresponding in position to the spaces between the carriers, and a series of reciprocating bars located in the space formed between the upper and lower portions of the carriers and having their rear ends extending beyond the rear end of the carriers and operating in the annular grooves of the rear roller, substantially as shown for the purpose described.

3. In a feeder of the character set forth, the combination of a board having slots or kerfs in its rear portion, rollers at the ends of the board, the rear roller having annular grooves corresponding in position with the kerfs in the board, endless carriers supported upon the rollers and spaced apart corresponding to the said kerfs and annular grooves, and reciprocating bars operating in the kerfs of the board, the annular grooves of the rear roller, and in the spaces formed between the endless carriers, substantially as and for the purpose set forth.

4. In a feeder of the character described, the combination of a board having a series of slots or kerfs in its rear portion, rollers at the ends of the board, the rear roller having annular grooves corresponding in position with the kerfs in the board, and reciprocating bars having their inner or front ends located below the said board and having their rear ends in the plane of the said board and operating in the kerfs thereof and in the annular grooves of the rear roller, and having their rear ends toothed and extending beyond the rear roller, substantially as and for the purpose set forth.

5. A feeder of the character described, comprising side pieces, a board intermediate of the side pieces and having its rear portion formed with kerfs or slots, rollers at the ends of the board and journaled in the said side pieces, the rear roller having annular grooves corresponding in position to the kerfs, a series of endless carriers supported upon the rollers and spaced apart, toothed bars having their inner or front ends brought together and located below the board, and having their rear ends located in the plane of the said board and operating in the kerfs and the annular grooves of the rear roller and projecting beyond the latter, the projecting ends being toothed, a transverse lever having adjustable connection with a side of the feeder and having the inner ends of the reciprocating bars connected therewith, means for vibrating the said lever, and a plate located above the rear portion of the carriers and reciprocating bars and curving rearwardly and downwardly, substantially as and for the purpose set forth.

571,149. TABLET-MACHINE FOR STENOGRAPHERS' USE. MILLARD P. BONEBRAKE, Stockton, Kans. Filed Apr. 28, 1896. Serial No. 589,419. (No model.)



Claim.—1. The sides 5, 6, provided with the inclined desk-table 7 and having the bearing-block 17, the rollers 9 and 26 and the friction-rollers 25 and 27, the sheet of paper 23 and the endless belt connecting said rollers 9 and 26, substantially as and for the purpose specified.

2. The sides 5 and 6, desk-table 7, and the sheets of paper 23, in combination with the feed-roller 26 and the supply-roller 9, one end of which is journaled in a bearing-slot 16, having an upper removable bearing-block 17 held in place by the hinged bar 10, substantially as and for the purpose specified.

571,150. FENCE. JOHN T. CONOVER, Flemington, N. J. Filed Mar. 9, 1895. Serial No. 541,092. (No model.)

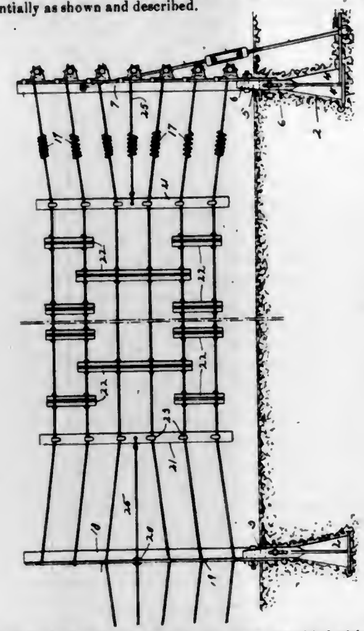
Claim.—1. A post for wire fences, provided with a lower section or base having a base-plate or anchor connected therewith, and provided with an upper extension or stem, the sides of which are inclined upwardly and inwardly, and provided with transverse slots or holes, and an upper section secured to said base-section by means of bolts passing therethrough and through said slots, substantially as shown and described.

2. A post for wire fences, consisting of a plurality of sections, the lower or base section of which is provided with an anchor-plate which extends to some distance therefrom, and is provided with a groove in its outer end, an anchor-bar arranged below said plate, and transversely of said groove, and a draw-brace extending through said groove and connected with said bar, and extending upwardly, and connected with the upper portion of said post, substantially as shown and described.

3. In a wire fence, the combination with each panel or section between the posts, of a series of long yokes, pickets or braces, one being arranged adjacent to each post, and each of which is connected with all the fence-wires, the fence-wires being also arranged in separate series, and the series between the posts and the adjacent long yokes or pickets being inclined from the posts to said yokes or pickets, and all the wires being parallel between said long yokes or pickets, substantially as shown and described.

4. In a wire fence, the combination with each panel or section between the posts, of a series of long yokes, pickets or braces, one being arranged adjacent to each post, and each of which is connected with all the fence-wires, the fence-wires being also arranged in separate series, and the series between the posts and the adjacent long

yokes or pickets being inclined from the posts to said yokes or pickets, and all the wires being parallel between said long yokes or pickets, and said wires between the long yokes or pickets being provided with short pickets or braces, by which two or more are bound together, substantially as shown and described.



5. A post for wire fences or other purposes, provided with a lower section or base, and with an upper section or stem, the side or sides of which are inclined upwardly and inwardly and provided with a transverse slot or slots, and an upper section secured to said extension or stem by means of bolts passing therethrough and through said slot or slots, substantially as shown and described.

6. In a wire fence the combination with each panel or section between the posts, of a series of long yokes, pickets or braces, one being arranged adjacent to each post, and each of which is connected with all the fence-wires, the fence-wires being also arranged in separate series and the series between the posts, and the adjacent long yokes or pickets being inclined toward the center, and all the wires being parallel between said long yokes or pickets, and the wires of the panel between said long pickets being united in series and said series being united by short pickets or braces, and each wire of the panel being provided with a spring to admit of expansion or contraction under all changes of temperature, substantially as shown and described.

571,151. WITHDRAWN.

571,152. TRUNK. GEORGE CROUCH, New York, N. Y. Filed Nov. 15, 1895. Serial No. 569,008. (No model.)

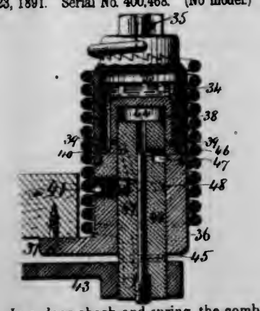


Claim.—1. The trunk-valance formed of folded sheet metal inclosing a strip of prepared fiber and corrugated longitudinally and rivets passing through the trunk-body and through both thicknesses of sheet metal and the fiber strip, substantially as specified.

2. The trunk-valance formed of folded sheet metal inclosing a strip of prepared fiber and corrugated longitudinally and rivets passing through the trunk-body and through both thicknesses of sheet metal and the fiber strip, in combination with a contiguous reinforcing-band of prepared fiber having a strip of sheet metal between the fiber and the trunk-body with its edge folded over to inclose the edge of the prepared fiber, substantially as specified.

3. The combination with the trunk, of a valance formed of a strip of sheet metal folded and having within the fold a sheet or strip of prepared fiber, the parts being corrugated longitudinally near the edge of the valance for stiffening the same, there being also a corrugation in the sheet or strip of prepared fiber adjacent to the edges of the sheet metal and rivets passing through the sheet metal and the inclosed material for securing the valance to the body of the trunk, substantially as set forth.

571,153. DOOR-CHECK. THOMAS CURLEY, Waltham, Mass. Filed July 23, 1891. Serial No. 400,468. (No model.)



Claim.—1. In a door check and spring, the combination with a chamber containing fluid and surrounding a cylinder formed integral with a base having an attaching-plate, contracted passages formed in the walls of the cylinder through which fluid may pass to the outer chamber, of a spring-operated rotatory plunger contained within said cylinder and having a cam-groove moving on a bearing when the plunger is rotated, all adapted to be contained within a socket formed in the door-frame and operated, as described.

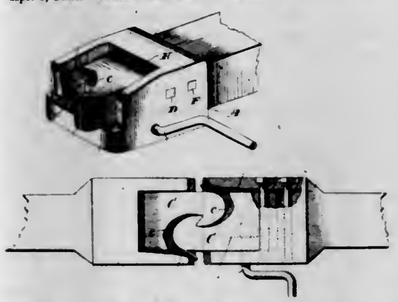
2. The combination with the cylinder 38 having the contracted passages 39 and 40 and surrounded by the chamber 34 containing a fluid and having the air-inlet 35, of a spring-operated plunger 42, rotated in said cylinder by the arm 43, having a cam-groove 47 working on the bearing 41, and passages 44 and 46 and an adjusting-pin 45, adapted to wholly or partially close said passages, as described.

571,154. MATCH. JOHN W. DENMEAD, Akron, Ohio, assignor to the Diamond Match Company, Chicago, Ill. Filed Nov. 22, 1894. Renewed Apr. 20, 1896. Serial No. 588,394. (No model.)

Claim.—1. A match having a body or stick formed of a strip of combustible material spirally wrapped upon itself so that each portion of the strip overlaps another portion, and a suitable head of ignitible material, substantially as and for the purpose specified.

2. A match having its body or stick formed of a strip of paper spirally wrapped upon itself so that each portion of the strip overlaps another portion, and a head of ignitible substance, substantially as and for the purpose shown.

571,155. CAR-COUPLING. JOHN J. FLYNN, Aurora, Ill. Filed Apr. 1, 1896. Serial No. 585,800. (No model.)

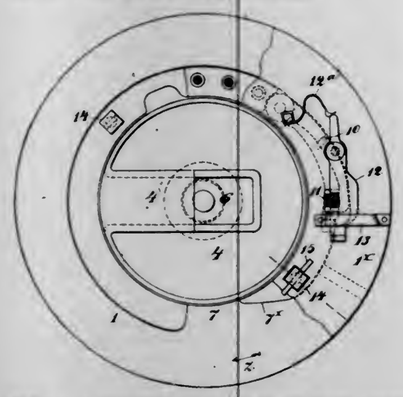


Claim.—1. A car-coupler comprising a draw-head, a coupling-hook pivoted thereto, and a hook-engaging spring attached to the draw-head, whose movement is in a direction at a right angle to that in which the hook is swung to couple and uncouple, substantially as and for the purpose specified.

2. A car-coupler comprising a draw-head, a hook mounted on a horizontal pivot, and a flat spring secured to the draw-head at the side of the hook and having its free end projecting forward to engage the side of a connected hook, substantially as and for the purpose set forth.

3. A car-coupler comprising a draw-head having a cavity in its upper side, at the front end, a hook pivoted within and normally resting on the bottom of the cavity, a flat spring interposed between the side of the hook and the side wall of the cavity, and having its free end projecting forward to engage the side of a connected hook, the overhang or lip on the draw-head to engage and stop the hook when swung upward, a shaft extending through the draw-head beneath the hook, and an arm carried by said shaft to engage the under side of the hook, substantially as and for the purpose described.

571,156. WIRE-REEL. FREDRIK FORSBERG, Sandviken, Sweden. Filed June 1, 1896. Serial No. 593,699. (No model.)

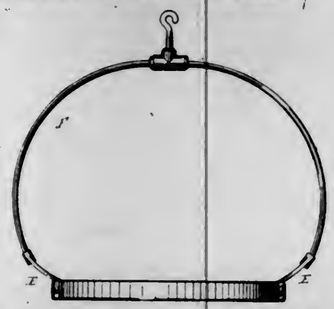


Claim.—1. A rotatively-mounted winding-reel having a circumferential groove to receive the wire, or the like, a concentric circular recess in its face, and an aperture 7 at the bottom of said groove and opening into said recess, in combination with a fixed, circular center piece occupying said recess in the reel and having in it a radial channel 6, adapted to be brought into coincidence with the aperture 7 in the reel, substantially as and for the purpose set forth.

2. A rotatively-mounted reel to receive flattened wire or the like direct from the rolls, having a circumferential groove, and provided with a removable ring-flange, a hinged flap 8, occupying a recess in the bottom of the circumferential groove, and means substantially as described for supporting the said flap during the winding operation, substantially as set forth.

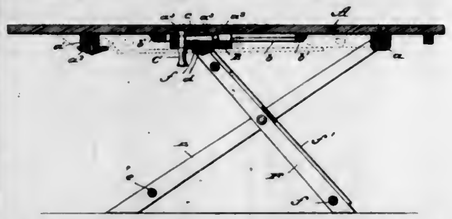
3. A rotatively-mounted reel to receive a flattened wire or the like direct from the rolls, having a circumferential groove, and provided with a removable ring-flange, a hinged flap 8, occupying a recess in the bottom of the circumferential groove, a wedge 11, arranged in a keyway in the reel under the free end of said flap, and a latch 12, for locking the said wedge in place, substantially as set forth.

571,157. SCALE-PAN. GEORGE S. FORSCHNER, New York, N. Y. Filed Sept. 1, 1896. Serial No. 604,501. (No model.)



Claim.—The combination with an unflanged enameled scale-pan, of a ring placed against the under side of the pan along the rim of the same and a metal band closely surrounding said ring and provided at its upper edge with a flange overlapping and resting on the upper surface of the pan along the rim of the same, the bottom edge part of said band being turned in firmly against the bottom edge of said ring throughout its entire length, substantially as herein shown and described.

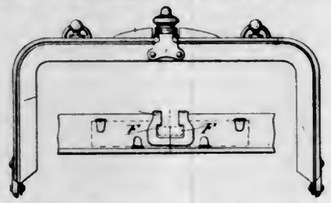
571,158. IRONING-TABLE. JACOB H. FOSTER, Rising City, Nebr. Filed Aug. 27, 1896. Serial No. 604,087. (No model.)



Claim.—1. The combination in an ironing-table, of parallel guide-rails secured to the under side of the top, a block in sliding engagement with said guide-rails, said block projecting beyond the guide-rails and provided with a transverse groove with a turn-button adjoining the same, a spring-actuated pin carried by the block and adapted to engage a series of notches or recesses to hold said block in an adjusted position; together with two sets of pivoted legs one set having a cross-bar adapted to engage the groove and turn-button of the sliding block, substantially as shown and for the purpose set forth.

2. The combination in an ironing-table, of the longitudinal guide-rails *b b* and blocks *a a'* secured to the under side of the top, the block *a'* carrying a turn-button a^3; a block B in sliding engagement with the guide-rails provided with a transverse groove and turn-button adjoining the same; a spring-actuated pin let into the block and adapted to engage a series of notches or recesses in the under side of the table-top to hold said block in an adjusted position; together with a pair of legs pivoted at their upper ends to the block *a* and provided at their lower ends with a cross-bar adapted to be engaged by the turn-button a^3; and a second pair of shorter legs pivoted within the other legs and having an upper cross-bar which engages the transverse groove and turn-button of the sliding block, the parts being organized substantially as shown and for the purpose set forth.

571,159. BAG-FRAME CATCH. AUGUST GOERTS, Newark, N. J. Filed Dec. 18, 1895. Serial No. 572,503. (No model.)



Claim.—1. The combination with two flanged pivoted frame-sections, of a fitting secured on the flange of one section and provided with a recessed lip bent under said flange and having pockets at its inner end, a head on the other frame-section, a spring-pressed bolt in said head, which bolt is provided at its lower end with lugs that can enter the pockets in the lip on the other frame, substantially as herein shown and described.

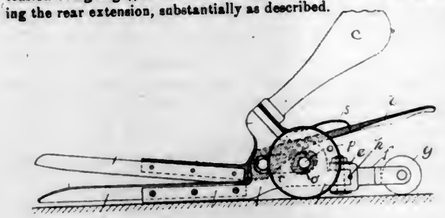
2. The combination with two pivoted flanged U-shaped frame-sections, one of them having a recess in the edge of its flange, of a fitting on said recessed flange, which fitting has a recessed lip bent under the flange and inclined inward and downward and provided at its inner end with pockets, a head on the other frame-section, a spring-pressed bolt in said head and side lugs on the lower end of said bolt, which lugs have their upper edges beveled, substantially as herein shown and described.

3. The combination with two flanged pivoted U-shaped frames of which one is provided with a recess and at said recess with pockets in its under side for receiving lugs of a bolt, a head on the other frame-section, a spring-pressed bolt in said head and side lugs on the lower end of said bolt, substantially as herein shown and described.

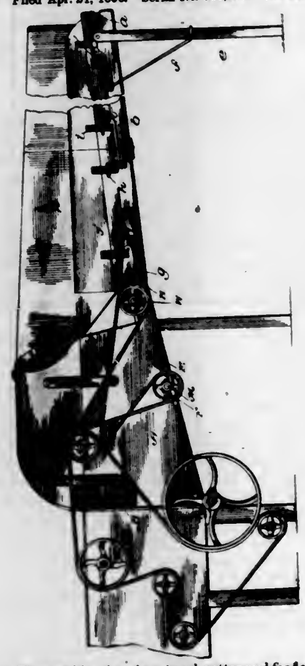
571,160. SHEARS. PAUL HAASE, Chemnitz, Germany. Filed May 22, 1896. Serial No. 592,603. (No model.)

Claim.—1. In combination, a frame having a forward extension carrying a blade, and a rearward extension, an arm pivoted to the rear extension means for controlling the action of the joint, a shaft journaled in the frame, wheels mounted on the shaft, an elliptic carried by the shaft, a handle pivoted to the frame having a forward extension carrying a cutter, said handle having a rearward extension engaged and operated by the elliptic, substantially as described.

2. In combination, a frame having a front and rear extension, a cutter carried by the forward extension, an arm pivoted to the rear extension, a wheel on the arm, a pin for controlling the arm, a shaft journaled in the frame, wheels on the shaft, an elliptic on the shaft, a handle pivoted to the frame, front and rear extensions formed with the handle, a cutter carried by the forward extension, the rear extension being engaged and actuated by the elliptic and a pin engaging the rear extension, substantially as described.



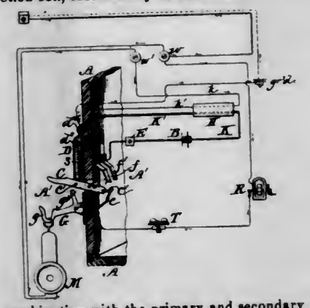
571,161. BAND-CUTTER AND FEEDER. DAVID HARPER, Neelyville, Ill. Filed Apr. 21, 1896. Serial No. 588,496. (No model.)



Claim.—The combination, in a band-cutter and feeder, of brackets or side plates provided with lateral vertical flanges at their rear edges adapted to be attached to the front of a threshing-machine, the said side plates being of a less height at their front ends than at their rear ends, forwardly-projecting lips formed integral with the front ends of the side plates at the lower corners of the same, journal-boxes secured on said lips, a shaft journaled in said boxes and carrying a series of pulleys, a carrier running over said pulleys, lateral offsets formed on said plates at their lower edges near their front ends, the plates being provided with openings just above said offsets, a shaft extending through said openings and journaled on said offsets and carrying a series of knives between the side plates, lateral offsets formed on the upper edge of the side plates near the rear ends of the same, a shaft journaled on said offsets and carrying a series of knives between the side plates, vertical plates secured upon the upper edges of the side plates or brackets, a hood secured upon the upper edges of said vertical plates, and means for rotating the several shafts.

571,162. TELEPHONE-SWITCH. EDWARD M. HARRISON, Chicago, Ill. Filed Nov. 21, 1894. Serial No. 529,479. (No model.)

Claim.—1. In combination with the primary and secondary of an induction-coil and battery including a short calling-circuit, lagged in from the main line, a pivoted cut-out lever in constant connection with the ground and having at its inner end, a transverse horizontal bar and means to keep the outer end or handle of the cut-out lever raised, so as to keep the inner transverse horizontal bar in constant contact with the short or calling circuit, a pivoted trigger catch or releasing device, without electrical connections, and having at its outer end a hook and at its inner end an upwardly-projecting catch, for the purpose of holding the pivoted cut-out lever down, when pressed under the catch by the hand, for the purpose of establishing the primary circuit and at the same time to bring in the secondary circuit of an induction-coil, substantially as described.



2. In combination with the primary and secondary of an induction-coil and battery including a short calling-circuit, lagged in from the main line, a pivoted cut-out lever in constant connection with the ground and having at its inner end, a transverse horizontal bar and means to keep the outer end or handle of the cut-out lever raised so as to keep the inner transverse horizontal bar in constant contact with the short or calling circuit, a pivoted trigger-catch or releasing device, not electrically connected with anything, having at its outer end a hook and at its inner end an upwardly-projecting catch, for the purpose of holding the pivoted cut-out lever down when pressed under the catch by the force of the hand, for the purpose of establishing the primary circuit and at the same time to bring in the secondary circuit of an induction-coil; and whereby the use of said induction-coil and battery-circuit may be discontinued by simply releasing the trigger-catch by placing a weight on the hook thereof, causing the pivoted cut-out lever to return to its normal position in the calling-circuit, substantially as described.

3. The combination in a telephone switch device, of a pivoted cut-out lever, in constant contact with the ground, and having at its inner end a transverse bar, a magneto-bell spring secured below said bar, two battery and line springs secured above said bar, a lifting-spring normally holding the cut-out lever with its transverse bar in contact with the magneto-bell spring, and a pivoted trigger or release device, having at its outer end a hook and at its inner end an upwardly-projecting catch, adapted to engage with a pin on said cut-out lever for holding the transverse bar of said lever in contact with the battery-springs during communication, substantially as described.

4. A telephone-switch comprising terminals of a signal-circuit and a transmitter-circuit, a pivoted cut-out lever adapted, when in its raised position, to connect the signal circuit with the line-circuit, and, when in its lower position, to connect the transmitter-circuit with the line-circuit, a lever pivoted below said cut-out lever, and having means for holding the transmitter, whereby the lever is normally held down by the weight of said transmitter, and a hook upon said lever for engaging and holding the cut-out lever when the latter is in its lower position, substantially as described.

5. A telephone-switch comprising terminals of a signal-circuit and transmitter-circuit, a pivoted cut-out lever adapted when in its raised position to connect the signal-circuit with the line-circuit and when in its lower position to connect the transmitter with the line-circuit, a lever pivoted below said cut-out lever, and having means for holding the transmitter, whereby the lever is normally held down by the weight of said transmitter, a hook upon said lever for engaging and holding the cut-out lever when the latter is in its lower position, and means whereby, upon the removal of the transmitter, the lever is thrown into position to engage the cut-out lever when in its said lower position, substantially as described.

6. A telephone switch comprising terminals of a signal-circuit and a transmitter-circuit, a pivoted cut-out lever adapted, when in its raised position, to connect the signal-circuit with the line-circuit, and, when in its lower position, to connect the transmitter-circuit with the line-circuit, a lever pivoted below said cut-out lever and having means for holding the transmitter, a heel-piece projecting from said lever, a spring between said heel-piece and a fixed portion of the switch whereby the lever is, when left to the action of the spring, forced upwardly, and a hook upon said lever adapted, in the raised position of the le-

ver, to engage the cut-out lever and hold the same when said cut-out lever is in its lower position, substantially as described.

571,163. GRAND PIANO. JOSEPH HERRBURGER, Paris, France. Filed Aug. 15, 1896. Serial No. 602,848. (No model.)



Claim.—1. In an action for grand pianos, the combination of a rider with an outwardly-bulged repeating-lever pivotally connected to said rider, substantially as specified.

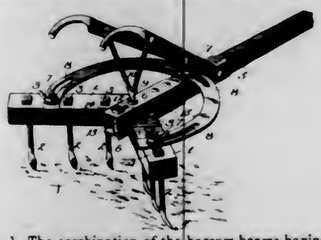
2. In an action for grand pianos, the combination of a rider with an outwardly-bulged and slotted repeating-lever, and with a regulating-screw that extends through said lever, substantially as specified.

3. In an action for grand pianos, the combination of a rider with a post projecting upwardly therefrom a screw engaging said post, and an outwardly-bulged repeating-lever engaged by the screw, substantially as specified.

4. In an action for grand pianos, the combination of a jack and rider with an outwardly-bulged repeating lever pivoted to the rider, and with a bent spring engaging the repeating-lever and the jack, substantially as specified.

5. In an action for grand pianos, the combination of a jack and rider, with an outwardly-bulged repeating-lever, a regulating-screw engaging said lever, and a spring engaging both said lever and the jack substantially as specified.

571,164. HARROW. LARKIN H. JACKSON and WILLIAM E. RHEGNESS, Dyer, Tenn. Filed May 18, 1896. Serial No. 591,979. (No model.)

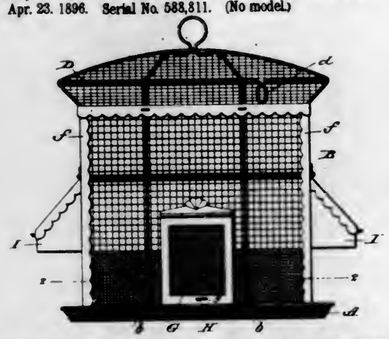


Claim.—1. The combination of the harrow-beams having a lap-joint, the tongue having plates embracing and pivoted to said lap-joint and extending in rear thereof, an abutment between the extended ends of said tongue-plates in rear of the beams, a semicircular plate having slots and screw-bolts for securing said slotted plate to the tongue and to the beam parts, for the purpose stated.

2. The combination, with the tongue, the harrow-beams having a lap-joint pivotally connected to the tongue and embraced by lapping parts thereof and a semicircular plate adjustably secured to the tongue and to the beam parts, with an abutment adjustably secured in slots of the lapping tongue parts in rear of the lap-joint of the beam, for the purpose described.

3. The combination with the tongue, the harrow-beams pivotally connected to each other and to the tongue, and the semicircular plate having slots and the screw-bolts upon which said plate is independently movable upon the beams and the tongue whereby the range of the adjustment of these parts is increased.

571,165. BIRD-CAGE. CARRIE L. JOHNSON, Glendale, N. Y. Filed Apr. 23, 1896. Serial No. 588,811. (No model.)



Claim.—1. The combination in a bird-cage, of the frame B consisting of the wires *b b* and *b'* bent as shown to present vertical members and upper transverse members which are inclined outward and then upward, the wire *b'* being formed into a loop or handle and the terminals of all the wires bent outward; rectangular frames D C and C' connecting the wires to each other; a wire fabric placed over the frame, so constructed, and metallic bands *c* and *c'* for holding the fabric upon the frame; together with the bottom or pan A, and means carried thereby to engage the outwardly-bent ends of the wires *b b* and *b'*, substantially as shown and described.

2. The combination in a bird-cage, of a frame which is adapted to be covered by a wire fabric, said frame consisting of frames C C' and D and wires *b* and *b'* connected thereto, the ends of the wires *b* and *b'* being bent outwardly, as shown; together with a bottom or pan A having loops *a a a'* and staple a^3, a rod K which engages at one end with the loop *a'* and is formed into an eye at its other end to engage the staple a^3, and a hook for holding the rod in engagement with the staple, for the purpose set forth.

3. A fastening for bird-cages consisting of a bent bolt *h* passed through an opening in the door, said door being provided adjacent thereto with a slot, and a plate pivoted to the outer end of the bolt so as to engage the slot, substantially as shown and for the purpose set forth.

571,166. SUPPORT AND CARRIER FOR ARTIFICIAL TEETH. HENRY D. JUSTI, Philadelphia, Pa. Filed June 10, 1896. Serial No. 594,940. (No model.)



Claim.—In a support and carrier for an artificial tooth, a carrying-bar and elastic jaws thereon with a recess in the inner face thereof for receiving a pin on the tooth.

571,167. FURNITURE-CASTER. MAURICE LACHMAN, London, England, assignor to the Automatic Castor and Wheel Company, Limited, same place. Filed Dec. 31, 1895. Serial No. 573,881. (No model.) Patented in England Apr. 29, 1893, No. 8,661, and in France Apr. 21, 1894, No. 237,938.



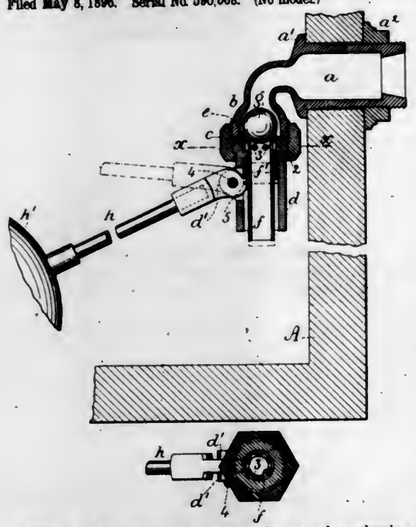
Claim.—1. The combination with a caster provided with antifriction-rollers placed between the socket and horn, of a sleeve to automatically gage the distance between the socket and horn, and a double flanged guide-plate for the rollers, arranged with the flange of larger diameter downward, to prevent the collection of dirt on the running-surface for the rollers, as herein set forth.

2. In a caster provided with antifriction-rollers, the combination with a socket, horn, and pivot-pin, of a flanged sleeve to automatically gage the distance between the socket and the horn, and to prevent the pivot-pin tearing away from the caster during usage, as shown and described.

3. In a caster provided with antifriction-rollers, the combination with a socket, horn and pivot-pin, of a flanged sleeve on the pivot-pin having its flange extending beneath the plate of the horn and its upper end bearing against the under side of the socket-plate, and having its flanged end countersunk to receive the expanded end of the pin to hold the parts together, as shown and described.

4. In a caster provided with antifriction-rollers, the combination with a socket, a horn, and a pivot-pin, of a double-flanged guide-plate turning loose on the pivot, and having the flange of larger diameter downward, so as to prevent the collection of dust or dirt on the running surfaces for the rollers, as shown and described.

571,168. VALVE FOR CLOSET-CISTERNS. JORDAN L. MOTT, JR., New York, N. Y., assignor to The J. L. Mott Iron Works, same place. Filed May 8, 1896. Serial No. 590,668. (No model.)



Claim.—1. The combination with the downward supply-pipe and the removable sleeve *d*, and coupling *c*, screwed upon the supply-pipe, of a float and a lever pivoted upon the sleeve *d*, a ball-valve having its seat at the upper end of said sleeve *d*, a tubular lifter *f* acted upon by the float and its lever, a stop to limit the upward movement of the tube as it lifts the ball-valve, there being openings through the upper end of the tubular lifter and an annular waterway around the same, substantially as specified.

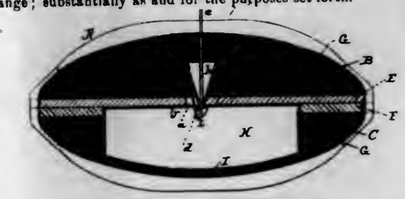
2. The combination with the water-supply pipe, coupling *c*, and sleeve *d*, having the internal rib 2 of the tubular lifter *f*, and collar *f'*, sliding within the sleeve *d*, there being openings at the upper end of the lifter and a valve that is above and raised by said lifter, substantially as specified.

3. In a valve for closet-cisterns, the combination with the float and pivoted arm, the coupling *c*, ball-valve *g*, and tube *d*, having a seat for the ball at its upper end and an internal annular rib 2, the tubular lifter *f* having a collar *f'*, and perforations 3, adjacent to the upper end, the rib 2, surrounding the tube and acting as a stop for the collar *f'*, and leaving an annular recess outside the tube adjacent to the perforations 3, substantially as set forth.

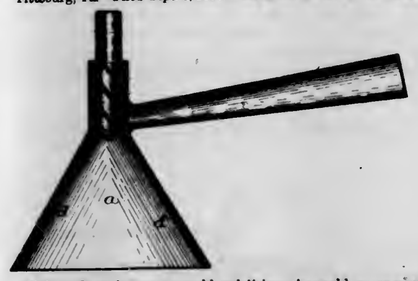
571,169. PINCUSHION. JAMES MCCARTNEY, New York, N. Y. Filed Feb. 26, 1896. Serial No. 580,862. (No model.)

Claim.—1. The pincushion A composed of the sections B, C, hinged together and each containing the filling material G, said sections having the substantially flat meeting surfaces, combined with the receptacle H embedded in the filling material of the lower section C, as shown, and means for locking said sections together; substantially as and for the purposes set forth.

2. The pincushion A composed of the sections B, C, hinged together and each containing the filling material G, said sections having the substantially flat meeting surfaces, combined with the receptacle H embedded in the filling material of the lower section C, as shown, the flange J along the edge of said receptacle, the spring-catch on the upper section B to engage said flange, and the concealed guide for directing a pin to said catch for freeing the latter from said flange; substantially as and for the purposes set forth.

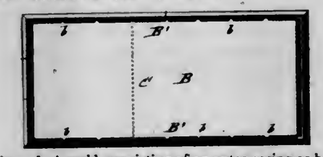


571,170. ICE-CREAM MOLD AND DISHER. HENRY J. PFEIFFER, Pittsburg, Pa. Filed Sept. 1, 1896. Serial No. 604,569. (No model.)



Claim.—In an ice-cream mold and disher, the mold, a worm-screw journaled in the apex of said mold, cutters secured on said screw, a casing around the screw, a coil-spring around the screw, said spring secured at the upper end to the casing and at the base to a washer on the screw, a plunger carrying flanges projecting inwardly at the base to engage in the threads of the screw and operate the same, and a suitable handle secured to the casing, substantially as shown and described.

571,171. ICE-CREAM MOLD. ROBERT L. PRANGE, New York, N. Y., assignor of one-half to William Grevel, same place. Filed Sept. 2, 1896. Serial No. 604,603. (No model.)



Claim.—1. A mold, consisting of an outer casing or box provided with a removable cover, and a removable inner mold-section, being open at the top and fitted snugly within the outer casing or box, and provided with parallel slits in its sides, substantially as set forth.

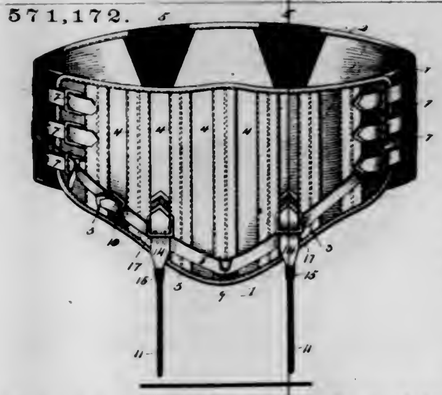
2. A mold, consisting of an outer casing or box provided with a removable cover, a removable inner mold-section, fitting snugly within the outer casing or box and being open at the top and provided with parallel slits in its sides, and a removable division-plate adapted to be inserted into the slits, substantially as set forth.

3. A mold, consisting of an outer casing or box provided with a removable cover, a removable inner mold-section fitting snugly within the outer casing or box and being open at the top and one end and provided with parallel slits in its sides and its closed end, and a removable division-plate adapted to be inserted into the slits of the side walls or end of the inner mold-section, substantially as set forth.

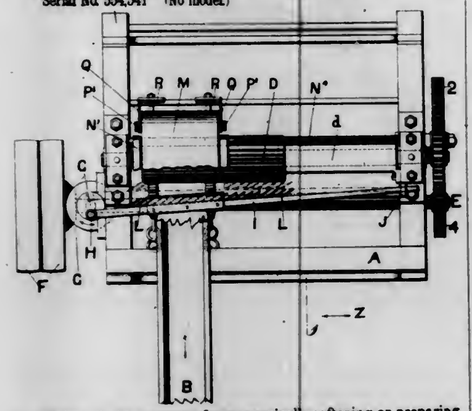
571,172. BANDAGE. CHARLOTTE A. PROVOOST, Buffalo, N. Y. Filed Mar. 11, 1896. Serial No. 582,710. (No model.)

Claim.—The herein described abdominal supporter consisting of the stiffened separable front and rear sections, 1 and 2, connected at the sides by the short straps, 6 and buckles 7, the girth-strap, 8, attached to the rear section, at the top and extending obliquely downward and around the front section, the hook on the front section for holding the girth down, and the perineal or thigh straps 11, composed of soft-rubber tubing, having puckered tapes passing therethrough to limit their extension, said tapes being stitched to the tubes at the ends, and the stitches covered, substantially as described.

571,172.



571,173. MACHINE FOR PREPARING FIBER. DICK E. RADCLYFFE and TAYLOR BURROWS, London, England. Filed July 1, 1895. Serial No. 554,541. (No model.)



Claim.—1. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of rollers constructed between its journals for a portion of its length with active working faces consisting of flutes or corrugations, and at the other portion of its length between its journals with a non-active or smooth face, means for revolving said rollers, and means for feeding the fibers along in the direction of the length of the said rollers, substantially as set forth.

2. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of fluted rollers, constructed at one part thereof with active working faces to crush the fiber between them and at another part thereof with non-active faces, means for revolving said rollers, means for causing the lapping of the fiber on one of the rollers, and means for beating and gradually pushing said fiber along in the direction of the length of the roller on which it is lapped until it is clear of the crushing action of the said pair of revolving rollers, substantially as set forth.

3. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of crushing-rollers, means for causing the fiber to lap and to remain lapped around one of said rollers while being crushed between the rollers, and means for beating and gradually pushing said fiber in the direction of the length of the roller on which it is lapped until it is clear of the crushing action of the rollers, substantially as set forth.

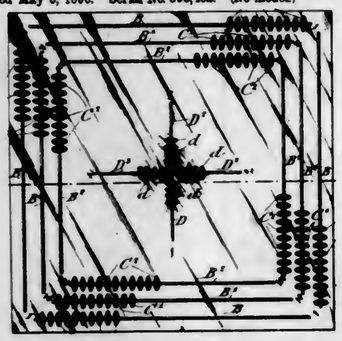
4. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a roller having between its journals one part thereof fluted and of larger diameter than the other part, a second fluted roller adapted to intermesh with the fluted part of the first-named roller, means for revolving said rollers, and means for feeding the fibers along in the direction of the length of the said rollers, substantially as set forth.

5. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of crushing-rollers, means for revolving the rollers, means for causing the lapping of the fiber on one of the rollers as the same is fed in between the rollers, and a reciprocating push-off bar or rod arranged adjacent to the rollers, substantially as set forth.

6. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of crushing-rollers, means for revolving said rollers, an endless belt arranged to coöperate with one of said rollers for lapping the fiber around and keeping it lapped around said roller, and means for beating and gradually pushing the fiber along in the direction of the length of the roller on which it is lapped, until it arrives at a point where no crushing action takes place, substantially as set forth.

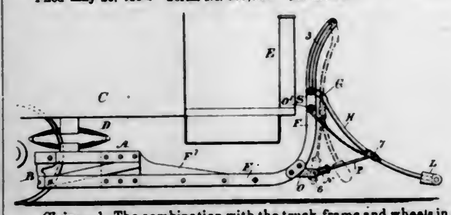
7. In apparatus for mechanically softening or preparing fiber of the character and in the condition described, the combination of a pair of crushing-rollers, means for revolving said rollers, a spring-mounted endless belt coöperating with one of said rollers, and a reciprocating push-off bar or rod arranged adjacent to the roller on which the fiber is adapted to be lapped, substantially as set forth.

571,174. GAME-COUNTER. JOSEPH SOLATINOW, Paterson, N. J. Filed May 6, 1896. Serial No. 590,482. (No model.)



Claim.—A game-indicator, consisting of a base-board, several sets of stringing-wires arranged around the outer edge of the board at right angles to each other, and upon the upper side of the base-board, said sets of wires being of greater length than height, and each wire having downwardly-projecting ends or feet inserted into the base-board, and being of flat, inverted-V shape between the ends or feet, and sliding buttons on said wires, substantially as set forth.

571,175. CAR-FENDER. IRA N. STANLEY, Brooklyn, N. Y., assignor to himself, Edward D. White, and Julia E. Brick, same place. Filed May 29, 1896. Serial No. 593,532. (No model.)



Claim.—1. The combination with the truck-frame and wheels in a car, of a frame extending forward and rising vertical, or nearly so, in front of the dashboard or car-platform, a guard or fender having near its upper edge a cross-bar, and means for connecting the guard to the vertical portion of the frame that extends out from the truck, and allowing such guard-frame to be moved up or down on such frame, cylinders having trunnions and supporting-jaws on the frame for holding the cylinders, pistons in the cylinders and piston-rods connected with the guard-frame, and springs in the cylinders that yield when the guard encounters an obstruction, substantially as set forth.

2. The combination with the truck-frame and wheels in a car, of a frame extending forward and rising vertical, or nearly so, in front of the dashboard or car-platform, a guard or fender having near its upper edge a cross-bar, and means for connecting the guard to the vertical portion of the frame that extends out from the truck, and allowing such guard-frame to be moved up or down on such frame, cylinders having trunnions and supporting-jaws on the frame for holding the cylinders, pistons in the cylinders and piston-rods connected with the guard-frame, and springs in the cylinders that yield when the guard encounters an obstruction, the cylinders confining the air so that the same acts upon the pistons in aid of the springs, substantially as set forth.

3. The combination with the truck-frame and wheels in a car, of a frame extending forward and rising vertical, or nearly so, in front of the dashboard or car-platform, a guard or fender having near its upper edge a cross-bar, and means for connecting the guard to the vertical portion of the frame that extends out from the truck, and allowing such guard-frame to be moved up or down on such frame, cylinders having trunnions and supporting-jaws on the frame for holding the cylinders, pistons in the cylinders and piston rods connected with the guard-frame, and springs in the cylinders that yield when the guard encounters an obstruction, the cylinders confining the air so that the same acts upon the pistons in aid of the springs, substantially as set forth.

4. The combination with the guard having a front cross-bar and side frames, of pivotal connections at the upper ends of the side frames, and a sliding support for such pivotal connections, and the piston-rods and pistons in the cylinders, and pivotal connections at the front ends of the piston rods to the side portions of the guard-frame, frames and trunnions for supporting the cylinders, and upon which they can be swung in drawing up the guard closely adjacent to the end of the car when the same is out of use, substantially as set forth.

5. The combination with the guard having a cross-bar at the front edge and side bars, of a yielding tube or rollers upon the front cross-bar, sliding pivotal connections for the upper ends of the side frames, rods jointed at their front ends to the side bars of the guard, springs acting upon these rods, trunnions and jaws for supporting the rods and springs and sustaining the guard when drawn up substantially vertical and out of use, substantially as set forth.

6. The combination with the guard H and the frame F and sliding connection between the frame and guard, of the rods P, pivoted to the guard and the frame respectively, and a cross-shaft O on the frame and chains from the shaft to the guard, so as to draw the guard up by rotating the shaft and winding the chains on the same, substantially as specified.

571,176. DENTAL PLUGGER. ROBERT N. STOCKTON, Philadelphia, Pa. Filed Apr. 16, 1896. Serial No. 587,746. (No model.)



Claim.—1. In a dental plugger, a casing with a collar secured to the rear end thereof, a spindle projecting into said collar and bearing against a spring therein, a hammer moving freely on said spindle, a serrated dog pivoted in a longitudinal slot in said spindle, and adapted to engage a flange on said hammer, and a stud projecting inwardly from said collar against said dog, said parts being combined substantially as described.

2. In a dental plugger, a casing with a collar secured to one end thereof, a sliding spindle projecting into said collar, a hammer moving freely on said spindle, a spring bearing against said hammer and collar, said spindle having a longitudinal slot with a serrated dog pivoted therein, and a stud on said collar in contact with said dog, said parts being combined, substantially as described.

3. In a dental plugger, a casing with a collar on one end thereof, a sliding spindle projecting into said collar, and having a longitudinal slot, a hammer moving freely on said spindle, and having a flange on one end, a serrated dog pivoted in the said slot in the spindle, and engaging said flange, a spring bearing against said dog, and a stud on said collar in contact with said dog, said parts being combined substantially as described.

4. In a dental plugger, a casing, a sliding spindle therein, a hammer movable on said spindle, a collar on said casing, having a stud forming a stop for said spindle, and a cross-bar in said casing forming a stop for said hammer, said parts being combined, substantially as described.

5. In a dental plugger, a casing, a sliding spindle with a projection thereon, a collar on said casing having a longitudinal slot with transverse recesses, a pin on said casing in said slot or recesses and a stud on said collar, said parts being combined, substantially as described.

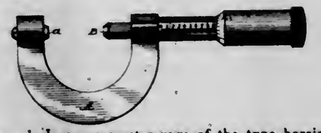
6. A dental plugger, having a casing with a collar secured to its rear end, a sliding spindle projecting into said collar, and against a spring therein, a hammer movable freely on said spindle, and having a body with an inclosed bushing, a coil-spring bearing against said body and said collar, a serrated dog pivoted in a slot in said spindle and engaging a flange on said hammer, and a stud on said collar in contact with said dog, said parts being combined, substantially as described.

571,177. RIVET. JOSEF TEMLER, London, England, assignor, by mesne assignments, to the National Metal Edge Box Company, of New Jersey. Filed Oct. 14, 1895. Serial No. 565,621. (No model.) Patented in England Aug. 30, 1893, No. 16,335, and in Germany June 7, 1894, No. 75,443.

Claim.—1. A sheet-metal rivet made from a rhomb-shaped blank and composed of a circular head, riveting-points formed from the acute corners of the blank, and guide-points formed from the obtuse corners of the blank, said riveting and guide points being bent directly from and at right angles to the circular head in contradistinction to being bent partly beneath the head, substantially as set forth.

2. A new and improved rivet formed from a rhomb-shaped blank and having the acute and obtuse angles of the blank bent at right angles with the head to form riveting and guiding points respectively, substantially as described.

571,178. MICROMETER-GAGE. GEORGE THOMPSON, Cleveland, Ohio. Filed Feb. 17, 1888. Renewed Apr. 10, 1896. Serial No. 587,035. (No model.)



Claim.—1. In a micrometer-gage of the type herein described and shown, the circumferentially-graduated sleeve attached to the threaded measuring-spindle, in combination with the stationary neck having on diametrically opposite points two longitudinal lines, one graduated for the reading of thousandths of an inch, the other graduated for the reading of odd sixteenths of an inch.

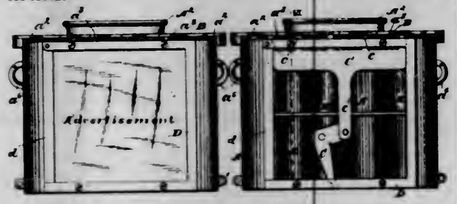
2. In a micrometer-gage of the type herein described and shown, the threaded spindle and its adjusting-sleeve divided circumferentially into twenty-five equal parts, in combination with the frame having the neck provided with the two longitudinal lines at diametrically opposite points.

3. The micrometer gage consisting of the U-shaped body, having the internally-threaded neck, the measuring-spindle, the sleeve attached to said spindle, the circumferential graduations on the end of the sleeve, the two longitudinal lines at diametrically opposite points on the neck, one of said lines graduated for the reading of thousandths of an inch, the other graduated and numbered to indicate the odd sixteenths of an inch.

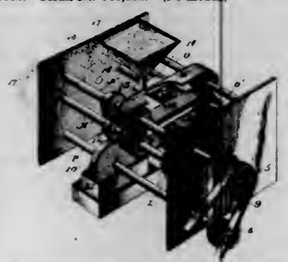
571,179. COIN-HOLDER. FRANK B. WAGNER, Cleveland, Ohio. Filed July 29, 1895. Serial No. 557,418. (No model.)

Claim.—A coin holder consisting of a series of coin-holding barrels, A, arranged side by side and having the forward portions of their upper edges cut away to form discharge-openings a^2, for the coins, and having partition-flanges a^3 at their open upper ends between their adjoining sides, a top plate B secured over the open upper ends

of the barrels and formed with finger-slots *b*, corresponding with said barrels and having open ends over the coin-openings, spring-followers *a*, in the barrels, a transverse bar C, arranged to move parallel with the longitudinal axes of the barrels and provided with locking-fingers *c*, projecting at the coin openings, a finger-piece C', connected to move the transverse bar to project the locking fingers across the coin or away from same, and a receptacle A', at the rear of the barrels and provided with a funnel-shaped opening A^2, at its top, substantially as set forth.



571,180. MACHINE FOR MAKING AND SANDING MATCH-BOX SHUCKS. HENRY W. WHELAN, Detroit, Mich., assignor to the Diamond Match Company, Chicago, Ill. Filed Mar. 31, 1893. Renewed Apr. 20, 1896. Serial No. 588,392. (No model.)



Claim.—1. In combination with a suitable support, and means for feeding the strip along, the strip bending devices, and the conical roller engaging the strip after it has passed the bending devices, substantially as and for the purpose shown.

2. In combination with a suitable support and means for feeding the strip along, bending devices to bend up portions of the strip, means for turning the bent-up portions over toward each other, and the conical roller engaging one of such bent portions to fold the same down, substantially as and for the purpose set forth.

3. As a means for sanding shucks for match-boxes, in combination with the two traveling belts, adapted to grasp between them a portion of a shuck, so as to support the shuck and carry it along with them, a glue-applying device, to apply glue to the under side of part of the shuck projecting beyond the belts, and a sand-applying device, over which the glued part of the shuck is moved along by the belts, substantially as described.

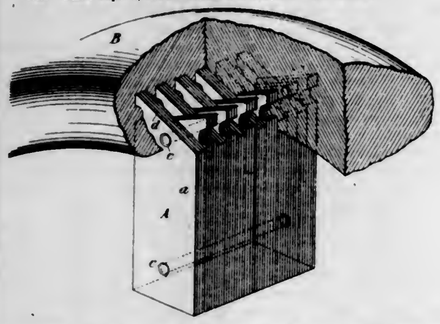
4. As a means for sanding shucks for match-boxes, in combination with the traveling belts to engage opposite sides of the shuck so as to entirely support the shuck and carry it along, means for applying glue to the under side of an exposed part of the shuck, a source of supply of sand, and a revolving wheel adapted to apply sand to the glued part of the shuck, substantially as and for the purpose shown.

5. As a means for sanding shucks for match-boxes, in combination with the traveling belts to engage opposite sides of a shuck so as to support the latter and carry it along, a rotating disk supplied with glue situated below and at one side of the path of the belts, a sand-receptacle and a sand-throwing wheel rotating therein, having the notched periphery adapted to take sand from the receptacle and throw it against the glue applied to the shuck by the glue-disk, substantially as and for the purpose set forth.

6. In combination with a machine for making shucks for match-boxes whereby the shucks are delivered in a flattened condition, two traveling belts, between which the shucks are fed from the machine, and by which the shucks are grasped and supported adapted to engage the opposite sides of only a portion of the shucks, a gluing device to apply glue to the under side of a projecting part of each shuck, and a sander to apply sand to the glued part, substantially as and for the purpose described.

7. In combination with a machine for making shucks for match-boxes whereby the shucks are made and delivered in a flattened condition the two traveling belts between which the shucks are delivered from such machine and by which the shucks are supported and carried along, with a clear projecting part having its under side out of contact with any supporting-surface, the rotating glue applying disk to apply glue to the under side of the projecting parts of the shucks, means for supplying it with glue, the rotating sanding-wheel situated substantially in line with the glue-applying disk, so that the portion of the shuck which is supplied with glue will be carried over it as the shuck is moved along by the belts, and means for supplying such wheel with sand, substantially as and for the purpose specified.

571,181. FIELD-MAGNET POLE. JAMES J. WOOD, Fort Wayne Ind. Filed Sept. 8, 1896. Serial No. 605,154. (No model.)



Claim.—1. A field-magnet having a cast yoke and laminated poles embedded in it, said poles made of laminæ having sides of unequal length at their embedded ends, and said laminæ reversed at intervals to form oblique ribs projecting to alternately opposite sides, so that oblique spaces are left between them which are filled with ribs of cast-iron, serving to strengthen the yoke and increase the area of surface contact between the wrought and cast iron.

2. A laminated field pole adapted at one end to be embedded in a cast yoke made of laminæ having sides of unequal length at their embedded ends, and reversed at intervals to form oblique ribs projecting to alternately opposite sides, so that the embedded end of the pole presents an alternation of oppositely-inclined ribs with inclined channels between them.

3. A lamina or punching for a field-magnet pole, having its end *d* formed with an oblique outline so as to be longer on one side than the other, and with a notch *b* formed in the longer side.

571,182. LOOM-REED. JOSEPH ADAMSON, Pawtucket, R. I. Filed Jan. 28, 1896. Serial No. 577,162. (No model.)

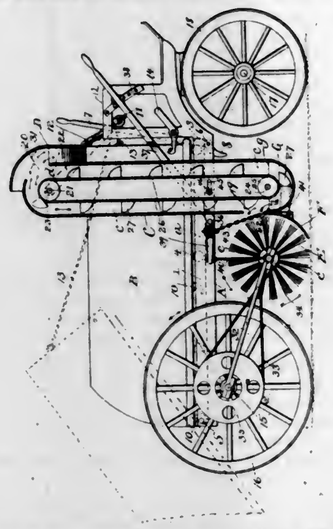


Claim.—As an improved article of manufacture, a weaver's reed composed of the backs A, and a series of resilient dents or wires *b* each provided with bends *a* within the reed and at or near the backs thereof, the ends of the said dents or wires being rigidly secured in position in the backs A, substantially as and for the purpose specified.

571,183. STREET-SWEEPER. MARLON B. ATKINSON, Washington, D. C., assignor of two-thirds to Bernard J. Coyle and John Fitzmorris, same place. Filed Feb. 14, 1896. Serial No. 579,300. (No model.)

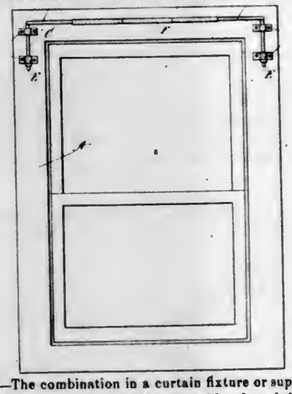
Claim.—1. In a street-sweeping machine, the combination, with a suitable frame, of a brush revolubly secured to the frame and adapted to direct the sweepings toward the center, a deflector having a downward inclination from the center toward each end and adapted to receive the sweepings from the brush, a sweepings-receiver mounted above the brush, and two elevators, one on either side of the receiver, adapted respectively to take the sweepings from the ends of the deflector and deposit them in the receiver.

2. In a street-sweeping machine, the combination, with a suitable frame, of a brush revolubly secured to the frame and adapted to direct the sweepings toward the center, a deflector having a downward inclination from the center toward each end and adapted to receive the sweepings from the brush, a sweepings-receiver mounted above the brush, two elevators, one on either side of the receiver, adapted respectively to take the sweepings from the ends of the deflector and deposit them in the receiver, and means carried by each elevator permitting its independent lateral adjustment relative to the brush.



3. In a street-sweeping machine, the combination, with a suitable frame, a brush revolubly secured to the frame and adapted to direct the sweepings toward the center, a deflector having a downward inclination from the center toward each end, a sweepings-receiver mounted above the brush, and two elevators, one on either side of the receiver, for conveying the sweepings from the ends of the deflector to the receiver, of an apron pivotally mounted in front of the brush and adapted to automatically rise to allow it to pass an obstruction and then drop by gravity to its normal position, said apron being so mounted that in rising to pass an obstruction it will recede from the brush to avoid interference with the revolution of the latter.

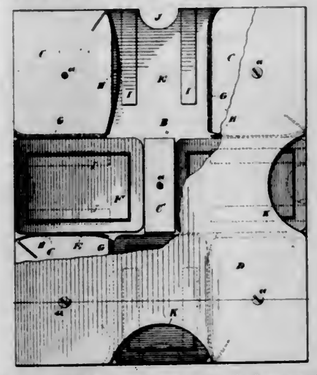
571,184. CURTAIN FIXTURE OR SUPPORT. GEORGE W. BAMFORD, Richmond, Va., assignor to August F. Cordes, same place. Filed Dec. 4, 1895. Serial No. 570,997. (No model.)



Claim.—The combination in a curtain fixture or support of two rods, a tubular section adapted to fit upon said rods and slide thereon, said rods being bent at right angles to the window-frame and then again bent downwardly parallel with said window-frame, and journal-brackets on the frame wherein the said rods are secured, and a bur or nut secured to the end of said rods, substantially as set forth.

571,185. DUPLICATE-WHIST APPARATUS. RICHARD M. BENT, New York, N. Y. Filed May 9, 1896. Serial No. 590,803. (No model.)

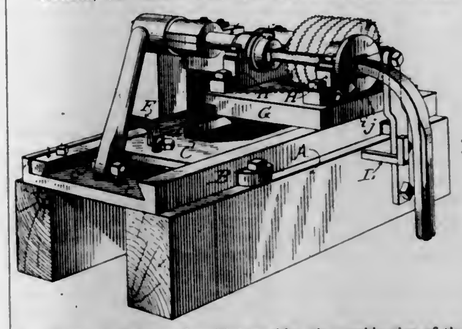
Claim.—1. An apparatus for the purposes described comprising a tray having receptacles in the sides thereof adapted to receive cards, a spring arranged upon one side of each receptacle, and an elastic cushion arranged upon the opposite side thereof, both adapted for contact with the edges of the cards to hold the cards in position within the receptacle, substantially as specified.



2. An apparatus for the purposes described comprising a tray having receptacles in the sides thereof adapted to receive cards, a spring having one end secured to one side or wall of each receptacle near the outer edge thereof, and its other end free and extending rearwardly into the receptacle, and an elastic cushion secured to the opposite side or wall of the receptacle, said spring and elastic cushion being adapted for contact with the opposite edges of the cards within the receptacle to hold the same in position therein, substantially as specified.

3. An apparatus for the purposes described comprising a tray having receptacles in the sides thereof adapted to receive cards, a thumb indentation in the base of said tray at the center of each receptacle, and a larger semicircular recess in the cover at each receptacle, a bow-spring having the outer end bent at an angle to the remainder thereof, and said bent-over end secured to one of the sides or walls of the receptacle near the outer edge thereof and its other end free and extending rearwardly into the receptacle, and a strip of felt secured to the opposite side or wall of the receptacle, said spring and strip of felt being adapted for contact with the edges of the cards within the receptacle to hold the cards in position therein, substantially as specified.

571,186. WOODWORKING-MACHINE. DANIEL BULLOCK, Fort Atkinson, Wis. Filed June 12, 1896. Serial No. 595,336. (No model.)



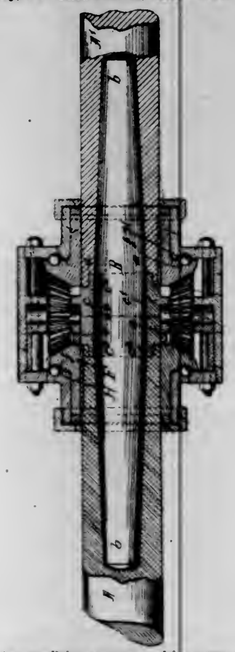
Claim.—1. In a woodworking machine, the combination of the frame or bed; a rotary cutter; a reciprocating carriage; boxes mounted on said carriage; a disk rotatably secured within one of said boxes; and work-clamping means carried thereby; a second disk rotatably mounted within the other box; said disk being provided with a transverse opening having one face inclined to the others; and a pattern rim or edge; and a roller secured to the frame.

2. In a woodworking-machine the combination of the frame or bed; a cutter; a reciprocating carriage; a spring for advancing the carriage; a lever pivoted to the frame in rear of the carriage; and a link pivotally connected to the lever and the carriage, the relation of the parts being such that when the carriage is drawn back and the lever depressed, the parts will be locked, substantially as described.

3. A work-holder disk for woodworking-machines comprising a solid head or body having a polygonal opening formed in and extending therethrough, and having one face curved or flared, substantially as described.

4. A work-holder disk for woodworking-machines provided with a longitudinal opening having one face curved or flared, substantially as described, and a rim or edge having the pattern which it is desired to impart to the work.

571,187. EQUALIZING-GEAR. CHARLES C. BURTON, Pittsburg, Pa., assignor of four-fifths to John C. Des Granges, same place, Lewis E. Holden, Beloit, Wis., George M. Ludlow, Chicago, Ill., and Curtis G. Hussey, Allegheny, Pa. Filed Mar. 11, 1895. Serial No. 541,229. (No model.)



Claim.—1. An equalizing-gear comprising a two-part shaft, miter-gears secured upon each shaft-section, a gear-supporting disk mounted to turn concentrically with the shaft-sections, one or more miter-pinions mounted in said gear-supporting disk in position to intermesh with both of the gears on the shaft-sections, and means for holding the said gears from outward endwise movement, comprising bearing-rings rigidly connected with the said gear-support and overlapping the gears on the shaft-sections, substantially as set forth.

2. An equalizing-gear comprising a two-part shaft, miter-gears secured upon each shaft section, a gear-supporting disk mounted to turn concentrically with the shaft-sections, one or more miter-pinions mounted in said gear-supporting disk in position to intermesh with both of the gears on the shaft-sections, and means for holding the said gears from outward endwise movement, comprising bearing-rings rigidly connected with the said gear-support and overlapping the gears on the shaft-sections, and roller-bearings interposed between said bearing-rings and the gears, substantially as set forth.

3. An equalizing-gear comprising a two-part shaft, miter-gears secured upon each shaft-section, a gear-supporting disk mounted to turn concentrically with the shaft-sections, one or more miter pinions mounted in said gear-supporting disk in position to intermesh with both of the gears on the shaft-sections, and means for holding said gears from outward endwise movement comprising cylindric flanges on the opposite sides of the gear-supporting disk, and bearing-rings rigidly connected with the said gear-support and overlapping the peripheries of the gears on the shaft-sections, substantially as set forth.

4. An equalizing-gear comprising a two-part shaft, miter-gears secured upon each shaft-section, a gear-supporting disk mounted concentrically with the shaft, spindle projections extending from opposite sides of said gear-supporting disk and engaging recesses in the adjacent ends of the shaft-sections, one or more miter-pinions having its or their axis disposed radially with relation to the shaft and each arranged to intermesh with the gears on the shaft-sections, and means for holding said gears from outward endwise movement comprising bearing-rings rigidly connected with the said gear-supporting disk and overlapping the gears on the shaft-sections, and roller-bearings interposed between said bearing-rings and adjacent parts of the gears, substantially as set forth.

5. An equalizing-gear comprising a shaft or axle formed in two alined sections each provided with an axial recess in its adjacent end, a spindle extending between said shaft-sections the ends of which engage said axial recesses, an annular gear-casing mounted rigidly upon said spindle, comprising a hub portion keyed to the spindle, a disk portion extending outward from the hub portion and provided with a plurality of radially-disposed journal-recesses therein, annular imperforate cylindric flanges extending from opposite sides of the periphery of the disk, a circular disk or plate adapted to fit within one of said cylindric flanges and against the disk portion, provided in its face with journal recesses adapted to register with those of said disk, miter-gears mounted between said disks, an annular miter-gear rigidly mounted upon the end of each shaft-section in position to intermesh with opposite sides of the radially-disposed miter-gears, and imperforate end-closing plates secured to the margins of the cylindric flanges and forming in conjunction therewith a complete housing for the gears, substantially as set forth.

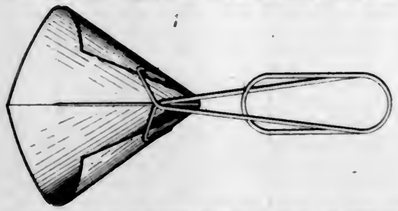
6. An equalizing-gear comprising a shaft or axle formed in two alined sections each provided with an axial recess in its adjacent end, a spindle extending between said shaft-sections the ends of which engage said axial recesses, an annular gear-casing mounted rigidly upon said spindle, comprising a hub portion keyed to the spindle, a disk portion extending outward from the hub portion and provided with a plurality of radially-disposed journal-recesses therein, annular imperforate cylindric flanges extending from opposite sides of the periphery of the disk, a circular disk or plate adapted to fit within one of said cylindric flanges and against the disk portion, provided in its face with journal-recesses adapted to register with those of said disk, miter-gears mounted between said disks, an annular miter-gear rigidly mounted upon the end of each shaft-section in position to intermesh with the opposite sides of the radially-disposed miter-gears, imperforate end-closing plates secured to the margins of the cylindric flanges, said plates having central cylindric hub portions forming tubular bearings which embrace the bubs of the annular gears, and glands centrally apertured for the shaft-sections and threaded upon the cylindrical hub portions of the end-closing plates, substantially as set forth.

7. The combination with a two-part shaft or axle and an equalizing-gear connecting the shaft-sections, of moving electrical motor elements mounted concentrically with and upon said equalizing-gear, and stationary electrical motor elements supported adjacent to the said moving elements, substantially as set forth.

8. The combination with a two-part shaft or axle and an equalizing-gear connecting said shaft-sections, of a series of moving electrical motor elements mounted upon the exterior of the equalizing-gear, a frame mounted upon the shaft provided with parts extending at opposite sides of the equalizing gear, and immovable electrical motor elements supported upon said frame in proximity to said movable elements, substantially as set forth.

9. The combination with a two-part shaft or axle and an equalizing-gear connecting said shaft-sections, comprising a plurality of miter-gears inclosed within a cylindrical-shaped housing of moving electrical motor elements mounted directly upon said gear-housing, whereby said housing and inclosed gears constitute the moving part of the motor, a rectangular frame mounted upon the shaft, opposite sides of which extend parallel with the shaft and at opposite sides of said gear-housing and stationary electrical motor elements mounted upon said frame, substantially as set forth.

571,188. ICE-CREAM MOLD AND DIPPER. FRED D. CLARK, McDonald, Pa. Filed Mar. 20, 1896. Serial No. 584,094. (No model.)

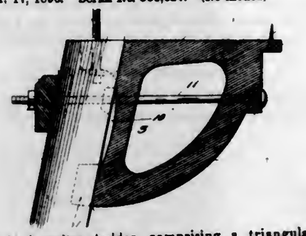


Claim.—1. In an ice-cream mold and dipper, the combination with the hinged cone-shaped mold, clamps or sockets secured near the free ends of the two sections, a handle composed of one piece of wire formed in an oblong shape for the body portion with the free ends crossed and engaging in the clamps or sockets, of a pointed rod secured in the center of the cone, substantially as shown and described.

2. In an ice-cream mold and dipper, the combination of a suitable shaped mold composed of any suitable material, and formed in sections hinged together, a coiled handle having its free ends crossed and secured to the sections, thus forming a spring to return the mold

to its original shape after opening, substantially as shown and described.

571,189. COLTER-HOLDER. FRANCIS M. COOK, Tupelo, Ark. Filed Apr. 17, 1896. Serial No. 588,027. (No model.)



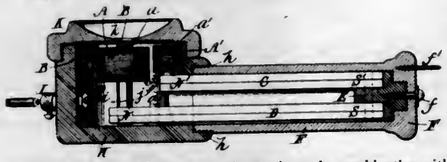
Claim.—1. A colter-holder, comprising a triangular-shaped bracket secured to the under side of a plow-beam, a clamp block for securing a colter to the bracket, and tie-rods for binding the clamp-block against the colter and securing the latter to the bracket, substantially as set forth.

2. A colter-holder, comprising a triangular-shaped bracket, secured to the under side of a plow-beam, spaced lugs cast integral with the bracket for receiving a colter, a clamp-block having a groove in one of its sides and adapted to fit one edge of the colter, and tie-rods for binding the clamp block against said colter and securing the latter to the bracket, substantially as set forth.

3. A colter-holder, comprising a bracket having a securing-plate provided with an inclined downwardly-projecting arm and a curved brace connected to the securing-plate and the downwardly-projecting arm, a clamp-block for securing a colter to the bracket, and tie-rods for binding the clamp-block against the colter and securing the latter to the bracket, substantially as set forth.

4. A colter-holder, comprising a bracket having a securing-plate provided with an inclined downwardly-projecting arm and a curved brace connected to the securing-plate and the downwardly-projecting arm, lugs cast integral with the bracket at its upper and lower ends and forming notches for receiving a colter, a clamp-block having a groove in one of its sides adapted to fit one edge of the colter, and tie-rods secured to the bracket and extending beyond the colter at each side thereof, said rods having the clamp-block mounted threon and provided with nuts for binding the said clamp-block against the colter and securing the latter to the bracket, substantially as set forth.

571,190. MAGNETO-TELEPHONE. EDWARD M. HARRISON and WILLIAM S. HARRISON, Chicago, Ill. Filed Nov. 21, 1894. Serial No. 529,477. (No model.)



Claim.—1. In an electromagnetic telephone the combination with a diaphragm of permanent steel magnets, of unequal length, their like poles being separated at their lower ends by a diamagnetic heel-piece and electromagnetic coils on the pole-pieces at the opposite ends, substantially as shown and described.

2. In an electromagnetic telephone the combination with a diaphragm, of permanent steel magnets, of unequal length, and having their like poles separated at their lower ends by a diamagnetic heel-piece, the upper ends of the magnets being attached to the two electromagnetic coils of unequal resistance, substantially as shown and described.

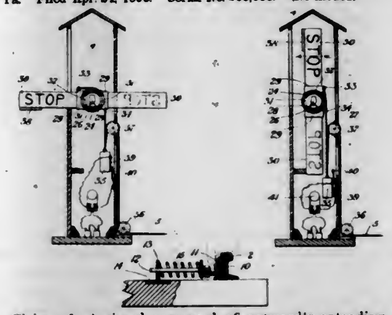
3. In an electromagneto-telephone, the combination with the diaphragm of permanent steel magnets of unequal length and having their like poles separated at their lower ends, and riveted to a diamagnetic heel-piece, the upper ends of the magnets being attached to two electromagnetic coils of unequal resistance, a cushion of felt or equivalent material attached to the upper ends of the cores of the electromagnetic coil, the edge of the diaphragm-plate resting lightly in contact with the cushion of the electromagnetic coil A′, and the center of the diaphragm-plate barely out of contact with the cushion of the electromagnetic coil, A, substantially as described.

4. In an electromagnetic telephone-receiver, the combination with a diaphragm-plate of a long and a short permanent steel magnet, having their north and south ends separated at their lower ends by a paramagnetic heel-piece, to which they are riveted, said heel-piece forming a nut or tap to bolt the magnets to the lower ends of the receiver-case and a connecting-screw, the upper ends of the short permanent steel magnet having a soft-iron shoe fitting over the ends of the magnets and to the top of the inside of the receiver-case, substantially as described.

5. In an electromagneto-telephone, the combination with a diaphragm and compound magnets in pairs of uneven length, having their north and south ends separated at their lower ends by a paramagnetic heel-piece, a screw connecting said heel-piece to the handle of an insulating-case, a bolt connecting the upper end of the short permanent magnet to the receiver-case and having one end adjacent to the diaphragm, and the long permanent magnet carrying an electromagnetic coil with its core adjacent to the diaphragm-plate, substantially as described.

6. In an electromagnetic telephone, the combination with a diaphragm and compound permanent magnets of uneven length, made fast in the handle of a case composed of insulating material, the upper end of the short permanent magnet being bolted to the receiver-case, and the long permanent magnet carrying an electromagnetic coil, having a core composed of numerous soft iron wires and its outer end adjacent to the diaphragm-plate, of a blind binding-screw composed of brass, or equivalent metal, whose expansion is opposite to that of iron under the influence of heat or cold, for the purpose of uniformly maintaining the same position of the outer end of the core with relation to the diaphragm under varying temperatures, substantially as described.

571,191. RAILWAY-SIGNAL. WILLIAM D. HARTZ, Talley Cavey, Pa. Filed Apr. 24, 1896. Serial No. 588,888. (No model.)



Claim.—1. A signal composed of outwardly-extending signal-blades secured to a revolving ring, journaled on a hollow trunnion provided with a removable cap furnished with a bull's-eye, substantially as set forth.

2. A signal composed of outwardly-extending signal-blades secured to a revolving ring, journaled on a hollow trunnion, with openings in the hollow trunnion and in the ring designed to come into register when the signal is set at "danger" substantially as set forth.

3. A signal composed of outwardly-extending hollow signal-blades secured to a revolving ring, journaled on a hollow trunnion, with openings in the hollow trunnion and in the ring in line with the hollow blades, designed to come into register when the signal is set at "danger," substantially as set forth.

4. A signal composed of outwardly-extending signal-blades, secured to a revolving ring journaled on a hollow trunnion, and a lamp within the trunnion, substantially as set forth.

5. In combination with a signal-tower, a signal-shifting device actuated by the flange of a wheel, and a cable connecting the shifting device with the signal: a locking and releasing device consisting of a toothed ratchet-bar inserted in the line of the cable and a locking-bar engaging the teeth of such ratchet-bar and provided with one end projecting into the path of a car-wheel flange whereby such end of the bar may be depressed, substantially as set forth.

6. In combination with a signal composed of outwardly-extending signal-blades secured to a revolving ring journaled on a hollow trunnion, a counterweight attached to one of the blades to turn it to "danger," a weight 35 attached to the revolving ring to turn it to "safety," and an electric contact secured to such weight designed to close a circuit and ring a bell when the signal is set to "danger;" the signal-shifting device comprising a bar having one end set against the rail and the other end diverging laterally therefrom, a cable attached to such divergent end and to the weight 35, springs to normally hold one end of the bar against the rail and the other end away from the rail, whereby the bar may be moved toward the rail to actuate the signal, by means of the flange of a car-wheel, substantially as and for the purposes set forth.

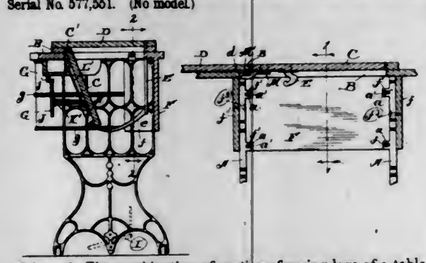
571,192. LOOM. ISAK HEER, Zurich, Switzerland. Filed July 20, 1894. Serial No. 518,151. (No model.) Patented in Switzerland Dec. 28, 1893, No. 7,327; in France July 2, 1894, No. 239,344, and in England July 6, 1894, No. 13,107.



Claim.—1. In combination, the shuttle, the pair of stop-levers pivotally carried thereby, one of said levers having an eye for the thread, a spring connected with said lever and a connection from this lever to the other lever of the pair whereby the tension of the spring and weft applied to one lever will be transmitted to the other, said connection consisting of a link, substantially as described.

2. In combination, in a loom, the shuttle boxes, the shuttles therein, the vertical shaft H having the fier, the horizontal shaft E connected to the shaft H to be moved longitudinally thereby, the levers on the shuttle arranged to be held retracted by the tension of the weft, the spring in the shuttle for forcing said levers outwardly when the weft-thread fails, and connections from the shaft E to a stop-motion, substantially as described.

571,193. SEWING-MACHINE TABLE. NICHOLAS A. HULL, Chicago, Ill., assignor to Frank Patzack, same place. Filed Jan. 31, 1896. Serial No. 577,551. (No model.)

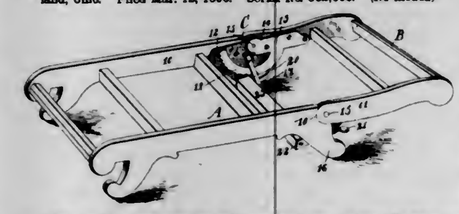


Claim.—1. The combination of castings forming legs of a table, a combined pedal-support and brace extending between and secured to the castings, lugs on the ends of the combined pedal-support and brace, such lugs coming in contact with the castings, bolts connecting the lugs and the castings, respectively, and a board forming a combined back and brace also extending between and secured to the castings, with fastenings extending from the castings directly into the combined back and brace; substantially as described.

2. In a sewing-machine table, a table-top, a cover and a machine base-board, the cover and the base-board being pivotally secured to the table-top, a connection between the cover and the base-board, and an abutment extending out from the base-board and into contact with the table top when the base-board is brought nearly into a horizontal plane by opening the cover; substantially as described.

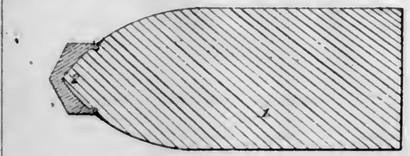
3. In a sewing-machine table, a table-top, a cover and a machine base-board, the cover and the base board being pivotally secured to the table-top, a connection between the cover and the base-board, and an abutment extending out from the base-board, with an adjustable abutment on the table-top, such abutment on the base-board coming into contact with the adjustable abutment on the table-top when the base-board is brought nearly into a horizontal plane by opening the cover; substantially as described.

571,194. COUCH OR BED HINGE. AMBROSE HUTTINGER, Cleveland, Ohio. Filed Mar. 12, 1896. Serial No. 582,868. (No model.)



Claim.—The combination of a main frame, a head-frame, two main-frame hinge-plates respectively secured to the inner sides of the main frame and at one end thereof, two head-frame hinge-plates respectively secured to the inner sides of the head-frame and respectively hinged to the main-frame hinge-plates, a curved rack-bar secured to each head-frame hinge-plate, two levers respectively fulcrumed at the sides of the main frame and below the main-frame hinge-plates, each lever having a spur thereon respectively capable of cooperating with the teeth of the ratchet-bars and each lever also having sockets, and a weighted beam secured in the sockets and extending transversely from one end to the other, substantially as described.

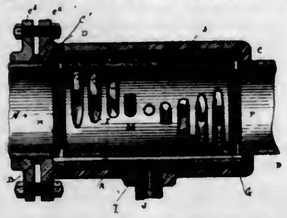
571,195. ARMOR-PIERCING PROJECTILE. ISAAC G. JOHNSON, New York, N. Y. Filed Aug. 3, 1896. Serial No. 601,539. (No model.)



Claim.—1. The combination with an armor-piercing projectile having a hard solid conoidal point formed with a peripheral groove near its extremity, of a soft-metal cap having a recess or cavity in its inner end provided with an annular rib, said cap fitting over the conoidal point of the projectile and the rib forced and compressed in the said groove whereby the cap is firmly secured to the projectile, substantially as described.

2. The combination with an armor-piercing projectile having a hard solid conoidal point formed with a peripheral groove near its extremity, of a soft-metal cylindrical cap having a conoidal point and a recess in its inner end provided with an annular rib and the line of junction of said conoidal point of the cap with the cylindrical portion thereof lying in a plane in rear of the point of the projectile, substantially as described.

571,196. GAS-MIXING APPARATUS. ROBERT G. KIRKWOOD, Wheeling, W. Va. Filed Mar. 9, 1896. Serial No. 582,374. (No model.)



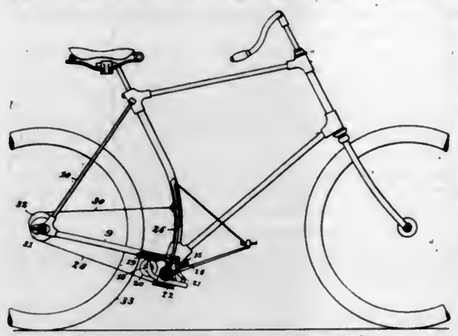
Claim.—1. The combination of the inner tube, an outer tube surrounding a part of the inner tube, the said tubes forming between them a chamber for the reception and retention of a fluid, a packing encircling the inner tube and bearing against the outer tube, and a clamp for holding the packing against the outer tube, substantially as described.

2. The combination of the outer shell, with the inner shell provided with apertures opposite each other and the series of apertures arranged spirally, cross-pipes extending from side to side of the shell with their ends held in these apertures, said cross-pipes having apertures or openings inside the shell, a gas supply to the chamber between the outer and inner shell and means for propelling air longitudinally through the inner shell, all combined substantially as described.

571,197. MECHANISM FOR WORKING VELOCIPEDES. BIRGER LJUNGSTRÖM, Stockholm, Sweden. Filed Feb. 28, 1896. Serial No. 581,149. (No model.)

Claim.—1. In cycles, driven by means of oscillating treadles 26, an arrangement for regulating the treadles with regard to their relative position, consisting of a balance 15 journaled in such a position, that the axis of the same runs crosswise to the treadle-shaft the ends of said balance being provided with rollers, cams 27 on the treadle-naves, upon which the rollers are adapted to rest, said cams being eccentric and so turned, that the treadle, when moving downward, forces the corresponding end of the balance to move outward, with the view, that the one treadle may not be pressed upward, unless the other treadle is simultaneously pressed downward.

2. In combination with the frame, the treadle-naves and the cams 27 thereon, the balance 15 having the rollers, the revoluble piece 4 journaled in the frame and the spring 11 for actuating said revoluble piece in such a direction that the rollers of the balance are pressed against the cams 27 on the treadle-naves, substantially as described.

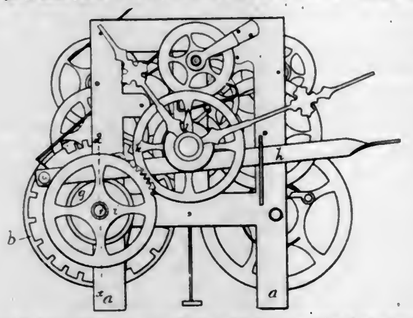


3. In combination with the frame, the treadle-naves and the cams 27 thereon, the balance 15, the rollers, the revoluble piece 4 also formed as a balance, the movable part 18, and the turning disk supported thereby, of the chain or rope which connects the coupling-disks and also the brake-disk, and the spring 11 having one end connected to one end of the piece 4 and the other end connected to the movable part 18, whereby the chain or rope may be kept strained and the braking-disk out of engagement with the driving-wheel, substantially as described.

4. In combination with the frame, the treadle-naves and the cams 27 thereon, the balance 15, the rollers, the revoluble piece 4 also formed as a balance, the movable part 18, and the turning disk supported thereby of the chain or rope which connects the coupling-disks and also the brake-disk and the spring 11 having one end connected to one end of the piece 4 and the other end connected to the movable part 18, the headed pin fixed to the frame and passing through an aperture in the balance 15, said aperture being so shaped that the balance prevents the swinging of the piece 4, unless the balance occupies its middle position whereby the braking cannot take place when the treadles, are at the turning points, substantially as described.

5. In combination, with the frame, the treadle-naves, and the cams 27 thereon, the revolable piece 4, the part 18, the turning and braking disks supported thereby, said part 18 having the ends of its legs bent angularly to pivots entering grooves in the frame, and having its other end connected with the balance 4 whereby said part 18 is effectually guided, substantially as described.

571,198. CALENDAR-CLOCK MECHANISM. THOMAS W. R. MCCABE, Winsted, Conn., assignor to the William L. Gilbert Clock Company, same place. Filed Apr. 15, 1896. Serial No. 587,718. (No model.)

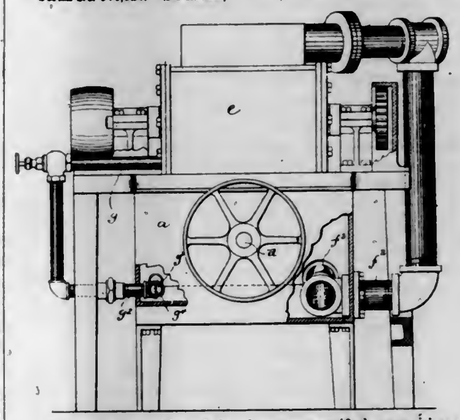


Claim.—1. In combination, the striking mechanism of the clock, including the count-wheel *b* carrying pawl stops *c c*, the pawl *e* cooperating with said stops, the calendar-operating lever *h*, and the rotary cam *g* connected to pawl *e*, all substantially as described and for the purposes set forth.

2. In combination, the striking mechanism of the clock, including the count-wheel *b* carrying the two pawl-stops *c c* on opposite sides of the axis, the pawl *e* cooperating with the said stops, the calendar-operating lever *h*, and the rotary cam *g* connected to pawl *e*, all substantially as described and for the purposes set forth.

3. In combination, the striking mechanism of the clock, including the count-wheel *b* carrying the two pawl-stops on opposite sides of the axis, the pawl *e* cooperating with the said stops, the time mechanism of the clock, the index *l* journaled on the same axis as the clock-hands, the gear *k* adapted to rotate with such index, the gear *i*, the calendar-operating lever *h*, and the rotary cam *g* connected to the pawl *e*, all substantially as described and for the purposes set forth.

571,199. BLACKLEADING-MACHINE. WILLIAM H. NICHOLAS, Boston, and RICHARD STEPHENSON, Quincy, Mass. Filed Jan. 27, 1896. Serial No. 576,927. (No model.)



Claim.—1. A machine of the character specified, comprising a box or casing, a mold-carriage movable therein, a blower the casing of which communicates with the box through suitable openings above the path of the carriage, a suction pipe or conduit connected with the receiving side of the blower-casing and including a perforated section within the box, and a valved relief pipe or conduit connected with the discharge side of the casing and including a perforated section within the box, the blower drawing air and powdered material through the said suction-conduit from the lower portion of the box and delivering it at the upper portion of the box, while the relief-conduit is adapted to conduct air from the blower-casing to the box to reduce the pressure and temperature in the blower-casing and agitate the powdered material in the box.

2. A machine of the character specified, comprising a box or casing, a mold-carriage movable therein, a blower the casing of which communicates with the box through suitable openings above the path of the carriage, a suction pipe or conduit connected with the receiving side of the blower-casing and including a perforated section within the lower portion of the box, and a removable sieve in said suction-conduit, the latter having an opening provided with a removable cover to permit the insertion and removal of the sieve.

3. In a machine of the character specified, the combination of a box or casing, a mold-carriage movable therein, a blower the casing of which communicates with the box through suitable openings above the path of the carriage, a suction-pipe connected with the receiving side of the blower-casing, and means for regulating the pressure and temperature of the air in the blower-casing, said means including a valved conduit connected with the casing of the blower.

571,200. SAW. JOSHUA OLDHAM, Brooklyn, N. Y. Filed Aug. 12, 1896. Serial No. 602,563. (No model.)



Claim.—1. In a saw, the insertible tooth chisel bit or point having its base or inner end provided with a lateral enlargement or thickened, in combination with the blade having the tooth-receiving slot or socket provided at its base with an enlargement thereof or aperture receiving the enlargement at the base of said tooth, said tooth enlargement adapted to be compressed or punched into a forward and a rearward projection, substantially as set forth.

2. In a saw, the insertible tooth having its base laterally enlarged or widened out and flared toward its upper cutting end in combination with the blade having its tooth-receiving slot or socket provided with an enlargement or apertnre at its inner end or base receiving

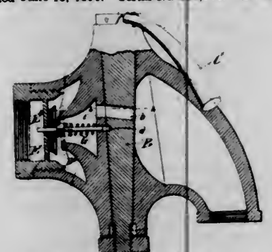
said enlargement of the tooth, said enlargement of the tooth adapted to be compressed into a forward and rearward projection, substantially as set forth.

3. In a saw, the insertible tooth having its upper end portion or point flared toward its extreme outer edge and also toward its forward and rear edges and bifurcated in its forward and rear faces, and having its base end laterally enlarged or thickened, in combination with the blade having the tooth-receiving socket or slot terminating in an enlargement or aperture at its inner end, said base-end enlargement of the tooth adapted to be compressed into a forward and rearward projection, substantially as set forth.

4. In a saw, the insertible tooth having a laterally enlarged or thickened inner end or base and its longitudinal edges provided with grooves or channels, in combination with the blade having the tooth-receiving slot or socket terminating at its inner end or base in an enlargement or aperture receiving the enlargement at the base end of said tooth, the longitudinal edges of said slot or socket having ribe engaging the longitudinal grooves or channels of said tooth, said enlargement at the base end of said tooth being compressed into forward and rearward projections, substantially as set forth.

5. In a saw, the insertible tooth having its outer end or point enlarged laterally and tapered rearwardly to the width of the blade and its base end laterally enlarged or thickened, in combination with the blade having the tooth-receiving slot or socket provided at its lower or inner end with an enlargement or aperture receiving the enlargement at the base end of said tooth, said enlargement of the tooth adapted to be compressed into a forward and a rearward projection, substantially as set forth.

571,201. ANGLE-COCK. THOMAS A. OUTHOUSE, Mount Olive, Ill., assignor to himself and Albert Bohler and Edward H. Meyer, same place. Filed June 13, 1896. Serial No. 595,378. (No model.)



Claim.—1. An angle-cock, having a key formed with two ports opening into one end of the angle-cock body, the other ends of the said ports being adapted to register with a port leading to a chamber formed in the angle-cock body, a valve adapted to be seated on a seat formed in the said chamber, and a spring for normally holding the said valve off the said seat, substantially as shown and described.

2. An angle-cock, having a key formed with two ports opening into one end of the angle-cock body, the other ends of the said ports being adapted to register with a port leading to a chamber formed in the angle-cock body, and a valve adapted to be seated on a seat formed in the said chamber, the said valve being secured on a valve-stem adapted to engage a recess in the said key, to permit the said valve to move to its seat, substantially as shown and described.

3. An angle-cock having a casing provided with a key-seat and a chamber at one side of the key-seat and communicating therewith by a port, a key operating in the key-seat and having two ports each capable of having one end registered exclusively with the port leading to the chamber, and a valve within said chamber, the valve controlling the port leading to the chamber, substantially as described.

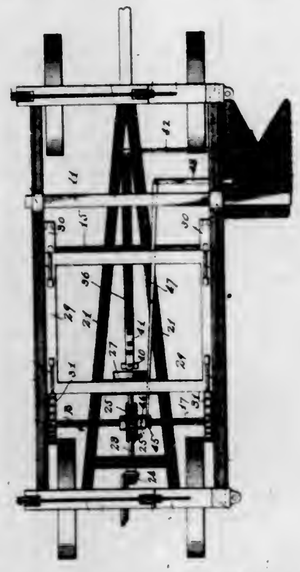
4. An angle-cock having a casing provided with a key-seat and with a chamber communicating with the key-seat through a port, a key operating in the key-seat and having two ports, each port being capable of registering exclusively with the port leading to the chamber, a valve commanding the chamber, and a stem for the valve, the stem moving with the valve and the key having a recess into which the stem of the valve may move, substantially as described.

5. An angle-cock having a casing provided with a key-seat and with chamber communicating with the key-seat through a port, a key having two ports each capable of exclusively registering with the port and the key also having a recess, a valve commanding the chamber, and a stem for the valve, the stem being capable of entering the recess in the key whereby to permit the valve to close, substantially as described.

6. An angle-cock having a casing provided with a key-seat and with a chamber communicating with the key-seat through a port, a key having two ports and a recess, each port in the key being capable of exclusively registering with the port in the casing, a valve-stem moving in the casing and into the recess of the key when the key is adjusted with certain of its ports at the port of the casing, and a valve carried by the stem and commanding the port of the casing, substantially as described.

7. An angle-cock having a casing provided with a key-seat and a chamber communicating with the key-seat through a port, the chamber having a valve-seat adjacent to the port, a key fitted within the key-seat and having two ports and a recess, the ports of the key being each capable of exclusively registering with the port of the casing, a spider held within the chamber, a valve-stem slidable within the spider and capable of having one end projected into the recess of the key when the key is adjusted to a certain position, and a valve carried by the stem and cooperating with the valve-seat of the chamber, substantially as described.

571,202. CORN-HARVESTER. CHARLES SCHULZE, Deer Plain, Ill. Filed July 29, 1895. Serial No. 557,433. (No model.)

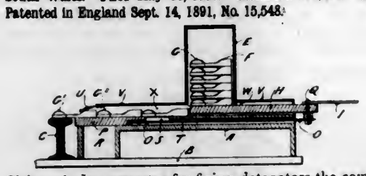


Claim.—1. In a corn-harvester, A shaped frames, cross-bars carried by said A-shaped frames, means of supporting said frames, U-bearings at the lower ends of said frames, caps for closing said U-bearings, longitudinally-extending bars journaled in said U-bearings and connecting said frames, connections between said longitudinal bars, drums journaled in the cross-bars of each of said A-shaped frames, a vertical shaft journaled for rotation in the upper part of each of said A-shaped frames, arms extending upwardly at an angle from each of said shafts, grooved wheels mounted in the ends of said arms, cables attached to said drums and passing over said grooved wheels and having their opposite ends attached to either one of said longitudinally-extending bars as desired, and crank-handles for rotating said drums, substantially as specified.

2. In a corn-harvester, an intermittently-movable reciprocating carrier, comprising a rectangular frame and a flexible extension attached to said rectangular frame for the purpose of increasing the size thereof, uprights on said frame, uprights on said flexible extension, and folding transversely thereof, wheels around which said flexible extension operates, and means of supporting and operating said carrier, substantially as specified.

3. In a corn-harvester, an intermittently-movable reciprocating carrier, comprising a rectangular frame and a flexible extension attached to said retangular frame for the purpose of increasing the size thereof, uprights on said frame, uprights on said flexible extension, and folding transversely thereof, wheels around which said flexible extension operates, sprocket-chains attached to said carrier, sprocket-wheels operating said chain, a worm-wheel operating said sprocket-wheels, a hand-operated clutch between said worm-wheel and said sprocket-wheels, a worm operating said worm-wheel, and connections between said worm and the driving-wheels, whereby said worm is operated, substantially as specified.

571,203. FOG SIGNALING APPARATUS. DANIEL SLADE, Ashfield, New South Wales, assignor to Christopher Tayler, Sydney, New South Wales. Filed May 11, 1896. Serial No. 591,153. (No model.) Patented in England Sept. 14, 1891, No. 15,543.



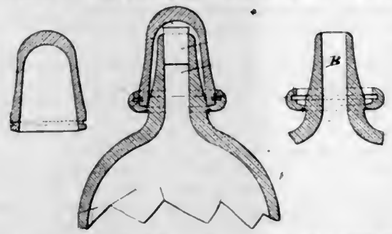
Claim.—1. In apparatus for fixing detonators the combination of the casing having a storage-box, the box for receiving the detonators the slide for moving the detonators into position, and a second slide controlling the receiving-box, substantially as described.

2. In combination, the casing, a storage-box, a slide for moving the detonators into position, a controlling slide adapted to support the end of the detonator when in position and a spring for pressing upon the detonator, substantially as described.

3. In combination, the casing having the storage chamber for the detonators, the slide for moving the detonators therefrom, a second slide connected with the first slide to move therewith and the spring for pressing upon the detonators, substantially as described.

4. A detonator mount or carrier consisting essentially of a carrier F, a detonator secured to one end, a projection at the opposite end and a holding device engaging said projection, substantially as described.

571,204. ANTIREFILLING BOTTLE. WILLIS A. SMITH, New York, N. Y. Filed June 30, 1896. Serial No. 597,564. (No model.)



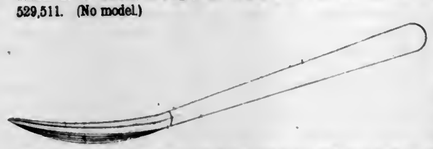
Claim.—1. An antirefilling bottle, provided with a frangible collar integral with the neck of the bottle, and a cap extending over the neck of the bottle and locked with its lower end to the said collar, substantially as shown and described.

2. An antirefilling bottle, comprising a bottle having a neck, an external collar having a frangible connection with the said neck, and a cap extending over the neck of the bottle and locked to the said collar, substantially as shown and described.

3. An antirefilling bottle, comprising a bottle having a neck, a collar having a frangible connection with the said neck, a cap extending over the neck of the said bottle, and a locking device for fastening the said cap to the said collar, substantially as shown and described.
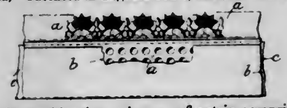
4. An antirefilling bottle, comprising a collar frangibly connected with the neck of the bottle and formed with an annular recess, and a cap extending over the neck of the bottle and formed with an annular recess registering with the recess in the said collar, and a locking-wire extending into each of the said recesses so as to lock the cap to the collar, substantially as shown and described.

571,205. COMBINED COAL-SHOVEL AND ASH-SIFTER. THEOLINDA B. SORENSON, Chicago, Ill. Filed Nov. 21, 1894. Serial No. 529,511. (No model.)



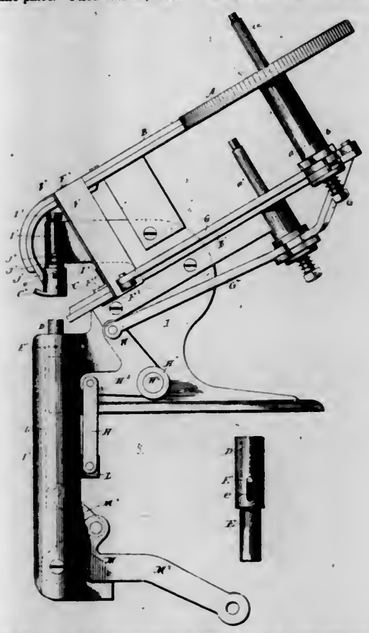
Claim.—In a combined coal-shovel and ash-sifter, a handle, a body portion formed integrally therewith, a series of tapering tines, rectangular in cross-section, formed integrally with said body portion and projecting therefrom in a slight curve relative to the direction of length of said handle, said tines presenting their sharp corners or edges as an upper surface, and also bent longitudinally, the bends of the respective tines increasing from the outer tines inwardly and the ends of the tines being arranged in a straight line with each other, thereby forming a scoop; as and for the purpose set forth.

571,206. FANCY BOX. HUGH STEVENSON and ALBERT H. STEVENSON, Manchester, England. Filed July 16, 1896. Serial No. 599,424. (No model.) Patented in England Oct. 4, 1895, No. 18,541.



Claim.—In combination, a box *c*, a fly-strip comprising a perforated base and a projecting portion, and a banding-slip *b* covering said perforated portion, substantially as described.

571,207. BUTTON-SETTING MACHINE. EDWIN D. WELTON, Waterbury, Conn., assignor to The Scovill Manufacturing Company, same place. Filed Jan. 21, 1895. Serial No. 535,662. (No model.)



Claim.—1. In a button-setting machine, the combination with a punch and means for reciprocating the same, of a stationary die, means for adjusting the same, a centering and compensating collar movably secured to the stationary die and normally projecting below the face thereof, a spring combined with the collar for normally holding it in such projection, but yielding to permit it to retire under the action of the punch, a vertically-movable chambered button-head holder applied over the die upon which it is vertically movable, and means for automatically feeding button-heads to the said button-head holder.

2. In a button-setting machine, the combination with a punch and means for reciprocating the same, of a stationary die adapted to afford a bearing for the button-heads, a centering and compensating collar mounted upon the lower portion of the die which is reduced in diameter for the purpose, and movable upon the said portion of the die, a spring encircling the reduced portion of the die and engaging at its lower end with the upper edge of the collar, and at its upper end with the shoulder formed by reducing the die, and exerting a constant effort to maintain the same with its lower edge projected beyond the face of the die, and a vertically-movable button-head holder, chambered to adapt it to fit over the die and collar, including the shoulder of the former, and adapted to have button-heads fed into it under the die and the said collar.

3. In a button-setting machine, the combination with a stationary die adapted to afford a bearing for the button-heads, of a punch and means for actuating the same, a vertically-movable button-head holder, chambered to adapt it to fit over the die upon which it is vertically movable, and constructed with a feed-slot adapted in dimensions to

pass a button-head to the die, a feed-opening intersecting the said slot, and two forwardly-projecting upturned feeding-fingers, substantially as described.

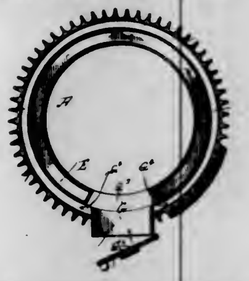
4. In a button-setting machine, the combination with a punch and means for reciprocating the same, of a stationary die adapted to afford a bearing for the button-heads, a spring-actuated centering and compensating collar mounted upon the said die and normally projecting below the face thereof, a vertically-movable button-head holder, chambered to adapt it to fit over the die and collar, and constructed to have button-heads fed into it one at a time at a point below the face of the die and the collar, and means for feeding button-heads into the said holder.

5. In a button-setting machine, the combination with two independent hoppers respectively designed to receive button-heads and tack-like fasteners, of independent chutes leading from the said hoppers, a double cut-off extending into both of the said independent chutes, and means for operating the said cut-off to simultaneously feed button-heads and tack-like fasteners through the chutes, substantially as described.

6. In a button-setting machine, the combination with two hoppers, of two independent chutes leading therefrom, and a double cut-off consisting of a plate provided at its respective ends with notched arms respectively entering the passages of the chutes, and means for operating the said double cut-off which simultaneously feeds button-heads and tack-fasteners through the chutes, substantially as described.

7. In a button-setting machine, the combination with a plunger having its upper end chambered, of an anvil consisting of a long pin located in the said chamber, an annular fender or guard-sleeve located in the upper end of said chamber, inclosing the upper end of the anvil, and constructed with two elongated slots located opposite each other, and a pin passing transversely through the upper end of the plunger and the chamber therein, and also passing through the anvil which it supports in said chamber, and through the slots in the fender, the reciprocating movement of which it limits, and a spiral spring located in the lower portion of the chamber, encircling the lower end of the anvil, and impinging at its upper end against the fender which it normally projects beyond the face of the anvil, substantially as described.

571,208. HEATING-BOILER. EDWIN A. WOOD, Utica, N. Y. Filed Aug. 4, 1896. Serial No. 601,653. (No model.)



Claim.—1. The combination in a steam-boiler, water-heater, or like device, a fire-box surrounded by a continuous water-chamber, an opening in said chamber a casing surrounding the chamber and forming a space or flue between the outer wall of the chamber and casing, a feed-door fitting the casing and made narrower than the opening in the water-chamber to form communicating passage-ways between fire-box and space or flue at each side of the door only substantially as described, whereby the entire products of combustion are caused to pass out through said passage-ways as set forth.

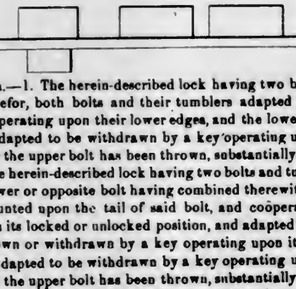
2. The combination in a steam-boiler, water-heater, or like device, a fire-box surrounded by a water-chamber, a casing surrounding the chamber forming a flue between the outer wall of the casing and chamber, an opening in the casing communicating with the flue at each side of said opening and forming the only outlet from the fire-box thereto, and a door in the casing provided with air-openings substantially as described, whereby air is mingled with the gases in passing to the flue, as and for the purpose set forth.

3. The combination in a steam-boiler, water-heater or like device, a fire-box, a water-space surrounding the same and extending above the crown-sheet thereof, with said crown-sheet having its upper surface made dome shaped or inclining from the horizontal, for the purpose and substantially as described.

4. The combination in a steam-boiler, water-heater or like device, an outer casing composed of a series of vertically-arranged staves having a portion to form the inner wall of said casing and the outwardly-extending ribs or pins to form a space to receive a non-conducting material substantially as and for the purpose set forth.

5. The combination in a steam-boiler, water-heater or like device an outer casing composed of a series of vertically-arranged staves made in substantially T form in cross-section, and a non-conducting material filling the space between the adjacent side walls of the stems substantially as described.

571,209. CHIN-REST FOR DENTAL OPERATING-CHAIRS. JOHN F. ADAMS, Worcester, Mass. Filed Mar. 16, 1896. Serial No. 583,303. (No model.)

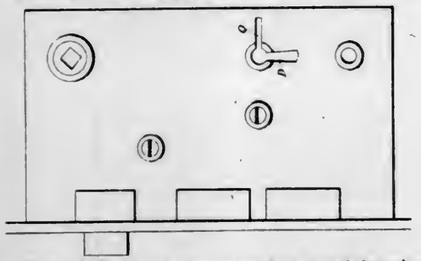


Claim.—1. The chin-rest consisting of the plate or chin-piece adapted to fit beneath the jaw, the supporting rod suitably bent to pass the shoulder of the occupant, a universal adjusting-joint connecting said chin piece with said rod, the clamping and adjusting joint carrying said rod, and a socket and fastening device for upholding and confining the stem of said clamping-joint, substantially as set forth.

2. The combination, of a dental or surgical operating-chair, a chin-piece adapted to underlie the jaw of the patient, a rod having support in connection with said chair, and attached to said chin-piece by an adjusting and clamping joint, for retaining said chin-piece in relation to the rod, and means for securing and adjusting the rod in relation to the chair, for the purpose set forth.

3. In a chin-rest for dental operations upon the lower jaw; the combination, of the chin-piece having backwardly-curved wings adapted to underlie the jaw, the supporter-rod connected with said chin-piece by an adjustable joint, means for holding said joint, the clamping and adjusting joint carrying said rod, the attaching-socket having the clamping-joint stem mounted therein, and the thumb-screw or means for tightening said stem in the socket, substantially as set forth.

571,210. HOTEL-DOOR LOCK. CHARLES W. ANDREWS, New Haven, Conn., assignor to the Mallory & Wheeler Company, same place. Filed July 2, 1896. Serial No. 597,855. (No model.)



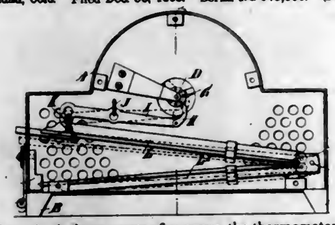
Claim.—1. The herein-described lock having two bolts and tumblers therefor, both bolts and their tumblers adapted to be thrown by keys operating upon their lower edges, and the lower bolt and its tumbler adapted to be withdrawn by a key operating upon its upper edge after the upper bolt has been thrown, substantially as described.

2. The herein-described lock having two bolts and tumblers therefor, the lower or opposite bolt having combined therewith a lever pivotally mounted upon the tail of said bolt, and coöperating to hold the bolt in its locked or unlocked position, and adapted with the bolt to be thrown or withdrawn by a key operating upon its lower edge, and also adapted to be withdrawn by a key operating upon its upper edge after the upper bolt has been thrown, substantially as described.

3. In a two-bolt lock the combination with a lower bolt formed with key notches in the upper and lower edges of its tail, of a lever pivotally mounted upon the said tail, a spring also mounted on said tail and extending into engagement with the rear edge of said lever, an upwardly-extended finger at the forward edge of said lever, a stump on said lever coacting with the post in the case for holding the bolt in the locked or unlocked position, said lever formed with an operating-notch in its upper edge and adapted when thrown to close the key-opening in the outside of the case, substantially as described.

4. The herein-described lock having two bolts and tumblers therefor, both adapted to be moved by keys operating upon their lower edges, the lock-case formed with two key-slots extending from the same center, and located between the said bolts, one of said slots narrower than the other, and the lower bolt adapted to be withdrawn by a key entered through the narrow slot and operating upon its upper edge after the upper bolt has been thrown, substantially as described.

571,211. THERMOMETER FOR OVENS. LIZZIE S. BARNDOLLAR, Trinidad, Colo. Filed Dec. 30, 1895. Serial No. 573,806. (No model.)



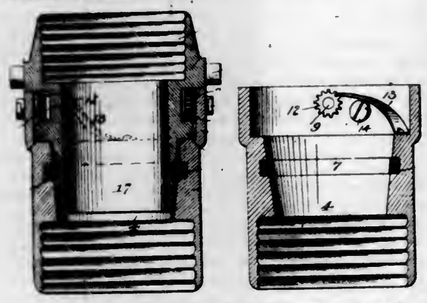
Claim.—1. A thermometer for ovens, the thermometer comprising a compound expansion-bar provided with two bars extending at an angle one to the other and secured each at one end to a pivoted block, a resistance-block for the remaining end of one of said bars, a lever connected with the remaining end of the other bar, a pointer adapted to be actuated from said lever, and a catch for locking one of the bars in place, substantially as shown and described.

2. In a thermometer, the combination with a casing, of an indicator mounted in the casing, two expansion-bars, one of which is connected with the indicator and the remaining one of which is engaged with a part rigid on the casing, and a pivotally-mounted block to which the expansion-bars are connected, substantially as described.

3. In a thermometer, the combination with a casing, of an indicator, two expansion-bars one of which is connected with the indicator and a pivotally-mounted connection between the two expansion-bars, said connection being capable of rocking downward under the influence of one bar to draw the second bar in the same direction, substantially as described.

4. In a thermometer, the combination with a casing, of an indicator, two expansion-bars, each bar consisting of two parts respectively formed of high and low expansive metal, one of said bars being connected with the indicator, and a pivotally-mounted connection between the two bars, substantially as described.

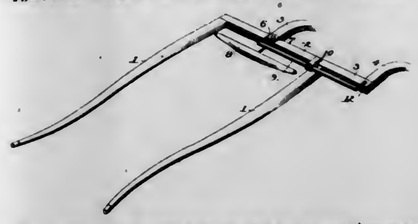
571,212. HOSE-COUPLING. ROBERT W. BURKHARDT, Laramie City, Wyo., assignor of three-fourths to George B. Hurd, New York, N. Y., and George S. Porter, Glen Ridge, N. J. Filed Jan. 6, 1896. Serial No. 574,489. (No model.)



Claim.—1. In a hose-coupling the combination with the female section having a socket, an enlarged head, the pinions pivoted to the inner side of said heads, the spring engaging therewith and the headed pin provided with a nut working in an inclined slot in said head for throwing the spring into and out of engagement with one of the pinions, of the male section provided with segments or inclined rack-bars on the outside thereof with which said pinions engage; substantially as described.

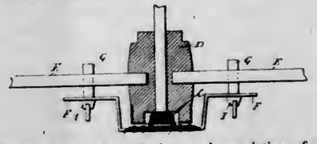
2. In a hose-coupling the combination with the female section having a tapering socket formed with an annular groove, the gasket seated therein, the enlarged head formed with an inclined slot and a series of bosses, the studs passing through said bosses, the pinions journaled therein, the flat spring secured to the end of the socket and engaging with one of said pinions, and the headed pin passing through said slot and provided with a nut, of the male section having a tapering end fitting in said socket, a series of segments or inclined rack-bars and a peripheral flange provided with lugs, substantially as described.

571,213. SHAFT FOR VEHICLES. PERRY F. CHAMBERS, La Cygne, Kans. Filed Oct. 15, 1895. Serial No. 565,774. (No model.)



Claim.—The combination with the shafts, the cross-bar secured to the inner ends thereof, having an extension projecting laterally beyond one of said shafts, and the thills, one of which is secured to the end of said extension and the other secured to the cross-bar midway between the shafts, of the pulley pivoted to said cross-bar intermediate the shafts, the chain passing therearound, the singletree to which one end of said chain is secured, the lugs secured to the cross-bar, the lever pivoted thereto, to the inner end of which the other end of said chain is secured, and the rod or bar secured to the end of said extension to which the outer end of said lever is connected, substantially as described.

571,214. AXLE-NUT WRENCH. THOMAS G. CLIFFORD, Hoboken, N. J., assignor of one-half to August Hartkorn, Jr., same place. Filed Aug. 17, 1896. Serial No. 602,927. (No model.)



Claim.—The herein-described wrench consisting of a plate bent to sit over the end of a hub and with outwardly-extending slotted ends, an angular socket secured to the central portion of said plate, and keys adapted to be clamped to said ends by bolts extending through said slots, said keys formed with spoke-notches in their opposite edges, and whereby the wrench may be rigidly secured to a wheel, substantially as described.

571,215. RAILWAY-CROSSING. DANIEL COLLEN, Inwood, Canada. Filed Apr. 2, 1896. Serial No. 585,937. (No model.)

Claim.—1. A railway-crossing, comprising fixed rail-sections at the diamond, and endwise-movable rails at opposite sides of the diamond and in longitudinal alinement with the fixed rail-sections thereof, substantially as and for the purpose set forth.

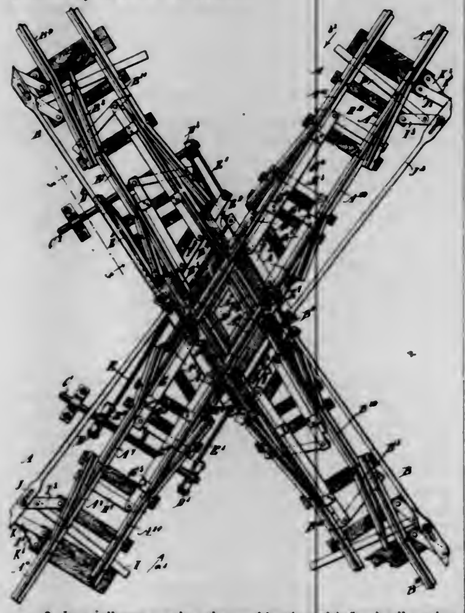
2. A railway-crossing comprising fixed rail-sections at the diamond, and endwise-movable rails at opposite sides of the diamond in longitudinal alinement with the fixed rail-sections thereof, said movable rails being between the fixed sections of the diamond and the track-rails, substantially as described.

3. A railway-crossing comprising fixed rail-sections at the diamond, and pairs of endwise-movable rails at opposite sides of the diamond and in longitudinal alinement with the rail-sections thereof, each pair of slidable rails being adapted to connect at their outer ends with the track-rails, substantially as described.

4. A railway-crossing comprising track-rails, fixed rail-sections at the diamond, endwise-movable rails at opposite sides of the diamond and in longitudinal alinement with the rail-sections thereof, and intervening the said rail-sections and the track-rails, and means for moving the said slidable rails into and out of contact with the ends of the fixed rail-sections, substantially as described.

5. A railway-crossing, comprising permanent rail-sections at the diamond of the crossing, and slidable rails adapted to abut on said

permanent sections or be moved outwardly and away therefrom, each pair of slidable rails being adapted to connect at the outer point end with the permanent rail-sections of the track, a switch-point and means for moving the switch-point in unison with the slidable rails, substantially as shown and described.



6. In a railway-crossing, the combination with fixed rail-sections at the crossing, and fixed track-rails, of longitudinally-alined rails having their inner ends abutting the fixed rail-sections and their outer ends engaging the sides of the track-rails, means for moving the said rails longitudinally, and means for holding the outer ends of the said rails against the track-rails when their inner ends abut the fixed sections of the crossing, substantially as described.

7. In a railway-crossing, the combination with fixed rail-sections at the crossing, of a bar fitted to slide, rails carried by said bar in longitudinal alinement with the rail-sections, arms pivoted to the said bar and provided with blocks engaging the outer ends of the said rails, links pivoted to the arms and to the rail sections of the track-rails, and means for sliding said bar, substantially as and for the purpose set forth.

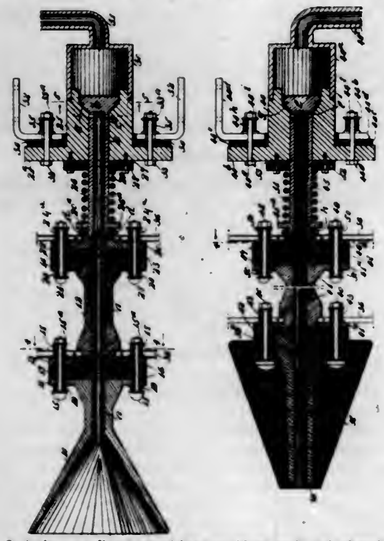
8. In a railway-crossing, the combination with fixed rail-sections at the crossing, of a bar fitted to slide, rails carried by the bar in longitudinal alinement with the said sections and having their outer ends pointed and engaging the sections of the track-rails, a rock-shaft provided with arms, rods connecting the arms with the said bar, arms pivoted to the slide-bar and having their outer ends provided with blocks engaging the said rails, and links pivoted to the sections of the track-rails and to the outer ends of the said arms, substantially as described.

9. In a railway-crossing, the combination with fixed rail-sections at the crossing, of movable rails alined with the said sections, and having their outer ends engaging the sections of the track-rails, means for moving said alined rails endwise and their outer ends out of alinement with the track-rails, a switch-point, and means for operating the switch-point from the sliding bar, substantially as described.

10. In a railway-crossing, the combination with fixed rail-sections at the crossing, of movable rails alined with the said sections and having their outer ends engaging the sides of the sections of the track-rails, means for moving the said alined rails endwise away from the rail-sections and the sections of the track-rails, a switch-point, means for operating said point from the rail-operating mechanism, a signal, and means for operating the signal from the mechanism operating the switch-point, substantially as described.

571,216. AUTOMATIC PIPE-COUPLING DEVICE. WILEY E. CROWSON, Montgomery, Ala. Filed Aug. 14, 1895. Serial No. 559,244. (No model.)

Claim.—1. A pipe-coupling, comprising a coniform male and a female coupling-head, a body portion for each coupling-head supported and adapted to slide, the said body portion and coupling-head being connected by an elastic joint, a valve connected with the body portion of each coupling-head moving therewith and controlling the passage of air through the coupling, the connected coupling-head, body portion and valve being spring-pressed, substantially as described.



2. A pipe-coupling, comprising a coniform male and a female coupling-head, a body portion for each coupling-head having a slightly-flexible connection therewith, a tail-block for each body portion adapted for connection to a source of air or steam supply and provided with a valve-seat, a spring-pressed valve-stem slidable in the said tail-block, and with which the said body portion has a slightly-flexible connection, the said valve-stem being provided with a valve-head normally engaging the seat in said tail-block, substantially as described.

3. A pipe coupling, comprising a longitudinally-perforated coniform male and female coupling-head, a perforated body portion for each coupling-head having a slightly-flexible connection therewith, a perforated tail block for each body portion, a hollow valve-stem fitted to slide in the bore of the said tail-block and with which the said body portion has a slightly-flexible connection, the said hollow stem being provided with a valve-head on its rear end, a valve-seat formed at the rear end of the tail-block and adapted to be engaged by the said valve head, a spiral spring on each valve stem normally pressing the valve-head on its seat, a chamber on each tail-block, and means for connecting each chamber with a source of air or steam supply, substantially as set forth.

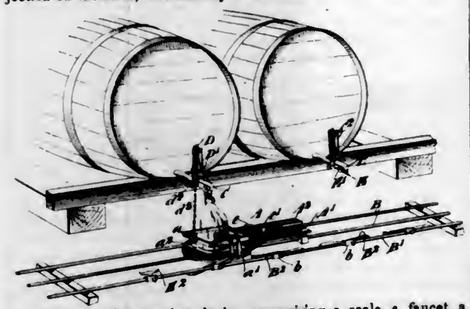
4. In a pipe-coupling of the described construction, the combination with the slightly flexible body portion of one of the main coupling-sections, of the tapered coniform coupling-head of elastic material, a tubular shank on which the said elastic head is secured, the said shank being provided at its rear end with a circumferential flange, and bolts for holding said coupling-head on the body portion, the heads of the said bolts being embedded in the material of the coupling-head and the bodies of the said bolts being adapted to pass loosely through perforations in the circumferential flange on the rear end of the tubular shank, substantially as set forth.

5. In a pipe-coupling of the described construction, the combination with the body portion of one of the main coupling-sections, the said body portion having a radial flange at its end, of the flaring coniform coupling-head terminating at its rear end in a radial flange, yielding washers arranged between the flanges on the head and the body portion of the coupling, bolts adapted to pass loosely through perforations formed in the said flanges, and elastic cushions arranged on the said bolts, as and for the purpose specified.

571,217. LIQUID-MEASURING DEVICE. GEORGE W. CURTIS, Long Grove, Iowa. Filed Feb. 14, 1896. Serial No. 579,225. (No model.)

Claim.—1. A liquid-measuring device, comprising a scale, a track on which the same is mounted, stop-levers mounted on a support extending longitudinally of the track, and means for connecting the scale-beam with the valve-operating mechanism of a faucet, substantially as specified.

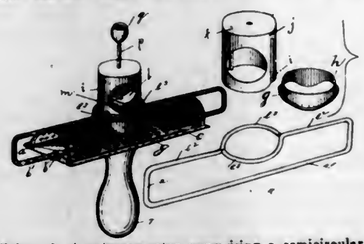
2. A liquid-measuring device, comprising a scale, a track on which the same is mounted, a rod extending longitudinally of the track at one side thereof, and stop-levers adjustably mounted on said rod, the said stop-levers being adapted to engage a shoulder or projection on the scale, substantially as specified.



3. A liquid-measuring device, comprising a scale, a faucet, a spring-pressed plug-valve for said faucet provided with an upwardly-extending stem, posts on said faucet carrying a bracket through which the upper end of the valve-stem extends, an angle lever pivoted between its ends in the upper portions of said posts, the upper end of said lever having a pivotal connection with the upper end of the valve-stem, a latch adapted to engage the lower end of the lever to hold the valve in an open position, and a connection extending from the scale-beam for releasing the said latch, substantially as described.

4. A liquid-measuring device, comprising a scale, a faucet, a plug-valve for the faucet and having an upwardly-extending stem, a spring for closing the valve, a pivoted lever having one end engaged with the valve-stem, a rock-shaft, a latch on the rock-shaft to engage with the lower end of the lever, and a rod attached to the rock-shaft, having a counterbalanced lower end and having its upper end adapted for engagement with the scale-beam, substantially as specified.

571,218. NUTMEG-GRATER. CHARLES E. DAMON, Reading, Mass., assignor to the Edgar Manufacturing Co., same place. Filed July 31, 1896. Serial No. 601,173. (No model.)



Claim.—1. A nutmeg-grater comprising a semicircular grater-plate having guides or bearings with which its grating-surface is substantially concentric, a wire frame or carrier composed of the straight central portion to move longitudinally and rock or oscillate in said bearings, the arms bent outwardly from the ends of said central portion and backwardly over the exterior of the grater-plate, said arms terminating in the curved portions which collectively form a clip or collar at the center of the frame, and a nutmeg-holder embraced by said clip and held thereby in position to cooperate with the grater-plate, as set forth.

2. A nutmeg-grater comprising a semicircular grater-plate having guides or bearings with which its grating-surface is substantially concentric, a wire frame or carrier formed to move longitudinally and rock or oscillate in said bearings and having a central clip or collar located over the grater-plate, a sheet-metal socket embraced by and secured to said collar and having its lower edge formed to fit the curvature of the grater plate, and a nutmeg-holder inserted in said socket and secured thereto.

3. A nutmeg-grater comprising a semicircular grater-plate having guides or bearings with which its grating-surface is substantially concentric, a wire frame or carrier formed to move longitudinally and rock or oscillate in said bearings and having a central clip or collar located over the grater-plate, a sheet-metal socket embraced by and secured to said collar and having its lower edge formed to fit the curvature of the grater plate, said socket having an inwardly-projecting ear, a nutmeg-holder inserted in said socket and provided with a vertical indentation which forms a groove in the exterior of the holder to engage said ear and a rib on the interior of the holder, and a spring-pressed follower movable in the holder, and provided with a groove to receive said rib.

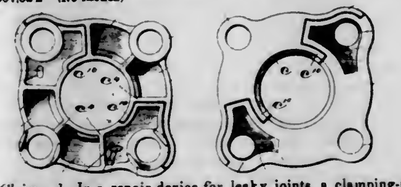
571,219. SIEVE FOR FLOUR-MILLS. JULES DENIS, Wygmael, Belgium. Filed Aug. 12, 1895. Serial No. 559,025. (No model.) Patented in Belgium Nov. 12, 1894, No. 112,681; and Dec. 4, 1894, No. 113,002; in England Dec. 14, 1894, No. 24,384; in France May 2, 1895, No. 247,084; in Luxemburg June 1, 1895, No. 2,314; in Italy June 4, 1895, XXX, 38,935, and LXXVI, 224; in Switzerland June 5, 1895, No. 10,457; in Spain June 12, 1895, No. 17,559, and in Portugal July 10, 1895, No. 2,034.



Claim.—1. In plane sieves with horizontal gauze, and having a gyrating motion, narrow battens D arranged singly or in sets on guides C, against one of the long sides of each channel and occupying only a part of the width of the channel, and capable of a little play in a direction perpendicular to the long side of the channel, for the purposes set forth.

2. The combination with a plane sieve adapted to have a gyratory motion, of a longitudinally-arranged batten or battens adapted to have a slight movement in inclined guides, transversely to the length of the channel or channels, to jar the sieve-frame, and presenting an under surface inclined substantially transversely to the channel to transport the material by deflecting the same, substantially as described.

571,220. REPAIR DEVICE FOR STOPPING LEAKY JOINTS. SOLOMON R. DRESSER, Bradford, Pa. Filed Apr. 14, 1896. Serial No. 587,524. (No model.)



Claim.—1. In a repair device for leaky joints, a clamping-ring formed of sections having overlapping end portions, said overlapping portions being provided with strengthening-webs, substantially as described.

2. In a repair device for leaky joints, a clamping-ring formed of sections having overlapping end portions, each of said overlapping portions of each section being provided with a strengthening-web adjacent to its inner edge and a strengthening-web adjacent to its outer edge, substantially as described.

3. In a repair device for leaky joints, a clamping-ring formed in sections having overlapping end portions provided with bolt-holes therein, said overlapping portions of one section being provided with projections eccentric to said bolt-holes, and the overlapping portions of the other section being provided with apertures adapted to be engaged by said projections, for temporarily securing the sections together, substantially as described.

4. In a repair device for leaky joints a clamping-ring formed in sections having overlapping end portions, each section being cored out intermediate its ends, forming inner and outer walls and having radially-disposed webs connecting said walls, each overlapping end portion of each section having strengthening-webs, forming continuations of said inner and outer walls, substantially as described.

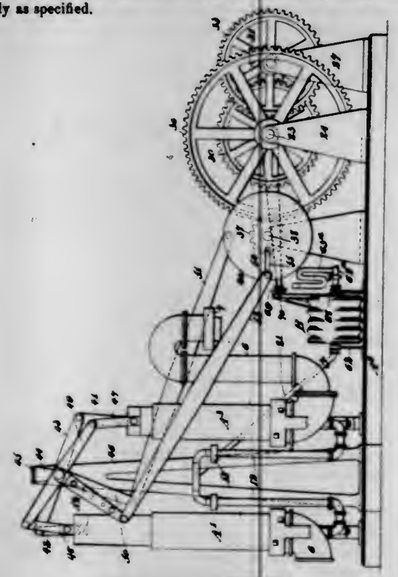
571,221. GAS-GENERATING MACHINE. JOHN A. ENOS, Washington, D. C. Filed Sept. 13, 1895. Serial No. 562,368. (No model.)

Claim.—1. A gas-generating machine, comprising a generator cylindrical in cross-section and having annular corrugations on its side and end walls, perforated diaphragms in the generator, absorbent material between the diaphragms, means for rotating the generator and means for forcing a constant pressure of air through the generator, substantially as specified.

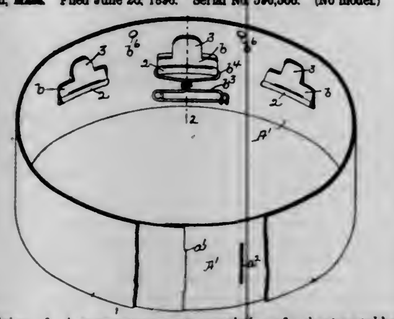
2. In a gas-generating machine, a generator comprising a cylinder of corrugated metal and mounted to rotate, perforated diaphragms in the said cylinder, absorbent material between the diaphragms, and means for rotating the cylinder, substantially as specified.

3. The driving power for a gas generating machine, comprising a weight-operated drum, a shaft operated thereby, a gear-wheel rigidly mounted on said shaft, a pinion on another shaft and with which the gear-wheel meshes, a gear-wheel connected with said pinion and

meshing with a pinion loosely mounted on the first-named shaft, a gear-wheel connected to this last-named pinion and meshing with a pinion attached to a sleeve mounted to rotate on the second-named shaft, a gear-wheel on said sleeve connected with a pinion mounted on a sleeve adapted to rotate on the first-named shaft, a large gear-wheel on this last-named sleeve, a pinion with which this large gear-wheel engages, and crank-disks on the shaft of said pinion, substantially as specified.



571,222. GARMENT-SUPPORTER. MARY A. FARRINGTON, Boston, Mass. Filed June 20, 1896. Serial No. 596,306. (No model.)



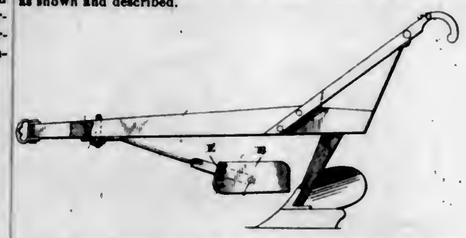
Claim.—1. A garment-supporter consisting of a sheet-metal belt having inwardly-projecting substantially wide lugs or ears attached to the belt at their lower or bottom portion only to leave their sides disconnected from the said belt, and fastening devices for the skirt independent of the said lugs or ears and provided with a looped portion adapted to be slipped over the upper portion of the said lugs or ears and embrace the sides thereof, substantially as described.

2. In a garment-supporter, the herein-described metallic belt composed of a metal strip provided at points intermediate of its ends with inwardly-projecting substantially wide lugs or ears integral with the metal strip and struck up therefrom and having their upper ends inclined backward toward the opening in the belt left by the said lug or ear when formed, substantially as and for the purpose specified.

3. In a garment-supporter, the herein-described metallic belt composed of a metal strip provided at points intermediate of its ends with inwardly-projecting lugs or ears integral with the strip and consisting of a longitudinally curved or bent lower portion, and an upper portion inclined backward toward the belt, substantially as described.

571,223. PLOW-FENDER. ABRAHAM G. W. FOSTER, Sargent, Ga. Filed Sept. 28, 1895. Serial No. 563,963. (No model.)

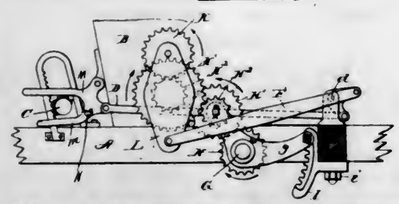
Claim.—1. The combination of an arm adapted to support a fender, a device to which the arm is pivotally secured for clamping the same to a plow-beam, and a stud projected from the arm toward the beam whereby when the arm is drawn to the beam the stud will engage the same and prevent pivotal movement of the arm, substantially as shown and described.



2. The combination of a fender, an arm extended forward therefrom and bearing flatly upon the under side of the beam, the plate to which the said arm is pivotally secured whereby the arm is adapted to turn laterally in the desired direction, a stud carried by the upper side of the said arm for engaging the beam, and a yoke or clamp for securing the plate to the beam, substantially as shown and described.

3. The combination of a fender-carrying arm, a clamping-plate to which the arm between its ends is pivoted, a device for drawing and clamping the plate to the beam, and a stud projected laterally from the arm upon the opposite side of the pivot from the fender and adapted when the arm has been turned to the desired adjustment to enter the beam, by the clamping-plate being drawn to the beam, thus holding the arm at the desired adjustment or inclination, substantially as shown and described.

571,224. SPEED-GEARING FOR GRAIN-DRILLS. ROBERT GALLOWAY, Buffalo, N. Y. Filed Dec. 26, 1895. Serial No. 573,302. (No model.)



Claim.—1. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper and rotating with the axle in a forward direction an intermediate gear-wheel meshing therewith, a relatively-fixed bracket, whose center is coincident with the center of axle or drive-shaft proper, the change or driving gear and the movable or shifting gear so located with relation to the driving-gear as that the operative or working surfaces of the said gears are always directly opposed to each other as they are brought into mesh, whereby lost motion is taken up; substantially as described.

2. In a speed-gearing for grain drills the combination of the gear-wheel mounted on the axle or drive-shaft proper, and rotating with the axle in a forward direction, an intermediate gear-wheel meshing therewith, a relatively-fixed bracket, and means for adjusting the same, the driving-gear, the shifting gear, the shifting-gear bracket, the shifting gear being so located with relation to the driving-gear as that their operative or working surfaces are directly opposed to each other as they come into mesh whereby lost motion is taken up; substantially as described.

3. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper, and rotating with the axle in a forward direction an intermediate gear-wheel meshing therewith, the change or driving gear detachably secured thereon, of the relatively-fixed bracket and means for adjusting the same, the shifting gear, the feed-shaft and the shifting bracket pivoted thereon, the shifting gear being so located with relation to the driving gear as that as they are brought into mesh lost motion is prevented; substantially as described.

4. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper and rotating with the axle in a forward direction, an intermediate gear-wheel meshing therewith, the change or driving gear detachably secured thereon, the relatively-fixed bracket and means for adjusting the same, the shifting gear, the feed shaft, the shifting-gear bracket pivoted thereon and means for shifting and controlling the same, the shifting gear being

located with relation to the driving-gear so that their operative or working faces are directly opposed to each other as they come into mesh, whereby lost motion is taken up; substantially as described.

5. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper, an intermediate gear-wheel meshing therewith, a relatively-fixed bracket having two arms the gear-carying arm, and the adjusting-arm, the adjusting-segment bolted to the frame to lock the bracket in adjusted position, the change-gear and the shifting gear adapted to mesh therewith; substantially as described.

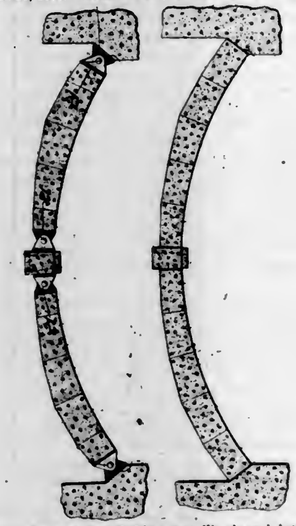
6. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper, an intermediate gear-wheel meshing therewith, the relatively-fixed bracket, the change or driving gear, the shifting gear, the shifting bracket, the crank-arm, and the shifting link, the shifting gear being located with relation to the driving-gear so that their operative or working faces are always directly opposed to each other as they come into mesh whereby lost motion is prevented; substantially as described.

7. In a speed-gearing for grain-drills the combination of the gear-wheel mounted on the axle or drive-shaft proper, an intermediate gear meshing therewith, the change-gear detachably secured thereon the shifting gear, the feed-shaft and the shifting-gear bracket pivoted thereon, the crank-arm and the shifting link; substantially as described.

8. In a speed-gearing for grain-drills, the combination of the shifting gear, the driving-gear, the feed-shaft, the shifting bracket pivoted thereon, the crank-shaft, the crank mounted on said shaft, the shifting link pivotally connected at one end to said crank and at the other end to the shifting bracket, whereby when the gears are in mesh, the three centers will be in line and the gears held rigidly in place; substantially as described.

9. In a speed-gearing for grain-drills, the combination of the shifting bracket journaled on the feed-shaft, the crank-arm and the shifting link, one end of the said shifting link pivoted to the shifting bracket the other end to the crank-arm the movable or shifting gear and the change-gear, substantially as described.

571,225. CONCRETE BRIDGE. ADAM GEISEL, St. Louis, Mo. Filed Mar. 23, 1896. Serial No. 584,440. (No model.)

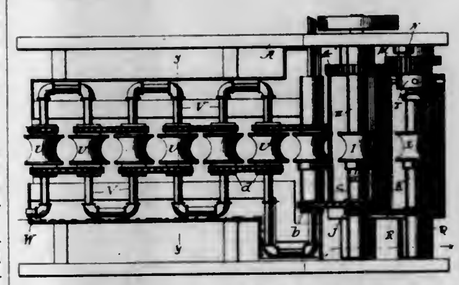


Claim.—1. In a concrete bridge, metallic shoes jointed together and inserted between the ends of the haunches and the skewbacks and between the opposite ends of the haunches and the keystone, substantially as specified.

2. A concrete bridge consisting of abutments having skewbacks, metallic shoes resting upon said skewbacks, mating metallic shoes jointed to said first-mentioned shoes, haunches comprising voussoirs of concrete bonded together resting in said second-mentioned metallic shoes, metallic shoes at the upper ends of said haunches and metallic shoes jointed to the last-mentioned shoes, and a keystone resting between said last-mentioned shoes, substantially as specified.

3. A concrete bridge consisting of abutments having skewbacks, metallic shoes resting upon said skewbacks, mating metallic shoes jointed to said first-mentioned shoes, haunches comprising voussoirs of concrete bonded together resting in said second-mentioned metallic shoes, metallic shoes at the upper ends of said haunches and metallic shoes jointed to the last-mentioned shoes, a keystone resting between said last-mentioned shoes, and walls on top of said haunches, said walls being unbonded from said haunches and said abutments, substantially as specified.

571,226. MACHINE FOR WORKING RUBBER. FREDERICK HADFIELD, Woonsocket, R. I. Filed Aug. 20, 1896. Serial No. 603,384. (No model.)



Claim.—1. An apparatus for feeding soft rubber comprising a pipe adapted to be connected with a source of steam supply and having the transverse portions, and feed-rolls journaled on the said transverse portions of the pipe, substantially as and for the purpose set forth.

2. In a rubber-working machine, the combination of a main frame, calender-rolls journaled in said frame, a pipe supported by the main frame and adapted to be connected with a source of steam supply and having the transverse portions, and rolls, for conveying rubber from a warmer to the calender-rolls, journaled on the transverse portions of the pipe, substantially as and for the purpose set forth.

3. In a rubber-working machine, the combination of a main frame, calender-rolls journaled in the main frame, feed-rolls arranged in the main frame and having sprocket-wheels, a gear-wheel fixed with respect to one of the calender-rolls, a drive-shaft arranged above said calender-roll and having a gear meshed with the gear thereof and also having a loose sprocket-wheel, a chain connecting said sprocket-wheel and the sprocket-wheel of the feed-roll contiguous to the calender-rolls, sprocket-chains connecting the several feed-rolls, a shaft K, arranged in advance of the uppermost calender-roll and having a gear-wheel and also having a sprocket-wheel, a chain connecting said sprocket-wheel and the sprocket-wheel on the drive-shaft, a pinion meshing with the gear-wheel on the calender-roll and also meshing with the gear-wheel on the shaft K, and means for heating the feed-rolls, substantially as and for the purpose set forth.

4. In a rubber-working machine, the combination of a main frame, calender-rolls arranged in said frame, feed-rolls also arranged in said frame, a roll L, arranged in advance of the uppermost calender-roll gearing intermediate of said roll L, and the feed-rolls for rotating the latter and means for rotating the roll L, and the calender-rolls, substantially as and for the purpose set forth.

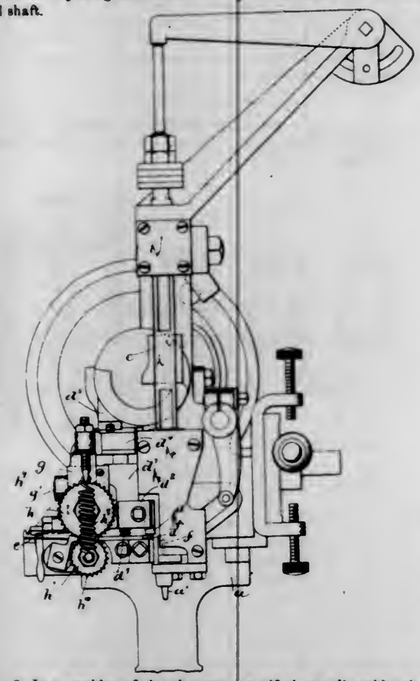
5. In a rubber-working machine, the combination of a main frame, calender-rolls arranged in said frame, feed-rolls also arranged in line in said frame and having concave peripheries, a roll L_1 arranged in advance of the uppermost calender-roll and having a concave periphery, a roll I, arranged above the uppermost calender-roll and also having a concave periphery, means for rotating the calender-rolls and the rolls L_1 I, and gearing intermediate of the roll L, and the feed-rolls for rotating the latter, substantially as specified.

6. An apparatus for feeding soft rubber comprising a frame, a pipe adapted to be connected with a source of steam supply and having the transverse portions, feed-rolls journaled on the said transverse portions of the pipe, and a pan arranged below the rolls and pipe and adapted to deflect the heat against the rubber mass as it passes over the rolls, substantially as specified.

571,227. MACHINE FOR MAKING AND DRIVING METALLIC FASTENINGS. WILLIAM S. HAMM, Newton, and ARTHUR W. EATON, Boston, Mass., assignors to the Staple Fastening Machine Company, Boston, Mass. Filed Apr. 10, 1896. Serial No. 586,909. (No model.)

Claim.—1. In a machine of the character specified, an adjustable wire-feeding mechanism, comprising first, a feed-roll-operating shaft; secondly, a driving-shaft; thirdly, intermediate connections between the said shafts having provisions for intermittently rotating the feed-roll shaft, said connections including an oscillatory lever, and an adjustable fulcrum or center on which said lever oscillates; and, fourthly,

means for adjusting said center to vary the movement of the feed-roll shaft.



2. In a machine of the character specified, an adjustable wire-feeding mechanism, comprising a feed-roll shaft, having a ratchet, a driving-shaft having a cam, an oscillatory lever engaged with said cam, a loose sleeve on the feed-roll shaft, having an arm on said sleeve carrying a pawl engaged with said ratchet, connections between said sleeve and lever, whereby the sleeve is oscillated on the feed-shaft by movements of the lever, and adjustable fulcrum or center on which said lever oscillates, and means for adjusting said center to vary the movements imparted to the sleeve.

3. In a machine of the character specified, the combination of a feed-roll-operating shaft having a ratchet, an oscillatory arm having a pawl engaged with said ratchet, a driving-shaft, connections between said driving-shaft and arm for imparting an oscillatory movement from the shaft to the arm and pawl, and means for adjusting the length of said movement.

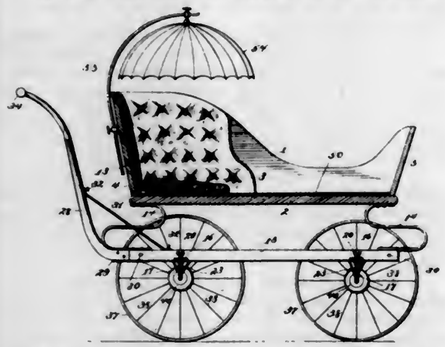
4. In a machine of the character specified, the combination of a feed-roll-operating shaft having a ratchet, an oscillatory arm having a pawl engaged with said ratchet, a driving-shaft, a lever oscillated by said shaft, connections for imparting movement from the lever to the arm and pawl, a movable fulcrum or center on which the lever oscillates, and an adjusting device connected with said center to vary its position.

5. In a machine of the character specified, the combination of a feed-roll-operating shaft having a ratchet, an oscillatory arm having a pawl engaged with said ratchet, a driving-shaft, a lever oscillated by said shaft, connections for imparting movement from the lever to the arm and pawl, a movable fulcrum or center on which the lever oscillates, an adjusting-lever pivoted to a fixed support and connected with said center to impart motion thereto, and means for locking said lever to hold the movable center in any position to which it may be adjusted.

6. In a machine of the character specified, the combination of a carrier, wire-cutting devices mounted on the carrier, and feed-rolls on said carrier, a driving-shaft, connections between said shaft and the feed-rolls for intermittently rotating the latter, said connections including a lever oscillated by the driving-shaft, and a movable fulcrum or center on which said lever oscillates, and connections between the said movable center and the carrier whereby they may be simultaneously adjusted.

7. In a machine of the character specified, the combination of a carrier, wire-cutting devices mounted on the carrier, and feed-rolls on said carrier, a driving-shaft, connections between said shaft and the feed-rolls for intermittently rotating the latter, said connections including a lever oscillated by the driving-shaft, and a movable fulcrum or center on which said lever oscillates, an adjusting-lever pivoted to a fixed support, connections between one arm of said lever and the movable center, and connections between the other arm of the lever and the carrier.

571,228. FOLDING CARRIAGE. FREDERICK HEPPNER, New York, N. Y. Filed June 1, 1896. Serial No. 593,720. (No model.)



Claim.—1. In a collapsible carriage, a body composed of a bottom having a head and foot board, and two sides adapted to be attached to or detached from said bottom, a truck-frame consisting of two side bars and two metallic cross-bars, springs for connecting said truck-frame to the body, four axles adapted to be attached to and detached from the truck-frame, collapsible wheels arranged to be journaled upon said axles, and a pair of handles adapted for securement to the truck-frame before arranged, substantially as and for the purposes set forth.

2. In a collapsible carriage, the combination of a body composed of a bottom, a head and foot board, and two sides, each arranged for attachment to said bottom by means of hooks, a truck-frame, springs secured to said frame, and to which the bottom of the body is also secured, four axles, brackets, and screws for securing said axles to the truck-frame, tubular hubs journaled upon said axles, collapsible wheels adapted to be attached to and removed from said hubs, and handles arranged for attachment to and detachment from the truck-frame, substantially as and for the purposes set forth.

3. In combination with a running-gear of a carriage of the character described, a body consisting of a bottom supported by said running-gear by means of suitable springs, a head and foot board having hooks arranged upon their lower edges for engagement with suitable plates secured upon the bottom, two sides, each having similar hooks for engagement with like plates upon said bottom, lugs projecting from the meeting edges of the head and foot board and sides, pins for passing through suitable holes in said lugs, whereby the several parts are secured in position, substantially as and for the purposes set forth.

4. In combination with a running-gear of a carriage of the character described, a bottom board 2, supported by suitable springs carried by said running-gear, strips of fabric secured to said bottom, a head and foot board, each having hooks for engagement with suitable plates, secured upon the bottom, two side boards also having hooks for engagement with the plates upon the bottom, lugs projecting from the meeting edges of these last-named parts, pins for passage through suitable holes in said lugs, whereby the parts are secured in position, substantially as and for the purposes set forth.

5. In combination with a body of a carriage of the character described, the side-bars 15, springs 14, supported by said side bars, and each in turn supporting said body, cross-bars 16, having slots and central openings therethrough, axles 17, bolts 19, carried by said axles, and adapted to pass through said slots, thumb-nuts for securing said bolts within said slots, brackets 23, each consisting of levers pivoted together and terminating in jaws, means for attaching said brackets to the side-bars, tubular hubs journaled upon said axles, wheels consisting of rims, spokes, and the disks 40 and 41, each of said disks adapted to fit upon the squared portions of said hubs, and nuts 46, for engagement with suitable threads upon the disk 40, substantially as and for the purposes set forth.

6. In combination with a body of a carriage of the character described, the side-bars 15, springs 14, supported by said side-bars, and each in turn supporting said body cross-bars 16, having slots and central openings therethrough, axles 17, bolts 19, carried by said axles and adapted to pass through said slots, thumb-nuts for securing said bolts within said slots, brackets 23, each consisting of levers pivoted together and terminating in jaws, and means for attaching said brackets to the side-bars, substantially as and for the purposes set forth.

7. In combination with the truck-frame of a carriage of the character described, four axles having upwardly-curved extensions 18, said extensions being provided with bolts 19, thumb-nuts 20, run upon said bolts, brackets 23, each composed of two levers terminating in jaws for engagement with said axles, hooks formed with said levers, adapted to engage suitable plates secured upon the side-bars of the truck-frame, and collapsible wheels adapted to be journaled upon said axles, substantially as and for the purposes set forth.

8. A collapsible wheel consisting of a tubular hub adapted to be journaled upon a suitable axle, said hub having squared enlargements formed thereon, disks 40, and 41, each adapted to engage with the squared enlargements, and having radial slots formed therein, spokes having heads upon their inner ends for engagement with said slots, a rim to which the outer ends of the spokes are attached, a nose 46, having threads formed thereon for engagement with suitable threads formed upon the disk 40, whereby the wheel may be attached to or detached from the hub without removing the latter from its axle, as specified.

9. In a collapsible carriage the combination of a body, composed of a bottom, a head and foot board and two sides, each attached to said bottom by means of hooks, a truck-frame, springs secured to said frame, supporting the body, four axles, brackets, and screws for securing said axles to the truck-frame, tubular hubs journaled on the axles, collapsible wheels adapted to be attached to and removed from said hubs, handles arranged to be attached to and detached from the truck-frame, a handle-bar removable from said handles and a truss consisting of two wires running diagonally connecting the parallel wires, said truss being adapted to brace the handles as and for the purpose described.

571,229. CAR COUPLING. JAMES A. HIBSON, Chicago, Ill. Filed Oct. 7, 1896. Serial No. 608,131. (No model.)

Claim.—1. The combination, in a car-coupler, of a pendent latch having a bar jointed thereto and extending through the lower wall of the draw-head, and a spring engaging said bar to normally hold it in vertical alinement with said latch, substantially as described.

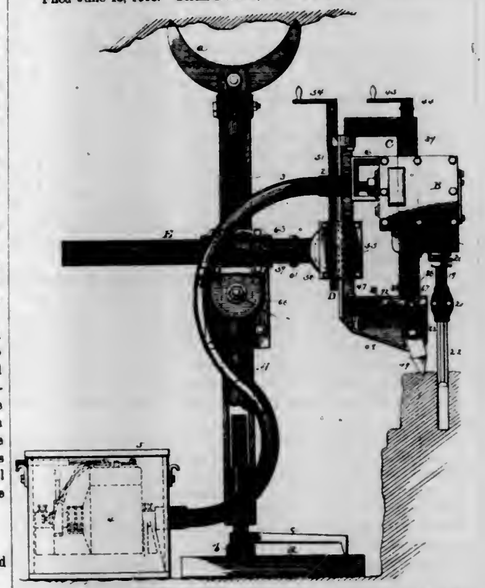
2. The combination, in a car-coupler, of a pendent latch having a bar jointed thereto and extending through the lower wall of the draw-head, a spring engaging said bar to normally hold the same in vertical alinement with said latch and prevent vibration of the latter, and means adapted to engage the latch to prevent its accidental withdrawal from the draw-head, substantially as described.

3. The combination, in a car-coupler, of a pendent latch having curved rear edge and a shoulder, a bar jointed to said latch and extending through the lower wall of the draw-head, a spring engaging said bar to prevent vibration of latch, and a pin arranged in the draw-head and adapted to engage the shoulder of the latch to prevent accidental withdrawal of the latter, substantially as described.

571,230. SEAL-LOCK. WESLEY P. HUNTLEY, Jr., Richmond, Va. Filed June 19, 1896. Serial No. 596,106. (No model.)

Claim.—In combination with the base-plate, guide-sleeve and spring-pressed locking-dog, the bolt rotatable and longitudinally movable in said sleeve, provided with a retaining-notch which engages and prevents the retraction of the bolt only after said bolt has moved its full extent in locking direction and also with a longitudinal slot open at its lower end for the insertion of the seal, and the staple formed with a slot n open upon that face of the staple which the bolt first meets and arranged to register with the slot in the bolt when the latter is home in the staple, substantially as and for the purposes hereinbefore set forth.

571,231. ROCK-DRILL. LEONA H. JENKINS, Philadelphia, Pa. Filed June 13, 1895. Serial No. 552,713. (No model.)



Claim.—1. In a rock-drill, the combination with a casing and a supporting-post, of a main frame adjustably connected with said casing, a supplemental frame having a hinged connection with the main frame, an axially-adjustable bar adapted to be disposed at an angle to said support, an adjustable connection between said bar and support and an adjustable connection between said bar and supplemental frame, substantially as set forth.

2. In a rock-drill, the combination with a casing, and a support, of a main frame connected with the casing, a supplemental frame pivotally connected with the main frame and adjustably connected with the support, angular flanges on said frames movable angular plates adapted to engage said angular flanges, a bolt passing through said plates and a slot in an arm of the frames, a nut on said bolt, a ratchet-wheel on said nut, a spring-actuated dog adapted to engage said ratchet-wheel and a handle on said dog, substantially as set forth.

3. In a rock-drill, the combination with a casing and a support, of a main frame connected with said casing, a supplemental frame connected with said main frame, endwise-sliding adjustable connections between said supplemental frame and support, and a feed-screw connected with the casing and main frame, whereby to feed said casing forward and a similar screw connected with the supplemental frame and the support for moving the supplemental frame endwise, substantially as set forth.

4. In a rock-drill, the combination with a casing and a support, of a main frame adjustably connected with the casing, a supplemental frame hinged to the main frame, means for locking said frames together, a bar having a longitudinal, axial and pivoted adjustable connection with said support, and an adjustable connection between said bar and the supplemental frame, substantially as set forth.

5. In a rock-drill, the combination with a casing and a supporting-post, of a yoke on said casing, a guide-bar adjustably connected with said yoke, arms projecting from said guide-bar, a locking-bar pivotally connected to said arms, an arm rigidly secured to said locking bar, a steadying rest or support secured to said last-mentioned arm, and connections between said locking-bar and said supporting-post, substantially as set forth.

6. In a rock-drill, the combination with a casing and a supporting-post, of a guide-bar adjustably connected with the casing, arms projecting from the guide-bar, a locking-bar pivotally connected with the free ends of said arms, an arm rigidly secured to said locking-bar, a steadying rest or arm secured to said last-mentioned arm, means for moving said locking-bar downwardly to cause the steadying rest or arm to engage the rock, and connections between said locking-bar and supporting-post, substantially as set forth.

7. In a rock-drill, the combination with a casing and a supporting-post, of a frame adjustably connected with said casing, a supplemental frame, a screw-threaded rod passing through a perforated

enlargement on the supplemental frame, a yoke embracing said supplemental frame and having a screw-threaded opening for the passage of said screw, a corrugated disk carried by said yoke, a similarly-corrugated disk carrying a tubular arm and adapted to mesh with the above-mentioned corrugated disk, a bolt passing centrally through said disks and retaining them in mesh, an adjustable bar secured to said tubular arm, and an adjustable connection between said adjustable arm and supporting-post, substantially as set forth.

8. In a rock-drill, the combination with a casing adapted to contain drilling mechanism, and a supporting-post, of a clamping-sleeve adjustably secured to the supporting-post, a corrugated disk carried by said clamping-sleeve, clamping-plates, a bar adjustably held between said clamping-plates, a corrugated disk on one of said clamping-plates and adapted to mesh with the first-mentioned corrugated disk, a bolt passing centrally through said corrugated disks and adapted to retain said disks in mesh with each other and connections between said adjustable bar and casing, substantially as set forth.

9. In a rock-drill, the combination with a casing and supporting devices of a reciprocating cross head mounted in the casing, a crank-shaft adapted to reciprocate said cross head, an arm or extension on the cross-head having a recess with an enlarged upper portion, a cap secured to said arm or extension and having recesses corresponding with the recesses in the arm or extension, and a drill-rod projecting through the recesses in the arm or extension and cap and having a head to enter the enlarged portions of said recesses, substantially as set forth.

10. In a rock-drill, the combination with a casing and supporting devices, of a reciprocating cross-head in said casing, a crank shaft adapted to reciprocate said cross-head, a revoluble drill-rod carried by said cross-head, a pinion on said drill-rod, a shaft mounted parallel with the drill-rod, an elongated gear on said shaft meshing with the pinion on the drill-rod, and gearing between the said shaft and the crank-shaft, substantially as set forth.

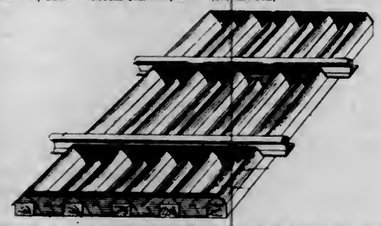
11. In a rock-drill, the combination with a casing, of a reciprocating cross-head in said casing, a drill-rod carried by said cross-head, a crank shaft adapted to reciprocate said cross-head, a pinion on the drill-rod, a shaft parallel with the drill-rod, an elongated gear on said shaft meshing with the pinion on the drill-rod, a bevel-pinion on said shaft, a horizontal shaft, a bevel-pinion on the horizontal shaft and meshing with said first-mentioned beveled pinion, a pinion on the crank-shaft and gearing between the pinion on the crank-shaft and the said horizontal shaft, substantially as set forth.

12. In a rock-drill, the combination with a casing, of a reciprocating cross-head in said casing, a crank-shaft adapted to reciprocate said cross-head, a drill-rod revolubly connected with said reciprocating cross-head, a pinion or spur wheel made integral with the drill-rod, an elongated gear meshing with said pinion or spur wheel, a pinion on the crank-shaft, and gearing between said pinion and the elongated gear-wheel, substantially as set forth.

13. In a rock-drill, the combination with a casing having removable plates which constitute a part of the casing and complete it when in position, of guides carried by said removable plates, a cross-head adapted to reciprocate between said guides, a drill-rod carried by said cross-head, and means for reciprocating said cross-head and rotating the drill-rod, substantially as set forth.

14. In a rock drill, the combination with a casing and stuffing-boxes or bearings, of a crank-shaft or drill-rod mounted in said stuffing-boxes or bearings and extending at one end beyond the casing, a cross-head adapted to be reciprocated by said crank-shaft, said cross-head connected to the drill-rod, a clutch at the free end of said crank-shaft, a bracket on the casing, a supplemental bearing in said bracket for the clutch-casing and a flexible shaft connected with said clutch, substantially as set forth.

571,232. STOCK-GUARD. JACOB M. LEE, Houston, Tex. Filed Mar. 10, 1896. Serial No. 582,637. (No model.)

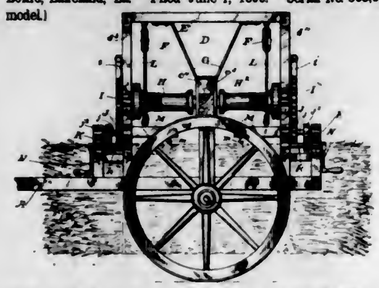


Claim.—1. In a cattle-guard for railroads, the combination with a plurality of beveled caps or arches, each having a flange or projection on one side, and adapted to fit over the cross-ties, and a plurality of inclined slats each provided with a backwardly-extending flange on its upper edge, and arranged approximately midway between said caps or arches; of a pair of end pieces cut away to fit over the cross-ties, to which said caps or arches and said inclined slats are secured at their ends, substantially as described.

2. In a cattle-guard for railway-tracks, the combination with a series of beveled caps or arches adapted to fit over the cross-ties and each having a projection or flange on one side thereof extending beyond the side of the cross-tie; and a series of inclined slats set midway between said caps or arches at approximately the same inclination as the face of the cap of the arch immediately behind said slat, and having a flange extending backward from its top at approximately the same inclination as the other face of said cap or arch; of a pair of end pieces or slats cut away to fit over the cross-ties, and to which the ends of the said caps or arches and said inclined slats are riveted, substantially as described.

3. In a cattle-guard for railroads, the combination with a plurality of beveled caps or arches adapted to fit over the cross-ties and each having its ends flanged, of a plurality of teeth projecting outward from the surface of said plates, an inclined slat bent backward at its upper edge and secured between said end slats, and a pair of end slats secured to said flanges and adapted to fit over the cross-ties, substantially as described.

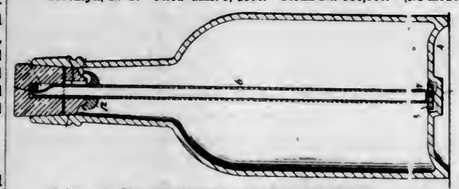
571,233. APPARATUS FOR HANDLING CANE. ANTHONY A. LORIO, Lakeland, La. Filed June 1, 1896. Serial No. 593,898. (No model.)



Claim.—1. An apparatus for handling cane or the like, comprising an arched axle, side pieces secured thereto and constituting the tongue-hounds, an overhead support mounted on the side pieces, and hoisting mechanism actuated by suitable gearing, substantially as described.

2. An apparatus for handling cane, comprising a wheeled frame, an overhead support mounted thereon and carrying blocks, independently-operating drums supported on the frame, ropes wound upon the drums and passing through the blocks, and hook-bearing bars carried by the ropes, substantially as described.

571,234. NON-REFILLABLE BOTTLE. OLIVER J. MOUSSETTE, Brooklyn, N. Y. Filed Mar. 5, 1896. Serial No. 581,969. (No model.)

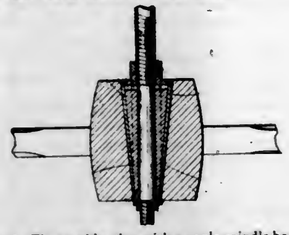


Claim.—1. The combination with a bottle having a stopper or plug arranged in its mouth and provided with a liquid-passage and with a tube forming an air-passage, of a liquid-seal cup located under the stopper or plug and serving to hold liquid to form a seal for closing the lower end of the liquid-passage, said tube extending from the stopper or plug through the bottle to near the bottom thereof, and a float arranged in operative connection with the lower end of the tube and serving to close the same, substantially as and for the purposes described.

2. The combination with a bottle having a stopper or plug arranged in its mouth and provided with a liquid-passage and with a tube forming an air-passage, said tube passing through the stopper or plug and extending therefrom through the bottle to near the bottom thereof, a liquid-seal cup mounted on the tube directly under the stopper or plug and serving to hold liquid to seal the lower end of the liquid-passage in said stopper or plug, and a float arranged in operative connection with and serving to close the lower end of the tube, substantially as and for the purposes described.

3. The combination with a bottle, of a stopper or plug arranged in the mouth of the bottle and provided with a liquid-passage and with a tube forming an air-passage, said tube extending through the stopper or plug and bottle and having its lower end arranged in juxtaposition to the bottom wall of the bottle, a float arranged under the lower end of the tube and serving to close the lower end of the tube when liquid is introduced into the bottle, and a liquid-seal-holding cup mounted on the tube in juxtaposition to the liquid-passage formed in the stopper or plug, substantially as described.

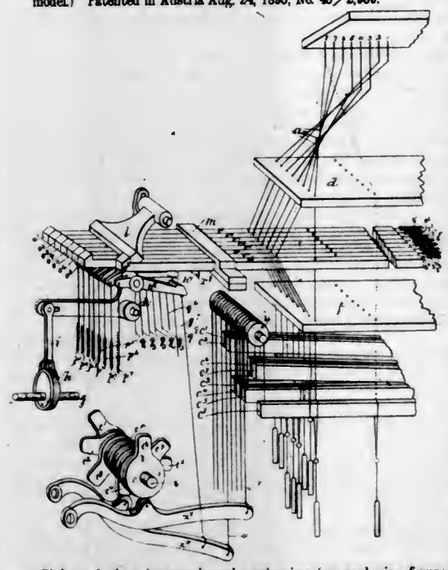
571,235. AXLE-BOX. WILLIAM J. MCLEAN, Gloster, Miss. Filed Apr. 14, 1896. Serial No. 587,463. (No model.)



Claim.—1. The combination with an axle-spindle having its outer end screw-threaded and provided with a nut, and its inner end enlarged and screw-threaded, a flange-nut and a lock-nut upon the latter end, the axle-skein having V-shaped tongues, and the axle-box having V-shaped grooves engaged by said tongues, a shoulder and flange upon the inner end of the axle-box engaged by said flanged nut to adjust the box and skein upon the axle-spindle, substantially as shown and described.

2. The combination with a straight axle-spindle having screw-threads upon each end, and a nut upon its outer end, and a flange-nut upon its inner end, and lock-nut upon the same end, an axle-box having V shaped tapering grooves extending throughout its length, an interior shoulder surrounded by a flange having said grooves continued therein, an axle-skein having tongues to engage said grooves and adjustably held against the outer end by said flanged nut housed by the flange of the axle-box, substantially as shown and described.

571,236. LOOM. EDUARD VON OBERLEITNER, Mährisch-Schönberg, Austria-Hungary. Filed Nov. 1, 1895. Serial No. 567,652. (No model.) Patented in Austria Aug. 24, 1895, No. 45/2,939.



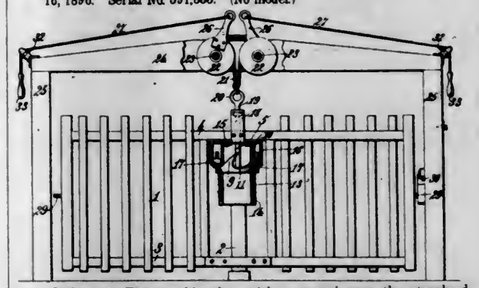
Claim.—1. In a harness-board mechanism for producing figured fabric, the combination with two stationary harness-boards, of a divided harness-board composed of independently-movable members and mounted between said stationary boards, harness-cords passing through said harness boards so as to be normally bent to an angle between the stationary harness-boards by the divided harness-board, means for imparting backward and forward motion to the members of said divided board-shafts connected to the lower ends of said harness-cords and means for raising and lowering said shafts, substantially as described.

2. In a mechanism of the character described the combination with two stationary harness-boards, of a divided harness-board mounted between said stationary harness-boards having a plurality of independently-movable members with projections on the upper and lower faces of said members, springs connected to and exerting a backward pull on said members, means for holding said members against the pull of said springs, means for returning said members to their initial position after being drawn backward by said springs, harness cords passing through said stationary and divided harness-boards so as to be normally bent to an angle between said stationary boards by said divided board, means for lifting said harness-cords, shafts connected to said cords below the said harness-boards, and means for simultaneously raising said shafts and releasing said members of the divided harness-board, substantially as described.

3. In a mechanism of the character described, the combination with stationary harness-boards, of a divided harness-board mounted between said stationary boards, having a plurality of independently-movable members, with projections on the upper and lower faces of said members, springs connected to and exerting a backward pull on said members, means for holding said members against the pull of said springs, means for returning said members to their initial position after being drawn back by said springs, harness-cords passing through said stationary and divided harness-boards so as to be normally bent to an angle between said stationary boards by said divided board, means for raising said harness-cords from above, shafts connected to the lower ends of said harness-cords beneath said harness-boards, a drum with lifting-cords passing over said drum and connected to said shafts, levers connected to the other ends of said lifting-cords, connection between said levers and means for holding said divided board members in initial position, cams mounted above and adapted to operate said levers, substantially as described.

4. In a mechanism of the character described, the combination with two stationary harness-boards, of a divided harness-board mounted between the said stationary boards having a plurality of independently-movable members with projections on the upper and lower faces of said members, springs connected to and exerting a backward pull on the said members, pawls adapted to engage said lower projections, a reciprocating knife for returning said members to their initial positions by engaging said upper projections, harness-cords passing through said stationary and divided harness-boards so as to be normally bent to an angle between the stationary harness-boards by said divided harness-board, means for lifting said harness-cords from above, shafts connected to the lower ends of said harness-cords beneath said harness-boards, a drum, with lifting-cords passing over said drum and connected at one of their ends to said shafts, pivoted levers connected to the other ends of said lifting cords, cords connecting said levers with said pawls, cams mounted at different angles around a shaft above said levers and adapted to actuate the same, substantially as described.

571,237. GATE. HORATIO V. PHILPOTT, Buffalo, Tex. Filed May 16, 1896. Serial No. 591,835. (No model.)



Claim.—1. The combination with a central post, the standard projecting centrally from the top of said post and the toothed and segmentally-slotted disk attached to said post by means of headed studs inserted through the disk-slots vertically into the post-top, of a yoke attached to the top beam of the gate and provided with a swivel-bolt, pivotally-supported disks provided with actuating-arms, and a flexible connection between said disks and swivel bolt, substantially as described.

2. The combination of the posts 25 and 28, the gravity-latch 30 and stop 31 on the inner side of a post, a centrally-pivoted, vertically-

movable and horizontally-swinging gate having its opposite ends provided with pins 29 to engage the latch and stop, the central post 2 on which the gate is pivoted, an oscillatory disk 6 supported on the top of said post and provided with inclined teeth 9, rolls 17 carried by the top beam of the gate and engaged with said teeth to turn the gate, pivotally-supported disks 22 provided with actuating-arms 26, and a swiveled connection between said disks and the top beam of the gate, substantially as described.

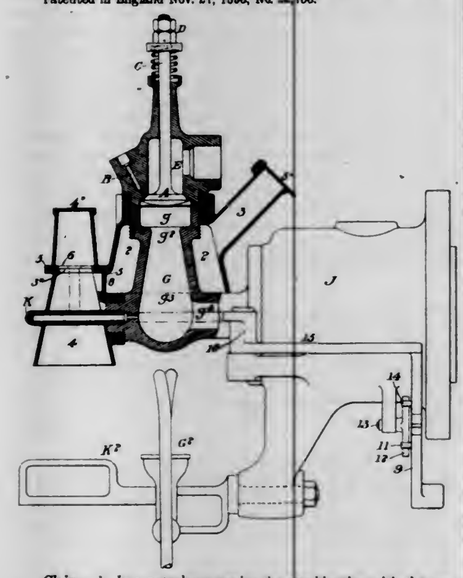
3. The combination with the vertically-movable and horizontally-swinging gate 1, the central post 2 on which the gate is pivoted, the oscillatory disk 6 supported on the top of said central post and provided with inclined teeth 9, and the rolls 17 carried by the top beam of the gate and engaged with said teeth to turn the gate, of the posts 25, the beams 24 connecting said posts at the top; the disks 22 pivoted between said beams and provided with vertically-projecting arms 26, the yoke 18 secured to the top of the gate and provided with a swivel-bolt 19, the flexible connection 21 between said disks and swivel-bolt, and cords or wires attached to the arms 26 and adapted to be extended to any required distance from which to operate the gate, substantially as described.

571,238. PREPARING COCOA. GUSTAV A. PIEPER, Rotterdam, Netherlands. Filed Dec. 30, 1895. Serial No. 573,823. (No specimens.)

Claim.— 1. The method or process herein described of manufacturing cocoa from cocoa-beans of commerce, which consists in first moistening the beans with an alkaline solution to neutralize the acids therein, and then subjecting the beans to fermentation, substantially as set forth.

2. The method or process herein described of manufacturing cocoa, which consists in moistening cocoa-beans with an alkaline solution and thereby neutralizing the acids therein, adding a ferment to the beans, and roasting, cleaning, and grinding said beans, substantially as set forth.

571,239. INTERNAL-COMBUSTION ENGINE. CHARLES W. PINKNEY, Smethwick, England, assignor to Tangyes, Limited, Birmingham, England. Filed Feb. 24, 1896. Serial No. 580,454. (No model.) Patented in England Nov. 27, 1893, No. 22,753.



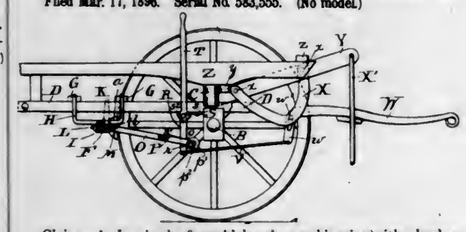
Claim.— 1. In a petroleum-engine the combination with the vaporizer, of a heat-retaining hood surrounding the same at the inlet portion thereof to retain heated air to prevent the deposit of carbonaceous matter in the vaporizer, a lamp or heater, a tube or chimney over the same having passages therefrom one for discharging the gases from the lamp into the atmosphere and another leading to the hood for supplying heat thereto, and a valve for alternately closing one passage and opening the other, substantially as described.

2. In a petroleum-engine the combination with the vaporizer, of a heat-retaining hood surrounding the same at the inlet portion thereof, to retain heated air to prevent the deposit of carbonaceous matter in the vaporizer, a lamp or heater, a tube or chimney over the same having passages one for discharging the gases from the lamp into the atmosphere and another leading to the hood for supplying heat thereto, a valve for opening the passage to the atmosphere and closing that to the hood during the normal working of the engine, and means for automatically operating said valve to close the passage to the atmosphere and open that to the hood when the normal speed of the engine is exceeded and no explosions take place, substantially as described.

3. In a petroleum-engine, the combination with the actuating-lever of the inlet-valve mechanism, of a pecker adapted to operate said lever during the normal running of the engine, but to be lifted out of the path of said lever when excessive speed is attained, a suitably-actuated lever for opening the exhaust-valve of the engine at proper intervals, a stop in the path of said lever, connections between the stop and the actuating-lever of the inlet-valve whereby movement of the latter during the normal running of the engine withdraws the stop from the path of the lever of the exhaust-valve, allowing the same to close, but remains in the path of said lever and holds the exhaust-valve open during the running of the engine at abnormal speed, substantially as described.

4. In a petroleum-engine, the combination with the vaporizer, of a heat-retaining hood surrounding the same at the inlet portion thereof to retain heated air, a lamp or heater, a tube or chimney over the same having passages therefrom, one for discharging the gases from the lamp into the atmosphere and another leading to the hood for supplying heat thereto, a valve for opening the passage to the atmosphere and closing that to the hood during the normal running of the engine, an actuating-lever for said valve arranged in proximity to the pecker of the inlet-valve-operating mechanism whereby when excessive speed is attained the pecker engages and operates the lever to automatically close the passage from the lamp to the atmosphere and open that from the lamp to the hood, substantially as described.

571,240. VEHICLE-BRAKE. ISAAC W. PRICE, Rosseau, Ohio. Filed Mar. 17, 1896. Serial No. 583,555. (No model.)



Claim.— 1. In a brake for vehicles, the combination with a brake-bar provided with brake-shoes and draft-rods attached to the vehicle in front of the wheels thereof, of a block having a longitudinal slot bearing an antifriction wheel revolving on a pin passing through the block near its open end, said block having an ear on either side thereof rigidly fixed thereto for supporting said block pivotally between the ends of the draft-rods connecting with the brake-bar, and an arm attached at one of its ends to the vehicle, its free end passing through the slot in said block, and means for moving said free end backward, whereby the brake-bar is operated, substantially as shown and described.

2. In a brake for wheeled vehicles, the combination with a brake-bar provided with brake-shoes, links passing around said bar, loop-rods passing through the ends thereof and supporting said bar underneath said loops, the loops attached to the ends of bars supported by the hounds of the vehicle and attached thereto, means for drawing the brake-shoes in contact with the circumference of the wheel and applying pressure thereto, substantially as shown and described.

3. In a brake for wheeled vehicles, the combination with a brake-bar having brake-shoes thereon and supported by bars attached to the hounds of the vehicle, rods connecting said brake-bar to a slotted block provided with an antifriction-wheel in the end thereof, the free end of an arm passing downward through said block, its upper end rigidly fixed to a rocking shaft journaled to the bounds and provided with an operating-lever fixed to the outer end thereof, whereby a forward rocking of the shaft causes a backward and upward movement of the free end of the arm fixed thereto and brings the brake-shoes in contact with the circumference of the wheel, substantially as shown and described.

4. In a brake for wheeled vehicles, the combination with a brake-bar provided with brake-shoes and swung by suitable supports attached to the vehicle and in front of the wheels thereof, an arm rigidly fixed at one of its ends to a rock-shaft journaled to the hounds of the vehicle, and provided with means for rocking said shaft, the free end of the arm passing through a block connected with draft-rods to the brake-bar, said block resting normally near the free end

of the arm whereby the backward movement of the free end of the arm causes the block to move toward the fixed end thereof and the pressure of the brake-shoes against the wheels is intensified, substantially as shown and described.

5. In a brake for wheeled vehicles, the combination with a brake-bar having brake shoes thereon and draft-rods attached thereto, the opposite ends of said rods pivoted to a slotted block having an antifriction-wheel pivoted therein, the free end of an arm passing down and through said block, its upper end rigidly connected with a rocking shaft having an operating-lever at the end thereof, whereby the forward rocking of the shaft throws the arm, attached thereto, backward and upward at its lower end, causing the block to which the brake-bar is connected to move upward and draws said brake in contact with the wheels, substantially as shown and described.

6. In a brake for wheeled vehicles, the combination with a brake-bar provided with shoes and supported in front of rear wheels thereof by rods whereon it may slide, said rods connected to bars supported by, and attached to the hounds of the vehicle, a brace-bar hinged at one of its ends to a rod connected to the rear side of the brake-bar, the opposite end of the brace-bar bolted between draft-rods connected to the brake at their forward ends, and at their opposite ends provided with mechanism for drawing the brake in contact with the circumference of the wheels and locking it therewith, substantially as shown and described.

7. In a brake for wheeled vehicles, the combination with a brake-bar provided with brake-shoes and supported in front of the wheels, an operating-lever pivoted to supporting-brackets attached to supports therefor in the rear of the axle, a short arm formed with the operating-lever and turned downward at an angle thereto, a rod connecting said arm to the free end of another arm passing through a slotted block with an antifriction-wheel pivoted therein, the upper end of said arm attached to a shaft, the slotted block pivoted between draft-rods connecting with said brake, substantially as described and shown.

8. In a brake for vehicles, the combination with a brake-bar provided with brake-shoes and supported by rods attached to bars fastened to the vehicle forward of the rear wheels thereof, draft-rods connecting with said brake-bar at points opposite the middle thereof by a rod passing through eyebolts in said brake-bar, and through the ends of the draft-rods, the opposite ends of the latter pivoted on either side of a block and bolted to the sides of a brace-bar back of said block, the opposite end of the brace-bar hinged to the brake-bar at the middle thereof, connecting rods and levers for operating said brake suitably attached and supported, connecting with the block to which the draft-rods are joined, substantially as shown and described.

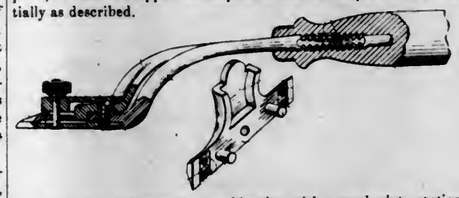
9. In a brake for wheeled vehicles, the combination with a brake-bar provided with brake-shoes, hung to rods whereon it may slide in front of the rear wheels of a vehicle, a slotted block having an antifriction-wheel in the end thereof and pivoted between draft-rods attached to the brake-bar at their opposite ends, an arm fixed at one of its ends to a rock-shaft journaled to the hounds near the axle and provided with a lever on one of the ends thereof, the free end of the arm passing through the slotted block forward of the antifriction-wheel therein and having a pin in the end thereof to support said block in a normal position, substantially as shown and described.

10. In a brake for wheeled vehicles, the combination with a brake-bar having brake-shoes thereon and supported on rods on which said brake-bar may slide in front of the wheels of a vehicle, a slotted block with an antifriction-wheel pivoted in the end thereof, draft rods pivoted to said block and attached to the brake-bar at their opposite ends, an arm fixed at one end to a rock-shaft journaled to the hounds, the free end of the arm passing through the slotted block and provided with a pin to support said block in its normal position, a rod connecting the free end of said arm with the arm of a lever supported in the rear of the axle to the frame of a rack and operating vertically, substantially as shown and described.

11. In a brake for vehicles, the combination with a brake-bar provided with brake-shoes, hung by links passing under and around said bar near either end thereof, loop-rods passing through the ends of the links, the ends of the rods turned up at an angle and connected with the ends of a pair of bars parallel to each other, said bars bolted across and to the hounds of the vehicle, draft-rods attached to said brake-bar, between the point where linked to the supporting-rods thereof, and having the opposite ends connected with the arm of an operating-lever, said lever pivoted between supporting-brackets, whereby the upward lifting of the free end of the lever will draw the brake-shoes in contact with the circumference of the wheels of the vehicle, substantially as shown and described.

571,241. ANIMAL-SHEARS. JOSEPH K. PRIEST, Nashua, N. H. Filed Aug. 22, 1896. Serial No. 603,602. (No model.)

Claim.— 1. Animal-shears, comprising in combination, a lower handle constructed with a broadened, shouldered forward portion, an integral hollow stud extending up from top of said broadened portion, a lower comb-plate beneath said broadened portion and abutting against the integral depending shoulder thereof, an upper handle loosely pivoted to said integral hollow stud, and provided with a forwardly-extending projection, an upper notched and slotted cutter provided with guide-pins, and engaging with the projection of the upper handle, so as to be reciprocated by said handle; said upper cutter resting upon ribs of the comb-plate, a pressure-plate constructed to overhang the top surface of the pivot end of the upper handle and rest upon the hollow integral stud without frictionally bearing upon the cutter-plate in rear of its bearing-rib, nor upon the upper handle, a screw for connecting the handle and lower comb plate, and a screw for connecting the pressure-plate, upper cutter-plate and lower comb-plate, so that the upper cutter-plate is free to reciprocate, substantially as described.



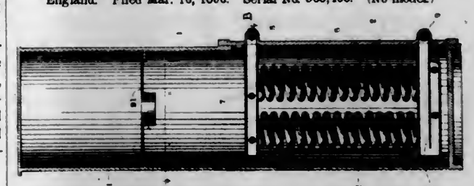
2. In a hair-clipper, the combination with a comb-plate, stationary handle and movable handle, of a cutter-plate provided upon its upper surface with a narrow raised portion or rib c, forming a bearing-surface for balls applied between the upper cutter-plate and the pressure-plate, and a pressure plate adapted to engage said bearing-surface, substantially as described.

3. In a hair clipper, the combination with the comb and cutter plates and suitable handles, of a pressure-plate, provided with grooves at right angles to its front edge, detachable ball-retaining devices, adapted to fit in said grooves, which provide ball-runs parallel with the movement of the cutter-plate, and balls in said runs, substantially as described.

4. In a hair-clipper, the combination with a cutter-plate, pressure-plate, and comb-plate, of a stationary handle, having a depending shoulder forming a seat to receive the rear edge of the comb-plate, a stud integral with said stationary handle upon its upper side, forming the bearing for a movable handle and a movable handle pivotally mounted upon said stud for operating the cutter-plate, substantially as described.

5. In a hair-clipper, the combination with a cutter-plate, pressure-plate, and comb-plate, of a stationary handle, having a depending shoulder forming a seat for the edge of the cutter-plate, a stud integral with said stationary handle, upon its upper side, forming the bearing for a movable handle, a movable handle pivotally mounted upon said stud, and adapted to operate the cutter-plate, and a pressure-plate, adapted to press upon the cutter-plate at its forward edge only and to bear at the rear upon the stud, substantially as described.

571,242. EVAPORATOR. DANIEL A. QUIGGIN, Blundell Sands, England. Filed Mar. 16, 1896. Serial No. 583,468. (No model.)



Claim.— 1. In an evaporator, condenser or the like, a shell, a series of coils within the same, an inlet-pipe and an outlet-pipe, said coils being disposed at different points along the said pipes, one of the pipes having a circuitous passage through it to cause the steam to pass equally through the several coils, substantially as described.

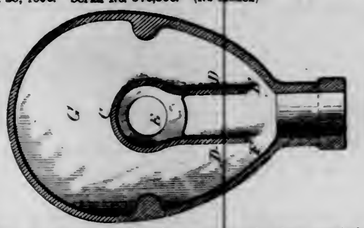
2. In combination, a shell, coils within the same, an inlet and an outlet pipe, said coils being disposed at different points along the same, and one of said pipes being of double form, providing a circuitous passage therein to cause the steam to pass equally through the several coils, substantially as described.

3. In an evaporator, the combination of the shell, the removable door, the upper and lower pipes projecting into the shell therefrom, the coils extending between said pipes, the pipes 5 and 9 extending from the upper and lower centers of the door laterally to one side thereof and the inlet and outlet pipes at the side of the shell and connecting with the pipes 5 and 9 independently of the shell, said con-

nection including a hollow hinge-joint to allow the water to pass substantially as described.

4. In combination, the shell, the removable door having the upper and lower pipes 7 and 8 with the heating-coils carried thereby, the pipes 5 and 9 on the door extending laterally thereof to one edge, the inlet-pipe at the side of the shell and at the rear of the door, and the jointed connection between the inlet-pipe and the pipe 5 comprising the curved pipe 4 arranged to swivel in its support, and forming with said support a hollow hinge-joint for the free passage of the water therethrough substantially as described.

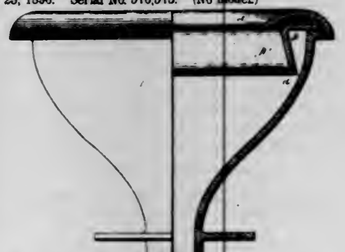
571,243. AIR-CHAMBER. JAMES F. REED, Millvale, Pa. Filed Jan. 23, 1896. Serial No. 576,568. (No model.)



Claim.—1. An air-chamber for water-supply pipes consisting of an exterior shell, having water inlet and outlet openings, the outlet-opening being at right angles to the inlet-opening and an interior wall or partition extending from the front to the back of the exterior shell, said partition being concentric with the outlet-opening and having depending sides extending to near the inlet-opening, substantially as described.

2. An air-chamber for water-supply pipes consisting of an exterior shell having flattened front and back walls, water inlet and outlet openings, the outlet-opening being at right angles to the inlet-opening, and an interior wall or partition extending from the front to the back of the exterior shell said partition being circular in cross-section and coocentric with the outlet-opening and having straight depending sides extending to near the inlet opening substantially as described.

571,244. WATER-CLOSET. JOHN C. REED, Allegheny, Pa. Filed Jan. 23, 1896. Serial No. 576,575. (No model.)



Claim.—1. The combination with the hopper or bowl of a water-closet, and the flushing-rim, attached thereto of a cast-metal, enameled seat, made separate from and secured to said hopper and flushing-rim and projecting inwardly so as to overlap and conceal the upper part of the flushing-rim, substantially as described.

2. A cast-metal enameled water-closet seat, in combination with a hopper having an outwardly-extending flange, and a flushing-rim having a horizontal flange resting on the hopper-flange, the said seat being formed with a thickened undercut base resting on the flange of the flushing-rim and a depending flange embracing the edges of the hopper and flushing-rim flanges, substantially as described.

571,245. NURSING-BOTTLE. WILLIAM L. ROTH, Washington, D. C. Filed Apr. 6, 1896. Serial No. 586,379. (No model.)



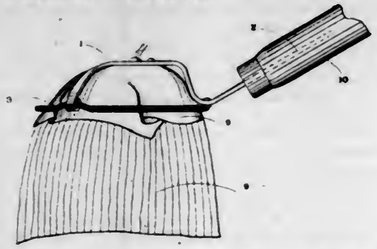
Claim.—1. In a nursing-bottle the combination with a nipple having a constricted neck, of a porous filtering-body located above said neck, substantially as described.

2. In a nursing-bottle the combination with a nipple having a constricted neck, of a porous filtering-body located above the neck, and projecting side knobs below said neck the latter to facilitate adjustment of the nipple in place, substantially as described.

3. In a nursing-bottle the combination with a nipple having a constricted neck, of a conical filtering-body with squared base located above the neck, and diametrically opposite side knobs projecting below said neck to facilitate adjustment, substantially as described.

4. In a nursing-bottle having plain diverging sides, the combination with a nipple having a constricted neck, a porous filtering-body located above the neck, and projecting side knobs arranged below said neck to facilitate adjustment, substantially as described.

571,246. MOP. HUGH ROWLANDS, Ty Cristion, near Valley, England. Filed Apr. 2, 1896. Serial No. 585,966. (No model.) Patented in England Apr. 18, 1894, No. 7,661.

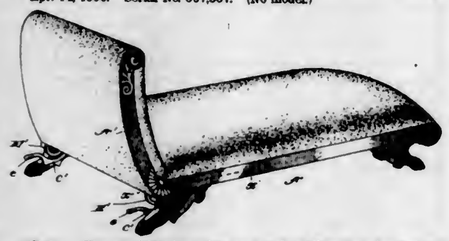


Claim.—1. In combination in a mop, the handle, a holder having a central point of attachment for the mop material, and a peripheral bearing ring or portion extending about the central point and connected therewith, and the mop material secured to the central point and arranged to be borne upon by the peripheral ring, the connection between the ring and central point leaving open spaces for the insertion of the hand, substantially as described.

2. In combination, a holder having a central point of attachment for the mop material and a peripheral bearing portion to engage said material and the mop material consisting of strands stitched together and to a flexible cover 9, both the flexible cover and the thrums being secured to the holder at the central point of attachment and spreading from this central point to be borne upon by the peripheral portion, substantially as described.

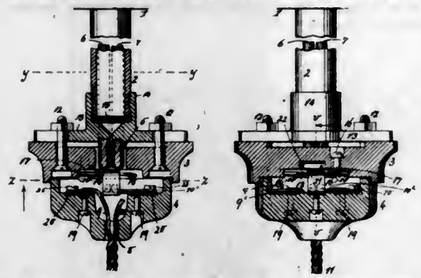
3. In combination with the mopping material and the handle, the holder, which consists of a bifurcated central portion 1, provided with a prong 2 for attachment to the handle and a bélical prong 7 whereby the mopping material is detachably secured, and a peripheral portion 3 attached to the main and bifurcated parts of the central portion 1, substantially as described.

571,247. LOUNGE. EDWARD E. RUETER, Allentown, Pa., assignor to John P. Knobeloch, Philadelphia, Pa. Filed Jan. 31, 1894. Renewed Apr. 14, 1896. Serial No. 587,557. (No model.)



Claim.—The combination with an article of furniture having stationary and adjustable parts or members, of a hinge plate B secured to the framework of the stationary part or member, and provided at one end with an offset portion having a pintle-bearing, and at the other end with a pintle B', a pivot-plate E secured to the adjustable part or member and having a sleeve-bearing a^3 mounted upon said pintle B', a spring arranged upon and secured to said sleeve-bearing and fixed at the other end to a pin on the hinge-plate B, a ratchet-locking bar arranged at one end in the offset portion of said hinge-plate B and provided with a pintle mounted in the pintle-bearing formed in said offset portion, an arm carried by the hinge-plate E for engagement with the teeth of said ratchet-locking bar, and a spring for maintaining the locking-bar in operative relation with said engaging arm, substantially as specified.

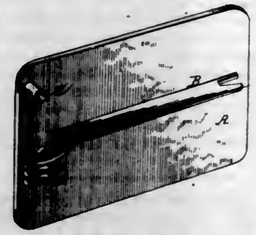
571,248. ELECTRIC-LIGHT ATTACHMENT. JOSEPH H. RUBBY, Nutley, N. J. Filed Apr. 30, 1896. Serial No. 589,760. (No model.)



Claim.—1. An electric-lamp suspending attachment, consisting of an insulator-section 3, provided with a central opening 5 for the passage of the electric conductors, and with hook-shaped contacts 18 to which the said conductors are connected, an insulator-section 4, provided with a central conductor-passage 8, and with hook-shaped contacts 21 to hook into engagement with the hook-shaped contacts of the other insulator-section, and springs 22 acting upon the hook-shaped contacts of one section to press the same against the hook-shaped contacts of the other section, substantially as described.

2. An electric-lamp suspending attachment, consisting of an upper insulator-section 3 having a conductor-passage 5 and hook-shaped contacts 18, a cross-bar 13 arranged above said insulator-section and provided with an upwardly-extending screw-threaded socket 14, screws for detachably connecting the upper insulator-section with said cross-bar, and a lower insulator-section provided with a conductor-passage 8, and with hook-shaped contacts 21 adapted to hook into engagement with the hook-shaped contacts of the upper section, substantially as described.

571,249. LIBRARY-SHELVING. GEORGE STIKEMAN, Brooklyn, N. Y. Filed July 16, 1896. Serial No. 599,431. (No model.)



Claim.—1. A bracket for library-shelving consisting of a vertical plate or body part, a lug adapted to engage the inner surface of a grooved or channeled vertical standard a tooth adapted to engage the inturned edge of said standard and an immovable laterally-extending projection adapted to engage the outer surface of the standard substantially as described.

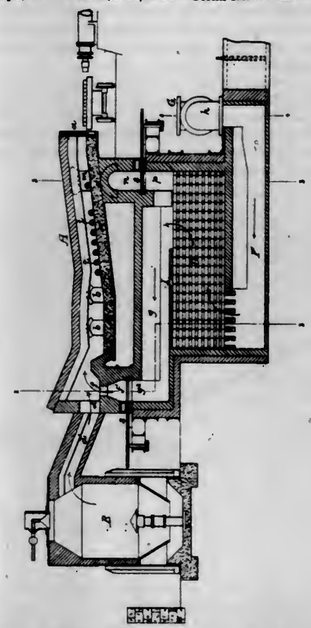
2. A bracket for library-shelving consisting of a vertical plate, a laterally-extending stationary lug on said plate adapted to bear on the inner surface of a channel or groove in a vertical standard and a lateral ledge or flange located below said lug and adapted to support a shelf and to bear against the outer surface of the standard and terminating in a hook adapted to embrace the outer side of the standard substantially as described.

3. A bracket for library-shelving having a stationary lug adapted to bear against the inner surface of a groove or channel in a vertical support, a lateral ledge or flange adapted to support a shelf, and a tooth or teeth adapted to engage with teeth on the channel-bar substantially as described.

4. A bracket for library-shelving having a lateral flange or ledge and a lateral hook, in combination with a shelf having a kerf in its end to receive said flange or ledge and a pin to engage said hook substantially as described.

5. In library-shelving the combination with a vertical grooved standard having teeth or serrations of a bracket consisting of a vertical plate or body part having a lug adapted to enter the groove of said standard, a lateral shelf-supporting ledge or flange, located below said lug and terminating in a hook adapted to embrace the outer side of the standard and a tooth or teeth located on the side of the bracket and adapted to engage the teeth on the vertical standard substantially as described.

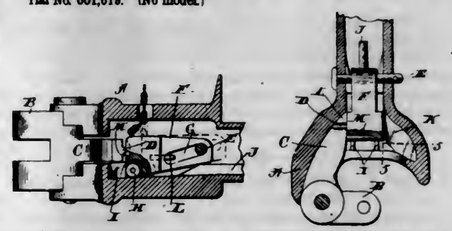
571,250. METALLURGICAL FURNACE. BENJAMIN TALBOT, Pencoyd, Pa. Filed Apr. 14, 1896. Serial No. 587,453. (No model.)



Claim.—1. The combination of a regenerative furnace having inlets and outlets so disposed that the heating-gases always pass through it in the same direction, a gas-generator in communication with the inlet end of the furnace, a pair of regenerators, a pair of valved regenerator-outlets, in communication with the inlet end of the furnace, lateral outlets at the discharge end of the furnace, a transverse chamber beneath the end of the furnace and in communication with said lateral outlets, and valved necks between said chamber and the regenerators, substantially as specified.

2. A metallurgical furnace having a bed or bottom composed partly of basic or neutral material and partly of acid material, the basic or neutral material being disposed at and near that end of the furnace where the heating-gases enter the same, substantially as specified.

571,251. CAR-COUPLING. JOHN C. TAYLOR, Findlay, Ohio, assignor of one-half to Enoch Ross, same place. Filed Aug. 4, 1896. Serial No. 601,619. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head, a horizontally-swinging jaw, a locking-block situated wholly within the draw-head, the forward end of the block having a reciprocating movement on the bottom of the draw-head, the rear end of the block being cut away and provided with an inclined slot extending horizontally therethrough, a pin extending transversely through the draw-head at a point above the bottom of the draw-head to permit the rear end of the locking-block to move downward as it moves forward within the said draw-head, and an operating-means extending through the draw-head thereinto and operatively connected with the said block for moving it backward within the draw-head, substantially as shown and described.

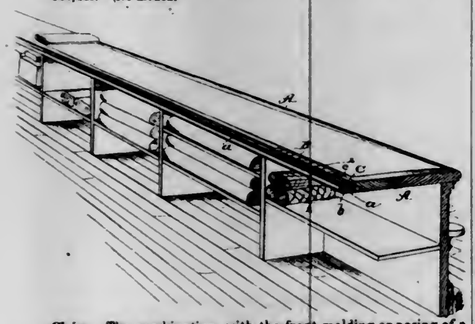
2. The combination with the draw-head, the pivoted jaw, cleat J situated in the rear portion of the draw-head, abutment I at the forward end of the draw-head and the detent slidable longitudinally in

the draw-head and adapted to move upon the cleat and abut against the abutment, substantially as shown and described.

3. The combination of the draw-head, the pivoted jaw having its tail portion provided with flange D, the sliding detent provided with a depression upon its forward end, where it is engaged by flange D as described, substantially as set forth.

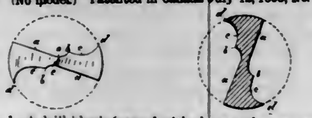
4. The combination of the draw-head, the pivoted jaw, the pivot-pin, the sliding detent having the inclined slot whereby it is adapted to move back and forth upon the pin, the friction-roller carried by the forward end of the detent, and the side flanges or guides K and L upon the draw-head for holding the detent from lateral displacement, substantially as shown and described.

571,252. ATTACHMENT FOR SALES-COUNTERS. HUGH WALKINSHAW and JAMES KAPP, Lebanon, Mo. Filed Oct. 30, 1895. Serial No. 567,443. (No model.)



Claim.—The combination, with the front molding or nosing of a store-counter, having a lengthwise dovetail groove in its upper side, and a stop-pin located at the end of said groove, of the graduated yardstick having a lengthwise dovetail rib that fits loosely in said groove, whereby the yardstick is adapted to slide freely parallel to the edge of the counter, as and for the purpose specified.

571,253. DRILLING OR BORING TOOL. BRUNO WERKELMANN and THEODOR WERKELMANN, Berlin, Germany. Filed May 7, 1895. Serial No. 548,444. (No model.) Patented in Canada July 12, 1895, No. 49,475.



Claim.—1. A drill-blank formed with elongated cross-section and having two cutting edges on each side of its axis, formed respectively of the short curve *b e*, and the long curve *b d*, separated from each other by the sharp longitudinal edge *b* as and for the purpose explained.

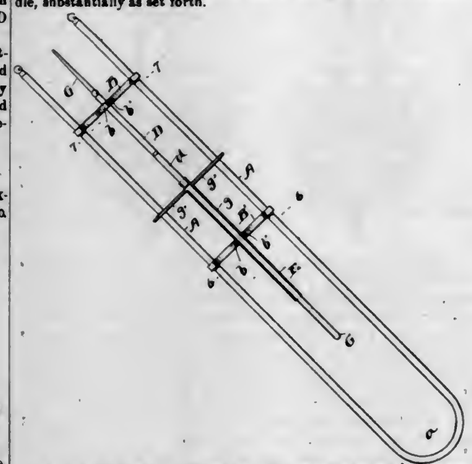
2. A drill formed of the blank having an elongated cross-section, with two curved cutting edges on opposite sides of its axis and of its longest diameter, and each formed of the short curve *b e*, and the long curve *b d*, separated by the sharp longitudinal rib *b*; said blank being ground upon its end in two planes intersecting at its axis and each grinding-plane forming two cutting edges in different lines so as to produce a fore borer and an after borer as explained.

571,254. BOOK-HOLDER. JAMES T. WHITMORE, Cleveland, Ohio. Filed Apr. 6, 1896. Serial No. 586,326. (No model.)

Claim.—1. A book-holder comprising a frame provided with bearings for the back of a book, and terminating, at its lower end, in a handle, and provided, furthermore, with a spring-hook or spring-jaw at the forward side and at or near its lower end, substantially as and for the purpose set forth.

2. A book-holder comprising two parallel members A A forming a handle at the lower end of the device, two cross-bars B B' connecting together, and rigidly secured to, said parallel members and arranged a suitable distance apart above the handle and provided, on their forward sides, with bearings for the back of the book, and a suitably-formed spring-hook or spring-jaw at the forward side of the device above the handle, substantially as and for the purpose set forth.

3. A book-holder comprising two parallel members A A forming a handle at the lower end of the device, two cross-bars B B' connecting together and rigidly secured to said parallel members and arranged a suitable distance apart above the handle and provided, on their forward sides and centrally, with two forwardly-converging bearings *b' b'* for the back of the book, and a suitably-formed spring-hook or spring-jaw at the forward side of the device above the handle, substantially as set forth.

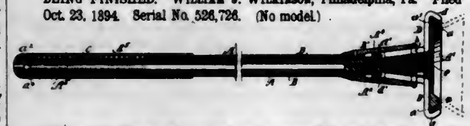


4. A book-holder consisting of a wire bent to form the two parallel members A A and the handle *a*; the cross-bars B B' connecting together, and rigidly secured to, said parallel members, and provided, upon their forward sides, with bearings for the back of the book, and another wire extending centrally through said cross-bars and bent to form the spring-hook or spring-jaw *d*, all arranged and operating substantially as shown, for the purpose specified.

5. A book-holder comprising a frame provided with bearings for the back of a book, and terminating, at its lower end, in a handle, and provided, furthermore, with a jaw at or near its lower end and forward side, a cylindrical tube rigid with and arranged longitudinally of said frame, and the oscillating leaf-holder comprising a member having bearing in, and movable endwise of, said tube, substantially as and for the purpose set forth.

6. A book-holder comprising a cylindrical stationary tube arranged longitudinally of the device, an oscillating wire journaled in and movable endwise of said tube, and bent at a point below said tube to form the spring-jaw *g*, and the arms *g' g'* projecting laterally from opposite sides, respectively, of said jaw, substantially as and for the purpose set forth.

571,255. CLUTCH FOR HOLDING GLASS ARTICLES WHILE BEING FINISHED. WILLIAM J. WILKINSON, Philadelphia, Pa. Filed Oct. 23, 1894. Serial No. 526,726. (No model.)



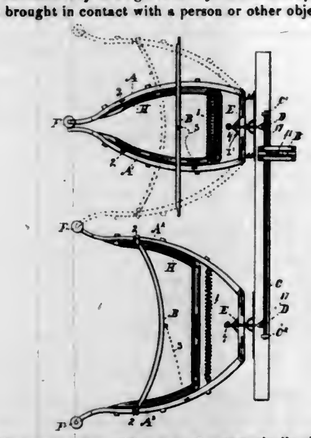
Claim.—1. The combination in a clutch for holding glass articles to be finished, of the inner tube, a plate secured to the stem carried by said tube, segmental clutch-levers pivoted to said stem, a sleeve, a spider mounted on said sleeve both the sleeve and spider engaging the clutch-levers and a spring acting to force the sleeve upon the clutch-levers, substantially as described.

2. The combination of the inner tube A, a flanged plate A' levers having jaws forming an annular clutch, a tapered sleeve, a spider mounted on said sleeve and having arms passing between the clutch-levers, and a spring acting to force the sleeve upon the clutch-levers, substantially as described.

571,256. SAFETY-FENDER FOR STREET-CARS. JOHN W. ANGELL, Owosso, Mich., assignor of one-half to David M. Estey, same place. Filed July 25, 1895. Serial No. 557,125. (No model.)

Claim.—1. In a safety-fender, the combination with a car, of a pair or more of jaws pivotally connected with the car to swing vertically to a folded position and movable, when unfolded, approximately in a horizontal plane to clasp or retain the object or person brought in contact therewith.

2. The combination with a car, of a pair or more of jaws hinged or pivoted to swing horizontally and to fold vertically in front of the car-platform, said jaws swinging, when closing, approximately in a horizontal plane, means for folding the jaws vertically, and mechanism for automatically closing the said jaws when they are unfolded and are brought in contact with a person or other object.



3. The combination with a car, of automatically closing jaws, a hanger to which said jaws are attached, and suitable mechanism for folding the said jaws into substantially a perpendicular position.

4. The combination with a car, of automatically-closing jaws, a hanger to which said jaws are pivoted to swing vertically, mechanism for folding the jaws into substantially a perpendicular position, a trip mechanism for unlocking the jaws when they stand unfolded and open, and a spring for automatically closing the jaws when unlocked by the trip mechanism, substantially as described.

5. In combination with a car, a pair or more of jaws held expanded by means of a suitable lock, a trip adapted by contact to unlock said jaws, a hanger to which said jaws are attached, and lever mechanism for folding said jaws when not in use into a compact position.

6. In a car-fender, the combination with a car, of a pair or more of jaws, a pneumatic or other cushion for said jaws, a lock for retaining said jaws open, a trip for unlocking said jaws, a spring or springs for automatically closing said jaws, and means for raising and lowering said jaws at will, substantially as described.

7. In combination with a pair of jaws attached to a street-car or other vehicle, a pivoted hanger to which said jaws are pivotally connected to swing approximately horizontal, means for retaining the said jaws in their opened position, a trip for releasing the said jaws from their opened position, springs adapted automatically to close said jaws, buffers at the front end of said jaws, and means for rocking the hanger to swing the jaws vertically, substantially as described.

8. The combination with a car, of two oppositely-arranged jaws pivotally mounted to swing approximately horizontal and to fold upward to an approximately perpendicular position, each jaw consisting of a collapsible framework which collapses when it is raised vertically, substantially as described.

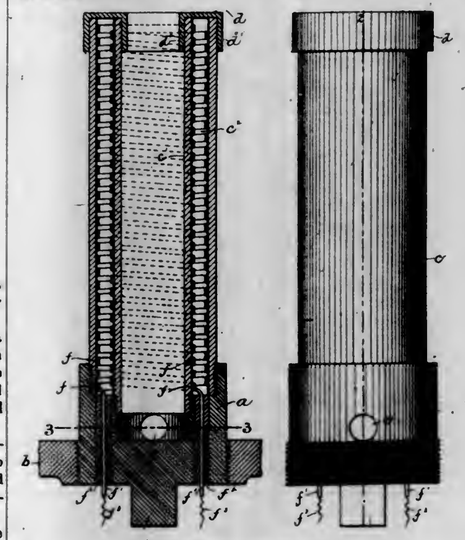
9. The combination with a car, of automatically-closing jaws, a hanger to which the said jaws are attached, and suitable mechanism for folding said jaws into a compact position so as not to interfere with the coupling of the cars.

10. In combination with a car, of a pair of jaws, each jaw composed of a folding framework pivotally connected and adapted to fold together when said jaws are raised, a hanger to which said jaws are attached, lever mechanism for lifting said jaws, and said jaws adapted to fold when lifted, substantially as described.

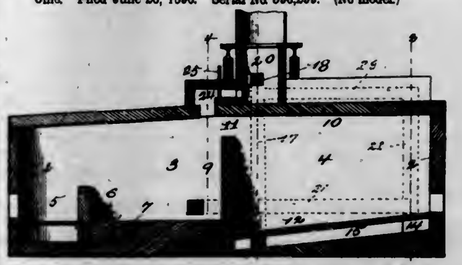
571,257. ELECTRIC HEATING APPARATUS. ARTHUR E. APPLEYARD, Natick, Mass., assignor, by mesne assignments, to the National Electric Heating Company, Manchester, N. H. Filed Jan. 30, 1896. Serial No. 577,380. (No model.)

Claim.—1. An electric heating apparatus comprising a holder or base formed as a plug and provided with means whereby it may be detachably inserted in an orifice in a casing or support, two concentric tubes secured to the inner portion of said holder and separated from each other by an annular space, the outer tube having a diameter less than that of the plug an electrical resistance in said space, liquid-passages at both ends of the inner tube to the space outside of the outer tube and insulated conductors connected with the resistance and extending through the holder, the said tubes, resistance, and conductors being supported entirely by the holder, which detachably secures said parts to the casing or support.

2. An electric heating apparatus comprising a screw-threaded holder or base formed as a screw-threaded plug adapted to be inserted in an orifice in a water-receptacle, two concentric tubes detachably secured to the inner portion of the holder and separated by an annular space, the inner tube being open at the end away from the holder, and a port or passage through the walls of the device connecting the space in the inner tube with the space outside of the outer tube whereby water in the boiler is permitted to circulate through the inner tube, an electrical resistance located in said space, and insulated conductors connected with said resistance and extending through the holder.



571,258. REHEATING-FURNACE. WILLIAM H. BAILEY, Piqua, Ohio. Filed June 20, 1896. Serial No. 596,299. (No model.)



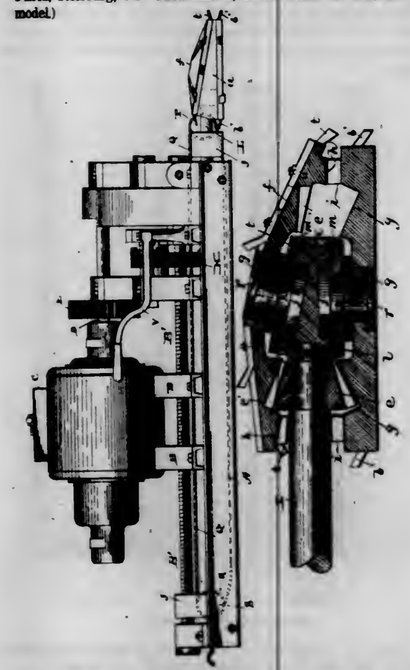
Claim.—1. In a reheating-furnace, the combination with fireplace and the primary heating-chamber connected with the smoke-stack by a damper-controlled flue, of the reheating-chamber connected with said chamber, flues leading from said reheating-chamber beneath the floor of the same, the vertical flues passing from said floor-flue through the side walls to the crown of the furnace, and the flues passing from said side flues through said crown then to the smoke-stack, substantially as specified.

2. In a reheating-furnace, the combination with fireplace and the primary heating-chamber, connected with the smoke-stack by a damper-controlled flue, of the reheating-chamber connected with said primary chamber, the flues leading from said primary chamber through the side walls of the reheating-chamber, and connecting with the vertical flues in said side walls, and the longitudinal flues connecting with said vertical flues and leading to the smoke-stack, substantially as specified.

3. In a reheating-furnace, the combination with the fireplace and the primary heating-chamber connected with the smoke stack by a damper-controlled flue, of a reheating-chamber communicating with the primary chamber, a series of flues situated beneath the floor of the reheating-chamber and connected therewith by suitable openings, vertical flues leading from the flues beneath the floor of the reheating chamber through the side walls of said reheating-chamber and connecting with the smoke-stack, and longitudinal flues leading from

the primary chamber through the side walls of the reheating-chamber and connecting with vertical flues which connect with longitudinal flues leading to the smoke-stack, substantially as specified.

571,259. MINING-MACHINE. JOSEPH BOLAND and GEORGE W. FRITZ, Pittsburg, Pa. Filed Mar. 6, 1895. Serial No. 540,741. (No model.)



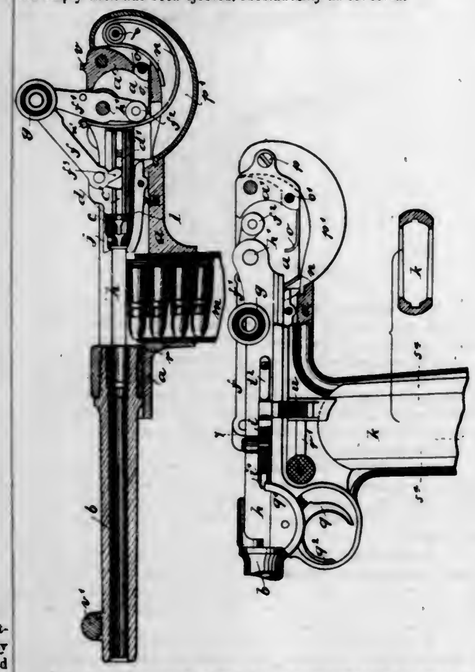
Claim.—1. In a mining-machine, the supporting-frame, the cutter-carriage, forwardly-extending arms having their inner ends firmly connected to the forward end of the carriage, a cutter socket or head firmly connected between the said arms beyond the carriage-frame, the cutter-driving shaft having its outer end journaled in the inner portion only of said head or socket, the socket having recesses in its top and bottom at points beyond the journal of said shaft for the purpose described, headed pins with their heads in said recesses, a cap or washer engaging the said pin-heads and secured to the outer sides of the socket, and the cutter-wheels keyed to the shanks of the pins, substantially as described.

2. In a mining-machine, the combination of the two cutting-disks, a driving-shaft meshing with one of said disks, a socket-piece provided with a cavity on its upper surface, said upper cutting-disk being provided with a journal-pin having an enlarged head fitting in said cavity, and means for securing the journal-pin in its socket, substantially as described.

3. In a mining-machine, the combination with a driving-shaft of upper and lower disks, a socket-piece, brackets supporting the socket-piece, the driving-shaft having its end journaled in one side of the socket-piece, said socket-piece having an enlarged cavity, a journal-pin secured to the upper disk, having an enlarged head fitting in said cavity, and a tap for holding said enlarged portion in the cavity, substantially as described.

571,260. RECOIL MAGAZINE-PISTOL. HUGO BORCHARDT, Berlin, Germany. Filed Oct. 21, 1893. Serial No. 488,759. (No model.) Patented in Germany Sept. 9, 1893, No. 75,837; in Austria-Hungary Sept. 11, 1893, No. 49,411 and No. 3,626; in Switzerland Sept. 16, 1893, No. 7,296; in Belgium Sept. 18, 1893, No. 105,460; in Norway Sept. 19, 1893, No. 3,324; in France Sept. 21, 1893, No. 232,975; in Italy Sept. 25, 1893, No. 285; in Spain Sept. 29, 1893, No. 15,014, and in England Oct. 6, 1893, No. 18,774.

Claim.—1. An automatic repeating firearm, comprising, a frame provided with a grip at its front part and a curved thrust-piece at its rear end, an automatically-operating cartridge-magazine arranged in the said grip under the breech, and a trigger mechanism, a sear, and an empty-shell ejector, all carried by the said frame; in combination with a barrel provided with slides, a breech-bolt slidable in the said slides, a firing-pin slidable in the said breech-bolt, and a toggle-joint pivoted to the said breech-bolt and to the said slides and adapted to strike the said thrust-piece thereby opening the breech, the said slides together with all the said elements carried by them being slidable in the said frame; and a spring connected to the toggle-joint and to the frame and operating to push forward the said slides and all the elements carried by them together with a cartridge after the said parts have been forced rearwardly by the recoil on firing a cartridge and the empty shell has been ejected, substantially as set forth.



2. In a recoil magazine-pistol, the combination with the supporting frame having slideways, of the sliding barrel having slides working in said ways, the sliding bolt, the toggle-joint $f f'$, having its rear link pivoted to said slides and its front link connected to said bolt, and the cam faced thrust-piece a' fixed in the frame and engaged by the rear toggle-link during the recoil to double up the toggle and open the breech.

3. In a recoil magazine-pistol, the combination with the supporting-frame a having slideways, of the sliding barrel b having slides k k working in said ways, the sliding bolt c, the toggle-joint $f f'$ with its front link jointed to the bolt and its rear link pivoted on a transverse spindle k', the said spindle connected to said slides k and sliding in slots k^3 in the lock-case, and the cam-faced thrust-piece a' engaged by the rear toggle-link to double up the toggle during the recoil movement.

4. In a recoil magazine-pistol, the combination with the supporting-frame and sliding barrel and breech-bolt, of a toggle-joint $f f'$ one link of which is jointed to the breech-bolt and the other link turns on an axis and is connected to the barrel and frame so as to receive the recoil of the barrel, and a spring n seated in said frame and connected to the toggle-joint to be compressed by the doubling up of the latter during the recoil and exerting its tension against the toggle-joint for straightening the latter and thereby restoring the barrel and closing the breech.

5. In a recoil magazine-pistol, the combination with the supporting-frame and sliding barrel and breech-bolt, of a toggle-joint $f f'$ the front link of which is jointed to the breech-bolt and the rear link turns on a spindle connected to the barrel and has a rearward arm bearing a roller, a cam-shaped thrust-piece a' fixed in the lock-case and which is engaged by said roller to double up the toggle-joint upon the recoil movement, and a buffer-spring o which engages said roller toward the end of said movement and arrests the moving parts.

6. In a recoil magazine-pistol, the combination with the supporting-frame and sliding barrel, breech-bolt and firing-pin, the latter having a stop d', of a toggle-joint $f f'$ connected to the barrel and frame to be doubled up by the recoil movement, with its front link f jointed to the bolt to draw it back during said movement and formed with an arm f^3 engaging said stop d' for cocking the firing-pin during the same movement, the sear i engaging said stop to hold the firing-pin cocked during the forward or reloading movement, and a trigger q in mechanical connection with said sear.

7. In a recoil magazine-pistol, the combination with a supporting-frame, the sliding barrel, the breech-bolt and the firing-pin, the latter having a stop d', of mechanism acting during the recoil movement to draw back the breech-bolt and open the breech and to draw back the firing-pin within the breech-bolt, a sear i connected to the barrel so as to slide therewith and engaging said stop d' to hold the firing-pin cocked, and a trigger q mounted on the stationary frame and having a mechanical connection with said sear when the pistol is loaded and ready for firing.

8. In a recoil magazine-pistol, the combination with the supporting-frame, the sliding barrel, the breech-bolt and the firing-pin, the latter having a stop d', of mechanism acting during the recoil movement to draw back the breech-bolt and to draw back the firing-pin within the breech-bolt, a sear i connected to the barrel and engaging said stop d' to hold the firing-pin cocked, a trigger q mounted on the stationary frame and having a trigger-arm q' formed with an inclined face, and a spring-pin i' mounted in the sear and engaged by said inclined face on the trigger-arm when the pistol is loaded and ready for firing.

9. In a recoil magazine-pistol, the combination with the supporting-frame and the sliding barrel, breech-bolt and firing-pin and the reloading mechanism operated by the recoil, of a sear i for engaging the firing pin and holding it cocked, connected to said barrel and movable therewith during the recoil movement, and a trigger q having a trigger-arm q' pivotally mounted on the stationary frame and arranged in position to engage the sear when the pistol is loaded.

10. In a recoil magazine-pistol, the combination with the supporting-frame and the sliding barrel, breech-bolt and firing-pin, the reloading mechanism operated by the recoil, and the sear i for holding the firing-pin cocked, of a safety-slide u mounted on the side of the frame and movable into or out of engagement with said sear and adapted when in engagement therewith to block its releasing movement.

11. In a recoil magazine-pistol, the combination with the supporting-frame and the sliding barrel having slides sliding in said frame, the breech-bolt, firing-pin and reloading mechanism operated by the recoil, and the sear for holding the firing-pin cocked, of a safety-slide u mounted on the side of the frame and movable into or out of engagement with a shoulder on said barrel-slide and with said sear, whereby when moved into engagement with said parts it renders the trigger-lever and barrel as well as their connected parts, immovable.

12. In recoil-operated firearms, a longitudinally-movable barrel actuated by the recoil, means for returning said barrel to position, a bolt movable toward and from said barrel, and a frame movably carrying said barrel, in combination with a link pivoted to said bolt at one end, a second link connected at one end to and operating said first link, fulcrumed to said barrel and projecting at its other end beyond said fulcrum and operated by its projecting end to move said bolt.

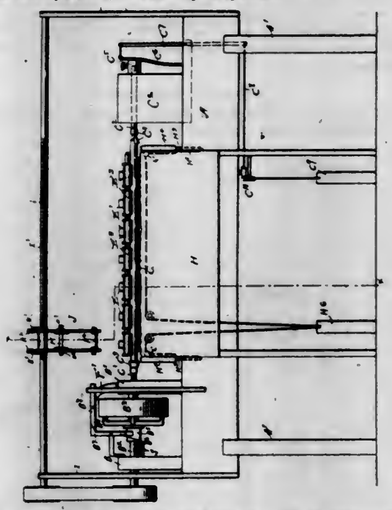
571,261. HOSE-MACHINE. ROBERT T. BURCHELL, Trenton, N. J. Filed Apr. 7, 1896. Serial No. 586,557. (No model.)

Claim.—1. In a hose-machine, the combination with the removable mandrel, and means for supporting and rotating the same, of a shaft adjacent to the mandrel, a series of adjacent spring-arms carried by said shaft and having at their free ends bearings which are adjacent to said mandrel, and a short roller journaled in the bearings of each of said arms, together with means whereby said arms with their rollers may be moved toward and away from the mandrel, substantially as specified.

2. In a hose-machine, the combination of the mandrel, and mechanism for rotating the same, a counterweighted shaft journaled above and to the rear of said mandrel, the series of collars adjustably secured thereto, the series of spring-arms carried by said collars, and the series of rollers journaled at the free end portions of said arms, adjacent to the said mandrel, substantially as specified.

3. In a hose-machine, the short driving-shaft having a center bearing at one end, and having a cap secured over said center, said cap having an angular tapered socket, of a mandrel having a squared end adapted to fit the said socket, a center bearing at its opposite end, a short centering-shaft for said bearing, a half-funnel-shaped cup on said shaft adapted to receive the mandrel end, a spring for holding said centering-shaft in contact with the mandrel, and means for withdrawing said centering-shaft out of contact with the mandrel, substantially as specified.

4. In a hose-machine, the combination of the mandrel, its driving and centering shaft, the pulley on the driving-shaft, the clutch mechanism, the compound shifting lever, the counterweighted shaft, the series of spring-roller-carrying arms adjustably secured to said shaft, and the lever also secured to said shaft, and adapted, when depressed, to engage and actuate the shifting lever to throw the clutch mechanism into operation, substantially as specified.



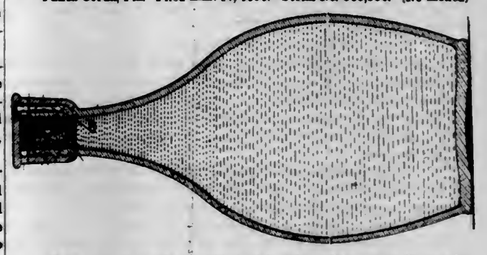
5. In a hose-machine, the combination with the removable mandrel, the rock-shaft journaled adjacent to said mandrel, a series of spring-arms carried by said shaft and terminating at their free ends in bearings, forks adjacent to the mandrel, and a short roller journaled in each of the said forks, the series of rollers so journaled being arranged to break joints with each other, substantially as specified.

6. In a hose-machine, the combination with the mandrel, of the feed-table having the parallel rollers H', H', the roller H^2 above one of the rollers H', the vertically-movable slides in which the roller H^2 is journaled, a treadle, and connections between the treadle and the said slides whereby they may be raised, substantially as specified.

7. In a hose-machine, the combination with the removable mandrel, the driving-shaft therefor, the endwise-movable treadle-operated centering-shaft, the feed-rollers for said mandrel, the counterweighted rock-shaft adjacent to the mandrel and behind the same, the series of spring-arms carried by each shaft, and having each at its free end portion, adjacent to the mandrel, a loosely-journaled short roller, the cutter-carrying arms carried by the same shaft as the spring-arms and the cutters, substantially as specified.

8. In a hose-machine, the combination with a revolving mandrel, of a shaft journaled parallel therewith and formed with a helical thread, the semicylindrical traveler engaging said shaft and supported and traveling thereon, the hanger having lateral arms whose upper ends are secured to the top portion of the said traveler a roll journaled in said hanger, and means for putting the axis of said roll under more or less friction, substantially as specified.

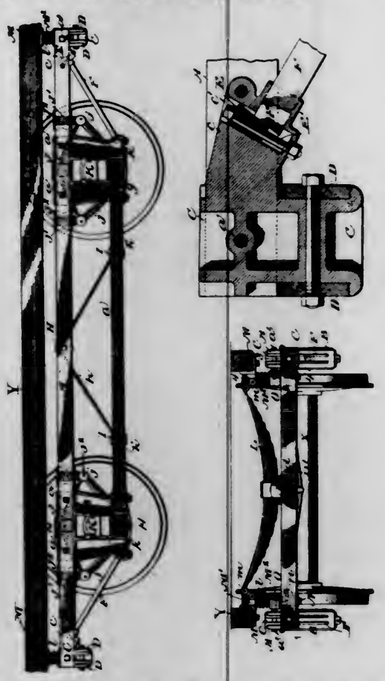
571,262. BOTTLE-SEALING DEVICE. ANDREW M. COWART, Punta Gorda, Fla. Filed Mar. 17, 1896. Serial No. 583,536. (No model.)



Claim.—1. A bottle, provided with a frangible cap to fit over its neck, keyways in the cap and neck, an aperture being formed in the cap in line with its keyway and a non-removable key adapted to be inserted through said aperture into the ways to lock the cap against removal; the key being of a length to cause its upper end to lie within the aperture and thereby permit of the insertion of a non-removable cement thereover, substantially as set forth.

2. The combination with a bottle having an externally-threaded and longitudinally-grooved neck, and a cork closing the neck, of an internally-threaded cap screwed on the neck and having an internal groove or keyway registering with that in the neck and an aperture in its top leading thereto; the top of the cap being connected to the body by frangible legs, and a key inserted into the keyways through said aperture the aperture being permanently closed above the key, substantially as set forth.

571,263. CAR-TRUCK. THOMAS CRAWFORD, Green Island, N. Y. Filed May 8, 1896. Serial No. 590,719. (No model.)



Claim.—1. The combination of the axle-boxes, the vibrating or swinging links connected thereto to opposite sides thereof at their lower ends, the spring supported on and connected to the upper ends of said levers and the truck frame supported on the spring, substantially as described.

2. The combination of the truck-frame, the pedestals attached thereto, the semielliptical spring lying within the pedestal above the journal-box, and the swinging links connecting the ends of said spring to the journal-box, substantially as described.

3. The combination of the truck-frame, the pedestals attached thereto, the spring lying within the pedestal above the journal box, and the swinging links connecting the ends of said spring to the journal box, with the coiled springs J′ for reinforcing the elliptical spring substantially as described.

4. The combination of the truck-frame, the pedestals attached thereto, the semielliptical spring lying within the pedestal above the journal-box, the swinging links connecting the ends of said spring to the journal-box, with the coiled springs J′ for reinforcing the elliptical spring with the castings J^3 attached to the truck-frame above links *j*, *j*, and the springs J′ for reinforcing the elliptical spring substantially as described.

5. The combination of the journal-box, the links *j* connected thereto, having recesses *j′* in their free ends; with the spring J having its ends engaged in said recesses *j′* substantially as described.

6. In a truck, the combination of the pedestals, the top side bars A, A, connected thereto, the casting H attached to said bars intermediate the pedestals, the lower side bars G, G, attached to the pedestals, the castings I, I, attached to bars G, and the rod *h*, connected to castings H and G, substantially as described.

7. The combination of the truck-frame, the transverse inverted semielliptic bolster-springs L on the ends thereof, and the swinging-link hangers pivotally connected to the ends of said springs and to castings on the car-body sills, all substantially as described.

8. The combination of the truck-frame, the car-body, and bolster-springs, and the castings on the car-body to which the bolster-spring is connected; with the castings O, attached to the ends of the frame, the king-bolts N, loosely connecting castings O and the castings to which the bolster is connected and the springs *n* on bolts N, substantially as described.

9. The combination of the truck-frame, the bolster-springs L on the ends thereof, and the hangers connecting the ends of said spring to casting P on the car-body sills, and the castings O on the truck-frame below castings P, with the king-bolts N, connecting castings O and P, and the springs on said bolts, all substantially as described

10. In a truck the combination with the end braces, of the adjusting-wedge blocks, substantially as described, for tightening the braces, substantially as described.

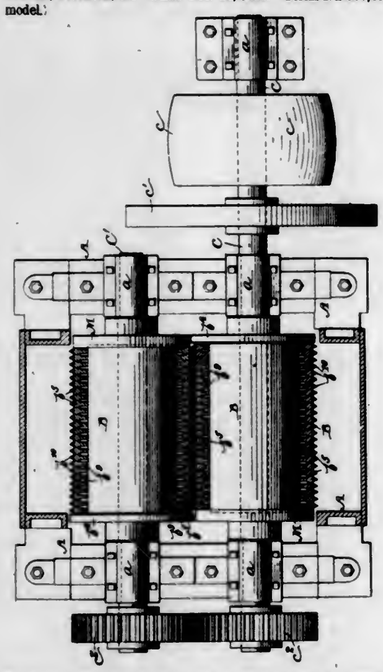
11. In a truck the combination of the pedestals, the top bars and end castings with the inclined braces as F, and the adjusting-wedge as E, all substantially as described.

12. In a truck the combination of the side bars, and pedestals, the corner castings having slots *c′*, adjusting-wedges E′ in slots *c′* with the end braces F, having wedge head-block F′ entering slot *c* and engaging wedge E, for the purpose and substantially as described.

13. The combination of the truck-frame, the bolster-spring L, the castings M attached to the car-sills, having depending portions M^3, the hangers connecting the ends of the bolster-spring to said castings, and the springs I surrounding parts *m* of the castings, for the purpose and substantially as described.

14. The combination of the truck-frame, the bolster-spring L, the castings M attached to the car-sills, having depending portions M^3, the hangers connecting the ends of the bolster-spring to said castings, and the springs I surrounding parts *m* of the castings, with the casting O, the king-bolts N, and springs *n*, all for the purpose and substantially as described.

571,264. COAL CRUSHING OR BREAKING ROLLS. WILLARD B. CULVER, Scranton, Pa. Filed Feb. 24, 1896. Serial No. 580,435. (No model.)

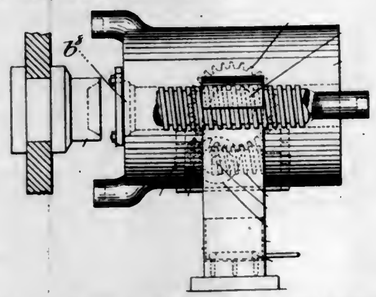


Claim.—1. In a crusher or breaker, the combination with a suitable frame, of a plurality of crushing-rolls provided with steel-toothed peripheries formed of separated rings on which the teeth are cast, and mounted upon the said frame, and means for adjusting said rolls longitudinally independently of each other so as to have the teeth stand exactly central of the spaces in which they move, substantially as described.

2. A coal crusher or breaker, comprising a frame, a plurality of crushing-rollers mounted in the same, and each comprising a hollow revoluble cylinder, a series of removable steel rings mounted on said cylinder and having integral toothed peripheries, and separated, ground projections on the sides of said rings, whereby they are firmly seated one against the other, and means for holding the rings assembled, substantially as described.

3. In a coal-breaker, a pair of crushing-rollers mounted in a frame provided with means for adjusting the rollers longitudinally independently of one another, and each of said rollers being formed of a hollow cylinder provided with a fixed flange at one end and a movable follower at the other, and said cylinder having a series of separated narrow, manganese steel breaking-rings slipped on its periphery and bolted in position; said rings having small integral teeth cast on them, and the rings being arranged so that the teeth of one roller will enter spaces between the teeth of the other roller, and each of the rings also being formed with side surfaces near its periphery on one of which side surfaces small, spaced, contacting, ground projections are formed, and, the rings having a dishing form inward from said projections, all in such manner that a light, yet a firm and durable structure for breaking coal in small uniform sizes is produced, and the rollers can be adjusted so as to accurately work with one another, as set forth.

571,265. APPARATUS FOR TREATING HEATED METALS UNDER PRESSURE. GEORGE A. DICK, London, England. Filed Dec. 20, 1894. Serial No. 532,486. (No model.)



Claim.—1. In apparatus for treating heated metals under pressure, the combination of a pressure chamber or container consisting of a tube or lining of suitable metal open at both ends and surrounded by a series of concentric spaced tubes open at both ends and having interposed between them heat insulating or non-conducting material, means for preventing the escape of such material, a die and a ram or plunger for pressing the heated metal through the die, substantially as herein shown and described and for the purpose stated.

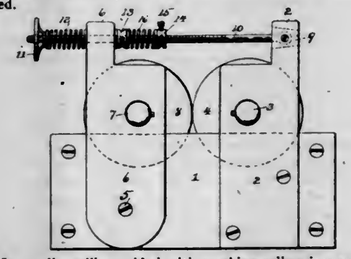
2. In apparatus for treating heated metals under pressure, a pressure-chamber or container consisting of a tube or lining of suitable metal open at both ends and surrounded by a series of concentric spaced tubes open at both ends and having interposed between them, heat-insulating or non conducting material and provided with stop-rings at each end for preventing the escape of such material, substantially as herein shown and described, and for the purpose stated.

3. In apparatus for treating metals under pressure a pressure-chamber or container consisting of a tube or lining of suitable metal open at both ends and surrounded by a series of concentric spaced tubes open at both ends and having interposed between them, heat-insulating or non-conducting material, suitable means at each end for preventing the escape of such material, the said lining and tubes being of taper form so that they will not become separated by the pressure exercised upon the heated metal within the lining, substantially as herein shown and described and for the purpose stated.

4. In apparatus for treating heated metals under pressure, a pressure-chamber or container consisting of an exteriorly-tapered tube or lining of suitable metal open at both ends and closely embraced by a correspondingly interiorly-tapered casing open at both ends, the lining and the tapered casing being surrounded by a series of concentric spaced tubes with heat-insulating or non-conducting material interposed between them, the parts being formed to interlock in one direction so that by reversing the direction of the pressure, the lining may be forced out of the tapered casing without disturbing the heat-insulating or non-conducting material, substantially as herein shown and described.

571,266. ROLLER-MILL ADJUSTMENT. MICHAEL FAVROW, St. Cloud, Minn. Filed Jan. 15, 1896. Serial No. 575,600. (No model.)

Claim.—1. A roller-mill provided with a pair of crushing-rollers, one of the pair journaled in a fixed bracket and the other journaled in a movable bracket, adjusting-rods secured to said fixed brackets, stop-nuts carried by said rods between said brackets and against the sides of the movable bracket, springs carried by said rods and resting against said nuts and held in contact therewith by jam-nuts and means for securing said jam-nuts to said rods, substantially as shown and described.



2. In a roller-mill provided with crushing-rollers journaled in a fixed and in a movable bracket, the combination with said rollers, of threaded adjusting rods secured in said brackets and provided with stop-nuts resting in contact with the inner side of said movable bracket, a coiled spring resting against said nuts and held in position therewith by jam-nuts and said jam-nuts held in a fixed position on said rods by set-screws in said jam-nuts, substantially as shown and described.

3. In a roller-mill, the combination with a roller journaled at each of its ends in fixed brackets, and a roller journaled at each of its ends in brackets pivoted at their lower ends, of adjusting-rods pivoted at one of their ends to said fixed brackets, their opposite ends threaded and passing loosely through apertures in said pivoted brackets and having a coiled spring on the ends thereof resting against said brackets and held in an adjustable position thereon with a stop-nut, stop-nuts on said rods on the inner side of said brackets and in contact therewith, a coiled spring on each of said rods held in contact with said stop-nut by a jam nut and said jam-nut having a set-screw therein for rigidly holding it on said rod, substantially as shown and described.

571,267. BIT-STOCK. JOHN W. GRAY, Stillwood, S. C. Filed Apr. 3, 1896. Serial No. 586,067. (No model.)



Claim.—1. In a bit-stock, the combination with a body or frame composed of two superposed members the one having a beveled overhanging lug engaging in a correspondingly-beveled slot in the other, each having a plurality of semicylindrical grooves in its inner face coincident with similar grooves in the other member, and each having a longitudinal slot and a transverse slot communicating with each other formed coincident with similar slots in the other member; a shaft journaled in one set of said grooves in said members across said longitudinal slot, a bevel-gear rigidly mounted upon said shaft and a crank mounted upon said shaft for turning same; a chuck-spindle journaled in another set of grooves in said members with its inner end across said transverse slot, a pinion rigidly mounted upon said chuck-spindle in said transverse slot and meshing with said bevel-gear; means for holding the two members together, and means for attaching the bit to said chuck-spindle, substantially as described.

2. In a bit-stock, the combination with a body or frame composed of two superposed members the one having a beveled overhanging lug engaging in a correspondingly-beveled slot in the end of the other, and the former having a hand-grip thereon; each having a plurality of semicylindrical grooves coincident with similar grooves in the opposite member, and each having a longitudinal slot and a transverse slot communicating with each other formed coincident with similar slots in the other member; a chuck-spindle journaled in one set of grooves in said body; a bevel-pinion rigidly mounted upon said chuck-spindle in said transverse slot; a bevel-gear mounted in said longitudinal slot upon a shaft journaled in another set of grooves; a crank mounted upon said shaft for rotating same; means for holding said members together, and means for attaching the bit to said chuck-spindle, substantially as described.

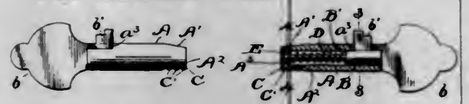
3. In a bit-stock, the combination with a body or frame composed of two superposed members the one having a hand grip formed thereon, and a beveled overhanging lug engaging in a correspondingly-beveled slot in the end of the other; each having an extension at the opposite end from said hand-grip having a semicylindrical groove longitudinally thereof, and each having a longitudinal slot and a transverse slot in communication with the other; a chuck spindle journaled in the semicylindrical grooves in said extensions, and crossing said transverse slot; a bevel-pinion rigidly mounted upon said chuck-

spindle in said slot; a bevel-gear meshing with said pinion mounted in said longitudinal slot upon a shaft journaled in said frame; a crank mounted upon said shaft; means for holding said members together and means for attaching the bit to said chuck-spiadle, substantially as described.

4. In a bit stock, the combination with a body or frame composed of two superposed members the one having a hand-grip formed thereon, and a beveled overhanging lug engaging in a correspondingly-beveled slot in the end of the other; each having an extension at the opposite end from said hand-grip provided with a semicylindrical groove longitudinally thereof, and each having a longitudinal slot and a transverse slot in communication with each other; a chuck-spindle journaled in said extensions and crossing said transverse slot; a bevel-pinion rigidly mounted upon said spindle in said slot; a bevel-gear meshing with said pinion mounted in said longitudinal slot upon a shaft journaled in said frame; a crank mounted upon said shaft; screws passing through the said members and binding the same together; an internally-screw-threaded collar or band engaging upon screw-threads upon the ends of said extensions; and means for attaching the bit to said chuck-spindle, substantially as described.

5. In a bit-stock, the combination with a body or frame composed of two superposed members the one having a hand-grip formed thereon, and a beveled overhanging lug engaging in a correspondingly-beveled slot in the end of the other; each having an extension at the opposite end from said hand-grip provided with a semicylindrical groove longitudinally thereof, a chuck-spindle journaled in said extensions; a bevel-pinion rigidly mounted upon said spindle in a slot in said frame; a bevel-gear meshing with said pinion mounted in a slot in said frame at right angles to said pinion, upon a shaft journaled in said frame; a crank mounted upon said shaft; screws binding said members together; an internally-screw-threaded collar or band engaging upon screw-threads upon the ends of said extensions; and a chuck for holding the bit, substantially as described.

571,268. KEY FOR TIME-RECORDERS. EDWARD G. HERNE, Cleveland, Ohio, assignor to George W. Herne, same place. Filed Apr. 6, 1896. Serial No. 586,352. (No model.)



Claim.—1. A key comprising a laterally and circumferentially slotted cylinder or barrel bearing the distinguishing-type externally; a shaft having bearing within the cylinder or barrel and fixed in the latter so far as endwise movement is concerned, said shaft being provided with a tongue or arm projecting laterally and outwardly through the slot in the cylinder or barrel, and means for turning the shaft, substantially as set forth.

2. A key consisting of a laterally and circumferentially slotted type bearing cylinder or barrel A; a shaft having bearing in the cylinder or barrel and fixed in the latter so far as endwise movement is concerned, said shaft being provided with a laterally-projecting arm extending through the slot in the barrel; means for turning the shaft, and a spiral spring confined upon the shaft within the barrel and having opposite ends secured to the barrel and shaft, respectively, and acting to retain the shaft in its normal position, substantially as set forth.

3. A key consisting of a type-bearing cylinder or barrel slotted laterally at its forward end and provided with an internal flange at or near the rear end; a shaft having suitable bearing in the cylinder or barrel and provided with an arm projecting laterally through the slot in the barrel and next forward of the rear wall of said slot, said shaft extending through the aforesaid flange; a member fixed upon the shaft next rearward of said flange and overlapping the flange's rear side, and means at the forward end of the shaft for turning the latter, substantially as set forth.

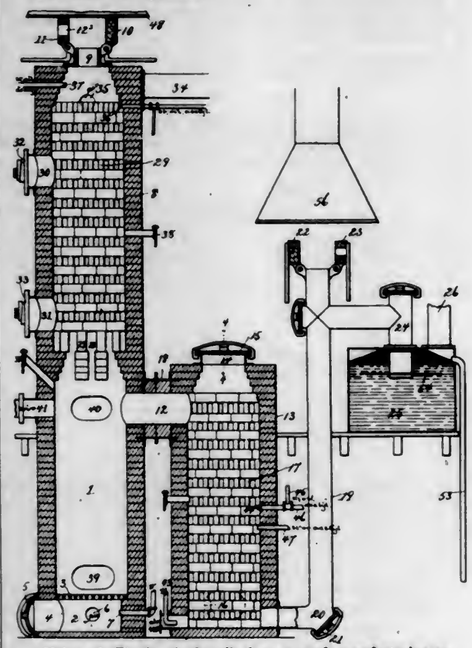
4. A key consisting of a cylinder or barrel slotted laterally at its forward end, and provided, at its rear end and externally, with a flattened surface A', a shaft having suitable bearing in said barrel and provided with an arm extending through the slot in the barrel, and means for turning the shaft, substantially as set forth.

5. A key consisting of a laterally-slotted cylinder or barrel provided, at any suitable point externally, with a laterally-projecting arm, a shaft having suitable bearing in the barrel and provided with a laterally-projecting arm extending through the slot in the barrel, and means for turning the shaft, substantially as set forth.

6. A key consisting of a cylinder or barrel slotted laterally at its forward end, and provided, upon one side and at or near its rear end and externally, with a distinguishing-type, a shaft having bearing in said barrel and provided with an arm extending through the slot in the barrel, and means for turning the shaft, substantially as set forth.

7. A key consisting of a cylinder or barrel slotted laterally at its forward end, and provided, at or near its rear end and externally with two flattened surfaces A' and A², the distinguishing-type formed upon or fixed to one of said flattened surfaces; a shaft having suitable bearing in said barrel, and means for turning the shaft, substantially as set forth.

571,269. PROCESS OF MANUFACTURING GAS. JOHN L. JANEWAY, Oaks, Pa.; Price W. Janeway and Thomas L. Hodge, administrators of said John L. Janeway, deceased, assignors to the Phœnix Gas and Improvement Company, Philadelphia, Pa. Filed Dec. 31, 1895. Serial No. 573,878. (No specimens.)



Claim.—1. The herein-described process of manufacturing gas, said process consisting in first manufacturing a water-gas; second, heating a mixture of acetylene and steam to produce a gaseous vapor; third, intermingling said gaseous vapor with the hot water-gas, and, finally, passing the mingled gases through a body of heated refractory material.

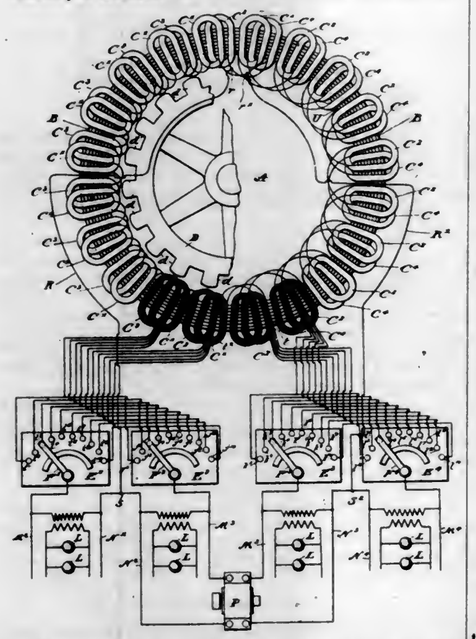
2. The herein-described process of manufacturing gas, said process consisting in, first, heating a body of carbonaceous material to incandescence; second, passing therethrough a jet of steam to produce a gas; third, passing a mingled quantity of steam and acetylene through a body of heated refractory material to produce a fixed gas that will not stratify in the holder after being manufactured; fourth, intermingling the two gases, and, finally, passing the mingled gases through a second body of heated refractory material to fix the gas.

3. An improvement in the art of producing gas, consisting in intermingling a gas generated from acetylene and steam with a water-gas, and conveying the intermingled gases to a fixing-chamber to convert them into a fixed gas, substantially as described.

4. An improvement in the art of producing gas, consisting in heating acetylene and steam, intermingling the heated acetylene and steam with a water-gas, and finally, further heating the combined acetylene, steam and water gas, substantially as described.

571,270. SYSTEM OF ELECTRICAL DISTRIBUTION. JOHN F. KELLY and CUMMINGS C. CHESNEY, Pittsfield, Mass., assignors to the Stanley Electric Manufacturing Company, same place. Filed July 30, 1896. Serial No. 601,073. (No model.)

Claim.—1. In a system of electrical distribution, an alternating-current generator having a set of generating-coils consisting of two groups of generating-coils, said groups having their electromotive forces in opposition, said generating coils consisting of principal generating-coils and regulating generating-coils, the regulating generating-coils being connected to circuit-controllers more than one in number, and each circuit-controller connected to one of as many mains or feeders, and controlling the relation of the regulating generating-coils to the principal generating-coils and the mains or feeders, substantially as described.



2. In a system of electrical distribution a multiphase alternating-current generator having a set of generating-coils for each phase, all energized from the same source of magnetism, each set consisting of principal generating-coils and regulating generating-coils, the regulating generating-coils being connected to one or more circuit-controllers, and each circuit-controller connected to one of as many mains or feeders and controlling the relation of the regulating generating-coils to the principal generating-coils and the mains or feeders, substantially as described.

3. In a system of electrical distribution an alternating-current generator having two sets of generating-coils each being of different phase consisting of two groups of generating-coils, said groups having their electromotive forces in opposition, said generating-coils in each set consisting of principal generating-coils and regulating generating-coils, the regulating generating-coils being connected to one or more circuit-controllers each circuit-controller being connected to one of as many mains or feeders and controlling the relation of the regulating generating-coils to the principal generating-coils and the mains or feeders, substantially as described.

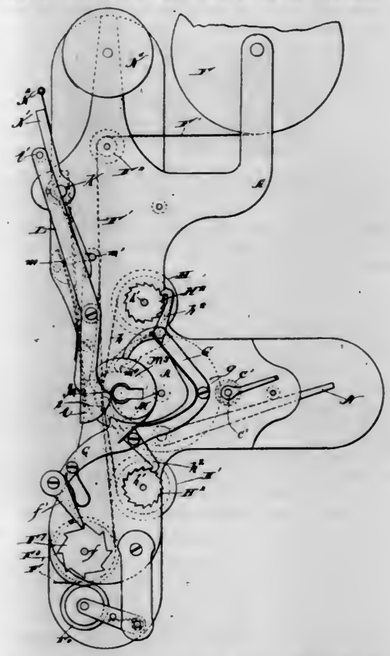
571,271. WIRE-FASTENER. JOHN C. KREMER, Wadsworth, Ohio. Filed July 31, 1895. Serial No. 557,783. (No model.)



Claim.—1. A wire-fastener, comprising a tapered or conical sleeve having a smooth unbroken bore and provided with means for engaging a post, and a conical or tapered plug arranged within the sleeve, projecting beyond the smaller end thereof and provided with a longitudinal groove adapted to engage a wire, substantially as described.

2. The combination with a fence-post having an opening 2, of a conical or tapered sleeve arranged within the opening 2 of the fence-post, terminating short of the inner face thereof and provided at its outer end with lugs engaging the outer face of the post, said sleeve being provided with a smooth unbroken bore, and a conical or tapered plug arranged within the sleeve or bore, provided with a longitudinal groove and projecting beyond the inner or smaller end of the sleeve, substantially as described.

571,272. EMPLOYEE'S TIME RECORDER. ERIC W. LINDENAU, Joliet, Ill. Filed June 28, 1895. Serial No. 554,336. (No model.)

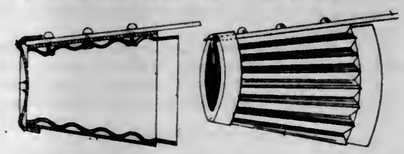


Claim.—1. In an employee's time-register, the combination of the operating mechanism substantially as described, with a slotted key-guide, a slotted disk provided on its exterior surface with a cam, and fixed to said guide, a slotted cam M', fixed on the inner portion of the key-guide, the levers L, and G, to engage the exterior cam, and adapted to cause the hammers to strike and press the ribbons against the type-wheels, and the lever m^3, to engage the cam M', to prevent the removal of the key and its reversal, substantially as described.

2. In an employee's time-register, the combination with the operating mechanism substantially as described, of a slotted key-guide, a slotted disk provided with a cam and fixed to said guide, the lever G, adapted to engage the cam to cause the paper and ink ribbon to move a certain distance, substantially as described.

3. In an employee's time-register, the combination with the operating mechanism substantially as described, of a key-guide, having an exterior cam, the cam-levers L, and G, adapted to engage the cam on the key-guide thereby causing the paper and ink ribbons to be shifted and the hammers to strike and press the same against the type-bearing devices, and an internal cam secured on the key-guide to prevent the key being withdrawn till turned completely around, substantially as described.

571,273. CULTIVATION OF ASPARAGUS. CARL A. VON MALTZAHN, Blücherhof, Germany. Filed Sept. 21, 1894. Serial No. 523,712. (No model.) Patented in Germany Aug. 17, 1894, No. 82,449; in Luxemburg Aug. 18, 1894, No. 2,902; in England Aug. 22, 1894, No. 15,984; in Spain Aug. 27, 1894, No. 16,250; in Belgium Aug. 29, 1894, No. 115,596; in Hungary Sept. 10, 1894, No. 1,069; in Italy Sept. 28, 1894, No. 37,296; in Austria Oct. 24, 1894, No. 44/5,650; in France Aug. 22, 1895, No. 240,852, and in Denmark Sept. 27, 1895, No. 209.



Claim.—A double-walled case for cultivating vegetables, both walls of which are provided on their opposing faces with grooves or ribs; the two sets of ribs being at an angle to each other.

571,274. CAR-COUPLING. MARTIN L. MARDIS, Salem, Ohio. Filed Aug. 27, 1896. Serial No. 604,100. (No model.)



Claim.—1. The combination with a draw-head and its swinging knuckle, of a latch or dog pivoted in the draw-head to lock the knuckle closed, and a sliding releaser connected to the latch and pushed forward thereby when said latch is raised against the tail of the knuckle to push the knuckle open, substantially as shown and described.

2. The combination with the draw-head and its swinging knuckle, and the vertically-rocking latch-bar locking said knuckle closed, of the releaser sliding in the lower wall of the draw head and pivoted to the latch by which it is reciprocated, substantially as shown and described.

3. In a car-coupling of the class described, the latch pivoted in the draw-head to lock the knuckle closed and provided with an extension opposite its locking end, and the knuckle-releaser pivoted to said extension for reciprocation by the latch, substantially as shown and described.

4. The combination with the draw-head and its knuckle, of a latch or dog mounted in the draw-head to lock the knuckle, an oblique upwardly-inclined guideway in the bottom of the draw-head and a sliding releaser connected to said latch or dog, working on said guideway and engaging the tail of the knuckle to push it open, substantially as shown.

5. The combination with the draw-head and its knuckle, of a latch or dog mounted in the draw-head to lock the knuckle, an inclined guideway in the bottom of the draw-head, a sliding knuckle-releaser connected to the latch for reciprocation thereby and having a tongue-and-groove connection with the said guideway, substantially as shown.

6. The combination with the draw-head having a slot in its upper side, an inclined, oblique guideway in the bottom under said slot, and a knuckle pivoted in the draw-head with the end of its tail extending to the slot and over said guideway, of a pivoted vertically-swinging dog or latch working in said slot, engaging the end of the knuckle-tail and provided with a rearwardly-projecting extension, and a sliding releaser pivoted to said extension, working on said guideway and engaging the rear end of the knuckle tail to force the knuckle open when the latch is raised, substantially as shown.

7. The combination with the draw-head and its knuckle, of a latch pivoted near its middle in the draw-head and adapted to engage the tailpiece of the knuckle with one of its ends and lock the knuckle closed, and a releaser for the tailpiece and pivoted to the opposite end of said latch and reciprocated thereby, substantially as shown and described.

8. The combination with the draw-head and its knuckle, of a vertically-swinging latch to lock this knuckle, means for operating the latch from the end, sides and top of a car and a sliding releaser connected to and reciprocated by the latch to engage the tail of the knuckle and swing the knuckle open, substantially as shown.

9. The combination with the draw-head and its swinging knuckle provided with a tailpiece, of the rocking latch mounted in the draw-head to lock the knuckle closed and the sliding releaser pivoted to the rear of said latch and moved forward when the latch is rocked and against the rear side of the tailpiece to throw the same out of the draw-head, substantially as shown and described.

10. The coupling-knuckle having its tail or extension provided on its rear inclined or curved face with an overhanging flange, substantially as shown.

11. In a car-coupler of the character described the pivoted latch for locking the knuckle, provided with a rearwardly-projecting extension opposite its locking end and the knuckle-releaser pivoted at its rear end to the said extension for reciprocation thereby, substantially as shown.

12. The combination with the draw-head and its swinging knuckle, of a vertically-rocking latch to lock the knuckle, and a releaser pivoted to the latch and having a reciprocating motion imparted to it by the rocking motion of said latch, substantially as shown and described.

571,275. GUARD OR SCREEN FOR URINALS. EDMUND L. MAXWELL and HENRY W. GORMAN, Los Angeles, Cal. Filed June 2, 1896. Serial No. 593,968. (No model.)

Claim.—1. A guard or screen for urinals constructed as herein described, the same comprising a solid blue-lead frame conforming to the urinal, the said frame being provided with a groove in its inner edge, into which the wire-netting is placed and fastened by closing the said groove after the wire-netting has been introduced, substantially as and for the purpose set forth and described.



2. In a urinal-guard the combination set forth of a solid blue-lead frame with a groove in its inner edge into which a wire gauze or netting is fastened by closing the said groove upon the edges of the said gauze or netting, the said netting so shaped that it will hold a disinfectant directly over the outlet of the urinal, substantially as described and for the purpose as specified.

3. In a urinal-guard, the combination with a urinal of a frame conforming to a urinal constructed with a groove extending the full circumference of the said frame with a wire gauze or netting fastened within the said frame by closing the said groove upon the edges of the said netting, and the said netting so shaped that it will hold a disinfectant away from the bottom of the urinal-bowl, and also prevent the passage of any substance larger than the meshes within the said gauze to within the pipe leading away from the urinal, substantially as, and for the purpose specified.

4. The combination with a urinal of a grooved frame adapted to be received within the bowl, and a wire gauze or netting fastened within the said frame, by introducing the edges of the said gauze or netting within the said groove, and clamping the said gauze or netting within the frame, by closing the said groove upon the edges of the netting, substantially as set forth, and for the purpose specified.

5. A urinal-guard consisting of a blue-lead frame, provided with a slot extending in its inner side the full circumference of the said frame, and a wire-netting fitted within the said frame and fastened therein by closing the said slot upon the edges of the said netting, in the manner and for the purpose as set forth and described.

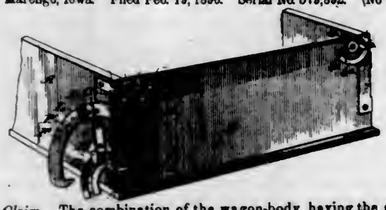
571,276. SHOE-PULL. GUSTAVE MÜLLER, Bridgeport, Conn., assignor, by direct and mesne assignments, to The Patent Shoe Pull Company, same place. Filed Feb. 23, 1895. Serial No. 539,367. (No model.)



Claim.—1. An improved pull device for gaiters consisting of an elastic sphere, or substantially of spherical form; elongated passages 2 extending through said body and parallel with each other; bridge 3 between said passages; strap 4 whose free ends extend through such passages and are attached to the top of a shoe, the body of the said strap engaging the said bridge to afford a resistance against the pulling strain, as set forth.

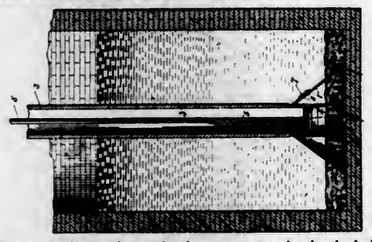
2. An improved pull device for shoes, consisting of an elastic substantially spherical body provided with elongated passages extending therethrough and parallel to each other, thereby forming a bridge between the two slots, to afford a resistance against the strain of the pull-strap of a shoe, the said pull-strap passing through the slots of the spherical body and over the bridge and resting thereon, the free ends thereof being attached to the top of a shoe; the diameter of the said spherical body being approximately the length of the pull-strap extending above the top of the shoe, and thereby adapted to rest upon the edge of the shoe-upper, whereby the shoe pull-strap is at all times elevated, and rendered easily accessible to be grasped by the fingers, substantially as described.

571,277. END-GATE FOR WAGONS. BERNARD T. MURPHY, Marengo, Iowa. Filed Feb. 19, 1896. Serial No. 579,892. (No model.)



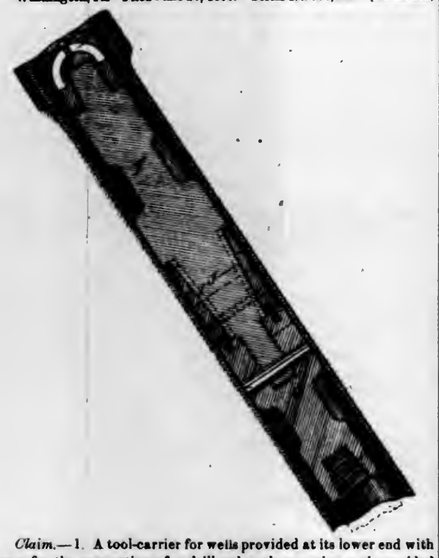
Claim.—The combination of the wagon-body, having the guide-irons attached thereto, of a sheet-metal end-gate having straps or members each side thereof, the segmental guide arms extending from said strap members, and passing over the guide-irons, two guide-arms on each side an upper and a lower arm, the upper guide-arms having hooks at their forward ends, the lower guide-arms being slotted, substantially as shown and described.

571,278. CISTERN-CLEANER. JOEL A. MCCAWLEY, Canton, Ky., assignor of one-half to George W. Cobb, same place. Filed June 1, 1896. Serial No. 593,909. (No model.)



Claim.—A cistern-cleaner having a pump mechanism including a cylinder or barrel, a suction-cup carried by and surrounding the lower extremity of the cylinder or barrel, the latter terminating contiguous to the plane of the base or periphery of the cup, and a valved vent in the cup to allow the escape of contained air during the immersion of the lower edge of the cup in the sediment to avoid the agitation of the same, substantially as specified.

571,279. TOOL-FISHING APPARATUS. GEORGE L. MCKAIN, Washington, Pa. Filed June 27, 1896. Serial No. 597,187. (No model.)



Claim.—1. A tool-carrier for wells provided at its lower end with means for the connection of a drill-rod grab or socket and provided with the tapering seats spreading toward their upper ends, and the slips held to and sliding along said seats substantially as shown and described.

2. A tool-carrier for wells provided with tapering seats and with slips sliding longitudinally along the same, springs bearing beneath the slips and a breakable cord or band encircling said carrier and adapted to hold the slips retracted, substantially as shown and described.

3. The combination in a tool substantially as described of the body having tapering seats, the slips movable longitudinally along said seats, registering sockets being provided in the ends of the slip and in the body and springs fitting in said sockets and arranged to actuate the slips longitudinally, substantially as shown and described.

4. The combination of the casing, the tool fitting therein and having at its lower end means for connecting the tool grab or socket and having between its ends tapering seats, and slips movable longitudinally thereon and adapted to bind in the casing, whereby the latter may be lifted to withdraw the said tool and the parts attached thereto, substantially as shown and described.

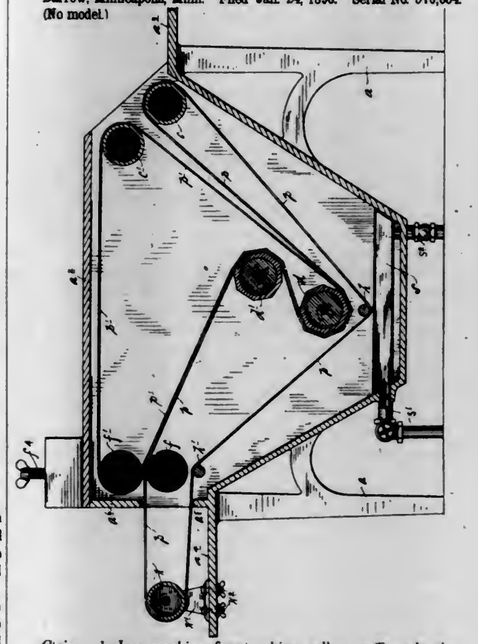
5. The improved tool herein described, consisting of the carrier having upper and lower sections jointed together and held at such joint from turning, the lower section being provided at its lower end with means for connecting with a drill-rod grab or socket, and the upper section being provided with longitudinally-tapering seats, the slips held to and movable along said seats, the springs by which to actuate said slips and the breakable cord or band encircling said slips and adapted to hold the same in retracted position, substantially as shown and described.

571,280. FEED-TROUGH. EDWIN J. NASON, Washington, Kans. Filed June 12, 1895. Serial No. 552,572. (No model.)



Claim.—The combination in a stock-feeder and heater, a feed-receptacle, a trough located underneath, covers for the receptacle and trough, a valve for regulating the discharge of the feed to the trough, a rod extending out longitudinally through the end of the feeder for operating the valve, heating-pipes in the trough, and a branch heating-pipe extending up into the feed-receptacle.

571,281. STARCHING-MACHINE. DANIEL H. NEWTON, Rochester, Minn., assignor, by mesne assignments, of one-half to Jennie C. Darrow, Minneapolis, Minn. Filed Jan. 24, 1896. Serial No. 576,634. (No model.)



Claim.—1. In a machine for starching collars, cuffs and other articles, the combination with a starch-vat, of a flexible conveyer, for the articles, formed by the facing folds of a pair of endless aprons or carriers, running together face to face in one section of their circuits through said vat, and two or more singly-acting saturating-rollers cooperating with said conveyer or facing folds of said aprons, from opposite sides of the same, in succession, substantially as and for the purpose set forth.

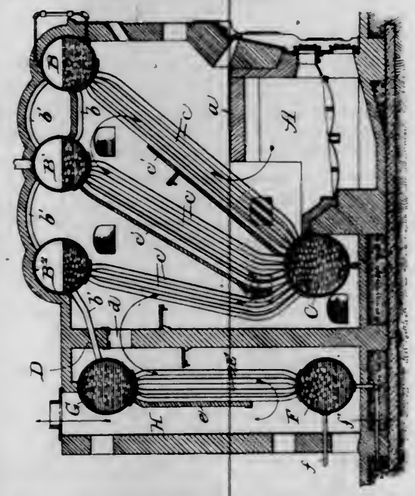
2. In a machine for starching collars, cuffs and other articles, the combination with a starch-vat, of a flexible conveyer formed by the facing folds of a pair of endless porous aprons or carriers running face to face, in one section of their circuits through said vat, and a series of two or more singly-acting saturating-rollers, cooperating with said

conveyer or facing folds of said aprons, from opposite sides of the same, in succession, substantially as and for the purposes set forth.

3. In a machine for starching collars, cuffs and other articles, the combination with a starch-vat, of a conveyer, for the articles, formed by the facing folds of a pair of endless aprons or carriers running together, face to face, in one section of their circuits through said vat, and one or more singly-acting polygonal rollers coöperating with said conveyer or facing folds of said apron, substantially as and for the purpose set forth.

4. The combination with the starch-vat, of the receiving or feed rollers *c c'*, the octagonal saturating-rollers *d*, *d'*, the wringing-rollers *f f'*, the delivery-roller *k*, and suitable guide-rollers, as *h h'*, the textile-fabric apron *p* mounted on the rollers *c d d' f k h h'*, and the textile-fabric apron *p'* mounted on the rollers *c'*, *d d' f'*, and means for imparting motion to said rollers and aprons, substantially as and for the purposes set forth.

571,282. STEAM-BOILER. HARRY S. PELL, Akron, Ohio, assignor to the Stirling Company, Chicago, Ill. Filed Dec. 22, 1893. Serial No. 494,404. (No model.)



Claim.—1. In a water-tube boiler, the combination of a lower feed-drum communicating with a source of water supply, a rear elevated drum, pipes connecting the feed-drum with the rear elevated drum, a middle elevated drum, pipes connecting the rear and middle elevated drums, a lower mud-drum, pipes connecting the middle elevated drum with the mud-drum, a front elevated drum or drums, pipes connecting the mud-drum with the front elevated drum or drums, and means for drawing off steam from the middle and front elevated drums, whereby water may be introduced into the lower feed-drum, carried up to the rear elevated drum, across to the middle elevated drum, down to the mud-drum, and up to the front elevated drum or drums, substantially as described.

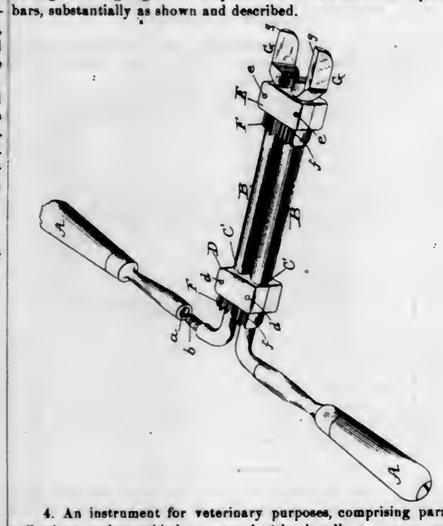
2. In a water-tube boiler, the combination of three elevated steam and water drums, B and B' and B^2, a lower drum, C, series of tubes connecting the lower drum with each of the elevated drums, pipes affording steam and water communication between the drums, B and B', and steam communication between the drums B' and B^2, a lower feed-water drum, F, an elevated feed water drum, G, a series of tubes connecting such drums, tubes affording water communication between the drums G and B^2, and means for supplying water to the lower feed-water drum, substantially as described.

571,283. VETERINARY TOOTH-CUTTER. THOMAS J. PENCE, Troy, Ohio. Filed Oct. 26, 1895. Serial No. 566,997. (No model.)

Claim.—1. A veterinary tool composed of parallel roller-bars, formed with sector-gears thereon, each of said bars being provided at one end with a handle and at the other end with a cutting edge, and connected by bearing-boxes, substantially as described.

2. A veterinary molar-tooth cutter, comprising two parallel roller-bars, each of said bars being provided at one end with a detachable handle and at the other end with a cutter-jaw integral with the bar, and bearing-boxes for connecting said bars together, substantially as described.

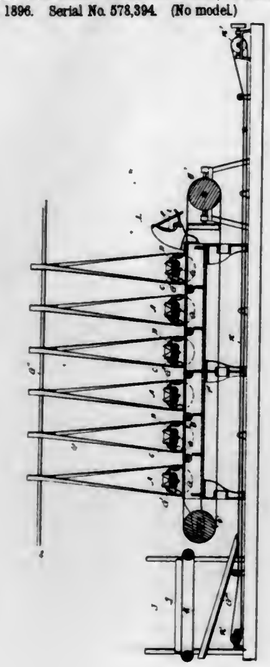
3. A veterinary molar-tooth cutter, comprising parallel bars adapted to receive a partial rotation and provided at one end with a handle, bearing-boxes for connecting said bars, and a cutter-jaw having a cutting edge carried by the other end of each of the parallel bars, substantially as shown and described.



4. An instrument for veterinary purposes, comprising parallel roller-bars each provided at one end with a handle, means secured to each bar for guiding the same during partial rotation of the bars, bearing-boxes for connecting said bars, and a cutter-jaw formed at the other end of each bar, substantially as described.

5. An instrument for veterinary purposes, comprising parallel bars provided at one end with a handle, and each bar being reduced at two points to receive bearing-boxes for connecting the bars together, sector-gears secured to each bar at two points, and a cutter-jaw formed at the other end of each bar, substantially as described.

571,284. MACHINE FOR REDUCING AND PREPARING CEREALS FOR FOOD. HENRY D. PERKY, Worcester, Mass. Filed Feb. 7, 1896. Serial No. 578,394. (No model.)



Claim.—1. The combination of a series of reducing or shredding heads, the endless carrier-belt arranged to travel below the said heads, a series of open-ended receivers designed to be carried on said belt, a cutting device located over the rear portion of said belt and adapted to be operated by the engagement therewith of the receivers as they pass thereunder, and means whereby said receivers may be again returned to feeding position, substantially as specified.

2. The combination of the series of reducing or shredding heads arranged in line, the roller-way below said heads, the endless belt arranged to run over said way, the feed-table at the front end of said belt, its feed-belt in line with the first-named belt and designed to be driven at a slightly greater speed, the sectional receivers, the automatic cutter, and the return belt and chute, substantially as specified.

3. The combination with the series of reducing-heads, the endless belt thereunder, and the sectional receivers having the trip-lugs or projections, of the section-cutter, having the parallel-motion hanger, the knife-frame secured to said hanger, and having trip-lugs for engagement with the lugs of said receivers, the knife, its retracting-spring and the cam-and-lever devices for forcing said knife to its work, substantially as specified.

4. The combination with the receivers having trip or catch lugs, of the parallel-motion hanger, the knife-frame secured to said hanger and adapted to be engaged by the said trip or catch lugs, means whereby said engagement and the movement of the hanger caused thereby, causes the knife to descend to its work, and means for retracting the knife after the cut has been made and for returning the hanger to normal position, substantially as specified.

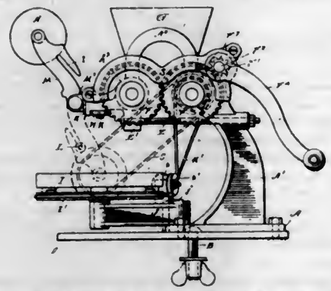
5. The section cutter having the parallel-motion, counterbalanced hanger, the cutter-frame secured thereto and having a trip-lug or projection, the cutter, the retracting-spring therefor, the counterbalanced cam-lever, the trip-lever which secures said cam lever in operative position, and the lever having one arm engaging a bearing of the knife and its outer arm engaging the said cam-lever, substantially as specified.

6. In a grain shredding or reducing machine, the combination with a pair of reducing-rolls one of which is circumferentially grooved, and the comb or scraper for removing the product from the grooved roll, of the inclined scraper arranged to play back and forth upon the upper surface of said scraper, a pair of oscillating, spring-actuated, pivoted levers to which said scraper is attached, notched cams upon the shaft of one of the reducing-rolls, and adjustable lugs carried by said levers and engaging the respective cams, substantially as specified.

7. A grain shredding or reducing machine having a pair of rolls or cylinders journaled to rotate in neat contact with each other, one of said rolls or cylinders being circumferentially grooved, the hopper having the sectional, adjustable lateral walls provided with bearings on the ends of said rolls, the cut-off slides seated in ways of the hopper-walls, the driving mechanism for said rolls or cylinders, and clutch-gear whereby said rolls or cylinders may be disconnected from the driving mechanism, substantially as specified.

8. In a grain reducing or shredding machine, the combination with the reducing-rolls having the rabbeted end portions, of the vertically-adjustable hopper having a bearing upon said rabbeted end portions, the bearing-sections of the hopper being separate from the main frame of the hopper and capable of an independent endwise adjustment with relation to the said rolls, substantially as specified.

571,285. MACHINE FOR REDUCING CEREALS. HENRY D. PERKY, Worcester, Mass. Filed Feb. 7, 1896. Serial No. 578,395. (No model.)



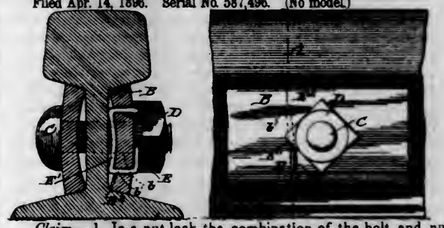
Claim.—1. In a machine for the reduction of cereals and other products, the frame having the spring-arches, the arms of which are provided with boxes or bearings, the parallel reducing-rolls journaled in said boxes or bearings, the tension-bolts engaging said arches the hopper arranged to feed between said rolls, the discharging comb or scraper, and driving mechanism, substantially as specified.

2. In a machine for the reduction of cereals and other products, the combination with the frame, its parallel standards and spring-arches, the tension bolts therefor, the parallel reducing-rolls journaled to the arms of said arches, the discharging-comb, the hopper, and means for receiving and shaping the product discharged from said rolls, substantially as specified.

3. In a machine for the reduction of cereals and other products, the combination with the frame having a suitable clamp by means of which it may be secured to a table or the like, the parallel standards, the spring-arches, and the tension-bolts therefor, of the parallel reducing-rolls journaled to the arms of said arches, the discharging-comb, and the rotary table below the said comb, substantially as specified.

4. In a machine for the reduction of cereals and other products, the combination with the frame, the reducing-rolls journaled therein, and the reducing comb or scraper, of the arm pivoted to the bed portion of said frame, and arranged to swing in a horizontal plane below the said rolls and comb, into different positions with respect thereto, a horizontal table beneath the comb and journaled to the said arm, and adapted thereby to receive the product discharged from the said rolls upon different zones of its surface and gear for rotating said table, said gear being adapted to accommodate itself to different positions of the table, substantially as specified.

571,286. NUT-LOCK. CHARLES T. REDFIELD, Glen Haven, N. Y. Filed Apr. 14, 1896. Serial No. 587,496. (No model.)



Claim.—1. In a nut lock the combination of the bolt and nut, the fish-plate having perforations adjacent to said nut and a locking device consisting of a central connecting portion and parallel arms projecting from the opposite ends of said connecting portion the latter being bowed approximately in the plane of said end arms, the said arms being directed through perforations in the fish-plate and bent into engagement with the nut and the bowed portion being arranged beneath the fish-plate all substantially as shown and described.

2. In a nut-lock, a locking device comprising a central connecting portion and parallel arms projecting from the ends thereof the arms being untempered and the connecting portion being tempered and bowed approximately in the plane of said arms combined with the bolt and nut and means for holding said locking device in place with its untempered arms in position to be turned to position to lock the nut substantially as shown and described.

3. The combination of the bolt, the nut, the fish-plate having a perforation and the locking device having an arm extended through said perforation and bent to secure the nut and having a portion extended alongside and beneath the fish-plate substantially as set forth.

4. The improvement in nut-locks substantially as herein described consisting in combination with the rail, the fish-plate, fitted thereagainst and having perforations adjacent to its bolt-holes the bolt and the nut, of the locking device having a central portion extending along the inner side of the fish-plate and held between the same and the rail and having end arms entering the perforations in the fish-plates, one or both of said arms being bent flat against the fish-plate and bearing at its extremity against the edge of the nut substantially as shown and described.
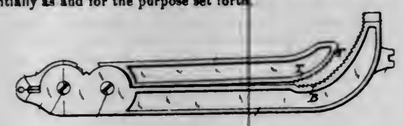
5. The combination of the fish-plate having separated perforations adjacent to its bolt-hole, the bolt and nut, and the locking device having a connecting portion under the fish-plate and arms projected out through the separated perforations and bent against the fish-plate and bearing endwise against the nut substantially as shown and described.

6. The combination of the perforated fish-plate, the bolt and nut and the locking device having a bowed or deflected portion under the fish-plate and an arm extended out through the perforations in the fish-plate, bent against the fish plate and bearing endwise against the nut substantially as shown and described.

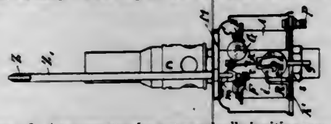
571,287. COMBINATION-TOOL. JOSIAH F. RYDER, Attleborough, Mass. Filed Apr. 8, 1896. Serial No. 586,749. (No model.)

Claim.—In a tool the combination of a principal member and a lever member pivotally connected to each other, one end of the prin-

cipal member being curved and having teeth and adapted to form, with the lever member, which is also curved and having teeth, a wrench as described, the said principal member having a cutting and gripping jaw pivotally attached to the said principal member and operated by the lever member, and a cutting and gripping device, substantially as and for the purpose set forth.



571,288. ELECTRIC GAS-LIGHTING DEVICE. ERNEST SCHMIDT, Berlin, Germany. Filed Aug. 1, 1896. Serial No. 601,351. (No model.)



Claim.—1. An apparatus for automatically igniting gas and other lamps by means of electric current which consists of an electromagnet having an armature consisting of two independently-movable members, a gas-cock operatively connected to one member and an igniting device operatively connected to the other member, and means for sending one and the same current through the electromagnet-coils and to the spark producing device substantially as described.

2. The combination of an electromagnet having an armature consisting of two members, said two members being capable of reciprocatory movement on and round the same pivots, a gas-cock operatively connected with one member and an igniting device operatively connected to the other member, and means for operating the armature and the igniting device by one and the same current substantially as described.

3. The combination of an electromagnet having a double armature as specified and means for connecting one member of said armature to the igniting device, a gas-cock and means for operatively connecting the other armature member thereto consisting of a double pawl, suspended from said armature member and adapted to engage alternately pins on the revoluble gas-cock, and a spring attached to the gas-cock and rotated therewith said spring connected to the double pawl and operating the same substantially as described.

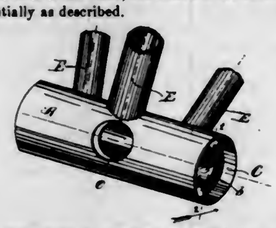
4. The combination of an electromagnet having an armature consisting of two members, pivotally supported as specified, one of said members being operatively connected to the gas-cock, and the other to an igniting device consisting of a hollow rod extending in proximity to the burner, and a tube insulated therein and capable of substantially vertical movement therein, an insulated spring *m* to press said tube downward and an extension to said second member to engage the lower end of said inner tube when the magnet is excited and electric connections to the magnet and to the igniting device for the purpose substantially as described.

5. The combination of an electromagnet A having a double armature B C pivotal connections for said armature to the burner-tube at B', a cock R in the burner-tube consisting of a revoluble disk having pins *a* and *b* and recesses *x y* said disk being pivotally connected to a partition dividing said burner-tube, a double pawl K suspended from the member B of the armature, and a spring actuated by the rotation of the cock-plug to throw the said double pawl in opposite directions alternately and corresponding to the position of the cock, a conductor Z' fast on a plate of the burner and extending in proximity to the burner-head, a spring-actuated conductor Z insulated as regards the conductor Z' and adapted to form therewith a spark-producing head and means for transmitting the motion of the armature member C to said conductor substantially as described.

6. The combination of an electromagnet having an armature consisting of two members substantially as described, means for operatively connecting one member to the gas-cock, and means for operatively connecting the other member to a spark-producing device, and a spark-producing device consisting of a fixed hollow conductor Z' in connection with one pole of a battery, and a spring-actuated conductor Z connected to the other pole of the battery a jet-flame orifice at the top of the latter conductor and means for connecting the lower end of same to the burner-tube above the gas-cock.

571,289. BEARING-BRACKET FOR BICYCLES. EDWARD L. SHULTZ, Chicago, Ill. Filed July 15, 1893. Serial No. 480,636. (No model.)

Claim.—1. In mechanism of the class described, the combination with a crank-hanger tube of tubular frame members inserted through the sides of said tube, and united in the central portion thereof, substantially as described.

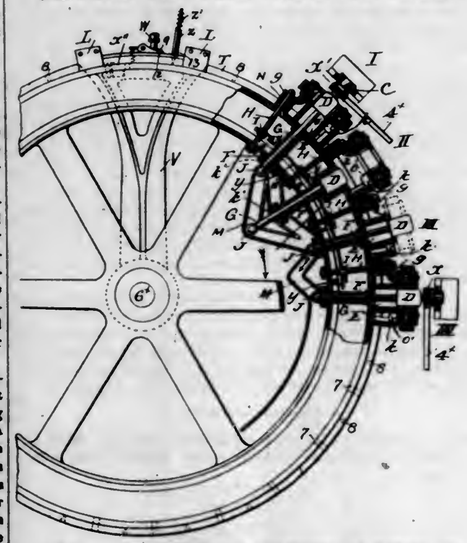


2. In mechanism of the class described, the combination of a main tube, a supplemental tube disposed longitudinally within said main tube, and a frame member inserted through the sides of the main tube and fastened to the supplemental tube, substantially as described.

3. In mechanism of the class described, the combination of an outer cylindrical tube, an inner tube supported concentrically within the outer tube and rigidly connected to it, and brace-rods having a bearing in each tube and firmly secured to either tube, substantially as described.

4. In mechanism of the class described, the combination of an outer cylindrical tube, an inner tube supported concentrically within the outer tube and firmly secured thereto, both tubes being provided with openings, and a brace rod or rods inserted therein and firmly secured to either tube, substantially as described.

571,290. MACHINE FOR FORMING AND PRESSING LOOPS. ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed May 2, 1895. Serial No. 547,894. (No model.)



Claim.—1. In combination, a die comprising die members and clamping means, a movable carrier for the die and its clamping means to move the same from station to station and means for operating the clamping means automatically as the die with its clamp reaches the proper station, substantially as described.

2. The die comprising the frame, the die members, the clamping-ring having the cam-surfaces and the inclined fingers for returning the dies to normal position.

3. The die comprising the die members, the rollers having extended axles, the clamping-ring having cam-surfaces acting on the roller and the inclined fingers to engage the roller-axles, substantially as described.

4. In combination the die comprising the die members with means for moving them toward and from each other said members coöperating to form a die-cavity between them and the loop-stick with means for moving the same into and out of the die-cavity, said dies when in their inward position pressing the blank simultaneously about the sides of the loop-stick located between them, substantially as described.

5. In combination, a movable carrier, a die mounted thereon to move therewith and comprising a series of die members movable toward and from each other and coöperating to form a die-cavity between them, means also movable with the carrier to clamp said dies and a loop-stick also mounted on the carrier to move therewith and means for reciprocating the loop-stick into and out of the die-cavity, substantially as described.

6. In combination, the die comprising the frame, and the die members forming a die-cavity between them, the reciprocating loop-stick with operating means for moving the loop-stick into and out of said cavity and means for moving the die into and out of line with the loop-stick, substantially as described.

7. In combination, the movable carrier, the die and loop-stick carried thereby, means for moving the die into and out of line with the loop stick and means for advancing and retracting the loop-stick, substantially as described.

8. In combination the movable carrier, the swinging die thereon having a die-cavity, the reciprocating loop-stick with means for moving the same into and out of the die cavity and means for operating said parts, substantially as described.

9. In combination, the reciprocating loop-stick, the die movable into and out of line with the same, the support for the die and loop-stick and means for advancing and retracting the loop-stick to and from the die and also for advancing and retracting the loop-stick when the die is moved aside, substantially as described.

10. In combination, the die comprising the die members, the reciprocating loop-stick arranged to enter the cavity and means reciprocating with the loop-stick for closing said cavity, substantially as described.

11. In combination, the die comprising the die members forming a die-cavity between them, the loop-stick movable into and out of the die-cavity, with operating means therefor and means adjacent to the loop-stick arranged to receive the same when retracting and to discharge the loop therefrom, substantially as described.

12 In combination, the die comprising the die members forming a die-cavity between them, the reciprocating loop-stick movable into and out of the die-cavity and means reciprocating therewith arranged to receive the loop-stick when retracting to discharge the loop therefrom, substantially as described.

13. In combination, the die comprising the frame, with the die members, the reciprocating loop-stick movable into and ont of the die, means reciprocating with the loop-stick to close the opening, said means being movable independently of the loop-stick and acting to discharge the loop from the loop-stick, substantially as described.

14. In combination, the die comprising the frame, with the die members, the reciprocating loop-stick movable into and out of the die, and the loop stick case reciprocating with the loop stick and arranged to close the opening and means for operating the said case and loop-stick whereby the said stick will retract within the case to discharge the loop, substantially as described.

15. In combination in a die-frame, the radially-movable die members, the loop stick, the front plate *n* and the removable bushing *m*, substantially as described.

16. In combination, in a die, the frame, the radially-movable die members, the loop-stick with means for reciprocating the same, means for moving the die aside, and the bushing *m* on the die arranged to receive the loop-stick when advanced, substantially as described.

17. In combination, the movable carrier, the loop-sticks and cases movable on the same, the dies movable into and out of line with the loop-sticks and cases and means for retracting the loop-stick and case from the die and for retracting the loop-stick within the case; for advancing the loop-stick and case and protruding the stick to receive a new blank, and for retracting and advancing the said stick and case in the same relative position to the die, and means for operating the die to and from position, substantially as described.

18. In combination, the die comprising the die members, the reciprocating loop-stick, the reciprocating case, the supports for said parts, means for moving the die into and out of line with the loop-stick, means for advancing the loop-stick case and protruding the loop-stick therefrom to receive the new loop and for retracting and advancing the loop-stick and case in the same relative position to place the loop in the die, substantially as described.

19. In combination, the carrier, the dies, the reciprocating loop-stick having shanks, the loop-stick cases with hollow shanks, the rollers on the shanks, the cams M, M' for operating the said parts and means for moving the dies into and out of line with the loop-stick, substantially as described.

20. In combination, the carrier, the dies, the reciprocating loop-stick and case, the cam-tracks M, M' for operating said parts, the said tracks meeting at one point and a single track to operate both the loop-stick and case simultaneously, substantially as described.

21. In combination, the carrier, the dies pivoted thereto, the shafts H connected to the dies, the cam Y for operating the shafts and dies and the reciprocating loop-sticks on the carrier with means for operating the same.

22. In combination, the carrier, the dies comprising the die members and the clamping-ring and means for operating the said ring comprising the upper and lower arms to engage parts of the ring, said arms being pivotally supported.

23. In combination, the carrier, the dies with the rotary clamping rings and the pivoted yoke arranged at one station to engage and turn the ring when the die arrives at the said station.

24. In combination, the carrier, the dies with clamping rings the pivoted yoke arranged at one station for operating the ring and the guide-rollers for steadying the carrier, substantially as described.

25. In combination the moving carrier, the dies with the clamping-rings supported on the carrier to move therewith and means for turning the rings arranged adjacent to the path of the die for operating the ring when the die arrives at that station, substantially as described.

26. In combination, the carrier, the reciprocating loop-sticks, the dies pivoted to the carriers and arranged to be swung upwardly and the catch-studs adapted to support the dies in proper position, substantially as described.

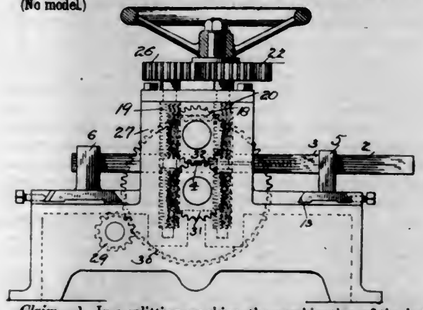
27. In combination, the carriers comprising the inner and outer flanges, the loop-sticks reciprocating therein, the pivoted die-frames and the shafts H therefor journaled in said flanges, substantially as described.

28. In combination, the carrier, the dies and loop-sticks, the vibrator, the push-pawl carried thereby, the stop-pin and the releasing-pawl also carried by the vibrator, substantially as described.

29. In combination, the carrier, the dies with the clamping-rings and the locking and unlocking means arranged adjacent to the path of the carrier to operate the said rings, substantially as described.

30. In combination, a loop-stick, a die, means for moving one of said parts into and out of line with the other and means for moving one of said parts in a direction axially of the loop-stick and die-cavity whereby the loop-stick will enter the die-cavity, substantially as described.

571,291. MACHINE FOR SPLITTING LEATHER FOR FORMING POCKETS. ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed May 7, 1895. Serial No. 548,433. (No model.)



Claim.—1. In a splitting-machine, the combination of the knife, the rollers and the guides for the leather having ways or grooves for the side edges thereof, said knife being intermediate of and in line with said ways.

2. A splitting-machine for leather and the like comprising a knife, the rollers for engaging the leather and guiding the same, and means for holding and guiding the leather at its edges consisting of the movable frame having bearings for the edges of the leather, substantially as described.

3. A splitting-machine comprising the knife, the rollers and the movable carrier for the leather engaging the side edges thereof and means for operating the rollers to feed the leather with its carrying-frame forward to the knife, substantially as described.

4. A leather-splitting machine comprising the knife, the rollers, the carrying-frame comprising the side bars having shoulders against which the leather abuts and means for operating the rollers to feed the leather with said guide-bars forward, substantially as described.

5. A leather-splitting machine, comprising the knife and the leather-carrying means consisting of the side bars having grooves in the inner sides to receive the edges of the leather and means between the bars for engaging and guiding the leather to the knife, substantially as described.

6. A leather-splitting machine comprising the knife and the guide and holding bars having grooves in their faces to receive the edges of the leather and the rollers arranged to engage and guide the leather intermediate of the said grooved bars, substantially as described.

7. A leather-splitting machine, comprising the knife, the guide-bars having the grooves to receive the edges of the leather and the stop-shoulders at the ends of said grooves and the guiding means for the leather intermediate of the guide bars, said knife being of less width than the distance between the grooves of the guide-bars.

8. A leather-splitting machine, comprising the knife, the grooved bars for holding the leather, the intermediate guiding means for the leather, said grooved bars being adjustable toward and from each other, substantially as described.

9. A leather-splitting machine comprising the knife, the grooved guide-bars, the rollers and the bearings for the grooved bars, arranged to slide laterally in ways in the frame, substantially as described.

10. A leather-splitting machine, comprising the knife, the grooved guide-bars, adjustable laterally of the machine and the rollers made up of sections arranged to be held by said guide-bars to make a roller of greater or less length, substantially as described.

11. A leather-splitting machine, comprising the knife, the grooved guide-bars, adjustable toward and from each other laterally of the machine, and the roller made up of adjustable sections, splined to the roller shaft on each side of a solid shaft portion, said sections being arranged to be held in engagement or separated to make a longer or shorter roller, substantially as described.

12. In combination in a leather-splitting machine, the rolls, the carrying-frame for the leather having ways engaging the side edges thereof and arranged to move the said leather against the knife, and the knife with means for reciprocating or oscillating the same, intermediate of said ways leaving the side edges of the leather intact substantially as described.

13. In combination, the frame, the guide-bars for holding the leather, the upper and lower rolls, the knife and means for adjusting the rollers toward and from the cutting-line consisting of the right and left screws and the movable boxes having threads engaging the screws, substantially as described.

14. A leather-splitting machine, comprising the knife, the carrying-frame for the leather and the clamping means thereon for clamping the edges of the leather, substantially as described.

15. A leather-splitting machine, comprising the knife, the carrying-frame for the leather comprising the two guide-bars and the clamping means carried by said guide-bars to clamp the edges of the leather, substantially as described.

16. A leather-splitting machine, comprising the knife, the grooved guide-bars for holding the leather and the clamping means for holding the leather edges in said grooves, substantially as described.

17. In combination the knife, the grooved guide-bars, the clamping-jaws carried thereby and forming between them continuations of the said grooves and means for operating the said clamps, substantially as described.

18. In combination, the knife, the guide-bars having recesses, the clamping-jaws carried thereby and having inclined ribs, the clamping-slide having inclined recesses engaging therewith and the operating-rod extending through the guide-bars, substantially as described.

19. In combination, the knife, the guide bars arranged to receive the leather, the clamps carried by the guide bars and the operating connections between the clamp arranged to operate them simultaneously and uniformly, substantially as described.

20. In combination, the knife, the recessed and grooved guide-bars, the clamping-jaws forming continuations of the grooves and movable toward and from each other and the clamping-slides with means for operating the same longitudinally, said slides having connections with the clamping-jaws, substantially as described.

21. A leather-splitting machine, comprising the leather-carrying bars adjustable toward and from each other, the knife arranged between the bars and the rollers adjustable as to width, substantially as described.

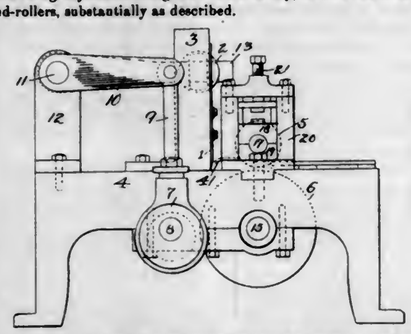
22. In combination in a leather-splitting machine, means for holding and guiding the side edges of the leather, the knife arranged between said holding means to act on the leather intermediate of its side edges, means for reciprocating or oscillating the knife and the feed-rolls for feeding the leather to the knife, substantially as described.

571,292. MACHINE FOR CUTTING LEATHER.

ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed July 17, 1895. Serial No. 556,204. (No model.)

Claim.—1. In combination, the cutting knife, the feeding mechanism comprising the upper and lower rollers 5 and 6 and variable driving means therefor, comprising the continuously-moving pawl-carrier, carrying the pawl continuously in one direction around the axis of the feed-roller, the ratchet and the pair of adjustable guard-plates forming a track around which the pawl runs, said plates controlling the engagement between the pawl and ratchet, substantially as described.

2. In combination, the horizontal table, a vertically-reciprocating knife, means for driving the same and the feed-rollers, arranged one above and one below the table and to one side of the knife, said knife being adjustable along the table laterally, toward and from the feed-rollers, substantially as described.



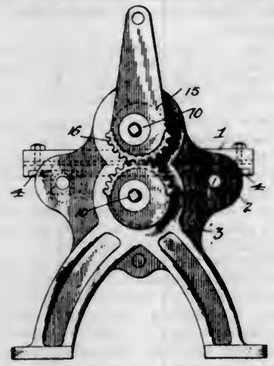
3. In combination, the reciprocating knife, a cross-head carrying the same, the standard in which the cross-head moves, means for operating the knife connected with the cross head, and comprising the rock-shaft, the arm extending therefrom and adjustably engaging the cross-head the feed-rollers, said standards with the cross-head and knife being adjustable toward and from the feed-rollers, substantially as described.

4. In combination, a table, the shaft 8, the reciprocating cutting-knife connections between said shaft and knife for operating the same, the feed-rollers and connections between the said feed-rollers and shaft 8, comprising the gear and pinion on the roll-shaft and shaft 8 respectively, the said gear being loose on the roll-shaft and rotating continuously in one direction, the pawl carried by the gear, the ratchet on the roll-shaft and a pair of guard-plates, arranged alongside each other and having cut away portions, said plates being adjustable and adapted to control the engagement of the pawl with the ratchet, substantially as described.

5. In combination, the frame, the vertically-reciprocating knife, the rock-shaft, and arm connected with the knife, the shaft 8, the eccentric thereon, the pitman and arm connecting the rock-shaft with the eccentric, the feed-rollers, the gear loose on the feed-roll shaft and engaging a pinion on the shaft 8, and the variable driving mechanism including the pawl and the ratchet with the adjustable guard-plates, substantially as described.

571,293. MACHINE FOR TRIMMING LEATHER.

ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed July 17, 1895. Serial No. 556,205. (No model.)



Claim.—1. In combination in a leather-trimming machine, a pair of rollers, a pair of guide-bars extending across the ends of the rolls and in the plane of the bight of the same, said guide-bars having grooves in the plane of the bight of the rolls to receive the edges of the leather projecting beyond the ends of the rolls and the knives in the said grooves to trim the said leather edges, substantially as described.

2. In combination in a leather trimming machine, a pair of guide-bars having grooves in their inner opposing faces with knives therein, the supporting-frame, said bars being adjustable toward and from each other, and the upper and lower rollers arranged with their bight in the plane of the grooves of the bars, said rollers being formed in

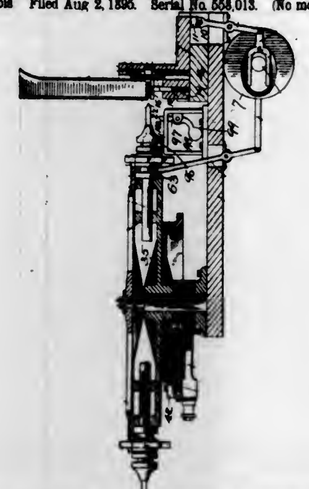
sections one section being arranged adjacent to each guide-bar and adjustable to follow the adjustments of said bar, substantially as described.

3. In combination, the grooved guide-bars carrying the knives, the rollers consisting of rings, the shafts having the screw-rods extending therethrough, and the nuts extending from the roller-rings to engage the screw-rod, said shaft being grooved longitudinally to receive the nuts, substantially as described.

4. In combination, the frame, the grooved guide-bars, the knives carried thereby, the rollers intermediate of the guide-bars, and adjustable laterally, the supporting-bars of dovetail form fitting notches in the guide-bars along which the guide-bars are adjustable, substantially as described.

571,294. MACHINE FOR FINISHING LEATHER LOOPS.

ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Aug. 2, 1895. Serial No. 558,013. (No model.)



Claim.—1. In combination, in a machine for finishing loops, means for shaping the slitted blanks, means for applying dressing thereto, means for drying the loop and means for giving the loop a final pressure independent of the first pressing means, substantially as described.

2. In combination, the carrier having loop-sticks, the press arranged to act on the loop on the loop stick, means for applying dressing to the loop, drying means and a second press for giving a final pressure to the loop on the stick, independent of the first press, substantially as described.

3. In combination, the carrier having loop-sticks to receive and spread the slitted blanks, a press, the finishing-bath arranged in the path of the loop-sticks, a heating-chamber through which the loop-stick with the loop thereon moves and a press for giving a final pressure to the loop, substantially as described.

4. In combination, the carrier having the loop-sticks, a pressing mechanism for the loop, means for applying the finishing or dressing material to the loop after it is pressed and means for drying the loop in its pressed state with the dressing applied thereto, substantially as described.

5. In combination, the carrier having loop-sticks, means for pressing the loops, and means for applying the dressing material comprising the baths or tanks arranged below the path of the loop-sticks and the brushes in the baths with operating means therefor to apply the dressing to the loops, substantially as described.

6. In combination, the carrier, the loop-stick, and means for placing the loop onto the stick comprising the spring pusher-plates arranged to move toward and from each other, means for holding the loop-blanks in front of the plates, and in line with the point of the loop stick, and means for moving the pusher-plates and loop-stick together, substantially as described.

7. In combination, the loop stick having a wedge-shaped end, the yielding pusher, the magazine for feeding the blanks to the pusher and means for operating the pusher and loop-stick together.

8. In combination, the loop-stick having a wedge-shaped end, the pusher comprising yielding members to press on the blanks, substantially as described.

9. In combination, a carrier, the loop-stick having a wedge-shaped end, the pusher comprising the yielding members and means for feeding the loop-blanks thereto, substantially as described.

10. In combination, the loop stick, the carrier therefor a magazine, the yielding pusher-plates and the yielding supporting-plate for the lower blank, substantially as described.

11. In combination, the loop-stick, the carrier, a magazine, the pusher-plates, and the yielding and pivoted supporting-plate, substantially as described.

12. In combination, the loop-stick, its carrier, a magazine having an opening at its lower end for the exit of the loop blank of less width than that of the blank with retaining-shoulders 15 at the sides of the opening, a support for the lower blank of the pile and the yielding pusher, substantially as described.

13. In combination, the movable carrier having a series of radially-movable loop-sticks, a press, arranged adjacent to the path of the loop-sticks and independent of the carrier and means for moving the loop-stick with the loop longitudinally into and out of the press when it arrives before the same, substantially as described.

14. In combination, the loop-stick, the carrier, a press arranged independent of but adjacent to the path of the loop-sticks on the carrier, said press comprising a frame, a series of dies movable radially therein, a series of levers projecting rearwardly and connected with the dies at their front ends and means engaging the rear ends of the levers for operating them, substantially as described.

15. In combination, the loop stick, the carrier, and the press comprising the dies movable toward and from each other, the die levers pivoted to the frame and extending rearwardly, the sliding shaft or cam-carrier, having the cam-surfaces for operating the levers, and means for operating the sliding shaft, substantially as described.

16. In combination, the loop-stick, the die, the die-blocks having notched upper ends with overhanging portions and the levers having pins or studs engaging said notched ends, and projecting laterally beneath the overhanging portion, substantially as described.

17. In combination, the movable carrier, the series of loop-sticks, movable longitudinally therein, means for moving the loop-sticks longitudinally at certain stations and means for positively holding the loop-sticks against longitudinal movement between said stations, substantially as described.

18. In combination, the movable carrier the press, the series of longitudinally-movable loop-sticks on the carrier arranged to be brought in succession in front of the press and means for holding the loop-sticks against longitudinal movement consisting of the flange or rim to engage a longitudinally-movable part of the loop-stick, said rim being cut away in line with the press, to allow the longitudinal movement of the loop stick, substantially as described.

19. In combination, the movable carrier, the longitudinally-movable loop-sticks and means arranged at one or more stations to engage the loop-stick to operate the same longitudinally, substantially as described.

20. In combination, the movable carrier, the longitudinally-movable loop-stick comprising the arbor with the grooved head, the flange or rim engaging the said groove and cut away at intervals and the lever arranged to engage the grooved head with means for operating the lever, substantially as described.

21. In combination, the carrier, the series of loop-sticks arranged to rotate, means adjacent to the path of the loop-sticks to operate on the loops carried thereby and means for rotating the loop-sticks, substantially as described.

22. In combination, the carrier, the series of longitudinally-movable loop-sticks arranged to rotate, means for rotating said sticks, means for operating the same longitudinally and means for holding the loop-sticks against rotary movement as they are moved longitudinally, substantially as described.

23. In combination, the carrier, the rotary loop-sticks having star-wheels, means arranged adjacent to the path of the loop-stick for operating on the loop and the stationary rack engaging the star-wheel to rotate the same with the loop-stick, substantially as described.

24. In combination, the carrier, the loop-sticks, means arranged adjacent to the loop-stick path to operate thereon, a vibrator-lever having a pawl on one side, a stop pin, and a dog on the other side of the vibrator for controlling the stop-pin, substantially as described.

25. In combination, the carrier, the rotary loop-sticks, the star-wheels, the rack, means for operating the loop-sticks longitudinally, and the guides engaging the star-wheels to prevent rotary movement, and means for acting on the loop in the advanced position of the loop-stick, substantially as described.

26. In combination, the carrier, the loop-sticks having longitudinal movement, the pusher on the loop-stick, and the dog for retarding the pusher, substantially as described.

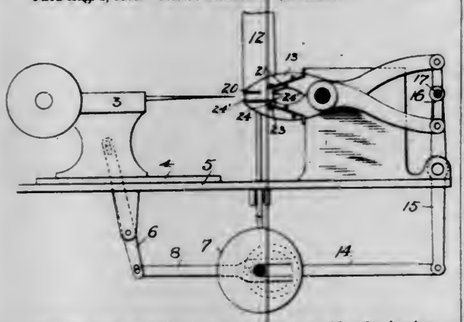
27. In combination, the carrier, the loop-sticks having longitudinal movements, the pusher on the loop-stick, means for retarding the pusher, and means for placing a fresh blank on the loop stick and for returning the pusher to normal position, substantially as described.

28. In combination, the loop-stick, the series of dies the recipro-

cating shaft, the cams thereon and adjustable connections between the same and dies radiating from the shaft, substantially as described.

29. In combination, the loop-stick, the series of dies, the cams, the sliding carrier therefor, and the die-levers having adjustable portions to be operated by the sliding cams, said adjustable connection radiating from the sliding carrier, substantially as described.

571,295. LEATHER-SLITTING MACHINE. ALONZO L. SWEET, Chicago, Ill., assignor to the Seamless Leather Company, of Illinois. Filed Aug. 2, 1895. Serial No. 558,014. (No model.)



Claim.—1. In combination in a slitting machine for leather, a slitting-knife, means for holding the leather by its edges and means intermediate of the holding means located on opposite sides of the leather to be slit and engaging said opposite sides to hold the intermediate part of the said leather blank, substantially as described.

2. In combination, the slitting-knife, the holding means for the edges of the leather and yielding means intermediate of the edge, holding means to engage the leather, substantially as described.

3. In combination, the slitting-knife, means for clamping the leather at its edges, and the spring-plates intermediate of the clamping means, substantially as described.

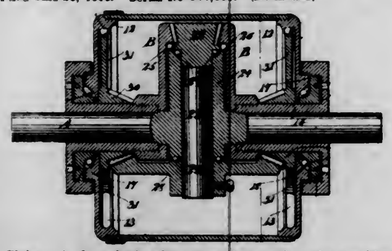
4. In combination, the slitting-knife, the clamping-levers pivotally supported, means for opening and closing the levers, said levers being arranged to clamp the edges of the leather, substantially as described.

5. In combination, a slitting-knife clamping means with operating mechanism to open and close the same, a receiver or box intermediate of the clamping means and feeding mechanism for feeding the blanks thereto, said box having yielding walls and open at the front, sides and rear edges for receiving the loop-blank and the slitting-knife, substantially as described.

6. In combination, means for holding the leather and a slitting-knife composed of sections and means for reciprocating the sections in relation to each other in the direction of the cut to thrust the point of the sections alternately in advance, substantially as described.

7. In combination, the clamping means comprising the two pairs of levers with means for opening and closing the same, the spring-plates extending across between the pairs of levers, a slitting-knife and feeding mechanism for the leather, substantially as described.

571,296. DEVICE FOR CONVERTING MOTION. WESTON E. WATKINS, Phelps, N. Y., assignor to William A. White, same place. Filed Jan. 28, 1896. Serial No 577,168. (No model.)



Claim.—1. In a device for converting motion, the combination, with two lerers, a sleeve secured to each lever, a stationary axis upon which the sleeves turo, and a toothed segment secured to each sleeve, of a hub or casing mounted to revolve, converting-gearing operated by the said segments, and clutch devices operated by the said gearing and arranged to operate upon the hub or casing and revolve the same, as and for the purpose specified.

2. In a device for converting motion, the combination, with two levers, a sleeve secured to each lever, a stationary axis upon which the sleeves turn, and a toothed segment secured to each sleeve, of a shaft mounted in stationary bearings, being at an angle to the aforesaid stationary axis, a beveled gear secured to the upper end of the said shaft, engaging with each of the said toothed segments, a gear secured to the lower end of the oscillating gear-carrying shaft, and pinions mounted to oscillate upon the said sleeves, engaged by the said lower gear, each pinion having a clutch connection with the interior of the hub or casing, substantially as described.

3. The combination, with two levers, a sleeve secured to each lever, a stationary shaft or axis upon which the sleeves turn, and a toothed segment secured to each sleeve, of a hub or casing provided with annular grooves near its ends, a bushing formed upon the said stationary shaft or axis and extending through the same, a shaft mounted to oscillate in the said bushing, a pinion located at the upper portion of the shaft and engaged by both toothed segments, a gear located upon the lower end of the said oscillating shaft, pinions mounted to oscillate one upon each sleeve, being actuated from the said lower gear, arms projected from the said pinions, having their outer ends beveled, and balls engaging with the outer ends of the arms and the grooved portions of the hub or casing, as and for the purpose set forth.

4. The combination with two levers, a sleeve secured to each lever, a stationary shaft or axis upon which the sleeves turn, and a toothed segment secured to each sleeve, of a hub or casing provided with annular grooves near its ends, a bushing formed upon said stationary shaft or axis and extending through the same, a shaft mounted to oscillate in the said bushing, a pinion located at the upper portion of the shaft, engaged by both toothed segments, a gear located upon the lower end of the said oscillating shaft, pinions mounted to oscillate one upon each sleeve, being actuated from the said lower gear, arms projected from the said pinions, the outer ends of which arms are beveled and the beveled surfaces grooved, the grooves in the said beveled surfaces being coincident with a groove in the hub or casing, a ball carried by the grooved portion of each arm and adapted for frictional engagement with the grooved portion of the said hub, and a stop formed at the lower portion of the beveled end of each arm, preventing the balls from leaving the said arms, as and for the purpose specified.

571,297. ELECTRIC WALL-BOX. WILLIAM F. BOSSERT, Utica, N. Y., assignor to the Bossert Electric Construction Company. Filed Aug. 3, 1896. Serial No. 601,554. (No model.)



Claim.—1. The combination with a wall-box having openings adapted to receive electric conduits, of plug-plates wedged in the openings and substantially coinciding with the exterior and interior surfaces of the walls of the box.

2. The combination of the box herein described, the electric conduits entering the box and the clamp, substantially as set forth.

3. The combination with the wall-box herein described of the adjustable cover, substantially as set forth.

4. The electric wall-box having conduit-openings and a plug-plate therefor having lipped edges, substantially as set forth.

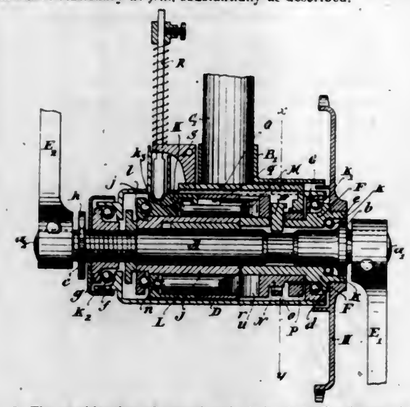
5. The combination with a wall-box having openings adapted to receive electric conduits, of plug-plates wedging in the openings and adapted to be displaced or removed to clear the opening for the conduit by being forced inwardly or outwardly, substantially as set forth.

6. A wall-box drawn out of sheet metal having numerous openings formed by punching and adapted to receive electric conduits plug-plates therefor wedging in the openings and conforming to the exterior and interior surfaces of the walls in which the opening is formed and capable of being removed by forcing the plug-plates outwardly or inwardly, substantially as set forth.

571,298. CYCLE. HANS BRINGS, Cologne, Germany. Filed Aug 5, 1895. Serial No. 558,277. (No model.)

Claim.—1. The combination of a crank-axle suitably mounted, a sleeve J keyed thereto and having mounted therein longitudinally-movable pins with V-shaped ends, a cam-sleeve detachably mounted on said sleeve J to operate said pin-butts, a sleeve F loose on said crank-axle, a clutch N loose on said sleeve F and having teeth to engage with said pins, a driving-chain wheel mounted on said sleeve F, means for coupling the clutch N and sleeve, and means for arresting at times the said cam sleeve substantially as described

2. The combination of a crank-axle A, having affixed around it a series of longitudinally-movable pins M having V-shaped ends, a cam-sleeve loosely mounted on said axle and engaging the butt-ends of said pins, as specified, clutch having correspondingly-shaped teeth to engage the projected end of said pins, a sleeve F loosely mounted on said axle and having driving-wheel H and suitable orifice, a spring-pressed pin *w* to enter said orifice, said pin being spring-mounted on the said clutch N, means to operate said pin, and means to retain the cam-sleeve stationary at will, substantially as described.

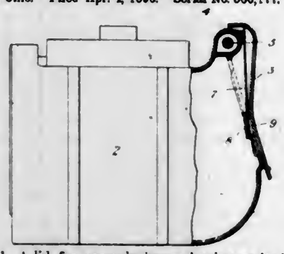


3. The combination of a crank-axle A, having affixed around it a series of longitudinally-movable pins M having V-shaped ends, a cam-sleeve loosely mounted on said axle and engaging the butt-ends of said pins, as specified, means to retain said cam sleeve stationary, a clutch having correspondingly-shaped teeth to engage the projected end of said pins, a sleeve F loosely mounted on said axle and having driving-wheel H; an orifice in said sleeve and a spring-pressed pin on the clutch, to engage said orifice, a cam-disk *p* to operate said pin, and means to move said cam-disk longitudinally on said sleeve F substantially as described.

4. The combination of a crank-axle A having affixed around it a series of longitudinally-movable pins M having V-shaped ends, a cam-sleeve loosely mounted on said axle and engaging the butt-ends of said pins, as specified, a clutch having correspondingly-shaped teeth to engage the projected end of said pins, a sleeve F loosely mounted on said axle and having driving-wheel H, means for coupling said clutch and sleeve, an orifice *j* on the cam-sleeve K and a vertically-movable spring-pressed rod R to engage said orifice substantially as described.

5. The combination of a crank-axle A having affixed around it a series of longitudinally-movable pins M having V-shaped ends, a cam-sleeve loosely mounted on said axle and engaging the butt-ends of said pins, as specified, a clutch having correspondingly-shaped teeth to engage the projected end of said pins, a sleeve F loosely mounted on said axle and having driving-wheel H, means for coupling said clutch and sleeve, an orifice *j* on the cam-sleeve K and a vertically-movable spring-pressed rod R to engage said orifice, a bell-crank lever *s* connected to said rod and to the cam-disk P in the manner and for the purpose substantially as described.

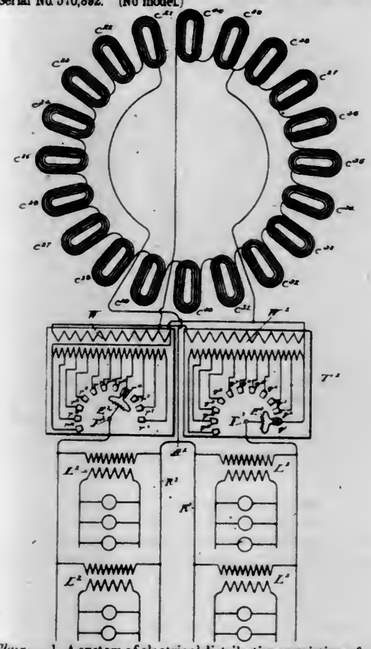
571,299. LID FOR CAR-AXLE BOXES. ALBERT O. BUCKIUS, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed Apr. 4, 1896. Serial No. 586,177. (No model.)



Claim.—1. A lid for car-axle boxes, having on its inner face a bridge or pocket, with an internal projection, and a leaf spring having a hole or recess adapted to engage therewith; substantially as described.

2. A lid for car-axle boxes having on its inner face a bridge or pocket, with an internal projection, and a leaf-spring having a hole or recess adapted to engage therewith, the space under the bridge or projection being dished or curved; substantially as described.

571,300. SYSTEM OF ELECTRICAL DISTRIBUTION. CUMMINGS C. CHESNEY and JOHN F. KELLY, Pittsfield, Mass., assignors to the Stanley Electric Manufacturing Company, same place. Filed Dec. 3, 1895. Serial No. 570,892. (No model.)

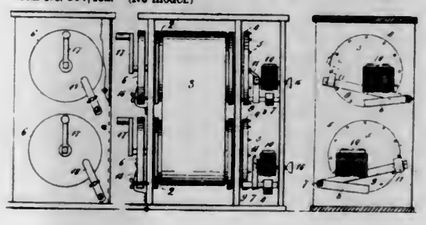


Claim.—1. A system of electrical distribution consisting of a work circuit containing translating devices, a dynamo having principal generating-coils and independent auxiliary generating-coils, and a circuit-controller consisting of a controlling transformer energized by the current from said independent auxiliary coils and supplying an electromotive force in series with or opposition to that of the main work-circuit, substantially as described.

2. A system of electrical distribution consisting of more than one circuit, a dynamo having principal generating coils and independent auxiliary generating coils, and independent circuit-controllers, each consisting of a controlling transformer energized by the current from said independent auxiliary generating-coils, and supplying an electromotive force in series with or opposition to that of the principal generating coils and the line, substantially as described.

3. A system of electrical distribution consisting or more than one circuit, a dynamo having principal generating-coils and independent auxiliary generating-coils, and independent circuit controllers, each consisting of a controlling transformer having its primary in series with the independent auxiliary generating-coils, and its secondary when in action in series with or opposition to the principal generating-coils and the line, substantially as described.

571,301. STATION-INDICATOR. DANIEL E. CONNER, Covington, Ky., assignor to James Steffen, same place. Filed June 29, 1896. Serial No. 597,402. (No model.)



Claim.—In a station and street indicator for electrically-propelled railway-cars, the combination with the herein-described contact-switch and electromagnets of the winding spools or rollers, the belt attached at its extremities to the spools and having the names of the stations or streets printed or painted thereon in regular succession, the disks provided with studs as shown and attached to the outer ends of the spools, the vertically-swinging arms adapted to move in unison with the armatures of the magnets and having pawls at their free ends to engage the studs, all arranged substantially as and for the purpose herein specified.

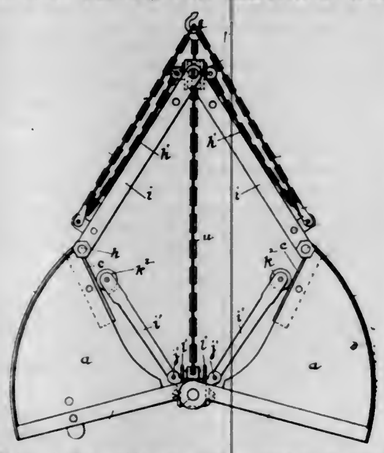
571,302. BICYCLE. LOUIS DE ROSE, San Francisco, Cal. Filed Dec. 9, 1895. Serial No. 571,583. (No model.)



Claim.—1. In a bicycle, the combination of a frame, the rear axle, the fork D, connected with the rear axle, the spring-bar connected at an intermediate point of its length with the upper end of the fork and having the upwardly and forwardly bent portion *b*, a connection between the spring-bar and frame, and the seat mounted on and secured to said portion *b*, of the spring-bar, substantially as and for the purpose set forth.

2. In a bicycle, the combination of the main frame, the rear axle, the seat-support carried by the main frame, the seat connected thereto, the fork D, connected with the rear axle, the spring-bar connected at its forward end with the seat-support and at an intermediate point of its length with the fork and having the upwardly and forwardly bent portion *b*, the seat mounted on and secured to said portion *b*, and the hand-grasp also connected with the seat-support; the said hand-grasp being disposed below the seat on the seat-support of the main frame and corresponding in length to the width of said seat, substantially as and for the purpose set forth.

571,303. COAL-BUCKET. CARL EIBER, Brooklyn, N. Y. Filed Jan. 22, 1894. Renewed Apr. 4, 1896. Serial No. 586,199. (No model.)



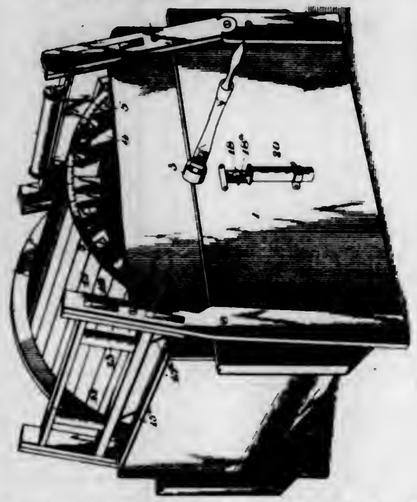
Claim.—1. The combination of the two parts of the scoop, the lower cross-head having the said two parts of the scoop pivoted to it, the truss-frames pivoted to the outer extremities of the said two parts of the scoop, the upper cross-head having the truss-frames pivoted to it, the opening-chains attached to the trusses at or near their lower extremities and the closing and hoisting chains attached to the lower cross-head and traversing the sheaves in the upper and lower cross-heads substantially as described.

2. The combination with the upper cross-head, the truss-frames pivoted thereto, the closing and hoisting chains, and the sheaves in said cross-head for said chains, of the cross-head-controlling chains connected to it and to the truss-frames substantially as described.

3. The combination with the two parts of the scoop, the lower cross-head, the closing and hoisting chains and the sheaves in said cross head for said chains, of the bar-weights pivoted to the cross-head and bearing on the two parts of the scoop respectively substantially as described.

4. The combination of the lower cross-head, the bucket-opening stop-spurs projecting from the extremities of the cross-head, and the two parts of the scoop pivoted to the said cross head, said scoop pivoted at the outer extremities to the truss-frames, and said truss-frames pivoted to the upper cross-head with opening-chains and closing and hoisting chains, all substantially as described.

571,304. WASHING-MACHINE. JOHN H. ESTES, Everton, Mo., assignor of one-half to Joseph W. Springer, same place. Filed Feb. 24, 1896. Serial No. 580,415. (No model.)

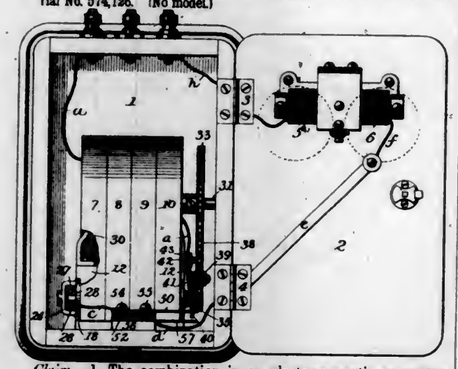


Claim.—1. In a washing-machine, the combination of a body provided at opposite sides with vertical grooves forming guides, a cylindrical rubber journaled in the washing-machine body, a flexible washboard extending entirely around the cylindrical rubber and having at its bottom a transverse slat projecting laterally from the washboard and extending into and guided by said grooves, supporting-frames mounted on the body at the ends thereof, one of the frames being rigid and the other frame being pivoted and connected with the adjacent end of the flexible washboard and adapted to swing the same to and from the cylindrical rubber, springs mounted on the frames and connected with the washboard, pulleys mounted at opposite sides of the body in openings thereof and arranged at the top of the vertical grooves, cords connected with the projecting ends of the transverse slat, arranged within the grooves of the body and passing over the said pulleys, and springs connected with the cords, substantially as described.

2. In a washing-machine, the combination of a body, supporting-frames mounted on the body at the ends thereof, one of the frames being rigid and the other being pivoted and capable of swinging inward and outward, springs mounted on the frames, a rotary rubber journaled in the body, and a flexible cylindrical washboard extending around the entire periphery of the rubber and having one end connected with the springs of the pivoted frame, substantially as described.

3. In a washing-machine, the combination of a body, a rotary rubber journaled therein, a flexible cylindrical washboard extending around the entire periphery of the rubber and composed of transverse slats and cords or the like, having the slats strung on them, a pivoted frame mounted on the front end of the body and provided with a transverse roll receiving the cords at the adjacent end of the washboard, springs mounted on the pivoted frame and connected at their lower ends with said cords, a rigid frame mounted on the body at the rear end thereof and having an adjustable transverse portion, and springs mounted thereon and connected at their upper ends with the adjacent portion of the washboard, substantially as described.

571,305. MAGNETO-GENERATOR. JOHN C. FRANCIS, New York, N. Y., assignor to Elias M. Greene, same place. Filed Jan. 2, 1896. Serial No. 574,126. (No model.)



Claim.—1. The combination in an electromagnetic generator, of the contacts, the contact-lever, and a slack chain arranged to operate the lever when said chain is tightened, substantially as described.

2. The combination in an electromagnetic generator, of ordinary horseshoe-magnets, separate pole-pieces confined between the poles or lower ends of said magnets and counterbored at each end to constitute recesses for the reception of supporting heads or bearings for the shaft of the armature, substantially as described.

3. The combination in an electromagnetic generator, of separate pole-pieces confined between the poles or lower ends of the magnets, heads recessed or sunken into the ends of said pole-pieces, and supporting the rotating armature-shaft, brackets secured to the upper part of the pole-pieces at their ends, a shaft supported in said brackets, a bell and armature circuit, and means for automatically cutting out the armature, substantially as shown and described.

4. The combination in an electromagnetic generator, of ordinary horseshoe-magnets and an armature rotating between the lower ends of the latter, a pinion carried by one end of the armature-shaft, an enlarged sprocket-wheel supported in bearings above the pinion, and a sprocket-chain connecting the two, and being normally somewhat slack, the pivoted lever normally pressing against the chain to take up the slack therein, and the coiled spring connecting the lower arm of said lever, the whole being arranged substantially as shown and for the purpose set forth.

5. The combination in an electromagnetic generator, of the separate pole-pieces, the armature-shaft, the pivoted lever, the enlarged sprocket-wheel and the sprocket-pinion, the connecting-chain, the contact-springs, the coiled spring connecting the lever, and the armature and bell circuits, substantially as shown and herein described.

6. The combination in an electromagnetic generator, of the pivoted lever, the upper contact-spring with which the lever is normally in contact, the lower contact spring, constituting a part of the armature-circuit, connections to complete both the armature-circuit with the magnets and the bell-circuit, the bell-operating devices, and an automatic device for operating said lever, substantially as shown and for the purpose described.

571,306. APPARATUS FOR TREATING RODS OR BARS. GEO. H. GEYER Pittsburg, Pa., assignor to Jones & Laughlins, Limited, same place. Filed Feb. 28, 1894. Serial No. 501,790. (No model.)

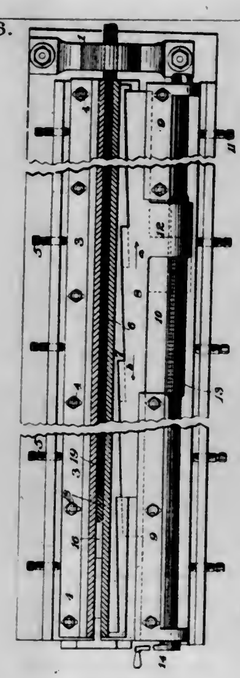
Claim.—1. In a machine for treating bars, rods, &c., the combination of a die for reducing a bar or rod, and mechanism for pushing the entire length of the bar or rod through the die, substantially as set forth.

2. In a machine for treating bars, rods, &c., the combination of a die for reducing a bar or rod, and mechanism operative on the rear end of the bar or rod, for pushing the latter through the die, substantially as set forth.

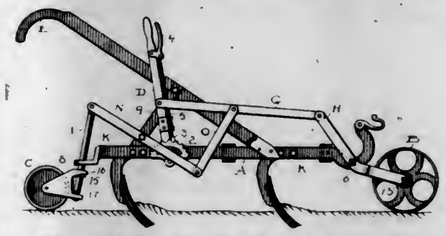
3. In a machine for treating bars, rods, &c., the combination of a die for reducing a bar or rod, a guide for preventing lateral movement of the bar or rod, in any direction, and mechanism for pushing the bar or rod through the die, substantially as set forth.

4. In a machine for treating bars, rods, &c., the combination of a die for reducing a bar or rod, a stationary and a movable guide, means for shifting the movable guide laterally, and means for pushing the bar or rod through the die, substantially as set forth.

571,306.



571,307. CULTIVATOR. ELIAS HAIMAN, REINHOLD HUETTICH, and CLARK BISHOP, Cleveland, Ohio, assignors to the Empire Plow Company, same place. Filed Feb. 19, 1896. Serial No. 579,885. (No model.)



Claim.—1. The cultivator-frame, the front wheel and two standards for said wheel bent edgewise substantially midway of their length, and pivoted on the sides of said frame in the angle of their bend, in combination with the operating bar and lever connected with the tops of said standards, the lower portion of said standards extending forward of the pivot-point at an inclination, substantially as described.

2. The frame of the cultivator, the front wheel B, the two flat standards H for said wheel bent midway of their length and pivoted in the angle of their bends on said frame, the lower portion of said standards projecting forward from the said pivot-point, in combination with the operating-bar G, a single rear wheel and mechanism connecting said rear wheel operatively with said bar G, substantially as described.

3. The cultivator-frame, the rear caster and its standard constructed to slide up and down in said frame, an operating-bar N pivoted to the top of said standard at one end, and to an operating-link O at the other end and pivoted at about its middle on the cultivator-frame, and an actuating bar G and lever D connected with said link, substantially as described.

4. The cultivator-frame, the front wheel and the supporting-standards H for said wheel bent and pivoted at about their middle on said frame, in combination with the single rear caster-wheel C, and a vertically-sliding standard L therefor, the operating-bar G connected with the top of said standards H, and the lever D for operating said bar, the link C pivoted to said bar G and the bar N pivoted between its ends and connecting the rear caster standard with the link O, substantially as described.

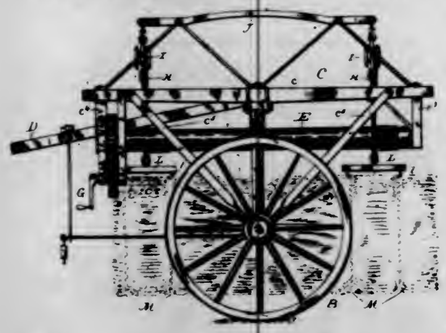
571,308. FLASK FOR MAKING SEAMLESS SASH-WEIGHTS. ADDISON S. HODGES, Chelsea, Mass., assignor to Esther Ann Hodges, same place. Filed Nov. 11, 1895. Serial No. 568,649. (No model.)



Claim.—1. In a device for molding sash-weights, the combination with a longitudinally-grooved bottom board G', of a series of head-patterns G secured at equal distances apart to the bottom board and each having a laterally-extending recess formed in one side, a longitudinally-movable bar K fitted to slide in the said groove in the bottom board, and a series of mark-patterns *k* secured to the movable bar K and fitted in the recesses in the head-patterns, whereby said mark-patterns may be simultaneously moved into said recesses when the patterns are withdrawn from the mold, substantially as and for the purpose set forth.

2. In a device for molding sash-weights, the combination with a longitudinally-grooved bottom board G', of a series of head patterns G secured at equal distances apart to the bottom board and provided upon their corresponding sides with laterally-extending recesses, a longitudinally-movable bar K fitted to slide in the groove in the bottom board, a series of mark-patterns *k* secured to the bar K and fitted in the recesses in the head-patterns, a frame H surrounding the head-patterns, a perforated sand-lifter plate A, fitted over the head-patterns, and a sand-receiving frame I seated on said sand-lifter plate, substantially as described and for the purpose specified.

571,309. VEHICLE FOR HAULING SUGAR-CANE. ANTHONY A. LORIO, Lakeland, La., assignor of one-half to Edouard A. Koch, Bayou Goula, La. Filed Feb. 14, 1896. Serial No. 579,281. (No model.)



Claim.—1. An apparatus for handling sugar cane comprising a wheeled frame, an overhead support thereon carrying blocks, windlass-rollers or drums mounted on the frame, ropes wound upon the rollers and engaging the blocks on the overhead support, blocks supported by the ropes, hook-carrying bars depending from these latter blocks, and mechanism for turning the rollers, substantially as described.

2. An apparatus for handling sugar-cane comprising a wheeled frame having an extensible axle on which are mounted the supporting-wheels, windlass-rollers carried by the frame, ropes wound upon the rollers, blocks supported by the ropes, hook-carrying bars depending from the blocks, and mechanism for turning the rollers, substantially as described.

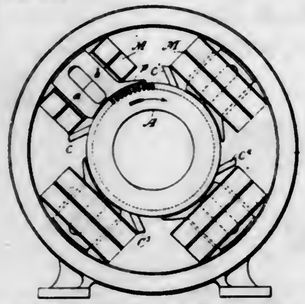
571,310. DYNAMO-ELECTRIC MACHINE. ROBERT LUNDELL, Brooklyn, N. Y., assignor of two-thirds to Edward H. Johnson, New York, N. Y. Filed Oct. 7, 1895. Serial No. 564,847. (No model.)

Claim.—1. A dynamo-electric machine having its field cores or poles arranged with saturated and unsaturated portions as and for the purpose described.

2. A dynamo-electric machine having field-magnet cores or pole-pieces so divided and arranged that there is an increase in the magnetic reluctance in the direction of rotation of the armature or rotary part.

3. A dynamo-electric machine having field-magnet cores and pole-pieces so divided and arranged that the magnetic reluctance is caused to increase in the direction of rotation of the armature or rotary part.

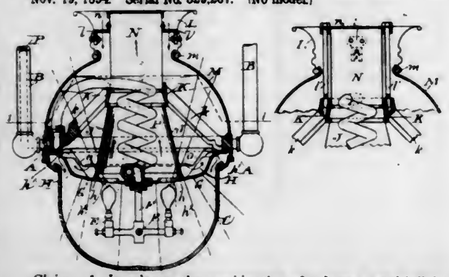
4. Means for preventing the shifting of the magnetic field with increasing load in a dynamo-electric machine, consisting of field-cores or pole-pieces having low magnetic reluctance on the side where commutation takes place and high magnetic reluctance on the opposite side of the pole while the armature or rotary part rotates from the pole of low magnetic reluctance toward the pole of high magnetic reluctance.



5. In a dynamo-electric machine a field-magnet coil surrounding a field-magnet pole which is divided into two parts separated by an air-space, one of said parts having an inner field-pole surface of greater area than the other.

6. In a dynamo-electric machine a field-magnet coil surrounding two field-magnet poles separated from each other by an intervening air-space, one of said field-magnet poles having a wedge-shaped pole-piece, the inner face of which is of greater area than the inner face of the other pole-piece, substantially as described.

571,311. GAS-LAMP. JAMES F. MCELROY, Albany, N. Y., assignor to The Consolidated Car-Heating Company, same place. Filed Nov. 19, 1894. Serial No. 529,267. (No model.)



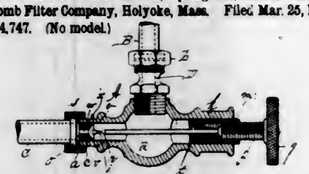
Claim.—1. In a lamp, the combination of a dome, a multiplicity of burners, a reflector-plate between said dome and said burners having corresponding apertures above said burners, a transparent chimney arranged above the apertures, a ring adapted to support the upper end of said chimney, braces adapted to support said ring, a secondary chimney resting upon said ring, said dome, apertures in the reflector-plate, and burners being so arranged that the dome is illuminated by direct rays from said burners through said apertures, substantially as described and for the purpose set forth.

2. In a lamp, a dome, a burner, an opaque reflector-plate intervening between said dome and burner and having an aperture above the burner, a transparent chimney erected above said aperture, an entering gas-pipe entering said chimney and depending therethrough and supported by said reflector-plate and carrying burners at its lower extremity, all suitably mounted and arranged, substantially as described and for the purpose set forth.

3. In a lamp, the combination of a lamp-ring, a globe hinged thereto, a burner within said globe, a reflector above said burner secured to said ring, a coil placed above said reflector, a cone-shaped lower chimney placed above said reflector, a ring placed around the upper edge of said lower chimney, an upper chimney connecting with said lower chimney, a dome around said lower chimney and upper chimney resting on said lamp ring, a guide ring O located contiguous to the ribs H H upon the upper surface of the reflecting-plate G, whereby the air drawn through the upper portion of the dome contiguous to the chimney N is caused to pass under the guide-ring O through the passage ways between the ribs, and thence into the globe, substantially as described.

4. In a lamp, the combination of a lamp-ring, a lower globe hinged thereto, a burner within said globe, a reflector provided with a series of ribs, an opening in said reflector above each of the burners, a cone placed above said reflector, an upper chimney above said cone, a dome placed about said cone and upper chimney, a guide connected with said ring for the purpose of directing the current of air from the top of the dome in contact with the lower chimney and said ribs on said reflector, substantially as described and for the purpose set forth.

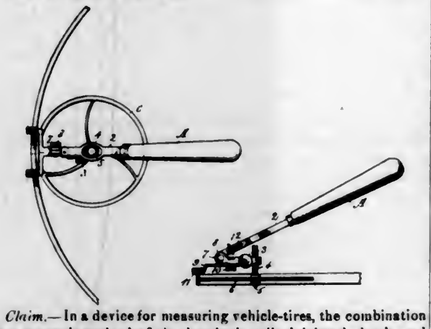
571,312. APPARATUS FOR FILTERING AND CLARIFYING LIQUIDS. ALBERT C. NEWCOMB, Springfield, Mass., assignor to the Newcomb Filter Company, Holyoke, Mass. Filed Mar. 25, 1896. Serial No. 584,747. (No model.)



Claim.—1. In a device for filtering and clarifying water, a valve having a longitudinal inlet water-passage therein, on the inner end of which is a valve-seat, combined with a valve-rod normally extending through said passage and having a head on its free end for abrading action upon the wall of said passage, a valve-surface thereon for engagement with said seat, and that portion thereof between said head and valve-seat of a reduced diameter, a revoluble spindle fixed to said rod having a screw connection with said valve whereby a longitudinal movement is imparted to the free end of said rod within said passage, water-filtering devices substantially as described, and connections uniting said valve and filtering devices, substantially as set forth.

2. In a device for filtering and clarifying water, a valve having a longitudinal inlet water-passage therein, on the inner end of which is a valve-seat, combined with a valve-rod normally extending through said passage, and having a head on its free end of slightly less diameter than said water-passage, a valve-surface thereon for engagement with said seat, and that portion thereof between said head and seat of reduced diameter whereby water may flow therebetween, a revoluble spindle to which one end of said rod is fixed, having a screw connection with said valve whereby a longitudinal and revoluble movement is imparted to the free end of said rod within said passage, water-filtering devices substantially as described, and connections uniting said valve and filtering devices, substantially as set forth.

571,313. WHEEL-MEASURE. AUGUST E. REMUS, Oak Park, Ill., assignor of one-third to C. J. Gotsch, same place. Filed June 24, 1896. Serial No. 596,801. (No model.)



Claim.—In a device for measuring vehicle-tires, the combination with a measuring-wheel of the herein-described jointed shank, and the adjustable slide provided with guide-rollers substantially as and for the purpose herein set forth.

571,314. PROCESS OF FORMING PHOTOGRAPHIC PRINTS. SEBASTIEN P. SAMPOLO and CHARLES L. A. BRASSEUR, New York, N. Y., assignors to the Joly-Sambra Company, of New York. Filed Apr. 14, 1896. Serial No. 587,552. (No specimens.)



Claim.—1. The mode or art herein described of forming printing-surfaces for color-printing from a photograph from nature or artists' work, which consists in first making a subdivided photographic representation, composed of differing partial images in side by-side areas of the representation, then producing photographically a separate partial print for and from each partial image, and then producing a printing block or surface for and from each partial photo-print, substantially as described.

2. The mode or art herein described of forming a photographic print from any one of differing partial images forming parts of a subdivided photographic representation of a multicolored object and formed or lying in side-by-side areas of the representation, which consists in forming a print of the desired partial imnge by means of the action of light from or through the chosen partial image and through a screen having side by-side areas respectively light-retarding or opaque and light transmitting, the transmitting areas thereof exposing the chosen partial image and the retarding or opaque areas thereof obscuring or stopping out the remainder of the said partial images during the printing, substantially as described.

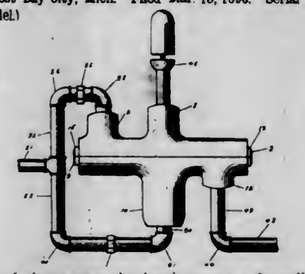
3 The mode or art herein described of forming a photographic print from any one of differing partial images forming parts of a subdivided photographic representation of a multicolored object and formed or lying in side-by-side areas of the representation, which consists in forming a print of the desired partial image by means of the action of light from or through the chosen partial image and through a screen having side-by-side areas respectively light-retarding or opaque and light-transmitting, the transmitting areas thereof exposing the chosen partial image and the retarding or opaque areas thereof obscuring or stopping out the remainder of the said partial images during the printing, and in causing relative motion of the image-bearer and screen taken as one, and the print film, during the printing, to expose new or additional areas of the print film to the action of the light from or through the said partial image, substantially as described.

4. The mode or art herein described of forming a photographic print from any one of differing partial images forming parts of a subdivided photographic representation of a multicolored object and formed or lying in side by-side areas of the representation, which consists in exposing a sensitive film to the action of light from or through one of said partial images, and in stopping out the remainder of said partial images, substantially as described.

5. The mode or art herein described of forming a photographic print from any one of differing partial images forming parts of a subdivided photographic representation of a multicolored object and formed or lying in side-by-side areas of the representation, which consists in exposing a sensitive film to the action of light from or through one of said partial images, in stopping out the remainder of said partial images, and in causing relative motion of the image-bearer and screen taken as one, and the print film, during the printing, to expose new or additional areas of the print film to the action of the light from or through the said partial image, substantially as described.

6. The mode or art herein described of forming printing-surfaces for color-printing from a photograph from nature or artists' work, which consists in first making a subdivided photographic representation composed of differering partial images in side-by-side areas of the representation; second, producing photographically a separate partial print for and from each partial image, each by exposing a sensitive film to the action of light from or through one of said partial images, stopping out the remainder of said partial images and causing the light to act upon the whole or the desired parts of the sensitive film; and third, producing a printing block or surface for and from each partial print so obtained, substantially as described.

571,315. PNEUMATIC SIGNALING APPARATUS. FRED SCHIEFFLER, West Bay City, Mich. Filed Mar. 13, 1896. Serial No. 583,138. (No model.)



Claim.—1. In a pneumatic signal apparatus for railway-trains, two substantially-alike chambers provided with inlet and outlet connections on opposite sides, a dividing flexible diaphragm therefor, an opening therein, the disks or washers 22, and 23, provided with openings therein, the nut 25, the whistle-valve stem 19, provided with the

valve 18 near its upper end and the shoulder 20, the said disks placed on opposite sides of the said diaphragm with their openings directly opposite the said opening in the said diaphragm and the said whistle-stem inserted therein against the said shoulder 20 and secured thereto by the nut 25, the lower valve-stem 27, the auxiliary valve 26, and the nipple 30, the said lower valve-stem provided with the valve 26, provided with the port 47, and the enlargement on its lower end, with its upper end resting against the lower end of the said upper valve-stem and its lower end resting on the upper side of the auxiliary spring 29, the lower end of the said auxiliary spring resting on and supported by the upper end of the lower inlet-nipple 30 substantially as described.

2. In a pneumatic signal apparatus for railroad-trains the combination of a cylindrical shaped chamber 1 split longitudinal in two substantially alike parts provided with the upper inlet lug 6 the lower inlet-lug 10 and whistle-supporting lug 8 and the threaded lugs 2, 2, on its ends, the nuts 15, 15, in combination with the vertical pipe 32, and 33 and the T joint 34, the said vertical pipes connected thereby, the unions 35 and 39 and the elbows 36 and 40 the upper inlet-nipple 37 and the elbow 38 the lower inlet-nipple 30 the elbow 41 and the whistle 45 combined with the diaphragm 14 the washers 21 and 22 the upper valve-stem 19 the nut 25 the lower valve stem 27 and the spring 29 all said parts combined substantially as described.

571,316. RAILROAD CROSS-TIE. ALONZO BIDWELL, Sedgwick, Ark., assignor of seven twenty-fourths to James V. Dabbs, John Glunz, and M. V Barnett, Fort Scott, Kans. Filed May 20, 1896. Serial No. 592,245. (No model.)



Claim.—A railroad cross-tie having the base A, rail-supports B and the median rib *a* the said rib being provided with overhangs a' a^3, ratchet a^3 and the spring-clamp C curved in front as shown and described.

571,317. CARRIAGE ATTACHMENT FOR LAMPS. MORRILL F. BRIGHAM, Marlborough, Mass.; Eugene O. Brigham administrator of said Morrill F. Brigham, deceased. Filed Mar 27, 1895. Renewed July 16, 1896. Serial No. 599,448. (No model.)

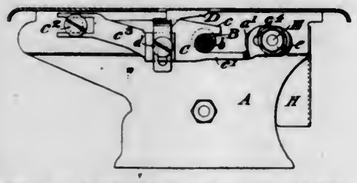


Claim.—1. The herein described lamp-carrying attachment, consisting of a suitable top piece, fitted with a handle and a plurality of spring-actuated holding-arms depending from the said top and provided with lower beveled faced holding ends adapted to snap beneath a lamp-burner dome-plate, substantially as described.

2. The herein-described lamp-carrying attachment, comprising a top piece in the form of a rigid disk, a disk-like protector parallel to and below the top piece, a spring tending to separate the two, and a plurality of laterally spring-actuated holding-arms, fixedly secured about the periphery of said top piece and movably secured about the periphery of said protector, said arms having hooked lower ends to engage beneath the dome-plate of the lamp-burner, substantially as described.

3 The herein-described lamp-carrying attachment, comprising two parallel disks, one below the other, a spring between them, a plurality of resilient pressers depending from the lower disk to engage within the top of the chimney, and a plurality of holding-arms, passing freely through peripheral perforations provided therefor in said lower disk and fixed at their upper ends adjacent the periphery of the upper disk, said arms having hooks at their lower ends to engage beneath the dome-plate of the lamp-burner, substantially as described.

571,318. SEWING-MACHINE. JAMES F. HARDY, New York, N. Y. Filed Aug. 26, 1895. Serial No. 560,495. (No model.)



Claim.—1. The combination with the actuating-shaft, the feed-dog support, the vibrating arm and the eccentrics on the actuating-shaft for actuating the feed-dog support and the vibrating arm, of a bolt extending laterally from the feed-dog support, means for adjusting the said bolt toward and away from the pivotal connection of the feed-dog support, a channel-bar fixed to said bolt and depending therefrom, a link having a vertically-sliding connection with said channel-bar, means for connecting the link in different vertical adjustments with respect to the vibrating arm, a pointer on the link and a scale in proximity to said pointer, substantially as set forth.

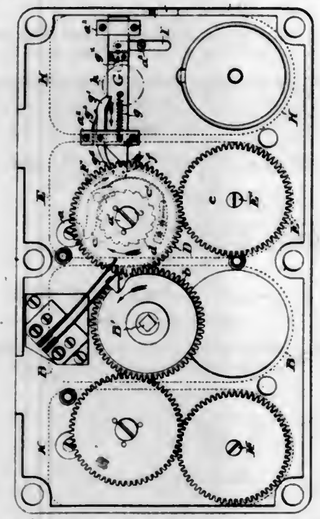
2. The combination with the actuating-shaft, the feed-dog support, the vibrating arm and the eccentrics on the actuating-shaft for actuating the feed-dog support and the vibrating arm, of a slotted extension at the front of the said vibrating arm, a bolt extending laterally from the feed-dog support, a channel-bar fixed to said bolt and depending therefrom, a link having a vertically-sliding engagement with the channel-bar and the slotted extension and means for clamping the link to the slotted extension in the desired vertical adjustment, substantially as set forth.

3. The combination with the actuating-shaft, the feed-dog support, the vibrating arm, and the eccentrics on the actuating-shaft for actuating the feed-dog support and the vibrating arm, of an extension at the front of the said vibrating arm having a vertically-elongated slot therein, a bolt extending laterally from the feed-dog support, a channel-bar fixed to said bolt and depending therefrom, a bifurcated link embracing said slotted extension, a stud on the link engaged with the channel-bar and a locking bolt passing through the branches of the link and through the slot in the slotted extension for locking the link to the vibrating arm in the desired vertical adjustment, substantially as set forth.

571,319. STOP MECHANISM FOR TIME-LOCKS. WILLIAM H. HOLLAR, Philadelphia, Pa., and HARRY W. PIDGEON, Boston, Mass.; said Pidgeon assignor to said Hollar. Filed Dec. 27, 1895. Serial No. 573,453. (No model.)

Claim.—1. In a time-lock, the combination of a plurality of clock-movements; a motor adapted to rewind a selected movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism positively related to the motor; and means substantially as set forth whereby said stop mechanism is inoperative during the period of winding action of said motor, but permitted to act as a stop, only after an effective winding action thereof, substantially as set forth.

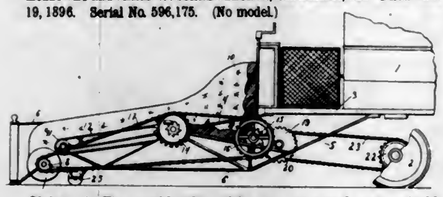
2 In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; and a disk operatively connected with said motor and engaging with said stop mechanism, whereby said stop mechanism is prevented from operating during the winding action of said motor upon said selected clock-movement, substantially as described.



3. In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; and a notched disk operatively connected with said motor and engaging with said stop mechanism, whereby a complete winding action of said motor upon the selected clock-movement permits said stop mechanism to act upon the remainder of said clock-movements, substantially as set forth.

4. In a time-lock, the combination of a plurality of clock-movements; a motor; means connective of said motor and a selected clock-movement; stop mechanism for the remainder of said clock-movements; actuating devices for said stop mechanism operatively related to said motor; a tripping-lever by which said stop mechanism may be normally detained; a disk operatively connected with said motor and engaging said tripping-lever, said disk also temporarily engaging said stop mechanism itself, whereby the winding action of said motor trips said lever to initiate the action of said stop mechanism, but immediately engages and restrains said stop mechanism until a complete winding action has been effected, substantially as set forth.

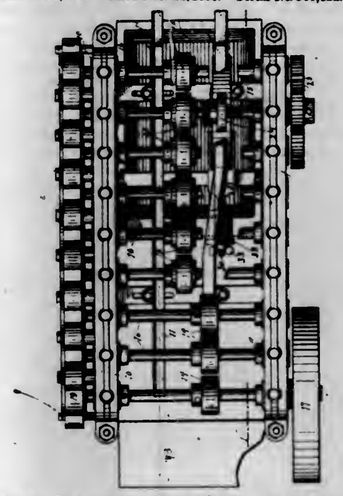
571,320. UNREMITTING ROTARY CAR-FENDER. JOHN J. HOLLOWAY and JAMES W. STARKWEATHER, Los Alamos, Cal. Filed June 19, 1896. Serial No. 596,175. (No model.)



Claim.—1. The combination with a car mounted upon suitable wheels, of a fender therefor secured to the under side of the car by suitable brace-rods constituting a fender-supporting frame, a cylinder located in the forward end of said frame, a pair of drums or rollers in the rear of said cylinder, an apron or carrier-belt surrounding said drums and means, actuated by the forward movement of the car, for rotating said cylinder and drums in a reverse direction to that of the car-wheels, substantially as and for the purpose described.

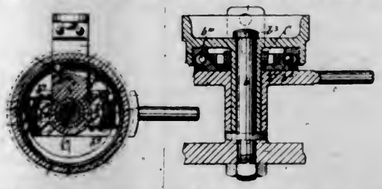
2. The combination with a car mounted upon suitable wheels, of a fender therefor secured to the under side of the car by suitable brace-rods constituting a fender-supporting frame, a cylinder located in the forward end of said frame having a sprocket-wheel upon its outer end, a pair of drums or rollers located just in the rear of said cylinder, one of said drums having a sprocket-wheel upon its outer end, an apron or carrier belt surrounding said drums, a counter-shaft mounted in said frame having a sprocket-wheel upon its outer end, a chain surrounding the sprocket-wheels on said counter shaft, on said drum and on said cylinder, a pinion on said counter-shaft, a gear-wheel meshing with said pinion and secured to a second counter-shaft, a sprocket-wheel thereon, and a sprocket-chain connecting said sprocket-wheel and a similar sprocket-wheel on the shaft upon which said wheel is mounted, substantially as and for the purpose described.

571,321. SHUCK-GLUING MACHINE. WILLIAM F. HUTCHINSON, New York, N. Y. Filed Nov. 22, 1895. Serial No. 569,822. (No model.)



Claim.—In a machine of the kind described, the combination of the two guides essentially parallel with each other and of a general U shape in cross-section, one of them having one-side gradually bent to double the flap of a box-shuck, feed-rolls between the two guides, compression-rolls at the discharge end of the doubling-guide, and means for applying glue to a box-flap through one side of the doubling-guide, substantially as described.

571,322. OVEREDGE SEWING-MACHINE. HERMANN A. KLEMM, New York, N. Y., assignor of one-half to Christian Engelhardt, same place. Filed Jan. 31, 1895. Serial No. 536,759. (No model.)



Claim.—1. The combination in an overedge sewing-machine, of a rocking arm, means for rocking said arm, a looper, a looper-carrying bar pivoted to the rocking arm and slidingly mounted in a bearing-block, an arm carrying said block and connected by a universal joint to the looper carrying bar, bearings in which the said arm reciprocates longitudinally, a rotary shaft and cams thereon having contact with and arranged to reciprocate the said arm and vibrate it in a plane substantially perpendicular to the general direction of the longitudinal axis of the looper-carrying bar, whereby the proper movements are imparted to the looper.

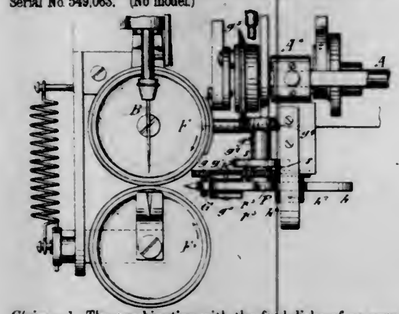
2. In an intermittent rotary device, the combination of an oscillating member, a rotary member, and a fixed member; a circular surface on said rotary member concentric with its center of rotation, inclined or non-concentric surfaces on said oscillating and fixed members, facing said circular surface, and a clutch ball or roller interposed between said surfaces of the oscillating and rotary members, and a clutch ball or roller interposed between said surfaces of the fixed and rotary members; the said device adapted when the oscillating member is oscillated, to cause the intermittent rotation of the rotary member in one direction and prevent its rotation in an opposite direction.

3. In an overedge sewing-machine, the combination of a pair of rotary feed-disks, a horizontally-reciprocating needle, an oscillating

thread-carrying looper, and mechanism for imparting intermittent or step-by-step motion to the inner feed disk, said mechanism consisting of an oscillating diametrical piece having wedge-pieces and spring-actuated locking-balls between said wedge-pieces and a ring of the inner feed-disk, and a radial stationary plate having a wedge-piece and a spring-actuated ball between the same and the rim of the feed-disk, said ball acting as a check device for the feed-disk, substantially as set forth.

4. In an overedge sewing-machine, the combination of a pair of rotary feed-disks the outer feed-disk being moved by frictional contact with the inner feed disk, with mechanism for imparting an intermittent or step-by-step motion to the inner feed-disk, said mechanism consisting of a diametrical piece, below the inner feed-disk, eccentric wedge-pieces on the same, means for imparting oscillating motion to said diametrical piece, a grooved ring at the under side of the inner feed-disk, spring actuated balls located between the wedge-pieces and ring, and a check device for the feed-disk consisting of a stationary plate below the same, an eccentric wedge-piece on said plate inclined in similar direction to the wedge-pieces on the diametrical piece, and a spring-actuated check-ball between said wedge-piece and ring, whereby the feed-disk is positively arrested during the return motion of the diametrical piece but released during the forward or feed motion of the same, substantially as set forth.

571,323. HAIR-DIVIDING ATTACHMENT FOR OVEREDGE SEWING-MACHINES. HERMANN A. KLEMM, New York, N. Y., assignor of one-half to Christian Engelhardt, same place. Filed May 13, 1895. Serial No. 549,063. (No model.)

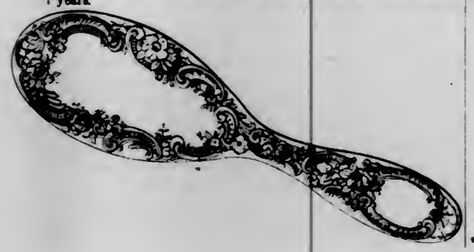


Claim.—1. The combination with the feed-disks of an overedge sewing-machine of a swinging arm provided with a dividing-disk adapted to project into the path of the fabric being fed, means for locking said arm in operative and inoperative positions, means for rotating said disk, and adjustable guides adjustable toward or from one another disposed on said swinging arm on opposite sides of said dividing-disk for guiding the material being sewed.

2. The combination with the feed-disks of an overedge sewing-machine of a swinging arm provided with a dividing-disk adapted to project into the path of the fabric being fed, means for locking said arm in operative and inoperative positions, a gear-wheel disposed on said swinging arm, a pinion disposed on the shaft of said dividing-disk and adapted to mesh with said gear-wheel, and a beveled friction-disk integrally connected with said gear-wheel and adapted to form contact with a disk on the shaft of the motion-transmitting mechanism.

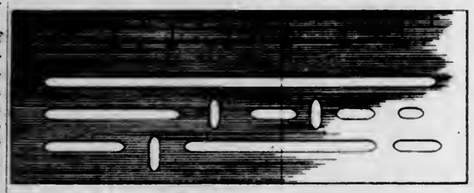
DESIGNS.

26,250. BRUSH-BACK OR SIMILAR ARTICLE. WILLIAM C. CONMAN, Providence, R. I., assignor to the Gorham Manufacturing Company, same place. Filed Sept. 23, 1896. Serial No. 606,796. Term of patent 7 years.



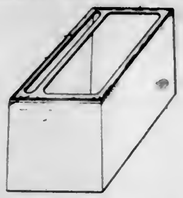
Claim.—The design for the back of a brush or similar article herein shown and described.

26,251. ERASING-PLATE. VIRGINIA COPLAND, Washington, D. C. Filed Sept. 24, 1896. Serial No. 606,896. Term of patent 3½ years.



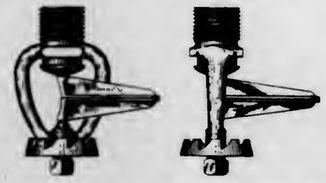
Claim.—The design for an erasing-plate herein shown.

26,252. MATCH-BOX. ALLISON N. CLARK, Plainville, Conn. Filed Sept. 24, 1896. Serial No. 606,893. Term of patent 14 years.



Claim.—The design for a match-box substantially as herein shown and described.

26,253. SPRINKLER. WILLIAM ESTY, Laconia, N. H. Filed Mar. 5, 1894. Serial No. 502,436. Term of patent 14 years.



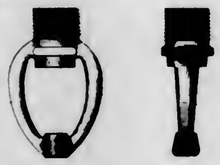
Claim.—The design for a sprinkler, substantially as shown.

26,254. DISTRIBUTER FOR FIRE-EXTINGUISHERS. WILLIAM ESTY, Laconia, N. H. Filed Oct. 12, 1896. Serial No. 606,663. Term of patent 14 years.



Claim.—The design for a distributer for automatic fire-extinguishers, substantially as shown.

26,255. YOKE FOR AUTOMATIC FIRE-EXTINGUISHERS. WILLIAM ESTY, Laconia, N. H. Filed Oct. 12, 1896. Serial No. 606,664. Term of patent 14 years.



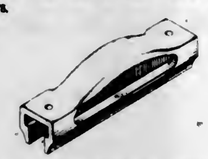
Claim.—The design for the yoke or frame of an automatic fire-extinguisher, substantially as shown.

26,256. VALVE-SUPPORT. WILLIAM ESTY, Laconia, N. H. Filed Oct. 12, 1896. Serial No. 606,665. Term of patent 14 years.



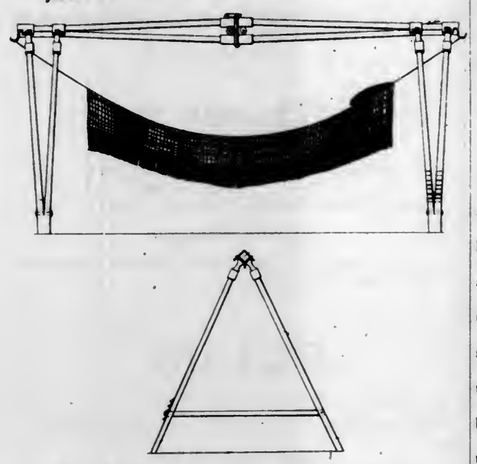
Claim.—The design for the valve-support of an automatic fire-extinguisher, substantially as shown.

26,257. HOLDER FOR SHARPENING-TOOLS. THOMAS A. LAMOTTE, Philadelphia, Pa. Filed Sept. 24, 1896. Serial No. 606,898. Term of patent 7 years.



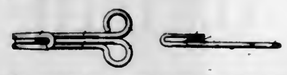
Claim.—The design for a holder of a skate-sharpening tool as herein described and as shown in the accompanying drawing.

26,258. HAMMOCK-SUPPORT. ISAAC E. PALMER, Middletown, Conn. Filed Sept. 16, 1893. Serial No. 485,725. Term of patent 14 years.



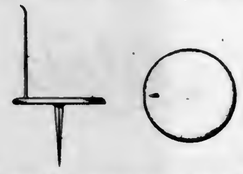
Claim.—The design for a hammock-support as herein shown and described.

26,259. GARMENT-HOOK. EDWIN F. SMITH and FRANK A. SMITH, Union City, Conn. Filed June 22, 1896. Serial No. 596,551. Term of patent 14 years.



Claim.—The design for a garment-hook substantially as shown and described.

26,260. CURTAIN-TACK. CHRISTIE M. NUMAN, Canton, Ohio. Filed Aug. 14, 1896. Serial No. 602,815. Term of patent 7 years.



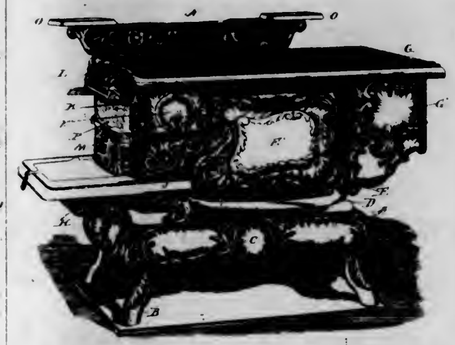
Claim.—The design for a curtain-tack as herein shown and described.

26,261. SHELF-SECTION FOR STOVES. HERBERT W. BEATTIE, Quincy, Mass., assignor to the Sill Stove Works, Rochester, N. Y. Filed July 6, 1896. Serial No. 598,249. Term of patent 14 years.



Claim.—The design for the upper or shelf section of a stove or range, substantially as shown and described.

26,262. COOKING-STOVE. HERBERT W. BEATTIE, Quincy, Mass., assignor to the Sill Stove Works, Rochester, N. Y. Filed July 6, 1896. Serial No. 598,248. Term of patent 14 years.



Claim.—1. The design for a cooking stove or range substantially as herein shown and described.

2. In a design for a stove or range, the base substantially as herein described and shown.

3. In a design for a stove or range, the oven-door, substantially as herein described and shown.

4. In a design for a stove or range, the water-reservoir substantially as herein described and shown.

5. In a design for a stove or range, the end ash-pit door J substantially as herein shown and described.

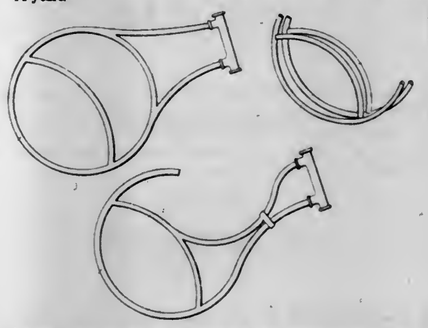
6. In a design for a stove or range, the fire-pot door K substantially as herein shown and described.

7. In a design for a stove or range, the rail N substantially as herein shown and described.

8. In a design for a stove or range, the broiler-door L, substantially as herein shown and described.

9. In a design for a stove or range, the front ash-pit door M substantially as herein shown and described.

26,263. BICYCLE-FRAME. EUGENE N. GATES, Holliston, Mass., assignor of two-thirds to W. E. Putney, Fitchburg, Mass., and Charles H. Chapman. Filed July 17, 1896. Serial No. 599,566. Term of patent 14 years.



Claim.—The design for a bicycle-frame, substantially as shown and described.

TRADE-MARKS

REGISTERED NOVEMBER 10, 1896.

29,114. PENS. Louis Dreka, Philadelphia, Pa. Filed Oct. 14, 1896.

DREKA

Essential feature.—The word "Dreka." Used since 1871.

29,115. ASSESSMENT AND TAX LEDGERS. Solomon R. Fairchild, Tacoma, Wash. Filed Oct. 13, 1896.

XAT

REGDEL

Essential feature.—The words "Xat regdel." Used since April 15, 1896.

29,116. COUPON TICKETS OR CONTRACTS. The Inter-State Casualty Company of New York, New York, N. Y. Filed Apr. 18, 1896.

ONE THOUSAND

FOR ONE

Essential feature.—The words "One Thousand for One." Used since April 2, 1896.

29,117. PASTEBOARD, AND BOXES, CASES, WRAPPERS, ENVELOPS, AND OTHER ARTICLES MANUFACTURED THEREFROM. The Thompson & Norris Company, Brooklyn, N. Y. Filed Oct. 3, 1896.

CELLULAR

Essential feature.—The word "Cellular." Used since March 1, 1894.

29,118. SHOES. The Jones Shoe Manufacturing Company, Columbus, Ohio. Filed Oct. 5, 1896.

CRACKERJACK

Essential feature.—The word "Crackerjack." Used since September 1, 1896.

29,119. SHOES. Pingree & Smith, Detroit, Mich. Filed Oct. 12, 1896.

St. Nicholas

Essential feature.—The abbreviation and word "St. Nicholas." Used since August 1, 1896.

29,120. WOMEN'S SHOES. Hamilton, Brown Shoe Company, St. Louis, Mo. Filed Oct. 7, 1896.

Picnic

Essential feature.—The word "Picnic." Used since January 1, 1886.

29,121. BOOTS AND SHOES. Rice & Hutchins, Incorporated, Boston, Mass. Filed Oct. 8, 1896.

ÆOLUS.

Essential feature.—The word "Æolus." Used since August 15, 1896.

29,122. SOLE AND HEEL PROTECTORS. The North & Judd Manufacturing Company, New Britain, Conn. Filed Oct. 8, 1896.

CIRCLETTE

Essential feature.—The word "Circlette." Used since July 15, 1894.

29,123. CORSETS. Weingarten Bros., New York, N. Y. Filed Oct. 9, 1896.

La Vida

Essential feature.—The words "La Vida." Used since September 1, 1896.

29,124. CORSETS. Weingarten Bros., New York, N. Y. Filed Oct. 13, 1896.



Essential feature.—A representation of the Goddess of Liberty with a corset on. Used since October 1, 1896.

29,125. CORSETS. Weingarten Bros., New York, N. Y. Filed Oct. 13, 1896.

LIBERTY

Essential feature.—The word "Liberty." Used since October 1, 1896.

29,126. READY-MADE GARMENTS. Max B. Brunner, New York, N. Y. Filed Oct. 8, 1896.



Essential feature.—A representation of a ducal crown accompanied by the words "Non Nobis Solum." Used since October 1, 1895.

29,127. ITALIAN CLOTHS, SERGES, SILKS, VELVETS, BINDINGS, BRAIDS, AND LININGS. Lesher, Whitman & Co., New York, N. Y. Filed July 28, 1896.



Essential feature.—A pictorial representation of a crown. Used since 1870.

29,128. COTTON GOODS, SUCH AS BEDSPREADS, BEDQUILTS, COUNTERPANES, AND OTHER JACQUARD-WOVEN GOODS, EXCEPT TOWELINGS. Monadnock Mills, Claremont, N. H., and Boston, Mass. Filed Sept. 29, 1896.



Essential feature.—An eagle of Japanese type with raised wings and standing on one foot upon a base bearing a monogram. Used since October 15, 1894.

29,129. KID-BODY BISQUE-HEAD DOLLS. The Firm of J. D. Kestner, Jr., Waltershausen, Germany. Filed Oct. 10, 1896.



Essential feature.—A representation of a crown with streamers pendent. Used since December 24, 1895.

29,130. EMBALMING FLUIDS. The Embalmers Supply Company, Westport, Conn., New York, N. Y., and St. Louis, Mo. Filed Oct. 19, 1896.

UPTIMUM

Essential feature.—The word "Uptimum." Used since October 29, 1895.

29,131. REMEDIES FOR COMMON AND SIMPLE DISORDERS. Hance Bros. & White, Philadelphia, Pa. Filed Sept. 29, 1896.

TEN-CENTS-ABLES

Essential feature.—The compound word "Ten-Cents-Ables." Used since January 1, 1896.

29,132. TABLETS FOR COLDS AND HAY-FEVER, ALSO A TONIC AND DISINFECTANT. William Christopher Kloman, Baltimore, Md. Filed Aug. 25, 1896.

Check-to-Cold

Essential feature.—The compound word "Check-to-Cold." Used since July 7, 1896.

29,133. LACTATE OF SILVER, CITRATE OF SILVER, AND ALL PHARMACEUTICAL PREPARATIONS OF SILVER. Chemische Fabrik von Heyden, Gesellschaft, mit Beschränkter Haftung, Radebeul, Germany. Filed Sept. 1, 1896.

Credé

Essential feature.—The word "Credé." Used since May 21, 1896.

29,134. CAUSTIC SODA AND SILICATE OF SODA. Joseph Crosfield & Sons, Limited, Warrington, England. Filed Oct. 15, 1896.



Essential feature.—A representation of the device known as "golden fleece" and the words "Golden Fleece." Used since February, 1891.

29,135. CAUSTIC SODA AND SILICATE OF SODA. JOSEPH CROSFIELD & SONS, LIMITED, Warrington, England. Filed Oct. 15, 1896.



PYRAMID

Essential feature.—A representation of a pyramid and the word "PYRAMID." Used since January, 1895.

29,136. SAPONACEOUS AND ALKALI SOLUTIONS TO BE MIXED WITH SOAP AND WATER FOR CLEANING PURPOSES. EMIL BURST, St. Louis, Mo. Filed Aug. 15, 1896.

WASHING
WITH EASE



Essential feature.—The words "WASHING WITH EASE" used in connection with a pictorial representation of the interior of a room in which is located a stove with steaming washboilers on top of the same and in which is shown a woman seated in the foreground. Used since August 1, 1895.

29,137. CEMENT FOR RUBBER GOODS, ESPECIALLY FOR BICYCLE-TIRES. JAMES E. MCWILLIAM, Hubbardston, Mass. Filed Sept. 30, 1896.

BIKO

Essential feature.—The word "BIKO." Used since January 1, 1896.

29,138. GRAPHITE AND ITS PRODUCTS. THE UNITED STATES GRAPHITE COMPANY, Saginaw, Mich. Filed Oct. 9, 1896.



MEXICAN

Essential feature.—A picture of a Mexican and the word "MEXICAN." Used since January 1, 1893.

29,139. LOZENGES AND OTHER CONFECTIONERY. SMITH & PETERS, Philadelphia, Pa. Filed Apr. 28, 1896.



Essential feature.—A representation of a wreath of clover-leaves. Used since June 23, 1890.

29,140. CRACKERS, WAFERS, AND MALT EXTRACTS. POTTER & WRIGHTINGTON, Boston, Mass. Filed Mar. 20, 1896.

OLD GRIST MILL

Essential feature.—The words "OLD GRIST MILL." Used since January 1, 1893.

29,141. COMPOUNDS OF KOLA AND MALT FOR FOODS AND BEVERAGES. THE THOMSON & TAYLOR SPICE COMPANY, Chicago, Ill. Filed June 1, 1896.



Essential feature.—The words "A WELL FED FEELING." Used since March 17, 1896.

29,142. NON-INTOXICATING EFFERVESCENT BOTANIC BEVERAGE. THE KENTORA BREWERY COMPANY, LIMITED, Nottingham, England. Filed July 9, 1896.

KENTORA

Essential feature.—The word "KENTORA." Used since July 22, 1890.

29,143. COCOA. HENRY MAILLARD, New York, N. Y. Filed Oct. 10, 1896.



Essential feature.—The words "MAILLARD'S BREAKFAST COCOA" and a representation of two ornamental shield-like figures, between which is an anchor entwined by serpents and surmounted by an eagle with outstretched wings. Used since 1868.

29,144. TEA, COFFEE, SPICES, BAKING-POWDER, FLAVORING EXTRACTS, SOAP, AND STARCH. JONES BROTHERS, New York, N. Y. Filed Sept. 29, 1896.



Essential feature.—A triangle upon a disk, the disk being within a border. Used since August 4, 1896.

29,145. OLIVE-OIL. F. ROMEO & CO., New York, N. Y. Filed Oct. 10, 1896.



Essential feature.—A representation of a bee. Used since January, 1896.

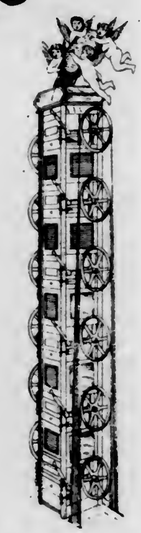
29,146. ARTIFICIAL SACCHARINE COMPOUNDS. CHEMISCHE FABRIK VON HEYDEN, GESELLSCHAFT, MIT BESCHRANKTER HAFTUNG, Radebeul, Germany. Filed Sept. 1, 1896.

ZUCKERIN

Essential feature.—The word "ZUCKERIN." Used since December 4, 1895.

29,147. WHEAT-FLOUR. PEARL ROLLER MILL COMPANY, Oswego, Kans. Filed Oct. 14, 1896.

SKY-SCRAPER



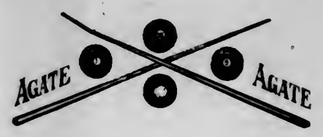
Essential feature.—The compound word "SKY-SCRAPER" and a pictorial representation of a roll-column. Used since September 15, 1896.

29,148. TOBIES. S. EWART & CO., Pittsburg, Pa. Filed Oct. 15, 1896.

Gold Standard

Essential feature.—The words "GOLD STANDARD." Used since January 1, 1881.

29,149. BILLIARD AND POOL BALLS. ALBANY BILLIARD BALL COMPANY, Albany, N. Y. Filed June 9, 1896.



Essential feature.—A representation of two billiard-cues crossed at about midway between their ends, with a ball placed near each of the four angles made by the crossing of said cues, and the word "AGATE" in connection therewith. Used since January 1, 1896.

29,150. CERTAIN NAMED ELECTRICAL APPARATUS. CHEMISCH-ELEKTRISCHE FABRIK "PROMETHEUS" GESELLSCHAFT MIT BESCHRANKTER HAFTUNG, Frankfort-on-the-Main, Germany. Filed Aug. 8, 1896.

Prometheus

Essential feature.—The word "PROMETHEUS." Used since May 1, 1896.

29,151. GAS-FIXTURES FOR INCANDESCENT GAS-LAMPS. LEOPOLD HARTMAN, New York, N. Y. Filed Sept. 10, 1896.

SUNLIGHT

Essential feature.—The word "SUNLIGHT." Used since July 15, 1896.

29,152. FIXTURES FOR INCANDESCENT GAS-LAMPS. LEOPOLD HARTMAN, New York, N. Y. Filed Sept. 10, 1896.

PHOENIX

Essential feature.—The word "PHOENIX." Used since May 1, 1895.

29,153. CYCLES, VELOCIPEDES, BICYCLES, AND TRICYCLES. J. AUCOC ET DARRACQ, Paris, France. Filed July 21, 1896.



Essential feature.—A representation of a globe upon which is a prancing horse with a rider and the word "GLADIATOR." Used since April 29, 1892.

29,154. BICYCLES AND TRICYCLES. EDWIN R. WILLCOX, Westport, Conn. Filed Oct. 7, 1896.

BOUTEZ EN AVANT

Essential feature.—The words "BOUTEZ EN AVANT." Used since June 15, 1896.

29,155. COMPRESSIBLE TUBULAR HOLDERS FOR PLASTIC CEMENTITIOUS MATERIAL. BOSTON WOVEN HOSE AND RUBBER COMPANY, Boston, Mass., New York, N. Y., San Francisco, Cal., and Cleveland, Ohio. Filed Oct. 8, 1896.



Essential feature.—A red or reddish colored tip or end of a compressible holder. Used since September 1, 1896.

29,156. SHOTGUNS. WINCHESTER REPEATING ARMS COMPANY, New Haven, Conn. Filed Sept. 29, 1896.

Match

Essential feature.—The word "MATCH." Used since June 15, 1880.

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

JENKINS *v.* BURKE.

Decided July 29, 1896

1. INTERFERENCE—TESTIMONY RELATING TO CHARACTER OF PARTIES—STRIKING FROM RECORD.

Testimony concerning the general character of the parties is not evidence and should not be before the various tribunals of the Office, and it should, therefore, be stricken from the record.

2. SAME—TESTIMONY—SECOND DEPOSITION—STRIKING FROM RECORD.

That a witness may be twice called is a circumstance touching his credibility alone and not the competency of the evidence. A second deposition by a witness, therefore, cannot, as mere matter of law, be excluded from the consideration of the various tribunals.

MOTION to suppress testimony.

TRADE-MARK FOR SOAP—APPEAL.

Application of Maross Jenkins, No. 50,963, filed February 26, 1896. Application of Frank G. Burke, No. 50,577, filed January 3, 1896.

Mr. Thomas D. Stetson for Jenkins.

Messrs. Munn & Co. for Burke.

SEYMOUR, *Commissioner:*

The appellant, Burke, brought a motion to strike out testimony which the appellee had taken and which was favorable to the appellee concerning his general character and other testimony which was adverse to his opponent's general character, and, second, to strike out the second deposition of a witness, which the appellee had taken against his objection, on the ground that as he had once been examined it was unlawful for him to take a second deposition even about somewhat different matters.

In the trial of civil cases the procedure concerning the character of parties and witnesses is hedged about by well-defined rules. To affect his credibility a witness may be asked whether he has been convicted of a certain crime, and if his answer is in the negative he may be confronted by the record of his conviction. In some jurisdictions he may be asked whether he has not committed a crime the prosecution for which has been barred by the statute of limitations. Parties in civil cases, as distinguished from witnesses, may be asked upon cross-examination as to their occupations, past and present, but on these matters the Examiner is concluded by the answers of the witness. In criminal cases accused persons may introduce evidence in the first instance in their own behalf as to their character touching the matter for which they may be on trial, but in civil cases parties may not introduce witnesses as to their own good character in general. Nor may parties attack their opponent's character in civil cases by evidence as to unfavorable or untruthful matter, except in the manner above indicated.

But it is urged that all the tribunals in the Office should pass upon this question, and that testimony should not be struck out upon a motion of this character; but that rule is confined to questions of fact claimed to be irrelevant to the principal fact in dispute. Testimony of the character objected to in the first part of this motion is not evidence and should not be before the various tribunals of the Office or before any tribunal in a civil case. The magistrate administering justice should be blind to the general character of litigants, except as their truthfulness as witnesses is brought into question by the manner in which they testify or as it is disclosed by the circumstances of the case.

That a witness has been twice called is a circumstance touching his credibility alone and not the competency of the evidence. A second deposition by a witness cannot as mere matter of law be excluded, but the fact that a witness has been called and then recalled may be commented upon, and in some cases it is a circumstance touching the credibility of the witness. The deposition, however, cannot be excluded from the consideration of the various tribunals.

It is ordered that the testimony concerning the character of both the parties be struck out, and to that extent the appeal is allowed. The appeal on the second branch of the motion is denied.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Second Circuit.

TUTTLE, TRUSTEE, ETC., *v.* CLAFLIN *et al.*

Decided July 29, 1896.

1. CROSBY AND KELLOGG—MACHINE FOR CRIMPING TEXTILE MATERIALS—INFRINGEMENT.

Letters Patent No. 37,033, granted December 2, 1862, to C. O. Crosby and Henry Kellogg, for a machine for crimping textile materials, examined and in view of the art *Held* to be for a pioneer invention and to be infringed.

2. PIONEER INVENTION.

The mechanism of the patent in suit was original with the inventors for the manufacture of "plaits," and for that purpose their machine is a pioneer invention, notwithstanding the hints of a prior device. It is not an addition to an old structure.

3. PROFITS IN INFRINGEMENT—IMPROVEMENT, EFFECT OF—BURDEN OF PROOF.

If defendants took complainants' device in its original form, the latter are entitled to the pecuniary advantage which the infringers derived from the unauthorized use of the patent. If the infringers added an improvement, they have a right to an apportionment, the burden of proof being upon them to show that a portion of the profits was the result of the improvement.

4. SAME—ESTIMATES—EXPERIMENTS.

Estimates only and estimates based upon experiments by the complainants made only in a small way, which include estimates for the expense of an unnecessary feature of a process and which make no allowance for the economies which result from a subdivision of work, such as would be employed in manufacturing for wholesale trade, are unsatisfactory.

5. PLEADING—NOTICE—WAIVER.

After alleging the invention and grant of the patent and the assignment the pleader averred that the defendants, knowing the premises, infringed. This is not an averment that they had notice or knew that their machines infringed. The allegation in regard to infringement was traversed, but nothing was said below upon the subject of notice. It is too late to raise for the first time in an appellate court technical questions of pleading or proof which are not jurisdictional in their character.

6. ADDITIONAL DELAY TO BE AVOIDED—PROFITS.

A court will hesitate to compel a large additional expenditure of time by ordering an accounting in a suit which has been pending for a long time, especially when the manufacture which forms the basis of the suit has ceased and it is likely that further testimony would result in mere estimates. The court will itself determine the profits.

APPEAL and cross-appeal from a decree of the United States Circuit Court for the Southern District of New York.

Before PECKHAM, LACOMBE, and SHIPMAN, Judges.

Mr. Benjamin F. Lee for the complainant.
Mr. Edmund Wetmore for the defendants.

SHIPMAN, *J.*:

The plaintiff, as trustee of the Elm City Company, which was an assignee of Letters Patent No. 37,033, dated December 2, 1862, issued to C. O. Crosby and Henry Kellogg, for a machine for crimping textile materials, brought a bill in equity July 10, 1878, against the individuals formerly composing the firm of H. B. Claflin & Co., which alleged an infringement of said patent and prayed for an injunction and an account.

A temporary injunction having been granted, the Circuit Court for the Southern District of New York, upon "final hearing," passed a decree April 3, 1884, which adjudged that the defendants had infringed the second and fourth claims of the patent and directed an accounting. (29 O. G., 696; 19 Fed. Rep., 599.) The patent had in 1873 been sustained by Judge Woodruff in the case of *Elm City Co.* v. *Wooster*. (6 Fish. Pat. Cas., 452.)

On August 26, 1893, the special master filed his report, which assessed no damages, and found that in the years 1873 and thereafter until and during 1879 the defendants had in use in their business at various times four roller plaiting-machines, all which infringed the second and fourth claims of the Letters Patent in suit, and upon which they had plaited 483,910 yards of goods, and that the saving which had resulted from the use of said machines over the only pre-existing method of plaiting, which was by hand, was $76,215.85, and reported said sum as the profits, gains, and advantages which they had derived by reason of their infringement. The defendants having filed exceptions to this report, some of which were sustained, the court set aside the report, and in its final decree directed that the complainant recover of the defendants six cents as nominal damages and costs for all proceedings prior to and including the order of reference, and that the costs before the master be taxed in favor of the defendants.

From this decree each party appealed, the defendants from that portion which adjudged that there had been an infringement of claims 2 and 4 of the patent and the complainants from the whole of the decree except that portion which recognized the validity of the patent and the infringement of claims 2 and 4 and directed the payment of costs.

The question of infringement is naturally to be first considered. The machine was for crimping or plaiting textile materials and, as shown in the drawings of the patent, was a sewing-machine attachment; but the specification and claim 1 declared that it was to be used either with or without sewing mechanism. The plait-forming mechanism was simple, but for the purposes for which it was used was novel. Its position in the history of the art will hereinafter be considered. It consisted of a blade of metal, called a "crimper," and the presser-plate, which, in connection with the cloth-plate or table, was a holder, and was also a presser or smoother of the plait. If the plait was wider than the presser-foot, two additions on each side of the presser-foot served as supplementary smoothers. A spring pressed upon the blade as it advanced to form the plait, and was relaxed when the blade was retracted. The blade in its forward motion over the table gathered up the material into a partially-formed plait, passed with it under the presser-foot, and pushed it forward between the presser-foot and the table, so that the plait was flattened, smoothed, and brought to a sharp edge.

The operation of the machine, including the sewing mechanism, which serves to stitch the crimp, is described in the specification as follows:

An end of a strip of muslin is to be laid upon the platform under the crimper and under the presser-foot, and the needles will descend and have their loops secured by the loopers. While the needles are still in the cloth the crimper has retreated as far as possible from them. The crimper-presser then descends, forced down by its spring, and bears the crimper upon the goods. The latter then advances and makes a crimp of the cloth lying between it and the line where the cloth is grasped between the presser-foot and the table. (see Fig 14ª,) the crimper being actuated by the cam *j*. The latter then holds the crimper at rest, and the needles leave the cloth. The cam *k* then acts upon the crimper, and it shoves the cloth and the crimp just made under the presser foot, the latter smoothing down or flattening the crimp by its spring pressure upon the goods. During this second advance of the crimper it pushes the goods along under the presser foot. The crimper now pauses, and the needles enter behind the crimp just formed. (See Fig. 14ᴮ.) Cam *i* now comes into action and lifts the crimper-presser, relieving the crimper from the pressure of the spring, so that the crimper may slide back without any tendency to ruck up the goods, and when *m* is elevated the cams *j* and *k* permit the spring to draw the crimper back, ready to take a new crimp. * * *. After the crimp is formed it acts as a spacer to space the crimps apart and as a pusher to force the goods through the machine. The presser-foot and the table in conjunction act as a holder, holding the goods at rest while the crimp is formed, and the presser-foot alone acts as a smoother, flattening the crimp down smooth and to an edge while the goods are being crimped or pushed forward by the crimper.

The specification also said that the patentees intended at some time to add to the machine an ordinary rough-surface feed acting below the cloth and feeding as the crimper shoved the goods, in order to aid the latter in forcing the finished crimp along when there was a heavy pressure upon the presser-foot.

They also intended to attach a weight to the finished end of the crimp to aid in drawing it along when the pusher was doing its work.

The second and fourth claims are as follows:

2. In combination, a crimper and a smoother substantially such as described, and acting, substantially as specified, to fold the crimps to an edge.

4. In combination with a crimper substantially such as specified, a spring acting to force said crimper upon the goods while crimping them and relaxing its pressure while the crimper is retreating, substantially in the manner and for the purpose specified.

The defendants' machines, known as "roller" plaiting-machines and as the "Griffith" and "Fanning" machines, from the names of the machinists who made them, were in their important particulars constructed like the machine described in the English patent to James Orr of November 4, 1867, which was never patented in this country. These machines did not contain any sewing mechanism and consisted in general of a wide reciprocating blade and a yielding upper roll and a metallic lower roll. The blade is caused to advance to and recede from the bite of the rolls. As it advances over the surface of the lower roll it forms a plait of the textile material lying between it and the surface of this roll, and this partially-formed plait is delivered to the bite of the two rolls, which are a smoother and a holder. These rolls are revolved intermittently and when they revolve feed or pull the plaited fabric. The upper roll is the equivalent of the presser-foot, and, in fact, a roller presser-foot is old in sewing-machine mechanism. The lower roll is the equivalent of the table or cloth-plate of the Crosby and Kellogg machine, and the substitution of rollers for flat surfaces was an obvious mechanical transition. These machines were introduced when plaits upon wider strips of cloth than could ordinarily be presented to a sewing-machine became fashionable and when it was also important to have a machine which could readily adapt itself to cloth of different thicknesses. When sewing mechanism was not needed, the advantage of two rollers or revolving surfaces, to which the plait is presented and between which it passes, over two flat surfaces, between which it is pushed, is obvious. The metallic roll is heated, so that the plait is ironed as well as smoothed.

The argument of the defendants in support of the theory of non-infringement of the second claim is based upon the part of the specification which says that after the needles leave the cloth a cam shoves the cloth and the crimp just made under the presser foot, the latter flattening the crimp by its spring pressure, and that the crimper during this, which is its second advance, pushes the goods along under the presser-foot. The defendants' construction of the second claim is that it is limited to what is called the "second" operation of the machine—viz., that of folding the crimper to an edge by the combined action of the crimper in pushing the formed crimp along and the smoother pressing down upon it as it is thus pressed forward—whereas they say that in the defendants' machines the crimper performs no part of folding to an edge and that there is no conjoint action for this purpose between the crimper and the smoother.

The position that the second claim is limited to such a construction of crimper and smoother that both must continuously act together to fold the crimp to a perfect edge is neither required by the specification nor by the claim. The former speaks of the crimp as formed—*i. e.*, partially formed—before it is pushed under the presser-foot, and as flattened down to an edge as it is pushed through. In like manner in the defendants' machines the crimper is folded, though not to a complete and perfect edge, when the blade pushes it up to the surface of the lower roller, delivers it to the grasp of the two rollers, which fold the crimp down over the edge of the crimper, and as the blade recedes complete the work of smoothing and polishing. The defendants' construction of the claim would have the effect of limiting it to a flat presser-foot, between which and a flat table the crimp must be pushed—in other words, to a machine in which the crimper spaces the crimps. In the language of Judge Wallace upon final hearing:

While the defendants' machines do not employ a crimper which operates independently to space the crimps, their crimper and smoother effect the operation of folding the crimps to an edge, and their devices in this behalf are the substantial equivalents of those in the combination described in the second claim. In their machines the spacing is done by revolving rolls or holder which, after each crimp is formed, advances the cloth while the blade is retreating through a distance equal to the space between the successive crimps.

It is next said that the defendants' machines do not infringe claim 4. As the patent has expired and as claim 2 is the important and valuable one of the patent, it is not necessary to consider at length this question. Claim 4 is for the combination of the blade and spring which forces the blade upon the cloth when crimping is done and relaxes its pressure when the crimper is retreating. The Fanning machine has a spring which does this precise work in the same way. The Griffith machine has no spring, but the blade is rocked by the moving mechanism down upon the cloth and as it retreats is rocked away from the cloth.

It is not necessary to discuss at length the importance of the infringed claims with relation to the entire invention of the patentees.

The master in his report found that the invention of claim 2 was the essential feature of both the Griffith and Fanning machines, without which they would have been worthless. This feature was the blade, which folded the material upon itself and, taking the plait to the smoother to be ironed, acted in combination with the smoother and was the gist of the invention, without which plaits could not be made.

But the defendants say that even if the infringers took the essential part of the patented machine it was itself but an improvement upon the George B. Arnold patent of May 8, 1860, and was not essential to plaiting mechanism, and thereby attempt to bring the case within the principle of *Garretson* v. *Clark*, (27 O. G., 524; 111 U. S., 120.) The object and scope of the Arnold machine sufficiently appear in his original specification, and were to gather up one piece of cloth in small even folds or corrugations and to sew it to another piece of cloth not so gathered. The patentee said:

By my invention I am enabled to take two pieces of cloth of unequal lengths and placing their edges together, with the longer piece at the bottom, and by running them through the machine not only to gather the bottom cloth to any desired degree of fullness, but to sew them firmly together at the same time.

It was strictly an attachment to a sewing-machine and depended for its success upon sewing mechanism, but could be used without, and creases or gathers would be made in the cloth. It was designed to sew

a ruffle upon a band and was intended to do nothing else. The patent was reissued in 1874 and, after the custom of that period, contained claims some of which in their broad and general language could sweep in the Crosby and Kellogg invention; but the distinction between the two devices was correctly and forcibly stated by Mr. Brevoort as follows:

It (the Crosby and Kellogg machine) was a new mechanism, in contradistinction to being a mere improvement, but it was a mechanism which came under the broad terms of the Arnold reissue. It was by itself a different machine from the Arnold reissue.

The claims of the reissued patent to John A. Pipo, a reissue, on July 27, 1875, of an original patent dated January 27, 1863, are of the same character. The object of the invention was simply—

to provide means (in a sewing-machine) for forming and sewing a ruffle between two pieces or folds of cloth at one and the same operation.

The crimping mechanism of the patent in suit was original with the inventors for the formation of the ornamentation properly called "plaits," and for that purpose was a pioneer invention. The Arnold and Pipo machines merely gave hints how a plaiting-machine could be made. The manufacture of plaits originated with the mechanism of Crosby and Kellogg, whose machine was not an addition to an old structure, as in *Garretson* v. *Clarke*, *supra*, or in *Reed* v. *Lawrence*, (29 Fed. Rep., 915.)

Upon the foregoing facts the question of the rule of law in regard to the method of ascertaining the profits was not a debatable one. If the defendants had made no addition to the Crosby and Kellogg invention, it being one of an original and primary character, they took it as it was, although they furnished their machines with mechanical equivalents which might produce better work than the corresponding devices for which they were substituted, and the complainants would be entitled to the pecuniary advantage which the infringers derived from their unauthorized use of the patent, the profit being in this case the difference between the expense of plaiting by the use of the patented device and the expense of doing the same thing by hand. (*Mowry* v. *Whitney*, 1 O. G., 492; 14 Wall., 620; *Cawood Patent*, 12 O. G., 709; 94 U. S., 695; *Thomson* v. *Wooster*, 31 O. G., 913; 114 U. S., 104; *Sessions* v. *Romadka*, 59 O. G., 539; 145 U. S., 29.) The defendants insist, however, that they made additions which materially benefited the machines and increased their effective power. If this be true, although they took the whole of the vital and effective part of the invention, but superadded and annexed an improvement which contributed to the saving which they obtained, they have a right to an apportionment, the burden being upon them to show that a portion of the profits was the result of the improvement which they annexed. (*Elizabeth* v. *Pavement Co.*, 97 U. S., 126; *Crosby Valve Co.* v. *Safety Valve Co.*, 57 O. G., 1000; 141 U. S., 441.)

The defendants satisfied the circuit court that the combinations of claims 2 and 4 would not produce the finished product of the infringing machines, and that the features added by Orr, Griffith, and Fanning, and particularly the ironing feature, must have contributed something to the value of the machines, and that it was erroneous to say that the whole value was due to the Crosby and Kellogg invention.

From 1871 to 1879 the trimming or ornamentation of ladies' dresses by means of plaits was universal. They were used upon materials of all kinds, as well those of linen and cotton, which were made up into cheap suits, as those of woolen and silk. The roller-machines were exclusively for the manufacture of these plaits upon strips of cloth usually of four inches, sometimes of six inches, in width, which were not stitched on the machine and were nicely ironed. It is manifestly true that the patented machine, as shown in and while attached to a sewing-machine, was not practically adapted to the exclusive manufacture of plaits which were not stitched. It becomes important, in view of the conclusions of the circuit judge, to ascertain to what extent and in what particulars improvements were made which brought the defendants' machines to their position of commercial importance.

The defendants first asserted that if the sewing mechanism was detached the machine could not make merchantable plaits unless it had additional feeding mechanism other than a four-motion feed, and that such mechanism must be produced by inventive skill. This statement would have seemed trustworthy but for the subsequent introduction into the case of the five machines and the bias-plaiting machine made by Mr. Walker in 1871 and efficiently used as commercial machines while the fashion for plaits lasted. They were the patented machines without the stitching mechanism and with the ordinary rough-surface feed spoken of in the specification. If heat was required, it was furnished by means of gas, which was carried in a pipe under the bed or cloth plate. These machines effectually disposed of the theory that sewing mechanism was indispensable in the practical operation of the Crosby and Kellogg machines.

The next position of the defendants was that the leading improved feature of their machines was the feeding mechanism, which consisted of the two rollers, which were not the feeding device of the patented machine and required invention to produce; but it was conceded that a roller presser-foot was an early device in sewing machines and that the upper roll acted substantially as a presser-foot, with the additional function of helping to feed. When the presser-foot became a roller in a plaiting-machine, the table must also become a roller also, and thus rollers were naturally substituted for plates. When thus substituted they also, from the manner in which they necessarily operate, and as incidental to the work of holding and smoothing, are a feed which pulls the fabric along. This fact is insufficient to constitute them a new addition to the Crosby and Kellogg machine. That had also a feeding mechanism, and nothing has been superadded. When the infringer uses in his infringing machine the essential part of the patented machine, without which his infringing machine is worthless, it is not an adequate answer to the demand for the payment of his entire profits that his substituted equivalents improved the work of the corresponding elements of the infringed machine. The heating of the lower metallic roll, and thereby making it a device for ironing as well as smoothing, was an

addition, though not a patentable one, which was not made of importance in the testimony, but it was of pecuniary importance and benefit. If the work had been done by hand, it would have been necessary to press down each fold with a hot iron as soon as made, and heat must be applied to machine-made goods in order to make them a finished article. The heated roll, so far as it was a mangle, was an annex to the existing mechanism, and if it was a superaddition which produced a pecuniary benefit in its operation it is not of importance that it had been used before in like machines.

It follows that so much of the cost of making plaits by hand as included the cost of ironing should be deducted from the savings which the master found were derived from the use of the infringing mechanism, and it is probable that the master would have done so if the defendants had furnished any data from which the computation could have been made. (*Crosby Valve Co.* v. *Safety Valve Co.*, *supra*.) In the opinion in the Crosby case, which related to a patented valve, it appears that no evidence showed that any of the improvements which were patented after the issuance of the infringed patent and which were owned by the defendant gave any advantage in selling the infringing article, and therefore no allowance was made for the alleged benefit created by such improvement.

The master proceeded to ascertain the pecuniary advantage which the infringer derived from the unauthorized use of the patent, which was, in accordance with his previous findings of fact, the difference between the expense of plaiting by the use of the patented device and the expense of doing the same thing by hand. He found that the expense of plaiting about 484,000 yards, if other than woolen, would have been fifteen cents per yard, and that about 60,000 yards were woolen goods, which would have cost ten cents more. We are not satisfied with the accuracy or strength of the testimony upon which this finding was made. The witnesses for the complainant made their estimate for plaiting a strip of linen four inches wide and four plaits to the inch, which was the ordinary width called for in 1877 and 1878. Plaits varied in width from one-sixteenth of an inch to three-fourths of an inch. The narrow plaits were the most expensive. About seventy-five per cent. of the material was used in a width of four inches. The remaining twenty-five per cent. was used in widths of from half an inch to six inches. The complainant introduced three witnesses upon the subject of the cost of hand-made goods. Kursheedt, a manufacturer of plaitings, estimated the cost at seventeen and one-half cents per yard; but he never plaited goods by hand for sale and had no knowledge of what others paid. He did pay for making samples by hand in accordance with the time which the workmen took. Brown, a manufacturer of plaitings, made attempts to manufacture by hand between 1876 and 1878. His attempts resulted in a belief that the work cost him from fifteen to twenty cents a yard. Wooster, who was a large manufacturer of machine-made plaits, who is pecuniarily interested in the result of the suit, and who apparently has had no experience in hand-plaiting, estimated that such plaitings would cost twenty cents per yard.

Smith, the defendants' superintendent of the manufacturing part of their cloak and silk department, represented them before the master. He said nothing in regard to cost, and his only attempt to furnish testimony upon that subject was his wife's hurried experiment of about twenty minutes' duration to ascertain the time in which she could plait goods by hand upon a sewing-machine.

The testimony of the complainant is unsatisfactory. Kursheedt and Wooster gave estimates only, unaccompanied with knowledge gained by experiment or by investigation. Brown made practical experiments, apparently in a small way. But all of them included the expense of ironing, which two of them seemed to regard as important, and all estimated upon plaits of a fourth of an inch in width. No account was apparently taken of the economies which would inevitably come from increased production. If the defendants had entered upon the manufacture of half a million yards by hand, the advantages resulting from a subdivision of work among experienced persons and economical methods of doing the work by wholesale would have manifested themselves. The estimates of these witnesses are, in our opinion, the result either of inaccurate knowledge or of an insufficient investigation of the expenses of work upon a large scale.

The circuit judge was of opinion that the facts in this case took it out of the general rule that the pecuniary advantages which the infringers derived from the unauthorized use of the patent is to be estimated upon the entire production of the infringers, because, in his opinion, the evidence showed that the defendants never would have resorted to the hand method, because it was so expensive as to be prohibitory and because it was impossible to make a marketable plaiting by hand.

There may be and probably will be cases in which an inadvertent infringer of an old and unknown patent for the method of manufacturing an article which is made and sold by the million at a cheap rate and which is expensively made by hand, like paper bags, the article suggested by Judge Coxe, will have a persuasive equity against a decree for his entire profits, upon the ground that the owner of the patent suffered no damage and that the paper-bag business was created by automatic machinery and never would have existed if the bags must be made by hand; but the equity in this case is based entirely upon the testimony of Smith, the defendants' superintendent of manufacture, who in answer to questions which, assuming that the cost of manufacture by hand would have been from fifteen to twenty cents, asked whether it would have been practicable for the defendants to have employed such a method, replied that it would not have been, because it would have made the goods cost so much that they could not have sold them. What the effect would have been if the cost had been materially less than that which was assumed the witness did not state, and as we are of opinion that the assumed cost was much larger than the actual cost the answer throws no light upon the probable conduct of the defendants. The witness furthermore knew nothing upon the subject of what his employers would have done if they had been obliged to lose

money in this branch of their business, and they gave no testimony. They were doing a reputed business of from $30,000,000 to $40,000,000 per year. In 1878 the total sales of the cloak and suit department were a trifle below $600,000, the amount of sales of suits in that department was $131,287.03, and the amount of sales of plaited suits was $30,614.62. Whether the firm, which undertook to do a leading wholesale dry-goods business, would have permitted themselves to disregard the wants of customers by keeping aloof from an important article of trade the witness had apparently no adequate means of information.

The conclusion of the judge of the circuit court that a marketable article of plaitings could not be made by hand does not seem to have been adequately supported by the testimony. It appears that the defendants generally plaited silk and dress-goods and woolen goods by hand, because the machines injured the fine goods, and when, after the injunction, hand-made plaiting was used upon ordinary suits there was no difference in the appearances of the two classes of finished work.

The defendants' fifth assignment of error upon its cross-appeal was the alleged error of the court in ordering that the complainant could recover damages and profits, and, if such a decree could be lawfully directed, in not limiting the recovery to the period subsequent to the receipt of notice to them that the Griffith and Fanning machines were claimed to be infringements. This assignment was for the purpose of taking the benefit of the decision in *Dunlap* v. *Schofield*, (64 O. G., 139; 152 U. S., 244.)

The bill in equity was silent upon the allegations called for by section 4900 of the Revised Statutes that the complainants marked their machines or notified the defendants of the infringement.

After alleging the invention and grant of the patent and the assignment the pleader averred that the defendants, knowing the premises, infringed. This is not an averment that they had notice or knew that their machines infringed. The answer specially traversed the allegations in regard to infringement, but was likewise silent upon the subject of notice. The defendants introduced a witness in January, 1884, who made the customary proof of good faith and that when they were notified they stopped the use of the machines. No point was made upon final hearing or during the nine and one-half years before the master in regard to the absence of the allegation or of the proof of notice. No exception upon that subject was taken to the report of the master. The point was not made before the court when the decree was made final, and appeared for the first time in the assignment of errors, more than sixteen years after the answer was filed. The question is not whether the rules of pleading required the allegation of notice in a bill in equity which asked for damages and profits. That question is settled in *Dunlap* v. *Schofield*, *supra*, but it is whether the neglect to take notice of the omission either by answer or in any other form until after the final decree was not a waiver of the want of notice. It was so held in *Rubber Co.* v. *Goodyear*, (9 Wall., 811,) where the point of want of notice did not appear until the hearing before the master, and the court held that the triable issues must be confined to the pleadings. This was affirmed in *Sessions* v. *Romadka*, (59 O. G., 539; 145 U. S., 29.) In *Dunlap* v. *Schofield*, *supra*, a bill in equity to recover damages, the bill and answer made the proper averments and denials, but no proof was given, and the court held that the burden of proof rested upon the complainant. In *Royer* v. *Coupe*, (70 O. G., 779; 155 U. S., 583,) an action at law, the pleadings were silent, but the question was actually litigated upon the trial by contradictory evidence, and the court thought that it should have been submitted to the jury. In this case the pleadings were silent. The question never became one actually in issue and was never raised in the circuit court.

It is too late to raise for the first time in an appellate court technical questions of pleading or proof which are not jurisdictional in their character and which were not raised either in the pleadings or before the trial court, where defects might have been remedied, and which must therefore be considered to have been waived.

It is therefore not necessary to consider whether the provisions of section 4900 are applicable only to cases in law or in equity in which damages, as distinguished from profits, are the subject of investigation.

The case stands upon this wise: In our opinion the conclusions of the circuit judge were too sweeping in their character and that too much importance was given to the alleged improvements which were made upon the Crosby and Kellogg machine and to the testimony of Smith that the expense of hand-made plaits would have prohibited his employers from their use. We are, on the other hand, of opinion that an allowance should have been made for the improvement in the defendants' machine by which the plaits were automatically ironed and that the estimates of the witnesses upon which the master based his findings of court were excessive by reason of the omissions which have been mentioned. But the whole record and the silence of the defendants show that they must properly be charged with a large sum as profits.

We have been in doubt as to the proper disposition of the case—whether it should be sent to a master for rehearing or whether this court should ascertain from the record the proper amount. (*Goulds Mfg. Co.* v. *Cowing*, 21 O. G., 1277; 105 U. S., 253.) This case has now been in court for eighteen years. It survived two masters and was before a master for more than nine years. The lapse of time undoubtedly arose from a variety of circumstances, and we are not aware that it is attributable to the counsel in the case; but the delays which are incident to an accounting are well known, and we hesitate exceedingly to compel an additional expenditure of time. The manufacture of plaits in any large amount has now ceased, and it is very likely that further testimony would result only in estimates not the result of experience. We have therefore concluded to ascertain from the record a more satisfactory amount of profits, and conclude that a resonable allowance will be the sum of $40,000.

The decree will be reversed, with costs of this court, and the cause remanded, with instructions to enter a decree declaring the validity and the infringement by the defendants of the second and fourth claims of the Crosby and Kellogg patent, and adjudging that the complainant recover from the defendants the sum of $40,000 as their profits, and the costs in the circuit court to be taxed.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 7. TUESDAY, NOVEMBER 17, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
CHANGES IN CLASSIFICATION	979
PRINTS	980
PRICE OF PRINTED COPIES OF PATENTS	980
ISSUE OF NOVEMBER 17, 1896	980
APPLICATIONS UNDER EXAMINATION	980
PATENTS GRANTED	981
REISSUES	None.
DESIGNS	1112
TRADE-MARKS	1120
LABELS	None.
DECISIONS OF THE U. S. COURTS—	
Chauche *et al.* v. Pare	1123
Raymond v. Royal Baking Powder Company	1124
Strom Manufacturing Company v. Weir Frog Company	1125
Western Mineral Wool and Insulating Fibre Company v. Globe Mineral Wool Company	1127

Changes in Classification.

(ORDER No. 1,107.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 7, 1896.

The following changes in classification are hereby directed:

In Division XII, Class 74, Machine Elements, the following subclasses are established:

Cranks and levers—
38 Cranks and wrist-pins,
39. Hand-levers.
Gearing—
40. Screw-and-nut,
41. Teeth and bodies.
Sprocket-chains—
42. Endless-belt,
43. Solid-link,
44. Solid-link and coupler.
Machine-brakes—
45. Centrifugal speed-regulators,
46. Stop mechanisms.
Pitmen—
47. Longitudinally-adjustable rod,
48. Longitudinally-yieldable.

In Class 193, Conveyers, a subclass is established to be entitled 22, Spouts.

In Division XIII, Class 30, Cutlery, a subclass is established to be entitled 24, Pruning implements, fruit-clippers, and subclasses in Class 59, Chains, Staples, and Horseshoes, to be entitled—

10. Key-holders.
11. Swivels.

In Division XV, Class 25, Clay and Pottery, a subclass is established to be entitled 42, Pottery-kilns, saggers.

In Division XXVI, Class 173, Electricity, Conductors, subclasses 70, Conductors, underground, and 243, House-wiring, are abolished.

The following subclasses are established in the same class:

247. Conduits—
248. Cleaning and wire-drawing,
249. House-wiring,
250. Junction and distributing boxes.
251. Supports and hangers.

The following subclasses are established in Class 172, Electricity, Motive Power:

Transmission of power—
245. Phase indication,
246. Phase regulation.

In Division XXXII, Class 150, Packing and Storing Vessels, all the subclasses under the subheads Wooden vessels, barrels, buckets, and pails, and Wooden vessels, boxes, are abolished.

In Class 215, Bottles and Jars, the following subclasses are established:

Bottle stoppers—
100. Ejectors,
101. Fasteners, expanding,
102. Tube, valve, spring.
103. Bottle-valves, separable necks.
104 Jars, ejecting

A new class is established, to be entitled Class 217, Wooden Barrels and Boxes, containing the following subclasses:

1. Barrel-bungs—
2. Bushings,
3. Expansible—
4. Vented,
5. Locks—
6. Bayonet,
7. Plugs—
8. Diaphragm—
9. Integral,
10. Protectors,
11. Valves—
12. Ingress—
13. Collapsible,
14. Controllers—
15. Rotary,
16. Screw,
17. Diaphragm,
18. Liquid-seal,
19. Safety,
20. Wrenches.
21. Barrel closures—
22. Clamp—
23. Bail,
24. Cam,
25. Expanding bolts,
26. Hoops,
27. Lever,
28. Rotary,
29. Screw,
30. Fasteners—
31. Spring catch.
32. Barrel-covers—
33. Compartment,
34. Hinged,
35. Rotary,
36. Wire.
37. Barrel-heads—
38. Braced,
39. Expanding,
40. Fasteners,
41. Followers.
42. Barrel-hoops—
43. Blanks,
44. Elastic,
45. Locks—
46. Notched,
47. Staple,
48. Retainers,
49. Tighteners.
50. Barrel-joints.
51. Barrel-racks.
52. Barrel-stands—
53. Portable,
54. Tilting—
55. Portable,
56. Trucks,
57. Swing—
58. Roller-supports.
59. Barrel-staves—
60. Moisteners.
61. Barrels—
62. Bent—
63. Sections,
64. Cases,
65. Compartment,
Barrels—
66. Knockdown,
67. Linings.
68. Ventilated—
69. Perforated.
70. Boxes—
Bent—
71. Angular—
72. Double blank,
73. Joints,
74. Curved—
75. Joints,
76. Walls,
77. Block,
78. Bottle-racks,
79. Cases—
80. Bottle—
81. Cells—
82. Strips,
83. Dispensing—
84. Pivoted,
85. Mailing,
86. Can,
87. Jar—
88. Cushion,
89. Cells—
90. Clip,
91. Cord,
92. Crimped,
93. Cushioned,
94. Plate—
95. Multiple,
96. Pocket—
97. Flexible—
98. Slitted,
99. Separable,
100. Strip—
101. Locking—
102. Bent,
103. Cushion,
104. Loop,
105. Slit—
106. Tongued,
107. Closures—
108. Hinged—
109. Slide,
110. Supports,
111. Sliding,
112. Compartment—
113. Followers,
114. Dispensing,
115. Display—
116. Bottle—
117. Clip,
118. Compartment—
119. Folding,
120. Grooved,
121. Covers—
122. Compartments,
123. Cravat,
124. Embroidery,
125. Jewelers—
126. Clamp,
127. Sample-fasteners—
128. Clip,

Boxes—
129. Joints,
130. Knockdown—
131. Folding—
132. Removable sides,
133. Linings,
134. Stays—
135. Angular,
136. Driving—
137. Wire,
138. Straps—
139. Wire,
140. Walls.
141. Crates—
142. Closures,

Crates—
143. Cushioned,
144. Folding—
145. Poultry—
146. Removable sides,
147. Fruit-box,
148. Hat-supports,
149. Knockdown—
150. Poultry,
151. Package—
152. Roll,
153. Poultry—
154. Collapsible,
155. Sectional,
156. Ventilated.

JOHN S. SEYMOUR,
Commissioner.

PRINTS.

36.—Title: "CIRCUS PLAYING CARDS." *The United States Playing Card Company*, New York, N. Y. Application filed October 13, 1896.

37.—Title: "FAIRY BOOTS." (For Boots and Shoes.) *The L. Candee & Company*, New Haven, Conn. Application filed October 21, 1896.

38.—Title: "WOONSOCKET RUBBERS." (For Rubbers and Overshoes.) *The Woonsocket Rubber Company*, Providence, R. I. Application filed October 21, 1896.

Price of Printed Copies of Patents.

Attention is called to the fact that under date of May 14, 1891, the price of uncertified printed copies of patents was fixed at the *uniform price of ten cents each*, whether purchased singly or in quantities.

Issue of November 17, 1896.

Patents	413—No. 571,324 to No. 571,736,	inclusive
Designs	49—No. 26,264 to No. 26,312,	inclusive.
Trade-Marks	32—No. 29,157 to No. 29,188,	inclusive.
Prints	3—No. 36 to No. 38,	inclusive.
Labels	None.	
Reissues	None.	
Total issue	497	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2	....	New Hampshire	2	....
Arizona Territory	....	....	New Jersey	19	1
Arkansas	3	....	New Mexico Territ'y	....	....
California	11	1	New York	94	5
Colorado	5	....	North Carolina	....	....
Connecticut	12	1	North Dakota	1	....
Delaware	....	....	Ohio	25	4
District of Columbia	4	....	Oklahoma Territory	....	....
Florida	....	....	Oregon	3	....
Georgia	2	1	Pennsylvania	46	5
Idaho	....	....	Rhode Island	7	1
Illinois	35	3	South Carolina	3	....
Indian Territory	....	....	South Dakota	2	....
Indiana	14	....	Tennessee	3	....
Iowa	4	....	Texas	5	....
Kansas	9	....	Utah	....	....
Kentucky	5	....	Vermont	1	....
Louisiana	3	1	Virginia	2	....
Maine	5	....	Washington	2	....
Maryland	3	2	West Virginia	2	....
Massachusetts	29	3	Wisconsin	10	....
Michigan	11	....	Wyoming	....	....
Minnesota	10	....	U. S. Army	....	....
Mississippi	2	....	U. S. Navy	....	....
Missouri	12	....			
Montana	....	....	Total to citizens of the United States	411	29
Nebraska	3	....			
Nevada	....	....			

To citizens of foreign countries: Patents and Designs—51; Trade-Marks and Prints—6.

APPLICATIONS UNDER EXAMINATION.

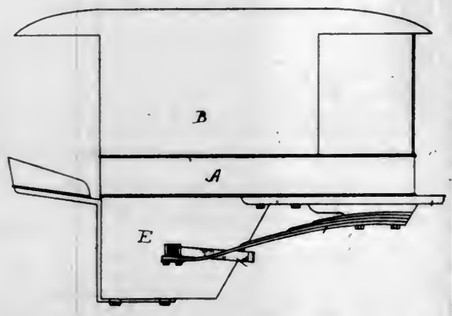
Condition at Close of Business November 10, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended.	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Oct. 10	Oct. 30	243
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Oct. 10	Oct. 26	113
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Oct. 12	Oct. 23	123
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Oct. 12	Oct. 17	185
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Oct. 14	Oct. 14	157
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 12	Oct. 12	320
226	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Oct. 10	Oct. 12	227
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Oct. 10	Oct. 12	258
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Oct. 12	Oct. 10	190
221	XXIII. Instruments of Precision, Acoustics, etc.	Oct. 12	Sept. 15	370
	Between one and two months.			
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Sept. 28	Oct. 13	198
215	XVII. Paper Manufactures and Printing.	Sept. 19	Oct. 13	133
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Oct. 5	Oct. 10	190
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Oct. 5	Oct. 10	191
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Oct. 8	Oct. 10	170
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Sept. 12	Oct. 7	238
190	IX. Hydraulics, Fire-Extinguishers, etc.	Oct. 5	Oct. 5	204
93	XXI. Textiles, etc.	Sept. 25	Oct. 4	229
246	I. Tillage and Fences	Oct. 3	Oct. 2	284
255	XII. Mechanical Engineering, Store-Service, etc.	Oct. 3	Oct. 1	238
253	X. Carriages and Wagons	Sept. 12	Sept. 30	4 8
248	XVIII. Steam-Engineering, etc.	Sept. 16	Sept. 28	142
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Sept. 14	Sept. 18	375
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Sept. 10	Sept. 14	421
106	II. Farm Stock, Products, etc.	Sept. 11	Sept. 11	334
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Oct. 6	Sept. 10	174
	Between two and three months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 15	Oct. 22	541
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Sept. 8	Oct. 1	450
240	VII. Harvesters, Games and Toys, and Velocipedes.	Aug. 10	Sept. 12	1364
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 3	335
102	XIX. Stoves and Furnaces	Sept. 15	Sept. 1	457
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 12	Aug. 26	419
	Between four and five months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 5	Oct. 1	803
	Total number of applications awaiting action			10,494
	Under one month in arrears.			
	Designs	Oct. 20	Nov. 2	120
	Trade-Marks	Nov. 2	Nov. 3	33

PATENTS

GRANTED NOVEMBER 17, 1896.

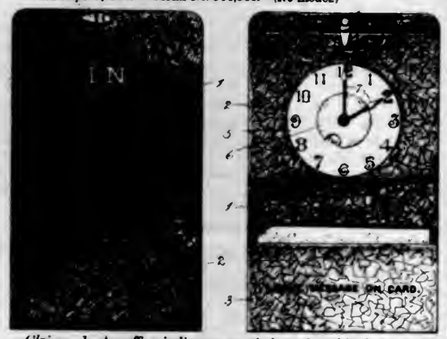
571,824. DELIVERY-WAGON. JOHN W. AKERMAN, Newburyport, Mass. Filed Feb. 14, 1896. Serial No. 579,239. (No model.)



Claim.—1. In a delivery-wagon, a wagon-body, the rear end of which is provided with a depending extension or compartment and a seat which is connected therewith, and extends outwardly behind the wagon-body, and an axle which is angular in form and incloses the front portion of said depending extension, or compartment, substantially as shown and described.

2. In a delivery-wagon, a wagon-body, the rear end of which is provided with a depending extension or compartment and a seat which is connected therewith, and extends outwardly behind the wagon-body, and an axle which is angular in form and incloses the front portion of said depending extension or compartment, and the forward portion of the wagon-body being supported by springs which are connected therewith, and with said axle at the side of said depending extension or compartment, substantially as shown and described

571,825. OFFICE-INDICATOR. AUGUSTUS ANGELL, Hartford, Conn., assignor of one-half to William E. Wright, Burlington, N. J. Filed Sept. 5, 1895. Serial No. 561,518. (No model.)

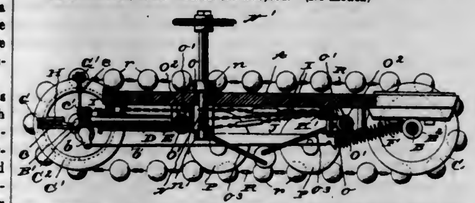


Claim.—1. An office-indicator consisting of a thin base, a thin leaf hinged to one face of the base near the middle and adapted to be turned up to cover the upper part of the base or turned down to cover the lower part of the base, a numbered dial on the face of the leaf that is exposed when the leaf is turned up, the other face of the leaf being blank, and hands pivoted to the leaf at the center of the dial on the dial side of the leaf, substantially as specified.

2. An office-indicator consisting of a thin base, a thin leaf hinged to one face of the base near the middle and adapted to be turned up to cover the upper part of the base or turned down to cover the lower part of the base, a dial bearing both hour numerals and also day indications on the face of the leaf that is exposed when the leaf is turned up, the other face of the leaf being blank, a pivot at the center of the dial, a revolving disk smaller than the dial held by the pivot outside of the day indications, and hands held by the same pivot on the dial side of the leaf and pointing to the hour-numerals, substantially as specified.

3. An office-indicator consisting of a thin base, a thin leaf hinged to one face of the base near the middle and adapted to be turned up to cover the upper part of the base or turned down to cover the lower part of the base, a catch for holding the leaf when it is turned up, a dial bearing hour-numerals and also day indications on the face of the leaf that is exposed when the leaf is turned up, the other face of the leaf being blank, a pivot at the center of the dial, a revolving disk smaller than the dial held by the pivot, said disk covering all but one of the day indications, a pair of hands held by the same pivot on the dial side of the leaf and pointing to the hour-numerals, a flap at the bottom of the base that is exposed when the leaf is turned up and covered when the leaf is turned down, and a leg hinged to the back of the base, substantially as specified.

571,826. TRACTION-ENGINE. RAMON S. ANGELL, Oakes, N. D. Filed June 20, 1896. Serial No. 596,261. (No model.)



Claim.—1. In a traction-engine the combination with the body or bed A, carrying a suitable motor, of the front axle consisting of a two-part crank B'; the tubular frame C^3, having a rearwardly-projecting arm D; a boxing secured to the under side of the bed, and receiving the arm D; the wheels C', mounted on the axle ends in ball-bearings; and provided with double rimmed peripheries, all constructed arranged and operating as hereinbefore described.

2. In a traction-engine the combination with the body or bed, of a front axle secured to the body as described, and consisting of a two-part crank B'; the frame C^3, having the projecting arm D; the boxing E, provided with the socket to receive the arm D; the wheels C', mounted in ball-bearings, on the axle ends; their hubs having the three arms c; the cross bar G, secured to the front horizontal arm c; and the retaining-forks H, all constructed, arranged and operating substantially as described.

3. In a traction-engine the combination with the body, of the two part cranked front axle, each half B', having a projecting arm; rods extending from said arms to the coiled springs F; the boxing receiving the arm extending rearwardly from the frame C^3; the front wheels mounted in ball-bearings, having hubs provided with three projecting arms c; the cross-bars G, and G'; the latter connected with the steering-chain I; the said chain; sheaves c', on the frame C^3; other sheaves K', secured to the body of the engine; and the steering-post N, all constructed arranged and operating substantially as described.

4. In a traction-engine, the combination with the body or bed A, of the frame O, consisting of the cross-rods O', the cylinders O^2, suitably attached to the bed—the lateral rods O^3, bent to form axles for the tension-wheel frame; the said frame; the tension-wheels P; the halled chains R, forming endless tracks; the wheels C, having peripheral cups to receive the endless tracks; and the wheels C', having double rims to retain the track-chains R, all constructed arranged and operating as hereinbefore described.

5. In a traction-engine, the combination with the body, of the double cranked front axle B'; the wheels C', having ball-bearings upon the ends of said axle, and double-rimmed peripheries; the rear axle B, having wheels revolving with it; the endless tracks consisting of

the chains R, provided with the balls r arranged to fit with the front and rear wheels and the tension wheels, the frame O, for the tension-wheels; and the said tension-wheels, all constructed arranged and operating as hereinbefore described.

6. In a traction-engine, the combination with the body or bed A, of the frame O, consisting of the cross-rods O′, provided with the upright arms o′ the lateral spiral springs S; the containing-cylinders O^2 suitably attached to the bed, the lateral rods O^2 forming axles or supports for the tension-wheel frame; the said frame; the tension-wheels P, provided with double rims and ribs for retaining the track-chains; and the said chains R, forming endless tracks, all constructed, arranged and operating as hereinbefore described.

571,327. DRESS-STAY. ALLEN BAGLEY, Ypsilanti, Mich. Filed Mar. 16, 1896. Serial No. 583,327. (No model.)



Claim.—1. A dress-stay formed of a woven fabric, having stiffening-blades woven into the fabric as an integral part thereof, said blades corrugated their entire length on both their lateral edges, the threads of the woven fabric on both sides of said blades being drawn into the recesses formed by said corrugations, to hold the blades from endwise movement in the fabric, as set forth.

2. A dress-stay formed of a woven fabric consisting of stiffening warp-strips or blades A′, A′, textile warp-threads B, and textile woof-threads C interwoven with the warp-threads in the manner set forth, said blades being corrugated their entire length on both their lateral edges, the textile woof-threads from end to end of said blades being drawn into the recesses on both the corrugated edges of the blades, to prevent endwise movement of the blades, said fabric having lateral selvages of textile threads, through which the stay may be stitched into place, for the purpose set forth.

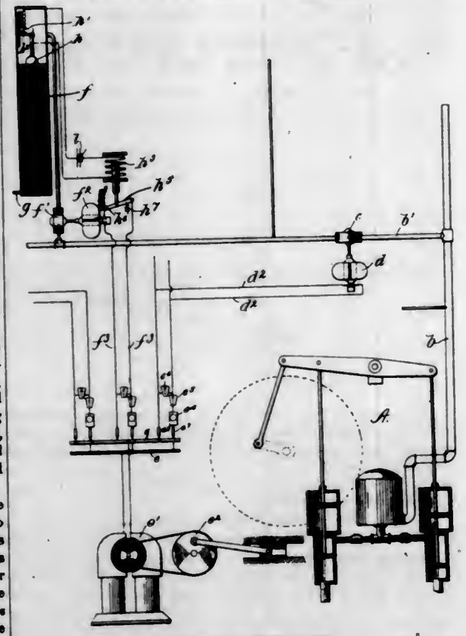
3. A dress stay formed of a woven fabric consisting of textile woof-threads, stiffening warp-strips or blades corrugated from end to end on their lateral edges, and textile warp-threads, the woof-threads interwoven with said blades and warp threads, and the woof-threads crossing between the adjacent edges of said blades and at the outer edges thereof, and arranged from end to end of said blades in the recesses at both the corrugated edges of the blades to hold the blades from endwise movement, said fabric having lateral selvages of textile threads, through which the stay may be stitched into place, and said blades constituting an integral part of the woven fabric, substantially as set forth.

571,328. ELECTRICALLY-OPERATED WATER-SUPPLY SYSTEM. JOHN P. BARRETT, Chicago, Ill. Filed Aug. 31, 1895. Serial No. 561,069. (No model.)

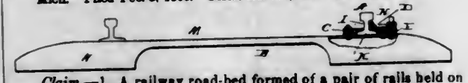
Claim.—1. In a water-supply system, the combination with the main-station pumping apparatus, of water-mains extending therefrom to the districts to be supplied, a series of electrically-operated auxiliary pumps situated at intervals along said mains for assisting the main pumping apparatus in forcing the water through the mains, a series of tanks or stand-pipes situated at the centers of distribution of outlying districts, an electrically-operated pump provided in connection with each of said stand-pipes for forcing water from the mains into said stand-pipe, supply-pipes connected with said stand-pipes, a generator or other source of electricity located at a central station and connected in circuit with said electrically-operated pumps to supply current thereto and controlling apparatus at said central station for controlling the current supplied to said electrically-operated pumps, whereby the electrically-operated pumps may be thrown into operation when desired to assist the main pumping apparatus, substantially as described.

2. In a water-supply system, the combination with the main-station pumping apparatus, of water-mains extending therefrom to the districts to be supplied, a series of tanks or stand-pipes situated at the centers of distribution of outlying districts, an electrically-operated pump provided in connection with each of said stand-pipes for forcing water from the mains into the stand-pipes, supply-pipes connected with said stand pipes, a generator or other source of electricity located at a central station and supplying current to said electrically-operated pumps, and controlling apparatus at the said central station for controlling the current supplied to said electrically-operated pumps, substantially as described.

3. In a water-supply system, the combination with the main-station pumping apparatus, of water-mains extending therefrom to the districts to be supplied, a series of tanks or stand-pipes situated at the centers of distribution of outlying districts, an electrically-operated pump provided in connection with each of said stand-pipes for forcing water from the mains into the stand-pipes, supply-pipes connected with said stand-pipes, a generator or other source of electricity located at a central station and supplying current to said electrically-operated pumps, and means independent of the central station and controlled by the rise and fall of the water-level in said stand-pipes for varying the speed of the electrically-operated pumps, substantially as described.



571,329. RAILROAD CROSS-TIE. JOHN C. BARTON, Port Huron, Mich. Filed Feb. 3, 1896. Serial No. 577,945. (No model.)

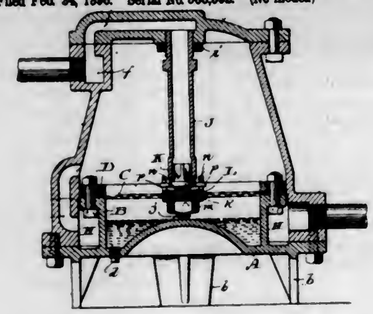


Claim.—1. A railway road-bed formed of a pair of rails held on metallic ties having top and wing webs, enlarged ends and reduced central parts and downcurved outer ends, such rails and ties held together by inner clamps C, and outer bolsters D, held in place by clamps E, F at the sides and front thereof, substantially as set forth.

2. The rail-fastening formed of an inner clamp held by a bolt, and an outer bolster D from the tie to the rail-head, held by clamps E, F at the sides and front thereof, each held by bolts as set forth.

3. In a rail-fastening an outer bolster D from the tie to the rail-head, held by clamps E, F at the sides and front thereof, each held by bolts as set forth.

571,330. STEAM-TRAP. ARTHUR J. BAYLEY, Milwaukee, Wis. Filed Feb. 24, 1896. Serial No. 580,592. (No model.)



Claim.—1. A steam-trap comprising a base provided with a fluid-reservoir having an expansible diaphragm for its cover, a closed shell on the base provided at its lower end with a pipe-connecting hollow boss and having such dimensions that an annular chamber is formed adjacent to the reservoir open to said boss, this chamber and that portion of the shell above the diaphragm being in communication, a drain-pipe hung within said shell, and a valve for this pipe mounted on the diaphragm.

2. A steam-trap comprising a base having a dome-like indentation surrounded by a wall surmounted by an expansible diaphragm, a closed shell on the base of such dimensions that a chamber is formed between it and the reservoir surrounding the latter, there being an inlet to the chamber, communication of the latter with that portion of the shell above the diaphragm and an outlet from said shell; a pipe communicating with the outlet from within the aforesaid shell, and a pipe-valve mounted on said diaphragm.

3. A steam-trap comprising a base provided with a fluid-reservoir surmounted by an expansible diaphragm, a shell on the base provided with an inlet and an outlet, the dimensions of the shell being such that an annular chamber is formed between it and the reservoir open to said inlet, this chamber being in communication with that portion of said shell above the diaphragm, a shell-cover provided with a port leading to said outlet, a pipe depending from the cover in communication with the latter port, and a pipe-valve mounted on said diaphragm.

4. A steam-trap having a water-escape controlled by a valve provided with lateral lugs, a valve-holder comprising a disk having hook-arms engaged by the valve-lugs, and suitable means for seating and unseating the valve.

5. A steam-trap having a water-escape controlled by a valve provided with lateral lugs, a valve-holder comprising a disk having hook-arms engaged by the valve-lugs and a depending shank held in an expansible diaphragm, and a stop opposing said shank to limit contraction of the diaphragm.

571,331. FENCE. WILLIAM F. BEALS, Decatur, Ill. Filed Mar. 9, 1895. Serial No. 541,171. (No model.)



Claim.—In a fence comprising line-wires and pickets attached thereto, the combination of tension or compensating springs disposed at corresponding points in the length of the line-wires, and comparatively wide pickets disposed one on each side, or end, of the tension-springs, and having the opposing edges notched to receive the end portions of the said tension-springs and afford protection for the latter, substantially as set forth.

571,332. PROCESS OF AND APPARATUS FOR COMPRESSING, &c., AND NEW-SHAPENING HOLLOW INGOTS IN MATRICES. TOUSSAINT BIOURROUX, Dusseldorf, Germany, assignor to Duisburger Eisen und Stahlwerke, Duisburg, Germany. Filed June 12, 1895. Serial No. 552,503. (No model.)

Claim.—1. The herein-described method of producing hollow bodies from ingots and the like, consisting in compressing and shaping a hollow ingot or the like while in a heated state in a matrix by means of a presser, which method consists in pressing one hollow hot ingot of one shape against another hollow hot ingot, until the shape of the latter is changed as desired by such pressing, and then pressing said first-mentioned hollow hot ingot with another hollow hot ingot and thereby changing the shape of said first-mentioned hollow hot ingot.



2. The improved method of producing hollow bodies from ingots and the like, by pressing them through a compressing and shaping matrix, which method consists in superposing two hot hollow ingots, applying force to one and pressing it against the other, and thereby forcing the latter into the desired shape, then placing another hot hollow ingot against that to which force was applied, applying force to the ingot thus placed, pressing it against the ingot against which it is placed, and thereby pressing the latter into the desired shape.

3. The improved process of producing hollow bodies from hot hollow ingots between compressing and shaping matrices and mandrels, which consists in partially shaping the interior and exterior of one hot hollow ingot, then placing against the unfinished end thereof an unshaped hot hollow ingot and pressing the latter against said end of said first-mentioned ingot until the shaping of the latter is completed and the shaping of the adjacent end of the following ingot is partially effected.

4. In apparatus for producing hollow bodies, a matrix, in combination with a mandrel of less size than the interior of said matrix and extending through the latter, and a presser fitting said matrix between the walls of the latter and the walls of said mandrel, and movable into said matrix to force a hot hollow ingot through the space between said walls.

5. In apparatus for producing hollow bodies from hot ingots, a matrix for holding two ingots, a mandrel in said matrix for extending through two ingots when held therein, and a presser in the space between said mandrel and matrix, movable into the latter for pressing through it one of the ingots held therein and partially through it the other of such ingots.

6. In apparatus for producing hollow bodies, a matrix having receiving and discharge ends of different shape, in combination with a mandrel in said matrix extending from its portion of one shape to its portion of another shape, and a presser movable into and fitting the receiving end of said matrix between the walls of the latter and the adjacent walls of said mandrel at the receiving end of said matrix, substantially as and for the purpose set forth.

7. In apparatus for producing hollow bodies from hollow ingots, a matrix open at both ends and receiving the ingots at one end and discharging them at the other, in combination with a mandrel movable into the receiving end of said matrix and through the latter to the discharge end thereof for shaping the interior of ingots passing therethrough, and a presser between the walls of said mandrel and the receiving ends of said matrix and movable into said receiving end and partially through the latter for pressing ingots partially therethrough during its inward movement.

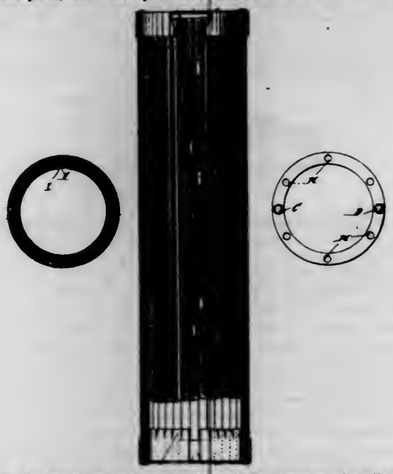
8. In apparatus for producing hollow bodies from hollow ingots, a matrix having differently-shaped receiving and discharge ends, in combination with a mandrel movable into said matrix and having a portion for entering the hollow of an unshaped ingot in the receiving end and a portion entering the interior of the partly-shaped ingot in the discharge end, and a presser between said mandrel and matrix, movable into the latter for pressing an unshaped ingot through the space between the matrix and mandrel.

9. In apparatus for making hollow bodies, the matrix B, in combination with a mandrel C movable therein and having a portion c, a tapering portion *d* and a shaping portion *i*, and a presser *e* movable into said matrix between the walls of the shaping portion *i* of the mandrel and the walls of the matrix, substantially as and for the purpose set forth.

571,333. CHIMNEY. ALEXANDER G. BORRY, New York, N. Y. Filed Aug. 16, 1895. Serial No. 559,493. (No model.)

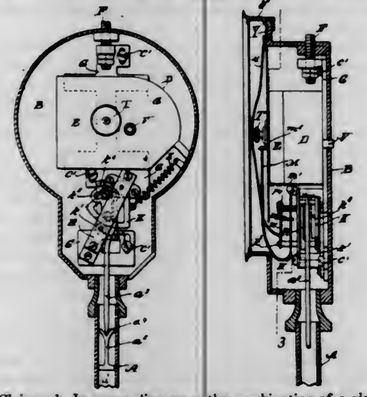
Claim.—1. A chimney for gas or other burners comprising a frame composed of annular heads or end pieces, and united by metal rods said heads or end pieces being U-shaped in cross-section, and the inner walls continued above the outer walls, and slitted or divided, and the space between the metal rods being filled with glass rods, which are removable, the inner wall of one of said heads or ends being provided with a vertical opening or space by means of which the

glass rods may be inserted or removed, said space being closed by a movable plate, substantially as shown and described.



2. The combination in a chimney of the character described, of the annular rings or heads provided with annular flanges one of which is wider than the other and which are provided with one or more vertical slots through which the glass rods are inserted, said inner lower flange having a series of incisions or cuts upon the upper edge thereof, the metallic rods connecting said heads and the glass rods removably secured between said flanges, substantially as described.

571,334. RECORDING-PYROMETER. EDWARD BROWN, Philadelphia, Pa. Filed May 22, 1896. Serial No. 592,610. (No model.)



Claim.—1. In a recording-gage, the combination of a clock carrying a recording-dial, and a recording-pen which traverses the dial, both being mounted upon the same adjustable sliding plate.

2. The combination in a recording-gage of a case B, a clock carrying a recording-dial, a pivoted arm carrying a recording-pen, a sliding plate G upon which the clock and pen are mounted, and the adjusting-screw F.

3. In a recording-gage the rotating circular recording-chart P having thereon a curved scale p' p^2 extending on each side of the center of the chart, struck from one center upon which are cut lower degrees on one side of the center, and the higher degrees on the opposite side, and a recording-pen traversing the said scale, by which device the accuracy of the instrument may be tested.

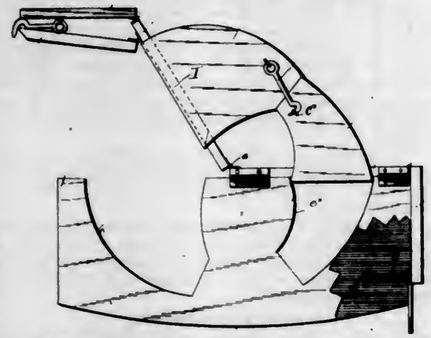
4. In a recording and indicating gage the combination of a pivoted arm carrying a recording-pen m^2, a recording-chart rotated by a clock, and a pointer N which traverses above the surface of the chart and indicates the degrees on a separate dial, both the pointer and pen moving in unison from the same pivot.

5. In a recording-gage the combination of a recording-dial rotated by a clock, an indicating-pointer N, and a recording-pen m^2 both oscillating upon the same pivot operated by the arm R secured to the multiplying mechanism, and springs s' s^2.

6. In a recording gage the combination of a rotating recording-dial P, an arm R, secured to the multiplying mechanism of the gage, an adjusting-screw r' upon the arm, by which the recording-pen upon the pivoted arm M may be brought into position with the degrees upon the dial.

7. In a recording-pyrometer, the combination of an expansion-stem the motion of which is to be recorded, the connecting-link a^3, adjusting-arm k^2, the pivoted rack K, a spring S to hold the mechanism and stem in contact, a recording-pen m^2 oscillating with the pinion-shaft k^2, and a recording-dial P driven by a clock.

571,335. COMBINED CHAIR AND BOX. HOLIDAY H. BRUCE, Jefferson City, Mo. Filed Apr. 17, 1896. Serial No. 587,933. (No model.)



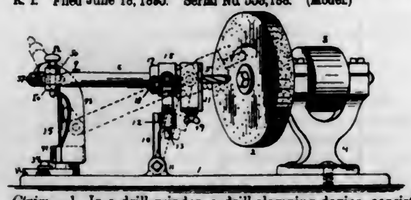
Claim.—1. In a combined chair and box, a bottom in two parts, hinged together, and having curved pieces on its edges, sides hinged to said bottom and having openings to receive the curved pieces, and hinged ends mounted at opposite ends of the bottom, substantially as specified.

2. In a combined chair and box, a bottom in two parts, hinged together, and having curved pieces on its edges, sides hinged to said bottom, and having openings to receive the curved pieces, and hinged ends mounted at opposite ends of the bottom, and hooks on the end pieces and on the curved pieces at opposite sides of the bottom, substantially as specified.

3. In a combined chair and box, a bottom in two parts, hinged together, and having curved pieces on its edges, sides hinged to said bottom and having openings to receive the curved pieces, and hinged ends mounted at opposite ends of the bottom, and hooks on the end pieces and on the curved pieces at opposite sides of the bottom, the side pieces having openings to receive said curved pieces when the device is formed into a box, substantially as specified.

4. In a combined chair and box, a bottom in two parts, hinged together, and having curved pieces on its edges, sides hinged to said bottom and having openings to receive the curved pieces, and hinged ends mounted at opposite ends of the bottom, and hooks on the end pieces and on the curved pieces at opposite sides of the bottom, one portion of the bottom being formed with openings and hinged strips, substantially as and for the purpose described.

571,336. DRILL-GRINDER. WILLIAM G. BUDLONG, Providence, R. I. Filed June 18, 1895. Serial No. 553,188. (Model.)



Claim.—1. In a drill-grinder, a drill-clamping device, consisting of a movable block, properly mounted and having a central slot terminating in a V-shaped recess, a clamping-block, movable in said slot but not rotatable therein and made with a V-shaped recess, a nut fixed in said slot, and a screw, properly mounted and made with a right-handed and left-handed screw-thread, as shown, engageable with said nut and clamping-block and arranged centrally with respect to said slot, nut and clamping-block, substantially as specified.

2. The combination of an oscillating stand a yoke provided with a spindle which is rotatably mounted in said stand and a ring pivotally and diametrically mounted in said yoke and adapted to sustain a tool-holding device, substantially as described.

3. The combination of an oscillating stand, a yoke pivotally mounted thereon, a ring pivotally mounted in said yoke and a tubular tool-holder supported in said ring, substantially as described.

4. The combination of an oscillating stand, a yoke pivotally mounted therein, a ring pivotally mounted in said yoke, a tubular tool-holder supported in said ring and a sliding block within said tube to center and support a tool, substantially as shown.

5. The combination of an oscillating stand, a yoke pivotally mounted therein, a ring pivotally mounted in said yoke, a tubular tool-holder provided with a longitudinal slot, a sliding block within the tool-holder and a set-screw passing through said slot into said block, substantially as and for the purpose set forth.

6. In a drill-grinder the combination of an oscillating stand provided with a yoke pivotally mounted thereon, a ring pivotally mounted in said yoke, a tool-holder rotatably mounted and connected with said ring, a swiveling post, a rod pivotally mounted on said post and jointed at its end with the end of said tool-holder, substantially as specified.

7. In a drill-grinder, the combination of a rotatably-mounted tool-holder, a swiveling post, a rod pivotally mounted on said post and jointed to the end of the tool-holder and a guide having a cam edge, all operating substantially as and for the purpose specified.

8 In a drill-grinder, the combination of an oscillating stand, a tool-holder rotatably mounted thereon, a swiveling post, a rod pivotally mounted on said post and jointed to the end of the tool holder and a guide having a cam edge, substantially as shown.

9. In a drill-grinder the combination of an oscillating stand provided with a universal joint, a tool-holder rotatably mounted and connected with said joint, a swiveling post, a rod pivotally mounted on said post and jointed to the end of the tool-holder and a guide having a cam edge, substantially as specified.

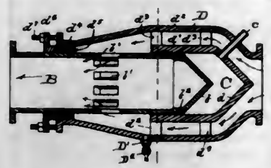
10. In a drill-grinder the combination of a rotatably mounted tool-holder, a swiveling post, a rod pivotally mounted on said post and jointed to the end of the tool-holder and an adjustable guide having a cam edge, substantially as shown.

11. In a drill-grinder, the combination of an oscillating stand, a tool holder rotatably mounted thereon, a swiveling post, a rod pivotally mounted on said post and jointed to the end of the tool-holder and an adjustable guide having a cam edge, substantially as specified.

12. In a drill-grinder, the combination of a rotatably-mounted tool-holder, a pivotally-mounted rod having a jointed connection with said tool holder and provided with adjustable stops adapted to regulate the radius of the arc of curvature described by said jointed connection, substantially as set forth.

13. The improved drill-grinder, herein described, having a bed, a standard thereon supporting a grinding-wheel and also an oscillating stand and a rear stand, a rotatable tubular tool-holder, slotted longitudinally and having at its forward end a head-piece provided with adjustable clamps to seize and center the drill, a sliding block within the bore of the tool holder and provided with a set-screw passing through said slot, a swiveling yoke mounted on the oscillating stand, a ring pivotally mounted in said yoke and surrounding the tool-holder, a swiveling post mounted in the rear stand, a rod pivotally mounted on said post and provided with adjustable stops and connected at its end by a joint with the rear end of the tool holder and an adjustable guide having a cam edge, all combined and operating substantially as shown and for the purpose specified.

571,337. EXPANSION OR TELESCOPIC JOINT FOR PIPES CONTAINING FLUID UNDER PRESSURE. JOHN P. BURNHAM, Chicago, Ill. Filed Jan. 6, 1896. Serial No. 574,513. (No model.)



Claim.—1. The expansible or telescope joint for steam or other pipes, comprising in combination two telescopic sections or members furnished with a chamber between the same, the two opposite walls of such chamber being one connected to or formed integrally with one of said sections, and the other being connected to or formed integrally with the other of said sections, the pressure in such chamber being less than that in the pipe so that the pressure in the pipe against the two opposite walls of such chamber will compensate for the pressure in the pipe tending to separate the sections thereof, one of said pipe-sections having double walls with an annular passage between them surrounding said chamber for the passage of the steam or fluid from one pipe-section to the other substantially as specified.

2. The expansible or telescope joint for steam or other pipes, comprising in combination two telescopic sections or members furnished with a chamber between the same, the two opposite walls of such chamber being one connected to or formed integrally with one of said sections, and the other being connected to or formed integrally with the other of said sections, the pressure in such chamber being less than that in the pipe so that the pressure in the pipe against the two opposite walls of such chamber will compensate for the pressure in the pipe tending to separate the sections thereof, one of the sections of said pipe having a swell or enlargement to form an annular throat or communication around said chamber, and a drain pipe or opening at said bell or enlargement, substantially as specified.

4. The expansible telescope joint for steam or other pipes, comprising in combination a pipe-section B furnished with openings b', and an end wall b, and a pipe-section D furnished with an inner wall d' provided with an end wall d, and an outer enlarged wall or bell d^2 there being a chamber C between said end walls b d, substantially as specified.

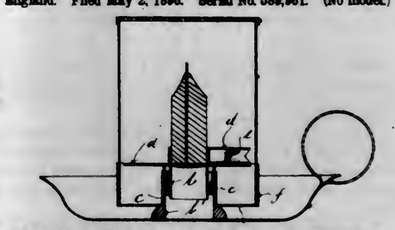
5. The expansible or telescope joint for steam or other pipes, comprising in combination a pipe-section B furnished with openings b', and an end wall b, and a pipe-section furnished with an inner wall d' provided with an end wall d, and an outer enlarged wall or bell d^2, there being a chamber C between said end walls b d, and a pipe or passage c connecting said chamber C with the outer air, substantially as specified.

6. The expansible or telescope joint for steam or other pipes, comprising in combination a pipe-section B furnished with openings b', and an end wall b, and a pipe-section D furnished with an inner wall d' provided with an end wall d, and an outer enlarged wall or bell d^2, there being a chamber C between said end walls b d, and a drain D^2, substantially as specified.

7. The expansion or telescopic joint for steam or other pipes, comprising in combination two telescopic sections or members furnished with a chamber between the same, the two opposite walls of such chamber being, the one connected to or formed integrally with one of said sections and the other connected to or formed integrally with the other of said sections, a packing-ring joint between said chamber and one of said pipe-sections, and a stuffing-box joint between said two telescopic pipe-sections, and a pipe or passage connecting such chamber with the outer air, substantially as specified.

8. The balanced expansion-joint for pipes, comprising an enlargement on one pipe into which the other pipe telescopes, said enlargement being provided with an interior inclosed chamber communicating with the outer air by a pipe or conduit for leading off the leakage, a stuffing-box between the enlargement and the entering-pipe, and a packing-ring between the chamber and said entering-pipe, substantially as specified.

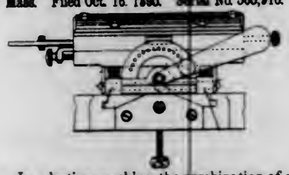
571,338. CANDLESTICK. GEORGE CASTLEDEN, Framlingham, England. Filed May 2, 1896. Serial No. 589,961. (No model.)



Claim.—In candlesticks or candle-holders in combination, a disk or plate having attached thereto a socket-piece, spring-clips which engage in a socket attached to the candlestick or candle-holder; a casing or surrounding tray which is carried upon the socket, a glass or globe which rests upon said casing, or tray; perforations in the bottom of said casing or tray for the admission of air; a perforated

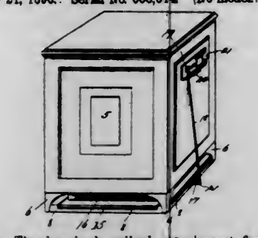
cap or cover for use upon the top of the said globe or chimney; a spring-clip pivoted to the said disk or plate upon the upper side of same; for holding the candle.

571,339. LASTING-MACHINE. FRANK CHASE, Waterville, Me., assignor to The Chase Lasting Machine Company, Portland, Me., and Boston Mass. Filed Oct. 16, 1895. Serial No. 565,910. (No model.)



Claim.—In a lasting-machine, the combination of a sidewise-tiltable carriage with a pair of swinging locking-arms, one for each side of the carriage, substantially as and for the purpose set forth.

571,340. LEAK-ALARM. SAMUEL J. CLOUSTON, Brooklyn, N. Y. Filed July 21, 1896. Serial No. 600,014. (No model.)



Claim.—1. The herein-described attachment for refrigerators, which consists of a frame mounted below the refrigerator, a lever pivotally connected with said frame, a plate pivotally supported on the inner end of said lever, the outer end of said lever being projected at one side of the refrigerator, and being provided with an adjustable weight, said end of said lever being also connected with an upwardly-directed rod which is connected with and adapted to operate an alarm device, substantially as shown and described.

2. The combination with a refrigerator, of the herein-described alarm attachment, consisting of a frame 7, provided with two transverse bars 9, and two parallel transverse bars 11, a superimposed plate 15, to the central portion of which one end of the lever is pivoted, a weight adjustably secured upon the outer end of the lever, an upwardly-directed rod 18 connected with said weight, a dog 19 pivotally connected with said rod 18, a plate 20 secured to the refrigerator and to said dog, a gong 21 and operating mechanism 22 between said dog and gong, and a spring-actuated hammer 23 mounted adjacent to said gong, all constructed, arranged and operated in the manner set forth.

571,341. LACING OF BOOTS OR SHOES. GEORGE L. CUMINE, London, England. Filed July 29, 1896. Serial No. 600,901. (No model.) Patented in England Oct. 22, 1895, No. 19,857.



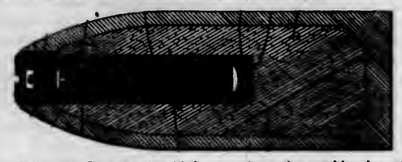
Claim.—1. The combination with a boot or shoe, of smooth bars secured along the edges to be closed, the lacing being passed around said bars and being free to slide along the same, substantially as described and for the purpose set forth.

2. The combination with a boot or shoe, of smooth bars secured along the edges to be closed, the lacing being passed around said bars and being free to slide along the same, and base-pieces for said bars secured in position along the edges to be closed, substantially as described.

3. In combination with the bars *a*, and bases *b*, hooks *f'* at the ends of said bars, substantially as described.

571,342. FUSE FOR HIGH EXPLOSIVES. ROBERT B. DANNELL, Washington, D. C., assignor to the Hathaway High Explosive Company, New York, N. Y. Filed Feb. 29, 1896. Serial No. 581,287. (No model.)

Brief.—A colloided nitrocellulose is confined in a strong envelop provided with suitable means for igniting the explosive at the desired time. The rupturing of the envelop, caused by the explosion of the colloided nitrocellulose, detonates the main charge.



Claim.—1. In a fuse for high explosives, the combination with a strong envelop partly filled with colloided nitrocellulose, of means for igniting said nitrocellulose, substantially as described.

2. In a fuse for high explosives, the combination with a strong envelop partly filled with colloided nitrocellulose and an oxidizing agent, of means for igniting said nitrocellulose, substantially as described.

3. In a fuse for high explosives, the combination with a strong cylindrical envelop partly filled with colloided nitrocellulose and interiorly screw-threaded, of an igniting device screwed into said envelop, substantially as described.

4. In a fuse for high explosives, the combination with a strong envelop, partly filled with colloided nitrocellulose, of an igniting device held therein, and a case containing black powder or like explosive connected to said igniting device, substantially as described.

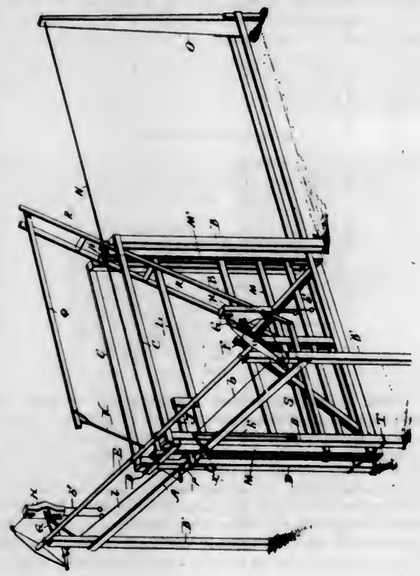
5. In a fuse for high explosives the combination with a strong envelop partly filled with colloided nitrocellulose and an oxidizing agent, of an igniting device held therein, and a case containing black powder or like explosive connected to said igniting device, substantially as described.

6. In a fuse for high explosives, the combination with a strong cylindrical envelop partly filled with colloided nitrocellulose, of a fuse-stock screwed therein, and igniting mechanism contained in said fuse-stock, substantially as described.

7. In a fuse for high explosives, the combination with a strong cylindrical envelop partly filled with colloided nitrocellulose, of a fuse-stock screwed therein, and igniting mechanism contained in said fuse-stock, and operated by the impact of the shell, substantially as described.

8. In a fuse for high explosives, the combination with a strong cylindrical envelop partly filled with colloided nitrocellulose, of a fuse-stock screwed therein, and igniting mechanism contained in said fuse-stock, and a case containing black powder or like explosive connected to said fuse-stock, substantially as described.

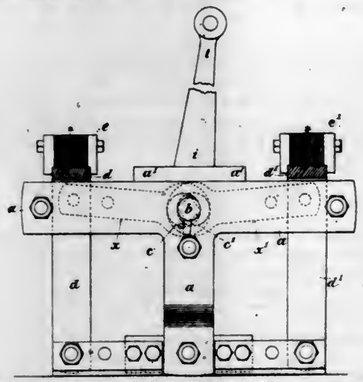
571,343. SLIDING GATE. LEE DEARMONT, Mound City, Mo. Filed Jan. 20, 1896. Serial No. 576,092. (No model.)



Claim.—1. A sliding gate comprising vertical posts, a single horizontal bar upon which the gate slides, a post at one end for supporting one end of the rod or bar; a gate with antifriction-rolls at its top, a latch pivoted to a rigid part of the gate, a releasing device for the latch comprising a pivoted cam-arm, a long rotary arm at the front end of the gate, transverse arms at the ends of the long arm having supplemental arms carrying antifriction-bearings for the cords or chains; cords or chains connected to the releasing device, and extended to and connected with the transverse arms, supplemental cords depending from said arms, and a toggle connecting the rotary arm and the gate and pivoted thereto substantially as described.

2. A sliding gate comprising vertical posts, a single horizontal rod or bar upon which the gate slides, a single post for supporting the end of the rod or bar, a gate with antifriction-rolls at its top; a latch for the gate, a releasing device for the latch, a long rotary arm at the front end of the gate, transverse arms at the ends of the long arms, blocks with sheaves at top and bottom, supported on brackets on the insides of the front posts, cords or chains connected at one end to the releasing device and extended to and connected with the short arms and passed through or over one of the sheaves in the block and supplemental cords or chains attached to the other end of the short arms, and passed through or over the other sheave in the block, substantially as described.

571,344. FORGING AND WELDING MACHINE. GUILLAUME DEBOMBOURG, Collonges, France, assignor of one-half to George Saxon, James Saxon, and Alfred Saxon, Openshaw, England. Filed Oct. 25, 1895. Serial No. 566,876. (No model.)

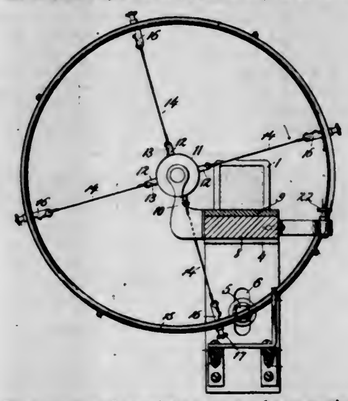


Claim.—The combination of a frame composed of a base and two T-shaped uprights fixed to opposite sides thereof, the lateral arms of said uprights being connected; two upright levers pivotally and adjustably connected to opposite ends of the base and arranged to swing between the arms of the uprights of the frame; each of said levers carrying on its upper end above the frame, a clamping mechanism consisting of an adjustable jaw and a pivoted jaw positively operated by a lever to clamp the work between said jaw and the adjustable jaw; a shaft horizontally journaled in the upright members of the frame carrying between said members two eccentrics, links adjustably connecting said eccentrics with the pivoted levers and means for turning said shaft to positively swing the levers toward or from each other, substantially as described.

571,345. MACHINE FOR CUTTING YEAST-CAKES. CLAAS DENEKAS, Washington, D. C. Filed Aug. 17, 1896. Serial No. 602,991. (No model.)

Claim.—1. In an apparatus for cutting yeast-cakes from a continuous feed of compressed yeast, the combination with a table, and means for continuously feeding the yeast along the same, of a cutting-wheel mounted transversely to said table and consisting of a hub, a series of cutters, and a rim, the said cutters also forming the spokes for connecting said hub and rim and passing in their rotation through a transverse slot in said table, and a stop in proximity to the rim for indicating the completion of each successive cut, substantially as set forth.

2. In an apparatus for cutting yeast-cakes from a continuous feed of compressed yeast, the combination with a table, and means for continuously feeding the yeast along the same, of a cutting-wheel mounted transversely to said table and consisting of a hub, a series of cutters, and a rim, the said cutters also forming the spokes for connecting said hub and rim and passing in their rotation through a transverse slot in said table, guide-pins on said rim for the hand of the operator, and a stop in proximity to the rim for indicating the completion of each successive cut, substantially as set forth.

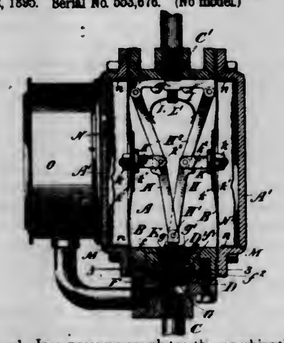


3. In an apparatus for cutting yeast cakes from a continuous feed of compressed yeast, the combination with a feeding-nozzle through which the compressed yeast is expressed by suitable means, of a table for receiving the expressed yeast from said nozzle and composed of two sections having their adjoining ends a slight distance apart to form a transverse slot, means for adjustably supporting said table-sections in position with respect to said nozzle, a series of transverse gage lines on the table-section farthest from the nozzle to indicate the amount of compressed yeast that has passed the transverse slot, and a cutting-wheel having its cutters rotating through said slot to cut the yeast, substantially as set forth.

4. In an apparatus for cutting yeast-cakes from a continuous feed of compressed yeast, the combination with a table, and means for continuously feeding the yeast along the same, of a manually-operated cutting-wheel mounted transversely to said table and having its cutters passing in their rotation through a transverse slot in said table, guide-pins on said wheel for indicating the successive points to be grasped by the operator, and a vertically-yielding stop in proximity to said wheel against which the hand of the operator will contact when each successive cut is completed, said stop having a stem passing through its support and an interposed spring to retain said stop in its normal uppermost position, substantially as set forth.

5. In an apparatus for cutting yeast-cakes from a continuous feed of compressed yeast, the combination with a table, and means for continuously feeding the yeast along the same, of a manually-operated cutting-wheel mounted transversely to said table and having its cutters passing in their rotation through a transverse slot in said table, a guide for said wheel mounted upon the side of the table, and a vertically-yielding stop mounted in said guide and against which the hand of the operator contacts at the completion of each successive cut of the cutting-wheel, substantially as set forth.

571,346. PRESSURE-REDUCING VALVE. EDWARD N. DICKERSON, New York, N. Y., and JULIUS J. SUCKERT, Ridgewood, N. J. Filed June 22, 1895. Serial No. 553,676. (No model.)

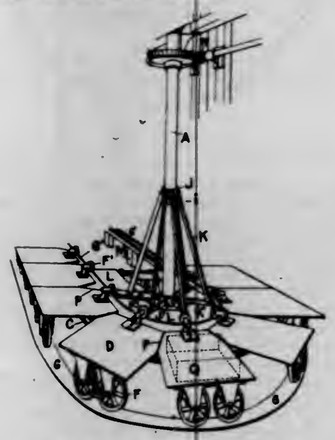


Claim.—1. In a pressure-regulator the combination with a plurality of flexible diaphragms, of a scored or fluted valve-plug, toggles secured at one end to the valve-plug and at the other end to the interior of the pressure-chamber, links connecting the toggles with the

flexible diaphragms, a spring bearing upon one of the arms of the toggles to control the valve opening, and means for regulating the pressure exerted by said spring, substantially as specified.

2. In a pressure-regulator the combination with a plurality of flexible diaphragms, of the block F, valve D', bushing E, the packing-ring intermediate of the bushing E and block F, toggles secured at one end to the valve-plug and at the other end to the interior of the pressure-chamber, links connecting the toggles with the flexible diaphragms, a spring bearing upon the toggle-arms, and means for controlling the pressure of said spring, substantially as specified.

571,347. CONVEYER. JAMES M. DODGE, Philadelphia, Pa., assignor to the Link-Belt Engineering Company, same place. Filed Dec. 15, 1890. Serial No. 374,765. (No model.)





Claim.—1. In a package-conveyer, the combination with chain-wheels, of an endless chain, platforms rigidly and permanently secured to said endless chain forming a closely-connected apron or table in a plane parallel to the plane of rotation of the chain-wheels, and supporting devices connected to the platforms and arranged on each side of the chain, substantially as and for the purpose set forth.

2. In a package-conveyer, the combination with an endless chain, of a series of platforms secured to said chain, track-rails for the platforms, and sprocket-wheels for the chain, the said wheels being provided with a plate or flange on which the inner ends of the platforms are supported, substantially as and for the purpose set forth.

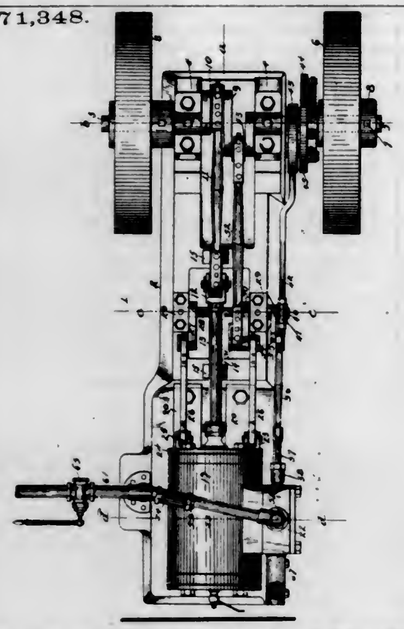
3. In a package-conveyer, the combination with chain-wheels, of a pitch-chain supported thereon, a series of platforms rigidly and permanently secured to the chain in a plane parallel to the plane of rotation of the chain-wheels, inner and outer track-rails, and supporting devices between the platforms and rails, one being below and the other above the horizontal planes of the platforms, substantially as described.

4. In a package-conveyer, the combination with the chain-wheels, of a chain mounted thereon, a series of platforms connected with the chain and moving in a plane parallel to the plane of the chain-wheels, track-rails for the platforms, supporting devices between the platforms and track-rails, a head-shaft connected to one of the chain-wheels, and means connected to said shaft for supporting a portion of one of the track-rails, substantially as described.

571,348. ENGINE. FARMER DORSEY, Bellmont, Ill. Filed Sept. 16, 1895. Serial No. 562,636. (No model.)

Claim.—In an improved steam-engine, the combination of a reciprocating cylinder and chest, of a telescopic supply and exhaust pipe connection secured to said cylinder and chest, connecting-arms secured to said cylinder and to a rocking lever, a connecting-rod secured to said rocking lever, and to the crank-arm of the drawing-shaft, for the purpose as shown and described.

571,348.



571,349. COMBINED DOUGH-BOARD AND BREAD-CUTTING TRAY. FRANK S. FARQUHAR, Uniontown, Pa. Filed Apr. 7, 1896. Serial No. 586,483. (No model.)



Claim.—1. As an improved article of manufacture, a combined bread-cutting board and a dough-kneading board consisting of a board having a smooth upper and lower surface, the outer edge of the board provided with a flange or rim extending entirely around the board and projecting up from the face of the same a short distance, a block attached to the upper face of the board and of less diamensions than the board, substantially as described.

2. As an improved article of manufacture, a combined bread-cutter and dough-board, the same consisting of a board substantially rectangular in shape and of light material, and having a flange or rim extending around its outer edge and projecting above the face of the same; a block of heavier and harder material than the board, also of rectangular shape, and attached to the face of the same near one end and projecting above it, whereby a space is formed between the block and the flange; the upper face of the block lying in the same horizontal plane as the top of the said flange or rim, substantially as described and for the purpose set forth.

571,350. OIL-INJECTOR FOR BOILERS. HENRY W. FAYETTE, New York, N. Y., assignor to Arthur M. Pierce, same place. Filed Sept. 15, 1894. Renewed May 7, 1896. Serial No. 590,631. (No model.)

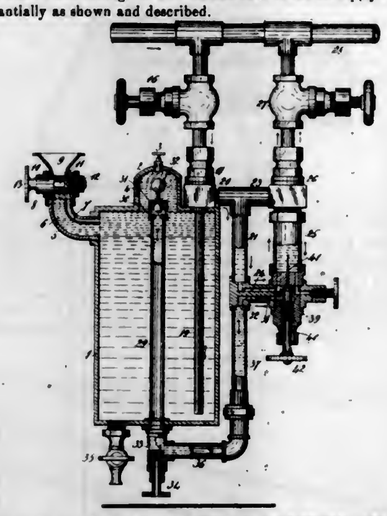
Claim.—1. In a device of the character herein specified, an oil-tank; an automatic valve therein for controlling the escape of oil; a pipe entering said tank and communicating with the feed-water supply; a sight-glass having independent connections with the oil supply and the feed-water supply, and means for regulating the flow of oil into the sight-glass, the whole combined, and arranged to operate, substantially as shown and described.

2. In a device of the character herein specified, the combination with the oil and water commingling-chamber formed by the sight-glass, of independent oil and feed-water connections, arranged substantially as shown and described.

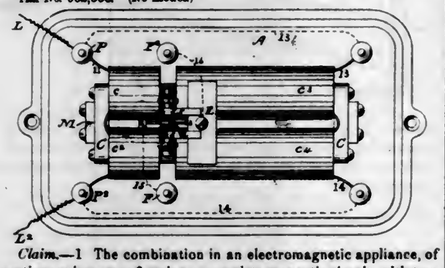
3. In a device of the character herein specified, the combination with a sight-glass forming a commingling-chamber, and provided with means for causing water to circulate therethrough, of an oil-regulating valve, in which is comprised a valve-shell, and a valve-stem provided with a needle-point projecting up into the commingling-chamber, substantially as shown and described.

4. The combination with the commingling-chamber, of the circulating feed-water supply thereto, and the oil supply, arranged substantially as shown and described.

5. In a device of the character herein specified, the combination with the sight-glass, and the oil supply tube connected therewith, of an automatic controlling-valve at the entrance to the oil-supply tube, substantially as shown and described.



571,351. ELECTROMAGNETIC SIGNAL-RECEIVING INSTRUMENT. STEPHEN D. FIELD, Stockbridge, Mass., assignor to the American Bell Telephone Company, Boston, Mass. Filed Aug. 11, 1896. Serial No. 602,388. (No model.)



Claim.—1 The combination in an electromagnetic appliance, of a continuous iron core forming a complete magnetic circuit, with two independent inducing-coils wound over different portions thereof, and connected in parallel with each other in the same circuit, the said coils having similar magnetizing power, and being adapted thereby to develop in the said core opposite and equal magnetizations when the maximum current is fully established through them, but to act thereon successively and oppositely and to develop in polar projections or surfaces of the said core a definite polarity when the current is rising, or being established, and an opposite polarity when the current is falling, or being disestablished; substantially as described.

2. The combination in an electromagnetic appliance, of a continuous iron core forming a closed magnetic circuit, with two independent magnetizing helices connected in parallel with one another in the same electric circuit and surrounding different portions of the said core so as to produce poles between their approximating ends; the said helices being of similar magnetizing power, but different inductance, and adapted thereby to act equally and oppositely on the said core, but at different times, and to develop in the said poles a given magnetic polarity due to one of them when a current is caused to pass through them, and an opposite polarity due to the other, when the said current is withdrawn.

3. The combination in an electromagnetic receiving instrument, of an iron core; independently-acting exciting-helices of similar magnetizing power, but different inductance, surrounding different portions of the said core, and so connected in parallel with one another as to act equally and oppositely thereon, and to maintain the same thereby at a magnetic zero, or in a magnetically neutral state when a steady current is established through both, and to produce a magnetic pole at a point of the said core between their adjacent ends when either is acting alone, or while the current through either is in its variable state; and a working armature mounted in inductive proximity to the said intermediate polar portion of the said core, to be controlled thereby; substantially as described.

4. An electromagnetic receiving instrument comprising an endless iron core with opposite polar projections or surfaces, exciting-coils of similar magnetizing power but different inductance surrounding the said core on different sides of its poles respectively, and connected in the same electric circuit in such manner as to act equally and maintain magnetic neutrality in the core when traversed by a fully-established steady current, but to attain their maximum magnetizing power dissimultaneously under current variations, and to determine thereby successively-opposed polarities in the said poles, and an armature responsive to changes in magnetic polarity mounted or poised in magnetic relation to the said polar surfaces, to be acted upon thereby, substantially as described.

5. A relay or signal-receiving apparatus consisting of reversely-wound magnetizing-coils of different inductance but substantially equal magnetic strength connected in parallel with each other, an electromagnetic core surrounded by the said coils, and a polarized vibratory or oscillatory armature responsive to the action of the low-inductance coil during the variable state of a rising current, and to that of the high-inductance coil during the variable state of a falling current traversing the circuit containing the said coils, substantially as described.

6. The combination in an electromagnetic receiving instrument, of reversely-wound or connected exciting-coils, an iron core forming a closed magnetic circuit, surrounded by said coils, pole-pieces of the said core located between the said coils, a polarizing medium or agent, and a tongue or armature of magnetic material polarized thereby and arranged to vibrate in the field of the said pole-pieces, substantially as specified.

7. A relay or signal-receiving instrument, comprising in combination, an electromagnetic core with approximating pole-pieces or polar surfaces, a vibratory or oscillatory armature poised or hung with its free end in the field of the said pole-pieces, a polarizing medium or magnet imparting a normal magnetization of definite polarity to the said pole-pieces, and a permanent and opposed polarity to the said armature, and exciting-coils of like magnetizing power and diverse inductance, connected in parallel circuit with each other surrounding the said core; whereby the magnetization of the core due to the coil of higher inductance is slower both in rising and falling, than that due to the coil of lower inductance.

8. In a polarized relay the combination of a continuous electromagnetic core forming a complete magnetic circuit, two independent exciting-coils of like magnetizing power but diverse inductance connected in parallel with each other in a circuit, and surrounding the said core, pole-pieces or polar surfaces arranged in proximity to one another at opposite points of the said core, an oscillatory or vibratory armature hung or poised with its free end between said polar surfaces, and a polarizing-magnet having its poles in inductive proximity respectively to the said iron core and the said armature, whereby a definite polarity is maintained in the latter, and a normal and opposed polarity is imparted to the polar surfaces of the former, substantially as herein described.

9. An electromagnetic instrument having two pole-pieces or polar surfaces, an armature having its free end in the field of said poles, an external polarizing medium, and two independent exciting-coils or windings of like magnetizing power, but different inductance, surrounding the core represented by said poles in such manner as to excite opposite magnetizations therein, and connected in separate parallel branches of the same circuit, substantially as described.

10. A polarized relay having its electromagnetic core wound with two independent magnetizing coils or windings of equal and opposite magnetizing power, but unequal inductance, the said coils being connected in parallel with one another, substantially as described.

11. The combination in an electromagnetic receiving instrument, of reversely-wound magnetizing-coils connected in parallel with each other in an electric circuit, surrounding iron cores, and adapted to be mutually reactive; with a vibratory armature, a polarizing-magnet therefor, and means for varying the relative inductance of the said coils.

12. The combination in an electromagnetic receiving instrument, of an iron core with pole-pieces, or polar surfaces, a vibratory armature hung with its free end in the field of said poles and adapted to respond to magnetic changes produced therein, and a polarizing-magnet, imparting opposite polarity to the said core and armature respectively, with reversely-wound or connected magnetizing-coils connected in parallel with each other, surrounding, and adapted to magnetize the said core dissimultaneously and oppositely, and an adjustable resistance in the circuit of one or both of the said coils, substantially as described.

13. The combination in an electromagnetic receiving instrument of an iron core with pole-pieces or polar surfaces, an armature mounted to vibrate between the said pole-pieces, and a polarizing-magnet imparting opposite polarity to the said core and armature respectively, with reversely-wound or connected exciting-coils of similar magnetizing power and dissimilar inductance surrounding the said core, and

connected in parallel with one another, an adjustable resistance in the circuit of the coil of lesser inductance, and an adjustable impedance in the circuit of the coil of greater inductance, substantially as described.

571,352. METHOD OF OBTAINING TETRA-ALKYL URIC ACID. EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed June 16, 1896. Serial No. 595,791. (No specimens.)

Claim.—1. The process which consists in acting upon the salt of an alkyl derivative of uric acid with a haloid ether, for the purpose, substantially as set forth.

2. The process which consists in acting upon the salt of a dialkyl uric acid with a haloid ether, for the purpose substantially as set forth.

3. The process which consists in acting upon the cuprous salt of dialkyl uric acid with a haloid ether, for the purpose substantially as set forth.

4. The process which consists in acting upon the cuprous salt of dimethyl uric acid with methyl iodid to form tetramethyl uric acid.

5. The process which consists in mixing the copper salt of dimethyl uric acid with powdered glass and heating the same with methyl iodid and ether in the manner and in the proportions, substantially as set forth.

6. The process which consists in mixing the copper salt of dimethyl uric acid with powdered glass and heating the same with methyl iodid and ether in the manner and proportions substantially as stated and then purifying the resulting product by first boiling in water, and then evaporating to dryness and extracting with chloroform.

7. The process which consists in warming an alkaline solution of a dimethyl uric acid with a solution of potassio-tartrate of copper in excess, then treating the resulting cuprous salt of dimethyl uric acid with a haloid ether, substantially as set forth.

8. The process which consists in warming an alkaline solution of a dimethyl uric acid with Fehling's solution in excess, then mixing the resulting copper salt of dimethyl uric acid with powdered glass and heating the mixture with methyl iodid and ether, in the manner and in the proportions substantially as set forth.

571,353. BROMOTHEOPHYLLIN AND PROCESS OF MAKING SAME. EMIL FISCHER, Berlin, Germany, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Filed Sept. 23, 1895. Serial No. 563,423. (Specimens.)

Claim.—1. The process which consists in mixing theophyllin with bromin, and then heating the mixture, substantially as set forth.

2. The process which consists in mixing theophyllin with bromin, and then heating the mixture under pressure, substantially as set forth.

3. The process which consists in mixing theophyllin with bromin in the proportion of one part of the former to five parts of the latter, then heating the mixture to 100° centigrade, and retaining the same at this temperature in a closed vessel, substantially as set forth.

4. The process which consists in the following steps: first, mixing theophyllin and bromin in the proportion of one part of the former to five parts of the latter, then heating the mixture in a closed vessel to 100° centigrade, and retaining it at that temperature for several hours, then opening the vessel and raising the temperature to about 150° centigrade, to drive off the excess of bromin, substantially as set forth.

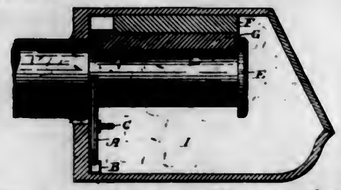
5. The process which consists in mixing theophyllin with bromin, then heating the mixture under pressure, and then driving off the excess of bromin and purifying the residue, substantially as set forth.

6. The process which consists in the following steps: first, mixing theophyllin and bromin in the proportion of one part of the former to five parts of the latter, then heating the mixture in a closed vessel to 100° centigrade, and retaining it at that temperature for several hours, then opening the vessel and raising the temperature to about 150° centigrade, to drive off the excess of bromin, and then purifying the residue, substantially as set forth.

7. The process which consists in mixing theophyllin with bromin in the proportion of one part of the former to five parts of the latter, then heating the mixture to 100° centigrade, and retaining the same at this temperature in a closed vessel, then driving off the excess of bromin, then decolorizing the residue, then dissolving the crude bromotheophyllin obtained in lye and treating with animal charcoal, and finally precipitating it by acid and recrystallizing the precipitate from alcohol, substantially as set forth.
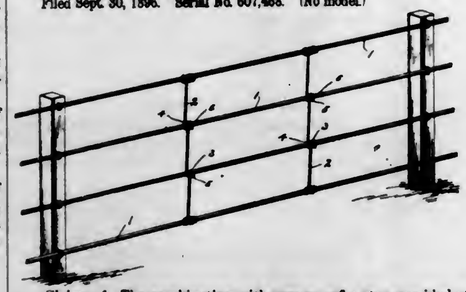
8. As a new compound, bromotheophyllin having the formula hereinbefore stated, whose melting-point is between 315° and 320° centigrade, which is soluble with difficulty in alcohol and water, but readily taken up by dilute alkalies.

571,354. DUST-GUARD. DANIEL FOCKE, Cape May, N. J., assignor to George J. Richardson, trustee, Philadelphia, Pa. Filed May 8, 1895. Serial No. 548,479. (No model.)



Claim.—In a car-axle box having a lid opening and a single back plate, the combination with the journal of an adjustable dust-guard adapted to be introduced through the lid-opening of the axle-box, and having its top edge concaved to fit the journal, and having a spring attachment at its center to the bottom of the guard, said guard when in position contacting directly with the back plate of the axle-box and provided on its front face with a handle by which the guard may be readily withdrawn from the box, substantially as described.

571,355. FENCE-STAY. EZRA A. FRANTZ, Mount Morris, Ill. Filed Sept. 30, 1896. Serial No. 607,468. (No model.)

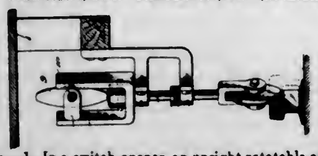


Claim.—1. The combination with runners, of a stay provided at intervals with forwardly-extending loops respectively engaging the runners and twisted at the front or outer sides thereof to cause the upper and lower sides of the loops to clamp the runners, substantially as specified.

2. A sectional stay having straight portions connected by loops and interlocking half-twists, substantially as specified.

3. A fence-stay comprising separate sections each having a straight body portion and terminal oppositely-facing half-loops extended to form half-twists adapted to be interlocked with corresponding half twists upon the contiguous extremities of adjoining sections, substantially as specified.

571,356. SWITCH-OPENER. GUSTAVE W. FREDERICKS, Detroit, Mich. Filed Sept. 3, 1896. Serial No. 604,790. (No model.)



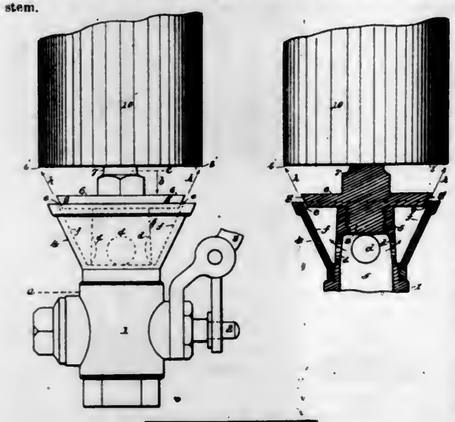
Claim.—1. In a switch-opener, an upright rotatable and longitudinally-movable spindle provided with a wheel at its lower end, a spring to lift said spindle, a rotatable shaft having a cam in contact with the upper end of said spindle, and an arm upon said shaft adapted to come in contact with and move a fork projecting laterally from said spindle, substantially as described.

2. In a switch-opener, an upright rotatable and longitudinally-movable spindle having a wheel at its lower end, a spring for lifting said spindle, a rotatable shaft having a cam in contact with the upper end of said spindle, a laterally-projecting fork carried by said spindle, and an adjustable arm mounted upon said shaft and adapted to come in contact with said fork, substantially as described.

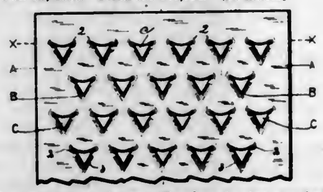
571,357. WHISTLE. HENRY R. FRISBIE, Newark, N. J., assignor to the Eastwood Wire Manufacturing Company, Belleville, N. J. Filed Aug. 24, 1894. Serial No. 521,254. (No model.)

Claim.—A whistle, comprising in combination, the valve-body 1 having column 5 projecting therefrom and integral therewith, lateral

steam-ports in the base of said column, steam-bowl 4 whose exterior and interior surfaces are both cone shaped, said bowl removably attached to the base of said column, bell-stem 7 carrying the plate 6 whose circumferential edge *g* has the same inclination as the said bowl, so that the inclined edge thereof combined with the inclined inner wall of the bowl, and placed in the proper relation to the ports of the said column, will guide the steam in a direct and unobstructed course from the column to the edge of the bell mounted on the bell-stem.

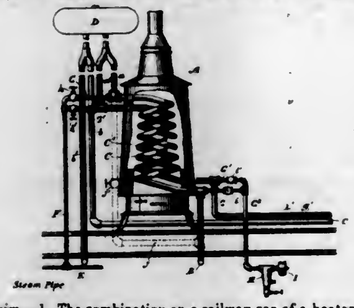


571,358. GRATER. EVANGELINE GILMORE, Hamilton, Canada. Filed Feb. 20, 1896. Serial No. 579,991. (No model.)



Claim.—In a grater, the metallic plate, having punched through it the substantially triangular apertures C each aperture having the raised lateral inclined cutting edges, rising from the receiving end toward and joining at the rear or apex of the triangle, to give a shear cut and a clean final severance of the grated material, substantially as set forth.

571,359. CAR-HEATING APPARATUS. EDWARD K. GOLD, New York, N. Y. Filed Jan. 24, 1891. Serial No. 378,867. (No model.)



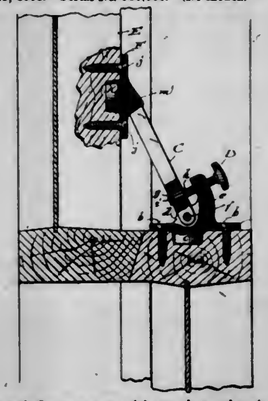
Claim.—1. The combination on a railway-car of a heater at one end thereof, two liquid-circuits heated thereby, each circuit having its hot-water pipe carried to the remote portion of the car and there formed with an extended radiating-surface, whereby the hottest liquid in the circuit is utilized for heating the portion of the car most remote from the direct heat radiation of the heater, and the pipe of each circuit carried thence back to the portion of the car more nearly adjacent to the heater and there formed with an extended radiating-surface for radiating heat from the partially cooled water, and carried thence back to the cool-water inlet of said heater, and means for effecting the heating and circulating of either one or both said circuits, whereby for mild weather one only may be operated, and in cold weather both may be operated, and whereby in either case the heat throughout the car is equalized.

2. The combination on a railway-car of two radiating-circuits, a heater containing two distinct water-heating passages, forming part of said circuits respectively, and two steam-passages in operative contact each with one only of said water-passages, so that each water-passage is heated by its corresponding steam-passage, a steam-supply pipe divided into two branches leading to said two steam-passages in the heater, and means for controlling the admission of steam to one only or to both said steam-passages, whereby to determine the heating and circulating of the liquid in one only of said circuits (for mild weather) or in both of said circuits (for cold weather) without necessitating valves in said circuits, and said heater provided with a fire-chamber inclosing both said water-passages, whereby the making of a fire therein heats both passages and circulates the water in both circuits.

3. The combination on a railway-car of a heater containing two distinct heating-coils, each coil consisting of a steam and a liquid pipe the one within the other, two liquid radiating circuits to which the liquid-pipes of said coils are respectively connected, and a steam-pipe divided into two branches in which the steam-pipes of said coils are connected respectively, said branches on emerging from the opposite ends of said coils being reunited, valves for admitting steam to said branches independently, check-valves in said branches between the coils and the junction of the branches, to prevent backflow of steam from either branch into the other, a single pipe leading from said junction, and a drainage-trap for discharging condensed water therefrom.

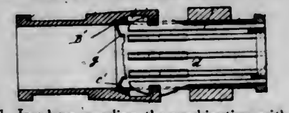
4. The combination on a railway-car of a heater containing two distinct heating-coils, each coil consisting of a steam and a liquid pipe the one within the other, two liquid-radiating circuits to which the liquid pipes of said coils are respectively connected, and a steam pipe divided into two branches in which the steam-pipes of said coils are connected respectively, valves for admitting steam to said branches, said branches on emerging from the opposite ends of said coils being reunited in a single pipe, and a drainage-trap for discharging condensed water from said pipe.

571,360. SASH-FASTENER. CHARLES M. GREEN, Chicago, Ill. Filed Nov. 15, 1895. Serial No. 569,008. (No model.)



Claim.—A sash-fastener comprising a plate, a longitudinally-slotted brace-bar in pivotal connection with the plate, a screw adjustable in a plate-lug and having a non-threaded shouldered and flanged portion engaged with the bar-slot, and another plate having a lug that opposes said bar when the fastener is in working position.

571,361. HOSE-COUPLING. PIERRE E. GUÉRARD, Montreal, Canada, assignor of one-half to Napoléon Mathieu, same place. Filed May 21, 1896. Serial No. 592,377. (No model.)

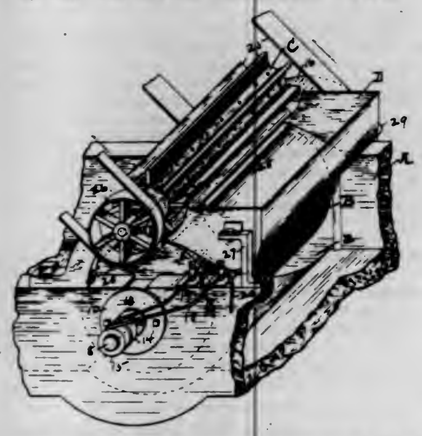


Claim.—1. In a hose-coupling, the combination, with one half of the coupling provided with a shoulder at its front end and an annular groove behind the said shoulder; of the other half of the coupling provided with a series of longitudinal slots, a series of spring-fingers each having two inclined projections extending through the

slots, and notches between the said projections; and a slidable ring for pressing inward the said spring-fingers, substantially as set forth.

2. In a hose-coupling, the combination, with one half of the coupling provided with a conical ring of soft material, a shoulder at its front end, and an annular groove between the said shoulder and ring; of the other half of the coupling provided with a conical front end for bearing against the said ring, a series of longitudinal slots, a series of spring-fingers each having two inclined projections extending through the said slots, and notches between the said projections; and a slidable ring for pressing inward the said spring-fingers simultaneously and releasing the halves of the coupling, substantially as set forth.

571,362. MAGNETIC SEPARATOR. JOSEPH B. HAMILTON, Springfield, Mass. Filed Dec. 5, 1893. Serial No. 492,845. (No model.)



Claim.—1. In a magnetic separator, the combination with a revolving electromagnetic cylinder and a revolving wiper, of a receiver located adjacent thereto and provided with a projecting bottom and backwardly-turned lip or flange, substantially as and for the purpose described.

2. The combination with a chute, as A, the electromagnetic roll B, and the wiper-shaft C, of the receiver D provided with the lip 28 at the edge thereof adjacent to said roll, substantially as described.

3. The electromagnetic roll B having the core *b* carrying the helix *c*, and wings 2, rigidly connecting said core with the shell thereof and provided with the heads 5 carrying the trunnions 8, disks 3 and packing 4 being interposed between said heads and the ends of the helix, substantially as set forth.

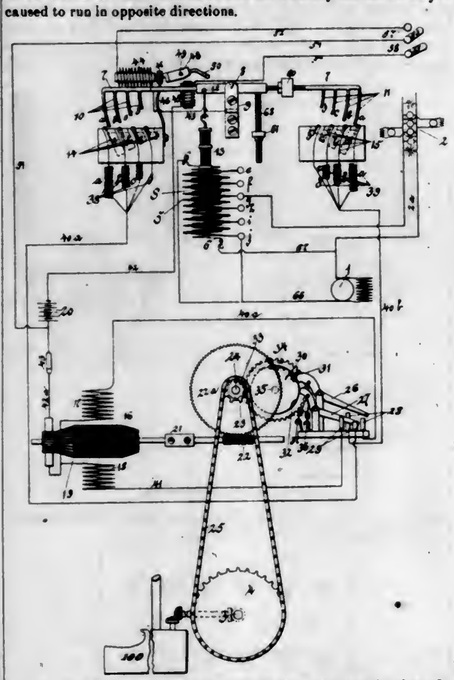
571,363. ELECTRIC GOVERNOR FOR WATER-WHEELS. WILLIAM W. HANDY, Baltimore, Md. Filed June 19, 1896. Serial No. 596,134. (No model.)

Claim.—1. In an electric governor, the combination of a dynamo, a prime motor and mechanism for regulating the force applied to the prime motor, a solenoid, a reciprocating core in said solenoid, a double lever from which said core is suspended having a number of projections on each end, and contacts with which the projections of the lever may engage, said contacts being connected with a source of current and said electrically-operated regulating mechanism.

2. In an electric governor, the combination of a dynamo, a prime motor and mechanism for regulating the force applied to the prime motor, a solenoid composed of a series and shunt coil in the same circuit, a reciprocating core in the said solenoid, a double lever from which said core is suspended, having a number of projections on each end, and mercury contacts into which the projections of the lever may dip, said contacts being connected with a source of current and said electrically-operated regulating mechanism.

3. In an electric governor, the combination of a solenoid composed of a series and shunt coil, a reciprocating core suspended in said solenoid, a double lever (from which the core is suspended) having a number of projections on each end, two adjustable weights connected to the lever used for balancing the pull of the solenoid and also for varying the sensitiveness of the lever, mercury contacts into which the projections of the lever may dip step by step, resistances connected to the mercury contacts, a source of current, a gate-moving mechanism, and connections whereby the said mechanism will move at speeds proportional to the changes in load.

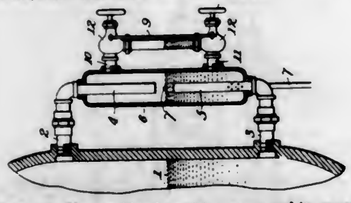
4. In a gate or valve moving mechanism, the combination of an electric motor connected to the gate or valve by means of worm and other gearing, switches which break the current through the motor when the gate or valve is closed or fully open, and connections between the motor and a source of current whereby the motor may be caused to run in opposite directions.



5. In a gate or valve moving mechanism, the combination of an electric motor connected to the gate or valve by means of worm and other gearing, switches which break the current through the motor when the gate or valve is closed or fully open, and connections between the motor and a source of current whereby the motor may be caused to run in opposite directions, and at speeds proportional to the changes in load.

6. In a starting and stopping device, the combination of the magnets 44 and 45, armatures 47 and 48, spring 46 and arm 50.

571,364. DEVICE FOR PREVENTING ACCUMULATION OF AIR IN PRESSURE-PIPES. JOHN W. HARTMAN, Bethlehem, Pa. Filed Nov. 29, 1895. Serial No. 570,551. (No model.)

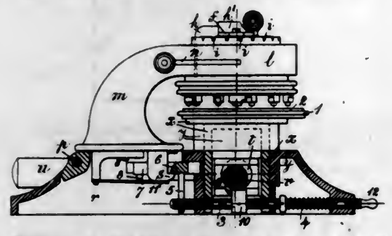


Claim.—1. The combination with a pump and its pressure-pipe, of an air chamber in communication with the pressure-pipe, a vent-chamber 6 having a small vent midway of its height, a pipe leading from the air-space of the air-chamber into the upper portion of the vent-chamber, and a pipe leading from the water-space of the air-chamber into the lower portion of the vent-chamber, substantially as described.

2. The combination with a pump and its pressure-pipe, of an air-chamber in communication with the pressure pipe, a relatively small vent-chamber having a small vent pipe leading from its middle portion and provided with a valve, a pipe leading from the air-space of the air-chamber into the upper end of the vent-chamber and extending down nearly to the vent, and a pipe leading from the water space of the air-chamber into the lower end of the vent-chamber and extending upward nearly to the vent, substantially as described.

3. The combination with a pump and its pressure-pipe, of an air-chamber communicating with the pressure-pipe, a relatively small vent-chamber having a small normally open vent at its middle portion, pipes connecting the upper and lower portions of the vent-chamber respectively with the air-space and the water space of the air-chamber, and a gage-glass communicating respectively with the upper and lower portions of the vent-chamber, substantially as described.

571,365. MACHINE FOR PERFORATING DOCUMENTS. CHARLOTTE HEATH, London, England. Filed Mar. 9, 1896. Serial No. 582,409. (No model.) Patented in England Dec. 5, 1891, No. 21,251.



Claim.—1. In a machine for perforating or marking documents, the combination of the lettered or figured rotatable rings *a*, *b*, *c*, center *d*, perforating or marking instruments *k*, cross-bar *f*, radial grooves *i*, sliding catch-plate *h* and guide *h'*, substantially as described.

2. In a machine for marking or perforating documents, the combination of the lettered or figured rotatable rings *a*, *b*, *c*, center *d*, perforating or marking instruments *k*, cross-bar *f*, radial grooves *i*, sliding catch-plate *h*, guide *h'* and friction-pin *i'*, substantially as described.

3. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device composed of a circular center block and circular concentric rings fitting over said block and adjustable thereon, means for securing said rings in the desired position relative to each other and to said center block and perforating or marking instruments carried by said block and said rings; of a hollow base, an arm pivoted in said base and carrying said perforating or marking device, means for locking said pivoted arm; a plunger mounted in said base, and movable vertically therein; an eccentric and a lever connected thereto for operating said plunger, and a soft disk mounted upon said plunger and adapted to be thrown upward against said perforating or marking instruments, substantially as described.

4. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device composed of a circular center block and a plurality of circular concentric rings fitting over said block and adjustable thereon; means for securing said rings in the desired position relative to each other and to said center block, and perforating or marking instruments carried by said block and said rings; of a hollow base; a curved arm pivoted in said base and carrying said perforating or marking device; means for locking said pivoted arm; a vertical plunger mounted in said base beneath said perforating or marking device; a soft disk mounted upon said plunger; an eccentric and a lever connected thereto for operating said plunger, and means for releasing said pivoted arm adapted to be operated by said lever and eccentric, substantially as described.

5. In a machine for marking or perforating documents, the combination with an adjustable perforating or marking device composed of a central circular block and a plurality of circular concentric rings fitting over said central block; means for securing said rings together and to said central block in the desired position relative to each other, and perforating or marking instruments carried by said block and said rings; of a hollow base; a curved arm pivoted in said base and carrying said perforating or marking devices; a catch on said pivoted arm; a spindle mounted in said base; a detent mounted upon said spindle and adapted to engage said catch; a spring normally pushing said spindle forward and holding said detent in engagement with said catch; a collar on said spindle; a spring mounted in said frame and adapted to throw said catch out of engagement with said detent when said spindle is withdrawn; a vertical plunger mounted in said base; an eccentric working in said plunger mounted in said base; a lip on said eccentric adapted to engage the collar on said spindle, and a rocking lever for turning said eccentric, substantially as described.

6. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device, of a hollow base, an arm pivoted in said base and carrying said perforating or marking device, means for locking said pivoted arm; a plunger mounted in said base, and movable vertically therein; an eccentric and a lever connected thereto for operating said plunger and adapted to be thrown upward against said perforating or marking instruments, substantially as described.

7. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device, of a hollow base; a curved arm pivoted in said base and carrying said perforating or marking device; means for locking said pivoted arm; a vertical plunger mounted in said base beneath said perforating or marking device; a soft disk mounted upon said plunger; an eccentric and a lever connected thereto for operating said plunger, and means for releasing said pivoted arm adapted to be operated by said lever and eccentric, substantially as described.

8. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device, of a hollow base; a curved arm pivoted in said base and carrying said marking or perforating device; a catch on said pivoted arm; a spindle mounted in said base; a detent mounted upon said spindle and adapted to engage said catch; a spring normally pressing said spindle forward and holding said detent in engagement with said catch; a collar on said spindle; a spring mounted in said frame and adapted to throw said catch out of engagement with said detent when said spindle is withdrawn; a vertical plunger mounted in said base; an eccentric working in said plunger; a lip on said eccentric adapted to engage the collar on said spindle, and a rocking lever for turning said eccentric, substantially as described.

9. In a machine for perforating or marking documents, the combination with an adjustable perforating or marking device composed of the lettered or figured rotatable rings *a*, *b*, *c*, center *d*, perforating or marking instruments *k*, cross-bar *f*, radial grooves *i*, sliding catch-plate *h*, and guide *h'*; of a hollow base, a curved arm pivoted in said base and carrying said marking or perforating devices, a catch on said pivoted arm, a spindle mounted in said base, a detent mounted upon said spindle and adapted to engage said catch, a spring normally pressing said spindle forward and holding said detent in engagement with said catch, a collar on said spindle, a spring mounted in said frame and adapted to throw said catch out of engagement with said detent when said spindle is withdrawn, a vertical plunger mounted in said base, an eccentric working in said plunger, a lip on said eccentric adapted to engage the collar on said spindle, and a rocking lever for turning said eccentric, substantially as described.

10. In a machine for marking or perforating documents, the combination with an adjustable perforating or marking device composed of the lettered or figured rotatable rings *a*, *b*, *c*, center *d*, perforating or marking instruments *k*, cross-bar *f*, radial grooves *i*, sliding catch-plate *h*, guide *h'*, and friction-pin *i'*; of a hollow base, a curved arm pivoted in said base, and carrying said marking or perforating devices, a catch on said pivoted arm, a spindle mounted in said base, a detent mounted upon said spindle and adapted to engage said catch, a spring normally pressing said spindle forward and holding said detent in engagement with said catch, a collar on said spindle, a spring mounted in said frame and adapted to throw said catch out of engagement with said detent when said spindle is withdrawn, a vertical plunger mounted in said base, an eccentric working in said plunger, a lip on said eccentric adapted to engage a collar on said spindle, and a rocking lever for turning said eccentric, substantially as described.

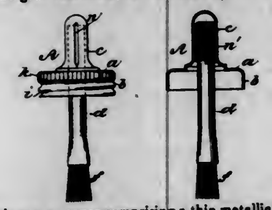
571,366. MEASURING-POLE. REUBEN HEGARTY, Madera, Pa. Filed May 23, 1896. Serial No. 592,848. (No model.)



Claim.—An extensible measuring-pole made up of two parts, one of which is formed with a groove made by angularly-arranged cuts and the other with a tongue having flaring wings, the said tongue adapted to fit said groove and forming a sliding connection between said parts in which lateral movement is prevented, a wear-plate upon the upper end of one of said parts having lateral slits on each side, a clamping collar fitting around the parts of said pole, having a web on its inner surface which fits the said slits and a thumb screw in said collar, whose inner end is adapted to bear against said wear-plate, substantially as and for the purpose described.

571,367. BOTTLE CAP AND BRUSH. CHARLES M. HIGGINS, Brooklyn, N. Y. Filed July 20, 1895. Serial No. 556,658. (No model.)

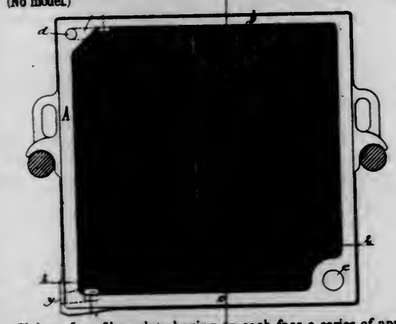
Claim.—1. A bottle cap or cover comprising a thin metallic body portion *a* provided with the knurled edge *k*, and the screw threaded portion *b*, to encircle and cover the mouth of the bottle, and a straight tubular shank or handle c extending upwardly from the body portion and formed integral therewith, all substantially as shown and described.



2. A bottle cap or cover comprising a thin metallic body portion *a* provided with the knurled edge *k*, and the screw-threaded portion *b*, to encircle and cover the mouth of the bottle; a straight tubular shank or handle c extending upwardly from the body portion and formed integral therewith; and a brush or its equivalent secured within the handle and projecting from the under face of the cap, all substantially as shown and described.

3. The combination with the cap A formed with the tubular handle-shank c of a brush having its stem *d* socketed within said shank and of a smaller diameter than the same, and with the ribs *n*, or their equivalent, filling the space between the two and forming a tight frictional bearing between the shank and stem, substantially as shown and described.

571,368. FILTER-PRESS AND FILTER-PRESS PLATE. ERNST HÜBNER, Halle, Germany. Filed Aug. 11, 1894. Serial No. 520,012. (No model.)



Claim.—In a filter-plate having on each face a series of upright parallel grooves, those on one face alternated in position relatively to those on the others, and having an internal channel, the transverse gutters *b* and *b'* at top and the transverse gutters *c*-*c'* at bottom connecting the ends of the grooves on the opposite faces of the plate, the gutters on one face of the plate being above those on its other face, two of said gutters communicating with said channel, whereby by placing said gutters one above the other a suitable thickness of metal exists between them, substantially as and for the purpose set forth.

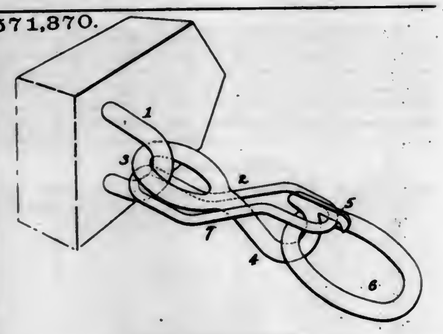
571,369. PROCESS OF REFINING GOLD AND SILVER BULLION. BERTRAM HUNT, Cripple Creek, Colo. Filed Sept. 10, 1896. Serial No. 605,425. (No specimens.)

Claim.—The process of refining bullion-slimes by first roasting the slimes to decompose all cyanogen compounds and carbonaceous matters and then treating the roasted slimes with nitric acid, substantially as described.

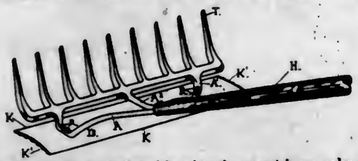
571,370. SINGLETREE-HOOK. FRANK M. HUNT, Round Oak, Ga. Filed Mar. 18, 1896. Serial No. 583,721. (No model.)

Claim.—In a locking device for trace and other hooks, the combination of a hook 2 having an eye 3 and a forwardly projecting hook 4 lying in a plane different from the eye 3, said hook 4 being provided with a forward extension at its free end, this extension projecting beyond the forward end of the hook portion 4 and this hook portion curving backward toward the eye, a staple or eye engaging said eye 3, whereby said hook shall be capable of a longitudinal movement, and a locking-link engaging the staple under the eye 3 and bent upward to embrace the hook and lie normally under the extension thereon, this link serving to close the hook 4, substantially as described.

571,870.



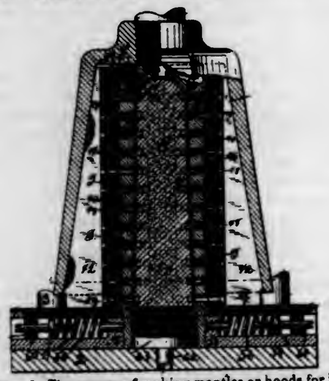
571,871. AGRICULTURAL HAND-TOOL. WILLIAM D. HUNTINGTON, Lynn, Mass. Filed Oct. 19, 1894. Serial No. 526,391. (No model.)



Claim.—1. An agricultural hand-tool, comprising a rake having teeth, arms connected therewith and bent downwardly, then horizontally, and thence upwardly and rearwardly to a common handle, and a shuffle-hoe blade secured to the horizontal portions of said arms, substantially as described.

2. An agricultural hand-tool, comprising a rake having working teeth and arms for support in a handle all stamped from a single piece of metal, said arms extending downwardly, then horizontally and thence upwardly and rearwardly, and united with a central straight brace to form a common tang, and a shuffle-hoe blade attached to the horizontal portions of the arms on the side opposite to the rake-teeth, substantially as described.

571,372. PROCESS OF AND MACHINE FOR MAKING MANTLES OR HOODS FOR INCANDESCENT GAS-LIGHTS. PHILIP INCH, Washington, D. C., assignor, by mesne assignments, to the Consolidated Sterling Incandescent Gas Lamp Company, of New Jersey. Filed Feb. 19, 1896. Serial No. 579,886. (No model.)



Claim.—1. The process of making mantles or hoods for incandescent gas-lights, consisting in first forming a core of a yielding fusible substance, wrapping a sheet of material suitable for incandescence on the core, perforating said sheet while on the core, and finally melting out the core, substantially as described.

2. The combination in a machine for making mantles or hoods for incandescent gas-lights, of movable cutters, slides carrying the cutters, a former adapted to move over the slides and press the slides inward, means for depressing the former, and a chambered block adapted to contain the mantle arranged within the slides and provided with guiding-holes for the cutters, substantially as described.

3. The combination in a machine for making mantles or hoods

for incandescent gas-lights, of movable cutters, slides carrying the cutters and provided with flaring bearing-surfaces, a hollow former adapted to descend over said slides and force the same inward, and a chambered block arranged within said slides and provided with guiding-holes for said cutters, substantially as described.

4. The combination in a machine for making mantles or hoods for incandescent gas-lights, of movable cutters, slides carrying the cutters, a former adapted to move the slides inward, springs adapted to retract the slides, and a chambered block within the slides provided with guiding-holes for the cutters.

5. In a machine for making mantles or hoods for incandescent gas-lights, the combination with the chambered guiding-block G, of a plug adapted to enter the said block and sustain the mantle in proper position, substantially as described.

6. The combination in a machine for making mantles or hoods for incandescent gas-lights, of hollow movable cutters, slides carrying said cutters and chambered behind the same, and plates adapted to retain said cutters in the slides and perforated in line with the cutters, substantially as described.

7. The combination in a machine for making mantles or hoods for incandescent gas-lights, of a former E, a lever for depressing the same, slides adapted to be pressed inward by said former E, cutters on said slides, and a chambered block within the slides provided with holes for the cutters, substantially as described.

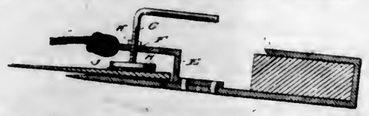
8. As a new product a core A of yielding fusible material, and a perforated wrapper of material suitable for incandescence thereon, substantially as described.

571,373. SPECTACLE-CASE AND HOLDER FOR PENCILS, PENS, &c. WILLIAM A. JOHNSTON, Homer, La. Filed Nov. 21, 1895. Serial No. 569,728. (No model.)



Claim.—In a device of the class described, the combination of a spectacle-case having a cover, and provided on the exterior of its body with projections or enlargements located beneath the cover, and a clasp, adapted to engage a pocket, interposed between the covering and the body of the spectacle-case and provided with openings interlocking with the projections or enlargements, substantially as described.

571,374. SHINGLING-BRACKET. JOSIAH A. KERR, Greenville, Ohio. Filed Sept. 11, 1896. Serial No. 605,485. (No model.)



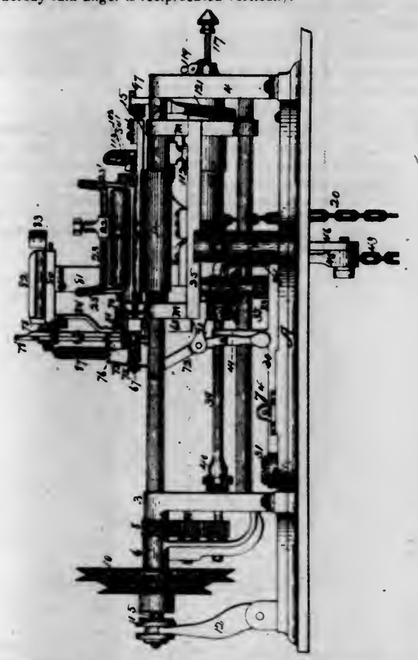
Claim.—The improved shingle-bracket herein described consisting of the main or base plate, having the stirrup at one end, the teeth or projections at the opposite end, on the upper face thereof, the arm secured to said main plate, the connection leading from said arm, the adjustable clamping-rod, mounted in said arm, and the head carried by said rod, and formed with teeth or projections for engaging the upper face of the shingle to clamp the bracket in position.

571,375. CIGAR-BUNCH-ROLLING MACHINE. FRANK R. KEYES and CHARLES A. BAKER, Binghamton, N. Y. Filed Mar. 29, 1895. Serial No. 543,297. (No model.) Patented in England Mar. 5, 1895, No. 4,700.

Claim.—1. In a cigar-machine the combination with a paste-reservoir, its discharge-pipe, an intermediate rocking valve, and a cigar-bunch-tip concavity into which the discharge pipe opens to eject paste onto the tip of said bunch as it is being rolled into the wrapper, of a rocking handle operatively connected to said valve to open it when rocked in one direction and an oscillatory wrapper-nicking knife connected to said handle and adapted to be operated by it when it is rocked in the opposite direction.

2. In a cigar-machine, the combination with suitable cigar-bunch supporting and rotating mechanism, of a wrapper gripping finger and suitable means to reciprocate it vertically and longitudinally.

3. In a cigar-bunch machine, the combination with a presser-roller and its frame and means to operate it vertically, of a wrapper-gripping finger and mechanism connected to the presser-roller frame whereby said finger is reciprocated vertically.



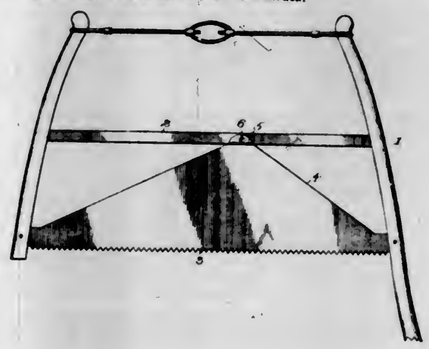
4. In a cigar-machine, the combination with a presser-roller and its frame, and means to operate it vertically, of a vertically-reciprocated wrapper-gripping finger, and means to reciprocate it longitudinally to project or retract it.

5. In a cigar-machine, the combination with suitable cigar-bunch supporting and rotating mechanism, and a traversing table carrying it, of a wrapper-gripping finger mounted in vertical and horizontal supports and means to reciprocate it vertically and longitudinally.

6. In a cigar-machine, the combination with suitable cigar bunch supporting and rotating mechanism, a presser-roller and means to vertically reciprocate it, and a traversing table carrying them, of a wrapper-finger mounted in a horizontal support; a horizontal support mounted in a vertical support, and means to reciprocate said finger vertically and longitudinally.

7. A trough, weighted to tilt upon its support, in combination with a rock-shaft; an arm secured thereto; crossed tuck-cutting blades pivoted upon said support; links connecting them to said arm and a support engaging with said trough to right it when said blades are open, and to permit it to tilt when said arm is operated to close said blades to cut a tuck and remove said support.

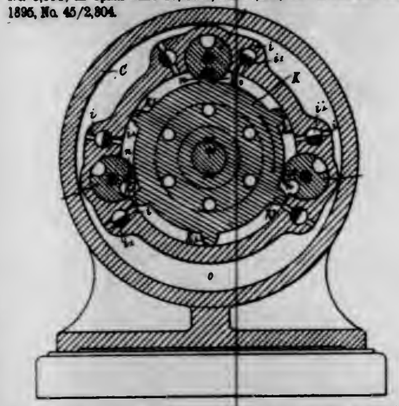
571,376. SAW. EUGENE L. KNAPP, Cooperstown, N. Y. Filed Apr. 15, 1896. Serial No. 587,663. (No model.)



Claim.—1. A saw comprising a frame provided with a cross-brace, and a blade secured to one side of the frame, said blade having a widened portion secured to the cross-brace of the frame, substantially as set forth.

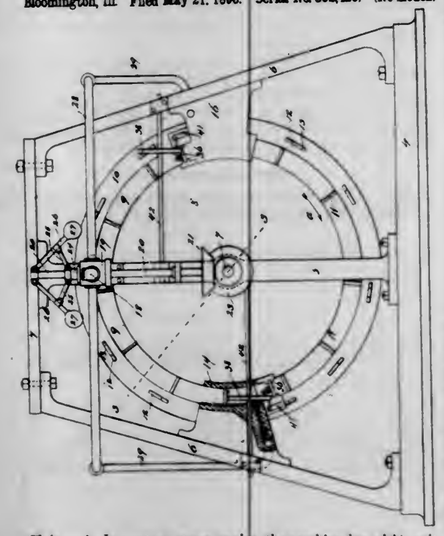
2 A saw comprising a frame provided with a cross-brace, and a blade secured to one side of the frame and having a widened portion provided with a nib, said nib being secured to the cross-brace, substantially as set forth.

571,377. ROTARY ENGINE. ALBERT A. KRYSAT, Aschersleben, Germany. Filed Oct. 16, 1895. Serial No. 565,863. (No model.) Patented in Luxemburg Apr. 5, 1895, No. 2,375; in France Apr. 9, 1895, No. 246,512; in Belgium Apr. 10, 1895, No. 115,004; in England Apr. 10, 1895, No. 7,342; in Italy Apr. 23, 1895, No. 38,737; in Finland May 17, 1895, No. 570; in Canada May 27, 1895, No. 44,084; in Hungary June 21, 1895, No. 3,064; in Spain June 26, 1895, No. 17,263, and in Austria Aug. 8, 1895, No. 45/2,804.



Claim.—In combination in a rotary engine, the piston provided with projecting teeth, the rotary abutments having grooves to receive the said teeth, a pair of exhaust-valves, one on each side of the rotary abutment, the end casings each having a steam-passage therein, the steam-inlet openings leading from each of the said steam-passages and extending laterally into the steam-space of the cylinder, an exhaust-steam space extending circumferentially about the cylinder through which the exhaust-ports extend and means for supplying steam to either of the end passages and cutting off the other passage as desired.

571,378. ROTARY STEAM-ENGINE. JOHANNES L. LAMPE, Jr., Bloomington, Ill. Filed May 21, 1896. Serial No. 592,429. (No model.)

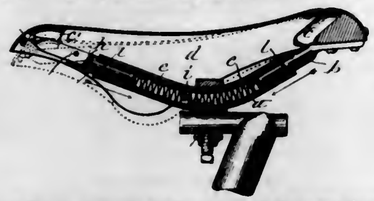


Claim.—1. In a rotary steam-engine, the combination with a suitable frame, of a shaft passing transversely therethrough, a wheel mounted on said shaft, and provided at its perimeter with a band or rim on the outer surface of which is formed a central annular flange, said band or rim being provided at regular intervals in each side with plates which project therefrom, and said frame being provided with steam-chests between which said rim or band passes, said steam-chests being open at their upper and lower sides, and said plates which are secured to the rim or band being adapted to pass therethrough, each of said steam-chests being also provided with means for admitting steam thereto, and with sliding covers, which are adapted to close the entrance to the steam-chests, as the plates on the rim or band pass therethrough, and devices connected with said plates or covers and with the central annular flange on the wheel for operating the former, so as to open and cover the entrance to the steam-chests through which the plates on the rim or band pass, substantially as shown and described.

2. In a rotary steam-engine, the combination with a suitable frame, of a shaft passing transversely therethrough, a wheel mounted on said shaft and provided at its perimeter with a band or rim on the outer surface of which is formed a central annular flange, said band or rim being provided at regular intervals on each side with plates which project therefrom, and said frame being provided at each end with two steam-chests between which said rim or band passes, said steam-chests being open at their upper and lower sides, and said plates which are secured to the rim or band being adapted to pass therethrough, each of said steam-chests being also provided with means for admitting steam thereto, and with sliding covers, which are adapted to close the entrance to the steam-chests, as the plates on the rim or band pass therethrough, and devices connected with said plates or covers, and with the central annular flange on the wheel for operating the former, so as to open and cover the entrance to the steam-chests through which the plates on the rim or band pass, and said frame being also provided with a governor which is in connection with the central shaft on which the wheel is mounted, by means of suitable gearing, and also with the steam-supply pipe, substantially as shown and described.

3. In a rotary steam-engine, the combination with a suitable frame, of a shaft passing transversely and centrally therethrough, a wheel mounted on said shaft and provided at its perimeter with a band or rim on the outer surface of which and centrally thereof, is formed a central annular outwardly-directed flange, said band or rim being provided at regular intervals on its opposite sides with projecting plates, and said frame being provided at its opposite ends with two steam-chests through which the opposite sides of the rim or band of the wheel pass, said steam chest being open at each end so as to admit of the passage of the plates, connected with or formed on the band or rim of the wheel therethrough, and said steam-chest being provided with steam-passages which communicate therewith, said passages being provided with sliding cut offs, and said steam-chests being also provided at the ends thereof into which the plates on the rim or band pass, with sliding covers and devices connected with said sliding covers and said cut offs, and with the central annular flange on the band or rim of the wheel, for operating said covers and said cut-offs, substantially as shown and described.

571,379. BICYCLE SADDLE. CHARLES F. LEFEVER, Syracuse, N. Y. Filed Oct. 28, 1895. Serial No. 567,104. (No model.)



Claim.—1. A bicycle saddletree formed of two end plates, arms extending from said plates part way toward the center of the tree, a rigid longitudinal supporting-tube constituting the central member of the tree and embracing the free end portions of the arms, and springs sustained in said tube and abutting against the ends of the arms as set forth.

2. A saddletree consisting of end plates, arms extending from said plates part way toward the center of the tree, a rigid longitudinal supporting-tube constituting the central portion of the tree, and springs in said tube abutting against the ends of the arms as set forth.

3. A bicycle-saddletree composed of a rigid tubular central supporting member, end members sliding in said tubular member, springs sustained in the tubular member and abutting against the inclosed end members and an abutment interposed between the inner ends of the springs as set forth.

4. A bicycle-saddletree composed of a rigid tubular central supporting member, seat-supporting plates under the ends of the seat, a longitudinal inverted-arch-shaped tube under the central portion of the seat and constituting the main support of the saddle, correspondingly-curved arms extending from the aforesaid plates and sliding in the segmental tube, springs in said tube abutting against the ends of the arms, and an abutment interposed between the inner ends of the springs as set forth.

5. A bicycle-saddle consisting of a longitudinal inverted-arch-shaped supporting-tube under the central portion of the saddle, seat-supporting plates under the ends of the seat, an arm rigidly attached to the rear plate and sliding with its free end in the aforesaid tube, an arm extending from the front plate into the aforesaid tube and provided with a downwardly-deflecting joint, a flexible seat secured to the plates and holding the jointed arm in its normal position, springs in the tube abutting against the ends of the arms, and an abutment interposed between the inner ends of the arms substantially as set forth and shown.

6. A saddletree composed of a rigid longitudinal central supporting member, end members sustained longitudinally movable on said central member, a spring for each end member supported on the central member to oppose the movement thereof, and adjustable locking devices on the central member for preventing longitudinal movement of said end members as set forth.

7. The combination of the saddletree composed of a rigid tubular central member of inverted-arch shape, end members having arms sliding in said central member, springs within the central member abutting against the end members, and a leather seat supported on said end members and stretched between said supports.

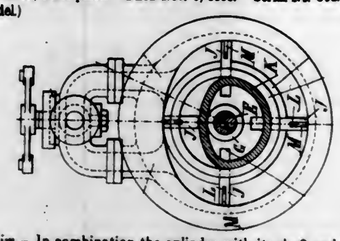
571,380. PAIL-BOTTOM. SIDNEY J. LISK, Clifton Springs, N. Y. Filed Apr. 14, 1896. Serial No. 587,501. (No model.)



Claim.—1. As a new article of manufacture a pail consisting of a body having its lower portion expanded to form a shouldered vertical recess and a bottom consisting of two superimposed disks of metal having different expansive properties, the central portions of said disks being convex and an adjacent border portion being concaved, the edge of the upper disk being bent upwardly and that of the lower one downwardly, said bent portions being fitted in the recess in the body and the lower edge of the body being bent up around the edge of the lower disk, the said recess being of a depth substantially equal to the thickness of the metal of the other disk, whereby the inner surface of the body will be flush with the inner face of the bent-up edge of the upper disk, as and for the purpose set forth.

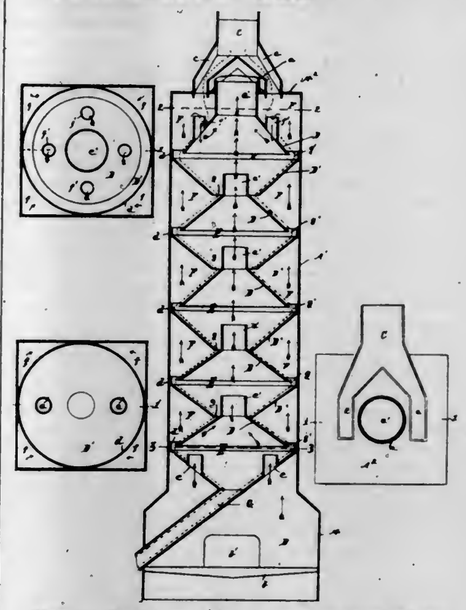
2. The combination with the body of a metallic vessel having its lower portion expanded to form a shouldered vertical recess, of a bottom consisting of two superimposed disks, the edge of the upper disk being bent upwardly and that of the lower one downwardly, said bent portions being fitted in said recess and the lower edge of the body bent up around the edge of the lower disk, the said recess being of a depth substantially equal to the thickness of the metal of the upper disk, whereby the inner surface of the vessel will be flush with the inner face of the bent-up edge of the upper disk, substantially as and for the purpose set forth.

571,381. ROTARY STEAM-ENGINE. LARS G. LJUNGSTRÖM, Stockholm, Sweden, assignor of one-half to Wilhelm Georg Christoff Harmsen, same place. Filed Nov. 9, 1895. Serial No. 568,490. (No model.)



Claim.—In combination the cylinder with its shaft and with the eccentric space about said shaft, the cylinder-head having the integral inwardly-projecting cam extending along the shaft, said head having also an annular groove in its inner face at a distance from the shaft, and a rotary piston having sliding abutments with spring-pressed portions M tending constantly outward, the said piston being cup-shaped with its edges fitting in the internal groove of the cylinder-head and its bottom or head portion fitting between the edge of the cam and the other cylinder-head, said head having a recess directly about the shaft for the reception of the boss on the cup-shaped piston, substantially as described.

571,382. SAND-HEATER. JAMES R. MAYER, Erie, Pa. Filed Feb. 14, 1896. Serial No. 579,247. (No model.)



Claim.—1. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; the heating-chamber; and means of introducing and discharging material respectively to and from it; of a series of inclined plates arranged in succession one above another in said chamber and having portions of the edges thereof free from the walls of the chamber and from each other so as to form ways for the passage of material to be dried over the surfaces of said plates and to make independent passages adjacent to said plates whereby are formed flues independent of the passages for the material, said flues being arranged to allow an active draft through said chamber and to bring the products of combustion into contact with the inclined plates.

2. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; the heating-chamber; and means of introducing and discharging material respectively to and from it; of a series of alternating spreaders and hoppers arranged in succession one above another in said chamber and having portions of the edges thereof free from the walls of the chamber and from each other so as to form ways for the passage of the material to be dried over the surfaces of said spreaders and hoppers and to form independent passages adjacent to said spreaders and hoppers whereby are constituted flues independent of the passages for the material, said flues being arranged to allow an active draft through said chamber and to bring the products of combustion into contact with the spreaders and hoppers.

3. In an apparatus for heating or drying sand and similar materials, the combination with the heating-chamber; and means of introducing and discharging material to and from it; of a series of plates of graduated inclinations the greater at the top and arranged in succession one above another in said chamber and means of introducing heat to said plates.

4. In an apparatus for heating or drying sand and similar materials, the combination with the heating-chamber; and means for introducing and discharging material to and from it; of a series of inclined plates arranged in succession one above another in said chamber with successive connecting-passages of greater dimension at the top than at the bottom; and means of introducing heat to said plates.

5. In an apparatus for heating or drying sand and similar materials, the combination with the heating-chamber; and means of in-

troducing and discharging material to and from it; of a series of plates in said chamber arranged in succession one above another with graduated inclinations greater at the top than at the bottom and connected by passages of greater dimensions at the top than at the bottom; and means of introducing heat to said plates.

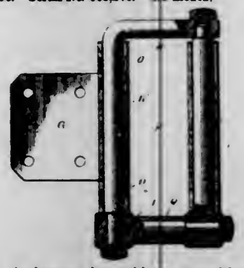
6. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; the heating-chamber; and means for introducing and discharging material respectively to and from it; of a series of alternating spreaders and hoppers, arranged one above another in said chamber, and having portions of their edges free from each other and from the walls of the chamber whereby there are formed passages for the material to be dried, and independent passages adjacent to the said spreaders and hoppers constituting flues independent of the passages for the material, said flues being arranged to convey the products of combustion into contact with the under surfaces of the said spreaders and to allow an active draft through said chamber.

7. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; the heating-chamber; and means for introducing and discharging material respectively to and from it; of a series of alternating spreaders and hoppers, arranged one above another in said chamber, and having portions of their edges free from each other and from the walls of the chamber whereby there are formed passages for the material to be dried, and independent passages adjacent to the said spreaders and hoppers constituting flues independent of the passages for the material, said flues being arranged to convey the products of combustion into contact with the under surfaces of the said hoppers and to allow an active draft through said chamber.

8. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; the heating-chamber; and means for introducing and discharging material respectively to and from it; of a series of alternating spreaders and hoppers, arranged one above another in said chamber, and having portions of their edges free from each other and from the walls of the chamber whereby there are formed passages for the material to be dried, and independent passages adjacent to the said spreaders and hoppers constituting flues independent of the passages for the material, said flues being arranged to convey the products of combustion into contact with the under surfaces of both said spreaders and hoppers and to allow an active draft through said chamber.

9. In an apparatus for heating or drying sand and similar materials, the combination with the furnace; of a heating-chamber substantially rectangular in cross-section; means of introducing and discharging material respectively to and from it; a series of conically-shaped plates arranged one above another in said chamber, the spaces formed at the corners between the plates and the walls of the heating-chamber forming flues independent of the passages for the material, said spaces being connected with the furnace and the stack.

571,383. GATE-HINGE. MORGAN MORGAN, Foxburg, Pa. Filed Aug. 19, 1896. Serial No. 603,279. (No model.)



Claim.—1. An improved gate-hinge, comprising a leaf adapted to be attached to the posts, and an essentially rectangular-shaped frame pivotally connected to the leaf, said frame having antifriction sleeves or collars arranged upon one member of the frame above and below the leaf to hold the frame in proper position in connection with the leaf, substantially as shown and described.

2. An improved gate-hinge, comprising a leaf adapted to be attached to the post, and an essentially rectangular-shaped frame pivotally connected to the leaf, said frame having antifriction sleeves or collars arranged upon the side and bottom members, substantially as shown and described.

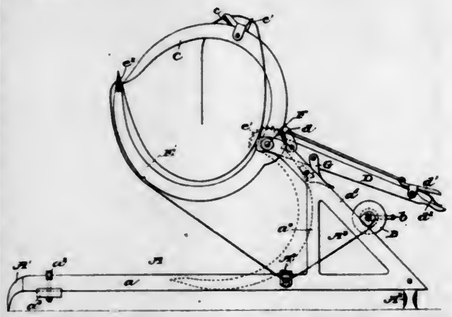
3. In a gate-hinge, the combination with the leaf, of the essentially rectangular-shaped frame pivotally connected therewith, said frame comprising a right-angular top and side member, a bottom member through which the end of the side member projects and a front member through which the end of the bottom member projects, the top of said front member projecting through the end of the top member, substantially as shown and described.

4. The combination with the hinge-posts, supporting-post and latch-post, of the hinge comprising the leaf and the rectangular-shaped frame, said frame having the antifriction sleeves or collars, the gate consisting of the horizontal vertical bars, the supporting-hook attached to the supporting post, and the latch-strip arranged upon the front face of the latch-post, substantially as and for the purpose described.

571,384. COMPOSITION FOR WATERPROOFING FELT. WILHELM MÜLLER, Frankfort-on-the-Main, Germany, assignor of one-half to Hermann Steinhäuser, Offenbach-on-the-Main, Germany. Filed Oct. 16, 1895. Serial No. 565,893. (No specimens.) Patented in Germany June 9, 1894, No. 82,216; in England Mar. 5, 1895, No. 4,798; in Belgium Mar. 8, 1895, No. 114,479, and in France Mar. 8, 1895, No. 245,636.

Claim.—The herein-described new and useful waterproofing compound consisting of amber, rosin, Venetian turpentine, brown shellac, refined camphor and sandarac in benzin and alcohol or other suitable solvent.

571,385. FODDER PACKER AND BINDER. CHARLES T. MCCANE, Rockspring, Ky. Filed May 4, 1896. Serial No. 590,066. (No model.)



Claim.—1. A fodder packer and binder comprising a suitable frame, a pair of curved binder-arms or hooks pivotally supported at their shanks upon said frame with their curved portions opposed to each other; one of said arms being provided with an operating-lever for moving the same on its pivot so as to cause it to approach or recede from the opposing arm, and the other arm having its pivoted end or shank provided with ratchet-teeth adapted to be engaged by a pawl or dog carried by said operating-lever and means for operating said dog so as to adapt the binder-arms to be locked in a closed position or permit one of said arms to drop down in position to open the arms to receive the material to be bound, a reel supported upon said frame and binding cord or twine wound on said reel and passing therefrom through an eye in one of said arms to a securing device on the opposite arm for holding the free end of the cord, substantially as described.

2. In combination with the supporting-frame having the standards rising therefrom, the hand-lever pivotally supported upon said standards and provided with a curved binder-arm or hook extending therefrom; said hand-lever being also provided with a pivoted pawl and thumb-lever for operating said pawl, and a binder-arm or hook pivoted at one end adjacent to the pivot of said lever and provided at said end with ratchet-teeth adapted to be engaged by said pawl, so that said hooks may be closed upon each other and locked, substantially as described.

3. In a hand-operated packer and binder, the combination with a suitable supporting-frame, of a pair of binder-arms comprising an upper arm or hook pivotally supported on said frame, and a lower arm pivoted at one end adjacent to the pivot of the upper arm so that it may drop down and open the arms to receive between them the material to be bound, a lever for closing said arms and compressing the material so as to form a compact bundle; said lever being adapted for raising the arm and the bundle clasped thereby, and means for locking the arms so that the bundle may be raised by said lever without changing the position of the arms relatively to each other and to the lever, substantially as described.

4. In combination with the supporting-frame, the hand-operated lever pivotally mounted thereon and provided with a projecting hook or binder-arm and with a pivoted pawl and operating-lever therefor, and the oppositely-arranged binder-arm or hook having its shank pivoted coincident with the pivot of the lever and provided with

ratchet-teeth thereon adapted to be engaged by said pawl, together with the pendent catch or hook pivoted to said lever and adapted to catch under a fixed part of the supporting-frame and hold said lever with the binder-arms in an elevated position, substantially as described.

5. In a hand operated packer and binder, the combination with the supporting-frame, of the binder-arms pivotally mounted on said frame, the operating lever for closing, raising and lowering said arms, means for securing the arms in a fixed position relatively to each other adapted to retain them in such position when said lever is operated to raise or lower the arms, and a catch pivoted to the lever and adapted to take under a fixed part of the supporting-frame so as to sustain the lever in a fixed position when the binder arms and the bundle clasped thereby are raised, substantially as described.

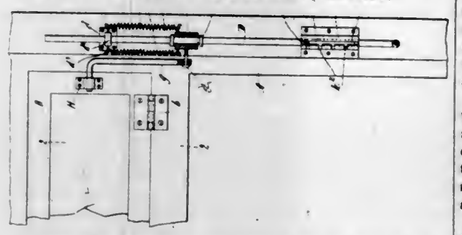
6. In a hand-operated fodder packer and binder, the combination with a pair of pivotally-supported binder-arms one having an eye at its free end and the other provided with a notched projection or crotch, and means for opening and closing said arms so as to adapt them to receive between them and compress the material in compact form at the point to be encircled by the binding-cord, of means for locking said arms with the bundle compressed between them, and means for raising and sustaining said arms in an elevated position, a reel journaled upon the frame and having the binding-cord wound thereon and passed therefrom through the eye in one of said pivoted arms, and having its free end secured in the crotch carried by the opposite arm, substantially as described.

7. In a hand-operated packer and binder, the combination with a pair of pivotally-supported binder-arms and means for operating the same so as to compress between them and raise the material to be bound, of a supporting-frame on which said arms are mounted having converging bars provided with a hook at the point where said bars meet adapted to take into the earth so as to anchor and hold the frame in position for use in the field; one of said arms being adapted to drop down between said converging bars to receive the material placed thereon between the same and the upper arm, substantially as described.

8. In a hand-operated fodder packer and binder, the combination with a suitable supporting-frame, of a pair of binder-arms comprising an upper arm or hook provided with a notched projection thereon for securing the free end of the binder-twine, and a lower arm having its shank pivoted coincident with the pivot of the upper arm and provided with an eye at its free end through which the binder-twine may pass, means for locking said arms in a fixed position relatively to each other to adapt the bundle to be compressed between the same and to be raised, and also to permit the lower arm to drop down so as to open the arms for receiving the material to be bound, and a lever for closing said arms and raising the bundle grasped thereby, substantially as described.

9. A hand-operated fodder packer and binder, comprising a suitable frame having a hook at one end for anchoring the frame in the field, and standards rising therefrom, a lever pivotally supported upon said standards and having a curved hook or binder-arm projecting therefrom; said lever being also provided with a pawl, and a pawl-operating dog pivotally secured thereto, a binder-arm or jaw pivoted at one end coincident with the pivot of the lever, and provided with ratchet-teeth thereon adapted to be engaged and locked by said pawl; the latter arm being also provided at its free end with an eye to receive the binder twine, a reel journaled in suitable bearings mounted upon said standards, binding cord or twine wound upon said reel and passing therefrom through an eye at the base of the frame and thence through the eye of the pivoted binder-arm and from thence to a securing means provided therefor on the opposite binder-arm, substantially as described.

571,386. TRANSOM-ADJUSTER. HUGO NEWMAN, New York, N. Y. Filed Feb 20, 1896. Serial No. 580,042. (No model.)



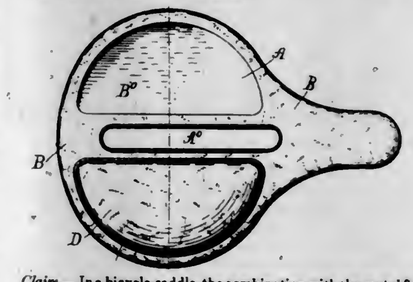
Claim.—The combination with a door-frame, of a transom which is hinged at one side and means for opening the same, and for holding it in any desired position, which consists of a vertically-movable rod which passes through keepers secured to the side of the door-frame, said rod being provided with a tubular head which is mounted thereon, and with which is connected a crank-lever, one arm of which passes through a keeper secured to said transom, and means for operating said vertically-movable rod, which consists of a tubular bearing formed on one of the keepers by which it is connected with the frame, and springs connected with the upper keeper, and with the tubular head, said tubular bearing being provided with an oblong slot in the outer side thereof, and with radial slots which communicate therewith, and said rod being provided with a pin and with a handle, the pin being adapted to operate in said slots, substantially as shown and described.

571,387. BUTTON. WILLIAM O'NEILL, Brooklyn, N. Y. Filed June 5, 1896. Serial No. 594,393. (No model.)



Claim.—The herein-described button, made up of a disk and shank therefor made of wire having a head thereon which engages the edges of an opening through which said wire projects, the said disk being formed with a slot therein through which the outer projecting arm of said shank is inserted, and reinforcing-plates, one on the top of said button projecting over said slot and the other on the under side of said button projecting through said slot.

571,388. BICYCLE-SADDLE. CHARLES E. PAGE, Denver, Colo., assignor of three-fifths to Carl A. Freeman, same place. Filed Dec. 30, 1895. Serial No. 573,747. (No model.)



Claim.— In a bicycle-saddle, the combination with the metal frame A having central slot A° with a downwardly-extending flange or rib *a* around said slot; and the downwardly-extending rib or flange *a'* around the periphery of said metal frame, said ribs or flanges being perforated at intervals for the passage of suitable fastenings for the cover of said frame; of the flexible cover B fitting over said frame, slotted to correspond with the slot in said metal frame, secured to the ribs *a* and *a'* and cut away at B° on either side of the said slot to form seats for the reception of pads; a pair of rubber pads each consisting of a semicircular concave plate having cross-ribs on the concave side thereof, and a covering for said ribs, said pads fitting in said apertures in said cover and resting upon said metal frame; and a pair of caps D of leather or like material fitting over said pads, and secured at their edges to said cover, substantially as described.

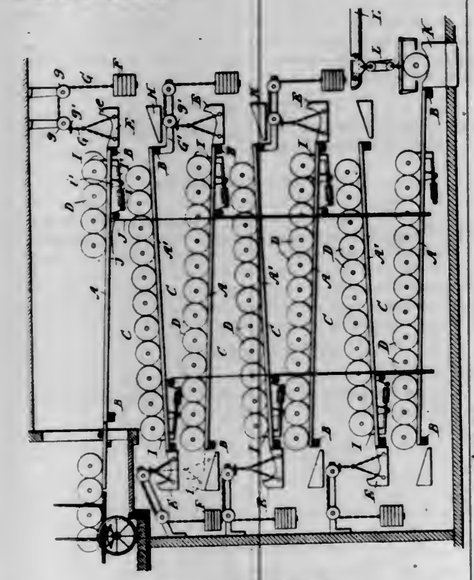
571,389. STORAGE AND DELIVERY SYSTEM. GEORGE E PANCOAST, New York, N. Y. Filed June 22, 1896. Serial No. 596,391. (No model.)

Claim.—1. In a storage and delivery system for storing and transmitting rolls of paper, the combination of a series of oppositely-directed inclined planes and a series of vertically-movable blocks for carrying rolls from one plane to another, and means for retaining rolls of paper upon and releasing them from the planes, substantially as shown and described.

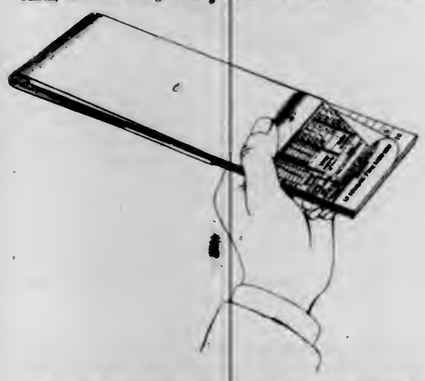
2. In a storage and delivery system for handling rolls of paper, the combination of a plurality of oppositely-directed inclined planes arranged in vertical series and a plurality of counterweighted blocks or receptacles for conducting rolls of paper from one inclined plane to another, and a series of weighted stops for regulating the movement of the rolls upon the said inclined planes, substantially as shown and described.

3. In a storage and delivery system for handling rolls of paper, the combination of a plurality of oppositely-directed inclined planes arranged in vertical series; with a means for controlling the descent of the rolls adapted to be transmitted from the said plane, comprising an automatic trip mechanism located upon the lower end of each plane, said mechanism constituting a hinged plane having an arm ex-

tended therefrom which engages with a counterweight for maintaining the said plane in a normally upwardly-extended position, and a longitudinal sliding arm and a segmental stop which is operated by said arm, and a locking-lever for said segmental stop, said lever adapted to be operated by a descending roll of paper, substantially as shown and described.



571,390. TICKET-BOOK COVER. WILLIAM J. PERDUE, Fort Smith, Ark. Filed Aug. 4, 1896. Serial No. 601,626. (No model.)



Claim.—1. The combination with a ticket book or pad, of a flexible cover adjustably connected to the back or bottom of said book or pad and having a straight-edge or cutter at its free end, substantially as shown and described.

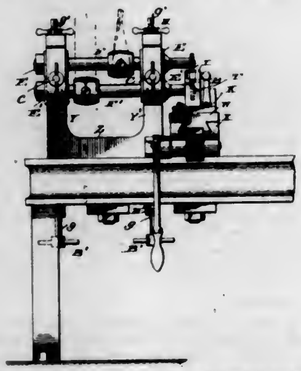
2. The combination with the ticket book or pad, of the flexible cover slidably connected with the back or bottom of said book or pad, and having a straight-edge or cutter at its free end, substantially as shown and described.

3. The combination with the ticket book or pad, of the flexible cover slidably connected to the back or bottom of the book or pad, and having a metallic straight-edge or cutter at its free end, said straight edge or cutter having its cutter edge flanged or turned downward, substantially as shown and described.

4. The combination with the ticket book or pad, of the cover having a sleeve at one end adapted to slide over the back or bottom of the ticket book or pad, and having a metallic straight-edge at the opposite end, substantially as shown and described.

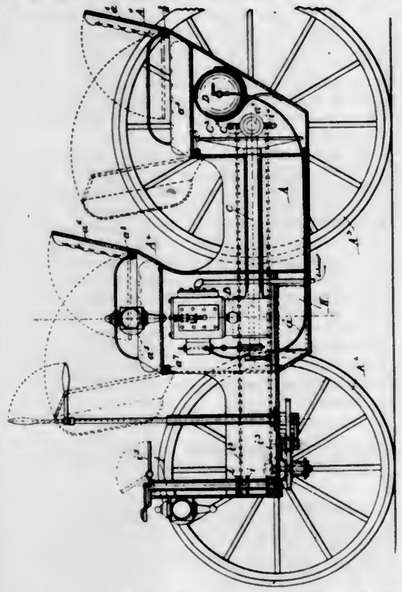
5. As an improved article of manufacture, an adjustable cover adapted to be attached to a ticket book or pad, said cover having a sleeve at one end, and a metallic straight edge or cover at the opposite end all arranged and adapted to operate substantially as shown and described.

571,391. BURRING OR MILLING LATHE. ALBERT PETERIT, New York, N. Y. Filed Oct. 11, 1895. Serial No. 565,336. (No model.)



Claim.—In a bur cutting machine the combination of the shafts rotating in opposite directions and arranged one above the other, each having a cutter secured thereto, the reciprocating carriage, the jig provided with an opening to receive the cock and an angle-piece or stop for the thumb-piece or handle of the cock to bear against, substantially as specified.

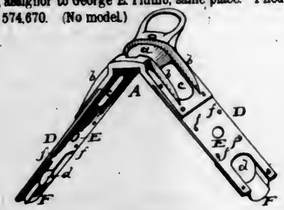
571,392. SELF-PROPELLING VEHICLE. REUBEN H. PLASS, Brooklyn, N. Y. Filed Apr. 20, 1895. Serial No. 546,559. (No model.)



Claim.—1. A self-propelling vehicle comprising an axle having a longitudinally-movable roller connected therewith in a manner to rotate with it, an engine arranged on approximately the same plane as the axle, the engine being provided with a shaft having its end arranged adjacent to the axle, and a friction-plate on the shaft designed to be engaged by the roller, substantially as described.

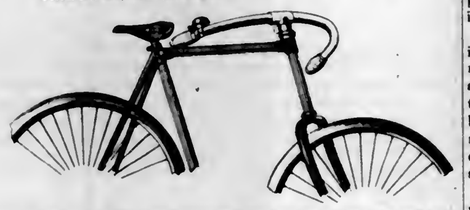
2. In a self propelling vehicle, the combination with the king-bolt having a gear-wheel attached thereto of a standard provided with a handle at its upper end and with a gear-wheel at its lower end, and a gear-wheel interposed between and meshing with those on the king-bolt and standard, substantially as described.

571,393. HARNESS-SADDLETREE. ADELBERT E. POST, Cleveland, Ohio, assignor to George E. Plumb, same place. Filed Jan. 8, 1896. Serial No. 574,670. (No model.)



Claim.—The flexible saddletree consisting of the bow A, having the depression *a*, ribs *b b*, openings *c c*, spring-leaves D D, having slots *d d* and the flat loops F F, constructed and adapted to operate substantially as described.

571,394. BICYCLE-HANDLE AND BELL-RINGER. HENRY U. PRINDLE and EUGENE T. LAMPTON, Woodland, Cal. Filed Mar. 10, 1896. Serial No. 582,621. (No model.)



Claim.—1. The combination of the handle-bar and the bell held thereon having a projecting ring-lever, of a handhold having a tubular socket portion fitted lengthwise on the handle-bar provided at its inner end with a detachable cap having a projecting member adapted to engage the ring-lever when the said core is turned and means for locking the core member on the handle-bar from longitudinal movement substantially as shown and described.

2. The combination with the handle-bar having a slotway extended transversely thereto, a handhold having a core member held to turn on the handle-bar and the ring member projected radially thereon, the inner end of the handhold having a shank portion fitted through the core member and extended into the slot of the handle-bar substantially as shown and described.

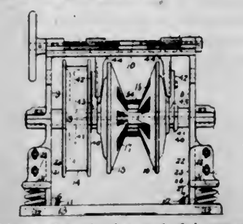
3. The combination with the handle-bar having a stud and the bell mounted thereon having a projecting ringing member, of a tubular core adapted to be fitted longitudinally on the end of the handle-bar and having a detachable cap member at its inner end provided with a projecting member adapted to engage the ring member of the bell, said core-piece having a transverse slot movable about the handle-stud, the sleeve having a recess held normally out of alinement with the slot of the core piece and adapted to be moved in alinement therewith whereby the said sleeve and core can be pulled out of a locked engagement with the stud substantially as shown and described.

4. As an improvement in bell-ringing devices for bicycles, the combination with the handle-bar and the bell held thereon having a projecting ringing member, spring-returned to its normal position, of a handhold held on the handle-bar to rotate thereon provided with a detachable cap member held to rotate with the handle-bar, said member having a projecting portion adapted to engage the ring member of the bell and move it in one direction against its spring-tension as the handhold is turned and adapted to be returned to its normal position by the tension of the said ringing member substantially as shown and for the purposes described.

571,395. VARIABLE-SPEED MECHANISM. LOUIS T. PYOTT, Philadelphia, Pa. Filed Dec. 12, 1895. Serial No. 571,894. (No model.)

Claim.—1. The combination in a power-driven machine of an attached driving-shaft and a driving-pulley, an attached driven shaft and a driven pulley, and an interposed shaft, swingingly supported in a structure detached from the machine, and having a pulley belted from the driving-shaft pulley and a pair of interlocking cone-pulleys belted to the driven-shaft pulley, substantially as described and set forth.

2. In a variable-speed mechanism an intermediate shaft between the driving and driven shafts of a machine, an independent frame for the intermediate shaft pivotally attached to an independent base-plate, multiple springs seated upon the base-plate, and adjustable brackets attached to the shaft-frame and seated upon the springs, substantially as described and set forth.



3. In variable-speed mechanism a shaft interposed between the driving and driven shafts of the machine and belted thereto, a frame for the interposed shaft, adjacent to the machine, but unattached thereto and independent thereof, a base-plate to carry the shaft frame, pivotal attachments for the shaft-frame to the base-plate, yielding mechanism between the base-plate and the shaft-frame to maintain the shaft frame in normal position when not forced therefrom, and an upper part to the shaft-frame being removably attached to the lower parts, and connecting across from side to side above the pulleys on the interposed shaft, substantially as described and set forth.

4. In variable-speed mechanism, an intermediate shaft supported in a swinging frame pivotally attached to a base-plate at one end, means to support the frame in its normal position, a pulley on the shaft coupled to the machine, a pair of interlocking cone-pulleys on the shaft coupled to the machine, an outer hub for each cone-pulley having a groove therein, a shifting fork entering each groove and means for causing the shifting forks to approach and recede from each other at the will of the operator, substantially as described and set forth.

5. In variable-speed mechanism, an interposed shaft, a pivotally suspended and yielding frame, having divided journal-bearings therein for the shaft, a seat in the upper cross-framing, a bearing at each end thereof, and a screw seated therein having right and left hand threads, and means for moving the screw and adjusting its attachments resting in the seats aforesaid substantially as described and set forth.

6. In a variable-speed mechanism, an interposed shaft yieldingly suspended, a pulley thereon, a pair of interlocking cone-pulleys thereon, a framework above the pulleys having a guide therein, traversing arms guided therein and extending downward, forked shifting arms attached thereto and engaging the interlocking cones, a nut inserted into the upper end of each traversing arm, and means to move the traversing arms toward and from each other, substantially as described and set forth.

7. In mechanism for changeable speed, interlocking cones therefor each having a semidiametral hub extending from the interlocking face thereof, and a semidiametral recess for the insertion of the hub of the opposite cone, substantially as described and set forth.

8. In a variable-speed mechanism, an interposed shaft and a framework therefor pivotally carried, lugs upon the framework and attached thereto a radially-yielding arm carrying a shaft and a tightener-pulley at its outer end, and means for operative attachment to a machine substantially as described and set forth.

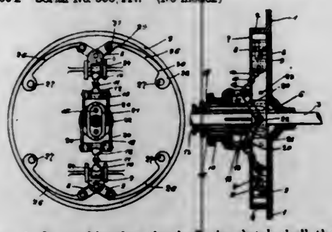
9. In a variable-speed mechanism, an interposed shaft between the driving and driven shaft, a pivotally-supported and yielding framework therefor, means to maintain the framework in normal position, a shaft, a pulley, and a pair of interlocking cone pulleys, means to adjust the interlocking cone-pulleys laterally, between the frames, for the purpose of changing the diametral contact of the belt running in connection therewith and means to operatively connect the pulleys to a machine, substantially as described and set forth.

10. In changeable-speed mechanism, a driving and a driven shaft for the machine, pulleys on each of the aforesaid shafts, an interposed shaft carried upon a pivotally-yielding frame, said frame being independent of the machine and unattached thereto save by belt contact, a pulley on the interposed shaft having a belt running to the pulley on the driving-shaft, a tightener-pulley attached to and swinging from the pivotal frame, a pair of interlocking cone-pulleys on the interposed shaft, means to move them on the shaft to increase or decrease the diametral contact of the belt thereto connected, and a belt from the interlocking cone pulleys to the pulley upon the driven shaft of the machine, substantially as described and set forth.

11. In changeable speed mechanism, a driving-shaft and pulley, a driven shaft and pulley, an independent interposed shaft, a pulley and a pair of interlocking cone-pulleys thereon, a swinging frame for the interposed shaft independent of the machine, pivotally carried, to permit the approach of the interposed shaft either toward the driven shaft and from the driving-shaft, or vice versa, a tightener-pulley, its journal and arms swingingly attached to the interposed shaft frame,

to permit the tightening-pulley to lie upon the upper side of a compensating belt from the driving-shaft pulley to the interposed-shaft pulley, the belt being slack and kept in operative contact by the tightener-pulley when the swinging frame of the interposed shaft approaches or recedes from the driving-shaft, and a belt from the interlocking cone-pulleys to the driven-shaft pulley, substantially as described and set forth.

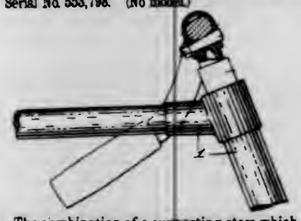
571,396. CLUTCH. CHARLES CHAST, Bucyrus, Ohio. Filed Dec. 31, 1894. Serial No. 533,447. (No model.)



Claim.—1. In combination, the shaft, the clutch-shell, the clutch-shoes arranged at opposite points of the shell, the toggle-levers extending substantially radially of the shell, and the collar 21 connected thereto, with means for operating the parts, said collar being arranged to move radially of the shell in the direction of the toggles, substantially as described.

2. In combination the clutch-shell, the clutch-shoes, the double toggles for operating the same, the shifting sleeve connected to the central joint of the double-toggle levers and the collar 21 to which the inner ends of the double toggles are connected, said collar 21 being movable radially of the shell substantially as described.

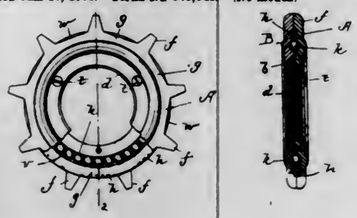
571,397. BICYCLE. JOHN D. RICE, Hiawatha, Kans. Filed June 24, 1895. Serial No. 553,798. (No model.)



Claim.—1. The combination of a supporting-stem which is adapted to be turned and having a socket, a handle-bar curved in two planes adapted to be passed through the stem and loosely fitting therein, an opening formed in the socket and recesses formed in the handle-bar, and a tapering pin adapted to enter the opening on either side of the socket and to fit in the recesses with its tapering side bearing against the handle-bar so that by inserting the pin through either side of the socket into the opening and turning the stem the handle-bar may be adjusted to different positions, substantially as shown and described.

2. The combination with the handle-bar of a bicycle, the stem for supporting it, a socket formed on said stem and having the handle bar loosely fitting therein, a suitable opening formed in the socket and suitable recesses formed in the handle-bar at that point where it passes through the socket, and a removable key or pin formed with a tapering side adapted to be inserted in said opening and one of the recesses through either end of the said opening in the socket with the tapering side bearing against the handle-bar whereby the position of the handle-bar may be changed, substantially as shown and described.

571,398. SPROCKET-WHEEL. WILLIAM J. ROSS, Boston, Mass. Filed Jan. 17, 1896. Serial No. 575,841. (No model.)

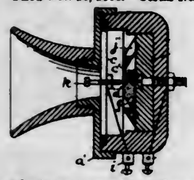


Claim.—1. A sprocket-wheel provided with an antifriction device on its periphery between its teeth and adapted to be engaged by the jack-chain substantially as and for the purpose specified.

2. A sprocket-wheel comprising two members secured together and provided with teeth; a ring contained between said members and mounted to revolve on a roller-bearing, the outer edge of said ring projecting beyond the corresponding edges of said members between said teeth substantially as and for the purpose set forth.

3. The herein-described sprocket wheel comprising the members, A, B, detachably secured together; the ball-bearings, *k*, and the ring, *h*, fitted to travel on said balls and projecting between the teeth, *f*, of said members as described.

571,399. TELEPHONE-TRANSMITTER. DAVID N. ROWAN, Irvington, N. Y. Filed Dec. 10, 1895. Serial No. 571,701. (No model.)



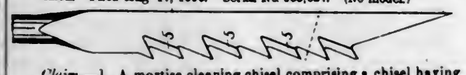
Claim.—1. In a telephone-transmitter, the combination of flexible, non-conducting shelves, electrodes, and granular conducting material suspended on the shelves between the electrodes as described.

2. In a telephone-transmitter, the combination of flexible non-conducting shelves, granular conducting material thereon suspended on the shelves between electrodes, an inner diaphragm in contact with the shelves and the granular conducting material, a fixed outer diaphragm with a space between the diaphragms and a mechanical connection between the diaphragms, as described.

3. The combination of flexible non-conducting shelves, granular conducting material thereon, suspended on the shelves between electrodes, an inner diaphragm in contact with the shelves and the granular conducting material, a fixed outer diaphragm, with a space between the diaphragms and a pressure device between the diaphragms, as described.

4. The combination of flexible non-conducting shelves, granular conducting material thereon suspended between the electrodes, an inner diaphragm in contact with the shelves and the granular conducting material, a fixed outer diaphragm, with a space between the diaphragms and a screw and nut for regulating the pressure of the inner diaphragm against the shelves and the granular conducting material thereon, as described.

571,400. MORTISING-CHISEL. HENRY RUPPERT, Sebewaing, Mich. Filed Aug 17, 1896. Serial No. 603,027. (No model.)



Claim.—1. A mortise-cleaning chisel comprising a chisel having teeth on the back edge thereof and above the sloping side of the chisel, each tooth cut with its sloping side extending to one side of the chisel, the teeth alternating up the chisel edge, whereby the sloping side of one tooth will be upon one side of the chisel, the sloping side of the next tooth above or below upon the opposite side of the chisel, substantially as specified.

2. In a mortise cleaning chisel, teeth upon the back edge of the chisel the proper distance above the sloping wall of the chisel, the teeth sloping downward and outward each tooth having from its upward slant a beveled portion extending to the side of the chisel.

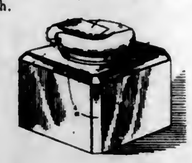
3. In a mortising-chisel, rake-teeth upon the back edge of the chisel, each tooth extending part way across the edge of the chisel and having the beveled wall 6 extending to the side of the chisel, the bevel upon one tooth being opposite to the bevel upon the other, substantially as specified.

4. In a mortising-chisel, rake-teeth upon the back of the chisel, each tooth extending part way across the edge and alternating, substantially as specified.

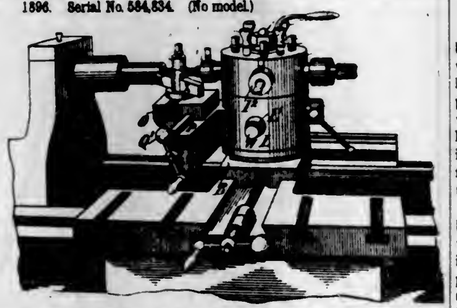
5. A mortising-chisel having a cutting edge, and above the sloping side of the chisel a number of drag-teeth, each tooth extending part way across the edge of the chisel with their cutting edges arranged in opposite sides thereof and in opposition to each other, substantially as specified.

571,401. INKSTAND. FRANCIS SCHENKER, Vincennes, Ind. Filed Aug. 1, 1896. Serial No. 601,380. (No model.)

Claim.—An inkstand consisting of an ink-receptacle having an upwardly-extending circular neck, a cap having a depending circumferential flange to fit said neck, a horizontally-extending top having a horizontal slot extending from about the center to one edge and a central, concaved, depending lip, having a curved edge, a horizontal valve or tongue having a concaved and depending inner end having a curved edge and adapted to seat and fit against the said lip, and having a thickened and weighted rear portion and a downwardly-curved and undergrooved outer end, and a pivot-pin extending transversely through said cap and also through said tongue to afford eccentric pivot-bearing for said valve or tongue, substantially as and for the purpose set forth.



571,402. LATHE. FRITZ SCHNEIDER, Erie, Pa. Filed Mar. 25, 1896. Serial No. 584,634. (No model.)



Claim.—1. In a lathe-turret, comprising a stationary socket, adapted to be secured to the bed of a lathe, a pivot-bolt, set in the center of the socket, a turret-head, set concentrically on the socket and turnable on the pivot-bolt, the combination with the turret, of mechanism for adjusting and automatically locking the turret-head in position on the socket, comprising a tapered locking-pin, set in a bushing, sunk in the socket, a spiral spring, set underneath the pin and pressing the pin upward into conical recesses in the turret-head, adapted to receive the tapered end of the locking-pin, pins provided with push-knobs on their upper ends, set in the turret-head vertically above the recesses and adapted to dislodge the locking-pin, when pushed downward, and spiral springs pressing the pins upward.

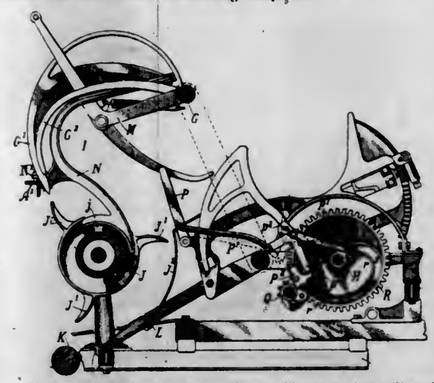
2. In a lathe-turret, the combination with a stationary cylindrical socket, adapted to be secured to the bed of a lathe, of an auxiliary turret, pivoted thereon and adapted to be rigidly secured to it, the auxiliary turret comprising a slideway for a tool-carriage, a feed-screw for adjusting the tool carriage in position and for feeding it at a right angle to the lathe-spindle, and a thumb-screw for securing the tool-carriage in adjusted position on the slideway.

3. In a lathe-turret, comprising a stationary cylindrical socket, adapted to be secured to the bed of a lathe, and a turret rotatably secured thereto, the combination of mechanism for automatically locking the turret to the socket when in right position to the spindle of the lathe, the combination comprising a spring-actuating pin, set in the socket and having a tapered end adapted to slide automatically into a correspondingly-shaped recess in the turret, thus locking the turret in position, and a pin having a knob, set in a boring opposite the recess, and a spring, holding the pin in receded position.

571,408. SELF-BINDING HARVESTER. JAMES R. SEVERANCE, Chicago, Ill., assignor to the McCormick Harvesting Machine Company. Filed Dec. 11, 1893. Serial No. 493,418. (No model.)

Claim.—1. In a self binding harvester, the combination of a binder located between the platform and the main wheel, a passage-way from the platform to the binding-receptacle, and spring-straps forming the bottom of the passage-way, said straps being connected at the receiving end of the passage-way only with the binder-frame so as to be adjustable with it in its movements.

2. In a self-binding harvester, the combination of a binder located between the platform and the main wheel, a passage-way from the platform to the binding-receptacle, and spring-straps forming the bottom of the passage-way and secured to a projection from the binder-frame at their receiving ends so as to be adjustable therewith in its movements, the discharge ends of said straps being free and unattached and bent toward the binding-receptacle.



3. In a self-binding harvester, the combination of an adjustable binder, situated between the platform and the main wheel, a passage-way from the platform to the binding-receptacle, spring-straps forming the bottom of the passage-way, said straps being secured to a projection from the binder-frame at the receiving end of the passage-way only so as to be adjustable with the binder, and a feeding device located above the incoming grain and having feed-teeth corresponding to the spring-straps on the opposite side of the passage-way, said feeding-teeth being also connected to the binder so as to be adjustable therewith.

4. In a self-binding harvester, the combination of an adjustable binder situated between the platform and the main wheel, a passage-way from the platform to the binding-receptacle, spring-straps forming the bottom of the passage-way, said straps being secured to a projection from the binder-frame at their receiving ends only so as to be adjustable with the binder, a feeding device located above the incoming grain, and having feed-teeth corresponding to the spring-straps, and clearer-bars corresponding to the feed-teeth, said feeding device and clearer-bars being also connected with the binder so as to be adjustable therewith.

5. The combination with an adjustable binder, of a feeding device adjustable therewith and given its movement by an arm projecting from the binder-frame through the slot in one of the clearer-bars which move the teeth of the feeding device.

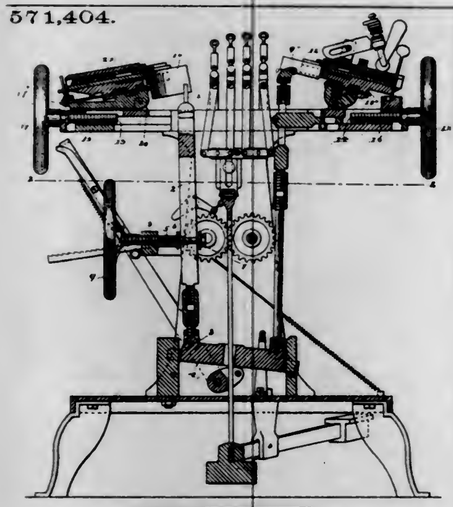
6. The combination, in a self-binding harvester, of a feeding device located at the delivery end of the platform in a plane above it, said device consisting of revolving feed-teeth, a primary receptacle above the feeding device to and into which the grain is forced and accumulated by said feeding device, a binding receptacle beyond the primary receptacle, stationary scrolls to strip the grain from the revolving feed-teeth, said scrolls forming one wall of the primary receptacle, curved guides that hold the grain on the feed-teeth and form one side of the passage way to the primary receptacle, a trip-finger located and arranged at one side of said way and extended up to form the opposite wall of the primary receptacle from the scrolls and normally separating it from the binding-receptacle, and connections between the tripping-finger and a clutch, whereby when the primary receptacle is filled with grain by the feeding devices the force to move the finger and clutch the binder is transmitted from said device through the grain in the receptacle to the trip-finger, after which the grain is transferred to the binding receptacle for binding.

7. The combination, in a self-binding harvester, of a feeding device located at the delivery end of the platform in a plane above it, a primary receptacle above the feeding device to and into which the grain is carried and accumulated by the feeding device, a trip-finger positioned at one side of the passage-way and extended up to form one wall of the primary receptacle normally separating it from the binding-receptacle, and connections between the finger and the clutch, whereby when the primary receptacle is filled with grain by the feeding device, the force to move the finger and clutch the binder is transmitted from said device through the grain in the receptacle to the finger after which the grain is transferred to the receptacle where it is bound.

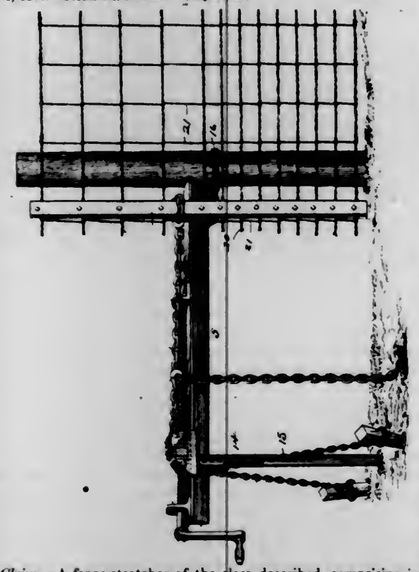
571,404. LASTING-MACHINE. WALTER SHAW, Boston, Mass. Filed Jan. 4, 1896. Serial No. 574,316. (No model.)

Claim.—In a lasting-machine, the combination of a swinging heel-pin post provided with a heel-pin; means for raising and lowering the heel-pin post; a screw engaging the heel-pin post, and mounted in a stationary bearing, substantially as and for the purpose set forth.

571,404.



571,405. FENCE-STRETCHER. GEORGE H. SHELLABERGER, De Kalb, Ill., assignor to Edward F. Shellaberger, same place. Filed Dec. 6, 1895. Serial No. 571 221. (No model.)



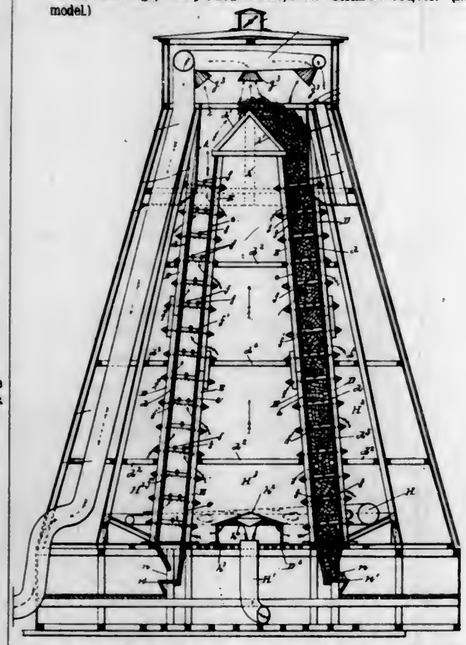
Claim.—A fence-stretcher of the class described, comprising in combination a frame block composed of a metal T-bar, a hinged leg to vertically support the outer end of said block, bearings mounted on said frame-block, a worm-shaft revolubly mounted in said bearings and having an operating handle, a traveling block mounted upon the frame and carrying a nut operatively engaged by the worm-shaft, a grapple secured to the traveling block, a clamp to be secured to the fence fabric and a chain connected to the clamp and adapted to be engaged by the grapple, substantially as described.

571,406. BICYCLE-FRAME. ARTHUR SIDWELL, Waltham, Mass., assignor to himself, and Walter Measure, Highlandville, Mass. Filed Aug. 13, 1894. Serial No. 520,182. (No model.)



Claim.—A frame-joint comprising two tubes the end of one tube engaging the wall of the companion tube; a truss formed of two plates arranged at right angles to each other and twisted spirally, said truss being inserted in said first tube with its end projecting beyond the end thereof into slots in the wall of the companion tube and the whole secured together by brazing substantially as specified.

571,407. KILN FOR DRYING KINDLING-WOOD. OTIS H. SMITH, Cambridge, Mass. Filed Mar. 25, 1896. Serial No. 584,775. (No model.)



Claim.—1. In a drying-kiln for wood, an open-work crib which holds the wood, a hot-air chamber inside of the crib and a hot-air chamber outside of the crib, a source of hot-air supply, a pipe leading from said source of supply and around the crib in the outside hot-air chambers, outlet-openings in said pipe for the hot air, a pipe leading from the hot-air supply into the inner hot-air chamber, an outlet for the hot air in the upper part of the kiln, the chambers otherwise being tight so that the hot air will pass through the wood before it reaches the outlet, substantially as described.

2. In a drying-kiln for wood, an open-work crib for the wood, a hot air chamber inside of the crib and a hot-air chamber outside of the crib, a source of hot-air supply outside of the kiln, a pipe leading from said source of supply into the outside hot-air chamber and surrounding the crib, outlet-openings in said pipe for the hot air, a pipe leading from the hot-air supply to the inner hot-air chamber, means by which the hot air is forced under pressure through the pipes into the hot-air chambers and through the wood, an outlet for the hot air in the upper part of the kiln, the chambers being otherwise tight so that the hot air will pass through the wood before reaching the outlet, substantially as described.

3. In a drying-kiln, a crib surrounded by a hot-air chamber, a pipe leading from a source of hot-air supply under pressure into said chamber and surrounding the crib, said pipe having a plurality of exit-openings and deflectors which direct the currents of hot air out of the pipe into the chamber and toward the crib, substantially as described.

4. In a drying-kiln, a crib surrounded by a hot-air chamber, a pipe leading from a source of hot-air supply under pressure into said chamber and surrounding the crib, said pipe being of gradually-decreasing diameter in that portion which surrounds the crib and having a plurality of exit-openings in its surface in different parts of the chamber, substantially as described.

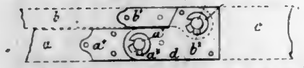
5. In a drying-kiln, a crib having a central hot-air chamber with open-work sides which form inner walls for the crib, a centrally-pointed cap surmounting said chamber, the outer walls of the crib also having open-work flaring sides, a hot-air chamber surrounding the outer walls of the crib, a hot-air generator outside of the kiln, hot-air conductors leading into the lower part of said hot-air chambers, means by which the hot air is forced under pressure into the hot-air chambers and through the mass of wood in the crib and an outlet for the hot air after it has passed through the wood, substantially as described.

6. In a drying-kiln, a crib having a central hot-air chamber with flaring open-work sides, a centrally-pointed cap surmounting said chamber, the outer walls of the crib also having open-work flaring sides, a hot-air chamber surrounding the crib, a hot air generator outside of the chambers and crib, hot air conductors leading into the lower part of said chambers, means by which the hot air is forced under pressure into the hot air chambers and through the wood in the crib, a return-pipe which conveys the air back to the bottom of the kiln, a condenser and means by which the said return air is forced into and through the condenser and hot-air generator and again into the hot-air chambers of the kiln, substantially as described.

7. In a drying-kiln a crib having open-work sides, a central air-chamber within the crib, an air chamber surrounding the crib, a hot-air generator outside of the kiln, with pipes which convey the hot air into said chambers, and openings in the pipes for the distribution of the hot air in the chambers, means by which the hot air is forced through the hot-air pipes into the chambers under pressure, an outside steam supply and a main steam-pipe having branches which lead into the hot-air pipes, a single valve in the main steam-pipe outside of the kiln controlling the admission of steam into the several branches whereby steam may be quickly admitted to the hot-air pipes and chambers and interior of the crib, substantially as described.

8. In a hot-air drying-kiln, a crib having open-work sides, hot-air chambers inside and outside of the crib, the hot air having ordinarily no escape except through the mass of wood in the crib, and ventilating-passages with dampers which can be opened to allow an extra avenue of escape for the damp air, substantially as described.

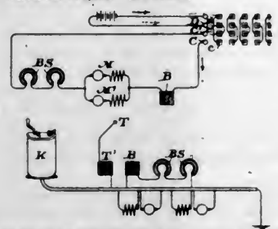
571,408. HINGE. WILLIAM SMITH, Ashton-under-Lyne, England. Filed May 28, 1896. Serial No. 593,472. (No model.)



Claim.—1. In combination, the socket-plate, and the pivot-plate, said pivot-plate being secured to the lid and the socket-plate to the frame, the said socket-plate having a pivot-opening and an opening adjacent thereto to form a stop and the pivot-plate having a pivot-pin with a projection adjacent thereto, said pivot and projection extending into the pivot-opening and stop-opening of the socket-plate, substantially as described.

2. In combination, a socket-plate fitted against the side of the seat and a pivot-plate having a pin engaging the same, said plate being fixed to the side edge of the lid and having inwardly-extending flanges a^4, to clip the lid, said flanges being in the plane of the edge of the socket plate to engage the same when the lid is thrown back and thus act as a stop for said lid, substantially as described.

571,409. ELECTRIC BRAKE. ELMER A. SPERRY, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed June 20, 1896. Serial No. 596,253. (No model.)



Claim.—1. In an electric braking apparatus comprising motors operating as generators to supply a braking-current and electromagnetic-braking devices, an auxiliary source of electromotive force independent of the motors and the trolley-current, and a device for causing the current from the auxiliary source to pass through the brake-magnets when the braking-current ceases.

2. In a brake-circuit containing a dynamo-electric machine, the combination of a storage battery with a device adapted to connect the battery in the brake-circuit in one direction for charging and in the other direction for discharging.

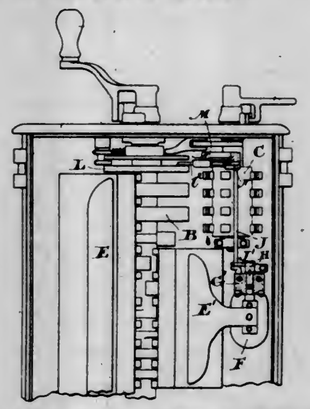
3. In an electric braking apparatus, a storage battery, and an automatic switch adapted to connect it in the brake-circuit in one direction while the motors are acting as generators, and in the other direction to discharge through the brake-circuit when the current from the motors ceases.

4. In an electric braking apparatus, a switching mechanism, oppositely-acting coils in the brake and trolley circuit, and mechanical connections between the switch and the coils.

5. An automatic switching device for a braking-circuit, comprising a cylinder with cross-connected contacts in alternately-reversed positions, fixed contacts for the braking-circuit and for the auxiliary source of electromotive force, a coil in the trolley-circuit, a coil in the braking-circuit, and means operated by the coils for rotating the cylinder.

6. A switching mechanism for use with electric braking apparatus, comprising cross-connected movable contacts, fixed contacts, coils in the brake and trolley circuit, and armatures cooperating with the coils and making mechanical connection with the movable contacts, one of the armatures working against a spring and the other having no spring.

571,410. ELECTRIC CONTROLLER. ELMER A. SPERRY, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed July 31, 1896. Serial No. 601,148. (No model.)



Claim.—1. In an electric-brake system, the combination of dynamo-electric machines used for propelling and braking purposes, a switch for limiting the current when the machines are acting as generators and braking the car, and means for insuring the opening of the limit-switch at a predetermined time.

2. In an electric-brake system, the combination of dynamo-electric machines used for propelling and braking purposes, a switch for limiting the current when the machines are acting as generators and braking the car, and means actuated by the controller-handle for positively opening the limit-switch, before the power-circuit is closed.

3. In an electric brake system, the combination of dynamo-electric machines used for propelling and braking purposes, a contact-cylinder for controlling the circuits of the machines, a cam carried by the shaft of the cylinder, and means operated by the cam for opening the limit-switch before the power-circuit is closed.

4. In a controller, the combination of an inclosing case, a contact-cylinder, a limit-switch mounted within the case, a magnet for closing the limit-switch, and means actuated by the controller-handle for opening the limit-switch before the power circuit is closed.

5. In a controller, the combination of a contact-cylinder, a limit-switch mounted on the core of a magnet, an arm for opening the switch, and a cam actuated by a movement of the controller-handle for operating the arm.

6. In a controller, the combination of a contact-cylinder adapted to establish certain relations of the brake-circuit, a blow-out magnet included in the brake-circuit, and a limit-switch for limiting the current generated by the dynamo-electric machines, when used for braking purposes, actuated by the current flowing in the coil of the blow-out magnet.

7. In a controller, the combination of a contact-cylinder adapted to establish certain relations of the power and brake circuits, a blow-out magnet included in the brake circuit, a limit-switch mounted on the core of the magnet, contacts carried by the armature of the switch adapted to close a circuit for limiting the power of the generators, and an arm for positively actuating the switch at a predetermined time.

8. In a limit-switch, the combination of an armature pivoted at its center of gravity, contacts carried by the armature, stationary contacts mounted on a support and adapted to engage with the armature-contacts, a magnet for operating the armature, and an arm positively actuated for insuring the opening of the circuit.

571,411. CLEANER FOR FLOUR-BOLTS. FRANK R. STITZEL, Loudonville, Ohio. Filed Jan. 7, 1896. Serial No. 574,585. (No model.)



Claim.—1. The combination with a flour bolt or reel, of a knocker to strike the same smartly, and an actuating-cam mounted upon a shaft to rotate therewith in one direction and to remain stationary upon the turning of the said shaft in a reverse direction, substantially as set forth for the purpose described.

2. The combination with a flour bolt or reel, of a pivotally-supported knocker to strike the same smartly, a tappet adjustably connected with the knocker, and an actuating-cam to engage with the tappet for operating the knocker and mounted upon a shaft to rotate therewith in one direction and to remain stationary upon the turning of the shaft in an opposite direction, substantially as set forth.

3. The combination with a flour bolt or reel, of a knocker for striking the sides thereof, a shaft, a ratchet-wheel secured upon the shaft a cam mounted upon the ratchet-wheel and adapted to engage with and operate the knocker, and a pawl carried by the cam and adapted to engage with the teeth of the ratchet-wheel, substantially as and for the purpose set forth.

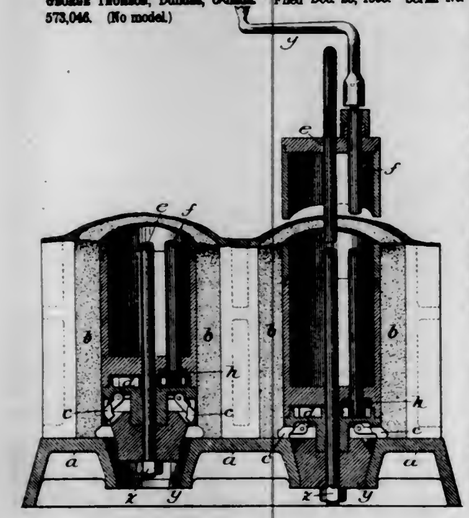
4. The combination with a flour bolt or reel, of a knocker, arms secured at one end to the knocker and pivotally supported at their opposite end, a tappet having adjustable connection with the knocker, a shaft adapted to be driven by the flour-bolt-actuating mechanism, a ratchet-wheel secured upon the shaft, a cam mounted upon the ratchet-wheel so as to turn loosely thereon, a pawl attached to the cam and adapted to take into the teeth of the ratchet-wheel to secure the cam against rotation in one direction, and a spring for holding the free end of the pawl in engagement with the teeth of the ratchet-wheel, substantially as and for the purpose set forth.

571,412. NECK-YOKE. JOHN H. STORCH, Wetona, Pa. Filed Aug. 26, 1895. Serial No. 560,472. (No model.)



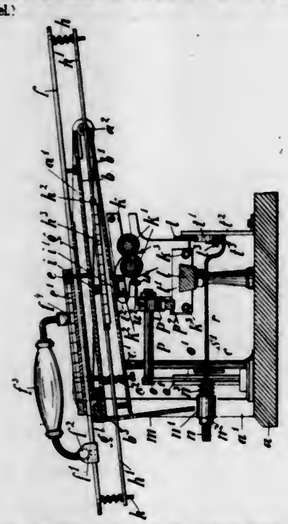
Claim.—The combination with a neck-yoke provided in its middle part with two sides defining a cleft or spaces therein, of bearing-plates upon the opposite sides a bearing-thimble in each of the plates, a ring, trunnions upon opposite sides of the ring adapted to enter the thimbles, respectively, and an inwardly-opening recess in the side of the ring in alinement with the longitudinal axis of the yoke, substantially as set forth.

571,413. IRON-PIPE PATTERN. JAMES THOMSON, Hamilton, and GEORGE THOMSON, Dundas, Canada. Filed Dec. 23, 1895. Serial No. 573,046. (No model.)



Claim.—A mechanical device to be attached to the foot or lower end of iron-pipe patterns to form a mold or matrix for the bead consisting of one, two or more slicks or slickers *c c*, each so connected by a hinge to the under side of a plate or gearing *d d*, revolving around the axis of a pipe-pattern, that when the pattern is suspended perpendicularly, the slicks of their own weight fall to such a position, that their outermost point is within the lines of the external surface of the pattern, but which when the pattern is resting on its end, project beyond the line of the pattern, and can be made to revolve in that position by means of a crank *g*, rod *f*, and pinion *h* acting on the plate or gearing to which the slicks are hinged, such slicks being so shaped at their projecting ends, as to excavate in the sand a mold or matrix for a pipe-beading; all substantially as above set forth.

571,414. TYPE-WRITING MACHINE. RICHARD TOEPPER, Naumburg-on-the-Saale, Germany. Filed Oct. 10, 1895. Serial No. 565,287. (No model.)



Claim.—1. A type-writing machine such as described, comprising means for effecting different lengths of spacing movements of the paper-carriage and consisting of a plate *m*, provided with a plurality of recesses and operating-faces, the bolt *n* actuated by said plate, the angle-lever *o*, the pawl *p'*, connected therewith, the rack-bar p^3, the spring *q'* for actuating the lever *o*, the length of so many teeth moved by the paper-carriage being governed by the projecting faces of the said plate, substantially as described.

2. A type-writing machine such as described in combination with a movable paper-carriage, a pawl *p'* connected therewith, a rack-bar p^3, connected with the frame of the machine, a bar *u* having inclined ends u^3 and u^4 supported in frame *k*, and having a slit *u'* for guidance of the finger u^2 connected with pawl *p'* and for disengaging said pawl from the rack, substantially as described.

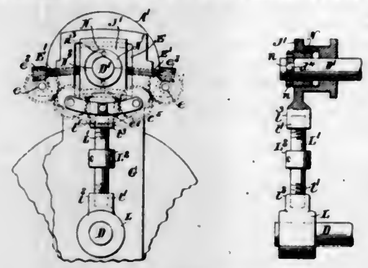
3. A type-writing machine such as described, comprising means for effecting the feed of the paper carriage, consisting of a vertically-movable plate, an angle-lever *o*, pawl *p'* rack-bar p^3, bolt *n*, bar extension *r* and second rack-bar *t* with its pawl *t'*, pivot t^3, spring t^4 and loop t^5, all combined and arranged for joint operation, substantially as described.

4. A type-writing machine of the class described, comprising the base and angular end-frame plates, the top and bottom plates hinged to said frame-plates, the adjustable columns *c*, the paper rolls *k'*, supported upon a movable carriage, and a presser-arm frame adapted to move upon said carriage and carrying index and type boards all combined to operate, substantially as described.

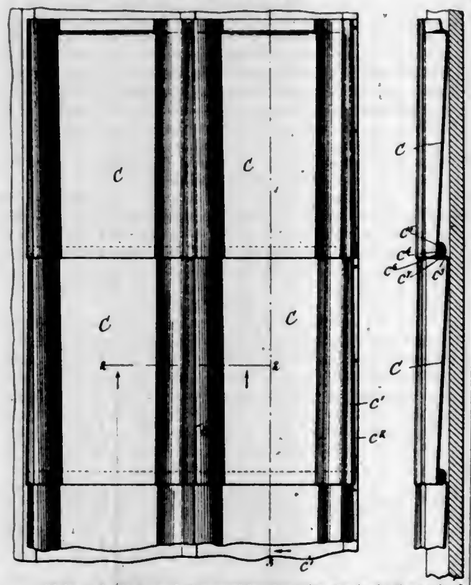
571,415. PRINTING-MACHINE. WILLIAM H. R. TOYE, Philadelphia, Pa., assignor to himself and Robert P. Brown and Edward L. Bailey, same place. Filed Jan. 22, 1894. Serial No. 497,617. (No model.)

Claim.—1. The combination with a pair of cylinders constituting a printing-couple, of journal-boxes in which the supporting-shaft of the form-cylinder turns, bolts adapted to engage with each side of both journal-boxes and retain them in position and means for operating all the bolts simultaneously and equally to adjust the cylinder as described.

2. The combination with two cylinders constituting a printing-couple of journal-boxes J' in which the supporting-shaft of the form-cylinder turns, said boxes having an internally-threaded outer end as d^5 and split sleeves N screwing on the ends of the boxes J' and connected with the roll-shaft so as to cause it to move longitudinally with them.



571,416. ROOF. WILLIAM W. TURNER, Chicago, Ill. Filed Feb. 23, 1895. Serial No. 539,347. (No model.)



Claim.—1. In a roof, the combination with the body thereof, of a series of plates, each having on one edge a flange formed by doubling the metal on itself and a nail-strip projecting beyond, the engaging edge of the adjacent plate having a turned-up edge to engage under said flange, both said flange and turned-up edge being of circular shape in cross-section and concentric with each other, whereby the circular turned-up edge may be coiled within the circular flange and thus establish an extended bearing or contact between the plates, substantially as described.

2. In a roof, the combination with the body thereof, of a series of plates, each having on one edge a flange formed by doubling the metal on itself and a nail-strip projecting beyond, the engaging edge of the adjacent plate having a turned-up edge to engage under said flange, both said flange and turned-up edge being of circular shape in cross-section and concentric with each other, whereby the circular turned-up edge may be coiled within the circular flange and thus establish an extended bearing or contact between the plates, and a wooden strip resting on the body of the roof and located immediately below the engaging seam between the two plates, said flat portion of the plate resting on the body of the roof, substantially as described.

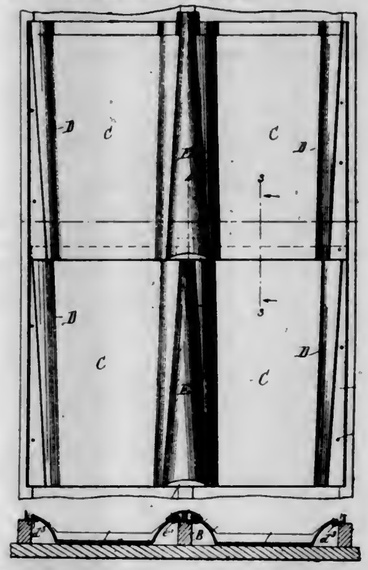
3. A sheet-metal section for a roof having one end turned up, as at c^3 and outward, as at c^4, while the other end is doubled downward on itself, provided with a flange c^5 and turned down slightly as at c^7, substantially as described.

4. A sheet-metal section for a roof having one end turned upward as at c^3, outward as at c^4, and upward as at c^5, while the other end is doubled upon itself and provided with a flange c^6 and the edge turned downward as at c^7, substantially as described.

5. A metal sheet for a roof having one end turned upward as at c^3, outward as at c^4 and upward as at c^5, the other end doubled upon itself and having the flange c^6 and turned downward as at c^7, one longitudinal edge provided with a curved flange *c* while the other edge is provided with the curved flange *c'* and horizontal portion c^2, substantially as described.

6. The combination in a roof of two sheets or sections engaged together by an interlocking seam, one sheet provided with a curved flange *c'* and horizontal portion c^2, while the other sheet is provided with a curved flange *c* of substantially the same curvature as the flange *c'* which when engaged to the adjacent sheet projects beyond the center of the arch formed by the flange *c'* and thus holds the inner faces of the flanges *c c'* together, substantially as described.

571,417. ROOF. WILLIAM W. TURNER, Chicago, Ill. Filed Feb. 23, 1895. Serial No. 539,348. (No model.)



Claim.—1. In a roof the combination with the body thereof of a series of sheets engaged to said body, the longitudinal edge of each sheet being bent to form a longitudinal groove, and said edge being engaged to the body of the roof adjacent to the longitudinal edge of the next sheet and a locking and covering strip for covering said adjacent edges, said locking-strip provided on its under side with flanges which engage in the recesses of the respective sheets and thus cover the latter, substantially as described.

2. In a roof the combination with the body thereof provided with longitudinal strips of a series of sheets having their edges bent upward to a point above the strip on the roof, each edge bent upon itself to form a longitudinal recess on the under side and to form a horizontal nailing portion, each edge together with the edge of the adjacent sheet being engaged to the strip by nailing or otherwise to said longitudinal portion, and a covering-strip provided with flanges on its under side adapted to simultaneously engage in a recess on each of the adjacent sheets, substantially as described.

3. In a roof the combination with the body thereof provided with longitudinal strips of a series of sheets having their edges bent upward to the heights of the strip on the roof, each edge bent on itself to form a longitudinal recess which opens away from the body of the sheet, and a covering-strip provided with flanges on its under side adapted to substantially engage in a recess on each of the adjacent sheets, substantially as described.

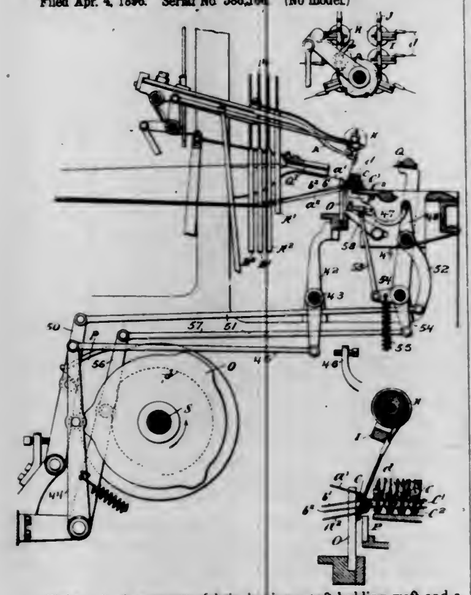
4. In a roof the combination with the body thereof and the longitudinal strips thereon of a series of metal sheets, the longitudinal edges of which are curved upward to the height of the strip, each longitudinal edge being bent upon itself and then extended outward thus forming a recess and a covering strip of concavo convex shape provided on the concave side with two longitudinal ridges or flanges adapted to engage simultaneously in the recesses of the adjacent edges of the sheets, substantially as described.

5. In a roof the combination of two or more sheets each having its longitudinal edges doubled upon them so as to form outwardly-opening recesses, tapered from top to bottom, and a locking-strip, having flanges on the under side to engage said recesses, said strip correspondingly tapered from a wide base to a narrowed top, substantially as described.

6. A metallic sheet for a roof consisting of a flat portion having each longitudinal edge turned upward and outward, each extreme edge doubled upon itself and extended outwardly, the lower end doubled upon itself and extended outwardly a short distance, the upper end bent upward and outward, substantially as described.

7. A metal sheet for a roof consisting of a horizontal portion having each longitudinal edge curved upward and outward, each extreme edge doubled upon itself and extended outwardly and upwardly, the lower end doubled upon itself and extended outwardly a short distance, the upper end bent upward and outward, and then upward slightly and the lower finished end turned slightly downward, substantially as described.

571,418. MOQUETTE FABRIC AND MOQUETTE-LOOM. EUGENE TYNDSON, Yonkers, N. Y., assignor to Warren B. Smith, same place. Filed Apr. 4, 1896. Serial No. 586,166. (No model.)



Claim.—1. A moquette fabric having a tuft-holding weft and a plurality of tuft binding or body wefts to each row of tufts within a single shed of some of the warps and with the binding or body wefts separated from each other and from the tuft-holding weft by other warps, substantially as described.

2. A moquette fabric having the warps arranged in sets of binding and dividing warps, and having a tuft-holding weft and a plurality of tuft-binding or body wefts to each row of tufts within a single shed of the binding-warps and with the binding or body wefts separated from each other and from the tuft-holding weft by the dividing-warps, substantially as described.

3. A moquette fabric having the warps arranged in sets of binding and dividing warps, and having a tuft-holding weft and a plurality of tuft-binding or body wefts to each row of tufts within a single shed of the binding-warps and with the binding or body wefts separated from each other and from the tuft-holding weft by the dividing-warps, said dividing-warps running straight through the fabric so as to lie between corresponding wefts for the successive rows of tufts, substantially as described.

4. A moquette fabric having binding and dividing warps and having a row of tufts for each three wefts, and having the three wefts for each row of tufts within a single shed of the binding-warps and consisting of a tuft-holding and two tuft-binding or body wefts with the binding or body wefts separated from each other and from the tuft-holding weft by dividing-warps, substantially as described.

5. In a loom for weaving moquette fabrics, the combination with means for inserting the tufts, a weft-carrier, and warp-heddles, of means for actuating the weft-carrier and heddles to insert a tuft-holding weft and a plurality of tuft-binding or body wefts to each row of tufts within a single shed and to shift the warps to form a single shed of some of the warps inclosing all of said wefts and to separate each of said wefts from the other wefts by other warps, substantially as described.

6. In a loom for weaving moquette fabrics, the combination with means for inserting the tufts, a weft-carrier, and binding and dividing warp-heddles, of means for actuating the weft-carrier and heddles to insert a tuft-holding weft and two tuft-binding or body wefts to each row of tufts within a single shed and to shift the binding warps to form a single shed inclosing all of said wefts and to shift the dividing-warps to separate each of said wefts from the other wefts, substantially as described.

7. In a loom for weaving moquette fabrics, the combination with means for inserting the tufts, a weft-carrier, lay, comb, and warp-heddles, of means for actuating the weft-carrier and heddles to insert a tuft-holding weft and a plurality of tuft-binding or body wefts to each row of tufts within a single shed and to shift the warps to form a single shed of some of the warps inclosing all of said wefts and to separate each of said wefts from the other wefts by other warps and means for operating the lay and comb to hold the comb against the successive rows of tufts during the insertion and beating up of one or more binding or body wefts, and to beat up one or more binding or body wefts against the comb substantially as described.

8. In a loom for weaving moquette fabrics, the combination with means for inserting the tufts, a weft-carrier, lay, comb, and binding and dividing warp-heddles, of means for actuating the weft-carrier and heddles to insert a tuft-holding weft and two tuft-binding or body wefts to each row of tufts and to shift the binding-warps to form a single shed inclosing all of said wefts and to shift the dividing-warps to separate each of said wefts from the other wefts, and means for operating the lay and comb to hold the comb against the successive rows of tufts during the insertion and beating up of two binding or body wefts, and to beat up each of said two binding or body wefts against the comb substantially as described.

9. In a loom for weaving moquette fabrics, the combination with the lay, comb, weft-carrier, heddles and means for inserting the tufts, of means for actuating the heddles and weft-carrier, and means for actuating the lay and comb to hold the comb against the successive rows of tufts during the insertion and beating up of one or more tuft-binding or body wefts and to beat up one or more tuft-binding or body wefts against the comb, substantially as described.

10. In a loom for weaving moquette fabrics, the combination with the lay, comb, weft-carrier, heddles, and means for inserting the tufts, of means for actuating the heddles and weft carrier to insert a tuft-holding weft and two tuft binding or body wefts to each row of tufts, and means for actuating the lay and comb to hold the comb against the successive rows of tufts during the insertion and beating up of one or more tuft-binding or body wefts, and to beat up one or more tuft-binding or body wefts against the comb substantially as described.

571,419. PROCESS OF MANUFACTURING HOODS OR MANTLES FOR INCANDESCENT GAS-BURNERS. WILLIAM L. VOELKER, Elizabeth, N. J., assignor to the Consolidated Sterling Incandescent Gas Lamp Company, of New Jersey. Filed May 22, 1896. Serial No. 592,664. (No specimens.)

Claim.—The process hereinbefore described of manufacturing hoods or mantles for incandescent gas lights consisting in partially drying the hood or mantle, and then introducing it into a closed furnace and there exposing it at once to an intense temperature, whereby the hot air of the furnace acts as a die on the hood or mantle, and the same bakes before it can distort.

571,420. COMMUTATOR-BRUSH. ALDRED K. WARREN, New Brighton, N. Y. Filed May 15, 1896. Serial No. 591,696. (No model.)



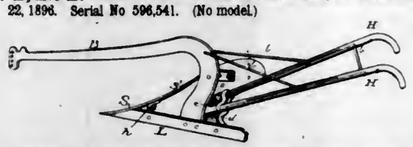
Claim.—1. The combination of a commutator-brush of material adapted to rub on a commutator, an extension piece of similar cross-section to the brush, and means for fastening the brush and extension together.

2. The combination of a commutator-brush of yielding or fragile material, the outer end thereof being reinforced, an extension-piece fitted thereto, and means securing the brush and extension together.

3. The combination of a commutator-brush of yielding or fragile material, the outer end being made solid or reinforced, said end being reduced and perforated transversely, an extension fitted to the reduced end, and a bolt or pin passing through said perforation for holding the brush and extension together.

4. The combination of a brush A, having a solid portion D, a reduced end C, and a hole E in the solid part, and an extension-piece F, having arms G, the inner sides of which are grooved to fit end C, and bolt I passing through arms G and end C.

571,421. PLOW. CHARLES E. WHITE, Monmouth, Ill. Filed June 22, 1896. Serial No. 596,541. (No model.)

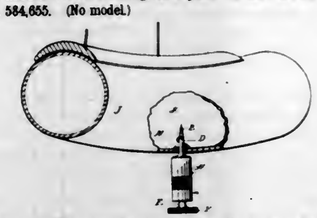


Claim.—1. In combination in a plow, the pair of handles and a plate carried to said plow having sockets in the face thereof to receive the handles and a clamping-plate having corresponding sockets therein and means for securing said plates together, substantially as described.

2. In combination, in a plow, the pair of handles, the stationary plate carried thereby having sockets in the face thereof to receive said handles, an independent clamping-plate having corresponding sockets, and a bolt extending centrally of said plates between the sockets for clamping said plates together, substantially as described.

3. In a walking ground-plow, the combination of the handles H H', socket-plate *d* and clamp *c*, with the share S, landside L, and beam B.

571,422. NEEDLE FOR REPAIRING PUNCTURED BICYCLE-TIRES WITH CEMENT. CHARLES F. WHITE, Denver, Colo., assignor of one-third to Robert Gerwing, same place. Filed Mar 24, 1896. Serial No. 584,655. (No model.)



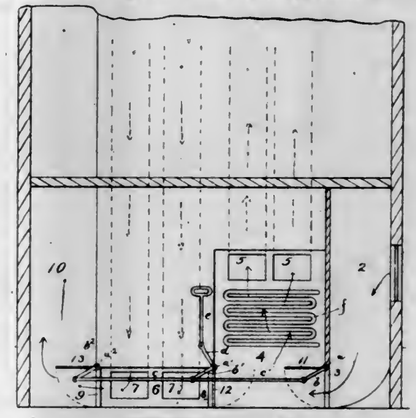
Claim.—1. The combination in a needle for mending punctured tires with liquid cement of an instrument having a solid integral, tapering point, an eye or opening in or transversely through said point adjacent to its end, a cement-chamber in the needle communicating with said eye and adapted to hold the cement, a plunger having a piston fitted in said chamber, a cap detachably secured to said needle, a threaded hole through said cap, a threaded stem on said plunger adapted to the threaded cap, and a head or knurled disk on the stem of the plunger, as set forth.

2. The combination in a needle for mending punctured tires with liquid cement of an instrument having a solid point an eye in said point adjacent to its end, a chamber in the needle extending from its head to its eye, one or more steps of different diameters adjacent to said point and blending therefrom in increased diameter and in successive order adapted for various sizes of punctures, a plunger having a piston fitted to reciprocate in said chamber, a stem on said plunger, a head or knurled finger-disk on said stem, a cap secured to the head of said needle against displacement and arranged to extend above it, a diametrical opening through the side of said cap above the needle adapted for a cement-inlet to the chamber in the needle and a hole in said cap adapted to fit the stem of said plunger.

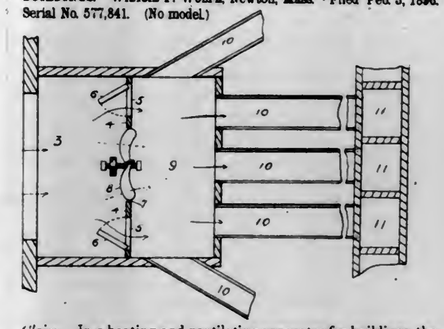
571,423. HEATING AND VENTILATING APPARATUS. WILTSIE F. WOLFE, Newton, Mass. Filed May 16, 1895. Serial No. 549,524. (No model.)

Claim.—1. In a heating and ventilating apparatus, the combination with a heating chamber and ventilating-chamber, provided with an intermediate communicating opening and with openings in their outside walls, of valves controlling said openings, and mechanism connecting said valves in such manner as to open the valves in the outside openings and to close the valve controlling the intermediate opening and vice versa, flues communicating with the heating-chamber and ventilating-chamber, respectively, and heating means within the heating-chamber.

2. The combination with a heating-chamber, and a ventilating-chamber, and an intermediate partition, of valve-openings in the intermediate partition and in the outside walls of the chambers, respectively, valves controlling said openings, levers secured to said valves, and a connecting-rod pivotally secured to each of said levers, the valves, levers and rod being so related that the valves controlling the openings in the outside walls will be opened simultaneously with the closing of the intermediate valve and vice versa, flues communicating with each of said chambers and designed to communicate with a compartment and heating means within the heating-chamber.

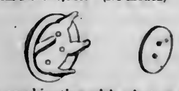


571,424. HEATING AND VENTILATING APPARATUS FOR BUILDINGS. WILTSIE F. WOLFE, Newton, Mass. Filed Feb. 3, 1896. Serial No. 577,841. (No model.)



Claim.—In a heating and ventilating apparatus for buildings, the combination, substantially as described, of a chamber; a partition in the same dividing the chamber into two compartments; ducts for admitting the outer air into one compartment; ducts forming communication between the apartments to be ventilated and the other compartment; valves in the partition to admit air from one side of the partition to the other and capable of being opened or closed, and apparatus located in said partition for forcing the air from the outer to the inner compartment of the chamber.

571,425. BUTTON. JEANIE F. WOOD, Hoboken, N. J. Filed Jan. 20, 1896. Serial No. 576,149. (No model.)

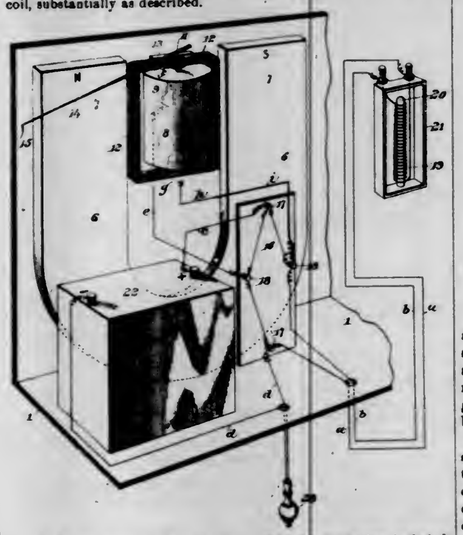


Claim.—The combination with a button provided with a flexible plate which is secured to the under side thereof, on which are formed projections or arms, of a disk which is adapted to be secured to a garment, and said button being adapted to be connected with or detached from said disk, by bending the arms or projections connected with the plate, which is secured thereto, substantially as shown and described.

571,426. ELECTRIC THERMOMETER. MICHAEL A. AGELASTO, Norfolk, Va. Filed May 8, 1896. Serial No. 590,722. (No model.)

Claim.—1. In an electric thermometer, a Wheatstone bridge included in a battery-circuit and having one of its resistance-coils isolated at a remote point to form a thermostatic coil, a suitably-arranged scale, a stationary permanent magnet having oppositely-arranged poles, a dead-beat helix or coil pivotally suspended from a

fixed point of balance between the poles of the permanent magnet and having circuit-wire connections with the bridge, and a pointer moving over the scale and fitted directly to the dead-beat helix or coil, substantially as described.



2. In an electric thermometer, a Wheatstone bridge included in a battery-circuit and having one of its resistance-coils isolated at a remote point to form a thermostatic coil, a suitably-arranged scale, a stationary permanent magnet having oppositely-arranged poles, a stationary metallic core supported between the poles of the permanent magnet, a pivotally-suspended helix loosely encircling the core between the poles of the permanent magnet and carrying a pointer, and circuit-wire connections between said helix and the Wheatstone bridge, substantially as set forth.

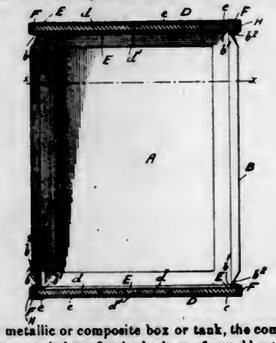
3. In an electric thermometer, a Wheatstone bridge included in a battery-circuit and having one of its resistance-coils isolated at a remote point to form a thermostatic coil, a suitably-arranged scale, a stationary permanent magnet having oppositely-arranged poles, a stationary metallic core supported between the poles of the permanent magnet, a pivotally-suspended helix loosely encircling the core and carrying a pointer, circuit-wire connections between the helix and the bridge, and a readjusting-bar magnet fitted on the helix between the opposite poles of the permanent magnet, substantially as set forth.

4. In an electric thermometer, a case or box provided with an enlarged upper portion having a glass-covered open front side, a curved scale-plate fitted within the front side of the upper portion of the case, a Wheatstone bridge arranged in the case and included in a battery-circuit, one of the resistance coils of the bridge being isolated at a remote point to form a thermostatic coil, and a magnetically-influenced movable body having circuit-wire connections with the bridge and carrying a pointer provided with a finger moving over the top edge of the scale-plate, substantially as set forth.

5. In an electric thermometer, a Wheatstone bridge included in a battery-circuit and having one of its resistance coils isolated at a remote point to form a thermostatic coil, a suitably-arranged scale, a stationary permanent magnet having oppositely-arranged poles, a stationary metallic core supported between the poles of the magnet and provided at its upper end with a short pivot-pin, a movable dead-beat helix loosely encircling the stationary core between the poles of the permanent magnet and carrying centrally at its upper side a bearing cup or socket loosely turning on said short pivot pin, circuit-wire connections between the two terminals of the helix and two opposite terminals of the bridge, a readjusting bar magnet fitted on the upper side of the helix, and a pointer attached to the helix, substantially as set forth.

571,427. METALLIC OR COMPOSITE BOX. HENRY J. S. BROWN, Cambuslang, Scotland, assignor to the Acme Package Company, Limited, Bridgeton, Glasgow, Scotland. Filed Mar. 24, 1896. Serial No. 584,610. (No model.) Patented in England Oct. 16, 1891, No. 17,697.

Claim.—1. In a metallic or composite box or tank, the body portion consisting of a single metallic sheet bent into box form and having ledges at its sides, the ends of said sheet bent to lie parallel and secured together by means of a U-shaped bar and strips or keys fitted between said parallel ends of the sheet and engaging the U-shaped bar and sheet, substantially as set forth.



2. In a metallic or composite box or tank, the combination with a body portion consisting of a single sheet of metal bent into box form and dished or paneled and having its ends suitably joined together and ledges at the edges of the sheet, one of the ends of the boxes resting on said ledges and bands of metal bent into channel form to grip both the ends of the boxes and the supporting-ledges on the body, substantially as set forth.

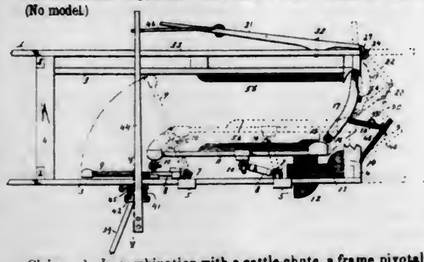
3. The combination with a single sheet of metal B bent into box shape and provided with ledges for supporting the ends of the box, the ends of said sheet being bent up to lie parallel with each other, of the U-shaped bar C formed with inward-turned ends, and the strips or keys *c* fitted between the parallel bent ends of said sheet, one end of each of said keys entering the turned-in edges of the bar C and their other ends bent over against the sheet B, substantially as set forth.

4. The combination with the body of the box or tank having grooved supporting-ledges formed on its edges, of the ends D supported on the ledges of the body, the metal bands F bent into channel form and adapted to grip the edges of the ends D and the grooves of the supporting-ledges and means for securing said metal bands in place, substantially as set forth.

5. The combination with the body of the box or tank consisting of a single sheet of metal B dished and paneled, as shown, and bent into box form and provided with end supporting-ledges, of the wooden end D supported on the ledges of the body, the inner covering metal sheet E, and the metallic band F bent into channel form around the corners of the box and adapted to grip both the end D and the groove of the supporting-ledge, substantially as set forth.

6. The combination with the body of the box or tank consisting of a single metallic sheet dished and paneled and having supporting-ledges on its edges, of the wooden end D supported on the ledges of the body B and provided with a bar or band *d*, metal sheet E covering the inner surface of the end D and metallic band F bent into channel form around the corners of the box and gripping the end D and the groove in the ledges of the body, and metal strip H soldered to the side of the box to secure the metal band in place, substantially as set forth.

571,428. BRANDING AND DEHORNING DEVICE. QUALLS BRUTON, Kansas City, Kans. Filed Mar. 6, 1896. Serial No. 582,157. (No model.)



Claim.—1. In combination with a cattle-chute, a frame pivotally linked to one side of and within said chute, a yoke-frame pivotally connected to the front end of the first-named frame and detachably connected to the front end of the opposite side of the chute, which will yield when pressure is applied thereon by a steer and will consequently cause the inward movement of said first-named or swinging frame so as to clamp the steer more tightly between the same and the opposite side of the chute, and means to lock the swinging frame in such position, substantially as described.

2. In combination with a cattle-chute, a frame pivotally linked to one side of and within said chute, a yoke-frame pivotally connected to the front end of the first-named frame and detachably connected to the front end of the opposite side of the chute, which will yield when pressure is applied thereon by a steer and will consequently cause the inward movement of said first-named or swinging frame so as to clamp a steer tightly between the same and the opposite side of the chute, means to lock the swinging frame in such position, and downwardly converging longitudinal bars securing the opposing sides of said frame of the chute in order to keep the steer upon his feet.

3. In combination with a cattle-chute, gates hinged to the inner side of the same, an extension for one of said gates, a longitudinal frame hinged to said gates and adapted by their movement to approach or recede from the opposite side of the chute, and a yoke-frame hinged to the front end of said longitudinal frame and detachably connected to the opposite side and front end of the chute whereby, when a steer comes against it it will yield and cause the longitudinal frame to move inward and the gate extension to close the rear end of the passage behind the steer, substantially as described.

4. In combination with a cattle-chute, gates hinged to the inner side of the same, an extension for one of said gates, a longitudinal frame hinged to said gates and adapted by their movement to approach or recede from the opposite side of the chute, a yoke-frame hinged to the front end of said longitudinal frame and detachably connected to the opposite side and front end of the chute whereby, when a steer comes against it it well yield and cause the longitudinal frame to move inward and the gate extension to close the rear end of the passage behind the steer, and means which lock said longitudinal frame and gate extension at any point in their adjustment.

5 In combination with a cattle-chute, gates hinged to the inner side of the same, an extension for one of said gates, a longitudinal frame hinged to said gates and adapted by their movement to approach or recede from the opposite side of the chute, a yoke-frame hinged to the front end of said longitudinal frame and detachably connected to the opposite side and front end of the chute whereby, when a steer comes against it it will yield and cause the longitudinal frame to move inward and the gate extension to close the rear end of the passage behind the steer, and means which lock said longitudinal frame and gate extension at any point in their adjustment, and means to trip said locking mechanism, and release the yoke-frame from its connection with the opposite side of the chute; whereby the steer may readily and easily escape from the chute.

6. In combination with a cattle-chute, gates hinged to the inner side of the same, an extension for one of said gates, a longitudinal frame hinged to the front end of said frame and bridging the front or discharge end of the chute; a yoke-frame hinged to the front end of said longitudinal frame, said yoke frame comprising essentially an upper bar having a sliding pivotal connection with the opposite side and front end of the chute, a lower bar, and a link pivotally connected at one end to the front end of the opposite side of the chute and pivoted at its opposite end to said lower bar, so as to provide at this point a break-joint or yielding connection whereby when a steer protrudes his head through the yoke-frame and presses firmly against the same such joint will first yield or break and will thereby cause the longitudinal frame to clamp the steer firmly in position, substantially as described.

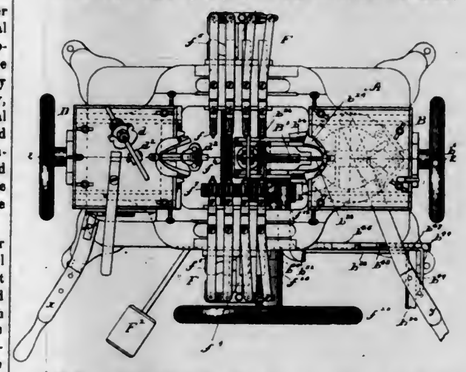
7. In combination with a cattle-chute, gates hinged to the inner side of the same, one of them having an extension, longitudinal frame hinged to the front end of said frame and bridging the front or discharge end of the chute; a yoke-frame hinged to the front end of said longitudinal frame, said yoke-frame comprising essentially an upper bar, a lower bar, and the link connected to said lower bar and provided at its opposite end with an eye, eyebolts projecting from the front end of the opposite side of the chute above and below the points of intersection of sides with the upper bar and the link and the yoke-frame, a lever, vertical bolts carried thereby and engaging said eyebolts outward of the upper bar so as to provide a sliding pivotal connection with the same, and engaging the eye and the link so as to provide a fixed pivotal connection with the same, substantially as described.

8. In combination with a cattle-chute, gates hinged to the inner side of the same, one of them having an extension, longitudinal frame hinged to the front end of said frame and bridging the front or discharge end of the chute; a yoke-frame hinged to the front end of the longitudinal frame, said yoke-frame comprising essentially an upper bar, a lower bar, and the link connected to said lower bar and provided at its opposite end with an eye, eyebolts projecting from the front end of the opposite side of the chute above and below the points of intersection of sides with the upper bar and the link and the yoke-frame, a lever, vertical bolts carried thereby and engaging said eyebolts outward of the upper bar so as to provide a sliding pivotal connection with the same, and engaging the eye and the link so as to provide a fixed pivotal connection with the same, a rack bar pivotally connected to one of said gates and engaging a rod or shoulder secured to the chute, a trip-plate pivoted below the same, a lever pivoted upon the chute and linked to said trip-plate and also to the first-named lever, whereby when the latter is operated the bolts are withdrawn from their engagement with the eyebolts, and the trip-plate lifts the rack-bar from engagement with said rod or shoulder simultaneously, substantially as described.

9 In combination with a chute having an opening, gates hinged to the inner side of the chute at opposite sides of said opening, an extension for one of said gates, a swinging frame carried by said gates, a yoke-frame pivotally connected to the front end of said swinging frame and loosely and detachably connected to the front end and opposite side of the chute, and means to disconnect said yoke-frame from the front end of the chute, substantially as described.

10. In combination with a chute having an opening, gates hinged to the inner side of the chute at opposite sides of said opening, one of them provided with an extension, a swinging frame carried by said gates, a yoke-frame pivotally connected to the front end of said swinging frame and pivotally and detachably connected to the front end and opposite side of the chute, a bar hinged to the front end of the chute at the side occupied by the swinging frame, a link-bar pivotally connecting the same with the lower bar of the yoke-frame, and a rope for engagement round the neck of the steer, in order to secure him firmly in the desired position for dehorning purposes, substantially as described.

571,429. LASTING-MACHINE. FRANK CHASE, Waterville, Me., assignor to the Chase Lasting Machine Company, Portland, Me, and Boston, Mass. Filed Sept. 23, 1895. Serial No. 563,454. (No model.)



Claim.—1. The herein-described improvement in lasting-machines, consisting in the combination of a leather-stretching mechanism and a toe-lasting mechanism with a reciprocating heel-clamping mechanism which automatically grips and holds the last rigidly by the heel prior to operation of the leather-stretching and toe-lasting mechanisms, substantially as and for the purpose set forth.

2. The herein-described improvement in lasting machines, consisting in the combination of a leather-stretching mechanism with a reciprocating, sidewise-rocking toe-lasting mechanism and a reciprocating heel-clamping mechanism having no sidewise-rocking movement, substantially as and for the purpose set forth.

3. The herein described improvement in lasting-machines, consisting in the combination of a leather-stretching mechanism; a toe-support; means for holding the toe-support yieldingly toward the heel-post; a heel-post, and a heel-clamping mechanism, substantially as and for the purpose set forth.

4. The herein-described improvement in lasting-machines, consisting in the combination of a reciprocating heel-clamping mechanism and a heel-post connected therewith, the heel-post having, in respect to the said mechanism, an initial movement toward the same, substantially as and for the purpose set forth.

5. The herein-described improvement in lasting-machines, consisting in the combination of a reciprocating heel-clamping mechanism with a movable heel-post and connections to move the heel-post inwardly when the heel-clamping mechanism is moved outwardly and outwardly when the heel-clamping mechanism is moved inwardly, substantially as and for the purpose set forth.

6. The herein described improvement in lasting machines, consisting in the combination of a heel-clamping mechanism with a heel-pin post which has a back-and-forth motion between the heel and toe lasting mechanisms and a vertically-reciprocating motion, with means

which prevent the heel-pin post from moving sidewise transversely, substantially as and for the purpose set forth.

7. The herein-described improvement in lasting-machines, consisting in the combination of a heel-clamping mechanism with a movable heel-pin post and a yielding support for the heel-pin post at the front and back thereof, substantially as and for the purpose set forth.

8. The herein-described improvement in lasting-machines, consisting in the combination of a reciprocating heel-clamping mechanism the inner end of which is tiltable on transverse bearings but which is rigid during its inward movement, with a reciprocating sidewise rockable toe-lasting mechanism the inner end of which is tiltable on transverse bearings, substantially as and for the purpose set forth.

9. For lasting and other machines, the herein-described pad-support having longitudinally split ends, substantially as and for the purpose set forth.

10. For lasting and other machines, the herein-described pad-support having split ends in combination with split links, substantially as and for the purpose set forth.

11. For lasting and other machines, the herein-described pad-support having split ends; split links connected therewith, and a pivotally-attached guide-bar for each set of split links, substantially as and for the purpose set forth.

12. For lasting and other machines, the herein described pad-support having a flexible body portion and longitudinally split ends, substantially as and for the purpose set forth.

13. In a lasting-machine, the combination of a pad with a pad-support having independently-movable longitudinal sections at each end, substantially as and for the purpose set forth.

14. In a lasting-machine, the combination of a pad with a pad-support an end of which has a plurality of inward-moving longitudinal sections, substantially as and for the purpose set forth.

15. In a lasting-machine, the combination of a driving-gear; a pawl to prevent back motion thereof; rising and falling leather-stretching mechanism; and means which connect the pawl with said mechanism to lift the pawl out of connection with the gear when said mechanism is lifted, substantially as and for the purpose set forth.

16. In a lasting-machine, the combination of a reciprocating heel-clamping mechanism with a lever pivotally connected therewith; a movable heel pin post; an arm pivotally connected with the heel-pin post and with said lever, to move the heel pin post inwardly, substantially as set forth.

17. In a lasting-machine, the combination of a reciprocating heel-clamping mechanism with a lever pivotally connected therewith and provided with a lug; a heel-pin post; a rack-arm pivotally connected with the heel-pin post and engaged by said lug, whereby the said post is moved backwardly when the heel-clamping mechanism is advanced, substantially as set forth.

18. In a lasting machine, the combination of a heel-clamping device a heel-pin automatically movable toward the clamping device, and means for locking the heel-pin in relation to said device when a last is in place, substantially as and for the purpose set forth.

19. In a lasting-machine, the combination of an oscillating heel-pin and heel-clamping mechanism with means, substantially such as described, for connecting the heel-pin and said mechanism at different points corresponding to different sizes of lasts inserted, substantially as and for the purpose set forth.

20. In a lasting-machine, the combination of movable toe-rest and reciprocating toe-lasting mechanism, the toe-rest moving with the shoe in the direction of the length of the shoe when the toe-rest is reciprocated, substantially as and for the purpose set forth.

21. In a lasting-machine, the combination of a leather-stretching mechanism with heel and toe supports which are rigid in relation to the shoe during the operation of the leather-stretching mechanism and with heel and toe lasting instrumentalities, the heel-support having an initial movement toward the heel-clamp, substantially as and for the purpose set forth.

22. In a lasting-machine, the combination of a heel-clamping mechanism with a heel-pin and means for simultaneously moving the heel-pin and heel-clamping mechanism toward each other whereby the last is held by pressure between the heel-pin and said mechanism during the operation of the leather-stretching mechanism, substantially as and for the purpose set forth.

23. In a lasting-machine, the combination of a vertically and to-and-fro moving heel-pin; a toe-rest which is held stationary in relation to the shoe by contact therewith; a movable support for the heel-pin and toe-rest and means, substantially such as described for moving the said support, substantially as and for the purpose set forth.

24. In a lasting-machine, the combination of a heel-clamping mechanism; a heel-pin having a to-and-fro movement in relation to the heel-clamping mechanism, and a size-adjusting mechanism connecting the heel-pin with the heel clamping mechanism, substantially as and for the purpose set forth.

25. In a lasting-machine, the combination of a heel-clamp having independently movable end sections with a loosely-mounted centering extension to permit shifting for rights and lefts, substantially as and for the purpose set forth.

26. In a lasting-machine, the combination of an end lasting mechanism with a toe-rest which moves with the shoe in the direction of the length thereof by contact therewith, substantially as and for the purpose set forth.

27. In a lasting-machine, the combination of a heel-clamp with a heel-pin and means for moving the heel-clamp and heel-pin toward each other in the direction of the length of the shoe to cause the heel-clamp to automatically clamp a jacked shoe, substantially as and for the purpose set forth.

28. In a lasting-machine, the combination of a reciprocating heel-clamping mechanism and a heel-pin movable from and toward said heel-clamping mechanism with a notched bar connected with the heel-pin and a swinging tooth-bar connected with the reciprocating heel-clamping mechanism and engaging with notches of said bar.

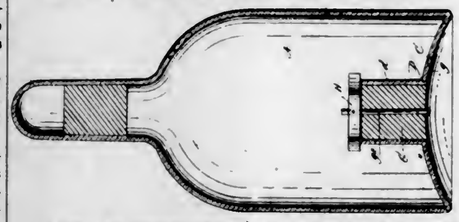
29. In a lasting-machine, the combination of a reciprocating heel clamping mechanism with a heel-post; an oscillating support therefor; a cam coöperating with said support and having a handle; a dog on said handle; a swinging rack with which said dog coöperates; a lever pivotally connected with said cam; a toothed bar from the heel-post; a connection between said lever and toothed bar; and a lug-carrier connected with the heel-clamping mechanism and arranged with its lug in coöperating position with the toothed bar, substantially as described.

30. In a lasting-machine, the combination of a reciprocating toe-clamping mechanism with a toe-post longitudinally adjustable and an arm from the clamping mechanism, said arm and toe-post being engaged when the toe-clamping mechanism is moved backward, substantially as described.

31. In a lasting-machine, the combination of a heel-post with centering-springs on each side in the direction of the length of the last-recess, substantially as described.

32. In a lasting-machine, the combination of a reciprocating heel-clamping mechanism and a heel-pin movable from and toward said heel-clamping mechanism with a notched bar connected with the heel-pin and a tooth-bar connected with the reciprocating heel-clamping mechanism, and engaging with notches of said bar.

571,430. BOTTLE. SIMON COSTELLO, Greenwich, Conn. Filed Feb. 12, 1896. Serial No. 578,998. (No model.)



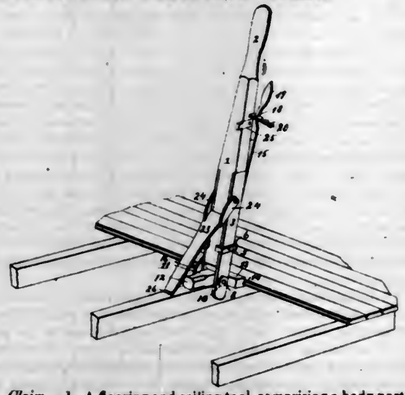
Claim.—The combination with a bottle or other vessel provided with a closed neck and a filling-orifice at the bottom thereof, of a plug or stopper which, is forced into said neck through said filling-orifice, said filling-orifice being also provided with an inwardly-directed tubular extension, and a non-removable cork or stopper which is adapted to be secured therein, said non-removable cork or stopper being provided with a bottom plate which is secured to the non-removable plug or stopper by means of a rod which passes therethrough and which is provided at its upper end with a spring, substantially as shown and described.

571,431. GAS BURNER. ALFRED E. DETWILER, Milwaukee, Wis., assignor to the Milwaukee Gas Stove Company, same place. Filed Nov. 13, 1893. Serial No. 490,742. (No model.)



Claim.—A gas burner composed of a casting having an apertured top and formed at a point removed from both ends with a depending pocket or enlargement extending longitudinally under a central partition dividing it from an upper chamber of the casting and communicating at both of its ends with said chambers at points inward from the ends of said chamber so that the air and gas passing from the enlargement into the upper chamber may diffuse itself in opposite directions both over the partition and away from it toward the ends of the chamber, and a gas-mixing chamber extending laterally from the depending pocket or enlargement, substantially as and for the purposes described.

571,432. FLOORING AND CEILING TOOL. JAMES A. ELDER, Galena, Kans., assignor of one-half to Robert Hardwick, same place. Filed Sept. 28, 1895. Serial No. 563,948. (No model.)

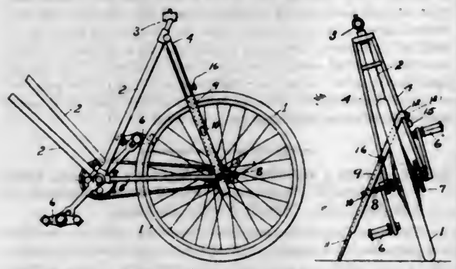


Claim.—1. A flooring and ceiling tool, comprising a body portion having a pair of side plates projecting below the lower end thereof, one of said plates projecting beyond the end of the other and having a spider-clamp secured to its inner side, a head-block pivotally mounted between the projecting ends of said plates, and a lever pivotally carried upon the front side of the body portion, and having its lower end also provided on its inner side with a spider-clamp to engage the side of the joist, substantially as described.

2. A flooring and ceiling tool, comprising a body portion having a handle at its upper end, a pair of plates projecting from opposite sides and beyond the lower end of the body portion, one of said plates projecting beyond the lower end of the other, a spider-clamp secured to the inner end of the longer plate, a bolt passing transversely through said plates, a head-block pivotally mounted upon the bolt and between said plates, having a groove in its forward end and a head at its rear end, and a lever pivotally carried at the front side of the body portion, and having its lower end provided with a spider-clamp, and also with an opening engaging the projecting end of the transversely-arranged bolt, substantially as described.

3. A flooring and ceiling tool, comprising a body portion having side plates projecting beyond the lower end of the said body portion, one of said plates projecting beyond the lower end of the other and provided with a spider-clamp on its inner side, a bolt passing transversely through said side plates and beyond the lower end of the body portion, and provided with a shoulder bearing against the shorter arm, a head-block pivotally mounted upon the bolt between said plates, a bracket extending transversely of the body portion so as to form a slot between the same and the body portion, a lever mounted in said slot, and having a perpendicular extension at its lower end having an opening engaging the bolt, a spider-clamp at its inner side, having at its upper end a handle, and nuts engaging the projecting ends of the transversely-arranged bolt, and a rack-bar carried by the body portion and engaged by the lever, substantially as described.

571,433. BICYCLE-SUPPORT. ERA FARNSWORTH, Minneapolis, Minn. Filed Apr. 3, 1896. Serial No. 586,112. (No model.)



Claim.—1. The combination with a bicycle of a support-bar having one end thereof bifurcated so as to engage the frame of the bicycle and the spokes of the wheel and means for fastening the support to the frame substantially as shown and described.

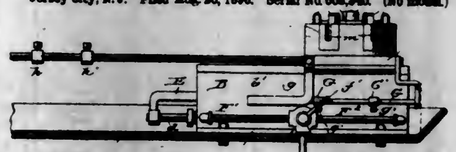
2. The combination with a bicycle, of a support-bar semicircular in cross section, and having one end thereof bifurcated so as to engage the frame of the bicycle and the spokes of the wheel, and means for fastening the support to the frame when not in use, substantially as set forth.

3. The combination with a bicycle of a support-bar having one end bifurcated for engaging the frame of the bicycle and the spokes of the wheel, means for locking the same while so engaged, and means for securing the same to the frame of the wheel when not in use, substantially as specified.

4. The combination with the brace 4 and step 8 of a detachable support-bar which is semicircular in cross-section for embracing the brace 4 and which is provided with the holes 10 and 11, substantially as shown and described.

5. The combination with a bicycle of a support-bar having one end bifurcated for engaging the frame of the bicycle and the spokes of the wheel, the lugs 12, the lock 15 and the set screw 16, substantially as set forth.

571,434. BOLT-CUTTING MACHINE. HENRY A. FERGUSON, Jersey City, N. J. Filed Aug. 20, 1896. Serial No. 603,240. (No model.)



Claim.—1. The combination of a revolving turret or bolt-carrier having a series of devices for carrying the bolts, a reciprocating carriage, fluid-pressure operating mechanism for actuating the carriage, a rod mounted on the carriage and carrying devices for opening and closing the dies, devices carried by the carriage for controlling the operation of the fluid-pressure mechanism to reciprocate the carriage, and mechanism actuated by the reciprocation of the carriage to turn the turret.

2. The combination of the sliding carriage, the revolving turret or bolt-carrier mounted thereon, the pins projecting from the turret for revolving it, the dog engaging the pins at each reciprocation of the carriage to turn the turret, a cylinder, a piston, connections between the piston and the carriage, a valve for controlling the admission of fluid to the opposite ends of the cylinder, devices carried by the carriage for operating the valve, and devices also carried by the carriage for opening and closing the dies.

3. The combination of the reciprocating carriage, the revolving turret mounted thereon, a series of downwardly-projecting pins connected with the turret, a locking-bolt, a latch-lever for operating it, an adjustable tripping-block for operating the latch-lever, and a dog carried by the adjustable block, adapted to act on the pins to turn the turret.

4. The combination of the reciprocating carriage, the revolving turret carried thereby, a bolt for locking the turret to the carriage, a latch-lever for operating the bolt, downwardly-projecting pins connected with the turret, an adjustable tripping-block acting on the latch-lever, a dog carried thereby, acting on the pins, a cylinder, its piston, connections between the piston and the carriage, a valve for controlling the admission of fluid to the cylinder, and adjustable stops carried by the carriage for controlling the movement of the valve.

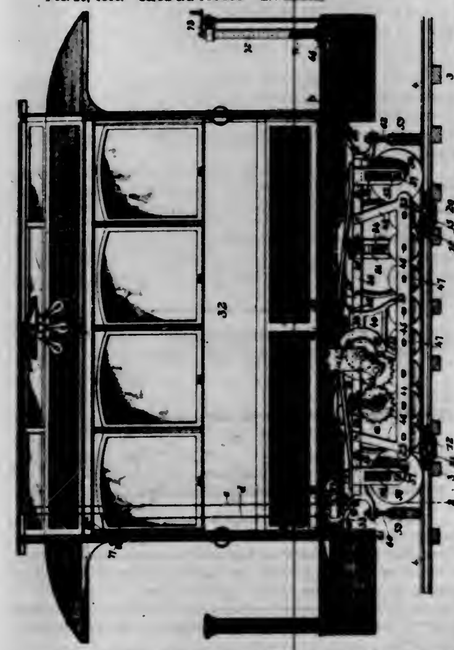
5. The combination of a reciprocating and revolving turret or bolt-carrier, fluid-pressure mechanism for reciprocating the turret, adjustable stops moved correspondingly with the turret to control the operation of the fluid-pressure mechanism, means for turning the turret and locking it, and an adjustable block and dog for controlling the operation of the turret revolving and locking devices.

6. A bolt-carrier or turret having a series of recesses in its periphery, and an adjustable annular plate secured to its periphery and provided with a series of slots or recesses of different widths.

7. A bolt-carrier or turret provided with recesses for the heads of the bolts, springs pressing against the heads of the bolts to hold them in position and receive end thrust, and an annular plate having a series of slots or recesses of different widths adjustably secured to the periphery of the cylinder.

8. The combination of the reciprocating carriage, means for actuating it, a revolving turret or bolt-carrier pivotally connected with the carriage and having a series of downwardly-projecting pins, a bolt for locking the carriage and turret together, a latch-lever for operating the bolt, an adjustable tripping-block having a flange adapted to engage with the latch-lever, and a pivoted spring-pressed dog mounted on the block and adapted to engage with the pins to revolve the turret.

571,435. ELECTRIC-RAILWAY SYSTEM. GEORGE J. FORREST, Carlisle, Pa., assignor of one-half to Samuel L. Diven, same place. Filed Feb. 29, 1896. Serial No. 581,332. (No model.)



Claim.—1. In an electric-railway system, the combination with a surface track; of a third rail arranged centrally between the main-track rails, said third rail being sectional and comprising separate registering members, one of which members is formed with a rail-tread and base flange, and both of which members have formed between their meeting faces a longitudinal wire-pocket, an insulated main conductor or feed-wire incased in said longitudinal wire-pocket, and suitable contact devices having metallic connections with the main conductor or feed-wire, substantially as described.

2. In an electric-railway system, the combination with a surface track; of a third rail arranged centrally between the main-track rail and having a continuous longitudinal wire-pocket, a wooden core or casing fitted in the wire-pocket of the third rail, an insulated main conductor or feed-wire incased in said wooden core or casing, a series of circuit-closing contact devices interposed in a line with the third rail and having connections with the main conductor or feed-wire, and the car carrying a plow traveling over the third rail and said contact devices, substantially as set forth.

3. In an electric-railway system, the combination with a surface track; of a third rail arranged centrally between the main-track rails, said third rail being sectional and comprising separate registering members one of which members is formed with a rail-tread and base-flange, and both of which members have formed between their meeting faces a longitudinal wire-pocket, a wooden wire core or casing fitted in said wire-pocket of the third rail, an insulated main conductor or feed-wire incased in said wooden core or casing, suitable contact devices having connections with said main conductor or feed-wire, and the car carrying a plow traveling over the third rail and said contact devices, substantially as set forth.

4. In an electric railway system, a track having a central third rail arranged in spaced sections or lengths, contact-boxes interposed between the adjacent ends of the third-rail sections, circuit closing devices arranged in each contact-box, and having a surface contact-plate normally projected above the plane of the upper side of the contact-box and the tread of the third rail, separate side guard-plates fitted against the opposite sides of each contact-box and the directly-adjacent rail ends, said side guard-plates being provided at their upper edges with longitudinal guard-flanges curved outwardly and projected upwardly above the plane of the normally-elevated surface contact-plate of the contact devices, and transverse joint-bolts connecting the opposite side guard-plates with the contact boxes and also with the adjacent rail ends, substantially as described.

5. In an electric-railway system, the track having a central third rail arranged in spaced sections or lengths, and a series of regularly-spaced contact devices interposed between the adjecent ends of the third-rail sections, each of said contact devices comprising a contact-box, a fixed contact-cup seated within the box, an enlarged conductor-core arranged within the fixed contact-cup and having feed-wire connections with its ends, and a normally-elevated surface contact-plate fitted within and projecting above the upper side of the box and carrying a movable contact-cup adapted to be depressed directly over and onto said enlarged conductor-core, and also adapted to have a registering contact with the fixed cup, substantially as set forth.

6. In an electric-railway system, the track having a central third rail, the main conductor or feed-wire incased in and insulated from the said rail, and a series of regularly-spaced contact devices interposed between the ends of the third-rail sections, and each comprising a contact-box, a lower semicylindrical fixed contact-cup seated within the lower part of said box, an enlarged cylindrical conductor-core arranged within said fixed contact-cup and having feed-wire connections with its ends, a wire coil encircling said conductor-core, and a normally-elevated surface contact-plate seated within and projecting above the upper side of the box and having a depending adjusting-post carrying at its lower end an upper movable semicylindrical contact-cup adapted to work onto said conductor-core and to have a registering contact with the lower fixed contact-cup, substantially as set forth.

7. In an electric-railway system, the combination of a track having a central third rail and spaced contact devices in lineal alinement with said rail, and an electric plow yieldingly mounted at the under side of a motor-car and essentially comprising a rack of collecting-spools, and a separate current distributing saddle having metallic connection with the entire series of spools, and a bearing-contact with the hubs of certain of said spools, and circuit-wire connections with said distributing-saddle, substantially as set forth.

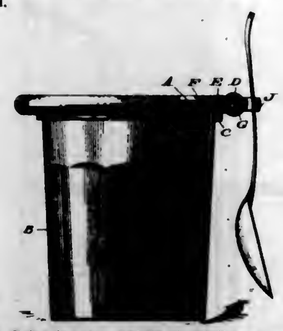
8. In an electric-railway system, the combination of a track having a central third rail and spaced contact devices in lineal alinement with said rail, and an electric plow essentially comprising a main supporting-beam yieldingly suspended from the under side of the motor-car, a depending bearing-rack connected with said beam, a series of alined collecting-spools mounted within said bearing-rack and riding on the third rail, a current-distributing saddle mounted on said main supporting-beam and having metallic connection with the entire series of spools, a pair of hangers depending from each end of the main supporting-beam at each end of the rack of spools, spring-depressed peripherally grooved pilot-wheels mounted in each pair of hangers and traveling on the third rail in advance of the rack of spools, a cleaning broom or brush supported at one side of each pilot-wheel and contacting with the third rail, and transversely-arranged brace-bars connected with said main supporting-beam and the axles of the motor-car to limit the lateral play of the plow, substantially as set forth.

9. In an electric railway system, the combination of a track having a central third rail and spaced contact devices in lineal alinement with said rail, and an electric plow essentially comprising a main supporting-beam yieldingly suspended from the under side of the motor-car, a depending bearing-rack connected with said beam, a series of alined collecting-spools having opposite cylindrical hub portions and spindle extremities journaled in the opposite side portions of said bearing-rack, a distributing-saddle mounted centrally on the beam and having opposite pairs of depending spaced conductor-arms provided at their lower extremities with curved contact portions arranged within said bearing-rack and contacting with the cylindrical hub portions of the collecting-spools immediately below the saddle, and the motor and lighting circuits for the car having wire connections with said distributing-saddle and also with the metallic truck of the car, substantially as set forth.

10. In an electric-railway system, the combination with a surface track; of a third rail arranged centrally between the main-track rails, a series of circuit-closing contact devices interposed in the line of said third rail and each having movable contact portions provided with surface plates normally elevated above the plane of the tread of the third rail, a motor-car carrying a collecting-plow adapted to travel over the third rail and said surface contact-plates, and an electric signal having wire connections respectively with one of the main rails of the surface track and with the movable contact portion of one of said contact devices, substantially as set forth.

571,436. MEDICINE-DOSE INDICATOR. CHARLES E. GLENTWORTH, Sharon Hill, Pa., assignor to George M. Walter, Philadelphia, Pa. Filed Mar. 5, 1896. Serial No. 581,897. (No model.)

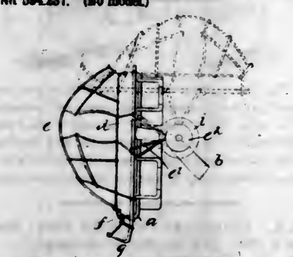
Claim.—1. A medicine dose or administering indicator consisting of a plate, having a depending flange, and a peripheral rim with a neck, a boss embracing said rim and adapted to be moved thereon, and an index connected with said boss and adapted to move over graduations on said plate, the central portions of said plate being normally flat and unoccupied, said parts being combined substantially as described.



2. A medicine dose or administering indicator, consisting of a plate having a peripheral rim, a neck joining said rim with said plate, a boss movably fitted on said rim, and an index connected with said boss and adapted to move over graduations on said plate adjacent to said rim, said boss being elastic and separated at its ends, so as to be capable of being sprung upon and from said rim, the parts named being combined substantially as described.

3. A medicine dose or administering indicator, consisting of a plate, having a peripheral rim with a neck, an elastic boss adapted to embrace said rim and to be moved thereon, an index-finger connected with said boss, and a loop connected with said boss opposite to said index, the main part of the upper face of said plate being flat and normally unoccupied said parts being combined, substantially as described.

571,437. BASE-BALL MASK. WILLIAM GRAY, Hartford, Conn., assignor of one-half to Charles Soby, same place. Filed June 4, 1896. Serial No. 594,237. (No model.)



Claim.—1. In combination in a base-ball mask, a frame, means for securing the frame to the head of the wearer, a front piece having a swinging movement in a plane lengthwise of the frame and connected thereto by a pivot located centrally at each side of the frame and front piece, all substantially as described.

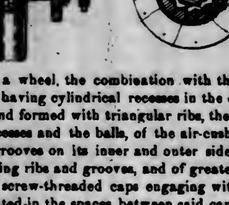
2. In combination in a base-ball mask, a frame, means for securing the frame to the head of the wearer, a front piece having a swinging movement lengthwise of the frame and secured thereto by pivots located centrally at each side of the front piece and frame, and a spring-catch for uniting the mask and frame and adapted to be released on the upward movement of the front piece, all substantially as described.

3. In combination in a base-ball mask, a padded frame, means for securing the frame to the head of the wearer, brackets extending backward from the central side parts of the frame, a front piece having backward-extending brackets from the central side parts thereof and corresponding with the brackets on the frame, a pivot uniting the ends of the brackets on the frame and front piece whereby the latter is adapted to be swung upward and backward, and a spring-catch for uniting the frame and front piece and adapted to be released on the upward movement of the latter, all substantially as described.

571,438. BRUSH-CLEANER. THEODORE L. HARLOW, Gardner, Mass. Filed Feb. 3, 1896. Serial No. 577,882. (No model.)

Claim.—1. A brush-cleaner, comprising substantially parallel cleaning-sections having a downward and inward inclination, a cross-bar located back of the cleaning-sections in the path of a brush drawn between the said sections, and loop-sections adapted to engage the inner surface of a bottle and hold the cleaner therein, substantially as described.

2. A brush cleaner, comprising two loops connected by a cross-bar, downwardly-extending and approximately parallel cleaning-sections at one side of the said cross-bar, and a bowed section in approximately the same horizontal plane as the loops, substantially as described.



3. A brush-cleaner constructed of a single piece of wire and comprising two loops forming the upper end portion thereof, connected by a cross-bar, the wire being carried downward and inward from each loop over the cross-bar in substantially parallel lines, forming cleaning-sections, the ends of the wire being carried upward from the lower ends of the cleaning-sections for a predetermined distance, being then bowed, the bow portion being substantially on a level with the upper portion of the loops, as and for the purpose specified.

4. A brush-cleaner constructed of a single piece of wire and comprising two loops forming the upper end portion thereof and connected by a cross bar, the wire being carried downward and inward from each loop over the cross-bar in substantially parallel lines, forming cleaning-sections, the ends of the wire being carried upward from the lower ends of the cleaning-sections for a predetermined distance, being then bowed, the bow portion being substantially on a level with the upper portion of the loops, as and for the purpose described, the extremities of the wire being made to terminate in a holder for the brush, as set forth.

571,439. WHEEL. WILLIAM F. H. HARVEY, Kokomo, Ind., assignor to John W. Lappin, John Braun, and James Gaffney, same place. Filed Feb. 15, 1896. Serial No. 579,339. (No model.)

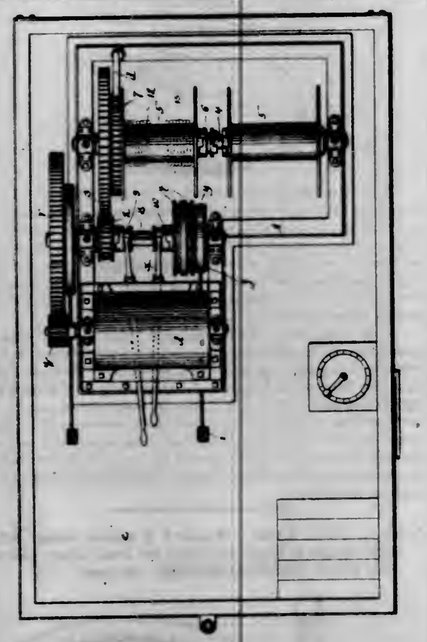
Claim.—In a wheel, the combination with the axle, the sleeve secured thereto having cylindrical recesses in the ends and exterior screw-threads, and formed with triangular ribs, the beveled rings located in said recesses and the balls, of the air-cushion having triangular ribs and grooves on its inner and outer sides the hub formed with corresponding ribs and grooves, and of greater length than the air-cushion, the screw-threaded caps engaging with said sleeve and the washers located in the spaces between said caps and the ends of the air-cushion, substantially as described.

571,440. CABLE-CARRIER. ETVIND L. HEIDENREICH and GUSTAVE MONRATH, Chicago, Ill.; said Monrath assignor to said Heidenreich. Filed Aug. 15, 1896. Serial No. 602,847. (No model.)

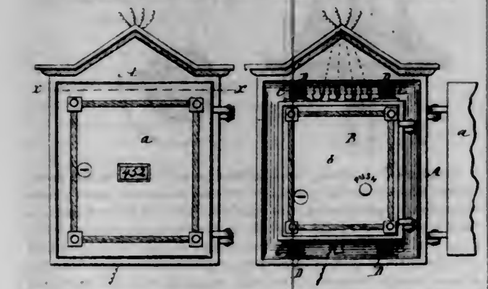
Claim.—1. The combination with the cableway and with the traveling car suspended therefrom, of the electric motor mounted on said car, the winch mechanism driven by said motor, the guide-block separately sustained upon the cableway at a defined distance from the car, the car-block and the dual tackles extended between each block and the winch mechanism therefor, substantially as described.

2. The combination with the cableway and with the traveling car suspended therefrom, of the electric motor mounted on said car, the companion winches driven by said motor, the guide-block sustained upon the cableway at defined distance from the car, the car-block and the separate tackles for each block and its corresponding winch substantially as described.

3. The combination with the cableway and with the traveling car suspended therefrom, of the electric motor mounted on said car, the car-propelling wheels and the winch mechanism independently driven by said motor, the guide-block separately sustained upon the cableway, the car-block, and the separate tackles extended between each block and the winch mechanism therefor, substantially as described.



571,441. ELECTRIC SIGNAL-BOX. WILLIAM W. HIBBARD, Rochester, N. Y., assignor to the Standard Electric Signal Company, same place. Filed June 16, 1894. Serial No. 514,823. (No model.)

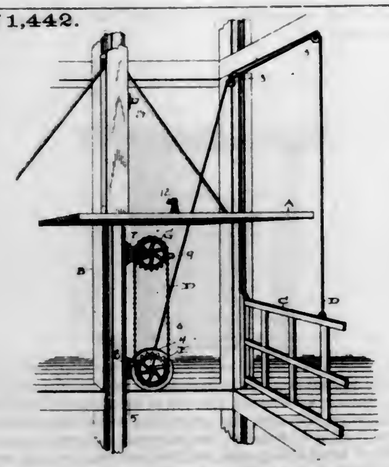


Claim.—In a signal-box, the combination with the two boxes set one within the other and separated by a clear space, of four spiral springs at the corners connecting the boxes and sustaining the interior one, and insulators around which the springs rest, said insulators constructed with cores that enter the hollow of the springs and end flanges that prevents contact of the springs with the boxes, as herein shown and described.

571,442. SAFETY MECHANISM FOR OPERATING ELEVATOR-GATES. JOHN T. HOBBS, Cleveland, Ohio, assignor to the Cleveland Safety Gate Company, same place. Filed Apr. 3, 1896. Serial No. 586,064. (No model.)

Claim.—The attachment described, comprising a single pair of sprocket-wheels and a chain, projections on said chain and dogs on the elevator-platform to engage the same, the gate and its cable, a pulley for said cable and means to secure the pulley removably at the side of the lower sprocket-wheel, whereby one size or another of cable-pulley may be employed, substantially as described.

571,442.



571,443. SUNSHADE FOR CANOPIED VEHICLES. AQUILA W. HOLLINGSWORTH, West Liberty, Iowa. Filed Jan. 28, 1896. Serial No. 577,103. (No model.)



Claim.—The combination with a vehicle-canopy of an automatic spring-actuated, ratchet, curtain-roller mounted beneath one edge thereof, two or more rods attached to the end of the curtain, clamps adjustably mounted on the canopy-supports, and having said rods pivoted thereto and winged nuts for securing the rods to the clamps in any position, substantially as and for the purposes stated.

571,444. BICYCLE-TIRE. CHARLES A. HUSSEY, New York, N. Y. Filed Apr. 9, 1896. Serial No. 586,802. (No model.)

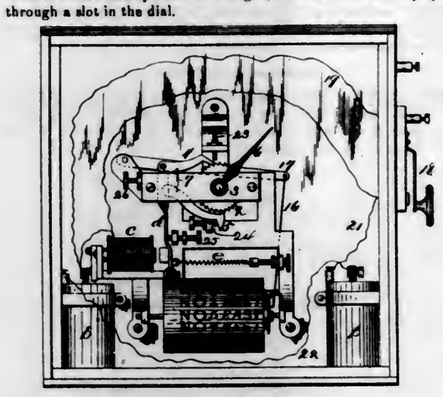


Claim.—1. In a hollow tire for bicycles or other vehicles, the combination of a series of spring-formers or supporters constructed and arranged substantially as shown and described and connected to each other by an elastic band and an envelop or cover having a wedge-shaped extension immediately inside and contiguous to the tread and arranged in connection with the spring-former, substantially as and for the purposes set forth.

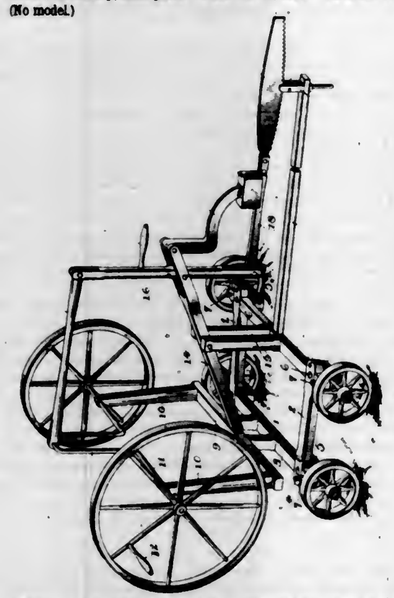
2. In a hollow tire for bicycles or other vehicles, a series of spring-steel formers or supporters arranged a slight distance one from the other and connected in a series by an elastic band as shown, said formers being divided at points opposite the central point of the tread and having inwardly-curved and wedge-shaped shoulders, with a rubber envelop or cover secured around the formers and having a complementary wedge-shaped portion, all arranged substantially as shown and described.

571,445. ANNUNCIATOR. FRANKLIN A. JENNINGS, Ithaca, N. Y., assignor to the Electric Bulletin Company, same place and Chicago, Ill. Filed May 11, 1895. Serial No. 548,909. (No model.)

Claim.—In an annunciator a dial provided with a series of notices, a pointer-shaft, a pointer thereon, a ratchet on said shaft, a battery, an electromagnet having a swinging armature and two pawls upon said armature simultaneously engaging with said ratchet to respectively push and pull it around and shift said pointer each time a circuit is made, in combination with a cam upon the pointer-shaft, a lever engaging with said cam, a cylinder provided with a series of train-designating notices and a pawl connected to said lever and engaging with a ratchet, all actuated by the rotation of the pointer-shaft to rotate said cylinder to change the notice which is displayed through a slot in the dial.



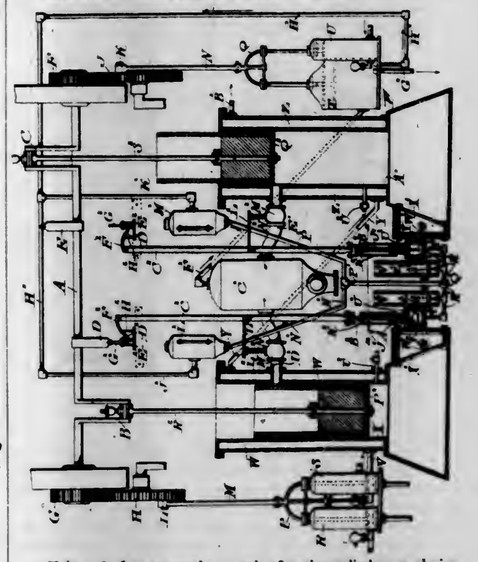
571,446. DRAG-SAW. LEWIS JOHNSON, Ruston, La., assignor to Robert J. Rasbury, same place. Filed Jan. 17, 1896. Serial No. 575,869. (No model.)



Claim.—1. In a portable drag saw, the combination with a truck-frame carrying the saw mechanism, of the carrying-wheels mounted on reversible stub-axles capable of being adjusted longitudinally or transversely of the truck-frame, and a detachable tongue for supporting the saw when not in use, said tongue being provided at its outer end with a supporting-roller and having its inner end removably fitted in the truck-frame whereby it may be removed while the saw is in operation, substantially as described.

2. In a portable drag-saw, a rectangular truck-frame comprising parallel longitudinal and transverse bars intersecting and crossing each other at the corners of the frame and projecting beyond such corners, each bar having vertical openings in said projecting portions, in combination with stub-axles extending horizontally under the projecting ends of said bars and fulcrumed on vertical axes at the intersection of said bars, carrying-wheels on said axles, and stay-pins removably inserted through said vertical openings in the projecting ends of the bars, said pins also interchangeably engaging the stub-axles for holding the same either longitudinally or transversely of the truck-frame, substantially as described.

571,447. GAS-ENGINE. CHARLES A KUNZEL, Jr., Hoboken, N. J. Filed Dec. 10, 1895. Serial No. 571,686. (No model.)



Claim.—1. In a gas engine, a pair of engine-cylinders, explosion-chambers therefor, a tank for holding a suitable explosive, conduits leading from said tank to said explosion-chambers, a pair of open-ended tubes suitably supported a valve-chamber intermediate each of said tubes and an explosion chamber, ports forming a communication between said chambers and tubes, gas-burners located in said valve chambers and tubes, the burners in the latter being ignited continuously, means for forcing gas into said burners, valves in said valve-chambers, each valve being adapted to alternately open and close the communication between the ports leading from its chamber to the adjacent explosion chamber and tube, and to cut off communication between said ports, when in inferior position, and means for actuating said valves.

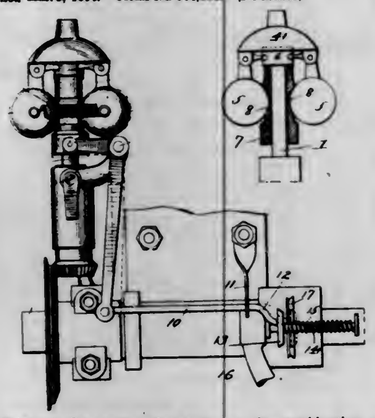
2. In a gas-engine, reservoirs adapted to contain gasolene and coal-oil respectively, means for conducting air under pressure to said reservoirs, engine cylinders provided with explosion-chambers, conduits leading from said gasolene-reservoir to said explosion-chambers, open-ended tubes, a valve-chamber intermediate each tube and an explosion-chamber, communicating ports between each explosion-chamber, its valve-chamber and tube, a port in the lower portion of each valve-chamber, a gas-burner adjacent each of the last-mentioned ports, and adapted to be alternately lighted and extinguished, other gas-burners located within said tubes and adapted to burn continuously, valves in said valve-chambers, each valve being adapted to alternately open and close the communication between the ports leading from its chamber, said ports being closed to each other when their controlling-valve is in inferior position, and means for actuating said valves.

3. In a gas-engine, a pair of engine-cylinders, valve-chambers, and explosion-chambers therefor, an exhaust reservoir, exhaust-conduits leading to the latter from each cylinder, valves in said conduits adapted to be operated in unison with the valves in said valve-chambers, a source of supply for an explosive and an inflammable gas, means for conducting the same to the explosion and valve chambers respectively, burners connected with the gas supply, valves in said valve-chambers, each valve being adapted to alternately open and close the communication between the ports leading from its chamber, said ports being closed to each other when their controlling-valve is in inferior position, and means for actuating said valves.

4. In a gas engine, the cylinders X and A′, each having an explosion-chamber X′, the inlet-valve chambers U′, each having a valve A^3 therein, and the ports Y′ and Z′, the latter leading to the tubes V′, the gas-conduit $I^{\prime}$ having the branches B′, each provided with the

burners S', T', said burners S', burning continuously, while the burners T' are alternately ignited and extinguished, means for conducting an explosive mixture and an inflammable gas to the explosion-chambers and burners respectively, the reservoir C, valved exhaust-conduits leading from each engine-cylinder thereto, and means for actuating the inlet and exhaust valves.

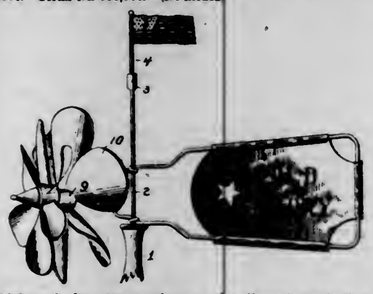
571,448. GAS-ENGINE GOVERNOR. JOHN W. LAMBERT, Anderson, Ind., assignor to the Buckeye Manufacturing Company, same place. Filed Mar. 5, 1896. Serial No. 581,960. (No model.)



Claim.—1. In a gas-engine governor, the combination, of the governor-spindle and means for operating it, the outwardly-swinging governor-balls carried by the spindle, a slidable non-rotating sleeve carried by the spindle and provided with an annular cam-surface, a spring tending to normally draw the balls against said cam-surface, and devices connecting said sleeve to the gas-inlet-operating devices, as and for the purposes set forth.

2. In a gas engine governor, the combination of the governor-spindle and means for operating it, the governor-balls pivotally carried by the spindle, a slidable rotatable collar carried by the spindle and operated by the balls, a slidable non-rotatable sleeve supported on the spindle independently of the collar and provided with an annular cam surface, a spring connecting the balls and normally drawing them against said cam-surface, an angle-lever pivotally connected to said sleeve, a shifting-rod connected to said angle-lever, a gas-inlet lever carrying a slidable spring-actuated roller normally bearing against said shifting-rod, and an operating-cam adapted to strike said roller when in the path of the same, substantially as described.

571,449. ROTARY PNEUMATIC TOY. GODFRIED LAUBE, Huron, S. D., assignor of one-half to V. L. Grable, Malakoff, Tex. Filed July 8, 1896. Serial No. 598,363. (No model.)



Claim.—1. In a pneumatic toy, a handle and standard, a frame bent to produce a vane-support, and eyes to receive the standard, a shaft formed by a continuation of the frame-wire, fan-wheels arranged on the shaft and a keeper engaging the front fan held in place by spreading the split end of the shaft, as and for the purpose described.

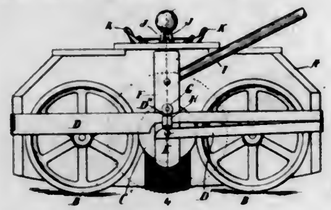
2. A pneumatic toy consisting of a suitable handle, a vane-frame bent to produce eyes at top, and bottom, said frame terminating in a shaft having a split end, fan-wheels arranged on the shaft and a keeper engaging the first fan and held in place by spreading the split end of the shaft, as and for the purpose described.

571,450. FASTENER FOR SHOES, &c. WILLIAM C. LEIBER, Philadelphia, Pa. Filed Feb. 29, 1896. Serial No. 581,242. (No model.)



Claim.—An elbow, an eyelet on one member thereof, a pulley between the members of said elbow, and an axle for said pulley, said eyelet being an integral portion of the member from which it projects, and said axle being an integral portion of one member of the elbow, removed from the same, bent toward the other member and firmly connected therewith, said parts being combined forming an an improved fastening for shoestrings, &c.

571,451. CARPET-SWEEPER. ALLEN D. LINN and ALLEN R. LINN, Grand Rapids, Mich., assignors to T. Stewart White, Thomas Friant, Gaius W. Perkins, and Charles J. Reed, same place. Filed Feb. 24, 1896. Serial No. 580,312. (No model.)



Claim.—1. In a carpet-sweeper in combination with a case, a brush, and vertically-movable supports for said brush, levers attached to said supports, a bale attached to said levers, and a support for said levers attached to the case, whereby the brush is raised proportionately as the propelling power applied to the bale is increased substantially as described.

2. In a carpet-sweeper, in combination with a case and brush, flexible arms to press the brush in contact with the surface acted upon, vibrating levers for raising said brush, and a bale connected to said levers and automatically operating the same by the power applied to propel the machine, substantially as described.

3. In a carpet-sweeper, a case, flexible arms attached at one end to said case, a brush journaled on the movable ends of said arms and pressed downward thereby, levers pivoted to said arms, supports for said levers and a bale pivoted to said levers, substantially as described.

4. In a carpet-sweeper, a case, flexible arms attached to said case at one end, a brush journaled on the free ends of said arms and pressed downward thereby, vibrating levers pivoted to said arms, projections on said levers, a track engaged by said projections, and a bale pivoted to said levers and operating the same, substantially as described.

5. In a carpet-sweeper, a case, guard-bars divided to form flexible arms, a brush journaled on said arms, levers pivoted to said arms, rolls on said levers engaging and traversing the upper edge of said guard-bars, and a bale pivoted to said levers, substantially as described.

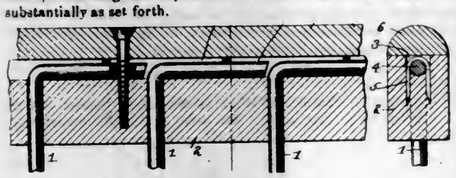
6. In a carpet-sweeper, a case, guard-bars attached to the same, and divided longitudinally and laterally forming spring-arms, studs in the free ends of said arms, a brush and levers journaled on said studs, rolls and hooks on said levers engaging and traversing said guard-bars, and a bale pivoted to said levers, substantially as described.

7. In a carpet-sweeper, a case having a transverse slot, pans pivoted in said case, a spring folded at the middle and projecting through said slot, and having diverging arms pivoted to said pans, whereby said pans are alternately opened by moving said folded end laterally in said slot, substantially as described.

8. In a carpet-sweeper, a case having a transverse slot, a scutcheon-plate having projections opposite the ends of said slot, dust-pans pivoted in said case near their inner angles a spring folded at the middle and projecting upward through said slot and laterally movable therein, and having diverging spring-arms pivoted to said pans above the pivots thereof, whereby said pans are held closed and alternately opened substantially as described.

571,452. BASKET. FRIEDRICH PARTHIER, Chicago, Ill. Filed July 31, 1895. Serial No. 557,669. (No model.)

Claim.—In a basket the combination with the upright sticks, of longitudinal bars arranged along the upper edges of the basket at the upper ends of said sticks and having perforations for the passage of said sticks and being grooved in their upper edges from end to end, the ends of said sticks being of less vertical thickness than said groove and being bent over and seated thereinto; staples driven into said longitudinal bars over the bent ends of said sticks, and a strip secured to said longitudinal bars over said staples and said bent ends of the sticks, for holding said staples and the bent ends of the sticks in place, substantially as set forth.

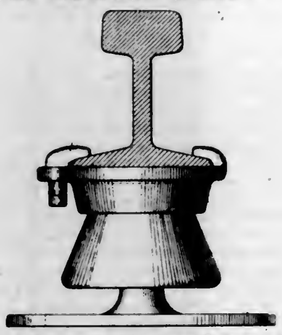


571,453. BOOK-MARK. RUFUS S. PICKETT, New Haven, Conn. Filed Feb. 21, 1896. Serial No. 580,201. (No model.)



Claim.—A book-mark, substantially as herein shown and described, consisting of a loop shaped piece of spring-wire or similar material, the short arm of which is flattened, and the longer arm having undulations or curves formed therein in a plane passing through the short arm, the extremity of the longer arm being provided with an eye or loop to manipulate the same, the shorter arm being adapted to pass beneath the back of the book, and the longer arm to mark the page, as and for the purpose set forth.

571,454. RAIL-SUPPORT. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 25, 1896. Serial No. 603,917. (No model.)



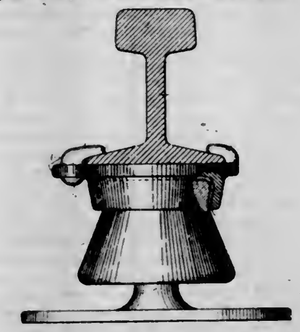
Claim.—1. As a new article of manufacture, an insulator for a railway-rail, comprising a body of insulating material, a metallic cap having a fixed lug and a removable lug, the two lugs adapted to engage with the flange of the rail, and means for securing the removable lug in place.

2. As a new article of manufacture, an insulator for a railway-rail, comprising a body of insulating material, a metal cap having a fixed lug and a removable lug, the two lugs adapted to engage with the flange of the rail, and means, consisting of a slot through the shank of the lug and a tapered pin passing through the slot, for securing the removable lug in place.

571,455. RAIL-SUPPORT. WILLIAM B. POTTER, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 25, 1896. Serial No. 603,919. (No model.)

Claim.—1. An insulator for a railway-rail, comprising a body of insulating material, a metallic cap secured to the insulator, the cap being provided with a fixed lug, a rotatable lug, and means for securing the rotatable lug in its engaging position with the rail.

2. As a new article of manufacture, an insulator for a railway-rail, comprising a body of insulating material, a cap secured thereto, the cap being provided with two lugs adapted to engage opposite flanges of the rail, one of the lugs being fixed, and the other being rotatable and being provided with a tongue engaging with a notch in the cap when in position to retain the rail in place.



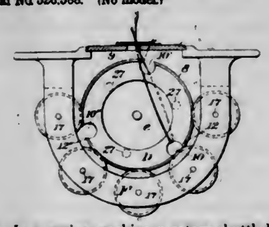
571,456. MUCILAGE-BOTTLE. CLINTON W. REEVES, Los Angeles, Cal. Filed Jan. 3, 1896. Serial No. 574,233. (No model.)



Claim.—1. A mucilage-bottle provided with a neck, a removable cap or cover therefor, provided with a depending tubular extension adapted to fit loosely within said neck and a small tubular extension formed on the upper side thereof, and a brush the handle of which is adapted to pass through said cap and through said extensions, and provided with a tubular adjustable extension, at the upper end thereof, substantially as shown and described.

2. A mucilage-bottle, substantially as herein shown and described, consisting of a receptacle A, the neck of which is provided with a removable cap or cover D, having an annular horizontal flange or rim adapted to rest upon the neck of the bottle, and to the lower side of which is secured a tubular extension d adapted to fit within the neck of the bottle, and on the upper side of which is formed a small tubular extension d^2 adapted to receive the handle E of the brush, and to the upper end of which is connected a tubular extension G, the top of which is closed, and which is provided with a longitudinal slot g to receive a set-screw, operating in connection with the handle to afford adjustability for the same, all combined and operating as and for the purpose set forth.

571,457. SHUTTLE-ACTUATING MECHANISM FOR SEWING-MACHINES. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 22, 1894. Serial No. 526,588. (No model.)



Claim.—1. In a sewing-machine, a rotary shuttle having two or more peripheral hook-formative recesses; in combination with shuttle-supporting means, consisting of a series of track-rolls extending around not more than one-half of the periphery of said shuttle and adapted for supporting said shuttle, whereby the same may be withdrawn from its supporting means in a direction corresponding to the plane of rotation of said shuttle, and having the successive supporting-points of said rolls separated by distances unequal to an aliquot part of the distance between any two hook-formative recesses; and means for rotating said shuttle, whereby two or more recesses will not be brought into juxtaposition with the supporting-rolls simultaneously, during the rotation of the shuttle, substantially as described.

2. In a sewing-machine, the combination with a rotary shuttle having a plurality of driver-sockets in one side thereof, and adapted

to be peripherally supported for rotation; of a peripherally-disposed shuttle-support, comprising a series of rolls extending around not more than one-half of the periphery of said shuttle upon the under side thereof and adapted to support said shuttle, whereby the same may be withdrawn from its support in a direction corresponding to the plane of rotation of said shuttle; means for holding said shuttle against lateral displacement; and a revoluble driver having a plurality of actuating members corresponding in number with, and adapted for successively engaging, the sockets in said shuttle at one side the center of rotation thereof, and within the circuit of the shuttle-support, to thereby hold the shuttle during rotation thereof in positive engagement with its support, and prevent accidental displacement thereof through the openings in said support, substantially as described.

3. In a sewing-machine, the combination with a rotary shuttle having a plurality of driver-sockets in one side thereof, and adapted to be peripherally supported for rotation; of a peripherally-disposed shuttle-support, comprising a series of rolls extending around not more than one-half of the periphery of said shuttle upon the under side thereof and adapted to support said shuttle; and a rotary shuttle-driver supported for bodily shifting movement longitudinally of its axis into and out from operative relation with the shuttle, substantially as described.

4. The combination with a rotary shuttle having a plurality of relatively equidistantly-disposed hook-forming recesses in the periphery thereof, and also having a driver-socket in one face thereof, intermediate each successive pair of said recesses; of a series of rolls sustaining said shuttle, the said rolls being located upon the under side and extending around not more than one-half the periphery of the shuttle, whereby the shuttle can be readily withdrawn from and reinserted in its operative position; and an obliquely-disposed revoluble driver having a plurality of driver-pins adapted for successively entering the driver-sockets in the shuttle.

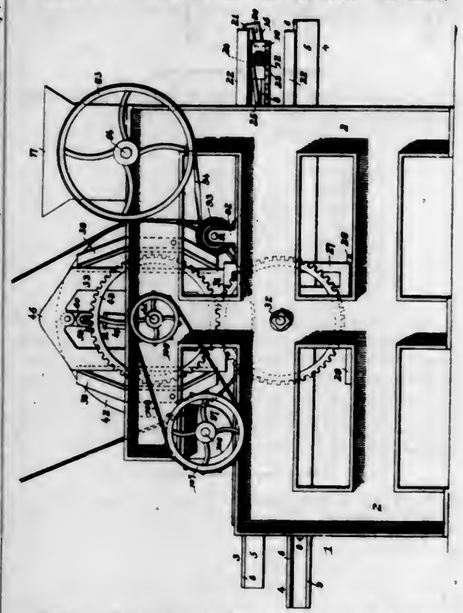
5. In a sewing-machine, the combination with a shuttle adapted to be peripherally supported for rotation, and having a plurality of sockets in one face thereof; of means for peripherally supporting said shuttle; means for preventing lateral displacement of said shuttle; an obliquely-disposed rotary driver shiftable longitudinally, and adapted to thereby bring its shuttle-actuating pins into and out from operative relation with the shuttle, and said driver having a plurality of pins corresponding in number and location with the sockets in the shuttle, and normally adapted to successively engage said sockets during their travel through the lower portion of their circuit, and to withdraw therefrom, during their travel through the upper portion of their circuit to permit the passage of the needle-loops around the shuttle; and means for securing said driver longitudinally in any of its positions, substantially as described.

6. In a sewing-machine, the combination with a shuttle adapted to be peripherally supported for rotation, of means for peripherally supporting said shuttle, means for preventing lateral displacement of said shuttle, a rotary driver shiftable longitudinally into and out of engagement with the shuttle and normally in geared connection with the same and having a driving-shaft, a longitudinally-shiftable bushing fixed against longitudinal movement relatively to said driver and adapted to form a journal for the shaft of said driver and having also a peripheral transverse slot, a fixed journal-bearing for said bushing and adapted to permit longitudinal shifting of the bushing relatively thereto, a rotatable shifting bolt disposed transversely of said bushing and having an eccentric member adapted to engage the peripheral slot in said bushing and thereby shift the bushing and the driver to bring said driver into operative connection with or disconnect it from the shuttle, and means for preventing longitudinal displacement of said shifting bolt, substantially as described.

7. In a sewing-machine, the combination with a shuttle having a series of driver-sockets in one face thereof, and adapted to be peripherally supported for rotation; and with means for peripherally supporting said shuttle, and for preventing lateral displacement thereof; of shuttle-actuating mechanism consisting of a rotary driver having a series of pins adapted for successively engaging the sockets in said shuttle, and shiftable longitudinally into and out of engagement with the shuttle, and normally in geared connection with the same, and having a driving-shaft; a longitudinally-shiftable bushing fixed against longitudinal movement, relatively to said driver, and adapted to form a journal for the shaft of the driver; a fixed journal-bearing for said bushing, and adapted to permit longitudinal shifting of the bushing relative thereto; and a shifting device connected with said bushing, and adapted to shift the same longitudinally, to thereby operatively connect said rotary driver with or disconnect it from the shuttle, substantially as described.

8. In a sewing machine, the combination with a shuttle adapted to be peripherally supported for rotation; of means for peripherally supporting said shuttle; means for preventing lateral displacement of said shuttle; a primary driving-shaft mounted for rotation and carrying a gear-wheel; and an intermediate, longitudinally-shiftable driving-shaft having a gear-wheel fixedly secured thereto, and normally in mesh with, and adapted to be shifted out from engagement with, the gear-wheel upon the primary shaft, and also having shuttle-actuating driving-pins normally in engagement with the shuttle; and means for securing said intermediate driving-shaft longitudinally in any of its positions, substantially as described.

571,458. SAND-CORE-MOLDING MACHINE. THOMAS J. RYAN, Buffalo, N. Y. Filed Apr. 7, 1896. Serial No. 586,567. (No model.)



Claim.—1. In a sand-core-molding machine, a pair of slide-tables arranged in different planes, propelling mechanism for sliding core-boxes on each of said tables, and core-forming devices suitably arranged over one of said tables, substantially as set forth.

2. In a sand-core molding machine, the frame, upper and lower horizontal slide-tables extending the entire length of the frame and arranged in parallel planes, propelling mechanism for sliding core-boxes on each of said tables, and core-forming devices suitably arranged over the upper of said slide-tables, substantially as set forth.

3. In a sand-core-molding machine, the frame, upper and lower horizontal slide-tables arranged one above the other within the frame, hooks for moving the core-box sections suitably supported at one end of each of said tables, suitable connections between the hooks for both tables to provide for the simultaneous movement thereof, and core-forming devices suitably arranged over the upper of said slide-tables, substantially as set forth.

4. In a sand-core-molding machine, the frame, upper and lower slide-tables arranged one above the other within the frame and each consisting of a pair of horizontal parallel guide-rails, propelling mechanism for sliding the core-boxes on each of said tables, and core-forming devices suitably arranged over the upper table, substantially as set forth.

5. In a sand-core-molding machine, the frame, upper and lower slide-tables arranged one above the other within the frame and each consisting of a pair of horizontal parallel guide-rails, intermediate cross-braces connecting the guide-rails of each table, the central cross-brace for the guide-rails of the upper table being wider than the other braces, propelling mechanism for sliding core-boxes on each of said tables, a vent-forming press supported to work above the upper table and of a width substantially equaling the width of said wide cross-brace for the upper table, and suitably-arranged sand feed and flouring devices, substantially as set forth.

6. In a sand core-molding machine, the frame, upper and lower slide-tables arranged one above the other within the frame and each consisting of a pair of parallel guide-rails provided with longitudinal guide-ribs at their upper edges to slidably support thereon the core-boxes, obliquely opposite hooks for moving the core box sections respectively supported at one end of each of said tables, suitable connections between the obliquely opposite hooks to provide for the simultaneous movement thereof, and core-forming devices suitably arranged over the upper of said slide-tables, substantially as set forth.

7. In a sand-core-molding machine, the frame, upper and lower horizontal slide-tables arranged one above the other within the frame, movable hooks supported to oscillate and reciprocate at one end of each of said tables, the hooks for the two tables being obliquely opposite, a rod connection with the obliquely opposite hooks to provide for the simultaneous oscillation and reciprocation thereof, means for operating the rod connection, and core-forming devices suitably arranged over the upper of said tables, substantially as set forth.

8. In a sand-core-molding machine, the frame, upper and lower horizontal slide-tables arranged one above the other within the frame, a horizontally-movable rock-shaft supported at one end of each of said tables and carrying hooks for moving the core-box sections, the two rock-shafts being obliquely opposite, a rod connection with the obliquely opposite rock-shafts to provide for the oscillation and reciprocation thereof, means for operating the rod connection, and core-forming devices suitably arranged over the upper table, substantially as set forth.

9. In a sand-core-molding machine, the frame, upper and lower horizontal slide-tables arranged one above the other within the frame to support core-boxes thereon, a horizontally movable rock shaft supported at one end of each of said tables and carrying hooks for moving the core-box sections, the two rock-shafts being obliquely opposite, opposite obliquely-arranged reciprocatory propelling-rods provided at a central point between their ends with upright slotted yokes and connected at their opposite ends respectively with the opposite extremities of the obliquely opposite rock-shafts to provide for the oscillation and reciprocation thereof, suitably-rotated gear-wheels mounted at opposite sides of the frame and carrying wrist-pin blocks loosely working in the vertically-slotted yokes of the propelling-rods, and core-forming devices suitably arranged over the upper table, substantially as set forth.

10. In a sand core-molding machine, the frame, upper and lower horizontal slide-tables arranged one above the other within the frame to support core-boxes thereon, a horizontally-movable rock-shaft supported at one end of each of said tables, the two rock-shafts being obliquely opposite, suitably-reciprocated obliquely-arranged propelling-rods connected at their ends respectively with the opposite extremities of the obliquely opposite rock-shafts, a pair of oscillating blocks mounted fast at one end on each of said rock-shafts and provided at one side with a pair of reversely-disposed offstanding guide-flanges and at the side opposite said flanges with a pair of spaced bearing lugs or brackets, an adjustable hook-plate mounted to slide between the guide-flanges of each oscillating block and provided with a laterally-projecting adjusting-arm having a threaded opening and working in the block between the bearing lugs or brackets thereof, an adjusting-screw loosely mounted in said bearing lugs or brackets and working in the threaded opening of the adjusting arm of each hook plate, and core-forming devices suitably arranged over the upper table, substantially as set forth.

11. In a sand-core-molding machine, the frame, upper and lower horizontal slide-tables arranged within the frame and each consisting of a pair of parallel guide-rails, the guide-rails of each of said tables being provided near one end with longitudinally-disposed slots and at their outer sides with slide grooves or ways, flanged slide-blocks mounted in said slide grooves or ways and provided upon their outer sides with short projecting stop-studs, horizontally-movable rock-shafts carrying hooks for moving the core-box sections and having their opposite ends projecting through the slots and the slide-blocks near one end of the guide-rails of each of said tables, the two rock-shafts being obliquely opposite, short rock-arms fitted on the opposite extremities of each of said rock-shafts, reciprocatory obliquely-arranged propelling-rods having a pin connection at their ends respectively with the short rock-arms of the obliquely opposite rock-shafts, the pin connection between said propelling-rods and said rock-arms being extended at the inner sides of the rock-arms and adapted to engage against the short stop-studs projected from said slide-blocks, means for reciprocating said propelling-rods, and core-forming devices suitably arranged over the upper table, substantially as set forth.

12. In a sand-core molding machine, a table adapted to slidably support thereon the core-boxes, means for moving the core-boxes on said table, a vertically-reciprocating press supported to work above the table and carrying a detachable vent-plate provided with vent-forming ribs or beads, a punch-pin mounted on the press, means for intermittently moving said punch-pin, a suitably-supported drive-shaft, operating connections between the drive-shaft and the vent-press, and suitably-arranged sand-feed and flouring devices, substantially as set forth.

13. In a sand-core-molding machine, a table adapted to slidably support thereon the core boxes, means for sliding the core-boxes on the table, a vertically-reciprocating vent-press supported to work above the table, a punch-pin adjustably mounted on the vent-press, means for forcing the punch pin downward at intervals, and suitably-arranged sand feed and flouring devices, substantially as set forth.

14. In a sand core-molding machine, the frame, opposite pairs of upright guide plates arranged at opposite inner sides of the frame, a table mounted within the frame and adapted to slidably support thereon the core boxes, means for sliding the core boxes on the table, a vertically-reciprocating vent-press arranged above the table and comprising a flat horizontal press-plate and opposite upright side portions slidably mounted between said upright guide-plates, a suitably-supported drive-shaft, yielding adjustable eccentric connections between said drive-shaft and the upright side portions of the vent-press, a punch-pin adjustably mounted on the vent-press, a vent-plate detachably fastened to the lower side of said press-plate and provided with vent forming ribs or beads, means for forcing the punch-pin downward at intervals, and suitably-arranged sand-feed and flouring devices, substantially as set forth.

15. In a sand-core-molding machine, a table adapted to slidably support thereon the core boxes, a vertically-reciprocating vent-press supported to work above the table and provided with a flat horizontal press-plate having therein a longitudinally disposed slot, a vent-plate detachably fastened to the lower side of the press-plate and provided with vent-forming ribs or beads, an upright box adjustably mounted on the upper side of the press-plate, a normally spring-elevated L-shaped punch-pin mounted within said box and having its lower end disposed in and working through the slot of said press-plate, a suitably-supported drive shaft, operating connections between said drive-shaft and the vent-press, a gear-pinion adjustably mounted on said drive-shaft, a suitably-supported counter-shaft, a gear-wheel adjustably mounted on said counter shaft and meshing with said pinion, said gear-wheel being larger than the pinion, and provided with a strike-stud adapted to work at intervals onto the upper horizontal portion of said punch-pin, and sand-feed and flouring devices, substantially as set forth.

16. In a sand-core-molding machine, a table adapted to slidably support thereon the core-boxes, a vertically-reciprocating vent-press supported above the table and having opposite rectangular upright side portions provided with upper cross-bars, a suitably-supported drive-shaft carrying a pair of eccentrics, eccentric-straps encircling said eccentrics directly below the said cross-bars and each of said eccentric-straps being provided with a strap-arm extension having in its upper end a squared socket and a guide-bore leading downward from the floor of said socket, a cap closing the upper end of said socket and having a rod-opening, an eccentric-rod projecting through said rod-opening and provided with a threaded portion disposed within said socket and with an unthreaded extension beyond said threaded portion working in said guide-bore, said eccentric-rod being provided at its upper end with an annular groove and immediately below said groove with a nut portion, a nut mounted on the threaded portion of the eccentric-rod and having a squared head registering within the squared socket, a spring interposed between the squared head of the nut and the floor of the socket, a bifurcated pivot-plate embracing the upper end of the eccentric-rod and pivotally secured to the cross-bar immediately thereabove, a set-screw mounted in said pivot-plate and projecting into the annular groove of said eccentric-rod, and suitably-arranged sand-feed and flouring devices, substantially as set forth.

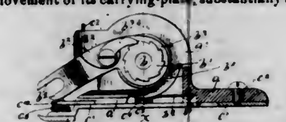
17. In a sand core molding machine, a table adapted to slidably support thereon the core-boxes, a vertically-reciprocating vent-forming press supported above the table, a sand-feed device supported at one side of the vent-forming press, a flouring device supported at the opposite side of the press, a rapidly-rotating cylindrical leveling-brush supported over the table between the sand-feed device and the press, and a curved shield-plate extended from one side of the sand-feed device between the brush and the press, substantially as set forth.

18. In a sand-core molding machine, a table adapted to slidably support thereon the core-boxes, the vent-forming press supported above the table, a sand-feed device supported at one side of the vent-press, a flour-box supported at the opposite side of the vent-press and provided in its lower side with a screened narrow longitudinal discharge-slot, a rotating sifter blade or paddle working within said box over said screened slot, means for sliding the core box section on the table, and means for rotating said sifter blade or paddle across said slot during the travel thereunder of every alternate core-box section, substantially as set forth.

571,459. WORK-MOVING ATTACHMENT FOR SEWING-MACHINES. JOHN D. SCHOONMAKER, Chicago, Ill., assignor to the Lenox Manufacturing Company, Jersey City, N. J. Filed Jan. 22, 1894. Serial No. 497,739. (No model.)

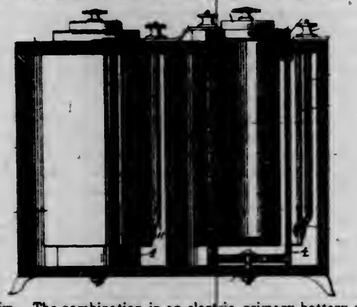
Claim.—1. In a sewing-machine attachment, for zigzag stitching, the combination with a rotary cam-wheel, receiving motion from the needle-bar, of a pivoted plate subject to the action of said cam-wheel, and a cloth-clamp pivoted to said pivot-plate, for lateral pivotal mo-

tion thereon, and having a slotted arm engaging a stud supported in a fixed position from the frame of the device, whereby said cloth-clamp will be held to a true line with the feed of the machine, under the pivotal movement of its carrying-plate, substantially as described.



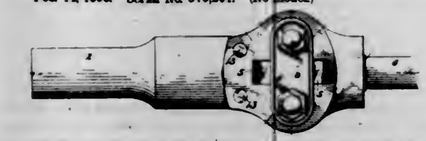
2. The attachment, comprising the frame a a' a^3 securable to the presser-foot bar, with the part a', arranged to form a casing, the shaft b journaled in said casing and provided with the cam-wheel b^2, fixed to said shaft, and having the peripheral cam channel b^4, the ratchet-wheel b' on said shaft, the lever b^3 pivoted on said shaft and provided with the spring-held pawl b^5, engaging said ratchet, and having the jaws b^6, for attachment to the needle-bar, the plate c' having its rear end pivoted to the bed a and provided with the stud and roller engaging the cam-wheel channel b^4, the cloth-clamp c pivoted to the vibrating plate c' and having the slotted arm c^4 working over a stud on the fixed arm c^{10}, all arranged and operating substantially as described.

571,460. PRIMARY BATTERY. SAMUEL N. SMITH, Minneapolis, Minn. Filed Nov. 16, 1895. Serial No. 569,152. (No model.)



Claim.—The combination in an electric primary battery of the cell, with a porous cup of clay fastened in the bottom thereof—a cover tightly fitting the cell—a cylindrical zinc element suspended from said cover into the cell outside of said porous cup, a porous cup of carbon also suspended from said cover and extending into said cup of clay, a washer or packing provided between said cover and the top of said cup of clay electrical connections on said cover with said zinc and carbon parts, said zinc and carbon parts being removable with said cover, a depolarizer comprising acidulated nitrate of soda provided in said carbon cup and a solution of common salt provided in the cell outside said cup of clay substantially as described.

571,461. DRILL CHUCK. NILS O. SWANSON, Lead, S. D. Filed Feb. 14, 1896. Serial No. 579,291. (No model.)

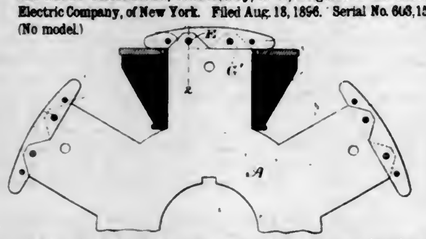


Claim.—1. In a drill chuck, the combination of a head having a longitudinal bore, a mortise intersecting with the bore, and recesses in the opposite sides of the head extending at right angles to and intersecting with the mortise, dogs fitted within the opposite end of the mortise upon each side of the bore and having notches in their outer sides, corresponding stops within the aforesaid mortise and upon the dogs for limiting the inward movement of the dogs, yokes placed in the recesses of the head and engaging with the notched sides of the dogs, and means for drawing the yokes together and securing them to the head, substantially as set forth.

2. A drill-chuck comprising a head having a longitudinal bore and a transverse mortise intersecting with the bore, the ends of the mortise being square, a bushing or sleeve secured in the bore of the head and having openings in its sides corresponding to the mortise, and having the ends of the said openings curved, whereby corner projections or stops are formed, dogs fitted in the end portions of the mortise and having their inner corners cut away to form shoulders or stops to engage with the corresponding corner projections formed by the bushing, and means for pressing the dogs inward against the sides of the drill or tool shank, substantially as set forth.

3. A drill chuck constructed substantially as set forth, and comprising a head having a longitudinal bore, a transverse mortise intersecting with the bore, and recesses in the sides of the head intersecting with and extending at right angles to the mortise, a bushing or sleeve fitted within the bore of the head and having openings corresponding with the mortise, and having end portions extending into the mortise to form stops, dogs fitted in the mortise upon opposite sides of the bore and having shoulders at their ends to engage with the projecting portions of the sleeve, whereby the inward movement of the dogs is limited, said dogs having notches in their outer sides and having their inner faces grooved and inclining toward the inner end of the bore, yokes placed in the recesses in the sides of the head and engaging with the notched sides of the dogs, and a shackle and clamp-nuts for connecting the parts and clamping the dogs against the shank of the tool or drill, substantially as set forth.

571,462. FIELD-MAGNET STRUCTURE. DAVID P. THOMSON and HENRY GEISENHÖNER, Schenectady, N. Y., assignors to the General Electric Company, of New York. Filed Aug. 18, 1896. Serial No. 603,150. (No model.)

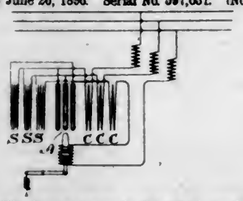


Claim.—1. A field-magnet structure for a dynamo-electric machine, consisting of salient poles of laminated structure, provided with separate laminated tips, and means for securing the tips to the poles.

2. A field-magnet structure for a dynamo-electric machine, comprising laminated salient poles provided with laminated expanded tips, some of the laminæ of the tip provided with tenons which register with suitable spaces in the laminæ of the pole, and means for holding the parts in engagement.

3. A field-magnet structure for a dynamo-electric machine, comprising laminated pole pieces provided with laminated expanded tips or pole-faces, the laminæ of the pole and tip having engaging tenons and spaces, and arranged in groups, with means for securing the parts together, thus maintaining them in place by the strength of the securing means and by their frictional engagement.

571,463. CONTROLLING ELECTRIC ARCS. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed June 26, 1896. Serial No. 597,031. (No model.)



Claim.—1. The improvement in the art of regulating or controlling electric arcs, which consists in subjecting the arc to the directive influence of a resultant field of force produced by a plurality of magnetic or electromagnetic devices, the lines of force from some of which tend to drive the arc in one direction, while those from other devices act to oppose or modify the action of the first named.

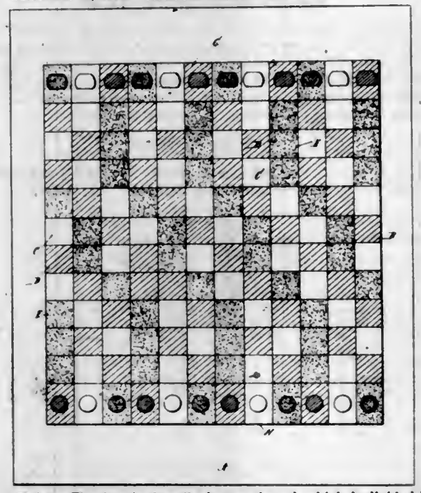
2. The improvement in the art of regulating or controlling electric arcs, which consists in subjecting the arc to the directive influence of a resultant field of force produced by a plurality of electromotive-force devices, some of which are dependent for their action upon the current flowing in series with the arc, and the lines of force from which tend to drive the arc in a given direction, the others of which oppose the first-named devices and depend for their action upon the potential existing around the arc.

3. In combination, terminals or electrodes at which an arc is to be maintained, electromagnetic devices in series with the arc generating lines of force tending to drive the arc in a given direction, and other devices in shunt to the arc, the lines of force from which tend to oppose or modify the action of those from the first named devices.

4. In combination, terminals or electrodes at which an arc is to be maintained, a coil or coils in series with the arc, generating lines of force tending to drive it in a given direction, and another coil or set of coils in shunt to the arc generating lines of force which tend to oppose or modify the action of those from the first-named coils.

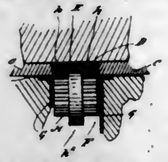
5. In combination, terminals or electrodes at which an arc is to be maintained, a coil or coils in series with the arc generating lines of force tending to drive it in a given direction, another coil or set of coils in shunt to the arc generating lines of force which tend to oppose or modify the action of those from the first-named coils, and an arc-striking means controlled by the series current.

571,464. GAME DEVICE. CHARLES O. TRUEX, New York, N. Y. Filed Mar. 11, 1896. Serial No. 582,727. (No model.)



Claim.—The herein-described game-board which is divided by transverse and longitudinal lines, whereby a square is formed, which is divided into squares or spaces, said squares or spaces being distinctively colored, three different colors being employed, and the variously-colored spaces being arranged as herein described, said square also consisting of twelve rows longitudinal and transverse rows, of the spaces referred to, and twenty-four blocks, disks or pieces which represent men, twelve of which are different in form from the others, and the blocks, disks or pieces of each twelve being also distinctively colored, the colors employed being similar to those of the spaces, substantially as shown and described.

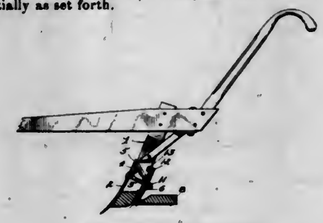
571,465. SASH-FASTENER. JOHN A. H. UMBACH, Savannah, Ga. Filed July 1, 1896. Serial No. 597,667. (No model.)



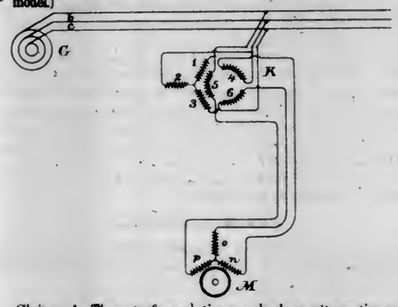
Claim.—In the herein-described window-sash lock and support, the combination with the frame of a window and sash slidably mounted therein, of a vertical metal strip connected therewith, and having a central longitudinal groove, at each side of which are formed gear-teeth, of a roller H having gear-teeth formed at each end thereof, adapted to operate in connection with the teeth formed on said vertical strip, said roller having an annular flange adapted to engage said groove, and a pawl K pivotally supported adjacent to said roller, and having gear-teeth on its lower side, adapted to engage the gear-teeth on the roller said pawl being provided with an arm, and a vertical rod L, pivotally connected with said arm and by means of which said pawl is operated, substantially as shown and described.

571,466. PLOW ATTACHMENT. HEDLEY WHITE, Marquez, Tex. Filed Sept. 4, 1896. Serial No. 604,886. (No model.)

Claim.—In a guide attachment for plows and cultivators, the combination with the longitudinally-slotted standard, the shovel, and the heel-bolt projected rearwardly through the slot of the standard, of a vertically-adjustable guide-foot attachment arranged at the rear side of the standard and comprising a single casting having a straight rearwardly-disposed slide-bar and a curved securing-plate disposed at an angle to the bar and projected upwardly from the front end thereof, said securing-plate having a longitudinally-disposed slot receiving the heel-bolt, and upper and lower rest-lugs at its ends to rest flat against the rear side of the standard, the upper of said lugs having a short guide-stud working in the slot of the standard, and a clamping-nut engaging the heel-bolt at the rear side of said securing-arm, substantially as set forth.



571,467. REGULATING POLYPHASE CIRCUITS. ALBERT H. ARMSTRONG, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed May 2, 1896. Serial No. 589,953. (No model.)



Claim.—1. The art of regulating a polyphase alternating current motor, translating device, or other circuit, which consists in introducing between the circuit to be controlled and the main source of polyphase electromotive forces intermediate constant electromotive forces, and varying the phase relation between the electromotive forces of the lines and those of the intermediate source from coincidence to opposition, thus impressing upon the motor or other device to be regulated the desired resultant electromotive forces.

2. An alternating-current regulator comprising a polyphase inducing member having interconnected coils or windings in shunt between the mains of the distribution system, an induced member having a core and an independent coil or winding in series between each supply-line and the work, and means for varying the relative angular position of the inducing and induced windings so as to vary the phase relation between the electromotive force of the line and that in the induced member of the regulator.

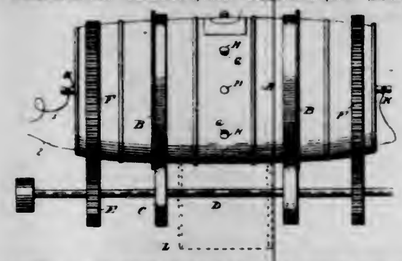
3. An alternating-current regulator, comprising a fixed inducing member and a rotatably-mounted induced member, the first having a winding in shunt to the lines, and the second a core and a winding comprising an independent coil in series between each of the supply-lines and the work, and a handle for changing the relative angular position of the rotating and fixed members, and thereby the phase relation between electromotive forces in the coils carried upon them.

4. The combination of a generator of alternating current, and lines leading therefrom between which a desired difference of potential is maintained, with a regulator comprising a polyphase inducing member having coils interconnected in shunt between the lines, and an induced member having a core and an independent coil or winding in series between each supply-line and the work, and means for varying the relative positions of the two members so as to change the phase relation between the line electromotive force and the electromotive force of the induced member, and thus regulate the electromotive force impressed upon the working circuit.

5. In combination, a generator of alternating current, lines leading therefrom and supplying an electric railway, a traveling vehicle upon the railway deriving its energy from the lines, a polyphase alternating current motor or motors on the vehicle, and a regulator also carried upon the vehicle, and comprising a polyphase inducing

and an induced member, the former connected in shunt between the lines, the latter having a core and an independent coil connected in series between each supply-line and the work, and means for varying the relative position of the windings carried by the two members, and thus impressing upon the motor or motors a resultant electromotive force depending upon the phase relation between the line electromotive force and that in the induced member of the regulator.

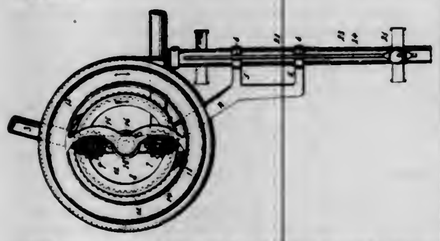
571,468. PROCESS OF TREATING ORES. THOMAS P. BARBOUR, San Antonio, Tex. Filed Nov. 7, 1893. Serial No. 490,294. (No model.)



Claim.—1. The herein-described process of treating ores which consists in first treating the raw material with copper oxid and sulfuric acid, then chlorinating the pulp thus treated, introducing the chlorinated mass into a suitable agitator having zinc therein, and establishing an electric current through the mass in the presence of zinc, substantially as set forth.

2. A chlorinating-tank for treating ores consisting of a revoluble cask having a single manhole and a circular series of bung-holes, copper pole-disks secured within the cask at opposite ends thereof and arranged in an electric circuit, insulator bracing-posts arranged between said disks and the outer heads of the tank, flanged guide-rings encircling said cask at an intermediate point, spur-rings encircling the cask near its opposite ends, and a horizontal drive-shaft carrying guide-rolls engaging said flanged guide-rings and drive-pinions engaging said spur-rings, substantially as set forth.

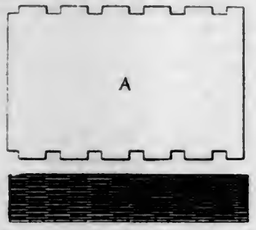
571,469. POWER MECHANISM FOR BICYCLES. AUGUST BRAUER, Independence, Mo. Filed June 29, 1896. Serial No. 597,456. (No model.)



Claim.—1. A power mechanism for vehicles comprising a suitable framework, a shaft journaled therein a wheel upon said shaft, cog-pinions upon said shaft, internally-toothed rings engaging said pinions and arranged eccentrically thereon, and provided externally with ratchet-teeth grooved annuli surrounding said rings concentrically and suitably journaled, spring-actuated pawls carried thereby and engaging said ratchet-teeth, vertical slotted guide-tubes carried by the framework, sliding blocks therein and projecting through said slots, pedals carried by said blocks, cables engaging and secured to said grooved annuli and to said sliding blocks, and cushions or springs in the upper and lower ends of said guide-tubes, substantially as described.

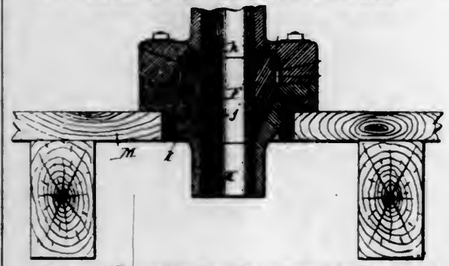
2. A power mechanism for vehicles comprising a framework, a shaft journaled therein, a wheel mounted upon said shaft, cog-pinions upon said shaft, idle cog-pinions carried by stub shafts of the framework, rings eccentrically surrounding the first-named cog pinions and provided with cog-teeth engaging said cog-pinions and the idle cog-pinions and with flanges at the inner and outer sides or faces of the same, and provided also with peripheral ratchet-teeth, annuli surrounding said rings, and provided with central stub-shafts journaled in the framework, springs secured at their opposite ends to said framework and to said annuli, spring-actuated pawls engaging said ratchet-teeth and carried by said annuli, flexible connections mounted in peripheral grooves of said annuli and vertically-reciprocating pedals attached to said cables, substantially as described.

571,470. PACK OF PHOTOGRAPHIC FILMS. JOSEPH T. CLARKE, Boston, Mass. Filed Dec. 29, 1890. Serial No. 376,162. (No model.) Patented in England July 29, 1890, No. 11,891.



Claim.—As a new article of manufacture, a pack or series of photographic films of two patterns, having their opposite edges notched, and being so formed and arranged in alternate sequence that the notches of the films of odd number in the pack correspond to the projections between the notches of the films of even number, and vice versa, substantially as and for the purpose described.

571,471. WATER-CLOSET JOINT. EDWARD L. DAVIS, Buffalo, N. Y. Filed Nov. 22, 1895. Serial No. 569,757. (No model.)



Claim.—1. The combination with a stationary bowl having a fixed tapering nipple communicating with the outlet of the bowl, of a plate or flange adapted to be secured to the floor and having a stationary tube or conduit provided with a tapering seat which receives said nipple, and fastening-bolts arranged parallel with said nipple, whereby the nipple is drawn into its seat in the floor-plate upon tightening said bolts, substantially as set forth.

2. The combination with a water-closet bowl having a base-flange, of a separate base-plate secured to said base-flange and having a depending nipple communicating with the outlet of the bowl, a plate or flange adapted to be secured to the floor and having a tube or conduit which receives said nipple and fastenings connecting said base-plate with said floor-plate, substantially as set forth.

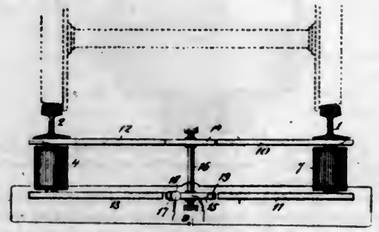
3. The combination with a water-closet bowl having a base-flange provided with a dovetail groove or recess, of a separate base-plate provided with a dovetail tenon engaging in said groove and a depending nipple communicating with the outlet of the bowl, a floor plate or flange having a tube or conduit which receives said nipple, and fastenings connecting said base and floor plates, substantially as set forth.

4. The combination with a water-closet bowl having a base flange provided with a dovetail groove or recess of a separate base-flange having a dovetail tenon engaging in said groove, a nipple or short tube removably secured in said base-plate and extending upwardly into the base-flange of the bowl, whereby the nipple prevents longitudinal displacement of the base-plate on the bowl-flange, and a floor plate or flange having a tube or conduit which receives said nipple, substantially as set forth.

5. The combination with a water-closet bowl having an outlet-opening at its lower end and a recess formed in the wall of said opening, of a base-plate secured to the base-flange of the bowl, a vertically-movable nipple arranged in said base-plate and extending into the recess of said outlet-opening, and a packing interposed between said nipple and the opposing wall of said recess, substantially as set forth.

6. The combination with a water-closet bowl having an outlet-opening and a recess arranged in the wall of said opening and forming a shoulder, of a base-plate secured to the base-flange of the bowl and having a screw-threaded opening, an externally screw-threaded nipple engaging with said opening and extending into the recess of the bowl flange, and a packing-gasket interposed between said shoulder and the upper end of said nipple, substantially as set forth.

571,472. TRACK INSTRUMENT. THOMAS B. DIXON, Henderson, Ky. Filed Nov. 15, 1895. Renewed Oct. 14, 1896. Serial No. 608,891. (No model.)



Claim.—1. In a track instrument, the combination, with a magnet, of two armatures connected together, movably mounted and located in magnetic fields of said magnet, said armatures occupying different relative positions with respect to the poles of their respective magnetic fields and the field of one of said armatures being arranged to be weakened with respect to the field of the other armature when a train passes over the track, and means for holding the first-named armature normally in closer proximity to the poles of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, substantially as described.

2. In a track instrument, the combination, with a magnet, of two armatures connected together, movably mounted and located in magnetic fields of said magnet, said armatures occupying different relative positions with respect to the poles of their respective magnetic fields and the fields of one of said armatures being arranged to be weakened with respect to the field of the other armature when a train passes over the track, means for holding the first-named armature normally in closer proximity to the poles of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, and a signal-controlling device operated by the movement of said armatures, substantially as described.

3. In a track instrument, the combination, with a magnet, of two armatures connected together, movably mounted, and located in magnetic fields of said magnet, said armatures occupying different angular positions with respect to the lines of force of their respective magnetic fields and the field of one armature being arranged to be weakened with respect to the field of the other armature when a train passes over the track, and means for holding the first-named armature normally in closer parallelism with the lines of force of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, substantially as described.

4. In a track instrument, the combination, with a magnet, of two armatures connected together, movably mounted, and located in magnetic fields of said magnet, said armatures occupying different angular positions with respect to their respective magnetic fields, and the field of one armature being arranged to be weakened with respect to the field of the other armature when a train passes over the track and having its poles in closer proximity to the path of motion of the ends of its armature than are the poles of the other magnetic field with respect to the other armature, whereby the first-mentioned armature is caused normally to be in closer parallelism with the line of force of its magnetic field than is the second armature, and both armatures are caused to move when a train passes over the track, substantially as described.

5. In a track instrument, the combination, with a magnet, of two armatures secured to a common pivotally-mounted shaft, and located in magnetic fields of said magnet, said armatures occupying different angular positions with respect to the lines of force of their respective magnetic fields, and the field of one armature being arranged to be weakened with respect to the field of the other armature when a train passes over the track, and means for holding the first-named armature normally in closer parallelism with the lines of force of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, substantially as described.

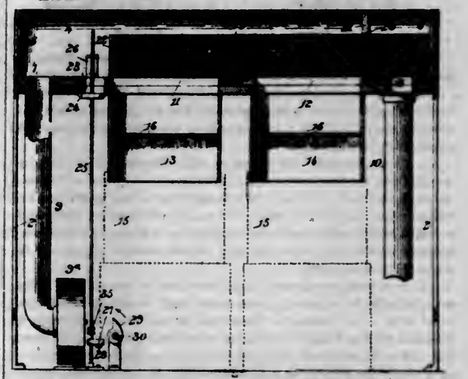
6. In a track instrument, the combination, with a magnet, of two armatures secured to a common pivotally-mounted shaft, and located in magnetic fields of said magnet, said armatures occupying different angular positions with respect to the lines of force of their respective magnetic fields and the field of one armature being arranged to be weakened with respect to the field of the other armature when a train passes over the track, means for holding the first-mentioned armature normally in closer parallelism with the lines of force of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, and a signal-controlling device operated by the movement of said armatures, substantially as described.

7. In a track instrument, the combination, with two magnets, producing between their unlike poles magnetic fields, of two armatures connected together, movably mounted, and located in magnetic fields produced by said magnets, said armatures occupying different relative positions with respect to the poles of their respective magnetic fields, and the field of one of said armatures being arranged to be weakened with respect to the field of the other armature when a train passes over the track, and means for holding the first-named armature normally in closer proximity to the poles of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to move, substantially as described.

8. In a track instrument, the combination, with two magnets having connected to their poles magnetic conductors, the conductors of the unlike poles of said magnets extending toward each other and having at their ends magnetic poles producing between them magnetic fields, of two armatures connected together, movably mounted, and located in magnetic fields produced between said magnetic conductors, said armatures occupying different relative positions with respect to the poles of their respective magnetic conductors, and the field of one of said armatures being arranged to be weakened with respect to the field of the other armature when a train passes over the track, and means for holding the first-named armature normally in closer proximity to the poles of its magnetic field than the other armature, whereby, when a train passes over the track, said armatures are caused to be moved, substantially as described.

9. In a track instrument, the combination, with two magnets having unlike poles connected to the track-rails, and magnetic conductors connected with said magnet-poles and producing between them a magnetic field arranged to be short-circuited by wheels passing over the track, of other magnetic conductors connected with the other poles of said magnets and likewise producing between them a magnetic field, and two armatures connected together, movably mounted, and located in said magnetic fields respectively, said armatures occupying different positions with respect to the poles of their respective magnetic conductors, whereby, when a train passes over the track, said armatures are caused to move, substantially as described.

571,473. COTTON ELEVATOR AND DISTRIBUTER. JAMES W. ELLIOTT, Corsicana, Tex. Filed July 30, 1895. Serial No. 557,634. (No model.)



Claim.—1. In a cotton elevator and distributer, a horizontal vacuum-box provided in the floor thereof with a plurality of cotton-discharge openings, and with an air-inlet opening, a horizontal continuous arched screen provided with imperforate closed ends and supported at its edges on the floor of the box so as to extend continuously over the cotton-discharge openings, said screen being of a smaller cross-sectional area than the vacuum-box, an exhaust suction-pipe communicating with the interior of the box beyond one of the closed ends of the screen, a suction supply-pipe connected with the floor of the box near one end so as to communicate with the interior of the arched screen and disposed at right angles to the length of said screen to provide for the direct delivery of cotton against the inner surface of the screen, and an intermittently-operated valve working over said air-inlet opening, substantially as set forth.

2. In a device of the class described, the combination of a distributer-box, feeders in communication with openings in the floor of the distributer-box, a screen extending over said openings, a conductor communicating with the space inclosed by the screen, a pneumatic tube, an exhaust apparatus, a valve arranged in operative relation

with an inlet-opening in the distributer-box and spring-actuated to hold it normally seated, a cam 29 and means for communicating continuous motion to the same, and a foot 27 carried by the stem of said valve in the path of the cam and adapted to be engaged at intervals thereby to open the valve and equalize the pressure upon both sides of the screen, whereby the cotton in contact with the inner surface of the screen may fall by gravity into the feeders, substantially as specified.

571,474. FILTER. ALBERTINE GRANDJEAN, née UHOLD, Paris, France. Filed Mar. 1, 1895. Serial No. 540,315. (No model.) Patented in Belgium June 1, 1894, No. 110,250, and in France Oct. 8, 1894, No. 241,923.



Claim.—1. As a new article of manufacture, a filtering medium composed of flocculent pulp defibrated and compressed in a dry state into the form of a block, as specified.

2. A filter having a filtering medium of paper-pulp defibrated in the dry state and compressed in such dry state in the form of a block, said block being clamped and held between two perforated plates located on opposite sides of such block, one of said plates being connected with a liquid-inlet in the containing-casing and the other of said plates being connected with a liquid outlet in the containing-casing, all substantially as hereinbefore described and illustrated in the drawings for the purpose specified.

571,475. WASHING-MACHINE. JOHNSON M. GROVER, Toronto, Canada. Filed Nov 11, 1895. Serial No. 568,622. (No model.)



Claim.—1. In a washing-machine, in combination with the roller-shaft, the tubular standard, slots in said standard to receive the shaft, a detachable supporting-rod within said standard, said rod having a vertical slot to receive said roller-shaft, and an opening in said slot, whereby the roller-shaft may be removed when the rod is detached, substantially as described.

2. In combination with the upper roller and the rocker, the tubular standard, open at each end, the slotted supporting-rod within said standard, said rod provided with a flanged top, a locking-washer, and means on the lower end of said rod to engage said washer, said rocker provided with supporting-arms entering the standard, and a spring confined between said arms and said washer, substantially as and for the purpose described.

3. In a washing-machine, in combination with a suitable roller, end standards for supporting said roller, each of said standards provided with a rod slotted to receive the axis of said roller, said rod provided with a flanged cap at its upper end and lugs at its lower end, and said standard provided with a cross-slotted washer to receive the lower end of the rod, substantially as and for the purpose described.

4. In a washing-machine, in combination with the standards, the projections on one of said standards, a bracket adapted to be secured to a vessel and provided with recesses to receive said projections, the other standard provided with the slotted arm, c^3, the sliding screw-bolt, c' thereon, provided with the projection, G, and a bracket P secured to the vessel and having a slot adapted to receive said projection, whereby the machine may be secured to different sized vessels, substantially as described.

571,476. SAFETY-VENT. JAMES T. HAYDEN, Oak Park, Ill., assignor to the Crane Company, Chicago, Ill. Filed May 8, 1896. Serial No. 590,767. (No model.)

Claim.—1. In a safety-vent, a rupture-disk, comprising a body portion, a flanged offset, and a cylindrical portion, substantially as described.

2. In a safety-vent, a rupture-disk composed of a flat portion 5, an offset flange 4, and a cylindrical part 7, substantially as described.

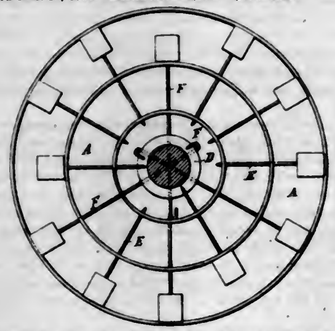
3. In a safety-vent, a rupture-disk, comprising a body portion, an annular securing edge, and a cylindrical portion, substantially as described.



4. In a safety-vent, a rupture-disk, comprising a body portion, a flanged portion and a weakened cylindrical portion, substantially as shown and described.

5. In a safety-vent, a rupture-disk, comprising a body portion, a securing portion, and a weakened portion approximately cylindrical in shape, substantially as described.

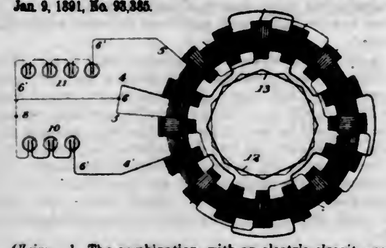
571,477. TOY PUZZLE. MICHAEL J. HOWLETT, Bayonne, N. J. Filed Mar. 11, 1896. Serial No. 583,694. (No model.)



Claim.—1. A toy puzzle comprising in combination with a box or case a spring-jack contained therein, a series of slides movable through the sides of the box toward and away from the jack, the ends of a portion of the slides engaging directly with the jack, while the ends of the other slides are extended beyond or bent back toward the jack so that the first-named ends of the slides will be brought into engagement with and lock the jack, while those of the others will be disengaged therefrom by the same movement of the slides relatively to the jack, as set forth.

2. The combination with the circular box B, the spring-jack contained therein, the slides E passing through the sides of the box and engaging with the jack when pushed in, and the slides F passing under the jack and turned back so as to engage therewith when pulled out, as herein described.

571,478. ALTERNATING-CURRENT MOTOR. MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Société Anonyme pour la Transmission de la Force par l'Electricité, same place. Filed May 26, 1895. Serial No. 550,676. (No model.) Patented in Belgium Jan. 9, 1891, No. 93,385.



Claim.—1. The combination, with an electric circuit possessing self-induction, charged with alternating currents, of an electrolytic polarization-battery having a sufficient number of cells in series to neutralize by polarization the electromotive force of the self-induction in the circuit, substantially as described.

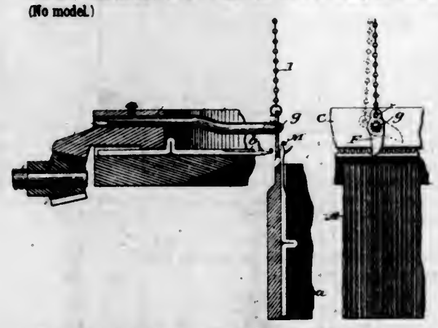
2. The combination, with an alternating-current motor, and in series with a circuit or circuits of the same, of an electrolytic polarization-battery adapted to yield an electromotive force opposed to that of the self-induction of the said circuit or circuits, substantially as described.

3. The combination of a feeding-circuit carrying monophase alternating currents, and a field-magnet, the coils of which are in parallel branches derived from the feeding-circuit; with a polarization battery or batteries for dephasing the currents in the branches with reference to each other, and thereby producing a rotary field, substantially as described.

4. A rotary-field alternating-current motor with two sets of field-magnet coils supplied from a source of simple alternating currents, and an electrolytic polarization battery or batteries connected up with the said field-magnet circuits, whereby the currents in the same are displaced in phase, substantially as described.

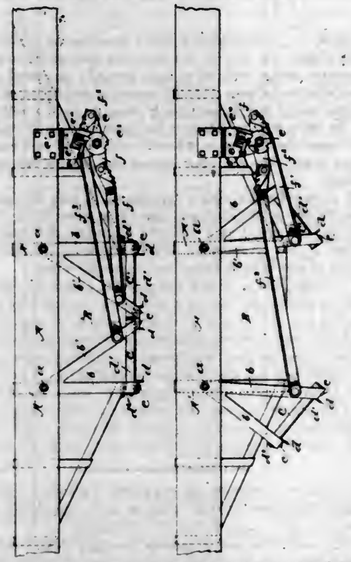
5. In an alternating-current motor, the combination of two sets of field-coils, each in a branch derived from a single-phase alternating-current circuit; with electrolytic polarization cells or batteries for unequally shifting the phases of currents in the branches and thereby producing a rotary field, substantially as described.

571,479. STOP-MOTION FOR KNITTING-MACHINES. WILLIS A. INGALLS, Manchester, N. H. Filed Jan. 9, 1896. Serial No. 574,862. (No model.)



Claim.—In a knitting-machine, a rod or shaft provided with an offset and adjustably connected to the cam-plate, and a suitable rocker pivotally attached to the free end of said rod or shaft, one end of said rocker being adapted to run in close proximity to the work and the other end being attached to a chain adapted to operate the stop mechanism, substantially for the purpose set forth.

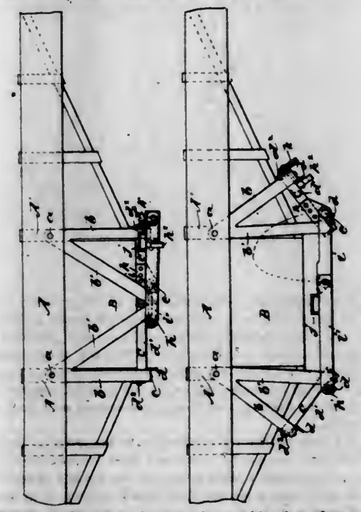
571,480. DUMPING-CAR. SINCLAIR J. JOHNSON, New York, N. Y. Filed Feb. 24, 1896. Serial No. 580,556. (No model.)



Claim.—1. In combination with a dumping-car, a gate for closing the exit for the load, said gate being suspended by two hangers supporting the edges thereof, said hangers being pivotally secured above said gate and one of them being longer than the other, whereby one edge of said gate may be dropped lower and describe a greater arc than the other during the opening and closing movements.

2. In combination with a dumping-car, a gate for closing the exit for the load, said gate being suspended by two hangers rigidly secured to the edges thereof, one of said hangers being longer than the other and placed at a different angle to the gate, whereby one edge thereof may be dropped lower and describe a greater arc than the other during the opening and closing movements.

571,481. DUMPING-CAR. SINCLAIR J. JOHNSON, New York, N. Y. Filed Feb. 24, 1896. Serial No. 580,557. (No model.)



Claim.—1. In a dumping-car, the combination of one or more gates for closing the exit for the load, a lever-arm pivotally secured to one gate, a second lever-arm jointed to the first and pivotally secured to form a brace at its other end, said lever-arms being adapted to be spread and open the gate or gates and to be folded and close the same.

2. In a dumping-car, the combination of two gates adapted to close the exit for the load, a shaft secured to one of said gates, a lever-arm projecting from said shaft, a second lever-arm jointed to the outer end of the first, and pivotally secured at its other end to the other gate, said lever-arms being adapted to be spread and open said gates, and to be folded and close the same.

3. In a dumping-car, the combination of two gates adapted to close the exit for the load, a shaft secured to one of said gates, a lever-arm at each end of said shaft and projecting therefrom, a second lever-arm at each end of said gates and jointed to those projecting from said shaft and having the other ends thereof pivotally secured to the other gate, said lever-arms being adapted to be spread and open said gates and to be folded and close the same.

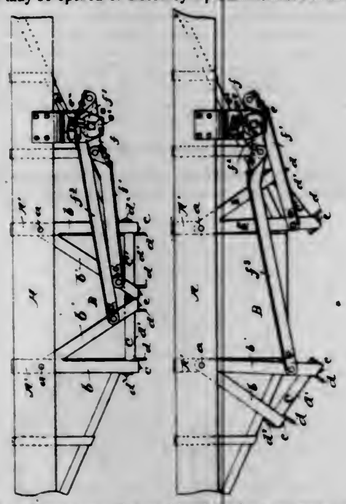
4. In a dumping-car, the combination of two gates for closing the exit for the load, hangers by which said gates are suspended and adapted to oscillate, a shaft secured to one of said gates, a lever-arm projecting from said shaft, a second lever-arm jointed to the outer end of the first and pivotally secured at its other end to the other gate, said lever-arms being adapted to be spread and open said gates and to be folded and close the same.

5. In a dumping-car, the combination of one or more gates for closing the exit for the load, a lever-arm pivotally secured to one gate, a second lever-arm jointed to the first and pivotally secured to form a brace at its other end, and a rest for the jointed ends of said lever-arms when folded, said rest being at or below the line of dead-center of the pivot-points of said lever-arms substantially as and for the purposes set forth.

571,482. DUMPING-CAR. SINCLAIR J. JOHNSON, New York, N. Y. Filed Feb. 24, 1896. Serial No. 580,558. (No model.)

Claim.—1. In a dumping-car, the combination of one or more gates adapted to close the exit for the load, hangers for suspending said gates at each end and at both edges a shaft secured to the car and provided at each of its ends with one or more crank-arms and one or more horizontally-moving lever-bars having connection with

said crank-arms and with the hangers for said gate or gates, whereby the same may be opened or closed by a partial rotation of said shaft.

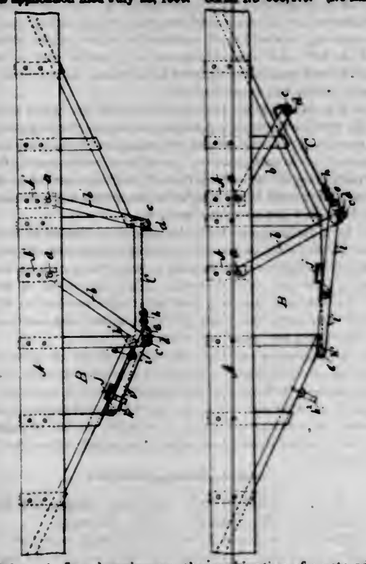


2. In a dumping-car, the combination of one or more gates for closing the exit for the load, hangers for suspending said gates at each end and both edges a shaft secured to the car and provided at its ends with one or more crank-arms, a ratchet and pawl adapted to retain the said shaft in a fixed position and one or more horizontally-moving lever-bars connected therewith, and with the hangers for said gate or gates for opening and closing the same as said shaft is partially rotated.

3. In a dumping-car, the combination of two gates for closing the exit for the load, hangers by which said gates are suspended at both ends and at each edge, a shaft secured to the car and provided at its ends with two crank-arms, and horizontally-moving lever-bars connected therewith, and with the hangers for the gates respectively, substantially as described.

571,483. DUMPING-CAR. SINCLAIR J. JOHNSON, New York, N. Y.

Original application filed Feb. 24, 1896, Serial No. 580,567. Divided and this application filed July 25, 1896. Serial No. 600,479. (No model.)



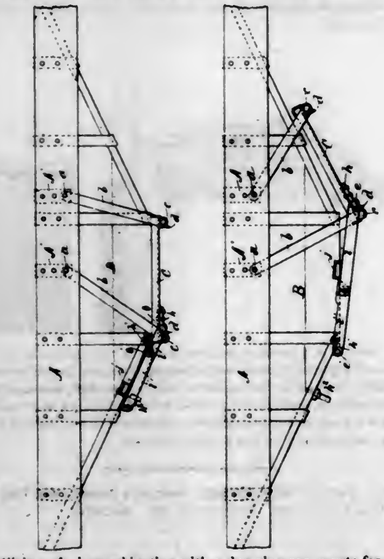
Claim.—1. In a dumping-car, the combination of a gate adapted to close the exit for the load, a lever-arm having one end pivotally secured on the under side of said gate, a second lever-arm having one end jointed to the outer end of the first, and the other end pivotally secured on the under side of the car, said lever-arms being adapted to be spread and open the gate and to be folded and close the same.

2. In a dumping-car, the combination of a gate adapted to close the exit for the load, a shaft having its bearings on the under side of said gate, a lever-arm projecting from said shaft, a second lever-arm jointed to the outer end of the first and pivotally secured at its other end on the under side of the car, said lever-arms being adapted to be spread and open the gate, and to be folded and close the same.

3. In a dumping-car, the combination of a gate suspended by hangers adapted to oscillate in opening and closing the exit for the load, a lever-arm pivotally secured to said gate, a second lever-arm jointed to the outer end of the first and pivotally secured at its other end on the under side of the car, said lever-arms being adapted to be spread and open the gate and to be folded and close the same.

571,484. DUMPING-CAR. SINCLAIR J. JOHNSON, New York, N. Y.

Filed July 25, 1896. Serial No. 600,480. (No model.)



Claim.—1. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being placed to be at a different angle from the other with reference to the gate, and one of said hangers being longer than the other, whereby one edge of said gate may be dropped lower than the other during the opening substantially as described.

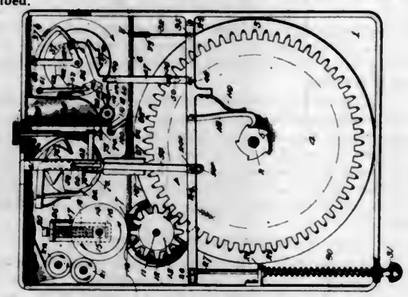
2. In combination with a dumping car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being longer than the other.

3. In combination with a dumping-car, a gate for opening and closing the exit for the load, said gate being suspended by two hangers having one end of each pivotally connected therewith and the other end of each pivotally connected at different points above said gate, one of said hangers being placed at a different angle to the gate when closed from the other hanger substantially as described.

4. In combination with a dumping car, a gate for opening and closing the exit for the load, said gates being suspended by two hangers, one end of each pivotally connected therewith, and the other end of each pivotally connected at different points above the said gate.

571,485. STREET-CAR-TRANSFER PRINTING, DELIVERING, AND RECORDING DEVICE. PETER M. KNOPP, Kansas City, Mo. Filed Aug. 31, 1895. Serial No. 561,169. (No model.)

Claim.—1. A street-car-transfer stamping device comprising a suitable casing, a lever therein, a frame pivotally connected to said lever, a shaft carried by said frame, a date-stamping mechanism upon said shaft, a direction-stamping mechanism carried by said frame, an ink-transfer roller, and operative connections between the same and the lever, whereby the depression of the latter causes said roller to successively contact with and apply ink to the direction and date stamping mechanism, and then causes said roller to move out of the path of descent of said mechanism, substantially as shown and described.



2. A street-car-transfer stamping device, comprising a suitable casing, a lever therein, a frame pivotally connected to said lever, a date-stamping mechanism in the form of disks carried by said frame, a reversible direction-stamping mechanism carried by said frame, an ink-fountain provided with a ductor-roll, a transfer-roller held yieldingly in contact with said roll, and means substantially as shown and described, as said lever is depressed to first rotate the ductor-roll then move the transfer-roller and in its passage apply ink to the direction-stamping mechanism, and then to cause simultaneously the depression of the stamping mechanism and the application of ink by said roller to the date-stamping mechanism, substantially as set forth.

3. A street-car-transfer stamping device, comprising a suitable casing, a lever therein, a frame pivotally connected to said lever, a shaft carried by said frame, a date-stamping mechanism in the form of a series of disks mounted upon said shaft, vertically-slotted guide-plates, pins projecting from said frame in axial alinement with said shaft and engaging said slots, a direction-stamping mechanism having a fixed relation to said frame, an ink-fount, a ductor-roll therefor, a pair of levers, arms pivotally connected thereto and carrying a transfer-roller, springs holding said transfer-roller normally in engagement with the ductor roll, a pitman pivotally connecting the first-named lever with an arm of one of the other levers, and vertically-slotted guide-plates in which the pivot-pin between said pitman and said arm is adapted to reciprocate, substantially as set forth.

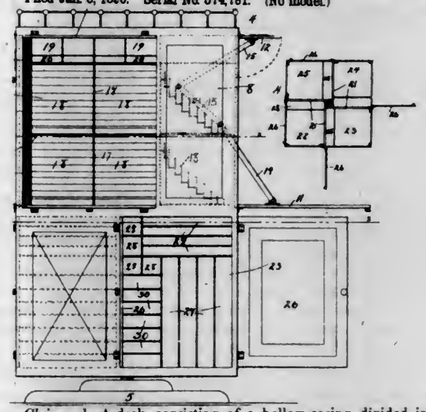
4. A street-car-transfer stamping device, comprising a suitable casing, a lever therein, a frame pivotally connected to said lever, a date stamping mechanism supported by said frame and consisting of a series of disks, a direction-stamping mechanism also carried by said frame, an ink-fount, a ductor-roller therefor, a pair of levers provided with lugs or shoulders at their outer ends, a pair of arms pivoted inward of said lugs or shoulders, a transfer-roller carried by said arms, springs forcing said arms toward said lugs or shoulders, a pitman pivotally connecting the first-named lever and an arm of one of the last-named levers, all arranged substantially as and for the purpose set forth.

5. A street-car-transfer printing, stamping and delivering device, comprising a suitable casing, a shaft therein, a drum loosely mounted upon said shaft and carrying loosely a roll of paper, a paper-feed roller geared to said drum, a spring-depressed printing-roller cooperating with said paper-feed roller, a guideway arranged to receive the paper from between said rollers and having its delivery end communicating with a slot in the casing, a lever within the casing, a knife pivotally connected to said lever adapted to work through a slot in the guideway, a frame pivotally connected to said lever, a date and direction stamping mechanism carried by said frame, a movable transfer-roller also operatively connected to said lever, and means whereby the depression of said lever will first supply ink to the transfer-roller, next cause said roller to apply ink to the stamping mechanism, and then cause said stamping mechanism to descend and make the required impression upon the printed portion of the paper in the guideway, and means, substantially as shown and described, as said lever and said ink-transfer roller and said stamping mechanism resumes its original position, to cause the drum to rotate and the printing-roller to make the required impression upon the portion of paper moving into the guideway, and to sever that portion of the ticket already stamped from the body or unstamped portion.

6. A street-car-transfer stamping device, comprising a suitable casing, a lever therein, a frame pivotally connected to said lever, a direction-stamping device rotatably carried by said frame and consisting of an angular rod, a sleeve telescopically engaging same and projecting through the top of the casing, and a disk or head at the upper end of said sleeve whereby it may be rotated, substantially as and for the purpose set forth.

571,486. DUPLICATE DESK. JAMES C. LAUGHLIN, Columbus, Ind.

Filed Jan. 8, 1896. Serial No. 574,781. (No model.)

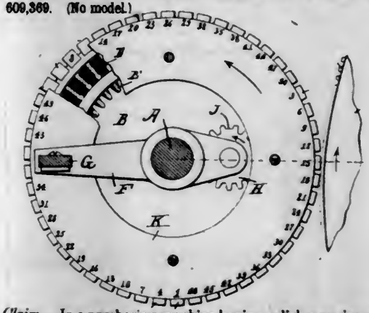


Claim.—1. A desk, consisting of a hollow casing, divided into an upper and a lower portion, having its upper part divided by suitable vertical partitions into a series of compartments, each having an open side, vertically-swinging doors adapted to close said openings, and one of said doors adapted when open to form a writing-table, the lower portion of said casing being also divided by a series of vertical partitions into a series of compartments each having an open side, each of the compartments formed in the upper and lower portions of the casing being subdivided by suitable partitions into a series of compartments adapted to hold books and papers, substantially as set forth.

2. A desk, consisting of a hollow casing, divided into an upper and a lower portion, having its upper part divided by suitable vertical partitions into a series of compartments each having an open side, a pair of vertically-swinging doors adapted to close said opening, one of said doors being adapted, when open, to form a writing-table, the lower portion of said casing being also divided by vertical partitions into a series of compartments each having an open side, which is closed by a horizontally-swinging door, each of said compartments formed in the upper and lower portions of the casing being subdivided by suitable partitions into a series of compartments adapted to hold books and papers, substantially as set forth.

3. In a desk, the combination of a casing, a compartment formed within said casing and having an opening in one side thereof, a pair of vertically-swinging doors hinged to opposite sides of said opening, one of said doors being adapted, when open, to form a writing-table, and intermediate connecting mechanism connecting said doors, substantially as shown and described, whereby the doors are simultaneously operated, and are supported when open, substantially as set forth.

571,487. NUMBERING-MACHINE. CARLOS DE LEON, Hamilton, Ohio, assignor to the National Autographic Register Company, New York, N. Y. Filed Oct. 14, 1895. Renewed Oct. 19, 1896. Serial No. 609,369. (No model.)



Claim.—In a numbering-machine having a disk carrying radially-movable types protruded by the action of a pinion geared to the disk, the combination, substantially as set forth, of types having gear-teeth

on their inner ends to form the gear element of the disk, and a pinion having teeth meshing with the teeth formed on said types and having an abnormally shallow tooth-space.

571,488. FOOT-BELT. JAMES W. MADDEN, Brooklyn, N. Y. Filed July 11, 1896. Serial No. 598,855. (No model.)



Claim.—1. A foot-belt comprising a flexible strip and a metallic plate, punched and folded as shown to engage the ends of the strip, combined and arranged to serve substantially as herein specified.

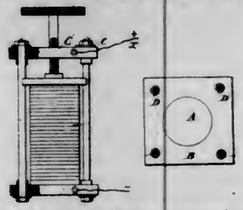
2. A foot-belt comprising the strip of elastic webbing A and punched, notched and folded plate B, combined and arranged to serve substantially as herein specified.

3. The plate B having the wings B' and oppositely-situated notches B^2, in combination with the webbing A having its ends inclosed between and held by the wings when the latter are folded one upon the other, all adapted to serve as and for the purposes herein specified.

4. The plate B having the wings B', oppositely-situated notches B^2, and groove B^3 connecting the angles of the notches to determine the folding-line and initiate the fold, in combination with the elastic webbing A having its ends inclosed between and held by the wings when the latter are folded one upon the other, all adapted to serve as and for the purposes herein specified.

5. The plate B having the wings B', oppositely-situated notches B^2, holes *b*, and groove B^3 connecting the angles of the notches to determine the folding-line and initiate the fold, in combination with the webbing A having its ends inclosed between and held by the wings when the latter are folded one upon the other, and the eyelets C engaged in said holes and passing through the webbing, all substantially as herein specified.

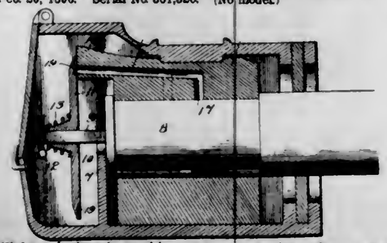
571,489. MANUFACTURE OF ELECTRICAL RESISTANCES. AUGUSTUS J. MARQUAND, Cardiff, and DAVID LOWDON, Barry Dock, England. Filed June 25, 1896. Serial No. 596,956. (No model.)



Claim.—1. An electrical resistance composed of asbestos cloth having deposited in its texture carbon resulting from the decomposition of carbonaceous material in contact with the asbestos cloth.

2. An electrical resistance which can be varied at will and which consists of a press by which a gradual pressure is applied to a pile forming part of an electric circuit, such pile being composed of asbestos cloth having in its texture deposited carbon resulting from the the decomposition of carbonaceous matter in contact with the asbestos cloth.

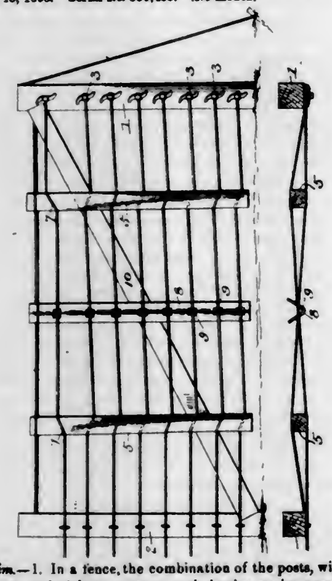
571,490. JOURNAL-BOX. JOSEPH L. MARTIN, Dawson, Pa. Filed Feb. 29, 1896. Serial No. 581,320. (No model.)



Claim.—1. In a journal-box, a transverse imperforate partition located in front of the end of the journal and forming with one end of the box an oil-reservoir arranged entirely beyond the end of the journal, in combination with an oil-carrying disk connected to the journal and rotating within the reservoir, and a brass overhanging the reservoir and having its advance end in contact with the rotating disk and provided with inclosed oil-passages extending from the front end of the brass to the bearing-surface thereof, and screw-plugs movable at substantially right angles to said passages and having their inner ends projecting therein, the said plugs being made adjustable for the purpose of regulating the flow of oil to the journal, substantially as described.

2. A journal-box provided intermediate its ends with an imperforate cross-partition acting as a stop for the end of the journal and also forming with one end of the box an oil-reservoir located entirely beyond the end of the journal, in combination with a brass having an overhanging portion reaching beyond the end of the journal and extending over said partition, and an oil-conducting disk mounted on the end of the journal and contacting with the brass, substantially as described.

571,491. FENCE. WILLIAM H. MASON, East Monroe, Ohio. Filed Aug. 15, 1895. Serial No. 559,405. (No model.)

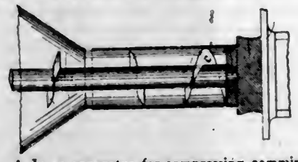


Claim.—1. In a fence, the combination of the posts, wires strung to the posts, and pickets or stays, each having on its opposite sides alternating notches extending obliquely in the same direction to receive the alternating wires when the pickets or stays are slanted sufficiently to bring the notches parallel or in line with the fence-wires, and each of said pickets having a reversely-arranged oblique notch at one end, whereby when said picket or stay is raised to a vertical direction and one of the wires forced into said reversely-arranged notch, kinks will be formed in the wires to prevent the picket or stay being slid thereon, and the reversely-arranged notch of said picket or stay will lock the same in its vertical direction against the strain of the other wires, substantially as described.

2. As an article of manufacture, a stay or picket for fence-wires, having a series of alternating notches on its opposite sides, said notches extending obliquely in the same direction, said picket or stay having at one end a notch, which extends obliquely in a reverse direction, substantially as described.

3. In a fence, the combination of the posts, wires strung to the posts, and pickets or stays, each having on its opposite sides alternating notches extending obliquely in the same direction to receive the alternating wires when the pickets or stays are slanted sufficiently to bring the notches parallel or in line with the fence-wires, and each of said pickets having a reversely-arranged oblique notch at one end, whereby when said picket or stay is raised to a vertical direction and one of the wires forced into said reversely-arranged notch, kinks will be formed in the wires to prevent the picket or stay being slid thereon, and the reversely-arranged notch of said picket or stay will lock the same in its vertical direction against the strain of the other wires, said wires being crossed in their length and a metallic angle-stay placed at the point of crossing to retain the wires in position for the purpose set forth.

571,492. MACHINE FOR PACKING GRANULATED OR POWDERED SUBSTANCES. CHARLES J. MATTISON, Oswego, N. Y. Filed Jan. 7, 1896. Serial No. 574,599. (No model.)

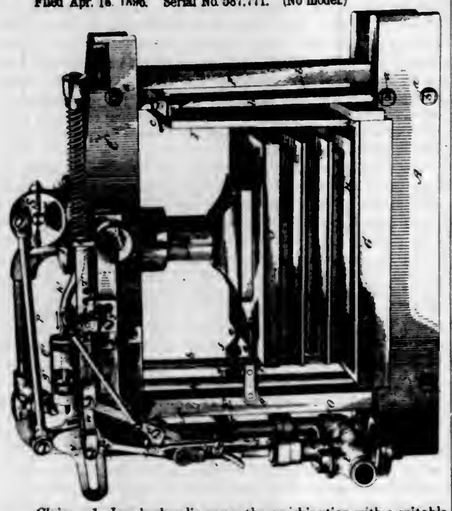


Claim.—1. In an apparatus for compressing comminuted material into a shell or case around a solid core, the combination, with a revoluble packing-auger provided with a tubular center adapted to temporarily hold a solid core during the operation of compressing the comminuted material, of a yielding platform arranged to hold said shell or case and to move downward in opposition to a movable resistance, as herein specified.

2. In an apparatus for compressing comminuted material into a case or shell around a solid core, the combination, with a revoluble packing-auger provided with a tubular center that is adapted to temporarily hold the solid core during the operation of packing the comminuted material; said packing-auger being constantly surrounded by a packing-tube, and a spring contained in said tubular center and arranged to feed down the solid core correspondingly to the filling of said shell, of a yielding platform arranged to hold said shell or case and to move downward against the opposition of a movable resistance, as herein specified.

3. In an apparatus for compressing comminuted material into a shell or case around a solid core, the combination, with a revoluble packing-auger provided with a tubular center that is adapted to temporarily hold a solid core during the operation of compressing the comminuted material, of a yielding platform arranged to move downward against the opposition of a movable resistance, and a block placed or fixed on said yielding platform and provided with a recess for retaining the lower end of said core during the operation of compressing the comminuted material in the case or shell; said block being adapted to form a recess in the lower end of a package of said material, as herein specified.

571,493. HYDRAULIC PRESS. JOHN S. MILLER, Goshen, Ind. Filed Apr. 16, 1896. Serial No. 587,771. (No model.)



Claim.—1. In a hydraulic press, the combination with a suitable pump, of a regulating device therefor, consisting of a slotted crank, the piston of the pump connecting with the slotted crank, a notched and weighted regulating-arm, a pin with which the notches engage, means for connecting the arm with the piston of the pump, and means for adjusting the arm, substantially as and for the purpose set forth.

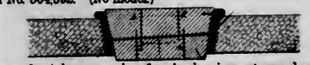
2. In a hydraulic press, a suitable pump, a slotted crank a pitman connecting with the pump-piston and with the slot in the crank, a notched and weighted regulating-arm connecting with the pitman, a pin for holding said arm in its adjusted position, and means for raising the arm out of engagement therewith, substantially as and for the purpose specified.

3. In a hydraulic press, a suitable pump, a slotted crank, a pitman connecting the piston of the pump with said crank, a notched and weighted arm, a pin for holding the arm in its adjusted position, a pivoted crank-lever, and a lever-arm connecting therewith for operating it to raise the notched arm out of engagement with the pin, substantially as and for the purpose set forth.

4. In a hydraulic press, a suitable pump, a slotted crank a pitman connecting the pump-piston with the crank, said pitman terminating in a yoke at its upper end with roller which engages the slot in the crank, a notched and weighted regulating-arm connecting with the pitman by pivoted links, a pin with which the notches in the arm engage, a pivoted crank-lever for raising the arm, and means for operating the crank-lever, consisting of a depending lever-arm pivotally connecting at its upper end with the notched arm and suitably connecting with the crank-lever, substantially as and for the purpose specified.

5. In a hydraulic press, a suitable pump, a slotted crank, a pitman connecting the pump-piston with the crank, a notched and weighted adjustable arm connecting with the pitman, means for holding the arm in its adjusted position, a cylinder communicating with the water-pipe of the pump, a cock for controlling the supply of water to the cylinder, a spring-actuated piston connecting with the cylinder, and a slidable bar, and means for connecting said bar with the piston whereby the two will move simultaneously, substantially as and for the purpose set forth.

571,494. BUNG FOR BARRELS. ARCHIBALD R. MCKECHNIE, New York, N. Y., assignor of five eighths to Robert G. Dun, Charles J. Kintner, and Adelaide T. Buchanan, same place. Filed Oct. 4, 1895. Serial No. 564,592. (No model.)



Claim.—1. A bung made of a single piece of wood and provided with a separable part or detachable core which is integral therewith and of substantially the same depth as the bung, in combination with means for holding the separable part after it has been severed from the bung proper, said bung having been given a conical shape under pressure so as to close the grooves and make it practically solid, substantially as described.

2. A bung made of a single piece of material having a central core which is integral therewith, said core being formed by grooves in the opposite faces of the bung proper, in combination with means for holding the core or separable part after it is detached from the bung, said bung having been compressed after the grooves were formed so as to close them and make it, the bung, practically solid, substantially as described.

3 A bung having a separable part which is integral therewith, in combination with a holding device consisting of means secured to the separable part and at a point near the bottom of the bung and extending outward and upward in a plane with the axis thereof to a point near the outer face thereof, substantially as described.

4. A bung constructed of a single piece of material and provided with a separable part which is integral therewith, in combination with a holding device which extends laterally through the bung and the separable part thence upward in a plane of the axis of the bung and to a point near the outer surface thereof.

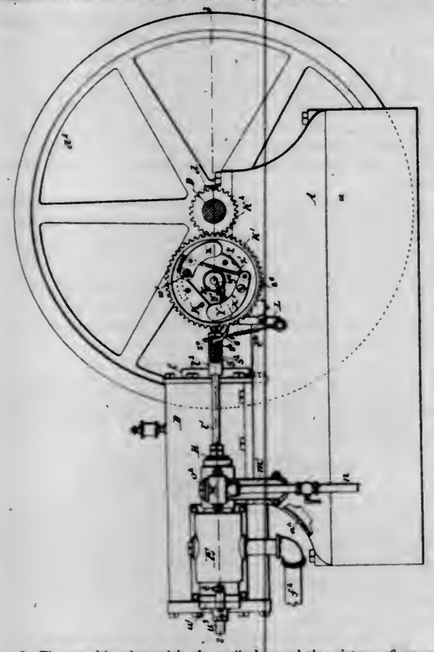
5. A bung constructed of a single piece of wood and provided with a central detachable core or separable part which is integral therewith, in combination with a holding device in the nature of a staple having a long leg extending through the bung and the separable part, the short leg being embedded in the lateral face of the bung and the head of the staple being substantially parallel with the axis thereof.

6. A bung constructed of a single piece of wood having grooves in its opposite faces which overlap each other, said bung being provided with a holding device which extends therethrough, all of the parts being compressed so as to close the grooves and constitute a solid bung.

571,495. GAS-ENGINE. FRED C. OLIN, Buffalo, N. Y. Filed Oct. 2, 1895. Serial No. 564,410. (No model.)

Claim.—1. The combination with the cylinder and the piston, of a valve-chamber connected with the cylinder, an exhaust-chamber connected with the valve chamber, a hollow valve stem arranged in said valve and exhaust chambers and communicating with a fuel supply, an exhaust-valve mounted on the inner end of the valve-stem, actuating mechanism whereby the hollow valve-stem is moved inwardly for opening the exhaust-valve and outwardly for closing the same, a fuel-valve adapted to move toward and from the valve-stem and actuating mechanism whereby the fuel valve is moved inwardly for opening the same and outwardly for closing the same, substantially as set forth.

2. The combination with the cylinder and the piston, of a valve-chamber connecting with the cylinder, and exhaust chamber connected with the valve-chamber by an opening provided with by-passes, a hollow valve-stem guided in said opening and an exhaust-valve mounted on said valve-stem, substantially as set forth.



3. The combination with the cylinder and the piston, of an exhaust-chamber connected with the cylinder, a hollow valve-stem arranged in said chamber and communicating with the cylinder and with a fuel supply, and an exhaust-valve loosely mounted on said stem, substantially as set forth.

4. The combination with the cylinder and the piston, of a valve-chamber connecting with the cylinder, an exhaust-chamber connecting with the valve-chamber, a hollow valve-stem arranged in the valve and exhaust-chambers, a valve-ring arranged on the valve-stem within the valve-chamber and provided on its rear side with an exhaust-valve face which is adapted to bear against an exhaust-valve seat surrounding the valve-stem, and a fuel-valve adapted to bear against a fuel-valve seat formed on the front side of the valve-ring, substantially as set forth.

5. The combination with the cylinder and the piston, of a valve-chamber connecting with the cylinder, an exhaust-chamber connecting with the valve-chamber, a hollow valve-stem arranged in the valve and exhaust chambers and provided with an external annular flange, a valve-ring surrounding the external flange and having an exhaust-valve face on its rear side which is adapted to bear against an exhaust-valve seat surrounding the valve-stem, an external flange formed on the valve-stem, an internal flange formed on the valve-ring and bearing against the rear side of the external flange of the valve-stem, a retaining-ring secured to the inner side of the valve-ring and arranged in front of the external flange, and a fuel-valve adapted to bear against a fuel-valve seat formed on the front side of the valve-ring, substantially as set forth.

6. The combination with the cylinder and the piston, of an exhaust-chamber connected with said cylinder, a hollow valve-stem arranged in said chamber and provided with an exhaust-valve, actuating mechanism whereby the valve-stem is moved inwardly for opening the exhaust-valve and outwardly for closing the same, a fuel-valve which is adapted to move toward and from a valve-seat on the valve-stem and capable of moving inwardly with the valve-stem without opening the fuel-passage during the operation of opening the exhaust, and a yielding holding finger or rod adapted to bear against the fuel-valve and hold the same against its seat during the inward movement of the valve-stem, substantially as set forth.

7. The combination with the cylinder and the piston, of a valve-chamber connected with the cylinder and provided on one side with a head, an exhaust-chamber connected with the opposite side of the valve-chamber, a reciprocating hollow valve-stem arranged in said valve and exhaust chambers and provided with an exhaust-valve, a valve-rod arranged within the hollow valve-stem and provided with a fuel-valve adapted to bear against a seat on the hollow valve-stem, a spring engaging with said valve-rod for holding the fuel-valve yieldingly against its seat, a separate holding finger or rod guided in said head and adapted to bear against the fuel-valve and a spring whereby the holding finger or rod is yieldingly held in its projected position, substantially as set forth.

8. The combination with the cylinder and the piston, of an exhaust-chamber connecting with the cylinder, a hollow valve-stem arranged in said chamber and connected with a fuel supply, an exhaust-valve mounted on said stem, an inwardly-opening check-valve arranged in the fuel supply, and an inwardly-opening fuel-valve arranged on the valve-stem between the check-valve and cylinder, said check and fuel valves being adapted to be opened inwardly by the suction of the piston, substantially as set forth.

9. The combination with the cylinder and the piston, of an exhaust-chamber connecting with the cylinder, a hollow valve-stem arranged in said chamber and carrying an exhaust-valve, a check-valve chamber communicating with the hollow valve-stem, an air-supply pipe opening into the check valve chamber and provided with a valve seat, a gas-supply pipe opening into the check-valve chamber and provided with a valve-seat, and a check-valve adapted to bear upon the seats of the air and gas supply pipes, substantially as set forth.

10. The combination with the cylinder and the piston, of a chest provided with a valve-chamber connected with the cylinder and an exhaust-chamber connecting with the valve-chamber, a valve-stem arranged in said valve and exhaust chambers and carrying an exhaust-valve, a stationary contact arranged within the valve-chamber and connected with one terminal of an electric generator and a shifting rod arranged in the valve-stem and provided with a movable contact which forms the other terminal of the electric generator and which is adapted to bear against the stationary contact, substantially as set forth.

11. The combination with the cylinder and the piston, of a chest provided with a valve-chamber connected with the cylinder and an exhaust-chamber connecting with the valve-chamber, a longitudinally-reciprocating valve-stem arranged in said valve and exhaust chambers and carrying an exhaust-valve, a stationary contact arranged within the valve-chamber and connected with one terminal of an electric generator, a shifting rod arranged in the valve-stem and having a longitudinally-reciprocating movement with said valve stem and a rotary movement independent of said stem, a movable contact secured to the shifting rod, adjacent to the stationary contact, and connected with the opposite terminal of the electric generator, a rock-lever secured to said shifting rod, a spring connected with said lever for turning the shifting rod in one direction and holding the movable contact in engagement with the stationary contact and a cam adapted to engage with said rock-lever for turning the shifting rod in the opposite direction for disengaging the movable contact from the stationary contact, substantially as set forth.

12. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, an exhaust-cam engaging with said roller or bearing-piece and having a salient portion which opens the exhaust-valve and a receding portion which permits the exhaust-valve to be closed, a rider-disk arranged adjacent to the exhaust-cam, a movable regulator-pawl adapted to engage with the face of the rider-disk for holding the roller or bearing-piece out of engagement with the receding portion of the exhaust-cam, and a movable trip cam whereby the regulator-pawl is disengaged from the face of the rider disk for permitting the roller or bearing piece to engage with the receding portion of the exhaust-cam and closing the exhaust-valve, substantially as set forth.

13. The combination with the cylinder, the piston and the exhaust-valve, of a rock-arm connected with the exhaust-valve and provided with a roller or bearing-piece, a rotary exhaust cam engaging with said roller or bearing-piece and having a salient portion for moving said rock-arm forward and opening the exhaust-valve and a receding portion which permits the rock-arm to move backwardly for opening the exhaust-valve, a rider-disk arranged adjacent to the exhaust-cam, a regulator-pawl pivoted on said rock-arm and adapted to engage with the face of the rider-disk for holding the roller or bearing-piece out of engagement with the receding portion of the exhaust-cam, a spring whereby the regulator-pawl is yieldingly held in engagement with the face of the rider-disk, and a trip-cam whereby the regulator-pawl is disengaged from the face of the rider-disk for permitting the roller or bearing-piece to engage with the receding portion of the exhaust-cam and closing the exhaust-valve, substantially as set forth.

14. The combination with the cylinder, the piston and the exhaust-valve, of a rock-arm connected with the exhaust valve and provided with a roller or bearing-piece and with a stop-lug, a rotary exhaust-cam engaging with said roller or bearing-piece and having a salient portion for moving said rock-arm forward and opening the exhaust-valve and a receding portion which permits the rock-arm to move backwardly for opening the exhaust-valve, a rider-disk arranged adjacent to the exhaust-cam, a regulator-pawl pivoted on said rock-arm and adapted to engage with one side against the face of the rider-disk for holding the roller or bearing-piece out of engagement with the receding portion of the exhaust-cam and bearing with its opposite side against the stop-lug, a spring whereby the regulator-pawl is held against said lug, a spring whereby the regulator-pawl is yieldingly held in engagement with the face of the rider-disk and a trip-cam whereby the regulator-pawl is disengaged from the face of the rider-disk for permitting the roller or bearing-piece to engage with the receding portion of the exhaust-cam and closing the exhaust-valve, substantially as set forth.

15. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, an exhaust-cam engaging with said roller or bearing-piece, a rotary rider disk arranged adjacent to said exhaust-cam, a regulator-pawl connected with the roller or bearing-piece and adapted to engage with the rider-disk, a movable trip-cam arranged on the rider-disk and adapted to disengage the regulator-pawl from the face of the rider-disk, a centrifugal weight-lever connected with the trip-cam and adapted to move the trip-cam into an inoperative position and a spring whereby the trip-cam is yieldingly held in its operative position, substantially as set forth.

16. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, an exhaust-cam engaging with said roller or bearing-piece, a rotary rider-disk arranged adjacent to the exhaust-cam, a regulator-pawl connected with the roller or bearing-piece and adapted to engage with the rider-disk, a trip-cam adapted to disengage said pawl from the face of the rider-disk and pivoted with its rear end adjacent to the rider-disk, a centrifugal weight-lever connected with its front end to the pivot of the trip cam and a return-spring connected with the weight-lever, substantially as set forth.

17. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, an exhaust-cam engaging with said roller or bearing-piece, a rotary rider-disk arranged adjacent to the exhaust-cam, a regulator-pawl connected with the roller or bearing-piece and adapted to engage with the rider disk, a trip-cam adapted to disengage said pawl from the face of the rider-disk and pivoted adjacent to the rider-disk, a centrifugal weight-lever yieldingly connected with said trip-cam and a return-spring connected with the weight-lever, substantially as set forth.

18. The combination with the cylinder, the piston, and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, an exhaust-cam engaging with said roller or bearing-piece, a rotary rider-disk arranged adjacent to said exhaust-cam, a regulator-pawl connected with the roller or bearing-piece and adapted to engage with the rider-disk, a trip-cam adapted to disengage said pawl from the face of the rider-disk and secured with its rear end to a wrist-pin which is pivoted adjacent to the rider-disk, a weight-lever mounted loosely with its front end on said wrist-pin and provided with a radial slot, a pin secured to said wrist-pin and passing through said slot, and a spring secured with its ends to the weight-lever and said pin, substantially as set forth.

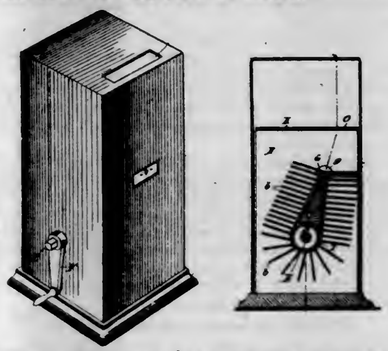
19. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, a supporting-wheel journaled on an arbor and provided with an exhaust cam engaging with said roller or bearing-piece, a rider-disk secured to said wheel, a regulator-pawl secured to the roller or bearing-piece and adapted to engage with the face of the rider-disk, a trip-cam adapted to disengage the regulator-pawl from the face of the rider-disk and secured with its rear end to a wrist-pin which is pivoted in the supporting-wheel, a weight-lever mounted on said wrist-pin a spring for moving said weight-lever inwardly and an adjusting-screw arranged axially in the arbor and adapted to adjust the tension of the return-spring, substantially as set forth.

20. The combination with the cylinder, the piston and the exhaust-valve, of a roller or bearing-piece connected with the exhaust-valve, a supporting-wheel journaled on an arbor and provided with an exhaust-cam engaging with said roller or bearing-piece, a rider-disk secured to said wheel, a regulator-pawl, secured to the roller or bearing-piece and adapted to engage with the face of the rider-disk, a trip-cam adapted to disengage the regulator-pawl from the face of the rider-disk, weight-levers arranged on the supporting-wheel on opposite sides of its pivots, a rod connecting said weight-levers, a wrist-pin pivoted in the supporting-wheel and connecting the front end of one of said levers with the rear end of the trip-cam, a return spring secured with one end to the other weight lever, an elbow-lever pivoted on the supporting-wheel and having one of its arms connected with the return spring, and an adjusting-screw arranged axially in the arbor and engaging with the other arm of the elbow-lever, substantially as set forth.

21. The combination with the cylinder, the piston and the exhaust-valve, of a cam having a salient portion whereby the exhaust-valve is held open during the exhaust-stroke of the piston, and a receding portion whereby the exhaust-valve is permitted to close during the suction, compression and working-strokes of the piston and a movable starting-cam capable of being projected beyond the face of said receding portion for holding the exhaust-valve open during a portion of the compression-stroke of the piston, substantially as set forth.

22. The combination with the cylinder, the piston and the exhaust-valve, of a supporting-wheel provided with an exhaust-cam having a salient portion whereby the exhaust-valve is held open during the exhaust-stroke of the piston, and a receding portion whereby the exhaust-valve is permitted to close during the suction, compression and working strokes of the piston, a starting cam pivoted on the supporting-wheel and adapted to be projected beyond the face of the receding portion of the exhaust-cam or to be retracted, a turn-button pivoted on the supporting-wheel and adapted to hold the starting-cam in its projected position, and a spring whereby the starting-cam is retracted when released by the turn-button, substantially as set forth.

571,496. KINETOSCOPE. ADOLPH PETTENKOFER, Brooklyn, N. Y. Filed Jan. 22, 1896. Serial No. 576,425. (No model.)



Claim.—1. In a kinetoscope the combination with a roller, of a stationary block having a sharp turn or angle thereon, and an endless belt or tape traveling around said roller and block, and having a series of pictures secured thereto, substantially as described.

2. A kinetoscope constructed with a stationary block having a sharp angle or shoulder formed thereon and an endless belt adapted to travel around said block and over said angle, and pictures secured at one end to said tape or belt, and extending at an angle therefrom, substantially as described.

3. A kinetoscope containing a roller a stationary block having a sharp corner or edges thereon, an endless belt traveling over and around said block and roller, and a series of pictures secured at one end to said tape or belt and extending at an angle therefrom, substantially as described.

4. In a kinetoscope, the combination with a suitable frame, of a roller secured thereto a stationary block formed with a sharp turn and secured to said frame, an endless belt carrying a series of pictures traveling around said roller and block, and an outer casing having a window or opening therein opposite to said sharp turn on said block and with an opening therein for viewing said pictures substantially as described.

5. In a kinetoscope the combination with a suitable frame, of a traveling endless belt having pictures secured at one end thereto, and extending at an angle therefrom, an outer casing covering said frame-work and provided with an opening for admitting light to said pictures, and with an opening through which to view the same, and a diaphragm contained within said outer casing, and provided with an opening in alinement with the latter opening, substantially as described.

571,497. COMBINED PLATFORM AND GANG-PLANK. JAMES A. POWELL, Ashland, Ky. Filed July 16, 1896. Serial No. 599,443. (No model.)

Claim.—1. The combination of a platform or housing designed to be mounted upon the floor of a car and provided with a longitudinal chamber, the longitudinal guides mounted within the platform or housing and sloping from the center to the ends thereof, the gang-

plank arranged upon the guides and composed of two sections hinged together at the center of the gang-plank, and locking devices for securing the gang-plank in operative position, said locking devices being also arranged to secure the gang-plank against movement when the same is housed within the platform substantially as described.

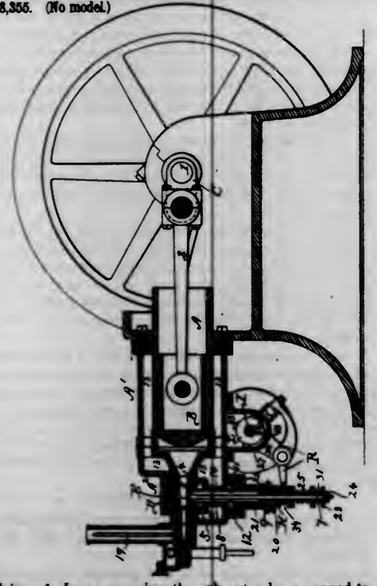


2. The combination of a platform or housing having a longitudinal chamber and designed to be mounted upon the floor of a car, the drop members hinged to the top portion of the platform or housing, forming inclined end portions thereof and adapted to be raised to give access to the longitudinal chamber, the guides arranged within the platform or housing and sloping from the center to the ends thereof, and the gang-plank mounted upon the guides and composed of two sections hinged together at the center of the gang-plank substantially as described.

3. The combination of a platform or housing, stops mounted upon the bottom of same at the ends, a gang-plank arranged within the platform or housing, and dogs depending from the lower face of the gang-plank and arranged to engage the stops when the gang-plank is in operative position and also when it is arranged within the platform or housing, whereby the gang-plank is locked in both positions substantially as described.

4. The combination of the platform or housing having a longitudinal chamber, stops mounted upon the bottom thereof at the ends of the same, a gang-plank arranged within the platform or housing, the gravity-dogs depending from the lower face of the gang-plank and arranged to engage the stop when the gang-plank is in operative position and also when the same is housed within the platform, and the inclined drop members hinged to the top of the platform or housing and resting upon the ends of the gang-plank when the latter is housed substantially as described.

571,498. GAS-ENGINE. EMIL RAPPE, Chicago, Ill., assignor to Harvey J. Hopkins, Pleasantville, Pa. Filed Jan. 29, 1894. Serial No. 498,355. (No model.)



Claim.—1. In a gas-engine, the exhaust-valve arranged to open and close the exhaust port, and made hollow to provide a supply-passage which communicates with the supply port, and a supply-valve for opening and closing the passage through the exhaust-valve, said supply-valve being seated on the outer face of the exhaust-valve, and both valves opening in the same direction, substantially as set forth.

2. In a gas-engine, the exhaust-valve arranged to open and close the exhaust-port, and made hollow to provide a supply-passage which communicates with the supply port, and a supply-valve for opening and closing the passage through the exhaust-valve, said supply-valve being seated on the outer face of the exhaust-valve, and being capable of independent movement in the same direction in which the exhaust-valve moves and both valves opening in the same direction, substantially as set forth.

3. In a gas-motor, a normally-closed exhaust-valve controlling the exhaust-port and a supply-valve seated on the outer face of the exhaust-valve and controlling the passage leading through the exhaust-valve and communicating with the supply-port, both of said valves opening in the same direction and said supply-valve being subject to means for normally closing the same of less strength than the means for normally closing the exhaust-valve, whereby the supply-valve may be independently lifted from its seat on the exhaust-valve, without opening the exhaust-port, substantially as described.

4. In a gas-engine, the combination of the cylinder, the normally-closed hollow exhaust-valve, a supply-valve normally closing the passage through the exhaust-valve, said supply-valve being seated upon the outer face of the exhaust-valve and arranged to open in the same direction with the latter, and having its stem extended into and through said passage in the exhaust-valve, and mechanism, substantially as described for operating the said valves from an eccentric on the driving-shaft, substantially as set forth.

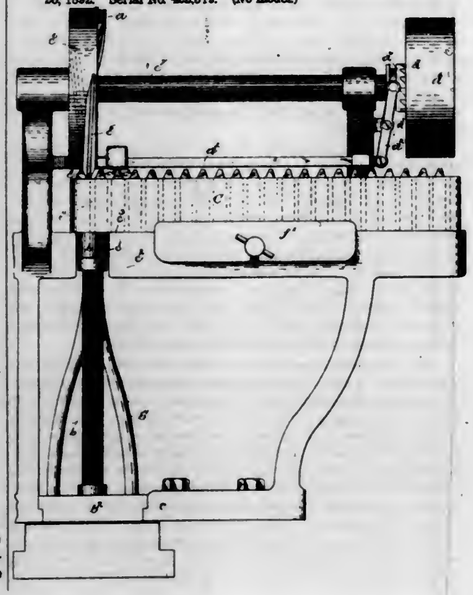
5. In a gas-engine, the combination with the supply-valve, of an adjustable cut-off cam and a governor for automatically adjusting the same, mechanism for operating the valve from said cam, and a cam or stop device for temporarily breaking power-transmitting connection, between the valve and cut-off cam, substantially as described.

6. In a gas-engine, the combination of a supply-valve, lever P for operating the same, lever Q for operating lever P, cam M, and a push-pin N arranged between said cam and lever P, substantially as described.

7. In a gas-engine, the combination of a supply-valve for supplying the cylinder, a lever P for operating the same, a lever Q carrying the lever P, and a stop device intermittingly presented as a fulcrum to one end of lever P, substantially as described.

8. The combination with the supply-valve, of the adjustable cut-off cam and a governor for automatically adjusting the same, levers P and Q connected as set forth, and power-transmitting connection between lever Q and the cut-off cam, substantially as described.

571,499. NAIL DISTRIBUTING AND DRIVING MACHINE. FREEBORN F. RAYMOND, 2d, Newton, Mass., assignor to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Feb. 20, 1892. Serial No. 422,319. (No model.)



Claim.—1. In a nail-driving machine a nail-distributer having a line of distributing-holes the upper ends of which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device in combination with said head, as and for the purposes described.

2. The combination of a nail-distributer having a series of distributing-passages, the upper ends of which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device, a table the upper surface of which is upon a line with or above the upper surface of the distributer, and a nail-supplying block movable upon said table and having lines of holes which have the arrangement of the holes in the upper part of the distributer, as and for the purpose described.

3. The combination of the distributer, the table, the nail-supplying block, the guide f, f' and the removable nail-supplying block.

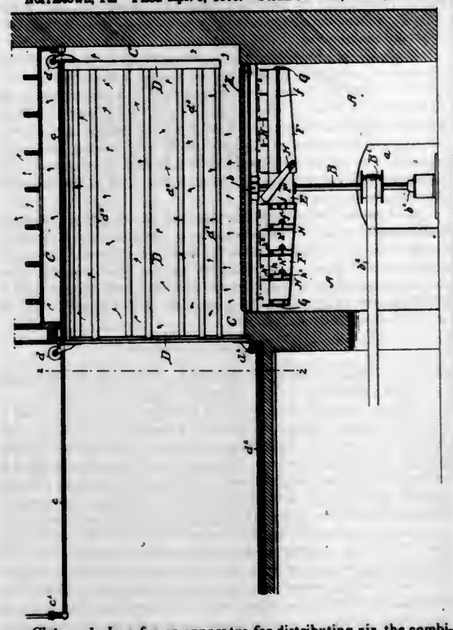
4. The combination of a distributer, a nail-supplying block having the lines of the order or arrangement of the holes of the distributer at their upper ends, which are upon a line at right angles or practically at right angles to the line of the reciprocation of the nailing head or device; a table or guide for the same to direct the movement of the block relatively to the distributer, and mechanism for imparting an intermittent movement of the block to bring its line of holes in successive order over the holes of the distributer substantially as described.

5. The combination of a distributer and nail-supplying block having the lines of holes extending across the same previously filled with nails and of the arrangement of the holes of the distributer at the upper ends thereof, and feed mechanism for imparting an intermittent forward movement to the nail-supplying block, and a stopping device to stop the action of the feed after each feeding movement, as and for the purposes described.

6. The combination of the feed-block C, movable in guides upon a table and having the teeth c^3, the distributer and an engaging device like a worm-tooth to engage said teeth successively and impart to the block an advancing movement, as and for the purposes described.

7. The combination of a distributer, the nail-supplying block C movable upon a bed relative to the distributer, as specified, and having the teeth c^3, the shaft c^7 and wheel upon said shaft, having the worm-thread c^8 to engage the teeth c^3, the driven member of a clutch, and a cam or stop for automatically disengaging the driven member from the driving member of the clutch at the end of the feed-movement of the block, substantially as described.

571,500. APPARATUS FOR DISTRIBUTING AIR. JOHN L. WEST, Norristown, Pa. Filed Apr. 6, 1895. Serial No. 544,747. (No model.)



Claim.—1. In a fan or apparatus for distributing air, the combination with a hub or central portion of a fan, of a series of radially-disposed arms centrally pivoted upon a radially-disposed axis and adjustably secured upon said axis with means for regulating the adjustment of each arm upon its axis and a series of blades extending across the upper face of said arms, substantially as described.

2. In a fan or apparatus for distributing air, the combination with the arm of a fan, of a blade extending across and at an angle to the plane of said arm, said blade being adjustable at different angles.

3. In an air-distributing apparatus, the combination of a rotatable hub, journaled in suitable bearings, radially-disposed arms adjustable at different angles thereon, blades secured to the upper face of said arms, said blades being adjustable upon said arms at an angle to said arms and to each other, substantially as described.

4. In a fan, the combination of the central hub, a surrounding strengthening-band, an inclosing casing, a series of radial rods or bars extending from the hub to said strengthening-band, adjustable arms secured to said rods, and blades secured to the upper face of said arms, substantially as specified.

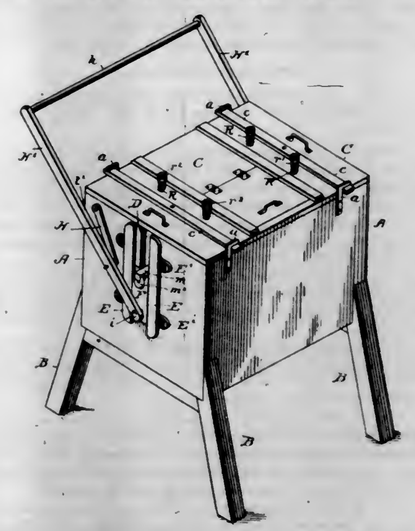
5. In a fan, the combination of the hub, E, the circular ring, G, a series of rods, f, extending between the hub and ring, an arm, F, carried by each rod, f, an end piece, f^4, for each arm, having segmental slots, f^5, securing-bolts, f', extending through said end pieces to secure the arms to the hub, a blade, H, a right-angled flange, A, thereon, having a segmental slot, h', and securing-bolts, h^3, h^3, for fastening the blades to said arms, F, substantially as specified.

6. In a rotary fan the combination of a central hub, a surrounding strengthening-band, G, secured to said hub and radial arms, F provided between the hub and said strengthening-band adjustably secured in position and means for regulating the adjustment of the angle of the face of the respective arms and for holding the same in any desired position, and short blades adjustably secured across the upper face of said arms, substantially as described.

7. In a rotary fan short adjustable blades, H, adapted to the face of the radial arms of said fan, right-angle flanges, A, provided upon each blade having segmental slot, h', securing-bolt, h^3, adapted to said slot and securing-bolt, h^3, for pivotally securing the blade to the arm, substantially as described.

8. In a rotary fan an adjustable radial arm, F, having the lower forward edge bent upward at an angle to the line of the main body of the arm, and short blades, H, adjustably secured upon the face of said arm having the right-angle flange, A, segmental slot, h', therein, pivotal securing-bolt, h^3, and bolt, h^3, provided in said segmental slot, substantially as described.

571,501. WASHING-MACHINE. JOHN L. WEST, Norristown, Pa. Filed May 17, 1895. Serial No. 549,663. (No model.)



Claim.—1. The combination of the outer casing and removable cover, a perforated clothes-containing chamber, mechanism connected with said clothes-containing chamber for positively reciprocating the same in a vertical line in said casing, an automatically-yielding, perforated presser-plate provided in said clothes-containing chamber having guide-bolts, R, and compression-springs, r, substantially as described.

2. The combination of the outer casing having slotted end walls, a guided block arranged opposite each slot, a clothes containing chamber comprising a perforated casing having end plates, M, lugs, *m*, projecting from said end plates and adapted to recesses in the guided blocks, guides within said outer casing for the clothes-containing chamber, a perforated presser-plate, and springs acting to depress and hold said presser-plate within the clothes-containing chamber, with means for vertically reciprocating the guided blocks, substantially as specified.

3. The combination of the outer casing or tub, a removable cover, C, thereon, pivoted locking-bars, *c*, carried by said cover, hooks, *a*, on the outer casing with which said locking-bars are adapted to engage, a perforated presser-plate, Q, bolts, R, extending therefrom through openings in the cover, C, springs, *r*, *r'*, surrounding said bolts, adjusting-nuts, r^2, on the upper ends of said bolts, and a vertically-movable perforated clothes-containing chamber in said casing or tub, substantially as specified.

4. The combination of the outer casing or tub having slotted end walls, guide-bars, E, adjustably secured to said end walls on either side of the slots in the casing, guided blocks, F, adapted to the guide-bars at each end of the casing or tub, a perforated clothes-containing chamber, L, within said casing or tub, lugs, *m*, projecting from the opposite ends of the clothes-containing chamber and adapted to recesses in the blocks, F, a perforated presser-plate, springs acting to depress the same and means for vertically reciprocating the guided blocks, F, substantially as specified.

5. The combination of the outer casing or tub having slotted end walls, guide-bars, E, adjustably secured to said walls on either side of the casing-slots, guided blocks, F, adapted to the guide-bars at each end of the casing or tub, levers, H', pivoted to said blocks, swinging links, H, carrying said levers, the perforated clothes-containing chamber, end lugs, *m*, thereon adapted to recesses in the blocks, F, a perforated presser-plate, and springs acting to depress said presser-plate, substantially as specified.

6. The combination of the outer casing or tub having slotted end walls, links, H, pivoted to said end walls, levers, H', carried by said links, a connecting-handle, A, and cross-bar, *t'*, extending between and connected to said levers, a securing-hook, *t*, adapted to engage with said cross-bar, *t'*, guided blocks, F, to which the levers, H', are connected, a preforated clothes-containing chamber, end lugs, *m*, thereon adapted to recesses in the blocks, F, a perforated presser-plate and springs acting to depress said presser-plate, substantially as specified.

7. The combination of the outer casing or tub having slotted end walls, the guide-bars, E, slotted holding-plates, E', carrying said guide-bars, bolts, *g*, passing through the end walls of the casing and through the slots in the holding-plates, a block, F, guided by said bars, a perforated clothes-containing chamber, end lugs thereon adapted to recesses in the blocks, F, a perforated presser-plate, and springs acting to depress said presser-plate, substantially as specified.

571,502. ELECTRIC ELEVATOR. ROBERT WILSON, Louisville, Ky. Filed July 8, 1895. Renewed Apr. 16, 1896. Serial No. 587,574. (No model.)

Claim.—1. In an electric elevator, the combination of an electric machine adapted to act either as a motor or as a dynamo, a controlling resistance for said machine when operating as a motor, a controlling resistance for the machine when operating as a dynamo, and an electromotive device actuating or controlling both of said resistances and means whereby said electromotive device may be operated at will from the car, substantially as described.

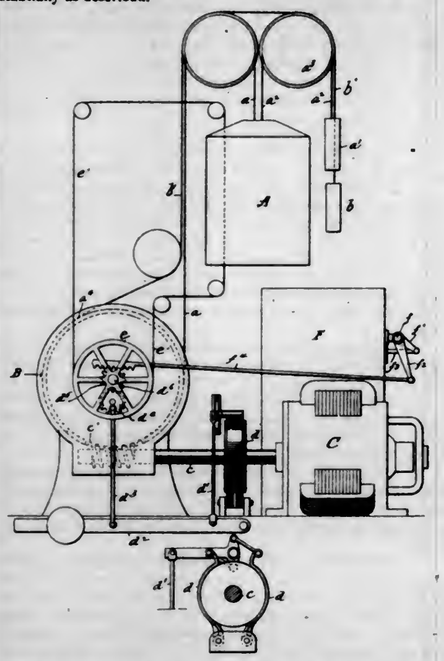
2. In an electric elevator, the combination of a car, an electric motor, two speed-controlling rheostats and a solenoid having two independent cores respectively operating said rheostats, substantially as described.

3. In an electric elevator, the combination of a car, an electric motor, two speed controlling rheostats, a solenoid the center of magnetism in which may be shifted, and two independent cores in said solenoid respectively operating said rheostats.

4. In an electric elevator, the combination of a car, an electric motor, two speed-controlling rheostats, a solenoid the center of magnetism in which may be shifted, and two independent cores in said solenoid respectively operating said rheostats, each core provided with a stop limiting its movement, substantially as described.

5. In an electric motor, the combination of a car, an electric motor, two speed-controlling rheostats, a solenoid the center of magnetism in which may be shifted, and two independent cores in said solenoid respectively operating said rheostats, and mechanism operated from the car to shift the center of magnetism of the solenoid.

6. In an electric elevator, the combination of the car, an electric motor adapted to act either as a motor or a dynamo, a resistance for the armature when operating as a motor, a short circuit including a resistance, for the armature when operating as a dynamo, a solenoid whose center of magnetism may be shifted, two cores for the solenoid connected respectively with and operating the said resistances, mechanism for shifting the center of magnetism in the solenoid and means whereby said mechanism may be operated at will from the car, substantially as described.



7. In an electric elevator, the combination of a car, an actuating electric motor, two sets of resistances for controlling the speed of the car, a solenoid, a commutating-switch by which the center of magnetism of the solenoid may be shifted, two cores for said solenoid acting successively to vary the respective resistances and means whereby the commutating device may be operated from the car, substantially as described.

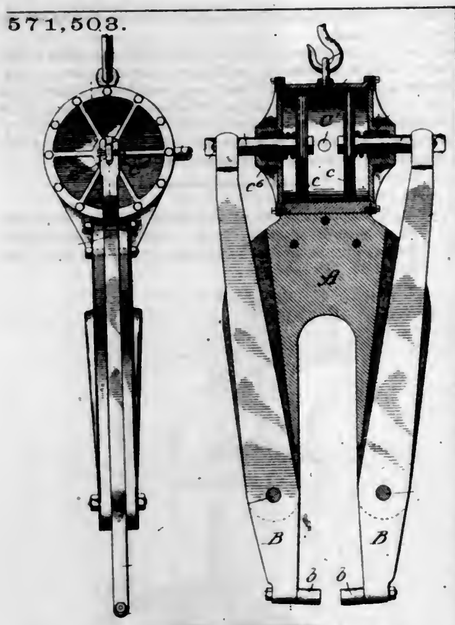
8. In an electric elevator, the combination of an element having a to-and-fro movement imparted by mechanism under control of the operator in the car, a main switch connected with and operated by said element, a solenoid whose center of magnetism may be shifted, a commutating-switch adapted to shift the magnetism of the solenoid, and also connected to and operated by said element, an actuating-motor and two sets of resistances located each in separate circuits and controlled respectively by two movable cores of the solenoid, substantially as described.

9. A means for controlling the speed of electrically-propelled vehicles, consisting of two rheostats, one in the main armature supply circuit of the motor and the other in a short circuit around the armature, a solenoid whose center of magnetism may be shifted, two cores for said solenoid one attached to and operating each rheostat, and a switching device by which the magnetism of the solenoid may be shifted, substantially as described.

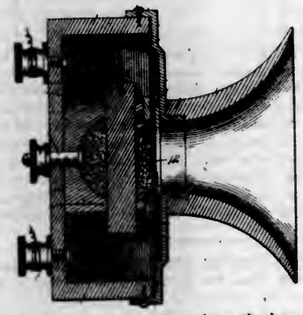
571,503. RIVETING-MACHINE. ARCHIE M. BAIRD, Topeka, Kans. Filed Mar. 17, 1896. Serial No. 583,537. (No model.)

Claim.—A machine of the class described having combined a bifurcated frame portion, two vibrating actuating-levers pivotally secured to the free ends of the frame portion and provided with acting jaws at their outer free ends and their inner free ends arranged to extend over and beyond the frame portion, a fluid-pressure cylinder secured to the heel of the bifurcated frame portion and between the actuating-levers, two reciprocating pistons movably mounted in the cylinder portion and having their piston-rods extending out of opposite ends of the cylinder so as to engage the actuating-levers and operate the same, said cylinder having a fluid-port located between the reciprocating pistons so as to supply fluid-pressure between the same and operate the actuating-levers, and mechanism for returning the pistons, piston-rods and actuating-levers to their inoperative position, substantially as described.

571,503.



571,504. MICROPHONE-TRANSMITTER. EDGAR A. BARKALOW and NEHEMIAH CRAWFORD, Kokomo, Ind. Filed July 31, 1896. Serial No. 601,196. (No model.)

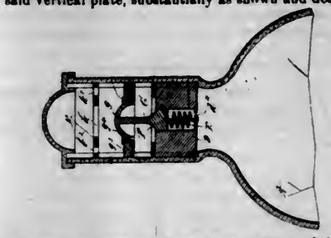


Claim.—1. In a microphone-transmitter, the box, a vibratory diaphragm clamped over the front open side of the box and included in the primary circuit, a non-conducting cup secured within the box in rear of the diaphragm and open at its front side, a mass of granulated carbon or similar material entirely filling the cup and confined therein by the diaphragm, which is in direct contact with said material, and a carbon pencil or rod extending through the cup and having the portion within the cup entirely surrounded by the granulated material, substantially as set forth.

2. In a microphone-transmitter, the box, a vibratory diaphragm arranged over the open side of the box and included in the primary circuit, a non-conducting cup secured within the box in rear of the diaphragm and provided with diametrically opposite alined openings, a flexible damper or cushion-ring interposed between the annular rim of the cup and the inner side of the diaphragm, a mass of granulated carbon or similar material arranged within the cup and contacting with the inner side of the diaphragm, and a carbon pencil or rod fitted in the opposite openings of the cup and surrounded by the said mass of granular material, said pencil or rod being disposed parallel with the diaphragm, substantially as set forth.

571,505. BOTTLE. CHARLES P. BEHRENS, Lindenhurst, N. Y. Filed Apr. 10, 1896. Serial No. 586,935. (No model.)

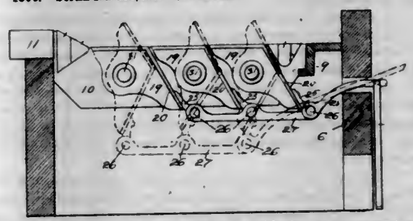
Claim.—1. A bottle or other vessel, provided with a neck in the bottom of which is secured a vertical plate, having a central vertical chamber formed therein, which is open at the top, a movable plug mounted in said chamber and secured to the bottom thereof, by means of a spring, said plug being provided with a shaft or rod, to the upper end of which is secured a valve, which is adapted to close a central port or opening through a disk or plate which is secured in the neck above said vertical plate, substantially as shown and described



2. A bottle or other vessel, provided with a neck in the bottom of which is secured a vertical plate, having a central vertical chamber formed therein, which is open at the top, a movable plug mounted in said chamber and secured to the bottom thereof, by means of a spring, said plug being provided with a shaft or rod, to the upper end of which is secured a valve, which is adapted to close a central port or opening through a disk or plate which is secured in the neck above said vertical plate, and said neck being also provided with a perforated disk or plate above said valve, and a perforated cap or cover which is secured thereto, substantially as shown and described.

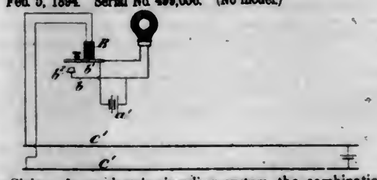
3. A bottle or other vessel, provided with a neck in the bottom of which is secured a vertical plate, having a central vertical chamber formed therein, which is open at the top, a movable plug mounted in said chamber and secured to the bottom thereof, by means of a spring, said plug being provided with a shaft or rod, to the upper end of which is secured a valve, which is adapted to close a central port or opening through a disk or plate which is secured in the neck above said vertical plate, and said neck being also provided with a perforated disk or plate above said valve, and a perforated cap or cover which is secured thereto, and the central vertical chamber in the vertical plate being provided with a perforation or opening in the bottom thereof, substantially as shown and described.

571,506. GRATE. JOSEPH BRISTLY, Scranton, Pa. Filed July 7, 1896. Serial No. 598,299. (No model.)



Claim.—The combination with a suitable frame or support, provided with side bars, of grate-bars pivotally mounted between said side bars, said grate-bars each consisting of a triangular end piece, a downwardly-inclined front plate, and backwardly-directed arms, each of said grate-bars being provided at one end with a journal or projection on which is mounted a bar, and a lever pivotally connected with the journal or projection of the forward grate-bar, and projecting through an opening formed in the front wall or support, whereby said grate bars may be agitated or dumped, and also turned over so that the inclined front plates will form pockets, in which position the backwardly-directed arms of each bar will be projected upwardly, and forwardly, substantially as shown and described, and for the purpose set forth.

571,507. ELECTRIC SIGNALING SYSTEM. JOHN P. BUCHANAN, Boston, Mass., assignor to the Hall Signal Company, of Maine. Filed Feb. 5, 1894. Serial No. 499,056. (No model.)

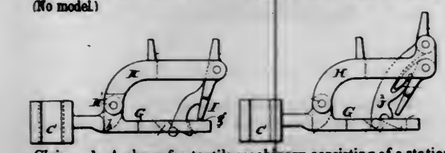


Claim.—In an electric signaling system, the combination of an electric signal falling by gravity into "danger" position, an electro-

magnet arranged to operate said signal to put it to "safety," a battery having its poles permanently connected to the operating-magnet, a shunt-circuit around the battery containing a pair of contacts controlled by a track-circuit, said shunt-circuit operating when closed to permit the signal to go to "danger" by gravity and when open to put the signal to "safety" by the power of the magnet, substantially as set forth.

571,508. AUTOMATIC CLAMP FOR TEXTILE MACHINERY.

HARRY W. BUTTERWORTH, Philadelphia, Pa., assignor to the H. W. Butterworth & Sons Company. Filed June 8, 1896. Serial No. 594,695. (No model.)



Claim.—1. A clamp for textile machinery consisting of a stationary jaw, a frame movably connected to the stationary jaw and adapted to have its free end movable to or from the stationary jaw, a stop to limit the approach of the free end of the movable frame toward the stationary jaw, a loose gravity-actuated jaw loosely pivoted to the free end of the movable frame, and a cloth-controlled locking device freely movable to lock the movable frame except when held out of action by the cloth.

2. A clamp for textile machinery, consisting of a stationary jaw, a frame movably connected to said stationary jaw, a loosely-pivoted gravity-actuated jaw carried upon the frame and adapted to operate in connection with the stationary jaw, a locking device for locking the movable frame relatively to the stationary jaw, and a cloth-controlled retaining-finger for simultaneously controlling the movement of the movable jaw and locking device.

3. A clamp for textile machinery, consisting of a stationary jaw, a frame movably connected to said stationary jaw, a loosely-pivoted gravity-actuated jaw carried upon the frame and adapted to operate in connection with the stationary jaw, a locking device for locking the movable frame relatively to the stationary jaw, and a cloth-controlled retaining-finger for simultaneously controlling the movement of the movable jaw and locking device and provided with an extension adapted to be acted upon by cams to move the locking device and movable jaw.

4. A clamp for textile machinery consisting of a stationary jaw, a frame movably connected to the stationary jaw and adapted to have its free end movable to or from the stationary jaw, a stop to limit the approach of the free end of the movable frame toward the stationary jaw, a loose gravity-actuated jaw loosely pivoted to the free end of the movable frame, a cloth-controlled locking device freely movable to lock the movable frame except when held out of action by the cloth, and a connection between the cloth-controlled locking device and gravity-actuated jaw.

5. In a clamp for textile machinery, the combination of a frame having a clamping-jaw, a movable frame carried by said main frame, a loose gravity-actuated gripping-jaw pivoted to the movable frame, means independent of the jaws to limit the movable frame in one direction, and a gravity-actuated locking device to limit the movement of the movable frame in the other direction.

6. In a clamp for textile machinery, the combination of a frame having a clamping-jaw, a movable frame carried by said main frame, a gripping-jaw pivoted to the movable frame, means independent of the jaws to limit the movable frame in one direction, a locking device to limit the movement of the movable frame in the other direction, and a gravity-actuated and cloth-controlled finger for controlling the gripping action of the movable jaw.

7. In a clamp for textile machinery, the combination of a flat clamping-jaw having a slot in its face, with an overhanging frame hinged to the rear end of the flat clamping-jaw, a pivoted clamping-jaw carried at the overhanging end of the frame, a gravity-actuated and cloth-controlled finger for controlling the clamping operation of the movable jaw, and a lock for locking the overhanging frame relatively to the flat jaw under the control of the controlling-finger.

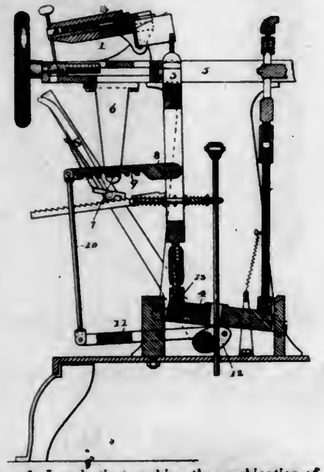
8. In a clamp for textile machinery, the combination of a flat clamping-jaw having a slot in its face, with an overhanging frame hinged to the rear end of the flat clamping-jaw, a counterweighted pivoted clamping-jaw carried at the overhanging end of the frame, a controlling-finger for controlling the clamping operation of the movable jaw, and a counterweighted lock for locking the overhanging frame relatively to the flat jaw under the control of the controlling-finger.

9. The combination of a stationary jaw, a pivoted frame hinged thereto, a pivoted jaw carried at the free end of the hinged frame, and a cloth-controlled locking device for locking the hinged frame relatively to the stationary jaw adapted to be controlled by the fabric to be clamped.

10. In a tentering-machine, the combination of a chain or conveyer provided with clamps, consisting of a stationary jaw, a hinged frame movable to and from the said jaw, a movable jaw hinged to the free end of the movable frame, and a cloth-controlled locking device for locking the movable frame to the stationary jaw during the clamping operation of the movable jaw, with cams for operating the movable frame when the clamp is receiving the fabric.

571,509. CLAMPING MECHANISM FOR LASTING-MACHINES.

FRANK CHASE, Waterville, Me., assignor to the Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Filed Oct. 16, 1895. Serial No. 565,913. (No model.)

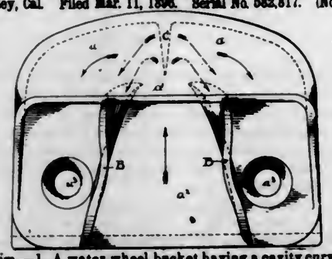


Claim.—1. In a lasting-machine, the combination of a reciprocating heel-clamping mechanism and a heel-pin movable from and toward said heel-clamping mechanism with a notched bar connected with the heel-pin and a stationary tooth-bar which engages with the notches of the notched bar that is connected with the heel-pin.

2. The combination in a lasting-machine, of a reciprocating heel-clamping mechanism and a heel-pin movable from and toward said heel-clamping mechanism with a notched bar connected with the heel-pin and a stationary tooth-bar which engages the notches on said bar connected with the heel-pin; and with a movable toe-rest.

571,510. WATER-WHEEL BUCKET.

ANDRE CHAVANNE, Grass Valley, Cal. Filed Mar. 11, 1896. Serial No. 582,817. (No model.)



Claim.—1. A water wheel bucket having a cavity curved in both directions, and separated wings or ribs extending between the cavity-walls and terminating short of the bottom of said cavity whereby the latter is divided into compartments communicating at their bases, said cavity having in the center of its bottom in line with the median plane of the central compartment a cutter to receive and divide the entering stream.

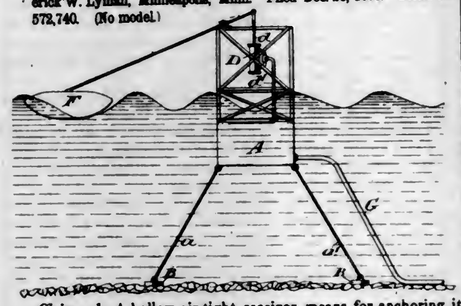
2. A water-wheel bucket having a cavity curved in both directions and formed between an outer or front short wall and an extended rear or back wall, and separated wings or ribs on the back wall and extending between the cavity-walls and terminating short of the bottom of said cavity whereby the latter is divided into compartments communicating at their bases.

3. A water-wheel bucket having a cavity curved in both directions and formed between an outer or front short wall and an extended rear or back wall, and separated wings or ribs on the back wall and extending between the cavity-walls and terminating short of the bottom of said cavity whereby the latter is divided into compartments communicating at their bases, said cavity having in the center of its bottom in line with the median plane of the central compartment a cutter to receive and divide the entering stream.

4. A water-wheel bucket having a cavity curved in both directions and separated wings or ribs extending between the cavity-walls in inwardly-converging planes and terminating short of the bottom of said cavity whereby the latter is divided into a central nozzle-like or inwardly-contracting compartment and side compartments outwardly contracting, all of said compartments communicating at their bases, said cavity having in the center of its bottom, in line with the median plane of the central compartment, a cutter to receive and divide the entering stream.

571,511. MEANS FOR CONVERTING WAVE MOTION INTO POWER.

JOHN R. CLARK, New York, N. Y., assignor of one-half to Frederick W. Lyman, Minneapolis, Minn. Filed Dec. 20, 1895. Serial No. 572,740. (No model.)



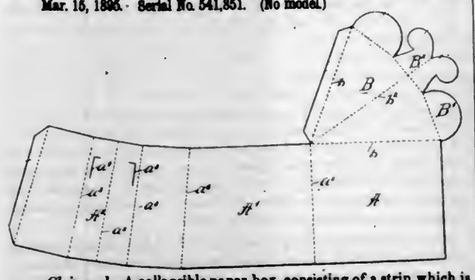
Claim.—1. A hollow air-tight receiver, means for anchoring it in a body of water exposed to the wind, a support uprising from the receiver, an air pump fixed to said support and communicating with the interior of the receiver, and a lever pivoted to the receiver having its free end subject to the direct impact of the waves for operating the air pump to compress air within the receiver, substantially as set forth.

2. A hollow air-tight receiver, means for anchoring the receiver in a body of water below the wave-line, a support uprising from the receiver, an air-pump communicating with the receiver and fixed to said support, a lever fulcrumed on said support and connected with the piston of the air-pump and a float connected with the opposite end of said lever and subject to the action of the waves to operate the lever, substantially as set forth.

3. In combination, a hollow air-tight receiver, means for anchoring the receiver in a body of water below the wave-line, a skeleton frame surmounting the receiver, an air-pump fixed to the frame and communicating with the receiver, a lever fulcrumed on the frame and having one of its arms connected with the piston of the air-pump, and a pair of floats connected with the opposite arm of the lever and subject to the action of the waves to operate the lever, substantially as set forth.

571,512. PAPER BOX.

FRANK B. DAVIDSON, Chicago, Ill. Filed Mar. 18, 1895. Serial No. 541,851. (No model.)



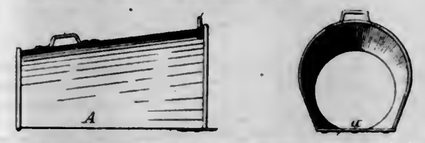
Claim.—1. A collapsible paper box, consisting of a strip which is bent into tubular form to constitute a plurality of side walls and is provided at one end with a pasting flap by which the ends of the strip are permanently united, and a polygonal end wall forming an integral extension at one side of said strip, and conformed to the shape of one end of said tubular part, a pasting flap by which one of the edges of the polygonal end wall adjacent to its integrally-connected side is permanently secured to the adjacent edge of a second side wall, said end wall being provided with a score or folding line which bisects the angle included between the integrally-connected side and the permanently-attached side, and an integral locking-tongue on the free marginal part of said end wall adapted to engage locking-slits on the adjacent part of the tubular body, substantially as described.

2. A collapsible sector-shaped paper box consisting of a strip which is bent into tubular form, and is provided at one end with a pasting flap which is permanently secured to the opposite end of the strip, said strip forming a tubular body having two radius sides and an arc side, an end wall of sector shape, made integral with the strip and forming an integral extension at one side thereof, a pasting flap by which the edge of said end wall adjacent to its integrally connected wall is secured permanently to the adjacent radius side of the body, said end wall being provided with a score or folding line which bisects the angle included between the two radius sides of the box, and the other edge of said end wall being provided with an integral locking-tongue adapted to engage with locking-slits on the adjacent part of the arc wall of the body, substantially as described.

3. A box-blank consisting of a strip adapted to be bent into tubular form to constitute a plurality of side walls, a flap upon one end of said strip for uniting the ends thereof, a polygonal end wall formed at one side of said strip conformed to the shape of one end of said tubular part, a pasting flap for permanently attaching one of the edges of said polygonal end wall adjacent to its integrally-connected side to the adjacent edge of a second side wall, said end wall being provided with a score or folding line which bisects the angle included between the integrally-connected side and the side adapted to be permanently attached, and a flap for detachably uniting the remaining free edge of said end wall with one of said walls of the tubular body, substantially as described.

571,513. BAG-FILLER.

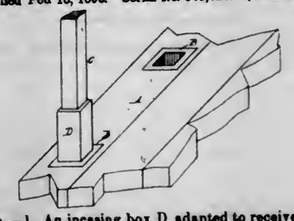
JAMES W. DAVIDSON, Syracuse, N. Y. Filed Mar. 18, 1896. Serial No. 583,651. (No model.)



Claim.—The combination of a cylindrical tapering body having a flattened side at the large end, said body being of substantially the same length on the upper side as on the lower side, a blade secured to the flattened side and projecting slightly beyond the edge of the body, and handles at opposite ends of the body, substantially as described and shown.

571,514. WAGON-STANDARD.

WILLIAM F. DILL, Philadelphia, Pa. Filed Feb 18, 1896. Serial No. 579,727. (No model.)



Claim.—1. An incasing box D, adapted to receive a standard C; provided with elongated part E, adapted to set in a socket; and shoulder F, pierced with opening G; all operating substantially as and for the purposes described.

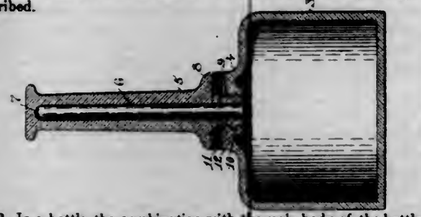
2. The combination with an incasing shoe D of a standard C; said shoe being provided with an elongated part E, adapted to set in a socket, or box B, and a shoulder F upon said shoe D, adapted to rest upon the edge of a receiving socket, or box B, all operating substantially as described.

571,515. BOTTLE.

BENJAMIN R. DILLON, Providence, R. I. Filed Sept. 11, 1895. Serial No. 562,131. (No model.)

Claim.—1. In a bottle, the combination with the main body of the bottle opaque to actinic rays provided with an opening for the reception and discharge of the liquid, of a transparent tubular neck the internal tube of which is closed at the upper end of the neck and open at the lower end of the neck, and the means substantially as described for securing the detachable neck to the main body of the bottle, whereby the liquid is all contained in the body of the bottle where it may be protected from the action of light, but may be made

to flow into the tube in the neck for examination and comparison, as described.



2. In a bottle, the combination with the main body of the bottle 3 opaque to actinic rays, the internally-screw-threaded opening 10 for the discharge of the liquid and the shoulder 12, of the detachable neck 5 extending from the body of the bottle, the internal tube closed at the upper end of the neck and open at the lower end thereof, the flange 8, the screw-threaded extension 9 of the neck and the washer 11, whereby the neck may be secured to or detached from the body of the bottle and when secured form a convenient handle for the bottle, as described.

571,516. APPARATUS FOR CLOSING STAVES. ALEXANDER DUNBAR, Liverpool, England. Filed May 6, 1896. Serial No. 590,319. (No model.) Patented in England Mar. 4, 1893, No. 4,999; in Spain Feb. 5, 1894, No. 15,457; in France Feb. 8, 1894, No. 236,129; in Belgium Feb. 10, 1894, No. 108,661; in Italy Feb. 19, 1894, No. 35,735; in Austria July 13, 1894, No. 3,198; in Hungary Nov. 7, 1895, No. 4,517, and in Portugal Jan. 20, 1896, No. 2,067.

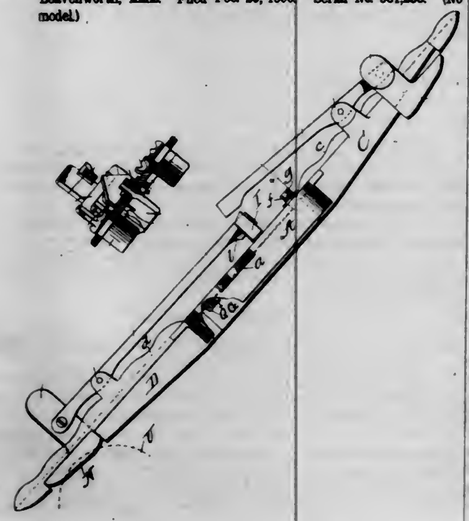


Claim.—1. In apparatus for drawing together staves, a receptacle for the staves, having pivoted thereto a series of levers, a sleeve having links connecting the same with the levers, and means for moving the sleeve; substantially as described.

2. In apparatus for drawing together staves, a receptacle for the staves having pivoted thereto a series of levers, adjustable blocks upon said levers arranged to contact with the staves, a sleeve having links connecting the same with the levers, and means for moving the sleeve; substantially as described.

3. In apparatus for drawing together staves, a receptacle for the staves having pivoted thereto a series of levers, a rod located in line with the center of the receptacle, a sleeve upon said rod, links connecting the sleeve with the levers, and means for moving the sleeve along the rod; substantially as described.

571,517. AUTOMATIC TROLLEY-SWITCH. LOUIS M. ERB, Leavenworth, Kans. Filed Feb. 29, 1896. Serial No. 581,233. (No model.)



Claim.—1. In a trolley-switch, in combination, a shiftable tongue and a trigger lying in the path of the tread of the trolley-wheel and adapted to be moved upward by the upward pressure of the trolley and thereby shift said tongue, for the purpose specified.

2. In a trolley-switch, in combination, three trolley-tracks, a shiftable tongue adapted to connect one of said tracks with either of the other two, and a trigger lying in the path of the tread of the trolley-wheel and adapted to be moved upward by the upward pressure of the trolley and thereby shift said tongue, for the purpose specified.

3. In a trolley-switch, in combination, a plate having three ribs extending therefrom, a tongue adapted to connect one of said ribs with either of the other two, a lever operating to shift the tongue and pivoted to one of said ribs and carrying a trigger which depends into the path of a trolley-wheel passing along said rib whereby the pressure of the trolley-wheel causes the tongue to shift, for the purpose specified.

4. In a trolley-switch, in combination, a plate, three ribs extending therefrom, a shiftable tongue adapted to connect one of said ribs with either of the other two, there being formed a recess in one of said ribs, a trigger operating to shift the tongue and adapted to occupy said recess and also adapted to depend therefrom into the path of the trolley-wheel, whereby a trolley-wheel passing along said rib presses said trigger out of the way into said recess and thereby shifts said tongue, for the purpose specified.

5. In a trolley-switch, in combination, a plate, three ribs extending therefrom, a shiftable tongue adapted to connect one of said ribs with either of the other two, a wedge-shaped block secured to said tongue, a lever engaging with a face of said block and operated by a trigger in the path of the trolley, whereby the trolley is adapted to shift the tongue, for the purpose specified.

6. In a trolley-switch, a plate, three ribs extending therefrom, a shiftable tongue adapted to connect one of said ribs with either of the other two, in combination with a trigger lying in the path of a trolley-wheel passing along that rib with which the tongue is always connected, and a trigger lying in the path of a trolley-wheel passing along one of the other ribs, said triggers operating when engaged by said trolley-wheel to shift the tongue, one in one direction and one in the other, whereby the tongue is caused to shift its position as the trolley approaches the tongue and to shift back after it has left the tongue, for the purpose specified.

7. In a trolley-switch, in combination, a plate having three ribs extending therefrom, a tongue having one end pivoted at the inner end of one of said ribs and having its other end adapted to lead to either of said remaining ribs, and a wedge-shaped block secured to said tongue and levers engaging with the opposing faces of said block and operated by triggers in the path of the trolley beyond each end of the tongue, whereby said tongue is adapted to be shifted in one direction by the trolley as it runs onto the switch and in the opposite direction by the trolley as it leaves the switch, for the purpose specified.

8. In a trolley-switch, in combination, a plate having three ribs extending therefrom, a tongue pivoted at the inner end of one of said ribs and adapted to connect said rib with either of the other two, in combination with a spring operating to hold said tongue in engagement with either of said ribs until a desired amount of force is applied to the tongue to remove it therefrom, in combination with mechanism operated by the trolley for applying such force to the tongue, for the purpose specified.

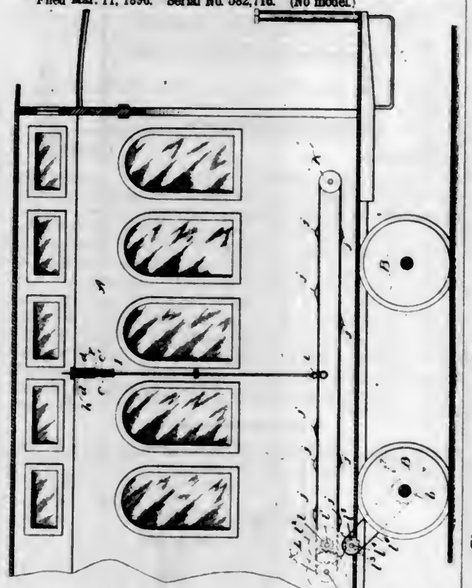
9. In a trolley-switch, in combination, a plate having three ribs extending therefrom, a tongue pivoted at the inner end of one of said ribs, said tongue being adapted to have its other end lead to either of the remaining ribs, said tongue having a wedge-shaped block projecting through a slot in said plate, a lever pivoted to that one of said ribs which is always in connection with the tongue and having a trigger loosely clasping said rib and thereby lying in the path of a trolley-wheel passing along said rib, the inner end of said lever adapted to contact with one of the faces of the wedge-shaped block and thereby shift the tongue in one direction and a lever pivoted to one of the other of said ribs and having a trigger adapted to be engaged by a trolley-wheel passing along that rib, said lever operating upon the other face of said wedge-shaped block whereby the tongue is shifted in the other direction when said last-mentioned trigger is operated, for the purpose specified.

10. In a trolley-switch, in combination, a plate having three ribs extending therefrom, a shiftable tongue adapted to connect one of said ribs with either of the other two, a lever pivoted to one of said ribs and operating to shift said tongue, a trigger connected with said lever and depending into the path of a trolley-wheel passing along said rib whereby a pressure upon said trigger is adapted to cause the tongue to shift, in combination with a counterweight operating to cause said trigger to normally depend into the path of the trolley-wheel, for the purpose specified.

11. In a trolley-switch, in combination, a plate having three ribs

extending therefrom, a tongue adapted to connect one of said ribs with either of the other two, said tongue being pivoted to the plate by means of an integral lug on the tongue passing through the plate, a means for holding said lug from withdrawal from the plate, and a spring holding the tongue in either extreme position against displacement by a force of less than a predetermined amount, for the purpose specified.

571,518. STATION-INDICATOR. HARRY FEDER, New York, N. Y. Filed Mar. 11, 1896. Serial No. 582,716. (No model.)



Claim.—1. A street or station indicator for cars, comprising a disk, a pointer arranged to move around the face of the disk, a belt driven by the movement of the car provided with abutments spaced apart with relation to the distances between the streets or stations, a pointer advancing means in position to be successively operated by the abutments on the belt for advancing the pointer one step for each of the abutments, substantially as set forth.

2. In a street or station indicator for cars, a disk, a pointer adapted to move around the face of the disk, and means under the control of the movement of the car for advancing the pointer step by step, the said means comprising an endless belt, a friction-wheel engaging the track and connected to the belt for driving it, the said belt having abutments spaced along the same, and pointer-advancing means adapted to be engaged by the abutments, substantially as set forth.

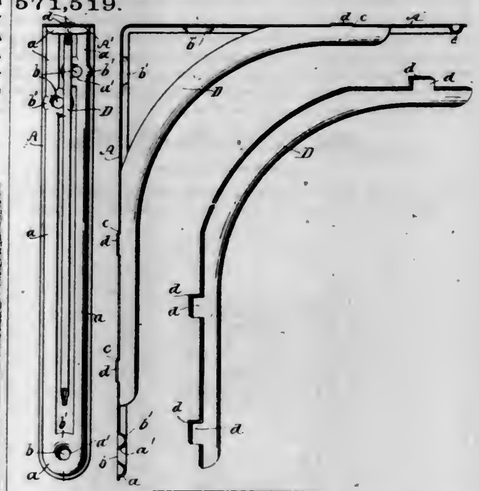
3. In combination, a stationary disk upon which the names of the streets or stations are indicated, a supplemental stationary disk in front of and spaced from the first-named disk, a pointer located between the two disks, and means for imparting to the pointer a step-by-step movement around between the said disks, the said supplemental disk having openings through which the names of certain of the streets or stations are permanently exposed and the pointer is exposed at intervals, substantially as set forth.

571,519. SHELF-BRACKET. JAMES C. GRIFFIN, Allegheny, Pa. Filed Jan. 20, 1896. Serial No. 576,102. (No model.)

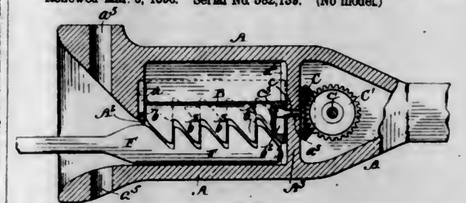
Claim.—1. In a shelf-bracket, the combination of a right-angled sheet-metal strip having a continuous bead-surface projected throughout its entire surface near its edge, and provided with beaded sockets leading into apertures, and slots through its surface; and a sheet-metal brace formed from a single piece and double walled by having its edges bent toward each other and provided with tongues formed integrally therewith adapted to fasten said brace to wall and shelf plates by engagement with slots therein, substantially as shown and described.

2. In a shelf-bracket, the combination of a right-angled sheet-metal strip comprising slotted plates A, and A′, having an endless bead *a*, upon their surface; with double-walled brace D, having tongues *d*, formed integrally therewith, said tongues being in engagement with the said slots and bent at right angles upon the said plates, substantially as shown and described.

571,519.



571,520. CAR-COUPLING. CHRISTOPHER H. HAMILTON, New York, N. Y., assignor to Frank R. Biedler, Baltimore, Md. Filed Apr. 27, 1895. Renewed Mar. 6, 1896. Serial No. 582,139. (No model.)



Claim.—1. In an automatic car-coupler the combination of the draw-head constructed substantially as described and having a chamber therein, with a groove *a* in one end of said chamber, a detent or toothed rack B in said chamber, a pin *b* in one end of said detent adapted to set in the groove *a*, a groove b^3 in the opposite end of said detent, and a pin c adapted to set in the said groove b^3, as set forth.

2. In an automatic car-coupler the combination of the draw-head constructed substantially as described and having a chamber therein, with a groove *a* in one end of said chamber, a detent or toothed rack B in said chamber, a pin *b* in one end of said detent adapted to set in the groove *a*, a groove b^3 in the opposite end of said detent, a pin *c* having a squared end and set into the said groove b^3, and means for turning said pin *c* to operate the detent, as set forth.

3. In an automatic car-coupler the combination of the draw-head constructed substantially as described, with a groove *a* therein, detent B, groove b^3 in said detent, pin *c*, and a link or bar F, and means substantially as described for turning the said detent to disengage the link or bar, as set forth.

4. In an automatic car-coupler the rotating and vertically-sliding detent B, means for holding said detent in position, in combination with the gears C and C′, rod *c*′, and means for operating said rod to turn or uncouple the detent, as set forth.

5. In an automatic car-coupler the combination of the draw-head constructed substantially as described and having a chamber therein, with a groove *a* in one end of said chamber, a detent or toothed rack B in said chamber, a pin *b* in one end of said detent adapted to set in the groove *a*, a groove b^3 in the opposite end of said detent, a pin *c* one end of which sets in the groove b^3, a gear C on the opposite end of said pin *c*, gear C′ meshing said gear C, rod *c*′ on which said gear C′ is mounted, means for turning said rod to turn the detent, and a guide or other means to limit the extent of movement, as set forth.

6. In a car-coupler the combination of a rotating detent, substantially as described, with the gears C and C′, rod *c*′, roller c^3 on said rod, and a lever C^3 for operating said rod to turn the detent, as set forth.

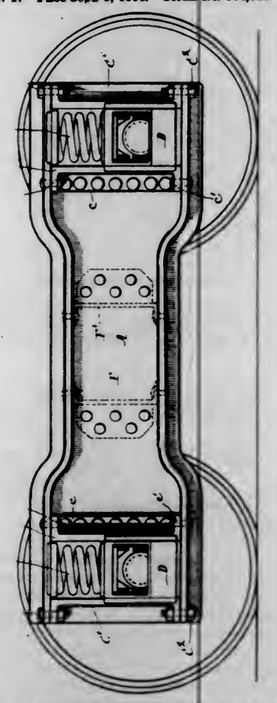
571,521. PACKAGE FOR POWDERS. FRED A. HERRELINE, New Brighton, and JACOB HARTMAN, Pittsburg, Pa. Filed Apr. 17, 1896. Serial No. 588,033. (No model.)

Claim.—As a new article of manufacture, a package for powders,

or similar materials, it having two superposed strips of paper or flexible fabric in one or both of which there is compressed a series of cavities, said cavities containing a series of masses of differing materials, said strips of paper being tightly secured together at points between adjacent cavities to effectually close said cavities, and one of said strips of paper being formed or provided with external characters indicating respectively the contents of the closed cavities.



571,522. SIDE FRAME FOR CAR-TRUCKS. HERBERT H. HEWITT, Buffalo, N. Y. Filed Sept. 3, 1896. Serial No. 604,812. (No model.)



Claim.—1. A side frame for car-trucks formed from a single rolled-plate girder or beam having a thin web or body and having edges rolled with flanges or thicker than said web or body, the ends of said web or body being cut away, leaving the thick edges or flanges projecting beyond said ends, substantially as described.

2. A side frame for car-trucks formed from a single rolled-plate girder or beam having flanges at its edges, the ends of the web of said plate girder or beam being completely cut away between its edge flanges, and said edge flanges being bent to form the spaces for the journal-box, &c., substantially as described.

3. A side frame for car-trucks formed of an integral plate girder or beam comprising a central web having at top and bottom lateral flanges and having at top and bottom outside of said lateral flanges the vertical reinforce-ribs, substantially as described.

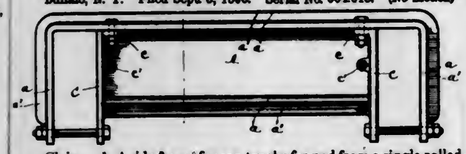
4. A side frame for car-trucks comprising a central web having at top and bottom lateral flanges and having at top and bottom outside of said lateral flanges the vertical reinforce-ribs, said vertical ribs being formed of metal thicker than the central web, substantially as described.

5. A side frame for car-trucks formed from a single-plate girder or beam rolled with top and bottom lateral flanges *a* and with top and bottom vertical ribs *a'* outside the lateral flanges, the ends of the lateral flanges and vertical ribs extending beyond the web of the beam and being suitably bent to form spaces for the axle-boxes, &c., substantially as described.

6. A side frame for car-trucks rolled from a single-plate girder or beam with top and bottom lateral flanges and with top and bottom reinforce-ribs extending in vertical direction and having the lateral flanges and vertical ribs extending beyond the body of the web of the beam and bent outwardly therefrom, the end portions of said web being stretched or expanded adjacent said bent flanges, substantially as described.

7. A side frame for car-trucks formed from a single rolled-plate girder or beam having a thin web or body and having edges rolled thicker than said web or body, the end of said web or body being cut away so as to leave the thickened edges projecting beyond said ends, said projecting thickened edges being bent outwardly and the end portions of said web or body being stretched or expanded adjacent said bent edges, substantially as described.

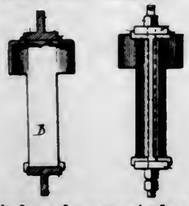
571,523. SIDE FRAME FOR CAR-TRUCKS. HERBERT H. HEWITT, Buffalo, N. Y. Filed Sept. 3, 1896. Serial No. 604,813. (No model.)



Claim.—1. A side frame for car-trucks formed from a single rolled-plate girder or beam having a thin web or body and having an under flanged edge, the upper portion of the plate girder or beam being cut away below said flanged edge and completely through the bottom, said flanged upper edge being bent down to form the outer pedestals, the space between the pedestal-jaws being open at the bottom for the withdrawal of the journal-boxes, substantially as described.

2. A side frame for car-trucks formed from a single rolled-plate girder or beam having a thin web or body and having at its top and bottom edges laterally-projecting flanges *a* and reinforce-ribs *a'* outside of said flanges, said lateral flanges and reinforce-ribs at the upper edges of the web being projected beyond said web and bent downwardly to form open-bottom spaces for the axle-boxes, &c., substantially as described.

571,524. CAR-TRUCK. HERBERT H. HEWITT, Buffalo, N. Y. Filed Oct. 5, 1896. Serial No. 607,938. (No model.)



Claim.—1. A side frame for car-trucks formed of a rolled beam having open-ended spaces at its ends to permit the pedestals to be inserted into and removed horizontally therefrom, in combination with three-sided pedestals formed with open bottoms and removably held within the end spaces of the side frame.

2. A side frame for car-trucks formed of a metal web, or body having top and bottom thickened edge portions projecting from its ends to form open-ended spaces for the pedestals, in combination with three-sided pedestals within the end spaces of the side frame, the bottoms of said pedestals being closed by the bottom thickened end portions of the side frame.

3. A side frame for car-trucks formed from a single rolled-plate girder or beam having a thin web or body and having integral with said web or body top and bottom thickened edges projecting at its ends, in combination with three-sided pedestals removably held within the end spaces of the side frame, the bottoms of said pedestals being closed by the bottom projecting thickened portions of the side frame.

4. A side frame for car-trucks comprising a metal web or body provided at its ends with top and bottom projecting portions forming pedestal-spaces, in combination with three-sided pedestals formed with open bottoms, said pedestals being removably bolted to the web or body and to the top and bottom projecting end portions of the side frame.

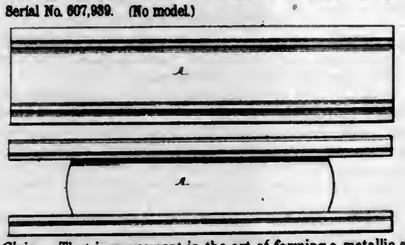
5. A side frame for car-trucks comprising a metal web or body provided at its ends with top and bottom projecting portions forming pedestal-spaces, in combination with three-sided pedestals provided at top and bottom with vertical projections to engage the projecting end portions of the side frame.

6. A pedestal for the side frame of a car-truck formed of a single piece consisting of integral jaws or sides and top the inner jaw being flanged to engage the web and the top being flanged to engage the projecting end of the side frame and a spring-cap formed in one piece therewith.

7. A pedestal for the side frame of a car-truck consisting of integral jaws or sides and top the inner jaw being formed with double flanges to straddle the end of the body of the side frame.

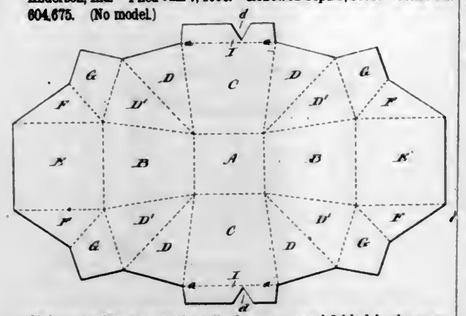
8. A pedestal for the side frame of a car-truck consisting of integral jaws or sides and top, one of said jaws having a vertical hole therethrough to receive a bolt and the other of said jaws being flanged to permit it to be attached to the body of the side frame.

571,525. METHOD OF MAKING SIDE FRAMES FOR CAR-TRUCKS. HERBERT H. HEWITT, Buffalo, N. Y. Filed Oct. 5, 1896. Serial No. 607,939. (No model.)



Claim.—That improvement in the art of forming a metallic side frame for car-trucks that consists in rolling a plate girder or beam with thickened or flanged edges thereafter cutting away the end portions of the web or body of the girder or beam in such manner as to leave an excess of metal at the ends of the web of said girder or beam, and thereafter expanding the thickened or flanged edges (one or both) of said girder or beam and stretching in vertical direction the uncut end portions of the web or body, whereby the ends of said body are made broader than its central portion and whereby the excess metal at the ends of the web or body will permit such parts being unduly reduced in thickness, substantially as set forth.

571,526. PAPER VESSEL. IRA W. HOLLETT, Chicago, Ill., assignor to the J. W. Sefton Manufacturing Company, same place and Anderson, Ind. Filed Jan. 7, 1896. Renewed Sept. 2, 1896. Serial No. 604,675. (No model.)



Claim.—1. The herein-described paper vessel folded in the manner set forth from a single blank and having its side walls C C provided along their upper edges with the extensions I I adapted to be bent outward and downward over the upper edges of the corner-folds D D and fit between the latter and the corners D' D', substantially as and for the purpose specified.

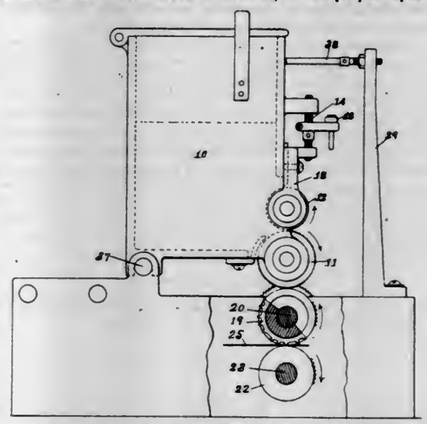
2. The herein-described paper vessel folded from a single blank composed of the bottom portion A, ends B B, sides C C, corner-folds D D', end extensions E E, and parts F G, folded into vessel shape in the manner described, and the sides C having the extensions I provided with the notches *d*, each extension I being bent outward and downward over the upper edges of the adjacent corner-folds D D at the opposite sides of its notch *d*, substantially as and for the purpose specified.

571,527. MACHINE FOR APPLYING PASTE TO PAPER, &c. WILLIAM H. HOWES and WILLIAM A. LORENZ, Hartford, Conn. Filed May 31, 1895. Serial No. 551,146. (No model.)

Claim.—1. In a paste-feeding device, a feeding-roll, and an adjacent gaging-roll, the rolls arranged to have the paste fed directly between them, the gaging-roll geared to rotate at so slow a speed relative to the feeding-roll as to cause substantially the entire film of paste passing between them to be smoothly retained on the paste-feeding roll, leaving the gaging-roll substantially dry, for the purpose specified.

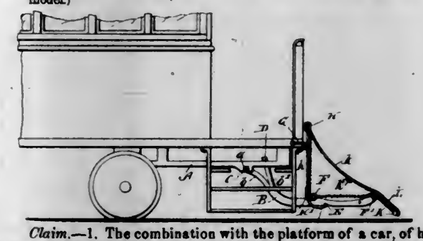
2. A pasting device, consisting of a box adapted to hold a supply of paste, a feeding-roll and a slower-rotating gaging-roll journaled thereon, with their working surfaces entering an aperture in the box below the normal paste-level, substantially as described.

3. A pasting device, consisting of a box adapted to hold a supply of paste, a feeding-roll, and a slower-rotating gaging-roll journaled thereon, with their working surfaces entering an aperture in the box below the normal paste-level, the sides of the aperture adjacent to the peripheries of the rolls being provided with valves adjustable toward and from the surfaces of the rolls, for the purpose specified.



4. In combination with a machine for carrying and suitably presenting objects to be pasted, and provided with means for operating the pasting-rolls, the herein-described pasting device, consisting of a paste-box adapted to be removably supported on the machine, and having a pasting-roll and a slower-moving gaging-roll journaled thereon, each provided with suitable arms or carriers adapted to engage with corresponding actuating arms or carriers of the machine, substantially as described.

571,528. CAR-FENDER. WILLIAM H. KALTENBECK, Roxbury, N. Y., assignor of one-half to Thomas Winters, Margaretville, N. Y. Filed Aug. 7, 1895. Renewed Apr. 14, 1896. Serial No. 587,559. (No model.)



Claim.—1. The combination with the platform of a car, of hangers secured beneath the same at each side thereof, each of which is provided with a cavity or recess in its lower side, a fender or guard, comprising the main frame, the lower ends of the sides of which are curved upwardly and provided with branches and one of which is adapted to be supported in said notches or recesses and the other of which is adapted to rest on the hangers, said main frame being projected in front of the car, and a supplemental, vertical frame connected with the platform and resting on the main frame, substantially as shown and described.

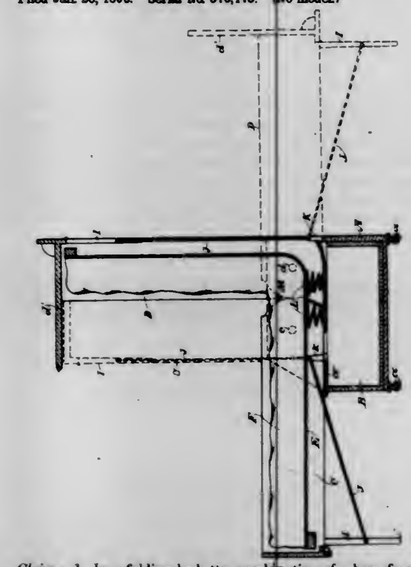
2. The combination with a car, of a fender or guard, consisting of a main frame, the inner ends of the sides of which are adapted to be connected with hangers, which are connected with the platform of the car, said main frame being projected forward of the car, and a supplemental frame connected with the car and resting on the main frame and provided with springs or projections, which are adapted to enter the notches or recesses in the under side of the sides of the main frame, the forward part of said main frame and said supplemental frame being provided with a covering of wire mesh or similar material, and flexible straps or strips extending over the top of the supplemental frame forward and over the forward end of the main frame, and connected with a transverse rod, which is provided with arms which rest upon the forward end of the main frame, said flexible strip or straps being connected near the middle by means of a transverse rod, substantially as shown and described.

3. The combination with a car, of a main fender or guard frame, the inner ends of the sides of which are connected with hangers, which are secured to the platform of the car, a supplemental, vertical

frame connected with the frame of the car and provided with projections or springs, which rest beneath the sides of the main frame, flexible strips or straps, which extend over the top of the supplemental frame forward and over the forward end of the main frame and are connected with a transverse rod, said rod being provided with spring-arms, which extend backward over the front end of the main frame and said flexible strips or straps being connected near the middle by a transverse rod, substantially as shown and described.

4. The combination with a car, of a main fender or guard frame, the inner ends of the sides of which are connected with hangers, which are secured to the platform of the car, a supplemental, vertical frame connected with the frame of the car and provided with projections or springs, which rest beneath the sides of the main frame, flexible strips or straps, which extend over the top of the supplemental frame forward and over the forward end of the main frame and are connected with a transverse rod, said rod being provided with spring-arms, which extend backward over the front end of the main frame, and said flexible strips or straps being connected near the middle by a transverse rod, and the supplemental frame and the forward part of the main frame being provided with a covering of wire mesh or similar material, substantially as shown and described.

571,529. FOLDING BED. HENRY G. KRASKY, San Francisco, Cal. Filed Jan. 20, 1896. Serial No. 576,175. (No model.)



Claim.—1. In a folding bed, the combination of a base-frame, a head-section and a foot-section hinged separately and directly to said frame on lines lying within the planes of the sides of said base-frame and sections whereby when extended the adjacent ends of said sections shall abut, and a mattress stretched between the outer ends of said sections and lying in a plane below the hinge-centers of said sections.

2. In a folding bed, the combination of a base-frame, a head-section and a foot-section hinged separately and directly to said frame, a mattress stretched between the sections and lying in a plane below the hinge-centers of said sections, a hinged leg upon the upper portion of the front of the foot-section and means for locking said leg when the section is in a horizontal position, comprising a pivoted latch on the leg, a pin in the section with which the latch engages, a pivoted lever, a connection between the same and the latch, and means for releasing the leg from a locked position.

3. In a folding bed, and in combination with a swinging section, a hinged leg upon the upper portion of the front of said section, and the means for locking said leg when the section is in a horizontal position, and releasing it again when in a vertical position, consisting of the pivoted latch connected with the upper end of the leg above its pivotal point, a fixed pin in the section with which the latch engages, a link connected with the inner extremity of the latch, and a pivoted lever connected with the link.

4. In a folding bed, and in combination with the swinging foot and head sections, the latter having a top piece overlapping the upper end of the foot-section, a hinged leg upon the upper portion of the front of the foot-section, and the means for locking said leg when the section is in a horizontal position and releasing it again when in a vertical position, consisting of the pivoted latch connected with the upper end of the leg above its pivotal point, a fixed pin in the section with which the latch engages, a link connected with the inner extremity of the latch, a pivoted lever connected with the link and projecting beyond the section, and a fixed stop in the top piece of the head-section, with which the end of the lever comes in contact when the section is raised to a vertical position.

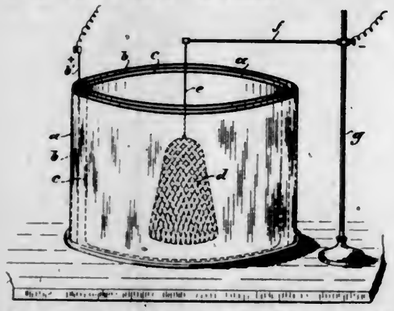
571,530. METHOD OF AND COMPOSITION FOR MAKING ARTIFICIAL SILK. RUDOLF LANGHANS, Berlin, Germany. Filed Jan. 17, 1894. Serial No. 497,191. (No specimens.)

Claim.—1. The herein described method of producing non-inflammable artificial silk from cellulose and other analogous carbohydrates, which consists in purifying the said material, subjecting the purified material to the action of phosphosulfuric, sulfuric and phosphoric acids until a viscid syrup is obtained, drawing the syrup into a filament, removing therefrom the acid, and hardening, substantially as described.

2. The hereinbefore-described method of producing non-inflammable artificial silk from cellulose and other analogous carbohydrates, which consists in purifying the said material, subjecting the purified material to the action of phosphosulfuric, sulfuric and phosphoric acids until a viscid syrup is obtained, increasing the stability of the syrup by treating it with an ethyl ester or its described equivalents, drawing the said syrup into a filament, removing therefrom the acid, and hardening, substantially as described.

3. The herein-described composition for making non-inflammable silk, which consists of a solution of purified cellulose in sulfuric and phosphoric acids mixed with an ethyl ester or its described equivalent, substantially as described.

571,531. PROCESS OF PRODUCING COATINGS COMPOSED OF EARTHY OXIDS. RUDOLF LANGHANS, Berlin, Germany. Filed Nov. 18, 1895. Serial No. 569,346. (No specimens.)



Claim.—1. The herein described process of preparing basic earth salts, which consists in dissolving hydrated oxids of earth metals in solutions of neutral earth salts, to thereby form an electrolyte, and separating the hydroxids of the earth metals by the action of an electric current of high destiny, substantially as described.

2. The herein-described process of producing coherent and firmly adhesive porous coatings composed of oxids of the earth metals, which consists in electrolyzing a solution of basic earth salts by an electric current of high density, depositing thereby upon an electroconductive foundation as an electrode hydroxids of earth metals, and drying and calcining the deposit.

3. The herein-described process of producing an incandescing body composed of an electroconductive foundation coated with oxids of the earth metals, which consists in electrolyzing a solution of basic earth salts by an electric current of high density to thereby deposit hydroxids from the said solution upon the said foundation immersed therein as a cathode, dipping the so-coated foundation into an aqueous solution of an acid or its specified equivalent capable of converting the deposited hydroxids into salts which are indissoluble in the solution, and which will be reduced to oxids by the action of heat, and then drying and calcining the thus converted deposit to drive off the acid.

4. The herein-described process of producing coherent and firmly adhesive porous coatings composed of oxids of the earth metals upon electroconductive foundations, which consists in electrolyzing with an electric current of high density a solution containing basic earth salts and an alkaloid salt, thereby depositing in an intimate union hydroxids of earth metals and the alkaloid upon the foundation placed in the said solution as a cathode, and drying and calcining the coated foundation to destroy the organic substance to convert the hydroxids into oxids.

571,532. PROCESS OF PRODUCING COATINGS COMPOSED OF EARTHY OXIDS. RUDOLF LANGHANS, Berlin, Germany. Filed Nov. 29, 1895. Serial No. 570,552. (No specimens.)

Claim.—1. The herein-described process of producing coherent and firmly-adhesive porous coatings composed of one or more earthy oxids, which consists in electrolyzing a dilute aqueous solution of a metahydroxid of an earth or alkali-earth metal by an electric current of low density, depositing thereby upon an electroconductive foundation as the cathode a coating of hydroxid, and finally drying and calcining said deposit.

2. The herein-described process of producing coherent and firmly-adhesive porous coatings composed of one or more earthy oxids, which consists in immersing a reticulated electroconductive foundation in an electrolyte composed of a dilute aqueous solution of a metahydroxid of an earth or alkali-earth metal, passing an electric current of low density through said electrolyte and the foundation as the cathode, to thereby deposit upon the latter a coating of indissoluble hydroxid, and finally converting said hydroxid into an earthy oxid.

3. The herein-described process of producing coherent and firmly-adhesive porous coatings composed of one or more earthy oxids, which consists in electrolyzing a dilute aqueous solution of a metahydroxid of an earth or alkali-earth metal by an electric current of low density, depositing thereby upon a platinum-wire foundation forming the cathode a coating of earthy hydroxid, and finally drying said deposit and converting it by heat into an earthy oxid.

4. The herein-described process of producing coherent and firmly-adhesive porous coatings composed of one or more earthy oxids, which consists in subjecting to the action of an electric current of low density an electrolyte composed of a dilute aqueous solution of a meta earthy hydroxid and an organic base, depositing thereby a coating of earthy hydroxid and the organic base upon an electrocondnctive foundation immersed in the electrolyte and forming the cathode, and finally drying said deposit and calcining, to destroy the organic base and leave a porous coating of earthy oxid.

571,533. ELECTROLYTIC PROCESS OF CONVERTING HYDROXIDS OF EARTH AND EARTH ALKALI METALS INTO INDISSOLUBLE ORGANIC OR INORGANIC SALTS, &c. RUDOLF LANGHANS, Berlin, Germany. Filed Mar. 28, 1896. Serial No. 585,240. (No specimens.)

Claim.—1. The herein-described process of electrolytically transforming into salt the hydroxid of earth metal deposited upon electroconductive foundations, which consists in placing such coated foundations as an anode in an electrolyte which consists in an aqueous solution of an acid or its specified equivalent capable of converting the hydroxid coating into a salt which is indissoluble in the bath, but reducible to oxid by the action of heat, and electrolyzing by a current of low density.

2 The herein-described process of electrolytically transforming into salt the hydroxid of earth metal deposited upon electroconductive foundations, which consists in placing such coated foundation as an anode in an electrolyte which consists of an aqueous solution of selenious acid or its described equivalent, and subjecting the said solution to the action of a current of low density.

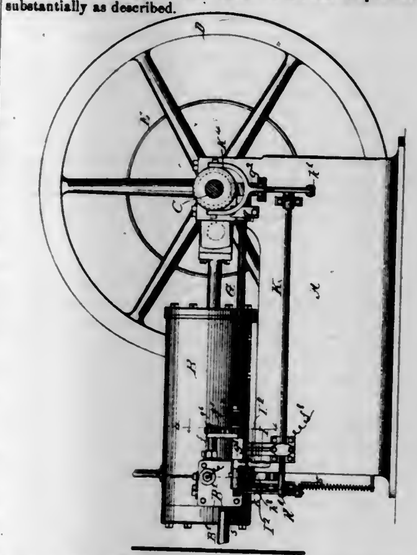
3. The herein-described process of electrolytically transforming the hydroxid of an earth metal deposited by electrolysis as coatings upon electroconductive foundations into salt by the action of an electric current of low density on an aqueous solution of an acid or its described equivalent capable of converting the hydroxid into a salt that is indissoluble in the bath and reducible to oxid by heat, into which solution the coated foundation is placed as an anode, and thereafter reducing the salt to oxid by calcination.

571,534. GAS-ENGINE. GEORGE W. LEWIS, Chicago, Ill. Filed Aug. 4, 1893. Serial No. 482,343. (No model.)

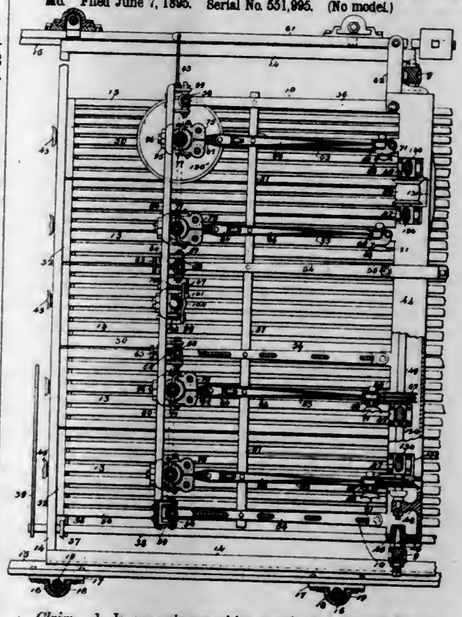
Claim.—1. In combination with the ignition-chamber of a gas-engine, a rotary electrode consisting of a head within said chamber carried by a shaft which passes out through the wall of the chamber to connection with suitable devices for rotating it, said head having a contacting prominence on its end face, substantially as described, and a stationary spring-electrode arranged to contact with the said prominence of the rotary electrode and to press the head against the wall of the ignition-chamber during such contact.

2. The combination with the exhaust-valve lever H′ and the rotative shaft G carrying a cam for operating said lever H′, of a hand-lever I mounted on said shaft and provided with an arm I′ adapted to engage the lever H′ whereby the exhaust-valve may be held open at pleasure, substantially as described.

3. In combination with the rotative shaft G and exhaust-valve lever H′, the sleeve A^3 splined on the shaft G and carrying the opposite, offset cams H and A^4 and the screw H^3 engaging with the sleeve and provided with a head A^7 whereby the said screw may be operated by hand to give lengthwise movement to the sleeve upon the shaft, substantially as described.



571,535. WOOD-CARVING MACHINE. EMIL LOCHMAN, St. Louis, Mo. Filed June 7, 1895. Serial No. 551,995. (No model.)



Claim.—1. In a carving-machine, a suitable horizontally-swinging frame, a swinging extension forming a part of the same, a series of tools carried by the free end of the said extension, an upright stock-frame comprising a series of adjacently-pivoted stock boards adapted to be tilted about their pivotal points to accommodate variable dimensions of stock, means for adjusting said frame to and from the extension, said frame being adapted to slide in a plane parallel to the working plane of the tools carried by the extension, substantially as set forth.

2. In a carving-machine, a suitable upright stock-frame comprising a series of adjacently-pivoted stock-boards adapted to be tilted about their pivotal points to accommodate variable dimensions of

stock, terminal tilting plates for said boards, an arm projecting from each plate, a general operating-rod connecting the several arms, a rock shaft, an arm connecting said shaft with the operating-rod, a tilting lever for said rock-shaft, means for retaining the tilting plates in any desired position, a swinging frame, and a series of tools pivoted to the free end thereof for cooperating with the stock-boards in any of their tilted positions, substantially as set forth.

3. In a carving-machine, a horizontally swinging frame, a swinging extension forming a part of the same, a terminal beam carried by the said extension and adapted to be operated in a vertical plane, a vertical stock-frame with which said extension is adapted to cooperate, suitable supporting arms or brackets, guide-bars mounted transverse to the free ends of the supporting-arms, and adapted to hold between them said stock-frame, adjusting-bolts mounted in the supporting-arms and passing through suitable lugs secured to the guide-bars, and means for operating said bolts and thus adjusting the position of the frame and guide-bars along the supporting arms or brackets, substantially as set forth.

4. In a carving-machine, a horizontally-swinging frame, a swinging extension pivoted to the same, a series of arms pivoted at their inner ends and forming a part of said extension said arms adapted to swing jointly in a vertical plane about their pivotal points, a tool-carrying beam disposed along the free ends of said arms, pivoted blocks connecting said beam with the arms and adapted to be held in a normally vertical position during the operation of the machine, said beam being adapted to oscillate in a horizontal plane, a suitable shaft and drive-pulleys carried by the swinging frame, tools mounted on the front beam of the extension, and drive-belts connecting said tools with the pulleys on the drive-shaft, substantially as set forth.

5. In a carving-machine, a swinging frame adapted to be secured to the wall of the building, a swinging extension forming a part of the same, a hollow post forming the pivotal point for said extension, a series of vertically-swinging arms pivoted to the post, one of said arms embracing the post and adapted to carry a counterweight at the outer end of its embracing portion, an upper arm pivoted to a bracket leading from the post and carrying a counterweight at the short end thereof, a link connecting said upper arm to the adjacent arm of the series of pivoted arms, a pivoted block carried at the free ends of the vertically-swinging arms, a tool-carrying beam having a series of vertically-disposed U-shaped brackets whose arms are pivoted to the free ends of the tilting blocks thereby permitting the tool-carrying beam to oscillate in a horizontal plane, a second series of arms pivoted to the post and having disposed at either end suitable pulleys, a series of tool-casings disposed along the tool-carrying beam, a pulley carried by each spindle, a pulley-supporting shaft located in the hollow post and supported by the swinging frame, belts connecting the several pulleys, and a general connecting-rod pivotally secured to the entire series of arms whereby the entire series of arms and the tool carrying beam can swing in a vertical plane, substantially as set forth.

6. In a carving-machine, a suitable swinging extension, a post forming the pivotal point of the same, an arm having a forked end embracing the post, a suitable guideway in one of the members of the fork, belt tension-pulleys adjustably mounted in said guideway, and a terminal pulley carried by the free end of the arm, substantially as set forth.

7. In a carving-machine, a suitable tool-casing, means for pivotally securing said casing to the frame of the machine for allowing rotation of said casing in a vertical plane, a yoke embracing the casing and adapted to oscillate in a vertical plane but at right angles to the plane of rotation of the casing, and a pivoted guide-block carried by the yoke and adapted to oscillate in a horizontal plane, substantially as set forth.

8. In a carving-machine, a suitable tool-casing, a lateral enlarged extension forming a part of same, means for pivoting said extension to the frame, a chamber within said extension, a tool spindle passing through the casing and having a pulley secured thereto within the chamber, a yoke having encircling bands embracing the casing on either side of the extension, said yoke adapted to swing in a plane at right angles to the plane of rotation of the casing, and a guide-block pivoted between the arms of the yoke and adapted to oscillate in a horizontal plane at right angles to the plane of oscillation of the yoke, said guide-block carrying guide-pulleys, substantially as set forth.

9. In a carving-machine, a suitable tool-carrying beam, vertically-swinging supporting-arms for said beam, intermediate connections between said arms and beam for permitting the swinging of the latter in a vertical plane and allow simultaneous movement of the same in a horizontal plane, a suitable tool-casing pivoted to said beam, a tool-spindle passing through the casing, means for rotating said spindle, a yoke embracing the casing and adapted to swing in a plane at right angles to the plane of rotation of the casing, and a guide-block pivoted to the yoke and adapted to swing in a horizontal plane, substantially as set forth.

10. In a carving-machine, a tool-casing adapted to rotate in the plane of its longitudinal axis, a yoke pivoted to the casing and adapted to oscillate in a plane at right angles to the first plane, and a guide-block pivoted to the yoke and adapted to oscillate in a plane at right angles to both the aforesaid planes, substantially as set forth.

11. In a carving-machine, a swinging extension, a series of vertically-swinging arms forming a part of the same, a vertically-oscillating block pivotally carried by the free ends of said arms a tool-carrying beam pivoted to the free ends of said blocks and adapted to oscillate in a horizontal plane, a bearing-plate forming a part of said blocks, and a binding-screw passing through the beam and adapted to be screwed against the bearing-plate to retain the beam in any adjusted position, substantially as set forth.

12. In a carving-machine, a suitable beam adapted to be secured to the wall of a building, supporting arms or brackets projecting from the same, guide-bars mounted transverse to the brackets and adapted to hold between them a suitable sliding stock-frame, adjusting-bolts mounted in the supporting-arms and passing through suitable lugs secured to the guide-bars, gear-wheels carried by the outer ends of the adjusting-bolts, operating-shafts having gear-wheels meshing with the aforesaid gear-wheels and means for turning the operating-shafts whereby the guide-bars and stock-frame confined between them are adjusted along the supporting-arms, substantially as set forth.

13. In a carving-machine, a tool-carrying beam, a series of tool-casings pivoted to the same, a rod connecting said series, a tracer-casing likewise pivoted to the beam and connected to the tool series, a brake-block cooperating with the tracer-casing, and a binding-bolt for binding the tracer and tool series connected thereto when said series are tipped to any desirable angle, substantially as set forth.

14. In a carving-machine, a suitable spindle-casing, a spindle mounted within the same, a pulley on said spindle adapted to bear against the inner walls of said casing, an oil-passage in said spindle, and an oil-cup secured to the casing and means for adjusting it to bear against one end of the spindle and vary the pressure of the pulley carried by it against the inner wall of the casing, substantially as set forth.

15. In a carving-machine, a suitable tool-casing, a spindle for the same, a pulley on said spindle, a suitable drive-belt for said pulley, a suitable shield carried by the casing, and suitable connections between the shield and the frame of the machine for permitting the shield to accommodate itself to the variable movements of the casing and spindle carried by it, substantially as set forth.

16. In a carving-machine, a swinging extension having a series of vertically-sweeping arms, a block pivoted to the free end of each arm and adapted to retain a vertical position during the sweep of said arms, a terminal tool-supporting beam, a series of U-shaped brackets secured thereto, each bracket having its arms embracing the pivoted block carried by the arms at opposite ends of the block, thus retaining the tool-supporting beam in a vertical position during the sweep of the arms, substantially as set forth.

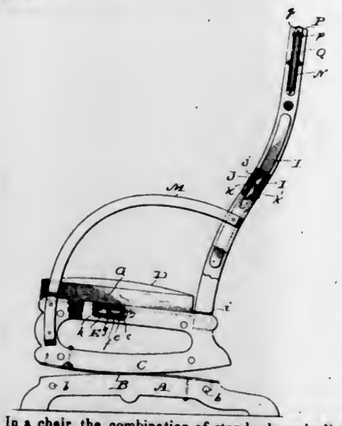
17. In a carving-machine, a suitable swinging frame, a swinging extension pivoted to the same, a hollow post carried by the end of the swinging frame and forming the pivotal point for the swinging extension, a series of arms carried by the swinging frame and entering the post through suitable openings in its walls approximately to the center or axis thereof, a drive-shaft carried by said arms within the post, a series of pulleys disposed about said shaft, a series of tool-spindles carried by the free end of the swinging extension, pulleys carried by the tools, and a series of belts connecting the pulleys on the drive-shaft with the pulleys on the tool-spindles, substantially as set forth.

18. In a carving-machine, a swinging extension having a series of arms sweeping in a vertical frame, a series of pulleys carried by each arm, a series of tool-spindles carried by the free end of the swinging extension, a pulley for each spindle, a pulley guide-block connected to the tool-spindle, and a strap securing or connecting said guide-block with the free end of each of the vertically-sweeping arms, substantially as set forth.

19. In a wood-carving machine, suitable supporting arms or brackets, guide-bars mounted transverse to the free ends of the supporting-arms, and adapted to hold between them a suitable sliding stock-frame, adjusting-bolts mounted in the supporting-arms and passing through suitable lugs secured to the guide-bars, and means for operating said bolts and thus adjusting the position of the frame and guide-bars along the supporting arms or brackets, substantially as set forth.

571,536. CHAIR. MICHAEL W. NEUKES, Port Washington, Wis., assignor of one-half to Reinhard Stelling, same place. Filed May 12, 1896. Serial No. 591,262. (No model.)

Claim.—1. In a chair, the combination of standards embodied therein, boxes joined to the standards, a movable section of the chair, plates joined to the movable section and provided with shanks having rocker extremities operative in the boxes, and springs arranged in said boxes under tension against the rocker extremities of said plate-shanks.

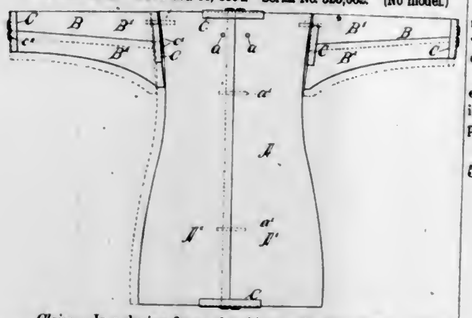


2. In a chair, the combination of standards embodied therein, mortise-boxes in the standards provided with inner ribs, spring-plates under tension against the ribs, a movable section of the chair, and rocker-shanks extended from the movable section to engage said boxes against the spring-plates therein.

3. In a chair the combination of a seat-frame and back-frame, with cast-metal plates having upper outwardly-extended horizontal lips overlapping upper edges of the seat-frame standards and lower inwardly-extended horisontal lips constituting rests for the back-frame standards, together with screws each of which is run through a back-standard and plate into a seat-frame standard, the thickness of said plates being such that the width of the back-frame is restricted to such dimension that it will readily nest in the seat-frame or base of the chair when the latter is packed knockdown.

4. In a chair, the combination of back-standards, socket-castings fast on the standards, a back-section in detachable engagement with the castings, and caps for said castings having tangs overlapping upper extremities of said standards to which they are secured.

571,537. SHIRT-DRYING FRAME. HARRIET A. ROWLAND, Evanston, Ill. Filed Oct. 11, 1894. Serial No. 525,602. (No model.)



Claim.—In a drying-frame for shirts and other similar articles, comprising a body portion and arm portions, each of said portions being divided longitudinally and made of two flat board-sections joined edge to edge by sliding telescopic connections, embracing slotted plates and screw-clamping devices, whereby each end of each section may be independently adjusted and maintained in adjusted position by frictional engagement of the connections, said arm portions being connected with the body portion by means of dowel-pins secured in the upper boards of the arm portions and adapted to enter holes in the edges of the body portion so as to hold said arm and body portions in the same plane, substantially as described.

571,538. PROCESS OF PURIFYING IRON OR STEEL. ERNEST H. SANITER, Wigan, England. Original application filed Feb. 24, 1892, Serial No. 422,662. Divided and this application filed June 22, 1892. Serial No. 437,577. (No specimens.) Patented in Belgium Jan. 2, 1892, No. 98,005.

Claim.—1. The process of desulfurizing iron during its conversion into steel, which consists in adding to the molten metal an excess of alkaline earth till the slag has from fifty-five per cent. to sixty per cent. of such earth, and then adding chlorid of calcium, substantially as described.

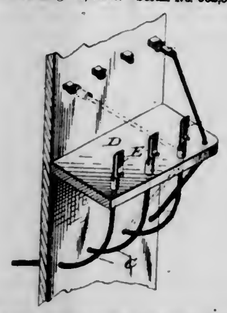
2. The process of desulfurizing iron during its conversion into steel, which consists in maintaining in the slag from fifty-five to sixty per cent. of alkaline earth, and adding to the molten metal an alkaline earthy halogen salt equal to from 1.5 to five per cent. of the slag formed, substantially as described.

3. The process of desulfurizing iron during its conversion into steel in the open-hearth furnace, which consists in maintaining in the slag from fifty-five to sixty per cent. of alkaline earth, and adding to the molten metal an alkaline earthy chlorid equal to from 1.5 to five per cent. of the slag formed, substantially as described.

4. The process of desulfurizing iron during its conversion into steel, which consists in maintaining in the slag from fifty-five to sixty per cent. of alkaline earth, and adding to the molten metal such materials as will form an alkaline earthy halogen salt equal to from 1.5 to five per cent. of the slag formed, substantially as described.

5. The process of desulfurizing iron during its conversion into steel, which consists in adding to the molten metal an excess of lime till the slag has from fifty-five to sixty per cent. of lime, and adding chlorid of calcium equal to from 1.5 to five per cent. of the slag formed, substantially as described.

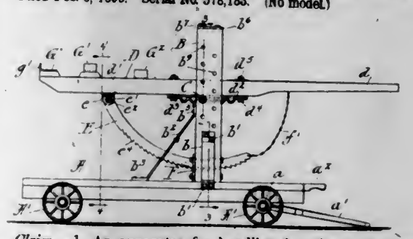
571,539. ELECTRICAL SWITCH-CONDUCTOR. WILLIAM H. SAWYER, Providence, R. I., assignor to the American Electrical Works, same place. Filed Aug. 12, 1896. Serial No. 602,580. (No model.)



Claim.—1. An electrical cord or conductor composed of an elastic rubber cord, surrounded by a braided web carrying one or more wires or conductors, and the whole inclosed within a suitably wound or braided covering, substantially as and for the purpose specified.

2. In a telephone switchboard conductor, the combination of an elastic rubber core; with one or more wires or conductors, and an inclosing wound or braided covering, substantially as and for the purpose specified.

571,540. DRAW-BAR LIFT. JOACHIM SCHULTZ, Chicago, Ill. Filed Feb. 6, 1896. Serial No. 578,183. (No model.)

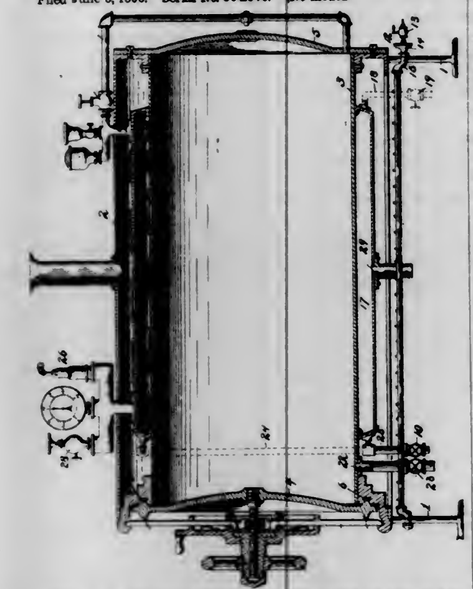


Claim.—1. An apparatus for handling draw-bars comprising a wheeled main frame, an upright standard mounted upon the main frame, a lever adjustably and pivotally mounted between its ends upon said standard so as to oscillate in a vertical plane, and means for holding a draw-bar longitudinally upon one end of the lever, said means comprising lateral supports upon the lever arranged to project above the supporting-surface of the latter at each side thereof.

2. An apparatus for handling draw-bars comprising a wheeled main frame, an upright standard consisting of two members held parallel with each other and at a distance apart by means of space-blocks, mounted upon said main frame, a lever arranged to extend between said standard members and provided with a longitudinal series of

pivot-apertures, there being a vertical series of pivot-apertures provided through the standard members, a pivot-pin for adjustably connecting said lever with the standards, means for locking the lever at a desired angle with relation to the standard, comprising a segmental-shaped ratchet-bar connected with one end of the lever and arranged to extend between the standard members, a detent-plate mounted upon the standard, with which said ratchet-bar is adapted to engage, and means for holding a draw-bar longitudinally upon one end of the lever, comprising lateral and end bar-supports upon the lever arranged to project above the supporting-surface of the latter.

571,541. STERILIZER. AUSTIN V. M. SPRAGUE, New York, N. Y. Filed June 6, 1896. Serial No. 594,576. (No model.)



Claim.—1. In an apparatus for sterilizing articles, an interior sterilizing-chamber, an annular steam-generating chamber surrounding the first-named chamber, means for generating steam under pressure above the normal in said generating-chamber, and a conduit controlled by a cock connected to both chambers whereby both chambers may be heated, and steam generated and subsequently admitted to the sterilizing-chamber, substantially as described.

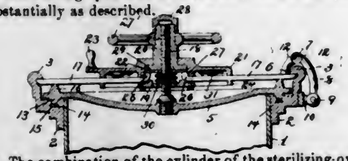
2. In an apparatus for sterilizing articles, an interior sterilizing-chamber, an annular steam-generating chamber surrounding the first-named chamber, means for generating steam under pressure above the normal in said generating-chamber, and a conduit controlled by a cock connected to both chambers whereby both chambers may be heated, and steam generated and subsequently admitted to the sterilizing-chamber, said sterilizing-chamber being provided with a drainage-outlet, substantially as described.

3. In an apparatus for sterilizing articles, an interior sterilizing-chamber, an annular steam-generating chamber surrounding the first-named chamber, means for generating steam under pressure above the normal in said generating-chamber, said means consisting of a cylinder surrounding the steam-generating chamber, a burner situated in or near an opening in the bottom of said latter cylinder and means for producing a draft about the generating-chamber, a conduit controlled by a cock connected to the steam-generating and sterilizing chambers whereby the latter may be heated and steam generated and subsequently admitted to the sterilizing-chamber, substantially as described.

4. In a sterilizing apparatus, a steam-tight oven, a steam-generator surrounding the oven and in contact therewith adapted to heat its walls by conduction and radiation, means for generating steam under a pressure above the normal, and a pipe and cock whereby the steam-space of the generator and the oven can be made to communicate at will, substantially as described.

571,542. DOOR FOR STERILIZING-OVENS. AUSTIN V. M. SPRAGUE, New York, N. Y. Filed June 6, 1896. Serial No. 594,577. (No model.)

Claim.—1. In a sterilizing-oven or the like, the combination of a door, a series of independent and radially-arranged levers adapted to shut said door, and a device to simultaneously operate the levers, said device bearing upon each of the levers, and a lever-spacing plate 21, substantially as described.



2. The combination of the cylinder of the sterilizing-oven having the ring provided with a flange, the hinged door, said door having the bearing-rim 13 and the fulcrum-rim 16, the levers adapted to engage the flange of the ring, and resting on rim 16, the post or stud fixed in the door, the lever-spacing plate movable about said post and provided with a slotted peripheral flange to receive the levers, and means for applying power to the levers to force the door to its seat, substantially as described.

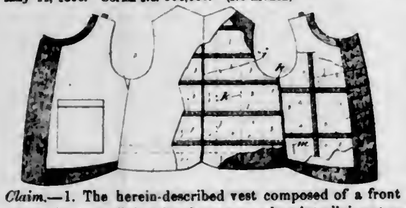
3. The combination of the cylinder of the sterilizing-oven having the ring provided with a flange, the hinged door, said door having the bearing-rim 13 and the fulcrum-rim 16, the levers adapted to engage the flange of the ring, and resting on rim 16 and having each an upturned end, the post or stud fixed in the door, the lever-spacing plate movable about said post and provided with a slotted peripheral flange to receive the levers, and a rim 27 to engage the upturned ends of the levers, and means for applying power to the levers to force the door to its seat, substantially as described.

4. The combination of the cylinder of the sterilizing-oven having the ring provided with a flange, the hinged door, said door having the bearing-rim 13 and the fulcrum-rim 16, the levers adapted to engage the flange of the ring and resting on rim 16, the post or stud fixed in the door, the lever-spacing plate movable about said post and provided with a slotted peripheral flange to receive the levers, means for holding said levers in the slots, and means for applying power to the levers to force the door to its seat, substantially as described.

5. In a sterilizer, the combination of the door, the hinging device, said device comprising brackets 10 fixed to the exterior of the sterilizer, the pintle 9 journaled in said brackets, the links 8 situated at the side of the sterilizer, the pintle 7, and the bracket-arms 6 fixed to the door, said brackets 10 and 6 being joined by the pintle 7 situated in line with the outer wall of the sterilizer when the door is closed, substantially as described.

6. In a sterilizer-oven or the like, the combination of a door, a series of independent and radially-arranged levers adapted to shut said door, means for directly resisting the end thrust imparted to the levers, and a device to simultaneously operate the levers, said device consisting of a nut 20, and a post 18, substantially as described.

571,543. VEST. FREDERICK H. SPRAGUE, Orange, Mass. Filed May 11, 1896. Serial No. 591,009. (No model.)



Claim.—1. The herein-described vest composed of a front and back, a regular inner lining for the same, and an interlining strengthened by the application of stay-strips to the same, from side to side thereof, said interlining being stitched to the back of the vest from top to bottom thereof, substantially as described.

2. In a vest, an interlining having stay-strips stitched to the same, in approximately parallel lines throughout its body and extending from side to side thereof, the said stay-strips and lining being united with the material of the back and front of the vest by the stitches employed to hold together the vertical seams of the vest, substantially as described.

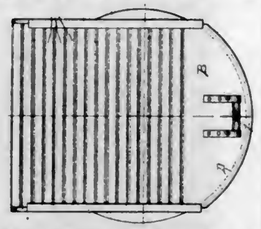
3. In a vest, the combination with the outer and inner plies of the vest material, of an interlining having stitched to one side of it, across the body thereof and independent of the vest material, both crosswise and vertically stay-strips, substantially as described.

4. In a vest, the combination with the outer and inner plies of the vest material, of an interlining having a stay-strip stitched to one side of it and running in a vertical direction across the body thereof and independent of the vest material, the said stay-strip being joined to the vest proper in the shoulder-seam, substantially as described.

5. In a vest having pocket-stitches, the combination with the outer and inner plies of the vest material, of an intermediate lining of chamois fiber having stitched to one side of it stay-strips independent of the vest material, the said lining being stitched to the front of the vest, by short lines of stitches cooperating with the pocket-stitches, substantially as described.

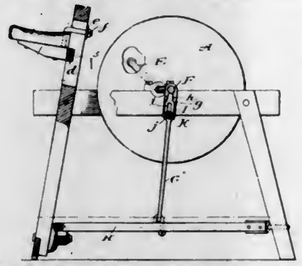
6. In a vest, the combination with the outer and inner plies of the vest material, of an interlining, said interlining being stitched to the vest at its edges and being strengthened by the application thereto of a plurality of stay-strips extending across the same from side to side thereof in approximately parallel lines, said stay-strips being independent of the adjacent vest material, the back portion of the interlining being secured to the back of the vest by lines of stitches extending transversely to the stay strips, the front portion of the vest having pocket-stitches, and the interlining at the front portions of the vest being secured thereto by lines of stitches cooperating with the pocket-stitches, and the folded portions of the interlining being otherwise unconnected throughout their bodies with the front portions of the vest, substantially as described.

571,544. BARREL-COVER. HENRY SPRINGSTED, Schenectady, N. Y. Filed Dec. 14, 1894. Serial No. 531,781. (No model.)



Claim.—The combination with the partly-slatted cover having a handle on the upper side and a stop on the lower for limiting the throw, of the metallic frame provided on the upper side with grooves for guiding and holding said cover and on the lower side with a circular rim or rest having a plurality of depending flanges or lugs extending below the barrel-top, and the roller journaled below the level of the cover in the projecting ears of said frame, as set forth.

571,545. MANUAL MOTOR. JACOB STEFFENSON, North Cape, Wis., assignor of one-half to James Fredricksen, same place. Filed Mar. 27, 1896. Serial No. 585,052. (No model.)

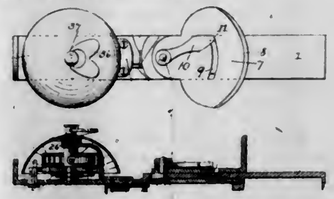


Claim.—The combination of a suitable frame embodying a vertically-slotted post, a saddle having an arm engaging the post-slot, a cross-head on the saddle-arm opposed to the inner side of the post, a rib depending from the saddle and having a shouldered end engaging said post-slot, a treadle arranged to be rocked by a person astride said saddle, and a pitman for connection of the treadle with another movable machine element.

571,546. COMBINED DOOR-FASTENER AND ALARM. ANDREW E. VEON, Brainerd, Minn., assignor of one-half to Edward W. Lynch, same place. Filed July 17, 1896. Serial No. 599,571. (No model.)

Claim.—1. In a door-fastener, the combination with a bar having a wedge formed at one of its ends at a right angle thereto and a shoulder formed on the same side of said bar with said wedge intermediate of the ends of said bar, of a locking-cam pivoted to the opposite side of said bar near its opposite end, said locking-cam provided with means to engage with said bar and rest in a locked position thereon, substantially as shown and described.

2. A door-fastener consisting of a bar terminating at one of its ends in a wedge formed at a right angle thereto, a locking-cam pivoted to the opposite end, a latch pivoted at one of its ends with said cam, its opposite end provided with hooks passing through a slot in said cam formed therein circumferentially of the pivoted point of said latch, and said hooks adapted to engage with said bar and hold said cam in locked engagement therewith when said cam is thrown forward, substantially as shown and described.



3. In a door-fastener, the combination with a bar having a wedge formed at one of its ends at a right angle thereto, said bar provided with a shoulder intermediate of its ends, of a cam and a latch therewith pivoted at the side of said bar at its opposite end, said cam provided with a slot formed therethrough concentric with the pivotal end of the latch, the free end of said latch passing through said slot and provided with hooks projecting in opposite directions, and adapted to engage with said bar and hold said cam in a fixed relation therewith, substantially as shown and described.

4. A ringing alarm for attachment to a door-fastener consisting of a gong mounted on a plate provided with means for attachment with said fastener, a duplex striker provided with a pair of striking-arms pivotally secured to said plate with said arms in striking distance of opposite sides of said gong, said arms provided with an escapement contacting with a toothed wheel mounted on a post rotated by a spring coiled around said post and means connecting with said fastener for releasing the tension of said spring, substantially as shown and described.

5. In a door-fastener, the combination with said fastener, of a detachable ringing alarm provided with a gong, a coiled spring mounted within said gong on a rotatable post secured to a plate and carrying a toothed wheel operating a striker pivoted to said plate, said striker provided with arms having projections thereon to contact with the teeth on said wheel whereby said arms are thrown against said gong when said wheel is revolved, means connecting with said fastener for holding the tension of said spring and releasing it, substantially as shown and described.

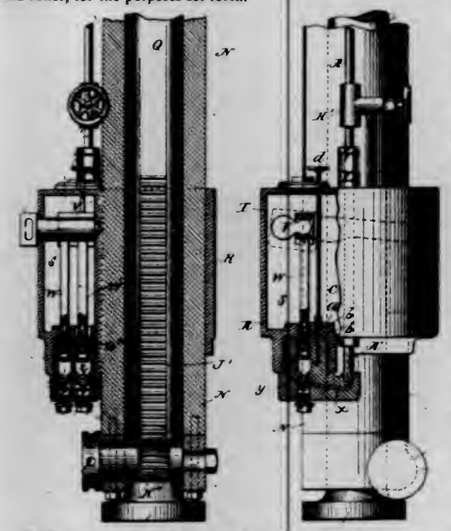
6. The combination in a door-fastener provided with a bar carrying a locking-cam pivoted on a bolt movable in a slot in said bar, of a plate provided with means of attachment to said bar, said plate having mounted thereon a ringing alarm consisting of a gong struck by a pair of striking-arms resting within said gong on each side thereof and pivotally mounted on said plate, said arms operated by a spring coiled around a post and fixed thereto at one of its ends, an escapement mounted on said post, means for turning said post to increase the tension of said spring, the arms of said striker provided with projections contacting with teeth on said escapement and held normally in contact by a draw-bar connecting with the movable bolt with which said locking-cam is pivoted, substantially as shown and described.

7. A door-fastener provided with a ringing-alarm attachment said fastener consisting of a bar having a wedge formed at one of its ends, for insertion in the jamb of the door, a shoulder on the side of said bar to rest in contact with the edge of said jamb, a locking-cam pivoted to the side of the bar to a bolt supported in a longitudinal slot, a plate attached to the side of said bar by means of a lug thereon said bar provided with a slot and a sliding bolt attached to said plate and engaging in said slot, said plate having mounted thereon a coiled-spring-operating mechanism consisting of a spring attached to a revolving post having mounted thereon a toothed escapement, a gong fixed to means for holding said post in position and a striker provided with arms supported on each side of said escapement and having projections thereon operating in contact with the teeth on said escapement, said striker pivoted to said plate, a draw-bar connecting with the bolt to which the locking-cam is pivoted and with one of the arms of the striker to hold the latter normally in contact with the toothed escapement, substantially as shown and described.

571,547. HYDRAULIC JACK. JOHN WEEKS, New York, N. Y., assignor to John F. Dettmar, executor of Richard Dudgeon, deceased. Filed May 26, 1896. Serial No. 593,120. (No model.)

Claim.—1. The combination of a bracket, a roller supported by the bracket, a plate forming part of the bracket, a hydraulic jack seated against the plate, and a chain which passes over the roller and engages with the upper end of the jack, for the purposes set forth.

2. The combination of a bracket, a roller supported by the bracket, a plate forming part of the bracket having a concave side, a jack having a convex head, which engages with said plate, and a chain both ends of which are connected with the jack, and which passes over said roller, for the purposes set forth.

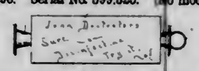


3. The combination of a hydraulic jack having two pumps of differing capacity, a rack on the ram and a pinion on the frame of the jack, a bracket carrying a roller, a plate or bearing for the upper end of the jack, and a chain which engages with the jack and passes over the roller on the bracket, whereby the two structures are permanently connected together, for the purposes set forth.

4. The combination in a jack of a bracket embodying a seat for the head of the jack, a jack, the head of which engages with the seat on the bracket, flexible devices permanently connecting the bracket and the jack, two pumps in the jack of differing capacity, and means to throw the larger pump out of operation, for the purposes set forth.

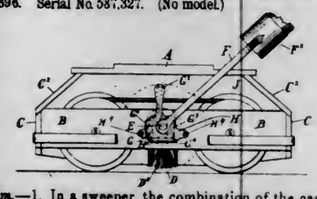
5. The combination in a jack of a bracket embodying a seat for the head of the jack, a jack the head of which engages with the seat on the bracket, flexible devices permanently connecting the bracket and the jack, two pumps in the jack, of differing capacity, means to throw the larger pump out of operation, and a rack upon the ram of the jack and a pinion on the frame thereof for retracting the ram, for the purposes set forth.

571,548. ADVERTISING TOY. ROBERT S. WEST, Cleveland, Ohio. Filed July 15, 1896. Serial No. 599,325. (No model.)



Claim.—A toy consisting of a block of wood having a longitudinal opening therein, a wire passing through said opening, and metallic cones secured upon the ends of said wire, adapted to be turned in frictional contact with said block, substantially as and for the purpose set forth.

571,549. CARPET-SWEEPER. GUSTAV A. WORZ, Milford, Ohio, assignor to the Milford Manufacturing Company, same place. Filed Apr. 13, 1896. Serial No. 587,327. (No model.)



Claim.—1. In a sweeper, the combination of the case, the brush and its axle D^3, bail F and pin E forming the pivot upon which the end of the axle rotates, and the block G pivoted at S on pin E and having three successive edges or portions as G^3, G^4 and G^5, the two latter respectively at increased distances from the pin E, and the frame as B, plate H and an abutment H^3 supported thereby, substantially as and for the purposes specified.

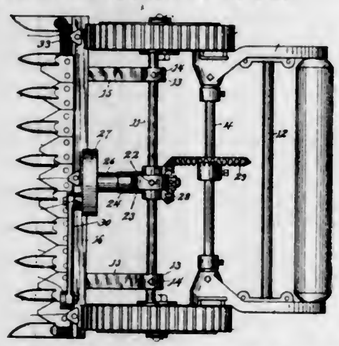
2. In a sweeper, the combination of the case, the brush and its axle D^3, bail F and pin E forming the pivot upon which the end of the axle rotates, and the block G pivoted at S on pin E and having three successive edges or portions as G^3, G^4 and G^5, the two latter respectively at increased distances from the pin E, and the frame as B, and an abutment H^3, flange H^4, the edge of the block being received behind the flange and resting on the abutment, and plate H upholding the abutment H^3 substantially as and for the purposes specified.

3. In a sweeper, the combination of the case, the dust-pan K, and the end or transverse wall, pivot K^3, enabling the pan to swing, direct-acting push-piece L, extending through slot L^3 in the frame of the sweeper, and down to pan, and there pivoted thereto, at K^3, and the angulated spring M, M^3, M^4 connected at one end M^3 to pan K, and at the other end to push-piece L, substantially as and for the purposes specified.

4. In a sweeper, the combination of the case, the wall-frame J, pan K, pivoted at K^3 to the frame, push piece recessed at L^3, spring M, M^3, M^4, pivotally connected to the pan at K^4, and within recess L^3 to the push-piece at L, the latter being pivoted to the pan substantially as and for the purposes specified.

5. In a sweeper, the combination of the case, the wall-frame J, pan K, pivoted at K^3 to the frame, push-piece L having a recess at L^3 formed by bending the push-piece to such shape, the push-piece being bent at its lower end and forming a pivot-piece L^2 received into opening K^2 in the pan, angulated spring M, M^3, M^4, whose arm M bent at its free end forms the pivot M^2 received in opening K^4 of the dust-pan, the free end of arm M^4 being bent and forming the pivot-pin M^5, received into opening L^5 of the push-piece, the arm M^4 in part lying in the recess L^3, and the pivots L^2, M^2, M^5 being all held in place by the wall J, in connection with the pan and push-piece, the latter above being held in position by the frame of the sweeper, substantially as and for the purposes specified.

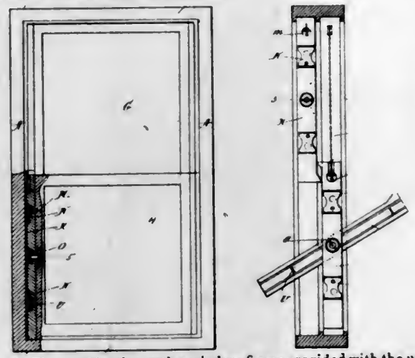
571,550. LAWN-MOWER. ALBERT BLAUBACH, Milwaukee, Wis. Filed Dec. 18, 1895. Serial No. 572,491. (No model.)



Claim.—In a lawn-mower, the combination, of the frame of the mower, stub-axles extending therefrom, traction-wheels supported on said stub-axles, a driven shaft located in the rear of the frame and geared to the traction-wheels, said shaft having a beveled gear mounted thereon, a rigid rod extending transversely from one side of the frame to the other, and at the forward portion of the frame, an arm mounted on the rod, at or near the center thereof, and depending therefrom, said arm formed or provided at its lower end with a sleeve extending at right angles to the rod, a longitudinal shaft journaled in the sleeve, one end of the shaft provided with a beveled gear meshing with the first-mentioned gear, a crank or disk to which the opposite end of said shaft is connected, an arm or arms connected to the transverse rod and extending downwardly therefrom, a transverse finger bar connected to said arm or arms, a cutter-bar slidingly mounted on the finger-bar, and a pitman connection between the crank or disk and the movable cutter-bar.

571,551. SUPPORT FOR WINDOW-SASHES. LUZERNE M. BOLLES, Brooklyn, N. Y. Filed Nov. 13, 1895. Serial No. 568,751. (No model.)

Claim.—1. The combination with a window-frame provided with the usual beads or strips at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance-weights, which are secured thereto by means of plates as *m*, which are set into the sides of said stiles or bars, said plates being provided with notches or recesses in their upper sides and with inwardly-directed shoulders or projections behind which are placed bars or rods with which are connected cords or chains which are also connected with said weights, said stiles or bars being provided with longitudinal grooves or slots in which said cords or chains are placed, substantially as shown and described.



2. The combination with a window-frame provided with the usual strips or beads at each side thereof, between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance-weights, which are secured thereto by means of plates as *m*, which are set into the sides of said stiles or bars, said plates being provided with notches or recesses in their upper sides and with inwardly-directed shoulders or projections behind which are placed bars or rods with which are connected cords or chains which are also connected with said weights, said stiles or bars being provided with longitudinal grooves or slots in which said cords or chains are placed, and window-sashes pivotally connected with said stiles or bars, and adapted to be turned on their pivots, substantially as shown and described.

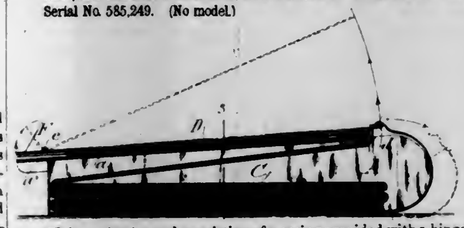
3. The combination with a window-frame provided with the usual beads or strips at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance weights and cords, said stiles or bars being so formed as to project beyond said beads or strips, and said stiles or bars being also provided with vertical convex portions on their outer surfaces, and with window-sashes pivotally connected therewith, centrally thereof, the sides of the frames of said window-sashes being also provided with vertical concave portions, or grooves into which the convex portion of the stiles or bars are adapted to fit, said stiles or bars being provided with springs on their outer sides, which are adapted to operate in connection with the frame of the window, to force said stiles or bars inwardly, said springs being set into said stiles or bars, and adapted to operate in connection with plates which are secured thereto, substantially as shown and described.

4. The combination with a window-frame provided with the usual beads or strips, at each side thereof between which the window-sashes are mounted, of vertically-movable stiles or bars mounted in the spaces formed by said beads or strips, and provided with counterbalance weights or cords, said stiles or bars being so formed as to project beyond the said beads or strips, and being also provided with vertical convex portions or beads on their outer surfaces, and window-sashes pivotally connected therewith and centrally thereof, the sides of the frames of said sashes being also provided with vertical concave portions or grooves into which the convex portions or beads of the stiles or bars are adapted to fit, said stiles or bars being provided with spring-operated plates on their outer sides, which are adapted to press against the frame of the window, and the pivotal connection of said window-sash and said stiles or bars being made by means of pivot-pins which pass through plates secured to the sashes and also through extensions or cylindrical portions formed on said plates which project into the stiles or bars, said pins being provided at their outer ends with plates mounted thereon in cavities or recesses formed in the stiles or bars, and also with spiral springs which are mounted thereon between said plates and the cylindrical extension through which said pins pass, substantially as shown and described.

5. The combination with a window-frame, provided with the usual bead at each side thereof, between which the window-sashes are mounted, of vertically-movable stiles mounted in the space formed by said beads or strips, and provided with counterbalanced weights or cords, said stiles being pivotally connected with the stiles of the sash, and plates secured upon the outer side of said stiles, and provided with an inwardly-directed portion, upon which is secured a spring adapted to force the stile away from the frame, and a loop or staple secured in the sides of the sashes opposite the inwardly-directed portion of the plates and adapted to force said plates outwardly against the window-frame to prevent the rattling of the sash, substantially as described.

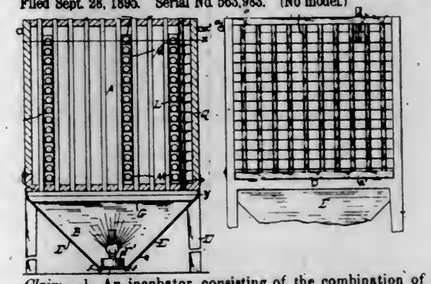
6. The combination with a frame provided with a sash, stiles or bars, having a longitudinal rib or extension secured to each side of said frame within the recessed or rabbeted portion thereof; spring-operated plates secured to said stiles or bars at each end thereof, and having an inwardly-directed cylindrical portion secured to the inner surface of the same, which projects into a corresponding recess in the stiles, said sash having a longitudinal groove or recess formed in the edges thereof in which the longitudinal rib of the stiles projects, a staple adapted to register with said cylindrical extension on the plates to force the same against the sash, and pivotal connection between said sash and stiles to permit of the revolution of the former, substantially as described.

571,552. SALES-PAD. WILLIAM H. BREAKSPEAR, OTTO SPANNAUS, and CHARLES WEISBECKER, New York, N. Y. Filed Mar. 28, 1896. Serial No. 585,249. (No model.)



Claim.—A sales-pad, consisting of a casing provided with a hinged lid, a transverse hinge-rod at the top of the casing, a retaining-frame hinged on said rod, a ledge extension at the front end of the top of the casing, and a cutter also hinged on said hinge-rod and arranged above said ledge extension, substantially as set forth.

571,553. INCUBATOR. FREDERICK R. BROWN, Waukesha, Wis. Filed Sept. 28, 1895. Serial No. 563,983. (No model.)



Claim.—1. An incubator, consisting of the combination of the upper and lower chambers, the vertically-disposed air pipes or flues leading from the lower chambers through said upper chamber, the removable egg-cases provided with egg-compartments and adapted to fit between said air pipes or flues, the front and side doors for said upper chamber, and the platforms inserted between the pipes adjacent to the front door in planes corresponding with the floors of the egg-compartments, together with a lamp located in said lower chamber, and a deflector above said lamp, substantially as described.

2. An incubator, consisting in the combination of the upper and lower chambers, the vertically-disposed air pipes or flues leading from the lower chamber through said upper chamber the removable egg-cases provided with egg-compartments and adapted to fit between said air pipes or flues, the removable side screens for said egg-cases, the front and side doors for said upper chamber, and the platforms inserted between the pipes adjacent to the front door in planes corresponding with the floors of the egg-compartments together with a lamp located in said lower chamber, and a deflector above said lamp, substantially as described.

571,554. TRANSFERRING DEVICE FOR KNITTING-MACHINES. WILLIAM G. CHISOLM, Charleston, S. C., assignor of one-half to T. L. Dodd, same place. Filed June 6, 1896. Serial No. 594,561. (No model.)

Claim.—1. A transfer-reed having a groove in one side adapted to receive the needle of a knitting-machine and a hook projecting

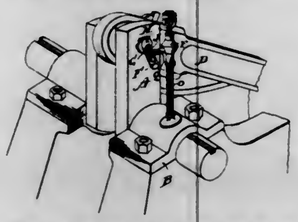
from the free extremity of the reed at the opposite side thereof from the groove, substantially as set forth.



2. A transfer-reed having a longitudinal groove in one side and a latched hook on the opposite side, substantially as set forth.

3. In a transferring device for knitting-machines, the combination with a grooved reed adapted to receive a needle of the knitting-machine, a hook at the free end of said reed, flanges on said reed, and a latch pivoted between said flanges and adapted to protect the end of the hook so as to permit the fabric to be moved freely off of said reed, substantially as set forth.

571,555. LUBRICATOR. PETER T. COFFIELD, Springfield, Ohio. Filed Oct. 3, 1895. Serial No. 564,536. (No model.)



Claim.—1. The combination with a crank having an oil-orifice leading from one side of it to the periphery of its pin, an oil-receiver secured to the side of the crank opposite said orifice and consisting of a tube standing at an angle to the crank, closed at its free end, open at its other end, cut away at its side leaving a part H to prevent the oil from spilling out, and having a blade placed longitudinally therein and extending above the tube where the opening is made in its side, and a stationary oil-reservoir mounted near the crank and having a nozzle projecting near to the path of rotation of said blade.

2. In a lubricator, a receiver consisting of a tube closed at one end, open at the side with a portion H left remaining open at the end near the portion H and having a screw-threaded projection, and an interiorly-placed longitudinal blade, the blade standing above that part of the tube which is cut away where the opening is made in the side.

571,556. METHOD OF BRIDGING TEETH. FRANK COMER, London, England. Filed July 16, 1896. Serial No. 599,411. (No model.) Patented in England Sept. 25, 1895. No. 17,905.

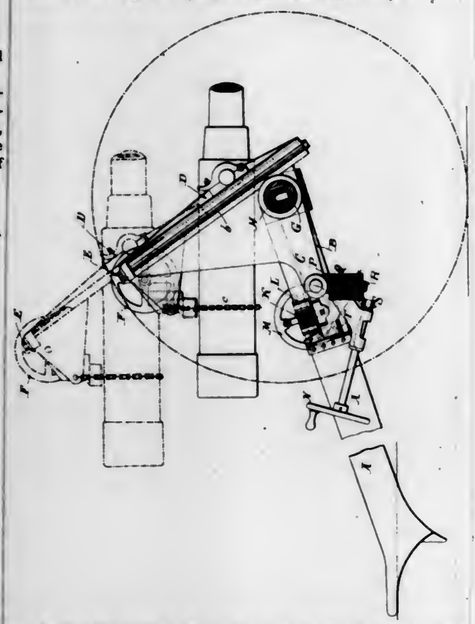


Claim.—The method herein described of capping or bridging teeth, which consists in first grinding the stump or crown into suitable form, then enlarging the nerve-canal and fixing a pin or screw therein, then fitting a cap thereover, then placing a small split tube over the pin or screw, which projects through said cap, then taking an impression with which the split tube is removed, then placing another screw or pin in said split tube, as it is held in the impression, then making a cast or model in or from said impression, in which said screw remains when the impression is broken away, then placing a cap or bead on said screw in the cast or model, substantially as shown and described.

571,557. GUN-CARRIAGE. JOSEPH A. DEPORT, Paris, France. Filed June 20, 1895. Serial No. 553,490. (No model.) Patented in France Mar. 18, 1895, No. 245,893; in Belgium May 15, 1895, No. 115,619; in England May 15, 1895, No. 9,637, and in Austria July 10, 1895, No. 45 2,590.

Claim.—1. The combination in a gun-carriage of a main frame, an adjustable frame movable thereon mounted to preserve an invariable angle during the recoil, and formed with ways inclined rearwardly and upwardly, means for adjusting the angle of the latter frame, and a gun-carrying slide movable on said ways, adapted for operation in essentially the manner described, whereby during the recoil the gun is compelled to ascend parallel with said ways.

2. The combination in a gun-carriage of a main frame, an adjustable frame mounted to swing horizontally to determine the lateral pointing of the gun, and adapted to turn around a horizontal axis for determining the elevation of the gun, and constructed with inclined slideways, and a gun-carrying slide movable on said ways.



3. In a gun-carriage, the combination of a main frame, an adjustable frame formed with hydraulic cylinders inclined rearwardly and upwardly, the exterior front faces of which constitute slideways, and a gun-carrying slide movable on said ways, adapted to cover and protect the ways, and carrying the piston-rods of said cylinders, constructed and arranged to cause the latter slide to ascend said ways during the recoil, thereby elevating the gun parallel with said ways.

4. The combination with the main frame or trail A and axle G, of the laterally-adjustable support B, an adjustable frame C pivoted on said support, an adjusting device between them for varying the vertical angle of said frame relatively to said support, and a gun-carrying slide D movable on inclined ways on said frame.

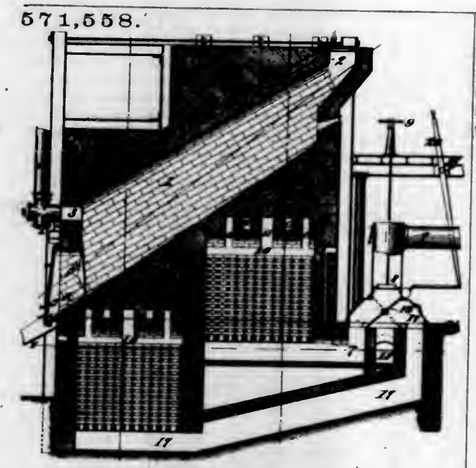
5. The combination in a gun-carriage of a main frame or trail A having a transverse ledge T, a main axle G and support B consisting of a sleeve H on said axle adapted to swing thereon around the pivot I, and of rearwardly-projecting arms resting on said ledge, a lateral adjusting-screw engaging said arms for laterally swinging said support, an adjustable frame C pivoted on said sleeve, a screw adjusting device interposed between said frame and the rearward arms of the support B for varying the elevation of said frame, inclined ways formed on said frame, and a gun-carrying slide D movable on said ways.

6. In a gun-carriage, the combination of a main frame, an adjustable frame formed with inclined slideways, protector-shields extending laterally from said slideways, and a gun-carrying frame movable on said ways.

571,558. GAS-GENERATOR. JOHN C. DODS, St. Louis, Mo., assignor to James Green, same place. Filed July 3, 1896. Serial No. 598,010. (No model.)

Claim.—An illuminating-gas generator comprising a retort, the combustion-chambers extending alongside the retort, the elevated regenerative furnace located beneath the upper end of the retort, the depressed regenerative furnace located beneath the lower end of the retort, the alternating gas and air forked passages connecting the regenerative furnaces with the combustion-chambers, the upper producer-gas and air passages connected with the elevated regenerative furnace, the lower producer-gas and air passages extending beneath the regenerative furnaces and connected with the depressed regenerative furnace and the reversing-valve controlling the upper and lower passages, subtantially as described.

571,558.

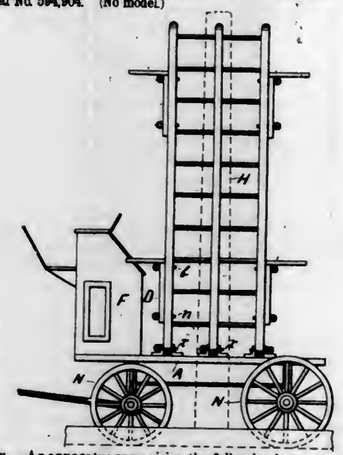


571,559. ROTARY BRUSH. FRANK G. FARNHAM, Honesdale, Pa. Filed Feb. 10, 1896. Serial No. 578,749. (No model.)



Claim.—A brush consisting of radially-arranged fibers, a central tubular hub comprising two parts each having one end flanged and with the flanged ends reversed, flexible disks on each side of the fibers and with stiff disks covering the flexible disks, the whole being secured together, substantially as described.

571,560. APPARATUS FOR USE IN PAINTING TROLLEY-POLES. HENRY A. FRENCH, Providence, R. I. Filed June 10, 1896. Serial No. 594,904. (No model.)

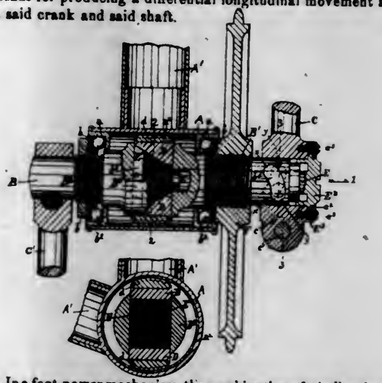


Claim.—An apparatus comprising the following instrumentalities: a platform, a movable support therefor, a ladder pivotally and adjustably mounted on said platform, two or more knee brackets pivoted to swing on the outer sides of said ladder, small platforms fast on said brackets, and an adjustable brace-rod secured to said ladder and platform to support and adjust said ladder, substantially as described.

571,561. BRAKE FOR BICYCLES. FRED A. GLADWIN, Rochester, N. Y. Filed May 8, 1896. Serial No. 590,790. (No model.)

Claim.—1. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B, a crank C, brake-blocks attached to said shaft within said hanger and movable toward and from the interior surface of said hanger, a rod within said shaft, and mechanism thereon for operating said brake-blocks and connections between said rod and a crank.

2. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B, a crank C, brake-blocks attached to said shaft within said hanger and movable toward and from the interior surface of said hanger, a rod within said shaft having a connected wedge-like block for moving said brake-blocks and having connections to a crank, and means for producing a differential longitudinal movement as between said crank and said shaft.



3. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B, a crank C, brake-blocks attached to said shaft within said hanger and movable toward and from the interior surface of said hanger, a rod within said shaft having a connected wedge-like block for moving said brake-blocks and having connections to a crank, and means for producing a differential rotary movement and a differential longitudinal movement as between said crank and said shaft.

4. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B having a transverse perforation within the crank-hanger and a longitudinal perforation extending from said transverse perforation to the end of the shaft, a pressure-block in said transverse perforation adapted to move toward and from the interior surface of said hanger, a rod movable in said longitudinal perforation in the shaft having a wedging-block set in said transverse perforation for operating said pressure-block, and connections between a crank and said rod for operating said wedging-block thereon.

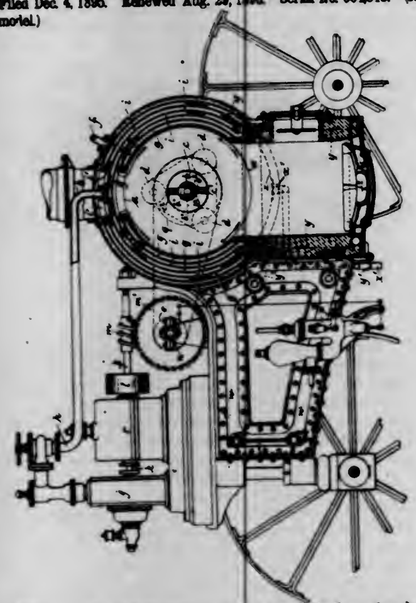
5. In a foot power mechanism, the combination of a hollow hanger A, a driving-shaft B having a transverse perforation within said hanger and a longitudinal perforation extending from said transverse perforation to the end of the shaft, pressure-blocks in said transverse perforation adapted to move toward and from the interior surface of said hanger, a rod movable longitudinally in said longitudinal perforation and having a wedge like block set in said transverse perforation for operating said pressure-blocks, a crank upon said shaft having a partial rotary movement thereon, stop mechanism for limiting said rotary movement, means for producing a longitudinal movement of said crank with reference to said shaft, and connections between said rod and said crank.

6. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B having a transverse perforation within said hanger and a longitudinal perforation extending from said transverse perforation to the end of the shaft, pressure-blocks in said transverse perforation adapted to move toward and from the interior surface of said hanger, a rod movable longitudinally in said longitudinal perforation having a wedge-like block set in said transverse perforation whereby to press said pressure-blocks against the interior of said hanger, a crank on said shaft adapted to have a partial rotary movement with reference to the shaft, diagonal slots on the outer surface of said shaft within the bearing of the crank thereon, pins fixed to said crank and extending into said slots, whereby said crank has a limited rotary movement and a limited longitudinal movement with reference to said shaft, and connections between said rod and said crank for moving the latter longitudinally to operate said pressure-blocks.

7. In a foot-power mechanism, the combination of a hollow hanger A, a driving-shaft B having a transverse perforation b^3 within said hanger and a longitudinal perforation extending from said transverse perforation to the end of the shaft, pressure-blocks D D sliding in said transverse perforation to move toward and from the interior surface of said hanger, a rod E movable longitudinally in said longitudinal perforation and having a wedge-block E' on the end of said rod set in said transverse perforation and fitting the same on two sides but capable of longitudinal movement therein, whereby to press said pressure-blocks against the interior of said hanger, a crank C having a split ring e embracing the end of said shaft and capable of a rotary movement thereon, one or more diagonal slots b^4 on the outer surface of said shaft within the ring C, pins c^3 passing through said split ring and fastened thereto and extending into said slots, whereby said

crank has a limited rotary movement and a limited longitudinal movement with reference to said shaft, a head E^2 upon the outer end of said rod E provided with a rim e^3 outside of said split ring c and a ring E^3 fitting over said rim e^3 and attached to said split ring c, substantially as described.

571,562. STEAM-GENERATOR. JAN GRUBINSKI, Warsaw, Russia. Filed Dec. 4, 1895. Renewed Aug. 29, 1896. Serial No. 604,313. (No model.)

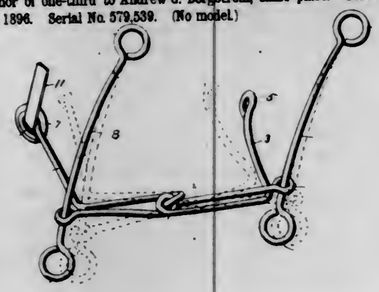


Claim.—1. In a steam-generator, a series of shallow chambers mounted upon and rotating with a hollow shaft, each of said chambers being provided with water-inlet and steam-outlet passages through said shaft, whereby the shallow chambers are brought into communication with each other, and means for rotating the shaft and chambers in the presence of heat, substantially as and for the purposes set forth.

2. In a steam-generator, a hollow shaft, a series of shallow communicating chambers secured to said shaft, means for conveying water to said chambers through said shaft, a fire-chamber arranged beneath said chambers, a series of arched channels arranged beyond said chambers and fire-chamber and adapted to receive steam generated in said chambers, and means for rotating said shaft and chambers, substantially as described.

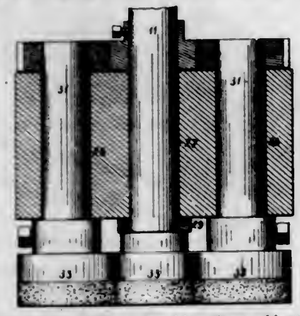
3. In combination with a hollow shaft, shallow steam-generating chambers and means for rotating said shaft and chambers, of hollow condensing-chambers connected with the exhaust of an engine, a receptacle partially surrounding the lower ends of said condensing-chambers, an outlet from said condensing-chambers to said receptacle, an outlet leading from the receptacle to the water-chamber of the generator, a stationary jacket surrounding the condensing-chambers, air-inlet openings in said jacket, and an outlet from said jacket to the under grate-room, substantially as described.

571,563. BRIDLE-BIT. ISRAEL HARMARSON, Hopkins, Minn., assignor of one-third to Andrew G. Bergstrom, same place. Filed Feb. 17, 1896. Serial No. 579,539. (No model.)



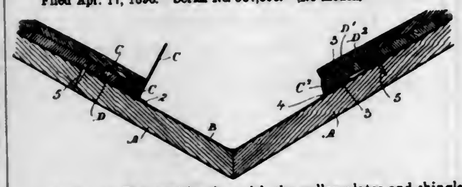
Claim.—A bridle-bit comprising two bars or rods forming the main portion thereof, each having one end bent at substantially right angles to the other, and arranged to project forward beyond the main portion of the bit, the ends of said bent portions being provided with loops through which pass the straps from the checkrein, the bars arranged to slide vertically in loops provided in the ends of the main portions of said bit, said bars being provided with looped ends, and the bars forming the main portion of said bit being provided with interlocking loops, for the purpose set forth.

571,564. GLASS-POLISHING MACHINE. EDWARD J. HOFFMAN, Rockford, Ill. Filed May 18, 1896. Serial No. 592,041. (No model.)



Claim.—In a glass polishing machine, the combination of a vertically-rotatable shaft, a head loosely supported thereby, a series of polishers loosely supported by the head and a gear connection between the polishers and the rotatable shaft.

571,565. ROOF-VALLEY. ROBERT JAHN, Scotch Plains, N. J. Filed Apr. 17, 1896. Serial No. 587,890. (No model.)



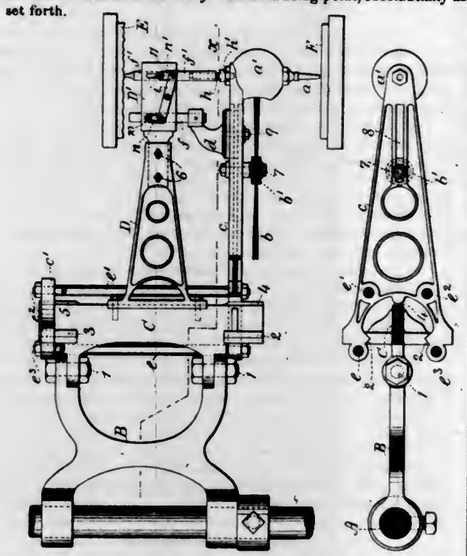
Claim.—1. The combination with the valley-plates and shingles or slates, of flashing-plates permanently connected at one edge with the valley-plates and folded over the edges and upon the surfaces of the shingles or slates to inclose the same, the shingles or slates in one row being laid upon the flashing-plate of the row below, substantially as set forth.

2. The combination with the valley-plates having double folds 3, of the flashing-plates having edge flanges driven in between the folds of the valley-plates and lapping, and such flashing-plates being folded down upon the shingles or slates in succession and coming beneath the slates or shingles in the row above, substantially as set forth.

571,566. CARVING-MACHINE. OTTO JAHNSEN and GOTTFRIED MEINHARDT, New York, N. Y., assignors to said Jahnsen. Filed Feb. 10, 1896. Serial No. 578,701. (No model.)

Claim.—1. The combination in a carving-machine with an overhead support for the pattern and a tracer adapted to follow the same, of a hollow ball and carving-tool and means for rotating the carving-tool in bearings in the hollow ball, a frame connected to the hollow ball and adapted to be moved in any direction, a bracket connected to said frame and a vertical bar connected to the bracket, a slideway for said vertical bar, and a vertical bar parallel thereto and on whose upper end is the aforesaid tracer and a slideway therefor, and means for coupling said vertical bars so that as the one moves down, the other will move up, and vice versa, substantially as set forth.

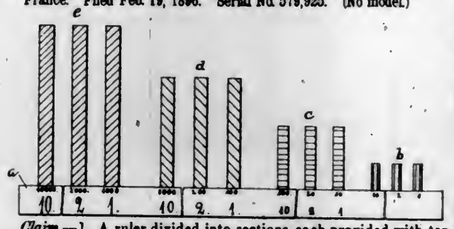
2. In a carving-machine, the combination with a frame C and a bracket-frame D connected therewith, of a head D′ and bolts for adjustably connecting the same to the bracket-frame D, slideways in said head D′, parallel vertical bars f f' in said slideways, the one carrying a tracing-point, a rocking frame pivoted to the side of the head and links connected to the same and also to the said vertical bars f f', a carving-tool in the same vertical axial line with the rod f', a frame connected to the bearings of said carving-tool and a connection therefrom to the vertical bar f whereby the downward or upward movement of the carving-tool by the hand of the operator effects the reverse movement of the bar f' and its tracing-point, substantially as set forth.



3. In a carving-machine, the vertical member A, the frame B pivoted thereto, the frame C and the bolts 1 for pivotally connecting the same to the frame B, the grooved slideways 2, 3, and edge slideways 4, 5, upon opposite sides and at the top and bottom ends of the frame C, the frame c and head-frame c' and the tie-rods e e' e^2 e^3 connecting said frames and the slides upon said frames in the slideways upon the frame C, the carving-tool and the hollow ball forming a bearing therewith connected to the frame c whereby the vertical movement of the carving-tool is caused to be even and steady and smooth, substantially as set forth.

4. In a carving-machine, the combination with the movable frames and the carving-tool carried by one of said frames, of an adjustable bracket frame and head, parallel bars and slideways therefor in said head, an adjustable connection from one bar to the frame carrying the carving-tool and means for coupling said bars to produce an opposite movement, a tracing-point on the upper end of the other bar to enter an overhead pattern, a rod h in the case of the carving-tool and axially in line with the carving-tool, and entering an opening in the lower end of the tracer-bar whereby the tracer-bar is also axially in line with the carving-tool to accurately produce the opposite pattern, substantially as specified.

571,567. CALCULATING-RULER. CASIMIR R. JOUVE, Dax, France. Filed Feb. 19, 1896. Serial No. 579,925. (No model.)



Claim.—1. A ruler divided into sections, each provided with ten holes of equal diameter for each section, but increasing in diameter from section to section, being smallest in the section to the right and largest in the section to the left, said holes being adapted to receive with slight friction, sticks of different diameter to fit said holes, and having a different length, the sticks in the section to the right, representing the units, being the shortest and thinnest but equal to each other and the sticks in the section to the left representing the thousands, being the thickest and the longest, also equal to each other.

2. A ruler divided into sections, each provided with ten holes adapted to receive with slight friction, sticks of different length, different diameter and different color, being equal in each section, said ruler having numerals, engraved in front of the holes from "1" to "10" in the section of the units, from "10" to "100" in the section of the tens, from "100" to "1,000" in the section of the hundreds, &c., substantially as described.

3. A ruler divided into sections, each provided with ten holes adapted to receive with slight friction, sticks of different length, different diameter and different color, being equal in each section, said ruler having numerals engraved in front of the holes, from "1" to "10" in the section of the units, from "10" to "100" in the section of the tens, from "100" to "1,000" in the section of the hundreds, &c., and having in the section of the tens the numerals "1" to "10" marked or engraved at the base of the ruler in prominent size, and in the next section having the numerals "1" to "10" engraved under the numerals from "100" to "1,000" in still more prominent size, &c., substantially as described and for the purpose set forth.

571,568. STAND FOR LAMPS. GEORGE P. KATO, Jr., Jersey City, N. J. Filed Mar. 30, 1896. Serial No. 585,327. (No model.)



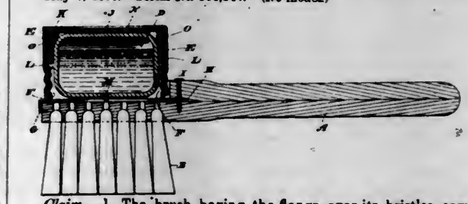
Claim.—1. As a new article of manufacture the stand comprising the base, the figure mounted thereon, and the supporting-standard also mounted on said base and encompassing said figure except at its front and overhanging the top of same; substantially as and for the purposes set forth.

2. As a new article of manufacture the stand comprising the base A, the figure mounted thereon, the supporting-standard also mounted on said base and encompassing the back, sides and top of said figure, and the receiver D secured upon the top of said standard; substantially as and for the purposes set forth.

3. As a new article of manufacture, the stand comprising the base A, the figure B mounted thereon and having secured within its lower end the plug g to receive the fastening-screw, and the supporting-standard C encompassing said figure B and secured to said base along the outer edges of the latter; substantially as set forth.

4. As a new article of manufacture, the stand comprising the base, the figure B mounted thereon, and the supporting-standard C also mounted on said base and encompassing said figure at its back, sides and upper end, the sides of said standard extending forward to the overhanging portion E at the upper end of said standard; substantially as set forth.

571,569. BRUSH. GEORGE P. KATO, Jr., Jersey City, N. J. Filed May 7, 1896. Serial No. 590,517. (No model.)



Claim.—1. The brush having the flange over its bristles, combined with the cap for engagement with said flange, the elastic receptacle within said flange and cap and having an outlet-aperture, and the follower between the open top of said cap and said receptacle; substantially as set forth.

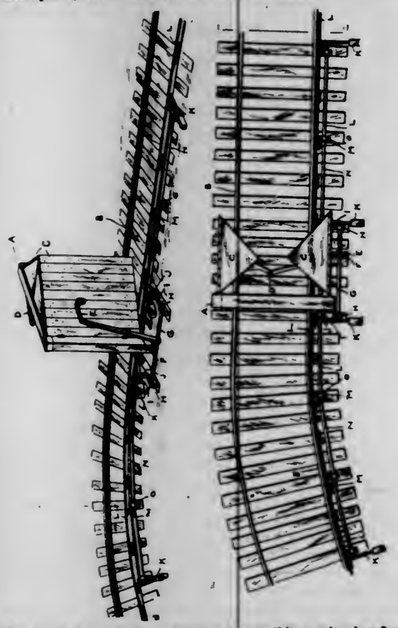
2. The brush having the flange over its bristles, combined with the cap for engagement with said flange, the apertured elastic receptacle having the lateral flange adapted to engage the upper edge of

said flange, and the follower between said receptacle and the open top of said cap; substantially as set forth.

3. The brush having the threaded flange F over its bristles, said flange having the securing-lips G, H, combined with the threaded cap engaging said flange and at its upper end having the opening J and flange K, the apertured elastic receptacle D, and the follower N between the top of said cap and said receptacle and having the flange O; substantially as set forth.

4. The brush, the cap E, and means for securing said cap over the bristles of the brush, combined with the apertured elastic liquid-containing receptacle held by said cap, and the follower intermediate the open top of said cap and said receptacle; substantially as set forth.

571,570. MINE TRAP-DOOR. HORATIO KEYES, Terre Haute, Ind. Filed Apr. 19, 1895. Serial No. 546,318. (No model.)



Claim.—1. In a mine trap-door, an expansible moving bar formed in sections whereby it can be made to conform to the line of a straight or curved track, such bar lying in the path of passing cars, a shaft connected with such moving bar, and mechanism between such shaft and door for opening and closing the latter when the bar is operated.

2. In a mine trap-door a moving bar formed in sections, a flexible shaft connected to said moving bar, whereby it may be made to work on the line of either a straight or curved track, and suitable devices connecting such shaft with the door, whereby such door will be opened and closed by the movement of passing cars.

3. In a mine trap door, a moving bar lying parallel with and close to one of the rails and adapted to be moved by passing cars, said bar being formed of expansible sections adjustably connected together, a shaft connected with such moving bar and mechanism between such shaft and door whereby the door will be opened and closed on the operation of the moving bar.

4. In a mine trap-door, a moving bar lying parallel with and close to one of the rails and adapted to be moved by passing cars, said bar being formed of sections, a flexible shaft formed of sections connected together and with the moving bar, and devices connected with said shaft and the trap-door, whereby such door will be opened and closed on the operation of the moving bar.

5. In a mine trap-door, a moving bar lying parallel with and close to one of the rails and adapted to be moved by passing cars, said bar being formed of sections adjustably connected together, a flexible shaft formed of sections suitably connected together and with the moving bar, and devices connected with such shaft and the trap-door whereby such door will be opened and closed on the operation of the moving bar.

6. In a mine trap-door, a moving bar lying parallel with and close to one of the rails and adapted to be moved by passing cars, said bar being formed in sections adjustably connected together, a shaft formed of sections connected together by universal couplings and to the moving bar by short arms, and devices connected with said shaft and the trap-door whereby such door will be opened and closed on the operation of the moving bar.

7. The combination with a mine trap-door of a moving bar formed in sections, such bar lying parallel to the track in the path of passing cars; a flexible shaft adapted to carry such bar and permit it to conform to a track of any curvature, and mechanism connecting such shaft with the door for opening and closing the same.

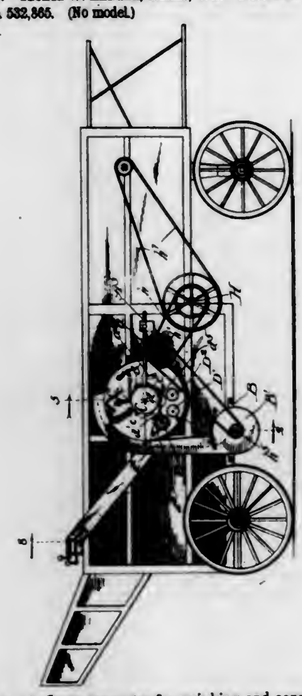
8. In a mine trap-door, a moving bar formed in sections adjustably connected together whereby the bar can be shortened or lengthened, and the device thereby be made to conform to the line of a straight or curved track, such bar lying parallel with the track and in the path of passing cars, a flexible shaft mounted in fixed boxings and carrying such moving bar, and connections between such shaft and door whereby the latter will be opened and closed through the operation of the moving bar

9. In means for operating a mine trap-door, a moving bar adjustable to lie parallel with the rails of a curved or a straight track; a sectional coupled shaft, adapted to carry such adjustable moving bar, and mechanism connecting such shaft with the door, whereby the latter will be opened and closed by the movement of the moving bar.

10. The combination with a mine trap-door of an adjustable moving bar in the path of passing cars; a suitable shaft carrying said moving bar, whereby the two are adapted to be operated on a straight or curved track; and mechanism between said shaft and door for opening and closing the latter when the bar is operated.

11. The combination with a mine trap-door of a moving bar, such bar lying parallel to the track, a suitable shaft adapted to carry such bar and permit it to conform to a track of any curvature, and mechanism connecting such shaft with the door for opening and closing the same.

571,571. APPARATUS FOR WEIGHING AND CONVEYING GRAIN. GEORGE W. KRAMER, Racine, Wis. Filed Dec. 24, 1894. Serial No. 532,865. (No model.)



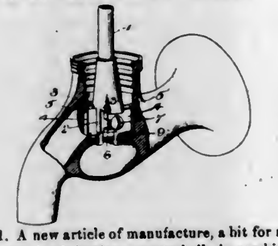
Claim.—1. In an apparatus for weighing and conveying grain, a grain-conveyer consisting of an inclosed delivery channel to convey grain from a point of supply to a point of deposit, an inclosed return or exhaust channel connected with the delivery-channel at or near its point of discharge or deposit and with an air-blower to complete a circuitous route for a current of air and facilitate the conveying of grain, an air-blower connected at its inlet-opening with the return-channel, a partition in the blower-casing so as to provide a space between its operative mechanism and the case for the introduction of the material to be conveyed and connected with the delivery-channel at such point, and an opening in the casing whereby the material may be introduced into the material-space of the blower, substantially as described.

2. In an apparatus for weighing and conveying grain, a grain-conveyer consisting of an inclosed delivery-channel to convey grain from a point of supply to a point of deposit, an inclosed return or exhaust channel connected with the delivery-channel at or near its point of discharge and with an air-blower to complete a circuitous route for a current of air and facilitate the conveying of grain, a screen interposed between the delivery and return channels to prevent material entering the return-channel and assist in discharging material, a rotating fan connected at its inlet-opening with the return-channel, a partition in the blower-casing so as to provide a space in the lower portion for the introduction of material and connected with the delivery-channel at such point, and an opening in the casing whereby the material may be introduced into the material-space of the blower, substantially as described.

3. In an apparatus for weighing and conveying grain, a grain-conveyer consisting of an inclosed delivery-channel to convey grain from a point of supply to a point of deposit, an inclosed return or exhaust channel connected with the delivery-channel at or near its point of discharge and with an air-blower to complete a circuitous route for a current of air and facilitate the conveying of grain, a screen interposed between the delivery and return channels to prevent material entering the return-channel and assist in discharging material, a rotating fan connected at its inlet-opening with the return-channel and mounted in its casing so as to provide a space in the lower portion for the introduction of material and connected with the delivery-channel at such point, a partition interposed between the rotating fan and the casing to inclose the material-space and prevent injury to the grain, and means whereby the material may be introduced into the material-space of the blower, substantially as described.

4. In an apparatus for weighing and conveying grain, a grain-conveyer consisting of an inclosed delivery-channel to convey grain from a point of supply to a point of deposit, an inclosed return or exhaust channel connected with the delivery-channel at or near its point of discharge and with an air-blower to complete a circuitous route for a current of air and facilitate the conveying of grain, a screen interposed between the delivery and return channels to prevent material entering the return-channel and assist in discharging material, a sliding gate over such screen to regulate the size of the opening, a rotating fan connected at its inlet-opening with the return-channel and mounted in its casing so as to provide a space in the lower portion for the introduction of material and connected with the delivery-channel at such point, and means whereby the material may be introduced into the material-space oft he blower, substantially as described.

571,572. TOOL FOR RESEATING FAUCETS. SAMUEL H. LEA, New York, N. Y., assignor of one-half to Edwin T. Ogle, same place. Filed Aug. 19, 1896. Serial No. 603,236. (No model.)



Claim.—1. A new article of manufacture, a bit for reseating faucets, comprising a shank having a central rib, in combination with a pair of adjustable cutter-blades having guide-pins, and a retaining-bolt for adjustably securing the blades to the shank, substantially as shown and described.

2. A shank having beveled shoulders and a central rib formed with an orifice, a pair of adjustable cutter blades having bolt-recesses and guide-pins, and a retaining-bolt passing through said orifice and recesses, substantially as set forth.

571,573. COW-MILKER. WILLIAM M. MEHRING, York Road, Md. Filed Feb. 7, 1895. Serial No. 537,814. (No model.)

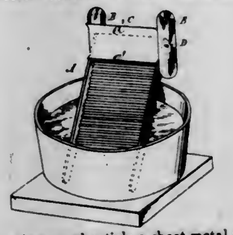
Claim.—1. In a cow-milking machine, a substantially conical teat-tube provided with an internal stricture, at the lower end, having a width sufficient to permit the tube to bear against the side only of the end of the teat when the latter is drawn upon, but tapered sufficiently to prevent said end being drawn through the tube, in combination with a suction-pump, substantially as described.

2. In a cow-milking machine, a substantially conical teat-tube provided with an internal annular stricture, at the lower end, having a width sufficient to permit the tube to bear upon the side only of the end of the teat when the latter is drawn upon, but tapered sufficiently to prevent said end being drawn through the tube, in combination with an elastic washer stretched across the larger end of the tube and having a central orifice for receiving the teat, substantially as described.



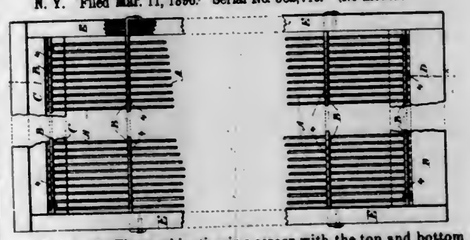
3. In a cow-milking machine, the combination with a teat-tube, of an elastic washer adapted to stretch across the tube, and having flanges arranged to fit over the end of the tube, with a circular mouth-piece adapted to screw over the end of the tube, and having shoulders which bear upon the end of the tube to clamp the washer securely in place, substantially as described.

571,574. WASHBOARD. NATHANIEL S. MONROE, Arcola, Ill. Filed Jan. 14, 1895. Serial No. 534,889. (No model.)



Claim.—As an improved article a sheet-metal washboard-guard and soap-holder consisting of the rectangular central portion, the end wings bent at right angles thereto, and formed with pivot-holes, and the edges of said central portions bent outwardly forming ledges, all made integral, substantially as and for the purpose specified.

571,575. SCREEN FOR SAND, &c. JOSEPH NORWOOD, Brooklyn, N. Y. Filed Mar. 11, 1896. Serial No. 582,719. (No model.)

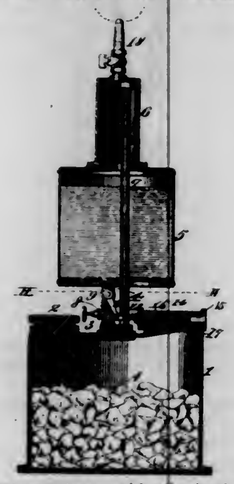


Claim.—1. The combination in a screen with the top and bottom cross-pieces having grooves in their surfaces, of longitudinal parallel wires having their ends bent at right angles, cross-bars each having

diagonal slots forming acute-angle hooks, the slots receiving the wires and the hooks bent down to hold such wires in place, the intermediate cross-bars being secured at their ends to the side members of the frame and the cross-bars at the respective ends of the parallel wires being received with the bent ends of such wires into the grooves of the top and bottom cross-pieces of the frame, substantially as set forth.

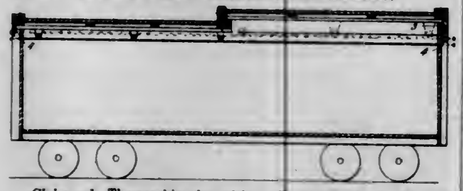
2. The combination in a screen with the parallel wires, of cross-bars slotted diagonally and receiving the wires, the acute-angled hooks of the cross-bars being bent down to hold the wires in position and the ends of the cross-bars being bent at right angles, the cross-pieces C D and the side frames connected together, such side frames being notched for the passage of the end portions of the cross-bars, and to which side pieces the ends of the cross-bars are connected, substantially as set forth.

571,576. GAS-GENERATOR. JOHN C. PORTER, St. Louis, Mo. Filed Dec. 28, 1895. Serial No. 573,637. (No model.)



Claim.—A gas-generator comprising the chemical-holding chamber, the liquid-holding reservoir surmounting the said chemical-holding chamber, the gas-receiving chamber surmounting the said liquid-holding reservoir and open to the latter to permit the free circulation of the gas between the gas-receiving chamber and the liquid-holding reservoir, the gas-pipe extending from the chemical-holding chamber, through the liquid-holding reservoir and into the gas-receiving chamber, the liquid-pipe connecting the liquid-holding reservoir with the chemical-holding chamber, and having a controlling-valve, and a self-regulating valve provided with a turning plug, a pendent crank-arm to the said plug, the horizontal gas-pressure cylinder mounted on the chemical-holding chamber and in communication therewith, the spring-piston, working in the said cylinder, having a rod connected with the pendent crank-arm; substantially as described.

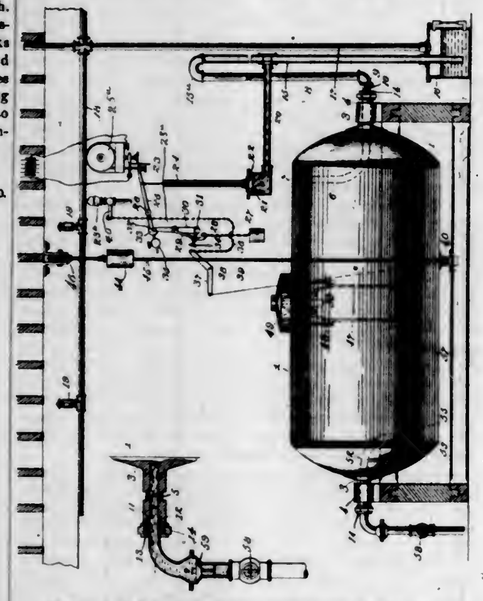
571,577. RAILWAY-CAR. WILLIAM G. RICHARDS, Hillsborough, Ohio. Filed July 13, 1896. Serial No. 599,002. (No model.)



Claim.—1. The combination with a railway-car of a roof consisting of two movable sections the outer ends of which are adapted to project beyond the end walls of the car, the overlapping strips covering the projecting ends of the sections, and the depending cleats or aprons attached to the outer and under edge of said overlapping strips substantially as and for the purposes herein specified.

2. The combination with a railway-car of a roof consisting of two sections, the cross-bar overlying the junction of said sections, the bolt connecting the cross-bar and the lapped inner ends of the sections, the hasp covering the head of said bolt and the seal-lock adapted to secure the hasp substantially as and for the purpose specified.

571,578. AUTOMATIC FIRE-EXTINGUISHING SYSTEM. GEORGE H. ROBINSON, New York, N. Y., and ERNST F. STECK, Chicago, Ill., assignors to the Fire Extinguisher Manufacturing Company, Chicago, Ill., and New York, N. Y. Filed Apr. 10, 1896. Serial No. 586,903. (No model.)



Claim.—1. A fire-extinguishing system consisting of the combination of a series of fluid-distributing pipes normally free from liquid and containing a gas under low pressure, with a high-pressure primary fluid supply and a secondary fluid supply at lower pressure, means for throwing said primary supply into action, means whereby the low-pressure supply is thrown into condition for action by the same act, and means whereby the excess of pressure of the primary supply will restrain the flow from the secondary supply until the primary supply is partially exhausted, substantially as described.

2. The combination of the dry distributing-pipes, the chemical supply communicating therewith, the secondary liquid supply in communication with the chemical supply and having a normally-closed valve for holding it in check, and a single operating means held in check by the air in the dry pipes, and constructed to simultaneously set in operation the chemical supply and open the said valve of the secondary supply, substantially as shown and described.

3. A fire-extinguishing system consisting of the combination of a series of fluid-distributing pipes, with a primary chemically-operating fluid supply and a secondary fluid supply constructed and arranged substantially as shown and described, the primary fluid-supplying apparatus being an intermediate part in that system of consecutive channels which extends from the source of the secondary supply to the outlets of the fluid distributing pipes, and means for setting the primary and secondary supply apparatus into action simultaneously, as and for the purposes set forth.

4. A fire-extinguishing system consisting of the combination of a series of fluid-distributing pipes, with a primary chemically-operating fluid supply, a containing-cylinder, a secondary fluid supply connected by a pipe to the primary supply, a valve on said pipe, and means for upsetting the cylinder of the primary apparatus and simultaneously opening the valve.

5. A fire-extinguishing system having in combination a partially-rotatable cylinder or receptacle for containing an extinguishing fluid and gas-producing substances held in separation, the piping system connected with said cylinder, a pipe or passage adapted to be connected with a head of fluid under pressure and having communication with said cylinder, and a valve for closing communication between said cylinder and pipe, opened by the movement of said cylinder, substantially as set forth.

6. A fire-extinguishing system having in combination a partially-rotatable cylinder for containing extinguishing fluid and gas-producing chemicals held in separation, the pipe system connected therewith, the secondary supply also communicating with said cylinder and having a check-valve opening under pressure from the secondary supply, and a second valve for closing communication between said cylinder and secondary supply located at a point between the cylinder and check-valve and connected with and operated by said rotating cylinder, substantially as set forth.

7. A fire-extinguishing system consisting of the combination of a series of fluid-distributing pipes, with a secondary fluid supply and a primary chemically-operating fluid supply connected to the secondary supply and to the pipe system as shown, suitable valves between the primary and secondary supplies, and means for upsetting the chemical apparatus and means for opening said valves by the act of upsetting whereby the opening of said valves will create a free channel from the secondary supply through the primary apparatus to the pipe system.

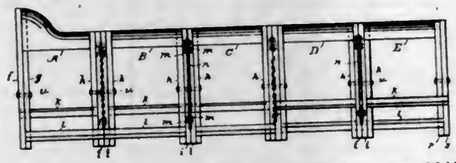
8. A fire-extinguishing system consisting of the combination of a series of fluid-distributing pipes provided with one or more fusible sprinklers, a source or sources of extinguishing fluid or fluids, means for causing the discharge of said extinguishing fluids, a float connected to such means, a seat for said float and a liquid-retaining column extending above said seat and held to the seat by a compressible fluid situate between the liquid and the fusible sprinklers.

9. A fire-extinguishing system having in combination a source or sources of extinguishing fluid, means for setting same in operation, the pipe system connected with said source or sources charged with a liquid counterbalance whereby the operative means are controlled, fluid-pressure in said pipes acting as a counterbalance for said liquid counterbalance, and a liquid-feeding column, whereby the elevation of the liquid counterbalance remains constant under certain changes of condition, substantially as shown and described.

10. A fire-extinguishing system having in combination a source or sources of extinguishing fluid, means for setting same in operation, the piping system, a gooseneck having one end connected with said source or sources and forming an overflow, a chamber into which the other end of said gooseneck dips and from the upper side of which the piping system rises, a vessel communicating with said gooseneck and chamber and being located below the upper end of said gooseneck, and a float in said vessel connected with said operating means, substantially as set forth.

11. A fire-extinguishing system having in combination a source or sources of extinguishing fluid, a gooseneck connected with said source or sources at one end, a chamber into which the other end of the gooseneck dips, the piping system rising from said chamber, a vessel located below the upper end of said gooseneck and communicating therewith, a float located in said vessel and having a connection with said operating means, and a stand-pipe rising from said cylinder around said connection for catching leakage, substantially as set forth.

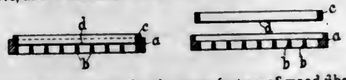
571,579. COMBINED CAMP-STOOL AND COT. SAMUEL H. SCHENCK, Zionsville, Ind. Filed Mar. 16, 1896. Serial No. 583,312. (No model.)



Claim.—1. The herein-described cot comprising a number of folding camp-stools provided with loose pin-hinges situated alternately at each side of the cot, whereby the stools or sections of the cot are connected and enabling them to be folded in a serpentine manner, substantially as and for the purposes shown and described.

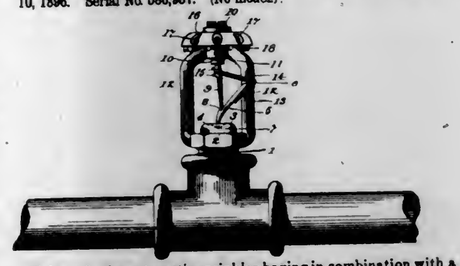
2. The combination of the series of stools to make a cot, the adjoining X-legs of which are alternately provided with alined eyes, and the rods or pintles completing the hinge, whereby said stools may be folded or collapsed, or separated from each other, substantially as shown and described.

571,580. APPARATUS FOR MAKING WOOD FELT. ROBERT SPUTH, Dresden, Germany. Filed May 15, 1894. Serial No. 511,347. (No model.) Patented in Austria-Hungary July 4, 1892, No. 1,666 and No. 1,576, and in Germany Oct. 25, 1892, No. 68,499.



Claim.—In an apparatus for the manufacture of wood fiber into plates or sheets, the frame c with a sieve d attached at the bottom of the frame, and a frame a having supporting cross-bars b, the inner upper edges of the frame being rabbeted for the reception of the sieve-frame c, so that such sieve and frame may rest upon the cross-bars and be adapted to receive into the sieve-frame a layer of wood-pulp, and for the removal of the frame and sieve for pressing the pulp on the sieve previous to its removal from the same, substantially as set forth.

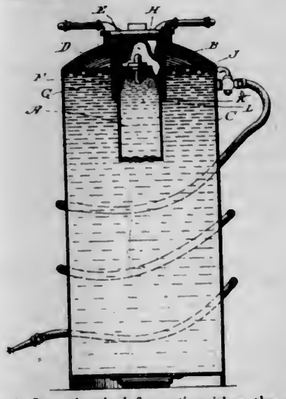
571,581. AUTOMATIC SPRINKLER FOR FIRE-EXTINGUISHERS. ERNST F. STECK, Chicago, Ill., assignor to the Fire Extinguisher Manufacturing Company, same place and New York, N. Y. Filed Apr. 10, 1896. Serial No. 586,937. (No model.)



Claim.—1. An automatic sprinkler having in combination with a valve, means for controlling said valve consisting of a lever having one arm impinging said valve and being provided with a notch or seat, a bearing opposite said valve, a post fitted between said seat and bearing, a second lever overlapping the other arm of said first lever and attached thereto by a fusible connection and a link connection from said second lever to said post, substantially as and for the purpose set forth.

2. An automatic sprinkler having in combination a valve, the lever 5 having its end 7 impinging said valve and being provided with a notch 8, a screw arranged opposite said valve, the post 9 seated in said notch 8 and bearing under said screw, the member 6 overlapping the under side of lever 5, and being soldered thereto, the link 14 pivotally secured to the member 6 and surrounding said bar 9, said bar being provided with lugs 15, substantially as set forth.

571,582. CHEMICAL FIRE-EXTINGUISHER. ERNST F. STECK, Chicago, Ill., assignor to the Fire Extinguisher Manufacturing Company, same place and New York, N. Y. Filed Apr. 30, 1896. Serial No. 589,665. (No model.)



Claim.—1. In a chemical fire-extinguisher, the combination of an outer vessel for holding the alkaline liquid, an unsealed acid-containing vessel having an annular shoulder supported by and within the alkaline vessel, a supporting-frame, and a glass sealing-cap or bell seated upon the shoulder of the acid-containing vessel.

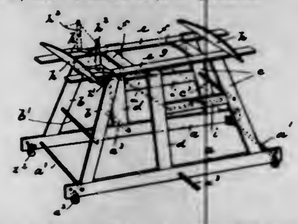
2. In a chemical fire-extinguisher, the combination of an outer alkaline containing vessel, an inner acid-containing vessel, a supporter, and a cap or bell covering the upper part of the acid-containing vessel and having openings at the bottom whereby a liquid-sealed escape is provided for the gaseous fumes.

3. In a chemical fire-extinguisher, the combination of an outer alkaline-containing vessel, an inner acid-containing vessel, a glass cap or bell covering the upper part of the acid-containing vessel and means substantially as shown and described for introducing the escaping fumes from the acid-containing vessel directly into the alkaline water without contacting with the metallic parts.

4. In a chemical fire-extinguisher, the combination of an outer vessel containing alkaline water, an inner vessel supported by the

outer vessel, and containing acid, a glass bell, cap, or dome arranged over the top of the inner vessel and retaining between it and the inner vessel a quantity of alkaline water, the latter forming a liquid seal, with said seal.

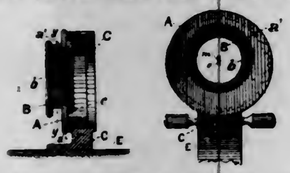
571,583. BABY-WALKER. JOSEPH H. THOMAS, Paterson, N. J. Filed Apr. 17, 1896. Serial No. 587,895. (No model.)



Claim.—1. In a baby-walker, a frame comprising upright standards, pairs of parallel bars *a*, *e*, and cross-bars *a'*, *b'*, *c'*, joining said standards, transverse braces *f* secured to two of said parallel bars and forming therewith a space *g*, a seat adapted to be supported by various parts of the frame, and segmental pieces or rockers transversely secured to the frame, substantially as described.

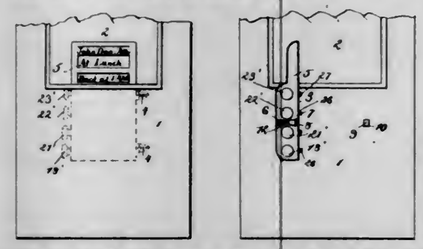
2. In a baby-walker, a frame comprising upright standards, parallel bars *a* and shorter parallel bars *e* joining the ends of said standards, cross-bars *a'*, *b'*, *c'*, also joining said standards, transverse braces *f* secured to the shorter parallel bars *e*, and forming therewith a space *g*, parallel supports *i* connecting pairs of said upright standards, a removable seat mounted on said supports beneath the space *g*, and segmental pieces or rockers secured to the shorter pair of said parallel bars, substantially as described.

571,584. CENTERING DEVICE. LANCASTER THOMAS, Philadelphia, Pa. Filed Dec. 7, 1894. Serial No. 531,062. (No model.)



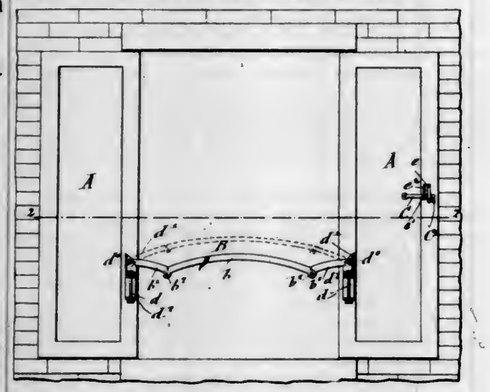
Claim.—In a centering device, in combination, a ring-bracket C sliding in or secured to a fixed standard E, a ring-frame A fitted and revoluble therein, said ring-frame having a circular aperture *a'* eccentric to its periphery and a cylindrical nut or bushing B fitted and revoluble therein, the said bushing being tapped internally with a thread eccentric to its periphery, the degree of eccentricity between the aperture and the periphery of the ring-frame A and the degree of eccentricity between the inner thread *b* and periphery of the bushing B, being equal, substantially as and for the purpose set forth.

571,585. OFFICE-INDICATOR. JAMES A. TOBIN, Lancaster, Ohio. Filed July 18, 1896. Serial No. 599,666. (No model.)



Claim.—An office-indicator, comprising the paneled door, the case hinged thereto and secured in place by means of the spring-catch on the case engaging the head of a stud on the door, the rollers mounted in pairs in said case, each pair being provided with a flexible band containing suitable announcements, the face of the case being formed with slits through which a portion of the bands may be exposed to view, and a series of locking-pins located in the side of the case, and adapted to lock the rollers when the case is closed against the door, substantially as shown and described.

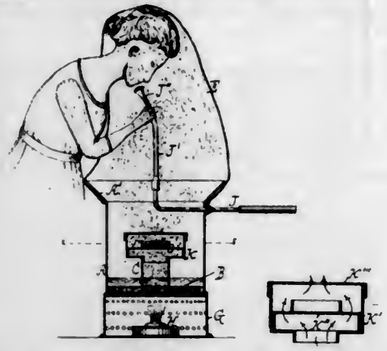
571,586. SHUTTER-FASTENER. GEORGE L. VOGEL, New York, N. Y. Filed June 6, 1896. Serial No. 594,514. (No model.)



Claim.—1. The combination with hinged shutters, of a knuckle-jointed brace extending from shutter to shutter and consisting of a middle section and two end sections, vertical swivels or pintles journaled in suitable bearings on the shutters and to which swivels the end sections of the brace are pivoted, a brace-latch applied to the inner side of one of the shutters, and adapted to interlock with the middle section of the brace, and means for operating the latch from the outside of the shutter, substantially as set forth.

2. The combination, with hinged shutters, of a knuckle-jointed brace extending transversely across the window from shutter to shutter, and being formed of three sections, namely a middle section and two end sections, the end sections being pivoted to the upper ends of pintles swiveled to ears of the shutters, and a pivoted latch applied to one of the shutters and adapted to engage the middle section of the brace when the shutters are in closed position, said latch being provided with a pin passing through to the outside of the shutter so as to permit a release of the latch from the middle section of the brace when it is desired to open the shutters from the outside, substantially as set forth.

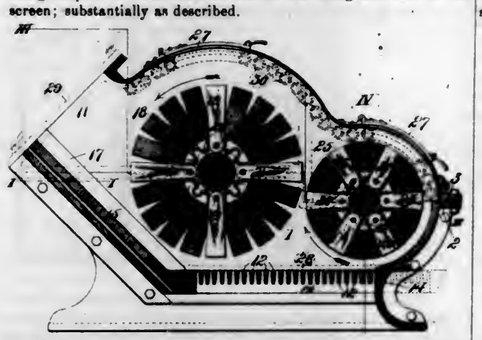
571,587. FACE-STEAMING APPARATUS. OSCAR A. WEISSENBORN, Jersey City, N. J. Filed Mar. 12, 1896. Serial No. 582,888. (No model.)



Claim.—In a face-steaming apparatus, the combination of the steaming vessel as A, the medicament-holder therein, composed of the main portion A' the perforated partition K'' with its central ring and the cap K''' with the central escape-hole; the face-hood as E, upon said vessel with an opening to admit the head of a person, said hood being otherwise closed, and a breathing-tube extending through the side of the steaming vessel and thence upward into the hood, substantially as and for the purpose herein described.

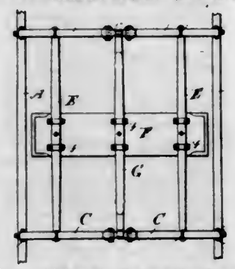
571,588. PULVERIZING AND MIXING MACHINE. HERMAN S. ALBRECHT, St. Louis, Mo. Filed May 6, 1896. Serial No. 590,481. (No model.)

Claim.—1. A pulverizing and mixing machine comprising a housing having a feed-opening provided with an inclined ribbed lining, a screen beneath the lining and a pair of cylinders having spring-arms and revolving in opposite directions: the arms of the outer cylinder being adapted to break the material on the lining and also on the screen; substantially as described.



2. A pulverizing and mixing machine comprising a housing having a feed opening provided with an inclined, ribbed lining, a screen beneath the lining, and a cylinder having spring-arms; the arms of the cylinder being adapted to break the material on the lining and also on the screens, substantially as set forth.

571,589. VEHICLE-GEAR. WILLIAM ATKINSON, Granby, Canada. Filed May 4, 1896. Serial No. 590,245. (No model.)



Claim.—1. In a vehicle-gear, the combination of side-bars suitably supported, transverse or end supports pivoted to said side-bars fore and aft and each flexibly and slidingly joined in the center, side springs parallel to the side-bars supported at their ends upon the transverse or end supports and adapted to resist a downward pressure in the center, the cross-bar secured to and carried upon said side springs and a center spring secured to said cross-bar adapted to resist a downward pressure at the ends and having its ends connected to the couplings of the end supports, substantially as set forth.

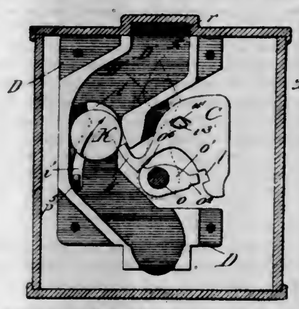
2. In a vehicle-gear, the combination of side-bars suitably supported, clips and shackles fore and aft on said side-bars adapted to support transverse or end supports pivotally, two transverse or end supports each in two parts flexibly and slidingly joined in the center and pivotally supported in said shackles at the outer ends, and a coupling connecting the inner ends flexibly and slidingly, substantially as set forth.

3. In a vehicle-gear, the combination of side-bars suitably supported, transverse or end supports secured to said side-bars fore and aft, a longitudinal spring near each side-bar having its ends carried upon the transverse or end supports and adapted to resist a downward pressure, a cross-bar secured upon said springs and a spring between said side springs and parallel to them secured to said cross-bar and supporting at its ends the transverse or end supports, substantially as set forth.

571,590. COIN-CONTROLLED MECHANISM FOR TELEPHONES. RICHARD D. GALLAGHER, Jr., Chicago, Ill. Filed Mar. 14, 1896. Serial No. 583,219. (No model.)

Claim.—1. In a coin-controlled mechanism for telephones, the combination of a coin-chute, a call-circuit switch, an operating-handle normally engaging said switch to maintain the user's call-circuit open, and a gravity-catch normally locking said handle and extending into said chute to arrest a coin therein for unlocking said handle, substantially as described.

2. In a coin-controlled mechanism for telephones, the combination of a coin-chute, a call-circuit switch comprising a spring-contact *n* extending between the contacts *m* and *m'*, an operating-handle having an insulated extension p^6 normally holding said spring against the contact *m'*, and a gravity-catch C normally looking said handle and having an arm *k* extending into said chute to arrest a coin therein to turn the gravity-catch and unlock the handle, substantially as described.



3. In a coin-controlled mechanism for telephones, the combination of a coin-chute, a call-circuit switch, an operating-handle normally engaging said switch to maintain the user's call-circuit open, a gravity-catch normally locking said handle and extending into said chute to arrest a coin therein for unlocking said handle, a signal lever device extending into the path of the coin, and means connected with the handle for engaging the coin with said lever device, substantially as described.

4. In a coin controlled mechanism for telephones, the combination of a base-plate carrying a call circuit switch, an operating-handle normally engaging said switch to maintain the user's call-circuit open, a signal lever device, a chute-plate on said base-plate, having a coin-chute containing an opening between its ends toward which said chute inclines in contrary directions, the lower portion of said chute leading into said opening to said base plate, a gravity-catch normally locking said handle and extending into said chute-opening to arrest a coin in the chute for unlocking said handle, and means connected with the handle for engaging the coin with said lever device through said chute-opening, substantially as described.

5. In a coin-controlled mechanism for telephones, the combination of a base-plate A^3 having an opening *p* and carrying a call-circuit switch, an operating-handle normally engaging said switch to maintain the user's call-circuit open, a signal lever device, a chute-plate D on said base plate, having a front coin-chute D' containing an opening *i* toward which said chute inclines in contrary directions, the lower portion of said chute leading into said opening to said base-plate, a rear coin-chute D^3 on said chute-plate leading to said opening *p*, a gravity-catch C normally locking said handle and extending into said chute-opening to arrest a coin in the chute D' for unlocking said handle, and means connected with the handle for engaging the coin with said lever device through said chute-opening, substantially as described.

6. In a coin-controlled mechanism for telephones, the combination of a base-plate A^3 having a shoulder *q* containing an opening *p* below which extends the slotted lug *p'*, said base-plate carrying a call-circuit switch, an operating-handle A' on a rotary spring-controlled stem *o*, carrying a hub *o'* provided with a nose o^2, a shoulder o^3 and an arm p^4 carrying an insulated piece p^5 normally holding said switch open and a curved extension p^5 to enter the slot in said lug, a signal lever device, a gravity-catch C containing a notch *l* at which to engage said nose to lock the handle against turning and provided with an arm *k*, a chute-plate D on said base-plate, having a front chute D' containing a slot *i'* to admit said extension p^5 and an opening *i* toward which said chute inclines in contrary directions and into which said arm *k* enters, the lower portion of said chute leading into the opening *i* to said base-plate and a rear coin-chute D^3 on said chute-plate leading to said opening *p*, substantially as and for the purpose set forth.

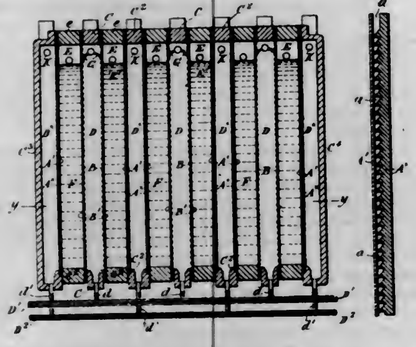
7. In a coin-controlled mechanism for telephones, the combination of a base-plate carrying a call-circuit switch and a signal-switch, an operating-handle normally engaging said call-circuit switch to maintain the circuit open, a signal lever device E comprising the pivotal contact-carrying arm *h* having a spring-controlled finger h^4 extending from it, a signaling device G controlled by said signal-switch, a chute-plate on said base-plate having a coin-chute containing an opening between its ends toward which said chute inclines in contrary directions, the lower portion of said chute leading into said opening to said base-plate, a gravity-catch normally locking said handle and extending into said chute-opening to arrest a coin in the chute for unlocking said handle, and means connected with the handle for engaging the coin with the finger h^4 through said chute-opening, substantially as described.

8. In a coin-controlled mechanism for telephones, the combination of a base-plate carrying a call-circuit switch and a signal-switch,

an operating-handle normally engaging said call-circuit switch to maintain the circuit open, a signal lever device E comprising the pivotal contact-carrying arm A having a socket A^3 and a spring-controlled finger A^4 extending from the arm through said socket, a signal device G controlled by said signal-switch, a catch F pivotally supported to engage at one end the finger A^4 and to be engaged at its opposite end by the mechanism of the operating-handle, a chute-plate on said base-plate having a coin-chute containing an opening between its ends toward which said chute inclines in contrary directions, the lower portion of said chute leading into said opening to said base-plate, a gravity-catch normally locking said handle and extending into said chute-opening to arrest a coin in the chute for unlocking said handle, and means connected with the handle for engaging the coin with the finger A^4 through said chute opening, substantially as described.

571,591. APPARATUS FOR ELECTROLYSIS OF CHLORIDS, &c.

JAMES HARGREAVES, Farnworth-in-Widnes, and THOMAS BIRD, Cressington, England. Filed Jan. 4, 1894. Serial No. 490,671. (No model.)



Claim.—1. In electrolytic apparatus, a cell having opposing porous diaphragms, and an anode and cathode respectively located in contact with the exterior surfaces of the diaphragms, substantially as described.

2. In electrolytic apparatus, a cell comprising numerous compartments containing the electrolyte, each compartment having opposing porous diaphragms forming a chamber, an anode and cathode respectively located in contact with the exterior surfaces of the diaphragms, and collecting-chambers arranged alternately with the electrolyte-compartments; substantially as described.

3. In electrolytic apparatus, a cell comprising several compartments having opposing porous diaphragms, an anode and cathode respectively located in contact with the exterior surfaces of the diaphragms, and a series of collecting-chambers arranged alternately with the electrolyte-compartments, the anode collecting-chambers being arranged alternately with the cathode collecting-chambers; substantially as described.

4. In electrolytic apparatus, a cell having opposing permeable diaphragms forming the sides thereof, and a serrated anode and a cathode respectively located against the exterior surfaces of the permeable diaphragms, said serrated anode being in contact with the permeable diaphragm only at the point of the projections left by the serrations, substantially as described.

5. In electrolytic apparatus, a cell having opposing permeable diaphragms forming the sides thereof, and a serrated anode and a cathode respectively located against the exterior surfaces of the permeable diaphragms, and means for directing a stream of fluid between the anode and its diaphragm, substantially as described.

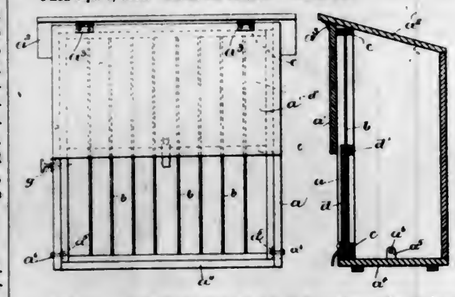
6. For use in the manufacture of an alkali or cation or derivative product, a cell comprising a recessed plate C^3, a space $D^\times$ bounded by the recessed plate, a vertical exposed anode $A^\times$ and a permeable diaphragm A' next the plate C^3, a chamber E containing the electrolyte, a permeable diaphragm B' and vertically exposed cathode B on the opposite side of the chamber E, and a space D next the cathode B, the cell ending with a recessed plate C^4, substantially as herein described.

7. For use in the electrolytic apparatus, the improved manufacture of diaphragm consisting of a mineral fabric with an insoluble sulfate deposited thereon, substantially as herein described.

8. The process for manufacturing a diaphragm for use in electrolytic apparatus which consists in depositing sulfate of baryta or sulfate of strontia on a fabric of glass fiber or of asbestos by repeatedly dipping the fabric in a solution of baryta or of strontia and alternately into sulfuric acid or a solution of a sulfate.

571,592. CHICKEN-COOP.

JACOB P. HAZEN, Shirley, Mass. Filed Apr. 8, 1896. Serial No. 586,695. (No model.)

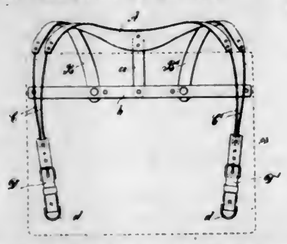


Claim.—1. A chicken-coop having an imperforate front piece *a* extending from its top partly to its bottom, an opening below said front piece, a frame secured to the interior of the coop, back of said front piece and opening, and extending from the bottom of the opening upwardly behind the front piece, vertical rods or wires secured to said frame and forming guides extending vertically across the opening and behind the front piece, the portions of the said rods below the front piece constituting guides and also a fixed grating to guard the opening, while their upper portions constitute guides behind the front piece, and an imperforate slide grooved to engage said wires and prevent lateral displacement thereof and movable vertically thereon to open and close the grated opening, said slide having cleats or crossbars *d'* extending across the wires, and means whereby it may be supported at different heights.

2. A chicken-coop having an imperforate front piece *a* extending from its top partly to its bottom, an opening below said front piece, a frame secured to the interior of the coop, back of said front piece and opening, and extending from the bottom of the opening upwardly behind the front piece, vertical rods or wires secured to said frame and forming guides extending vertically across the opening and behind the front piece, the portions of the said rods below the front piece constituting guides and also a fixed grating to guard the opening, while their upper portions constitute guides behind the front piece, a slide grooved to engage said wires and prevent lateral displacement thereof and movable vertically thereon and provided with cleats *d'* extending across the wires, a top hinged to the body of the coop, and a bottom detachably secured to said body.

571,593. KNAPSACK-CARRIER.

ALBERT HERZBERG, Berlin, Germany, assignor of one-half to Richard Holtkötter, same place. Filed Oct. 5, 1895. Serial No. 564,779. (No model.)



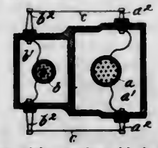
Claim.—In a knapsack-carrier, the combination with the nape-strap A having its middle portion adapted to be secured to the knapsack, and having its ends adapted to take over the shoulders of the wearer, and with the back-straps B B' having their rear ends adapted also to be secured to the knapsack, and having their front portions running parallel to the shoulder portions of said nape-strap, of the two cords C C' having each one end connected to the said nape-strap, and the other end to the neighboring back-strap; and straps D D' suspended by said cords; said straps D D' having means for being coupled to the knapsack, and being adapted to adjust themselves upon the said cords, so as to exert each the same draft upon the two parts of its respective cord, for the purpose as described.

571,594. CABLE TERMINAL-BOX.

WILLBUR H. JOHNSTON, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed Sept. 14, 1896. Serial No. 605,710. (No model.)

Claim.—1. In a cable terminal-box the combination with a main cable-head and an auxiliary cable-head forming the box, said main and auxiliary cable-heads being adapted to contain the main and

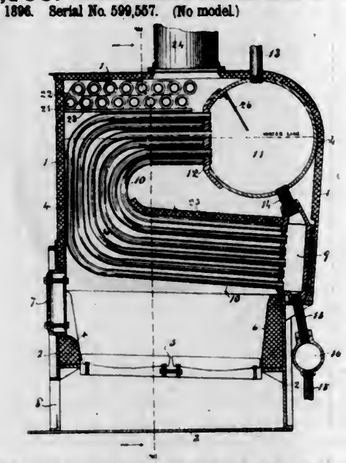
office cables respectively, of binding-screws or terminals located upon each cable-head, to which the conductors of the respective cables are adapted to be connected, and external conductors adapted to electrically connect the terminals connected with the conductors of one cable with the terminals connected with the conductors of the other cable, substantially as described.



2. The combination with a main cable-head adapted to receive a main cable, of an auxiliary cable-head adapted to receive a branch or office cable, said cable-heads forming a cable terminal-box, binding-screws or terminals mounted upon each cable-head, to which terminals the conductors of the respective cables are adapted to be connected, and fuses or other heavy current-arresters adapted to electrically connect the terminals connected with the conductors of one cable with the terminals connected with the conductors of the other cable, substantially as described.

571,595. BOILER.

CHARLES KELLOGG, Athens, Pa. Filed July 17, 1896. Serial No. 599,557. (No model.)



Claim.—1. In a boiler, the combination of a series of vertical headers having their sides corrugated in the manner and for the purpose described, a steam-drum above the headers, staggered tubes running from the headers out over the fire-box thence upward and finally backward to the steam-drum, return connections between the steam-drum and headers, and a feed-water inlet connected with the bottom of each header.

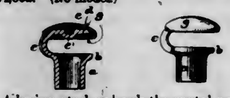
2. In a boiler, the combination of a series of vertical headers ranged above and outside the fire-box, each header having its sides corrugated to fit against the next adjacent header in the manner and for the purpose described and the entire series of headers being slightly inclined away from the fire-box, a steam-drum above the headers, staggered tubes issuing at right angles from the headers and running out over the fire-box, with a slight upward inclination according to the inclination of the headers, thence upward and finally backward to the steam-drum, short return connections between the bottom of the steam-drum and the tops of the headers, a mud-drum below the headers, and connections between the mud-drum and the bottoms of the headers.

3. In a boiler, the combination of a series of vertical headers ranged along a ledge outside the fire-box wall, each header having its sides corrugated to fit against the next adjacent header in the manner and for the purpose described and the entire series of headers being slightly inclined away from the fire-box, a steam-drum above the headers, staggered tubes issuing at right angles from the headers and running out over the fire-box, thence upward and finally backward horizontally to the steam-drum, a fire-bridge fitted closely to the top of the series of headers and extending out over the tubes to where they bend upward, short return connections between the bottom of the steam-drum and the tops of the headers above the fire-bridge, a mud-drum below the headers, and connections between the mud-drum and the bottoms of the headers.

4. In a boiler, a fire-box, a series of vertical headers fitted together as described and ranged along a ledge outside of and above the fire-box lining with a slight outward incline, a steam-drum above the headers, staggered tubes issuing at right angles from the headers and running out over the fire-box, thence upward and finally backward to the steam-drum, short return-tubes from the bottom of the steam-drum to the tops of the headers, a fire-bridge extending from the top of the headers out over the tubes in the manner described, and feed-water-heater pipes above the upper tubes, the above parts within one inclosing shell, and a mud-drum outside the shell beneath the headers, a connection between mud-drum and heater-pipes, and connecting-pipes between the mud-drum and the bottoms of the headers, all arranged and combined substantially as shown and described.

571,596. LACING-HOOK.

ELEAZER KEMPSHALL, New York, N. Y., assignor to Theophilus King, trustee, Boston, Mass. Filed Oct. 4, 1894. Serial No. 524,892. (No model.)



Claim.—1. A lacing stud or hook the metal portion of which has a substantial central hub projecting below the under surface of the head and having the entire head excepting the lower end of the projection, covered with pyroxylin or analogous plastic material, substantially as described.

2. A lacing-hook, the outer metal surface of the head of which is provided with an uncut indentation or hub struck downwardly therefrom and projecting below the under surface, in combination with an envelop or covering of plastic material, as pyroxylin, which covers the outer surface, the edge and all but the central portion of the under surface of the head, substantially as described.

3. A lacing-hook blank, comprising a securing member, a head, a neck connecting said member and head, a hub projecting from the under surface of the head, whereby said head may be supported above the die plate to enable the covering of plastic material to be molded thereon.

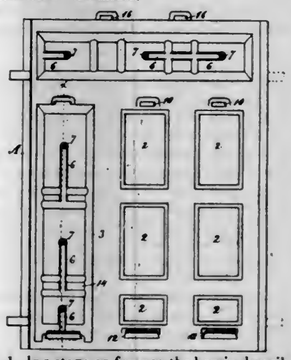
4. A lacing-hook comprising in its construction, a head, an attaching member, a neck connecting said head and member, and means to separate said head from a die-plate, or anvil, whereby a covering of plastic material may be molded about the top and bottom of said head, substantially as and for the purpose set forth.

5. A lacing-hook comprising in its construction, a securing member, a head, a neck connecting said head and member, a part on the under side of said head to engage a die-plate, and a covering of plastic material molded about said head, and extending under the edge thereof, substantially as and for the purpose set forth.

6. A lacing-hook comprising in its construction, a securing member, a head, a neck connecting said member and head, and a die-engaging member upon said head, substantially as and for the purpose set forth.

571,597. REMOVABLE MICA FRAME OR HOLDER FOR HEATING-STOVES.

FRANK V. KNAUSS, Portsmouth, Ohio. Filed Dec. 9, 1895. Serial No. 571,494. (No model.)



Claim.—1. In a stove or furnace the herein-described removable mica frame or holder provided with recesses adapted to receive centrally-perforated mica plates; arms overhanging the centers of said plates and means for drawing and retaining the plates within said recesses substantially as specified.

2. A removable mica-frame for stoves, comprising a frame, an integral arm thereto, a mica sheet fitted in said frame and secured to

the end of the arm, and lugs at the corners of the said frame, substantially as and for the purpose described.

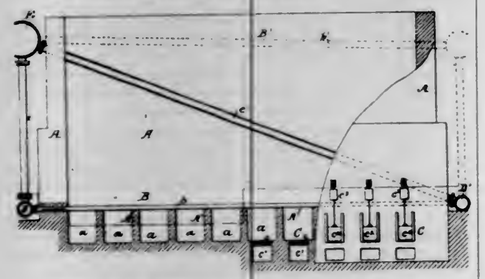
571,598. **MANUFACTURE OF PLATES FOR ELECTRIC ACCUMULATORS.** JOHANNES KÖRNER, Mannheim, Germany. Filed Jan. 6, 1896. Serial No. 574,519. (No model.) Patented in Germany Feb. 27, 1895, No. 84,186; in France June 3, 1895, No. 243,030; in Switzerland June 15, 1895, No. 10,462, and in Belgium Oct. 21, 1895, No. 117,973.

Claim.—1. As an improvement in the manufacture of secondary-battery plates, causing a protective layer of sulfate of potash to be deposited thereon and then applying the active material or paste, substantially as described.

2. The improvement in the manufacture of plates for electric accumulators or secondary batteries, consisting in exposing the uncoated carrying frames, plates or grids to the action of the electric current in a solution of sulfate of potash and sulfuric acid in order to deposit a crystalline coating thereon, for the purpose of protecting them from the destructive action of the electrolyte, substantially as set forth.

3. Plates for electric accumulators or secondary batteries consisting of grids or other carriers or conductors coated directly with a protective layer composed essentially of acid sulfate of potash, substantially as described.

571,599. **KILN.** WILLIAM B. MELCHER, Philadelphia, Pa. Filed Jan. 2, 1894. Serial No. 496,379. (No model.)



Claim.—1. The combination in a kiln, of the walls, the horizontal tubes forming the floor, flues under the floor, furnaces for generating heat, manifolds connected to the tubes at each end and a drum connected to the manifolds, substantially as described.

2. The combination in a kiln, of the walls, longitudinally-arranged tubes forming the floor thereof, transverse flues extending under said floor and furnaces communicating with said flues, a series of longitudinally-arranged tubes extending over the kiln forming the roof thereof, a steam-drum and pipes connecting the steam-drum with the floor-tubes and with the roof-tubes, substantially as described.

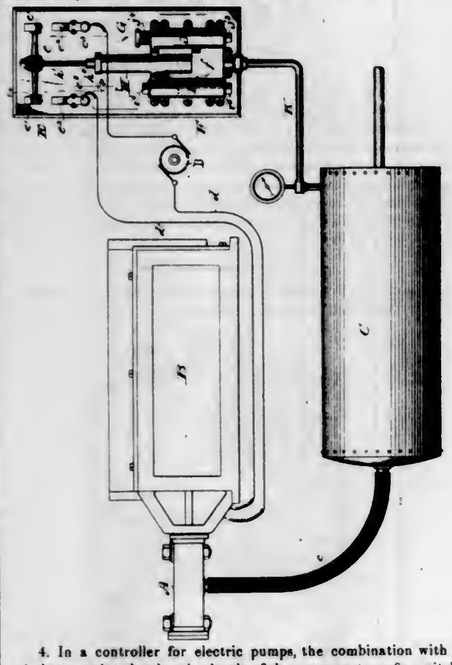
3. The combination in a kiln, of the longitudinally-arranged tubes forming the floor thereof, manifolds at each end connected to the several tubes, a steam-drum mounted above the manifolds, pipes *c* connecting the drum to one manifold, an inclined pipe *c'* connecting the drum with the other manifold, flues extending under the floor and furnaces communicating with said flues, substantially as described.

571,600. **CONTROLLER FOR ELECTRIC PUMPS.** FRANK W. MERRITT, Duluth, Minn., assignor to the Electric Motor Company, same place. Filed Feb. 14, 1896. Serial No. 579,259. (No model.)

Claim.—1. In a controller for electric pumps, the combination with a switch governing the electric circuit of the pump-motor, of a switch-actuating piston and cylinder, a controlling piston and cylinder connected at one end with the force side of the pump, a spring acting on said piston in opposition to the pump pressure, and an intermediate cylinder and piston controlling fluid-pressure supply and waste of the switch-cylinder and piston and in turn governed in operation by said controlling-piston, substantially as and for the purposes set forth.

2. In a controller for electric pumps, the combination with a switch governing the electric circuit of the pump-motor, of a switch-actuating piston and cylinder having a fluid-pressure supply and exhaust connection at one end and a spring acting on said piston in opposition to the fluid-pressure, a controlling piston and cylinder connected at one end with the force side of the pump, and having a spring acting on said piston in opposition to the pump-pressure, and an intermediate cylinder and piston controlling the supply and exhaust connection of the switch cylinder and in turn controlled in its operation by said controlling-piston, substantially as and for the purposes set forth.

3. In a controller for electric pumps, the combination with a switch controlling the electric circuit of the pump-motor, of a switch-actuating cylinder and piston having a fluid-pressure supply and waste connection, a controlling piston and cylinder connected with the force side of the pump, an adjustable spring acting upon said piston in opposition to the pump-pressure, and an intermediate cylinder and piston controlling the supply and waste connection of the switch-cylinder, and in turn controlled in operation by said controlling-piston, substantially as and for the purposes set forth.



4. In a controller for electric pumps, the combination with a switch governing the electric circuit of the pump-motor, of a switch-actuating piston and cylinder having a fluid-pressure supply and exhaust connection, a controlling piston and cylinder having a constant connection with the force side of the pump and a spring acting upon said piston against the pump-pressure, and an intermediate piston and cylinder controlling the supply and exhaust connection of the switch-cylinder, and having a supply and exhaust connection governed by said controlling-piston, the several cylinders having connections with the force side of the pump, substantially as and for the purposes set forth.

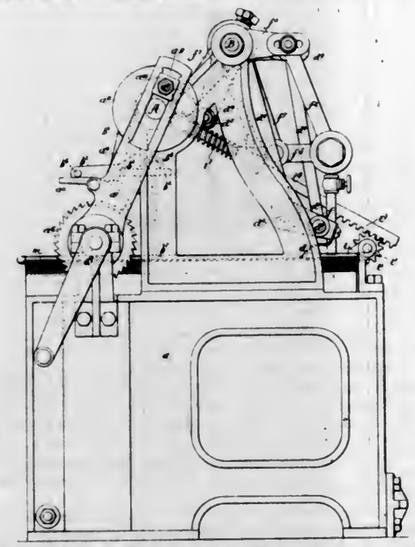
5. In a controller for electric pumps, the combination with an electric switch, of a switch actuating piston having a fluid-pressure supply and exhaust connection, a spring acting on said piston against the fluid-pressure, a controlling piston and cylinder having a constant connection with the force side of the pump, and a spring acting upon said piston against the pump-pressure, an intermediate piston and cylinder controlling the supply and exhaust connection of the switch-cylinder, and having fluid pressure supply and exhaust connections, and a valve connected with the controlling-piston and governing the supply and exhaust connections of the intermediate cylinder, substantially as and for the purposes set forth.

571,601. **PAPER-FEEDING MACHINE.** ROBERT MCKEE, Philadelphia, Pa. Filed Feb. 21, 1895. Serial No. 539,263. (No model.)

Claim.—1. The combination in a paper-feeding device, of lifting mechanism having as an element a ratchet and pawl, a vibrating arm carrying said pawl, and a rock-shaft having three arms, one acted upon directly by a cam for rocking the shaft, the second having a projection acting directly on the pawl, and the third having a detector-rod bearing upon the pile of sheets, substantially as specified.

2 The combination in a paper-feeding device, of a support for the pile of sheets, a series of suction-nozzles, a pipe carrying the same, a pair of cams, a shaft having a pair of bell-crank levers acted on by said cams and so mounted that their outer ends swing in a substantially vertical plane, links connecting the suction-pipe to the vertically-swinging ends of said levers, an arm mounted on the lever-shaft and having its lower end swinging in a substantially horizontal plane,

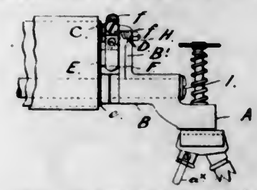
another arm on said shaft, a cam acting on said arm, and a link connecting the lower end of the horizontally-swinging arm to the suction-pipe, substantially as specified.

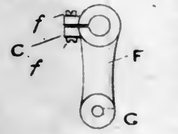


3. The combination in a paper-feeding device, of a support for the pile of sheets, a buckling finger, a suction-nozzle, a bar for clamping the front end of the pile of sheets, rocking arms carrying said bar, a shaft carrying said arms, a pinion on said shaft, a rack engaging with said pinion, and a cam for imparting movement to said rack, substantially as specified.

4. The combination in a paper-feeding device, of a support for the pile of sheets, a blast-pipe for delivering blasts of air toward the edges of said sheets, a pipe providing communication between said blast-pipe and an air-forcing apparatus, and means for controlling the flow of air through said pipe whereby provision is afforded for maintaining a gentle blast which is increased in force at intervals, substantially as specified.

571,602. **EDGE-SETTING MACHINE.** HENRY A. OLDERSHAW, Leicester, England. Filed June 10, 1895. Serial No. 552,358. (No model.) Patented in England Dec. 7, 1894, No. 23,791.

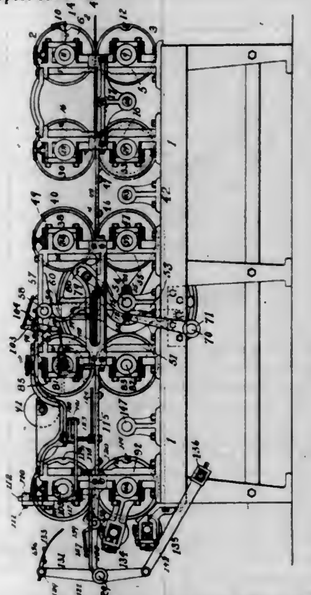




Claim.—In machines for setting the edges, middles of soles, or waists of boots and shoes the arrangement of tool-carrying devices consisting of a lower tube, or tool-holder A, a horizontal barrel or hollow body B, a right-angled or crank arm B' shaped so that its elbow forms a cover for the front of the eccentric-strap C, and gear-rod F these being coupled to the cranked arm and eccentric of the driving-shaft, the said tool carrying device being mounted on a fulcrum under and in a vertical line with the eccentric of and the bearings of the driving-shaft, all in the manner and for the purpose substantially as described.

571,603. **MACHINE FOR MAKING PAPER BAGS.** WILLIAM H. PATTERSON, Cuyahoga Falls, Ohio, assignor to Helen Patterson, same place. Filed Dec. 17, 1895. Serial No. 572,448. (No model.)

Claim.—1. In a machine of the class designated, the combination of a pair of housings, 5 and 16, bearing a pair of rolls each, of a pair of brackets, 17, connecting said housings, a shaft 19 journaled in said brackets, a roller 27 on a pin 26, extending between two arms, 24 and 25, on said shaft 19, of a pair of rolls, 30 and 33, said roll 30 consisting of a pair of narrow rolls 30 and 31, of a dull knife 32, extending between them, a roll 33 having a reduced middle portion, on which said roller 27 runs, and provided with lugs, 34, on the inner sides of the enlarged heads thereof, a guide-board 4, having a knife, 162, with sharp teeth along its edge, across its inner end, and adapted to rest on roller 27 and be raised by it, substantially as shown and for the purpose set forth.



2. In a machine of the class designated, having a main driving-shaft 54, provided with tight and loose pulleys, a crank-arm, 66, a roller 67 on the end thereof, a curved slotted arm 65, pivoted on the frame, a shoe 59 on a shaft 58, pivoted in brackets on housings 35 and 51 of said machine, a rock-shaft 60, having a roller 61 thereon, running in the slotted opening in said curved arm 65, said crank 66 adapted to revolve with said shaft 55, and encounter the curved portion of said arm, and actuate said shoe forward and back, by means of said roller 61, arm 60 and shaft 58, in combination with a plate, 68, sustained under said shoe, and a spring, 69, projecting through said plate in front of the point of said shoe, substantially as shown and described.

3. In a machine of the class designated, the combination of a shaft, 81, mounted in housings in said machine, and hollow one-half of its length, and having a slotted opening connecting with said hollow part, a folder-blade, 95, hinged in said slotted hole, a secondary shaft, 94, within said hollow post, and forming the support for blade, 95, a spring-finger, 97, attached to said shaft, 94, and a stop, 100, on a shaft, 99, mounted in the frame of the machine, a trigger, 101, on said shaft, 99, and a roll, 85, and a pin, 102, projecting therefrom and arranged to encounter said trigger and release said spring 97, and permit the free movement of shaft 94 and blade 95, substantially as shown and described.

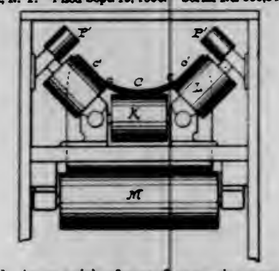
4. In a machine of the class designated, the combination of a shaft, 81, mounted in housings in said machine, a pair of narrow rolls, 85 and 86, mounted thereon, each having a radial slot in the inner faces, a slotted bar, 87, arranged to pass through said slots in said rolls, an adjustable creaser-knife, 88, fastened in the slot in said bar, and two circular ridges, 90, on the inner sides of said housings and partially surrounding and eccentric to the journals of said shaft, 81, arranged to encounter the upper face of the bar 87, at its outer ends and depress said creaser knife during the passage of said bar under said ridges, substantially as shown and described.

5. In a machine of the class designated, the combination of two sets of housings, 51 and 92, a plate 115, suspended between said housing and over which the bag passes, a shaft, 105, journaled in said housings, 92, a grooved cam 116 on said shaft, a rocking arm 118 pivotally mounted in said machine, a connecting-link 121, attached to said arm 118, and a crank 122 attached to said link and mounted on a vertical shaft, 123, and an arm, 124, mounted on said vertical shaft and having a free end adapted to be swung inward over the face of the table, 115, and back by the movement of the roller in said grooved cam, substantially as shown and described.

6. In a machine of the class designated, the combination of a pair of brackets, as 127 and 128, a horizontal shaft, 129, journaled

therein, a series of folder-blades, 133, mounted thereon, a crank, 134, and connecting-rod, 135, operating said shaft, and a second folder, 150, mounted on a separate shaft journaled in said brackets, and arranged to be actuated by the descent of said folders 133, and to be returned to its normal position by a spring, substantially as shown and described.

571,604. CONVEYER-BELT APPARATUS. THOMAS ROBINS, Jr., New York, N. Y. Filed Sept. 19, 1896. Serial No. 606,311. (No model.)



Claim.—1. As an article of manufacture, the conveyer-belt having a wearing-face thicker at the central portions and thinner at the side portions, and combined with a backing which is thicker at the side portions and thinner at the central portions, substantially as set forth.

2. As an article of manufacture, a belt for conveyers and other uses presenting in cross-section, a wearing-face, and a body portion or backing which is thicker at the edges and thinner and more flexible at one or more points nearer to the middle of the belt, the belt thus combining relatively stiff edges with one or more relatively flexible points between the edges, substantially as set forth.

3. A conveyer belt consisting of a backing and a facing which has a thickened central portion, the said belt having stiffened edges or side portions, substantially as set forth.

4. A conveyer-belt of approximately uniform thickness, composed of suitable treated canvas and rubber, combined with a relatively greater number of plies of the canvas at or near the edges of the belt than in the middle, substantially as set forth.

5. The supporting-pulleys L, K, L, the hollow bearings F therefor, and the horizontal and turn-up hollow shafts secured in the said bearings, and the oil devices mounted on the ends of the turn-up shafts, substantially as set forth.

6. In combination, the two brackets or castings suitably supported, the horizontal pulley mounted between them, the turn-up shafts secured in the said brackets or castings, and the pulleys L loosely turning thereon, substantially as set forth.

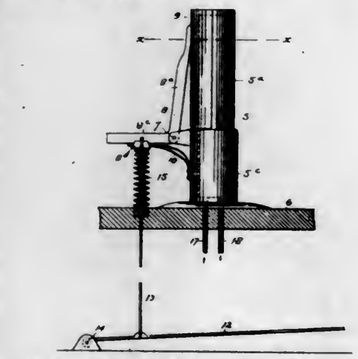
571,605. BASKET. ALOIS SCHEIDT, St. Paul, Minn. Filed July 11, 1896. Serial No. 598,573. (No model.)



Claim.—The improved basket described, consisting essentially of the sheet-metal body 1, formed from a single piece of material and having its lower edge slitted vertically for a sufficient distance, and the slitted portions bent downwardly and inwardly, leaving the vertical straight portion 2, the external ring 5, secured at the base of said straight portion 2, the upper base-plate 7, and the lower base-plate 6, receiving between their marginal edges the slitted edges of the body which are secured thereto by rivets, the wooden ring 9, arranged on the bottom of the basket so as to support the same, the hinged handles 10, and the plates 12, securing the handles to the basket substantially as specified.

571,606. TURN-DOWN-COLLAR SHAPER. JAMES R. WALSH, Denver, Colo., assignor to Carrie Walsh and Philip Feldhauser, same place. Filed Mar. 14, 1896. Serial No. 583,274. (No model.)

Claim.—1. In a turn-down-collar shaper, the combination with a suitable support, of the hollow upright column mounted on said support, the bell-crank lever fulcrumed on the column, the clamping-plate attached to one arm of said lever, a spring engaging the lever and adapted to hold the clamping-plate against the column, suitable means for actuating the lever and separating the clamping-plate from the column, means for introducing steam to the chamber of the hollow column, and means for carrying away the water of condensation, substantially as described.

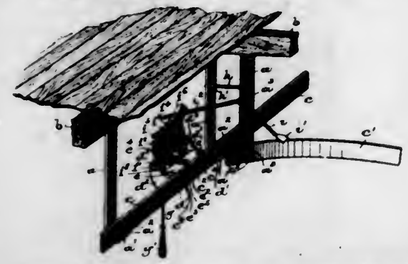


2. In a turn-down-collar shaper, the combination with a suitable support, of the hollow upright column mounted on said support, the spring supported bell-crank lever fulcrumed on the column, the clamping-plate attached to the lever and adapted to engage the column, a foot-lever, a suitable connection between the foot-lever and the bell-crank lever, and suitable means for heating the hollow column by introducing the heating medium into the chamber of the column, substantially as described.

3. In a turn-down-collar shaper, the combination with a suitable support, of the hollow upright column circular in cross-section, said column being mounted on said support, a spring-supported bell-crank lever fulcrumed on the column, a clamping-plate attached to one arm of the lever, said plate being arc-shaped in cross-section to conform to the shape of the column, the foot-lever, a suitable connection between the foot lever and the bell-crank lever, suitable means for introducing steam into the chamber of the hollow column, and means for carrying away the water of condensation, substantially as described.

4. In a turn-down-collar shaper, the combination with a suitable support, of the hollow column mounted thereon, the spring-held bell-crank lever fulcrumed on a suitable support, the clamping device attached to said lever and normally engaging said column, and suitable means for heating the column, substantially as described.

571,607. OVERHEAD SWITCH AND HANGER. PAUL F. WERNER, Vallsburg, N. J., assignor to J. Duncan & Co., Boston, Mass. Filed June 22, 1896. Serial No. 596,394. (No model.)



Claim.—1. In an overhead tramway, a switch comprising therein, a switch-bracket adapted to be secured to a rail, a pivotally-arranged lower rail-section having an opening therein, and a rail portion, and a second rail-section above said lower rail-section, provided with a stud adapted to extend into the opening in said lower rail-section to operate the same, and a rail portion on said upper rail-section, substantially as and for the purposes set forth.

2. In an overhead tramway, a switch, comprising therein, a switch-bracket d having arms d^3 provided with bearings, a rail-section e pivotally arranged on said bracket and having a rail portion e^3, and a rail-section f journaled in the bearing portions of said arms d^3, having a rail portion f^4, and means for operating said rail-sections, substantially as and for the purposes set forth.

3. In an overhead tramway, a switch, comprising therein, a switch-bracket d having arms d^3 provided with bearings, a rail-section e pivotally arranged on said bracket, having an opening e^2 and a rail portion e^3, and a rail-section f journaled in the bearing portions of said arms d^3, having a rail portion f^4, and a stud adapted to extend into said opening e^2 to operate said rail-section e, and means for operating said rail-sections, substantially as and for the purposes set forth.

4. In an overhead tramway, a switch, comprising therein, a switch-bracket d having arms d^3 provided with bearings, a rail-section e pivotally arranged on said bracket, having an opening e^2 and a rail portion e^3, and a rail-section f journaled in the bearing portions of said arms d^3, having a rail portion f^4 and a stud adapted to extend into said opening e^2 to operate said rail-section e, and upwardly and backwardly inclining post on said rail-section f, and a rod g and handle g' connected with said post to actuate said rail-section f, substantially as and for the purposes set forth.

5. An overhead tramway, comprising a rail or track c having a cut-away portion c^2, and a disconnected rail, as c', of a switch-bracket secured to one side of said rail c directly in front of said cut-away portion c^2, a rail-section e on said bracket having an upwardly-extending rail portion e^3 adapted to be forced into said cut-away portion c^2, a second rail-section f on said bracket having a rail portion adapted to connect a portion of said cut-away part c^2 with said disconnected rail c', as set forth, and means for operating said rail-sections e and f, substantially as and for the purposes set forth.

6. An overhead tramway, comprising a rail or track c having a cut-away portion c^2, and a disconnected rail, as c', of a switch-bracket d secured to one side of said rail c directly in front of said cut-away portion c^2, a pair of arms d^3 on said bracket having bearing portions, a rail-section e pivotally arranged on said bracket, having an upwardly-extending rail portion e^3 and a hole e^2 in said rail-section, a second rail-section f journaled in said arms d^3, having a rail portion f^4 and a stud adapted to extend into said opening e^2 to operate said rail-section e, and means for operating said rail-section f, substantially as and for the purposes set forth.

7. An overhead tramway, comprising a rail or track c having a cut-away portion c^2, and a disconnected rail, as c', of a switch-bracket d secured to one side of said rail c directly in front of said cut-away portion c^2, a pair of arms d^3 on said bracket having bearing portions, a rail-section e pivotally arranged on said bracket, having an upwardly-extending rail portion e^3 and a hole e^2 in said rail-section, a second rail-section f journaled in said arms d^3, having a rail portion f^4 and a stud adapted to extend in said opening e^2 to operate said rail-section e, an upwardly and backwardly inclining post on said rail-section f, and a rod g and handle g' connected with said post to actuate said rail-section f, substantially as and for the purposes set forth.

8. In an overhead tramway, the combination, with the rails c and c', hangers connected therewith, and a switch in said rail c, having a pivoted rail-section f, of a stop-bar i pivotally connected with one of said hangers, having a stop i' adapted to be brought in contact with said rail c', and an arm i^3 connected with said arm i adapted to be engaged by said rail-section f when raised, substantially as and for the purposes set forth.

9. In an overhead tramway, in combination with a pair of hangers, a continuous rail secured to the one hanger and an open rail secured to the other hanger, a switch, connected with said continuous rail, and a connecting adjusting-screw h, having adjusting nuts h' and h^3, arranged, substantially as and for the purposes set forth.

571,608. LOCK FOR BOLT-GUNS. THOMAS B. WILSON, Springfield, Mass., assignor to Charles E. Billings, Hartford, Conn. Filed May 23, 1892. Serial No. 433,986. (No model.)



Claim.—1. The combination of a sear provided with an engaging portion n at one end, a head l at the opposite end projecting above and below the body portion m, and pivotally mounted at the upper portion s of the head, a trigger arranged to engage the lower portion of the head and a sear-spring, substantially as and for the purposes stated.

2. The combination of a sear having a body portion m, a nose n and a head l, a latch to close the pivoted slot pivoted to the head, a trigger i provided with a recessed head to receive the lower end of the head of the sear, a trigger-guard and a spring o, all in combination with a firearm, substantially as shown.

3. The combination in a firearm of a sear, consisting of a body portion m a head l and engaging part n, a detachable trigger-guard provided with a spring-receiving recess, and a spring mounted therein, and bearing at one end directly against the sear, immediately below the engaging end and a trigger, substantially as and for the purposes stated.

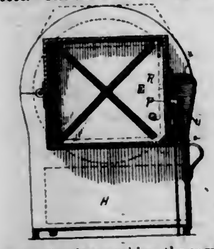
4. The combination of a sear provided at one end with a slot s, a latch pivotally mounted on the sear and arranged to close the open side of the slot s, a trigger arranged to operate the sear, a spring, and a pin r, engaging the slot s substantially as shown.

5. The combination in a firearm provided with a lock-receiving recess and having a pin r mounted therein, of a sear provided with an engaging nose, and with a transverse slot s, to engage the pin r, a latch arranged to cover the open side of the slot s, a trigger arranged to operate the sear and draw the nose out of engagement, a spring arranged to return the nose to its normal position, and means to support the spring and trigger, substantially as and for the purposes stated.

6. The combination in a firearm having a lock-receiving recess, of a pin r transversely mounted therein, a sear having a body m, a nose n and a head l, the latter being slotted transversely in its upper portion to receive the pin r and being projected downwardly to engage the trigger, a latch j mounted upon the sear and arranged to close the open side of the slot s, a trigger i pivotally mounted in the trigger-guard and provided with a recess in its head to receive the depending portion of the head of the sear, and a spring arranged to return the nose of the sear to its normal position, substantially as and for the purposes stated.

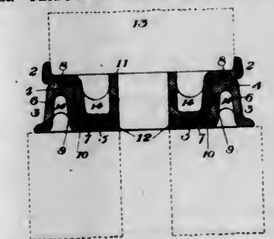
7. The combination in a firearm-lock mechanism of a removable trigger-guard having a slot through it for the passage of the trigger a pin u mounted transversely across said slot, a trigger provided with a slot opening downwardly to set over the pin, a sear and a spring, substantially as and for the purposes stated.

571,609. ICE-SHAVING MACHINE. JENETTA V. BOHANNAN, Baltimore, Md., assignor of one-fourth to John T. Jones, same place. Filed Apr. 21, 1896. Serial No. 588,499. (No model.)



Claim.—In an ice-shaving machine, the combination with the receptacle having a hinged cover with its free longitudinal edge recessed, of the arm N having a collar slidingly held on a horizontal rod, said arm designed to work in the recess of the cover and to rest on the edge of the box or receptacle and means for operating same, of the covering U secured to the side and a projecting portion a of the bottom of the said receptacle, adapted to inclose the said recess and the arm working therein, whereby outside air is prevented from entering the receptacle, substantially as shown and described.

571,610. CENTER PLATE FOR CARS. ALBERT O. BUCKIUS, Chicago, Ill., assignor to the National Malleable Castings Company, Cleveland, Ohio. Filed Feb. 18, 1896. Serial No. 579,707. (No model.)



Claim.—1. In a center-plate device for cars, upper and lower circle plates, having annular horizontal bearing-surfaces in two horizontal planes above and below, and lateral inclined bearing-faces extending between said annular bearing-surfaces; substantially as described.

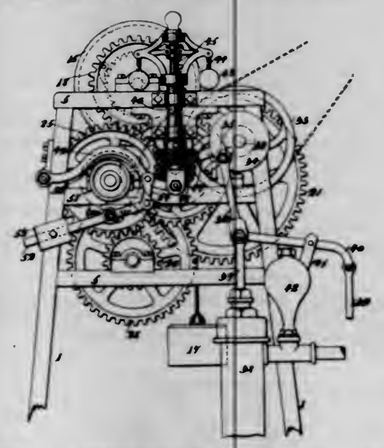
2. In a center-plate device for cars, upper and lower circle plates, having annular bearing-surfaces in two horizontal planes above and below, one of said plates having an outer annular bearing against the

load and having also an inner central hub which extends into contact with the load on the same side of the plate, whereby said plate will receive and transmit the force of such load uniformly; substantially as described.

3. In a center-plate device for cars, upper and lower circle plates, having annular bearing-surfaces in two horizontal planes above and below, one of said plates having a central hub which affords a long bearing for the king-bolt, and the other of which has a central eye and is unprovided with a hub; substantially as described.

4. Center plates, one of which has a central cylindrical hub in axial line with the eye of the other plate and adapted to transmit to the other plate a portion of the load; substantially as described.

571,611. PUMPING-POWER. GEORGE M. CARTER, JOHN H. DREW, and CHARLES L. DREW, East Prairie, Mo. Filed Mar. 20, 1896. Serial No. 584,116. (No model.)



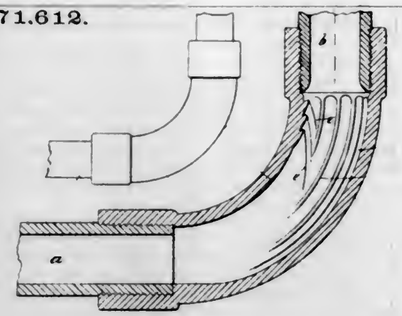
Claim.—1. A pump-operating machine comprising a motor, a pump-rod-operating crank, a chain of gearing between the motor and said crank and a governor comprising a rotary hollow shaft operated by the gearing, a frame on the upper end of said hollow shaft, weighted angle-levers pivoted to said frame, a shaft connecting with the angle-levers and extended through the hollow shaft, a brake-lever pivoted at one end to the machine-frame and at the other end to the lower end of said shaft, a friction-wheel on a gear-shaft for engagement with the brake-lever, a lever pivoted to the machine-frame, an adjustable weight on one end of said lever and a link connection between the opposite end of said lever and the brake-lever, substantially as specified.

2. A pump operating mechanism, comprising a driving-shaft, a motor for operating said driving-shaft, a pump-rod-actuating crank, a ratchet-wheel rigidly mounted on the driving-shaft, a gear-wheel loosely mounted on the driving-shaft, a dog on the loose gear-wheel engaging the ratchet wheel, gearing between said loose gear-wheel and the crank, a governor operating in connection with the gearing between the loose gear and the crank, a gear-wheel on the outer end of the driving-shaft, a pinion meshing with the gear-wheel, a ratchet-wheel mounted on the pinion-shaft, an arm loosely mounted on the pinion-shaft, and a dog-carrying lever having pivotal connection with the outer end of said arm and adapted to engage the ratchet-wheel, the end of said dog-carrying lever opposite the end engaging said ratchet-wheel being extended beyond the end of the arm and provided with a handle, substantially as specified.

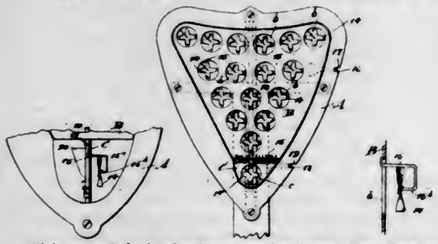
571,612. STEAM-FITTING. AUGUSTUS EICHHORN, Orange, N. J. Filed Sept. 15, 1896. Serial No. 605,911. (No model.)

Claim.—A feed and return fitting for steam-pipes, the fitting consisting in a curved tube, the upper end of which is provided with a series of channels on the inner side of its outer portion, the channels running longitudinally and downward and leading the water of condensation to the lower outer portion of the fitting and the fitting also having at the interior side of the inner and upper portion a series of curved channels running across the fitting and leading outward and slightly downward at each side so as to conduct the water of condensation laterally into the first-named channels and so as to prevent the water of condensation from passing down the interior side of the inner portion of the fitting and dropping across the interior of the fitting, substantially as described.

571,612.



571,613. DEVICE FOR DEMONSTRATING FINANCIAL PROBLEMS. OLIVER ELISON, Concord, Nebr. Filed Aug. 12, 1896. Serial No. 602,576. (No model.)



Claim.—1. A device for demonstrating financial problems, consisting of a frame having independent pivoted members, openings in the said members, and wheels carried by the pivoted members shaped to be acted upon by the wind and located over the said openings, as and for the purpose set forth.

2. A device for demonstrating financial problems, consisting of a frame, plates independently pivoted in the said frame, the said plates being provided with a predetermined number of openings, wind-wheels carried by the plates and located over the openings at the outer face of the plates, and latches for the said plates, whereby they may be held in substantially the same plane as that of the front of the frame, or assume a position at an angle to the frame, as and for the purpose set forth.

3. In a device for demonstrating financial problems, a pivoted frame, plates pivoted in the said frame, each of the said plates being provided with openings, the openings in one plate being of greater number than those in the second plate, and wind-wheels carried by the plates and supported over the said openings at a point beyond the same, and locking devices for the said plates, substantially as and for the purpose specified.

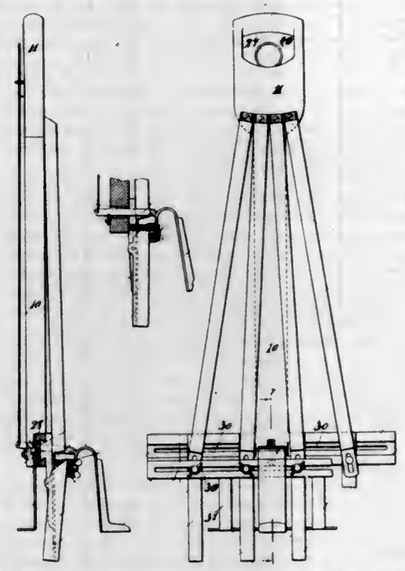
4. In a device for demonstrating financial problems, a pivoted frame, plates pivoted in the said frame, each of the said plates being provided with openings, the openings in one plate being of greater number than those in the second plate, wind-wheels carried by the plates and supported over the said openings at a point beyond the same, locking devices for the said plates, and means, substantially as described, for maintaining the plates at a right angle to the frame when their locking devices are released from their keepers, substantially as and for the purpose set forth.

5. In a device for demonstrating financial problems, a frame, plates pivoted in the said frame, one of the said plates being provided with sixteen openings and the other with a single opening, and wind-wheels held to revolve respectively one opposite each opening in each plate the wind-wheels being carried by the plates, as and for the purpose set forth.

6. In a device for demonstrating financial problems, a frame, plates pivoted in the said frame, one of the said plates being provided with sixteen openings and the other with a single opening, a wind-wheel held to revolve opposite each opening in each plate said wind-wheels being supported by the plates, locking devices for each plate, stops for the said plates, and a pivoted support for the frame, as and for the purpose specified.

7. In a device for demonstrating financial problems, a plate having openings therein, hangers secured to one face of the plate, extending through said openings beyond the opposite face, the hangers being thence bent at an angle to their attached members and finally in direction of the openings to which they belong, centering the latter, and wind-wheels mounted to turn on the centering members of the said hangers, as and for the purpose set forth.

571,614. HAND-PLANTER. JOHN F. GAMSON, Lodge Pole, Nebr. Filed Jan. 30, 1896. Serial No. 577,332. (No model.)



Claim.—1. In a hand-planter, the combination, with a support, stocks adjustable upon the said support, and a spade attached to the lower portion of each stock, of shoes pivoted upon the spade-stocks, partially surrounding the said spades, a trip-foot connected with all of the shoes and adapted for engagement with the surface of the ground, serving when in such contact to carry the shoes to an open position, a latch connected with all of the shoes, a keeper for the latch, and a trip connected with the said latch, as and for the purpose specified.

2. In a hand-planter, the combination, with a support, stocks adjustable upon the said support, and a spade attached to the lower portion of each stock, of shoes pivoted upon the spade-stocks, partially surrounding the said spades, a trip-foot connected with all of the shoes and adapted for engagement with the surface of the ground, serving when in such contact to carry the shoes to an open position, a latch connected with all of the shoes, a keeper for the latch, a trip connected with the said latch, a spring operating in a direction to close the lower ends of the shoes, and conductors attached to the support and to the said spade-stocks in a manner to provide a conductor for each of the shoes, whereby a plant when placed in a conductor will be delivered to one of the shoes, as and for the purpose specified.

3. In a planter, the combination with a shank, of a series of rigid stocks, a spade carried by each stock, a trip-bar, a shoe pivoted on each stock, the shoes being connected to the trip-bar, a spring pressing the trip-bar, a foot connected to the trip-bar, a latch pivotally connected to the foot, and means for disengaging the latch, substantially as described.

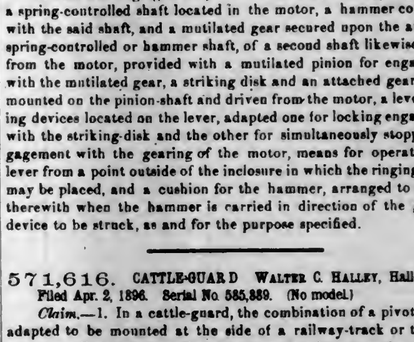
4. In a planter, the combination with a shank, of a grooved cross-bar, a series of stocks adjustably held on the grooved cross-bar, a spade fixed to each stock, a shoe pivotally mounted on each stock, a trip-bar connected with the shoes, a spring pressing the trip-bar, a foot connected to the trip-bar, and a latch moving with and holding the cross-bar, substantially as described.

5. In a planter, the combination of a shank, a plurality of stocks rigidly carried by the shank, a spade fixed to each stock, a channel-shaped shoe pivoted to each stock and respectively capable of movement to receive the shoes, a trip-bar rigidly connecting the shoes, a foot fixed to the trip-bar, a spring pressing the trip-bar, and means for removably holding the trip-bar against the tendency of the spring, substantially as described.

571,615. CLOCK STRIKING MECHANISM. HENRY HALL, Portsmouth, Ohio. Filed May 19, 1896. Serial No. 592,127. (No model.)

Claim.—1. In a bell-ringing device, a clock-motor, a shaft driven from said motor and provided with a mutilated pinion, a spring-controlled shaft, a hammer operated by said spring-controlled shaft, and a mutilated gear on the said spring-controlled shaft and meshing with the teeth of the said mutilated pinion, as and for the purpose specified.

2. In a bell-ringing device, a clock-motor, a shaft driven from the said motor and provided with an attached mutilated pinion, a spring-controlled shaft having a mutilated gear meshing with the teeth of the mutilated pinion, a hammer attached to the mutilated gear, a striking-disk, a locking device for the said disk, and a gear connected with the said disk, loosely mounted on the shaft carrying the mutilated pinion and operated also from the clock-motor, as and for the purpose set forth.



3. In a bell-ringing device, a clock-motor, a shaft driven from the said motor and provided with an attached mutilated pinion, a spring-controlled shaft having a mutilated gear meshing with the teeth of the mutilated pinion, a hammer attached to the mutilated gear, a striking-disk, a locking device for the said disk, a gear connected with the said disk, loosely mounted on the shaft carrying the mutilated pinion and operated also from the clock-motor, a lever, and means for operating the said lever from the exterior of the clock mechanism, the said lever being connected with the locking device for the striking-disk and the disk being provided with a recess to receive the said locking device, as and for the purpose specified.

4. In a bell-ringing device, the combination with a spring-motor having its escapement-shaft provided with a projecting finger or spur, and a striking-disk provided with a recess in its periphery, of a lever fulcrumed upon one of the casing-plates of the motor, a locking-arm at one end of the said lever and arranged to enter the recess in the striking-disk to lock the same, and a second locking-arm projecting from the lever and having its free end extending through an opening in the casing-plate adjacent to the escapement shaft, the said locking-arm being arranged to be moved in the path of the finger or spur carried by the escapement-shaft when the striking-disk is locked, as and for the purpose specified.

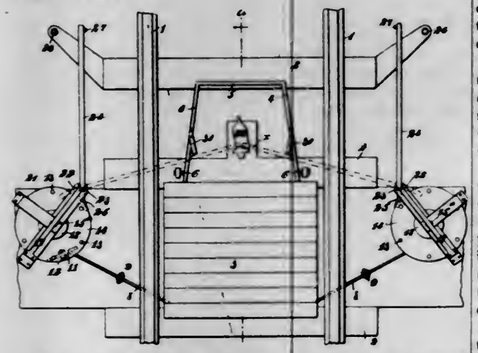
5. In a bell-ringing device, the combination, with a spring-motor, a spring-controlled shaft located in the motor, a hammer connected with the said shaft, and a mutilated gear secured upon the aforesaid spring-controlled or hammer shaft, of a second shaft likewise driven from the motor, provided with a mutilated pinion for engagement with the mutilated gear, a striking-disk, and an attached gear loosely mounted on the pinion-shaft and driven from the motor, a lever, and locking devices located on the lever and adapted one for locking engagement with the striking-disk and the other for simultaneously stopping engagement with the gearing of the motor, as and for the purpose specified.

6. In a bell-ringing device, the combination, with a spring-motor, a spring-controlled shaft located in the motor, a hammer connected with the said shaft, and a mutilated gear secured upon the aforesaid spring-controlled or hammer shaft, of a second shaft likewise driven from the motor, provided with a mutilated pinion for engagement with the mutilated gear, a striking disk and an attached gear loosely mounted on the pinion-shaft and driven from the motor, a lever, locking devices located on the lever, adapted one for locking engagement with the striking-disk and the other for simultaneously stopping engagement with the gearing of the motor, means for operating the lever from a point outside of the inclosure in which the ringing device may be placed, and a cushion for the hammer, arranged to contact therewith when the hammer is carried in direction of the gong or device to be struck, as and for the purpose specified.

571,616. CATTLE-GUARD. WALTER C. HALLEY, Halley, Ark. Filed Apr. 2, 1896. Serial No. 585,889. (No model.)

Claim.—1. In a cattle-guard, the combination of a pivoted gate adapted to be mounted at the side of a railway-track or the like, means tending to swing the gate transversely across the track, a spring, a wheel actuated from the spring and provided with means to

open the gate, and a tilting device to be actuated by an animal passing along the track, and arranged to control the said wheel, substantially as set forth.



2. In a cattle-guard, the combination of a pivoted gate adapted to be mounted at the side of a railway-track or the like, means tending to swing the gate transversely across the track, a wheel having driving mechanism and provided with means to open the gate, and a tilting device to be actuated by an animal passing along the track, to control the movement of said wheel, substantially as set forth.

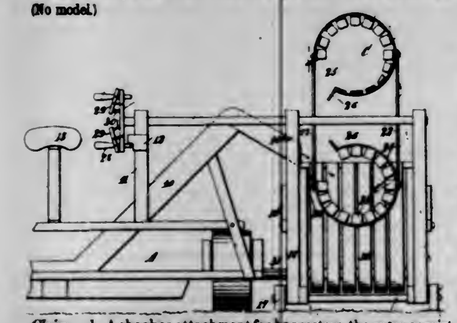
3. In a cattle-guard, the combination of a pivoted gate adapted to be mounted at the side of a railway-track or the like, means tending to swing the gate transversely across the track, means to hold the gate open, a tilting device to be actuated by an animal passing along the track, and arranged to release the gate, and a figure arranged adjacent to the tilting device and provided with a cartridge-chamber and a firing-pin to be engaged by the gate when swung transversely across the track, substantially as set forth.

4. In a cattle-guard, the combination of a pivoted gate adapted to be mounted at the side of a railway-track or the like, means tending to swing the gate transversely across the track, a rotative spring-actuated wheel, pins on the wheel, an ear on the gate to be engaged by the pins, said pins being arranged to engage the car on the gate when the wheel is turned to open the gate, and a tilting device adapted to be actuated by an animal passing along the track, and arranged to control said wheel, substantially as set forth.

5. In a cattle-guard, the combination of a pivoted gate adapted to be mounted at the side of a railway-track or the like, means tending to swing the gate transversely across the track, a rotative spring-actuated wheel having a series of pins to be engaged by the stop to hold the wheel against turning, an ear on the gate to be engaged by said pins when the wheel is turned, whereby the gate is opened, and a tilting device arranged to be actuated by an animal passing along the track, and arranged to control the said wheel, substantially as set forth.

6. In a cattle-guard for railways, a gate movable over and from the railway, a spring tending to throw the gate over the railway, a pivoted disk normally restraining the gate, a pallet-lever controlling the disk, and means for tripping the pallet-lever, substantially as described.

571,617. SHOCKER ATTACHMENT FOR HARVESTERS. MARY R. HUBER, Marysville, Kans. Filed Dec. 10, 1895. Serial No. 571,656. (No model.)



Claim.—1. A shocker attachment for harvesters, the same consisting of a car or truck adapted for attachment to a harvester, uprights secured at the rear end of the truck, a shaft journaled in the said uprights, a locking device for the shaft, arms projected from opposite sides of the shaft, the end of one arm facing to the rear and the other facing to the front of the truck, and a receptacle secured to an end portion of each arm, each receptacle being provided with one open end and an opening in its side, the side opening being adapted to receive sheaves of grain which find an exit through the open end of the receptacles, as and for the purpose specified.

2. The combination with a harvester, of a truck connected to move with the same, a shaft mounted transversely in the truck and extending to the harvester, arms carried by the shaft, and shock-receptacles carried by the arms, each shock-receptacle having an opening in its side and being capable of delivering the shock from one end, substantially as described.

3. The combination with a harvester, of a truck connected to move with the same, the truck having two standards, a transversely-extending shaft journaled in the standards and extending to the harvester, a cross-bar connected to the inner end of the shaft, two spring-pressed pins carried by the cross-bar and capable of alternately locking with the harvester, arms carried by the outer end of the shaft and between the standards of the truck, and shock-receptacles carried by the arms and capable of being moved into juxtaposition with the discharge-chute of the harvester, substantially as described.

4. A shocker attachment for harvesters, the attachment having a truck capable of connection with the harvester, a shaft mounted on the truck, a cross-bar fixed to the inner end of the shaft, a spring-pressed pin carried by the cross bar and capable of locking with the harvester, a shock-receptacle, and means projecting from the shaft by which means the shock-receptacle is carried, the shock-receptacle being movable into juxtaposition with the discharge-chute of the harvester, substantially as described.

5. A harvester attachment having a wheeled truck adapted to be connected with and move alongside of the harvester, a shaft revolubly mounted in the truck and extending over the harvester, means by which the shaft may be temporarily locked with the harvester, and a shock-receptacle carried by the shaft and receiving the shocks from the harvester, the shock-receptacle turning with the shaft to drop the shocks upon the ground, substantially as described.

571,618. ELASTIC BED-PLATE. PAUL KNOCH, Adlershof, Germany, assignor to Heinrich Phillipp Knoch, same place. Filed Sept. 6, 1895. Serial No. 562,018. (No model.)



Claim.—1. A supporting-plate consisting of a yielding absorbent material having a surface impregnated with a hardening substance, the hardened substance extending partly into the plate and leaving the remainder of the plate in its original yielding form, substantially as described.

2. A supporting-plate formed of yielding material having one surface impregnated with a hardened substance, the hardening substance extending partly into the plate and leaving the remainder of the plate in its original yielding form, substantially as described.

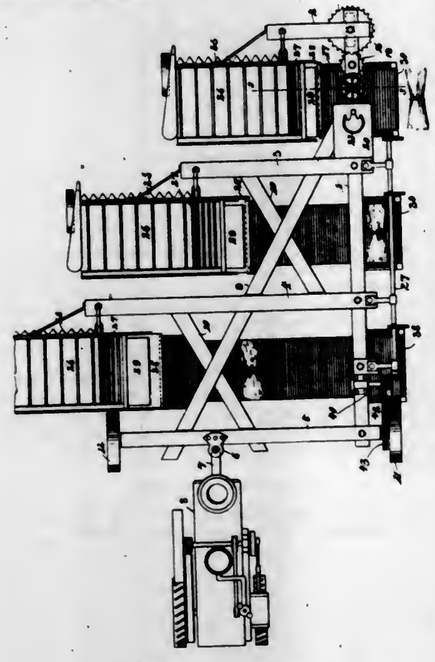
3. A method of forming supporting-plates, the method consisting in first impregnating a yielding plate with a solution of india-rubber, the solution being permitted to extend partly into the plate and second in vulcanizing the solution of india-rubber so as to form a hardened surface for the plate and so as to leave the remainder of the plate in its original yielding form, substantially as described.

571,619. HARVESTER AND BINDER. ROBERT P. LOCKHART, Patoka, Ind. Filed May 29, 1896. Serial No. 593,562. (No model.)

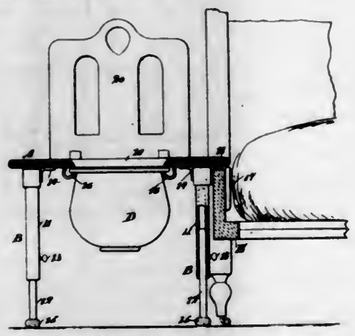
Claim.—1. A harvester and binder, comprising a frame having a longitudinal beam and transverse beams successively increasing in length, reapers attached to the frame and successively increasing in lateral projection, a binder-table for each reaper, conveyers for carrying the cut grain to the tables, endless belts for receiving the bound grain from the tables, means for operating the belts, and a traction-engine connected to the rear of the machine, substantially as specified.

2. A harvester and binder, comprising a main frame, supporting-wheels for the same, a steering-wheel, a steering-shaft, gear connections between the steering shaft and wheel, reapers supported by the frame and successively increasing in lateral projection, binder-tables for receiving cut grain from the reapers, carrier-belts for receiving bundled grain from the tables, a shaft extended longitudinally of the machine, means for rotating said shaft from the rear wheels, sprocket-wheels on the shaft, and sprocket-chains extended therefrom to sprocket-wheels on the journals of the carrier-belts, substantially as specified.

3. A harvesting apparatus, having a frame, and a series of harvesting and binding machines carried by the frame, the cutting mechanism and platforms of each machine being out of longitudinal alinement, and the conveyers of each machine being graduated in length so that the sheaves from the several machines may be delivered in alinement, substantially as described.



571,620. COMMODE. CORA G. MANN, Brooklyn, N. Y. Filed Apr. 10, 1896. Serial No. 586,965. (No model.)



Claim.—1. In a commode, the combination, with a seat, of telescopic supports connected with the seat, a clamp or hanger attached to the seat, and having hook members adapted to receive the flange of a vessel, and a locking device connected with the said clamp or hanger, as and for the purpose specified.

2. In a commode, a seat, telescopic supports having a hinged connection with the seat and a clamp or hanger consisting of a series of connected substantially horizontally-located hooks placed around the opening in the seat, and arranged to receive the flange of the vessel and a spring-latch connecting the ends of said clamp or hanger, as and for the purpose specified.

3. In a commode, the combination, with a seat and its opening, the said seat being provided with sockets having undercut sections and also with a support for a vessel beneath the opening therein, of telescopic legs having hinged connection with the seat, a locking device for the said legs, and a back having angular foot-pieces secured thereto and adapted to be received in said sockets, the horizontal portions thereof entering said undercut sections, as and for the purpose specified.

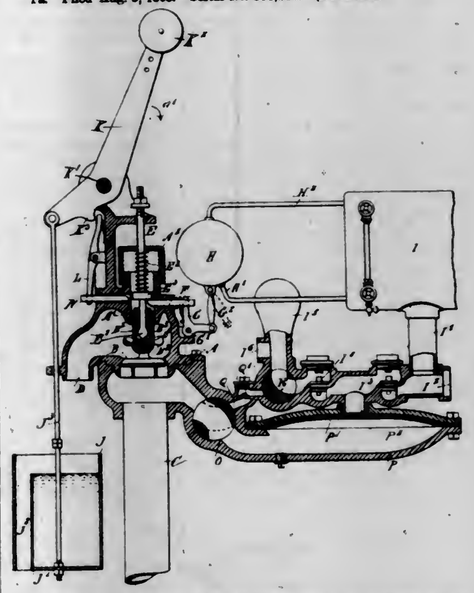
4. In a commode, the combination, with a seat, and telescopic legs connected with the seat, of arms hinged to the said seat and arranged for engagement with the side boards of a bed, and means for locking the members of the legs in predetermined position, substantially as set forth.

5. In a commode, the combination, with a seat, of locking-arms having hinged engagement with the seat and adapted for engagement with the side boards of a bed, telescopic legs having a hinged connection with the said seat, locking devices for the said legs, and a back adjustably and detachably connected to the said seat, as and for the purpose specified.

6. In a commode, the combination, with the seat and the opening of the same, of a hanger or clamp constructed of a spring material such as wire, the said material being formed in a series of substantially horizontally located hooks, and a latch pivotally connected with one end of the said hanger or clamp and adapted for engagement with the other end of the same, substantially as and for the purpose set forth.

7. In a commode, the combination with a seat, of a clamp or hanger consisting of a series of connected horizontally-disposed hooks placed around the opening in said seat and arranged to receive the flange of a vessel, a latch pivotally connected with one end of said hanger or clamp and adapted for engagement with the other end thereof, legs comprising a tubular member having a hinged connection with said seat, rod members having sliding action in said tubular members and a locking device for holding the rod members in the tubular members in predetermined positions, as set forth.

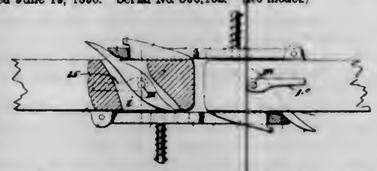
571,621. HYDRAULIC ENGINE. HORACE D. PAYNE, Thompson, Pa. Filed Aug. 5, 1895. Serial No. 558,217. (No model.)



Claim.—1. A hydraulic engine comprising a valve-casing having an inlet and outlet, a valve adapted to be seated in said casing by the water-pressure, a stem extended upward from the valve, a bolt movable transversely in the casing and adapted to engage with the valve-stem to hold the valve open, a pivoted lever for moving said bolt out of engagement with the valve-stem, an overflow vessel having connection with the lever and adapted to receive an overflow from the valve-casing, a bolt adapted to hold the valve in a closed position, and a water-receiver having connection with said bolt, substantially as specified.

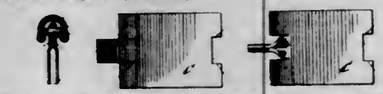
2. A hydraulic engine comprising a valve-casing, a valve in said casing, a stem extended from the valve, a weighted lever pivoted to a bracket on the valve-casing, a pivoted lever adapted to be moved in one direction by the weighted lever, a bolt connected to the pivoted lever and adapted for engagement with the valve-stem to hold the valve in an open position and a vessel connected to the weighted lever and adapted to receive water discharged from the valve-casing, substantially as specified.

571,622. CAR-COUPLING. JUNIUS L. PLEDGER, Pelham, Ala. Filed June 19, 1896. Serial No. 596,162. (No model.)



Claim.—The combination with a laterally-slotted draw-head having a rearwardly-sloped latch-block projected at one side thereof, a tripping-dog pivoted in said slot and having sloped ends that will laterally project when the dog is rocked, and a rock-arm on the pivot of the dog, of an elongated and longitudinally-slotted link pivoted on the side of the draw-head by its rear end oppositely from the latch-block, a stud projected from the draw-head through a slot in the link, and a spring on said stud adapted to press the link toward the draw-head, substantially as described.

571,623. UMBRELLA RIB AND STRETCHER. DANIEL H. REDMOND and CHALKLEY B. BALDWIN, Philadelphia, Pa. Filed Mar. 9, 1896. Serial No. 582,358. (No model.)

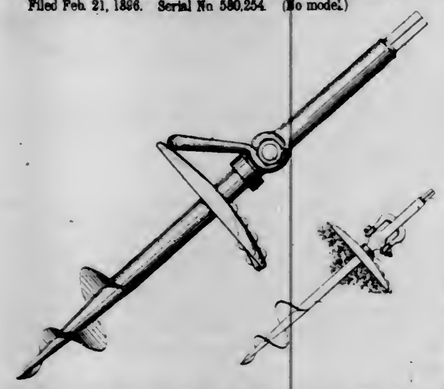


Claim.—1. The combination of a grooved or recessed rib, the stretcher projecting into the recess of the rib, and the clip surrounding the rib and having its marginal or edge portions return bent along the inner surface of the rib so as to embrace the edges of the same, said clip being formed with an integral pivot bent from one edge of the clip and projecting transversely through the recess of the rib and through the stretcher, the free end of the pivot engaging the edge of the opposite inturned marginal portion of the clip, and the pivot being to the inside of the plane of the rib's edges, substantially as described.

2. The combination of a grooved or recessed rib, the stretcher projecting into the recess of the rib, and the clip surrounding the rib and formed at one edge with a notch and at the other edge with a pivot projecting transversely through the recess of the rib, and engaging the notch at the other edge of the clip, said pivot passing through the stretcher, substantially as described.

3. The herein-described blank for forming clips having integral pivots and adapted to connect umbrella ribs with stretchers, said blank consisting of an approximately rectangular piece of sheet metal having a notch at one edge and a projecting tongue at the opposite edge, the said blank being formed with slits or cuts extending a predetermined distance into the body of the material and in line with the side edges of the projecting tongue, as and for the purpose set forth.

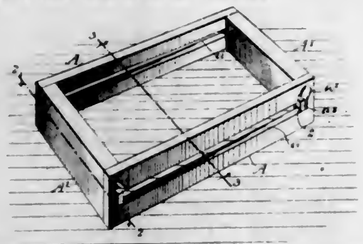
571,624. SHORE-ANCHOR. JOHN J. RYAN, Memphis, Tenn. Filed Feb. 21, 1896. Serial No. 580,254. (No model.)



Claim.—1. A shore anchor adapted to have one of its ends forced into the ground, a collar or flange on the post, and a disk movably mounted on the post below the collar, the said disk having a lateral opening whereby it may be moved laterally from the post, substantially as specified.

2. A shore anchor, comprising an anchor-post having a screw portion and a collar or flange, a disk movable on the post, between the screw portion and the collar or flange, and having an outwardly-opening slot, and a closing-plate for said slot, substantially as specified.

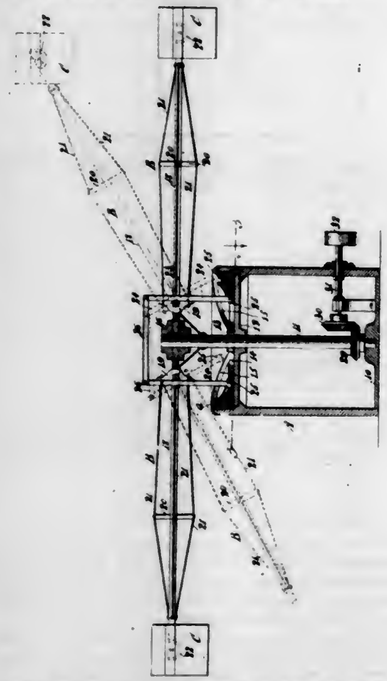
571,625. TYPE-BINDER. JOSEPH SEIDE, New York, N. Y. Filed Mar. 13, 1896. Serial No. 583,096. (No model.)



Claim.—1. A type-binder comprising longitudinally-channeled side bars, the lower wall and an end wall of each channel being beveled and each channel having an upwardly and outwardly extended opening at its end, an end bar having engagement with said side bars and another end wall having lugs movable in the channels of the side bars, the said lugs having projections to engage over the beveled portions, substantially as specified.

2. A type-binder, comprising longitudinally-channeled side bars having a beveled lower wall and a beveled end wall, an upwardly and outwardly exteoded opening from the ends of the channel, and end bars having lugs adapted to engage in the channels of the side bars, and having projections to engage the beveled portions, substantially as specified.

571,626. MERRY-GO-ROUND. WILLIAM X. SIMPSON, Aurora, Ill. Filed Nov. 30, 1895. Serial No. 570,597. (No model.)



Claim.—1. In a merry-go-round or like machine, a vertically-arranged shaft mounted to rotate, means for driving the same, carrying-arms pivoted in supports connected with the said shaft, the said arms being arranged in pairs, a bed surrounding the shaft and having its upper surface inclined or beveled and provided with cam grooves or recesses having substantially the same inclination as the bed, a guide-bar secured to each carrying-arm near its pivot-point and adapted to travel at its lower end in the inclined cam-grooves of the bed, a connection between the guide-bars of each pair of carrying-arms, and cars pivotally connected with the outer ends of said carrying-arms, as and for the purpose specified.

2. In a merry-go-round or like machine, a supporting-frame, a rotating shaft mounted in said frame and extending above the top of the same, a bed at the top of the frame and surrounding the said shaft, the said bed having an inclined upper face and a central opening and provided with cam-grooves in its upper face following the inclination thereof and extending from its inner margin to a predetermined outer point, carrying-arms pivotally attached to the rotating shaft in pairs, a guide-bar secured to each carrying-arm near its pivot-point being provided with rollers adapted to enter the cam-grooves in the upper face of the bed, and a link connection between the guide-bars of each pair of carrying-arms, as and for the purpose set forth.

3. In a merry go-round or like machine, the combination with a vertical shaft, journals for the same, a driving mechanism connected with the shaft, and a bed supported around the shaft having an inclined upper face and a central opening, the said bed being provided with substantially segmental cam grooves produced in its inclined face following the direction thereof and extending from its inner margin outward, of a sleeve or hub secured to the upper end of said shaft, arms radiating from the said hub, carrying-arms pivoted at their inner ends in the said hub-arms, the said carrying-arms being arranged in pairs and balanced as to weight, guide-bars secured to the carrying-arms, the guide-bars of each pair of arms having a link connection, and each guide-bar being adapted to travel at its lower end in the cam-grooves of the bed, as and for the purpose specified.

4. In a merry-go-round or like machine, the combination with a supporting tower, a drive-shaft mounted in said tower, a driving mechanism connected with the said shaft, and a bed supported on said tower and arranged around the shaft, the said bed having a central circular opening and an inclined outer face, the inclination being upward from its inner margin, the said inclined face of the bed being provided with a series of cam-grooves, each groove comprising two members uniting near the outer periphery of the bed, the grooves commencing at the inner margin thereof, of a hub or sleeve secured on the upper end of the said shaft, arms arranged in pairs and radiating from the said hub, carrying-arms each provided with a shoe at its inner end pivotally connected with a pair of hub-arms, the said carrying arms being adapted to be rotated by the said shaft, guide-arms attached to the said carrying-arms and extending downward therefrom, the lower ends of said guide-arms being provided with friction-rollers adapted to enter the cam-grooves of the bed, and a link connection between the guide-bars of each pair of carrying-arms, as and for the purpose specified.

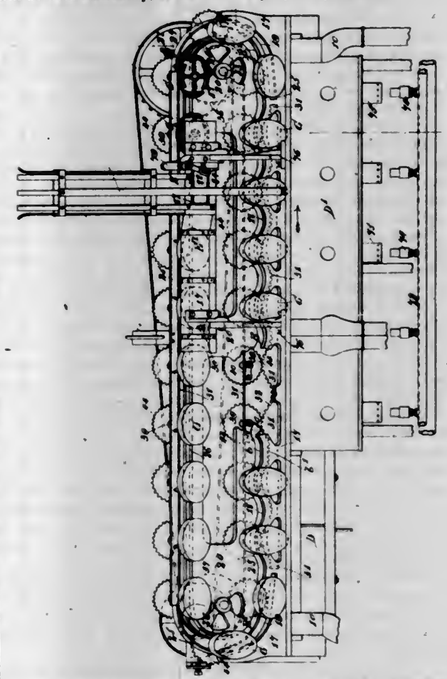
5. In a merry-go-round, the combination with a supporting-tower, a partition arranged near the top of said tower, a vertical shaft mounted at its lower end in the bottom of said tower and near its upper end in the said partition, the said shaft extending above the top of the tower, and a driving mechanism connected with the said shaft, of a bed located on the upper face of the partition and surrounding the said shaft, the said bed being provided with an inclined upper surface having cam-grooves formed therein, the said grooves being inclined correspondingly to the inclination of the bed, a hub on the upper end of the shaft, arms arranged in pairs and radiating from the said hub, carrying-arms each provided with a shoe at its inner end pivotally connected with a pair of hub-arms, and guide-bars connected with the carrying-arms and each provided with a friction-roller at its lower end adapted to travel in the cam-grooves of the bed, the guide-bars of each pair of arms having a link connection, as and for the purpose specified.

571,627. CAN-SOLDERING MACHINE. NELSON TROYER, Astoria, Oreg., assignor of one-half to Frederick P. Kendall, same place. Filed Sept. 23, 1895. Serial No. 563,401. (No model.)

Claim.—1. In a can-soldering machine, an undulating rack, a guide-channel near the rack shaped correspondingly to the rack, a can-holder the support of which moves in the said channel, and a pinion carried by the support, being adapted for engagement with the aforesaid rack, and a carrier for the shaft, as and for the purpose specified.

2. In a can-soldering machine, a solder or flux bath, an undulating rack, a correspondingly-shaped guide-channel located above the said rack, a shaft, a carrier for the same, the travel of the shaft being regulated by the shape of the said channel, a pinion secured to the shaft and engaging with the said rack, whereby the shaft when drawn through the guide-channel will be rotated by the engagement of the pinion with the said rack, and a chuck adapted to receive a can and arranged to pass over the said solder-bath, substantially as described.

3. In a can-soldering machine, a frame having a serpentine guide-channel therein, guide-rails attached to the frame and located above the said channel, the ends of the guide-rails being curved to meet the said channel, an undulating rack located beneath the undulating channel, conforming thereto, a shaft held to travel in the said guide-channel, adapted to receive a can-holder, a pinion carried by the shaft and engaging with the said rack, a carrier with which the shaft is connected, and a cam carried by the shaft and adapted for engagement with the guide-rails, whereby when such contact is obtained the shaft will be held stationary, as and for the purpose specified.



4. In a can-soldering machine, a can-holding shaft, an undulating guide-channel for the same, guide-rails located above the undulating channel, being parallel for a given distance in their length, the ends of the said rails being curved to meet the extremities of the said undulating channel and conform thereto, a rack terminating inside of the lower point of the guide-rails, a pinion secured to the said shaft, adapted for engagement with the said rack, and a cam secured to the shaft, shaped to pass between the guide-rails, the said cam serving to prevent the rotation of the shaft while between the said guide-rails, as and for the purpose specified.

5. In a can-soldering machine, a can-holding shaft, an undulating guide for the same, a correspondingly-shaped rack adjacent to the guide, like curved sections being in registry with the said rack, an endless conveyer, a link connection between the conveyer and the shaft, and a pinion carried by the shaft and adapted for engagement with the aforesaid rack, as and for the purpose specified.

6. In a can-soldering machine, a frame provided with a guide-channel, a rack adjacent to said channel, a can holding shaft extending through the said channel and provided with a bearing fitted to engage with the opposite walls of the channel, a mechanism substantially as described, for drawing the shaft through the channel, a pinion secured upon the shaft and engaging with the rack, a cam-head attached to the said shaft, a chuck provided with spring-controlled jaws and operated from the said cam-head, and trips adapted to operate the said cam-head during its travel in the machine, as and for the purpose specified.

7. In a can-soldering machine, the combination with a frame having a guide-channel thereon, a stationary rack, an endless carrying-belt and means for driving the same, of guide-rails leading to and from the guide channel, can holding shafts having bearings thereon fitted to and adapted to slide in said channel, cams secured to the shafts, adapted to travel in engagement with the guide-rails, and pinions secured to the shafts and adapted for engagement with the rack, substantially as and for the purpose specified.

8. In a can-soldering machine, the combination with a frame having an undulating channel thereon, and inclined end channels communicating with the undulating channel, and guide-rails independent of the undulating channel but partially surrounding the inclined channels, of can-holding shafts having fixed bearings, adapted to travel in said channels, cams secured to the shafts, adapted to engage

with the guide-rails, an undulating rack located adjacent to the undulating channels the undulations of both corresponding, a carrier for the shafts, and pinions secured upon the shafts, engaging with said rack, substantially as shown and described.

9. In a can-soldering machine, the combination with a frame having a guide-channel thereon, guide-rails leading to and from said channel, trip devices located one near each guide-rail and a rack adjacent to said channel, of an endless carrier, shafts attached to the carrier, extending through and guided by said channel, cams secured upon the shaft, adapted for engagement with the guide-rails, pinions carried by the shafts and engaging with said rack, and chucks carried by the shafts, being opened or closed by the said trip devices, substantially as described.

10. In a can-soldering machine, a pivoted auxiliary frame, an adjusting device whereby the auxiliary frame is given an inclination, a carrier located in the frame, shafts pivotally connected with the said carrier, being given lateral movement thereby, a rack-and-pinion mechanism for rotating the said shaft, chucks adapted to receive cans and carried by the said shafts, the said chucks being provided with spring-controlled clamps, a cam-head arranged to open and close the said clamps, trip devices attached to the frame, and arms projected from the said cam-head, adapted to be engaged by the said trip devices for opening and closing the chucks, substantially as described.

11. In a can-soldering machine, the combination, with a frame provided with an undulating guide-channel, devices for adjusting the frame to an inclined position, an endless carrier, shafts connected with the said carrier, having lateral movement directed by the said guide-channel, and an undulating rack located beneath and corresponding to the undulating guide-channel, of a solder or flux bath provided with a track extending over the contents of the bath, chucks secured to the said shaft and adapted to receive cans, the latter being adapted to travel upon the track of the bath, a gage for holding the cans upon the chucks, pinions attached to the said shafts and engaging with the said racks, guide-rails located above the undulating channel, the ends of the rails extending downward to meet the channels and terminating at the ends of the rack, and cams secured to the said shafts, adapted to travel between and engage with the guide-rails, substantially as shown and described.

12. In a can-soldering machine, a chuck, the same consisting of a plate and a cam-head having movement on the plate, spring controlled clamps carried by the said plate, and a slide operating said clamps and operated from said cam-head, as and for the purpose specified.

13. In a can-soldering machine, a chuck or holder for cans consisting of a plate, spring-controlled clamps movably mounted on the said plates, slides adapted to operate the said clamps and connected therewith, pins projected from the slides, and a cam-head provided with a cam-race adapted to receive the pins of the slides, the said race having recesses therein in number corresponding to the number of the slides, as and for the purpose specified.

14. In a can-soldering machine, a chuck or can-holder consisting of a plate of substantially-corresponding contour to that of the can it is adapted to carry, spring-controlled clamps located at the margins of the plate, shanks connected with the said clamps, slides connected with said shanks, a cam-head mounted to turn on the plate and provided with a cam-race having recesses therein, pins projected from the slides, entering the said race, and trip-arms extending from the exterior of the said cam head, as and for the purpose set forth.

15. In a can-soldering machine, a flanged table contracted at its delivery end and having the flange at said end inclined, a hopper arranged to feed cans to the table, a door hinged at the table below the hopper and adapted to have movement over the table, a chuck, a carrier for the same, a spring-controlled shaft provided with an arm connected with the door, and a second arm adapted to rock the said shaft and adapted to be lifted by the chuck-carrier, a support for the chuck in its passage beneath the said second arm, a conveyer for the chuck-carrier, and a trip device adapted to engage with the chuck and close the same upon the can at the contracted end of the said table, as and for the purpose set forth.

16. In a can-soldering machine, the combination with a frame, of an undulatory guide, a correspondingly-formed rack, a belt, and a chuck connected with the belt and capable of moving independently of the belt, the chuck being controlled by the guide and operated by the rack, substantially as described.

17. In a can-soldering machine, the combination with a frame, of a belt, a shaft having loose connection with the belt and capable of moving independently of the belt, a chuck carried by the shaft, an undulatory guide controlling the shaft, and an undulatory rack with which the shaft cooperates, substantially as described.

18. In a can-soldering machine, the combination with a main frame, of an auxiliary frame adjustably carried on the main frame, an endless oval-shaped guide supported on the auxiliary frame, an undulatory rack adjacent to one run of the guide, a belt, a chuck connected with the belt, and means for operating the chuck by engagement with the rack, substantially as described.

19. In a can-soldering machine, the combination with a frame, of a guide, a chuck controlled by the guide, means for moving the chuck, a shaft having two crank-arms, one of said crank-arms being engaged by a part moving with the chuck, and a pivotally-mounted door for controlling the feed of the cans, said door having sliding connection with and being actuated by the remaining arm of the shaft, substantially as described.

20. In a can-soldering machine, the combination with a frame, of a guide, a belt, a shaft moving in the guide and connected to the belt, a chuck, a rock-shaft, an arm carried by the rock-shaft and adapted to be engaged by the shaft which carries the chuck, a second arm carried by the rock-shaft, and a pivotally-mounted door slidably connected with the second arm, said door controlling the feed of the cans, substantially as described.

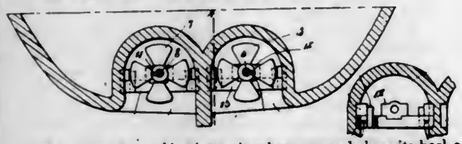
21. In a can-soldering machine, the combination with a frame, of a belt, a can holding chuck connected with and moved by the belt, a table having a portion inclined in relation to the line of movement of the chuck, and means for feeding the cans so that they will be engaged with the inclined portion of the frame, said inclined portion being capable of moving the cans laterally and into engagement with the chuck, substantially as described.

22. In a soldering-machine, the combination with a frame, of an undulatory guide, a correspondingly-undulating rack, a belt, a shaft connected with the belt and wabbled by the guide, a gear-wheel fixed to the shaft and meshing with the rack, and a chuck carried by the shaft, substantially as described.

23. In a can-soldering machine, the combination with a frame having a detent, of a chuck and means for moving the chuck into engagement with the detent, the chuck comprising two movable clamps, and also comprising a cam-head connected with the clamps and adapted to be engaged by the detent to operate the clamps, substantially as described.

24. In a can-soldering machine, the combination with a frame having a detent, of a chuck and means for moving the chuck into engagement with the detent, the chuck consisting of two clamps, a cam-head having eccentric and sliding connection with the clamps, and a pin projecting from the head and capable of being moved into engagement with the detent, substantially as described.

571,628. PROPELLER. WILLIAM M. TUCKER, Nelsonpoint, Cal. Filed Aug. 3, 1896. Serial No. 601,516. (No model.)



Claim.—1. A vessel having a chamber arranged along its keel, a propeller-shaft extended longitudinally through said chamber, a number of propeller-wheels on said shaft, and supporting-bars for said shaft having their ends removably engaged in recesses in the side walls of said chamber, substantially as specified.

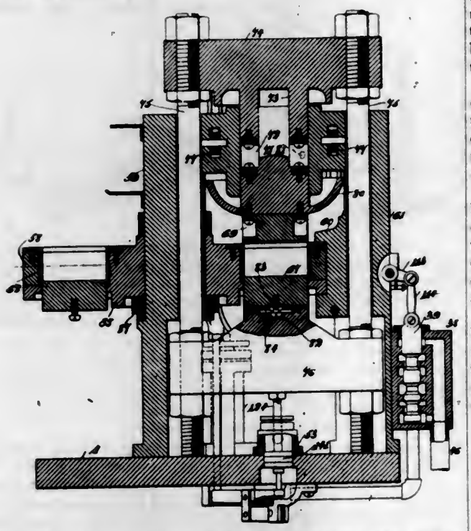
2. A vessel having parallel chambers arranged along its keel, an outlet-opening at the bottom, a propeller-shaft arranged longitudinally in each chamber, transverse bars for supporting said shafts, the said transverse bars having their ends fitted into L-shaped recesses formed in the opposite walls of the chamber, keys for securing said bars in the recesses, and propeller-wheels on said shafts, substantially as specified.

3. A vessel, comprising a hull having parallel longitudinal chambers formed along its keel, L-shaped recesses formed in the opposite walls of each chamber, transverse bars adapted to engage their ends in said recesses, the said bars having transverse mortises, a key having a shank portion to engage through a mortise and having a head portion to engage in a recess, a wedge-shaped key for securing the first-named key in position, propeller-shafts supported on said transverse bars, and propeller-wheels removably secured on said shafts, substantially as specified.

571,629. BRICK-MACHINE. HENRY B. WHITEHEAD, Memphis, Tenn., assignor of one-half to John J. Bishop, same place. Filed Feb. 12, 1896. Serial No. 578,968. (No model.)

Claim.—1. A brick-machine, comprising a mold, dies operating therein and having air-outlets, a cylinder receiving pressure by which said dies are operated, an extractor-cylinder, and means for forcing a high pressure only into both the pressure-cylinder and extractor-cylinder, and causing an intermittent action of the dies and thus allowing air to escape, substantially as specified.

2. In a brick-forming machine operated by hydraulic pressure, a pressure-controller, comprising a valve-casing having a series of receiving and exhaust chambers one above another formed by perforated partitions in the casing, a piston-valve movable through said perforations, having one end enlarged so as to be self-moving by hydraulic pressure in one direction to instantly release the pressing devices and reverse their movement, high and low pressure chambers in said casing and communicating with certain of said first-named chambers, and a valve-controlled opening between the said two chambers the valve controlling said opening being independent of the piston-valve, substantially as set forth.



3. A brick-machine operating pump, comprising high and low pressure cylinders formed in a single casting, a receiving-chamber in said casting below the cylinders, puppet-valve-controlled openings between the receiving-chambers and the cylinders, discharge-chambers above the cylinders, puppet-valve-controlled openings between said cylinders and the discharge-chambers, plungers operating in said cylinders, and rods connecting the cross-heads of said plungers, whereby they may move in unison in opposite directions, substantially as specified.

4. A pump for operating a brick machine, comprising high and low pressure cylinders formed in a single casting, air-chambers or safety-valves communicating with the cylinders, a receiving-chamber in said casting having valve-controlled communication with the cylinders, plungers operating in said cylinders, a cross-head on each of the plungers, connecting-rods between each of the plungers, a driving-shaft having a bearing in a block arranged between the two cylinders, eccentrics on said driving-shaft, and eccentric-rods extended from said eccentrics to a connection with the cross-head of one of the plungers, substantially as specified.

5. In a brick-machine operated by hydraulic pressure, a controlling-valve into which pressure is discharged and comprising a valve-casing having high and low pressure chambers and having a valve-controlled communication whereby the low pressure may mingle with the high pressure, a piston-valve movable in chambers having communication with the first-named chambers, a pressure-cylinder having oppositely-moving plungers therein for operating upper and lower dies, a connection between said cylinder and the piston-valve casing, a cylinder having communication with a valve-casing, a piston operated in said cylinder, a rotary table carrying molds, connections between said table and the piston in the last-named cylinder for rotating said table, and a table-locking device operated from said piston, substantially as specified.

6. A brick-machine, comprising a rotary table carrying molds, a post upon which said table is mounted, a notched flange on the lower side of said table, a ring mounted on the post within the circumference of the flange, a dog carried by said ring and adapted to engage in the notches of the flange, a cylinder arranged below the table, a piston operating therein by hydraulic pressure, a connection between said piston and the ring, whereby a step-by-step rotary motion may be imparted to the table a bell-crank lever operated by the piston, and a rod extended from the bell-crank lever and adapted to engage the dog to release it from the table, substantially as specified.

7. A brick-machine, comprising a rotary table carrying molds, lower dies for the molds, a cross-head operated by hydraulic pressure for moving said lower die upward, and a clamping device between said lower die and the cross-head consisting of a headed lug on the die and spring-yielding bolts on the cross-head, whereby said die may be moved downward on the downward movement of the cross-head, substantially as specified.

8. A brick-machine, comprising a die-supporting cross-head, a rotary table, a piston operated by hydraulic pressure, for rotating said table, a locking device for said table, comprising a longitudinally-movable bolt, means whereby said bolt may be moved into locking position by a movement of the table-operating piston, a transversely-movable bolt for locking the first-named bolt, and a connection between the transversely-movable bolt and the die-supporting cross-head, whereby the said bolt may be moved out of engagement with the first-named bolt, substantially as specified.

9. A brick-machine, comprising a rotary table carrying molds, dies movable in said molds, a low-pressure pump for operating the table, a high-pressure pump for operating the dies, and an ejector comprising a cylinder having a piston therein operated in its upward movement from the high-pressure pump and in its downward movement from the low-pressure pump, substantially as specified.

10. In a brick-machine, a rotary table carrying molds, upper and lower dies movable in said molds by hydraulic pressure, an ejector operated by hydraulic pressure, and comprising a head having means for engaging with a projection on the lower die, whereby said lower die may be moved downward in the mold, and means forward of the ejector for moving said lower die upward in its mold, to regulate the amount of clay to be placed therein, substantially as specified.

11. A brick-machine, comprising a rotary table carrying molds, lower dies carried in the molds and movable therein, and a regulator therefor comprising horizontally-extended arms or tracks, and swinging arms for raising the lower die to the plane of the horizontally-disposed arms the said swinging arms being operated by the engagement of the die therewith, substantially as specified.

571,630. PEN OR PENCIL HOLDER. EDWARD G. WICKWIRE, Larned, Kans. Filed May 22, 1896. Serial No. 592,573. (No model.)



Claim.—1. A pen or pencil holder constructed of a single piece of spring-wire bent to form an X-shank, a coil at the upper end of each upper member of the shank, and pins extending downward at the rear of the shank, one from each coil, the wire being also bent upon itself at the lower ends of the lower members of the shank into coils, from the rear of which the wire is carried upward and outward in front of the shank between its lower members, forming a curved clamping tongue, keepers being formed in the lower members of the shank for the reception of the free ends of the pins, as and for the purpose specified.

2. A pencil-holder formed of spring-wire shaped to comprise a shank, at each end of which two coils are formed, a pin extending from each of the two coils at one end of the shank, a keeper adjacent to each of the remaining coils, and a clamping-tongue extended from said remaining coils outward and upward to the vicinity of the first-named coils, substantially as described.

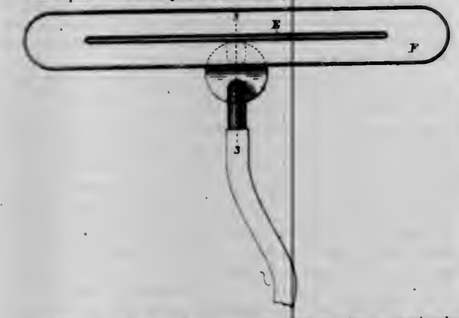
571,631. LAMP-BURNER. FRANK T. WILLIAMS, Meriden, Conn., assignor to the Edward Miller & Company, same place. Filed Nov. 25, 1895. Serial No. 570,085. (No model.)



Claim.—A lamp-burner having a fixed and substantially vertical skirt surrounding the wick-tube, said skirt being perforated to admit air for feeding the burner, a vertically-sliding chimney-gallery mounted on said skirt, an imperforate wind-guard secured to said gallery and

of a materially larger diameter than said skirt to provide for the free entrance of air to the burner, said wind-guard being of a width to substantially cover the perforations in the vertical wall of said skirt when in its normal position, and to extend down to the top rim of said skirt when in its elevated position, said guard being also provided with an opening at one side, substantially as described and for the purpose specified.

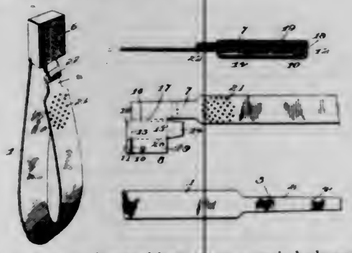
571,632. FLASH-LIGHT APPARATUS. JOSEPH WOLF, Rochester, N. Y., assignor of one-half to John A. Robertson and Albert Mutschler, same place. Filed May 7, 1896. Serial No. 590,566. (No model.)



Claim.—1. In a flash-light apparatus, the powder-reservoir, the adjustable bottom for the same, the air or gas inlet pipe, a powder-exit pipe, a funnel, an igniting device, said inlet and exit pipes communicating directly with the upper surface of the powder and all combined substantially as set forth whereby the powder may be discharged by a blast on its unobstructed surface, and the charge maintained at an approximately constant level, substantially as described.

2. The combination of the reservoir having a removable cap provided with an inlet and an exit, an air or gas inlet pipe, a powder-exit pipe both pipes terminating in the cap, a funnel and an igniting device, and an adjustable bottom, whereby the reservoir can be separated from its cap and pipes, and filled and the pipes and cap replaced, and whereby the powder may be discharged by a blast on its unobstructed surface, and the charge maintained at an approximately constant level, substantially as described.

571,633. SEAL. AUGUST T. ZETTERLUND, Chicago, Ill. Filed Apr. 18, 1896. Serial No. 588,123. (No model.)

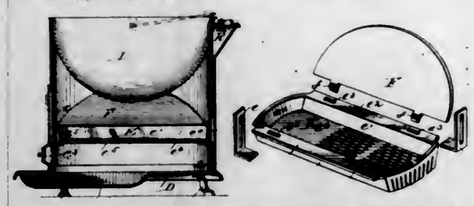


Claim.—1. A car seal comprising a strap or main body portion having one end bent back in substantially parallel relation thereto and having the extremity of said bent portion again bent back to form a spring-tongue which projects toward the end of the seal and is interposed between the said parallel portions of the bent end of the strap, an inclosing case extending around and protecting said tongue, and a flat sleeve at the opposite end of said strap having an internal stop, said sleeve being adapted to be inserted into said case so as to embrace the spring-tongue and interlock therewith, substantially as described.

2. A seal comprising an extended strap having one end bent back substantially parallel to itself and having the extremity of such bent portion folded upon itself to form a spring-tongue which projects toward the end of the strap and lies between the main body of the strap and its folded end portion, a case extending around and inclosing said bent end and tongue and having a closed outer end and an open inner end, and a sleeve at the opposite end of the strap, adapted to be inserted into said case and having an internal stop-shoulder for engaging the spring-tongue, substantially as described.

3. A seal, comprising an extended strap provided adjacent to one end with a lateral flap folded transversely around the end of the strap to form a flat sleeve, said flap being provided with the longitudinal extensions 12 and 14, and the transverse extension 10, the one 14 forming a tongue for closing the rear or inner end of the sleeve, and the extensions 10 and 12 being folded upon themselves and upon the body of the flap to form a rigid and double-thick transverse stop-shoulder at the open end of the sleeve, and a spring tongue or hook at the opposite end of the strap adapted to be inserted in said sleeve and to engage said stop-shoulder, substantially as described.

571,634. AGRICULTURAL BOILER. FREDERICK C. ZUMDAHL and WILLIAM J. ZUMDAHL, Forreston, Ill. Filed Mar. 18, 1896. Serial No. 583,671. (No model.)



Claim.—1. In an agricultural boiler, the combination, with a sheet-iron casing having a door provided with a draft-opening, of a set of slotted lugs adjustably secured to the inside of said casing, a grate resting on the lugs and a pair of wings contacting with said grate and with the sides of the said casing, substantially as described.

2. In an agricultural boiler, the combination, with a sheet-iron casing, of a tongue cut from said casing and extending rearward at an incline, and a strip having a central portion provided with a smoke-opening, and a pair of triangular wings forming sides, said strip being flanged and secured to the tongue and to the casing, whereby a smoke-box is formed, substantially as described.

3. In an agricultural boiler, the combination, with a cylindrical casing having lugs projecting inward, of a tray having a grated bottom and flanges at its sides provided with holes, said tray resting on lugs, and a pair of wings provided with studs which are arranged to enter the holes in the flanges of the grate-tray, the upper ends of said wings resting against the inside of the casing, substantially as described.

4. In an agricultural boiler, the combination, with a casing having a door provided with a draft-opening, of a series of slotted lugs adjustably secured to the inside of the casing, a pan having flanged edges resting on said lugs and provided with holes, said pan being grated at its front end and having a grated bottom at its forward end, and a pair of wings provided with lugs entering the holes in the flanged edges, said wings resting loosely against the inside of the casing, whereby the pan may be adjusted above or below the draft-opening, substantially as described.

571,635. PROCESS OF DECOLORIZING TANNIN EXTRACT. JOHN S. ADRIANCE, New York, N. Y. Filed June 18, 1896. Serial No. 596,056. (No specimens.)

Claim.—1. The herein-described process of removing coloring-matter from extracts containing tannin, which consists in subjecting the said extract to the action of a basic acetate-of-lead solution, whereby a precipitate will be formed containing portions of the coloring-matter mechanically and chemically combined with the lead, as and for the purpose specified.

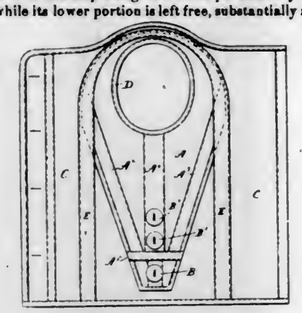
2. The herein-described process of removing coloring-matter from extracts containing tannin, which consists in adding to the liquid extracts certain amounts of a basic acetate-of-lead solution, settling the coloring-matter in the extract thus treated, and finally drawing off the clear liquid, as and for the purpose set forth.

3. The herein-described process of treating liquid extracts containing tannin for the removal of the coloring-matter therefrom, the said process consisting in adding to the said liquid extracts a solution of basic acetate of lead to precipitate the coloring-matter, said solution consisting of acetate of lead, litharge and water, drawing off the clear liquid after the precipitated matters have settled, and finally evaporating the liquid thus freed from coloring-matter, whereby the color of the finished extract will be materially lightened, enabling leather to be given a very light shade without detracting from its quality, and preventing fabrics in which the finished extract is used as a mordant from being stained, as and for the purpose set forth.

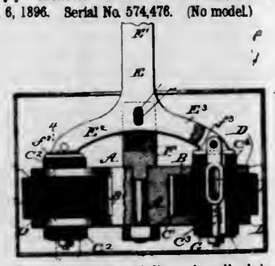
571,636. UNDERWAIST. JAMES C. ANDREWS, New Haven, Conn. Filed June 8, 1895. Serial No. 552,102. (No model.)

Claim.—The combination with an underwaist, of a permanently-applied wedge-shaped supporting-flap arranged with its pointed end

downward, and having its upper end formed with an armhole which is registered with the armhole in the waist, a binder binding the edges of the armhole of the waist and the edges of the armhole of the supporting-flap together, and a reinforcing shoulder-strap extending over the upper portion or the supporting flap and above the armholes of the waist and flap, and extended downward in parallel lines to the lower edge of the waist so as to include the entire flap within it, the upper portion of the flap being therefore permanently attached to the waist, while its lower portion is left free, substantially as set forth.



571,637. SPRING. ALEXANDER C. BELL, New Alexandria, Pa. Filed Jan. 6, 1896. Serial No. 574,476. (No model.)



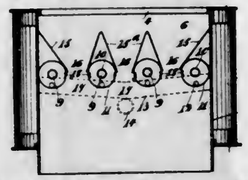
Claim.—1. In a spring substantially as described the combination with the support and the springs proper held thereto and spaced apart of the lever jointed to the support between the springs proper and having rigid arms extending over the springs and a link connecting one of said arms with its respective spring substantially as set forth.

2. The combination of the support the springs held thereto and spaced apart the lever jointed to the support between the springs and having rigid arms extending thereover and links connected with said arms and extended through and held at the opposite ends of the springs substantially as set forth.

3. The spring herein described consisting of the support the springs proper held to said support the lever having a sliding connection with said support and provided with rigid arms extending over the springs, and links connected with the lever-arms and extended thence through the springs proper and held substantially as and for the purposes set forth.

4. A spring substantially as described comprising the support having opposite fixed portions held rigidly together and provided between them with a space for the springs and having in such fixed portion openings, and the springs fitted between said fixed portions and having tenon-like ends entering the same substantially as shown and described.

571,638. WHEAT-STEAMER. NATHAN C. BLACKBURN and EDGAR R. HOWELL, Fairbury, Nebr. Filed Jan. 15, 1896. Serial No. 575,642. (No model.)

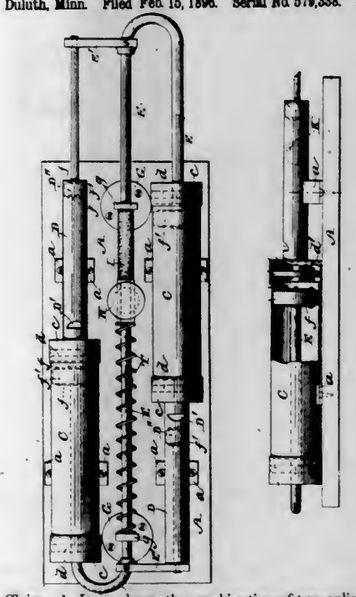


Claim.—1. A wheat steamer or the like, comprisig a duct, a series of drums extending across the same and provided with outlets in their sides adapted to discharge steam against the material passing through the ducts, and steam-pipes connected with a steam-supply and extending through the drums above the bottoms thereof and having openings to supply steam to the drums, the bottoms of the drums below the outlets and steam-pipes forming a channel wherein is collected the water condensing in the drums, said drums being provided with outlets for the escape of the water from their lower parts, substantially as set forth.

2. A wheat-steamer comprising a duct for the passage of the material to be steamed, a series of drums extending across said duct and forming between them passages for the material to be steamed, steam-pipes extending longitudinally through the respective drums and having openings to supply steam thereto, said drums being provided with outlets for the discharge of steam against the material flowing through said passages, and a steam chamber having a steam-supply pipe, said chamber extending along one side of the duct and having communication with the steam-pipe of each drum, substantially as set forth.

3. A wheat-steamer, comprising a duct, a series of drums extending across the same and forming between them passages for the material to be steamed, said drums having outlets for the discharge of steam against the material passing between them, and having means for supplying steam to them, the lower portions of the drums being adapted to retain the water condensing therein, and a water chamber extending along the side of the duct and having communication with the lower portion of each of said drums, substantially as set forth.

571,639. SOUNDING DEVICE. FRIEDRICH W. G. BOETTCHER, Duluth, Minn. Filed Feb. 15, 1896. Serial No. 579,338. (No model.)



Claim.—1. In an alarm, the combination of two cylinders, each cylinder provided with an independent sounding device, pistons for said cylinders, a single piston-rod connecting said pistons, whereby they can be operated simultaneously and sound the alarms, substantially as described.

2. In an alarm, the combination of two cylinders, an independent sounding device for each cylinder; said sounding devices being of different tones, a piston in each cylinder, and a piston-rod for connecting said pistons, whereby one of said sounding devices is sounded upon the movement of one piston and the other upon the opposite movement of the other piston, substantially as described.

3. A bicycle-alarm comprising two cylinders, independent sounding devices in each cylinder, pistons for said cylinders, a piston-rod connecting said pistons whereby the sounding devices are operated simultaneously, and a lever connected to the piston-rod and adapted to be pivoted on the right or left hand side of the handle-bar of a bicycle, substantially as described.

4. In an alarm, the combination of two cylinders, each cylinder provided with a sounding device, pistons for said cylinders and connected together, and a spring for returning the pistons, whereby the pistons can be operated simultaneously and sound two alarms, substantially as described.

5. In a sounding device, the combination of a reed-cylinder and a whistle-cylinder suitably connected together, pistons for said cylin-

ders and means for connecting said pistons together whereby they can be operated simultaneously, substantially as described.

6. In a sounding device, the combination with a base portion, of a reed-cylinder and a whistle-cylinder mounted thereon, a single piston in each cylinder and a piston-rod connecting said pistons whereby they can be operated simultaneously, substantially as described.

7. In a sounding device, the combination with a base portion, of a whistle cylinder, a reed-cylinder, disks provided with reeds and mounted in each end of the said reed-cylinder, pistons for both of said cylinders and a piston rod connecting said pistons whereby they can be operated simultaneously, substantially as described.

8. In a musical sounding device, the combination with a suitable base portion of two reed-cylinders, two whistle-cylinder pistons for all of said cylinders, a piston-rod connecting all of said pistons whereby they can be operated simultaneously, substantially as described.

571,640. WATER-CARRIER. JOSEPH A. BONON, Terra Alta, W. Va., assignor of one-half to P. K. Adams, same place. Filed Apr. 27, 1896. Serial No. 589,293. (No model.)



Claim.—1. In an apparatus for elevating water and carrying the same from a spring, well, &c., to a convenient point for use, the combination of a track, a carriage adapted to travel upon the track and bearing a bucket, an operating cord or rope having connection with the carriage to impart motion thereto, a cross-bar having a depression in its top edge or side, and a roller fitted in the bottom of the depression to support the sagging portion of the operating cord or rope and coming flush at its ends with the depression, substantially as and for the purpose set forth.

2. The herein-described apparatus for elevating water and carrying the same from a spring, well, &c., to a convenient point for use, consisting of an operating-drum and tension-rollers at the delivery end, a post at the far side of the spring and provided with a sheave-pulley, a wire or cable passing around the said post and extending parallel to provide tracks, and having its ends secured to and adapted to be wound upon the said tension-rollers, posts provided with arms to support the tracks, carriages mounted upon the tracks, an operating-rope passing around the sheave-pulley of the post and reversely wound upon the aforesaid operating-drum, and having connection with the carriages to move them in opposite directions upon the tracks, cross-bars attached to the supporting-posts and having depressions in their top sides provided with rollers to support the sagging portions of the operating-rope, and buckets removably attached to the carriages, substantially as specified.

571,641. CHOCK-BLOCK. NORMAN T. BOOSE, Rockwood, Pa. Filed Mar. 27, 1896. Serial No. 585,074. (No model.)

Claim.—1. In a chock-block, the combination, with a block proper, of a securing-plate disposed in said block proper, legs provided on said securing-plate and adapted to engage the surface on which the block is placed, and a screw for operating the securing-plate to force the legs into engagement with said surface to lock the block against a wheel, substantially as set forth.



2. A chock-block, comprising a hollow block proper provided with an incline, and a securing-plate sliding within the block and adapted to engage the surface on which the block is placed to lock the block against a wheel, substantially as set forth.

3. A chock-block, comprising a block proper having an incline and flanges formed at the sides of such incline, a securing-plate sliding within the block proper and provided with tapering legs, and means for forcing the sliding plate into engagement with the surface on which the block is placed to lock the same against a wheel, substantially as set forth.

4. A chock-block, comprising a block proper having an incline and flanges formed at the sides of such incline, a securing-plate sliding within the block and provided with an enlarged portion, and means adapted to engage with said enlarged portion and force the securing-plate into the surface on which the block is placed to lock the same against a wheel, substantially as set forth.

5. A chock-block, comprising a block proper having an incline and flanges formed at the sides of such incline, a securing-plate sliding within the block proper and having tapering legs, a screw having one end squared and passing through the block proper into engagement with the securing-plate, whereby said plate is forced into the surface on which the block is placed, and a support for holding the squared end of the screw above the upper side of the block proper, substantially as set forth.

6. A chock-block, comprising a hollow block proper the inner sides of which are provided with guides, a securing-plate sliding within such guides, a screw provided with a flange and engaging with the securing-plate, and a support secured within the block proper adapted to hold the flange of the screw, whereby said screw is retained within said block, substantially as set forth.

571,642. PHOTOGRAPHIC RETOUCHER. SAMUEL G. BRADFORD, Benton Harbor, Mich. Filed May 21, 1895. Serial No. 550,114. (No model.)



Claim.—In a photographic retouching-tool, a tubular handle, and a cylindrical case or housing carried thereby, in combination with an operating-shaft, a wind-motor wheel fast upon said shaft and arranged within said cylindrical case or housing, a nozzle connected with said case or housing, a flexible air-tube connected therewith, eyes or loops attached to the handle and embracing said flexible air-tube, and an automatic spring actuated cut-off for pinching said flexible air-tube and closing the air-passage therein, substantially as and for the purpose specified.

571,643. FOLDING BED. CLINTON H. BUCHER, Staunton, Va. Filed June 19, 1896. Serial No. 596,187. (No model.)



Claim.—1. In a folding bed, two uprights, a rectangular frame pivoted therebetween and a roll-top adapted to be turned over the bed or forced under the same, substantially as and for the purpose set forth.

2. In a folding bed, two posts having suitable feet, a rectangular frame pivoted between said posts, a roll-top guided in suitable grooves formed in said frame, and legs L pivoted to said frame, substantially as and for the purpose set forth.

3. The herein described combination of the hollow posts A, a rectangular frame B pivoted between said posts, said frame composed of side rails and head and foot boards C, said boards having grooves formed therein, a roll-top adapted to slide within said grooves, legs L pivoted to the rails of the bed, cords G attached to the outer rail of the bed, pulleys H over which cords run, and weights F for counterbalancing the bed, substantially as and for the purpose set forth.

4. The herein-described combination of the posts A, feet J having casters set therein, a frame B composed of side rails and head and foot boards C, a rolling top adapted to be guided by grooves formed within said boards, brackets I secured to the outer edge of the frame, cords G attached to said brackets, pulleys H journaled within the posts and weights F attached to said cords, all arranged substantially as and for the purpose set forth.

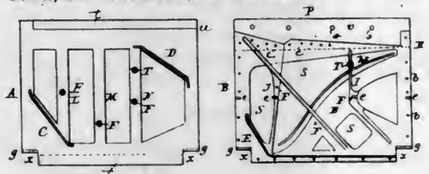
571,644. ARTIFICIAL TEETH. JOHN S. CAMPBELL, Paris, France, assignor to the Dentenax Company, Limited, London, England. Filed Oct. 15, 1895. Serial No. 565,766. (No model.)



Claim.—1. As an improved article of manufacture, a tooth-backing consisting of a metal plate having a narrow vertical slot therein adapted to receive the stem of a headed pin or plate extending from the back of a tooth whereby said tooth is capable of vertical adjustment on said backing, substantially as described.

2. As an improved article of manufacture, a tooth-backing having a slot open at one end, adapted to receive the stem of a headed pin or plate and to be placed upon the tooth by a sliding movement, substantially as described.

571,645. PIANOFORTE. JOSEPH H. CLARK, Deering, Me. Filed Nov. 13, 1895. Serial No. 568,800. (No model.)



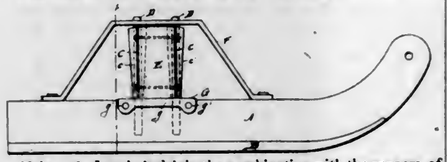
Claim.—1. The metallic frame A, provided with the ribbed corners C, D, the ribbed arched bars L, M, N, to hold against the regulating-bolt T, substantially as described.

2. The ribbed corner E, of the plate B, and the connection and combination of the said plate B, with the ribbed arches R, R, R, of the plate A, and the beveled head-bolt T, and the rib H, of the plate B, substantially as and for the purpose specified.

571,646. LIQUID COMPOUND USED FOR TEMPERING AND TOUGHENING STEEL, IRON, OR OTHER METALS. ZACHRIAH T. CLARK and JONATHAN R. NEILL, Portland, Oreg. Filed Apr. 11, 1896. Serial No. 587,194. (No specimens.)

Claim.—The compound herein described, to be used for tempering and toughening metals, consisting of linseed-oil, sweet-oil, sulfuric acid, blue vitriol, common salt and unslaked lime, in about the proportions stated.

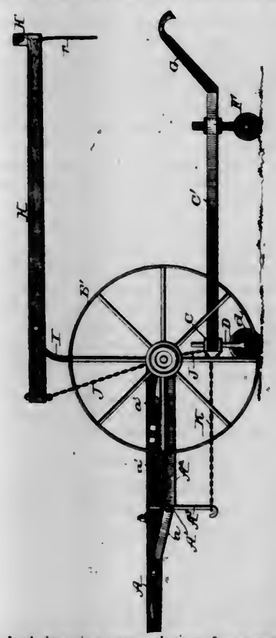
571,647. BOB-SLEIGH. JOHN CLAYTON, Minneapolis, Minn. Filed June 13, 1896. Serial No. 595,455. (No model.)



Claim.—1. In a bob-sleigh, the combination with the runners, of plates G secured thereto, and having each a horizontal flange which seats on the upper edge of said runner and is formed with oblong slots A, a plate H secured to each runner opposite its plates G and having a horizontal flange upon which the horizontal flange of the plate G rests, and bolts connecting the two plates of each runner, together with a bench whose knee portions rest upon the horizontal flanges of the plates G, the reef-plates, and the starts whose lower ends enter the runner through the said slots A and whose upper ends are secured in said reef-plates, said starts having a loose engagement with the bench, substantially as specified.

2. In a bob-sleigh, the combination with a runner, a bench whose knee portion is seated on said runner, and a reef-plate whose end portions are secured to the runner upon opposite sides of the bench and whose intermediate portion extends over the bench but is disconnected therefrom, of the start-plates C secured to opposite faces of the said knee portion, each of said plates having the outwardly-projecting tapered flanges c' and the corresponding opposite flanges c united at their inner edges by a connecting-wall, said flanges and wall forming in said plate a vertical chamber of gradually-decreasing depth from its upper to its lower end, and starts, one of which extends loosely up through each of said chambers, said starts having their lower ends secured in the runner and their upper ends in the reef-plates, substantially as specified.

571,648. COTTON CHOPPER AND CULTIVATOR. JOHN COOKE, Greensborough, Ala. Filed June 19, 1896. Serial No. 596,176. (No model.)



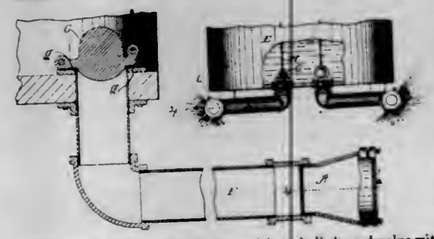
Claim.—1. A dragging cotton-chopper frame made in triangular form with cotton-chopping hoes or sweeps only along its front edge, and in a row at right angles to the line of draft, an axle with supporting-wheels arranged along the front edge and above the cotton-chopper frame, chains for adjustably connecting the cotton-chopper frame to the running-gear and adjusting its front edge vertically, and a supporting-wheel and pair of handles arranged at the rear apex of said triangular frame substantially as and for the purpose described.

2. A dragging cotton chopper frame made in triangular form with cotton-chopping hoes or sweeps along its front edge, an axle with supporting-wheels arranged along the front edge and above the cotton-chopper frame and loosely connected to the same, standards mounted upon the axle, one or more levers fulcrumed upon said standards and projecting to the rear and having, at their front ends, a flexible connection with the front edge of the chopper-frame substantially as and for the purpose described.

3. A dragging cotton-chopper frame made in triangular form with its long side in front and at right angles to the draft-line, and provided with cotton-chopping devices on said long front side exclusively, and having its two sides converging to a middle apex in the rear, a supporting-wheel arranged beneath the middle and rear apex, and handles arranged above the same, substantially as and for the purpose described.

4. The combination of the tongue A with braces a a', the rectangular frame A' A^2 A^3 with downwardly-projecting hooks A^3, the wheeled axle with upwardly-projecting standards I, the triangular dragging chopper-frame C C' with chopping devices along its front edge, and a running-wheel and handles in the rear, draft-chains K and L, lifting-chains J, and rearwardly-projecting levers H fulcrumed on the standards I and connected at their front ends to the lifting-chains J substantially as and for the purpose described.

571,649. STREET-SPRINKLER. ALBERT P. CROSS and IRWIN H. HILL, Los Angeles, Cal. Filed June 22, 1896. Serial No. 596,461. (No model.)

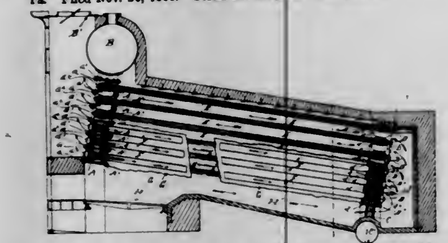


Claim.—1. A street-sprinkler comprising a bell-shaped valve with plain end; a cap having a segmental collar, a socket being provided therein to seat a portion of the end of the valve, and the inner face of the cap being flat where the collar is omitted, such flat portion extending laterally beyond the bell, and the seat for the end of the valve in the collar being arranged to hold the inner face of the cap away from the end of the valve; and means for fastening the cap to the end of the valve.

2. A street-sprinkler comprising a bell-shaped valve with plain end; a cap having a segmental collar, a socket being provided therein to seat a portion of the end of the valve, and the inner face of said cap, where the collar is omitted, being flat and beveled oblique to the plane of the seat for the end of the valve, said seat being arranged to hold the inner face of the cap away from the end of the valve; and means for fastening the cap to the end of the valve.

3. In a street-sprinkler, the combination of a pipe leading from the sprinkler-tank; a clack-valve to close the inner end of the pipe; a bell-shaped sprinkler-valve with plain end arranged on the outer end of such pipe; a cap fastened to the sprinkler-valve and having a segmental collar in which is provided a socket to seat a portion of the end of the sprinkler-valve, the inner face of the cap, where the collar is omitted, being flat with an open space between the free portion of the end of the valve and the flat inner face of the cap; and means for fastening the cap to the end of the valve.

571,650. TUBULOUS STEAM-BOILER. LEONARD D. DAVIS, Erie, Pa. Filed Nov. 26, 1895. Serial No. 570,312. (No model.)



Claim.—1. The combination in a tubulous steam-boiler, of front and rear headers having openings therethrough for the passage of the products of combustion, and water-tubes secured in said headers in close proximity to each other, so as to form with the openings in the headers substantially fire-tight fire-flue walls, substantially as and for the purpose set forth.

2. The combination in a tubulous steam-boiler, of a front header consisting substantially of transverse sections, having openings between them for the passage of the products of combustion, and vertical ends on said transverse sections adapted to be secured together and form vertical passages therefrom, a steam-drum secured to the ends of the uppermost header-section, a rear header consisting substantially of transverse central sections having openings between them for the passage of the products of combustion, and vertical ends provided with closed heads resting upon, but not communicating with each other, water tubes secured in the transverse portion of each front header-section and in the corresponding rear header-section in close proximity to each other, so as to form with the front and rear headers substantially fire-tight upper and lower return fire-flue walls, and downflow-pipes secured in the ends of each front header-section and in the ends of the corresponding rear header-section at the sides of the boiler, substantially as and for the purpose set forth.

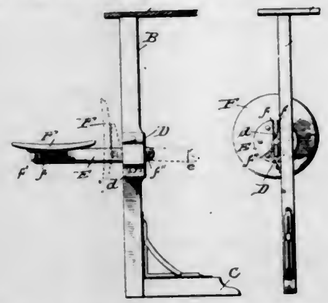
3. The combination in a tubulous steam-boiler, consisting substantially of tiers of water-tubes secured in front and rear headers, and a downflow-pipe, connecting said headers at each side of the boiler, corresponding to each tier of water-tubes, of feed-water pipes extending into the front ends of the lower pair of downflow-pipes, and a mud drum communicating with the lower portion of the header at the rear of the boiler, substantially as and for the purpose set forth.

4. The combination in a tubulous steam-boiler, of a front header constructed of sections, each consisting substantially of a transverse shell, cylindrical ends on the ends of said shell, flanges on said cylindrical ends, whereby they can be secured together so as to form vertical passages up to the steam-drum secured to the topmost section, and a rear header constructed of sections, consisting substantially of transverse shells having cylindrical ends, the ends of which are closed and resting one upon another, substantially as and for the purpose set forth.

5. The combination in a tubulous steam-boiler, of a front header constructed of sections, each consisting substantially of a transverse shell inclined upward from the center toward the ends thereof, flanged cylindrical ends on said shells whereby said cylindrical ends can be secured together one above the other, so as to form continuous vertical passages up to a steam-drum secured to the uppermost section of the header, a rear header consisting substantially of a transverse shell inclined upward from the center toward the ends thereof, cylindrical ends on said shells, provided with closed heads, so that when the cylindrical end of one section is placed upon another there is no communication between them, and a tier of water-tubes secured between the shells and downflow-pipes between the cylindrical ends of the corresponding front and rear header-sections, substantially as and for the purpose set forth.

6. The combination in the header-sections of a tubulous steam-boiler, of transverse shells inclined upward from the center toward the ends thereof, and adapted to receive the ends of water-tubes secured therein, in close proximity to each other and vertical sections at each end of said shells adapted to be secured together and to a steam-drum, so as to form vertical passages at the sides of the boiler, from the ends of said shells to the steam-drum of the boiler, substantially as and for the purpose set forth.

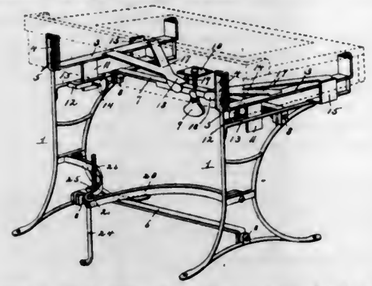
571,651. SEAT FOR COUNTERS. GEORGE W. DEARBORN, Lynn, Mass. Filed July 25, 1896. Serial No. 600,545. (No model.)



Claim.—1. In combination, the counter, the vertical standard, the boxing, the bar slidable in said boxing, and the seat having the elongated plates secured to the bottom thereof and extending to near one edge, the outer end of the bar being pivoted between the plates near their outer ends and said plates embracing the bar for the full length of the plates when the seat is in a horizontal position, substantially as described.

2. In combination, with a counter, the standard beneath the edge thereof having a rearwardly-extending foot, the boxing bolted to the side of said standard and having a recess or passage-way, the bar slidable in said passage-way and having a notch in its upper edge near the inner end, the lip on the boxing for engaging said notch, the cross-pin in the end of the bar, the seat, and the angle-plates bolted to the under face thereof and embracing the end of the bar, said bar being connected to said plates near the edge of the seat whereby the seat may be swung into either a vertical or horizontal position, and when in a horizontal position will be supported directly by the bar, substantially as described.

571,652. DESK. WILLIAM T. DODD, Prescott, Wash. Filed June 15, 1894. Serial No. 514,673. (No model.)

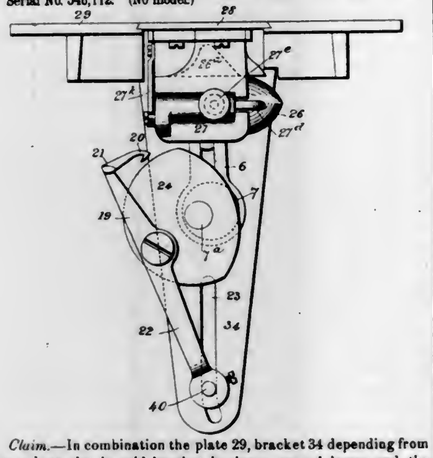


Claim.—1. In a school-desk, the combination of end uprights provided with vertical front and rear guide-pins, a desk-top adapted to fit between said guide-pins above the plane of the upper ends of the uprights, transverse bars secured to the under side of the desk-top near its ends and terminating in front and in rear thereof in vertical sockets to receive the vertical guide-pins, a single adjusting-screw threaded in a bar connecting the upper ends of the uprights and engaging the lower surface of the desk-top, ears 11 depending from the transverse bars and fitting in keepers 12 on the said uprights, and set-screws on the uprights for engaging said ears and locking the desk-top at the desired vertical adjustment, substantially as specified.

2. The combination with end uprights, an upper connecting-bar between said uprights, a desk-top, guiding connections between the uprights and the desk top, adjusting means for varying the elevation of the desk-top, and locking devices for securing the desk-top at the desired adjustment, of braces pivotally connected at their outer ends to the under side of the desk-top and slidably fitted at their inner ends upon the said connecting-bar adjacent to its center and means for locking the inner ends of the braces at the desired point to the said bar, substantially as specified.

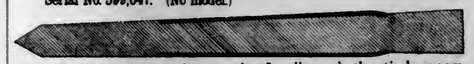
3. The combination with end uprights, an upper connecting bar between said uprights, a desk-top fitting slidably between guiding-pins on the uprights, and an adjusting-screw for varying the elevation of the desk-top, of ears depending from the desk-top and fitting in keepers on the uprights, set-screws for locking said ears in the keepers, upstanding ears on the uprights fitting in guide-openings in the desk-top, and cam-clamps 16 mounted upon the desk-top and engaging said upstanding ears to lock the desk-top at the desired vertical adjustment, substantially as specified.

571,653. SEWING-MACHINE. JOSEPH FLETCHER, Clayton-le-Moors, and CHARLES BROWN, Preston, England. Filed Apr. 17, 1895. Serial No. 546,112. (No model.)



Claim.—In combination the plate 29, bracket 34 depending from same, a long slot in said bracket having a curved lower end, the looper, a disk 24, a pin carried by said disk on which the looper is pivoted, a pin 40 carried by the end of the looper and passing through the slot, a washer 41 on said pin, a spring pressing against said washer, means for retaining the spring on the pin and thus holding the looper to the slot, and means for rotating the disk, whereby the looper is operated, the curved slot imparting a smooth action to the looper and the spring enabling wear on the faces of the bracket to be taken up, substantially as described.

571,654. MEANS FOR PROTECTING PILES FROM AQUEOUS INSECTS. HUGO GALLINOWSKY, Longbeach, Miss. Filed July 13, 1896. Serial No. 599,047. (No model.)



Claim.—1. A protective covering for piles and other timbers composed of fibrous material compounded with boracic acid, magnesium chlorid, hydrated magnesium oxid and sal-ammoniac, substantially as described.

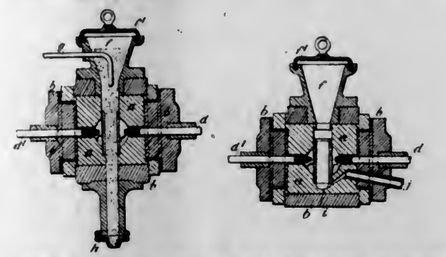
2. A pile covered throughout a portion of its length with a substance consisting of fibrous material, compounded with boracic acid, magnesium chlorid, hydrated magnesium oxid and sal-ammoniac, substantially as described.

3. A pile or other timber, covered throughout a portion of its length with a substance composed of fibrous material compounded with boracic acid, magnesium chlorid, hydrated magnesium oxid and sal-ammoniac, and filled with creosote, substantially as described.

4. A pile covered throughout a portion of its length with a substance consisting of fibrous material compounded with boracic acid, magnesium chlorid, hydrated magnesium oxid and sal-ammoniac; and diminished in cross-section where said covering is applied, and filled with creosote with said covering on, substantially as described.

5. In the protection of piles and other timbers, the process which consists in subjecting fibrous material to a bath of boracic acid, then pressing a portion of said acid out, then subjecting said fibrous material to successive baths of magnesium chlorid and hydrated magnesium oxid with sal-ammoniac, then pressing the said fibrous material so treated and wrapping the same on the timber to be protected, and then subjecting the timber with covering on, to a bath of creosote, or other wood-preserving oil, substantially as described.

571,655. ELECTRIC FURNACE. ADAM C. GIRARD and ERNEST A. G. STREET, Paris, France. Original application filed May 24, 1895, Serial No. 550,538. Divided and this application filed Oct. 29, 1895. Serial No. 567,273. (No model.) Patented in France May 25, 1893, No. 230,341; in England July 8, 1893, No. 13,340; in Germany Aug. 2, 1893, No. 81,479; in Austria-Hungary Aug. 2, 1893, No. 41,930 and No. 65,879; in Belgium Sept. 9, 1893, No. 106,309; in Switzerland Sept. 14, 1893, Nos. 8,017 and 8,689; in Italy Sept. 30, 1893, No. 267, and in Spain Oct. 27, 1893, No. 14,950.



Claim.—1. An electric furnace having a fixed carbon tube or casing through which the material to be heated is fed, said carbon tube or casing constituting a common electrode, and one or more other electrodes arranged in proximity to said carbon tube to produce an arc outside of said tube, whereby the material under treatment is separated from the arc, substantially as described.

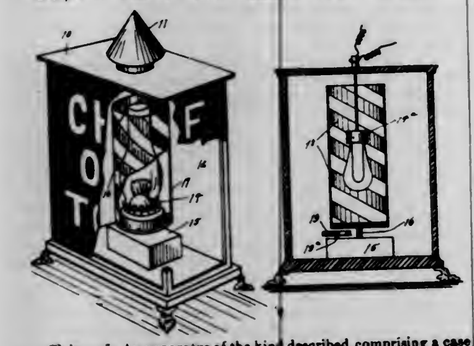
2. In an electric furnace having a heating-chamber for treating fusible materials, the combination of a carbon tube or casing located in said heating-chamber and constituting one of the electrodes between which the arc is produced, carbons d, d' constituting other electrodes, a hearth, such as i, located in juxtaposition to the inner end portion of the carbon tube or casing and in which the material, as it is fused, collects, and an outlet or conduit communicating with said hearth and through which the fused material can be discharged, substantially as described.

3. An electric furnace having a refractory block a, provided with a heating-chamber c, and a longitudinal passage, a hopper connected with the upper end of said passage and provided with a cover f at its upper end and with an outlet h at its lower end, a carbon tube e located within the heating-chamber, carbon electrodes d and d', arranged about the carbon tube for producing a voltaic arc outside said tube

and enabling gaseous fluid to be conducted to the heating-chamber, and a tube *g* opening into said hopper, substantially as described.

4. An electric furnace having a refractory block *a* provided with a heating-chamber *c*, and a longitudinal passage, a hopper *f* connected with the upper end of said passage and provided with a cover *f*, a carbon tube *e* located in the heating-chamber, electrodes *d* and *d'* arranged about the carbon tube for producing a voltaic arc outside said tube, a hearth *i* located in juxtaposition to the inner end of the carbon tube, and a discharge-outlet *j*, substantially as described.

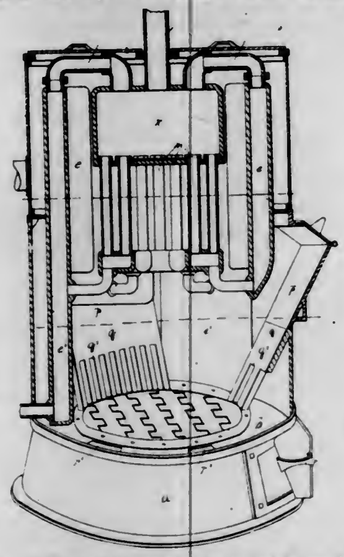
571,656. ADVERTISING DEVICE. JOSEPH H. GOLDING, New York, N. Y. Filed Dec. 18, 1895. Serial No. 572,490. (No model.)



Claim.—1. An apparatus of the kind described, comprising a case having more or less transparent or translucent sides, a lamp within the case, a rotary hollow screen inclosing the lamp, and a series of multicolored bands on the screen, the bands being produced diagonally, whereby the rotation of the screen causes the shifting colors to traverse diagonally over the sides of the case, substantially as described.

2. The combination with the case, of the rotary multicolored screen, the picture-supports held to turn with the screen, and means for supporting the lamp within the screen, substantially as described.

571,657. SECTIONAL STEAM-BOILER. CHARLES GORTON, New York, N. Y. Filed May 17, 1895. Serial No. 549,674. (No model.)

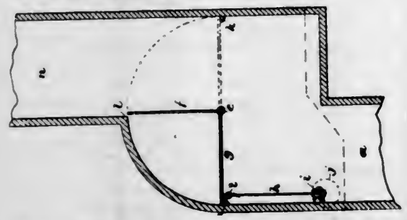


Claim.—1. The combination of a base having the top ring with air-openings, a casing supported on said base, the grate in the base within the ring, the boiler comprising the vertical sections secured together and forming an inclosed cylinder, alternate sections extended down and resting on said ring, side fuel-openings between the long sections, inclined grates from said openings between the long sections and resting on said ring and having openings above the air-openings of the ring.

2. An upright boiler comprising the vertical series of water-sections having the narrow vertical edges whereby the sections are secured together to form a vertical inclosing wall, the inner and outer surfaces of which are subjected to the heat and products of combustion, each section formed integral with the transversely-rounded outer surface and vertically-corrugated inner surface, and connections to cause a circulation vertically through each section, substantially as set forth.

3. A boiler having a side fuel-pocket at the exterior of the casing, and an opening thereinto, and pivoted to swing laterally and permit access to the fire-pot, substantially as described.

571,658. REGULATING-DAMPER FOR CONTROLLING INCOMING CURRENTS OF AIR. FRANK W. GRAVES, Woburn, Mass. Filed Feb. 12, 1896. Serial No. 579,012. (No model.)



Claim.—1. The combination with a fluid duct, provided with an enlarged portion, of a damper and a motor for said damper, both situated in said enlarged portion; the movable element of the motor being situated in and the damper being situated out of the initial path of the current.

2. The combination with an air-inlet pipe or conduit having an enlargement at one side, of an automatically-operating, counterbalanced, angular two-wing damper or valve, pivoted at its angle in said pipe or conduit with its operating-wing facing the inlet end thereof to receive the impact of the air and swing the valve against the action of its counterbalance; the air-regulating damper-wing extending toward the outlet end of the conduit and adapted to be swung across the said pipe or conduit and into said enlargement by the first-named wing to control the passage of the air therethrough, substantially as described.

3. The combination with an air-inlet pipe or conduit having a curved wall or abutment on its inner side, of a swinging, counterbalanced damper or valve mounted in the conduit and provided with two wings at right angles to each other; one wing moving close to the said abutment or curved wall to receive the impact of the incoming air and swing the damper or valve and cause the other wing to swing across the pipe or conduit and regulate the passage of air therethrough.

4. The combination with an air-pipe or conduit, offset between its ends, and there provided with a curved wall or abutment, of a two winged counterbalanced damper or valve mounted in the pipe or conduit, with its operating-wing facing the inlet end thereof and working against said curved wall or abutment, and its air-regulating wing extending toward the outlet end of the pipe or conduit and adapted to swing across the offset and regulate the passage of air therethrough to the outlet end.

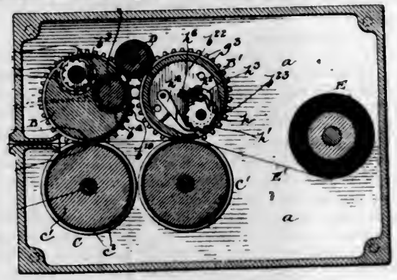
5. The combination with an air-inlet pipe or conduit, having a curved wall or abutment on its inner side, of a swinging, two-winged damper or valve, having a variable counterbalancing device and mounted in the pipe or conduit, with its operating-wing facing the inlet end thereof to receive the impact of the air and working close to said curved wall or abutment, and its air-regulating wing extending toward the outlet end and adapted to be swung across the pipe or conduit by the air-pressure exerted on the operating-wing.

6. The combination with the air-inlet pipe or conduit and a curved wall or abutment, of a two-winged damper or valve, mounted in the pipe at the offset, with its operating-wing facing the inlet end and working close to the said curved wall or abutment, and its air-regulating wing extending toward the outlet end to swing across the offset, a guide in front of the operating-wing and a weight having a cord extending over the guide to the front side of the said operating-wing.

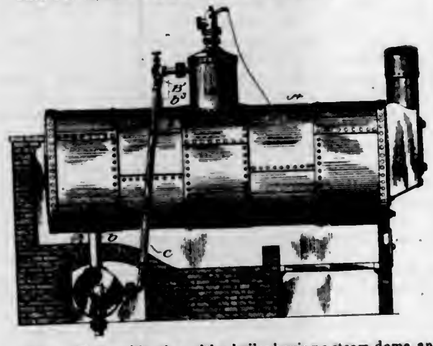
571,659. TRANSFER-TICKET REGISTER. CHARLES E. GROBET, New York, N. Y., assignor of two thirds to Augustus T. Docharty and Julio Hatchwell, same place. Filed Feb. 21, 1896. Serial No. 580,223. (No model.)

Claim.—The combination in a ticket and transfer device, of a suitable casing having an exit guide-passage in line with the movement of the tickets or transfers, for the delivery of the same, printing-drums

mounted in said casing, time indicating types and place indicating types, in separate recesses of one drum, and dating and numbering types mounted in the recesses of another of said drums, means for moving said time, place and dating types independently, from the exterior of the casing, a reel carrying a web of paper, independent pressure-drums below each printing-drum, whereby the web of paper is fed continuously between each set of printing and pressure drums, independent gearing, operatively connecting each printing-drum with its respective pressure-drum, an inking-roller interposed between the printing-drums, for inking the types carried by each of said drums, and gearing for revolving the printing-drums, simultaneously from the exterior of the casing, substantially as described.

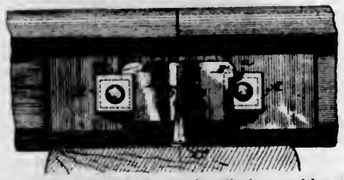


571,660. STEAM-BOILER. THOMAS GUNNING, Pittsburg, Pa. Filed Feb. 10, 1896. Serial No. 578,764. (No model.)



Claim.—The combination with a boiler having a steam-dome, and a mud drum connecting with said boiler, of an angular pipe opening at its ends in said dome and also in the steam-space of the boiler, a valve or valves in said angular pipe, and a pipe leading from said mud-drum into said angular pipe, whereby a constant circulation between said mud-drum and boiler may be maintained, substantially as and for the purpose set forth.

571,661. NUT-LOCK. TOWNSON HAND, North Vernon, Ind., assignor of two-fifths to Moses Alexander and John C. Cope, same place. Filed Apr. 3, 1896. Serial No. 586,726. (No model.)

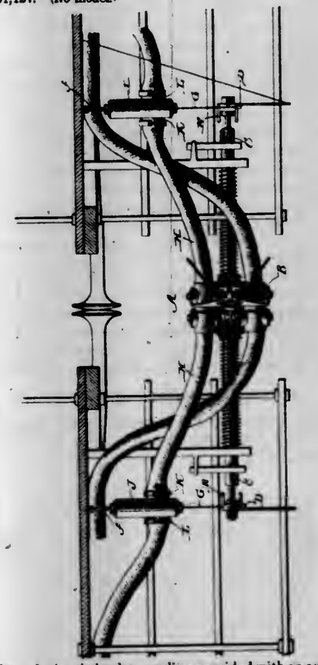


Claim.—1. The nut lock herein described comprising the nuts spaced apart and provided with edge grooves having base-walls forming seats for the locking-plate and with end tenons also forming seats for said plate, the locking-plate fitted to said seats and adapted to extend between the adjacent nuts and provided at its middle with a bulged portion having an opening for the hook of the anchor and the anchor having a base-plate adapted to be spiked to the ties and an upwardly extending portion adapted to engage in the opening of the locking-plate substantially as shown and described.

2. The combination of the nuts the plate arranged at its ends to hold the same from turning and provided at its middle with an outwardly-projecting portion extending up and down across said plate and having an opening the anchor-plate having a hook engaging in said opening and means for securing said plate substantially as shown and described.

3. A nut-lock consisting of the anchor having a base-plate and an upwardly-extending portion provided with a hook and the locking-plate adapted at its ends to secure a nut and provided at its middle with a bulged portion whereby the plate may be extended and having in such bulged portion an opening for the hook of the anchor substantially as shown and described.

571,662. AIR-BRAKE COUPLING. WILLIAM A. HARRIS and BENJAMIN S. H. HARRIS, Greenville, S. C. Filed Feb. 28, 1896. Serial No. 581,127. (No model.)



Claim.—1. An air-brake coupling provided with an automatically-operating valve and with a shifting regulating device, combined with a fluid-operated piston by which to actuate such device substantially as and for the purposes set forth.

2. The combination of an air-brake coupling having a valve, devices by which such valve may be automatically closed, restraining devices which in certain adjustments may prevent the automatic closing of such valve, and a fluid-operated piston by which to set the restraining devices to such adjustment substantially as set forth.

3. The combination of an air-brake coupling having a valve, devices by which such valve may be automatically closed, a fluid-operated piston, and intermediate devices whereby a certain movement of such piston may restrain the operation of the automatic valve-closing devices substantially as set forth.

4. In an air-brake coupling the combination with the valve thereof of devices by which to close the same, restraining devices by which to hold such valve-closing devices from operating, a fluid-operated piston by which to actuate such devices and the casing for such piston, having a by-pass and ports whereby the fluid may pass in one direction without operating said piston substantially as and for the purposes set forth.

5. An air-brake coupling provided with a valve, valve-closing devices, restraining devices for such valve-closer, and a cylinder having a piston by which to actuate the restraining devices and provided with a by-pass and ports whereby the fluid may pass in one direction without operating said piston substantially as and for the purposes set forth.

6. In an apparatus substantially as described the combination with the cylinder and the piston therein of the check operating in said cylinder below and independently of the piston, ports being provided whereby the actuating fluid may be admitted above or below said check substantially as set forth.

7. In an apparatus substantially as described the combination of the cylinder, the piston therein, the check movable in said cylinder below and independently of the piston, the cylinder being provided with a port alongside the line of movement of the check and stop devices whereby the check in its opposite positions will expose opposite ends of said port substantially as set forth.

8. In an apparatus substantially as described the combination of the main cylinder, the by-pass cylinder and the piston and check in the main cylinder the said cylinders being provided with ports whereby the air may play freely in one direction through one cylinder and in the opposite direction through the other cylinder substantially as set forth.

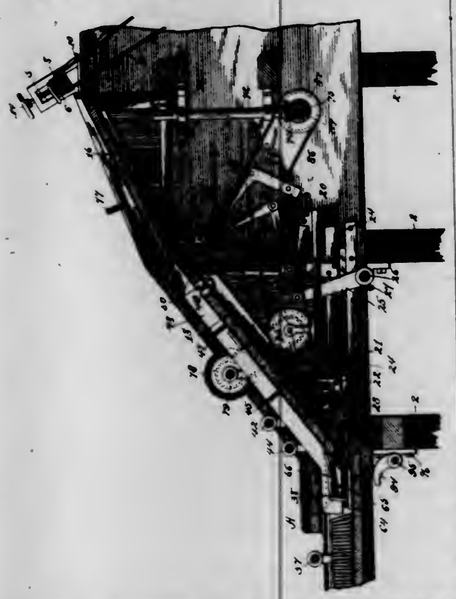
9. In an apparatus substantially as described the combination of the two cylinders and ports and connections whereby air may pass in one direction through one cylinder and in the opposite direction through the other cylinder check devices in both said cylinders for preventing the reverse movement of the air therethrough and a piston in one of said cylinders substantially as set forth.

10. In an apparatus substantially as described the combination of the cylinder I having a stop *f'* and ports M and N, the check limited in one direction by the stop *f'* a stop for limiting the opposite movement of said check, the cylinder J having ports P and Q and a check in said cylinder J substantially as and for the purposes set forth.

11. In an air-brake coupling the combination of the valve, the carrier members sliding one upon the other, one of said members being provided with a stop, a shifting regulating device upon the other member provided with a portion arranged to engage the stop of the first member, and the fluid-operating piston arranged to actuate said shifting regulating device all substantially as and for the purposes set forth.

12. The combination of an air-brake coupling having a valve, mechanism by which such valve may be automatically closed, a fluid-operated device arranged to restrain the movement of said valve-closing mechanism, a casing inclosing said fluid-operated device and having ports and controlling devices whereby the fluid may pass freely in one direction without affecting the fluid-operating device but will operate said device on the opposite movement substantially as set forth.

571,663. MACHINE FOR STACKING CAKES. DANIEL M. HARTMAN and JOHN G. DONNELL, Philadelphia, Pa. Filed May 29, 1896. Serial No. 593,633. (No model.)



Claim.—1. In a machine for stacking cakes and the like, a frame for supporting the operating parts of said machine, an endless belt for elevating said cakes from a suitable hopper, a primary chute upon which said cakes are precipitated from the belt, a secondary chute arranged to receive the cakes from the primary chute, platforms carried by said secondary chute, means for giving the secondary chute a to-and-fro longitudinal movement, and a table whose surface is divided by lengthwise partitions, substantially as and for the purposes set forth.

2. In a machine for stacking cakes and the like, a frame for supporting the operating parts thereof, an endless belt, lags secured upon said belt, a hopper having a hinged bottom, by means of which the cakes are fed to the machine, a primary chute arranged to receive the cakes from the lags of the belt, a secondary chute adapted to receive the cakes from the primary chute, adjustable partitions carried by said secondary chute for assorting and conveying the cakes to the proper locations, platforms 38 carried by the secondary chute, a table 52 adapted to receive the cakes from the platforms, a series of slides arranged beneath said platforms and adapted to receive their motion therefrom, mechanism for imparting a reciprocating motion to the secondary chute, and a main shaft for communicating motion to the operative parts of the machine, substantially as and for the purposes set forth.

3. In a machine of the character described, a frame for the support of the several operating parts thereof, a roll 4 suitably mounted, a roll 8 adjustably mounted upon said frame, an endless belt carried by said rolls, lags secured upon said belt, a board 11 so hinged as to be operated upon by said lags, mechanism for effecting an intermittent step-by-step movement of the roll 4, a primary chute mounted upon the frame of the machine so as to have a sidewise reciprocation, means for effecting said reciprocation, partitions 17, by which the upper surface of said chute is divided into ways, a secondary chute so mounted as to have a longitudinal to-and-fro movement, mechanism for effecting said to-and-fro movement, adjustable partitions arranged upon the secondary chute so as to guide the cakes in their downward movement, platforms 38 carried by said chute for receiving the cakes, slides 64 arranged beneath the platforms and adapted to receive motion therefrom, a table 52, a series of partitions 54 and 55, by which the upper surface of said table is divided into grooves, the partitions 55 being adjustable sidewise, and threaded rods, by means of which said partitions may be adjusted, substantially as and for the purposes set forth.

4. The herein-described combination of a frame for the support of the several parts of the machine, a shaft 3 journaled therein, a roll 4 mounted upon said shaft, a roll 8 mounted upon the shaft 7, adjustable boxes in which said shaft is journaled, means for adjusting said boxes, an endless belt carried by said rolls, lags 10 secured upon said belt, a board 11 so hinged that its inner edge is in the path of travel of said lags, a ratchet-and-pawl mechanism secured to the shaft 3, by means of which the latter is given an intermittent step-by-step movement, means for regulating the amount of said movement, a primary chute adapted to receive the cakes from the belt, partitions 17 for dividing said chute into ways, a straight edge 77 for regulating the passage of the cakes down the chute, a secondary chute adapted to receive the cakes from the primary chute, partitions 51 secured upon said secondary chute, adjustable partitions 48 also secured upon said chute, wings 46 pivoted to said adjustable partitions, partitions 39 to which said wings are also pivoted, rods 42 and 44, the former having right and left handed threads thereon, nuts 41 for engagement with said threads, collars 40 supported by the rod 44, said collars and nuts serving to support the partitions 39, a frame 20 upon which the secondary chute is supported, said frame being supported by ball-bearings, a rock-shaft 26, arms 25 carried thereby, connecting links 28, the ends of which are pivoted to said frame and arms, platforms 38 carried by the lower end of the secondary chute, slides 64 having pins projecting upward therefrom into engagement with suitable slots formed in the platforms, and a table suitably divided for the reception of the cakes after being stacked, substantially as and for the purposes set forth.

5. In combination with a machine of the character described, a chute 18 so mounted as to have a longitudinal to and-fro movement, mechanism for imparting said to and-fro movement thereto, adjustable partitions arranged upon the upper surface of said chute, means for adjusting said partitions, platforms carried by the lower end of said chute, slides arranged beneath said platforms, pins projecting upward therefrom into engagement with suitable slots formed in said platforms, and a series of brushes rotatably mounted above the surface of the chute, whereby cakes sliding down said chute are brought into proper relative position to the guideways thereon, substantially as shown and described.

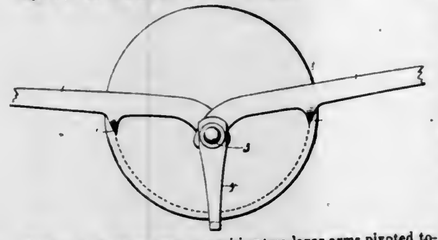
6. In a device of the character described a chute, stationary partitions secured therein, a bar across the chute, pairs of partitions slidable on the rod between the stationary partitions, a threaded rod journaled across the chute, nuts on the slidable partitions threaded to the rod, wings hinged to the ends of the slidable partitions, the wings of each pair being hinged together and extensions hinged to the joint of each pair of wings and slidably guided in slots of the chute as and for the purpose described.

7. In combination with the secondary chute of a machine of the character described, platforms carried by the lower end of said chute having slots formed therein, slides arranged beneath said platforms and pins projecting upward from said slides within said slots, said slots being so arranged as to cause the slides to dwell during a portion of the movement of the chute, substantially as and for the purpose set forth.

8. In a device of the character described a frame, a chute reciprocating thereon, a rotary brush carried on said chute and means for imparting motion to said brush consisting of a sprocket-wheel on the chute geared to the brush, a suitably-driven sprocket-wheel journaled in the frame a sprocket-chain connecting said sprocket-wheels and a belt-tightener composed of an arm hinged to the frame and carrying two pulleys which support the two stretchers of the chain, and a lever secured to the arm and operated by the chute through a connecting-rod as and for the purpose described.

9 In a device of the character described, a frame, a chute slidable thereon, a rock-shaft journaled in the frame carrying an arm, a link connecting the arm to the chute, a lever on the rock-shaft having a slot, a shoe sliding in the slot, a screw operating through the shoe, adapted to determine the position of the shoe within the slot, a power-shaft journaled in the frame carrying a crank-wheel and a connecting-rod connecting the crank-wheel to the shoe as and for the purpose described.

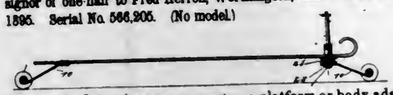
571,664. CAN-OPENER. JOHN L. HAYNES, Pawling, N. Y. Filed Apr. 25, 1896. Serial No. 589,040. (No model.)



Claim.—1. A can-opener comprising two lever-arms pivoted together, a cutter on each arm, and a fulcrum-arm extended from the pivot of said lever-arms, and having a finger to engage the side of a can, substantially as specified.

2. A can-opener comprising two lever-arms pivoted together, a fulcrum-arm extended from the pivot of said lever-arms and adapted to engage the side of a can, and a cutter on each lever-arm, the cutter of one arm being adapted to overlap that of the other arm, substantially as specified.

571,665. TOBOGGAN. HARRY P. HERRON, Los Angeles, Cal., assignor of one-half to Fred Herron, Worthington, Minn. Filed Oct. 19, 1895. Serial No. 566,205. (No model.)



Claim.—1. In a toboggan or coaster, a platform or body adapted to receive a person, arms attached to the platform or body at the rear and extending downwardly therefrom, a roller or wheel journaled in the said arms, duplicate arms and a roller located at the forward portion of the body, the said forward arms being connected, a steering device attached to the connecting medium of the forward arms, and a lock whereby the steering device may be held rigid and the forward arms prevented from turning, as and for the purpose specified.

2. In a toboggan or coaster, a body or platform upon which the person is to rest, spring-arms connected with the body at its ends and extending downwardly therefrom, and rollers carried by the said spring-arms, the said rollers being provided with ball-bearings, as and for the purpose specified.

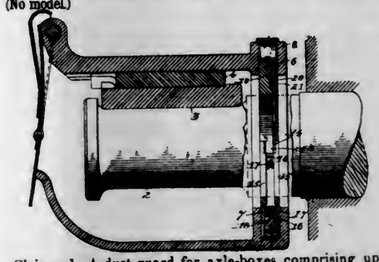
3. In a toboggan or coaster, a body or platform, spring-arms connected with the said body or platform at its ends, the arms being downwardly inclined, the forward arms being connected and the rear arms secured directly to the platform, rollers journaled in the two sets of arms, the said rollers being provided with ball-bearings, a steering-shaft attached to the connecting medium of the forward set of arms, ball-bearings for the said shaft, and a locking device whereby the said shaft may be held stationary, as and for the purpose set forth.

4. In a toboggan or coaster, the combination, with the body or platform adapted to sustain a person, of spring-arms connected with the body and extending downwardly therefrom, a shaft secured in the said arms, a roller mounted to turn on the said shaft, and ball-bearings carried partially by the roller and partially by the shaft, as and for the purpose specified.

5. A toboggan, comprising a body, two spring-arms projecting from each end of the body, the arms being extended downwardly and with angular relation to the body, and a roller journaled in each pair of arms, substantially as described.

6. In a toboggan, the combination of a body portion, a spring-arm secured to the body portion and projecting downwardly therefrom, and a roller carried by the arm, substantially as described.

571,666. DUST-GUARD FOR CAR-AXLE BOXES. HARRY I. HOLDERNESS, Pine Bluff, Ark. Filed June 26, 1896. Serial No. 597,020. (No model.)



Claim.—1. A dust-guard for axle-boxes comprising upper and lower sections capable of a limited vertical movement on each other, and the plates yieldingly mounted on the sections, surrounding the axle-opening and capable of springing outward horizontally to engage frictionally the side walls of a dust-guard chamber to effect a tight joint, substantially as described.

2. A dust-guard for axle-boxes, comprising an upper section and a lower section composed of a lower body portion, and a pair of yieldingly-mounted curved plates forming the upper portion of the lower section, presenting curved edges to an axle and adapted to engage yieldingly the side walls of the axle-box, substantially as described.

3. A dust-guard for axle-boxes, comprising an upper section and a lower section composed of a lower body portion provided at its upper edge with a rib, a pair of curved plates forming a groove for the reception of the rib and constituting the upper portion of the lower section, transverse pins loosely connecting the plates, and means for expanding the plates, substantially as and for the purpose described.

4. A dust-guard for axle-boxes, comprising an upper section provided at opposite sides with depending tongues, and a lower section composed of a lower body portion, and a pair of curved plates yieldingly mounted on the body portion and constituting the upper portion of the lower section and receiving the said tongues between their terminals, substantially as described.

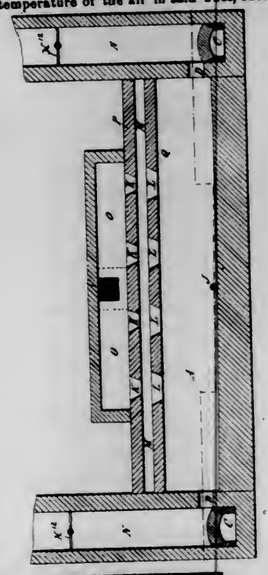
5. A dust-guard for axle-boxes, comprising an upper section provided at one of its faces with a recess and having a yieldingly-mounted plate arranged in the recess and presenting a lower semicircular edge to conform to the configuration of the axle, said upper section being provided at opposite sides with depending tongues, and a lower section composed of a lower body portion, and a pair of yieldingly-mounted plates constituting the upper portion of the lower section, adapted to engage the side walls of a dust-guard chamber and receiving said tongues between their terminals, substantially as described.

571,667. FURNACE FOR HEATING STEEL OR IRON INGOTS. HENRY W. HOLLIS, Spennymoor, England. Filed June 20, 1896. Serial No. 596,311. (No model.)

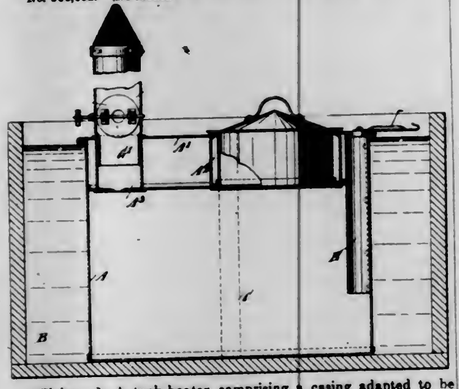
Claim.—1. In a furnace, and in combination, the heating-chamber, an upper and a lower arch above the same, a space between said arches, means for supplying air to said space, gas-inlet ports in the upper arch, flame-inlet ports in the lower arch, and means for supplying gas to the gas inlet ports, the pressure of which together with the draft in the chamber draws air from the space between the arches into the furnace so that the gas passes into the chamber surrounded by a stratum of highly-heated air which supports the combustion of said gas, substantially as described.

2. In a furnace, and in combination, the heating-chamber, an upper and lower arch above the same, a space between said arches, a double wall at the back of the furnace with the space formed in which the first space communicates, air-flues communicating with said space in the walls, gas-inlet ports in the upper arch, flame-inlet ports in the lower arch, means for supplying gas to the gas inlet ports, the pressure of which together with the draft in the chamber draws air from the space between the arches into the furnace so that the gas passes into the chamber surrounded by a stratum of highly-heated air which supports the combustion of said gas, and outlets from the heating-chamber arranged near the air-flues, so that the waste heat raises the temperature of the air in said flues, substantially as described.

3. In a furnace, and in combination, the heating-chamber, an upper and lower arch above the same, a space between said arches, a double wall at the back of the furnace with the space formed in which the first space communicates, air-flues communicating with said spaces in the walls, gas-inlet ports formed at the highest point of the upper arch, flame-inlet ports in the lower arch and directly beneath the gas-inlet ports, means for supplying gas to the gas-inlet ports, the pressure of which together with the draft in the chamber draws air from the space between the arches into the furnace so that the gas passes into the chamber at the highest point of the furnace crown surrounded by a stratum of highly-heated air, and outlets from the heating-chamber arranged near the air-flues so that the waste heat raises the temperature of the air in said flues, substantially as described.



571,668. TANK-HEATER. ANDREW W. JOHNSEN, PETER T. HERREID, and THOMAS HERREID, Blair, Wis. Filed Feb. 26, 1896. Serial No. 580,892. (No model.)

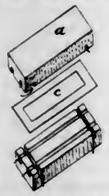


Claim.—1. A tank-heater, comprising a casing adapted to be fastened in a tank containing the liquid, feed or the like to be heated, said casing being provided with a combustion-chamber and having a double top forming a closed air-space for the purpose of preventing radiation of heat, substantially as shown and described.

2. A tank-heater, comprising a casing adapted to be set in a tank containing the liquid, feed or the like to be heated, said casing being provided with a double top, forming a combustion-chamber in the lower portion of the casing, a draft-channel in one end of said casing, and a chimney held on the other end of said casing and set in a thimble secured in said double top, substantially as shown and described.

3. A tank-heater, provided with a casing adapted to be set in a tank containing the liquid, feed or the like to be heated, said casing being provided with a double top and a combustion-chamber in the lower portion of said casing, said double top being provided with a manhole, and a cover fitting said manhole and seated thereon at its lower and upper ends, substantially as shown and described.

571,669. LIGHTNING-ARRESTER. ACHILLES DE KHOTINSKY, Boston, Mass., assignor to the American Bell Telephone Company, same place. Filed Sept. 24, 1896. Serial No. 606,877. (No model.)



Claim.—1. A spark or air gap protective appliance, consisting of two carbon plates having their proximate surfaces grooved or channeled; and a centrally-slotted non-conducting septum between them, the edges of the slot coinciding with the axial or central lines of the said channels.

2. In a spark or gap protective appliance, the combination of carbon line and earth plates in close proximity to each other, and provided with longitudinal and transverse grooves or channels in their proximate surfaces, with an interposed septum of mica or like non-conductor having a slot in its central part whose edges coincide with the axial lines of the channels in the said plates, as set forth.

3. A spark or air gap protective appliance consisting of two carbon plates having their proximate surfaces grooved or channeled and their edges chamfered or rounded; and a centrally-slotted non-conducting septum between the said surfaces of the same size thereof, the edges of the slot coinciding with the axial lines of the said channels, substantially as described.

4. A spark or air gap protective appliance consisting of two carbon plates one of which has an angular-shaped mass of easily-fusible conducting material embedded in its approximate surface having a hooking or locking extension; and a centrally-slotted non-conducting septum between the said plates, the edges of the slot coinciding with the axial lines of the said channels, as set forth.

571,670. SHOE-LACE FASTENER. HARRY KOLLOCK, Philadelphia, Pa. Filed May 26, 1896. Serial No. 593,128. (No model.)



Claim.—1. A shoe-lace fastener consisting of an eyelet adapted to be secured to the material of which the shoe is made, and having a bead, a portion of which is cut away the gap being filled by a hook, substantially as and for the purpose set forth.

2. In combination with a shoe an eyelet adapted to be attached thereto, said eyelet having a bead formed upon its upper portion, a portion of said bead being cut away, and a hook pivoted within said bead so as to close the cut-away portion thereof, substantially as and for the purpose set forth.

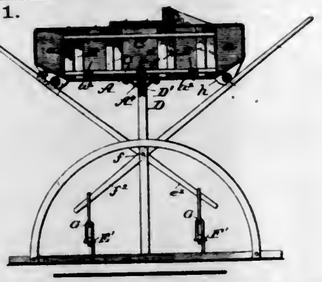
3. A shoe-fastener consisting of an eyelet adapted to be attached to the shoe in combination with a hook pivoted to said eyelet in such manner that the lacing may be forced within the eyelet without its end being passed therethrough, as specified.

4. The herein-described combination of eyelet, a bead formed upon the upper portion, a portion of said bead being cut away, a hook pivoted to said bead and adapted to close said cut-away portion, and an extension H formed with said hook adapted to act as a spring to hold the latter in its normal position, substantially as and for the purpose set forth.

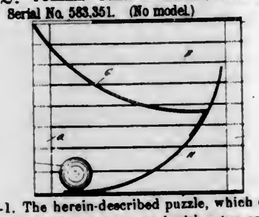
571,671. WASHING-MACHINE. JOSEPH LACHANCE, Little Falls, Minn. Filed Jan. 8, 1896. Serial No. 574,785. (No model.)

Claim.—The combination of the body provided at its ends with rollers and between its ends with bearings, the rack having seats for said bearings, the levers pivoted to said rack and having their upper ends bearing against the end rollers of the body and the treadles connected with the lower ends of said levers substantially as set forth.

571,671.



571,672. PUZZLE. FRANK H. LEHMAN, Lebanon, Pa. Filed Mar. 16, 1896. Serial No. 583,351. (No model.)

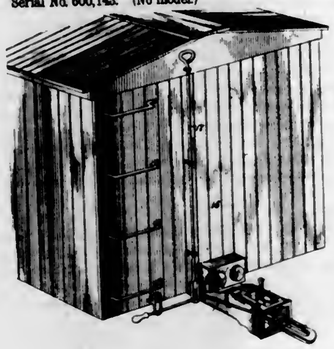


Claim.—1. The herein-described puzzle, which comprises a box or casing provided with a bottom, and with a top or cover having a slot or opening at one end thereof, a plate or partition which extends downwardly and backwardly, from said slot or opening, and which connects with a similar plate or partition which extends downwardly and forwardly, one corner of said first-named plate or partition being cut away, and a ball or spherical body which is adapted to be inserted through the slot or opening in the top or cover, substantially as shown and described.

2. The herein described puzzle, which comprises a box or casing provided with a bottom, and with a top or cover having a slot or opening at one end thereof, a plate or partition which extends downwardly and backwardly, from said slot or opening, and which connects with a similar plate or partition which extends downwardly and forwardly, one corner of said first-named plate or partition being cut away, and a ball or spherical body which is adapted to be inserted through the slot or opening in the top or cover, and each of said plates or partitions being curved or segmental in form, substantially as shown and described.

3. The herein-described puzzle, which comprises a box or casing provided with a bottom, and with a top or cover having a slot or opening at one end thereof, a plate or partition which extends downwardly and backwardly, from said slot or opening, and which connects with a similar curved plate or partition which extends downwardly and forwardly, one corner of said first-named plate or partition being cut away, and a ball or spherical body which is adapted to be inserted through the slot or opening in the top or cover, and each of said plates or partitions being curved or segmental in form, and the sides, or the sides and ends of the box or casing being composed of open-work consisting of wires or similar devices, substantially as shown and described.

571,673. CAR-COUPLING. LYMAN S. LEWIS, Guttenberg, Iowa, assignor of one-half to William L. Korda, same place. Filed July 22, 1896. Serial No. 600,143. (No model.)



Claim.—1. In a car coupling, the combination of a draw-head, a substantially L-shaped catch pivoted at its angle to the draw-head at the bottom thereof and having one arm arranged to couple with the link, and its other arm adapted to be engaged by the link, whereby the said arm is swung upward automatically, a spring-actuated locking device located at the top of the draw-head, pivoted at its front or outer end to the same and adapted to engage the catch automatically, a rock-shaft mounted on the draw-head and having an arm connected with the locking device, said rock-shaft being provided at the side of the draw-head with an L-shaped arm forming a handle, and an operating-rod designed to extend to the top of the car and provided at its lower end with a loop receiving the outer portion of the L-shaped portion of the rock-shaft, substantially as described.

2. In a car coupling, the combination of a draw-head, a transverse pin passing through the draw-head at the bottom thereof and provided at one end with a flat head, an L-shaped catch pivoted at its angle to the draw-head at the bottom thereof by the said pin, and fixed to the latter, a lever arranged on the exterior of the draw-head and provided with an opening receiving the head of the pin and having opposite shoulders adapted to engage the same, and means for holding the lever in position on the draw-head, substantially as described.

3. In a car-coupling, the combination of a draw-head, a transverse pin passing through the draw-head, a catch mounted on the transverse pin, and an operating-lever having an opening receiving the pin, said opening being composed of two substantially quadrant-shaped portions adapted to permit the pin to have a free quarter-turn independent of the lever, substantially as and for the purpose described.

571,674. RAILROAD-SWITCH. LYMAN S. LEWIS, Guttenberg, Iowa, assignor of one-half to William L. Korda, same place. Filed July 23, 1896. Serial No. 600,295. (No model.)



Claim.—1. In a railroad-switch, the combination with a switch-rail, a switch-bar, and means for actuating the latter to operate the switch, of a shaft operated by means of the switch-bar, a tumbler mounted upon the shaft, and a second shaft having a projection to engage with the tumbler and lock the switch, substantially as and for the purpose set forth.

2. In a railroad-switch, the combination of a switch-rail, an operating-bar for closing the switch, a shaft having connection with the operating-bar, a tumbler mounted upon the shaft, a second shaft having a projection to engage with the tumbler and lock the latter and the switch, and a rail-trip operatively connected with the said second shaft to disengage the projection thereof from the tumbler, substantially as and for the purpose set forth.

3. In a railroad-switch, the combination of a switch-rail, an operating-bar, a shaft having connection with the operating-bar, a tumbler secured to the said shaft, two shafts having projections to alternately engage with and lock the tumbler, and rail-trips connected

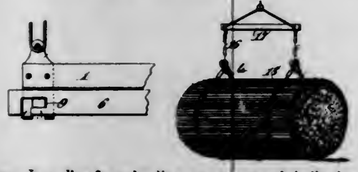
with the respective shafts and located at different distances from the switch, substantially as and for the purpose set forth.

4. In a railroad-switch, the combination of a switch-rail, an operating-bar, a trip connected with the operating-bar and adapted to be struck by the approaching train to throw the switch, a shaft having connection with the operating-bar, a tumbler mounted upon the shaft, parallel shafts disposed upon opposite sides of the tumbler and having projecting portions to alternately engage with and lock the tumbler, and rail-trips located at different distances from the switch and connected with the respective shafts upon opposite sides of the tumbler, substantially as and for the purpose set forth.

5. In a railroad-switch, the combination of a switch-rail, a switch-bar, a lever having an arm in engagement with the switch-bar, a trip located to one side of the track to be struck by the advancing train, a bar for transmitting motion from the said trip to the lever and having a limited play, whereby the switch may be closed and the trip returned to a normal position, a shaft having connection with the switch-bar, a tumbler secured to the said shaft, and a second shaft having a projection to engage with the tumbler and operatively connected with a rail-trip, substantially as and for the purpose set forth.

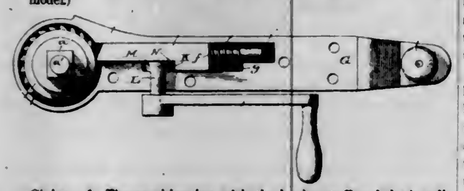
6. In a railroad-switch, the combination of a switch-rail, trips located upon opposite sides of the track and adapted to be struck by a passing train, a lever, connections between the lever and trips to admit of the switch being thrown and the trip actuated returning to a normal position, a switch-bar operated by means of the lever and bearing a spring to engage with the switch-rail, a spring for opening the switch when the latter is released, a shaft operatively connected with the switch-bar, a tumbler mounted upon the shaft, parallel shafts located upon opposite sides of the tumbler and provided with projecting parts to alternately engage with and lock the tumbler and the switch, means for holding the last-mentioned shafts in position to engage with and lock the tumbler, and rail-trips adapted to engage with the last-mentioned shafts and located at different distances from the switch, substantially as and for the purpose set forth.

571,675. SUGAR-CANE SLING. JAMES MALLON, New Orleans, La., assignor of one-half to James W. Bodley, Staunton, Va. Filed May 4, 1896. Serial No. 590,183. (No model.)



Claim.—In a sling for unloading sugar-cane and similar long material, the combination with a bar having clips, of chains attached to said clips, a locking-bar movable longitudinally in loops forming part of said clips and provided with open transverse slots in one edge adapted to register with slots cut through the bottoms of the loops, said open slots communicating with slots extending lengthwise and in the same direction in the locking-bar, chains having links which lie in said slots and are locked by fingers on the bar formed by the slots, and a lever fulcrumed on the bar carrying said clips and pivotally connected to the locking-bar, for operation, substantially as described.

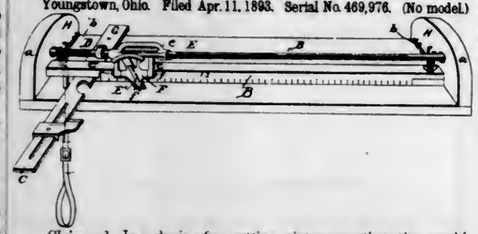
571,676. HAND-BRAKE. CLARENCE MULLIN and FRANK C. GALLOWAY, Cincinnati, Ohio. Filed July 20, 1896. Serial No. 599,789. (No model.)



Claim.—1. The combination with the brake-staff and the handle in two parts provided with recesses upon their adjacent faces, of the pawl mounted to slide in said recesses, a spring acting on the pawl, a ratchet and a cam-lever mounted in the said handle, said ratchet having its hub arranged to be engaged by the brake-staff, and devices for actuating the pawl against the tension of its spring, all substantially as herein shown and described.

2. The combination with the brake-staff and the handle in two parts having recesses upon their adjacent faces, of the pawl mounted to slide in said recess, the spring acting on the pawl, a ratchet and a cam lever mounted in the said handle, all substantially as shown and described.

571,677. PICTURE-MATTING CUTTER. WILLIAM H. MURDOCH, Youngstown, Ohio. Filed Apr. 11, 1893. Serial No. 469,976. (No model.)



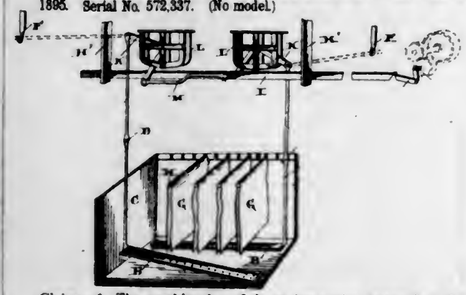
Claim.—1. In a device for cutting picture-matting, the combination with a knife-carriage and knife, of a guide-bar upon which said knife-carriage is movable, a spring for pressing said guide-bar in one direction, a cam upon the end of said guide bar, and a plate engaged by said cam, substantially as described and for the purpose set forth.

2. In a device for cutting picture-matting, the combination of the rod for guiding the cutting device, a spring for pressing said rod in one direction, and means for forcing and locking said rod against the action of said spring, substantially as described.

3. In a device for cutting picture-matting, the combination of the knife-carriage, the knife adjustably supported thereby, a guide-rod upon which said carriage travels, springs for forcing said guide-rod in one direction, and means for locking said rod against the action of said springs, substantially as described.

4. In a device for cutting picture-matting, the combination with the frame, having end walls formed with openings; plates secured to said end walls and formed with projections adjacent to said openings; a spring-pressed guide-rod, extending loosely through said openings and provided with cams for engaging said projections; a handle for said rod; and cutting means guided by said rods, substantially as shown and described.

571,678. TANNING MACHINERY. ABRAHAM A. MYERS, Lancaster, Pa., assignor to Margaret G. Myers, same place. Filed Dec 16, 1895. Serial No. 572,337. (No model.)

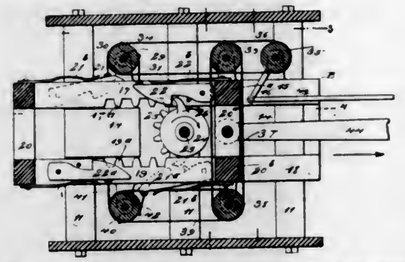


Claim.—1. The combination of the reciprocating power-bar, the depending brackets, the bell-crank levers fulcrumed at their angles to the brackets in a plane above the plane of the reciprocating bar, the links pivotally connecting the lower arms of the levers with the said bar, the agitator mechanism, and the depending rods from the upper arms of the bell-crank levers which have detachably hinged connections with the said agitator mechanism, and the devices for supporting the said rods when not in use, substantially as shown and described.

2. The combination of a reciprocating power-bar, depending brackets, the bell-crank levers fulcrumed at their angles between said brackets, the connections between the lower arms of the levers and the said bar, the depending rods pivotally connected to the upper arms of the bell-crank levers which have detachable hinged connections with the said agitator mechanism, and the device for supporting the said rods when not in use, substantially as shown and described.

571,679. DEVICE FOR CONVERTING MOTION. VAN RENSSELAER MCCULLOUGH and MORGAN MCCULLOUGH, Vernonia, Oreg.; said Van Rensselaer McCullough assignor to said Morgan McCullough, and said Morgan McCullough assignor of one-half to Timothy J. Hoare, Multnomah County, Oreg. Filed June 18, 1894. Renewed Apr. 30, 1896. Serial No. 589,788. (No model.)

Claim.—1. In a device for the converting of reciprocating into rotary motion, a frame, a piston having guided movement in the frame, the said piston being provided with a double set of spring-pressed pawls, each set comprising an upper and a lower pawl, the piston being further provided with opposing rack-surfaces, a power-shaft to be acted upon, a wheel provided with a toothed segment and carried by the said shaft, and spurs located upon the wheel at opposite sides, one spur at each end of the row of teeth, and means, substantially as shown and described, for carrying one set of pawls out of possible engagement with the said spurs and bringing the other set into engagement whereby the movement of the power-shaft will be reversed as and for the purpose set forth.



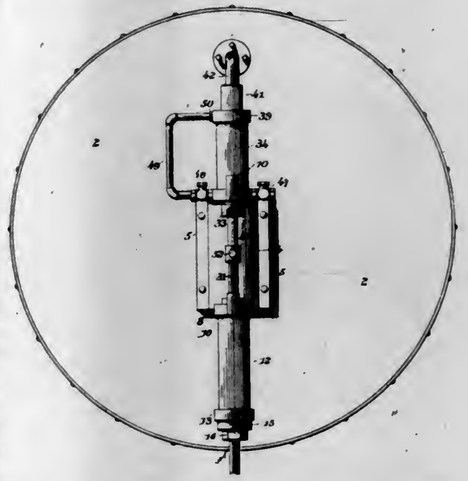
2. In a machine for converting reciprocating into rotary motion, the combination, with a frame and a piston having sliding movement in the said frame, the said piston being provided with two sets of pawls located at opposite sides, each set of pawls comprising an upper and a lower set diagonally located with respect to each other, and an upper and a lower opposing rack-surface located between the two sets of pawls, of a power-shaft, a wheel secured to said shaft and provided with a toothed segment adapted for engagement with the upper and lower rack-surfaces of the piston, spurs located at opposite sides of the wheel, one at each end of the row of teeth, the spurs being adapted for engagement with the set of pawls located upon the corresponding side, and a shifting mechanism for elevating either set of pawls out of possible engagement with the spurs, one set being always in line for engagement with one of the spurs, as and for the purpose specified.

3. In a machine for converting reciprocating into rotary motion, the combination, with a frame, a piston having sliding movement in the said frame, the said piston being provided with two sets of pawls located at opposite sides, each set of pawls comprising an upper and a lower set diagonally located with respect to each other, and an upper and a lower opposing rack-surface formed on the piston and located between the two sets of pawls, of a power-shaft, a wheel secured to said shaft, provided with a toothed segment adapted for engagement with the upper and lower rack-surfaces of the piston, spurs located at opposite sides of the wheel, one at each end of the row of teeth, the spurs being adapted for engagement with the set of pawls located upon the corresponding side, a drum located upon the upper surface of the piston and a drum upon the lower surface of the same, the upper drum being connected at opposite sides with opposing upper pawls, the lower drum being correspondingly connected with the lower pawls, a shifting-drum journaled upon the piston, upper and lower drums located between the drums connected with the pawls and the shifting-drum, a belt connection between the intermediate drums, and between each intermediate drum and corresponding pawl-controlling drum, and a belt connection between the shifting-drum and one of the intermediate drums, as and for the purpose specified.

571,680. PUMP FOR DOMESTIC WATER SYSTEMS. ELIJAH NEFF, Milford, Ind. Filed May 28, 1896. Serial No. 593,446. (No model.)

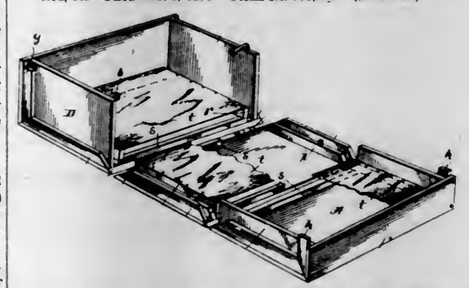
Claim.—1 In a water pumping apparatus, the combination with a storage-tank; of a pair of spaced vertically-alined cylinders, the lower of which has a water-supply pipe connection with its lower end, suitable air-pipe connections with the upper cylinder, a single delivery-pipe leading to the storage-tank and connected with the upper end of the upper cylinder, said delivery-pipe having at its point of connection with the upper cylinder a check-valve sealed with water when closed, and a reciprocating plunger-tube carrying at its lower end a valved plunger working in the lower cylinder, and at its upper end a piston-head which works in the upper cylinder and provides for feeding air from one end of said upper cylinder to the other and for the expulsion of air and water out of said cylinder through a single delivery-pipe, substantially as set forth.

2. In a water-pumping apparatus, the combination with a storage-tank; of a pair of spaced vertically-alined cylinders, the lower of which has a water-supply-pipe connection with its lower end, a valved goose-neck delivery-pipe having a valved lower end connected with the upper end of the upper cylinder and leading to the storage-tank, a valved air-inlet connection with the lower end of the upper cylinder, a valved air-delivery pipe leading from the lower to the upper end of said upper cylinder, and a suitably-reciprocated plunger-tube carrying at its lower end a valved plunger and at its upper end a piston-head, said piston-head operating to draw air into the lower end of the upper cylinder, to deliver the supply of air into the upper end of said cylinder, and to expel the air and water thereabove out of the upper cylinder through said delivery-pipe, substantially as set forth.



3. In a water-pumping apparatus, the combination with a storage-tank; of a pump-supporting frame bolted to one end of the tank and provided at its upper and lower ends with integral offstanding vertically-alined cylinder-caps having tubular rod guides formed integrally at their outer side edges, a combined air and delivery cylinder supported on the upper of said cylinder-caps and having air-pipe connections for delivering a supply of air from the lower to the upper end thereof, a valved delivery-pipe connection between the upper end of the upper cylinder and the storage tank, a lower water-cylinder fitted at its upper end to the lower of the cylinder-caps, a reciprocating plunger-tube carrying at its lower end a valved plunger-head for the lower cylinder and at its upper end a piston-head for the upper cylinder, and a pump-rod working in said rod-guides and having a coupling connection with the plunger-tube, substantially as set forth.

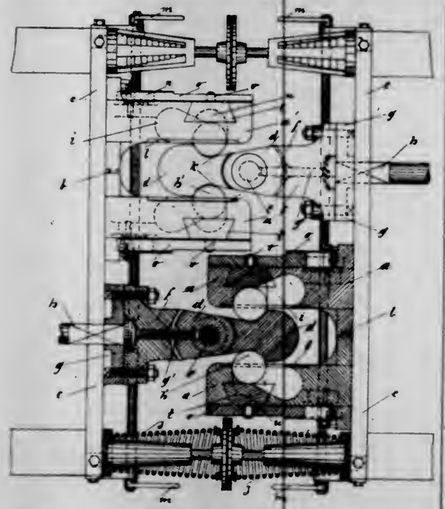
571,681. CONVERTIBLE TRUNK. AUGUSTUS W. NEWELL, Bradford, Pa. Filed Mar. 2, 1896. Serial No. 581,505. (No model.)



Claim.—1. A convertible trunk or chest comprising a back hinged at its lower edge to the rear edge of the bottom, a top hinged at its rear edge to the upper edge of the back, the hinges being adapted to permit the back and top to fold outward so as to be in a line or in the same plane with the bottom of the trunk or chest the top having end and side wings to form a foot, substantially as described.

2. A convertible trunk or chest comprising a back hinged at its lower edge to the rear edge of the bottom, a top hinged at its rear edge to the top of the back, the ends of the trunk or chest being divided on a line below the upper hinge-point of the back, and the strips *g*, *h*, being respectively cut away and projecting for the purpose of preventing lateral movement of the front edge of the trunk, substantially as described.

571,682. AUTOMATIC BALL-COUPLING FOR RAILWAY-WAGONS. HUGO OBERLAENDER, Leipsic, Germany. Filed Feb. 24, 1896. Serial No. 580,563. (No model.) Patented in Belgium Dec. 16, 1895, No. 118,865; in Hungary Dec. 28, 1895, No. 5,012; in Austria Jan. 8, 1896, No. 46/43, and in Canada Apr. 1, 1896, No. 51,827.



Claim.—1. In an automatic ball-coupling for railway-wagons the combination of two blocks or cheeks connected with each other by means of a prism screwed onto the buffer-beam and provided with two slots, with two balls lying in such slots, and with a tongue being revoluble upon a bolt and resting in a casting-fastener to the other wagon; as and for the purpose set forth.

2. In an automatic ball-coupling for railway-wagons the combination of two blocks or cheeks connected with each other by means of a prism, screwed onto the buffer-beam and provided with two slots, with two balls being slidable in these slots, and with two plates being screwed onto the cheeks and with two movable slides being each provided with a hollowing and receiving its direction in the cheeks, and with an uncoupling device consisting of a hand-lever, two cogged wheels and two racks provided with guiding-slots; as and for the purpose set forth.

3. In an automatic ball-coupling for railway-wagons the combination of a tongue being provided with two grooves and revoluble upon a bolt, with a casting being attached to a plate by means of screws connected with a drawing-rod underneath the wagon, and with a strong spring resting partly in the said tongue and partly in the said casting; as and for the purpose set forth.

4. In an automatic ball-coupling for railway-wagons the combination of a slide being provided with a hollowing of the same size as the ball employed with a small roller guided in a slot of the rack of the uncoupling device; as and for the purpose set forth.

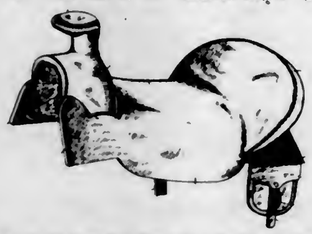
571,683. FENCE-STAY. CHARLES OSMART, Girard, Ill. Filed Aug. 19, 1896. Serial No. 603,268. (No model.)



Claim.—1. The combination with fence-runners, of a sectional stay, the contiguous extremities of adjoining upper and lower sections thereof being provided with interlocking loops, the loop of one section being engaged with the contiguous runner, and the loop of the other section terminating in an approximately horizontal hook also engaging the runner, substantially as specified.

2. The combination with fence-runners, of a stay having upper and lower sections arranged at their contiguous ends adjacent to an intermediate runner, the lower section being provided at its upper end with a downturned open loop, and the lower extremity of the upper section being provided with an approximately horizontal loop engaging the shank or body portion of the lower section and extending under the runner upon opposite sides of the plane of said shank, said upper section terminating in a hook engaging the runner, substantially as specified.

571,684. RIDING-SADDLE. CLARENCE W. PERCIFIELD, Rising Star, Tex. Filed May 19, 1896. Serial No. 592,176. (No model.)

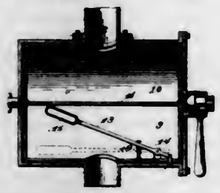


Claim.—1. In a riding-saddle, the combination with the cantle, of rear jockeys having their upper portions extended and meeting in the rear of the cantle, forming a rear quarter, and means for securing the meeting edges of the upper extensions of the rear jockeys, substantially as set forth.

2. In a riding-saddle having a pommel and cantle, a seat, cantle, front, rear and middle jockeys formed of a single piece, the front portion of the seat and the top edges of the front jockeys being secured to the pommel-covering, and the rear jockeys being extended and meeting in the rear of the cantle, and means for securing the meeting edges of the rear jockey extensions, substantially in the manner shown and described.

3. The combination with a saddle having snap-hooks or like fastenings, of a bag, and rings placed between the flap and back of the bag and held thereto by the same means employed for connecting these parts, and the bag having detachable connection with the saddle, substantially in the manner specified.

571,685. AUTOMATIC MEASURING AND REGISTERING FAUCET. WILLIAM M. PRICE, Philadelphia, Pa. Filed Jan. 2, 1896. Serial No. 574,109. (No model.)



Claim.—1. A measuring-faucet consisting of a casing an inlet thereto and outlet therefrom, a valve adapted to fit in said casing and means within said valve for automatically locking it in a predetermined position, as and for the purpose described.

2. A measuring-faucet consisting of a casing, an inlet thereto and an outlet therefrom a valve adapted to fit in the casing and means within the valve operated by the contents of said valve for locking it in a predetermined position.

3. A measuring and registering faucet, consisting of a casing, an inlet thereto and an outlet therefrom, a valve adapted to fit within said casing, the interior of which is divided into two compartments, openings leading from said compartments adapted to be brought into alinement first with the inlet and then with the outlet, a lever pivoted within one of the compartments, a float carried by said lever, a pin actuated thereby, notches with which said pin is adapted to engage for locking the valve in two positions, whereby the compartments may be filled and then emptied, and a registering mechanism actuated by said valve, whereby the number of rotations of the valve are registered, substantially as and for the purposes set forth.

4. The herein described combination of a casing, a valve adapted to fit therein, packing so arranged as to prevent the escape of liquid from the inlet, two compartments formed in the interior of said valve, a lever pivoted in one of said compartments, a float carried by said lever, so arranged as to lock the valve while either of the compartments is being filled or emptied, a handle for actuating the valve, and

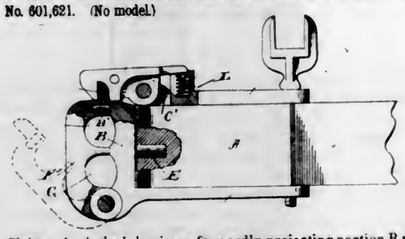
a registering mechanism actuated by said valve, whereby the number of rotations of the valve are registered, substantially as and for the purposes set forth.

5. A measuring-faucet consisting of a casing an inlet thereto, an outlet therefrom, a valve adapted to fit within the casing an aperture in the valve adapted to register with either the inlet or the outlet of the casing and a float-operated lever within the valve adapted to lock the valve in a predetermined position, as and for the purpose described.

6. A measuring-faucet consisting of a casing, an inlet thereto, an outlet therefrom, a valve adapted to fit within said casing the interior of which is divided into two compartments, openings leading from said compartments adapted to be brought into alinement first with the inlet and then with the outlet, a lever pivoted within one of the compartments a spring pressing against said lever a float carried by the lever, a pin actuated thereby, notches with which said pins are adapted to engage for locking the valve in two positions whereby the compartments may be filled and then emptied and a packing-ring adjustably secured to the casing around the inlet and adapted to make close contact with the sides of the openings of the valve, as and for the purpose described.

7. In a device of the character described, casing having a notch a valve in said casing, a lever pivoted in the valve carrying a float, and a pin adapted to engage the notch in the casing, as and for the purpose described.

571,686. CLEVIS. JOHN REEL, French Camps, Miss., assignor of one-half to James A. Sanderson, same place. Filed Aug. 4, 1896. Serial No. 601,621. (No model.)

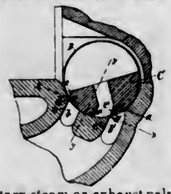


Claim.—1. A clevis having a forwardly-projecting portion B provided with cavities, a hinged portion F provided with registering cavities, the ligament between the cavities of the two members forming a supporting-web for a ring or hook, and a means for holding the pivoted portion F in its closed position, whereby the ring is loosely held in either of the openings formed by the cavities and prevented from passing to the other cavity, substantially as shown and described.

2. In a clevis, the swinging bar F adapted to inclose the draft-attaching cavities, the catch pivotally supported between its ends and at its outer end adapted to engage the end of the latch supported within the same, the recessed lug, and the spring confined therein against which the opposite end of the catch is adapted to bear, for the purpose substantially as shown and described.

3. The combination of a clevis provided with the rearwardly-extending arms, means for securing the same at their extremities to the plow-beam, a pivoted clevis-latch, the backwardly-extending lug L, carried by the clevis, and a latch for engaging the pivoted clevis-latch, substantially as shown and described.

571,687. CYLINDRICAL ROTARY VALVE. RICHARD H. RICE, Providence, R. I. Filed Oct. 25, 1895. Serial No. 566,909. (No model.)

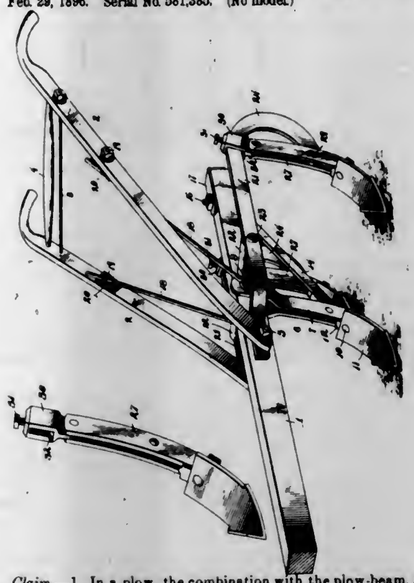


Claim.—1. A rotary steam or exhaust valve, having a cylindrical bearing-surface, with its opening faces arranged perpendicularly to a plane, which coincides with the opening edges of the two opposite opening faces of the valve, substantially as described.

2. A cylindrical valve seat, provided with a plurality of ports, the walls of which, at their opening edges, are arranged perpendicularly to a plane which coincides with the opening edges of the two opposite ports of the valve-seat, substantially as described.

3. The combination of a cylindrical valve-seat, having a plurality of ports, with a rotary steam or exhaust valve, the opening faces of the valve and of the ports of the valve-seat, being arranged perpendicularly to a plane, which coincides with the two opposite opening edges, substantially as described.

571,688. PLOW. STERLING P. RICHMOND, Billings, Mo. Filed Feb. 29, 1896. Serial No. 581,385. (No model.)



Claim.—1. In a plow, the combination with the plow-beam, and the plow-handles pivotally connected directly thereto, of friction-plates arranged upon the inner adjacent faces of the handles and having transverse serrations or corrugations, a pair of handle-braces also having pivotal connection with the beam and extending across the serrations or corrugations of the friction-plates, and clamping-eyebolts passing through said handles and having the braces slidingly engaged thereby, whereby the braces may be clamped against said friction-plates, substantially in the manner and for the purpose described.

2. In a plow, the combination with the plow-beam, of a laterally-disposed beam extension-piece having its rear portion recurved or formed with a U-shaped bend and provided at its extremity with an oblique slot, a standard slidingly fulcrumed on such extremity and having its pivotal bolt or pin working in said slot, and a clip having pivotal connection with the standard and a sliding engagement with the extension-piece, substantially as described.

571,689. BILLET-LOOP. CHARLES ROZELL, Hutchinson, Kans. Filed Nov. 23, 1895. Serial No. 569,955. (No model.)

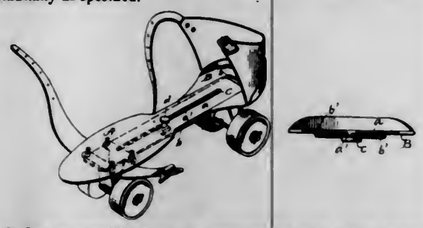


Claim.—An improved article of manufacture, a double or twin billet-loop constructed substantially as specified and comprising side pieces of approximately triangular or V form, cross-bars extending in parallel relation and connecting the side pieces at their angles, the front cross bar having its sides flat and notched in its front edge to afford clearance for the butt-end of the buckle-tongue, a stud extending inwardly from a rear cross-bar to engage with and fix the position of a strap passing through the adjacent loop, and longitudinal flanges on the inner faces of the side pieces in the same straight line with the front cross-bar and extending in a plane passing through the front cross-bar and midway between the rear cross-bars, said longitudinal flanges gradually decreasing in thickness toward their rear ends and having a space between their inner edges to admit of the rivet securing the folded end of the strap occupying a position intermediate the front and rear ends of the flanges, substantially as set forth.

571,690. ROLLER-SKATE. JOHN SCHADE, Brooklyn, N. Y., assignor to Henry Schade, same place. Filed Apr. 18, 1896. Serial No. 588,100. (No model.)

Claim.—1. An extensible skate-body, comprising a heel plate or

portion, and a toe plate or portion, said plates or portions having overlapping extensions, one of said extensions having an elongated longitudinal groove therein, and the other a rib or flange, which slidably engages said groove, together with means for securing said portions in the proper adjustment, and for preventing vertical separation thereof substantially as specified.

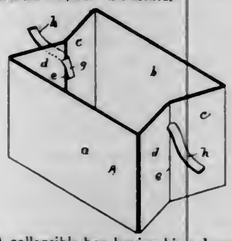


2. In an extensible skate, the combination with a heel portion having a forward extension, of a toe portion having a similar but rearward extension, said extensions being overlapped, and having one a longitudinal slot therein, and the other an elongated rib or flange which engages said slot, the end portion of the uppermost extension also engaging a depression formed in the other of said portions, together with means for securing the two portions in proper adjustment, and for preventing vertical separation thereof substantially as specified.

3. In an extensible skate, the combination with a heel portion having a broad longitudinal depression in its upper surface, and having also an extension forming a continuation of this depressed portion, said depressed portion and extension having a continuous longitudinal slot therein, of a toe plate or portion having an extension which overlies the extension of the heel portion and also engages the said depression, and which has an elongated longitudinal rib or flange thereon which slidably engages the said slot, together with means for securing the adjustment of said portions, substantially as specified.

4. In an extensible skate, the combination with a heel portion B, having the extension b, the depression b' and slot b^3, of the toe portion A having the extension a which overlies the extension b and which has an elongated rib or flange a' which slidably engages the said slot, together with the rivet C, or like fastening, and the screw D, having the nut E, substantially as specified.

571,691. COLLAPSIBLE BOX. THEODORE F. W. SCHMIDT, Dayton, Ohio, assignor to Charles Wright Bell, Cincinnati, Ohio. Filed Feb. 25, 1896. Serial No. 580,651. (No model.)



Claim.—1. A collapsible box having hinged sectional sides reinforced at the hinges by the strengthening-pieces g, as described, a flexible bottom, and a rigid removable bottom made of stiff material and having upturned flanged edges lying parallel with and against the sides of the box, substantially as described.

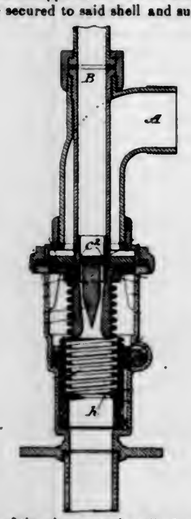
2. In combination with the collapsible box body A having hinged sectional sides, the tapes h attached to the inner adjacent edges of the hinged sections and at their free ends projecting through the sides to the exterior of the box, substantially as described.

571,692. ASPIRATOR. JOSEPH SCHNEIBLE, New York, N. Y. Filed Aug. 27, 1895. Serial No. 560,633. (No model.)

Claim.—1. In a device of the character described, the combination of means to supply the operating fluid, means to supply the fluid operated upon, a sleeve and nozzle constituting the parts of an aspirator, one of said parts being movable with respect to the other, and a flexible plate to support said movable part and adapted to yield with varying pressure thereon.

2. In a device of the character described, the combination with an aspirator, of a piston adapted to yield with the varying fluid-pressure thereon, means controlled by said piston to vary the flow of liquid through the aspirator and means to apply pressure to vary the resistance of said piston to the fluid-pressure thereon.

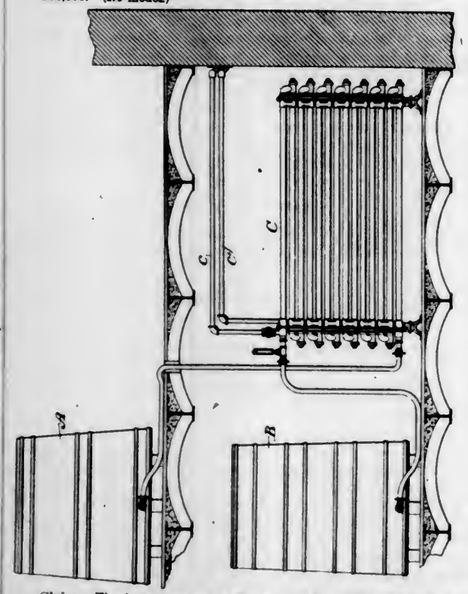
3. In a device of the character described, the combination with a shell or casing, means to supply one fluid thereto, and a nozzle to which the other fluid is supplied, of a sleeve surrounding said nozzle and a flexible plate secured to said shell and supporting said sleeve.



4. In a device of the character described, the combination with a shell or casing, means to supply one fluid thereto, and a nozzle to which the other fluid is supplied, of a sleeve surrounding said nozzle and adapted to move in said shell, and a spring to support said sleeve.

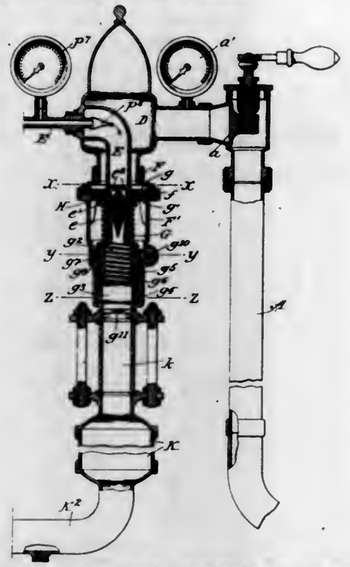
5. In a device of the character described, the combination with means to supply the operating fluid, means to supply the fluid operated upon, of a sleeve and nozzle constituting the parts of an aspirator, one of said parts being movable with respect to the other, a piston adapted to yield with the varying pressure thereon and having said movable part connected thereto, and an adjustable spring to support said piston.

571,693. MANUFACTURE OF FERMENTED LIQUORS. JOSEPH SCHNEIBLE, New York, N. Y., assignor to the Joseph Schneible Company, same place and Jersey City, N. J. Filed Apr. 24, 1896. Serial No. 588,895. (No model.)



Claim.—The improvement in the manufacture of fermented liquors, which consists in continuing the fermentation in the fermenting-vat until the desired degree of attenuation has been reached, then withdrawing the liquor from the fermenting-vat and conducting it to the stock-vat, and reducing the temperature of the liquor in its passage from the fermenting-vat to the stock-vat to a temperature at least as low as the temperature of the atmosphere about the stock-vat and sufficiently low to arrest fermentation.

571,694. APPARATUS FOR CHARGING LIQUIDS WITH GAS. JOSEPH SCHNEIBLE, New York, N. Y. Filed Apr. 15, 1895. Renewed Sept. 2, 1896. Serial No. 604,676. (No model.)



Claim.—1. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and the gas can be delivered and by means of which the gas is mingled with the liquid and impelled forward thereby and therewith, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel and means actuated by the pressure on the discharged liquid to control the escape of the charged liquid from the absorption vessel.

2. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid is delivered and by which the gas is drawn into and mingled with the liquid and impelled forward therewith, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel and means actuated by the pressure on the discharged liquid to control the escape of the charged liquid from the absorption vessel.

3. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid and gas can be delivered and which changes with varying pressure to vary the flow through the same, and an absorption vessel.

4. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and gas can be delivered and by means of which the gas is mingled with the liquid and impelled forward therewith and thereby, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means operated by the pressure of the liquid in the absorption vessel to control the gas supply.

5. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid and gas can be delivered and which changes with varying pressure to vary the flow through the same, an absorption vessel, and means to control the escape of the charged liquid from the absorption vessel.

6. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid and gas can be delivered, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, a valve to regulate the supply of gas, a diaphragm subject to the pressure of the liquid in the absorption vessel, and means intermediate the diaphragm and valve whereby the movement of the former controls the latter.

7. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a variable aspirator to which the liquid and gas can be delivered and which changes with varying pressure to vary the flow through the same, and an absorption vessel.

8. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a variable aspirator to which the liquid and gas can be delivered and which changes with varying pressure to vary the flow through the same, an absorption vessel, and means to control the escape of the charged liquid from the absorption vessel.

9. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a variable aspirator to which the liquid and gas can be delivered, and which changes with varying pressure to vary the flow through the same, an absorption vessel, a valve to control the escape of the charged liquid from the absorption vessel, and a diaphragm subject to the pressure of the liquid after it passes said valve and adapted to control said valve.

10. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a variable aspirator to which the liquid and gas can be delivered, a diaphragm connected to the aspirator to control the same, an absorption vessel, and means to control the escape of the charged liquid from the absorption vessel.

11. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a variable aspirator to which the liquid and gas can be delivered, a diaphragm connected to the aspirator to control the same, an absorption vessel, a valve to control the escape of the charged liquid from the absorption vessel, a diaphragm subject to the pressure of the liquid after it passes said valve and adapted to control said valve.

12. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and the gas can be delivered and by means of which the gas is mingled with the liquid and impelled forward thereby, and therewith, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means operated by the pressure on the liquid in advance of said device to regulate the supply of liquid.

13. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid and gas can be delivered, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel and means operated by the pressure on the liquid in advance of the aspirator to regulate the supply of liquid.

14. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid and gas can be delivered, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, means to control the delivery of the liquid from the absorption vessel, a diaphragm subject to the pressure on the liquid in advance of the aspirator and means controlled by said diaphragm to regulate the supply of liquid.

15. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and the gas can be delivered and by means of which the gas is mingled with the liquid and is impelled forward thereby and therewith, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel and means to maintain in said absorption vessel a pressure greater than the pressure on the gas before mingling.

16. In an apparatus for charging liquids with gas, the combina-

tion of a liquid supply, a gas supply, an aspirator to which the liquid can be delivered and by which the gas is drawn into and impelled forward and mingled with the liquid, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means to maintain in said absorption vessel a pressure greater than the pressure on the gas before mingling.

17. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and the gas can be delivered and by means of which the gas is mingled with the liquid and is impelled forward thereby and therewith, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means to maintain a predetermined difference between the pressures on the liquid and on the gas before mingling.

18. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid can be delivered and by which the gas is drawn into and impelled forward and mingled with the liquid, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means to maintain a predetermined difference between the pressures on the liquid and on the gas before mingling.

19. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device to which both the liquid and the gas can be delivered and by means of which the gas is mingled with the liquid and impelled forward therewith and thereby, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means to maintain a predetermined difference between the pressures on the liquid before and after the mingling of the gas therewith.

20. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid can be delivered and by which the gas is drawn into and impelled forward and mingled with the liquid, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means to maintain a predetermined difference between the pressures on the liquid before and after the mingling of the gas therewith.

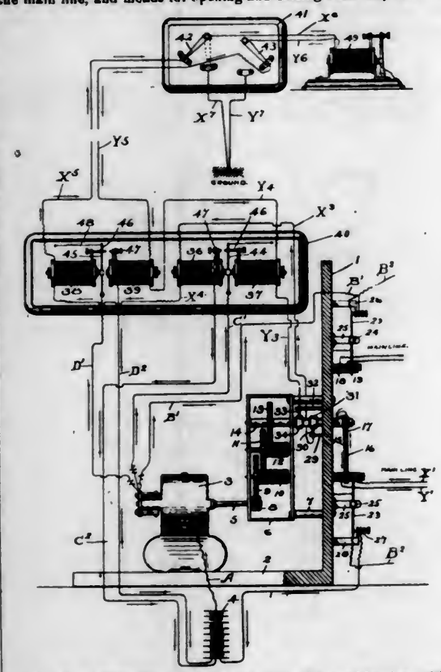
21. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, an aspirator to which the liquid can be delivered and by which the gas is drawn into and impelled forward and mingled with the liquid, said aspirator comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, and an opening to admit the gas to the constricted stream of liquid, an absorption vessel, and means whereby predetermined relations are maintained between the pressure on the gas before mingling, the pressure on the liquid before mingling and the pressure on the charged liquid.

22. In an apparatus for charging liquids with gas, the combination of a liquid supply, a gas supply, a device whereby the liquid is caused to draw the gas, mingle it with itself and impel it forward, said device comprising a constrictive passage for the liquid, a chamber of relatively larger diameter than the stream of liquid and into which the liquid and gas are delivered, an opening to admit the gas to the constricted stream of liquid, an absorption vessel, a valve controlled by the pressure on the discharged liquid to regulate the escape of the charged liquid from the absorption vessel and a valve controlled by the pressure on the liquid in advance of said device, to regulate the supply of liquid.

571,695. TELEGRAPH SWITCH MECHANISM. FRANK P. SCOTT, Terre Haute, Ind. Filed Mar. 25, 1896. Serial No. 584,579. (No model.)

Claim.—1. In a telegraph switch mechanism, the combination with the switch-arm and its shaft, of a motor so connected up with the shaft as to operate it, a battery, an armature, a contact-point, a circuit through the motor, armature, contact-point and battery, a branch line connected up with the magnet which operates the armature, and means on the branch line for operating said armature.

2. In a telegraph switch mechanism, the combination with a switch-arm and its shaft, of a motor so connected up with such shaft as to operate it, a battery, a pair of magnets, an armature between them, a contact point, a circuit through the motor, armature, contact-point, and battery, a loop-line through the magnets connected up with the main line, and means for opening and closing such loop-line.



3. In a telegraph switch mechanism, the combination with a switch-arm and its shaft, of a motor so connected up with the shaft as to operate it, a battery, a pair of magnets, an armature between the same, a contact-point, a spring normally holding the armature away from such contact-point, a circuit through the armature, contact-point and battery, a loop-line connected up with the main line and running through the magnets to a branch office, and a ground-switch within such loop-line at the branch office.

4. In a telegraph switch mechanism, a series of circuit-breakers on the switchboard, a switch-arm that engages the circuit-breakers *seriatim*, a motor that operates the switch-arm, a circuit through the motor and the series of circuit-breakers when the switch-arm is free from contact, and means for breaking such circuit when the switch-arm is in contact.

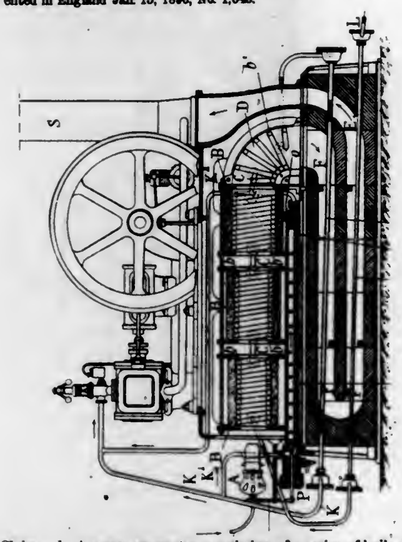
5. In a telegraph switch mechanism, a series of circuit-breakers on the switchboard provided with spring contact-pieces, a switch-arm that engages the contact-pieces *seriatim* and moves them somewhat, a motor that operates the switch-arm, and a circuit through the motor and series of circuit-breakers, such circuit so connected up with the circuit-breakers as to be broken when the switch-arm is in such engagement with a spring contact-piece as to force it in a position for opening the circuit.

6. In a telegraph switch mechanism, a series of pairs of spring contact-pieces on the switchboard, a switch-arm that engages the contact-pieces *seriatim* and passes between each pair, a motor that operates the switch-arm, a spring-controlled lever so pivoted that its inner end will always engage one contact piece of a pair, a contact-point with which the other end of such lever engages when a contact-piece resumes its normal position after the passage from it of the switch-arm, and a circuit through the motor and the series of levers and contact-points, substantially as set forth.

7. In a telegraph switch mechanism, a switchboard having on its face a pair of contact-pieces, a shaft mounted in said switchboard, a motor to drive such shaft, a switch-arm mounted on the shaft comprising stripe insulated from each other, collars mounted on the shaft, brushes mounted to engage the collars, wires connecting the collars with the metallic strips in the switch-arm, and wires extending from the brushes to the relay whereby a circuit from the main lines to the relay is effected through the switch-arm and rotary shaft.

8. A telegraph switch mechanism comprising a suitable frame-work having a switchboard, contact-pieces on the switchboard, main-line wires connected up with such contact pieces, a shaft in the frame-work, a motor to drive the shaft, a switch-arm mounted on the shaft comprising metallic stripe insulated from each other, a movable lever mounted on the switchboard one end of which engages one of the contact-pieces, a contact-point to be engaged by the lever, a battery, a circuit through the motor, battery, and lever and contact-point for each contact-piece, collars mounted on the shaft, brushes mounted to engage the collars, wires connecting the collars with the strips of the switch-arm, a pair of opposing magnets, wires connecting the brushes with the magnets, a branch office having a switch, wires leading from the magnets to such switch, an armature between such magnets, a contact-point, and a circuit through the motor, battery, armature, and contact-point, substantially as set forth.

571,696. STEAM GENERATOR. ADOLPHE SEIGLE, Paris, France, assignor to the Compagnie Internationale des Procédés Adolphe Seigle, same place. Filed July 10, 1896. Serial No. 598,697. (No model.) Patented in England Jan. 15, 1896, No. 1,043.



Claim.—1. A steam-generator, consisting of a series of helically-wound tubes suitably connected with the feed-water and steam collector, and a series of shells of increasing diameters upon the inner surface of which the tubes are secured, substantially as and for the purposes described.

2. A steam generator, comprising a series of disconnected shells of increasing diameters forming a combustion-flue, a series of worms wound upon the inner surface of the shells, a pipe connecting the first worm with the feed-water, and a superheater connected with the last worm, substantially as and for the purposes described.

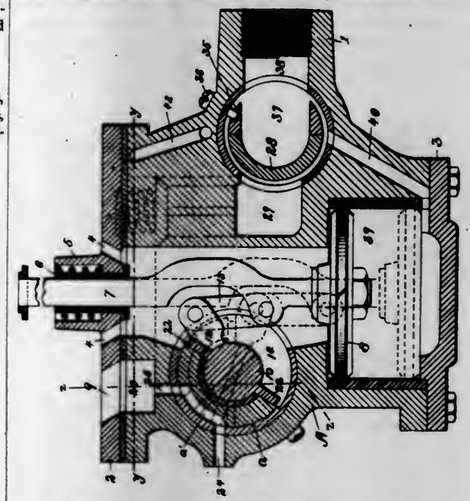
3. A steam-generator, comprising a series of disconnected shells of increasing diameters forming a combustion-flue, a series of worms helically wound upon the inner surface of the shells, a pipe connecting the first worm with the feed-water, a superheater connected with the last worm, a pyrometer-rod, a sleeve inclosing the same, a steam-pipe adapted to convey live steam from the superheater through the sleeve, and a hydrocarbon-burner controlled by said pyrometer-rod, substantially as and for the purposes described.

571,697. BRAKE MECHANISM. JOHN SHOURDS, Allegheny, Pa. Filed May 14, 1895. Serial No. 549,330. (No model.)

Claim.—1. In an air-brake mechanism, the combination with a train-pipe, a brake-cylinder, and an auxiliary reservoir, of a piston-chamber communicating with the train-pipe and with the auxiliary reservoir, a piston arranged in said chamber, a valve-chamber having a port 25 communicating with the brake-cylinder and an exhaust-port, a rotary valve arranged in said chamber and having a sliding member provided with a groove or way adapted to connect the port 25 with the piston-chamber and the auxiliary reservoir or with the exhaust-port, and connections between the piston and the valve, substantially as set forth.

2. In an air-brake mechanism, the combination with a train-pipe, an auxiliary reservoir, and a brake-cylinder, of a rotary controlling-valve consisting of a body portion having laterally-projecting flanges on opposite sides thereof, and another member, fitted between said body and the wall of the valve-chamber and adapted to be moved by the flanges on the body, substantially as set forth.

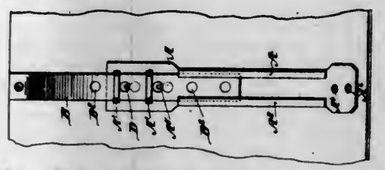
3. A valve for an air-brake mechanism consisting of a rotary body having laterally-projecting flanges on opposite sides thereof, and another member partially surrounding the rotary body and adapted to be moved by the flanges thereon, said rotary body being adapted to have a limited movement independent of the other member, and the latter having formed therein a port adapted to be closed by one of the flanges on the rotary body, substantially as set forth.



4 A valve for an air-brake mechanism consisting of a rotary body, 10, having laterally-projecting flanges on opposite sides thereof, another member, 21, partially surrounding the rotary body and adapted to be moved by the flanges thereon, and a sliding plate fitted in a way in the member 21 and having its ends in contact with both of the flanges on the body 10 and a passage or groove formed in its outer face, substantially as set forth.

5. In an air-brake mechanism, the combination with a train-pipe, an auxiliary reservoir, a brake-cylinder, a piston-chamber communicating with the train-pipe and with the auxiliary reservoir, and a piston arranged in the piston-chamber, of a valve arranged between the piston-chamber and the brake-cylinder and consisting of a rotary body connected with the piston and having laterally-projecting flanges on opposite sides thereof, another member, 21, partially surrounding the rotary body between and adapted to be moved by the flanges thereon, the member 21 having a port or ports in line with ports in the rotary body and another port adapted to be closed by a plug or pin on one of the flanges of the rotary body, and a sliding plate fitted in a way formed in the member 21 and extending continuously from one of the flanges on the rotary body to the other and having in its outer surface an air-passage, substantially as set forth.

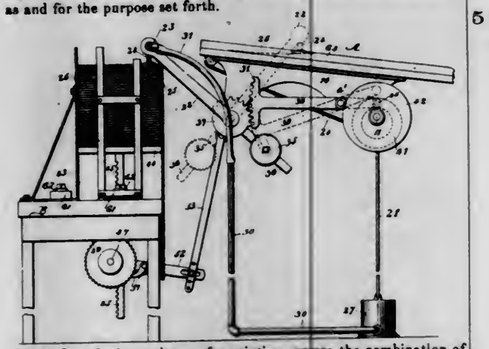
571,698. PICTURE-HANGER. ARCHIBALD SIDDALL, Bondi, New South Wales. Filed Dec. 19, 1895. Serial No. 572,628. (No model.) Patented in New South Wales Feb. 7, 1894, No. 4,867, and in England Mar. 19, 1894, No. 5,701.



Claim.—The herein-described picture-hanger consisting of a stay adapted to be secured to the frame of the picture and provided with a series of holes and guide-loops, and an elastic strip adapted to be secured to the picture-frame opposite the stay and having a series of holes and adapted to take within the loop of said stay with one of its series of holes in register with one of the holes in said stay, substantially as described and shown.

571,699. FEED ATTACHMENT FOR PRINTING-PRESSES. CHARLES S. SINCLAIR, Cincinnati, Ohio. Filed July 17, 1895. Serial No. 556,262. (No model.)

Claim.—1. In a feed attachment for printing-presses, the combination, with a feed-table, a drive-shaft, a picker-shaft journaled beneath the table and provided with a mutilated gear, a cam secured on the drive-shaft, a lever operated by the cam at one of its ends, being provided at its opposite end with a rack for engagement with the said gear, and arms projected from the extremities of the gripper-shaft, of a pipe journaled in the said arms and provided with suction-cups communicating with the interior of the pipe, a suction-pump the piston whereof has an eccentric connection with the drive-shaft, a flexible connection between the said pump and the said pipe carrying the cups, and a weight adjustably connected with the picker-shaft, as and for the purpose set forth.



2. In a feed attachment for printing-presses, the combination of a drive-shaft, a picker-shaft, a gear-wheel on the picker-shaft, a lever having a toothed sector meshing with the gear of the picker-shaft, a disk fixed on the drive-shaft and having an eccentric groove receiving a portion of the lever, arms rigidly secured to the picker-shaft, a tubular shaft carried by the arms, a suction-picker communicating with the tubular shaft, and an operated pump having flexible communication with the tubular shaft, substantially as described.

571,700. BICYCLE-REST. LEWIS SMITH, Brooklyn, N. Y. Filed Oct. 22, 1895. Serial No. 566,455. (No model.)



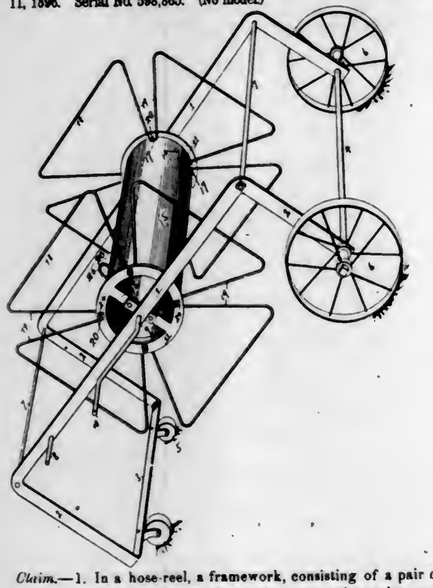
Claim.—1. A bicycle-rest, the same comprising a head-section terminating at one end in a head having sockets formed therein and at its opposite end in a link, and a keeper having a hinged connection with the head at one end, being adapted for locking engagement therewith at the opposite end, a foot-section having a link formed at one of its ends, adapted to slide upon the link of the head-section, and a clamp connecting the link portions of the two sections, as and for the purpose set forth.

2. A bicycle-rest, the same comprising a head-section terminating at one end in a head having sockets formed therein and at its opposite end in a link, and a keeper having a hinged connection with the head at one end, being adapted for locking engagement therewith at the opposite end, a foot-section having a link formed at one of its ends, adapted to slide upon the link of the head-section, and a clamp connecting the link portions of the two sections, the same consisting of plates having their opposing sections curved to receive the links of the head and the foot sections and their side edges inwardly flanged, and a bolt connecting the two plates, said bolt being provided with a suitable nut, as and for the purpose specified.

3. In a bicycle-rest, the combination of a foot having a downwardly-extending portion adapted to engage the ground, and provided at its upper end with a head adapted to engage under one of the pedal-cranks and one of the frame-bars, and a keeper pivotally connected at one end to said head and adapted to extend across the upper side of the pedal-crank and frame-bar when the head is under the same, said keeper being adapted to be locked at its other end to the head, and forming between it and the head two sockets adapted to receive the said pedal crank and frame-bar, substantially as set forth.

4. In a bicycle-rest, the combination of two sections adjustably connected and adapted to swing pivotally and slide upon each other, the lower section being adapted to rest on the ground, and the upper section being provided with a head adapted to engage under one of the pedal-cranks and one of the frame-bars, and a keeper pivoted at one end to the head and adapted to extend over the pedal-crank and frame-bar when the head is under the same, said keeper being adapted to be locked at its other end to the head and forming between it and the head two sockets adapted to receive the pedal-crank and frame-bar, substantially as set forth.

571,701. HOSE-REEL. THOMAS N. SMITH, Independence, Mo., assignor of one-half to William A. Symington, same place. Filed July 11, 1896. Serial No. 598,865. (No model.)



Claim.—1. In a hose-reel, a framework, consisting of a pair of inverted-U-shaped frames arranged opposite one another, a bar connecting the lower front ends, and an axle connecting the lower rear ends of said frames, casters swiveled below said bar, wheels mounted upon said axle, and brace-rods connecting said frames at the upper ends of their vertical arms, substantially as described.

2. In a hose-reel, a framework, consisting of a pair of inverted-U-shaped frames arranged opposite one another, a bar connecting the lower front ends and an axle connecting the lower rear ends of said frames, casters swiveled below said bars, wheels mounted upon said axle, brace-rods connecting said frames at the upper ends of their vertical arms, and a handle projecting from one of said frames, substantially as described.

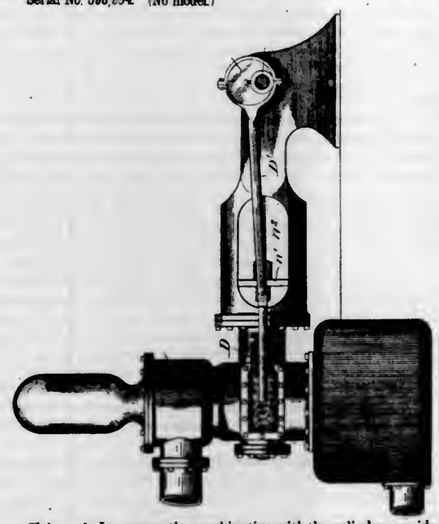
3. In a hose-reel, the combination of a framework, consisting of a pair of oppositely-disposed inverted-U-shaped frames, a bar connecting the lower front ends, and an axle connecting the lower rear ends of said frames, and brace-bars between said frames at their upper ends, with a reel or drum, and means to rotate the same, substantially as described.

4. In a hose reel, the combination with a suitable supporting-framework, of a reel proper or drum journaled rotatably therein, and comprising a shaft, rings mounted upon said shaft, a cylinder or drum mounted upon and connecting said rings, and wire end guards secured to said rings, substantially as described.

5. In a hose-reel, the combination with a suitable supporting-framework, of a reel proper or drum journaled rotatably therein, and comprising a shaft, rings mounted upon said shaft, a cylinder or drum mounted upon and connecting said rings, wire end guards secured to said rings, and a crank-handle for said shaft, whereby the reel may be rotated, substantially as described.

6. In a hose-reel, the combination with a suitable framework, of a reel proper or drum journaled rotatably therein, and comprising a shaft, rings mounted upon said shaft and provided with diametric cross-bars, a cylinder or drum mounted upon and connecting said rings, and a hook-rod to clasp the hose against the cylinder or drum, and extending through holes therein, and having one of its arms also extending through a guide loop of the cross-bar of one of said rings, substantially as described.

571,702. PUMP. JOHN STUMPF, Chicago, Ill. Filed July 13, 1896. Serial No. 598,954. (No model.)

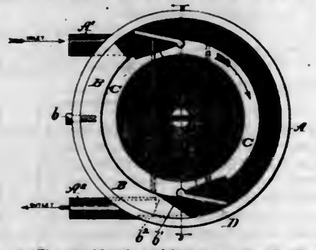


Claim.—1. In a pump, the combination with the cylinder provided with an inwardly-lifting induction-valve and an outwardly-lifting eduction-valve, the driving mechanism and piston, of an auxiliary plunger, effective in the same cylinder, actuated from the driving mechanism, while the piston is at the opposite limits of its traverse, to alternately increase and diminish the fluid-pressure in the cylinder and thereby effect opening-and-closing movement of said valves, substantially as and for the purpose set forth.

2. In a pump, the combination with the cylinder and its induction and eduction valves, the driving mechanism and piston, of an auxiliary plunger at the said cylinder actuated from the said driving mechanism, to discharge fluid into and withdraw fluid from the cylinder while the piston is at the opposite limits of its traverse, and thereby effect opening-and closing movement of said valves, substantially as and for the purpose set forth.

3. In a pump, the combination with the cylinder and its induction and eduction valves, the driving mechanism and piston, of a chamber in open communication with the cylinder, an auxiliary plunger movable in and out of said chamber and actuated from the driving mechanism while the piston is at opposite limits of its traverse, to withdraw fluid from and discharge it back into the cylinder, and thereby effect opening-and-closing movement of said valves, substantially as and for the purpose set forth.

571,703. ROTARY WATER-METER. JAMES G. SUMMERS, Charleston, W. Va. Filed July 25, 1896. Serial No. 600,506. (No model.)

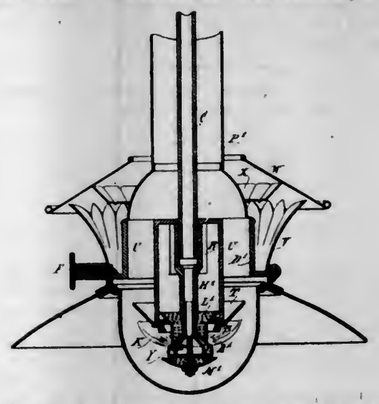


Claim.—1. The combination with an outer case having an outlet and an inlet port, and an abutment with inclined end between said outlet and inlet; of a rotary hub arranged within the case and having recesses in its periphery provided with hinged pistons, and slide-rods extending entirely through the hub at one side of the center or diametrical line and bearing at one end against the inner face of the hinged pistons at points removed from their axial centers, and at the other end extending through the opposite side of the hub and adapted to bear against the inclined end of the abutment to open the pistons substantially as and for the purpose described.

2. The combination in a water-meter, of a revolving annular hub a diametrical bar fixed to the same, a detachable cover, and a central shaft in said cover having a gear-wheel on one end and a slotted or bifurcated head on the inner end adapted to straddle the diametrical bar and impart the revolution of the hub to the registering device substantially as and for the purpose described.

3. The combination of the case A having inlet-port A′ and outlet-port A^2, the abutment B arranged between the said ports and having an inclined and chambered end, a set-screw *b* for holding said abutment to the case, the revolving annular hub C with recesses *c c*, hinged pistons D and slide-rods *d d* arranged outside of the diametrical line and bearing against the hinged pistons at points removed from their axial centers, and means for transmitting its revolutions to registering devices substantially as shown and described.

571,704. REGENERATIVE GAS-LAMP. WILLIAM R. SWIFT, New York, N. Y. Filed Mar. 12, 1896. Serial No. 541,410. (No model.)



Claim.—1. In a regenerative gas-lamp, the upright burner consisting of an annular chamber provided with upwardly-opening outlets for gas, and the downwardly-inclined inlet-tubes opening into said chamber at its upper surface, in combination with a deflecting-cone resting upon the burner between the outlet-openings and inlet-tubes for the purpose of directing the air to the inside and to the outside of the burner, as and for the purpose set forth.

2. In a regenerative gas-lamp, the combination of the gas-pipe, the central air-passage surrounding the same, the upright burner having an annular chamber provided with gas-outlets around its upper surface and connected to the gas-pipe by downwardly-inclined tubes opening into said chamber at its upper surface, and a perforated funnel-form deflecting-cone resting upon said chamber between the outlet-openings and the inlet-tubes and extending to the walls of said air-passage, substantially as and for the purpose set forth.

3. In a regenerative gas-lamp, the combination with the annular burner having perforations in the upper surface thereof, of an air-passage leading through the regenerative chamber to the burner, a perforated funnel-form deflector arranged about the gas-pipe and resting upon the burner within the line of perforations thereof and against the outer wall of the air-passage thereby directing a portion of the air through the burner to the under side of the flame and a portion of the air against the upwardly-extending flame, an adjustable deflector upon the lower edge of said wall directing the air to the upper side of the flame, and a perforated deflector below the burner provided with an imperforate upturned edge for directing air against the under side of the flame, substantially as set forth.

4. In a regenerative gas-lamp, the combination with the gas-pipe and the burner upon the end thereof, the regenerative chamber surrounding and attached to the gas-pipe and having an air-passage through the center thereof extending nearly to the burner, a perforated funnel-form deflector resting upon the burner for directing the air to the center and outside thereof, and a ring deflector screw-threaded to fit and turn upon screw-threads formed on the interior of the wall of said air-passage thereby rendering it vertically adjustable to vary the direction of the air deflected to the outside of the burner so as to properly present the air to different kinds of gas, substantially as shown and described.

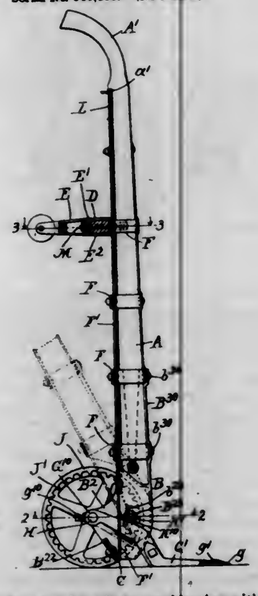
5. In a regenerative gas-lamp, the combination with the shield V, having air-passages at its upper edge and supported on the outer wall of the lamp, of the cap W, mounted on said shield, and a radially-corrugated deflector X, arranged about the interior of said cap, substantially as and for the purpose set forth.

6. In a regenerative gas-lamp, substantially as described, the combination with the downwardly-extending gas-pipe, of the branching

tube secured to the lower end thereof, the annular chamber having outlet-perforations along its upper outer edge and supported upon the branches of said tube and to the interior of which they conduct the gas in a manner such that it will strike the walls of said chamber and be diffused throughout it before escaping from the perforations, the air-passage surrounding the gas-pipe and leading downwardly toward the burner, and a deflecting-cone supported upon the burner just within the outlet-perforations and extended upwardly between the gas-pipe and the wall of the air-passage so as to divide the descending current of air and direct a portion through the annular chamber and the remainder to the outside thereof, as and for the purpose set forth.

7. In a regenerative gas-lamp, the combination with an upwardly-extending shield resting upon the frame of the lamp and having suitable air-passages therethrough, of a cap mounted on said shield and upwardly inclined toward the chimney of the lamp, and leaving a space between itself and the chimney, and a downwardly-inclined corrugated deflector X, secured at its outer edge to the interior of said cap, substantially as shown and described.

571,705. **HAND-TRUCK.** HENRY O. THOMAS, Chicago, Ill. Filed Nov. 16, 1895. Serial No. 569,155. (No model.)



Claim.—1. In a hand-truck in combination with the body and the wheels; a shoe or lift at the forward end pivotally connected to the body and adapted to oscillate between two positions, at one end of which it forms a forwardly-extended base adapted to support the truck standing upright, while at the other limit it projects at an obtuse angle to the body and provided with stops to arrest it at said positions respectively, whereby it is adapted to lie flat on the floor when the base extends obliquely rearward to afford leverage for lifting and held by downward pressure on the handles, substantially as set forth.

2. In a hand-truck in combination with the body having the axle at the rear; the wheels journaled on such axle, and the shoe or lift pivoted thereat and extending forward from its pivot and adapted to oscillate between the position substantially at right angles to the length of the body; and a position at an angle materially greater than right angles and provided with stops to arrest it at said positions respectively, substantially as and for the purpose set forth.

3. In a hand-truck in combination with the body comprising side bars and a cross-sill which joins them at the lower forward end; the axle located at the rear and higher than said forward cross-sill; a shoe or lift pivoted at the axle and extending forwardly therefrom above the cross sill and adapted to stop on the latter, and provided with a further stop on the body above the cross sill; substantially as set forth.

4. In a hand-truck in combination with the frame comprising side bars and cross sills uniting rigidly; brackets which terminate the side bars respectively and which extend rearward to afford supports for the axles; a shoe or lip comprising a forward lip and arms extending rearward therefrom when the ends and the axle constituting the fourth side are parallel with the lip; said frame being adapted to have its said side arms inserted between the side bars, and to be made rigid with the axle; the latter being journaled in the brackets; suitable stops to raise the side arms at the limits of oscillation about the axis of the axle sufficient to permit the truck to tilt from an upward position to a position inclined obliquely rearward; substantially as set forth.

5. In a hand-truck in combination with the body; the wheels journaled at the rear and provided with interior toothed rims; dogs mounted on the body adjacent to the wheels respectively; and adapted to engage their toothed rims to lock them against rearward rotation; a shoe or lift pivotally connected to the body and adapted to oscillate from a position extending forward substantially at right angles to the body, to a position extending forward at a largely obtuse angle to the body; and suitable means for engaging the dogs with the toothed rims and for disengaging them at will; substantially as set forth.

6. In a hand truck in combination with the side bars, the brackets which terminate them respectively; the wheels having their axles supported in said brackets and having interior toothed rims; the dogs pivoted in the brackets and adapted to engage the toothed rims; said dogs having each slot K^{30} extending past the fulcrum and the rod L mounted and adapted to slide on each side bar, and having a finger which engages the slot, whereby the dog may be thrown into and out of engagement with the toothed rim, by sliding the rod; and the ends of the slot stop the rod in its sliding movements; substantially as set forth.

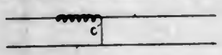
7. In combination substantially as set forth, the truck-body; the wheels journaled therein have the toothed rims; the dogs fulcrumed on the side bars of the frame respectively and adapted to engage the toothed rims; said dogs having the slots K^{30} and the rods L provided with slide-bearings on the side bars and extending beyond such bearings to engage the slots in the dogs respectively; whereby said rods serve as springs to hold the dogs in engagement by virtue of the flexure to which the rods are subjected below their lowest bearing on the side bars when in position to hold the dogs engaged.

8. In a hand-truck in combination with the side bars; the legs having sockets which face each other to receive the ends of the cross-sill and having an angle-seat facing inward and upward above said sockets and cross sill, adapted to be inserted endwise in the sockets; and the truck-frame having side bars adapted to lodge in the angle-seats and the angle-bolts having horizontal arms inserted through the side bars; the upper and lower webs of the sockets and the cross-sill which enters the sockets being virtually prepared to receive the vertical arms of the angle-bolts and the vertical web of the angle-seat being engaged to receive the horizontal arms of said bolts by pins, substantially as set forth, with the nuts on both ends of the bolts.

9. In a hand-truck in combination with the side bars A A; legs E E having lugs E' E^2 defining sockets and vertical lugs cooperating therewith to define inwardly and upwardly facing angle-seats for the side bars; and the cross-sill D having its ends inserted in said sockets; the cross-strap F secured to the cross-sill and extending over the side bars and bent down outside the same angle-bolt M M; said side bars and the downbent ends of the straps; the lugs of the sockets and the cross-sill insert therein being all apertured for the angle-bolts; the vertical lugs of the legs being notched at the upper end to receive the angle-bolts and being inserted between the side bars and the downbent ends of the strap and the nuts on the ends of said angle-bolts respectively; substantially as set forth.

10. In a hand-truck the shoe or lift having its forward lip slipping from the forward edge up to a rearwardly-facing shoulder which extends the whole length of the lip parallel; substantially as and for the purpose set forth.

571,706. **ELECTRIC CABLE.** SILVANUS P. THOMPSON, London, England. Filed July 20, 1892. Serial No. 440,672. (No model.) Patented in England Dec. 21, 1891, No. 22,304, and July 4, 1893, No. 13,064; in France June 20, 1892, No. 222,460, and Dec. 13, 1893, No. 234,763; in Germany Oct. 23, 1892, No. 86,013; in India Apr. 25, 1893, No. 320, and Aug. 17, 1894, No. 18; in Spain Sept. 4, 1893, No. 13,896, and Apr. 10, 1894, No. 15,306; in Brazil Feb. 7, 1894, No. 1,686; in Ceylon Aug. 22, 1894, No. 443, and in Straits Settlements Dec. 14. 1895.



Claim.—1. In an electric cable having continuously-insulated metallic conductors from end to end, the combination with the said conductors of a series of compensators or devices possessing both resistance and self-induction, systematically distributed at intervals along the entire length of the cable, so proportioned and arranged that their electromagnetic induction shall counterbalance from point to point the effect of the distributed electrostatic capacity of the gutta-percha surrounding the said conductors.

2. A cable divided into sections, in each of which is an electromagnetic induction device connecting the conductors, and forming a structural and integral part within the outer sheathing of the cable, each said electromagnetic induction device being so proportioned as to counterbalance the electrostatic capacity of the particular section to which it is applied, whereby the capacity of the section is counterbalanced.

3. The combination of two or more conductors in a cable with short-circuiting induction-coils placed between the conductors having each a resistance at least as great as that of the portion of the conductor between each such coil and the next, whereby the statical charges otherwise accumulating along its entire length, are drawn off at intervals along the length.

4. In a cable, the combination with the conductors thereof, one of which is formed at intervals as a laminated core, of a shunt extending from the other conductor and coiled around a laminated core in a coil of greater resistance than that of the entire circuit.

5. A cable having its conductors united at periodic intervals by shunts which are coiled around cores, and which have each a greater resistance than the combined resistance of the conductors between any such shunt-coil and the next such shunt-coil.

6. In an electric cable having continuously-insulated conductors running therethrough side by side, the combination within said cable of a conductor and a return-wire with induction-coils having their axes approximately parallel with the axes of the conductors.

7. The combination of two conductors which would if uncompensated exercise electrostatic retarding effects on one another by mutual capacity, with a self-induction coil or coils connecting them, of greater resistance than their circuit or circuits, such coil or coils possessing a high time constant and having a small and highly laminated core.

8. In an electric cable having two continuous insulated conductors, the combination of the said conductors with a self-induction coil or device which is connected across as an oblique bridge from one conductor to the other, one end of the said device or bridge being joined to one of the conductors at a point farther along the cable than that at which the other end of the said device or bridge is connected to the other conductor.

9. A cable comprising two or more insulated conductors running therethrough side by side and provided at intervals with compensating devices for diminishing the electrostatic capacity.

571,707. **ELECTRIC CABLE.** SILVANUS P. THOMPSON, London, England. Filed July 20, 1892. Serial No. 440,673. (No model.) Patented in England Dec. 21, 1891, No. 22,304, and July 4, 1893, No. 13,064; in France June 20, 1892, No. 222,460, and Dec. 13, 1893, No. 234,763; in Germany Oct. 23, 1892, No. 86,013; in India Apr. 25, 1893, No. 320, and Aug. 17, 1894, No. 18; in Spain Sept. 4, 1893, No. 13,896, and Apr. 10, 1894, No. 15,306; in Brazil Feb. 7, 1894, No. 1,686; in Ceylon Aug. 22, 1894, No. 443, and in Straits Settlements Dec. 14. 1895.



Claim.—1. The herein-described method of counterbalancing the effect of distributed electrostatic capacity in long lines of metallic return-circuits in which the conductors are separately insulated throughout, which consists in dividing the circuit into a series of successive separately-insulated metallic return-circuits in each of which a movement of electricity takes place and connecting these circuits by mutual induction.

2. A cable comprising a metallic return-line formed into a series of comparatively short independent and completely-insulated circuits each of substantially the same length or capacity and connected by mutual induction coils, or devices, the whole being inclosed within a common sheath, substantially as described.

3. The combination in a submarine electric cable of one or more short sections intermediate its ends, said section or sections each consisting of two conductors both separately insulated and inclosed within one common sheath, the said intermediate section or sections being connected by means of mutual induction devices with the portions of cable lying beyond in both directions.

4. An electric cable consisting of two insulated conductors inclosed side by side within a common external sheath, one of the said conductors being continuous from end to end, and the other being actually divided, the two divided parts being arranged in inductive relation and their ends connected to the undivided conductor.

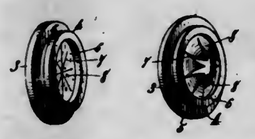
5. A cable consisting of two or more internal conductors, each of which is divided into sections constituting thereby a large number of successive circuits arranged in inductive relation each to the next and each inducing into the next in succession, the lines of conductors being connected across to a continuous conductor by double induction-coils, each having a high time constant, and having small well-laminated iron cores.

6. A cable consisting of two internal conductors separately insulated and inclosed within a common external sheath acting with a distributive mutual induction between their own parallel portions, either of the said interna' conductors being divided, actually or virtually, into sections in each of which a motion of electricity is possible.

7. In a cable consisting of two continuous metallic conductors, means for virtually dividing said conductors into connected sections, said means comprising induction devices applied distributively to said conductors at intervals.

8. A twin-wire cable comprising an outgoing and a return line, both separately insulated and inclosed within one common sheath, the said cable being formed into a series of comparatively short independent completely-insulated circuits each of substantially the same length or capacity, and connected by mutual induction coils or devices, substantially as described.

571,708. **DUST-GUARD FOR AIR-BRAKE HOSE-COUPLINGS.** WILLIAM Y. THOMPSON, Fort Howard, Wis. Filed Mar. 9, 1896. Serial No. 582,464. (No model.)

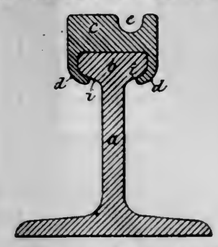


Claim.—1. The combination with a fluid-pressure-brake coupling, of a flexible diaphragm seated in said coupling, said diaphragm having a plurality of radial slits forming V-shaped tongues which, when closed lie in the same flat plane to prevent the passage therethrough of solid substances, but which yield in either direction under the pressure of a fluid to form an unobstructed passage therefor, substantially as described.

2. In a dust-guard for hose-couplings, the combination of a gasket consisting of two annular sections superimposed one upon the other, and an elastic diaphragm secured between said sections and provided with a plurality of radial slits extending from its center to near the periphery thereof, substantially as described.

3. In a dust-guard for hose-couplings, the combination of a gasket consisting of two annular sections 3 4 of the same internal diameter but of unequal external diameters, and an elastic diaphragm disposed between said annular sections and secured thereto and having a plurality of radial slits extending from its center to near its periphery, substantially as described and for the purpose specified.

571,709. **COMPOUND TRAMWAY-RAIL.** WILLIAM TOWLER, Leeds, England. Filed Aug. 31, 1896. Serial No. 604,429. (No model.)

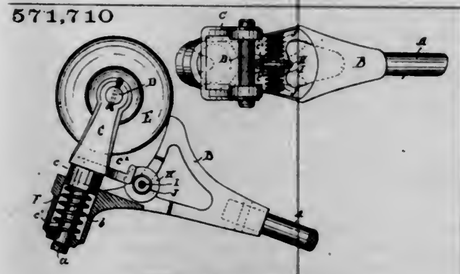


Claim.—The combination to form a compound tramway-rail of a girder having a head *b* approximately rectangular in section and with the under side *i* of the said head formed somewhat inclined to the horizontal with a separate removable head having depending side flanges or ribs *d* bent or folded close against the vertical sides and inclined under sides *i* of the girder-head substantially as described and illustrated.

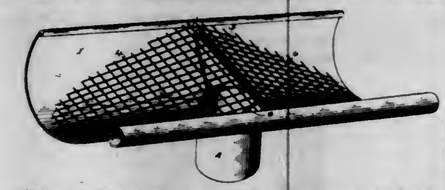
571,710. **TROLLEY FOR ELECTRIC CARS.** SAMUEL F. TUPPS, Westbrook, Me. Filed Oct. 9, 1895. Serial No. 565,111. (No model.)

Claim.—In combination with a trolley for electric cars a trolley-wheel mounted in a standard carried by a head, a spring for holding said standard in a raised position, arms on said standard, a disk working between said arms and carried by and free to slide upon a rod secured in the head and a spring on each side of said disk to hold it normally in a central position substantially as set forth.

571,710



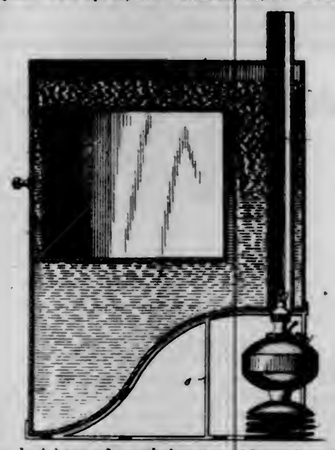
571,711. EAVES-TROUGH STRAINER. SYLVESTER A. TWIST, Coldwater, Mich. Filed Apr. 7, 1896. Serial No. 586,577. (No model.)



Claim.—1. The combination with the strainer constructed as described, of a spring-wire loop having its central portion interwoven with the longitudinal stranda of the strainer, the terminal portions of said loop constituting spring-arms which are adapted to enter and engage the down-spout, substantially as described.

2. A strainer for eaves-troughs, comprising reversely-inclining portions meeting at a medial point in a transverse crest or ridge of a length corresponding to the transverse measurement of the trough in the proximal plane of its top, in combination with a spring-wire loop having its central portion interwoven with the longitudinal strands of the strainer, the terminal portions of said loop constituting spring-arms which are adapted to enter and engage the down-spout, substantially as described.

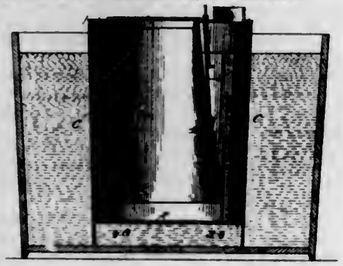
571,712. HEATER FOR EXPLOSIVES. HERMAN VULPIUS, Leadville, Colo., assignor of two-thirds to H. Kahn and John S. Doddridge, same place. Filed Apr 27, 1896. Serial No. 589,269. (No model.)



Claim.—1. A heater for explosives comprising a box, a water-jacket enveloping the box on all sides except the front and having its lower rear end cut away, providing a cooling-chamber, a hollow door fitting within and closing the front side of the box and having communication with the water-jacket through its hinges, a tube extending vertically through the rear portion of the water-jacket, and a heater located in the space formed by cutting away the lower rear portion of the jacket, and adapted to cause a circulation of hot air through the said vertical tube, substantially as and for the purpose set forth.

2. A heater for explosives, comprising a box, a water jacket enveloping the box and having its lower rear end portion cut away, forming a pit or cooling-chamber at the lower front end, a stand fitted to the said cut-away portion of the water-jacket, a tube extending vertically through the rear portion of the jacket, a yielding base, and a lamp mounted upon the yielding base and having its upper portion fitted to and extending within the lower end of the vertical tube, substantially as and for the purpose set forth.

571,713. BOILER. GEORGE P. WASHBURN, McGregor, Iowa. Filed Sept. 9, 1896. Serial No. 605,330. (No model.)



Claim.—In the herein-described heater, consisting of a fire-pot, as described, the fuel-magazine depending from the top thereof, a cover, a lid situated on said cover and adapted to cover the fuel-magazine, a smoke-outlet, a draft-damper situated at the lower end of the fuel-magazine, said draft-damper fitting in guideways, guideways for the reception of said damper, means for operating said damper consisting of a rod attached at the lower end to the top of the said damper and passing up through the said cover, substantially as shown and described.

571,714. CAR-FENDER. PATRICK J. WATERS, Bristol, Pa. Filed June 2, 1896. Serial No. 593,968. (No model.)



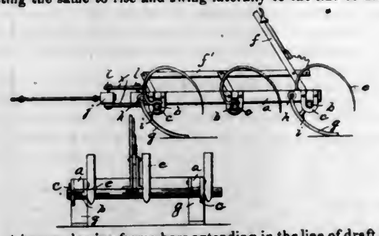
Claim.—1. In a device of the character described, a clamp consisting of a stationary member, a spring-pressed lever pivoted thereto, a bolt secured to the lever and projecting through a hole in the stationary member and a spring located between the end of the bolt and the stationary member in combination with a metal strap secured on the end of a chain having a projection on its end adapted to be engaged by the clamp, as and for the purpose described.

2. In combination with a car, a pair of brackets secured to the truck-frame thereof, a fender pivoted to said brackets, latches for holding said fender in position, springs carried by the cross bars of said fender, a cover stretched over said fender, straps for stretching said cover, eyes through which said straps pass, buckles carried by said straps for securing them within the eyes, a chain adapted to support the outer end of the fender, a clamp for holding the upper end of said chain against the weight of said fender, spring-shoes carried by the outer end of the fender adapted to slide upon the rails of the track, and a rubber strip secured to the outer end of the fender, substantially as shown and described.

3. The herein-described combination of the brackets 3, a fender pivoted to forked extensions, latches for securing said fender in position, springs carried by the cross-bars of said fender, a covering for said springs, straps carrying buckles for securing said cover in place, eyes through which said straps are adapted to pass, spring-shoes carried by the outer end of the fender adapted to slide upon the rails of the track, a chain for supporting the outer end of the fender, a metal strap carried by said chain, a clamp for holding said strap, means for releasing said strap when the fender is to be depressed, a vertical frame 32, hooks 30, for securing said frame in position, and a covering 33, for said frame, substantially as shown and described.

571,715. HARROW. EPPLINGER E. WHIPPLE, St. Johns, Mich. Filed Oct. 13, 1894. Serial No. 525,814. (No model.)

Claim.—1. The harrow-sections, in combination with the evener-bar *j* arranged transversely in front of the same, and the several pairs of coupling-links *k*, arranged on the upper and lower faces of the evener and section-frames, vertical pivots pivotally connecting said links to the said frames and evener, said links so slotted at the pivots at *l'*, *l'*, as to hold the evener from dropping to the ground and yet permitting the same to rise and swing laterally to the line of draft.



2. A harrow having frame-bars extending in the line of draft provided with bearings, turnable tooth-beams having harrow-teeth and mounted to turn in said bearings, and provided with means to hold the beams against longitudinal displacement, means, substantially as described, to rock and lock said beams, short shoes pivoted to the frame-bars, and projections from the tooth-beams arranged to force down said shoes when the beams are rocked to raise the teeth, substantially as described.

3. The combination of a harrow-frame, independent swinging supporting-shoes pivoted thereto to swing vertically, turnable tooth-beams carrying teeth and provided with turning and locking means, and projections from the beams arranged to engage and force down said shoes when the beams are turned to raise the teeth, and to move from said shoes and permit them to freely swing up when the beams are turned to force the teeth down, substantially as described.

4. A harrow having swinging supporting-shoes independently pivoted to and depending from the frame-bars, and turnable tooth-beams disconnected from and controlling said shoes so as to force them down when the beams are turned to raise the teeth, and to permit the shoes to freely swing when the beams are turned to force down the teeth, substantially as described.

5. A harrow-frame having the downwardly and rearwardly curved supporting-shoes independent of each other and forked at their upper ends with transverse eyes to receive the pivot-bolts uniting the shoes to the frame, and tooth-bars having teeth, said shoes being controlled by the movement of the tooth-bars, substantially as described.

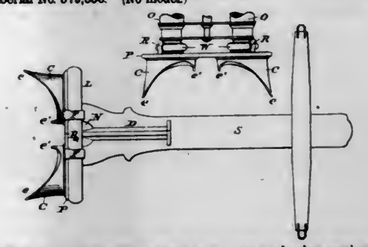
6. In a harrow, the combination of a frame, turnable tooth-beams mounted therein and provided with teeth, means for controlling the beams, and short supporting-shoes at their upper ends pivotally joined to the frame just in advance of certain beams and from thence extending downwardly and rearwardly beneath said beams and controlled by the movements of the beams so as to be held down to support the machine when the beams are rocked to raise the teeth and to move up when the teeth are thrown into operative digging position, substantially as described.

7. In a harrow, the combination of a frame extending in the line of draft, transverse rockable tooth-beams carried thereby and provided with teeth, the two shoes pivotally joined at their upper ends to the front portions of the frame just in advance of the front tooth-beam and extending downwardly and rearwardly to engage the ground, the two short supporting-shoes at their upper ends pivotally joined to the rear portions of the frame just in advance of the rear tooth-beam, and extending downwardly and rearwardly to support the rear end of the frame, and means for controlling said shoes so that they support the machine when the teeth are raised and swing up when the teeth are thrown down to operative position, substantially as described.

8. In combination, a harrow-frame turnable tooth-beams carried thereby, and provided with teeth and controlling means, and vertically-movable supporting-shoes confined directly to the frame adjacent to the tooth-beams, and means controlled by the movements of the beams and applied to the shoes between their lower ends and the frame to force the shoes down when the teeth are raised and to permit the shoes to move up when the teeth are down, substantially as described.

9. The combination of a harrow-frame, turnable tooth-beams mounted therein and provided with teeth and controlling-beams, and supporting-shoes pivotally joined at their upper end to the frame just in advance of the beams and from thence extending downwardly and rearwardly beneath the beams, and controlling means from each beam applied to its respective shoes between their pivotal points and rear ends to force down the shoes when the teeth are raised and permit the shoes to swing up when the teeth are lowered, substantially as described.

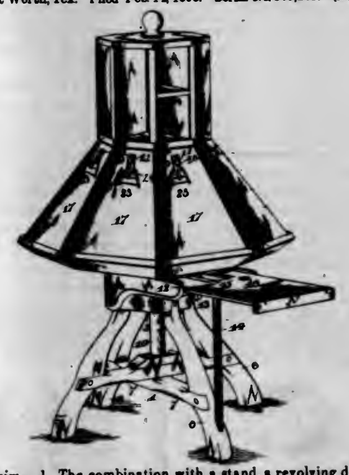
571,716. STEREOSCOPE. HAWLEY C. WHITE, Bennington, Vt., assignor to the H. C. White Company, same place. Filed Feb. 19, 1896. Serial No. 579,830. (No model.)



Claim.—1. An eyepiece for stereoscopes and other optical instruments consisting of a tubular piece provided with a lens and having the end which contacts with the user's face fitted to the orbit of the eye by having an outer projection fitted to the temple and an inner projection fitted to enter the sunken depression at the inner corner of the eye beside the nose.

2. A stereoscope fitted with tubular eyepieces for the eyes, each having an outer projection fitted to the temple and an inner projection fitted to enter the sunken depression at the inner corner of the eye, whereby a dark chamber for each eye is obtained in use.

571,717. REVOLVING BOOK-HOLDER. CALVERT L. BALLARD, Fort Worth, Tex. Filed Feb. 14, 1896. Serial No. 579,275. (No model.)



Claim.—1. The combination with a stand, a revolving desk having a vertical post journaled in the stand, and a support projected horizontally from the upper portion of the stand, of a writing-board slidably mounted in ways in the said support and having a slot to receive the said vertical post, whereby the writing-board can be pushed beneath the revolving desk when not in use and can be moved outward when required for service, substantially as specified.

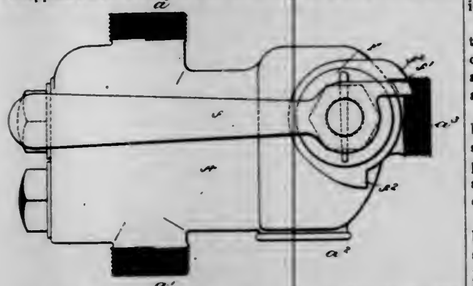
2. In combination, a stand comprising a head and legs, arms extending laterally from the head of the stand and connected at their outer ends, a brace interposed between a portion of the stand and the outer end of the arms to support the latter, a revolving desk mounted in the stand, and a writing-board slidably supported by the said arms and adapted to move beneath the revolving desk, and having a slot to receive the vertical post by means of which post the desk is rotatably supported, substantially as specified.

3. The combination with a desk, of a book-holder comprising a slotted plate, means for adjustably securing the plate to the desk, a frame having a pivotal or hinge connection with the plate and extending away from and in the plane thereof, and a spring secured to the plate and bearing upon the frame for moving the free end of the frame toward the desk, substantially as set forth for the purpose described.

571,718. STEAM-INJECTOR. PATRICK BROWNLEY, New York, N. Y., assignor to the Brownley Manufacturing Company, of New Jersey. Filed Apr. 17, 1896. Serial No. 587,928. (Model.)

Claim.—1. A double-tube injector having direct communications

for the forcer and lifter with the overflow-opening, means for positively closing the boiler-passage in starting the injector and a single steam-chamber common to both said lifter and forcer whereby steam is supplied simultaneously thereto in starting the injector, as set forth.



2. A double-tube injector having separate overflows for the lifter and forcer, a cock for quickly closing the overflow of the lifter and gradually closing that of the forcer and a steam-chamber for supplying steam simultaneously to both the lifter and forcer in starting the injector, whereby the forcer will also act as a lifter, as stated.

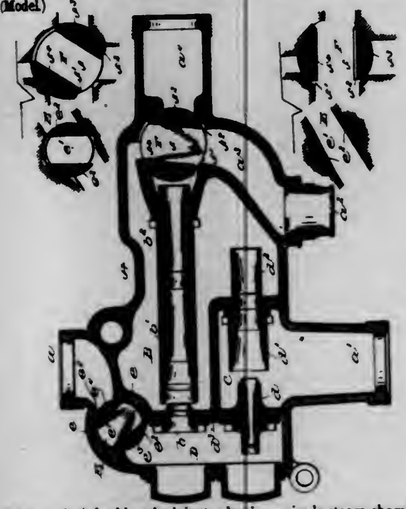
3. A steam-injector of the character herein specified having overflow-passages for the lifter and forcer and a cock intercepting said overflows having three ports, one of said ports allowing of the gradual closing of the overflow of the forcer after the overflow of the lifter is closed, as stated.

4. A steam-injector of the character herein specified having overflow-passages for the lifter and forcer, and a cock having a main opening or port extending transversely therethrough, and two smaller ports for the overflow from the forcer, as set forth.

5. A steam-injector of the character herein specified having overflow-passages for the lifter and forcer, and a cock having a main opening or port extending transversely therethrough, and two opposite cut-aways forming ports for the overflow from the forcer, as set forth.

6. The herein-described steam-injector having two sets of tubes forming a forcer and a lifter, a steam chamber for supplying steam to both of said sets of tubes simultaneously, an overflow-passage from said lifter and the delivery-chamber of said forcer intercepting one another, a cock located at such interception and having a main port, and two additional overflow-ports, and a lever for operating said cock, substantially as set forth.

571,719. STEAM-INJECTOR. PATRICK BROWNLEY and FRANCIS STICKER, New York, N. Y., assignors to the Brownley Manufacturing Company, of New Jersey. Filed Apr. 17, 1896. Serial No. 587,926. (Model.)



Claim.—1. A double tube injector having a single steam-chamber common to both the lifter and forcer and a steam-inlet cock having two steam-ports of different sizes, both of said ports being designed to open into said steam-chamber, and means for turning said cock, substantially as set forth.

2. A double tube injector having a single steam-chamber common to both the lifter and forcer and a steam-inlet cock having a wide transverse port or opening and a smaller port arranged diagonally to said former port or opening, both of said ports being designed to open into said steam-chamber, and a lever for turning said cock, as set forth.

3. A double-tube injector having a single steam-chamber common to both the lifter and the forcer, a steam-inlet cock located in the top of said steam-chamber, a second cock for controlling the overflow and the passage to the boiler, and connections between said cocks, substantially as set forth.

4. A double-tube injector having a steam-chamber common to both the lifter and forcer, a steam-inlet cock located in the top of said steam-chamber, a second cock for controlling the overflow and the passage to the boiler, an operating-lever and connections between said lever and said cocks, whereby the latter may be moved in unison, or independently, as set forth.

5. A double tube injector having a steam-chamber common to both the lifter and forcer, a steam-inlet cock located in the top of said steam-chamber, a second cock for controlling the overflow and the passage to the boiler, an operating-lever, a rocking bar mounted thereon, and connections between the ends of said rocking bar and said cocks, substantially as set forth.

6. A double-tube injector having a steam-chamber common to both the lifter and forcer, a steam-inlet cock located in the top of said steam-chamber, a second cock for controlling the overflow and the passage to the boiler, an operating-lever, a rocking bar mounted thereon, arms carried by said cocks, a pitman connecting the arm of the steam-inlet cock to one end of said rocking bar, and the handled rod connecting the other end of said rocking bar to the arm of said overflow-cock, substantially as set forth.

7. In a lifting and forcing injector having a single cock for controlling the overflow and the passage to the boiler, a steam-inlet cock having ports of different capacities, and means for moving said cocks in unison and independently, as set forth.

8. In a lifting and forcing injector having a single cock for instantly cutting off the overflow of the lifter and gradually that of the forcer, a steam-inlet cock having ports of different capacities, and a lever connected to both of said cocks, substantially as set forth.

9. In a lifting and forcing injector having a single cock for instantly cutting off the overflow of the lifter and gradually that of the forcer, a steam-inlet cock having ports of different capacities, a lever, connections between said lever and both of said cocks the connection between said lever and said steam-inlet cock permitting the latter to be moved independently of the other cock, substantially as set forth.

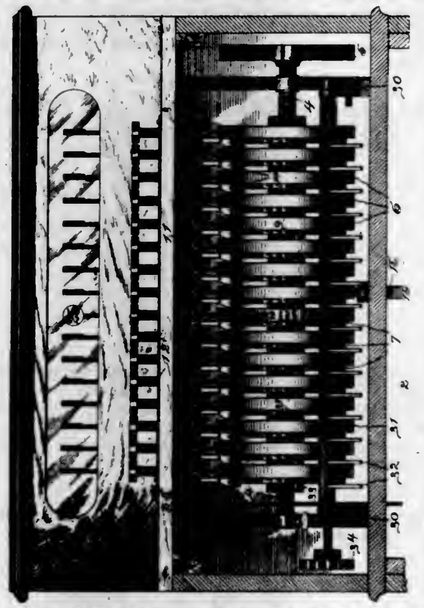
10. A lifting and forcing injector having steam-inlet and overflow cocks extended transversely through the machine, arms carried by said cocks having bent ends, stops designed to be engaged by said ends, and an operating-lever connected to both of said arms, substantially as set forth.

571,720. CASH REGISTER AND INDICATOR. WILLIAM H. CLEASBY, Hartford, Conn., assignor, by direct and mesne assignments, to Alice F. Cleasby, same place, and J. B. Chapman & Co., Springfield, Mass. Filed June 13, 1895. Serial No. 552,742. (No model.)

Claim.—1. In combination in a cash-register, a case, a shaft loosely supporting a number of figured wheels and an equal number of ratchet-wheels connected therewith, an equal number of collars secured on the shaft between the adjacent sets of figured and ratchet wheels with spring-arms projecting from the collars and holding against the ratchet-wheels with a frictional grasp, vertically-reciprocating numbered keys supported above the wheels, the shank of each of said keys being provided with a loosely-held gravity-pawl and an adjustable horizontal arm, numbered rotatable disks supported within the case with wings projecting from the stems of the disks and normally making contact with the ends of the adjustable arms that project horizontally from the shanks of the keys, substantially as specified.

2. In combination in a cash-register, a case having a cash-drawer, a shaft loosely supporting a number of figured wheels and an equal number of ratchet-wheels connected therewith, vertically-reciprocating numbered keys supported above the wheels, the shank of each of said keys being provided with a loosely-held gravity-pawl and an adjustable horizontal arm, numbered rotatable disks supported within the casing with wings projecting from the stems of the disks and normally making contact with the ends of the adjustable arms projecting from the shanks of the keys, pins projecting from the stems of the disks, a bail pivoted to the supporting-frame, springs connecting the bail with the pins projecting from the stems of the disks, and a trip connected with the cash-drawer and making contact with a portion of the bail for oscillating the bail and rotating the stems of the disks when the drawer is moved, substantially as specified.

3. In a cash-register in combination, a case having a cash-drawer and surrounding a supporting-frame, a shaft loosely bearing a number of figured wheels, an equal number of ratchet-wheels, and an equal number of collars with spring fingers frictionally connecting the ratchet-wheels and the figured wheels with the shaft, vertically-reciprocating numbered keys supported above the wheels, the shank of each of said keys being provided with a loosely-held gravity-pawl and an adjustable horizontal arm, a rocker-shaft held by the frame, a bail connected with the rocker-shaft and extending across the frame below and in the path of the adjustable arms on the shanks of the keys, an arm depending from the rocker-shaft, and a lever with one end engaging the rocker-shaft arm and the other end engaging a projection connected with the cash drawer, substantially as specified.

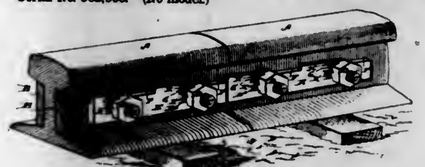


4. In a cash-register in combination, a case having a cash-drawer and surrounding a supporting-frame, a shaft bearing a number of figured wheels, an equal number of ratchet-wheels and an equal number of collars with spring-fingers that frictionally connect the ratchet-wheels and the figured wheels with the shaft, vertically-reciprocating numbered keys above the wheels, the shank of each of said keys being provided with a loosely-held gravity-pawl and an adjustable horizontal arm, numbered rotatable disks supported within the case with wings projecting from the stems of the disks and normally making contact with the ends of the adjustable arms that project from the shanks of the keys, pins projecting from the stems of the disks, a bail pivoted to the frame, springs connecting the bail with the pins projecting from the stems of the disks, a rod projecting downward from the disk bail, a trip connected with the cash-drawer and making contact with the rod, a rocker-shaft held by the frame, a bail connected with the rocker-shaft and extending across the frame below and in the path of the adjustable arms on the shanks of the keys, an arm depending from the rocker-shaft, a lever with one end engaging the rocker shaft arm, and a catch connected with the cash-drawer for engaging the other end of the lever, substantially as specified.

5. In combination in a cash-register, a case having a cash-drawer and surrounding a supporting-frame, a shaft provided with a handle at one end and supporting a number of figured wheels and an equal number of ratchet-wheels frictionally connected with the shaft, vertically-reciprocating keys supported above the wheels, the shank of each of said keys being provided with a loosely-held gravity-pawl, a rotatable rod supported by the case and extending across the frame adjacent to the ratchet-wheels, pins projecting from the side faces of the ratchet-wheels, an equal number of lugs projecting from the rod, a handle for rotating the rod so that the lugs may be moved into or out of the path of the pins projecting from the side faces of the ratchet-wheels, and a pin for locking the rod with the lugs in the path of the pins, substantially as specified.

6. In combination in a cash-register, a case having a cash-drawer and surrounding a supporting-frame, a shaft removably held by the frame and provided at one end with a handle, a number of figured wheels loosely held by said shaft, a number of ratchet-wheels supported by said shaft adjacent to each figured wheel, and a number of collars secured to the shaft and bearing spring-fingers that hold the figured wheels and the ratchet-wheels by frictional contact, numbered keys having a vertical reciprocation through perforations in a portion of the frame above the wheels, the shanks of which keys bear vertically-adjustable horizontal arms and loosely-held gravity-pawls, rotatable disks supported by the frame, wings projecting from the stems of the disks and adapted to make contact with the arms projecting horizontally from the stems of the keys, a bail rotarily supported by the frame and connected with the stems of the disks by springs, a rod projecting from the bail through the case into the cash-drawer, a rocker-shaft supported by the frame, a bail connected with this rocker-shaft and extending across the frame in the path of movement of the horizontally-adjustable arms of the key-shanks, an arm projecting from the rocker-shaft, a lever with one end engaging the rocker-shaft arm, a trip device connected with the cash-drawer and making contact with the rod projecting from the disk-bail, a catch connected with the cash-drawer and engaging the free end of the lever, a rod extending across the frame in front of the wheels, said rod being provided with a handle and a number of projecting lugs, pins projecting from the faces of the ratchet wheels, a key for holding the rod so that the lugs are in the path of the pins projecting from the ratchet-wheels, and a shield extending in front of and covering a portion of the peripheries of the figured wheels, substantially as specified.

571,721. NUT-LOCK. LOGAN M. CUNNINGHAM, Erie, Pa., assignor of one-half to Robert S. Constable, same place. Filed Mar. 11, 1896. Serial No. 582,808. (No model.)

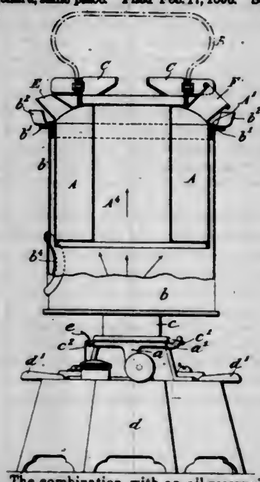


Claim.—1. In a nut-lock the combination with a bolt, of a washer-plate having sprig-tongues at the upper edges and spring-tongues in the main portion of plate and a nut having ratchet-teeth and an annular base all arranged substantially as shown and described.

2. In a nut-lock, the combination with a bolt, of a washer-plate, having crimped or corrugated spring-tongues upon the upper edge of plate, and spring-tongues within the main portion of plate, and the nut having its base constructed with central annular portion and the ratchet-faced outer portion substantially as shown and described.

3. In a nut-lock, the combination with a bolt, of a washer-plate, the upper edge of which is reduced, cut away and slitted providing a spring tongue or tongues, said tongue or tongues being crimped or corrugated transversely, the spring-tongues in the main portion of plate, and a nut having the ratchet-teeth and flat central portion upon its base all arranged substantially as shown and described.

571,722. HEATING ATTACHMENT FOR OIL-STOVES. WALTER DARBY and IOB DARBY, London, England, assignors of one-third to John Henry Punchard, same place. Filed Feb. 17, 1896. Serial No. 579,564. (No model.)



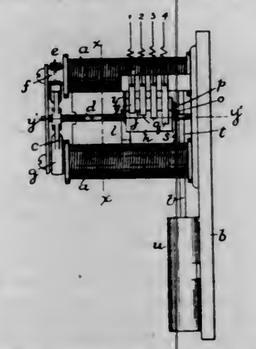
Claim.—1. The combination with an oil-reservoir, of a burner provided with a hood, an inclosing wall mounted on the said burner

and provided with supports at its upper end, a vessel provided with a central aperture and adapted to fit closely within the said inclosing wall, and a bracket mounted on top of the said vessel, substantially as described.

2. The combination with an oil-reservoir, such as *d* forming the base or stand for the stove of a case or inclosing wall such as *b* mounted just over the hood *c* of the burner, rests or supports, such as b^3 on the outer edge of the rim *b'* on the top of said case, a kettle such as A adapted to fit closely within said case *b*, a flange A' on said kettle to support same on the said rim *b'*, a vertical passage such as A^4 through said kettle, and rests or supports such as C on the top of said kettle A substantially in the manner and for the purposes hereinbefore described and illustrated in the drawings hereunto annexed.

3. The combination with an oil-reservoir, of a burner provided with a hood *c*, a case or inclosing wall *b* mounted on the said hood, rests or supports b^3 carried at the upper end of the inclosing wall, a vessel A adapted to fit closely within said case or wall *b*, a flange A' on the said vessel, a central vertical passage A^4 through said vessel, the said vessel being provided with the filling-orifice F and spout E, rests or supports C on top of said vessel, and a handle carried by said supports, substantially as described.

571,723. ELECTRIC GAS-LIGHTING APPARATUS. CHARLES W. DE MOTT, Brooklyn, N. Y., assignor of one-fourth to Devan P. Bloodgood, same place. Filed May 8, 1896. Serial No. 590,649. (No model.)



Claim.—1. The combination in an electric gas-lighting circuit, of the electromagnet, oscillating armature, contact-plate for the section-wires mounted loosely on the vibrating axis of the armature, and having the insulating-strip for breaking the circuit through said section-wires, contact devices connecting said plate with the magnet-wire, and the rigid arm of the armature-shaft connected with the contact-plate by a slack-motion device whereby it is inoperative on said plate in the normal use of the lighting apparatus, but causes said plate to interrupt a short circuit substantially as described.

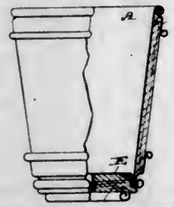
2. The combination in an electric gas-lighting circuit, of the electromagnet, oscillating armature, contact-plate for the section-wires mounted loosely on the vibrating axis of the armature and having the insulating-strip for breaking the circuits through said section-wires, said strip and the contact of the wires arranged to break the contacts of the series successively and interrupt any one while continuing the connection of the other, contact devices connecting said plate with the magnet-wire, and the rigid arm of the armature-shaft connected with the contact-plate by a slack-motion device whereby it is inoperative on said plate in the normal use of the lighting apparatus but causes said plate to interrupt a short circuit substantially as described.

3. The combination in an electric gas-lighting circuit, of the electromagnet, oscillating armature, contact-plate for the section-wires mounted loosely on the vibrating axis of the armature, and having the insulating-strip for breaking the circuits through said section-wires, contact devices connecting said plate with the magnet-wire, insulating-piece in said contact devices, and the rigid arm of the armature-shaft connected with the contact-plate by a slack-motion device whereby it is inoperative on said plate in the normal use of the lighting apparatus, but causes said plate to interrupt a short circuit substantially as described.

4. The combination in an electric gas-lighting circuit, of the electromagnet, oscillating armature, contact-plate for the section-wires mounted loosely on the vibrating axis of the armature, and having the insulating-strip for breaking the circuits through said section-wires, contact devices connecting said plate with the magnet-wire, the rigid arm of the armature-shaft connected with the contact-plate by the slack-motion device, whereby it is inoperative on said plate in the normal use of the lighting apparatus, but causes said plate to interrupt a short circuit, and the dash-pot connected with the said oscillating axis of the armature substantially as described.

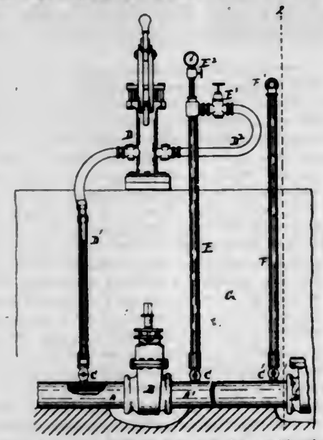
5. The combination in an electric gas-lighting circuit, of the electromagnet, oscillating armature having the taper gooseneck-terminals, contact-plate for the section-wires mounted loosely on the vibrating armature-shaft and having the insulating-strip for breaking the circuits through said section-wires, contact devices connecting said plate with the magnet-wire, and the rigid arm of the armature-shaft connected with the contact-plate by a slack-motion device whereby it is inoperative on said plate in the normal use of the lighting apparatus, but causes said plate to interrupt a short circuit substantially as described.

571,724. JACKETED CAN. HENRY L. GATES, Milwaukee, Wis., assignor to the Utility Manufacturing Company, same place. Filed Apr. 12, 1895. Serial No. 545,442. (No model.)



Claim.—The combination of a sheet-metal can-body, and end piece of like material provided with a depending inturned flange having permanent union with the body and serving for the retention of a shield, together with sheet-metal bands each of which has an edge joined to said body but is spread away from the latter to embrace and confine a jacket.

571,725. PIPE-TESTING DEVICE. SOLON G. HOWE, Detroit, Mich. Filed July 30, 1896. Serial No. 601,063. (No model.)

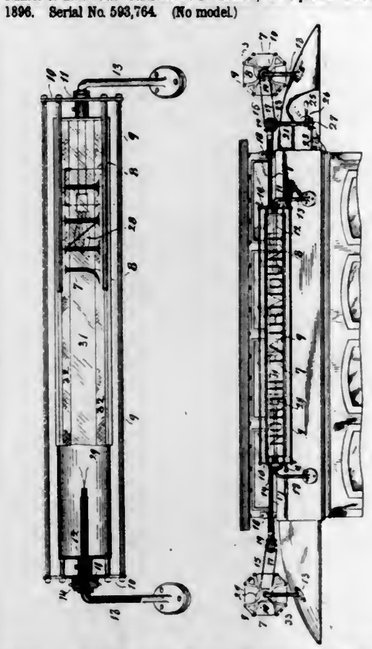


Claim.—1. In a pipe-testing device, the combination with adjacent pipe-mains, having a gate interposed therebetween, of service-cock connections located in the pipe-mains on either side of said gate, the one to control the inflow and the other the discharge, of a pressure-pump, and a third service-cock connection at the opposite extremity of a pipe-main to be tested to permit the free discharge of air from said pipe-main, substantially as described.

2. In a pipe-testing device, the combination with adjacent pipe-mains, having a gate interposed therebetween, of service-cock connections located in the pipe-mains on either side of said gate, the one to control the inflow and the other the discharge, of a pressure-pump, and a third service-cock connection at the opposite extremity of a pipe-main to be tested to permit the free discharge of air from said pipe-main, and a stand-pipe connected with one of said service-cock connections, having a pressure-gage, and a valve, for the purpose described.

3. In a pipe-testing device, the combination with pipe-mains, having a gate interposed therebetween, of service-cock connections located in said mains on opposite sides of said gate, a stand-pipe connected with one of said service-cock connections and provided with a pressure-gage, a pump connected with the other of said service-cock connections, and with said stand-pipe, said stand-pipe provided with a valve located between the pressure-gage and pump, and an additional service-cock connection located at the opposite extremity of the line of pipe being tested, to permit the discharge of air from said pipe, substantially as described.

571,726. ILLUMINATED AND CHANGEABLE STREET-CAR SIGN. CHARLES R. KLETTNER, Cincinnati, Ohio, assignor of one-half to Daniel O. Laws and Thomas N. Buchanan, same place. Filed June 1, 1896. Serial No. 593,764. (No model.)



Claim.—1. In a street-car sign, the combination of a sign-frame constructed of longitudinal rods 9 and end frames 10, forming a number of sign-faces, wires 8 stretched transversely between rods 9, the letters of the sign secured thereto and the whole pivotally supported at the end frames to permit the sign-faces to be changed.

2. In a street-car sign, the combination of a sign-frame constructed of longitudinal rods 9 and end frames 10, forming a number of sign-faces, wires 8 stretched transversely between rods 9, the letters of the sign secured thereto, the whole pivotally supported at the end frames to permit the sign-faces to be changed and lights and a reflector supported within the sign-frame in a manner to have the reflecting-surface back of the sign-face to be exposed at the time.

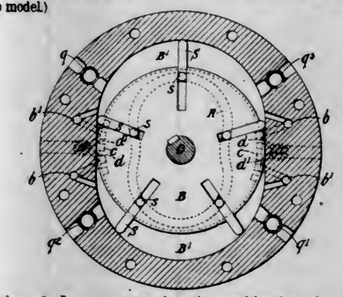
3. In a street-car sign, the combination of sign-frames, having sign-faces formed by longitudinal rods 9 and end frames 10, letters 7 suitably secured to the sign-faces, bearings 11 at end frames 10 on which the whole frame is supported in a manner to be capable of rotation to bring different sign-faces to the front, shafts 17 supported back of the sign-frames and parallel with them, mechanical connection between the sign-frames and these shafts whereby the latter may rotate the former, mechanical connection between all shafts whereby the rotation of one causes all to rotate, means to rotate one of the shafts and lights and a reflector behind the sign-face which is turned to the front.

4. In a street-car sign, the combination of sign-frames having sign-faces formed by longitudinal rods 9 and end frames 10, letters 7 suitably secured to the sign-faces, bearings 11 at end frames 10 on which the whole frame is supported in a manner to be capable of rotation to bring different sign-faces to the front, shafts 17 supported back of the sign-frames and parallel with them, mechanical connection between the sign-frames and these shafts whereby the latter may rotate the former, mechanical connection between all shafts whereby the rotation of one causes all to rotate, an upright shaft 21 operatively connected with one of the shafts 17 to rotate such shaft, a lever 25 to operate the upright shaft, means to lock the parts in their adjusted positions and lights and a reflector behind the sign-face which is turned to the front.

5. In a street-car sign, the combination of a sign-frame having sign-faces formed by longitudinal rods 9 and end frames 10, letters 7 suitably secured to the sign-faces, bearings 11 at end frames 10, hollow standards 13 bent inwardly to form journals 12 which receive bearings 11 and on which the whole frame is supported in a manner to be capable of rotation to bring different sign-faces to the front, means to rotate the sign-frame, electric lights at the ends of journals 12 receiving the wires through the hollow standards and a reflector behind the sign-face which is turned to the front.

6. In a street-car sign, the combination of sign-frames having sign-faces formed by longitudinal rods 9 and end frames 10, letters 7 suitably secured to the sign-faces, bearings 11 at end frames 10, hollow standards 13 bent inwardly to form journals 12 which receive bearings 11 and on which the whole frame is supported in a manner to be capable of rotation to bring different sign-faces to the front, shafts 17 supported back of the sign-frames and parallel with them, mechanical connection between the sign-frames and these shafts whereby the latter may rotate the former, mechanical connection between all shafts 17 whereby the rotation of one causes all to rotate, means to rotate the sign-frames, electric lights at the ends of journals 12 receiving the wires through the hollow standards and a reflector behind the sign-face which is turned to the front.

571,727. ROTARY ENGINE. ANDRIES F. SINCLAR VAN DE LAAR, Amsterdam, Netherlands. Filed Oct. 12, 1894. Serial No. 525,701. (No model.)



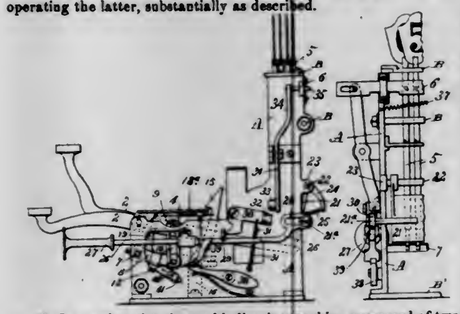
Claim.—1. In a rotary engine, the combination of a cylindrical casing having two double sets of admission and exhaust ports located on diametrically opposite sides thereof, a reversing valve or cock governing the admission-ports of each set, a rotary shaft extending through said casing, a toothed wheel or disk mounted on said shaft within the casing, an elliptical chamber in communication with said exhaust-ports and provided with other exhaust-ports located diametrically opposite each other, a wheel or disk mounted on said shaft within the elliptical casing, radial slides or sliding pistons carried by said wheel or disk, each of said slides or pistons being diametrically opposite the center of the space between two others of such slides or pistons, substantially as and for the purposes specified.

2. In a rotary engine, the combination with an elliptical chamber provided with admission-ports and exhaust-ports diametrically opposite each other, respectively, a rotary shaft extending through said chamber, a wheel or disk mounted on said shaft within the chamber, radial slides or pistons carried by said wheel or disk, each slide or piston being located diametrically opposite the center of the space between two other slides or pistons, and a slightly conical wheel or disk formed with teeth or projections on its periphery and with continuous peripheral walls on both sides of said teeth or projections, and a casing provided with admission and exhaust apertures and having a conical seating in which said conical wheel or disk works, substantially as and for the purposes hereinbefore described.

3. In a rotary engine, the combination of a casing A', a shaft O working in bearings therein, a slightly conical wheel or disk A having a toothed periphery and mounted on said shaft within the casing, admission-ports *d*, *d'*, reversing valves or cocks *a*, *a'* governing said admission-ports, whereby the fluid may be directed against the toothed periphery of said wheel or disk in either direction, an elliptical chamber B' provided with exhaust-ports q, q', q^2, q^3, passages *b*, *b'* communicating between said elliptical chamber and the casing A, a wheel or disk B mounted on said shaft within the elliptical chamber, and radially-sliding pistons S fitted in said wheel or disk B, each slide or piston being located diametrically opposite the center of the space between two other slides or pistons, substantially as and for the purposes above specified.

571,728. CASH-REGISTER. CHARLES H. LITTLE, Melrose, Mass., assignor to Robert F. Herrick, trustee, Milton, Mass. Filed May 29, 1896. Serial No. 593,574. (No model.)

Claim.—1. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of another, and means between said key-banks and said hooks for operating the latter, substantially as described.



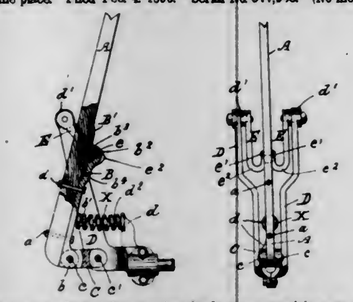
2. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member located in proximity to the divisional line between said rocker-plates for engaging each of said plates by the actuation of another, and means between said key-banks and said hooks for operating the latter, substantially as described.

3. In a cash registering and indicating machine composed of two or more key-banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of another, and means between said key-banks and said hook for operating the latter, combined with means independent of said key-levers or their coöperative parts for dropping any indicator-rod previously raised by the operation of a key of the machine, substantially as described.

4. In a cash registering and indicating machine composed of two or more banks, each bank having an independent rocker-plate, the combination with said key-banks and rocker-plates of a hook member for engaging each of said plates by the actuation of the other, and means between said key-banks and said hooks for operating the latter, combined with means independent of said key-levers or their coöperative parts for dropping any indicator-rod previously raised by the operation of a key of the machine, and for unlocking the key-levers of all the banks after the said indicator-rod has been dropped, substantially as set forth.

5. In a cash registering and indicating machine having two or more key-banks and an independent rocker-plate for each of said banks, the combination with said key-banks and rocker-plates of a hook member for engaging and locking each of said rocker-plates, by the actuation of another thereof, said hook members being pivotally supported below said rocker-plate, an arm 18, fixed on shaft 7, and engaging said hooks, an arm 8, on said shaft, and a link, as 9, pivotally connected to arm 8, and the under side of the rocker-plate, substantially as described.

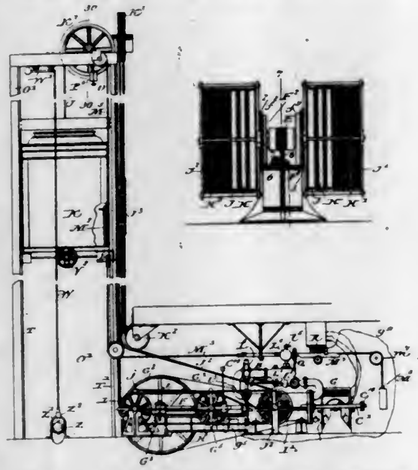
571,729. PICKER MECHANISM FOR LOOMS. JAMES H. PAIGE, Manchester, N. H., assignor to John W. Center and Samuel C. Kennard, same place. Filed Feb. 4, 1896. Serial No. 577,968. (No model.)



Claim.—1. In a picker-motion for looms comprising an ordinary picker-stick, a bifurcated bracket or support, and a connection for the lower ends of said picker-stick and bracket, a connection for the upper ends of said bracket and said picker-stick consisting of a yoke having its free ends pivoted to said bracket and provided with a journal *e* and flanges *d'* and a separable bearing fitting between said flanges consisting of a bar secured by bolts to the picker-stick at points below the journal and having at its end one section of a bearing, and a plate containing the counterpart section of said bearing, said plate being held in place by the said flanges and bar, substantially as described.

2. A bracket, the picker-stick, a bar secured by bolts to the lower end of said picker-stick said bar having at its lower end a bearing and pivot whereby it is pivotally connected to the bracket and having at its upper end a half-bearing, a plate having a counterpart half-bearing and held to the picker-stick by said bar, and a swinging yoke pivoted in said latter bearing and also pivotally connected to the bracket, substantially as described.

571,730. COMBINED ELECTRIC HYDRAULIC ELEVATOR. JOHN PARKINSON, Los Angeles, Cal., assignor, by mesne assignments, to The Parkinson Elevator Company, same place and Phœnix, Ariz. Filed Apr. 10, 1895. Serial No. 545,175. (No model.)



Claim.—1. In a multiple-sheave elevator, the combination of a hydraulic cylinder; a valve-controlled conduit connecting the ends of the cylinder; the car-supporting piston-rod within said cylinder passing through both ends of the cylinder; a piston-head mounted on the piston-rod within the cylinder; a body of liquid in the cylinder and conduit; a cross-head fastened to one end of the piston-rod; a rack connected with the cross-head and connected with the driving mechanism; the traveling sheave mounted on such cross-head; the fixed sheave; the car-operating cable fixed at one end, passed thence around the sheaves and operatively connected with the car at the other end; and the driving mechanism operatively connected with the cross-head.

2. In an elevator, the combination of a hydraulic cylinder; a valve-controlled conduit connecting the ends of the cylinder; the car-supporting piston-rod provided with a piston-head and arranged to reciprocate in the cylinder; a body of liquid in the cylinder and conduit; a traveling sheave operatively connected with the piston-rod to move therewith; the fixed sheave; the car-operating cable fixed at one end, passed thence around the sheaves and operatively connected with the car at the other end; and the driving mechanism operatively connected to the piston-rod.

3. In an elevator, the combination of the power-shaft provided with the pinion; the two fixed sheaves; the rack meshing with such pinion; two traveling sheaves fastened to such rack and arranged to travel back and forth between the fixed sheaves; the car; the car-operating cable fixed at one end, passed thence around one of the traveling sheaves and one of the fixed sheaves and operatively connected with the car at the other end; the counterweight; the counterweight-cable fixed at one end, passed thence around the other traveling sheave and the other fixed sheave and operatively connected with the counterweight; the cylinder; the conduit connecting the opposite ends of the cylinder; the piston-rod connected with the rack and extending through both ends of the cylinder; the piston-head mounted on the piston-rod and arranged to reciprocate within the cylinder; a body of liquid in the cylinder and conduit; valves to control the flow of liquid through the conduit, and mechanism operatively connecting the valves with the car.

4. In an elevator, the combination of the power-shaft provided with the pinion; the rack meshing with such pinion; the traveling sheave fastened to such rack; suitable guides for said rack; the fixed sheave; the car; the car-operating cable fixed at one end, and passed thence around the sheaves and operatively connected with the car; and car-supporting means connected with the rack.

5. In an elevator, the combination of the power-shaft provided with the pulley and with the pinion; a rack meshing with such pinion; a traveling sheave fastened to such rack; suitable guides for such rack; the fixed sheave; the car-operating cable fixed at one end, passed thence around the sheaves and operatively connected with the car; the motor; the belt connecting the motor with the power-shaft pulley; and car-supporting means connected with the rack.

6. In an elevator, the combination of the power-shaft provided with a pinion; a rack meshing with such pinion; the traveling sheave fastened to such rack; suitable guides for said rack; the fixed sheave; the car; the car-operating cable fixed at one end, passed thence around the sheaves and operatively connected with the car at the other end; the cylinder; the conduit connecting the opposite ends of the cylinder; the piston-rod connected with the rack and extending through both ends of the cylinder; the piston-head mounted on the piston-rod and arranged to reciprocate within the cylinder; a body of liquid in the cylinder and conduit; valves to control the flow of liquid through the conduit, and mechanism operatively connecting the valves with the car.

7. The combination of the power-shaft provided with the pinion; the rack meshing with the pinion; the traveling sheave connected with the rack; the truck provided with the two wheels each having a beveled flange; a track for such wheels provided with beveled faces to fit the beveled flanges and having a retaining-web projecting from its upper side between the beveled faces and provided with a retaining-flange; and a hooked arm depending from the truck and hooking into the retaining-web.

8. The combination of the power shaft provided with the pinion; the rack meshing with such pinion; the roller engaging the back of the rack opposite the pinion; the truck fastened to one end of the rack; the track for such truck arranged on one side of the pinion, and the rack-supporting wheels arranged on the other side of the pinion to engage with the under side of the rack to support it.

9. In an elevator, the combination of the car; the cylinder; the valve-controlled conduit connecting the ends of the cylinder; the car-supporting piston-rod operatively connected with the car and extending through both ends of the cylinder; the piston-head mounted on the piston-rod and arranged within the cylinder; the adjusting stop-nut screwed upon the end of the piston-rod to engage one head of the cylinder when the car has reached the downward limit of its travel.

10. In an elevator, the combination of the speed-descent governor-valve; a valve-lever secured thereto to partially rotate the same and provided at one end with an arc having the axis of the valve for center; a connecting-rod pivoted to the valve-lever between the valve and the arc and adjustably fastened to the arc; the car; the governor operatively connected with the car and also operatively connected with the connecting-rod.

11. In an elevator, the combination of the governor; the car operatively connected with the governor; the speed-descent governor-valve; a valve-operating lever connected with such valve and provided at one end with an adjustable weight and at the other end with an arc with the axis of the valve for center; a connecting-rod pivoted to the valve-lever between the arc and the valve; adjustable connections connecting the arc with the connecting-rod and means connecting the free end of the connecting-rod with the governor.

12. The combination of the conduit having a passage oblong in cross-section; a valve arranged to close such passage and to slide diagonally across such passage and provided with a screw-socket and with an oblong slot arranged parallel with such passage to register therewith during a portion of the movement of the valve; a valve-rod screwed into such valve; and the bearing arranged to allow the valve-rod to rotate and to prevent it from moving axially.

13. In an elevator, the combination of the cylinder having two compartments communicating with each other through a conduit; the car-supporting piston arranged in the cylinder; mechanism connecting such piston with the car to support the same during its descent; the descent-speed governor operatively connected with the car; the descent-speed governor-valve operatively connected with such governor and arranged to control the flow through the conduit, and an auxiliary valve arranged to adjust the size of the passage leading to such governor-valve.

14. In an elevator a hydraulic speed-regulator composed of a cylinder having its ends connected by a valve-controlled conduit; a piston within such cylinder arranged to return the liquid from compartment to compartment of the cylinder through such conduit; a body of liquid in the cylinder and conduit; and an air-collecting chamber having a valved outlet and arranged above and connecting with the highest point of the valved passage.

15. In an elevator, the combination of the car; the pulley-guides carried by the car; a pivoted lever; a single traveling pulley arranged in said guides on one side of the lever to travel toward and from the lever; the connecting-rods connecting the single pulley with one arm of the lever; the pair of traveling pulleys arranged in the pulley-guides on the other side of the lever to travel toward and from the lever; connecting-rods connecting the pair of pulleys with the other arm of the lever; the rope fastened at one end, passed under one of the pair of traveling pulleys, thence over and around the single traveling pulley, thence over the other pulley of the pair and thence down and connecting with the control-operating mechanism; such mechanism, and intermediate means connecting such mechanism with the car to control the same.

16. The combination of the pulley-guides carried by the car; the pivoted lever; a single traveling pulley arranged in the pulley-guides on one side of the lever to travel toward and from the lever; the connecting-rods connecting the single pulley with one arm of the lever; the pair of traveling pulleys arranged in the pulley-guides on the other side of the lever to travel toward and from the lever; and connecting-rods connecting the pair of pulleys with the other arm of the lever.

17. The combination of the arc, plain on one face and notched on the opposite face; the pivoted lever provided at its free end with a stop engaging with and sliding along the plain face of the arc; the handle pivoted to the lever and provided with the stop to limit its downward movement, and with the tooth arranged to enter the notches of the arc; and the spring arranged to move the handle to insert its tooth into the notches.

18. In an elevator, the combination of the well-frame; the stationary control rope-supporting pulley; the fixed threaded weight-guide rods arranged beneath such pulley; the upper stop nuts on the intermediate threaded portions of the rods; weight-retaining cross-head connecting the rods below the weight; the lower stop-nuts on the lower ends of the rods; the weight having guideways at its sides fitting the guide-rods; and the control-rope connected with the controlling mechanism of the elevator and passing over the pulley and fastened to the weight.

19. In an elevator, the combination of the control-valve arranged to close at its intermediate position and to open when turned to either side of such position; a valve-lever connected with such valve; the rheostat for turning on, regulating and cutting off the current for driving the elevator; the rheostat and control-valve-lever operating slide arranged to cut off the current when the valve is closed and when the lever is turned to one side to open the valve, and to turn on the current when the lever is turned to the other side to open the valve; the control-rope; means for operating the control-rope to operate the slide; and means for operating the slide in opposition to such rope.

20. In an elevator, the combination of the control-valve arranged to close at its intermediate position and to open when turned to either side of such position; a valve-lever connected with such valve; the rheostat for turning on, regulating and cutting off the current for driving the elevator; the rheostat and valve-lever operating slide connected with the control-valve and with the rheostat and arranged to cut off the current when the valve is closed and when the lever is turned to one side to open the valve, and to turn on the current when the lever is turned to the other side to open the valve; the control-rope; means for operating the control-rope to operate the slide; means for operating the slide in opposition to such rope; and adjustable stops to limit the movement of the slide in both directions.

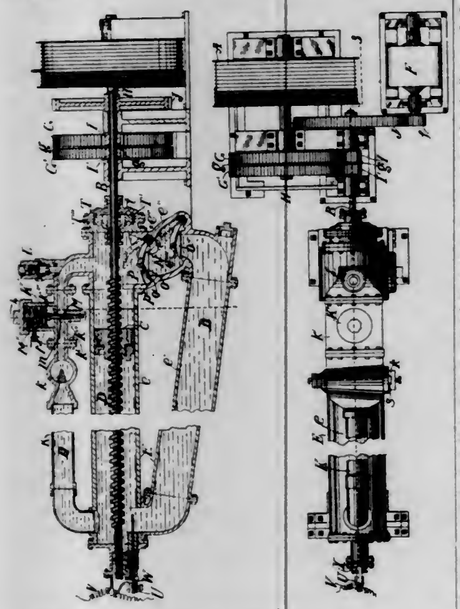
21. The combination of the rotating shaft provided with a clutch-head; the governor-sleeve mounted on the shaft to slide therealong; the governor mounted on the shaft to rotate therewith to operate the governor-sleeve; the rotating screw; the angle-levers pivoted to the screw to rotate therewith and adapted to engage the clutch-head; means to normally hold the levers out of engagement with the clutch-head; a lever-operating sliding sleeve journaled upon the shaft; a link connecting the governor-sleeve with the lever-operating sleeve to operate the same, and connecting-rods connecting the lever-sleeve with the angle-levers to draw them into engagement with the clutch-head.

22. In an elevator, the combination of the car; a safety device connected with the car; the governor-sleeve mounted on a shaft to slide therealong and connected with the safety device; such shaft; the governor mounted on the shaft to rotate therewith to operate the governor-sleeve and provided with springs arranged for normally holding the governor in position to be operated to operate the sleeve to throw the safety device into operation; a vertical lever pivoted to the car and connected with the sleeve to operate the same; a bent lever pivoted to the car; a vertical foot-rod pivoted to the horizontal arm of such bent lever; and the connecting-rod connecting the vertical arm of such bent lever with the upper arm of the vertical lever.

23. The combination of the safety-device-operating rope fastened at the top; a weight fastened to the lower end of such rope; a sleeve-

support; a screw-threaded sleeve surrounding the rope and screwed through the sleeve-support into the path of the weight and adapted to be screwed up and down therein.

571,731. COMBINED ELECTRIC HYDRAULIC SCREW-CONTROLLED ELEVATOR-ENGINE. JOHN PARKINSON, Los Angeles, Cal., assignor, by mesne assignments, to The Parkinson Elevator Company, same place and Phœnix, Ariz. Filed June 26, 1895. Serial No. 553,959. (No model.)



Claim.—1. In an elevator, the combination of a cylinder; a piston in the cylinder; a body of liquid in the cylinder on both sides of the piston; means to allow the unobstructed flow of liquid from one end of the cylinder to the other when the piston moves in one direction; and means to restrict and control the flow of the liquid from end to end of the cylinder.

2. In an elevator, the combination of the cylinder; the piston therein; the body of liquid in the cylinder on both sides of the piston; means to allow the unobstructed flow of the liquid from one end of the cylinder to the other when the piston is actuated in one direction; means for preventing the return of the liquid; and controlling means for allowing the return of the liquid when the piston is moved in the other direction.

3. In an elevator-engine, the combination of the loop provided with the straight member; the piston arranged to travel to and fro in such straight member; means for moving the piston arranged in the straight member and extending through the end thereof; a return-conduit connecting the ends of the straight member; a check-valve to allow the flow of liquid in one direction only through the loop; the body of liquid in the loop and return-conduit; and a valve to control the flow of liquid through the return-conduit.

4. In an elevator-engine, the combination of a rope-winding sheave fixed on a shaft; such shaft journaled to rotate; a cog-wheel fixed on such shaft; a screw-shaft provided with a pinion geared in such cog-wheel; a driven cog-wheel fixed on such screw-shaft; a motor provided with a pinion fixed on its armature and geared into such driven cog-wheel; a nut screwed on the screw-shaft; a guide to prevent the rotation of the nut and allow it to travel along the screw-shaft; and means to control the travel of the nut along the screw-shaft.

5. In an elevator-engine, the combination of a hollow loop for confining a body of liquid and composed of a straight member and a return member connecting the ends of the straight member; a nut fitted into the straight member and arranged to travel therein; a screw-shaft arranged in the straight member, screwed through the nut and journaled in the ends of the straight member and projecting beyond one of such ends; a restricted return-conduit connecting the ends of the straight member; a body of liquid in the loop and conduit; check-valves in the return member of the loop to allow the liquid to flow therethrough in one direction only; and a valve in the return-conduit to control the flow of liquid therethrough.

6. The combination of the loop composed of a straight member and a return member connecting the ends of the straight member; a nut fitted into the straight member and arranged to travel therein; means to prevent the rotation of the nut; a screw-shaft arranged in the straight member and projecting beyond one of its ends; a restricted return-conduit connecting the ends of the straight member; a body of liquid in the loop and conduit; a check-valve in the return member of the loop to allow the liquid to flow therethrough in one direction only; and a valve in the return-conduit to control the flow of the liquid therethrough.

7. In an elevator-engine, the combination of the loop provided with the straight member; the nut arranged to travel to and fro in such straight member; means for preventing the rotation of the nut; a return-conduit connecting the ends of the straight member; a check-valve to allow the flow of liquid in one direction only through the loop; the screw-shaft journaled in the ends of the loop and screwed through the nut; the body of liquid in the loop and return-conduit; a valve to control the flow of liquid through the return-conduit; the rope-winding sheave connected with the screw-shaft to rotate therewith; a collar fixed upon the screw-shaft; and ball-bearings arranged upon the opposite sides of the collar to sustain the thrust thereof.

8. In an elevator engine, the combination of the rope-winding sheave mounted on a shaft; such shaft; spur-wheels fixed on such shaft with their cogs arranged to break joints with each other; the screw-shaft and means for controlling the rotation of the screw-shaft; pinions fixed upon the screw-shaft with their cogs arranged to break joints and meshed in the spur-wheels; a driven spur-wheel fixed upon the screw-shaft; a motor provided with a pinion; and such pinion meshing with such driven spur-wheel.

9. The combination of the conduit provided with a widened portion and with a gate-socket in the floor thereof; a gate arranged in such socket and adapted to play across the passage to obstruct the same; a piston-chamber arranged above such passage and communicating therewith; a piston arranged in such chamber and having an area greater than the upper face of the gate; a rod connecting such gate with the piston; and suitable means for normally holding the piston depressed.

10. The combination of the hydraulic loop provided with the straight member and the check-valve-controlled return member; the return-conduit connecting the ends of the straight member and provided in its floor with the gate-socket; a gate arranged in such socket and adapted to play across the passage to obstruct the same; a piston-chamber arranged above such passage and communicating therewith; a piston arranged in such chamber and having an area greater than the upper face of the gate; a rod connecting such gate with the piston; the spring for normally holding the piston depressed; the screw-shaft connected to the rope-winding sheave to rotate therewith and journaled in the ends of the hydraulic loop; a nut fitted in the straight member of the loop and screwed upon the screw-shaft; means to prevent the rotation of the nut; and the body of liquid in the loop and return-conduit.

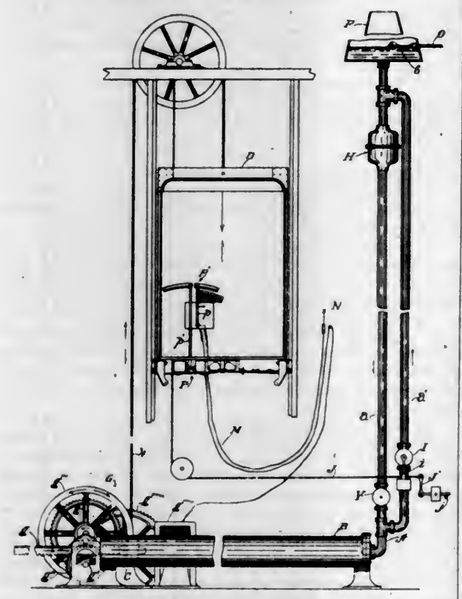
11. In an elevator-engine, the combination of the loop composed of a straight member and of a return member which connects the ends of the straight member and has at one end a vertical portion provided with a valve-seat; a valve arranged to seat upon such valve-seat; the valved return-conduit connecting the ends of the straight member; the body of liquid in the loop and return-conduit; and a piston operating in the loop.

12. In an elevator-engine, the combination of the loop composed of a straight member and of a return member which connects the ends of the straight member and has at one end a vertical portion provided with two valve-seats arranged one above the other in such vertical portion; two valves arranged respectively to seat in such valve-seats; two arms respectively hinged at one end to the valve-seats respectively and at the other end to the valves respectively; and a piston operating in the loop.

13. In an elevator-engine, the combination of the hydraulic loop provided with a straight member and the return member and a body of liquid therein; a nut arranged to travel to and fro in the straight member; a screw arranged to drive such nut; an electrical conductor; an electrical contact for connecting and disconnecting such conductor; a rod carrying such conductor and arranged extending through the end wall of the loop into the path of the nut and arranged to be moved by the nut to break the electric circuit.

14. The combination of the hydraulic loop having the straight member, and check-valves in the return member to allow the liquid to flow in one direction only, in such return member; a screw-shaft journaled in the ends of the loop and extending from outside the loop into the straight member; a nut fitted in the straight member and screwed upon the screw-shaft; means for preventing the rotation of the nut; a valved conduit connecting the opposite ends of the straight member, and a body of liquid in the loop and return-conduit.

571,732. COMBINED ELECTRIC HYDRAULIC ELEVATOR. JOHN PARKINSON, Los Angeles, Cal., assignor, by mesne assignments, to The Parkinson Elevator Company, same place and Phœnix, Ariz. Filed Dec. 3, 1895. Serial No. 570,875. (No model.)



Claim.—1. In an elevator, the combination of a piston arranged to operate in a cylinder; a movable liquid medium adapted and arranged to apply a practically constant and uniform pressure against the piston to force it in one direction; and means to allow, to control, and to prevent the movement of the liquid in order to assist, resist or prevent the movement of the piston; the car; and a hoisting device independent of the liquid connected with the car and arranged to operate in conjunction therewith and also connected with the piston and arranged to operate the piston, substantially as set forth.

2. In an elevator, the combination of a cylinder closed at one end; a piston arranged to operate in the cylinder; an elevated reservoir; a pipe connecting the reservoir with the closed end of the cylinder between it and the piston; a body of liquid in the cylinder, pipe and reservoir of sufficient volume to maintain a practically uniform pressure in the cylinder against the piston; a valve in the pipe to allow, to control and to prevent the flow of liquid therethrough; the car; and a hoisting device independent of the liquid and connected with the car to operate in conjunction therewith, and also connected with the piston and arranged to operate the piston; the whole being arranged as set forth whereby the hydrostatic pressure assists the hoisting device to raise the car, and at the descent of the car the piston is operated against the pressure of the liquid in the cylinder to force the water up the pipe, to the reservoir.

3. The combination of the elevated reservoir; the cylinder; the piston in the cylinder; the pipe connecting the reservoir with the cylinder; the liquid on one side of the piston in the cylinder, pipe and reservoir; mechanical means independent of the liquid and connected with the piston to operate the piston; and means to allow, to control and to prevent the movement of the liquid.

4. In an elevator, the combination of the car; driving mechanism connected with the car; a cylinder closed at one end; a piston in the cylinder; mechanism operatively connecting the piston with the driving mechanism; a body of liquid; means for introducing the liquid under a practically constant and uniform pressure into the cylinder to press against one side of the piston; and means to allow, to control, and to prevent the flow of the liquid into and out of the cylinder.

5. In an elevator, the combination of the car; driving mechanism connected with the car; a rack operatively connected through a pinion with the driving mechanism to move in conjunction therewith; a cylinder closed at one end; a piston in the cylinder connected with the rack; a body of liquid; means for introducing the liquid under pressure into the cylinder to press against one side of the piston; and means to allow, to control, and to prevent the flow of liquid into or from the cylinder, substantially as set forth

6. In an elevator, the combination of a cylinder; a piston; the car operatively connected with the piston to move it in one direction; a pipe connection extending from the cylinder to an elevated reservoir to give hydrostatic pressure in the cylinder against the piston to move it in the other direction; such reservoir of greater cross-sectional area than the cylinder; a body of liquid in the cylinder, pipe and reservoir, of sufficient volume to fill the cylinder and pipe when the piston is retracted, whereby a practically uniform pressure against one side of the piston will be maintained; and the driving mechanism connected with the piston to operate the same.

7. In an elevator, the combination of a cylinder; a piston; a pipe connection extending from the cylinder to an elevation great enough to give a practically constant hydrostatic pressure in the cylinder at all positions of the piston; a reservoir of greater sectional area than the cylinder arranged to supply liquid to the pipe and to receive the overflow therefrom when the piston rises; a body of liquid in the cylinder, pipe and reservoir of sufficient volume to fill the cylinder and pipe when the piston is retracted, whereby a practically uniform pressure against one side of the piston will be maintained; and the driving mechanism connected with the piston to operate the same to raise the car.

8. In an elevator, the combination of the driving mechanism; a rack arranged to be operated by the driving mechanism; a piston connected with the rack to move therewith; and a body of liquid arranged to exert a practically constant and uniform pressure against the piston, and arranged so that the liquid will be displaced at the movement of the piston; whereby the driving mechanism is assisted in one direction and controlled in the other, substantially as set forth.

9. In an elevator, the combination of the car; a piston; a body of liquid under a practically constant and uniform pressure arranged to press against the piston; and intermediate means between the piston and the car arranged to operate the car and to force the piston against the pressure of the liquid when the car descends and a motor independent of the liquid, operatively connected with such intermediate means to drive the same.

10. In an elevator, the combination of a piston arranged in a cylinder and operatively connected with the driving mechanism; such mechanism; the motor, independent of the liquid, arranged to operate said driving mechanism; means for applying hydrostatic pressure to the piston; and a pressure-equalizing reservoir arranged to store the liquid forced from the cylinder at the inward movement of the piston and to return the same to the cylinder when the piston is retracted, substantially as set forth.

11. The combination of the cylinder; the piston in the cylinder; the elevated upwardly-tapering reservoir; the pipe connecting such reservoir with the cylinder to apply liquid to produce hydrostatic pressure against the piston; and a body of liquid in the cylinder, pipe and reservoir.

12. The combination of the cylinder; the piston in the cylinder; the elevated upwardly-tapering reservoir; the pipe connecting such reservoir with the cylinder to apply liquid to produce hydrostatic pressure against the piston; a body of liquid in the cylinder, pipe and reservoir; the car; and driving mechanism operatively connected with the car and with the piston.

13. In an elevator, the combination of the cylinder; an elevated reservoir; a pipe connecting the reservoir with the cylinder; a body of liquid in the cylinder, pipe and reservoir; a valve in the pipe to allow, to control and to prevent the movement of the liquid therethrough; and a piston arranged in such cylinder and operatively connected with the car through intermediate means, and adapted and arranged to force liquid from the cylinder into the pipe, substantially as and for the purpose set forth; and the motor operatively connected with such intermediate means to drive the same.

14. In an elevator, the combination of the cylinder; the piston arranged in the cylinder and operatively connected with the car through intermediate means; the elevated reservoir; the pipe connecting the reservoir with the cylinder; the valve in such pipe to allow the liquid to flow in one direction therethrough and to prevent its return; a supplementary pipe communicating with such connecting-pipe on opposite sides of said valve and provided with the valve to allow, to control and to prevent the movement of the liquid through such supplementary pipe; and a body of liquid in the cylinder, pipes and reservoir.

15. In an elevator, the combination of the cylinder; the piston arranged in the cylinder and operatively connected with the car through intermediate means; the pipe connecting the reservoir with the cylinder; a valve arranged in such pipe near the top thereof to allow liquid to flow downward therethrough and to prevent its return; a supplementary pipe communicating with the connecting-pipe on opposite sides of such valve; a valve arranged at the bottom of the supplementary pipe to allow, to control and to prevent the flow of liquid through the supplementary pipe; means for operating such valve and a body of liquid in the cylinder, pipes and reservoir.

16. In an elevator, the combination of the cylinder; the piston arranged in the cylinder and operatively connected with the car through intermediate means; the pipe connecting the reservoir with the cylinder; a valve of larger area than the body of the pipe, arranged in such pipe near the top thereof to allow liquid to flow downward therethrough and to prevent its return; a supplementary pipe communicating with the connecting-pipe on opposite sides of such valve; a valve arranged at the bottom of the supplementary pipe to allow, to control and to prevent the flow of liquid through the supplementary pipe; means for operating such valve, and a body of liquid in the cylinder, pipes and reservoir.

17. The combination with the cylinder, piston, elevated reservoir, the pipe connecting the cylinder and reservoir, and the body of liquid in such pipe; of a valve arranged in a chamber; such chamber in the pipe; a seat for the valve; and an annular air-space above the valve-seat in the chamber.

18. The combination of the cylinder; the piston in the cylinder; the car operatively connected with the piston through intermediate means; the elevated reservoir; the pipe connecting the reservoir with the cylinder; the body of liquid in the reservoir, pipe and cylinder; a valve arranged to allow, to control, and to prevent the movement of the liquid; means connected with the valve to hold it normally closed; an electromagnet to operate such means to open the valve; the motor; the source of electrical energy; and the electrical conductor connecting the source of electrical energy with the motor and connected between the motor and such source of electrical energy with the electromagnet to energize the same.

19. In an elevator, the combination of a cylinder; a piston in the cylinder; a pipe connected with the cylinder; a storage-reservoir for such pipe arranged to supply liquid thereto; means for operating the piston; a liquid supply for such storage-reservoir; and a float-valve for such supply having its float arranged near the bottom of the storage-reservoir with its path wholly below the normal level of the liquid in such reservoir when the piston is retracted, so that the valve will be operated to supply liquid to the reservoir only when the piston is retracted and the volume of the liquid in the cylinder, pipe and reservoir is below the normal; substantially as and for the purpose set forth.

20. The combination of the vertical cylinder; the piston therein; the liquid; means for introducing the liquid into the cylinder to press upon the piston; means to control the movement of liquid into and out of the cylinder; the load operatively connected with the piston to force it up as the load descends; a rack fastened to and extending downward from the piston; a pinion for operating the rack; and means for driving the pinion.

21. The combination of a vertical cylinder closed at its upper end; a piston within the cylinder; a motor; operative means connecting the motor with the piston to pull it down; the load; operative means connecting the load with the piston to pull it up; a reservoir arranged above the cylinder and communicating therewith above the path of the piston; a body of liquid in the reservoir and cylinder above the piston; a valve arranged to allow a free flow of liquid from the reservoir into the cylinder and to prevent such flow; a valve arranged to allow a restricted flow of liquid from the cylinder into the reservoir and prevent such flow; and means for operating such valve.

22. The combination of a vertical cylinder closed at its upper end; a piston within the cylinder; a motor; operative means connecting the motor with the piston to pull it down; the load; operative means connecting the load with the piston to pull it up; a reservoir arranged above the cylinder and communicating therewith above the path of the piston; a body of liquid in the reservoir and cylinder above the piston; a valve arranged to allow the free flow of liquid from the reservoir into the cylinder and to prevent such flow; a rod connected with such valve and extending through the wall of the valve-chamber; suitable means connected with the valve-rod to operate the valve mechanically to open and close the same; a valve arranged to allow the restricted flow of liquid from the cylinder into the reservoir and prevent such flow; and means for operating such valve.

23. The combination of a cylinder closed at one end; a piston within the cylinder; a motor; operative means connecting the motor with the piston to force it down; the load; operative means connecting the load with the piston to force it up; a reservoir extending above the cylinder and communicating therewith between the piston and the closed end of the cylinder; a body of liquid in the reservoir and cylinder above the piston; a valve arranged to allow the free flow of liquid from the reservoir into the cylinder and to prevent such flow; a rod connected with such valve and extending through the wall of the valve-chamber; a toggle connected with such valve to reciprocate the same; a lever arranged to operate the toggle; means arranged to operate the lever to straighten the toggle to close the valve; an electromagnet arranged to operate against such means to bend the toggle to lift the valve; the power-wire connecting the motor with the source of electrical energy and passing through the magnet to energize the same; and suitable means between the magnet and the source of electrical energy for cutting off and turning on the current.

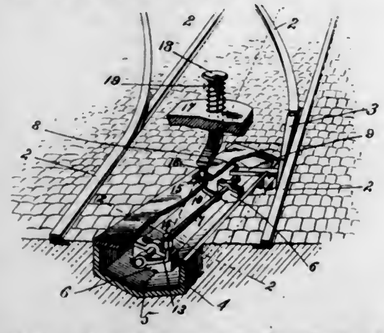
24. The combination of the elevator-car; the guide; the worm journaled to the car and carried thereby; a governor device operated by the movement of the car and adapted to operate the worm; a lever fulcrumed to the car and operatively connected with the worm; two dogs carried by the car and operatively connected with the lever and respectively provided with an eccentric curved face arranged to engage the opposite sides of the guide respectively.

25. The combination of the elevator-car; the guide; the worm journaled to the car and carried thereby; a governor device operated by the movement of the car and adapted to operate the worm; a lever fulcrumed to the car and operatively connected with the worm; two dogs carried by the car and respectively provided with an eccentric curved face adapted and arranged to respectively engage the opposite sides of the guide; a toggle-joint connected with the dogs to operate the same; and a rod connecting the lever with the toggle-joint to operate such joint.

26. The combination of the elevator-car; the guide; the worm journaled to the car and carried thereby; a governor device operated by the movement of the car and adapted to operate the worm; two dogs carried by the car and respectively provided with an eccentric curved face adapted and arranged to engage the opposite sides of the guide respectively; a toggle-joint arranged to operate the dogs; a rod connected with the toggle-joint and arranged to operate the same; and the lever pivoted to the car and having on one arm a rack meshing with the worm to be driven thereby and the other arm connected with the rod to operate it.

27. The combination of the elevator-car; two guides; the worm journaled to the car and carried thereby; a governor device operated by the movement of the car and adapted to operate the worm; a lever fulcrumed to the car; two eccentric dogs carried by the car and adapted to engage the opposite sides of one of the guides; a toggle-joint arranged to operate such dogs; another lever fulcrumed to the car; two eccentric dogs carried by the car and adapted to engage the opposite sides of the other guide; a toggle-joint arranged to operate such other dogs; a lever fulcrumed to the car and operatively connected with the worm; a rod connecting one arm of such lever with one of the toggle-joints; and a rod connecting the other arm of such lever with the other toggle joint.

571,733. SWITCH-THROWING DEVICE. WILLIAM H. REBOR, Boston, Mass., assignor to James Stone, same place. Filed June 10, 1896. Serial No. 594,925. (No model.)

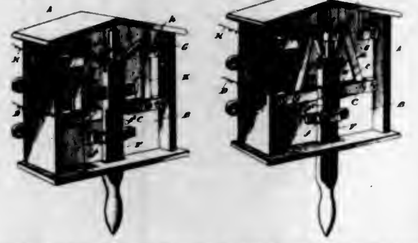


Claim.—1. In switch-throwing devices for railroads, a shaft extending diagonally between the rails and below the level thereof, suitable bearings therefor and arms secured to opposite sides of said shaft and extending outwardly therefrom, the ends of which are substantially level with the top of the said rails and in a line centrally therebetween, means on a car for depressing said arms for reciprocally oscillating said shaft, and means of engagement between said shaft and the movable point of a switch, substantially as described.

2. In a switch throwing device, a shaft located between and below the rails of a railroad in a diagonal position, arms secured to and extending outwardly from opposite sides of said shaft whose ends are substantially level with the said rail and in line centrally between them, an arm fixed to the end of said shaft, and a lever pivotally engaging said arm and the movable point of a switch, and means on a car for depressing one of said oppositely-located arms on said shaft for oscillating said shaft for moving said switch-point horizontally in either direction, substantially as described.

3. In a switch-throwing device, a shaft located between and below the rails of a railroad in a diagonal position, arms secured to and extending outwardly from opposite sides of said shaft whose ends are substantially level with the said rail, and in line centrally between them, an arm fixed to the end of said shaft, and a lever pivotally engaging said arm and the movable point of a switch, and means on a car for depressing one of said oppositely-located arms on said shaft at a time consisting of a spring-held push-rod having a rearwardly and downwardly extending cam-surface on the lower extremity thereof for engagement with the upper extremity of said levers for oscillating said shaft for moving said switch-point horizontally in either direction, substantially as described.

571,734. ELECTRIC CUT-OUT. BENJAMIN F. ROUT, Stanford, Ky., assignor of one-half to G. L. Penny, same place. Filed Mar. 27, 1896. Serial No. 585,123. (No model.)



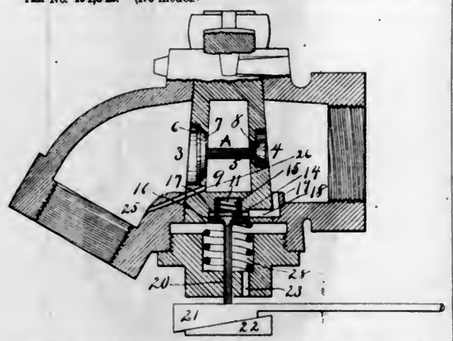
Claim.—1. In a circuit-closer or cut-out device, the non-conducting base, the upper and lower blocks, the sliding rod carrying a contact-plate, the contact-arms pivotally connected to the lower contact-blocks, and means carried by the operating-rod to move said contact-arms into and out of contact with the upper contact-blocks, substantially as shown and described.

2. In a circuit-closer, the non-conducting base, the upper and lower contact-plates slotted at their inner ends, the contact-arms pivoted to the lower contact-blocks, the sliding rod carrying a contact-plate, and the arms or levers connecting the sliding rod and the contact-arms, substantially as shown and described.

3. In a circuit-closer, a non-conducting base, the upper and lower contact-blocks slotted at their inner ends, the contact-arms pivoted to the lower contact-blocks, the sliding rod, the contact-plate carried by said sliding rod, and the toggle arms or levers connecting said rod and contact-arms, the guides in which said rods slide, and the shoulders upon said rod adapted to act as stops, substantially as shown and described.

4. In a circuit-closer, the non-conducting base, the upper and lower blocks, slotted at their inner ends, the sliding rod having a groove upon the inner face, said groove having a depression at one end, the contact plate and arms, the toggle arms or levers and the spring adapted to rest in said groove in the rod, substantially as shown and described.

571,735. AUTOMATIC SAFETY ANGLE-COCK. JOHN W. WINTERS, St. Paul, Minn., assignor, by direct and mesne assignments, of five-eighths to Mary O'Brien, Mary L. Gelina, John Gelina, Albert J. Kos, Deville H. Kent, and August Johnson, same place; Charles G. Brunson administrator of said Winters, deceased. Filed Nov. 21, 1893. Serial No. 491,542. (No model.)



Claim.—1. A plug-valve provided with an auxiliary valve arranged in the plug and having heads of different areas, substantially as shown and described.

2. A plug-valve comprising a valve-body adapted to connect with the train-pipe and with the hose, provided with an air-outlet in one side, a plug mounted to turn in the said valve-body and having a port adapted to connect the ends of the said valve-body with each other or to register with said air-outlet, and an auxiliary valve fitted to slide transversely across the said plug-port to connect one or both ends of the valve-body with the said port at the time the plug is closed and its port registers with the said air-outlet, said auxiliary valve being provided with heads of different areas, substantially as shown and described.

3. The combination with the valve-body and its plug-valve having a transverse opening by means of which the ends of the body can be put into communication with each other, of means actuated by the pressure on one side of said plug when closed for opening communication between the other end of the valve-body and the outer air.

4. The combination with the plug-valve, of a transverse auxiliary valve slidable therein, having two heads of different areas.

5. In a fluid-pressure brake system, the combination with the angle-cock valve-body and its plug-valve having a transverse opening for establishing communication between the ends of the body and an opening communicating with the hose end of the valve-body for gradually exhausting the pressure therein to the outer air, of means actuated by the pressure in the connected hose for opening communication between the other end of the valve-body and the outer air.

6. In a fluid-pressure brake system, the combination with the angle-cock valve body, of the plug-valve therefor having a passage for establishing communication between the ends of the valve-body, and an opening for establishing communication between the hose end of the cock and the outer air when the plug is turned to closed position, and means actuated by the pressure in the connected hose when the plug is in closed position for establishing communication between the train-pipe end of the cock and the outer air.

7. The combination with the angle-cock of an air-brake system, having a lateral release-port communicating with the plug-opening when the cock is closed, of two stem-connected piston-valves arranged in the plug of the cock at substantially right angles with the plug-opening, the stem being of such length that only one valve can be seated at a time, the valve adapted to be turned toward the hose end of the cock being larger than the other, substantially as described.

8. The combination with the angle-cock of an air-brake system having a port communicating with the train-pipe when the cock is turned to close the pipe, of the valve for said port adapted to be opened automatically by the pressure of the air in the coupled hose, and to be closed by the pressure in the train-pipe when the pressure in the hose is relieved, substantially as described.

9. The combination with the angle-cock of an air-brake system, provided with a lateral eduction-port in communication with the train-pipe when the cock is closed, of the valve adapted to automatically open said port while pressure remains in the hose connected to the angle-cock, and to automatically close the port when such pressure is removed.

10. The combination with the angle-cock of an air-brake system, of automatic means actuated by the air-pressure in the connected hose for exhausting air from the connected train-pipe when the angle-cock is closed.

11. The combination with the angle-cock of an air-brake system, having a lateral release-port communicating with the plug-opening when the cock is closed, and its plug having a port connecting the plug-opening with the train-pipe when the cock is closed, of the valve for said plug-port adapted to be opened by the pressure in the connected hose and to be closed by the pressure in the train-pipe when the pressure is removed from the hose, substantially as described.

12. The combination with the angle-cock of an air-brake system, having a release-port communicating with the plug-opening when the cock is closed, and its plug having a lateral port connecting the plug-opening with the adjacent train-pipe when the cock is closed, of the valve adapted to close the port in said plug, its stem and the piston carried by said stem and working in a chamber in the opposite side of said plug, substantially as described.

13. The combination with the angle-cock of an air-brake system, having a port adapted to open communication between the train-pipe and the outer air when the cock is closed, of a valve normally closing said port, and means actuated by the bumper of the opposite car for opening said valve.

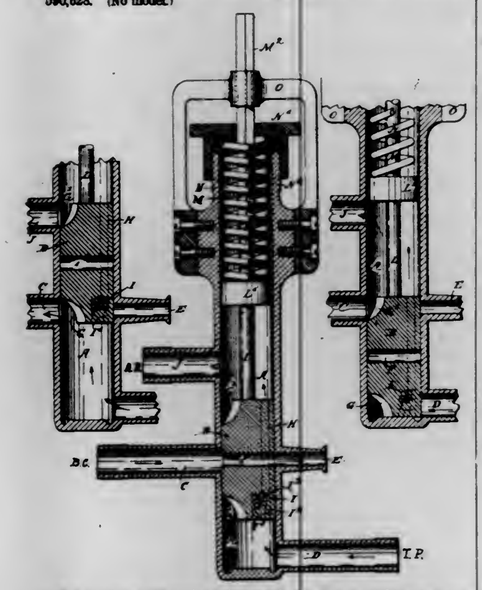
14. The combination with the angle-cock of an air-brake system, of the valve operated automatically by the hose-pressure for exhausting the air from the train-pipe when the cock is closed, and the valve operated by the bumper of another car for exhausting the air from the train-pipe when the cock is closed.

15. The combination with the angle-cock of an air-brake system, of means actuated by the impact of another car for exhausting the air from the train pipe when the cock is closed.

16. The combination with the angle-cock of an air-brake system, of automatic means for exhausting the air from the train-pipe when the cock is closed and the connected hose is coupled, and means op-

erative by the impact of another car to likewise exhaust the train-pipe when the hose is uncoupled.

571,736. AIR-BRAKE MECHANISM. HENRY C. ZENER, Sandy Point, Wash. Filed Apr. 20, 1891. Renewed May 7, 1896. Serial No. 590,623. (No model.)



Claim.—In an air-brake valve mechanism, the combination, consisting of the valve chamber, provided with an inlet-port D, at one end, the other end being provided with a spring adjusting device, and open to the atmosphere; port J located at a distance from port D, leading to an auxiliary reservoir, the port C located between ports D and J; the port E, as shown; and the valve-piston B, located and reciprocating in said chamber B, between the ports D and J, and provided with port H, and its valve mechanism substantially as specified, and the port or channel F, arranged to connect ports C, and E, as specified; the spring M, located and acting as specified, all constructed, combined and arranged to operate substantially as and for the purposes specified.

DESIGNS.

26,264. CAMPAIGN-BADGE. WILLIAM WALLACE, New York, N. Y. Filed Sept. 17, 1896. Serial No. 606,181. Term of patent 3½ years.



Claim.—The design for a campaign-badge herein shown and described.

26,265. ORNAMENTAL CHAIN. PHILIP J. DUERR, Buffalo, N. Y. Filed May 4, 1896. Serial No. 590,231. Term of patent 7 years.



Claim.—The design for a chain, substantially as herein shown and described.

26,266. WATCH-PLATE. ROSCOE M. FLOYD, Boston, Mass. Filed July 2, 1895. Serial No. 554,776. Term of patent 7 years.



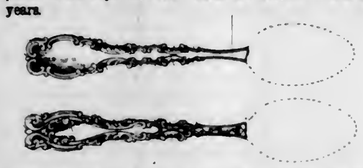
Claim.—The design for a watch-plate substantially as herein shown and described.

26,267. WATCH-PLATE. WEBSTER C. BALL, Cleveland, Ohio. Filed Sept. 8, 1896. Serial No. 605,194. Term of patent 14 years.



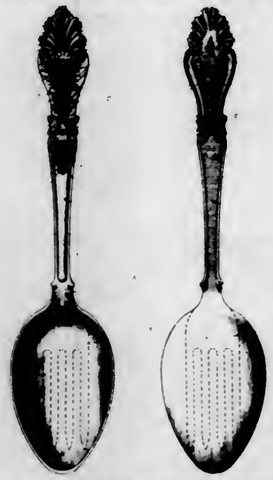
Claim.—The design for a watch-plate as herein shown and described.

26,268. HANDLE FOR SPOONS, &c. JOHN W. MAILLOT, North Attleborough, Mass., assignor to the F. M. Whiting Company, same place. Filed Sept. 15, 1896. Serial No. 605,948. Term of patent 3½ years.



Claim.—The design for a spoon or fork handle substantially as herein shown and described.

26,269. HANDLE FOR SPOONS. FREDERICK E. PRENAT, Waterbury, Conn., assignor to the Rogers & Hamilton Company, same place. Filed Sept. 14, 1896. Serial No. 605,831. Term of patent 14 years.



Claim.—1. In a design for a spoon-handle or similar article, the obverse substantially as shown and described.

2. In a design for a spoon-handle or similar article, the reverse substantially as shown and described.

3. The design for the handle of a spoon, fork, &c., substantially as shown in the accompanying drawings.

26,270. BORDER FOR COMB-BACKS. PHILEMON O. DICKINSON, Newark, N. J., assignor to Unger Brothers, same place. Filed Oct. 10, 1896. Serial No. 608,529. Term of patent 3½ years.



Claim.—The design for borders for backs of combs and similar articles, substantially as described and shown.

26,271. BACK FOR BRUSHES, &c. PHILEMON O. DICKINSON, Newark, N. J., assignor to Unger Brothers, same place. Filed Oct. 10, 1896. Serial No. 608,525. Term of patent 3½ years.



Claim.—The design for the back of a mirror or similar article, substantially as shown and described.

26,272. BACK FOR BRUSHES, &c. PHILEMON O. DICKINSON, Newark, N. J., assignor to Unger Brothers, same place. Filed Oct. 10, 1896. Serial No. 608,526. Term of patent 3½ years.



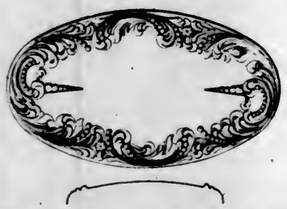
Claim.—The design for backs of brushes and similar articles, substantially as shown and described.

26,273. BACK FOR BRUSHES, &c. PHILEMON O. DICKINSON, Newark, N. J., assignor to Unger Brothers, same place. Filed Oct. 10, 1896. Serial No. 608,527. Term of patent 3½ years.



Claim.—The design for backs of brushes and similar articles, substantially as shown and described.

26,274. METAL BRUSH-BACK, &c. THEODORE W. FOSTER, Providence, R. I. Filed Oct. 9, 1896. Serial No. 608,416. Term of patent 3½ years



Claim.—The design for the metal cover herein shown and described.

26,275. METAL MIRROR-BACK, &c. THEODORE W. FOSTER, Providence, R. I. Filed Oct. 9, 1896. Serial No. 608,415. Term of patent 3½ years.



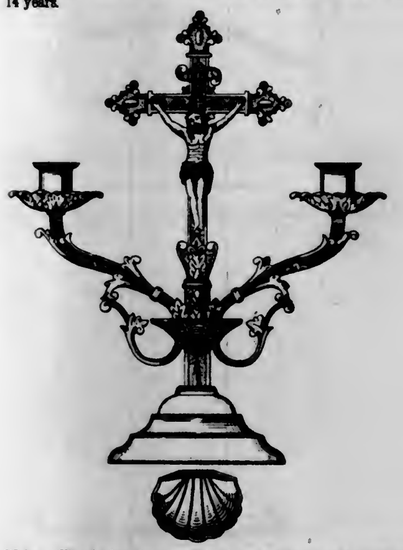
Claim.—The design for a metal back for mirrors and similar articles herein shown and described.

26,276. FRAME FOR PICTURES, &c. NICHOLAS STEIN, Philadelphia, Pa. Filed Oct. 7, 1896. Serial No. 608,183. Term of patent 7 years.



Claim.—The design for a frame as described herein and as illustrated in the accompanying drawing.

26,277. CANDELABRUM. SETH H. LEAVENWORTH and JOSEPH T. HOMAN, Cincinnati, Ohio, assignors to the Homan Silver Plate Company, same place. Filed July 20, 1896. Serial No. 599,977. Term of patent 14 years.



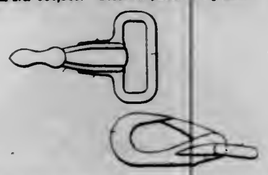
Claim.—The design for a combined candelabrum and water-font, as herein shown and described.

26,278 BOTTLE-STOPPER. WILLIAM T. JOHNSTON, Washington, D. C., assignor to Benj. B. Friedenwald, Baltimore, Md. Filed Sept. 23, 1896. Serial No. 606,791. Term of patent 14 years.



Claim.—The design for a disk bottle-stopper substantially as herein shown and described.

26,279. SNAP-HOOK. GEORGE M. HUBBARD, New Haven, Conn., assignor to the W. & B. T. Fitch Company, same place. Filed Oct. 5, 1896. Serial No. 607,965. Term of patent 14 years.



Claim.—The design for snap-hooks as herein shown and described.

26,280. TROUSERS HANGER. EUGENE G. HANFORD, Westfield, N. J. Filed Oct. 3, 1896. Serial No. 607,802. Term of patent 7 years.



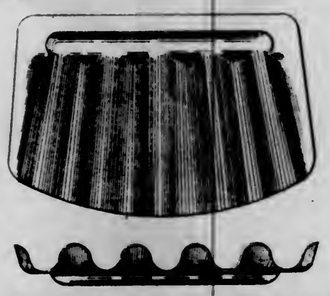
Claim.—The design for a trousers-hanger substantially as herein set forth and shown in the accompanying drawings.

26,281. CHECK-BIT. ABRAM R. MACE, New Haven, Conn. Filed Sept. 28, 1896. Serial No. 607,262. Term of patent 3½ years.



Claim.—The design for a check-bit as herein shown and described.

26,282. CHOPPING-KNIFE BLADE. WESLEY EMORY SITTERLY, Auburn, N. Y. Filed Sept. 21, 1896. Serial No. 606,585. Term of patent 3½ years.



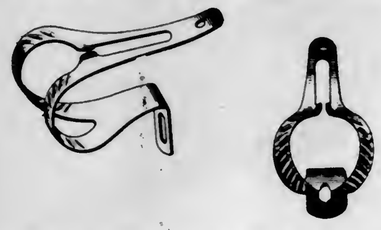
Claim.—The design for a chopping-knife blade, substantially as herein described and shown.

26,283. SHELLER FOR GREEN PEAS, &c. ANNA E DREW, New York, N. Y. Filed Aug. 12, 1896. Serial No. 602,581. Term of patent 7 years.



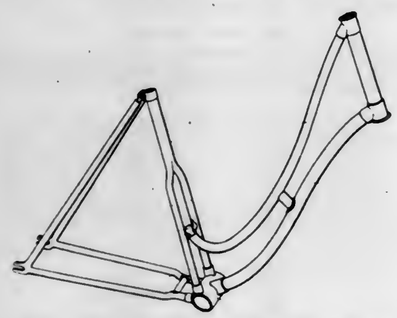
Claim.—The design for a green-pea and bean sheller, substantially as shown and described.

26,284. TOE-CLIP FOR VELOCIPEDES. DAVID BASCH, New York, N. Y. Filed Sept. 9, 1896. Serial No. 606,333. Term of patent 7 years.



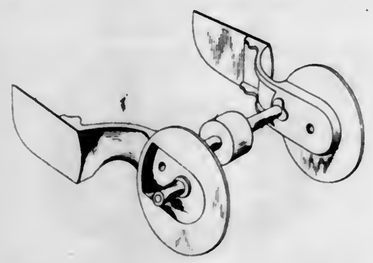
Claim.—The design for a toe-clip herein shown and described.

26,285. BICYCLE-FRAME. EDWARD M. GRAHAM, Chicago, Ill. Filed Oct. 5, 1896. Serial No. 607,966. Term of patent 7 years.



Claim.—The design for a bicycle-frame herein shown and described.

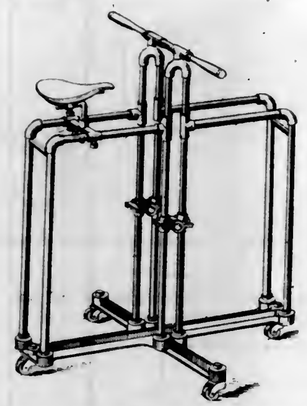
26,286. FRAME FOR LAWN-MOWERS. FREDERICK T. MAYNARD, Detroit, Mich., assignor to the Detroit Lawn Mower Company, same place. Filed June 6, 1896. Serial No. 594,629. Term of patent 14 years.



Claim.—1. In a design for a lawn-mower frame, the side bar, substantially as shown and described.

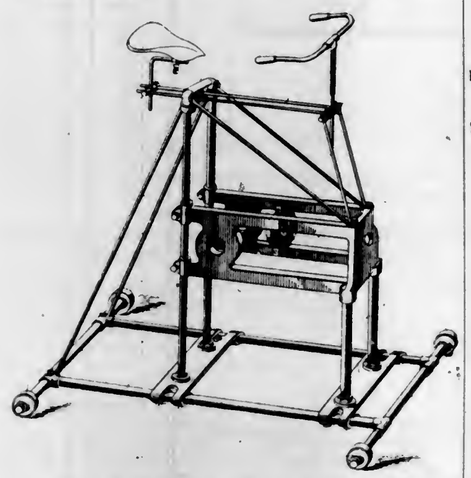
2. The design for a lawn-mower frame substantially as herein described and shown.

26,287. FRAME FOR DRILLING-MACHINES. FOSTER MILLIKEN, New York, N. Y. Filed Sept. 28, 1896. Serial No. 607,258. Term of patent 3½ years.



Claim.—The design for the drilling-machine frame herein shown and described.

26,288. FRAME FOR DRILLING-MACHINES. FOSTER MILLIKEN, New York, N. Y. Filed Sept. 28, 1896. Serial No. 607,259. Term of patent 3½ years.



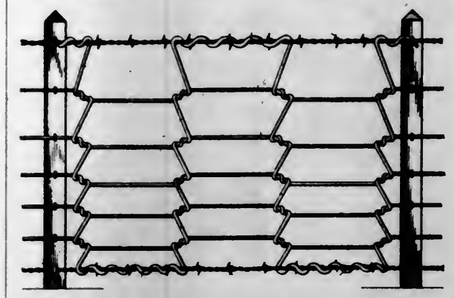
Claim.—The design for a frame of a drilling-machine herein shown and described.

26,289. ELEVATOR-GUIDE. GODFREY R. REHMANN, Philadelphia, Pa., assignor to the Morse, Williams & Company, of Pennsylvania. Filed Oct. 8, 1896. Serial No. 608,302. Term of patent 14 years.



Claim.—The design for an elevator guide-strip substantially as shown having a substantially T shape in cross-section with the rib B united to the flanges A, A, by a narrow neck *a* and provided with the longitudinal grooves *b*.

26,290. WOVEN-WIRE FENCE-PANEL. WILLIAM H. WARNER, Melvern, Kans. Filed Aug. 31, 1896. Serial No. 604,496. Term of patent 14 years.



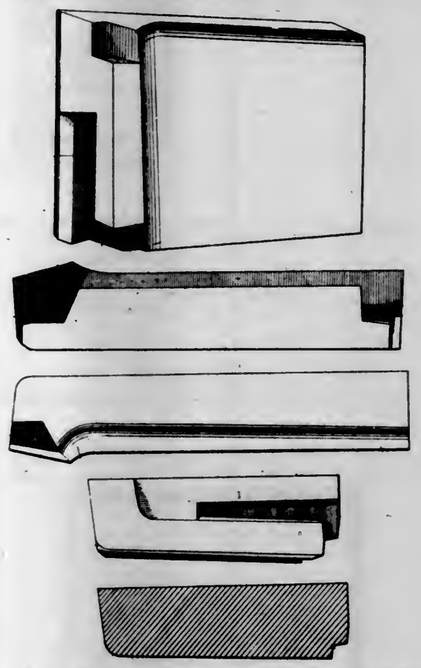
Claim.—The design for a woven-wire fence-panel herein shown and described.

26,291. CASING-RING FOR FURNACES. ARTHUR W. WALKER, Malden, Mass. Filed Oct. 7, 1896. Serial No. 608,178. Term of patent 14 years.



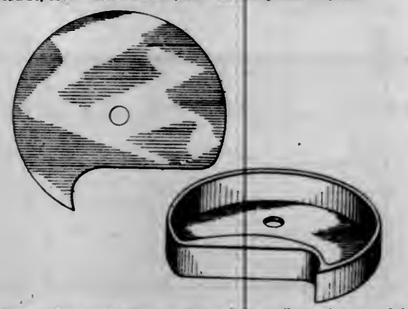
Claim.—The design for a casing-ring for furnaces, substantially as herein shown and described.

26,292. FIRE-BRICK. ARTHUR B. CLUNIES, Rochester, N. Y., assignor to the Still Stove Works, same place. Filed Oct. 3, 1896. Serial No. 607,803. Term of patent 14 years.



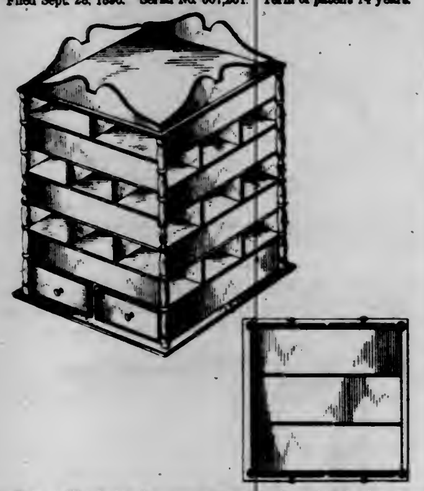
Claim.—The design for fire-brick, substantially as herein shown and described.

26,293. MAIL-PACKER. HENRY R. WAITE, Newton, Mass. Filed Sept. 28, 1896. Serial No. 607,263. Term of patent 14 years.



Claim.—The design for a packer substantially as shown and described.

26,294. CORSET-CASE. JOHN JAMES SHEPARD, Darlington, S. C. Filed Sept. 28, 1896. Serial No. 607,261. Term of patent 14 years.



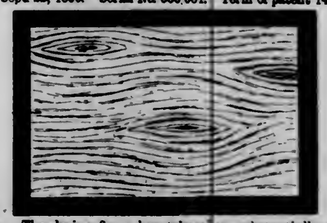
Claim.—The design for a corset case or cabinet herein shown and described.

26,295. MATCH-SAFE. GEORGE H. ALLEN, Clinton, N. Y. Filed July 10, 1896. Serial No. 598,767. Term of patent 3½ years.



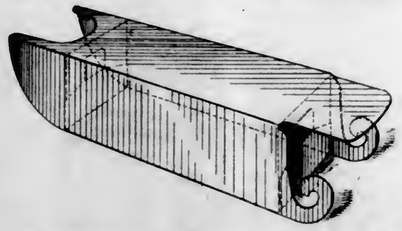
Claim.—The design of a match-safe as herein shown and described.

26,296. BOX-TRIMMING. NELSON A. MILLER, New York, N. Y. Filed Sept. 22, 1896. Serial No. 606,651. Term of patent 14 years.



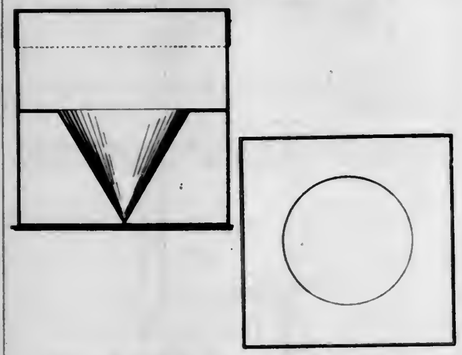
Claim.—The design for a box-trimming, substantially as shown and described.

26,297. PAPER BOX. PHINEAS B. MYERS, Brooklyn, N. Y. Filed Mar. 19, 1896. Serial No. 583,979. Term of patent 7 years.



Claim.—The design for a paper box, substantially as herein shown and described.

26,298. BOX. ANDREW A. MACDONALD, Lenox, Mass. Filed Sept. 30, 1896. Serial No. 607,504. Term of patent 7 years.



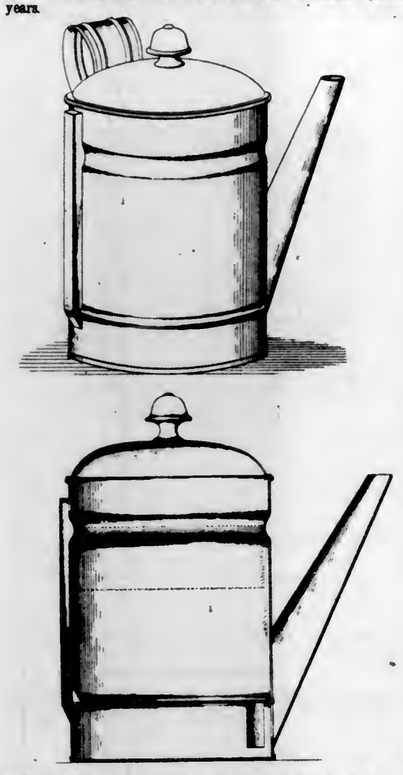
Claim.—The design for a flower-shipping box, substantially as described and shown.

26,299. COVERED DISH. EMILE GÉRARD, Limoges, France. Filed Oct. 7, 1896. Serial No. 608,182. Term of patent 7 years.



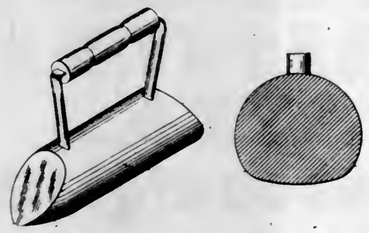
Claim.—The design for a dish substantially as shown and described.

26,300. COFFEE-POT. WILLIAM DAYTON HUNTER, Elizabethton, Tenn. Filed Sept. 24, 1896. Serial No. 606,892. Term of patent 14 years.



Claim.—The design for a coffee-pot, substantially as herein shown and described.

26,301. SAD-IRON. MARY SWEENEY, Allegheny, Pa. Filed Oct. 9, 1896. Serial No. 608,421. Term of patent 14 years.



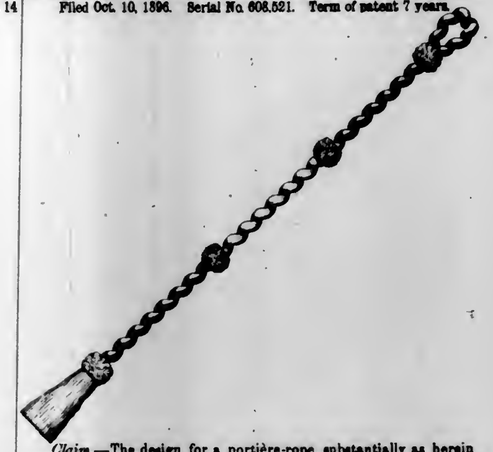
Claim.—The design for irons, substantially as shown.

26,302. SAD-IRON HEATER. CHARLES H. BOECK, Jackson, Mich., assignor to the Novelty Manufacturing Company, same place. Filed Apr. 29, 1896. Serial No. 589,608. Term of patent 7 years.



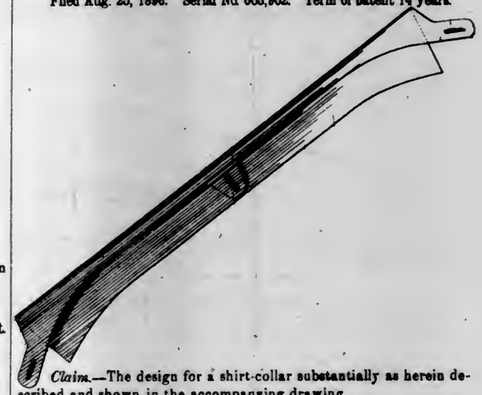
Claim.—The design for a sad-iron heater substantially as described and shown.

26,303. PORTIÈRE-ROPE. FRANKLIN W. OEHRLE, Philadelphia, Pa. Filed Oct. 10, 1896. Serial No. 608,521. Term of patent 7 years.



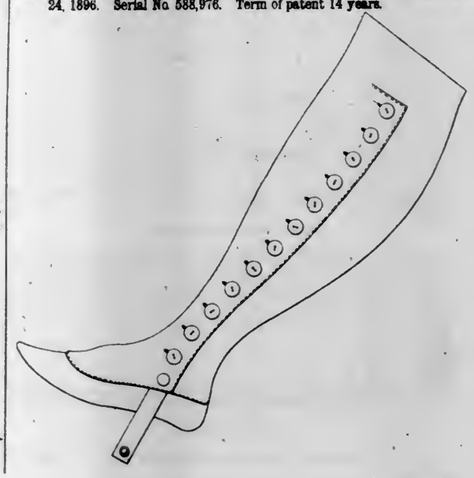
Claim.—The design for a portière-rope, substantially as herein shown and described.

26,304. SHIRT-COLLAR. OSCAR HAMMERSTEIN, New York, N. Y. Filed Aug. 25, 1896. Serial No. 603,902. Term of patent 14 years.

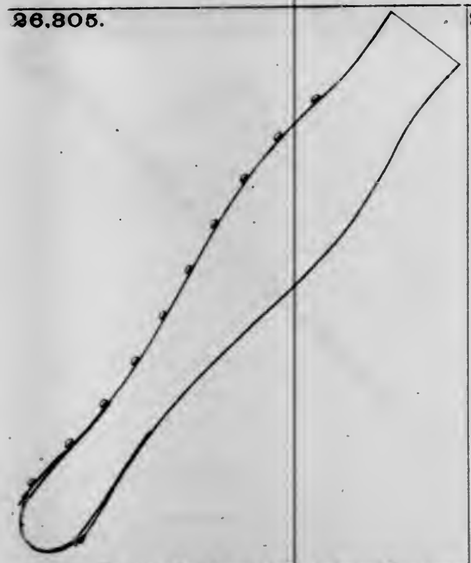


Claim.—The design for a shirt-collar substantially as herein described and shown in the accompanying drawing.

26,305. STOCKING. ARNOLD SESSLER, New York, N. Y. Filed Apr. 24, 1896. Serial No. 588,976. Term of patent 14 years.



26,305.



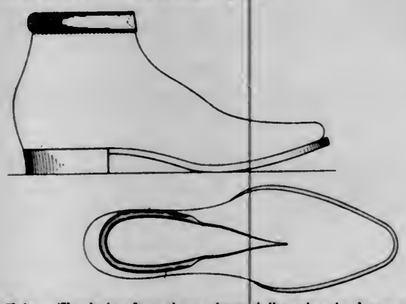
Claim.—The design for a bicycle-stocking substantially as shown and described.

26,306. INSOLE. CLARK ECKERT, Lawrenceville, Ind. Filed July 14, 1896. Serial No. 599,191. Term of patent 14 years.



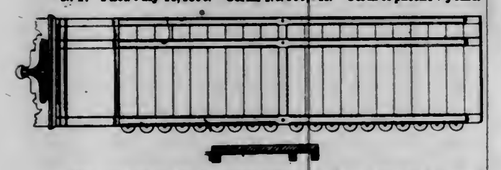
Claim.—The design for an insole for boots and shoes, as herein shown and described.

26,307. SHOE. HOWARD M. STEPHENS, Boston, Mass., assignor to the Rice & Hutchins, Incorporated, same place. Filed Oct. 1, 1896. Serial No. 607,617. Term of patent 7 years.



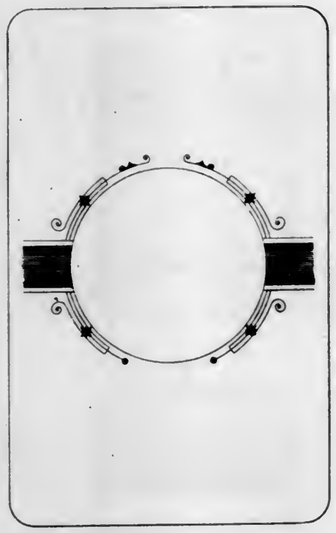
Claim.—The design for a shoe, substantially as herein shown and described.

26,308. PRICE-LIST STANDARD. DAVID H. DURSTON, Woodsport, N. Y. Filed July 13, 1896. Serial No. 599,741. Term of patent 7 years.



Claim.—A price-list standard substantially as herein described and shown.

26,309. ADVERTISING-CARD. TITUS S. INGRAHAM, Cleveland, Ohio. Filed Aug. 24, 1896. Serial No. 603,779. Term of patent 14 years.



Claim.—The design for an advertising-card, as herein shown and described.

26,310. FONT OF TYPE. WILLIS F. CORNELL, Alameda, Cal. Filed Sept. 30, 1896. Serial No. 607,505. Term of patent 7 years.



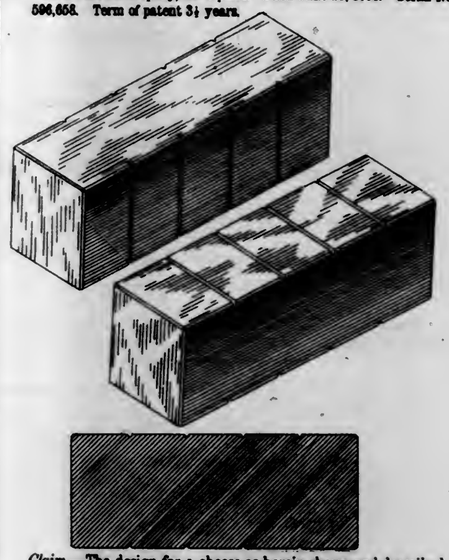
Claim.—The design for a font of type substantially as herein described and shown.

26,311. PATTERN FOR SHEET-GLASS. WILLIAM BUTLER and LYMAN H. ZIEGLER, Redkey, Ind., assignors to the Marietta Glass Company, same place. Filed Sept. 14, 1896. Serial No. 605,821. Term of patent 7 years.



Claim.—The design for sheet or plate glass substantially as herein shown and described.

26,312. CHEESE. WILLIAM I. BROWN, Utica, N. Y., assignor to the Thistle Cheese Company, same place. Filed June 23, 1896. Serial No. 596,658. Term of patent 3½ years.



Claim.—The design for a cheese as herein shown and described.

TRADE-MARKS

REGISTERED NOVEMBER 17, 1896.

29,157. HOSIERY. SHAW STOCKING COMPANY, Lowell, Mass. Filed Oct. 22, 1896.

Shawknit

Essential feature.—The word "SHAWKNIT." Used since December 15, 1879.

29,158. SHOES FOR MEN AND BOYS. HANAN & SON, Brooklyn, N. Y. Filed Aug. 13, 1896.



Essential feature.—A globe or portion of a globe representing the earth, a shoe thereon, a crescent, a face within the concave of the crescent turned toward the globe, rays of light from the crescent and face to the globe, and the words "THE BEST ON EARTH IS A HANAN SHOE," the word "TRADE-MARK," and the word "HANAN." Used since July 13, 1896.

29,159. PRINTED WOVEN FABRICS. THE EDDYSTONE MANUFACTURING COMPANY, Philadelphia, Pa. Filed Oct. 5, 1896.

JASPER

Essential feature.—The word "JASPER." Used since July 22, 1896.

29,160. BUTTER-POWDER. ROBERTS BROTHERS, West Jefferson, Ohio. Filed Sept. 21, 1896.

YELLOWSTONE

Essential feature.—The word "YELLOWSTONE." Used since August, 1896.

29,161. ELGIN CREAMERY-BUTTER. S. J. STEVENS & Co., Cincinnati, Ohio. Filed May 27, 1896.

SWEET LITTLE BUTTER-CUP

Essential feature.—The words "SWEET LITTLE BUTTER-CUP." Used since November, 1895.

29,162. BAKING AND YEAST POWDERS. FREDERICK WILLIAM YOUNG, New Orleans, La. Filed Mar. 25, 1896.

DIXIE

Essential feature.—The word "DIXIE." Used since April 30, 1889.

29,163. CANNED CORN. ILLINOIS CANNING CO., Hoopeston, Ill. Filed Oct. 8, 1896.

BISMARK



Essential feature.—The word "BISMARK" and the bust or head of Bismarck. Used since September, 1894.

29,164. RAW AND ROASTED PEANUTS. CHARLES F. MCCORT, Philadelphia, Pa. Filed Oct. 23, 1896.

Donkey



Essential feature.—The word "DONKEY" or the representation of a donkey. Used since August 15, 1894.

29,165. LEMONS. CHARLES TRIOLO, Chicago, Ill. Filed Aug. 1, 1896.

OLD GLORY

Essential feature.—The words "OLD GLORY." Used since September 1, 1893.

29,166. LIQUOR. THE SOCIÉTÉ ANONYME DE LA DISTILLERIE DE LA LIQUEUR BÉNÉDICTINE DE L'ABBAYE DE FÉCAMP, Fécamp, France. Filed Oct. 13, 1896.

BÉNÉDICTINE

Essential feature.—The word "BÉNÉDICTINE." Used since January 1, 1871.

29,167. PREPARATIONS IN WHICH WHISKY PREDOMINATES. SIMON I. NUSBAUM, Albany, N. Y. Filed Oct. 13, 1896.

KNICK AND ROCK

Essential feature.—The words "KNICK AND ROCK." Used since September 1, 1881.

29,168. CARBONATING-POWDER. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed Oct. 23, 1896.

ZENITH

Essential feature.—The word "ZENITH." Used since October 14, 1896.

29,169. MEDICATED CHEWING-GUM. WELLMAN & MIESEL, Defiance, Ohio. Filed Oct. 12, 1896.

ANTI-BACCO

Essential feature.—The compound word "ANTI-BACCO." Used since June 1, 1896.

29,170. MEDICATED SMOKING COMPOUNDS. HENRY Y. MCCORD and ALBERTUS H. SPAIN, Atlanta, Ga. Filed Oct. 23, 1896.

DOUBLE E-M

Essential feature.—The word and hyphenated letters "DOUBLE E-M." Used since September, 1894.

29,171. PHARMACEUTICAL PREPARATIONS CONTAINING MYRRH. FLOEGE & Co., Frankfort-on-the-Main, Germany. Filed Aug. 31, 1896.

MYRRHOLIN

Essential feature.—The word "MYRRHOLIN." Used since November, 1894.

29,172. REMEDY FOR HEADACHE. CHARLES C. COOK, Baltimore, Md. Filed Oct. 21, 1896.

SELTZERENE

Essential feature.—The word "SELTZERENE." Used since September 14, 1896.

29,173. REMEDIES FOR FEMALE COMPLAINTS. ELIZABETH M. COOK, San Francisco, Cal. Filed Oct. 22, 1896.

A'VIDA

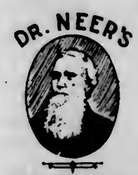
Essential feature.—The words "A'VIDA." Used since February, 1896.

29,174. LAXATIVE MEDICINES. TARRANT & Co., New York, N. Y. Filed Oct. 16, 1896.



Essential feature.—A design of a circular band or ring and cross-bar or tablet having the words "TARRANT'S SELTZER APERIENT" printed upon it. Used since 1866.

29,175. CERTAIN LIQUID MEDICINE FOR EXTERNAL AND INTERNAL USE. ELIZABETH A. NEER, Paterson, N. J. Filed Feb. 19, 1896.



KEYSTONE

Essential feature.—A picture of the late Dr. David Neer and the words "DR. NEER'S KEYSTONE." Used since May 1, 1862.

29,176. SALVE. JOSEPH P. URBEN, Allegheny, Pa. Filed Oct. 15, 1896.

ROSEOLINE CREAM

Essential feature.—The words "ROSEOLINE CREAM." Used since February, 1880.

29,177. HOG REMEDIES. FARBWERK FRIEDRICHSFELD, DR. PAUL RENY, Mannheim, Germany. Filed Apr. 7, 1896.

PORCOSAN

Essential feature.—The word "PORCOSAN." Used since March 1, 1896.

29,178. PREVENTIVE AGAINST ANIMAL DISEASES. FARBWERK FRIEDRICHSFELD, DR. PAUL RENY, Mannheim, Germany. Filed Apr. 15, 1896.



Essential feature.—A representation of an anchor, a globe in front of the same, an endless snake encircling the globe, and a laurel wreath encircling both the snake and globe. Used since March 1, 1896.

29,179. REFINED ILLUMINATING-OIL. RALPH J. VENNING, Cleveland, Ohio. Filed Aug. 26, 1896.

"Cycoline"

Essential feature.—The word "CYCOLINE." Used since March 4, 1896.

29,180. LAUNDRY AND TOILET SOAP. UNION SOAP CO., Baltimore, Md. Filed Aug. 29, 1896.

NOAH'S ARK

Essential feature.—The words "NOAH'S ARK." Used since August 25, 1896.

29,181. SOAP AND OTHER TOILET PREPARATIONS. VICTOR KLOTZ, Paris, France, and New York, N. Y. Filed Oct. 19, 1896.

GREEK COLLUPTUS

Essential feature.—The words "GREEK COLLUPTUS." Used since March 1, 1896.

29,182. LIQUID ANTISEPTIC COURT-PLASTER. GEORGE FROST COMPANY, Boston, Mass. Filed Oct. 15, 1896.

Flexiderma

Essential feature.—The word "FLEXIDERMA." Used since February 1, 1896.

29,188. MEDICATED SOAP. BODE & DALY, New York, N. Y. Filed July 6, 1896.

O. C. A. Bode

Essential feature.—A facsimile signature of Dr. O. A. Bode. Used since April 15, 1896.

29,184. SHEARS AND SCISSORS. ROBERT H. SEYMOUR, Holyoke, Mass. Filed Oct. 21, 1896.



Essential feature.—A representation of a trapezoid, shears and scissors, and the words "SEYMOUR'S SHEARS AND SCISSORS." Used since 1877.

29,185. BICYCLES. HENRY C. ENGLAND, Reading, Pa. Filed Aug. 3, 1896.

VINDEX

Essential feature.—The word "VINDEX." Used since July 15, 1896.

29,186. BICYCLES. TOLEDO MANUFACTURING COMPANY, Chicago, Ill. Filed Oct. 2, 1896.



Essential feature.—The words "OLD HICKORY" associated with a monogram formed of the letters "O" and "H." Used since November 1, 1895.

29,187. ENGINES, MACHINERY OR ITS PARTS, BOATS, AND GOODS PERTAINING TO MARINE AND GENERAL ENGINEERING. THE LIQUID FUEL ENGINEERING COMPANY, East Cowes and London, England. Filed July 10, 1896.

LIFU

Essential feature.—The word "LIFU." Used since July, 1894.

29,188. DRESSINGS AND POLISHES FOR SHOES. ROBERT H. FOERDERER, Philadelphia, Pa. Filed Oct. 22, 1896.

VICI

Essential feature.—The word "VICI." Used since March 1, 1896.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Ninth Circuit.

CHAUCHE *et al. v.* PARE.

Decided June 1, 1896.

1. ASSIGNMENT BY ATTORNEY IN FACT—LACK OF AUTHORITY.

A patentee appointed an attorney with full authority to grant licenses and also with authority to assign the patent, but on terms and conditions to be "agreed on and approved by the grantor, or every bargain closed will be void." The attorney thereafter, without referring the matter to his principal, transferred in his own name, as grantor, to the plaintiff, his executors, etc., "the exclusive liberty, license, power, and authority to make, use, and sell" the machines in all the States and Territories of the Union for the remainder of the term of the patent. *Held* that this was an assignment of the patent and was void as such both because made in excess of the attorney's authority and because it was his own act and deed and not that of his principal.

2. SAME—SAME—RATIFICATION BY PRINCIPAL.

After this transfer the principal wrote several letters to the plaintiff recognizing his interest in the invention, but all of which indicated that the patentee understood the plaintiff to have merely a license. *Held* that they did not amount to a ratification of the assignment which the attorney had attempted to make.

3. ACTION BY LICENSEE.

A mere licensee has no authority to sue infringers in his own name.

IN ERROR to the Circuit Court of the United States for the Northern District of California.

STATEMENT OF THE CASE.

This was an action at law by A. S. Pare against Marie E. Chauche, executrix, and others, for alleged infringement of a patent. In the circuit court a verdict was given for plaintiff. To review the judgment entered thereon, defendants sued out this writ of error.

Before GILBERT, ROSS, and MORROW, Judges.

Messrs. Wheaton, Kalloch & Kierce for the plaintiffs in error.

Mr. J. J. Scrivner and *Mr. M. B. Kellogg* for the defendant in error.

GILBERT, *J.:*

The plaintiffs in error were the defendants in an action brought to recover damages for the infringement of Letters Patent No. 299,815, issued on June 3, 1884, to Dominique Lille, for an improvement in fruit-presses. On May 22, 1885, the patentee, who resided in France, executed to Aime Pare, of Fresno, Cal., a power of attorney, with authority and upon terms therein expressed to grant licenses to manufacture and sell machines containing the invention for and during the life of the patent, also authority to transfer and assign said patent—

but at prices, charges, clauses, and conditions agreed on and approved by the grantor, or every bargain closed will be void.

Concerning the power to assign the patent, there were inserted also the following provisions:

However, it is understood that the said Lille's consent and approval will follow sufficiently either from a letter or from a telegraphic despatch addressed by him on receipt of notice.

It is understood that the grantor reserves the right of approving the sales only when the cession of patents is concerned, and not for the cession of license which the attorney shall have full power to make under the conditions above stipulated.

On August 28, 1886, under the authority conveyed by this instrument, the attorney therein named transferred unto the defendant in error, Antoine S. Pare, his executors, administrators, and assigns—

the exclusive liberty, license, power, and authority to make, use, and sell within and throughout all the States and Territories of the United States of America, for and during the residue or remainder of the term for which the said Letters Patent are or may be granted, the said invention (improvement in wine or fruit presses), upon the terms and conditions herein contained.

This assignment, instead of being made in the name of the patentee, is by its expressed terms an assignment from Aime Pare, the party of the first part, to Antoine S. Pare, the party of the second part, and is executed under the hand and seal of the said party of the first part and not for and on behalf of the patentee. It contains, however, the following recitals:

Whereas, Letters Patent of the United States of America were granted and issued to Dominique Lille, of the Republic of France, and a resident of Tronceus, in the Department of Gers, France, for an improvement in fruit-presses, said Letters Patent bearing date the 3d day of June, 1884, and are numbered 299,815, as will more fully appear by reference thereto; and whereas, the said Dominique Lille did, by an instrument in writing, on the 22d day of May, A. D. 1885, authorize and empower the said Aime Pare, party of the first part, to convey and dispose of, by license, on a stated and fixed royalty, the said invention and Letters Patent, within all the States and Territories of the United States of America aforesaid, as will also more fully appear by reference thereto.

Upon the trial the defendants in the action disputed the authority of the plaintiff therein to maintain the action under the rights conferred upon him by the assignment, and contended that the instrument was void and ineffective to transfer to him any interest in the patented invention or right to damages for its infringement, and the court so held. The plaintiff thereupon proceeded to offer in evidence certain communications that had passed between the attorney, Aime Pare, and his principal, the patentee, whereby it was claimed that the latter had ratified the transaction of his agent. The court admitted these communications in evidence, ruled that their contents were sufficient to prove such ratification, and instructed the jury that the instrument purporting to be an assignment, taken together with such subsequent acts of ratification on the part of the patentee, were sufficient to transfer his interest in the patented improvement to the plaintiff. This instruction of the court to the jury and the admission in evidence of the communications referred to, together with the exclusion of evidence offered by the plaintiffs in error to prove an assignment to them from the patentee of his demand for damages for the infringement, are the principal assignments of error.

There can be no question that, under the power of attorney, the agent had full authority to assign the patent; but it is equally clear that his authority could

be exercised only upon terms that should first be communicated to and accepted by his principal. The purported assignment therefore was clearly insufficient to transfer a title to the patent, not only because it was the act and deed of the agent and not that of his principal, (*Machesney* v. *Brown*, 29 Fed. Rep., 145, and cases there cited,) but for the further reason that the agent exercised a power not conferred upon him in that he made a transfer of the patent without communicating the terms of the sale to his principal or obtaining his approval thereof. (*Johnson Railroad Signal Co.* v. *Union Switch & Signal Co.*, 59 Fed. Rep., 20; *Union Switch & Signal Co.* v. *Johnson Railroad Signal Co.*, 10 C. C. A., 176; 61 Fed. Rep., 940.)

The letters the contents of which were held to furnish conclusive evidence of a ratification of the assignment on the part of the patentee were written during the period of two and one-half years succeeding the date of the assignment. The first was written to the patentee by his agent on September 20, 1886, and contains the following:

I made up my mind, and wrote to my brother [the defendant in error] and explained to him the situation. I told him that, if he was not to give me the money required, I was to abandon this business. He immediately sent me the funds, and, later on, I made him consent to buy the license, at the price and conditions mentioned in your power of attorney.

This is the only letter in the record which contains direct information concerning the extent of the interest sold and the terms and conditions of the sale. The agent here distinctly informs his principal that he has sold, not the patent, but a license; and he makes that fact doubly clear by saying that the sale has been made at the price and conditions mentioned in the power of attorney. The price and conditions mentioned in that instrument referred only to the transfer of a license. The terms upon which an assignment or "cession" of the patent might be made were not expressed. They were to be fixed after conference with the patentee. The agent was powerless to assign the patent upon terms to be fixed at his own discretion. His authority to grant privileges under the patent without the concurrence of his principal was limited solely to the transfer of licenses. It is in the light of the information afforded to the patentee by this first letter from his agent that the subsequent correspondence must be viewed. On December 28, 1886, the patentee thus wrote to the defendant in error:

If I had taken my patent in the United States at first, the duration might have been of seventeen years; but, nevertheless, you will have the privilege, at the expiration of the patent, to possess all the relation for the manufacture of my system, and you will receive as in the past the orders. In one word, there is an infallible prospect, there is only to manufacture on a large scale. For this, if necessary, organize a small company, because, to make money, the cash must not be wanted. If you pay cash, your *fournisseurs* will allow you great reduction. In this enterprise there can be no risk, first, because you are the only one who has the right to *exploiter* my system in the United States.

On April 23, 1887, the defendant in error wrote the patentee:

I have no definite plans for the manufacture of the machines; most probably will have them made by different manufacturers. * * * I inclose two drawings to give you an idea of the manner we are going to make the machines this year. Tell me what you think of it.

On October 21, 1888, the patentee wrote to the defendant in error:

I send you herewith the duplicate of a letter which I send to-day to the address below, concerning a lawsuit which you have instituted against Toulouse & Delorieux. I believe you are in the right.

The inclosed duplicate letter is addressed to the attorney of Toulouse & Delorieux. After referring to the rival presses of Toulouse & Delorieux, it contains the following:

Now, then, if these gentlemen wish to continue to build similar machines, all they have to do is to suppress the pieces I have pointed out, or else enter into an agreement with Mr. Pare, my licensee in the United States, for the development of my system of presses. The latter may make arrangements with several manufacturers, assigning to each a special territory. This is, sir, what my licensee is entitled to have your clients observe strictly, and failing to do which he must prosecute them to the full extent of the law.

On October 31, 1888, the patentee wrote to the defendant in error. After mentioning certain men who might be consulted with reference to disputed points in the patent, he proceeded thus:

If you will believe so, ask them the proof, if it is for that reason that you brought the lawsuit. * * * As for the power of attorney, I have looked it over, and see that you have the right to make, in general, all necessary proceedings. Consequently, it is useless for me to make such a trip. I will go only later on, or, if you wish to give up the license, I will take it back. You have only to renounce by a simple letter, and paying what is due to me.

On December 20, 1888, the defendant in error wrote the patentee concerning the rival machines that were being manufactured by Toulouse & Delorieux, and says:

But, no sooner the United States decide in my favor, I shall no more be friendly, and I will let them know my mind; also, the three other manufacturers who are infringing. * * * As soon as the court will have finally decided the validity of your patent I will pay the royalty upon all machines sold by me.

The last of the letters bears date February 2, 1889. It contains similar expressions to those found in the preceding correspondence and adds nothing material to the force or effect thereof.

We find nothing in any of these letters to indicate that the patentee was aware that his agent had made an assignment of the patent or that he ever received information from which that fact might be deduced. All the expressions found in the correspondence point to the conclusion that the patentee understood the defendant in error to be, as indicated in the first letter, a licensee only. If the letters prove ratification, they prove the ratification of the transfer of a license and not the ratification of an assignment. Such being their purport, it was error to charge the jury that the letters connected with the attempted conveyance from the agent to the defendant in error constitute a conveyance to the latter. As licensee the defendant in error had no authority to maintain the action. (*Birdsell* v. *Shaliol*, 30 O. G., 261; 112 U. S., 486; 5 Sup. Ct., 244; *Waterman* v. *Mackenzie*, 54 O. G., 1562; 138 U. S., 52; 11 Sup. Ct., 334.)

The judgment is reversed, with costs to the plaintiffs in error, and a new trial is ordered.

U. S. Circuit Court of Appeals—Seventh Circuit.

RAYMOND *v.* ROYAL BAKING POWDER COMPANY.

Decided October 15, 1896.

APPEALS—DISMISSING—INTERLOCUTORY APPEAL—APPEAL TAKEN OUT OF TIME.

Where the lower court held that defendant had infringed and referred the cause to a master in chancery, to take, state, and report to the court an account with respect to the infringement and the gains, profits, and advantages which the defendant had received or which had arisen or accrued by reason of such infringement, and while the matter was so pending before the master and before any report by him the appellant (here) perfected an appeal from that decree to the Court of Appeals, *Held* that the appeal should be dismissed, as the decree appealed from was interlocutory, and that the appeal was taken after the expiration of thirty days from the entry of the interlocutory decree.

ON appeal from the Circuit Court of the United States for the Northern District of Illinois.

Before WOODS and JENKINS, Judges.

Mr. Frank A. Helmer for the appellant.
Mr. Rowland Cox for the appellee.

JENKINS, *J.*, delivered the opinion of the court.

The Royal Baking Powder Company filed its bill in the court below to restrain the alleged appropriation and use of the word "Royal" in respect to baking-powder. The cause was heard in the circuit court on bill, answer, and proofs, and a decree entered on January 21, 1896, which found that the complainant was entitled to the exclusive use of the word "Royal" as a designation for and as distinguishing and identifying baking-powder by it manufactured and sold; that the defendant had infringed this exclusive right; that an injunction should issue perpetually restraining such infringement; that the complainant should recover the profits, gains, and advantages which had been received or made by the defendant from such infringement, and that the cause be referred to a master in chancery to take, state, and report to the court an account with respect to the infringement and the gains, profits, and advantages which the defendant had received or which had arisen or accrued by reason of such infringement.

While the matter was so pending before the master, and before any report by him, on June 17, 1896, the appellant here perfected an appeal from that decree to this court. The appellee now moves to dismiss this appeal upon the ground that the decree appealed from was interlocutory and that the appeal was taken after the expiration of thirty (30) days from the entry of the interlocutory decree.

Section 7 of the act of March 3, 1891, (26 Rev. Stats., chap. 517, p. 826,) establishing this court, as amended by the act of February 18, 1895, (28 Rev. Stats., chap. 96, p. 666,) provides—

that where upon a hearing in equity in a district court or a circuit court, an injunction shall be granted, continued, refused or dissolved by an interlocutory order or decree, or an application to dissolve an injunction shall be refused in a cause in which an appeal from a final decree may be taken under the provisions of this act to the Circuit Court of Appeals, an appeal may be taken from such interlocutory order or decree granting, continuing, refusing, dissolving, or refusing to dissolve an injunction to the Circuit Court of Appeals, provided that the appeal must be taken within thirty days from the entry of such order or decree and it shall take precedence in the Appellate Court; and the proceedings in other respects in the court below shall not be stayed, unless otherwise ordered by that court, during the pendency of such appeal.

And provided further that the court below may, in its discretion, require as a condition of the appeal, an additional injunction bond.

The determination of the question involved depends upon the further question whether the decree appealed from was an interlocutory or a final decree. If interlocutory, the appeal was not within the time provided and it must be dismissed. If the decree was final, the appeal was timely and the motion to dismiss should be denied. The purpose of the statute regulating appeals was to allow a speedy review of the action of the court below in granting or refusing an injunction, and this speedy review was granted while the cause was yet pending below because of the great detriment that might result by reason of the improvident issuing or refusing of an injunction. The statute was not designed to and does not change the rule which theretofore obtained that an appeal would only lie from a final decree, except in the particulars stated and with regard to the injunction granted or refused; nor was the statute designed to nor does it change the nature of a decree as theretofore established. It is true that the hearing which resulted in the decree in question was upon the merits of the controversy, and those merits were adjudicated, except with respect to the matters referred to the master. That, however, does not constitute the decree a final one for the purposes of an appeal, for, while the right of the complainant and the infringement by the defendant was determined by the decree, the matter was still at large and still remained in the breast of the chancellor and was subject to change by him prior to the final decree and during the term at which the final decree might be entered. This is elementary, the law, in its desire that right should be done, allowing the chancellor a breathing-time, so to speak—the interval between the interlocutory decree and the end of the term at which the final decree should be entered—within which he might reconsider his judgment. A final decree is one where nothing remains to be done by the court except to execute it ministerially. The decree appealed from was, therefore, clearly interlocutory. (*Bostwick* v. *Brinkerhoff*, 106 U. S., 3; *Lewisburg Bank* v. *Sheffey*, 140 U. S., 445; *Keystone Manganese and Iron Company* v. *Martin*, 132 U. S., 91; *McGourkey* v. *Toledo and Ohio Central Railway Company*, 146 U. S., 536, 545; *Latta* v. *Kilbourn*, 150 U. S., 524, 539; *David Bradley Manufacturing Company* v. *Eagle Manufacturing Company*, 66 O. G., 315; 18 U. S. App., 349; *The Brush Electric Company* v. *The Western Electric Company*, decided by this court October 5, 1896; *Lockwood* v. *Wickes*, U. S. App., 75 Fed. Rep., 118.)

In *Latta* v. *Kilbourn* the Court states the settled rule to be—

that if the court made the decree fixing the rights and liabilities of the parties and thereupon referred the case to a master for a ministerial purpose only, and no further proceedings in court were contemplated, the decree is final; but if it referred the case to him for a judicial purpose, as to state an account between the parties upon which a further decree is to be entered, the decree is not final.

The appeal taken was, therefore, under section 7 of the act above referred to, and to be effectual should have been taken within thirty (30) days from the entry of the interlocutory decree.

The appeal will be dismissed.

U. S. Circuit Court—Southern District of Ohio, Western Division.

STROM MANUFACTURING COMPANY *v.* WEIR FROG COMPANY.

Decided June 1, 1896.

1. ALKINS—RAIL-BRACE—VOID.

Letters Patent No. 352,285, dated November 9, 1886, to Charles Alkins, for improvements in rail-braces, *Held* void on its face for want of novelty and invention.

2. SAME—SAME—INVENTION.

There is no patentable invention involved in swaging or striking up by means of a die, from a blank of iron or steel, a rail-brace of a form which had previously been made of cast metals. (*Kilbourne* v. *W. Bingham Co.*, 60 O. G., 577; 1 C. C. A., 617; 50 Fed Rep., 697, followed.)

3. SAME—SAME—SUFFICIENT DESCRIPTION—SECTION 4888, REVISED STATUTES.

In view of the antiquity of the art of swaging, *Held* that claims 1, 2, 3, 9, and 10 are not void for want of a sufficient description to comply with Revised Statutes, section 4888, though the process not stated in full. (*Kilbourne* v. *W. Bingham Co.*, 60 O. G., 577; 1 C. C. A., 617; 50 Fed. Rep., 697, followed.)

4. DEMURRER FOR WANT OF INVENTION.

The cause should be considered upon the merits on demurrer to the bill whenever it appears upon the face of the patent that it lacks invention. (*Risdon Iron and Locomotive Works* v. *Medart*, 71 O. G., 751; 15 Sup. Ct., 745; 158 U. S., 63, followed.)

STATEMENT OF THE CASE.

This was a suit in equity by the Strom Manufacturing Company against the Weir Frog Company for alleged infringement of Letters Patent No. 352,286, issued November 9, 1886, to Charles Alkins, for improvements in rail-braces. The cause was heard on demurrer to the bill.

In describing his invention the patentee says:

This invention relates to the manufacture of rail-braces which are employed for the purpose of bracing the rails of a railroad, particularly at frogs or switches, or at points where bends or curves occur in the road. These braces are usually constructed with a base portion adapted to be spiked down upon a cross-tie or other appropriate bed, and with an abutment rising from said base portion and adapted to fit against the rail. Prior to my invention rail-braces of such character have been formed of cast metal, the abutment being necessarily cast solid, in order to insure the requisite strength and durability.

The objects of my invention are, first, to produce at a reduced cost and in a more convenient way a rail brace possessing in a high degree both strength and durability, and involving all of the advantages without the disadvantages of the old construction of rail braces; second, to rapidly and economically produce a rail-brace possessing all of the necessary features of strength, durability, and adaptability to its destined purpose, and at the same time involving the employment of considerably less metal than in the old construction of brace, whereby a saving in material is effected and the cost of production lessened, without weakening or otherwise detracting from the serviceability of the brace; third, to effect a considerable lessening of the time and labor heretofore incident to the manufacture of rail-braces, thereby reducing the cost of their manufacture and permitting large orders to be filled rapidly.

In carrying out my invention the rail-brace is stamped and struck up by dies from a blank of wrought or malleable iron or steel in a manner to convert the blank into a suitable base provided with a hollow abutment adapted to engage the rail in order to effectively brace the same. As will be hereinafter seen, the blanks can be sheared from a strip or oblong plate without loss of material, and the said blanks then cut or trimmed so as to shape them with reference to the desired ultimate shape of the abutting end or face of the hollow abutment, and to the particular way in which it is desired said hollow abutment shall bear against or engage the rail. It will be obvious that in the production of said braces considerably less time and labor will be involved than in the production of the old brace of cast metal, particularly for the reason that the provision of molds for forming the casting is rendered unnecessary, and that said braces will be lighter and more economical than the old construction of cast-metal rail-brace, on account of the saving effected in the material of which the brace is formed.

* * * * * * *

It is understood that the metal blanks could be struck up to form hollow abutments varying in shape from those herein shown, and that the blanks can be composed of either steel or wrought or malleable iron. The form of blanks herein shown is, however, particularly well adapted for the purpose, and the shape of the abutment is especially desirable, since the material is utilized in a most economical manner, and an exceedingly strong and at the same time comparatively light rail-brace produced.

The base portion of the brace will be provided with any suitable arrangement of notch or notches and holes for the spikes by which the brace is to be secured in place, said notch and holes being conveniently formed by the dies simultaneously with the operation of striking up the hollow abutment and otherwise shaping the brace to the contour of a rail.

The claims involved in this suit are as follows:

1. The improvement in the art of manufacturing rail-braces consisting in striking up a metal blank into a hollow abutment rising from a base, with its front or abutting end and said base shaped to the portions of the rail against which the brace is to bear, substantially as described.

2. The improvement in the art of manufacturing rail-braces consisting in striking up between the two opposite side edges and at one end portion of a metal blank a hollow abutment, with its front or abutting end shaped to the portions of the rail against which it is to bear, substantially as described.

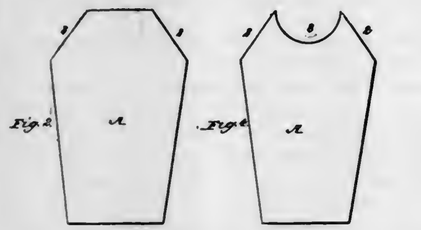
3. The improvement in the art of manufacturing rail-braces consisting in forming an oblong metal blank widening toward one end, and striking up a length of the wider end portion of said blank into a hollow abutment, with its front or abutting end and the material left as a base shaped to the portions of the rail against which the brace is to bear, substantially as described.

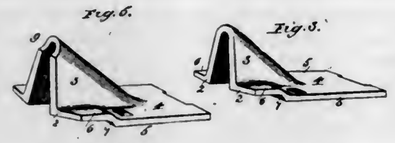
6. The blank A for a rail-brace, widening toward one end, substantially as described.

9. A struck-up metal rail-brace having a hollow abutment rising from a base, substantially as described.

10. The struck-up metal rail-brace formed with the hollow abutment 3, rising from a base, 4, substantially as described.

The following drawings will aid to understand the character of the alleged invention:





Messrs. Dyrenforth & Dyrenforth and *Mr. Geo. S. Bailey* for the complainant.

Messrs. Wood & Boyd for the defendant.

SAGE, *J.*:

The defendant demurs to the first, second, third, sixth, ninth, and tenth claims of the complainant's patent, granted to Charles Alkins November 9, 1886, for an improvement in rail-braces.

First. The first ground of demurrer is that the bill does not contain any matter of equity whereon this court could ground any decree and give to the complainant any relief against the defendant on account of said claims.

Second. That the alleged improvements specified in said claims were not new and patentable at the time of the alleged invention thereof, inasmuch as before that time it was the common and general knowledge of the public, of which the court will take judicial notice, that the art of striking up metal blanks into hollow articles was old, that the shaping of the article produced depended upon the form of the dies used, and that it has been held not to be invention to change the form of a die so as to make a new-shaped article under it.

Third. That cast rail-braces of the character and form of the patented one, but with the solid abutments, being admitted by the bill to be old before the date of the alleged invention, it is not shown by said bill that there was any invention in making the abutment hollow; that being a well and generally known result of the common practice of the art of striking up metal into any hollow form, of which the court will take judicial notice, and no novel, special, or other means than the public possessed is described in said patent for the accomplishment of this result.

Counsel subsequently added the following causes of demurrer:

Fourth. That there is no allegation that the invention, or so much of it as is specified in said claims, had not been patented or described in any printed publication in this or any foreign country before the date of the invention.

This ground of demurrer was conceded by counsel for the complainant, who prepared and submitted to defendant's counsel an amendment curing the defect, which has been admitted to the files.

Fifth. That the patent is void, so far as it relates to claims 1, 2, and 3, because there is no sufficient description, as required by section 4888 of the Revised Statutes of the United States.

Sixth. That the patent is void, so far as it relates to claims 9 and 10, because there is no sufficient description, as required by section 4888 of the Revised Statutes of the United States.

The fifth and sixth causes for demurrer will be overruled for the reasons stated in *Kilbourne* v. *W. Bingham Co.*, (1 C. C. A., 617; 60 O. G., 577; 50 Fed. Rep., 697.) That suit related to a sink swaged or struck up

from a single sheet of wrought iron or steel without joint, seam, or interior angle. The court said that if that element of the claim were a new process it was not sufficiently described to meet all requirements of section 4888, but that the antiquity of the process and the fact that the patentee did not expressly or by implication claim it saved the patent from the objection.

The court further said that—

the art of swaging metals into any required form was venerable long anterior to this patent.

Then follow illustrations and the statement that—

the variety of manufactures by this process has been limited only by the art of designing, the ductility of metals, and the possibilities of machinery.

The same case in the court below is reported in 47 Fed. Rep., 57, where a like view was taken.

So here, although the process is not stated in detail in the claims, it is, considering the antiquity of the art of swaging, sufficiently shown in the drawings and in the specification. The remaining causes for demurrer are well founded upon the authority of the cases already cited. It appears from the specification of the Letters Patent that prior to the complainant's invention braces formed of cast metal and of the character of the brace described upon which the claims are founded had been in common use, and the only novelty in the complainant's construction consisted in the production of a rail-brace stamped or struck up by dies from a blank of wrought or malleable iron or steel in a manner to convert the blank into a suitable base provided with a hollow abutment adapted to engage the rail in order to effectively brace the same. The blank, it is stated in the specification, can be sheared from a strip or oblong plate, then cut or trimmed with reference to the desired ultimate shape of the abutting end or face of the hollow abutment and to the particular way in which it is desired that the same shall bear against or engage the rail. There is no invention displayed in this improvement. The reasons for this conclusion are so fully stated in the cases cited above as to make the reference sufficient. The suggestion made by counsel for the complainant that general demurrers to bills in patent suits ought to be discouraged, upon the authority of *McCoy* v. *Nelson* (39 O. G., 831; 121 U. S., 484; 7 Sup. Ct., 1000) and other cases cited in the brief, is fully met and overcome by the later cases, (see *Risdon Iron and Locomotive Works* v. *Medart*, 71 O. G., 751; 158 U. S., 68; 15 Sup. Ct., 745,) which favor consideration of the merits upon demurrer and dismissal of the bill whenever it appears upon the face of the patent that it lacks invention. Certainly such practice ought to be encouraged; otherwise the life of a worthless or invalid patent might be prolonged and sums exacted by way of compromise from users by reason of the dread of the heavy expenses attending the taking of testimony and other matters necessary to the preparation of patent suits for final hearing.

The demurrer will be sustained upon the first three grounds assigned. The fourth ground, having been by consent cured by amendment, will be treated as withdrawn. The fifth and sixth grounds of demurrer will be overruled.

The bill will be dismissed at the costs of the complainant.

U. S. Circuit Court—District of West Virginia.

WESTERN MINERAL WOOL AND INSULATING FIBRE COMPANY *v.* GLOBE MINERAL WOOL COMPANY.

Decided June 25, 1896.

1. ROCKWELL—PROCESSES OF MANUFACTURING MINERAL WOOL—PATENTABLE AND INFRINGED.

Letters Patent No. 447,360, granted March 3, 1891, and No. 452,733, granted May 19, 1891, to Charles H. Rockwell, for processes of manufacturing mineral wool, examined and *Held* not anticipated, patentable, and infringed.

2. ANTICIPATION—NEW USE OF OLD MATERIAL—RESULT SUPERIOR.

A patent for the reuse of previously-cooled slag, which consists of remelting it with lime (or with silica, or with both) and then converting the mixture into mineral wool, is not anticipated by processes which consist in using slag before it has cooled, for the same purpose, when it appears that the patentee was the first to use successfully previously-cooled slag and when it appears that his product is superior to the former product.

3. SAME—RESULT DIFFERENT.

Such patents are not anticipated by the use of fresh hot slag to which lime has been added in order to produce a cement.

4. INVENTION—SIMPLICITY—RESULT NEW AND USEFUL—PUBLIC LOSS.

Simplicity does not negative invention, when a new and useful result is accomplished, where the process has clearly assisted in the manufacture of the product and where, if the process were to be eliminated from public knowledge, loss to the public would result.

STATEMENT OF THE CASE.

This was a suit in equity by the Western Mineral Wool and Insulating Fibre Company against the Globe Mineral Wool Company for alleged infringement of Letters Patent Nos. 447,360 and 452,733, issued to Charles H. Rockwell on March 3, 1891, and May 19, 1891, respectively, for a process of manufacturing mineral wool.

Messrs. Chilton & Thayer and *Mr. W. J. Townsend* for the complainant.

Mr. J. L. Parkinson and *Messrs. Ewing, Melvin & Ewing* for the defendant.

GOFF, *J.*:

This is a suit in equity in which the defendant is charged with infringing two Letters Patent of the United States owned by the complainant. One of them, No. 447,360, dated March 3, 1891, was issued to Charles H. Rockwell, and by him on the 9th day of March, 1891, duly assigned to the complainant. By the first of said patents there was granted to the patentee, his heirs and assigns, the exclusive right of manufacturing mineral wool in accordance with the process claimed therein, which was (claim 1) by remelting hardened slag or scoria from a smelting-furnace with lime and silica or silica and lime bearing stone, mixed in the proper proportions, and blowing the same into mineral wool, substantially as described; (claim 2) the process of manufacturing mineral wool, consisting of remelting hardened slag or scoria from a smelting-furnace with lime or lime-bearing stone, mixed in proper proportions, and blowing the same into mineral wool. The said second-mentioned patent granted to the patentee the right to the process, in the manufacture of mineral wool, of melting in a cupola hardened slag or scoria with silica or silica-bearing stone, mixed in proper proportions, and converting the same into mineral wool. The defenses are anticipation, non-patentability, and non-infringement.

Defendant insists that by printed publications, as

well as by prior knowledge and universal use for many years by others, it is shown the process described in complainant's patents was not novel at the time of its alleged invention. The publications referred to—to wit, *Encyclopædia Britannica*, ninth edition, *Literary Digest*, 1895, and *Engineering and Mining Journal*, 1872—do not, in my judgment, sustain this contention. They show the use to which slag can be put and how mineral wool has been and can be made from it, but do not even remotely discuss or suggest the process included in the first Rockwell patent. Complainant admits, and it is a fact well known, of which the court will take judicial notice, that mineral wool has been for many years manufactured from the slag taken from blast-furnaces; but it must be conceded that the process of manufacture resorted to before the discovery now protected by the Rockwell patent of March 3, 1891, was very different from that described in said patent. Formerly the slag in molten condition, as it came from the blast-furnace—a residuum - and before it had cooled, was subjected to a hot-air blast or steam-jets and the wool then used produced. No other process was then known or used. At that time there was no way known or in use by which the cold slag could be remelted or used. It was to overcome this difficulty that Rockwell made his experiments, and the process patented by him is the result. Formerly the successful operation of a mineral-wool plant depended on the continuous running of a blast-furnace, from which molten slag could be taken. If the furnace was not in blast, mineral wool could not be made. All prior attempts to remelt slag which had become hardened by cooling and then use it successfully in the making of mineral wool had failed. There is no evidence that such slag was ever profitably worked into mineral wool until after it was mixed with lime in the manner indicated by the Rockwell patent. Some slag which when in melted condition fresh from the furnace could be converted into mineral wool would not, when remelted, produce such wool until such mixture was added, and the character of the mixture depended upon the quality of the slag, which in some cases required lime and in others silica. The mineral wool so obtained was of better quality, better color, freer from impurities, and commanded a better price in the market. The testimony on these points is clear and uncontradicted. The only process now used in the making of mineral wool is that described in the Rockwell patents, and it is plain that they have entirely revolutionized the method of manufacturing it.

The claim of defendant as to "prior description" in the patents to John James Brodmer, dated November 5, 1867, No. 70,510, and to Augusta Amelia Player and Henry McAllister, Jr., administrators, dated May 31, 1870, No. 103,650, is without merit. The former relates to the production of a cement and contemplates the use of slag as it is received from the furnace in a fluid or semifluid state. This patent used slag as it came from the furnace, while the Rockwell patent takes and utilizes the slag that has been thrown away as useless. The one uses molten slag fresh from the furnace, before it has cooled, and adds to it unslaked lime for the purpose of making a cement, and the other takes hardened slag and, using it with lime or silica or lime and silica bearing stone, or both, fuses the combination in a cupola, and, blowing with a steam-jet, produces mineral wool, using for the said mixture certain proportions or per cents. not required to be now set forth.

It will not be necessary to examine in detail the other patents relied upon by defendant on this point. I do not find that they sustain the contention we are now considering. I conclude that there is novelty and invention in the Rockwell patents, now owned by the complainant. The previous process—the prior art—related to an entirely different method of manufacturing mineral wool from slag. The Rockwell improvements have been productive of most beneficial results not only to the owners thereof, but to the consumers of mineral wool, as well as to the owners of the raw material thereof, which otherwise in many cases would remain useless articles.

The claim is now made, as has frequently been the case, that the process covered by the invention is so plain and simple as to exclude the possibility of inventive genius. But why was it never resorted to before, if so simple? Why not used, if so plain? It may be simple, yet nevertheless an invention, and while now very plain it is still meritorious. Evidently the patentee has produced something new and useful, the benefits of which have been enjoyed by the public ever since he promulgated it. The process described in the patents has clearly assisted in the manufacture of mineral wool and greatly benefited the particular art to which it relates. If it was to-day eliminated, the formula lost, and the method of procedure forgotten, would not the public suffer a loss? I think so, and hence it follows that the owners of the patents in suit are entitled to the benefits of the same.

Without further discussing the questions involved it follows from what I have said that there is no merit in the defense that the process described had not been anticipated and that it was patentable. That the defendant has infringed it is so clear as not to admit of doubt, and a reference to the testimony on that point is entirely unnecessary. A decree will be passed sustaining the bill of complaint and granting the relief prayed for.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 8. TUESDAY, NOVEMBER 24, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
DISBARRED ATTORNEYS	1129
PREPARATION OF SPECIFICATIONS AND AMENDMENTS FOR THE PRINTER	1129
NOTICE	1129
EXTRACTS FROM THE RULES OF PRACTICE, ETC	1129
INDEXES TO PATENTS ON ELECTRICITY	1129
PRIVILEGES OF THE SCIENTIFIC LIBRARY	1130
ISSUE OF NOVEMBER 24, 1896	1130
APPLICATIONS UNDER EXAMINATION	1130
PATENTS GRANTED	1131
REISSUES	1257
DESIGNS	1261
TRADE-MARKS	1267
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Clarke *v.* Pettengill *v.* Crancer	1271
DECISIONS OF THE U. S. COURTS—	
Caldwell *et al. v.* Powell	1272
Brush Electric Company *v.* Western Electric Company	1273
Beach *v.* Inman *et al*	1275

Disbarred Attorneys.

(ORDER No. 1,108.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 14 1896.

It is hereby directed that any person who has been disbarred from practice before the Patent Office by order of the Commissioner be denied access to the files of the Office, either in his own capacity or as the representative of any other person or firm.

JOHN S. SEYMOUR,
Commissioner.

Preparation of Specifications and Amendments for the Printer.

The Examiners are directed before passing applications to issue to carefully examine all the papers and see that they are in such shape and condition as to avoid all possibility of error being made by the printers. Whenever interlineations or erasures have been made in the specifications or amendments which would lead to confusion and mistake, the Examiners should require the entire specification to be rewritten before passing the case to issue.

Notice.

On the 9th day of February, 1893, the President approved "An act to establish a Court of Appeals for the District of Columbia, and for other purposes," which contains the following:

Sec. 9. That the determination of appeals from the decision of the Commissioner of Patents, now vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of section seven hundred and eighty of the Revised Statutes of the United States, relating to the District of Columbia, shall hereafter be and the same is hereby vested in the court of appeals created by this act; and in addition, any party aggrieved by the decision of the Commissioner of Patents in any interference case may appeal therefrom to said court of appeals.

Sec. 17. That all acts and parts of acts inconsistent herewith are hereby repealed.

Extracts from the Rules of Practice in Relation to the Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

Indexes to Patents on Electricity.

Indexes to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1890, have been issued, and are for sale. These indexes, arranged alphabetically, numerically, and by classes, comprise the following volumes, the prices of which are given below:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Vol. 4. Appendix No. 4, July 1, 1884, to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Vol. 5. Appendix No. 5, July 1, 1885, to June 30, 1886. One volume, 54 pages In paper covers, $1.50.

Vol. 6. Appendix No. 6, July 1, 1886, to June 30, 1887. One volume, 52 pages. In paper covers, $1.50.

Vol. 7. Appendix No. 7, July 1, 1887, to June 30, 1888. One volume, 68 pages. In paper covers, $1.50.

Vol. 8. Appendix No. 8, July 1, 1888, to June 30, 1889. One volume, 72 pages. In paper covers, $1.50.

Vol. 9. Appendix No. 9, July 1, 1889, to June 30, 1890. One volume, 84 pages. In paper covers, $1.50.

Vol. 10. Appendix No. 10, July 1, 1890, to June 30, 1891. One volume, 98 pages. In paper covers, $1.50.

Vol. 11. Appendix No. 11, July 1, 1891, to June 30, 1892. One volume, 86 pages In paper covers, $1.50

Vol. 12. Appendix No. 12, July 1, 1892, to June 30, 1893. One volume, 80 pages. In paper covers, $1.50.

Vol. 13. Appendix No. 13, July 1, 1893, to June 30, 1894. One volume, 70 pages. In paper covers, $1.50.

Vol 14. Appendix No. 14, July 1, 1894, to June 30, 1895. One volume, 63 pp. In paper covers, $1.50.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of November 24, 1896.

Patents	357	No. 571,737 to No. 572,093, inclusive.
Designs	35	No. 26,313 to No. 26,347 inclusive.
Trade-Marks	31	No. 29,189 to No. 29,219, inclusive.
Prints	None.	
Labels	None.	
Reissue	4	No. 11,573 to No. 11,576, inclusive.
Total issue	427	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States	Patents and Designs	Trade-Marks and Prints.
Alabama	1	...	New Hampshire	4	1
Arizona Territory	...	...	New Jersey	12	...
Arkansas	3	...	New Mexico Ter	...	...
California	5	...	New York	82	5
Colorado	2	...	North Carolina	2	1
Connecticut	25	2	North Dakota	...	...
Delaware	...	...	Ohio	27	1
District of Columbia	1	...	Oklahoma Ter	...	...
Florida	1	...	Oregon	1	...
Georgia	1	...	Pennsylvania	43	1
Idaho	...	...	Rhode Island	2	...
Illinois	20	2	South Carolina	...	...
Indian Territory	...	...	South Dakota	2	...
Indiana	12	...	Tennessee	2	...
Iowa	...	...	Texas	3	...
Kansas	8	...	Utah	2	...
Kentucky	2	...	Vermont	4	...
Louisiana	2	...	Virginia	...	...
Maine	2	...	Washington	...	...
Maryland	2	...	West Virginia	1	...
Massachusetts	35	11	Wisconsin	10	...
Michigan	8	3	Wyoming	...	...
Minnesota	5	...	U. S Army	...	...
Mississippi	2	...	U. S. Navy	...	...
Missouri	16	1			
Montana	1	...	Total to citizens of the United States	363	28
Nebraska	2	...			
Nevada	...	...			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs	Trade-Marks and Prints	Countries.	Patents and Designs	Trade-Marks and Prints.
Argentina Republic	...	...	Japan	...	...
Austria Hungary	2	...	Mexico	...	...
Bahama Islands	...	...	Netherlands	...	...
Belgium	1	...	Newfoundland	...	...
Bermuda	...	...	New South Wales	...	...
Brazil	...	...	New Zealand	2	...
British Guiana	1	...	Norway	...	...
Canada	2	...	Porto Rico	...	...
Chile, Republic of	...	...	Portugal	...	...
Colombia	...	...	Queensland	...	...
Costa Rica	...	...	Russia	...	...
Cuba	...	...	San Salvador	...	...
Denmark	...	...	Scotland	...	...
Ecuador	...	...	South Australia	...	...
England	3	2	Spain	...	...
France	3	...	Sweden	...	...
Germany	13	1	Switzerland	1	...
Greece	...	...	Venezuela	...	...
Guatemala	...	...	Victoria	...	...
India	...	...	West Australia	...	...
Ireland	...	...			
Island of Jersey	1	...	Total to citizens of foreign countries	29	3
Italy	...	...			

APPLICATIONS UNDER EXAMINATION.

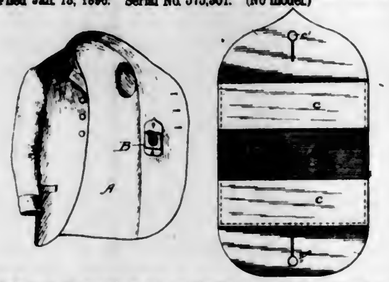
Condition at Close of Business November 17, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Oct. 17	Nov. 9	238
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling	Oct. 21	Nov. 2	93
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc	Oct. 19	Oct. 30	139
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Oct. 19	Oct. 26	194
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Oct. 17	Oct. 20	223
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone Working, Vegetable Cutters and Crushers.	Oct. 19	Oct. 19	137
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc	Oct. 19	Oct. 19	211
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Oct. 19	Oct. 19	226
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Oct. 18	Oct. 19	189
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Oct. 17	Oct. 19	270
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Oct. 17	Oct. 17	136
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Oct. 17	Oct. 15	192
221	XXIII Instruments of Precision, Acoustics, etc.	Oct. 17	Sept. 21	356
	Between one and two months.			
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 12	Oct. 19	316
215	XVII. Paper Manufactures and Printing	Oct. 2	Oct. 17	157
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Oct. 13	Oct. 15	150
93	XXI. Textiles, etc	Sept. 30	Oct. 14	196
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro Chemistry, etc.	Oct. 16	Oct 10	201
255	XII. Mechanical Engineering, Store-Service, etc.	Oct. 8	Oct. 9	233
120	IX. Hydraulics, Fire-Extinguishers, etc.	Oct. 5	Oct. 8	246
253	X. Carriages and Wagons	Oct. 1	Oct. 8	38
246	I. Tillage and Fences	Oct 3	Oct. 2	341
248	XVIII. Steam-Engineering, etc	Sept. 24	Sept. 28	141
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Sept. 14	Sept. 25	361
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Oct. 1	Sept. 24	389
106	II. Farm Stock, Products, etc	Sept. 22	Sept. 16	349
	Between two and three months.			
111	XXXII Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels etc.	Aug. 24	Oct. 23	524
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc	Sept. 10	Oct. 9	450
240	VII. Harvesters, Games and Toys, and Velocipedes.	Aug. 24	Oct. 1	1274
102	XIX. Stoves and Furnaces	Sept 5	Sept. 1	495
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 19	Aug. 26	384
	Between three and four months.			
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 12	Sept. 3	303
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 8	Oct. 3	760
	Total number of applications awaiting action			10,255
	Under one month in arrears.			
	Designs	Oct. 20	Nov. 9	125
	Trade-Marks	Nov. 9	Nov. 13	47

PATENTS

GRANTED NOVEMBER 24, 1896.

571,737. MATCH-POUCH. THOMAS R. ACKERS, Chicago, Ill. Filed Jan. 13, 1896. Serial No. 575,301. (No model.)

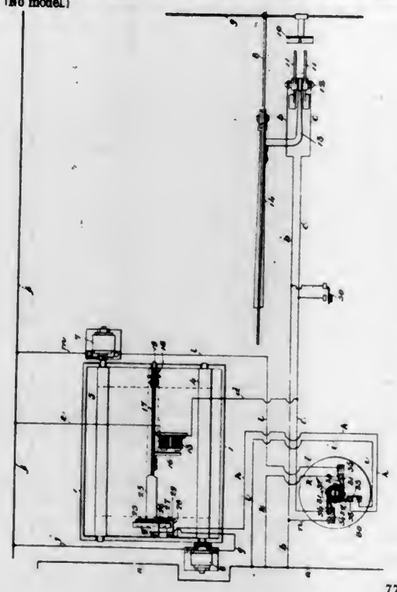


Claim.—1. A match-pouch of flexible material, provided with means for attaching it to a garment; and with a friction-surface on the front portion of the pouch protected by a flap over the same.

2. As a new article of manufacture, a match-pouch formed of a body portion of flexible material provided with means for attaching it to a garment, a pocket-strip secured to the body portion, a friction-surface on the outside of the pocket-strip, and a protecting-flap covering the friction surface, substantially as described.

3. As a new article of manufacture, a match-pouch formed of a body portion of flexible material provided with means for attaching the same to a garment, a pocket-strip secured to the body portion, a friction sheet secured to the outer side of the pocket-strip, and a protecting-sheet covering the face of the friction-sheet, said protecting-sheet being provided with a cut or slit to form a lifting tongue or flap whereby access to the friction-sheet may be had.

571,738. ELECTRIC STREET OR STATION INDICATOR. HERMAN ALWIEN, St. Louis, Mo. Filed Aug. 10, 1896. Serial No. 602,354. (No model.)



Claim.—1 In an electric indicator, a line-wire, a suitable web on which the names of the stations are disposed, rollers for said web, a series of circuit-closing devices disposed in proximity to the line-wire along the length thereof, a motor for advancing the web or turning the rollers on which the same winds, suitable mechanism actuated by the closing of the circuit under the action of the circuit-closing devices, for arresting the momentum of the web and rollers carrying the same acquired during the advancing movement of the web, and intermediate connections between the momentum-arresting device and the motor for alternately closing and breaking the circuit by which the motor is actuated, substantially as set forth.

2. In an electric indicator, a line-wire and a light-wire, suitable revolving rollers, a web adapted to wind on and unwind from said rollers, a series of circuit-closing devices or plates disposed along the line-wire in proximity thereto, a spring-actuated shifting bar carried by the casing of the indicator, an energizing-magnet having one end leading to the light-wire and the opposite end to the ground-wire, contacting arms carried by the car adapted to contact with the circuit-closing plates and complete the circuit of the magnet, an arm serving as an armature for the magnet carried by the shifting bar whereby the bar is shifted against the tension of the spring in one direction, a motor for one of the rollers of the web, a circuit closing and breaking roller over which the web passes, and suitable means carried by the last-named roller for closing the circuit by which the motor is driven and subsequently breaking said circuit after the web has been sufficiently advanced to indicate the next succeeding station, substantially as set forth.

3. In an electric indicator, a suitable line-wire, a casing, rollers mounted in the casing for receiving the opposite ends of the web on which the names of the stations are indicated, a circuit closing and breaking roller also mounted in the casing over which the medial portion of the web passes, a shifting bar actuated in one direction by the closing of a circuit mounted in proximity to the last-named roller, said shifting bar adapted to permit the last-named roller to revolve freely and advance the web for one position of the bar, and to intercept and arrest the momentum of the rollers and web for another position of said shifting bar, a motor adapted to advance the web the necessary distance for one position of the shifting bar and to cease operating for another position of said bar, and suitable means for reversing the motion of the web and permanently hold the shifting bar in position to allow for the reverse rotation of the rollers on which the web winds and the simultaneous free rotation of the circuit closing and breaking roller over which the medial portion of the web passes, substantially as set forth.

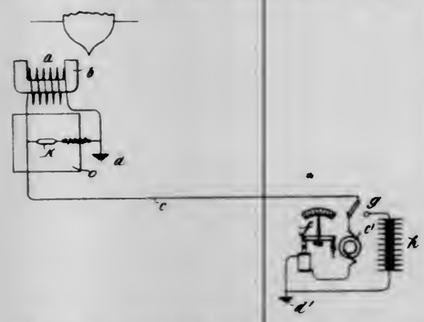
4. In an electric indicator, a suitable casing, web-winding rollers mounted therein, a circuit closing and breaking roller over which the medial portion of the web is adapted to travel, a weighted disk loosely and revolubly mounted at one end of the said roller, an extended wing carried by one of the faces of the disk, a knob projecting from the periphery of the disk adjacent to the weighted side thereof, a spring-arm against which the said knob is adapted to bear in one position of the disk and break the circuit leading to the motor by which the web is driven in one direction, a pin projecting from one face of the disk, an arm projecting radially from the periphery of the circuit closing and breaking roller for seizing the pin projecting from the disk and turn the latter with the roller during the rotation of said roller for the time the web is being advanced, a reciprocating or shifting intercepting-bar mounted in proximity to the circuit closing and breaking roller, a series of notches formed along the length of the bar, a series of arms projecting radially from the periphery of the circuit closing and breaking roller and adapted to normally bear against the shifting bar for arresting the momentum of the roller to which they are secured, the said wing carried by the disk having a bearing edge adapted to come also normally in contact with the shifting bar in one position of the latter, the said circuit closing and breaking roller and disk carried by it being adapted to freely rotate in another position of said shifting bar, whereby the circuit normally broken by the knob carried by the disk is closed and the motor actuating the web may be set in motion, substantially as set forth.

5. In an electric indicator, a revolving circuit closing and breaking roller, a suitable shifting bar, an energizing-magnet adapted to shift the bar in one direction upon the passage of the car along successive stations along the route of the main line and permit the free rotation of the said circuit closing and breaking roller, the said bar being adapted to assume its normal position after the passage of the car beyond the station at which it was operated electrically in one direction and thereby arrest the movement of the roller, substantially as set forth.

6 In an electric indicator, a line-wire, a light wire, a car, a casing for the indicator, motors adapted to drive the indicator in opposite directions, a switch having two electrical conducting-sections and two insulated sections, an energizing-magnet, circuit-closing devices disposed in proximity to the line-wire, contacting arms carried by the trolley-pole for riding over said circuit-closing devices, the current from the light-wire adapted in one position of the switch to actuate one of the motors, and in another position of the switch to actuate the other motor, and permanently control the energizing-magnet, substantially as set forth.

7. In an electric indicator, a suitable traveling web, winding-rollers for the same, an intermediate circuit closing and breaking roller over which the web passes, means for periodically intercepting the free rotation of said roller, a series of holes disposed along the opposite longitudinal edges of the web, and a series of radially-projecting pins carried by the intermediate roller cooperating with the holes in the web, substantially as set forth.

571,739. ELECTROMAGNETIC SENTINEL. FRANCIS B. BADT, Chicago, Ill. Filed Feb. 15, 1896. Serial No. 579,443. (No model.)



Claim.—1. In a signal device, the combination with a coil having its core in open magnetic circuit, of a source of alternating or interrupted current passing through the said coil, and an indicator provided within the circuit of the said coil adapted to indicate any current variation therethrough, substantially as described.

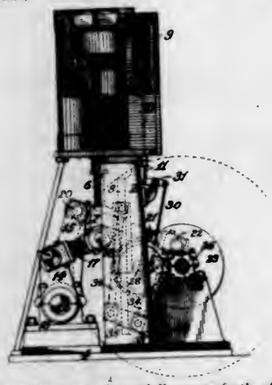
2. In a device for the detection of approaching iron or steel clad vessels, the combination with a submerged mine or torpedo *o*, of a coil *a*, attached to the same, whose core *b* is an open magnetic circuit, a source of alternating or interrupted current *c* flowing through the said coil, a current-indicating device *f* adapted to give warning when any change in current through the said coil takes place, a source of high potential electric current adapted to explode the said mine or torpedo, and means for switching the said current into circuit therewith; substantially as described.

571,740. STEAM-ENGINE. GEORGE A. BARNARD, New York, N. Y. Filed Nov. 13, 1895. Serial No. 568,754. (No model.)

Claim.—1. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a cross-head fixed to the rod of the piston, an arm or connection adapted to vibrate in a direction transverse to the traverse of the piston, and to effect two traverses, in opposite direction, during each stroke thereof, a link coupling said vibratory member directly to the cross-head, a rotatable crank-shaft, and a connection coupling said crank-shaft with the vibratory member.

2. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a cross-head fixed to the rod of the piston, an arm or connection adapted to vibrate in a direction transverse to the traverse of the piston, and to effect two traverses, in opposite direction, during each stroke thereof, a link coupling said vibratory arm or connection directly to the cross-head, a rotatable crank-shaft, and a connection coupling said crank-shaft with the vibratory member, at a greater distance from the axis thereof than the cross-head connection.

3. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a cross-head fixed to the rod of the piston, a shaft journaled to vibrate at right angles to the traverse of the piston, and to effect two traverses, in opposite direction, during each stroke thereof, lever-arms fixed upon the vibratory shaft, a rotatable crank-shaft, a connection coupling one of the lever-arms with the cross-head, and a connection coupling the other lever-arm with the crank-shaft.



4. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a cross-head fixed to the rod of the piston, a shaft journaled to vibrate at right angles to the traverse of the piston, and to effect two traverses, in opposite direction, during each stroke thereof, lever arms fixed, at an angle one to the other, upon the vibratory shaft, a rotatable crank-shaft, a connection coupling one of the lever-arms directly to the cross head, and a connection coupling the other lever-arm with the crank-shaft.

5. The combination, substantially as set forth, of two fluid-pressure cylinders pistons working in said cylinders, cross-heads fixed to the rods of said pistons, a shaft journaled to vibrate at right angles to the traverse of said pistons, and to effect two traverses, in opposite direction, during each stroke thereof, connections coupling said vibratory shaft directly to the cross-heads, a rotatable crank shaft, and a connection coupling said crank-shaft with the vibratory shaft.

6. The combination, substantially as set forth, of two fluid-pressure cylinders, pistons working in said cylinders, cross-heads fixed to the rods of said pistons, a shaft journaled to vibrate at right angles to the traverse of said pistons, and to effect two traverses, in opposite direction, during each stroke thereof, connections coupling said vibratory shaft directly to the cross heads, two rotatable crank-shafts, and connections coupling said crank-shafts with the vibratory shaft.

7. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a cross-head fixed to the rod of the piston, a shaft journaled to vibrate at right angles to the traverse of the piston, a connection coupling said vibratory shaft with the cross-head, a rotatable crank-shaft, a connection coupling said crank-shaft with the vibratory shaft, a counter-shaft geared to the crank-shaft, and independent connections coupling the cross-head with the counter-shaft.

8. The combination, substantially as set forth, of a fluid-pressure cylinder, a piston working therein, a distribution-valve controlling the supply and exhaust of the cylinder, a cross-head fixed to the rod of the piston, a shaft journaled to vibrate at right angles to the traverse of the piston, a connection coupling said vibratory shaft with the cross-head, a rotatable crank-shaft, a connection coupling said crank-shaft with the vibratory shaft, a counter-shaft geared to the crank-shaft, independent connections coupling the cross-head with the counter-shaft, and connections for actuating the distribution-valve by the movement of the counter-shaft.

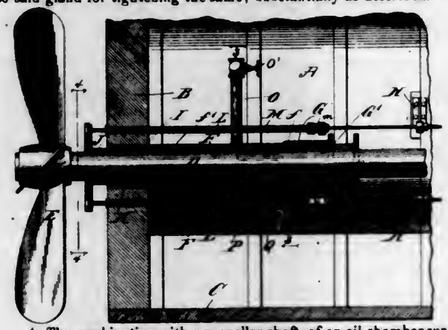
571,741. STUFFING-BOX FOR PROPELLER-SHAFTS. JAMES J. BATES, St. Louis, Mo. Filed Sept. 5, 1896. Serial No. 605,029. (No model.)

Claim.—1. The combination with a propeller-shaft, of a sleeve surrounding the same, packing, and packing-glands at each end of the sleeve, rods which engage the outside or rearmost packing-gland, said rods extending to the interior of the hull, and means for tightening said rods so that the gland compresses the rearmost packing; substantially as described.

2. The combination with a propeller-shaft, of a sleeve surrounding the same, packing, and packing-glands arranged in each end of the sleeve, the rearmost packing-gland being located outside of the hull of the vessel, and means located inside the hull of the vessel, and

connected to said outside gland, for tightening said gland; substantially as described.

3. The combination with a propeller-shaft, of a sleeve surrounding the same, and having inwardly-extending flanges near each end thereof, a collar arranged at the rear end of the sleeve and abutting against the rearmost of said flanges, a key cooperating with said collar and sleeve, a packing-gland, packing interposed between said gland and collar, and means located in the hull of the vessel and attached to said gland for tightening the same; substantially as described.

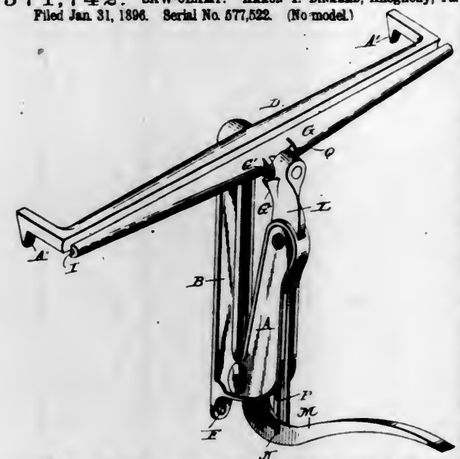


4. The combination with a propeller-shaft, of an oil-chamber surrounding the same, and a reservoir connected to said chamber and open at its top, whereby, upon the presence of water in said chamber, the oil in the reservoir is caused to overflow; substantially as described.

5. The combination with a propeller-shaft, of an oil-chamber surrounding the same, a reservoir connected to said chamber, said reservoir being open at its top, whereby, upon the presence of water in said chamber, the oil in the reservoir is caused to overflow, and a cock in the bottom of the chamber for withdrawing the water; substantially as described.

6. The combination with a propeller-shaft, of a sleeve surrounding the same, packing in each end of the sleeve, whereby, a chamber is formed in said sleeve, an oil-reservoir connected to the top of said chamber for supplying the same with oil, and a cock leading from the bottom of the chamber; substantially as described.

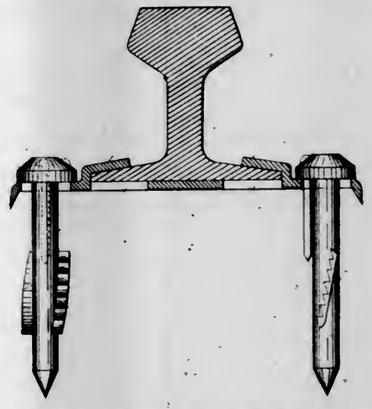
571,742. SAW-CLAMP. AARON T. BINKERD, Allegheny, Pa. Filed Jan. 31, 1896. Serial No. 577,522. (No model.)



Claim.—A saw-clamp, comprising the body portion A, the rear portion B thereof provided with shoulder O, jaw D pivoted at E and provided with shoulder E' and securing-spurs, slotted lever L pivoted to the front arm of the body portion and provided with shoulder G^2, jaw G pivoted to said lever and provided with shoulder G', lever M pivoted to the frame and in operative engagement with lever L and spring Q attached to said lever L and normally bearing upon jaw G to hold said jaw in horizontal position, substantially as shown and described.

571,743. TIE-PLATE AND SPIKE FOR RAILWAY-RAILS. ALONZO P. BLIVEN, Brooklyn, N. Y. Filed Mar. 5, 1896. Serial No. 581,942. (No model.)

Claim.—1. A tie-plate provided with spike-openings at each end thereof, having extensions at the sides, said openings being adapted to receive spikes, provided with inclined or spiral flanges on the sides thereof, substantially as shown and described.



2. The combination with a railroad-rail of a tie-plate provided with spike-openings at each end thereof with extended slotted sides in said openings adapted to receive spikes; and spikes provided with inclined or spiral flanges on the sides thereof, said flanges being provided with upwardly-directed teeth or projections on their outer or upper sides, substantially as shown and described.

3. A tie-plate for railway-rails, provided with upwardly-directed wings or projections which are cut from the material of the plate, and which are adapted to be folded or bent down over the flanges of a rail, said plate being also provided at each end outside of said wings or projections with spike-openings, and said openings being provided with extensions at each side which are adapted to receive, or through which are adapted to pass, inclined flanges formed on the sides of the spike, substantially as shown and described.

4. The combination with a tie-plate for railway-rails, provided with wings or projections which are adapted to be folded over the base-flanges of a rail, and with spike-openings at each end thereof, which are provided with extensions at their sides, of spikes which are adapted to be passed through said spike-openings and which are provided with inclined or spiral flanges having teeth or projections on their upper or outer surfaces, substantially as shown and described.

5. The combination with a tie-plate for railway-rails, provided with wings or projections which are adapted to be folded over the base-flanges of a rail and with spike-openings at each end thereof, which are provided with extensions at their sides, of spikes which are adapted to be passed through said spike-openings and which are provided with inclined or spiral flanges having teeth or projections on their upper or outer surfaces, and said spikes being also provided with heads having openings or holes formed therein, substantially as shown and described.

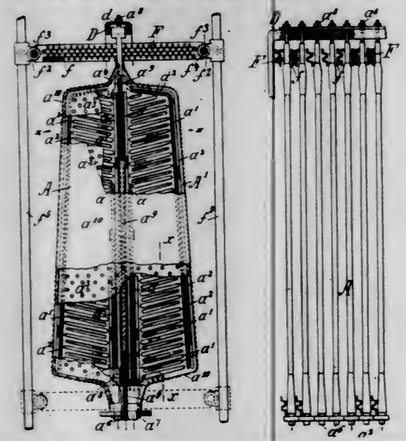
6. A railway-spike provided with inclined or spiral flanges on its sides having projections or teeth on their outer or upper surfaces, and with a head in which is formed a hole or opening which is adapted to receive a key pin or bolt, substantially as shown and described.

571,744. ASBESTOS FILTER. FRIEDRICH BREYER, Vienna, Austria-Hungary. Filed Apr. 23, 1895. Serial No. 546,889. (No model.)

Claim.—1. The mode of preparing filtering media, which consists in filling the meshes or interstices of a textile fabric with finely-divided asbestos, treating the fabric so prepared with a solution of water-glass whereby a cementing-mortar is formed, distributing the same uniformly throughout the meshes or interstices of the fabric, fixing the mortar by treatment with calcium chlorid, and rendering the same germ-proof by treatment with boiling water holding finely-divided asbestos and alumina, as kaolin, in suspension, substantially as set forth.

2. A filtering medium comprising a support for the filtering material consisting of a core-plate provided in its opposite faces with channels oblique to and inclining toward the major axis of the plate, with channels extending along the longer edges and along one of the end edges of the plate, and with a central open-ended gas-passage parallel with the major axis of the plate, perforated cover-plates applied to opposite sides of the core-plate and an outlet-branch in communication with the aforesaid channels and gas passage, in combination with a sheath of filtering material, substantially as and for the purpose set forth.

3. A filtering medium of a double-convex-lens shape in cross-section, comprising a support for the filtering material consisting of a sheet-metal core-plate provided with an open-ended central gas-passage parallel with the major axis of the plate, with channels for liquid of variable length parallel with and on opposite sides of said gas-passage, with channels for liquid oblique to and inclining toward the last-named channels and with channels for gas extending along the side edges and one of the ends of the core-plate, perforated cover-plates applied to opposite sides of the core-plate, and an outlet for liquid and gas in communication with the aforesaid gas-passage and channels for liquid and gas, in combination with a sheath of filtering material, substantially as and for the purpose set forth.



4. In a filter, an inclosing casing, a plurality of filtering media arranged therein, and supporting-plates at the head and foot of said media; of brushes in contact with the outer surfaces of the filtering media, mechanism for imparting to said brushes a to-and-fro movement along the media between the head and foot plates, and a stop mechanism operating automatically to limit the reciprocating motion of the brushes, for the purpose set forth.

5. In a filter, an inclosing casing, a plurality of filtering media arranged therein and supporting-plates at the head and foot of said media; of brushes in contact with the outer surfaces of the filtering media, mechanism for imparting to said brushes a to and fro movement along the media between the head and foot plates, and a stop mechanism located outside of the filter-casing operating automatically to limit the reciprocating motion of the brushes, for the purpose set forth.

6. In a filter, the combination with the inclosing casing and a series of filtering media arranged therein; of brushes in contact with the outer surfaces of said media, a brush-carrier, a power-driven driving-gear located outside of the filter-casing, an element driven by said gear connected with the brush-carrier to move the same along the filtering media, and a stop mechanism also located outside of the casing, operating to limit the movements of the brush-carrier in either direction, for the purpose set forth.

7. A filter comprising an inclosing casing, a plurality of interspaced filtering media arranged therein, independent brushes, one between each two filtering media operating upon the proximate surfaces thereof, brushes operating upon the outer surfaces of the end filtering media, a support common to all said brushes, and a rack-bar connected with said support; in combination with a driving-pinion in gear with the rack-bar and adapted to be revolved in opposite directions, and means for automatically limiting the reciprocating movements of said rack bar, for the purpose set forth.

8. In a filter, the combination with the inclosing casing and more or less flexible filtering media each provided at its upper end with a vertically-adjustable tension device exterior of the filtering media; of a bridge or head-plate, supporting-stems at the upper end of said filtering media held in said head-plate, and a support for the lower end of such media, substantially as described.

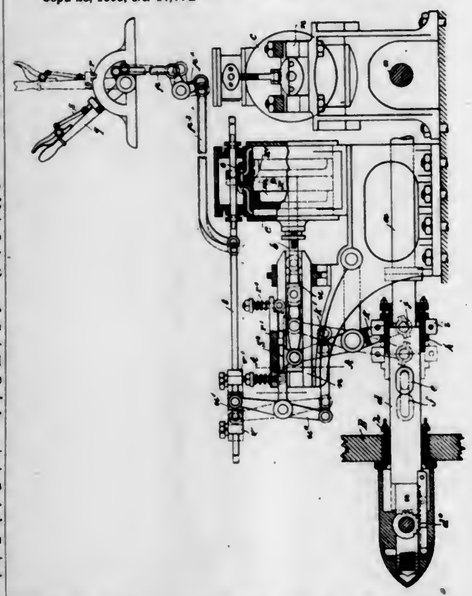
9. In a filter, the combination with a casing, a hollow filtering medium therein, and a cleansing device as a brush or brushes in contact with the surfaces of said filtering medium, and means for imparting a to and fro motion to the cleansing device, comprising a rack-bar and a driving-pinion; of means for limiting the extent of reciprocation of the rack-bar, consisting of spring-actuated pawls or dogs *g* pivoted to the rack-bar in pairs distant from each other, the nose of said pawls projecting into the path of the teeth of said driving-pinion, and abutments on said rack-bar for the tail of said pawls adapted to lock the same against rotation in one direction, substantially as and for the purpose set forth.

10. In a filter, the combination with the inclosing casing provided with stuffing-boxes f^6 f^6 and tubular guides f^7 at its upper and lower ends, the lower guides having stop-cocks f^9 and a series of interspaced filtering media arranged within said casing, of brushes operating upon the surfaces of the said filtering media, a support common to all the brushes, a to-and-fro-movable cross-head outside of the casing and connecting-rods connected with the brush-supports and guided in the aforesaid stuffing-boxes and tubular guides, for the purpose set forth.

11. In a filter, the combination with the inclosing casing provided with stuffing-boxes f^6 f^6 and the tubular guides f^7 f^7, hollow filtering media arranged in said casing, and cleansing devices comprising a system of interconnected brushes in contact with the surfaces of the filtering media; of means for imparting a to-and-fro motion to the brush system, consisting of a cross-head, connecting-rods f^8 f^8 connecting the brush system with such cross-head, said rods guided in the aforesaid tubular guides f^7 f^7, a rack-bar secured to said cross-head, a driving-pinion in gear with the rack-bar, and appliances adapted to automatically limit the movement of the rack-bar in either direction, for the purpose set forth.

12. In a filter, the combination with hollow filtering media, of brushes adapted to move to and fro along the surfaces of said media, said brushes consisting of zigzag shaped brush-rods F provided with an eye at each end, brush-tufts *f* secured in the recesses or depressions of their rods, and connecting-rods on which said brush-rods are threaded, substantially as and for the purpose set forth.

571,745. MEANS FOR ADJUSTING BLADES OF SCREW-PROPELLERS. HEINRICH BRINKMANN, Munich, Germany. Filed Dec. 24, 1895. Serial No. 573,201. (No model.) Patented in Germany Sept. 14, 1893, No. 82,319; in England Dec. 29, 1894, No. 25,253; in France July 9, 1895, No. 248,771; in Italy Sept. 9, 1895, No. 39,324, and in Spain Sept. 28, 1895, No. 17,774.



Claim.—1. The combination, with a propeller-adjusting device, and a cylinder provided with inlet and outlet ports, of a piston within the cylinder and connected to the propeller-adjusting device, a valve arranged to close both inlet-ports at once when in its central position, a hand-lever for operating said valve, and mechanism automatically operated by the propeller-adjusting device for returning the valve to its intermediate position, substantially as set forth.

2. The combination, with a propeller adjusting device, and a cylinder provided with inlet and outlet ports, of a piston within the cylinder and connected to the propeller-adjusting device, a valve arranged to close both inlet-ports at once when in its central position, a hand-lever for operating said valve, mechanism operated by the propeller-adjusting device for throwing the hand-lever to return the valve to its intermediate position, and means for locking the hand-lever when thus thrown, substantially as set forth.

3. The combination, with a propeller-adjusting device and means for operating the same; of mechanism independent of the operating means connected to said means and tending to force it in the direction it was last thrown, substantially as set forth.

4. The combination, with a propeller-adjusting device and means for operating the same, of yielding mechanism independent of the operating means connected to said means and tending to force it in the direction it was last thrown; substantially as set forth.

5. The combination, with a propeller-adjustiog device, and a shifting-lever connected to the propeller-adjustiog device and mechanism for throwing the shifting-lever into two opposite positions, of means acting on said lever and tending to keep it out of its position intermediate said two opposite positions, substantially as set forth.

6. The combination, with a propeller-adjusting device, a shifting-lever for operating the same and means for throwing the shifting-lever, of mechanism acting on one end of the shifting-lever and tending to rotate it on its fulcrum in the direction it was last thrown, substantially as set forth.

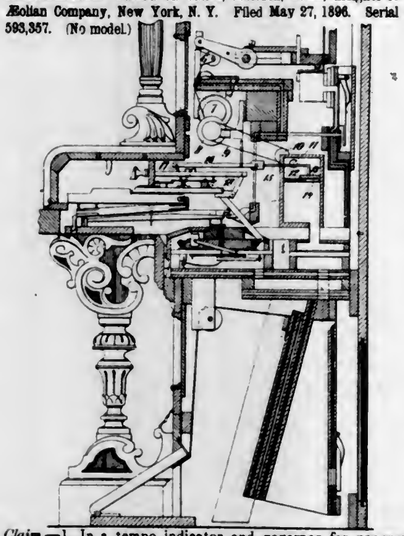
7. The combination, with a propeller-adjusting device, a lever for operating the same, and means for actuating said lever, of a pitman device connected to one end of the lever, a pair of guides, and means movable in the guides, and connected to the pitman device, for transmitting pressure to the lever, substantially as set forth.

8. The combination, with a propeller-adjusting device, a lever for operating the same, and means for actuating said lever, of a pitman device connected to the end of said lever, a cross-head connected to the end of the pitman, guides in which the cross-head moves, and means for pressing the cross head toward the lever, substantially as set forth.

9. The combination, with a propeller-adjusting device, a shifting-lever for operating the same, a piston connected thereto, and a cylinder within which the piston moves, said cylinder having inlet and outlet ports, of a valve arranged to close the inlet-ports when in its intermediate position, a valve-stem, a valve-operating lever connected to the shifting-lever, and a pair of stops adjustably secured to the valve-stem and arranged to contact with the valve-operating lever, whereby the valve is thrown to its intermediate position upon the shifting of the propeller-blades from one position to another, substantially as set forth.

10. The combination, with a cylinder having live-steam and exhaust ports, of a piston within the cylinder, a slide-valve arranged to close both steam-ports when in its intermediate position, a valve stem connected to the valve, a shifting-lever operated by the piston, a valve-operating lever connected to the shifting-lever, a pair of stops attached to the valve-stem and in the path of the valve-operating lever, and a hand-lever connected to the valve-stem, whereby by using the hand-lever the shifting-lever will be thrown by the piston and then the valve will be moved to its intermediate position, substantially as set forth.

571,746. TEMPO INDICATOR AND GOVERNOR FOR MUSICAL INSTRUMENTS. JOSEPH H. CHASE, Meriden, Conn., assignor to the Æolian Company, New York, N. Y. Filed May 27, 1896. Serial No. 593,357. (No model.)



Claim.—1. In a tempo indicator and governor for pneumatic musical instruments, the combination with the air-supply chamber having a suitable opening, a governing-valve controlling said opening, an operating-rod connected to the valve, a stop-rod arranged parallel with the valve-rod, a cranked arm arranged between and having its ends connected to the valve-rod and stop rod respectively, so that the movement of one will operate the other, a stationary scale, a movable pointer, and a suitable connection between the pointer and stop-rod, whereby a movement of the stop-rod will cause a similar movement of the valve and pointer.

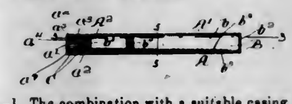
2. In a tempo indicator and governor for pneumatic musical instruments, the combination with the air-supply chamber having a suitable exit-opening, a sliding governor-valve for said opening, a rod connected to the valve, a sliding stop-rod, a pointer arranged parallel with the valve-rod and scale, and connections between the stop-rod, sliding valve and pointer whereby these two latter-named devices are operated by the single movement of the stop-rod, substantially as described.

3. In a tempo indicator and governor for pneumatic musical instruments, the combination with the air-supply chamber having a suitable exit-opening, a sliding valve operating over said opening, a sliding stop-rod, a pointer and scale, a cranked arm having its opposite ends connected to the sliding valve and sliding stop-rod respectively, and a connection between the pointer and sliding-rod, as and for the purpose set forth.

4. In a tempo indicator and governor for pneumatic musical instruments, the combination with the air-supply chamber having a suitable exit-opening, a sliding valve operating over said opening, a sliding stop-rod, a crank-arm having a connection with the valve and stop rod, a pointer and scale, and a bell-crank lever having one end connected to the stop-rod, and the other end arranged to operate the pointer, substantially as described.

5. In a tempo indicator and governor for musical instruments, the combination with the air-supply chamber having a suitable exit-opening, a valve for said opening, an operating-rod connected to the valve, a stop-rod, a pointer pivoted intermediate its ends, a stationary scale over which latter said pointer moves, and independent connections between the valve-operating rod and stop-rod and pointer and stop-rod whereby these parts are moved simultaneously.

571,747. BOX. GEORGE E. CLOW, Chicago, Ill. Filed Feb. 17, 1896. Serial No. 579,583. (No model.)



Claim.—1. The combination with a suitable casing, of a drawer sliding therein, the sides of which are narrower at the inner end, a catch in the casing, and a spring adapted to hold said drawer in engagement with the catch, except when the box is jarred, when said drawer will fall below the catch; substantially as described.

2. In a device of the class described, the combination with the portion A, having the upturned sides, *a*, and end piece, *a'*, of the upper portion, A', having the downturned sides, a^2, a^2, the sides *a*, and end *a'*, being bent over the portion A', and the drawer, B, sliding therein and provided with a suitable locking device; substantially as described.

3. The combination with a suitable casing open at one end, of a drawer sliding therein, a catch in said casing, a spring adapted to hold the rear end of the drawer in engagement with said catch and adapted to throw said drawer outward when released from the catch, the inturned edges, a^4, and stops b^4, adapted to strike said inturned edges and prevent the drawer from being wholly withdrawn; substantially as described.

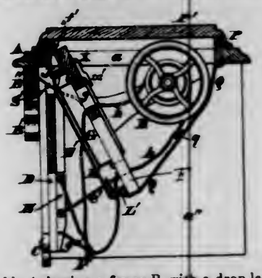
571,748. SEWING-MACHINE TABLE. JOHN C. COCHRAN, Ripley, Ohio. Filed Aug. 17, 1896. Serial No. 602,938. (No model.)

Claim.—1. The combination of a table or frame; a leaf hinged thereto; a front secured angularly to said leaf; end pieces projecting down from said table; wings hinged to said end pieces; and devices that communicate motion from said leaf to said wings, for the purpose stated.

2. The combination of a table or frame; a leaf hinged thereto; a front secured angularly to said leaf; end pieces projecting down from said table; wings hinged to said end pieces; and wing-workers applied to said leaf, which workers are inoperative when said wings are completely opened and closed, as set forth.

3. The combination of a table or frame; a leaf hinged thereto; a front secured angularly to said leaf; end pieces projecting down from said table; wings C, C', hinged to said end pieces; rods R, R', attached to said wings; workers S *s*", S' *s*", fastened to said leaf, and operating said rods, in the manner described; and recesses *b*, *b'*, in the front part of the structure, for the object stated.

4. The combination of a table; a frame P, secured thereon; a pair of wings C, C', hinged to end pieces of said table; workers S, S', that operate said wings, in the manner described; and adjustable braces T, T', connected to said workers, for the object stated.



5. The table A, having a frame P, with a drop-leaf F, and keepers M, M', applied to its under side, in combination with catches L *l*, L', *l'*, rod K, lever J *j*, and a spring that causes said catches to engage with said keepers, in the manner described.

6. The combination of a table or frame; a leaf hinged thereto; end pieces projecting down from said table; and a flexible screen having its upper margin secured to said table, and its lower edge attached to the rear portion of said leaf, the screen being sufficiently long to extend from one end piece to the other, for the purpose described.

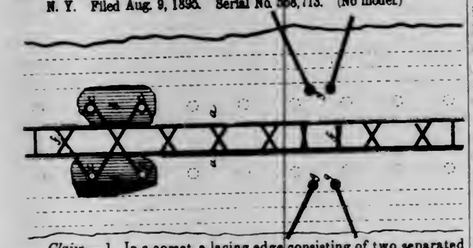
7. A table or frame having a leaf hinged thereto; end pieces projecting down from said table; a flexible screen having its opposite margins secured to said table and leaf; and a slat fastened longitudinally of said screen, for the purpose of keeping it in contact with said end pieces, as set forth.

8. A sewing-machine table having a drop-leaf hinged to it; a front secured angularly to said leaf; and a bent loop *g''*, having its ends attached to said front, for the purpose described.

9. The combination of frame P, perforated keeper M *o*, secured thereto, with a fastener O, and screw *o'*; and a screw *o''*, tapped in said frame P, and in line with said perforation *o*, and bearing against one side of said keeper, for the purpose stated.

10. The frame P, having a groove U, in it; a spring V V' *v*, fitted within said groove, and a turn-button X, pivoted to said frame, and having a countersink *x*, wherewith is engaged the bend *v*, of said spring, for the purpose described.

571,749. INVISIBLE LACING. ALBERT R. COLTON, Rochester, N. Y. Filed Aug. 9, 1895. Serial No. 558,713. (No model.)

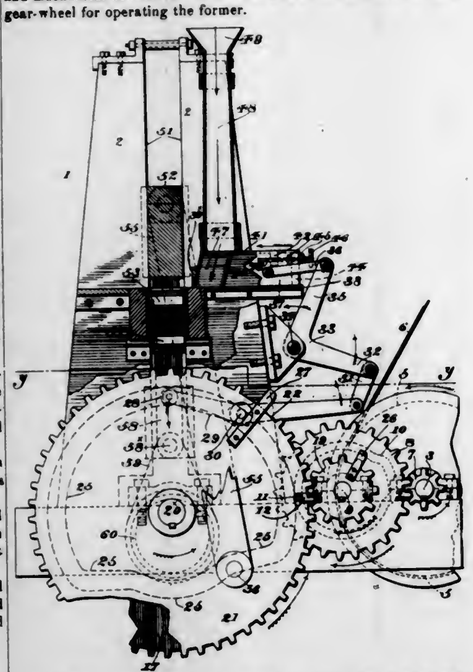


Claim.—1. In a corset, a lacing edge consisting of two separated flies, stiffeners on the outer faces of the same at some distance from their edges extending their entire length and provided with a series of registering holes, and eyelets passing from side to side through the holes in the stiffeners and through the interposed flies, the ends of the eyelets being secured to the outer face of the stiffeners and the flies being turned back so as to cover the exterior of the stiffeners and the ends of the eyelets, as and for the purpose set forth.

2. In a corset, a lacing edge consisting of two flies, stiffeners on the outer faces of the same at some distance from their edges extending their entire length and provided with a series of registering holes, eyelets passing from side to side through the holes in the stiffeners and through the interposed flies, the ends of the eyelets being secured to the outer face of the stiffeners and a grooved pulley journaled on the shank of each eyelet between the inner faces of the flies, the latter being turned back so as to cover the exterior of the stiffeners and the ends of the eyelets, as and for the purpose set forth.

571,750. BRICK-MACHINE. JOHN CRABTREE, Philadelphia, Pa. Filed Oct. 1, 1895. Serial No. 564,309. (No model.)

Claim.—1. In a brick-machine, a frame, a stationary mold on said frame, a driving-shaft with a pinion thereon, a feeding device movable on a table above said mold, upper and lower vertically-operating dies, a mutilated gear-wheel meshing with said pinion and mounted in said frame, mechanism connected with said upper dies and feeding device respectively, and said mutilated gear-wheel for operating the said upper dies and feeding device, a dog secured to said gear-wheel near the mutilated portion thereof, and a dog secured to said pinion and adapted to contact with the first-mentioned dog, and mechanism connected with the lower die and the shaft of said gear-wheel for operating the former.



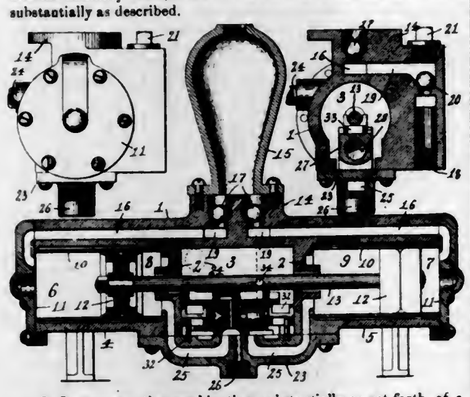
2. In a brick-machine, a mold, upper and lower dies, a shaft with a mutilated gear-wheel thereon, having a stop on one side, mechanism connecting said dies and said gear-wheel for raising and lowering the said dies, a shaft with a pinion thereon, meshing with said mutilated gear-wheel, and a lever with an end engaged in a cam-groove in the side of a second pinion, on said latter-mentioned shaft, and its other end adapted to engage said stop, said parts being combined substantially as described.

3. In a brick-machine, a suitable housing, the pinion 8 journaled therein, the cam-groove 10 located in said pinion, the bell-crank 13 suitably fulcrumed, the gear 17, a stop thereon, said stop being adapted to be engaged at intervals by an end of said bell-crank, the other end of the latter engaging the walls of said cam-groove, a gear 21, pinions 18 and 19, adapted to mesh with said gears, the latter having their teeth removed for a portion of their periphery, means for throwing said gears and pinions into engagement at proper intervals, reciprocating dies, a feed-slide, and mechanism for actuating said dies, and slide, substantially as described.

571,751. DIRECT-ACTING PUMP. JOHN B. CROCKER, Hamilton, Ohio. Filed Apr. 29, 1896. Serial No. 589,520. (No model.)

Claim.—1. In a pump, the combination, substantially as set forth, of a body structure having two cylinders and an intermediate downwardly-open chamber in a common line, a piston in each cylinder with their common piston-rod crossing said chamber, valved water-ports from the outer ends of both cylinders, a ported valve-seat closing the base opening of said chamber, and a valve below said piston-rod and carried on said seat and arranged to be shifted by said piston-rod, whereby the valve is made removable with the seat.

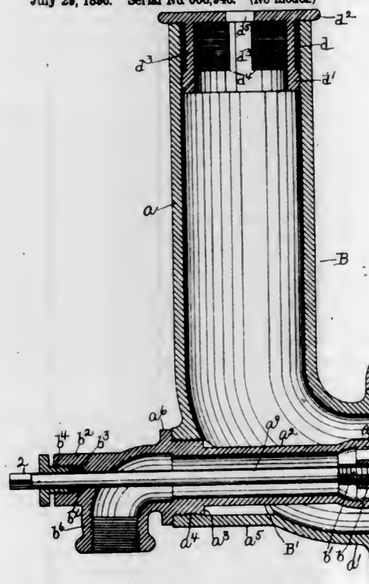
2. In a pump, the combination of a cylinder, a chamber at one end thereof, and open below, a piston in the cylinder with its rod working in the chamber, a ported valve-seat closing said chamber, a main valve working on said seat, and having cylindrical recesses and ports, an auxiliary valve working on said main valve and controlling the fluid-pressure in said cylindrical recesses, pistons in said recesses held against motion, and positive engagement between the piston-rod and the auxiliary valve, and between said valve and the main valve, substantially as described.



3. In a pump, the combination, substantially as set forth, of a cylinder, a valve seat connected by port therewith, a main valve on said seat and having lugs and ports, cylinders and pistons for moving said main valve, and an auxiliary valve on said main valve said auxiliary valve being directly engaged by the piston-rod and arranged to engage said lugs on the main valve and be moved by the main piston of the machine.

4. In a pump, the combination, substantially as set forth, of a body structure having seat 14 and ports 16 and 19 and water-inlet 18, valves 17 in recesses in said seat, a discharge connection partially closing said valve-recesses, valves 20 in recesses in the rear of said seat, and plugs 21 over said last-mentioned valves.

571,752. SMOKE-CONSUMING FURNACE. JAMES H. CROSBY, Somerville, Mass., assignor to Benjamin S. Agnew, Boston, Mass. Filed July 29, 1896. Serial No. 600,948. (No model.)



Claim.—1. The combination with a furnace, of an air-admission pipe B composed of the legs or arms *a a'*, means to connect the arm *a'* with the fire-box of the furnace, a steam-admission pipe or nozzle provided at one end with an outlet port or mouth and at its opposite end with a bend b^4 forming the inlet for said nozzle, and having an extension b^5 in line with the outlet-mouth, the said nozzle having screw-threads a^4 to engage a screw-threaded opening in the arm *a'* and also having a flange a^6 to abut against the arm *a'*, and a conical valve cooperating with the outlet-mouth of the steam-nozzle and having a stem extended back through the nozzle and through the extension b^5 of the same, substantially as described.

2. The combination with a furnace, of an air-admission pipe B composed of the legs or arms *a a'*, the arm *a* having internal screw-threads *d*, a steam pipe or nozzle extended into the arm *a'* and provided with a discharge port or mouth within the arm *a'* and with a bend b^6 outside of the arm *a'* constituting an inlet for said nozzle, which is detachably secured to said arm *a*, a valve cooperating with said discharge port or mouth and provided with a stem extended back through the said nozzle, and a cap d^3, a threaded ring *d'* engaging the screw-threads *d* and a series of arms connecting said cap and ring to form air-admission spaces d^4, substantially as described.

3. The combination of the following instrumentalities, an air-admission pipe, a deflector provided with an inclined front section *c'* and a tubular rear section *c* having top and bottom substantially flat surfaces, a coupling-sleeve c^3 extended into the tubular section *c* of the deflector, means to secure said sleeve in said deflector, a ring c^9 coupling the sleeve c^3 to the air-admission pipe, and a steam-supply pipe or nozzle extended into the said air-pipe and provided with a valve accessible from the outside of the air-pipe, substantially as described.

4. The nozzle B' consisting of a pipe or tube *a* provided with an enlarged head a^7 having a contracted discharge port or mouth at one end and having an inlet port at or near its opposite end at an angle to the discharge month, a bridge *b* in the head a^7 having a screw-threaded opening, a valve cooperating with the discharge-mouth and provided with a stem extended back through the opening in the said bridge and through the end wall of the said pipe beyond the inlet-port and provided with screw-threads at its front end to engage the screw-threaded opening in the bridge *b*, substantially as described.

571,753. CRANK AND PEDAL. WILLIAM L. DECKER, Worcester, Mass. Filed Apr. 17, 1895. Serial No. 546,164. (No model.)



Claim.—The combination with a crank-shaft, and a crank-arm attached thereto and having a radial slot in its free end, of a pedal-arm pivoted at one end, a crank-plate journaled in the free end of said pedal-arm, a crank-stud projecting from said crank-plate and entering the slot in said crank-arm and a pedal carried by said crank-plate, substantially as described.

571,754. TOY. CHARLES DEMOREST, Fort Ann, N. Y. Filed Apr. 14, 1896. Serial No. 587,482. (No model.)



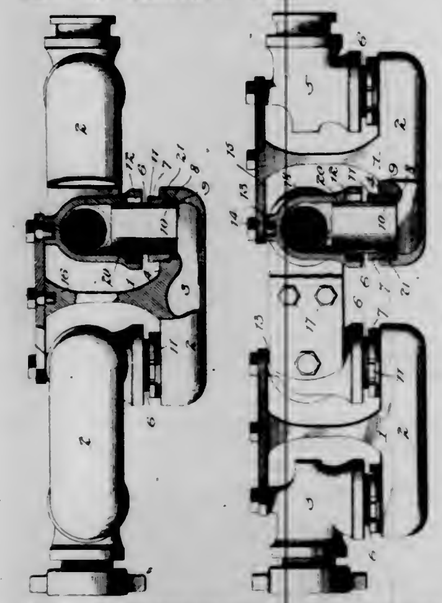
Claim.—1. In a toy, the combination with platform A axles B B, brackets A' A' provided with bearings *a a*, carrying-wheels C C secured to said axles and a driving band-wheel G', of a stationary bicycle-frame *d* mounted on a standard secured to the said platform, crank-axle *f*, mounted in bearings provided with said standard, bicycle-wheel F, band-pulley G, and cranks F' F² mounted on said crank-axle, a figure of a bicycle-rider mounted on the stationary framework of the bicycle, jointed legs H jointed with the said cranks and the lower end of the figure and a driving-band *g*, connecting the driven band-pulley with the driving band-wheel G', substantially as and for the purposes set forth.

2. In a toy, the combination with a platform A, axles B B, brackets A' A', provided with bearings *a a*, carrying-wheels C C and driving band-wheels M M secured to said axles, of the body of a figure (of an animal) mounted on a standard secured to said platform, standards J J also secured to the platform, crank-axles *j j* mounted in bearings in the said standards, band-pulleys K K and cranks *k k'* mounted each on said axles *j*, jointed legs L L pivoted with a forward portion of the said body and the cranks of the forward crank-axle *j*, jointed legs L' L' pivoted with a rearward portion of the said body and with

the rearward cranks and driving-bands connecting the band-pulleys K K with the driving band-wheels M M, substantially as and for the purposes set forth.

3. In a toy the combination with platform A axles B B, brackets A' A' provided with bearings of said axles, carrying-wheels C C and driving band-wheels G G' and M M mounted on said axles so as to revolve with the same, of a stationary bicycle-frame having stationary bodies of figures fixed thereto and supported by standards from the said platform, a stationary body of a figure (an animal) supported from the platform and at a side and distant from the bicycle-frame, crank-axles *f f* having bearings in the bicycle-frame, band-pulleys G G bicycle-wheels F and cranks $F' F^2$ secured to the respective crank-axles *f f*, crank-axles *j j* mounted in bearings on standards secured to the platform in alinement with the body of the animal figure, band-pulleys K K and cranks *k k'* mounted on said crank-axles *j j*, jointed legs pivoted with the lower ends of the bodies on the bicycle-frame and with the said cranks $F' F^2$, jointed legs L L, L' L' pivoted with the opposite end portion of the body of the animal figure and with the respective cranks on the axles *j, j*, and driving-bands *g g* and M' M', substantially as and for the purposes set forth.

571,755. TRAIN-PIPE. JOSEPH M. DORAN, Ogden, Utah. Filed June 27, 1896. Serial No. 597,168. (No model.)

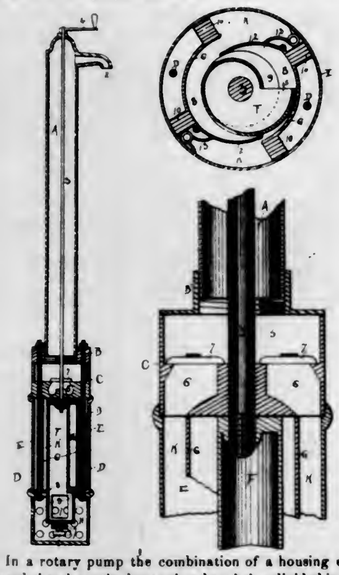


Claim.—The herein-described universal pipe-joint consisting of an elbow having a cylindrical nipple fixed therein, and projecting therefrom, and provided with an annular recess around the nipple, in combination with a T-shaped member having a hollow cross-arm, and provided with an opening to receive the nipple, whereby the two are made to communicate, and a stuffing-nut embracing the nipple and in engagement with the T-shaped member and adapted to recede into the annular recess when unscrewed, substantially as described.

571,756. ROTARY PUMP. JOHN H. EMPEGREN, Omaha, Nebr. Filed June 1, 1895. Serial No. 551,419. (No model.)

Claim.—1. In a pump, the combination with a hollow cam-shaped rotary piston having an opening, a lower projection extending from said piston and provided with suitable opening permitting the ingress of the water; a housing adapted to receive said piston, said housing being in two parts and provided with valves; a superposed chamber in communication with said valve housing; a supply-pipe extending from said superposed chamber, all substantially as and for the purpose set forth.

2. In a rotary pump, the combination, with the housing E, of the sectional tube, G, the valves, 12, 12, forming part of said tubing, G, the springs, 13, 13, the piston, F, provided with the opening, 15, and the lower projection, 9, said projection being provided with an opening, 1, the annular housing, C, provided with the escape-ways, 6, 6, communicating with said valved chamber, the valves 7, 7, within said annular housing, and the conducting-tube, A, all arranged substantially as and for the purpose set forth.



3. In a rotary pump the combination of a housing embodying superposed chambers, the lower chambers being divided into an inner and outer compartment, a discharge pipe extending from the upper chamber, a water-inlet opening into said inner compartment, a hollow rotary piston within said inner compartment, said piston being provided with an inlet extending beyond said lower chamber, and an opening extending into said inner compartment, valves communicating with said outer and inner compartments, said outer compartment communicating with said upper chamber, said valves being actuated by said rotary piston, and a valve controlling the communication between said outer compartment and upper chamber, all substantially as and for the purpose set forth.

4. In a pump the combination of a housing embodying superposed chambers, the lower chamber being divided into an outer and an open-ended inner compartment, a discharge-opening within said upper chamber, a piston within said inner compartment, said piston being provided with an unvalved water-inlet opening into said inner compartment, a valve-controlled communication between said upper chamber and outer compartment, normally open valves between said outer and inner compartments, said valves being closed by said piston, all substantially as and for the purpose set forth.

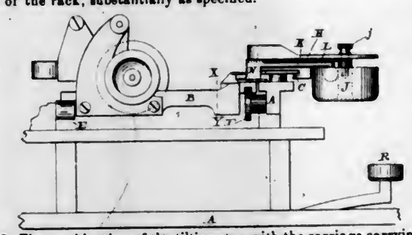
5. In a pump the combination of a housing embodying adjoining chambers, one of said chambers being divided into an inner and an outer compartment, valve connection between said inner and outer compartment and an escape-opening extending from said undivided chamber, a water inlet extending into said inner compartment, a communicating valve normally open between said inner and outer compartments and a piston adapted to operate said valve, all substantially as and for the purpose set forth.

6. In a pump the combination of a housing embodying adjoining chambers, one of said chambers being divided into an outer and an open-ended inner compartment, a discharge-opening within said undivided chamber, a piston within said inner compartment, said piston being provided with an unvalved water-inlet, a valve communicating between said inner and outer compartments, said valve being actuated by said piston, all substantially as and for the purpose set forth.

7. In a pump the combination of the following instrumentalities, to wit: a cylindrical chamber divided into an inner cylindrical and an outer annular compartment, a section of the dividing-wall between said compartments being hinged, a spring to normally force said section inward, an exit-opening from said outer chamber, a circular opening in the bottom of said inner compartment, a hollow scroll-shaped piston within said inner chamber, one point of said piston normally working against said dividing-wall and having an open lower projection passing through said circular opening, exit openings from said piston, and a bearing to adjustably support said piston, substantially as shown.

571,757. TYPE-WRITING MACHINE. WILLIAM C. FARNUM, Arlington, Vt. Filed Mar. 19, 1895. Serial No. 542,343. (No model.)

Claim.—1. In a type-writer the combination with a toothed rack of a margin-stop having teeth adapted to engage with those of the rack, means for tilting said stop to effect disengagement and a rigid retaining-lip on said stop to check the tilting of same when the teeth have swung out of engagement and allow the stop to be slid lengthwise of the rack, substantially as specified.

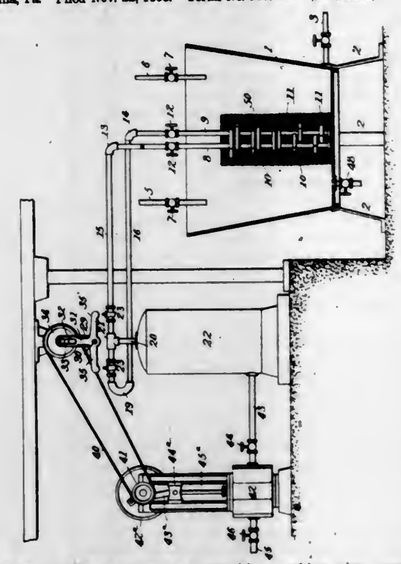


2. The combination of the tilting stop with the carriage carrying the striker provided with the groove for permitting the striker to pass beyond the said stop at will, and the top plate for preventing the tilting of the said stop for disengagement when such movement is unnecessary, substantially as described.

3. The combination of the grooved striker D attached to the movable carriage and the stops G and N beveled on one side so as to slide through said grooved striker in one direction and strike against same in opposite direction, substantially as described.

4. The combination with the alarm-bell of a type-writer of the clapper K the spring L and the adjusting-screw *j* upon which the bell may be turned to tighten the spring, substantially as specified.

571,758. WASHING-MACHINE. WHILLDIN S. FOSTER, Philadelphia, Pa. Filed Nov. 22, 1895. Serial No. 569,849. (No model.)



Claim.—1. The combination in a washing-machine, with a washing-tank, of means for introducing air under pressure into the tank in alternating reverse currents, substantially as described.

2. The combination in a washing-machine, with a washing-tank, of means for introducing air under pressure into the tank in alternating reverse currents, and an air-pressure supply, substantially as described.

3. The combination in a washing-machine, with a washing-tank, of separate series of reversely-arranged horizontal S-shaped pipes within the tank, a separate supply for each series, and means for forcing air under pressure first through one series and then through the other, substantially as shown and for the purpose described.

4. The combination in a washing-machine, with a washing-tank, of separate series of vertically-arranged horizontal S-shaped pipes arranged within the tank, a separate supply for each series of pipes, an automatic valve for each of said series, means for alternately opening and closing the said valves automatically, and an air-pressure-supply tank, substantially as described.

5. The combination in a washing-machine, of the washing-tank, the double series of reversely-arranged S-shaped pipes, the vertical pipes by which the two series are supported, the horizontal pipes or conduits connecting said vertical pipes, valves alternately admitting air to each of said conduits and thence to the S-shaped pipes, an air-pressure-supply tank, and means for automatically operating the said valves, substantially as described.

6. The combination in a washing-machine, of the washing-tank, means for introducing air under pressure into the washing-tank, an air-pressure supply and intermediate pipe connections provided with the valves 23, and the oscillating lever for operating said valves, and means for operating said lever, substantially as described.

7. The combination in a washing-machine, of the washing-tank, the horizontally-disposed S shaped pipes reversely arranged within the tank and supported in position by air-supply pipes, an air-pressure tank, and a pump therefor, pipe connections between the S-shaped pipes provided with suitable valves and communicating with the air-tank, the three-armed lever operating said valves, and means for oscillating said lever through the medium of devices connected with the pump, substantially as described.

8. The combination in a washing-machine, of the washing-tank, the reversely-arranged horizontal S-shaped pipes within the tank, an air supply for said pipes, and a shield or guard inclosing the pipes, substantially as described.

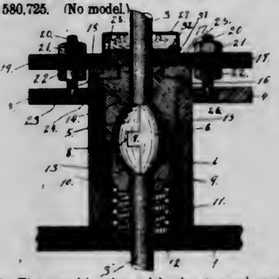
9. The combination in a washing-machine, of the washing-tank, the reversely-arranged horizontal S-shaped pipes within the tank, an air supply for the pipes, and a shield or guard constructed of a solid block inclosing said pipes and provided with openings for the escape of the air, substantially as described.

10. The combination in a washing-machine, of a washing-tank, and an air-pressure-supply tank, separate series of horizontal S-shaped pipes, their supporting and connecting pipes, the latter provided with automatic valves and being in communication with the air-pressure tank, the pivoted three-armed lever having its vertical arm slotted, the pulley having the pin working in said slot, a pump, and means for operating said pulley from said pump, substantially as described.

11. The combination in a washing-machine, of the washing-tank, the reversely-arranged and horizontally-disposed S-shaped pipes within the washing-tank, an air-pressure tank, and a pump supplying the same with air, separate supplies for the separate series of S-shaped pipes, and an automatic valve controlling each supply, a connection between the supply-pipes and air-pressure tank, and means for alternately opening and closing the valves in the supply-pipes, substantially as shown and for the purpose described.

12. The combination in a washing-machine, of the washing-tank, means for introducing air under pressure into the washing-tank at the middle portion of the latter, means for also introducing air under pressure into the tank at the sides thereof, and means for alternately reversing the courses or directions of the air, substantially as described.

571,759. STUFFING-BOX. LOUIS C. S. FRICK, Buffalo, N. Y., assignor of one-half to Ganson Depew, same place. Filed Feb. 25, 1896. Serial No. 580,725. (No model.)



Claim.—1. The combination with the flanged stuffing-box, piston-rod and sectional soft-metal packing 5, 6, of the spring-pressed packing-ring 9 with taperiug cavity 13 the flanged packing-ring 14, 16, with tapering cavity 15, the ring 23 with annular flange 24 and the tightening-disk 18, 19, provided with a shallow socket on its under side adapted for the reception of the ring 23 all combined and operating substantially as shown and described.

2. The combination with the flanged stuffing-box, piston-rod and sectional soft-metal packing 5, 6, of the spring-pressed packing ring 9 with tapering cavity 13, the flanged packing-ring 14, 16, with tapering cavity 15, the ring 23 with annular flange 24, the tightening-disk 18, 19, provided with a shallow socket on its under side adapted for the reception of the ring 23 and the donp-box 27 removably secured around the piston-rod and to the tightening-disk 18 all combined and operating substantially as shown and described.

3. The combination with the flanged stuffing-box, piston-rod and sectional soft-metal packing 5, 6, of the spring-pressed packing-ring 9 with tapering cavity 13, the flanged packing-ring 14, 16, with tapering cavity 15, the ring 23 with annular flange 24 having the wire packing 26 interposed between it and the stuffing-box, and the tightening-disk 18, 19, all combined and operating substantially as shown and described.

4. The combination with the flanged stuffing-box, piston-rod and sectional soft-metal packing 5, 6, of the spring-pressed packing-ring 9 with tapering cavity 13, the flanged packing-ring 14, 16, with tapering cavity 15, the ring 23 with annular flange 24 having the wire packing 26 interposed between it and the stuffing-box, the tightening-disk 18, 19, and the doup-box 27 removably secured around the piston-rod and to the tightening-disk 18 all combined and operating substantially as shown and described.

5. In a stuffing-box the combination with the tightening-disk 18 provided with the raised annular flange 28 with cut-away portions 29 and socket 32, of the doup box 27 provided with the ears 30, 30, the doup-box being secured to the tightening-disk by the pin 31 eegaging with the socket 32 substantially as and for the purpose stated.

571,760. MEANS FOR INSULATING ELECTRIC CONDUCTORS.

THEODORE GUILLEAUME, Mühlheim-on-the-Rhine, Germany. Filed Nov. 2, 1895. Serial No. 567,759. (No model.) Patented in England May 13, 1895, No. 9,442, and in Belgium July 2, 1895, No. 116,373.



Claim.—1. In an electric cable, a duplex tube, produced from a single strip, of non-conducting material, the edges of the strip being turned inward and constituting or forming part of a central partition dividing the tube into two compartments; the tube being, moreover, twisted about its axis so as to form spiral air-spaces within which the conductors are inclosed, substantially as herein described.

2. An electric cable comprising two naked conductors inclosed in the two compartments of a duplex tube produced from a single strip of non-conducting material, portions of the strip forming a wall to separate the two conductors; the whole being twisted about its common axis so as to convert the compartments within which the conductors are inclosed into spiral air-spaces, substantially as herein described.

3. An electric cable comprising two naked conductors inclosed in the two compartments of a duplex tube produced from a single strip of non-conducting material, portions of the strip in conjunction with a metallic strip forming a wall to separate the two conductors, and at the same time serving to insulate the metallic strip which is inserted in the thickness of the said wall; the whole being twisted about its common axis so as to convert the compartments within which the conductors are inclosed into spiral air-spaces, substantially as herein described.

4. The combination with two naked electric conductors of a twisted duplex inclosing tube produced from a single strip of non-conducting material, the edges of the strip being turned inward to form a wall to separate the two conductors, substantially as set forth.

5. For use in the manufacture of air-space cables, such as herein referred to, a forming-tool having a straight slot at its entering end which gradually assumes an S shape, a C shape or a W shape, and provided on opposite sides with ears for guiding the conductors; in combination with a finishing-tool having two circular compartments C C, which gradually contract and assume a trisngular or other form corresponding with that required for the finished product.

571,761. ELECTRIC-LIGHT-CORD ADJUSTER.

GEORGE L. GUILFORD, Bement, Ill. Filed May 9, 1896. Serial No. 590,852. (No model.)



Claim.—1. A spool-shaped electric-light-cord adjuster provided with slots in its heads which slots receive the cord, while the slack of said cord is wound on the spool, substantially as described.

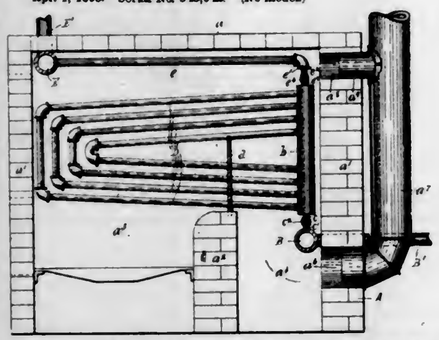
2. A spool-shaped electric-light-cord adjuster provided with oblique slots in its heads, substantially as described.

3. A spool-shaped electric-light-cord adjuster having its heads provided with oblique slots which extend inward from the periphery of the head and lead to a central opening, substantially as described.

4. A spool-shaped electric-light-cord adjuster having oppositely-slanting oblique slots in its respective heads, said slots extending inward from the peripheries of the heads and leading to respective centrally-disposed openings, substantially as described.

571,762. GENERATOR.

EDWARD HAYES, Rochester, N. Y. Filed Apr. 1, 1895. Serial No. 543,942. (No model.)



Claim.—1. In a generator, the combination of a combustion-chamber, a horizontal water-containing drum arranged at one side of the combustion chamber, upright heads mounted above the horizontal drum and connected thereto, and substantially U-shaped heating-coils projecting laterally from the upright heads and having their opposite branches inclined from each other from their outer ends toward the upright heads, said coils being arranged with their outer ends above the combustion-chamber and their opposite ends at one side thereof, substantially as and for the purpose specified.

2. In a generator, the combination of an outer shell having top and upright walls, a combustion-chamber arranged in proximity to one upright wall, a water-containing drum supported in proximity to the opposite upright wall, upright heads mounted above the water-containing drum and connected thereto, heating-coils projecting laterally from the heads and arranged with their outer ends above the combustion chamber in proximity to the adjacent upright wall and their opposite ends at one side of the combustion-chamber, subetantially as and for the purpose set forth.

3. In a generator, the combination of an outer shell having top and upright walls, a combustion-chamber arranged in proximity to one upright wall, a water-containing drum supported in proximity to the opposite upright wall, upright heads mounted above the water-containing drum and connected thereto, heating-coils projecting laterally from the heads and arranged with their outer ends above the combustion-chamber in proximity to the adjacent upright wall and their opposite ends at one side of the combustion-chamber, a drum arranged in proximity to the top wall and the upright wall adjacent to the combustion-chamber, and connections between the heads and the latter drum arranged adjacent to the top wall, substantially as and for the purpose described.

4. In a generator, the combination of an outer shell having top and upright walls, one of the upright walls having an outlet for the products of combustion, a combustion chamber arranged adjacent to the opposite upright wall, a wall interposed between said upright walls and formed of less height than the same, a fire-passage between the outlet and the combustion-chamber, upright heads adjacent to the wall provided with the outlet, and heating-coils projecting from the heads above the fire-passage, the intermediate wall and the combustion-chamber, substantially as and for the purpose set forth.

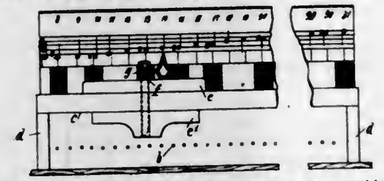
5. In a generator, the combination of an outer shell having top and upright walls, one of the upright walls having an outlet for the products of combustion, a combustion-chamber arranged adjacent to the opposite upright wall, a wall interposed between said upright walls and formed of less height than the same, a horizontal water-containing drum arranged adjacent to the outlet, upright heads mounted above the horizontal drum and connected thereto, and heating-coils projecting laterally from the upright heads above the intermediate wall and the combustion-chamber, substantially as and for the purpose specified.

6. In a generator, the combination of an outer shell having top and upright walls, one of the upright walls having an outlet for the products of combustion, a combustion-chamber arranged adjacent to the opposite upright walls with its base in substantially the same horizontal plane as the outlet, a wall interposed between said upright walls and formed of less height than the same, a horizontal water-containing drum arranged adjacent to the outlet, upright heads mounted above the horizontal drum and connected thereto, heating-coils projecting laterally from the upright heads above the intermediate wall and the combustion-chamber, a drum arranged in proximity to the top wall and the upright wall adjacent to the combustion-chamber, and connections between the heads and the steam-drum arranged adjacent to the top wall, substantially as and for the purpose specified.

7. In a generator, the combination of a combustion-chamber, a horizontal water-containing drum arranged at one side of the combustion-chamber, upright heads mounted above the drum, nipples or pipes projecting from said drum and heads and having their adjacent ends interlocked and provided with annular screw-threaded surfaces, one of said surfaces decreasing gradually in diameter from its outer end, and the other surface having its outer end of substantially the same diameter as the adjacent end of the former surface and increasing gradually in diameter toward its opposite end, and a coupling having a tapered screw-threaded inner periphery engaged with said annular surfaces, substantially as and for the purpose described.

571,763. APPARATUS FOR SOUNDING STRINGED MUSICAL INSTRUMENTS.

ARTHUR HEINE, Leipsic-Gohlis, Germany, assignor to the Fabrik Lochmann'scher Musicwerke, Actien-Gesellschaft, same place. Filed June 30, 1896. Serial No. 597,571. (No model.)



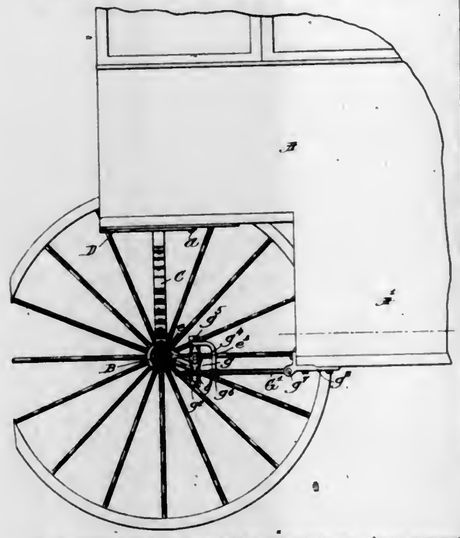
Claim.—1. In a stringed musical instrument, the combination with a sounding-board and strings, of a bar located above the said strings, a slide movable thereon, a pin in said slide adapted to contact with certain of the said strings, substantially as and for the purposes set forth.

2. In a stringed musical instrument, the combination with a sounding-board and strings, of a slotted bar located above said strings a slide mounted in the said slotted bar and carrying a pin adapted to engage certain of said strings, substantially as described.

3. In a stringed musical instrument, the combination with a sounding-board and strings, of a slotted bar located above and at a right angle to the said strings, a scale attached to said bar, a slide having a pin adapted to be brought into contact with the said strings, and a pointer attached to said slide, substantially as and for the purposes set forth.

571,764. VEHICLE RUNNING-GEAR.

ALBERT A. HOLT, Fitchburg, Mass. Filed Apr. 6, 1896. Serial No. 586,358. (No model.)



Claim.—1. A vehicle running-gear, having an axle to support the front of the body and pivotally connected therewith, and a supporting-spring interposed between said axle and body, combined with a reach extending forward from said body and connected to said axle by horizontal and vertical pivots, and means for relative lateral movement between said reach and said axle, substantially as described.

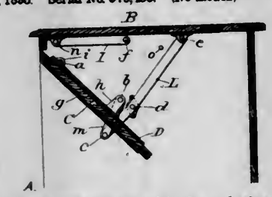
2. A vehicle running-gear, having an axle to support the front of the body and pivotally connected therewith, and a supporting-spring interposed between said axle and body, combined with a central reach, and two rearwardly, divergent springs, said reach and springs being attached to said body at their separated ends, and connected at their opposite ends to said axle by a vertical pivot, substantially as described.

3. A vehicle running-gear, having an axle to support the front of the body and pivotally connected therewith, and a supporting-spring interposed between said axle and body, combined with a central reach, and two rearwardly, divergent bars attached at their rear ends to the body, said reach and bars being connected at their forward ends to said axle by a common vertical pivot or king-bolt, substantially as described.

4. In a vehicle of the class described, an axle, a fifth-wheel connecting it with the vehicle-body and directly above the axle, a reach extended forward from the downturned portion of the body, and a pivotal connection between the axle and front end of the reach, the pivot of said connection being located beneath the pivot of the fifth-wheel, substantially as described.

571,765. TYPE-WRITER CABINET.

WILLIAM HORROCKS, Herkimer, N. Y., assignor to the Horrocks Desk Company, same place. Filed Nov 29, 1895. Serial No. 570,453. (No model.)



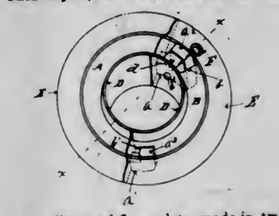
Claim.—1. In combination with the swinging shelf having its front pivoted to the case as shown whereby it is prevented from being thrust outward when the shelf is raised, the lever L pivoted to the wall of the case, with its longer arm pivoted to the cover near its rear edge and its shorter arm to one end of a link *m*, while the opposite end of said link is pivoted to the bracket *h* secured to the shelf, the combination and arrangement of the various parts being substantially as shown and described.

2. The combination in a type-writer cabinet, of the swinging shelf pivoted at its front edge to the case as shown whereby it is prevented from being thrust outward when the shelf is raised, the operating-lever pivoted to the wall of the case at a point below the shelf when raised, and having its longer arm pivoted to the cover near its rear edge and its shorter arm pivoted to one end of a link *m* which has its opposite end pivoted to the shelf by means of a bracket, and the swinging link I pivoted at one end to the cover near its front and at its opposite end to the wall of the case, substantially as shown and described.

3. The combination in a type-writer cabinet, of the swinging shelf C having a sliding machine-base D mounted thereon, the straight operating-lever L turning on a fixed pivot below the shelf when raised and having one end pivoted to the lid B and its opposite end pivoted to a swinging link *m* which has its opposite end pivoted to a bracket attached to the shelf, all arranged to operate as and for the purpose set forth.

571,766. CEILING AND FLOOR PLATE.

ALEXANDER JARECKI, Erie, Pa. Filed July 30, 1896. Serial No. 601,112. (No model.)

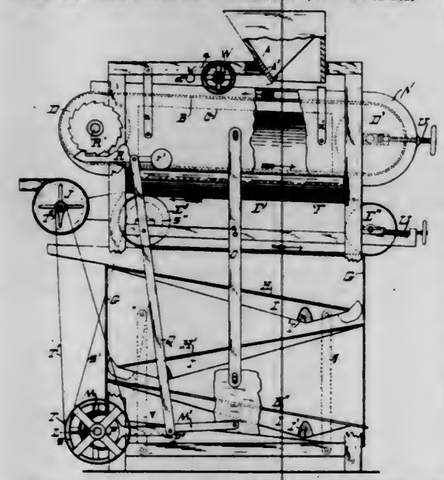


Claim.—1. A ceiling and floor plate, made in two segments or halves, curved arms on one of said halves, having upturned lugs on the ends thereof, and slots or openings in the other of said halves, adapted to receive the lugs on the arms of the first-named half, and

a set-screw passing through one of said lugs, and a collar on said plate, substantially as and for the purpose set forth.

2. In a ceiling and floor plate, segmental sections A and B, formed of a collar D and an ogee flange E, arms a and a' on the section A, upturned lugs a^2 and a^3 on said arms, slots b and b' in the section B to receive the lugs a^2 and a^3, and a set-screw F passing through the lug a^3, and through the collar D on the section B, substantially as and for the purpose set forth.

571,767. FLAXSEED-CLEANING MILL. OLAUS JOHANSEN, Racine, Wis. Filed Dec. 12, 1895. Serial No. 571,860. (No model.)



Claim.—1. A flaxseed-cleaning mill consisting in the combination of a vibrating and revolving belt-sieve, adapted to permit the passage of the flaxseed therethrough, a hopper adapted to feed the uncleaned seed upon said sieve, sheds or inclines adapted to convey the seed from between the upper and lower halves of said sieve and deliver the same thereunder, a revolving canvas belt conveyer adapted to receive and carry the seed to one side of the machine and drop the same into a vibrating shoe, a suction-fan adapted to remove the chaff and dust from the seed as it is delivered into said shoe, and a gang of inclined sieves located in said shoe and adapted to successively receive the seed and transfer the same longitudinally of each sieve to a suitable discharge-opening at the front of the last sieve, substantially as described.

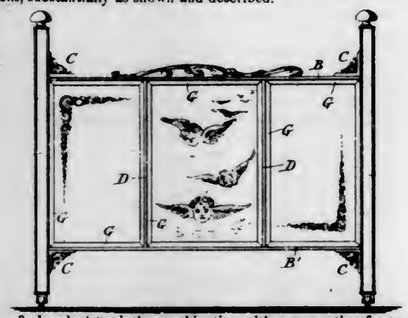
2. A flaxseed-cleaning mill, consisting in the combination of a vibrating box and a revoluble belt-sieve located therein, rollers for supporting and actuating said belt-sieve, a ratchet-wheel connected with one of said rollers a lever provided with a spring-actuated pawl adapted to engage the teeth of said ratchet-wheel and an eccentric connection between the main driving-shaft and said lever, whereby the motion of said shaft is communicated thereto, together with a gang of vibrating sieves also eccentrically connected with said shaft, and a centrally-pivoted bar connecting said gang of sieves with said vibrating box, substantially as described.

3. A flaxseed-cleaning mill, consisting in the combination of a vibrating and revolving belt-sieve provided with a flexible strip V on each side and adapted to permit the passage of the flaxseed therethrough, a hopper provided with a drop-lid, a weighted rack-bar connected with said hopper, a cross-rod mounted upon the mill-frame and having cogs for engaging the teeth of said rack-bar to actuate said lid, together with a suitable fan for cleaning the dust and chaff from the seed, and a gang of longitudinally-vibrating sieves adapted to receive the seed from said belt-sieve and convey it successively over the several members of the gang to a suitable discharge-opening, substantially as described.

571,768. BEDSTEAD. ZACHARY T. JOSEM, New York, N. Y. Filed Feb. 25, 1896. Serial No. 580,723. (No model.)

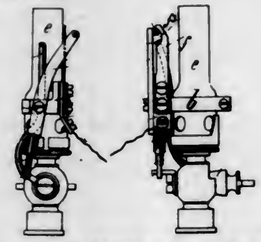
Claim.—1. In a bedstead, the combination with a supporting-frame comprising vertical and horizontal bars, of channel-irons formed independently of said bars, means to secure said channel-irons to said bars and a panel composed of sheets of material having their edges inserted in and held together by said channel-irons, substantially as shown and described.

2. In a bedstead, the combination with a corner-post and top and bottom rails, of channel irons formed independently of said posts and rails, means to secure said channel-irons to said posts and rails, angle-irons inserted in said channel-irons at their points of meeting and secured thereto and a panel having its edges inserted in said channel-irons, substantially as shown and described.



3. In a bedstead, the combination with a supporting-frame comprising vertical and horizontal bars, of channel-irons formed independently of said bars, means to secure said channel-irons to said bars and a panel comprising a sheet of backing material and a sheet of open-work metal, said sheets having their edges inserted in and held together by said channel-irons, substantially as shown and described.

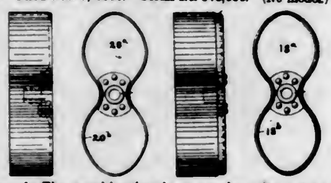
571,769. ELECTRIC IGNITING DEVICE FOR GAS-BURNERS. GOTTFRIED P. KRIEGER, Kiel, Germany. Filed May 4, 1896. Serial No. 590,188. (No model.)



Claim.—1. An electric igniting attachment for gas-burners consisting essentially of a clip or strap adapted to be secured to the burner, a spring and a two-armed rock-lever, respectively secured to and pivoted on said strap, one of the arms of said lever provided with a suitable contact adapted to impinge upon the spring and flex the same and having its other arm constructed telescopically and adapted for connection with the plug of a gas-cock substantially as and for the purpose set forth.

2. An electric igniting attachment for gas-burners consisting essentially of a clip or strap adapted to be secured to the burner, a spring provided at its free end with a recess or cut-away portion f^2 and a two-armed rock-lever respectively secured to and pivoted on said strap one of the arms of said lever provided with a suitable contact adapted to impinge upon the spring and flex the same and having its other arm constructed telescopically and adapted for connection with the plug of a gas-cock substantially as and for the purpose set forth.

571,770. ROTARY BLOWER, EXHAUSTER, OR PUMP. AUGUST W. KURZ, Cleveland, Ohio, assignor of one-half to John P. Dowd, same place. Filed Feb. 5, 1896. Serial No. 578,066. (No model.)

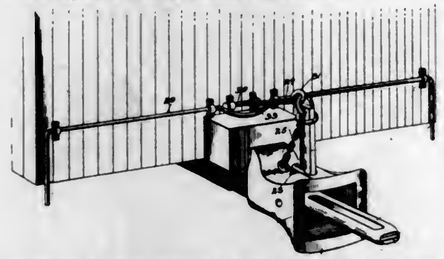


Claim.—1. The combination in a revolver for rotary blowers, exhausters or pumps, of a series of flanged transverse sections assembled in line, a shaft, and means for rigidly attaching said sections to said shaft, substantially as and for the purpose set forth.

2. The combination in a revolver for rotary blowers, exhausters or pumps, of a series of flanged and shouldered intermediate and flanged end sections peripherally shrunk together, a shaft, and means for rigidly attaching said sections to said shaft, substantially as and for the purpose set forth.

3. The combination in a revolver for rotary blowers, exhausters or pumps, of a series of flanged and shouldered intermediate and flanged end sections peripherally shrunk together, a shaft passing through the section-plates, and collars secured to said plates and shrunk onto said shaft, substantially as and for the purpose set forth.

571,771. CAR-COUPLING. CHARLES LEE, San Antonio, Tex. Filed Sept. 4, 1895. Serial No. 561,429. (No model.)



Claim.—1. In a car-coupling, the combination with a car, a coupling-pin provided a short distance from its lower end with a shoulder, and means for raising the coupling-pin without going between cars, of a draw-head having a coupling-pin perforation and provided at the rear of the upper portion thereof with a shoulder located above the upper wall of the link opening or cavity, forming a seat and arranged to be engaged automatically by the shoulder of the coupling-pin when the latter is raised, said coupling-pin projecting below the top wall of the draw-head when it is supported on said seat, and a spring-actuated block arranged to engage the depending portion of the coupling-pin, substantially as described.

2. In a car-coupling the combination of a draw-head having a coupling pin perforation, and provided at the rear thereof, at a point above the upper wall of the cavity of the draw-head, with a downwardly and rearwardly inclined seat, a coupling-pin provided at its rear edge with an inclined shoulder arranged to interlock automatically with the inclined seat, said shoulder being located a sufficient distance from the lower end of the coupling-pin to cause the latter to project below the top wall of the draw-head, and a spring-actuated block mounted within the draw head and adapted to engage the depending end of the coupling-pin, substantially as described.

3. In a car-coupling, the combination of a draw-head having a coupling-pin perforation, provided at its top with a seat and having a rounded front portion and a rectangular rear portion, a coupling-pin having a shoulder to engage the seat, and a spring actuated block, substantially as described.

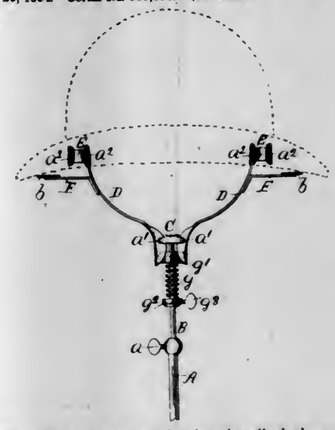
4. The combination of a draw-head provided at its top and bottom with longitudinal grooves and having horizontal grooves on the inner faces of its sides and provided at the front terminals of the latter grooves with perforations or openings located slightly above the horizontal plane of those grooves, a spring-actuated sliding block arranged in the draw-head and provided with upper and lower projections fitting in the longitudinal grooves, said block being provided with a transverse perforation, and a pin arranged in the perforation of the block and projecting laterally therefrom and fitting in the horizontal grooves, said pin being adapted to be withdrawn through the perforations or openings of the draw-head, substantially as described.

5. In a car-coupling, the combination of a draw-head provided at its top and bottom with longitudinal grooves and having at its sides horizontal grooves and longitudinal ribs, a spring-actuated block provided at its sides with grooves to receive the ribs and having a transverse perforation and provided at its top and bottom with projections fitting in the longitudinal grooves, and a removable transverse pin arranged in the perforation of the block and fitting in the horizontal grooves, substantially as described.

6. In a car-coupling, the combination of a draw-head provided at its top and sides with grooves and having longitudinal ribs arranged on the inner faces of its sides, a sliding block provided at its sides with grooves to fit the said ribs and having a transverse perforation and provided with upper and lower projections to fit the longitudinal grooves at the top and bottom of the draw-head, a transverse pin arranged in said perforations and fitting in the grooves of the sides of the draw-head, a stationary plate removably arranged in the draw-head and provided with notches to receive the ribs thereof, and a spring interposed between the plate and the block, substantially as described.

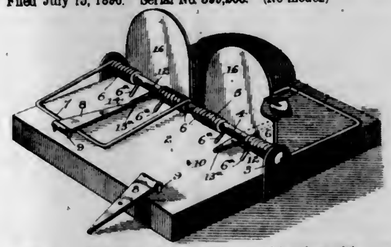
7. In a car-coupling, the combination of a draw-head provided at its sides with longitudinal grooves and having perforations communicating with the same, a spring-actuated block provided with a transverse perforation, and a removable transverse pin adapted to be passed through the perforations of the draw-head and arranged in the perforation of the block and having its terminals fitting in the said grooves, substantially as described.

571,772. HAT-HOLDER. EDWARD LEGER, Chicago, Ill. Filed Dec. 29, 1894. Serial No. 533,330. (No model.)



Claim.—In a hat-holder of the class described, the combination of the bar A, the rod B, having a telescopic connection therewith, the set-screw, a, the plate C, the companion lever-arms D D, the pivot-pins, a' a', the spring-arms, E E, the bracket-plates, F F, the springs, d d, the springs, g, the sliding collars, g' g^3, and the set-screw, g^2, substantially as described.

571,773. ANIMAL-TRAP. CHARLES LELAND, Mount Desert, Me. Filed July 15, 1896. Serial No. 599,208. (No model.)



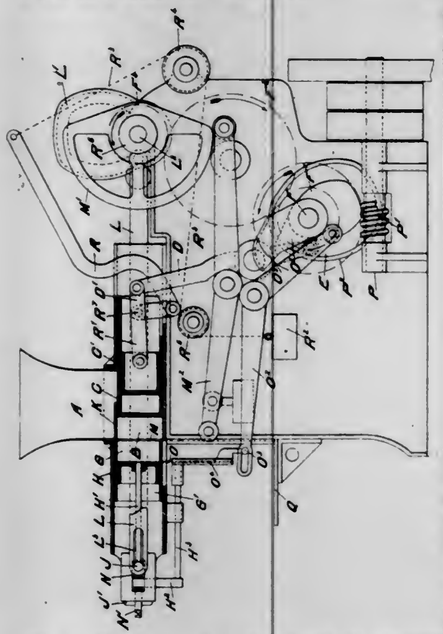
Claim.—1. In an animal-trap, the combination with a suitable base, of a vertical partition mounted thereon, a spring-actuated deadfall, a hinged catch for holding said deadfall in its set position upon one side of said partition, and a pivoted trigger engaging said catch and adapted to receive the bait on the opposite side of the partition; the construction being such that the deadfall and catch are completely concealed behind the partition, substantially as described.

2. In an animal-trap, the combination with a suitable base carrying a lateral shaft, of a spring-actuated deadfall mounted upon said shaft, a hinged catch for holding said deadfall in its set position, and a horizontally-movable pivoted trigger adapted to engage the free end of the catch to hold it in its set position, substantially as described.

3. In an animal-trap, the combination with a suitable base, a vertical partition mounted on said base, a spring-actuated deadfall, a hinged catch for securing the same in its set position upon one side of said partition and provided with a vertical aperture, a vertical pin mounted in the base and adapted to engage said aperture to prevent any lateral movement of the catch, and a pivoted bait-trigger moving in a horizontal plane and adapted to receive the bait on the opposite side of said partition and adapted to engage said catch, substantially as described.

4. In an animal-trap, the combination with a suitable base, of apertured lugs mounted thereon, a shaft mounted in said lugs, a vertical partition forward of said shaft, a spring actuated deadfall mounted upon said shaft, a hinged catch for retaining the deadfall in its set position upon one side of said partition, and a horizontally-movable bait-trigger engaging said catch and arranged upon the opposite side of said partition, substantially as described.

571,774. MACHINE FOR MAKING BREAD. GEORGE LEWIS and CHARLES E. POINTON, Wellington, New Zealand. Filed May 15, 1896. Serial No. 591,699. (No model.) Patented in England May 17, 1894, No. 9,683, and in Germany Apr. 2, 1895, No. 86,357.



Claim.—1. The improvements in bread-making and analogous machinery comprising a dividing-chamber having a hopper mounted thereon and fitted at one end with a sliding ram, and at the opposite end with a sliding box provided with separate compartments, in combination with a pair of reciprocating knives, one of said knives being arranged to free the dough in the sliding box from the excess of dough in the dividing-chamber after compression, and the other being arranged to free the dough from the sliding box for the discharge of the same substantially as set forth.

2. In combination, the chamber B, and a ram having inner and outer parts C, C', means for operating the inner part positively and a yielding connection between the inner and outer parts, substantially as described.

3. In combination, the chamber B, the ram comprising the inner and outer parts, the positive means for operating the inner part, and the weighted-lever connection between the inner and outer parts, substantially as described.

4. In combination, the chamber B, the ram comprising the inner and outer parts, the means for positively operating the inner part, the weighted bell-crank lever fulcrumed on the outer part and the connection from said lever to the inner part, substantially as described.

5. In bread-making and analogous machinery the combination of a ram C having an inner sliding part C', with weighted levers R and links R' and the cam-levers D and links D', substantially as set forth.

6. In combination in bread making machinery, a sliding box G formed into separate compartments by plates or partitions G', each compartment being open-ended, a plunger H, the cross-head H^2, the rod H' connecting the plunger to the cross-head and means for reciprocating the cross-head, substantially as described.

7. In bread-making and analogous machinery the combination comprising the sliding box G having separate compartments a plunger H in each compartment the cross-head H^2, a cross-head J the adjusting-screws J' connecting the two cross-heads, the said plungers H being connected to the cross heads H^2, substantially as set forth.

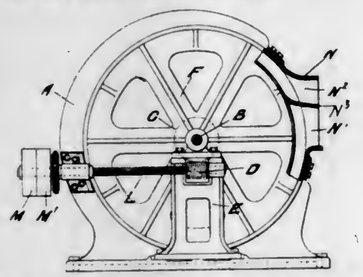
8. In bread-making and analogous machinery the combination of the cross-head J the cross-head H^2 connected thereto and the attached plungers H, with the slotted side rods L and cams L', substantially as set forth.

9. In combination with the mold-box, the plunger in the box, a knife arranged to maintain its relation to the plunger in its different positions in the box and means for operating the knife when the plunger is in position to discharge the dough, substantially as described.

10. In combination, the sliding box, the side rods L connected thereto and having slotted ends, the plunger H, the cross-head J moving in the slots and the connection from said cross-head to the plunger, substantially as described.

11. In combination, the sliding box, the plunger operating therein, and the knife O with connections between the same and the plunger and means for operating the knife when the plunger is in discharging position, substantially as described.

571,775. MACHINE FOR MOLDING DOUGH. GEORGE LEWIS and CHARLES E. POINTON, Wellington, New Zealand. Filed May 15, 1896. Serial No. 591,700. (No model.) Patented in England Oct. 10, 1894, No. 19,950, and in Germany Apr. 8, 1895, No. 84,427.



Claim.—1. The improvements in dough-molding machines comprising a pair of molding-wheels mounted within a fixed cylinder upon one common shaft, and provided with gearing by which they are revolved in opposite directions, and at different speeds, the peripheries of the molding-wheels being so shaped as to form an annular space or chamber between the disks and the internal surface of the cylinder, substantially as set forth.

2. In dough-molding machines, the combination of the molding-wheel F keyed or fixed to the shaft B, having a large gearing-wheel C upon one end of the same, and the molding-wheel G mounted loosely upon the shaft B, and having a small gearing-wheel H keyed or fixed to its extended boss G', with a fixed cylinder or drum A having a double mouthpiece N attached thereto, substantially as set forth.

3. In dough-molding machines the combination comprising the fixed cylinder A, the molding-wheels F and G, and worm-wheels C and H, with the worms D and J mounted upon the shafts L and K respectively, the belt-pulleys M M' and chain-gearing M^3, the worms D and J and the worm-wheels C and H being made right and left handed respectively, substantially as set forth.

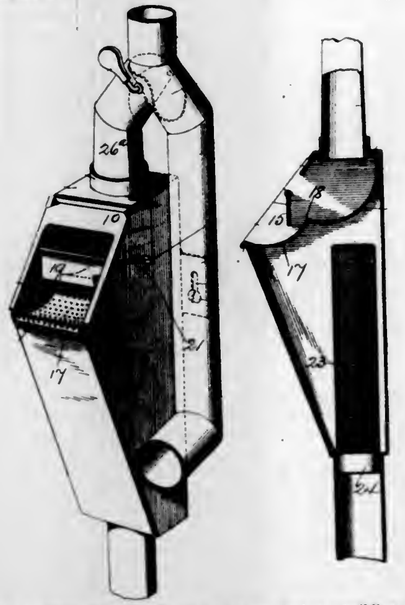
4. In a dough-molding machine, a stationary cylinder, a molding-wheel within the same, a mouthpiece projecting from said cylinder at one side, and a division-plate therein forming an inlet and outlet passage in said mouthpiece, substantially as described.

5. In a dough-molding machine, a cylinder and a pair of molding-wheels having their peripheries shaped to form an annular space between the wheels and cylinder, the said wheels operating side by side in opposite directions and the said cylinder extending about the adjacent peripheries of the said wheels substantially as described.

571,776. RAIN-WATER FILTER. NATHAN H. LONG, Muncie, Ind. Filed May 9, 1896. Serial No. 590,893. (No model.)

Claim.—1. A rain-water filter, consisting of a chambered body portion adapted to be attached to a building, a pipe connecting said chambered body and the rain-water-supply pipe, a discharge-pipe connected with the lower portion of said body, a vertical reticulated chamber or tube seated in said discharge-pipe and extending up within said chamber, a shoe removably seated in the upper portion of said chambered body and having at its upper portion a depending hood, a dual-concaved and reticulated lower portion constituting the bottom and rear, an upwardly-extending dam between said dual concaves, and a shutter hinged on said shoe apd rockingly depending above the reticulated portion thereof substantially as and for the purpose set forth.

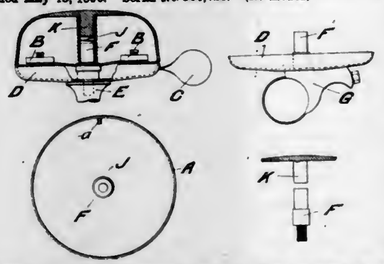
2. A rain-water filter, consisting of a chambered body portion adapted to be attached to the side of a building and having at its top an upwardly-extending collar and at the upper portion of its front face an opening and a depending flange, a double-concaved reticulated shoe having a central transverse dam and removably contained within said open portion and extending across and upwardly of the upper portion of said chamber, a shutter hinged in and extending transversely across said shoe a bifurcated or branched pipe connecting at its upper portion with the rain supply, one lower end of said pipe connecting with said collar and the other portion extending parallel with the chambered body a curved valve pivoted in the upper portion of said branched pipe, a discharge-pipe extending from the bottom of said body, and a tubular strainer removably seated in said discharge-pipe and extending up within said chamber, substantially as and for the purpose set forth.



3. A rain-water filter adapted to be attached to a building and having connection with the rain-water supply, and consisting of a shell or body and an outlet-pipe, a vertically-disposed chamber located within said shell or body and a shoe removably seated in the upper portion of said shell or body and having a reticulated bottom portion and a transverse bridge, or dam, and a shutter rockingly journaled in said shell and extending transversely of and above said shoe, substantially as and for the purpose set forth.

4. A rain-water filter, consisting of a shell or body having a flat rear portion and a downwardly-tapering front portion, a water-discharge pipe connected with its lower end, a reticulated cylinder or tube removably seated at its lower end in said discharge-pipe, a shoe removably seated in the upper portion of said shell and having a dual-concaved reticulated bottom and a substantially central upwardly-projecting bridge or dam, a shutter pivoted in said shell and located above said bridge or dam, a combined water-supply and waste-discharge pipe connected with the upper portion of said shell, and a cut-off valve located in said last-named pipe substantially as and for the purpose set forth.

571,777. BICYCLE-BELL. HARRY LUCAS, Birmingham, England. Filed May 15, 1896. Serial No. 591,720. (No model.)

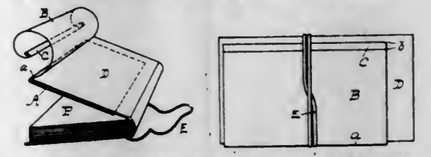


Claim.—1. A bell comprising a dome, a base beneath the same adapted to be fixed to a support, hammer mechanism between the base and dome, and a spring-support between the dome and base extending from said base up within the dome, substantially as described.

2. In combination in a bell, the combination of the dome having the projecting stud K, the base having the projecting stud F and the spring connecting the studs substantially as described.

3. In alarm and signal bells the combination of the dome A having a projecting stud K, and the base-plate D having a projecting stud F, with a flexible connection J the stud K being forced into one end of the connection and the stud F into the opposite end, substantially as set forth.

571,778. CIGARETTE-ROLLER. ALBERT F. MADDEN, Newark, N. J. Filed Sept. 17, 1894. Serial No. 523,241. (No model.)



Claim.—1. A cigarette-roller, consisting of a stiff but thin and flexible sheet of highly-polished metal B having a turned-over and reinforced edge C, and of the curled or curved form described, substantially as set forth.

2. A cigarette-roller of thin flexible springy material having smooth or polished surfaces on both sides, whereby the edge thereof may be rolled into the cigarette with the wrapper and thereafter released substantially as described.

3. In a cigarette-roller, the curled metallic portion B in combination with the turned-back edges C leaving a space between B and C for the insertion of the cigarette-paper, substantially as set forth.

4. As a roller attachment, the metallic plate formed with the flat portion A, curled portion B, and turned-back edge C, substantially as set forth.

5. In a roller attachment, the curled metallic plate B and flat portion A formed to fit the cover of a cigarette-paper book or holder, substantially as set forth.

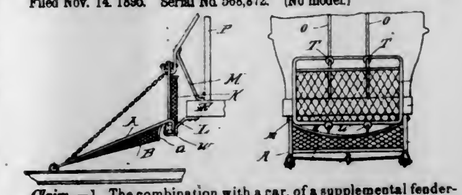
6. As a roller attachment for a cigarette-paper book or block, a curled metallic plate B and means for holding the same in position upon the said book or block, substantially as set forth.

7. As a roller attachment for a cigarette-paper book or block, a plate forming a retaining portion or flap A, a cigarette-rolling portion B, and an edge C, the said edge having space beneath for the edge of a cigarette-wrapper paper, substantially as set forth.

8. As a roller attachment for a cigarette-paper book or block, a plate forming a retaining portion or flap A, a cigarette-rolling portion B, and a stiff edge C, substantially as set forth.

9. As a roller attachment for a cigarette-paper book or block, a plate forming a retaining portion or flap A, a cigarette-rolling portion B, and a fold *a* conforming to the edge of the cover or similar part of the said book or block, substantially as set forth.

571,779. CAR-FENDER. CHARLES F. MAISCH, Philadelphia, Pa. Filed Nov. 14, 1895. Serial No. 568,872. (No model.)



Claim.—1. The combination with a car, of a supplemental fender-frame supported in rollers in front thereof, and a main fender-frame, the rear end of which is pivotally connected with the lower side of said supplemental frame, said main frame being projected forward and provided with rollers which are adapted to travel on the rails of the track, and said supplemental-frame rollers being supported by braces connected with the platform of the car, and with the dash-board, substantially as shown and described.

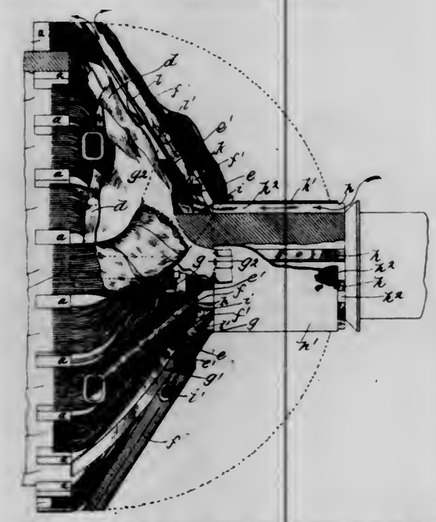
2. The combination with a car, of a supplemental fender-frame supported in rollers in front thereof, and a main fender-frame, the rear end of which is pivotally connected with the lower side of said supplemental frame, said main frame being projected forward and provided with rollers which are adapted to travel on the rails of the track, and said supplemental-frame rollers being supported by braces connected with the platform of the car, and with the dashboard, and the forward end of the main fender-frame being connected with the upper side portions of the supplemental frame, by means of side chains, substantially as shown and described.

571,780. DYNAMO-ELECTRIC MACHINE. WILLIAM F. MARZAHN, Buffalo, N. Y. Filed Sept. 21, 1896. Serial No. 606,521. (No model.)

Claim.—1. In a dynamo-electric machine, the combination of a

drum-armature, with ventilating-tubes disposed in the end or ends thereof, substantially as described.

2. In a dynamo-electric machine, the combination of an armature, with ventilating-tubes disposed among the windings thereof adapted to convey air from the region of the shaft to the outer circumference of the armature, substantially as described.



3. In a dynamo-electric machine, the combination of an armature, with ventilating-tubes of insulating material disposed among the windings thereof adapted to convey air from the region of the shaft to the outer circumference of the armature, substantially as described.

4. In a dynamo electric machine, the combination of an armature, with ventilating-tubes radially disposed among the windings thereof, substantially as described.

5. In a dynamo-electric machine, the combination with ventilating-tubes disposed among the windings thereof, said tubes having ventilating-openings between their ends, substantially as described.

6. In a dynamo-electric machine, the combination with an armature, of ventilating-tubes disposed among the windings thereof adapted to convey air from the region of the shaft to the outer circumference of the armature, said tubes being provided with openings adapted to convey air from among the windings of the armature to said tubes, substantially as described.

571,781. AXIOMETER. JAMES N. MAYHEW, Indianapolis, Ind. Filed Aug. 8, 1895. Serial No. 558,659. (No model.)

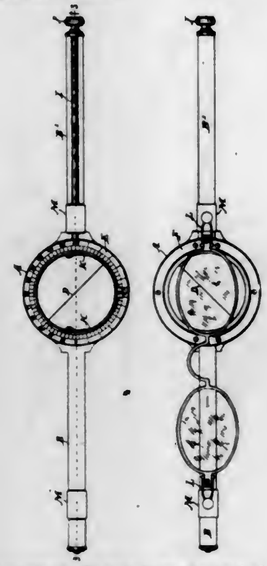
Claim.—1. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening therein, a pair of slides mounted on the main frame and adapted to be moved toward and from the center of said ring, and means carried by said slides for engaging with and holding a spectacle-frame, as and for the purpose set forth.

2. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening therein, a pair of slides mounted on the main frame and adapted to be moved toward and from the center of said ring, and a spring-grip carried by each of said slides and adapted to engage and hold a spectacle-frame, substantially as described.

3. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening thereof, and means carried by said main frame for engaging and supporting a lens in front of said opening.

4. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening thereof, means for engaging and supporting a lens in front of said opening, and a suitable scale for indicating the angular position of the indicator, substantially as set forth.

5. In an axiometer, the main frame composed of an annular central portion and a pair of oppositely-extending radial arms secured thereto, a ring mounted in said central portion and adapted to be rotated therein, an indicator extending across the opening of said ring, a pair of slides mounted one on each of said radially-extending arms of the main frame and longitudinally movable thereon, and means carried by said slides for engaging a spectacle-frame, substantially as and for the purpose set forth.



6 In an axiometer, the main frame composed of an annular central portion and a pair of oppositely-extending radial arms secured thereto, a ring mounted in said central portion and adapted to be rotated therein, an indicator extending across the opening of said ring, a shaft mounted in one of the arms of the main frame and provided at one end with a gear adapted to engage with suitable teeth carried by the ring, and at the other end provided with means for rotating said shaft, a pair of slides mounted one on each of the arms of the main frame, and means carried by said slides for engaging and holding a spectacle-frame, substantially as set forth.

7. In an axiometer, the main frame composed of an annular central portion and a pair of oppositely-extending radial arms secured thereto, a ring mounted in said central portion and adapted to be rotated therein, an indicator extending across the opening of said ring, a shaft mounted on one of the arms of the main frame and provided at one end with a gear adapted to engage with a series of teeth carried by the ring, and at the other end with means for rotating said shaft, a pair of slides mounted one on each of the arms of the main frame, and a spring-grip carried by each of said slides for engaging and supporting a spectacle-frame, as and for the purpose set forth.

8. In an axiometer, the main frame composed of the annular central portion and a pair of oppositely-extending radial arms secured thereto, an annular recess formed in one surface of said central portion, a ring mounted in said central portion and provided with a flange adapted to rest in said annular recess, a series of teeth formed on said flange, an indicator extending across the opening of said ring, a shaft mounted in one of the arms of the main frame and provided at one end with a gear adapted to engage with the teeth on said flange, and provided at the other end with means for rotating said shaft, a pair of slides mounted one on each of the arms of the main frame, and means carried by said slides for engaging and supporting a spectacle-frame, substantially as described.

9. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening thereof, means carried by the main frame for supporting a lens in front of said opening, and means also carried by the main frame for supporting a neutralizing-lens at the rear of said opening, substantially as and for the purpose set forth.

10. In an axiometer, the combination with the main frame, of a ring mounted so as to rotate therein and provided with an indicator extending across the opening thereof, and an attachment adapted to be secured to said main frame in front of the opening of said ring and adapted to hold a lens in front of said opening, as and for the purpose set forth.

11. In an axiometer, the combination with the main frame and a ring mounted so as to rotate therein and provided with an indicator extending across the opening thereof, of an attachment for said main frame consisting of an annular plate provided with a pair of arms each provided with a spring clip for engaging the main frame, and a pair of springs secured to one surface of said annular plate and adapted to engage and hold a lens in front of the opening therein, substantially as set forth.

12. In an axiometer, the combination with the main frame consisting of the annular central portion and a pair of oppositely-extending arms secured thereto, a ring mounted in said central portion so as to rotate therein, and an indicator secured to said ring and extending across the opening thereof, of an attachment for said main frame consisting of the annular plate T provided with a pair of oppositely-extending arms U each provided with a spring-clip adapted to engage the arms of the main frame, and a pair of springs P secured to one face of plate T and adapted to engage and support a lens in front of the opening in said plate and in front of the opening in said central portion of the main frame, all combined and arranged to cooperate substantially as and for the purpose set forth.

571,782. FEED-GAGE FOR PRINTING-PRESSES. EDWARD L. MEGILL, Brooklyn, N. Y. Filed Feb. 10, 1896. Serial No. 578,728. (No model.)



Claim.—1. A pin feed-gage having a dog 5, pivoted to the gage and adapted to swing laterally over the pin at the rear of the gage and press the overlying platen-paper down tightly thereon, substantially as set forth.

2. A pin feed-gage having lateral supports 2, 2, extending rearwardly from the gage-head, a bridge-piece 1^b on said supports, and a dog 5, pivoted at its front end to said bridge-piece and its free end adapted to take over the rearwardly-projecting pin of the gage and press the platen-paper down forcibly thereon, substantially as set forth.

3. In a feed-gage having a gage-head and rearwardly-projecting pin to pierce the platen-paper, the combination of the said head provided with means for pivotally connecting the dog thereto, and the said pin, of the said dog, 5, pivoted on an upright stud and adapted to swing laterally, said dog having at its free end a lip adapted to bear on the platen-paper and press the latter down upon the inserted pin, substantially as set forth.

4. A pin feed-gage having a sheet-metal gage-head 1, with an integral folded flap 1^x, and an aperture 1^a at the fold of the flap, and having a round pin, 3, with a flattened portion, said flattened portion being bent upwardly and embraced between the plies of the head and extending through said aperture 1^a, substantially as set forth.

5. A pin feed-gage having a sheet-metal gage-head formed of two plies, as described, and having a pin 3 and stripping-finger 4, formed integrally, a portion between said pin and finger being tightly embraced between the plies of the gage-head, substantially as set forth.

6. A feed-gage comprising a head formed of two integral plies of sheet metal and having lateral supports integral with the head and extending rearwardly therefrom, and a round wire pin having a portion flattened and tightly embraced between the plies of the gage-head, said pin being bent substantially at right angles to the face of the gage-head and extending rearwardly therefrom between said supports, substantially as set forth.

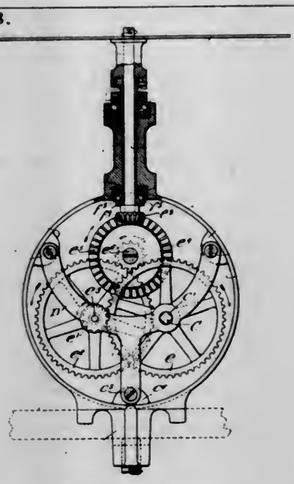
571,783. CENTRIFUGAL MACHINE. FERDINAND F. METZGER, Philadelphia, Pa. Filed Jan. 23, 1896. Serial No. 576,528. (No model.)

Claim.—1. A centrifugal machine provided with operating mechanism incased and having a removable cover, a vertical shaft provided with bonnets or caps, dished rings or plugs mounted in a flanged tubular bearing, balls interposed between said bonnets or caps and rings or plugs, a flanged sleeve or collar connected with one of said bonnets or caps and provided with a jam-nut, the flanged portion of said sleeve or collar slotted and recessed and a test-tube holder provided with a pin adapted to engage through the slot of said sleeve or collar with the flanged recessed portion thereof, substantially as and for the purposes described.

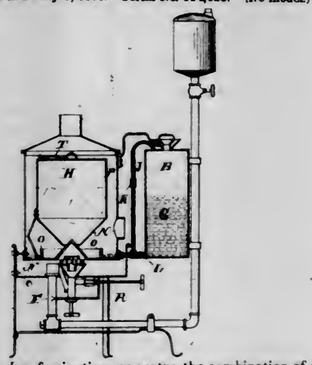
2. A centrifugal machine provided with a vertical shaft extending through a tubular bearing having at each end thereof a ball bearing connection, one of said connections provided with a sleeve or collar having a slot and a recess and a test-tube holder provided with a pin, substantially as and for the purposes described.

3. In a centrifugal machine, a case or box having a removable cover, a clamp adapted to engage a support, a train of gears mounted in said case or box, a vertical shaft supported in a bearing, both ends of which have ball-bearing connections, one of said connections provided with a sleeve or collar having a slot, a jam-nut engaging said sleeve or collar and a test-tube holder provided with a bearing and a pin adapted to engage the said sleeve or collar, substantially as and for the purposes described.

571,783.



571,784. FUMIGATING APPARATUS. THOMAS F. MOSS, Hudson, Wis. Filed July 1, 1895. Serial No. 554,623. (No model.)



Claim.—1. In a fumigating apparatus, the combination of a portable frame or support, a vapor-burner supported on said frame, a tank mounted on said frame for supplying liquid fuel to the said burner, a plate supported on said frame to be directly impinged upon by the flame of said burner, and a receptacle supported above said plate for holding fusible fumiferous material and having a reduced passage adapted to deliver said material to said plate, substantially as set forth.

2. In a fumigating apparatus, the combination of a vapor-burner adapted to provide a heating-flame, a plate supported above and partially surrounding said burner, means for holding a supply of fusible fumiferous material and delivering it gradually to said plate, means for delivering water to said plate within the heated area for the generating of steam, and a casing forming a chamber above said plate which receives and mingles the fumes and the steam, substantially as set forth.

3. In a fumigating apparatus, the combination of a vapor-burner, a plate arranged to be directly impinged on by the flame of the burner, a receptacle adapted to hold a mass of fusible fumiferous material and to deliver it to a heated portion of the said plate, a water-receptacle adjacent to and separated from the said last portion of the plate and a casing arranged to provide a duct through which travel the fumes from the said plate and steam from the water-receptacle, substantially as set forth.

4. In a fumigating apparatus, the combination of a vapor-burner, a water-receptacle in the path of the flame and products of combustion from said burner, a heating-plate arranged to be impinged on by the flame of the burner, a casing forming a chamber above said water-receptacle and heating-plate and adapted to receive and commingle fumes from the plate and steam from the water-receptacle, a receptacle adapted to contain a supply of fusible fumiferous material and to deliver the same to the heating-plate, a tank for water, and means for delivering the water to the said water-receptacle, substantially as set forth.

5. In a fumigating apparatus, the combination of the vapor-burner, the heating-plate for fusible fumiferous material in the flame region of said burner, the water-receptacle in said flame region, the receptacle for holding and delivering the fumiferous material, the tank for holding and delivering water to the water-receptacle in the flame region, the receptacle for holding and delivering burning fluid to the burner, and the frame which unites and supports all of the said parts, substantially as set forth.

6. In a fumigating apparatus, the combination of a burner, a receptacle supported above the burner to contain fusible fumiferous material and having a reduced passage-way through which the material can be delivered, and a casing surrounding said receptacle and partly surrounding the burner, to provide a fume-generating chamber adjacent to the burner and a fume collecting and discharging chamber above said generating-chamber, substantially as set forth.

7. In a fumigating apparatus, the combination of a burner, a receptacle for fusible fumiferous material supported above the burner and having a discharge-opening at its lower end, a heating-plate arranged in the path of the flame of the burner and having on its upper surface a conical projection extending into the discharge-opening in said receptacle, and a casing forming a fume-generating chamber about said projection on the plate and a fume-collecting chamber communicating therewith, substantially as set forth.

8. In a fumigating apparatus, the combination of a burner, a plate or support in the flame region of the burner, a receptacle for fusible fumiferous material adapted to deliver said material gradually to said plate, and a casing surrounding said receptacle and forming a fume-generating chamber at its lower end, adjacent to said plate, and a fume-receiving chamber at its upper end, said casing having one or more air-inlets, communicating with the fume-receiving chamber, and a reduced discharge-opening in its top wall above the receptacle for fumiferous material, substantially as set forth.

9. In a fumigating apparatus, the combination of a burner, the casing forming a fume-generating chamber having a wall or walls in the flame region of the burner, the water-receptacle adapted to be heated by the burner, the receptacle for fusible fumiferous material, the water-tank supplemental to the aforesaid water-receptacle, and the air-pipe interposed between the said water-receptacle and the tank, substantially as set forth.

10. In a fumigating apparatus, the combination of the burner, the heating-plate above the burner, the ring or flange, O, secured to said plate and forming on the upper side of the plate two separate receptacles, one for fusible fumiferous material and one for water, the casing above said plate inclosing a fume and steam chamber, a water-receptacle supplemental to and outside of said water-chamber, means for holding fusible fumiferous material and supplying it to one of the receptacles separated by the said ring or flange, O, and a duct for delivering water to the other of said receptacles, substantially as set forth.

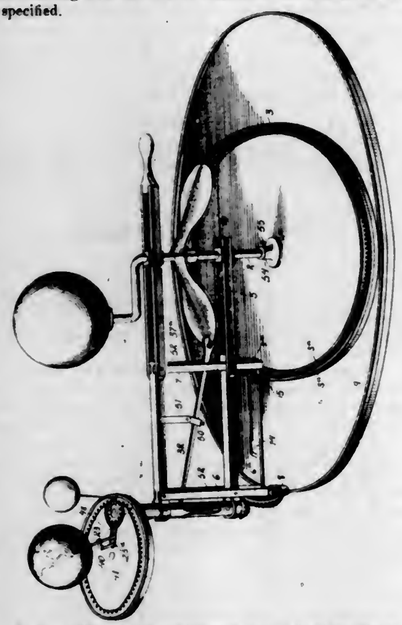
571,785. TELLURIAN. ROBERT MOWERY, Hot Springs, Ark., assignor of one-fourth to John H. Kilgore, same place. Filed Mar. 18, 1896. Serial No. 583,773. (No model.)

Claim.—1. In a tellurian, the combination with a fixed sun-globe, of a rotary frame, a bracket swiveled upon the frame, an earth-globe having an inclined axis mounted upon the bracket and adapted to describe an orbit around the sun-globe, a fixed cam-guide, and a lever actuated by the cam-guide and operatively connected with said bracket to impart rotary motion to the bracket in accordance with the movement of the frame around its axis and preserve a uniform direction of inclination of the axis of the earth-globe, substantially as specified

2. In a tellurian, the combination with a fixed sun-globe, of a rotary frame, a bracket swiveled upon the frame, an earth-globe having an inclined axis mounted upon the bracket, a shaft fixed to the bracket and carrying a cam, an operating-lever arranged with its outer extremity in operative relation with said cam, and a fixed cam-guide traversed by the inner end of the lever and adapted to impart a rocking movement thereto to cause rotary movement of said bracket and preserve a uniform direction of inclination of the axis of the earth-globe, substantially as specified.

3. In a tellurian, the combination with a fixed sun-globe, of a rotary frame, a vertical shaft carried by the frame, a cylindrical shell carried by the shaft and provided with a cam groove, an earth-globe having an inclined axis carried by the shaft, a rocking lever arranged at its outer extremity in said cam-groove and mounted to operate in a vertical plane, and a fixed cam-guide arranged in operative relation with and traversed by the inner extremity of the lever, whereby rotary movement is imparted to the shaft to preserve the direction of inclination of the axis of the earth-globe, substantially as specified.

4. In a tellurian, the combination with a fixed sun-globe, of an elliptical track, a rotary frame arranged in a radial position with relation to the track, mounted at its outer end upon and adapted to traverse the track and slidably mounted at its inner end at the center of the space inclosed by the track, a bracket swiveled upon the frame, an earth-globe having an inclined axis mounted upon the bracket, a lever mounted upon the frame and operatively connected at one extremity with said bracket, and a fixed cam-guide traversed by the other extremity of the lever, the periphery of the cam being equidistant at all points from the track when measured upon straight lines radiating from the axis of rotation of the frame, substantially as specified.



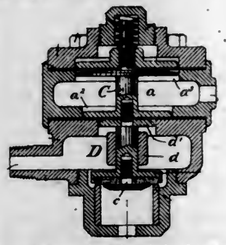
5. In a tellurian, the combination with a fixed sun-globe, of an elliptical track, a central standard, a rotary frame slidably mounted at its inner end upon said standard and at its outer end upon the track, a rotary bracket mounted upon the frame and carrying an earth-globe having an inclined axis, a lever mounted upon the frame and operatively connected at its outer extremity with the bracket, and a cam-guide arranged concentric with the track and traversed by the inner extremity of said lever, said guide being double oval in plan and double inclined in longitudinal section, substantially as specified.

6. In a tellurian, the combination of a base having an elliptical track, a central standard rising from the base and provided with journal portions, a stationary sun-globe, a frame having parallel longitudinal bars mounted for rotation and sliding movement upon the journal portions of the standard and mounted at its outer end upon the track, a bracket mounted for rotation upon the frame and supporting an earth-globe having an inclined axis, a lever mounted upon the frame and operatively connected at its outer extremity with said bracket, and a double inclined cam-guide fixed to the standard with its periphery in engagement with a notch in the inner extremity of said lever, said cam-guide being peripherally equidistant from the track and having a central collar fitted upon and adjustably secured to the standard, substantially as specified.

7. In a tellurian, the combination of a base having an elliptical track, a central standard supporting a sun-globe, a rotary frame slidably mounted at its inner end upon the standard and mounted at its outer end upon said track, a circular rack concentric with said standard, an earth-globe mounted for rotation upon the frame and adapted to describe an orbit around the sun-globe, a spindle mounted upon the frame, a pinion feathered upon said spindle and meshing with the teeth of the rack, the rack having guard-webs to maintain the pinion in operative relation therewith, and connections between the spindle and the earth-globe, substantially as specified.

8. In a tellurian, the combination with a sun-globe and a rotary frame, a bracket swiveled upon the frame, an earth globe having its axis mounted upon the bracket, operating devices for the earth-globe, means for imparting rotary movement to the bracket to maintain the axis of the earth-globe at a uniform inclination, an inclined table supported by said bracket and having an opening through which the axis of the earth-globe extends, whereby the earth-globe is arranged above the plane of the table, said table being provided contiguous to its periphery with an annular seat, a carrier 43 mounted for rotation in said seat independently of the movement of the table and connections between the carrier and the means for operating the earth-globe, and a moon-globe supported by said carrier and adapted to describe an orbit around the earth-globe, substantially as specified.

571,786. AIR-BRAKE. HENRY F. NOYES, Elgin, Ill., assignor to the Westinghouse Air Brake Company, Pittsburg, Pa. Filed Nov. 24, 1894. Serial No. 529,881. (No model.)



Claim.—1. In auxiliary valves for air-brake systems, the combination of a casing provided with a primary air-chamber arranged to be connected to a train or service pipe and an exhaust-chamber arranged to be connected to the exhaust of a triple valve of a brake-cylinder, a valve or valves in such casing arranged to be actuated by a predetermined fluid-pressure in the primary chamber and permit the discharge of any fluid-pressure in the exhaust-chamber above a predetermined amount, and when an excess of the predetermined fluid-pressure enters the primary chamber the valve is held open and all fluid-pressure permitted to escape from the exhaust-chamber, substantially as described.

2. In auxiliary valves for air-brake systems, the combination of a casing provided with a primary air-chamber adapted to be connected with the train pipe and an exhaust-chamber adapted to be connected with the exhaust-port of a triple valve, a piston-rod in the primary chamber provided with a diaphragm-piston at each end, one of such pistons being of a larger superficial area than the other, an exhaust and retaining valve in the exhaust-chamber arranged to be actuated when the piston-rod is actuated, and a spring arranged to normally close the exhaust-valve, the relative superficial areas of the diaphragm-pistons and exhaust-valves acting to operate against the tension of the spring when the normal or ordinary fluid-pressure is admitted to the primary chamber and hold the valve open and permit the escape of all fluid-pressure from the exhaust-chamber above a predetermined amount, and when an excess of fluid-pressure enters the primary chamber the valve is held open and all fluid-pressure permitted to escape from the exhaust-chamber, substantially as described.

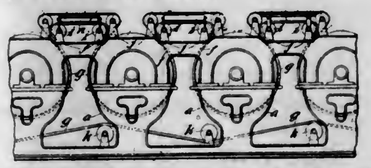
3. The combination of an air-brake system provided with a source of air-pressure, an engineer's valve, a triple valve, a brake-cylinder and auxiliary reservoir substantially as described, with an auxiliary valve-casing having a primary chamber connected with the train-pipe and an exhaust-chamber connected by way of the triple valve with the brake-cylinder, a valve or valves in such casing arranged to be actuated by the normal or ordinary fluid-pressure in the primary chamber and permit the discharge of all the fluid-pressure in the brake-cylinder except a predetermined amount, and when an excess of fluid-pressure is furnished the primary chamber any and all fluid-pressure in the brake-cylinder is permitted to exhaust, substantially as described.

4. In auxiliary valves for air-brake systems, the combination of a casing provided with a primary air-chamber adapted to be connected with a train-pipe and an exhaust-chamber adapted to be connected with the exhaust-port of a triple valve, a piston-rod in the primary chamber provided with a diaphragm-piston at each end, one of such pistons being of a larger superficial area than the other, a reciprocating valve-rod in the exhaust-chamber substantially in line with the piston-rod and arranged to be actuated as the piston-rod is actuated, a diaphragm-piston on one end of such valve-rod, an exhaust-valve on the opposite end of the rod arranged to close an opening in the exhaust-chamber, a spiral spring interposed between one end of the valve-casing and the piston-rod to normally keep the exhaust-valve closed, and a retaining-valve connected with the exhaust-chamber, the whole so constructed and arranged that when the normal or ordinary fluid-pressure is admitted to the primary chamber and any pressure to the exhaust-chamber, the exhaust-valve remains closed and a predetermined amount of the fluid-pressure of the exhaust-chamber is exhausted through the retaining-valve, and when an excess of fluid-pressure is admitted to the primary chamber the exhaust-valve is opened and all the fluid-pressure in the exhaust-chamber is permitted to escape into the outer air, substantially as described.

5. In auxiliary valves for air-brake systems, the combination of a casing provided with a primary air-chamber adapted to be connected with a train-pipe and an exhaust-chamber adapted to be connected with the exhaust-port of a triple valve, a piston-rod in the primary chamber provided with a diaphragm-piston at each end, one of such pistons being of a larger superficial area than the other, a reciprocating valve-rod in the exhaust-chamber substantially in line with the piston-rod and arranged to be actuated as the piston-rod is actuated, a diaphragm-piston on one end of such valve-rod, an exhaust-valve on the opposite end of the valve-rod arranged to close an opening in the exhaust-chamber, an adjustable screw-threaded plug inserted in the valve-casing adjacent to the upper end of the piston-rod, a spiral spring interposed between such adjustable plug and the valve-rod, and a retaining-valve connected with the exhaust-chamber of the auxiliary valve, the whole so constructed and arranged that when the normal or ordinary fluid-pressure is admitted to the primary chamber and any fluid-pressure to the exhaust-chamber the exhaust-valve remains closed and a predetermined amount of the fluid-pressure in the exhaust-chamber is exhausted through the retaining-valve, and when an excess of fluid-pressure is admitted in the primary chamber the exhaust-valve is opened and all the pressure in the exhaust-chamber is permitted to escape into the outer air, substantially as described.

6. In air-brake systems, the combination of a brake-cylinder, a triple valve connected with such brake-cylinder and a source of air-pressure, an auxiliary valve provided with a primary chamber connected with a source of fluid-pressure and an exhaust-chamber connected with the exhaust of the triple valve, a piston-rod in the primary chamber provided with a diaphragm-piston at each end, one of such pistons—preferably the upper—being of a larger superficial area than the other, a reciprocating valve-rod in the exhaust-chamber substantially in line with the piston-rod and arranged to be actuated as the piston-rod is actuated, an exhaust-valve on such valve-rod arranged to close an opening in the exhaust-chamber, and a spiral spring arranged between the valve-casing and the piston-rod to normally close the exhaust-valve, the relative superficial areas of the diaphragm-pistons and exhaust-valves acting to operate against the tension of the spring when the normal or ordinary fluid-pressure is admitted to the primary chamber and hold the exhaust-valve open until the pressure falls below a predetermined amount in the exhaust-chamber and brake-cylinder, and when an excess of fluid-pressure is admitted to the primary chamber to hold the exhaust-valve open until all fluid-pressure is discharged from the exhaust-chamber and brake-cylinder, substantially as described.

571,787. PAPER-DRIER. ANDREW G. PAUL and HERBERT A. JOSLIN, Boston, Mass.; said Joslin assignor to said Paul. Filed June 15, 1893. Serial No. 477,634. (No model.)

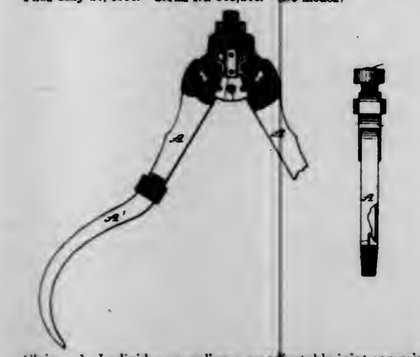


Claim.—1. In a drying-machine for drying paper or other material in combination with a series of revolving drying-cylinders and an ironer moving with the cylinders, a diaphragm or partition so placed as to be between and to separate the material to be dried and the ironer while they are passing between the cylinders, whereby the vapor that rises from the one is prevented from coming into contact with the other, substantially as and for the purposes set forth.

2. In a drying-machine for drying paper or other material, in combination with a series of revolving drying-cylinders and an ironer moving with the cylinders, a diaphragm or partition made of material which is a good conductor of heat so placed as to be between and to separate the material to be dried and the ironer whereby the vapor that rises from the ironer while they are passing between the cylinders is prevented from coming into contact with the material to be dried, while some of the heat from the ironer and the vapor is transmitted to the material to be dried, all substantially as and for the purposes set forth.

3. In a drying-machine for drying paper or other material in combination with a series of revolving drying-cylinders and an ironer moving with the cylinders, an arched diaphragm or partition so placed as to be between and to separate the material to be dried and the ironer while they are passing between the cylinders and provided with drains or gutters, whereby the vapor which rises from the ironer is prevented from coming into contact with the material to be dried, and the moisture deposited on the diaphragm is caused to run off through the drains, substantially as and for the purposes set forth.

571,788. CALIPERS. JOHN N. PEAVEY, Jr., Ashland, N. H. Filed May 27, 1896. Serial No. 593,200. (No model.)

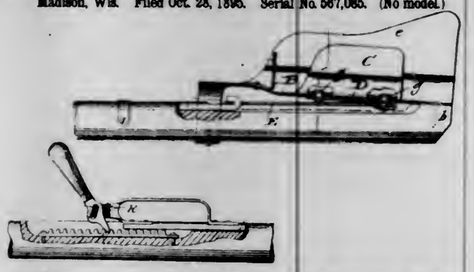


Claim.—1. In dividers or calipers, an adjustable joint comprising independently-pivoted legs provided with a segment of a spur-pinion within which the pivot of each is coöcentric, a threaded stud adapted for longitudinal movement between the pinion portions of said legs, a double rack secured to said stud and engaging the pinions of said legs, and a nut threaded to stud for adjusting the same.

2. In dividers or calipers, an adjustable joint comprising a yoke-piece carrying independently-pivoted legs provided with a segment of a spur-pinion within which the pivot of each is concentric, a threaded stud adapted for longitudinal movement between the pinion portions of said legs, a double rack engaging the pinions of said legs and secured to said stud, and a nut resting in slots formed in said yoke and threaded to said stud for adjusting the same.

3. In dividers or calipers, an adjustable joint comprising a yoke-piece carrying independently-pivoted legs having each a segment of a spur-pinion within which the pivot is concentric, a threaded stud adapted for longitudinal movement between the pinion portions of said legs, a double rack engaging the pinions of said legs and secured to said stud, and a pair of nuts threaded to said stud one resting in slots formed for the purpose in the yoke and the other placed above and adapted to be turned down upon said yoke, all substantially for the purpose set forth.

571,789. DEVICE FOR HANDLING BOOKS. HERMAN PFUND, Madison, Wis. Filed Oct. 28, 1895. Serial No. 567,085. (No model.)

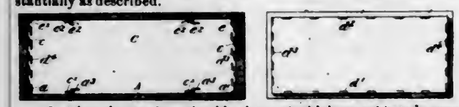


Claim.—1. In a book-handling device, the combination of a handle, a flanged plate rigidly secured to one end of the handle, a jaw having loose play on the plate opposite the flange of the same, a jaw-operating rod having free play longitudinally of said handle, a fulcrum-pin carried by the rod, a lever-dog having a slot engaged by the fulcrum-pin, and a rack on the aforesaid handle for the engagement of the lever-dog.

2. In a book-handling device, the combination of a handle, a flanged plate rigidly secured to one end of the handle, a jaw having loose play on the plate opposite the flange of the same, a jaw-operating rod adjustable longitudinally of said handle, a grip on the lower end of the rod provided with longitudinally-extending parallel ears, a fulcrum-pin uniting the ears, a lever-dog having a slot engaged by the fulcrum-pin, and a rack on the aforesaid handle for engagement of the lever-dog.

571,790. KNOCKDOWN BOX. THEOPHILE J. B. PITIOT, Marseilles, France. Filed Apr. 3, 1896. Serial No. 586,052. (No model.) Patented in France Aug. 7, 1895, No. 249,377.

Claim.—1. A knockdown box each section of which is provided with hooks extending from the ontside, where the hooks are headed, to the inside, where they are bent at right angles, the shank of each hook being provided with devices to prevent it from turning, substantially as described.



2. A knocknown box, the side pieces of which are rabbeted around their edges and provided with hooks extending through from the ontside, where they are headed, along the inner edges of the rabbets, to the inside, where they are bent at right angles, the top, bottom, front and back pieces of said box being seated in the rabbets of the side pieces, and having hooks engaging with the hooks of said side pieces.

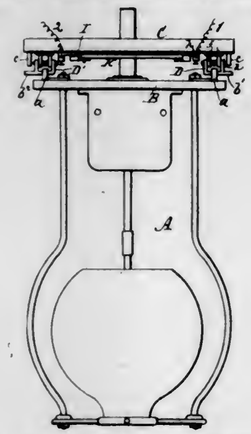
3. A knockdown box in which the bottom, the side pieces and the front and back pieces are detachably secured by interlocking hooks, and in which the top is provided with hooks at opposite side edges adapted to engage with hooks in the side pieces of the box, and which is also provided with rotatable hooks extending through from the outside, where they are headed, to the inside, where they are bent at right angles, and adapted to engage with hooks on the back piece when turned.

4. A knockdown box in which each section is provided with a hook arranged in a recess adapted to engage with another hook also arranged in a recess.

5. A knockdown box in which the sections are mitered and recessed with hooks extending into recesses in the mitered edges of the section.

6. A knockdown box having battens at the corners each provided with a series of hooks extending from the outside of the box, where they are headed, to the inside of the battens, where they are bent at right angles and interlock, said interlocking portions of the hooks being arranged in recesses intervening between the battens and the sides of the box.

571,791. SWITCH FOR ELECTRIC LAMPS. HENRY R. QUIMBY, Rochester, N. Y. Filed Dec. 4, 1895. Serial No. 571,072. (No model.)

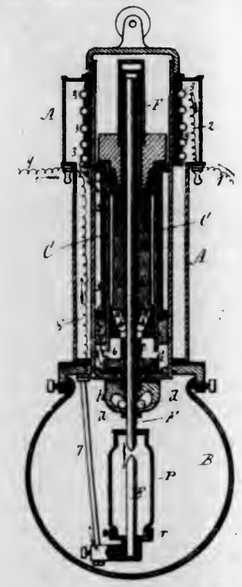


Claim.—1. In an electric-lamp switch, the combination, with the lamp-board B and hanger-board C, of the yokes D D′ pivoted to the hanger-board so as to turn up and down; the springs *g g* for forcing the yokes upward; the contact-pins *c c′* resting in line with the yokes and against which the yokes strike; and the open hooks *a a* attached to the lamp-board and engaging with the yokes and drawing them down from contact with the pins; as shown and described and for the purpose specified.

2. In an electric-lamp switch, the combination of the two metallic plates E E′ attached to the hanger-board; the spring yokes D D′ pivoted thereto; the contact-pins *c c′* resting in line therewith; the hooks *a a* attached to the lamp-board engaging with the yokes and drawing them away from the pins; the two metallic plates G G′ attached to the lamp board; the two arms H H′ pivoted thereto; the rod K connecting the arms; and the two sets of contact-plates *k k′* and *l l′* with which the arms connect when swung in opposite directions, thereby changing the circuit as described.

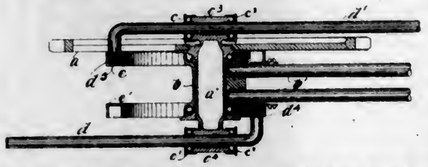
571,792. ELECTRIC-ARC LAMP. HENRY R. QUIMBY, Rochester, N. Y. Filed Mar. 12, 1896. Serial No. 582,851. (No model.)

Claim.—1. In an electric lamp the combination of a tubular magnet, a cylindrical armature resting therein and provided with a central passage of greater diameter than the carbon so that the carbon will not come in contact with the armature, a set of non-conducting balls resting in inclines in the armature, clamping the carbon, a stop below the balls entering the end of the armature and raising the balls when the armature is lowered, a cap below the armature and insulated therefrom, and a set of conducting-balls resting on slight inclines in the cap and bearing against the carbon, the whole so arranged that the two sets of balls center the carbon and hold it from contact with the magnet, and the lower set of balls serve as conductors to convey the current to the carbon at its lower end, thereby preventing any circuit between the carbon and the armature above the lower set of balls, as herein shown and described.



2. In an electric lamp the combination with the transparent shade or globe P, provided with the fixed carbon E, and having the carbon F movable freely through its top, of the base *r* to which the shade or globe is attached, and the rod 7 supporting said base and allowing an adjustment of the base up and down thereon in order to adjust the lamp to proper relative positions with the ends of the carbons, said rod also forming a conductor, as herein shown and described and for the purpose specified.

571,793. BICYCLE. JOHN RAU, Chicago, Ill., assignor to Frank L. Salisbury, John E. Salisbury, and Clarence E. Brinckerhoff, same place. Filed Jan. 28, 1895. Serial No. 536,405. (No model.)



Claim.—In a bicycle, the combination with the frame thereof and the driving-shaft, of cylindrical guideways on the ends of the said shaft, annular rings secured to the frame intermediate the said guideways, said rings being arranged eccentrically to the driving-shaft and being provided with grooves in their outer faces, pedal-levers passing slidingly through the guideways and having their ends, opposite to those which carry the pedals, bent inwardly, a block mounted upon said bent end of each lever and curved to correspond with the curvature of the grooves in the rings, and seating within said groove, said blocks being provided with recesses d^7 in their opposite faces and adjacent to their opposite ends, antifriction-rollers d^8 seated in said recesses and bearing upon the walls of the grooves of the rings, antifriction-balls arranged within the cylindrical guideways at opposite ends thereof and bearing upon the pedal-levers, and dust-proof caps upon the ends of said guideways and inclosing the said balls and through which caps the pedal levers slidingly pass, as specified.

571,794. DEVICE FOR REMOVING COVERS OF CANS OR OTHER RECEPTACLES. GEORGE J. RECORD, Conneaut, Ohio. Filed Apr. 28, 1896. Serial No. 589,383. (No model.)



Claim.—1. In combination with a receptacle having a removable cover, a lever arranged to remove the said cover, and a fulcrum which is pivoted to the body of the said receptacle independently of the bail and any other part and which is arranged to fold against the said receptacle when the latter is carried or at rest and when the said fulcrum is not immediately needed for opening the can substantially as set forth.

2. In combination with a receptacle or package, a lever arranged to lift the cover thereof and a pivoted fulcrum for said lever, the latter being shaped to fold on the cover of the said can and aid in holding it in place substantially as set forth.

3. In combination with a receptacle and its removable cover, a lever arranged to lift the said cover, and a fulcrum turning up for use or down to be folded away, the pivotal motion of the said fulcrum being in the same plane as that of the said lever and presenting the top of the said fulcrum thereto substantially as set forth.

4. A fulcrum having the ordinary form of the body or frame of a buckle pivoted to the body of a receptacle or package, in combination with a loop-form lever pivoted to the cover thereof, said lever being constructed with a bend or elbow to fit over the said fulcrum and hold it in operative position substantially as set forth.

5. A lever pivoted to the cover of a receptacle or package and having a bend D^8 formed therein, in combination with a fulcrum pivoted to the body of said receptacle or package and arranged to fit into the said bend or elbow, the said fulcrum being bent and extended to fit over the said cover substantially as set forth.

6. A receptacle provided with a cover a lifting-lever and a fulcrum for said lever, the latter being adapted to aid in holding the cover on said receptacle when not in position to aid the said lever in lifting.

571,795. DOUP-HEDDLE FOR LENO-WEAVING. WILLIAM H. REDDING, Worcester, Mass. Filed Mar. 10, 1896. Serial No. 582,672. (No model.)



Claim.—1. As an improved article of manufacture, a heddle having the doup-wire combined therewith, as described, said doup being mounted to move longitudinally, its looped end guided through the double dye, formed in the central part of the heddle, and the lower end of said doup joined by a loose sliding connection or running clasp with the lower part of the heddle-stem, substantially as and for the purpose set forth.

2. A heddle formed of wire twisted to form a double eye and obliquely offset at its center, and having a movable doup mounted thereon, the doup-wire folded to form a top loop, its two strands passed through the respective openings of the heddle-eye, and the lower end of said doup-wire loosely clasped about the heddle-wire to move freely thereon, for the purpose set forth.

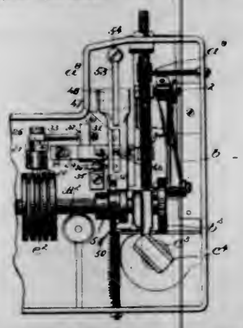
3. The combination, of the heddle, the doup formed of wire mounted thereon, the heddle forming a guide for the foot of the doup in its upward and downward movement relative to the heddle, and a weighting device or bar disconnectedly engaging the foot of the doup for normally depressing the same, substantially as set forth.

4. The heddle having the longitudinally-movable doup mounted and guided thereon, the foot of said doup clasped about the heddle-wire, in combination with a depressing-bar extending through the harness, carried in the same frame with the heddle, and resting upon or engaging the foot of said doup, guides in connection with the har-

ness frame carrying the ends of said bar, and springs combined with said guides for acting upon said bar, substantially as set forth.

571,796. SEWING-MACHINE FOR FINISHING BUTTONHOLE-PIECES.

JOHN REECE, Boston, Mass.; Marietta Reece and Francis A. Shea administrators of said John Reece, deceased. Filed Oct. 22, 1891. Serial No. 409,533. (No model.)



Claim.—1. In a sewing-machine for stitching thrum ends, the following instrumentalities, viz: stitch-forming mechanism, including a needle having only a right-line movement; a thrum-gatherer; actuating mechanism to vibrate said thrum-gatherer laterally with relation to the line of stitching; a throat-plate having a groove; a bender adapted to enter said groove and bend the material therein; means to actuate said bender; a feeding device, and means to impart to said feeding device in addition to its regular feeding movement a lateral movement first in one and then in the opposite direction following the movement of the thrum-gatherer to operate, substantially as described.

2. In a sewing-machine for stitching thrum ends, the following instrumentalities, viz: stitch-forming mechanism; a feeding device; means to operate it to feed the goods forward, and means to vibrate said feed device laterally to the line of forward feed; a thrum-gatherer; actuating mechanism to vibrate said thrum-gatherer laterally with relation to the line of stitching; a throat-plate having a groove; a bender adapted to enter said groove and bend the material therein; devices to actuate said bender; a presser-foot; and a throat-plate serrated or notched as at $a^{\times}$ immediately under the presser-foot, the latter acting to hold the material and prevent it slipping backwardly during the action of the bender, substantially as described.

571,797. HARNESS ATTACHMENT FOR VEHICLES.

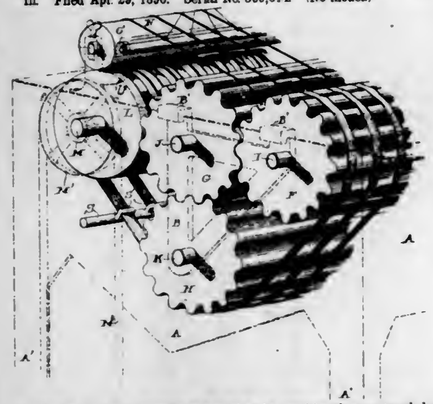
JOHN REEL, French Camps, Miss., assignor of one-half to J. A. Sanderson, same place. Filed Apr. 3, 1896. Serial No. 586,116. (No model.)



Claim.—The combination with a pair of thills, of a curved holdback extending across the space between the same, clamps engaging the thills and provided with back portions 5 arranged at the inner faces of the thills, arms 3 pivoted to the back portions 5, extending rearward therefrom and engaging the same, whereby they are prevented from swinging upward beyond a horizontal position, said arms being secured to the ends of the holdback and being capable of swinging downward below a horizontal position, and springs mounted on the back portions 5 of the clamps, located above the arms, connected with the latter, substantially as described.

571,798. STARCHING-MACHINE.

VALLEY C. REGAN, Rockford, Ill. Filed Apr. 29, 1896. Serial No. 589,614. (No model.)



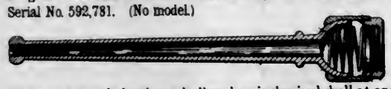
Claim.—1. In a starching-machine, in combination, a starch-box, a series of corrugated intermeshing starching-rollers mounted therein, a series of transverse endless guide-tapes driven by and traveling with the corrugated starching-rollers, a lower, and an upper, wringer-roller, the former mounted in, and the latter upon, the starch-box, and a series of transverse endless guide-cords driven by one of the corrugated starching-rollers and traveling therewith and with the wringer-rollers, and a series of guide-eyes corresponding in number with the guide-cords, which cords pass through and are guided by said guide-eyes, substantially as and for the purpose specified.

2. In a starching-machine, in combination, a starch-box, a series of corrugated intermeshing starching-rollers mounted therein, a series of transverse endless guide-tapes driven by and traveling with the corrugated starching-rollers, a series of tape guide-eyes corresponding in number with the guide-tapes, a lower, and an upper, wringer-roller, the former mounted in, and the latter upon, the starch-box, and a series of transverse endless guide-cords driven by one of the corrugated starching-rollers and traveling therewith and with the wringer-rollers; substantially as and for the purpose specified.

3. In a starching-machine, in combination, a starch-box, three corrugated, intermeshing starching rollers, trunnions for the rollers, a bracket suspended from each side of the starch-box, having bearings for the trunnions, a wringer-roller mounted in bearings in the starch-box, a wringer-roller mounted above the box, a series of transverse endless guide-tapes extending around two of the corrugated rollers and the lower wringer-roller and beneath the remaining and intermediate corrugated roller, a series of guide-eyes for the guide-tapes, a series of transverse endless guide-cords extending around the aforesaid intermediate corrugated roller and the upper wringer-roller, and a series of guide-eyes for the guide-cords substantially as and for the purpose specified.

571,799. HOSE-NOZZLE.

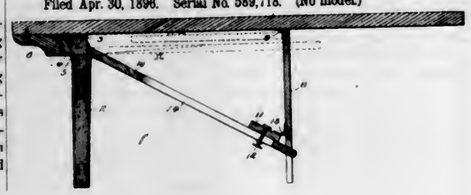
ADRIAN J. REYNOLDS, Nashville, Mich., assignor of one-half to W. S. Powers, same place. Filed May 23, 1896. Serial No. 592,781. (No model.)



Claim.—A nozzle having a hollow hemispherical shell at one end, in combination with a collar conforming upon its inner surface to the exterior contour of said shell, a bushing removably fitted in said collar, and a spring interposed between the bushing and the nozzle and having its end coils reduced in diameter to fit within the shell of the nozzle, substantially as described.

571,800. FOLDING IRONING-TABLE.

JAMES B. RYLANDER, Lockhart, Tex., assignor of one-half to R. Burks Williams, same place. Filed Apr. 30, 1896. Serial No. 589,718. (No model.)

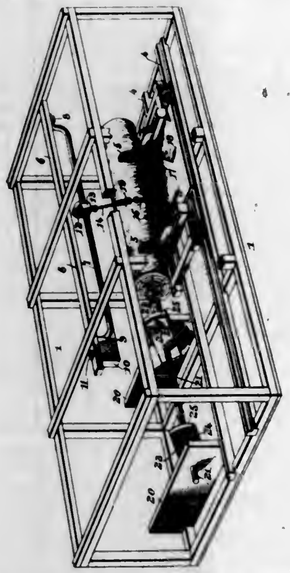


Claim.—1. In an ironing-table, the combination of an ironing-board, a transverse cleat secured to the rear portion thereof, means for supporting the rear end of the ironing-board, a leg hinged to the ironing-board in advance of the cleat and provided at its bottom with an opening, a block hinged to the leg at the opening thereof and provided with a fastening device, and an inclined brace hinged at its upper end to the cleat and provided with a longitudinal slot receiving said fastening device, whereby the brace is adjustably connected with the leg, substantially as and for the purpose described.

2. In an ironing-table, the combination of an ironing-board provided at its lower face with a transverse cleat, a cross-bar hinged to the transverse cleat and arranged to abut against the rear face thereof, rear legs secured to the cross-bar and arranged at the ends of the transverse cleat, a pivoted button mounted on the ironing-board and arranged to engage the cross-bar to lock the rear legs in their folded and operative positions, a front leg hinged to the ironing-board and provided at its bottom with an opening and an inclined brace bingedly connected with the ironing-board and adjustably secured to the front leg at the opening thereof, substantially as described.

571,801. LOG-TURNER.

DANIEL J. SALTSMAN, Memphis, Tenn. Filed Aug. 19, 1896. Serial No. 603,251. (No model.)



Claim.—1. In a log-turner for sawmills, the combination with the sawmill log-carriage; of a log-turning chain carrying a hook at its lower end for engagement with the log on the carriage and having a traveling support at its upper end, and a suitably-arranged stop to check the movement of the traveling support of the chain, substantially as set forth.

2. In a log-turner for sawmills, the combination with the sawmill log-carriage; of a track-rail arranged longitudinally above the carriage and provided with a stop at one end, and a log-turning chain carrying a hook at its lower end for engagement with the log on the carriage, and having a traveling support at its upper end working on said track-rail, substantially as set forth.

3. In a log-turner for sawmills, the combination with the sawmill log-carriage, of a log-turning chain carrying a hook at its lower end for engagement with the log on the carriage and having a traveling support at its upper end, said log-turning chain being provided intermediate of its ends with a spring-section, and a suitably-arranged stop for the traveling support of the chain, substantially as set forth.

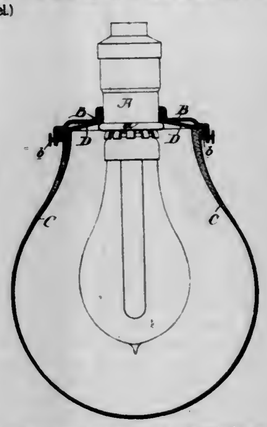
4. In a log-turner for sawmills, the combination with the sawmill log-carriage; of a track-supporting beam arranged longitudinally above the log-carriage, a longitudinal track-rail arranged below the beam and fastened thereto, said track-rail being provided at one end with a curved stop portion, a rigid brace block secured against the curved stop portion of the track-rail, a log-turning chain carrying at its upper end a trolley-wheel traveling on said track and provided intermediate of its ends with a spring-section, and a cant-hook attached to the lower end of the chain and provided with an offstanding handle-arm adapted to be temporarily fastened to the log-carriage when not in use, substantially as set forth.

5. In a log-turner for sawmills, the combination with the sawmill-carriage; of a log-turning chain having a traveling support for its upper end and carrying at its lower end a cant-hook, a suitably-arranged stop to check the movement of the traveling support of the chain, and oscillatory skid-knees movably supported at one side of the ways for the log-carriage beyond said stop, substantially as set forth.

6. In a log-turner for sawmills, the combination with the sawmill log-carriage; of a log-turning chain having a traveling support for its upper end and carrying at its lower end a cant-hook, a suitably-arranged stop to check the movement of the traveling support of the chain, a horizontal adjusting-shaft arranged parallel with the movement of the log-carriage beyond said stop, and oscillatory or dropping skid-knees mounted on said shaft and provided with metal-faced rounded contact ends, substantially as set forth.

571,802. GLOBE ATTACHMENT FOR ELECTRIC LAMPS.

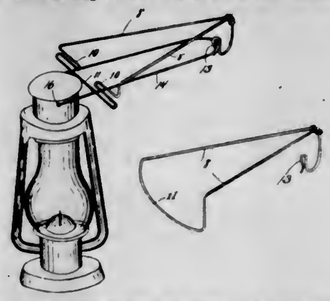
EDWARD SCHRANTZ, St. Louis, Mo. Filed Aug. 15, 1896. Serial No. 602,830. (No model.)



Claim.—The combination with an electric-lamp socket, which is formed with a beading at its lower end, of a globe-holder secured to said socket above the beading, a wire-gauze disk formed with a central opening which is capable of being expanded to pass over said beading and close around the socket above the beading, whereby, the beading supports the center of the disk, and a globe which is supported by said globe-holder, said globe and globe-holder clamping the edges of the disk between them; substantially as described.

571,803. SUPPORT FOR LANTERNS.

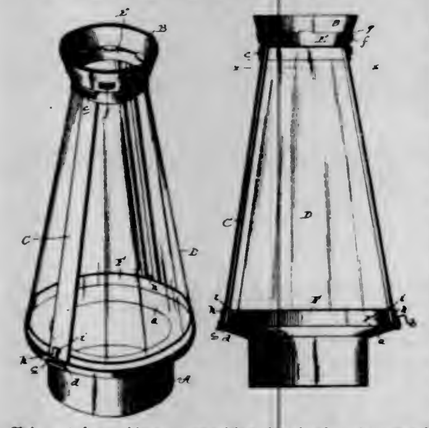
EUGENE D. SEGAR, Randolph, Vt. Filed Aug 26, 1896. Serial No. 603,963. (No model.)



Claim.—1. The herein-described support for lanterns which is adapted to be connected with a wagon-body, said support consisting of two side arms which are designed to be connected with the bottom of the wagon-body, and which are connected at the front end with a cross-bar which projects below said side arms, and said support being provided at the end opposite said cross-bar with a hook, the ends of said arms which are connected by the cross bar being also provided with inwardly-directed loops below which the cross-bar is placed, substantially as shown and described.

2. The herein-described support for a lantern, which is composed of spring-wire which consists of the two side arms 8, which are connected at one end, and provided at the opposite end with inwardly-directed loops below which is a cross-bar, said support being also provided at the end opposite said loops and cross-bar, with a hook with which the bail of the lantern is adapted to be connected, substantially as shown and described.

571,804. LAMP-CHIMNEY. EDWARD SEGASSIR, New Orleans, La. Filed Aug. 20, 1896. Serial No. 603,371. (No model.)



Claim.—A lamp-chimney comprising the circular sheet metal base having the outwardly and upwardly directed flanges *a*, *b*, the sheet-metal top ring, the connecting-plates having the grooves *c*, at their opposite edges and also having tongues at their lower and upper ends passed through apertures in the base and top ring and bent against the same, isinglass arranged within the top ring and the flange *b*, of the base and in the grooves of the connecting-plate, and rings arranged within the top ring and the flange *b*, of the base and having tongues passed through apertures in the top ring and connecting-plates respectively and bent against the same; said rings being adapted to retain the isinglass in position, substantially as and for the purpose set forth.

571,805. TOBACCO-PIPE. GUSTAV STARK, New York, N. Y., assignor to Marianna Stark, same place. Filed Apr. 28, 1896. Serial No. 589,441. (No model.)

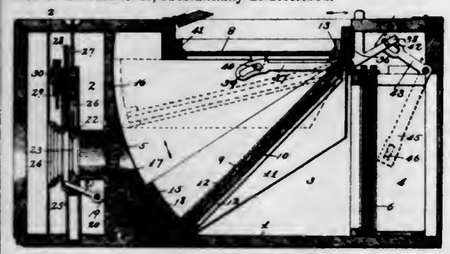


Claim.—A smoking-pipe consisting of the combination of the usual bowl, a stem portion having a cylindrical opening extending therethrough from end to end, and into which the smoke-outlet of the bowl enters, the mouthpiece having a stem that occupies such cylindrical opening, being of reduced diameter in its central portion and closely fitting the cylindrical passage at points adjacent to the mouthpiece and to the end of the stem, and a clamp-nut engaging a thread upon the projecting end of the stem to clamp the parts in position.

571,806. CAMERA. PHILIP K. STERN, St. Louis, Mo., assignor to the Stern Manufacturing Company, same place. Filed Feb. 10, 1896. Serial No. 578,826. (No model.)

Claim.—1. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera, and means for transferring an image from the focusing-screen of said camera to the focal plane thereof; a shutter for controlling the exposure of the sensitized material, and a diaphragm-stop normally out of register with the optical axis of the said camera, said diaphragm-stop to coöperate with said shutter whereby upon the operation of said shutter the diaphragm-stop shall come into register with the optical axis as aforesaid, substantially as described.

2. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera; a shutter for controlling the exposure of the sensitized material, a lever for swinging the aforesaid mirror and suitable power mechanism for operating the said shutter; said power mechanism to be set by the operation of the said lever, substantially as described.



3. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera and means for transferring an image from the focusing-screen of said camera to the focal plane thereof; a diaphragm-stop normally out of register with the optical axis of said camera and a lever for introducing said stop simultaneously with the transfer of the image from the focusing-screen to the focal plane, substantially as described.

4. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera, and means for transferring an image from the focusing-screen of said camera to the focal plane thereof; a diaphragm-stop and means for introducing said diaphragm-stop simultaneously with the transfer of the image from the focusing-screen to the focal plane of said camera and means also for throwing said diaphragm-stop out of register with the optical axis of said camera after said mirror has been swung into a normal position, substantially as described.

5. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera, and means for transferring an image from the focusing-screen of said camera to the focal plane thereof; a lever and a diaphragm and a suitable controlling shutter mechanism both operated by the said lever simultaneously with the transfer of the image, substantially as described.

6. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera, and a focusing-screen set at right angles to the focal plane of said camera, of a diaphragm carrying a diaphragm-stop and shutter, said diaphragm, diaphragm-stop and shutter being normally out of register with the optical axis of the said camera, and of a common lever to transfer the image from the focusing-screen to the focal plane and introduce the aforesaid diaphragm, diaphragm-stop and shutter to register with the optical axis of said camera, substantially as described.

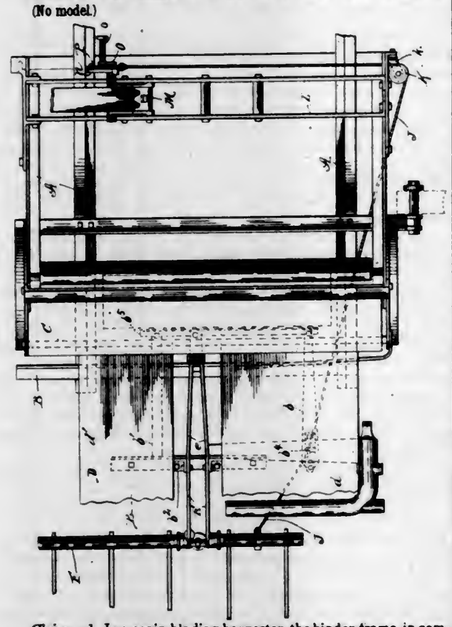
7. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of the said camera and a focusing-screen set at right angles to the focal plane of said camera of suitable controlling shutter mechanism for controlling the exposure of the sensitized material and of suitable power actuating mechanism for operating said shutter, and of a common lever to transfer the image from the focusing screen to the focal plane and set said controlling shutter mechanism, substantially as described.

8. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera and a focusing-screen set at right angles to the focal plane of said camera, a shutter for controlling the exposure of the sensitized material, a diaphragm-stop normally out of register with the optical axis of the said camera, suitable power mechanism for operating said shutter, and a common lever to transfer the image from the focusing-screen to the focal plane, and for the introduction of the aforesaid diaphragm-stop to register with the optical axis of said camera and to shut the shutter mechanism, substantially as described.

9. In a photographic camera having an internal mirror normally inclined at an angle to the optical axis of said camera, and a focusing-screen set at right angles to the focal plane of said camera, and means for transferring an image from the focusing-screen of said camera to the focal plane thereof, of a lever for swinging the aforesaid mirror, of a diaphragm carrying a shutter, and diaphragm-stops, said diaphragm being adapted to uncover the lens-aperture of said camera, and of a lever adapted to engage said diaphragm actuated by the operation of the aforesaid mirror, whereby, upon the swinging of the said mirror into its normal position, said lever shall throw the said diaphragm so as to uncover said lens-aperture, and whereby upon swinging the mirror out of its normal position said diaphragm shall cover the lens-aperture, substantially as described.

10. In a photographic camera the combination of a box having an internal diagonally-disposed mirror, a plate having an aperture at one end of said box and a lens situated thereat, a receptacle having an opening opposite said aperture being adapted to receive a sensitized material, a focusing screen located on a side of said box, a diaphragm-stop which shall lie normally out of register with said lens aperture and a shutter which shall normally uncover said lens-aperture, of a lever adapted to swing the aforesaid mirror, said lever to cooperate with the aforesaid diaphragm-stop and aforesaid shutter, substantially as described.

571,807. BUNDLE-CARRIER FOR HARVESTERS. BENJAMIN F. STEWART, West Pullman, Ill. Filed July 20, 1895. Serial No. 556,574. (No model.)



Claim.—1. In a grain-binding harvester, the binder-frame, in combination with a forked or two-part bundle-carrier-supporting arm secured to said frame, attached to the upper support therefor by a sliding connection and extending outward some distance beyond the binder-frame proper, a bundle-carrier arranged outside of and below the binder-frame, and a jointed mechanism for connecting the carrier to the outer or lower ends of the said forked support, substantially as described.

2. In a grain-binding harvester, the binder-frame, in combination with a forked or two-part strap, G, connecting the binder-frame to its upper support by a sliding connection and extended outward some distance beyond the binder-frame and provided at their extremities with downward and outward bends, *g*, and mechanism for fastening the bracket H to the outer projecting ends of the fork-arms, substantially as described.

3. In a grain-binding harvester, the binder-frame, in combination with a supplemental two-part or forked supporting-arm connecting the binder-frame to its upper support by a sliding connection, arranged between the end strap-supports thereof and having the outer or lower ends of the two parts extended some distance beyond the binder-frame, which are bent at their extremities to form downwardly-curved ends a bundle-carrier mounted with side lugs, A', filling the space between the said fork ends, and bolts, A^2, passing through the fork-arms, the bracket-arm and side lugs thereon, whereby the carrier is securely connected to and supported by the fork-arms, substantially as described.

4. In a grain-binding harvester, a binder-frame laterally adjustable upon its supports; a two-part supporting-arm E attached to the binder-frame, and at one end connected to the binder-frame support by a sliding connection, and at the other end supporting the bundle-carrier, the space between the two parts of the arm E being adapted to leave room for the working of the needle and compressor-arm, substantially as described.

5. In a grain-binder, a binder-frame; a two-part deck resting upon and secured to the upper faces of the lower supporting-bars of the binder; a two-part connecting-arm, supporting the bundle-carrier, the members of which are disposed approximately parallel to each other, leaving a space between them for the passage of the needle, and at the crossing of the lower supporting-bar of the binder rising above the deck, whereby the center of the gavel is supported above the deck while being formed, bound and discharged.

571,808. HARNESS ATTACHMENT. CHARLEY H. STOODY, Ripley, Ohio. Filed Apr. 30, 1896. Serial No. 589,708. (No model.)



Claim.—1. In a check-hook, a box-loop at the free end of the bill, and a latch located in front of the box-loop and forming with the front portion of the bill a space corresponding with the box-loop, and having its rear end extending across the space of the said box-loop, the free end of the latch projecting into the space formed between the bill and shank of the check-hook, substantially as set forth.

2. In a check-hook, a box-loop provided at the free end of the bill, outwardly extending ears located in front of the box-loop, a latch having pivotal connection with the said ears and forming with the front portion of the bill a space corresponding with the box-loop, said latch having its rear end projecting across the space of the said box-loop and having its free end extending into the space formed between the bill and shank, and a spring for normally holding the latch in proper position substantially as and for the purpose set forth.

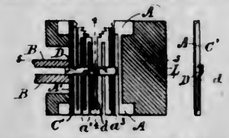
3. In combination, a check-hook having a box-loop at its free end which is made flaring, and a spring-actuated latch having pivotal connection with the check-hook and having parallel arms which extend along the sides of the box-loop and are adapted to have a releasing-strap connected therewith, substantially in the manner and for the purpose set forth.

4. In combination, a check-hook having a box-loop at its free end and parallel ears, a latch having pivotal connection with the ears and extending into the space of the box-loop, and formed with parallel arms which extend along the sides of the box-loop and in the rear of the aforesaid ears, and are adapted to have a releasing-strap connected therewith, substantially as and for the purpose set forth.

5. In combination, a check-hook having parallel ears and a box-loop at its free end, a latch having pivotal connection with the ears and formed with parallel arms which extend along the sides of the box-loop, a cross-bar connecting the parallel arms, and a spring mounted upon the cross-bar and exerting a pressure against the box-loop to hold the latch closed, substantially as set forth.

6. In combination, a check-hook having parallel ears and a box-loop at its free end, a latch having pivotal connection with the said ears and having parallel arms to extend along the sides of the box-loop, cross-bars extending in parallel relation and connecting the end portions of the parallel arms, a spring mounted upon the upper cross-bar and having its terminal portions engaging with the box-loop and lower cross-bar, a resetting-strap adapted to operate through the box-loop and provided with a button, and a releasing-strap having connection with the lower cross-bar of the latch, substantially as set forth for the purpose described.

571,809. AUTOMATIC JUSTIFIER. ALFRED W. STORM, New York, N. Y., assignor of one-eighth to Claude S. Farrington, same place. Filed Feb. 21, 1896. Serial No. 580,235. (No model.)



Claim.—1. In a justifier adapted for use with a line of matrices in casting linotypes, the combination, with a flat body having a recess upon one side with inclined end C′ adjacent to the edge of the body, of a tongue D arranged transversely to such edge and provided with a sloping face D′ fitted to the front incline C, the tongue being constructed and operated to close the mouth of the mold continuously as it is retracted into the recess, substantially as herein set forth.

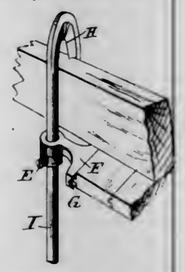
2. In a justifier adapted for use with a line of matrices in casting linotypes, the combination with a flat body having a recess upon one side with front incline C′ adjacent to the edge of the body, of a tongue

D arranged transversely to such edge and provided with a sloping face D' fitted to the front incline C', and means for holding the tongue normally above the recessed side of the body-plate with its end projected over the edge, as and for the purpose set forth.

3. In a justifier, the combination with a flat body having a recess upon one side with front incline C' adjacent to the edge of the body, of a tongue D arranged transversely to such edge and provided with a sloping face D' fitted to the front incline C', and spring-supports holding the tongue upon the body normally lifted from the recess with its inclined face projecting from the edge of the body, as and for the purpose set forth.

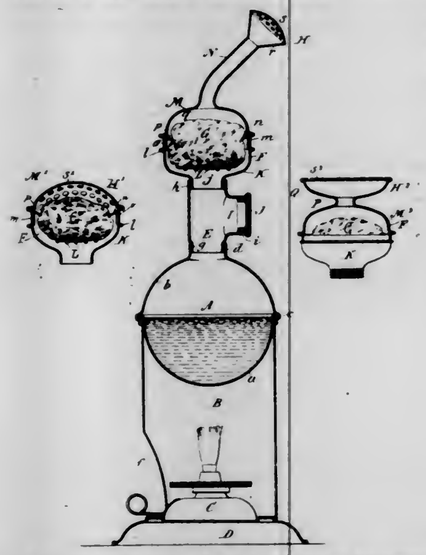
4. In a justifier, the combination, with a flat body-plate having the recess C extended along one edge with front incline C' adjacent to such edge, of the tongue D extended transversely to such edge with its outer side normally parallel to the body-plate and having the spring-arms E secured by slotted feet in the bottom of the recess, to hold the end of the tongue normally projected from the edge of the plate, as and for the purpose set forth.

571,810. FLOORING AND CEILING LEVER. AMOS C. TUBBS, Trading Post, Kans. Filed July 25, 1895. Serial No. 557,161. (No model.)



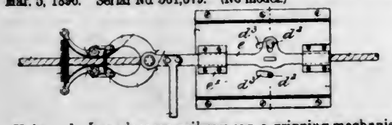
Claim.—The combination of a lever I, having a hook at one end the inside edge of the hook being sharpened, an arm F, having at one end a hole through which the lever passes freely and at its other end a groove B, to engage the work, with a collar adjustable along said lever I to limit the motion of said arm F.

571,811. VOLATILIZER. JAMES H. VALENTINE, Chatham, N. J. Filed Mar. 20, 1893. Serial No. 466,813. (No model.)



Claim.—In a volatilizer the boiler A and reservoir F in combination with the neck E connected to said boiler and having open end A and branch I for connection with said reservoir, and the cap J closing the open ends of said neck, whereby said reservoir can be applied to said neck at either the top or side thereof.

571,812. GRIPPING MECHANISM FOR CARS. WILHELM VOGT, Philadelphia, Pa., assignor to Abraham A. Landis, Collegeville, Pa. Filed Mar. 5, 1896. Serial No. 581,879. (No model.)



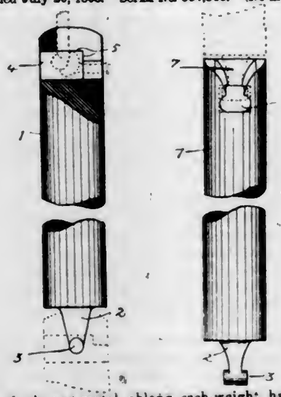
Claim.—1. In a pleasure-railway car, a gripping mechanism provided with independent friction-jaws adapted to rest upon the cable prior to the gripping thereof, said independent friction-jaws adapted to control the grip mechanism and to prevent the same from operating when the car is moving at substantially greater speed than the cable, as and for the purposes described.

2. A gripping mechanism for pleasure railway cars, consisting of longitudinally-movable gripping-cheeks adapted to grip the cable, a longitudinally-movable rod secured to said cheeks and adapted to operate the same, and two spring-controlled friction-jaws carried by said rod and adapted to rest frictionally upon the cable, all arranged so that when the car is moving faster than the cable said friction-jaws and rod will be moved in one direction to open the gripping-cheeks and when the car and cable are moving at approximately equal speeds the jaws and rod are moved in an opposite direction to thereby close the gripping-cheeks upon the cable, substantially as and for the purposes described.

3. A gripping mechanism for pleasure-railway cars, consisting of two gripping-cheeks, a block supporting said cheeks and recessed to permit of the longitudinal movement thereof, a longitudinally-movable rod sliding on said block and secured at one end to said cheeks, two spring-controlled friction-jaws pivoted to the other end of the rod, and friction-rollers carried by said jaws adapted to rest upon the cable, all arranged so that when the car is moving faster than the cable said rollers will rotate and the jaws and rod will be moved in one direction to open the gripping-cheeks, and when the car and cable are moving at approximately equal speed, the rollers cease to rotate and the jaws and rod are moved in an opposite direction to close the gripping-cheeks upon the cable, substantially as and for the purposes described.

4. A gripping mechanism for pleasure railway cars, consisting of two gripping-cheeks, a block supporting said cheeks and recessed to permit of the longitudinal movement thereof, a longitudinally-movable rod sliding on said block and secured at one end to said cheeks, a leaf-spring adapted to shift said movable rod in one direction on said block, two spring controlled friction-jaws pivoted to the free end of the rod and adapted to rest upon the cable, all arranged so that when the car is moving faster than the cable, said jaws and rod will be moved against the tension of the leaf-spring to open the gripping-cheeks and when the car and cable are moving at approximately equal speed, the jaws and rod are moved by said leaf-spring to close the gripping-cheeks upon the cable, substantially as and for the purposes described.

571,813. SASH-WEIGHT. WILLIAM C. WALDA, Fort Wayne, Ind. Filed July 29, 1896. Serial No. 557,503. (No model.)



Claim.—1. A cast-metal oblong sash-weight having upon its lower end an axially-arranged T anchor-lug 2, flaring at its base as shown, and provided at its upper end with the transverse opening 4, extending to and beyond the center of the weight, for the purpose described, a laterally-elongated aperture or eye 6, upon the reverse side thereof communicating with the lower part of said aperture 4, and adapted to loosely admit the head 3 of the anchor 2, a centrally-located vertical slot 7, of a length equal to that of the said opening 4, but extending from the reverse side and having beveled sides flaring from the interior outwardly and contracted from the top downward and forming thereby the ledges 5, 5, adapted to secure the anchor-lugs of the adjacent interlocking sash-weight all as shown and for the purpose described.

2. A series of cast-metal oblong sash-weights of three and four pounds weight each, and each weight having upon its lower end an axially-arranged T anchor-lug 2, flaring at its base as shown, and provided at its upper end with a transverse opening 4 extending to and beyond the center of the weight for the purpose described, a laterally-elongated aperture or eye 6 upon the reverse side thereof, communicating with the lower part of said aperture 4 and adapted to loosely admit the head 3 of the anchor 2 as shown; a centrally-located vertical slot 7, of a length equal to that of the said opening 4 but extending from the reverse side and having beveled sides flaring from the interior outward and contracted from the top downwardly and forming thereby ledges 5, adapted to secure the anchor-lug of the adjacent interlocking sash-weight and for securing within said ledges a sash-cord all as shown and for the purpose described.

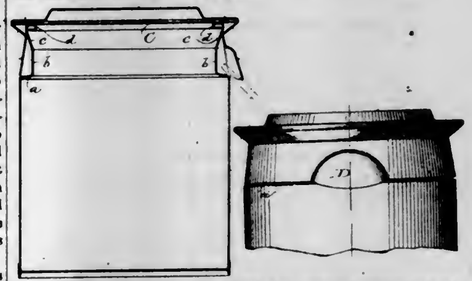
3. A cast-metal elongated cylindrical sash-weight having at its upper end an elongated slot open in front with its walls or sides and rear tapering and contracted downwardly from the top, and terminating in a transverse elliptical opening 6, as shown, having its longer diameter at right angles with the longitudinal axis of the weight-body, and its shorter diameter vertical and at right angles to its greater diameter, and having on the reverse side a transverse rectangular aperture 4, with its lower edge coincident with the lower edge of the said elliptical opening 6, and its sides coincident with the circumference of the opening 6 at its greatest diameter; the said openings communicating at a point about one-third of the diameter from the front of the opening 6, and the said opening 4 by the intersection of the overhanging walls of the slot 7, and the meeting of the interior end with the opening 6, forming ledges 5 and 5, as shown and described, and the upper slotted end of said weight being rounded on the front and rear as shown, and the said slotted opening and the opening 6 being adapted to admit the anchor end of a like weight, and the lower end of said weight having an anchor with a T-head, the said anchor being flaring at its base as shown, and adapted to be inserted in the elliptical orifice 6 of a like weight, and which being so inserted will securely hold the attached weight suspended and thereby forming a series as described and for the purpose stated.

4. A metallic oblong sash-weight made to be cast in a single piece without the use of a core in molding and casting, having at its lower end an anchor T-lug, and at its upper end a centrally-slotted vertical opening extending from the front rearward, to and beyond the center of the weight, and opening at its lower end into a square or oblong aperture or opening extending from the rear to and beyond the longitudinal center of the weight, said described transverse opening having a greater width than the side walls of the slotted opening at the point of intersection and thereby forming horizontal ledges in said side walls and also communicating with another transverse opening extending from the reverse side rearward to the interior end of the first-described transverse opening, and intersecting the side walls of the slotted opening at a point below that of the intersection of the first described transverse opening with said side walls and thereby forming vertical ledges in said side walls at right angles to the said horizontal ledges and adjacent to the same, and the said slotted and transverse openings being adapted and arranged to receive the anchor-lug T of another like weight, and by the interlocking of the parts within the central part of said weight, upon said ledges, to securely but loosely connect the weights for use in a series for the purpose described and set forth.

5. An elongated cylindrical sash-weight, having at its upper end near the top a transverse opening extending about two-thirds of the diameter of the weight, as shown, and upon the diametrically opposite side an elliptical transverse opening; having its longer diameter at right angles with the longitudinal axis of the weight and terminating in the said opposite transverse opening; a longitudinal slot extending downwardly from the top of the weight and tapering inwardly and terminating in said opening; the said slot extending from the front backward about two-thirds the diameter of the cylinder, and at its lower end forming by its communication with the said transverse openings, ledges for the retention of the sash-cord in the longitudinal center of the cylinder, and at the lower end of said weight having a centrally-located anchor-lug as shown, adapted to engage centrally in the slotted upper end of a like weight, and by interlocking parts to securely but loosely connect the weights together, substantially as shown and for the purpose stated.

571,814. CLOSURE FOR VESSELS. FRANCIS A. WALSH, Milwaukee, Wis. Filed July 16, 1896. Serial No. 599,389. (No model.)

Claim.—1. A closure for vessels comprising a sheet-metal cover having a downward-extending flange, provided with an inward bend or contraction for contact with the exterior surface of the vessel to be closed on a single plane, said flange being free from contact with the vessel above and below said plane.



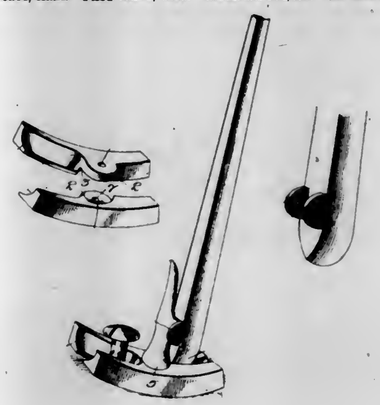
2. The combination with a vessel of a closure therefor, comprising a sheet-metal cover having a downward-extending flange provided with an inward bend or contraction, the diameter of the top of the said vessel being greater than that of the said cover-flange at the line of said inward bend or contraction, and the said cover-flange above and below the line or plane of said inward bend extending outwardly, free from contact with the side or wall of the vessel, whereby the closure is effected by springing the cover over the top of the vessel, and the said cover held tightly to place by the contact on a single horizontal plane between the said inward bend or contracted part of the cover, and the exterior surface of the said vessel.

3. The combination with a vessel having an exterior shoulder near one end and a flanged end extending upwardly and outwardly beyond the shoulder, of a closure therefor comprising a sheet-metal cover having a downward-extending flange bent or contracted inwardly for contact on a single horizontal plane with said outwardly-extending flange of the vessel, the diameter of the top of the latter being greater than that of the said cover-flange at the line of said inward bend or contraction, and said cover-flange being formed with an outward swell, whereby the closure is effected by springing the cover over the vessel-top, and the said cover held tightly to place by a wedging contact, but capable of instant release without injury to the cover by the action of a lever inserted beneath the said swell and fulcrumed on the said shoulder.

4. The combination with a vessel of a closure therefor comprising a sheet-metal cover having a spring-flange for wedging contact on a single horizontal plane with the vessel to be closed, a fulcrum-point on the vessel and a projection on the cover-flange adjacent to said fulcrum-point for enabling said cover to be released or sprung off without injury thereto by a suitable tool or lever.

5. A closure for vessels, comprising a sheet-metal cover of greater diameter than that of the vessel to be closed, and having a spring-flange extending inwardly, at an angle, to the line or point of contact with the side or wall of the vessel, and thence outwardly, whereby the said flange is free from contact with the said side or wall both above and below the said line or point of contact.

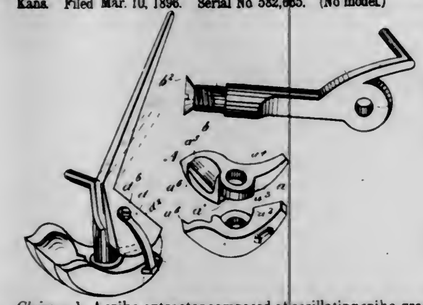
571,815. SPIKE OR BOLT PULLER. ARTEMUS WELSH, Lawrence, Kans. Filed Jan. 3, 1896. Serial No. 574,253. (No model.)



Claim.—1. The combination with opposing jaws provided with interlapping portions, of a fulcrum-post extending upward therefrom and having a pin which passes through the interlapping portions of the jaws and forms a common pivot therefor, and a lever having a wedged-shaped portion which enters between the jaws, substantially as described.

2. The combination with the opposing jaws formed with rocker bearing surfaces curving in coincident and regular arcs from front to rear, and also provided with interlapping portions, of a fulcrum-post having a pin which passes through said portions and forms a common pivot for both jaws, and a lever journaled on the fulcrum-post and having a wedge-shaped portion entering between the heel ends of the jaws, substantially as described.

571,816. SPIKE-EXTRACTOR. ARTEMUS WELSH, Lawrence, Kans. Filed Mar. 10, 1896. Serial No. 582,635. (No model.)

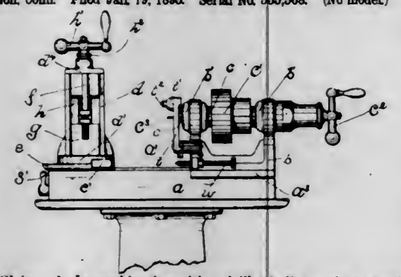


Claim.—1. A spike-extractor composed of oscillating spike-grasping jaws, and ears upon the opposite inner sides of said jaws adapted to overlap and provided with a vertical registering perforation, a vertical fulcrum-post, a pivot upon the lower end of said post upon which the jaws oscillate extending within the perforation in said ears and a lever having a recessed lower end portion pivotally connected with said fulcrum-post, and a rib having a downwardly-extended oppositely-inclined portion or wedge at its lower extremity adapted to engage with the opposing sides of the rear ends of said jaws, as and for the purpose described.

2. A spike-extractor composed of oscillating spike-grasping jaws, said jaws having curved bearing-surfaces and an intermediate hinged connection, a fulcrum-post, a lever having a recessed lower end portion pivotally connected with said fulcrum-post and a wedge at the extremity of the lower end of the recessed portion of said lever, and a laterally-extended bar on the said fulcrum-post, as and for the purpose described.

3. The combination in a spike-extractor with the oscillating hinged jaws of the vertical fulcrum-post, a recessed block pivotally connected with the upper end of the said post having a downwardly-extended rib, and a wedge at the lower extremity of said rib, and an upwardly and rearwardly deflected lever connected with the said block, lugs on the outer side and rear end portion of one of said jaws and a spring-plate connected at one end with the pivot on said fulcrum-post for said recessed block and having the other end retained between the lugs on the side of said jaw, substantially as and for the purpose described.

571,817. CENTERING-MACHINE. LOCIUS E. WHITON, New London, Conn. Filed Jan. 19, 1895. Serial No. 535,568. (No model.)

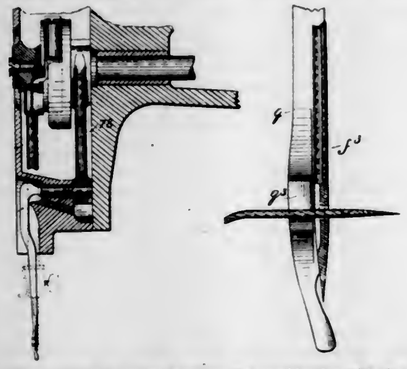


Claim.—1. In combination with a drill-spindle, work-supporting mechanism revolubly mounted upon a base-plate having at opposite sides beveled offsets c^4, a bolt mounted in said work-supporting mechanism, adapted to engage the said offsets, and an adjustable stop in the path of a radially-projecting part of said work-supporting mechanism, all substantially as specified.

2. In combination, a bed, a carriage mounted to slide thereon, a work-support revolubly mounted on said carriage by means of a central bolt extending through the base of the work-support and through the said carriage and bed, a cross-bar k^3 on said bolt, and a rock-shaft with flattened circumference as set forth, engaging said cross-bar, substantially as and for the purpose specified.

3. In combination with a drill-spindle and its journal-bearing, a stop-gage consisting of a hinged arm whose free end is cupped and may be swung over said spindle, as set forth, one end wall of said cup being in engagement with, and supported by, the said journal-bearing when in use, substantially as specified.

571,818. NEEDLE-THREADER FOR SEWING-MACHINES. CHARLES H. WILLCOX, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Aug. 10, 1895. Serial No. 558,853. (No model.)

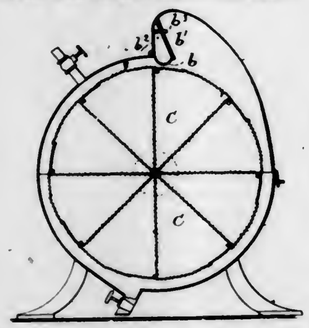


Claim.—1. In a sewing machine, the combination with the needle, of a vibrating finger in proximity thereto and provided with a needle-threader and actuating mechanism for vibrating said finger, substantially as described.

2. In a sewing-machine, the combination with the needle and its driving mechanism, of a vibratory finger provided with a thread guide or notch which is in line with the axis of the needle-eye when the needle is at or near its highest point and means for vibrating said finger, substantially as described.

3. In a sewing-machine, the combination with the needle and its driving mechanism, of a vibratory finger having on one side a projection provided with a thread guide or notch which is in line with the needle-eye when the needle is at or near its highest point and means for vibrating said finger, substantially as described.

571,819. WASHING-MACHINE. JOHN C. WILSON, Allegheny, Pa. Filed Apr. 30, 1896. Serial No. 589,641. (No model.)

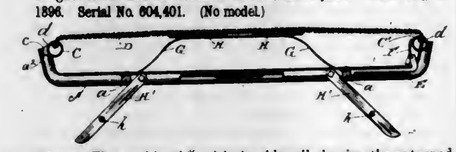


Claim.—In washing machines, the combination of the casing, perforated drum mounted to revolve therein, an open ended trough whose ends project beyond the ends of the drum, and a curved eccentric lid projecting beyond said trough, all substantially as shown and described.

571,820. PROCESS OF MANUFACTURING PNEUMATIC TIRES. FRANK W. WOOD, Indianapolis, Ind. Filed Aug. 9, 1895. Serial No. 558,773. (No specimens.)

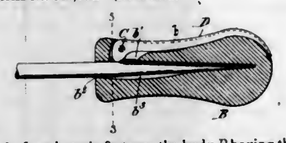
Claim.—That process of manufacturing rubber tubes or tires which consists in first preparing the sheet-rubber and fabric of the proper width and size, building up a flat tire-blank of layers of said material arranged with the edge of one layer projecting beyond the edge of the next, said several layers being united to each other by kneading, then folding said blank to bring said edges together and lap the projecting edges of the layers, and then uniting said edges by kneading as the layers were first united, and finally vulcanizing said tires or tubes by the usual process, substantially as set forth.

571,821. BED-BOTTOM OR COT. JOSEPH WOOD, Chicago, Ill., assignor of one-half to Leonard Warden, same place. Filed Aug. 31, 1896. Serial No. 604,401. (No model.)



Claim.—The combination with the side rails, having the upturned ends, of a slotted tubular piece secured in the head portion of said rails, and a slotted tubular piece having engaging devices about its middle for a pawl, and openings c^2, to receive a rod to turn the tube, said tubular piece being eccentrically hung or journaled in the foot portion of the side rails, transverse bars uniting the side rails, a series of bow-springs adjustably secured on said bars, a spring-actuated pawl secured on one of the bars and adapted to engage the tubular end piece at the foot of the cot, and a wire mattress secured at its ends in the slots of the tubular end pieces, substantially as described.

571,822. HAT-PIN FASTENER. LINA BRAUN, New York, N. Y., assignor to herself, and Joseph Hain, Brooklyn, N. Y. Filed Apr. 16, 1896. Serial No. 587,784. (No model.)



Claim.—1. In a hat-pin fastener the body B having the end opening intersecting a recess b' and a depression at the lower side of the end opening, together with a clamping-lever pivoted on an elastic pin spanning the upper part of the recess the short clamping-arm of said lever being located within said portion, the arrangement being such that the hat-pin can be forced downward to a limited extent, whereby both the elasticity of said pin and the pivot is made available, substantially as herein specified.

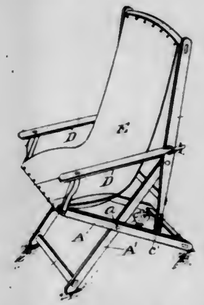
2. In a hat-pin fastener, a body provided with an end opening and a longitudinal slot having the front recess b', in combination with a lever having a long and a short arm at a little more than a right angle to each other, with the long arm coinciding with the surface of the body when adjusted for use, and the short arm adapted to engage with a hat-pin clampwise, and to be turned to a position a little beyond that of the greatest pressure in effecting the engagement, and with an elastic pivot piercing the lever adjacent to its short arm, and allowing of yielding so that the elasticity both of the pin and of the pivot is made available, adapted to serve substantially as herein specified.

3. The hat-pin fastener described, comprising a body B, provided with an end opening, open slot b, and deep recess b', in combination with the lever D having a long arm coinciding approximately with the surface of the body, and a short arm at an angle thereto, adapted to engage with a hat-pin clampwise and maintain its clamped position reliably by being turned a little beyond the position of greatest strain, together with a yielding pivot for the lever bearing in the body adjacent to the deep recess of the slot, substantially as specified.

571,823. ADJUSTABLE FOLDING CHAIR. ADELBERT F. BRIGGS, New Lisbon, Wis. Filed Aug. 25, 1896. Serial No. 603,869. (No model.)

Claim.—1. An adjustable folding chair provided with crossed legs and having back standards pivotally secured to the ends of the upper rear crossed legs and adjustably supported on the lower rear crossed legs of said chair, arms movable lengthwise supported on the outer sides of said standards, said arms supported at their forward ends by uprights pivotally attached at the upper front ends of said crossed legs whereby said arms are held parallel to the plane in which said chair is supported when said standards are inclined either forward or back, and said chair provided with a seat, substantially as shown and described.

2. A folding chair consisting of back standards and crossed legs, said standards held together at their upper ends by a cross-bar and at their lower ends by a tie and pivotally secured to the upper rear ends of said crossed legs, the lower ends of said standards having springs secured thereon and supported on the rear pair of said crossed legs and said chair provided with a seat supported by said standards and the cross-bar attached to the upper front ends of said crossed legs, substantially as shown and described.



3. A folding chair provided with legs crossed and pivotally secured to each other in pairs, said chair provided with a back consisting of two standards held together by a cross-bar and a tie-bar, each of said standards pivotally secured to the rear upper ends of said crossed legs, the lower ends of said standards free and adjustably supported on the rear lower crossed legs whereby the back of said chair may be inclined forward or backward, said chair provided with a seat and having arms movable longitudinally at their rear ends supported at the sides of said standards and the forward ends of said arms pivotally attached to and supported by a cross-bar secured to the ends of the upper crossed legs, substantially as shown and described.

4. In a folding chair, the combination with the crossed legs thereof, of a back formed of standards pivoted to the upper rear ends of said legs, said standards provided with springs on their lower ends resting on the rear legs and means for holding said standards at any desired point thereon, horizontal arms secured to each end of the round of said chair at their forward ends and having their rear ends movably supported at the sides of said standards, a seat and back-support secured at its upper end to the cross-bar of said standards and attached at its opposite end to the round connected to the ends of said legs, substantially as shown and described.

5. The combination in an adjustable folding chair provided with crossed legs pivotally secured together in pairs, of a back consisting of a pair of standards held to each other by a cross-bar at the top and a tie-bar at the lower end thereof, said standards pivotally secured to the upper rear ends of said crossed legs and the free ends of said standards adjustably supported on the lower rear crossed legs, arms movable longitudinally, loosely secured at their rear ends to said standards and pivotally supported at their forward ends to the cross-bar uniting the upper ends of the upper front crossed legs and a seat and back-support attached to the cross-bar of said standards and the cross-bar uniting the ends of the upper front crossed legs, substantially as shown and described.

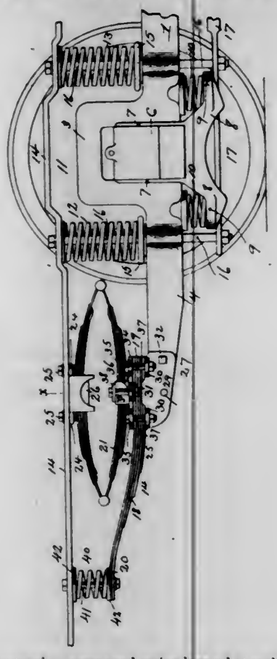
571,824. CAR-TRUCK. JOHN A. BRILL, Philadelphia, Pa. Filed Apr. 11, 1896. Serial No. 587,110. (No model.)

Claim.—1. In a car-truck, a compound spring located at each corner, said spring being composed of two unequal parts, a lower part attached to the truck-frame, extending out beyond the truck-frame, and engaging with the car-body, and an upper part comprising two connected bow-springs extending between the proximate frame end of said lower part and the truck-chord, substantially as described.

2. In a car-truck, a compound spring located at each corner, said spring being composed of two unequal parts, a lower part attached to the truck-frame, extending out beyond the truck-frame, and engaging with the car-body, and an upper part comprising two connected bow-springs extending between the proximate frame end of said lower part and the truck-chord, combined with other springs for supporting the car-body, substantially as described.

3. In a car truck, a compound spring located at each corner, said springs being composed of two unequal parts, a lower part attached to the truck-frame, extending out beyond the truck-frame, and engaging with the car-body, and an upper part comprising two connected bow-springs extending between the proximate frame end of said lower part and the truck-chord, combined with spiral springs on the truck-frame for supporting the car-body, substantially as described.

4. In a car-truck, a compound spring located at each corner, said spring being composed of two unequal parts, a lower part attached to the truck-frame, and extending out beyond the truck-frame, a compressible resilient element between the end of the lower part and the car-body and engaging therewith, and an upper part comprising two connected bow-springs extending between the proximate frame end of the said lower part and the truck-chord, substantially as described.



5. In a car-truck, a compound spring located at each corner, said spring being composed of two unequal parts, a lower part attached to the truck-frame and extending out beyond the said frame, oppositely-acting springs above and below the outer end of the said lower part engaging the car-body, and an upper part comprising two connected bow-springs extending between the proximate frame end of the said lower part and the truck-chord, substantially as described.

6. In a car-truck, a compound spring located at each corner, said springs being composed of two unequal parts, the lower part attached to the truck-frame and extending out beyond the truck-frame, the outer end of said lower part carrying a spiral spring engaging with the car-body, and an upper part comprising two connected bow-springs extending between the proximate frame end and the said lower part and the truck chord, substantially as described.

7. In a car-truck, a compound spring located at each corner, said spring being composed of two unequal parts, a lower part attached to the truck-frame and extending out beyond the truck-frame, the outer end of said lower part carrying a spiral spring engaging the car-body, a post extending between said outer end and the said chord or sill, and an upper part comprising two connected bow-springs extending between the proximate frame end of said lower part and the car-sill or truck-chord, substantially as described.

8. In a car-truck, the combination with a truck-frame, of the leaf-spring extending therefrom, and a compressible resilient element interposed between the outer end of said spring and the truck-chord, each of the corners of the truck being so provided with said leaf-spring and compressible element, substantially as described.

9. In a car-truck, the combination with a truck-frame, a full-elliptic spring extending between the extremes of said frame and the truck-chord, and a leaf-spring extending from said frame, its outer end engaging the truck-chord, substantially as described.

10. In a car-truck, the combination with a truck-frame, of the full-elliptic spring extending between the extremes of said frame and the truck-chord, a leaf-spring extending outwardly from said truck end, and a compressible resilient element interposing between the outer end of said leaf-spring and said truck-chord, substantially as described.

11. In a car-truck, the combination with a truck-frame, of the truck-chord, an extension of said frame formed at its four corners comprising a leaf-spring, and a full-elliptic spring interposed between said extension and said chord, substantially as described.

12. In a car-truck, the combination with a truck-frame, of the truck-chord, an extension of said frame formed at its four corners comprising a leaf-spring, and a full-elliptic spring interposed between said extension and the said chord, and other springs interposed between the frame and said chord, substantially as described.

13. In a car-truck, the combination with a truck-frame, of the truck-chord, an extension of said frame formed at its four corners comprising a leaf-spring, and a full-elliptic spring interposed between said extension and said chord, and spiral springs interposed between said frame and the chord, substantially as described.

14. In a car-truck, the combination with a truck-frame of the upper chord, an extension of said frame formed at its four corners comprising a leaf-spring, a compressible resilient connection between the end of said leaf-spring and said chord, and a full-elliptic spring interposed between said extension and said chord, substantially as described.

15. In a car-truck, the combination with a truck-frame, of the truck-chord, an extension of said frame formed at its four corners comprising a leaf-spring, oppositely-acting springs above and below the outer end of said leaf-spring and engaging said chord, and a full-elliptic spring interposed between said extension and said chord, substantially as described.

16. In a car-truck, the combination with a truck-frame, of the truck-chord, and an extension of said frame formed at its four corners comprising a leaf-spring, a spiral spring interposed between the outer end of said leaf-spring, a truck-chord, and a full-elliptic spring interposed between said extension and said chord, substantially as described.

17. In a car-truck, the combination with a truck-frame, and a truck-chord, a leaf-spring on said frame extending beyond its ends, a coil-spring interposed between the ends of the leaf-spring and the chord, and a full-elliptic spring extending between said frame and chord, substantially as described.

18. In a car-truck, the combination of an axle-box frame and an upper chord which extends beyond the end of said frame, with a spring extending from said frame to the extended portion of said chord, oppositely-acting springs interposed between the end of said spring and said chord, and a full-elliptic spring extending between said frame extension and said chord, substantially as described.

19. In a car-truck, the combination of an axle-box frame and an upper chord which extends beyond the end of said frame, with a spring extending from said frame to the extended portion of said chord, and springs of varying capacity secured to the end of said spring and to said chord, and a full-elliptic spring extending between said frame extension and said chord, substantially as described.

20. In a car-truck, the combination of an axle-box frame and an upper chord, which extends beyond the end of said frame, with a spring extending from said frame to the extended portion of said chord, an elastic connection between the extended portion of said spring and said chord or spring, and a full-elliptic spring extending between the end of said frame and chord, substantially as described.

21. In a car-truck, the combination of an axle-box frame and a top chord, with a full elliptic spring carried by said frame, and having a connection with said chord above its connection with said frame, and a leaf spring extending from the frame connection of the full-elliptic spring to said chord forward of said full-elliptic spring, substantially as described.

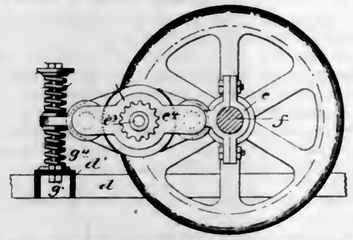
22. The combination of the top chord, a full-elliptic spring secured by a detachable saddle to the ends of said frame, a saddle movably connecting the top of said full-elliptic spring with said chord, and a leaf-spring confined on the end of said truck frame below said full elliptic, and extending out beyond the frame and engaging said chord, substantially as described.

23. The combination with a truck-frame, of a saddle having the lips 29 and top plate 28, ears 30, the leaf-spring 18, a plate 35 resting on top of the ends of said leaf spring, bolts 37 connecting the plate 35 to the ears 30, and confining the ends of said leaf-spring to the truck-frame, the end 20 of said leaf-spring engaging the car-body, substantially as described.

24. The combination with the frame extension 4, of the leaf-spring 18 secured on said extension by a detachable saddle, the top chord 14, a full-elliptic spring secured on the inner end of leaf-spring by a detachable saddle, its upper portion engaging the top chord, the outer end of the leaf-spring engaging said top chord, substantially as described.

571,825. ELECTRIC-MOTOR RAILWAY-TRUCK. JOHN A. BRILL and GEORGE M. BRILL, Philadelphia, Pa. Original application filed June 25, 1888, Serial No. 278,160. Divided and application filed Mar. 25, 1890, Serial No. 345,189. Again divided and this application filed Sept. 16, 1896. Serial No. 605,976. (No model.)

Claim.—1. In a motor-truck, the combination with the axle-box frame, of a motor sleeved at one end on one of the truck-axles, a cross-bar extending between the side bars of said frame, and a connection for the free end of the motor comprising a plurality of oppositely-acting springs, and a vertical guide fixed to the cross-bar, about which guide said springs are disposed, and between which springs said free end is interposed, substantially as described.



2. In a motor-truck, the combination of axles and the frame hung therefrom, said frame having a cross-bar, with a motor sleeved at one end on one of said axles, a bar affixed to and rising above said cross-bar, independent springs guided by said bar, the free end of the motor being located between said springs and guided by said upright bar, the springs being arranged to act in opposite directions above and below the free end of the motor, substantially as described.

3. In a motor-truck, the combination with the axle-box frame, of a motor sleeved at one end on one of the truck-axles, a cross-bar extending between the side bars of said frame, and a connection for the free end of the motor comprising a plurality of oppositely-acting springs and a restraining-guide for said springs and free end consisting of an upright bar immovably secured to said cross-bar, substantially as described.

4. In a motor-truck, the combination of axles and the frame hung therefrom, said frame having a cross-bar between its ends, with a motor swiveled on one of its axles, an upright bar carried by said cross-bar, a spring surrounding said upright bar and resting on said cross-bar, the motor resting at its free end upon said spring, another spring surrounding said upright bar and surmounting said free end, and means on said upright bar for restraining the upward movement of said last-mentioned spring.

5. In a truck, axles, and a frame hung therefrom, said frame having a cross-bar, with a motor swiveled at one end on one of said axles, an upright bar located on said cross bar, a spring supported by said cross-bar and supporting the free end of said motor, said spring surrounding said upright bar, another spring above said motor and surrounding said upright bar, and means on said upright bar for compressing said springs, substantially as described.

6. In a motor-truck, the combination with the axles of the axle-box frame hung from the axles independent of the movement of the superposed car, the cross bar uniting the side bars of said frame, a bar extending above said cross-bar, a motor movably supported on one of the truck-axles, its free end engaging said upright bar, springs above and below said free end and surrounding said bar, and plates and screw-nuts on said bar for compressing said springs, substantially as described.

7. In a motor-truck, the combination with the axles, of an independent frame hung from the axles, a motor sleeved at one end to one end of the axles, a cross-bar included in said frame, oppositely-acting springs above and below the free end of the motor, said springs resting on said cross-bar, substantially as described.

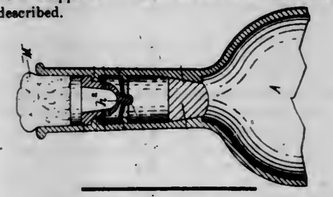
8. In a motor-truck, the combination with the axles, of an independent frame hung from the axles, a cross-bar included in said frame, a motor sleeved at one end to one of the axles, springs adapted to act conjointly and in opposite directions directly engaging the free end of the motor and disposed above and below said free end, said springs being supported from said cross-bar, substantially as described.

9. In a motor-truck, the combination with the axles, of the frame hung from the axles, a cross-bar included in said frame, an upright bar on said cross-bar, a motor sleeved at one end to one of said axles, a projection on the free end of the motor engaging the said upright bar, springs above the said bar engaging said projection, the engaging portion of said projection and bar permitting vertical play between them, substantially as described.

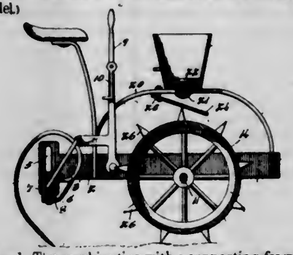
10. In a motor-truck, the combination with the axles, of the axle-box frame, the upright bar, oppositely-acting springs about the upright bar, the motor sleeved on one of the axles, its free end having a lug or projection and an opening therein through which said bar passes, the springs being disposed above and below said lug, and nuts on the upright bar for compressing the springs, substantially as described.

571,826. BOTTLE. DANTON O. BRUNNER and JACOB L. SHOUGH, Somerset, Ohio. Filed Dec. 23, 1895. Serial No. 573,148. (No model.)

Claim.—The combination with a bottle, the neck of which is contracted near the lower portion thereof forming an inclined valve-seat, and above which are formed inwardly-directed annular shoulders or flanges, of a frusto-conical valve adapted to close the opening in the lower portion of the bottle-neck, and a hollow conical attachment, the base of which is directed upwardly, and provided with an annular outwardly-directed flange adapted to rest upon the upper flange of the bottle-neck, the lower portion of said attachment being provided with a headed extension upon the shank of which is mounted a disk-valve adapted to rest upon the lower shoulder formed in the bottle-neck, said conical portion being provided with lateral ports or openings between said shoulders on the bottle-neck, and a superimposed cork or stopper M to close the mouth of the bottle, substantially as described.



571,827. CULTIVATOR, PLANTER, AND ROLLER. FRANKLIN P. BURDGE, Montezuma, Ohio. Filed May 8, 1896. Serial No. 590,762. (No model.)

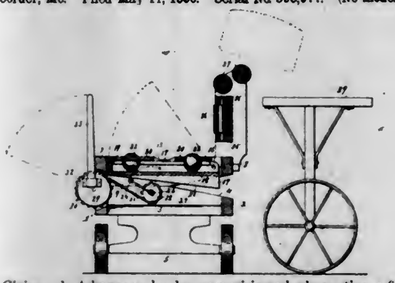


Claim.—1. The combination with a supporting-frame and ground-wheels, of a tooth-bar arranged transversely with its extremities fitted in vertical guides upon the frame, said bar being of zigzag construction and having alternate upwardly and downwardly extending arches arranged in a vertical plane, and harrow-teeth carried by said bar and affixed to the same, respectively, at the centers of the upwardly and downwardly extending arches, substantially as specified.

2. The combination with a supporting-frame, of a driving shaft or axle, coaxial rollers loosely mounted upon said shaft or axle and provided with spurs or teeth, seeding mechanism operatively connected with the driving shaft or axle, and a distributing or broadcasting plate loosely attached at one edge to the frame and resting at its free edge upon the spurs or teeth of the rollers for vibration thereof, substantially as specified.

3. The combination with a supporting-frame, a driving shaft or axle, coaxial spurred drums upon said shaft or axle to traverse the soil, and seeding mechanism operatively connected with the driving shaft or axle and having a seedbox arranged above said drums, of a distributing or broadcasting plate provided at one edge with clips to engage fixed portions of the frame in front or in rear of the seed-box and adapted to rest at its free edge upon the surfaces of the rollers for vibration by the spurs thereof, substantially as specified.

571,828. BAGGAGE-LOADER. DON C. CONKLIN and JOHN HUGHES, Corder, Mo. Filed May 11, 1896. Serial No. 590,977. (No model.)



Claim.—1. A baggage-loader, comprising a body portion, a frame mounted thereon and provided with one or more series of antifric-

tion-rollers, a swinging frame pivoted in said antifriction-roller-carrying frame, and means to operate the same, substantially as described.

2. A baggage loader, comprising a body portion, a frame mounted thereon, and provided with an upward extension at its rear edge, antifriction-rollers mounted in the horizontal portion of said frame and also in said upward extension, a swinging frame mounted in said antifriction-roller-carrying frame, and means to operate the same, substantially as described.

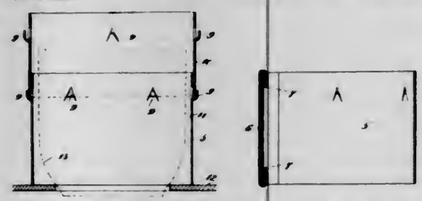
3. A baggage-loader, comprising a body portion, a frame mounted thereon and provided with an upward extension at its rear edge, antifriction-rollers mounted in said upward extension, a swinging frame mounted in said antifriction-roller-carrying frame, a rock-shaft journaled in the body portion and provided with an arm engaging the under side of said swinging frame, and means to operate the said rock-shaft, substantially as described.

4. A baggage-loader, comprising a body portion, a frame mounted thereon, and provided with an upward extension at its rear edge, antifriction-rollers mounted in the horizontal portion of said frame and also in said upward extension, a swinging frame mounted in said antifriction-roller-carrying frame, a rock-shaft journaled in the body portion, provided with an arm engaging the under side of the swinging frame, a sprocket-wheel upon the body portion, a chain secured to said sprocket-wheels and extending upwardly from the first-named to the last-named sprocket-wheel, and means to operate said last-named sprocket-wheel and thereby elevate said swinging frame, substantially as described.

5. A baggage-loader, comprising a body portion, a frame mounted thereon and provided with an upward extension at its rear edge, antifriction-rollers mounted in the horizontal portion of said frame and also in said frame extension, a swinging frame mounted in said antifriction-roller-carrying frame, a rock-shaft journaled in the body portion, provided with an arm engaging the under side of the swinging frame, a sprocket-wheel mounted on said shaft, a sprocket-wheel mounted upon the body portion, a chain secured to said sprocket-wheels and extending upwardly from the first-named to the last-named sprocket-wheel, and a lever secured at its lower end rigidly relative to said last-named sprocket-wheel, substantially as and for the purpose set forth.

6. A baggage-loader, comprising a body portion beveled outwardly and rearwardly at its upper side, a frame pivotally mounted thereon and beveled upwardly and rearwardly at its under side, an upward extension at the rear edge of said frame, antifriction-rollers journaled in the horizontal portion of said frame, vertically-arranged antifriction-rollers also journaled in said extension above the vertical series of rollers, a swinging frame mounted in said antifriction-roller-carrying frame and provided with antifriction-balls, and means to swing said frame and discharge the baggage upon it, substantially as described.

571,829. CASING OR SHIELD FOR POTS OR KETTLES. NANCY P. DUNCAN, Pittsburg, Pa. Filed Aug. 5, 1896. Serial No. 601,735. (No model.)



Claim.—1. The herein-described shield or casing, for use in connection with pots or kettles, for cooking purposes, said shield being composed of a strip of metal or similar material, and the ends thereof being adjustably connected, and said shield or casing being provided near its upper edge with outwardly and upwardly directed hooks or projections which are adapted to support a similar supplemental shield or casing, substantially as shown and described.

2. The herein-described shield or casing for use in connection with pots or kettles for cooking purposes, said shield or casing being composed of a strip of sheet metal or similar material, the ends of which are connected by a transverse clamp of sheet metal or similar material, and being also adjustable so as to regulate the size of the shield or casing, substantially as shown and described.

571,830. CHECKREIN-FASTENER. HENRY M. HERRING, North Attleborough, Mass., assignor to Fred S. Gilbert, same place. Filed Aug. 8, 1896. Serial No. 602,163. (No model.)

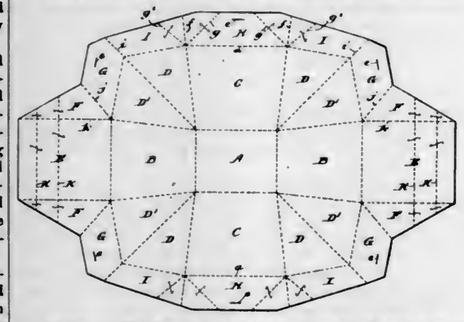
Claim.—1. A checkrein fastener, comprising a loop with means for securing the same to the checkrein, the ends of said loop being free and adapted to have frictional contact with the check-hook, substantially as described.



2. A checkrein-fastener comprising the loop adapted to engage the check-hook, said loop being formed of a single piece of wire having the ends doubled upon the sides and forming spring clamping-arms adapted to bear against the check-hook, and means for securing the fastener to the checkrein, substantially as described.

3. A checkrein-fastener comprising the loop adapted to engage the checkrein, said loop being formed of a single piece of wire having the ends doubled upon the sides and forming diverging spring-arms adapted to embrace the check-hook, and the wire loop doubled upon itself to form eyes, said eyes engaging the bends of the fastener between the main portion and the spring-arms, substantially as described.

571,831. PAPER VESSEL. IRA W. HOLLETT, Chicago, Ill., assignor to the J. W. Sefton Manufacturing Company, same place and Anderson, Ind. Filed Mar. 30, 1895. Serial No. 543,892. (No model.)



Claim.—1. The herein-described paper vessel, formed from a single blank having the bottom portion A, end walls B B provided with the extensions E E, sides C C, having the extensions H H separated from the sides C C by the creases *a a*, and each provided with the two diagonal creases *g g*, the corner-flaps D D′ intermediate the ends B and sides C at the four corners of the blank and having the extensions I G separated from each other by the crease *i* and separated from the extension H by the crease *f*, the extensions I being each provided with the diagonal crease *g′* connecting at its inner end with the adjacent creases *f g*, the parts F intermediate the extensions G and E and separated from the former by the crease *j* and from the latter by the crease *k*, said blank being folded into vessel shape in the manner described so that the corner-flaps D D′ overlap the sides C C and the extensions G I fit against the outer sides of the extensions H H, the corners *b b* of the parts H I being bent outward and downward and tucked behind said parts H I as described, and the closure of the vessel being accomplished by bending the extensions E E of the end walls B B downward to horizontal position over the top of the vessel, with the parts F F overlapping each other against the inner faces of the extensions H H of the sides C C, and by then bending downward to horizontal position across said extensions E E the vertical extensions of the side walls composed of the parts F G H I, said vertical extensions of the side walls being provided with suitable fastening devices for securing the parts H G and I together and for connecting said extensions and holding them in horizontal position after they have been bent downward thereto, substantially as and for the purpose set forth.

2. The herein-described paper vessel, formed from a single blank having the bottom portion A, end walls B B provided with the extensions E E, sides C C, having the extensions H H separated from the sides C C by the creases *a a*, the corner-flaps D D′ intermediate the ends B and sides C at the four corners of the blank and having the extensions I G separated from each other by the crease *i* and separated from the extensions H by the crease *f*, the parts F intermediate the extensions G and the extensions E and separated from the former by the crease *j* and from the latter by the crease *k*, said blank being folded into vessel shape in the manner described so that the corner-flaps D D′ overlap the sides C C and the extensions G I fit against the outer sides of the extensions H H, the closure of the vessel being accomplished by bending the extensions E E of the end walls B B downward to horizontal position over the top of the vessel, and by then bending downward to horizontal position across the extensions E E the vertical extensions of the side walls composed of the parts F G H I, said vertical extensions of the side walls being provided with suitable fastening devices for securing the parts H G and I together and for connecting said extensions and holding them in horizontal position after they have been bent downward thereto, and the wire bail J passed at its opposite ends through or secured to the overlapped corner-flaps D D′ at the opposite sides of the vessel below the vertical extensions of the side walls thereof, but not passing through the sides C C to the interior of the vessel, substantially as and for the purpose set forth.

3. A paper vessel having vertical extensions of its side and end walls adapted to be bent downward to horizontal position across the top of the vessel to form the cover, said extensions of the end walls thereof being provided with the transverse creases *k* adapted to stiffen the same and to brace the upper portion of the vessel and resist lateral pressure against the same tending to collapse it, substantially as described.

4. The herein-described fastening device L for paper vessels, consisting of a sheet-metal plate having its lower end bent at an angle to the body of the plate, to adapt it to pass through a slit in the wall of the vessel, and having a tongue struck from the body of the plate and bent outward and downward toward and over the bent lower end of the plate, to leave an aperture in the plate above said tongue, said tongue being adapted to fit over the edge of the wall of the vessel and to be bent down upon the same with the lower end of the plate, substantially as described.

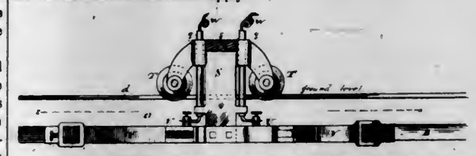
5. In a paper vessel, the combination of the fasteners K L, each consisting of a sheet-metal strip or plate having its lower end bent at an angle to the body of the plate and passed through a slit in the side wall of the vessel, and each having a tongue struck from the body of the plate and bent over the upper edge of the side wall of the vessel, said tongues and the lower ends of the plates being bent downward toward each other upon the walls of the vessel, the fastener L having in it an aperture above the edge of the side wall of the vessel formed by its tongue struck from the plate and bent downward, said aperture being adapted to have the end of the fastener K passed through it and bent backward upon itself, substantially as and for the purpose described.

6. In a paper vessel having vertical extensions of its side walls adapted to be bent downward across the top of the vessel to close the same, the combination, with one of such vertical extensions of the side walls, of the fastening device L, consisting of a sheet-metal plate having its lower end *c* passing through a slit in such extension and bent upward against the surface of the same, and having a tongue *d* struck from the body of the plate and bent outward therefrom and downward over the upper edge of said extension, leaving an aperture in the plate above said tongue, said tongue and the lower end of the plate passing through the slit in the extension being bent toward each other and pressed against the surface of said extension, to secure the plate thereto, and a suitable cooperating fastening device upon the vertical extension of the opposite side wall of the vessel, adapted to cooperate with the aperture in the plate L, substantially as described.

7. In a paper vessel having its side walls provided with vertical extensions adapted to be bent downward across the top of the vessel to close the same, the combination, with one of such vertical extensions of the side walls, of the fastening device L, consisting of a sheet-metal plate having its lower end *c* passed through a slit in the extension and bent upward against the surface thereof, and having a tongue *d* struck from the body of the plate and bent outward and downward over the upper edge of the extension, toward the upturned lower end of the plate, leaving an aperture in the plate above said tongue, and the cooperating fastening device K secured to the vertical extension of the opposite side wall of the vessel and consisting of a sheet-metal plate having its lower end *c* passed through a slit in such extension and bent upward against the surface of the same and having a tongue *d* struck from the body of the plate and bent outward and downward over the upper edge of the extension toward the upturned lower end of the plate, the upper end of said plate K being adapted to pass through the aperture in the plate L at the opposite side of the vessel when the vertical extensions of the two side walls are bent downward toward each other across the top of the vessel, and be bent backward upon itself to connect said extensions and hold them in horizontal position, substantially as described.

571,832. ELECTRICAL RAILWAY. RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to The Electric Car Company of America, same place. Filed Feb. 17, 1886. Serial No. 192,187. (No model.)

Claim.—1. In an electric railway the combination of a slotted conduit extending along the railway, a bared conductor arranged within the conduit and insulated from it, an electrically-propelled car, a current-collecting device extending from the car down through the slot into the conduit making an electrical contact with the bared conductor and also having wheels resting and running upon the conduit at the top, a laterally-adjustable connection between the axle and collecting device for sustaining the collector in an upright position and positively moving it along the conductor independently of the vertical movements of the car-body, and a return-circuit from the car to the source of electric supply.



2. In an electric railway two working conductors made in sections, the opposite conductors of two adjacent sections being electrically connected together, a closed circuit connecting two adjacent sections on the same side, an electromagnet in said closed circuit, an armature for said electromagnet, a shunt-circuit conecting adjacent sections on the same side and adapted to be opened or closed by said armature, electric motors or locomotives electrically connected with said working conductors, and a source of electricity connecting with said conductors.

3. In an electric railway two working conductors made in sections, the opposite conductors of two adjacent sections being electrically connected together a closed circuit connecting two adjacent sections on the same side, an electromagnet in said closed circuit, an armature for said electromagnet, a shunt-circuit connecting adjacent sections on the same side and adapted to be opened or closed by said armature, a resistance in said shunt-circuit, electric motors or locomotives, and a source of electricity connecting with said conductors.

4. In an electric railway two working conductors made in sections, the opposite conductors of two adjacent sections being electrically connected together, a closed circuit connecting two adjacent sections on the same side, an electromagnet in said closed circuit, an armature for said electromagnet, a shunt-circuit connecting adjacent sections on the same side and adapted to be opened or closed by said armature, an electromagnet in said shunt adapted to attract said armature when the shunt is closed, electromotors or locomotives electrically connected with said working conductors, and a source of electricity connecting with said conductors.

5. The combination of two sectional conductors extending along an electric railway, each section of one conductor being electrically connected with the preceding section of the other conductor, locomotives in series in traveling connection with said conductors and circuit-controllers between the successive sections of one of the conductors, the said circuit-controllers consisting of a high and a low resistance magnet the high-resistance maguet being in a closed circuit and the low-resistance magnet being in an interrupted shunt-circuit closed by the armature which the magnets attract.

6. In an electric railway the combination of a slotted conduit extending along the railway, two longitudinal bared working conductors arranged within and insulated from the conduit, an electrically-propelled car having a body supported on springs, an independent frame carried by the axle independently of the body, a laterally-movable collector-frame laterally movable upon the independent frame and extending down into the conduit, two hinged contacts carried by the collector-frame arranged one in advance of the other, and springs pressing said contacts upon the respective conductors.

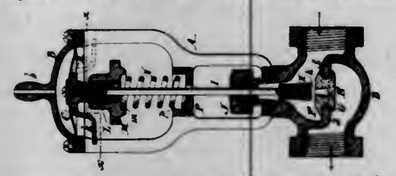
7. In an electric railway, the combination of a slotted conduit extending along the railway, conductors arranged within said conduit, an electrically-propelled vehicle, a supporting-frame sustained by the axle independent of the vehicle-body, a collector-frame sustained by the said supporting-frame independently of the axle, a contact carried by the collector-frame and spring-pressed into contact with the conductor, an electric motor on the car for propelling it receiving current from the collector-contact, and a return-circuit from the motor also extending along the railway.

8. In an electric railway, the combination of a bared conductor extending along the railway, car-axles and a car-body supported upon the axles by springs, a motor journaled by a frame to the axle to which it is geared and sustained independently of the car-body, a current-collector also carried by the axles independently of the car-body and making a traveling contact with the conductor extending along the railway, flexible electric-motor circuits extending from the collector to the car-body and including the motor, hand-controlled devices upon the car-body independent of the motor for controlling the current in the motor-circuit, and a return-circuit leading from the car to the source of electric supply.

9. In an electric railway the combination of a conductor extending along the railway, an electrically-propelled vehicle having wheels and axles and with a car-body supported upon springs, an electric motor geared to one of the axles for propelling the car, a current-

collecting device projecting from the car and making a traveling contact with the conductor extending along the railway, a frame carried upon the axles independently of the car-body and its movements for supporting both the electric motor and the current collecting devices, flexible circuits extending from the current-collecting device to the motor, and a return-circuit leading to the source of electrical energy.

571,833. REGULATING VALVE. RUDOLPH M. HUNTER, Philadelphia, Pa. Filed July 17, 1896. Serial No. 599,498. (No model.)



Claim.—1. In a valve device the combination of the body of a valve having an annular diaphragm, with a rubber seat having annular flanges to snap upon the inner edge of the annular diaphragm, and a movable valve adapted to seat itself upon the rubber seat.

2. In a valve device the combination of the body of a valve having an annular diaphragm, with a rubber seat having annular flanges to snap upon the inner edge of the annular diaphragm, and a movable valve adapted to seat itself upon the rubber seat, provided with a cup-shaped bottom to form a sharp annular edge.

3. In a valve device the combination of the body of a valve having an annular diaphragm, with a rubber seat having annular flanges to snap upon the inner edge of the annular diaphragm, and a movable valve adapted to seat itself upon the rubber seat provided with a cup-shaped bottom to form a sharp annular edge, a frame secured to the valve-body, an air chamber attached to the frame, a movable diaphragm for the air chamber, and a valve-stem extending from the valve to the movable diaphragm.

4. In a valve device the combination of the body of a valve having an annular diaphragm, with a rubber seat having annular flanges to snap upon the inner edge of the annular diaphragm, and a movable valve adapted to seat itself upon the rubber seat provided with a cup-shaped bottom to form a sharp annular edge, a frame secured to the valve-body, an air-chamber attached to the frame, a movable diaphragm for the air-chamber, and a valve-stem extending from the valve to the movable diaphragm an adjustable nut carried by the movable diaphragm, and a spring between the nut and frame.

5. In a valve device the combination of the body of a valve having an annular diaphragm, with a rubber seat having annular flanges to snap upon the inner edge of the annular diaphragm, and a movable valve adapted to seat itself upon the rubber seat provided with a cup-shaped bottom to form a sharp annular edge, a frame secured to the valve-body, an air-chamber attached to the frame, a movable diaphragm for the air-chamber, and a valve-stem extending from the valve to the movable diaphragm and an adjustable spring to move the valve away from its seat.

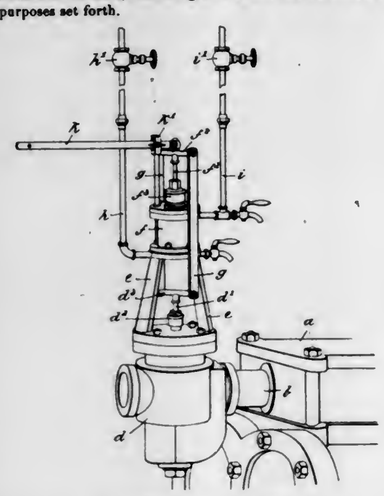
6. In a valve device, the combination of a main frame, an air-chamber and regulating-diaphragm secured to one end of the frame, a valve-body secured to the other end of the frame, a movable valve, a valve-rod extending to the regulating-diaphragm, a metallic casting secured to the diaphragm and having a lateral extension for holding it against rotation, an adjustable spring support or nut secured to and movable with the said casting of the diaphragm, and a spring interposed between said support and the main frame to oppose the action of the regulating-diaphragm.

7. In a valve device, the combination of a main frame, an air-chamber and regulating-diaphragm secured to one end of the frame, a valve-body secured to the other end of the frame provided with a rubber seat, a movable valve, a valve-rod extending to the regulating-diaphragm, a metallic casting secured to the diaphragm and having a lateral extension for holding it against rotation, an adjustable spring support or nut secured to and movable with the said casting of the diaphragm, and a spring interposed between said support and the main frame to oppose the action of the regulating diaphragm.

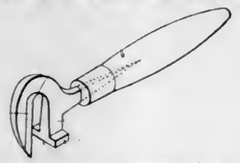
8. In a valve device, the combination of the body having an annular diaphragm, with a rubber seat held in place upon said diaphragm by its own elasticity or resiliency, and a movable valve having a cup-shaped bottom and annular edge to close upon said rubber seat.

571,834. BOILER-FEED-PUMP GOVERNOR. GEORGE H. IMMENDORF and AXEL H. ENGSTROM, Philadelphia, Pa.; said Engstrom assignor to said Immendorf. Filed Jan. 20, 1896. Serial No. 576,075. (No model.)

Claim.—The combination, in a boiler feed-pump governor, of the steam-chest of a pump, a vertically-movable valve *d*, provided with side top and bottom inlets and outlets to permit of the passage of steam from the supply to said chest, said valve having a stem extending through a packing-box d^3, formed integral with the bottom of a framework *e*, supporting a cylinder *f*, and provided with a removable flanged plug, said cylinder provided with a piston and stem adapted to traverse the same, cross-bars connected with the stems of said valve and piston, rods connecting said cross bars together, pipes *h* and *i*, respectively from said steam supply to one end of said cylinder and connecting the opposite end of said cylinder with the water discharge from said pump, stop-cocks *h'* and *i'*, provided in both of said pipes to regulate the pressure therein, and a threaded plug-valve in the bottom wall of said valve *d*, to permit of removal of extraneous matter from beneath the same, all arranged as shown and described and for the purposes set forth.



571,835. CAN-OPENER. WILLIAM J. KINNEAR, Luzerne, N. Y. Filed Mar. 18, 1896. Serial No. 583,839. (No model.)



Claim.—As a new article of manufacture, a cutting tool or can-opener, comprising a base with an upright curved over and downwardly constituting a knife, having its edge parallel with the inner surface of the upright and extending below the said base and terminating in a puncturing-spur: and a handle projected at right angles to said upright, substantially as shown and described.

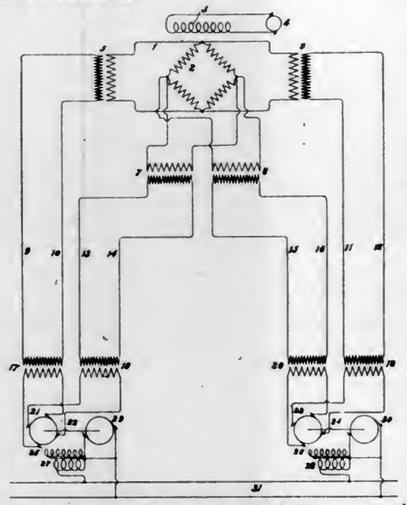
571,836. SYSTEM OF ALTERNATING-CURRENT REGULATION AND DISTRIBUTION. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Apr. 6, 1896. Serial No. 586,285. (No model.)

Claim.—1. A system of electrical distribution comprising an alternating-current generator, feeders supplied thereby, a direct-current circuit and a rotary transformer having a single compound-wound field-magnet and an armature located in the resultant field produced by said compound winding and connected to said alternating-current and direct-current circuits.

2. A system of electrical distribution comprising an alternating-current generator and its circuit, transformers included in said circuit, a direct-current work-circuit and a rotary transformer having a single compound-wound field-magnet, and an armature located in the resultant field produced by said compound winding and supplying current to said direct-current circuit.

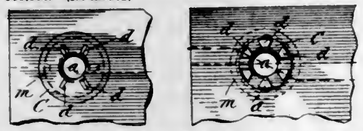
3. The combination with an alternating-current generator and a direct-current work-circuit located at a distance therefrom, of a rotary transformer connected to the alternating-current feeders and supplying the direct-current circuit, the field-magnet of said transformer having shunt and series coils so proportioned as to counteract the phase lag in the alternating-current circuit and effect an increase

in the electromotive force of the generator as the load on the direct-current circuit increases.



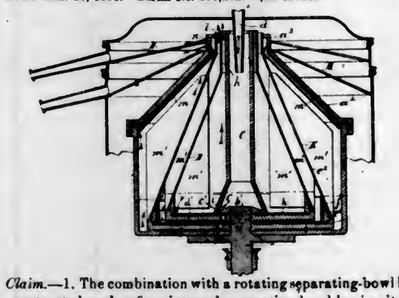
4. The combination with a source of alternating currents and a circuit supplied thereby, of a compound-wound rotary transformer having its field-magnet coils adjusted to counteract the phase lag in the alternating-current circuit as the direct-current-circuit load increases.

571,837. DIE FOR APPLYING PLASTIC COVERINGS ON EYELETS. ALBERT LATHAM, Springfield, Mass. Filed Mar. 16, 1896. Serial No. 583,396. (No model.)



Claim.—In a set of eyelet-covering dies the combination with the head-covering die, of an eyelet-receiving die having a hole or socket therein for the reception of the tubular eyelet-shank and having at its top, arranged around the mouth of the socket, several separated upstanding piers or projections upon which the flange-head of the eyelet is supported against crushing or collapsing, allowing the plastic material to flow around the edge of, and under, the head, substantially as described.

571,838. CENTRIFUGAL LIQUID-SEPARATOR. CARL J. LUNDSTROM, Little Falls, N. Y., assignor to D. H. Burrell & Co., same place. Filed Mar. 16, 1893. Serial No. 466,272. (No model.)



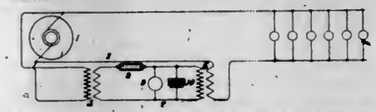
Claim.—1. The combination with a rotating separating-bowl having a contracted neck, of an internal separating-bowl having its peripheral wall extending outwardly beyond said neck, one of said bowls being provided with an inlet for the full milk, with a discharge-conduit at the neck for the separated cream and with a discharge-conduit at the large end through which the partially-skimmed milk is conducted to the other bowl, which latter is provided with discharge-passages for the separated cream and skim-milk, substantially as set forth.

2. The combination with a rotating separating-bowl having outlets for the separated cream and skim-milk, of an internal tapering separating bowl having its peripheral wall projecting outwardly beyond the zones of the outlets of the surrounding bowl and provided at its small end with an outlet for the separated cream and at its large end with a conduit for the escape of the partially-skimmed milk, which conduit extends inwardly from the peripheral wall of the inner bowl and discharges into the outer bowl, and a supply-conduit whereby the full milk is fed to the inner bowl, substantially as set forth.

3. The combination with a rotating separating-bowl provided at the top with a contracted neck and with outlets for the separated cream and skim-milk arranged therein, of an upwardly-tapering internal bowl having its peripheral wall projecting outwardly beyond the zones of the outlets of the surrounding bowl and provided at its upper end with an outlet for the separated cream, and at its bottom with a conduit for the escape of the partially-skimmed milk opening into the lower portion of the outer bowl, and a supply-conduit whereby the full milk is fed to the inner bowl, substantially as set forth.

4. The combination with an outer separating-bowl provided with a contracted neck having outlets for the separated cream and skim-milk, of a primary internal separating-bowl which first receives the milk to be separated, and a secondary internal separating-bowl in which said primary bowl is arranged and which is in turn arranged in said outer bowl, said secondary bowl being provided between its bottom and the bottom of the primary bowl with a diaphragm having an upturned marginal flange, substantially as set forth.

571,839. STATION POTENTIAL-INDICATOR. RALPH D. MERSHON, Pittsburg, Pa. Filed Dec. 23, 1895. Serial No. 572,978. (No model.)



Claim.—1. A station potential-indicator for alternating-current systems comprising a local circuit in which the impressed and counter electromotive forces of the main line are approximately reproduced in miniature, and a voltmeter for indicating the value of the resultant of these electromotive forces.

2. A station potential-indicator comprising a local circuit having a miniature counter electromotive force corresponding approximately in phase and amount to that of the main line, the respective ends of said local circuit having a shunt and a series connection with the main line, one or both of said connections being inductive, and means for indicating the potential at the load end of the main line, substantially as described

3. A local circuit having the counter electromotive force of the line approximately represented in miniature, a series converter having its primary in the main circuit and its secondary in the local circuit, a condenser in shunt to said series converter, connections between the local and main circuits whereby an electromotive force is impressed upon the former which is proportional to that impressed upon the latter and means for indicating potential changes, substantially as described.

4. The method of determining the potential at the load in an alternating-current circuit which consists in producing and compounding two electromotive forces, one of which is proportional to and in step with the generator electromotive force and the other of which is approximately proportional to and in step with the resultant of the counter electromotive forces of the line itself, thereby producing a resultant electromotive force which is substantially proportional to and in step with that at the load, and indicating the value of said resultant electromotive force.

5. The combination with an alternating-current circuit, of a local circuit in which is approximately represented the resistance or the self-induction of the main line and having a current proportional to and in step with the main current, connections between the local and main circuits whereby the electromotive force impressed upon the former may be proportional to and in step with that impressed upon the latter, and a voltmeter for indicating the resultant electromotive force, substantially as described.

6. Potential-indicating apparatus for alternating-current systems comprising means for approximately reproducing locally in miniature the counter electromotive force and the impressed electromotive force of the main line, and a device for indicating the value of the resultant obtained by combining such electromotive forces.

571,840. MAGAZINE-FIREARM. JOHN W. MULLINS, London, Ky. Filed Jan 23, 1896. Serial No. 576,567. (No model.)

Claim.—1 In a magazine-firearm of the class described, the com-

bination with the breech-piece and its receiving-chamber having the side opening, of the magazine placed opposite said opening and designed to contain a plurality of cartridges placed longitudinally therein, one upon another, the pivotal cover therefor and the spring-actuated follower in the said magazine, and a locking device controlled by said follower whereby said cover is held closed until the magazine is emptied substantially as specified.

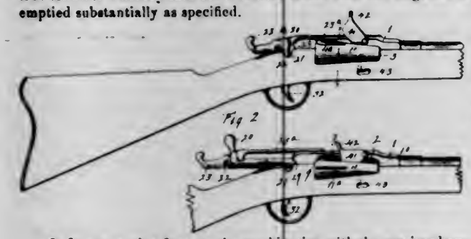


Fig 2

2. In a magazine firearm, the combination with the receiver having the side opening, of the magazine opposite said opening, a pivoted spring in the bottom of the magazine, a cover-plate arranged to operate upon said spring, a follower-arm pivoted to the spring, and a bearing for the said arm beyond the said spring, substantially as specified.

3. In a magazine-firearm, the fixed, but removable magazine, its hinged or pivoted cover, and the spring-actuated-follower mechanism, coacting with said cover, when the latter is closed and the magazine filled, to form a lock therefor, substantially as specified.

4. In a magazine-firearm, the combination with the receiver, of the magazine-chamber at one side thereof, and communicating therewith by a side opening, the oblique plate forming one wall of said chamber and having end portions, the spring forming the bottom of said chamber and pivoted to one of said end portions, said spring having an arm provided with a cam portion, a cap or cover pivoted to one of said end portions and having a cam-heel arranged to impinge upon the cam portion of the spring, and the follower-arm pivoted to the free portion of the spring and arranged to take a bearing upon the other of the said end portions, substantially as specified.

5. In a magazine-firearm, the combination with the receiver having a side opening, of the magazine-chamber at one side of the receiver, the removable but stationary plate forming the outer wall of said chamber, and having end portions, the hinged cap or cover, and the spring-actuated follower, and means whereby said cap or cover cannot be opened until the said chamber is emptied, substantially as specified.

6. In a magazine-firearm, the combination of the longitudinally-reciprocating and rotary breech-bolt, having the cams 27 and 30 at its rear end portion, the firing pin or needle, its cocking-head arranged to be acted upon by the cam 27 to retract said pin or needle, the receiver having the shoulder 31 arranged to coact with the cam 30, and the receiver cap or cover having a pivotal engagement with the said pin or needle, substantially as specified.

7. In a magazine-firearm, the combination of the receiver, the longitudinally-reciprocating and rotary breech-bolt, the firing-pin, the cocking-head adapted to be withdrawn beyond its cocking position, and having the safety locking-arm 26, the receiver cap or cover loosely carried by said pin, and having a recess for the engagement of said locking-arm in its normal position, together with cam devices whereby said pin is automatically retracted by the withdrawal of the said bolt, substantially as specified.

8. In a magazine-firearm, the combination of the longitudinally-reciprocating and rotary breech-bolt, its locking devices and cam portions 27 and 30, the rotary and reciprocating firing-pin, the cap or guard for the receiver carried loosely on said pin, and slotted at its rear end portion, the cocking-head carried by said pin, its safety locking-arm arranged to be acted upon by the cam portion 27 and to engage the slot of the cap or guard, the receiver having the abutment 31 for the cam portion 30, the trigger and the sear, all substantially as and for the purpose described.

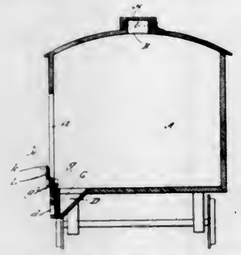
9. The combination of the receiver, the reciprocating and rotary breech-bolt, its locking devices, the firing-pin, its cocking-head, means whereby said pin is automatically retracted into firing position by the retraction of said bolt, and the receiver cap or cover plate carried loosely and pivotally on the said pin, substantially as specified.

10. In a magazine-firearm, the combination with the receiver, and the bolt arranged to reciprocate longitudinally therein, of the extractor and ejector arm 35 having a head portion at the rear end which loosely and pivotally engages a recess in the inner, forward portion of said bolt, and whose extracting-claw is near its rear end, and means whereby said arm is momentarily thrown upward as the bolt is retracted and immediately thereafter falls back by the further retraction of the bolt, to its normal position, substantially as specified.

11. In a magazine-firearm, the combination with the receiver having the longitudinal slot in its bottom, the plate 6 in the bottom of said slot, and having the projection 40, of the breech bolt, having the recess at its lower forward portion, the ejector and extractor arm whose rear end loosely engages the said recess, and which has its extractor-claw immediately forward of the end of the bolt, whereby its forward end extends nearly to the forward end of the shell, said arm, when the bolt is retracted being momentarily thrown upward to eject the shell, by its engagement with the projection 40, after which it immediately returns to normal position by the further retraction of the bolt, substantially as specified.

12. In a magazine-firearm, the combination with the receiver having the side opening of the magazine opposite said opening, a pivoted spring in the bottom of the magazine, a follower-arm pivoted to the spring, a bearing for the said arm beyond the spring, the pivotal cover, means for holding said cover closed through the action of said follower arm and spring, and the pivoted cut-off arranged to partially close the said side opening, substantially as specified.

571,841. GRAIN-CAR. FRANK H. OSTERHAUS, New York, N. Y. Filed Apr. 29, 1896. Serial No. 589,505. (No model.)



Claim.—The combination with a car provided with a longitudinal opening B, having upwardly-directed flanges *b*, and a hinged sectional cover H, whereby the ends and central portion of the car may be filled at the same time and a downwardly-directed chute D, formed in one side of the car, and a door G, to close the opening therein and connection with a lever *g*, having a shank g^2 which extends through the side of the car, and a crank K mounted on said shank which passes through a covered part L, substantially as described.

571,842. BUNG. JOSEPH PARBEL, Grand Rapids, Mich., assignor of one-half to Jacob Parbel, same place. Filed Apr. 6, 1896. Serial No. 586,408. (No model.)



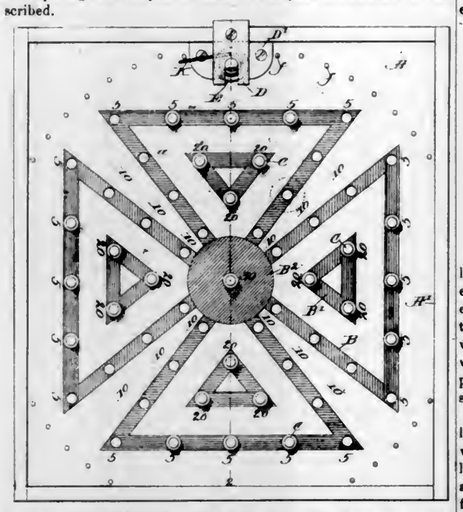
Claim.—1. In combination, a bushing, a flange on said bushing, inclines on said flange, a bung having a central opening and grooves in its upper and lower outer angles, a disk, a stud on said disk to engage said opening, rings of packing in said grooves, and lugs on said bung to engage said inclines, substantially as described.

2. In combination, a bushing, an outwardly and downwardly turned flange on said bushing, and an inwardly-turned flange on the same, having inclines, a bung having a central cavity and grooves in its upper and lower outer angles, packing-rings in said grooves, a post having a central opening in said stud to engage said opening, and openings to receive a tool for turning the same, a transverse bar on said bung and lugs on said bar to engage said inclines, substantially as and for the purposes specified.

571,843. GAME APPARATUS. GEORGE W. PRATT, Peabody, Mass., assignor of one-half to Susan A. Walton, Salem, Mass. Filed Feb. 7, 1896. Serial No. 578,384. (No model.)

Claim.—1. A game apparatus comprising a board, a plurality of openings or sockets therein, a plurality of pins adapted to be supported in loose engagement in said openings, and a top adapted to travel over said board when spun and to overturn the pins in said openings by contact therewith, said board having a plurality of resilient posts arranged in its corners in curves substantially concentric with said board, whereby said top is continually thrown inwardly toward said pins and openings, as it spins against said posts, substantially as described.

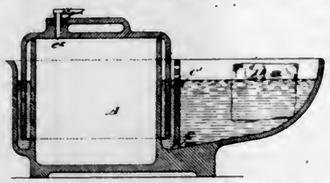
2. A game apparatus comprising a board, a plurality of openings or sockets therein, a plurality of pins adapted to be supported in loose engagement in said openings, the latter being variously marked with designating values, and a top adapted to travel over said board when spun, said top being provided with a lower portion adapted to enter said openings and adapted to overturn the pins, substantially as described.



3. A game apparatus comprising a board, a plurality of openings or sockets in said board arranged in figures, certain of said openings being inclosed within figures formed by other of said openings whereby they are rendered more difficult of access, a plurality of pins adapted to be supported in loose engagement in said openings, the latter being variously marked with designating values, certain of said openings being normally provided with said pins and others thereof being without said pins; and a top formed to travel over said board when spun, said top being provided with a lower portion adapted to enter said openings, substantially as described.

4. A game apparatus comprising a board, a plurality of openings or sockets in said board, a plurality of pins adapted to be supported in loose engagement in said openings, said pins being provided at either end with short reduced portions to enter the openings, and with shoulders to support the same on the edges of the said openings, and a top formed to travel over said board when spun, substantially as described.

571,844. STORAGE-RECEPTACLE. ALBERT B. SCHOFIELD, Brooklyn, N. Y. Filed Mar. 5, 1895. Serial No. 540,607. (No model.)

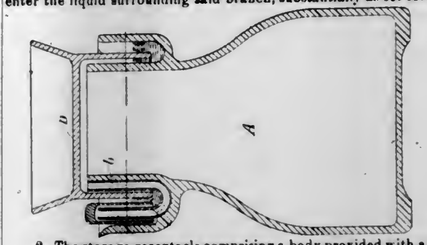


Claim.—1. A storage-receptacle comprising a body portion provided with a surrounding space for receiving a liquid seal, a trough extending from one side of said surrounding space and in communication with said surrounding space through the outer wall of said space and a cover provided with a rim adapted to enter the liquid within said surrounding space, substantially as set forth.

2. A storage-receptacle comprising a body portion provided with a surrounding space for the reception of a liquid seal, a trough at one side of said surrounding space and in communication with said surrounding space, the bottom of said trough being downwardly inclined toward said surrounding space and a cover provided with a rim adapted to enter the liquid within said surrounding space, substantially as set forth.

571,845. STORAGE-RECEPTACLE. ALBERT B. SCHOFIELD, Brooklyn, N. Y. Filed Mar. 18, 1896. Serial No. 583,679. (No model.)

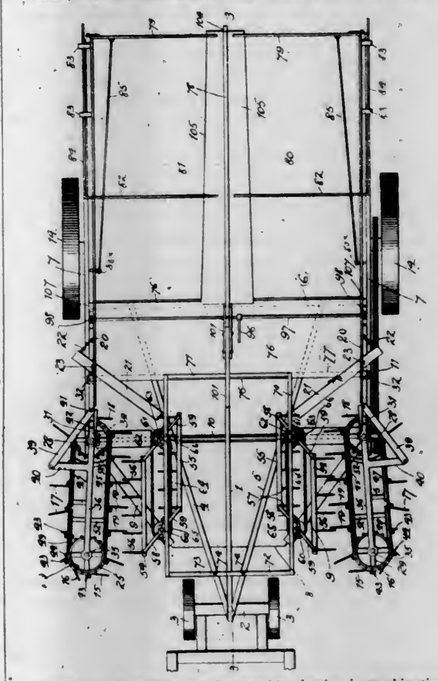
Claim.—1. A storage-receptacle, comprising a body provided with a valley around it for the reception of a liquid seal, an air-tight cover provided with a flange adapted to enter the sealing liquid in the valley, an air escape and inlet conduit forming free communication between the air within the receptacle and the exterior air and having its exterior branch surrounded by liquid and a cap adapted to cover the mouth of the outside branch of the said conduit and enter the liquid surrounding said branch, substantially as set forth.



2. The storage-receptacle comprising a body provided with a valley around it for the reception of a sealing liquid, an air inlet and escape pipe seated in the valley and separable from the body for establishing communication between the air within the receptacle and the exterior air through the body of the sealing liquid, a cover provided with a flange adapted to enter the sealing liquid and embrace within it the inner opening in the escape-pipe and a cap adapted to pass over the outer end of the escape pipe and into the sealing liquid, substantially as set forth.

3. A storage-receptacle, comprising a body provided with a valley around it for the reception of a liquid seal, an air-tight cover provided with a downwardly-extending flange adapted to enter the sealing liquid in the valley and with an upwardly-extending flange for retaining a cake of ice on the cover, an air escape and inlet conduit forming free communication between the air within the receptacle and the exterior air and means for closing the outside branch of the said conduit, substantially as set forth.

571,846. CORN-HARVESTER. FREDERICK G. SCHUERMAN, Twin Bluffs, Wis. Filed Jan. 2, 1895. Serial No. 533,647. (No model.)



Claim.—1. A stalk-harvesting machine having in combination a pair of hinged platforms having a space between them, a beam arranged along under said space, a brace-rod extending through said space and supporting the end of said beam, a vertically-sliding slotted beam to which said platforms are connected and through which said brace-rod extends, a lever for elevating said slotted beam, and pivoted braces secured to said first beam and to said platforms, substantially as set forth.

2. A stalk-harvesting machine having in combination a pair of platforms, a vertically-sliding, slotted beam to which said platforms

are hinged, a beam arranged under said platforms, a brace-rod extending through said slotted beam and platforms and supporting said second beam, inclined braces pivoted to said platforms and latter beam, and a two-part or slotted lever straddling said brace-rod and being connected to said slotted beam for elevating it, substantially as set forth..

3. A stalk-harvesting machine having in combination the main beam 1, the beam 78, the standards or uprights 89 104 supporting the beam 78 upon the beam 1, the guide-rods 90 supported by said beams 1 and 78, a beam arranged to slide on said rods, a pair of hinged platforms connected to said sliding beam, for supporting the stalks, and means for raising and lowering said sliding beam, substantially as set forth.

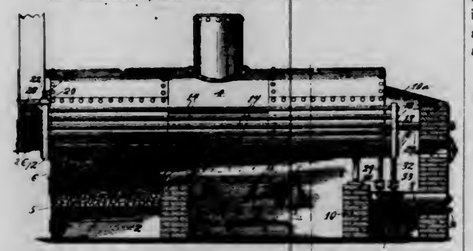
4. A stalk-harvesting machine having in combination a stalk-cutting knife, traveling belts, slats pivoted to said belts and being provided with fingers, projections 43 on said slats, the tracks or rails 45 47, extending along the sides of said belts and having a space between their rear ends and being arranged to engage with said projections 43, projections 44 on said slats and the track or rail 49 adapted to engage with said projections 44 and extending around the forward ends of said belts, for throwing said fingers lengthwise of their line of movement when engaging the stalks, substantially as set forth.

5. A stalk-harvesting machine having in combination a pair of pivoted platforms for supporting the stalks, said platforms being hinged permanently at a distance apart so as to at all times have a space between them, the beam extending along and under the contiguous edges of said platforms, an inclined brace-rod extending through said space between said platforms and supporting the ends of said beam, inclined braces pivoted to said beam and to said platforms, means for locking the outer ends of said platforms against movement when horizontal, means for elevating the contiguous edges of said platforms, and vertical guides for the contiguous edges of said platforms, substantially as set forth

6. A stalk-harvesting machine having in combination a pair of upwardly-folding platforms for supporting the stalks, means for elevating the adjacent edges of said platforms, and a longitudinal rest arranged over and parallel with the contiguous edges of said platforms, said rest being tapered rearwardly and also inclined downwardly from front to rear, whereby said rest will have a tendency to cause the stalks to slide toward the rear end of the rest, substantially as set forth.

7. A stalk-harvesting machine having in combination the main beam 1, means for supporting the same at its rear end, a rest arranged over said beam, the standards or uprights supporting said rest upon said beam, a pair of hinged platforms for supporting the stalks, vertical guides arranged at the ends of the inner edges of said platforms for guiding them in a vertical direction, and a lever arranged over the inner edges of said platforms and connected therewith, substantially as set forth.

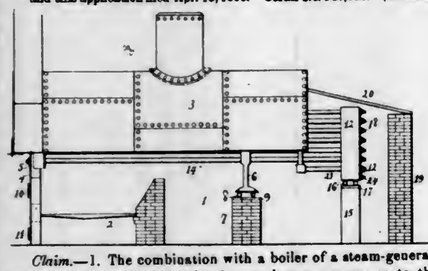
571,847. STEAM-GENERATOR. HENRY R. SCOTT, Kansas City, Mo. Filed Feb. 3, 1893. Serial No. 460,841. (No model.)



Claim.—1. The combination with a boiler of a steam-generator attachment comprising a pair of semicircular water-boxes, and a number of tubes connecting said water-boxes, openings in the outer sides of the water-boxes, removable plugs or hand-plates for closing said openings, horizontal pipes extending transversely of the front end of the boiler and communicating through a central coupling with said boiler, and through couplings and unions with the upper ends of the front water-box, substantially as set forth.

2. The combination with a boiler of a steam-generator attachment comprising a semicircular water-box located within the furnace below and to the rear of the boiler having its concave side upward, a semicircular water-box located exterior to the furnace having its concave side upward, and each having one continuous and uninterrupted chamber, a series of tubes communicating at their opposite ends with said continuous and uninterrupted chambers of said water boxes, tubes or pipes connecting the upper ends of said exterior water-box with the upper part of the boiler, tubes or pipes connecting the lower part of said interior water box with the lower part of the boiler, means for supporting the rear end of the generator and a detachable furnace-section having openings in which rest and are supported the front ends of said tubes for supporting the front end of said generator, substantially as set forth.

571,848. STEAM-GENERATOR. HENRY R. SCOTT, Kansas City, Mo. Original application filed Feb. 3, 1893, Serial No. 460,841. Divided and this application filed Apr. 13, 1895. Serial No. 545,656. (No model.)

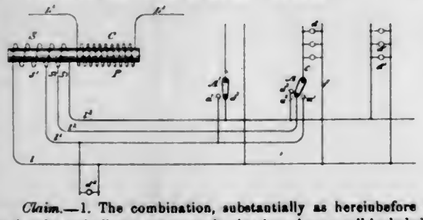


Claim.—1. The combination with a boiler of a steam-generator attachment, comprising a pair of water-boxes concave as to their upper sides and conforming to the configuration of the furnace said front water-box being adapted to form part of the front wall of the furnace and to receive and support the boiler; and each having one continuous and uninterrupted passage or compartment, a number of tubes or pipes communicating at their opposite ends with said water-boxes, openings in the outer sides of said water-boxes, removable plugs or hand-plates for closing said openings, an inlet-pipe for the boiler, pipes connecting the rear end of the boiler with the continuous passage or compartment of the rear water-box, and pipes communicating at their opposite ends with the front water-box and with the boiler.

2. The combination with a boiler and furnace of a rear water-box within the furnace independent of the boiler and rear furnace-wall, and having one continuous and uninterrupted passage or compartment, a front water-box concave as to its upper side adapted to receive and support the front end of the boiler and to form part of the front wall of the furnace and having one continuous and uninterrupted passage or compartment, tubes communicating at their opposite ends with said water-boxes, and tubes connecting said water-boxes with the boiler, substantially as set forth.

3. The combination with a boiler and furnace of tubes extending longitudinally with the boiler, a front water-box concave as to its upper side adapted to receive and support the front end of the boiler and to form part of the front wall of the furnace and having one continuous and uninterrupted passage or compartment with which said tubes communicate at one end, a rear water-box within the furnace independent of the boiler and rear furnace-wall having one continuous and uninterrupted passage or compartment with which said tubes communicate at the other end and extending below said tubes forming a mud-drum, a blow-off pipe connected with said rear water-box and tubes connecting said water-boxes with the boiler, substantially as set forth.

571,849. SYSTEM OF ELECTRICAL DISTRIBUTION. OLIVER B. SHALLENBERGER, Rochester, Pa., assignor, by mesne assignments, to the Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Filed Nov. 8, 1886. Serial No. 218,255. (No model.)



Claim.—1. The combination, substantially as hereinbefore set forth, of a main line, a converter having its primary coil included in the main line, conductors leading from different points in the length of the secondary coil, translating devices or groups of the same, and a circuit-controller for including said translating devices or groups of the same between different conductors leading from the secondary coil, at will.

2. The combination with the primary coil of a converter, of a secondary coil, conductors leading from the different points in the length of the latter, switch-points to which said conductors lead, switches applied to said points and translating devices connected in multiple arc between one of said conductors and one of said switches.

3. The combination, in a system of electrical distribution, of a source of alternating currents, a converter having its primary coil supplied from said source, a second converter supplied from the secondary circuit of the first-named converter, conductors leading from different points in the length of the secondary coil of the second converter, translating devices and means for including any or all of said devices between the different conductors, substantially as described.

4. The combination, in a system of electrical distribution, of a source of alternating currents, a converter supplied from said source, distributing-conductors supplied from the secondary of said converter, translating devices supplied from said distributing-conductors, a second converter having its primary coil also supplied from said distributing-conductors, other translating devices or groups of the same, and means, substantially such as described, for including the last-named translating devices in circuit with more or less of the secondary coil of the second converter.

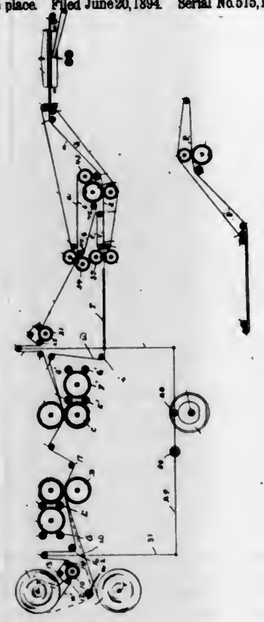
5. The combination with a source of electricity, of a converter having its primary coil in circuit therewith, contact-points connected with different points in the length of the secondary coil, a conductor permanently connected with one of said points, a second conductor, a circuit-controller for placing said second conductor in connection with any of said points, a third conductor leading from the terminal of the secondary coil, and translating devices, certain of which are connected in circuit between the last and first named conductors, and other translating devices included between said last-named and the remaining conductor.

6. The combination as hereinbefore set forth, with the main circuit of a system of electrical distribution, of an electric converter connected in the circuit of the source of electricity, two or more secondary circuits extending from the converter, and translating devices or groups of the same connected in said secondary circuits at different points.

7. The combination with the source of electricity, in a system of electrical distribution, and its circuit, of a potential-reducing converter connected in said circuit, two or more secondary circuits derived from the converter, consuming-circuits connected with said secondary circuits at different points, and translating devices connected in said consuming-circuits.

8. The combination with the source of electricity, in a system of electrical distribution, and its circuit, of a potential-reducing converter connected in said circuit, two or more secondary circuits derived from the converter, consuming-circuits connected with said secondary circuits at different points, translating devices connected in said consuming-circuits, and means for regulating the current supplied to said converter.

571,850. PRINTING-MACHINE. HENRY A. W. WOOD, New York, N. Y., assignor to the Campbell Printing Press and Manufacturing Company, same place. Filed June 20, 1894. Serial No. 515,128. (No model.)



Claim.—1. The combination with a rotary web-printing press capacitated to print upon a plurality of webs, and in which the cylinders run at a constant relative peripheral speed, means for withholding one of the webs during a part of the revolution of the cylinders, and guiding devices arranged so that another web can be led through the press at the peripheral speed of the cylinders, substantially as described.

2. The combination with a rotary web-printing press in which the cylinders run at a constant relative peripheral speed, of guides whereby one web may be led through said press continuously, at full speed, and web-manipulating mechanism whereby another web may be led through said printing mechanism at full speed for one-half a revolution of the printing-cylinders, and withheld for the other half of the revolution of the printing-cylinders, substantially as described.

3. The combination with a rotary web-printing press of guides for leading a web continuously through said printing mechanism at full speed, a web-manipulating mechanism for another web arranged to allow the same to run alternately at full speed, and then to stop the same for each half-revolution of the printing-cylinders, and a collecting or associating mechanism for collecting or associating the product of the two webs, substantially as described.

4. The combination with a printing-machine adapted to print upon a plurality of webs, of a web-feeding device adapted to alternately advance and withhold one only of the webs, substantially as described.

5. The combination with a web-printing machine adapted to print upon a plurality of webs, and through which one or more webs may be run at full speed, of a web-feeding mechanism adapted to alternately advance and withhold one of the webs, and means for associating or collecting the product of the webs, substantially as described.

6. The combination with a web-printing press adapted to print upon a plurality of webs, and through which one or more of the webs can be run at full speed, of suitable guides, and a web-feeding mechanism arranged so that one of the webs can be run either at full speed, or so that the same can be alternately advanced and withheld by the feeding mechanism, substantially as described.

7. In a printing-machine, the combination of a web-guiding mechanism for a main web, a continuously-operating feeding-in device for a supplemental web, a continuously-operating feeding-out device for the supplemental web, and looping-rollers for withholding the supplemental web during a non-impression period, and for advancing the same during an impression period, substantially as described.

8. The combination of a printing-machine, feeding-in and feeding-out devices for a supplemental web, adapted to feed the web at substantially one-half the speed of the main web, means for withholding the supplemental web during a non-impression period, and for advancing said web during an impression period, with guides, whereby a main web can be run at full speed through the machine, substantially as described.

9. In a printing-machine, the combination of a web-guiding mechanism for a main web, constantly-running feeding-in and feeding-out devices for advancing a supplemental web at one-half the speed of the main web, and looping-rollers for intermittently feeding the supplemental web through the printing mechanism, substantially as described.

10. In a rotary printing-machine, the combination of a printing and impression cylinder for printing upon two webs, means for constantly advancing one web, and means for withholding the second web during a non-impression period, and for advancing the same during an impression period, substantially as described.

11. In a printing-machine, the combination of printing-cylinders and impression-cylinders for printing upon and perfecting two webs, means for constantly advancing one of the webs, means for withholding the second web during a non-impression period, and for advancing said web during an impression period, and means for associating the products of the webs, substantially as described.

12. In a rotary printing-machine, the combination of printing and impression cylinders for printing upon and perfecting two webs, means for constantly advancing one of the webs, and means for intermittently advancing the second web through the printing mechanism, substantially as described.

13. In a printing-machine, the combination of printing and impression cylinders for printing upon and perfecting two webs, one web running constantly through said printing mechanism, with constantly-running feeding-in and feeding-out mechanism for advancing a supplemental web at one-half the speed of the main web, and means for intermittently feeding the supplemental web through the printing mechanism, substantially as described.

14. In a printing-machine, the combination of printing and impression cylinders for printing upon and perfecting two webs, constantly-running feeding-in and feeding-out devices for a supplemental web, looping-rollers for withholding the supplemental web during a non-impression period, and for advancing said web through the print-

ing mechanism during an impression period, and means for associating the products of said webs, substantially as described.

15. In a printing-machine for printing upon and perfecting two webs, the combination of a web feeding and guiding mechanism for a supplemental web adapted to feed the supplemental web to and out of the printing mechanisms at one-half the speed of the main web, and a mechanism for collecting sheets cut from said webs, substantially as described.

571,851. DETACHABLE HANDLE FOR PANS. THOMAS WRIGHT, Emaus, Pa. Filed Feb. 19, 1896. Serial No. 579,921. (No model.)



Claim.—1. The combination with the coupling having ears with notches and openings and adapted for attachment to a pan, of the handle having a sliding catch and a hooked end, and a spring acting upon said slide, substantially as described.

2. The combination with the coupling having ears with notches and openings, one of which is open at its upper side, of a handle having an extension with a cross-bar and a sliding catch, substantially as described.

3. The combination with the coupling having ears with notches and openings, one of which is open at its upper side, of a handle having an extension with a cross-bar and a sliding catch, provided with a trigger and with a stop-plate, substantially as described.

4. The combination with a coupling having ears with notches and openings, one of which is open at its upper side, of a handle having an extension with a cross bar adapted to said openings, the handle being hooked at its other end and a spring-actuated slide for movement lengthwise of the handle and having a beveled end to engage the notches of the coupling, substantially as described.

5. The combination with a coupling having ears with notches and openings, one of which is open at its upper side, of a handle having an extension with a cross-bar adapted to said openings, the handle being hooked at its other end and a spring-actuated slide for movement lengthwise of the handle and having a beveled end to engage the notches of the coupling, and a spring connected with said slide to normally hold it in engagement with said notches, substantially as described.

571,852. DETACHABLE SPOUT FOR CANS. CHARLES H. BAGLEY, New York, N. Y., assignor of one-half to Henry S. Prentiss, Elizabeth, N. J. Filed Nov. 16, 1895. Serial No. 569,164. (No model.)



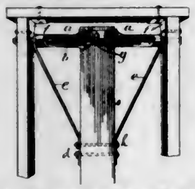
Claim.—1. A detachable spout for metallic vessels, made trough shape and provided with an upper, tapered pouring-spout and a lower cutting-skirt tapered to a point and having intermediate shoulders *e*, and a peripheral bead or projection, substantially as described.

2. A detachable spout for metallic vessels made trough shape and provided with an upper pouring-spout and a lower cutting-skirt, and a hinged lid adapted to fall obliquely across the mouth of the spout, substantially as described.

3. A detachable spout for metallic vessels made trough shape and provided with an upper pouring-spout and a lower cutting-skirt, two peripheral beads or projections, shoulders *e*, and lateral abutments *f*, substantially as described.

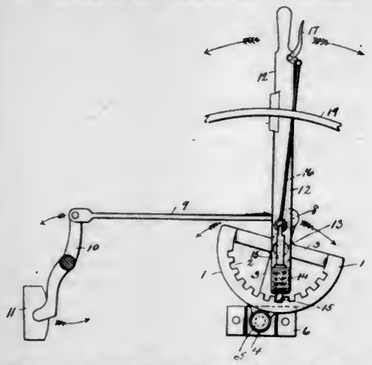
571,853. ORCHARD-LADDER. BENJAMIN M. CLOSE, Cato, N. Y. Filed Sept. 24, 1894. Serial No. 524,003. (No model.)

Claim.—1. In a ladder, the combination, with the sides thereof, of a grooved and perforated cross-head extending between said sides, and a bolt passing through the cross-head and the sides and uniting them.



2. In a ladder, the combination, with the sides thereof, of a grooved and perforated cross-head extending between said sides and uniting them, a third leg, and means for attaching the latter to the cross-head and bolt.

571,854. VEHICLE BRAKE-LEVER. CHARLES DOERING, Library, Pa. Filed Nov. 13, 1895. Serial No. 568,771. (No model.)



Claim.—1. In combination, a segmental rack having teeth on its inner face, a bracket to which the rack is pivoted, a lever pivoted to the frame of the rack and having a pawl engaging the teeth, a rod for operating the pawl, an extension of the rack-frame and a connecting-rod joining the brake-lever and the extension, as and for the purpose described.

2. In combination with the brake-bar of a vehicle, the semicircular rack 2, pivoted to the body of the vehicle and to the brake-rod, a hand-lever pivoted to the said rack and bolt or lock to engage the lever with the rack, as described.

3. In combination, a segmental rack, toothed on its inner surface and having a suitable frame, an extension 8, of said frame, a rod connecting the extension with the brake-lever, an operating-lever pivoted to the frame, a pawl carried by the lever and operating-rod for the pawl, and a frame on the body to which the segment is pivoted, as and for the purpose described.

4. A brake-lever consisting of the rack 2, pivoted to the bed or body of the vehicle, a lever 12, pivoted to the said rack, a means for locking and releasing the said lever to the rack and a connection 8 for attachment to the brake-rod 9, substantially as described.

571,855. PHOTOGRAPHIC PLATE HOLDER. MATHIAS FLAMANG, Newark, N. J., and FRANK MONIOT, New York, N. Y. Filed Jan. 28, 1896. Serial No. 577,164. (No model.)

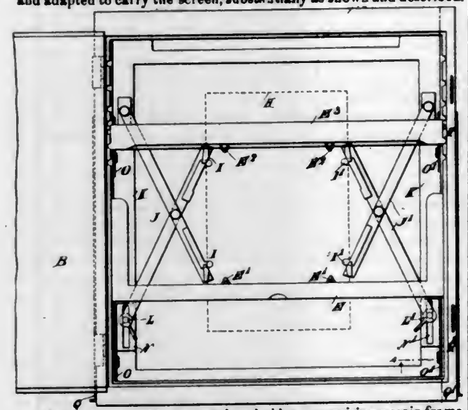
Claim.—1. A holder for photographic-screen plates and the like, provided with oppositely-arranged lazy-tongs, movable toward and from each other, and carrying plate-holding devices, substantially as described.

2. A holder for photographic-screen plates and the like, provided with oppositely-arranged lazy-tongs adapted to move toward and from each other and carrying plate-holding devices at their inner ends, substantially as described.

3. A holder for photographic-screen plates and the like, provided with lazy-tongs pivotally connected at one end to the frame of the holder, and slidably connected thereto at the other end, and plate-holding devices at the free ends of the lazy-tongs, substantially as described.

4. A photographic-screen plate holder, comprising the main frame adapted to carry a negative or auxiliary frame adjustable toward and from the negative and lazy-tongs secured to said auxiliary frame and carrying holders for a screen-plate, substantially as described.

5. A photographic-screen-plate holder, provided with a frame held laterally adjustable, means for adjusting said frame, lazy-tongs adjustably held on said frame, and holders carried by said lazy-tongs and adapted to carry the screen, substantially as shown and described.



6. A photographic-screen-plate holder, comprising a main frame adapted to receive a negative auxiliary frame movable toward and from said negative and provided with inclined slots, pins mounted to slide in the main frame and engaging the slots of the auxiliary frame, and lazy-tongs secured to said auxiliary frame and provided with holders for a screen-plate, substantially as described.

7. A holder for photographic-screen plates and the like, provided with a holder for the negative, a screen-plate holder movable toward and from said negative-holder, and actuating devices for shifting said screen-plate holder, said actuating devices extending through the frame to the outside thereof, substantially as described.

571,856. RUNNING-GEAR FOR VEHICLES. OCTAVE GRAVEL, Ingalls, Mich., assignor of one-half to John J. Gerondale, same place. Filed Nov. 6, 1895. Serial No. 568,130. (No model.)



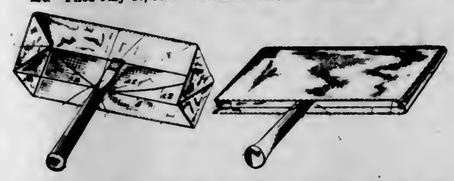
Claim.—In a running-gear, the combination of the front reach-section provided at its rear end with a horizontal bifurcation, the rear reach-section pivoted at its front end within the said bifurcation and the parallel upper and lower horizontally-disposed circular bracket-bars passing through the bifurcations of the front reach-section, secured to the top and bottom of the same and extending forward at opposite sides of the front reach-section, and having its terminals secured to the same, said bracket-bars being arranged above and below the rear reach-section and supporting the same, substantially as described.

571,857. CORN-HARVESTER. WILLIAM W. GREEN, Yorktown, Kans. Filed July 22, 1895. Serial No. 556,747. (No model.)



Claim.—In a corn-harvester, the combination with the body provided with an offset and runners, of the diagonally-arranged bar 5, a brace-bar 4 bolted to the body and to the bar 5, a knife 6 secured thereto and having an angular portion provided with a forward cutting edge, said knife being arranged directly in rear of the offset, the upwardly-extending flange 10 on the cutter, and the guard 11 having its front portion parallel with the side edge of the body and its rear portion bent to one side at an angle corresponding with the angle of the cutting portion of the cutter, the guide 12 secured to arm 5, and consisting of the forwardly-projecting horizontal portion 13, bent rearwardly at 14, and having the forwardly-projecting hooked portion 15 extending over the body of the machine, and the cradle 16 in advance of the hooked portion 15 and below the same and consisting of a curved bar 17 having standards 18 secured to the body.

571,858. SWIMMING DEVICE. DAVID B. HAVEN, Ste. Genevieve, Mo. Filed July 17, 1896. Serial No. 599,514. (No model.)



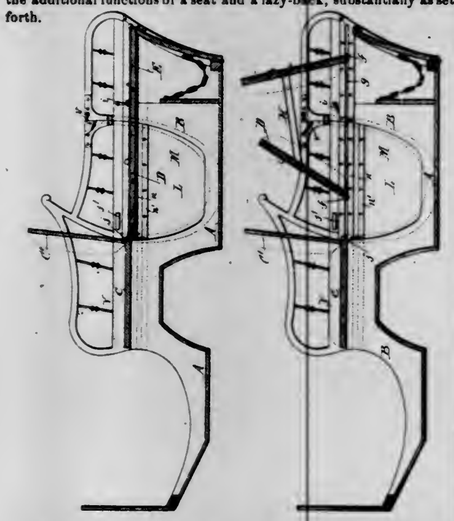
Claim.—1. In a swimming device, the combination with a supporting-handle, wings composed of pieces of fabric, frames upon which they are stretched, said wings automatically closing by the forward motion of the device through the water, and opening by the backward movement thereof, and a cord attached to the wings and passing through the handle and provided with knots designed to limit the passage of the cord through the handle and thus limiting the opening thereof, substantially as described.

2. A swimming device comprising a supporting-handle, a wire frame connected firmly thereto, pivoted frames hinged to the fixed frame, pieces of fabric stretched over the pivoted frames thereby forming wings adapted to close upon the handle automatically by the forward movement of the device through the water and open by the backward movement thereof, and means for automatically limiting the outward motion of the wings consisting of a cord passing through the handle and attached to the frames and provided with knots thereon to limit their movement, being adapted to be pulled through the handle and close the wings, substantially as described.

571,859. VEHICLE. CHARLES A. HENWICK, Buffalo, N. Y. Filed Aug. 10, 1896. Serial No. 602,337. (No model.)

Claim.—1. The combination with the vehicle-body having a front seat, of pivoted deck-panels or sections arranged on the body in rear

of the front seat, both capable of assuming a horizontal position, one in front of the other, for forming a deck, and each capable of being shifted lengthwise on the body, whereby each of said panels serves the additional functions of a seat and a lazy-back, substantially as set forth.



2. The combination with the vehicle-body, having longitudinal guideways, of a seat or panel provided with pivots arranged to slide in said guideways, whereby said seat or panel is capable of a combined sliding and swinging movement, substantially as set forth.

3. The combination with the vehicle-body having a front seat and provided in rear of said seat with longitudinal guideways, of a pair of reversible deck panels or sections arranged in rear of said front seat and each provided at its inner end with pivots arranged to slide in said guideways, substantially as set forth.

4. The combination with the vehicle-body having a front seat and provided in rear of said seat with longitudinal guideways, of a pair of reversible deck panels or sections arranged in rear of said front seat and each provided at its inner end with pivots arranged to slide in said guideways, and a link or brace connecting said deck-panels substantially as set forth.

5. The combination with the vehicle-body provided with a front seat and in rear of said seat with longitudinal guideways, of deck-panels provided at one end with pivots arranged to slide in said guideways, and a spring or cushion interposed between the end of one of said deck-panels and an opposing stationary part of the vehicle-body, substantially as set forth.

6. The combination with the vehicle-body provided with a front seat and in rear of said seat with longitudinal guideways, of deck-panels provided at one end with pivots arranged to slide in said guideways, and a spring or cushion which is arranged on the rear side of the front seat and against which the front deck-panel is adapted to bear, substantially as set forth.

7. The combination with the vehicle-body having a front seat and provided in rear of said seat with longitudinal guideways, of a pair of reversible deck panels or sections arranged in rear of said front seat and each provided at its inner end with pivots arranged to slide in said guideways, and a connecting brace or link pivoted to the edges of said panels, each of said panels being provided at its edge with a buffer or cushion adapted to bear against said link or brace, substantially as set forth.

8. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided between said seats with an entrance-passage, of a door adapted to close said passage and arranged to slide forwardly in front of said entrance-passage when opened, substantially as set forth.

9. The combination with a vehicle-body having front and rear seats and stationary side walls, one of which is provided between said seats with an entrance-passage, said front seat being provided with an end piece or railing made separate therefrom, and a longitudinally-sliding door adapted to close said passage and carrying said railing, substantially as set forth.

10. The combination with the vehicle-body having front and rear seats and stationary side walls provided between said seats with entrance-passages and on their inner sides with longitudinal guideways, of longitudinally-sliding doors adapted to close said passages and provided on their inner sides with guideways forming continuations of the ways of said side walls, and deck-panels provided with pivots arranged to slide in said guideways, substantially as set forth.

11. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided between said seats with an entrance-passage, of a longitudinally-sliding door adapted to close said passage and provided with a guide rail, a flanged laterally-movable roller arranged on the vehicle-body and supporting said guide-rail, and a shifting device whereby said roller is moved laterally for clamping the flange of said roller against said rail, substantially as set forth.

12. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided between said seats with an entrance-passage, of a longitudinally-sliding door adapted to close said passage and provided with a guide-rail, a flanged laterally-movable roller arranged on the vehicle-body and supporting said guide-rail, a shifting device whereby said roller is moved laterally for clamping the flange of said roller against said rail, and a spring which tends to shift said roller in the contrary direction from said shifting device, substantially as set forth.

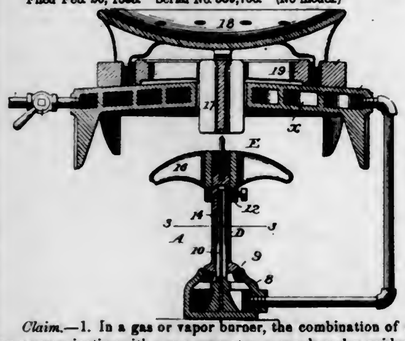
13. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided between said seats with an entrance-passage, of a longitudinally-sliding door adapted to close said passage and provided with a guide-rail, a roller supporting said rail and mounted on a longitudinally-movable journal or bolt which slides in the side wall of the vehicle-body, and a clamping-lever applied to said sliding bolt and having a cam bearing against a corresponding face of the vehicle-body, substantially as set forth.

14. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided with an entrance-passage, of a longitudinal guideway arranged on the side of the vehicle-body below said entrance-passage and a longitudinally-sliding door adapted to close said passage and provided with a guide-arm or projection sliding in said guideway, substantially as set forth.

15. The combination with a vehicle-body having front and rear seats and stationary side walls one of which is provided with an entrance-passage, of a longitudinal guideway arranged on the side of the vehicle-body below said entrance-passage and provided with an oblique end portion, and a longitudinally-sliding door adapted to close said passage and provided with a guide-arm or projection sliding in said guideway, substantially as set forth.

571,860. VAPOR-BURNER. HENRY A. HOUSE, Bridgeport, Conn.

Filed Feb. 26, 1895. Serial No. 539,760. (No model.)



Claim.—1. In a gas or vapor burner, the combination of a casing communicating with a gas generator or supply and provided with an outlet-port, and a valve adapted to said port, a series of weights arranged to act upon the valve outside of the casing and adapted to be raised by and in proportion to the pressure of the gas within the casing, substantially as set forth.

2. The combination in a vapor-burner, of a casing having an outlet-port and communicating with a supply-pipe, a valve adapted to said port having an outwardly-projecting stem, a weight upon the stem, and additional weights supported above the first arranged to be successively lifted to load the valve, substantially as shown and for the purpose set forth.

3. The combination of the casing of a burner, a valve adapted to a port in said casing, and a series of weights arranged to successively load the valve as the latter is raised, substantially as set forth.

4. The combination of the casing of a burner, its port, a movable valve, and a series of weights arranged above the valve to successively load the valve as the valve is raised, substantially as set forth.

5. The combination of a vapor-burner comprising a port and valve, and a number of sections of refractory material supported upon bearings and arranged to be brought successively into contact as the valve is lifted, substantially as described.

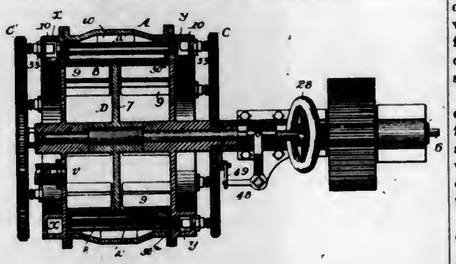
6. The combination of a vapor-burner comprising a port and valve, of an igniter device comprising branches or arms of refractory material extending into the space above or surrounding the burner and being carried by and adjustable on the valve, substantially as described.

7. The combination of the burner and valve and the generator having an opening, a section of refractory material extending through said opening in a position above the valve, a disk of refractory material arranged above the said section, and another section of refractory material carried by the valve, all arranged to make successive contact as the valve is lifted, substantially as and for the purpose described.

8. The combination in a vapor-burner, of a casing having an outlet-port, a supply-pipe communicating with the casing, a guide, a valve adapted to the port and moving on said guide, and an igniter-block of refractory material received by and adjustable on the stem of said valve, substantially as described.

571,861. STEAM-TURBINE. HENRY A. HOUSE, Bridgeport, Conn.

Filed Mar. 16, 1895. Serial No. 541,988. (No model.)



Claim.—1. The combination with the casing of a steam-turbine, of a driving-wheel provided at its periphery with a single series of separated blades arranged in the same circular plane and extending transversely across the casing, a series of stationary blades, two series of delivery-pipes extending transversely across the casing in proximity to the blades of the driving-wheel, said pipes being provided with steam-ports opening in different directions, adapted to direct steam upon opposite faces of the blades, and means for directing steam to one or the other series of said delivery-pipes, substantially as described.

2. The combination of a casing containing a driving-wheel, two sets of delivery-pipes each having a port at one end, and the pipes being disposed in pairs about the periphery of the wheel, means for directing steam into one or the other sets of pipes, valves adapted to enter the ports and being adjustable in varying degree to open and close the ports successively, and a governor for automatically controlling the position of the valves in accordance with the speed of the engine, substantially as described.

3. The combination with the casing and the drive-wheel of a series of delivery-pipes *a*, *a'*, equably disposed in pairs about the circumference of the wheel, and the pipes of each pair having inlet and discharge ports, valves arranged opposite the inlet-ports and adapted to enter the same, said valves being adjustable in varying degree to open and close the ports successively, and means for simultaneously operating the valves, substantially as described.

4. In a steam-turbine, the combination with the casing of the driving-wheel provided at its periphery with blades extending practically the full length of the casing, of the delivery-pipes substantially equal in length to the blades and provided with ports opening in opposite directions whereby steam may be directed upon opposite faces of the blades, valves for controlling the flow of steam to said pipes, and a speed-governor connected to automatically adjust said valves according to the speed of the engine, substantially as described.

5 The combination with the delivery-pipes *a*, *a'*, having the inlet and discharge ports, of the valves adapted to enter the inlet-ports and being adjustable in varying degree to open and close said ports successively, a series of pinions for the valves, and a toothed ring engaging all of said pinions, a governor, and connections intermediate the governor and ring whereby the latter is automatically moved in different directions accordingly as the speed of the engine increases or diminishes, substantially as described.

6. In a steam turbine, the combination with the casing, of a driving-wheel having blades extending practically the full length of the casing, delivery-pipes equably disposed in pairs about the periphery of the wheel, the pipes of each pair having discharge-ports opening in opposite directions and extending substantially the length of the blades, valves adapted to the inlet-ports of said pipes in varying degree, and means for moving said valves into and out of said ports to open and close the same, substantially as described.

7. In a steam-turbine, the combination with the casing, and a driving-wheel, of the delivery-pipes *a*, *a'*, each provided with an inlet-port at one end, valves adapted to enter the ports and being adjustable in varying degree to open and close the ports successively, and means for simultaneously operating said valves, substantially as described.

8. In a steam-turbine, the combination with the casing having an annular steam-chamber, of a driving-wheel, delivery-pipes *a*, *a'*, therefor each having an inlet-port leading into said chamber, means for supplying the chamber with a motor fluid, valves adapted to enter the inlet-ports and being adjustable in varying degree to open and close the ports successively, and means for simultaneously operating the valves, substantially as described.

9. In a steam-turbine, the combination with the casing, of a driving-wheel, delivery-pipes *a*, *a'* therefor each provided with an inlet-port, valves for entering the ports and adjustable in varying degree to open and close said ports successively, and means for antomatically and simultaneously operating said valves, substantially as described.

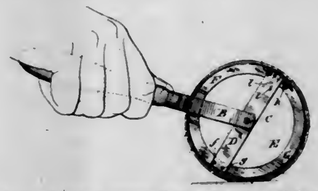
10. In a steam-turbine, the combination with the casing, of a driving-wheel, delivery-pipes *a*, *a'*, therefor each having an inlet-port, valves for entering the ports and being adjustable in varying degree for opening and closing the ports successively, and a governor and connections between the governor and valves whereby the latter are simultaneously operated, substantially as described.

11. In a steam-turbine, the combination with the casing, of a driving-wheel, delivery-pipes therefor each having an inlet-port, valves for entering the ports and being adjustable in varying degree to open and close the ports successively, and each valve having a stem provided with a pinion, a circular rack engaging said pinions, a governor on the shaft, and connections between the governor and rack whereby the valves are operated, substantially as described.

12. The combination with the inlet-ports of a steam-turbine, of controlling-valves adapted to enter the ports and being adjustable in varying degree for opening and closing the ports successively, a ring for operating all of the valves and provided with racks, reciprocating pawls, means for throwing the pawls into and out of engagement with said racks, and a governor controlling said means, substantially as described.

13. The combination with the casing of a steam-turbine, of the driving-wheel provided at its periphery with separated blades extending transversely across the casing, two series of delivery-pipes arranged in a circular plane and extending transversely across the casing in proximity to the edges of the blades of the driving-wheel, said pipes or passages having steam-ports opening in different directions adapted to direct steam upon opposite faces of the blades, and means for directing steam to one or other series of said delivery-pipes, substantially as described.

571,862. ROTARY BLOTTER. WILLIAM H. KELLY, New York, N. Y. Filed Jan. 16, 1896. Serial No. 575,706. (No model.)



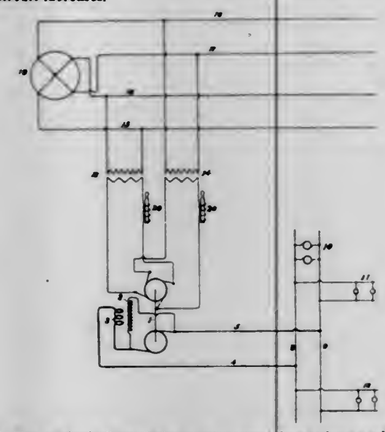
Claim.—In a rotary blotter the combination of the handle and connections as set forth with a two part cylinder, a yielding cover attached at its ends to the edges of the cylinder and a strip of blotting-paper folded at its ends and securely held in place in the manner described.

571,863. ROTARY-TRANSFORMER REGULATION. RALPH D. MERSHON, Pittsburg, Pa. Filed Apr. 6, 1896. Serial No. 586,288. (No model.)

Claim.—1. The method of controlling the electromotive force delivered from the direct-current end of a rotary transformer in accordance with changes in load, which consists in compounding the field of such transformer and establishing a difference of voltage between the same and the generator, which difference decreases as the load upon the direct-current side increases.

2. The method of controlling the electromotive force delivered from the direct-current end of a rotary transformer in accordance with changes in load which consists in compounding the field of such transformer and establishing in the alternating-current circuit an in-

ductive counter electromotive force the effect of which in reducing the line electromotive force decreases as the load on the direct-current circuit increases.

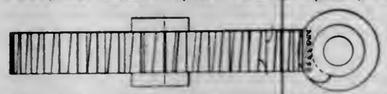


3. The method of regulating a rotary transformer in accordance with changes in load on the direct-current circuit, which consists in compounding the field of such transformer and establishing a counter electromotive force between the same and the generator, the effective component of which counter electromotive force decreases as the load on the direct-current circuit increases.

4. A system of electrical distribution comprising a source of alternating currents, its circuit, a rotary transformer having a compound-wound field-magnet, and an inductive resistance in said alternating-current circuit of such value that the desired electromotive force at the direct-current terminals may be automatically secured.

5. The combination with an alternating-current circuit provided with an inductive resistance, of a rotary transformer receiving current from such circuit and having a compound-wound field-magnet whereby the desired electromotive force upon the direct-current circuit will be secured.

571,864. GEARING FOR ELEVATORS. EDWARD B. PARKHURST, Woburn, Mass. Filed Nov. 18, 1895. Serial No. 569,274. (No model.)



Claim.—1. The combination with vertical racks, as 3, 3, of an elevator car or platform, gears mounted on said car or platform and provided with teeth each having one surface thereof inclined relatively to the axis of the gear, as in the case of a worm-gear, and the other surface thereof parallel with said axis to engage with the teeth of the adjacent rack, worms in engagement with the inclined surfaces of the teeth of the said gears, and means to rotate the said worms, substantially as described.

2. The gear herein described having each tooth thereof provided with one surface which is inclined relatively to the axis of the gear, as in the case of a worm-gear, and the other surface thereof parallel with the said axis, as in the case of a spur-gear, substantially as set forth.

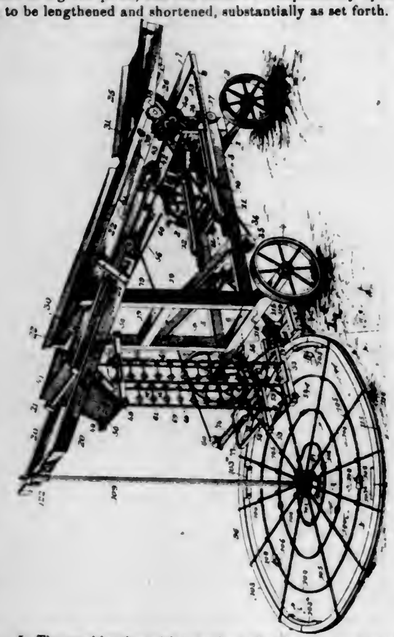
571,865. GRAIN-BUNDLE STACKER. HENRY F. SPAULDING, Canastota, S. D. Filed Jan. 10, 1896. Serial No. 574,997. (No model.)

Claim.—1. A revoluble stack-forming base or platform, in combination with a stacker for depositing thereon bound bundles of grain in rows and courses in the formation of a stack, substantially as set forth.

2. A revoluble stacking-base, in combination with a stacker provided with an adjustable conveyer section bearing a chute movable with the said conveyer-section and adapted to deposit the bound bundles of grain upon the revoluble stack-forming base when building the stack, substantially as specified.

3. A revoluble stacking base, in combination with a stacker having an adjustable conveyer-section provided with a chute capable of being lengthened and shortened and movable with the said conveyer-section so as to deposit the bundles of grain upon the stacking-base in the formation of the stack, substantially as described.

4. In a stacking-machine, the combination with a conveyer comprising a relatively fixed and a movable section, of a chute carried by the movable section, a drum operatively connected with the movable section for extending it, a second drum for lengthening and shortening the chute, a clutch mechanism for connecting the two drums, whereby the movable section and the chute can be simultaneously actuated and the delivery end of the chute caused to maintain a position in a given plane, and the chute be independently operated so as to be lengthened and shortened, substantially as set forth.



5. The combination with a stacker, of a chute comprising a guide formed by vertical supports composed of links having pivotal connection and arranged to yield outwardly at their upper ends and to resist outward pressure between their ends and to maintain a normal vertical position, substantially as set forth.

6. The combination with a stacker, of a chute comprising vertical supports composed of links having interlocking pivotal joints formed by an approximately butterfly projection on the end of one link and a corresponding slot on the end of the adjacent link to receive the wings of the butterfly projection, substantially in the manner and for the purpose set forth.

7. In a stacker, the combination of a chute comprising vertical supports, and toothed wheels at intervals in the length of the supports, substantially as set forth and for the purpose described.

8. In a stacker, the combination with a hopper, and guards exterior thereto, of a guide comprising vertical supports formed of links pivotally connected together and adapted to have their ends abut, whereby the links are held in alinement against pressure from within the guide and the upper links capable of yielding by engagement with the said guards, substantially as set forth for the purpose described.

9. In a stacker, a chute comprising a hopper, bars adjustably connected together and supporting the sides of the hopper, guards exterior to the hopper, vertical supports composed of pivoted links capable of resisting pressure against their inner sides, lower bars adjustably connected together and having the said supports connected therewith, toothed wheels at intervals in the length of the supports, and means for raising and lowering the lower bars, whereby the chute can be lengthened or shortened, substantially as set forth for the purpose described.

10. In a stacker, the combination of an adjustable platform, a pivoted conveyer-section, and actuating mechanism for simultaneously moving both the platform and the said pivoted conveyer-section, substantially as and for the purpose set forth.

11. In a stacker, the combination of a platform having rearwardly-extending arms provided with teeth, a pivoted conveyer-section, a bar having connection with the pivoted conveyer-section and formed with teeth, and a shaft provided with pinions meshing with the arms of the platform and with the teeth of the said bar, whereby both the platform and the conveyer-section are capable of simultaneous adjustment, substantially as set forth.

12. In a stacker, the combination with a chute comprising parallel bars adjustably connected together and notched to form a guide, and a frame attached to one of the bars, of a fork operating across the space between the bars and moving in the said notches, a spring mounted upon the stem of the fork between the bar and frame, and a rope or cord under the control of an attendant, whereby the said fork can be actuated, substantially as set forth for the purpose described.

13. A revoluble stacking-base comprising a hub, an outer rim, and arms intermediate of the rim and hub, substantially as set forth.

14. A revoluble stacking-base comprising a hub having a vertical flange formed with notches, an outer rim, and arms, the latter recessed at their outer ends to engage with the rim and having lateral extensions at their inner ends to engage with the inner wall of the vertical flange of the hub, substantially as set forth for the purpose specified.

15. A revoluble stacking base comprising a hub, an outer rim, arms connecting the hub and rim, and intermediate rings formed with loops corresponding in position and number with the said arms and adapted to receive the latter, substantially as set forth.

16. A revoluble stacking-base comprising a hub, an outer rim, and intermediate arms, the latter having their outer portions pivoted to the main body of the arms, whereby the outer portion of the base can be given a dip, substantially in the manner set forth.

17. In combination, a stacking-base, a central support, and outer supports capable of being lengthened and shortened for raising or lowering the outer portion of the stacking-base, substantially as set forth.

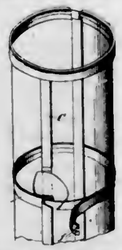
18. A stacking base, in combination with a central support, and outer supports each comprising a base, a frame, and an intermediate set-screw, whereby the frame can be raised or lowered to adjust the outer portion of the stacking-base to the required elevation, substantially as and for the purpose specified.

19. In combination, a revoluble stacking-base comprising a hub, an outer rim, and intermediate arms having their outer portions pivoted, a central support, and outer supports each consisting of a base having a threaded opening, a frame having a roller for the rim to rest upon, and an intermediate set-screw adapted to operate in the threaded opening of the base and having a swivel or loose connection with the frame, substantially as specified.

20. In combination, a stacking-base comprising a hub, an outer sectional rim, strips overlapping the joints between the sections of the rim and secured thereto, arms detachably connected with the hub and rim, and a series of rings of different diameters and concentrically disposed, and having corresponding loops to receive the said arms, and each ring being composed of sections detachably connected together, substantially in the manner set forth for the purpose described.

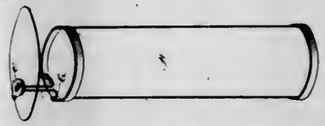
21. In a stacking-machine, the combination of a conveyer comprising a fixed and a movable section, a chute carried by the movable section and capable of being lengthened and shortened, a drum operatively connected with the movable conveyer-section, a second drum in line with the first-mentioned drum and adapted to have a movement toward and from the said drum and operatively connected with the said chute, half-clutches on the opposing ends of the two drums, means for holding the movable drum in either of its two positions, and a ratchet-and-pawl mechanism for holding the drums against backward rotation and under the control of the operator so that either one or both may be thrown into or out of operative relation, substantially in the manner set forth for the purpose described.

571,866. TRANSPARENT CHIMNEY. AARON P. STORRS, Owego, N. Y. Filed Oct. 29, 1895. Serial No. 567,299. (No model.)



Claim.—In a chimney such as herein described, the combination with the top and bottom rings and the plurality of vertically-arranged binding-strips connecting said rings and having recesses on each side, of the independent flexible sheets of transparent material arranged one above the other and having their vertical edges clamped in the recesses in the vertical binding-strips with their horizontal meeting edges overlapped and in contact and the horizontally-arranged clamping-bands overlying the horizontal meeting edges of the sheets of transparent material with their ends confined in the recesses in the vertical binding-strips and studs or projections on said horizontal binding-bands for holding the sheets in fixed position; substantially as described.

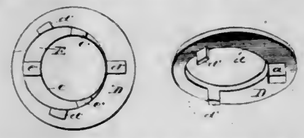
571,867. CHIMNEY FOR LIGHT-GIVING BURNERS. AARON P. STORRS, Owego, N. Y. Filed Oct. 30, 1895. Serial No. 567,431. (No model.)



Claim.—1. The combination with the chimney for light-giving burners, of the transparent canopy and the metallic plates formed in one piece doubled around the edge of the canopy, and the support or standard for the canopy passing through both said plates and canopy within the edge of the latter and clamped to the plates, whereby the canopy is held in horizontal position; substantially as described.

2. The combination with the chimney for light-giving burners of the transparent canopy, the integral supporting-plates clamped around the edge of the canopy, and the support or standard formed of wire having its doubled central portion passed through the plates and canopy and clamped thereto, and its ends reversely bent and formed into independent clamping-forks for the top of the chimney; substantially as described.

571,868. LAMP-POST CAP. AARON P. STORRS, Owego, N. Y. Filed Apr. 30, 1896. Serial No. 589,732. (No model.)



Claim.—1. In a centering device for burners the combination with the post or support and the two cooperating disks having the eccentric aperture therein and downwardly-extending flanges bounding a portion only of the periphery of the apertures; whereby the side walls of the apertures and the wall of the post may be brought in line; as and for the purpose set forth.

2. In a centering device for burners the combination with the post or support of the two cooperating disks having eccentric apertures therein and depending relatively small lugs whereby the side walls of the apertures in the disks and of the support may be brought in line and the lateral displacement of said disks prevented; substantially as described.

571,869. FLEXIBLE SHAFT. NELSON STOW, Binghamton, N. Y. Filed Dec. 27, 1895. Serial No. 573,535. (No model.)



Claim.—1. A flexible shaft composed of layers of wire, the internal layers being reduced to form a tapered portion.

2. A flexible shaft composed of layers and having a reduced or tapered portion, the reduction or grinding being distributed throughout the layers, substantially as described.

3. A flexible shafting having a tapered or reduced part and formed of layers the internal layers being tapered or reduced at the reduced part of the shaft while the outer layer is of the same diameter throughout, substantially as described.

571,870. PROCESS OF TREATING SUINT AND PRODUCTS RESULTING THEREFROM. HERMANN T. VULTÉ, New Rochelle, N. Y., assignor to John H. Wingfield, New York, N. Y. Filed Feb. 16, 1895. Serial No. 538,701. (No specimens.)

Claim.—1. The process of separating the cholesterin group of constituents of suint from the more soluble and the insoluble constituents, consisting in dissolving the suint in a warm petroleum-oil which forms a solution of the suint, and while keeping the solution heated depositing first the insoluble matter from the solution and then by cooling depositing the cholesterin group of constituents, substantially as described.

2. The process of separating the cholesterin group of constituents of suint from the more soluble and the insoluble constituents, consisting in dissolving the suint in a warm petroleum-oil of specific gravity 30° to 38° Baumé, and while keeping the solution heated depositing first the insoluble matter from the solution, and then by cooling depositing the cholesterin group of constituents, substantially as described.

3. As a new composition of matter, the refined liquid product from which the insoluble matter and cholesterin group of constituents have been removed, consisting of the residue of suint dissolved in a petroleum-oil of specific gravity not higher than 51° Baumé, substantially as described.

4. As a new composition of matter, the refined liquid product from which the insoluble matter and cholesterin group of constituents have been removed, consisting of the residue of suint dissolved in a petroleum-oil of specific gravity 30° to 38° Baumé, substantially as described.

5. As a new composition of matter, the neutral wool-fat substantially such as results from the treatment of suint in the manner described and consisting mainly of the described cholesterin group of constituents of suint, substantially as described.

6. As a new composition of matter, the refined product from which the insoluble matter has been removed, consisting of the mixture of the deposit and solution obtained by subjecting suint to the action of a warm petroleum-oil of specific gravity not higher than 51° Baumé, substantially as described.

7. As a new composition of matter, the refined product from which the insoluble matter has been removed, consisting of the mixture of the deposit and solution, obtained by subjecting suint to the action of a warm petroleum-oil of specific gravity 30° to 38° Baumé, substantially as described.

571,871. NUT-LOCK. JOHN E. WARD, Waverly, N. Y. Filed Jan. 27, 1896. Serial No. 576,996 (No model.)



Claim.—1. A washer having a bolt-opening and an annular groove in one face surrounding the same, combined with a flexible fastening device adapted to surround the bolt in said groove and to wedge itself against the entering portion thereof, said groove having a cooperating opening substantially as described.

2. A washer having a bolt opening and an annular groove in one face surrounding the same, combined with a flexible fastening device adapted to surround the bolt in said groove and to wedge itself against the entering portion thereof, said groove opening out upon one side of the plate or washer, substantially as described.

3. A washer having a bolt-opening and an annular groove in one face surrounding the same, said groove opening out upon one side of the plate or washer, and having a teat or projection upon its opposite face combined with a bendable fastening device inserted in said opening and having its inner end tapered to form a wedge against the portion thereof entering the groove, substantially as described.

4. The combination with a bolt and the nut, of a washer having a bolt-opening and a groove surrounding the same and opening out upon one face of the washer and a flexible fastening device, adapted to be driven into said opening and to make a complete circle in said groove and to have its inner end wedged between the outermost portion of the fastening and the opposite adjacent wall of the groove, substantially as described.

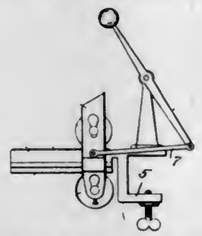
571,872. TIRE-FASTENING. ANGUS M. WILLIAMSON, Philadelphia, Pa. Filed Nov. 2, 1895. Serial No. 567,697. (No model.)



Claim.—1. A wheel-tire fastening, comprising a felly, a band secured on the felly and having outwardly-projecting side flanges forming a channel, a resilient tire seated in said channel, a rod passed through the tire and having each of its opposing ends formed with an opening, and a loop bolt passed through the openings in the rod, and also through the band and felly and secured in place, substantially as described.

2. A tire-fastener, comprising a felly, a resilient tire located on the felly, a rod holding the resilient tire, the ends of the rod being located adjacent to each other, and a loop-bolt connected with said ends and passed through the felly, substantially as described.

571,873. ENVELOP-SEALER. JAMES H. FEARIS, Connersville, Ind. Filed Sept. 5, 1896. Serial No. 605,030. (No model.)



Claim.—1. In an envelop-sealer, the combination, substantially as set forth, of a fixed flat pad having a moistening-surface adapted to receive flatly at one time the entire gummed surface of the gummed flap of an envelop, a pressing agent at said moistening-surface and adapted to press the envelop-flap against said surface, and mechanism for giving motion to said pressing agent so as to permit the flap to be presented to said surface and then press the flap to said surface and then permit said flap to be removed.

2. In an envelop-sealer, the combination, substantially as set forth, of a fixed flat pad having a moistening-surface adapted to receive at one time the entire gummed surface of the gummed flap of an envelop, a carriage arranged to move across said pad, a roller mounted in said carriage and bearing against said pad, and mechanism for giving traversing motion to said carriage.

3. In an envelop-sealer, the combination, substantially as set forth, of a fixed flat pad having a moistening-surface, with an area as great as that of the gummed flap of the envelop, a support holding said pad in an elevated position with said moistening-surface downward, a carriage arranged to traverse said pad, a roller mounted in said carriage under said pad and engaging the moistening-surface of the pad, and mechanism for traversing said carriage across said pad.

4. In an envelop-sealer, the combination, substantially as set forth, of a pad having its lower surface formed of absorptive yielding material, a filling of absorptive material above said lower surface and adapted to be charged with water and keep said lower surface moistened, and a perforated pan disposed within the upper central portion of said absorbent material and displacing only said upper central portion.

5. In an envelop sealer, the combination, substantially as set forth, of a tablet having a dry surface and a moistening-surface, a carriage arranged to traverse said tablet, rollers mounted in said carriage and engaging the surfaces of the tablet, and mechanism for giving traversing motion to said carriage.

6. In an envelop-sealer, the combination, substantially as set forth, of a tablet presenting a surface upwardly and carrying a pad presenting a moistening-surface downwardly, a support connected with said tablet and adapted to support the same horizontally with both its surfaces accessible, a carriage arranged to traverse said tablet, rollers mounted in said carriage and engaging the surfaces of the tablet, and mechanism for giving traversing motion to said carriage.

571,874. PUNCHING-BAG SUPPORT. HORACE B. FRAZIER, Chicago, Ill., assignor to the E. C. Cook & Bro., same place. Filed Sept. 3, 1895. Serial No. 561,341. (No model.)

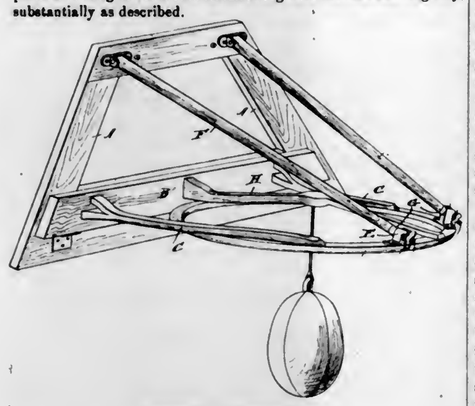
Claim.—1. A punching-bag support, comprising in combination a rebound-ring, a support for the bag located above the plane of the ring, and a punching-bag flexibly connected to the support substantially as described.

2. A punching-bag support, comprising a base and a framework hinged thereto, said framework having a rebound-ring and a support-bar extending above the horizontal plane of the ring and suitable braces, substantially as described.

3. A punching-bag support, comprising a base, a hinged cross-piece, supporting-arms rigidly connected with said cross-piece, a rebound-ring supported upon said arms and braces adjustably connected with the hinged portion of the framework, substantially as described.

4. A punching-bag support, comprising in combination a base adapted to be secured to a wall, an open framework hinged thereto whereby it may be extended at an angle to the supports, side braces for maintaining it in such angular position, and an upwardly-arched bar for supporting the bag, substantially as described.

5. A punching-bag support having a rebound-ring with a narrow rounded contact edge and means for supporting said ring and a punching-bag flexibly connected to the support by a connecting means which permits the bag to contact in its full swing with the rebound-ring only, substantially as described.

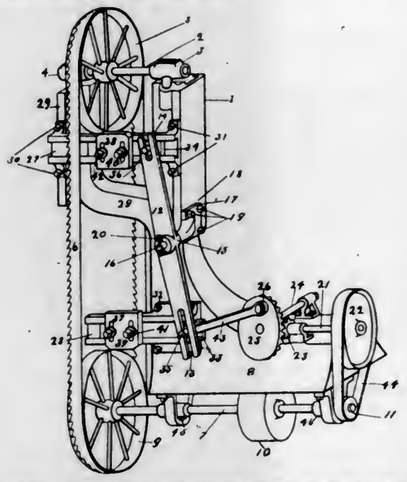


571,875. BURNER FOR ACETYLENE GAS. HENRY F. FULLER, Chicago, Ill., assignor to the Walmsley, Fuller & Company, same place. Filed May 20, 1896. Serial No. 592,273. (No model.)



Claim.—A burner for acetylene gas comprising a tip formed throughout of metal and composed of a tubular body having a thickened top increased in thickness around its center and concave on its outer surface, and provided with one or more minute holes extending through it to afford the burner outlet, substantially as and for the purpose set forth.

571,876. RECIPROCATING SCRAPER FOR BAND-SAW WHEELS. ROSWELL W. HALE, West Bay City, Mich. Filed May 11, 1896. Serial No. 591,059. (No model.)



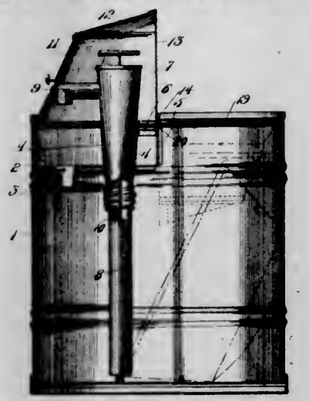
Claim.—1. In reciprocating scrapers for band-saw mills, the combination of the wheels 5, and 9, the lever 12, said lever provided with bifurcated ends and a journal-bearing at its midway, the journal 16, for journaling the said lever thereon, the slides 33, and 34, and the slideways 27, and 28, and means for scraping the faces of the said wheels 5, and 9, substantially as described.

2. In reciprocating scrapers for band-saw mills, the combination of the lever 12, said lever provided with bifurcated ends and a journal-bearing at its midway, the saw-wheels 5, and 9, the journal 16, the slides 33, and 34, the slideways 27, and 28, and the scrapers 37, and 38, and means for actuating the same substantially as described.

3. In reciprocating scrapers for band-saw mills, the combination of the band-saw wheels 5, and 9, the slideways 27, and 28, secured to the column of a band-saw mill, and the bolts for securing it thereto the slides 33, and 34, provided with pintles 35, and 36, the scrapers 37, and 38, provided with slotted holes and the stud-bolts 41, and 42, the said scrapers secured to the said slides by means of the said stud-bolts, the lever 12, provided with bifurcated ends and a journal-bearing provided at its midway; the journal 16, said journal provided with a flange 17, the said flange secured to the column of the band-saw mill and the bolts for securing the same, the said lever journal-bearing slid on the said journal with its bifurcated ends placed astride of the said pintles, and the cotter-pin 20, for securing it on the said journal substantially as described.

4. In reciprocating scrapers for band-saw mills, the combination of the band-saw wheels 5, and 9, the lever 12, provided with bifurcated ends and a journal-bearing at its midway, the slides 27, and 28, said slides secured to the column of a band-saw mill, and the bolts for securing it thereto, the slides 33, and 34, provided with pintles 35, and 36, and the scrapers 37, and 38, provided with slotted holes, and the stud-bolts 41, and 42, the said scrapers secured to the said slides by inserting the said bolts through the said slotted holes and screwed into the said slides, the journal 16, said journal provided with a flanged end 17, said flanged end secured to the column of a band-saw mill, and the bolts for securing it thereto, and the cotter-pin 20, the said lever journal-bearing slid on the said journal with its bifurcated ends astride of the said pintles and secured by the said cotter-pin, the reciprocating connecting-rod 43, the miter gear-wheel 25, provided with a wrist-pin 26, and its shaft 24, the said reciprocating rod having one end journaled to the lower pintle and its opposite end connected to the said wrist, the miter-wheel 23, and its shaft 21, the band-wheel 22, the pulley 11, and the belt 44, for driving the same substantially as described.

571,877. PORTABLE OIL TANK AND PUMP. LEWIS W. HEMP, St. Louis, Mo. Filed Apr. 8, 1896. Serial No. 586,637. (No model.)



Claim.—1. In a portable oil tank and pump, a hood removably hinged on a line transversely of the center of the tank, said hood being half-conical in elevation and semicircular at its base and of such a size and shape as that it will tip backward into said tank and a lid semicircular in form removably positioned behind said hood, substantially as stated.

2. In a portable oil tank and pump, the combination of a tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one-half of the upper end of said tank, a strainer in said cover, a flaring tube in said cover, a pump consisting of two or more pieces jointed together and removably located in said flaring tube, a hood removably hinged on a line with the straight edge of said cover and transversely of the center of the tank, said head being half-conical in elevation and semicircular in plan and of such a size and such a shape as that it will tip backward into said tank, and a lid semicircular in form removably positioned behind said hood, substantially as stated.

3. In a device of the class described, the combination of the tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one half of the upper end of said tank, an opening in said cover, a pump constructed in removable sections and removably located in said opening, a hood removably hinged on a line with the straight edge of said cover and transversely of the center of the

tank, said hood being of such a size and such a shape as that it will cover said pump when in position for use and as that it will tip backward into said tank and a lid, semicircular in form, removably positioned behind said hood, substantially as specified.

4. In a device of the class described, the combination of a tank, a cover rigidly fixed in said tank and closing approximately one-half of the upper end of said tank, an opening in said cover, a pump constructed of detachable sections and designed to be removably located in said opening, a hood removably hinged to said tank and designed to cover said pump when the same is in use, said hood being of such a size and such a shape as that it will tip backward into the space behind said cover, a lid removably positioned behind said hood and designed to close the opening behind said cover, substantially as specified.

5. In a device of the class described, the body 1, the semicircular top piece 2 rigidly fixed in horizontal position at a point below the upper edge of said body 1, the flaring tube 4 penetrating said top piece, the wall 5 projecting upwardly from the straight edge of said top piece, the lid 19, the vertical wall 20 attached to said lid and the pins 21 and 22 inserted and fixed horizontally through said wall, substantially as specified.

6. In a device of the class described, the body 1, the semicircular top piece 2 rigidly fixed in horizontal position at a point below the upper edge of said body 1, the flaring tube 4 penetrating said top piece, the wall 5 projecting upwardly from the straight edge of said top piece, the pump in said tube 4, which pump consists of the head 7 and the lower tube 8 removably screwed together, the spout 9 attached to the head 7 and the plunger 10 operating in said lower tube, the sections of said pump being of such a size and such a shape as will allow of their being packed in the bottom of said tank, substantially as specified.

7 In a device of the class described, the combination of a tank, a cover closing one-half of the upper end of said tank, said cover having a strainer and a tubular opening, a pump removably positioned in said tubular opening, a hood removably hinged to said tank, which hood consists of the semicircular flaring wall 11, semicircular flaring top 12 and the vertical wall 13, said hood being of such a size and such a shape as that it will tip backward into said tank, substantially as specified.

8. In a device of the class described, the combination of a tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one-half of the upper end of said tank, and a hood hinged on a line with the straight edge of said cover, said hood being of such a size and such a shape as that it will tip backward into said tank, substantially as specified.

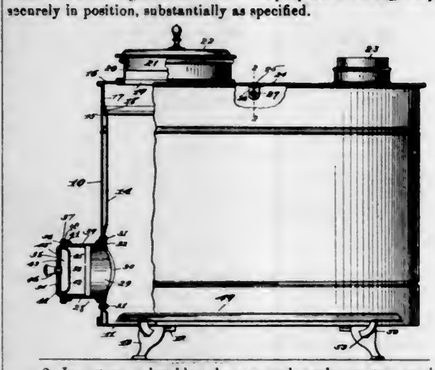
9. In a device of the class described, the combination of a tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one-half of the upper end of said tank, a hood hinged on a line with the straight edge of said cover, said hood being of such a size and such a shape as that it will tip backward into the space behind said cover, and a lid semicircular in form removably positioned behind said hood, substantially as specified.

10. In a device of the class described, the combination of a tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one-half of the upper end of said tank, a pump consisting of two or more pieces jointed together and removably mounted in a position through said cover, the sections of said pump being of such a size and such a shape as will allow their being packed in the bottom of said tank, and a hood hinged on a line with the straight edge of said cover, said hood being of such a size and such a shape as that it will tip backward into said tank, substantially as specified.

11. In a device of the class described, the combination of a tank, a cover rigidly fixed in said tank, said cover being semicircular in form and closing one-half of the upper end of said tank, a pump consisting of two or more pieces jointed together and removably mounted in a position through said cover, the sections of said pump being of such a size and such a shape as will allow their being packed in the bottom of said tank, a hood hinged on a line with the straight edge of said cover, said hood being of such a size and such a shape as that it will tip backward into said tank, and a lid semicircular in form removably positioned behind said hood, substantially as specified.

571,878. STOVE. LEWIS W. HEMP, St. Louis, Mo. Filed June 22, 1896. Serial No. 596,476. (No model.)

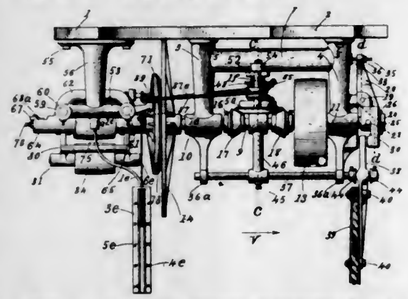
Claim.—1. In a stove, a sheet-metal body 10 in a vertical position, the sheet-metal bottom 11 attached to said body 10, the lining 14 removably inserted inside of the body 10, said lining having the outwardly-flared upper edge 15 fitting tightly within and a slight distance below the edge of said body 10, the sheet-metal top 16 covering the upper end of said body 10, the flange 17 projecting downwardly from the edge of said top and fitting closely within the upper end of the body 10, the lower edge 18 of said flange being turned inwardly and fitting closely within the upper edge 15 of the lining 14, the strap of iron 24 extending transversely under the top 16 and attached thereto by means of the rivet 25 and having its ends 26 turned downwardly inside of the flange 17, and the stove-bolts inserted through the upper edge of the body 10, then through the flange 17, and then through the ends 26 for the purpose of holding the parts securely in position, substantially as specified.



2. In a stove, a hot-blast damper and spark-arrester, consisting of the disk 34 having the opening 43 above its center, the disk 35 having the opening 42 below its center, the edges 36 and 37 of said disks being turned toward each other as required to form a space between said disks, the thimble 39, the flange 40 projecting outwardly from the outer end of said thimble and engaging against the inner surface of the edge 37 of the disk 35, the outer edge 41 of the disk 44 being turned over the edge 37 and over the edge of the flange 40 and downwardly behind said flange 40 as required to hold the disks 34 and 35 and the thimble 39 securely together, and the disk 44, having the opening 45 above its center, pivotally mounted between the disks 34 and 35, substantially as specified.

3. In a stove, the bottom 11, the loops 12 attached to said bottom, the legs 13 inserted in said loops, said legs having the apertures 53, the foot-rest 49, the posts 50 attached to said foot-rest by means of the bolts 51, the hooks 54 upon the lower ends of said posts and removably inserted in said apertures 53, the strengthening-lugs 55 upon said legs 13 in position to be engaged by said hooks, and the lugs 56 extending downwardly from said posts 50 and engaging the outer surface of the legs 13 below the apertures 53, substantially as specified.

571,879. VARIABLE-SPEED COUNTER-SHAFT. BRITAIN HOLMES, Buffalo, N. Y., assignor to James Sangster, same place. Filed May 20, 1895. Serial No. 549,882. (No model.)



Claim.—1. In a frictional gearing, the combination, with a longitudinally-movable rotatable shaft having a disk at one end thereof, of a carriage adjacent to and movable in a plane parallel with the face of the disk, a rotatable shaft journaled in said carriage having a disk at one end, the face of which is at an angle to said first-mentioned disk, mechanism intermediate the carriage and the longitudinally-movable shaft for automatically moving the carriage when the first-mentioned shaft is moved longitudinally, and means for moving the shaft so as to place the disk into or out of contact, substantially as set forth.

2. In frictional gearing, a rotatable shaft having a disk mounted thereon at one end thereof, slideways at right angles to said shaft, a carriage reciprocably movable on said slideways, a rotatable shaft journaled in said carriage and having a disk secured thereto and adapted to contact with said first-mentioned disk, two bevel-wheels mounted on said first-mentioned shaft, a bevel-wheel adapted to gear with either of said two bevel-wheels and having secured to its shaft a drum with a spiral grooved periphery, and cords connected with said drum and said carriage, said bevel-wheel shaft having its bearing movable on said first-mentioned shaft, said parts being combined substantially as described.

3. In a frictional gearing, the combination, with a driven disk and a slideway adjacent thereto and parallel therewith, of a movable carriage upon the slideways, a driven disk upon the carriage at a slight angle to the other disk and adapted to be moved entirely across its face, a lever for moving the disks into and out of engagement, and automatic means for moving the one disk across the face of the other when the lever is operated, substantially as set forth.

4. In a frictional gearing, the combination, with two disks, one of which is movable entirely across the face of the other, of a shifting bar capable of movement in two directions, at substantially right angles to each other, and means for connecting the bar with the disks, whereby the movement of the bar in one direction will place the disks into or out of contact, and a movement in the other direction will vary the direction and rate of speed of the disks relatively to each other, substantially as set forth.

5. A variable-speed counter-shaft, consisting of a supporting-frame, a driving-shaft mounted therein, a driving-disk at its forward end, an arm or lever pivoted to the rear hanger, a yielding spring engaging with said arm, means for adjusting the force of said spring, a pivoted box, a thrust-bearing connecting the lower end of said arm with the rear end of the driving-shaft, a shifting bar and connecting mechanism for moving the driving-disk away from the driven disk; or allowing the spring to act and bring the driving-disk into frictional contact with the driven disk, substantially as set forth.

6. In a variable-speed counter-shaft, the combination, with supporting-hangers, of a driving-shaft mounted in suitable boxes in said hangers, a driving-disk at one end of said shaft, an arm pivoted to the rear hanger, a yielding spring engaging with said arm, a box pivoted in said arm below its pivotal center, a thrust-bearing connecting said arm with the opposite end of the driving-shaft, a toggle-joint having one end of one of its members located within a recess in the lower end of the pivoted arm, and the other member having one end located in a recess in the lower portion of the rear hanger, and a pivoted shifting bar having depressions at each side of its top end in which are located the two opposite ends of the toggle-joint bars, for moving the driving-shaft and its driving-disk away from the driven disk, substantially as described.

7. In a variable-speed counter-shaft, the combination, with a driving friction-disk, its driving-shaft and operating mechanism, of a supporting-frame, a slideway mounted thereon, at right angles to the driving-shaft, a sliding carriage mounted on said slideway, a driven disk on said carriage facing the driving-disk at a slight angle thereto so that a portion of one side only is in contact therewith, two driving bevel-wheels on the driving-shaft, a vertical shaft between said wheels, a beveled driven wheel and winding-drum mounted thereon, cords or cables connecting the winding-drum with the driven-disk carriage, and a pivoted shifting bar and its connecting mechanism, for moving the driven bevel-wheel to or in engagement with one or the other driving bevel-wheels, and thereby causing a movement of the driven disk on the face of the driving-disk, substantially as set forth.

8. A variable-speed counter-shaft, consisting of a supporting-frame, a driving-disk capable of a rotary movement in its bearings, two bevel driving-wheels and a driving friction-disk mounted on said shaft, in combination with the supporting-frame, a transverse slideway, a carriage thereon, a driven friction-disk mounted in said carriage, at a slight incline to the working face of the driving-disk, so that a portion only on one side of its center is in frictional contact therewith, a driven bevel-wheel, means connecting it with the driven friction-disks, a shifting bar, and means for bringing said driven bevel-wheel into engagement with one or the other bevel driving-wheels on the driving-shaft, and thereby causing a movement of the driven friction-disk on the face of the friction driving-disk, substantially as set forth.

9. In a variable-speed counter-shaft, the combination, with a depending supporting-frame, of a driving-shaft mounted therein, capable of a longitudinal and a rotative movement in its bearings, a driving-disk rigidly secured to the forward end of said shaft, an arm pivoted to the rear frame piece, a spring for moving said arm on its pivotal center in one direction, means for adjusting the force of said spring, a pivoted box, a thrust-bearing connecting the lower end of said arm with the rear end of the driving-shaft, and a shifting bar and connecting mechanism for moving the pivoted arm in an opposite direction against the force of said spring, and thereby operating the driving-disk, substantially as set forth.

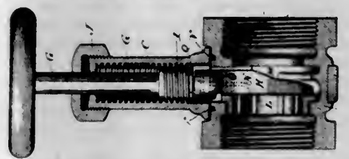
10. In a variable-speed counter-shaft, a depending supporting-frame, a transverse slideway mounted on said frame, a movable carriage mounted on said slideway carrying a driven disk mounted on a shaft so as to be capable of rotation, boxes on said carriage, in combination with a driving-disk rigidly secured to a driving-shaft set nearly at right angles to the driven-disk slideway and mounted in bearings in a depending frame, the driven disk being adapted for contact with a portion of its face on the driving-disk, means including bevel-gearings connected with and operated by the driving shaft for moving the driven-disk carriage in its slideway and thereby moving the driven disk on the face of the driving-disk, a support for the shaft of one of said bevel-gears, mounted on the shaft of the driving-disk, and a shifting bar for bringing said bevel-gearing into or out of engagement, substantially as set forth.

11. In a variable-speed counter-shaft, the combination, with the driven-disk carriage and slideway on which it travels, of a clamping device, a spring for closing the same and holding the carriage to the slideway at any point to which it may be adjusted, a carriage-releasing bar and means for operating it and opening the clamp and releasing the carriage, and moving the latter, substantially as set forth.

12. In a variable-speed counter-shaft, the combination with the driven-disk carriage and a slideway upon which it slides back and forth, of a pivoted clamping-bar and a closing-spring for locking the driven-disk carriage when adjusted to the desired point, and means substantially as above described, whereby the driven-disk carriage is released just prior to being moved and instantly locked the moment the desired adjustment is made, substantially as set forth.

13. In a variable-speed counter-shaft, the combination, with a driven friction-disk, of a carriage upon which it is mounted on a rotatable shaft, and a track or slideway secured in a depending frame for said carriage to move on, a driving-shaft mounted at right angles to the carriage-slideway in boxes in a depending frame, and capable of a rotating and a longitudinal movement in its bearings, two bevel driving-pulleys mounted on the driving-shaft, a shaft mounted below the driving-shaft in boxes and capable of a longitudinal movement only in said boxes, an upright standard mounted rigidly on said shaft, a vertical shaft journaled in said standards, a winding-drum and bevel-gears secured to said vertical shaft, ropes or cables connected with said winding-drum and with the driven-disk carriage, grooved friction-pulleys for keeping said ropes in position, and means for moving the driven bevel friction-wheel from one to the other driving bevel-wheels and thereby causing the movement of the driven friction-disk across the face of the driving-disk, substantially as set forth.

571,880. STRAIGHTWAY VALVE. EDMUND H. LUNKEN, Cincinnati, Ohio, assignor to the Lunkenheimer Company, same place. Filed Aug. 18, 1894. Serial No. 520,665. (No model.)



Claim.—1. In a straightway valve, the combination with the rotary and longitudinally-movable valve-stem having the threaded portion engaging fixed threads in the casing, and the valve-disk operated thereby, of the swiveled coupling-piece interposed between and connecting the disk and stem, means for preventing the rotation of the coupling-piece whereby the stem may be turned to raise and lower the disk without turning the coupling-piece and friction between and wear upon the disk and stem be avoided, substantially as described.

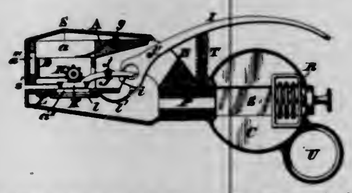
2. In a straightway valve, the combination, with the rotary valve-stem and the disk operated thereby, of a non-rotatable coupling-piece R interposed between and connecting them, said piece having a projecting flange at each end, the lower one fitting in a recess in the upper side of the disk and the upper one fitting in a recess in the lower end of the valve-stem and confined therein, and the valve-stem adapted to rotate independent of the coupling-piece substantially as described.

3. In a straightway valve, the combination, with the rotary valve-stem having the interiorly-threaded recess in its lower end, and the disk operated by the stem, of the coupling-piece R interposed between them and having a flange at its lower end fitting in a recess in the upper side of the disk and with a second flange at its upper end fitting in the recess in the lower end of the valve stem, and the lock-nut Q having left-hand threads screwed into the recess in the stem and confining the upper end of the coupling-piece therein, and means for preventing the rotation of the coupling-piece substantially as described.

571,881. CANCELING-PUNCH. EDWIN H. MURDOCK, Cincinnati, Ohio. Filed Oct. 20, 1892. Serial No. 449,463. (No model.)

Claim.—1. A hand-punch provided with a device that cuts a portion from a ticket; a type-wheel that cancels said clipping; a recep-

tacle for holding it; a slide that opens and closes the entrance to said receptacle; and a single lever that successively operates said wheel, cutter and slide, in the manner described, and for the purpose stated.



2. A hand-punch provided with a slotted cutter, a wheel having a numbered periphery, and a common lever that operates said devices and causes said wheel to traverse said slot and imprint a ticket, which printed portion is bodily detached by said cutter, substantially as herein described.

3. A punch provided with a slotted knife, and a canceling device operating through said slot, said canceling device being applied to a carrier reciprocating within the head of the implement, substantially as described.

4. A punch provided with a slotted knife, a type-wheel operating through said slot, a pad that applies ink to said wheel, and a common lever operating said knife, wheel and pad, substantially as described.

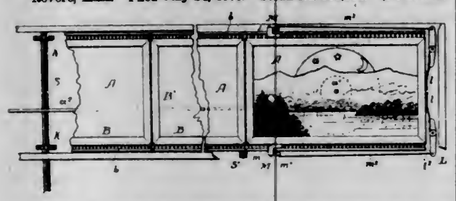
5. A hand-punch having a mortised head; a carrier reciprocating therein; a type-wheel journaled in said carrier; a swinging ink-pad applied to said head, and adapted to support said wheel when elevated; and a single lever that operates said carrier and pad, in the manner described, and for the purpose stated.

6. The combination, in a canceling-punch, of a reciprocating carrier D, provided with a type-wheel E, the springs g, g', having their free ends in contact with said carrier, the shaft G, to which the coiled ends of said springs are fastened, the lug g^3, applied to said shaft, and the lifter H operating said lever, said lever being rigidly attached to the toe i of the main lever I, for the purpose described.

7. A hand-punch provided with a device that first cancels a ticket; a device that then severs this canceled part from the ticket proper; and another device that finally permits this clipping to be deposited within a sealed receptacle, which three operations are successively effected by the action of a single lever, substantially in the manner herein described.

8. The combination, in a hand-punch, of the carrier D, reciprocating within the head of the implement, the type-wheel E, journaled in said carrier, devices for operating said carrier, a swinging flap M, hung upon a shaft N, having a lateral projection n, a spring m that raises said flap, and a bent lever V, adapted to act against said projection n, in the manner described, said bent lever being rigidly attached to the toe i, of main lever I, all as herein set forth.

571,882. ADVERTISEMENT-SHIFTER. BENJAMIN NICHOLS, Revere, Mass. Filed July 24, 1896. Serial No. 600,332. (No model.)



Claim.—1. In an advertisement-shifter, the combination of two parallel sets of guides, advertisement-holding frames movable in said guides, means for imparting a forward motion to the frames in one of said guides and a rearward motion to those in the other, and means for automatically switching said frames from one set of guides to the other.

2. In an advertisement-shifter, the combination of the parallel guides, frames sliding therein and having rack-pins, driving-gears meshing with said rack-pins, and means for switching the frames from one guide to the other, for the purpose set forth.

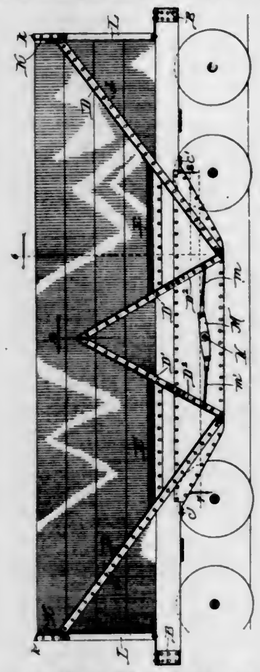
3. The combination of the parallel guides, frames sliding therein and having rack-pins, gears meshing with said rack-pins, and springs for keeping said rack-pins in engagement with said gears in switching the frames from one guide to the other.

4. The combination of the parallel guides, the card-frames, means for their propulsion, levers, L and M, by which the frames are switched from guide to guide, and the rods, m^3, connecting said levers, for the purpose specified.

5. The parallel guides, the card-frames sliding therein and having rack-pins, and the actuating gears meshing with said rack-pins, in combination with the levers, L and M, and their connecting-rods, m^3, as set forth.

6. The combination with the grooves and card-frames sliding therein, of the rotative disk, a, wheel, a', and the bar, a^3, substantially as and for the purpose specified.

571,883. METALLIC CAR. WILLARD PENNOCK, Minerva, Ohio. Filed Apr. 14, 1896. Serial No. 587,452. (No model.)



Claim.—1. A car of the class described, having a bottom portion provided with a substantially centrally-located A-shaped portion, swinging doors—one on each depending leg of the A-shaped portion, a set of compound levers formed of at least three links interposed between such doors and arranged to open or close the same, and a rock-shaft substantially centrally arranged between the swinging doors and carrying the central link of the compound levers for holding the compound lever in a substantially straight line when the doors are closed for transmitting the strain or load from one door to the other and for operating the levers or links, substantially as described.

2. A car of the class described having a bottom provided with a substantially centrally-located A-shaped portion, swinging doors one on each of the lower depending legs of the A shaped portion, a set of compound toggle-levers interposed between such doors the central lever of which is arranged to carry the pivotal fulcrum points of the end levers beyond a central line to lock the same, and hold the compound levers in substantially a straight line when the doors are closed to transmit the strains direct from one door to the other, and a rock-shaft upon which said central lever is mounted for operating the parts, substantially as described.

3. A car of the class described having a bottom provided with a centrally-located A-shaped portion, swinging doors one on the lower end of each depending leg of the A-shaped portion, a set of compound toggle-levers interposed between such doors the central lever of which is arranged to carry the pivotal fulcrum-points of the end levers beyond a central line to lock and hold the compound levers in substantially a straight line when the doors are closed to transmit the strain or load from one door to the other and cause the load to assist in locking the same, a rock-shaft upon which the central lever is mounted and operated, and means for limiting the motion of the rock-shaft in one direction, substantially as described.

4. A car of the class described having a bottom provided with a centrally-located A-shaped portion, swinging doors one on the lower end of each depending leg, a set of compound toggle-levers interposed between such doors the central lever of which is arranged to carry the fulcrum pivotal points of the end levers beyond a central line to hold the compound levers in substantially a straight line when the doors are closed to assist in locking the doors and transmit the strain or load from one door directly to the other, a rock-shaft upon which the central lever is mounted and operated, and means for locking the rock-shaft at one limit of its motion to hold the parts in their closed position, substantially as described.

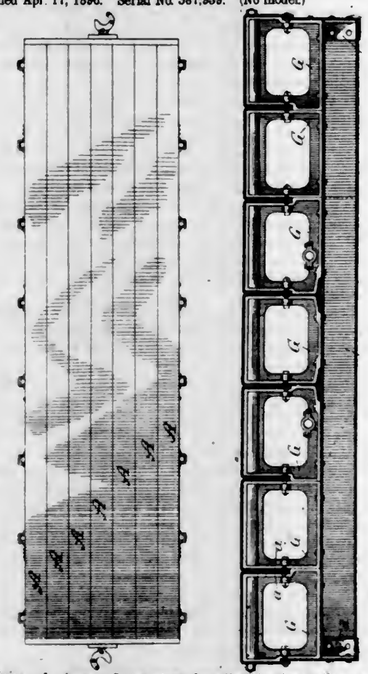
5. A car of the class described having a bottom or floor portion and side portions formed of channel-beams arranged longitudinally with respect to the length of the car and with their legs or flanges extending outwardly to present a smooth or substantially smooth interior surface, substantially as described.

6. A car of the class described having a bottom or floor portion and side portions formed of channel-beams arranged longitudinally with respect to the length of the car and end portions formed of channel-irons arranged transversely the length of the car all of such channel-beams having their legs or flanges extending outwardly to reinforce the structure and present a smooth interior surface, substantially as described.

7. A car of the class described having an inclined bottom or floor portion provided with a substantially centrally-located A-shaped portion, and side portions formed of channel-beams all arranged longitudinally with respect to the length of the car and having their leg or flange portions extending outwardly to reinforce the structure against interior pressure and present a smooth or substantially smooth interior surface, and means for tying the side portions together at the ends and central portion, substantially as described.

8. A car of the class described, having a bottom portion formed of metallic beams extending longitudinally or lengthwise of the car, metal beams one arranged at each side of the car to form the compression member of a truss and a filling of metal interposed between the metal compression-beam and the outer side channel-beams and secured to the same to stiffen the structure and assist in distributing the load, substantially as described.

571,884. METALLIC CAR. WILLARD PENNOCK, Minerva, Ohio. Filed Apr. 17, 1896. Serial No. 587,939. (No model.)



Claim.—1. A car of the class described having a floor portion formed of several channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, and a pair of center subsills formed of angle-beams arranged to reinforce the legs of the central channel beam or beams and assist in supporting the same, substantially as described.

2. A car of the class described having a floor portion formed of several channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, a pair of center subsills formed of inverted-T beams arranged to reinforce the legs of the central channel beam or beams and extending down to and supporting the carrier-irons, substantially as described.

3. A car of the class described having a floor portion formed of several channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, a pair of center subsills formed of inverted-T beams to reinforce the legs of the central channel beam or beams and cut away in their end portions to form shoulder stops for the draw-bar spring follower-plates, substantially as described.

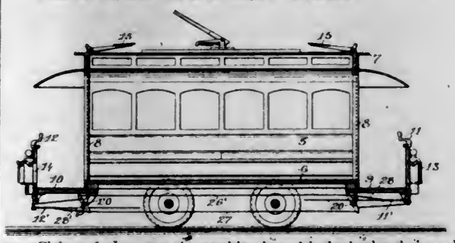
4. A car of the class described having a floor portion formed of channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, a pair of center subsills formed of inverted-T beams to reinforce the legs of and support the central channel beam or beams, and centrally-located rectangular or I beams arranged transversely under the inverted-T beams to assist in distributing the load of the car, substantially as described.

5. A car of the class described having a floor portion formed of several channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, a pair of center subsills formed of inverted-T beams to reinforce the legs of and support the central channel beam or beams and extending down to and resting on the compression member of the body-bolster, and a body-bolster arranged with its lower or compression member passed under and secured to the inverted-T beams, substantially as described.

6. A car of the class described having a floor portion formed of channel-beams extending lengthwise of the car with their legs or flanges extending downwardly, a pair of center subsills formed of inverted-T beams to reinforce the legs of and support the central channel beam or beams, centrally-located rectangular or I beams arranged transversely under the inverted-T beams, and side metallic truss-beams L-shaped in cross-section with their horizontal members arranged underneath and connected with the transverse rectangular or I beams and their vertical members secured to the outer flanges or legs of the side channel-beams, substantially as described.

7. A car of the class described having a floor portion formed of several channel-beams extending lengthwise of the car with their lateral flanges extending downwardly, a pair of center subsills formed of inverted-T beams to reinforce the legs of the central channel beam or beams, and a bolster having its tension member formed of a tie rod or rods arranged transversely through the channel-beams and its compression member made in at least three portions and having the end portions resting in and secured in the channels of the side channel-beams and its main portion passed under the inverted-T beams secured thereto with the ends secured in the shoulders or steps of the end portions, substantially as described.

571,885. CAR-SIGNAL. HORATIO PHINNEY, Providence, R. I. Filed Feb. 26, 1896. Serial No. 580,837. (No model.)



Claim.—1. In a car, the combination with the brake-chain and two semaphore-signals supported pivotally on a transverse rod above the roof, of a transverse shaft supported in bearings below the floor of the car, levers secured to the transverse shaft, connections between the semaphore-signals and the levers on the transverse shaft, and connections between the levers and the brake-chain, whereby on the setting of the brakes from the front brake handle two semaphore-signals are set on the top of the car, as described.

2. The combination with a street-car, of the detachable box 30 provided with the panel 31 and the shutter 32, and the bell-crank connections between the shutter and the brake-chain whereby the shutter is operated to expose the light on the setting of the brake, as described.

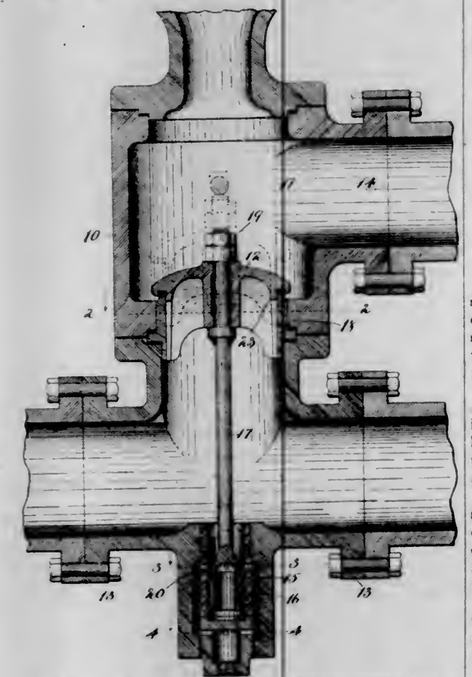
3. The combination in a street-car with the semaphore-signals 15 15 mounted on the rods 18 18 above the car, the shafts 20 20 having the levers 26 and 22 22 secured thereto, of the brake-chains 11′ and 12′, the counterbalance-weight 25, and the rods connecting the levers with the semaphore-signals and the brake-chains, whereby on winding the brake-chains on the brake shaft the signals are automatically set, as described.

571,886. LOOM-TEMPLE. LUDGER PAINCHAUD, Salem, Mass. Filed July 10, 1896. Serial No. 598,626. (No model.)



Claim.—In a loom-temple, the combination of the leaf A, provided with the arm A^2 connected at one end therewith, and having at its other end the catch *c*, said arm being formed integral with said leaf; the leaf C hinged at one end to the leaf A, and provided with the longitudinal slot F; the spring-latch A carried by the leaf C; the spindles *b* and *c* and the bur-rolls B and D.

571,887. PUMP CHECK AND RELIEF VALVE. GEORGE H. REYNOLDS, Chicago, Ill., assignor to The Crane Elevator Company, same place. Filed July 24, 1896. Serial No. 600,455. (No model.)



Claim.—1. The combination with a discharge-passage from a pump and a check-valve seated therein, of a relief-passage of small capacity relative to said discharge-passage and a relief-valve in said relief-passage operated by said check-valve, substantially as described.

2. The combination with a discharge-passage from a pump and a check-valve seated therein of a relief-passage of small capacity relative to said discharge-passage, and a relief valve connected to said check-valve, substantially as described.

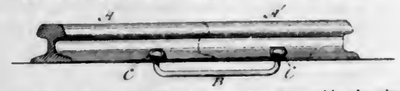
3. The combination with a discharge-passage from a pump and a check-valve seated therein; of a passage of small capacity relative to said discharge-passage for relieving pressure in said first-named passage, and a valve controlling the latter adapted to be operated by said check-valve, substantially as described.

4. The combination with a discharge-passage from a pump and a check-valve seated therein of a relief-passage from said discharge-passage; of small capacity relative to said discharge-passage, said relief-passage being controlled by a valve connected to said check-valve, substantially as described

5. The combination with a discharge-passage from a pump of a check-valve seated therein having a cylindrical projection extending below its seat, ports for relieving excess of pressure from said discharge-passages and a relief valve controlling said ports, operated by said check-valve, substantially as described.

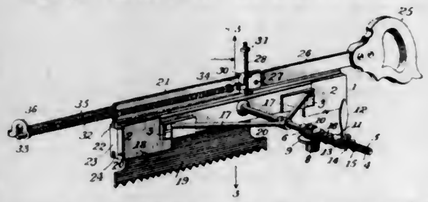
6. The combination with a discharge-passage from a pump, and a check-valve 12 seated therein, of a relief port 20 from said discharge-passage; said relief port being of small capacity relative to said discharge-passage a relief-valve 16 for controlling said port and a stem 17 connecting said relief-valve to said check-valve, substantially as shown and for the purpose specified.

571,888. ELECTRIC RAIL-BOND. GEORGE H. SCOTT, Worcester, Mass. Filed Apr. 23, 1896. Serial No. 588,716. (No model.)



Claim.—An electric rail bond comprising in combination the connecting-rod, B, and the collars C, C, adapted to fit over the ends of said connecting-rod and in the rail-flange openings, said collars being tapered or conical-shaped upon the outside, and their longitudinal openings cylindrical in shape about half-way through from the smallest to the largest ends of the collars, and flaring outward, tunnel-shaped therefrom, to the larger ends of said collars, substantially as and for the purpose set forth.

571,889. WEATHER-BOARD SAW. THOMAS SMYTH, Fredericktown, Mo. Filed Aug. 20, 1896. Serial No. 603,379. (No model.)



Claim.—1. In a weather-board saw, the combination with the stock, the saw and means supported on the stock for guiding the saw, of jaws upon the stock, gages or shoulders adjacent to the jaws, a shaft supported at right angles to the stock, a clamping-roller provided with a flange, and a support for the roller arranged to slide upon the shaft, substantially as described.

2. In a weather-board saw, the combination with the stock, the saw and means supported on the stock for guiding the saw, of clamping-jaws upon the stock, gages or shoulders adjacent to the jaws, a lateral shaft supported upon the stock between the jaws, a sleeve upon the shaft, a clamping device supported on the sleeve and a cam arranged to move said sleeve, substantially as described.

3. In a weather-board saw, the combination with the stock, the saw and means supported on the stock for guiding the saw, of a lateral shaft, the sleeve sliding upon the shaft and carrying a roller, the cam rotating on the shaft, the pin upon which the cam-surface bears and the spring interposed between the cam and the sleeve, substantially as described.

4. In a weather-board saw, the combination with the stock, and the saw-guides 22, of the clips 23 connecting the stock and guides, and the saw-blade having extensions 20 at its serrated edge, substantially as described.

5. In a weather-board saw, the combination with the stock, the saw, and means supported on the stock for guiding the saw, of the handle arranged to draw the saw in one direction and a spring interposed between the stock and the saw to assist the saw in the opposite direction, substantially as described.

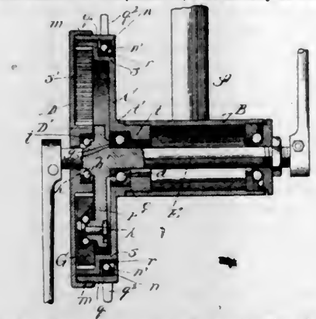
6. In a weather-board saw, the combination with the stock, the saw, and means supported on the stock for guiding the saw, of the pin 28, the guide-piece sliding upon said pin and having flanges which engage the saw-back, the rod connected with the guide-piece, a spiral spring upon the rod and the perforated arm attached to the saw, the said rod passing through said arm, and the spring bearing against it, substantially as described.

7. In a weather-board saw, the combination with the stock, the saw, and means supported on the stock for guiding the saw, of a handle-bar, and means for pivotally connecting said bar to either end of the saw, substantially as described.

8. In a weather-board saw, the combination with the stock, of a pair of rectangular guide-plates for the saw, clips in which the ends of the guide-plates are movably mounted, said clips being attached to the stock, and a shaft attached to the stock, said guides being centrally pivoted upon said shaft, substantially as described.

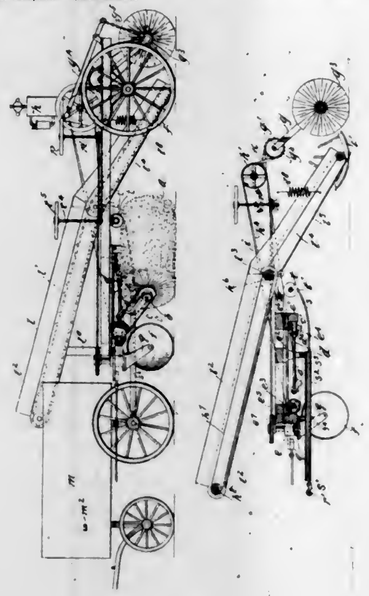
571,890. SPEED-GEAR FOR BICYCLES. JAMES P. STEPPENS, Chicago, Ill., assignor of one-half to Frederick Haas, same place. Filed June 1, 1896. Serial No. 593,738. (No model.)

Claim.—1. In a bicycle or similar vehicle, the combination of an annular gear-wheel C rigidly attached to one end of the pedal-shaft journal-box and provided externally toward its rim with a race member *r* and internally with a race member *e*, a hubless sprocket-wheel encircling said gear and provided with a race member *n* and threaded at one edge of its rim, a disk D provided with a threaded flange screwed upon said sprocket-wheel and with a pinion D′ rigid with the disk, through the medium of which the latter is revolved, said parts being provided with antifriction-bearings, a pedal-shaft E provided with a rigidly-attached arm F carrying toward its outer end a wrist-pin *k* and at its base the race member *f* corresponding with the member *e*, and a pinion G loosely mounted upon said wrist-pin meshing with said annular gear and operative to turn the sprocket-wheel through the medium of the pinion D′, substantially as described.



2. In a bicycle or similar vehicle, the combination of an annular gear-wheel C rigidly attached to one end of the pedal-shaft journal-box and provided externally toward its rim with a race member *r* and internally with a race member *e*, a hubless sprocket-wheel encircling said gear and provided with a race member *n* and threaded at one edge of its rim, a disk D provided with a threaded flange screwed upon said sprocket-wheel and a pinion D′ through the medium of which the disk is revolved, said pinion D′ being provided with a race member *l*, a pedal-shaft E provided with a rigidly-attached arm F carrying toward its outer end a wrist-pin *k* and at its base race members *h* and *f*, and a pinion G loosely mounted upon said wrist-pin meshing with said annular gear and operative to turn the sprocket-wheel through the medium of the pinion D′, substantially as described.

571,891. STREET-SWEEPER. FORTE BAIN, Chicago, Ill., assignor of one-half to John P. Barrett, same place. Filed July 2, 1895. Serial No. 554,680. (No model.)

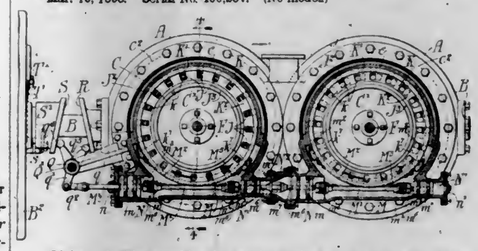


Claim.—1. In a street-sweeping apparatus, the combination of the sweeper with a separable cart adapted to receive the sweepings therefrom, a cable by which said cart may be attached to the sweeper, and a tubular guide for said cable pivotally supported at or near one of its ends; substantially as and for the purpose specified.

2. In a street-sweeping apparatus, the combination of the brushes *a a*, frames *c c* supporting said brushes, shafts *d d*, cross-piece *e* and block *e′* with a rod e^2 suitably supported upon the bed of the machine; substantially as described.

3. In a street-sweeping apparatus, the combination of a vehicle, a brush supported thereon adapted to sweep the surface of the street, an endless conveyer adapted to receive sweepings from said brush, with suitably-supported rollers over which the conveyer is adapted to travel, a belt or belts adapted to travel about said rollers between the same and the conveyer and adapted to engage said conveyer beneath the same, and means for rotating one of said rollers, whereby motion is imparted to said belt or belts and the conveyer engaged thereby, substantially as described.

571,892. STEAM-ENGINE. MILAN C. BULLOCK, Chicago, Ill. Filed Mar. 16, 1893. Serial No. 466,237. (No model.)



Claim.—1. The combination with a cylinder, and a steam chest or receiver, said cylinder being provided with an exhaust-passage adjacent to its side wall and with annularly-arranged steam inlet and exhaust ports, and a valve ring separating the steam chest or receiver from the exhaust-passage and provided with two sets of ports operating in connection with the steam inlet and exhaust ports of the cylinder, said cylinder being provided with a cylindrical bearing-surface engaging the outer surface of the valve-ring between the two sets of ports in the said ring, substantially as described.

2. The combination with a cylinder provided with live-steam and exhaust passages and also provided with a conical valve seat having ports therein, of a valve-ring separating the live-steam from the exhaust passage and provided with ports communicating with said live-steam and exhaust passages, said valve-ring having a conical bearing-surface which is held by the steam-pressure normally in contact with the conical valve-seat and a cylindric bearing-surface engaging said valve-ring between the live-steam and exhaust ports, said ring being adapted to slide on said cylindric bearing-surface toward and from its seat, substantially as described.

3. The combination with a cylinder and a steam chest or receiver, said cylinder being provided with an annular exhaust-passage adjacent to its side wall and with annularly-arranged steam inlet and exhaust ports, a valve-ring separating the steam chest or receiver from the exhaust-ports and provided with two sets of ports operating in connection with the steam inlet and exhaust ports of the cylinder, said cylinder being provided with a cylindric bearing-surface engaging the outer-surface of the valve-ring between the two sets of ports in the said ring and the valve-seat, the engaging surfaces of the ring and valve-seat adjacent to the steam-ports being of conical form, substantially as described.

4. The combination with a cylinder and a steam chest or receiver, said cylinder being provided with an exhaust-passage adjacent to its side wall and with annularly-arranged steam inlet and exhaust passages, a valve-ring separating the steam chest or receiver from the exhaust-passage and provided with two sets of ports operating in connection with the steam inlet and exhaust ports of the cylinder, said cylinder being provided with an annular bearing-surface engaging the valve-ring between the two sets of ports in said ring, and a second or cut-off valve ring resting against the main-valve ring, and provided with ports controlling the passage of steam to the said inlet-ports, substantially as described.

5. The combination with a cylinder, a steam chest or receiver and an exhaust-passage, said cylinder being provided with annularly-arranged steam-ports leading from the receiver to the cylinder, annularly-arranged exhaust ports leading from the cylinder to an exhaust-passage and a valve-ring separating the steam chest or receiver from the exhaust-passage and provided with two sets of ports adapted to severally operate in connection with the said steam inlet and ex-

haust ports, and a cylindric surface on the cylinder engaging the outer surface of the valve-ring between the two sets of ports in said ring, substantially as described.

6. The combination with a cylinder, a steam chest or receiver located adjacent to the end of the cylinder and separated from the same by a diaphragm or partition forming the cylinder-head, and an exhaust-passage adjacent to the side wall of the cylinder, said cylinder being provided with annularly-arranged ports extending through the cylinder-head from the receiver to said cylinder, and with annularly-arranged ports leading through the side wall of the cylinder from the interior thereof to the exhaust-passage, and a valve-ring which extends over the head and side walls of the cylinder and separates the steam chest or receiver from the exhaust-passage, and which is provided with two sets of valve-ports operating severally in connection with the steam inlet and exhaust ports of the cylinder, substantially as described.

7. The combination with a cylinder and a steam chest or receiver adjacent to one end of the same, said cylinder being provided with a diaphragm or partition forming the cylinder-head, with an exhaust-passage adjacent to its side wall, and with annularly-arranged inlet-ports extending through the cylinder-head and annularly-arranged exhaust-ports extending through the side wall of the cylinder to said exhaust-passage, of a valve-ring provided with an outer cylindric part provided with valve-ports which operate in connection with the exhaust-ports, and an inwardly-extending part or flange covering the steam-inlet ports and provided with valve ports operating in connection with the same, substantially as described.

8. The combination with a cylinder and a steam chest or receiver adjacent to one end of the same, said cylinder being provided with a diaphragm or partition separating it from the receiver and forming the cylinder-head, and being also provided with an exhaust-passage adjacent to its side wall and with an oblique or conical valve-seat at the margin of its head provided with steam-inlet ports and with a cylindric annular valve-seat provided with exhaust-ports and a valve-ring provided with annularly-arranged valve-ports operating in connection with the said inlet and exhaust ports, substantially as described.

9. The combination with high and low pressure cylinders both of which are closed at one end and open at the other, of an intermediate receiver in communication with the open end of the high-pressure cylinder, pistons in said cylinders and a single piston-rod to which both pistons are attached, said cylinders being each provided with steam inlet and exhaust ports located at the junction of the cylinder-heads with the side walls thereof and the high-pressure cylinder being provided with an exhaust passage or passages located exterior to its side wall and extending lengthwise of the cylinder from the exhaust port or ports at its closed end to the receiver and means for controlling the inflow of steam to and its exhaust from the cylinders.

10. The combination with high and low pressure cylinders each of which is closed at one end and open at the other, of an intermediate receiver in communication with the open end of the high-pressure cylinder, said receiver being separated from the low-pressure cylinder by a partition or diaphragm which forms the head of said low-pressure cylinder, pistons in the said cylinders, a single piston-rod to which said pistons are secured and which passes through said diaphragm or partition, said cylinders being provided with steam inlet and exhaust ports located in the walls of the cylinders adjacent to their closed ends and said high-pressure cylinder being provided with an exhaust passage or passages located exterior to its side wall and extending lengthwise of the cylinder from the exhaust port or ports thereof to the said receiver and means controlling the passage of steam through said steam inlet and exhaust ports.

11. A single-acting compound engine comprising high and low pressure cylinders each of which is open at one end and closed at the other, an intermediate receiver in communication with the open end of the high-pressure cylinder, pistons in the cylinders and a single piston rod to which both pistons are attached, said high-pressure cylinder being provided at its closed end with a plurality of annularly-arranged steam-inlet ports and at the same end with a plurality of annularly-arranged exhaust-ports and having exhaust-passages exterior to its side wall and extending lengthwise of the cylinder from said exhaust-ports to the said receiver and valves controlling the flow of steam through said ports.

12. A single-acting compound engine comprising high and low pressure cylinders both of which are closed at one end and open at the other end, an intermediate receiver in communication with the open end of the high-pressure cylinder, pistons within the cylinders, a single piston-rod to which both pistons are attached, said high-pressure cylinder being provided with annularly-arranged steam-inlet ports and annularly-arranged exhaust-ports both located at the closed end of said high-pressure cylinder, exhaust-passages located exterior to the wall of the high-pressure cylinder and extending longitudinally of the same from said exhaust-ports to the receiver and a single annular valve-ring provided with ports which operate in connection with both the inlet and exhaust ports of the high-pressure cylinder.

13. A single-acting compound engine comprising a high-pressure cylinder which is open at one end and closed at the other, a low-pressure cylinder larger in diameter than the high-pressure cylinder and provided with a diaphragm or partition located at a distance from the end of the cylinder and forming with the adjacent end of the high-pressure cylinder a receiver for exhaust-steam which is in communication with the open end of the high-pressure cylinder, pistons in said cylinders and a single piston-rod to which said pistons are secured, said high-pressure cylinder being provided with an inlet port or ports and with an exhaust port or ports located at its closed end and with exhaust-passages located exterior to the wall of the cylinder and leading from said exhaust-ports longitudinally of the cylinder to the receiver and said low-pressure cylinder being provided with annularly-arranged steam-inlet ports which extend through said partition or diaphragm and a valve-ring which controls said steam-inlet ports of the low-pressure cylinder.

14. A single-acting compound engine comprising a high-pressure cylinder which is open at one end and closed at the other, a low-pressure cylinder larger in diameter than the high-pressure cylinder and provided with a diaphragm or partition located at a distance from the end of the cylinder and forming with the adjacent end of the high-pressure cylinder a receiver for exhaust-steam which is in communication with the open end of such high-pressure cylinder, pistons in said cylinders, and a single piston-rod to which said pistons are secured, said high-pressure cylinder being provided at its closed end with an inlet port or ports and an exhaust port or ports and having an exhaust passage or passages located exteriorly to the wall of the cylinder and leading from exhaust port or ports longitudinally of the cylinder to the receiver, and the low-pressure cylinder being provided with a plurality of annularly-arranged steam-inlet ports which extend through the said partition or diaphragm and valve-ring controlling said inlet-ports of the low-pressure cylinder, and means for giving oscillatory movement to said valve-ring.

15. A single-acting compound engine comprising a high-pressure cylinder which is open at one end and closed at the other, a low-pressure cylinder larger in diameter than the high-pressure cylinder and provided with a diaphragm or partition, located at a distance from the end of the cylinder and forming with the adjacent end of the high-pressure cylinder a receiver for exhaust-steam which is in communication with the open end of the high-pressure cylinder, pistons in such cylinders and a single piston-rod to which said pistons are secured, such high-pressure cylinder being provided with steam inlet and exhaust ports at its closed end and having an exhaust passage or passages located exterior to the side wall of the cylinder and leading from such exhaust-ports longitudinally of the cylinder to the receiver and the low-pressure cylinder being provided with annularly-arranged steam-inlet ports extending through said partition or diaphragm with an exhaust-passage in its side wall adjacent to the said diaphragm and with annularly-arranged exhaust-ports at its closed end leading to said exhaust-passages, and a single valve-ring provided with ports which operate in connection both with said steam inlet and exhaust ports.

16. An engine-cylinder comprising inner and outer cylindric shells forming an exhaust-passage between them, and a cylinder-head cast integral with the inner shell, said head being provided with annularly-arranged inlet-ports and the inner shell with annularly arranged exhaust-ports, and a valve-ring fitting between the inner and outer shells and controlling said inlet and exhaust ports, substantially as described.

17. An engine-cylinder comprising an outer and inner shell, and a head cast integral with the inner shell, said outer shell being longer than the inner shell and being extended beyond the head to form the side walls of the steam chest or receiver, said inner shell and head being provided with annularly-arranged steam inlet and exhaust ports, and a valve-ring for controlling the inlet and exhaust openings or ports, said valve-ring being provided with an external cylindric surface engaging the inner surface of the outer cylinder which extends beyond the cylinder-head, substantially as described.

18. An engine-cylinder comprising outer and inner shells, and a cylinder-head cast integral with the inner shell, said shells being adapted to form an exhaust-passage between them, and the inner shell being attached to the outer shell by means of an outwardly-extending flange on the open end of the inner shell, which flange is bolted to the adjacent end of the outer shell, and provided with slots or apertures forming a continuation of the exhaust-steam passage, substantially as described.

19. The combination with an engine-cylinder and a steam chest or receiver separated from the cylinder by a diaphragm or partition forming the cylinder-head, said head being provided with annularly-arranged steam-inlet ports, and the side wall of the cylinder being provided with an annular exhaust-passage and with annularly-arranged ports leading from the interior of the cylinder to said exhaust-passage, a valve-ring provided with two sets of valve-ports operating in connection with said steam inlet and exhaust ports, and a second or cut-off-valve ring resting in contact with the main-valve ring and provided with ports for controlling the passage of steam to the inlet-ports of the valve, substantially as described.

20. The combination with an engine-cylinder and a steam chest or receiver separated from the cylinder by a diaphragm or partition forming the cylinder-head, said head being provided with annularly-arranged steam inlet ports, and the side wall of the cylinder being provided with an annular exhaust-passage and with annularly-arranged ports leading from the interior of the cylinder to said exhaust-passage, a valve-ring provided with two sets of valve-ports operating in connection with said steam inlet and exhaust ports, and a second or cut-off-valve ring resting in contact with the main-valve ring and provided with ports for controlling the passage of steam to the inlet-ports of the valve, the cylinder-head being provided with a cylindric bearing-surface engaging the said cut-off-valve ring, substantially as described.

21. The combination with an engine-cylinder, of a valve-chest or receiver separated from the cylinder by a diaphragm or partition forming the cylinder-head, said cylinder being provided with an annular exhaust-passage in its side wall and with annularly-arranged steam-inlet ports in the said head, and annularly-arranged exhaust-ports leading through the side wall of the cylinder to said exhaust-passage, a valve-ring having an outer cylindric part which operates in connection with the exhaust-ports, and an inwardly-extending part or flange operating in connection with the said inlet-port, and a second cut-off-valve ring resting on said inwardly-extending part or flange and provided with annularly-arranged ports operating in connection with the ports in said flange, substantially as described.

22. The combination with a cylinder, and a steam chest or receiver, said cylinder being provided with an exhaust-passage adjacent to its side wall, and with annularly-arranged steam inlet and exhaust ports, and a valve-ring separating the steam chest or receiver from the exhaust-passage and provided with ports operating in connection with the steam inlet and exhaust ports of the cylinder, said cylinder being provided outside of the valve-ring with an annular bearing-surface or valve-seat against which the valve-ring bears, and which contains annularly-arranged ports or passages corresponding with the exhaust-ports in the valve-ring, and communicating with the exhaust-passage of the cylinder, substantially as described.

23. The combination with a cylinder provided with an annular steam-space, of an annular valve-ring within said space, a longitudinally-reciprocating rod extending tangentially through a stuffing-box into said steam-space, and flexible strands attached at their opposite ends to the ring and rod, substantially as described.

24. The combination with a cylinder or steam chest and a valve-ring, of means for actuating the valve-ring comprising a longitudinally-reciprocating rod located within the cylinder or steam-chest adjacent to the ring, pistons attached to each end of said rod, a cylinder communicating with the interior of the cylinder or steam-chest within which said pistons slide, and means for giving longitudinal reciprocatory motion to the rod, substantially as described.

25. The combination with a cylinder and steam chest or receiver which is separated from the cylinder by a diaphragm forming the cylinder-head, said cylinder being provided with an annular exhaust-passage in its side wall and with steam inlet and exhaust passages leading from the steam chest or receiver to the interior of the cylinder, and from the interior of the cylinder to said exhaust-passage, a valve-ring controlling said steam inlet and exhaust openings and engaging an annular bearing-surface formed on the side wall of said cylinder, said cylinder being provided with a transverse recess located opposite the outer surface of said ring, and means for actuating the said ring comprising a longitudinally-sliding rod located in said recess, and two flexible strips attached at their ends to said valve-ring and rod, substantially as described.

26. The combination with an engine-cylinder and a steam chest or receiver, of a valve-ring and means for actuating the same comprising a longitudinally-movable rod located adjacent to the valve-ring and provided at its ends with pistons, cylinders opening into the steam chest or receiver within which said pistons are adapted to slide, flexible strips attached at their opposite ends to the valve-ring and said rod, and means for giving reciprocatory motion to said rod comprising a revolving cam-plate, and a movable arm in contact with the plate and connected with the said rod, one of said pistons and its cylinder being made larger than the other whereby the pressure of steam thereon holds the said movable part or arm in contact with the said cam-plate, substantially as described.

27. The combination with the cylinder or cylinders and crank-shaft of an engine and the valves thereof, of means for actuating said valves comprising a rock-shaft arranged parallel with the central axes of the cylinder, said rock-shaft being provided with arms connected with said valves, a cam-plate on the crank-shaft and an arm on the rock-shaft engaging the cam-plate, substantially as described.

28. The combination with the cylinder or cylinders and crank-shaft of an engine and the valves thereof, of means for actuating said valves comprising a rock-shaft arranged parallel with the central axis of the cylinders, arms on the rock-shaft connected with the valves and a cam-plate on the crank-shaft of the engine, an arm on said rock-shaft in contact with said cam-plate, and means for holding the said arm in engagement with the plate, comprising a cylinder subject to steam-pressure, and a piston therein connected with an arm on the rock-shaft, substantially as described.

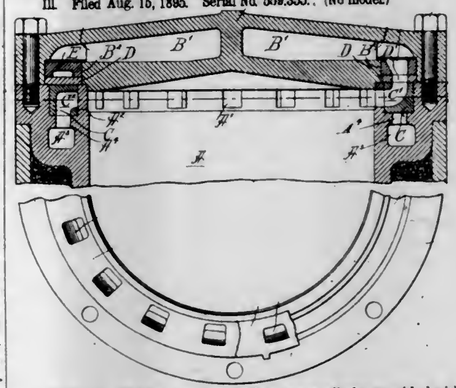
29. The combination with the high and low pressure cylinders and crank-shaft of a compound engine and the main and cut-off valves thereof, of means for actuating said valves comprising two rock-shafts arranged parallel with the central axis of the cylinders, rigid arms on the rock-shaft connected with the several valves, two cam-plates on the said crank-shaft, arms on said rock-shafts engaging said cam-plates, the cam-plate which operates the cut-off valve being mounted to rotate on the shaft, and a speed-governor carried by the shaft and operating said cam-plate, substantially as described.

30. The combination with an engine-cylinder, a steam chest or receiver and crank-shaft, of a valve-ring and means for actuating the same comprising a longitudinally-movable rod, flexible stripe attached at their opposite ends to said valve-ring and rod, a cam-plate on the crank-shaft and a rock-shaft arranged parallel with the axis of the cylinder and provided with an arm connected with the said rod, and with a second arm engaging the said cam-plate, substantially as described.

31. The combination with an engine-cylinder, a steam chest or receiver and a crank-shaft, of a valve-ring and means for actuating the same comprising a longitudinally-movable rod provided at its ends with pistons, cylinders communicating with the steam chest or receiver and within which said pistons slide, flexible strips attached at their opposite ends to the valve-ring and rod, a cam-plate on the crank-shaft and a rock-shaft provided with an arm which is connected with the said rod, and with a second arm which bears against said cam-plate, one of said pistons and its cylinder being made larger than the other, to hold the arm of the rock-shaft in contact with said cam-plate, substantially as described.

32. The combination with a piston-rod provided with a shoulder, a smooth conical bearing-surface adjacent to said shoulder and a screw-thread adjacent to said bearing-surface of a piston provided with a central opening which fits closely the said conical bearing-surface, and with a deep circular recess surrounding said opening, said recess having a shallow circular part of increased diameter adjacent to the surface of the piston, an interiorly-screw-threaded collar having a deep cylindric part which fits accurately within the deeper part of said recess and is provided with an enlarged flange which fits within the shallow recess, with its outer surface flush with the face of the piston and a dowel-screw engaging said flange of the collar to hold said collar from turning in the piston, substantially as described.

571,893. STEAM-ENGINE VALVE. MILAN C. BULLOCK, Chicago, Ill. Filed Aug. 15, 1895. Serial No. 559,355. (No model.)

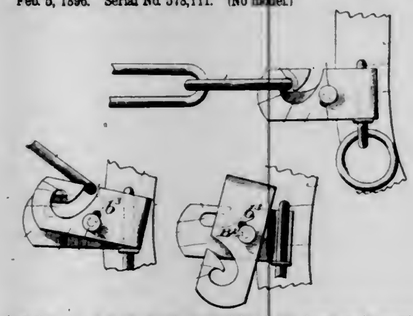


Claim.—1. The combination, with a steam-cylinder provided with an annular valve recess having at one side thereof, a flat valve-seat provided with steam-ports and steam supply and exhaust passages at opposite sides of said recess, of a valve-ring located in said recess and provided with steam-admission ports extending from one side face of the ring to the inner face of the ring, and with steam-exhaust ports which extend from the opposite side of the ring to said inner face of the ring, and a valve-plate resting against the valve-ring and located between the same and the steam-supply passage, said plate being provided with steam ports and forming a flat valve-seat opposite to that of said recess, substantially as described.

2. The combination, with a steam-cylinder provided with an annular valve-recess having at one side thereof a flat valve-seat provided with steam-ports and steam supply and exhaust passages at opposite sides of said recess, of a valve-ring located in said recess and provided with steam-admission ports extending from one side face of the ring to the inner face of the ring, and with steam exhaust ports which extend from the opposite side face of the ring to said inner face of the ring, a valve-plate resting against the valve-ring and located between the same and the steam-supply passage, said plate being provided with steam-ports, and forming a flat valve-seat opposite to that of the said recess, and a cut-off-valve ring resting against the outer surface of said valve-plate, substantially as described.

3. The combination, with a steam-cylinder provided with an annular valve-recess having at one side thereof a flat valve-seat provided with steam-ports and steam supply and exhaust passages at opposite sides of said recess, of a valve-ring located in said recess and provided with steam-admission ports extending from one side face of the ring to the inner face of the ring, and with steam-exhaust ports which extend from the opposite side face of the ring to said inner face of the ring, a valve-plate resting against the valve-ring and located between the same and the steam-supply passage, said plate being provided with steam-ports and forming a flat valve-seat opposite to that of the said recess, the end portion of the cylinder adjacent to the cylinder-head being formed by a separate ring interposed between the body of the cylinder and the head, and containing the annular valve-recess, substantially as described.

571,894. HAME HOOK. FELIX F. CHERRY, Aurora, N. C. Filed Feb. 5, 1896. Serial No. 578,111. (No model.)



Claim.—1. A hame-hook comprising two plates each provided with a curved open-ended slot, one of said plates having a semicylindrical retaining-hook to engage the hame iron, and the other plate having a flange extending at right angles to the plate, adapted to lie over said retaining hook, substantially as described.

2. A hame-hook comprising two parts each having an open-ended slot and a curved portion communicating therewith forming a hook, said parts being pivotally mounted one upon the other and provided with means for detachably securing them to a hame, substantially as described.

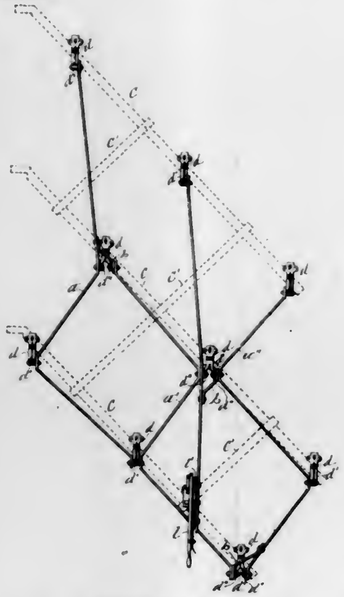
3. A hame-hook comprising among its members the main hook-plate having a retaining-hook adapted to engage the hame and a slotted portion forming a hook for engaging a part connected with the trace and a locking-plate pivotally connected with said main plate, having a retaining flange adapted to engage and overlie said retaining-hook and having a locking projection adapted to lie across the slot of said main plate when the parts are in operative position, substantially as described.

4. A hame-hook comprising among its members, a main hook-plate having at one end a retaining-hook for engaging a part connected with the hame, and at the other end a slot forming a hook for engaging the trace, and a locking-plate having a flange for engaging the said retaining-hook, a slot adapted to receive a part connected with the trace, and a locking projection adapted to extend across the slot of the said main plate, a connecting-bolt for pivotally uniting said plates, one of said plates having a slotted portion engaging said bolt, substantially as described.

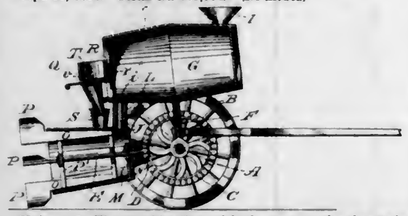
571,895. HARROW. ORLANDO J. CHILDS, Utica, N. Y. Filed Mar. 20, 1893. Serial No. 466,801. (No model.)

Claim.—In combination with the harrow-frame and teeth pivotally connected thereto, the longitudinal zigzag bars *a a' a''* approaching and receding from each other, arms extending upward from the pivoted ends of the teeth and having their upper ends entered between the approaches of the aforesaid bars and pivoted thereto, and braces *b b* tying said bars together at their approaches as set forth.

571,895.



571,896. SEEDER. ELIOT K. CLOVER, Baton Rouge, La. Filed Sept. 15, 1896. Serial No. 605,904. (No model.)



Claim.—1. The combination with the receptacle, the main axle and the wheels, of the casing at the rear of the receptacle, the revolving blades within the casing, the means for revolving said blades, and the coverers on the rear ends of the blades, as set forth.

2. The combination with the receptacle and the casing at the rear thereof, of the revolving blades within the casing, the coverers at the rear ends of the blades, and the hopper at the rear of the receptacle and communicating with said casing, substantially as shown and described.

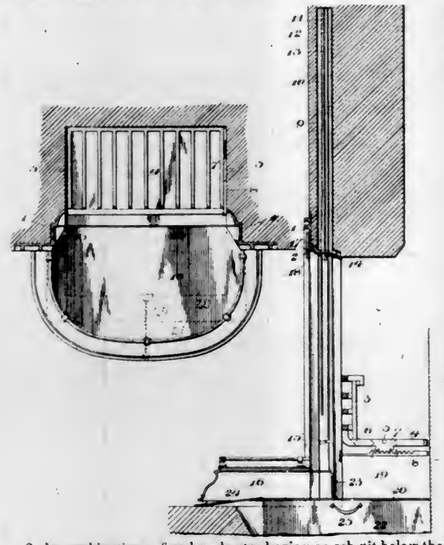
3. The combination with the main axle and the wheels and the coverers, of the bevel-pinion on the axle, the casing, the longitudinal shaft therein, the bevel-pinion on the front end thereof, and the blades on the shaft within the casing, as set forth.

4. The combination with the receptacle, the axle and the wheels, of the bevel-pinion on the axle, the casing, the longitudinal shaft, the bevel-pinion thereon, the blades on the longitudinal shaft within the casing, and the coverers on the rear ends of said blades, substantially as and for the purpose specified.

5. The combination of the receptacle, the casing supported from the rear end thereof, the axle, the wheels and bevel-pinion on said axle, the longitudinal shaft, the bevel-pinion thereon, the blades on said shaft, the coverers on the rear ends of the blades, the divided hopper detachably mounted on the rear end of the receptacle, the slides therefor, and the funnels between the hopper and the said casing, all substantially as shown and described.

571,897. FIREPLACE-HEATER. JIMMIE B. CRUMP, Mobile, Ala. Filed Feb. 8 1896. Serial No. 578,582. (No model.)

Claim.—1. In combination, an open-front heater having a pocket above and in line with its front, and having guides or ways in the inner sides of the legs or side pieces of the said front, guards slidably mounted within the pocket and ways, means as a turn-button, ring and projection at the upper end of the front for supporting the guards within the pocket, and a shield extending in front of and concealing the supporting means for the guards, substantially as set forth.



2. In combination, a fireplace-heater having an ash-pit below the fire-pot and a reservoir-pit below the ash-pit, and extending forwardly of the ash-pit and fire-pot a sliding plate forming a bottom to the ash-pit and a cover to the reservoir-pit, and a vertical blade about in line with the front of the ash-pit and having its lower edge about touching the top side of the sliding plate, substantially as set forth for the purpose described.

3. In combination, a fireplace-heater having an ash-pit below the fire-pot and a reservoir-pit below the ash-pit with its front end forwardly inclined, and extending forwardly of the ash-pit and fire-pot an ash-pan removably located in the reservoir-pit, a sliding plate forming a cover for the ash-pan and a bottom to the ash-pit, and a blade disposed at about the front end of the ash-pit and having its lower edge approaching or touching the top side of the sliding plate, substantially as and for the purpose set forth.

571,898. PNEUMATIC STACKER. WILLIAM W. DINGEE, Racine, Wis., assignor to the J. I. Case Threshing Machine Company, same place. Filed June 18, 1895. Serial No. 553,221. (No model.)

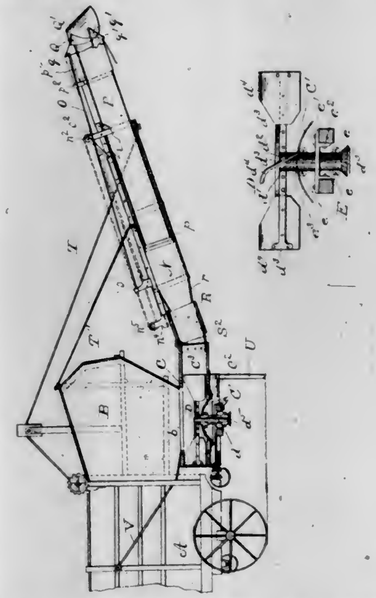
Claim.—1. In a pneumatic stacker the combination with the fan-casing and fan, of the main tube communicating with the fan casing, a sliding extension-tube within the main tube a flexible packing-ring for said sliding tube adapted to engage the inner face of the main tube, said ring extending beyond the end of the sliding tube and adapted to be forced against said main tube by the pressure of air within the same, substantially as described.

2. In a pneumatic stacker the combination with the main tube provided with a strengthening-bar, of a sliding extension-tube within the main tube, a sliding supporting bar for said sliding tube having a sliding engagement with said strengthening-bar, supporting devices for said main tube and adjusting devices connected with said sliding bar for extending and retracting said sliding tube, substantially as described.

3. In a pneumatic stacker, the combination with the fan-casing and the delivery-throat thereof, of a stacker-tube, hinge-plates secured to said throat, having annular bearing portions and segmental portions extending into said tube, hinge-plates secured to said tube having annular bearing portions engaging the bearing portions of said first-named plates, a bolt securing said plates together, a spring bottom plate secured to one of said parts and frictionally engaging the other part, and forming with said segmental portions a continuation of the walls of said throat and tube, substantially as described.

4. In a pneumatic stacker, the combination with the fan-casing having a receiving-aperture and a delivery-throat, of a fan having radially-extending arms in a plane parallel to the planes of the top and bottom of the fan-casing, and fan-blades secured to said arms and disposed obliquely to said top and bottom of the fan-casing, each blade having the edge nearest the said receiving-aperture in advance of the other edge substantially as described.

5. In a pneumatic stacker, the combination with the fan-casing having a receiving-aperture and a delivery-throat, of a fan having radially extending arms in a plane parallel to the top and bottom of the fan-casing and fan-blades secured to said arms disposed angularly to said top and bottom of the fan casing each blade having its edge adjacent to said receiving-aperture provided with a forwardly-extending flange, extending in the direction in which the fan is rotated, substantially as described.

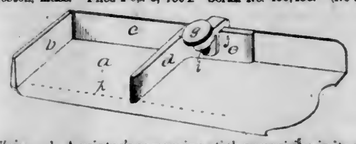


6. In a pneumatic stacker the combination with the fan casing provided with a circular supporting-track provided with recesses on the side adjacent said casing and supporting-rollers engaging said track, of devices for imparting an oscillatory motion to said casing including a clutch-shipping lever and pins for engaging the recesses in said track and having portions for operatively engaging said lever, substantially as described.

7. In a pneumatic stacker the combination with the main tube composed of sheet material, of a stiffening-bar having one face forming a continuation of the internal surface of the tube, the longitudinal edges of said sheet material being permanently united to said bar, substantially as described.

8. In a pneumatic stacker the combination with the main tube composed of sheet material and a stiffening-bar having a face forming a continuation of the internal surface of said tube, the longitudinal edges of the sheet material being united to said bar, a sliding extension-tube within said main tube, a sliding bar connected with the extension-tube and having a sliding engagement with the said stiffening-bar, devices connected with said sliding bar for moving the same to extend or retract the extension-tube and supporting devices for the stacker engaging the main tube, substantially as described.

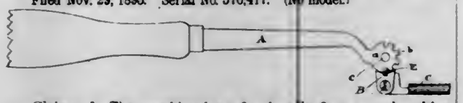
571,899. PRINTER'S COMPOSING-STICK. WILLIAM H. GOLDING, Boston, Mass. Filed Feb. 8, 1894. Serial No. 499,480. (No model.)



Claim.—1. A printer's composing-stick comprising in its construction an adjustable side bar and its base; a clamping means having a positively-engaging screw for clamping the base to the rear wall of the stick, said clamping means being movable in rectilineal lines transverse to the longitudinal lines of the base and being provided with an aperture, and a pin supplemental to the clamping means mounted in the top of the base and extending vertically into the said aperture, substantially as set forth.

2. A printer's composing-stick comprising in its construction an adjustable side bar and its base, a clamp for clamping the latter to the rear wall of the stick, the said clamp being provided with a depending lip in engagement with the inner face of the base, and a clamping-screw tapped into the clamp and bearing at its free end against the said lip, as set forth.

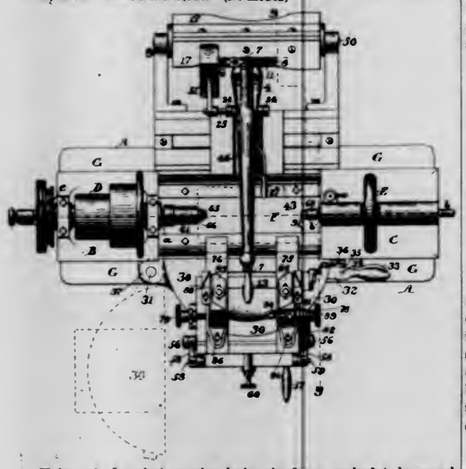
571,900. ADJUSTING TOOL-HOLDER. HARRY S. HASSTINK, Pittsburg, Pa., assignor of one-half to James F. Thompson, same place. Filed Nov. 29, 1895. Serial No. 570,417. (No model.)



Claim.—1. The combination of a handle for a woodworking end-cutting tool, forked at its forward end and provided on its tines with ratchet-teeth; an independent link pivotally adjusted between said tines; a pawl contained in said link and normally adapted to engage the said ratchet-teeth and means for detachably connecting a series of wood-cutting tools to the said link.

2. The combination of a handle for a woodworking end-cutting tool, forked at its forward end and provided on its tines with ratchet-teeth; an independent link pivotally adjusted between said tines; a spring-actuated pawl working in a slot in said link, said pawl being provided with a spur to engage said ratchet-teeth and with lugs at its ends to retain the spring and prevent its own lateral displacement, and means for detachably connecting a series of wood-cutting tools to the said link.

571,901. HUB-TURNING LATHE. JOSEPH C. HEALD, Lawrence, Mass., assignor of one-half to Albert C. Fowler, same place. Filed Nov. 19, 1895. Serial No. 569,390. (No model.)

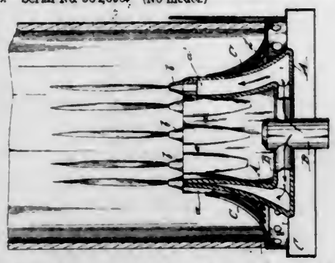


Claim.—1. In a hub-turning lathe, the frame or bed A deepened in the central portion as shown and in said central portion extended to the front as indicated at part F, and having a cover 30, arranged above said part that so projects to the front of the main line of said frame, and an escape-tube 74 by which the refuse that enters said enlargement may be drawn and delivered therefrom for the purposes specified.

2. In a hub-turning lathe, and in combination with slide 2 arranged to be reciprocated in the longitudinal line of the lathe, standard 4 of slide 3, having arm 46 with shaft 7 mounted thereon and provided at front with a hand-crank and at the rear carrying sprocket 11, a shaft 12 carrying sprocket 6 and threaded in slide 5: and a cutter 9 secured to arm 10 of slide 5, all so arranged that said cutter will traverse the length of the hub while it can be actuated transversely thereto as specified.

3. In a hub-turning lathe the combination of the following instrumentalities, to wit, a supporting-frame, a head-stock and adjustable tail stock mounted on said frame and constructed and arranged to operate as specified: a cutter as 9 duly connected with a hand-actuated arm 46, and suitable mechanism by which said cutter traverses both the length of the hub and is adjusted to the diameter thereof; a hub-former mounted in rear of the lathe and arranged to limit the position of said cutter 9 as specified: a shaft as A driven from said head-stock and by gears and pitman arranged through vibrating lever n to impart to the cutter 9 through standard 4 a reciprocating movement the length of the hub, a cutter-stock as 29, carried by means like cutter 9 actuated by lever 27 and arranged at the front of the machine to finish the surface of the hub, all substantially as specified.

571,902. GAS-BURNER. HERMAN KUHFAHL, New York, N. Y., assignor of three-fourths to W. & W. A. Lang, same place. Filed Mar. 20, 1896. Serial No. 584,098. (No model.)



Claim.—1. A gas-burner consisting of a hollow ring having its upper portion open and the side walls so corrugated, that the inner grooves of the corrugations meet each other and form a series of cones which are each provided with an orifice for the discharge of the gas, the hollow ring being connected by a connecting-pipe with the main gas-pipe, substantially as set forth.

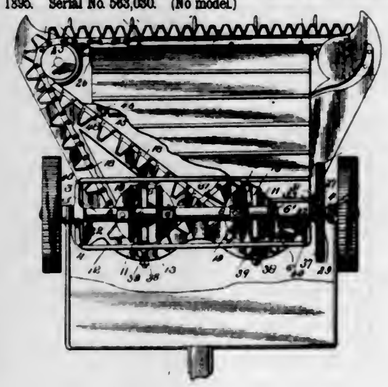
2. A gas-burner consisting of a hollow ring connected with the main gas-pipe and having one end open and its side walls so corrugated that the inner grooves of the same meet each other and form thus separate openings, and tapering burner-tips being inserted into the said openings and forming in shape the continuations of the cones produced by the said corrugations of the side walls of the ring, substantially as set forth.

571,903. SEAL FOR BOTTLES. LESLIE C. LANE, Minneapolis, Minn. Filed Aug. 27, 1895. Serial No. 560,652. (No model.)



Claim.—The combination with a bottle, or other similar vessel, formed with one or more depressions in the inner wall of its neck, said depressions having frangible outer walls, of a stopper having a depending perforated lug, and a loose spring catch-bar, said bar being insertible through the perforation in the lug and engageable with the depressions in the bottle-neck, the lug-perforation and the depressions being adapted for alinement when locked together, whereby when the outer wall of the depressions is broken the catch-bar may be rattled out and the stopper removed from place, substantially as described.

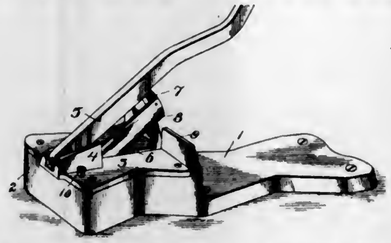
571,904. HARVESTER. WILLIAM J. LANKFORD, Ottawa, Kans., assignor of one-half to Edward Chenoweth, same place. Filed Sept. 19, 1895. Serial No. 563,030. (No model.)



Claim.—1. The combination with a revolving axle, a cutter-bar and two endless chains of cutters, of guide-pulleys at each end of the cutter-bar, two independent vertical shafts each running in a separate stationary bearing and carrying sprocket-wheels for driving the chain, and intermediate gearing between said axle and vertical shafts, substantially as described.

2. The combination in a grain or grass cutter, of an endless chain of cutters and a supporting and guiding frame therefor, with gearing operated from the axle and a second frame carrying said gearing and adjustable on the frame carrying the cutters, whereby the cutters may always be kept taut, substantially as described.

571,905. DEVICE FOR CUTTING PLUG-TOBACCO. ALBERT E. LUCAN, Paris, Ill. Filed July 29, 1895. Serial No. 557,519. (No model.)



Claim.—A cutting device for plug-tobacco, comprising a flat base provided with an integral continuous upstanding flange 2 of a sufficient height to form a liquid-tight receptacle for a solvent liquid, a cap-plate 3 fitted to the upper edges of said flange to cover the open side of the receptacle and provided with a plugged filling-opening, a longitudinal guide-slot 6 having enlarged portions at its ends, a pair of bearing-ears at one end of the slot, and a straight integral upwardly-disposed guide-flange 9 at the edge opposite said ears, a cutter-bar pivotally mounted at one end between the bearing-ears and of a greater width than the guide-slot between its enlarged portions, said cutter bar or lever being provided with a pair of right angularly-disposed hanger-arms adapted to work in the enlarged portions of the guide-slot to permit that part of the cutter bar or lever between said hanger-arms to rest upon the surface of the cap-plate so as to close the slot and thereby exclude foreign matter from the liquid-receptacle, and a knife-blade attached to said hanger-arms in a plane parallel with the cutter bar or lever and adapted to pass through said guide-slot, whereby when the cutter bar or lever is depressed the knife blade will be arranged wholly within the receptacle, substantially as set forth.

571,906. APPARATUS FOR MULTIPLE SWITCHBOARDS FOR TELEPHONE-EXCHANGES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 7, 1893. Serial No. 461,387. (No model.)

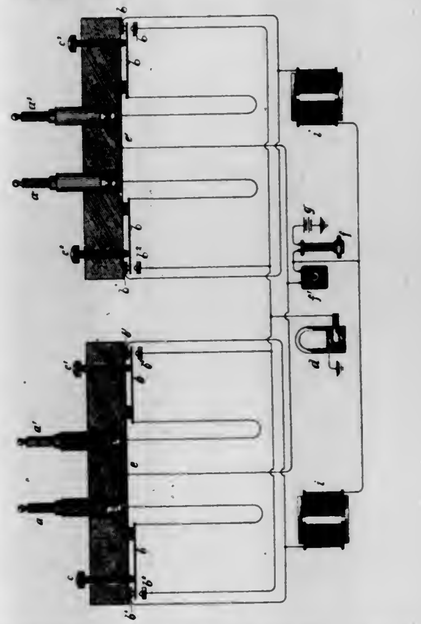
Claim.—1. The combination with several pairs of connecting-plugs, of conductors joining the different members of each pair, branches connecting each of said conductors with one terminal of an operator's telephone, and retardation-coils included in said branches, substantially as described.

2. The combination with several pairs of connecting-plugs, of conductors joining the different members of each pair, a branch from each of said conductors to an operator's telephone set and test-battery, and a retardation-coil included in each of said branches, substantially as described.

3. In combination, pairs of connecting-plugs, the different members of each pair being connected by conductors, a socket for each of said plugs wherein the plug normally rests and with which it makes electrical contact, conductors connecting each of said pairs of plugs through a retardation-coil to the operator's telephone, and other conductors connecting the said plug-sockets directly with the telephone, whereby an operator receives the full telephonic current when receiving an order from a substation, but only a very small shunted portion of the telephonic current of two subscribers in connection, substantially as described.

4. The combination with an operator's receiving-telephone and transmitting-telephone, of circuit connections uniting the receiving-telephone with all of several telephone-lines in use, a separate circuit containing the transmitting-telephone, and switching mechanism adapted to automatically connect the said separate circuit with the line of a calling subscriber in the act of making connection with the said line, substantially as described.

5. The combination with two telephone-lines each extending from a substation to a common central station and connected with several spring-jacks thereat, of normally-insulated test-pieces upon the spring-jacks, and means for grounding the same when connection is made to the line, pairs of connecting-plugs, the different members of each pair being connected together by conductors, a signal-receiving device connected through a retardation-coil with each of said pairs of plugs, and a test-battery in circuit with said signal-receiving device, substantially as described.



6. The combination with several connecting-plugs, of conducting-cords connecting the said plugs in pairs, the telephone receiver connected through high resistance with each of said conducting-cords, sockets for the plugs with which they make electrical contact, and a telephone-transmitter connected in a branch between the said sockets and the telephone-receiver, substantially as described.

7. The combination with several pairs of united telephone-lines, of an operator's telephone-receiver normally connected through resistances with all of the lines, a transmitter normally disconnected from the telephone-lines and in a circuit with the receiver, and switching apparatus for closing the circuit containing the telephone transmitter and receiver in direct connection with a particular line, substantially as described.

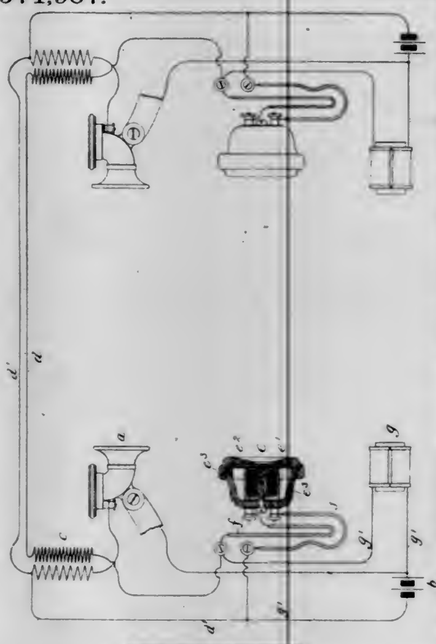
8. The combination with several telephone-lines, of a telephone-receiver and a telephone-transmitter permanently connected in a conductor, a common branch from the telephone-lines to said conductor at a point intermediate between the receiver and the transmitter, and means for connecting the free terminal of the transmitter with any telephone-line, whereby the telephone-receiver is permanently in circuit with all of the lines, while the transmitter and receiver may be brought into circuit with any particular line.

571,907. TELEPHONE. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Feb. 7, 1893. Serial No. 461,389. (No model.)

Claim.—1. The combination with the electromagnet of a telephone-receiver, of an electromagnetic coil not one of the telephone-coils, and circuits connecting the telephone receiver and the said electromagnetic coil in different parallel branches of a line-circuit, and a source of electricity in one of said branches, whereby the battery and telephone-coil are included in a local circuit and the passage of telephonic currents through the battery is prevented by the impedance-coil, substantially as described.

2. The combination with the coil of a telephone, included in one branch of a circuit, of a separate retardation or impedance coil included in a second branch, and a source of electricity in one of said branches, whereby the battery and telephone-coil are included in a local circuit and the passage of telephonic currents through the battery is prevented by the impedance-coil; substantially as described.

571,907.



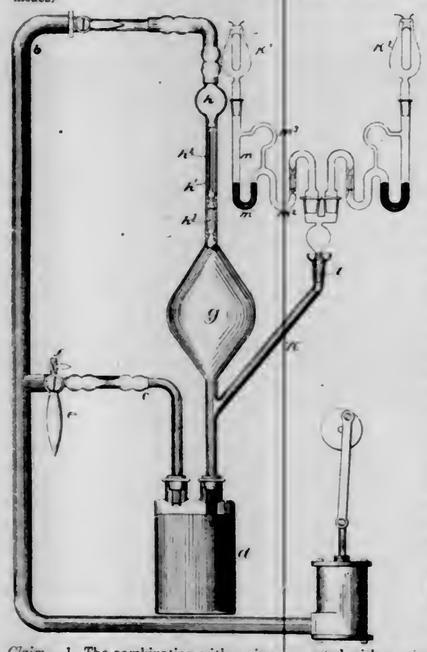
taining the valve to close the same, substantially as and for the purpose specified.

2. The pipe *m* provided with bends m' m^2, the by-path m^3 about a liquid seal contained in the bend m', in combination with a valve m^4, whereby when air rushes into the tube *m* the liquid sealing substance is caused to immediately close the valve, substantially as specified.

3. The combination with a tube connecting two chambers containing a fluid at different pressures, of a column of mercury or other liquid in the tube, a valve adapted to be closed upon its seat by the action of the mercury when surrounded by it, and a restricted passage or by-path about the column of mercury, whereby the mercury column is driven forward to close the valve by an abnormal difference in pressure of the fluid in the chambers, substantially as specified.

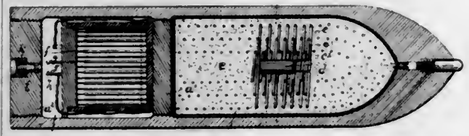
4. The combination with two chambers containing a fluid at different pressures, of a tube connecting the chambers, a column of mercury or other liquid in the tube, means for retaining the mercury column normally in a stable position in the tube, a normally open valve in the tube adapted to be closed by the action of the mercury column when thrown against it, and a restricted passage or by-path about the mercury column when in its normal position, substantially as described.

571,908. SAFETY-VALVE FOR MERCURIAL AIR-PUMPS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 13, 1893. Serial No. 477,476. (No model.)



Claim.—1. The combination with a pipe connected with an air-pump and leading to a bulb to be exhausted, of two U shaped bends in said pipe, one of said bends containing a mercury seal and the other a valve, and a by-path of comparatively small capacity leading around the mercury, whereby when air is admitted suddenly the mercury is transferred by the pressure of the air to the portion of the pipe con-

571,909. EXPLOSIVE PROJECTILE. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Jan. 15, 1894. Serial No. 496,971. (No model.)



Claim.—1. The combination with a projectile filled with material non-explosive at normal temperature but adapted to become explosive when its temperature is suitably elevated, of a source of heat contained in the projectile adapted to heat the said material uniformly throughout its mass, substantially as described.

2. The combination with a projectile filled with a material non-explosive at the normal temperature but adapted to be rendered explosive by suitable elevation of temperature, of a source of heat within the shell, and means for distributing the heat uniformly throughout the mass of said material, the application of the heat being automatically determined by the act of throwing the projectile, substantially as described.

3. The combination with a projectile filled with a material non-explosive at normal temperature but adapted to become explosive upon a suitable elevation of temperature, of heating-coils in the material, a source of electric current in the projectile, and a circuit-closer operated automatically in the throwing of the projectile to connect the heating-coils in circuit with the electric generator.

4. The combination with a projectile filled with a material non-explosive at normal temperature but adapted to be rendered explosive by a suitable elevation of temperature, of heating-coils placed in the mass of said material, an electric generator inclosed in the projectile in circuit with said coils, and an igniter adapted to be operated automatically by the striking of the projectile, substantially as described.

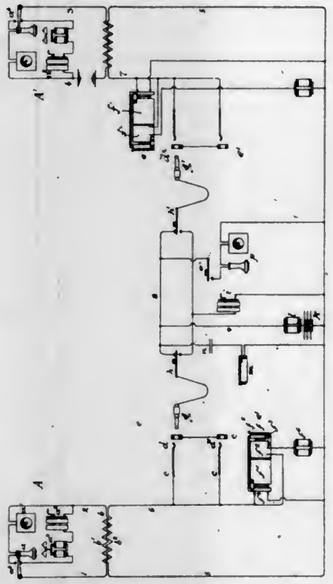
5. The combination with a projectile filled with material non-explosive at normal temperature but adapted to explode when its temperature is sufficiently elevated, of an electric fuse or igniter in said material, and a delay-action switch operated by the striking of the projectile to close an electric circuit through the igniter, substantially as described.

571,910. TELEPHONE-EXCHANGE SYSTEM. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 16, 1894. Serial No. 526,063. (No model.)

Claim.—1. The combination with a telephone-line provided with means for transmitting alternating signaling-currents, of a line-annunciator in a bridge therefrom adapted to display its indicator when excited by alternating currents, but to conceal the same when traversed by continuous currents, a plug for making connection with the line, a clearing-out annunciator adapted to respond to alternating currents, and means for preventing the actuation thereof by continuous currents, said clearing-out annunciator being connected with the plug, a source of continuous current and means for connecting said source of current with the conductor of the telephone-line to find circuit through the line-annunciator when connection is made with the line, substantially as described.

2. In combination, several telephone-lines, each including one helix of a repeating-coil at a central station, local circuits including the remaining helices of the different repeating-coils, said local circuits having one conductor in common, spring-jacks connected with

the remaining conductor of each local circuit, and an annunciator adapted to respond to alternating currents but to be reset by continuous currents connected in a bridge between the remaining conductor of the local circuit and the common conductor, a plug-circuit for uniting the spring-jacks of any two local circuits, and a source of constant current in a bridge between the conductor of said plug-circuit and the common conductor, substantially as described.



571,911. UMBRELLA OR PARASOL. CHARLES S. STOKES, Brooklyn, N. Y. Filed May 19, 1896. Serial No. 592,229. (No model.)



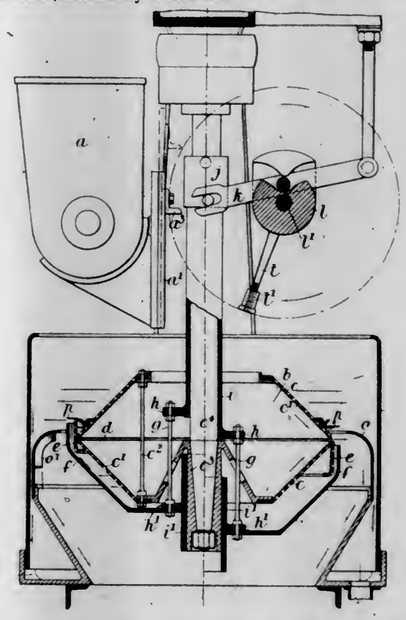
Claim.—In an umbrella, in combination, a hollow stick having a hole therein near each end, a sleeve or runner slidable upon said stick, a brace-engaging annulus upon said sleeve or runner, ears 3 upon said runner struck up from the body of the runner forming bearings for the catch-lever and thereby providing an opening 8 upon each side of the runner for the finger and thumb of the operator to control the movement of the same along the stick, a spring-lever pivotally supported by and between said ears, said lever lying parallel with said runner approximately in a plane with the periphery of said annulus, one portion of said lever being hook-shaped and terminating in a flaring end, and an aperture in the sleeve or runner in the path of said lever end, substantially as and for the purpose shown and described.

571,912. CENTRIFUGAL MACHINE. WILLIAM P. ABELL, Essequebo, British Guiana. Filed Dec. 10, 1895. Serial No. 571,666. (No model.) Patented in France Dec. 9, 1895, No. 252,287, and in Austria Apr. 24, 1896, No 46/1,637.

Claim.—1. In a centrifugal drying-machine the combination with the basket formed of two perforated cones placed base to base and having a permanent opening between said bases, of an annular casing surrounding portions of the basket adapted to revolve therewith and having an independent movement in respect thereto, and an annular closing device secured to said casing and adapted to close the opening between the edges of said cone, substantially as described.

2. In a centrifugal drying-machine the combination with the basket comprising two perforated cones, placed base to base and having a permanent opening between said bases, of an annular casing surrounding portions of said basket adapted to revolve therewith and having an independent movement with respect thereto, an annular closing device secured to said casing, adapted to close said permanent opening and forming a passage between said closing device and said casing, substantially as described.

3. In a centrifugal drying-machine the combination with the basket comprising the two perforated cones placed base to base and having a permanent opening between them, of a stationary casing surrounding said basket, an inner casing surrounding portions of said basket adapted to revolve therewith and having an independent movement in line with the axis of rotation of said basket, and a closing device secured to said inner casing, forming a passage between them, said closing device being adapted to close the said opening of the basket, substantially as described.



4. In a centrifugal drying-machine the combination with the basket comprising two revoluble perforated cones, placed base to base and having a permanent opening between said bases, of a casing surrounding portions of said basket adapted to revolve therewith but having an independent movement with respect thereto in line with its axis of rotation, a closing device for said permanent opening of the basket secured to said casing forming a passage between it and the casing, a stationary casing adapted to receive granular material, surrounding said revoluble casing, having its upper edge below the discharge of said passage when said revoluble casing is in operative position and a stationary casing adapted to receive fluid material surrounding said casing for granular material, substantially as described.

5. In a centrifugal drying-machine the combination with the revoluble basket comprising perforated cones placed base to base and having a permanent opening between them a movable closing device adapted to engage said permanent opening and automatic actuating devices operatively connected with said closing device, substantially as described.

6. In a centrifugal drying machine the combination with the revoluble basket comprising perforated cones placed base to base and having a permanent opening between said bases, a movable closing device adapted to engage said permanent opening, devices for feeding material to the basket, and automatic actuating devices operatively connected with said feeding devices, and said closing device whereby the action of the machine is rendered continuous, substantially as described.

7. In a centrifugal drying-machine the combination with the revoluble perforated basket comprising cones placed base to base, of devices for opening and closing said basket and continuously-operating mechanism operatively connected with said devices, for automatically opening and closing said basket, substantially as described.

8. In a centrifugal drying-machine, the combination with the revoluble perforated basket comprising a pair of cones placed base to base and having a permanent opening between them, a movable closing device for said permanent opening, of a continuously-operating shaft and operative connections between said shaft and said closing device for automatically opening and closing said basket, substantially as described.

9. In a centrifugal drying-machine the combination with the basket comprising two cones placed base to base and having a per-

manent opening between them, a driving-shaft for rotating said basket, a movable closing device for said permanent opening, a sleeve adapted to slide on said driving-shaft, operatively connected with said closing device, a continuously-operating shaft and operative connections between said shaft and said sleeve, for automatically and intermittently moving said closing device into and out of operative position with respect to said basket, substantially as described.

10. In a centrifugal drying-machine the combination with the revoluble basket comprising perforated cones placed base to base rigidly secured together and having a permanent opening between said bases, an annular strip of flexible material secured to one of said cones and a movable annular closing device adapted to close said opening in the basket and to engage said flexible strip, substantially as described.

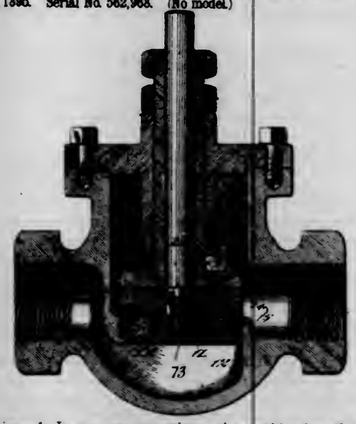
11. In a centrifugal drying-machine the combination with the revoluble basket comprising two perforated cones placed base to base with a permanent annular opening between them, of a movable closing device for said basket consisting of an annular ring adapted to close said permanent opening, said ring having at its lower edge an inwardly-turned annular flange adapted to engage the exterior of the lower cone and having its upper edge extended past said permanent opening to a point above the plane occupied by the masse cuite in the basket, whereby said closing device prevents the masse cuite from leaving the basket, substantially as described.

12. In a centrifugal drying-machine the combination with the revoluble basket comprising perforated cones placed base to base and having a permanent opening between said bases, of an annular closing device adapted to close said opening and provided at one edge with an inwardly-extending annular flange, annular strips of flexible material secured to the basket on opposite sides of said permanent opening adapted to be engaged by said flange, and by the other edge of said annular closing device, substantially as described.

13. In a centrifugal drying-machine the combination with the revoluble basket comprising perforated cones placed base to base and having a permanent opening between said bases, of an annular closing device adapted to be moved over said openings, said device having its lower edge provided with an inwardly-extending annular flange, an annular flexible strip on the lower cone adapted to be engaged by said flange and annular flexible strip on the upper cone, one adapted to engage the inner side of the closing device and another extending beyond and engaging the top of said closing device, substantially as described.

14. In a centrifugal drying-machine the combination with the revoluble basket comprising perforated cones placed base to base and having a permanent opening between them of an annular closing device adapted to be moved over said opening, said annular closing device having at one edge an inwardly-extending annular flange and a flexible annular strip secured to said basket in the path of said closing device, substantially as described.

571,913. FLUID-PRESSURE REGULATOR. EDWARD BADER, St. Louis, Mo., assignor of one-half to August Friz, same place. Filed Sept. 19, 1895. Serial No. 562,968. (No model.)

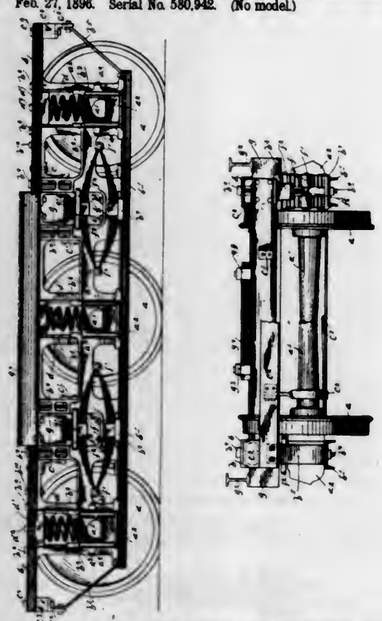


Claim.—1. In a pressure-regulator, the combination of a housing, a valve-seat in said housing, a valve provided with recesses in both of its side faces, which are arranged out of transverse line with each other and means for operating said valve, substantially as described.

2. In a pressure-regulator, the combination of a housing, a valve-seat in said housing, a valve provided with recesses in both of its faces, said valve being arranged in contact with said valve-seat, and an adjustable plate arranged in contact with the face of said valve, opposite said valve-seat, substantially as and for the purpose set forth.

3. In a pressure-regulator, the combination of a housing, a valve-seat provided with ports, a valve provided with recesses in both of its faces, and means arranged to operate said valve; said means consisting of a weighted lever, a piston connected to said lever, a cylinder in which said piston is arranged to operate, and connection from said cylinder to the delivery side of the regulator, substantially as described.

571,914. CAR-TRUCK. JOHN C. BARBER, St. Paul, Minn. Filed Feb. 27, 1896. Serial No. 580,942. (No model.)



Claim.—1. A side frame for car-trucks comprising upper and lower longitudinal tie-bars, end pedestals, and one or more body-panels having bolster and spring seats, with said pedestals and body panel or panels embraced by said tie-bars and rigidly connected thereto and so disposed that the outer ends of the panel or panels coöperate with the pedestals to form journal-box guides, substantially as described.

2. A side frame for six-wheel car-trucks, comprising upper and lower tie-bars, a pair of end pedestals and a pair of body-panels having bolster and spring seats, with said pedestals and body-panels embraced by said tie-bars and rigidly connected thereto and with all of said parts so disposed that the outer ends of said body-panels coöperate with said pedestals to form the front and rear journal-box guides and that the inner ends of the said body-panels coöperate to form the guides for the central journal-box, substantially as described.

3. A side frame for six-wheel car-trucks, comprising upper and lower tie-bars, a pair of end pedestal castings and a pair of panel-like body-castings having bolster and spring seats, with all of said castings embraced by and rigidly connected to said tie-bars and so disposed that the outer ends of the body-castings coöperate with the pedestal castings to form the guides for the front and rear journal-boxes and that the inner ends of the body-castings coöperate to form the guides for the central journal-box, substantially as described.

4. The six-wheel car-truck frame, comprising the combination with the pair of side frames each composed of the upper and lower longitudinal tie-bars connected by end braces, end pedestals, and body-panels having bolster and spring seats, with the pedestals and panels embraced by the tie-bars and rigidly connected thereto and with all of said parts so disposed that the outer ends of the panels coöperate with the pedestals to form the guides for the front and rear journal-boxes and the inner ends of the panels coöperate with each other to form the guides for the central journal-box, transoms and end crossties connecting said side frames, above the level of the truck-axles, and diagonal crossed braces connecting said side frames, below the level of the truck-axles, substantially as described.

5. In a car-truck, the combination with side frames having underrunning or lower tie-bars, cooperating to brace and hold the parts in

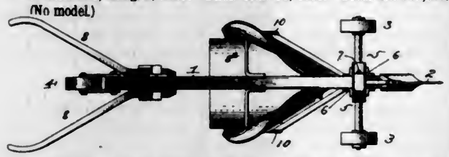
position, of spring base-plates adjustably securable to the bodies of the side frames and adapted to be upheld by said lower tie-bars, whereby the springs may be applied in advance of said lower tie-bar and be removed by simply removing the said tie-bars and spring base-plates, substantially as described.

6. In a car-truck, the combination with side frames composed of upper and lower tie-bars and one or more body-panels embraced by and rigidly connected to said tie-bars, of spring base-plates adjustably secured to the panels and adapted to be upheld by the lower tie-bar, when applied, whereby the springs may be applied in advance of the lower tie-bar and may be removed by simply taking off the lower tie-bar and spring base-plates, substantially as described.

7. In a six-wheel car-truck, the combination with the side frames composed of upper and lower tie-bars, end pedestals and body-panels having bolster and spring seats, with the base-plates for the main springs extending laterally on opposite sides of the vertical panel-webs, and pairs of elliptic springs applied to each of said seats, lengthwise of the side frame, resting on said spring base-plates, with one on each side of the panel-web, substantially as described.

8. In a six-wheel car-truck, the combination with side frames having spring and bolster seats, and a bolster-platform, comprising the pair of bolsters working in said seats and resting on said springs, the I-shaped bars connecting the ends of said two bolsters, the pair of double truss-bars connecting said bolsters near to but on the opposite sides of their centers, and the pair of I-shaped bars parallel with the bolsters and midway between the same, embraced and held by said truss-bars, all substantially as and for the purpose set forth.

571,915. BICYCLE-PATH-EXCAVATING MACHINE. CHARLES L. BARRETT, Allegan, Mich. Filed Mar. 30, 1896. Serial No. 585,383. (No model.)



Claim.—1. A path cutting machine, comprising a central beam, provided at its front end with a central opening-point or cutting edge, a moldboard on each side of the beam, a plate secured along its longitudinal center to the under side of said beam, its front edge being sharpened and inclined away from the beam, and an edge-cutter at the outer end of each cutting edge, substantially as described and set forth.

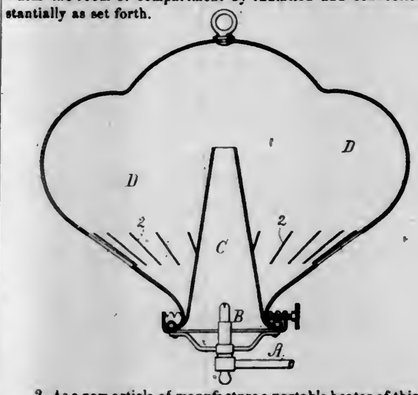
2. A path-excavating machine, comprising a central beam, carrying an entering point, a plate secured along its longitudinal center to the under edge of said beam, said plate having its front edges sharpened and provided along each of its outer longitudinal edges with a depending cutting-flange, a moldboard on each side of the beam behind the adjacent cutting edge of the plate, and an edge-cutter at the outer end of each cutting edge, substantially as described and for the purpose set forth.

3. A path-excavating machine, comprising a central beam, provided with a central entering point, a moldboard on each side of the beam, a plate secured centrally to the under side of the beam and curved transversely and bent down at its rear end, the front edge of the plate being sharpened and provided with the edge-cutters working forward of the moldboard, substantially as described and for the purpose set forth.

4. A path-excavating machine, comprising a central beam carrying handles, an entering point, and suitable transporting-wheels, adjustable vertically, a plate secured along its longitudinal center to the under edge of said beam, said plate having its front edges sharpened and inclined outward and rearward and provided along each of its outer longitudinal edges with a depending cutting-flange, said plate being curved transversely, a moldboard on each side of the beam behind the adjacent cutting edge of the plate, and an edge-cutter at the outer end of each inclined edge, substantially as described and for the purpose set forth.

571,916. GAS STOVE AND HEATER. THOMAS BATTY, Colchester, England, assignor to Albert Theodore Otto, Chicago, Ill., and Frederick Ripley Blount, New York, N. Y. Filed Oct. 17, 1895. Serial No. 565,925. (No model.) Patented in England Mar. 14, 1889, No. 4,423, and Oct. 24, 1893, No. 20,010.

Claim.—1. As a new article of manufacture a gas heating device composed of a hollow thin sheet-metal chamber conically contracted in the lower part and provided with narrow slots, and a conical mixer open at both ends and rising within the vessel and united at its lower end to the mouth of such vessel, the heater being adapted to rest upon an ordinary shade-ring over and around a gas-burner, so that the air and gas will mix and pass down through the narrow slots and burn below the conical portion of the vessel to heat the same and warm the room or compartment by radiation and convection, substantially as set forth.



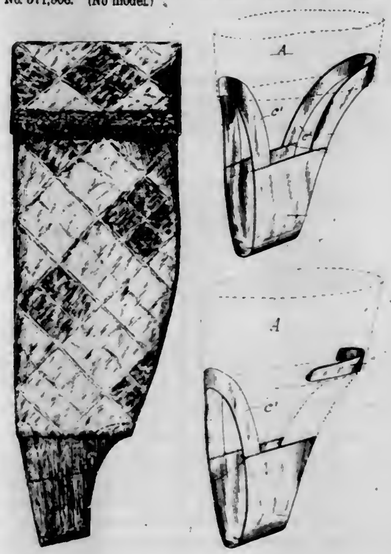
2. As a new article of manufacture a portable heater of thin sheet metal having a rounded upper portion and a suspending-ring, and a lower conical portion slotted for the passage of the combustible gas, a mixing-cone within the vessel open at the top and bottom and permanently connected at the bottom with the mouth of the thin sheet-metal heating vessel and adapted to being supported over an ordinary gas-burner to form a heater, substantially as set forth.

571,917. PROCESS OF OBTAINING VANILLIN. CARL BERGMANN, Hanover, Germany, assignor to Wilhelm Mallmann, Brussels, Belgium. Filed June 13, 1896. Serial No. 595,467. (Specimens.) Patented in Belgium July 28, 1893, No. 105,742.

Claim.—1. The process for the manufacture of vanillin from paraoxybenzaldehyde, which consists in converting the same into the meta-nitro-meta-amido-methoxyparaoxybenzaldehyde, substantially as described.

2. The process for the manufacture of vanillin from paraoxybenzaldehyde, which consists in changing the latter into the meta-nitro and meta-amido combination, and then transforming the latter into metamethoxyparaoxybenzaldehyde (vanillin) by the action of nitrous acid in alcoholic solution, substantially as described.

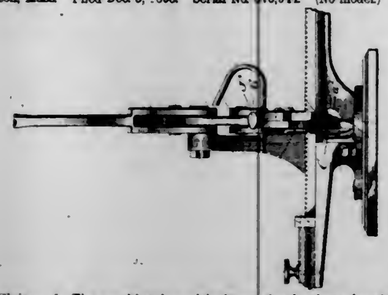
571,918. LEG-COVERING. GILBERT H. FINGER, New York, N. Y., and WILLIAM J. FORD, Leicester, England. Filed Dec. 11, 1895. Serial No. 571,808. (No model.)



Claim.—1. A leg-covering provided at its lower end with a strap adapted to pass beneath the foot of the wearer, a non-elastic lining secured to the strap over that portion which passes beneath the foot, and an upwardly-extending strip forming a portion of the lining and attached to and extending around the marginal edge of the instep-opening of the strap.

2. A leg-covering provided at its lower end with a strap adapted to pass beneath the foot of the wearer, a non-elastic lining secured to the strap over that portion which passes beneath the foot, said lining having upwardly-extending front and rear strips attached to and extending around the marginal edges of the instep and heel openings respectively of the strap.

571,919. RULE AND LEAD CUTTER. WILLIAM H. GOLDING, Boston, Mass. Filed Dec. 3, 1895. Serial No. 570,944. (No model.)



Claim.—1. The combination with the casting having a longitudinal extension and the fixed cutter, of a movable cutter, a straight depending arm integral with the cutter bar and extending therefrom in front of its pivot in position to engage the vertical end of one of the extensions of said base to prevent springing out of the movable cutter; substantially as described.

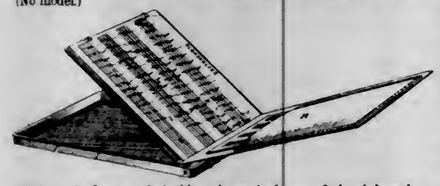
2. A gage for a machine of the class described grooved longitudinally upon each side and formed with heads at one end and transverse strips traversing said grooves upon one side of the gage near each end thereof, substantially as specified.

3. A gage for a machine of the class described grooved longitudinally upon each side and formed with heads at one end and transverse strips traversing said grooves upon one side of the gage near each end thereof, said gage being slotted longitudinally, combined with a washer fitted in said groove and having an opening for the reception of a thumb-screw, substantially as specified.

4. The combination with a gage-plate having notches and openings, of an endwise-reversible invertible gage having a transverse strip at each end to engage said notches, a longitudinal slot, a washer, and a thumb-screw, substantially as specified.

5. The combination with a gage-plate having notches and openings, of an endwise-reversible invertible gage having a longitudinal slot, a washer and a thumb-screw, and upon one side near each end a transverse strip fitted to the notches of the gage-plate, substantially as specified.

571,920. MUSIC-HOLDER. HENRY GRODZIK and FREDRICK C. LUETHI, Fort Wayne, Ind. Filed Mar. 31, 1896. Serial No. 585,624. (No model.)

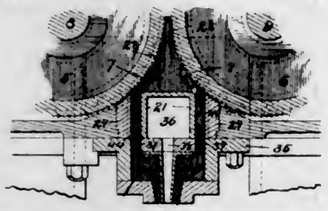


Claim.—1. In a music-holder, the main frame of aluminium, having a seat upon which rests the transparent face of celluloid or other material, the back or cover, and means for holding the same in place, and the pivoted frame within the main frame, to which sheets or folios are attached, substantially as shown and described.

2. In a music-holder, the main frame of aluminium, the transparent face of celluloid, the pivotal frame having a perforated member, the cover, and the springs attached to the main frame and bearing upon the exterior of the cover, substantially as shown and described.

3. In a music-holder, the combination with the main frame of aluminium of the transparent face of celluloid, the pivotal frame having a perforated member, to which the sheets or folios are attached, the cover having a pocket upon the interior, and the springs attached to one end of the main frame and bearing upon the exterior of the cover, substantially as shown and described.

571,921. TRIPLET-CAKE-MAKING MACHINE. PEMBROKE D. HARTON, Philadelphia, Pa. Filed June 23, 1896. Serial No. 596,617. (No model.)



Claim.—1. In a cake-machine, the combination of the hopper, a pair of coöperating feed-rollers arranged in the bottom thereof, transverse partitions dividing said hopper into a plurality of separate compartments, separate discharge-passages from the compartments and beneath the rolls, two chambers in which more than two of said passages open, another chamber between said first-mentioned chamber into which the remaining several passages open, and concentric nozzles from said three chambers forming a sheet of three layers of the materials forced through the chambers, &c., by the rolls, all substantially as and for the purposes set forth.

2. In a cake machine, the combination of a hopper, two coöperating feed-rolls therein having series of circumferential grooves, a series of transverse partitions entering said grooves and dividing the hopper into a series of entirely separate compartments, separate discharge-passages beneath the rolls and from the compartments, and chambers into which certain passages open, said chambers having nozzles, all substantially as set forth.

3. In a cake making machine, the combination of feeding means for forcing several streams of materials, an elongated chamber arranged beneath the feeding means with down-passages on both sides thereof, an opening in the top of the chamber with said passages closed at said opening, the bottom of the chamber having a narrow opening, a nozzle depending from said opening, a casing into which the said passages open having a bottom nozzle, said chamber-nozzle passing centrally through said casing and dividing the same into two spaces and entering said casing-nozzle and dividing the same into two nozzles, substantially as and for the purposes set forth.

4. In a cake-machine, the combination of a hopper divided into a series of compartments, and each having its own bottom discharge-passage, a series of chambers less in number than the compartments and passages, each chamber having a sheet-forming nozzle, said nozzles concentrically arranged to form a sheet of layers of materials, certain passages opening into and concentrating the material therefrom in one chamber, and the remaining passages opening into and concentrating their material in the remaining chamber, and means for forcing the soft materials from the compartments, and through the passages, chambers and nozzles, substantially as and for the purposes set forth.

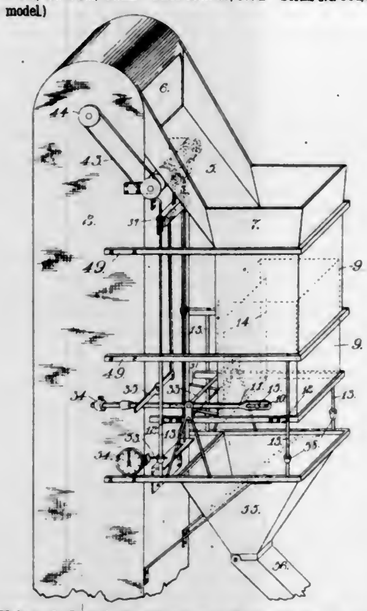
5. In a cake-machine, the combination of an elongated hopper, a pair of parallel biting feed-rolls arranged in and throughout the length thereof, transverse partitions in the hopper fitting the rolls and dividing the hopper into a series of compartments arranged side by side with the rolls in each, each compartment having a separate down-discharge passage between the rolls, and discharge-nozzles with which said passages communicate, substantially as and for the purposes set forth.

6. In combination, a hopper, a pair of coacting feed-rolls therein having roughened surfaces, transverse partitions in the hopper snugly fitting the rolls and forming separate compartments with the rolls in the bottoms of each, partitions between the rolls and below the bite thereof forming separate down-discharge passages from said compartments, and nozzles communicating with said passages, substantially as and for the purposes set forth.

7. In combination, a hopper-frame, a hopper having a series of compartments provided with feeding means, each compartment having a separate down-discharge passage, said passages arranged side by side, an elongated box or chamber arranged beneath all of said passages and having a discharge-nozzle, two passage-spaces on opposite sides of said chamber, respectively, nozzles with which said spaces respectively communicate, said chamber having top openings into certain discharge-passages which are closed from said spaces, the chamber being closed at the top beneath the remaining discharge-passages so that the material passing down said passages is divided by the top of the chamber and passed into said two side passage-spaces, substantially as and for the purposes set forth.

8. In combination, a frame, a hopper divided into several compartments, a pair of coacting feed-rolls passing through all the compartments, a chamber arranged longitudinally beneath the bite of the rolls, vertical partitions extending up from the chamber between the rolls and below the bite thereof and forming separate down-discharge passages from the compartments, the vertical roll-strippers arranged on each side of said chamber and forming the down-passage spaces between themselves and the side of the chamber, said chamber having top openings between certain partitions with edges extending to the strippers and closing said spaces beside said openings so that the material from said passages passes into the chamber, beneath the remaining passages the top of the chamber formed to divide the downflowing material and pass it into said two spaces, a horizontal plate having a narrow discharge-opening at the bottom of the chamber and corresponding openings from the spaces and a central depending casing around all of said openings, a plate secured to the bottom of said casing having a central nozzle, and a nozzle from said chamber-opening depending through the casing and centrally arranged in said first-mentioned nozzle, all substantially as and for the purposes set forth.

571,922. AUTOMATIC GRAIN-MEASURING APPARATUS. ALVA HUNT, St. Paul, Minn. Filed Mar. 20, 1894. Serial No. 504,422. (No model.)



Claim.—1. In a device of the class described, the combination of the counterweighted magazine, the series of rotary shutters for closing the top and bottom of said magazine, the springs normally holding the bottom shutters closed and the top shutters open, the mechanism for operating said shutters, and the tripping-weight operated by the weight of the grain in the magazine to actuate said mechanism to reverse the position of said shutters.

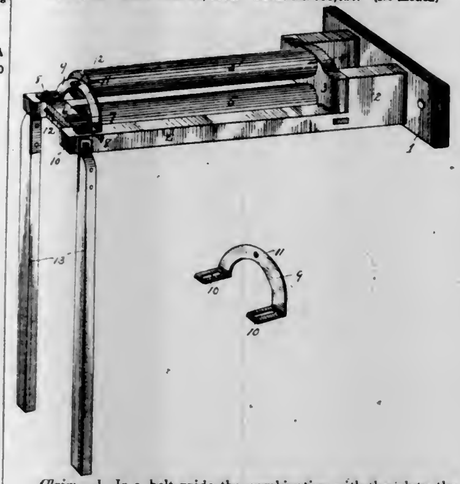
2. In an apparatus of the class described, the combination with the chute and hopper, of the counterweighted magazine, the series of rotary shutters for closing the top and bottom of said magazine, the cranks and pitman for operating said shutters, the springs normally holding the bottom shutters closed and the top shutters open, the trip-levers connected to said pitman, and the tripping-weight adapted to actuate said levers to reverse the position of said shutters.

3. In an apparatus of the class described, the combination with the grain-chute and hopper, of the vertically-movable magazine arranged underneath the same, the counterbalancing-weight therefor determining its capacity, the series of rotary shutters in the top and bottom of said magazine, the means for normally holding the bottom shutters closed and the top shutters open, the shutter-operating cranks, pitman, and levers, the trip-weight adapted to actuate said levers, the means connected to the running parts of the apparatus for lifting said weight to normal position, and the catch for supporting it in such position.

4. In an automatic grain-measuring device, the grain-receptacle therefor, having in combination the normally open shutters at the top, the normally closed shutters at the bottom, series of successively-gearing cog wheels, each of which operates one of the upper shutters, and a similar series each of which operates one of the lower shutters, reciprocating rods, each of which is attached to one of each series of cog-wheels, and means operative to reciprocate said rods.

5. In an automatic measuring device, the combination with the measuring-receptacle thereof, having means for subdividing off a certain quantity of the contents of the receptacle, of the pivoted lever or levers having on one end said measuring-receptacle and on the other weights adapted to be adjustably located on said levers so as to approximately balance the weight of the receptacle and a measure of grain therein, the trip engaged by said lever or levers, and the weight adapted to be released by said trip when so engaged and to operate to separate off and discharge a certain measure of grain from the magazine.

571,923. BELT-GUIDE. NOAH JOHNSON and HENRY L. HUNT, Padua, Ill. Filed June 20, 1895. Serial No. 553,629. (No model.)

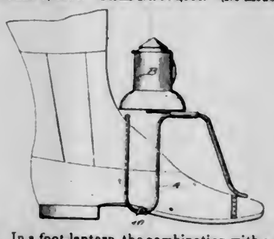


Claim.—1. In a belt-guide the combination with the plate the brackets secured thereto, and the struts, of the lower roller journaled to said struts, the bearing-plate formed with elongated slots, the screw-bolts passing through said slots, the nuts, and the upper roller journaled to one of said struts and to said plate, substantially as described.

2. In a belt-guide, the combination with the plate, the brackets, the struts and the rollers, of the props pivoted to the outer ends of the brackets, substantially as described.

3. In a belt-guide, the combination with the plate, the brackets secured thereto, the struts secured to said brackets and the pivoted props for supporting the outer ends of the brackets, of the movable bearing-plate formed with elongated slots, the screw-bolts passing through said brackets and slots, the nuts engaging with said bolts, the lower roller journaled to said struts and the upper roller journaled to said bearing-plate and to one of said struts, substantially as described.

571,924. FOOT-LANTERN. FRANÇOIS LUCAS, Munson Station, Pa. Filed June 6, 1896. Serial No. 594,566. (No model.)



Claim.—1. In a foot-lantern, the combination with a support consisting of a stirrup adapted to straddle the foot of the user, of a lantern connected to said stirrup.

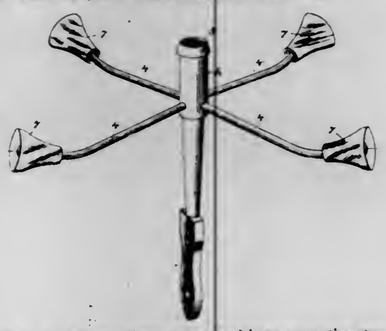
2. In a foot-lantern, the combination with a stirrup adapted to straddle the foot of the user, of a hook pivoted to one part of the

stirrup and adapted to engage with another part thereof, and a lantern connected to the stirrup.

3. In a foot-lantern, the combination with a support comprising a stirrup adapted to straddle the foot of the user, and a tongue resting on the toe of the foot, of a lantern connected to the support, substantially as described.

4. In a foot-lantern, the combination with a support comprising a stirrup adapted to straddle the foot of the user and means for holding the stirrup in position, a tongue adapted to rest on the foot of the user, and a socket connected to the support, of a lantern provided with a tongue adapted to be held in the socket, substantially as described.

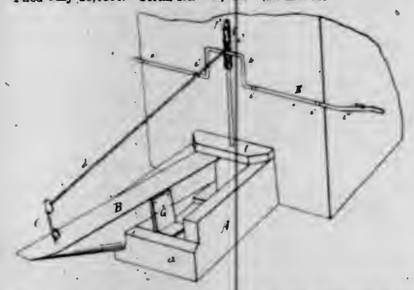
571,925. INSECT-DESTROYER. ROBERT L. LYNCH, Leeport, Ky. Filed Oct. 3, 1895. Serial No. 564,516. (No model.)



Claim.—1. An insect-destroyer, comprising a supporting stem or standard provided at its top with an insecticide-receptacle and having a removable cover or cap, radially-disposed tubular arms extending outward from the upper portion of the stem or standard and communicating with the receptacle, and artificial flowers detachably mounted on the outer ends of the arms, substantially as and for the purpose described.

2. An insect-destroyer, comprising a supporting stem or standard provided at its top with an insecticide-receptacle and having a removable cover or cap, radially-disposed tubular arms extending outward from the upper portion of the stem or standard and communicating with the receptacle, elastic tips arranged on the outer ends of the arms and having discharge-orifices, and the removable tapering shells mounted on the outer ends of the arms and secured thereto by the elastic tips and receiving the same, substantially as and for the purpose described.

571,926. CAR-COUPLING. FRANCIS MCTAGGART, Iroquois, S. D. Filed July 28, 1896. Serial No. 600,745. (No model.)



Claim.—1. In double-hook car-couplings, the right-angled plate G, attached to one side of the hook and adapted to come under the hook of opposite draw-head as and for the purpose specified.

2. A hook B having the superposed upright C combined with a shaft E having the crank *e* flexibly connected with said upright and with a turn-post F as shown and described.

571,927. ELECTRIC SWITCH. JAMES T. NORTON, Boston, Mass. Filed Jan. 28, 1896. Serial No. 577,113. (No model.)

Claim.—1. In an apparatus of the class described, a fixed switch member, an actuator having a rocking and a lateral movement, a wiper thereon provided with an abutment, independent plungers to rock said actuator in opposite directions, and a movable resilient switch member adapted to engage the abutment at one or the other side, to thereby move the actuator laterally after passing its dead-center, inward movement of the switch-closing plunger rocking the actuator to cause the wiper to retain the switch members in contact while the lateral movement of the actuator is completed by the spring member, substantially as described.



2. In an apparatus of the class described, a fixed switch member, a coöperating movable spring member having a bend or projection therein, a rocking actuator to engage and move said spring member in one direction, said actuator having an abutment to be engaged by the projection on the movable member, and manually-operated means to impart initial movement to the actuator in opposite directions, engagement of the abutment at one side by the projection on the movable switch member completing the throw of the actuator, substantially as described.

3. In an apparatus of the class described, a fixed switch member, a coöperating movable member comprising a plurality of superposed springs secured at one end, an actuator adapted to move the spring switch member positively in one direction, and independent plungers to move the actuator in opposite directions, to open or close the switch, substantially as described.

4. In an apparatus of the class described, a fixed switch member, a coöperating movable member comprising a plurality of superposed springs secured at one end, an actuator having a fixed and a movable fulcrum, and adapted to engage and positively move the spring member in one direction, and independent manually-operated plungers to swing the actuator in opposite directions, to open or close the switch, substantially as described.

5. In an apparatus of the class described, a rocking actuator having an abutment thereon, a fixed switch member, a coöperating movable spring member adapted to engage the abutment at one or the other side, to complete the throw of the actuator, independent devices to manually move the actuator initially in opposite directions, and a fixed detent to limit movement of said actuator in one direction, substantially as described.

6. In a double-pole switch or cut-out, two fixed switch members, two coöperating movable resilient members, a common actuator to positively move the resilient members simultaneously in one direction, and independent means to impart initial movement to the actuator in opposite directions, the movable switch members acting upon and by their resiliency completing the movement of the actuator automatically, substantially as described.

7. In a machine of the class described, a fixed switch member, a coöperating movable spring member having a bend or projection therein, an actuator adapted to rock and provided with an abutment, the bend or projection of the spring member engaging the abutment at one or the other side, to throw the actuator after it passes the dead-center, means to move the actuator in one direction to close the switch, and a locking device to thereafter permit movement of the actuator into position to be acted upon by the spring member and lock the switch, substantially as described.

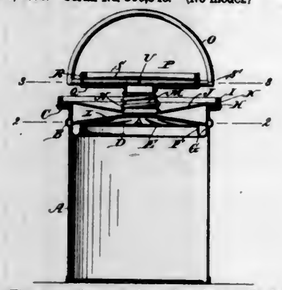
8. In an apparatus of the class described, an actuator provided with an abutment and having a fixed and a movable fulcrum, a fixed switch member, a coöperating movable spring member adapted to engage the abutment at one or the other side, to complete the throw of the actuator, independent plungers, to impart initial movement of the actuator in opposite directions, a pin on the actuator, and a notched support therefor, initial movement of the actuator to close the switch causing the pin to ride over the support to the notch, entrance of the pin into the notch on lowering the adjacent end of the actuator to thereby permit the spring member to complete the throw of the actuator, such engagement of the pin and notch locking the switch in closed position, substantially as described.

9. In an apparatus of the class described, a base-plate having upturned supports thereon, a rocking frame having projections at one end to move on said supports, a link pivotally connecting the other end of the frame and the supports, and plungers to rock said frame in opposite directions, combined with a casing of insulating material, a fixed switch member and a movable switch member supported thereby, and an insulating wiper-block on the frame, adapted to engage and positively move the spring member in one direction, the plungers moving the frame in opposite directions to open or close the switch, substantially as described.

10. In an apparatus of the class described, an actuator mounted to rock, and having an abutment thereon, a fixed switch member, a coöperating movable spring member adapted to engage the abutment

at one or the other side, and to throw the actuator after passing dead-center, and independent plungers to impart initial movement to the actuator and change the point of engagement of the spring member and abutment, substantially as described.

571,928. PACKAGE. GURDON PENDLETON, Jr., Carbondale, Pa. Filed May 7, 1896. Serial No. 590,540. (No model.)



Claim.—1. The cover for a package herein specified as comprising a sheet-metal cover-plate E, formed integrally with a rim G to fit the mouth of the package, a dished expanding-plate L within the rim G to bear radially against the same, and means for flattening the dished plate L toward a plane and holding it flattened.

2. The cover for a package herein specified as comprising a cover-plate E formed with a cylindrical sheet-metal rim G to fit the mouth of the package, a dished expanding-plate within the rim G to bear radially against the same, and means for flattening the dished plate L and holding it flattened.

3. The cover for a package herein specified as comprising a cover-plate E having a peripheral depressed shoulder F and a generally cylindrical expansible rim G to fit the mouth of the package, a dished expanding plate L resting on the shoulder F within the rim G to bear radially against the same, and means for flattening the dished plate L and holding it flattened.

4. The cover for a package herein specified as comprising a cover-plate E having a generally cylindrical expansible rim G to fit within the mouth of the package, the rim G being formed with an outwardly-projecting flange H to rest upon the shelf C of the package, a dished expanding-plate L within the rim G to bear radially against the same, and means for flattening the dished plate L and holding it flattened.

5. The cover for a package herein specified as comprising a bottom cover-plate E having a generally cylindrical expansible rim G to fit within the mouth of the package, a top plate J fixed to the upper edge of the rim G, a dished expanding-plate L between the plates E and G, and within the rim G, to bear radially against the rim G, and means for flattening the dished plate L and holding it flattened.

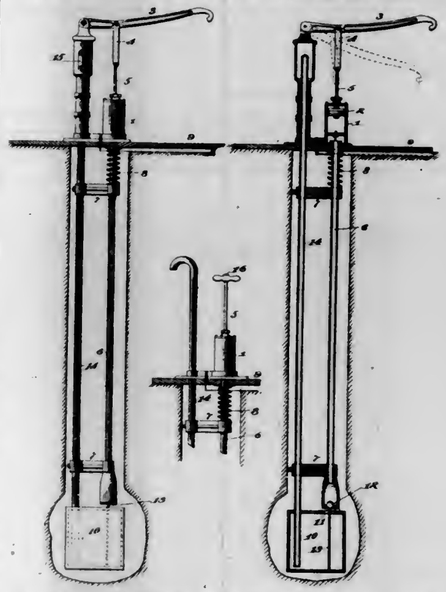
6. The cover for a package herein specified as comprising a bottom cover-plate E, and top plate J, having their edges joined by an expansible rim G to fit within the mouth of the package, and the top plate having a threaded boss N, a dished expanding-plate L between the plates E and J and within the rim G to bear radially against the same, and a screw M working in the boss N against the center of the dished plate L to flatten the same and hold it flattened.

7. The cover for a package herein specified as comprising a bottom cover-plate E and top plate J joined by an expansible rim G to fit the mouth of the package, the top plate J having a threaded boss N, a dished expanding-plate L between the plates E and J and within the rim G to bear radially against the same, a screw M working in the threaded boss N against the dished plate L to flatten the same, and having a head P, and a bail O hinged to the screw-head P, for turning the screw M and expanding the rim G, and for withdrawing the cover, and adapted to be folded down upon the cover.

571,929. PUMP. WASHINGTON I. PEIFER, California, Mo., assignor of one-fourth to Otto Conrad, same place. Filed May 23, 1896. Serial No. 592,795. (No model.)

Claim.—1. In a pump, the combination with an air cylinder, a plunger therein and means for reciprocating said plunger, of a water-chamber having an opening in the upper end thereof, a water-pipe leading upwardly from said chamber, an air-pipe leading downwardly from said cylinder, means for normally holding said pipe out of connection with said water-chamber and means for connecting said pipe and chamber, substantially as and for the purpose described.

2. In a pump, the combination with an air-cylinder, a plunger therein and means for reciprocating said plunger, of a slidingly-mounted air-pipe leading downwardly from said cylinder, means for holding said pipe normally upward, a valve in the lower end of said pipe, a water-chamber having an opening in its upper side with which said pipe is adapted to be brought into engagement, a water-pipe leading upwardly from said chamber and means for forcing said air-pipe downward, simultaneously opening said valve and connecting said pipe and chamber, substantially as and for the purpose described.

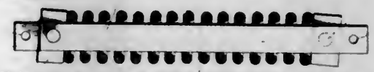


3. In a pump, the combination with an air-cylinder, a plunger therein and means for reciprocating said plunger, of a slidingly-mounted air-pipe leading downwardly from said cylinder, means for holding said pipe normally upward, a ball-valve in the lower end of said pipe having a stem extending downwardly therefrom, a water-chamber, a water pipe leading upwardly therefrom, and means for forcing said air-pipe downwardly, whereby connection is made between the lower end of said pipe and said chamber and said valve is released by the engagement of its stem with the bottom of said chamber, substantially as and for the purpose described.

4. In a pump, the combination with an air-cylinder, a plunger therein and means for reciprocating said plunger, of an air-pipe leading downwardly therefrom, slidingly mounted in suitable guides or bearings, a platform connected to the upper end of said pipe, a spring for normally holding said pipe in its upper position, a water-chamber, having an opening therein, located beneath the lower end of said pipe, and a water-pipe leading upwardly from said chamber whereby, upon the depression of said platform, said air-pipe will be forced downwardly and connection made between it and said water-chamber, substantially as and for the purpose described.

5. In a pump, the combination with an air-cylinder, a plunger therein and means for reciprocating said plunger, of an air-pipe leading downwardly therefrom, slidingly mounted in suitable guides or bearings, a platform connected to the upper end of said pipe, a spring for normally holding said pipe in its upper position, a ball-valve on the lower end of said pipe having a stem extending downwardly therefrom, a water-chamber having an opening therein in which the stem of said valve projects, and a water-pipe leading upwardly from said chamber whereby, upon the depression of said platform, said air-pipe will be forced downwardly, connection will be made between it and said chamber, and said valve will be opened by the engagement of its stem with the bottom of said chamber, substantially as and for the purpose described.

571,930. TENSION DEVICE FOR WIRE FENCES. HENRY C. PRATT, Canandaigua, N. Y. Filed Jan. 29, 1896. Serial No. 577,303. (No model.)

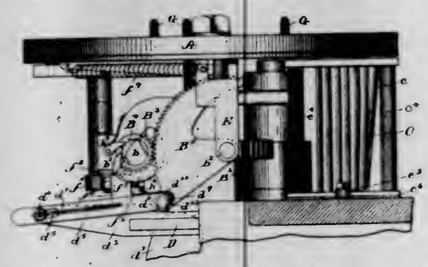


Claim.—1. A tension device for wire fences comprising among its members, a coiled spring, a pair of flat tension-bars extending longitudinally through said spring, each of said bars being provided

with a cross-bar pivotally connected therewith and having an edge engaging an end of said spring, substantially as described.

2. A tension device for wire fences comprising among its members, a coiled spring having its ends out of the transverse planes of the next adjacent coils, the flat tension-bars of a width substantially equal to the internal diameter of the spring, extending longitudinally through said spring and having their edges loosely engaging the interior of the same, each of said bars being provided with a cross-bar pivotally connected thereto at one end, and means for engaging a fence-wire at the other end, substantially as described.

571,931. DEVICE FOR FEEDING NAILS. FREEBORN F. RAYMOND, 2d, Newton, and CHARLES H. FOSS, Hyde Park, Mass., assignors to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees Filed Oct. 3, 1895. Serial No. 564,491. (No model.)



Claim.—1. In a machine of the character specified, a nail-holding plate A having a large number of lines a of nail-holding holes arranged therein and guides upon which said plate is vertically movable without being detached from the machine.

2. The nail-holder plate A, having an inner flange a^2 to rest upon the shoulder a^3 of the rotary central plate a^4.

3. The rotary plate a^4, having a shoulder a^3, a nail-holding plate A having a flange a^2, and means for fastening the flange and shoulder together.

4. The rotary plate a^4 and the nail-holder plate A, vertically movable in relation thereto.

5. The rotary plate a^4, having pins G, and the nail holding plate A having holes in its inner edge through which said pins extend.

6. A nail-holding plate having a large number of nail-holding holes arranged in rows therein and a portable nail-holder having a similar arrangement of nail-holding holes, and means for centering the portable holder above the nail-holding plate with its lines of nail-holding holes in line with the nail-holding holes of the nail-holding plate.

7. The combination of a nail-holding plate A having intermittent periods of rotation and rest, and provided with a flat upper surface and skimmer-registering devices movable therewith with a portable skimmer to rest upon said plate and be registered by said registering devices, the holes of which are of the same order and arrangement as the holes of the section of the nail-holding plate over which it is placed, and a removable cover therefor adapted to be withdrawn after the plate has been registered.

8. The combination of the nail holding and feeding plate, the registering-pins G, with the nail-feeding skimmer having holes upon its inner edge to register with the pins G, the nail-holding skimmer being in the form of a sector-plate and having a cover-plate movable outwardly therefrom.

9. A nail-holder skimmer in the form of a perforated sector-plate having sections of registering devices, handles and a removable cover-plate.

10. In a machine of the character specified, a nail-holding plate in the form of a segment-plate provided with a large number of radiating holes arranged therein, having a bottom or under plate removable outwardly therefrom, whereby the plate is adapted to hold in a relatively small compass a large number of nails, and whereby it is also adapted to feed nails to a section of a circular nail holding and feeding plate having nail holding and receiving holes of similar arrangement, as and for the purposes set forth.

11. A movable nail holding and feeding plate and an upwardly-movable plate I arranged over the nail holding and feeding plate to operate as specified.

12. A movable nail holding and feeding plate and the plate I having the curved edge i arranged over the nail holding and feeding plate to operate as specified.

13. A movable nail holding and feeding plate with a plate I pivoted to an independent support and arranged to bear upon the tops of the nails carried by said plate.

14. A movable nail holding and feeding plate provided with nail-receiving holes from which the upper ends of the nails project, in combination with a nail-discharging plate I arranged over the nail holding and feeding plate at the point where the said plate discharges its nails and which is adapted to assist in said discharge, as and for the purposes specified.

15. In a machine of the character specified, a nail holding and feeding plate having holes for the reception of nails with a cover-plate arranged over said nail holding and feeding plate and adapted to prevent upward movement of the nails from the said nail holding and feeding plate as said plate is being fed or as the machine is being operated.

16. The movable nail holder and feeder having the plate I arranged over a portion thereof as specified and attached to the machine to be movable by a swinging movement out of operative relation therewith.

17. A movable nail holding and feeding plate and an under cover-plate beneath the same, one being movable vertically in relation to the other.

18. A rotary nail holding and feeding plate having intermittent forward rotation imparted to it and a cover-plate beneath the nail holding and feeding plate having a narrow aperture extending inward from its edge and provided with a slight interrupted oscillating movement.

19. In a machine of the character specified, a circular nail holding and feeding plate in combination with a worm-wheel attached thereto and an intermittently-operated worm arranged to engage the worm-wheel and which acts to move the nail holding and feeding plate and also to lock the said nail holding and feeding plate at the end of its feeding movement and to hold it locked in said position.

20. The rotary nail holding and feeding plate, a nail-transferring plate or carrier and actuating devices for rotating the said nail holding and feeding plate, which devices are connected with the nail transferring or carrier plate, and operated thereby.

21. The combination of a nail-transferring plate or carrier, an oscillating sector-gear connected with said plate, or its actuating device, to be oscillated thereby, a worm-wheel connected with a nail holding and feeding plate, a worm to engage said worm-wheel, and intermittently-operated devices between the worm-wheel and sector-gear comprising a pinion to mesh with the sector-gear, a feed-pawl carried thereby and a ratchet-wheel with which said feed-pawl engages connected with the said worm-wheel, as and for the purposes described.

22. The combination of the nail holding and feeding plate, the worm-wheel B′ connected therewith, the worm B^2, its shaft b, the ratchet-wheel B^4 secured thereto and the oscillating feed-pawl b' to engage the teeth of the ratchet-wheel.

23. The combination of the nail-holding and feeding plate, the worm-wheel B′ connected therewith; the worm B^2 which engages the worm-wheel B′, the shaft b, the ratchet-wheel b^4 carried thereby, the stop-pawl b^3 and the driving-pawl b' attached to a pinion B^3, free upon the said shaft b, and means for rotating the pinion forward and back, as and for the purposes described.

24. The combination of the nail holding and feeding plate, its actuating worm-wheel, the worm B^2 and its actuating devices detachably connected with the movable nail carrier or transferrer.

25. The combination of the worm operating sector B^3, the reciprocating arm d^3, and the intermediate link-latch d^4.

26. The combination of the worm-operating sector B^3, the reciprocating arm d^3, having a stud d^5, the link connecting the stud with the sector having the slot d^6, and the spring d^7.

27. The combination of the worm-operating sector B^3, with the connecting-link d^4, having the sector-stud bearing d^{10}, and spring-latch d^{11}.

28. In a nail holding and feeding mechanism, a nail holding and feeding plate of the character specified, having a large number of nail-holding holes and an under cover-plate therefor, both of which plates are vertically movable together, as and for the purposes specified.

29. In a nail holding and feeding mechanism, a nail holding and feeding plate having a large number of nail-holding holes and an under cover-plate therefor, both of which plates are adapted to be moved laterally together, as and for the purposes described.

30. In a nail holding and feeding mechanism, a nail holding and feeding plate having a large number of nail-holding holes, an under cover-plate therefor, the said nail holding and feeding plate and said cover-plate both being vertically and laterally movable together, as and for the purposes described.

31. In a nail holding and feeding mechanism, a nail holding and feeding plate having a large number of nail-holding holes, an under cover-plate therefor, the said nail-holding plate and cover-plate being adapted to be moved first vertically and then laterally, as and for the purposes described.

32. In a nail holding and feeding mechanism, a nail holding and feeding plate having a large number of nail-holding holes, an under cover-plate therefor, the said plates being adapted to be separated vertically and also to be moved vertically in their separated relation, as and for the purposes described.

33. In a nail holding and feeding mechanism, a nail holding and feeding plate having a large number of nail-receiving holes, an under nail cover-plate, the two plates being separable vertically in relation to each other, and both of said nail-plates being laterally movable in their separated relation, as and for the purposes described.

34. In a nail holding and feeding mechanism of the character specified, the combination of a vertically-movable nail holding and feeding plate adapted to hold a large number of nails and feed them in successive order to a nail-distributer, with said distributer, as and for the purposes described.

35. In a nail holding and feeding mechanism, the combination of the distributer C, with nail holding and feeding plate and a plate-cover both vertically movable with relation to the nail-distributer.

36. In a nail holding and feeding mechanism, the combination of the distributer, with nail holding and feeding plate and its cover-plate, both movable vertically and laterally in relation to the distributer.

37. In a nail holding and feeding mechanism, the combination of the distributer, the nail holding and feeding plate, the movable cover-plate and the stay or registering plate c^6, against which the upper part of the distributer is held in contact.

38. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover plate, an arm supporting the same and means for moving the arm vertically.

39. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate and an arm for supporting the same pivoted to a stationary stud or post at one side of the center of said nail-holding plate.

40. In a nail holding and feeding mechanism, the combination of a nail-holding plate, its cover-plate and supporting mechanism, and means for moving it vertically, comprising the two inclines E′, E^2, bearing opposed relation to each other, and one of which is movable in relation to the other.

41. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover and means for supporting them both, and devices for lifting them and holding them in their lifted position, comprising the inclines E′, E^2, ending in flat surfaces and one of which is movable in relation to the other, their flat surfaces coming together at the end of the lifting movement and acting to support the parts in their lifted position.

42. In a nail holding and feeding mechanism, the combination of the post or support c, an arm pivoted thereto carrying at its outer end a nail holding and feeding plate and cover-plate, the said arm having a horizontal swinging movement upon said pivot and means carried by said pivot for moving said arm vertically thereon and for holding it in its vertical position during the swinging movement of said arm.

43. In a nail holding and feeding mechanism, the combination of the lifting and swinging arm E, the nail holding and feeding plate and cover-plate carried thereby, their operating mechanism also carried by said arm to be movable vertically and horizontally therewith, a detachable connection between said operative devices and the movable part of the machine upon which the feeding apparatus is used, as and for the purposes described.

44. The combination of the nail holding and feeding plate, its cover-plate, the movable arm E for supporting the same and means for locking said arm with the nail holding and feeding plate and cover-plate in operative position.

45. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate, and a supporting-arm, pivoted as described, having a short end e' and a stationary bracket or arm against which said short end is brought in contact, as and for the purposes described.

46. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate and a supporting-arm E, pivoted as described, and having a short end e' and a stationary bracket, and means for fastening the arm to the said bracket.

47. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate and its cover-plate, both laterally movable, and means for locking them in their operative position.

48. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate, a rock-shaft connected therewith to move it in one direction, and a movable part of the machine to which the nail-feeding apparatus is attached which communicates movement to said rock-shaft.

49. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate and a rock-shaft connected therewith, the rock-shaft having an arm with which a tappet is adapted to be brought into contact.

50. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate, a rock-shaft connected therewith, its tappet-arm and an adjustable tappet.

51. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate and an arm operated by a tappet for actuating the same and an adjustable tappet.

52. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate, the cover-plate-operating devices, and a reciprocating tappet for actuating the same.

53. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate, and operating mechanism and means for actuating the cover-plate-operating mechanism, comprising a reciprocating tappet, the said tappet consisting of a threaded stud carried by a reciprocating part, and a nut for adjusting the relation of the end of the stud to said reciprocating part.

54. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate, a lever or rock-shaft for moving it in one direction, and a spring for moving it in the reverse direction.

55. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, its cover-plate, the nail-carrier and connecting devices for operating the cover-plate at the end of the backward movement of the nail-carrier.

56. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate, the nail-carrier, a tappet carried thereby, a tappet-arm connected with the cover-plate, and a spring for returning the cover-plate and reversing the position of the tappet-arm, as and for the purposes described.

57. In a nail holding and feeding mechanism, the combination of the nail holding and feeding plate, the cover-plate, the nail-carrier plate, and means connecting it with the nail holding and feeding plate to rotate it during the forward movement of the carrier-plate, and other means connecting the carrier-plate with the cover-plate to operate it at the end of the backward movement of the carrier, substantially as described.

58. In a nail holding and feeding mechanism, the combination of a nail holding and feeding plate, the cover-plate, the distributer having uncovered passages therein, the nail-carrier and devices for moving the nail holding and feeding plate upon the forward movement of the nail-carrier and for actuating the cover-plate to uncover the holes in said nail holding and feeding plate upon the backward movement of the nail-carrier.

59. In a machine of the character specified, a portable skimmer or loader having a nail holding section in the form of a segment-plate in which the nail holding and receiving holes are arranged in a large number of radiating lines, which holes correspond to a similar arrangement of holes in the nail holding and feeding plate, as and for the purposes specified.

60. In a machine of the character specified, the portable skimmer or loader having flanges at each end and a cover-plate sustained by said flanges.

61. In a machine of the character specified, a portable loader or skimmer in the shape of a segment-plate having a large number of radiating lines of holes therein and provided with an under cover-plate detachably secured to the said skimmer by its edges only, and adapted to be moved outwardly from the front edge thereof to uncover its holes.

62. In a machine of the character specified, the combination of a portable loader or skimmer having a large number of nail-holding holes therein, a removable under cover-plate attached by its edges only to the said skimmer and adapted to be moved outwardly from its front edge in uncovering the holes therein and handles attached to the front edge of said cover-plate shaped to hook upon the outer surface of the skimmer when the cover-plate is in its closed position, whereby they serve also to sustain the front edge of the cover-plate when the skimmer is loaded with nails.

63. In a machine of the character specified, the portable skimmer or loader, a cover-plate attached to the under surface of the skimmer or loader and a lock for fastening it to the skimmer or loader, substantially as described.

64. In a machine of the character specified, a portable skimmer or loader having sections of a registering device in combination with other sections of a registering device mounted upon or carried by the nail holding and feeding devices.

65. In a machine of the character specified, the portable skimmer or loader having an inner flange provided with registering holes.

66. In a machine of the character specified, in combination with the nail holding and feeding plate, the portable skimmer or loader, having a cover removable from its front edge, means for centering the skimmer or loader with its attached cover upon the nail holding and feeding plate in a manner to permit the withdrawal of the cover from the front edge thereof, as and for the purposes described.

67. In a nail holding and loading machine of the character specified, a nail holding and loading plate circular in form, having radial lines of holes extending entirely around it and divided by skimmer or loader registering or centering devices into sections, each of which

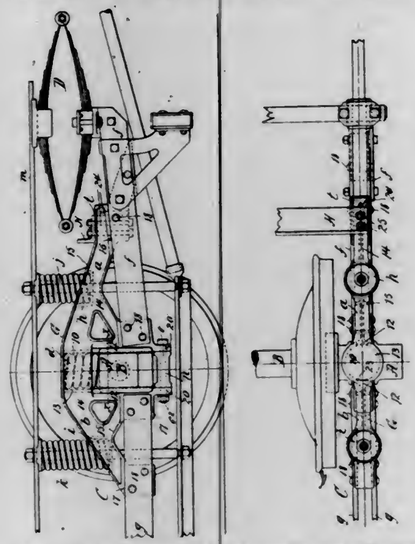
is provided with centering or registering devices for receiving and locating a portable nail-holder or skimmer, substantially as described.

68. In a nail feeding and loading apparatus of the character specified, a rotary nail holding and feeding plate divided into sections of equal length by centering or registering devices of the same character and arrangement, each of which is adapted to receive any one of a number of portable skimmers or loaders and center it or register it, whereby the same or a uniform portable skimmer or loader may be employed with each section of the nail holding and feeding plate, as and for the purposes described.

69. In a nail holding and feeding device of the character specified, a slowly-moving nail holding and feeding plate having centering or registering devices thereon which move with it, and a portable loader or skimmer adapted to be centered or registered by said centering or registering devices upon said nail holding and feeding plate and while it is in motion, whereby the nail holder and feeding plate may be loaded with nails without interfering with or stopping the operation of the machine, substantially as described.

70. The combination in a machine of the character specified of a nail holding and feeding plate having a large number of nail receiving holes adapted to be moved to deliver said nails in successive order, with a portable skimmer or loader having a large number of nail-receiving holes of the arrangement of the holes of the nail holding and feeding plate, adapted to be mounted upon said last-named plate, and an independent under cover-plate for said portable skimmer or loader, the said portable skimmer or loader being adapted to be moved with the nail holding and feeding plate.

571,932. TRUCK FOR RAILWAY-CARS. EDWARD N. RICHARDS, Springfield, Mass. Filed Apr. 15, 1896. Serial No. 587,624. (No model.)



Claim.—1. In a car-truck frame the combination with a yoke having an inverted-U-formed central part and a downwardly and forwardly inclined yoke extension, *a*, of a yoke-bar having a connection with a depending member of the central part of the yoke, extending therefrom forwardly and upwardly and also connected with the forward extremity of the yoke extension, extending in advance of said extremity, the elevated advanced extremity of said bar having a car-supporting spring mounted thereon substantially as described.

2. In a car-truck frame, the combination with the yoke having the central inverted-U-shaped portion and the extension *a* extending from the top of the central portion, downwardly and forwardly, the said extension and a depending member, of the central portion having the opposite side rests 16 16, of the yoke-bars *f f* set in and secured to said rest-provided portions of the yoke, substantially as and for the purposes set forth.

3. In a car-truck frame the combination with the yoke having the central inverted-U-shaped portion and the extensions *a b* inclined from the top of the central portion, said extensions and the depending members of the central portion of the yoke having the opposite side rests, 16 16, 17 17, with marginal ribs or shoulders, of the yoke-bars *f f* and *g g* set in, and secured to, said rest-provided portions of the yoke, substantially as described.

4. In a car-truck a yoke having a central inverted-U-shaped portion, and extensions *a b* projecting from the top of said central portion downwardly forwardly and rearwardly, and having intermediately the upwardly-opening spring-seats *h* and *i*, the former one having its base higher than the latter, substantially as described.

5. In a car-truck, a truck-frame mounted on the journals and carrying at its end an elliptic spring and spiral springs mounted on the truck-frame forward and to the rear of the journal-box, the forward one being shorter and of quicker reaction than the rearward one, combined with a sill or sill-plate resting on all said springs, substantially as and for the purpose set forth.

6. In a car-truck in combination, the journal-box, the yoke having the inverted-U-formed central part and the downwardly-inclined forward and rear extensions projecting longitudinally from the top, having the spring-steps *h* and *i* at different heights, the longitudinal yoke-bars *f* and *g* connected to the depending member of said central part of the yoke and also connected with the extremities of the yoke extensions, an elliptic spring on the forward end of the yoke-frame, the respectively short and longer spiral springs *j* and *k* in said seats *h* and *i*, and the sill or sill-plate resting on said spiral and elliptic springs, substantially as described and for the purposes set forth.

7. In a car-truck of the character described, in combination, a yoke having a forward yoke extension *a* provided with a rest *t* the yoke at this portion being constructed with several vertical holes, 24, the cross-girder H supported on said rest *t* and one or more bolts passed through the said girder and through a portion only of said vertical holes, all whereby said girder which may be utilized as a brake-support can have its position at various distances from the car-wheel axle to accord with different-sized car-wheels, substantially as described

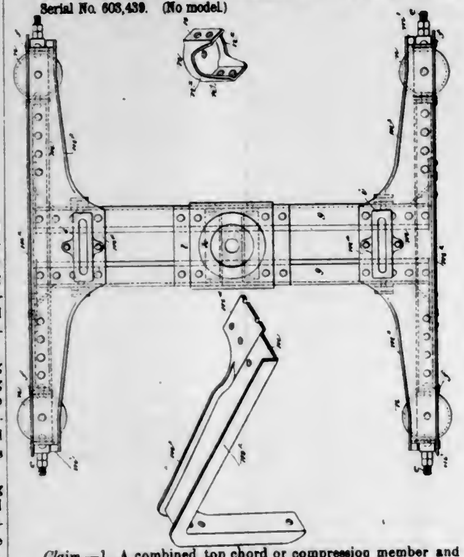
---

571,933. BLACK TRIAZO DYE. CHRISTOPHER RIS, Basle, Switzerland, assignor to John R. Geigy & Co., same place. Filed Mar. 3, 1896. Serial No. 581,653. (Specimens.) Patented in France Oct. 2, 1895, No. 250,697.

Claim.—1. The process herein described of producing a black coloring-matter, which consists in diazotizing a mixed diazo dyestuff obtained from benzidin, an alkylated beta, alpha$_4$-amidonaphthol-beta$_2$-sulfo-acid and a non-alkylated beta$_1$-alpha$_4$-amidonaphthol-beta$_2$-sulfo-acid, and combining the diazo compound thus obtained with resorcin, substantially as set forth.

2. The new black triazo coloring-matter, being a black powder, easily soluble in water with bluish-black color, soluble in concentrated sulfuric acid with a grayish-blue color, decomposed by reducing agents to a colorless solution, and dyeing unmordanted cotton in gray to deep-black shades, substantially set forth.

571,934. PRESSED-STEEL TRUCK-FRAME FOR RAILWAY-CARS. CHARLES T. SCHOEN, Philadelphia, Pa. Filed Aug. 21, 1896. Serial No. 603,439. (No model.)



Claim.—1. A combined top chord or compression member and gusset, for a built-up or composite side frame for railway-car trucks, constructed of one piece and substantially in the form shown.

2. A side frame for railway-car trucks, comprising the outer jaws of the pedestals, a connecting medium, and a gusset for union with the transom, the said outer jaws, connecting member, and gusset being formed of a single piece of metal, substantially as described.

3. A side frame for railway-car trucks, comprising a combined upper chord or tensile member and gusset, having a uniform outer flange extending from end to end and inner flanges extending from the ends and dying out at or near the gusset, and all constructed of pressed steel, substantially as described.

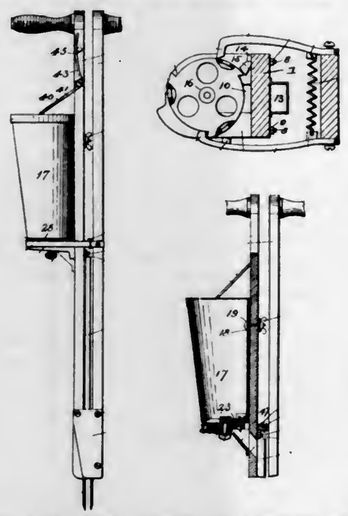
4. As an improved article of manufacture, a combined spring cap and reinforce adapted to be riveted in the upper angles and to the jaws of a pedestal of a railway-car truck, substantially as described.

5. In a side frame for railway-car trucks, the combination with the pedestals, of the combined spring-caps and reinforces, each constructed of a single piece, and riveted to the inner and outer jaws and tops of the pedestals, substantially as described.

6. A combined spring-cap and pedestal-reinforce, comprising a substantially circular base, flat sides, and vertical flanges connecting the base and sides, substantially as described.

7. A combined spring-cap and pedestal reinforce, comprising a substantially circular base, having flat sides, and vertical flanges connecting the base and its sides around the circular edge of the base, the whole formed of steel plate pressed to shape, substantially as described.

571,935. HAND CORN-PLANTER. URIAS SHAFFER, Lancaster, Ohio. Filed Aug. 14, 1896. Serial No. 602,753. (No model.)



Claim.—1. In a hand corn-planter, the combination with the staffs pivotally connected together, the blades at the lower ends, the seed-spout, the castings having a seed-passage communicating with a seed-opening in one of said staffs formed with a lug and an ear, the hopper and the bottom having a slot engaging with said ear, of the stationary seed-plate, the rotatable seed-disk having peripheral ratchets and slots, the push-pawl pivoted to one of the staffs having a hook at the free end adapted to engage with said lug to limit the outward movement of the staffs, the pull-pawl also pivoted to said staff, having a hook at its free end and a stop-lug near said end, and the coiled spring connecting said pawls, substantially as described.

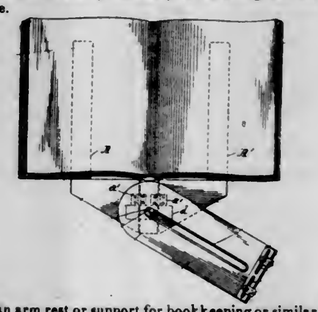
2. In a corn-planter, of the character described, the combination with the pivoted staffs, the hopper and the hopper-lid, of the lid-fastener consisting of a piece of wire bent to form two diverging arms, the loops pivotally connected with one of said staffs, the straight arm and the holding-pin; substantially as described.

571,936. ARM-REST FOR BOOKS. ABELARDO J. SOTO, Martinez, Cal. Filed May 29, 1896. Serial No. 593,533. (No model.)

Claim.—1. In an arm-rest for bookkeepers, the combination of folding supporting-arms adapted to fit within a book and conform to the position of the same, and an arm-plate supported by said folding arms.

2. In an arm rest or support for bookkeeping or similar purposes, the combination with the hinged or movable arms or members which fit within the book, of the horizontally-movable arm plate or board.

3. The combination of the supporting-arms, and a horizontal arm-plate carried thereby and adapted to swing horizontally from side to side.



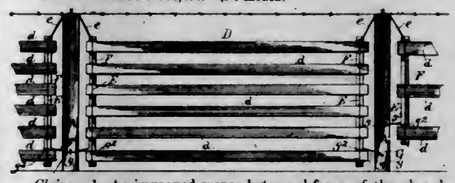
4. In an arm rest or support for bookkeeping or similar purposes, the combination with the supporting arms or members, of the arm plate or board pivotally connected to said arms and adapted to slide on its pivot.

5. In an arm rest or support for bookkeeping or similar purposes, the combination with the base plate or block, of the supporting arms or members movably connected thereto, of the arm plate or board having a horizontal groove cut therein, and a stud extending through said groove and securing the said plate or board to the base plate or block.

6. In an arm rest or support for bookkeeping or similar purposes, the combination with the supporting arms or members, of the horizontally-movable and rotatable arm plate or board, and of the slide-plate secured to one end of the arm plate or board.

7. In an arm rest or support for bookkeeping or similar purposes, the combination with the base plate or block, of the supporting arms or members movably secured thereto, the arm plate or board connected to said base plate or block so as to have free horizontal movement and be free to swing from one side of the book to the other, and of the button secured to the under face of the base plate or block.

571,937. FENCE. THOMAS N. TUCKER, Celeste, Tex. Filed July 6, 1896. Serial No. 598,259. (No model.)



Claim.—1. An improved suspended panel fence of the class described, comprising the posts provided with the projecting spike or pin in their top, the panels formed of a series of longitudinal rails and having the vertical end braces, and the securing-wires connecting the ends of the rails with said braces and formed with the top loop hooked over the spike upon the top of the post, substantially as and for the purpose set forth.

2. An improved suspended panel fence of the class described comprising the posts provided with the projecting spike or pin in their top, the portable panels formed of a series of longitudinal rails having their ends secured to vertical braces or strips and suspended between the posts, and the securing-wires connected to the brace and looped over the rails and having their top ends formed into an extended loop adapted to be hooked over the spike upon the top of the post, substantially as and for the purpose set forth.

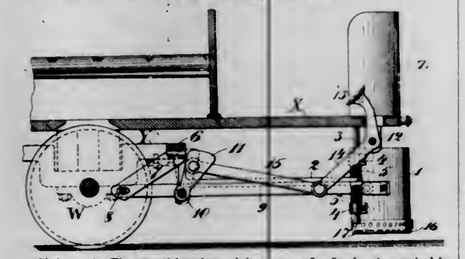
3. The herein-described improved suspended panel fence, comprising the posts provided with the projecting spike or pin in their top, the portable panels formed of a series of longitudinal rails having their ends secured to the vertical braces or strips and provided with the securing-wires connected to the braces at the bottom and secured to said brace and carried upwardly and looped over the ends of the rails, the top ends of said securing-wires being formed into an extended loop adapted to be hooked over the spike upon the top of the post, whereby the panels are removably suspended between the posts, and securing devices extending from the post to the bottom portion of the panel, substantially as and for the purpose, set forth.

4. As an improvement in suspended panel fences of the class described, the combination, with the post having the projecting spike or pin at its top, of the removable panel having the end wire extended into a loop at the top and adapted to be hooked over the spike, substantially as and for the purpose set forth.

5. In a fence of the class described, the panel adapted to be suspended from the posts and comprising the series of longitudinal rails secured at their ends to the vertical brace or strip and provided with the end wires forming the extended loop at the top adapted to be connected to the posts, substantially as and for the purpose set forth.

6. In a fence of the class described, the panel comprising the series of longitudinal rails, the vertical end braces or strips, and the securing-wires secured to said brace at the bottom and carried upwardly, the wire being looped over the ends of the rails and secured to the brace and having its top end formed into an extended loop, whereby the completed panel is adapted to be removably suspended from the posts, substantially as and for the purpose set forth.

571,938. CAR-FENDER. MORRIS WEISEL, New York, N. Y. Filed July 1, 1896. Serial No. 597,668. (No model.)



Claim.—1. The combination with a car, of a fender 1 carried by the car and mounted in an upright position substantially under the end of the car, said fender being adapted for depression, and springs to elevate said fender to its normal position, of means for depressing the fender comprising depressing-arms 9, coupled at their rear ends to the car and at their front ends to the fender, the rock-shaft 10, having bearings in said arms, a cam on said shaft adapted, when rocked to take under some part of the car and depress said arms 9 and the fender, and means substantially as described for rocking said cam from the platform of the car.

2. The combination with a car, a fender carried thereby and adapted to be depressed into contact with the ground, the depressing-arms, and the rocking cam carried by said arms and adapted to take under some part of the car when rocked, of the elbow-lever fulcrumed on the platform and having one arm 13 projecting up through the same and another arm 14, and a link 15 coupling the arm 14 with the rocking cam, whereby the latter may be rocked from the platform, as set forth.

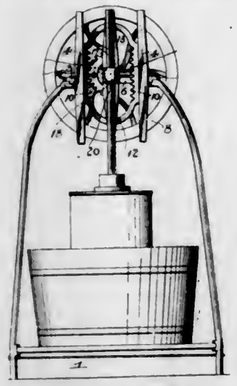
3. The combination with a car, of a vertically-arranged fender at the end of the car, the rigid supporting-arms 2, fixed at their rear ends to the truck-frame of the car and at their respective front ends to vertically-arranged guiding-rods 3, which engage each a pair of keepers, 4, on the fender, the said keepers, the pairs of springs 5, on the rods 3, the pair of springs on each rod being arranged on opposite sides of the arm 2 and abutting on the respective keepers 4, the depressing-arms 9, hinged to the fender at their front ends and having slotted connections with the truck-frame, and mechanism substantially as described for depressing the fender from the platform of the car.

4. The combination with a car, of a fender carried thereby and adapted for depression until its lower edge is in contact with the ground, said fender being provided at its lower edge with a yielding cushion 16, and to the rear of said cushion with serrations adapted to bite into the clothing of a person who may have fallen on the track, as set forth.

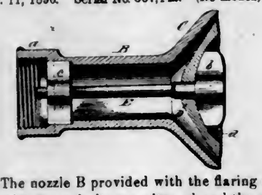
571,939. DEVICE FOR CONVERTING MOTION. GUY E. BARDSHAR and AUGUST HEIBERGER, Sandusky, Ohio. Filed Mar. 18, 1896. Serial No. 583,697. (No model.)

Claim.—1. In a device for converting motion, the combination, with the parallel guide bars, the reciprocating open frame, having rounded ends and its inner sides formed with cogs or teeth, and the guide-plate secured to said frame, formed with oppositely-extending V-shaped grooves at opposite sides of the center of said plate, the ends of which are open and opposite said cogs or teeth, of the rotatable cogged segment having a roller adapted to engage with said grooves, substantially as described.

2. In a device for converting motion, the combination, with the parallel guide bars, the reciprocating open frame, having rounded ends, and its inner sides formed with cogs or teeth, and the guide-plate secured to said frame formed with oppositely-extending V-shaped grooves the sides of which are curved from their ends to their juncture, and the ends of said grooves being open and opposite said cogs or teeth, of the rotatable cogged segment having a roller adapted to engage with said grooves, the curved projections on said plate, provided with lugs, the hinged clamp and the eccentric, substantially as described.

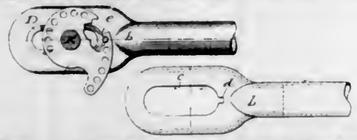


571,940. SPRAY-NOZZLE. WILLIAM BINFORD, Ogden, Utah. Filed Apr. 11, 1896. Serial No. 587,142. (No model.)



Claim.—The nozzle B provided with the flaring end C, and having longitudinal grooves in its opposite end, and the perforated bearing c which has its ends held in the grooves, combined with the screw-bolt, provided with a thumb-nut on its outer end, and the convex sprayer which is located within the flaring end of the nozzle; the screw-bolt being made to pass through the sprayer and screw into the cross-piece c, substantially as shown.

571,941. BICYCLE. FRANK H. BOLTE, Milwaukee, Wis., assignor to the Bolte Cycle Manufacturing Company, same place. Filed Sept. 28, 1895. Serial No. 563,973. (No model.)



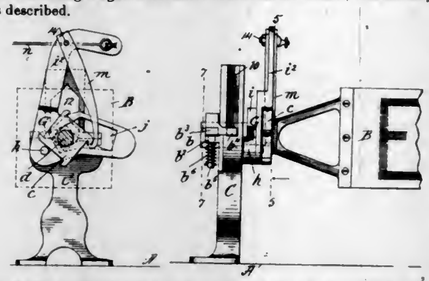
Claim.—1. A bicycle axle-hanger that results from engagement of two tubes differential as to length, the inner one being shortest but registered at its outer end with an end of the other, a swaging together of both tubes for a distance from their registered ends less than the length of said inner one, and a longitudinal slotting of the blank obtained by the swaging operation.

2. A bicycle axle-hanger that results from engagement of two tubes differential as to length, the inner one being shortest but registered at its outer end with an end of the other, a swaging together of both tubes for a distance from their registered ends less than the length of said inner one, a longitudinal slotting of the blank obtained by the swaging operation, a notching of said blank to intercept the slot therein and the engagement of said slot with a bushing having a prong that engages said notch.

3. A bicycle axle-hanger having a notch intercepting its longitudinal slot and a bushing for the slot provided with a prong that engaging said notch extends laterally from the hanger, in combination with an eccentric curvilinear axle-engaging washer provided with a series of prong-receivers corresponding in arrangement to its contour.

571,942. ROTATABLE SIGN FOR STREET-CARS. JOHN D. BROWNE, Springfield, Mass. Filed Apr. 27, 1896. Serial No. 589,220. (No model.)

Claim.—1. The combination with a rotatable sign having a prismatic-formed journal and a fixed ratchet-wheel thereon, and a support for the journal, of a pivotally-supported part or casting having an aperture, the ends of which are narrower than the intermediate portion, which apertured casting embraces the prismatic journal, a pawl mounted on said casting to engage the ratchet-teeth of the journal, and means for imparting a swinging movement to the casting, all whereby the initial movement of the casting will disengage the prismatic journal, leaving the same free to be turned by the pawl, and whereby the final movement of the casting brings the further narrowed end of the said aperture into engagement with said journal restraining it against excessive rotational movement, substantially as described.



2. The combination with a rotatable sign having provided on its journal-shaft a series of ratchet-teeth, and also a round portion *d* and a squared portion *f* and a separable spring-closed journal-box for the extremity of the shaft, of a part or casting G pivotally mounted adjacent the shaft having an aperture therethrough comprising the angular slot opening at the one side, within which is disposed the round shaft portion, and the recess f^2 with squared end portions and a widened intermediate portion, within which aperture is disposed the squared portion of the shaft, and a pawl hung on said casting having a swinging movement therewith, and operating on said ratcheted journal-shaft, and means for imparting a swinging movement to the said part G, substantially as and for the purposes set forth.

3. The combination with the rotatable sign having provided on its journal-shaft a series of ratchet-teeth and having a round portion *d*, a squared portion *f* and also having its end of prismatic form, of a separable spring journal-box having a prismatic socket or seat for the end of the shaft, and a part or casting G pivotally mounted on the journal-box support and adjacent the shaft, having the aperture comprising the angular slot-opening at the one side and the aperture f^2 opening at the other which is squared at its ends and is intermediately widened, a pawl hung on said casting for engaging the said ratchet, and means for imparting a swinging movement to the said part G, substantially as described.

4. The combination with several rotatable signs for a car, and mechanism adapted to be moved for rotating said signs, of a series of sheaves suitably grouped and mounted at a convenient part of the car, cords or like flexible connections secured to said actuating mechanisms and running around said sheaves, and each having a handle whereby it may be individually drawn, and a part engaged with the several cords whereby when said part is drawn, all of the signs will be simultaneously operated.

571,943. SAFETY-PIN. FERDINAND DEMING, Waterbury, Conn. Filed Feb. 18, 1895. Serial No. 538,750. (No model.)

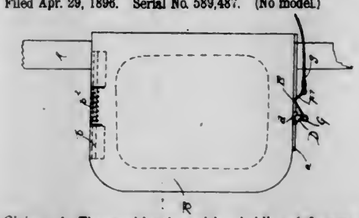


Claim.—1. In a safety-pin, the combination with a back composed of sheet metal bent to a substantially U shape in cross-section and terminating at one end in a rearwardly-bent shield substantially as described, and at its opposite end in two rounded ears each of which is provided at its inner side with a centrally-disposed, circular projection or boss, of a pin-bar provided at or near its rear end with a spring-coil which embraces and has a central bearing upon said projections on said ears and having its opposite end adapted to enter said shield, substantially as set forth.

2. In a safety-pin, the combination with a back substantially U-shaped in cross-section, terminating at one end in a rearwardly-bent shield and at its opposite end in two rounded ears each of which is provided at its inner side with a centrally-disposed, circular projection or boss, of a pin-bar provided at or near its rear end with a spring-coil which embraces and has a central bearing upon said projections on said ears, and a guard projecting from said back to a point adjacent to said shield, said back, shield, ears and guard being composed of a single piece of sheet metal, substantially as described.

3. In a safety-pin, the combination with a back composed of sheet metal bent to a substantially U shape in cross-section, terminating at one end in a rearwardly bent shield and at its opposite end in two rounded ears each of which is provided at its inner side with a centrally-disposed, circular projection or boss, of a pin-bar provided at or near its rear end with a spring-coil of substantially the same diameter as said ears, which coil embraces and has a central bearing upon the projections on the latter, and a headed pintle extending centrally through both of said ears and said coil, substantially as set forth.

571,944. BRIDLE-BLIND. JOHN W. EMMONS, Brooklyn, N. Y. Filed Apr. 29, 1896. Serial No. 589,487. (No model.)



Claim.—1. The combination with a bridle, of frames which are secured to the sides thereof, and adapted to cover or inclose the eyes of a horse, said frame being provided with spring-operated shields or covers, which are adapted to be held in a closed position by spring-catches, and a supplemental rein connected with said spring-catches, substantially as shown and described.

2. The combination with a bridle, provided with the usual reins, and of the usual construction, of means for blindfolding a horse, consisting of frames, which are secured to the sides of the bridle, and which are provided with shields or covers, which are hinged to the upper sides thereof, and which are adapted to be thrown upwardly, or opened by a spring, said shields or covers being held in the closed position, by spring-catches which are adapted to be operated, substantially as shown and described.

3. The combination with a bridle, provided with the usual reins, and of the usual construction, of means for blindfolding a horse, consisting of frames, which are secured to the sides of the bridle, and which are provided with shields or covers, which are hinged to the upper sides thereof, and which are adapted to be thrown upwardly, or opened by a spring, said shields or covers being held in the closed position by spring-catches, and a supplemental rein connected with said spring-catches, by means of a crank-lever, substantially as shown and described.

571,945. CIGAR-BOX. PHILIP H. ERTHEILER, Philadelphia, Pa., assignor to Wilhelmina Laun Ertheller and Louis Adelbert Borneman, same place. Filed Mar. 13, 1896. Serial No. 583,044. (No model.)



Claim.—1. An improved box for cigars, having an inner cell, adapted to receive cigars, and surrounding air-tight cells, in combination with a lining impervious to moisture in said air-tight cells, a filling of cut stems of tobacco in said cells, and a lid fitted to close tightly into the neck of the box, substantially as and for the purpose set forth.

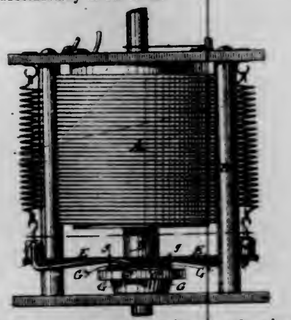
2. In a box for storing and protecting cigars, an external case, and a cell within said external case, having an air-tight space around it, supports uniting said cell with the outer case, and an inclined rim or neck, uniting the open side of the inner cell with the upper or outer margin of the outer cell, in combination with a lid having air-tight spaces contained therein, also lined with moisture-impervious material and charged with the described absorptive material, and fitted to conform closely the fit in the beveled rim or neck, substantially as and for the purpose set forth.

3. In a box for storing cigars and protecting the same from impairment from climatic changes, a double-walled box containing air-tight cells within said walls, and lining material impervious to moisture applied to the interior surface of said air-tight cells in combination with the described absorptive material and cement for securing such absorbent material, in the cell, substantially as and for the purpose set forth.

571,946. ELECTRIC-ARC LAMP. CHARLES ESCHWEI, Long Island City, N. Y. Filed Sept. 11, 1896. Serial No. 605,463. (No model.)

Claim.—1. In an electric-arc lamp, the combination of a solenoid,

a tubular magnet in said solenoid, a bracket-plate attached to the lower end of said magnet, a carbon-holder guided in said magnet, a clutch located below the bracket-plate and formed of a socket and clutch members, a ring-shaped plate resting on the clutch members, and angular pivot-arms applied to the bracket-plate and socket and adapted to exert pressure on said clutch members and cause them to grip the carbon holder as soon as the tubular magnet is drawn into the solenoid, substantially as set forth.



2. In an electric-arc lamp, the combination of a solenoid, a tubular magnet extending into the same, a bracket-plate attached to the lower end of said magnet, springs for suspending the magnet and bracket-plate, a carbon-holder guided in said magnet, a clutch composed of a tapering socket and tapering clutch members in said socket, a ring-shaped plate above said clutch members, and angular arms pivoted to sockets of said bracket-plate and extending through eyes of the clutch-socket over the ring-shaped plate so as to engage the latter and produce the engagement of the carbon-holder by the clutch as soon as the magnet is drawn into the solenoid, substantially as set forth.

3. In an electric-arc lamp, the combination, of a solenoid, a tubular magnet in the same, a carbon-holder guided in said magnet, a bracket-plate at the lower end of said magnet, a clutch formed of a tapering socket and tapering members in said socket, a ring-shaped plate extending over the clutch members, arms pivoted to the bracket-plate and extending over the ring-shaped plate, and a rimmed sleeve located below the clutch members and extending through the bottom of the socket, substantially as set forth.

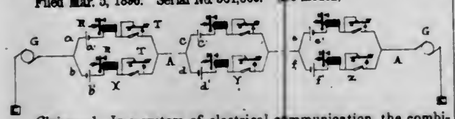
571,947. PNEUMATIC TIRE. HUGH FAULKNER, Leicester, England, assignor, by means assignments, to Fred W. Morgan and Rufus Wright, Chicago, Ill. Filed June 8, 1896. Serial No. 594,721. (No model.) Patented in England Apr. 10, 1893, No. 7,288.



Claim.—1. A pneumatic tire containing within the air-chamber, small pieces of puncture-closing material and a liquid, the puncture-closing pieces being free to move in the liquid and to distribute themselves automatically, substantially as set forth.

2. A pneumatic tire having the inner wall of its air-chamber lubricated, and inclosing loose puncture-closing pieces within such air-chamber, said puncture closing pieces being free to shift about, substantially as set forth.

571,948. TELEGRAPH. LEO W. HILDBURGH, New York, N. Y. Filed Mar. 5, 1896. Serial No. 581,869. (No model.)



Claim.—1. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of two normally-closed loops at each station over which the positive and negative waves of the alternating current are caused to pass separately, and transmitting and receiving instruments at the stations, substantially as set forth.

2. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of two normally-closed loops at each station, means for causing the positive waves to pass over one loop and the negative waves over the other loop, and transmitting and receiving instruments at the stations, substantially as set forth.

3. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of two loops at each station, asymmetric resistances for causing the positive waves to pass over one loop and the negative waves over the other loop, and transmitting and receiving instruments at the stations, substantially as set forth.

4. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of two or more normally-closed loops at each station, means for causing the positive waves and negative waves of the alternating current to pass over separate loops, and receiving and transmitting instruments at each station, said receiving and transmitting instruments being in separate loops, substantially as set forth.

5. In an electrical circuit, the combination with a line and a source of alternating current therefor, of two loops in said line, and an asymmetric resistance in each loop consisting of two metal diaphragms with particles of carbon or equivalent material between them, a permanent magnet at one diaphragm, and an electromagnet at the other diaphragm, said magnets being so arranged that waves of one polarity will cause the magnets to attract each other, and that the waves of the opposite polarity will cause the magnets to repel each other, whereby the particles between the diaphragm are brought into more or less intimate contact and thereby varying the resistance to the passage of the current-waves, substantially as set forth.

6. In an electrical circuit, the combination with a line and a source of alternating current therefor, of two loops in said line, an asymmetric resistance in each loop consisting of two metal diaphragms arranged so that their periods of vibration will correspond to the alternations of the current and with particles of carbon or equivalent material between said diaphragms, a permanent magnet at one diaphragm and an electromagnet at the other diaphragm, said magnets being so arranged that waves of one polarity will cause the magnets to attract each other, and that waves of the opposite polarity will cause the magnets to repel each other, whereby the particles between the diaphragms are brought into more or less intimate contact and thereby varying the resistance to the passage of the current-waves.

7. In a system of electrical communication, the combination with a main line and a source of alternating current therefor, of two loops at each station, an asymmetric resistance in each loop consisting of two metal diaphragms with particles of carbon or equivalent material between them, a permanent magnet at one diaphragm and an electromagnet at the other diaphragm, said magnets being so arranged that waves of one polarity will cause the magnets to attract each other and that waves of the opposite polarity will cause the magnets to repel each other, whereby the particles between the diaphragms are brought into more or less intimate contact and thereby varying the resistance to the passage of the current-waves, and transmitting and receiving instruments at the stations, substantially as set forth.

8. In a telegraph system, the combination with a main line and a source of alternating current therefor, of two loops at each station, receiving and transmitting instruments in each loop, asymmetric resistances between the source of alternating current and the instruments, and asymmetric resistances between the instruments and the main line, substantially as set forth.

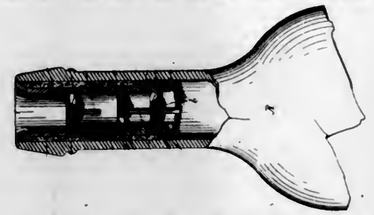
9. In a telegraph system, the combination with a main line and a source of alternating current therefor, of two loops at each station, receiving and transmitting instruments in each loop, asymmetric resistances in each loop for causing the positive waves to pass over one loop and the negative waves over the other loop, and means in each loop for preventing the impulses passing over one loop from returning over the other loop at the same station, substantially as set forth.

10. In a telegraph system, the combination with a main line and a source of alternating current therefor, of two loops at each station, receiving and transmitting instruments in each loop, asymmetric resistances in each loop for causing the positive waves to pass over one loop and the negative waves over the other loop, and a circuit-interrupter in each loop which controls the opposite loop and prevents the impulses passing over one loop from returning over the other loop at the same station, substantially as set forth.

11. In a telegraph system, the combination with a main line and a source of alternating current therefor, of two loops at each station, receiving and transmitting instruments in each loop, asymmetric resistances in each loop for causing the positive waves to pass over one loop and the negative waves over the other loop, a ground connection from the transmitting-key in each loop, and a rheotome in each loop for opening and closing the ground connection of the key in the opposite loop for preventing the impulses passing over one loop from returning over the other loop at the same station, substantially as set forth.

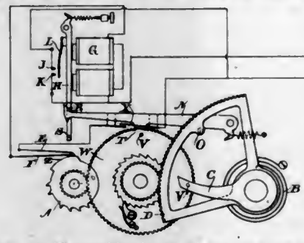
12. In a telegraph system, the combination with a line and sources of alternating currents at the terminals thereof, of two loops at each terminal, asymmetric resistances for dividing the alternating impulses between the two loops, and an artificial line and duplex transmitting and receiving instruments connected with each loop, substantially as set forth.

571,949. BOTTLE-STOPPER. GOTTHARD KOEHLER, San Francisco, Cal. Filed Apr. 8, 1896. Serial No. 586,707. (No model.)



Claim.—In a bottle-stopper, for the purpose specified, the combination with the upper and the lower sections united together, of a perforated diaphragm located in each section of the stopper, a perforated valve movably secured between the said diaphragms, the stem of which valve projects through the diaphragm of the lower section, a feather or key secured within the lower section which fits within a socket or groove cut in the edge of the valve so as to prevent the valve being turned or rotated, and a rod depending from the diaphragm of the upper section so as to limit the outward movement of the valve.

571,950. FIRE-ALARM SIGNAL-BOX. GEORGE F. MILLIKEN, Boston, Mass. Filed Dec 14, 1891. Serial No. 415,062. (No model.)



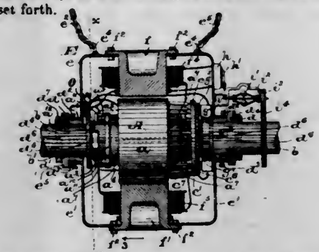
Claim.—1. The combination in a signal apparatus of a time-train, a non-interference magnet in the circuit, a signal-wheel driven by the said train having its first tooth longer than the others, and adapted to make two or more rotations to repeat the signal, and a contact in the main line operated by the time-train at times when the long tooth of the signal-wheel is under the contact-springs on all rotations succeeding the first.

2. The combination in a signal apparatus, of a time-train, a signal-wheel driven thereby and adapted to move a certain distance before interrupting the circuit, a non interference magnet, a locking device for the armature of said magnet, adapted to release the armature while the signal-wheel is moving said certain distance, and at other times to lock said armature in either its attracted or retracted position, contact-springs resting normally on a long tooth of said wheel, and means for suppressing the effect of such long tooth on every repetition of the signals.

571,951. MEANS FOR GENERATING ELECTRICITY FROM CAR-WHEEL AXLES. MORRIS MOSKOWITZ, Newark, N. J., assignor to the National Electric Car Lighting Company, of West Virginia. Filed July 19, 1895. Serial No. 556,504. (No model.)

Claim.—1. In a means for generating electricity from a car-wheel axle, the combination, with a car-wheel axle, of a dynamo on said axle, a governor arranged on the axle, an electric regulating device controlled by said governor, adapted to equalize the output of electricity of the dynamo and maintain the same constant, and a pole-changer comprising therein, a pivotally arranged contact-arm and means for actuating said arm from the car-wheel axle, and contacts in circuit with said dynamo, substantially as and for the purposes set forth.

2. In a means for generating electricity from a car-wheel axle, the combination, with a car-wheel axle, of a dynamo on said axle, a governor on said axle, an electric regulating device controlled by said governor, adapted to equalize the output of electricity of the dynamo and maintain the current constant, and a pole-changer actuated from said car-wheel axle, comprising therein, a pair of contact-arms and a cam operated by said axle, a bar or arm connected with said cam and adapted to actuate said contact-arms, and electrical contacts in circuit with said dynamo, all arranged, substantially as and for the purposes set forth.



3. In a means for generating electricity from a car-wheel axle, the combination, with a car-wheel axle, of a dynamo on said axle, a governor on said axle, an electric regulating device controlled by said governor, comprising therein, an electric current-regulator or arm h' controlled by said governor, a rheostat adapted to decrease the electromotive force in the field-coil of the dynamo, and thereby equalize the voltage of the dynamo into the main circuit, and a pole-changer, comprising therein, a pivotally-arranged contact-arm, and means for actuating said arm from the rotating car-wheel axle, and electrical contacts in circuit with said dynamo, substantially as and for the purposes set forth.

4. In a means for generating electricity from a car-wheel axle, the combination, with a car-wheel axle, of a dynamo on said axle, a governor on said axle, an electric regulating device controlled by said governor, comprising therein, an electric current-regulator or arm h' controlled by said governor, a rheostat adapted to decrease the electromotive force in the field-coil of the dynamo and thereby equalize the voltage of the dynamo into the main circuit, and a pole-changer actuated from the car-wheel axle, consisting essentially, of a cam, operated by said axle and a pair of contact-arms controlled by the action of said cam, and electrical contacts in circuit with said dynamo, all substantially as and for the purposes set forth.

5. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, field-magnets, an armature, commutator, and brush-holders, all made in half-sections, and means for securing said half-sections to the car-wheel axle and together to form a complete dynamo, substantially as and for the purposes set forth.

6. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, field-magnets, an armature, commutator and brush-holder, all made in half-sections, and means for securing said half-sections to the car-wheel axle and together to form a complete dynamo, a governor arranged on said axle, and an electric regulating device controlled by said governor, adapted to equalize the output of electricity of the dynamo and maintain the same constant, substantially as and for the purposes set forth.

7. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, field-magnets, an armature, commutator and brush-holder, all made in half-sections, means for securing said half-sections to the car-wheel axle and together to form a complete dynamo, a governor on said axle, an electric regulating device controlled by said governor, and a pole-changer actuated from the car-wheel axle, substantially as and for the purposes set forth.

8. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, an armature, commutator and brush-holder, all made in half-sections, means for securing said half-sections to the car-wheel axle and together, a shell or casing, also of half-sections, on said axle, and a core in each half-section of said casing, forming the magnetic fields of the dynamo, substantially as and for the purposes set forth.

9. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, an armature, commutator and brush-holder, all made in half-sections, means for securing said half-sections to the car-wheel axle and together, a shell or casing, also of half-sections, on said axle, and a core in each half-section of said casing, forming the magnetic fields of the dynamo, and a pole changer on said casing, actuated from the car-wheel axle, substantially as and for the purposes set forth.

10. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, an armature, commutator and brush-holder, all made in half-sections, means for securing said half-sections to the car-wheel axle and together, a shell or casing, also made in half-sections, on said axle, and a core in each half-section of said casing, forming the magnetic fields of the dynamo, a governor arranged directly on the car-wheel axle, and an electric regulating device on said casing, controlled by said governor, adapted to equalize the output of electricity of the dynamo and maintain the same constant, substantially as and for the purposes set forth.

11. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, a dynamo, comprising therein, an armature, commutator and brush-holder, all made in half-sections, means for securing said half-sections to the car-wheel axle and together, a shell or casing, also made in half-sections, on said axle, and a core in each half-section of said casing, forming the magnetic fields of the dynamo, a governor on said axle, and an electric regulating device on said casing controlled by said governor, comprising therein, an electric-current regulator or arm N, a rheostat adapted to decrease the electromotive force in the field-coil of the dynamo, and thereby equalize the voltage of the dynamo into the main circuit, substantially as and for the purposes set forth.

12. In a means for generating electricity from a car-wheel axle, in combination, a dynamo on the car-wheel axle, comprising therein, an armature-coil, magnetic cores f and f' and coils f^4 and f^5 thereon, a governor on the car-wheel axle, a current-controller N controlled by said governor, a rheostat, circuit-wires connecting said controller with the rheostat, circuit-wires connecting the field coils with the rheostat, and circuit-wires connecting said field coils with the main circuit-wires, all arranged, substantially as and for the purposes set forth.

13. In a means for generating electricity from a car-wheel axle, in combination, a dynamo on the car-wheel axle comprising therein, an armature-coil, magnetic cores f and f' and coils f^4 and f^5 thereon, a governor on the car-wheel axle, a current-controller N controlled by said governor, a rheostat, circuit-wires connecting the field-coils with the rheostat, circuit-wires connecting both field-coils with the main circuit-wires, a pole-changer, comprising therein electrical contacts in circuit with the dynamo-circuit, and circuit-wires 15 and 16 connecting said contacts, all arranged on a car-truck, substantially as and for the purposes set forth.

14. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, half sections a^{10}, adapted to be secured on said axle to form a sleeve, and a dynamo, comprising therein, field magnets, and two armature-sections separately wound and connected to form a complete armature-coil, and a commutator and brush-holder, all made in half-sections, all to form a complete dynamo, substantially as and for the purposes set forth.

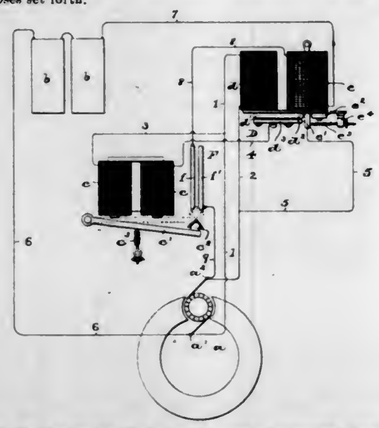
15. In a means for generating electricity from a car-wheel axle, in combination, with a car-wheel axle, half-sections a^{10}, adapted to be secured on said axle to form a sleeve, and a dynamo, comprising therein, two armature-sections separately wound and connected to form a complete armature-coil, and a commutator and brush-holders, all made in half-sections, as set forth, a casing E on said car-wheel axle, also made in half-sections, and cores f and f' in each half-section of said casing wound to form the field-coils of said dynamo, substantially as and for the purposes set forth.

16. In a means for generating electricity from a car-wheel axle, the herein-described dynamo adapted to be secured to a car-wheel axle, comprising therein, two half-sections forming a casing, adapted to be secured to the car-wheel axle, cores f and f' forming stationary magnets, and an armature on said axle rotating between said magnets, consisting essentially, of half sections, secured together and wound to form semicylindrical armature-coils, and means for securing said sections together and to the car-wheel axle, substantially as and for the purposes set forth.

17. In a means for generating electricity from a car-wheel axle, the herein-described dynamo, adapted to be secured to a car-wheel axle, comprising therein, half-bearings a^{10}, each half-bearing having a flange at one end, half-sections e and e' forming a casing adapted to be secured to said axle, cores f and f' in said half-sections forming stationary magnets, an armature on said axle, rotating between said magnets, consisting essentially, of half-rings a' secured together and wound to form semicylindrical armature-coils, means for securing said sections together, and to said half-bearings, commutator-sections made in halves and secured to the car-wheel axle, and brush-holders on said car-wheel axle, all arranged, substantially as and for the purposes set forth.

571,952. ELECTRIC SWITCH. MORRIS MOSKOWITZ, Newark, N. J., assignor to the National Electric Car Lighting Company, of West Virginia. Filed June 11, 1896. Serial No. 595,105. (No model.)

Claim.—1. The herein-described electric switch, comprising therein, an electromagnet d having a pole-piece d', an electromagnet e, having an armature e' and a soft-iron shoe e^3 secured to the said magnet e, so that said armature e' is movably arranged between the ends of said pole-pieces d' and said shoe e^3, substantially as and for the purposes set forth.

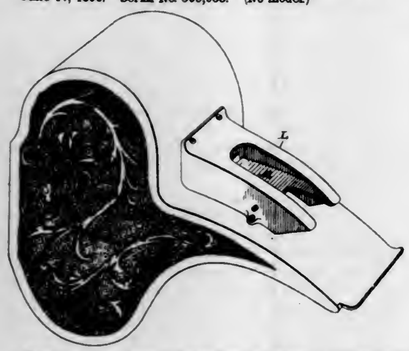


2. The herein-described electric switch, comprising therein, an electromagnet d having a pole-piece d', an electromagnet e, having an armature e', and a soft-iron shoe e^3 secured to the said magnet e, so that said armature e' is movably arranged between the ends of said pole-piece d' and said shoe e^3, and a metallic bar d^2 secured to said pole-piece d', substantially as and for the purposes set forth.

3. The combination, with a dynamo, secondary battery, a pair of electromagnets and their armature, a contact device and the respective circuit connection, of a switch D, comprising therein, an electromagnet d, in shunt with the dynamo, and having a pole-piece d', an electromagnet e in series with the dynamo and battery, having an armature e', and a soft-iron shoe e^3 secured to said magnet e, so that said armature e' is movably arranged between the ends of said pole-piece d' and said shoe e^3, substantially as and for the purposes set forth.

4. The combination, with a dynamo, secondary battery, a pair of electromagnets and their armature, a contact device and respective circuit connections, of a switch D, comprising therein, an electromagnet d, in shunt with the dynamo, and having a pole-piece d', an electromagnet e in series with the dynamo and battery, having an armature e', and a soft-iron shoe e^3 secured to said magnet e, so that said armature e' is movably arranged between the ends of said pole-piece d' and said shoe e^3, and a metallic bar d^2 secured to said pole-piece d', substantially as and for the purposes set forth.

571,953. CASH-REGISTER. WILLIAM MURPHY, Dayton, Ohio, assignor to the National Cash Register Company, same place. Filed June 17, 1896. Serial No. 595,933. (No model.)



Claim.—1. In a device of the class described, a combination with the check-ejecting devices, of a housing having a yielding platform secured therein, for the purpose described.

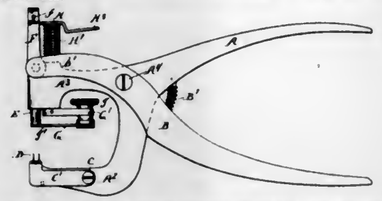
2. In a device of the class described, a combination with the check-ejecting devices, of a housing to receive the check when it is ejected, of a platform pivotally secured in said housing, for the purpose described.

3. In a device of the class described, a combination with the check-ejecting devices, of a fixed housing, arranged to receive the check when ejected, having a slotted side and a yielding platform within said housing, for the purpose described.

4. In a device of the class described, the combination with the check-ejecting devices, of a fixed housing, having a slotted side and a yielding, slotted platform secured within the said housing, for the purpose described.

5. In a device of the class described, the combination with the check-ejecting devices, of a fixed housing having a slotted side and an open inner end and arranged to receive the check when it is ejected, of a slotted platform pivotally secured within said housing so as to yieldingly close the outer end of the same, for the purpose described.

571,954. HAND BUTTON-SETTING IMPLEMENT. FRANKLIN S. MCKENNEY and FRANK R. WELTON, Detroit, Mich.; said Welton assignor to said McKenney, and said McKenney assignor of one-half to J. M. Longyear, Marquette, Mich. Filed Dec. 9, 1895. Serial No. 571,502. (No model.)



Claim.—1. In a hand button-setting implement, the combination of a jaw provided with arms A^2 A^3, and an operating-handle, a lever B fulcrumed to said handle and itself provided with an operating-handle, a die spindle having a reciprocatory movement through the forward end of the arm A^2 and connected with the forward end of the operating-lever, a button-holding device, an additional spindle carrying said button-holding device at its lower end and having a reciprocatory movement through the forward end of the arm A^2, said button-holding device made reciprocatory independently of the reciprocation of the die-spindle, and said arm A^2 provided with a seat for a fastening, substantially as set forth.

2. In a hand button-setting implement, the combination of a jaw provided with arms A^2 and A^3, one of which arms is provided with a seat for a fastening, clamps to hold a fastening upon the seat, said clamps being vertically reciprocatory and laterally movable, a die-spindle sleeved through the forward extremity of the arm A^2, a graduated button-holding device, a reciprocatory spindle carried by the arm A^2 supporting said button-holding device, said device made adjustable to hold different sizes of buttons, and an operating-lever fulcrumed to said jaw to reciprocate the die-spindle, substantially as set forth.

3. In a hand button-setting implement, the combination of a jaw provided with arms A^2, A^3, and an operating-handle, a die-spindle sleeved through the forward end of the arm A^2, an operating-lever to reciprocate the die-spindle, fulcrumed to said handle and itself provided with an operating-handle, an additional spindle sleeved through the forward end of the arm A^2, an arm G' carried by the last-named spindle, and a button-holding device having an adjustable engagement with the arm G', substantially as set forth.

4. In a hand button setting implement, the combination of a jaw provided with arms A^2 A^3, a die spindle sleeved through the arm A^2, an operating-lever fulcrumed to said jaw, a yoke connecting the upper extremity of the die-spindle to the said lever, spindles H H' sleeved through the arm A^2, an arm G' carried by the spindles H H', a button-holding plate G having an adjustable engagement with the arm G', substantially as set forth.

5. In a hand button setting implement, the combination of a jaw A provided with a handle, and having at one end thereof arms A^2, A^3, a die-spindle reciprocatory through the arm A^2, a spindle H having a reciprocatory engagement with the arm A^2, an adjustable button-holding device carried by said latter spindle provided with means to hold various sizes and kinds of ordinary commercial buttons, and an operating-lever fulcrumed to said jaw and provided with a handle adjacent to the handle of said jaw to reciprocate the die-spindle, substantially as set forth.

6. In a hand button-setting implement, the combination of a jaw A provided with arms A^2 A^3, a die-spindle sleeved through the arm A^2, an operating-lever fulcrumed to said jaw to reciprocate the die-spindle, a reciprocatory button-holding plate carried by the arm A^2, said plate formed with graduated button-holding recesses and with a device to hold a shank-button, substantially as set forth.

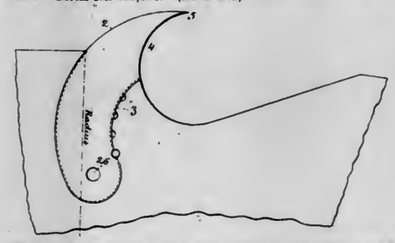
7. In a hand button-setting implement, the combination of a jaw provided with arms A^2 A^3, a reciprocatory die-spindle, an operating-lever fulcrumed to said jaw to reciprocate said spindle, one of said arms provided with an adjustable device having a series of seats for different sizes of fastenings, substantially as set forth.

8. In a hand button-setting implement, the combination of a jaw provided with arms A^2 A^3, a reciprocatory die-spindle, an operating-lever fulcrumed to the jaw to reciprocate said spindle, spindles H H' sleeved through the arm A^3, a button-holding device carried by the spindles H H', and a pressure-arm H^3 to reciprocate the spindles H H', substantially as set forth.

9. In a hand button-setting implement, the combination of a jaw A, a reciprocatory die-spindle sleeved through said jaw, an operating-lever to reciprocate the die-spindle, and an adjustable button-holding device having a reciprocatory engagement with the jaw, the button-holding device made reciprocatory with the reciprocation of the die-spindle and independently thereof, substantially as set forth.

10. In a hand button-setting implement, the combination of a jaw, a reciprocatory die-spindle sleeved through said jaw, an operating-lever to reciprocate said spindle, a reciprocatory arm G' carried by said jaw, and a button-holding device having a vertically and laterally movable engagement with the arm G', substantially as set forth.

571,955. SAW. DEWEY PHILLIPS, Arlington, Vt. Filed May 31, 1892. Serial No. 435,070. (No model.)

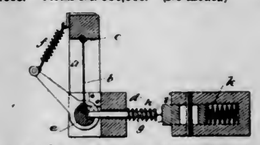


Claim.—1. In a saw having detachable teeth set into and fitting slots formed entirely in the body or main plate of the saw, the removable adjustable teeth each having a convex outer edge extending from the base to the cutting-point or nearly so and a curved inner edge parallel to the convex edge and a concave throat to the point of the tooth, the saw having slots with curved parallel edges corresponding to the teeth and concave recesses in the edges forming continuations of the throats in the teeth, the longitudinal curve of each saw-tooth being subtended by a radius and substantially perpendicular to the intersecting tangent so that the teeth are not liable to be thrown out when in use, and pins for holding the teeth in place substantially as specified.

2. In a saw having detachable teeth set into and fitting slots formed entirely in the body or main plate of the saw, the removable adjustable teeth each having a convex outer edge extending from the base to the cutting-point or nearly so and a curved inner edge parallel to the convex edge and a concave throat to the point of the tooth, the saw having slots with curved parallel edges corresponding to the teeth and concave recesses in the edges forming continuations of the throats in the teeth, the longitudinal curve of each saw-tooth being subtended by a radius and substantially perpendicular to the intersecting tangent so that the teeth are not liable to be thrown out when in use, and notches at uniform distances apart and pins whereby the teeth can be set out progressively, substantially as specified.

3. The combination with the removable saw teeth, of a saw-plate having notches for the reception of the teeth, such notches varying in depth in regular gradations for the reception of teeth varying in length in similar regular gradations, so that the teeth may be set out from time to time as worn away, by changing the teeth from the deeper into the shallower notches, substantially as set forth.

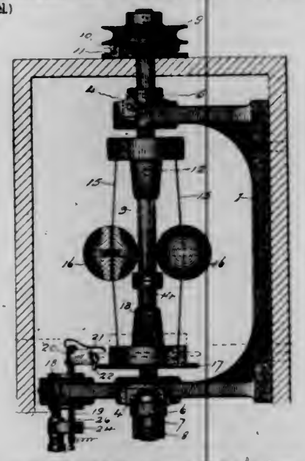
571,956. LOOM. EDWARD POERNER, Rockville, Conn. Filed Jan. 31, 1895. Serial No. 536,810. (No model.)



Claim.—In a loose reed motion the combination of a lay having the lower and upper cross pieces, a reed, a rotatable reed-confiner having a socket and a spring for turning the confiner to hold the lower edge of the reed between the said confiner and lower cross-

piece, a reed-confiner lock carried by the lay, a spring for normally holding the lock retracted from said socket, and a yielding bunter on a fixed part of the loom with which the lock engages to force the same into the socket near the end of the beat-up, substantially as described.

571,957. AUTOMATIC SPEED-LIMIT FOR ENGINES. JOHN R. REYNOLDS, Hartford, Conn. Filed May 8, 1896. Serial No. 590,693. (No model.)



Claim.—1. In a speed-limit, in combination, a frame, a rotary spindle held by the frame, a disk of conducting material supported upon and adapted to be moved longitudinally of the spindle and caused to occupy varying positions along the spindle according to the speed of rotation of the spindle, and conducting-pieces located in the path of and adapted to be engaged by the disk when the spindle rotates more rapidly than desired, substantially as specified.

2. In a speed-limit, in combination, a frame, a rotary spindle, antifriction-balls inserted between the rotary spindle and bearings in the frame, a disk of conducting material supported upon and adapted to be moved longitudinally of the spindle and caused to occupy varying positions along the spindle according to the speed of rotation of the spindle, and conducting-pieces located in the path of and adapted to be simultaneously engaged by the disk when the spindle rotates more rapidly than desired, substantially as specified.

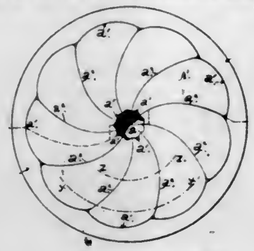
3. In a speed-limit, in combination, a frame, a rotary spindle, a disk of conducting material supported upon and adapted to be moved longitudinally of the spindle and caused to occupy varying positions along the spindle according to the speed of rotation of the spindle, and conducting-pieces held by the frame in such manner as to be adjustable longitudinally of the spindle and to project into the path of and be simultaneously engaged by the disk when the spindle rotates more rapidly than desired, substantially as specified.

4. In a speed-limit, in combination, a rotary spindle bearing a fixed sleeve and a movable sleeve, said sleeve being joined by springs bearing weights, a disk of conducting material connected with the movable sleeve, rods of conducting material adapted to be connected with electric circuit-wires, each of said rods bearing a plural number of conducting-contacts adapted to be engaged by the disk on the sleeve when the disk is moved into certain predetermined positions, substantially as specified.

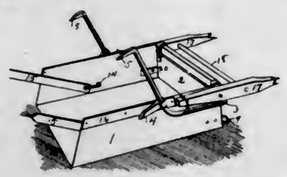
571,958. FLYING TARGET. BENJAMIN F. SAYLOR, Lancaster, Pa. Filed Feb. 5, 1894. Serial No. 499,176. (No model.) Patented in Canada Jan. 15, 1895, No. 47,897, and in England May 13, 1895, No. 9,414.

Claim.—1. A target to be sprung from a trap comprising a hollow segmental spherical body, having a practically cylindrical base-ring about the open end thereof, a conical depression in the center of its top and a depending cone in the hollow thereof, with alternating elevated and depressed spiral volutes in the convex surface of the dome, said volutes extending from said conical depression to the upper face of said cylindrical base-ring; and, with alternating elevated and depressed spiral volutes in the concaved surface of the dome, said under volutes extending from said depending cone to the extreme lower edge of the target, all substantially as described and for the purpose hereinbefore set forth.

2. The herein-described flying target comprising a hollow segmental spherical dome projected from the upper face of a cylindrical base-ring, and having a central conical top depression, with convoluted convex surface corrugations terminating in the upper face of said cylindrical base-ring, and having a central depending cone in the hollow of the dome with convoluted concaved surface corrugations extended to the extreme under edge of the target, all substantially as shown and for the purpose hereinbefore set forth.



571,959. DUMPING DEVICE FOR EARTH-SCRAPERS. SANDERS M. THAYER, Jamestown, N. Y. Filed Mar. 23, 1896. Serial No. 584,507. (No model.)

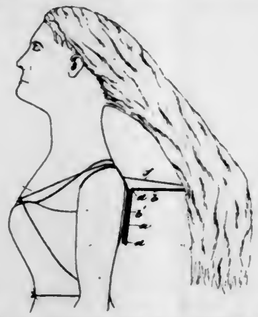


Claim.—1. In a dumping device for earth-scrapers, a rod encircling the rear of the scraper and connected thereto, the rod being bent upward and provided near the bend with a spur to engage the earth, the rod being provided with a tripping-arm to hold it in position, substantially as shown and for the purpose set forth.

2. In a dumping device for earth-scrapers, a rod hinged to the scraper, a tripping-arm secured thereto, the rod passing each side of the scraper and provided with spurs to take the earth at different distances from the hinging-point, substantially as shown and for the purpose set forth.

3. In a dumping device for earth-scrapers, the rod 3 encircling the scraper and hinged thereto, and provided with spurs 4, 4, and 5, 5, to engage the earth, and the trip-arm 6, in combination with a spring-arm having one end secured to the scraper the other end holding the arm 6 in place, substantially as shown and for the purpose set forth.

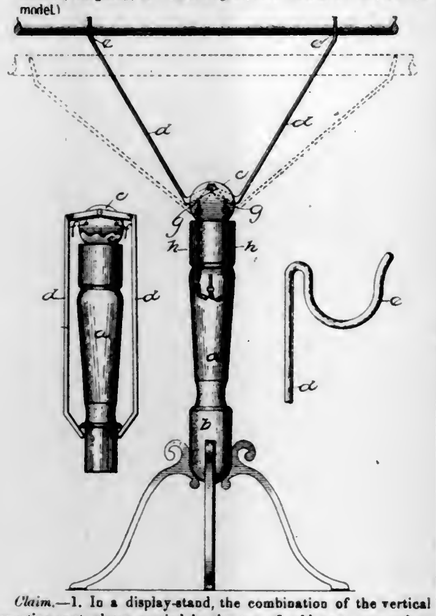
571,960. DEVICE FOR USE IN DRYING HAIR ON THE HEAD. GWENDOLINE R. WATERS, Denver, Colo. Filed Feb. 28, 1896. Serial No. 581,198. (No model.)



Claim.—1. A portable and folding appliance for drying the hair, comprising a back-piece having arms pivoted thereto, and adapted to be strapped to a person's back to receive and support the opened-up hair, and to be detached and folded together when not in use, substantially as described.

2. An appliance for drying hair on the head, comprising a back-piece, arms radially pivoted thereto, and connected by stay-strips, straps for securing the appliance to the person, and elastic mediums disposed between the straps and the arms to retain the arms in radial extension, substantially as described.

571,961. DISPLAY-STAND. PHILIP WEAVER and NICHOLAS S. HALLER, Allegheny, Pa. Filed Aug. 20, 1896. Serial No. 603,399. (No model.)



Claim.—1. In a display-stand, the combination of the vertical supporting-post, plates carried in the top of said post, supporting-arms pivoted between said plates, said arms being curved at their upper ends to form rests and flattened at their pivotal end to admit of their being crossed and folded on the supporting-post, and a stand having a socket to receive said post, substantially as shown and described.

2. In a display-stand, the combination of the vertical supporting-post, plates secured to the top of said post, said plates provided with apertures to receive pins secured by straps or chains to the supporting-posts, supporting-arms pivoted between said plates, said arms having curved upper ends, and flattened lower ends whereby they are crossed and folded on the supporting-post with the curved ends downward, and a supporting-stand for said post, substantially as shown and described.

571,962. CANDLESTICK. JAMES W. WILD, Boston, Mass., assignor of one-half to Daniel J. Wild, Cambridge, Mass. Filed Mar. 2, 1895. Serial No. 540,324. (No model.)

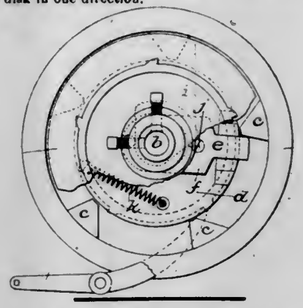


Claim.—In a candlestick, a removable candle-holder consisting of a series of rods rigidly secured at their ends to a base and to an annular top having a wick-opening, a follower through which said rods are extended and downturned to surround said rods and be guided by the same and to surround the upper end of and to retain the spring in place when compressed, and a removable spring interposed under compression between the base and follower within the rods, the candle being held upon the follower with its upper end pressed against the annular top, substantially as described.

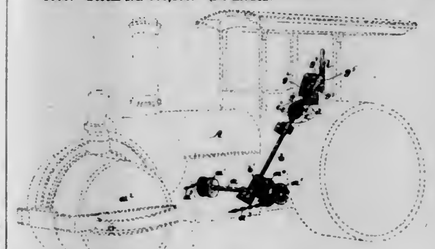
571,963. CLUTCH FOR CARD FEEDING MACHINES. CHARLES H. WOODBURY, Franklin, Mass. Filed Apr. 23, 1896. Serial No. 588,718. (No model.)

Claim.—1. A clutch for card-feeding machines, comprising in its construction a driving member having inwardly-projecting stops; a driven member, equipped with a radially-movable latch or dog, the inner part of which is made in yoke form and the outer end of which is guided by the said driven member; pins or projections on the yoke part of the latch or dog; the trip-latch ratchet-disk provided with a cam to operate between the said pins or projections; and a spring to move the trip latch disk in one direction, as set forth.

2. A clutch for a card-feeding machine, comprising in its construction a driving member, having inwardly-projecting stops; a driven member equipped with a radially-movable latch or dog held against sidewise movement by guides on the driven member; two pins or projections on the inner part of said dog; a ratchet-disk having a cam to operate between said pins or projections; and a spring to move the disk in one direction.



571,964. STEERING MECHANISM. JAMES F. ADAMS, Killingly, Conn., assignor of C. D. & C. S. Chase, Danielson, Conn. Filed July 6, 1896. Serial No. 598,133. (No model.)



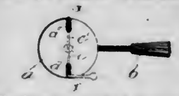
Claim.—1. In a steering mechanism, the combination with a power-shaft and its gear-wheel, of a steering-shaft, provided at its upper end with a sleeve, two gear-wheels loosely mounted on said sleeve, in engagement with and continuously driven in opposite directions by said power gear-wheel, a rod operating within said sleeve, clutch mechanism operated by said rod to engage either of said driven gears with and to rotate the steering-shaft, and means to operate said rod, substantially as described.

2. In a steering mechanism, a power-shaft, and its gear-wheel, combined with a steering-shaft having a sleeve projecting therefrom, a slot in the sleeve, two gear-wheels, loosely mounted on the sleeve and in continuous engagement with said power-gear, a rod extending within said sleeve, and means to operate the rod, said rod being provided with an extension working through said slot and adapted to be thrown into and out of clutching engagement with said loose gear-wheels, substantially as described

3. In a steering mechanism, a power-shaft, and its gear-wheel, combined with a steering shaft having a sleeve projecting therefrom, two gear-wheels loosely mounted on said sleeve and in continuous engagement with said power-gear, said sleeve being slotted between said two gears, and the latter being provided with lugs adjacent the slotted portion of said sleeve, a rod extending within said sleeve, and clutch mechanism to engage either of said two gears with said steering-shaft, said clutch mechanism being operated by said rod through said slotted sleeve, substantially as described.

4. In a steering mechanism, a power-shaft, and its gear-wheel, combined with a steering-shaft having a sleeve projecting therefrom, two gear-wheels loosely mounted on said sleeve and in continuous engagement with said power-gear, said sleeve being slotted between said two gears, and the latter being provided with lugs adjacent the slotted portion of said sleeve, a rod extending within said sleeve, pins fixed in said rod and extending through said slotted sleeve, and adapted to engage said lugs, and means to operate said rod, substantially as described.

571,965. DENTAL INSTRUMENT. JOHN T. BARKER, Wallingford, Conn. Filed Apr. 20, 1896. Serial No. 588,358. (No model.)

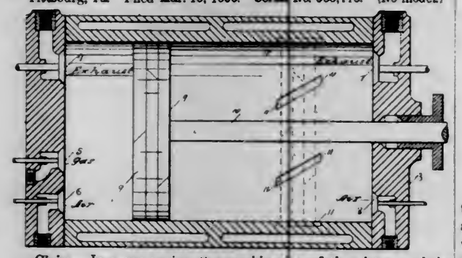


Claim.—1. The herein-described dental instrument for treating root-canals of teeth, comprising the tapering vessel *a*, open at the

smaller end, a probe *c*, and a guide or director *d*, for the said probe, affixed to one side of the interior wall of the tapering vessel, whereby fluid medicaments may be directed to the point of treatment in tooth-cavities, substantially as and for the purpose specified.

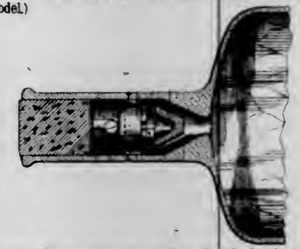
2. In combination, the tapering vessel *a* open at the smaller end, the probes *c c'* and the guides or holders *d d*, all substantially as described and for the purposes set forth.

571,966. OPERATION OF GAS-ENGINES. MILDRED BLAKEY, Pittsburg, Pa. Filed Mar. 18, 1896. Serial No. 583,718. (No model.)



Claim.—In a gas-engine, the combination of the piston, and the cylinder having the gas-valve in one end, an air-supply valve and an air and gas exhaust valve in each end, and the gas and air grooves formed in the cylinder, intermediately of its ends, and conducting the gas and air from one end of said cylinder to the other end, past said piston and within the chamber of said cylinder, substantially as set forth.

571,967. ATTACHMENT FOR PREVENTING REFILLING OF BOTTLES. ANSON D. COLE, Philadelphia, Pa., assignor of one-half to Barclay S. Smith, same place. Filed Apr. 29, 1896. Serial No. 589,495. (No model.)



Claim.—1. The combination with a bottle having a valve-seat and internally-lugged neck, of the valve, and the valve-protector adapted to be permanently cemented in the bottle-neck and provided with a recessed or grooved periphery and notched and unnotched shoulders or flanges, a closed top, and the liquid-outlet extending from the bottom out at the side beneath the closed top, substantially as set forth.

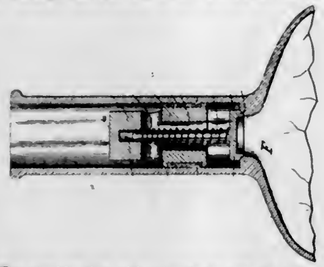
2. The valve-protector for non-refillable bottles, having the peripheral groove or recess, the shoulder or flange above said groove, the notched shoulder or flange beneath said groove, and the liquid-outlet extending from the bottom out at the side above the groove, substantially as and for the purpose set forth.

3. The valve-protector for non-refillable bottles, having the peripheral groove or recess, the shoulder or flange above said groove, the notched shoulder or flange beneath said groove, the communicating longitudinal and transverse passages, the reduced upper portion and the closed top, substantially as and for the purpose set forth.

571,968. ATTACHMENT FOR PREVENTING REFILLING OF BOTTLES. ANSON D. COLE, Philadelphia, Pa., assignor of one-half to Barclay S. Smith, same place. Filed May 28, 1896. Serial No. 593,148. (No model.)

Claim.—1. The combination with a bottle having the valve-seat formed with its neck, of the valve-protector adapted to be permanently secured in the bottle-neck above the valve-seat and having the body portion, the reduced upper portion, the closed top, the communicating longitudinal and transverse passages and the cavity or socket in its upper portion over its longitudinal passage, the valve beneath the protector having the stem passing through the longitudinal passage of the protector and entering the cavity or socket over it, and the spring carried by the valve-stem and serving to close the valve when relieved of the weight thereof, substantially as and for the purpose set forth.

2. The valve-protector formed complete in one piece having the peripheral recess, the shoulder above said recess, the notched shoulder beneath said recess, the communicating longitudinal and transverse passages, the reduced upper portion, the closed top, and the valve stem cavity or socket in its upper portion centrally over its longitudinal passage, substantially as and for the purpose set forth.



3. The combination with a bottle having the valve-seat and internally-lugged neck, of the valve-protector of integral construction adapted to be permanently cemented in the bottle-neck above the valve-seat and provided with the recessed or grooved periphery, the notched and unnotched shoulders or flanges, the closed top, the communicating transverse and central longitudinal passages beneath its closed top, and the cavity or socket in its upper portion over its longitudinal passage, the valve beneath the protector having the stem passing through the central longitudinal passage of the protector and entering the cavity or socket over this passage, and the spring carried by the valve-stem and bearing at its opposite ends, respectively, against the valve and the protector at the mouth of the cavity therein entered by the valve-stem, substantially as and for the purpose set forth.

571,969. TRUSS. PERJOHAN FREDIN, New Haven, Conn. Filed Apr. 20, 1896. Serial No. 588,219. (No model.)



Claim.—1. A truss having an inflatable ball-pad furnished with an inflation-tube, a cup-shaped frame adapted to receive said pad, a headed screw extending through the center of said pad and frame, and so as to clamp the central portions of the pad to the inside of the frame, and a nut applied to the outer end of said screw, substantially as described.

2. In a truss, the combination with a cup-shaped frame, of an inflatable ball-pad provided with an inflation-tube, and a clamping device extending through the center of said pad and into the frame, and whereby a central recess is formed in the pad, substantially as described.

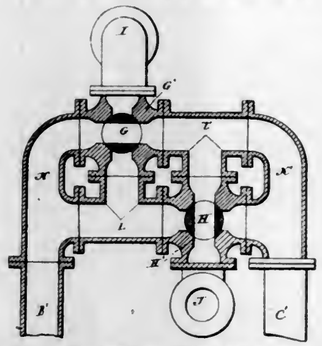
571,970. DENTAL OBTUNDER. HERBERT F. HARVEY, Cleveland, Ohio. Filed Dec. 21, 1895. Serial No. 572,837. (No model.)



Claim.—1. The combination with a dental blower having a transparent portion in its air-duct and suitable predetermined marks upon such portion, of a thermometer having its stem beneath said transparent portion and its mercury column registering with the marks on the latter, substantially as set forth.

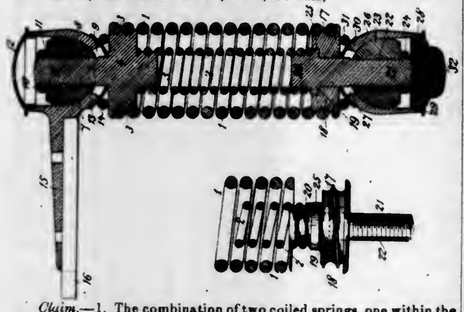
2. In a dental blower, the combination of a force-bulb, a longitudinally-slotted casing, a glass tube within said casing and forming the air-duct for the bulb, a heating-bulb at the other end of the casing and glass tube, a nozzle extending from said heating-bulb, a thermometer having its bulb within the heating-bulb and its stem in the glass tube, and a guide surrounding the thermometer and holding it from contact with the sides of the air-duct, substantially as set forth.

571,971. AIR-COMPRESSOR. EBENEZER HILL, South Norwalk, Conn. Filed June 19, 1896. Serial No. 596,128. (No model.)



Claim.—An apparatus for compressing gas or air and charging tanks with the same, consisting in a prime motor, two or more air-compressors connected therewith, and a charging-stand having separate connections with the said air-compressors, and a plurality of delivery-pipes, and containing ports and valves constructed and arranged to enable the air-compressors to be individually or collectively connected with tanks to be charged according to the conditions of pressure, so that the sum of the loads upon the air-compressors may be approximate to the average or ideal load of the prime motor, substantially as set forth.

571,972. SPRING. REYNOLD JANNEY, Westborough, Mass. Filed June 28, 1894. Serial No. 515,915. (No model.)



Claim.—1. The combination of two coiled springs, one within the other, the inner spring being normally in a state of compression and acting upon the outer one to weaken or reduce the power thereof.

2. The combination of two coiled springs, one within the other, the inner one being normally in a state of compression and acting upon the outer one to a certain point to weaken or reduce its power and beyond that point acting together with the outer spring to resist further extension.

3. The combination of the outer and heavier coiled spring, the inner coiled spring having normally an expansive action against the outer spring, and screws for connecting the ends of said springs together.

4. The combination of the outer and heavier coiled spring, the inner coiled spring having normally an expansive action against the outer spring, the screws 3 and 5, and the screws 17 and 20, the latter screws being independently movable to facilitate assemblage and the compression of the inner spring.

5. The combination with two concentric coiled springs, of two screws for connecting the associated ends of said springs, a threaded shank connected to said screws, a socket made of a single piece, and a ball or spherical bearing arranged upon said threaded shank and within said socket.

6. The combination of the two concentric coiled springs, the inner one being the weaker and acting normally to expand the outer, the screws for connecting the ends of said springs, the threaded shanks having balls screwed thereupon, the one-piece sockets, the attaching means thereon, and the closures for the sockets.

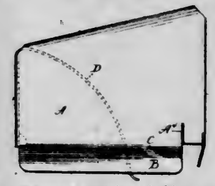
7. The combination with two concentric coiled springs, of two screws connecting the associated ends of said springs, and provided with a threaded shank, a socket made of a single piece and through which said shank passes, a ball screwed upon said shank within said socket, a concaved dust-excluding washer for said socket, a rubber ring for pressing upon said washer, and a dust-cap for said socket.

8. The combination with two concentric coiled springs, and at one end thereof, of the screw 3, head-piece 4, the screw 5, the threaded shank 6, the ball 7, the socket 8, having the opening 9 therein, the dust-cap 12, the washer 13, and the rubber ring 14.

9. The combination with two concentric coiled springs, and at one end thereof, of the screw 17, the head-piece 18, the seat 19, the collar 25, the screw 20, the shank 21 threaded as at 22, the ball 23, the nut 24, the socket 26 having an opening 27, the washer 30, the rubber ring 31, the dust-cap 29, and the rubber cushion 32.

10. In combination with the open base of the socket of a ball-and-socket joint, the concaved spring pressed washer.

571,973. TEMPORARY CARTRIDGE-HOLDER. THOMAS C. JOHNSON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Sept. 29, 1896. Serial No. 607,333. (No model.)



Claim.—1. A temporary cartridge-holder provided at its open bottom with one or more yielding cartridge-retaining ribs, and one or more locating-flanges, and containing an ejecting-spring which ejects the cartridges from it when said rib or ribs are sprung sufficiently to form a large enough passage through the bottom of the holder.

2. A temporary cartridge-holder having two yielding inwardly-extending cartridge-retaining ribs, and two longitudinal, laterally-diverging locating-flanges merging into the said ribs which are sprung outward by means of them, and an ejecting spring located within the holder.

3. A temporary cartridge-holder having one or more inwardly-extending yielding cartridge-retaining ribs, and one or more longitudinal laterally-diverging locating-flanges, a guide-finger extending downward from the rear end of the holder, and an ejecting spring located within the holder.

4. A temporary cartridge-holder having one or more inwardly-projecting yielding cartridge-retaining ribs, and one or more longitudinal laterally-diverging locating flanges, and an ejecting-spring extending downward into the holder from the forward upper corner thereof, and having a long straight shank by which it is attached to the front wall of the holder.

5. A temporary cartridge-holder having its side walls shaped to form two inwardly-projecting longitudinal retaining-ribs and two longitudinal laterally-diverging locating-flanges, by means of which the ribs are sprung away from each other, and an ejecting-spring located within the holder for ejecting the cartridges therefrom.

6. A temporary cartridge-holder formed from a single piece of sheet-steel having its front and rear ends and top closed, its bottom open, and formed with two inwardly-projecting cartridge-retaining ribs, and two longitudinally-arranged locating-flanges, the said ribs and flanges being formed integral with the lower ends of the side walls of the holder, which are adapted at their lower ends to spring.

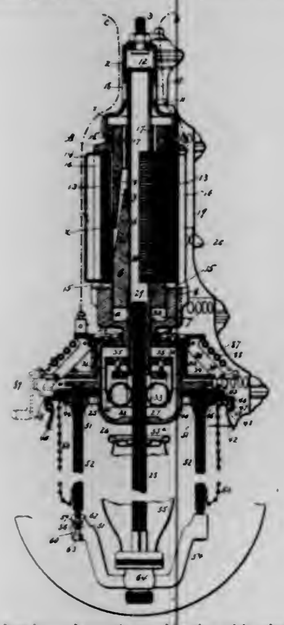
571,974. ELECTRIC-ARC LAMP. GEORGE R. LEAN, Cleveland, Ohio, assignor to the Jandus Electric Company, same place. Filed May 23, 1896. Serial No. 592,787. (No model.)

Claim.—1. In an arc-lamp, the combination with a magnet-core and armature, of a helix encircling said core and included in series with the carbons of the lamp, a constantly-closed conductor also encircling said core, whereby to effect the gradual starting and stopping of the lamp, and a clutch supported by said armature, substantially as set forth.

2. In an arc-lamp, the combination with the pole-piece of a magnet, an armature arc-starting mechanism and connections between the arc-starting mechanism and the magnet, of a helix encircling said pole-piece and armature and included in the lamp-circuit, and a constantly-closed conductor also encircling the pole-piece and armature, whereby to effect the gradual starting and stopping of the lamp, substantially as set forth.

3. A separating and feeding magnet for an electric-arc lamp having a conical pole-piece and a conical armature, the adjacent conical faces of said pole-piece and armature being disposed at an angle to each other, substantially as set forth.

4. A separating and feeding magnet for an electric-arc lamp having a conical pole piece, and a conical armature, one adapted to enter the other and the faces of the two cones arranged at an angle to each other, substantially as set forth.



5. In an electric-arc lamp, the combination with suitable framework and a clutch, of a separating and feeding magnet having a conical recess in its pole-piece or core, an armature having a conical end to enter said conical recess, the conical face of the armature being disposed at an angle to the face of the conical recess in the pole-piece or core and connections between said armature and clutch, substantially as set forth.

6. In an arc-lamp, the combination with the separating and feeding magnet having a hollow core and a hollow armature, of a tube attached to and communicating with the armature and passing loosely through said hollow core, a tube depending from the armature and clutch devices connected with the last-mentioned tube, substantially as set forth.

7. In an electric arc lamp, the combination with a magnet-shell, of a hollow cap or casting fixed to the upper end thereof, a pole piece secured within said shell, a hollow armature also disposed within the shell and constituting the plunger of a dash-pot formed at the lower end of the shell, a tube connected with the upper end of the armature and terminating within said hollow cap or casting, a cap closing the upper end of said tube, a tube depending from said armature, and clutch devices connected with said last-mentioned tube, substantially as set forth.

8. In an electric-arc lamp, the combination with a magnet-shell and a cylindrical casting secured within the lower end thereof, of a core depending within said shell, a helix within the shell, a lining in said cylindrical casting said lining inclosing the lower end of the core, an armature disposed within the shell and helix and having a sliding fit in the cylindrical casting, a tube depending from the armature and clutch devices carried by said tube, substantially as set forth.

9. In an arc-lamp, the combination with a carrier, of clutch-rings for the upper carbon, mounted therein, contact-rings also mounted in said carrier, and means for operating the clutch-rings without moving the contact-rings from the carbon, substantially as set forth.

10. In an arc-lamp, the combination with a clutch-pan and a carrier mounted therein, of a set of clutch-rings mounted in the carrier and adapted to engage the upper carbon, means for moving said clutch-rings to release the carbon, and contact-rings also mounted in said carrier and disposed in a higher plane than the clutch-rings so that they will not be affected by the operation of said clutch-rings, substantially as set forth.

11. In an arc lamp, the combination with a slotted carrier adapted to permit the passage of the upper carbon through it, of a series of clutch-rings having roughened peripheral grooves, mounted in said carrier, a series of contact-rings mounted in said carrier and alternating with the clutch-rings, said contact-rings being of the same diameter as the clutch-rings but having thicker or wider walls and a supporting-ring passing through all of said clutch and contact rings, substantially as set forth.

12. In an arc-lamp, the combination with the armature of the separating and feeding magnet, of a clutch pan or receptacle connected therewith, a vertically-movable slotted carrier supported in said pan or receptacle, clutch-rings mounted in said carrier, a horizontal ring passing through said clutch-rings, and a device adapted to be engaged by said carrier and clutch-rings, whereby to cause them to move upwardly and the carbon to feed, substantially as set forth.

13. In an arc-lamp, the combination with the separating and feeding magnet and its armature, of a tube depending from said armature, a plate secured to said tube near its lower end, a casing depending from said plate and having an inclined flange at its lower end, a vertically movable carrier within said casing and having a hole to receive the lower end of said tube, clutch-rings mounted on said carrier and adapted to bear against said inclined flange and the carbon-rod, a horizontal ring passing through the clutch rings, and a device to be engaged by said clutch-rings and carrier, substantially as set forth.

14. In an arc-lamp, the combination with a magnet-shell, a cylindrical casting secured thereto and an armature within said shell, of a box or casing secured to said cylindrical casting, a removable bottom for said box or casing and having an opening for the passage of the carbon, a tube secured to the armature and passing into said box or casing, a clutch-pan secured to said tube, a carrier in said clutch-pan, clutch-rings in said carrier and pan and adapted to engage the bottom of the box or casing to permit the carbon to feed, and a horizontal ring passing through said clutch-rings, substantially as set forth.

15. In an arc-lamp, the combination with the framework, of a ring removably attached to said framework, having a flange adapted to receive and support a globe and a cushion against which said ring bears, substantially as set forth.

16. In an arc-lamp the combination with the framework of a ring supported thereby, a spring-cushion above said ring, an annular plate adapted to be removably secured to said ring and bear against said spring-cushion, a curved flange depending from said annular plate, a globe, and a packing-ring between the peripheral flange of the globe and said curved flange on the annular plate, substantially as set forth.

17. In an arc-lamp, the combination with the framework, of a ring secured thereto and insulated therefrom, a globe-holder removably connected with said ring, a lower-carbon holder, electrical connections between said carbon-holder and said ring, said ring and globe-holder constituting part of the circuit through the lamp, so that when the globe and its holder are removed, the lamp will be open-circuited, substantially as set forth.

18. In an arc lamp, the combination with the framework, and an insulated ring supported thereby, of rods depending from said ring, a yoke or bracket removably secured to the lower ends of said rods, and an inner-globe holder and lower-carbon holder supported by said yoke or bracket, substantially as set forth.

19. In an arc-lamp, the combination with the framework, of two depending rods supported thereby and insulated therefrom, buttons or enlargements on the lower ends of said rods, a yoke or bracket, hollow bosses at the ends of said yoke or bracket, lugs projecting into said openings, and internal shoulders at the upper ends of said bosses for the reception of the buttons or enlargements on the depending rods, substantially as set forth.

20. A globe-holder comprising a base, an adjustable cap thereon and a spring-ring within said cap and adapted to be forced against the flange of the globe by said cap, substantially as set forth.

21. A globe-holder comprising a base, an adjustable cap thereon, and an annular coiled spring adapted to be forced by said cap, against the flange of the globe whereby to force the latter against its seat, substantially as set forth.

22. A globe-holder comprising a base, an adjustable cap thereon, said cap having an inwardly-curved flange, and an elastic ring adapted to be forced against the flange or shoulder on the globe by said curved flange on the cap, substantially as set forth.

23. A globe-holder comprising a base having external screw-threads, a cap adapted to screw on said base, said cap having an inwardly-curved annular flange at its upper edge, and an annular coiled spring within said curved annular flange, substantially as set forth.

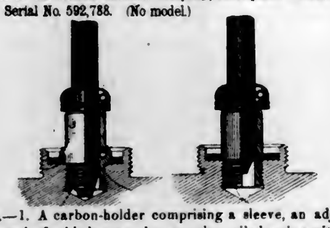
24. A globe-holder comprising a recessed base, a packing-disk thereon, a screw-cap on said base, said cap having a curved flange at its edge, and an elastic ring adapted to be pressed against the shoulder on the globe whereby to force the edge of the globe against said packing disk, substantially as set forth.

25. In an arc-lamp, the combination with a base having an externally-screw-threaded projection and having a hole, a portion of said hole being made with a tapering wall and a portion being made with a screw-threaded wall, of a cap adapted to screw on the screw-threaded projection, a device within said cap adapted to be forced by the cap against the flange of a globe whereby to clamp the latter to the base, and a split sleeve passing through the hole in the base and adapted to receive a carbon, said sleeve having a tapering portion to bear against the tapering wall of the hole in the base and a nut to screw in the screw-threaded portion of said hole in the base, substantially as set forth.

26. The combination in an arc-lamp, of a separating and feeding magnet and the carbons, a frame, strips of insulating material supported by said frame, and a low resistance wound on said bridges and included in circuit with the separating and feeding magnet and the carbons, substantially as set forth.

27. In an arc-lamp, the combination with the framework and a low resistance, of an insulated ring supported by the framework, a globe-holder removably attached to said ring, a lower-carbon holder included in circuit with the said ring and globe-holder, and a switch between said globe-holder and resistance, substantially as set forth.

571,975. CARBON-HOLDER. GEORGE R. LEAN, Cleveland, Ohio, assignor to the Jandus Electric Company, same place. Filed May 23, 1896. Serial No. 592,788. (No model.)



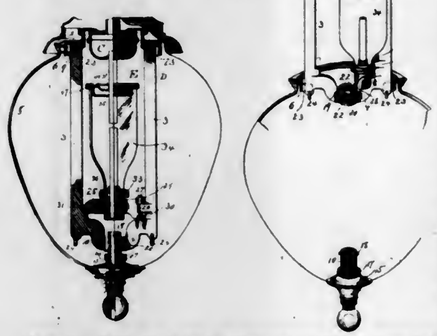
Claim.—1. A carbon-holder comprising a sleeve, an adjustable cap on the end of said sleeve and an annular coiled spring within said cap and adapted to be forced against the carbon, substantially as set forth.

2. A carbon-holder comprising a sleeve, a cap adapted to screw on the end of said sleeve, said cap having a curved flange or lip adapted to terminate in proximity to a carbon-rod inserted in the sleeve, and an annular coiled spring within said curved flange or lip, substantially as set forth.

3. A carbon-holder comprising a sleeve having an interior annular groove near one end, a flexible ring in said groove and a clamp at the free end of the sleeve, substantially as set forth.

4. A carbon-holder comprising a sleeve having a groove near its base, an annular coiled spring in said groove, an adjustable cap at the free end of the sleeve, said cap having a curved flange or lip and an annular coiled spring within said flange or lip, substantially as set forth.

571,976. ELECTRIC-ARC LAMP, GEORGE R. LEAN, Cleveland, Ohio, assignor to the Jandus Electric Company, same place. Filed July 7, 1896. Serial No. 598,351 (No model.)



Claim.—1. In an arc lamp, the combination with a depending arm, and a yoke at the lower end of said arm, of an outer-globe holder removably connected to said yoke, and an inner or arc-inclosing globe holder hinged to said arm above the yoke.

2. In an arc lamp, the combination with two depending arms and a yoke connecting the lower ends of said arms, of an outer-globe holder removably connected to said yoke, an inner or arc-inclosing globe holder hinged to one of said depending arms above the yoke and constructed to be locked to the other depending arm, substantially as set forth.

3. In an arc-lamp, the combination with depending arms, of a ring at the upper ends of said arms, a yoke at the lower ends of said arms, an outer-globe holder removably attached to said yoke, an outer globe, a collar secured to the upper end of said globe and adapted to bear against said ring, and an inner-globe holder hinged between said depending arms above the yoke, substantially as set forth.

4. In an arc-lamp, the combination with a frame, of an arm hinged at one end thereto, and a globe-holder and a carbon-holder carried by said hinged arm, substantially as set forth.

5. In an arc-lamp, the combination with a frame, of a globe-holder hinged thereto and a carbon-holder disposed within and carried by the globe-holder, substantially as set forth.

6. In an arc-lamp, the combination with a frame having depending arms, of an arm hinged at one end to one arm of the frame and adapted at its other end to engage a tooth or catch on the other arm of the frame, said hinged arm being adapted to support a globe-holder and a carbon-holder, substantially as set forth.

7. In an arc lamp, the combination with a frame having depending arms, of an arm hinged to one of said arms of the frame so as to be capable of a vertical and a swinging movement, the free end of said hinged arm being adapted to engage and become locked to the other depending arm of the frame, substantially as set forth.

8. In an arc-lamp, the combination with a base having an opening therein, a portion of said opening being tapering, of a collapsible sleeve or holder in said opening and having a tapering portion to bear against the tapering portion of said opening, said sleeve or holder having a screw-threaded lower end adapted to project below said base, and a nut adapted to screw on said lower end of the sleeve or holder and bear against the lower face of said base, substantially as set forth.

9. The combination with an inner or arc-inclosing globe, of a cover therefor comprising two pieces, one upon the other and both adapted to be permitted to have lateral motion, substantially as set forth.

10. The combination with an inner or arc-inclosing globe, of a cover therefor, said cover comprising a dished plate adapted to enter the globe and having a shoulder to rest and have a lateral movement on the upper edge of the globe, and a disk adapted to rest and have a lateral movement on said shoulder, said plate and disk having alined openings for the passage of the upper carbon of the lamp, substantially as set forth.

11. The combination with an inner or arc-inclosing globe, of a cover made in two pieces, one piece being a dished plate having a perforation and adapted to be capable of lateral movement on the globe, and the other piece being a concave disk having a perforation and adapted to be supported by the dished plate so as to be capable of lateral movement, substantially as set forth.

12. The combination with an inner or arc-inclosing globe, of a cover comprising two pieces having alined perforations and adapted to have lateral movement relatively to the globe and relatively to each other, one of said pieces having an annular shoulder to rest on the globe and to receive the edge of the other piece, and a curved annular lip or flange projecting from the periphery of said shoulder and terminating over the last-mentioned disk, substantially as set forth.

13. In an arc-lamp, the combination with a frame and a movable bar depending therefrom, of a globe having a close fit at its upper edge with the frame, and a clamp attached to said depending bar, and engaging the inner and outer faces of the globe, the inner member of said clamp being secured to said bar and the outer member of said clamp being yieldingly mounted on said bar, substantially as set forth.

14. The combination with a frame, and a bar attached to the lower end thereof, of a plate on said bar adapted to engage the inner face of the globe, a spring-sustained sleeve on said bar, a plate supported by said sleeve and bearing against the under face of the globe, and a ring at the upper end of the globe and having a close fit against the frame, substantially as set forth.

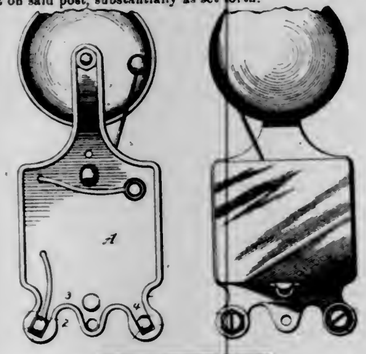
15. The combination with a frame, a globe and a bar attached to the frame, of a plate mounted on said bar and bearing against the inner face of the globe, a spring-sustained plate bearing against the under face of the globe, a yielding ring between the lower edge of said globe and the spring-sustained plate, and a ring at the upper end of the globe and having a close fit with the frame, substantially as set forth.

571,977. BINDING POST FOR ELECTRIC BELLS, &c. FREDERICK W. MANGER and OTTO H. HUEBEL, Brooklyn, N. Y. Filed Mar. 24, 1896. Serial No. 584,633. (No model.)

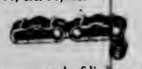
Claim.—1. The combination with a base-plate having a hole therein and a recess in its rear face, said recess having straight walls, of a binding-post adapted to pass through said hole in the base-plate and having a head to enter said recess and conform thereto, a washer adapted to screw on said post whereby to prevent endwise movement thereof and a clamping-nut on said post, substantially as set forth.

2. The combination with a base-plate having a hole therein and having a recess in its rear face, said recess having parallel walls, of a

binding-post adapted to pass through the hole in the base plate and having a head to conform to the shape of said recess, an insulating-washer disposed between said head and the walls of said recess, an insulating-washer encircling the post and bearing against the outer face of the base-plate, a metallic washer adapted to screw on the post and bear against said last-mentioned insulating-washer and a clamping-nut on said post, substantially as set forth.



571,978. SPROCKET-CHAIN. FREDERICK MYERS, New York, N. Y. Filed June 15, 1896. Serial No. 595,539. (No model.) Patented in Canada June 23, 1896, No. 52,729.



Claim.—1. A chain composed of links and coupling-blocks alternately coupled together, each link comprising two parallel straps provided with longitudinal slots which are centrally enlarged and cross-bars connecting the outer edges of said straps, their inner edges being disconnected, while the coupling-blocks have at their ends oppositely-projecting pintles to fit the ends of the slots and having heads which take over the outer sides of the straps the diameter of said heads being less than that of the enlarged portions of the slots, substantially as and for the purpose described.

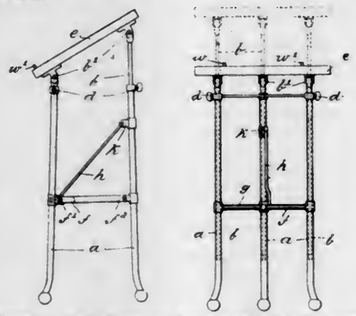
2. A chain composed of links and coupling blocks alternately coupled together, each link comprising two parallel straps provided with longitudinal slots which are centrally enlarged, and cross-bars connecting the outer edges of said straps, their inner edges being disconnected, while the coupling-blocks have in their end portions removable studs the ends of which form oppositely-projecting transverse pintles, which are formed to fit the end portions of the slots and have heads which engage the outer sides of the straps, the diameter of said studs and heads being less than that of the enlarged portions of the slots, so that the studs are independently insertible and removable when in line with said enlargements.

571,979. BICYCLE-LEG. HENRY OTTO, Bloomington, Ill. Filed Dec. 26, 1895. Serial No. 573,394. (No model.)



Claim.—The combination of a top and bottom clamping-plate, connecting-screw, the inclined jaw on the bottom plate, the concave rear wall in the jaw, and a leg with a concave-ending foot the eccentric top end pivoted to the jaw, substantially as and for the purpose specified.

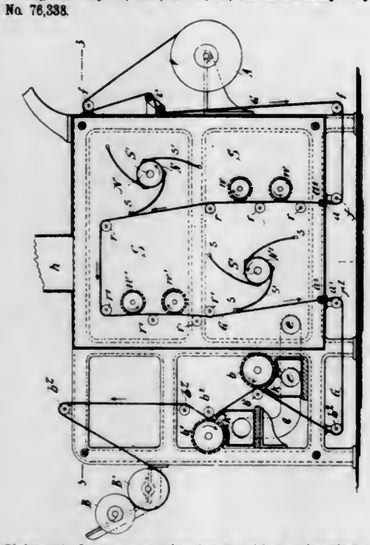
571,980. ADJUSTABLE FOLDING STAND. EDWARD G. PERFIELD, New Haven, Conn. Filed Apr. 20, 1896. Serial No. 588,316. (No model.)



Claim.—1. In an adjustable folding stand or similar support, the combination of three standards, a brace connected with two of said standards and hinged to the third, rods extensible in said standards, and a table pivotally connected with the upper ends of said rods, substantially as and for the purposes described.

2. In an adjustable folding stand or similar support, the combination of the front and rear standards, a brace hinged to one of said standards and pivotally connected with the other two, rods extensible in said standards provided with set-screws, a table pivoted to the upper end of each of said rods, a bar connecting the front standards together, an eye formed with the rear standard, and a latch engaging said bar and adapted to enter said eye, substantially as and for the purposes described.

571,981. MACHINE FOR CLEANING CARPETS. CARL SCHARER, Heidenheim-on-the-Brenz, Germany. Filed June 15, 1895. Serial No. 552,888. (No model.) Patented in France July 13, 1893, No. 231,524; in England July 14, 1893, No. 13,718, and in Germany July 14, 1893, No. 76,338.



Claim.—1. In a carpet-cleaning machine, a housing provided with an exhaust duct, and with narrow inlet and outlet slots in its bottom, brush-rolls, and a beater, arranged one above the other above the inlet-slot, and a beater and brush-rolls arranged one below the other above the outlet-slot, and suitable guide-rolls adapted to guide the carpet relatively to said devices so that both sides of said carpet while traveling in a vertical direction from the inlet to the outlet slot will be successively and repeatedly subjected to a brushing and beating action, for the purpose set forth.

2. In a carpet-cleaning machine, a housing provided with an exhaust duct, and with inlet and outlet slots in its bottom, of brush-rolls arranged in pairs and adapted to revolve in opposite directions, beaters arranged to alternate with the sets of brush-rolls, and guide-rolls adapted to guide the carpet to said devices in such manner that one pair of brushes and a set of beaters will operate on one side, and the other pair of brushes and set of beaters upon the other side of the carpet during its travel in a vertical direction from the inlet to the outlet slot, for the purpose set forth.

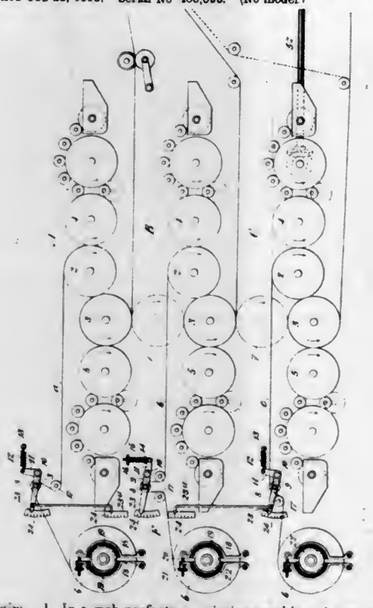
3. In a carpet-cleaning machine, a main housing provided with an exhaust-duct and with inlet and outlet slots in its bottom, brushes and beaters arranged within the housing to subject both sides of the carpet to repeated alternate brushing and beating during the travel of the carpet in a vertical direction; in combination with an auxiliary housing provided with an exhaust-duct, and brushes in said housing arranged to act upon both sides of the carpet, substantially as and for the purpose set forth.

4. In a carpet-cleaning machine, a main housing provided with an exhaust-duct and with inlet and outlet slots in its bottom, brushes and beaters arranged within the housing to subject both sides of the carpet to repeated alternate brushing and beating during the travel of the carpet in a vertical direction; in combination with an auxiliary housing provided with an exhaust-duct in communication with the main housing, and brushes in said auxiliary housing arranged to act upon both sides of a carpet, substantially as and for the purpose set forth.

5. In a carpet cleaning machine, a housing provided with an exhaust-duct, carpet-cleaning devices comprising beaters and brush-rolls arranged within the housing, in combination with brush-rolls arranged outside of said housing, a feed mechanism adapted to feed the carpet first to the cleaning devices within the housing, then to the brush-rolls outside of said housing, guide-rolls arranged to guide the carpet so as to be operated upon on both sides by the said cleaning devices, and dust-collectors for the outside brush-rolls provided with exhaust-ducts, substantially as and for the purpose set forth.

6. In a carpet-cleaning machine, the combination with a housing provided with an exhaust-duct, a delivery roll or beam at one end, a winding-roll at the opposite end and suitable tension and guide rolls v, f, r, r', b^3, brush-rolls w, w, w', w', and beaters N, N', arranged within the housing relatively to one another and to the guide-rolls r, r', as set forth, of the outside brush-rolls arranged relatively to the guide-rolls b^3 as described, dust-collectors k, k', for said rolls b^3, and exhaust-ducts connecting said dust-collectors with the housing, as and for the purpose set forth.

571,982. PRINTING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Oct. 23, 1893. Serial No. 488,896. (No model.)



Claim.—1. In a web perfecting printing-machine, the combination with transversely-cutting mechanism, of a web-operated web-tension indicator, and a web-tension regulator, substantially as described.

2. In a web-perfecting printing-machine, the combination with longitudinally-folding mechanism, of transversely-cutting mechanism, a web-operated web tension indicator, and a web-tension regulator, substantially as described.

3. In a web-perfecting printing-machine, a web-operated web-tension indicator, substantially as described.

4. The combination of a transversely-cutting mechanism, mechanism for supplying two or more printed webs thereto, movable rollers or guides for lengthening and shortening the path of one or more of the webs as the tension thereof decreases or increases, a web-tension indicator for and actuated by each of said rollers, and web-tension regulating means, substantially as described.

5. The combination of two or more web-perfecting printing-presses, a transversely-cutting mechanism for the webs thereof, web-operated web-tension-indicating mechanism for indicating the tension of one or more of the webs, and web-tension-regulating means, substantially as described.

6. In a printing-machine, the combination of a web perfecting printing-press, a transversely-cutting mechanism for the web, web-tension-regulating means, and a web-operated web-tension indicator, substantially as described.

7. In a printing-machine, the combination of a transversely-cutting mechanism, mechanism for supplying printed webs thereto, web-tension-regulating means, and web-operated web-tension indicators grouped near each other, substantially as described.

8. In a printing-machine, the combination of transversely-cutting mechanism, means for supplying two or more webs thereto, web-tension-regulating means for the webs, and means for indicating the tension of one or more webs irrespective of anything on the same, substantially as described.

9. In a printing-machine, the combination of a printing-press for perfecting a web, a longitudinal folder for folding the web, transversely-cutting mechanism for the folded web, a web-tension regulator, a scale, and a web operated pointer coacting with the said scale for indicating the web-tension, substantially as described.

10. In a printing-machine, the combination of printing mechanism for perfecting a plurality of webs, a longitudinal folder for folding the said webs, transversely-cutting mechanism for the folded webs, means for regulating the web-tensions, and mechanism for indicating the tension of one or more webs irrespective of anything thereon, substantially as described.

11. In a printing-machine, the combination of a number of web-perfecting printing-presses, means for regulating the web-tensions, web-associating mechanism, a transversely-cutting mechanism for the associated webs, and means for indicating all the web-tensions irrespective of anything on said webs, substantially as described.

12. In a printing-machine, the combination of a number of web-perfecting printing-presses, web tension-regulating means, web-associating mechanism, a transversely-cutting mechanism for the associated webs, and web-tension-indicating means located between the web supply and the printing mechanism for indicating the web-tensions irrespective of anything on said webs, substantially as described.

13. The combination of printing machinery for perfecting a web drawn from a roll, a roll-holder, transversely-cutting mechanism for the printed web, adjustable frictional mechanism for regulating the speed at which the roll unwinds, a scale, and a web operated pointer coacting with said scale for indicating the web tension, substantially as described.

14. In a printing-machine, the combination of inclined guides for the edges of folded copies, a receiver, means for pushing said copies between said guides onto said receiver, and an intermittently-acting stop for arresting copies on the guides and causing them to project, substantially as described.

15. In a printing-machine, the combination of inclined guides for the edges of folded copies, a receiver, means for pushing said copies between said guides onto said receiver, and a reciprocating stop intermittently arresting copies on the guides and causing them to project, substantially as described.

16. In a printing-machine, the combination of inclined guides for the edges of folded copies, means for pushing said copies between said guides; a rocking stop for intermittently arresting copies on the guides, and a cam operating said stop, substantially as described.

571,983. BICYCLE. WALTER W. SHAW, Texarkana, Ark. Filed Dec. 3, 1895. Serial No. 570,889. (No model.)

Claim.—1. In combination with a bicycle, substantially as shown and described, the reaches c and c', provided with inner bifurcated ends; brace c^3, provided with a bifurcated lower end having bearings c^3; crank-shaft d', having the adjustable U-bend d, journaled in bearings c^3; adjustable pitman a^3, having one end secured to the sleeve c^3, and the other to the joint b^3, on the rod b; and rod b, adjustably secured between the arms a^4, substantially as shown and described and for the purposes set forth.

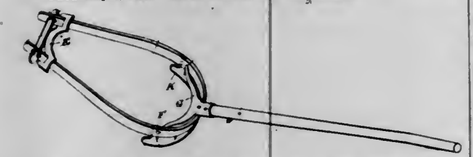
2. In a bicycle, substantially as shown and described, the handle-bars a^4, having adjustably secured between them rod b; joint b^3, working on said rod; pitman-rod a^3, its upper end secured to the joint b^3,

and its lower adapted to operate a crank, substantially as shown and described and for the purposes set forth.



3. In combination with a bicycle, substantially as shown and described, the reaches c and c', provided with inner bifurcated ends; brace c^3, provided with a bifurcated lower end terminating in a lower U-bend c'; crank-shaft d', having the U-bend d, journaled in the bearing c^3; pitman a^3, its upper end secured to bearing b^3, and its lower end adapted to operate a crank; spiral spring e^3, its lower end secured to the bar c', and its upper end to the sleeve c^3, substantially as shown and described and for the purposes set forth.

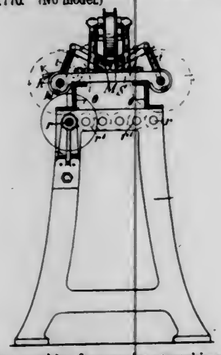
571,984. ANIMAL-POKE. ANDREW L. SIMMONS, Union City, Ind. Filed July 6, 1894. Serial No. 516,741. (No model.)



Claim.—1. The animal-poke herein shown and described, consisting of the yoke having the closed lower end and the upper open end, the pad fitting over the upper free ends of the yoke to rest on the neck of the animal, the bar for locking the free ends of the yoke having the oppositely arranged locking-heads, the barbs at the lower end of the yoke on the outer edge thereof, the yielding guard-wire adjacent to said barb, and the fork pivoted to the lower end of the yoke on the inner faces thereof and carrying the poke.

2. An animal-poke consisting of the yoke, the fastening for securing the free ends of the yoke, the poke pivoted to the yoke, the barbs projecting from the lower portion of the yoke and the flexible wire guard above the barbs; whereby the barbs are prevented from inflicting injury to animals with which they may contact.

571,985. MACHINE FOR SECURING STRETCHING-BANDS TO CARD-CLOTHS. JACOB STAUBLI, Calw, Germany. Filed Aug. 9, 1895. Serial No. 558,770. (No model.)



Claim.—1. In a machine for securing stretching-bands to carding-cloths, the combination, with mechanism for feeding the cloth and bands longitudinally, of a punching-die arranged to contact with the bands on the cloth as it is fed along, substantially as set forth.

2. In a machine for securing stretching-bands to carding-cloths, the combination, with mechanism for feeding the cloth and band longitudinally, of a punching-die, and means for intermittently bringing the said punching-die into contact with the bands on the cloth, substantially as set forth.

3. In a machine for securing stretching-bands to carding-cloths, the combination, with mechanism for feeding the cloth and band longitudinally, of a punching-die, a lever carrying the punching-die, and means for oscillating the lever, whereby the punching-die is intermittently brought into contact with the band, substantially as set forth.

4. In a machine for securing stretching-bands to carding cloths, the combination, with mechanism for feeding the carding-cloth and bands longitudinally, of a roller having flanges, and means for pressing the flanges of the roller against the bands, substantially as set forth.

5. In a machine for securing stretching-bands to carding-cloths, the combination, with mechanism for feeding the carding-cloth and bands longitudinally, of a lever fulcrumed at a fixed point, and a roller mounted in the lever and provided with flanges arranged to contact with the bands, substantially as set forth.

6. In a machine for securing stretching-bands to carding-cloth, the combination, with mechanism for feeding the carding cloth and bands longitudinally, of a lever fulcrumed at a fixed point, a roller mounted in the lever and provided with flanges, and means for forcing said flanges into contact with the bands, substantially as set forth.

7. In a machine for securing stretching-bands to carding-cloth, the combination, with mechanism for feeding the carding-cloth and bands longitudinally, of a roller provided with flanges, means for forcing said flanges into contact with the bands, a lever mounted at right angles to the direction of travel of the cloth and bands, a die carried by the lever, and means for oscillating the lever to bring the die against and away from the bands, substantially as set forth.

8. In a machine for securing stretching-bands to carding-cloth, the combination, with intermittent feed mechanism for feeding the cloth and bands longitudinally, of an intermittently-actuated die mechanism arranged to act on the band when the feed mechanism is at rest, substantially as set forth.

9. In a machine for securing stretching-bands to carding-cloths, the combination, with a feeding mechanism for feeding the cloth and bands longitudinally, of a pair of dies acting on the bands, and mechanism for intermittently actuating the dies and feeding mechanism, substantially as set forth.

571,986. BUTTON-SHANK AND BUTTON. EMIL TELTSCHIK, Vienna, Austria-Hungary. Filed Mar. 19, 1896. Serial No. 583,975. (No model.)



Claim.—1. An attaching-shank for buttons comprising a number of parallel arms forming the lateral edges of a prism, such arms being adapted to be secured at one end to the button, further comprising a bottom connecting these arms at the other extremity, and tongues fixed between these arms to the bottom or integral with the said bottom the said tongues being turned back upon the bottom.

2. An attaching-shank for buttons comprising a number of parallel arms forming the lateral edges of a prism such arms being adapted to be secured at one end to the button, further comprising a bottom connecting these arms at the other extremity and a separate sheet-metal star, which is placed upon one side of the bottom and the arms or rays of which are bent down upon the other side of the bottom.

3. An attaching-shank for buttons comprising a number of parallel arms forming the lateral edges of a prism, such arms being adapted to be secured at one extremity to the button, further comprising a bottom connecting these arms at the other extremity, further tongues fixed between these arms on the bottom or integral with the said bottom, which tongues are bent back upon this bottom, and a separate sheet-metal star which is placed upon the turned-back tongues of the bottom, and the arms or rays of which are bent down upon the other side of the bottom.

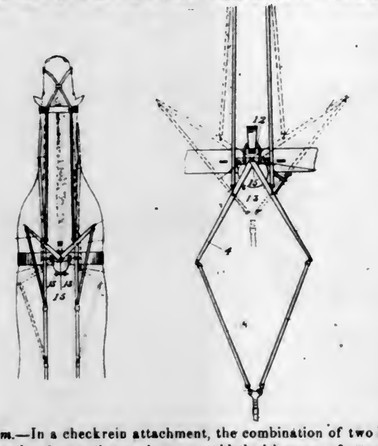
4. An attaching-shank for buttons comprising a number of parallel arms arranged in pairs, the upper ends of said pairs being joined and bent outwardly and a connection between the lower ends of the parallel arms, substantially as described.

5. The combination of a button-body, of an annular groove at its rear surface, of a centrally-perforated sheet-metal back fixed to the rear surface of the button-body, the said sheet-metal back having its inner edge bent toward the button-body and of an attachment-shank inserted into the hole of the sheet-metal back, the said shank consisting of a number of parallel arms lying vertically to the button-surface and forming the lateral edges of a prism the arms of which shank are at the outer extremity connected to each other and at the inner extremity bent outward and located in the groove at the back of the button-body between the bottom of this groove and the inner edge of the sheet-metal back.

6. The combination of a button-body, a sheet-metal back fastened to such body and having a central recess and a projection in

the center of such recess, an attachment-shank comprising a number of parallel arms lying vertically to the button-surface which arms are at the one extremity connected to each other and at the other extremity bent outward and inserted into the said recess, so that the said central projection in the recess enters between the free ends of the shank-arms and of a ring the exterior edge of which takes under the undercut edge of the said recess and the interior edge of which overlaps the bent extremities of the shank-arms.

571,987. CHECKREIN ATTACHMENT. ARIJAH C. WILLIAMS, Janesville, Wis. Filed June 24, 1896. Serial No. 596,707. (No model.)



Claim.—In a checkrein attachment, the combination of two levers, pivoted and operating as shown, provided with means of attachment to the back-pad, or its equivalent of a harness, means of attaching the checkreins thereto, and means of connecting said levers to the lines or a single operating medium specially provided therefor, substantially as shown and described for the purpose specified.

571,988. ROLLING SHUTTER OR SCREEN. OTTO BAYER, Esslingen, Germany. Filed Jan. 30, 1896. Serial No. 577,444. (No model.)



Claim.—1. In a roll-screen or the like, the combination, with the rails, of a plurality of slats, a tying device arranged to hold the slats to the rails and provided with slotted end pieces, and springs provided with loop portions engaging said slotted end pieces, and having straight ends secured to the rails, substantially as set forth.

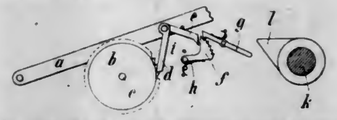
2. In a roll-screen or the like, the combination, with top and bottom rails having recesses, and a plurality of slats, of a tying device arranged to hold the slats to the rails and provided with slotted end pieces, and springs located in the recesses and provided with loop portions engaging the slotted end pieces, said springs having straight end portions, secured in the rails, and coils intermediate the said end and loop portions, substantially as set forth.

3. In a roll screen or the like, the combination, with a rail provided with recesses on opposite sides, said recesses connecting at one end, of a plurality of slats, tying devices arranged to hold the slats to the rails, and a double spring device located in both recesses of each rail and provided with ends engaging two adjacent tying devices, substantially as set forth.

571,989. FARE-REGISTERING APPARATUS. FRIEDRICH W. G. BRUHN, Berlin, Germany. Filed Feb. 7, 1896. Serial No. 578,340. (No model.)

Claim.—1. In a fare-register, the combination with the indicator-ratchet, and its actuating lever and pawl, of a hand-operated stop adapted to move and hold said pawl out of engagement with its ratchet and means for automatically disengaging the stop from the pawl, for the purpose set forth.

2. In a fare-register, the combination with the indicator-ratchet, its actuating lever and pawl, of a hand-operated stop adapted to move and hold said pawl out of engagement with its ratchet without interfering with the oscillations of the lever, and means controlled by said oscillations for automatically disengaging the stop from the pawl, for the purpose set forth.



3. In a fare-register, the combination with the indicator-ratchet, its actuating-lever, and a two armed pawl pivoted thereto, one of said arms normally engaging said ratchet; of a spring-actuated ratchet-stop adapted to be moved by its spring into engagement with the second arm of the aforesaid pawl, a spring-actuated locking-lever normally in engagement with the ratchet-stop, and means operated by hand for moving said locking-lever out of engagement with the stop, whereby the latter is automatically returned into its engagement with its locking-lever by the indicator-ratchet pawl through the oscillations of its lever, for the purpose set forth.

4. The combination with the ratchet c, the lever a, and the two-armed pawl d; of the ratchet-segment f, its locking-lever g and the cam-shaft k, said parts arranged and operating substantially as and for the purpose set forth.

571,990. DUST-EXCLUDER FOR VEHICLE-HUBS. COLUMBUS BUSWELL, Camden, Me. Filed Oct. 4, 1895. Serial No. 564,640. (No model.)



Claim.—The combination with the hub having the cap or cover secured to the outer end and having the annular groove or channel in its inner end, the cap having the horizontal flange to fit in said channel of the hub, the vertical band to rest against the face of the hub, and the flaring portion having the collar or flange for closely encircling the axle.

571,991. TROUSERS PRESSER AND STRETCHER. ROBERT B. COLLEY, St. Helier's, Island of Jersey. Filed May 13, 1896. Serial No. 591,346. (No model.)

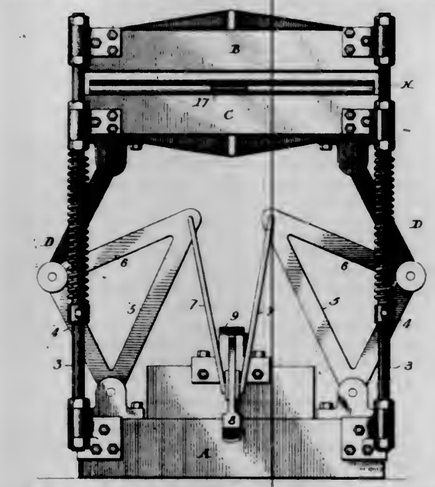


Claim.—1. A presser for trousers and other articles, comprising a base-board, screw-bolts pivoted directly to parts rigidly connected with the base-board so that said screw-bolts will be held against movement longitudinally of the base-board, two narrow clamping boards or portions having notched lugs rigidly secured thereto, the screw-bolts being adapted to enter the notches of the lugs, wing-nuts on said screw-bolts, and an intermediate presser portion adapted to fit between the said clamping-boards, substantially as described.

2. A presser for trousers and other articles comprising a base-board, screw-bolts pivoted directly to parts rigidly connected with the base-board so that said screw-bolts will be held against movement longitudinally of the base-board, two narrow clamping boards or portions having notched lugs rigidly secured thereto, the screw bolts being adapted to enter the notches of the lugs, wing-nuts on said screw-bolts, and an intermediate presser portion consisting of a board adapted to fit between the said clamping-boards, and transverse bars rigidly secured to said intermediate presser portion and provided with projecting notched ends adapted to receive sundry of the said screw-bolts, substantially as described.

571,992. APPARATUS FOR PRESSING AND DRYING GARMENT-STAYS. JOHN S. CROTTY, New York, N. Y. Filed Feb. 26, 1896. Serial No. 580,767. (No model.)

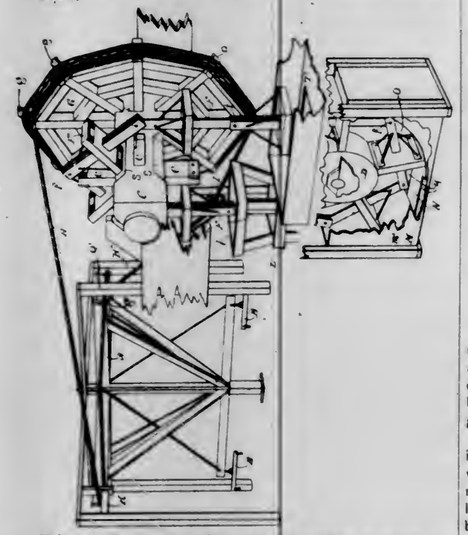
Claim.—1. The combination in an apparatus for pressing stays, corset-sections, &c., of a base A, standards 3, a hollow press-plate B secured to said standards a movable hollow press-plate C, toggles D, one section of each toggle in the form of a bracket, and a treadle connected to the bracket-section of each toggle, substantially as set forth.



2. The combination in a holder for making boned corset-sections, of flat perforated plates supported in separated positions to form intermediate air-circulating spaces *x*, a layer of fabric on each of said plates, and flat flexible sheets 10, 10, connected at their edges with the plates, substantially as described.

3. The combination in the holder H, of a presser-frame consisting of perforated plates and intermediate ribs 12, layers of fabric on opposite sides of the frame, and metallic sheets 10, 10, jointed to the frame at one edge, substantially as set forth.

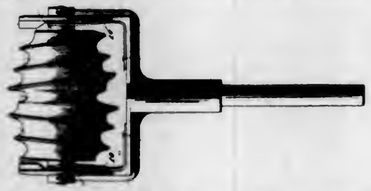
571,993. HORSE-POWER PUMPING-MACHINE. FRED H. M. DAVIS, Los Angeles, Cal. Filed Nov. 15, 1894. Serial No. 528,902. (No model.)



Claim.—1. The combination of the reel arranged to revolve in a horizontal plane and provided at intervals with narrow vertically-disposed rope-receiving faces arranged oblique to the plane of rotation of such reel; a power-receiving wheel arranged to revolve in a vertical plane and provided at intervals with rope-receiving faces arranged oblique to the plane of rotation of such wheel; a rope wound more than once around the vertical wheel and carried by the said faces of such wheel and running off of such wheel at the top of the wheel but at the inner ends of the oblique faces, thence to the upper edge of the rim of the reel and wound more than once around such reel and carried by the oblique faces of the reel and thence off of the same at the lower edge of such rim and thence to the bottom of the vertical wheel and onto the oblique faces thereof at the outer ends thereof; a guide arranged to guide the rope onto the upper ends of the faces on the reel; and guides to guide the rope from the reel to the outer ends of the faces of the wheel at the bottom of the wheel.

2. The combination of the axle mortised at right angles to receive the cross formed by the spurs; the spurs comprising three pieces, one provided with a mortise midway its length, and the other two each being provided with a tenon and a stud, an offset and a shoulder, and arranged to seat in the mortise in the first main piece substantially as described.

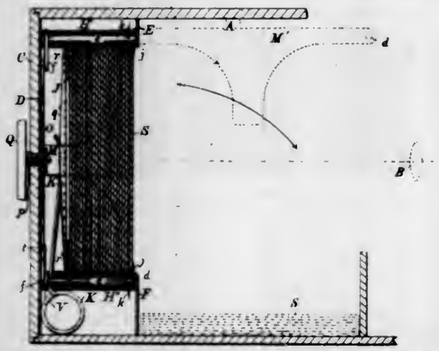
571,994. TROLLEY-FINDER. WILLIAM J. DONAHUE and WARD B. HAUSMAN, Philadelphia, Pa. Filed Oct. 10, 1895. Serial No. 565,258. (No model.)



Claim.—1. A trolley-finder consisting of a wheel having right and left hand grooves increasing in diameter toward the center and merging with the central groove on diametrically opposite sides of the wheel, and a suitable support, as and for the purpose described.

2. A trolley-finder consisting of a fork, a wheel rotating between the ends of the fork, said wheel and right and left hand grooves increasing in diameter toward the center and merging with the central groove at diametrically opposite points, as and for the purpose described.

571,995. MAGAZINE-CAMERA. LEANDER DUSTIN, Rochester, N. Y., assignor, by direct and mesne assignments, to Ezra R. Andrews and August L. Lehnkering, same place. Filed Dec. 23, 1893. Serial No. 494,560. (No model.)



Claim.—1. The combination, in a magazine-holder, of a suitable supporting-frame, a series of oscillating posts provided with radial arms and offset delivery and separation wings, means for urging the carriers forward, and an oscillating spider connected with said arms by crank-arms *f* having each a pin *i* said pins entering and being guided by slots *g*, substantially as described.

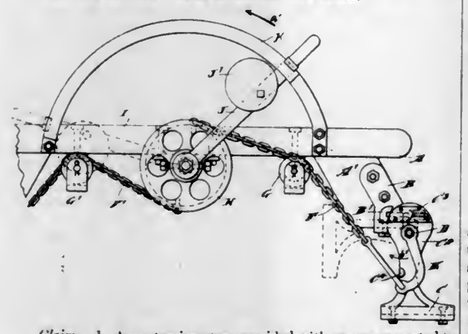
2. The combination, in a magazine holder, of a suitable supporting-frame, a series of oscillating posts provided with radial arms and with offset delivery and separation wings, the oscillating spider connected with said arms, the follower J and coiled spring K, said follower consisting of cross-bars and transverse bearing-pieces, said bars being flanged at their edges to form guides for the free ends of the spring, substantially as described.

3. The combination, in a magazine-holder, of the oscillating post *e*, provided with arm *f* and offset delivery and separation wings *j k* provided with sharpened edges, the oscillating arm *h*, and carriers provided with notches *n* situated near their edges adjacent the faces of other carriers, said notches being adapted to receive the sharpened end of the separating-wings, substantially as described.

4. The combination, in a magazine holder, of the oscillating post *e*, provided with arm *f* and offset delivery and separation wings *j k*, the oscillating arm *h*, and a slotted connection between the arms, substantially as described.

5. The combination in a magazine-holder, of a supporting-frame consisting of plates connected by studs, a series of oscillating parts provided with radial arms and with offset delivery and separation wings, the oscillating spider connected with the arms to secure simultaneous movement of the parts, the follower J, and the spring K, said follower having lugs guided by said studs and comprising bars *q q'* and bearing-pieces *r r'*, said bars being flanged to guide the free end of the spring, substantially as described.

571,996. EXTENSION-STEP. SAMUEL J. EVANS, Elkhorn, W. Va. Filed Sept. 26, 1896. Serial No. 607,016. (No model.)



Claim.—1. An extension-step, provided with an arm mounted to swing and adapted to successively engage the locking-bolt for locking the pivoted step to the fixed car-platform step, and to engage the pivoted step and swing the latter upward and inward, substantially as shown and described.

2. An extension step, pivoted to the fixed car-platform step, and carrying a bolt adapted to engage a keeper on the said fixed step, and an arm capable of swinging and under the control of the operator, the arm being adapted to engage the said bolt and move the latter out of engagement with the keeper, to unlock the said step, substantially as shown and described.

3. An extension-step, provided with a pivoted step having lugs on the step-brackets, and arms mounted to swing independently of the said step and adapted to engage the said lugs to impart a swinging motion to the pivoted step, substantially as shown and described.

4. An extension-step, provided with a pivoted step having lugs on the step-brackets, arms mounted to swing independently of the said step and adapted to engage the said lugs to impart a swinging motion to the pivoted step, and means, substantially as described, for imparting a swinging motion to the said arms, as set forth.

5. An extension-step provided with hangers secured to the car-platform step, brackets mounted to swing on the said hangers and carrying a step, a shaft mounted to turn in the pivot ends of the said brackets, an arm secured to the said shaft and adapted to engage a lug on one of the said brackets, means for imparting motion to the said arm, a bolt held on the said bracket and engaged by an extension of the said arm, and a keeper fixed on the said fixed bracket and engaged by the said bolt, substantially as shown and described.

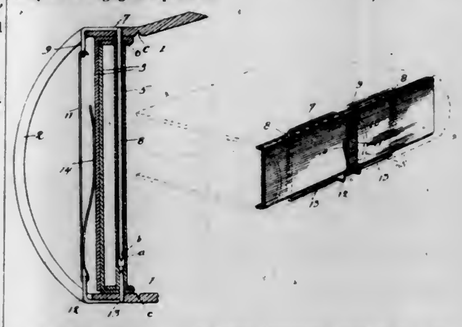
571,997. GAME APPARATUS. ALBERT W. FALL, Hoboken, N. J. Filed Jan. 7, 1896. Serial No. 574,612. (No model.)



Claim.—A game apparatus comprising a water-receptacle, and a float constituted in part of magnetizable material, a single rotating magnet substantially equal in length to the radius of the receptacle, and pivoted to the under side of said receptacle at a point intermediate the bend in the magnet and the polar ends thereof, a number of movable supports for said magnet lying at different points about its axis of rotation, a central bearing for said supports, and radial arms extending from said supports to the edge of the water-receptacle, substantially as described.

571,998. BINDER. WILLIAM F. FOWLER, Youngstown, Ohio. Filed Apr. 6, 1896. Serial No. 586,401. (No model.)

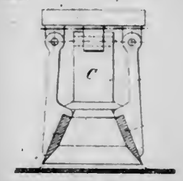
Claim.—1. A binder composed of two covers which are connected by a suitable back, angle-plates secured to each of said covers and projecting inward, tubes secured to one of said angle-plates, holes formed in the opposite angle-plate to receive the upper ends of the tubes, a staple secured within the lower ends of the tubes having an offset, a clasp attached to said offset, and a staple, the ends of which are adapted to be inserted into the upper ends of the tubes, an offset formed with said staple with which the hooked end of the clasp is adapted to engage as specified.



2. In a binder, two covers being connected together by a suitable back formed therewith, angle-plates riveted to said covers so as to project inward, tubes secured to the narrow member of one of the angle-plates, holes formed in the narrow member of the other angle-plate, a staple secured in the lower ends of the tubes, an offset formed with said staple, a clasp attached to said offset, a spring carried by said clasp and adapted to bear against one of the angle-plates when the covers are closed, a staple 7, the ends of which project into the tubes, and an offset 9, formed with said staple with which the hooked end of the clasp is adapted to engage substantially as and for the purposes set forth.

3. In a binder, two covers being connected together by a suitable back formed therewith, angle-plates riveted to said covers so as to project inward, tubes secured to the narrow member of one of the angle-plates, holes formed in the narrow member of the other angle-plate, a staple secured in the lower ends of the tubes, an offset formed with said staple, a clasp attached to said offset, a spring carried by said clasp and adapted to bear against one of the angle-plates when the covers are closed, a staple 7 the ends of which project into the tubes, an offset 9, formed with said staple with which the hooked end of the clasp is adapted to engage, a hook 10 formed upon the clasp and adapted to engage said offset and a cut-away portion in the back whereby access is had to the clasp as shown and described.

571,999. DEVICE FOR STAMPING OUT CARTONS, &c. ARTHUR FRIEDHEIM, Berlin, Germany. Filed Nov. 1, 1895. Serial No. 567,595. (No model.)



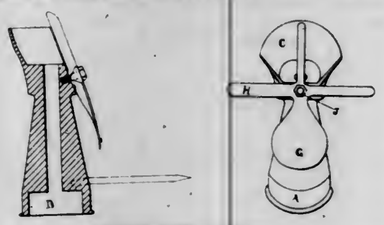
Claim.—1. The combination of a plate, a holder pivotally suspended from the plate and a knife carried by the holder, the edge of the knife being disposed diagonally to the holder, substantially as described.

2. The combination of a plate, a plurality of holders pivotally suspended from the plate, and a knife carried by each holder, the knives being disposed diagonally to the holders and having their ends approximately contiguous to each other, substantially as described.

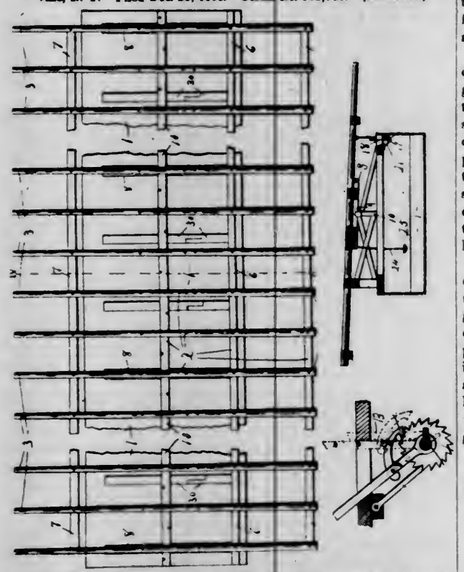
572,000. LAWN-SPRINKLER. JOHN H. FRY, Grand Rapids, Mich. Filed Aug. 27, 1895. Serial No. 560,680. (No model.)

Claim.—The combination with a nozzle, of a pivot projecting from the side of the nozzle, and a spraying device mounted on said pivot and composed of a plurality of flat imperforate fingers of different widths which radiate from the pivot in the same flat plane inclined with relation to the longitudinal axis of the nozzle, said spraying device being rotatable on the pivot to place any one of the fingers

of different widths in an inclined plane in the path of the stream flowing through the nozzle, or to place any two of said fingers upon each side of said nozzle to permit an unobstructed flow of water from the nozzle between them, substantially as described.



572,001. BARGE FOR TRANSPORTING AND LAUNCHING MATTRESSES FOR JETTY-WORK. WILLIAM T. GAYNOR, Fayetteville, N. Y. Filed Dec. 23, 1895. Serial No. 572,986. (No model.)



Claim.—1. In transporting and launching mattresses, the combination with a suitable barge or scow, of a platform supported upon said barge or scow by one or more fixed supports, and one or more removable supports at one side, said removable support or supports suspended at one end and movable at the other, whereby one side of the platform may be dropped to discharge the mat.

2. In transporting and launching mattresses, the combination with a barge or scow provided with a support or supports arranged approximately along the longitudinal center of the barge or scow, of a platform mounted upon the said support or supports, one or more fixed supports arranged to support one side of the platform, and one or more removable supports arranged to support the other side, said removable support or supports suspended at one end and movable at the other, whereby the platform may be tilted to discharge the mat.

3. In transporting and launching mattresses, the combination with a barge or scow provided with an elevated support or supports arranged approximately along the longitudinal center of the barge or scow, of a platform mounted upon said support or supports and having its sides projecting over the sides of said barge or scow, one or more stationary supports arranged to support one side of the platform, and one or more suitable supports suspended at one end and movable at the other, arranged to support the other side of said platform and have said movable end displaced to permit the platform to tilt and discharge its load.

4. In transporting and launching mattresses, the combination with a suitable barge or scow, of a platform mounted upon said barge or scow and supported at one side by one or more stationary supports, and at the other side by one or more removable supports, a rock-shaft arranged to support the removable support or supports, and means for rocking said shaft to displace said removable support or supports, so as to permit the platform to be tilted, as and for the purpose specified.

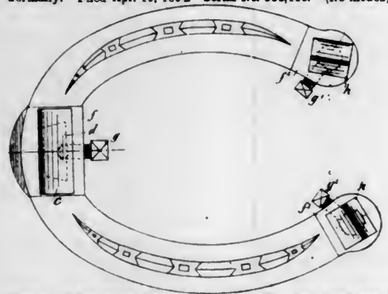
5. For transporting and launching mattresses, the combination with a suitable barge having an elevated support arranged longitudinally at or near the center of the barge, of a platform supported thereon at or near its longitudinal axis and arranged to have its weight distributed with substantial equality on both sides thereof, fixed supports at one side of the central support and removable supports at the other side, one or more ropes or chains for retaining the platform in its horizontal position, and one or more rods having enlarged heads for engaging with bearings in the frame of the barge for limiting the dumping movement of the platform, substantially as specified.

6. For transporting and launching brush-mats, the combination of a barge or flat-bottom boat, having a fixed support arranged along the longitudinal axis of the boat, a platform supported thereon at or near its longitudinal axis, having its weight distributed equally on both sides thereof, a fixed support or series of fixed supports on one side of said central support and substantially parallel thereto, and removable supports on the other side, consisting of legs attached to the platform, their lower ends resting on plates attached to a rotatable shaft sustained normally in a horizontal position, but dropping from under said legs when the shaft rotates, substantially as described and shown.

7. For transporting and launching brush-mats, the combination of a barge or flat-bottom boat, having a fixed support arranged longitudinally at or near the center of the boat, a platform supported thereon at or near its longer axis, having its weight distributed with substantial equality on both sides thereof; a fixed support or series of fixed supports on one side of said central support and substantially parallel thereto: and removable supports consisting of legs attached to the cross-beams of said platform sustained on plates attached to shaft rotatable in journals supported on the barge, said plates being elevated into a horizontal position to sustain said legs and being maintained in that position by means of a ratchet keyed to the shaft, a lever, pawl, and dog, substantially as described and shown.

8. For transporting and launching brush-mats, the combination of a barge; a fixed support arranged longitudinally along the center of the barge; a platform supported thereon at or near its central longitudinal axis and having its weight arranged with substantial equality on both sides thereof; fixed supports on one side of said central support; removable supports on the other side, consisting of legs depending from the platform, and plates for sustaining said legs attached to a rotatable shaft; means for rotating the shaft consisting of ratchets keyed thereto, lever journaled thereon and pawl; dog for engaging with said ratchet, and thumb-screw for retaining said pawl out of engagement, substantially as described and shown.

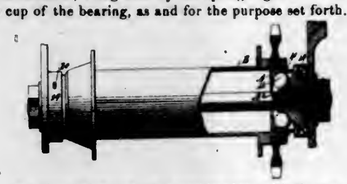
572,002. HORSESHOE. FRIEDRICH J. T. GEISSMER, Mittweida, Germany. Filed Apr. 19, 1894. Serial No. 508,186. (No model.)



Claim.—A horseshoe having a downwardly-thickened portion at the toe *f* and a rectangular orifice extending through said portion, and a calk *c* having a rectangular shank to fit said orifice and having therein a depression *d'*, a set-screw *g* passing through said thickened toe portion toward the front of same and adapted to extend into said orifice or depression *d'*, said shoe having also thickened shank ends *f'*, each having an upwardly-extending mutilated circular orifice therein, and a horizontally-arranged set-screw *g'* adapted to penetrate the said orifice at its flattened side, calks to fit said orifices each having a correspondingly flattened circular shank against which the flat end of said set-screw engages, substantially as described.

572,003. BICYCLE-BEARING. EDWARD A. GREEN, Battle Creek, Mich. Filed Nov. 7, 1895. Serial No. 568,196. (No model.)

Claim.—1. A bicycle-bearing, having a chamber formed around the exterior of its cone, and a spring-controlled washer contained in the said chamber, being held by the springs against the outer edge of the cup of the bearing, as and for the purpose set forth.



2. In a bicycle-bearing, the combination, with the cup and the cone thereof, the cone being provided at its exposed portion with a peripheral chamber open at that side which faces the cup, a washer located within the said chamber, facing the outer edge of the cup, and springs attached to the washer, acting to force the said washer to a contact with the said cup, thereby closing the space which would otherwise intervene the outer edge of the cup and the opposed surface of the cone of the bearing, as and for the purpose specified.

3. The combination, with the cup and cone of a ball-bearing, the cone being provided with an exterior or peripheral chamber open where the said chamber faces the cup, a washer constructed of rawhide, located within the said chamber, being adapted to engage with the outer edge of the cup, a backing for the said washer, and springs secured to the said backing and having bearing against the outer wall of the said cone chamber, the springs acting to normally force the washer to a bearing against the outer edge of the cup, as and for the purpose set forth.

4. In a bicycle-bearing, the combination, with a cup provided with an exterior shoulder, a cone, and the balls between the cone and the cup, of a band having an attached disk secured to the outer side surface of the cone, the band extending around a portion of the periphery of the cone, forming an annular chamber, and a spring-controlled washer located within the said chamber, being held by the springs against the outer edge of the cup, normally closing the space which would otherwise intervene the said outer edge of the cup and the adjoining surface of the cone, as and for the purpose specified.

5. The improvement in bicycle-bearings herein described, consisting of the cup the cone, a cup casing composed of a band and a disk, the disk being secured to and projecting radially beyond the outer end of the cone, and the band projecting from said disk longitudinally inward over the cone forming a washer-chamber around said cone, the washer fitted in said chamber and bearing against the outer edge of the cup and the springs in said casing and bearing between the disk and the washer and pressing the same against the outer edge of the cup, all substantially as and for the purpose set forth.

572,004. BLACKBOARD. CHARLES E. GREGORY, Nashville, Tenn. Filed Apr. 29, 1896. Serial No. 589,540. (No model.)



Claim.—1. A composition for surfacing blackboards consisting of black oxid of manganese and isinglass combined with other adhesive and coloring elements, substantially as set forth.

2. A blackboard provided with a surface of a composition made up of shellac, black oxid of manganese, ultramarine-blue, guiac, flour of talc, Venice turpentine, lampblack and isinglass in solution with alcohol and water, substantially as set forth.

3. A composition for surfacing or enameling blackboards consisting of isinglass and black oxid of manganese dissolved and combined with body making and coloring elements including shellac, substantially as set forth.

4. The process of making a composition for surfacing or enameling blackboards in which isinglass is used as an ingredient, which consists in dissolving said isinglass in water and alcohol, and adding shellac dissolved in alcohol, and other body-making and color giving elements, substantially as set forth.

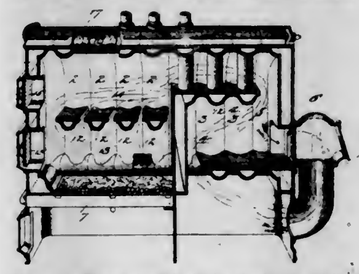
5. The process of making a composition for surfacing or enameling blackboards which includes both isinglass and shellac which consists in dissolving said isinglass in water and alcohol and dissolving the shellac in alcohol and combining the solutions with each other and with other adhesive, body-making and color-giving elements substantially as set forth.

6. The process of making a blackboard-surfacing composition containing shellac and isinglass, which consists in dissolving the shellac in alcohol and the isinglass in water and alcohol and then uniting the two solutions with each other and the other elements of the composition, substantially as set forth.

7 The process of making surfacing composition for blackboards, which consists in dissolving shellac in alcohol, then adding black oxid of manganese, guiac, Venice turpentine, flour of talc, lampblack and blue, then adding a solution of isinglass in water and alcohol, substantially as set forth.

8. The process of preparing the surface of a blackboard with the composition herein set forth, which consists in applying said composition to said surface in one direction, then rubbing down the same, then applying another coat in the other direction, then rubbing it down again, and repeating the operation until the desired thickness is secured, and then rubbing with a block of talc and finishing and cleaning with felt or cloth, substantially as set forth.

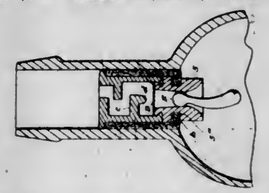
572,005. SECTIONAL BOILER. FERDINAND GROTE, Evansville, Ind. Filed July 23, 1896. Serial No. 600,234. (No model.)



Claim.—1. The sectional boiler herein shown and described, consisting of the ash-pit, the soot chamber adjacent thereto having an outlet provided with a damper, the grate above the ash-pit consisting of a series of sections, the transverse water-legs dividing the furnace into a fire-box and combustion-chamber, doors for said fire-box and combustion-chamber, and the joints connecting the sections of the boiler and consisting of flanged ends and bands or collars.

2. The sectional boiler herein described, consisting of a series of hollow sections, the tubular joints connecting the sections at the tops and sides, each joint consisting of the short tubes having their ends abutting and formed with inward-inclined flanges providing a conical seat and short tubes fitting in the seats and held firmly against the inclined walls of the flanges.

572,006. BOTTLE-STOPPER. JOHN C. GROUT, Brooklyn, N. Y. Filed Sept. 7, 1895. Serial No. 561,840. (No model.)
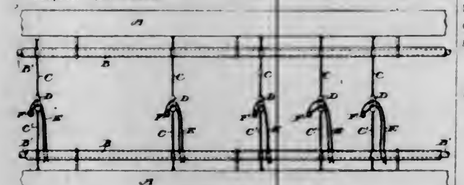


Claim.—1. In a bottle-stopper, a cylindrical portion formed with a seat for a ball-valve and a seat for a flat valve, a second cylindrical portion formed with a tortuous passage and having a limiting stop located above the flat valve and spaced therefrom and adapted to have the flat valve contact therewith when dislodged from its seat, a circumferential groove formed in one of the cylindrical portions and a flange formed on the other and adapted to fit in said groove, a ball-valve, and a flat valve above and between the ball-valve and said limiting-stop, substantially as and for the purposes described.

2 In a bottle stopper a cylindrical portion provided at its upper end with a flat valve seat and having a central bore formed with a ball-valve seat, the bore above the seat being larger than the ball and below the seat extended outwardly, a ball-valve fitted to its seat and having a tail extending through the expanded part of said bore, a second cylindrical portion provided with staggered lugs arranged to form a tortuous passage, and having a limiting stop located above the flat valve seat and spaced from a flat valve thereon and adapted to have said valve contact with it when dislodged from its seat by the ball-valve, a circumferential groove formed in one of the cylin-

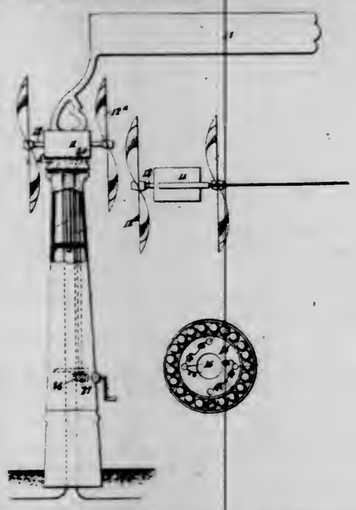
drical portions and a flange formed on the other and adapted to fit in said groove, and a packing-sleeve encircling said cylindrical portions and covering the joint between the two, substantially as and for the purposes described.

572,007. LOOM-HARNESS FOR WEAVING LENO GOODS. JOSEPH HAMPSON, Fall River, Mass. Filed Apr. 28, 1896. Serial No. 589,443. (No model.)



Claim.—The improved doup apparatus hereinbefore described, which consists of a series of plates D, having two apertures in the middle portion, the doups, passing through said apertures, and having a warp-thread ring attached to their looped ends, the leashes securing said plates, and the heddle-frames, to one of which the ends of the doups are attached, as shown and described.

572,008. ELECTRIC FAN FOR VENTILATING STREETS OR ALLEYS. VESPASIAN V. HEDGES, Coffeyville, Kans. Filed Nov. 13, 1895. Serial No. 568,757. (No model.)



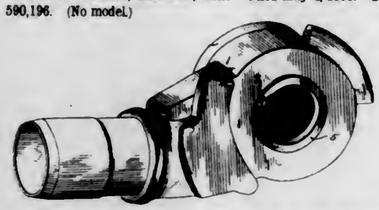
Claim.—1. In an electric fan, a motor, a casing for the same, a shaft driven by the motor, fans carried by the shaft, a support upon which the motor-casing is revolubly mounted, a source of electric supply, a connection between said source and motor, and means for making and breaking the circuit by the rotation of the motor-casing on its support, as and for the purpose set forth.

2. In an electric fan, a casing, a support upon which the casing is revolubly mounted, a motor located within the casing, a shaft driven from the motor, fans secured to said shaft, a vane attached to the casing, contact-points connected with the motor and located within the casing, contact-points located within the support and connected with a source of electrical supply, and means, substantially as described, for rotating the casing to bring one set of points in contact with the opposing set, as and for the purpose set forth.

3. An electric fan for ventilating streets and alleys, consisting of fans mounted on a shaft, a head in which the said fan-shaft is journaled, a motor mounted in the said head, a connection between the motor and the fan-shaft, a post on which the head is mounted, pins in the head with which the wires from the motor are connected, pins in the post with which the wires from the source of supply of power are connected, a driving-shaft operating to turn the head, and a driving mechanism for the said shaft, whereby the head may be revolved to bring the pins therein in contact with the pins in the post and close the circuit, substantially as described.

4. The combination of a support, a head-block mounted to turn thereon, a motor carried by the head-block, a fan carried on the head-block and operatively connected to the motor, two contact-pins mounted on the head-block and connected with the terminals of the motor-circuit, four contact-pins equally spaced apart and mounted on the support, said last-mentioned contact-pins being connected in pairs, line conductors leading from a source of electrical supply and connected with the respective pairs of contact-pins on the support, and means for turning the head-block to bring the contact-pin thereon in contact with either of the two pins of the respective pairs on the support, substantially as set forth.

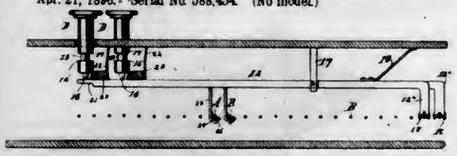
572,009. STRAINER FOR AIR-BRAKE HOSE-COUPLINGS. GEORGE H. HERBERT, Anaconda, Mont. Filed May 4, 1896. Serial No. 590,196. (No model.)



Claim.—1. The combination with an air-brake hose-coupling member, and a gasket arranged in the opening thereof and held in place by a removable cap, of a strainer arranged wholly in rear of the face of the coupling member and consisting of a reticulated disk seated upon the inner end of said gasket and embedded therein by the cap whereby dust is excluded when the coupling member is disconnected, said gasket forming a yielding seat for the strainer, substantially as specified.

2. The combination with an air-brake hose-coupling member, of a cross-sectionally-angular or L-shaped gasket arranged in the opening with its short arm projecting forwardly to the exterior face of the member and its longer arm in contact with the inner face at the front end of the cavity in the member, and a strainer consisting of a reticulated disk seated upon the inner surface of the longer arm of the gasket and between the gasket and the removable cap which forms a part of the coupling member whereby the strainer is embedded in the gasket, and dust is excluded when the coupling member is disconnected, substantially as specified.

572,010. MUSICAL INSTRUMENT. HENRY E. HIBSHMAN, New York, N. Y., assignor of one-half to William H. Moore, same place. Filed Apr. 21, 1896. Serial No. 588,454. (No model.)



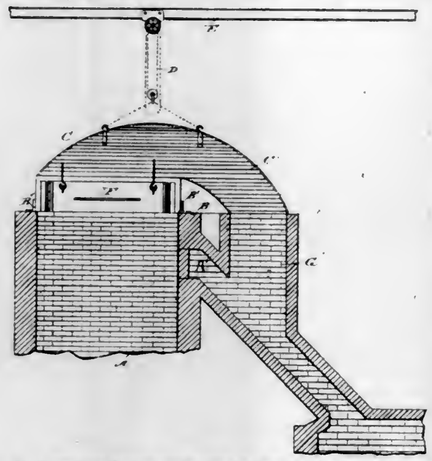
Claim.—1. In a musical instrument, the combination with levers normally held in contact with the strings, of vertically-sliding keys having their lower ends engaging the said levers to operate them, said keys being provided with spaced shoulders, one of which is beveled, and a spring-pressed locking-bar having its edge adjacent to the keys rounded and adapted to project into the space between the said shoulders when the keys are depressed, substantially as described.

2. In a musical instrument, the combination with sprieg-pressed levers normally held in contact with the springs, of vertically-sliding keys having their lower ends pointed and engaging the said levers, said keys being provided with spaced shoulders near their lower ends, a spring-hanger adjacent to the keys, and a locking-bar carried by the hanger and having its edge beveled and adapted to project into the space between the said shoulders when the keys are depressed, substantially as described.

3. In a musical instrument, the combination with levers, each having a downwardly-extending arm at one end and a hook-shaped arm projecting downwardly at a point between its ends, of vertically-sliding keys having their lower ends pointed and provided with an annular recess forming shoulders, spring-hangers, and a locking-bar having a beveled or rounded edge and secured to the said hangers, substantially as herein shown and described.

572,011. SMELTING-FURNACE. HERMAN HUBER, Kansas City, Mo. Filed June 22, 1895. Serial No. 553,669. (No model.)

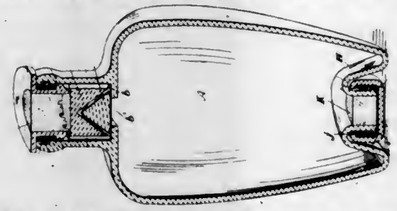
Claim.—1. A smelting-furnace, comprising a stack, a dust chamber separate from the stack, a downtake-flue communicating with the dust-chamber and extending upwardly and inwardly toward the stack and connected thereto, the downtake-flue extending farther upwardly parallel with the stack and having its upper end level with the mouth of the same, a hood embracing the mouth of the stack, and a flue communicating with the hood and projecting outwardly and downwardly, said flue being in communication with the upper end of the downtake, substantially as described.



2. A smelting-furnace comprising a stack having an open upper end or mouth and an outlet-opening in its side, a dust-chamber, a downtake-flue communicating with the dust-chamber and extending up and having communication with said outlet-opening of the stack, the downtake-flue also having an open upper end adjacent to the upper end of the stack, and means for connecting the mouth of the stack with the upper end of the downtake-flue, substantially as described.

3. A smelting-furnace comprising a stack having an open upper end or mouth, a downtake flue having an open upper end adjacent to the mouth of the stack, angular sockets fixed to the mouth of the stack, a hood having a form at its base conforming to the disposition of the sockets and removably held by the same, and a flue extending from the top of the hood and communicating therewith, the said flue being in communication with the downtake-flue, substantially as described.

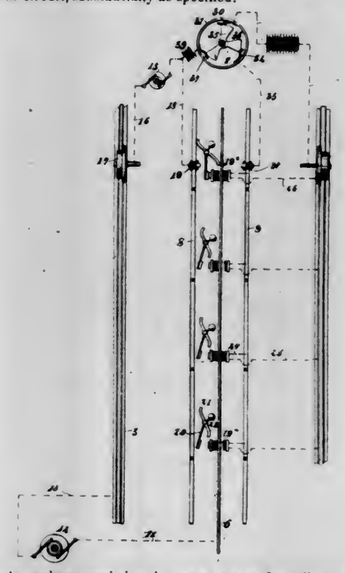
572,012. NON-REFILLABLE BOTTLE. GEORGE W. JOHNSON, Toronto, Canada. Filed Apr. 14, 1896. Serial No. 587,539. (No model.)



Claim.—A non-refillable bottle having a neck with a bottom ledge and central opening, a conical plug designed normally to cover such opening, a stopper with a conical recess of greater size than the plug and having peripheral longitudinal openings and a sleeve provided with an upper flange and lower shoulder, an annular groove in the neck between the flange and shoulder of the sleeve and plaster-of-paris designed to be inserted and fill the space between the flange and shoulder and the groove and openings in the bottom of the sleeve set intermediate of the peripheral openings in the stopper as and for the purpose specified.

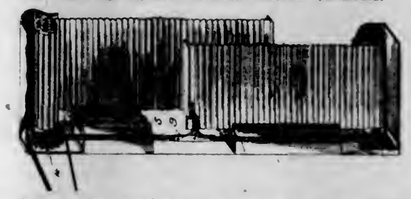
572,013. UNDERGROUND ELECTRIC POWER SYSTEM FOR RAILWAYS. WILLIAM L. KING, Winston, N. C. Filed May 21, 1896. Serial No. 592,406. (No model.)

Claim.—1. An underground electric power system for railways, comprising a conduit, a main current wire in said conduit, a main source of electricity with which the main wire connects, a return-circuit carrier having connection with said source of electricity, a sectional main working conductor in the conduit, an auxiliary working conductor in the conduit, a motor carried by a car and arranged in a circuit between the main working conductor and return circuit carrier, a three-point switch carried by the car, a shunt wire having a resistance connecting one of the switch-points with the circuit leading through the motor, an electric generator carried by the car and having one of its poles in connection with one of the switch-points and the other of its poles in connection with a track-rail, a connection between one of the switch-points and the auxiliary conductor, and a circuit-closer for closing a circuit between the main current-wire and the main working conductor, the said circuit-closer being operated from the generator carried by the car, or from a current derived from the main circuit, substantially as specified.



2. An underground electric power system for railways, comprising a main current-conductor, a working conductor, a motor carried by the car and arranged in a circuit leading from the main conductor, an electric generator carried by the car, a switch-box carried by the car, three yielding contact-fingers in said box, a shunt comprising a resistance connecting one of said points with the current leading through the motor, a connection between another of said points and a pole of the generator, a connection between the other of said points and an auxiliary working conductor, a three armed circuit-closer in said box adapted to engage with a pair of said points, and means for closing the circuit from the main conductor through the motor, the said means being controlled by the circuit-closer in the switch-box, substantially as specified.

572,014. FIREPROOF BLIND. WILLIAM R. KINNEAR, Columbus, Ohio. Filed Apr. 10, 1896. Serial No. 586,921. (No model.)



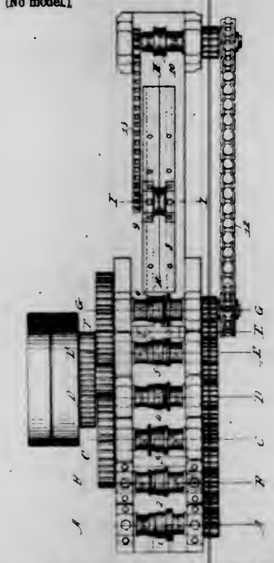
Claim.—1. In a window or other opening, a curtain or blind composed of two parts, rollers in the upper and lower parts of said opening upon which said parts of the curtain may be rolled or unrolled, a belt or chain connecting said rollers, the part of the curtain on the lower roller being connected to said belt, whereby the movement of said belt shall cause the movement of said curtains in contrary directions to open or close the opening in which the curtain or blind is placed, substantially as described.

2. In a window or other opening, rollers journaled in the upper and lower parts of said opening, a double or twofold curtain one part

being secured to each roller, separate channels or grooves for said parts of the curtain, a chain or belt for operating said curtain, the lower part being connected to said chain, substantially as described.

3. A metallic blind or curtain composed of slats having tongues and grooves formed at their opposite edges, shoulders 21, and slits between the edges of the tongues and shoulders, the tongues lying on opposite sides of the general plane of the slat, whereby the slats may be joined by sliding the tongues longitudinally in the grooves and a water-shedding curtain formed, substantially as shown.

572,015. MACHINE FOR MAKING METALLIC SLATS. WILLIAM R. KINNEAR, Columbus, Ohio. Filed June 8, 1896. Serial No. 594,755. (No model.)



Claim.—1. In a machine for making metallic slats of the kind herein described, a series of pairs of rolls 1, 2, 3, 4, 5, and 6 constructed to act in succession upon the edges of a strip of metal to bend the same to form a similar but reversely-arranged shoulder and groove upon each of the opposite edges of the slat, combined with cores 7 constructed to fit in the grooves of the slat and prolonged to extend between the rolls 6, substantially as shown and described.

2 In a machine for making metallic slats of the kind herein described, a series of pairs of rolls 1, 2, 3, 4, 5, and 6 constructed to act in succession upon the edges of a strip of metal to bend the same to form a similar but reversely-arranged shoulder and groove in each of the opposite edges of the strip, combined with die-plates 8, 8', and rolls 9 for imparting curvature to the slat between the shoulders, substantially as shown and described.

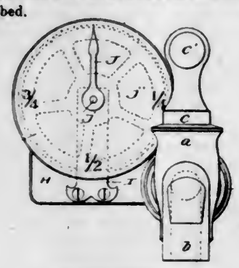
3. In a machine for making metallic slats of the kind herein described, a series of pairs of rolls 1, 2, 3, 4, 5, and 6 constructed to act in succession upon the edges of the strip of metal to bend the same to form a similar but reversely-arranged shoulder and groove on each of the opposite edges of the strip, combined with cores 7 constructed to fit in the grooves so formed and prolonged to extend between the rolls 6, and the die-plates 8, 8', and rolls 9 for imparting curvature to the slat between the shoulders, substantially as shown and described.

572,016. COMPOSITION OF MATTER FOR MANUFACTURING ARTIFICIAL VENEERS. CARL KÖSTER, Cologne, Germany. Filed Aug. 6, 1896. Serial No. 601,894. (No specimens.)

Claim.—A mass for artificial veneers consisting of a mixture of sawdust, zinc-white, flour paste, resin glue, linseed-oil and grape-sugar or like saccharine matter substantially in the proportions as described.

572,017. MEASURING-FAUCET. ANDREAS J. LASSEN, Chicago, Ill. Filed June 17, 1896. Serial No. 595,873. (No model.)

Claim.—A measuring-faucet provided with a vane-receiving chamber and a liquid-passage which is inclined in a horizontal plane and at an angle to the longitudinal axis of the faucet-body, a rotary vane or wheel situated in said chamber with its vertical axis at one side of the axial line of the liquid-passage, a bushing attached to the faucet, a vertical shaft passing through the bushing and attached to the vane or wheel, a worm on said shaft, a fixed supporting-plate situated at one side of and externally to the faucet, a fixed index-plate, an arbor carrying a pointer, and a worm-gear on the arbor and arranged to mesh with the worm on the vertical shaft, as and for the purposes described.



572,018. CARPET-STRETCHER. LEWIS G MAHLE, Carrollton, N. Y. Filed Sept. 9, 1896. Serial No. 605,242. (No model.)



Claim.—1. The combination, in a carpet-stretcher, of a slotted bar provided with a series of staples, a toothed cross-bar at one end of said slotted bar, a bar pivotally secured in said slotted bar, and a clamp adapted to fit over the end of said last-named bar and provided with a sharpened tooth to engage said bar and a hook to engage said staples, substantially as described.

2. The combination, in a carpet-stretcher, of a slotted bar, a toothed cross-bar secured to said slotted bar, a bar having one end pivotally secured in said slotted bar, clips adjustably and pivotally secured at the opposite end of said last-named bar, an extension-bar pivotally secured between said clips, and a cross-bar for said extension-bar, substantially as described.

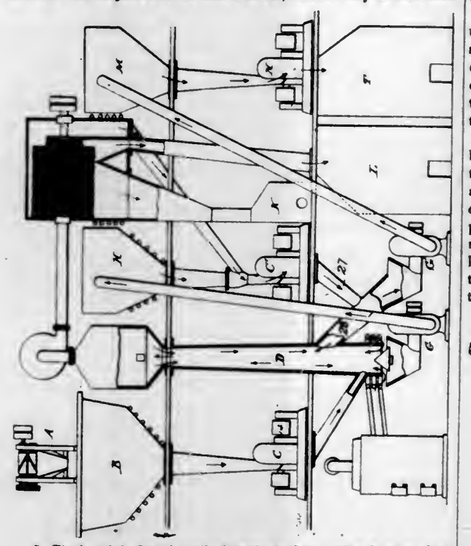
572,019. CORN PRODUCT AND PROCESS OF MAKING SAME. MARK W. MARSDEN, Philadelphia, Pa. Filed Mar. 6, 1896. Serial No. 582,126. (No specimens.)

Claim.—1. The within-described corn product consisting of the dried and comminuted fibrous portions of cornstalk, separated from the pith and other detrimental matters, substantially as set forth.

2. A new manufacture consisting of the outer fibrous portion of dried cornstalks, ground and mixed with cotton-seed or other food material containing different food elements, substantially as described.

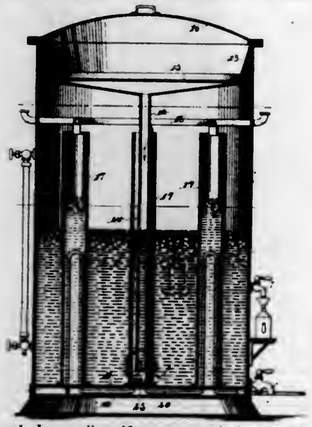
3. A new manufacture consisting of the fibrous portion of cornstalk ground or comminuted, and combined with a binding agent and pressed in cakes, substantially as described.

4. The process hereinbefore described of preparing a product from cornstalks, consisting in separating the fibrous portions of the stalk from the pith and impurities, the said fibrous portions being comminuted and subjected to the action of air, substantially as described.



5. The hereinbefore-described method of preparing food product from plants having piths and shells consisting in separating the pith and shell portions and in reducing the latter to a comminuted condition and subjecting it to the action of air, substantially as described.

572,020. WASTE-OIL PURIFIER. RUDOLPH METZ, Philadelphia, Pa. Filed June 30, 1896. Serial No. 597,641. (No model.)



Claim.—1. In an oil-purifier, a reservoir for the oil, a series of water-columns located in the said reservoir and spaced apart from each other and from the side of the reservoir, and a conductor of heat located in the said water-columns, whereby the oil placed in the said reservoir will extend around the said columns and may be heated without coming in direct contact with the conductor of heat, as and for the purpose set forth.

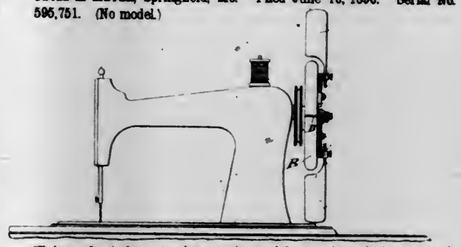
2. In an oil-purifier, a reservoir adapted to receive oil, water-columns located within the said reservoir, and heat-conducting coils located in the said columns, the coils being connected at a point below the bottom of the reservoir, whereby the oil is brought in contact with the water-columns and never in contact with the coils, as and for the purpose specified.

3. In an oil-purifier, a reservoir for the oil provided with a double bottom, the two bottoms being spaced one from the other, cylinders secured to the inner bottom and extending upward within the oil-reservoir, the said cylinders being adapted to receive and hold water and provided with a common water supply, heating-coils located within each of the cylinders, and a connection between the various coils located in the space between the two bottoms of the reservoir, as and for the purpose set forth.

4. In an oil-purifier, a reservoir for the oil, a series of water-columns contained in the said reservoir, a supply-pipe connected with all of the said columns and having branches extending beyond the outer face of the reservoir, the outer ends of which branches are open, and heating-coils located within the said columns, the connections between the coils being without the oil-receiving chamber of the reservoir, as and for the purpose specified.

5. In an oil-purifier, the combination, with a tank having a double bottom, the said tank being adapted to receive oil, a pan located in the upper portion of the reservoir, a strainer and lid for the pan, and a tube extending from the pan within the said tank, of hot-water columns located upon the inner bottom of the tank, a water-supply pipe connected with all of the said columns and having its inlet carried out beyond the tank and normally left open, and heating-coils located within the water-columns, the said coils being connected and the connections located in the space between the two bottoms of the tank, as and for the purpose specified.

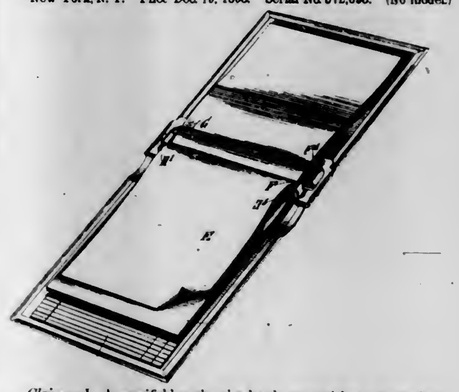
572,021. FAN ATTACHMENT FOR SEWING-MACHINES. BERTHOLD E. MEYER, Springfield, Mo. Filed June 16, 1896. Serial No. 595,751. (No model.)



Claim.—1. A fan attachment, comprising a slotted ring-shaped frame, formed with apertured bosses, hook-bolts held in the slots of the said frame and adapted to engage the spokes of a fly-wheel, and fan-wings having shanks engaging the said bosses and adapted to be secured therein, substantially as shown and described.

2. A fan attachment for sewing-machines, comprising a ring-shaped frame formed with segmental slots and with apertured bosses projecting from the face of the frame between the ends of adjacent slots, hook-bolts held in the said slots and adapted to engage the spokes of a fly-wheel, fan-wings having shanks fitted into the said bosses, and set-screws screwing in the said bosses to fasten the shanks in place, substantially as shown and described.

572,022. MANIFOLD CASH-SALES BOOK. JOHN H. MURPHY, New York, N. Y. Filed Dec. 19, 1895. Serial No. 572,695. (No model.)



Claim.—1. A manifold cash-sales book, comprising a cover having a flexible back provided with a stiffening-strip, and side arms held on the cover and adapted to engage the said stiffening-strip, to hold the latter in alinement with that part of the cover carrying the said arms, the latter when open permitting the entire flexible back to swing downward for inserting new leaves, substantially as shown and described.

2. A manifold cash-sales book, comprising a cover having a flexible back, a stiffening-strip in the said back, and a clamping-bar held on the cover and extending transversely over the said back and stiff-

ening-strip, and side bars pivoted on the cover part adjacent to the said strip, to hold the latter normally in alinement with the said cover, substantially as shown and described.

3. A manifold cash-sales book, comprising a book-cover, leaves for forming sales-slips and held on the said book-cover, the leaves being perforated transversely at or near their middle, a transfer sheet, a spring-pressed bar for holding the said leaves and transfer-sheet in place, the bar extending across the leaves at their perforations, the transfer-sheet extending outward over one-half of the sales-slip leaf, and pivoted side arms arranged on the cover and adapted to engage the side edges of the said leaves to hold the latter in place, substantially as shown and described.

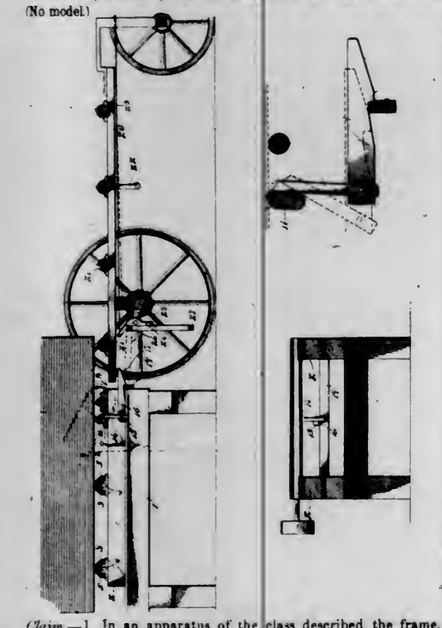
4. A manifold cash-sales book, provided with a book-cover, having a flexible back, and arms pivoted on the said book-cover and formed with lugs adapted to engage the side edges of the leaves at the said back, substantially as shown and described.

5. A book, comprising a cover having a flexible portion carrying a stiffening-strip and also carrying a strip forming a ridge, a transverse clamping-bar, and an arm carried by the cover and capable of holding the stiffening-strip rigid with the cover, substantially as described.

6. A book, comprising a cover having a flexible portion carrying a stiffening-strip, a transverse clamping-bar, and an arm carried by the cover and capable of holding the stiffening-strip rigid with the cover, substantially as described.

7. A book comprising a cover having a flexible body portion carrying a stiffening-strip, a transverse clamping-bar, and an arm carried by the cover and capable of holding the stiffening-strip rigid with the cover, the arm having a lug capable of engaging the edges of the leaves of the book and of holding the same from transverse displacement, substantially as described.

572,023. LOADING OR UNLOADING APPARATUS. FRANK MCDONOUGH, Eau Claire, Wis. Filed Mar. 17, 1896. Serial No. 583,600. (No model.)



Claim.—1. In an apparatus of the class described, the frame, dead piling-rolls mounted on said frame in the same horizontal plane, a live shifting-roll mounted on the frame beyond the piling-rolls and in a lower plane than the same, and a trip device arranged intermediate of the dead and live rolls and normally supporting the material to be handled out of contact with said live roll, substantially as set forth.

2. In an apparatus of the class described, the frame, parallel dead piling-rolls mounted in fixed positions on said frame, and a live shifting-roll mounted in a fixed position on the frame beyond and parallel with the piling-rolls and in a lower plane than the latter, substantially as set forth.

3. In an apparatus of the class described, the frame, dead piling-rolls mounted on said frame, a live shifting-roll mounted on the frame beyond the piling-rolls, a trip-bar mounted on the frame at one side of the live roll, and a latch connection with said trip-bar to provide for normally holding the upper edge thereof in a plane above the top surface of the adjacent live roll, substantially as set forth.

4. In an apparatus of the class described, the frame, dead piling-rolls mounted on the frame, a live shifting-roll mounted on the frame beyond the piling-rolls, an oscillating trip-bar journaled on the frame at one side of the live roll and provided at its upper edge with a longitudinal supporting-ridge, and at one side of said ridge with a side bevel, a link rigidly connected at its upper end with said trip-bar, a fixed catch-bar secured on the frame, and a trip-latch pivotally connected at one end with the lower end of said link and provided with a hook at its outer end adapted to normally engage said catch-bar to hold the trip-bar in an upright position and thereby dispose its supporting-ridge in a plane above the top surface of the adjacent live roll, substantially as set forth.

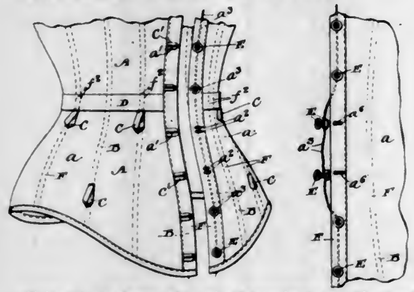
572,024. NECK-STRAP FOR HORSES. REUBEN F. NEWMAN, Manasquan, N. J. Filed May 22, 1896. Serial No. 592,586. (No model.)



Claim.—1. A neck-strap, comprising a neck portion and a tie or lead portion, a ring connection between said two portions, a ring on the end of the neck portion, and a spring-plate attached to the tie or lead portion adjacent to its connection with the neck portion, substantially as specified.

2. A neck-strap, comprising a neck portion having a ring at one end, a lead portion, a connection between the neck and and lead portion, the said connection forming a stop for the movement of the ring in one direction, and a spring-stop for limiting the movement of the ring in the opposite direction, and whereby the lead portion may be wholly separated from the ring, substantially as specified.

572,025. CORSET-WAIST. VIRGINIA H. OBERLY, Concord, N. H. Filed Jan. 25, 1896. Serial No. 576,846. (No model.)



Claim.—1. An improved article of manufacture, to wit: a corset-waist having along one of its meeting edges, single spaced buttonholes and along the opposite edge buttonholes arranged in pairs opposite each single buttonhole of the opposite edge, substantially as described.

2. An improved article of manufacture, to wit: a corset-waist provided along its meeting edges with buttonholes, a cord or tape carrying buttons arranged in pairs at equal intervals thereon and adapted to be slipped through the buttonholes on one of said meeting edges; said cord being passed through the eyes of the buttons and forming flexible shanks between the buttons of each pair, substantially as described.

3. The new article of manufacture, to wit: a washable corset-waist constructed with open-ended casings or pockets and buttonholes in its meeting front edges and lacing-holes in its meeting back edges, a lacing-cord, removable steels or bones in said casings, a supporting and attaching band applied to the corset at the waist-line and secured thereto by the vertical stitching which forms the casings or pockets, button receivers and supports constructed of tape-like fabric formed into a loop and having its lapping ends secured by sewing and secured to the attaching-band for receiving the buttons on articles of clothing of the wearer and supporting such articles, detachable pairs of buttons having flexible shanks and connected to a common cord or tape and secured in the buttonholes, substantially as described.

572,026. PROCESS OF MAKING ALUMINATE. DMITRY A. PENIAKOFF, Huy, Belgium. Filed Apr. 5, 1895. Serial No. 544,657. (No specimens.) Patented in Austria-Hungary Jan. 28, 1893, No. 43,718; in France Apr. 5, 1893, No. 229,154; in England Apr. 5, 1893, No. 20,604; in Germany May 9, 1893, No. 79,781; in Belgium Oct. 4, 1893, No. 106,630; in Luxemburg Dec. 12, 1893, No. 1,942; in Italy Dec. 31, 1893, No. 53,001, and in Spain Feb. 9, 1894, No. 15,321.

Claim.—1. The herein-described process for the production of aluminates which consists in heating a substance containing alumina in the presence of a sulfate and a sulfuret, substantially as described.

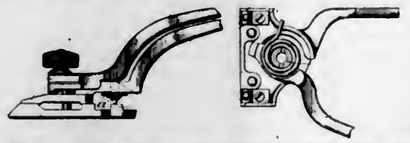
2. The herein-described process for the production of alkaline sulfates and chlorin which consists in heating a substance containing alumina in the presence of a sulfate and a sulfuret, converting the entire amount of sulfur into sulfurous acid gas, mixing said sulfurous-acid gas with oxygen and bringing it in contact with an alkaline chlorid to produce chlorin and alkaline sulfate, substantially as described.

3. The herein described process for the production of alkaline alumioates, which consists in heating a substance containing alumina, in the presence of an alkaline sulfate and a sulfuret, substantially as set forth.

4. The herein-described process for the production of alkaline aluminates, which consists in heating a substance containing alumina, in the presence of an alkaline sulfate and an alkaline sulfuret, substantially as set forth.

5. The herein-described process for the production of alkaline aluminates and chlorin, which consists in heating a substance containing alumina, in the presence of an alkaline sulfate and sulfuret, the sulfurous-acid gas obtained in this process being mixed with oxygen, and then brought in contact with alkaline chlorid, to produce chlorin and alkaline sulfate, substantially as described.

572,027. HAIR-CLIPPER. JOSEPH K. PRIEST, Nashua, N. H. Filed Mar. 17, 1896. Serial No. 583,609. (No model.)



Claim.—1. In a hair-clipper, the combination with a cutter-plate, of a comb-plate, a pressure-plate provided with ball-bearings; the latter, each, comprising two separable removable guide-plates having straight flanges at their ends that form, when together, straight walls for a ball-retaining run, and a ball in said run, and means for securing said plates in position, substantially as described.

2. In a hair-clipper, the combination of a stationary handle, a movable handle journaled on the same, a comb-plate, a cutter-plate, ball-bearings between the outer end of the stationary handle and the top of the cutter-plate; said bearings, each, comprising a pair of plates applied one over the other and provided with oppositely-inclined flanges forming a V-shaped groove and balls in said grooves, and means for securing the flanged plates in position, substantially as described.

3. In a hair-clipper, the combination with cutter and pressure plates, of a stationary handle provided with an integral pendent stud having a lower pointed end that engages and is braced against the comb-plate and thereby balances the pressure-plate no matter what its position is, and a movable handle journaled on said stud, substantially as described.

4. In a hair-clipper, the combination with a cutter-plate, of a comb-plate, pressure-plates, and means for keeping the pressure-plates in position to produce cutting-pressure, ball-bearings on the pressure-plates each comprising two separable removable guide-plates having straight flanges at their ends that form, when together, straight walls for a ball-retaining run, and a ball in said run, and means for securing said plates in position, substantially as described.

5. In a hair clipper, the combination with a cutter-plate, of a comb-plate, and pressure-plates, balls and holders for the same applied on the pressure-plates, a stationary handle provided with an integral pendent stud, and a movable handle journaled on said stud, substantially as described.

572,028. PLOW. RICHARD H. PURNELL, Rosedale, Miss. Filed June 16, 1896. Serial No. 595,722. (No model.)

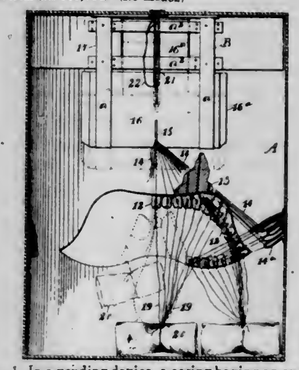
Claim.—1. The combination with a plow-standard; of a side bar pivoted or fulcrumed at its front end to the front lower edge of the standard and bearing at said front end a rigidly-attached sweep or scraper-blade, and at its rear end having a clamping-bolt for adjustably connecting it to the standard to vary the inclination and depth of the sweep substantially as and for the purpose described.



2. The combination with a plow-standard; of a pair of side bars arranged one upon each side of the standard and pivoted or fulcrumed at their front ends to the front lower edge of the standard and bearing at this point a rigidly-attached sweep or scraper-blade, and at their rear ends embracing the rear part of the standard and connected together thereupon by a clamping-bolt substantially as and for the purpose described.

3. The combination of a plow-standard having a curved series of holes in its rear portion, a pair of side bars pivoted at their front ends to the front lower edge of the standard, and having at their rear ends a clamping-bolt passing through one of said holes of the standard, and a sweep or scraper rigidly attached to the front ends of the side bars and adjustable with them as described.

572,029. VENDING DEVICE. GEORGE O. RANSON, Portland, Oreg., assignor to himself and William B. Lobner, same place. Filed Mar. 18, 1896. Serial No. 583,714. (No model.)



Claim.—1. In a vending device, a casing having an opening therein, a panoramic slide mounted in the said casing, removable objects located at the margin of the said opening, the said removable objects having a connection with the panoramic slide, operating the same when withdrawn, and means, substantially as described, for attaching merchandise to the aforesaid removable objects, as and for the purpose set forth.

2. In a vending-machine, a casing having a simulation of a face thereon and provided with openings representing the mouth and the eye-sockets, a slide mounted at the rear of the eye-sockets and containing the representation of eyeballs, the slide being spring-controlled, objects representing teeth, removably attached to the marginal portion of the mouth-opening, and a connection between the said teeth and the said slide, the connection being so made that when an object representing a tooth is withdrawn the slide will be operated in a manner to produce an expression of pain on the representation of the face, as and for the purpose set forth.

3. In a vending device, the combination, with a receptacle having a representation of a face produced thereon, and provided with openings representing the eye-sockets and an opening representing the open mouth, of objects representing teeth, removably attached to the marginal portion of the mouth-opening, a spring-controlled slide located at the rear of the eye-sockets and having the representation of eyeballs produced thereon, the eyeballs being visible at the said socket-openings, a breakable connection between the objects representing teeth and the said slide, the connection serving to operate the slide when an object representing a tooth is withdrawn, merchandise

concealed within the said receptacle, and connections, substantially as described, between the various articles of merchandise and the various objects representing teeth, as and for the purpose specified.

4. In a vending-machine, the combination, with a casing having openings therein representing eye-sockets and an open mouth, and a spring-controlled slide located at the rear of the eye-sockets and having the representation of eyeballs located thereon, of objects representing teeth, detachably secured to the receptacle at the margin of the mouth-opening, thread connections between the various teeth and the slide, and threads leading from the teeth to the interior of the receptacle, and adapted for attachment to articles of merchandise, as and for the purpose specified.

5. As a new article of manufacture, a receptacle formed with an opening, separate packages of material contained within the receptacle and capable of being passed in and out thereof through the opening, detachable parts carried adjacent to the opening in the receptacle, and means respectively connecting each package of material with a detachable part substantially as described.

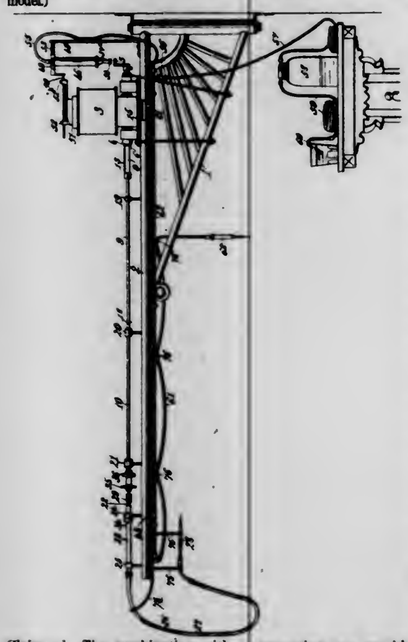
6. As a new article of manufacture a body portion formed with an opening therein, a series of removable parts carried by the main portion and adjacent to the opening, and separate packages of material respectively connected to the removable parts, substantially as described.

7. As a new article of manufacture a receptacle having a main portion formed with two openings, a series of removable parts carried by the main portion and adjacent to one opening, a slide movable adjacent to the remaining opening, a series of packages of material, and independent connections respectively between the removable parts and the packages of material, all of the connections being attached to the slide, substantially as described.

8. A new article of manufacture consisting of a receptacle formed with two openings, a series of detachable parts held adjacent to one opening, a slide movable adjacent to the second opening, a number of packages of material contained within the receptacle and capable of passing outward through the opening to which the attachable parts are adjacent, and independent connections respectively for the detachable parts and the packages of material, the connections being all attached to the slide, substantially as described.

9. A new article of manufacture having a body with an opening, detachable merchandise-carrying devices held adjacent to the opening, a slide carried by the body, and connections between the merchandise carrying devices and the slide, substantially as described.

572,030. **DENTAL ENGINE.** FREDERICK C. RIES and HENRY H. JOHNSON, Macon, Ga. Filed Mar. 24, 1896. Serial No. 584,629. (No model.)



Claim.—1. The combination with a supporting-arm provided with shaft-bearings, a motor mounted upon said arm and having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft connected at one end with and driven by said motor and journaled in the shaft-bearings on the supporting-arm, a rotary spindle movable on said supporting-arm into and out of engagement with the end of the driving shaft opposite the motor, supports arranged on the supporting-arm and in which said spindle is mounted, and a flexible shaft for connecting the rotary spindle with the tool-holding dental instrument, said supporting-arm carrying and sustaining the spindle both when it is engaged with and when it is disengaged from the driving-shaft, substantially as described.

2. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft driven by said motor and composed of yieldingly-connected sections journaled in bearings on the supporting-arm, a rotary spindle having a head constructed to engage and disengage the end of one of said yieldingly-connected driving-shaft sections, a flexible shaft for connecting said spindle with the tool-holding dental instrument, and a lengthwise-movable tube supported in bearings on said supporting-arm and in which the spindle rotates, said supporting-arm carrying and sustaining the said spindle, both when it is engaged with and when it is disengaged from the said section of the driving-shaft, substantially as described.

3. The combination with a swinging supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft composed of sections yieldingly connected together at their ends and journaled on the supporting-arm, a rotary spindle mounted on the supporting-arm, means whereby said spindle may be moved into and out of engagement with a part of said sectional driving-shaft, and a flexible shaft for connecting said spindle with the tool-holding dental instrument, said supporting-arm carrying and sustaining the said spindle both when it is engaged with and when it is disengaged from said driving shaft, substantially as described.

4. The combination with a supporting arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft driven by said motor and journaled in bearings on the supporting-arm, a rotating and lengthwise-movable spindle having a head constructed to engage and disengage one end of said driving-shaft, a flexible shaft for connecting said spindle with the tool holding dental instrument, a lengthwise-movable tube arranged in bearings on said supporting-arm and in which the said spindle rotates and is movable longitudinally, a sheath inclosing the flexible shaft and connected to said lengthwise movable tube, and a movable locking device for retaining the tube to hold the spindle in operative engagement with the driving-shaft, substantially as described.

5. The combination with a supporting-arm, a motor having a rotary shaft, and a tool holding dental instrument, of a driving-shaft composed of sections yieldingly connected together and journaled on the supporting-arm, a movable tube carried by said supporting-arm, a rotary spindle arranged in the tube and having means to detachably engage the driving-shaft and moved into and out of engagement with said shaft by said tube, and a flexible shaft for connecting said spindle with the tool-holding dental instrument, said supporting-arm carrying and sustaining the said movable tube and rotary spindle both when said spindle is engaged with and when it is disengaged from the driving-shaft, substantially as described.

6. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft journaled in bearings on the supporting-arm and driven by the motor, a flexible shaft connected with the tool-holding dental instrument, a spindle connected with and serving to operate said flexible shaft, coupling devices detachably and yieldingly connecting said spindle with the said driving-shaft, and a lengthwise-movable tube arranged in bearings on the supporting-arm and in which the spindle rotates and by which said spindle is moved to connect and disconnect said coupling devices, whereby the spindle is thrown into and out of operative connection with the driving-shaft, substantially as described.

7. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a spindle connected with the tool-holder of the dental instrument and having a slotted head, a driving-shaft driven by the motor and provided at one end with a tongue-piece which enters the slotted head of the spindle, a movable tube mounted on the supporting-arm and in which the spindle rotates, and means whereby the movement of the tube serves to connect the spindle with and disconnect it from the driving-shaft, substantially as described.

8. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a movable spindle having a slotted head and connected with the tool-holder of the dental instrument, a driving-shaft driven by the motor and composed of yieldingly-connected sections, one of which is provided with a tongue-piece which enters the slotted head of the spindle, a movable tube mounted on the supporting-arm and constituting a bearing for the spindle, and means whereby the movement of the tube serves to move the spindle into and out of engagement with the said tongue-piece, substantially as described.

9. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a spindle connected with the tool-holder of the dental instrument and provided with a slotted head, a driving-shaft journaled on the supporting-arm, driven by the motor and composed of sections yieldingly fitted at their ends one into another, one of the sections having a tongue-piece with which the slotted head of the spindle is adapted to engage, a movable tube mounted on the supporting-arm and constituting a bearing for the spindle, and means whereby the movement of the tube serves to connect and disconnect the spindle and the said tongue-piece of the driving-shaft, substantially as described.

10. The combination with a supporting-arm, a motor having a rotary shaft, and a tool-holding dental instrument, of a driving-shaft composed of a series of yieldingly-connected sections journaled on the supporting-arm, a spindle connected with the tool-holder of the dental instrument and having means to engage and disengage the sectional driving-shaft, a movable tube mounted on the supporting-arm and constituting a bearing for the spindle, and means whereby the movement of said tube serves to move said spindle into and out of engagement with said sectional driving-shaft, substantially as described.

11. The combination with a motor, a driving-shaft driven by the motor, and a dental plugging instrument, of an air-pump operated by the motor which actuates the driving-shaft, an air pipe or tube connecting the air-pump with the dental plugging instrument, a closed saliva receptacle, an air pipe or tube connecting the saliva-receptacle with the air-pump, a saliva-extractor, and an air pipe or tube connecting the saliva-extractor with the closed saliva-receptacle, substantially as described.

12. The combination with a motor of a dental engine, of an air-pump operated by the motor-shaft, a saliva-receptacle independent of said motor, a pipe or tube connected with said saliva-receptacle and serving for the passage of air moved by the air-pump, a saliva-extractor, and a pipe or tube connecting the saliva-extractor with the independent saliva-receptacle, substantially as described.

13. The combination with a bracket-arm, and a motor mounted thereupon, of an air pump driven by the motor-shaft, a dental plugging instrument, a closed saliva-receptacle, tubular connections between the air-pump, the dental plugging instrument and the saliva-receptacle, and a saliva-extractor, substantially as described.

14. The combination with a support, and a motor, of a dental plugging instrument, a pump-cylinder, connections between the pump-cylinder and the dental plugging instrument, a piston working in said cylinder and having a piston-rod detachably connected with the motor-shaft, and a device for holding the piston-rod retracted and out of the path of the motor-shaft when said piston-rod is disconnected from said shaft, substantially as described.

15. The combination with a suitable support, and an electric motor mounted thereupon and provided with a pole-changer or switch, of a movable air-conveying tube mounted on the support and serving to operate the pole-changer or switch, an air-pump driven by the motor-shaft, a tubular connection between the pump and one end of the air-conveying tube, and a dental plugging instrument connected with the other end of the air-conveying tube and having a mallet which is reciprocated by the action of the pump, substantially as described.

16. A dental plugging instrument having a reciprocatory mallet, and an adjustable screw-threaded tubular stem provided at its outer end with a tip; in combination with a lock-nut mounted on the screw-threaded stem, and an air-conveying tube secured to the tip of said stem, substantially as described.

17. The combination with the supporting-arm, and the motor of a dental engine, of a spring-yielding support interposed between the base of the motor and the supporting arm, and yieldingly connecting the two together, substantially as and for the purposes described.

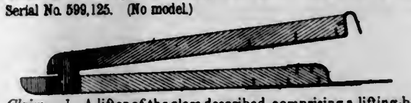
18. The combination with a pivoted bracket-arm, a dental instrument, a driving-shaft journaled on the bracket-arm and connected with the dental instrument, and an electric motor for operating the driving-shaft, of a spring-yielding connection between the base of the motor and the supporting-arm, substantially as and for the purposes described.

19. The combination with a bracket-arm, a rotatable shaft carried thereby, and an electric motor, of an elastic plate secured to the bracket-arm, and an elastic plate secured to the motor and supported by the elastic plate on the supporting-arm, substantially as and for the purposes described.

20. The combination with a bracket-arm, a dental instrument, and an electric motor, of a driving-shaft driven by the motor and composed of sections yieldingly connected at their ends, and a spring-yielding support interposed between the motor and the supporting-arm, and connecting the two together, substantially as and for the purposes described.

21. The combination with a swinging supporting-arm, and a motor mounted thereupon and having a rotary shaft, of a driving-shaft mounted in bearings on said arm and movable into and out of engagement with the motor-shaft, and a support, as 19, which sustains the end of the shaft when disengaged from the motor-shaft, substantially as described.

572,031. **PAN-LIFTER.** STEPHEN P. RUSH, Tyrone, Pa., assignor of one-half to George W. Friedley, same place. Filed July 14, 1896. Serial No. 599,125. (No model.)

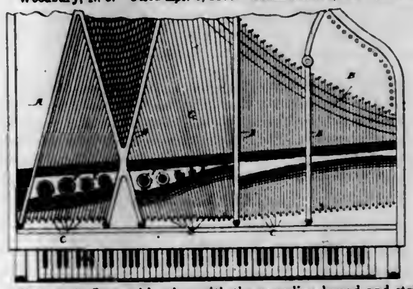


Claim.—1. A lifter of the class described, comprising a lifting-bar, a supporting-blade secured thereto and adapted to receive a vessel for lifting the same, a clamping-bar arranged upon said lifting-bar, a link connected to the lifting and clamping bars and adapted to permit said clamping-bar having a hinged and slidable movement upon the lifting-bar, and means for retaining the vessel upon the supporting-blade, substantially as set forth.

2. A lifter of the class described, comprising a lifting-bar, a supporting-blade secured thereto and adapted to receive a vessel for lifting the same, a clamping-bar arranged upon said lifting-bar, a link connected to said lifting and clamping bars, the points of connection of said link with the lifting and clamping bars being diagonally opposite to each other thereby permitting said clamping-bar having a hinged and slidable movement upon the lifting-bar, and means for retaining the vessel upon the supporting-blade, substantially as set forth.

3. A lifter of the class described, comprising a lifting-bar, a supporting-blade secured thereto and adapted to receive a vessel for lifting the same, a clamping-bar arranged upon said lifting-bar, said lifting and clamping bars being provided with slits formed in the ends opposite to the supporting-blade, a link connecting the lifting and clamping bars, said link having its ends pivotally secured in the slits of the lifting and clamping bars and thereby permitting the clamping-bar having a hinged and slidable movement upon the lifting-bar, and a clamping-hook secured to the clamping-bar and adapted to engage the vessel for retaining the latter upon the supporting-blade, substantially as set forth.

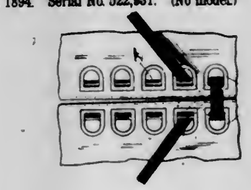
572,032. **STRING-BEARING FOR PIANOS.** JULIUS SCHMORR, Woodbury, N. J. Filed Apr. 6, 1896. Serial No. 586,394. (No model.)



Claim.—1. In combination with the sounding-board and strings of a piano, a sound-sustaining bearing of cupola shape in cross-section adapted to hold the strings in horizontal alinement, as specified.

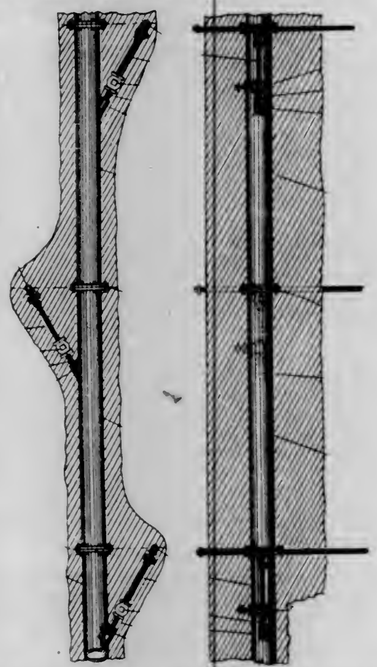
2. In combination with a piano and the striking mechanism thereof, a sound-sustaining bearing of cupola shape in cross-section having a straight edge in a lower horizontal plane than the remainder thereof, against which the strings bear, and by which they are held in horizontal alinement, said bearing having holes formed through its upper side to permit the free circulation of the sound from the strings, substantially as shown and described.

572,033. **EYELET.** DE WITT C. SEE, Sandy Hill, N. Y. Filed Sept. 13, 1894. Serial No. 522,931. (No model.)



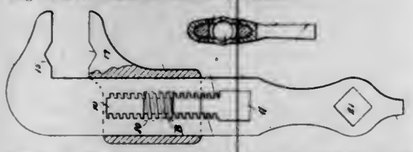
Claim.—An eyelet provided with straight and parallel neck portions and a straight side wall connecting said neck portions, and a roller journaled in said straight neck portions and in juxtaposition to the straight side wall of the eyelet, the inner face of the straight side wall being equal in length to the length of the roller, as and for the purposes described.

572,034. **DRIVEN-WELL SYSTEM.** BENJAMIN F. SMITH, Somerville, Mass., assignor of one-half to Charles G. Smith, same place. Filed May 20, 1896. Serial No. 592,302. (No model.)



Claim.—In a driven-well system, a series of jointed conduit-pipes having straight inclined hubs or bosses cast thereon, well-pipes alternately arranged on opposite sides of said conduit-pipe approximately in line with the joints of the latter, and inclined branch pipes leading from the said well-pipes to the said inclined hubs or bosses, substantially as described and for the purposes specified.

572,035. **WRENCH.** WALTER C. STOKES, New York, N. Y. Filed Aug. 14, 1896. Serial No. 602,760. (No model.)



Claim.—1. A wrench, the shank or body of which is provided with a slot or opening having threads formed along its longitudinal wall, which threads have their contact-faces concaved, a sliding sleeve, carrying a jaw and provided with an opening arranged to register with that in the shank and an adjusting-nut held in the opening in the sleeve and adapted to engage with the threads at the opening in the shank, substantially as shown and described.

2. In a wrench, the combination, with a body having a fixed jaw, the said body being provided with a longitudinal slot, enlarged at one end and provided at its reduced portion with threads in its side walls, of a sleeve held to slide on the body and provided with a jaw, the said sleeve having an opening extending through from side to side, corresponding in size to the enlargement of the slot in the body, and an adjusting-nut held to turn in the opening in the said sleeve, its threads being in engagement with the threaded walls of the body-slot, the adjusting nut being of such size as to extend outward beyond the sides of the said sleeve, as and for the purpose set forth.

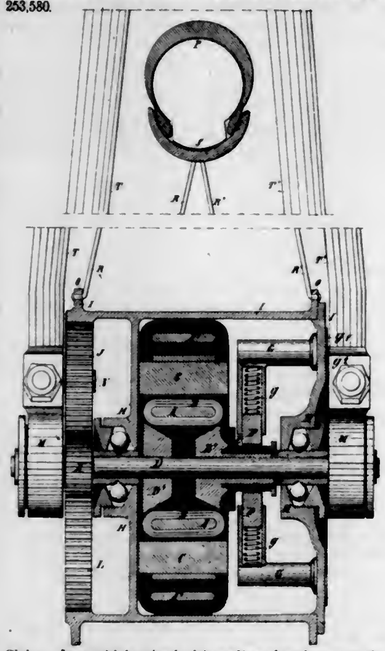
3. In a wrench, the combination, with a body or shank having a jaw formed at one end, which jaw is provided with an angular recess and with a straight surface adjacent to the recess, the opposite end of the body terminating in a screw-driver, the said body being further provided with a longitudinal slot, enlarged at one end and provided with threads in its side walls, of a sleeve held to slide on the body, being provided with a jaw having the face opposed to the fixed jaw provided with an angular and with a straight surface, the said sleeve being further provided with a slot extending through from side to side, and an adjusting-nut carried by the sleeve and engaging with the threaded walls of the body-slot, as and for the purpose set forth.

4. A wrench, the shank of which is provided with a longitudinal slot having a mutilated screw-thread formed on its side walls, a sleeve carrying a jaw adapted to slide on the shank, and an adjusting-nut engaged at both ends of the sleeve, the nut being held against side displacement by its bearing in the mutilated threads and its insertion and removal being effected from one end of the threads with an enlargement in the slot, substantially as described.

5. A wrench having a shank with a fixed jaw and with a longitudinal slot, one end of which slot is enlarged and the remaining portion of which is provided with a mutilated screw-thread the threaded walls of the slot being curved, a jaw sliding on the shank and provided with an opening registering with the slot, and a nut the screw-threads of which coact with the screw-threads of the slot, a portion of the nut fitting in the opening of the jaw whereby the jaw is connected with the nut, and the nut being capable of passing through the enlarged end of the slot, substantially as described.

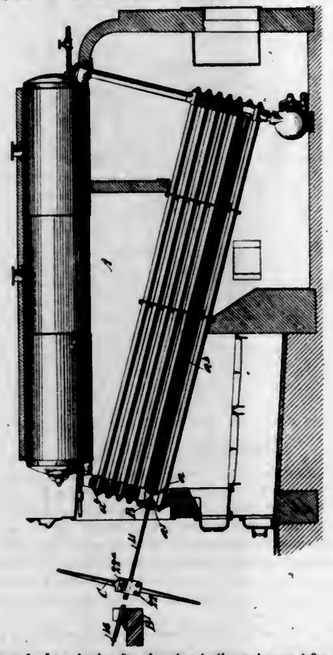
6. A wrench having a shank with a jaw at one end and with a longitudinal slot, the walls of which slot are curved and provided with a mutilated screw-thread, a jaw sliding on the shank and having an opening registering with the slot and a nut projecting through the slot and coacting with the threads thereof, the nut being held in place by the curved walls of the slot and a portion of the nut fitting in the opening in the jaw, substantially as described.

572,036. **WHEEL WITH ELECTRICAL MOTOR-HUB FOR VEHICLES.** CHARLES THÉRY, Marseilles, France. Filed July 31, 1896. Serial No. 601,271. (No model.) Patented in France Jan. 30, 1896, No. 253,580.



Claim.—In a vehicle wheel with median electric motor, the combination with the axle having bearings in supports on the vehicle, an armature and a commutator on the axle, a box or barrel hub to which the inner ends of the spokes are connected, having roller-bearings about the axle and forming an inclosure for the motor mechanism, a field-magnet secured to the interior of the hub about the armature, brush-holders on the interior of the hub carrying brushes bearing against the commutator, two metal rings on the exterior of the hub connected respectively with the commutator-brushes, other brushes on the framework of the vehicle bearing respectively against the rings and connected with a source of electricity on the vehicle, a pinion at one end of the axle, an internal rack on the hub, and an intermediate pinion meshing with said pinion and rack and rotating on a journal-pin fixed to the vehicle, substantially as described.

572,037. **STEAM-BOILER-TUBE CLEANER.** JOHN H. VOORHEES, Brooklyn, N. Y. Filed Feb. 27, 1896. Serial No. 581,026. (No model.)



Claim.—1. In a device for cleaning boiler-tubes and for like purposes, the combination of blades each having the rear face of its shank reduced, the reduced portion extending from the end of the shank opposite that carrying the blade to a point beyond the center of the shank and terminating in a shoulder, the shanks being placed together with the reduced portion of one resting upon the unreduced portion of the other, whereby an opening will be formed between them, and a tapered expander movable in the opening between the shanks of the blades, and adapted to engage the shoulders of the shanks of the blades to move them endwise in opposite directions, substantially as described.

2. In a device for cleaning tubes and for like purposes, the combination of a conducting-sleeve a tube arranged to be fed through the said sleeve and provided with opposite openings, cutters mounted in the tube and projecting out through the openings thereof, the cutters having their shanks reduced and formed with shoulders, whereby an opening is formed between them, a tapering expanding device working in the opening between the shanks of the cutters, and means for operating the expanding device, substantially as described.

3. In a device for cleaning tubes and for like purposes, the combination of an internally-threaded sleeve of an externally-threaded tube working in said sleeve and provided with opposite openings at its inner end, cutters in the tube and projecting through the openings thereof, the said cutters having their shanks reduced and provided with shoulders forming an opening between the said shanks, a rod having a wedge-shaped end, working in said opening, said rod extending out beyond the tube, and means for moving the rod endwise, substantially as and for the purpose set forth.

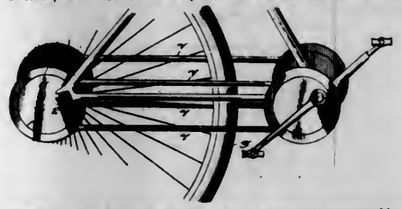
4. In a device for cleaning tubes and for like purposes, the combination of an internally-threaded sleeve, an externally-threaded tube working in the sleeve and provided with opposite slots at its inner end, means for imparting rotary movement to the tube, cutters in the tube and projecting through the opening thereof, said cutters having their shanks reduced and provided with shoulders to form an opening between them, a rod having a wedge-shaped end working in the said opening, said rod extending out beyond the end of the tube, and means for imparting endwise movement to the said rod, substantially as described.

5. In a device for cleaning boiler-tubes and for like purposes, the combination of an internally-threaded sleeve, an exteriorly-threaded tube working in the sleeve and provided with opposite slots at its inner end, mechanism for turning the tube, cutters arranged in the tube and projecting through the slots thereof, said cutters being arranged side by side and provided with an opening between them, a wedge-shaped expanding-rod working in the said opening and serving to move the cutters endwise in opposite directions, and means for operating said rod, substantially as described.

6. In a device for cleaning boiler-tubes, the combination with an exteriorly-threaded casing having opposite slots, knives or blades projecting through the slots of the casing, and an expanding device engaging the knives to move them outward into contact with the tube to be cleaned, of a sleeve having a feathered connection with the casing, a gear-wheel secured to the sleeve, a frame mounted on the sleeve, and pinions mounted in the said frame and engaging the said gear-wheel, substantially as described.

7. In a device for cleaning boiler-tubes, the combination with an exteriorly-threaded casing-tube having slots in opposite sides, knives projecting through the slots, and an expander for moving the knives in and out, of a flanged sleeve on the casing-tube and having a feathered connection therewith a gear-wheel secured to the sleeve, a stationary frame on the sleeve and comprising a collar and bracket-arms, shafts mounted in the collar and bracket arms, a pinion on each shaft and meshing with the said gear-wheel, and means for operating the said shafts, substantially as described.

572,038. **BICYCLE DRIVING-GEAR.** WILSON W. WHITCOMB, Batavia, N. Y. Filed June 29, 1896. Serial No. 597,389. (No model.)



Claim.—1. In a bicycle driving-gear, an eccentric mounted loosely on the driving-wheel axle, in combination with an internal gear surrounding said axle, a central pinion fast on the hub of the driving-wheel, a planetary pinion interposed between said central pinion and internal gear and journaled on said eccentric, and means connected with the crank-axle for driving said eccentric, substantially as described.

2. In a bicycle driving-gear, a crank-axle, an eccentric fast thereon, the driving-wheel axle, an eccentric mounted loosely thereon, straps surrounding said eccentrics and rigidly connected, an internally-toothed flange on the strap of the driving-wheel eccentric, a pinion fast on the hub of the driving-wheel, and a planetary pinion journaled on and carried by the driving-wheel eccentric and meshing with the central pinion and the internally-toothed flange, substantially as described.

572,039. **FEED MECHANISM FOR SEWING-MACHINES.** CHARLES H. WILLCOX, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Aug. 10, 1895. Serial No. 558,851. (No model.)

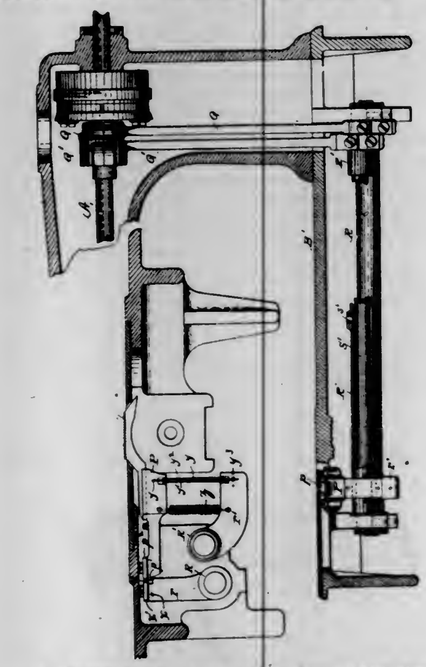
Claim.—1. In a feed mechanism for sewing-machines, the combination with a feed-eccentric and its shaft, and with the feed-bar, of connecting mechanism for transmitting motion from the former to the latter including a rock-shaft in the form of a tube or sleeve having bearings upon a rod extending through the same and secured at its ends in the frame of the machine, substantially as described.

2. In a feed mechanism for sewing-machines, the combination with the feed-bar of a rock-shaft for imparting motion thereto, said shaft being in the form of a tube, a rod extending through said shaft and having bearings therefor, and bushings in the frame supporting the ends of said rod and constituting end bearings for the rock-shaft, said bushings being adjustable in their supports in the line of the shaft, substantially as described.

3. The combination with the feed-bar, of a rock-shaft for reciprocating said feed-bar, and a joint or connection between the shaft and bar formed by a flat spring rigidly attached at its respective ends to the two connected parts, said spring being in the line of the transmitted motion so as to be practically rigid in such line and flexible transversely substantially as described.

4. The combination with the feed-bar of the feed-advancing rock-shaft, and the feed lifting rock-shaft, each of said shafts being jointed to said bar by means of a flat spring secured at its ends to the two

connected parts respectively, the spring being in each case in the line of the transmitted motion and practically rigid in such direction while flexible transversely thereto, substantially as described.



5. The combination with the feed-bar, of driving mechanism for vibrating said feed-bar, the elements of said driving mechanism being jointed together by means of flat springs disposed in the line of the transmitted motion so as to be rigid in that direction but flexible in the transverse direction, substantially as described.

6. The combination with the feed-bar, a rock-shaft for vibrating the same, and a feed-eccentric, of a pitman receiving motion from said eccentric, a flat spring attached firmly at one end to said pitman and disposed in the line of its reciprocating movement and at the other to a crank-arm on said rock-shaft, substantially as described.

7. The combination with the feed-bar, of driving mechanism comprising two elements connected by a joint formed of a flat spring held at its ends between clamping-surfaces on the respective elements, the two pairs of clamping-surfaces approaching to within a short distance of each other, substantially as described.

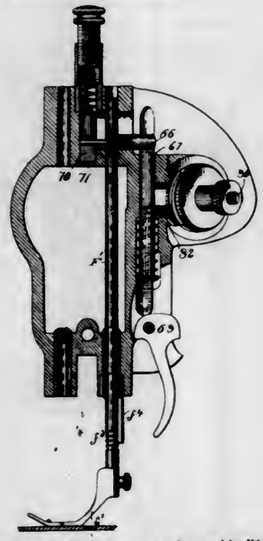
8. In mechanism for transmitting vibratory motion, the combination with a reciprocating element, such as a pitman, and an oscillatory element, of a flat spring forming the connection between the two, said spring being held at its ends between clamping-surfaces on the respective elements, one of said elements having a tongue and the other a groove into which the tongue slightly enters, the intermediate portion of the spring between the opposite clamping-surfaces being inclosed by the walls of said groove, substantially as described.

572,040. SEWING-MACHINE. CHARLES H. WILLCOX, New York, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, same place. Filed Aug. 10, 1895. Serial No. 558,852. (No model.)

Claim.—1. In a sewing-machine, the combination with the chambered head, of a presser-bar having bearings in said head, a lifter-rod outside the chamber of the head and disconnected from said bar but adapted to engage and lift the same when raised, and a lifter for actuating and raising said rod, substantially as described.

2. In a sewing-machine, the combination with the chambered head, of a presser-bar extending through the chamber and having bearings in the head, a cross-pin projecting from said bar through an opening in the head, a lifter-rod outside the chamber of the head and having its upper end beneath said pin so as to engage the same when raised, and a lifter for elevating said lifter-rod, substantially as described.

3. In a sewing-machine, the combination with the head of a presser-bar having bearings therein, a plunger, a cross-pin having a screw-thread engaging in a threaded opening extending transversely through said bar and inserted in a hole in said plunger, the opening through said bar being somewhat larger than the threaded portion of said pin, and a clamping-sleeve between the head of the pin and the presser-bar, substantially as described.



4. The combination with the presser-bar and its lifting mechanism of a tension comprising two tension-washers and a spring pressing one washer toward the other, a disk forming a rest or support against which one of said washers bears and by which it is held against the pressure of said spring, connections between said supporting-disk and the said lifting mechanism, whereby the support of said disk is withdrawn permitting motion of the contiguous washer away from said spring, and a stop for arresting the motion of the other washer, substantially as described.

5. The combination with the presser-bar and its lifting mechanism, of a tension-pin having a longitudinal slot, an inner tension-washer embracing said pin, means actuated by said lifter mechanism when the presser-bar is raised for permitting movement of said washer lengthwise of said pin, an outer tension-washer also embracing said pin and having a cross-bar lying in the slot therein to arrest longitudinal motion of said washer, and a tension-spring pressing the outer washer toward the inner washer, substantially as described.

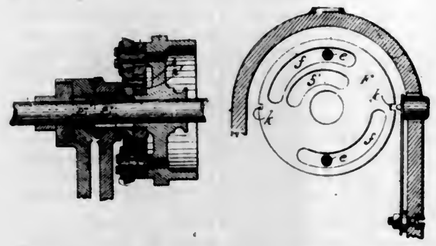
6. The combination with the presser-bar and its lifting mechanism including a lifter-rod independent of said bar, of a tension comprising a tension-wheel, washers one on each side of said wheel and a spring normally pressing said washers together, a disk having cam projections against which one of said washers bears, opposing cams on the contiguous washer, and a connection between said disk and lifter-rod, whereby the former is turned by the movement of the latter in raising and lowering the presser-bar, substantially as described.

7. The combination of the tension-pin having a longitudinal slot extending from one end, an inner tension-washer embracing said pin, means for permitting said washer to move lengthwise of said pin, a tension-wheel, an outer tension-washer having a cross-pin lying in the slot of the tension-pin to limit the longitudinal motion of said washer, and a tension-spring pressing the outer washer toward the inner washer, substantially as described.

8. The combination with the head of the machine, of a presser-bar having a bearing therein, and provided beneath the bearing with a series of notches extending entirely around the bar, and a guard extending downward from said head inclosing said notches on one side, but leaving them exposed and accessible on the other, substantially as described.

572,041. FEED MECHANISM FOR SEWING-MACHINES. CHARLES H. WILLCOX, New York, and STOCKTON BORTON, Brooklyn, N. Y., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Aug. 10, 1895. Serial No. 558,850. (No model.)

Claim.—1. In a feed mechanism for sewing-machines, the combination with a rotating shaft, of an eccentric connected with said shaft so as to rotate therewith, but adjustable radially thereof, an adjusting-cam mounted loosely on said shaft, frictional clamping devices for holding said cam and eccentric in their adjusted positions, and a connection between the cam and eccentric whereby the rotation of the cam relatively to the eccentric shifts the latter's position radially of the shaft, substantially as described.



2. In a sewing-machine, the combination with a rotating shaft, of an eccentric connected therewith for rotation but adjustable radially thereon, an adjusting-cam rotatable on said shaft, a connection between the cam and eccentric whereby the rotation of the cam relatively to the eccentric shifts the latter radially of the shaft, and a graduated scale for indicating the extent of movement of the cam relatively to the eccentric, substantially as described.

3. In a sewing-machine the combination with a rotating shaft, of an eccentric adjustable radially thereof, an adjusting-cam rotatable on said shaft, frictional clamping devices for holding said eccentric and cam in their adjusted positions, and a stop-pin or catch for engaging and holding said cam against the friction of said clamping devices so that the shaft and eccentric can be turned, and the position of the latter shifted radially while the cam is held stationary, substantially as described.

4. In a sewing-machine the combination with a rotating shaft, of an eccentric adjustable radially thereof, an adjusting-cam capable of rotation on said shaft, and having a cam-groove, a crank-pin on said eccentric entering said groove, frictional clamping devices for holding said cam and eccentric in their adjusted positions and means for shifting the position of said cam axially with reference to the eccentric and shaft, substantially as described.

5. In a sewing-machine, the combination with a rotating shaft, of a feed-eccentric adjustable radially thereon, an adjusting-cam connected with said eccentric and adjustable axially on said shaft but normally rotating therewith, a disk fast on said shaft carrying a graduated scale for indicating the relative positions of the shaft and eccentric, and a catch or stop-pin for holding the cam stationary while turning the shaft to change the adjustment of the eccentric, substantially as described.

6. The combination of the rotating shaft, the eccentric and its support adjustable radially thereof, a cam mounted on and adjustable axially of said shaft, and having a cam-groove, a crank-pin on said eccentric-support entering said groove, a disk fast on the shaft, screws passing through radial slots in the eccentric-support and concentric slots in the cam and entering threaded holes in said disk, and friction-washers surrounding the shanks of said screws, substantially as described.

572,042. SEWING-MACHINE. CHARLES H. WILLCOX, New York, N. Y., and CYRUS CARLETON, Providence, R. I., assignors to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Aug. 10, 1895. Serial No. 558,854. (No model.)

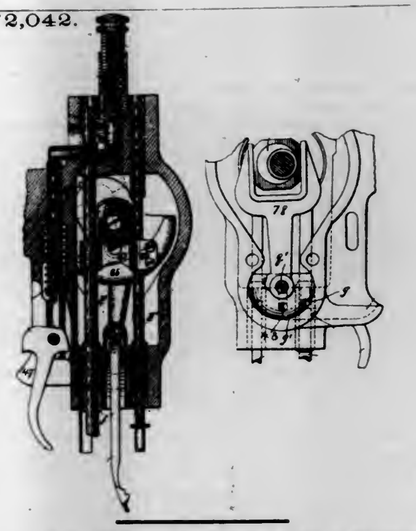
Claim.—1. In a sewing-machine, the combination with the chambered head, of a reciprocating bar (such as the needle-bar) having a bearing in said head, and an annular projection extending above the bottom of the chamber in said head and embracing said bar, the top of said projection being beveled off to an edge, substantially as and for the purpose set forth.

2. In a sewing-machine, the combination with the chambered head of a reciprocating bar (such as the needle-bar) and a bushing inserted in a hole in the head and forming a bearing for said bar, the upper end of said bushing projecting above the bottom of the chamber in the head and being beveled off to an edge surrounding the bar, substantially as described.

3. In a sewing-machine the combination with the head, having a chamber therein, the needle and foot bars having bearings in said head, and driving mechanism in said chamber, of an oil cup or receptacle outside the head and chamber and channels in said head for draining the oil from said chamber into said cup or receptacle, substantially as described.

4. In a sewing-machine, the combination with the chambered head, of a transverse horizontal shaft or spindle having a bearing in said head, the latter being provided with an inclined oil-passage beneath said bearing and projecting beyond the forward end thereof, substantially as described.

572,042.

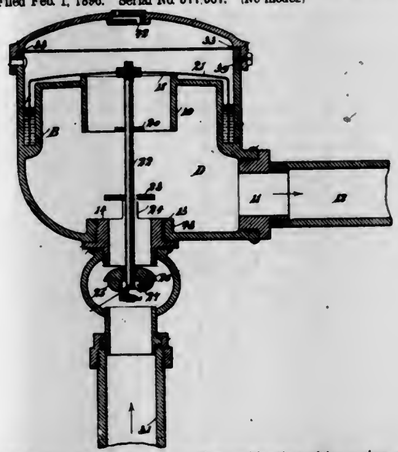


572,043. SPOOL-HOLDER. ABRAHAM M. YEAKEL, Perkasie, Pa. Filed Mar. 24, 1896. Serial No. 584,680. (No model.)



Claim.—In a device of the character described, a cylindrical case having a slot with an enlarged end cut in the side thereof, a spindle projecting from the bottom of the case and composed of two sections bowed at their centers, a cap swiveled to the end of the case, a tubular bushing secured in the end of the cap and projecting inward to inclose the free ends of the spindle, flanged disks of different diameters secured to the bushing so as to turn thereon, a cushion between the flanged disks, said cap and the outer disk having slots cut therein and the case having apertures registering with the slots, said cap also having an opening in its top adapted to register with the figures formed on the outer disks, as and for the purpose described.

572,044. GAS-REGULATOR. MYRON J. AMICK, New York, N. Y. Filed Feb. 1, 1896. Serial No. 577,687. (No model.)



Claim.—1. In a gas regulator, the combination with a casing, and a dome integral therewith, of a cover fitting on said casing provided with opposite overhanging lips, said casing near its upper edge being provided with a hole or opening and a diametrically-opposed recess in the outer surface of its opposite side, said recess having an inclined

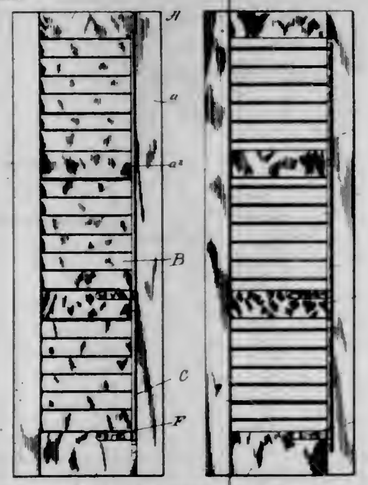
upper wall, a stud arranged to be inserted through said hole or opening and also through a corresponding opening in one of said lips, a screw in the opposite lip adapted to engage the inclined wall of the said recess, whereby every turn of said screw binds said cover more firmly on said casing, and a gasket interposed between said cover and said casing, as and for the purpose set forth.

2. In a gas-regulator, the combination with a casing, of a cover provided with an air vent or opening whose outer and inner ends are vertically disposed and out of coincidence with each other and diametrically opposite overhanging lips, one of said lips having an opening to receive a stud projecting from said casing, the opposing lip being provided with an inwardly-projecting screw and said casing with a recess to receive the inner end thereof, the upper wall of said recess being inclined, as and for the purpose set forth.

3. A gas-regulator, comprising a body or casing provided with outlet and inlet openings, a dome formed within the upper portion of said casing having its sides extending upward near the sides of said casing to form a chamber for the reception of mercury, thence inwardly, and finally downwardly to form a collar, said collar being open at the top and bottom, a float arranged to be received in said mercury-chamber, a stem attached thereto, a bar extending across the lower portion of said collar having an opening adapted to receive and act as a guide for the upper part of said stem, said casing having a collar surrounding the inlet-opening, a nipple secured in said opening flush with the inner end of said collar and provided with upwardly-projecting lugs, a cap supported by said lugs, adapted to protect said inlet-openings and serve as a guide for the valve-stem, a valve-chamber secured to said nipple outside of said casing arranged to receive the lower end of said valve-stem projected through said cap and nipple, and valves on said stem in said chamber, as and for the purpose set forth.

4. In a gas-regulator, the combination with a casing having inlet and outlet openings and an inwardly-extending collar in its lower portion surrounding said inlet-opening, a float, and a valve-stem on said float and provided with valves, one of said valves being secured to the end of said stem and the other loosely mounted thereon, of a dome cast integral with said casing having its sides spaced from the sides thereof, whereby a mercury-chamber is formed arranged to receive the lower portion of said float, said dome having an opening in its upper face and a downwardly-extending collar open at the top and bottom surrounding said opening, a bar extending across the lower surface of said collar having an opening therein to receive and guide the upper part of said valve-stem, a nipple secured in said inlet-opening provided with upwardly-projecting lugs and a circular cap supported by said lugs extending on a horizontal plane beyond the inner surface of said nipple and having a central opening to receive the lower part of said valve-stem, the lower surface of the nipple serving as a seat for said valves and said cap serving as a guide for said stem and a shield for said inlet-opening, as and for the purpose set forth.

572,045. BLIND FOR WINDOWS. WILLIAM E. ANDREW, Atlantic Highlands, N. J. Filed Jan. 30, 1896. Serial No. 577,408. (No model.)



Claim.—1. A blind having a corner of each of its slats cut away, in combination with a connecting-bar secured to the slats at these corners and bearing thereon when the slats are closed, whereby the slats will be held out of contact with each other, substantially as described.

2. In a blind, the combination with the slats, of a connecting-bar secured thereto at their corners and within the general rectangular outline of the slats and adapted to bear thereon when closed to prevent rattling, and, when opened, to bear against a stile of the blind-frame and to move thereon to effect the desired adjustment of the slats, substantially as described.

3. In a blind, the combination with the slats, of a connecting-bar secured thereto at their corners and within the general rectangular outline of the slats and adapted to bear thereon when closed to prevent rattling, and, when opened, to bear against a stile of the blind-frame and to move thereon to effect the desired adjustment of the slats, and means for holding the rod in its adjusted position, substantially as described.

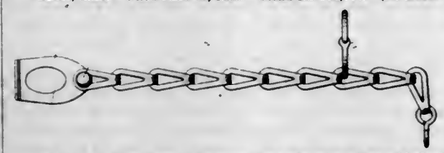
4. A blind having a corner of each of its slats cut away, a reinforcing band or plate secured to the slat over this cut-away portion, and a staple passed through the band or plate, in combination with a connecting-bar having staples engaging the staples of the slats, substantially as described.

5. In a blind, the combination with the slats, of a reinforcing band or plate secured to one of the corners of each of the slats and extending diagonally of the width thereof, staples passed through the plates, and a connecting-rod having staples engaging those of the slats, substantially as described.

6. A blind-slat having one of its corners reinforced by a diagonally-disposed plate through which is passed a staple, substantially as described.

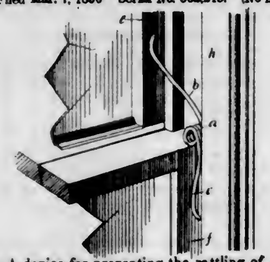
7. A blind-slat having one of its corners cut away, in combination with a diagonally-disposed plate secured over the cut-away portion, and a staple passed through the plate, substantially as described.

572,046. COMBINED DOOR-SECURER AND KEY-RING CHAIN. GEORGE F. BAILEY, Peabody, Mass., assignor of one-half to Justin N. Dows, Salem, Mass. Filed June 10, 1896. Serial No. 594,966. (No model.)



Claim.—A door-securer comprising the flat plate A provided with two apertures, one at one end and the other in its central portion and formed at its other end with a rib, a pivot held in said end aperture and engaged by one end of a chain, said chain carrying at its other end a hook, as and for the purpose set forth.

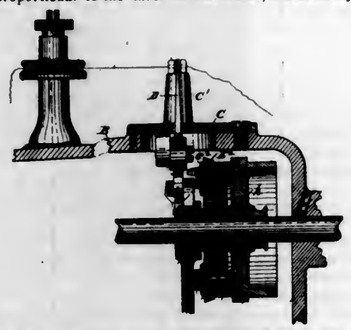
572,047. SASH-HOLDER FOR PREVENTING RATTLING OF WINDOWS. CHARLES H. BEER and CHARLES H. BEER, Jr., New York, N. Y. Filed Mar. 7, 1896. Serial No. 582,215. (No model.)



Claim.—A device for preventing the rattling of window-sashes, the device consisting of a spring-rod bent at a point between its ends to form a transverse coil and having its ends extended oppositely from the respective ends of the coil, said ends being respectively capable of engaging the upper and lower sashes of the window the coil being capable of engaging the inner bead of the window-frame and the ends of the rod being curved and capable of sliding freely on the window-sashes, substantially as described.

572,048. PULL-OFF DEVICE FOR SEWING-MACHINES. STOCKTON BOXTON, Brooklyn, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Aug. 10, 1895. Serial No. 558,849. (No model.)

Claim.—1. In a sewing-machine, the combination with the adjustable feed-eccentric, of a thread pull-off and connections for communicating thereto from said eccentric a vibratory movement approximately proportional to the throw of the latter, substantially as described.

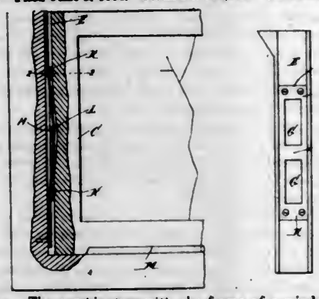


2. In a sewing-machine, the combination with the main shaft carried in the hollow arm of the machine, and the adjustable feed-eccentric on said shaft, of a pull off lever pivoted to a support in proximity to said eccentric and connections for imparting from the latter a vibratory motion to said lever, substantially as described.

3. The combination with the variable-feed eccentric, and with the friction-tension of a sewing-machine, of a pull-off lever from which the thread is led directly to said tension, and means for imparting to said lever from said eccentric a vibratory movement, substantially as described.

4. The combination with the adjustable feed-eccentric and the pitman operated thereby, of a pull-off lever pivoted in a suitable support and having a socket in its short arm, and a plunger connected with said pitman and working in said socket, substantially as described.

572,049. FRICTION SASH-BALANCE. PETER CLARK, New York, N. Y. Filed June 5, 1896. Serial No. 594,368. (No model.)



Claim.—The combination with the frame of a window, and the sashes mounted therein, of metal strips secured to the frame, adjacent to the sides of each of the sashes, said sashes being provided in their sides adjacent to said strips with grooves, and with metal plates secured therein, said metal plates being provided with two oblong slots whereby a central cross-piece and two end pieces are formed, and said metal strips being passed through said oblong slots back of the central cross-pieces, substantially as shown and described.

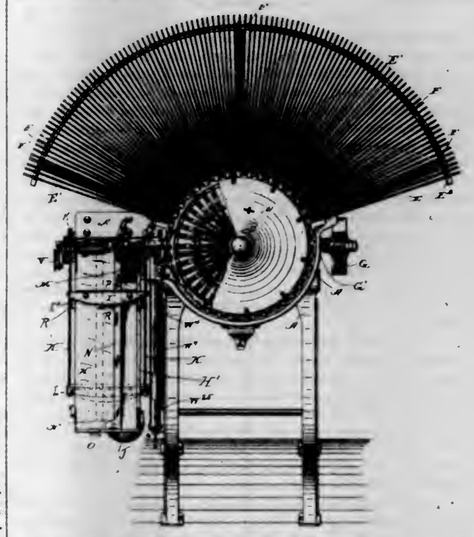
572,050. TYPE-DISTRIBUTER. ALEXANDER DOW, New York, N. Y., assignor to the Dow Composing Machine Company, of West Virginia. Filed May 19, 1894. Serial No. 511,828. (No model.)

Claim.—1. In a type-distributing machine, the combination with the type-galley, the blocks located thereon, and the column-lifter, of the rods secured to said block and passing through the column-lifter and the coiled springs interposed between said lifter and blocks, substantially as described.

2. In a type-distributing machine, the combination with the type-galley and column-lifter, of the movable lifting-plate having a step or shelf, the pitmen S^9 and S^{11} pivoted thereto and to the gears S^{21} and V^2 of the shaft U^{16}, for the purpose and substantially as described.

3. In a type-distributing machine, the combination with the type-galley and the lead-holder located below the same, of the movable lifting-plate having a shelf or step and provided with a spring-actuated plate, substantially as and for the purpose specified.

4. In a type-distributing machine, the combination with the type-galley and the lead-holder located below the same, of the movable lifting-plate having a step or shelf and provided with a spring-actuated plate, the pitmen pivoted to said plate, the gears with which said pitmen are connected and the rotatable shaft to which said gears are secured, substantially as described.



5. In a type-distributing machine, the combination with the automatic type-galley on which the dead matter is placed for distribution, the column-lifter provided with the blocks P^3 and the springs P^4, the mechanism as described for forcing out the leads and a rotatable disk provided with type-carriers secured thereto, substantially as described.

6. In a type-distributing machine, in combination with the type-galley, the vertically-moving lifting-plate S to elevate the end line of type from the galley, the horizontally-moving line-forcer for moving the type so elevated to the point whence they are taken to be distributed and the drum V for adjusting said line-forcer to the length of line to be moved forward, substantially as described.

7. In a type-distributing machine, the combination of a type-galley, a lead-holder Q, mechanism for elevating the lines of type from the said type-galley, and for placing the leads in the said lead-holder, and a mechanism for forcing the said leads into the lead-holder comprising the presser-dog S^{18}, intermittently-actuating gears therefor and the retracting-spring, substantially as and for the purpose described.

8. In a type-distributing machine, the combination with the type-galley and the vertically-movable lifting-plate, of the horizontally-movable line-driver, the chain or rope connected therewith, the pulley over which said chain or rope passes, the coiled spring connected with said chain or rope, the weight secured to said spring, and the tube in which said weight is located, substantially as described.

9. In a type-distributing machine, the combination with the main galley-shaft U^{15}, the spur-gear U^{16} secured thereto, the release-cam U^{12} and clutch U^{13} connected therewith, the sliding spring-actuated clutch U^{14}, the cam U^{20} having shoulder U^{21}, the spring-actuated check-bolt U^{18}, the check-bolt lever secured thereto, the shaft U^8 and dog U^7 secured thereto, of the horizontally-movable line-driver T', and connections, whereby shaft U^8 is actuated by the movement of said line-driver, substantially as described.

10. In a type-distributing machine, the combination with the main galley-shaft, the spur-gear U^{16} secured thereto, the release-cam U^{12} and clutch U^{13} connected therewith, the sliding spring-actuated clutch U^{14}, the cam U^{20} having shoulder U^{21}, the spring actuated check-bolt U^{18}, the check bolt dog U^6 secured thereto, the shaft U^8 and dog U^7 secured thereto, of the horizontally-movable line-driver T', the rod T^{12}, the sleeve T^{13} mounted thereon, the lever U fulcrumed intermediate its ends to the frame of the machine and the lever pivoted thereto and secured to said shaft U^8, substantially as described.

11. In a type-distributing machine, the combination with the movable line-lifting plate, having spring-actuated lead-lowering plates, the main galley-shaft, the type and the lead holder located below the same, of the forcer-gear S^{21} secured to said galley-shaft, the lead-forcer segment S^{19} with which said gear engages the shaft S^{17} to which said segment is secured, the lead-forcer S^{16} also secured to said shaft, and the helical spring S^{17}, substantially as described.

12. In a type distributing machine, the combination with the line driver, the chain or rope secured thereto and the weight for moving said line-driver forward, of the retracting chain or rope also secured to said line-driver, the drum V secured to shaft V′ upon which said chain or rope is wound, substantially as described.

13. In a type-distributing machine, the combination with the line-driver, the chain or rope secured thereto and the weight for moving said line-driver forward, of the retracting chain or rope also secured to said line-driver, shaft V′, the drum V secured thereto upon which the retracting chain or rope is wound, the pulley V⁴ secured to said shaft, having chain V⁵ and weight V⁶ and pin or stud V¹¹, the pinion also secured to said shaft, the main galley-shaft U¹⁵, the mutilated gear V³ secured thereto, meshing with said pinion and the spring-pawl V⁴ with which said pin engages, substantially as described.

14. In a type-distributing machine, the combination with the line-driver, the chain or rope secured thereto and the weight for moving said line-driver forward, of the retracting chain or rope also secured to said line-driver, the shaft V′, the drum secured thereto upon which the retracting chain or rope is wound, the pulley V⁴ secured to shaft V′ having pawl-pin V¹¹, chain V⁵ and weight V⁶, the pinion also secured to said shaft, the main galley-shaft U¹⁵, the mutilated gear V³ having release-pin V¹⁹ and the pawl V³, substantially as described.

15. In a type-distributing machine, the combination with the line-driver, the chain or rope secured thereto and the weight for moving said line-driver forward, of the retracting chain or rope also secured to said line-driver, the shaft V′, the drum V, the grooved pulley having pawl-pin V¹¹, the stop-pin V¹², the chain V⁵ and weight V⁶, the pinion also secured to said shaft, the main galley-shaft U¹⁵, the mutilated gear V³ having release-pin V¹⁹, the pawl-standard V⁷, the spring-pawl pivoted thereto and the stop-pin V¹⁴ secured to said pawl-standard, substantially as described.

16. In a type distributing machine, the combination with the shaft V′, the drum secured thereto and connected with a line-driver, the adjusting-disk V¹⁵ located within said drum, provided with a series of holes, the dog V¹⁶ rotatable on shaft V′, the screw V¹⁷ connected with said dog and the pin V¹⁸ secured to said drum, substantially as described.

17. In a type-distributing machine, the combination with the shaft V′, the drum V secured thereto, the adjusting-disk V¹⁵ located within said drum, provided with a series of holes, the dog V¹⁶ rotatable on shaft V′, the screw V¹⁷ connected with said dog and the pin V¹⁸ secured to said drum, of the grooved pulley V⁴ having pawl-pin V¹¹, the stop-pin V¹², the chain V⁵ and weight V⁶, the pinion V⁸, the main galley-shaft U¹⁵, the mutilated gear V³ having release-pin V¹⁹, the pawl-standard V⁷, the spring-pawl V⁹ and the stop-pin V¹⁴ secured to said standard, substantially as described.

18. In a type-distributing machine, the combination with the frame of the machine, of the auxiliary line-driver comprising pawl W, the lever W³, the chain or cord W⁴, the pulleys W⁵ and W⁶ over which said chain or cord passes and the spring W⁷ connected with said chain or cord, substantially as described.

19. In a type-distributing machine, the combination with the pawl W, the lever W′ and the cord or chain connected therewith, of the rod W⁸ connected with said lever, the bell-crank lever W⁹ attached thereto, the rod W¹⁰, rack W¹¹, the gear W¹³ on shaft V′, the pawl W¹⁸ engaging with a shoulder W¹⁴ on said rack, the dog W¹⁶ on said shaft, the lug W¹⁷ with which said dog engages, the crank W¹⁹ secured to shaft V′, the pawl-pin W²⁰ and pin W²¹, substantially as described.

20. In a type-distributing machine, the combination with the pawl W, lever W³, rod W⁸, bell-crank lever W⁹ and rod W¹⁰, of the rack W¹¹, and means substantially as described for actuating the same.

21. In a type-distributing machine, the combination with the auxiliary line-driver and the rack connected therewith, having a shoulder, of the dog W¹⁶ adapted to engage with said shoulder, the gear W¹³ engaging with said rack, the shaft V′ upon which said gear is mounted, the lug W¹⁷ on said shaft, the dog W¹⁶, the crank W¹⁹ and the pin W²⁰, substantially as described.

22. In a type-distributing machine, the combination with a rotatable disk with type carriers secured thereto, of a safety-plate B³ actuated by any one of said carriers to arrest the movement of said disk, substantially as described.

23. In a type-distributing machine, an automatic type-galley in combination with a rotatable disk to which type-carriers are movably secured, the safety-plate B³ actuated by any one of said type-carriers to arrest the movement of said disk, substantially as described.

24. In a type distributing machine an automatic type-galley in combination with a rotatable disk with one or more type carriers thereto movably secured, the plate B⁴ with teeth B⁴ and spring B³⁰ actuated by each of said carriers to reinforce the cut off action thereof at the point where the type is cut off for distribution, substantially as described.

25. In a type-distributing machine, a rotatable disk with type-carriers thereto movably secured in combination with a safety-plate B³ provided with as many pins B⁵ as there are type-carriers adapted to engage each of said carriers, the plate B⁴⁰ and the piece B⁴⁵ actuated by said plate B⁴ and bolt B⁵⁰ with a recess engaged by plate B⁴⁰, the ratchet-teeth at its end and a handle portion, substantially as described.

26. In a type-distributing machine in combination with a rotatable disk provided with type-carriers movably secured, the reinforcing-plate B⁴ provided with the teeth B⁵ adapted to be engaged by said type-carriers and actuated by coiled spring B⁴⁵ to increase the cut-off action of said carriers at the instant when each carrier takes off a single type, substantially as described.

27. In a type-distributing machine, the combination of a galley, means for taking the lines therefrom and placing them in a channel, a rotating disk with means for actuating the same, type-carrier arms pivoted to said disk and adapted to strike the type from the said line-channel, combined with a series of radially-disposed channels adapted to receive nicked type from the said arms, a spring in said arm adapted to press the said type into said channel, and the cam Y⁸ of said arm to press the said type in the manner and substantially as described.

28. In a type distributing machine, a distributer-disk therefor, distributer-arms comprising the arm B¹⁴ pivoted to the said disk, the type-seat Y′ slidably mounted within the arm, a spring actuating the said seat, the cam-lug Y⁹ of said type-seat, the cams Y⁸ at the end of the arm B¹⁴, combined with means for actuating the said disk, substantially as and for the purpose described.

29. In a type-distributing machine, the combination with the rotatable disk provided with movable type-carriers, of the channel X, the pawl X′, the spring X¹⁸ and the ring X¹¹ for actuating said pawl, substantially as described.

30. In a type-distributing machine, the combination with the rotatable disk, provided with movable type-carriers, of the measuring-cams, the pawl X′ and the cams to operate said pawl, substantially as and for the purpose described.

31. In a type distributing machine, the combination with the type-galley, of the rotatable disk provided with radial type-carrying arms, and the radial channels provided with wards and adapted to receive nicked type from the said arms, substantially as described.

32. In a type-distributing machine, the combination of a feeding-galley, a rotatable disk provided with type-carriers thereto movably connected, mechanism for reinforcing the cut-off action of said type-carriers at the instant of the action of said carriers to cut off a single type, and mechanism to automatically arrest the movement of said disk and the radial channels into which said carriers deliver the type as described and for the purpose set forth.

33. In a type-distributing machine, the combination of a rotatable disk provided with radial type-carrying arms thereto movably secured, the adjustable piece B¹¹, the arm or carrier B¹⁴ secured thereto, and the piece Y′, the screw Y³, and the coiled spring Y⁴ therefor, as and for the purpose described.

34. In a type distributing machine, the combination of a rotatable disk, type-carriers B¹⁴ thereto movably secured, the ejecting mechanism Y′, Y³ and Y⁴ thereof, the spring B⁵⁰ actuating said type-carriers B¹⁴ to cut off the end type of the line to be distributed, and the toothed plate B⁴ actuated by the spring B⁵⁰ to reinforce said spring B⁵⁰, substantially as described.

35. In a type-distributing machine, the combination with the removable channels E′, of the channel-plates Z⁶, the supporting-piece F, the rotatable disk B, the type-carrier arm B¹⁴ mounted thereon, and mechanism to supply said arms with type and to actuate the same, substantially as described.

36. In a type-distributing machine, in combination a rotatable disk provided with type-carrier arms thereto movably secured, the cam Y¹⁰ for retracting the ejecting-piece Y′ by its shoulder Y⁹ at the point where the type are cut off the end of the line to be distributed by said carriers, the pin or screw Y³ connected to said piece Y′, the ring or plate B³ provided with the spring B³⁰ and as many teeth on its edge as there are type-carrier arms with which said pin or screw Y³ engages to reinforce the cut-off action of said carrier-arms, the spring Y⁴ actuating the piece Y′ to eject the type from the carrier at the proper point as and for the purpose described.

37. In a type-distributing machine the combination with a rotatable disk with type-carrier arms thereto movably secured, of a plate B³ provided with as many pins B⁵ as there are type carrier arms, the plate B⁴⁰ movably connected to said disk the spring B⁴⁵ actuating said plate B⁴⁰ and the piece B⁴⁷ adjustably connected to plate B⁴⁰ and bent at one end to engage with the arm of plate B³ when said plate B³ has been moved back by a carrier acting on the pin B⁵, as and for the purpose described.

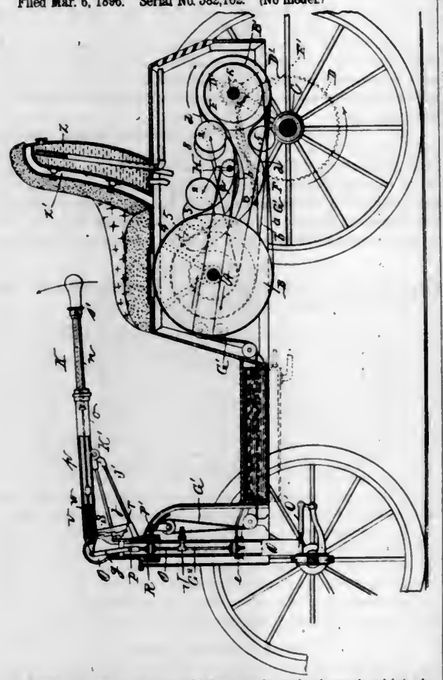
38. In a type-distributing machine, the rotatable disk provided with type-carrier arms thereto movably secured in combination with the safety-plate B³ provided with the pins B⁵, the plate B⁴⁰ movably connected to said disk and provided with the adjustable piece B⁴⁷ bent to engage with an arm of said plate B³ the coiled spring B⁴⁵ actuating said plate B⁴⁰ and the bolt B⁵⁰, the end of which is toothed, provided with a slot B⁵¹, the spring B⁷¹ actuating said bolt to engage with the ratchet B⁵¹ when not in engagement with said plate B⁴⁰, as and for the purpose described.

39. In a type distributing machine, the combination with the rotatable disk B and the arms B¹⁴ of the pawl X′, spring X¹⁵ and channels E, substantially as described.

40. In a type-distributing machine, the combination of the rotatable disk with type-carrier arms thereto movably secured, the cam-ring X¹¹ firmly connected to said disk, the pawl X′ actuated by the said cam-ring through the roller X⁹ of the pivoted lever X⁸, the spring X¹⁸ and the channel carrying type to the carriers B¹⁴, substantially as and for the purpose described.

41. In a type-distributing machine, the combination of a galley automatically feeding the matter to be distributed, to the distributing mechanism, a lead-holder situated below said galley, into which the leads are automatically delivered, a rotatable disk provided with type-carrier arms thereto movably secured, said carriers constructed to each receive a single nicked character or type from said galley, in succession and to deliver the same into their appropriate receptacles, a safety mechanism by means of which the mount of said disk may be arrested, a reinforcing mechanism to increase the cut-off force of the said carriers at the point where each letter is received from the galley and a series of receptacles for type provided with wards and a friction-spring as and for the purpose described.

572,051. MOTOR-VEHICLE. JAMES F. DURYEA, Springfield, Mass., assignor to the Duryea Motor Wagon Company, same place. Filed Mar. 6, 1896. Serial No. 582,102. (No model.)



Claim.—1. In a motor-vehicle, a main axle through which the propelling force is conveyed to the wheels thereof, a suitable motor, a main shaft driven by said motor, a cone-pulley fixed on said main shaft, combined with a counter-shaft having a belt-pulley thereon, supported in axial alinement with said main shaft and main axle, gear connections between said counter-shaft and axle, one or more loosely-running driving-belts uniting said cone and counter shaft pulleys, idler-pulleys applied to said belts, toggle-lever frames supporting said idler-pulleys in pairs in proximity to said belts, a cam-shaft extending across the vehicle near said toggle-frames having cams thereon for engagement with said frames, whereby said idler-pulleys are moved against and from said belts, the operating-lever, and connections between said lever and cam-shaft whereby the latter-named shaft is reciprocally rotated, substantially as set forth.

2. In a motor-vehicle, the combination of a motor and a main shaft driven thereby, supported on the frame of the vehicle, a counter-shaft, suitable belt-pulleys on said two shafts, a driving-axle, supports on said axle for said counter-shaft, braces pivotally connected to said supports by one end, and to the vehicle-frame by their opposite ends, a gear connection between said counter-shaft and driving-axle, and belts for connecting said main shaft and said counter-shaft for reciprocally revolving the latter, substantially as set forth.

3. In a motor-vehicle, the combination of a motor and its main shaft, a counter-shaft driven by belts from said main shaft, said counter-shaft being suitably supported upon, and driving said axle, and a series of idler-pulleys for engagement with said belts, and a cam-shaft for operating said idler-pulleys, a flexible connection between said cam-shaft and the operating-lever of the vehicle for rotating said cam-shaft by vertical movements of said operating-lever, substantially as described.

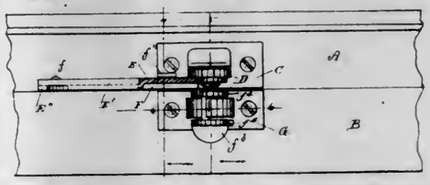
4. Means for controlling the movements of motor-vehicles consisting of an operating-lever pivotally supported upon a tubular steering-head, for movement in vertical and horizontal planes for respectively controlling the motive force and direction of said vehicle, and a spring actuated locking-bolt within said operatiig-lever for securing said lever at different angles in said vertical plane, substantially as set forth.

5. Means for controlling the movements of motor-vehicles consisting of an operating-lever pivotally supported upon a tubular steering-head, for movement in vertical and horizontal planes for respectively controlling the motive force and direction of said vehicle, and a spring-actuated locking bolt within said operating-lever for securing said lever at different angles in said vertical plane, and a plunger within said steering-head having vertical reciprocating movements imparted thereto by said operating-lever, and a suitable connection between said plunger and the driving mechanism of the vehicle for controlling the latter, substantially as described.

6. Means for controlling the idler-pulleys of belt-driven motor-vehicles, consisting of a cam-shaft for operating said idler-pulleys, said shaft having cams thereon provided with cavities within which said cams are retired by the movement of said shaft in one direction, and means for rigidly supporting said cams when the said shaft is moved in an opposite direction, and means for controlling the reciprocal rotation of said cam-shaft, substantially as set forth.

7. The herein-described brake located and operating on the inside of one of the driving-pulleys, as B′, of the motor-vehicle, consisting of the spring-metal strap I′, which is normally out of engagement with the said driving-pulley, one end of which is attached to the arm E′, at 27, and the opposite free end of which is connected through a turnbuckle 28, to the lever 29, pivotally attached to said arm E′, to the upper end of which are secured the flexible connections 31, for forcibly expanding the said strap against the inner surface of said pulley B′, substantially as described.

572,052. WINDOW-FASTENER. CHARLES M. FOWLER, Worcester, Mass., assignor to Norman F. Tucker, same place, and Albyn A. Stebbins, Fitchburg, Mass. Filed June 4, 1896. Serial No. 594,220. (No model.)

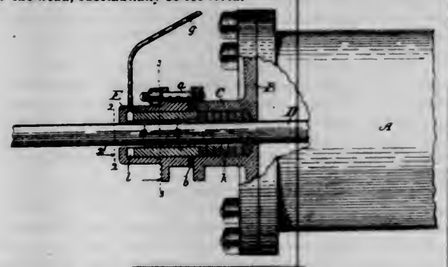


Claim.—The herein-described window-fastener consisting of a link or lever E universally jointed to one of the sashes, combined with a link or lever F, pivoted to the lever E and having a flattened shank *f″* adapted to interlock with a notched lock-plate G secured to the other sash and having a groove or recess *g″* and a cam-disk *f⁴* on the inner end of the lever F adapted to enter said groove and laterally press the sashes together when the device is locked substantially as and for the purpose set forth.

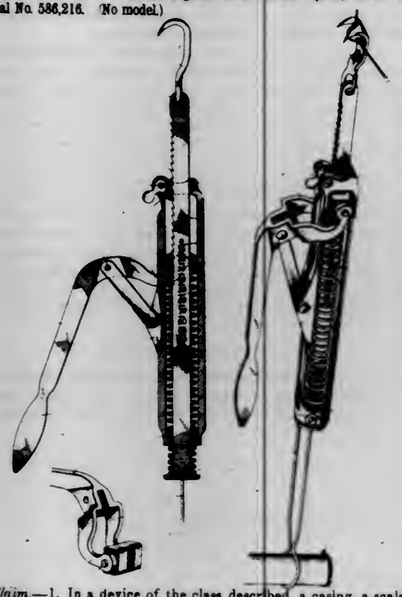
572,053. PISTON-ROD PACKING. OLIN J. GARLOCK, Rochester, N. Y., assignor to the Garlock Packing Company, Palmyra, N. Y. Filed May 22, 1896. Serial No. 592,632. (No model.)

Claim.—1. A device for packing piston rods consisting in combination with a stuffing-box, and packing material therein, of an extension chamber for the stuffing-box having an outer and an inner cylindrical wall inclosing an annular space between them, a cylindrical presser-head in said space adapted to press the packing material, and means for supplying steam under pressure between the end of the head and the extension, substantially as set forth.

2. A device for packing piston-rods consisting in combination with a stuffing-box and packing material nearly filling the same, of an extension-chamber at the end of the stuffing-box, said extension being provided with an inner longitudinal wall or sleeve, the bore of which is the same as the diameter of the rod, a cylindrical head between the sleeve and the wall of the extension, the outer end of which is at a distance from the end of the extension and the inner end extends past the joint between the stuffing-box and the extension and bears against the packing material, and means for introducing steam under pressure between the ends of the extension and the outer end of the head, substantially as set forth.



572,054. COMBINATION WIRE-STRETCHER AND DOMESTIC SCALE. MANNIN GROSS, Burlington, Kans. Filed Apr. 4, 1896. Serial No. 586,216. (No model.)



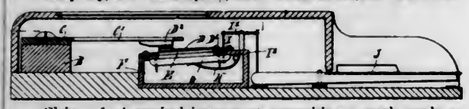
Claim.—1. In a device of the class described, a casing, a scale-bar mounted to slide in said casing and having scale graduations, a spring coiled on the scale-bar and bearing against one end thereof, and a lever-adjusted collar sliding on said scale-bar and working against the other end of the spring thereof, substantially as set forth.

2. In a device of the class described, a casing, a spring-actuated scale-bar mounted to slide longitudinally in said casing and provided in one edge with a series of ratchet-teeth, a catch-dog mounted in the casing and engaging the ratchet-teeth of said scale-bar, a spring mounted on the scale bar and working at one end through one end of the casing and bearing against one end of the scale-bar, and a lever-adjusted collar sliding on the scale-bar and working against the other end of said spring, substantially as set forth.

3. In a device of the class described, a casing, a hanger-bail pivotally connected with one end of said casing, a scale-bar mounted to slide through the casing and provided at one end with a head-plate or flange, a series of scale graduations, and with a series of ratchet-teeth, a gravity catch-dog pivotally mounted on the casing and engaging said ratchet-teeth, a spring coiled on the scale-bar and bearing at one end against said head-plate or flange, and a lever-adjusted collar sliding on the scale-bar and working against the other end of said spring, substantially as set forth.

4. In a device of the class described, a skeleton casing provided at one end with a squared guide-opening and at the opposite end with a guide ring, a catch-dog pivotally mounted at one side of said guide-opening, a scale-bar mounted to slide through the guide-opening and ring of said casing and provided at one end with a head-plate or flange, a series of scale graduations, and with a series of ratchet-teeth engaged by said catch-dogs, a spring coiled on the scale-bar and bearing at one end against said head-plate or flange, a collar sliding on the scale-bar and working against the other end of said spring, an adjusting-lever having a forked end pivotally connected with said sliding collar, and a link pivotally connected at one end with the casing at an intermediate point and at its other end with the adjusting-lever at an intermediate point thereof substantially as set forth.

572,055. MEANS FOR SOUNDING COMBS. ALFRED HERRLING, Jersey City, N. J. Filed Apr. 24, 1896. Serial No. 588,914. (No model.)



Claim.—1. A musical instrument, comprising a comb, reeds or like vibrators adapted to engage the teeth of the comb, but independent thereof so as to be capable of alternately swinging into and out of contact with said teeth, and means for actuating the vibrators, substantially as described.

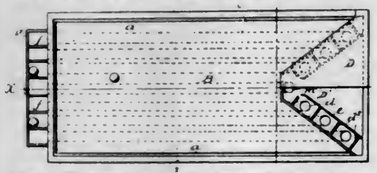
2. A musical instrument, comprising a comb, reeds or like vibrators provided with felted or cushioned portions arranged to intermittently engage the teeth of the comb and means for actuating the vibrators, substantially as described.

3. A musical instrument, comprising a comb, reeds or like vibrators whose free ends are arranged adjacent to the teeth of the comb so as to come into intermittent contact therewith during the vibration of the reeds, and means for actuating the vibrators, substantially as described.

4. A musical instrument, comprising a comb having teeth, and reeds adapted to be vibrated and adapted to engage with their free ends the free ends of the teeth, substantially as shown and described.

5. A musical instrument, comprising a comb, reeds or like vibrators arranged to intermittently engage the teeth of the comb, cushions located at the points of engagement of the teeth with the vibrators, and means for actuating the vibrators, substantially as described.

572,056. GAME-TABLE. GIDEON S. JEFFRIES, Reading, Pa. Filed July 6, 1896. Serial No. 598,162. (No model.)



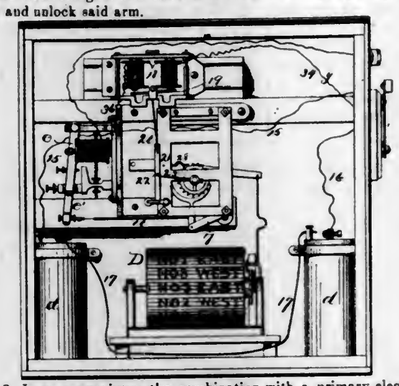
Claim.—The combination of a game-table having a partially-inclined bed B, with a V-shaped house at one end thereof having a series of openings *d* along both sides thereof through which balls may pass, holes *d'* in the bed of said table inside of said house, a ridge *e* just inside of said openings *d* to partially stop the balls, and chutes H leading from said holes and having their outlets in a trough F at the forward end of the table, said trough being divided into numbered apartments *f*, substantially as and for the purpose set forth.

572,057. ANNUNCIATOR. FRANKLIN A. JENNINGS, Ithaca, N. Y., assignor to the Electric Bulletin Company, same place and Chicago, Ill. Filed May 11, 1895. Serial No. 548,903. (No model.)

Claim.—1. A dial containing train-bulletins, a pointer mounted upon a pointer-shaft and a scape-wheel also upon said shaft, in combination with an electromagnet, an escapement-yoke mounted upon a pivot and provided with pallets adapted to engage with said scape-wheel and a rod adjustably connecting said yoke to the armature of said magnet whereby said scape-wheel is intermittently rotated by the making and breaking of the circuit through said magnet.

2. The combination with a stationary dial, a rotating shaft, a pointer thereon and an arm also thereon and means to rotate said shaft to shift said pointer and arm, of an electromagnet a rocking armature therefor, a rod secured to and vibrated by said armature, an oscillating bar connected to and actuated by said rod, and provided with a pin with which said arm is adapted to engage to stop said shaft and pointer, and a parallel bar switch to reverse the polarity

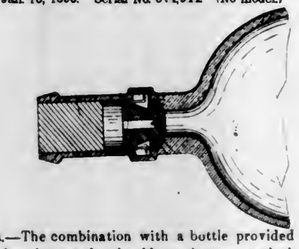
of said electromagnet and cause it to rock to oscillate said bar and lock and unlock said arm.



3. In an annunciator, the combination with a primary electromagnet, an escapement actuated thereby, a shaft, a pointer thereon, and an arm upon said shaft actuated by said escapement, of a secondary electromagnet having a rocking armature, a vibratory rod secured to said armature, an oscillating bar connected to said rod and provided with a pin with which said shaft-arm is adapted to engage to stop or release said shaft and pointer, and a parallel-bar switch to reverse the polarity of said secondary electromagnet and cause its armature to rock and oscillate said bar and pin to become engaged with or released from said arm.

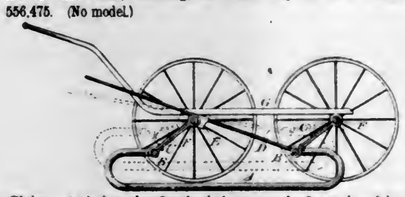
4. In an annunciator, the combination with a train-designating rotatable cylinder, a pawl-and-ratchet mechanism to rotate it and a lifting-lever carrying said pawl, and a rotating cam engaging with said lever, of an idler upon said lever primarily engaging with said cam and a check-pin upon said lever adapted to engage with said cam after the idler has passed the apex thereof.

572,058. BOTTLE. JULIAN R. LINDSEY, Fort Robinson, Nebr. Filed Jan. 10, 1896. Serial No. 574,944. (No model.)



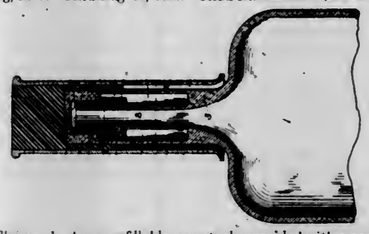
Claim.—The combination with a bottle provided with a neck, having an interior annular shoulder and groove and whose lower portion is much thicker than the upper portion, an annular valve-seat in said thicker portion, a cylindrical valve, provided with external triangular notches, adapted to fit on said seat, said valve having a vertical central bore extending partly through it from which extend outwardly-extending perforations whose mouths are located so that they are closed when said valve is seated, springs secured to said valve and having outwardly-directed projections to enter said annular groove, and a stopper in the bottle-mouth, all constructed, located, arranged and adapted to operate substantially as herein shown and described.

572,059. COMBINED CHILD'S CARRIAGE AND SLED. THOMAS S. MINNIS, Meadville, Pa., assignor to Roland B. Thompson, same place, and A. Clark Bane, Pittsburg, Pa. Filed July 19, 1895. Serial No. 556,475. (No model.)



Claim.—A sled made of a single bar or rod of metal and having runners upwardly curved at each end and cross-bars connecting at front and back the ends of said curves; a pair of links of equal length connecting the ends of said cross-bars pivotally with the running-gear or frame of a child's carriage, and means for raising, lowering and locking the sled either up or down.

572,060. NON-REFILLABLE BOTTLE. JOHN F. NALDER, Flushing, N. Y. Filed Aug. 12, 1896. Serial No. 602,538. (No model.)



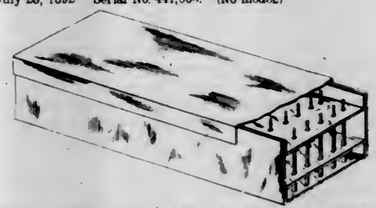
Claim.—1. A non-refillable receptacle provided with a neck comprising inner and outer sections forming an intervening space between them, said space being open at its top and bottom, the outer section being extended above the inner section to provide a cork-receiving portion, and the inner section being provided with passages communicating with the interior of the bottle and with the intervening space between the said sections at a point intermediate of the ends thereof, substantially as described.

2. A non-refillable receptacle provided with a neck comprising inner and outer sections forming an intervening space between them, said space being open at its top and bottom, the outer section being extended above the inner section to provide a cork-receiving portion, and the inner section being provided with passages communicating with the interior of the bottle and with the intervening space between the said sections at a point intermediate of the ends thereof, combined with a cork or stopper composed of a solid upper portion fitting in the extension of the outer section of the neck, and a depending tubular portion extending downward into the intervening space between the sections of the neck and covering the outer ends of the said passages, substantially as described.

3. A non-refillable receptacle provided with a neck comprising an inner section having a central longitudinal opening, and provided at its lower portion with an annular chamber concentric with the central opening, said inner section being provided with bores extending from the top of the central opening to said chamber and the latter being provided above the lower ends of the bores with openings or perforations, and the outer section of the neck surrounding the inner section and forming an intervening space open at its top and bottom, substantially as described.

4. A non-refillable receptacle provided with a neck comprising an inner section provided with a central longitudinal opening, and having bores parallel with the upper portion of the opening, and provided with an annular chamber concentric with the lower portion of the central opening and provided with a narrow annular extension, arranged outside of the lower portions of the bores, said inner section being provided at the upper end of the said extension of the annular chamber with perforations and having a plug at its top, the outer section surrounding the inner section of the neck, connected with the same by radial arms and extending above the inner section, combined with a cork composed of a solid upper portion, and a depending tubular portion extending downward in the intervening space between the sections of the neck and covering the adjacent perforations of the inner section, substantially as described.

572,061. NAIL-PACKAGE. ARTHUR NEWTON, Boston, Mass., assignor, by mesne assignments, to James W. Brooks, Petersham, and John Brooks, Cambridge, Mass., trustees. Filed Mar. 28, 1890. Renewed July 23, 1892. Serial No. 441,003. (No model.)



Claim.—1. In a portable nail-package, the combination with a box or case, of a cover, a false bottom adapted to slide upon said box, and means intermediate said false bottom and cover to maintain the

nails in vertical position, said sliding false bottom serving as a support for the nails during transportation and being capable of removal when it is desired to release the nails.

2. A nail package comprising a rectangular box or case with a cover, horizontal perforated partitions in which nails are located, and a false bottom movable lengthwise of the box and supporting the points of the nails, as set forth.

3. The improved nail-package composed of sheets 4 4 having nail-supporting orifices and bent at their edges to form flanges, side pieces 2 2 secured to said flanges, and a removable bottom 5 arranged to support the lower ends of the nails that stand in said orifices, as set forth.

4. A portable nail-package comprising a block or case having a series of independent nail-receptacles arranged in such relation to one another that the nails will be delivered in gangs or charges to the work.

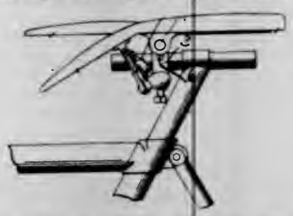
5. A portable nail package or carrier for use in heel-nailing machines, comprising a box or case having a series of independent nail-receptacles arranged in parallel rows, said rows being so arranged with relation to one another that each row delivers its nails in gangs or charges to the work at predetermined intervals, substantially as described.

6. A nail-package comprising a block or case having independent nail receptacles arranged in parallel rows and so disposed as that the nails are in position to be delivered to the work in gangs or charges, and a bottom plate for closing all the holes in said block or case during transfer of the package, substantially as described.

7. A nail package or carrier comprising a block or case having a series of independent nail-receptacles arranged in parallel rows, and a cover which retains the nails in said package, substantially as described.

8. A nail package or carrier for the transportation and distribution of fastenings comprising a block or case having independent nail-receptacles arranged in parallel rows in which the nails are inserted heads downward, and a removable cover for said case so as that when said cover is removed and the said case is placed in proper operative relation to the work the nails will be fed from said receptacles in gangs or charges, substantially as described.

572,062. BICYCLE-SADDLE. ARTHUR E. PECK, Minneapolis, Minn. Filed Aug. 6, 1895. Serial No. 558,401. (No model.)



Claim.—1. In a bicycle-saddle, the combination with a main seat-section, of auxiliary seat-sections hinged to the front edge of the main seat-section and adapted for alternate movement.

2. A bicycle-seat, comprising, in combination, a stationary rear section and two yieldingly-supported independent sections hinged to said rear section at or near its forward edge.

3. A bicycle-seat, comprising, in combination, a stationary rear section, two independent sections hinged to or near the forward edge of said stationary section, and means connecting said hinged sections whereby they rise and fall alternately to each other.

4. A bicycle-seat comprising in combination, a stationary rear section, two independent sections, hinged to the forward edge of a rear section, means for yieldingly supporting the hinged sections, and a continuous covering over the three sections.

5. A bicycle-seat comprising in combination a stationary rear section, two independent sections hinged to the forward edge of said rear section, the standard 3 upon which the rear section is mounted, the lever 15 pivoted centrally on said standard, and the connecting-rods, connecting the ends of said lever and said hinged sections, for the purpose set forth.

6. The combination in a bicycle-seat of a rigid and inflexible but cushioned rear section whereon the rider's weight is mainly supported and auxiliary supporting-sections hinged at the forward edge thereof, substantially as described.

7. A bicycle-seat comprising a stationary or body-supporting rear section in combination with auxiliary supporting-sections hinged at the forward edge of said rear section, means whereby when either of the auxiliary sections is depressed the other is raised and the surfaces of said auxiliary sections forming immediate extensions of the surface of the rear section, as and for the purpose specified.

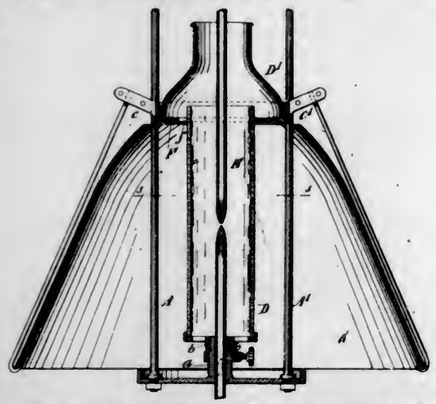
8. A bicycle-seat comprising a suitable rear section adapted to support the main part of a rider's weight in combination with two independent sections hinged at or near the forward edge of the rear section, their surfaces forming extensions of the surface of the rear section, and a pivoted lever or walking-bar interposed between said independent sections and by which a downward movement of one independent section is imparted to the other independent section to raise the same, as and for the purpose specified.

572,063. CURRYCOMB. CHARLES E PIPER, Laconia, N. H. Filed Mar. 13, 1895. Serial No. 541,569. (No model.)



Claim.—A currycomb provided with curved arms terminating in projecting stops having cushions on their faces, and a swinging knocker pivoted to the currycomb and traveling upon said curved arms, the head of said knocker having a pad which is interposed between the knocker-head and said curved arms and having cushions on its ends which come in contact with the cushions respectively on the projecting stops, substantially as set forth.

572,064. ARC-LAMP. JOHN RAE, New York, N. Y. Filed Nov. 26, 1895. Serial No. 570,162. (No model.)



Claim.—1. The combination with the carbon-supporting rods of an arc-lamp, of a chimney supported by the rods and adapted to surround the supported carbons, and a chimney-top into which the upper end of the carbon-surrounding chimney extends, there being an annular air-space between the first-named chimney and the said chimney-top, substantially as specified.

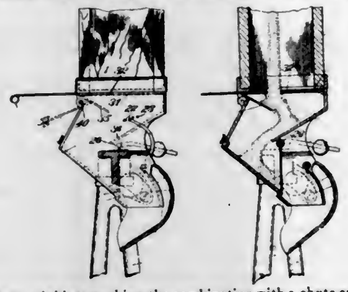
2. The combination with the carbon-supporting rods, of an arc-lamp, of a carbon-protecting chimney supported by the rods, an annular plate adapted to support a chimney-top and having radial arms, clamping-plates for securing the arms to the rods and rods extended downward from said arms and having their lower ends adapted to engage with the bottom edge of a shade, substantially as specified.

3. The combination with a carbon-lamp frame comprising rods and a lower-carbon-holder plate and having a tubular boss to receive the carbon, a flanged collar on said boss, a carbon-surrounding chimney supported on said flange, an annular plate clamped to the frame-rods, a chimney-top supported by said annular plate, and downwardly-extending shade or reflector supported from its lower edge by said annular plate, substantially as specified.

572,065. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 10, 1896. Serial No. 586,928. (No model.)

Claim.—1. The combination with a chute embodying a stream-directing wall and an inclined brake-wall located above said first-mentioned wall, of a sliding gate having a stream-deflecting portion and interposable in the path of flow of the supply-stream, and a valve for said chute.

2. The combination with a chute embodying a stream-directing wall and an inclined brake wall located above said first-mentioned wall, of a conduit communicating with said chute for supplying a stream of material thereto, and a sliding gate supported above said inclined brake-wall and interposable in the path of flow of said stream.



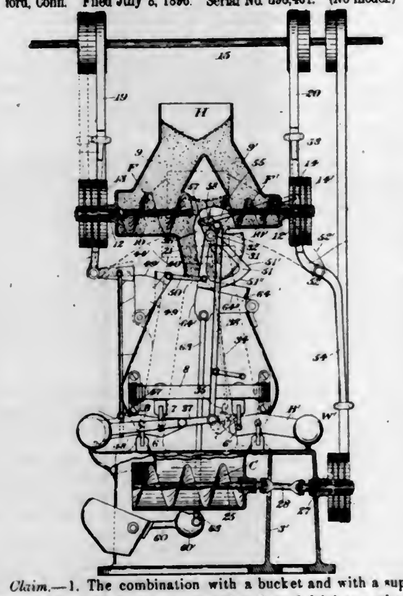
3. In a weighing-machine, the combination with a chute embodying a stream-directing wall, and an inclined brake-wall located above said first-mentioned wall, said chute having also a flange provided with a cut-away portion; a flanged collar resting on said flange, whereby there is formed by said cut-away portion a guideway; and a gate slidable in said guideway.

4. In a weighing-machine, the combination with a chute embodying a stream-directing wall, and an inclined brake-wall located above said first-mentioned wall; of a supply-conduit communicating with said chute for supplying a stream of material thereto; and a sliding gate located above said stream-directing wall and interposable in the line of flow of said stream.

5. In a machine of the class specified, the combination with a chute having a front wall and an adjustable rear wall extending from one of the end walls of the chute to the other, of a yieldingly-supported detent-blade located within said chute; and means for maintaining said blade in contact with the front wall of the chute when the machine is at rest.

6. The combination with a chute having an adjustable rear wall extending from one end wall of the chute to the other, said chute also having two oppositely-inclined walls; of a yieldingly-supported detent-blade located within said chute; and means for holding said blade in contact with one of the chute-walls when the machine is at rest.

572,066. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 8, 1896. Serial No. 598,461. (No model.)



Claim.—1. The combination with a bucket and with a supply-feeder and load-discharge conveyer therefor, of driving mechanism for said supply-feeder and load-discharge conveyer; and reciprocally-effective means for holding said load-discharge conveyer out of action during the effective period of the feeder and for holding the feeder out of action during the effective period of the conveyer.

2. The combination with a bucket and with means for supplying a stream of material thereto, of a load-discharge screw conveyer for said bucket; and means normally operative for holding said conveyer out of action during the load-supply period.

3. The combination with a bucket, of a pair of feeders therefor, each operable for supplying a stream of material to said bucket; means for successively throwing said feeders out of action at predetermined points in the descent of the bucket; a load-discharge conveyer for the bucket; and means for holding said conveyer out of action during the effective periods of said feeders.

4. The combination with a bucket and with a pair of feeders therefor, of means for successively stopping said feeders at predetermined points in the descent of the bucket; a valve having a depending rod; and a stop adapted for engaging said rod to thereby hold the valve in its wide-open position and to also release the same on the completion of the bucket-load.

5. The combination with a bucket, of a pair of feeders therefor; supporting-shafts for said feeders, each having fast and loose pulleys thereon; a power-shaft carrying pulleys connected by belts to said first-mentioned pulleys; and automatically-operable means for successively shipping said belts at predetermined points in the descent of the bucket.

6. The combination with a scale-beam, of a bucket supported thereby; a pair of feeders and their supporting-shafts, each of the latter having fast and loose pulleys thereon; a power-shaft having a pair of pulleys connected by belts to said first-mentioned pulleys; a valve; and a pair of belt-shippers operatively connected with said scale-beam and valve.

7. The combination with a bucket, of a feeder and its supporting-shaft provided with fast and loose pulleys; a load-discharge conveyer having fast and loose pulleys; a power-shaft having a pair of pulleys; a pair of belts; a compound belt-shifter for simultaneously shifting said belts; and automatically-operable means for said belt-shifter.

8. The combination with a bucket and with means for supplying a stream of material thereto, of a valve; a load-discharge conveyer for the bucket, a tilting hopper located to receive a stream of material from the conveyer; and reciprocally-effective stops operative, respectively, with said valve and hopper.

9. The combination with a bucket and with means for supplying a stream of material thereto, of a load-discharge conveyer; a shaft connected to said conveyer by a universal joint; fast and loose pulleys on said shaft; a power-shaft having a pulley; a belt on said pulley and connected to said loose pulley; and an automatically-operated belt-shipper for shipping said belt from said loose pulley to the fast pulley to thereby start said load-discharge conveyer.

10. The combination with a bucket, of a feeder therefor having a shaft provided with fast and loose pulleys; a power-shaft having a pulley connected by a belt to said fast pulley and shiftable therefrom to the loose pulley; an automatically-operated belt-shipper; a valve having a stop; and a coacting stop operative with said belt-shipper.

11. The combination with a scale-beam and with a bucket supported thereby, of a feeder and its supporting-shaft provided with fast and loose pulleys; a power shaft having a pulley; a belt connecting the same and the fast pulley, said belt being also shiftable to the loose pulley; a shipper; a rod for operating said belt-shipper, said rod being connected to the scale-beam, whereby said belt will be shipped from the fast to the loose pulley; and means for returning said rod to its normal position.

12. The combination with a scale-beam and with a bucket supported thereby, of a feeder and its supporting-shaft provided with fast and loose pulleys; a power-shaft having a pulley; a belt connecting the last-mentioned pulley with the fast pulley, said belt being also shiftable to the loose pulley; a belt-shipper; a rod for operating said belt-shipper, said rod being connected to the scale-beam and furnished with a hook; and a shiftable lever adapted to impinge against said hook on one of its strokes.

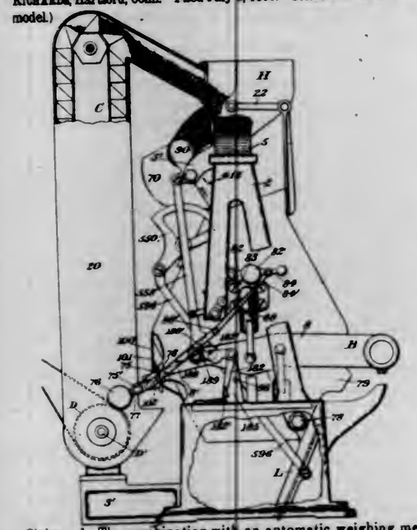
13. The combination with a scale-beam and with a bucket supported thereby, of a feeder and its supporting-shaft provided with fast and loose pulleys; a power-shaft having a pulley; a belt connecting said last-mentioned pulley with the fast pulley, said belt being also shiftable to the loose pulley; a belt-shipper; a rod for operating said belt-shipper and connected to the scale-beam by a sliding joint; and a shiftable lever supported by the scale-beam and adapted to actuate said rod on one of its strokes.

14. The combination with a scale-beam, of a bucket supported thereby; a feeder and its supporting-shaft provided with fast and loose pulleys; a power-shaft having a pulley connected by a belt to said fast pulley, said belt being shiftable to the loose pulley; a belt shipper having a stop operative therewith; a valve having a coacting stop; and a scale-beam connected to said first-mentioned stop to thereby actuate said belt-shipper.

15. The combination with a bucket, of a hopper having two branches leading to chambers therein; of a pair of feeders, one located in each chamber; driving mechanism for said feeders; and means for successively stopping the same at predetermined points in the descent of the bucket.

16. The combination with a bucket, of a feeder and its supporting-shaft provided with fast and loose pulleys; a load-discharge conveyer and its supporting-shaft having fast and loose pulleys; a power-shaft furnished with a pair of fixed pulleys; a pair of belts connected with said fixed pulleys and also shiftable from one to the other of the first mentioned sets of pulleys; a valve; and a compound belt-shipper operable for simultaneously shipping both of said belts and connected by a link to said valve.

572,067. AUTOMATIC WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 9, 1896. Serial No. 598,555. (No model.)



Claim.—1. The combination with an automatic weighing mechanism and with load-supplying means therefor, of load-reducing means operative during the weighing of a load.

2. The combination with an automatic weighing mechanism and with load-supplying means therefor, of load reducing means operative during the weighing of a load on the overpoising of said mechanism.

3. The combination with an automatic weighing mechanism, of load-supplying means and load-reducing means alternately operative during the weighing of a load.

4. In an automatic weighing-machine, the combination with load-supplying means; of a load-receiver having a load-reducing opening; and means for uncovering said opening during the weighing of a load.

5. In an automatic weighing-machine, the combination with load-supplying means; of a load-receiver; and load-reducing means carried by the load-receiver and operative during the weighing of a load.

6. In an automatic weighing-machine, the combination with load-supplying means; of a load-receiver; and load-reducing means carried by, and movable relatively to, the load-receiver and operative during the weighing of a load.

7. In an automatic weighing-machine, the combination with load-supplying means; of a load-receiver; and reciprocatory load-reducing means carried by the load-receiver and operative during the weighing of a load.

8. The combination with weighing mechanism, of means for supplying an overload of material to the weighing mechanism; and a load-reducing device operable for reducing the overload by discharging a portion thereof to thereby bring the loaded weighing mechanism to a true poise.

9. In an automatic weighing-machine, the combination with a reciprocatory load-receiver; of overloading means for overpoising said load-receiver; and load-reducing means operative during the weighing of a load.

10. In an automatic weighing-machine, the combination with a reciprocatory load-receiver; of overloading means for overpoising said load-receiver; and surplus-discharging means operative during the weighing of a load for subtracting the surplus from the overload.

11. In an automatic weighing-machine, the combination with a bucket, of supplementary valve mechanism for discharging a part of the bucket-load; and main load-discharging means operable on the ascent of the bucket.

12. In an automatic weighing-machine, the combination with a bucket; of supplementary mechanism for discharging a part of the bucket-load; and main load-discharging means operative upon the poising of the bucket on the ascent of the latter from an overpoising position.

13. In an automatic weighing-machine, the combination with a bucket and with a closer therefor, of closer-releasing means automatically operative on the ascent of the bucket.

14. In an automatic weighing-machine, the combination with a bucket; of the following instrumentalities operative in the order named—viz., overloading means, load-reducing means, and load-discharging means.

15. In an automatic weighing-machine, the combination with a bucket; of overloading means for overpoising said bucket; surplus-reducing means operative during the weighing of a load; and surplus-reconveying means for restoring the surplus to the bucket.

16. In an automatic weighing-machine, the combination with weighing mechanism embodying a bucket; of the following instrumentalities operative in the order named—viz., overloading means, overload-reducing means, load-discharging means, and overload-reconveying means for restoring the overload to the bucket on the make-up of a new load.

17. In an automatic weighing-machine, the combination with a bucket, beam mechanism, and load-supplying means; of beam-operated load-reducing means carried by the bucket and operative during the weighing of a load.

18. The combination with a load-receiver, of overloading and load-reducing mechanisms operative in the order named and effective, respectively, for causing the descent and ascent of said load-receiver below and to the poising-line during the weighing of a load; and means for preventing the discharge of the load-receiver during said descending movement thereof.

19. In an automatic weighing-machine, the combination with a bucket, beam mechanism, and load-supplying means; of reactive, beam-operated load-reducing means carried by the bucket and operative during the weighing of a load.

20. In an automatic weighing-machine, the combination with a bucket, beam mechanism, and load-supplying means; of counter-weighted, beam-operated load-reducing means carried by the bucket and operative during the weighing of a load.

21. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening and with beam mechanism and load-supplying means; of a beam-operated load-reducing valve operative for uncovering said opening during the weighing of a load.

22. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening and with beam mechanism and load-supplying means; of a load-reducing valve operative for uncovering said opening during the weighing of a load; and a valve-latch for holding said valve open.

23. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening and with beam mechanism and load supplying means; of a load-reducing valve operative for uncovering said opening during the weighing of a load; a valve-latch for holding said valve open; and a valve latch tripper operative on the ascent of the bucket.

24. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening and with a bucket-latch and beam mechanism; of overloading means; and a latch-tripping load-reducing valve operative for uncovering said opening during the weighing of a load and for releasing the bucket-latch on the ascent of the bucket.

25. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening and with a bucket-latch and beam mechanism; of overloading means; a latch-tripping load-reducing valve operative for uncovering said opening during the ascent of a load and for releasing the bucket-latch on the ascent of the bucket; a valve-latch for holding said valve open; and a valve-latch tripper operable on the ascent of the bucket.

26. In an automatic weighing-machine, the combination with a bucket having a load-reducing opening in one side thereof and between the delivery and discharge ends of the bucket, of means for covering and uncovering said opening.

27. In an automatic weighing-machine, the combination of a bucket having a spout in one side thereof and between the delivery and discharge ends of the bucket and having the load-supporting face of said spout inclined toward the discharge end of the bucket, and means for covering and uncovering said opening.

28. The combination with automatic weighing mechanism and with load-supplying means therefor, of load-reducing means operative during the weighing of a load; and means for receiving material taken from the bucket during such load-reducing action and reconveying it to the bucket for the make-up of a new load.

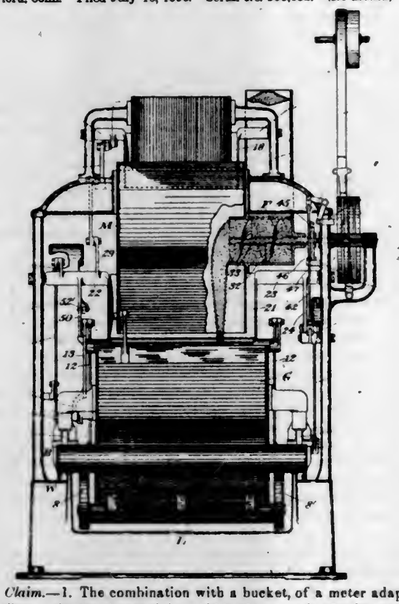
29. The combination with a supply-hopper and a valve therefor, of weighing mechanism embodying a bucket; load-reducing means operative during the weighing of a load; and means for conveying material withdrawn in reducing said load to said supply-hopper.

30. The combination with a supply-hopper and its regulating-valve, of weighing mechanism embodying a bucket; load-reducing means operative during the weighing of a load; and an elevator for conveying material withdrawn from the bucket during the load-reducing operation to said supply-hopper.

31. The combination with a supply-hopper and a regulating-valve therefor, of weighing mechanism embodying a bucket having a load-reducing opening; a valve for controlling the passage of material from such opening; and means for conveying material withdrawn from the bucket during the reducing operation back to said supply-hopper.

32. The combination with a supply-hopper and a valve therefor, of beam mechanism; a bucket supported thereon; load-reducing means operative with the bucket during the weighing of a load; and means for conveying material withdrawn from the bucket during the reducing operation back to said supply-hopper.

572,068. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 10, 1896. Serial No. 598,652. (No model.)



Claim.—1. The combination with a bucket, of a meter adapted to deliver a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; valve-actuating mechanism; and means carried by said meter and serving to furnish a drip-stream to the bucket through the meter.

2. The combination with a bucket, of a meter adapted to deliver a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; valve-actuating mechanism; and a force-feeder carried by the meter for supplying a drip-stream to the bucket through said meter.

3. The combination with a bucket having a closer, of a meter adapted to supply a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; valve-actuating mechanism; and reciprocally effective stops operative, respectively, with one of said valves and with the bucket-closer.

4. The combination with a bucket having a closer, of means embodying a latch for normally holding said closer against opening movement; a meter adapted to supply a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; and a latch tripper operatively connected with one of said valves.

5. The combination with a bucket and its supporting scale beam, of a meter adapted to supply a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; a depending rod connected to one of said valves and in position to receive a thrust from the scale-beam to open the same; and linkage and lever mechanism connecting said valve with the other valve and serving to close the latter when the first-mentioned valve is opened.

6. The combination with a bucket, of a meter adapted to supply a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; means for opening and closing said valves; and means carried by the meter, for furnishing a drip-stream to the bucket through the meter, whereby the efflux-valve when closed is adapted to catch the descending particles on the completion of the bucket-load.

7. The combination with a bucket, of a meter adapted to supply a charge of material to said bucket; means for controlling the influx and efflux of material to and from said meter; and a force-feeder carried by the meter and operable for supplying a drip-stream to the bucket through the meter.

8. The combination with a bucket, of a meter adapted to supply a charge of material to said bucket; means for controlling the influx and efflux of material to and from said meter; a drip-conduit in the wall of and communicating with said meter; and a force-feeder carried by the meter and operative in said conduit, said feeder serving to supply a drip-stream to the bucket through the meter.

9. The combination with a bucket, of a meter adapted for supplying a charge of material to said bucket; means for controlling the influx and efflux of material to and from said meter; a drip-conduit having a cylindrical spout passing through an opening formed in said meter; and a screw feeder located in said cylindrical conduit.

10. The combination with a bucket, of a meter adapted to supply a measured charge of material to said bucket; means operative, respectively, for controlling the influx and efflux of material to and from said meter; a force-feeder operable for supplying a drip-stream to the bucket; and means for vibrating said feeder.

11. The combination with a bucket, of a meter adapted for supplying a charge of material to said bucket; means for controlling the influx and efflux of material to and from said meter; a force feeder operable for supplying a drip-stream to the bucket; and automatically operated means for throwing said feeder out of action.

12. The combination with a bucket and its supporting scale-beam, of a force feeder supported by a telescopic shaft, means for rotating said shaft; and means for also vibrating one of the shaft-sections.

13. The combination with a bucket and its supporting scale-beam, of a force-feeder supported by a telescopic shaft; means for rotating said shaft; a cam mounted on one of the shaft sections; and rigid guides for said cam.

14. The combination with a bucket, of a meter for supplying a charge of material to said bucket; means for controlling the influx and efflux of material to and from said meter; a feeder and its supporting-shaft provided with fast and loose pulleys; a belt shiftable from one of said pulleys to the other; and an automatically-operated belt-shipper.

15. The combination with a bucket, of a meter for supplying a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; a valve-actuating lever; a feeder and its supporting-shaft provided with fast and loose pulleys; a belt shiftable from one of said pulleys to the other; and a belt-shipper operatively connected with said lever.

16. The combination with a bucket, of a meter for supplying a charge of material to said bucket; a pair of valves operative, respectively, for controlling the influx and efflux of material to and from said meter; valve actuating mechanism embodying a lever; a feeder and its supporting-shaft provided with fast and loose pulleys; a belt shiftable from one of said pulleys to the other; a belt-shipper; and connections involving a slide-joint between said belt-shipper and lever.

17. The combination with a bucket, of a meter for supplying a charge of material to said bucket; a pair of valves operative respectively, for controlling the influx and efflux of material to and from said meter; valve-actuating mechanism embodying a lever; a feeder and its supporting-shaft provided with fast and loose pulleys; a belt shiftable from one of said pulleys to the other; a belt-shipper; operative connections between said belt-shipper and lever; a depending rod connected to said lever; and a stop in position to arrest the movement of said lever.

18. The combination with a feeder and its supporting-shaft provided with fast and loose pulleys, of a belt shiftable from one of said pulleys to the other; a belt-shipper; an angle-lever, one of the arms of which is connected to said belt-shipper by a slide-joint; and a lever operatively connected to the other arm of said angle-lever.

19. The combination with a feeder and its supporting shaft provided with fast and loose pulleys, of a belt shiftable from one of said pulleys to the other; a belt-shipper; an angle-lever having a stud;

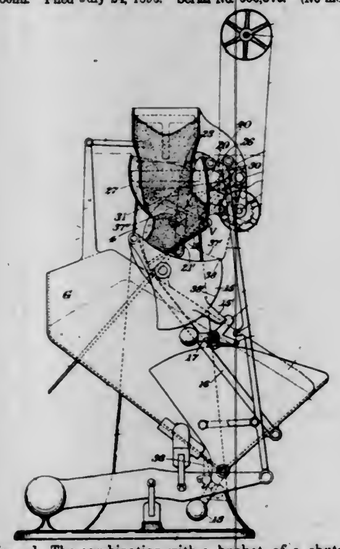
a link connected to said belt-shipper and having a longitudinal slot, the walls of which embrace said stud; and a lever operatively connected to said angle-lever by a link.

20. The combination with a bucket having a main closer provided with a locking-notch, of a supplemental closer having a projecting arm adapted to bear against one of the walls of said locking-notch, whereby said supplemental closer will be held against opening movement.

21. The combination with a bucket, of a main closer therefor having a locking-notch, a supplemental closer pivotally supported by said bucket and provided with a projecting arm adapted to bear against one of the walls of said notch, whereby said supplemental closer will be held against opening movement.

22. The combination with a bucket, of a main closer therefor having a segmental end plate, provided with a locking-notch; a supplemental closer movably supported by the bucket and having a projecting arm adapted to bear against one of the walls of said notch.

572,069. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 24, 1896. Serial No. 600,376. (No model.)



Claim.—1. The combination with a bucket, of a chute; an oscillating valve supported relatively to said chute and in position for receiving its closing force by a gravitating stream of material issuing from said chute; and a stream-director operable for delivering said stream toward the rear of the valve and movable about an axis independent of said valve.

2. The combination with a bucket, of a chute; an oscillating valve supported to receive its closing force from a gravitating stream of material issuing from said chute; and a movably-mounted stream-director operable for delivering said stream toward the rear of the valve, said stream-director being movable below the mouth of the chute and about an axis independent of said valve.

3. The combination with a chute, of an oscillating valve supported to receive its closing force from a gravitating stream of material issuing from said chute; and a stream-director supported relatively to said chute and operable for delivering said stream of material toward the rear of the valve, said stream director being movable about an axis independent of said valve.

4. The combination with a chute, of a cut-off valve supported for oscillatory movement about two independent axes and mounted to receive its closing force from a gravitating mass of material issuing from said chute; and valve-actuating means.

5. The combination with a bucket, of a chute; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute, said valve consisting of two hinged sections, the stream-cut-off section of which is connected to a relatively-fixed part of the machine by suspension-links; means for supporting the other valve-section; and valve-actuating means.

6. The combination with a bucket, of a chute; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute, said valve consisting of two hinged sections; suspension-links pivotally supported by studs on said chute, said links also being connected to one of the valve sections; means for supporting the other valve-section; and a stream-director supported relatively to the chute and by said studs.

7. The combination with a bucket, of a chute; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute, said valve consisting of two hinged sections, the cut-off section of which is suspended from said chute; a controlling-shaft connected to the other valve-section; and means for actuating said valve.

8. The combination with a bucket having a closer, of a chute; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute, said valve consisting of two hinged sections, the cut-off section of which is connected to a relatively-fixed part of the machine by suspension-links; means for supporting the other valve-section; valve-actuating means; and reciprocally-effective stops operative, respectively, with said valve and closer.

9. The combination with a bucket having a closer, of means comprising a latch for normally holding said closer against opening movement; a chute; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute, said valve consisting of two hinged sections, the cut-off section of which is connected to a relatively-fixed part of the machine by suspension links; means for supporting the other valve section; actuating means; and a latch-tripping device operative with said valve.

10. The combination with a chute, of a cut-off valve movable about two independent axes and supported to receive its closing force from a gravitating mass of material issuing from said chute; and means for actuating and for vibrating said valve.

11. The combination with a chute, of a rotary cam; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute; and links suspending the valve from the chute and permitting the same to be bodily movable toward the plane of action of said cam.

12. The combination with a chute, of a controlling-shaft; a cut-off valve supported to receive its closing force from a gravitating mass of material issuing from said chute and consisting of two sections, the cut-off section of which is suspended by links from said chute; connections between the other valve-section and said valve; and valve-actuating means.

13. The combination with a chute, of a valve; a stream-director coacting with said chute and operable for directing a stream of material from said chute toward the rear of said valve and being also movable about an axis independent of the valve-axis, said stream-director being connected to and controlled by said valve.

14. The combination with a bucket and with a chute, of a controlling-shaft; a valve consisting of two sections, one of which is connected to said controlling-shaft, the other being supported from the chute by suspension-links; and a stream-director also operatively connected to said shaft.

15. The combination with a bucket and its supporting scale-beam, of a chute; a valve consisting of two sections, one of which is supported from said chute; and a shaft connected to the other valve-section and having a depending rod in operative relation with said scale beam.

572,070. TRANSFERRING APPARATUS. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 11, 1896. Serial No. 602,422. (No model.)

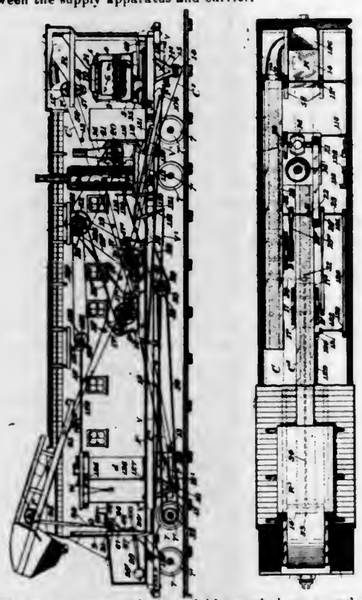
Claim.—1. The combination with a regulable supply device and a movably-supported receiving device, of a traveling conveyer between said two devices; driving mechanism for the conveyer; and means controlled by a movement of the receiving device, for automatically regulating the supply to the conveyer.

2. The combination with a regulable supply device, of a movably-supported receiving device located at one side of, and remote from, the supply device; a conveyer between said two devices; driving mechanism for said conveyer; and means actuated by a movement of the receiving device, for cutting off the supply to the conveyer.

3. The combination with two independent hoppers, one of which is movably supported; of a traveling conveyer located between and effective for transferring material in a continuous stream from one to the other hopper; and valve mechanism operable by a movement of the movable hopper, for cutting off the supply of material from the other hopper.

4. The combination with a supply device and with a traveling conveyer located with its receiving end below the supply device and with its discharging end at one side of and above said supply device, of a receiving device movably supported in juxtaposition to the discharge end of the conveyer and above the horizontal plane of the supply device; and supply-regulating mechanism connecting the supply and receiving devices and operable by a movement of the receiving device, for automatically cutting off the supply.

5. The combination with a regulable supply apparatus and with a movably-supported receiver, of a traveling conveyer located between the supply apparatus and the receiver and effective for carrying material in a continuous stream from the supply apparatus to the receiver; actuating mechanism for the carrier; and means controlled by a movement of the receiver, for automatically regulating the supply between the supply apparatus and carrier.



6. The combination with a regulable supply-hopper and with a movably-supported receiving-hopper, of an endless conveyer located between the two hoppers and effective for carrying material in a continuous stream from the supply to the receiving hopper; actuating mechanism for said conveyer; valve mechanism connecting the two hoppers and automatically operable by a movement of the receiving-hopper, for cutting off the supply from the supply-hopper.

7. The combination with a supply-hopper and a gravitative receiver, of a conveyer located between and effective for conveying material in a continuous stream from the supply-hopper to the receiver; actuating mechanism for the conveyer; a cut-off in operative connection with the supply-hopper; and means controlled by the movement of the receiver, for actuating the cut-off.

8. The combination with a supply-hopper; a cut-off shiftably supported on, and operable for closing the outlet of, the supply-hopper; a counterweighted, gravitative receiver; a traveling carrier having receiving and discharging ends in cooperative relation with the outlet of the supply-hopper and the inlet of the receiver, respectively; actuating mechanism for the carrier; and cut-off-actuating instrumentalities operatively connecting said cut-off and receiver and automatically operable on a movement of said receiver.

9. The combination with a regulable supply device and a movably-supported receiving device, of a traveling conveyer between said two devices; driving mechanism for the conveyer; and supply-regulating mechanism controlled by a movement of the receiving device, for automatically regulating the supply from the supply device and embodying hand-operable instrumentalities whereby said supply may be regulated independently of the movement of said receiving device.

10. The combination with a supply-hopper and a valve therefor and with a movably-supported receiver, of valve-actuating mechanism in operative connection with the valve and receiver and comprising two cooperative valve-actuating devices, both of which are simultaneously and automatically effective for imparting a closing movement to the valve on a movement of the receiver, and one of which is operable for imparting a closing movement to the valve independently of the movement of the receiver.

11. The combination with a supply-hopper and a valve therefor, of valve-actuating mechanism in operative connection with said valve and comprising two cooperative valve-actuators so organized and connected that one actuator will normally be operated by, and have a valve-closing movement with, the other actuator, and may also have a valve-closing movement independently of said other actuator.

12. The combination with a supply-hopper and a valve therefor, of valve-actuating mechanism in operative connection with said valve and comprising two valve-actuators shiftably connected together to have valve-closing movements in synchronism, or one independently of the other; means organized and connected to effect valve-closing movement of the two actuators in synchronism; and means organized and connected to effect a valve-closing movement of one of said actuators independently of the other.

13. The combination with a supply-hopper and a valve therefor, of valve-actuating mechanism in operative connection with said valve and comprising two cooperative valve-actuators so organized and connected that one actuator may have a valve-closing movement with, or independently of, the other actuator; automatically-operable instrumentalities for imparting a valve-closing movement to the two valve-actuators in synchronism; and hand-operable instrumentalities for imparting a valve-closing movement to one of said valve-actuators, independently.

14. The combination with a supply-hopper and a valve therefor, of valve-actuating mechanism in operative connection with said valve and comprising two valve-actuators shiftably connected together to have a unitary valve-closing movement, or one independently of the other; automatically-operable instrumentalities for imparting a valve-closing movement to the two valve-actuators in unison; hand-operable instrumentalities for imparting a valve-closing movement to one of said valve-actuators, independently; and means for normally retaining the two actuators in position for cooperative, unitary action.

15. A transferring apparatus comprising two oppositely-inclined traveling conveyers, one of which has its receiving and discharging ends located below and above the discharging and receiving ends, respectively, of the other conveyer; a regulable supply apparatus located above the receiving end of each conveyer; a receiver movably supported below the discharging ends of each conveyer; driving mechanism organized and connected to impart traveling movements to said two conveyers in relatively opposite directions; and independent means controlled by the movements of the two receivers for automatically regulating the supply to the two conveyers.

16. A transferring apparatus comprising two oppositely-inclined traveling conveyers set side by side in intersecting relation with the receiving and discharging ends of one conveyer located below and above the discharging and receiving ends, respectively, of the other conveyer; actuating mechanism for said conveyers; a regulable supply-hopper located above the receiving end of each conveyer; a receiver movably supported in operative relation with the discharge end of each conveyer; and two independently-operable mechanisms controlled by the movements of the two receivers for automatically cutting off the supply of material from the two hoppers to the two conveyers.

17. In a transferring apparatus, the combination with an automatic weighing-machine having a suitable receiver and a discharger, of a traveling supply-conveyer having a receiving end located below and a discharging end located above the receiver and discharger, respectively, of the weighing-machine; a supply apparatus in operative relation with the receiving end of the conveyer; a receiving conduit or hopper movably supported between the discharge end of the conveyer and the receiver of the weighing-machine; and valve mechanism operatively connecting the movable receiving-conduit and the supply apparatus and controlled by a movement of the conduit, for cutting off the supply to the receiving end of the conveyer; a traveling delivery-conveyer set in obliquely-transverse relation to the supply-conveyer and having a receiving end located below and in juxtaposition to the discharger of the weighing-machine and having a discharging end located above the receiving end of the supply-conveyer; and means for imparting a traveling movement to said two conveyers in relatively opposite directions.

18. The combination, in a transferring apparatus, of two independently actuated endless conveyers disposed in relatively oblique, transverse planes, side by side, and having their discharging ends located above the receiving ends of one another; a regulable supply-hopper located above the receiving ends of each conveyer and between the adjacent ends of the two conveyers; a chute or receiver movably supported in juxtaposition to the discharge end of each conveyer; valve mechanism operatively connecting the movable chute and the supply-hopper of each conveyer and operable by a movement of said chute for cutting off the supply from each supply-hopper; a weighing-machine located between and having a receiver and a discharger in juxtaposition to the movable chute of one conveyer and the receiver of the other conveyer, respectively; and actuating mechanism for imparting traveling movements to the two conveyers, whereby one of said conveyers will constitute a supply-conveyer for the weighing-machine, and whereby the other conveyer will constitute a discharge-conveyer for said weighing-machine.

19. In a transferring apparatus, the combination of an endless conveyer; driving mechanism for said conveyer; a supply-hopper located above the receiving end of said conveyer and having a valve; a receiver in operative relation with the discharge end of said conveyer and movably supported; a counterweighing device in operative connection with, and effective for normally holding, the receiver

in operative relation with the conveyer; and valve-actuating mechanism operatively connecting the valve of the supply-hopper and a shiftable member of the counterweighting device

20. In a transferring apparatus, the combination with an endless conveyer and driving instrumentalities therefor, and with a supply-hopper and a movably-supported receiver in operative relation with the receiving and discharging ends of said conveyer; of a counterweighted device in connection with the movable receiver; a valve shiftably connected with the supply-hopper; and a valve-actuating device operatively connecting the valve and the counterweighting mechanism and operable by a movement of the receiver and said counterweighting mechanism for automatically closing the valve; and hand-operable means in connection with the valve-actuating device and effective for closing the valve independent of a movement of the receiver.

21. In a transferring apparatus, a box-like transportable carrier; driving mechanism supported on said carrier for propelling the same; a supply apparatus located at one end of said carrier and having a valve; a receiver movably supported at the opposite end of the carrier; an inclined, endless conveyer supported with its receiving and discharging ends in juxtaposition to the supply apparatus and the receiver, respectively; a driving-wheel engaging the conveyer substantially midway between the receiving and discharging ends thereof; means for actuating the driving-gear, to impart a traveling movement to the conveyer; and valve mechanism connecting the supply apparatus and movable receiver and automatically operable on the movement of said receiver, for cutting off the supply to the conveyer.

22. The combination with a supply-hopper having a valve and with a conveyer supported with its receiving end below said hopper, of a receiver movably supported in juxtaposition to the discharge end of said conveyer; a counterweighting device in operative connection with, and effective for normally holding, the receiver in one position; a compound valve-actuating device comprising two shiftable valve-actuators, one of which has an elongated bearing at the inner end thereof for supporting the inner end of the other actuator, and the other actuator of which has its inner end shiftably supported in said bearing and has a stop-abutment in normal engagement with the end of said bearing, and one of which actuators is pivotally connected with the valve, and the other of which actuators is pivotally connected to a member of the counterweighting device and is operable on a movement of said counterweighting device for effecting a valve-closing movement of the other actuator; means for retaining the two valve actuators in cooperative relation; and hand-operable instrumentalities connected to effect a valve-closing movement of one actuator independently of the other.

23. The combination with a car-body, of a roof having a pivotally supported section at one end thereof; a transferring conduit or hopper carried on said roof-section; an adjusting device in operative connection with and effective for raising and lowering the conduit end of the roof section; and a counterweighting device supporting said adjusting device.

24. In a transferring car, the combination with a car-body, of a supply-hopper located at one end of the car-body near the floor-line thereof; a pivotally-supported roof-section located at the opposite end of the car body and having a transferring-conduit; counterweighted, adjusting and supporting devices in operative connection with the free end of the roof-section; a traveling conveyer carried at its discharge end on the pivotally-supported roof-section; valve mechanism operatively connecting the supply-hopper and the counterweighted adjusting device and operable by a movement of the roof-section for automatically cutting off the supply to the conveyer, and means for actuating the conveyer.

25. The combination with a car-body, of two obliquely-disposed, inclined, endless conveyers supported for traveling movement with the receiving and discharging ends of each conveyer located at opposite ends of the car and with the receiving and discharging ends of one conveyer located below and above the discharging and receiving ends, respectively, of the other conveyer; driving mechanism constructed, organized, and connected to apply power to said conveyers at a point substantially midway between the receiving and discharging ends thereof; and an automatic weighing-machine adjustably supported between the discharge end of one conveyer and the receiving end of the other conveyer.

26. The combination with a weighing-machine, of an adjustable support therefor comprising a suitable base and two independently-adjustable supporting members; and means for adjusting said two supporting members in relatively transverse directions.

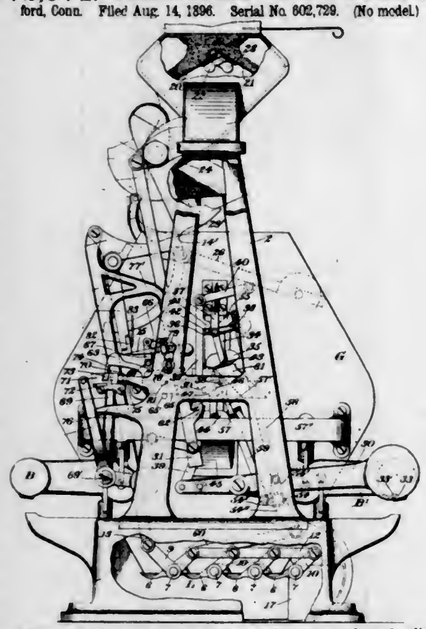
27. The combination with a weighing-machine, of an adjustable support therefor comprising a suitable base and two independently-adjustable supporting members; and means for adjusting said two supporting members in relatively transverse directions in planes concentric to a point in juxtaposition to the upper end of the weighing-machine.

28 In a transferring-car, the combination with two oppositely-inclined conveyers; of a weighing-machine located between the discharging end of one conveyer and the receiving end of the other conveyer; and supporting means for said weighing-machine, embodying instrumentalities whereby the supported end of said weighing-machine may be adjusted in two directions without changing the vertical alinement of the receiver of the said weighing-machine with relation to the discharge end of the conveyer.

29. A universally adjustable support for weighing-machines, it comprising two supporting members constructed and supported for adjustment in relatively transverse directions and in the arc of a circle; and two adjusting devices organized and connected to effect independent adjustments of the two members in relatively transverse directions.

30. The combination with a traveling conveyer and with a gravitating receiver in connection with said conveyer, of a supporting and adjusting device comprising a counterweighted lever; a slide supported on said lever for shifting movement therewith; a bracket movably supported on said slide and having two intermeshing gears, one of which is internally screw-threaded; and a lifting-rod having a screw-threaded bearing at its lower end in the internally-screw-threaded gear and connected at its upper end with the receiver; and means for actuating the gear to raise and lower said receiver.

572,071. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 14, 1896. Serial No. 602,729. (No model.)



Claim.— 1. The combination with a load-receiver, of overloading, load-reducing, and auxiliary load supply mechanisms operative during the weighing of a load.

2. The combination with weighing mechanism, of overloading, load-reducing, and auxiliary load-supplying means operative during the weighing of a load.

3. The combination with an automatic weighing mechanism, of overloading, load-reducing, and auxiliary load-supplying means alternately effective during the weighing of a load.

4. The combination with a load-receiver, of overloading means therefor; load-reducing means supported by said receiver; and auxiliary load-supplying means operative during the weighing of a load.

5. The combination with framework, of a load-receiver; overloading means for said load-receiver; load-reducing means; and auxiliary load-supply means supported by the framework and operative during the weighing of a load.

6. The combination with a bucket, of the following instrumentalities operative in the order named—viz., overloading means, loading-reducing means, auxiliary load-supplying means, and load-discharging means.

7. The combination with a bucket having a load-reducing opening therein, of the following instrumentalities operative in the order named during the weighing of a load—viz., overloading means, means for uncovering the load-reducing opening, and auxiliary load-supplying means.

8. The combination with framework and with a bucket having a load-reducing opening therein, of the following instrumentalities operative in the order named during the weighing of a load—viz., overloading means, means for uncovering the load-reducing opening, and auxiliary load-supplying means supported by the framework.

9. The combination with a bucket having a load-reducing opening, of the following instrumentalities operative in the order named during the weighing of a load—viz., overloading means, a load-reducing valve carried by the bucket, and auxiliary load-supplying means.

10. The combination with a bucket and with overloading means therefor, of load-reducing means; and means effective for resupplying material to the bucket during the weighing of a load.

11. The combination with a bucket and with overloading means therefor, of an auxiliary load-supply device; load-reducing means operative for removing material from the bucket and for delivering it to the auxiliary load-supply device; and means for effecting the withdrawal of material from the auxiliary load-supply device and returning it to the bucket.

12. The combination with framework and with a bucket, of overloading means for said bucket; an auxiliary load-supply device supported by the framework; load-reducing means operative for removing material from the bucket and delivering it to said auxiliary load-supply device; and means for withdrawing the accumulated material from said auxiliary load-supply device and returning it to the bucket.

13. The combination with a load-receiver and with overloading means therefor, of a scale beam; beam-operated load-reducing means; and auxiliary load-supplying means.

14. The combination with a load receiver, of overloading means therefor; load-reducing mechanism; and auxiliary load-supplying mechanism comprehending a valve.

15. The combination with a load-receiver, of overloading means therefor; load-reducing mechanism and auxiliary load-supplying mechanism, each of said mechanisms comprehending a valve, said valves being successively effective; and valve-actuating means.

16. The combination with a load-receiver, of overloading mechanism; load-reducing mechanism and auxiliary load-supplying mechanism, each of said mechanisms comprehending a valve, said valves being successively effective; and valve-actuating mechanism.

17. The combination with a load-receiver, of overloading means therefor; load-reducing and auxiliary load-supplying mechanisms, each comprehending a valve, said valves being alternately effective; and valve-actuating means.

18. The combination with a bucket having stream outlet and inlet openings in a wall thereof, of successively effective stream-controllers therefor; and actuating mechanism for said stream-controllers.

19. The combination with a bucket having stream outlet and inlet openings in a wall thereof, of successively-effective stream-controlling valves therefor; and valve-actuating mechanism.

20. The combination with a bucket having stream outlet and inlet openings in a wall thereof, of overloading means for said bucket; successively-effective valves controlling said openings; and valve-actuating mechanism.

21. The combination with a bucket having outlet and inlet openings in a wall thereof, of stream-controlling devices for said openings; and load-supplying means intermediate said openings.

22. The combination with a bucket having outlet and inlet openings in a wall thereof, of devices for controlling said openings; overloading means for the bucket; and an auxiliary load-supply device intermediate said openings.

23. The combination with a bucket having load-reducing and auxiliary load receiving openings, of valves for controlling the passage of material from and to said openings, said bucket being also provided with an opening positioned to receive the stream of material from the load-reducing valve.

24. The combination with a bucket having load-reducing and auxiliary load-receiving openings, of valves for controlling the supply of material from and to said openings; and a spout positioned to receive a stream of material from the load-reducing valve.

25. The combination with a bucket having load-receiving, load-reducing, and auxiliary load-receiving openings; of valves for controlling the passage of the material to said load-receiving openings and from said load-reducing opening.

26. The combination with a weighing mechanism, of a load-receiver; a load-supply device; and automatically-operated means for removing material from the load-receiver and delivering it to the load-supply device and for also restoring a portion of such material to the load-receiver from the load-supply device during the weighing of a load.

27. The combination with weighing mechanism, of a load-receiver; overloading means therefor; an auxiliary load-supply device; and automatically-operated means for removing material from the load receiver and delivering it to the auxiliary load-supply device and for also restoring a portion of such material to the load-receiver from the auxiliary load-supply device during the weighing of a load.

28. The combination with weighing mechanism, of a load-receiver; a load-supply device; automatically-operated means for removing material from the load-receiver and delivering it to the load-supply device and for also restoring a portion of such material to the load-receiver from the load-supply device during the weighing of a load; and instrumentalities for emptying said load-supply device at a point subsequent to the completion of the true load.

29. The combination with a bucket, of an auxiliary load-supply device; automatically-operative means for removing material from the bucket and delivering it to said supply device and for also restoring a portion of said material to the bucket from the load-supply device; and successively-operative means for effecting the discharge of the bucket and also that of the load-supply device.

30. The combination with a bucket having a load-reducing spout and a spout communicating with the bucket and receiving material from said load-reducing spout, of an auxiliary load-supply device; a valve operative for delivering a portion of the material from the bucket to said load-supply device during the weighing of a load and for also delivering the material within said load-reducing spout to the spout communicating with the bucket on the completion of the load; and valve-actuating means.

31. The combination with a bucket having a load-reducing spout and a spout communicating with the bucket and receiving material from said load-reducing spout, of an auxiliary load-receiver; a valve controlling said load-reducing spout; and valve-actuating mechanism.

32. The combination with a bucket having a load-reducing spout, an auxiliary load-receiving spout, and a spout communicating with the bucket and receiving material from said load-reducing spout; of an auxiliary load-supply device located between the load-reducing and load-receiving spouts; and means for delivering a portion of material from the bucket to the load-supply device and from the latter to the load-receiving spout during the weighing of a load and for also delivering the material within the load-reducing spout to the spout communicating with the bucket.

33. The combination with a bucket, of a chute having an overload-controlling valve; load-reducing means; auxiliary load-supply means comprehending a valve; and an actuator for said last-mentioned valve operative with the overload-controlling valve.

34. The combination with a bucket, of a chute having an overload-controlling valve; load-reducing means; an auxiliary load-supply device comprehending a valve; and a rod provided with an actuator for said last-mentioned valve and connected to said overload-controlling valve.

35. The combination with a bucket having a load-reducing opening controlled by a valve; an auxiliary load-supply device located to receive a portion of material from said valve and comprehending a valve; valve-actuating mechanism; and means for throwing the valve for the auxiliary supply device ont of action.

36. The combination with a bucket, of a hopper provided with a valve for delivering material therefrom to said bucket; an actuator for said valve; a closer for the bucket; and means operative with said closer for throwing said valve ont of action relatively to its actuator.

37. The combination with a bucket, of a hopper provided with a valve sleeved to a support; a projection disposed in the path of movement of an actuator for said valve and normally coupled thereto; and means for uncoupling said projection from the valve.

38. The combination with a bucket having a closer, of a hopper provided with a valve sleeved to a support; a projection disposed in the path of movement of an actuator for said valve and normally coupled thereto; and means operative with the closer for automatically uncoupling said projection from the valve.

39. The combination with a bucket having a load-reducing spout and a load-supply spout, of an auxiliary load-supply device intermediate said spouts; a pair of valves, one for the load reducing spout and the other for the auxiliary load-supply device; and a bucket-supporting scale-beam having a rod connected thereto, said rod carrying a pair of actuators, one for each valve.

40. The combination with a bucket having a load-reducing spout and a load-supply spout, of an auxiliary load-supply device intermediate said spouts; a pair of valves, one for the load-reducing spout and the other for the auxiliary load-supply device; and a bucket-supporting scale beam having a rod connected thereto, said rod carrying a pair of actuators, one for each valve, one of said actuators being a by-pass actuator.

41. The combination with a bucket, of a hopper having a valve sleeved to a support, the hub of said valve constituting one member of

a clutch; a complemental clutch member on said support normally coupled to its mate and provided with a projection disposed in the path of movement of an actuator for the valve; and means for uncoupling said clutch members.

42. The combination with a bucket having a closer, of a hopper; a valve for said hopper, said valve being sleeved on a support and having its hub constituting one member of a clutch; a sliding clutch member on said support and normally coupled to its mate and having also a projection disposed in the path of movement of an actuator for said valve; and a lever for uncoupling said clutch members, said lever being operatively connected with the closer.

43. The combination with a bucket having a closer, of a hopper; a valve for said hopper, said valve being sleeved to a support and having its hub constituting one member of a clutch; a sliding clutch member on said support normally coupled to its mate and provided with a projection disposed in the path of movement of an actuator for said valve; and a lever for controlling said sliding clutch member, said lever being operatively connected with the closer.

44. The combination with a bucket having a closer, of a hopper; a valve for said hopper sleeved on a support and having its hub constituting one member of a clutch; a sliding clutch member normally coupled to its mate and provided with a projection disposed in the path of movement of an actuator for the valve; a lever for uncoupling said clutch; a compound lever; and operative connections between said levers and the bucket-closer.

45. The combination with a bucket having load-reducing and auxiliary load-supplying openings, each controlled by a valve; of a closer for the bucket; and means operative with the closer for simultaneously opening one of said valves and throwing the other out of action.

46. The combination with a load-receiver, of a load-discharge controller; means for causing the descent of said load-receiver to a point below the poising-line; and instrumentalities for blocking the action of said load-discharge controller as the bucket passes below the poising-line.

47. The combination with a load-receiver and with overloading means for causing the descent of the load-receiver to a point below the poising-line, of a load-discharge controller; and instrumentalities for blocking the action of said load-discharge controller as the bucket passes below the poising-line.

48. The combination with a load-receiver and with overloading and load reducing means therefor for successively causing the descent and ascent of the load-receiver below and above the poising-line, of a load-discharge controller; and instrumentalities for blocking the action of said load-discharge controller as the bucket passes below and above the poising line.

49. The combination with a load-receiver, of a load-discharge controller; means for causing the descent of said load-receiver to a point below the poising line; instrumentalities for blocking the action of said load-discharge controller as the bucket passes below the poising-line; and automatically-operated means for releasing said load-discharge controller at a predetermined point.

50. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of overloading means for the bucket, whereby it is caused to descend to a point below the poising-line; and instrumentalities for blocking the action of said latch as the bucket passes below the poising-line.

51. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a latch-tripper; overloading means for the bucket, whereby it is caused to descend to a point below the poising-line; and instrumentalities for blocking the action of said latch-tripper as the bucket passes below the poising-line.

52. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a self-active latch-tripper.

53. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a self-active latch-tripper; means for causing the descent of the bucket to a point below the poising line; and instrumentalities for blocking the action of the latch-tripper on said bucket movement.

54. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a counterweighted latch-tripper; and means for holding said latch-tripper against movement during the weighing of a load.

55. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a yieldingly-mounted, self-active latch-tripper.

56. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a latch-tripper provided with a tooth; a pair of reciprocatory, recessed plates; and means for sliding one of said plates relatively to the other, whereby the recesses may be caused to register, and the tooth on said latch-tripper may be thrust into said registered recesses.

57. The combination with a bucket embodying a shiftable load-discharger normally held against movement by means comprehending a latch, and with a supporting scale-beam for said bucket; of a pair of recessed plates connected to and reciprocative by the beam; a toothed latch-tripper; and means for sliding one of said plates relatively to the other, whereby the two recesses will be caused to register, and the tooth of the latch-tripper will be thrust into said registered recesses.

58. The combination with framework having a projection, of a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch; a latch-tripper provided with a tooth; a scale-beam; a pair of plates connected to said scale-beam and each having a recess, one of said plates having a sliding movement relatively to the other; and a lever for sliding said plate, whereby the two recesses in said plates will be caused to register and into which registered recesses the tooth of the latch-tripper will be thrust.

59. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a bucket-supporting scale-beam provided with a post which carries two plates, one of which has a sliding movement relatively to the other, each of said plates having a recess which registers at a predetermined point in the operation of the machine; means for sliding one of said plates relatively to the other, to thereby cause the recesses to register; and a latch-tripper having a tooth adapted to be thrust into the registered recesses.

60. The combination with a bucket embodying a shiftable load-discharge member normally held against movement by means comprehending a latch, of a latch-tripper mounted on a pivotally-supported lever and operatively connected with the latch, said latch-tripper having a tooth; a pair of plates provided with recesses; and means for sliding one of said plates relatively to the other.

61. The combination with a bucket having a closer normally held against movement by means comprehending a latch, of a latch-tripper having a tooth; a pair of recessed plates; means for reciprocating said plates, whereby the recesses thereof may be caused to register, into which registered recesses the tooth of the latch-tripper may be thrust; and means for returning said latch to its normal position.

62. The combination with a bucket having a closer, of means comprehending a rod and a latch for holding said closer against opening movement, said rod being reciprocatory and provided with an arm; a latch-tripper provided with a tooth; a pair of recessed plates; and means for reciprocating said plates, whereby the recesses will be caused to register, into which registered recesses the tooth of the latch tripper may be thrust, said latch-tripper being so situated as to be returned to its normal position by the arm on said rod on one of the strokes thereof.

63. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against movement; a latch-tripper having a tooth and mounted on a lever operatively connected to the latch; and a pair of recessed, reciprocatory plates; and means for reciprocating said plates, whereby the recesses will be caused to register, into which registered recesses the tooth of the latch-tripper may be thrust.

64. The combination with a bucket having a closer, of closer-holding means comprehending two engaging detents, one of which is provided with a by-pass.

65. The combination with a bucket having a closer, of a rocker operatively connected thereto and having a rocker-arm provided with a by-pass; and a latch for engaging said rocker-arm.

66. The combination with a bucket having a closer, of a rocker connected to said closer and having an arm provided with a by-pass; a latch for engaging said rocker arm; and means for normally blocking the action of said latch.

67. The combination with a bucket having a closer, of a rocker operatively connected thereto; a latch for engaging said rocker, said latch having an extension; a latch-tripper mounted on a counterweighted lever connected by links to the extension of the latch; and means for normally limiting the action of said latch-tripper.

68. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against opening movement; a lever constituting a latch-tripper; and a rock-shaft having a crank adapted to bear against one of the arms of said lever; and means for operating and holding said shaft against movement.

69. The combination with a chute having an inclined wall, a portion of which is deflected above the normal plane of said wall, whereby such deflected portion is adapted to direct a stream of material away from the discharge edge of a valve for said chute; of a valve for said chute; and actuating mechanism for said valve.

70. The combination with a chute having therein a pair of oppositely-inclined, yieldingly-mounted baffle-plates; of a valve for said chute; and valve-actuating mechanism.

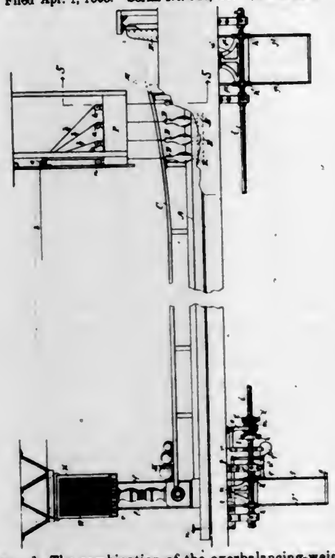
71. The combination with a chute having a pair of oppositely-inclined, counterweighted baffle-plates; of a valve for said chute; and valve-actuating mechanism.

72. The combination with a bucket, of a closer therefor consisting of a series of overlapping plates; means for operatively connecting and maintaining said plates in the shut positions thereof; closer-releasing mechanism; and a counterweight connected to one of said plates for shutting the series.

73. The combination with a bucket, of a closer therefor consisting of a series of operatively-connected, overlapping, curved plates mounted on shafts having rock-arms; a bar uniting the several rock-arms; a rocker mounted on the bucket and operatively connected to the closer; and a latch for engaging said rocker.

572,072. WITHDRAWN.

572,073. BOWLING-ALLEY. FREDERICK A. PRATT, Pawtucket, R. I. Filed Apr. 1, 1895. Serial No. 544,055. (No model.)

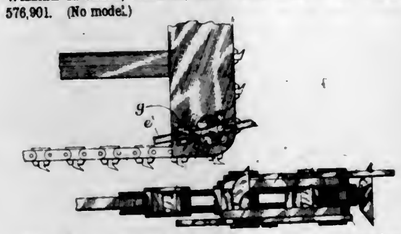


Claim.—1. The combination of the overbalancing-weights, with the pins, the connecting chains or cords, and the magnets, substantially as described.

2. The combination of the magnets, and the pins, with means acting to overbalance and raise the pins, and means for lowering the pins, substantially as described.

3. The combination of the overbalancing-weights, the pins, the connecting cords or chains, the magnets, and the table for raising the weights, with the laterally-inclined bed of the pit, the inclined table for raising the balls to the run, and means for causing the simultaneous elevation of the weights and balls, upon their respective tables, substantially as described.

572,074. HOLDING MECHANISM FOR MINING-MACHINES. WILLIAM H. SLADE, Columbus, Ohio. Filed Jan. 25, 1896. Serial No. 576,901. (No model.)

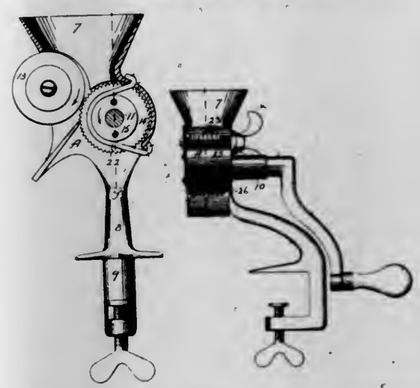


Claim.—1. In a holding mechanism for mining-machines the combination with the traveling frame, a chain-cutter-carrying wheel journaled therein and holding-bars arranged on said frame respectively above and below the front end plate of the machine, and adapted to have imparted thereto alternate reciprocating motions, entirely within the plane of said endless chain cutter, substantially as and for the purpose specified.

2. In a holding mechanism for mining-machines the combination with the traveling frame and a cutter-chain carrying wheel journaled therein and pins projecting eccentrically from the hubs of said wheel, of holding-bars having sliding bearings on said traveling frame and link-shaped intersections in said holding-bars adapted to receive said pins, substantially as and for the purpose specified.

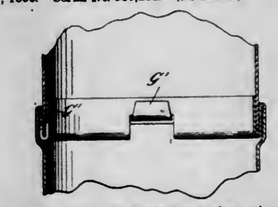
3. In a holding mechanism for mining-machines the combination with a traveling frame and a cutter-chain-carrying wheel journaled therein, of holding-bars having sliding bearings on said traveling frame and an eccentric connection with said wheel-hubs, said holding-bars being arranged in positions slightly inclined toward the direction of the cut to be made substantially as and for the purpose specified.

572,075. RAISIN-SEEDER. ALFRED J. SMITH, New Britain, Conn. Filed May 7, 1896. Serial No. 590,574. (No model.)



Claim.—A machine for seeding raisins having in combination a grooved and toothed main roller, the case or frame, and the skeleton clearers extending partly around said roller and provided with hooks at their ends for engaging said case and by means of which hooks they are attachably and detachably secured to said case, substantially as described and for the purpose specified.

572,076. STOVEPIPE. CHARLES A. SMITH, Minerva, Ohio. Filed Apr. 27, 1896. Serial No. 589,211. (No model.)

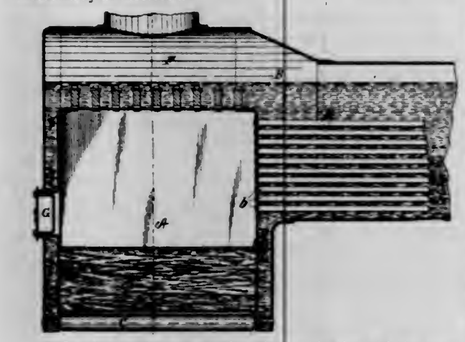


Claim.—A pipe-joint consisting of two edges adapted to be united, one edge being slitted to form tongues, the other edge being provided with a double fold forming a groove and provided with perforations arranged at a distance from the bottom of the groove substantially equal to the length of the tongues, the edge with the tongues being adapted to rest against the bottom of the groove, and the tongues adapted to be passed through the perforations and be bent back upon themselves, substantially as set forth.

572,077. FIRE-BOX FOR STEAM-BOILERS. JUD SMITH, Sayre, Pa. Filed Mar. 14, 1896. Renewed Oct. 28, 1896. Serial No. 610,360. (No model.)

Claim.—1. In a fire box for a steam-boiler, the combination with the front and rear water-legs of the boiler, of water passages or flues connecting both and dividing the fire-space above the grate into two or more compartments and a grate below said flues and adjacent thereto, substantially as and for the purpose described.

2. In a fire-box for steam-boilers, one or more narrow water passages or flues extending through and dividing the fuel-space into separated compartments, and connecting the water-legs of the boiler through the fire and a grate below said flues and adjacent thereto, substantially as described.



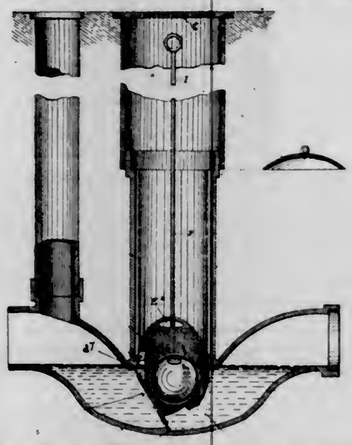
3. In a fire box for steam-boilers, the combination with the water-legs of the boiler surrounding the fire-box, of water passages or flues extending vertically and horizontally through the fire-space and communicating with said water-legs and a grate below said flues and adjacent thereto, substantially as described.

4. The combination with a fire-box for steam-boilers, having water-legs forming the front and rear walls of the fire-box, of water flues or passages connecting and communicating with the water-legs and extending vertically and horizontally through the fire from front to rear, whereby the sides of said water-flues are in direct contact with the fire and a grate below said flues and adjacent thereto, substantially as described.

5. In a fire-box for steam-boilers having water-legs forming the front and rear walls, wedge-shaped water passages or flues extending vertically and horizontally through the fire and connecting and communicating with the water-legs, whereby the body of the fire is in direct contact with the sides of the water-flues and separate fire-compartments are afforded between the sides of the water-flues, which compartments gradually increase in width from the top downward toward the grate and a grate below said flues and adjacent thereto, substantially as and for the purpose described.

6. In a fire-box for steam-boilers, the combination with the boiler having downwardly-extending water-legs forming the front and rear walls of the fire-box, of one or more wedge-shaped water passages or flues extending horizontally and vertically through the fuel-space and communicating at each end with the water-legs, their narrow and lowermost edge at or near the plane of the grate-bars, and a grate below said flues and adjacent thereto, substantially as and for the purpose described.

572,078. SEWER-TRAP AND FLUSHING-GATE. JOHN T. TITUS, San Francisco, Cal. Filed Feb. 6, 1896. Serial No. 578,221. (No model.)



Claim.—1. The improved trap and flushing-gate for sew connections, consisting of the trap-body having the curved valve-chamber; the upright pipe extending perpendicularly upward from the top of the valve-chamber to the surface of the ground; the valve-seat in the chamber beneath; and the valve fitted to said seat and comprising the oval-shaped valve-disk, the hollow ball on the back of said disk having an aperture closed by a cap, the perpendicular flange extending upward from the back of the valve-disk and having guide-rollers on the edges thereof; and the perpendicular grooves in the upright extension over the valve chamber, one of said grooves being closed at the bottom to form a bearing for one of the guide-rollers, combined for operation as hereinbefore described.

2. The combination, with the trap-body composed of the horizontally-set valve-chamber having an inclined valve-seat and the vertically-standing pipe extending upward from the top of said chamber and provided with vertical grooves on the inside located diametrically opposite to each other, one of said grooves being directly over the upper part of the valve-seat; of the combined valve and flushing-gate consisting of the valve-disk, the centrally-placed perpendicular flange on the back of such disk, the hollow ball or receptacle within said flange having an opening provided with a means for closing it, the guide-rollers on the edges of said flange adapted to fit the grooves in the standing extension of the trap-body, and the rod attached to said flange as a means of controlling and working the valve, constructed for operation as set forth.

572,079. MUCILAGE-BOTTLE. STEPHEN O. TRESCOTT, Pittsburg, Kans. Filed Jan. 9, 1896. Serial No. 574,823. (No model.)



Claim.—1. A mucilage bottle or receptacle, comprising a compressible elastic hollow body, and a tip provided with a bore communicating with the interior of the body and adapted to serve as an outlet for the mucilage when the receptacle is compressed, substantially as described.

2. A mucilage bottle or receptacle, comprising a hollow body and a flexible tip secured to said body and made with walls decreasing in thickness gradually toward its free end, forming an end portion adapted to serve as a brush, said tip having a channel or outlet communicating with the interior of the body, substantially as described.

3. A mucilage bottle or receptacle, comprising a hollow body and a flexible tip secured thereto and made with an outlet communicating with the interior of the body, said outlet being approximately cylindrical at its inner end and termiuating at its outer end in an elongated discharge-slot, and the walls of the tip increasing in thickness gradually from the discharge end thereof, so as to afford flexibility for the said outlet yet preventing such flection thereof as will bring the walls of the outlet into contact with each other, substantially as described.

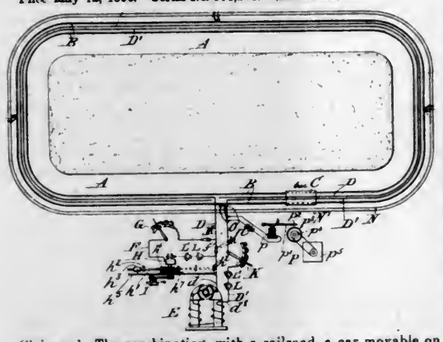
4. A mucilage bottle or receptacle, comprising a compressible elastic hollow body and a tip made with an outlet communicating with the interior of the body and made approximately cylindrical at its inner end, said outlet gradually increasing in length while decreasing in width to form a discharge slit, substantially as described.

5. A mucilage bottle or receptacle, comprising a compressible elastic hollow body, and a tip made with walls decreasing in thickness gradually toward its free end, forming an end portion adapted to serve as a brush, said tip having a permanently-open outlet communicating with the interior of the body and made approximately cylindrical at its inner end, the outlet gradually increasing in width to form an elongated discharge-slit, substantially as described.

6. A mucilage bottle or receptacle, comprising a compressible elastic hollow body, a tip made with a permanently-open outlet communicating with the interior of the body, the walls of the said outlet increasing in thickness gradually from the discharge end thereof toward the body so as to afford flexibility for the said outlet, while preventing such flection thereof as will bring the walls of the outlet into contact with each other, substantially as described.

7. A mucilage bottle or receptacle, comprising a compressible elastic hollow body, and a tip made with walls increasing in thickness gradually from its end toward the body, said tip having a permanently-open outlet communicating with the interior of the body and made approximately cylindrical at its inner end, the outlet gradually increasing in width to form an elongated discharge-slit, substantially as described.

572,080. SPEEDING DEVICE FOR RACE-TRACKS. HENRY G. WILSHIRE, Los Angeles, Cal., and MITFORD C. MASSIE, Washington, D. C. Filed May 12, 1896. Serial No. 591,271. (No model.)



Claim.—1. The combination, with a railroad, a car movable on the railroad, a motor arranged to propel the car, and a main circuit in which said motor is included, of a branch circuit, means for energizing both circuits, an indicator-motor in the branch circuit, and indicating mechanism operated by the motor in the branch circuit, substantially as described.

2. The combination, with a railroad, a car movable along the railroad, a motor arranged to propel the car, and a main circuit in which the said motor is included, of a shunt-circuit from the main circuit, a motor in the shunt-circuit, an indicating mechanism operated by the motor in the shunt-circuit, and means for energizing the circuits.

3. The combination, with a railroad, a car movable along the railroad, a motor on the car and arranged to propel the same, a pair of conductors, a source of electricity connected to one end of one conductor and to the opposite end of the other conductor, and means for carrying the current from the conductors to the car-motor, of a branch circuit from the main circuit, an indicator-motor located therein, and indicating mechanism operated by the indicator motor.

4. In a speeding apparatus for race-tracks, the combination, with a railroad in proximity to the race-track, a car movable along the railroad, a motor on the car and arranged to propel the same, a main circuit in which the car motor is included, and means for energizing said main circuit, of a shunt-circuit from the main circuit, an indicator-motor in the shunt circuit, means for adjusting the resistance of the shunt-circuit, and indicating mechanism operated by the indicator-motor.

5. In a speeding apparatus for race-tracks, the combination, with a railroad in proximity to the race-track, a car movable along the railroad, a motor mounted on the car and arranged to propel the same, a pair of conductors, means for establishing electrical communication between the motor and the conductors, a rheostat and a speed-indicator on the car, a main circuit in which the conductors and car-motor are included, and means for energizing the main circuit, of a shunt-circuit from the main circuit, a rheostat at a fixed point in the main circuit, resistance coils in the shunt-circuit, an indicator-motor included in the shunt-circuit, gearing driven by the indicator-motor, a position-indicator operated by the gearing, and a scale near which the position-indicator moves.

6. In a speeding apparatus for race-tracks, the combination, with a railroad in proximity to the race-track, a car movable along the railroad, a motor on the car and arranged to propel the same, and a main circuit in which said car-motor is included, of a shunt-circuit from the main circuit, a motor in the shunt-circuit, speed-indicating and position-indicating devices actuated by the motor in the shunt-circuit and means for energizing the circuits.

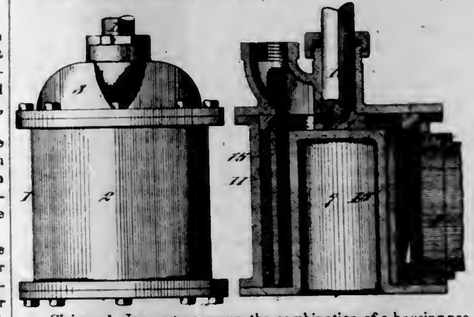
572,081. AUTOMATIC TEMPERATURE-ANNUNCIATOR. JOHN A. YOUNG, Indianapolis, Ind. Filed May 11, 1896. Serial No. 591,036. (No model.)



Claim.—1. The herein-described mechanism for announcing limits of maximum and minimum degrees of temperature in a room, comprising in combination a base; a thermometer attached thereto; a sensitive bar mounted at one end to a metallic post secured to said base and having its opposite end in proximity to another metallic post secured to said base, said post being provided with adjusting screw-nuts which may be moved into proximity to the end of said bar, the said bar being composed of two strips having unequal ratios of expansion secured together, suitable binding-posts secured to said base and connected by wires in an electrical circuit so that said bar forms part of the circuit when its free end is in contact with said adjusting nuts, substantially as and for the purpose shown and described.

2. In an apparatus of the kind described, the combination of the base, the thermometer mounted thereon, the pair of supporting-posts and pair of binding-posts mounted on the front of said base at one end thereof, the post provided with adjusting-nuts mounted on the front of said base at the opposite end thereof, the thermostatic bar secured at one end to the said pair of supporting-posts, the opposite end of said bar having the fork and adapted to form a contact with said adjusting-nuts, with a suitable electrical circuit, substantially as shown and described for the purposes specified.

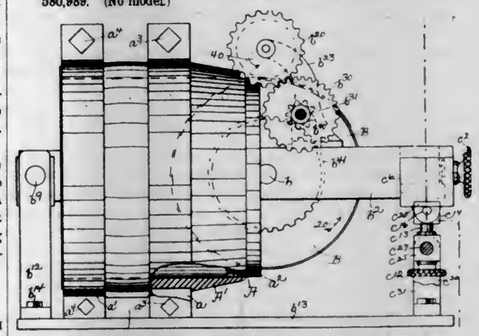
572,082. ROTARY PUMP. JAMES M. ALLEN, St. Louis, Mo., assignor of one-half to Armand J. Welcker, same place. Filed Feb. 8, 1896. Serial No. 578,529. (No model.)



Claim.—1. In a rotary pump, the combination of a housing provided with an inlet and an outlet, a cylindrical body eccentrically located in said housing, a traveling cylinder, and piston-wings carried by said traveling cylinder, substantially as described.

2. In a rotary pump, the combination of a housing provided with an inlet and an outlet, a cylindrical body eccentrically located in said housing, a traveling cylinder provided with ports, piston-wings hinged to said traveling cylinder, and springs arranged to press against said wings, substantially as and for the purpose set forth.

572,083. SKIVING-MACHINE. MILTON CHASE and MATTHEW H. FOSTER, Haverhill, Mass., assignors to Ambrose S. Vose, Boston, and Charles E. Kennard, Longwood, Mass. Filed Feb. 27, 1896. Serial No. 580,989. (No model.)



Claim.—1. In a skiving-machine, the combination of the following instrumentalities, viz: a rotatable circular knife or cutter, a support for the material to be skived movable bodily toward, beyond and within the cutting edge of the said circular knife, a supporting-frame for the counter-support adjustable axially into and out of the said circular knife, and means to hold the material on the support while it is acted upon by the rotatable circular knife, substantially as described.

2. In a skiving-machine, the combination of the following instrumentalities, viz: a rotatable circular knife or cutter, a rotatable matrix or support for the material to be skived having its periphery movable toward and within the cutting edge of the said circular knife, a supporting-frame adjustable within the said knife axially and

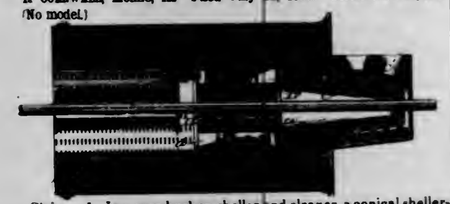
radially, and in which the said matrix is mounted, and means to hold the material on its matrix or support, substantially as described.

3. In a leather-skiving machine, the combination of the following instrumentalities, viz: a rotatable circular or hoop knife or cutter, a matrix or support for the material movable bodily axially and radially within the rotatable circular or hoop knife, a support for said matrix extended into said circular knife and adjustable axially and radially therein to effect the axial and radial movements of the matrix within the said circular knife, and means to hold the material on its support while it is being acted upon by the circular knife, substantially as described.

4. In a counter-skiving machine, the combination of the following instrumentalities, viz: a rotatable circular or hoop knife or cutter, a support for the counters movable bodily axially within the rotatable circular or hoop knife and provided with a transversely-curved surface of substantially the same curvature as the circular knife, having a portion thereof intermediate of the sides of the support removed to form a matrix of greater depth at its center than at its sides, whereby the counter may be skived or cut on both sides on the passage of the knife in one direction over the said support, and means to hold the counters in the matrix of the said support, substantially as described.

5. In a skiving-machine, the combination of the following instrumentalities, viz: a rotatable circular knife or cutter, a support movable bodily within and across the path of movement of the said knife and beyond its cutting edge and provided with a transversely-curved surface of substantially the same curvature as the circular knife and having a portion thereof intermediate of its sides removed to form a matrix of greater depth at its center than at its sides, and means to hold the counter on its matrix while it is being acted upon by said knife, and a supporting-frame for the said matrix-support adjustable axially and radially within the said circular knife, substantially as described.

572,084. COMBINED CORN SHELLER AND CLEANER. JOHN R. CORNWALL, Moline, Ill. Filed July 30, 1896. Serial No. 601,058. (No model.)



Claim.—1. In a corn husker, sheller and cleaner, a conical sheller-casing having a parallel extension at its large end extending beyond the shelling-cone forming a chamber, and a sleeve attached to said chamber, in combination with a rotatable shaft extending axially through the shell, chamber and sleeve, having a conical shelling-cone and beater-drum mounted thereon; whereby the husks passing through the sheller are prevented from wrapping around said shaft and clogging the sheller, substantially as and for the purpose described.

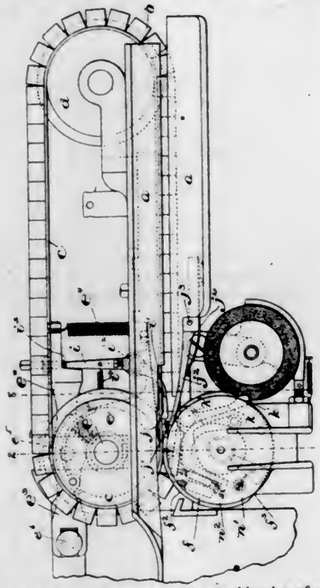
2. In a corn-sheller a conical sheller-casing having a parallel extension at its large end extending beyond the shelling-cone forming a chamber; in combination with the conical shelling-cone and sectional beater-drum revolving therein, substantially as and for the purpose described.

3. The combination of the rotary screen, a fixed shell therein having a conical end extending through one end of the screen, and provided with a hopper exterior to the screen; and with internal teeth substantially as described; with the rotatable shaft extending axially through the shell, a shelling-cone fixed on said shaft within the conical portion of the shell having spiral teeth beneath the hopper, and also toothed on its interior portion; and the beater on the shaft within the inner end of the shell, all substantially as and for the purpose described.

4. The combination of the casing, the rotatable screen; the rotatable shaft passing axially therethrough; the fixed shell having its outer end conical and projecting through the end of the screen and provided with a hopper; said shell having rows of internally-projecting teeth, and rows of perforations intermediate the rows of teeth substantially as described; with the shelling-cone mounted on the shaft, within the conical portion of the casing, having spiral teeth C, and husking-teeth *c*; and the beater sections mounted on the shaft within the cylindrical portion of the shell; all for the purpose and substantially as described.

572,085. MAIL-MARKING MACHINE. JOHN S. HANSEN, Boston, Mass., assignor to the American Postal Machines Company, same place. Filed Nov. 25, 1895. Serial No. 569,962. (No model.)

Claim.—1. In a mail-marking machine, the combination with a marking and an impression cylinder arranged in juxtaposition and one journaled in fixed bearings and the other in a support movable toward and from the one in fixed bearings and yieldingly pressed toward the same, and a letter-displaced detent engaging said movable support to separate the cylinders; of a lever pivoted to a fixed support and engaging said movable support, and means associated with the cylinder in fixed bearings and coacting with said lever and with said detent to effect outward movement of the opposed cylinder.



2. In a mail-marking machine the combination of an impression and a marking cylinder one being journaled in stationary bearings and positively rotated; an elongated carrier with bearings intermediate of its ends for the other cylinder; a rest for one end of said elongated carrier constituting a fulcrum therefor; a lever coupled with the opposite end of said carrier and pivoted to a fixed support; means associated with the cylinder in stationary bearings for vibrating said lever; and a letter-displaced detent engaging the carrier at a point between its cylinder bearing and the end coupled with the lever and constituting a fulcrum for the carrier to rock upon in the absence of matter to be marked, substantially as described.

3. In a mail-marking machine, the combination of an impression and a marking cylinder one being journaled in stationary bearings and positively rotated; an elongated carrier with bearings intermediate of its ends for the other cylinder; a rest for one end of said elongated carrier constituting a fulcrum therefor; an adjusting-screw in that end of the carrier and bearing against the rest; a lever coupled with the opposite end of the said carrier and pivoted to a fixed support; means associated with the cylinder in stationary bearings for vibrating said lever; and a letter-displaced detent engaging the carrier at a point between its cylinder-bearing and the end coupled with the lever and constituting a fulcrum for the carrier to rock upon in the absence of matter to be marked, substantially as described.

4. In a mail-marking machine, the combination of a letter-carrying band, a printing-cylinder journaled in fixed bearings at one side of the band, an impression cylinder at the opposite side of the band, said cylinder having a band-supporting surface which is adjustable relatively to the printing cylinder, so that the band may be either operatively or inoperatively supported by the impression-cylinder, a detent which normally holds the said band-supporting surface in its inoperative position, said detent having an arm or extension formed to bear on the back of a letter, a letter-clamping lever and an auxiliary lever mounted on the printing-cylinder, said clamping-lever being capable of a limited independent movement, a stationary cam cooperating with the auxiliary lever, and springs controlling said levers, as set forth.

5. In a mail marking machine, a printing-cylinder having a die-receiving socket and a die-ejecting slide movable transversely in said socket and recessed to receive the inner end of the die with one end of said recess inclined whereby withdrawal of the slide ejects the die, substantially as described.

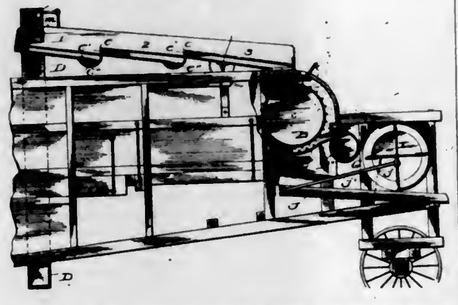
6. In a mail-marking machine, a printing-cylinder having a die-receiving socket and a die-ejecting slide movable transversely in said socket and recessed to receive the inner end of the die with one end of said recess inclined whereby withdrawal of the slide ejects the die, and a spring connecting the slide with the cylinder and resisting withdrawal of the former.

7. In a mail-marking machine, a printing-cylinder having a die-receiving socket, a die-ejecting slide movable transversely in said socket, and a die-locking pin connected with said slide.

8. In a mail-marking machine, the combination with the hopper, the band, and printing mechanism at one end of the hopper, of a series of horizontally-arranged rolls adapted to support and convey the letters in the hopper, said rolls being in rolling contact with the band.

9. In a mail marking machine, the combination with the hopper, the band, and printing mechanism at one end of the hopper, of a series of horizontally-arranged rolls adapted to support the letters in the hopper, and means for pressing said rolls yieldingly against the band.

572,086. RECLEANER FOR THRESHING-MACHINES. JOHN P. MONNETT, Rensselaer, Ind. Filed Jan. 25, 1894. Renewed Apr. 29, 1896. Serial No. 589,605. (No model.)



Claim.—1. The combination with a primary threshing-machine, and the cylinder thereof, of a separator arranged longitudinally upon the top of the primary machine and carrying screens of different sizes, an elevator between said primary machine and the separator, a secondary shoe situated in advance of said cylinder, and in line with the elevated separator and the primary machine, a distributing mechanism interposed between said separator and the secondary shoe, and a blast fan arranged in advance of the secondary shoe to deliver its blast upon said shoe toward the cylinder of the primary machine, substantially as and for the purposes described.

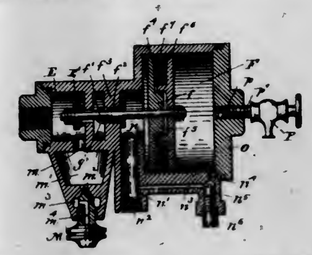
2. The combination with a primary machine, and the cylinder thereof, of an inclined separator mounted upon the top of the primary machine and carrying screens of different sizes and discharge-spouts from said screens, an elevator between said separator and the primary machine, a secondary shoe situated below the separator and in advance of the cylinder, a transverse distributing-trough and conveyer between the separator and secondary shoe, a chute which receives from the lower end of the separator and delivers to said transverse trough, and a blast-fan for the secondary shoe, substantially as and for the purposes described.

3. The combination with a primary threshing-machine and the cylinder thereof, of an inclined shaking-separator arranged longitudinally upon the top of the primary machine, and provided with a series of screens and with discharge-spouts for the screens, and an endless elevator which travels in the grain-trough of the primary threshing-machine and delivers the grain to the upper end of the inclined separator, a distributing mechanism above and in advance of the cylinder, a vertical spout on one side of the primary machine and having its upper end receiving from the lower screen of the separator and carried inward to discharge to the distributing-trough, a secondary shoe situated in advance of the cylinder and below the distributing trough, and a blast-fan situated in front of the secondary shoe to deliver its blast upon the shoe and distributing mechanism, substantially as described.

4. The combination of a separator having the screens and the discharge-spouts which receive the different grades of grain separated by said screens, an inclined chute arranged below the final screen of the separator and discharging to a hopper, a concave perforated trough below said hopper, a screw conveyer operating within said trough, a shaking-shoe below the trough, and a blast-fan in advance of the trough and above the shoe, for the purposes described, substantially as set forth.

5. The combination with a threshing-machine, and an elevator, of an inclined separator arranged longitudinally of the machine to receive from the elevator and to discharge into the cylinder, and provided with a series of screens and with independent discharge means, a perforated trough and conveyer contained within the casing of said machine in front of the cylinder, an inclined chute arranged to receive from the final screen of the separator and having a lateral delivery to the trough and conveyer, a shaking-shoe below said trough and arranged at the front of the machine to deliver to a sacking or delivery mechanism, and a blast-fan in front of the trough and above said shoe, substantially as described.

572,087. AUTOMATIC VALVE FOR TRACK-SANDING APPARATUS. MARK E. BOULTER, Somerville, Mass., assignor to the Automatic Track Sanding Company, Portland, Me., and Boston, Mass. Filed Nov. 25, 1895. Serial No. 570,002. (No model.)



Claim.—1. The combination of an air-reservoir and train-line of an air brake system with the sand-box and an intermediate valve, having a valve-chamber connected with the said air-reservoir and the sand-box, a piston-chamber connected upon one side with the train-line by a large passage, and upon the other side by a restricted or small passage a piston in said piston-chamber and a valve, the piston-chamber and piston being of larger area than the valve, and the piston being connected with the valve, all as and for the purposes described.

2. In an automatic valve of the character specified, the combination of the valve-chamber connected with the air-reservoir and with the sand box, a piston-chamber connected upon both sides with the train-line, the connection from one side being much smaller than that upon the other, and means for regulating the size of the said smaller passage, the said piston and piston-chamber being of larger area than the valve and the piston being connected with the valve, as and for the purposes described.

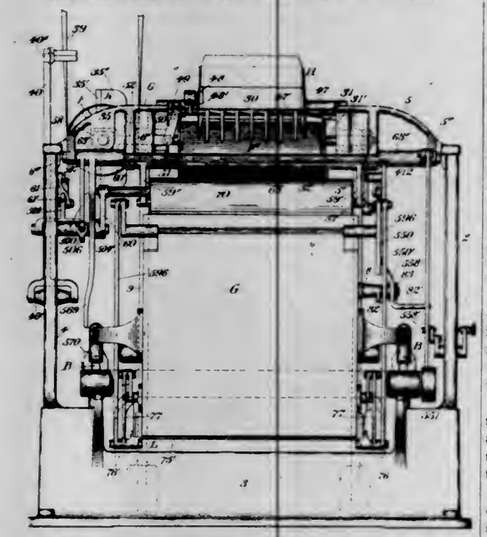
3. The combination of the air-reservoir and train-line of an air-brake system, a sanding device and an intermediate automatic valve connected with the air-reservoir, train-line and sanding device as specified, and adapted to be automatically actuated to open the connection between the air-reservoir and the sanding device upon the application of the train-brake, and means substantially as specified for varying the action of said automatic valve adapted to be set in advance of its action, and whereby it may be automatically operated for service stops or for emergency stops only, substantially as described.

4. The combination in an automatic valve of the character specified, of the casing *a*, the valve-chamber E, therein, the inlet *c'* to the valve-chamber, the outlet *g*, the passage *g'*, the relatively large piston-chamber F, the piston *f* contained therein, the piston-rod *f''* connecting it with the valve E' in the valve-chamber, the said valve E', the piston being of larger area than the valve, the passage *n'* from one end of the piston-chamber and the passage n^3, n^4, from the other end of the piston-chamber, all as and for the purposes described.

5. The combination of the valve-body having the valve-chamber E and threaded extension therefrom, the threaded cap *c* to screw into said extension, having the threaded hole *c'*, the diaphragm having the passage *g*, the outlet *g'* having the threaded end g^3, the passage *h* between the valve chamber and the outlet *g'* of the valve or cock H for controlling the same, the piston-chamber F, the piston *f* contained therein, the valve E', the piston-rod connecting the piston with the valve, the diaphragm and stuffing-box f^3 supported thereby, the passages connecting the piston-chamber upon both sides of the piston with the train-line, the threaded hole n^3, the regulator n^5 for regulating the size of the passage n^3, n^4, the relief-cock P, the drip-chamber *n'*, its connection *m* with the valve-chamber E, and its cock, substantially as described.

6. The combination in a valve of the character specified, of the valve-chamber E' connected with the air-reservoir and with the sand-box, its valve, the piston-chamber, piston *f*, of relatively large area, contained therein, adapted to be operated by variations of the air-pressure of the train-line upon either side thereof, and connected with the valve E' and the cock P for relieving or changing the pressure upon one side of the piston to permit the closing of the valve.

572,088. **WEIGHING-MACHINE.** FRANCIS H. RICHARDS, Hartford, Conn. Filed May 7, 1896. Serial No. 590,584. (No model.)



Claim.—1. The combination with weighing mechanism embodying a reciprocatory member; of a feeder; suitably-supported fast and loose pulleys, the latter of which is operatively connected with the feeder; a belt; and means operatively connected with said reciprocatory member for shipping said belt from one of said pulleys to the other.

2. The combination with weighing mechanism embodying a reciprocatory member; of a feeder; a shaft having differential pulleys; a second shaft operatively connected with said feeder and supporting a series of fast and loose pulleys; belting connecting said differential pulleys with said series of fast and loose pulleys; and a belt-shifting device operatively connected with said reciprocatory member.

3. The combination with weighing mechanism embodying a counterweighted lever and automatically-operating means for controlling the movements of said lever; of a feeder; suitably supported fast and loose pulleys; a belt; and means operatively connected with said lever for shipping said belt from one of said pulleys to the other, and vice versa.

4. The combination with weighing mechanism embodying a valve; of a feeder; a shaft operatively connected to said feeder and supporting fast and loose pulleys; a belt; a valve-actuating device; and means operatively connected with said valve-actuating device for shipping said belt from one of said rolls to the other, and vice versa.

5. The combination with weighing mechanism embodying a reciprocatory member; of a feeder; a shaft operatively connected to said feeder and supporting fast and loose pulleys; a belt; a suitably-supported belt-shipping device; and a link operatively connecting said belt-shipping device and reciprocatory member.

6. The combination with weighing mechanism, of a power driven, transversely-vibratory feeder controlled by said weighing mechanism.

7. The combination with a power-driven feeder, of means for vibrating the same during a portion of its movement.

8. The combination with a power-driven feeder having high and low speeds, of means for vibrating said feeder during its low speed.

9. The combination with a feeder consisting of a belt, of a pair of rolls for supporting said belt; and a movably-supported yoke for supporting one of said rolls.

10. The combination with a feeder consisting of a belt, of two rolls for supporting said belt; a rocking yoke supporting one of said rolls; and means for vibrating said yoke.

11. The combination with a suitable frame having a bearing, of a yoke having a journal located in said bearing; a roll; a second roll; a belt connecting said rolls; and means for vibrating said yoke.

12. The combination with a suitably-supported yoke, of a pair of belt-connected rolls, one of which is supported by said yoke, and the other of which is connected with suitable driving mechanism; and means for varying the speed of one of said rolls.

13. The combination with a variable-speed feeder and its driving mechanism, of means for vibrating said feeder.

14. The combination with weighing mechanism embodying a reciprocatory member; of a feeder; a shaft operatively connected with said feeder and supporting fast and loose pulleys; a belt; and means operatively connected with said reciprocatory member for shipping said belt from one of said pulleys to the other, and vice versa; and means for vibrating said feeder.

15. The combination with a suitably-supported yoke having laterally extending arms; of two rolls connected by a belt, one of which is supported by said yoke and the other of which is operatively connected with driving mechanism; and means for engaging said lateral arms to thereby oppositely rock said yoke.

16. The combination with a suitably-supported yoke having laterally extending arms; of two belt-connected rolls, one of which is supported by said yoke; a multifaced cam for engaging one of said lateral arms; and a spring connected with the other arm and with a relatively-fixed part of the framing.

17. The combination with weighing mechanism embodying a bucket, of a feeder; a disintegrator; actuating mechanism for said feeder and disintegrator; and means controlled by the weighing mechanism, for reciprocating said disintegrator transversely of the line of feed of a stream of material supplied by said feeder.

18. The combination with a feeder operable for supplying a stream of material, and driving mechanism for said feeder; of a shaft having a series of fingers projecting therefrom and provided with means for holding said fingers in contact with said stream of material; and weighing mechanism automatically controlling the action of said feeder.

19. The combination with a pair of rolls, of an endless belt connecting said rolls; a shaft having a series of bars projecting therefrom and located above the upper run of said feed-belt; means for reciprocating said shaft transversely of the line of feed of a mass of material on said feed belt; and driving mechanism for one of said rolls.

20. The combination with weighing mechanism embodying a reciprocatory member; of a feeder; a shaft operatively connected to said feeder and supporting fast and loose pulleys; a belt; a suitably-supported belt-shipping device; means operatively connecting said belt-shipping device and reciprocatory member; and a suitably-supported shaft having a series of fingers projecting therefrom.

21. The combination with a feeder having a variable speed, and operable for supplying a stream of material; a suitably-supported shaft having a series of fingers adapted to contact with said stream of material and automatically-operative means for regulating the speed of said feeder.

22. The combination with weighing mechanism embodying a bucket, of a variable-speed power-driven feeder controlled by the weighing mechanism; and a reciprocating apron located below said feeder.

23. The combination with weighing mechanism embodying a bucket, of a variable-speed power-driven feeder controlled by the weighing mechanism; a supporting-shaft provided with an eccentric; a suitably-supported reciprocating apron operative beneath said feeder; and a pitman operatively connected to said eccentric and reciprocating apron.

24. The combination with a framework, of a rock-shaft supported thereby and having rock-arms; a valve supported between said rock-arms; and valve-actuating mechanism.

25. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve pivotally supported between said rock-arms; and valve-actuating mechanism.

26. The combination with framework, of a rock-shaft supported thereby and having rock-arms; and a lever operatively connected with said valve.

27. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve pivoted between said rock-arms; a pivotally-supported lever having a rock-arm movable about the axis of said lever and connected thereto and also to said valve.

28. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve pivotally supported by said rock-arms; an independent shaft carrying a cam; and a lever in engagement with said cam and operatively connected with said valve.

29. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve pivotally supported by said rock-arms; an independent shaft carrying a cam; a lever in engagement with said cam and operatively connected with said valve; and means for limiting the movement of said last-mentioned rock shaft.

30. The combination with framework, of a rock-shaft supported thereby and having rock-arms, a valve pivotally supported between said rock-arms; an independent shaft provided with a cam; a lever in engagement with said cam and operatively connected with said valve; a rod supported by said last-mentioned shaft; and a stop for engaging the same at a predetermined point in the operation.

31. The combination with a feeder and driving mechanism therefor, of a valve; valve-actuating mechanism; a bucket having a closer; and means for maintaining the valve closed and the feeder at rest while the closer is open.

32. The combination with a feeder and its driving mechanism, of a valve; valve-actuating mechanism; a bucket having a closer; and reciprocally-effective stops operative, respectively, with said valve and closer.

33. The combination with a feeder having a variable speed and also a period of rest, of a bucket having a closer; and reciprocally-effective stops operatvie for maintaining the feeder at rest while the closer is open, and for holding the closer against opening movement while the feeder is in motion.

34. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve supported between said rock-arms; a bucket having a closer and reciprocally-effective stops connecting, respectively, with said valve and closer.

35. The combination with framework, of a rock-shaft supported thereby and having rock-arms; a valve supported by said rock-arms; an independent shaft carrying a cam; a lever in engagement with said cam and operatively connected with said valve; a stop also carried by said last-mentioned shaft; and a coacting stop operatively connected with said closer.

36. The combination with framework, of a rock shaft supported thereby and having rock-arms; a valve supported by said rock-arms; an independent shaft provided with a connecting-rod; a cam carried by said independent shaft; a lever in engagement with said cam and operatively connected with said valve; and a device for engaging said rod.

37. The combination with framework, of a rock-shaft having rock-arms and having said rock-shaft supported by said framework; a valve supported between said rock-arms; an independent shaft; an independent shaft having a depending stop-rod; a stop for engaging the same; a cam on said independent shaft; a lever in engagement with said cam and operatively connected with said valve; a bucket having a closer; a stop supported by said independent shaft; a coacting stop operatively connected with said closer; a connecting-rod attached to said independent shaft; and a device for engaging said connecting-rod.

38. The combination with a bucket, of a closer therefor consisting of two connected plates, one of which is attached to the bucket; and closer-supporting means connected to the other plate.

39. The combination with a bucket, of a closer therefor consisting of two connected plates, one of which is attached to the bucket; and closer-supporting means connected to the other plate.

40. The combination with bucket mechanism embodying a shiftable load-discharge member, of a variable-speed feeder having also a period of rest; and means operative with said shiftable load-discharge member for holding said feeder against movement during the load discharge period.

41. The combination with a bucket, of a two-part closer therefor; a counterweighted lever; and a link connecting said lever and closer.

42 The combination with a bucket, of a closer therefor consisting of two pivotally-connected plates, one of which is provided with a stop for impinging against the other on the opening movement of said closer; a counterweighted lever; and a link connecting said lever and one of the closer-plates.

43. The combination with weighing mechanism, of a feeder; a shaft operatively connected to said feeder and having fast and loose pulleys thereon; a belt; a belt-shipping device; and means operative with said weighing mechanism for limiting the movement of said belt-shipping device.

44. The combination with weighing mechanism embodying a bucket having a member shiftable for discharging a load, of a power-driven feeder having a variable speed; a disintegrating device; a valve; valve-actuating mechanism; and means operative with said weighing mechanism for throwing said feeder and disintegrator out of action on the completion of a bucket load.

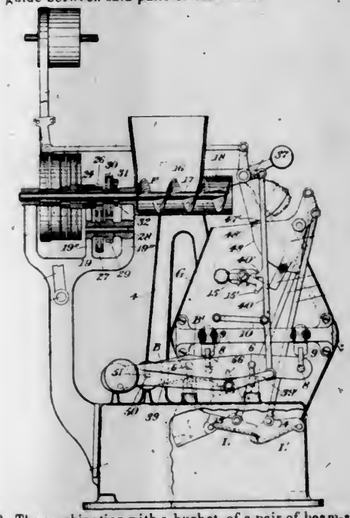
45. The combination with a feeder comprising a roll; a yoke supporting said roll and having a lateral arm; a shaft having a series of fast and loose pulleys; a series of differential pulleys; belting connecting said series of pulleys; a belt-shipping device; and a multifaced cam supported by said shaft and operable for engaging said lateral arm.

46. The combination with a feeder; of a shaft carrying a series of fast and loose pulleys; a belt-shipping device; a suitably-supported rock-shaft having rock-arms; a valve supported between said rock-arms; a valve-actuating lever; and connections between said valve-actuating lever and valve.

572,089. **WEIGHING-MACHINE.** FRANCIS H. RICHARDS, Hartford, Conn. Filed July 2, 1896. Serial No. 597,833. (No model.)

Claim.—1. The combination with a bucket, of a pair of scale-beam arms united at their rear ends by a counterweight; and a second pair of scale-beam arms also united at their rear ends by a counterweight, said last-mentioned pair being located within the area circumscribed by the first-mentioned pair, and the beam-arms and weights of both pairs being parallel with each other.

2. The combination with a bucket, of a pair of beam-arms united at their rear ends by a counterweight; a second pair of beam-arms also united at their rear ends by a counterweight and located within the area circumscribed by the first-mentioned pair of beam-arms, the beam-arms and counterweights being in parallelism with each other; and a guide between said pairs of beam-arms.



3. The combination with a bucket, of a pair of beam-arms united at their rear ends by a counterweight; a second pair of beam-arms also united at their rear ends by a counterweight and located within the area circumscribed by the first-mentioned pair; and a pin and-slot guiding connection between said pairs of beam-arms.

4. The combination with weighing mechanism, of a screw feeder; a pair of pulleys connected to said feeder, one of them through an interposed train of differential gears; a belt shiftable from one of said pulleys to the other; and a belt shifter controlled by a reciprocatory member of the weighing mechanism.

5. The combination with weighing mechanism embodying a reciprocatory member, of a feeder; a pair of pulleys connected to said feeder, one of them through an interposed train of differential gears; a belt shiftable from one of said pulleys to the other; and a belt-shifter automatically operated by said reciprocatory member.

6. The combination with a valve, of a feeder; a pair of pulleys connected to said feeder, one of them through an interposed train of differential gears; a belt shiftable from one of said pulleys to the other; and a belt-shifter automatically operated by said valve.

7. The combination with a valve, of a feeder; a series of three pulleys, two of which are connected to said feeder, one of them through an interposed train of differential gearing, said third pulley constituting an idler; a belt shiftable along said series of pulleys; and a belt-shifter automatically operated by the valve.

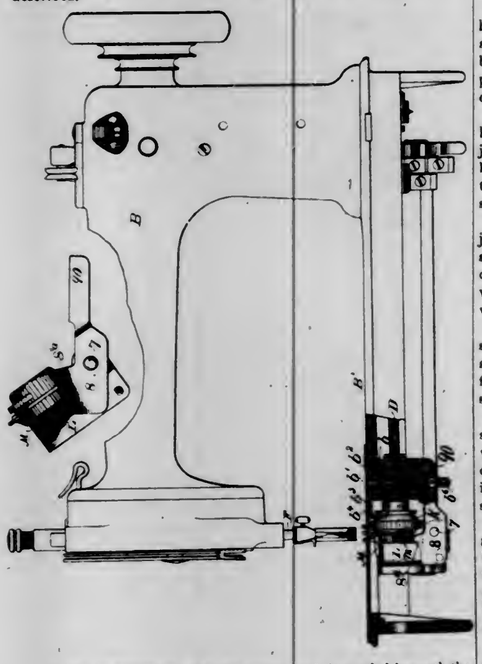
8. The combination with a valve, of a feeder and its supporting-shaft provided with a bushing; a pair of pulleys rotative, respectively, with said shaft and bushing; a train of differential gears operatively connected, respectively, to said feeder and bushing; a belt movable from one of said pulleys to the other; and a belt-shifter automatically operated by the valve.

9. The combination with a valve, of a feeder and its supporting-shaft provided with a bushing; a pair of pulleys rotative, respectively, with said shaft and bushing; a pinion fast on said shaft; and a train of differential gears, the first member of the series being connected to said bushing and the last furnished with a pawl for engaging the teeth of said pinion; a belt movable from one of said pulleys to the other; and a belt-shifter automatically operated by the valve.

10. The combination with a feeder and its supporting-shaft and with a valve having supporting-arms, one of which is provided with a rock-arm; of a bushing on said shaft; a pair of pulleys attached, respectively, to said shaft and bushing; a train of differential gears connected with said bushing and feeder; a belt movable from one of said pulleys to the other; and a belt-shipping lever joined to said rock-arm by a rod.

572,090. **LOCK-STITCH SEWING-MACHINE.** STOCKTON BORTON, Brooklyn, N. Y., assignor to the Willcox & Gibbs Sewing Machine Company, New York, N. Y. Filed Aug. 10, 1895. Serial No. 558,846. (No model.)

Claim.—1. A cup shaped rotary hook having an interior shoulder, and a point formed by an oblique cut, the side of this cut being deflected where it intersects said shoulder so as to be approximately parallel with the outer side of the hook-point, in combination with a non-rotating bobbin-case inclosed in said hook and having a segment of a rim over which the point of the hook passes, substantially as described.



2. The combination with the rotary hook journaled beneath the bed plate of the machine and having an annular flange for throwing off oil, of an oil-recess in the bed-plate adjacent to the flange and inclined drip surfaces leading from said recess, substantially as described.

3. The combination with the hook-shaft journaled in a bracket beneath the bed-plate, a rotary hook on one end of the shaft having an annular flange for throwing off the oil, an oil-recess in the work-plate having a curved rim or guard and inclined drip-surfaces leading from said rim or guard to the bracket in which the shaft has its bearing, substantially as described.

4. The combination with the bed-plate and stitch-forming mechanism of a sewing-machine, including a hook-shaft beneath the bed-plate, the latter being provided with an opening for a throat-plate, of an oil guard or flange adjacent to said opening and drip-surfaces leading downwardly and away from said opening, substantially as described.

5. The combination with the cup-shaped rotary hook, of an inclosed bobbin-case having projecting segments with intervening spaces, and a tension-spring on the periphery of the case in one of said spaces, substantially as described.

6. The combination with the rotary hook, of the inclosed bobbin-case provided with a rim having segmental projections with intervening spaces, a tension-spring on the periphery of the case in one of said spaces, and a thread-groove along the base of one of said segments leading toward the top of the bobbin-case, substantially as described.

7. The combination with the throat-plate, the hanger, the hollow rotary hook, and means for rotating the same continuously in one direction, of a bobbin-case suspended from said hanger and inclosed in said hook, said case being provided with a thread pin or guide for the bobbin-thread, arranged to one side of the opening in the throat-plate, so that the thread pulls from said pin in a direction approximately tangential to the bobbin-case and tends to turn it in a direction opposite to that of the rotation of said hook, substantially as described.

8. The combination with the bobbin-case, of a thread-guide thereon, comprising a pin and a shield having a perforation slightly larger than and embracing said pin, the head of the latter being beveled on upper side only, substantially as and for the purpose described.

9. The combination with the bobbin-case, of a thread-guide thereon, comprising a pin and a shield having a perforation slightly larger than and embracing said pin, the head of the latter being beveled on the upper side only, and the shank of said pin inside the shield being grooved or cut away, substantially as described.

10. The combination with the needle, the rotary hook, and the hanger, of the bobbin case suspended by the hanger in said hook, and a loop-detainer projecting into a space between the bobbin-case and the hook, to keep taut the loop of upper thread after it has passed under the bobbin case, substantially as described.

11. The combination with the needle, the rotary hook, and the hanger, of the bobbin-case suspended by the hanger in said hook, and a loop detainer in the form of a rounded lug projecting into a space between the bobbin-case and the book to keep taut the loop of upper thread after it has passed under the bobbin-case, substantially as described.

12. The combination with the cup-shaped rotary hook, of a hanger, and a bobbin-case inclosed in said hook, and having a projecting flange resting upon said hanger, the contact-surfaces of the hanger and flange being smooth and horizontal in cross section, so that the bobbin-case rests loosely on the hanger, substantially as described.

13. The combination of the bobbin-case having on its face a projecting flange, a bobbin-hanger upon which said flange rests, a hanger-support and a bracket in which said support is pivoted so as to permit of the insertion and removal of the bobbin, said bracket being provided with curved ribs upon which the lower edge of the bobbin rests when the hanger-support is tilted downward, substantially as described.

14. The combination with the stitch-forming devices of a lock-stitch sewing-machine, of a throat-plate provided with a needle-hole and a groove in the under side of said hole extending rearwardly therefrom forming a wall or shoulder for holding the thread to one side of said needle-hole, substantially as described.

15. The combination with the stitch-forming mechanism of a lock-stitch sewing-machine including a bobbin-case and a looper or hook which twists the loop in carrying it around the bobbin-case, of loop-controlling devices for holding the two ends of the needle-loop as it is drawn up on opposite sides respectively of the axis of the needle—substantially as described.

16. The combination with the needle and other stitch-forming mechanism, of a presser-foot having an approximately circular needle-hole provided with a narrow slit of less width than the diameter of the needle-hole extending rearwardly therefrom wide enough for the passage of a single thread, so that the loop of under thread, if drawn through the cloth, encounters the solid surface of the foot, substantially as described.

17. In a lock-stitch sewing-machine, the combination with the needle and other stitch-forming mechanism, of a presser-foot having a needle-hole, and a narrow extension thereof on one side of the axis of the needle, substantially as described.

18. The combination with the needle and cooperating mechanism for forming a lock-stitch, of a needle-shield for keeping the point of the needle clear of its thread, said shield being provided near its end with a groove on the side adjacent to the needle, substantially as described.

19. The combination with the hook, the bobbin-case and the bobbin-hanger, of the forked support in which the hanger is pivoted, said support being provided on its forked ends with curved ribs or flanges, upon which the bobbin-case rests while being introduced into and removed from the hook, substantially as described.

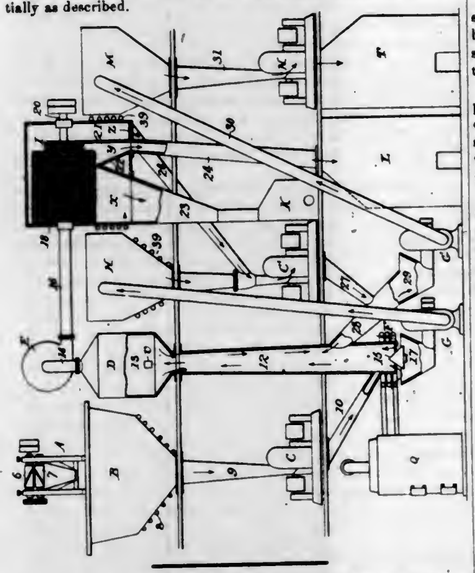
572,091. REDUCTION OF PITHY PLANTS. MARK W. MARSDEN, Philadelphia, Pa. Filed Mar. 6, 1896. Serial No. 582,127. (No model.)

Claim.—1. In an apparatus for the separation of pith from the shells of plants, the combination of a cutting-machine, a hopper, means for heating said hopper and the material in transit, a mill, and a separator communicating with the mill, substantially as described.

2. In an apparatus for the separation of pith from the shells of plants, the combination of a mill, a separator communicating at its bottom with the mill, means for directing a heated current of air upward to the separator, and a screener having different chambers and communicating with the top of the separator, substantially as described.

3. In an apparatus for the separation of pith from the shells of plants, the combination of a mill, a separator communicating at its bottom with the mill, means for directing a heated current of air upward to the separator, a screener having different chambers and communicating with the top of the separator, a supplemental mill connected to one of the chambers of the screener, connections between said mill and the separator, a hopper in said connections, and an exhaust-fan connected to the hopper, substantially as described.

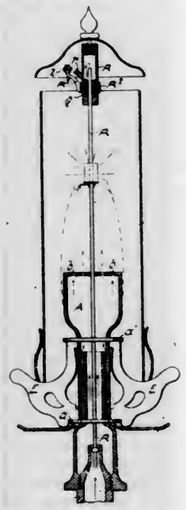
4. In an apparatus for the separation of pith from the shells of plants, the combination of a main and a supplemental mill, a separator connected at its lower end with the main mill and with a hopper, means for directing a current of air upward through the separator, a screener having different chambers and a heating agency and communicating with the upper end of the separator and having one of its chambers connected with the supplemental mill, connections between said mill and the hopper, and a fan in said connections, substantially as described.



572,092. PROCESS OF MAKING ALLOYS. ERNEST A. GEORGES, (called CHARLES STREET,) Paris, France, assignor to the Electro-Metallurgical Company, Limited, London, England. Filed June 13, 1896. Serial No. 595,459. (No specimens.)

Claim.—The process herein described of making alloys of metals of the chromium group with other metals, said process consisting in melting the more fusible metal, introducing the chromium or similar metal and causing its solution in the fused metal, protecting the former at the moment of its introduction by a solidified coating or layer of flux completely preserving it from contact with the atmosphere, the flux being of such a nature as to eliminate the small quantity of oxid that may have formed, as set forth.

572,093. SELF-IGNITING BURNER. ALBERT RAMMOSER, Berlin, Germany, assignor to George Lowenberg, same place. Filed June 3, 1896. Serial No. 594,149. (No model.)



Claim.—1. The process of manufacture of lighting-pellets for self-igniting burners, consisting of mixing platinum black with some pulverized, non-combustible and porous material, previously treated in vacuum by vapors of sulfuric acid, and thoroughly dried, in proportion of two to one, and then pressing the mixture into shape.

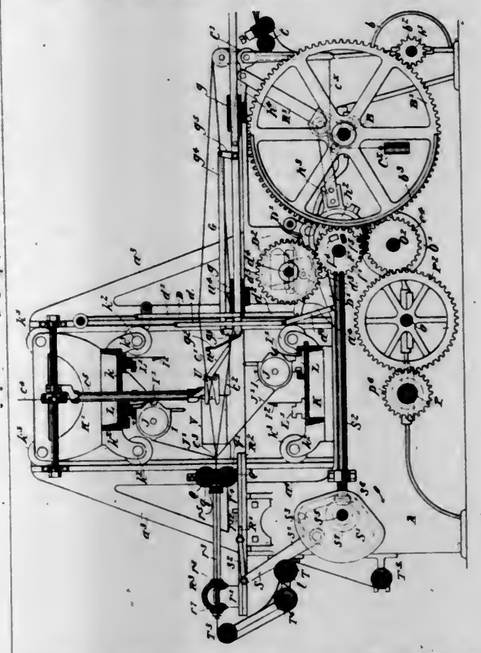
2. Pellets for self-igniting gas-burners, composed of platinum sponge or platinum-black mixed with some pulverized non-combustible and porous material, previously treated in vacuum by vapors of sulfuric acid, and thoroughly dried, in proportion of two to one, and then pressed into suitable shape.

3. Self-igniting gas-burners composed of a gas-burning fixture, provided with a stop-cock, a bracket secure thereto, and of a bunch of pellets, produced of platinum sponge or platinum-black mixed with some pulverized non-combustible porous material and strung on a thin platinum wire, mounted on the bracket opposite the aperture in the gas fixture.

4. A self igniting burner for illuminating-gas, composed of a small tube, adapted to be inserted in a gas-jet, a larger closed tube set on top of the small tube, a small outlet-tube branching from the closed tube, a bracket, supporting a bunch of self-igniting pellets, set thereon, and a suitable quantity of mercury filled in the closed tube, and adapted to close the outlet-tube when expanded by heat.

REISSUES.

11,573. LOOM FOR WEAVING CANE. HENRY B. MORRIS, Michigan City, Ind., assignor to Ford, Johnson & Co., same place. Filed Feb. 4, 1896. Serial No. 578,059. Original No. 549,930, dated Nov. 19, 1895.



Claim.—1. In a machine for weaving open-mesh cane-cloth, the combination of warp feeding mechanism, diagonal-strand-carrying devices, means for moving the said carrying devices in planes perpendicular to the plane of the fabric, and means to move the said devices also in planes transverse thereto across the fabric, weft-feeding devices and means to operate the same to insert a weft-strand after each operation of the diagonal-strand-carrying devices.

2. In a machine for weaving open-mesh cane-cloth, the combination of warp-feeding mechanism, diagonal-strand-carrying devices, means for moving the said carrying devices in planes perpendicular to the plane of the fabric and means to move the said devices also in planes transverse thereto across the fabric as it is being fed forward, weft-feeding devices means to operate the same to insert two weft-strands after each operation of the diagonal strand-carrying devices.

3. In a machine for weaving open-mesh cane cloth, the combination of the warp feeding mechanism, the harness, means for operating it, mechanism for weaving strands diagonally across the fabric alternately with the operations of the harness, the picker, means for

operating it immediately after each operation of the diagonal-strand-weaving mechanism, a beater, and means for operating it to beat up the filling inserted by the picker.

4. In a machine for weaving open-mesh cane cloth, the combination of the warp-feeding mechanism, a series of shuttles or diagonal-strand carriers on opposite sides of the horizontal plane of the fabric, means for moving said shuttles toward and from each other in planes perpendicular to the horizontal plane of the fabric, means for moving the two series of shuttles in opposite directions transversely to the warps across the fabric, and means for inserting the filling.

5. In a machine for weaving open-mesh cane-cloth, the combination with the warp-feeding and weft-inserting mechanism, of devices operated step by step after each operation of the weft-inserting mechanism to interweave strands diagonally across the fabric.

6. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with a pair of carriages arranged transversely of the machine above and below the warp respectively, means for moving said carriages toward and from each other, a pair of shuttle-holders, one movable and the other stationary, arranged on the respective carriages, a series of shuttles carrying bobbins on which are wound the diagonal strands, mechanism for transferring said shuttles from one holder to the other as the carriages are brought together, and mechanism for reciprocating each movable holder to set the shuttles inward one step while held thereby, substantially as described.

7. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with a pair of guiding and gripping rollers arranged just in front of the weaving-line, a pair of carriages arranged respectively above and below the warp and adapted to move vertically to and from each other, mechanism for reciprocating the said carriages, movable and fixed shuttle-holders mounted on the respective carriages, diagonal-strand shuttles mounted in said holders, mechanism for connecting and disconnecting said shuttles from said holders and transferring them from one holder to the other, and mechanism for imparting a step-by-step movement to each movable holder while the shuttles are held therein, substantially as described.

8. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with vertically-movable carriages, K K′, arranged transversely of the warp and adapted to be moved toward and from each other vertically, means for reciprocating said carriages, a movable shuttle-holder, L, and stationary holder, L′, mounted on each carriage and provided with sockets, and the diagonal-strand shuttles, I, provided with pins, i^8 i^9, adapted to be set in the said sockets of the holders respectively, substantially as described.

9. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with vertically-movable carriages, K K′, arranged transversely of the warp and adapted to be moved toward and from each other vertically, means for reciprocating said carriages, a movable shuttle-holder, L, and stationary holder, L′, mounted on each carriage and provided with sockets, the diagonal-strand shuttles, I, provided with pins, i^8 i^9, adapted to be set in the said sockets of the holders respectively, and mechanism for fastening the shuttles to the holders and for disconnecting and transferring them from one holder to the other, substantially as described.

10. The carriages, K K′, arranged transversely of the warp and above and below the same respectively, in combination with mechanism for reciprocating said carriages toward and from each other, movable and stationary shuttle-holders, L L′, mounted on the respective carriages, diagonal-strand shuttles, I, adapted to be set loosely in said holders and provided with a rear notch, i^9, and the spring-catches, I′ I^3, mounted respectively on the holders, adapted to engage with the notches in the shuttles and to automatically disconnect one from the shuttle and connect the other therewith when the carriages are brought together, substantially as described.

11. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with vertically-movable carriages, K K′, arranged above and below the warp and transversely thereof, movable and stationary shuttle-holders L L′, connected to the respective carriages, diagonal-strand shuttles, I, adapted to be set in said holders loosely, devices for fastening the shuttles to said holders and transferring them from one holder to the other automatically, mechanism for giving a single step by-step reciprocation to each movable holder to move the shuttles therein from one warp interspace to the next, and mechanism adapted to reciprocate said carriages at suitable intervals, substantially as described.

12. The reciprocating carriages, K K′, in combination with the movable and stationary shuttle-holders, L L′, provided with sockets, the diagonal-strand shuttles, I, provided with pins, i^8 i^9, adapted to said sockets, the rear notch, i^9, in each shuttle, spring-catches, I′, I^3, fastened to the respective holders, standing normally a little within the said notches in the shuttles, and provided with long, inclined hooks or catch-points, i^{11}, whereby the catches are automatically disconnected and connected with the shuttles when the holders are brought together by the reciprocation of the carriages, substantially as described.

13. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with a pair of carriages arranged transversely of the warp above and below the same and adapted to move vertically, mechanism for reciprocating said carriages at intervals, movable and stationary shuttle-holders arranged transversely on the said carriages, diagonal-strand shuttles adapted to be set in said holders, mechanism for securing the shuttles to said holders and automatically disconnecting and transferring them from one to the other, a feed device adapted to automatically feed the shuttles into the machine near the meeting space of the carriages, and mechanism for automatically picking up a shuttle at this point when the carriages are brought together and transferring it to the regular shuttle-holder, substantially as described.

14. In a machine for open-cane-weaving, the harness and mechanism for operating the same, in combination with a pair of gripping-rollers arranged in front of and in proximity to the weaving-line, mechanism for inserting or weaving in the diagonal strands and inserting the ends thereof between the rolls, the filling picker and mechanism adapted to operate the same immediately after the operation of the diagonal-strand mechanism, and a beater with mechanism arranged to operate the same immediately after the operation of the filling-picker, substantially as described.

15. In a machine for open-cane-weaving, mechanism for weaving the mat, in combination with a pair of carriages arranged transversely of the warp above and below the same and adapted to move vertically, mechanism for reciprocating said carriages at intervals, movable and stationary shuttle-holders arranged respectively on the said carriages, diagonal-strand shuttles adapted to be set in said holders, mechanism for securing the shuttles to said holders and automatically disconnecting and transferring them from one holder to the other, and mechanism for automatically removing a shuttle to one side of and beyond the warp at the end of its working travel, substantially as described.

16. In a machine for open-cane-weaving, the diagonal-strand shuttle, I, provided with a perforated nose, i^8, a diagonal-strand bobbin mounted in said shuttle and with the end of the strand projecting through said nose, a support at one end of the machine to which the shuttles are successively fed, and a picker adapted to move lengthwise of the machine to seize the projecting end of the said strand and draw it out toward the front of the machine, and a holding device to which said picker delivers the end of the strand, substantially as described.

17. In a machine for open-cane-weaving, the diagonal-strand shuttles, I, provided with perforated noses, i^8, at the front edge thereof, in combination with diagonal strand bobbins, J, mounted in said shuttles and with the ends of the strands projecting through said perforated noses, a support at the side of the machine for said shuttles, an automatic feed device adapted to deliver the shuttles successively to said support, a picker adapted to move lengthwise of the machine and to seize and draw out the projecting strands, and grip-rollers in front of the weaving-line to which the picker delivers the ends of the diagonal strands, substantially as described.

18. In a machine for open-cane-weaving, the sliding beater-frame, in combination with the beater, G′, composed of a pivoted cross-bar, g', mounted in the frame, and arms, g^3, secured to said bar and constructed with short vertical tips, and bodies inclined backward from said tips to the cross-bar, substantially as described.

19. In an open-cane-weaving machine, the sliding beater-frame, G, mounted in guideways, g, in combination with the cross bar, g', journaled in said frame and provided with beater-arms, g^3, a cam-guide, G^2, provided with a straight groove, g^7, and a broken groove or passage, g^8, a switch, g^9, pivoted in said guide, a bell-crank, g^5, and a link rod, g^4, connecting said bell crank with a crank-arm, g^2, on the beater cross-bar, substantially as described.

20. In a machine for open-cane-weaving, the shaft, F, in combination with the sleeve, H, mounted loosely thereon and provided with a disk, h, fixed on the end thereof and having a lug, h', on its outer face extending into the shaft, a pinion, f^7, mounted loosely on said shaft and provided with a lug, f^8, on its inner face with a free space between it and the shaft, a T-headed spring-clutch, F^3, pivoted to the disk, the driving gear-wheel, B^3, provided on one face with a semi-circular rim-flange, b^4, adapted to act upon the pawl to hold it from engagement with the lug, f^8, and an eccentric, h^3, on the sleeve connected with the sliding beater-frame to reciprocate the same when the pawl is released from the rim-flange and thereby the pinion and disk are clutched together, substantially as described.

21. The shuttles, I, each consisting of a rim, i, the inner face of which is a complete circle and provided with a rabbet, i', on the inner edge of one side thereof, in combination with the bobbins, J, each composed of two circular disks of unequal size joined by a short hub, and adapted to fit the central opening of the holder with the edge of the larger disk resting upon the side rabbet thereon, and a fastening device for securing the cop in the shuttles, substantially as described.

22. The shuttles, I, each consisting of a rim, i, the inner face of which is a complete circle and provided with a rabbet, i', on the inner edge of one side thereof, in combination with the bobbins, J, each composed of two circular disks of unequal size joined by a short hub and adapted to fit the central opening of the shuttle with the edge of the larger disk resting upon the side rabbet thereon, and buttons, i^2, pivoted in grooves in the shuttle and adapted to turn inside of the smaller disk of the bobbin, substantially as described.

23. In an open-cane-weaving machine, the shuttles, I, provided with T-headed pins, i^{10}, in combination with inclined guide-chutes W, provided with slots, w, adapted to receive said pins on the shuttles, and a supporting-stop on the inside of the frame to which the shuttles are delivered by sliding down the chutes, substantially as described.

24. In a machine for open-cane-weaving, the main frame, A, in combination with upright standards or posts, a', rising from each side thereof and having V-shaped inner edges, a^2, in combination with the carriages, K K′, consisting of bed-pieces, k, and rectangular end pieces, k', provided with rollers, k^3, at each corner adapted to fit the guideways of the respective standards, diagonal-strand shuttles mounted on said carriages, mechanism for operating the shuttles for weaving in the diagonal strands, and mechanism for reciprocating the said carriages toward and from each other, substantially as described.

25. The upright guide-standards, a', in combination with the carriages, K K′, mounted and guided within said standards, diagonal-strand shuttles mounted on said carriages, mechanism for operating the diagonal-strand shuttles mounted on and carried by said carriages, the shaft, P, provided with crank-arms, p, eccentrics, p^2, pitmen, p' and p^4, levers P′, link-bars, p^5, and mechanism for intermittingly rotating said shaft, P, from the main shaft, substantially as described.

26. The vertically-movable carriages, K K′, arranged one above and the other below the warp and having horizontal bed-pieces, k, arranged transversely of the machine, in combination with sliding shuttle-holders L, mounted in guideways on the faces of said beds and running lengthwise thereof, stationary shuttle-holders, L′, fixed on said faces of the beds directly opposite to the respective movable holders, levers L^3 m^3, pivoted to the backs of the respective bed-pieces, links, m^3, connecting-rods, M^3, a rock-shaft M, to which said rods are connected, and mechanism for oscillating said shaft at intervals, substantially as described.

27. The reciprocating carriages, K K′, having horizontal beds, k, the sliding shuttle-holders, L, mounted in guideways on the faces of said beds, the levers, L^3 m^3, connected with the sliding holders by suitable links, connecting-rods, M^3, a rock-shaft, M, connected to the rods, M^3, shuttle-blocks, N, mounted in the same guideways with the sliding shuttle-holders and connected directly to the rods, M^3, and mechanism for oscillating said shaft at suitable intervals, substantially as described.

28. The reciprocating carriages, K K′, having horizontal beds, k, the sliding shuttle-holders, L, mounted in guideways on the faces of said beds, the levers, L^3 m^3, connected with the sliding holders by suitable links, connecting-rods, M^3, rock-shaft, M, connected to the rods, M^3, and blocks, N′, mounted in the same guideways as the sliding shuttle-holders but at the outer or rear ends thereof, connected directly to the rods, M^3, and adapted to take a shuttle at the end of its step-by-step movement across and through the warp and move it some distance beyond the latter, substantially as described.

29. The reciprocating carriages, K K′, in combination with the sliding shuttle-holders mounted on the bed-faces of said carriages, mechanism also mounted on said carriages and arranged to act directly on said holders to impart to them a sliding movement, upright rock-shaft, M, sleeves, M′, splined to said rock-shaft and held to the respective bed-pieces by inclosing brackets, N^2, fixed on said beds, connecting devices uniting crank-arms on said sleeves with the actuating mechanism of the movable shuttle holders whereby the said actuating mechanism is operated, an oscillating bell-crank, M^3, provided with a rack segment, m^8, on one arm engaging with a pinion, m, on the lower end of the oscillating shaft, a revolving cam, M^4, with its cam-groove engaging the other arm of the said lever, and mechanism for rotating said cam at intervals from the gear-wheel, B^3, on the main wheel of the driving-shaft, substantially as described.

30. In a machine for open-cane-weaving, the diagonal-strand picker-shaft, r, in combination with a sleeve-shaft, r^3, mounted loosely thereon, gripping-fingers, r^5 r^4, attached to the inner ends of these respective shafts, a bow-spring, r^6, connecting said fingers, pinions, r^7 and r^8, on the outer ends of said shafts, a bevel-gear, R^3, arranged to engage with the respective pinions, a sliding support on which these shafts and gears are mounted, shuttles, I, provided with perforated noses, i^8, mechanism for reciprocating said sliding support to and from the shuttles, and the yielding grip-rollers at the rear of the weaving-line, substantially as described.

31. In a machine for open cane-weaving, the diagonal-strand picker-shaft, r, in combination with a sleeve shaft, r^3, mounted loosely thereon, gripping-fingers, r^5 and r^4, attached to the inner ends of these respective shafts, a bow-spring, r^6, connecting said fingers, pinions, r^7 and r^8, on the outer ends of said shafts, a bevel-gear, R^3, arranged to engage with the respective pinions, a sliding support on which these shafts and gears are mounted, shuttles, I, provided with perforated noses, i^8, mechanism for reciprocating said sliding support to and from the shuttles, and the yielding grip-rollers at the rear of the weaving-line, substantially as described.

32. In a machine for open-cane-weaving, a sliding support, R′, mounted in ways at the front of the machine adapted to move lengthwise thereof, and provided with upright lugs, r^{12} and r^{13}, in combination with a solid shaft, r, mounted in a journal-bearing on said support, a sleeve-shaft, r^3, mounted loosely on the shaft, r, grip fingers, r^5 and r^4, on the inner ends of these respective shafts, a bow-spring, r^6, connecting said fingers, bevel-pinions, r^7 r^8, on the outer ends of said shafts, a bevel-gear, R^3, mounted on a journal at right angles to said shafts and arranged to engage with their respective pinions, and having on its outer face two projecting pins, r^{10} r^{11}, a swinging arms R^4, mounted loosely on the journal of said wheel and dropping between the two pins thereon to the plane of the lugs on the sliding support, and mechanism for reciprocating said sliding support at suitable intervals, substantially as described.

33. In a machine for open-cane-weaving, the sliding support, R′, in combination with a diagonal-strand picker mechanism mounted thereon, a bell-crank lever, S, connected at one end to said slide, a cam, S′, provided with a cam-groove, s^4, arranged to engage the other or short arm of said lever, and mechanism for imparting an intermittent rotation with the shaft of said cam from the main shaft, substantially as described.

34. The combination with a vertically-moving carriage of a sliding shuttle holder thereon, a shuttle feed-chute, and a reciprocating block for transferring a shuttle from the chute to the end of the sliding holder close to the other shuttles carried thereby.

35. The combination with the warp-feeding and weft inserting mechanism, of the diagonal-strand carriers, means for actuating them, the gripping devices, a picker for drawing diagonal strands into the bite of the gripping devices, and means for actuating said picker.

36. In a machine for weaving open-mesh cane-cloth, the combination with the warp feeding and weft-inserting mechanism, of the vertically-reciprocating shuttles or diagonal-strand carriers, the pickers reciprocating parallel with the warps and toward and from the carriers, the gripping-rollers into the bite of which the pickers draw the diagonal strands, and means for actuating the pickers.

37. In a machine for weaving open-mesh cane-cloth, the combination of warp-feeding mechanism operated step by step, means for applying a tension to the warps, heddles for forming a shed, diagonal-strand-carrying devices, means for moving the said carrying devices in planes perpendicular to the plane of the fabric, and means for moving the said devices also in planes transverse thereto across the fabric, weft-inserting devices, means for operating the weft-inserting devices to insert two weft-strands after each operation of the diagonal-strand-carrying devices, means for causing the diagonal-strand-carrying devices to rest while the weft is being inserted, and means for causing the weft-inserting devices to rest while the diagonal-strand carrying devices are in operation.

38. In a machine for weaving open-mesh cane cloth, the combination of warp-feeding mechanism, diagonal-strand carrying devices, means for moving the said carrying devices in planes perpendicular to the plane of the fabric, and means to move said devices also in planes transverse thereto across the fabric, heddles for forming the shed, weft-inserting devices, means for operating them to insert a weft-strand after the operation of the diagonal-strand-carrying devices, means for then changing the heddles, means for then inserting another weft-strand, and devices for then bringing into operation the diagonal-stand-carrying devices.

39. In a machine for weaving open-mesh cane-cloth, the combination of warp-feeding mechanism, comprising tension devices and take up devices, diagonal-strand-carrying devices, means for moving the said carrying devices in planes perpendicular to the plane of the fabric, and means to move said devices also in planes transverse thereto across the fabric, weft-inserting devices, shed-forming mechanism, means for operating the weft-inserting devices after each operation of the diagonal-strand-carrying devices to insert a single thread, means for then changing the heddles, devices for then causing the weft-inserting devices to insert another strand, and means for then bringing into operation the diagonal-strand-carrying devices.

40. In a machine for weaving open-mesh cane-cloth, the combination with the warp feeding and weft-inserting mechanism, of diagonal-strand carriers, and mechanism for moving said carriers through the fabric and for drawing the thread therefrom to interweave strands diagonally across the fabric as it is step by step advanced after each operation of the weft-inserting mechanism.

11,574. BOBBIN-HOLDER AND THREAD-CATCHER. THOMAS J. MURDOCK, Woonsocket, R. I., assignor of one-half to John Roney, same place. Filed Oct. 10, 1895. Serial No. 565,295. Original No. 541,377, dated June 18, 1895.



Claim.—1. The combination with a revoluble spindle, of a bobbin-holder and thread holding and releasing device, said bobbin-holder and thread holding and releasing device comprising means for engaging the bobbin and means, actuated by the movement of a bobbin longitudinally of the said spindle, for catching and releasing the thread: whereby when a full bobbin is doffed the thread will be caught and held and when an empty bobbin is pressed home upon the spindle the thread thus caught will be released.

2. The combination with a revoluble spindle, of a thread holding and releasing device comprising two members one of which is fixed to said spindle and the other of which is adapted to frictionally engage the bobbin and which has a limited vertical movement relative to said spindle, whereby when a bobbin is doffed the said movable member is lifted to catch the thread, and when a new bobbin is operatively connected to the spindle the said movable member is forced downward to release the said thread.

3. The combination with a revoluble spindle, of a disk fast thereto, yielding bobbin-holding devices adapted to engage the bobbin-head frictionally and which are mounted to be movable lengthwise of said spindle, and a thread holding and releasing device comprising two members one of which is vertically movable with the said bobbin-holding devices and the other of which is stationary relative to said disk; whereby when a full bobbin is doffed the thread may be clamped between the two members of said thread holding and releasing device and will be released when the head of a new bobbin is forced between the said bobbin-holding devices to operatively connect the bobbin with said revoluble spindle.

4. A revoluble spindle adapted to carry a bobbin, a disk affixed to said spindle, and a series of fingers circularly grouped and mounted upon the disk, combined with a shell adapted to wipe the fingers and mounted upon the spindle, substantially as described.

5. In a bobbin-holder a revoluble spindle, a disk fast to it, a series of fingers forming part of the disk, combined with a shell loosely mounted upon the spindle, two or more oscillating plates pivoted to the shell and extending through the disk, and means to cause the plates to grip the bobbin-head, whereby the shell may be moved, substantially as specified.

6. In combination with a rotary spindle, and a bobbin-holder thereupon, a group of circumferential thread-grasping fingers mounted on a disk fast on the spindle, and a shell supporting the bobbin-holder and adapted to reciprocate and to cooperate with the fingers, substantially as described and stated.

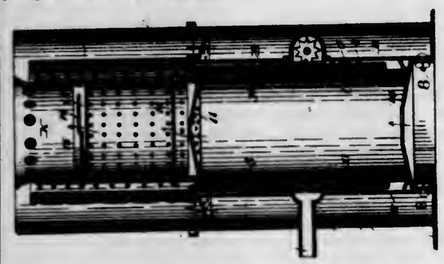
7. The combination with a revoluble spindle, a transverse disk secured fast to it, and thread-catchers thereon, of a shell loosely mounted on the spindle, two or more rocking plates secured to the shell, said shell being adapted to move upon the thread-catchers and hold the thread, while it is passing about the exterior of said shell, substantially as set forth.

8. The combination with a rotary spindle, a transverse disk affixed to it, and thread-catchers upon the disk and immovable with respect to the spindle, of a shell loosely mounted upon the spindle, two or more rocking plates secured to the shell, and an annular spring disposed circumferentially of the plates, whereby the shell is adapted to reciprocate upon engagement with or disengagement of the bobbin from said spindle, substantially for purposes described.

11,575. OIL-BURNER. ATWELL J. BLACKFORD, Medina, Ohio, assignor of one-half to the Durand Manufacturing Company, same place. Filed Apr. 27, 1896. Serial No. 589,607. Original No. 538,638, dated Apr. 30, 1895.

Claim.—1. An oil-burner comprising a wick-chamber having open ends, an outer tube and an inner perforated tube forming between them a mixing-chamber above the upper end of the wick, a diaphragm situated within the inner tube and spanning the same just above but adjacent the upper end of the wick, the perforations of the said inner tube being both below and above the said diaphragm, and the diaphragm being provided with a central opening to permit a free passage of the air therethrough, and to obstruct the upward flow of the air adjacent the walls of the inner tube to deflect air through the perforations therein below the said diaphragm, substantially as described.

2. An oil-burner comprising a wick-chamber having open ends, an outer combustion-tube and an inner perforated combustion-tube forming between them a mixing-chamber about the upper end of the wick, a diaphragm spanning the inner tube at a point just above the wick, the perforation of the inner tube being below and above the diaphragm, said diaphragm having only a large central opening, whereby a free passage of the air is permitted therethrough, and the air retarded adjacent the wall of the inner tube and forced therethrough to the mixing-chamber, and a diaphragm spanning the inner tube at its upper portion and provided with a small central opening, whereby most of the air passing through the large opening of the lower diaphragm is confined between the diaphragms and forced through the inner perforated tube, while a small amount of unvitiated air is permitted to pass through the small opening of the upper diaphragm, substantially as described.



3. In oil-burners a wick-chamber having open ends and a pair of combustion-tubes seated about the top of said chamber, in combination with a perforated diaphragm spanning the wick-chamber to limit the admission of air thereto, a drum surrounding the wick-chamber and having a restricted air-opening, and a perforated plate spanning the space between said drum and wick chamber at a point above the air-inlet of the drum, substantially as described.

4. In oil-burners a wick-chamber and a pair of perforated combustion-tubes seated about the top of said chamber, in combination with a plate at the bottom of the wick-chamber having an opening and the outer wick-chamber tube fixed to said plate about said opening, a drum resting on said plate and inclosing the burner and having an opening to admit a limited quantity of air into the space between said drum and the burner, and a perforated plate spanning the space between said drum and the burner below the combustion-tubes, substantially as set forth.

5. In an oil-burner, the lower burner-section consisting of the wick-chamber and a diaphragm with air-passages spanning the interior of said chamber at its bottom, and at its top respectively, in combination with the upper burner-section consisting of the perforated combustion-tubes and diaphragms with air passages spanning the interior of said tubes near their ends, and an inclosing drum for the burner apart therefrom to form an air-chamber between said parts, and a perforated diaphragm across said air-chamber at about the base of the combustion-tubes substantially as set forth.

6. In an oil-burner, the wick-chamber and wick and a lower drum-section surrounding said chamber, in combination with a pair of perforated combustion-tubes seated about the top of the wick-chamber and a top drum-section surrounding said tubes and forming a continuation of said lower drum-section, the combustion-tubes and the top drum section being connected, whereby the combustion-tubes and the top drum-section are made bodily removable together, substantially as set forth.

7. An oil burner having a wick-chamber and a wick, in combination with a pair of perforated combustion-tubes, and a drum-section surrounding the said tubes, the drum-section and tubes seated around the upper end of the wick and having their lower ends in a plane with the upper ends of the wick, the combustion-tubes and drum-sections being connected, whereby the combustion-tubes and the drum-section are made bodily removable from the burner, substantially as and for the purpose set forth.

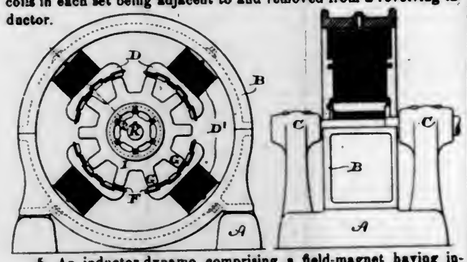
11,576. INDUCTOR-DYNAMO. CHARLES P. STEINMETZ, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Oct. 31, 1896. Serial No. 610,753. Original No. 559,419, dated May 5, 1896.

Claim.—1. An inductor-dynamo having inwardly-projecting pole-pieces provided with field-magnet windings, armature-coils mounted upon the polar faces, and a revolving inductor.

2. An inductor-dynamo comprising a field-magnet having projecting pole-pieces, pole-faces circumferentially extended, the armature-coils being mounted upon the polar faces, and a revolving inductor.

3. An inductor-dynamo having inwardly-extending pole-pieces, polar faces provided with projections, and armature-coils mounted upon the projections of the polar faces.

4. An inductor-dynamo comprising inwardly-extending pole-pieces, polar faces provided with projections, and armature-coils mounted in sets upon the projections of the polar faces, alternate coils in each set being adjacent to and removed from a revolving inductor.

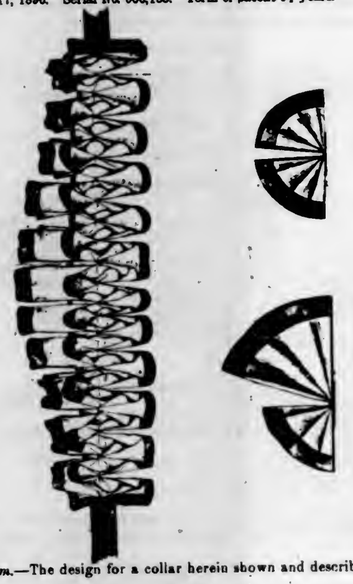


5. An inductor-dynamo comprising a field-magnet having inwardly-extending pole-pieces of alternately-opposite polarity, armature-coils mounted upon the polar faces of the field-magnets, and a revolving inductor having projections passing through the fields created by the field-magnet poles.

6. A field-magnet structure for an inductor-dynamo, comprising field-magnets cores, polar faces having projections upon which the coils may be wound, and a coil upon each field-magnet core, the coil magnetizing all of the projections.

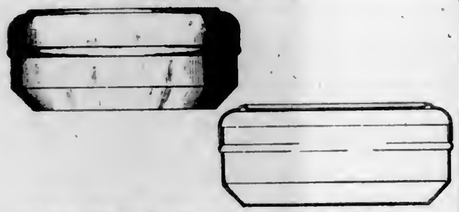
DESIGNS.

26,313. COLLAR. HERMAN ROSENTHAL, New York, N. Y. Filed Sept. 17, 1896. Serial No. 606,185. Term of patent 3½ years.



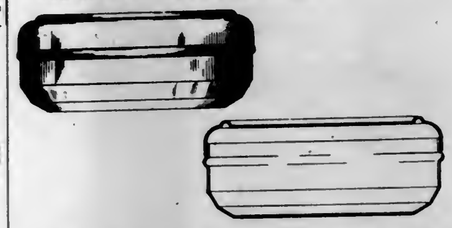
Claim.—The design for a collar herein shown and described.

26,314. BOX. GEORGE MILLER, Baltimore, Md. Filed Oct. 17, 1896. Serial No. 609,250. Term of patent 14 years.



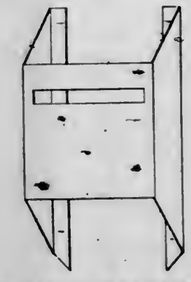
Claim.—The design for boxes herein shown and described.

26,315. BOX. GEORGE MILLER, Baltimore, Md. Filed Oct. 17, 1896. Serial No. 609,251. Term of patent 14 years.



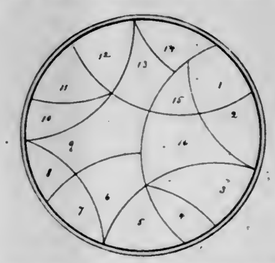
Claim.—The design for boxes herein shown and described.

26,316. BODY FOR MATCH-BOXES. ALLISON N. CLARK, Plainville, Conn. Filed Sept. 24, 1896. Serial No. 606,894. Term of patent 14 years.



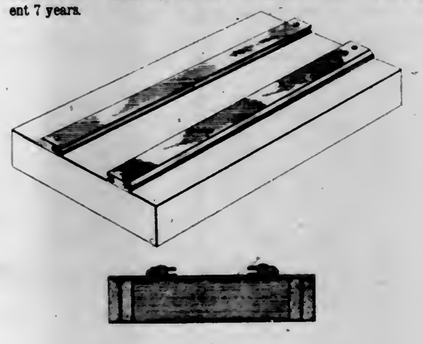
Claim.—The design for a match box body substantially as herein shown and described.

26,317. PUZZLE. THEODORE W. KLOMAN, Bayonne, N. J. Filed Sept. 18, 1896. Serial No. 606,302. Term of patent 3½ years.

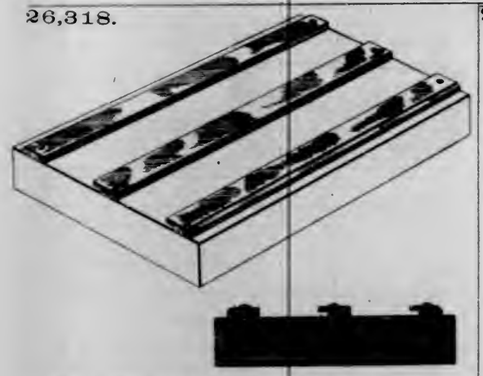


Claim.—The design for a puzzle, substantially as herein shown and described.

26,318. BOX OR HOLDER FOR BLOCKS, &c. JAMES E. HUTCHINSON, Washington, D. C., assignor to the Westcott-Jewell Company, Seneca Falls, N. Y. Filed Sept. 28, 1896. Serial No. 607,263. Term of patent 7 years.

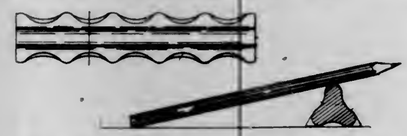


26,318.



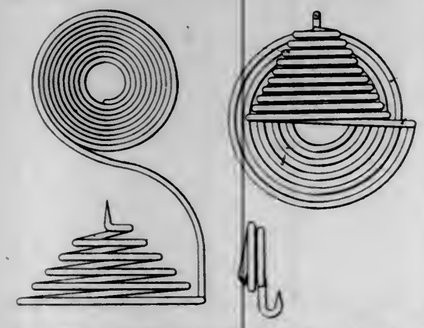
Claim.—The design for a box or holder for spelling-blocks, substantially as set forth.

26,319. PEN-RACK. FRANCIS WOOD, Brooklyn, N. Y. Filed Sept. 24, 1896. Serial No. 606,891. Term of patent 7 years.



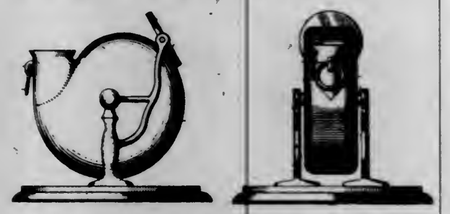
Claim.—The design for a pen rack substantially as herein described and shown.

26,320. PAPER-HOLDER OR SIMILAR ARTICLE. LAZARUS ARKIN, Brooklyn, N. Y. Filed Jan. 2, 1896. Serial No. 574,161. Term of patent 7 years.



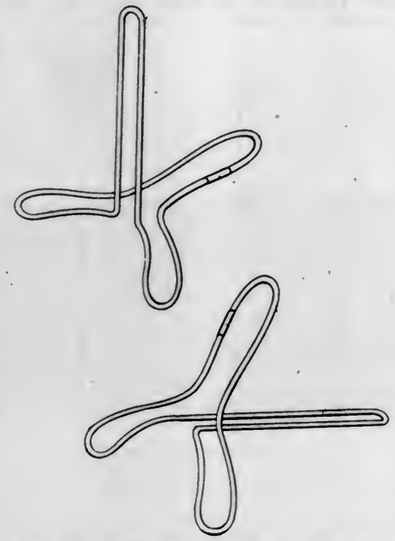
Claim.—The design for a paper holder or similar article, substantially as herein shown and described, combining the features of a stand, or paper-weight, with coiled-wire card-holders, all twisted of one piece of spring-wire.

26,321. DISPLAY-JAR. EUGENE R. LATTA, Lafayette, Ind. Filed May 28, 1896. Serial No. 593,515. Term of patent 7 years.



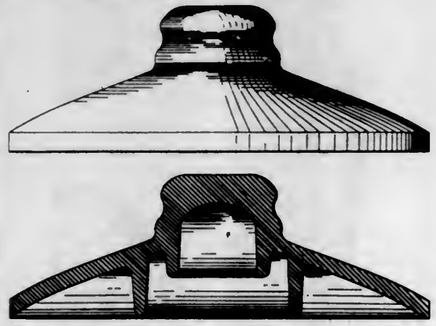
Claim.—The design for a display-jar, substantially as described and shown.

26,322. DISPLAY-STAND. WALTER M. MITCHELL, Evanston, Ill. Filed Sept. 26, 1896. Serial No. 607,117. Term of patent 7 years.



Claim.—The design for a display-stand or goods-support, substantially as herein shown and described.

26,323. INSULATOR. FRED M. LOCKE, Victor, N. Y. Filed Sept. 25, 1896. Serial No. 607,004. Term of patent 7 years.



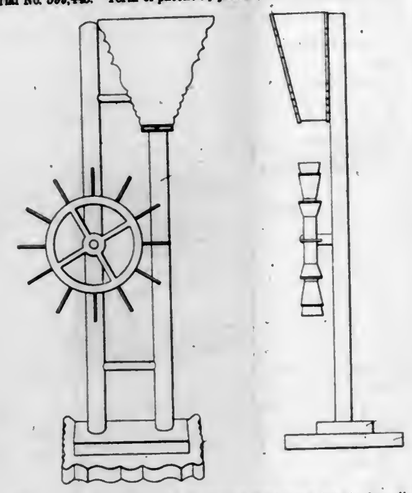
Claim.—The design for an insulator substantially as shown and described.

26,324. PIPE-FERRULE. MAX I. KAUFMANN, New York, N. Y. Filed June 26, 1896. Serial No. 597,085. Term of patent 3½ years.



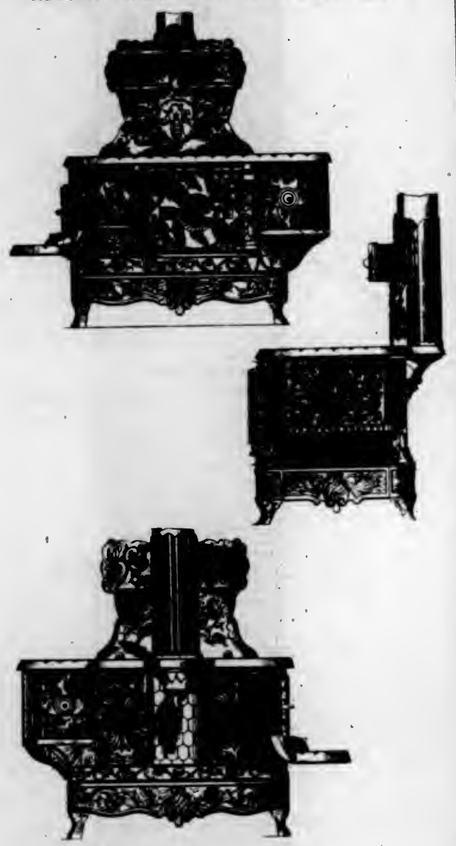
Claim.—The design for a pipe-ferrule substantially as shown and described.

26,325. FRAME FOR TOY SAND-MILLS. MAX R. SCHARLES, New York, N. Y., assignor to Scharles Brothers. Filed July 16, 1896. Serial No. 599,445. Term of patent 3½ years.



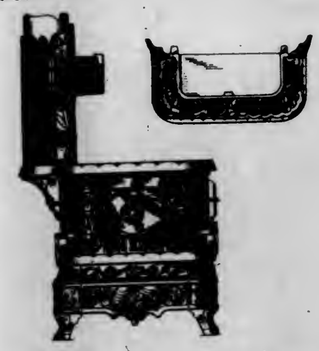
Claim.—The design for a frame for toy sand-mills, herein described and illustrated.

26,326. TOY STOVE. CHARLES A. BAILEY, Cromwell, Conn. Filed Oct. 14, 1896. Serial No. 608,895. Term of patent 3½ years.



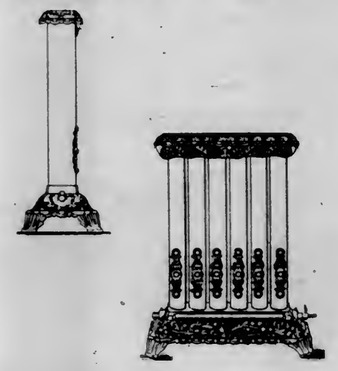
Claim.—The design for a toy stove substantially as herein shown and described.

26,326.



Claim.—The design for a stove substantially as herein shown and described.

26,327. GAS-STOVE. AARON H. WOLFF, New York, N. Y., assignor to the Wolff Gas Radiator Manufacturing Company, same place. Filed Aug. 29, 1896. Serial No. 604,333. Term of patent 7 years.



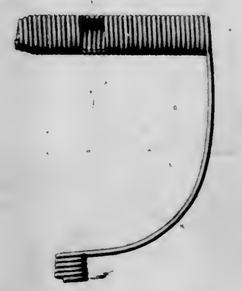
Claim.—1. The design for a gas-stove as herein described and shown in the accompanying drawings.

2. In a design for a gas-stove, the base as herein described and shown in the accompanying drawings.

3. In a design for a gas-stove, the hanging face-plate as herein described and shown in the accompanying drawings.

4. In a design for a gas-stove, the top plate as herein described and shown in the accompanying drawings.

26,328. HEATER FOR CURLING-IRONS. MARTIN N. DIALL, Terre Haute, Ind. Filed Oct. 19, 1896. Serial No. 609,374. Term of patent 7 years.



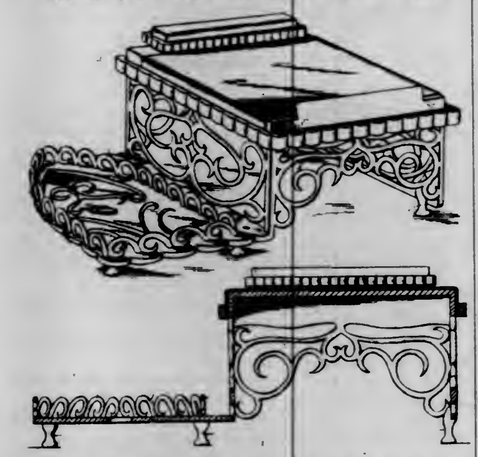
Claim.—The design for a heater for curling-irons, substantially as herein shown and described.

26,329. DUPLEX EGG-TESTER. PHILIP M. EARLE, Jacksonville, Fla. Filed Sept. 24, 1896. Serial No. 606,499. Term of patent 14 years.



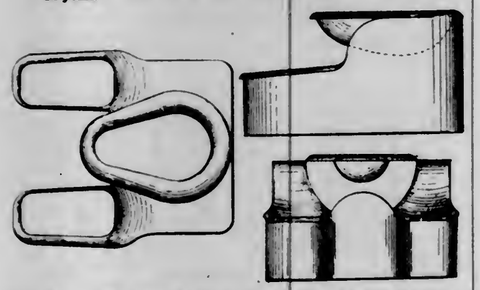
Claim.—The design for a duplex egg-tester, substantially as herein shown and described.

26,330. SAD-IRON HOLDER. MAURICE L. NEWELL, Denver, Colo. Filed Oct. 12, 1896. Serial No. 608,655. Term of patent 14 years.



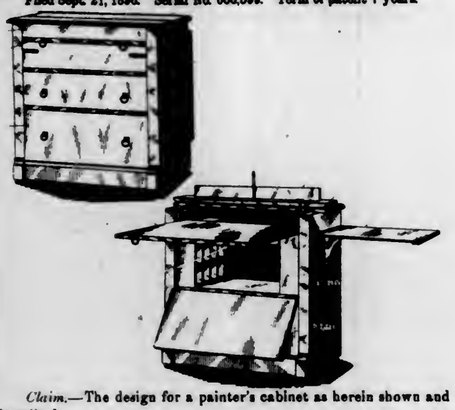
Claim.—The design for a sad-iron holder, substantially as herein shown and described.

26,331. BIDET AND FOOT-BATH. PATRICK H. PENDERGAST, Syracuse, N. Y. Filed Oct. 12, 1896. Serial No. 608,653. Term of patent 14 years.



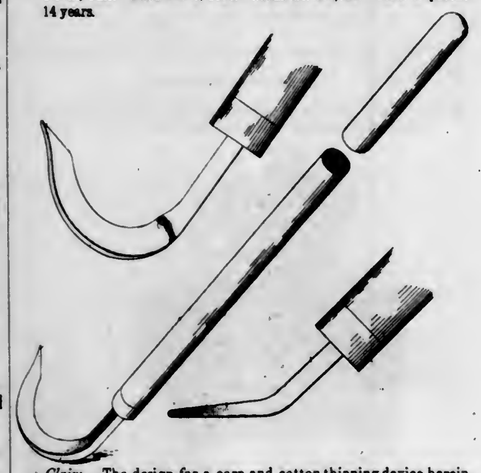
Claim.—The design for a combined bidet and foot-bath substantially as herein described and shown.

26,332. PAINTER'S CABINET. ALICE M. PRINGLE, Preston, Canada. Filed Sept. 21, 1896. Serial No. 606,599. Term of patent 7 years.



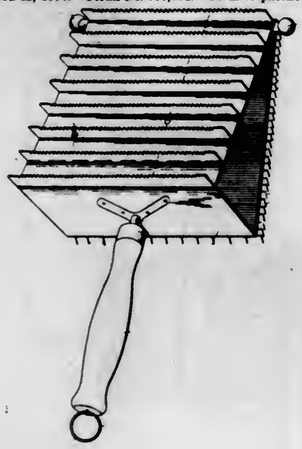
Claim.—The design for a painter's cabinet as herein shown and described.

26,333. THINNING-TOOL FOR COTTON, &c. JAMES M. SANDERS, Nevin, Ohio. Filed Oct. 6, 1896. Serial No. 608,062. Term of patent 14 years.

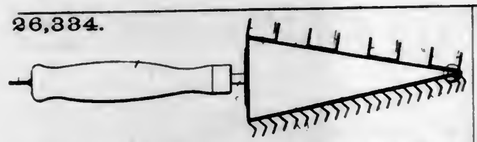


Claim.—The design for a corn and cotton thinning device herein shown and described.

26,334. CURRYCOMB AND CARD. ORRIN B. READ, Charlotte, Vt. Filed Oct. 12, 1896. Serial No. 608,651. Term of patent 14 years.

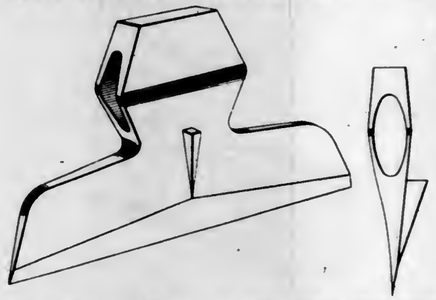


26,334.



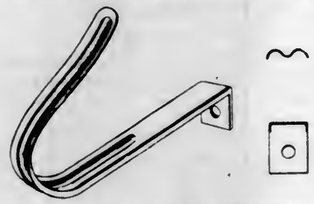
Claim.—The design for a combined currycomb and card, substantially as herein shown and described.

26,335. BROADAX. JAMES BARBOUR, Kingsland, Ark. Filed Oct. 12, 1896. Serial No. 608,650. Term of patent 7 years.



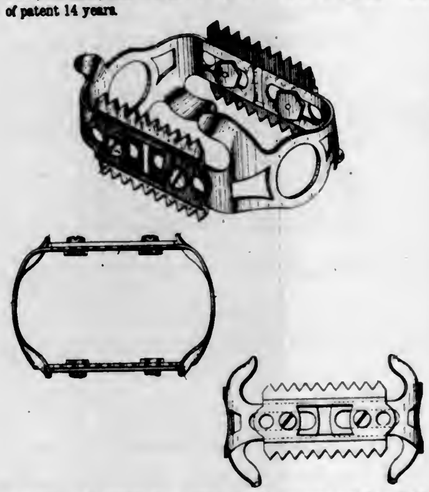
Claim.—The design for a broadax, substantially as herein shown and described.

26,336. TOE-CLIP FOR BICYCLES. HERMANN A. EIRICH, Rockford, Ill. Filed Mar. 16, 1896. Serial No. 586,485. Term of patent 7 years.



Claim.—The design for a toe-clip for bicycle-treadles herein shown and described.

26,337. TREAD-PIECE FOR BICYCLE-PEDALS. ARTHUR SIDWELL, Waltham, Mass. Filed Oct. 12, 1896. Serial No. 608,659. Term of patent 14 years.



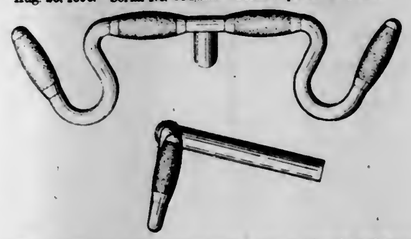
Claim.—The design for a tread-piece for bicycle-pedals, substantially as herein shown and described.

26,338. ELASTIC TIRE. JESSE LYMAN DANN, Columbus, Ohio. Filed Oct. 12, 1896. Serial No. 608,656. Term of patent 14 years.



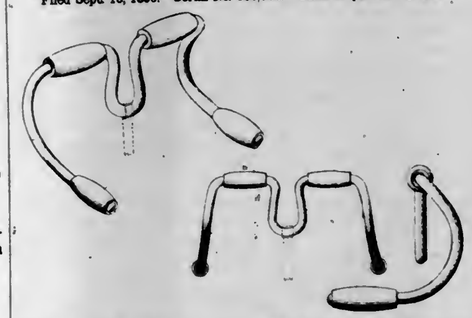
Claim.—The design for an elastic tire, substantially as herein shown and described.

26,339. HANDLE-BAR. LUTHER G. BILLINGS, Clifton, N. Y. Filed Aug. 28, 1896. Serial No. 604,223. Term of patent 14 years.



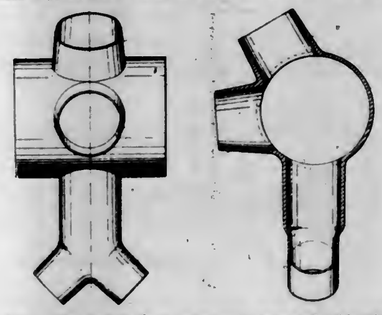
Claim.—The design for a handle-bar for a bicycle, substantially as herein shown and described.

26,340. HANDLE-BAR. ROBERT W. MURPHY, New York, N. Y. Filed Sept. 18, 1896. Serial No. 606,300. Term of patent 7 years.



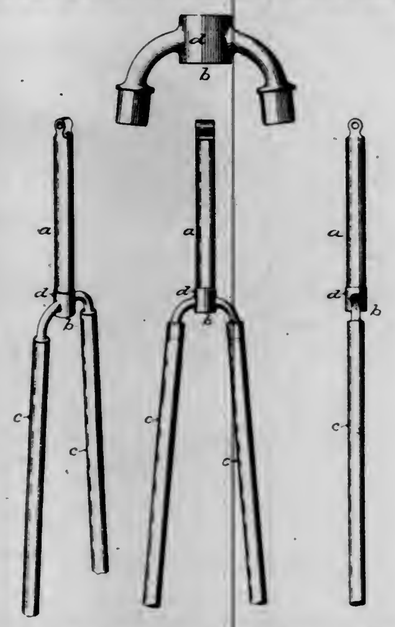
Claim.—The design for a bicycle handle-bar, herein shown and described.

26,341. CRANK-AXLE HANGER FOR BICYCLES. IRVIN D. LENGEL, Reading, Pa., assignor to The Packer Cycle Company, same place. Filed Sept. 22, 1896. Serial No. 606,682. Term of patent 3½ years.



Claim.—The design for a crank-axle hanger for bicycles, substantially as herein shown and described.

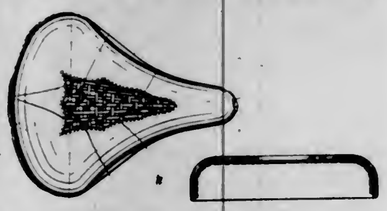
26,342. BICYCLE BRACE OR FORK. CHARLES L. TRAVIS, Minneapolis, Minn., assignor to the Hygienic Wheel Company, Philadelphia, Pa. Filed Jan. 31, 1896. Serial No. 577,321. Term of patent 14 years.



Claim.—1. The design for a bicycle brace or fork, comprising the members *a*, *b* and *c*, of the form herein shown and described.

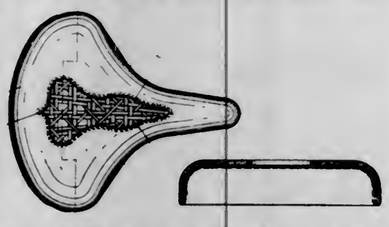
2. In a design for a bicycle brace or fork, the curved or arched member *b* having the central portion *d* and the curved arms extending outwardly and downwardly therefrom as shown.

26,343. BICYCLE-SADDLE. FREDERICK MESINGER, New York, N. Y., assignor to the Mesinger Bicycle Saddle Company, same place. Filed Oct. 12, 1896. Serial No. 608,660. Term of patent 7 years.



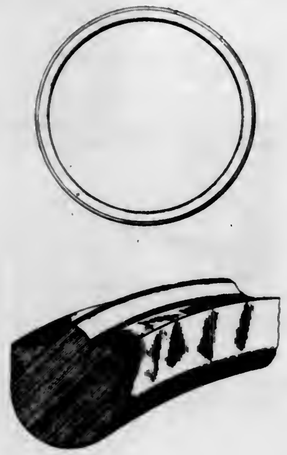
Claim.—The design for a bicycle-saddle substantially as herein shown and described.

26,344. BICYCLE-SADDLE. FREDERICK MESINGER, New York, N. Y., assignor to the Mesinger Bicycle Saddle Company, same place. Filed Oct. 12, 1896. Serial No. 608,661. Term of patent 7 years.



Claim.—The design for a bicycle-saddle substantially as herein shown and described.

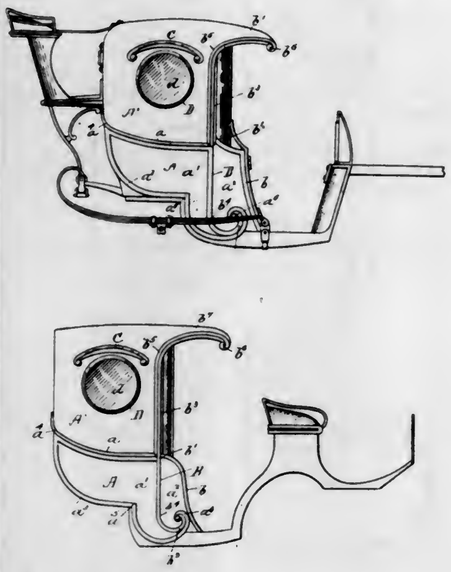
26,345. FELLY OR WHEEL-RIM. JESSE LYMAN DANN, Columbus, Ohio. Filed Oct. 12, 1896. Serial No. 608,657. Term of patent 14 years.



Claim.—The design for a felly or rim substantially as herein shown and described.

26,346. WITHDRAWN.

26,347. CARRIAGE-BODY. HENRY C. SEARS, Boston, Mass. Filed Nov. 25, 1895. Serial No. 570,116. Term of patent 14 years.



Claim.—1. The design for a carriage-body as herein described and shown.

2. In a design for a carriage-body, the pattern which comprises the moldings or beads *a*, a^3 and *b*, pillar B and scroll a^5, of the conformation shown, and collectively forming the panels *a'* and a^4, as set forth.

TRADE-MARKS

REGISTERED NOVEMBER 24, 1896.

29,189. SUNDAY-SCHOOL CARDS. INTERNATIONAL ART PUBLISHING COMPANY, LIMITED, New York, N. Y. Filed Oct. 27, 1896.

Mizpah

Essential feature.—The word "MIZPAH." Used since October 19, 1896.

29,190. WORKINGMEN'S GLOVES AND MITTENS. FELIX H. HUMISTON, St. Louis, Mo. Filed Oct. 12, 1896.



Essential feature.—A pictorial representation of a horseshoe and the words "HORSE SHOE." Used since May 1, 1896.

29,191. COUGH-SYRUP. EDWARD T. HIGGINS and CHARLES D. HIGGINS, Greensborough, N. C. Filed Sept. 16, 1896.

TAR HEEL
COUGH SYRUP

Essential feature.—The words "TAR HEEL COUGH SYRUP." Used since March 2, 1896.

29,192. REMEDY FOR RHEUMATISM AND KINDRED DISEASES. FRIEDRICH S. MASON, New York, N. Y. Filed June 15, 1896.

Colchi-Sal

Essential feature.—The compound word "COLCHI-SAL." Used since December 1, 1894.

29,193. FEVER AND AGUE REMEDIES. EDWIN C. HOWE, Bridgeport, Conn. Filed Oct. 26, 1896.

25399

Essential feature.—The number "25399." Used since 1878.

29,194. MEDICINAL PREPARATIONS CONTAINING IRON OR MANGANESE. ROBERT FARRIS, Boston, Mass. Filed Apr. 14, 1896.

NORMAL

Essential feature.—The word "NORMAL" printed in red on a white ground. Used since January 1, 1896.

29,195. PEPSIN WAFERS. JOSEPH SHATTUCK, Nashua, N. H. Filed Oct. 26, 1896.



Essential feature.—The word "PEPSINAID" and a representation of a wafer. Used since June 29, 1896.

29,196. LAGER-BEER. CHICAGO BREWING COMPANY, Chicago, Ill. Filed June 9, 1896.



Essential feature.—The words "OUR OWN EXPORT" and a representation of a woman standing upon a globe and holding a pennant in her right hand, which extends partially around the skirt, and the other end of which drapes between her feet, and in her left hand holding the end of a square, the angle of which rests against her left hip. Used since May 25, 1896.

29,197. SAUCES. WILLIAM HOVENDEN COURTENAY, Worcester, England. Filed May 23, 1896.



Essential feature.—A representation of a hand holding a bottle by means of a bottle-holder. Used since April 1, 1896.

29,198. PICKLES. SKILTON, FOOTE & CO., Somerville, Mass. Filed Nov. 2, 1896.

MRS. HOLBROOKS
GOLDEN
GERMAN SALAD

Essential feature.—The words "MRS. HOLBROOK'S GOLDEN GERMAN SALAD." Used since October 12, 1896.

29,199. FORMOSA TEA. WOLFE, MCMILLAN & Co., Philadelphia, Pa. Filed Oct. 27, 1896.

ORANGE BLOSSOM



Essential feature.—The words "ORANGE BLOSSOM" arranged above a pictorial representation of a spray of orange-blossoms. Used since September 1, 1896.

29,200. BAKING-POWDER. H. A. KREPOHL & Co., Quincy, Ill. Filed Apr. 6, 1896.

SUNRISE

Essential feature.—The word "SUNRISE." Used since August 1, 1894

29,201. CERTAIN NAMED ARTICLES DESIGNATED GROCERIES. WILLIAM EDWARDS & Co., Cleveland, Ohio. Filed Oct. 21, 1896.

WESTERN RESERVE

Essential feature.—The words "WESTERN RESERVE." Used since May 29, 1896.

29,202. LAUNDRY STARCH. T. KINGSFORD & SON, Oswego, N. Y. Filed Oct. 10, 1896.

T-B

Essential feature.—The letters "T-B" arranged within a triangular-shaped figure. Used since October 6, 1896.

29,203. REFINED BEEF SUET OR FAT. HUGON & Co., LIMITED, Pendleton, England. Filed Oct. 29, 1896.

ATORA

Essential feature.—The word "ATORA." Used since 1895.

29,204. TOILET PREPARATIONS MANUFACTURED FROM WOOL-FAT. BENNO JAFFÉ & DARMSTAEDTER, Martinikenfelde, Germany. Filed Sept. 11, 1896.



Essential feature.—A circle or ring connected with arrows. Used since January 9, 1886.

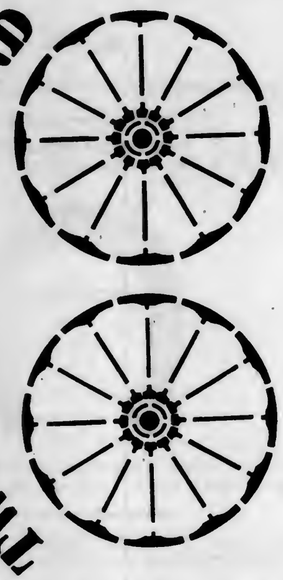
29,205. POWDERED TALC OR AGALITE. INTERNATIONAL PULP COMPANY, Gouverneur and New York, N. Y. Filed Oct. 24, 1896.

NOGRITAGALITE

Essential feature.—The word "NOGRITAGALITE." Used since April 15, 1896.

29,206. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

TWO-WHEEL BRAND



Essential feature.—The words "TWO-WHEEL BRAND" and a representation of two wheels. Used since October 19, 1896.

29,207. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

GLOBE BRAND



Essential feature.—The words "GLOBE BRAND" and a representation of a globe. Used since September 12, 1896.

29,208. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

CRESCENT BRAND



Essential feature.—The words "CRESCENT BRAND" and a representation of a crescent. Used since September 12, 1896.

29,209. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

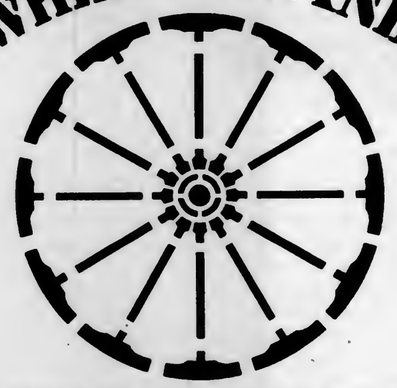
EAGLE BRAND



Essential feature.—The words "EAGLE BRAND" and a representation of an eagle. Used since October 6, 1896.

29,210. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

WHEEL BRAND



Essential feature.—The words "WHEEL BRAND" and a representation of a wheel. Used since September 19, 1896.

29,211. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

ROSE BRAND



Essential feature.—The words "ROSE BRAND" and a representation of a rose. Used since August 19, 1896.

29,212. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896

LIGHTHOUSE BRAND



Essential feature.—The words "LIGHTHOUSE BRAND" and a representation of a lighthouse. Used since August 19, 1896.

29,213. INDIA-RUBBER, GUTTA-PERCHA, AND OTHER VULCANIZABLE GUMS. GEO. A. ALDEN & Co., Boston, Mass. Filed Oct. 29, 1896.

BELL BRAND



Essential feature.—The words "BELL BRAND" and a representation of a bell. Used since August 19, 1896.

29,214. CLINICAL AND OFFICE INSTRUMENTS AND APPARATUS. HERCULES SANDER, Detroit, Mich., assignor to the Animarium Company, of New York, N. Y. Filed Oct. 24, 1896.



Essential feature.—A pictorial representation of a bowl, the ankle of a person, an instrument in the bowl, and a flexible cord or wire connected with the instrument and with a band or strap encircling the ankle. Used since January, 1895.

29,215. CLINICAL AND OFFICE INSTRUMENTS AND APPARATUS. HERCULES SANDER, Detroit, Mich., assignor to the Animarium Company, of New York, N. Y. Filed Oct. 24, 1896.

DIADUCTION

Essential feature.—The word "DIADUCTION." Used since April 18, 1893.

29,216. CLINICAL INSTRUMENTS AND APPARATUS. HERCULES SANDER, Detroit, Mich., assignor to the Animarium Company, of New York, N. Y. Filed Oct. 24, 1896.

OXYDONOR

Essential feature.—The word "OXYDONOR." Used since April 18, 1893.

29,217. CERTAIN DESIGNATED ELECTRICAL APPLIANCES. THE HART & HEGEMAN MANUFACTURING COMPANY, Hartford, Conn. Filed Oct. 26, 1896.



Essential feature.—The letters, character, and abbreviation "H & H M Co" arranged as a monogram. Used since August 20, 1896.

29,218. WOODEN CLOCK-CASES. SETH THOMAS CLOCK COMPANY, New York, N. Y. Filed Aug. 13, 1896.

ADAMANTINE

Essential feature.—The word "ADAMANTINE." Used since July 1, 1896.

29,219. STOVES AND RANGES. PLYMOUTH STOVE FOUNDRY CO., Plymouth, Mass. Filed Oct. 27, 1896.

PILGRIM

Essential feature.—The word "PILGRIM." Used since October 1, 1894.

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

CLARKE *v.* PETTENGILL *v.* CRANCER.

Decided October 31, 1896.

INTERFERENCE—PETITION FOR RECONSIDERATION.

A petition asking that the Examiner of Interferences be directed to reconsider his decision awarding priority, upon the ground that such decision is a travesty on equity practice, a gross injustice, that it is in direct contradiction to the evidence, and that the Examiner has exceeded his powers, when the record of the case discloses that the Examiner acted with deliberation and apparent fairness, is wholly unjustifiable and should not have been presented.

ON petition.

ADJUSTABLE HANDLE-BAR.

Application No. 567,387 of George H. Clarke filed October 30, 1895. Application No. 558,100 of A. N. Pettengill filed August 3, 1895. Application No. 553,857 of George A. Crancer filed June 24, 1895.

Messrs. Burridge & Cutter for Clarke.
Mr. E. W. Anderson for Pettengill.
Messrs. Higdon, Higdon & Longan for Crancer.

SEYMOUR, *Commissioner:*

This case comes before me on petition by Pettengill praying that the Examiner of Interferences may be directed to reconsider his decision of October 16, 1896, awarding priority of invention to Crancer and that he be directed to render a decision in accordance with the evidence and the facts before him.

The petition alleges that the decision is a travesty on equity practice, a gross injustice to the petitioner, and a discredit to the Office; that it is in direct contradiction to the evidence before the Examiner and is a direct and unwarranted attack upon the credibility of the petitioner and his witnesses; that the Examiner has exceeded his powers in going behind the evidence presented and disregarding the same; that the Examiner has raised the question of laches and has decided it against the petitioner; that the Examiner has raised presumptions against the petitioner and decided them adversely to him and in favor of Crancer.

In view of the extraordinary remedy which I am asked to apply I have examined these statements somewhat closely and have examined the entire record as though the case were before me on the merits, and I have questioned the counsel who presented this petition. It appears that Pettengill attempted to prove priority of invention by testifying that he had conceived of the improvement in the year 1893; that he made drawings of it at that time, which were exhibited to his sons, and that he made handle-bars in the course of the year 1895. None of these drawings or sketches were produced in evidence or in any manner brought to corroborate these statements, although his sons and another witness testified that sketches were shown to them. The absence of these exhibits was not explained. "Exhibit A" was introduced, which is a copy, apparently, of the drawing forming part of the application, and the witnesses were asked whether this represented what the applicant Pettengill had invented, to which answer was made in the affirmative. But this drawing, being a copy, might have been made just prior to the giving of this testimony, and is not admissible in itself as proof that the sketches were made in 1893, except upon a sufficient showing that those sketches were lost and that they had been diligently searched for and could not be found.

It is stated that the case was not tried according to the instructions of counsel and that the handle-bars were present when the witnesses testified; but in the matter of an invention so closely resembling many other articles of the same type the fact that the witness had them present when he testified, but did not put them in evidence, is very properly a circumstance to be weighed against the petitioner. I do not care to assume that the case was so badly tried as the petitioner's counsel suggests. It is fair to assume that it was tried upon deliberation; that exhibits that were accessible were not put in the case because they would not strengthen the case, and in the absence of explanation why "Exhibit A" was put in evidence, when not in itself admissible, all tend to the conclusion that Pettengill was not the prior inventor. If Crancer, an earlier applicant, can be defeated upon such a showing, then the burden of proof which is upon Pettengill may be disposed of as a mere feather's weight.

In the case of *Soley* v. *Hebbard*, (70 O. G., 921.) a contest on priority recently decided by the Court of Appeals of the District of Columbia between two applicants, of which Hebbard was the earlier, Morris, judge, speaking for the court, said:

> Moreover, Hebbard's application for a patent was the first in the order of time. Under these circumstances Hebbard is in the position of a defendant in possession, with the *prima facie* right of ownership by virtue of his possession, and it is incumbent upon any one who would dispute his right to establish an antagonistic title by a clear and fair preponderance of evidence. It will not do merely to raise a doubt, so as to render a defendant's right questionable. There must be a reasonable preponderance of evidence in order to overcome the presumption of right arising from the fact of possession. The burden of proof in the present case is upon the appellant Soley to show that his (Soley's) idea was actually communicated to Hebbard and acted upon by the latter, and if he fails to make such proof his claim cannot be sustained and the appellee must be left in the possession of the invention where we find him. Has the appellant so made out his case?

My conclusion is, and I am inclined to express it with emphasis, not only that the Examiner of Inter-

ferences violated no law, did no injustice, but that this petition, and particularly the unwarranted attack upon the Examiner attempted in it, is wholly unjustifiable, and that this petition, whether considered as an attempt to bring before the Commissioner that which under the practice can ordinarily be reviewed in the first instance only by the Examiners-in-Chief or as a gratuitous attack upon the Examiner, should not have been presented.

The petition is accordingly denied.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—Third Circuit.

CALDWELL *et al. v.* POWELL.

Decided April 10, 1896.

1. VAN RODEN—DESIGN—COLLEGE-BADGE—NOT VOID.
   Design patent No. 20,748, granted May 19, 1891, to George C. Van Roden, *Held* not void on its face for want of invention.
2. DESIGN—COLLEGE-BADGE—PATENTABILITY.
   A design for a college-badge, consisting of a pin having the shape of a guidon flag, upon which the letters "U. P." are placed, is not so absolutely void of invention upon its face as to justify the court in sustaining a demurrer upon that ground.
3. DEMURRER—EFFECT UPON BILL.
   The effect of a demurrer is to admit the truth of the charges in the bill when the latter are well pleaded.

APPEAL from the Circuit Court of the United States for the Eastern District of Pennsylvania.

STATEMENT OF THE CASE.

This was a bill by James E. Caldwell and others against Charles S. Powell for infringement of Letters Patent No. 20,748, for a design for a college badge or pin. The circuit court sustained a demurrer to the bill for want of patentable invention appearing on the face of said patent and dismissed the suit. (71 Fed. Rep., 970.) Complainants appeal.

Before ACHESON, WALES, and GREEN, Judges.

Mr. J. P. Creasdale and *Mr. Lewin W. Barringer* for the appellants.

Mr. George J. Harding (*Mr. George Harding*, on the brief) for the appellee.

GREEN, *J.:*

This bill was filed to restrain the defendant from infringing a patented design. The design itself is for a badge or pin and is of gold (or other metal) and enamel, triangular in shape, like a guidon, having upon the face a combination of red and blue colors, in two horizontal stripes or bars, and bearing the letters "U. P." embossed thereon. This badge or pin was intended mainly for the students in attendance at the University of Pennsylvania, and the colors on the badge are the well-known colors of that university. There is no question made as to the infringement of the design by the defendant. It is admitted.

The bill of complaint is in the usual form of such bills and contains, *inter alia*, the allegation that one Van Roden—

was the original and first inventor of the badge in question, which was not known or used by others in this country, and not patented or described in any printed publication, in this or in any foreign country, prior to the invention thereof by said Van Roden, and not in public use or sale in the United States for more than two years prior to the application for said patent, which application was filed in the United States Patent Office on the 11th day of April, 1891; the said Van Roden fully and in all respects complying with all the requisitions of the law in that behalf.

The bill further stated that the said Van Roden on the 7th day of April, 1891, by a certain instrument in writing—

did sell and assign to the firm of James E. Caldwell & Co. the entire right, title, and interest in and to the said invention and design for badge, and did thereby authorize and request the Commissioner of Patents to issue the said Letters Patent to the firm of James E. Caldwell & Co., which said instrument was recorded in the Patent Office on the 11th day of April, 1891; and the said James E. Caldwell & Co., the complainants, did, in accordance therewith, obtain Letters Patent for said design for badge, issued in due form of law to them, bearing date the 19th day of May, 1891, and numbered 20,748, whereby was granted and secured, according to law, to your orators, their heirs and assigns, for a term of fourteen years from the said date, the full and exclusive right to make, use, and vend, throughout the United States and the Territories thereof, the invention therein specified and claimed, as in and by said Letters Patent, or certified copy thereof, here in court to be produced, will more fully appear.

The bill contained the further allegation that—

the invention or design for badge described and claimed in said Letters Patent is of great value and importance; that badges or pins constructed in accordance therewith have been made and sold in large numbers since the grant of the patent; that the rights of the complainants have been generally acquiesced in and acknowledged by the public; and that, but for the doings of this defendant, and others acting in collusion with him, they would be in the exclusive enjoyment of the rights and privileges granted by and under the said Letters Patent.

The bill then avers that the complainants have placed upon every badge or pin by them made, of this design, the word "Patented" and the date of the granting of the Letters Patent, and charges the defendant with—

the making, using, and vending of pins and badges embracing the invention or design for badge, or a material part thereof, patented as aforesaid, and thereby the said defendant has infringed, and still does infringe, upon the exclusive rights and privileges intended to be secured to the said complainants by their said Letters Patent.

The bill concludes with the usual prayer for injunction and other relief. To this bill the defendant has interposed a general demurrer, and for causes of demurrer the want of invention and of novelty in the conception and production of the design were assigned. On the argument of the cause in the court below the demurrer was sustained and the bill dismissed. From that decree this appeal is taken.

It is a general principle of equity pleading that, as a demurrer proceeds upon the ground that, admitting the facts stated in the bill to be true, the complainant is not entitled to the relief he seeks, all matters of fact which are stated in the bill are admitted by the demurrer and cannot be disputed in arguing the question whether the defense thereby made be good or not, and such admission extends to the whole manner and form in which it is here stated; or, to state the principle more concisely, every charge in the bill, well pleaded, is absolutely admitted by the demurrer. Treating the issue raised by the bill and demurrer simply as one of pleading it would be difficult indeed to find the slightest ground for the justification of the demurrer. The bill is full, complete, and orderly in its statements of facts upon which the prayer for relief is based. It is not necessary to repeat again the averments and allegations, which have been already quoted at some length. The effect of the demurrer is to admit their truth. If so, stronger reasons for equitable relief could hardly be advanced.

But the defendant claims that the design itself, as described in the patent, shows absolutely no invention whatever. His insistment is that the badge or pin in question is in shape, or form, or general appearance a mere copy of a well-known style of flag, commonly called a "guidon," and that the court will take judi-

cial notice of this fact, and, having such knowledge, it cannot grant to the complainants any relief, for they utterly fail to show any cause for the interference of a court of equity. But can it be said by this court, upon demurrer, if it should find that a flag of the shape of a guidon is common and well known, that a badge or a pin molded into a similar shape, bearing upon it, in combination, certain colors and letters, is not novel and does not show invention? The statute which protects inventors requires the production of a new and pleasing design. The invention demanded consists in the conception and production of a design which can be so characterized. The design in this case is not to be found alone in the triangular shape, but rather in a conception which combines shape, colors, and letters. As was pertinently said by Mr. Justice Bradley in *New York Belting and Packing Co.* v. *New Jersey Car Spring and Rubber Co.*, (54 O. G., 135; 137 U. S., 446-450; 11 Sup. Ct., 193:)

Whether or not the design is new is a question of fact, which, whatever our impressions may be, we do not think it proper to determine by taking judicial notice of the various designs which may have come under our observation. It is a question which may and should be raised by answer and settled by proper proofs.

We think, under the circumstances, the defendant should have been put to his answer in this case, and hence the decree below is reversed.

U. S. Circuit Court of Appeals—Seventh Circuit.

BRUSH ELECTRIC COMPANY *v.* WESTERN ELECTRIC COMPANY.

Decided October 5, 1896.

1. BRUSH ELECTRIC LAMP—NOT INFRINGED.
   Letters Patent No. 219,208, granted September 2, 1879, to Charles F. Brush, for a double-carbon electric lamp, examined and *Held* not infringed.
2. PATENTABILITY—MEANS—OBJECT.
   The object of an invention is not patentable, the means may be. "Mechanism * * * to separate * * * pairs dissimultaneously" is an element of means.
3. INFRINGEMENT.
   Devices which effect a distinctly simultaneous separation of pairs of carbons of a lamp do not infringe a patent in which there is claimed a device for securing a dissimultaneous separation of such pairs of carbons.
4. SAME.
   The contention that, since it is physically impossible for two sets of carbons to be separated at one and the same electrical instant, the defendant's devices must infringe is manifestly fallacious.

APPEAL from the Circuit Court of the United States for the Northern District of Illinois, Northern Division.

STATEMENT OF THE CASE.

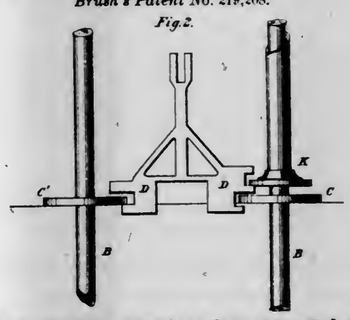
These cases were argued at our October session, 1895. They involve questions of the validity, construction, and infringement of Letters Patent No. 219,208, granted September 2, 1879, to Charles F. Brush for a double-carbon electric lamp. In case No. 271 the Scribner lamp, made in conformity with Patent No. 418,758, granted January 7, 1890, to Charles E. Scribner, and in case No. 272 the monitor lamp and the twin lamp, which the appellee asserts the right to make and use under Letters Patent, also to Scribner, Nos. 502,535 and 502,536, respectively, are the devices which are alleged to infringe the Brush patent. The claims in question read as follows:

1. In an electric lamp, two or more pairs or sets of carbons, in combination with mechanism constructed to separate said pairs dissimultaneously or successively, substantially as and for the purpose specified.
2. In an electric lamp, two or more pairs or sets of carbons, in combination with mechanism constructed to separate said pairs dissimultaneously or successively and establish the electric light between the members of but one pair, (to wit, the pair last separated,) while the members of the remaining pair or pairs are maintained in a separated relation, substantially as shown.
3. In an electric lamp having more than one pair or set of carbons, the combination, with said carbon sets or pairs, of mechanism constructed to impart to them independent and dissimultaneous separating and feeding movements, whereby the electric light will be established between the members of but one of said pairs or sets at a time, while the members of the remaining pair or pairs are maintained in a separated relation, substantially as shown.
4. In a single electric lamp, two or more pairs or sets of carbons, all placed in circuit, so that when their members are in contact the current may pass freely through all said pairs alike, in combination with mechanism constructed to separate said pairs dissimultaneously or successively, substantially as and for the purpose shown.
5. In an electric lamp wherein more than one set or pair of carbons are employed, the lifter D or its equivalent, moved by any suitable means, and constructed to act upon said carbons or carbon-holders dissimultaneously or successively, substantially as and for the purpose shown.
6. In an electric lamp wherein more than one pair or set of carbons are employed, a clamp, C, or its equivalent, for each said pair or set, said clamps C adapted to grasp and move said carbons or carbon-holders dissimultaneously or successively, substantially as and for the purpose shown

The lifter D and the clamps C referred to in the fifth and sixth claims are illustrated by Fig. 2 of the patent, of which the following is a copy:

Brush's Patent No. 219,208.

Fig. 2.



The second claim, which as first presented was rejected because "altogether too broad if not functional," read in this wise:

An electric lamp or light regulator having two or more pairs or sets of carbons, each pair or set adapted to have independent separating and feeding movements, whereby the voltaic arc will be established between the members of but a single one of said pairs or sets, substantially as shown.

This patent has been in frequent litigation, and while the validity of some of the claims is not now denied their construction and scope are strenuously contested. In the following cases are reported opinions in some of which the prior art and other pertinent facts are so fully stated and discussed as to make a further statement or extended discussion here unnecessary: *Brush Electric Co.* v. *Ft. Wayne Electric Co.*, (50 O. G., 434; 40 Fed. Rep., 826;) *Same* v. *Same*, (44 Fed. Rep., 284;) *Brush Electric Co.* v. *West. Elec. Light & Power Co.*, (52 O. G., 1950; 43 Fed. Rep., 533;) *Brush Elec. Co.* v. *New Am. Arc Light Co.*, (46 Fed. Rep., 79;) *Brush Elec. Co.* v. *Elec. Imp. Co.*, (52 Fed. Rep., 965.)

It is contended, under pleadings and proofs which present the question, that the issues in case No. 271, and in No. 272 in part, were tried and determined in the suit against the Western Electric Light and Power Company, called the *Toledo Case*, and that the Western Electric Company was privy to and had sole and open charge of the defense in that suit, and therefore is conclusively bound by the decree therein rendered. That case was heard by Judges Brown and Ricks, and, summing up the prior art, Justice Brown said:

The French patent of Denayrouse, it is true, contained the principal feature of the Brush patent in the successive combustion of two pairs of carbons, but by means so different that they can by no stretch of construction be regarded as mechanical equivalents. The invention has no application to carbons placed end to end,

as in the American patents, but to those lying side by side, as in the patent of Jablochkoff, who appears to have originated this arrangement. It is in fact a duplication of the Jablochkoff candle, with the addition of "an electric key for making and breaking contact with the electric current for each such candle. This key is worked by one arm of a lever, the other arm of which has a stud pressed by a spring against the candle, which is burning, near its lower end. When this candle is burned nearly down, so that the stud of the lever is no longer supported by the solid matter of the candle or carbon, the lever and key are moved by the spring, and contact is thus broken with the circuit for the nearly-consumed candle, and is made with the circuit for a fresh candle, which is thereby kindled, and thus successively, as candle after candle becomes consumed, fresh candles are kindled automatically to take their place."

But as this patent is not seriously claimed as an anticipation no further reference to it will be made. The main questions in this case turn upon the proper construction of the Brush patent. While the claims are undoubtedly broad, they ought not to be interpreted as for a function or result, since there is nothing novel in substituting one pair of carbons for another, and thus securing a successive combustion of two or more pairs. It was done long before the Brush patent, and may still be done by manual interference, by replacing one set of carbons with another, or by any mechanism which does not involve the dissimultaneous and dissimultaneously separating and feeding movement. What the claims purport to cover are briefly all forms of mechanism constructed to separate the two or more pairs of sets of carbons "dissimultaneously" (a word coined for the occasion, but readily understood) or successively, in order that the light may be established between the members of but one pair or set at a time, while members of the remaining pair are maintained in a separate relation. It is claimed by the defendant, however, that the words "dissimultaneously or successively," contained in the first six claims of the patent, refer only to the exact instant, the very *punctum temporis*, of the separation of the carbons; and that as the Scribner patent, under which the defendants are operating, provides for the initial simultaneous separation of the carbons, there is no infringement, though the light is formed between but one pair, the other being held in reserve to await their consumption. If this contention be correct, then it necessarily follows that Brush, who is acknowledged to be the actual inventor of the double carbon, and whom defendants' expert, Mr. Lockwood, frankly admits (page 243) to be justly regarded as having done more than any one else to make electric-arc lighting on a large scale a practical success, secured by his patent the mere shade of an idea—a wholly immaterial and useless feature—abandoning to the world all that was really valuable in his invention.

The court below, holding the dissimultaneous initial separation of the carbons to be an essential feature of the Brush lamp, found that the appellee had not infringed. (72 O. G., 1203; 69 Fed. Rep., 240.)

Before WOODS, JENKINS, and BUNN, Judges.

Mr. Henry A. Seymour for the appellant.

Mr. George P. Barton and *Mr. Charles A. Brown* for the appellee.

WOODS, *J.*, after making the foregoing statement, delivered the opinion of the court.

The decree in the *Toledo Case* awarded a perpetual injunction, but with an order of reference to a master to ascertain the damages by reason of infringement, and for that purpose the suit, it is conceded, is still pending. It is therefore only an interlocutory decree and not available as an estoppel in respect to any issue in these suits. (*Barnard* v. *Gibson*, 7 How., 650; *Humiston* v. *Stainthorp*, 2 Wall., 106; *McGourkey* v. *Toledo & Ohio Ry.*, 146 U. S., 545; *David Bradley Mftg. Co.* v. *Eagle Mftg. Co.*, 66 O. G., 315; 6 C. C. A., 661; 18 U. S. App., 349; *Jones* v. *Munger, etc., Co.*, 1 C. C. A., 668; 2 U. S. App., 188; *Richmond* v. *Atwood*, 61 O. G., 1655; 2 C. C. A., 596; 5 U. S. App., 151; *Marden* v. *Campbell, etc., Co.*, 15 C. C. A., 26; 33 U. S. App., 123; *Bissell Carpet Sweeper Co.* v. *Goshen Sweeper Co.*, 72 Fed. Rep., 545.)

The proposition that the claims of the Brush patent, excepting the fifth, are void because they are for a result or a function and not for definite means we do not consider tenable. As was said in the Fort *Wayne Case*, (50 O. G., 434; 40 Fed. Rep., 826, 833)—

> the specification describes mechanism whereby a result may be accomplished, and the claims are not for mere functions. * * * They are for combinations of specific mechanisms, and their substantial equivalents, and not for results irrespective of means for their accomplishment.

In the sixth claim the clamp C is described as "adapted" to grasp and move the carbons; but, there being no express reference to any mechanism to be used in connection with them, we are not ready to agree that the claim is—

> for the two clamps in combination with the mechanism described in the patent for actuating the clamps. (See *Temple Pump Co.* v. *Goss Pump, etc., Co.*, 7 C. C. A., 174; 18 U. S. App., 229.)

Upon the controlling question, whether the claims of the patent refer to the initial separation or only to an arc-forming separation of the carbons of the lamp, we concur in the view of the court below.

It is not to be questioned that Brush's object was to produce an electric lamp in which by means of automatic mechanism two or more sets of carbons should be consumed successively; but while that fact should not be overlooked in any attempt to determine the meaning of the claims of his patent, the distinction between the object of an invention and the means contrived for its accomplishment should not be forgotten. The object to be achieved is not patentable; the means may be. The claims in question, as it was necessary they should be in order to be valid, are for the means described, and their equivalents, of effecting in a single lamp the successive burning of two or more pairs of carbons. To accomplish that purpose Brush devised and claimed a—

> mechanism constructed to separate said pairs dissimultaneously or successively, substantially as described and for the purpose specified.

As the lamp and its operation are described there occurs in it first a separation of one pair of carbons, and closely following a separation of the second pair, producing between the latter, if there be but two sets, an arc-light which burns until the carbons are consumed, whereupon the carbons of the other pair are brought again into contact and at once are separated the second time, producing an instant renewal of the arc, which continues, barring accident, until the carbons supporting it are consumed. In the light of the prior art, how ought the claims to be construed? Without attempting a presentation of that art, we are content with the summary statement of it made in the *Toledo Case*.

> While the claims [as it is there said] are undoubtedly broad, they ought not to be interpreted as for a function or result, since there is nothing novel in substituting one pair of carbons for another, and thus securing a successive combustion of two or more pairs. It was done long before the Brush patent, and may still be done by manual interference, by replacing one set of carbons with another, or by any mechanism which does not involve the dissimultaneous and dissimultaneously separating and feeding movement.

It is of course an obvious and necessary characteristic of the Brush lamp that there shall be in it a successive or dissimultaneous arc-forming separation, because otherwise there cannot be a successive consumption, of the different sets of carbons. In other words, in a double-carbon lamp successive burning and dissimultaneous arc-forming separations are inseparable conditions. A claim for one is equivalent to a claim for the other. The final object to be accomplished is the successive burning of the different sets of carbons; but that cannot be without an arc-forming separation of each set as it begins to burn. If, therefore, the claims of the patent, as contended and as seems to have been adjudged in the *Toledo Case*,

cover the arc-forming separation with which the burning of each set of carbons begins, the patent gives a monopoly of all possible lamps in which two or more sets of carbons are brought automatically into successive use, no matter what the means or mechanism employed. So broad a construction is not admissible. It is anticipated by the patent of Denayrouse and probably by those of Wilde, Reynier, and Siemens and Halske, at least when considered together and in connection with the Day lamp. (*Floresheim* v. *Schilling*, 53 O. G., 1737; 137 U. S., 64.) There cannot be a mechanism capable of—

> substituting one pair of carbons for another, and thus securing a successive combustion of two or more pairs, * * * which does not involve the dissimultaneous and the dissimultaneously separating and feeding movement,

if that expression means the so-called "arc-forming separation" and not the initial separation so plainly illustrated by the lifter D, as shown in the drawings and explained in the specification of the patent. The second claim, which was first presented to the Patent Office, covered in terms—

> independent separating and feeding movements whereby the voltaic arc will be established between the members of but a single one of said pairs or sets, substantially as shown.

That was an appropriate and accurate mode of expressing the idea of arc-forming separation, and in none of the claims allowed is there an equivalent expression. That claim, however, was rejected, not because functional, but because it was "altogether too broad if not functional," and the authorities are familiar which forbid a construction of claims allowed which will make them equivalent to broader claims rejected.

It does not follow from this construction of the claims that Brush—

> secured by his patent the mere shade of an idea—a wholly immaterial and useless feature.

It is still possible to give his patent the benefit of a liberal though not unrestricted application of the doctrine of equivalents and to bring under it merely colorable departures from the terms of its claims. In the case against the *Ft. Wayne Electric Company*, (44 Fed. Rep., 284,) for instance, a device in which one set of carbons was at first separated by hand was declared an infringement, though it is to be observed that it was so held—

> because it clearly appears from the proof and operation of the machines, as exhibited upon the hearing of the motion, that if the attendant did not latch up the upper carbon of one pair the machine itself would automatically do so, the same as it is done in the Brush lamp.

It is easy to conceive a mechanism which at first and for a short while would lift the carbons simultaneously and allow them to burn alternately, as in the Day lamp, and then produce a distinct and wider separation of one pair, leaving the other set to burn until consumed, when, as in the Brush patent, the pair which had been held in separation would come into play; but such an attempt at evasion would hardly be allowed to succeed. Again, if it be true, as contended, that the carbons in the Brush lamp, as described and illustrated, are operated by a single mechanism, the fact is not mentioned in the claims, and by a liberal construction the monitor and twin lamps, it might be said, do not escape infringement merely because in them each pair of carbons is moved by a separate mechanism connected with the other only by the electric current which passes through both. Those lamps and the Scribner lamp do not infringe, we agree with the court below in holding, because instead of the dissimultaneous initial separation, which we consider an essential feature of the Brush lamp, they have a distinctly simultaneous initial separation, which deprives them of the advantage asserted in Brush's specification to result from the formation of the first arc between a predetermined pair of carbons, and, on the other hand, secures for them the advantage of arcs of equal length between both sets of carbons, which in the Brush lamp, it seems, is not effected.

The contention that there has been infringement even if the patent be limited to the initial separation of the carbons, because it is physically impossible that two sets of carbons shall "be separated at one and the same electrical instant of time," is manifestly fallacious, though the physical fact be conceded. The separation contemplated in the Brush patent is certain, controlled, and predetermined, and in so far as there may be a failure to effect a simultaneous separation by the mechanism in the lamps of the appellee it is uncontrolled and not intended.

In respect to the invention covered by this patent Brush was not in the broad sense a pioneer, though doubtless by reason of his prior inventions he may have been—

> justly regarded as having done more than any one else to make electric-arc lighting on a large scale a practical success.

In support of the application for this patent his attorneys before the Commissioner of Patents insisted that the real invention was "broadly a principle, or a method of moving the carbons in a lamp," and that that "mode *per se*" was the true invention sought to be protected; but it is clear that the patent as granted is for a mechanism only, and while under a liberal application of the doctrine of equivalents—

> if the device is appropriated in its essential features it will be an infringement, notwithstanding some change in the location and relation of parts,

even though a doubtful function of little comparative worth be eliminated, (*Western Electric Co.* v. *Sperry Electric Co.*, 7 C. C. A., 164, 173; 18 U. S. App., 177,) yet the proposition enunciated in *Temple Pump Co.* v. *Goss Pump, etc., Co.*, (7 C. C. A., 174, 182; 18 U. S. App., 229,) is not inapplicable, namely—

> that when a device designed merely for the improvement of a well-advanced art is described as having particular features of construction, which are adapted to accomplish specific results or modes of operation, and the claim of the patent is for that device, the features so described are covered by the claim, and may not be rejected, or treated as of secondary importance, in order to extend the patent over other forms or features not described.

The decree of the circuit court is affirmed.

U. S. Circuit Court—Northern District of New York.

BEACH v. INMAN *et al.*

Decided September 12, 1896.

1. PRELIMINARY INJUNCTION—SUBSTANTIAL IDENTITY OF STRUCTURE—PRIOR ADJUDICATION.

A motion for a preliminary injunction will be granted when it appears that the defendant's structure is the same as the complainant's in all respects save one, and that one, though differing in a narrow technical sense, is the same in principle, and when it further appears that the complainant's patent has been uniformly upheld during years of arduous litigation with the present defendant.

2. SUBSTITUTION OF EQUIVALENTS—PRIOR LITIGATION—WORDING OF CLAIMS.

The substitution of a horizontally-moving roller presser and cutter for a vertically-moving direct plunger and cutter will not suffice to avoid infringement in the case of a defendant who was also an unsuccessful defendant in a long course of prior litigations, even though the structure complained of evades the wording of the claims in suit.

3. INFRINGEMENT—PREVIOUS ADJUDICATION.

A court of equity will not be overzealous in behalf of a defendant who persists in producing an old article which concededly contains all the elements save one of a combination uniformly forbidden him in previous suits.

MOTION for a preliminary injunction. The patent, Reissue No. 11,167, was sustained. (C. D., 1894, 618; 69 O. G., 1067; 63 Fed. Rep., 597; affirmed 74 O. G., 379; 71 Fed. Rep., 420.)

Mr. John Dane, Jr., for the complainant.
Mr. Edmund Wetmore for the defendants.

COXE, *J.:*

The first three claims of the Beach patent are involved.

That the defendants' machine contains all the elements of the combinations of these claims save one is conceded. It does not, it is said, have the upper clamping-die of the patent. In a narrow technical sense this is true. The defendants' die moves horizontally instead of vertically and has a roller-pressure instead of that of a plunger. Both reciprocate, both cut off the stay-strip, and both press it upon the box-corner with sufficient force to make it stick. One has a rolling progressive cut. In the other the knife has a straight edge which cuts across the strip synchronously as the die descends. So far as the cutting action is concerned it is like the substitution of a circular saw for a straight saw or a cimeter for a claymore. The character of the cut is not of the essence of the invention, and it is wholly immaterial whether a round cutter begins operations at the edge or a straight cutter begins on the top or bottom of the stay-strip, so long as the cut is completed in time to enable the die to press the severed portion down upon the corner of the box. The same, substantially, is true of the pressing action of the two machines. It is the difference between a roller and a hammer—instruments often used interchangeably in mechanics.

The defendants' upper die is provided with a V-shaped groove around its periphery which coöperates with the diverging faces of the lower die, and between the two dies the stay-strip is pressed into position. In principle the two machines are identical. They differ in details only. So long as the strip is made to adhere in the proper manner to the corner of the box it can make no difference whether pressure is applied uniformly to the entire adhesive surface or by beginning the application at the side and continuing it until the desired result is accomplished. A postage-stamp can be made to stick as well by passing a blotting-roller over it as by pressing it down with the hand. In short, the defendants accomplish the same result by equivalent means. Having in mind the broad construction placed upon the patent, the court is convinced that the defendants infringe.

The complainant is not limited to the precise mechanism shown. He is entitled to a liberal application of the doctrine of equivalents.

The first three claims are broad ones, [says the Circuit Court of Appeals,] covering the particular combinations referred to without any restriction to the details of mechanical construction. * * * The only question is whether, in view of the state of the art, Beach was entitled to appropriate as broad a combination as he has set forth in his first three claims, which cover every device for affixing stay-strips to the outside of box-covers, where the operation is performed by the combined action of a feeding mechanism, a cutting mechanism and a pasting mechanism, in combination with any opposing clamping-dies whose faces diverge. The circuit court sustained these broad claims, and we concur in this decision.

It must, therefore, be held that the changes made by the defendants are of form and not of substance. They introduce no new function, accomplish no new result, and are only such as would occur to an ingenious mechanic whose object is to produce a machine which will do the forbidden work while presenting a different appearance to the eye.

When a patentee has obtained a final decree after years of arduous litigation, it should be final in reality as well as in name. It should guard his rights against all intruders. It should be a document of the utmost value and not a mere *brutum fulmen*. If, after having passed the ordeal of the courts, patents are still to be scanned with a hostile microscope and the inartistic and perhaps thoughtless nomenclature of the description is to be substituted for the machine itself, an invitation is extended to infringers to begin again the work of spoliation under a new disguise. They have only to change the mechanism by substituting a new part, taking care that it shall be known by a different name from the one used by the inventor to describe the corresponding part in the patented machine, and they may proceed with impunity. When the actual invention is made clear, the inventor should not be impaled upon a sharp construction of his ill chosen adjectives. An infringer should not escape because he is able "to evade the wording of the claims." Parts of speech should yield to parts of iron and brass. A defendant who has been pronounced in the wrong at every stage of a litigation extending over a period of eight years should be satisfied. He should stop. When he persists in producing the old article by using a machine which concededly contains all the elements of the forbidden combination save one, the court should not be overzealous to strain the rules of equity in his behalf. The presumptions are all against him.

The motion is granted.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 9. TUESDAY, DECEMBER 1, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
NOTICE	1277
DISBARRED ATTORNEYS	1277
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	1277
OFFICIAL GAZETTE	1277
PRICE OF PRINTED COPIES OF SPECIFICATIONS AND DRAWINGS	1277
INDEXES TO PERIODICALS	1277
PUBLISHERS' CATALOGUES	1278
ISSUE OF DECEMBER 1, 1896	1278
APPLICATIONS UNDER EXAMINATION	1278
PATENTS GRANTED	1279
REISSUES	None.
DESIGNS	1418
TRADE-MARKS	1423
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Ex parte Frasch	1427
DECISIONS OF THE U. S. COURTS—	
Long *et al* *v.* Pope Manufacturing Company	1428
Edison Electric Light Company *v.* Kaelber	1430
Bennett & Shepherd *v.* Schooley	1432

Notice.

It is hereby directed that in the printing of claims of applications for patents the punctuation of the claims as made by applicants be strictly followed, and that the punctuation of the specification made by applicants be not departed from except to cure a manifest absurdity.

Disbarred Attorneys.

(ORDER No. 1,108.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 14, 1896

It is hereby directed that any person who has been disbarred from practice before the Patent Office by order of the Commissioner be denied access to the files of the Office, either in his own capacity or as the representative of any other person or firm.

JOHN S. SEYMOUR,
Commissioner.

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.
Argentine Republic.
Belgium.
Brazil.
Costa Rica.
Denmark.
Haiti.
Honduras.
Italy.
Mexico.
Netherlands.
Norway.
Peru.
Portugal.
Russia.
San Salvador.
Servia.
Sweden.
Switzerland.

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

The Official Gazette.

THE OFFICIAL GAZETTE is published every Tuesday, simultaneously with the weekly issue of patents. From January 1, 1872, (the commencement of its publication,) to June 30, 1883, it was published and bound in semi-annual volumes; since July 1, 1883, in quarterly volumes. Terms: To subscribers within the United States, Canada, and Mexico, $5 per annum; to foreign subscribers, $10; single copies, 10 cents; if mailed to foreign countries 10 cents additional for postage; bound semi-annual volumes, (prior to June 30, 1883,) full sheep, $4 per volume; bound quarterly volumes, (subsequent to July 1, 1883,) full sheep, $2.75 per volume, *Payment in advance.* No subscription will be received for less than three months. All orders should be addressed to "The Commissioner of Patents, Washington, D. C."

Price of Printed Copies of Specifications and Drawings.

(ORDER No. 1,094.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 25, 1896.

It is hereby ordered, pursuant to an amendment of section 493 of the Revised Statutes, entitled "An act amending the statutes relating to the sale of printed copies of patents," approved May 19, 1896, that the price to be paid for uncertified printed copies of specifications and drawings of patents shall be, for single copies, or any number of unclassified copies, five cents each; for copies by subclasses, three cents each; by classes, two cents each, and for the entire set of patents issued, in one order, one cent each.

This order will be in effect on and after July 1, 1896.

JOHN S. SEYMOUR,
Commissioner.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Astrophysical Journal, Chicago, a monthly title-index of publications on astrophysical and allied subjects.

Electrical World, New York, a weekly digest of electrical articles.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Electric Power, New York, a monthly synoptical index of electrical literature, American and foreign.

Journal of the United States Artillery, a bimonthly title-index of current artillery literature.

Proceedings of the Physical Society of London, monthly abstracts of the principal articles on physics published in the American and Continental journals since January 1, 1895.

School of Mines Quarterly, New York, a quarterly synoptical index of articles on analytical chemistry and title index of metallurgical literature.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of December 1, 1896.

Patents	418	No. 572,094 to No. 572,511, inclusive.
Designs	27	No. 26,348 to No. 26,374, inclusive.
Trade-Marks	25	No. 29,220 to No. 29,241, inclusive.
Prints	None.	
Labels	None.	
Reissues	None.	
Total issue	470	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	2		New Hampshire		
Arizona Territory			New Jersey	30	1
Arkansas	1		New Mexico Territ'y		
California	16		New York	73	10
Colorado	3		North Carolina		
Connecticut	23		North Dakota		
Delaware			Ohio	18	3
District of Columbia	4		Oklahoma Territory		
Florida	1	1	Oregon	2	
Georgia	3	1	Pennsylvania	52	
Idaho	1		Rhode Island	5	
Illinois	33	1	South Carolina	1	
Indian Territory			South Dakota	3	
Indiana	11		Tennessee	1	
Iowa	8		Texas	3	
Kansas	3		Utah		
Kentucky	2		Vermont	4	
Louisiana	1		Virginia	4	
Maine	2		Washington	1	
Maryland	5		West Virginia	1	
Massachusetts	33	3	Wisconsin	14	
Michigan	15		Wyoming	1	
Minnesota	6		U. S. Army	1	
Mississippi			U. S. Navy		
Missouri	13	2			
Montana	2		Total to citizens of the United States	405	22
Nebraska	3				
Nevada					

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina			Mexico		
Australia			Netherlands		
Austria-Hungary	1		Newfoundland		
Barbadoes			New South Wales	1	
Belgium			New Zealand		
Bermuda			Norway		
Brazil			Orange Free State		
Canada	4	1	Portugal		
Canary Islands			Queensland		
Cape Colony			Russia	2	
Ceylon			Scotland	3	
Chile, Republic of			South African Republic		
Colombia			South Australia	1	
Cuba			Straits Settlements		
Denmark			Sweden		
England	9	1	Switzerland	1	
France	3	1	Victoria		
Germany	14		West Australia		
Guatemala					
India					
Ireland			Total to citizens of foreign countries	40	3
Italy	1				

APPLICATIONS UNDER EXAMINATION.

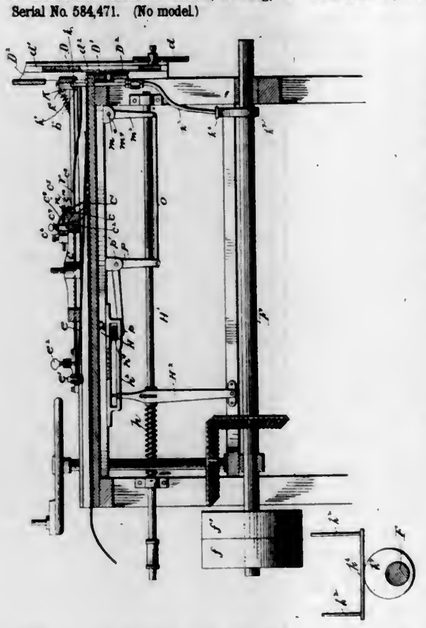
Condition at Close of Business November 24, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Oct. 24	Nov. 16	199
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Oct. 24	Nov. 10	121
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Oct. 24	Nov. 9	107
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Oct. 28	Oct. 30	218
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Oct. 24	Oct. 28	130
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Oct 24	Oct. 28	184
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Oct. 24	Oct. 28	216
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Oct. 26	Oct. 26	142
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Oct. 26	Oct. 26	208
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Oct. 24	Oct. 26	272
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Oct. 24	Oct. 17	237
221	XXIII. Instruments of Precision, Acoustics, etc.	Oct. 26	Oct. 2	314
	Between one and two months.			
255	XII. Mechanical Engineering, Store-Service, etc.	Oct. 22	Oct. 31	253
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 12	Oct. 27	331
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Oct. 21	Oct. 26	183
215	XVII. Paper Manufactures and Printing	Oct. 6	Oct. 22	150
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Sept. 22	Oct. 19	411
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Oct. 13	Oct. 17	191
93	XXI. Textiles, etc	Oct. 9	Oct. 17	218
253	X. Carriages and Wagons	Oct. 6	Oct. 14	371
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Oct. 5	Oct. 12	383
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Oct. 21	Oct. 10	205
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Oct. 9	Oct. 9	358
246	I. Tillage and Fences	Oct 3	Oct. 6	365
248	XVIII. Steam-Engineering, etc	Oct. 10	Oct. 5	140
120	IX. Hydraulics, Fire-Extinguishers, etc.	Oct. 5	Oct. 5	279
106	II. Farm Stock, Products, etc	Sept. 25	Sept. 16	316
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes.	Sept. 1	Oct. 1	1277
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Aug. 26	Sept. 26	340
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 24	Sept. 11	575
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Aug. 28	Sept. 3	290
102	XIX. Stoves and Furnaces	Sept. 5	Sept. 1	527
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 8	Oct. 3	892
	Total number of applications awaiting action			10,413
	Under one month in arrears.			
	Designs	Nov. 9	Nov. 12	119
	Trade-Marks	Nov. 10	Nov. 13	63

PATENTS

GRANTED DECEMBER 1, 1896.

572,094. MACHINE FOR CUTTING RIBBED FABRICS. CHARLES F. ADAMS and HENRY F. ADAMS, Reading, Pa. Filed Mar. 23, 1896. Serial No. 584,471. (No model.)



Claim.—1. In a machine for cutting ribbed fabrics, the reciprocating feed carriage having an adjustably-fixed lower feeder c' and a pivoted upper feeder c^3 provided with a spring adjustment for varying the normal position of the same with relation to said lower feeder, substantially as set forth.

2. In a machine for cutting ribbed fabrics the combination with the table having a guideway, the cutting mechanism at one end thereof, and the reciprocating feed-carriage, of the vertically-moving clamp, the spring connected thereto, a support for retaining said clamp in elevated position, and a projection on the carriage for releasing the same, substantially as set forth.

3. In a machine for cutting ribbed fabrics the combination with the table having a guideway, the cutting mechanism at one end thereof, and the reciprocating feed-carriage, of the vertically-moving clamp, a projection k on the clamp and a pivoted lever M having one end arranged to be depressed by the said projection when the movement of said clamp is below its normal clamping position, and at the other end operatively connected to a belt-shifting mechanism, substantially as set forth.

4. In a machine for cutting ribbed fabrics, the combination of a table having a guideway, a reciprocating feed-carriage traveling in said way, an adjustably-fixed lower feeder on said carriage, a spring-adjusted upper feeder pivoted on said carriage, a vertically-movable clamp, mechanisms to intermittently raise and lower the clamp, and a cutting mechanism, substantially as described.

5. In a machine for cutting ribbed fabrics, the combination of a table having a guideway, a reciprocating carriage traveling in said way, an adjustably-fixed lower feeder on the carriage, a spring-adjusted upper feeder pivoted on said carriage, a spring-finger connected at one end to the table beyond the extreme rearward movement of the carriage, its other end extending forward in the guideway under the carriage to press on the fabric, and clamping and cutting mechanisms, substantially as described.

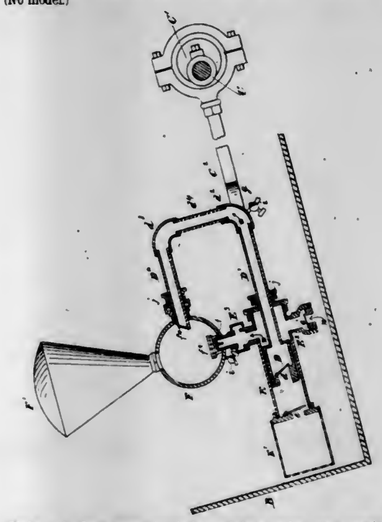
77 O. G.—79

572,095. MANUFACTURE OF MINERAL COLORS FOR CERAMIC PHOTOGRAPHY. GEORGE J. ATKINS, London, England. Filed Apr. 30, 1896. Serial No. 589,744. (No specimens.) Patented in England Feb. 15, 1895, No. 3,356; in France Aug. 1, 1895, No. 249,348; in Belgium Aug. 2, 1895, No. 116,805; in Austria Dec. 6, 1895, No. 45/4,667, and in Germany Jan. 17, 1896, No. 52,271.

Claim.—1. The herein-described method of rendering mineral and enamel colors suitable for photography by treating them with chromic acid or chromates sufficient to saturate their metallic components before mixing them with the gelatin or other colloid substance for forming the sensitive films.

2. As a new article of manufacture for use in photography, mineral or enamel colors the metallic components of which are saturated with chromic acid or chromates before they are mixed with the gelatin or other colloid substance for forming the sensitive films.

572,096. HAND FIRE-ENGINE. HENRY C. ATKINSON and WILLIAM MILLER, Louisville, Ky. Filed Oct. 23, 1895. Serial No. 566,620. (No model.)



Claim.—1. In a two-wheeled hand fire-engine, the combination with the engine-bed, nests of buckets adapted to fit in apertures in the rear of the engine-bed, supporting-wheels, ladders adapted to form part of the hauling-gear and the hauling-shafts, of the supporting-frame hinged at its rear end and provided with hooks to engage the ladder-rungs, the foot-pieces secured to the free end of said supporting-frame, devices for holding said frame and foot-pieces out of working position, and foot-pieces secured to the rear end of said engine-bed, substantially as shown and for the purposes set forth.

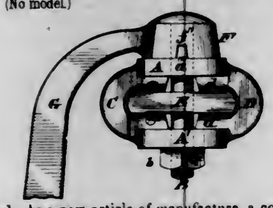
2. In a two-wheeled hand fire-engine a water-reservoir pivoted in front on both sides to the axle of the supporting-wheels adapted to be raised and lowered on said pivot and having on the top of its sides pivoted handle-bars with a bayonet-lock, in combination with a hose reel having an axle adapted to engage the lock of the pivoted handle and hold the reservoir in position substantially as described.

3. In a hand fire-engine a series of pump-cylinders E having induction valves e in their outer ends and strainers E' induction-valves e' in their bottom near their crank ends, exhaust-pipe in their tops, having a stem-valve f and a perforated valve cap f^2, near their crank ends, hollow valved piston-heads D, hollow piston-rods D', connected by elbow-joints d^3, pipes d^4 and elbow-joints d^5 with hollow rod D^2 parallel with the piston-rod and having a valve f^4 at its aperture,

adapted to be actuated similarly with the piston rod by the eccentric-rods C², in combination with a receiving-pipe F having a discharge-pipe f^2 and an air-chamber f' substantially as described and for the purposes specified.

572,097. COMBINED BODY-LOOP AND SPRING-COUPLING.

CHARLES A. BEHLEN, Cincinnati, Ohio. Filed June 22, 1896. Serial No. 596,478. (No model.)



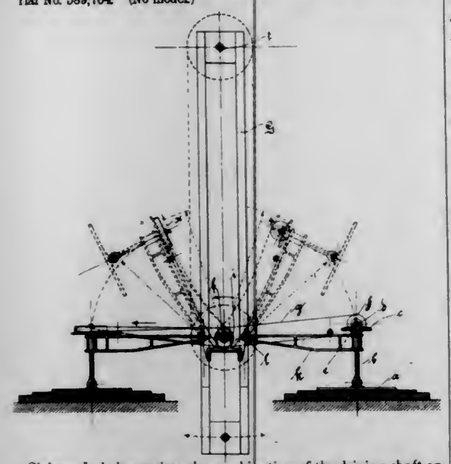
Claim.—1. As a new article of manufacture, a coupling consisting of the plates A, A', united by branches C, D, having bearings *c*, *c'*, *d*, *d'*, as herein described.

2. The combination of perforated plates A *a*, A' *a'*, united by branches C, D, having bearings *c*, *c'*, *d*, *d'*, a vibrating member E, inserted between said bearings, and pierced at *e*; a supporting member G, having a head F, resting upon the upper plate A, and provided with an eye *f*; and a bolt B traversing said passages *f*, *a*, *e*, *a'*, and secured with a retainer, as *b*, for the purpose described.

3. A body-loop, or similar supporting member provided with four limited bearings for a spring substantially as herein described.

572,098. DEVICE FOR THROWING OUT OF GEAR BELT-GEARING.

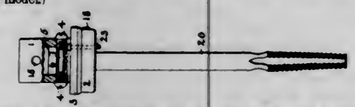
LEOPOLD BENDIT, Fuerth, Germany. Filed Apr. 30, 1896. Serial No. 589,704. (No model.)



Claim.—In belt-gearing, the combination of the driving-shaft extending horizontally and having a pulley thereon, the vertical driven shaft *b*, the horizontal shaft *e*, the gearing between the shafts *b* and *e*, the bracket carrying the shafts *b* and *e*, extending therefrom horizontally and pivoted at a point between the driving-shaft and the tool-shaft *b*, the pulley on the horizontal shaft *e* and the belt forming the direct connection between the driving-pulley and the pulley on the shaft *e*, said belt being slackened by the lifting of the bracket *k*, substantially as described.

572,099. SAFETY-SOCKET FOR TAPS OR DRILLS.

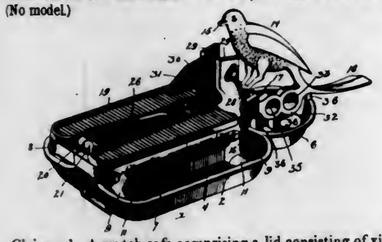
GOTTLIEB BETTCHER, Cleveland, Ohio. Filed June 5, 1896. Serial No. 594,451. (No model.)



Claim.—In a safety-socket for taps and drills, the following elements in combination; a sleeve 1 provided with an annular flange 3 at one end, a tool-holder 2 provided with the spindle 6 rotatable within said sleeve 1, an annular groove 7 in the periphery of said spindle, screws 4 engaging said sleeve and spindle, a series of holes 11, 12, 13, and 14 in the flange 3 concentric to the axis thereof, each of said holes being provided with a steel bushing 10, and a breakable pin 23 engaging one of said series of holes and entering a coincident hole in the flange of the holder 2, as set forth.

572,100. MATCH-SAFE.

PAUL BLECHSCHMIDT and GUSTAVE BLECHSCHMIDT, Rock Island, Ill. Filed Aug. 19, 1896. Serial No. 603,269. (No model.)



Claim.—1. A match-safe comprising a lid consisting of vibratory sections, a movable object adapted to pass between the lid-sections for picking up a match, a cam or wedge for moving said sections apart, and means for automatically closing said sections on the return movement of said object, substantially as described.

2. A match-box, comprising a hinged and sectional lid, a movable object adapted to enter between said sections when opened, means carried by said object for moving said sections apart at their meeting edges, and an actuating-spring for closing said sections on the return movement of said object, substantially as described.

3. A match-safe comprising a match-receptacle, opposing spring-jaws adapted to grasp the matches and also roughened for the purpose of igniting the matches as they are withdrawn from between said jaws, and a movable object adapted to enter between and spread said jaws and to pick up and deposit a match between the jaws substantially as described.

4. A match-box, comprising a sectional and hinged lid, a movable object adapted to enter between the lid-sections, means for opening and closing said sections, a perforated web carried by said object, and a cutter removably fitted to the base of the device and operating in conjunction with said web, substantially as and for the purpose described.

5. A match-safe comprising a match-receptacle, a lid therefor made up of vibratory sections, a movable object adapted to be actuated to pass between the lid-sections for picking up a match, match holding and igniting jaws arranged above the lid and in the path of the movable object so as to be spread apart by the downward movement of said object, and means for operating the movable object, and at the same time causing the lid-sections to be spread apart, substantially as described.

6. In a match-safe and cutter, the combination with the match-receptacle, of the movable object adapted to pick a match therefrom, a web 32 carried by the object and provided with one or more perforations 33, and a knife-blade or cutter 35 arranged in the path of the web and adapted to cooperate with the perforations, substantially as described.

7. In a match-safe, in combination, a match-receptacle, a movable object for picking up the matches, and opposing jaws arranged between said receptacle and object and in the path of the latter, the said object being arranged to move between and spread the jaws as it moves toward the receptacle, and to pick up a match and deposit the same between the jaws in its return movement, substantially as described.

572,101. COMPOSITION OF MATERIAL FOR INCANDESCENT GAS-LIGHTS.

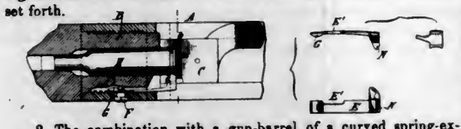
LUDWIG K. BÖHM, New York, N. Y., assignor to the American Incandescent Light Company, of West Virginia. Filed Nov. 5, 1895. Renewed Sept. 28, 1896. Serial No. 607,367. (No specimens.)

Claim.—A composition for incandescent material consisting of magnesium oxid, porcelain body, powdered asbestos, sulfate of chromium, oxid of calcium, sulfate of barium or minium, and thoria and zirconia, substantially in the proportions specified.

572,102. EXTRACTOR FOR BREECH-LOADING FIREARMS.

HAZEN W. BRADLEY, Ilion, N. Y., assignor to the Remington Arms Company, New York, N. Y. Filed Sept. 12, 1896. Serial No. 605,590. (No model.)

Claim.—1. The combination with the frame of a firearm and the barrel secured thereto, of an extractor composed of a curved spring-blade having a projection thereon contained in a groove in the barrel, a breech-block containing a groove with which the projection on the extractor engages, the groove containing the extractor being enlarged to permit the head of the extractor to slip by and engage with a groove in the cartridge when forced home by the breech-block, as set forth.



2. The combination with a gun-barrel, of a curved spring-extractor contained in a groove in the barrel, said groove being provided with a recess into which the end of the extractor enters at its limit of outward movement and permits the head of the extractor to disengage itself from the cartridge, as set forth.

3. The combination with a gun-barrel, of a spring-blade constituting an extractor contained in a groove, the said blade being formed with a lug G at one end and a head adapted to engage with a groove in the cartridge, the groove in the barrel being formed with a recess to receive the lug when the extractor is withdrawn, and permitting a sufficient side movement or play of the extractor, whereby the head of the latter will slip by and engage with the groove in the cartridge when forced home by the breech-block and disengage itself therefrom by spring-tension when withdrawn, as set forth.

572,103. SPRING-HEEL FOR BOOTS OR SHOES.

JOHN BRESMAN, San Francisco, Cal. Filed Mar. 9, 1896. Serial No. 582,350. (No model.)

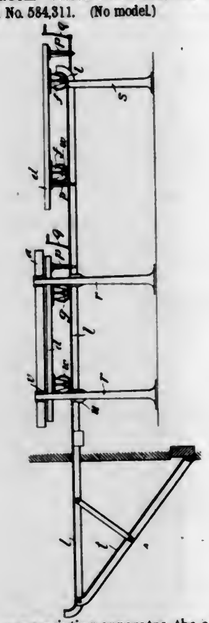


Claim.—1. In a spring-heel for boots and shoes, the combination with the upper metallic plate, of a ventilator connected therewith, a lower U-shaped metallic plate, a series of springs forming connection between the upper and the lower plates, and a rubber cushion interposed between the plates, said cushion conforming to the shape of the lower plate and having a series of openings therein within which the springs fit.

2. The combination with a boot or shoe, of a spring-heel secured thereto, an air-passage leading from the spring-heel within the boot or shoe, a valve covering said air-passage and an oscillatory valve-rod for controlling the valve.

572,104. TRUCK.

VICTOR CHARTENER, Pittsburg, Pa. Filed Mar. 21, 1896. Serial No. 584,311. (No model.)

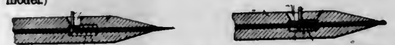


Claim.—1. In a sun-printing apparatus, the combination with a frame, adapted to hold a glass plate, and supported on standards, and with tracks, mounted underneath the frame, of a carriage, comprising a platform, brackets, supporting the platform; axles, pillowed in the brackets; eccentrics, rigidly secured to the axles; wheels, mounted on the eccentrics; worm-wheels, rigidly secured to the axles; a shaft mounted transversely to the axles in hangers secured to the platform, a worm, gearing with the worm-wheel, rigidly secured to the transverse shaft, and a crank for rotating the transverse shaft, whereby the eccentrics are simultaneously turned and the platform of the carriage lifted or lowered.

2. The combination with a truck, composed of wheels mounted in pairs of two on eccentrics, of worm-wheels, rigidly secured to the axles, a transversely-mounted shaft, worms, gearing with the worm-wheels, rigidly secured to the shaft and means for rotating the transverse shaft whereby the platform of the truck is lifted or lowered.

572,105. PENCIL.

GEORGE K. CUMMINGS and FREDERICK W. MUSSON, Chicago, Ill. Filed Mar. 10, 1896. Serial No. 582,609. (No model.)



Claim.—1. In a pencil a clutch adapted to move bodily in the handle and carry the lead with it in one direction and to move freely along the lead in the other direction, in combination with a retracting-spring, substantially as described.

2. In a pencil the combination of a handle and a lead; and a clutch whose clutching action is governed by its relative angle to the lead, and which has a bodily movement longitudinal to the handle, with a retracting-spring.

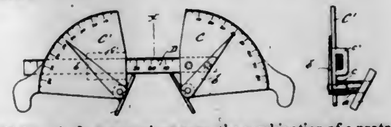
3. In a pencil the combination of a handle, a lead and a non-elastic clutch that has a bodily movement longitudinal to the handle.

4. In a pencil the combination of a handle, a lead, a non-elastic clutch that has a bodily movement longitudinal to the handle with a retracting-spring through which the lead freely slides.

5. In a pencil of a clutch-lever through which the lead freely slides and a spring through which the lead also freely slides with the handle or wood portion having a stop for confining the spring against the clutch-lever and another stop for causing the clutch-lever to bind on the lead under the pressure of the spring as set forth.

572,106. NOSE-PIECE GAGE FOR EYEGLASSES.

WALTER S. ESSICK, Reading, Pa. Filed June 1, 1896. Serial No. 593,714. (No model.)



Claim.—1. In a nose-piece gage, the combination of a protractor and a nose-piece rotatably mounted at the center thereof and provided with an index-finger arranged approximately at right angles to the nose-piece substantially as set forth.

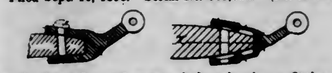
2. In a nose piece gage the combination with a slide-bar, of duplicate rotatably-mounted nose-pieces thereon and means for measuring the spread and incline of the nose-pieces substantially as set forth.

3. In a nose-piece gage the combination with a protractor having a nose-piece rotatably mounted at the center thereof and provided with an index-finger, of a measuring-bar fixed to said quadrant, and a duplicate nose-piece sliding on said bar substantially as set forth.

4. In a nose-piece gage the combination with a protractor having a nose-piece rotatably mounted at the center thereof and provided with an index finger, of a measuring-bar fixed to said quadrant, and a duplicate protractor with centrally-pivoted nose-piece and index, sliding on said bar substantially as set forth.

572,107. FRAMELESS SPECTACLES OR EYEGLASSES.

WALTER S. ESSICK, Reading, Pa., assignor, by direct and mesne assignments, to the Interchangeable Frameless Spectacle Company, Limited, same place. Filed Sept. 16, 1896. Serial No. 605,996. (No model.)



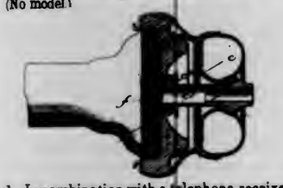
Claim.—1. A perforated spectacle-lens having a fitting clamped thereto by means of a clamping-screw engaging a perforated ear of said fitting, the inner face of which ear is recessed to form an outer bearing against the lens and to leave a portion of the lens immediately surrounding the perforation free from pressure, substantially as and for the purpose set forth.

2. A fitting for a perforated spectacle-lens having a perforated clamping-ear and an outer bearing formed on the inner face of said ear and adapted to seat against the surface of the lens at a distance from the perforation in the latter substantially as and for the purpose set forth.

3. A fitting for a perforated spectacle-lens having a perforated clamping-ear recessed on its inner face so as to form an outer edge of metal adapted to contact with the face of the lens and to conform to the latter under clamping-pressure, substantially as and for the purpose set forth.

4. A fitting for a perforated spectacle-lens having a perforated clamping-ear with an outer bearing formed on the inner face thereof and adapted to seat against the surface of the lens at a distance from the perforation in the latter and a yielding connection substantially as described between said ear and the body of the fitting adapted to permit adjustment of the ear to its seat upon the lens under pressure of the clamping-screw substantially as and for the purpose set forth.

572,108. EARPIECE FOR TELEPHONE-RECEIVERS. DE WITT C. FARRINGTON, Washington, D. C. Filed Apr. 3, 1896. Serial No. 586,092. (No model.)



Claim.—1. In combination with a telephone-receiver, an earpiece having a centrally-disposed auditory passage, a cushion seated in and covering the face of said earpiece and having a central aperture coincident with said passage, and a detachable tubular section forming a continuation of said auditory passage and snugly fitting within the aperture of the cushion, so as to close the same and aid in holding the cushion to its seat, substantially as described.

2. In combination with the earpiece of a telephone-receiver, a cushion detachably seated in the face thereof, and a detachable nipple communicating with the auditory passage through the earpiece and cushion and adapted to hold the cushion to its seat, substantially as described.

3. An auxiliary earpiece for telephone-receivers, comprising a cushion-holder having an auditory tube independent of but adapted to communicate with the delivery-opening in the receiver, an elastic ring encircling the inner end of said tube so as to bear against the face of the receiver and close said opening against outside noises, a cushion seated in the face of said auxiliary earpiece and means for detachably securing said auxiliary earpiece to the usual earpiece of the instrument, substantially as described.

4. An auxiliary earpiece for telephone-receivers, comprising a cushion-holder having an auditory tube communicating with the delivery-opening in the receiver, an elastic ring encircling the inner end of said tube so as to close said opening against outside noises, a cushion seated in the face of the earpiece and means for detachably securing said auxiliary earpiece to the usual earpiece of the instrument, together with a detachable nipple engaging the outer end of the auditory tube and adapted to confine the cushion between the same and the face of the earpiece, substantially as described.

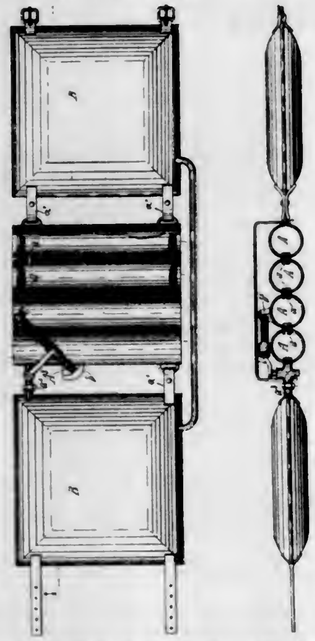
5. In combination with a telephone-receiver having the usual opening therein for delivering the sound-waves, a detachable nipple connecting with said opening, and a cushion encircling the nipple and completely covering the face of the earpiece except the auditory passage; said cushion being confined between the face of the earpiece and a shoulder or bulge of the nipple, substantially as described.

6. An auxiliary earpiece for telephone-receivers comprising a cushion-holder having an auditory tube connecting with the usual delivery-opening in the earpiece of the receiver, an elastic ring or sound-muffler interposed between said holder and the surface of said earpiece, an elastic cushion seated in the face of said holder and encircling said auditory tube, and a detachable nipple forming a continuation of said tube and having a projection or shoulder thereon for confining the cushion between the same and the surface of the holder, substantially as described.

572,109. LIFE-PRESERVER. THOMAS GORDON, New York, N. Y. Filed Nov. 21, 1892. Serial No. 452,082. (No model.)

Claim.—1. In a life-preserver, the combination with an inflatable part, of a chamber for containing compressed air or gas, a communication between said chamber and inflatable part, a valve for controlling said communication, and a material soluble in water, for holding said valve in a closed position, substantially as specified.

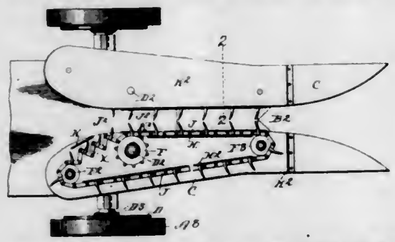
2. In a life-preserver, the combination with an inflatable part or parts, of a chamber or reservoir for containing compressed air or gas, a tube forming a communication between said inflatable part or parts and said chamber, a valve in said tube, a spring for operating said valve, and a part soluble in water for holding said spring in an operative position, substantially as specified.



3. In a life-preserver, the combination with an inflatable part or parts, of a chamber or reservoir for containing compressed air or gas, a tube forming a communication between said inflatable part or parts and said chamber or reservoir, a valve in said tube, a lever extending from said valve, a spring in contact with said lever, and a part or element soluble in water for holding said lever and spring in an operative position, substantially as specified.

4. In a life-preserver, the combination with an inflatable part, a chamber or reservoir for maintaining compressed air or gas, having communication with said inflatable part, a casing forming an air-chamber for supporting the compressed-air chamber in water, a valve for controlling the passage of air or gas from the compressed-air or gas chamber to the inflatable part and means, consisting of a material soluble in water, for holding said valve closed and releasing said valve after said material shall have been dissolved or weakened sufficiently to break, substantially as specified.

572,110. CORN-HARVESTER. WILLIAM H. GRAY, Eddyville, Iowa. Filed Jan. 17, 1896. Serial No. 575,853. (No model.)



Claim.—1. The combination in a corn-harvester or the like, of a sprocket-chain arranged to move in a horizontal plane, wheels for driving and supporting the chain so arranged as to permit several of the links to fold or kink upon each other and a guide located between two of said driving or supporting wheels to prevent the links from folding or kinking at that point, for the purposes stated.

2. The combination in a corn harvester, or the like, of a sprocket-wheel, means for driving the same, two idlers mounted in the same plane at opposite sides thereof, a track leading from one idler to the sprocket, a sprocket-chain passed around said sprocket-wheel and idlers and having a number of links sufficient to permit some of them to fold or kink, and arms or spurs on some of the links for the purposes stated.

3. In a harvesting-machine a carrier for cornstalks and the like comprising two like side pieces, each having its inner edge straight at its central portion and curved outwardly at its rear end, a sprocket-wheel mounted therein near the beginning of said curve, means for driving the sprocket-wheel, an idler at each end portion of the side piece, a track leading from the forward idler to the sprocket, a track leading from the rear idler to the forward one a sprocket-chain having an outwardly-projecting spur on each alternate link, passed around said sprocket and idlers and having a number of links sufficient to permit some of them to fold or kink in the rear of the sprocket-wheel substantially as set forth.

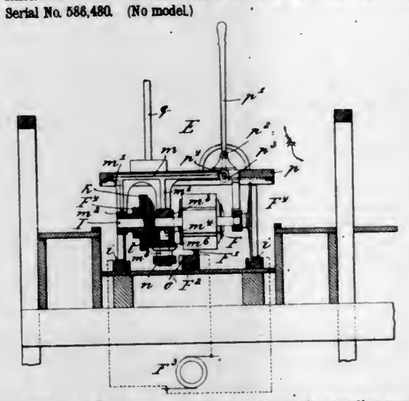
4. In a corn-harvester or the like the combination of a suitable continuous track, rounded at its ends, and widened at a certain point, of a sprocket-chain mounted for movement on said track and of such a length that some of the links may fold or kink at said widened portion, arms fixed to and projecting outwardly from some of the links, a sprocket-wheel located directly in advance of the said widened portion of the track to engage the chain and means for driving the sprocket-wheel.

5. In a corn harvester or the like, the combination of a suitable continuous track, comprising a flat bottom, a solid back, a slotted front and a widened portion, as set forth, of a sprocket-chain mounted for movement in said track and of such a length that some of the links may fold or kink in said widened portion, suitable arms projecting outwardly therefrom through said slotted front, a sprocket-wheel to engage said chain mounted in advance of the widened portion of the track and means for operating the said sprocket.

6. The combination in a corn-harvester or the like, having a suitable track rounded at its ends and widened at a certain point, a sprocket-chain mounted for movement on said track and of such a length that some of the links may fold or kink at said widened portion and means for driving said chain from a point in advance of the widened portion, of a slide mounted in said widened portion of the track, designed when moved therein to cause the links to fold or kink at different distances from the said chain-driving means and means for moving said slide.

7. The combination in a corn-harvester or the like, having a suitable track rounded at its ends and widened at a certain point, a sprocket-chain mounted for movement on said track and of such a length that some of the links may fold or kink at said widened portion and means for driving said chain from a point in advance of the widened portion, of a slide mounted in said widened portion of the track, designed when moved therein to cause the links to fold or kink at different distances from the said chain-driving means, and automatic shock-forming device located on the machine-frame and means connected therewith for advancing said slide when a certain predetermined quantity of stalks are assembled on the machine-frame, substantially as and for the purposes stated.

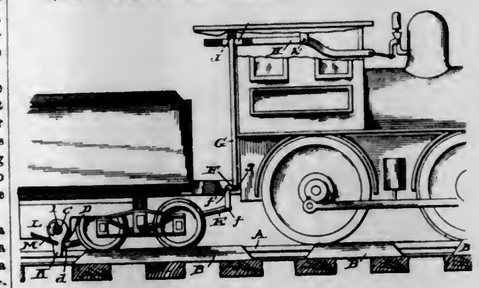
572,111. COMBINED ELECTRIC AND GRAVITY PLEASURE-RAILWAY. JAMES A. GRIFFITHS, Philadelphia, Pa. Filed Apr. 7, 1896. Serial No. 586,480. (No model.)



Claim.—1. In a pleasure-railway provided with ascending grades, a rack arranged along said grades, a car provided with a motor, a shaft adapted to be driven by said motor, a driving-pinion connected with said shaft, gearing connecting said pinion with an axle of said car, a frame adapted to shift said pinion on its shaft into and out of engagement with said gearing, and a cog-wheel carried by said frame and meshing with said driving pinion, said frame adapted to shift said cog-wheel into engagement with said rack when said driving-pinion is out of gear with said axle, substantially as and for the purposes described.

2. In a pleasure-railway provided with ascending grades, a feeder-rail and rack arranged only along the ascending grades, a car provided with suitable trucks, a motor mounted upon one of said trucks, a driving-pinion operated by said motor, a gear-wheel feathered to the axle of said truck and normally meshing with said pinion, a cog-wheel driven by said pinion, and mechanism for simultaneously shifting said cog-wheel into engagement with said rack and said gear-wheel out of engagement with said pinion, substantially as and for the purposes described.

572,112. AUTOMATIC WHISTLE. CHARLES H. HALL, Glidden, Wis., assignor of one-half to Edward Besse, Butternut, Wis. Filed May 12, 1896. Serial No. 591,235. (No model.)



Claim.—1. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, substantially as described.

2. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, one of said depending arms being loosely mounted on its shaft and the other carried by an independent shaft, substantially as described.

3. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, said depending arms being loosely mounted in relation to the shaft, and means on the arms to engage the shaft, said arms being mounted for action independent of each other, substantially as described.

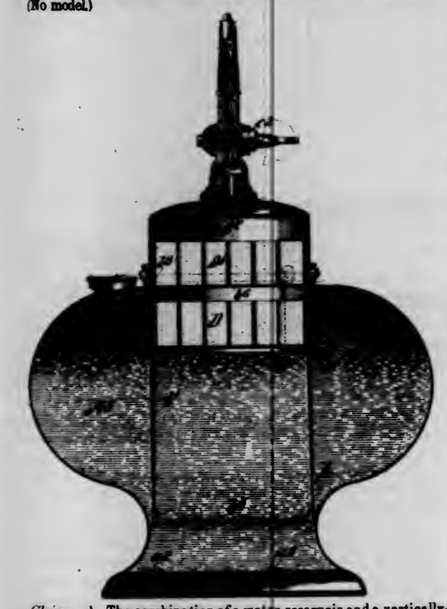
4. The combination with a series of blocks arranged alongside of a track and having their ends beveled, of a shaft carried by the moving train, depending arms disposed upon opposite sides of the locomotive and adapted to engage said blocks, gearing connected with the same and interposed mechanism between said shaft and the whistle, said depending arms being loosely mounted in relation to the shaft, and means on the arms to engage the shaft, said arms being mounted for action independent of each other, and springs acting on said arms and gear, substantially as described.

5. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, substantially as described.

6. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically-disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, said lever having an elongated slot in which the vertical arm has free play, substantially as described.

7. The combination with the shaft C, of the depending arm loosely mounted thereon, a crank-arm on said shaft and operative connections between said depending arm and shaft, a rod pivotally connected therewith, a pivoted bell-crank lever connected with said rod, a vertically-disposed rod pivotally connected with the bell-crank lever, and a lever connected with the upper end thereof and with the whistle, said lever having an elongated slot in which the vertical arm has free play, and means for preventing displacement of said arm from the slot, substantially as described.

572,113. ACETYLENE-GAS GENERATOR. WILLIAM P. HILL and HENRY D. HILL, St. Louis, Mo. Filed Feb. 24, 1896. Serial No. 580,516. (No model.)



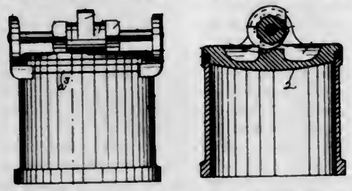
Claim.—1. The combination of a water-reservoir and a vertically-reciprocating gas-holder, whose lower end is within said reservoir; a support within and moving with the gas-holder for a solid substance, which when moistened generates gas; a support in said gas-holder above the support first mentioned upholding a gas-drying substance; said upper support being above the normal level of the water in the reservoir at all times and the upper surface of said lower support being beneath the normal surface of the water, when the gas holder is in its lowest position and above it when the gas-holder is in its highest position, substantially as and for the purpose described.

2. The combination of a water-reservoir and a vertically-reciprocating gas-holder, extending into the reservoir and composed of two communicating sections; a lower section having an inlet for water in the lower part thereof and carrying a support for solid material, which when moistened generates gas, and a removable upper section fitting down over and removably attached to the lower section and extending below the normal level of the water in the reservoir at all times, and thus securing a water seal and having a space therein above said support, for gas, substantially as described.

3. The combination of a water-reservoir, and a vertically-reciprocating gas-holder whose lower end extends into said reservoir, and which holder has a lower part having at its lower end an opening admitting water and in its upper part a support carrying a substance which when moistened generates gas; an intermediate part whose upper end connects with the top of said lower part and contains a support carrying a gas drying substance and a top part closing said intermediate part substantially as described.

4. The combination of a water-reservoir an opening at the top of said reservoir; a collar surrounding said opening; a gas-holder reciprocating within said collar; a support within and moving with said gas-holder for an alkaline-earth carbid; the upper surface of said support being located at a point which is above the surface of the water when the gas-holder is in its highest position and below the surface of the water when the gas-holder is in its lowest position and positive means for preventing the gas-holder from descending low enough to immerse the alkaline-earth carbid when the apparatus is out of use, but permitting it to ascend substantially as described.

572,114. CLEAN-OUT FOR SOIL-PIPES. FOREST HOOPER, Woburn, Mass. Filed June 9, 1896. Serial No. 594,823. (No model.)

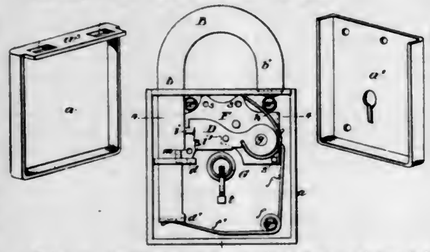


Claim.—1. In a clean-out apparatus, the combination with a body portion open at its opposite ends and provided with ears substantially diametrically opposite and attached to the sides of the said body portion, of a cover for one of said ends fitted between said ears and provided with a substantially central cam-engaging projection, a rod supported by said ears and detachable therefrom, a hub loose on said rod and provided with a cam to engage said projection, and with a nut by which the hub may be turned, substantially as described.

2. In a clean-out apparatus, the combination with a body portion open at its ends and provided with ears substantially diametrically opposite and having holes or openings in them, a cover to close one end of the said body portion and provided with a cam-engaging projection, a shaft extended into the holes in said ears above or beyond said cover and removable therefrom, and a hub loose on said shaft and provided with a cam coöperating with said cover, and with a nut, substantially as described.

3. In a clean-out apparatus, the combination with a body portion open at its ends and provided with ears attached to the sides of the body portion substantially diametrically opposite, a cover fitted between said ears to close one end of the said body portion and provided with a cam engaging projection substantially at its center, a shaft supported in said ears above or beyond said cover and detachable therefrom, a hub loose on said shaft and provided with a cam coöperating with the projection on said cover, and a nut attached to the cam-hub at one side of the said cam, substantially as described.

572,115. PADLOCK. MILTON JACKSON and ALBERT TAYLOR, Philadelphia, Pa., assignors to the D. K. Miller Lock Company, same place. Filed July 1, 1895. Serial No. 554,629. (No model.)



Claim.—1. A padlock-casing comprising front and rear halves each consisting of a plate of sheet metal struck up so as to form edge flanges which at the sides and bottom of the casing meet at about the transverse center of the same, the top plate being formed wholly upon one-half of the casing, substantially as specified.

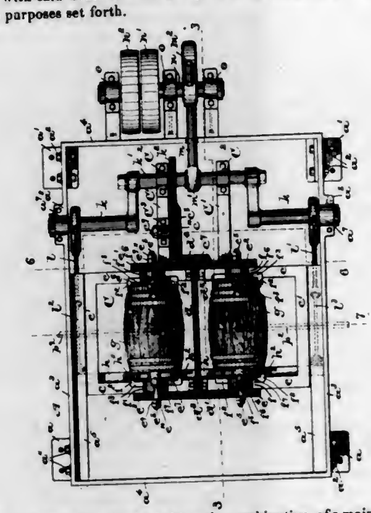
2. The combination of the casing, with the sliding shackle, the spring for projecting the same, the pivoted tumblers having notches in their outer edges and the sliding locking-plate having a fence for entering the notches in the tumblers, and a stump for engaging with a notch in the shackle, said locking-plate being moved in one direction by a spring, and in the opposite direction by the key, substantially as specified.

3. The combination of the lock-casing, the shackle, the pivoted tumblers, the sliding locking-plate, the key-hub mounted in the casing and a key-guiding stud extending across the casing below said key-hub, and parallel with the slot therein, substantially as described.

572,116. BARREL-WASHER. CHARLES A. JOHNSON, New York, N. Y., assignor to Theodore W. Myers, same place. Filed Sept. 13, 1895. Renewed Sept. 18, 1896. Serial No. 606,295. (No model.)

Claim.—1. In a barrel-washing machine, the combination, of a main frame, having guides or ways, a barrel-supporting carriage, sliding pieces in said guides, having sockets in which said carriage is pivotally supported, a crank-shaft adapted to rotate in bearings in said frame, an eccentric on said shaft and connected with said carriage to produce a reciprocatory movement of the same, and bearings

on said carriages, rotary brushes in said bearings, and means connected with said brushes for rotating the same, substantially as and for the purposes set forth.



2. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, and mechanism connected with said carriage, for producing an oscillatory movement of the carriage and a rotary movement of the brushes, substantially as and for the purposes set forth.

3. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways in which said carriage is arranged, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, and mechaniam connected with said carriage to cause a reciprocatory movement of the carriage and a rotary movement of the brushes, substantially as and for the purposes set forth.

4. In a barrel-supporting machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways on said frame, slides in said guides or ways, said carriage being pivotally connected with said slides, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, and mechaniam connected with said carriage, to cause a reciprocatory and at the same time an oscillatory movement of the carriage, and a rotary movement of the brushes, substantially as and for the purposes set forth.

5. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, and mechanism connected with said carriage, for producing an oscillatory movement of the carriage and a rotary movement of the brush-spindles, consisting, essentially, of a crank-shaft, a gear thereon, a miter-gear c^9 c^{10}, a miter-gear c^4 c^7, bearings *d'* and d^3 on the carriage-frame, a shaft *d*, gears d^3 and d^4 on said shaft, and gears *e'*, e^3, e^3, e^4 on the respective brush-spindles and in mesh with said gears d^3 and d^4, substantially as and for the purposes set forth.

6. In a barrel-washing machine, the combination, of a main frame, a barrel supporting carriage, guides or ways in which said carriage is arranged, bearings *f* and *f'* on said carriage, rotary brushes in said bearings, and mechanism connected with said carriage to cause a reciprocatory movement of the carriage and a rotary movement of the brush-spindles, consisting, essentially, of a crank-shaft, a gear thereon, a miter-gear c^9 c^{10}, a miter gear c^4 c^7, bearings *d'* and d^3 on the carriage-frame, a shaft *d*, gears d^3 and d^4 on said shaft and gears *e'*, e^3, e^3, e^4 on the respective brush-spindles, substantially as and for the purposes set forth.

7. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways on said frame, slides in said guides or ways, said carriage being pivotally connected with said slides, bearings *f* and *f'* on said carriage, rotary brushes in said bearings, and mechanism connected with said carriage to cause a reciprocatory and at the same time an oscillatory movement of the carriage, and a rotary movement of the brushes, substantially as and for the purposes set forth.

8. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, a cross-bar, brush-holding standards thereon, having brush-sections, and mechanism connected with said carriage for producing an oscillatory movement of the same, substantially as and for the purposes set forth.

9. In a barrel washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways in which said carriage is arranged, a cross-bar, brush-holding standards thereon, having brush-sections, and mechanism connected with said carriage for producing a reciprocatory movement of the same, substantially as and for the purposes set forth.

10. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways on said frame, slides in said guides or ways, said carriage being pivotally connected with said slides, a cross-bar, brush-holding standards thereon, having brush-sections, and mechanism connected with said carriage to cause a reciprocatory and at the same time an oscillatory movement of the same, substantially as and for the purposes set forth.

11. In a barrel-washing machine, the combination, of a main frame, a barrel-supportiog carriage arranged in said frame, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush-holding standards thereon, having brush-sections *i*, and mechanism connected with said carriage for producing an oscillatory movement of the carriage and a rotary movement of the brushes, substantially as and for the purposes set forth.

12. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways in which said carriage is arranged, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush-holding standards thereon, having brush-sections *i*, and mechanism connected with said carriage for producing a reciprocatory movement of the same and a rotary movement of the brushes, substantially as and for the purposes set forth.

13. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways on said frame, slides in said guides or ways, said carriage being pivotally connected with said slides, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush holding standards thereon, having brush-sections *i*, and mechanism connected with said carriage to cause a reciprocatory and at the same time an oscillatory movement of the carriage, and a rotary movement of the brushes, substantially as and for the purposes set forth.

14. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush-holding standards thereon, having brush-sections *i*, and mechanism, connected with said carriage for producing an oscillatory movement of the carriage and a rotary movement of the brush-spindles, consisting, essentially, of a crank-shaft, a gear thereon, a miter-gear c^9 c^{10}, a miter-gear c^4 c^7, bearings *d'* and d^3 on the carriage-frame, a shaft *d*, gears d^3 and d^4 on said shaft, and gears *e'*, e^3, e^3, e^4 on the respective brush-spindles and in mesh with said gears d^3 and d^4, substantially as and for the purposes set forth.

15. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways in which said carriage is arranged, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush holding standards thereon, having brush-sections *i*, and mechanism connected with said carriage for producing a reciprocatory movement of the same and a rotary movement of the brush-spindles, consisting, essentially, of a crank-shaft, a gear thereon, a miter-gear c^9 c^{10}, a miter-gear c^4 c^7, bearings *d'* and d^3 on the carriage-frame, a shaft *d*, gears d^3 and d^4 on said shaft, and gears *e'*, e^3, e^3, e^4 on the respective brush-spindles and in mesh with said gears d^3 and d^4, substantially as and for the purposes set forth.

16. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage, guides or ways on said frame, slides on said guides or ways, said carriage being pivotally connected with said slides, bearings, as *f* and *f'*, on said carriage, rotary brushes in said bearings, a cross-bar *h*, brush-holding standards thereon, having brush-sections *i*, and mechanism connected with said carriage to cause a reciprocatory and at the same time an oscillatory movement of the carriage, and a rotary movement of the brush-spindles, consisting, essentially, of crank-shaft, a gear thereon, a miter-gear c^9 c^{10}, a miter-gear c^4 c^7, bearings *d'* and d^3 on the carriage-frame, a shaft *d*, gears d^3 and d^4 on said shaft, and gears *e'*, e^3, e^3, e^4 on the respective brush-spindles and in mesh with said gears d^3 and d^4, substantially as and for the purposes set forth.

17. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, mechanism connected with said carriage for producing an oscillatory movement of the same, a reciprocating bar *h*, brush-holding standards thereon, having brush-sections *i*, and means for causing a reciprocatory movement of the bar *h*, substantially as and for the purposes set forth.

18. In a barrel-washing machine, the combination, of a main frame, a barrel-supporting carriage arranged in said frame, mechan-

ism connected with said carriage for producing an oscillatory movement of the same, a reciprocating bar *h*, brush-holding standards thereon, having brush-sections *i*, and means for causing a reciprocatory movement of the bar *h*, consisting, essentially, of a crank-shaft *k*, and eccentrics thereon and connected with said bar, substantially as and for the purposes set forth.

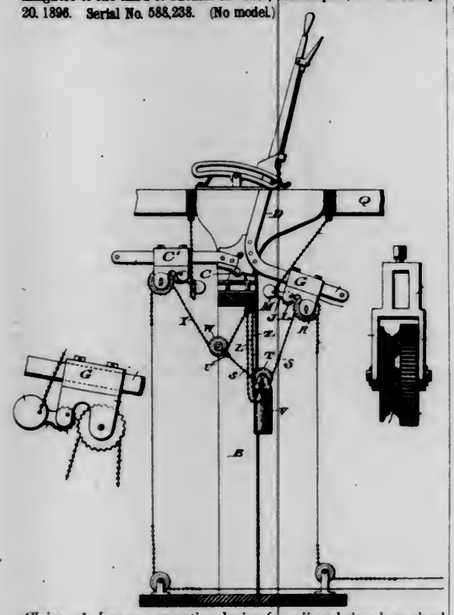
19. In a barrel washing machine, the combination, of a main frame, a barrel supporting carriage and means for producing a reciprocatory movement of said carriage, of bearings, as *f* and *f'* on said carriage, rotary brushes arranged on spindles in said bearings, a gear mechanism connected with said spindles, and mechanism for operating the same, substantially as and for the purposes set forth.

20. In a barrel washing machine, the combination, with a barrel-supporting carriage, of rotary brushes, their gear-wheels, means for operating the same, a cross-bar *h*, brush-holding standards thereon, and means for causing a reciprocatory movement of said bar *h*, substantially as and for the purposes set forth.

21. The combination, in a barrel-washing machine, of a main frame, a barrel-supporting carriage, of bearings, as *f* and *f'* on said carriage, rotary brushes arranged on spindles in said bearings, and means for operating the same, supporting fingers or lugs f^2 on said bearings, for supporting the barrel in the carriage, adjustable fingers or lugs f^7, and locking-levers f^8, all arranged, substantially as and for the purposes set forth.

22. In a barrel-washing machine, in combination, a main frame, a barrel-supporting carriage in said frame, and means for causing a reciprocatory motion of the same, bearings thereon, a hubbed gear-wheel in each bearing, a spindle e^5 in said hubbed gear-wheels, provided with radial brush-arms, and means for rotating said brush-arms, in combination, with a brush-holding standard h^3, having the curved part h^3, and the ⌊-shaped portions h^4, and brush-sections *i* adjustably arranged in said portions h^4, all arranged, substantially as and for the purposes set forth.

572,117. COMPENSATING DEVICE FOR RAILROAD-SIGNALS. JOSEPH R. JONES, Philadelphia, and JOSHUA W. JONES, Harrisburg, Pa., assignors of one-third to Thomas A. Jones, Philadelphia, Pa. Filed Apr. 20, 1896. Serial No. 588,238. (No model.)



Claim.—1. In a compensating device for railroad-signals, a wheel having a corrugated periphery, a pawl eccentrically mounted adjacent to said wheel, and having corrugations on its periphery adapted to engage the corrugations on said wheel, a counterbalance on said pawl, and a connection from the latter to a fixed point for causing the disengagement of said pawl and wheel at proper intervals.

2. In a compensating device for railroad-signals, switches, &c., a chilled, cast, corrugated wheel having a sprocket-hub, a yoke in which the same is rotatably mounted, a chilled, cast, corrugated pawl eccentrically mounted adjacent to said wheel, and provided with a counterbalance, a connection from said pawl to a fixed point, and a chain passing over said sprocket-hub and adapted to lead to suitable connections for actuating a signal-arm, switch, &c.

3. In a compensating device for a railroad-signal, a lever having a laterally-projecting arm with a yoke thereon, a wheel journaled in said yoke and having a corrugated periphery, and a sprocket-hub, a pivoted pawl having a corrugated periphery adapted to engage the corrugated periphery of said wheel, a counterbalance on said pawl, and a chain or other connection secured at one end to said pawl and at the other end to a fixed point, said parts being combined substantially as described.

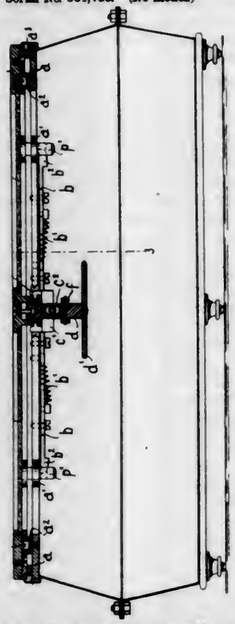
4. In a compensating device for a railroad-signal, a lever with a projecting arm, a yoke mounted on said arm, a wheel journaled in said yoke and having a corrugated periphery and a sprocket hub, a weighted pawl eccentrically mounted on said yoke and having corrugations adapted to engage the corrugations of the said wheel, and a chain having one end secured to said pawl and the other end to a fixed point.

5. In a compensating device for a railroad-signal, an operating-lever having laterally-projecting arms with yokes thereon, wheels and weighted pawls mounted on said yokes, said wheels having peripheral corrugations and sprocket-hubs, and said pawls having corrugations eccentric to the axis thereof, a clevis with a pulley journaled thereon, a weight with a pulley thereon, a chain secured to said clevis and passing around said pulley and one of said sprocket-hubs, and connected with a signal, and a second chain having one end secured to a fixed point and passing around the clevis-pulley and the other sprocket-hub and connected with the said signal.

6. In a compensating device, a chilled cast wheel having a corrugated periphery, a support therefor, a chilled cast pawl eccentrically mounted adjacent said wheel, and having corrugations on its periphery adapted to engage the corrugations on said wheel, a connection from said pawl to a fixed point, and a chain passing over a suitable portion of said wheel, and adapted to lead to connections for actuating a signal-arm, switch, &c.

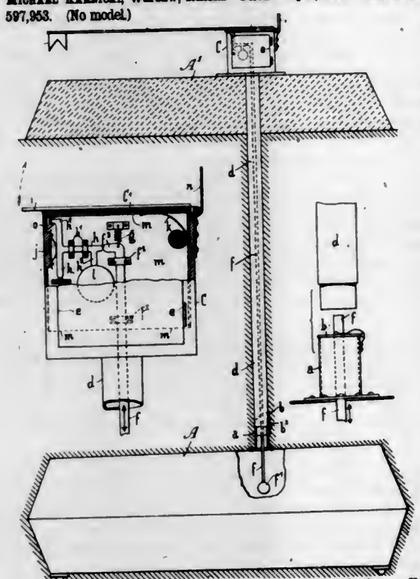
7. In a compensating device, a wheel having a corrugated periphery and a sprocket-hub, a pawl eccentrically mounted adjacent to said wheel and having corrugations on its periphery adapted to engage the corrugations on said wheel, a counterbalance on said pawl, a connection from the latter to a fixed point and a chain passing over said sprocket-hub and adapted to lead to connections for actuating a signal-arm, switch, &c.

572,118. COFFIN. MICHAEL KARNICKI, Warsaw, Russia. Filed Mar. 4, 1896. Serial No. 581,788. (No model.)



Claim.—In a hermetically-sealed box or coffin, a frame connected to the lid of the coffin, a transparent plate or cover adapted to be secured to said frame, mechanism for locking the plate and frame together, springs interposed between the plate and frame and adapted to throw the plate from the frame, a push-plate located within the coffin, and means controlled by said push-plate adapted to release the locking mechanism, substantially as and for the purposes described.

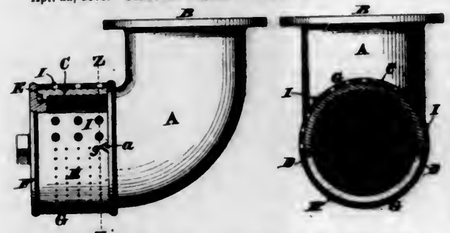
572,119. APPARATUS FOR SAVING PEOPLE BURIED ALIVE. MICHAEL KARNICKI, Warsaw, Russia. Filed July 3, 1896. Serial No. 597,953. (No model.)



Claim.—1. In an apparatus of the character described, a coffin-lid, a pipe leading therefrom to the surface of the grave, a box inclosing the upper end of the pipe, a rod traversing the pipe and extending within the box and within the coffin, a spring adapted to support the rod in a state of equilibrium, a projection formed at the box end of the rod, a sliding spring-catch arranged within the box and held in locking position by said projection, a lid secured to the box under spring-tension by said catch, a visual signal carried by said lid and an audible signal operated by said catch when released from engagement with said lid, substantially as and for the purposes described.

2. In a device of the character described, an air-tube connecting the coffin with a box, a rod traversing said tube and extending into the coffin, said rod adapted to open said box, and a sealing flap or valve located at the lower end of said tube and held in open position under spring-tension by said rod and adapted to close the tube when the rod is withdrawn, substantially as and for the purposes described.

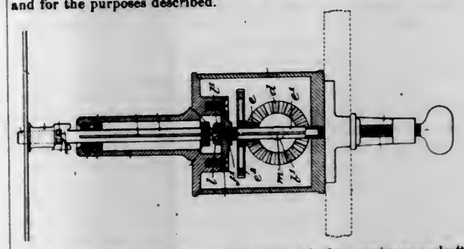
572,120. WATER-SPRINKLER. WILLIAM S. KISINGER, Bantam, Ohio, assignor to the Kisinger-Leon Company, Cincinnati, Ohio. Filed Apr. 22, 1895. Serial No. 546,676. (No model.)



Claim.—A sprinkling-head consisting of the hollow cylinder C, having an outlet-port D; a circularly-adjustable and longitudinally-shiftable annular cut-off G surrounding said cylinder, and provided with a series of perforations; a stop projecting from one of said members, and a notch in the other member, which stop engages with the notch, and thereby prevents the cut-off turning in either direction, until it has been shifted longitudinally a sufficient distance to disengage said stop from said notch, all as herein described, and for the purpose stated.

572,121. CENTRIFUGAL MACHINE. FERDINAND F. METZGER, Philadelphia, Pa. Filed Jan. 23, 1896. Serial No. 576,529. (No model.)

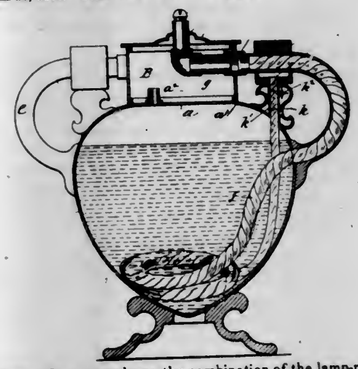
Claim.—1. In a centrifugal machine, a casing having an extension, a dished bearing-piece secured at the upper end of said extension, a driven shaft having a conical lower end and extending through said bearing-piece and rotating therein, a collar secured to the upper end of said shaft beneath said upper bearing-piece, balls interposed between said collar and bearing-piece, a bracket supported within said casing and below said driven shaft, a dished bearing-piece supported in said bracket, balls interposed between the conical end of said shaft and the lower dished bearing-piece and means for advancing said bearing-piece in said bracket to thereby adjust the tension of said lower bearing against the end of said driven shaft, substantially as and for the purposes described.



2. In a centrifugal machine, a driven shaft, a main gear-shaft located in a vertical plane and substantially out of alinement with the lower bearing of said driven shaft, each of said shafts being provided with a vertical groove, and a duct leading from the lower bearing of the driven shaft to the upper bearing of the gear shaft, whereby said grooves and duct constitute a continuous lubricating-channel for the bearings of said shafts, substantially as and for the purposes described.

3. In a centrifugal machine, a driven shaft, means for rotating the same, a head carrying a test-tube holder and a bayonet connection between said head and shaft members and consisting of a pin carried by one of said members the other member having a triangular recess merging into a vertical recess and terminating in a horizontal slot, substantially as and for the purposes described.

572,122. LAMP. HANORAH R. MORAN, New York, N. Y. Filed Jan. 25, 1896. Serial No. 576,760. (No model.)



Claim.—In a vapor-lamp, the combination of the lamp-reservoir and the burner, of a handle for the lamp, said handle being tubular and conveying fuel from the reservoir to the burner, a closed box surrounding a portion of said handle and forming an annular heating-chamber therefor, and a second burner located in said box, for the purpose set forth.

572,123. FLOOR CONSTRUCTION. ADOLPH C. MUNOZ, Philadelphia, Pa. Filed Dec. 12, 1895. Serial No. 571,895. (No model.)



Claim.—1. A floor construction consisting of similar terra-cotta blocks with edges slanting alternately in opposite directions, said blocks being arranged in courses, and interlocking in two directions at right angles to each other; in combination with a series of iron or steel beams to one of which at least every other course of blocks is secured, substantially as described.

2. A floor construction consisting of similar terra-cotta blocks with edges slanting alternately in opposite directions, said blocks be-

ing arranged in courses, and interlocking in two directions at right angles to each other; medial grooves in said blocks forming continuous channels along the courses in one direction; in combination with a series of iron or steel beams corresponding to and received within the channels of at least every other course of blocks, substantially as described.

3. A floor construction consisting of similar terra-cotta blocks with edges slanting alternately in opposite directions, said blocks being arranged in courses, and interlocking in two directions at right angles to each other; medial grooves in said blocks forming continuous channels along the courses in one direction; in combination with a series of iron or steel beams, strengthened at right angles with tie-rods, said beams corresponding to and being received within the channels of at least every other course of blocks, substantially as described.

4. A floor construction consisting of similar terra-cotta blocks with edges slanting alternately in opposite directions, and a square cross-section at a given horizontal plane, said blocks being arranged in courses, and interlocking in two directions at right angles to each other; medial grooves in said blocks forming continuous channels along the courses in one direction; in combination with a series of iron or steel beams, strengthened at right angles with tie-rods, said beams corresponding to and being received within the channels of at least every other course of blocks, and said tie-rods being embedded between the blocks at the plane of the square cross-section, substantially as described.

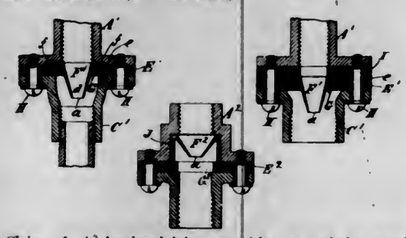
5. A floor construction consisting of similar terra-cotta blocks with edges slanting alternately in opposite directions, said blocks being arranged in courses, and interlocking in two directions at right angles to each other; medial grooves in said blocks forming continuous channels along the courses in one direction; in combination with a series of iron or steel beams corresponding to and received within the channels of at least every other course of blocks, the said beams being secured to their channels by a series of smaller blocks wedged into the interstices, substantially as described.

6. A floor construction consisting of two similar sets of terra-cotta blocks with edges slanting alternately in opposite directions, with air-spaces running through said blocks in one direction, which direction in one set of blocks is at right angles to the direction in the other set of blocks, said blocks being arranged in courses in which the sets alternate, and interlocking in two directions at right angles to each other, the air-spaces thus forming continuous straight and uninterrupted passages of uniform cross-section throughout the length of each course in one direction, substantially as described.

7. A terra-cotta block for floor construction having a flat top, two opposite edges of which are convex and the other two opposite edges concave, with edges consisting of warped surfaces slanting alternately in opposite directions, substantially as described.

8. A terra-cotta block for floor construction having a flat top, two opposite edges of which are convex and the other two opposite edges concave, with edges consisting of warped surfaces slanting alternately in opposite directions, and having a square horizontal cross-section at a plane which either forms the bottom or between the top and bottom of the block, substantially as described.

572,124. INSULATED JOINT FOR LIGHT-FIXTURES. WILLIAM MCELROY, Brooklyn, N. Y., assignor of two-thirds to George William Bayley, same place, and Fred White, New York, N. Y. Filed July 26, 1892. Serial No. 441,281. (No model.)



Claim.—1. An insulated joint comprising two tubular metallic sections, one above the other, an insulating material between said sections for insulating them, having an aperture affording communication between said sections, in combination with a tubular metallic lip traversing said aperture in said material in intimate contact with the walls of said aperture, said lip preventing inward distortion of said insulating material, affording a passage through the joint, and discharging the drip therethrough near the center of the lower section.

2. An insulated joint comprising two tubular metallic sections, one above the other, an insulating material between said sections for insulating them, having an aperture affording communication between said sections, and a separate tubular piece within said joint having an annular lip of less inner diameter than said aperture through said insulating material, said piece receiving the drip from the uppermost of said sections and precipitating it from said lip through said aperture and into said lowermost section near its center.

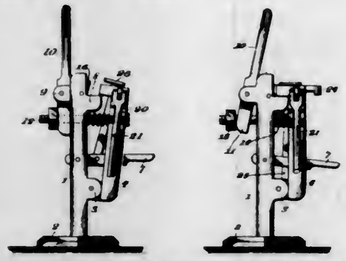
3. An insulated joint comprising two tubular metallic sections one above the other, an insulating material between said sections for insulating them and a separate tubular piece within said joint constructed with a depending annular lip of less inner diameter than the passage through the lowermost of said sections, and adapted to receive the drip from the uppermost of said sections and precipitate it within said lowermost section near its center.

4. An insulated joint comprising two tubular metallic sections, one above the other, an insulating material between said sections for insulating them and having a conduit or aperture communicating between said sections in combination with a tubular piece or lip separate from said sections, traversing said aperture in intimate contact with the walls thereof, for preventing inward distortion of such insulating material, and constructed to afford a passage through the joint and to discharge the drip therethrough within said lowermost section near its center.

5. An insulated joint comprising two tubular metallic sections one above the other, screw-threaded internally, a tubular piece of insulating material between said sections for insulating them, screw-threaded externally, for engagement with the internal screw-threads of said sections, and a tubular piece or lip traversing said insulating-piece to prevent its inward distortion and constituting internally a passage between said sections.

6. An insulated joint comprising tubular metallic sections A C, one above the other and internally screw threaded, in combination with insulating-piece E having conduit G, externally screw-threaded and engaging the screw-threads of said sections, ring c surrounding said insulating-piece between the ends of said sections, and tubular piece F traversing said insulating-piece to prevent its inner distortion.

572,125. DEVICE FOR FORMING HEEL-CALKS ON HORSE-SHOES. PHILIP M. PRAMER, Clear Lake, Iowa. Filed June 15, 1896. Serial No. 595,552. (No model.)



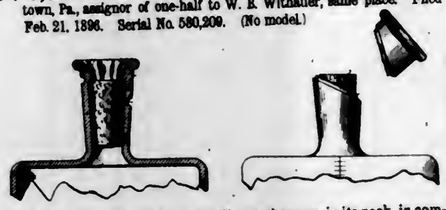
Claim.—1. In a device of the character set forth, the combination with a standard or upright, having an upsetting-tool thereon, of a horseshoe-supporting bar pivoted thereto, a clamp on the upper end of said supporting-bar and means for drawing said bar toward said upright and bringing the projecting end of said horseshoe into engagement with said tool, substantially as and for the purpose described.

2. In a device of the character set forth, the combination with an upright or standard, having an upsetting-tool in the upper end thereof, of a horseshoe-supporting bar pivoted to said upright, a clamp adapted to engage the sides of the horseshoe-blank, a clamp for engaging the top surface of said horseshoe-blank, both located at the upper end of said supporting-bar and means for drawing said supporting bar toward said upright and bringing the projecting end of said horseshoe into engagement with the upsetting-tool, substantially as, and for the purpose described.

3. In a device of the character set forth, the combination with an upright or standard, having an upsetting-tool at the upper end thereof, of a horseshoe supporting bar pivoted to said upright, a lever fulcrumed to said upright, engaging one end of a bolt attached to said supporting-bar, a foot-lever fulcrumed to said upright and projecting through a slot in said supporting-bar, a spring for normally holding said foot lever in its raised position, a rod pivoted to said foot-lever projecting upwardly therefrom and formed with a head overlapping the upper end of said supporting-bar and constituting a clamp for the top surface of the horseshoe-blank, a sliding clamping plate movable in guides in the upper end of said supporting-bar, and a lever fulcrumed to the side of said supporting-bar for operating the same, all arranged substantially as and for the purpose described.

4. In a device of the character set forth, the combination with an upright or standard, having an inwardly-projecting ledge or shoulder near its upper end, a recess in the side of said standard, just above said ledge or shoulder, an upsetting-tool fitting within said recess made up of a plate having a projection on its rear surface and a spring for normally urging the upper end of said plate outwardly, of a horseshoe-supporting bar pivoted to said upright or standard and having a slot therein, a foot-lever fulcrumed to said upright and projecting through said slot, a spring for normally holding said foot-lever in its raised position, a bolt passing through said upright and said supporting-bar having a head thereon which engages said bar and a nut upon its opposite end, a spring surrounding said bolt and engaging the inner surfaces of said upright and said bar, a lever fulcrumed on the outside of said upright having bifurcated lower ends which surround said bolt and engage the nut thereon, a rod pivoted to said foot-lever extending upwardly therefrom and formed with a head which overlaps the upper end of said supporting-bar and constituting a clamp for the top surface of the horseshoe, a clamping-plate slidingly mounted in the upper end of said supporting-bar, and a lever for operating said sliding plate fulcrumed upon the side of said supporting-bar, substantially as and for the purpose described.

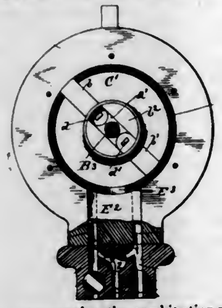
572,126. NON-REFILLING BOTTLE. JOHN T. SAVAGE, Middletown, Pa., assignor of one-half to W. B. Withaner, same place. Filed Feb. 21, 1896. Serial No. 580,209. (No model.)



Claim.—1. A bottle having a diagonal groove in its neck, in combination with a cork extending above and below said groove.

2. A bottle having an external diagonal groove in its neck and internal corrugations in the upper end of the neck extending inward beyond the wall of the throat of the bottle, in combination with a cork extending above and below said groove.

572,127. ROTARY ENGINE. ROBERT SCHLEGEL, San Francisco, Cal. Filed June 29, 1896. Serial No. 597,335. (No model.)

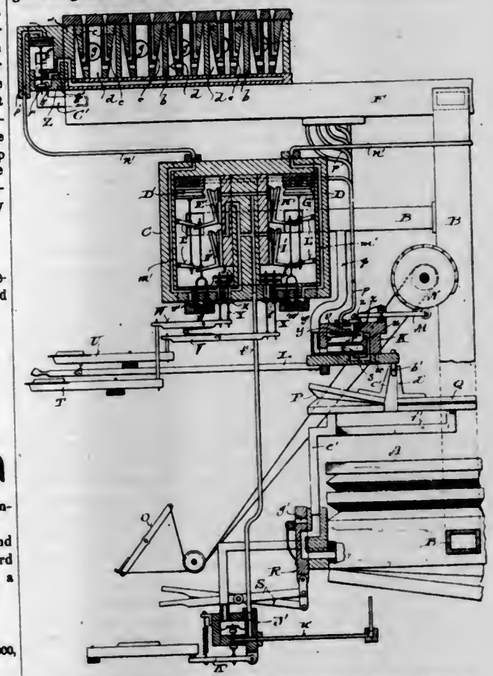


Claim.—In a rotary engine, the combination with the outer casing, the rotatable drum secured therein so as to leave a passage-way between the drum and the casing, the slide pistons working in grooves in the drum, the arm carried by the drum, the slide-blocks working in said arm, connection between the slide-blocks and the slide-pistons whereby the pistons are moved in or out by the movement of the slide-blocks, the eccentric cam-ring and connection between the cam-ring and the slide-blocks.

572,128. ORGAN. WILLIAM SCHUELKE, Milwaukee, Wis. Filed Feb. 5, 1896. Serial No. 578,092. (No model.)

Claim.—1. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a box having compartments each of which communicates with a pneumatic of the latter series, and a draw-stop controlling admission and exhaust of bellows-wind with reference to each box-compartment.

2. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a box having compartments each of which communicates with a pneumatic of the latter series, and a draw-stop controlling admission and exhaust of bellows-wind with reference to each box-compartment, and wind chest exhaust-valves cooperating with the pneumatics governing the stop-port valves.



3. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a box having compartments each of which communicates with a pneumatic of the latter series, a draw-stop controlling admission and exhaust of bellows-wind with reference to each box-compartment, and a pneumatic pedal-controlled action for operating a plurality of draw-stops.

4. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a box having compartments each of which communicates with a pneumatic of the latter series, a draw-stop controlling admission and exhaust of bellows-wind with reference to each box-compartment, a finger extended from the draw-stop, pneumatics provided with brackets for coöperation with a series of draw-stop fingers, and pedal-controlled valves operative to govern inflation and deflation of the latter pneumatics whereby a plurality of draw-stops may be simultaneously operated.

5. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a suitable wind-box having passages in communication with the latter pneumatics, draw-stops having supply and exhaust passages for registration with said box-passages, and a crescendo-decrescendo action operating in conjunction with exhaust and check valves to accomplish deflation of the aforesaid pneumatics independent of an adjustment of draw-stops for the same purpose.

6. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a suitable wind-box having passages in communication with the latter pneumatics, draw-stops having supply and exhaust passages for registration with said box-passages, exhaust and check valves arranged to permit deflation of the aforesaid pneumatics independent of an adjustment of draw-stops for the same purpose, spring-controlled

levers connected to said exhaust-valves, a lever-actuating drum, and suitable foot-controlled mechanism for imparting rotation to the drum in either direction.

7. The combination of an organ wind-chest and its register-box having communicating stop-ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a wind-box that has communication with the latter pneumatics and is divided by a horizontal partition into upper and lower sections, the former section being subdivided into compartments, draw-stops having passages that normally connect ports in the lower section of the wind-box with passages leading to said compartments and also provided with exhaust-passages for registration with the former passages, a normally open spring-controlled check-valve in each of the aforesaid compartments opposing a passage that communicates with one of the aforesaid latter pneumatics, a normally-seated valve controlling an outlet of said passage, a spring-controlled lever connected to the latter valve, a lever-actuating drum, and suitable means for imparting rotation to the drum.

8. The combination of an organ wind-chest and its register-box having communicating ports governed by valves, pneumatics attached to the valves, other valves arranged to control inflation and deflation of the pneumatics, other pneumatics controlling the latter valves, a box having compartments each of which communicates with a pneumatic of the latter series, a draw-stop controlling admission and exhaust of bellows-wind with reference to each box-compartment, valves governing exhaust-ports of the wind-chest, pneumatics controlling these valves, and key-controlled valves governing inflation and deflation of the last-named pneumatics.

9. The combination of an organ wind-chest of that class comprising ends and partitions abutted by walls parallel thereto but beveled away therefrom, each wall being provided with a series of horizontal apertures and corresponding series of upwardly-extended passages above the apertures, other partitions at right angles to the ones aforesaid and at intervals intermediate of the same, diaphragm-valves for the wall-apertures and passages within compartments formed by the partitions, and a wind-trunk beneath the compartments having divisions in port communication with the same; a wind-box having passage communication with each wind-trunk division, valves governing exhaust-ports of said box, pneumatics controlling these valves, a key-box having passages communicating with the pneumatics, key-controlled valves governing supply and exhaust ports of the key-box passages, a register-box having port communication with the wind-chest, a valve governing each register-box port, a pneumatic attached to this valve, another valve arranged to control inflation and deflation of the pneumatic, another pneumatic controlling the latter valve, a box having compartments each of which communicates with a pneumatic of the latter order, and a draw stop controlling admission and exhaust of bellows-wind with reference to each box-compartment.

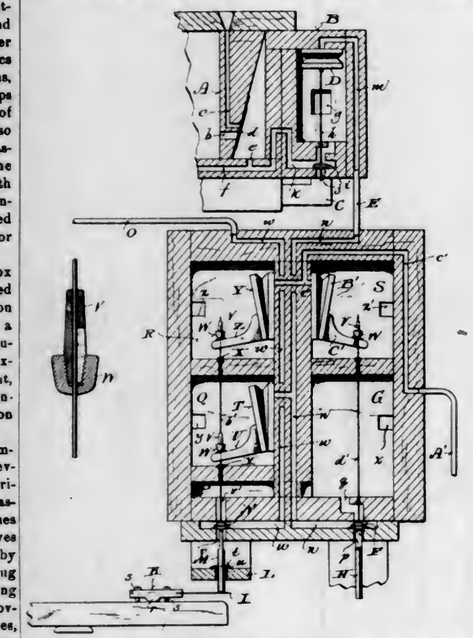
10. The combination of an organ key-box a series of valves in the key-box controlling inflation and deflation of key-pneumatics, other pneumatics controlling the valves, key-valves controlling inflation and deflation of the valve-pneumatics, a check for holding the latter pneumatics distended, another pneumatic operative to bring the check in and out of working position, and suitable means for opening and closing a wind-passage in communication with the latter pneumatic.

11. The combination of an organ key-box, plural series of valves in the key-box controlling inflation and deflation of key-pneumatics, other pneumatics controlling the valves, key-valves controlling inflation and deflation of the valve-pneumatics, checks for holding the latter pneumatics distended, and still other pneumatics operative to bring the checks in and out of working position, wind-passages in communication with the last-named pneumatics being governed by draw-stops and pedal controlled slides.

572,129. ORGAN. WILLIAM SCHUELKE, Milwaukee, Wis. Filed Apr. 20, 1896. Serial No. 588,276. (No model.)

Claim.—1. The combination of an organ wind-chest, a reed or pipe controlling diaphragm within an isolated portion of the wind-chest having communication with a wind-trunk compartment, a wind-box having an exhaust-port intercepting a passage that leads from the box into said compartment, a valve controlling the port and passage, a valve-controlling pneumatic communicating with a key-box passage having inlet and exhaust wind-ports, another valve arranged to control the latter ports, a sticker opposed to the latter valve, a key cooperative with the sticker, another pneumatic within a key-box compartment that is optionally open to bellows-wind, this pneumatic being in communication with a passage that in turn communicates with another organ, and the stem of the sticker-opposed valve in such connection with the latter pneumatic as to be under control of the same but free for cooperation with said sticker.

2. The combination of an organ key-box having a compartment optionally open to bellows-wind, a pneumatic in the compartment, an apertured arm extended from the pneumatic, a key-valve having its stem loose in the arm-aperture, and a button on the valve-stem in opposition to movement of the arm when said pneumatic collapses.



3. The combination of the key-box divided into compartments some of which are permanently open to bellows-wind and the remainder optionally open to this wind, the key-valves, and a pneumatic in each of the latter key-box compartments connected to a key-valve stem that is free to operate independent of said pneumatic.

4. The combination of a key-box having a passage provided with wind-ports, a valve controlling the ports, a sticker opposing the valve, a key, and a yielding sticker-support connected to the key.

5. The combination of a key-box having a passage provided with wind-ports, a valve controlling the ports, a sticker opposing the valve, a key, and a yielding sticker-support having adjustable tilt connection with the key.

6. The combination of a key-box having a passage provided with wind-ports, a valve controlling the ports, a sticker opposing the valve, a key, a block having a rocker-lug in contact with the key, screws arranged to regulate tilt adjustment of the block, and a yielding sticker-support extended from the block.

7. The combination of a key-box having a passage provided with inlet and exhaust wind-ports arranged in pairs, a single valve controlling each pair of the ports, a guide, a key actuated sticker loose in the guide opposite the valve, and a pin run through the sticker above its guide.

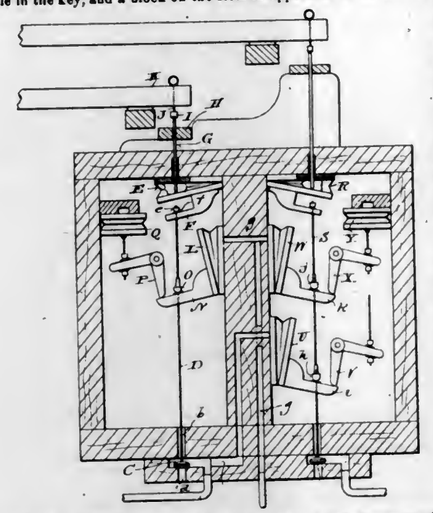
8. The combination of a key-box having a passage provided with inlet and exhaust wind-ports arranged in pairs, a single valve controlling each pair of the ports, a guide, a key-actuated sticker loose in the guide opposite the valve, a pin run through the sticker above its guide, and a buffer for the pin.

9. The combination of an organ valve-stem in the form of a wire devoid of screw-thread, a longitudinally-split stem-engaging sleeve having a screw-threaded taper end, and a button having a stem-engaging aperture as well as an enlargement of this aperture engageable with the sleeve-thread, and a lifting device operative against that portion of the button engaged with said stem.

572,130. ORGAN. WILLIAM SCHUELKE, Milwaukee, Wis. Filed Apr. 20, 1896. Serial No. 588,277. (No model.)

Claim.—1. The combination of the key-box wherein wind-pressure is constant, a pneumatic in said box, a valve having its stem connected to the pneumatic, and a key-sticker extended into said pneumatic to normally distend the same against wind-pressure thereon.

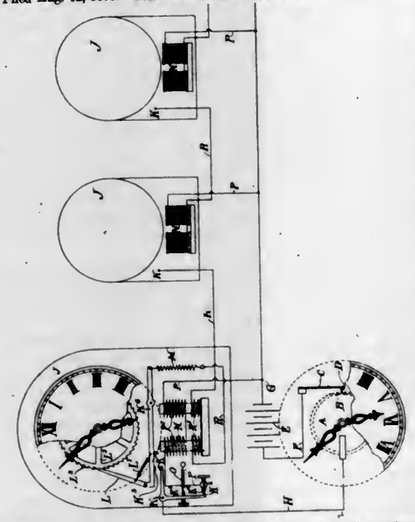
2. The combination of the key-box wherein wind-pressure is constant, a pneumatic in said box, a valve having its stem connected to the pneumatic, a sticker extended into said pneumatic to normally distend the same against wind-pressure thereon, a key, a stem adjustable in the key, and a block on the stem in opposition to the sticker.



3. The combination of the key-box wherein wind-pressure is constant, a pneumatic in said box, a valve having its stem connected to the pneumatic but movable independent of the same as well as therewith, a key-sticker extending into said pneumatic to normally distend the same against wind-pressure thereon, and a coupling action cooperative with the valve-stem.

4. The combination of the key-box wherein wind-pressure is constant, a pneumatic in said box, a valve having its stem connected to the pneumatic but movable independent of the same as well as therewith, a key-sticker extending into said pneumatic to normally distend the same against wind-pressure thereon, a coupling-pneumatic having an arm loosely engaged by the valve-stem, a resistance device on said stem opposing lift of the pneumatic-arm, and a pneumatically-controlled check for said arm.

572,131. ELECTRIC CLOCK. JOSEPH A. SCHULTE, Arcadia, Iowa. Filed Aug. 12, 1895. Serial No. 559,086. (No model.)



Claim.—1. In an electric clock the combination of a primary clock and a generator, a series of electrically-actuated clocks connected together by a single circuit, each having a setting-circuit successively closed and each having a holding-circuit, all such holding-circuits being in series when current is traversing them.

2. In a system of electrically-actuated clocks, the combination of a local generator with a local primary circuit making and breaking clock, a series of electrically-actuated clocks connected together by a single circuit and means for successively setting their mechanism by the action of the generator and means for holding all of the mechanism by the action of such generator and means for simultaneously releasing all of the mechanism.

3. In an electrically-actuated clock the combination of a magnet with two sets of windings, one a high-resistance winding, the other a low-resistance winding, a clock-actuating lever controlled by such magnet and a circuit making and breaking lever also controlled by said magnet and adapted when actuated to vary the circuits so as to successively energize said windings.

4. In an electrically-actuated clock the combination of a clock mechanism with a device for actuating same, a magnet with a high-resistance winding adapted to control said device, a magnet with a low-resistance winding adapted to hold such device a circuit making and breaking lever also controlled by said magnet and adapted when moved to vary the circuits so as to successively energize the high and low resistance windings.

5. In a system of electrically-actuated clocks the combination of a local generator with a local primary circuit making and breaking clock, a series of electrically-actuated clocks connected together by a single circuit, a device associated with each of said clocks for actuating the mechanism thereof, a magnet with a high-resistance winding adapted to control said actuating device, a magnet with a low resistance adapted to hold such device, a circuit making and breaking lever connected with the clock-circuit and adapted to be moved by the high-resistance winding so as to change the circuits in such a manner as to cut out said high-resistance winding and cut in said low-resistance winding substantially as described.

6. In a system of electrically-actuated clocks, the combination of a local generator with a local primary circuit making and breaking clock, a series of electrically-actuated clocks, each provided with an electromagnet of comparatively high resistance, one terminal of each of said magnets being independently connected with one terminal of the local generator, a spring-controlled lever connected with the clock mechanism of each clock so as to operate the same, said lever so positioned that it is moved to an operative position when the said electromagnets are energized, an electromagnet of comparatively low resistance associated with each of said levers and adapted to hold said levers in their retracted positions, said low-resistance electromagnet having a conductor leading from one terminal to the adjacent clock and from the other terminal to the circuit making and breaking device, said circuit making and breaking device so constructed that when the circuit is completed in the primary circuit, the high-resistance electromagnets are successively energized so as to act upon the lever associated therewith and will then be cut out of circuit, the low resistance being cut in circuit so as to hold said lever in its retracted position, whereby the system of clocks may be operated by a comparatively weak local generator, substantially as described.

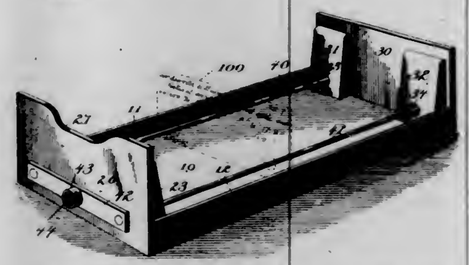
7. In a system of electrically-actuated clocks, the combination of a local generator with a local primary circuit making and breaking clock, a series of electrically-actuated clocks, each provided with an electromagnet of comparatively high resistance, one terminal of each of said magnets being independently connected with one terminal of the local generator, a spring-controlled lever connected with the clock mechanism of each clock so as to operate the same, said lever so positioned that it is moved to an operative position when the said electromagnets are energized, an electromagnet of comparatively low resistance associated with each of said levers and adapted to hold said levers in their retracted positions, said low-resistance electromagnet having a conductor leading from one terminal to the adjacent clock and from the other terminal to the circuit making and breaking device, said circuit making and breaking device comprising a pivoted lever provided at each end with contact-points, a stationary contact-point normally in contact with one end of said lever and connected to one terminal of the high-resistance magnet, the other end of said lever being opposed to the contact-point on the actuating-lever of the clock, said actuating-lever being connected with the low-resistance magnet, the parts so constructed that when said actuating-lever is attracted by the high-resistance magnet, it makes contact with the lever on the circuit making and breaking device, and at the same time moves the end of said circuit making and breaking device out of contact with its opposed stationary contact, whereby when the circuit is completed in the primary circuit, the high-resistance electromagnets are successively energized so as to act upon the lever associated therewith and will then be cut out of circuit, the low resistance being cut in circuit so as to hold said lever in its retracted position, whereby the system of clocks may be operated by a comparatively weak local generator, substantially as described.

8. In a system of electrically-actuated clocks, the combination with a primary circuit making and breaking clock and a generator, a series of electrically-controlled clocks, each provided with a spring-

actuated lever connected with the mechanism so as to actuate it when said lever is moved by said spring, comparatively high resistance electromagnets associated with each of said levers so as to move the same to an operative position when the magnets are energized, each of said magnets having one terminal connected with the primary generator so that they are energized independent of each other, an electromagnet of comparatively low resistance associated with each of said levers and adapted to hold the same in its retracted position, and a circuit making and breaking device associated with each set of magnets and adapted to alternately break the circuit through said high-resistance magnets and make the circuit through said low-resistance magnets when the circuit is completed through said primary circuit making and breaking clock.

9. In an electric-clock system the combination of a series of clocks, a movable spring-actuated arm associated with each clock and adapted when retracted and released to operate the mechanism of said clock, a comparatively high resistance magnet associated with each clock and adapted when energized to retract said movable arm, a circuit making and breaking clock and a source of electrical supply connected with said electromagnets in such a manner that when the circuit is completed the electromagnets are successively energized so as to successively retract said movable arms, a comparatively low resistance electromagnet associated with each clock and adapted when energized to hold said movable arms in a retracted position, and a circuit making and breaking device associated with each clock and operated by said high-resistance magnet so as to change the circuit from the high-resistance magnet to the low-resistance magnet, whereby the movable arms may be successively retracted and simultaneously released.

572,132. CARD-CATALOGUE FOR LIBRARIES, &c. EDGAR R. SOMES, Melrose, Mass. Filed Sept. 11, 1895. Serial No. 562,224. (No model.)



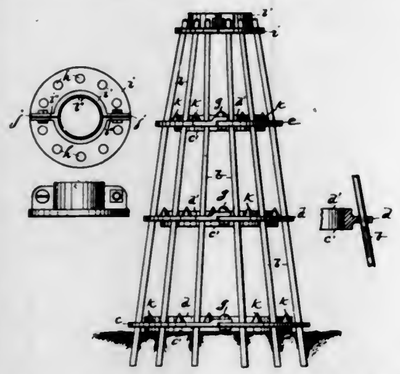
Claim.—1. A holder for the cards of a card-catalogue comprising a frame for receiving said cards provided with a hole at one end and a socket at the other end, a sliding rod for stringing said cards within the frame, said rod passing through said hole and engaging said socket, a bar to which said rod is connected, a lock fixed to said bar for fastening it to one end of the frame, and an independent key adapted to operate said lock and to serve as a handle for said bar.

2. A holder for cards of a card-catalogue, comprising a frame for receiving said cards, provided with an outer socket and a hole at one end, and an inner socket at the other end, a sliding rod for stringing said cards within said frame, said rod passing through said hole and engaging said inner socket, a bar to which said rod is connected, a rotary stud on said bar adapted to engage said outer socket, and a key for operating said rotary stud.

3. A holder for the cards of a card-catalogue comprising a frame for receiving said cards, provided with an outer socket and a hole at one end and an inner socket at the other end, a sliding rod for stringing said cards within the frame, said rod passing through said hole and engaging said socket, a bar to which said rod is connected provided with a socket, a stud disposed in the bar-socket and provided with lateral slots and a flanged head at its inner end for engaging the outer socket of the frame, and a key provided with pivoted spring-jaws adapted to engage the slotted stud for operating it and withdrawing the rod.

4. A holder for the cards of a card-catalogue comprising a frame for receiving said cards provided with an outer socket and a hole at one end, and an inner socket at the other end, a sliding rod for stringing said cards within the frame, said rod passing through said hole and engaging said socket, a bar to which said rod is connected provided with a socket, a stud disposed in the bar-socket and provided with lateral slots and a flanged head at its inner end for engaging the outer socket of the frame, a key having a transverse hole through its shank, a spring disposed in said hole and pivoted jaws adapted to engage the slotted stud, said jaws having finger-plates at their inner ends engaging the ends of said spring.

572,133. TREE-BOX. MORDECAI H. STEPHENS, Dayton, Ohio. Filed Feb. 8, 1896. Serial No. 578,473. (No model.)



Claim.—1. In a tree-box, the combination with a plurality of straight rods, of rings *c d* and *e* loosely inclosing said rods each of which is provided with upwardly-projecting points *k*, a collar *i* loosely supported on the upper ends of said rods, the said collar having a flange *i'* that projects above the upper ends of said rods and intervenes between said ends and the tree and an annular cushion on the inner side of said flange, the said cushion being secured between the adjoining parts of the flange and lining the interior surface thereof, as herein shown and described.

2. In a tree box, the combination of a series of straight rods, a series of graduated rings inclosing said rods and adapted to maintain them in an inclined position with their upper ends uniformly converging toward the center, a collar *i* loosely mounted on the upper ends of said rods and adapted to be raised therefrom, the said collar having a flange *i'* projecting upwardly, an annular elastic cushion lining the interior of said flange and secured between the adjoining ends thereof, whereby means are provided for increasing the area of space inclosed by the upper ends of said rods without necessitating the removal of the rods, substantially as described.

572,134. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Original applications filed July 26, 1895, Serial No. 557,236, and Nov. 7, 1895, Serial No. 568,212. Divided and this application filed Aug. 22, 1896. Serial No. 603,658. (No specimens.)

Claim.—1. The process of manufacturing pyroxylin compounds which consists in combining pyroxylin with camphor and one or more members of the hereinbefore-specified derivatives of crystalline aromatic acids (salacetol, betol, naphtholbenzoate, salol and benzoic anhydrid), and afterward subjecting the mixture to heat and pressure sufficient to render the compound plastic, substantially as described.

2. The process of manufacturing pyroxylin compounds which consists in mixing pyroxylin with camphor, one or more members of the hereinbefore specified derivatives of crystalline aromatic acids (salol, betol, naphtholbenzoate, salacetol and benzoic anhydrid) and a liquid menstruum or liquid menstrua, and afterward subjecting the mixture to heat and pressure sufficient to render the compound plastic, substantially as described.

3. A new composition of matter consisting of pyroxylin, camphor and one or more members of the hereinbefore-specified derivatives of crystalline aromatic acids (salol, betol, naphtholbenzoate, salacetol and benzoic anhydrid) substantially as set forth.

4. The process of manufacturing compounds of pyroxylin which consists in intimately mixing pyroxylin, camphor, one or more of the hereinbefore-specified derivatives of crystalline aromatic acids (salol, betol, naphtholbenzoate, salacetol and benzoic anhydrid) and a liquid menstruum or liquid menstrua sufficient in amount to convert the entire mixture into a pyroxylin solution, or compound, substantially as described.

5. As a new composition of matter, a compound of pyroxylin containing pyroxylin, camphor, one or more members of the hereinbefore-specified derivatives of crystalline aromatic acids (salol, betol, naphtholbenzoate, salacetol and benzoic anhydrid) and a liquid menstruum or liquid menstrua, substantially as described.

6. As a new composition of matter, a pyroxylin compound containing pyroxylin and one or more members of the hereinbefore-specified derivatives of crystalline aromatic acids (salol, betol, naphtholbenzoate, salacetol and benzoic anhydrid).

572,135. PYROXYLIN COMPOUND. JOHN H. STEVENS, Newark, N. J., assignor to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Original applications filed July 26, 1895, Serial No. 557,236, and Nov. 7, 1895, Serial No. 568,212. Divided and this application filed Aug. 22, 1896. Serial No. 603,659. (No specimens.)

Claim.—1. The process of manufacturing pyroxylin compounds which consists in combining pyroxylin with one or more members of the hereinbefore-specified new group of solid solvents (trional, sulfobenzid, sulfonal and sulfocarbanilid) and subjecting the mixture to heat sufficient to render the compound plastic, substantially as described.

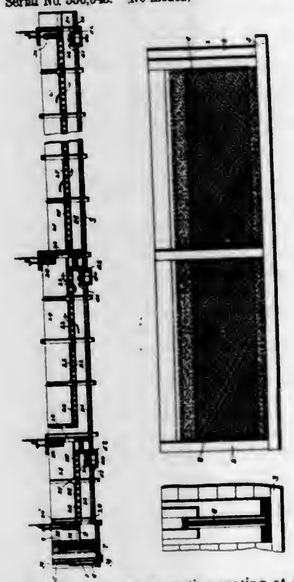
2. The process of manufacturing pyroxylin compounds which consists in mixing pyroxylin, camphor, one or more members of the hereinbefore-specified new group of solid solvents (trional, sulfobenzid, sulfonal and sulfocarbanilid) and subsequently subjecting the resulting compound to heat sufficient to render the compound plastic, substantially as described.

3. As a new composition of matter, a pyroxylin compound containing pyroxylin and one or more members of the hereinbefore-specified new group of solid solvents (trional, sulfobenzid, sulfonal and sulfocarbanilid), substantially as described.

4. As a new composition of matter, a pyroxylin compound containing pyroxylin, one or more members of the hereinbefore-specified new group of solid solvents, (trional, sulfobenzid, sulfonal and sulfocarbanilid,) and one or more known solvents of pyroxylin, substantially as described.

5. The process of manufacturing pyroxylin compounds which consists in mixing pyroxylin, one or more members of the hereinbefore-specified new group of solid solvents (trional, sulfobenzid, sulfonal and sulfocarbanilid) and one or more known solvents of pyroxylin sufficient in amount to make a pyroxylin compound or solution, substantially as described.

572,136. FILTER. GEORGE STITES, Philadelphia, Pa. Filed July 18, 1895. Serial No. 556,345. (No model.)



Claim.—1. A filter having a protection-grating at its inlet, an arresting-screen adjacent said grating, and provided with series of upper and lower chambers of increasing dimensions, movable frames suitably supported in each of said chambers, filtering devices mounted upon said frames, dividing-gates for said chambers, and separate discharge-valves for each of said lower chambers, each of the chambers of each series communicating with a chamber of the other series, said parts being combined substantially as described.

2. A filter, having suitable sides and flooring, a protection-grating, an arresting-screen, a series of compartments, in communication therewith of increasing diameter, a grating in each of said compartments, screens and filtering-cloths supported upon said grating and hinged frames having wire gratings or screens attached thereto, for holding said cloths in position, substantially as described.

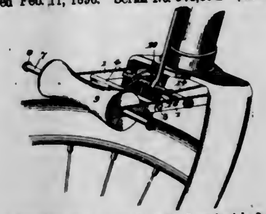
3. In a filter, a protection-grating, an arresting-strainer, a series of valved compartments, gratings thereon, hinged frames over said gratings, filtering devices supported upon said frames, in combination with means for cleansing said compartments, substantially as described.

4. In a filter, suitable gratings, the supporting-rod 44, the connections 48, pivotally mounted thereupon, the frame 43, attached to said connections, in combination with wire screens mounted on said frame, and cloth interposed between said screens, substantially as described.

5. In a filter, the rod 44, the nipples 46, connected with said rod, the T's 47 connected with said nipples 46, the nipples 48 secured to said T's 47, and the frames 16 attached by the T's 49 with said nipples 48 and provided with the screen 43× between the walls thereof, said parts being combined, substantially as described.

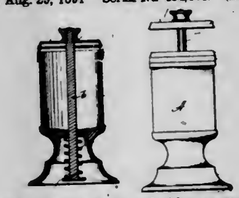
6. A filter consisting of upper and lower chambers arranged in pairs of increasing dimensions from the inlet thereof, and the communication between the adjacent chambers of the upper and lower chambers respectively, having filtering-cloths of different degrees of fineness, the coarsest cloth being between the smaller chambers and the finest cloths between the largest chambers, substantially as and for the purpose described.

572,137. BICYCLE-BRAKE. CLINTON W. TERPENING, Bedford, Iowa. Filed Feb. 11, 1896. Serial No. 578,894. (No model.)



Claim.—A bicycle-brake, consisting of a suitable frame, adjustable pivots formed with shoulders intermediate their ends and having a threaded connection with the brake-frame and adapted to engage sockets in the fork of the machine, a brake-shoe attached to said frame, and means for oscillating the brake-frame, substantially as described.

572,138. SALT-SHAKER. FREDERICK B. THATCHER, Providence, R. I. Filed Aug. 29, 1891. Serial No. 404,071. (No model.)



Claim.—The combination of a suitable receptacle having a perforated top provided with a conical portion to form a seat, a rod passing through said receptacle and through said perforated top, a cover secured to the outer end of said rod, said cover being provided with a conical flange arranged to seat upon the conical portion of said perforated top, and a spring acting upon said rod to normally hold said cover in its closed position, substantially as described.

572,139. SURGICAL APPARATUS. WILLIAM H. VOSS, Davenport, Iowa. Filed June 30, 1896. Serial No. 597,540. (No model.)

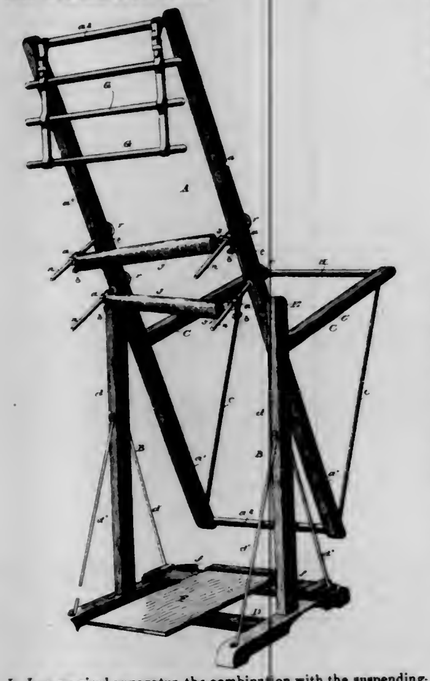
Claim.—1. In a surgical apparatus the combination with the two standards of the suspending-frame pivoted between its ends between said standards and movable freely therebetween, a body-rest sustained at the back of the frame and adjustable longitudinally thereof and a cross-bar at the upper end of the frame adapted to be grasped by the patient.

2. In a surgical apparatus the combination with the standards of the suspending-frame pivoted thereto on a horizontal axis, body-rests sustained at the back of the frame, adjustable longitudinally thereof and to and from the same and a handle at the upper end of the frame adapted to be grasped by the patient.

3. In a surgical apparatus the combination with the rectangular suspending-frame of the body-rests sustained at the back of the same and connected thereto at their opposite ends and adjustable independently at their ends to and from the frame, and a handle attached to the frame and adapted to be grasped by the patient.

4. In a surgical apparatus, the combination with the suspending-frame provided with slots, of the supporting-rods mounted adjustably

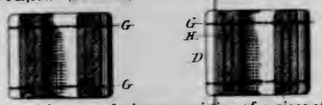
in said slots to move longitudinally of the frame, sleeves encircling said rods and adjustable thereon to and from the frame, and a body-rest fixed at its ends to said sleeves.



5. In a surgical apparatus, the combination with the suspending-frame of the supporting-rods mounted thereon and adjustable longitudinally thereof, sleeves encircling said rods and adjustable thereon to and from the frame, plates pivoted to said sleeves and a body-rest connected at its ends to said plates.

6. In a surgical apparatus, the combination with the two vertical fixed standards of a rectangular suspending-frame pivoted between its ends to said standards and comprising two side bars and connecting end bars, supporting-rods mounted in slots in said side bars, nuts for holding said rods in place, sleeves encircling said rods, clamping-nuts therefor and a body-rest attached to said sleeves.

572,140. PICKER-STAFF STRAP FOR LOOMS. JOHN F. WARREN and CHARLES G. WARREN, Worcester, Mass. Filed Mar. 23, 1895. Serial No. 542,897. (No model.)

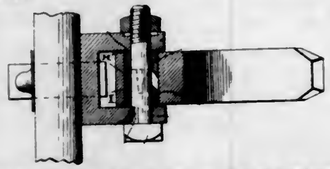


Claim.—1. A lug-strap for looms consisting of a piece of leather folded upon itself to form several plies, with a wide fold at the lower edge of the completed strap and having one edge of the piece of leather lying in said fold, and with a narrower fold at the upper edge of said completed strap lying against the other edge of said piece of leather, the plies of the said folded piece of leather being secured together and then bent into the usual loop form of a lug-strap, substantially as set forth.

2. A lug-strap for looms consisting of a piece of leather lined with cloth and folded upon itself to form several plies, with a wide fold at the lower edge of the completed strap and having one edge of the piece of leather lying in said fold, and with a narrower fold at the upper edge of said completed strap lying against the other edge of said piece of leather, the plies of the said folded piece of leather being secured together and then bent into the usual loop form of a lug-strap, substantially as set forth.

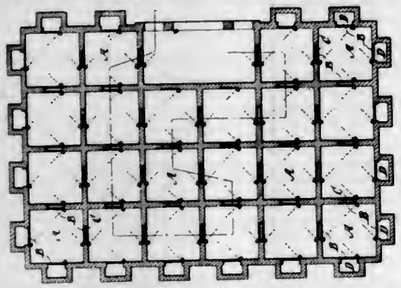
572,141. THILL-COUPLING. THOMAS A. WATROUS, Elmira, N. Y., assignor of two-thirds to Walter V. Elliott, same place. Filed Sept. 16, 1895. Serial No. 562,675. (No model.)

Claim.—1. The combination of the shackle, the bolt, the thill-arm, a bushing interposed between the bolt and arm, said bushing formed in two alined longitudinally-split sections, one of said sections being formed at its inner end with an internal circumferential bevel, and the other section formed with the external bevel, whereby when the bushing-sections are forced together the externally-beveled section will be contracted to grasp the bolt and the internally-beveled section expanded to tightly fit the thill-eye, substantially as shown and described.



2. The combination of the shackle, the bolt, the thill-arm having the eye reamed out larger than the bolt, the straight bushings fitting within the eye and beveled at their inner ends in opposite form so as to mesh one within the other to the extent of the beveled portion, one section of the bushing being formed with the V-shaped slits in order to contract when pressed or driven into the tapering portion of the other section, thus causing the slitted portion to contract and grasp the bolt, substantially as shown and described.

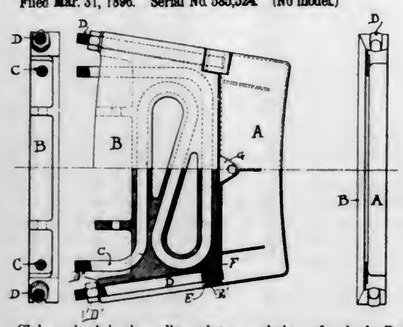
572,142. MAZE. PERCY G. WILLIAMS, Brooklyn, N. Y. Filed Apr. 8, 1896. Serial No. 586,702. (No model.)



Claim.—1. A maze or labyrinth consisting of chambers or inclosures, each chamber or inclosure being provided with a plurality of doors some of which open on blank walls and others communicating with adjacent chambers, substantially as described.

2. A maze or labyrinth consisting of a series of chambers or inclosures, cupboards communicating with the chambers, a plurality of doors in each chamber or inclosure some of which open on blank walls, some on cupboards, and others into adjacent chambers or inclosures and communicating openings between said chambers or inclosures provided with double doors, substantially as specified.

572,143. BOSH-PLATE. JAMES P. WITHEROW, Pittsburg, Pa. Filed Mar. 31, 1896. Serial No. 585,524. (No model.)



Claim.—1. A bosh-cooling plate consisting of a body B and a separable nose A, both of which are formed or provided with channels and means for passing water through the same for cooling them, as set forth.

2. A bosh-cooling plate consisting of a body B and a separable nose A, both of which are formed or provided with channels and means for passing water through the same, the nose being composed of bronze, and the body of a cheaper material, as set forth.

3. The combination in a bosh-cooling plate, of a body B provided with channels for the passage therein of water, with a separable nose A, also provided with a water-chamber, and water-pipes D connected with the nose A and securing the same to the body B, as described.

4. The combination in a bosh-cooling plate of the body B, the detachable nose A formed with a water-channel, the water-pipes D and nuts D' thereon for securing the nose to the body, the said body and nose being formed with a projection E on one and a recess E' on the other for centering and supporting the nose, as described.

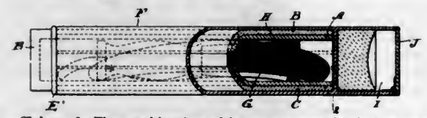
5. In a bosh-cooling plate, the combination of the hollow body B, the hollow separable nose A, means for passing water through said nose, and a supplementary withdrawable cooling device contained in the body B and provided with means for maintaining a circulation of water through the same, as set forth.

572,144. FASTENING FOR PINS. CLARENCE A. WORRALL, Philadelphia, Pa., assignor of one-half to Parke C. Dougherty, same place. Filed Jan. 21, 1896. Serial No. 576,316. (No model.)



Claim.—In a fastening for pins, the combination with the base and the pin pivoted to the base, of a rounded projection rigidly connected with the base, a curved spring connected with said projection and inclosing a space for the pin, and a rounded head upon the end of the spring, said head being normally spring-pressed upon the said rounded projection, substantially as described.

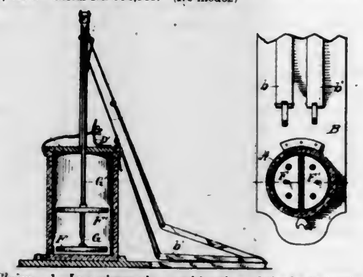
572,145. RAZOR-STROP. CLARENCE A. WORRALL, Philadelphia, Pa., assignor of one-half to Parke C. Dougherty, same place. Filed Mar. 14, 1896. Serial No. 583,176. (No model.)



Claim.—1. The combination with a razor-case having an open compartment at one end adapted to receive a strop, and a closed compartment at the other end provided with a lid and adapted to receive a cake of soap, said compartments being separated by a transverse partition, of a razor-strop consisting of a hollow body adapted to receive a razor and brush, said body having stropping and honing surfaces, a flange E' and a shank E extending beyond the flange, said case being adapted to receive the shank and form a handle for the strop and also adapted to receive the stropping portion and thereby inclose both the stropping and honing surfaces and the brush and razor, substantially as described.

2. In a razor-strop, the combination with a hollow body adapted to receive a razor and brush, of honing-strips having inclined edges extending longitudinally of said body, and stropping-pieces secured to the hollow body between the honing-pieces, the sides of the stropping-pieces abutting against the inclined edges of the honing-pieces, substantially as described.

572,146. CHURN. JOHN A. ASHER, Greencastle, Ind. Filed June 3, 1895. Serial No. 551,513. (No model.)



Claim.—1. In a churn the combination of the body having a rim or flange at its top, with a lid having a central opening, and openings on two opposite sides of the central opening for the dasher-rods, a standard projected through the central opening having an upwardly-extending outside portion of increased diameter forming a shoulder to rest against the lid, and a device for clamping the standard to the lid and the lid to the churn substantially as described.

2. In a churn the combination of the body having a rim or flange at its top, with a lid having a central opening, and openings on two opposite sides of the central opening for the dasher-rods, a standard projected through the central opening and extended into the churn to near the bottom thereof and having an upwardly-projecting outside portion of increased diameter forming a shoulder to rest upon said lid, and a device for clamping the standard and lid to the churn, consisting of a bolt projected through an opening in the standard and terminating at its outer end with a hook to engage the rim of the churn, and having its opposite end threaded, a metal bar its outer end bent to engage the rim of the churn at the opposite side from that engaged by the hook on the bolt, and its inner end turned upwardly and provided with an opening through which the threaded end of the bolt is passed, the said bolt being provided with a nut at its free end whereby the bar and bolt may be drawn tight against the churn-cover thereby clamping the standard to the lid and the lid to the churn-body substantially as described and claimed.

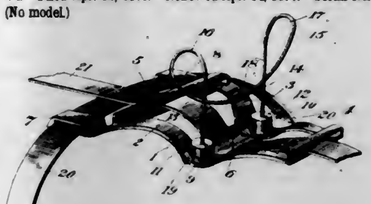
572,147. SPRING-BED. GILBERT BACON, Antigo, Wis. Filed Mar. 18, 1896. Serial No. 583,790. (No model.)



Claim.—1. The combination with the bed-frame, the head-castings 4 having the L-shaped recesses, 7, the upper and lower edges of which are undercut, and the laterally-extended perforated lips 8, the bolts 9 threaded therein, the opposite foot-castings 5 having the projection 11 provided with the pockets 12 having undercut edges, of the head and foot bars having heads at their ends and mounted in the pockets and recesses of the castings, and the woven-wire bottom connecting the bars, substantially as specified.

2. The combination with the bed-frame and the head and foot castings, 4 and 5, of the head-bar, 20, comprised in the section 21 having the recess 22 and the section 23, the foot-bar 13 comprising the upper and lower sections, 14 and 15, the woven-wire bottom having its ends clamped by the sections of the two bars, screws passed through the same, the caps arranged on the ends of the bars and the bearings on the ends of the caps, substantially as specified.

572,148. REIN-HOLDER. FREDERICK E. BARNES, Fair Haven, Vt. Filed Apr. 12, 1895. Renewed Apr. 14, 1896. Serial No. 587,558. (No model.)



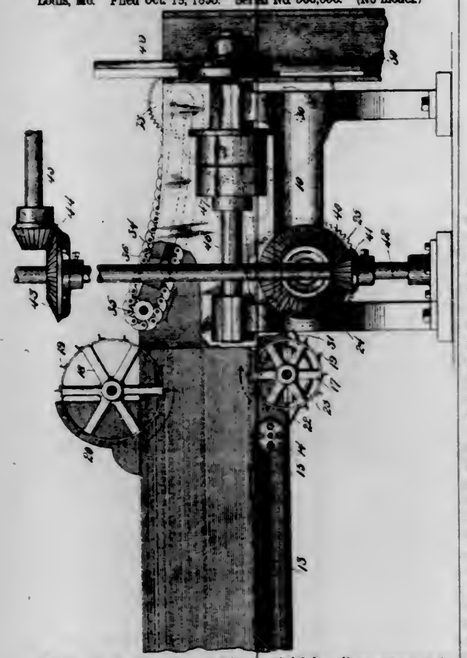
Claim.—1. The combination with a rein-holder base or frame provided with a transverse loop and with a pair of longitudinal loops at its opposite extremities, with a second transverse loop intermediate of the transverse and longitudinal loops and with a bridge intermediate of said transverse loops, of a rein-holder, and means for securing the same to the frame or base, substantially as specified.

2. The combination with a rein-holder frame or base consisting of a pair of diverging side pieces, of longitudinal loops upon the divergent extremities of the side pieces, and a transverse loop uniting the convergent extremities of the side pieces, a second transverse loop to one side of the longitudinal loops and uniting the side pieces, a bridge intermediate of the transverse loops and in a different plane, a rein-holder, and means for sustaining the rein-holder upon the base, substantially as specified.

3. The combination with a frame provided with loops 7 and 8, loops 4 and 5, a bridge 6, and terrets 9 and 10, of a rein-holder adapted to be supported by the terrets, substantially as specified.

4. The combination with a rein-holder frame provided with loops of a holder-pad provided with loops correlative with the loops of the holder-frame and adapted to be secured by the straps of the harness passing through the loops of the frame and pad, respectively, substantially as specified.

572,149. TOBACCO-CUTTING MACHINE. GEORGE BENTLEY, St. Louis, Mo. Filed Oct. 13, 1895. Serial No. 566,030. (No model.)



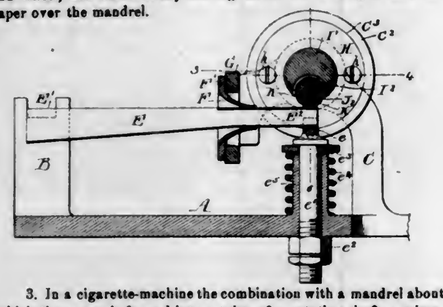
Claim.—1. In a cutting-machine, an initial endless conveyer to which material is fed, upper and lower conveyer-wheels constituting a pair, each provided with flights and spaced apart, the lower wheel being arranged in advance of the initial conveyer to take the material therefrom, a pair of conveyer-chains arranged in front of the pair of conveyer-wheels and adapted gradually to compress the material being operated upon, in combination with a rotating cutter to which the material is fed by said chains, means for driving the feeding mechanism mentioned and means independent therefrom for driving the cutter, all the parts being arranged in a suitable hopper or box.

2. In a cutting-machine a hopper or box, an initial conveyer of endless form mounted therein to which material is fed, upper and lower conveyer-wheels constituting a pair, each provided with flights and spaced apart, the lower wheel being arranged in an opening in the bottom of the hopper or box in advance of the initial conveyer to take the material therefrom, the material being held down to the lower conveyer-wheel by the upper conveyer-wheel, a pair of conveyer-chains arranged in front of the pair of conveyer-wheels and adapted gradually to compress the material being operated upon, in combination with a rotating cutter to which the material is fed by said chains, means for driving the feeding mechanism mentioned and means independent therefrom for driving the cutter.

572,150. CIGARETTE-MACHINE. HUGO BILGRAM Philadelphia, Pa., assignor, by mesne assignments, to the Bonsack Machine Company, Salem, Va. Filed Dec. 9, 1893. Serial No. 493,222. (No model.)

Claim.—1. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel, and means for feeding a strip of paper over the mandrel.

2. In a cigarette-machine the combination with a mandrel, about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel, and continuously-moving means for feeding a strip of paper over the mandrel.



3. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel, means for effecting a yielding contact between the mandrel and crimping-wheel, and means for feeding a strip of paper over the mandrel.

4. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel, means for rotating the crimping-wheel on its own axis, and means for feeding a strip of paper over the mandrel.

5. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and the crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel, means for rotating the crimping-wheel on its own axis, means for effecting a yielding contact between the mandrel and crimping-wheel, and means for feeding a strip of paper over the mandrel.

6. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, the normal position of the mandrel and crimping-wheel being such that they will come in contact at one point in the revolution of the shaft and wheel and a belt as U^3 for drawing the filled tube forward and the paper over the mandrel.

7. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a bearing-block *e* arranged beneath and fitting around the end of the mandrel, a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, said wheel being arranged above the bearing-block *e* as described, and means for feeding a strip of paper over the mandrel.

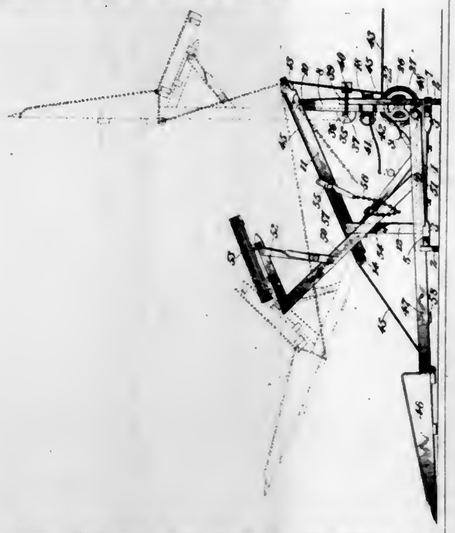
8. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a spring-supported bearing-block *e* arranged beneath the end of the mandrel and having means for adjusting its normal position, a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, said wheel being arranged above the bearing-block *e* as described, and means for feeding a strip of paper over the mandrel.

9. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a spring-supported bearing-block *e* arranged beneath and fitting around the end of the mandrel and having means for adjusting its normal position, a rotating shaft, a crimping-wheel secured eccentrically to and rotating with the shaft, said wheel being arranged above the bearing-block *e* as described, and means for feeding a strip of paper over the mandrel.

10. In a cigarette-machine the combination with a mandrel about which the paper is formed into a tube, of a rotating shaft, a drum K journaled eccentrically to the end of the shaft and having a spur-wheel K′ and crimping-wheel K^3 formed on its face, a stationary internally-toothed gear arranged to engage the gear K′ and revolve the drum K on its axis as it revolves about the axis of the shaft and means for feeding a strip of paper over the mandrel as and for the purpose described.

572,151. STACKER. LUKE L. BIBBER, Spencer, Iowa. Filed Dec. 30, 1895. Serial No. 573,752. (No model.)

Claim.—1. The combination with a main frame, upright frame and uprights thereon, of a longitudinally-movable shaft in the uprights, an operating-shaft at right angles to the first-named shaft, a drum upon the operating-shaft, a cable on the drum, a loose drum upon the first-named shaft, and cable thereon, elevator mechanism operatively connected with the first-named shaft, and mechanism for shifting the position of the first-named shaft, a fixed gear upon the first-named shaft, and a pinion upon the operating-shaft adapted to engage the gear upon the loose drum, or the gear fixed to the shaft, substantially as and for the purpose specified.



2. The combination with a main frame, uprights thereon, shaft and shaft-operating mechanism, of guide-pulleys upon the uprights, cables winding upon the main frame, and connected to the cables, and a discharge-platform carried upon the elevator-frame at an inclination to the elevator platform so as to discharge the load of the elevator-platform when the latter is in the completely-elevated position, substantially as set forth.

3. The combination with a main frame, uprights, shaft and shaft-operating mechanism, of guide-pulleys upon the uprights, cables winding upon the shaft and working in the guide-pulleys, an elevator-frame pivotally supported upon the main frame, and a discharge-platform pivotally secured to the elevator-frame, substantially as set forth.

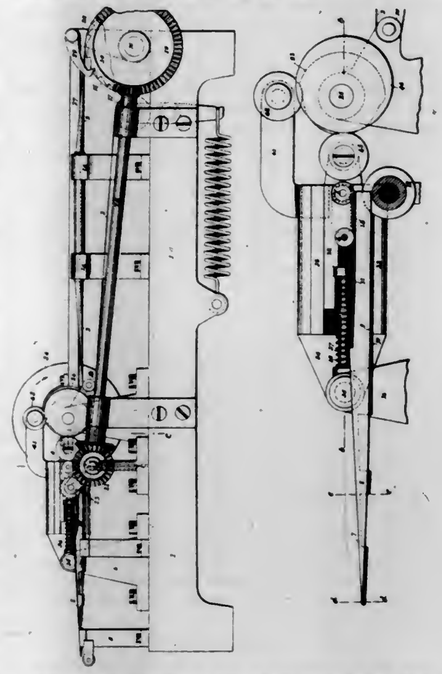
4. The combination with a main frame, uprights, shaft and shaft-operating mechanism, of pulleys upon the uprights, cables winding upon the shaft, an elevator-frame pivotally supported on the main frame and secured to the cables, a discharge-platform pivoted to the elevator-frame, and means for limiting the movement of the discharge-platform before the elevator-frame has reached its lowest limit of movement, substantially as set forth.

5. The combination with a main frame, uprights, shaft and shaft-operating mechanism, of an elevator-frame, or the like, pivoted to the main frame, a discharge-platform pivotally carried on the elevator-frame, a cable winding upon the shaft and secured to the platform, and elevator-frame-return-actuating mechanism connecting the platform with the frame, substantially as set forth.

6. The combination with a main frame, uprights, shaft, and shaft-operating mechanism, of an elevator-frame pivotally supported upon the main frame, cables winding upon the shaft and operatively connected with the elevator-frame, a discharge-platform pivoted to the elevator frame, means for limiting the movement of the discharge-platform with respect to the elevator-frame, and elevator-frame return-actuating mechanism connected to the frame and to the discharge-platform, substantially as set forth.

7. The combination with a main frame, uprights, shaft and shaft-operating mechanism, of an elevator-frame pivotally supported upon the main frame, a cable operatively connected to the shaft, and elevator-frame, discharge-platform pivotally connected with the elevator-frame, means for limiting the movement of the discharge-platform, with respect to the elevator-frame, means for interrupting the downward movement of the discharge-platform before the elevator-frame reaches its lowest movement, and elevator frame-return-actuating mechanism connecting the main frame and the discharge-platform, substantially as set forth.

572,152. CIGARETTE-MACHINE. JAMES A. BONSACK, Philadelphia, Pa., assignor to the Bonsack Machine Company, Salem, Va. Filed Apr. 4, 1892. Renewed Dec. 9, 1893. Serial No. 493,451. (No model.) Patented in England Apr. 8, 1892, No. 6,734; in Germany Apr. 15, 1892, No. 74,352, and in Spain Feb. 21, 1893, No. 13,305.



Claim.—1. In a cigarette-machine, the combination of the following groups of mechanism or instrumentalities; a wrapper-tube-forming mechanism adapted to tubularly shape a continuous ribbon of wrapper-paper moving through it and around a tobacco filler also moving through said mechanism and join or bring the opposite edges of said wrapper into lapping contact; a feeding mechanism adapted to feed the wrapper forward through the tube-forming mechanism; a crimping mechanism adapted to operate independently of the action of the feeding mechanism to crimp the joined edges of the wrapper and seal the same; and mechanism acting to bring the crimping mechanism into and retract it from contact with the paper.

2. In a cigarette-machine, the combination of the following instrumentalities; a wrapper-forming mechanism adapted to tubularly shape a continuous ribbon of wrapper-paper moving through it and around a tobacco filler also moving through said mechanism and join the opposite edges of said wrapper; and intermittently-operating seam-crimping mechanism adapted to act upon the joined edges of the wrapper to close and seal the same together; a feeding mechanism adapted to intermittently feed the wrapper-tube through the tube-forming mechanism; and mechanism acting to bring the crimping mechanism into and retract it from contact with the paper.

3. In a cigarette machine, the combination of a wrapper-forming mechanism, adapted to tubularly shape a ribbon of wrapper-paper around a tobacco filler moving through said mechanism and join the edges of said wrapper; a seam-crimping mechanism acting intermittently to close together the engaged edges of the formed wrapper and seal the same; and a feeding mechanism acting intermittently and alternately with the said seam-sealing mechanism and adapted to feed the wrapper through the machine.

4. In a cigarette-machine, the combination of a wrapper-forming mechanism adapted to tubularly shape a continuous wrapper and join its opposite edges; a seam-crimping mechanism adapted to act to close together the edges of the wrapper and seal the same; a feeding mechanism adapted to feed the wrapper-tube through the wrapper-forming mechanism; and a filler-feeding channel or tube located within the wrapper and constructed and arranged to confine the filler from the unsealed wrapper and to deliver the tobacco into the wrapper-tube at or near the seam-sealing devices.

5. In combination in a cigarette-machine, a wrapper-former acting to tubularly shape the wrapper and join its opposite edges; a seam-

sealing mechanism acting intermittently to seal the edges of the wrapper; a filler-feeding tube located within the formed wrapper and adapted to deliver the tobacco into the wrapper-tube and also adapted to support the wrapper edges against the action of the exterior seam-sealing mechanism; and a feeding mechanism acting to feed the wrapper and filler through the machine.

6. In a cigarette-machine, the combination of a wrapper-forming guide adapted to tubularly shape a continuous wrapper around a tobacco filler moving through said mechanism and bring the edges of said wrapper to contact; a seam-sealing mechanism adapted to act intermittently to seal together the engaged edges of the wrapper; a feeding mechanism adapted to draw the wrapper through the wrapper-forming guide; and driving mechanism adapted to intermittently and alternately operate said sealing and feeding mechanism.

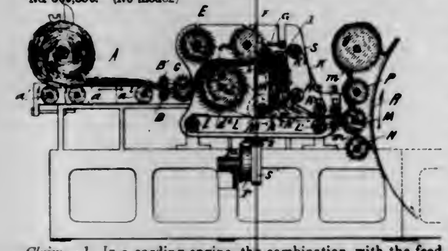
7. In a cigarette-machine an interior support, mechanism for intermittently feeding a tubularly-formed wrapper-ribbon along and over said support and around a tobacco filler moving through said mechanism, a crimping device located exteriorly to the wrapper-tube and adapted to act intermittently on the joined edges of the wrapper and against the interior support, the feeding mechanism and crimping mechanism acting alternately, and so that a substantially continuous line of crimping is formed along the tube by successive actions of the crimper.

8. In a cigarette-machine an interior support having a serrated anvil action, mechanism for intermittently feeding a tubularly-formed wrapper-ribbon along and over said support and around a tobacco filler moving through said mechanism, a crimping device located exteriorly to the wrapper-tube and adapted to act intermittently on the joined edges of the wrapper and against the serrated portion of the interior support, the feeding mechanism and crimping mechanism acting alternately, and so that a substantially continuous line of crimping is formed along the tube by successive actions of the crimper.

9. In a cigarette-machine mechanism for tubularly forming a ribbon of wrapper-paper and joining or bringing its edges together, the combination of a tube adapted to serve as a conduit or channel for the tobacco filler and confine the same until delivered in the wrapper-tube, and also adapted to act as a mandrel upon which the wrapper is tubularly formed, and an outer tube inclosing the said filler-tube, such outer tube having a longitudinal slot adapted to guide the edges of the wrapper and being also adapted to receive the wrapper-ribbon and form it on the inner tube.

10. In a cigarette-machine mechanism for cylindrically forming a wrapper-ribbon and bringing its edges into engagement, a tubular mandrel adapted to serve as a filler-tube or tobacco-conduit, a wrapper-forming tube surrounding the filler-conduit and slotted to permit the passage of the edges of the wrapper, and an edge-former adapted to receive the edges of the formed wrapper and bend them to engagement one within the other.

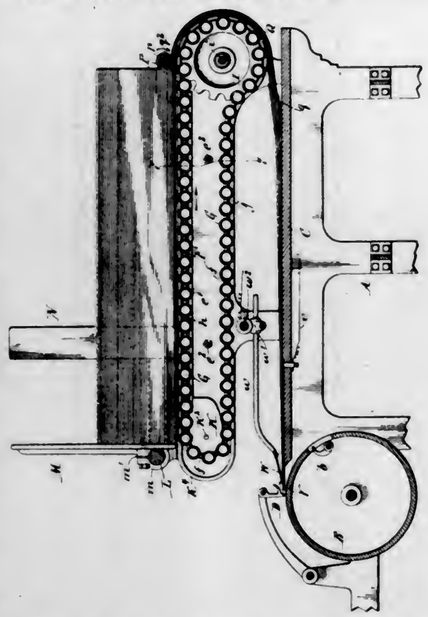
572,153. FEEDING APPARATUS FOR CARDING-ENGINES. ALPHONSE BORIOS, La Sarraz, Switzerland. Filed Nov. 18, 1895. Serial No. 569,356. (No model.)



Claim.—1. In a carding-engine, the combination, with the feed-rollers B and B'; of a ratchet-wheel secured to roller B, a slotted pawl-lever pivoted on the end of roller B, a pawl b' pivoted to the said lever and engaging with the said ratchet-wheel, a screw-threaded spindle journaled longitudinally in the said lever and provided with means for revolving it, a slidable nut arranged in the slotted lever and operated by the said spindle, a revoluble wheel provided with a laterally-projecting crank-pin, and a lever pivoted at one end on the said crank-pin and provided with a fork on its other end engaging with pins projecting from the said nut, substantially as set forth.

2. In a carding-engine, the combination, with the two long takers-in C and M; of equalizing devices interposed between the said parts and comprising, frames S, a carding-drum D, a fancy roller E above and in front of the carding-drum, a doffer F and a comb G above and at the rear of the carding-drum, a holding-down roller I below the said comb, endless aprons H, K, and L, carried by rollers and forming a space under the roller I for the accumulation of the fibers, the feed-rollers m m' at the bottom and rear of the said space, for delivering the fibers to the taker-in M; and driving mechanism operating to reciprocate the said equalizing devices longitudinally of the said takers in, substantially as set forth.

572,154. PAPER-FEEDING MACHINE. THOMAS A. BRIGGS, Niagara, Canada, and WILLIAM A. PHILPOTT, Jr., Niagara Falls, N. Y. Filed Oct. 11, 1894. Serial No. 525,567. (No model.)



Claim.—1. The combination with the feed-table, of a feed apron provided with transverse feed-rollers and arranged above the table, pile-confining devices arranged above the upper straight portion of the feed-apron and wheels around which the front portion of the feed-apron passes downwardly toward the feed-table, substantially as set forth.

2. The combination with the feed-table, of a feed-apron provided with transverse rollers and arranged above the table, wheels around which the front portion of the feed-apron turns downwardly toward the feed-table, pile confining devices arranged above the upper straight portion of the feed-apron, and a pile-retaining device arranged above the apron at the foot of the delivery side of the pile, substantially as set forth.

3. The combination with the feeder-frame and the roller belt or apron, of upper and lower guides arranged on said frame and supporting the upper and lower portions of the belt or apron, wheels around which the front portion of the belt or apron passes, transfer blocks or plates whereby the rear portion of the belt or apron is transferred from the lower to the upper guides, and adjusting devices whereby the transfer-blocks can be adjusted for taking up slack in the belt or apron, substantially as set forth.

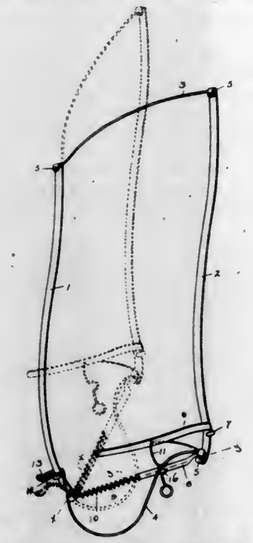
4. The combination with the roller-belt and the wheels around which the front portion of the belt or apron passes, of a flexible pressure-apron bearing against the front portion of the belt and secured at one end, and a tension device connected with the opposite end whereby said apron is drawn taut, substantially as set forth.

5. The combination with the feed-table and the feeder-frame, of a roller-belt arranged in the feeder frame and supporting the pile of sheets, wheels around which the front portion of the belt passes, a flexible pressure-apron surrounding the portion of the belt which passes around the wheels, and a spring-roller whereby the apron is drawn taut, substantially as set forth.

6. The combination with the feed-table and the feeder-frame, of a roller-belt arranged in the feeder-frame and supporting the pile of sheets, wheels around which the front portion of the belt passes, a retaining-roller mounted on the feeder-frame and arranged above the belt at the foot of the delivery side of the pile, a flexible pressure-apron secured with its upper and lower ends to the feed-table and retaining-roller respectively, and a spring whereby the retaining-roller is turned for winding the apron on the retaining-roller and pressing the same against the roller-belt, substantially as set forth.

7. The combination with the feeder-frame having each of its side pieces provided with a longitudinal flange and with a longitudinal row of openings, of a transverse bar provided with upright guides for confining the pile, and slides supporting the transverse bar and provided with pins which engage in said openings and with hooks which engage underneath said flanges, substantially as set forth.

572,155. TROUSERS-STRETCHER. CHARLES BURNHAM, Rochester, N. Y., assignor of one-half to Lauriston L. Stone and Thomas L. Foulkes, same place. Filed June 5, 1896. Serial No. 594,378. (No model.)



Claim.—1. The combination with the two members or rods having holding devices at their ends to engage a trousers-leg, of the links 3 and 4 composed of single pieces of spring metal, pivotally connected at each end to the ends of said members leaving a space between them, and locking devices independent of said spring-links for holding the members substantially parallel but permitting their approach by the flexing of the links, substantially as described.

2. The combination with the two members, of the links 3 and 4 composed of single pieces of spring metal pivoted to the ends of the members leaving a free space between them, the link formed in two parts sliding one upon the other and one connected to each member, and a catch carried by one member and engaging said link for holding the members separated, but permitting them to yield against the tension of the spring-links, substantially as described.

3. The combination with the two members, of the spring-links 3 and 4 pivoted to the ends of said members leaving a free space between them, the telescopic link pivoted to the members at opposite ends, the arm 6 and the spring-catch thereon engaging the telescopic link, substantially as described.

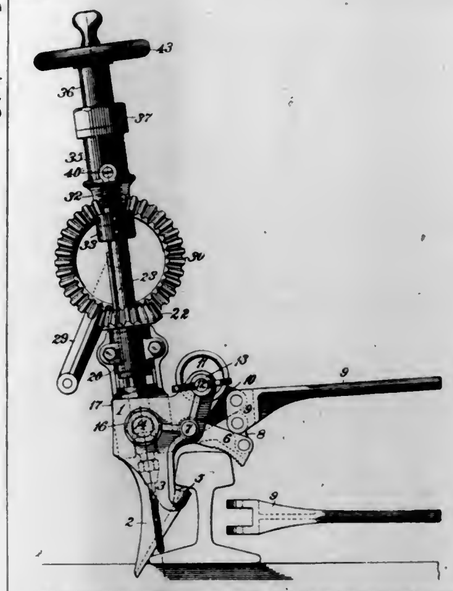
4. The combination with the two members or rods, of the spring-links 3 and 4 pivoted to their opposite ends leaving a free space between them, the telescopic link, the arm 6, and the wire catch attached to one member extending through the arm and having the portion engaging the telescopic link, substantially as described.

5. The combination with the members 1 and 2, of the spring-links 3 and 4 pivoted at their ends to the members, the stops 7 and 12, the serrated catch on one member, the pivoted catch 13, and fastening devices for holding the members separated, but permitting their movement by the yielding of the spring-links, substantially as described.

6. The combination with the two members or rods, of the spring-links 3 and 4 pivoted to their ends leaving a free space between them, the spur or holding-catch on the lower end of one member, the pivoted wire catch at the corresponding end of the other member, the telescopic link pivoted to the members, the arm 6 and catch on said arm engaging the telescopic link, substantially as described.

572,156. TRACK-DRILL. JOHN P. COLEMAN, Edgewood Park, Pa., assignor to the Union Switch and Signal Company, Swissvale, Pa. Filed May 28, 1896. Serial No. 593,373. (No model.)

Claim.—1. In a track-drill, the combination of a clamping mechanism and a drilling mechanism mounted with a capability of angular adjustment around its axis on the clamping mechanism, substantially as set forth.



2. In a track-drill, the combination of clamping mechanism constructed to grasp the head of the rail, a drill mechanism, and means for connecting the drill mechanism to the clamping mechanism in such manner as to permit of an angular adjustment of the drill mechanism in a vertical plane toward and from the rail, substantially as set forth.

3. In a track-drill, the combination of side plates provided with projections for engagement with the under side of the rail-head, a clamping-jaw, a toggle mechanism for forcing the jaw against the rail-head, and a vertical drill mechanism mounted between the side plates, substantially as set forth.

4. In a track drill, the combination of side plates provided with projections for engagement with the under side of the rail-head, a clamping-jaw, an adjustable abutment or block, a toggle mechanism arranged between the abutment and clamping-jaw for shifting the latter, and a drill mechanism mounted on the side plates, substantially as set forth.

5. In a track-drill, the combination of side plates provided with projections for engaging the under side of the rail-head, a clamping-jaw, a pivotally mounted block or abutment, an eccentrically mounted disk for adjusting the block or abutment, a toggle mechanism arranged between the abutment and clamping-jaw for shifting the latter, and a drill mechanism mounted on the side plates, substantially as set forth.

6. In a track-drill, the combination of a clamping mechanism, a drill mechanism and a guide or gage holding and connected to the clamping mechanism, but independent thereof as regards its clamping function, and adapted to regulate the position of the clamping mechanism on the rail, substantially as set forth.

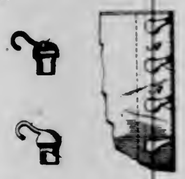
7. In a track-drill, the combination of side plates, means for clamping the side plates on a rail, trunnions mounted in the side plates and a drill-stock provided with a head mounted on said trunnions, substantially as set forth.

8. In a track-drill, the combination of side plates, means for clamping the side plates on a rail, trunnions mounted in the side plates, and a drill-stock having a head provided with slots adapted to fit over the trunnions, substantially as set forth.

572,157. FASTENING FOR SHOES, LEGGINGS, &c. JOHN L. CONAWAY, Philadelphia, Pa. Filed Dec. 21, 1895. Serial No. 572,906. (No model.)

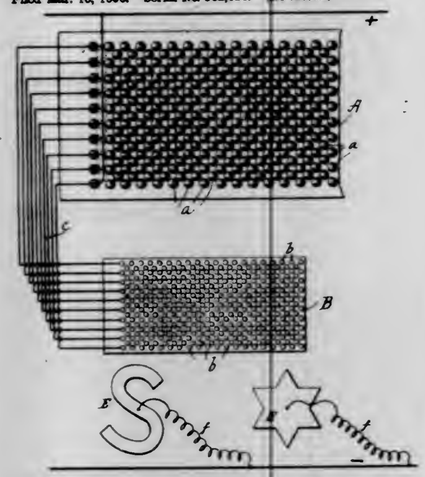
Claim.—1. The combination with a shoe-upper, of a fastening device comprising a head having an eyelet secured in the upper, and a shank projecting from the top of the head upward and outward beyond the side of the head and terminating in an underturned hook lying close to or in alinement with the meeting edges of the upper,

said shank being arranged at an angle to the said meeting edges with the hook disposed toward the top of the upper, whereby when the lacing is being drawn taut, there will be but slight resistance and consequently but little attrition offered to the lacing by the hook, substantially as described.



2. A shoe-fastening comprising a head having an eyelet and a shank pivotally connected with the head and terminating in an undertorned hook, substantially as described.

572,158. ELECTRIC SIGN. WILLIAM CONNELL, Pittsburg, Pa. Filed Mar. 10, 1896. Serial No. 582,620. (No model.)



Claim.—In an electric sign, the combination of a sign-board having its surface covered with incandescent lamps, and a switchboard having its surface covered with exposed circuit terminals there being one terminal corresponding to each lamp, the corresponding lamps and terminals being directly connected electrically and occupying the same relative positions on their respective boards, and a movable figure or character of conducting material connected with the main circuit and adapted to be put in contact with said terminals and move about over the surface of the switchboard while always making sliding contact with the terminals directly beneath the figure or character, substantially as and for the purpose described.

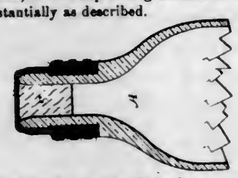
572,159. PROTECTOR FOR PNEUMATIC TIRES. EDWARD DAVIES and ARTHUR HARRISON, Adelaide, South Australia. Filed July 16, 1896. Serial No. 599,414. (No model.)



Claim.—A protector for pneumatic and other similar tires, composed of two bands having serpentine folds of any desired pitch, interwoven or interlocked substantially as herein described.

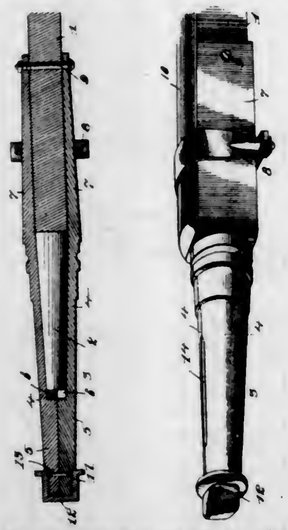
572,160. STOPPER-LOCK. DAVID F. GRAHAM, Springfield, Mass., assignor of one-half to Geo. D. Chamberlain, same place. Filed Feb. 13, 1896. Serial No. 579,155. (No model.)

Claim.—1. In combination with a bottle having top and bottom shoulders projecting from its neck, a lock between said shoulders, said lock consisting of a sleeve having a vertical groove in its side and a head projecting laterally from said sleeve, a series of rings revoluble upon said sleeve and having internal grooves, intermediate rings, each having a feather, and a hasp having notches in the outer face of its branches substantially as described.



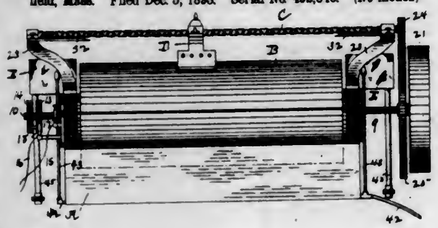
2. In combination with a bottle having top and bottom shoulders projecting from its neck, a lock between said shoulders, said lock consisting of a sleeve having a head projecting laterally therefrom, a series of rings revoluble upon said sleeve each having internal grooves and a notch on its periphery, intermediate stationary rings having a series of notches on their peripheries, and a hasp having in the outer face of its branches notches and near their top, a breaking point or notch substantially as described.

572,161. AXLE-SKEIN. EVANDER M. GRAHAM and LLEWELLYN R. COLWELL, Ruston, La. Filed Oct. 15, 1895. Serial No. 565,776. (No model.)



Claim.—The combination of an axle having a reduced end 2, an axle-skein composed of two longitudinal sections arranged at opposite sides of the axle, having inner tubular portions to receive the reduced end of the same, and provided beyond the axle with a solid outer portion, the terminals of the sections being reduced and exteriorly threaded, a transversely-disposed fastening device connecting the outer terminals of the sections, the straight parallel arms 7 formed integral with the sections and arranged on the front and rear faces of the axle, a fastening device passing through the ends of the arms and the axle, an axle-clip embracing the axle and securing the arms to the same, and an axle-nut arranged on the threaded terminals of the sections of the skein and concealing the ends of the adjacent fastening device, substantially as described.

572,162. MAGNETIC SEPARATOR. JOSEPH B. HAMILTON, Springfield, Mass. Filed Dec. 5, 1893. Serial No. 492,846. (No model.)



Claim.—1. In a magnetic separator, the combination with an electromagnetic roll or cylinder, of a wiper adapted to be held in contact with said roll or cylinder by magnetic attraction, and means for imparting movement to said wiper longitudinally of the roll or cylinder, substantially as set forth.

2. In a magnetic separator, the combination with an electromagnetic roll, of a wiper bearing against the surface of said roll, means for imparting to said wiper a reciprocatory movement longitudinally of the roll, and means for directing a jet of water against said wiper, at one end of its traverse, to clean the same, substantially as set forth.

3. In a magnetic separator, the combination with a trough or chute for conducting a flowing material, of an electromagnetic roll journaled at its ends in the sides of said trough, a screw-shaft supported adjacent to said roll and lying parallel with the axis thereof said screw-shaft having a double-reversed thread which at one end extends beyond the end of the roll, a wiper operatively engaging the thread of said shaft and bearing against the surface of said roll, and means for revolving said roll and shaft at different speeds, substantially as and for the purpose set forth.

4. In a magnetic separator, the combination with an electromagnetic roll, of a wiper bearing against the surface of said roll, a screw-shaft operatively engaging said wiper and adapted to move it longitudinally of said roll and beyond the end of the latter, and a spray-box located adjacent to the end of said roll and containing water-jet devices as described, into which box said wiper is carried by its operating-shaft when it leaves said roll, substantially as and for the purpose described.

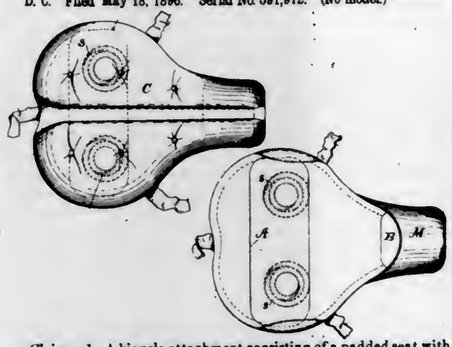
5. In a magnetic separator, the combination with roll B, of screw-shaft C, and wiper D, said wiper consisting of block 26 operatively engaging the thread of said shaft, frame 28 capable of a limited vertical movement upon said block, and wiping-strips 35 and magnetic part 36 carried by said frame, substantially as set forth.

6. The combination with a trough or chute, as A, of an electromagnetic roll, as B, revolubly supported transversely of said trough, wiper D bearing against the surface of said roll, screw-shaft C operatively engaging said wiper and adapted to carry it beyond the ends of said roll, and means, as the guide-bars 32, for guiding the wiper in its movement after it leaves the ends of the roll, substantially as set forth.

7. The combination of the roll B, wiper D, and screw-shaft C for operating the latter, of a spray-box E located adjacent to the end of said roll, perforated pipes 41 located in said box and pipes 42 43 and 44 for supplying water thereto, substantially as set forth.

8.–The combination with the electromagnetic roll B provided with trunnions 9 10 and carrying band-pulley 21 and gear 25, of the screw-shaft C carrying pinion 24 which meshes with said gear 25, wiper D operatively connected with said screw-shaft, and means, as the guide-bars 32, for holding the wiper from rotation when it passes beyond the ends of the roll substantially as described.

572,163. BICYCLE-SADDLE. MARY F. HENDERSON, Washington, D. C. Filed May 18, 1896. Serial No. 591,972. (No model.)

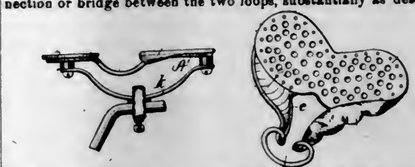


Claim.—1. A bicycle attachment consisting of a padded seat with a double cross-bar and means for applying and securing the same to the saddle, substantially as herein set forth.

2. A bicycle-saddle consisting of a supporting-piece composed of transverse bars held at such distance apart by a central longitudinal bar as to afford between them free play to the legs of the rider, and a cushion covering the supporting-piece on the top and the sides, substantially as shown and described.

572,164. BICYCLE-SADDLE. MARY F. HENDERSON, Washington, D. C. Filed June 8, 1896. Serial No. 594,741. (No model.)

Claim.—1. A frame for a bicycle-saddle comprising two approximately elliptical loops, one forming the contour of the seat and the other the contour of the guard, and a contracted and depressed connection or bridge between the two loops, substantially as described.



2. A framework for a bicycle saddle shaped to form a rear loop to support the seat, a front loop of approximately elliptical outline, and a connection or bridge, whose sides curve downward and inward from the rear loop, and upward and outward toward the front loop, thereby forming on each side a cavity corresponding to the contour of the leg, substantially as described.

3. A bicycle-saddle frame comprising a seat at the back and a guard in front, with an open space between them, in combination with a cushion covering the seat and guard, and forming between the two cavities conforming to the contour of the rider's legs, substantially as described.

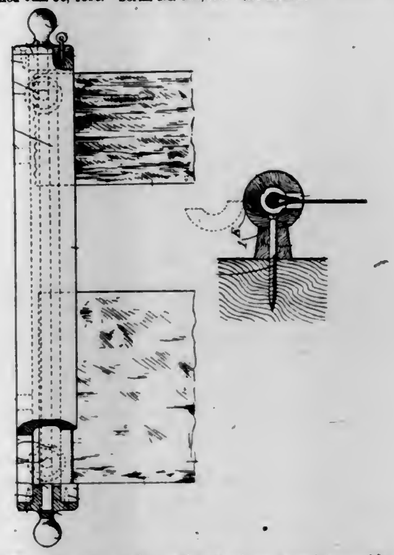
4. A bicycle-saddle comprising a framework or skeleton composed of two approximately elliptical loops one in front and the other at the rear with a depressed and contracted connection, covers for the loops and a cushion corresponding in outline to the framework or skeleton and secured thereto, substantially as described.

5. A bicycle-seat provided on its edge with a bead or rib of rubber, substantially as described.

6. A bicycle-seat having a seat and guard with a depression or space between, adapted to the contour of the rider's legs, and provided with lateral or edge cushions to prevent contact of the legs with rigid surfaces or edges, substantially as described.

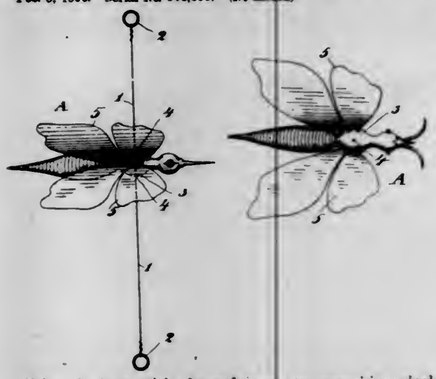
7. A bicycle-saddle comprising a framework shaped to form the contours of the seat and guard respectively, with an intermediate depression, and provided with recesses or pockets beneath the edge of the seat, and with pads or cushions in said recesses or pockets, substantially as described.

572,165. CURTAIN-POLE. WILLIAM HODGSON, Tremont, N. Y. Filed Jan. 30, 1896. Serial No. 577,475. (No model.)



Claim.—A curtain-pole consisting of two equal separable portions, each being provided in its inner surface with a longitudinal semicircular groove forming a circular retaining-chamber for the curtain-rod when said portions are closed upon each other, said rod being supported in apertures in plugs secured to the ends of said poles, said portions being cut away at their lower edges to form a longitudinal passage into said chamber, means for joining and locking said pole-sections and means for fastening said pole to a window-frame, substantially as shown and described.

572,166. TOY. WILLIAM A. HOFFMANN, New York, N. Y. Filed Feb. 5, 1896. Serial No. 578,099. (No model.)



Claim.—1. As an article of manufacture, a toy comprising a single fine wire provided with suitable end pieces for holding and straining it between the hands, and a device A, simulating a winged insect having a small hole extending transversely through its body nearest to one end thereof through which the wire is threaded, said hole fitting the wire snugly but not tightly, whereby the binding of the margins of the holes on the upright wire causes the wings of the descending insect to vibrate, substantially as set forth.

2. As an article of manufacture, a device A, simulating a reversible insect and furnished with thin, light double wings at each side, a hollow body and a hole through the body to receive a fine wire, of the single, fine wire threaded through said hole, and fitting the same closely, substantially as set forth.

572,167. VENTILATED RECEPTACLE. WILLIAM E. HOWELL, Los Angeles, Cal. Filed Oct. 9, 1895. Serial No. 565,140. (No model.)



Claim.—1. In a receptacle the lower portion of which is made of a single piece and air-ducts formed integral therewith and on the inner side or corners thereof, openings in the lower portion to register with said ducts and perforations in the inner wall of said ducts, substantially as and for the purpose specified.

2. The blank for a receptacle consisting of one piece to be folded to form the sides, and the ends with extensions and the parts to form the corner and parts to form the air-ducts.

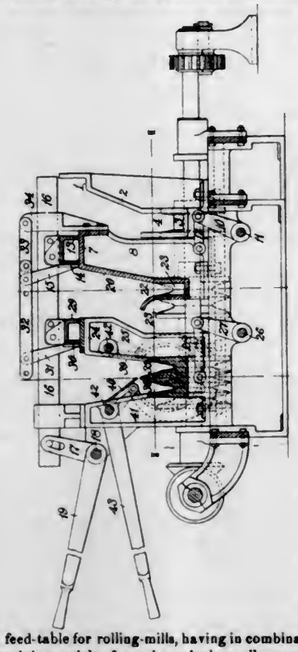
572,168. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Youngstown, Ohio. Filed June 6, 1896. Serial No. 594,477. (No model.)

Claim.—1. A feed-table for rolling-mills having in combination a series of two or more plates or beds for receiving articles as they come from the reducing-rolls, two or more inverted boxes or troughs arranged upon the plates or beds, means for simultaneously moving said boxes or troughs to shift the articles laterally off of said beds, and two or more series of feed rollers for receiving the articles as they drop from the receiving-beds and feeding them to the reducing-rolls, substantially as set forth.

2. A feed table for rolling-mills, having in combination a series of two or more plates or beds for receiving articles as they come from the reducing rolls, means for simultaneously shifting the articles laterally off of both beds, two or more series of feed-rollers for receiving the articles as they drop from the beds, and returning them to the reducing-rolls, and aprons provided with grooves at their lower edges for directing the articles as they drop from the beds, and guiding them while being fed into the reducing-rolls, substantially as set forth.

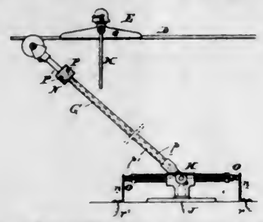
3. A feed-table for rolling-mills, having in combination a plate or bed for receiving articles as they come from the rolls, an inverted box or trough arranged on the plate or bed, and provided with a movable side, means for shifting the box or trough laterally, arms connected to the movable side, and means for holding the ends of said arms from lateral movement, substantially as set forth.

4. A feed-table for rolling-mills, having in combination a plate or bed for receiving articles from the reducing-rolls, means for shifting the articles off of the plate or bed, guide-grooves for receiving the articles as they drop from the bed or plate, two hinged aprons for directing the articles into the guide-grooves, and manually-controlled means for shifting both aprons simultaneously, substantially as set forth.



5. A feed-table for rolling-mills, having in combination a plate or bed for receiving articles from the reducing-rolls, means for shifting the articles laterally off of said plate or bed, guide-grooves for receiving the articles as they drop from the plate or bed, hinged aprons for directing the articles into said grooves, yokes connected to the free edges of the aprons and means for shifting one of the aprons, substantially as set forth.

572,169. ELECTRICALLY-ACTUATED RAILWAY-SWITCH. RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to the General Electric Company, of New York. Filed July 25, 1894. Serial No. 518,512. (No model.)

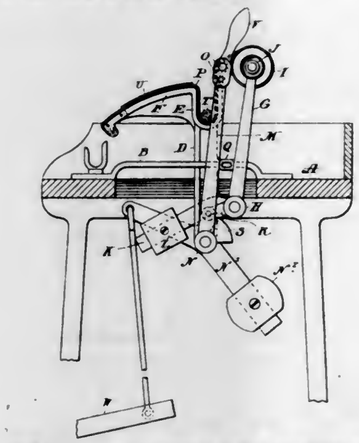


Claim.—1. The combination of a branching railway having positive suspended conductors, a track-switch at the juncture of the two railways, electric power devices for throwing the switch in either direction, two downwardly-extending loosely-swinging insulated contacts arranged at a distance in advance of the track-switch and movable on transverse axes on each side of the suspended conductor, electric circuits between the contacts and respective power devices, an electrically-propelled car having an upwardly-extending underrunning trolley device extending upward so as to pass freely between the swinging contacts and making contact with the suspended conductor and provided with laterally-projecting pins or contact devices for closing an electric circuit with either of the first-mentioned pivoted contacts by striking and then moving under them, and a switch device on the car for putting either of the laterally-projecting contacts on the car into electric circuit with the motor-circuit of the car.

2. The combination of a branching railway having a suspended positive working conductor, a track-switch, electromagnetic power devices for shifting said track-switch in either direction, circuits extending to a distance from said track-switch and terminating in loosely-swinging contacts insulated from the suspended conductor, and pivoted on transverse axes so as to swing parallel to the length of the suspended conductor and extend below the main contact of the trolley, an electrically-propelled car having a trolley receiving current from the suspended working conductor, and projecting devices carried on the trolley-arm for making temporary electrical connection with said swinging contacts and conductors for the purpose of supplying current to the electromagnetic power devices for shifting the switch.

3. The combination of a branching railway, a track-switch at the juncture of the tracks, electromagnetic power devices for operating said switch, a suspended conductor arranged at an elevation above the tracks of the railways, suspended contacts arranged at a distance in advance of the track-switch and respectively connected by circuits with the electric power devices for moving the track-switch in either direction, an electrically-propelled car, an upwardly extending trolley pivoted to the roof of the car and making an underrunning contact with the suspended conductor or trolley-wire, contact devices on the trolley arm for making contact respectively with the two suspended contacts, circuits from the trolley-contacts to the body of the car, a switch electrically connected with the motor-circuit or trolley-wire adapted to close the circuit leading to either of the trolley-contacts whereby the current may be supplied as desired to move the switch in either direction, and contact devices at the base of the trolley for maintaining electrical connection between the switch and trolley-contacts when the trolley is reversed.

572,170. CIGAR-BUNCHING MACHINE. WILLIAM H. ISLEY, Jersey City, N. J., assignor to David Wood, Brooklyn, N. Y. Filed Mar. 16, 1895. Serial No. 541,994. (No model.)



Claim.—1. In a cigar-bunching machine the combination with a rolling-table having a concavity in rear thereof, of a pivotally-supported tension-frame normally held in rear of and adjacent the said concavity, a bunching-apron secured at one end to the upper portion of the tension-frame and at its other end to the forward end of the rolling-table and a pivotally-supported shaping-frame also normally in rear of said concavity but in front of the tension-frame, and means carried by the journal of the shaping-frame for positively engaging the tension-frame and moving it in the direction opposite to the direction of the shaping frame; substantially as described.

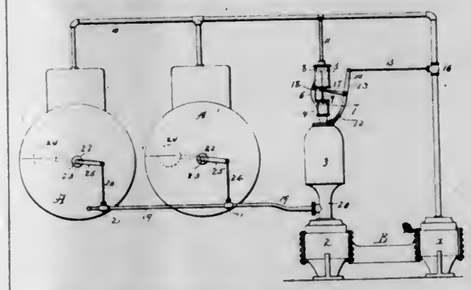
2. In a cigar-bunching machine, the combination of a rolling-table, a concavity in the rear thereof, a bunching-apron, a pivotally-supported tension-frame supporting one end of said apron, means for normally causing the tension-frame to swing toward the rear of the rolling-table, and a crank arm secured to the journal of the tension-frame, with a pivotally-supported shaping-frame carrying a bunching-roller, a cam secured to the journal of said shaping-frame and adapted to operate the tension-frame through the medium of the crank-arm, substantially as and for the purpose specified.

3. A cigar-bunching machine consisting of a pivotally-mounted tension-frame adjustably carrying the rear end of a bunching-apron, a crank-arm projecting from the journal-bearing of said tension-frame, in combination with the rolling-table and bunching-apron, and a pivotally-supported shaping-frame carrying a bunching-roller toward its upper end, and carrying a cam upon its journal-bearing adapted to engage with the crank-arm on the tension-frame to cause the upper end of said tension-frame to move rearward away from the concavity in the rear end of the rolling-table, for the purpose of affording tension to the said bunching-apron during the entire process of rolling the bunch and with the counterweight located on an arm projecting from the tension-frame journal-bearing and operated as described.

4. In a cigar-bunching machine, the combination of a pivotally-supported tension-frame, a rolling-table having a concavity as described, a bunching-apron, and means to cause the said tension-frame to normally swing toward the concavity in the rear of said rolling-table, a stop Q, with a pivotally supported shaping-frame and means to cause the same to normally swing toward the rear of the rolling-table where it is checked by said stop Q, a bunching-roller carried by the shaping-frame, and with means as described including a cam and crank-arm for causing positive and coöperative action between said tension-frame and shaping-frame so that as said shaping-frame is moved toward the front of the rolling table the tension frame will be moved in the opposite direction.

5. In a cigar-bunching machine, a pivotally-supported tension-frame G, an arm K projecting from said frame G, counterweight L, crank-arm R adjustably carried by said arm K projecting from said tension-frame bearing, and an adjusting roller I supported by said tension-frame, in combination with a pivotally-supported shaping-frame M, a bunching-roller O carried thereby, arm N' projecting from said shaping-frame axle and carrying a counterweight N², with a cam S, a stop Q on said framework for checking the frames G and M, and a concavity E in the upper end of said framework, and with a roll-table and apron P, one end of which apron is secured to the forward end of said roll-table, the other end being secured to the said adjusting-roller I, substantially as described.

572,171. MEANS FOR FEEDING AND CONTROLLING SUPPLY OF WATER TO BOILERS. AMOS E. JOHNSON, Northumberland, Pa., assignor of one-half to Louisiana P. Johnson, same place. Filed July 28, 1896. Serial No. 600,795. (No model.)

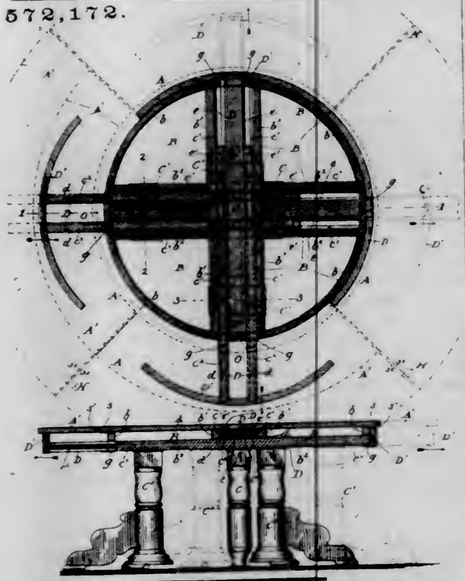


Claim.—The combination with a boiler, a steam-pump, a feed-pipe having a valve therein and adapted to conduct water to the boiler, and a steam-pipe leading from the boiler to the steam-pump, of a crank-shaft mounted in the wall of the boiler, a float secured to said crank-shaft, an arm on the outer end of said crank-shaft, a connection between said arm and the valve in the feed-pipe, an air-chamber communicating with the pump, a cylinder communicating with the air-chamber, a cylinder communicating with the steam-pipe leading to the pump, pistons in said cylinders, a rod connecting said pistons, a bell-crank lever having one arm connected with said piston-rod, a valve in the steam-pipe leading to the pump and a connection between said valve and the other arm of the bell-crank lever, substantially as set forth.

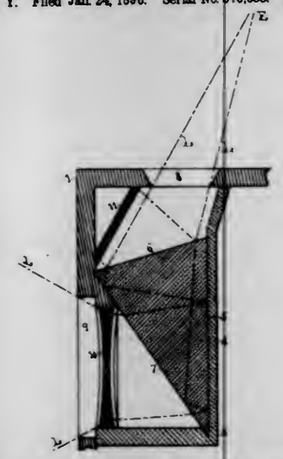
572,172. CIRCULAR EXTENSION-TABLE. GEORGE KRUEGER, Albany, N. Y. Filed Sept. 2, 1893. Serial No. 484,608. (No model.)

Claim.—In a circular extension-table, the combination with the frame B, comprising the circumferential rail *b*, parallel bars *b'* *b'*, provided with guiding elements described, parallel bars b^3 b^3 on a plane below the bars *b'* *b'*, and provided also with guiding elements as described and crossing bars *b'* *b'* at the middle of their length, one or more legs permanently fixed to said frame, and table-top A, securely fixed to the said parts comprising said frame B, radially-moving brackets D, working through openings provided in the circumferential rail *b* and provided with guiding elements described for coaction with the guiding elements provided on the bars *b'* *b'* and b^3 b^3, and removable leaves A', in number corresponding with the number of radially-moving brackets; the outer edges of the fixed table-top and the adjacent edges of the removable leaves being provided with coacting tongues and grooves *s s'* and adjacent end edges of said removable leaves having coacting tongues s^3 s^3, substantially as described for the purposes set forth.

572,172.



572,173. PHOTOGRAPHIC FINDER. ALFRED C. MERCER, Syracuse, N. Y. Filed Jan. 24, 1896. Serial No. 576,635. (No model.)



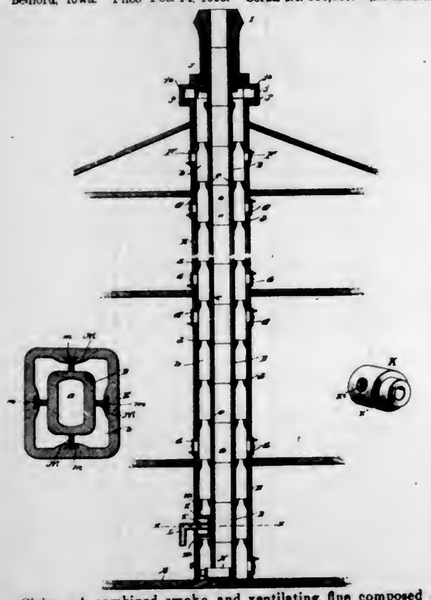
Claim.—1. In a photographic finder, the combination of: first, a negative lens suitably supported and fixed in the front opening of a box and perpendicularly to and first in the path of the light passing from the object or view through the finder to the eye; second, a triangular glass prism, suitably supported and fixed just behind the said negative lens, below a top opening in the said box and in the said path of light, having two polished internally-reflecting faces one of which, not silvered, is placed or cut at such an angle to the other which is silvered that the former or first face transmits one part of a ray or pencil of light on its way from the object or view to the latter or second face, and, simultaneously, totally reflects another, later, part of the same ray or pencil of light, on its way from the said second internally-reflecting face to the eye; third, a final upper emitting and refracting polished face of the said triangular glass prism, oblique to the now emitted and refracted said ray or pencil (or said path) of light and fixed at such an angle to a black screen, which is suitably supported and fixed in the said box just above and in front of the said triangular glass prism, that the said screen only is reflected to the eye by the said emitting and refracting face; fourth, two contours, one bounding the said front opening in the said box and the other bounding the said top opening in the said box, so proportioned as visually to coincide when the eye is correctly located in using the finder.

2. In a photographic finder, the combination of: first, a negative lens suitably supported and fixed in the front opening of a box and perpendicularly to and first in the path of the light passing from the object or view through the finder to the eye; with, second, a triangular glass prism suitably supported and fixed just behind the said negative lens, below a top opening in the said box and in the said path of light, having two polished internally-reflecting faces, one of which, not silvered, is placed or cut at such an angle to the other which is silvered that the former simultaneously transmits one part of, and totally reflects another part of, the same ray or pencil of light passing from the object or view through the finder to the eye; and with, third, a final upper emitting and refracting polished face of the said triangular glass prism, oblique to the now emitted and refracted said ray or pencil (or said path) of light, and fixed at such an angle to a black screen, which is suitably supported and fixed in the said box just above and in front of the said triangular glass prism, that the said screen only is reflected to the eye by the said emitting and refracting face.

3. In a photographic finder, the combination of: first, a negative lens suitably supported and fixed in the front opening of a box and perpendicularly to and first in the path of the light passing from the object or view through the finder to the eye; with, second, a triangular glass prism suitably supported and fixed just behind the said negative lens, below a top opening in the said box and in the said path of light, having two polished internally-reflecting faces one of which, not silvered, is placed or cut at such an angle to the other which is silvered that the former simultaneously transmits one part of, and totally reflects another part of, the same ray or pencil of light passing from the object or view through the finder to the eye.

4. In a finder, a prism having a final emitting-surface oblique to the emitted pencil of light, in combination with a screen so placed and sized as to be alone reflected to the eye by said surface.

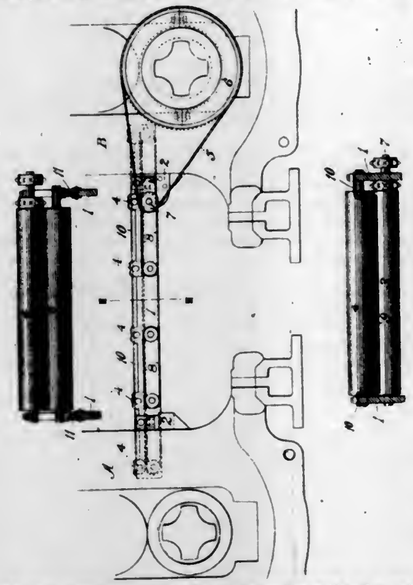
572,174. SAFETY FLUE AND VENTILATOR. ROBERT G. MOON, Bedford, Iowa. Filed Feb. 14, 1895. Serial No. 538,389. (No model.)



Claim.—A combined smoke and ventilating flue composed of similar sections, the inner sections forming a smoke-passage, and the outer sections an air-space surrounding the inner sections, and a top section fitted upon the topmost inner section and extending over the space between the inner and outer sections, and having a lower flange encircling and forming a space with the top edge portion of the next lower section, and having corner-pieces notched in their lower ends to receive the corners of the said next lower section and hold the aforesaid top section in proper position, substantially in the manner set forth, for the purpose described.

572,175. FEED-TABLE FOR ROLLING-MILLS. WILLIAM H. MCFADDEN, Allegheny, Pa. Filed Mar. 23, 1896. Serial No. 584,404. (No model.)

Claim.—1. The combination in a feed-table for rolling-mills of two series of feed-rollers, the rollers of one series being arranged to press the sheets against the rollers of the other series, and means for positively driving the rollers of one series, substantially as set forth.

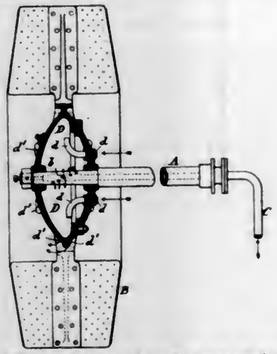


2. The combination, in a feed-table for rolling-mills, of a series of positively-driven rollers and a series of rollers arranged to press the article being fed against the positively-driven rollers, substantially as set forth.

3. The combination, in a feed-table for rolling-mills, of a series of positively-driven rollers, and a series of rollers arranged to press the article being fed against the positively-driven rollers, and to be rotated by frictional contact with the article, substantially as set forth.

4. The combination, in a feed-table for rolling-mills, of a series of positively-driven rollers, a series of supporting-plates intermediate of the rollers, and a series of rollers arranged to press the article being fed against the positively-driven rollers, substantially as set forth.

572,176. APPARATUS FOR TREATING FIRE-GASES EVOLVED IN STEAM-BOILERS, &c. JAMES PATTERSON, Glasgow, Scotland, assignor of one-half to James Ramsay Sandilands, same place. Filed Apr. 3, 1895. Serial No. 544,330. (No model.) Patented in England Sept. 25, 1894, No. 18,163; in France Mar. 19, 1895, No. 245,911; in Belgium Mar. 19, 1895, No. 114,627; in Germany Mar. 19, 1895, No. 83,142; in Canada July 2, 1895, No. 49,355, and in Italy Sept. 30, 1896, XXX, 39,714, and LXXVII, 500.



Claim.—1. The combination of a casing connected with a flue or passage through which gases to be treated pass, a fan disposed in said casing and provided with a hollow hub having discharge-openings, means for supplying water to said hub, and means for admitting air to said hollow hub.

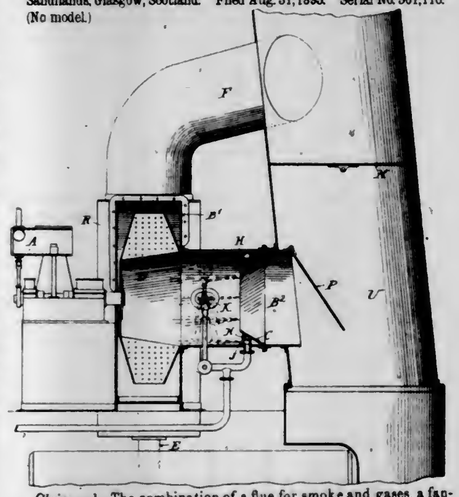
2. The combination of a casing connected with a flue or passage through which gases to be treated pass, a fan disposed in said casing and provided with a hollow hub, having discharge-openings, a hollow spindle connected with said hub for supplying water thereto, and means for admitting air to said hub.

3. The combination of a casing connected with a flue or passage through which gases to be treated pass, a fan disposed in said casing and provided with a hollow hub having discharge-openings, a hollow spindle extending into said hub and connected with a suitable water-supply, said spindle having openings therein for discharging water into said hub, said hub having openings for permitting the air or gases to enter the hub from the fan casing.

4. The combination of a casing connected with a flue or passage through which gases to be treated pass, a fan disposed in said casing and having a hollow blade-carrying spindle, means for rotating said spindle in one direction, a hollow spindle disposed in said blade-carrying spindle, and connected with a suitable water-supply, said spindle having openings in one end thereof, means for rotating said spindle in the opposite direction to the direction of the blade-carrying spindle, and a hollow hub into which the perforated end of said spindle extends, said hub being provided with openings.

5. The combination of a casing connected with a flue or passage through which gases to be treated pass, a revolving fan disposed in said casing and provided with a hollow spindle connected with a suitable water-supply, a hollow hub into which the fan-spindle extends and which carries the fan-blades, said hub having openings therein directed in the direction in which the fan-blades rotate, said openings serving to permit the water entering the spindle to issue therethrough into the fan-casing, and openings in said hub for permitting the air or gases to enter the hub from the fan casing.

572,177. APPARATUS FOR TREATING FIRE-GASES. JAMES PATTERSON, Gourock, Scotland, assignor of one-half to James Ramsay Sandilands, Glasgow, Scotland. Filed Aug. 31, 1895. Serial No. 561,110. (No model.)



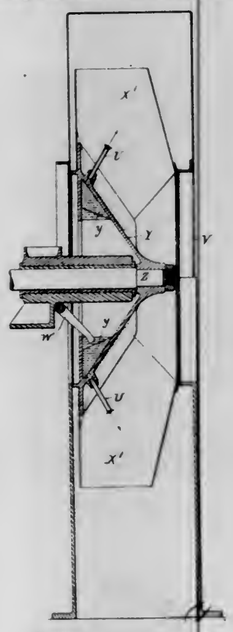
Claim.—1. The combination of a flue for smoke and gases, a fan-casing, a rotary fan in said casing, a passage connecting said flue and fan-casing, means for discharging jets of water into said connecting-passage transversely of the current of gases passing therethrough, and means for discharging inducing-jets across the transverse jets.

2. The combination of a fan, a flue or passage through which the gases to be treated pass, said flue being connected to said fan, means for supplying water to said fan, means for producing a jet or jets of water through which said gases pass, an inducing-nozzle disposed in the passage leading to the fan, and a perforated ring surrounding said nozzle through which water under pressure is caused to pass in the direction leading to the fan.

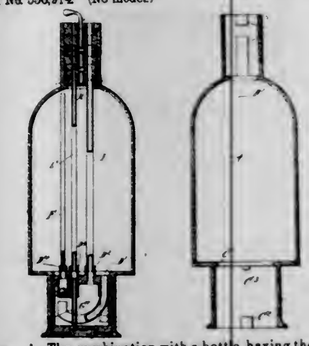
3. The combination of a fan, a flue or passage through which the gases to be treated pass, said flue being connected to said fan, means for producing a jet or jets of water through which said gases pass, an inducing-nozzle disposed in the passage leading to the fan, and jet devices disposed around said nozzle through which water under pressure is caused to pass in direction toward the fan.

572,178. BLOWER FOR TREATING GASES EVOLVED IN FURNACES. JAMES PATTERSON, Gourock, Scotland, assignor of one-half to James Ramsay Sandilands, Glasgow, Scotland. Filed Sept. 26, 1895. Serial No. 563,747. (No model.)

Claim.—A rotary fan for treating gases from furnaces and other sources, comprising a spindle, a hollow hub fixed thereto and open on one side to the atmosphere, blades secured to said hollow hub, a water-pipe projecting through the atmospheric opening in the hub, for supplying water to the interior of the hub at its periphery, and channels or tubes leading from the hub to the interior of the fan-casing



572,179. BOTTLE. JACOB PAULUS, Brooklyn, N. Y., assignor of one-half to August Hartmann, East Orange, N. J. Filed May 28, 1895. Serial No. 550,914. (No model.)



Claim.—1. The combination with a bottle, having the usual neck, and a tubular extension at the bottom thereof of a disk or plate secured in said tubular extension, and having ports or passages therethrough, and means for closing said tubular extension and forming a chamber therein, a disk or plate secured in the neck of the bottle, and having ports or passages formed therein, tubes forming a connection between the ports or passages in the disk secured in the neck and those formed in the disk or plate secured in the tubular extension, and means for admitting the contents of the bottle into the chamber formed in the tubular extension, and discharging the same through one of said tubes, the other of said tubes being adapted to admit air to said chamber, substantially as shown and described.

2. The combination with a bottle, having the usual neck, and a tubular extension at the bottom thereof, of a disk or plate secured in said tubular extension, and having ports or passages therethrough, and means for closing said tubular extension and forming a chamber therein, a disk or plate secured in the neck of the bottle, and having ports or passages formed therein, tubes forming a connection between the ports or passages in the disk secured in the neck and those formed in the disk or plate secured in the tubular extension, and means for admitting the contents of the bottle into the chamber formed in the tubular extension, and discharging the same through one of said tubes, the other of said tubes being adapted to admit air to said chamber, substantially as shown and described.

3. The combination with a bottle, provided with the usual neck, and a tubular extension at the bottom thereof, of a disk or plate secured in the upper part of said tubular extension, said disk or plate being provided with ports or openings with which communicate tubes, which also communicate with similar ports or openings formed in the disk or plate secured in the neck of the bottle, a series of similar disks or plates arranged within the neck of the bottle, above the first-named plate, which are provided with ports or openings which correspond, and are adapted to register with those in the first-named disk or plate, one or more of the said disks or plates being revoluble within the neck therein, one of said tubes being adapted to admit of the discharge of the contents of the bottle, and the other to supply air thereto, and means for turning the revoluble disks or plates within the neck of the bottle, substantially as shown and described.

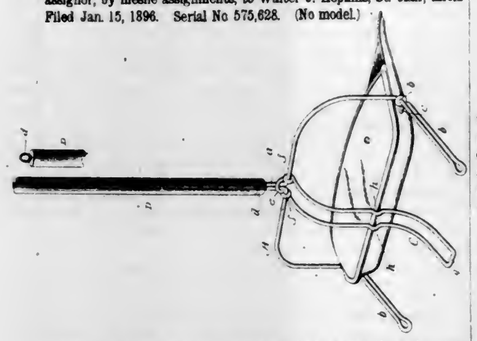
4. The combination with a bottle, provided with the usual neck, and a tubular extension at the bottom thereof, of a disk or plate secured in the upper part of said tubular extension, said disk or plate being provided with ports or openings with which communicate tubes, which also communicate with similar ports or openings formed in the disk or plate secured in the neck of the bottle, a series of similar disks or plates arranged within the neck of the bottle, above the first-named plate, each of which is provided with ports or openings which correspond, and are adapted to register with those in the first-named disk or plate, one or more of the said disks or plates being revoluble within the neck therein, one of said tubes being adapted to admit of the discharge of the contents of the bottle, and the other to supply air thereto, and means for turning the revoluble disks or plates within the neck of the bottle, the disk or plate secured within the tubular extension at the bottom of the bottle, being also provided with a port or opening with which communicates a tube which extends upward through the bottle near to the top thereof, and with another port or opening with which is connected a tube which communicates with a chamber formed in the tubular extension, substantially as shown and described.

5. The combination with a bottle provided with the usual neck and with a tubular extension at the bottom thereof, which is closed by a plate secured at its lower end, of a disk or plate secured in the upper end of said tubular extension forming a chamber therein, said disk or plate being provided with a plurality of ports or openings with two of which communicate tubes which extend upwardly and communicate with similar ports or openings formed in a disk secured in the bottom of the neck of the bottle, a plurality of similar disks or plates arranged within the neck of the bottle above the first-named disk or plate, each of which is provided with ports or openings which correspond with those formed in the first-named disk or plate, and one or more of said last-named disks or plates being revoluble and the others rigidly secured within the neck, one of said ports or openings in the disk or plate secured in the tubular extension, being also provided with a tube which extends upward into the bottle and a valve to control the entrance thereto, and another of said ports or openings within the disk or plate secured within the tubular extension, being also provided with a tube which extends downwardly into the chamber within said tubular extension, and means for turning the revoluble disks or plates within the neck of the bottle, substantially as shown and described.

6. The combination with a bottle provided with the usual neck and with a tubular extension at the bottom thereof, which is closed by a plate secured at its lower end, of a disk or plate secured in the upper end of said tubular extension forming a chamber therein, said disk or plate being provided with a plurality of ports or openings with two of which communicate tubes which extend upwardly and communicate with similar ports or openings formed in a disk secured in the bottom of the neck of the bottle, a plurality of similar disks or plates arranged within the neck of the bottle above the first-named disk or plate each of which is provided with ports or openings which correspond with those formed in the first-named disk or plate, and one or more of said last-named disks or plates being revoluble and the others rigidly secured within the neck, one of said ports or opening in the disk or plate secured in the tubular extension, being also provided with a tube which extends upward into the bottle and a valve to control the entrance thereto, and another of said ports or openings within the disk or plate secured within the tubular extension, being also provided with a tube which extends downwardly into the chamber within said tubular extension, and means

for turning the revoluble disks or plates within the neck of the bottle, consisting of a key-rod adapted to be inserted through central openings formed in each of the disks or plates above the last, and provided with wings or extensions by which the revoluble plates are turned, substantially as shown and described.

572,180. DUST-PAN. SYLVANUS T. PERRY, Port Huron, Mich., assignor, by mesne assignments, to Walter J. Hopkins, St. Clair, Mich. Filed Jan. 15, 1896. Serial No. 575,628. (No model.)



Claim.—1. A dust pan comprising a hanger, a pan pivoted eccentrically within the hanger, and a locking-piece pivoted to the hanger and extending rearwardly therefrom to engage with the rear edge of said pan and forming a foot to rest upon the floor, substantially as described.

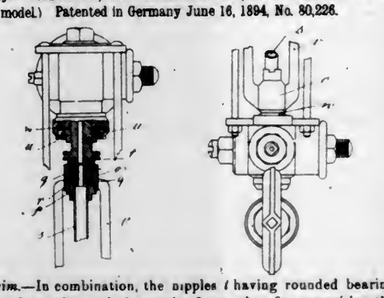
2. The combination with a hanger, and a dumping-pan pivoted therein, of a locking device pivoted at one end to the hanger and provided at its other end with a foot adapted to rest upon the floor, said locking device being constructed to engage, at an intermediate point of its length, with the rear edge of the pan, substantially as and for the purposes described.

3. In a dust-pan, the combination with a hanger, and a pan hung thereto, of a locking-piece pivoted on the hanger in a manner to have its movement in a direction away from the pan limited by the hanger and thereby held to lie in the path of the rear side of the pan, and said locking-piece constructed with a rearwardly-extended foot *g* adapted to rest on the floor, substantially as and for the purposes described.

4. In a dust-pan, the combination with a hanger having a shank and a pan hung to said hanger, of a notched locking-piece pivoted to said hanger and provided at one end with a loop which engages with the shank of the hanger to limit the movement of the locking-piece, the other end of which is provided with a rearwardly-extending foot *g*, substantially as described.

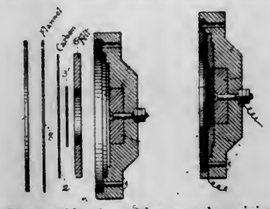
5. In a dust-pan, the hanger A made from a single length of wire which is bent to form the bail, a shank, the inclined feet, and the inwardly-extending trunnions, combined with a pan mounted eccentrically on the trunnions, a staff attached to the shank, and a notched locking-piece which is pivotally mounted on the bail and is provided at one end with a loop *e* and at its other end with a foot *g*, substantially as described.

572,181. WATER-GAGE GLASS. JOSEF PISSINGER, Munich, Germany. Filed Jan. 11, 1896. Renewed Oct. 14, 1896. Serial No. 608,892. (No model.) Patented in Germany June 16, 1894, No. 80,226.



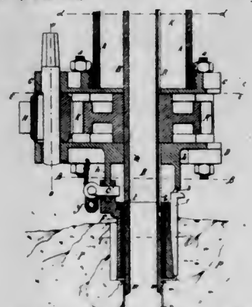
Claim.—In combination, the nipples *l* having rounded bearing ends, the glass tubes and the carrier-frame therefor comprising the parts *q* having rounded bearings adapted to the nipples *l*, the boxes *p*, the rings *o* to which the boxes and parts *q* are attached and the protecting-rods V extending alongside the glass tube and connected to the rings *o*, substantially as described.

572,182. TELEPHONE-TRANSMITTER. FOREST A. RAY, Boston, Mass. Filed Oct. 23, 1895. Serial No. 566,591. (No model.)



Claim.—The combination with a sound-receiving diaphragm, a thin carbon disk affixed on one side thereof, and an apertured damper-disk to cover the remaining side surface of the diaphragm, of an exterior casing, a fixed electrode therein, an exterior retaining-ring, a felted damper-ring circumferentially between the retaining-ring and the diaphragm, and a cell to contain finely-granulated material as a variable resistance, substantially as set forth and described.

572,183. APPARATUS FOR FIXING AND SUPPORTING ROCK-DRILLS. UGO SALVOTTI, Milan, Italy. Filed July 25, 1896. Serial No. 600,527. (No model.)



Claim.—1. An apparatus for supporting and fixing rotary drills or boring machines consisting of two plates C C D D fixed by means of bolts *a a a a*, the said plates serving to support the shaft *o o*, and having between them a spur-wheel K and a pinion H the former splined upon the shaft of the drill B and the latter upon the shaft *o o*; the upper plate *c c* being connected to the cylinder A A of the borer and the lower plate D D bearing an annular crown *h h* which is adapted to enter the slots of the lugs *f f f*, all substantially as described and illustrated in the drawings.

2. In combination, the drill shaft, a socket or sleeve F through which the same passes, means for turning the drill shaft, the support for the said means arranged above the socket and extending across the same, the stud-and-groove connection between the sleeve and the said support and the pins C for completing the said connection, said connection extending parallel with the drill-shaft, substantially as described.

3. In combination, the socket having the lugs at different points about it with inclined grooves extending longitudinally of the socket and intermediate of the lugs, the drill-shaft, the gearing for driving the same and the plate D extending over the socket and having the crown *h* detachably secured to the lugs of the socket, the said grooves being adapted to receive wedges, substantially as described.

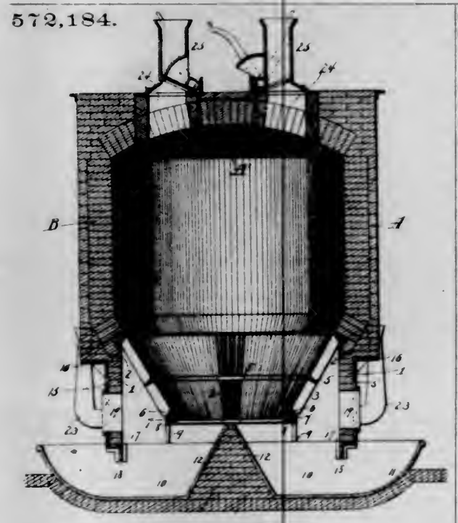
572,184. GAS-PRODUCER. JAMES D. SWINDELL, Pittsburg, Pa. Filed Feb. 7, 1896. Serial No. 578,425. (No model.)

Claim.—1. In a gas-producer, the combination with a body portion for the reception of coal, of a basket-grate, and a projection having steep sloping sides and a sharp-pointed apex the apex thereof reaching across the center of the grate from side to side thereof and serving to divide the falling ashes and cause them to descend in two directions as they drop from the grate, substantially as set forth.

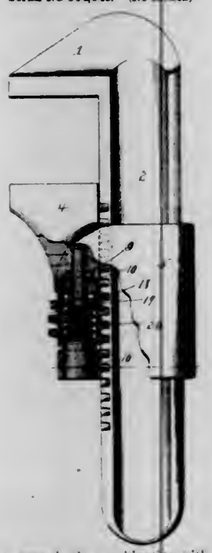
2. In a gas-producer, the combination with a body portion, of a basket-grate, a basin, and a projection extending upwardly from the bottom of the basin with steep sides, its apex reaching beneath the center of the grate, substantially as set forth.

3. The combination with a solid masonry wall, and an annular ring L shaped in cross-section built therein, of a basket-grate the upper end of which hooks over the ring and is built into the masonry wall, substantially as set forth.

572,184.



572,185. WRENCH. MILTON WENGER, New Holland, Pa. Filed Mar. 24, 1896. Serial No. 584,648. (No model.)



Claim.—1. In a wrench, the combination with the fixed and the movable member thereof, one of said members being provided with a portion having threads of long pitch, of a nut having threads of long pitch to mesh with said first-mentioned threads, said nut being mounted in one member of the wrench in such manner that when pressure is applied to said members of the wrench to separate them, said nut will have frictional contact with the member in which it is located and so that when pressure is applied to the members to cause them to approach, such frictional contact will be relieved, substantially as set forth.

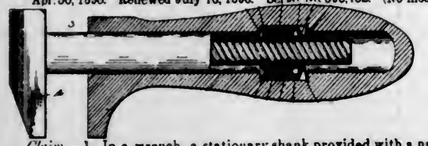
2. In a wrench, the combination with the fixed jaw and a shank projecting therefrom, said shank having threads of long pitch, of a movable jaw having a yoke to embrace said shank, said yoke having a nut-opening, of a nut mounted in said opening and having threads of long pitch to mesh with the threads on the shank of the fixed jaw, a conical seat for one end of said nut, and a spring for forcing said nut against said conical seat, substantially as set forth.

3. In a wrench, the combination with a fixed and a movable member, one of said members having a portion with threads of long pitch, of a nut having threads of long pitch to mesh with said first-mentioned threaded portion, said nut being supported in one member of the wrench and a spring located within said nut and adapted to force it into frictional contact with the member of the wrench in which it is supported, substantially as set forth.

4. In a wrench, the combination with a fixed member and a movable member having a portion with threads of long pitch, of a hollow nut having threads of long pitch to mesh with said first-mentioned threads and revolubly mounted in one member of the wrench, said nut being adapted to have a slight longitudinal movement and to have frictional contact with the member of the wrench in which it is mounted, an internal shoulder at one end of the nut, antifriction-balls bearing against said shoulder, a washer in the nut bearing against said antifriction-balls, a fixed pin having a head at one end and passing loosely through the nut and washer for revolubly supporting the nut, and a spring within said nut bearing at its respective ends against said washer and against the head of the pin on which the nut is mounted, substantially as set forth.

5. In a wrench, the combination with a fixed jaw and a shank projecting therefrom, said shank having a number of threads of long pitch on one edge, of a movable jaw, a yoke on said movable jaw embracing said shank, said yoke having a nut-opening therein and one wall of said opening having a conical recess therein, a hollow nut in said opening, a pin fixed in the yoke and passing through the nut-opening for revolubly supporting the nut, one end of said nut being made conical to enter said conical recess, external threads of long pitch on said nut adapted to mesh with the threads on the shank, an internal shoulder at the conical end of the nut, antifriction-balls bearing against said shoulder, a washer encircling the pin on which the nut is mounted and bearing against said antifriction-balls, a shoulder at the rear end of said pin, and a spring located within the nut and bearing at its respective ends against said last-mentioned shoulder and the washer, substantially as and for the purpose set forth.

572,186. WRENCH. MILTON WENGER, New Holland, Pa. Filed Apr. 30, 1895. Renewed July 10, 1896. Serial No. 598,732. (No model.)



Claim.—1. In a wrench, a stationary shank provided with a nut-opening, the movable shank arranged to work through the nut-opening and provided with a plurality of threads of long pitch, an adjusting-nut mounted within the nut-opening and having a clutch connection with one side thereof, a ball-bearing for the side of the nut opposite its clutch connection, and a spring interposed between the ball-bearing and one side of said nut-opening, said spring holding the balls of said bearing in place and also normally adjusting the nut against the side of the nut-opening with which it has a clutch engagement, substantially as set forth.

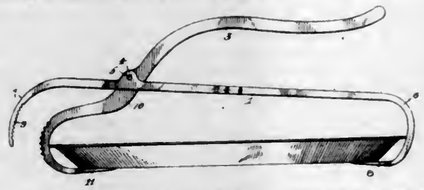
2. In a wrench, a stationary shank provided with a nut-opening, the movable shank arranged to work through the nut-opening and provided with a plurality of threads of long pitch, an adjusting-nut mounted within the nut opening and having a clutch connection with one side thereof, said nut being provided in the side opposite its clutch connection with an annular bearing-groove, a series of bearing-balls arranged in said groove, a dished bearing plate arranged against said balls, and a spring interposed between said bearing-plate and one side of the nut-opening, substantially as set forth.

3. In a wrench, a stationary shank provided with a nut-opening, the movable shank arranged to work through the nut-opening and provided with a plurality of threads of long pitch, a clutch-ring fitted within the nut-opening at one side thereof, an adjusting-nut mounted within said nut-opening and having a frictional clutch connection with said clutch-ring, a ball-bearing for the side of the nut opposite its clutch connection, and a spring interposed between the ball-bearing and one side of said nut-opening, substantially as set forth.

4. In a wrench, a stationary shank provided with a nut-opening, the movable shank arranged to work through the nut-opening and provided with a plurality of threads of long pitch, a clutch-ring fitted within the nut-opening at one side thereof and provided with an inner conical or beveled friction-surface, an adjusting-nut mounted within the nut-opening and provided at one side with a conical clutch-neck registering with said friction-surface, and at the opposite side with an annular bearing-groove, a series of antifriction bearing-balls arranged in said bearing-groove, a dished bearing-plate arranged against said bearing-balls, and a spring interposed between said bearing-plate and one side of the nut-opening, substantially as set forth.

572,187. PAN-LIFTER. THOMAS O. ANDRUS and THOMAS J. NEWTON, Albany, Vt. Filed Sept. 8, 1896. Serial No. 606,162. (No model.)

Claim.—1. A device of the class described comprising a bar, provided at its ends with inwardly-extending jaws, and a lever pivoted intermediate of its ends to the bar, having one end located between the said jaws and provided with inner and outer jaws cooperating with the jaws of the bar, whereby the device is adapted to engage the upper edge of a bowl or analogous utensil, and is capable of receiving or supporting and gripping a plate, substantially as described.



2. A device of the class described, comprising a bar, having its ends 6 and 7 bent downward, the end 7 being provided at its inner face with a jaw, the jaw 8 mounted on the end 6 of the bar and disposed substantially horizontally, the lever pivoted intermediate of its ends to the bar, extending below the same and provided at the outer face of its lower end with a jaw, arranged to cooperate with the jaw of the end 7 to form a pair of pincers, and the jaw 11 located at the inner side of the lower end of the lever, disposed substantially horizontally and cooperating with the jaw 8, substantially as described.

3. A device of the class described comprising a bar having its ends 6 and 7 curved downward and provided intermediate of the same with a longitudinal slot, the end 7 being forked or bifurcated and having teeth at its inner face to form a jaw, the jaw 8 arranged at the end 6 of the bar and located beneath the latter, the lever pivoted intermediate of its ends in the slot and having its lower end curved downward and inward and provided at its outer face with teeth to form a jaw, and a jaw 11 disposed at the lower end of the lever, substantially as described.

572,188. TELEPHONE-TRANSMITTER. LOUIS D. APPLEMAN, Waynesborough, Va., assignor of one-half to W. Nevins Fishburne, same place. Filed Mar. 19, 1896. Serial No. 583,967. (No model.)



Claim.—1. In a telephone transmitter, the combination with a diaphragm, a fixed electrode, and an electrode attached to said diaphragm and an interposed granular conducting mass, of means operated by said diaphragm for causing the entire surface of the electrode attached thereto to move away from the granular mass during the vibration of the diaphragm away from the speaker, and to approach the same during the vibration of diaphragm toward the speaker, substantially as described.

2. In a telephone-transmitter, the combination with a diaphragm and an electrode moving therewith, of a second electrode fixed between said diaphragm and said first electrode, and a granular conducting mass interposed between said electrodes, substantially as described.

3. In a telephone-transmitter, the combination with a diaphragm and an electrode connected thereto and moving therewith, said electrode being in the form of a corrugated carbon disk, of a second electrode, also corrugated and interposed between the diaphragm and the first electrode, and a granular mass interposed between said electrodes, substantially as described.

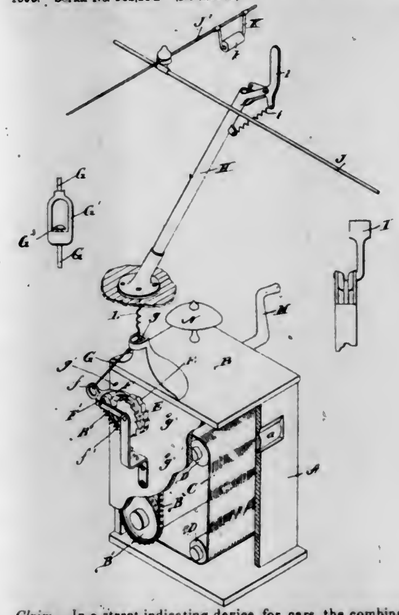
4. In a telephone-transmitter, the combination with a diaphragm and an open bridge or frame carried thereby, of an electrode mounted in the interior of said bridge or frame, a second electrode inclosed by said bridge or frame, and granular conducting material interposed between said electrodes and adapted to be compressed as the diaphragm returns to its normal position, substantially as described.

5. In a telephone-transmitter, the combination with a diaphragm, of a bridge or frame carried thereby, a corrugated carbon electrode mounted on the interior of said bridge or frame farthest from said electrode, a second corrugated carbon electrode fixed between the first electrode and the diaphragm, and granular conducting material held between said electrodes, substantially as described.

6. In a telephone-transmitter, the combination with a diaphragm, of a bridge or frame carried thereby, a corrugated carbon electrode mounted on the interior of said bridge or frame farthest from said electrode, a second corrugated carbon electrode fixed between the first electrode and the diaphragm, and powdered carbon held between said electrodes, substantially as described.

7. In a telephone-transmitter the combination of a diaphragm, an electrode moving therewith, and a second electrode interposed between the diaphragm and the first electrode, and granular carbons adapted to form a more perfect electrical connection between the two electrodes during the return of the diaphragm from the limit of vibration away from the speaker to its normal position, substantially as described.

572,189. STATION-INDICATOR. DENNIS BEEMER, Detroit, Mich., assignor of one-eighth to William Buckow, same place. Filed Mar. 7, 1896. Serial No. 582,234. (No model.)



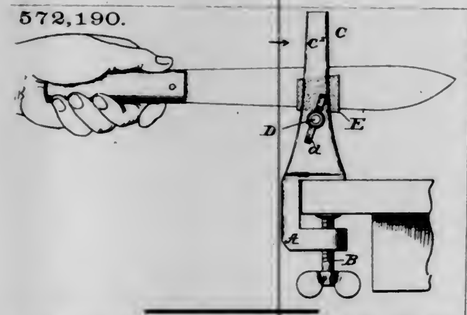
Claim.—In a street-indicating device for cars, the combination of a ribbon having the street-names or stations printed thereon, winding-rolls for carrying and winding said ribbon, said rolls mounted in a cabinet having an opening through which to view the names, suitable belting connecting the roll winding up the ribbon with the roll from which it is unwound, ratchet-wheels mounted on the shaft of one of said winding-rolls, and a swinging arm pivoted to said shaft, a double dog pivoted to said swinging arm adapted to engage the teeth of the ratchet-wheels, a spring for drawing the swinging arm to the limit of its stroke, pins *j'* to limit the travel of the swinging arm, a cable having one end attached to the swinging arm, the other to a bell-crank mounted in a standard on top of the car, a spring L forming a part of said operating cable and located between the tripping and actuating levers, and means suspended above the car for tripping said bell-crank, substantially as described.

572,190. KNIFE-SHARPENER. JOHN H. BRINKMAN, Indianapolis, Ind. Filed May 11, 1896. Serial No. 591,044. (No model.)

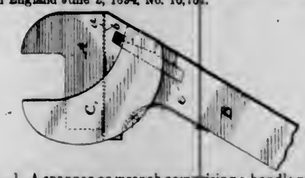
Claim.—1. In a knife-sharpener, a bifurcated standard C the sections of which are drawn together by means of a bolt and nut, said sections having transverse opposite depressions or ways with inwardly-beveled edges, said ways being located on the inner faces of the sections, and files removably secured in said ways, said parts being combined and arranged in the manner substantially as described and for the purposes specified.

2. The combination, with the clamp A and screw B, of the standards C and C^3, having oppositely-curved upper ends and a screw-bolt to draw the standards together, said standards having inside opposite ways c with beveled edges said ways being wider at one end than at the other and the files E shaped as described and having teeth cut substantially as described and specified

572,190.



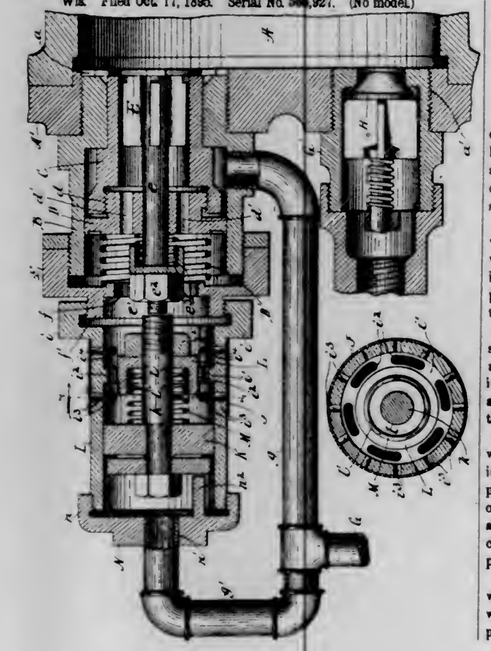
572,191. WRENCH. RICHARD M. CARROLL, Sydney, New South Wales. Filed May 6, 1896. Serial No. 590,488. (No model.) Patented in England June 2, 1894, No. 10,761.



Claim.—1. A spanner or wrench comprising a handle portion having its upper end enlarged and serrated, and formed with the longitudinal slot and the adjacent notch, a wedge working in said slot, a clamp in part constituting one of the jaws and having a boss fitting within the notch, an adjustable and removable jaw also serrated and held in position by the clamp, and a spring acting upon said clamp, substantially as shown and described.

2. A spanner or wrench comprising a handle bar having an enlarged end provided with serrations and formed at or near one of its edges with a slot and a notch, a wedge in said slot, a spring beneath the enlargement of the handle bar, a removable and adjustable jaw correspondingly serrated and provided with a spanner portion, and a clamp also having a spanner portion and embracing the shank of the movable jaw and the enlarged end of the handle-bar, and being provided with a block entering the notch, substantially as described.

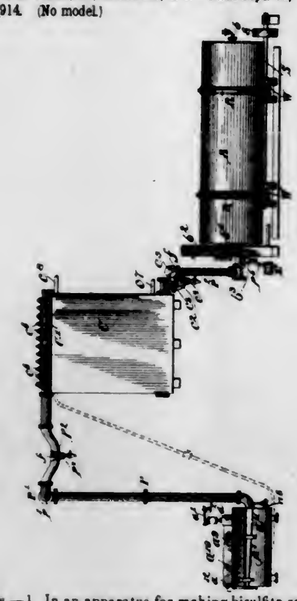
572,192. AIR-PUMP VALVE. NIELS A. CHRISTENSEN, Milwaukee, Wis. Filed Oct. 17, 1895. Serial No. 566,927. (No model.)



Claim.—1. In air-brakes for cars, an air-pump cylinder, in combination with a suction-valve, movable seat for said valve, an air-reservoir connected with said pump-cylinder, mechanism for moving said valve-seat away from the valve, and mechanism for forcing the valve away from its seat positively, both mechanisms adapted to be operated when the pressure in the air-reservoir exceeds a certain limit, substantially as described.

2. In air-brakes for cars, a pump-cylinder, A, in combination with suction-valve case, B, connected therewith, movable bushing, C, mounted in said case, suction-valve, E, seated on said bushing and provided with stem, *e*, piston, D, fitted in a piston-chamber within said case and connected to the bushing, cylinder, I, connected to said valve-case, piston, K, mounted in said cylinder, I, and provided with stem, *k*, arranged to contact with the valve-stem, air-reservoir connected with the pump-cylinder, and pipe, G, leading from said reservoir and provided with branches, *g*, *g'*, connecting respectively with the valve-case and supplementary cylinder, substantially as described.

572,193. APPARATUS FOR MAKING BISULFITE SOLUTIONS. JAMES L. COKER, Jr., Hartsville, S. C. Filed Sept. 14, 1892. Serial No. 445,914. (No model.)



Claim.—1. In an apparatus for making bisulfite solutions, a revoluble mixing vessel provided with an overflow-opening in one of its heads, and with internal buckets, in combination with a sulfurous-acid-gas-supply pipe extending into said vessel through said overflow-opening and having its discharge proximate to the opposite head of such vessel, for the purpose set forth.

2. In an apparatus for making bisulfite solutions, the combination with a revoluble mixing vessel provided with internal buckets and with a central overflow in one of its heads, of a gas-supply pipe opening into the vessel above the normal level of liquid therein, said supply-pipe adapted to convey liquid dropped from the buckets out of the mixing vessel into a separate receiver, substantially as set forth.

3. In an apparatus for making bisulfite solutions, a mixing vessel adapted to be partially filled with milk of lime, means for raising and dropping such liquid, and a sulfurous-acid-gas-supply pipe opening into the vessel above the normal level of liquid therein, said pipe adapted to receive and discharge into a separate receiver some of the dropping liquid, substantially as and for the purpose set forth.

4. In an apparatus for making bisulfite solutions, the combination with a revoluble mixing vessel provided with a central overflow-opening in one of its heads, and with internal buckets, of a gas-supply pipe extending in an upward direction into said vessel through the overflow-opening and having a discharge pipe near its outer end, and a conveyer connected with the outlet of said supply-pipe adapted to convey liquid discharged from the buckets into such pipe, for the purpose set forth.

5. In an apparatus for making bisulfite solutions, the combination with a revoluble mixing vessel provided with internal buckets and with a central opening in one of its heads, a sulfurous-acid-gas-supply pipe extending in an upward direction into the vessel through said overflow-opening, said pipe provided near its inlet with a discharge-pipe and having its outlet proximate to the closed end of the vessel, and an adjustable conveyer as a board or vane B', connected with the outlet of the gas-pipe and adapted to convey liquid discharged from the buckets into said pipe, for the purpose set forth.

6. In apparatus for making bisulfite solutions, a mixing vessel having a central overflow in one of its heads, a gas-duct extending into said vessel above the liquid therein and having its outlet near the closed end of the vessel, mixing devices for mixing the gas with a liquid in the vessel, a conveyer for conveying liquid into the gas-duct at the discharge end thereof, a discharge-pipe at the inlet end of said duct, a receiver into which said discharge-pipe projects, said receiver having its outlet above the outlet of the discharge-pipe, for the purpose set forth.

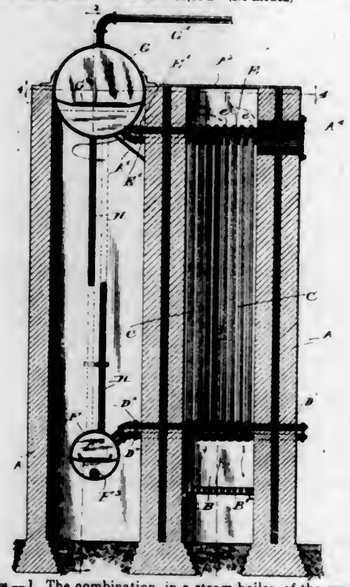
7. In apparatus for making bisulfite solutions, a sulfurous-acid-gas producer comprising a combustion-chamber, a receptacle thereon for lump sulfur and means for conveying the molten sulfur to the combustion-chamber, for the purpose set forth.

8. In apparatus for making bisulfite solutions, a sulfurous-acid-gas producer comprising a jacketed combustion-chamber, a receptacle thereon for lump sulfur, and appliances for conducting the molten sulfur from the receptacle to the combustion-chamber, for the purpose set forth.

9. In apparatus for making bisulfite solutions, a sulfurous-acid-gas producer, comprising a combustion-chamber, a receptacle thereon for the lump sulfur adjustable as to area, and appliances for conducting the molten sulfur from the receptacle to the combustion-chamber, for the purpose set forth.

10. In apparatus for making bisulfite solutions, a sulfurous-acid-gas producer comprising a jacketed combustion-chamber, a receptacle or hopper thereon adjustable as to area, an opening between one of the side walls of the hopper and the jacket of the combustion-chamber, a gutter or trough extending along said opening, and a pipe connecting the gutter with the combustion-chamber, substantially as and for the purpose set forth.

572,194. STEAM-BOILER. ASHLEY R. COOPER, Mooresville, Ind. Filed Feb. 24, 1896. Serial No. 580,384. (No model.)



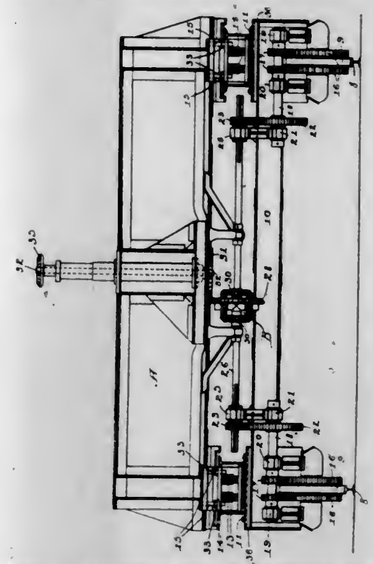
Claim.—1. The combination, in a steam-boiler, of the surrounding walls, the combustion chamber therein, vertical pipes within said combustion-chamber, horizontal pipes connecting the upper and lower ends of said vertical pipes, a second space within the structure, upper and lower drums mounted within said space, the cross-pipes connecting said drums, a flue leading from the upper end of the combustion-chamber around and beneath the upper drum, and thence to the smoke-stack, substantially as shown and described.

2. The combination, in a steam-boiler, of vertical steam-generating pipes, horizontal connecting-pipes therefor, a steam-drum and a mud-drum connected to said horizontal pipes, a passage for the products of combustion leading from the combustion-chamber to beneath said drum, and a deflecting or guard plate A' arranged below said steam-drum and protecting the horizontal pipes where they are attached thereto from the products of combustion, substantially as shown and described.

3. The combination, in a steam-boiler, of a series of groups of straight vertical steam generating pipes, a horizontal upper and lower pipe to each group, a mud-drum at the bottom, and a steam-drum at the top with which said horizontal pipes, respectively, connect, and detachable unions inserted in said horizontal pipes, whereby any group of said steam-generating pipes can be cut off at will, substantially as shown and described.

4. In a steam-boiler, the combination, of the surrounding walls divided into two compartments one of which is the combustion-chamber and the other of which contains the water-supply and mud drum in its lower part and the steam-dome in its top, the vertical heating-pipes in the combustion-chamber, the horizontal pipes connecting them with the water-supply and steam-dome, and the cross-pipes connecting said water-supply drum and steam-dome, all substantially as set forth.

572,195. LOCOMOTIVE-CRANE. OLIVER CROSBY, St. Paul, Minn. Filed Apr. 6, 1896. Serial No. 586,419. (No model.)



Claim.—1. In a locomotive-crane, the combination with the main platform and its groups of carrying-wheels arranged at each corner thereof, of the traction-wheel on each rail intermediate of the forward and rear carrying-wheels, their connecting beam or truck, the laterally-slidable connections between said cross-beam and platform, the driving-shaft, and the epicyclic train for transmitting power therefrom to both said traction-wheels.

2. In a locomotive-crane, the pair of connected traction-wheels therefor arranged one on each rail, the antifriction-rolls carried by said wheels, the bearing-plates resting upon said rolls, the adjustable connection between said plates and platform whereby any desired load may be applied to said traction-wheels, and the epicyclic train and connected source of power.

3. In a locomotive-crane, the combination with its platform and carrying-wheels, of the pair of traction-wheels arranged one on each track, their connecting beam or truck, the antifriction-rolls carried by said truck, the bearing-plate resting upon said rolls, and partly supporting said platform, the cushion-springs, the adjusting-screws interposed between said bearing-plate and platform for varying the pressure upon said antifriction-rolls, the epicyclic train, and its connected driving mechanism carried by said platform, and the slidable driving connection between said train and each of said traction-wheels.

4. In a vehicle of the class described, the combination with the front and rear carrying-wheels, of their intermediate traction-wheels, the rigid connection between said traction-wheels, means for driving said wheels, and the laterally-traveling connection between said wheels and said vehicle.

5. In a vehicle of the class described, the combination of the medially-arranged traction-wheels on both rails, their rigid connect-

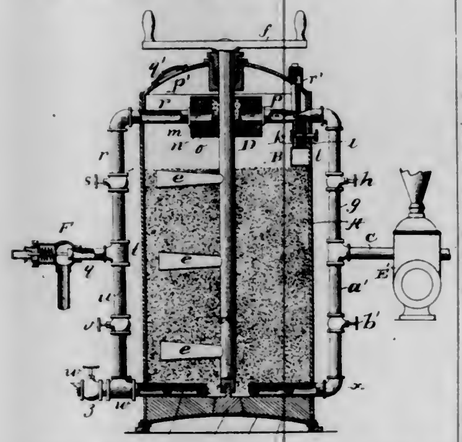
ing-bar, the common driving mechanism for said wheels, the interposed epicyclic train, and the laterally-traveling connection between said traction-wheels and vehicle.

6. In a vehicle of the class described, the combination with the front and rear carrying-wheels, of the intermediate traction-wheels, the bar connecting said wheels, the bearing-plates and antifriction-rolls constituting a laterally-traveling connection between said traction-wheels and the vehicle, means for applying any desired load to said traveling connections, the driving-shaft upon said vehicle, the pinions having hub-journals carried upon said shaft permitting relative sliding movement, and the operative driving connection between said pinions and traction-wheels.

7. In a vehicle of the class described, the combination of the flanged traction-wheels on opposite rails, their rigid connecting-bar, the laterally-traveling connection between said bar and vehicle, consisting of the series of antifriction-rolls, the plate bearing upon the same, and the springs and tension-screws interposed between said plate and the body of the vehicle, the common source of power, the epicyclic train connected therewith, the driving gear for the opposite traction-wheels, and the interposed slidably-connected driving-shaft and pinion for operating said traction from said train.

8. In a vehicle of the class described, the combination with its main body or platform, the vertically-swiveled carrying-trucks at the corners thereof, the intermediate driving-wheels, their rigid connection, the source of power carried by said vehicle, and the laterally-slidable driving connection between said source of power and said traction-wheels.

572,196. FILTER. JOHN DAVIS, Allegheny, Pa. Filed Apr. 14, 1892. Serial No. 429,127. (No model.)

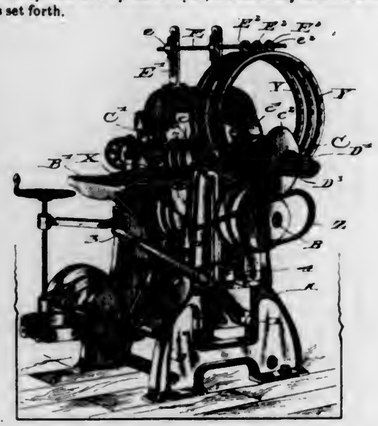


Claim.—The combination of a filter provided with a supply-pipe and a pump connected thereto, a discharge-pipe to communicate with a steam-boiler, a waste-pipe and a back-pressure valve provided with means to weight the valve equal to the pressure of the boiler.

572,197. EMBOSSING-MACHINE. EDWARD S DE TAMBLE, Indianapolis, Ind., assignor to the Union Embossing Machine Company, same place. Filed July 17, 1896. Serial No. 599,509. (No model.)

Claim.—1. The combination, in an embossing-machine, of a main framework, an adjustable frame or table, a main shaft carried thereby and having an end which projects to the outside of the framework of the machine, and is there provided with supporting disks or rollers for the work to be treated, a spindle mounted in bearings in the main framework and also extending to outside the frame of the machine and there provided with embossing rolls or dies, a burner within said spindle, a cap loosely mounted in the end of said spindle and adapted to remain stationary while the latter revolves for carrying the burner at its outer end a flexible coupling connected to said cap and extending back substantially parallel with the spindle to alongside the frame and thence to the gas-fuel-supply pipe, and said pipe, whereby wheel-rims and similar annular structures may be embossed upon their interior sides, substantially as shown and described.

2. An embossing-machine, the spindle whereof extends to outside the framework thereof and carries embossing rolls or dies thereon, and a heat-supplying tube connected to the burner-cap in the outer end of the spindle and extending thence back alongside the spindle to near the framework, thus enabling annular structures to be placed over the spindle and operated upon, substantially as and for the purposes set forth.



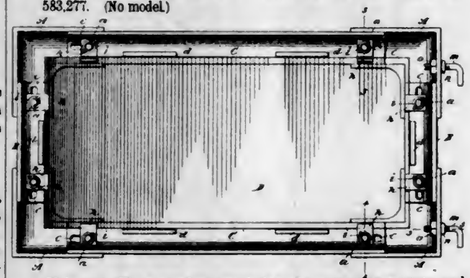
572,198. ACCUMULATOR OR SECONDARY BATTERY. FRIEDRICH W. ELLERMANN, Vienna, Austria-Hungary, assignor to Moricz Engl and Floris Wüste, same place. Filed Dec. 16, 1895. Serial No. 572,349. (No model.) Patented in France Aug. 24, 1894, No. 240,952; in Belgium Aug. 24, 1894, No. 111,531; in England Aug. 24, 1894, No. 16,162; in Hungary May 30, 1895, No. 2,852; in Austria July 23, 1895, No. 2,645, and in Germany Aug. 24, 1895, No. 83,154.

Claim.—1. A composition for manufacturing accumulator-plates consisting of litharge and sulfate of magnesium mixed into a plastic mass with liquid ammonia, substantially as described.

2. The process of manufacturing accumulator-plates consisting in first preparing a plastic mass of litharge and sulfate of magnesium with liquid ammonia, then forming the plates out of this mass, then keeping the plates for several days in a hardening liquor whereby the plates acquire a cement-like hardness, substantially as and for the purposes described.

3. The process of manufacturing accumulator-plates consisting in forming the plates out of a mass of litharge, sulfate of magnesium and liquid ammonia, then treating the plates in a hardening liquor and then effecting the formation of the same in a solution of sulfate of magnesium, substantially as described.

572,199. OVEN-DOOR FOR COOKING STOVES OR RANGES. MYRA L. EVEREST, Clayton, N. Y. Filed Mar. 16, 1896. Serial No. 583,277. (No model.)



Claim.—1. The oven-door consisting of a central glass plate, and a metal inclosing frame composed of overlapping adjustable sections A, B and C, with means for securing the sections together and the glass plate in position; substantially as described.

2. The oven-door consisting of a central glass-plate, the metal inclosing rim composed of adjustable sections, and the means for securing said sections together and the plate in place which consist of the screws and the two nuts and clamp thereon; substantially as described.

3. The oven-door consisting of the glass plate, and the inclosing frame composed of the corner-sections A and the sections B, C, adjustable within said corner-sections, said sections being concave on their inner faces and having their edges on corresponding planes; substantially as described.

4. The oven-door consisting of the glass plate, and the inclosing frame composed of the corner-sections A and the sections B, C, adjustable within said corner-sections and having the slots and screws at their ends; substantially as and for the purposes set forth.

5. The oven-door consisting of the glass plate, and the inclosing frame composed of overlapping sections, combined with the screws for securing said sections together, the nut on said screws close against said frame, the clamp on said screws against said nut and extending over the glass plate, and the nut on said screws binding against said clamp, substantially as set forth.

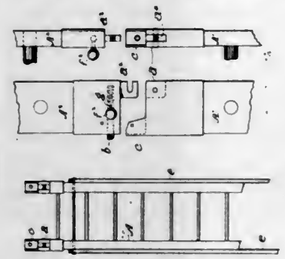
6. The oven-door consisting of the glass plate, and the inclosing frame composed of overlapping sections, combined with the shoulders on said frame to support said glass plate, and means for securing said plate and allowing for the expansion and contraction of same; substantially as set forth.

7. The oven-door consisting of the glass plate, and the inclosing frame composed of overlapping sections, combined with the screws for securing said sections together, the nut on said screws close against said frame, the clamp on said screws against said nut and extending over the glass plate, and the wing-nut on said screws binding against said clamp, substantially as set forth.

572,200. SOLDER FOR SOLDERING ALUMINIUM. GRANT HAMMOND, Mulberry, Cal. Filed Jan. 8, 1896. Serial No. 574,725. (No specimens.)

Claim.—As an improved article of manufacture, a solder for aluminium, consisting of an alloy of tin, thirty parts, aluminium, four parts, and zinc, three parts, substantially as described.

572,201. LADDER. CHARLES G. HAUSMANN, Cleveland, Ohio. Filed Mar. 17, 1896. Serial No. 583,547. (No model.)



Claim.—1. A ladder formed in sections having each a lug and a spring-lock at one end and a socket and catch at the other on each rail, substantially as described.

2. A ladder formed in sections having each a hooked lug and a spring-lock at one end, and a socket to receive and retain said lug and a catch to receive a lock-bolt at the other, on each rail, substantially as described.

3. A ladder formed in sections one having on each rail a hooked lug and a spring-lock, and the other having on each rail a socket to receive and hold the lug and a catch to receive the lock-bolt, whereby the sections may be joined together and locked in a straight line, or joined at an angle with each other, substantially as described.

4. The combination of the ladder section having a pivoted brace and having on each rail a socket and a catch, and the section having on each rail a lug to engage the socket and a spring lock to engage the catch and lock the sections together, substantially as described.

5. The combination of the ladder-section having a pivoted brace and socket, and interchangeable sections each having at one end a lug to engage said socket, a similar socket at their opposite ends, and a spring-lock at one end of each section to secure the sections together, substantially as described.

6. The joint for sectional ladders, comprising a socket open on two sides and having a transverse lug or bar, and a catch, on one section, and a hooked lug adapted to enter and engage said socket from either side, and a spring-actuated bolt adapted to engage said catch, on the other section; whereby the sections may be joined in line or transversely, substantially as described.

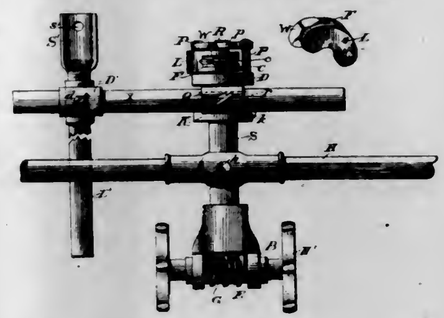
572,202. HAT-FASTENING. KATIE D. HEAD, Lawrenceburg, Ky. Filed May 19, 1896. Serial No. 592,179. (No model.)

Claim.—1. In a hat-fastener, the combination with a hat, of a single fastening-wire extending around the inside of the hat and connected thereto, of a single piece of spring-wire having its ends connected to the end portions of the fastening-wire, said spring-wire being twisted into a series of separated coils which loosely encircle the fastening-wire, and also being formed into separated loops which lie intermediate the coils and are adapted for reception of the hat-pin.

2. In a hat-fastener, the combination with a hat, of a fastening-wire formed in a single piece which extends around the inside of the hat and is bent into eyes at its ends, said fastening-wire being secured to the hat, and a single piece of spring-wire having its ends fastened to the eyes of the fastening-wire, and which spring-wire is twisted around the fastening-wire into a series of separated coils which loosely encircle said wire, the spring-wire being also formed into a series of depending loops or eyes which lie intermediate the coils and are adapted for the reception of a fastening-pin.



572,203. INSIDE PIPE-CUTTER. RUDOLPH HERBERS, Beardsley, Minn. Filed Mar. 30, 1896. Serial No. 585,458. (No model.)



Claim.—1. In an inside pipe-cutter, the combination with a hollow shaft having a disk at one end, pins projecting from said disk, levers pivoted at one end on said pins, and cutting-wheels carried by the other ends of the levers; of a rod extending through said shaft, a cam mounted on the rod and having grooves for the admission of the cutting edges of said wheels, means for turning this rod, and independent means for rotating said shaft, as and for the purpose set forth.

2. In an inside pipe-cutter, the combination with a hollow shaft having a disk at one end, pins projecting from said disk, levers pivoted at one end on said pins, and cutting-wheels carried by the other ends of the levers; of a rod extending through said shaft, a cam mounted on the rod, a handle fast on the shaft for rotating it, a gear on the rear end of the rod, an endless screw engaging such gear, and means for turning the gear, as and for the purpose set forth.

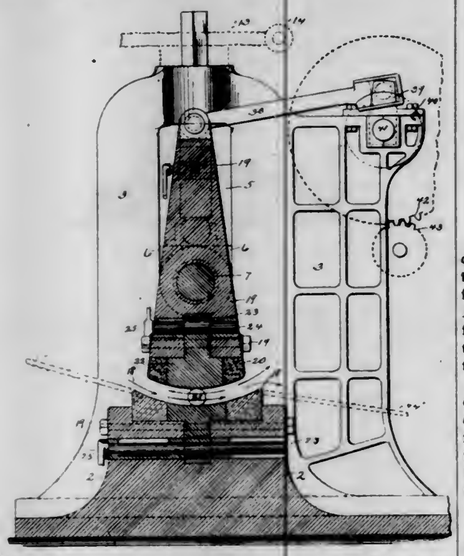
3. In an inside pipe-cutter, the combination with a rotatable hollow shaft having a disk at its outer end, radially-movable levers pivoted to said disk, cutting-wheels carried by said levers, and means substantially as described for throwing such levers outward; of a collar mounted on the shaft in rear of the disk, a set-screw through the collar against the shaft, a ring mounted on the shaft between said disk and collar, and means for supporting such ring, as and for the purpose set forth.

4. In an inside pipe-cutter, the combination with a rotatable hollow shaft having a disk at its outer end, radially-movable levers pivoted to said disk, cutting-wheels carried by said levers, and means substantially as described for throwing such levers outward; of a collar mounted on the shaft in rear of the disk, a set-screw through the collar against the shaft, a ring mounted on the shaft between said disk and collar and having a sleeve with a set-screw, a rod having a spoon for attachment to some other boiler-fine, a double socket into one member of which this rod passes, and a lateral rod connecting the other member with said sleeve, as and for the purpose set forth.

572,204. APPARATUS FOR MANUFACTURING AXLES, &c., FROM IRON OR STEEL. THOMAS HIGGINS, Pittsburg, Pa., assignor of one fourth to Frederick Norris, same place. Filed Aug. 20, 1896. Serial No. 603,337. (No model.)

Claim.—1. An apparatus for the purpose of shaping or forming car-axles and other cylindrical-shaped bodies of metal, consisting of a

stationary concave die, a convex die operating in conjunction therewith, a means for giving said convex die an oscillating movement, and a means for automatically feeding the same downward to place the pressure upon the blank between the dies, as described.



2. An apparatus for shaping or forming axles and other like forms from bars of metal, consisting of a stationary concave die, a convex die operating in conjunction therewith, a means for giving said convex die a rocking or oscillating movement, a device for automatically lowering the said convex die, a rocking die-holder carrying said convex die and a means for rapidly elevating and lowering the convex die for the purpose of removing the finished article and replacing the blank between the dies.

3. In combination with a stationary die, and a rocking or oscillating die-holder and means for rocking and oscillating the same, the ratchet-wheels and pawls for giving the said die-holder a limited vertical movement, as described.

4. In combination with an apparatus for the purpose set forth the journal-formers arranged in pairs, each pair consisting of a concave and convex surface arranged the one opposite to the other, a means for moving each set toward and away from each other, and a means for giving the convex formers a rocking or oscillating movement as and for the purpose described.

5. In combination with an apparatus for forming the body of an axle as described, the concave and convex journal or groove formers, arranged in pairs, and means for moving the concave and convex surface of each pair toward or away from each other, as described.

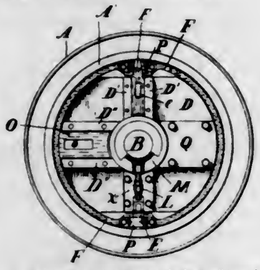
6. In combination with an apparatus for the purpose set forth, a concave die and an oscillating convex die, each die having raised or elevated portions for forming journals or grooves, said elevated portions being adjustable in the direction of the length of the said dies, whereby journals or grooves may be formed in any part of the blank, as described.

7. A means for rolling axles and other like shapes from bars of metal consisting of a stationary concave die an oscillating rocker-arm provided with a convex die at the base, the axis of which is parallel to that of the stationary die, a means for automatically feeding the convex die downward, a means for rapidly lowering or raising the same die, the journal-formers arranged in each of the said dies, and means for operating the same toward or away from each other, all arranged and combined for service substantially as set forth.

8. In combination with a stationary concave die, and an oscillating or rocking die-holder for the purpose described, the ratchet-wheels and their engaging pawls, a double eccentric movement connected to the said pawls, whereby the same may be disengaged, and a means substantially as shown for rapidly rotating the screws connected to the said ratchet-wheels, as and for the purpose described.

9. In combination with an apparatus for forming the body of an axle, as set forth, the adjustable formers arranged in pairs operated toward or away from each other by means of eccentrics, for the purpose of forming journals or grooves in blanks revolving upon their axis between dies or formers, substantially as set forth.

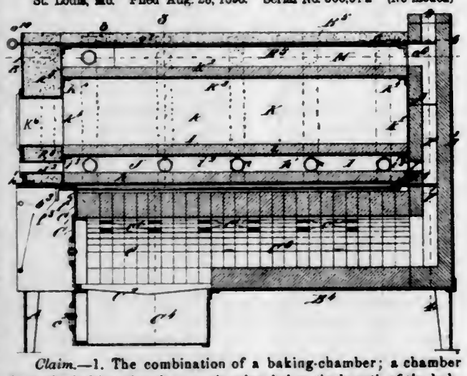
572,205. FRICTION-CLUTCH. LAWRENCE M. JOHNSTON, Dayton, Ohio, assignor to the New Era Iron Works Company, same place. Filed June 9, 1896. Serial No. 594,856. (No model.)



Claim.—1. A friction-clutch consisting of two halves or segments of a ring, in combination with wedges arranged to force the ends of the segments apart to increase the circumference and diameter and force the ring into contact with the friction-surface A′ of the pulley A, bow-springs P attached to the ends of the segments whose constant force is to bring the segments together, and coiled springs acting upon the segments at a point between their ends, substantially as and for the purpose described.

2. A friction-clutch consisting of two halves or segments of a circle forming a clutch, wedges E arranged as described, to increase the diameter and produce friction contact with the inner surface of the friction-ring A′ of the pulley A, bow-springs attached to the ends of the halves or segments and midway between their ends, coiled springs R producing a constant spring-pressure toward the center, substantially as and for the purpose described.

572,206. BAKER'S OVEN AND STOVE. FREDERICK S. KINNEY, St. Louis, Mo. Filed Aug. 28, 1895. Serial No. 560,814. (No model.)



Claim.—1. The combination of a baking-chamber; a chamber above the baking-chamber; a chamber below the hearth of the baking-chamber; a deflector beneath the last-mentioned chamber; a fire-box below the deflector; a direct-draft flue means connecting the fire-box therewith; a damper closing the connection; indirect-draft flues extending up on two or more sides of the baking-chamber; means for connecting them beneath the deflector with the fire-box; means connecting their upper ends with the chamber above the baking-chamber, means connecting said last-mentioned chamber with the direct-draft flue, means connecting one or more of the indirect draft flues laterally with the chamber between the hearth of the baking-chamber and the deflector; means admitting cold air from the outside laterally into said chamber directly above the deflector, substantially as described.

2. The combination of the fire-box, a deflector above it; a direct-draft flue; a chamber connecting the fire-box and said flue; a chamber on each side of said fire-box; beneath the deflector, substantially as shown, lateral passages connecting said fire-box with the chambers on each side thereof; a damper in said direct-draft flue; and indirect-draft up-flues connected at their lower ends with one of said last-mentioned chambers, and means connecting their upper ends with said direct-draft flue, substantially as described.

3. The combination of a baking-chamber; a baking-hearth; a deflector beneath said hearth; a chamber between said deflector and hearth; a fire-box beneath the deflector; a direct-draft flue; means connecting the fire-box and direct-draft flue; indirect-draft flues passing up on two or more sides of the baking chamber; means connecting said indirect-draft flues with the fire-box; means connecting one or more of them with the chamber between the deflector and hearth; a passage connecting said chamber and direct-draft flue; and a damper below said passage: substantially as described.

4. The combination of a baking-chamber; a baking-hearth; a deflector beneath said hearth: a chamber between said deflector and hearth; a fire-box beneath the deflector; a direct-draft flue; means connecting the fire-box and direct-draft flue; indirect-draft flues passing up on two or more sides of the baking-chamber; means connecting their upper ends with the direct-draft flue; means connecting said indirect draft flues with the fire-box; means connecting one or more of them with the chamber between the deflector and hearth; one or more cold-air inlets admitting air to said chamber; a passage connecting said chamber and direct-draft flue; and a direct-draft-flue damper located below said passage; substantially as described.

5. The combination of a baking-chamber; a substantially air-tight baking-hearth; a deflector beneath the hearth; a chamber between the hearth and deflector; a fire-box beneath the deflector; a chamber on each side of said fire-box and beneath said deflector; means connecting each of said last-mentioned chambers with the interior of the fire-box; flues leading upward from the chambers last mentioned; and means connecting said flues with the sides of the chamber between said heartb and deflector; substantially as described.

6. The combination of a baking-chamber; a substantially air-tight baking-hearth; a deflector beneath the hearth; a chamber between said hearth and deflector; a fire-box beneath said deflector; a chamber on each side of said fire-box and beneath said deflector; means connecting each of said last-mentioned chambers with the interior of the fire-box; flues leading upward from said chambers on two or more sides of the baking-chamber; means connecting said flues with the chamber between said hearth and deflector; and means admitting cold air to said last-mentioned chamber; substantially as described.

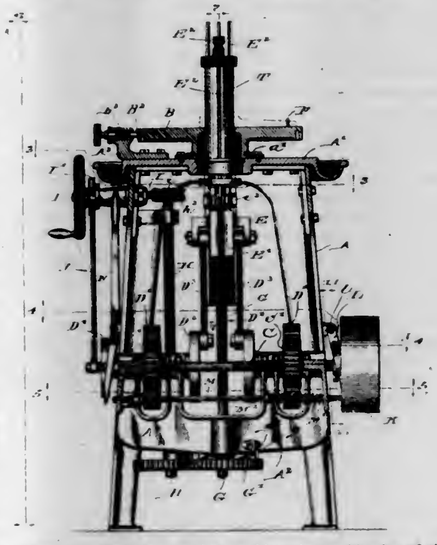
7. The combination of a fire-box; a chamber on each side of it; passages connecting its interior with said chambers; a direct-draft flue; means connecting the fire-box with said flue; a deflector over said fire-box and chambers; a baking-hearth above said deflector; a chamber between said deflector and hearth; a baking-chamber above said hearth; a substantially horizontal chamber above said baking-chamber; means connecting it with said direct-draft flue; indirect-draft flues leading up on two or more sides of the baking-chamber, from the chambers on each side of the fire-box, to said chamber above the baking chamber; means connecting one or more of said indirect-draft flues with the interior of the chamber between the baking-hearth and deflector; means connecting said chamber with the outer air; a passage connecting it with the direct-draft flue; and a damper located between said passage and the fire-box; substantially as described.

8. The combination of a baking-chamber; a fire box beneath the baking chamber; a direct-draft flue; means connecting said flue and fire-box; a chamber over the baking chamber; a transverse flue; means connecting the transverse flue with the direct-draft flue; means dividing said chamber, over the baking-chamber, into two compartments; an inner and an outer passage in each compartment, both extending from the end next the direct-draft flue toward the opposite end, and being connected together near said opposite end; a passage leading from said direct-draft flue below said passages leading from said inner passages, into said transverse flue and direct-draft flue; movable means separating said inner passages from the portion of the direct-draft flue above them; passages connecting the ends of said outer passages nearest the direct-draft flue, with said transverse flue; and a damper in each of said last-mentioned connecting passages; substantially as described.

9. The combination in a baker's oven, of a casing; a fire-box within the casing; a direct-draft flue at the back; a chamber connecting the fire-box and direct-draft flue; a chamber on each side of said fire-box; passages connecting said fire-box and the chambers on each side of it; a deflector above said fire-box and chambers; a baking-hearth above the deflector; a chamber between the deflector and hearth; a baking-chamber above the hearth; a chamber above the baking-chamber; a filling of heat-retaining material between the baking-chamber and the outside of the structure, at front, sides, and rear, and at the rear, surrounding the direct-draft flue; indirect-draft flues leading from the chambers on each side of the fire-box, to the chamber above the baking-chamber, and extending up at the front and sides of the latter, through said filling; means connecting said indirect-draft flues with the chamber between the hearth and deflector; means connecting the last-mentioned chamber with the direct-draft flue; one or more air-inlets admitting cold air to said chamber; and means closing said air-inlets; substantially as described.

10. The combination of a baking-chamber; a fire-box; a direct-draft flue rising at the rear of the baking-chamber; means connecting the direct-draft flue with the fire-box; a chamber M over the baking-chamber; a partition m^3, dividing the chamber M into two compartments; an inner passage m^4 and an outer passage m^5 in each compartment, extending forward from the rear toward the front; means connecting the front ends of said passages in each compartment; the flue O, opening into the direct-draft flue; passages o and o^2 connecting the rear ends of the passages m^5 with the flue O; dampers closing the passages o and o^3; passages o′ and o^3; dampers o^5, o^6; and damper-rods, attached to said dampers, and passing forward above the chamber M; all arranged and operating substantially as described.

572,207. GEAR-CUTTING MACHINE. THOMAS J. LINDSAY, Lafayette, Ind. Filed Dec. 4, 1895. Serial No. 571,026. (No model.)



Claim.—1. In a gear-cutting machine, the combination of the frame, the revoluble table thereon having a central aperture, a head mounted to reciprocate in said aperture, a multiplicity of cutters carried by said head, said cutters being arranged in circular line within said central aperture of said table, and mechanism for operating said reciprocating head, whereby said cutters are operated simultaneously, substantially as set forth.

2. The combination, in an internal-gear cutting machine, of a framework, a work-table, two or more cutters extending up through said table, mechanism for driving said cutters, and a cam-feeder centrally disposed between the cutters and having as many cam-faces as there are cutters, and mechanism for driving the same.

3. The combination, in a machine for cutting internal gears, of the framework formed with a horizontal top having a central aperture, a work-table also formed with a central aperture mounted to revolve on the top of said frame and formed with apertures in its periphery, a bracket mounted on said frame alongside the edge of said table, a spring-mounted detent mounted in said bracket and adapted to engage with said apertures in the edge of said table, and the cutter-head mounted to operate in the central aperture in said frame-top and table, and mechanism for operating the same, substantially as set forth.

4. The combination, in an internal-gear-cutting machine, of the framework, guides on said framework, a cutter-head adapted to reciprocate in said heads, said cutter-head having inclined surfaces and inclined bearing-plates engaging with said surfaces, and means for adjusting said bearing-plates to secure an accurate bearing between said head and guides, substantially as shown and described.

5. The combination, in an internal-gear-cutting machine, of the framework having a cutter inclosing tube T extending upwardly therefrom with slots in its sides, a cutter-head below said table with cutters connected thereto and extending up into said tube, the cutting-faces whereof project through slots in the sides of said tube, and a feeding-cam within said tube and behind the cutters, whereby, as said cam-feeder is rotated, the cutters are fed outwardly into the work, substantially as shown and described.

6. The combination, in an internal-gear-cutting machine, of a framework, a reciprocating cutter-head, cutters connected to said head and held within a cutter-inclosing tube, a cam-feeder within said

tube and behind said cutters, and caps having cam-slots secured to the upper and lower ends of said cam-feeder.

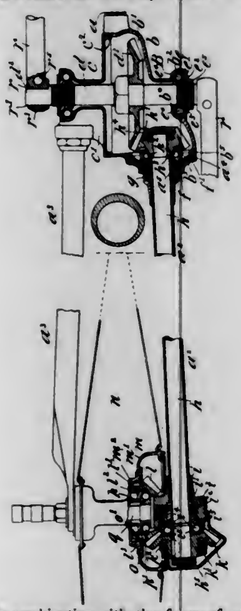
7. The combination, in an internal gear-cutting machine, of a suitable framework, guides thereon, a reciprocating cutter head mounted in said guides, and cutters substantially in the form of saws secured to said cutter-head by means of links having a pivotal connection with the cutters and with said cutter head and means for feeding said cutters outwardly.

8. The combination, in an internal-gear-cutting machine, with reciprocating cutters, of a feeder therefor consisting of a rotating structure having cam-faces which come in contact with the backs of the cutters and support said cutters while feeding them forward, substantially as shown and described.

9. The combination, in an internal-gear-cutting machine, with the cutter-feeder, of the rod or shaft G by which the same is operated, a wheel on said rod provided with stops, a second shaft provided with a spring-attached gear-wheel engaging with the gear-wheel on the cutter-feeder shaft, an arm on said last-named shaft, a clutch connected to the driving-pulley, a rod running from said clutch, a detent engaging with said rod, said detent being provided with an arm with which an arm on the last-mentioned shaft will engage as it revolves, whereby the clutch is automatically disengaged as the feeding mechanism reaches its final position.

10. The combination, in an internal-gear-cutting machine, of a driving-shaft, a driving-pulley loosely mounted on said shaft, a clutch, a rod connected to said clutch, a spring on said rod by which the clutch is normally held out of engagement, a catch-collar on said rod, a detent engaging with said catch-collar, and a connection between said detent and the feeding mechanism, whereby, when the feeding has reached the desired point, the detent is automatically withdrawn, and the clutch thrown out of engagement by means of its spring, substantially as set forth.

572,208. BICYCLE. WILLIAM A. LORENZ, Hartford, Conn., assignor, by mesne assignments, to the Pope Manufacturing Company, same place and Portland, Me. Filed Apr. 25, 1894. Serial No. 508,954. (No model.)

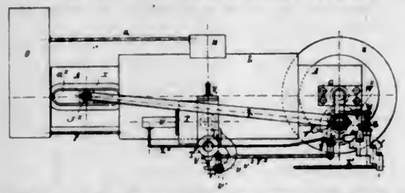


Claim.—1. In combination with the frame of a bicycle or like vehicle, a crank-bracket including a hollow and sectional case composed of a socket-section containing gear-sockets and a crank-bearing, and a cover-section having a crank-bearing centrally therethrough and with its edges provided with a screw-thread fitting the screw-threaded interior surface of the socket-section, and projections or sockets for the attachment of the several members of the frame, all substantially as described.

2. In combination with the frame of a bicycle or like vehicle, a crank-bracket having integral projections for the attachment of the tubular members of the frame and composed of a socket-section and a cap-section entirely inclosing the crank-shaft and running parts connected therewith and adjacent thereto, the socket-section provided with gear-sockets and with bearings for one end of the crank-shaft, and a cap-section provided centrally thereof with a bearing for the opposite end of the crank shaft and secured to the socket-section by means of interengaging screw-threaded parts, the crank-shaft located in said bearings, a driving-wheel, and means for imparting movement from the crank-shaft to the driving-wheel, all substantially as described.

3. In combination in a bicycle or like vehicle, a crank-bracket inclosing the crank-shaft and moving mechanism connected therewith, the crank-shaft, the connecting-shaft extending within the crank-bracket and in engagement with the crank-shaft, a bearing-case surrounding the connecting-shaft and adjustably secured in the fork side, a threaded socket in the frame, a flange on the fork side located in the socket, a threaded sleeve fitting the socket in the frame and engaging the flange on the fork side whereby the entrance of dust is prevented, and the driving-wheel in engagement with the connecting-shaft, all substantially as described.

572,209. EXPLOSIVE-ENGINE. EDUARD R. LUDI, New York, N. Y. Filed Dec. 13, 1895. Serial No. 572,063. (No model.)



Claim.—1. In a gas-engine, the combination with a cylinder, of a valve-chest, a vaporizer communicating with said valve-chest and adapted to be heated, an oil-valve having a discharge-orifice opening into the chamber of said vaporizer, and the baffle-plate situated within said vaporizer and lying in the path of the jet of oil injected into the vaporizer from the oil-valve, for the purposes described, substantially as set forth.

2. In a gas-engine, the combination with a cylinder, of a valve-chest, the vaporizer communicating with the valve-chest, an oil-valve shell connected to the vaporizer and provided at its inner end with a plug having the oil-discharge orifice i^3 arranged to direct a jet of oil into the vaporizer-chamber, a valve fitted in the oil-valve shell, rods or stems attached to said oil-valve shell and extending into the vaporizer-chamber, the baffle-plate situated within the chamber of the vaporizer and attached to said fixed stems or rods, said baffle-plate lying in the path of the jet or stream of oil injected through the orifice i^3 and arranged within the vaporizer to leave a narrow space between the wall of the vaporizer and the edge of the baffle-plate, as and for the purpose described.

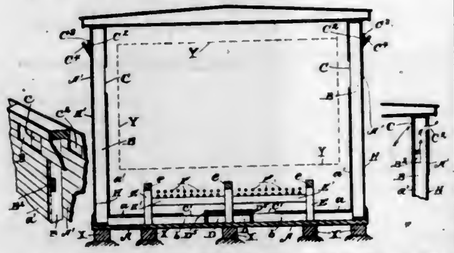
3. In a gas-engine, the combination with the power-shaft F, an oil-pump having a reciprocating piston, and an exhaust-valve, of a rotary member or gear *b* driven by the power-shaft F and provided with two cams, as *c*, *d*, a lever W lying in the path of one cam and arranged to actuate the piston of said oil-pump, another lever V lying in the path of the other cam, a rock-shaft having a finger which is adapted to open the exhaust-valve, and a rod connected to the lever V and to an arm on the rock shaft, substantially as and for the purposes described.

4. In a gas-engine, the combination with a power-cylinder and oppositely-movable pistons therein, of a valve box or chest T applied centrally to and communicating directly with said power-cylinder, an independent chambered vaporizer-shell T' adapted to be externally and internally heated and applied to and communicating with one end of said valve-box T, an oil-spraying device discharging to one end of said vaporizer-chamber, and an automatic air-admission valve g^6 carried by the valve-chest and arranged between the vaporizer and the power-cylinder, as and for the purposes described.

5. In a gas-engine, the combination with a power-cylinder and oppositely-movable pistons therein, of the valve-chest T applied centrally to and communicating directly with said power-cylinder, a vaporizer T' carried by said valve-chest and provided with an oil-valve and with an internal baffle-plate, and the automatic air-admission valve mounted in the valve-chest between the power-cylinder and the vaporizer and opened only by the suction created by the outward movement of said pistons in the power-cylinder, as and for the purposes described.

6. In a gas-engine, the combination with a power-cylinder and oppositely-movable pistons therein, of a valve-chest T applied centrally to and communicating directly with said power-cylinder, a vaporizer T' carried by said valve-chest and provided with an oil-valve and with an internal baffle plate, a suction-operated air-admission valve g^6 mounted in one side of the valve-chest between the vaporizer and said cylinder, and a mechanically-actuated exhaust-valve g^{11} mounted in the opposite side of the valve-chest, as and for the purposes described.

572,210. LUMBER-DRIER. HORACE J. MORTON, Chicago, Ill. Filed Feb. 6, 1896. Serial No. 578,258. (No model.)



Claim.—1. The combination of headers, steam-pipes extending outward from the headers and joined at their ends farthest from the headers, a steam connection between the headers, with a valve interposed in such connection, a connection between one of the headers and a steam supply and a blow off cock to the other header; substantially as described.

2. The combination of headers, steam-pipes extending outward from the headers and joined at their ends farthest from the headers, a steam connection between the headers, with a valve interposed in such connection, a steam-trap, a connection between one of the headers and a steam supply, and a connection between the other header and the steam-trap, with a blow-off cock in the last-named connection; substantially as described.

3. The combination of steam-headers, means for supplying steam thereto, steam-pipes extending outward from the headers respectively, such steam heating-pipes joined at the ends thereof farthest from the headers, a steam connection between the headers independently of the steam heating-pipes, and means for releasing air from the headers and steam heating-pipes: substantially as described.

4. The combination of headers, steam-pipes extending outward from the headers and joined at their ends farthest from the headers, a steam connection between the headers, with a valve interposed in such connection, a steam-trap, a connection between one of the headers and a steam supply, and a connection between the other header and the steam-trap, with a blow-off cock in the last-named connection and means for admitting cool air to the drying-room: substantially as described.

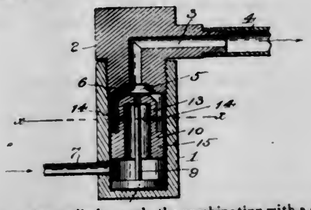
5. In a lumber-drier the combination of a fresh-air conduit consisting of a longitudinally-extending chamber underneath the heating apparatus of the drier, such chamber divided into compartments, with means for controlling the admission of air to such compartments, severally, and openings on the sides of the longitudinally-extending chamber whereby thin sheets of air are delivered therefrom into the drier; substantially as described.

6. In a lumber-drier the combination of a fresh-air conduit consisting of a longitudinally-extending chamber underneath the heating apparatus of the drier, such chamber divided into compartments, with means for controlling the admission of air to such compartments, severally, and openings on the sides of the longitudinally-extending chamber whereby thin sheets of air are delivered therefrom into the drier, and means for returning heated and moistened air from near the top of the drier to and mixing it with such sheets of fresh air; substantially as described.

7. In a lumber-drier, the combination of an air-supply conduit consisting of a longitudinally-extending chamber underneath the heating apparatus of the drier, such chamber divided into compartments, with means for controlling the supply of air to the several compartments, and with openings on the sides of the longitudinally extending chamber through which sheets of air are delivered into the drier, and means for discharging moist air from the drier at points therein below the tops of the piles of drying lumber; substantially as described.

8. In a lumber-drier, the combination of a fresh-air conduit consisting of a longitudinally-extending chamber underneath the heating apparatus of the drier, such chamber divided into compartments, with means for controlling the admission of air to the several compartments, and with openings on the sides of the longitudinally-extending chamber through which sheets of air are delivered into the drier, means for discharging moist air from the drier at points therein below the tops of the piles of drying lumber but above the heating apparatus and returning such moist air to underneath the heating apparatus and there mixing it with the incoming sheets of air, and means for discharging a determined portion of such returning moist air from the drier and to the atmosphere; substantially as described.

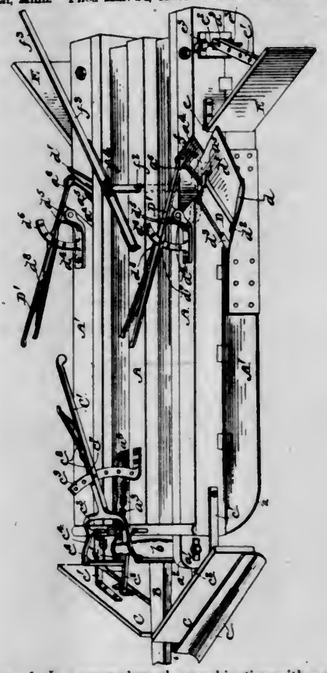
572,211. CYLINDER-COCK. JAMES F. MCCOY, Winona, Minn. Filed Apr. 9, 1896. Serial No. 586,854. (No model.)



Claim.—1. In a cylinder-cock, the combination with a casing having an inlet near one end, and an outlet-passage at the opposite end, of a vertically-movable hollow valve, the upper end or dome of which is closed and adapted to close the outlet-passage and the walls of which are provided with openings, a disk arranged within said casing below the inlet and of less diameter than the interior diameter of the casing to form a space therebetween, and a stem for connecting the disk to the valve, substantially as set forth.

2. In a cylinder cock, the combination with the cylindrical casing having an inlet-pipe near its lower end, the screw-plug at the upper end having an outlet-passage, and provided with a valve-seat in its inner end, of the inverted vertically movable cup-shaped valve, located in said casing, closed at its upper end and beveled to correspond with the valve seat, and formed with openings near its upper end, and with an annular flange at its lower end, the stem or rod and the disk connected with said valve, substantially as described.

572,212. SNOW-PLOW AND RUTTER. DUNCAN J. MCGREGOR, Duluth, Minn. Filed Mar. 24, 1896. Serial No. 584,675. (No model.)

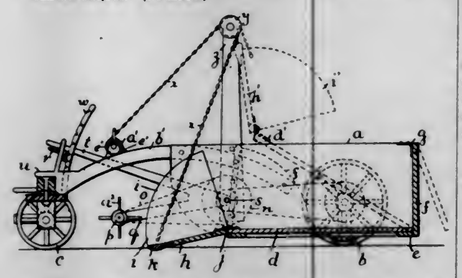


Claim.—1. In a snow-plow, the combination with a sled, carrying plows, a vertically-movable rudder mounted on the sled and means for holding said rudder normally up out of contact with the snow, and a lever for depressing said rudder to elevate the sled, whereby the latter may be more easily turned, substantially as described.

2. In a snow-plow, the combination with a sled, of a vertically-adjustable plow mounted in front of the same, and adapted to discharge outside of the runners, rutting-knives mounted in guides upon opposite sides of the sled, wings for throwing the cuttings from said knives outside of the runners adjustable wings for catching said cuttings and throwing them off the road, a vertically-movable rodder mounted on the sled and means for depressing the same at will, substantially as described.

3. In a snow-plow, the combination with a sled carrying plows, of adjustable rutting-knives mounted on said sled, a vertically-movable rudder mounted on the sled, means for holding the rudder normally up, and a lever for depressing the rudder at will, substantially as described.

572,213. SNOW OR DIRT COLLECTING AND DUMPING MACHINE. CARL G. OTTERSTEN, Brooklyn, N. Y. Filed Apr. 5, 1895. Serial No. 544,540. (No model.)

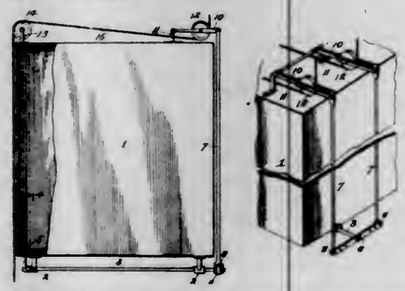


Claim.—1. The combination of the receiving-box open at the front end and having means for moving it along the ground, also having the bottom and the tail-board adapted for dumping at the hind end, the scraper or scoop hinged to the front end of the bottom and adapted for the front end to run along the ground, the vertically-adjustable rotating brush or beater at the front end of the box, and means for raising the scoop for closing the front end of the box for retaining the load substantially as described.

2. The combination of the receiving-box open at the front end, and having the bottom and the tail-board adapted for dumping at the hind end, the scraper or scoop hinged at the front end of the bottom and adapted for the front end to run along the surface of the ground, the vertically-adjustable rotary brush or beater at the front end of the box, and means for raising the scoop and the bottom of the box for dumping the load at the hind end substantially as described.

3. The combination of the receiving-box open at the front end and having means for moving it along the ground, also having the bottom and the tail-board adapted for dumping at the hind end; the scoop or scraper hinged at the front end of the bottom and adapted for the front end to run along the ground, the vertically-adjustable rotary brush or beater at the front end of the box, and the windlass, chains and chain carrying pulleys connected with the scoop for raising it and the bottom of the box substantially as described.

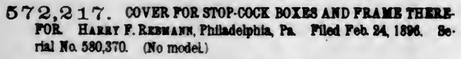
572,214. CONTROLLING MECHANISM FOR ELEVATORS. WILLIAM R. H. OTTO, Kansas City, Mo. Filed Sept. 28, 1895. Serial No. 563,947. (No model.)



Claim.—1. A valve-controlling mechanism for elevator-cars, comprising an operating-lever, a rocking lever connected to respond to the movement of the operating-lever, a pair of levers mounted upon the car and connected to respond to the movements of the rocking lever, guide-sheaves carried by said pair of levers, guide-sheaves mounted upon the car, and cables engaging said sheaves and the sheaves of the said pair of levers, and adapted to be operated by the movement of the operating-lever, substantially as described.

2. A valve-controlling mechanism for elevator cars or cages, comprising a rock-shaft, an operating-lever secured to said rock-shaft and projecting into the car, a rocking lever mounted upon said rock-shaft, a pair of levers mounted upon the car, a pair of pull-rods pivotally connecting said levers and the rocking lever, guide-sheaves carried by said pair of levers, guide-sheaves mounted upon the car, and cables guided around said sheaves and adapted to be actuated by the operation of the operating-lever within the car, substantially as described.

572,215. INSULATED ELECTRIC CONDUCTOR. WILLIAM R. PATTERSON, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Dec. 10, 1894. Serial No. 531,357. (No model.)



Claim.—As a new article of manufacture, an electric conductor immediately surrounded by a layer of wool, and a cotton covering formed directly upon said layer of wool, said cotton covering being impregnated with a fireproofing compound, to thereby produce a non-inflammable insulation possessing high non-hygroscopic properties, substantially as described.

572,216. INTERCHANGEABLE-COLOR-EXHIBITING DEVICE. JAMES E. PATTON, Jr., Milwaukee, Wis. Filed July 6, 1896. Serial No. 598,065. (No model.)



Claim.—1. An interchangeable-color-exhibiting device comprising a base, a series of removable and interchangeable color-cards, and a cover having a pictorial representation on the outer face thereof, and an opening therethrough whereby, when the cover is closed upon the base, a portion of each color-card is displayed to complete the picture, substantially as set forth.

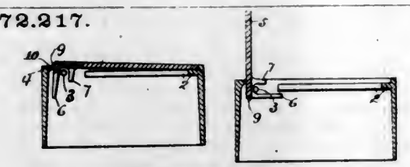
2. An interchangeable-color-exhibiting device, comprising a base having a depressed center and a surrounding frame with tongues projecting over said center, a series of removable and interchangeable color-cards fitting within said center, beneath said tongues, a cover hinged to the base, and having a mutilated or partially-cut-away picture on its outer face, and a receptacle for the color-cards secured to the back of the base, substantially as set forth.

572,217. COVER FOR STOP-COCK BOXES AND FRAME THEREFOR. HARRY F. REHMANN, Philadelphia, Pa. Filed Feb. 24, 1896. Serial No. 580,370. (No model.)

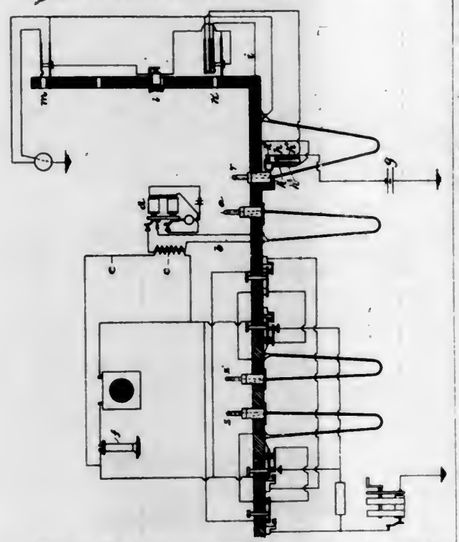
Claim.—1. An improved stop-cock-box frame and cover, consisting of a frame having a supporting-flange extending partly around the inner edge thereof and below the upper surface; trunnions projecting inwardly from said frame, and a beveled flange 4 in said frame, in combination with a cover-plate fitted to rest on the inwardly-projecting flange with its upper surface flush with the upper surface of the frame, and provided with projections arranged to embrace the trunnions, and having a beveled edge adapted to be forced downwardly within the inwardly-projecting edge of the frame; the whole forming a flush-topped frame and cover substantially as described and shown.

2. A stop-cock-box cover and frame therefor consisting of a frame adapted to fit on the top of a stop-cock box, and a cover-plate adapted to fit flush therein, and rest upon inward projections to hold the same in flush position, trunnions formed on the frame, downward projections formed on the cover arranged to embrace said trunnions, in combination with beveled projections adapted to be forced under one side of said frame and by springing to be held within the frame by the reaction of the said side so sprung substantially as and for the purpose set forth.

572,217.



572,218. NEEDLE-PLUG TEST SYSTEM FOR MULTIPLE SWITCHBOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 1, 1888. Renewed Feb. 24, 1890. Serial No. 341,403. (No model.)



Claim.—1. The combination with a telephone-line connected to ground at the substation and with switches on two or more switchboards and through a grounding-jack and battery to ground, of a test-plug inserted in a spring-jack of the line, said test-plug being provided with two contacts or terminals, one of said terminals being connected with the lifted spring of the spring-jack and the other terminal being connected with the contact-point of the spring-jack, a circuit between said terminals including one winding of an induction-coil and a rheotome or vibrator and a telephone included in the circuit of the other winding of the induction-coil, whereby on listening at the telephone, a tone or vibration may be heard, substantially as described.

2. The combination with a telephone line connected to earth at a substation and with spring-jack switches, one on each of two or more multiple switchboards, and from the switch on the last board through a grounding-jack and battery to ground, of the terminal plug of said line inserted in said grounding-jack to close the connection of the line with said battery, a switching device including one winding of an induction-coil and the main contacts of a rheotome or vibrator, which switching device on being inserted in a spring-jack of the line loops said winding of the induction-coil and rheotome into the circuit and a telephone connected in a circuit with the other winding of the induction-coil, substantially as described.

3. The combination with the needle test-plug provided with an insulated contact-piece and a needle-point, and said contact-piece and point constituting the terminals of a rheotome and one winding of an induction-coil included in circuit between said terminals, a telephone included in circuit with the other winding of the induction-coil, a telephone-line including two or more switches and a test-battery, whereby on inserting the test-plug in one of the spring-jack switches of the line it may be determined whether or not said line is open at another spring-jack of the line.

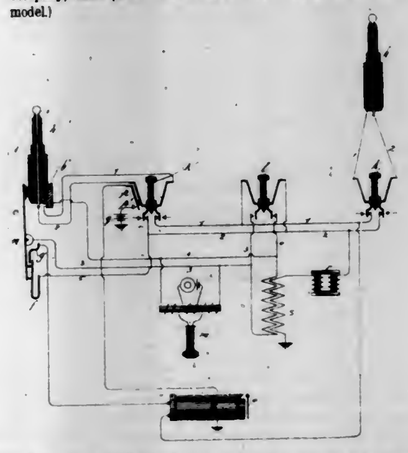
4. In a test system for telephone-switchboards, a normally-closed circuit including a source of current for each line, means for making connection with the line at any of several points and simultaneously interrupting the said circuit there, a test-indicating instrument, and a testing-plug connected therewith adapted to break the said circuit and loop the said instrument into the circuit, whereby the test instrument is caused to respond when the line is free, substantially as described.

5. The combination with a telephone line extending to the central station and connected through spring-jacks upon the several switchboards, of a source of electricity normally in circuit with the line, but adapted to be disconnected therefrom when connection is made with the line, a loop-plug adapted to be inserted into a spring-jack of the line, and a signaling device connected between the terminals of the loop-plug adapted to respond when said source of electricity is connected in circuit but to remain irresponsive when said source of electricity is disconnected from the line, substantially as described.

6. The combination with a telephone line grounded at each terminal, of spring-jack switches included serially in the line said spring-jack switches having separable contacts, and a source of testing-current normally connected with the said telephone-line but adapted to be disconnected therefrom when the line is switched for conversation, a plug adapted for insertion into a spring-jack switch having contact-pieces adapted to register with the separated contact-points of the spring-jack, respectively, and a signaling instrument in a circuit between the contact-pieces of the plug, substantially as described.

7. The combination with a telephone-line, of spring-jack switches having separable contacts included serially in the line-circuit, a ground connection with the line before the first spring-jack, and another ground connection including a source of testing-current after the last spring-jack in the series, a loop-plug adapted for insertion into any spring-jack to register with the separated contacts of the spring-jack, and a signaling instrument included in a circuit between the contact-pieces of the plug, substantially as described.

572,219. CORD SWITCH FOR TELEPHONE-SWITCHBOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 14, 1894. Serial No. 511,207. (No model.)



Claim.—1. In combination a socket and a resting-plug resting therein, a lever of the first class having one extremity bearing upon the side of said plug, switch-contacts actuated by the other extremity of said lever, and circuit connections with the switch-contacts, substantially as described.

2. The combination with a connecting-plug, of a resting-socket adapted to receive the same, a flexible cord attached to the plug and a weight acting upon the cord to draw the plug into the side of its socket, a lever of the first class having one extremity projecting laterally into the socket adapted to be displaced therefrom by the insertion of the plug in its socket, and switch-contacts controlled by the opposite extremity of the lever, substantially as described.

3. In a strip or group of cord switches the combination of the metal and the insulating portions of the frame, the rib upon the insulating portion with groove *d*, the switch-levers *c* of the different cord switches, and the pivot-pins *c'* secured in the groove, substantially as described.

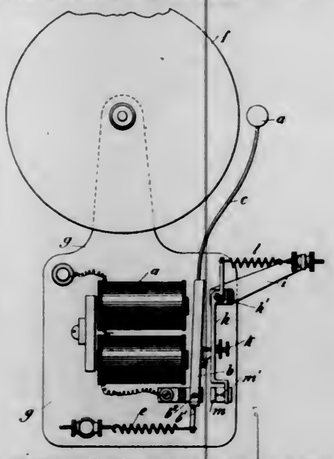
4. The combination with the switch-lever *c* having one extremity adapted to be acted upon by the plug when in its socket, of the insulating-stud and the contact-pin upon the other extremity of the lever, at different distances from its fulcrum, and the contact-spring *f* adapted to engage the insulating-stud and the contact-pin alternately as the switch-lever is oscillated, substantially as described.

5. The combination with the switch-lever of the first class having one extremity adapted to be moved by the pressure of the connecting-plug upon it when the plug is in its socket, of the insulating-stud and the contact-pin upon the other arm of the lever at different dis-

tances from its fulcrum, the contact-spring adapted to engage the insulating stud and the contact-pin alternately as the lever is oscillated, and the fixed stop limiting the outward movement of the contact-spring in following the switch-lever, substantially as described.

6. The combination with a pair of connecting-plugs, of a plug-circuit uniting the different members of the pair, a metallic sleeve upon one of said plugs connected with one conductor of the cord circuit, a metallic resting-socket for the said plug adapted to make connection with the sleeve, a cord switch in said socket comprising a switch-lever of the first class, one of whose extremities is adapted to project into the plug-socket when the plug is removed therefrom, a switch-spring controlled by the other arm of said lever to be oscillated between contact-points, the switch-spring being connected with the other side of the plug-circuit, a telephone having one terminal connected with the metallic socket and the other terminal with one of said contact-points; a clearing-out annunciator having one terminal connected with one side of the plug-circuit and the other terminal with the remaining contact point, whereby when the plug is removed from its socket the circuit of the telephone is opened at two points and the circuit of the clearing-out annunciator is closed, substantially as described.

572,220. **ELECTRIC SIGNAL-BELL.** CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 31, 1894. Serial No. 513,072. (No model.)



Claim.—1. The combination with an electromagnet, of a pivoted armature therefor adapted to oscillate to and from the magnet poles, two pairs of contact-points controlled thereby to be simultaneously closed together at a point of the oscillation of the armature intermediate between the extremities of its range, and an electric circuit including the said contact-points in series, substantially as described.

2. The combination with an electromagnet and the oscillating armature thereof, of a contact-point carried by the armature, a pivoted contact-lever carrying a contact point adapted to register with the contact-point upon the armature, a resting-contact for said contact-lever adapted to limit its movement toward the magnet, and an electric circuit including both pairs of contact-points in series, substantially as described.

3. The combination with an electromagnet in an electric circuit, of a pivoted armature therefor, a pivoted contact-lever and registering contact-points, one carried upon the armature and the other upon the said contact-lever, a retractile spring for said armature, and an opposing spring acting upon said contact-lever, another contact-piece upon said contact-arm, and a resting-anvil therefor adapted to intercept the movement of said contact-lever in following the armature-lever, the retractile spring of the armature-lever being insufficient in force to lift the contact-lever from its resting-stop, and an electric circuit including in series both pairs of contact-points, substantially as described.

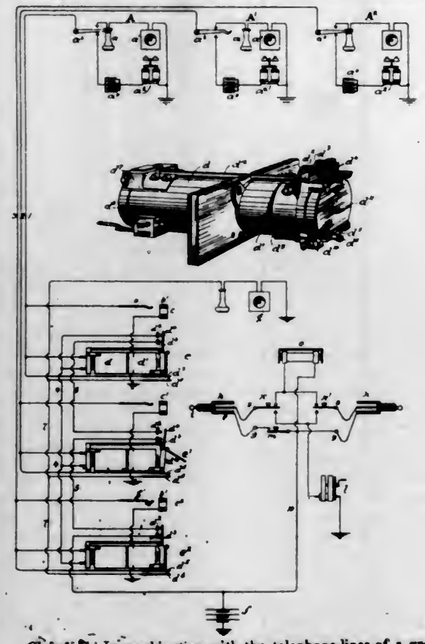
4. The combination with an electromagnet in an electric circuit, of a pivoted armature therefor, a pivoted contact-lever and registering contact-points, one carried upon the armature and the other upon the said contact-lever, a retractile spring for said armature, and an opposing spring acting upon said contact-lever, another contact-piece upon said contact-lever, and a resting-anvil therefor adapted to intercept the movement of said contact-lever in following the armature-lever, the retractile spring of the armature-lever being insufficient in force to lift the contact-lever from its resting-stop, and a shunt-circuit about said electromagnet including both pairs of contact-points in series, substantially as described.

5. In an electric signal-bell the combination with the bell-magnet, of a vibrating armature therefor provided with a retractile spring, a pivoted contact-lever, registering contact-points, one carried by said armature and the other by said contact-lever, and a spring acting upon said contact-lever tending to maintain the contact-points closed, a fixed resting-contact for said contact-lever, the retractile spring of the armature being insufficient to lift the contact-lever from its resting-contact, a shunt-circuit about said bell-magnet including both pairs of contact-points, and an electric circuit including said bell together with a battery and a signal-key, substantially as described.

6. The herein described method of transmitting several successive signals by means of an electric bell provided with a short circuit about its magnet and with mechanism adapted to break the continuity of said short circuit while the armature is in oscillation, which consists in transmitting in the electric circuit containing the bell, pulsations of electric current at intervals of insufficient duration to permit the oscillating lever of the bell to cease its vibration.

7. The method of preventing the short-circuiting of a bell provided with a short circuit about its magnet and with mechanism thrown into oscillation by the excitement of the magnet, adapted to break the said short circuit, which consists in sending an electric current through the bell before the oscillating lever has ceased vibrating after the first interruption of current, as described.

572,221. **TELEPHONE-EXCHANGE SYSTEM.** CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Oct. 16, 1894. Serial No. 526,062. (No model.)



Claim.—1. In combination with the telephone-lines of a group, each provided with means for making connection with it in a switch-board, a relay in each line normally responsive to currents in the line, a local circuit containing an operator's telephone adapted for connection with any of the lines through the agency of the corresponding relay, a device actuated in the movement of any relay adapted to prevent the operation of any other relay at the same time, and mechanism actuated in making connection with the line adapted to restore the said device to its normal position to permit the subsequent operation of other relays, substantially as described.

2. The combination with telephone-lines of a group, of a relay in connection with each line responsive to currents in the line, a local circuit including an operator's telephone adapted for connection with any line through the agency of the corresponding relay, a circuit controlled by each of the relays to all the other relays adapted when changed by one relay to prevent the operation of the other, electrical mechanism in each relay adapted to return the relay to its normal position, a circuit including said mechanism, and a switch operated in making connection with the line controlling the said last-mentioned circuit, substantially as described.

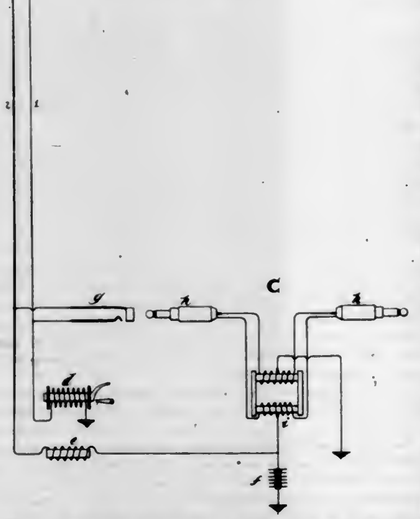
3. The combination with each of several telephone lines, of a common source of signaling-current adapted to be closed through any of the lines to signal from the substation to the exchange, an annunciator in the line, and switch-contacts thereon controlling the connection of the source of signaling-current with all the lines, an electrical device for restoring the relay to its normal position, and a switch actuated in making connection with the line controlling the circuit through said device, substantially as described.

4. The combination with each of several telephone-lines normally open at the substation and including a common source of signaling-current at the exchange, of means for closing the line at the substation for signaling, and an annunciator in each line having switch-contacts adapted to disconnect the source of signaling-current from all the lines when the annunciator is operated, substantially as described.

5. The combination with each of several telephone-lines normally open at the substations and connected with a common source of signaling-current at a central station, of means at each substation for closing the line-circuit to signal, an annunciator in each line at the central station having one pair of switch-contacts adapted, when the annunciator is operated, to connect its particular line with an operator's telephone and another pair of switch-contacts adapted to disconnect the common source of signaling-current from all the lines of the group, substantially as described.

6. The combination with a telephone-line, of a self-restoring annunciator in the line together with a source of electric current, switch-contacts controlled by the annunciator adapted to connect the line with an operator's telephone when it is operated, a local circuit through the restoring-magnet, switch-contacts for closing the same when connection is made with the line, and a key adapted to open the local circuit, whereby the operator's telephone may be brought into connection with the line during the use of the line, substantially as described.

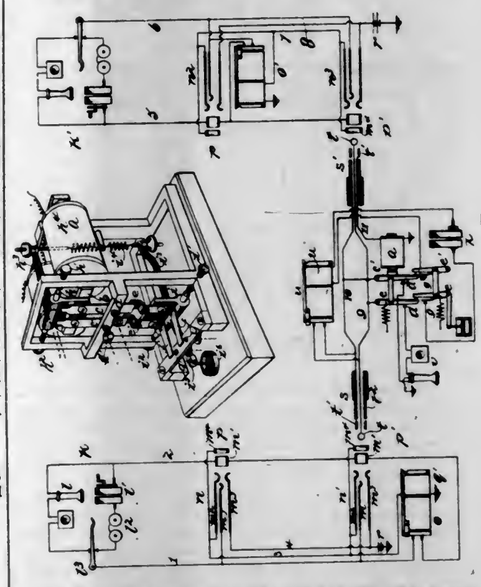
572,222. **TELEPHONE-CIRCUIT.** CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Aug. 1, 1895. Serial No. 557,825. (No model.)



Claim.—1. The combination in an electric circuit, of a source of current, a variable-resistance transmitting-telephone, an inductive resistance in shunt of the telephone, and an electromagnetic responsive instrument requiring for its operation a current greater than the maximum resistance of the transmitter would permit, as described.

2. In combination in a telephone-line, a source of current, an annunciator, a receiving-telephone, a variable-resistance transmitting-telephone, and a resistance-coil in shunt of the transmitting-telephone adapted to permit said source of current to create in the circuit a current sufficient to operate the annunciator, substantially as described.

572,223. **APPARATUS FOR TELEPHONE-SWITCHBOARDS.** CHARLES E. SCRIBNER, Chicago, and FRANK R. MCBERTY, Downer's Grove, Ill., assignors to the Western Electric Company, Chicago, Ill. Filed June 6, 1894. Serial No. 513,719. (No model.)



Claim.—1. The combination with a telephone-line, of an operator's telephone connected therewith, a plug connected with the line for uniting it with another line by means of a spring-jack thereof, a relay controlling switch-contacts included in the circuit of the telephone, and a local circuit containing the magnet of the said relay terminating in registering contact-points of the said plug and spring-jack; whereby the operator's telephone is connected with the line until the plug is inserted in the said spring jack, and is reconnected with the line when the plug is removed from the spring-jack, as described.

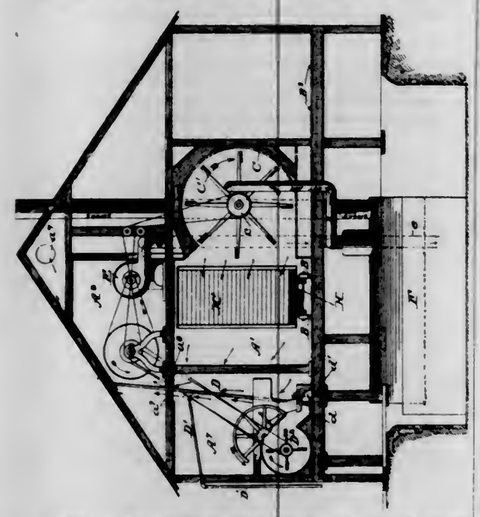
2. The combination with a pair of plugs adapted for insertion into spring-jacks of telephone-lines, the plug-circuit uniting the plugs, and an operator's telephone in a bridge of the plug-circuit, of switch-contacts included in the bridge containing the telephone, an electromagnet controlling the switch-contacts, and a local circuit terminating in registering contacts upon one of the plugs and the spring-jacks, completed when the plug is inserted into a spring-jack substantially as described.

3. The combination with telephone-lines terminating in spring-jacks, of a connecting-plug adapted for insertion into one of the spring-jacks, and the plug-circuit thereof, a generator of signaling-current, and an electromagnetic switch adapted when excited to connect the generator of signaling current with the plug-circuit, a local circuit independent of the line including the electromagnet of said switch terminating in contact-pieces adapted to be closed together in the act of inserting the plug into the spring-jack, substantially as described.

4. The combination with a connecting-plug and an operator's telephone, of an electromagnet connected with a circuit of the plug adapted to be closed during the insertion of the plug in a spring-jack, and switching mechanism actuated by said magnet to interrupt the circuit of the telephone, substantially as described.

5. In combination, a conductor forming a part or extension of a line to a telephone-substation, a relay having a lever *c* connected with said conductor, normally resting upon a stop *d* connected with a telephone, adapted to make connection with and to carry with it a lever *e* when it is attracted to its magnet, a contact *f* electrically connected with said lever *e* and adapted to be separated thereby from its resting-stop *g*, means for retarding the movement of lever *e*, and a generator of signaling-current connected with stop *g*, substantially as described.

572,224. FRUIT-DRIER. ARTHUR B. SHEARER, Arroyo Grande, Cal. Filed Nov. 22, 1895. Serial No. 569,818. (No model.)



Claim.—1. The fruit-drier, comprising a drying chamber, having a glass partition at one side, a water-spraying pipe behind said partition, a fan also located within the chamber behind said partition and discharging cold air thereagainst, and means for directing a hot-air blast over the fruit to be dried, and against said partition, substantially as set forth.

2. The fruit-drier, consisting in the main compartment, having a condensing-partition at one side of its drying-space, a fruit-carrier adapted to pass through said drying-space, a fan opposite the condensing-partition to force hot air over the substance to be dried and against said partition, a heater or furnace for heating the air supplied to said fan, and a blower for withdrawing the air from the drying-chamber and returning it to the heater or furnace substantially as set forth.

3. The improved fruit-drier, consisting of the main compartment, having end doors and a track between them, for the tray-cars; a condensing wall, or partition, set at one side of and parallel to the track; means for spraying water and directing a blast of cool air upon said wall, for cooling it; a heater or furnace for heating the air; a fan for forcing the hot air across the track-space and the fruit-laden car and against condenser-wall; and a blower for withdrawing the air from the drying-chamber and returning it to said furnace or heater, for reheating and drying, substantially as set forth.

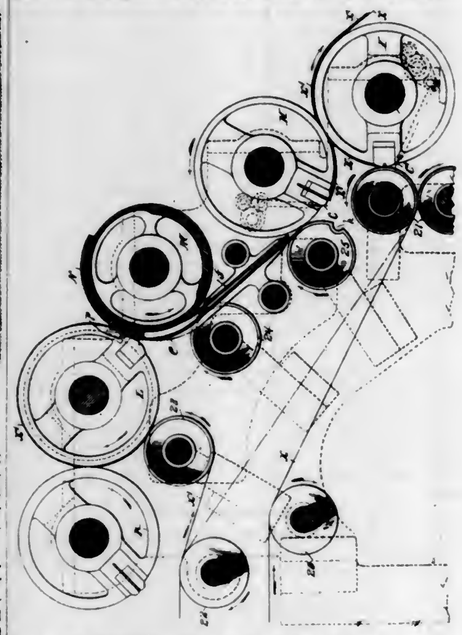
572,225. PRINTING-MACHINE. EDWARD P. SHELDON, Brooklyn, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Feb. 10, 1896. Serial No. 578,688. (No model.)

Claim.—1. The combination with a pair of sheet cutting and carrying cylinders arranged to act upon a web, of a sheet-feeding segment running at a lower speed than said cylinders and arranged to advance a sheet from another source to said cylinders in position to be associated with the other sheet or sheets received by said cylinders and then pass out of engagement with the sheet, substantially as described.

2. The combination with a pair of sheet cutting and carrying cylinders arranged to act upon a web and having sheet-holding pins, of a sheet-feeding segment running at a lower speed than said cylinders and arranged to advance a sheet from another source to said cylinders in position to be taken by the pins with the other sheet or sheets received by said cylinders and then pass out of engagement with the sheet, and a feeding-roll coacting with one of said cylinders to advance the sheet held by the pins, substantially as described.

3. The combination with a pair of sheet cutting and carrying cylinders arranged to act upon one web, of a pair of cutting-cylinders, and a sheet-feeding segment running at a lower speed and arranged to advance a sheet from another web to the cutting and carrying cylinders in position to be associated with the sheet or sheets received by said cylinders from the first-mentioned web and then pass out of engagement with the sheet, substantially as described.

4. The combination with a pair of sheet cutting and carrying cylinders arranged to act upon one web, of a pair of cutting-cylinders running at a lower speed and acting to completely sever a sheet from another web, and a sheet-feeding segment running at said lower speed and acting to advance the severed sheet to the cutting and carrying cylinders in position to be associated with the sheet or sheets received by said cylinders from the first-mentioned web and then pass out of engagement with the sheet, substantially as described.



5. The combination with a sheet-collecting mechanism arranged to collect sheets from one source, of a feeding-segment running at a lower speed and arranged to advance a sheet from another source to the collecting mechanism in position to be associated with the other collected sheets and then pass out of engagement with the sheet, substantially as described.

6. The combination with a sheet-collecting mechanism arranged to collect sheets from one source, of a feeding-segment running at a lower rate of speed and arranged to advance a sheet from another source to the collecting mechanism and then pass out of engagement with the sheet, a feeding roll coacting with said segment, and guides for the sheet between the segment and collecting mechanism, substantially as described.

7. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a sheet-feeding segment running at a lower speed and arranged to advance a sheet from another source to the collecting-cylinder in position to be associated with the sheets from the main web and then to pass out of engagement with the sheet, substantially as described.

8. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a pair of sheet-cutting cylinders running at a lower speed and arranged to completely sever a sheet from another web, and a feeding-segment running at said lower speed and acting to feed the severed sheet from the second web to the collecting-cylinder in position to be associated with the sheets from the main web and then pass out of engagement with the sheet, substantially as described.

9. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a pair of sheet-cutting cylinders running at a lower speed and arranged to act upon another web, a feeding segment running at said lower speed and arranged to feed a sheet from the second web to the collecting-cylinder in position to be associated with the sheets received from the main web and then pass out of engagement with the sheet, and a feeding-roll coacting with the collecting-cylinder to advance the sheets thereon, substantially as described.

10. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a pair of sheet-cutting cylinders running at a lower speed and arranged to act upon another web, a feeding-roll between the sheet-cutting cylinders and the collecting-cylinder, and a feeding-segment running at said lower speed and coacting with the feeding-roll to feed the sheet from the second web to the collecting-cylinder and then pass out of engagement with the sheet, substantially as described.

11. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a pair of sheet-cutting cylinders running at a lower speed and arranged to act upon another web, a feeding-roll between the sheet-cutting cylinders and the collecting-cylinder, and a feeding-segment running at the lower speed and coacting with one of the cutting-cylinders and the feeding-roll to feed the sheet from the second web to the collecting-cylinder and then pass out of engagement with the sheet, substantially as described.

12. The combination with a pair of sheet cutting and collecting cylinders arranged to act upon a main web, of a pair of sheet-cutting cylinders running at a lower speed and arranged to act upon another web, a feeding-roll between the sheet-cutting cylinders and the collecting-cylinder, a feeding-segment running at the lower speed and coacting with one of the cutting-cylinders and the feeding-roll to feed the sheet from the second web to the collecting-cylinder and then pass out of engagement with the sheet, and a feeding-roll coacting with the collecting-cylinder to advance the sheets thereon, substantially as described.

13. The combination with printing mechanism arranged to deliver a plurality of printed webs running in line with each other and at different speeds, of a sheet cutting and collecting mechanism adapted to receive one of the webs, a sheet-cutting mechanism arranged in line with the first-mentioned mechanism and running at a lower speed, and feeding mechanism for advancing a sheet from said sheet cutting mechanism to the cutting and collecting mechanism in position to be associated by the cutting and collecting mechanism with sheets received by said cutting and collecting mechanism from the other web, substantially as described.

14. The combination with two printing mechanisms capacitated to print a plurality of webs and deliver said webs in line with each other, and arranged to be run at the same speed or different speeds, of a sheet cutting and collecting mechanism arranged to act on one web, or on both webs when run at the same speed, a sheet-cutting mechanism for one of the webs arranged in line with the cutting and collecting mechanism and running at a lower speed than said cutting and collecting mechanism, and feeding mechanism for advancing a sheet from said sheet-cutting mechanism to the cutting and collecting mechanism in position to be associated by the cutting and collecting mechanism with sheets received by said cutting and collecting mechanism from the other web, substantially as described.

15. The combination with printing mechanism arranged to deliver a plurality of printed webs running at different speeds, of sheet cutting and collecting cylinders for the higher-speed web, sheet-cutting cylinders running at a lower speed for the second web, and a feeding-segment running at said lower speed and arranged to feed a sheet from the second web to the cutting and collecting cylinders and in position to be associated with sheets received from the higher-speed web, and then pass out of engagement with the sheet, substantially as described.

16. The combination with printing mechanism arranged to deliver a plurality of printed webs running one above the other and at the same or different speeds, of cutting and collecting cylinders arranged to act on one web, or both webs when run at the same speed, sheet-cutting cylinders in the same vertical plane with the cutting and collecting cylinders running at a lower speed for one of the webs, and a feeding-segment running at said lower speed and arranged to feed a sheet from the lower-speed web to the cutting and collecting cylinders and in position to be associated with sheets received from the higher-speed web, and then pass out of engagement with the sheet, substantially as described.

17. The combination with printing mechanism arranged to deliver a plurality of printed webs running at different speeds, of sheet cutting and collecting cylinders for the higher-speed web, sheet-cutting cylinders running at a lower speed for the second web, a feeding-roll between the cutting-cylinders and collecting-cylinder, and a feeding-segment coacting with one of the cutting-cylinders and with the feeding-roll to feed a sheet from the cutting-cylinders to the collecting-cylinder and then pass out of engagement with the sheet, substantially as described.

18. The combination with printing mechanism arranged to deliver a plurality of printed webs running at different speeds, of sheet cutting and collecting cylinders for the higher-speed web, sheet-cutting cylinders for the second web acting to completely sever a sheet and running at a lower speed, a feeding-roll between the cutting-cylinders and collecting-cylinder, and a feeding-segment coacting with one of the cutting-cylinders and with the feeding-roll to feed the severed sheet from the cutting-cylinders to the collecting-cylinder and then pass out of engagement with the sheet, substantially as described.

19. The combination with printing mechanism arranged to deliver a plurality of printed webs running at different speeds, of a sheet cutting and collecting mechanism adapted to receive one of the webs, a sheet-cutting mechanism running at a lower speed, and feeding devices for advancing a sheet from said sheet-cutting mechanism to the collecting mechanism in position to be associated by the collecting mechanism with sheets collected thereby from the first-mentioned web, substantially as described.

20. The combination with printing mechanism capacitated to print and deliver a plurality of webs, and arranged to be run at the same speed or different speeds, of a sheet cutting and collecting mechanism arranged to act on one web, or on both webs when run at the same speed, a sheet-cutting mechanism for one of the webs running at a lower speed than said cutting and collecting mechanism, and feeding devices for advancing a sheet from said sheet-cutting mechanism to the collecting mechanism in position to be associated by the collecting mechanism with sheets collected thereby from the first-mentioned web, substantially as described.

21. The combination with a collecting-cylinder arranged to collect sheets from one source, of feeding devices for advancing a sheet from another source to the collecting-cylinder in position to be associated on the collecting cylinder between sheets collected thereby, substantially as described.

22. The combination with sheet cutting and collecting cylinders arranged to act on a main web, of feeding devices for advancing a sheet from another source to said cylinders in position to be associated on the collecting-cylinder with and between the sheets collected thereby, substantially as described.

23. The combination with feeding mechanism, of sheet-cutting cylinders running at a lower speed than the feeding mechanism, and a feeding-segment running at said lower speed and arranged to advance a sheet to the feeding mechanism and then pass out of engagement with the sheet, substantially as described.

24. The combination with feeding mechanism, of sheet-cutting cylinders running at a lower speed than the feeding mechanism and acting to completely sever the sheet, and a feeding-segment running at said lower speed and arranged to advance the severed sheet to the feeding mechanism and then pass out of engagement with the sheet, substantially as described.

25. The combination with feeding mechanism, of sheet-cutting cylinders running at a lower speed than the feeding mechanism, a feeding-roll between the cutting-cylinders and feeding mechanism, and a feeding segment running at said lower speed and coacting with said roll to advance a sheet to the feeding mechanism and then pass out of engagement with the sheet, substantially as described.

26. The combination with feeding mechanism, of sheet-cutting cylinders running at a lower speed than the feeding mechanism, a feeding-roll between the cutting-cylinders and feeding mechanism, and a feeding segment running at said lower speed and coacting with one of the cutting-cylinders and with said feeding-roll to advance a sheet to the feeding mechanism and then pass out of engagement with the sheet, substantially as described.

27. The combination with feeding mechanism, of sheet-cutting cylinders running at a lower speed than the feeding mechanism, and a feeding-segment running at said lower speed and coacting with one of the cylinders in advancing a sheet to the feeding mechanism and arranged to pass out of engagement with the sheet to release the latter for its advance by the feeding mechanism substantially as described.

28. The combination with a sheet-carrying cylinder having sheet-holding pins, of sheet cutting cylinders running at a lower speed than the carrying-cylinder, and a feeding-segment running at said lower speed and arranged to advance a sheet into position to be taken by the pins on the carrying-cylinder and then pass out of engagement with the sheet, and a feeding-roll coacting with said carrying-cylinder to advance the sheet held by the pins, substantially as described.

29. The combination with a sheet-carrying cylinder having sheet-holding pins, and a second cylinder to which sheets are transferred from said carrying-cylinder, of sheet-cutting cylinders running at a lower speed than the carrying-cylinder, and a feeding-segment running at said lower speed and arranged to advance a sheet into position to be taken by the pins on the carrying-cylinder and then pass out of engagement with the sheet, and a feeding-roll coacting with said carrying-cylinder to advance the sheet held by the pins to the cylinder to which the sheet is transferred, substantially as described.

30. The combination with sheet-feeding mechanism, of cutting-cylinders K, L running at a lower speed than the sheet-feeding mechanism, feeding-roll 24 between cylinder L and the feeding mechanism, and feeding-segment N coacting with cylinder L and roll 24, substantially as described.

31. The combination with sheet-feeding mechanism, of cutting-cylinders K, L running at a lower speed than the sheet-feeding mechanism, feeding-roll 24 between cylinder L and the feeding mechanism, guides *e* for directing the leading end of the sheet from cylioder L, and feeding-segment N coacting with cylinder L and roll 24, substantially as described.

32. The combination with cutting and collecting cylinders H, I

having pins *c*, *c'*, and feeding-rolls 25, 21 coacting with said cylinders, of cutting-cylinders K, L and feeding-segment N running at a lower speed than cylinders H, I, and feeding-roll 24 coacting with segment N, substantially as described.

33. The combination with cutting and collecting cylinders H, I having pins *c*, *c'*, and feeding-rolls 25, 21 coacting with said cylinders, of cutting-cylinders K, L and feeding-segment N running at a lower speed than cylinders H, I, feeding-roll 24 coacting with segment N, and guides *e*, *f* between roll 24 and cylinder H, substantially as described.

34. The combination with cutting and collecting cylinders H, I having pins *c*, *c'*, and feeding-rolls 25, 21 coacting with said cylinders, of cutting-cylinders K, L and feeding-segment N running at a lower speed than cylinders H, I, feeding-roll 24 coacting with segment N, and guides for directing the leading end of the sheet from cylinder L to the segment and roll 24, substantially as described.

35. The combination with cutting and collecting cylinders H, I having pins *c*, *c'*, and feeding-rolls 25, 21 coacting with said cylinders, of cutting-cylinders K, L running at a lower speed than cylinders H, I, sheet-holding pins *p* on cylinder L, and feeding-segment N coacting with cylinder L, substantially as described.

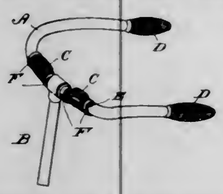
36. The combination with cutting and collecting cylinders H, I having pins *c*, *c'*, and feeding-rolls 25, 21 coacting with said cylinders, of cutting-cylinders K, L running at a lower speed than cylinders H, I, sheet-holding pins *p* on cylinder L, feeding-roll 24 and guides *e*, *f*, and feeding-segment N coacting with cylinder L and roll 24, substantially as described.

37. The combination with cutting cylinders K, L, of guides *e* for directing the leading end of the sheet from the cylinder L, roll 24, and feeding-segment N coacting with cylinder L and roll 24, substantially as described.

38. The combination with cutting cylinders K, L, of guides *e* for directing the leading end of the sheet from cylinder L, and segment N coacting with cylinder L substantially as described.

39. The combination with cutting-cylinders K, L, and pins *p* on said cylinder L, of guides *e* for directing the leading end of the sheet from the pins, and segment N coacting with cylinder L, substantially as described.

572,226. **BICYCLE-HANDLE.** JAMES C. SPIEGEL, Middletown, N. Y. Filed Oct. 25, 1895. Serial No. 566,814. (No model.)



Claim.—The combination with the handle-bars of a bicycle, of the herein described pad adapted to be connected therewith at any point thereon, consisting of a pneumatic cushion or pad C, segmental upon the under surface to receive the convex portion of the handle-bar and being provided at each end with loops through which pass straps carrying buckles through which means the device may be secured to the handle of a bicycle as set forth.

572,227. **TRANSPOSING-KEYBOARD** HENRY H. STROSTER, Butte, Mont. Filed Oct. 25, 1895. Serial No. 566,893. (No model.)

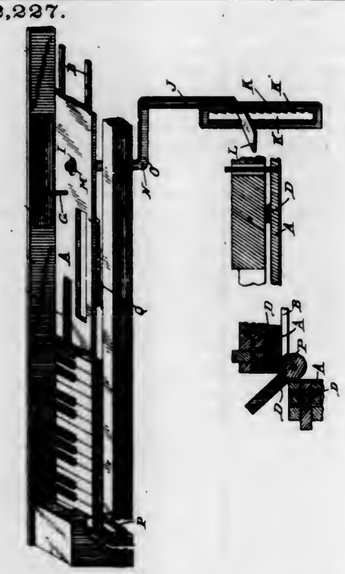
Claim.—1. The combination with a slidingly-mounted frame carrying the finger-keys, of a sectional pivot-slat formed of sections flexibly connected together on which the finger-keys rest, a pedal for moving the frame in one direction, and a spring for actuating it in the opposite direction, and an indicator carried by said frame, substantially as described.

2. The combination with the keyboard, of the pivot-slat in sections flexibly connected together, each section thereof fastened to its respective section of the keyboard, substantially as described.

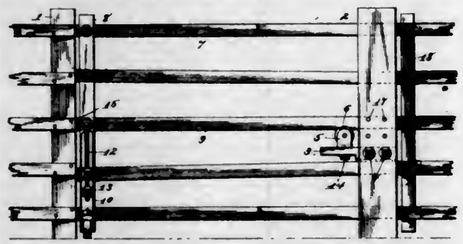
3. The combination with the keyboard, of the pivot-slat in sections, each section thereof fastened to its respective section of the keyboard, the several sections of the keyboard being fastened together by a flexible fabric, substantially as described.

4. The combination with the keyboard in sections flexibly connected, of the pivot-slat in sections and each section firmly attached to its respective section of the keyboard, and a roller over which the keys pass, the finger-keys being pivotally fastened near the front ends of their corresponding sections of the keyboard, substantially as described.

572,227.



572,228. **GATE.** IRVING H. SWINK, Dublin, Pa. Filed Nov. 15, 1895. Serial No. 569,021. (No model.)

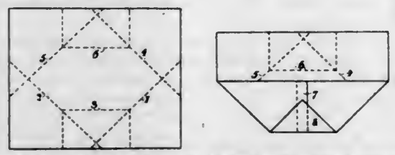


Claim.—1. A support for gates consisting of a vertically-adjustable bracket, a horizontally-adjustable fork swiveled thereto, and a guide-roll carried by the fork, in combination with a gate adapted to slide on the roll and a vertically-adjustable caster, as and for the purpose described.

2. A support for gates, consisting of a vertically-adjustable bracket secured to a post and having a horizontal slot therethrough, a fork adjustably swiveled in said slot, and a flanged roll journaled in the fork and adapted to form a guide for the gate in combination with a vertically-adjustable caster secured to the end of the gate by bolts slidable in a slot in the caster, as and for the purpose described.

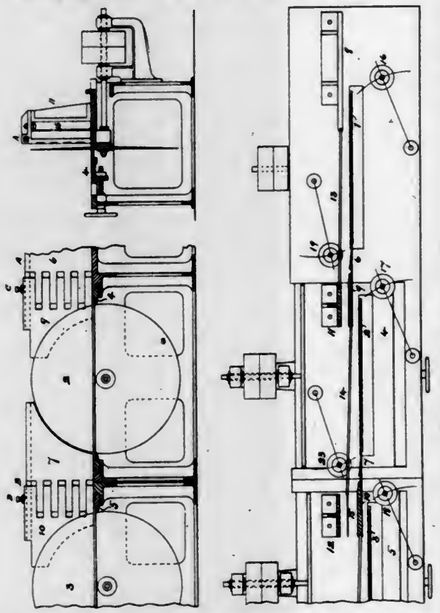
3. A support for gates consisting of a vertically adjustable bracket, a horizontally-adjustable fork swiveled thereto, and a roll journaled in the fork, as and for the purpose described.

572,229. **PAPER BAG.** ELIJAH F. TAYLOR, Sheffield, England. Filed June 3, 1896. Serial No. 594,160. (No model.) Patented in England Aug. 17, 1895, No. 15,496.



Claim.—A paper bag or box formed from a single rectangular sheet of paper or the like, said sheet being folded first upon lines 1, 2 and 3 in the order named, with the overlapping portions pasted together, and then folded upon lines 4, 5 and 6 in the order named with the corresponding parts pasted, substantially as described.

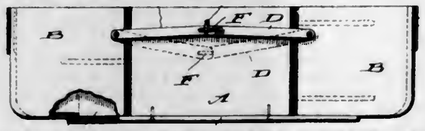
572,230. **CIRCULAR SAWING MACHINE.** CHARLES E. TURNOCK, Liverpool, England. Filed Mar. 30, 1896. Serial No. 585,427 (No model.) Patented in England Sept. 13, 1895, No. 17,137.



Claim.—1. In circular-saw machines employing two or more saws in the order herein described, the combination with the fences adjoining the second and succeeding saws, of plates such as 6, 7, attached thereto by a number of dovetailed tongues fitting into corresponding grooves in the faces of such fences, substantially as herein shown and described and for the purpose stated.

2. The combination with the second and each succeeding saw of fences such as 9, 10, and the combination therewith of brackets such as 11, 12, and plates such as 15, substantially as herein shown and described and for the purpose stated.

572,231. **WINDOW-SHELF.** MILO K. WAITE, Northville, N. Y., assignor of one-half to Clarence R. Blake, same place. Filed Sept. 22, 1896. Serial No. 606,675. (No model.)



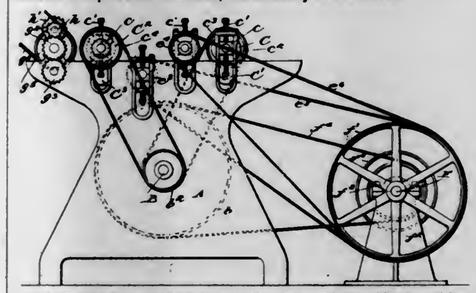
Claim.—1. A window-shelf composed of the central body portion having cut-away ends, recessed end pieces which are applied to the ends of the body portion and suitable brackets attached to the under sides of the end pieces, combined with toggle-levers for adjusting the end pieces, substantially as set forth.

2. A window sliding shelf composed of the central body portion having cut-away ends, the extensible end pieces, recessed so as to fit over the ends of the body portion, and a guiding-strip applied to one edge of the body portion, and having its free ends overlapping the edges of the end pieces, combined with toggle-levers for adjusting the end pieces in relation to the body portion, and the brackets hinged to the under sides of the end pieces, substantially as specified.

572,232. **SPLINT-MACHINE.** JOHN T. WHITTEN, Passaic, N. J. Filed Mar. 14, 1896. Serial No. 583,243. (No model.)

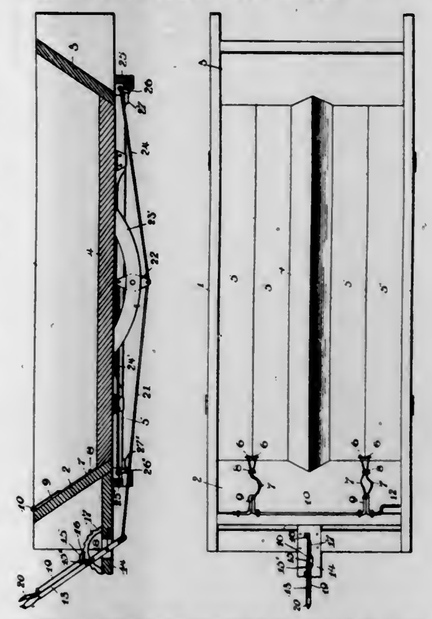
Claim.—1. In a splint-machine, the combination, with a knife, of a pair of arms carrying the knife, a pair of levers to which said arms are pivoted, said levers being fulcrumed on a fixed frame, an eccentric for oscillating said levers, and an eccentric for oscillating the arms, substantially as described.

2. In a splint-machine, the combination, with a knife, means for forcing the knife down, and mechanism for moving the knife rearward, of a bed having an opening, a plate movable in said opening and provided with a slot into which the knife can project, and connections between the knife-moving mechanism and the plate, whereby the slot is kept below the knife, substantially as described.



3. In a splint-machine, the combination, with a molding-machine consisting of a frame supporting a pair of front and a pair of rear feed-rollers, a bed having an opening between said front and rear feed-rollers, a pair of cutter-heads, arranged one above and one below said opening, knives secured to said cutter-heads, of a reciprocating knife, a pair of arms carrying the knife, a pair of levers to which the arms are pivoted, said levers being fulcrumed on a fixed frame, an eccentric for oscillating said levers, and an eccentric for oscillating the arms, substantially as and for the purpose specified.

572,233. **GRAVEL-DUMP.** ALBERT P. WILLIAMS, Galveston, Ind. Filed July 29, 1896. Serial No. 600,940. (No model.)



Claim.—A wagon-dump comprising the wagon-body, having a longitudinal central triangular rib 4, the curved brackets 23 23' secured to said rib, the rock-lever 22 fulcrumed in said brackets, the rods 24 24', the rock-shafts 26 26' having integral double crank-arms 25 25', and the hand-lever 13 having weighted pawl 15, the rod 19 and grip-lever 20, and the stationary notched rack 18, substantially as shown and described.

572,234. **ICE-FREEZING CAN.** JOHN C. WINDLE, St. Louis, Mo. Filed Mar. 16, 1896. Serial No. 583,395. (No model.)

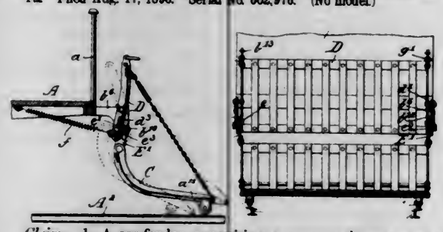
Claim.—1. In an ice-freezing can, suitable side walls, a bottom raised a suitable distance above the lower edges of said walls, downwardly-deflected flanges forming a part of said bottom, rivets partially securing the flanges to the sides, inwardly-turned edges along the bottom of the side walls, removed a suitable distance from the

lower edges of the deflected flanges of the bottom for stiffening the side walls, and suitable solder interposed between the side walls and the flanges for additionally securing the latter to the side walls, substantially as set forth.



2. An ice freezing can comprising suitable side walls, a bottom raised a suitable distance above the lower edges of said walls, downwardly-deflected flanges forming a part of said bottom, rivets for partially securing the flanges to the side walls, inwardly-turned edges along the bottom of the side walls, thereby forming a suitable gutter between the upturned edges of the bottom of the can and the free edges of the flanges, and suitable solder interposed between the full width of the flanges and the side walls and between the inwardly-deflected edges of the bottom and the side walls, said solder also covering the exposed surfaces of the flanges, and additional solder uniting the adjacent ends of the flanges of the several sides of the bottom, substantially as set forth.

572,235. CAR-FENDER. JOHN A. G. O. WOLTERS, Philadelphia, Pa. Filed Aug. 17, 1896. Serial No. 602,976. (No model.)



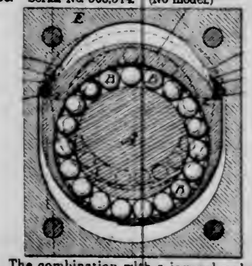
Claim.—1. A car-fender, comprising a concave-shape apron, a convex-shape guard, curved link connections with said apron and guard, slidable and detachable spring-clamping supports for said fender and chains or cords connected with said apron and guard, substantially as and for the purposes described.

2. A car-fender, comprising a concave-shaped apron, a side-slotted guard, link connections located between said apron and the car, stud pins projecting from said guard and connections and detachably engaging supports provided with perforated tongues adapted to be slid in bearings having spring-catches provided with pins, substantially as and for the purposes described.

3. A car-fender, comprising an apron linked to a guard having the lower part on each side slotted, said guard and links provided with pins engaging supports detachably connected with the car, a spring connected with said car and guard and chains or cords connected with said apron and guard, substantially as and for the purposes described.

4. A car-fender, comprising an apron, a guard, pivotal link connections with said apron and guard, supports provided with perforated tongues, perforated bearings held to position on said supports by spring controlled catches provided with pins, said guard being normally held under spring-tension, substantially as and for the purposes described.

572,236. JOURNAL-BEARING. CHARLES H. WOODWORTH, Chicago, Ill., assignor of one-half to Charles F. Davis, El Paso, Tex. Filed Nov. 11, 1895. Serial No. 568,514. (No model.)



Claim.—1. The combination with a journal and a series of antifriction devices surrounding it, of an open spring-ring encircling said antifriction devices, said ring being of such diameter that when in use it has a constant tendency to contract, and means for transmitting the load to said ring at two points located upon opposite sides of the vertical diameter of the journal, substantially as set forth.

2. The combination with a journal and a series of antifriction devices surrounding it, of an open spring-ring encircling said antifriction devices, said ring being of such diameter that when in use it has a constant tendency to contract, and a pair of shoes for transmitting the load directly to said ring at two points located upon opposite sides of the vertical diameter of the journal, substantially as set forth.

3. The combination with a journal and a series of antifriction devices surrounding it, of an open spring-ring encircling said antifriction devices, a pair of movable shoes through which the load is transmitted to the ring, said shoes being in engagement with the ring upon opposite sides of its vertical diameter, and seats upon which said shoes bear and are adapted to slide in order to accommodate themselves to the position of the ring, substantially as set forth.

4. The combination with a journal, of a series of antifriction devices surrounding it, a ring encircling said antifriction devices, a pair of movable shoes through which the load is transmitted to the ring, said shoes being in engagement with the ring upon opposite sides of its vertical diameter, and seats against which said shoes bear and upon which they are adapted to slide, said shoes having rocking engagement with the ring, substantially as set forth.

5. The combination with a journal and a series of antifriction devices surrounding it, of an open spring-ring having a constant tendency to contract encircling said antifriction devices, a pair of movable shoes having circular projections, and seats upon which said shoes bear and are movable, the ring being provided upon opposite sides of its vertical diameter with circular sockets in which the projections of the shoes fit, substantially as set forth.

6. The combination with a journal and a series of antifriction devices surrounding it, of an open spring-ring having a constant tendency to contract, encircling said antifriction devices, a pair of movable shoes having circular projections, and seats upon which said shoes bear, the ring being provided with circular sockets in which the circular projections of the shoes fit and with shoulders engaging the ends of said projections, substantially as set forth.

7. The combination with a journal and a plural series of antifriction devices surrounding it, of a plurality of open spring rings encircling said antifriction devices, means for transmitting the load to each of the rings at two points located upon opposite sides of its vertical diameter and means for holding said rings at the proper distance apart, substantially as set forth.

8. The combination with a journal and a series of antifriction-balls surrounding it, of an open spring-ring having a constant tendency to contract encircling said balls, said ring being provided with overlapping ends the inner one of which is bifurcated and provided along the inner edges of its two divisions with converging bearings for the balls, substantially as set forth.

9. The combination with a journal and a bearing therefor, of a journal-box having opposite the end of the journal an annular race and an antifriction-ball arranged on said race, the point of contact between the race and ball being between the end of the journal and a vertical plane which is perpendicular to the axis of the journal and cuts the center of the ball, whereby the ball is given a tendency to roll away from the end of the journal, substantially as set forth.

10. The combination with a journal and a bearing therefor, of a journal-box having opposite the end of the journal an annular race, the outer wall of which, below the horizontal diameter of the journal, slopes downward and away from the end of the journal, and the inner wall of which, above the horizontal diameter of the journal, slopes downward and away from the end of the journal, and a ball arranged in said race, substantially as set forth.

572,237. STAMP OR COIN CASE. GEORGE B. ADAMS, Irvington, N. J., assignor to the Whitehead & Hoag Company, of New Jersey. Filed Aug. 8, 1896. Serial No. 602,142. (No model.)



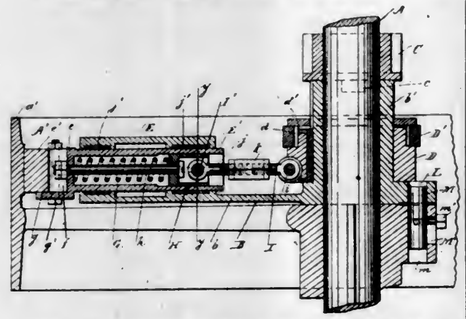
Claim.—1. In a stamp or coin case, the combination, with a shell *a* having a marginal rim or bead *a'*, forming a chamber in the back of said shell, of a ring *b* having an inwardly-projecting edge *b'*, said ring being held in said shell in contact with said rim or bead *a'*, and a lid or cover pivotally connected with said ring, having a holding-catch adapted to engage in spring-contact with said inwardly-projecting edge *b'* of said ring, substantially as and for the purposes set forth.

2. In a stamp or coin case, the combination, with a shell *a* having a marginal rim or bead *a'*, forming a chamber in the back of said shell, a covering of a plastic material, bearing an inscription, design, emblem, or the like, over said shell and having its edges turned down over said marginal rim, a ring in said shell placed over the edge of said covering to secure the latter in position, and a lid or cover pivotally connected with said ring, having a holding-catch adapted to engage in spring-contact with said ring, substantially as and for the purposes set forth.

3. In a stamp or coin case, the combination, with a shell *a* having a marginal rim or bead *a'*, forming a chamber in the back of said shell, a covering of a plastic material, bearing an inscription, design, emblem, or the like, over said shell and having its edges turned down over said marginal rim, a ring in said shell placed over the edge of said covering to secure the latter in position, said ring having an inwardly-projecting edge *b'*, and a lid or cover pivotally connected with said ring, having a holding-catch adapted to engage in spring-contact with said inwardly-projecting edge *b'* of said ring, substantially as and for the purposes set forth.

4. The herein-described stamp or coin case, consisting, essentially, of a convex shell *a* having a marginal rim or bead *a'*, a ring *b* secured in said shell in contact with said rim or bead *a'*, said ring having an inwardly-extending edge *b'* provided with one or more openings therein, and a lid or cover *d* having one or more hinge portions operatively secured in said opening or openings in the ring *b*, and a holding-catch d^3 on said lid or cover, adapted to engage in spring-contact with the edge *b'* of said ring *b*, substantially as and for the purposes set forth.

572,238. FRICTION-CLUTCH. GUSTAF A. ANDERSON, Waynesborough, Pa., assignor to the Geiser Manufacturing Company, same place. Filed Apr. 11, 1896. Serial No. 587,066. (No model.)



Claim.—1. The combination, with one friction-clutch member comprising an internal cylinder; of another friction-clutch member comprising a spider provided with guides, a ring slidable on the hub of the spider, hollow plungers slidable in the said guides and carrying blocks for engaging with the internal cylinder, pistons slidable in the said plungers, springs arranged in the plungers, slidable bolts positively connecting the said plungers with their respective pistons and confining the said springs under a prearranged tension, and links pivoted to the said slidable ring and pistons, substantially as set forth.

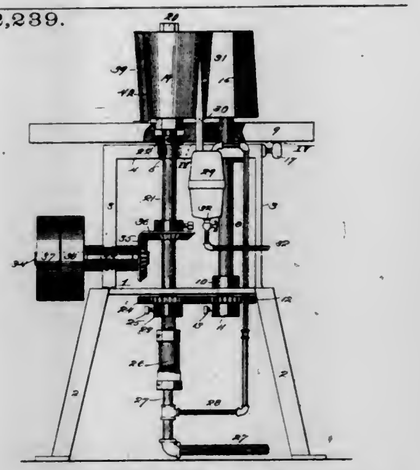
2. The combination, with one friction-clutch member comprising an internal cylinder; of another friction clutch member comprising a spider provided with a guide-cylinder, a ring slidable on the hub of the spider, a hollow plunger slidable in the guide-cylinder and carrying a block for engaging with the internal cylinder, a hollow piston slidable in the said plunger, a spring arranged in the plunger, a slidable bolt positively connecting the plunger and piston and confining the spring under a prearranged tension, a pin passing transversely through the said piston and provided with projecting ends engaging with grooves in the said plunger and guide-cylinder, and a link pivoted on the said pin and pivotally connected with the said slidable ring, substantially as set forth.

3. The combination, with one friction-clutch member comprising an internal cylinder; of another friction-clutch member comprising hollow slidable plungers carrying blocks for engaging with the internal cylinder, pistons slidable in the said plungers, springs arranged between the said plungers and pistons, means for confining the springs under a prearranged minimum tension, a support for the said plungers, and means for moving the plungers radially in the said support, substantially as set forth.

572,239. COLLAR-FOLDING MACHINE. JAMES A. ANDERSON, Kansas City, Mo. Filed May 11, 1896. Serial No. 590,991. (No model.)

Claim.—The combination with a pair of rotating cones inverted with respect to each other, of a discharge-nozzle curved to correspond in degree to the curvature of the neckband of a collar, and adapted to discharge a long and narrow stream of steam, substantially as set forth.

572,239.



572,240. TOBACCO-PIPE. JULIUS ANDERSSON, Chatham, N. J. Filed Dec. 20, 1895. Serial No. 572,809. (No model.)

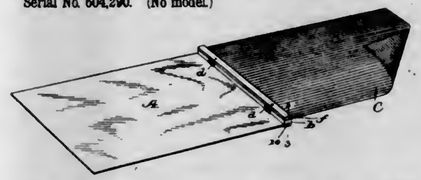


Claim.—1. In a tobacco-pipe, the combination of a bowl and stem, a plurality of partitions in the stem-passage forming a succession of cells, the partitions having alternately-arranged passages in their upper portions to permit the passage of smoke through the upper ends of the cells, whereby liquid carried by the smoke will deposit in and be retained by the cells, substantially as shown and described.

2. In a pipe, the combination of the bowl, the stem, the retainer in the stem, and the transverse partitions within the retainer, said partitions having the alternately-arranged smoke-openings in their upper portions whereby the smoke is directed in a zigzag course through the retainer, substantially as shown and described.

3. The combination of the bowl, the stem, the partitioned retainer insertible within the stem, the compartments formed by the said partitions communicating, block C, at the base of the bowl provided with recesses, the locking strip beveled at its forward end for engaging the beveled depending portion of the pipe, and the mouthpiece secured to the stem proper and the said locking-strip, substantially as shown and described.

572,241. CARBON-SHEET HOLDER FOR MANIFOLDING BOOKS OR PADS. CHARLES S. BINNER, Malden, Mass. Filed Aug. 29, 1896. Serial No. 604,290. (No model.)

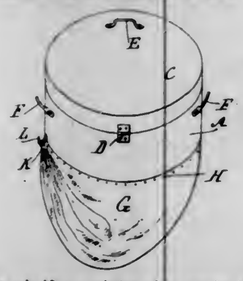


Claim.—1. A carbon-sheet holder comprising a base-plate or tablet adapted to be inserted between the leaves of a book or pad and provided along one edge with a clamping device for holding the edge of the carbon-sheet, said device consisting of a pair of bars hinged together on the inner side and adapted to be opened to receive the edge of the carbon-sheet inserted from the outer side, whereby said sheet is adapted to be folded backward over the top of the upper clamping-bar to bring it into position for use, substantially as described.

2. A carbon-sheet holder comprising a base-plate or tablet adapted to be inserted between the leaves of a book or pad and provided along one edge with a clamping device for holding the edge of the carbon-sheet, said device consisting of a pair of bars hinged together on the inner side and adapted to be opened to receive the edge of the carbon-sheet inserted from the outer side, whereby said sheet

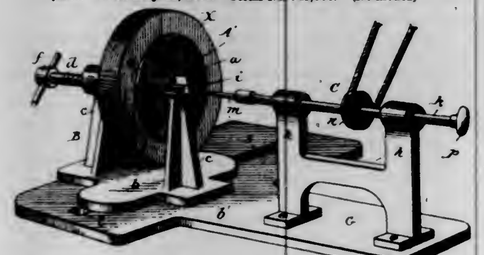
is adapted to be folded backward over the top of the upper clamping-bar to bring it into position for use, and said clamping-bars being provided, one with pins and the other with holes to receive said pins when the upper bar is closed down onto the carbon-sheet, substantially as described.

572,242. ASH-SIFTER. MATHIAS J. BRANDENBERGER, Philadelphia, Pa. Filed Mar. 16, 1896. Serial No. 583,334. (No model.)



Claim.—An ash-sifter consisting of an annular band A, having a screen bottom B, cover C, hinged thereto, said cover having handles E, handles F and a hook L, a flexible sack G, secured at the bottom thereof, said sack G, having its lower end open and a fastening device K, attached to said lower end, which is adapted to engage with hook L, when said lower end is folded up, thereby forming a bag or receptacle for ashes, substantially as shown and described.

572,243. MANUFACTURE OF BUFFER-WHEELS. STEPHEN H. BROOKS, New York, N. Y., assignor to the Foot & Brooks Company, same place. Filed May 11, 1895. Serial No. 549,000. (No model.)



Claim.—1. An apparatus for the manufacture of buff-wheels, consisting of a drilling-machine provided with a tool and means for operating the same, two perforated clamping-plates or templets, and means for clamping them upon a body of disks, and a movable support in the said machine for the said plates and disks, substantially as described.

2. The combination in an apparatus for making buffer-wheels, of perforated plates, and means for carrying the plates toward each other and for pressing them upon intermediate buffer-disks, and means for supporting the disks and plates to permit the same to be revolved together, and a drill, and means for presenting the different perforations of the plate opposite the drill, substantially as described.

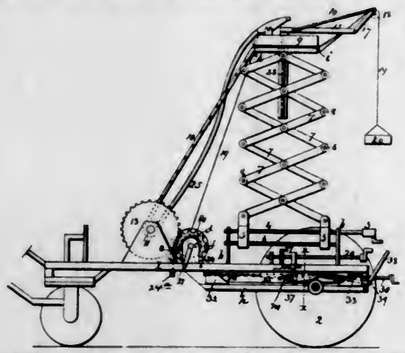
3. The combination of the drill mechanism provided with a perforating-tool *m*, and means for operating the same and a clamp B, provided with bearings for the trunnions, of templets, one of said bearings cut away at one side to permit the tool to pass close to the trunnions, substantially as described.

572,244. FIRE-ESCAPE LADDER. JEAN F. CHAZOTTE, Montreal, Canada. Filed July 9, 1895. Serial No. 555,384. (No model.) Patented in Canada Oct. 3, 1895, No. 50,156.

Claim.—1. In a fire-escape ladder the combination of the wagon-frame 1, the rib 35 thereunder having curved ends, wedges 32 and 33 under said ends and the screw 30 in engagement with said wedges, substantially as described.

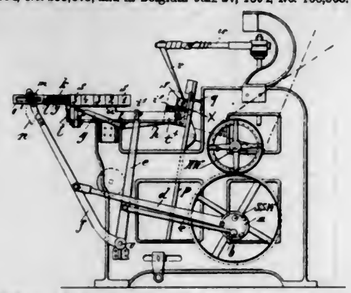
2. The combination of the wagon-frame 1 and a lazy-tongs ladder thereon, wheels and axles supporting said frame, wedges between the bottom of the frame 1 and the rear supporting-axle, the lever 38 pivoted to said frame, the connecting-rod 39 uniting said lever and wedges, substantially as described.

3. The combination of the wagon-frame 1, a lazy-tongs ladder having screw-blocks 5 at the foot thereof, a right and left hand screw passing through said blocks, the platform 9 on top of the ladder, the rack 28 pendent from said platform, the horizontal crank-shaft 29 mounted upon the wagon-frame, and the pinion 27 upon said shaft for engagement with the rack, substantially as described.



4. The combination of the wagon-frame 1, a lazy-tongs ladder thereon, the top platform 9, hose-nozzles secured to said platform, the drums 26 carrying the hose, a bridge revoluble on the platform 9, a ladder upwardly inclined on the end of the bridge, a pulley 18 upon said ladder, a wire rope over said pulley, a crank-shaft retaining one end of said rope, and a friction-strap and a drum upon said shaft, substantially as described.

572,245. CHANGE-BOX MECHANISM FOR POWER-LOOMS. EMIL CLAVIEZ, Chemnitz, Germany, assignor to Kunstweberei, Claviez & Co., Gesellschaft mit Beschrankter Haftung, Leipsic, Germany. Filed Jan. 28, 1896. Serial No. 577,198. (No model.) Patented in Germany Nov. 23, 1893, No. 73,904; in Austria-Hungary Dec. 30, 1893, No. 1,687 and No. 33,600; in England Jan. 10, 1894, No. 553; in France Jan. 20, 1894, No. 235,675, and in Belgium Jan. 27, 1894, No. 106,303.



Claim.—1. In combination, the lay having the raceway provided with an opening from front to rear for the passage of a shuttle-box, the box *t* at the front of the loom for holding a series of shuttles and having an upper plate *u* in line with the bottom of the raceway when the lay is forward, means for transferring the shuttle-boxes from the upper plate *u* to the lay and for pushing out of the raceway the previously-used shuttle-box, the said box *t* having a rearward extension reaching to the rear of the lay when forward to receive the used shuttle-box from the rear of the lay and means for raising the shuttle-boxes from the lower part of the box *t* to the upper plate thereof, substantially as described.

2. In combination, in a loom, the lay having an opening from front to the rear for the passage of the used shuttle-box, means for thrusting the shuttle-boxes into the raceway and the catches f^3 f^4 having the noses v' v^3 for holding the shuttle-boxes on the lay, substantially as described.

3. In combination in a loom, the lay having a depressed seat for receiving the shuttle-boxes and a passage to allow them to enter at the front and be discharged at the rear, the catches for holding the boxes in place in said depressed portion and means for moving the shuttle-boxes from front to the rear, substantially as described.

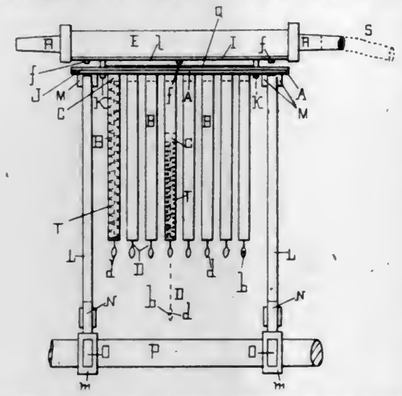
4. In combination, the lay having a passage from front to rear for the shuttle-boxes, the angular pieces *q* on the rear of the lay to direct the discharge of the shuttle-boxes therefrom, the box *t* for holding a series of shuttle-boxes, and having the rear extension to receive the shuttle-boxes from the angular pieces *q*, and means for operating the shuttle-boxes to and from the box *t*, substantially as described.

5. In combination, the lay, the box *t* for holding a series of shuttle-boxes, it having the upper plate *u*, the elevating-table or the pusher *c*, the lever having arms *g*, *h*, for controlling the elevating-table and means for moving the shuttle-boxes from the plate *u* to the raceway, substantially as described.

6. In combination, the lay having the raceway, the box *t* having the upper and lower parts for receiving the shuttle-boxes, the elevating means for the shuttle-boxes and the catches *f'* for holding the elevated shuttle-box in its upper position, substantially as described.

7. In combination, the lay and the shuttle-box, feeding means comprising the rotary pattern-cylinder, the hook *d'* for operating it, a catch controlling said hook, an electromagnet for withdrawing the catch, the circuit and the make-and-break device comprising the contact-points and the traveling ribbon having openings through which said points may contact, substantially as described.

572,246. LOOM. ROBERT CUSCADEN and WILLIAM F. POLESZ, Philadelphia, Pa. Filed Jan. 9, 1896. Serial No. 574,808. (No model.)



Claim.—1. In a loom, the combination with a series of cylinders disposed perpendicularly to the warp-threads, and in line therewith, of a piston in each cylinder, operatively connected directly to one of said warp-threads, means for supplying a fluid under pressure to said cylinders, and controlling devices for said fluid supply, substantially as described.

2. In a loom, the combination with a series of cylinders disposed perpendicularly to the warp-threads, each of said cylinders being in line with one of said threads, of a piston in each cylinder operatively connected with its respective warp-thread, compressed-air-supplying devices for all of said cylinders, and a perforated pattern-card, adapted to be interposed between said air-supplying devices and said cylinders, substantially as described.

3. In a loom, the combination with a series of cylinders disposed perpendicularly to the warp-threads, each of said cylinders being in line with one of said threads, a piston in each cylinder operatively connected with its respective warp-thread, means for supplying compressed air to all of said cylinders, means for controlling the admission of air to each cylinder, and lifting devices for elevating said cylinders, substantially as described.

4. In a loom, the combination with a series of cylinders, disposed perpendicularly to the warp-threads, each cylinder being in line with one of said threads, of a piston in each cylinder, operatively connected with its respective warp-thread, compressed-air-supplying devices for all of said cylinders, a perforated pattern-card, adapted to be interposed between said air-supplying devices and the said cylinders, and lifting devices for elevating said cylinders, substantially as described.

5. In a loom, the combination with a series of cylinders disposed perpendicularly to the warp-threads, each of said cylinders being in line with one of said threads, a piston in each of said cylinders operatively connected with its respective warp-thread, retracting devices for said pistons, compressed-air-supplying devices for all of said cylinders, a perforated pattern-card adapted to be interposed between said air-supplying devices and said cylinders, and lifting devices for elevating said cylinders, substantially as described.

6. In a loom the combination with the warp-thread carriers, of a cylinder, and a piston therein operatively connected with each carrier, a compressed-air chest provided with delivery-apertures adapted to register with said cylinders, and means for separating said cylinders and air-chest to permit the insertion and removal of a pattern-card and a perforated pattern-card, substantially as described.

7. The combination with the tube-sheet provided with a plurality of tubes or cylinders, a piston in each of said cylinders, and a warp-thread carrier connected with each of said pistons, of the compressed-air chest, provided with a series of discharging-apertures adapted to register with said tubes, and means for moving said tube-sheet into and out of engagement with said air-chest and controlling devices for the air supply, substantially as described.

8. The combination with the tube-sheet provided with a plurality of tubes or cylinders, a piston in each of said cylinders, and a warp-thread carrier operatively connected with each of said pistons, of a compressed-air chest provided with apertures adapted to register with said tubes, and having guiding projections engaging guiding-recesses in said tube-sheet, and means for moving said tube-sheet into and out of engagement with the air-chest and controlling devices for the air supply, substantially as described.

9. The combination with the tube-sheet, the tubes or cylinders, pistons in said cylinders and warp-thread carriers operatively connected with said pistons, of the air-chest provided with a compressed-air chamber, and a distributing-chamber, said distributing-chamber having apertures adapted to register with said tubes or cylinders, controlling-valves for admitting air from said compressed-air chamber into said distributing-chamber, said valves having operating parts extending outside of the air-chest and adapted to be engaged by the tube-sheet, and means for moving said tube-sheet into and out of engagement with the air-chest, substantially as described.

10. The combination with the vertically-movable air-chest provided with a series of delivery-apertures and stationary supports for engaging parts connected with said air-chest and limiting its downward movement, the tube-sheet supported normally below said air-chest, leaving a space between them for the insertion and removal of a perforated pattern-card, said tube-sheet being provided with a series of tubes or cylinders adapted to register with the openings in said air-chest, pistons in said cylinders and warp-thread carriers operatively connected with said pistons and means for raising said tube-sheet and air-chest, a perforated pattern-card, and controlling devices for the air supply, substantially as described.

11. The combination with the air chest having a compressed-air chamber and a communicating distributing-chamber provided with a series of discharge-apertures, controlling-valves for the communications between said chambers, having their stems projecting below the bottom of the air-chest, a tube-sheet supported normally below said air-chest, and provided with a plurality of tubes or cylinders adapted to register with said apertures in the air-chest when the parts are brought together and packing-sheets secured to the meeting faces of said parts having apertures therein registering with the said apertures and tubes, substantially as described.

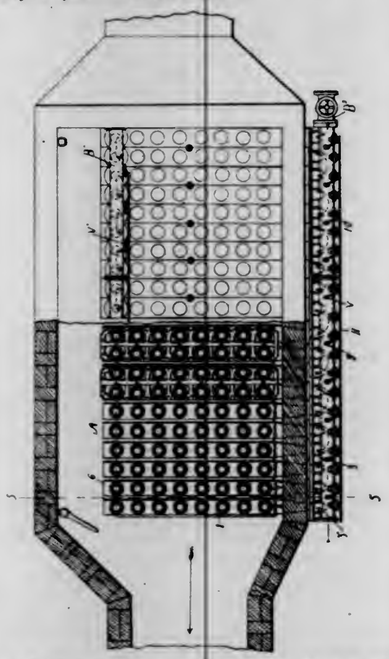
12. The combination with the vertically-movable air-chest provided with a series of discharge-apertures and stationary supports for limiting the downward movement of said air-chest, of the tube-sheet normally supported below the air-chest, provided with a series of tubes or cylinders adapted to register with said apertures, a piston and warp-thread carrier for each tube or cylinder, said air-chest having guiding portions adapted to engage the tube-sheet to prevent lateral movement of one with respect to the other, and lifting devices operatively connected with the tube-sheet for raising it a greater distance than the distance between the tube sheet and air-chest, substantially as described.

572,247. FEED-WATER HEATER. WILLIAM DOWNS, New York, and ARTHUR H. BLACKBURN, Matteawan, N. Y. Filed May 18, 1896. Serial No. 592,021. (No model.)

Claim.—1. In a fuel-economizer or feed-water heater, the combination with the nest of pipes, the feed-pipe 2 connected with one tier thereof, the top pipe 4 communicating with the other end of the pipes of said tier, a top pipe 5' communicating with the top pipe 4 and with one end of the nest of pipes of another tier, a bottom pipe 7 at the opposite end of the pipes of the last-named tier, a blow-off pipe B communicating with the bottom pipe 7, the combined access and blow-off pipe B^3 having communication with all the tiers of pipes at one end, the top delivery header or pipe B' having communication with the opposite ends of all the tiers of pipes, and valves alternately disposed in the feed-pipe and the delivery-pipe, whereby the apparatus may be converted from a non-circulating into a positive circulating apparatus.

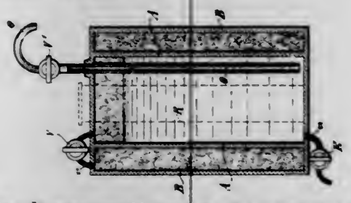
2. In a fuel-economizer or feed-water heater, the combination with the nest of pipes, the feed-pipe 2 connected with one tier thereof, the top pipe 4 communicating with the other end of the pipes of said tier, a top pipe 5' communicating with the top pipe 4 and with one end of the nest of pipes of another tier, a bottom pipe 7 at the opposite end of the pipes of the last-named tier, a blow-off pipe B communicating with the bottom pipe 7, the combined access and blow-off pipe B^3 having communication with all the tiers of pipes at one

end, the top delivery header or pipe B' having communication with the opposite ends of all the tiers of pipes, and valves alternately disposed in the feed-pipe and the delivery-pipe, arms on the stems of the valves, and a valve-rod on the free ends of the arms, whereby the valves may be opened and closed in unison.



3. In a fuel economizer or feed-water heater the combination with the nest of pipes, the feed-pipe 2 connected with one tier thereof, the top pipe 4 communicating with the other end of the pipes of said tier, a top pipe 5' communicating with the top pipe 4 and with one end of the nest of pipes of another tier, a bottom pipe 7 at the opposite end of the pipes of the last-named tier, a blow-off pipe B communicating with the bottom pipe 7, the combined access and blow-off pipe B^3 having communication with all the tiers of pipes at one end, the top delivery header or pipe B' having communication with the opposite ends of all the tiers of pipes, and valves alternately disposed in the feed-pipe and the delivery-pipe and formed with stems, arms in the ends of the stems, and a valve-rod detachably connected to the ends of the arms, whereby some or all of the valves may be operated by the valve-rod.

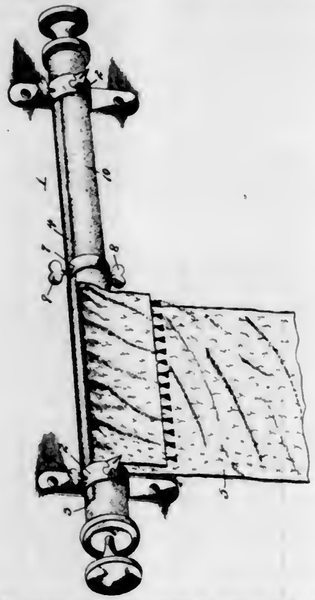
572,248. RECEPTACLE FOR PRESERVING, TRANSPORTING, AND SELLING BEER, &c. HEINRICH DRÄGER and BERNHARD DRÄGER, Lubeck, Germany, assignors, by mesne assignments, to the Deutsche Bierfass-Automat-Gesellschaft, same place. Filed Mar. 19, 1896. Serial No. 583,973. (No model.)



Claim.—In a transportable vessel for the preservation and the sale on draft of beer and other liquids, the combination of an inner chamber A and an outer chamber B containing gas of low pressure, and extending about the inner chamber, with an outer pipe *u* connecting the chambers and the valve V in said connection for opening the pipe *u*, if required, substantially as described.

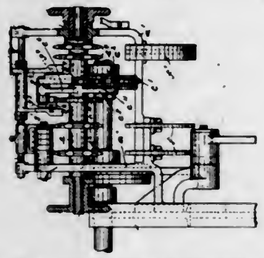
572,249. CURTAIN-POLE. HIRAM ECKERT, Marine City, Mich. Filed June 23, 1896. Serial No. 596,608. (No model.)

Claim.—1. A terminally-supported curtain pole having in its upper side a longitudinal groove, a retaining-strip seated in said groove to secure an overextending portion of a curtain therein, terminal means, as set-screws, for securing the extremities of the strip in the groove, and an intermediate strip-securing device consisting of a looped clamp provided with terminal set-screws bearing respectively against the under side of the pole and the outer surface of the strip, substantially as specified.



2. The combination of brackets, a longitudinally-grooved curtain-pole terminally fitted in said brackets and having a longitudinal groove, a retaining-strip seated in the groove to hold an overextending portion of a curtain in contact with the floor of the groove and extending through said brackets, and securing devices, as thumb-screws, mounted in the brackets and engaging the outer surface of said strip to secure the latter in the groove and prevent longitudinal displacement of the pole, substantially as specified.

572,250. MULTIPLIER FOR LOOMS. ADOLF F. DU FAUR, Newark, N. J., assignor to Robert Atherton, Paterson, N. J. Filed Aug. 5, 1896. Serial No. 601,694. (No model.)



Claim.—1. The combination with the pattern-chain and the levers operated thereby, of a shaft, a sprocket-wheel mounted on the shaft and carrying the pattern-chain, a sprocket wheel loosely mounted on said shaft, an auxiliary chain on said sprocket-wheel, a ratchet-wheel for each of said sprocket-wheels, an oscillating arm loosely mounted on the shaft, two pawls fulcrumed on said oscillating arm and adapted to engage the teeth of their respective ratchet-wheels, means for oscillating said arm, and means for controlling the pawls in such a manner that when one pawl is brought into engagement with the teeth of its ratchet-wheel, the other pawl is brought out of engagement, substantially as and for the purposes described.

2. The combination with the pattern-chain and the levers operated thereby, of a shaft, a sprocket-wheel on said shaft and carrying the pattern chain, a sprocket-wheel loosely mounted on said shaft, an

auxiliary chain on said sprocket-wheel, a ratchet wheel for each of said sprocket-wheels, an oscillating arm loosely mounted on the shaft, two pawls fulcrumed on said oscillatiog arm and adapted to engage the teeth of their respective ratchet-wheels, means for oscillating the arm, a rod arranged above the shaft and parallel thereto, two depending connected arms fulcrumed on said rod, a pin projecting from each of said arms and adapted to engage its respective pawl, and means for operating said depending arms, all said parts substantially as and for the purposes described.

3. The combination with the pattern-chain and the levers operated thereby, of a shaft, a sprocket-wheel on said shaft and carrying the pattern-chain, a sprocket-wheel loosely mounted on said shaft, an auxiliary chain on said sprocket-wheel, a ratchet-wheel for each of said sprocket-wheels, an oscillating arm loosely mounted on the shaft, two pawls fulcrumed on said oscillating arm and adapted to engage the teeth of their respective ratchet-wheels, means for oscillating the arm, a rod arranged above the shaft and parallel thereto, two depending connected arms fulcrumed on said rod, a pin projecting from each of said arms and adapted to engage its respective pawl, an outwardly-projecting ball carried by the pattern-chain and adapted to engage one of said depending arms, and an outwardly-projecting ball carried by the auxiliary chain and adapted to engage the other depending arm, all said parts, substantially as and for the purposes described.

4. The combination with the pattern-chain and the levers operated thereby, of a shaft, a sprocket-wheel on said shaft and carrying said pattern-chain, a sprocket-wheel loosely mounted on said shaft, an auxiliary chain on said sprocket-wheel, a ratchet-wheel for each of said sprocket-wheels, an oscillating arm loosely mounted on the shaft, two pawls fulcrumed on said oscillating arm and adapted to engage the teeth of their respective ratchet-wheels, means for oscillating the arm, a rod arranged above the shaft and parallel thereto, a sleeve loosely arranged on said rod, two arms depending from said sleeve, a pin carried by each of said depending arms and adapted to engage its respective pawl, means carried by the pattern-chain to operate one of said arms, means carried by the auxiliary chain to operate the other arm, and means for holding said arms in operative position, all said parts substantially as and for the purposes described.

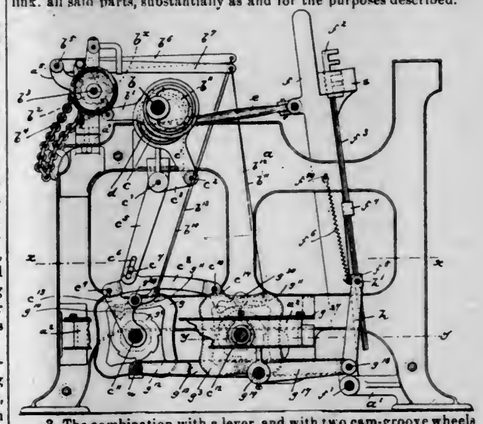
5. The combination with a continuously-revolving shaft, and a shaft parallel therewith, of an eccentric on the revolving shaft, an arm carried by said eccentric, an oscillating arm loosely mounted on the parallel shaft and pivotally connected with the arm of the eccentric, a sprocket-wheel mounted on the parallel shaft, the pattern-chain on said sprocket-wheel, a series of fulcrumed levers operated by said pattern-chain, a sprocket-wheel loosely mounted on the parallel shaft, an auxiliary chain carried by said sprocket-wheel, a ratchet-wheel for each of said sprocket-wheels, two pawls fulcrumed on the oscillating arm and adapted to engage the teeth of their respective ratchet-wheels, and means controlled by the pattern-chain and the auxiliary chain respectively to bring the pawls into and out of engagement with the teeth of said ratchet-wheels, substantially as and for the purposes described.

6. The combination with a continuously-revolving shaft and a shaft parallel therewith, of an eccentric on the revolving shaft, an arm carried by said eccentric, an oscillating arm loosely mounted on the parallel shaft and pivotally connected with the arm of the eccentric, a sprocket-wheel on the parallel shaft, a pattern-chain carried thereby, a series of fulcrumed levers operated by said pattern-chain, a sprocket-wheel loosely mounted on the parallel shaft, an auxiliary chain on said sprocket-wheel, a ratchet-wheel connected with the pattern-chain-carrying sprocket-wheel, a ratchet-wheel, having its teeth cut in opposite direction, connected with the auxiliary-chain-carrying sprocket-wheel, a pawl for each of said ratchet-wheels fulcrumed on the oscillating arm, a rod above the parallel shaft, two depending connected arms fulcrumed on said rod, a pin carried by each of said depending arms and adapted to engage the pawls, and means carried by the pattern-chain for operating one of said depending arms, and means carried by the auxiliary chain for operating the other depending arm, all said parts, substantially as and for the purposes described.

572,251. BOX-LOOM. ADOLF F. DU FAUR and ALFRED GARTNER, Newark, N. J., assignors to Robert Atherton, Paterson, N. J. Filed Aug. 5, 1896. Serial No. 601,697. (No model.)

Claim.—1. The combination with a lever, and with two cam-groove wheels controlling the same, of a ratchet-wheel connected with each of said cam-groove wheels, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said fulcrumed arms and adapted to engage the teeth of its respective ratchet-wheel, and means for oscillating said fulcrumed arms, all said parts, substantially as and for the purposes described.

2. The combination with a lever, and with two cam-groove wheels controlling the same, of a ratchet-wheel connected with each of said cam-groove wheels, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said fulcrumed arms and adapted to engage the teeth of its respective ratchet-wheel, a link pivotally connecting the said fulcrumed arms, and means for oscillating said link, all said parts, substantially as and for the purposes described.



3. The combination with a lever, and with two cam-groove wheels controlling the same, of a ratchet-wheel connected with each of said cam groove wheels, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said fulcrumed arms and adapted to engage the teeth of its respective ratchet-wheel, a link pivotally connecting the said fulcrumed arms, a fulcrumed angle-lever pivotally and self-adjustably connected with one arm to the said link, and means for oscillating the other arm of said angle-lever, all said parts, substantially as and for the purposes described.

4. The combination with a lever, and with two cam-groove wheels controlling the same, of a ratchet-wheel connected with each of said cam-groove wheels, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said fulcrumed arms and adapted to engage the teeth of its respective ratchet-wheel, means for controlling said pawls, and means for oscillating the said arms, all said parts, substantially as and for the purposes described.

5. The combination with a lever, and with two cam-groove wheels controlling the same, of a ratchet-wheel connected with each of said cam-groove wheels, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said fulcrumed arms and adapted to engage the teeth of its respective ratchet-wheel, means for controlling said pawls, a link pivotally connecting the said fulcrumed arms, and means for oscillating said link, all said parts, substantially as and for the purposes described.

6. The combination with the main driving-shaft, of an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam shafts arranged parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, the shuttle-box lifting-lever operated by said cam-groove wheels, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each of said cam-shafts, a pawl pivotally secured on each of said arms and adapted to engage the teeth of its respective ratchet-wheel, a link pivotally connecting the said arms, and connected with and operated by the oscillating angle-lever, all said parts, substantially as and for the purposes described.

7. The combination with the main driving-shaft, of an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam-shafts arranged parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, the shuttle-box lifting-lever operated by said cam-groove wheels, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each of said cam-shafts, a pawl pivotally secured on each of said arms and adapted to engage the teeth of its respective ratchet-wheel, means for controlling the pawls, a link pivotally connecting the said arms, and connected with and operated by the oscillating angle-lever, all said parts, substantially as and for the purposes described.

8. The combination with the main driving-shaft, of an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam-shafts parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, the shuttle-box lifting lever operated by said cam-groove wheels, means operated from the oscillating angle-lever to intermittingly rotate said cam-groove wheels, and a spring-controlled brake wheel connected with each cam-groove wheel, all said parts, substantially as and for the purposes described.

9. The combination with the main driving-shaft, of an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said

eccentric, two cam-shafts parallel with the driving shaft, a cam-groove wheel on each of said cam-shafts, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each cam-shaft, a pawl pivotally secured on each arm and adapted to engage the teeth of its respective ratchet-wheel, a link pivotally connecting said arms, and connected with and operated by said fulcrumed angle-lever, and a spring-controlled brake-wheel for each cam-groove wheel, all said parts, substantially as and for the purposes described.

10. The combination with the main driving-shaft, of an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam-shafts parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each cam-shaft, a pawl pivotally secured on each arm and adapted to engage the teeth of its respective ratchet-wheel, a link pivotally connecting said arms, and connected with and operated by said fulcrumed angle-lever, means for controlling the pawls, and a spring-controlled brake-block for each cam-groove wheel, all said parts, substantially as and for the purposes described.

11. The combination with the shuttle-box lifting-lever and the cam-groove wheels controlling the same, a fulcrumed lever pivotally connected to one end of said lifting-lever, a ratchet-wheel connected with each cam-groove wheel, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said arms and adapted to engage the teeth of its respective ratchet-wheel, and means for oscillating said arms, all said parts, substantially as and for the purposes described.

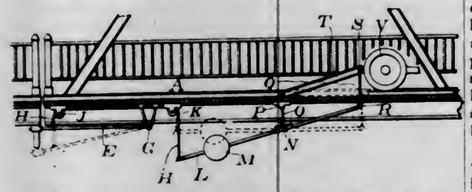
12. The combination with the shuttle-box lifting-lever and the cam-groove wheels controlling the same, a fulcrumed lever pivotally connected to one end of said lifting-lever, a ratchet-wheel connected with each cam-groove wheel, a fulcrumed arm for each of said ratchet-wheels, a pawl pivotally secured to each of said arms and adapted to engage the teeth of its respective ratchet-wheel, means for oscillating said arms, and a spring-controlled brake-wheel for each of the cam-groove wheels, all said parts, substantially as and for the purposes described.

13. The combination with the pattern-chain and the treadle-levers operated thereby, of the main driving-shaft, an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam-shafts parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, the shuttle-box lifting-lever operated by said cam-groove wheels, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each of said cam-shafts, a pawl pivotally secured on each of said arms and adapted to engage with its pawl-shaped end the teeth of its respective ratchet-wheel, and having its projecting end controlled by its respective treadle-lever, and a link pivotally connecting the said arms, and connected with and operated by the fulcrumed angle-lever, all said parts, substantially as and for the purposes described.

14. The combination with the pattern-chain and the treadle-levers operated thereby, of the main driving-shaft, an eccentric on said shaft, a fulcrumed oscillating angle-lever operated from said eccentric, two cam-shafts parallel with the driving-shaft, a cam-groove wheel on each of said cam-shafts, the shuttle-box lifting-lever operated by said cam-groove wheels, a ratchet-wheel connected with each of said cam-groove wheels, an arm loosely mounted on each of said cam-shafts, a pawl pivotally secured on each of said arms and adapted to engage with its pawl-shaped end the teeth of its respective ratchet-wheel, and having its projecting end controlled by its respective treadle-lever, a link pivotally connecting the said arms, and connected with and operated by the fulcrumed angle-lever, and a spring-controlled brake-wheel for each of said cam-groove wheels, all said parts, substantially as and for the purposes described.

572,252. AUTOMATIC CAR-STOPPER FOR DRAWBRIDGES.

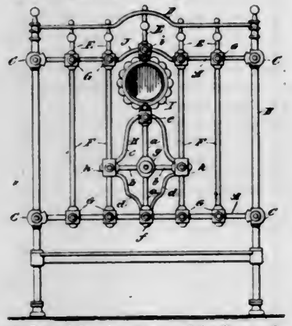
PHILIP C. FLOSTER, Bay City, Mich. Filed Jan. 18, 1896. Serial No. 576,040. (No model.)



Claim.—In an automatic car-stopper for drawbridges, the combination of a draw having a section of railway-track and provided with a suitable segment or inclined plane, a stationary portion of a bridge, a railway-track provided with a pivoted portion, a main lever, L, having a fulcrum and a pivotal connection with the pivoted portion of said track, a weight adapted for attachment to one arm of said main lever, an auxiliary lever having a fulcrum and provided with a roller, F, near one end, means substantially as described whereby the movement of said auxiliary lever may be transmitted to said main lever and weight, as set forth.

572,253. METAL BEDSTEAD.

DAVID FRANK, Brooklyn, N. Y., assignor of one-half to John Trounstine, New York, N. Y. Filed Sept. 2, 1896. Serial No. 604,613. (No model.)



Claim.—1. In and forming a part of the frame of a metal rail or bar bedstead, the boxes at the intersecting points of said bars or rails, and the boxes *i*, *e*, permanently integral with the bed-frame and located at said intersecting points and having the rear integral extensions *k* and outer recesses *j*, combined with the inclosing frame I secured at its edges within said recesses and against said extensions and being substantially flush with the vertical plane of the bed-frame; substantially as shown and described.

2. In and forming a part of the frame of a metal rail or bar bedstead, the boxes at the intersecting points of said bars or rails, and the boxes *i*, *e*, permanently integral with said bed-frame and having the integral rear extensions *k*, the outer recesses *j*, the screws carried by said extensions and extending outwardly, and the ornamental nuts on the outer ends of said screws, combined with the inclosing frame I seated in said recesses and against said rear extensions and through which said screws pass; substantially as shown and described.

3. In and forming a part of the head or foot frame of a metal rail or bar bedstead, the centrally-disposed bar-frame H composed of the vertical bar *a*, horizontal bar *b*, upper and lower curved bars *c*, *c*, and *d*, *d*, and boxes *e*, *f*, *g*, *h*, whereby the meeting parts of said bar-frame H are secured together and to surrounding parts of the bed-frame; substantially as set forth.

572,254. CAR-HEATING APPARATUS.

EDWARD E. GOLD, New York, N. Y. Filed Nov. 18, 1893. Serial No. 491,309. (No model.)

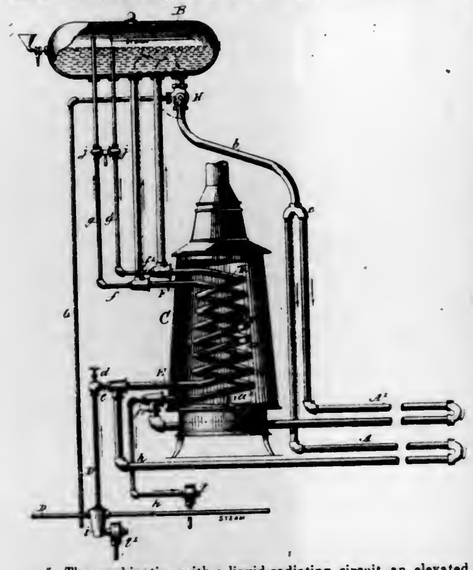
Claim.—1. The combination with a liquid-radiating circuit and an elevated expansion-tank, of two steam-heaters below said tank, a pipe for admitting steam to the first heater, the first heater discharging into the expansion-tank, and an overflow-pipe for admitting steam or hot overflow-water from the expansion-tank to the second heater, whereby the steam is first admitted to the first heater, then to the tank wherein by condensation it maintains the full volume of water in the circulating system, and finally the remaining steam with any excess of water passes to the second heater, where its remaining heat is utilized.

2. The combination with a liquid-radiating circuit and an elevated expansion-tank, of two steam-heaters below said tank, the first arranged to be traversed upwardly by the steam and upwardly by the water being heated, and the second a reverse-flow heater to be traversed downwardly by the steam and upwardly by the water being heated, a pipe admitting steam to the lower part of the first heater, a pipe for discharging from said heater into the expansion-tank, a pipe for admitting steam or hot water from the expansion-tank to the second heater, and a pipe leading from the lower part of the second heater to a trap or discharge, whereby the two heaters, which receive steam at different temperatures are rendered of approximately equal heating efficiency.

3. The combination with two liquid-radiating circuits and an elevated expansion-tank communicating with both, of two steam-heaters in operative contact with the respective circuits, a pipe for admitting steam to the first heater, a pipe for discharging therefrom into the expansion-tank, and a pipe for admitting steam or hot water from the expansion-tank to the second heater.

4. The combination with a liquid-radiating circuit, an elevated expansion-tank, and a local heater or stove for heating said circuit.

of two steam-heaters below said tank, a pipe for admitting steam to the first heater, an ascending pipe for discharging therefrom into the expansion-tank, a descending pipe from said tank for admitting steam or hot water from the expansion-tank to the second heater, and valves for simultaneously closing said ascending and descending pipes to admit of the circuit being heated by said local heater.



5. The combination with a liquid-radiating circuit, an elevated expansion-tank, a heater beneath said tank, of a steam-pipe communicating through said heater with said tank for admitting steam thereto, a valve in said circuit for closing communication through it, and a blow-off pipe leading from said circuit adjacent to said valve, whereby by closing said valve and turning steam into said circuit, the contained air or liquid is forced through said circuit and expelled to said blow-off pipe, and the pocketing of the air or liquid in the circuit is prevented.

6. The combination with a liquid-radiating circuit and expansion-tank, of a steam-pipe communicating with said tank for admitting steam to the tank and circuit, a valve in said circuit adjacent to said tank, and a blow-off pipe leading from said circuit, and arranged to communicate when said valve is closed with the portion of the circuit beneath the valve, whereby on admitting steam to the tank the air or liquid contained in the circuit is forced around through it to said valve and expelled through said blow-off pipe.

572,255. DEVICE FOR ACTUATING BRAKES.

EDWARD S. HALL, New York, N. Y. Filed Feb. 17, 1896. Serial No. 579,673. (No model.)

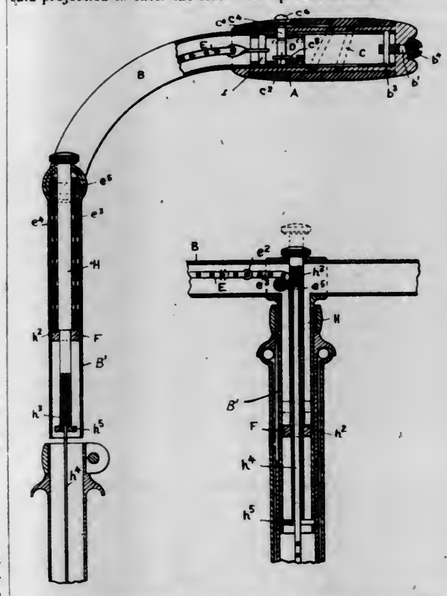
Claim.—1. Brake-operating devices comprising a revoluble handle provided with a screw having an initial quick pitch and a following slow pitch of thread, a movable part actuated by the screw, and connections from said movable part to the brake device.

2. Combined steering and brake-operating devices comprising a steering-bar coupled with the vehicle-wheel, a handle fitted revolubly on the steering-bar and provided with a screw having an initial quick pitch and a following slow pitch of thread, a movable part actuated by the screw, and connections from said movable part to the brake device.

3. Brake-operating devices comprising a tube, a handle fitted revolubly thereon and provided with an interior indented screw having an initial quick pitch and a following slow pitch of thread, a movable part within the tube and having a projection entering the indented screw of the handle, and connections from said movable part to the brake device.

4. Combined steering and brake-operating devices comprising a tubular steering-bar coupled with the vehicle-wheel, a handle fitted revolubly on the steering-bar and provided with an indented screw having an initial quick pitch and a following slow pitch of thread, a movable part within the steering-bar and having a projection entering the indented screw of the handle, and connections from said movable part to the brake device.

5. Brake-operating devices comprising a revoluble handle provided with an interior indented screw and a slot leading from the end of the handle to said screw and providing a lateral shoulder at the beginning of the screw, a movable part having a projection adapted to both the leading-slot and the screw, and connections from said movable part to the brake device, substantially as described, whereby the leading-slot guides the projection of the movable part to the screw and permits turning of the handle only in direction to cause said projection to enter the screw and operate the brake.



6. Brake-operating devices comprising a revoluble handle provided with an interior indented screw and a slot leading from the end of the handle to said indented screw and providing a lateral shoulder at the beginning of the screw permitting turning of the handle only in direction to operate the brake, said slot at its point of junction with the screw having a lateral handle-locking aperture; a movable part having a projecting latch adapted to the leading-slot, the screw and the locking-aperture; a push-button in the handle adapted to the latch for unlocking the handle, and connections from the movable latch-carrying part to the brake device.

7. Brake-operating devices comprising a revoluble handle provided with an interior indented screw and a slot leading from the end of the handle to the screw, said screw having an initial quick pitch and a following slow pitch of thread, a movable part having a projection adapted to both the leading-slot and the variably-pitched screw, said slot providing a lateral shoulder permitting turning of the handle only in direction causing the projection to enter the screw and actuate the brake, and connections from said movable part to the brake device.

8. Brake operating devices comprising a brake, and means actuating it from a handle-bar including an intermediate connection comprising draft devices leading from the brake and its operating means and a telescoping screw-coupling loosely supported at its upper part by the draft devices of the operating means, and connected at its lower part to the brake-actuating draft devices.

9. Brake-operating devices comprising a brake, and means actuating it from a handle-bar including an intermediate connection comprising draft devices leading from the brake and its operating means and a telescoping screw coupling loosely supported at its detachable upper part by the draft devices of the operating means, and connected at its lower part to the brake-actuating draft devices; said upper part of the coupling being visible and thereby indicating the movement of the brake device.

10. Brake-operating devices comprising a brake, and means actuating it from a handle-bar consisting of flexible connections within the handle-bar and the vehicle-frame, a sliding block within the handle-bar stem and an extensible or telescoping coupling within the handle-bar stem and comprising a shouldered upper part resting loosely by its shoulder on the sliding block and a lower part adjustable on said shouldered upper part and coupled to the brake-operating draft device.

11. In brake-operating devices, the combination, with the brake device and its slide or plunger, of a fixed part in the plunger-guide,

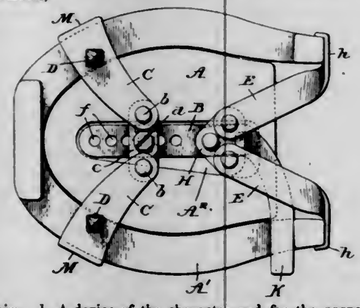
and a flexible connection leading from the brake-operating device and passing in a bight under or around said fixed part and connected to the plunger, substantially as described, whereby as the main draft portion of the flexible connection moves in one direction the plunger and the brake will be moved in the other direction to apply and release the brake.

12. Brake-operating devices comprising operating means on a handle-bar, a flexible connection E, connected to said operating means and having two branches e^3 e^4 entering the handle-bar stem, a sliding block F in the stem and connected to the parts e^3 e^4; a coupling comprising an interiorly-threaded upper tube H having a lower end loosely passing through the block F, and a shoulder h^3 resting on the block and a lower rod h^4 having screw-threads adapted to the threads of the tube H, and a draft connection between the rod h^4 and the brake device, substantially as described.

13. Brake-operating devices comprising operating means on a handle-bar, a flexible connection E connected to said operating means and having two branches e^3 e^4 entering the handle-bar stem, a sliding block F, in the stem and connected to the parts e^3 e^4; a coupling comprising an interiorly-threaded upper tube H having a lower end loosely passing through the block F and a shoulder h^3 resting on the block and a lower rod h^4 having screw-threads adapted to the threads of tube H, a draft connection between rod h^4 and the brake device, and a guiding-detent h^5 for rod h^4 preventing turning of the rod and also preventing its fall should the tube H be uncoupled from it, substantially as described.

14. The combination, with the brake device, of a connected plunger L fitted in the fork-stem K and having slots l^3, a pin l^2 crossing the plunger and entering its slots and fixed to the fork-stem, and a flexible connection as M leading from an operating device, entering the plunger, passing in a bight around the fixed pin l^2 and secured at l^4 to the plunger, substantially as described.

572,256. CREEPER FOR HORSESHOES. LYNN HALL and ADOLPH PETZOLD, Philadelphia, Pa. Filed Jan. 11, 1896. Serial No. 575,078. (No model.)



Claim.—1. A device of the character and for the purpose described, consisting of a frog-plate A recessed at A^2, a retaining device adapted to rest within the recess of the frog-plate, and adjustable means secured to the retaining device and operating to lock the same in position on the shoe; substantially as set forth.

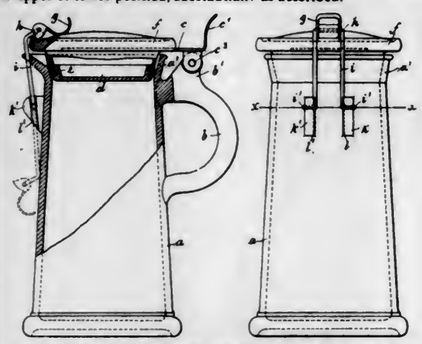
2. In combination, the frog-plate A recessed at A^2, means and retaining-straps C C pivoted thereto and adapted to bind the edges of the shoe; and metallic points D adapted to be screwed into the said straps; substantially as set forth.

3. In a creeper for horseshoes, the longitudinal retaining-bar B adapted to seat within the open portion of the horseshoe, the flanged straps C, C, adjustably pivoted thereto and having creeper projections on their lower faces, the locking-lever pivoted to said bar, the plate carried by said locking-lever, and the rear straps pivoted to said plate and having the flanged ends A adapted to bear against the heel ends of the shoe, substantially as specified.

4. In combination, the longitudinal bar B, cross-bar c, the flanged straps C C pivoted thereto, creeper-points D carried by said straps, and a locking-lever K pivoted to the bar B and adapted by a movement of its free end to cause the flanges of the straps to bind the edges of the shoe and lock the device thereto; substantially as and for the purpose set forth.

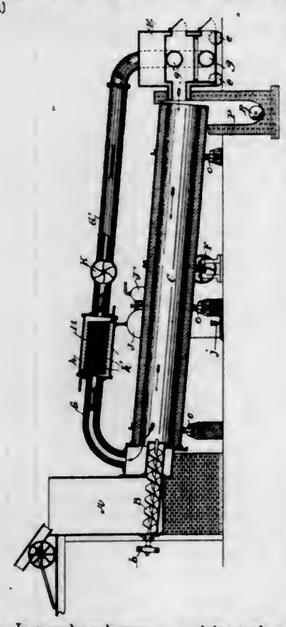
572,257. HERMETICALLY-CLOSING JUG. ALBERT HEINEMANN, Berlin, Germany. Filed Apr. 30, 1896. Serial No. 589,745. (No model.) Patented in England Mar. 18, 1895, No. 5,555.

Claim.—1. In combination, the jug, the cover and a closing-bow having spring arms with laterally-bent ends, said jug having bearing-openings for the said bent ends with grooves adjacent to the said openings for engaging the closing-bow for holding the same in either its upper or lower position, substantially as described.



2. In combination, the jug, the conical cover with its packing, and having a groove in its top, the locking-lever and the closing-bow consisting of the bow-shaped spring-wire, the free ends of the bow being sprung into bearings on the jug and the said locking lever being pivoted on the cross-bar of the bow, substantially as described.

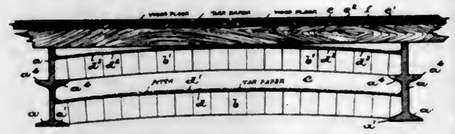
572,258. APPARATUS FOR MAKING FERTILIZERS. PETER HOGAN, Ballston, N. Y. Filed Mar. 7, 1893. Serial No. 465,040. (No model.)



Claim.—In a garbage-burner, a receiving-tank, a revolving incinerating-chamber, a propeller adapted to feed the contents of the tank into said incinerating-chamber, a pipe communicating with the incinerating-chamber at one end and a source of heat at the other, through which pipe smoke and gases from the incinerating-chamber are conducted to the furnace, a condensing-chamber placed within said pipe, a perforated coil carrying water in said condensing-chamber, providing for a spray of water into the chamber, a fan-blower arranged in said pipe, substantially as described and for the purpose set forth.

572,259. FLOOR OR ROOF CONSTRUCTION FOR COLD-STORAGE OR OTHER BUILDINGS. IRVIN G. HOOPER, Newark, N. J. Filed Mar. 19, 1896. Serial No. 583,860. (No model.)

Claim.—1. In a building, the herein-described floor or roof construction, comprising therein, in combination, girders, as *a*, or the like, arches of brick, stone or the like, supported thereon, formed with an air-space between said arches, and an insulating material on said arches, consisting of a layer of tar-paper and a layer of pitch, substantially as and for the purposes set forth.



2. In a building, the herein-described floor or roof construction, comprising therein, in combination, iron girders, as *a*, longitudinally-arranged flanges *a'* on said girders, and longitudinally-arranged angle-irons or projections at a point half-way between the lower and upper surfaces of said girders, a brick, stone or other like arch *b* resting on said projection *a'*, a brick, stone or other like arch *b'* resting on said angle-irons or projections at the middle of each girder, said arches forming an air-space *c* between them, and an insulating material on each arch, substantially as and for the purposes set forth.

3. In a building, the herein described floor or roof construction, comprising therein, in combination, iron girders, as *a*, longitudinally-arranged flanges *a'* on said girders, and longitudinally-arranged angle-irons or projections at a point half-way between the lower and upper surfaces of said girders, a brick, stone or other like arch *b* resting on said projection *a'*, a brick, stone or other like arch *b'* resting on said angle-irons or projections at the middle of each girder, said arches forming an air-space *c* between them, and an insulating material on each arch, consisting of a layer of tar-paper and a layer of pitch, substantially as and for the purposes set forth.

4. In a building, the herein-described floor or roof construction, comprising therein, in combination, iron girders, as *a*, longitudinally-arranged flanges *a'* on said girders, and longitudinally-arranged angle-irons or projections at a point half-way between the lower and upper surfaces of said girders, a brick, stone or other like arch *b* resting on said projection *a'*, a brick, stone or other like arch *b'* resting on said angle-irons or projections at the middle of each girder, said arches forming an open air-space *c* between them, and an insulating material on each arch, wooden beams on said iron girders, floor-boards on said beams, and a layer of tar-paper between said floor-boards, substantially as and for the purposes set forth.

5. In a building, the herein-described floor or roof construction, comprising therein, in combination, iron girders, as *a*, longitudinally-arranged flanges *a'* on said girders, and longitudinally-arranged angle-irons or projections at a point half-way between the lower and upper surfaces of said girders, a brick, stone or other like arch *b* resting on said projections *a'*, a brick, stone or other like arch *b'* resting on said angle-irons or projections at the middle of each girder, said arches forming an open air-space *c* between them, and an insulating material on each arch, wooden beams on said iron girders, floor-boards on said beams, and a layer of tar-paper between said floor-boards, substantially as and for the purposes set forth.

6. In a building, the herein-described floor or roof construction, comprising therein, in combination, iron girders, as *a*, arches of brick, stone or the like, supported by said girders, formed with an air-space between them, a layer of tar-paper and pitch on said arches, a cover, as *h*, over the upper portions of each girder, and pitch arranged under said cover, all substantially as and for the purposes set forth.

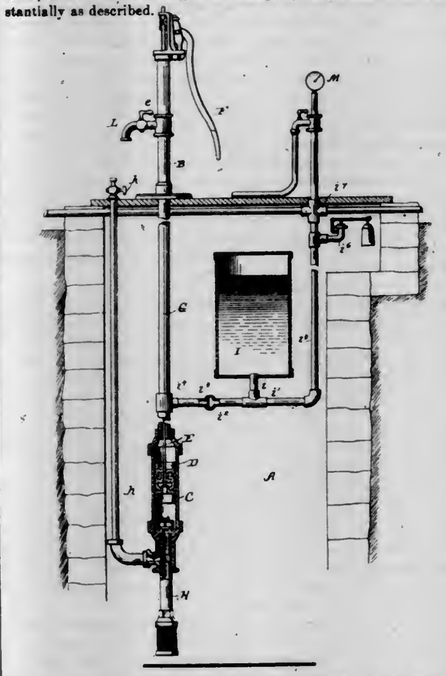
572,260. PUMP. HARRY JONES, Richmond, Ind. Filed Sept. 1, 1896. Serial No. 604,552. (No model.)

Claim.—1. The combination with a pump, a reservoir, means for connecting said reservoir with said pump above the forcing mechanism thereof, means for preventing backflow through such connection, and a discharge-pipe extending from said reservoir, of an air-supply opening below the forcing mechanism of said pump and above water-level, means for closing the same, and means for closing the discharge-opening of said pump, substantially as described.

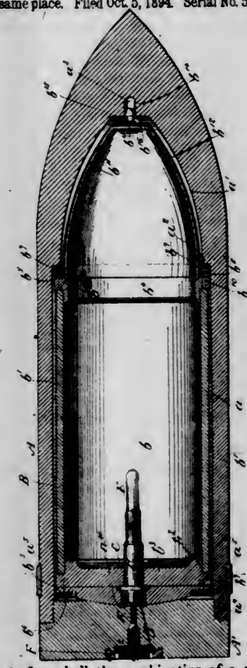
2. The combination with a pump, a cylinder, a reservoir, a pipe connecting said reservoir with said pump above said cylinder, a check-valve therein, and a discharge-pipe for said reservoir, of an air-supply opening below the cylinder of said pump and above water-level, means for closing the same, and means for closing the discharge-opening of said pump, substantially as described.

3. The combination with a pump, a cylinder therein, a reservoir, a pipe connecting said reservoir with said pump above said cylinder, a check-valve therein, and a discharge-pipe for said reservoir, of an air-supply pipe attached to said pump above water-level and below said cylinder, a cock for closing the same, and a cock for closing the discharge-opening of said pump, substantially as described.

4. The combination with a pump, a cylinder therein, a reservoir, a pipe connecting said reservoir with said pump above said cylinder, a check-valve therein, a discharge-pipe for said reservoir, and a safety-valve therein, of an air-supply pipe attached to said pump above water-level and below said cylinder, a cock for closing the same, and a cock for closing the discharge-opening of said pump, substantially as described.



572,261. SHELL FOR HIGH EXPLOSIVES. JOEL G. JUSTIN, Syracuse, N. Y., assignor to the Justin Projectile Company of West Virginia, same place. Filed Oct. 5, 1894. Serial No. 524,998. (No model.)



Claim.—1. In a shell the combination of a casing constituting the body of the shell, a carrier for an explosive charge fitted to the

casing so as to provide for relative rotary motion between the two parts, a detonator arranged in said carrier, and a hammer, which will normally be inoperative, for exploding the detonator, but which will be rendered operative by rotary motion caused by the rifling of a gun.

2. In a shell the combination of a casing, a carrier for an explosive charge fitted to the casing so as to provide for relative rotary motion between the two parts, a detonator arranged in said carrier, a hammer fitted to the carrier for exploding the detonator, and means appurtenant to the casing, which will normally hold the hammer in a position in which it will be incapable of exploding the detonator, but which will release the hammer when the relative rotary motion between the shell and carrier begins.

3. In a shell the combination of a casing, a carrier for an explosive charge fitted to the casing, so as to provide for relative rotary motion between the two parts, a detonator arranged in the said carrier, a hammer fitted to the carrier for exploding the detonator, and a screw-thread forming an appurtenance of the casing, engaging with the hammer and having a pitch the reverse of that of the rifling of the gun in which the shell is to be used.

4. In a shell the combination of a casing, a carrier for an explosive charge, fitted to the casing, so as to provide for relative rotary motion between the two parts, a detonator arranged in said carrier, a hammer fitted to the carrier for exploding the detonator, and a screw fastened to the base of the casing and extending into a screw-threaded recess in the hammer, said screw having a pitch the reverse of the rifling of the gun from which the shell is to be fired.

5. In a shell the combination with a casing having a base block provided with a screw K and a screw g for holding said screw K in place; of an explosive-carrier fitted to the casing so as to provide for relative rotation between the two, and having a hammer H for engaging with the said screw K.

6. In a shell the combination of a casing, a carrier for an explosive charge fitted to the casing so as to provide for relative rotary motion between the two parts, a base-block, a recess in the rear side of said base-block, and a fuse-plate fitting such recess, the said fuse-plate and the said recess being constructed so that the one shall have a tongue and the other a groove for packing, which will be located intermediately of it and the tongue.

7. A fuse-plate for a shell made in two parts, one part having a firing-hole and independent vent-holes, and the other part having holes which communicate with the holes in the first-mentioned part, one of said parts being revoluble relatively to the other, substantially as specified.

8. In a shell the combination of a base-block having a recess and a two-part fuse-plate fitting in said recess, and having an annular groove or recess in the forward side and a number of holes leading from said groove or recess to the rear of said fuse-plate.

9. The combination with a shell having a single passage a^{11}, of a two-part fuse-plate having in its forward side an annular groove or recess communicating with the said passage a^{11} and a bridge or partition crossing said annular groove or recess, one part of said fuse-plate being rotarily adjustable relatively to the shell, so as to locate its bridge or partition at different distances from said passage.

10. The combination with a shell having a single passage a^{11}, of a two-part fuse-plate having in its forward side an annular groove or recess adapted to communicate with the said passage a^{11} and a bridge or partition crossing said annular groove or recess and made of such size as to be capable of closing said passage a^{11}, one part of said fuse-plate being rotarily adjustable relatively to the shell, so that its bridge or partition may be brought behind or to one side of the said passage a^{11}

11. In a shell the combination with a casing having a base-block provided with a passage a^{11} and an annular passage a^{10}, of an explosive-carrier fitted to said casing, to provide for relative rotary movement between said parts, and having a passage c' communicating opposite the passage a^{10} of the casing.

12. In a shell the combination of a casing having an annular groove a^{20} and a relatively movable carrier for an explosive charge, having a circular rib c^{10} extending into said annular groove a^{20}.

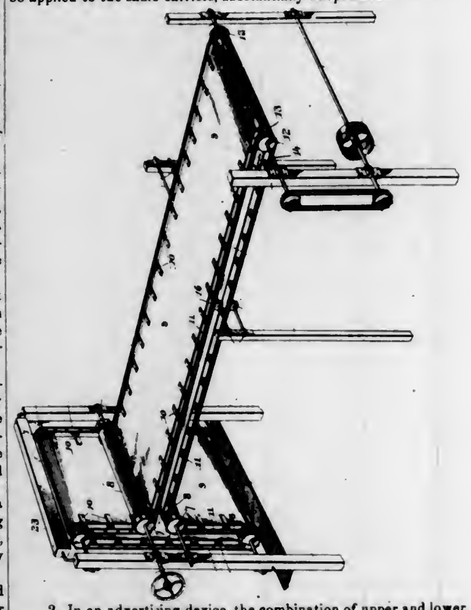
13. In a shell the combination with a casing and an explosive-carrier having a base-block made in two parts, a detonator having a chamber C provided with a flange c which fits between the two parts of the base-block in said carrier.

14. In a shell the combination of a chamber, a hammer, a wire for temporarily holding the hammer in position and a screw for engaging the hammer and detaching it from the wire.

15. In combination with a shell a firing device consisting of a chamber J provided with vents, a chamber I' engaging with said chamber J, a firing-pin I and a wire for temporarily holding the firing-pin.

572,262. ADVERTISING DEVICE. JOSEPH A. KENNEL, Eaton, Ohio, assignor of two-thirds to Henry H. Farr and John M. Gale, same place. Filed June 10, 1896. Serial No. 594,973. (No model.)

Claim.—1. In an advertising device, the combination with upper and lower main guiding devices having spindles carrying terminal chain-wheels, auxiliary guiding devices arranged in rear of the plane of the main guiding devices and also having chain-wheels, carrier-chains traversing said chain-wheels, and means for communicating motion simultaneously to the carrier-chains, of a flexible advertising medium, as an apron, provided at its lateral edges with means for detachably engaging the carriers, and held stretched between the planes thereof, whereby a plurality of interchangeable mediums may be applied to the same carriers, substantially as specified.



2. In an advertising device, the combination of upper and lower guiding devices including spindles carrying terminal chain-wheels and intermediate rollers, intermediate guiding devices corresponding in construction with the upper and lower guiding devices, endless carriers, as chains, traversing said chain-wheels, auxiliary guiding and supporting devices for the portions of the carriers in rear of said intermediate guiding devices, and a flexible advertising medium provided at its lateral edges with means for detachably engaging the carriers and held from sagging between its edges by said rollers, substantially as specified.

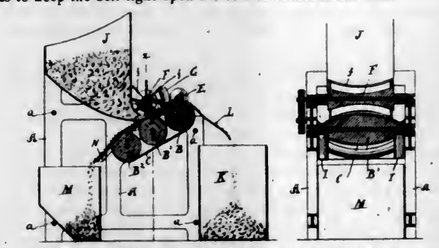
3. In an advertising device, the combination of upper and lower and intermediate guiding devices, auxiliary guiding and supporting devices arranged in rear of the plane of the upper and lower guiding devices, endless carriers traversing said guiding devices, an endless apron attached at its edges to the carriers and adapted to be exposed at the portion between said upper and lower guiding devices, and flexible advertising-strips inscribed with advertising matter detachably secured at their extremities to the carriers, and intermediately supported by the apron, substantially as specified.

4. An advertising device, for displaying the results of sports or games, comprising a display-frame having uprights, movable guiding devices mounted upon the uprights, an endless flexible advertising medium mounted upon said guiding devices and adapted to be adjusted longitudinally to expose different portions of its surface at the front of the display-frame, and an adjustable drum 23 mounted above the uppermost guiding devices and having a plurality of faces adapted to bear announcements to agree with the advertising matter exhibited upon the exposed portion of the medium, substantially as specified.

572,263. COTTON-GIN AND WOOL-BURRING MACHINE. HOSEA W. LIBBEY, Boston, Mass. Filed July 15, 1893. Serial No. 480,607. (No model.)

Claim.—1. In a cotton-gin or wool-burring machine a series of rollers convex on their periphery, an endless belt passing over the same and made to conform to the shape of the rollers, a beater bar roller concave on its periphery and provided with beater-bars, an adjustable curved plate, a convex feed-roller, a feed hopper and suitable receptacles to receive the cleansed cotton and the seeds substantially as set forth.

2. In a cotton-gin or wool-burring machine concave beater-bars and a concave feed-roller in combination with a convex endless belt for conveying the cotton under the beater-bars to the concave feed-roller, the lower or rear roller carrying said belt being adjustable so as to keep the belt tight upon the convex rollers as set forth.



3. In a cotton-gin or wool-burring machine an adjustable curved plate in combination with a convex endless belt, concave beater and concave feed-roller substantially as and for the purposes set forth.

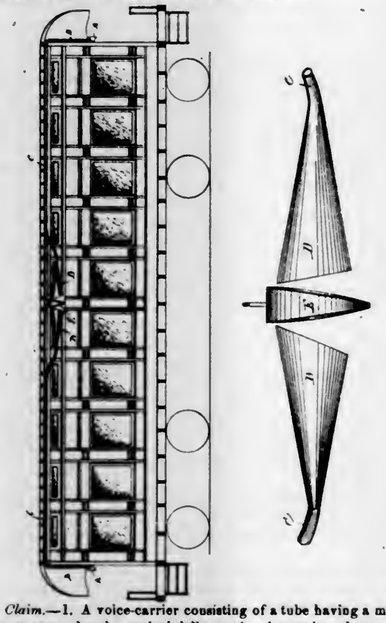
4. In a cotton-gin or wool-burring machine the combination of the convex endless belt, convex rollers for carrying same, a concave feed roller, a curved adjustable plate, a concave beater-roller, troughs or gutters on each side of said endless belt, a feed-hopper and means for operating the machine as set forth.

5. In a cotton-gin or wool-burring machine the combination of frames A, feed-hopper J, mounted above same, convex rollers B, B', B² arranged between said frames, endless belt C, running upon said convex rollers, a concave feed-roller E, arranged over the center of the upper belt-roller, concave beater roller F, at the rear of the feed-roller, and having bars f, a curved adjustable plate G, arranged between the feed-roller and beater and gears Q, R, T, all arranged and operated as set forth.

6. In a cotton-gin or wool-burring machine the combination of a beater, a feed-roller and a convex endless belt, troughs or gutters arranged on each side thereof for carrying off the seed and other deleterious substances separated from the cotton or wool by the beaters substantially as set forth.

7. In combination with a cotton-gin or wool-burring machine a roller, a series of beater-bars secured thereto, and a series of sectional balls corrugated on their under side and pivoted to said beater-bars substantially as set forth.

572,264. SPEAKING-TUBE. HOSEA W. LIBBEY, Boston, Mass. Filed Oct. 17, 1895. Serial No. 565,976. (No model.)

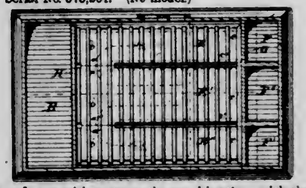


Claim.—1. A voice-carrier consisting of a tube having a mouth-piece at one end and a conical delivery-chamber at its other end its delivery end being cut off on an obtuse angle in combination with a diaphragm arranged in front of the mouth of the cone-chamber and having angular convex surfaces whereby the sound-waves delivered from the said chamber will strike the diaphragm and be directed in a downward course.

2. In combination with a voice-carrier a conical delivery-chamber the delivery end of which is cut off on an obtuse angle and a distributing-disk arranged opposite the enlarged mouth of the cone-chamber having an angular convex surface upon which the sound-waves are delivered and directed in a downward course substantially as set forth.

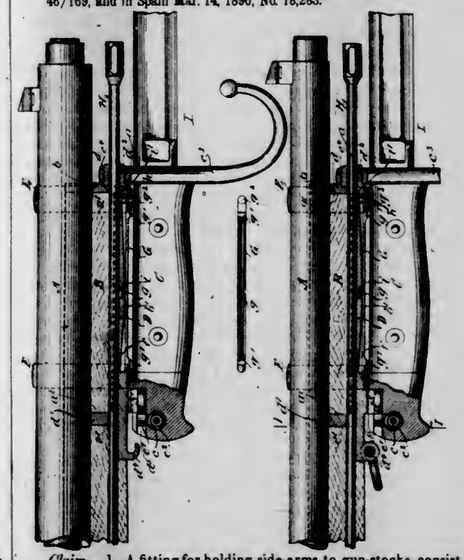
3. In a voice-carrier the combination of a tube a conical delivery-chamber at the inner end thereof and a diaphragm having a convex surface opposed to the delivery end of the said delivery-chamber to receive and deflect the sound-waves from said delivery-chamber, said convex surface of the diaphragm and the delivery end of said chamber respectively inclined on lines forming an acute angle substantially as and for the purposes set forth.

572,265. COOKING STOVE OR RANGE. JOHN H. MAGER, Buffalo, N. Y., assignor of one-half to James T. Noble, same place. Filed Jan. 13, 1896. Serial No. 575,281. (No model.)



Claim.—In a cooking-stove, the combination, with the diving and ascending flues, of the bake-oven, a series of angular tubes removably resting upon the bottom plate of the stove and communicating with the diving and ascending flues by their rear ends, and with each other with their side openings, and a register in the lower part of the side plates communicating with the bake-oven, said angular tubes having their exterior surfaces ribbed or corrugated and their bottom sides provided with feet, as and for the object set forth.

572,266. MEANS FOR AFFIXING SIDE-ARMS TO GUNS. PAUL MAUSER, Oberndorf, Germany. Filed Dec. 2, 1895. Serial No. 570,771. (No model.) Patented in Germany Oct. 30, 1895, No. 86,365; in Belgium Nov 9, 1895, No. 118,488; in France Nov. 11, 1895, No. 251,597; in England Nov. 13, 1895, No. 21,546; in Sweden Nov. 14, 1895, No 6,795; in Norway Nov. 20, 1895, No. 4,648; in Switzerland Dec. 9, 1895, No. 11,331; in Italy Dec. 31, 1895, XL, 134/426; in Austria Jan. 12, 1896, No. 46/169, and in Spain Mar. 14, 1896, No. 18,283.



Claim.—1. A fitting for holding side-arms to gun-stocks, consisting of a metal body D for embracing the under side of a gun-stock,

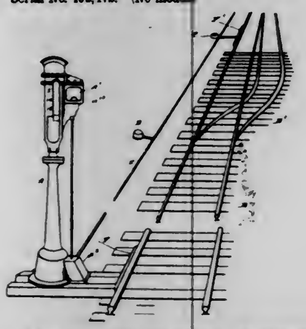
having at its front end a stud d^2 for entering a socket in a side-arm, and having near its rear end a projection for locking said side-arm to it, two straps carried by said fitting for fastening it to the stock and barrel of a gun, and a spring G carried by said fitting and holding both said straps thereon.

2. For connecting side-arms to guns and the like, a fitting D, having a stud d^2 at front and a locking-projection d^3 at rear, a spring-socket f between its ends, straps E and F for fastening it to the stock of a gun, and a spring G holding said straps in place.

3. For fixing side-arms to guns and the like, a fitting D adapted to be fastened to the stock of a gun, and having a body b, a front plate d, a stud d^2 thereon, a stud d^2 near its rear, and a projection d' near its rear.

4. For fixing side-arms to guns and the like, a fitting D having front stud d^2 and rear stud d^2, and a side-arm I having an eye c^4 in its guard and a groove d^5 in its hilt, said eye fitting over said stud and said groove fitting over said projection, and means locking said side-arm on said fitting.

572,267. BLOCK-SIGNAL. BENJAMIN B. MORGAN, Ypsilanti, Mich., assignor to the Morgan Signal Company, same place. Filed Dec. 1, 1893. Serial No. 492,472. (No model.)



Claim.—1. In a block-signal for railways, the combination with a track, a signal-post and case carrying said signal, a time-signal in conjunction with the block-signal and the block-signal post, of transparent receptacles adapted to be filled with colored liquid, a valve adapted to close the outlet of one of said receptacles, means for automatically closing said valve by the passing of a train along the track, means whereby the time-signal is set and the block-signal displayed automatically and simultaneously with the closing of said valve and by the passage of said train, and means for automatically opening said valve whereby the block-signal is withdrawn by said train passing out at the opposite end of the block, substantially as described.

2. In a block-signal for railways, the combination and arrangement of a transparent chamber exposed to view, a colored liquid adapted to be forced therein, means for automatically forcing said liquid therein by the passing of a train upon an adjacent track, an air-pump located at the opposite end of the block, means for automatically actuating the same by the passage of the train out from said block, a communicating pipe connecting said air-pump with means for automatically actuating a discharge-valve, whereby a passage-way is opened leading from said indicating-chamber and the liquid discharged therefrom, substantially as described.

3. In a block-signal for railways, the combination and arrangement of a transparent chamber exposed to view, a colored liquid adapted to be forced therein, means for automatically forcing said liquid therein by the passing of a train upon an adjacent track, an air-pump located at the opposite end of the block, means for automatically actuating the same by the passage of the train out from said block, a communicating pipe connecting said air-pump with means for automatically actuating a discharge-valve, whereby a passage-way is opened leading from said indicating-chamber and the liquid is discharged therefrom, and a relief-valve operating to automatically release the air from the receiving-chamber of said air-pump, whereby the air is continually being forced into the apparatus and discharged therefrom after doing its work, substantially as and for the purpose described.

4. In a block-signal for railways, the combination and arrangement of a transparent chamber exposed to view, a colored liquid adapted to be forced therein, means for automatically forcing said liquid therein by the passing of a train upon an adjacent track, an air-pump located at the opposite end of the block, means for automatically actuating the same by the passage of the train out from said block, a communicating pipe connecting said air-pump with means for automatically actuating a discharge-valve, whereby a passage-way is opened leading from said indicating-chamber and the liquid discharged therefrom, a relief-valve operating to automatically release the air from the receiving-chamber of said air-pump, whereby the air is continually being forced into the apparatus and discharged therefrom after doing its work, and means connected with the track whereby the air is positively discharged from the operating trip-chamber simultaneously with the setting of the signal, substantially as described.

5. In a block-signal for railways, the combination and arrangement of a transparent chamber exposed to view, a colored liquid adapted to be forced therein, means for automatically forcing said liquid therein by the passing of a train upon an adjacent track, an air pump located at the opposite end of the block, means for automatically actuating the same by the passage of the train out from said block, a communicating pipe connecting said air-pump with means for automatically actuating a discharge-valve, whereby a passage-way is opened leading from said indicating-chamber and the liquid discharged therefrom, an intermediate air-pump connected with said communicating pipe and adapted to be operated by hand, whereby air may be forced into said pipe and withdraw said signal in the manner hereinbefore set forth, substantially as described.

6. The combination of a railway-track, a track connection, an air-pump suitably connected thereto and operated thereby, two compression-subchambers connected by communicating pipe E, one subchamber having a movable wall connected to and adapted to operate a signal apparatus, and containing means for discharging the air therefrom after performing work, substantially as described.

7. In an apparatus for actuating a signal, and analogous purposes in connection with railways, the combination of said railway, a track connection adapted to be actuated by the passage of a train, an air-compressing apparatus consisting of two elastic diaphragms g g^2 inclosing a chamber having a centrally-fixed diaphragm H', a check-valve located in an aperture in said fixed diaphragm to permit the rapid passage of air from one side thereof to the other, and means to permit the air to return slowly from the compression-chamber, an air-compression chamber located contiguous thereto, a valve located in the walls of said chamber, and means connecting the opposite diaphragm from that actuated by the track connection with the valve in said compression-chamber in such manner that the motion of the diaphragm upon the compression of the air behind it shall open said valve in the compression-chamber, and retain the same open during the time of the slow withdrawal of the air from behind the diaphragm operating said valve, substantially as described.

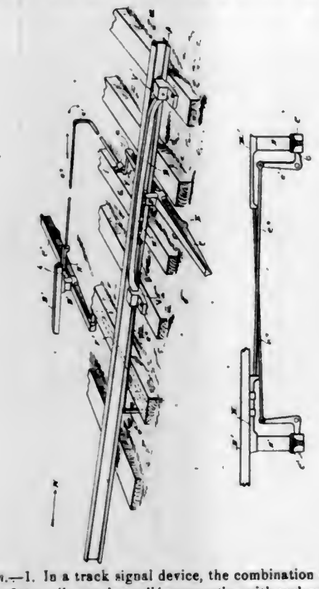
8. In a liquid block signal for railways, the combination of a transparent chamber open to observation upon each side, a colored liquid adapted to be placed within said chamber, means leading from said chamber to the source of supply of said colored liquid whereby the same may be withdrawn, and means controlling the discharge of said colored liquid, consisting of a plate containing two apertures, one aperture connected with said signal-reservoir and opening out into the surface of said plate, the other aperture connecting with a discharge-pipe and also opening into the face of said discharge-plate contiguous to the opening of the first-named aperture, an elastic diaphragm covering both apertures and rigidly secured at its edges to said plate, and means whereby the diaphragm is controlled and held or withdrawn against the pressure of the liquid in the indicating-signal chamber, substantially as described.

9. In a liquid block-signal for railways, the combination of a transparent chamber open to observation upon each side, a colored liquid adapted to be placed within said chamber, means leading from said chamber to the source of supply of said colored liquid whereby the same may be withdrawn, and means controlling the discharge of said colored liquid, consisting of a plate containing two apertures, one aperture connected with said signal reservoir and opening out into the surface of said plate, the other aperture connecting with the discharge-pipe and also opening into the face of said discharge-plate contiguous to the opening of the first-named aperture, an elastic diaphragm covering both apertures and rigidly secured at its edges to said plate, means whereby the diaphragm is controlled and held or withdrawn against the pressure of the liquid in the indicating-signal chamber, consisting of a swinging block impinging against the outer face of said elastic diaphragm and controlled by a toggle-joint, and means for operating said toggle-joint upon the passage of a moving train, substantially as described.

10. In a liquid block-signal for railways, the combination with a transparent indicating-chamber, of a central opaque diaphragm located therein, the lower edge of said diaphragm being cut out to permit the transmission of light and the free communication between the liquid upon either side thereof, substantially as described.

11. In an apparatus for actuating a signal, and analogous purposes in connection with railways, the combination of a railway, a track connection adapted to be actuated by the passage of a train, an apparatus consisting of two elastic diaphragms inclosing a chamber having an interposed centrally-fixed diaphragm, a check-valve located in an aperture in said fixed diaphragm to permit the passage of air from one side thereof to the other, and means to permit the air to return slowly from the compression side of said diaphragm to the initial-pressure side, substantially as described.

572,268. RAILWAY SIGNAL APPARATUS. BENJAMIN B. MORGAN, Ypsilanti, Mich., assignor to the Morgan Signal Company, same place. Filed May 15, 1894. Serial No. 511,313. (No model.)



Claim.—1. In a track signal device, the combination of a track consisting of two rails, a spring-rail in connection with each rail thereof, not adjacent but successive one to the other, block connections adapted to be operated by the spring-rails respectively, connections between the blocks arranged in such manner that the depression of one block on one side operates to withdraw the other block from operative contact with the opposite spring-rail, and means to hold it in an inoperative position, substantially as described.

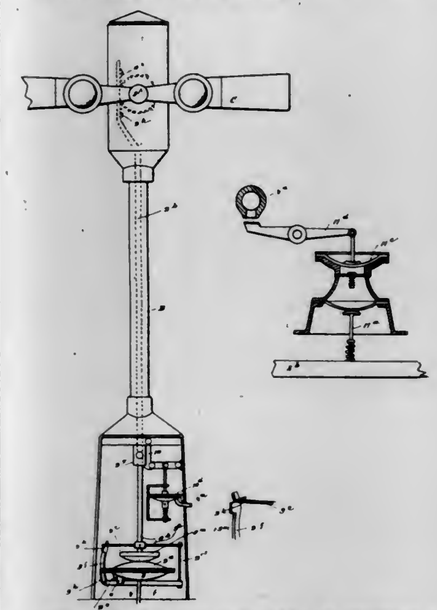
2. In a combined track and signal device for railways, the combination of a single track and a rail connection with each rail thereof, the two rail connections not being adjacent but successive in their relative positions, means whereby the operation by a passing train of one rail connection disconnects the other rail connection, whereby the same is prevented from operating, a pneumatic retarding device adapted to hold said latter connections in an inoperative position, and means whereby the length of time it is so held is controlled, substantially as described.

3. In a signal device for railways, the combination of a track, a rail connection with each rail thereof, the two connections not being adjacent but successive in their relative positions longitudinal with the track, means whereby the operation by a passing train of the rail connection first reached disconnects the other rail connection and prevents the same from operating, an electric connection consisting of a pneumatic retarding device operated by said track connection and carrying therein electrical contacts adapted to engage fixed electrical contacts in such manner that the electric connections are successively operated by the separate track connections, and also successively disconnected from operating and held in an inoperative position by the retarding device, substantially as described.

4. A combined track and signal connection consisting of the combination of a pneumatic retarding device composed of a lower movable diaphragm carrying thereon an electrical connection, an upper movable diaphragm K^2, means whereby the lower diaphragm is operated by a track connection actuated by a passing train, an interposed fixed diaphragm containing a valved aperture for the quick passage of inclosed air, and a small aperture for the return thereof, substantially as described.

5. In a combined track and signal connection, the combination of a pneumatic retarding device composed of a lower movable diaphragm, an upper movable diaphragm, means whereby the lower diaphragm is operated by a track connection, a fixed diaphragm interposed between the two movable diaphragms containing a valved aperture for a quick passage of inclosed air from below to the upper side of said interposed diaphragm, a small aperture for the slow return of air, and an unyielding connection between the upper and the lower diaphragm compelling a simultaneous movement of the two diaphragms with reference to each other.

572,269. RAILWAY-SIGNAL. BENJAMIN B. MORGAN, Ypsilanti, Mich., assignor to the Morgan Signal Company, same place. Filed Feb. 12, 1896. Serial No. 578,975. (No model.)



Claim.—1. In a pneumatic railway-signal, the combination of a signal and signal-rod, a bellows adapted to actuate the signal-rod, and provided with a valve-stopped vent, a lever adapted to actuate the valve, and means actuated by the signal-rod whereby the valve is opened whenever the rod passes prescribed limits in either direction, substantially as described.

2. In a pneumatic signal for railways, in combination with the signal and the rod, a catch adapted to engage with and sustain the same, a link adapted to actuate the catch, and a pneumatic bellows adapted to actuate the link, substantially as described.

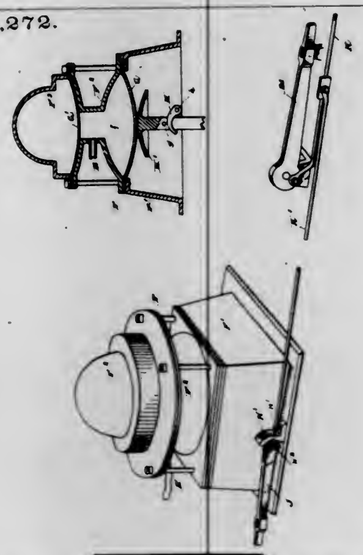
3 In a pneumatic signal for railways, the combination of a train-actuated lever, an actuating-station and a signal-station, both provided with bellows, means of communication between the two bellows, a catch adapted to engage with and sustain the signal, a link adapted to actuate the catch, and a pneumatic bellows adapted to actuate the link, substantially as set forth.

4. In a pneumatic railway-signal, the combination of a signal and signal-rod, bellows adapted to operate the signal-rod, and provided with a valve-stopped vent, a lever adapted to actuate the valve, and means actuated by the signal-rod whereby the valve is opened whenever the rod passes prescribed limits, and means for retaining the valve open until the signal-rod has returned to another prescribed limit, and thence closing said valve, thereby cushioning the further passage of said signal-rod, substantially as described.

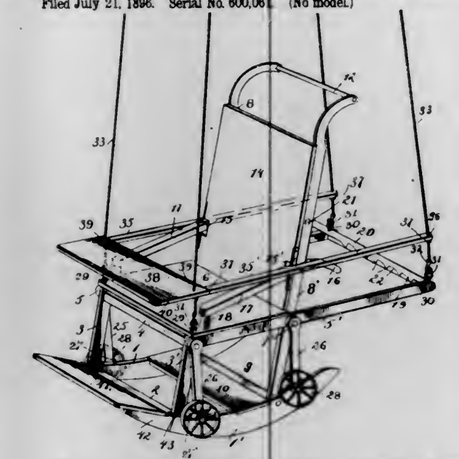
572,270. INTERLOCKING SWITCH-SIGNAL. BENJAMIN B. MORGAN, Ypsilanti, Mich., assignor to the Morgan Signal Company, same place. Filed May 23, 1896. Serial No. 592,757. (No model.)

Claim.—In a combined switch and signal apparatus, the combination of a switch, a rod and lever operating the same, an extension-rod connecting with the rod operating said switch, means consisting of a rotating lever, an intermediate mechanism for operating a semaphore, a casing surrounding the journal of said lever, the perforation therein forming a bearing for an extension-rod, and locking means upon said lever whereby the extension-rod is adapted to lock the lever in a predetermined position when the switch is thrown, substantially as described.

572,272.



572,271. NURSERY-CHAIR. NELS K. NELSEN, Rockland, Idaho. Filed July 21, 1896. Serial No. 600,061. (No model.)

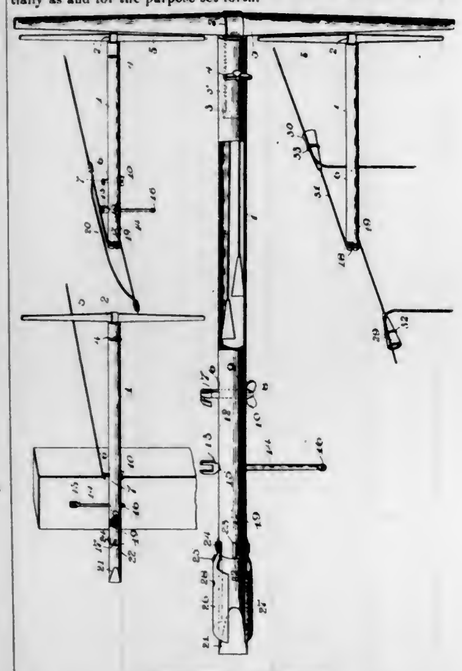


Claim.—A chair comprising the rockers 1 1' having the rigid brace 10, the pivoted braces 2 and 9, the former being provided with the pivoted legs 3 3' and the latter with the back rails 8 8', the side rails 5 5' secured to the outer ends of the braces 2 and 9, and having their rear ends connected by a cross-bar 19, in combination with the brace 21 secured between the said back rails, and the levers 20 23 hinged to said bar 19, the lever 20 being provided with a series of ratchet-shaped teeth 22, and the lever 23 with a hook 24, said teeth and hook being adapted to engage the cross-bar 19 to rigidly secure the back of the chair in an inclined position, substantially as shown and described.

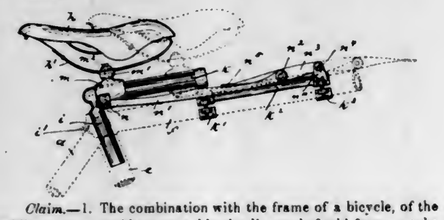
572,272. WIRE-FENCE TOOL. LEWIS W. ORTON, Bellevue, Tex. Filed July 18, 1896. Serial No. 599,384. (No model.)

Claim.—1. In a wire-fence tool, the sleeve or pipe 1, one end of which is provided with a detachable clamp in which is secured the transverse handle 5, and provided with the rectangular orifice 6, in which to removably secure the reversible claw 7, the orifices 15, in which to secure the wrench 13 having elongated handle; its end 19 formed with longitudinal slots 17 and 18, adapted to operate the wire cable 31 and the rings and cones; the pipe adapted to carry also the chisel-bit 21, and the shovel-blades 26 and 27 to be removably secured in said end 19 by a bolt 24, substantially as and for the purpose set forth.

2. The pipe 1, provided with the transverse handle 5, and having its opposite end 19 formed with longitudinal slots 17 and 18, in combination with the flexible wire cable 31, having loose solid rings 32 and 33, and the cones 29 and 30 secured to its opposite ends, substantially as and for the purpose set forth.



572,273. SLIDING SADDLE-SUPPORT FOR BICYCLES. OSCAR PETERSON, Paterson, N. J. Filed May 21, 1896. Serial No. 592,434. (No model.)



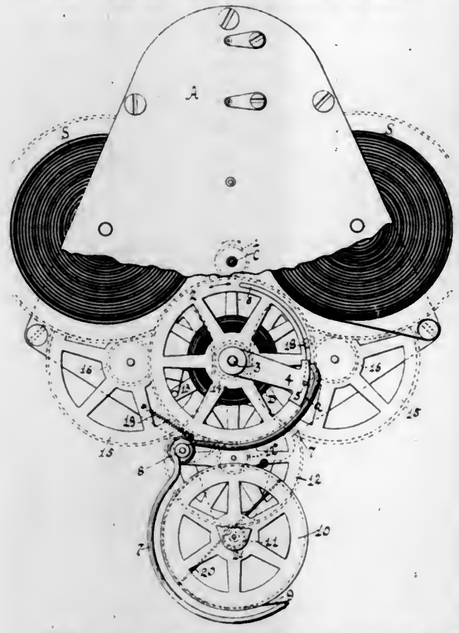
Claim.—1. The combination with the frame of a bicycle, of the saddle-post, removably arranged in the diagonal of said frame, a tube or bar projecting from said saddle-post, a clip connecting the forward portion of said tube or bar with the top tube of the frame, a sleeve on said tube or bar and adapted to slide thereon, the saddle carried by said sleeve, a lever fulcrumed on the top tube and in front of the clip, and an arm pivotally secured at one end to the sliding sleeve and at its other end to said lever, all said parts, substantially as and for the purposes described.

2. The combination with the frame of a bicycle, of the saddle-post removably arranged in the diagonal of said frame, a tube or bar projecting from said saddle-post, a clip removably arranged on the top tube of the frame and supporting the front portion of said tube or bar, a sleeve on said tube or bar and adapted to slide thereon, the saddle carried by said sleeve, a clip removably secured on the top tube and in front of the bar-supporting clip, a brace connecting said clips, a lever fulcrumed on the front clip, and an arm pivotally secured at one end to the said lever and at its other end to the sliding sleeve, all said parts substantially as and for the purposes described.

3. The combination with the saddle-post, of a tube or bar projecting from the upper portion of said post, a sleeve on said tube or bar and adapted to slide thereon, the saddle carried by said sleeve, a brace secured to the forward portion of and substantially parallel with said tube or bar, a clip on the forward end of said brace, a lever fulcrumed on said clip, and an arm pivotally secured at one end to the sliding sleeve and at its other end to the said lever, all said parts, substantially as and for the purposes described.

4. The combination with the frame of a bicycle, of a tube or bar removably arranged on the top tube of said frame and substantially parallel therewith, a sleeve on said tube or bar and adapted to slide thereon, the saddle carried by said sleeve, a lever fulcrumed on the top tube, an arm pivotally secured at one end to the sliding sleeve and at its other end to about the center of said lever, and a flattened head or enlargement on the free end of said lever and adapted to engage the said arm and the top tube respectively, all said parts, substantially as and for the purposes described.

572,274. SELF-WINDING CLOCK. HENRY S. PRENTISS, Elizabeth, N. J., assignor to the Prentiss Clock Improvement Company, of New Jersey. Filed Jan. 7, 1895. Serial No. 534,018. (No model.)



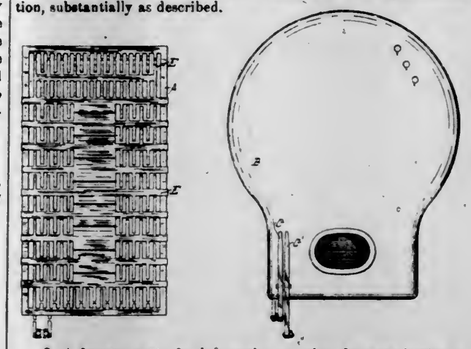
Claim.—1. A mechanical self-winding clock comprising in its structure a driving-spring, a winding spring for winding the driving-spring, a great wheel mounted loosely on its arbor, a detent restraining the motion of the winding-spring, an arm 4 engaged by the great wheel and adapted to engage with the detent, a gear arranged in line with the great wheel and provided with a pin adapted to engage arm 4, and a connection between said gear and the winding-spring, substantially as described.

2. A mechanical self-winding clock comprising in its structure a driving-spring having one terminal connected to the great wheel and its other terminal to a gear arranged to turn about an axis in line with that of the great wheel, a brake lever and wheel restraining the motion of the winding-spring, an arm provided with a pin extending through a slot in the great wheel, a pin on the gear adapted to engage the pin on the great wheel for throwing the arm out of contact with the brake-lever, and an operative connection between the gear and the winding-spring, substantially as described.

3. A mechanical self-winding clock comprising in its structure two winding-springs having a common winding-arbor connected thereto by a train of gears, a great wheel and gear mounted on said winding-arbor in the manner specified, a driving-spring located between said great wheel and gear and connected to the same, means, substantially as described for restraining the winding-springs, and a release actuated by the great wheel for freeing the winding-springs at predetermined intervals; all embodied in said clock movement, substantially as described.

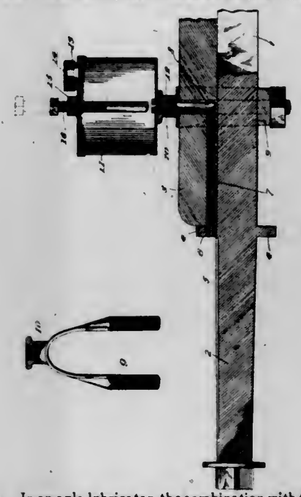
572,275. FURNACE-GRATE. CHARLES H. RADKE, Kaukauna, Wis. Filed June 21, 1895. Serial No. 553,548. (No model.)

Claim.—1. A furnace-grate for locomotive or other furnaces having a strong draft adapted to maintain combustion in a shallow body of fuel, consisting in the combination of a central closed surface, adapted to remain uncovered by fuel, and surrounding open grating adapted to support a shallow body of fuel in a state of rapid combustion, substantially as described.



2. A furnace-grate for locomotive or other furnaces having a strong draft adapted to maintain combustion in a shallow body of fuel, consisting in the combination with the supporting-frame, of a series of open grate-bars, each provided with a closed or solid center F of sufficient width to substantially close the space between it and the corresponding portions of adjacent grate-bars substantially as described.

572,276. AXLE-LUBRICATOR. JOHN REICHENBACH, Egg Harbor City, N. J. Filed Nov. 1, 1895. Serial No. 567,593. (No model.)

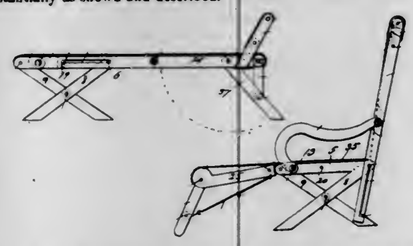


Claim.—In an axle-lubricator, the combination with the axle having a perforated spindle-collar, of a bolster provided with a longitudinal groove and a vertical opening connected therewith, an oil-tube inserted in said groove and opening, a clip surrounding said axle and bolster, said clip having a vertical internally-threaded extension, an oil-cup having a central exteriorly-threaded extension to engage the extension on the clip, and a valve-rod centrally located in said cup and adapted to be raised and lowered, in the manner and for the purpose described.

572,277. RECLINING-CHAIR, COT, OR LOUNGE. ROBERT RICHARDS, Brooklyn, N. Y. Filed May 23, 1896. Serial No. 592,744. (No model.)

Claim.—1. A chair, comprising side bars, which constitute a part of the seat and which are suitably connected by cross rods or bars, at each end thereof, legs pivotally connected with the opposite ends of said side bars, and crossed, and pivotally connected where crossed, a back consisting of upright side bars, pivot-bars connected with the rear ends of the side bars of the seat, and the legs connected therewith, longitudinal slots formed in the side bars of the back and engaging the pivot-bars, said longitudinal slots being provided at their lower ends with transverse slots which open downwardly, detachable

arms connecting said side bars of the back, and of the seat, and pins secured to the side bars of the seat and adapted to enter said slots, substantially as shown and described.



2. A chair, comprising side bars, which constitute a part of the seat, and which are suitably connected by cross rods or bars, at each end thereof, legs pivotally connected with the opposite ends of said side bars, and crossed, and pivotally connected where crossed, a back consisting of upright side bars, pivot-bars connected with the rear ends of the side bars of the seat, and the legs connected therewith, longitudinal slots, formed in the side bars of the back and engaging the pivot-bars, said longitudinal slots being provided at their lower ends with transverse slots which open downwardly, detachable arms connecting said side bars of the back, and of the seat, and pins secured to the side bars of the seat and adapted to enter said slots, and said chair being also provided with a flexible strip, which constitutes a part of the seat, and which is carried upwardly and passed over a rod or bar at the top of the upright side bars of the back, said rod or bar being provided with a ratchet-wheel, and a pawl which is pivotally connected with one of said upright side bars of the back, and adapted to operate in connection with said ratchet-wheel, substantially as shown and described.

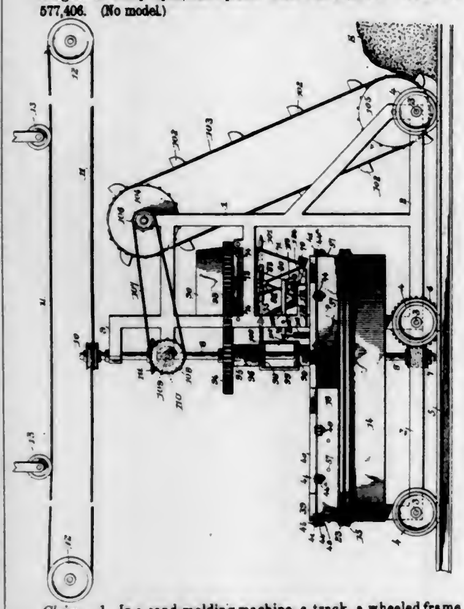
3. A chair, comprising side bars, which constitute a part of the seat, and which are suitably connected by cross rods or bars, at each end thereof, legs pivotally connected with the opposite ends of said side bars, and crossed, and pivotally connected where crossed, a back consisting of upright side bars, pivot-bars connected with the rear ends of the side bars of the seat, and the legs connected therewith, longitudinal slots, formed in the side bars of the back and engaging the pivot-bars, said longitudinal slots being provided at their lower ends with transverse slots which open downwardly, detachable arms connecting said side bars of the back, and of the seat, and pins secured to the side bars of the seat and adapted to enter said slots, and said chair being also provided with a flexible strip, which constitutes a part of the seat, and which is carried upwardly, and passed over a rod or bar at the top of the upright side bars of the back, said rod or bar being provided with a ratchet-wheel, and a pawl which is pivotally connected with one of said upright side bars of the back, and adapted to operate in connection with the ratchet-wheel, and said chair being also provided with a detachable foot-rest, substantially as shown and described.

4. A chair, comprising side bars, which constitute a part of the seat, and which are suitably connected by cross rods or bars, at each end thereof, legs pivotally connected with the opposite ends of said side bars, and crossed, and pivotally connected where crossed, a back consisting of upright side bars, pivot-bars connected with the rear ends of the side bars of the seat, and the legs connected therewith, longitudinal slots, formed in the side bars of the back and engaging the pivot-bars, said longitudinal slots being provided at their lower ends with transverse slots which open downwardly, detachable arms connecting said side bars of the back, and of the seat, and pins secured to the side bars of the seat and adapted to enter said slots, and said chair being also provided with a flexible strip, which constitutes a part of the seat, and which is carried upwardly, and passed over a rod or bar at the top of the upright side bars of the back, said rod or bar being provided with a ratchet-wheel, and a pawl which is pivotally connected with one of said upright side bars of the back, and adapted to operate in connection with the ratchet-wheel, and said chair being also provided with a detachable foot-rest, consisting of suitable side bars detachably connected with the seat of the chair, and which are provided at their outer ends with legs, said legs being connected with the forward end of the foot-rest, substantially as shown and described.

5. The combination with a chair, provided with detachable arms, and a back which is pivotally connected with the seat, and adapted to be lowered into a horizontal position, of a pivoted support connected with the upper end of said back, and adapted to support the same when lowered into a horizontal position, a detachable support for a head-rest, consisting of a suitable frame, which is adapted to be connected with the end of said back, and an upholstered frame, which is adapted to be placed upon the seat of the chair, and the back, when the back is lowered into a horizontal position, and a head-rest which is also adapted to be connected with the detachable support therefor, substantially as shown and described.

6. A chair, provided with a seat, having legs pivotally connected therewith, said legs being crossed and pivotally connected, and a back which is pivotally connected with said seat, and which is adapted to be lowered into a horizontal position, and supported in such position, said back being also provided with a detachable frame for a head-rest, and an upholstered frame, which is adapted to be placed upon said chair, and said back when the latter is lowered into a horizontal position, and an upholstered head-rest, which is adapted to be placed upon said frame, substantially as shown and described.

572,278. MOLDING-MACHINE. THOMAS J. RYAN, Buffalo, N. Y., assignor to Emily Ryan, same place. Filed Jan. 30, 1896. Serial No. 577,406. (No model.)



Claim.—1. In a sand-molding machine, a track, a wheeled frame traveling on the track and having mold-forming devices, one of the axles of said wheeled frame carrying a worm-wheel, a single upright main shaft mounted vertically within the frame and carrying at its lower end a worm meshing with said worm-wheel and at its upper end a horizontally-disposed grooved drive-pulley, an endless cable supported horizontally above the frame and having a wrap around said horizontally-disposed drive-pulley, the direction of travel of the wheeled frame being determined by the direction of the wrap of the cable around the drive-pulley, an inclined endless bucket elevator mounted at the front end of the frame and providing for elevating and delivering the sand to the mold-forming devices, and a drive connection between the elevator and the upright main shaft, substantially as set forth.

2. In a sand-molding machine, a wheeled base, a rotary skeleton mold-table mounted for rotation on the base and essentially comprising inner and outer vertically-disposed polygonal rims forming a central open space for the use of attendants, pattern-plates successively fitted on the separate sections of the table and bridging the space between the rims thereof, and means for simultaneously advancing the wheeled base and rotating the table thereon, substantially as set forth.

3. In a sand-molding machine, a horizontal wheeled base-ring, a rotary skeleton mold-table mounted for rotation on the base-ring and essentially comprising inner and outer vertically-disposed polygonal rims forming an enlarged central open space for the use of attendants, the outer of said rims having a ball-bearing support at its lower edge on the base-ring, and the inner of said rims being provided at its lower edge with a continuous cog-ring and at its inner side with an annular bearing-shoulder, a series of fixed rollers bearing on said shoulder, pattern-plates successively fitted on the separate sections of the mold-table and bridging the space between the rims thereof, suitably-arranged sand-feeding devices, and a shaft carrying a pinion meshing with the cog-ring of the mold-table, substantially as set forth.

4. In a sand-molding machine, a horizontal base-ring, a skeleton polygonal rotary mold-table having vertically-disposed inner and outer rims, separate pattern-plates detachably secured to the upper edges of the said rims and bridging the space therebetween, each of said pattern-plates being provided at opposite points with perforations, separate sets of shouldered adjusting-pins arranged to work in perforations of alternate pattern-plates to engage with the perforated ears of the drag-sections of the flasks, separate sets of tubular or hollow adjusting-pins working in perforations of the pattern-plates alternating with those accommodating the shouldered pins and adapted to receive the studs or pins of the cope-sections of the flasks, means for automatically raising and lowering each set of adjusting-pins for each pattern-plate, and suitably-arranged sand-feeding devices, substantially as set forth.

5. In a sand-molding machine, a horizontal base-ring, a rotary mold-table mounted on said ring, successively-arranged pattern-plates fitted on said table and each provided at its opposite side edges with perforated ears, a separate vertically-movable lifting-plate arranged under each pattern-plate and carrying a set of upwardly-disposed pins fitting in the perforated ears of the pattern-plate and adapted to interlock with the flask-section supported on the pattern-plate, automatically-operated adjusting devices arranged under each lifting plate and brought into play at a certain point in the rotation of the rotary table, and suitably-arranged sand-feeding devices, substantially as set forth.

6. In a sand-molding machine, a horizontal base-ring, a rotary mold-table mounted on said ring, and essentially comprising inner and outer polygonal rims and a pair of cross-bars arranged between and connecting the parallel sections of the two rims, the said cross-bars being provided at a central point with vertically-disposed guide-openings, successively-arranged pattern-plates fitted on the separate sections of the table and each provided at opposite points with perforations, a vertically-movable lifting-plate arranged under each pattern-plate and carrying a set of pins fitting in the perforations of the pattern-plate and adapted to engage with the flask-section supported thereon, depending guide-rods connected at their upper ends to each lifting-plate near its opposite ends and projecting through the guide-openings of said cross bars, springs arranged on said guide-rods below the cross-bars to provide for normally depressing the lifting-plate, automatically-operated adjusting devices arranged under each lifting-plate to provide for the automatic elevation thereof at a certain point in the rotation of the rotary table, and suitably-arranged sand-feeding devices, substantially as set forth.

7. In a sand-molding machine, a horizontal base-ring, a skeleton polygonal rotary mold-table mounted on said ring, pattern-plates successively fitted on the separate sections of the polygonal table and each provided at opposite points with perforations, a spring-retracted lifting plate arranged under each pattern-plate and carrying a set of adjusting-pins fitting in the perforations of said pattern-plate, a pair of oppositely-located rock-shafts mounted within each section of the table below each lifting-plate, oscillating adjusting-levers mounted at an intermediate point of their ends on said oppositely-located rock-shafts and carrying at their upper ends rollers bearing under the lifting-plate directly thereabove, a connecting-rod pivotally connected at one end to the lower extremity of one adjusting-lever and at its opposite end to the upper extremity of the directly opposite adjusting-lever below the same lifting-plate, a fixed strike-arm arranged in the path of the lower ends of the oppositely-connected adjusting-levers so as to be successively engaged by both of said levers as the mold-table rotates, and suitably-arranged sand-feeding devices, substantially as set forth.

8. In a sand-molding machine, a horizontal base-ring, a skeleton polygonal rotary mold-table mounted on said ring, pattern-plates fitted on the separate sections of the table, a spring-retracted lifting-plate arranged under each pattern-plate and carrying a set of adjusting-pins engaging with the flask section supported on the pattern-plate, wear-plates detachably fitted on the under side of each lifting-plate and provided at their opposite ends with depending stop-shoulders, opposite pairs of simultaneously-movable adjusting-levers supported to oscillate under each lifting-plate and carrying at their upper ends rollers bearing on said wear-plates and against the shoulders thereof, a suitably-arranged fixed strike-arm adapted to be engaged by the lower ends of certain of said adjusting-levers to provide for the oscillation of the opposite pairs of such levers in two directions, and suitably-arranged sand-feeding devices, substantially as set forth.

9. In a sand-molding machine, the mold-table, and a sand-feeding hopper supported above the table and comprising separate pairs of pivotally-suspended independently-swinging side and end plates, and a combined lock and adjusting device connecting said side and end plates, substantially as set forth.

10. In a sand-molding machine, the mold-table, and a sand-feeding hopper supported above the table and essentially comprising a pair of opposite adjustable side plates pivotally supported at their upper edges, a pair of opposite adjustable end plates pivotally supported at their upper edges and arranged to work between the opposite ends of the side plates, a pair of corner-plates pivotally mounted on each end plate and bearing against the side plates to close in the corners of the hopper, and a combined lock and adjusting device connecting said side and end plates, substantially as set forth.

11. In a sand molding machine, the mold-table, and a sand-feeding hopper supported above the table and essentially comprising a pair of opposite side plates pivotally supported at their upper edges and provided at their lower edges with offstanding slide-flanges, a pair of opposite end plates pivotally supported at their upper edges and arranged to work between the opposite ends of the side plates, said end plates being provided at their lower edges with outturned guide flanges, a pair of corner-plates pivotally mounted on each end plate at their upper outer corners and having their lower edges working in said outturned guide-flanges, slide-bars arranged between each pair of corner-plates and having bifurcated ends slidably engaging the inner edges of said corner-plates, a pair of adjusting-bars arranged outside of each end plate and provided with lower hooked ends passed under the lower edges of the side plates and slidably engaged with said slide-flanges thereof, said adjusting-bars intersecting each other at one side of said slide-bars, and thumb-screws passed through the intersecting ends of the adjusting-bars and engaging with said slide-bars to lock these several parts together, substantially as set forth.

12. In a sand-molding machine, the mold-table, a sand-feeding hopper supported in a fixed position above said table and provided at its upper end with a horizontal screen, having a scalloped surface and a rotary sifter-box supported to rotate over the upper end of the hopper and provided with an interior series of distributing-wings having their lower edges registering with the scalloped surface of said screen, substantially as set forth.

13. In a sand-molding machine, the mold-table, a sand-feeding hopper supported in a fixed position above the table and having in its upper end transverse cross-bars supporting a short upwardly-disposed bearing-spindle, a horizontal screen fitted on said cross-bars and provided on its upper side with a series of concentric scallops, and a rotary sifter-box provided centrally therein with a socketed bearing-hub receiving said bearing-spindle and with a series of radially-disposed distributing wings or blades having notched lower edges registering with the scallops of said screen, substantially as set forth.

14. In a sand-molding machine, a suitably-supported rotary mold-table having a cog-ring, a sand-feeding hopper supported above said table and provided at its upper end with a horizontal screen, a sifter-box supported to rotate over said screen and provided with an exterior cog-ring, a suitably-driven upright main shaft, a horizontal spur-wheel mounted on said shaft and meshing with the cog-ring of the sifter-box, said spur-wheel carrying at one side a clutch-hub, a bevel gear-wheel mounted on the main shaft below the spur-wheel and provided at its upper side with a clutch-hub, a suitably-mounted short counter-shaft carrying at one end a pinion meshing with the cog-ring of the mold-table and at its other end a beveled gear-wheel meshing with the similar wheel on the main shaft, and a pair of simultaneously-adjusted spaced clutch-collars mounted on the main shaft between the spur and beveled gear wheels, and adapted to respectively engage at different times the clutch-hubs of said spur and beveled gear-wheel, substantially as set forth.

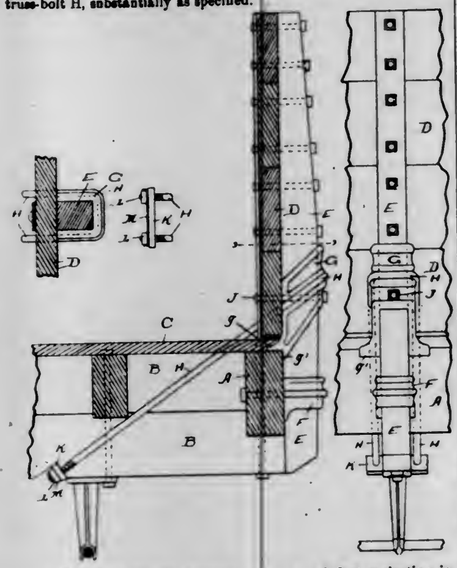
15. In a sand-molding machine, a suitably-supported rotary mold-table, sand-feeding devices, an oscillating walking-beam pivotally supported between its ends at one side of the sand-feeding devices, a bowed spring secured between its ends to one end of the walking-beam and provided with hook extremities, stationary guides arranged below the walking-beam, a rammer-head having a vertical reciprocation between the fixed guides and provided with a shank portion having an eye therein, a flexible strap passed through the eye of the rammer-shank and connected to the hook extremities of the spring, an operating connection with the end of the walking-beam opposite the end carrying the rammer-head, and a pair of angled arms respectively arranged above and below the walking-beam and carrying buffer-cushions disposed adjacent to the beam at one side of its pivotal support, substantially as set forth.

572,279. GONDOLA CAR. WILLIAM S. SCHROEDER, Chicago, Ill., assignor to himself, and Charles A. Schroyer, Oak Park, Ill. Filed May 20, 1896. Serial No. 592,257. (No model.)

Claim.—1. The combination with the side-boards and stake of a coal or gondola car, of a metal pocket G bearing upon the floor or sill of the car, and the U-shaped inclined truss-bolt H, substantially as specified.

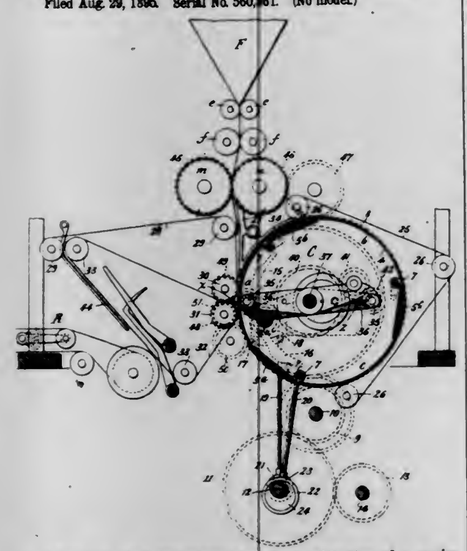
2. The combination with the side-boards and stake of a coal or gondola car, of a metal stake-pocket G having a seat for the truss-bolt and also having an extension whereby it may be sustained by the floor or sill of the car, and the inclined truss-bolt, substantially as specified.

3. The combination with the side-boards and stake of a car of the metal stake-pocket G having the seat for the truss-bolt and also having a foot and heel whereby it may be stayed by the floor or sill of the car, both vertically and horizontally, and an inclined U-shaped truss-bolt H, substantially as specified.



4. The stake having attached to it a metal foot projecting inwardly from the stake and adapted to rest upon the floor or sill and thus sustain the stake vertically, in combination with the floor or sill of the car, and a truss-bolt, substantially as specified.

572,280. FOLDING-MACHINE. WALTER SCOTT, Plainfield, N. J. Filed Aug. 29, 1895. Serial No. 560,861. (No model.)



Claim.—1. In a folding-machine, the combination of a carrier having a number of spaces through which folding-blades may be protruded, folding-blades differing in number from said spaces supported and moving independently of said carrier, and mechanism for giving different times of revolution to said carrier and said blades, substantially as and for the purpose described.

2. In a folding-machine, the combination of a carrier having a number of spaces through which folding-blades may be protruded, folding-blades differing in number from said spaces supported and moving independently of said carrier, on an axis eccentric to that of said carrier, and mechanism for giving different times of revolution to said carrier and said blades, substantially as and for the purpose described.

3. In a folding-machine, the combination of a carrier having a number of spaces through which folding-blades may be protruded, folding-blades differing in number from said spaces supported and moving independently of said carrier, means for rendering one or more of said blades active or inactive, and mechanism for giving different times of revolution to said carrier and said blades, whereby sheets may be folded separately or be collected and folded, substantially as described.

4. In a folding mechanism, the combination of a carrying-cylinder, and a folding-blade independent of said cylinder and revolving within said cylinder on an axis eccentric to that of said cylinder, substantially as described.

5. In a folding and collecting mechanism, the combination of a carrying or collecting cylinder, three spaces through which a folding-blade may protrude, a folding-blade revolving within said cylinder on an axis eccentric to that of said cylinder, and mechanism for causing said blade to make three revolutions while the cylinder makes two, whereby sheets are collected and folded, substantially as and for the purpose described.

6. In a folding mechanism, the combination of a carrying-cylinder, three spaces through which a folding-blade may be protruded, two folding-blades revolving within said cylinder on an axis eccentric to that of said cylinder, and mechanism for causing said blades to make three revolutions to two of the cylinder, whereby sheets are folded, substantially as described.

7. In a folding and collecting mechanism, the combination of a carrying or collecting cylinder, three spaces through which a folding-blade may be protruded, two folding-blades revolving within said cylinders on an axis eccentric to that of said cylinder, mechanism for causing said blades to make three revolutions while the cylinders make two and means for rendering one of said blades active or inactive, whereby sheets may be folded separately or be collected and folded, substantially as described.

8. In a folding-machine, the combination of a cylinder or carrier, fixed bearings on which it rotates, a shaft journaled in said bearings eccentrically thereto and a folding-blade journaled in arms on said shaft, substantially as described.

9. In a folding-machine, the combination of a cylinder or carrier, fixed bearings on which it rotates, a shaft journaled in said bearings eccentrically thereto, folding-blades journaled in arms on said shaft, and means for rendering one or more of said blades operative or inoperative, substantially as described.

10. In a folding-machine, the combination of a cylinder provided with three spaces through which folding-blades may be protruded, fixed bearings on which it rotates, a shaft eccentrically journaled relatively to said bearings, and two folding-blades journaled in arms on said shaft.

11. In a folding-machine, the combination of a carrier or cylinder, a shaft journaled eccentrically thereto, two folding-blades journaled in arms on said shaft, fixed gears, and connections therefrom to said blades, and means for detaching one of said gears and fixing it to the corresponding arm, whereby the corresponding blade may be rendered inoperative, substantially as described.

12. The combination of a revoluble sheet-carrier, a folding or creasing blade within and supported independently of said carrier, and driving mechanism for revolving said carrier and said blade at different times, substantially as described.

572,281. FRUIT-JAR. ALBERT G. SMALLEY, Chelsea, Mass. Filed Feb. 24, 1896. Serial No. 580,596. (No model.)

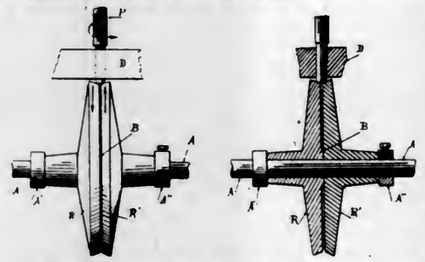


Claim.—1. The improved fruit-jar herein described having a squarish body with rounded vertical and rounded horizontal bottom corners to form a grip at the lower end of the jar; a screw-threaded neck and a washer-supporting surface contiguous to the base of the neck, in combination with an internally-threaded cover-cap comprising a neck-ring the bottom edge of which engages the washer on said shoulder when the imperforate and flangeless cover-cap is turned home, substantially as and for the purpose set forth.

2. In a fruit-jar, the combination of a squarish, round-cornered jar having an exteriorly-threaded neck and a washer-supporting surface at the base of the neck with an elastic ring mounted on said surface and an imperforate screw cover cap the lower edge of which engages said elastic ring to form a gas-tight joint while the opposed portions of the cap and neck, including the end wall of the neck, around the mouth of the jar, have a space between them to form a gas-passing joint, the elastic ring projecting outwardly at all points from the lower edge of the cap, substantially as and for the purpose set forth.

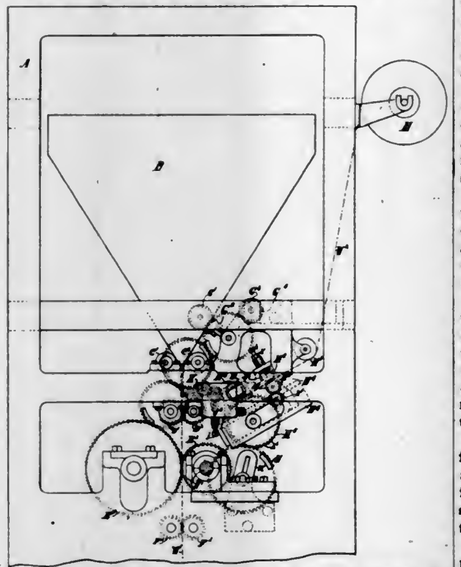
3. A fruit-jar which is polygonal in cross-section at right angles to its longer axis and has rounded vertical corners and rounded horizontal or top and bottom corners, the glass of the sides and corners being uniformly distributed and the corners being of arch-like construction.

572,282. STEP FOR VERTICAL SHAFTS. HYACINTHE TRENTA, Lyons, France. Filed May 19, 1896. Serial No. 592,206. (No model.) Patented in France Apr. 15, 1896, No. 252,839.



Claim.—In combination, the shaft P to be supported, having a semispherical end, the two contiguous disks, the peripheries of which form a V-shaped groove, and the shaft carrying said disks, said semispherical end of the shaft P resting at only two points on the two disks, substantially as described.

572,283. WEB-PRINTING PRESS. GEORGE W. TURNER, Brooklyn, N. Y., assignor, by direct and mesne assignments, to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Sept. 23, 1890. Serial No. 365,899. (No model.)



Claim.—1. In a printing machine, the combination with the delivery mechanism for the main sheets, of feeding and pasting mechanisms constructed and located in position to advance printed sheets of less length than the main sheets and of small size relatively thereto and attach them to the pages of the main sheets over a waste space on the latter, so as to form a part of the printed matter on the pages to which they are respectively attached, substantially as described.

2. In a printing-machine, the combination with the delivery mechanism for the main sheets, of feeding, severing, and pasting mechanisms constructed and located in position to sever from a narrow printed web sheets of less length than the main sheets and of small size relatively thereto and attach them to the pages of the main sheets over a waste space on the latter, so as to form a part of the printed matter on the pages to which they are respectively attached, substantially as described.

3. In a printing-machine, the combination with the delivery mechanism for the main sheets, of pasting mechanism for applying paste to a waste space on a main sheet and feeding mechanism constructed to advance printed sheets of less length than the main sheets and of small size relatively thereto and located in position to deliver said small sheets upon the pasted waste spaces on the main sheets, whereby the main sheets are provided with small sheets forming a part of the printed matter on the pages to which they are respectively attached, substantially as described.

4. In a web-printing machine, the combination with the longitudinal folder whereby the main sheets are doubled, of feeding and pasting mechanisms constructed and located in position to advance printed sheets of less length than the main sheets and of small size relatively thereto and attach them to the outer pages of the main sheets after the latter leave the longitudinal folder and over a waste space on the main sheets, so as to form a part of the printed matter on the page to which they are respectively attached, substantially as described.

5. In a web-printing machine, the combination with the longitudinal folder, whereby the main sheets are doubled, of pasting mechanism constructed and located in position to apply paste to said main sheets as they pass over the folder, and feeding mechanism constructed to advance printed sheets of less length than the main sheets and of small size relatively thereto, and located in position to deliver said small sheets on the pasted portions of the main sheets, substantially as described.

6. In a printing-machine, the combination with the delivery mechanism for the main sheets, of feeding and pasting mechanisms constructed and located in position to advance printed sheets of less length than the main sheets and of small size relatively thereto and attach them to the pages of the main sheets over a waste space on the latter, so as to form a part of the printed matter on the pages to which they are respectively attached, and means for varying the speed of said feeding mechanism in accordance with the size of the sheets to be attached, substantially as described.

7. In a printing-machine, the combination with the delivery mechanism for the main sheets, of feeding and pasting mechanisms constructed and located in position to advance small printed sheets and attach them to the main sheets, and means for varying the speed of the feeding mechanism in accordance with the size of the small sheets relatively to the main sheets, substantially as described.

8. In a printing-machine, the combination with the delivery mechanism for the main sheets, of feeding and pasting mechanisms constructed and located in position to advance small printed sheets and attach them to the main sheets, and means for adjusting the pasting mechanism to vary the extent of surface to which paste is applied, substantially as described.

9. In a printing-machine, the combination with the delivery mechanism for the main sheets, of feeding and pasting mechanisms constructed and located in position to advance small printed sheets and attach them to the main sheets, and means for varying the speed of the feeding mechanism and the extent of surface pasted in accordance with the size of the small sheets, substantially as described.

10. In a printing-machine, the combination with the delivery mechanism for the main sheets, of web feeding, severing and pasting mechanisms constructed and located in position to sever from a narrow printed web small sheets and attach them to the main sheets, means for varying the length of the small sheets severed by the severing mechanism, and means for varying the speed of the feeding mechanism in accordance with the size of the small sheets, substantially as described.

11. In a web-printing machine, the combination with the folder for doubling the main web and feeders for moving forward the web after folding, of feeders for propelling another web toward the web first mentioned, a cutter having removable knives and operating to sever portions of the second web and variable mechanism for driving the feeders and cutters for the second web, substantially as described.

12. In a web-printing machine, the combination with the delivery mechanism, of rollers H^3, H^3 for feeding a second web, cutting-rollers H^5 H^6 for severing such web, a table adjacent to the rollers H^5 H^6 and a feeding-roller for conducting portions of the second web into contact with the main web, substantially as described.

13. In a web-printing machine, the combination with the delivery mechanism, of rollers H^3, H^3 for feeding a second web, cutting-rollers

H^3, H^4 for severing such web, a table adjacent to the rollers H^4, H^5, a feeding-roller for conducting portions of the second web into contact with the main web and guards for preventing the curling of the edges of the second web, substantially as described.

14. In a web-printing machine, the combination with the delivery mechanism, of rollers H^2, H^3 for feeding a second web, cutting-rollers H^3, H^4 for severing such web, a table adjacent to the rollers H^3, H^4 and having openings through it, two rollers on opposite sides of said table operating to feed the pieces cut from the second web over the said table and a feed-roller for conducting the pieces cut from the second web into contact with the main web, substantially as described.

15. In a web-printing machine, the combination with the delivery mechanism, of rollers H^2, H^3 for feeding a second web, cutting-rollers H^3, H^4 for severing such web, a table adjacent to the rollers H^4, H^5 constructed of two sections having intermatching finger-like portions at their opposite ends and having openings through it, two rollers on opposite sides of said table operating to feed the pieces cut from the second web over the said table, and a feed-roller for conducting the pieces cut from the second web into contact with the main web, substantially as described.

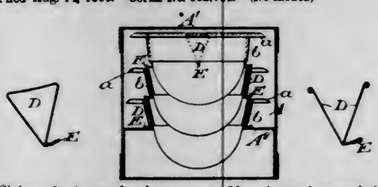
16. The combination with two sheet-feeding mechanisms adjustable relatively to each other, of a table supporting the sheet between the feeding mechanisms, and means for adjusting the length of said table, substantially as described.

17. The combination with rolls J' J^2 engaging by ribs, of table i having fingers extending between said ribs and made in two parts for adjustment of the length of the table transversely to the rolls, substantially as described.

18. The combination with driving-shaft N', of driven shaft *n* mounted in inclined bearings, and sliding frame A' carrying rolls driven from shaft *n*, substantially as described.

19. The combination with a forked paste-block carrier, of means for adjusting said forks to hold paste-blocks of different sizes, substantially as described.

572,284. DEVICE FOR SUPPORTING HATS IN STACKS. PIERRE C. WARING, Yonkers, N. Y., assignor to John T. Waring, same place. Filed Aug. 14, 1896. Serial No. 602,701. (No model.)



Claim.—1. A stay for the support of hats in stacks, consisting of a standard adapted to be inserted between the crown and band of a hat and having a laterally-projecting foot, substantially as herein described.

2. The combination with hats placed one above another in a stack with the crown of one inverted within the crown of the next one below, of stays inserted at intervals within the band of the upper hat and having laterally-projecting feet for the support of the upper one on the brim of the lower one, substantially as herein described.

3. A stay for the support of hats in stacks, consisting of a single piece of wire bent in the form of a triangular loop and having its ends twisted together to form a foot projecting laterally from the said loop, substantially as herein described.

572,285. BATTERY-CELL. CHARLES WILLMS, Baltimore, Md. Filed Aug. 15, 1896. Serial No. 602,896. (No model.)



Claim.—1. A battery cell or vessel having a seal or stopper of caoutchouc vulcanized to it.

2. A battery cell or vessel having a seal or stopper of caoutchouc vulcanized to and interlocked with it.

3. A battery cell or vessel prepared at its end with a coating of copper to insure its adhesion to the sealing material, and having a seal or stopper of caoutchouc vulcanized to its prepared end.

4. A battery cell or vessel having a flanged end and a seal or stopper of caoutchouc vulcanized to its flanged end.

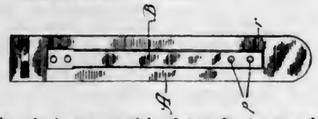
5. A battery cell or vessel having a perforated end and a seal or stopper of caoutchouc on opposite sides of the perforated end and extending through the perforations thereof.

6. A battery cell or vessel provided with a detachable ferrule at one end, to which is firmly secured a seal or stopper of vulcanite.

7. A battery cell or vessel made in two sections detachably connected, and provided with a seal or stopper of caoutchouc vulcanized to its end.

8. A battery cell or vessel having a seal or stopper of caoutchouc vulcanized to it, in combination with an element suspended from the stopper, and a vent-screw extending through it.

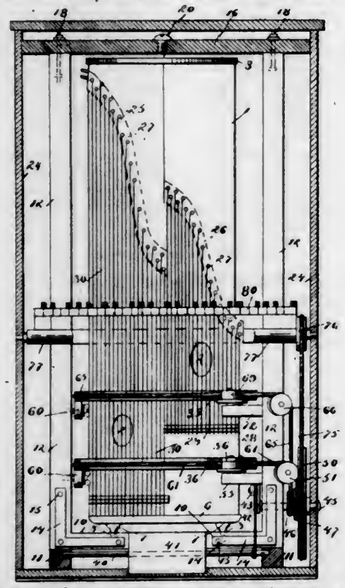
572,286. REED. JOHN O. ASTENIUS, Chicago, Ill. Filed June 9, 1896. Serial No. 594,822. (No model.)



Claim.—1. As a new article of manufacture, a reed having one or more holes *p* in its free end portion, substantially as and for the purpose set forth.

2. As a new article of manufacture, a reed having holes *p* in alinement with each other lengthwise of the tongue in its free end portion, substantially as and for the purpose set forth.

572,287. MUSICAL MACHINE. JOSEPH BAUMGARTNER, Dubuque, Iowa. Filed Apr. 7, 1896. Serial No. 586,609. (No model.)



Claim.—1. In a musical instrument, a circular stationary sounding-board, one or more sets of strings applied vertically thereto, one or more circular bows which are provided on their inner edges with hair arranged in strips and adapted to rotate horizontally around said strings and board and means for moving the strings in and out of contact with said bows, as and for the purposes shown.

2. In a musical instrument, a circular sounding-board, one or more sets of strings applied thereto, one or more circular rotating bows which surround the board and strings and a mechanism for rotating the bows, combined with keys, an endwise-moving rod for each key, a shoe connected to each rod, a hammer for each rod, means for connecting each rod to its hammer and a revolving roller for operating the rods and hammers, substantially as shown.

3. In a musical machine, a circular sounding-board two sets of strings of unequal length applied thereto, two rotating bows, endless belts which operate the bows, guide-wheels or pulleys for guiding the belts, a revolving roller and a mechanism for operating both the bows and the roller, combined with keys, an intermediate connecting mechanism, and hammers for operating the strings, as and for the purposes shown.

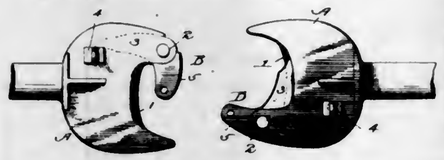
4. In a musical instrument, the operating-keys, an endwise-moving rod, connected to each key, a shoe connected to each rod, and which serves to force the rod downward; a support for the hammers, a spring-actuated hammer for each rod, and means for connecting

the hammer to its rod, combined with a revolving roller with which the shoes engage, a circular sounding-board, strings applied thereto, rotating bows provided with hair upon their inner edges and a mechanism for operating both the bows and the roller, substantially as set forth.

5. In a musical instrument, a circular vertical sounding-board, strings attached thereto, one or more circular bows adapted to rotate around said sounding board and strings, and means for bringing each string in and out of contact with the bow, consisting of key 80, post 100, cord 92, hammer 87, with string 95 all combined to operate substantially as described and shown.

6. In a musical instrument, a circular vertical sounding-board, suitable strings secured to said board, one or more circular bows rotating around said board and strings, and means substantially as described for rotating said bows, as and for the purposes shown.

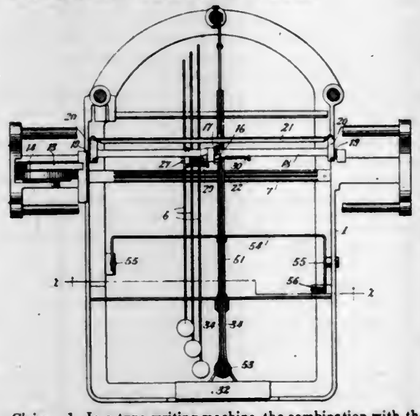
572,288. CAR-COUPLING. AMOS BOPP, Hagerstown, Md. Filed Feb. 19, 1896. Serial No. 579,851. (No model.)



Claim.—1. In a car-coupler, the combination with a draw-head member having an upper concavity provided with a vertical face to allow a free vertical movement in relation to the opposite draw-head and being provided with a lower ledge projecting beyond the upper concavity, of a knuckle having a vertical diameter equal to that of the head and provided with a broadened convex, upper portion having a vertical face projecting beyond the lower portion of the knuckle to form a shoulder arranged and adapted to enter the concavity and to engage the lower ledge, substantially as described.

2. In a car-coupler, the combination with a draw-head member provided with a concaved recess having a vertical face, of a lower opposing member provided with a ledge having a vertical face and projecting beyond the upper recessed portion thereof, a knuckle having its top flush with the top of the draw-head and being provided with a broadened portion 5, having a shoulder 7, a rounded vertical face on the shoulder, the broadened portion being made to fit closely within the concaved recess of the opposing draw-head, whereby the two draw-heads have a free vertical up-and-down movement in relation to each other, substantially as described.

572,289. TYPE-WRITING MACHINE. BYRON A. BROOKS, Brooklyn, N. Y., assignor to The Wyckoff, Seamans & Benedict, Ilion, N. Y. Filed July 6, 1896. Serial No. 598,077. (No model.)



Claim.—1. In a type-writing machine, the combination with the carriage, the letter-space feed mechanism, the letter-keys and the space-key, of two independent devices, one of which is operated by the letter-keys and the other by the space-key, and both so connected with the letter-space feed mechanism that while the operation of either device alone does not affect the letter-spacing, their conjoint operation produces a double space; substantially as set forth.

2. In a type-writing machine, the combination of two elements, one operated by the letter-keys and the other by the space-key, and means connecting said elements with the spacing dog and ratchet so that the operation of either element singly does not affect the operation of the spacing-dog, but by their combined operation the dog is permitted to feed a double space; substantially as set forth.

3. In a type-writing machine, in combination, a paper-carriage, a letter-space escapement mechanism therefor constructed and arranged to effect either a single-space movement or a double-space movement of said carriage, a series of letter-keys connected to actuate said escapement mechanism, a space-key also connected to actuate said escapement mechanism, a device operated only by said letter-keys and a device operated only by said space-key, the construction and arrangement being such that when the letter-keys are actuated the device operated by the space-key serves to prevent the carriage from moving more than a letter-space distance, and such that when the space-key is actuated the device operated by the letter-keys serves also to prevent the carriage from moving more than a letter-space distance, and also such that when both a letter-key and the space-key are simultaneously actuated both of said devices are operated and the carriage is permitted to move a distance of two letter-spaces: substantially as set forth.

4. In a type-writing machine, in combination, the usual spacing-key having always the same depression and adapted when depressed alone to effect single spacing only, letter-keys having always the same depression, a rack, a dog adapted to yield either one tooth or two teeth of the rack, means for controlling the movement of the dog connected to the said spacing-key and to the letter-keys, and so arranged that when the letter-keys are operated alone and when the spacing-key is operated alone, the dog yields a single tooth only, but when the spacing-key and the letter-key are struck together the said controlling means is actuated and the dog permitted to yield two teeth; substantially as set forth.

5. In a type-writing machine, the combination of a paper-carriage, a letter-space escapement mechanism, letter-keys, a bail therefor carrying a stop, a spacing-key also carrying a stop, and a lever adapted to both said stops and to the escapement mechanism, substantially as set forth.

6. In a type writing machine, the combination of a paper-carriage, a letter-space escapement mechanism including a spring-acted vibratory feeding-dog, a movable stop adapted to permit said dog to vibrate either for one letter-space or two letter-spaces as desired, but arranged to normally restrict said dog to vibrate one letter-space, a lever adapted to move said stop to a position such that the said dog may vibrate the distance of two letter-spaces, the letter-keys, a stop for said lever controlled by said letter-keys, a space-key and a second stop for said lever controlled by said space-key; substantially as set forth.

7. In a type-writing machine, the combination of a paper-carriage, a letter-space escapement mechanism including a pivoted spring-acted dog, a movable stop for said dog, a lever for acting on said stop, the letter-keys, a bail for said keys carrying a stop for said lever, and a space-key also carrying a stop for said lever; substantially as set forth.

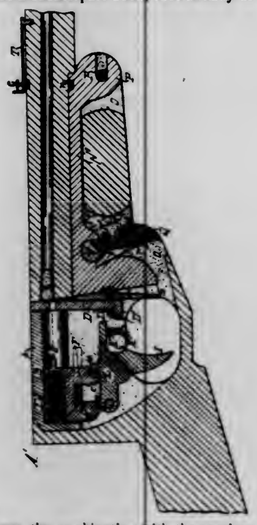
8. In a type-writing machine, the combination of a paper-carriage, a letter-space escapement mechanism including a pivoted spring-acted dog, a movable stop therefor, a lever adapted to act on said stop, a space key lever composed of two separated bars embracing said stop-actuating lever and provided with means to hold said lever at rest during type impressions, letter-key levers, and a bail adapted to be acted on by said letter-key levers and carrying means adapted to hold said stop-actuating lever at rest when said space-key lever is depressed; substantially as set forth.

9. In a type-writing machine, the combination of a paper-carriage, a letter-space escapement mechanism including a pivoted spring-acted feeding-dog, a movable stop for said dog, a lever adapted to vibrate said stop, letter-key levers, a bail therefor, and a space-key lever; the construction and arrangement being such that the said stop-actuating lever is supported by the space-key lever when a letter-key is depressed, and is supported by the said bail when the space-key is depressed, but when both keys are depressed together the said lever is adapted to vibrate and move the said dog-stop to a position such that the dog may vibrate the distance of two letter-spaces; substantially as set forth.

572,290. BREECH-LOADING FIREARM. BURTON H. CLEMENT, Chester, Wis., assignor of one-half to Ead Johnson, Waupun, Wis. Filed Apr. 24, 1896. Serial No. 588,909. (No model.)

Claim.—1. In a firearm, the combination with the receiver, of a sliding spring-actuated hammer provided with a firing-pin adapted to project through an opening in the front end of said receiver, a downward-extending cocking-flange formed integrally with said hammer and provided with a hook *e* and lug *e'*, a cocking-bar G engaged by

said flange between the hook *e* and lug *e'* and projecting laterally through recesses in the frame to the exterior, together with the trigger provided with a counterpart hook, substantially as described.

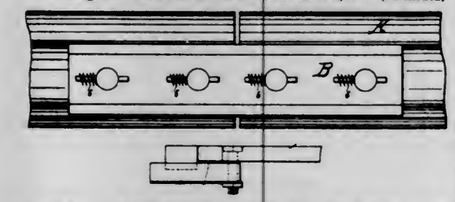


2. In a firearm, the combination with the receiver, of a sliding spring actuated hammer provided with a firing-pin adapted to project through an opening in the front end of said receiver, a downward-extending cocking-flange attached to the hammer and provided with a hook *e*, lug *e'* and adjusting-screw M, together with a trigger provided with a hook L adapted to engage in the hook *e* or against the lug *e'*, and means for moving said hammer against the tension of its actuating-spring, substantially as described.

3. In a firearm, the combination with the frame provided with the hooked flange A', of a receiver provided with a recessed rear end into which said flange A' is adapted to fit, and a head-piece or breech-block dovetailed into the front end of the receiver, said block being extended downward and supported by a pin D'' so as to form a bearing for a rocking lever, or cartridge-extractor, substantially as described.

4. In a firearm, the combination of the barrel, the removable flange N' dovetailed thereto along its upper edge and provided with an open-ended slot at its front end for engaging the hinge-pin, a hook Q hinged to the flange N' and adapted to engage with locking-pins in the frame for holding the breech respectively in its open and closed position, a cartridge-extractor pivoted centrally to the rear end of the flange N' and offset at each end so as to engage against and be operated by the head-piece or breech-block, together with a key for holding said flange longitudinally to the barrel and provided with flanges for engaging the edges of the frame and adapted to release the latter only when the hook Q is released from the locking-pins, and the barrel is tilted over the end of the frame, substantially as described.

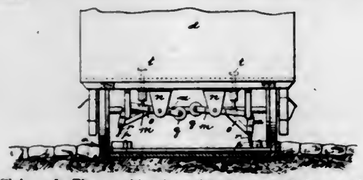
572,291. LOCK-WEDGE. WILLIAM W. CRAWFORD, Wilmerding, Pa., assignor to George E. Kuhn, same place, and Wesley S. Guffey, Pittsburg, Pa. Filed Dec. 27, 1895. Serial No. 573,447. (No model.)



Claim.—1. A bolt-fastening, consisting of a bolt having a conical slot near its securing end, a securing pin or lock provided with an upper inclined edge, said securing-pin being provided with a partly-open conical slot forming lugs, substantially as described and set forth.

2. In a bolt-fastening, a bolt with a conical slot, a securing pin or lock having an upper inclined edge and partly-open conical slot forming lugs, and spring for retaining the securing pin or lock in position, substantially as described and set forth.

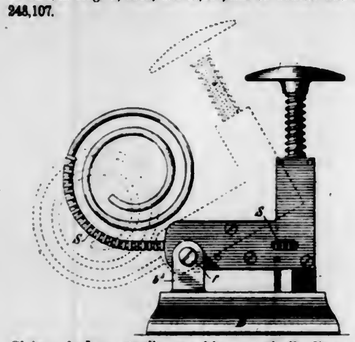
572,292. SWITCH-OPERATING DEVICE. ERWIN D. FARNSWORTH, Newark, N. J. Filed Feb. 2, 1895. Serial No. 537,036. (No model.)



Claim.—1. The combination with the car, of the angular lever weighted at one end and at the other provided with the hinged contact-piece and a spring, *r*, controlling said contact-piece, substantially as set forth.

2. The combination with the angular frame fulcrumed upon the car, of a hinged contact-piece, a spring, *r*, for holding the same in normal position to engage the switch mechanisms, and a depression-piece adapted to throw said frame into position to make a contact, substantially as set forth.

572,293. STAPLING-MACHINE. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Greenfield Automatic Fastener Company, same place. Filed Nov. 16, 1894. Renewed Jan. 9, 1896. Serial No. 574,916. (No model.) Patented in Belgium June 14, 1895, No. 116,040; in Canada Aug. 2, 1895, No. 49,583, and in France Oct. 5, 1895, No. 248,107.



Claim.—1. In a stapling-machine a spirally-disposed support adapted to sustain a strip of united staples, the distance between the convolutions of said support being greater than the length of the legs of the staple.

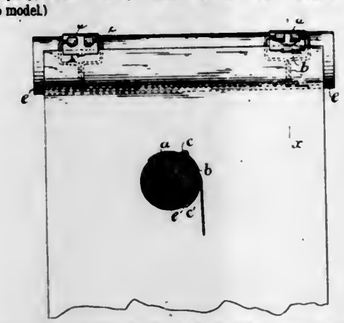
2. In a stapling-machine a spirally-disposed support adapted to sustain a strip of united staples in combination with feeding mechanism adapted to feed the material forward and a plunger adapted to shear off and drive a single staple at each operation, the distance between the convolutions of the spirally-disposed support being greater than the length of the legs of the staples.

3. A stapling-machine provided with mechanism for feeding forward a strip of completed staples, a single plunger for severing and driving one staple at a time and a clenching-anvil for clenching the staple upon the under side of the material to be bound, said feeding mechanism being carried by an arm pivoted to the base of the machine and provided with means for preventing the forward movement of the completed strip of staples, and additional yielding means which is brought into action after the strip of staples is checked in its forward movement and is thereby adapted to feed the strip forward only after each complete operation, substantially as described.

4. A stapling-machine provided with mechanism for feeding a strip of completed staples forward as they are used one at a time, a single staple-severing and staple-driving plunger, said feeding mechanism and plunger being carried by an arm pivotally secured to the base of the machine, in combination with a yieldingly-supported anvil adapted to bend the inner ends of the staple inward as they are driven through the material to be bound; a stationary or fixed anvil adapted to clench the ends into the under surface of the material at the completion of the stroke of the plunger, means for preventing the forward movement of the staple-strip after a staple has been placed in position beneath the plunger, and a yielding attachment in connection with the feeding mechanism which permits said feeding mechanism to yield after the staple-strip has been checked in its forward movement.

5. A stapling-machine provided with a single plunger adapted to sever and drive one staple at a time from a strip of completed staples; a clenching-anvil for clenching the free ends of the staples upon the under side of the material to be bound; checking or holding means for preventing forward movement of the completed strip of staples when a staple is in position to be severed and driven therefrom; additional yielding means acting in conjunction with the feeding mechanism and adapted to prevent the latter from forcing the staple-strip forward after it is held by the checking or holding means.

572,294. ATTACHING WINDOW-SHADES TO ROLLERS. EDMUND F. HARTSHORN, Newark, N. J., assignor to the Stewart Hartshorn Company, of New Jersey. Filed Sept. 27, 1895. Serial No. 563,821. (No model.)



Claim.—1. As a new article, a fastener for attaching shades to rollers consisting of the clasp *a* provided with the spur *b* arranged to penetrate the shade and roller, and the hook *c* hinged to the clasp *a* and provided on the end with means for engaging with the roller whereby the clasp and spur are held in place on the roller, substantially as described.

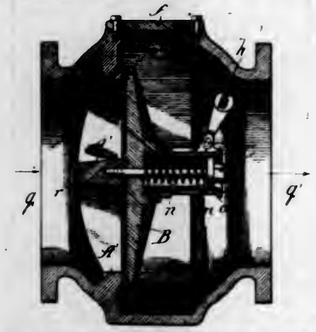
2. In a fastening for attaching shades to rollers, in combination, a clasp *a* provided with the spur *b* arranged to penetrate the shade and roller, and a hook *c* hinged to the clasp and provided with the bent end *c'* adapted to engage with a groove in the roller, substantially as described.

572,295. WATERPROOF COMPOSITION. GUSTAV CHRISTIAN FORCHTEGOTT HAUSER, Erlangen, Germany, assignor to the Chemische Fabrik auf Actien, vormals E. Schering, Berlin, Germany. Filed June 9, 1894. Serial No. 514,091. (No specimens.) Patented in England Sept. 28, 1893, No. 18,237; in Italy Nov. 18, 1893, No. 34,979, and Dec. 10, 1893, No. 35,207; in France Dec. 22, 1893, No. 233,080; in Austria May 31, 1894, No. 44,/2,028, and in Hungary Sept. 24, 1894, No. 1,222.

Claim.—1. The herein-described waterproof composition which consists of anhydrous formaldehyd gelatin free from photosensitive ingredients, substantially as set forth.

2 The herein-described method of producing a waterproof gelatin composition which consists in subjecting the gelatin free from photosensitive ingredients to the action of a watery solution of formaldehyd, then removing the gelatin composition from the solution and then drying the same, substantially as set forth.

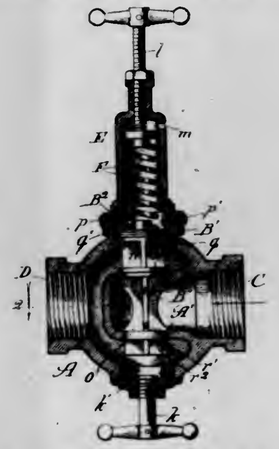
572,296. BACK-PRESSURE VALVE. FRANK HENNEBÖHLE, Chicago, Ill. Filed Mar. 21, 1896. Serial No. 584,273. (No model.)



Claim.—1. A back-pressure valve comprising, in combination, a chamber provided with an inlet and an outlet and containing a valve-seat, a valve in the chamber, a dash-pot containing a light spring confined against the valve and normally holding it against its seat, a shaft journaled in the shell and connected with the dash-pot and a lever on the shaft carrying an adjustable weight, substantially as and for the purpose set forth.

2. A back-pressure valve comprising, in combination, a chamber A provided with an inlet and an outlet and containing a spider-shaped valve-seat A', a disk-valve B having packed seating portions *p* and *p'* formed to bear against said seat about its margin and at its central portion and carrying a cylinder *o*, a rod *n* fastened to said seat to extend through the valve into said cylinder and provided at its outer end with a head *l*, and a spring *m* confined in the cylinder about the rod between the valve and said head, substantially as and for the purpose set forth.

572,297. SAFETY-VALVE. FRANK HENNEBÖHLE, Chicago, Ill. Filed Mar. 21, 1896. Serial No. 584,274. (No model.)



Claim.—1. An automatic-stop safety-valve comprising, in combination, a chamber having an inlet and an outlet, a balanced valve seating in said chamber to close under a reduction of pressure therein, a piston extending from said balanced valve and exposed to the pressure in said chamber, and a regulating-spring opposing said piston to said pressure, substantially as and for the purpose set forth.

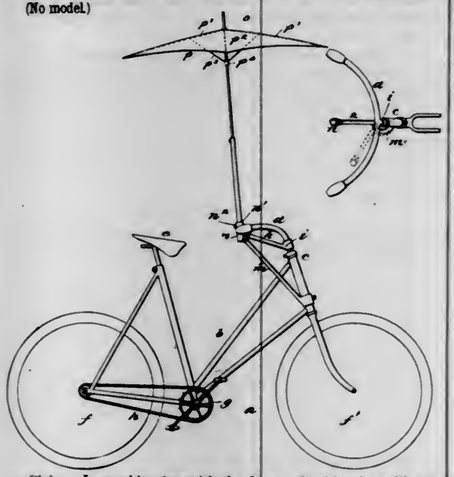
2. A valve device comprising, in combination, a chamber having an inlet and an outlet, a balanced valve seating in said chamber, a spring-housing extending from an opening in said chamber and containing, near its inner end, a piston-chamber, a piston extending from said balanced valve toward its seat in said piston-chamber, and a regulating-spring confined in the housing against said piston, substantially as and for the purpose set forth.

3. An automatic-stop safety-valve comprising, in combination, a chamber having an inlet and an outlet, a balanced valve seating in said chamber to close under a reduction of pressure therein, a piston extending from said balanced valve and exposed to the pressure in said chamber, a regulating-spring opposing said piston to said pressure, and a set-screw adjustable against the balanced valve to open it in opposition to said spring, substantially as and for the purpose set forth.

4. A valve device comprising, in combination, a chamber A provided with an inlet and an outlet and containing the valve-seat A', a balanced wing-valve B seating in said chamber and carrying at one end a neck *n* terminating in a piston B', a tubular spring-housing E extending from an opening *q* in said chamber and provided with a bearing at its outer end for a set-screw *l* projecting into the housing, a valve chamber B^3 near the inner end of said housing for the piston, and a spring F confined in said housing between the set-screw and piston, substantially as and for the purpose set forth.

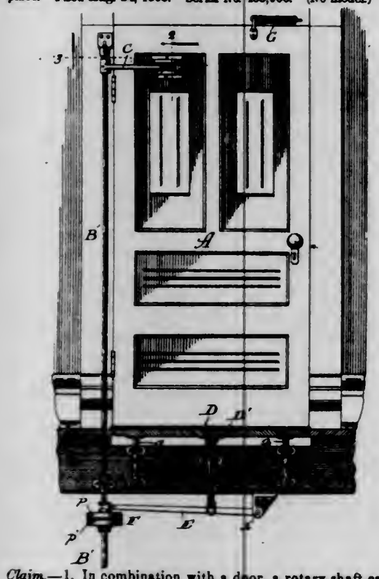
5. A valve device comprising, in combination, a chamber A provided with an inlet and an outlet and containing the valve-seat A', a balanced wing-valve B seating in said chamber and carrying at one end a neck *n* terminating in a piston B', a tubular spring-housing E having a vent *m* and extending from an opening *q* in said chamber and closed at its outer end where it affords a bearing for a set-screw *l* projecting into the housing, a piston-chamber B^3 near the inner end of said housing for the piston, a spring F confined in said housing between the set-screw and piston, and a set-screw *k* adjustable against the balanced valve in opposition to said spring, substantially as and for the purpose set forth.

572,298. UMBRELLA ATTACHMENT FOR BICYCLES. MARY A. HICKS, Hartford, Conn. Filed Feb. 26, 1896. Serial No. 580,916. (No model.)



Claim.—In combination with the frame of a bicycle or like vehicle, a bracket pivoted thereto, an arm secured to the bracket and arranged to swing therewith horizontally, a diagonally-arranged brace extending from the outer part of the arm downward to the frame to which it is pivoted, and a socket-piece secured to the outer end of the arm, the socket bearing a clamp device for holding the handle of a parasol, substantially as set forth.

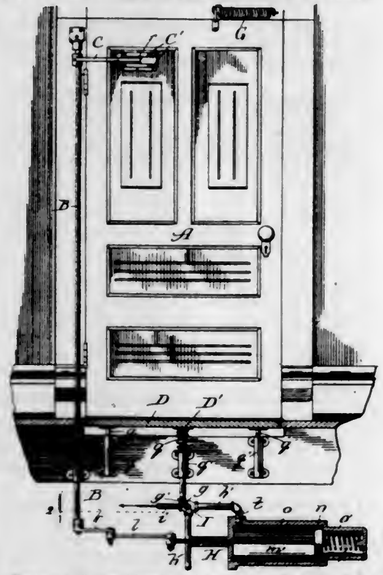
572,299. DOOR-OPERATING APPARATUS. OLIVER H. HICKS, Chicago, Ill., assignor to the Hicks-Troy Electric Door Company, same place. Filed Aug. 24, 1893. Serial No. 483,906. (No model.)



Claim.—1. In combination with a door, a rotary shaft carrying a clutch member and connected with the door to operate it by rotation of the shaft, a normally-rotating shaft carrying a clutch member, yielding primary actuating means, such as a spring-platform, and a lever connected with one of said clutch members and controlled by the movements of the primary actuating means to produce slipping engagement and disengagement of the clutch members, substantially as and for the purpose set forth.

2. In combination with a door, a shaft B, and arm C connecting the said shaft with the door, a rotary motor-shaft B′, a friction-clutch F having its members respectively on the shafts B and B′, a lever E engaging one of said clutch members, and yielding primary actuating means, such as the platform D controlled by a spring D′, and carrying a post *g* connected with the lever, substantially as and for the purpose set forth.

572,300. DOOR-OPERATING APPARATUS. OLIVER H. HICKS, Chicago, Ill., assignor to the Hicks-Troy Electric Door Company, same place. Filed Mar. 18, 1895. Serial No. 542,186. (No model.)



Claim.—1. In combination with a door, a stem or rod, a depressible pressure-plate engaging said stem or rod, a pressure-cylinder containing a piston, a valve mechanism operated by said stem or rod, supply and waste pipe connections to the valve and pressure-cylinder, and mechanism operated by said piston to open or close a door, substantially as described.

2. In combination with a door, a vertically-supported rock shaft connected with the door, a cylinder containing a piston connected with the rock-shaft to actuate it by movement of the piston, said cylinder having valve-controlled communication with a fluid pressure supply, and a spring-controlled yielding platform in the approach to the door and operatively connected with the valve to control the supply of fluid-pressure to the cylinder, substantially as described.

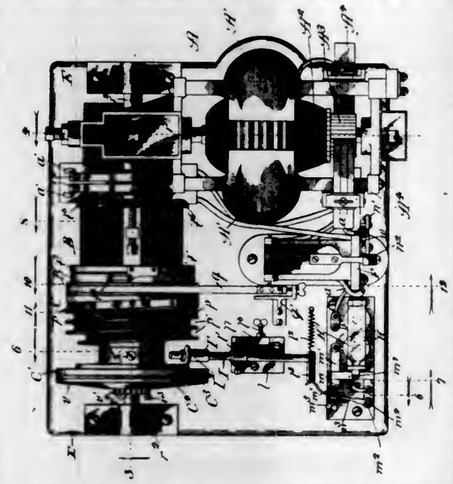
3. In combination with a door, a vertically-supported rock-shaft connected with the door, a cylinder containing a piston connected with the rock-shaft to actuate it by movement of the piston, said cylinder having valve-controlled communication with a fluid-pressure supply and with the outer air, a spring confined in the cylinder against said piston in opposition to the fluid-pressure against it, and a spring-controlled yielding platform in the approach to the door and operatively connected with the valve to open and close said cylinder to the supply of air-pressure and to the outer air by the movements of the platform, substantially as described.

4. In combination with a door, a rock-shaft B, an arm C connecting said shaft with the door, a motor comprising a cylinder containing a spring *m*, a piston *n* opposing said spring and having its rod connected with the shaft B to turn it, a fluid-pressure supply-pipe leading into the cylinder and containing a three-way valve controlling communication of said cylinder with the fluid-pressure supply and with the outer air, and yielding primary actuating means, such as the platform D controlled by a spring D′ and carrying a post connected with said valve, substantially as and for the purpose set forth.

572,301. ELECTRIC DOOR-OPERATING APPARATUS. OLIVER H. HICKS and ROBERTUS F. TROY, Chicago, Ill., assignors to the Hicks-Troy Electric Door Company, same place. Filed Jan. 28, 1896. Serial No. 577,208. (No model.)

Claim.—1. In combination with a door, an electric motor primary actuating means in the approach to the door, a magnetic clutch device spring-actuated in one direction and electrically actuated against its spring in the contrary direction, a connecting medium between said clutch device and door, a check on said clutch device for

regulating the extent of opening the door, and electric circuits including said primary actuating means and said magnetic spring-clutch device and motor, substantially as and for the purpose set forth.



2. In combination with a door, primary actuating means in the approach to the door at its opposite sides, an electric motor, a magnetic clutch device, a connecting medium between said clutch device and door, electric circuits including said primary actuating means and said magnetic clutch device and motor, and a switch connected with said clutch device and controlled thereby to maintain open the circuit containing the primary actuating means at one side of the closed door for a short time after their contacts are brought into mutual engagement and thus render such means temporarily inoperative, substantially as and for the purpose set forth.

3. In combination with a door, electric mat-sections in the approach to the door, one in front of the door and two behind it, an electric motor, a magnetic clutch device, a connecting medium between said clutch device and door, electric circuits containing said mat-sections, and an electromagnetic switch device, electric circuits containing, respectively, said clutch device and motor, and both controlled by said electromagnet switch device from said mat-sections, a switch device in a mat-circuit, and a connection between said switch device and clutch device actuated by said clutch device to open said switch while opening the door, and thereby cut out of circuit a mat-section behind the door, substantially as and for the purpose set forth.

4. In combination with a door, electric mat-sections in the approach to the door, one in front of the door and two behind it, an electric motor, a magnetic clutch device spring-actuated in one direction and electrically actuated against its spring in the contrary direction, a connecting medium between said clutch device and door, a check on said clutch device for regulating the extent of opening the door, electric circuits containing said mat-sections and an electromagnetic switch device, electric circuits containing, respectively, said clutch device and motor and both controlled by said electromagnet switch device from said mat-sections, a switch device in a mat-circuit, controlled by said check to open by opening the door and thereby cut out of circuit a mat-section at the door, and a switch device in a mat-circuit and a switch device in the motor-circuit, both located in position to be engaged by the door and maintained open when the door is closed, substantially as and for the purpose set forth.

5. In combination with a door, a door-spring, primary actuating means in the approach to the door, an electromagnet G, a switch device controlled by the armature of said magnet, electric circuits containing said primary actuating means and magnet, a rotary magnetic clutch device comprising an electromagnet B supported on a rotary shaft r^3, and included in a branch circuit controlled by said switch device, an armature B′ controlled by a spring *s* in opposition to said door-spring, a spool C loosely supported on the shaft and a head C^4 between which and said armature the spool is clutched by the force of said spring, a cord *p* connecting said spool with the door, an electric motor A geared to said shaft and contained in another branch circuit controlled by said switch device, and a switch device in the motor-circuit located in position to be engaged by the door when closed, substantially as and for the purpose set forth.

6. In combination with a door, a door-spring, primary actuating means in the approach to the door, an electromagnet G, a switch device controlled by the armature of said magnet, electric circuits containing said primary actuating means and magnet, a rotary magnetic clutch device comprising an electromagnet B supported on a rotary shaft r^3 and included in a branch circuit controlled by said switch device, an armature B′ controlled by a spring *s* in opposition to said door-spring, a spool C loosely supported on the shaft and carrying the cam-disk C′, a head C^4 and the interposed friction-piece *v*, a cord *p* connecting said spool with the door, an electric motor A geared to said shaft and contained in another branch circuit controlled by said switch device, a switch device in the motor-circuit and located in position to be engaged by the door when closed, a branch of said circuit, including the primary actuating means, a switch device in said branch circuit, and a connecting-rod between said switch device and disk actuated by the rotation of the spool in the opening of the door to open said switch device, substantially as and for the purpose set forth.

7. In combination with a door, a door spring, primary actuating means in the approach to the door, an electromagnet G, a switch device controlled by the armature of said magnet, electric circuits containing said primary actuating means and magnet, a rotary magnetic clutch device comprising an electromagnet B supported on a rotary shaft r^3 and included in a branch circuit controlled by said switch device, an armature B′ controlled by a spring *s* in opposition to said door-spring, a spool C loosely supported on the shaft and carrying the spirally-grooved cam-disk C′, a head C^4 and the interposed friction piece *v*, a cord *p* connecting said spool with the door, an electric motor A geared to said shaft and contained in another branch circuit controlled by said switch device, a switch device in the motor-circuit and located in position to be engaged by the door when closed, a switch device in a mat-circuit, a connecting-rod between said switch device and disk operated by the rotation of the spool in the opening of the door to open said switch device, and a switch device in said mat-circuit located in position to be engaged by the door when closed, substantially as and for the purpose set forth.

8. In combination with a door, a door-spring, electric mat-sections in the approach to the door, one in front of the door and two behind it, an electromagnet G, a switch device controlled by the armature of said magnet, electric circuits containing said mats and magnet, a rotary magnetic clutch device comprising an electromagnet B on a rotary shaft r^3 and included in a branch circuit controlled by said switch device, and armature B′ controlled by a spring *s* in opposition to said door-spring, a spool C loosely supported on the shaft and carrying the cam-disk C′, a head C^4 and the interposed washer *v*, a cord *p* connecting said spool with the door, an electric motor A geared to said shaft and contained in another branch circuit controlled by said switch device, a switch device M in the motor-circuit located in position to be engaged by the door, a switch device in a mat-circuit, comprising an electromagnet H, a spring *m* controlled by the armature H′ of said magnet and connected with a contact *m′* and a spring controlled switch-finger m^2 having an extension m^6, a pivotally-supported rod I for engagement at one end with said switch-finger and provided at its opposite end with a head at which it engages the said cam-disk, and a switch device N in said mat-circuit located in position to be engaged by the door, substantially as and for the purpose set forth.

9. In combination with a door, electric mechanism for operating it, containing a switch device M comprising a stationary contact, a pivotal contact, a cam in position to be engaged by said pivotal contact, a pivotal head on which said pivotal contact is supported and having a spring connection therewith, an operating-lever engaging said head, and a support for the switch mechanism, substantially as described.

10. In combination with a door, electric mechanism for operating it, containing a switch device M comprising a stationary bifurcated contact h', a pivotal contact h^7, a cam h^8, in position to be engaged by said contact h^7, a pivotal head h^5 having a slot h^6 and on which said contact h^7 is pivotally supported, a spring h^9 connecting said head and contact therein, a spring-controlled operating-lever h^{13} having a stud h^{12} entering said slot, and a case *h* supporting the switch mechanism, substantially as described.

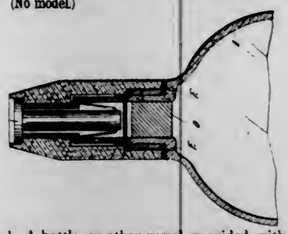
11. In combination with a door, electric mechanism for operating it, a spring controlled arm adjacent to the door in position to engage it and a cord connecting said mechanism with said arm at the free end of the latter, substantially as and for the purpose set forth.

12. In combination with a door, electric mechanism for operating it, including a rotary spool, a spring-controlled arm, p^4, on the door, a buffer device L between said arm and door, and a cord *p* fastened at one end to said spool and at its opposite end to said arm and passing between its ends over an interposed guide-pulley p^5, substantially as described.

13. In combination with a door, a door-opening spring S, electric mat-sections O, O′ and O^2 at the door-threshold, an electromagnet G, a switch device controlled by the armature of said magnet, electric circuits containing said mats and magnet, a rotary magnetic clutch

device comprising an electromagnet B on a rotary shaft r^4 and included in a branch circuit controlled by said switch device, an armature B' controlled by a spring s in opposition to the door-opening spring, a spool C loosely supported on the shaft and carrying the cam-disk C', a head C^4 and the interposed friction-piece v, a cord p connecting said spool with the door, an electric motor A geared to said shaft and contained in another branch circuit controlled by said switch device, a switch device M in the motor-circuit located in position to be engaged by the door, a branch circuit of said mat-circuits containing a switch device a connecting-rod between said switch device and disk and actuated by the rotation of the spool in the opening of the door to open said switch device, a switch device N in said branch circuit and located in position to be engaged by the door, a spring-controlled arm p^4 on the door, a cord p connecting said spool with said arm and a buffer device L in position to engage said arm and to engage said switch devices M and N in the closing of the door, substantially as and for the purpose set forth.

572,302. NON-REFILLABLE BOTTLE. SYLVESTER P. HILL and FRANK VAN WINKLE, Newark, N. J. Filed May 7, 1896. Serial No. 590,511. (No model.)



Claim.—1. A bottle or other vessel, provided with a neck, an annular shoulder or projection at the base thereof, a tubular attachment which is adapted to be placed on, and inclose said neck, and which is provided with transverse openings in the sides thereof, wires secured in the bottle at the base of the neck and adapted to be passed transversely through said openings, a tubular casing which is adapted to be inserted over said tubular attachment, and which is provided at its upper end with an inwardly-directed annular shoulder, and a plug which is adapted to be forced into the upper end of said tubular attachment, and provided with springs which are adapted to operate in connection, with an inwardly-directed annular shoulder formed therein, and with a cap or head which is adapted to rest upon the upper end of said tubular attachment, and in the annular chamber formed within said tubular casing, substantially as shown and described.

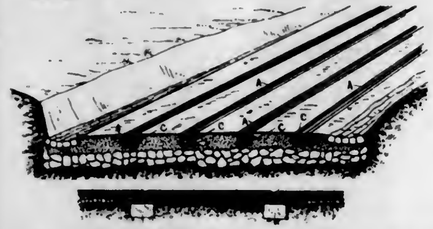
2. A bottle or other vessel provided with a neck, an annular shoulder or projection at the base thereof, a tubular attachment which is adapted to be placed on, and inclose said neck, and which is provided with transverse openings in the sides thereof, wires secured in the bottle at the base of the neck, and adapted to be passed transversely through said openings, a tubular casing which is adapted to be inserted over said tubular attachment, and which is provided at its upper end with an inwardly-directed annular shoulder, and a plug which is adapted to be forced in the upper end of said tubular attachment, and provided with springs which are adapted to operate in connection with an inwardly-directed annular shoulder formed therein, and with a cap or head which is adapted to rest upon the upper end of said tubular attachment, and in the annular chamber formed within said tubular casing, said tubular attachment being provided with a central contracted portion, which is smaller than the base thereof, and with an upper portion which is contracted and smaller than the central portion, and the central bore through the tubular casing being similarly formed, substantially as shown and described.

3. A bottle or other vessel, provided with a neck, at the base of which is an annular ontwardly-directed shoulder or projection, and a tubular attachment connected therewith, the lower end of which is adapted to inclose said neck, said neck being provided with wires which are secured therein, at the base of the neck and which are adapted to be passed therethrough and a tubular casing which is adapted to inclose said tubular attachment, and the upper end of which is provided with an annular chamber, and a plug which is adapted to be inserted into said attachment, and which is provided at its lower end with springs which are adapted to operate in connection with an annular inwardly-directed shoulder or projection in said tubular attachment, said plug being provided at its upper end with a disk or head, which is adapted to rest on said tubular attachment and the bottom of the annular chamber which is formed in said tubular casing, substantially as shown and described.

4. A bottle or other vessel provided with a neck, a tubular attachment connected therewith, and adapted to be secured thereto, a tubular box or casing inclosing said attachment, and means for closing the upper end of said attachment and for holding said tubular casing in place, substantially as shown and described.

5. A bottle, or other vessel, provided with a neck, a tubular attachment connected therewith, and adapted to be secured thereto, a tubular box or casing inclosing said attachment, and means for closing the upper end of said attachment and for holding said tubular casing in place, consisting of a plug, the lower end of which is provided with a spring or springs which operate in connection with an annular shoulder or projection in said tubular attachment and the upper end of which is provided with a head or disk which rests on said tubular attachment, and on the bottom of an annular chamber formed in said casing, substantially as shown and described.

572,303. ROAD-RAIL FOR HIGHWAYS. HERBERT R. KEITHLEY, New York, N. Y. Filed May 28, 1896. Serial No. 593,393. (No model.)



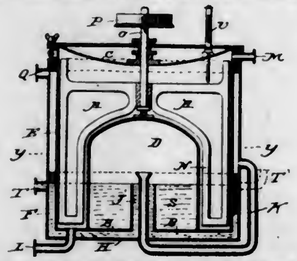
Claim.—1. A metallic girder-rail for wagon-roads having a base, a web and a tread formed integrally and adapted to support only flangeless wheels of vehicles and having a flange for retaining said wheels upon the tread, substantially as described.

2. As an article of manufacture, an integral girder road-rail for highways substantially H-shaped in cross-section, and having a wearing-surface or tread substantially over the web of the rail for receiving ordinary or unflanged vehicle-wheels, and a retaining-flange at the side of the wearing-surface, substantially as described.

3. As an article of manufacture, an integral girder road-rail for highways substantially H-shaped in cross-section, and having a tread or wearing-surface substantially over the web of the rail for receiving ordinary or unflanged vehicle-wheels, and two retaining-flanges, one at each side of the wearing-surface, substantially as described.

4. As an article of manufacture, an H-shaped integral girder road-rail for highways formed by reshaping or rerolling a T or railroad-track rail, said road-rail having a tread or wearing-surface substantially over the web of the rail, and a retaining-flange at the side of the wearing-surface, substantially as described.

572,304. EVAPORATING-PAN. FRITZ KLEEMANN, Berlin, Germany. Filed Mar. 1, 1894. Serial No. 501,996. (No model.)

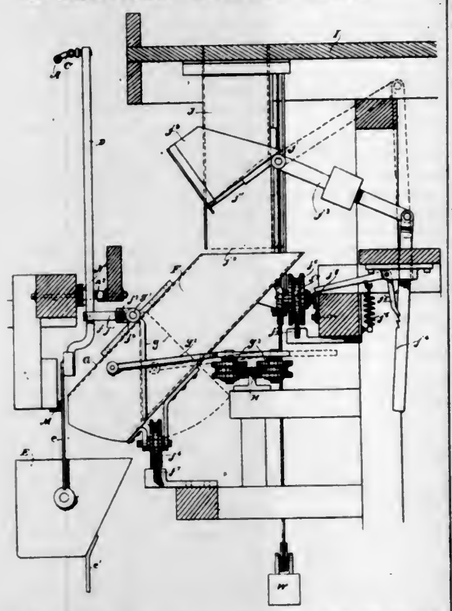


Claim.—1. In combination, the casing A, the interior cap D, the steam heating-jacket E, the double bottom H and chamber F, the pipe J extending up from the double bottom and opening into the cap D, the supply-pipe leading to the interior of the casing for the liquid to be treated, the water supply adapted to fill the chamber F the double bottom H and the cap D up to the level of the tube J, the steam-supply pipe leading to the jacket E and to the interior of the cap D the outlet for the condensed steam from the jacket E and the stirrer within the casing A, substantially as described.

2. In combination, the casing A, the cap D therein, the water-chamber around the lower part of the casing A and at the bottom of the interior cap D, the steam supply leading to the upper part of the casing and the upper part of the cap, the supply-conduit for the liquid at the lower part of the chamber A and the discharge leading from the upper part thereof whereby the rising liquid to be treated

is subjected first to the action of the hot water and then to the action of the steam, substantially as described.

572,305. WIRE ROPEWAY. JAMES T. LUDLOW, San Francisco, Cal. Filed Feb. 17, 1896. Serial No. 579,527. (No model.)



Claim.—1. In a wire ropeway and in combination with the traveling bucket, a loading-car adapted to accompany the bucket for a given distance, and to return again to its initial point, said car having a gate at its lower end, provided with side flanges, which, when the gate is open continue the side walls of the car and a rod from said gate engaging a cam track by which it is operated to control the opening and closing of the gate.

2. In a wire ropeway, and in combination with the traveling bucket, a loading-car adapted to accompany the bucket for a given distance and to return to its initial point, a swinging gate hinged to the lower end of the car, and adapted to open under the weight of the load, a rod from said gate engaging a cam-track by which it is operated to control the opening and closing of the gate, an overlying charge-hopper adapted to supply a charge of material to the loading-car when the latter is at its initial point.

3. In a wire ropeway and in combination with the traveling bucket, a loading-car adapted to accompany the bucket for a certain distance and then to return to its initial point, and an overlying charge-hopper adapted to supply a charge of material to the loading-car when the latter is at its initial point.

4. In a wire ropeway and in combination with the traveling bucket, a loading-car adapted to accompany the bucket for a certain distance and then to return to its initial point, and an overlying charge-hopper adapted to supply a charge of material to the loading-car when the latter is at its initial point, said hopper having the gate at its lower end provided with ends adapted to continue the walls of the chute when supplying the charge.

5. In a wire ropeway and in combination with the traveling bucket, a loading-car adapted to accompany the bucket for a certain distance and then to return to its initial point, an overlying charge-hopper adapted to supply a charge of material to the loading-car when the latter is at its initial point, said hopper having a swinging gate at its lower end, and the means for controlling said gate consisting of the weighted arm, the ratchet-bar, the spring-controlled pawl and swinging track for releasing the pawl and the pin on the loading-car for operating the track.

6. In a wire ropeway having buckets suspended by hangers from a traveling cable, the means for holding said hangers straight during operations tending to retard them, consisting of a chain moving at the rate of speed of the hangers and having means for engaging them.

7. In a wire ropeway having buckets suspended by hangers from a traveling cable, the means for holding said hangers straight during operations tending to retard them, consisting of a traveling chain moving at the rate of speed of the hangers and having pins adapted to engage said hangers.

8. In a wire ropeway having buckets suspended by hangers from a traveling cable, and having means for loading and unloading, depending for their operation upon the traveling buckets and hangers, means for holding and steadying the hangers against the retarding tendency of said operations, consisting of endless traveling chains moving at the rate of speed of the cable and engaging the hangers.

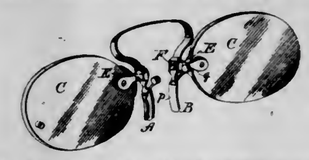
572,306. EYEGLASS NOSE-GUARD. EMIL B. MEYROWITZ, Ridgefield, N. J., assignor to the Meyrowitz Manufacturing Company, same place. Filed July 18, 1895. Serial No. 556,417. (No model.)



Claim.—1. An eyeglass nose-guard comprising a nose-piece adjustable edgewise upon a pivot at or near its middle, and a metallic connection having an attaching-arm and an adjusting-arm in one part and united with said nose-piece by said pivot at the intersection of said arms, said adjusting-arm being further attached to the nose-piece by a rivet at its extremity, and being pliable edgewise to adjust the nose-piece and of greater effective length than the distance between said pivot and said rivet to permit such adjustment, substantially as hereinbefore specified.

2. An eyeglass nose-guard comprising a nose-piece having a back plate of pliable metal attached thereto, a metallic connection having an attaching-arm and an adjusting-arm, a pivot at the intersection of said arms uniting said nose-piece at or near its middle with said metallic connection, and a rivet attaching said adjusting-arm to said nose-piece at or near its lower end, substantially as hereinbefore specified.

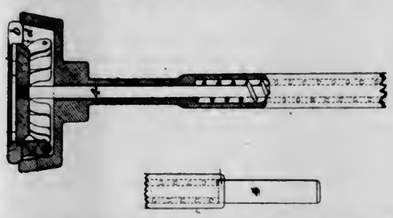
572,307. EYEGLASS NOSE-GUARD. EMIL B. MEYROWITZ, Ridgefield, N. J., assignor to the Meyrowitz Manufacturing Company, same place. Filed Feb. 14, 1896. Serial No. 579,194. (No model.)



Claim.—1. An eyeglass nose-guard comprising two parts united with each other by rivets one of which forms a pivot, one of the parts having an adjusting-arm which is pliable edgewise between said rivets to adjust the nose-guard, and is of greater effective length than the distance between said rivets to permit such adjustment.

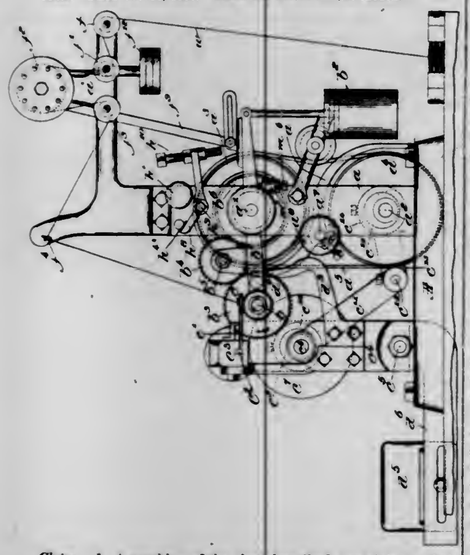
2. An eyeglass nose-guard composed of a pivoted nose-piece adjustable edgewise and a metallic connection having an attaching-arm a pliable adjusting-arm and a third arm, in one piece, a supplemental pad supported at the extremity of said third arm, and a pair of rivets uniting the parts, substantially as hereinbefore specified.

572,308. GLASS-HOLDING SNAP. JOHN E. MILLER, Washington, Pa., assignor to George Duncan's Sons & Co., same place. Filed Jan. 30, 1896. Serial No. 577,378. (No model.)



Claim.—In a glass-holding snap, a movable rod having a disk or head, and glass-holding sections hinged thereto, in combination with a cup or head surrounding said glass-holding sections, means for normally retracting said rod to bring the sections within the cup or head and to close the same, said sections being adapted to fall open by gravity when the rod is projected; substantially as described.

572,309. WINDING-MACHINE. ALFRED B. MORSE, Easton, Mass. Filed Oct. 11, 1895. Serial No. 565,314. (No model.)



Claim.—1. A machine of the class described, containing a winding-spindle, a swinging support therefor, means to rotate said spindle in the different positions into which it is swung, a thread-guide arranged to travel in a line lying in a plane perpendicular to the radius of said swinging support and embracing the axis of said winding-spindle, means to reciprocate said thread-guide along its said line of travel, said line of travel and said winding-spindle axis separating one from the other as and to compensate for the building up of the body of the thread on said spindle, and a cam-surface interposed between said spindle and thread-guide, the movement of the former maintaining the line of travel of the latter in substantially the same said plane during the said separation, substantially as described.

2. In a machine of the class described, a frame, a thread-guide, a winding-spindle movable bodily from said thread guide during the winding of the thread thereupon, a support for said bodily-movable spindle, and mechanism to positively rotate the said spindle in any of the positions into which it is moved during the winding operation, substantially as described.

3. In a machine of the class described, a driving-shaft, a winding-spindle mounted to swing about the said shaft, intermediate driving connections for driving said spindle by said shaft in any position of the former, a thread-guide, a swinging support therefor, a cam mounted in said support connected to said thread-guide to operate the same, and connections intermediate the cam and said driving-shaft for driving the said cam in any position of said support, substantially as described.

4. In a winding-machine, the frame, a shaft journaled therein, and means to drive it, a spindle, a spindle-support mounted to swing about the axis of said shaft, a reciprocating thread-guide, its support, means to actuate said guide, and a weight acting upon the said spindle-support to press the spindle normally toward said thread-guide, substantially as described.

5. In a machine of the class described, a frame, a shaft journaled therein, and means to drive it, a support mounted to swing about the axis of said shaft, a spindle journaled in the outer end of said support and means for driving the same from said shaft, a reciprocating thread-guide, a swinging support therefor, means to press the said spindle and thread-guide one toward the other, and connecting devices between the said spindle-support and thread-guide support to cause movement of one by the other, substantially as described.

6. The frame, the shaft journaled therein, and means to drive it, a spindle-support mounted to swing about the axis of said shaft, a winding-spindle journaled in the said support, and means for driving said spindle by said shaft, a reciprocating thread-guide, its support, a stud on the said spindle-support, and an arm on the thread guide support acted upon by said stud to cause movement of one support by the other, substantially as described.

7. In a machine of the class described, a frame, a driving-shaft journaled therein, a spindle-support fulcrumed about the axis of said driving-shaft, and a spindle therein, means for driving said spindle from said shaft, a driven shaft, cones on the same and said driving-shaft, and connections for driving the former by the latter, a reciprocating thread-guide, a fulcrumed support therefor, a thread-guide-actuating cam mounted in the said support, and connecting means between said cam-shaft and said driven shaft, substantially as described.

8. In a machine of the class described, the frame, the driving-shaft journaled therein, a driven shaft driven thereby, the fulcrumed spindle-support, its spindle geared to and driven by the driving-shaft, the reciprocating thread-guide, a fulcrumed support for said thread-guide, the thread-guide-actuating cam journaled in said support, and geared to and driven by said driven shaft, means to vary the speed of said cam relatively to said spindle, substantially as described.

9. In a machine of the class described, the combination with thread-winding devices, of a tension-wheel adapted to be rotated by the thread traveling to the said winding devices, a rotatable friction-surface connected with the said wheel, a flexible friction-belt in contact with said friction-surface, and means connected with the winding devices for varying the area of frictional contact of said belt and rotatable friction-surface to thereby vary the tension on the thread, substantially as described.

10. In a machine of the class described, the combination with winding devices, of the thread-tension wheel, the friction wheel connected therewith, the flexible friction-belt, a movable arm to which it is attached, and means to vibrate said arm to change the position of the said friction-belt to vary the tension, substantially as described.

11. In a winding-machine, a winding-spindle, and a thread-guide, supports for the same movable one toward and from the other, a tension-wheel a rotatable friction-surface connected therewith, a flexible friction-belt acting upon said friction-surface, and connections between the said belt and said movable support whereby the said relative movements of said supports, as the body of thread being wound increases, reduces the frictional contact of said belt upon said surface, substantially as described.

12. In a machine of the class described, a frame and a shaft journaled therein, the fulcrumed support, the spindle thereon driven from said shaft, the reciprocating thread guide and support therefor, means to move the said spindle normally toward said thread-guide, and automatic stopping devices adapted to be set in operation by movement of the said fulcrumed spindle-support, substantially as described.

13. A machine of the class described, containing suitable winding devices, and a main shaft for actuating the same, fast and loose pulleys on the said shaft, a longitudinally-movable shipper-shaft and its shipper, a spring-actuated shaft, and connections between said shipper-shaft and said spring-actuated shaft, whereby movement of the shipper-shaft to change the belt from the loose to the fast pulley also causes movement of the said spring-shaft against the action of its spring, opposite movement of the said shipper-shaft taking place independent of the said spring-shaft, locking devices to engage and hold the said spring-shaft in its position where moved by said shipper-shaft, and connections between the locking devices and winding devices whereby release of the locking devices permits return movement of the spring-shaft and with it the shipper-shaft to change the belt from the fast to the loose pulley, substantially as described.

14. In a machine of the class described, a winding-spindle provided at its inner end with a tapering shoulder, combined with a removable clamping-collar adapted to wedge the winding-quill upon the said tapering shoulder, and engaging projections on the said collar to engage said quill, to operate, substantially as described.

15. In a machine of the class described, a fixed shaft, and a movable shaft and bearings therefor, toothed wheels on the respective shafts, an intermediate wheel in mesh with the said toothed wheels, levers journaled about the axes of said fixed and movable shafts, and jointed at and provided with a bearing for said intermediate wheel, and eccentric bearings for and movable relatively to the ends of said levers adjacent said fixed and movable shafts, whereby the adjustment of said intermediate wheel with relation to either of its engaging wheels may be varied, substantially as described.

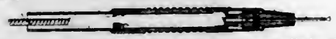
16. A machine of the class described containing a swinging winding-spindle, means to rotate it, a traveling thread-guide normally resting on the cop or bobbin on said spindle, and means to vary the position of the line of travel of said thread-guide to meet the changing positions of said spindle to maintain the said guide uniformly in one and the same direct line opposite the middle of the body of thread, substantially as described.

17. A machine of the class described, containing a winding-spindle, a swinging support therefor, means to positively drive said spindle in any position into which it may be swung as the body of thread builds thereon, a thread-guide and means to maintain the latter normally resting against the said body of thread on said spindle as the cop or bobbin is being wound, substantially as described.

18. A machine of the class described, containing a thread-guide, a winding-spindle, a swinging support for said spindle and to swing the latter away from the said thread-guide as the body of thread builds upon said spindle, and means to positively rotate said spindle in any position into which it may be swung during the winding of said body of thread thereupon, substantially as described.

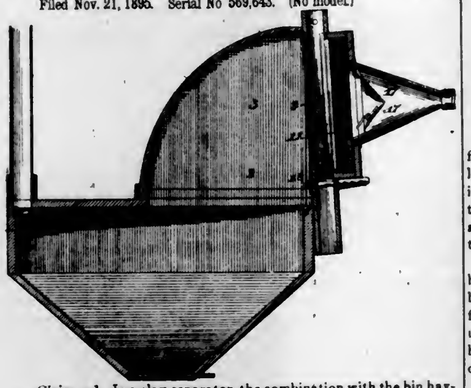
19. A machine of the class described containing a swinging winding-spindle, means to rotate it, a traveling thread-guide, and means to move it with its thread-eye always in substantially a single plane relatively to the said spindle, said plane embracing the axis of said spindle and the locus of said moving thread-eye, and means to vary the relative position of the line of travel in said plane of said thread-guide to meet the changing positions of said spindle, substantially as described.

572,310. HANDPIECE FOR DENTAL ENGINES. CHARLES O. PERKINS, Petaluma, Cal. Filed Jan. 6, 1896. Serial No. 574,450. (No model.)



Claim.—In a dental handpiece, a rotatable spindle having a longitudinally-split, double-coned socket at the end with the cone-bases together, a pin extending across from one side of the slit to the other, immovably fixed at one end, moving loosely through the other side, and adapted to engage and lock the flattened grooved shank of a tool, a ring slidable upon the inner cone to clamp the tool in place, a casing consisting of a central, and two end sections adapted to screw together, an opening in the front end section through which the sliding ring is movable, and an adjustable collar fixed to the spindle and abutting against the outer end of the central section of the casing.

572,311. CLAY-SEPARATOR. PHIL S. PLACE, Alfred, N. Y. Filed Nov. 21, 1895. Serial No. 569,643. (No model.)



Claim.—1. In a clay-separator, the combination with the bin having a hood communicating therewith, of a pendent screen-frame covering the open end of said hood and hinged thereto, said screen-frame having a feed-opening extending longitudinally through the same and also comprising a screen proper at one side of the feed-opening and a plurality of deflecting-slats on the opposite side, and a funnel carried by the hinged screen-frame and adapted to direct the air-blast against the deflecting-slats, substantially as described.

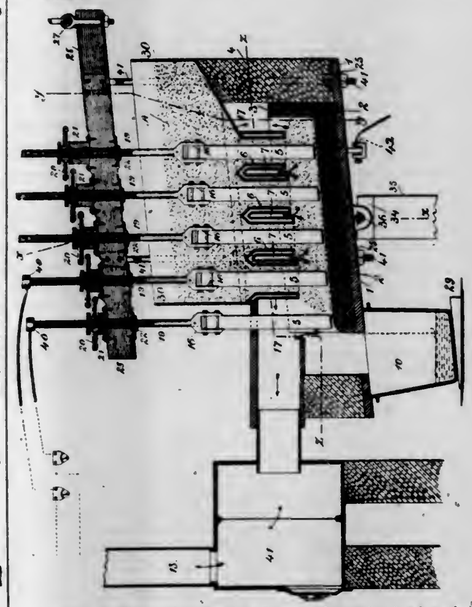
2. A screen-frame covered at one side with meshed-wire fabric and having opposite thereto a plurality of deflecting-slats having each a substantially triangular cross-sectional shape, an air-chest forming an extension of the screen-frame and inclosing the slatted portion thereof, and an air-blast pipe communicating with said air-chest, all arranged substantially as and for the purpose described.

3. A screen-frame provided with entrance and discharge mouths and covered upon one side with screening material and partially covered at the other side with a plurality of triangular deflecting-slats, an air-chest extension of the screen-frame inclosing said slats, an air-supply funnel communicating with said air-chest, and an air-deflecting cone arranged within said funnel, substantially as specified.

4. A screen-frame covered at one side with meshed fabric and at its opposite side with a plurality of deflecting-slats, and an air-chest extension of said frame inclosing said slats, in combination with an air-supply cone communicating with the air-chest, and a conical air-deflector arranged centrally of said funnel and formed with radially-disposed slots, substantially as and for the purpose described.

5. In a machine of the class described, in combination, a bin, a hood in communication therewith, a pivoted screen-frame connected to said hood, provisions for supplying and distributing air to said screen-frame, a steam-spray pipe arranged upon the screen-frame and projecting within the hood, and a flexible steam-supply pipe, all arranged substantially as described.

572,312. ELECTRIC FURNACE. EDGAR F. PRICE, Newark, N. J. Filed July 22, 1895. Renewed Apr. 11, 1896. Serial No. 587,233. (No model.)



Claim.—1. The combination in a furnace of a conducting-hearth forming one electrode, a range of electrodes substantially perpendicular to the hearth and means for adjusting the electrodes and regulating the currents, a supply-hopper for the material to pass down around the electrodes, and means for varying the inclination of the hearth and the movement of the material thereon as it passes from one electrode to another substantially as specified.

2. The combination with a furnace having an inclined bottom or hearth, of a range of electrodes substantially perpendicular to such bottom, means for supporting and adjusting the electrodes toward or from the hearth and means for supplying the material to be acted upon around such electrodes, and casings around the electrodes, there being spaces between such casing and the electrodes for the passage of the material acted upon, substantially as set forth.

3. The combination with a furnace having an inclined bottom or hearth, of a range of electrodes substantially perpendicular to such bottom, means for supporting and adjusting the electrodes toward or from the hearth, means for supplying the material to be acted upon around such electrodes, a hollow casing around each electrode and means for supplying a circulating fluid through such hollow casings to regulate the temperature thereof, there being spaces between the electrodes and the casings for the passage of the material to be acted upon, substantially as set forth.

4. The combination with an inclined hearth of a range of electrodes over such hearth and electric connections to the hearth and to the electrodes and means for supplying the material to be treated around the electrodes in the range, except the one adjacent to the place of delivery from the hearth, so that the materials cannot pass off the hearth without being subjected to the electric operation, substantially as specified.

5. The combination in an electric furnace, of a hearth or bottom forming one electrode, a range of electrodes substantially perpendicular to the bottom, casings around the respective electrodes and a hopper with which such casings are connected, there being spaces between the casings and the electrodes for the passage of the material acted upon, substantially as specified.

6. The combination in an electric furnace, of a hearth or bottom forming one electrode, a range of electrodes substantially perpendicular to the bottom, casings around the respective electrodes and a hopper with which such casings are connected, there being spaces between the casings and the electrodes for the passage of the material acted upon, the casings being provided with openings forming flues, and flues into which the escaping gases or other materials pass and a chamber to which they are led, substantially as set forth.

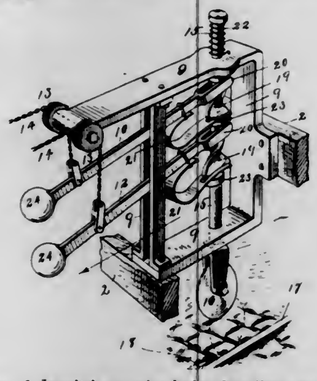
7. The combination in an electric furnace, of a hearth or bottom forming one electrode, a range of electrodes substantially perpendic-

ular to the bottom, casings around the respective electrodes and a hopper with which such casings are connected, there being spaces between the casings and the electrodes for the passage of the material acted upon, a pivotal support for the furnace and means for adjusting the inclination of the bottom or hearth, substantially as set forth.

8. The combination in an electric furnace, of a bottom or hearth, a pivoted plate for supporting the same, side walls and a hopper for the material to be acted upon, an electrode and means for adjusting the proximity of the end of the same to the bottom of the hearth, a casing surrounding the electrode, there being a space between the casing and the electrode for the material in the hopper to pass down to the hearth, supporting-rods and a screw for adjusting the furnace upon its pivotal support and varying the inclination of the hearth, and a removable pot for receiving the product from the furnace, substantially as set forth.

9. The combination in an electric furnace with a conductor forming the furnace-hearth from which the changed material is allowed to pass off by gravity, of an adjustable electrode above the hearth, a supply-hopper from which the material to be treated descends around the upper electrode and a lateral escape for the gases to prevent them ascending through the material under treatment, substantially as specified.

572,313. SWITCH-OPERATING DEVICE FOR STREET-RAILWAY CARS. DAVID RIOUX, NELSON C. BUSHEY, and NAPOLEON L. BYRON, Springfield, Mass. Filed Aug. 17, 1896. Serial No. 602,983. (No model.)



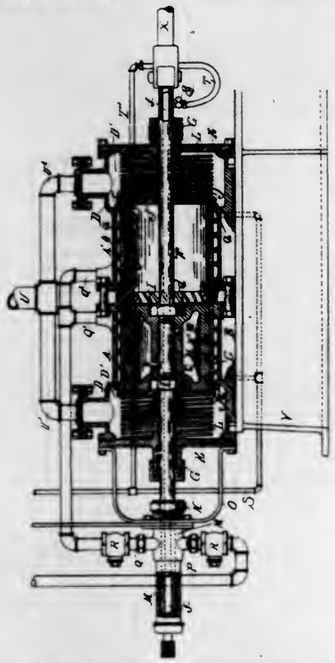
Claim.—1. In switch-operating devices for railway-cars, a revoluble and vertically-moving post supported in a vertical position on the car-truck, containing two screw-sections of reversely-formed spiralities, a switch-engaging wheel hung to rotate on the lower end of said post, two bifurcated levers engaging said screw-sections, whereby simultaneous downward and revoluble movements are imparted to said post, and a spring for lifting said post and wheel, combined with two vertically-moving foot-posts in the platform of the car, and connections between said foot-posts and said levers, substantially as set forth.

2. In switch-operating devices for railway-cars, a revoluble and vertically-moving post supported in a vertical position on the car-truck, containing two screw-sections of reversely-formed spiralities, a switch-engaging wheel hung to rotate on the lower end of said post, two bifurcated levers engaging said screw-sections, whereby simultaneous downward and revoluble movements are imparted to said post, and a spring for lifting said post and wheel, combined with two elbow-levers supported under the platform of the car, a foot-post for operating each of said elbow-levers, and connections between said last-named levers and said bifurcated levers, substantially as set forth.

3. The yoke 9, the bifurcated post 15, containing two reversely-formed screw-sections, supported for revoluble and vertical movements in said yoke, the switch-engaging wheel 16, hung on said post, a spring to lift said post and wheel, two bifurcated levers hung in said yoke and engaging said screw-sections, combined with means between said yoke and the platform of the car, whereby vibratory motions are imparted to said bifurcated levers, substantially as set forth.

572,314. AIR-COMPRESSOR. THOMAS H. ROBERTS, Detroit, Mich. Filed July 16, 1896. Serial No. 599,345. (No model.)

Claim.—1. The combination with a piston and piston-rod, of a cylinder in which said piston is adapted to reciprocate, comprising two like sections secured together, with an apertured ring between their adjacent ends, each section having a chest at its outer end through which the piston-rod passes and outwardly-opening disk valves in said chests sleeved upon the piston-rod and adapted to seat on the ends of the cylinder.



2. The combination with a cylinder formed of two like sections secured together, with an apertured ring between, each section having a chest at its outer end, and outwardly-opening valves in said chests seated on the ends of the cylinder, of a piston adapted to fill the space of one of said cylinder-sections and to be reciprocated from one section to the other.

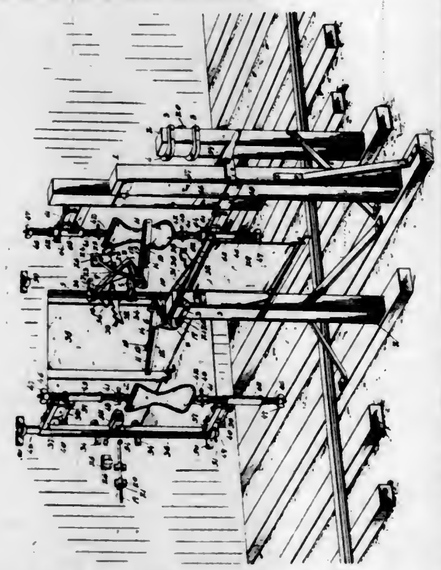
3. A compression-cylinder comprising the two like sections A A′ secured together with the apertured ring B between, each section having the rib *a* around its inner surface forming the groove *b*, and the extension D forming chests or chambers D′ the linings or bushings C fitting within the cylinder and shouldered into the ring B having the flanges *c* at their outer ends forming valve-seats, in combination with the piston, the piston-rod extending out through the chests and the valves J sleeved thereon adapted to seat on the flanges *c*.

572,315. MAIL RECEIVER AND DELIVERING APPARATUS. WILLIAM Z. RUNKLE, Delphi, Ind. Filed Mar. 19, 1896. Serial No. 583,926. (No model.)

Claim.—1. In a mail-pouch-handling apparatus, a delivering device having holders for frictionally engaging the mail-pouch rings, the rings being adapted to be disengaged therefrom by a longitudinal strain, said holders being mounted for longitudinal movement toward and from each other and vertical swinging movement parallel with the direction of movement of the mail-receiving devices, yielding means for normally maintaining the holders retracted or at the limits of their movement from each other, and yielding means for normally maintaining the holders in their upright or vertical positions, substantially as specified.

2. In a mail-pouch-handling apparatus, a delivering device having holders for frictionally engaging the mail-pouch rings, the rings being adapted to be disengaged therefrom by a longitudinal strain, and guides mounted for swinging movement in a vertical plane and yieldingly held in their upright or normal positions, the holders being mounted in said guides for longitudinal movement toward and from each other and yieldingly held retracted, or at the limits of their movement from each other, substantially as specified.

3. In a mail-pouch-handling apparatus, the combination with a swing having horizontal upper and lower arms, of guides having lateral horizontal spindles mounted in alined bearings, respectively, on the upper and lower arms of the swing and yieldingly held in their normal or upright positions, and holders having jaws for frictionally engaging mail-pouch rings and provided with stems mounted for longitudinal reciprocation in said guides, the upper and lower holders being yieldingly held at the limits, respectively, of their upward and downward movements, substantially as specified.



4. In a mail-pouch-handling apparatus, a delivering device having upper and lower holders for frictionally engaging mail-pouch rings, and provided with stems, guides for said stems having horizontal rock-shafts or spindles mounted to allow the guides to swing in a vertical plane parallel with the direction of movement of the mail car, each guide having a preponderance of weight below its rock-shaft or spindle to hold it yieldingly in a vertical position, and means for yieldingly maintaining the upper and lower holders at the limits, respectively, of their upward and downward movements, substantially as specified.

5. In a mail-pouch-handling apparatus, the combination with a swing having horizontal arms provided respectively with alined inner and outer bearings, tubular guides provided respectively near their upper extremities with horizontal spindles mounted in said bearings, said guides being yieldingly held in upright positions by the preponderance of their weight below said spindles, holders for frictionally engaging mail pouch rings having stems mounted for longitudinal reciprocation in said guides, thumb-nuts threaded upon the remote or outer extremities of the stems of the holders beyond the said guides, and springs interposed between the remote extremities of the guides and said thumb-nuts and adapted to be adjusted in tension by the latter to yieldingly maintain the holders at the limits of their movement from each other, substantially as specified.

6. In a mail-pouch-handling apparatus, a delivering device having upper and lower tubular guides provided with lateral spindles mounted in bearings to allow swinging movement of the guides in a vertical plane parallel with the direction of movement of the mail-car, said guides being yieldingly held in their upright positions, holders provided with stems fitted for longitudinal reciprocation in the guides and adapted to turn therein, and return-springs mounted upon the guides for normally maintaining the holders at the limits of their movement from each other, substantially as specified.

7. In a mail-pouch-handling apparatus, a car delivering device having a swing provided with vertically-alined trunnions, holders carried by the swing for engaging the mail-pouch rings, a pivotal holding-arm mounted upon the swing, and means consisting of a pivotal latch 56 for securing said arm to a fixed object on the car when extended to hold the swing in operative position, substantially as specified.

8. In a mail-pouch-handling apparatus, a delivering device having a swing mounted upon vertically-alined trunnions, holders carried by the swing for engaging the mail-pouch rings, a holding-arm pivotally mounted upon the swing, an adjustable supporting-pin 57 carried by the swing for holding the arm in its extended position, and a latch for engaging the arm when the swing is in operative position, substantially as specified.

9. In a mail-pouch-handling apparatus, a receiving device having forwardly-deflected jaws and opposite spring-catches carried respectively by the jaws to engage a mail-pouch, substantially as specified.

10. In a mail-pouch-handling apparatus, a receiving device having forwardly-deflected jaws, and spring-catches carried respectively by the jaws for engaging a mail-pouch and arranged contiguous to each other at their rear ends, each catch consisting of a spring face-plate secured at one end to the inner surface of a jaw and provided at the other end with a guiding-tongue, substantially as specified.

11. In a mail-pouch-handling apparatus, a receiving device having forwardly-deflected jaws, spring-metal face-plates secured at their front ends, respectively, to the inner surfaces of the jaws, guiding-tongues carried by the free rear ends of the plates and operating in slots in the jaws, and terminal stop-pins at the outer extremities of the tongues to form handholds and limit the inward movement of the face-plates, substantially as specified.

12. In a mail-pouch-handling apparatus, a pivotal receiving device mounted to swing in a horizontal plane and having jaws provided with opposite yielding catches for engaging and supporting a mail-pouch, a return-spring to fold or swing said device to its inoperative position, and means for temporarily holding the crane in operative position to resist the pressure of an engaged pouch until securely engaged by said catches, substantially as specified.

13. In a mail pouch-handling apparatus, a pivotal receiving-crane provided with jaws, laterally-yielding catches for engaging and supporting a mail-pouch by lateral compression, said crane being adapted to yield after the engagement of the mail-pouch by the catches to carry the bag out of the path of delivering devices, and means for temporarily resisting the pressure of a mail-pouch until securely engaged by said catches, substantially as specified.

14. In a mail-pouch-handling apparatus, a receiving device having a crane mounted to swing in a horizontal plane and provided with jaws to engage a mail pouch, said crane being adapted to yield when encountered by a mail-pouch, and a cushioning-web for checking the movement of the crane when it reaches its inoperative position, substantially as specified.

15. In a mail-pouch-handling apparatus, a receiving device having a swinging crane provided with jaws, yielding catches on the jaws to engage a mail-pouch, a latch for temporarily securing the crane in its operative position, and a trip connected with the latch and arranged in rear of the catches in the path of a mail-pouch entering between the jaws, substantially as specified.

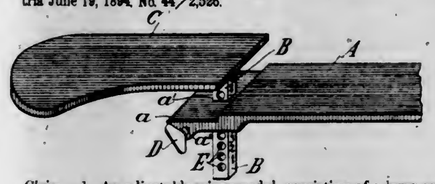
16. In a mail-pouch-handling apparatus, a receiving device having a swinging crane provided with jaws to engage a mail-pouch, resilient actuating devices for swinging the crane to its inoperative position when released, a latch for temporarily holding the crane in its operative position, and means actuated by a mail-pouch for disengaging the latch and releasing the crane, substantially as specified.

17. In a mail-pouch-handling apparatus, a receiving device having a swinging crane provided with jaws to receive a mail-pouch, a spring for normally holding the crane in its inoperative position, means for adjusting the tension of said spring, a latch for temporarily securing the crane in its operative position, and means actuated by a mail-pouch for disengaging the latch to release the crane, substantially as specified.

18. In a mail pouch-handling apparatus, a receiving device having a swinging crane provided with jaws for engaging a mail-pouch, a spring coiled concentrically with the fulcrum of the crane and provided with a central loop, a tension-bolt engaging said loop and adapted to be adjusted to vary the tension of the spring, a latch for temporarily securing the crane in its operative position, and means actuated by a mail-pouch for disengaging the latch to release the crane, substantially as specified.

19. In a mail-pouch-handling apparatus, the combination with duplicate sets of spaced hinge straps or brackets provided with alined openings, a pivot pin removably engaging said openings, a crane fulcrumed upon said pivot-pin and provided with jaws for engaging a mail-pouch, a spring carried by said pin for folding the crane, and means for temporarily securing the crane in its operative position and releasing the same when encountered by a mail pouch, substantially as specified.

572,316. PIANO-PEDAL. KARL SCHULER, Hanover, Germany. Filed Nov. 25, 1895. Serial No. 569,999. (No model.) Patented in Austria June 19, 1894, No. 44,/2,526.



Claim.—1. An adjustable piano-pedal, consisting of a lever-section A, having a depressed portion *a*, an adjustable section C and a

square bar B secured thereto; having a depression in one side thereof and a set-screw D fitted in the lever-section A to engage with the depressions of the bar, substantially as described.

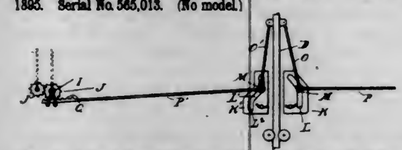
2. An adjustable piano-pedal, consisting of a lever-section A, having a depressed portion *a*, an adjustable section C, a square bar B secured thereto having a depression in one side thereof and a series of numbers opposite each of said depressions and means for locking the bar B opposite each of said depressions, substantially as described.

572,317. WIRE FENCE. EDWARD F. SHELLABERGER, De Kalb, Ill. Filed Aug. 1, 1894. Serial No. 519,162. (No model.)



Claim.—A wire fencing comprising a series of parallel cables and a series of stay-wires, each stay-wire having open eyes with end portions passing by each other in opposite directions, substantially in line with the body of the strip, the cable-strands being partially embraced between the curved portions and the end portions of the open eyes, as and for the purpose set forth.

572,318. BRIDGE-GATE. FREDERICK M. SMITH, Bay City, Mich., assignor of one-half to Thomas E. Webster, same place. Filed Oct. 8, 1895. Serial No. 565,013. (No model.)



Claim.—1. In a bridge-gate, the combination with the approach and the gates carried by rotatable gate-posts, arranged in pairs on opposite sides, of a transverse push and pull rod extending from each pair toward the center of the approach and adapted to rotate the gate-posts, a guide-roller on the inner end of each push and pull rod, a cam-groove for each guide-roller, a longitudinal push and pull rod extending from the bridge to the approach and having actuating connection with the transverse push and pull rods, and a lever upon the bridge having actuating connection with said longitudinal push and pull rod, substantially as described.

2. In a bridge-gate, the combination with the approach and the gates therefor, having rotatable gate-posts arranged in pairs on opposite sides, of a transverse push and pull rod extending from each pair toward the center of the approach and adapted to operate the gates, cam-grooves in which the inner ends of said push and pull rods are guided, a longitudinal push and pull rod under the control of the bridge-tender from the bridge and extending therefrom to the approach, links connecting the same with the transverse push and pull rods, and an automatic coupling and uncoupling device in said longitudinal push and pull rods, substantially as described.

3. In a bridge-gate, the combination with the approach and the gates thereupon, having rotatable gate-posts arranged in pairs on opposite sides, of a longitudinal push and pull rod extending from near the pivotal center of the bridge to the approach and provided with means under control of the bridge-tender to operate the same, of transverse push and pull rods upon the approaches on opposite sides of the longitudinal push and pull rod and extending to the gate-posts to operate the same, links connecting the longitudinal push and pull rod with the transverse push and pull rods, and cam-grooves into which the inner ends of said transverse push and pull rods engage, said cam-grooves having their inclined and parallel portions reversely arranged substantially as described.

4. In a bridge-gate, the combination with the approach and the two sets of swinging gates thereupon, controlling the admission and exit to and from the bridge of the transverse push and pull rods P P', one for each set of gates the bed-plates K K' having cam-grooves guiding the inner ends of said transverse push and pull rods and having inclined and parallel portions reversely arranged in the two bed-plates, the longitudinal push-rod extending from the bridge to the approach and consisting of the separate parts B D, the automatic coupling and uncoupling devices E, the links O O' connecting the push and pull bars, and a lever on the bridge having actuating connection with the longitudinal push and pull bar, substantially as described.

5. In a bridge-gate, the combination with the approaches and the two sets of swinging gates on each approach, of the walking-beam lever A centrally of the bridge, the lever T and its actuating connection with the walking-beam lever A, two longitudinal push and pull rods extending from the opposite ends of the lever A to the approaches, and having the separate parts B and D secured respectively in guides upon the bridge and the approaches thereto, automatic coupling and uncoupling devices between the parts B and D and connections between the parts D and the gates whereby the two sets of gates on each approach are differently operated, substantially as described.

6. In a bridge-gate, the combination with the draw and approaches provided with swinging gates on opposite sides, of the bed-plates K K' located between the gates, the cam-grooves L L', having parallel and inclined portions, reversely arranged in the two plates, the parallel extension L^3 of the cam-slot, the guide-rollers M M' engaging into said cam-grooves, the transverse push and pull rods P P' carried by the guide-rollers and adapted to operate the gates successively on opposite sides, and devices operated from the draw to reciprocate the guide-rollers in the cam-slots, substantially as described.

7. The combination with a draw and an approach thereto, of a gate on the entrance and on the exit side of the approach, and a single means on the draw for operating both said gates one in advance of the other.

8. The combination with a plurality of swinging gates, of push and pull rods operatively connected with said gates extending from the gates toward each other, cams with which the contiguous ends of said rods engage, a push and pull rod, actuating connections between said last rod and said first-mentioned rods, and means for operating said last-mentioned rod for operating said gates.

9. The combination with a plurality of gates, of a single operating device for said gates, and connections between said gates and device whereby the gates are differently operated.

10. The combination with a plurality of gates, rods operatively connected with said gates, a single operating means for said gates, and cams interposed between said rods and operating means whereby the gates are differentially operated and locked in their opened and closed positions, substantially as described.

572,319. ELECTRIC SWITCH. CHARLES B. STERLING, New York, N. Y. Filed June 13, 1895. Serial No. 552,644. (No model.)



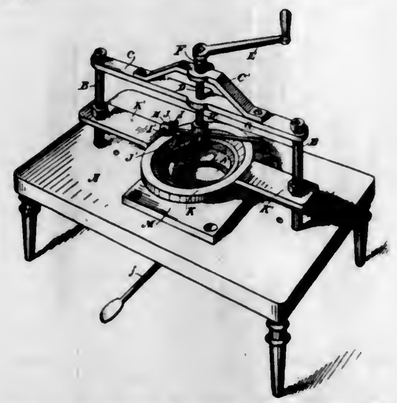
Claim.—1. In an electrical switch, a rotatable stem, provided with a handle, a carrier-plate loosely carried by the rotatable stem, a yielding connection between said plate and stem, said carrier-plate provided with contacts and two or more of said contacts being connected with each other by a conductor at the under side of the plate, in combination with fixed contacts connected with electrical conductors and overhanging the carrier-plate, all of said fixed contacts being in the path of all the carried contacts, substantially as described.

2. In an electrical switch, a rotatable carrier-plate provided with contacts, and two or more of said contacts being connected with each other by a conductor at the under side of the plate, a lock therefor and a stem and handle for locking and throwing the carrier-plate as desired the carrier-plate loosely carried by the rotatable stem, and a yielding connection between said stem and carrier-plate in combination with fixed contacts connected with electrical conductors and overhanging the carrier-plate, all of said fixed contacts being in the path of all the carried contacts, substantially as described.

3. In an electrical switch, a rotatable carrier-plate provided with contact-plugs projecting through the carrier-plate and above its surface, a conducting-strip secured to the under side of the plate, and supporting two or more of said plugs, means to rotate the plate, and overhanging fixed contacts all arranged in the path of all the contact-plugs, substantially as described.

4. In an electrical switch, a rotatable carrier-plate provided with contact-plugs projecting through the carrier-plate and insulated from each other, a conducting-strip secured to the under side of the plate, and connecting two or more of said plugs, means to rotate the plate, and overhanging fixed contacts all arranged in the path of all the contact-plugs, substantially as described.

572,320. CUTTER FOR BEVEL-CARDS. PAUL J. STUPARICH, San Francisco, Cal. Filed May 11, 1896. Serial No. 590,999. (No model.)

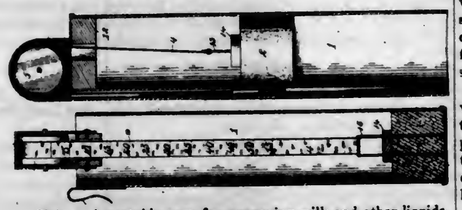


Claim.—1. An apparatus for cutting beveled openings in cards and tablets, consisting of a table, a removable plate secured thereon having a beveled central opening, a vertically-movable clamping-plate having a beveled opening made centrally therein, a vertical shaft turnable above the clamping-plate, a transversely-adjustable bar carried by the shaft, having a head upon its outer end, a cutting-blade and a means for clamping it to the head so as to stand at the desired angle, and a means for rotating the shaft and blade.

2. An apparatus for cutting beveled openings in cards and tablets consisting of a table, a base-plate having a central opening, a vertically-movable clamping-plate and guides upon which it is movable, said clamping-plate having a beveled opening made centrally therein, an adjustable supplemental plate fixed beneath the clamping-plate, a vertically movable and rotatable shaft having a head at its lower end, an arm transversely adjustable in said head, having a head at its outer end, a rod extending through said head having an opening upon one side to receive the shank of the cutter-blade and a nut fitting the screw-threaded opposite end whereby the blade may be turned and clamped at any desired angle.

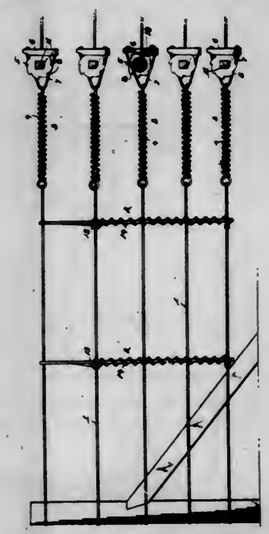
3. An apparatus for cutting beveled openings in cards or tablets, consisting of a table, a removable plate fixed thereto having a central opening, a cross bar supported and vertically movable above the plate, with journals for a vertically-rotatable shaft, an arm carried by the lower end of the shaft and adjustable transversely thereto, with an angularly-adjustable cutter at the end, a spring by which the vertical shaft is normally held up, said spring yielding to allow the shaft and cutter to be depressed, a disk having a beveled central opening, and a mechanism by which the disk is movable to clamp the tablet to be operated on between itself and the lower perforated plate.

572,321. GAGE. JOHN P. VAN VLECK, Cooksville, Wis. Filed Apr. 3, 1896. Serial No. 586,066. (No model.)



Claim.—A portable gage for measuring milk and other liquids, adapted to be readily transferred from one can to another, and comprising a tubular casing open at its lower end and provided with an exterior longitudinally-disposed well closed at its lower end and open at the upper end, a detachable pulley-casing mounted on top of the tubular casing and provided at its front with an opening, a pulley mounted in the pulley-casing, a float arranged within the tubular casing, a weight arranged in the well, a strip or ribbon provided with graduations arranged on the pulley and connected with the weight and the float and adapted to withdraw the same from the well and the tubular casing when the pulley-casing is detached, to permit the parts to be washed, and a resilient catch adapted to engage the upper edge of a can, substantially as and for the purpose described.

572,322. WIRE FENCE. ISAAC M. WARNER, Batavia, Mich. Filed Oct. 5, 1895. Serial No. 564,806. (No model.)



Claim.—1. In a fence, the combination with a runner, of a drum or spool connected to one end of the runner and provided with ratchet-disks, a tension-spring connected to the other extremity of the runner, a shoe having a seat bearing against the ratchet-disks and provided with a projection or shoulder to engage the teeth thereof, and a loop or yoke connecting the shoe to the adjacent extremity of the tension-spring, said loop or yoke being arranged between the planes of the ratchet-disks with its arms upon opposite sides of the drum or spool, substantially as specified.

2. In a fence, the combination with runners, of a single blank stay intersecting the runners and doubled upon itself near its upper end to form a loop extending over and engaging the uppermost runner, the short arm of the loop terminating in a hook engaging the upper intermediate runner, and a continuous tie-wire coiled upon the lower single portion of the stay and securing the runners thereto, the intermediate runners with the exception of that with which said hook is engaged being capable of vertical movement independedtly of the stay by reason of the coiled tie-wire, substantially as specified.

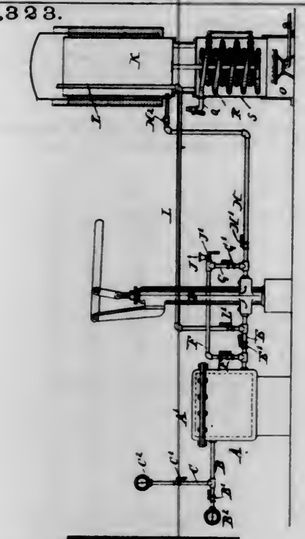
572,323. APPARATUS FOR FLAVORING CIGARS. LEWIS B. WHITE, New York, N. Y. Filed Feb. 17, 1896. Serial No. 579,612. (No model.)

Claim.—1. In an apparatus for flavoring cigars, the combination with a vessel for receiving cigars, of a pump connected with said vessel, both at its suction and at its forcing end, and a vapor-generator connected with said pump both at the suction and forcing end, pipes for making the above connections and proper cocks in said pipes, substantially as herein shown and described.

2. In an apparatus for flavoring cigars, the combination with a vessel for receiving cigars, of a pump, a tank, a pipe connecting the pump with the vessel, a cock in said pipe, a pipe connecting the pump with the tank, a cock in said pipe, a pipe connecting the above two pipes at opposite sides of the pump and having cocks and an outlet and means for generating vapors in the tank, substantially as herein shown and described.

3. In an apparatus for flavoring cigars, the combination with a vessel for receiving cigars, of a pump, a tank, pipes connecting the receiving vessel and the tank with the pump, cocks in said pipes, a connecting-pipe and cocks for establishing connections between either the suction or the forcing end of the pump and the receiving vessel and the tank, and a pipe for establishing direct communication between the tank and the receiving vessel and a cock in said pipe, substantially as herein shown and described.

572,323.



572,324. PNEUMATIC TOOL. CHESTER B. ALBREE, Allegheny, Pa. Filed May 15, 1896. Serial No. 591,638. (No model.)



Claim.—1. A reciprocating tool having a cylinder and piston, an exhaust port, a port adapted to be uncovered at the end of the instroke of the piston to admit fluid-pressure to the rear of the piston and to cause its initial outstroke, a passage through the piston to admit fluid-pressure to the rear of the piston after the beginning of the outstroke, and a valve which controls said port and is closed automatically when the pressure at the rear of the piston is reduced by exhaustion.

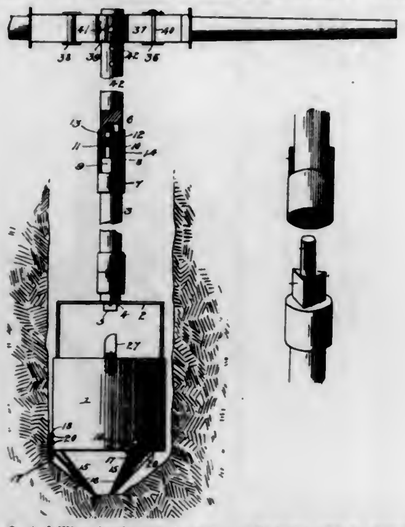
2. A reciprocating tool having a cylinder and piston, an exhaust-port, a port adapted to be uncovered during the instroke of the piston to admit fluid-pressure to the rear of the piston and to cause its initial outstroke, a passage through the piston to admit fluid-pressure to the rear of the piston thereafter, and a valve which controls said port and is closed automatically when the pressure at the rear of the piston is reduced by exhaustion, said valve being subjected on one side to the closing pressure from the cylinder at the outer end of the piston and on the other side to the pressure from the inner end thereof.

3. A reciprocating tool having a cylinder and piston, an exhaust-port, a port adapted to be uncovered during the instroke of the piston to admit fluid-pressure to the rear of the piston and to cause its initial outstroke, a chamber H, H′ in the piston, a passage F adapted to register with a port leading to the rear portion of the cylinder, a check-valve in said passage, and a valve-controlled port admitting fluid to the forward portion of the cylinder.

4. A reciprocating tool having a cylinder and piston, the effective area of the piston exposed to pressure being greater at the rear end than at the forward end, and a pressure-inlet port, admitting constant fluid-pressure to the smaller end of the piston, an exhaust-port, a port adapted to be uncovered during the instroke of the piston to admit fluid-pressure to the rear of the piston and to cause its initial outstroke, a passage through the piston to admit fluid-pressure to the rear of the piston thereafter, and a valve which controls said port and is closed automatically when the pressure at the rear of the piston is reduced by exhaustion.

572,325. EARTH-AUGER. WILLIAM F. BENNETT and STEPHEN HILL, Goldsmith, Ind. Filed Jan. 16, 1896. Serial No. 575,773. (No model.)

Claim.—1. A drilling implement having a cylindrical bucket and drill-bits detachably secured to the lower edge of the bucket and each consisting of a blade split longitudinally to form a main or body portion arranged at its upper end in contact with the inner surface of the bucket, and a curved or bowed clearance-ear which is arranged outside of the circumference of the bucket, substantially as specified.



2. A drilling implement having a cylindrical bucket provided with means for the attachment of drill-bits, and a sand-bottom removably fitted in the bucket and provided with a centrally-pivoted slide or shutter having a pivotal scraping-blade and an oppositely-disposed pivotal closing wing adapted to be extended when the rotation of the bucket is reversed to close the slide, substantially as specified.

3. A drilling implement having a cylindrical bucket provided with drill-bits, and a sand-bottom arranged in the lower end of the bucket and comprising a plate provided with a segmental opening, a segmental slide or shutter pivoted coaxially with the bucket, a hinged scraping-blade 23 adapted to occupy a downwardly-inclined position when the bucket is rotated forwardly, and a hinged closing-wing 24 adapted to occupy an inclined position to engage the soil when the bucket is turned in the reverse direction, to close the slide or shutter, substantially as specified.

4. A drilling implement having a sectional stem, one end of each section having a cross-sectionally triangular socket and a rounded extension thereof, and the other end of each section having a cross-sectionally triangular stud and rounded extension to fit in said socket, a transverse locking-pin adapted to engage registering perforations in the socket and the rounded extension of the stud, and a sleeve mounted to slide upon the stem-section to cover and secure the locking-pin in place, substantially as specified.

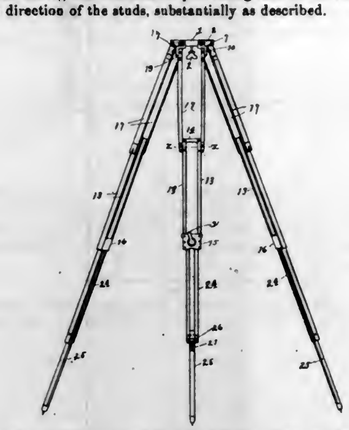
5. In a drilling implement, a stem provided with transverse perforations, a clamp adapted for attachment to said stem and provided with alined guides for an operating handle, said clamp having a body portion, a pivotal portion mounted for longitudinal adjustment upon the body portion, means for securing the free end of the pivotal portion in its operative position, the main and pivotal portions of the clamp having opposite seats to receive the stem, and a transverse locking pin adapted to engage one of the perforations in the stem and alined perforations in said seats, substantially as specified.

572,326. TRIPOD. FRANK A. BROWNELL, Rochester, N. Y., assignor to the Eastman Kodak Company, same place. Filed June 1, 1893. Serial No. 476,221. (No model.)

Claim.—1. The combination with the tripod-head having the brackets pivoted thereon arranged in pairs folding toward each other parallel with the head and having the studs, of the legs composed of the strips having the apertures for engaging the studs, said strips being movable in the direction of the length of the studs, substantially as described.

2. The combination with the head, the pair of brackets pivoted thereon and movable toward and from each other, of the leg, and cooperating studs and recesses on the leg and brackets, extending at an angle to the plane of the pivots of the brackets, substantially as described.

3. The combination with the head and the pair of brackets thereon, of the leg, and the laterally-extending cooperating studs and recesses on the leg and brackets, and the cooperating lugs and recesses between the leg and brackets for preventing their relative movement in the direction of the studs, substantially as described.



4. The combination with the tripod-head, and the brackets thereon having the laterally-extending studs, of the leg composed of the strips with their engaging ends laterally movable provided with the recesses engaging the studs, and the lugs engaging the brackets and preventing the relative lateral movements of the leg and studs, substantially as described.

5. The combination with the head, the brackets thereon having the studs and the cut-away portions at the side, of the leg having the recesses for the studs, and the locking-lugs adapted to enter the cut-away portions and permit the engagement of the studs and recesses when the leg is turned in one direction and preventing the disengagement of the studs and recesses when turned in the other direction, substantially as described.

6. The combination with the head and a pair of brackets pivoted thereon having the ears 8 and the cut-away portion 22, of the leg having the lugs 19 thereon, and the engaging pins and recesses between the leg and brackets, substantially as described.

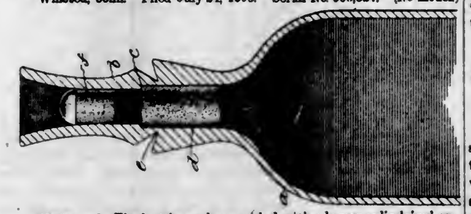
7. The combination with the head, the brackets 7 having the ears 8 and 10, and the studs 11, the pivots 9 and a leg having recesses for coöperating with the studs, substantially as described.

8. The tripod-head having the central screw-aperture, the recess 40 and the recesses 12, the screw having the reduced portion, and the slide adapted to be moved across the screw-aperture and the recess 40, of the brackets pivoted to the sides of the head having the ears 8 and 10 and studs 11 and the pivots 9, substantially as described.

9. The combination with the leg-section composed of the two strips 13, the plates 15 and 16 on opposite sides thereof, the former having the central apertures, and the cam-surfaces at the sides, of the leg-section 24 sliding between the strips and plates, and the rotary cam-plate 30 having the handle extending through the aperture, and the cam-surfaces coöperating with those on the plate 15, substantially as described.

10. The tripod-leg composed of the two strips 13 connected at their upper ends, the strips 17 pivoted to them and adapted to fold against their sides, of the plates 15 and 16, the former having the aperture and the cam-surfaces at the sides thereof, the leg-section 24 sliding between the strips 13, and the rotary cam-plate 30 having the cam-surfaces coöperating with those on the plate 15 and the handle extending through the aperture therein, substantially as described.

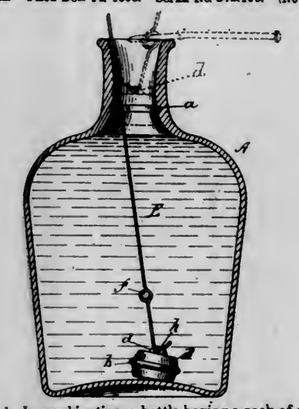
572,327. BOTTLE-FILLER GUARD. JOSEPH E. BRYAN, West Winsted, Conn. Filed July 24, 1896. Serial No. 600,327. (No model.)



Claim.—1. The bottle-neck provided with a lower cylindrical aperture, an upper cylindrical aperture of slightly smaller diameter adjoining, forming a narrow shoulder c, and a flaring mouth, internally, and an annular V-shaped reinforced notch e externally, a short distance below the said internal shoulder, substantially as specified.

2. The bottle-neck provided with a lower cylindrical aperture, an upper cylindrical aperture of slightly smaller diameter adjoining, forming a narrow shoulder c, and a flaring mouth, internally, and an annular V-shaped reinforced notch e externally, a short distance below the said internal shoulder, in combination with stoppers d and f, and the hard, round upper surface affixed to the top of stopper f, whereby extractive means are warded off, substantially as specified.

572,328. BOTTLE-SEALING DEVICE. JAMES H. BULLARD, Springfield, Mass. Filed Dec. 14, 1895. Serial No. 572,196. (No model.)



Claim.—1. In combination, a bottle having a neck of constricted internal diameter between its extremities, combined with a plug having a friable projection thereon, normally contained inside of said bottle for closing the inner extremity of the neck thereof, and means for fixing said plug in the inner extremity of said neck, and for breaking said friable projection, substantially as set forth.

2. In combination, a bottle having a neck of constricted internal diameter between its extremities, combined with a plug having a friable projection thereon normally contained inside of said bottle for closing the inner extremity of the neck thereof, and an elastic packing-ring between said plug and the adjoining portion of the bottle-neck, and means for fixing said plug in the inner extremity of the neck and for breaking said friable projection, substantially as set forth.

3. In combination, a bottle having a neck of constricted internal diameter between its extremities, combined with a plug having a friable projection thereon, normally contained inside of said bottle for closing the inner extremity of the neck thereof, and a plug-lifter extending through the neck of the bottle for temporary connection with said friable projection, substantially as set forth.

4. A plug which has a readily-breakable projection upon its top, and by means of which the plug is raised into position in the neck of the bottle, and which projection is adapted to be detached after the plug is seated, combined with a bottle having an internally-tapered neck to receive the plug, substantially as shown.

5. A bottle having the lower end of its neck internally tapered and provided with a groove in the tapered portion, combined with a tapered plug having a groove in its side, and a readily-breakable projection extending from its top, and an elastic packing-ring that is applied to the plug, substantially as described.

6. The bottle, and a plug placed therein, and provided with a projection upon its top that is readily removable, combined with a rod for raising the plug into position, the rod being provided with a hook at its lower end, and a loop a suitable distance above its lower end and into which a rod can be inserted for the purpose of detaching the handle or projection from the plug, substantially as set forth.

572,329. REGISTERING DEVICE FOR BOTTLES. JAMES H. BULLARD, Springfield, Mass. Filed Dec. 14, 1895. Serial No. 572,197. (No model.)

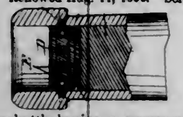
Claim.—1. In a bottle, a tube therein attached to the bottom of said bottle and extending up into the neck thereof having perforations through its side and a series of internal annular ribs, combined with a float in said tube, and rib-interlocking members supported by said float whereby any upward movement of said float is prevented, substantially as set forth.

2. In a bottle, a tube therein attached to the bottom of said bottle and extending up into the neck thereof having perforations

through its side and a series of internal annular ribs, combined with a float in said tube, rib-interlocking members supported by said float whereby any upward movement of said float is prevented, and a cap attached to the upper extremity of said tube having a central perforation therein, substantially as set forth.



572,330. BOTTLE-SEAL. JAMES H. BULLARD, Springfield, Mass. Filed Nov. 9, 1895. Renewed Aug. 11, 1896. Serial No. 602,460. (No model.)



Claim.—1. A glass bottle having a groove on the inside of the neck thereof, combined with a cup having an annular groove in the wall thereof, with perforations through the wall of said groove, and a metal cut ring in said groove for engagement with the groove in the bottle-neck, and a plastic material filling said cup and inclosing said cut ring, substantially as described.

2. A glass bottle having a thickened portion at the mouth thereof terminating in a shoulder on the outside of the neck, and a groove on the inside thereof located substantially opposite said shoulder, combined with a cup having a cut ring in a perforated groove in the wall of said cup, and a plastic material filling said cup, and said groove therein, back of said cut ring, substantially as set forth.

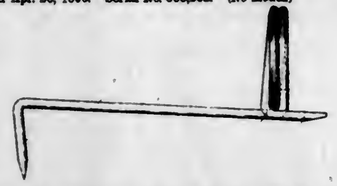
572,331. TOILET-PAPER HOLDER. EDWIN D. CASTERLINE, San José, Cal. Filed July 2, 1896. Serial No. 597,816. (No model.)



Claim.—1. A holder for a serving apparatus consisting of a box closed upon all sides and having a centrally-located discharge slit, in combination with a hanger, open at its top to receive said holder and having an opening coinciding with said slit, and a locking device on the inside of the holder, adapted to project through a wall thereof and to engage and interlock with the hanger.

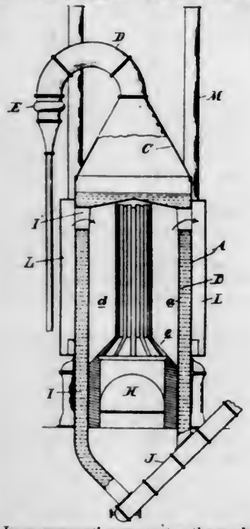
2. A holder for toilet paper consisting of an inclosed box having a centrally-located slit in the front, said holder adapted to contain a filling of paper formed of sheets folded so that each double sheet approximately fits the interior of the box, the inner flap of each sheet being interlocked with the outer flap of the next adjacent sheet, a permanent hanger having a back, bottom and sides, the front overlapping the holder to the edge of the slit, a locking device consisting of a spring-tongue fixed to the holder, and a slot in the hanger with which it is adapted to engage when the holder has been pushed into the hanger from the top so as to rest upon the bottom thereof.

572,332. SNOW-GUARD. MARTIN CLASON, Providence, R. I. Filed Apr. 20, 1896. Serial No. 588,262. (No model.)



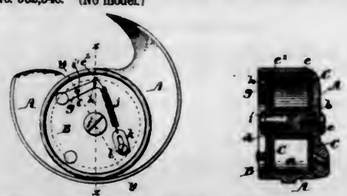
Claim.—In a snow-guard, the combination with the pointed end 4, of a length of wire bent to form the central rod 6, the loop 8, the vertical part 10 and the bearing end 12, whereby the snow-guard bent up from a length of wire forms a rigid support, as and for the purpose described.

572,333. EVAPORATING APPARATUS. THOMAS CRANEY, Bay City, Mich. Filed Apr. 8, 1895. Serial No. 544,950. (No model.)



Claim.—In an evaporating apparatus, the combination with a furnace, of a boiler-section having an annular water-space the inner wall of which is formed into hollow separated radial wings arranged vertically and extending inward toward the vertical center of the boiler and forming between their sides and ends the combustion-chamber, a casing around the boiler forming a smoke-flue between the same and outer wall of the boiler, pipes leading from the combustion-chamber into the smoke-flue and a settling-leg below the furnace, substantially as described.

572,334. THREAD-TENSION FOR SEWING-MACHINE SHUTTLES. HANFORD T. CROSBY, Boston, Mass., assignor to the Bertrand Sewing Machine Company, Portland, Me. Filed Mar. 9, 1896. Serial No. 582,346. (No model.)



Claim.—1. The combination with a rotary shuttle and its bobbin, of a revoluble disk for closing the bobbin-chamber of said shuttle, and provided with a thread-guiding eye near its periphery; an arm formed upon or secured to said disk near its periphery and projecting into the bobbin-chamber in close proximity to the peripheries of the bobbin-flanges and provided with a thread-guiding eye near the middle of its length; a lever pivoted to the front or outer face of said disk and provided with a thread-guiding eye near its free end; a spring for moving said pivoted lever in one direction; and a stop to limit the movement of said lever in either direction.

2. The combination with the shuttle A and bobbin C, of the disk B provided with the thread-guiding eye e^2, and having the arm e provided with the eye e'; the pivoted lever g provided with the eye h; the spring j; the slotted plate k and the clamping-screw l.

572,335. SHUTTLE FOR SEWING-MACHINES. HANFORD T. CROSBY, Boston, Mass., assignor to the Bertrand Sewing Machine Company, Portland, Me. Filed Mar. 14, 1896. Serial No. 583,240. (No model.)

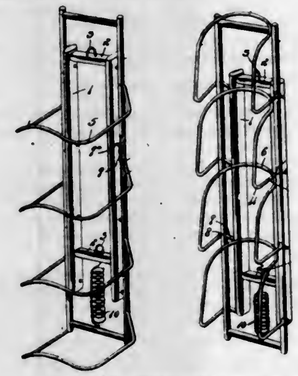


Claim.—1. In a shuttle tension device, the combination of a rotary shuttle-body provided with a bobbin-receiving chamber or recess, and a thread-delivering opening through the peripheral wall of said chamber; a leaf-spring secured to the front face of the shuttle-body and having its contact-surface with the front face of said shuttle-body parallel to the plane of revolution of said shuttle; a pair of thread-guiding hooks set in said front face of the shuttle-body, one at or near each end of said spring; and the plate C provided with the thread-guiding eye d, d'.

2. The combination with a rotary shuttle-case provided with a bobbin-chamber and with the thread-delivery opening e and a bobbin-carrying stud set therein; of a bobbin-retaining plate secured in a fixed position on said stud and provided with a thread-guiding eye at or near the axis of the shuttle-body; the spring D; the clamping-screw g; the adjusting-screw h; and the hooks E and F.

3. The combination of the shuttle A provided with the stud a, and the delivery-opening e; the bobbin B; the spring D provided with the annular lip d^3; the clamping-screw g; the adjusting-screw h; and the hooks E and F.

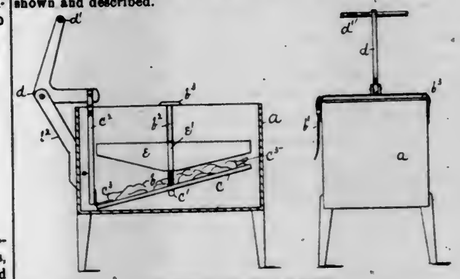
572,336. NEWSPAPER-RACK. JOHN A. DAWSON, Northville, S. D., assignor of one-half to John J. McCaughey, same place. Filed July 29, 1896. Serial No. 600,965. (No model.)



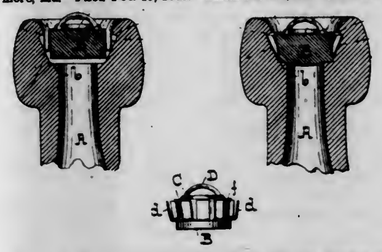
Claim.—A rack having coöperating stationary and movable frames connected by an actuating-spring whereby they are yieldingly held in their normal relative positions, and clamps having their arms provided with trunnions mounted in bearings in one of the frames, said trunnions being extended to form cranks terminating in wrist-pins mounted in the other frame, whereby the clamps are normally held folded and are adapted to be temporarily secured in their extended positions by arranging the cranks approximately in the planes of the frames, substantially as specified.

572,337. WASHING-MACHINE. ALVIN H. B. DEAN, New Bedford, Mass. Filed Mar. 18, 1896. Serial No. 583,783. (No model.)

Claim.—In a washing-machine, the combination with a rectangular suds-box, having a perpendicular groove in the interior surface of each of its sides, extending nearly to the bottom thereof and midway of its ends, of a perforated board, adapted to tilt on pivots resting in the bottom of said grooves, and means for actuating said board; a shallow open-topped box, having a perforated bottom, slanting upward from near its center, at an angle coincident with the slant of the board c, when one of its ends is depressed to its lowest extent, and provided with upright pieces fixed to the exterior of its sides, adapted to slide in the perpendicular grooves in the sides of said suds-box, and hold said box in a horizontal position; and means to limit the upward movement of said open-topped box, within said suds-box, all as shown and described.



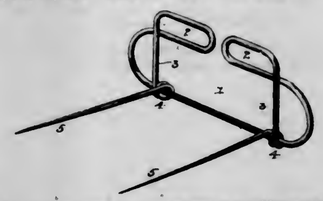
572,338. BOTTLE-SEALING DEVICE. JACOB S. DETRICK, Baltimore, Md. Filed Feb. 13, 1895. Serial No. 538,181. (No model.)



Claim.—1. In combination with a bottle having a mouth in which is a seat and a projecting lip situated over the seat, a compressible seal, a cup in which the compressible seal is placed having an annular groove in its crown, and a staple-extractor with its ends entering the said annular groove and bent around so as to fit in the groove, substantially as specified.

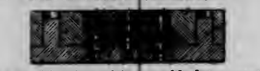
2. In combination with a bottle having a mouth provided with a seat and a projecting lip over the seat and an inclined or conical surface between the seat and the lip, a sealing device which consists of a compressible seal having a holder formed of a cup with upwardly-turned prongs of a diameter at the point at which they are bent or folded, greater than that of the portion of the bottle-mouth which receives them when the compressible seal is on the seat, whereby in the seating of the seal the lower end of the holder is forced into or made to grip the material of the seal, substantially as specified.

572,339. CALF-WEANER. GABRIEL DISRUD, Forward, Wis. Filed Feb. 14, 1896. Serial No. 579,272. (No model.)



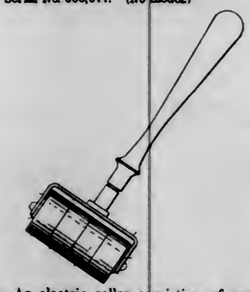
Claim.—As an article of manufacture, a calf-weaner comprising a transversely-elongated spur-carrying body or main loop having a continuous lower and an open upper side and terminating in spaced transversely-alined nose-loops having rounded extremities, the lower side of the body or main loop being adapted to yield torsionally, whereby the nose-loops may be separated by relative forward and rearward displacement to increase the interval therebetween during application, said nose-loops being normally held in alinement by the torsional resistance of the continuous lower side of the body or main loop, substantially as specified.

572,340. ASSEMBLING AND TRANSFERRING MECHANISM FOR EYELETS. ALANSON C. EATABROOK, Northampton, Mass. Filed Nov. 20, 1895. Serial No. 569,598. (No model.)



Claim.—The combination with a mold-plate constructed to receive the bodies of a series of eyelets and hold them with the flanged ends therefor exposed, of a transferring-plate for applying the eyelets to the said mold-plate, the said transferring-plate having a series of recesses or cavities, each of a diameter and depth to receive and retain the flanged end of an eyelet with its body or shank portion projecting above the surface of the plate, whereby to protect the flange from injury when the said plates are brought together, the sides of the cavity holding the eyelet against lateral displacement or overturning, substantially as described.

572,341. ELECTRIC ROLLER FOR THERAPEUTICAL AND MASSAGE PURPOSES. JOHN W. GIBBS, New York, N. Y. Filed Sept. 22, 1896. Serial No. 606,677. (No model.)



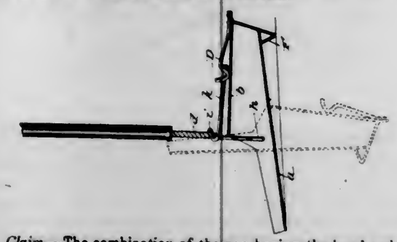
Claim.—1. An electric roller consisting of a central body and superimposed generating-plates as copper and zinc.

2. An electric roller consisting of a body provided with axial bearings, and with a smooth cylindrical face, the said face formed by, and consisting of a series of contiguous generating face-plates, as copper and zinc, supported thereby, and of a bifurcated holder to engage the said axial bearings, whereby an even pressure may at all times be exerted upon the person to which the said roller is applied, and a circuit may become established upon application of the roller to the said person.

572,342. PROCESS OF REFINING COPPERY SILVER BULLION. FREDERICK GUTZKOW, San Francisco, Cal. Filed July 14, 1896. Serial No. 599,166. (No specimens.)

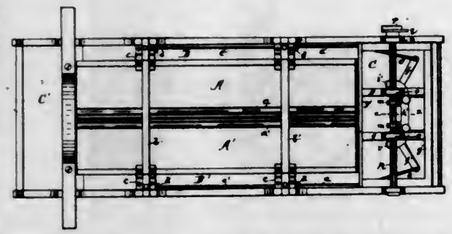
Claim.—The process of refining coppery silver bullion, which consists of the following successive operations, to wit: heating and dissolving the bullion in strong sulfuric acid, and during this operation progressively adding diluted sulfuric acid, separating the resulting copper sulfate by boiling to high concentration, separating the silver solution from the precipitated copper sulfate, diluting it with water and cooling, thus precipitating the silver as silver sulfate and leaving diluted acid, washing the precipitated copper sulfate with strong sulfuric acid to remove any adhering silver sulfate and reutilizing the diluted and strong acid thus obtained for dissolving fresh bullion, substantially as set forth.

572,343. DUST-PAN. WALTER J. HOPKINS, St. Clair, Mich. Filed Feb. 24, 1896. Serial No. 580,466. (No model.)



Claim.—The combination of the pan having the hood and also having journal-apertures in its side walls, the handle, the bail having a shank secured in said handle and also having lateral branches terminating in journals which bear in the journal-apertures of the pan, the catch of resilient metal fixedly connected at its rear end to the pan and arranged above the hood thereof and having its forward end free and bent downwardly and upwardly to form a loop which normally presses against the hood, and the link having the portion *i*, straddling the shank of the bail and the eyes *j*, receiving the lateral branches of the bail and also having the rearwardly-extending loop *k*, designed to be automatically engaged by the catch, as and for the purpose set forth.

572,344. DUMPING-WAGON. JOSEPH H. JACK, Dayton, Ohio. Filed Apr. 17, 1896. Serial No. 587,996. (No model.)



Claim.—1. In a dumping-wagon, the combination with a wagon-bed consisting of hinged sections A and A′, transverse bars *b* and *b*′, pulleys mounted on the inner sides of the wagon-body, and cables connected to said transverse bars, of levers *f* and *f*″ to which said cables are connected the said levers having their inner ends curved and pivoted below the wagon-seat, sliding plates *h* and *h*′ with an intervening slot through which the said levers project, a transverse rocker-rod mounted below the wagon-seat, arms *m* and *m* projecting upwardly from said rocker-rod and adapted to move the plates *h* and *h*′, and means for operating said rocker-rod from one side of the wagon to move the sliding plates *h* and *h*′, as herein shown and described.

2. In a dumping-wagon, the combination with the hinged floors A and A′, transverse bars *b* and *b*′, rollers mounted on the inner sides of the wagon-body, and cables connected to said bars and running forward to a point below the wagon-seat, of levers pivoted below the wagon seat and to which the said cables are connected, curved sliding plates rigidly secured to each other so as to provide an intervening slot through which the said levers project, rollers mounted on the lower one of said plates, tracks upon which said rollers are guided, a transverse rocker-rod mounted below the seat of the wagon, arms mounted on said rod and adapted to impart movement to the sliding plates, an upright bar rigidly connected to the rocker-rod on one side of the wagon, and means for engaging with said bar to operate the rocker-rod, substantially as and for the purposes specified.

572,345. PROCESS OF MAKING POTASSIUM BITARTRATE. HENRY T. JARRETT, New York, N. Y. Filed July 11, 1894. Serial No. 517,235. (No specimens.)

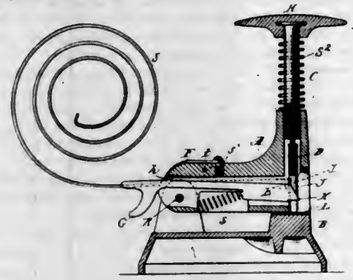
Claim.—1. The method of manufacturing bitartrate of potash from argols, consisting in first dissolving the argols in caustic soda to decompose the coloring-matter, or to render it insoluble, introducing the carbonate of soda to precipitate the lime, adding a compound of potassium and finally precipitating the bitartrate of potash directly from the mixture by the introduction of an acid.

2. The method of manufacturing bitartrate of potash from argols, consisting in first dissolving the argols in caustic soda to decompose the coloring-matter or to render it insoluble, introducing the carbonate of soda to precipitate the lime, adding a compound of potassium, introducing a decoloring agent and finally precipitating the bitartrate of potash directly from the mixture by the introduction of an acid.

572,346. STAPLING-MACHINE. JAMES A. KEYES, New York, N. Y., assignor, by mesne assignments, to the Greenfield Automatic Fastener Company, same place. Filed Sept. 7, 1895. Serial No. 561,776. (No model.)

Claim.—1. A stapling-machine provided with a single plunger adapted to sever and drive a single staple from a completed strip of staples at each operation, in combination with a guideway for guiding said staples to the plunger; feeding mechanism consisting of a sliding bar having an inclined face located in the downward path of the plunger; a pawl adapted to fall successively behind the individual staples of the strip when the sliding bar is forced backward by the downward movement of the plunger and a spring which normally holds said bar in its forward position, substantially as described.

2. A stapling-machine provided with a completed strip of staples, spring-actuated feeding mechanism for feeding said staples forward as desired, in combination with a plunger adapted to sever and drive one staple at a time, said feeding mechanism consisting of a sliding bar having an inclined face located in the path of the plunger, and a detent or hook adapted to fall between the backs of the staples as it is forced backward on the downward movement of the plunger, substantially as described.

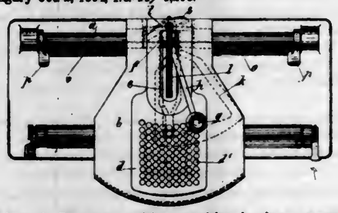


572,347. BRUSH. FRANK N. LOOK, Northampton, Mass., assignor to The Florence Manufacturing Company, same place. Filed Aug. 21, 1893. Serial No. 483,612. (No model.)



Claim.—A brush having a hollow sheet-metal face perforated for the reception of the bristles, cement or composition filling the hollow of the said face inside the flange and molded therein, said filling forming a reinforce for said face, said face having around the edge thereof a flange which projects beyond the said filling and is curved or concavo-convex in cross-section, tufts of bristles extending through the perforations in the face into the said cement or composition, said tufts having their inner ends embedded in and surrounded by the latter and secured in place thereby, and a hollow sheet-metal back also having around the edge thereof a flange which is curved or concavo-convex in cross-section and having its flange lapped over that of the face to unite the face and the back, with the free edge thereof concealed in the depression that is formed in the inner flange adjacent to the convexity of the latter, the overlapping flanges forming an intermediate bead, substantially as described.

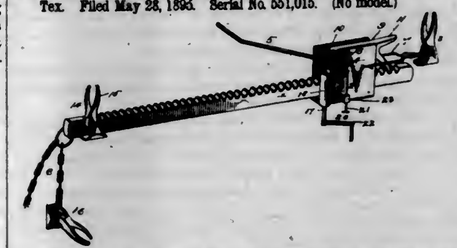
572,348. TYPE-WRITING MACHINE. OTTO F. MAYER, Berlin, Germany. Filed May 11, 1895. Serial No. 549,015. (No model.) Patented in Germany Nov 16, 1893, No. 73,296; in Switzerland Jan. 20, 1894, No. 8,107; in France Jan. 24, 1894, No. 235,767; in Belgium Jan. 24, 1894, No. 108,265; in England Jan. 26, 1894, No. 175; in Austria Jan. 26, 1894, No. 44/6,298; in Sweden Sept. 8, 1894, No. 4,056, and in Hungary Oct. 2, 1894, No. 44/6,298.



Claim.—1. In a type-writing machine having a movable type-plate attached to a laterally-displaceable carriage, and a printing-lever adapted to strike upon said type-plate, and to be displaced together with said carriage, the combination with said parts, of a rack arranged parallel to the direction of motion of the carriage, and adapted to be moved in a direction rectangularly thereto; a pawl taking into said rack, and adapted to be turned by the latter; and a screw arranged in the printing-lever, having said pawl fixed to one of its ends, and resting with the other end against a part of the carriage, for the purpose as described.

2. In a type-writing machine having a movable type-plate adapted to be adjusted by a setting-pin lever, and a displaceable carriage holding said two parts, the combination with said setting pin lever, of a ball-shaped slide fixed to the rear end of the same; a slot provided in said carriage, and adapted to serve as a guide for said slide; and a fixed guide-bar arranged over the said slide, and adapted to prevent the same from leaving said slot, for the purpose as described.

572,349. WIRE-STRETCHER. WILLIAM I. MORROW, Pine Grove, Tex. Filed May 28, 1895. Serial No. 551,015. (No model.)

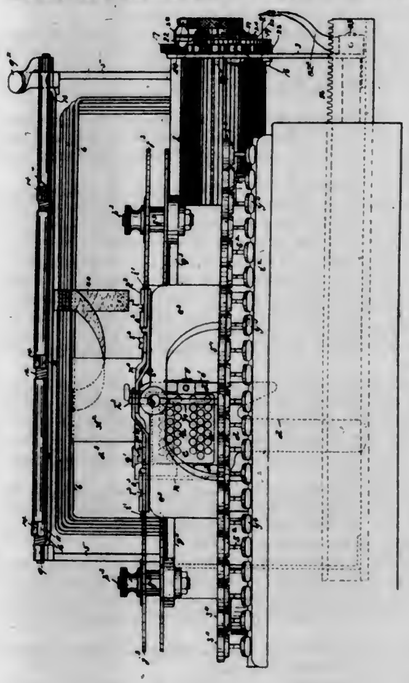


Claim.—1. In a wire-stretcher, the combination of a sliding frame provided with parallel sides and having at one of its sides a wire-receiving notch, a rack-bar arranged within the frame between the sides thereof and provided at its upper edge with teeth, gearing mounted on the sliding frame and meshing with the rack-bar, a pawl arranged between the sides of the frame, pivoted at one end to the same and having its other end engaging the rack-bar, said pawl being provided at a point intermediate of its ends with a cutting edge co-operating with the wire-receiving notch, and a handle 11, projecting horizontally from the pawl at a point intermediate thereof and located at the top of the casing substantially as described.

2. The combination of a wire-stretcher provided with a sleeve or bearing, a shaft arranged in the sleeve or bearing capable of a limited longitudinal movement therein and provided with a hook for engaging the two portions of a wire to be connected, a crank-handle for rotating the shaft to twist the wire, and a locking device for preventing the shaft from rotating, substantially as described.

3. In a wire-stretcher, the combination of a rack-bar, a sliding frame mounted thereon and provided with a sleeve or bearing, a gear-wheel mounted on the frame and meshing with the rack-bar, a crank-handle 5 connected with the gear-wheel, a shaft arranged in the sleeve or bearing and provided with a hook for engaging the two portions of a wire to be connected, the crank-handle 20 arranged on the shaft and provided with a slot, and the substantially T-shaped key loosely connected with the frame and arranged to engage the slot of the crank-handle 20, substantially as described.

572,350. TYPE-WRITING MACHINE. HORACE L. ARNOLD, Hartford, Conn. Filed June 10, 1885. Serial No. 168,238. (No model.)



Claim.—1. In a type-writer the combination of double and unlike ended type, mounted so as to be reversed at the will of the operator, and reversing mechanism substantially as described, with the platen and impression mechanism substantially as set forth.

2. The combination in a type-writer of double and unlike ended reversible type, a platen or impression-block, and means for actuating the type, substantially as described.

3. The combination of the double-ended sliding type, rotating supporting-plates for the type, turning and stop studs connecting with said supporting-plates, turn-hook, spring-pressed keeper, and mechanism for working the turn hook substantially as described.

4. The combination of the supporting and reversing shaft and parallel perforated plates for supporting the type, said plates having end flanges and center bearing-caps for connecting with the supporting shaft substantially as described.

5. The combination with the type supporting and reversing shaft of perforated type-supporting plates parallel with the shaft and having end flanges with center caps to embrace the supporting-shaft, and the collars and binding-screws securing said plates to the shaft substantially as described.

6. The combination of the perforated type-supporting plates, the supporting-shaft parallel with the plates and having said plates fitted thereto, and the frame plate having the flanged side projections for the journal-bearings of the shaft substantially as described.

7. The combination of the type-mount frame-plate and type-mount shaft, said plate having the flanged side projections for supporting the journal-bearings of said shaft and being offset to the vertical plane of the axis of the journal-bearings for balancing the type-mount, and said flanged projections stayed by connection with the edges of the plate in the offset substantially as described.

8. The combination with the type-mount of the keeper pivoted in the journal-bearing flange of the type-mount frame-plate, its spring, and the bearing-supports for the supporting-rod for the spring of said keeper formed in a flanged and bent projection of said plate substantially as described.

9. The type-cylinders composed of a split tube and type secured in the bore thereof substantially as described.

10. The combination with a hollow sliding type-cylinder of a reacting-spring located in the hollow space and having an arm projecting out of the cylinder and against a bearing for reacting thrusts, substantially as described.

11. The combination with the hollow slitted and reversible type-cylinders and their supporting-plates of the reacting-springs located in the hollow space of the cylinders and having both ends projecting from the cylinders and bearing against the plates to retract the cylinders in both directions, substantially as described.

12. The combination with the slitted type-cylinders of corrugated key-plates securing one or more rows of the cylinders by their ribs engaging the slits, said key-plates being confined between end bearings preventing longitudinal shift of the same substantially as described.

13. The combination with the type-mount, of actuating-levers which support it and effect universal motion of it in its plane, and a spring that balances the type-mount and levers substantially as described.

14. The combination with the type-mount of actuating-levers which support it and effect universal motion of it in its plane, a spring that balances the type-mount and levers, a stop-rest and a spring that returns the type-mount to the stop-rest substantially as described.

15. The combination with the type-mount and actuating-levers which effect universal motion of the same in its plane, of transfer-levers and transfer-bars respectively connected with said type-mount levers, and wedge-slides having wedges respectively actuating said transfer mechanism, said slides connected to the keys for operating said wedges, transfer mechanism and type-mount substantially as described.

16. The combination with the type-mount and actuating-levers which effect universal motion of the same in its plane and with the respective transfer mechanisms connected with said type-mount levers, of wedge-slides having adjustable wedges for working and regulating said respective transfer mechanisms and type-mount levers, substantially as described.

17. The combination of the type-mount, type-mount levers, balancing-spring, transfer-levers, transfer-bars and the wedge-slides connected with the keys, said slides having wedges for working the transfer-bars substantially as described.

18. The combination with the transfer-bars of the wedge-slides consisting of thin plates having the wedges pivoted to the side, with adjusting-screws resting on the edge, and said plates arranged edgewise between their supports and the transfer-bars substantially as described.

19. The combination of the slides, wedges, adjusting-screws, and spring-nuts substantially as described.

20. The combination in a type-writer of a type-mount in which the type are collectively mounted with the wedge-slides, wedges, transfer-bars, transfer-levers and type-mount levers for bringing the respective type to the printing-point, an escapement for the carriage shifting mechanism and variable space-pawl, transfer-lever, transfer-bar, and wedges connecting the space-pawl with the wedge-slides and keys substantially as herein set forth whereby each key is made to effect the type-mount and space-pawl adjustment in the first part of the stroke of the keys and to release the paper-carriage escapement in a later part of the stroke, substantially as described.

21. The combination in a type-writer of a type-mount in which the type are collectively mounted with the wedge-slides, wedges, transfer-bars, transfer-levers and type-mount levers for bringing the respective type to the printing-point, keys for operating the same, a key-plate having the keys pivoted on it for actuating the type-mount and being also pivoted for continuation of the key movement subsequently to actuating the type-mount, the paper-carriage escapement and the elbow-lever and wedge-bar for tripping said escapement by the key-plate movement substantially as described.

22. The combination in a type-writer of a type-mount in which the type are collectively mounted, with mechanism for bringing the respective type to the printing-point, keys for operating the same, a key-plate having the keys pivoted on it for actuating the type-mount and being also pivoted for continuation of the key movement subsequently to actuating the type-mount, the paper-carriage escapement the space-adjusting mechanism and the elbow-lever and wedge-bar for tripping said escapement by the key-plate movement, also the transfer-lever, transfer-bar and wedges, and wedge-slides connected with the keys for actuating the space-adjusting mechanism by the keys substantially as described.

23. The combination in a type-writer of a type-mount in which the type are collectively mounted with mechanism for bringing the respective type to the printing-point, keys for operating the same a key-plate having the keys pivoted on it and being also pivoted for continuation of the key movement subsequently to actuating the type-mount, the plunger for effecting the impressions and the means for actuating the plunger by the key-plate movement substantially as described.

24. The combination in a type-writer or a type-mount in which the type are collectively mounted, with wedge-slides, wedges, transfer-bars, transfer-levers, and type-mount levers for bringing the respective type to the printing-point, keys for operating the same, a key-plate having the keys pivoted on it and being also pivoted for continuation of the key movement subsequently to actuating the type-mount, the paper carriage escapement, plunger for effecting the impressions, elbow-lever and wedge-bar for tripping said escapement by the key-plate movement, and also the toggle-arms connecting rod and lever for actuating the impression-plunger by said key-plate movement substantially as described.

25. The combination in a type-writer, of a type-mount in which the type are collectively mounted with mechanism for bringing the respective type to the printing-point, keys for operating the same, a key-plate having the keys pivoted on it and being also pivoted for continuation of the key movement subsequently to actuating the type-mount, the paper-carriage escapement, space-adjusting mechanism, the transfer-lever, transfer-bar wedges and wedge-slides for actuating the space mechanism by the keys, the elbow-lever and wedge bar for tripping the escapement by the key-plate movement, impression-plunger and the toggle-arms, connecting rod and lever for actuating the impression-plunger by the key-plate movement, substantially as described.

26. The combination with the space-pawl of the carriage-escapement in a type-writer, of wedges or inclines, a transfer-bar and transfer-lever actuated by the keys, and the pivoted tail-guard which keeps the space-pawl out of the ratchet substantially as described.

27. The combination with the space-pawl of the carriage-escapement in a type-writer, of wedges or inclines, a transfer-bar and transfer-lever actuated by the keys; the pivoted tail-guard and the retaining-pawl substantially as described.

28. The combination with the type-mount and type-mount levers, also with the space-pawl of the paper-carriage escapement, and with the keys, of wedge-slides, transfer-bars and transfer-levers operating the type-mount, and also wedges operating the transfer-bar and transfer-lever to actuate the space-pawl by the keys, substantially as described.

29. The combination of the wedge-bar, and retaining-pawl of the paper-carriage escapement, with the pivoted key-plate connected with said bar, and the type-mount adjusting-keys pivoted on said key-plate substantially as described.

30. The combination with the space-pawl, wedge-bar, and retaining-pawl of the paper-carriage escapement, of the pivoted key-plate, type-mount adjusting-keys pivoted on said key-plate and the wedge-slides and transfer mechanism for actuating the space-pawl substantially as described.

31. The combination of the wedge-bar space-pawl and retaining-pawl of the paper carriage escapement, pivoted key-plate, type-mount adjusting-keys pivoted on said key-plate, wedge slides, and the respective systems of wedges and transfer mechanism operated by the wedge-slides and separately connected with the type mount levers, and the space-pawl, substantially as described.

32. The combination with the ribbon-spools, of the impression-plunger, the two pivoted levers connected therewith and leading in opposite directions, and the pawls pivoted on said levers and adapted to operate the ribbon spools reversely substantially as described.

33. The combination in a type-writer of ribbon-spools located at opposite sides of the printing-point, and the impression-plunger, pawl and pawl-levers for the respective spools connected with the said impression-plunger, reversing-pawls and the pawl-shifting slide substantially as described.

34. The combination of the type-mount arranged for bringing the type respectively to the printing-point, the paper-carriage arranged to shift the paper along the type, plunger arranged for actuating the type for making the impressions, and actuating the ribbon-spools for shifting the ink-tape along the printing-point, keys wedge-slides, wedges, transfer-bars, transfer-levers, and type-mount levers, also the elbow-lever and wedge-bar, and also the toggle-arms connecting rod and lever, connecting mechanism arranged for successively shifting the type-mount, releasing the paper-carriage escapement and operating the plunger by each stroke of the keys, all substantially in the arrangements herein described.

35. The combination of the type-mount arranged for bringing the type respectively to the printing-point the paper-carriage arranged for shifting the paper along the type and for varying the spaces of the same, the plunger arranged for actuating the type for making the impressions, the ribbon-spools for shifting the ink-ribbon along the printing-point, and actuating-keys, wedge-slides, wedges, transfer-bars, transfer-levers, and type-mount levers, also transfer-bar and transfer-lever, also the elbow-lever and wedge-bar, and also the toggle-arms, connecting rod and lever, connecting mechanism arranged for successively shifting the type-mount, adjusting the space mechanism, releasing the paper-carriage escapement, operating the plunger, and shifting the ribbon by each stroke of the keys, all substantially in the arrangement herein described.

36. The combination with the paper-carriage and its actuating-spring in a type-writer, of the escapement ratchet-wheel geared with the paper-carriage by a rack and pinion the retaining and space pawls constructed substantially as specified so as to permit the shift of the paper-carriage at the release of the escapement, and the wedge-bar and space-key for tripping the retaining-pawl substantially as described.

37. The combination with the paper-carriage and its actuating-spring in a type-writer, of an escapement ratchet-wheel geared with the paper-carriage by a rack and pinion retaining and space pawls arranged as described for the shift of the carriage at the release of the escapement, and the wedge-bar for tripping the retaining-pawl, which bar is arranged as described for operation either by the space-key or by the key plate at the will of the operator substantially as described.

38. The combination with the paper-carriage and its actuating-spring in a type-writer, of an escapement ratchet-wheel geared with the paper-carriage by a rack and pinion retaining and space pawls arranged for the shift of the carriage at the release of the escapement, the wedge-bar for tripping the retaining-pawl, said wedge bar arranged for operation either by the key-plate directly, or by the key-plate through a type-key, at the will of the operator substantially as described.

39. The combination of the escapement mechanism consisting of the pinion, ratchet-wheel, retaining-pawl, space-pawl, tail-guard of the stop-pawl, and the lever carrying the same, with the toothed rack of the carriage-escapement-lifting plate, and carriage-spring substantially as described.

40. The combination in a paper-carriage of a type-writer, of the paper-cylinder, spacing-arms, and paper-folding clips, said spacing-arms having means for shifting them substantially as described.

41. The combination with the spacing-arms and paper-clips of the extensible skeleton drum substantially as specified.

42. The extensible skeleton drum consisting of a series of bow frames, pivoted in the axis of the spacing-arms and connected together and to the spacing-arms with extensible tapes in combination with said spacing-arms substantially as described.

43. The combination with the spacing-arms and paper-holding clips, of the feeding-ratchet and intermediate wheel and pinion gearing said ratchet with the space-arm shaft substantially as described.

44. The combination with the paper-carriage in a type-writer of the paper-shifting arms, ratchet-wheel connected therewith, the feeding-pawl and pawl-lever having a uniform range of movement, and the adjustable pawl cut-off substantially as described.

45. The combination with the line-spacing arms and the spacing-ratchet of the paper-carriage, of the disconnecting-clutch and the friction device for holding the arms substantially as described.

46. The combination with the line-spacing arms and the spacing-ratchet of the paper-carriage, of the disconnecting-clutch consisting of the space-arm-turning knob splined to the arm-shaft, and fitted with a stop-stud and spring substantially as described.

47. The combination with the line-spacing arms, the friction device substantially as specified for the holding and the spacing ratchet of the paper-carriage, of the disconnecting-clutch consisting of the space-arm turning knob splined to the space-arm shaft and fitted with a stop stud and spring substantially as described.

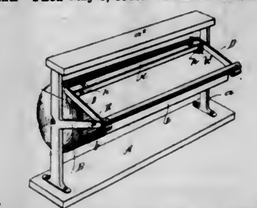
48. The combination of the line-spacing arms and paper-clips adapted to shift the paper from and back to the printing-point, of the scratch-plate adapted for the support of the paper for scratching substantially as described.

49. The combination of the pivoted key-plate having the recessed striking-pads and the keys pivoted on said plate and having the striking-disks substantially as described.

50. The combination in a paper-carriage of the paper-cylinder having the slit in the side, the stamped or depressed end supports attached to the base-plate and receiving the ends of the cylinder in its depressions and the clamping center rod extended through the end supports and the cylinder substantially as described.

51. In a type writing machine the combination with a paper-carriage and a bed-plate or base-support of two parallel arms 43, two links 46, and two links 47, each of said arms being connected at one end to the carriage, and at the other end to the free end of one of the links 47, and each of the said links 46, being connected at one end to the bed-plate and at the other end to the middle of one of the set of parallel arms substantially as described.

572,351. PAPER HOLDER AND CUTTER. JACOB S. AYDELOTT, Marion, Ind. Filed July 3, 1896. Serial No. 598,001. (No model.)



Claim.—1. A paper holder and cutter, comprising a frame in which a paper roll is adapted to be revolubly mounted, said frame being provided with outwardly-directed arms on which is pivotally supported a movable frame, the back of which is provided with a weight, which is adapted to rest upon said roll, and the front of which is provided with a transverse rod over which the end of the paper is passed, and with a blade by means of which the paper may be cut off, substantially as shown and described.

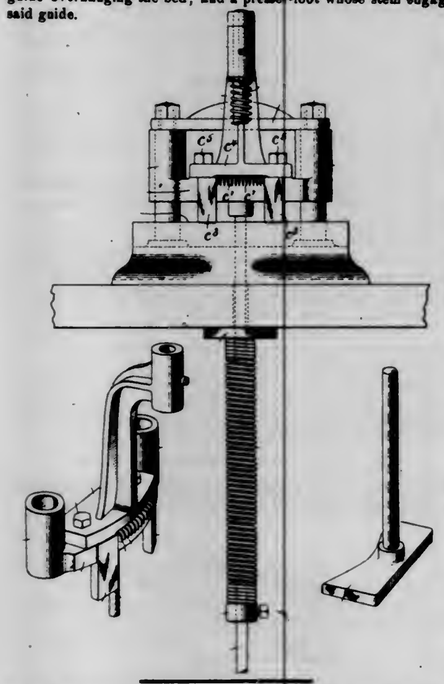
2. A paper holder and cutter, comprising a frame in which a paper roll is adapted to be revolubly mounted, said frame being provided with outwardly-directed arms, on which is pivotally supported a movable frame, the back of which is provided with a weight, which is adapted to rest upon said roll and the front of which is provided with a transverse rod over which the end of the paper is passed and with a blade by means of which the paper may be cut off, said paper being passed between the rod and the blade, and the movable frame being supported by the ends of said rod, which rest in notches or recesses formed in the arms connected with the main frame or support, substantially as shown and described.

572,352. LEATHER-SNIPPING MACHINE. CHARLES A. BONNEY, Brockton, Mass., assignor to the Brockton Folding Machine Company, same place. Filed Feb. 6, 1896. Serial No. 578,214. (No model.)

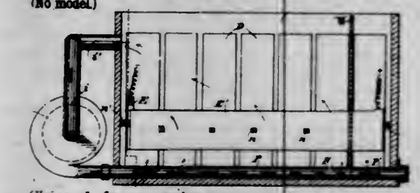
Claim.—1. In a machine of the character described, the combination of a work-supporting bed, a knife-carrier movable at right angles thereto and across the end of the same and having a projection constituting a gage for the edges of the work to abut and also a stop to limit the movement of the carrier; and knives fastened in said carrier and projecting over the bed.

2. In a machine of the character described, the combination of a supporting-bed, a carrier movable on fixed guides, a gang of knives affixed to the carrier, a rod affixed to the carrier and projecting downwardly therefrom, a retractile spring surrounding said rod and fastened at the lower end to the same and at the upper end to a fixed support, a guide affixed to the carrier and overhanging the supporting-bed, a presser-bar movable in said guide, a presser-foot affixed to said bar, and a spring interposed between the foot and guide.

3. In a machine of the character described, the combination of a work-supporting bed, a carrier movable across the end of the said supporting-bed and having transverse slots in its upper side; knives engaging said slots and projecting over the bed; a clamping-plate arranged over said knives and having an upstanding arm with a guide overhanging the bed; and a presser-foot whose stem engages said guide.



572,353. AMALGAMATOR. WILFRED L. BROWN and CALVIN BROWN, San Francisco, Cal., assignors, by direct and mesne assignments, of one-half to Leon St. D. Roylance and Charles A. W. Wagner, same place. Filed Feb. 27, 1895. Renewed Nov. 25, 1895. Serial No. 570,123. (No model.)



Claim.—1. In an amalgamator, a tank or receptacle having curved sides and amalgamating-plates fitted thereto, a pipe extending along the bottom between the sides with openings so disposed as to direct a fluid discharge therefrom against the concave surface of the amalgamating-plates, and an exhausting and discharging device having its discharge connected with said pipe and its exhaust connected with the interior of the tank near the top below the surface of its contents, whereby a continuous circulation is maintained.

2. In an amalgamator, a tank or receptacle having inclined sides and vertical ends, a pipe extending axially along the bottom with perforations therein so disposed as to discharge against the sides and a pump with an inlet connected with the upper part of the tank and an outlet connected with the perforated pipe to cause a circulation of the fluid contents, transversely-adjustable partitions by which the area of the tank is enlarged or diminished and removable amalgamating-plates fitted to the sides of the tank essentially tangential to or at an angle with the discharge-opening of the pipe.

3. In an amalgamator, a tank or receptacle having inclined sides and vertical ends, a pipe extending axially along the bottom with perforations so disposed as to discharge against the sides, and a pump with an inlet connected with the upper part of the tank and an outlet connected with the perforated pipe to cause a circulation of the fluid contents, transversely-adjustable partitions by which the area of the tank is enlarged or diminished, and removable amalgamating-plates fitted to the sides of the tank essentially tangential to or at an angle with the discharge-opening of the pipe, and a plunger movable within the pipe whereby its length is adjusted to correspond with the length of the tank and the position of the transverse partitions.

4. In an amalgamator, a tank in which the pulp and water circulate, amalgamating-plates arranged in said tank, a pipe on or near the bottom of the tank having perforations in its sides which increase in area from the inlet to the opposite end, and an exhausting and discharging device, whereby the fluid contents of the tank are continuously circulated from the upper part through the perforated pipe and thrown against the amalgamating-plates.

5. In an amalgamator, the combination of a tank or chamber having curved sides, curved amalgamating-plates fitted to said sides, a pipe extending axially between the lower edges of the plates and having perforations adapted to discharge jets substantially parallel with the curve of the lower portions of the plates whereby the particles impinge against the curved amalgamating-surfaces with a continuous pressure upward and outward from the point of initial contact therewith, an exhausting and discharging device having its inlet connected with the tank near the surface of its fluid contents and its outlet connected with the perforated pipe, and a stop-cock at the end of the pipe opposite to said device whereby the contents of the same may be discharged.

6. An amalgamator comprising a tank in which the pulp and water circulate, a curved amalgamating-surface within said tank, electrodes within said tank adapted to be connected with a source of electric energy, an exhausting and discharging device having its exhaust-pipe connected with the upper part of the tank and its discharge-pipe extending into and located on or near the bottom of the tank, whereby a continuous circulation of the fluid contents of the tank over the electrodes and against the concaved amalgamating-surface is maintained.

7. In an amalgamator, a tank or receptacle having curved sides and amalgamating-plates attached thereto, a perforated pipe extending axially along the bottom of the tank, an exhausting and discharging device connected with the tank and the pipe so as to circulate the fluid contents of the same continuously through the pipe and discharge the pulp against the concave surface of the amalgamating-plates, electrodes suspended above the pipe within the tank and wires by which said electrodes are connected with a source of electric energy.

8. In an amalgamator, a tank or chamber having curved sides and vertical ends, amalgamating-plates fixed upon said sides, a pipe having longitudinal slits made in its sides to discharge the pulp at an angle against the amalgamated plates, and a pump or device by which the fluid contents of the tank are continuously circulated from the upper part through the pipe, said slits being made with an increasing area from the inlet to the opposite end of the pipe.

9. In an amalgamator, a tank or chamber with curved sides and curved amalgamating-plates fitted to the sides, a pipe extending axially between the lower edges of the plates, having slits or openings discharging at angles against the surfaces of the plates, a pump or circulating device with an inlet connecting it with the tank near the surface of its contents, and an outlet connected with the perforated pipe, so as to cause the contents to continually impinge against the amalgamating-surfaces, and a discharge opening in the end of the pipe opposite to the pump whereby the contents of the tank are discharged.

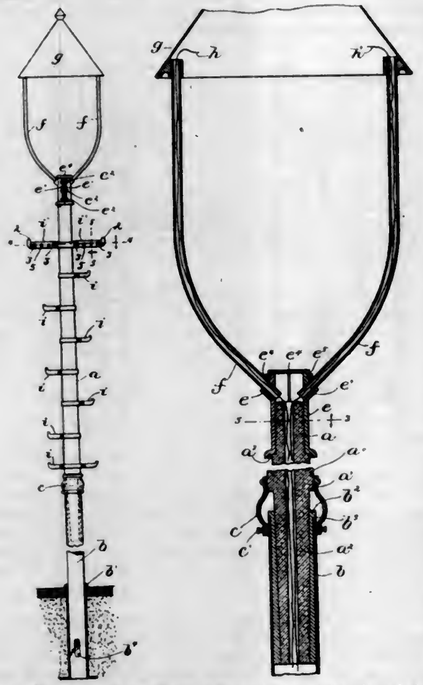
572,354. ELECTRIC-LAMP POST. JAMES BOOKNER, Boston, Mass., assignor to the Boston Electric Insulated Pole Company, same place. Filed Dec. 26, 1895. Serial No. 573,271. (No model.)

Claim.—1. The improved insulating lamp-post, comprising the tubular metallic base-section having a tapered socket, and the elongated wooden section having a metallic lamp-holder at its upper end and a tapered shank at its lower end of greater length than the said socket, and the said socket being supported with an unobstructed space below the tapered shank whereby the said tapered shank and socket may automatically compensate for shrinkage of the wooden section and maintain a firm connection between the two, and a collar surrounding the meeting points of the two sections at the top of the base-section, said collar being secured to one of said sections and adapted to move vertically on the other section.

2. An electric-lamp post comprising the elongated wooden section, the tubular metallic base-section receiving the lower end of the wooden section, the collar fitting on the upper end of the wooden section and composed of flanged sections bolted together and provided with packing-strips, said collar having a flanged detachable cap covering its upper end, and the lamp-supporting arms secured to said collar.

3. An electric-lamp post comprising the tubular metallic base-section, the tapered wooden section, and the double step or cross-arm composed of the metal strips clamped upon the wooden section, and the wooden strips clamped upon the metal strips.

4. An electric-lamp post comprising the tubular metallic base-section having a tapered socket, the wooden section having a reduced tapered shank fitting said socket, and the collar secured to the base section and loosely encircling the wooden section above said shank.



5. The improved insulating lamp-post comprising the tubular metallic base-section b, having a metal socket-piece b^3 provided with a shoulder b^4, and fitting inside the section b, the said socket-piece being internally tapered, the elongated wooden section having a metallic lamp-holder at its upper end and a tapered shank at its lower end of greater length than the said socket-piece, and the said socket being supported with an unobstructed space below the tapered shank of the wooden section, whereby the said tapered shank and socket may automatically compensate for shrinkage of the wooden section, and maintain a firm connection between the two sections.

6. The combination with the cast-iron socket b' adapted to be inserted in the ground, of the tubular base-section b fitting said socket b' and extending above the ground, and having a tapered socket, and the wooden section a having the tapered shank a^2 formed to fit the said tapered socket.

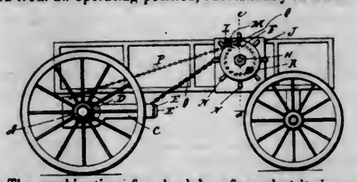
572,355. BICYCLE-TIRE CLEANER. WILLIAM H. CLARK, Providence, R. I. Filed Aug. 3 1896. Serial No. 601,431. (No model.)



Claim.—In a cleaning device for bicycle-tires, the following combination of instrumentalities; a case or box fitted to go between the bars of the fork and having one end open and shaped to fit the tire, a stationary block placed in the lower part of said case, a shaft held in bearings in said stationary block and carrying a roll having sharp points on its surface, a movable block of rubber or other yielding material placed on said stationary block and in contact with the points on the roll, a screw fitted in the top of the case to screw down on and hold the movable block, with means for clamping said case to the forked bars of the bicycle, substantially as described.

572,356. WHEEL-DRAG. THOMAS G. CLIFFORD, Hoboken, N. J., assignor of one-half to August Hartkorn, Jr., same place. Filed June 29, 1896. Serial No. 597,607. (No model.)

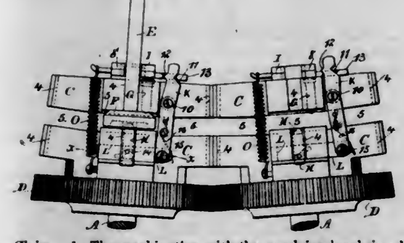
Claim.—1. The combination of a wheel-drag formed at its inner end with a slot for engagement with the hub of a wheel, and at its outer end with a foot extending into the path of the wheel-rim, an adjusting-disk mounted upon the body of the cart, a chain connected with one end of said drag and with the periphery of said adjusting-disk and a chain connected with the opposite end of said drag and with the side of said disk, whereby said drag may be placed in or removed from an operating position, substantially as described.



2. The combination of a wheel-drag formed at its inner end with a slot for engagement with the hub of a wheel, and at its outer end with a foot extending into the path of the wheel-rim, an adjusting-disk mounted upon the body of the cart, and formed with a peripheral groove and provided with an eccentric stud upon its outer face, means for arresting the movement of said disk, a chain connected with one end of said drag and with the periphery of said disk, and a second chain connected with the opposite end of said drag and with the outer face of said disk, and so as to be engaged by said eccentric stud, substantially as described.

3. The combination of a wheel-drag formed at its inner end with a slot for engagement with the hub of a wheel, and at its outer end with a foot extending into the path of the wheel-rim, an adjusting-disk mounted upon an axle projecting from the side of the cart, upon which axle the disk is horizontally adjustable, said disk formed with a peripheral groove and provided upon its outer face with a take-up roller, means for arresting the movement of the said disk, and chains one extending from the lower end of said drag into engagement with said groove, and the other from the inner end of the drag to the face of said disk, substantially as described.

572,357. BRAIDING-MACHINE. ALBERT R. DISS, Brooklyn, N. Y., assignor, by mesne assignments, to the Thomas Braid Company, of New York. Filed Aug. 16, 1895. Renewed May 9, 1896. Serial No. 590,952. (No model.)



Claim.—1. The combination with the revolving heads in a braiding-machine having notches in the periphery, of spool-carriers adapted to be received into such notches, each carrier having a circular cam, a motor-pin actuated by such cam as it is pressed by one head against the other head, a locking-bolt for holding the spool-carrier in position, and mechanism intervening between the motor pin and the locking-bolt for communicating to such locking-bolt a positive movement in holding the spool-carrier when transferred from one head to the other, substantially as set forth.

2. The combination in a braiding-machine having a range of circular revolving heads notched for the reception between them of spool-carriers, spool-carriers with circular cams, motor-pins in each head actuated by the circular cam, locking-bolts for holding the circular cam, exchange-levers and bolt-levers actuated by the same and bolt-slides connected with the bolt-levers for giving motion to the locking-bolts, substantially as set forth.

3. The combination in a braiding-machine, of a circular range of heads geared together and revolving in alternating directions, the edges of the heads being notched, spool-carriers adapted to be received into the notches, each carrier having a cam, positively-actuated mechanism receiving its motion from the circular cam of the spool-carrier and acting to simultaneously bolt the carrier to one head as such carrier is unbolted from the previous head, substantially as set forth.

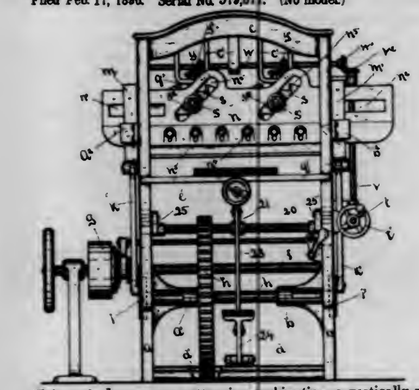
4. The combination in a braiding-machine, of a range of revolving heads, each head being provided with a set of transferring devices, each set of transferring devices consisting in a motor-pin receiving its motion from the spool-carrier, an exchange lever acted upon

by the motor-pin and also acting upon the exchange-lever of the adjacent set of devices, a bolt for locking the spool carrier, a bolt-lever receiving its motion from the exchange-lever and a bolt-slide for giving motion to the locking-bolt, substantially as set forth.

5. The combination with the revolving head in a braiding-machine, of a motor-pin, a spool-carrier and circular cam for acting on the motor-pin, an exchange-lever having V-shaped ends to engage the similar lever on the adjacent head, a bolt-lever having a V-shaped projection acted upon by the exchange-lever, a locking-bolt for engaging the spool-carrier, and a bolt-slide for actuating the locking-bolt, substantially as set forth.

6. The combination with the revolving head in a braiding machine, of a motor-pin, a spool-carrier and circular cam for acting on the motor pin, an exchange-lever having V-shaped ends to engage the similar lever on the adjacent head, a bolt-lever having a V-shaped projection acted upon by the exchange lever, a locking-bolt for engaging the spool-carrier, and a bolt-slide for actuating the locking-bolt and a spring acting at the connection between the bolt-lever and bolt-slide, substantially as set forth.

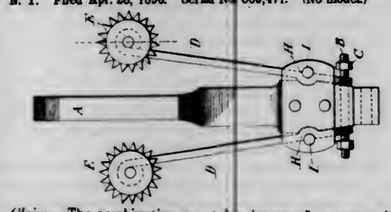
572,358. PAPER-CUTTER. JOHN S. EDGECOMB, Mystic, Conn. Filed Feb. 17, 1896. Serial No. 579,577. (No model.)



Claim.—1. In a paper-cutter, in combination, a vertically-movable cutter-bar and clamping-bar, means as set forth for connecting said bar whereby one may slide diagonally upon the other, said connection including carriages *s* mounted to slide in ways in the clamping-bar, sleeves *s*² splined to slide in said carriages, and mechanism for sliding said sleeves in said carriages to limit the upward movement of the clamping-bar.

2. In a paper-cutter in combination, a vertically-movable clamping-bar, yielding mechanism for holding said bar normally in its elevated position and including a foot-lever, as set forth, whereby said bar may be lowered, carriages *s* mounted to slide in ways on said bar threaded sleeves splined to slide in said carriages, screws engaging said threaded sleeves and means for rotating said screws to vary the position of said sleeves relatively to the said carriages for the purpose specified.

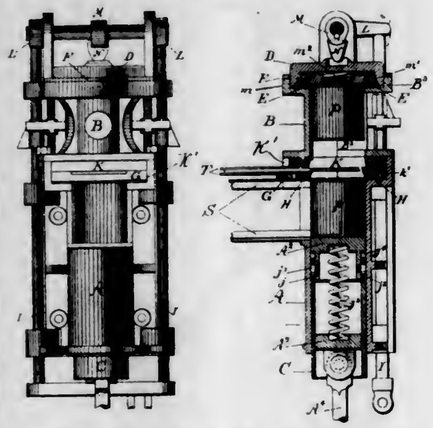
572,359. TUBE-CLEANER. FREDERICK HAIGHT, Poughkeepsie, N. Y. Filed Apr. 28, 1896. Serial No. 589,471. (No model.)



Claim.—The combination in a tube-cleaner of a center piece A having oblong hole F, combined with adjustable bolt B and nut C with levers D D having projection H held and operating around the pin I having cutters E E journaled on their free ends all substantially as shown and described and set forth.

572,360. CAN-HEADING MACHINE. ROBERT D. HUME, Gold Beach, Oreg. Filed Oct. 1, 1894. Serial No. 524,675. (No model.)

Claim.—1. In a machine for heading cans and in combination, means for feeding and holding in line can-bodies and flanged can-heads, a plunger for telescoping such can-bodies and can-heads together and for impelling them onward without changing the direction of motion which telescoped them, and mechanism located in the specified line of motion for compressing the flange of the head upon the can-body, substantially as described.



2. In a machine for heading cans, a reciprocating plunger for telescoping the can-body and its head together and for impelling the can body and head onward in the same line of motion which telescoped them, in combination with mechanism located in the specified line of motion for crimping the flange of the head against the outside wall of the can-body, and thereby making a tight exterior joint, substantially as described.

3. In a machine for heading cans, a chute for supplying the can-bodies, a chute for supplying the can-heads, a guide-passage for the can-bodies, a plunger for entering such can-bodies into the loosely-fitting heads, and then by the same stroke carrying such bodies and heads onward through the guide-passage, in combination with mechanism for crimping the heads upon the can-bodies, substantially as described.

4. In a can-heading machine, a tube or passage, a plunger working therein, a can-body chute connected with said passage, a can-head chute connected with said passage, and a sectional support for the can-heads yielding by the movement of the can-body and plunger so as to permit the can-body to enter the can-head, substantially as described.

5. In a can heading machine, an inclined frame, a guide tube or passage supported thereby, a plunger working in said tube, crimping mechanism at the upper end of said tube, separate fixed-chutes for can-bodies and can-heads entering said tube, substantially at right angles to the incline of the frame, and a discharge-chute, also substantially at right angles to said frame, substantially as described.

6. In a can-heading machine, the combination with a cylinder or passage for cans, having a plunger working therein, a chute for supplying can bodies to said cylinder, a chute for supplying can-heads to said cylinder, and a support to receive the can-heads from their chute and retain them in line with the can-body and plunger, but adapted to yield and permit the can-body to enter its head, substantially as described.

7. In a can-heading machine, the combination with a cylinder or passage for the can-bodies, a plunger working therein, and a sectional support for the can-heads consisting of a sectional ring having springs for pressing it inwardly and adapted to yield as the can-body is impelled by the plunger, so as to permit the can-body to enter its head, substantially as described.

8 In a can-heading machine and in combination, a cylinder or passage for cans, a plunger working in said cylinder and forming a support for the can-bodies, a beveled sectional ring for supporting the can-heads above the plunger, a stationary plate surrounding said sectional ring, and springs interposed between said ring and plate, whereby said sections can yield and permit the can-body to enter the can-head, substantially as described.

9. In a can-heading machine, the combination of crimping mechanism, a driving-shaft having connections for operating said crimping mechanism, a cylinder or passage for can-bodies and can-heads, and a plunger connected to said driving-shaft, and working in said cylinder, said plunger consisting of two heads connected by a pressure-spring, and an external shell connected rigidly to the lower head and by slots and pins to the upper head, substantially as described.

10. In a can-heading machine and in combination, a cylinder or passage, a plunger working in said cylinder, a beveled swaging-ring for closing the can-head against the can-body, crimping mechanism for compressing the head upon the body, driving mechanism connected to said plunger for moving the can bodies and heads, and connections from said driving mechanism for operating the crimping mechanism, substantially as described.

11. In a can heading machine, a two-part cylinder or passage for cans, a crimping mechanism in the upper part of the cylinder, a device in the lower part of the cylinder for forcing the can heads and bodies into the upper cylinder, and a driving mechanism having connections to said plunger and also to said crimping mechanism, substantially as described.

12. In a can-heading machine, a two-part cylinder, the upper part of which is a half-cylinder having hinged wings, a plunger in the lower part of said cylinder, crimping mechanism in the upper part of said cylinder, a driving mechanism and connections therefrom for operating said plunger, said wings, and said crimping mechanism, substantially as described.

13. In a can-heading machine, a cylinder or passage for can-bodies and can-heads, a mechanism for telescoping such can-bodies and can-heads together and for impelling said can bodies and heads through the said passage, dies for crimping said head upon said body, and mechanism for operating the crimping-dies, substantially as described.

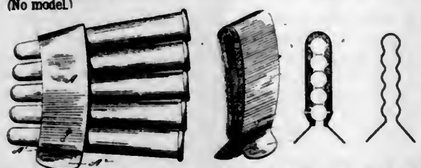
14. In a can-heading machine, the combination with a plunger forming a support for a can-body and its head, of a sectional crimping-die, springs for forcing the sections of said die outward or apart, a wedge-plate for positively forcing said sections inward or together, means for positively operating said wedge-plate for the purpose last named, and means for releasing the die-sections from the pressure of said wedge-plate, substantially as described.

15. In a can-heading machine, and in combination, a crimping-cylinder B, a plunger for supplying can-bodies and flanged can-heads to said cylinder and for supporting them therein, a discharge-opening in said cylinder, pivoted wings for alternately opening and obstructing said discharge-opening, crimping mechanism carried by said cylinder and operated substantially as described, and a spring-bolt *b*, for entering between the descending plunger and the can-body in said cylinder, so as to insure the discharge of the completed can from the cylinder, substantially as described.

16. In a can-heading machine, and in combination, a crimping-die composed of separate sections beveled upon their outer peripheries, a slotted plate secured to a cylinder by which the crimping-sections are carried, a wedge-plate having projections adapted to enter said slots and bear upon the said sections, and means substantially as described for alternately forcing said plate against the said sections, and for retracting the said plate, substantially as described.

17. In a can-heading machine having a cylinder or passage and a plunger working in said passage, a chute for feeding can-bodies to said passage, and independent chute for feeding can-heads to said passage above the can-body, a yielding support for holding said can-head, and a spring mounted in a recess in said yielding support, and adapted by its yielding movement to be projected into the can-head chute, substantially as and for the purposes described.

572,361. TEMPORARY CARTRIDGE-HOLDING CLIP. THOMAS C. JOHNSON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Oct. 5, 1896. Serial No. 607,880. (No model.)



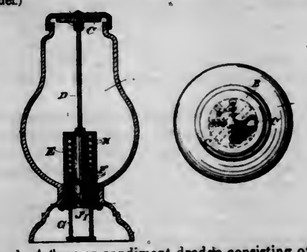
Claim.—1. A temporary cartridge-holding clip comprising a U-shaped elastic sheet-metal strap, closed at its top, open at its bottom, where it is provided with cartridge-retaining ribs and spreading-flanges, open at its rear and forward edges, and constructed to engage and hold a charge of cartridges by their forward ends.

2. A temporary cartridge-holding clip comprising a U shaped sheet-metal strap, furnished at its ends with spreading-flanges, and having a friction-lining.

3. A temporary cartridge-holding clip comprising a longitudinally-bowed U-shaped strap having its top closed and its bottom open, and its rear and forward edges open and longitudinally bowed, and also comprising a friction-lining.

4. A temporary cartridge-holding clip comprising a U-shaped sheet metal strap, closed at its top, open at its bottom, open at its rear and forward edges, formed at its bottom with two inwardly-projecting cartridge-retaining ribs, and two outwardly-projecting spreading-flanges, and provided also with a friction-lining.

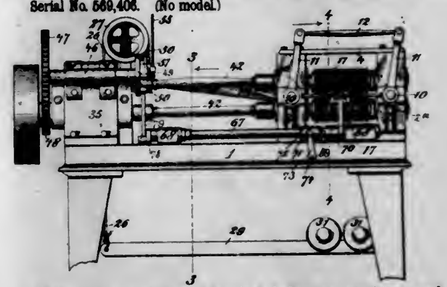
572,362. FLOUR OR CONDIMENT DREDGE. WILLIAM D. F. LORTEA, San Francisco, Cal., assignor of one-half to R. S. Rosenblat and I. S. Rosenblat, same place. Filed May 13, 1896. Serial No. 591,325. (No model.)



Claim.—1. A flour or condiment dredge consisting of a containing-chamber, a removable cap having radial perforations made therein, a longitudinal central shaft extending through the container and having a head fixed thereto with radial arms which normally coincide with and close the perforations in the cover, an inclosed case in the lower part of the container, into the inner end of which the shaft extends, spiral threads cut upon the shaft, a direct reciprocating slide surrounding the shaft within the outer case having lugs which engage the spiral grooves in the shaft, and a returning-spring pressing against the end of the slide whereby a reciprocating movement of the slide and a rotary movement of the shaft are effected.

2. A flour or condiment dredge consisting of a containing chamber, a removable cap fixed to the top thereof having radial lines of holes, a shaft extending longitudinally through the containing-chamber having a hub removably attached to its upper end, radial arms projecting from said hub and normally coinciding with and closing the holes in the cap, a projection from the upper end of the hub fitting the corresponding depression in the cap whereby the upper end of the shaft is guided, a close casing in the lower part of the receptacle into the end of which the shaft enters, spiral grooves cut in the enlarged portion of the shaft within the casing, a reciprocating slide fitting outside the shaft and inside of the fixed casing, guides by which it is caused to move in a direct line, lugs on the interior of the slide engaging the spiral grooves on the shaft and a spiral spring within the casing pressing against the end of the slide, whereby a reciprocating motion of the slide and a rotary motion of the shaft and arms are produced.

572,363. BATTERY-GRID AND MACHINE FOR PRODUCING SAME. ALBERT F. MADDEN, Newark, N. J., assignor to Abram Van Winkle and Rufus N. Chamberlain, same place. Filed Nov. 19, 1895. Serial No. 569,406. (No model.)



Claim.—1. A battery-grid having shelves or partitions and a suitable supporting-frame formed of an integral piece of lead, the shelves or partitions being of uniform density throughout and of different density from the supporting-frame, substantially as set forth.

2. In a machine for making battery-grids, the combination of a pair of spinning-rolls provided with parallel spinning-knives, means for rotating the spinning-rolls in proper relation to each other, means for supporting a blank plate, and means for feeding the plate-support between the rolls independent of the rolls, substantially as set forth.

3. In a machine for making battery-grids, the combination of the paired spinning-rolls, means for driving the same, a reciprocating support adapted to receive the blank plate and move back and forth between the spinning-rolls, and means for holding the rolls to their work with a yielding pressure, substantially as set forth.

4. In a machine for making battery-grids, the combination of suitable devices adapted to spin shelves or partitions upon a blank, with means for supporting the blank in proper relation to the spinning devices, and means for driving the spinning devices at a greater rate of speed than the blank supporting and feeding devices, substantially as set forth.

5. In a machine for making battery-grids, the combination of the adjustable spinning-rolls, means for driving the same, a plate-supporting device, and means independent of the spinning-rolls for feeding the plate-supporting device, substantially as set forth.

6. In a machine for making battery-grids the combination of means for feeding a battery-grid therethrough, spinning-rolls, and means for driving said rolls at greater speed than the feeding mechanism, as set forth.

7. In a machine for making battery-grids, the combination of the pair of adjustable spinning-rolls, means for driving them, means for holding them to their work with a yielding pressure, means for intermittently moving the rolls from their work, and means for supporting and feeding a blank, as set forth.

8. In a machine for making battery-grids, the combination of a suitable frame, the vertically-movable journal-boxes supported in said frame, the spinning-rolls journaled in said boxes, means for rotating them, the toothed lugs or projections on the journal-boxes, pinions engaging the teeth of said lugs, rock-shafts upon which said pinions are mounted, means for coupling said rock-shafts together, and means for exerting a yielding pressure thereupon, as set forth.

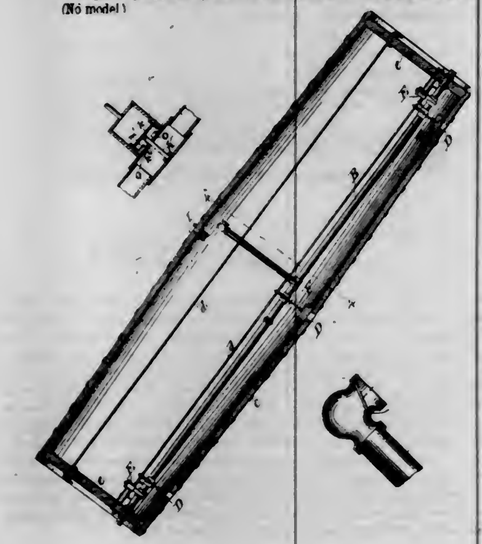
9. In a machine for making battery-grids the combination of the suitable frame, the vertically-movable journal-boxes supported therein and formed with toothed lugs or projections, rock-shafts carrying pinions which engage the teeth of said lugs or projections, rock-arms keyed to said rock shaft and connected by a rod, a lever connected to one of said rock-shafts, an adjustable weight lever, and suitable means connecting said levers, as set forth.

10. In a machine for making battery-grids, the combination of the adjustable spinning-rolls, means for holding the rolls to their work with a yielding pressure, a lever connected therewith, a toothed wheel intermittently engaging said lever for withdrawing the rolls, and means for supporting and feeding a plate, as set forth.

11. In a machine for spinning battery-grids, the combination of a pair of spinning-rolls, a blank-supporting frame having an opening for the reception of the blank and means for supporting the blank therein, means for reciprocating said frame between the rolls, and means for operating the rolls, as set forth.

12. In a machine for spinning battery-grids, the combination of the frame-standards, the spinning-rolls adjustably journaled therein, the transverse guide-grooves, the sliding frame supported in the guide-groove and provided with means for supporting a blank, and means for operating said sliding frame, as set forth.

572,364. APPARATUS FOR RAISING SUNKEN VESSELS. ALBERT G. MIDFORD, New York, N. Y., assignor to the Midford Pneumatic Salvage Company, same place. Filed July 11, 1896. Serial No. 598,830. (No model.)



Claim.—1. In a caisson for raising sunken vessels, the combination with a water-exit port, and a float-valve to close the same, of a counterbalance for said float to prevent it from closing by the suction of outgoing water, substantially as set forth.

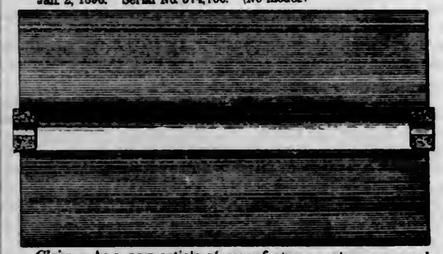
2. In a caisson for raising sunken vessels, the combination with a water exit port, and a float-valve to close the same, of a weighted lever pivotally connected with said float-valve, and acting as a counterbalance, substantially as set forth.

3. In a caisson, an air service and discharge pipe passed therethrough, a valve in said pipe, said valve closing by hydrostatic pressure, and a connection between said pipe and valve from either side of the valve, whereby a greater pressure passed through said pipe in either direction will cause said valve to open, substantially as set forth.

4. In a caisson, a service-pipe passed therethrough, a vertical branch pipe communicating with said service-pipe, and a valve in said branch pipe permitting egress from, but preventing ingress to said caisson, substantially as set forth.

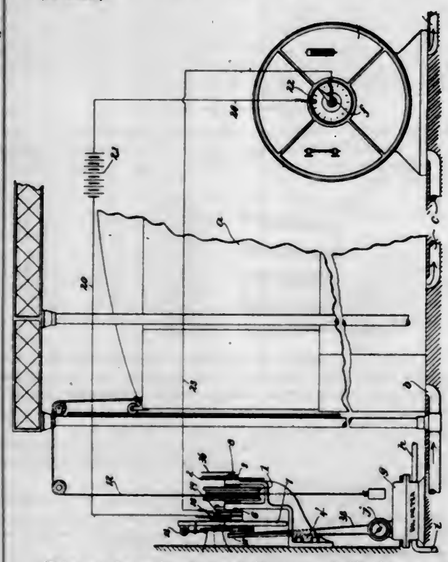
5. In a caisson, a service-pipe passed therethrough, a vertical branch pipe communicating with said service-pipe, said branch pipe having a valve permitting the passage of air from said caisson to said service-pipe, a feed-opening from the service-pipe to the caisson, and a valve arranged to close said feed-opening by the passage of air through said service-pipe in exhausting, substantially as set forth.

572,365. PLUG. DUNCAN L. MCCORKINDALE, Childs, Md. Filed Jan. 2, 1896. Serial No. 574,106. (No model.)



Claim.—As a new article of manufacture, a plug composed of froth and dirty wood-pulp, clay and refuse fiber, resulting from the manufacture of paper making, and which is molded into shape, substantially as shown.

572,366. DIFFERENTIAL INDICATOR FOR GAS APPARATUS. ROLLIN MORRIS, Philadelphia, Pa., assignor to the United Gas Improvement Company, same place. Filed Apr. 13, 1896. Serial No. 587,314. (No model.)



Claim.—1. In combination an indicator, a relief-holder, connections between the relief-holder and indicator for turning it forward and backward according as the relief-holder rises and falls, a gas-meter, and connections between the gas-meter and indicator for turning it forward, for the purposes set forth.

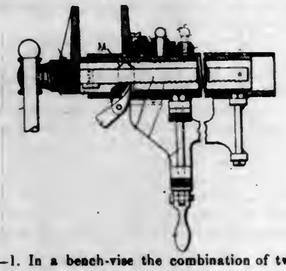
2. In combination an indicator, a pulley adapted to respond to the rise and fall of a relief-holder and operating to turn the indicator through the intervention of a toothed wheel, and a pawl adapted to respond to the advance of a gas-meter and operating to turn said toothed wheel, substantially as described.

3. In combination a gas-hand, a relief holder, a gas-meter, and mechanism substantially as described interposed between said holder and meter and gas-hand for causing the latter to indicate the volume of gas delivered, an oil-meter, an oil-hand, and connections between the oil-meter and oil-hand, for the purposes set forth.

4. In combination a gas-hand provided with an arm carrying toothed wheels, a ratchet-wheel provided with teeth meshing with said toothed wheels, a pulley provided with a toothed wheel 30, meshing with said toothed wheels, and a pawl for said ratchet-wheel, substantially as described.

5. In combination a gas-hand provided with a toothed wheel, a pulley, mechanism for imparting motion from the pulley to the toothed wheel, and means for turning the toothed wheel independent of the pulley, substantially as described.

572,367. BENCH-VISE. JOHN F. PARKER and CALVIN M. BENNETT, Portland, Me. Filed Oct. 23, 1895. Serial No. 566,651. (No model.)



Claim.—1. In a bench-vise the combination of two clamping-jaws one of which being adjustable at any angle, means for holding said clamping-jaws in position, means for pivotally attaching the same to a rigid object, means for raising and lowering the vise, means for swinging the vise and holding it in any desired position, substantially as and for the purposes set forth.

2. In a bench-vise the combination of a bed provided with sockets therein of two movable clamping-faces the one adapted to slide on said bed and adapted to be set at any angle the other mounted upon a rod threaded part way of its length and having on a portion of its circumference ratchet-teeth adapted to engage a pawl pivotally attached to the bed of the vise, means for throwing said ratchet-teeth and pawl out of engagement and means for moving said clamping-faces, substantially as and for the purposes set forth.

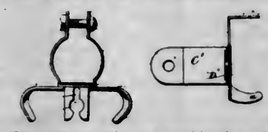
3. In a bench-vise in combination a bed two adjustable clamping-jaws one or more yokes pivotally attached to the vise and rigid object, a rod extending from the rear of the bed through a slotted plate attached to the rigid object, a cam-lever attached to said slotted plate and adapted to hold said rod rigidly in place, and means for raising and lowering the bed, substantially as and for the purposes set forth.

4. In a bench-vise in combination, a suitable bed provided with sockets, two adjustable clamping-faces moving on said bed, said bed being pivotally connected by means of a bracket and yoke to a suitable rigid object, an ear attached to the rigid object and having a slot therein, a rod pivotally attached to the bed of the vise and adapted to slide in the slot in said ear, and means for holding said rod rigidly in position, substantially as and for the purposes set forth.

5. In a vise the combination of a bed pivotally attached by means of yokes to a bench and adjustable clamping-surfaces adapted to move on said bed one of the clamping-surfaces adjustable by means of a rod threaded part way of its length the unthreaded portion being provided with ratchet-teeth on a part of its circumference, a pivoted pawl attached to said bed and adapted to engage the ratchet-teeth when in position, means for throwing said pawl and ratchet-teeth out of engagement, means for moving the clamping-jaws and holding the same in position, means for swinging the vise away from or toward the bench, means for locking it in any desired position, substantially as and for the purposes set forth.

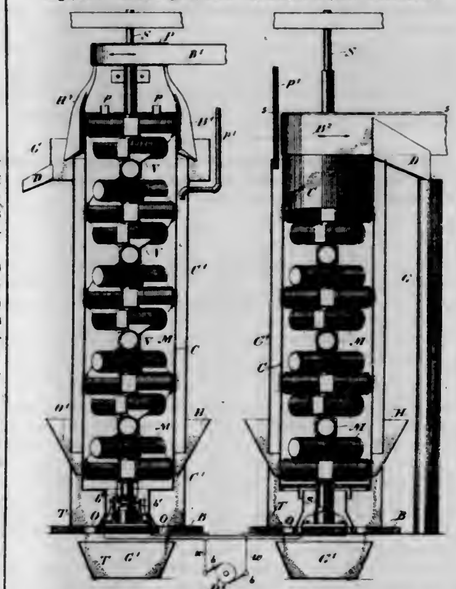
6. In a bench-vise a suitable bed provided with sockets in combination with two adjustable clamping-faces the one pivotally mounted on a plate adapted to slide on said bed, a pin to hold said plate and said jaw in position, a clamping-face moving on a rod threaded part way of its length, the unthreaded portion provided with ratchet-teeth on a part of its circumference, a pivoted pawl attached to the bed and adapted to engage the ratchet-teeth, means for throwing said ratchet-teeth and pawl out of engagement, means for moving said vise away from the bench and means for raising and lowering the vise, substantially as and for the purposes set forth.

572,368. WATCH-CARRIER. WILSON R. PORTER, New Haven, Conn., assignor to the New Haven Clock Company, same place. Filed May 13, 1895. Serial No. 549,130. (No model.)



Claim.—In a watch-carrier, the combination with a carrier-plate flat in its body portion and having three forwardly-extending integral holding-arms, two of which are located below its horizontal center, and on opposite sides of its vertical center, and the other of which is located centrally above them and comprising two laterally-spreading pendant-gripping fingers for receiving and gripping the pendant of a watch and separated at their bases by a vertical slit formed in the body portion of the plate; of a clip attached to the rear face of the said carrier-plate, which is rotatable with respect to the clip in a plane at a right angle thereto.

572,369. MAGNETIC ORE-SEPARATOR. CHARLES J. REED, Orange, N. J. Filed Sept. 3, 1891. Serial No. 404,605. (No model.)



Claim.—1. An ore-separator having one or more magnets arranged inside of a hollow cylinder or chamber, in combination with a second surrounding hollow cylinder or chamber through which the ore is advanced longitudinally in one direction, while the tailings are discharged in another direction, substantially as described.

2. In an ore-separator a series of magnets arranged upon a common shaft with their free poles in close proximity to a surrounding cylinder or chamber, in combination with a second outer cylinder or chamber, and outlets at opposite ends of the two cylinders or chambers for the magnetic and non-magnetic particles, substantially as described.

3. In an ore-separator a series of magnets arranged upon a common shaft with their free poles in close proximity to a surrounding cylinder or chamber; a second outer cylinder or chamber; an inlet for feeding the powdered ore against the outer face of the inner chamber; outlets at opposite ends of the two chambers, one for the tailings and the other for the magnetic particles, and means for removing the latter from the surface of the inner cylinder, substantially as described.

4. In an ore separator a series of magnets arranged in oblique rows around an axis which supports them all; a surrounding cylinder or chamber lying in close proximity to the free poles of the magnets; a second or outer cylinder or chamber; an inlet for the powdered ore; outlets at opposite ends of the two cylinders for allowing the magnetic particles to pass out at one end, and the non-magnetic particles at the other, substantially as described.

5. A magnetic ore-separator having one or more magnets located inside a hollow cylinder or chamber; a second surrounding cylinder or chamber open at both ends, in combination with a feeding-hopper, and an inlet-pipe for admitting air or water between the two cylinders, substantially as described.

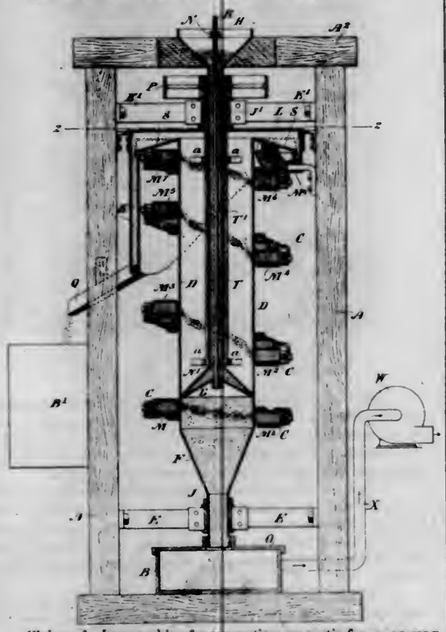
6. A magnetic ore-separator having a series of magnets arranged around a shaft with their free ends in close proximity to a surrounding cylinder or chamber; a second or outer cylinder or chamber open at both ends, and an inlet-pipe for admitting air or water between the two cylinders, substantially as described.

7. A magnetic ore-separator having a series of magnets arranged upon a fixed shaft with their free ends in close proximity to the inner surface of a rotary cylinder or chamber, in combination with a second outer cylinder or chamber open at both ends; means for feeding the powdered ore against the face of the inner cylinder, and means for removing the magnetic particles at one end of said cylinder or chamber, substantially as described.

8. A magnetic ore-separator having a series of magnets arranged obliquely around a shaft one above the other with their free ends in close proximity to a surrounding cylinder or chamber, in combination with means for feeding the powdered ore against the outer face of the inner cylinder, and means for removing the magnetic particles as they are advanced to one end of the cylinder, substantially as described.

9. A magnetic ore-separator having a series of magnets arranged obliquely around and fixed to a shaft, their free poles lying in close proximity to a rotary cylinder or chamber; a second surrounding cylinder or chamber; a feeding-hopper adapted to feed the ore against the outer face of the inner cylinder; means at one end of the cylinder for removing the magnetic particles as they are advanced longitudinally and obliquely, and a receiving device for receiving the particles as they are removed from the cylinder, substantially as described.

572,370. MECHANISM FOR SEPARATING MAGNETIC FROM NON-MAGNETIC SUBSTANCES. CHARLES J. REED, Orange, N. J. Filed Dec. 30, 1891. Serial No. 415,560. (No model.)



Claim.—1. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum in combination with fixed or stationary external magnets and means consisting of a tube and a feed-regulating device for regulating the flow of the material into the interior of the drum, substantially as herein set forth.

2. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum, into which the material is introduced in combination with fixed external magnets arranged in helical rows, substantially as herein set forth.

3. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum into which the material is introduced in combination with external magnets and a terminal cone for the discharge of tailings substantially as herein set forth.

4. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum into which the material is introduced in combination with external magnets and a terminal rim for discharging the magnetic particles, substantially as herein set forth.

5. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum in combination with external magnets, an internal distributer and a hopper, substantially as herein set forth.

6. In a machine for separating magnetic from non-magnetic particles, a hollow revolving drum in combination with external magnets, an internal distributer and a receptacle for receiving the magnetic particles, substantially as herein set forth.

7. A rotating cylinder, or drum, a series of magnets arranged spirally near the outer surface of said cylinder and means for forcing a blast of air through the cylinder, substantially as herein set forth.

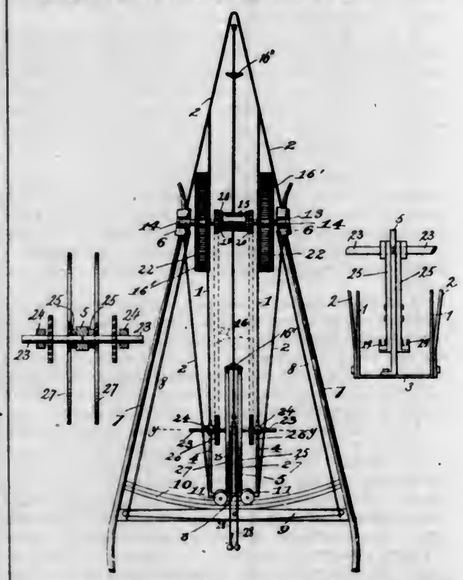
8. A rotary cylinder or drum, a series of magnets arranged spirally in one or more rows around the outer surface of said cylinder with their free or magnetizing poles in close proximity to the cylinder and means for feeding the powdered ore in a layer against the inner face of the drum at points near the lower magnets of the series substantially as herein set forth.

9. An ore-separator consisting of a hollow revolving drum, a series of magnets arranged spirally around its outer surface and a feed-tube extending from the top of the drum to a point near the lower end of the drum, substantially as herein set forth.

10. In an ore-separator a series of electromagnets arranged in one or more spiral rows with their free or magnetizing poles near a moving surface, said poles being of oblong shape and located above each other in sequence, substantially as herein set forth.

11. A hollow drum, or cylinder having a series of magnets arranged with their free or magnetizing poles in close proximity to one surface of the drum, said poles being oblong or elliptical and located above each other in sequence, substantially as herein set forth.

572,371. TRACTION-MOTOR. HARDY N. REVELLE, MICAJAH M. FORD, and JOE W. KELLEY, Buchanan, Ga. Filed Sept. 1, 1894. Renewed Nov. 4, 1896. Serial No. 611,073. (No model.)



Claim.—1. A frame, cuffs on said frame adapted to receive the shafts of vehicle, a traction-wheel, and straps adapted to connect said cuffs to the singletree, for the purpose specified.

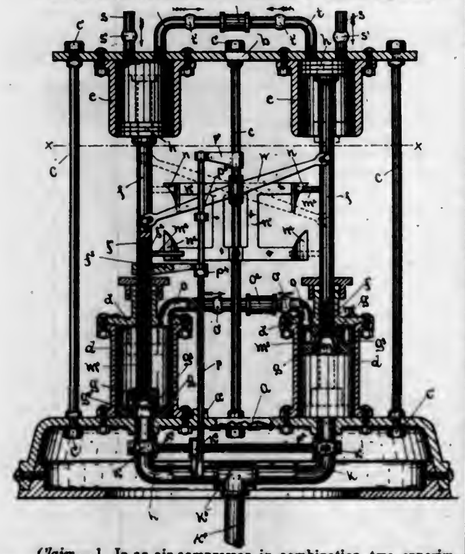
2. A frame movably secured between the shafts of a vehicle, angle-rollers on its back end, and a segment secured to said shafts in such a position as to be traversed by said rollers as the frame moves,

a traction-wheel mounted in said frame and a motor connected therewith.

3. A frame adapted to be secured to the thills of a vehicle, spring-barrels secured on said frame, two shafts mounted in bearings concentrically of and passing through said barrels, a wheel mounted on the contiguous ends of said shafts, sleeves revolubly mounted on said shafts, a spring thereon within each barrel and intermittent clutch mechanism carried on said sleeves and adapted to engage said hub in a direction applying the power stored in said spring to the wheel and means for winding said springs for the purpose specified.

4. A frame adapted to be secured to the thills of a vehicle, spring-barrels secured on said frame, two shafts mounted in bearings concentrically of and passing through said barrels, a wheel mounted on the contiguous ends of said shafts, sleeves revolubly mounted on said shafts, a spring thereon within each barrel, intermittent clutch mechanism carried on said sleeves and adapted to engage said hub in a direction applying the power stored in said spring to the wheel and means for winding said springs consisting of an annular flange concentrically on the traction wheel, a friction-wheel adapted to contact with said flange and mounted in a sliding bearing, and a belt connecting said friction-wheel with the aforesaid sleeve, substantially as shown and for the purpose specified.

572,372. AIR-COMPRESSOR. JOHN H. REYNOLDS, New London, Conn., assignor of one-half to Charles H. Klinck and Frank H. Burlee, same place. Filed Apr. 23, 1896. Serial No. 589,474. (No model.)



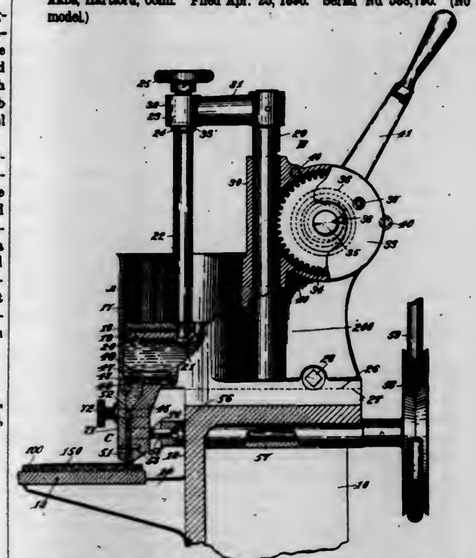
Claim.—1. In an air-compressor, in combination, two superimposed cylinders, a piston for each of said cylinders mounted upon a single piston rod as set forth, a rotary valve mounted on a stem within the said piston-rod, and means substantially as described for rocking said stem to open and close the said valve, for the purpose specified.

2. In combination, two end-to-end cylinders, pistons for said cylinders mounted upon a single piston-rod, a water-pipe leading into one of said cylinders having a valve as set forth, means for opening and closing said valve, a rotary valve in the piston of said water-cylinder, and means for rotating said piston-valve to open and close the same.

3. In combination, in and with a line of water-pipe a water-cylinder having a piston and piston-rod as set forth, a valve located in the piston, means for automatically shutting off the inflow of water at the end of the stroke and means for simultaneously opening said piston-valve to pass the water to the opposite side of the piston, an air-compression cylinder and a piston for the same mounted upon the piston-rod of the said water-cylinder.

4. In combination, two pairs of end-to-end cylinders each provided with a piston-rod and pistons as set forth, a lever-arm w whose opposite ends are connected with said piston-rods, means for automatically introducing water into one of the cylinders of each pair, and means consisting of rotary valves within said pistons and mechanism for operating the same whereby the water in said cylinders may pass the pistons and be discharged, substantially as and for the purpose specified.

572,378. MACHINE FOR APPLYING PASTE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 23, 1896. Serial No. 588,790. (No model.)



Claim.—1. The combination with a reservoir adapted to contain paste, said reservoir having an outlet; of a force-feed device located adjacent to said outlet at the delivery side thereof, said device being constructed to apply a continuous stream of paste to the material under treatment and a feed-channel through which the paste is forced in a thin stream by said device.

2. The combination with a reservoir adapted to contain paste, said reservoir having an outlet; of a rotary force-feed device at the delivery side of said outlet; and a feed-channel through which a thin, continuous stream of paste may be forced by said feed device.

3. The combination with a reservoir adapted to contain paste, and a bracket or apron extending from the reservoir and having a conduit communicating therewith, of a force-feed device carried by the bracket; and a feed-channel through which a thin, continuous stream of paste may be forced by said device.

4. The combination with a reservoir having an outlet, of a force-feed device for forcing a continuous stream of paste from the reservoir; a feed-channel; and means for regulating the size of the stream of paste as it issues from said channel.

5. The combination of a reservoir and a bracket or apron extending from the same and containing a conduit communicating with the reservoir, of a removable force-feed device carried by the bracket and constructed to force a continuous stream of paste from the reservoir to and upon the material under treatment.

6. The combination with a reservoir having a bracket or apron extending from the same, said bracket having a conduit; of a force-feed device carried by the bracket; a feed-channel; and means for regulating the size of the stream of paste forced through said channel.

7. The combination with a reservoir, of a bracket projecting therefrom, said bracket having a conduit communicating with the reservoir; a pair of gears, constituting a force-feed device, removably journaled in said bracket; and a removable cap for holding said gears in position.

8. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit therein leading from and communicating with said reservoir; and feeding mechanism carried by said bracket adjacent to said conduit, and comprising a pair of feed-gears adapted to convey a stream of paste into position for use.

9. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit therein leading from and communicating with said reservoir; feeding mechanism carried by said bracket adjacent to said conduit, and comprising a pair of intermeshing gears adapted to convey a stream of paste into position for use; and means for rotating said gears.

10. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit therein leading from and communicating with said reservoir; feeding mechanism carried by said bracket adjacent to said conduit, and comprising a pair of intermeshing gears adapted to convey a stream of paste into-

position for use; and means supported by said bracket for regulating the size of such stream, and comprising an adjustable device adapted to increase or decrease the size of said conduit adjacent to the mouth thereof.

11. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit leading from and communicating with said reservoir; and an adjustable spring-actuated device in position and operative to increase or decrease the size of said conduit adjacent to the mouth thereof, to regulate the size of the stream, and automatically adjustable to permit the passage of foreign material from said conduit.

12. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit therein leading from and communicating with said reservoir; feeding mechanism carried by said bracket adjacent to said conduit, for regularly supplying a stream of composition to the material to be operated on, and comprising a pair of intermeshing gears; and means adjustably supported by said bracket, for regulating the size of said stream, and comprising a lever pivotally secured to said bracket; an adjusting device carried by said bracket and engaging said lever; and a spring on said adjusting device intermediate said lever and bracket.

13. The combination of a reservoir having a bracket or apron extending from the same, said bracket having a conduit leading from and communicating with said reservoir; feeding mechanism carried by said bracket adjacent to said conduit, for regularly supplying a stream of paste to the material to be operated on; means in position for regulating the size of the stream; and a removable cap secured to said bracket, for closing said conduit.

14. The combination of a reservoir having an apron or bracket extending from the same, said bracket having a conduit therein leading from and communicating with said reservoir; a strainer in said reservoir above said conduit; feeding mechanism carried by said bracket adjacent to said conduit for regularly supplying a stream of composition to the material to be operated on, and comprising a pair of intermeshing gear-wheels; and means for regulating the size of the stream.

15. The combination with a reservoir, of a bracket; a pair of gears constituting a force-feed device removably journaled in said bracket, one of said gears having a stud projecting therefrom; a driving-shaft engaging said stud; and a removable cap for holding the gears in position on the bracket.

16. The combination of a reservoir having a bracket or apron extending below the same, said bracket having a conduit leading from and communicating with said reservoir; a feeding mechanism carried by said bracket, and comprising a pair of intermeshing gear-wheels adapted to convey a stream of composition into position for use; means for regulating the size of said stream; a piston in said reservoir and adapted to hold the composition under pressure; and spring-actuated gear mechanism operatively connected with said piston for holding the same in engagement with said composition.

17. The combination of a reservoir; a piston therein; a rack-slide supported adjacent to said piston and provided with an arm having a bifurcated sleeve adapted to receive the rod of said piston and from which it is removable; and a spring-actuated gear in position to engage said rack-slide, to thereby hold the piston in engagement with the contents of the reservoir.

18. The combination of a reservoir; a piston therein; a rod connected to said piston and having a neck and a collar; a rack-slide in position adjacent to said reservoir and provided with an arm having a bifurcated sleeve adapted to receive said neck, and said sleeve having a countersunk or recessed portion adapted to receive said collar; and spring-actuated gear mechanism in position to engage said rack.

19. The combination of a reservoir; a piston therein; a rack-slide adjacent thereto and operatively connected with said piston; a spring-actuated gear-wheel supported in position to engage said rack-slide; and means for actuating said gear-wheel, to thereby actuate the rack-slide and piston.

20. The combination of a reservoir; a piston therein; a rack-slide in position and operatively engaged with said piston; a casing adjacent to said rack-slide; a gear-wheel in said casing and meshing with the teeth of said rack-slide; and a spring connected to said gear-wheel and to said casing.

21. The combination of a reservoir; a piston therein; a rack-slide in position and operatively engaged with said piston; a casing supported in position relatively to said rack-slide and having a removable cap; a gear-wheel supported on a shaft journaled in said cap and in position to mesh with said rack-slide; and a spring connected to said gear-wheel and cap.

22. The combination of a reservoir; a piston therein; a rack-slide operatively engaging said piston; a casing supported in position relatively to said rack-slide, and having a removable cap having a hub; a gear-wheel supported on a shaft journaled in said hub and in position to mesh with said rack-slide; a helical spring carried on said hub and having one end thereof secured to said gear-wheel, and its opposite end to said removable cap; and a handle secured to said shaft, for manipulating said gear-wheel and thereby the rack and piston.

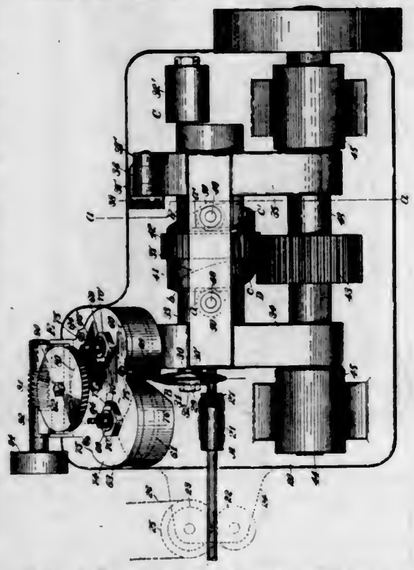
23. In combination with a fixture having a driving-shaft; of a reservoir having a bracket or apron projecting from the same, said bracket having a conduit therein leading from and in communication with said reservoir; feeding mechanism journaled on said bracket, and comprising a pair of intermeshing gears, one of said gears having its journal in operative engagement with the driving-shaft, whereby said intermeshing gears will be rotated.

24. The combination of a reservoir having a bracket or apron projecting from the same, said bracket having a conduit communicating with said reservoir and leading therefrom, the side wall of said conduit adjacent to its lower end forming a fixed lip; feeding mechanism carried by said bracket, and comprising a pair of intermeshing gears, one of said gears being in position to intersect the conduit and convey a stream of composition into position for use; and a lever pivotally supported on said bracket and having its lower end formed to constitute an adjustable lip adjacent to said fixed lip, whereby the size of said stream is regulated.

25. The combination of a reservoir; a piston therein; a rod connected to said piston and having a neck and a collar; a bifurcated sleeve provided with a countersunk or recessed portion adapted to receive said collar; and means for supporting said sleeve.

26. In combination with a reservoir and its delivery conduit; a force-feed device; and a removable cap for holding said device in position, whereby when said cap is detached the said feed device can be readily removed.

572,874. ROD-CUTTING APPARATUS. FRANCIS H. RICHARDS, Hartford, Conn. Filed May 7, 1896. Serial No. 590,583. (No model.)



Claim.—1 The combination with framework; of a hub journaled thereon; a cutter eccentrically carried by said hub; and means for rotating and reciprocating said hub, whereby said cutter will be moved in an orbital path toward and from the work and longitudinally relatively thereto.

2. The combination with framework; of an adjustable hub journaled thereon; a cutter eccentrically carried by said hub; and means for rotating and reciprocating said hub, whereby said cutter will be moved in an orbital path toward and from the work and longitudinally relatively thereto.

3. The combination with framework; of a hub or sleeve journaled thereon; a cutter eccentrically carried by said hub; means for continuously feeding the work to be operated on; and means for rotating said hub, and thereby moving the cutter in an orbital path toward and from the work, and for moving said hub, and thereby the cutter, longitudinally relatively to the work and synchronously with the feed thereof.

4. The combination with framework; of a hub journaled thereon; a rotating spindle eccentrically journaled in said hub; a cutter carried by said spindle; and means for rotating and reciprocating said hub, to thereby move said cutter in an orbital path toward and from the work, and actuate the same longitudinally relatively to said work.

5. The combination with framework; of a hub journaled thereon; a cutter eccentrically carried by said hub; a cam mounted on said hub and adapted to impart reciprocatory movements to the hub, and thereby to the cutter; and means for rotating said hub, to thereby move said cutter in an orbital path toward and from the work.

6. The combination with framework; of a hub journaled thereon; a rotating spindle eccentrically journaled in said hub; a cutter carried by said spindle; a cam mounted on said hub; a gear carried by said cam; and a rotating gear in position to mesh with said cam-gear, whereby said hub will be rotated and reciprocated, to thereby carry the cutter in an orbital path toward and from the work and longitudinally relatively thereto.

7. The combination with framework; of an adjustable bracket supported thereon; means for adjusting said bracket; a hub journaled in said bracket; a cutter eccentrically carried by said hub; and means for rotating and reciprocating said hub, to thereby move said cutter in an orbital path and reciprocate the same synchronously in a longitudinal path.

8. The combination with framework; of a rotatable shaft supported thereon, and carrying a gear; a bracket adjustably supported on said shaft; a hub journaled in said bracket; a cam mounted on said hub and having a gear meshing with the rotatable-shaft gear; means carried by the bracket to engage said cam; a rotatable cutter eccentrically carried by said hub, for movement in an orbital and a longitudinal path, and means for adjusting said bracket, to thereby adjust the cutter toward and from the work.

9. The combination with framework; of work-carrying means supported thereon; means for feeding the work continuously; a rotatable shaft supported on said framework, and carrying a gear; a pair of bracket-arms adjustably supported on said gear-shaft; a hub or sleeve journaled in said bracket-arms, and carrying a cam; a gear carried by said cam and meshing with the shaft-gear; studs carried by the framework, for engaging said cam; a rotatable shaft eccentrically journaled in said hub or sleeve; a cutter carried by said rotatable shaft, and means for adjusting said bracket-arms, to thereby adjust the cutter toward and from the work.

10. The combination with framework; of a rotatable hub journaled thereon for longitudinal movement; a cutter eccentrically carried by said hub; projections on said framework; a cam mounted on said hub, and having three sets of oppositely-disposed cam-faces adapted to engage said projections; and means for rotating said cam, and thereby the hub, whereby said cutter will be carried in an orbital path and longitudinally with the work when one set of cam-faces is in engagement with the projections; and will be carried in its orbital movement without longitudinal movement when another set of cam-faces is in engagement with the projections; and will be moved longitudinally of, or in a direction opposite to, the feed of said work when another set of cam-faces is in engagement with the projections.

11. The combination with framework; of means for continuously feeding the work to be operated on; supporting means journaled in said framework; a cutter eccentrically carried by said supporting means; and means for rotating and reciprocating said supporting means, to thereby move said cutter in an orbital path toward and from the work, and to move said cutter longitudinally with the work during a part of its orbital movement, and longitudinally of, or in a direction opposite to the feed of, the work during another part of its orbital movement.

12. The combination of means for continuously feeding the work to be operated on; a cutter; means for rotating said cutter; cutter-actuating means for moving said cutter in an orbital path toward and from the work and synchronously therewith and with the feed of the work, for actuating said cutter longitudinally relatively to said work; means operable for sharpening or grinding said cutter during a part of its orbital movement; and actuating means for said grinding or sharpening means.

13. The combination of means for feeding the work to be operated on; a cutter; cutter-actuating means for moving said cutter in an orbital path toward and from the work, and for moving said cutter longitudinally with the work during a part of its orbital movement, and longitudinally of, or in a direction opposite to the feed of the work during another part of its orbital movement; means operable for sharpening or grinding said cutter during a part of its orbital movement and intermediate of its longitudinal movements; and actuating means for said grinding or sharpening means.

14. The combination of means for continuously feeding the work to be operated on; a rotatable cutter; means for rotating said cutter; cutter-actuating means for moving said cutter in an orbital path toward and from the work, and for moving said cutter longitudinally with the work during a part of its orbital movement, and longitudinally of, or in a direction opposite to the feed of, the work during another part of its orbital movement; means operable for sharpening or grinding said cutter during a part of its orbital movement and intermediate of its longitudinal movements; and actuating means for said sharpening or grinding means.

15. The combination with framework; of means for continuously feeding the work to be operated on; a hub journaled in said framework; a cutter eccentrically carried by said hub; means for rotating and reciprocating said hub, to thereby move said cutter in an orbital path toward and from the work, and move said cutter longitudinally with the work during a part of its orbital movement, and longitudinally of, or in a direction opposite to the feed of, the work during another part of its orbital movement; means operable for sharpening or grinding said cutter during a part of its orbital movement and intermediate of its reciprocating movements; and actuating means for said sharpening or grinding means.

16. The combination of a cutter; actuating means for moving said cutter in an orbital path; means for sharpening said cutter, and comprising a pair of rotatable grinders or sharpeners supported edge to edge relatively to each other and adapted to engage said cutter during a predetermined part of its orbital movement; and actuating means for said grinders or sharpeners.

17. The combination of a pair of grinding or sharpening disks supported edge to edge and one in front of the other; a friction-wheel supported in position and engaging both of said grinding or sharpening disks; and means for actuating said friction-wheel, to thereby impart movement to said disks.

18. The combination of a tool; a closed casing adjustable toward and from said tool and having a removable cover and having its opposite wall provided with an opening; a pair of grinding or sharpening disks supported in said casing; a friction-wheel also supported in said casing and engaging said grinding or sharpening disks; and means for actuating said friction-wheel.

19. The combination of a casing; a pair of rotatable grinding or sharpening disks supported therein; a disk having a felt periphery also carried in said casing and frictionally engaging said grinding or sharpening disks; a worm-wheel operatively connected with the felt disk; and a worm in engagement with said worm-wheel for imparting motion thereto.

20. The combination with framework; of a rotating cutter; means for moving said cutter in an orbital path; a closed casing adjustable on said framework, and having an opening in its wall; a pair of grinding or sharpening disks having their peripheries rotating adjacent to said opening; a friction-wheel in said casing, and engaging the grinding or sharpening disks; a worm-wheel operatively connected with said friction-wheel; and a worm in mesh with said worm-wheel, whereby said grinding or sharpening disks will be rotated to engage the cutter during a predetermined period of its orbital movement.

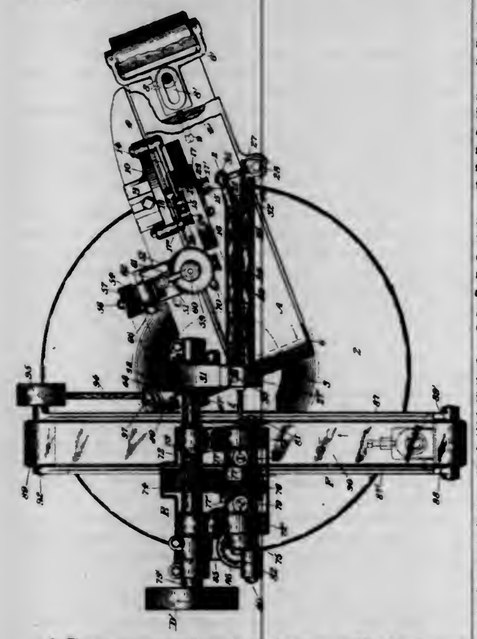
21. The combination of a closed casing, one of the walls thereof having an elongated recess; a normally-fixed, adjustable tubular sleeve having an annular flange engaging the inner face of said wall and an elongated ear supported in said elongated recess and having a screw-threaded end adapted to receive an adjusting-nut, whereby said fixed sleeve is adjustable relatively to the casing; a rotatable tubular sleeve supported in said normally-fixed sleeve, and having a flanged end; a spindle supported in said rotatable tubular sleeve, and also having a flanged end and a threaded end adapted to receive a clamp-nut; and a disk carried on said spindle and intermediate of said flanges.

22. The combination with framework; of means for feeding the work to be operated on continuously; a rotatable shaft supported on said framework; a bracket adjustably supported on said shaft; means for adjusting said bracket; a rotatable and reciprocating hub or sleeve journaled in said bracket, and carrying a cam having a gear, whereby said hub is rotated and reciprocated; a gear on said rotatable shaft in mesh with said cam-gear; projections carried by said bracket and adapted to engage said cam; a rotatable shaft eccentrically journaled in said hub; a cutter carried by said eccentrically-disposed shaft; and means for sharpening or grinding said cutter during a predetermined period of its orbital movement, and comprising a casing adjustable on said framework toward and from said cutter; a pair of grinding or sharpening disks journaled in said casing; a friction-disk engaging said grinding or sharpening disks; a worm-wheel operatively connected with the friction-disk; and a worm meshing with said worm-wheel, for imparting motion thereto.

23. The combination with framework; of a work-carrying support having a beveled face; means for feeding the work relatively to said support; a cutter; and means for actuating said cutter in an orbital path toward and from the work, and longitudinally relatively to the work, to thereby permit said cutter to commence its severing operation adjacent to the inner portion of said beveled face of the support, and thereby complete its cutting operation while the work is supported on said support.

572,875. CIGARETTE-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 1, 1896. Serial No. 593,692. (No model.)

Claim.—1. The combination with a tobacco-conveyer, of filler-forming and wrapper-applying means for forming a cigarette-body; a stationary former-tube having an inclined delivery end, and having such incline coincident with the cutting path of the cutter; a cutter having synchronous cutting movements transversely to, and longitudinally of, the cigarette-body, and having such longitudinal movement in unison with the advance of said cigarette-body; and means for actuating said cutter.



2. The combination with a tobacco-conveyer, of filler-forming and wrapper-applying means for forming a cigarette-body; a stationary former-tube having an inclined delivery end, and having such incline coincident with the cutting path of the cutter; a cutter having synchronous, rotary, revoluble, and axial movements, and having said rotary and revoluble movements transversely to the cigarette-body, and having said axial movement longitudinally of said cigarette-body and in unison with the advance of said body; and means for actuating said cutter.

3. The combination with a tobacco-conveyer, of filler-forming and wrapper-applying means for making a cigarette-body; a stationary former-tube having an inclined delivery end, and having such incline coincident with the cutting path of the cutter; an axially-reciprocatory cutter carrier rotatable transversely to the cigarette body and having its axis parallel with the plane of movement of said body, and having synchronous, rotary, and axial movements, and also having said axial movement in unison with the advance of the cigarette body; and a rotary cutter mounted eccentrically on said cutter-carrier, and held against axial movement relatively to said carrier, and having its axis parallel with the axis of said carrier.

4. The combination with a conveyer for the filler material, of a gravitating wrapper feed-roll coöperative with said conveyer; and a superimposed wrapper-roll coöperative with and yieldingly held on said feed-roll.

5. The combination with a conveyer for the filler material, of a gravitating spring-pressed wrapper feed-roll coöperative with said conveyer; and a superposed gravitating wrapper-reel coöperative with said feed-roll.

6. The combination with a conveyer for the filler material, of a wrapper feed-roll coöperative with said conveyer and having yielding and rigid surfaces, respectively, encircling the said roll; and a wrapper-roll coöperative with and yieldingly held on said feed-roll.

7. The combination with a conveyer for the filler material, of a wrapper feed-roll coöperative with said conveyer and having yielding and rigid surfaces, respectively, encircling the said roll; a scraper coöperative with the rigid surface of the feed-roll; and a wrapper-roll coöperative with and yieldingly held on said feed-roll.

8. The combination with a conveyer for the filler material, of a feed-roll coöperative with said conveyer and having yielding and rigid surfaces, respectively, encircling the said roll; a spring-pressed scraper coöperative with the rigid surface of the feed-roll; and a wrapper-roll coöperative with and yieldingly held on said feed-roll.

9. The combination with a conveyer for the filler material, of a gravitating spring-pressed feed-roll having yielding and rigid surfaces, respectively, encircling the said roll; a spring-pressed scraper coöperative with the rigid surface of the feed-roll; and a superimposed gravitating wrapper-roll coöperative with and yieldingly held on said feed-roll.

10. The combination with a conveyer for the filler material, of a wrapper feed-roll coöperative with said conveyer and having a rigid surface and also having a rubber ring encircling said feed-roll; and a wrapper-roll coöperative with and yieldingly held on said feed-roll.

11. The combination with a conveyer for the filler material, of an oscillatory feed-roll carrier adjacent to said conveyer; a gravitating wrapper feed-roll mounted for rotation on said carrier and coöperative with said conveyer; a tension-regulating device controlling said feed-roll carrier, for regulating the pressure of the feed-roll upon said conveyer; and a superposed gravitating wrapper-reel coöperative with said feed-roll.

12. The combination with a conveyer for the filler material, of an oscillatory feed-roll carrier adjacent to said conveyer; a gravitating wrapper feed-roll mounted for rotation on said carrier and coöperative with said conveyer; a tension-regulating device controlling said feed-roll carrier, for regulating the pressure of the feed-roll upon said conveyer; an oscillatory wrapper-reel carrier; and a superposed gravitating wrapper-reel mounted for rotation on said carrier and coöperative with said feed-roll.

13. The combination with a conveyer-table having an opening therein, of a conveyer for the filler material mounted for traveling movement on said table and over said opening; a conveyer supporting roll mounted for rotation beneath said table and having its supporting-surface flush with the surface of said table; a gravitating feed-roll coöperative with said conveyer and superposed thereon over the conveyer-supporting roll; and a superposed gravitating wrapper-reel coöperative with said feed-roll.

14. The combination with a conveyer-belt for the filler material, of a former-roll; a conical roll carried at the end of said former-roll; a pair of meshing gears carried, respectively, by said respective rolls and rotatively connecting said rolls; and means coöperative with said former-roll and conveyer-belt for rolling the filler material into a continuous rod whereby provision is made for the entrance of material from said conveyer-belt between the conical roll and the other part of the rod-forming device.

15. The combination with a conveyer-belt for the filler material, of a former-roll; a conical roll at the end of said former-roll; a pair of meshing bevel-gears carried, respectively, by and rotatively connecting said rolls; and means coöperative with said former-roll and conveyer-belt and serving to form the filler material into a continuous rod whereby provision is made for the entrance of material from said conveyer-belt between the conical roll and the other part of the rod-forming device.

16. The combination with a conveyer-belt for the filler material, of a former-roll; a conical roll carried obliquely at the end of said former-roll; a pair of meshing bevel-gears carried, respectively, by and rotatively connecting said rolls; and means coöperative with said former-roll and conveyer-belt, for forming the filler material into a continuous rod whereby provision is made for the entrance of material from said conveyer-belt between the conical roll and the other part of the rod-forming device.

17. The combination with a conveyer-belt for the filler material, of a former-roll; a conical roll having a universal connection with the end of said former-roll; a pair of meshing bevel-gears carried, respectively, by and rotatively connecting said rolls; and means coöperative with the former-roll and conveyer-belt, for forming the filler material into a continuous rod whereby provision is made for the entrance of material from said conveyer-belt between the conical roll and the other part of the rod-forming device.

18. The combination with a conveyer-belt for the filler material, of a former-roll having a socket in one of its ends and also having a bevel-gear; a spindle having a spherical bearing seated in said socket; a conical roll rotatively mounted on said spindle and having a complementary socket for said spherical bearing and also having a bevel-gear meshing with the aforesaid bevel-gear and rotatively connecting said rolls; and means coöperative with said former-roll and conveyer-belt for forming the filler material into a continuous rod whereby provision is made for the entrance of material from said conveyer-belt between the conical roll and the other part of the rod-forming device.

19. The combination with a former-roll having a socket in one of its ends, of a bevel-gear encircling said socket; a cap encircling said bevel-gear and having a contracted opening and also inclosing a bevel-gear on the conical roll; a spindle having a spherical bearing seated in the socket on the former-roll; a conical roll rotatively mounted on said spindle and having a complementary socket for said spherical bearing and also having a flared end surrounding the socket in said conical roll and inclosing the cap of the former-roll; and a bevel-gear carried by said conical roll and encircling the socket therein.

20. In a cigarette-machine, the combination of a carrier, a pair of rotary former-rolls mounted on said carrier, and a separate conical roll geared at one end with one of said former-rolls and mounted at the other end in said carrier; of a belt for conveying filler material to said devices.

21. A former device comprising a pair of end pieces; a former-roll spindle carried at its opposite ends by said end pieces; a pair of rotary former-rolls, one mounted on said spindle and the other supported at one of its ends by one of said end pieces; and a conical roll rotatively connected at one end with the free end of the last-mentioned former-roll and carried at its other end by the other end piece whereby provision is made for the entrance of material from the conveyer-belt between the conical roll and the other parts of the rod-forming device.

22. A former device comprising a pair of end pieces; a former-roll spindle carried at its opposite ends by said end pieces; a pair of rotary former-rolls, one mounted on said spindle and the other supported at one of its ends by one of said end pieces; a second spindle carried by the other end piece and having a universal connection with the free end of said last-mentioned former-roll; and a conical roll mounted on said second spindle and rotatively connected with said last-mentioned roll.

23. The combination with a former device comprising a carrier, a pair of rotary former-rolls mounted on said carrier, a separate conical roll geared at one end with one of said former-rolls and mounted at the other end in said carrier, and a pair of pinions carried, respectively, by said former-rolls at the ends thereof remote from said conical roll; of a belt for conveying filler material to said former device.

24. The combination with a conveyer for the filler material, of a pair of rotary former-rolls coöperative with said conveyer; and a conical roll rotatively connected at one of its ends with one of said former-rolls and disposed obliquely to said former-rolls whereby provision is made for the entrance of material from the conveyer-belt between the conical roll and the other parts of the rod-forming device.

25. The combination with a conveyer for the filler material, of wrapper-feeding means; and filler-forming and wrapper-applying means coöperative with said conveyer and with said wrapper-feeding means and embodying a pair of rotary former-rolls disposed obliquely to the paths of movement of said conveyer and the wrapper; and a conical roll rotatively connected at one of its ends with one of said former-rolls and disposed obliquely to such former-roll whereby provision is made for the entrance of material from the conveyer-belt between the conical roll and the other parts of the rod-forming device.

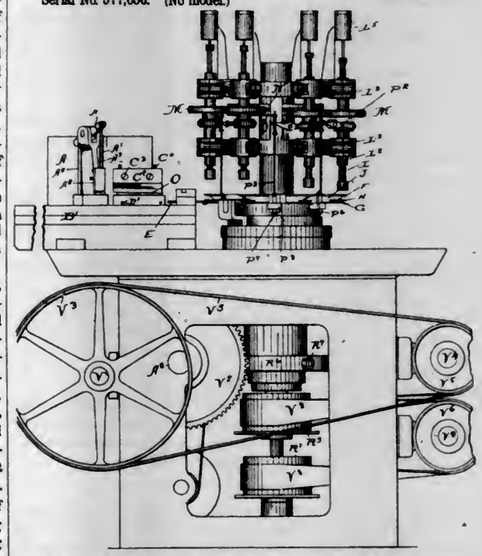
26. The combination with a conveyer for the filler material, of wrapper-feeding means; paste-applying means; and filler-forming and wrapper-applying means coöperative with said conveyer and with said wrapper-feeding means and embodying a pair of rotary former-rolls disposed obliquely to the paths of movement of said conveyer and the wrapper; and a conical roll rotatively connected at one of its ends with one of said former-rolls and disposed obliquely to said former-roll whereby provision is made for the entrance of material from the conveyer-belt between the conical roll and the other parts of the rod-forming device.

27. The combination with a shaft and a rotary carrier secured thereto, of an endless conveyer mounted for traveling movement and operative by said carrier; a worm-gear secured to said shaft; a driving worm-shaft; a worm secured to said worm-shaft and meshing with said worm-gear; a pinion on said worm-shaft; a spur-gear operative by said pinion; a pair of rotary former-rolls coöperative with the conveyer and disposed obliquely thereto; a conical roll rotatively connected at one of its ends with one of said former-rolls and disposed obliquely to such former-rolls; and a pair of pinions carried, respectively, by said respective former-rolls at the ends thereof remote from said conical roll and operative in the same direction by said spur-gear.

28. The combination with a shaft and with a rotary carrier secured thereto, of an endless tobacco-conveyer mounted for traveling movement and operative by said carrier; a cigarette-conveyer disposed at, and transversely to, the delivery end of the tobacco-conveyer; a worm-gear secured to said shaft; a driving worm-shaft; a worm secured to said worm-shaft and meshing with said worm-gear; a pinion on said worm-shaft; a spur-gear operative by said pinion; a pair of rotary former-rolls coöperative with the tobacco-conveyer and disposed obliquely thereto; a conical roll relatively connected at one of its ends with one of said former-rolls and disposed obliquely to such former-roll; a pair of pinions carried, respectively, by said respective former-rolls at the ends thereof remote from said conical roll and operative in the same direction by said-spur-gear; and driving connections between said first-mentioned shaft and the cigarette-conveyer.

29. The combination with a belt for conveying filler material, of a former device and a separate conical roll coöperating with such former device and disposed obliquely thereto, said roll serving to act upon the material on the conveyer-belt and in connection with the former device to shape the same into a continuous filler or tobacco rod.

572,376. MACHINE FOR FINISHING SPOKE-NIPPLES FOR BICYCLES. CHARLES E. ROBERTS, Oak Park, Ill. Filed Jan. 27, 1896. Serial No. 577,056. (No model.)



Claim.—1. The combination in a machine for finishing nipples for the spokes of bicycle-wheels, of mechanism for nicking the heads of the nipples, mechanism for slabbing or flattening the sides of their bodies, and mechanism for tapping them, substantially as specified.

2. The combination in a machine for finishing nipples for the spokes of bicycle wheels, of mechanism for nicking the heads of the nipples, mechanism for slabbing or flattening the sides of their bodies, mechanism for tapping them, and mechanism for feeding the nipples, substantially as specified.

3. The combination in a machine for finishing nipples for the spokes of bicycle-wheels, of mechanism for nicking the heads of the nipples, mechanism for slabbing or flattening the sides of their bodies, mechanism for tapping them, a moving holder adapted to hold the nipple rigidly and also adapted to carry it past the nicking and slabbing devices, and mechanism for assembling, positioning and delivering the nipples to said holder, substantially as specified.

4. The combination in a machine for finishing nipples for the spokes of bicycle-wheels, of mechanism for nicking the heads of the nipples, mechanism for slabbing or flattening the sides of their bodies, mechanism for tapping them, and a moving holder adapted to hold the nipple rigidly and also adapted to carry it past the nicking and slabbing devices to the tapping mechanism, substantially as specified.

5. The combination with nicking, slabbing and tapping mechanisms, of automatic mechanism for feeding the nipples to the machine, and automatic mechanism for carrying the nipples past said nicking and slabbing mechanisms and delivering them to the tapping mechanism, substantially as specified.

6. The combination with nicking, slabbing, and tapping mechanisms, of automatic mechanism for positioning, assembling and feeding the nipples to the machine, and automatic mechanism for carrying the nipples past said nicking and slabbing mechanisms and delivering them to the tapping mechanism, substantially as specified.

7. In a machine for nicking nipples and similar articles, a non-movable and stationarily-located saw and means for holding the article to be nicked and moving it across the teeth of the saw in combination with means for delivering the nipples to said holding means, substantially as specified.

8. In a machine for finishing nipples and similar articles, the opposing stationary saws D D, and means for holding the nipples and carrying them across the teeth of such saws in combination with means for delivering the nipples to said holding means, substantially as specified.

9. In a machine for finishing nipples, the combination of a stationary nicking-saw, and opposing stationary slabbing-saws, with

means for holding and carrying the nipples across the teeth of such saws and means for delivering the nipples to said holding means, substantially as specified.

10. The combination with a stationary saw and a moving holder for rigidly holding a nipple and carrying it across the teeth of the saw, of means for feeding the nipples into position over said holder, means for arresting the nipples at that position, and a device for forcing the nipples from that position into the holder, substantially as specified.

11. The combination with a stationary saw and a moving holder for rigidly holding a nipple and carrying it across the teeth of the saw, of means for feeding the nipples into position over said holder, a spring device for arresting the nipples at that position, and a driver for forcing the nipple past said arresting device and into the holder, substantially as specified.

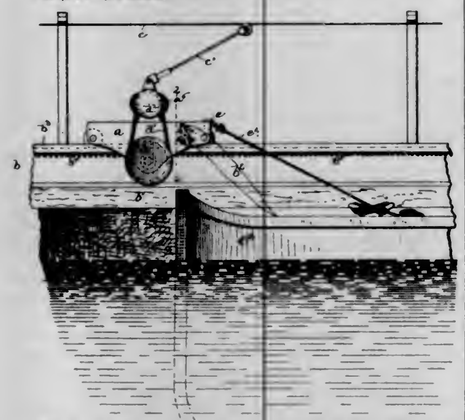
12. The combination with a stationary saw of a moving holder provided with spring actuated clamping-levers B^2 B^3 adapted to seize and hold the nipple, and automatic devices for opening said levers to release the nipple, substantially as specified.

13. The combination with the saws and the moving holder having clamping devices whereby the nipple is seized and rigidly held while it is moved across the teeth of the saws, of the tapping mechanism provided with nipple-holding devices, said first-mentioned holder being adapted to carry the nipple into the embrace of the holding devices of the tapping mechanism, substantially as specified.

14. In a machine for finishing nipples, a moving holder adapted to rigidly hold the nipple in a vertical position, and means for delivering the nipples singly to said holder, in combination with a stationary nicking-saw, located above the path through which the nipple is carried by said holder, and stationary slabbing-saws arranged at opposite sides of said path, substantially as specified.

15. The combination of a moving holder adapted to carry the nipple and to hold it rigidly and means for delivering the nipples singly to said holder, with a stationary saw arranged in an inclined position in the path of the nipple, substantially as specified.

572,377. **ELECTRIC TOWING APPARATUS.** ADAM E. SCHATZ, New York, N. Y. Original application filed Jan. 19, 1893, Serial No. 458,988. Divided and this application filed June 7, 1893. Serial No. 476,836. (No model.)



Claim.—1. The combination with a boat, of a carriage movable along a suitable support adjacent to a waterway, an electrical propelling-motor on said carriage, circuit connections, means for connecting the carriage and boat, whereby the latter will be propelled by the former, and connections, including a switch, between the motor and boat, whereby the motor-current may be controlled by a person on board the boat.

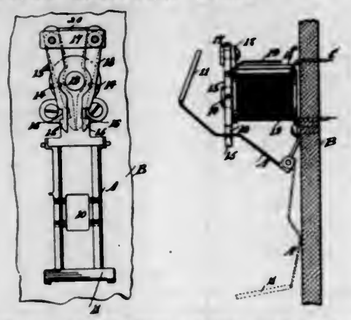
2. The combination with a fixed toothed rail located along the bank of a waterway, of an electric locomotive having a spur-gear meshing with said toothed rail, circuit connections, a boat, means for connecting the carriage of the locomotive with the boat whereby the latter will be propelled by the former, and connections, including a switch, between the locomotive and boat whereby the motor-current may be controlled by a person on board the boat.

3. In an electrical device for towing vehicles, the combination with a fixed rail, of a carriage sustaining an electric motor and geared to the rail, a coupling or drag-rope attached to the carriage, a switch-lever for directing the electric current to the motor, and a pull-rope for actuating said switch-lever, substantially as set forth.

4. In an electrical device for towing vehicles, the combination with a fixed rail, of a carriage sustaining an electric motor and geared to the same, a coupling or drag-rope attached to the carriage, an electric conductor parallel with the rail, a trolley-wheel with spring-arm pivoted upon the carriage to make contact with such conductor, a switch with lever for leading the current from the trolley to the motor, and a pull-rope for actuating such lever, substantially as set forth.

5. The combination with the rail *b* having vertical portion b^3 and the horizontal plate b^2 provided with a grooved upper surface and a rack b^4 on its under side, of the motor and its frame or truck *a* having hooks *e* and the wheels *a'* fitted to the grooved upper surface of the rail and the pinion a^3 meshing with the rack b^4, and means for connecting the motor with a canal-boat, substantially as and for the purpose set forth.

572,378. **ANNUNCIATOR-DROP.** WILLIAM SCHWAGERMAN, Yonkers, N. Y., assignor of one-half to Oscar Wiederhold, Summit, N. J. Filed Feb. 24, 1896. Serial No. 580,435. (No model.)



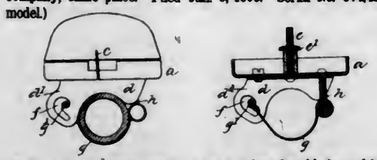
Claim.—1. In an annunciator, a magnet, a drop having an opening therein, and an armature located at each side of the magnet and normally held out of contact with the same, said armatures being each provided with a head adapted to enter the opening of the drop and support the same, substantially as described.

2. In an annunciator, a magnet, an armature located at each side of the magnet, being normally held out of contact with the same, the said armatures being provided with extensions at their free ends, and a drop having an opening through which the free ends of the armatures pass, the walls of the said drop-opening being adapted to be supported by the extensions of the armatures, as and for the purpose specified.

3. In an annunciator, a magnet, armatures pivoted at one end and arranged at each side of the magnet, being adapted to be attracted thereby, a tension device normally holding the free ends of the armatures separated, the said free ends being provided with extensions, and a drop arranged for locking engagement with the armatures when the latter are spread apart, the drop being released by the armatures when the magnet is energized, as and for the purpose set forth.

4. The combination, with a magnet, and spring-controlled armatures adapted to be attracted by the magnet, being normally held separated therefrom, of a drop arranged for locking engagement with the aforesaid armatures when the latter are not influenced by the magnet, as and for the purpose specified.

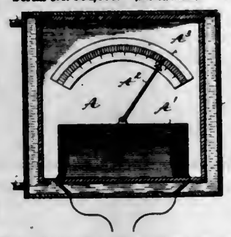
572,379. **BICYCLE-BELL CLAMP.** FREDERICK A. SCRANTON, East Hampton, Conn., assignor to the Bevin Brothers Manufacturing Company, same place. Filed Jan. 6, 1896. Serial No. 574,430. (No model.)



Claim.—1. In combination, a base, a bracket U-shaped in cross-section secured to the base and having side parts with curved sockets in the edges thereof, angular sockets in the side parts of the bracket located opposite each other, a clamp pivoted at one end to and between the side parts of the bracket, a clamp-screw in engagement with the base and with one end of the clamp, and a stud secured to the opposite end of the clamp, extending through the side parts of the bracket, and in engagement with the angular sockets, all substantially as described.

2. In combination, a base, a bracket U-shaped in cross-section located on the under side of the base, a stud for a gong extending through the bracket and base, means for clamping the stud and base in position, angular sockets located opposite each other in each of the side parts of the bracket, a clamp pivoted to and between the side parts of the bracket, an adjusting-screw extending through the base and in engagement with one end of the clamp, and a stud secured to the opposite end of the clamp and in engagement with the angular sockets in the side parts of the bracket, all substantially as described.

572,380. **VOLTMETER.** ALVAN A. SIMONDS, Dayton, Ohio. Filed Mar. 20, 1896. Serial No. 584,063. (No model.)

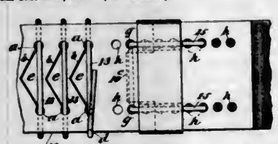


Claim.—1. The combination with a voltmeter comprising among its members, a coil of electrical conducting material, and indicating mechanism operated thereby, of means for regulating the temperature of said conducting material to maintain the uniform conductivity thereof, and secure uniform action of said indicating mechanism, substantially as described.

2. The combination with a voltmeter comprising among its members, a coil of electrical conducting material and indicating mechanism operated thereby, of means for circulating a fluid of uniform temperature around said conducting material to maintain its uniform conductivity and secure uniform action of said indicating mechanism, substantially as described.

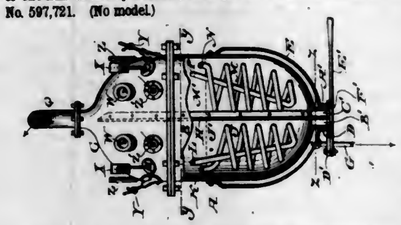
3. The combination with a voltmeter comprising among its members, a coil of electrical conducting material, of a water-jacket surrounding said coil and inlet and outlet pipes communicating with said water-jacket, substantially as described.

572,381. **STOVEPIPE-SHELF.** ABRAM H. SMITH, Vancouver, Canada, assignor to Eugenia P. Smith, Tacoma, Wash. Filed May 20, 1896. Serial No. 592,297. (No model.)



Claim.—A stovepipe-shelf, comprising a sheet-metal band, radial arms and braces therefor projecting from the band, and a securing device for the band, consisting of a locking staple adapted to engage its limbs in different perforations of the band near one end of said band, a hook formation on the other end of the band, adapted to hook upon the cross-bar of the locking-staple, and a clasp slidable over the hook and staple to keep them in a locked condition, substantially as described.

572,382. **VACUUM-PAN.** JOHN SMITH, Philadelphia, Pa., assignor of one-half to Henry Brandle, same place. Filed July 1, 1896. Serial No. 597,721. (No model.)



Claim.—1. A vacuum-kettle, an upright partition supported within said kettle forming compartments, means within each compartment for independently heating the same, a single exit-pipe receiving from both compartments simultaneously and having a valve thereon.

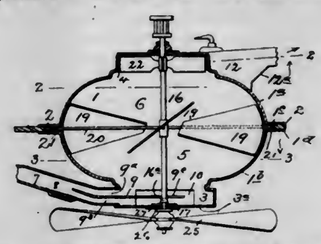
2. A duplex vacuum-kettle, consisting of a body, a cap therefor, a jacket around said body, a partition in the latter, a heating-pipe located in each compartment on either side of said partition, means for conducting a heating fluid to and from each of said pipes, an outlet-pipe leading from said cap, a chamber in communication with said outlet, a perforated diaphragm in said chamber, means for introducing a cooling medium above said diaphragm, and means for withdrawing the products of condensation from said chamber.

3. A duplex vacuum-kettle, consisting of a body, a cap therefor, a partition located within the same, a heating-jacket surrounding said body, means for independently heating each side of said partition, independent outlet-ports communicating with the lower portion of said body, and a valve for controlling said ports.

4. A duplex vacuum-kettle, an upright partition, located within the same, a heating-jacket surrounding said kettle, means for independently heating each side of said partition, independent outlet-ports communicating with the lower portion of said kettle, and a valve for controlling said ports.

5. A duplex vacuum-kettle, having a jacket surrounding the lower portion, a partition in the latter forming compartments, means for independently heating said compartments, an outlet from the upper portion of said kettle, a chamber into which said outlet discharges, an apertured diaphragm in the upper portion of said chamber, means for cooling and condensing the gaseous products evolved, means for withdrawing the same from said chamber, an outlet-passage leading from said body at either side of said partition, and a valve controlling each passage, whereby the contents of both compartments of the kettle can be simultaneously withdrawn.

572,383. **AIR COMPRESSOR AND BLOWER.** OSCAR L. SMITH, Edgewater, N. Y. Filed Jan. 27, 1896. Serial No. 577,058. (No model.)



Claim.—1. A casing having a central enlarged compartment, and an upper and lower contracted compartment communicating therewith, a feed-pipe leading to the lower compartment, and incasements opening into the upper compartment, combined with a shaft, a set of fans or blades carried by said shaft in said central compartment, and a set of smaller air-compressing fans or blades carried by said shaft in the upper compartment of said casing, substantially as described.

2. A casing having an upper and lower compartment, a feed-pipe leading into said lower compartment and a distributing-plate located in said feed-pipe and extending into said lower compartment, combined with a shaft, a series of blades carried thereby in said casing for drawing in air, another series of blades carried by said shaft in said upper compartment for compressing and forcing out air, and incasements carried by said casing to receive and conduct air, substantially as described.

3. A casing having an upper and lower compartment, a feed-pipe 7 leading to the lower compartment, a distributing-plate 9 extending from the feed-pipe 7 into said lower compartment, feed-pipes 10 also leading into said lower compartment, the inner end of said plate being curved at 9^a to distribute air from the pipes 7 and 10, and incasements connected with the upper compartment, to receive air, combined with a shaft having a series of fans or blades 19, to draw air, and a series of fans 22 to compress and expel air, substantially as described.

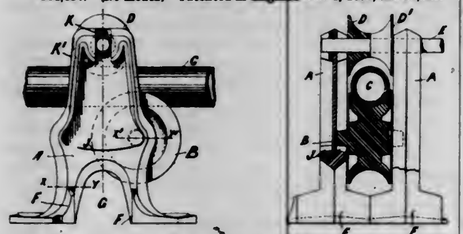
4. A casing having an upper and lower compartment, and an annular groove 21, and a feed-pipe leading to the lower compartment, combined with a shaft having a series of fans or blades, and rods extending from said fans or blades and located in said annular groove, as and for the purposes specified.

5. The combination of a casing having an upper and lower compartment, and an air-inlet for said lower compartment, with incasements connected with said upper compartment and inclined downwardly at 12ª to form a flaring mouth opening into the upper portion of said casing, in combination with a shaft having a double series of fans or blades to draw in, compress and expel air, as and for the purposes specified.

6. A casing having air inlets and outlets, combined with a shaft 16, a double series of fans or blades carried thereby in said casing,

and a fan carried by said shaft below said casing, substantially as described.

572,384. GUIDE-BEARING FOR RAILWAY CONNECTION-RODS. WILLIAM SMITH, London, England. Filed Feb. 23, 1894. Serial No. 501,137. (No model.) Patented in England Dec. 1, 1892, No. 21,949.

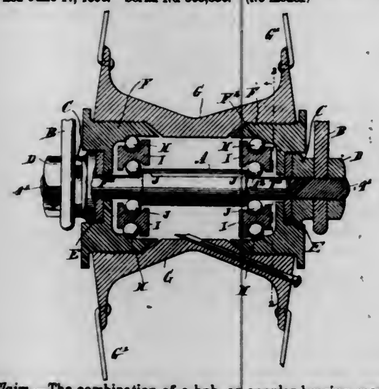


Claim.—1. In combination with the actuating-rod and the roller supporting the same and having projecting trunnions, guide-bearing frames between which the rod passes and the roller is received, such frames having surfaces that are inclined upwardly in both directions from the central portion, and on which surfaces the trunnions of the supporting-rollers rest, substantially as set forth.

2. The combination with the actuating-rod and the roller supporting the same and having projecting trunnions, of frames between which the rod and the roller are received, such frames having bases with open transverse clearance-channels below the roller and guard-fences upon the frames at each side of the clearance-channels, substantially as set forth.

3. The frames for the antifriction-roller supporting the actuating-rod, such frames being castings with curved surfaces J at the bottom of the recessed sides upon which the trunnions of the roller rest, and the passages K in the upper parts of the frames through which the trunnions are passed, substantially as set forth.

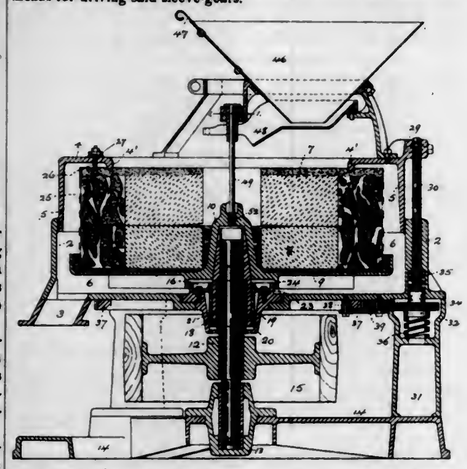
572,385. BALL-BEARING. HARRY A. STEPHENS, Missoula, Mont. Filed June 17, 1896. Serial No. 595,839. (No model.)



Claim.—The combination of a hub, an annular bearing secured in each end of the hub, each bearing having an inwardly-extending flange axially orificed and each bearing also having an inwardly-facing shoulder located inward of the respective flanges and forming ball-seats, an axle having reduced ends respectively passed through the orifices of the flanges, the axle having at the inner terminal of each reduced portion an outwardly-facing shoulder forming ball-seats, a fork in which the terminals of the axle are mounted, a nut on each terminal against which nuts the outer sides of the flanges respectively bear, two rings contained within the hub and respectively located adjacent to the flanges of the bearings, each ring having a peripheral groove and an internal groove, one wall of each groove being of increased height to oppose the corresponding shoulders respectively on the bearings and the axle, and antifriction-balls distributed throughout the grooves of the rings and respectively bearing on the seats formed by the shoulders of the axle and bearings, substantially as described.

572,386. GRINDING-MILL. THOMAS L. STURTEVANT, Quincy, and THOMAS J. STURTEVANT, Framingham, Mass., assignors to the Sturtevant Mill Company, Portland, Me., and Boston, Mass. Filed Jan. 16, 1896. Serial No. 575,802. (No model.)

Claim.—1. In a grinding-mill, the combination with a fixed casing, of a series of hollow posts surrounding said casing, a runner-stone rotatably mounted within said casing, a vertically-adjustable casing sliding within said fixed casing, a bed-stone supported by said adjustable casing, screw-threaded supporting-rods for said adjustable casing mounted in said hollow posts, sleeve-gears to actuate said rods, and means for driving said sleeve-gears.



2. In a grinding-mill, the combination with the stationary casing 2, of the rotatable bed-stone mounted therein, the posts 29 formed integral with said casing 2, the vertically-adjustable casing 5 sliding in said casing 2, the bed-stone 7 hung from said casing 5, the screw-threaded rods 30 supporting said casing 5 and moving freely in posts 29, sleeve-gears 34 engaging the lower ends of rods 30, and the ring 37 and means to drive said sleeve-gears 34.

3. In a grinding-mill, the combination with a fixed casing having a runner-stone mounted therein, of a movable casing having an inturned circular rib, a bed-stone having a circular groove into which the said rib fits, and supports for said bed-stone depending from said movable casing.

4. In a grinding-mill, the combination with suitable runner and bed stones, of a supporting-casing for the bed-stone having a downwardly-turned rib or flange which fits into a corresponding groove in the upper surface of said bed-stone, radially-disposed pins projecting from the circumference of said bed-stone, hooks to engage said pins, and nuts and washers which secure said hooks to the bed-stone casing in such a manner as to prevent axial movement of the bed-stone.

5. In a grinding-mill, the combination with a mill-casing, of a bed-stone mounted therein, said bed-stone being provided with an annular groove in its upper surface to receive a centering flange or rib on the mill-casing, and means for supporting said bed-stone so as that the said flange or rib is caused to grip the stone and prevent axial movement of the said bed-stone under the friction of the runner-stone.

6. In a grinding-mill, the combination with a bed-stone, of a runner-stone, a runner-head secured to said runner-stone and having a tapering socket terminating in a squared extremity, a cylindrical spindle having a squared end engaging the squared extremity of said socket, and a tapering shaft-sleeve fixed to said spindle to center the shaft.

7. In grinding-mills, a rotary spindle, a sleeve for centering the same affixed thereto and comprising a tapered upper part and a cylindrical lower portion, combined with an oil-pocket within which said sleeve projects, as specified.

8. In combination with a rotary shaft, a centering-sleeve affixed thereto, and a tube which clasps the lower end of said sleeve, combined with a flaring cup as a bearing for the tube, and a cylinder 21 made fast to said cup and extending centrally therethrough and out of contact with the said shaft, as stated.

9. In a grinding-mill, the combination with a stationary casing, of a runner-stone-supporting plate within said casing, a central cone on said plate having a screw-threaded aperture in the apex, a rotary shaft projecting into said cone, and a bed-stone adjustable toward and from said runner-stone.

572,387. BOTTLE. MARSTON TEBBETTS and LESLIE W. TEBBETTS, San Diego, Cal. Filed Apr. 22, 1896. Serial No. 588,004. (No model.)

Claim.—1. A bottle or other vessel, provided with a neck in the outer wall of which is formed a cavity or depression, a spiral spring placed within said depression and one end of which is passed through a perforation or opening in the side of the neck, and a strip or plate provided with a hook by which it is suspended within said neck, said strip or plate being provided with teeth or sprockets, through which the end of the spring is passed substantially as shown and described.

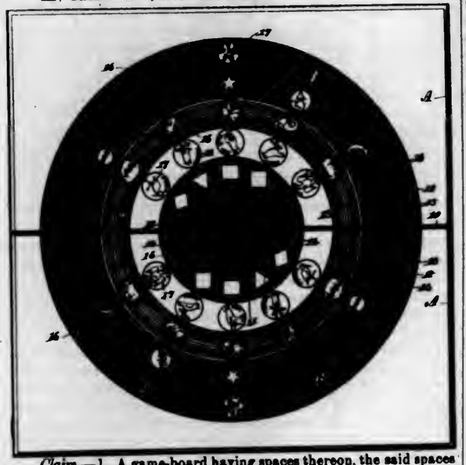


2. A bottle or other vessel, provided with a neck in the outer wall of which is formed a cavity or depression a spiral spring placed within said depression and one end of which is passed through a perforation or opening in the side of the neck, and a strip or plate provided with a hook, by which it is suspended within said neck, said strip or plate being provided with teeth or sprockets, through which the end of the spring is passed, said teeth being inwardly and downwardly directed and being adapted to engage with the plug or stopper, when the latter is forced into the neck, substantially as shown and described.

3. A bottle or other vessel provided with a neck in the outer wall of which is formed a cavity or depression a spiral spring placed within said depression, and one end of which is passed through a perforation or opening in the side of the neck, and a strip or plate provided with teeth or sprockets, through which the end of the spring is passed, said teeth being inwardly and downwardly directed and being adapted to engage with the plug or stopper, when the latter is forced into the neck and said cavity being provided with a shield of glass or similar material which is secured thereover, substantially as shown and described.

4. A bottle or other vessel provided with a neck in the outer wall of which is formed a cavity or depression, a spiral spring placed within said depression, and one end of which is passed through a perforation or opening in the side of the neck, and a strip or plate to which said spring is secured, said strip or plate being provided with teeth or sprockets, substantially as shown and described.

572,388. GAME APPARATUS. HELEN M. VAN KURAN, Chicago, Ill. Filed June 11, 1896. Serial No. 595,117. (No model.)



Claim.—1. A game-board having spaces thereon, the said spaces being respectively colored with a different standard color of the spectrum, and movable objects adapted to be placed upon the said spaces, the color of the said movable objects designed for each of the said spaces being that of a tint of the standard color of the space to which they belong, whereby when the movable objects are placed upon the board in their proper positions a spectrum of the standard colors and tints for the same will be obtained, substantially as described.

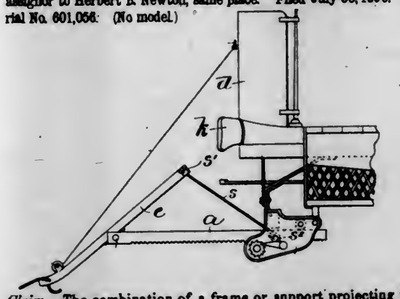
2. A game-board provided with a series of concentric circles, each bearing a different standard color of the spectrum, and a series of checkers for each of the said concentric circles, the checkers for the respective circles having their faces colored with tints of the standard color of the circle to which they belong, as and for the purpose set forth.

3. A game-board provided with a series of concentric circles bearing the standard colors of the spectrum, checkers having their faces colored with tints of the standard colors of the spectrum, and counters partaking of the shape of cubes, cylinders and a sphere, adapted to be placed in the center circle, as and for the purpose specified.

4. A game-board divided by a central line and having corresponding belts at each side of the dividing-line, bearing the standard colors of the spectrum, each belt having objects produced thereon, duplicated at each side of the aforesaid center line, and checkers corresponding in number to the number of objects on the board and having corresponding objects produced thereon, substantially as shown and described.

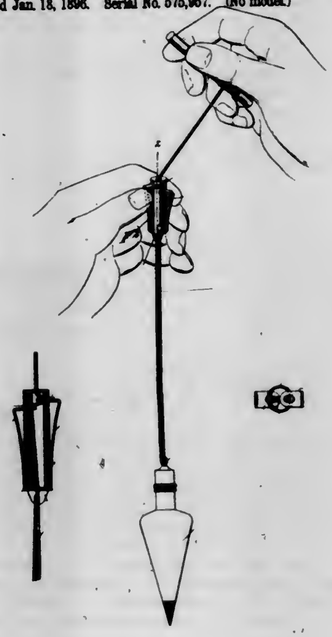
5. A game-board divided by a central line and having corresponding belts at each side of the dividing-line, bearing the standard colors of the spectrum, each belt having objects produced thereon, duplicated at each side of the aforesaid center line, and checkers corresponding in number to the number of objects on the board and having corresponding objects produced thereon, the said checkers being colored with tints of the standard colors of the spectrum on the belts to which they belong, as and for the purpose specified.

572,389. CAR-FENDER. HAROLD A. WEBSTER, Haverhill, Mass., assignor to Herbert R. Newton, same place. Filed July 30, 1896. Serial No. 601,056. (No model.)



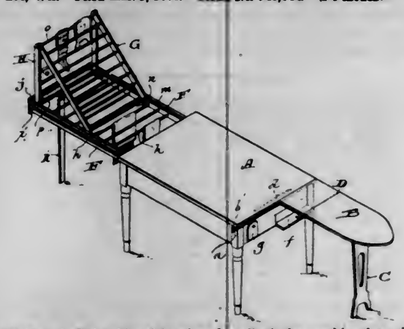
Claim.—The combination of a frame or support projecting forward from the car-platform, a primary fender pivotally connected between its ends to said support, with its center of gravity forward of its pivoted point, and adapted to swing from an inclined position with its forward end in close proximity to the track, to a horizontal position with its forward end elevated, and a flexible supplemental fender affixed at one end to the dasher of the car above the primary holder and at its lower end to the primary fender below its center of motion, said supplemental fender being held yieldingly in a tense condition by the primary fender.

572,390. PLUMB-SUPPORT. JOHN H. WEIR, New York, N. Y. Filed Jan. 18, 1896. Serial No. 575,957. (No model.)



Claim.—A plumb consisting of a casing having two openings therein, two outwardly-springing arms secured to the outer side of the casing and having bent perforated portions respectively movable through the openings, the casing also having a lug, a cord having one end fixedly connected to said lug, and a bob having sliding connection with the cord, the cord being passed from the bob upwardly past the lug of the casing and longitudinally through the casing and through the openings in the spring-arms, substantially as described.

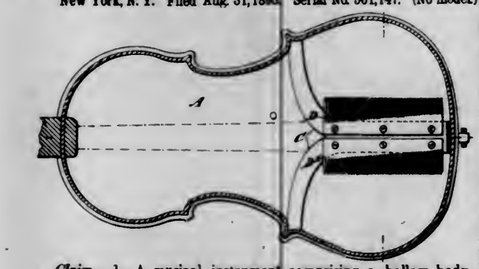
572,391. COMBINATION-TABLE. CHARLES WHITFORD, Milwaukee, Wis. Filed Mar. 5, 1895. Serial No. 540,644. (No model.)



Claim.—1. In a table of the class described, the combination with a suitably-supported frame and table-top having a projecting beveled end formed with a central transverse groove in its under side, and an upwardly-flanged angle-plate secured to said frame underneath said top and extending the entire width of the latter, of an ironing-board having its inner end beveled to correspond to the projecting beveled end of the table-top, and provided with a hinged supporting leg, and a plate secured to the under side of said board, said plate being of a width coincident with the length of the said central transverse groove in the table-top, and having a projecting downwardly-flanged edge for engagement with the described angle-plate, substantially as set forth.

2. In a table of the class described, the combination with a suitably-supported box-top having guide-strips secured to the inner sides thereof and an end opening, of a clothes-rack comprising side pieces externally grooved for engagement with said guide-strips, and internally grooved, and connected by bars and outer end pieces, a folding leg hinged to one of said end pieces and a hinged folding supplemental rack, the lower rod of one part of which forms a stationary pivot connecting said part to said side pieces, and the lower rod of the other part being in movable engagement with the said internal grooves of said side pieces, whereby, when the rack is fully extended and adjusted, it will comprise a horizontal rack, a vertical rack, and an obliquely-disposed rack, all adapted for use at the same time, substantially as set forth.

572,392. MUSICAL INSTRUMENT. BRUNO E. WOLLENHAUPT, New York, N. Y. Filed Aug. 31, 1895. Serial No. 561,147. (No model.)



Claim.—1. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support arranged within the body between the top and the bottom thereof and independent of the top and bottom so as not to affect the vibrations thereof, and a comb secured to the said support and having teeth responding sympathetically to the tones played on the outside strings, substantially as described.

2. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support arranged within the body between the top and the bottom thereof and independent of the bottom so as not to affect the vibrations thereof, and a comb secured to the said support and having teeth arranged transversely of the body and responding sympathetically to the tones played on the outside strings, substantially as described.

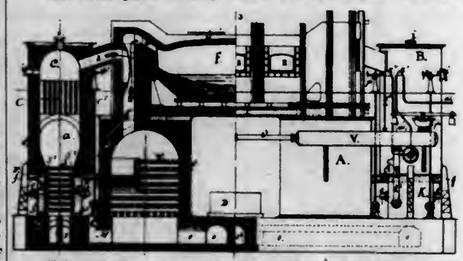
3. A stringed musical instrument of the class described, provided with a sounding-support secured at its ends to the front and sides of the body of the instrument to freely extend between the top and bottom of the said body, and a comb secured at its base to the said sounding-support and having teeth graduated to respond sympathetically to all the tones produced on playing the outside strings of the instrument, the said teeth being formed to quickly shorten the induced vibrations to rapidly diminish the volume of the sympathetic sound of each tooth, substantially as shown and described.

4. A stringed musical instrument, provided in its body with a fixed sounding-support arranged between the bottom and top of the body, and a multiple number of combs secured on the said sounding-support and having their teeth projecting laterally in opposite directions and beyond the sides of the said support, the teeth of the combs being arranged in reverse order to one another, substantially as shown and described.

5. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support secured to the sides of the body and extending between the top and bottom of the body and out of contact therewith, and a sympathetic vibrating device secured to said sounding-support, substantially as described.

6. A musical instrument comprising a hollow body, strings extending over the top of the body on the outside thereof, a sounding-support secured to the sides of the body and extending between the top and bottom of the body and out of contact therewith, and a comb secured to the said sounding-support and having teeth responding sympathetically to the tones played on the outside strings, substantially as described.

572,393. METALLURGICAL FURNACE AND PROCESS. ANDRÉ WRONSKI, Philadelphia, Pa., assignor of one-third to Joseph James de Kinder, same place. Filed Apr. 6, 1896. Serial No. 586,450. (No model.)



Claim.—1. In a regenerative furnace, the process which consists in effecting a mixture of naphtha and air in desired proportions and injecting the mixture in the form of vapor into the receiving-compartment of a gas-generator, then effecting a mixture of the injection with a current of heated air in desired proportions and conducting this product through a regenerator, thus decomposing the vapor into gases, then conducting these gases and a determined quantity of air from a hot-air apparatus into the reducing-compartment of the furnace and thus effecting the complete combustion of the gases, then conducting the burned gases through a second similar gas-generating apparatus and hot-air apparatus and utilizing their energy in heating the said second apparatus, substantially as shown and described.

2. In a regenerative furnace, a gas-generating apparatus having a fuel-receiving chamber, and an injector for charging the same with hydrocarbon vapors, a heating-chamber provided with an inlet for air and an outlet for waste products with means for controlling the said passages and boilers heated from the said chamber, a regenerator for transforming the said vapors and air into gases, and a gas-chamber provided with explosion-doors, in combination with a hot-air apparatus having an inlet for a current of air and means for regulating and heating the same, and an outlet for waste products, substantially as shown and described.

3. In a regenerative furnace, in combination, a gas-generating apparatus having a fuel-receiving chamber, an injector for charging the said chamber with hydrocarbon vapors, a heating-chamber provided with an inlet for air and boilers heated from the same, a steam-collector communicating with the said boilers and also connected with the injector, mechanism whereby steam from the collector operates the injector and means for controlling the communication between the said injector and collector, substantially as shown and described.

4. In a regenerative furnace, in combination, a gas-generating apparatus having a fuel-chamber, an injector for charging the said chamber with hydrocarbon vapors, a heating-chamber provided with an inlet for air and boilers heated from the same, a steam-collector communicating with the said boilers and also with the injector, mechanism whereby steam from the collector operates the injector means for controlling the communication between the collector and the injector, and a regenerator and gas-chamber communicating with said fuel-chamber, substantially as shown and described.

5. In a regenerative furnace an injector having a journaled shaft, a winged wheel fixed thereon, a conduit for liquid and a second conduit for air leading to the said winged wheel, a second winged wheel fixed on the said journaled shaft, and means for rotating the said second wheel, substantially as shown and described.

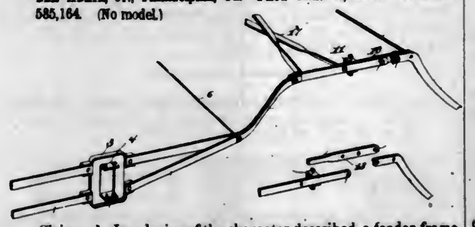
6. In a regenerative furnace an injector having a journaled shaft, a winged wheel fixed thereon, a conduit for liquid and a second conduit for air leading to said winged wheel, a second winged wheel fixed on the said shaft, a steam-collector, and a conduit connecting the steam-condenser with the second winged wheel, substantially as shown and described.

7. In a regenerative furnace an injector having a journaled shaft, a winged wheel fixed thereon, a conduit for liquid leading thereto, and a second conduit having adjustable ports for the admission of air communicating therewith, a second winged wheel fixed on the said shaft, a steam-condenser, and a conduit having a cock, therein connecting the steam-collector with the second winged wheel, substantially as shown and described.

8. In a regenerative furnace, a reduction-compartment, a gas-generating apparatus divided by a partition and having on each side of said partition an inlet for air and an outlet for waste products, a heating-chamber, a fuel-receiving chamber, a regenerator and a gas-chamber communicating with the said reduction-compartment, a hot-air apparatus divided by a partition and having on each side of said partition an inlet for air and an outlet for waste products, and a passage communicating with the reduction-compartment, in combination with a second similar gas-generating apparatus and hot-air apparatus communicating with the said reduction-compartment, substantially as shown and described.

9. In a regenerative furnace, a reduction compartment, a gas-chamber communicating with said reduction-compartment, a regenerator communicating with said gas-chamber, a fuel receiving chamber communicating with said regenerator, an air-heating chamber communicating with said fuel-receiving chamber, an inlet for air leading to said air-heating chamber, an outlet for waste products leading from said air-heating chamber, a second air-heating apparatus communicating with the said reduction-compartment, an inlet for air leading to said second air-heating apparatus, and an outlet for waste products leading from said second air-heating apparatus, in combination with a second similar gas-generating apparatus and hot-air apparatus communicating with said reduction-compartment.

572,394. FRAME FOR SUPPORTING CAR-FENDERS. ALEXANDER ADAIR, Jr., Philadelphia, Pa. Filed Mar. 28, 1896. Serial No. 585,164. (No model.)



Claim.—1. In a device of the character described, a fender-frame support, a rod pivoted thereon, a socket secured on said support adapted to receive one end of the rod, a fender-frame removably secured to the end of the rod and set-screws threaded in the socket to adjust the tilt of the rod, as and for the purpose described.

2. A frame supporting a fender in combination with the truck of a car, consisting of side bars, trestle-bars and yokes, the latter being adapted to embrace the boxes of said truck and extensions of less width than the main frame projecting beyond the ends of the car substantially as shown and described.

3. A frame for supporting a fender consisting of side bars, trestle-bars and yokes adapted to embrace the boxes in which the axles are journaled, cross-rods connecting said side bars and adapted to clamp them together, as and for the purpose described.

4. A frame for supporting a fender at either end thereof, consisting of side bars, trestle-bars and yokes, the latter being adapted to embrace the boxes in which the axles are journaled and be secured to said boxes substantially as and for the purposes set forth.

5. A frame for supporting a fender, consisting of side bars, trestle-bars secured thereto, yokes attached between the side bars and trestle-bars, cross-rods connecting the side bars and adapted to clamp them together, said side bars having extensions of less width than the main frame and brace-rods connecting said extensions, as and for the purpose described.

6. A frame for supporting a fender having yokes to embrace the boxes of an ordinary frame and cross-rods to clamp the yokes together, as and for the purpose described.

7. In a device of the character described, a fender-frame support, a socket secured thereon, set-screws threaded in the socket, an arm pivoted to the support having one end extending between the ends of the set-screws, said arm having a slot cut in its other end and a lug projecting from its side, a fender-frame having a slot in its end to engage the lug on the arm and a cross-bar connecting the sides of the fender-frame to be engaged by the slot in the arm, as and for the purpose described.

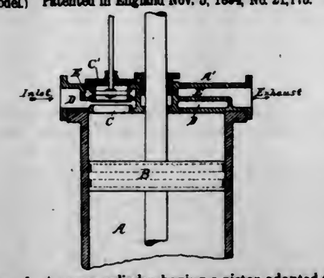
8. In a device of the character described, a frame for supporting a fender-frame provided with yokes adapted to embrace the axle-boxes of a truck and having flanges provided with set-screws for engaging said axle-boxes, as and for the purpose described.

572,395. CAR-COUPLING. NOAH W. AIGLER, Beavertown, Pa. Filed Mar. 31, 1896. Serial No. 585,556. (No model.)



Claim.—In a device of the character described a coupler-head having a hinged knuckle-hook on one side, a lug formed on the other side by cutting away a portion of the top and bottom thereof, a right-angular cam-shaped guard, ears formed thereon and adapted to fit in the cut-away portions of the head and a removable pivotal pin securing the lug to the ears, said guard being independent of the knuckle-hook and of such a shape as to guide the knuckle-hook of another coupler to its home, and be closed and held in its closed position by the other coupler as and for the purpose described.

572,396. VALVE FOR POWER-MOTORS. JOHN ANDERSON, Newcastle-upon-Tyne, England. Filed Apr. 12, 1895. Serial No. 545,535. (No model.) Patented in England Nov. 5, 1894, No. 21,175.



Claim.—1. A power-cylinder having a piston adapted to operate therein, a head or cover for said cylinder provided with a steam-space D and an exhaust-chamber E, a cylindrical chamber C provided with ports communicating with the steam-space and exhaust-chamber and opening into the cylinder, and a valve adapted to operate into the said cylindrical chamber and comprising a ring C' split or open at one side, a wedge G arranged in said split or opening and a bolt H securing said wedge in place, substantially as described.

2. In a power-cylinder, a ring-valve having a hub, a peripheral rim and radial arms connecting said hub and rim, said rim and one of the arms being split to receive a wedge G, and a bolt H passing through the split arm to secure the wedge in place, substantially as described.

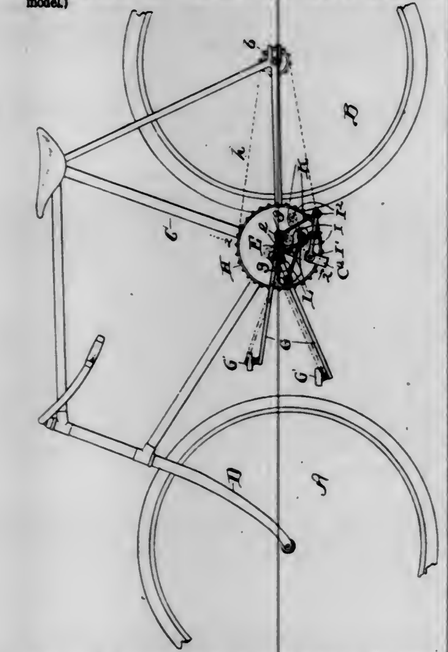
572,397. RIDING OR MOORING BITT. JACOB R. ANDREWS, Bath, Me., assignor to the Hyde Windlass Company, same place. Filed July 19, 1895. Serial No. 556,469. (No model.)

Claim.—A mooring or riding bitt, comprising a base, a spindle projecting upwardly from said base with a movable shell thereon, and a pawl-and-ratchet connection between the moving and the fixed parts, and a fixed bitt secured to or forming a part of the base

whereby is provided a movable bitt adapted to be rotated to allow the line or hawser to be rounded upon the capstan and a fixed or stationary bitt to which the line may be tied or secured, substantially as described.



572,398. BICYCLE-PROPELLING MECHANISM. THOMAS J. ARMSTRONG, Cleveland, Ohio. Filed Nov. 8, 1895. Serial No. 568,268. (No model.)

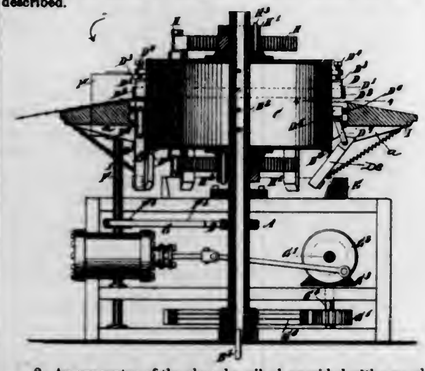


Claim.—1. In a machine of the character indicated, the combination of the relatively stationary frame, and driving crank-shaft provided with two cranks at opposite sides, respectively: of the two forwardly-extending pedal-bearing levers operatively connected, at their rear ends, with the different cranks, respectively; two vertically-swinging sway-bars pivoted at one end to the aforesaid frame adjacent to the different pedal-bearing levers, respectively; a link operatively connecting the other end of each sway-bar with the rear end of the adjacent pedal-bearing lever, and another link connecting together each of the pedal-bearing levers, and connected sway-bar a suitable distance from the first-mentioned connection between said bar and lever, substantially as and for the purpose set forth.

2. In a machine of the character indicated, the combination with the suitably-supported driving crank-shaft provided with two cranks located at opposite sides, respectively, of the shaft; the relatively stationary frame extending below said shaft, the two forwardly-extending pedal-bearing levers operatively connected with the different cranks, respectively; the two vertically-swinging sway-bars pivoted, at their forward ends, to the aforesaid frame and arranged below the different levers, respectively, and extending rearwardly of the shaft; links operatively connecting the rear ends of the different sway-bars, respectively, with the rear ends of the different pedal-bearing levers, respectively, and another connecting-link between each pedal-bearing lever and the connected sway-bar a suitable distance forward of the first-mentioned connection between said bar and lever, substantially as shown, for the purpose specified.

572,399. NET-LIFTING DEVICE. JOHN W. ATWOOD, Malden, Mass., assignor to himself, and the A. Booth Packing Company, Chicago, Ill. Filed Nov. 23, 1895. Serial No. 569,805. (No model.)

Claim.—1. An apparatus of the class described, provided with a revoluble drum, clamps arranged on the periphery thereof, each clamp comprising an elastic block, a guideway for the same, an adjustable plate engaging the top of the block, a movable block directly opposite the said elastic block, a lever pivoted on the drum and adapted to actuate the said movable block, a link for connecting said lever with said movable block, a stationary cam capable of moving the lever and a spring pressing the lever, substantially as shown and described.

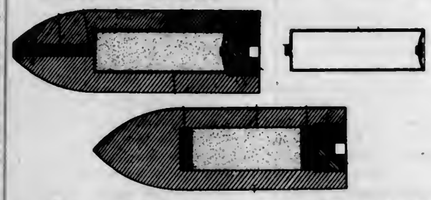


2. An apparatus of the class described, provided with a revoluble drum, clamps arranged on the periphery thereof, each clamp comprising an elastic block, a guideway for the same, an adjustable plate engaging the top of the block, a movable block directly opposite the said elastic block, a lever pivoted on the drum and adapted to actuate the said movable block, the adjacent ends of the said movable block and lever being beveled, a cam capable of moving the lever, and a spring pressing the lever, substantially as shown and described.

3. The combination with a frame, of a vertical shaft revolubly mounted therein, a drum fixed to the shaft, a series of stationary blocks carried by the drum, a movable block for each stationary block and carried by the drum and capable of sliding toward and from the respective stationary blocks, levers fulcrumed on the drum, links respectively connecting the levers and the movable blocks, a table outrunning from the drum and moving therewith, retractile springs respectively connected to the levers and to the table, and a cam fixed to the frame and capable of being engaged by the levers, the cam being arranged to move the levers against the tendencies of the springs, substantially as described.

4. The combination with a frame, of a vertical shaft revolubly mounted therein, a drum carried by the shaft, stationary blocks carried on the drum, movable blocks respectively sliding toward and from the stationary blocks, levers fulcrumed to the drum, links respectively connecting the levers and movable block, springs pressing the levers, and a cam for moving the levers against the tensions of the springs, substantially as described.

572,400. EXPLOSIVE PROJECTILE AND METHOD OF FIRING SAME. JAMES K. BAKEWELL, Allegheny, Pa. Filed Nov. 11, 1896. Serial No. 611,705. (No model.)



Claim.—1. The method hereinbefore described which consists in freezing a high explosive subject to explosion by concussion, and then while the explosive is frozen firing it from the gun and effecting its explosion; substantially as and for the purposes specified.

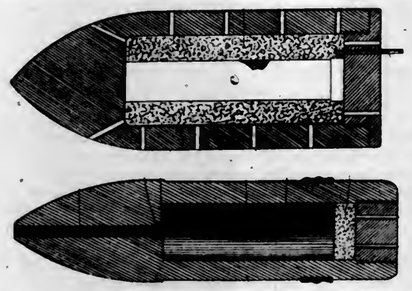
2. As a new article of manufacture, a projectile charged with a high explosive reduced to a temperature sufficiently low to render it practically non explosive when fired from a gun, substantially as and for the purpose specified.

3. As a new article of manufacture, a projectile consisting of the outer body having a cavity, a case or cylinder for containing the explosive, and a charge of a high explosive in a frozen condition; substantially as and for the purpose specified.

4. As a new article of manufacture a projectile charged with frozen dynamite; substantially as described.

5. The method hereinbefore described which consists in freezing a high explosive embodying a liquid subject to explosion by concussion, firing the same in a shell from a gun while in such frozen condition and exploding the same by impact when it strikes; substantially as described.

572,401. EXPLOSIVE PROJECTILE AND METHOD OF FIRING SAME. JAMES K. BAKEWELL, Allegheny, Pa. Filed Nov. 11, 1896. Serial No. 611,706. (No model.)



Claim.—1. The method of firing high explosives herein described which consists in charging a shell with a high explosive that is rendered less explosive by cold, and reducing the temperature of the explosive charge to a degree at which it may be fired from a gun without danger of premature explosion, and in subjecting the explosive charge during the flight of the projectile to heat created within the projectile.

2. As a new article of manufacture, an explosive projectile charged with a high explosive reduced to a temperature sufficiently low to render it practically non-explosive when fired from a gun, and a heat-giving agent for heating the explosive charge during the flight of the projectile.

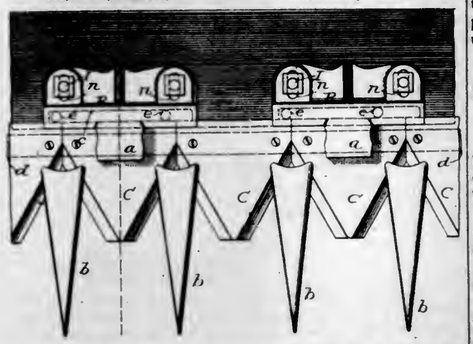
3. As a new article of manufacture an explosive projectile consisting of the outer body having a cavity, a case or cylinder in the projectile for containing the explosive, a charge of a high explosive in a chilled condition, and a charge of a heat-giving agent for thawing the high explosive.

4. As a new article of manufacture, an explosive projectile charged with chilled dynamite and a heat-giving agent in the projectile for thawing the chilled dynamite, substantially as described.

5. As a new article of manufacture, an explosive projectile consisting of the outer body having a cavity, a case or cylinder in the projectile for containing the explosive, a charge of a high explosive in a chilled condition, and a slow-burning compound for heating the explosive after the discharge of the projectile from the gun.

6. As a new article of manufacture, an explosive projectile consisting of the vented outer body having a cavity, a case or cylinder in the projectile for containing the explosive, a charge of a high explosive in a chilled condition, and a slow-burning compound for heating the explosive after the discharge of the projectile from the gun.

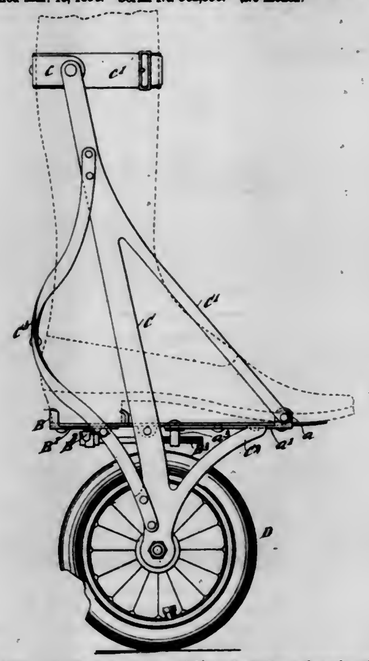
572,402. ANTIFRICTION-CLIP FOR REAPERS AND MOWERS. FRANK BARCLAY, Beatrice, Nebr. Filed May 11, 1896. Serial No. 591,089. (No model.)



Claim.—1. As a new article of manufacture, a clip composed of a single piece of metal, adapted to fit upon the upper surface of the finger-bar of a reaper or mower, with a groove in the under side of its front portion adapted to receive and hold a series of antifriction-balls in line with the rear right-angled edge of the sickle or its bar, and prevent their escape when the sickle is removed, with a front finger to project over the sickle and hold it in position, substantially as shown and described.

2. In combination with a smooth or flat-faced finger-bar A, the clip B provided with a channel or groove in the under side of its front portion adapted to receive and hold a series of antifriction balls upon the flat surface of the finger-bar directly in line with the rear right-angled edge of the sickle or its bar, with a front projecting finger *a* to hold the sickle in position, and having elongated bolt-holes *n* for adjusting the clip and balls, whereby said clip and balls can be applied to ordinary reapers or mowers without any alteration of the same as herein set forth.

572,403. ROLLER-SKATE. GEORGE T. BOND, Topeka, Kans. Filed Mar. 10, 1896. Serial No. 582,556. (No model.)



Claim.—A roller-skate comprising a foot-plate, clamping devices comprising a sole-clamp and a heel-clamp, side uprights secured to the foot-plate and extended above and below the same, a roller journaled in the lower portion of said uprights, braces extended from the upper portion of the uprights to a connection with the sole-clamps, the back braces crossed and secured together rearward of the heel, the ends of said back braces being secured respectively to the lower portion of one side upright and to the upper portion of the other side upright, and leg-strap, substantially as described.

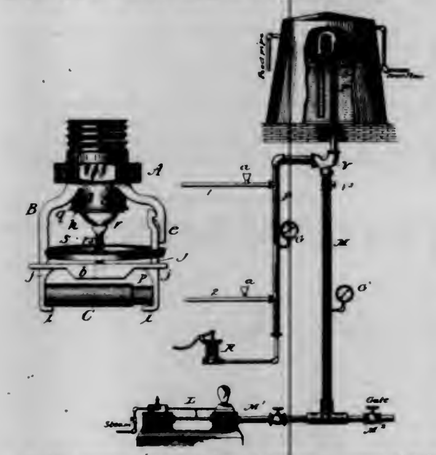
572,404. AUTOMATIC FIRE-EXTINGUISHER. CHARLES E. BUELL, North Plainfield, N. J. Filed Feb. 25, 1891. Serial No. 382,805. (No model.)

Claim.—1. In an automatic sprinkler the combination of a sprinkler-head a valve closing the same, a removable part holding the valve to its seat, and a thermomotor adapted, when exposed to abnormal heat, to forcibly remove said removable part.

2. The combination of the following elements, a sprinkler-outlet, a valve closing said outlet, a support for said valve that includes means for forcing said valve to its seat, a laterally-movable latch included in said support, and a thermally-operated motor for forcing the said latch in a lateral direction when acted upon by heat.

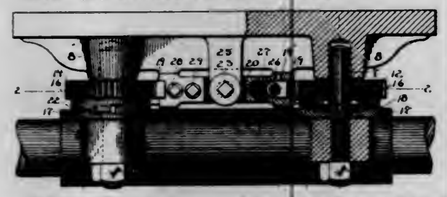
3. In an automatic sprinkler the combination of a valve closing the same, means for forcing the said valve to its seat that are adjustable, a movable support for the said valve, and a thermomotor adapted, when exposed to abnormal heat, to forcibly displace said movable support.

4. In a fire-extinguishing system a tank located above the system of sprinklers, a pipe connecting between the said tank and system that comprises a siphon, air-pressure in said pipe and system, and a feed-pipe for said tank, and connections from the first-named pipe and system to an auxiliary supply, substantially as described.



5. The combination of the following elements; a system of sprinklers, a tank above said system, a feed-pipe connected to said tank, a pipe connecting between the said tank and system that comprises a siphon, and that has connections to an auxiliary water supply that includes a valve that is adapted to open toward said tank.

572,405. PLATEN PRINTING-PRESS. FRANK A. BURNHAM, Cleveland, Ohio, assignor to the Chandler & Price Company, same place. Filed July 6, 1896. Serial No. 598,274. (No model.)



Claim.—1. In a press substantially as described, the platen and a series of cams supporting the same having teeth on their periphery, racks for operating said cams conjointly, and a screw for operating said racks, substantially as described.

2. The platen and a series of supporting-cams therefor arranged in a plane substantially parallel with the platen, a movable frame and independently-adjustable members in said frame to rotate said cams, and an operating-screw engaging said frame, substantially as described.

3. The platen and the cams supporting the platen, racks engaging said cams, a sliding frame connecting said racks and means to operate said frame, whereby the cams are rotated and the platen is raised or lowered, substantially as described.

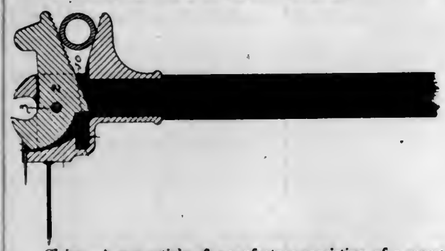
4. The platen and the supporting rock-shaft having lateral projections, a set of cams for each corner of the platen supported on said projections, and means for operating all said cams at the same time comprising a frame and racks, substantially as described.

5. In a printing-press a platen and a series of separately-controlled cams on which said platen rests, a rock-shaft having lateral projections supporting said cams, a sliding frame between said platen and shaft separately-adjustable racks on said frame to operate said cams, and guides for the platen projecting through said cams, substantially as described.

6. The platen, the rock-shaft therefor having lateral projections, bolts through said projections extending into the platen and cams supporting the platen on said projections, means to rotate the cams and move the platen and spring pressed connections between the platen and the rock-shaft, substantially as described.

7. The platen and the rock-shaft, a set of cams on the rock-shaft for each corner of the platen, a sliding frame between the shaft and the platen and a separately-adjustable rack in said frame for each of said sets of cams, substantially as described.

572,406. COMBINATION-TOOL. GEORGE J. CAPEWELL, Hartford, Conn., assignor to the Specialty Manufacturing Company, same place. Filed Oct. 30, 1893. Serial No. 489,441. (No model.)



Claim.—A new article of manufacture consisting of a recessed body having a circular flat surface on one edge, a projecting arm on the opposite edge, a beak-shaped jaw projecting from one end and a handle connection at the other end, and a plate held by a pivot in the recess in the body with its ends projecting out of the recess at substantially right angles with each other, substantially as specified.

572,407. CASH-CARRIER. DAVID E. CHIEN, Stafford, Conn. Filed July 24, 1896. Serial No. 600,325. (No model.)



Claim.—1. In a cash-carrier box, the coöperating grippers pivoted to the box as described, whereby they have a simultaneous movement in two directions, one a rotative movement permitting them to fold flatly against the bottom of the box, and the other a to-and-fro movement by which they approach each other at the gripping ends when unfolded, and recede when folded down against the box, substantially as and for the purpose set forth.

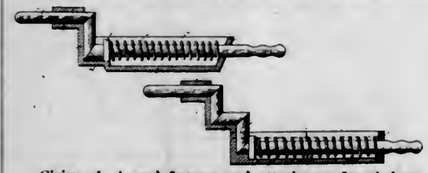
2. The combination of the carrier-box, the bent gripper-shaft and the coöperating folding grippers hung on said gripper-shaft, all substantially as described and for the purposes set forth

3. The combination of the carrier-box, the coöperating folding grippers connected to the box by a rotative attachment adapted to cause the free ends of the grippers to approach each other as they are swung outward from the box, and the cranked shaft for operating the grippers, all substantially as described and for the purposes set forth.

4. In combination, the carrier-tracks, the traveling carrier-cord, and the carrier-box, provided with the coöperating grippers, having a simultaneous movement in two directions, whereby they may be folded flatly against the bottom of the box, and when unfolded are caused to approach each other at their gripping ends, and grasp the carrier-cord, all substantially as and for the purpose set forth.

5. In combination, the carrier-box, the traveling carrier-cord, the pivoted carrier-cord-grasping device made of metal which responds to magnetic attraction, and the magnet adapted to hold the grasping device in the position of rest, all substantially as described and for the purposes set forth.

572,408. SASH-FASTENER. CHARLES J. CLARKE, Kingsburg, Cal. Filed July 13, 1895. Serial No. 555,897. (No model.)



Claim.—1. A cord fastener and attachment for windows, consisting of a bar having at one end a hook and a cord-attaching means at the other end, in combination with a slotted carrying-block for the sash, the end of the block having at one side a groove communicating with the slot of a depth equal to the thickness of the main portion of the hook-bar and adapted to receive it, whereby the bar and block are flush, substantially as shown.

2. A sash fastener comprising a casing, an endwise-moving bolt therein having one end projecting to form a lock and its opposite end projecting to form a handle, a spring within the casing normally holding the bolt inward in a locked position, the bolt having an intermediate lateral locking-shoulder, and a latch intermediately pivoted within the casing having one end provided with two locking-shoulders adapted to engage the bolt-locking shoulder as described, the distance between the two latch-shoulders being equal to the endwise movement of the bolt, and the opposite end of the latch projecting from the casing to form a handle, substantially as shown and described.

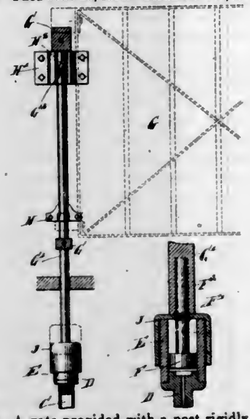
572,409. CHAIR-BRACE. JAMES COOPER, New York, N. Y. Filed May 16, 1896. Serial No. 591,773. (No model.)



Claim.—1. A chair-brace composed of a staple having inwardly-bent shanks to form a closed loop, a cross-bar engaged thereby, and a pair of stay-rods adapted to extend through the loop and to be secured to the chair-legs, substantially as specified.

2. The combination of a chair, with a staple secured to the chair-seat, and having bent shanks and a twisted body, a cross-bar extending through the staple, and a pair of bent stay-rods that engage the staple and are secured to the chair-legs, substantially as specified.

572,410. FLUID-CONTROLLED GATE. SETH A. CROWE, New York, N. Y. Filed June 23, 1896. Serial No. 596,602. (No model.)



Claim.—1. A gate provided with a post rigidly secured thereto and mounted to turn and slide in bearings, a piston controlled by fluid-pressure and engaging the lower end of the post for sliding it, and means for turning the post as it is slid by the piston, substantially as described.

2. A gate, provided with a post rigidly secured thereto and mounted to slide and to swing, a pin held on the said post and engaging an angular groove in a fixed part, and a piston controlled by fluid-pressure and engaging the lower end of the said post, substantially as shown and described.

3. A gate, provided with a post rigidly secured thereto and fitted to slide and to turn in fixed bearings, a pin projecting from the said post and engaging an angular slot in one of the said bearings, a piston loosely engaging the lower end of the said post to lift the latter, and a cylinder containing the said piston and connected with a fluid supply, substantially as shown and described.

4. A gate, provided with a post fitted to slide and to turn in fixed bearings, a pin projecting from the said post and engaging a slot in one of the said bearings, a piston loosely engaging one end of the said post to lift the latter, a cylinder containing the said piston and connected with a fluid supply, and a keeper formed with recesses adapted to be engaged by a pin held on the free end of the said gate, to lock the latter in a closed position, substantially as shown and described.

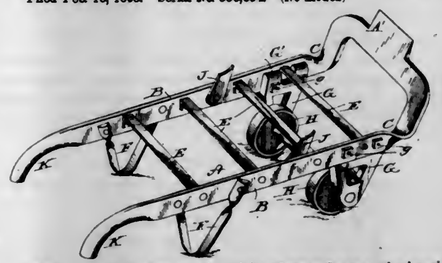
5. A gate provided with a post mounted to turn and to slide in fixed bearings, a pin projecting from the said post and engaging an angular slot in one of the said bearings, and a keeper formed with recesses adapted to be engaged by pins projecting from the free end of the said gate, substantially as shown and described.

6. A gate, provided with a post fitted to slide and to turn in fixed bearings, a pin projected from the said post and engaging a slot in one of the said bearings, a piston loosely engaging one end of the said post to lift the latter, a cylinder containing the said piston and connected with a fluid supply, and a cap held on the piston-rod of the said piston and engaging the said cylinder, substantially as shown and described.

7. In a gate, the combination with a gate provided with a post rigidly secured to the gate and having a recess in its lower end, and bearings in which the post is mounted to turn and slide, of a cylinder connected with a fluid supply, a piston in the cylinder and having its piston-rod projecting into the recess in the lower end of the post, and means for turning the post as it is slid by the piston, substantially as described.

8. In a gate, the combination of a gate provided with pins projecting from its free end, a post secured to the opposite end of the gate and provided with a laterally-projecting pin, bearings in which the post slides and turns, one of the bearings being provided with a slot having a vertical lower portion and an inclined and curved upper portion, and a keeper provided with recesses to receive the pins of the gates, substantially as described.

572,411. WAREHOUSE-TRUCK. MARTIN J. CUNNINGHAM, Springfield, Mo., assignor of one-half to Edward J. Ruschitzka, same place. Filed Feb. 18, 1895. Serial No. 538,854. (No model.)

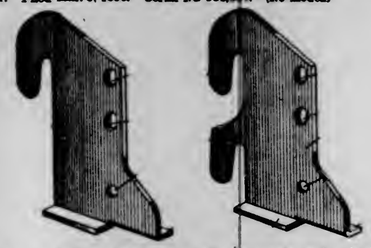


Claim.—1. As an improved article of manufacture, the herein-described warehouse-truck whose frame is formed of a single piece of strap-iron approximately of the same rectangular cross-section throughout, and bent into substantially parallel side pieces B standing in upright planes and having handles K at their rear ends, their front ends being given the twists and upward bends C so as to form the transverse shoe D standing in an upright plane at right angles to the upright planes of the side pieces, a projection A′ extending from the upper edge of said shoe, of less length than the shoe, and sharpened at its upper edge, cross-bars connecting the side pieces, and wheels beneath the whole, substantially as described.

2. As an improved article of manufacture, the herein-described warehouse truck, the same consisting of side pieces of strap-iron standing on edge and having handles at one end and an integral shoe connecting them at the other end, cross-bars connecting said side pieces, and lugs pivoted at their lower ends to the inner faces of the side pieces between two cross-bars and adapted to have their front edges rest against one cross-bar when they are raised, their upper ends

being notched and adapted to lie against the next adjacent cross bar when they are depressed, their upper edges at this time standing beneath the upper edges of the side pieces; combined with wheel-brackets each comprising a casting G having a shoulder G^3 near its upper end adapted to rest beneath the lower edge of the side piece and two spaced ears G' rising above such shoulder and adapted to rest against the inner face of the side piece astride one cross-bar, bolts *g* through the side pieces and the ears, an axle connecting the lower ends of the brackets, and wheels on said axle, substantially as described.

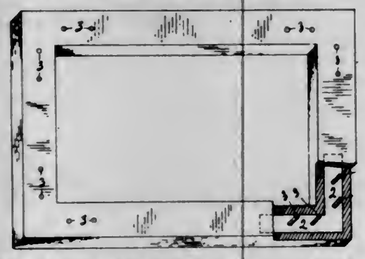
572,412. BEDSTEAD-JOINT. DANIEL D. CURTIS, Sidney Centre, N. Y. Filed Mar. 3, 1896. Serial No. 581,627. (No model.)



Claim.—1. A bed rail fastener having flanges formed at its bottom portion, the flanges being upon both sides, one flange in advance of the other, as and for the purpose specified.

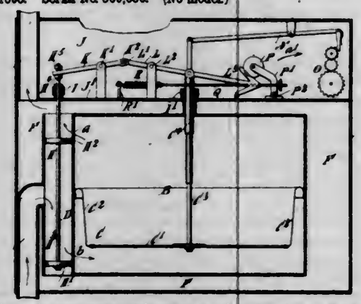
2. A bed-rail fastener, the body portion of which is provided with horizontal flanges at its sides, the flanges being in staggered arrangement, whereby the material from which the body is made may be cut and struck up in opposite directions in the formation of the said flanges, as and for the purpose set forth.

572,413. PRINTER'S CHASE. EDWIN B. DEWEY, Jamestown, N. Y. Filed June 2, 1896. Serial No. 594,002. (No model.)



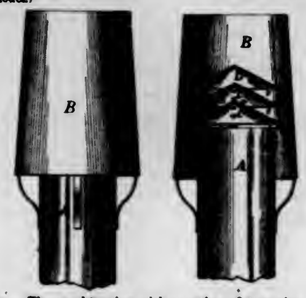
Claim.—In a cast printer's chase, the combination made by placing in the molds a right-angle piece of malleable or wrought steel or iron at each corner, said corner-piece having pins or their equivalent to hold the piece in position in the mold for the molten metal to flow around the same, substantially as shown and for the purpose set forth.

572,414. METER. JOHN H. DIXON, Marietta, Ohio. Filed Nov. 21, 1895. Serial No. 569,636. (No model.)



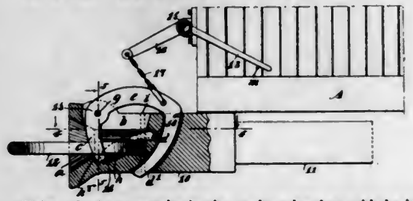
Claim.—A meter comprising a measuring-chamber, a diaphragm secured therein, a valve for controlling the inflow and outflow of the fluid to and from said chamber, a telescoping stem connected with said diaphragm, a lever pivotally connected with a member of the said telescoping stem, and provided with a spear-shaped end, a spring-pressed arm engaged by the spear-shaped end of the said lever, and a connection between said lever and the valve-rod of said valve, substantially as shown and described.

572,415. FLUE AND SMOKE-STACK PROTECTOR. LEWIS N. DUNMORE, Douglass, Kans. Filed Jan. 20, 1896. Serial No. 576,234. (No model.)



Claim.—The combination with a section of stovepipe, smoke-stack or flue a drum B provided with two or more conic-shaped caps C and D, all perforated but the top one and all fastened to inside of drum B so they will be directly over and allow the drum B to come down below the opening *e* in pipe or smoke-stack, the drum B being made larger at the bottom as shown substantially as and for the purpose described.

572,416. CAR-COUPLING. THOMAS FALES, Bridgeport, Cal. Filed Apr. 28, 1896. Serial No. 589,395. (No model.)



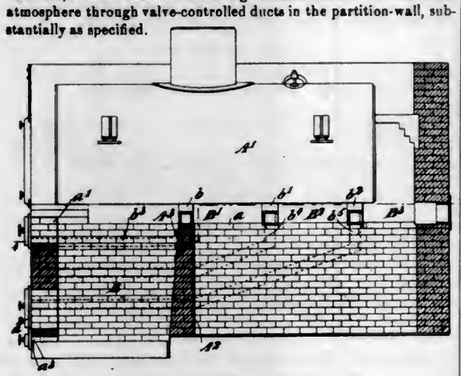
Claim.—1. A car-coupler having a draw-head provided with a rearwardly-located arc-shaped aperture, a longitudinally-extending slot forward of the aperture and a throat communicating with the slot and out of communication with the arc-shaped aperture, and a dog having limbs connected by a spacing-bar, one of the limbs being curved in conformity with the curvature of the aperture and being capable of moving in and out thereof and the second limb being movable in the slot and capable of projecting into the throat to engage the link, the limbs being connected by the spacing-bar and the dog being pivoted to the draw-head at the juncture of the spacing-bar and the said second limb, substantially as described.

2. A car-coupler having a draw-head provided with a rearwardly-located arc-shaped aperture, a longitudinal slot forward of the aperture, the longitudinal slot communicating with the throat of the draw-head which is located below it, and a dog having two limbs and a connecting-bar, one limb of the dog being curved in conformity to the curvature of the aperture and capable of moving in and out of said aperture and the second limb of the dog being capable of moving from the slot into the throat and of engaging and holding the link, the two limbs being connected by the spacing-bar and the dog being pivoted to the draw-head at the juncture of the spacing-bar and the said second limb, substantially as described.

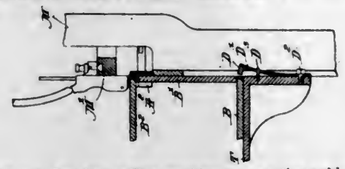
3. A car-coupler having a draw-head provided with a throat and a longitudinal slot above the throat, means moving in the slot by which the link may be held in the draw-head, and an arm movable in a horizontal recess in the draw-head and on a vertical axis, one end of the arm being capable of projecting into the throat to engage the top of the link, the other end of the arm being extended outward, substantially as described.

572,417. BOILER-FURNACE. DUDLEY D. FLEMMING, Jersey City, N. J. Filed Jan. 2, 1896. Serial No. 574,061. (No model.)

Claim.—A furnace for a steam-boiler, comprising a series of chambers communicating one with another above a separating-partition, each chamber having a greater height than width, means for admitting primary air to each chamber consisting of valve-controlled openings through a wall of the furnace below the grate-bars in the chambers, valve-controlled pipes leading into the chambers, a flame-bed divided into a number of combustion-chambers, and a hood extended transversely over the flame-bed at the front end of each combustion-chamber, each of said hoods having communication with the outer atmosphere through valve-controlled ducts in the partition-wall, substantially as specified.



572,418. BOX-NAILING MACHINE. SAMUEL D. FORD, Whitman, Mass., assignor of one-half to Walter E. Trufant, same place. Filed Sept. 30, 1895. Serial No. 564,069. (No model.)



Claim.—1. In a box nailing machine, a supporting-guide for the end or side of the box to be nailed, the same comprising an arm having a vertical portion, horizontally adjustable against the edge of said end or side of the box, and provided with a lip extending laterally therefrom so as to grasp the inner surface of said end or side and hold the same in proper alinement for nailing, substantially as described.

2. In a box-nailing machine, a supporting-guide for the end or side of the box to be nailed, the same comprising an arm having a vertical portion, horizontally adjustable against the edge of said end or side of the box, and provided with a lip adjustable thereon for different thicknesses of said box portion, and extending laterally therefrom so as to grasp the inner surface of said end or side and hold the same in proper alinement for nailing, substantially as described.

3. In a box-nailing machine, a supporting-guide for the end or side of the box to be nailed, the same comprising an arm having a vertical portion extending from and below the nailing-chucks of the machine, said arm being horizontally adjustable against the edge of said end or side of the box, and provided with a lip extending laterally therefrom so as to grasp the inner surface of said end or side and hold the same in proper alinement for nailing, substantially as described.

4. In a box-nailing machine, a supporting-guide for the end or side of the box to be nailed, the same comprising an arm having a vertical portion extending from and below the nailing chucks of the machine, said arm being horizontally adjustable against the edge of said end or side of the box, and provided with a lip extending laterally therefrom so as to grasp the inner surface of said end or side and hold the same in proper alinement for nailing, and an alining-plate secured to the machine parallel with and immediately behind and below the nailing-chucks thereof, whereby said plate and arm cooperate to properly aline the side and end meeting edges of the two box portions to be nailed together, substantially as described.

5. In a box-nailing machine, the combination with the frame thereof, nailing-chucks secured thereon, and the table adjustable relatively to said nailing-chucks, of one or more supporting-blocks automatically movable along and above said table, said blocks having their upper surfaces normally in alinement with said nailing-chucks above said table a distance corresponding to the thickness of the top board to be nailed, said construction permitting the nailing of said top board without further adjustment of said table, substantially as described.

6. In a box-nailing machine, the combination with the frame thereof, nailing-chucks secured thereon, and the table adjustable relatively to said nailing chucks, of one or more supporting-blocks secured to said table to move thereon to and from said frame, said blocks having their upper surfaces normally in alinement with said nailing-chucks above said table a distance corresponding to the thickness of the top board to be nailed, substantially as described.

7. In a box-nailing machine, the combination with the frame thereof, nailing chucks secured thereon, and the table adjustable relatively to said nailing-chucks, of one or more supporting-blocks secured to the rear side of said table by means of a spring to move on said table to and from said frame, said blocks having their upper surfaces normally in alinement with said nailing chucks above said table a distance corresponding to the thickness of the top board to be nailed, substantially as described.

8. In a box-nailing machine, the combination of a table, and blocks adapted to act as supports for holding the box while being nailed, said blocks resting upon the upper surface of the table and being each attached to a flat spring passing down back of the table, having its lower end secured to the said table, whereby said blocks are adapted to be pushed from the surface of the table and out of the way of the box, substantially as and for the purpose set forth.

9. In a machine of the class described, the combination with the frame, work-table, and nailing devices, of one or more laterally-movable supports arranged with their tops at a level above said table, and springs to move said supports in one direction, said supports being freely movable out of the way in an opposite direction against the action of said springs, whereby the supports, or the table normally beneath the same, may be used as a work-support at will, substantially as described.

10. In a machine of the class described, the combination with the frame, work-table, and nailing devices, of one or more laterally movable work-supports permanently connected to said table and arranged with their tops at a level above said table, said supports being freely movable laterally out of the way when not required, whereby the supports, or the table normally beneath the same, may be used as a work-support at will, substantially as described.

572,419. APPARATUS FOR TIPPING GAS-TUBING. CHARLES D. PERKS, New York, N. Y. Filed May 11, 1896. Serial No. 591,152. (No model.)



Claim.—1. A tube-tipping tool having inner edges or portions clamping the tip-plug to rotate it, and also provided with an outer mandrel portion loosely fitting within the tip-plug and having a rounded extremity projecting beyond the outer end of the clamped plug and guiding the tube foundation-spiral into engagement with the plug, substantially as described.

2. A tube-tipping tool, comprising an inner angularly-formed outwardly-tapered portion having edges clamping the tip-plug, and an outer mandrel portion over which the tip-plug fits loosely and which has a rounded extremity projecting beyond the outer end of the clamped plug and guiding the tube foundation-spiral into engagement with the plug, substantially as described.

3. Apparatus for tipping tubing, comprising a revoluble spindle, a mandrel adapted thereto and loosely fitting within the tip-plug and having inner edges or portions clamping the plug and also having a rounded extremity projecting beyond the outer end of the clamped plug and guiding the tube foundation-spiral into engagement with the plug during its rotation by the spindle, substantially as described.

4. Apparatus for tipping tubing, comprising a revoluble spindle, a mandrel adapted thereto and having an inner angularly-formed outwardly-tapered portion provided with edges clamping the tip-plug, said mandrel having an outer portion loosely fitting within the plug and also having a rounded extremity projecting beyond the outer end of the clamped plug and guiding the tube foundation spiral into engagement with the plug during its rotation by the spindle, substantially as described.

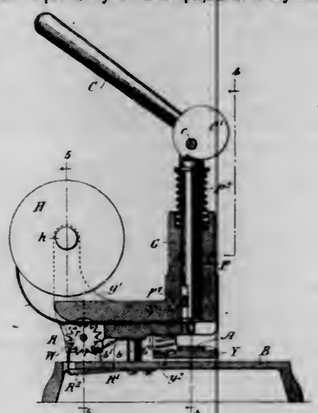
572,420. STAPLING-MACHINE. EDWIN T. GREENFIELD, New York, N. Y., assignor to the Greenfield Automatic Fastener Company, same place. Filed Nov. 16, 1894. Renewed Jan. 9, 1896. Serial No. 574,915. (No model.)

Claim.—1. A stapling-machine adapted to cut and drive staples from a strip or sheet of metal and consisting of a staple-bending and a staple-driving plunger, rigidly connected together and adapted the one to bend or form a staple and the other to sever and drive a previously-formed staple, substantially as described.

2. A stapling-machine adapted to form and drive a staple from a strip or sheet of metal consisting of mechanism which forms one staple, and additional mechanism which severs and drives a previously-formed staple.

3. A machine provided with means for holding a supply of staple-blanks united together, additional means for feeding said staple-blanks forward as they are used, in combination with a two-part plunger

adapted to form a staple from one of said blanks and simultaneously sever and drive a previously-formed staple, substantially as described.



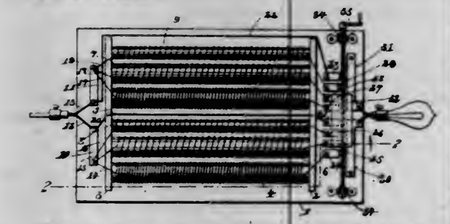
4. A stapling-machine provided with mechanism for successively feeding forward the material from which the staples are formed, additional mechanism for preventing said forward feed unless a staple is used, in combination with a two-part plunger adapted the one part to form the staples one at a time and the other to simultaneously sever and drive a previously-formed staple.

5. A stapling-machine provided with mechanism for successively feeding forward the material from which the staples are formed, a two-part plunger adapted to simultaneously form one staple and drive a previously-formed staple, and a clenching-anvil adapted to clench the driven staple through the material to be bound.

6. In a stapling-machine a staple-forming and staple driving plunger in combination with a clenching-anvil carried by a stirrup and means for forcing the staple-forming and staple-driving plunger forward, said stirrup being operatively connected to the same.

7. In a stapling-machine a staple-forming and staple-driving plunger operatively connected to mechanism for forcing said plungers forward, in combination with a clenching-anvil carried by a stirrup or support and so connected to the mechanism which drives the plunger forward that the anvil is simultaneously moved upward, thereby adapting the machine to bind different thicknesses of material.

572,421. REGULATOR FOR INCANDESCENT ELECTRIC LAMPS. WILLIAM HAWKER, Montreal, Canada. Filed May 29, 1896. Serial No. 593,553. (No model.)

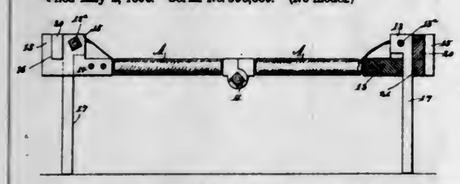


Claim.—1. A current-regulator for electric lamps and other devices, comprising pairs of resistance-coils, the resistance of one pair of coils being greater than that of another pair of coils, connections between the several coils, conductors adapted for engagement with the main lead-wires, a contact-plate for each of the coils and having connection therewith, lamp-circuit plates, and a sliding contact-block adapted for engagement with said lamp-circuit plates and with pairs of plates connected with the resistance-coils, substantially as specified.

2. A current-regulator for electric lamps and other devices, comprising pairs of resistance-coils adapted for connection at one end with the main lead-wires, an independent contact-plate having connection with each coil, other contact-plates adapted for connection with the main lead-wires, lamp-circuit plates, a contact-block adapted to close the circuit between the lamp-circuit plates and a pair of plates connecting with the coil, and a screw-rod passing through a tapped opening in said contact-block whereby the block may be moved, substantially as specified.

3. A current-regulator for electric lamps and other devices, comprising pairs of resistance-coils, the resistance of one pair differing from that of another, means for connecting the pairs of coils with the main lead-wires, contact-plates having connection with the coils, lamp-circuit plates, a screw-operated block for closing the circuit between pairs of contact-plates and the lamp-circuit plates, and a retarding device on said block, substantially as specified.

572,422. FOLDING COT. DAVID T. HELFRIN, New York, N. Y. Filed May 2, 1896. Serial No. 590,009. (No model.)



Claim.—1. A cot, the frame of which consists of side bars having a hinge connection and provided with sockets at their outer extremities, legs pivotally attached to the said socket portions of the frame, and cross-bars provided with heads arranged to enter the sockets and engage with the legs, and a bed-section attached to the cross-bars and the sections of the side bars of the frame, as and for the purpose specified.

2. A cot, the frame of which consists of side bars constructed in hinge-connected sections, the hinges being at the bottom of the sections, each section of each side bar having a socket formed at its outer end, bifurcated at the top and having an opening extending vertically from top to bottom through the body and the bifurcated portions of said sockets, legs pivotally attached to the said sockets and arranged to occupy a downwardly-extending vertical position, or a position over the side bars, and cross-bars terminating in heads arranged to enter the bifurcated portions of the said sockets, each head having a tongue to extend within the vertical openings of the sockets, and a bed-section attached to the side sections of the frame and the cross-bars of the same, as and for the purpose specified.

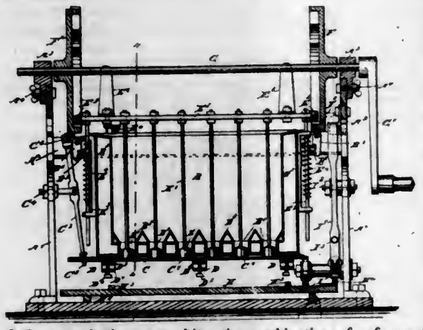
3. A cot, the frame of which consists of side bars constructed in hinge-connected sections, the hinges being at the bottom of the sections, each section of each side bar having a socket formed at its outer end, bifurcated at the top and having an opening extending vertically from top to bottom through the body and the bifurcated portions of the said sockets, legs pivotally attached to the said sockets, arranged to occupy a downwardly-extending vertical position, or a position over the side bars, and cross-bars terminating in heads arranged to enter the bifurcated portions of the said sockets, each head having a tongue to extend within the vertical openings of the sockets, and a bed-section attached to the side sections of the frame and the cross-bars of the same, the said bed being cut away opposite the sockets, and a hinge connection between the sections of the frame, as and for the purpose specified.

4. A cot, the frame of which consists of side bars constructed in hinge-connected sections, the hinges being at the bottom of the sections, each section of each side bar having a socket formed at its outer end, bifurcated at the top and having an opening extending vertically from top to bottom through the body and the bifurcated portions of the said sockets, legs pivotally attached to the said sockets, arranged to occupy a downwardly-extending vertical position, or a position over the side bars, and cross-bars terminating in heads arranged to enter the bifurcated portions of the said sockets, each head having a tongue to extend within the vertical openings of the sockets, and a bed-section attached to the side sections of the frame and the cross-bars of the same, the said bed being cut away opposite the sockets, and a hinge connection between the sections of the frame, the said bed being furthermore provided with longitudinal cuts at diagonally opposite sides near its ends, whereby the cross bars may be taken to a position parallel with the sections of the side bars of the frame, as and for the purpose specified.

572,423. CONFECTIONERY-MACHINE. SIMEON J. HICKS, Chicago, Ill., assignor to the Hicks Manufacturing Company, of Illinois. Filed Jan. 22, 1896. Serial No. 576,440. (No model.)

Claim.—1. A confectionery-machine, provided with a hopper formed with chambers, a slide for closing the said chambers, and formed with openings adapted to register with the chambers, and bearings for the said slide and each provided with a plate, and a screw for adjusting the said plate, to hold the latter in contact with the slide, substantially as shown and described.

2. A confectionery-machine, comprising a hopper, formed with a series of chambers, an apertured slide forming a bottom for the said chambers, and adapted to open the latter upon the shifting of the slide, plungers operating in the said hopper and chambers, a spring-pressed bar carrying the said plungers and provided on its ends with friction-rollers, cams mounted on a driving-shaft and engaging the said friction rollers, one of the said cams being provided with additional cam-arms, and a lever adapted to be engaged by the said cam arms and connected with the said slide, substantially as shown and described.

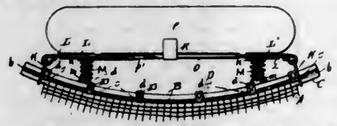


3. In a confectionery-machine, the combination of a frame, a hopper thereon having chambers for the passage of the molded articles, a main shaft extending above the hopper, plungers movable in the chambers of the hopper, a cross-bar uniting said plungers to move in unison, and cams on the main shaft to engage the opposite ends of the cross-bar to actuate said plungers, substantially as set forth.

4. In a confectionery-machine, the combination of a frame, a hopper therein having chambers for the passage of the molded articles, a main shaft journaled in the frame above the hopper, plungers movable in the chambers of the hopper, a cross-bar uniting the plungers to move in unison, a spring to move the plungers in one direction, and cams on the main shaft to engage opposite ends of the cross-bar to move the plungers in the other direction, substantially as set forth.

5. In a confectionery machine, the combination of a frame, a hopper therein having chambers for the passage of the molded articles, plungers movable in the chambers of the hopper, a cross-bar uniting the plungers to move in unison, guide-bars connected to the ends of the cross-bar and guided on the ends of the hopper, a main shaft journaled in the frame above the hopper, and cams on the main shaft to engage the cross-bar and actuate the plungers, substantially as set forth.

572,424. HAMMOCK. WILLIAM HINES, Middletown, Conn. Filed June 25, 1896. Serial No. 596,939. (No model.)



Claim.—1. The combination of the hammock-body, and the suspension-rod inserted through the hem thereof, of the bowed binding or stretching bar grooved on its inner face to seat said rod and having perforations communicating with the said grooves, the suspension ring or loop, and the suspension-cords gathered at said ring or loop, and running therefrom to and through the said bar, and looped around the said rod, substantially as specified.

2. In a hammock, the combination of the hammock-body, the bowed suspension-rod engaging the end hem thereof, the bowed stretcher-bar grooved to seat said rod, and perforated, the perforated clips secured to said bar, the suspension ring or loop, and the suspension-cords gathered at said ring or loop and looped around the said rod through the perforations of the clips and of the said bar, substantially as specified.

3. In a hammock, the combination of the hammock-body, the bowed suspension-rods inserted through the end hems thereof, the bowed stretcher-bars grooved on their inner faces to seat the said rods, the perforated clips secured to said bars, the suspension rings or loops, and the suspension-cords, the cord at each end being continuous, and extending back and forth from the suspension-rod to the said ring or loop, through said bar or clips, as described.

4. The combination with the hammock-body, the bowed suspension-rod inserted through the hem thereof, the bowed stretcher-bar grooved to seat said rod, and perforated for the suspension-cords, the suspension ring or loop, and the cord gathered at said ring or loop, and looped around said rod through the perforations of said stretcher-bar, of a pillow carried by said bar, substantially as specified.

5. The combination with the stretcher-bar, of the end bolsters secured thereon, the frames hinged or pivoted to said bolsters, the pillow-bearing blocks carried by said frames, the springs upon which said blocks rest, and the pillow carried by said blocks, substantially as specified.

6. The combination with the stretcher-bar, of the end bolsters secured thereto, the frames hinged to said bolsters, the pillow-blocks adjustable on said frames, the springs underneath said blocks, the pillow connected to said blocks, and the tightening-straps whereby said pillow may be stretched endwise through the adjustment of the said blocks, substantially as specified.

7. The combination of a hammock-body, the bowed suspension-rods inserted through the end hems thereof, the bowed stretcher bars grooved to seat said rods, the perforated clips secured to said bars, the suspension rings or loops, and the suspension-cords gathered at said rings or loops and looped around said rods through the perforation of said clips and of said bars, together with hinged or pivoted pillow-blocks carried by one of said bars, the pillow, and means for stretching the same lengthwise, substantially as specified.

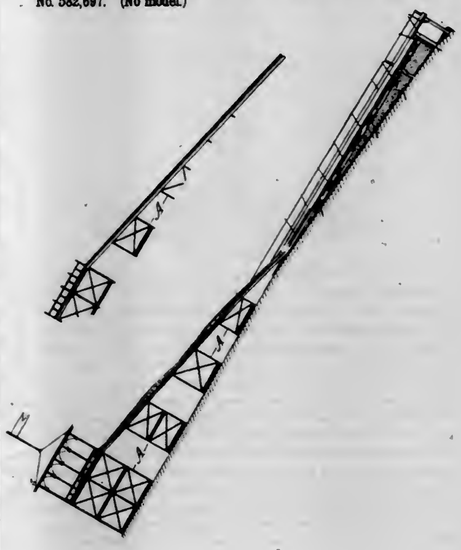
572,425. CAR-COUPLING. JOHN D. HOOD, Columbia, Pa. Filed Aug. 20, 1896. Serial No. 603,289. (No model.)



Claim.—1. A car-coupler consisting of a draw-head, a knuckle pivoted thereto, a locking-hook pivoted within the knuckle, and a sliding block carried by said hook, substantially as and for the purpose set forth.

2. The herein-described combination of a draw-head, a knuckle pivoted thereto so as to swing, a hook E formed with said knuckle, a locking-hook pivoted within the heel of the knuckle and adapted to engage the hooked end of an opposite knuckle, a sliding block attached to the locking-hook, a spring for actuating said block, a pin projecting from said block, and a cranked rod for moving the block against the action of its spring, substantially as and for the purpose set forth.

572,426. ARTIFICIAL SLIDE AND LAKE AND CONVEYER THEREFOR. CHARLES A. IDLER, Atlantic City, N. J., assignor of one-half to John Quincy Adams, Atco, N. J. Filed Mar. 11, 1896. Serial No. 582,697. (No model.)

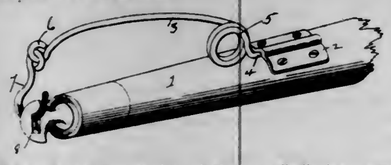


Claim.—1. In a pleasure-course of the character described, in combination with an incline or chute, an artificial basin or lake formed directly in a river or similar tide-water course by inclosing a portion thereof with retaining-walls extending above the bed to a height corresponding to the high-water mark, whereby when the tide rises the basin will be overflowed to thereby replenish and renew the water therein, substantially as and for the purposes described.

2. In a pleasure-course of the character described, in combination with an incline or chute, an artificial basin or lake consisting of flooring arranged on the bed of a tide-water course from a point of high tide to a point of low tide, side walls projecting upward from said flooring, and an end wall connecting said side walls at low-water mark and of a height corresponding to that of the water at high tide, whereby when the tide rises the basin will be overflowed to replenish and renew the water therein, substantially as and for the purposes described.

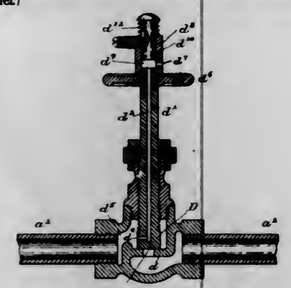
3. In a pleasure-course of the character described, in combination with an incline or chute, an artificial basin or lake consisting of a flooring arranged on an inclined bed of a river or similar tide-water course from a high to low water mark, side walls projecting upward from said flooring, an end retaining-wall connecting said side walls at low-water mark and of a height corresponding to that of the water at high tide, an artificial bed for said basin provided by filling the inclosed flooring to form an unvarying depth of water from end to end of the basin, and a promenade supported above the bed of the water-course and surrounding the side and end walls of said basin, substantially as and for the purposes described.

572,427. TRACE-HOLDER. GODFRIED LAUER, Huron, S. D., assignor of one-half to A. Vandenburg, same place. Filed Sept. 19, 1896. Serial No. 606,332. (No model.)



Claim.—In combination with a singletree, a clip having a central recess, a spring having its end resting on the singletree with the recess of the clip resting on the end of the spring, a coil formed in the spring with the free end suspended above the singletree, a hook swung in the eye at the end of the spring and an eye at the end of the singletree to receive the hook, as and for the purpose described.

572,428. AUTOMATIC TRACK-SANDING APPARATUS. HENRY L. LEACH, Cambridge, Mass. Filed Mar. 30, 1896. Serial No. 585,370. (No model.)

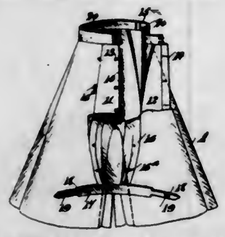


Claim.—1. In track-sanding apparatus, the combination of a compressed-fluid apparatus; a sand-supply apparatus having a sand-discharge pipe; a conduit from the compressed-fluid apparatus to the said supply apparatus; a valve-casing interiorly divided into two chambers by a valve seat, and mounted in said conduit with the conduit connected, on one side, with the chamber above the valve-seat, and on the other side with the chamber below the valve-seat; a regulating-valve mounted in said casing and having a handle projecting therefrom; and a sounding device which is between said fluid apparatus and sanding apparatus and is in communication with the conduit from the compressed-fluid apparatus to the sand-supply apparatus, and operative when said valve is off its seat and inoperative when the valve is on its seat; the sand-discharge pipe being in communication, through the sand-supply apparatus, with the said conduit.

2. The combination of a valve-casing having a valve-seat with a high-pressure port below the valve-seat and a low-pressure port above the valve-seat with a valve having a chambered stem, the chamber thereof having a constantly-open passage into the low-pressure chamber and an opening outside the casing.

3. The combination of a valve-casing having a valve-seat; a high-pressure port below the valve-seat and a low-pressure port above the valve-seat, with a valve having a chambered stem, the chamber thereof having a constantly-open passage into the low-pressure chamber and an opening outside the casing; and a valve for said opening outside the casing.

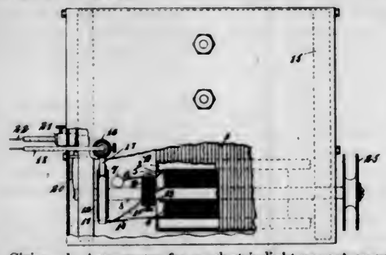
572,429. BICYCLE-SKIRT. JULIUS N. LEWINSON, New York, N. Y. Filed Feb. 4, 1896. Serial No. 577,984. (No model.)



Claim.—1. A divided skirt having a front portion or breadth, side portions or breadths plaited at their rear edges and extending inward at their lower portions forming the inner walls of the trousers and united at their upper edges forming the crotch, the upper portion of the back being detached at its top and side edges forming an apron, the side edges of which are plaited forming extensions of the plaits at the rear of the side portions, such apron being connected with and adapted to maintain the crotch in position when in use and to lower said crotch when desired, the belt connected with the main portion of the skirt, an opening being provided at the rear of the skirt proper and made at its lower end of a width approximately equal the width of the lower end of the apron, flaps extended from the side walls of said opening and adapted to close the same, said flaps being free at their lower ends and provided at their adjacent edges with fastenings, the apron being secured at its lower end to the skirt at or near the lower edges of said flaps, a belt-section at the upper end of said apron and fastenings by which to secure said belt-section to the skirt-belt, substantially as shown and described.

2. A divided skirt and trousers combined said skirt having a front portion or breadth and side portions or breadths plaited at their rear edges, the trousers and skirt proper being united at and below the crotch, the upper portion of the back of the skirt being detached at its top and side edges forming an apron, such apron being connected with and adapted to maintain the crotch in position when in use and to lower said crotch when desired, the belt connected with the main portion of the skirt, an opening being provided at the rear of the skirt proper and made at its lower end of a width approximately equal the width of the lower end of the apron, flaps extended from the said walls of said openings and adapted to close the same, said flaps being free at their lower ends and provided at their adjacent edges with fastenings, the apron being secured at its lower end to the skirt at or near the lower edges of said flaps, a belt-section at the upper end of said apron, and fastenings by which to secure said belt-section to the skirt-belt, substantially as shown and described.

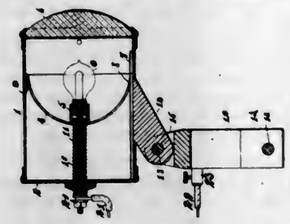
572,430. ELECTRIC-LIGHTING MECHANISM FOR BICYCLES. FRANCIS E. MAGEE, Brooklyn, N. Y. Filed Mar. 25, 1896. Serial No. 584,852. (No model.)



Claim.—1. A generator for an electric-light current, comprising a multiple-coil armature, a collector-ring on the armature-shaft, lead-wires extended from the coils to the collector-ring, a lead-wire extended from one of the coils to the shaft, a lead-wire extended from the other of said coils to a resilient arm carried by the shaft, and having a weighted end normally in engagement with the shaft, and connections for carrying a current from the collector-ring and shaft to a lamp, substantially as specified.

2. In a bicycle electric-lighting mechanism, the combination with a lamp carried by the bicycle, a generator, carried by the bicycle and having a multiple-coil armature rotated from the rear wheel of the bicycle, a collector-ring mounted on but insulated from the armature-shaft, connections between the two coils and collector-ring, a wire connection between one of the coils and the shaft, a block of insulating material mounted on the shaft, a spring secured to said block, a weight on said sprig normally in engagement with the shaft and serving as a current-governor, a connection between said spring and a coil of the armature, a brush in engagement with the collector-ring, a spring-contact in engagement with the shaft, and wire connections between the brush and contact and the lamp, substantially as specified.

572,431. ELECTRIC LAMP. FRANCIS E. MAGEE, Brooklyn, N. Y. Filed Mar. 25, 1896. Serial No. 584,853. (No model.)

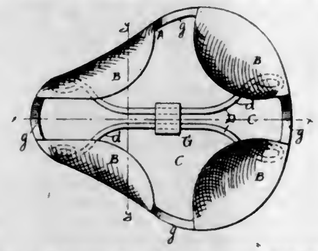


Claim.—1. An electric lamp comprising a metal casing, a lens it its forward end, a reflector adjustable longitudinally in the casing, an incandescent-lamp socket carried by the reflector, means for causing the adjustments of the reflector, and means for carrying an electric current to a lamp in the socket, substantially as specified.

2. An electric lamp, comprising a metal casing, a lens in the casing, a concave reflector adjustable longitudinally in the casing, a rib in the casing, engaging in a notch in the reflector, a lamp-socket carried by the reflector, and means for adjusting the reflector, substantially as specified.

3. An electric lamp adapted for adjustable connection with a support, and comprising a metal casing, a lens in one end thereof, a closure mounted to rotate on the other end thereof, a reflector mounted to move longitudinally in the casing, a lamp-socket on said reflector, a tubular screw-rod of insulating material, extended from the reflector through a tapped hole in the end closure, and a conductor-rod passing through said tubular screw-rod, substantially as specified.

572,432. SADDLE FOR BICYCLES. JAMES A. MALONEY, Washington, D. C. Filed June 20, 1896. Serial No. 596,333. (No model.)



Claim.—1. A bicycle or other saddle having four quadrantally-arranged pads or cushions forming between them a cruciform opening, substantially as specified.

2. A bicycle or other saddle having an open rigid frame of saddle form, and four independent, quadrantally-arranged pads secured thereto and forming between them a cruciform opening which extend to the outer edge of the saddle, substantially as specified.

3. A bicycle or other saddle having an open rigid frame and four independent quadrantally-arranged pads secured thereto, the two rear pads having an inward and downward incline, and the two front pads a downward and outward incline substantially as specified.

4. A bicycle or other saddle having an open rigid frame, a spring-support for said frame, and four quadrantally-arranged pads secured to said frame and having between them a cruciform opening, substantially as specified.

5. A bicycle or other saddle having an open rigid frame, provided with four enlarged pad-supporting portions, two at the front and two at the back, pads or cushions secured one to each of said portions, and separated from each other by a cruciform opening, substantially as specified.

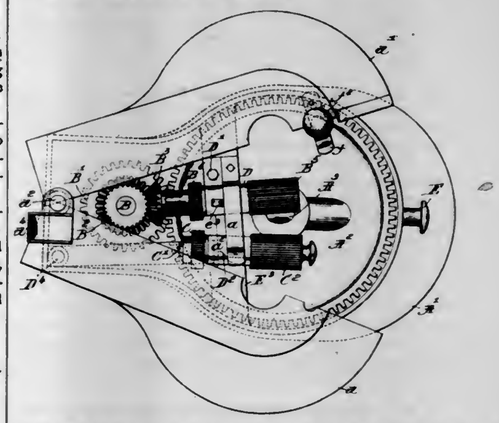
6. A bicycle or other saddle having an open frame, formed with four enlarged pad-supporting portions, and with reduced, depressed portions between the pad-supporting portions, substantially as specified.

7. A frame for bicycle and other saddles comprising a piece of metal shaped into open saddle form, and having at its rear portion two enlarged downwardly and inwardly inclined pad-supporting portions, and at the front two similar portions which are inclined downward and outward, substantially as specified.

8. The herein-described saddle, having the open supporting-frame formed with the four enlarged quadrantally-arranged pad supporting portions, and the reduced portions between the pad-supporting portions, the supporting-springs, and the four pads or cushions, one of which is secured to each of said enlarged portions, the two pads at the front being inclined downward and outward, and those at the rear having a downward and inward inclination, substantially as specified.

9. The herein-described saddle having a rigid open frame, and pads or cushions supported on said frame, at four different points, and having between them a cruciform opening, the two pads at the front being inclined downward and outward, substantially as specified.

572,433. COILER. JOHN T. MEATS and JOSEPH S. EATON, Taunton, Mass., assignors to the Mason Machine Works, same place. Filed Jan. 20, 1896. Serial No. 576,155. (No model.)



Claim.—1. In a coiler, the combination with a main roll B^6, its shaft, a bearing for the shaft, and means to rotate the shaft, of a second shaft having a roll C^3, pinions on said shaft to cause the said main shaft to revolve the said second shaft, a bearing for the said second shaft and a radius-bar carrying the said bearing, said radius-bar being mounted on a vertical pivot located substantially as described, whereby the separation of the said rolls by the accumulation of fiber disengages the said pinions, said radius-bar moving freely in the arc of a horizontal circle, substantially as described.

2. In a coiler, a trumpet, a coiler-gear, and a pair of rolls mounted side by side to feed the sliver into said coiler-gear, a horizontally-movable bearing for one of said rolls, said bearing having a flattened side, combined with a friction device adapted to ride on the flattened side of the bearing to thus insure uniformity of pressure on the material wound on the roll, substantially as described.

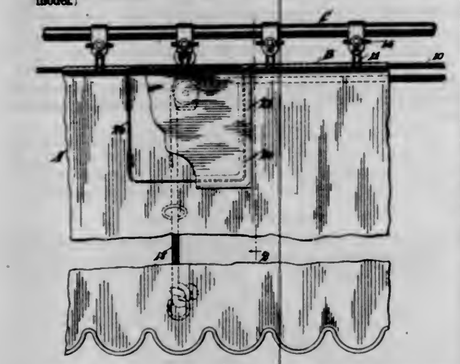
3. In a coiler, the coiling-gear, feed-rolls located above it and relatively movable horizontally, and a spring coöperating with the shaft carrying one of said rolls to retain the rolls in yielding relation, combined with a two-part cover mounted on a vertical pivot and movable in a horizontal plane from over and to fully expose the said rolls and their actuating-gear, each part of the cover being movable independently of the other, substantially as described.

4. In a coiler, the two-part centrally-divided cover mounted on a vertical pivot, one of said parts having attached to it a sliver-guide, combined with a trumpet sustained independently of said cover and with the pair of rolls B^6, C^3, one of the shafts of said rolls being movable in a horizontal plane away from the other of said shafts, substantially as described.

5. The shaft B^4, its stationary bearing, and the shaft C' and its movable bearing, said two shafts being provided with rolls, combined with a spring suitably secured to the machine, said spring shaped to yieldingly embrace said movable bearing, the said spring exerting uniform pressure on the top of the said bearing when the rolls are unduly separated, substantially as described.

6. In a coiler, a casing mounted on a horizontal pivot, a trumpet carried by said casing, combined with a cover mounted on a vertical pivot carried by said casing, and centrally apertured to fit snugly around said trumpet, substantially as described.

572,434. AWNING. CHARLES A. METZGER and WILLIAM E. METZGER, Rutland, Vt. Filed Feb. 18, 1896. Serial No. 579,739. (No model.)



Claim.—1. An awning provided with an expansion-spring opposite the pulley through which the draw-rope of the awning is passed, the said spring acting to hold the awning free from the said pulley, as and for the purpose specified.

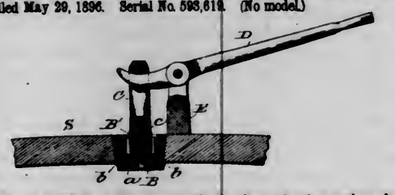
2. The combination, with a rod-support, of a hanger of substantially yoke formation, one member of the hanger being provided with a pin and the other member with an opening to receive the pin, and a device for drawing the members together, as and for the purpose specified.

3. The combination, with a supporting-rod, of a hanger comprising a yoke-like body of a spring material, having a pin near one extremity of one member, extending in direction of the opposite member, the said opposite member being provided with an opening to receive the said pin, a bolt secured in the pin-carrying member of the hanger, loosely passed through the opposing member, and a nut located upon the free end of the said bolt, adapted for engagement with the apertured member of the yoke-body of the hanger, as and for the purpose specified.

4. The combination, with a support, a yoke-like hanger provided with a pin attached to one member, and a keeper upon its opposite member, receiving the said pin, and a tension device adapted to contract the members of the hanger, or admit of the expansion of the same, of an awning, and a staple secured to the marginal portion of the said awning, through which staple the pin of the hanger is adapted to be passed, as and for the purpose specified.

5. An awning-hanger, consisting of a yoke provided with a pin projecting from one member and an opening in the other member to receive the pin, and a bolt for drawing the members of the yoke together, substantially as described.

572,435. BUNG. CHRISTIAN J. MEYERHOLZ, Mountain View, Cal. Filed May 29, 1896. Serial No. 593,619. (No model.)



Claim.—1. The combination with the bung having a threaded stem for the engagement of the extractor, with the loop having a threaded socket to engage the stem, and the lever provided with a fulcrum, whereby the loop and bung can be withdrawn, substantially as and for the purpose described.

2. In a bung, the combination of the cup-shaped wooden body A, and the bottom plate B having threaded stem B'; with the loop C, the lever D and fulcrum E, all substantially as and for the purpose set forth.

572,436. HEAD FOR GOLF-CLUBS. WILLIAM MILLS, Sunderland, England. Filed Nov. 30, 1895. Serial No. 570,614. (No model.)



Claim.—1. A golfing-instrument head comprising a frame, a series of partitions or divisional walls tapering to a narrow edge on the front and terminating a slight distance within the line of the frame-face, and a series of blocks fitted to the spaces and adapted to form an unbroken front face, substantially as described.

2. A golfing-instrument head consisting of a combined socket-piece and outer metallic framework H with divisional strengthening-ribs R forming compartments within the outer metallic frame, the wall or walls of any compartment being more or less serrated to retain the striking-blocks B filling the compartments all arranged combined or adapted for use substantially as herein set forth.

572,437. METALLIC RAILROAD-TIE. JOHN S. MITCHELL, Greensborough, Md. Filed Dec. 14, 1895. Serial No. 572,182. (No model.)



Claim.—1. A metallic railway-tie, comprising two casings having at their upper parts clamping-plates which engage the opposite sides of the rails, and binding-rods extending between said casings, each rod being secured at one end to one of the clamping-plates on one casing and extending diagonally downward and connected at its opposite end with the lower portion of the other casing, substantially as set forth.

2. A metallic railway-tie, comprising two casings adapted to support respective rails, clamping-plates on the respective casings which engage the sides of the rails thereon, rods extending between the casings, each rod being connected at one end to one of the clamping-plates of one casing and extending diagonally downward and having its opposite end connected to the lower part of the lower casing, said rods being crossed over each other, and a clamping device for securing the rods together at their crossing-point, substantially as set forth.

572,438. CELL OR BOX FOR ELECTRIC BATTERIES. JOHN M. MOFFAT, London, England. Filed May 23, 1896. Serial No. 592,792. (No model.) Patented in England May 30, 1894, No. 10,463, and in Germany Mar. 26, 1895, No. 85,828.



Claim.—1. A battery cell or box provided with an inwardly turned or curled lip at its upper end, a sealing-lid beneath said lip, and a vent arranged in said sealing-lid and opening beneath said lip, thereby preventing the escape of liquid while permitting the escape of gas from said cell or box.

2. In a battery cell or box, the combination, with the sealing-lid, of a vent-tube therein having a lateral opening above said lid, and a wall extending upward from said sealing-lid and having at its upper end an inwardly turned or curled lip which extends over said vent-tube so as to prevent the escape of liquid from said cell or box while permitting the escape of the gases therefrom.

3. A battery cell or box comprising a sloping sealing-lid, a wall extending upward from said lid and having at its upper end an inwardly turned or curled lip, and a vent-tube beneath said inwardly turned or curled lip extending through the lower part of said lid and having a lateral opening immediately above the same, substantially as and for the purposes hereinbefore described.

4. A battery cell or box the cap or cover of which is made with an inclined sealing-lid and with an inwardly turned or curled lip above said lid, and with a vent-tube beneath said inwardly turned or curled lip extending through the lower part of the inclined lid and having a lateral opening above the same, substantially as and for the purposes hereinbefore described.

572,439. LEATHER-DRESSING. JANE MOORE, Cambridge, Mass. Filed May 14, 1896. Serial No. 591,490. (No specimens.)

Claim.—1. The herein-described dressing, consisting of a compound of rubber, gutta-percha, Spanish licorice, and a vehicle, substantially as described.

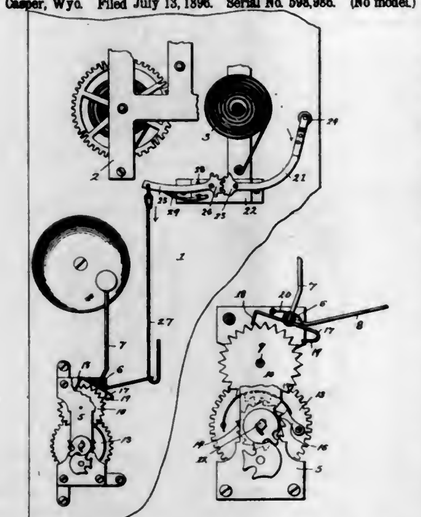
2. The herein-described dressing, consisting of a compound of wax, rubber, Spanish licorice and a vehicle, substantially as described.

3. The herein-described dressing, consisting of a compound of wax, gutta-percha, Spanish licorice, and a vehicle, substantially as described.

4. The herein-described dressing consisting of a compound of rubber, Spanish licorice, and a vehicle, substantially as described.

5. The herein-described dressing, consisting of a compound of wax, rubber, gutta-percha, Spanish licorice, and paraffin-oil, substantially as described.

572,440. WINDING-INDICATOR FOR CLOCKS. JAMES MOWRER, Casper, Wyo. Filed July 13, 1896. Serial No. 598,986. (No model.)



Claim.—The combination of the actuating device of a clock or similar mechanism, a gong, a lever adapted to be engaged by said actuating device and having a gear-segment at one end, a second lever having a gear-segment engaging that of the first-named lever, and mechanism connected with the second-named lever for striking the gong and sounding an alarm when said lever is moved, substantially as specified.

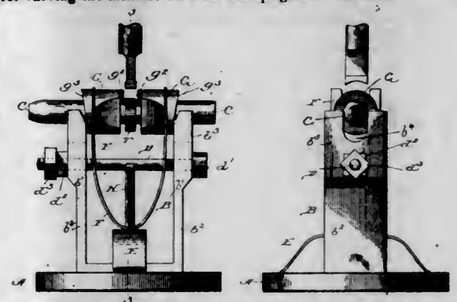
572,441. CURTAIN-RING. MORTON L. MUNSON, Detroit, Mich. Filed Nov. 5, 1895. Serial No. 568,046. (No model.)



Claim.—A curtain-ring consisting of a wire bent in the circular form, and having formed on one end a loop provided with the tongue b', and the opposite end with two hooks adapted to pass through the loop and straddle the tongue b', and perforate the curtain on their return, whereby it is held on the hooks and against the tongue and side of the loop, substantially as described.

572,442. MEANS FOR SQUARING EDGES OF AND FINISHING FINGER-RINGS. JOHN S. PALMER, Providence, R. I. Filed Aug. 10, 1896. Serial No. 602,331. (No model.)

Claim.—1. In a machine for squaring the edges of finger-rings, the combination of a vertically-movable arbor, a frame or standard having upright spring-bars serving to support said arbor, collars movable on the arbor and adapted to contact with the frame, and means for varying the distance between the uprights of the frame.



2. In combination with a spring-frame having the deep cuts in the top of its uprights, the vertically-movable arbor adapted to be lodged in and removable from such cuts, and the collars carried on such arbor and removable therefrom and provided with means for contacting with the uprights, all substantially as and for the purposes set forth.

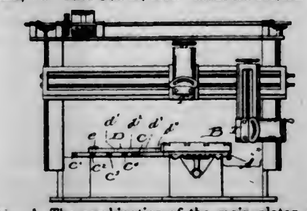
3. In a machine for squaring the edges of gold, silver, or plated finger-rings under the action of a punch, the combination with an arbor for holding a ring to be treated, and with collars adapted to grip the ring at its opposite sides, of an upright frame constructed and arranged to support the arbor to allow the downward movement thereof under the action of the punch and provided with means to move the collars inwardly to bind closely upon the edges of the punch.

4. The combination with a spring-frame and its adjusting-rod and vertically-movable arbor, of collars on the arbor having their outer ends inclined and arranged to contact with the frame on the downward movement of the arbor, a base-spring, and an upper spring resting on the base-spring and arranged to normally move the collars apart.

5. In a machine for squaring the edges of rings, the combination with a vertically-movable arbor for holding the ring, collars on and free to be moved lengthwise of the arbor to grip the edges of the ring, a spring serving to raise the shaft and its collars, a spring to move the collars from each other to release their hold on the punch, and means for moving the collars toward each other as the arbor moves downwardly, substantially as and for the purposes set forth.

6. In combination with the vertically-movable arbor, the spring E, resting on the bed of the machine, the spring F, resting on spring E, and bearing the arbor, the frame and its rod D, the fixed spindle I, and the sleeve H, thereon bearing on said rod to limit the upward throw of the arbor, as and for the purposes set forth.

572,443. PLANING OR MOLDING MACHINE. FRED R. PATCH, Rutland, Vt. Filed Feb. 24, 1896. Serial No. 580,431. (No model.)



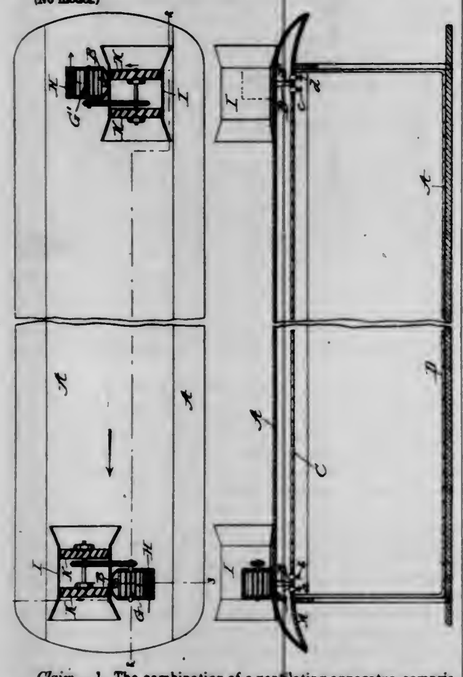
Claim.—1. The combination of the main platen, the auxiliary platen carried by the same, connections between the two whereby the auxiliary platen while moving with the main platen is permitted bodily lateral and oscillatory movement independent of the latter, guides attached to the auxiliary platen and stationary part of the machine respectively and adjustable with reference to each other for the purpose of varying the path of movement of the auxiliary platen, and connections between said guides whereby the auxiliary platen as it moves along with the main platen has imparted to it a combined bodily lateral and partially rotary movement independent of the latter, substantially as and for the purposes hereinbefore set forth.

2. The combination with the main and auxiliary platens connected together substantially as described, of the two guides attached to the frame of the machine and the auxiliary platen respectively and consisting the one of a guide-table having a series of grooves of

varying diameter, and the other an apron carrying pins or their specified equivalents adjustable to engage any one of said grooves substantially as and for the purposes hereinbefore set forth.

572,444. VENTILATING APPARATUS FOR VEHICLES, &c.

EDWARD P. PHELPS, Chicago, Ill. Filed Feb. 13, 1896. Serial No. 579,177. (No model.)



Claim.—1. The combination of a ventilating apparatus, comprising an upper set of pipes and a lower set of pipes, connected together, with a forcing-fan and an exhaust-fan connected to such system of pipes; substantially as and for the purpose set forth.

2. In a ventilating apparatus, the combination with a system of pipes, comprising an upper and a lower set connected together, and a forcing-fan and exhaust-fan connected to such pipes, and suitable valves controlling the direction of flow; as and for the purpose set forth.

3. In a ventilating apparatus, the combination with a system of pipes, comprising an upper set of pipes and a lower set of pipes connected together, two fans connected with the system of pipes, and a pair of valves arranged adjacent to each connection with a fan, the individual valves of the pair being on opposite sides of such connection, whereby the fan may be alternated as force and exhaust fans; as and for the purpose set forth.

4. In a ventilating apparatus for vehicles the combination with a system of pipes comprising an upper and a lower connected together, and a forcing and exhaust fan connected to such pipes, of wind-motors arranged on the outside of the vehicle and connected to the fans to operate the same; as and for the purpose set forth.

5. In a ventilating apparatus for vehicles, the combination with a system of pipes located in such vehicle, two fans connected with such pipes, each fan having a pair of valves, the individuals of which are respectively arranged on opposite sides of such connection, and wind-wheels respectively arranged at opposite ends of the vehicle and on the outside of the same and connected to operate such fans; as and for the purpose set forth.

6. In a ventilating apparatus for vehicles, the combination with a system of pipes located within the vehicle, comprising a lower set of pipes and an upper set of pipes, connected together, of two fans, one near each end of the vehicle and each connected with the pipes, valves on each side of the connections last mentioned, wind-wheels on the outside of the vehicle, adjacent to and connected to operate the fans; substantially as and for the purpose set forth.

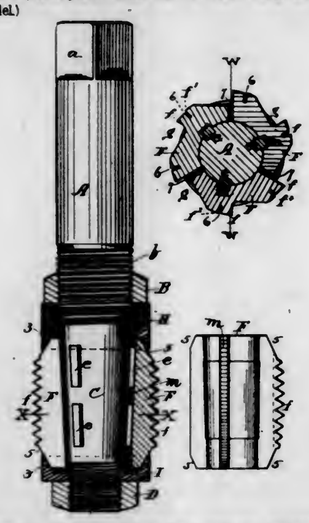
7. In a ventilating apparatus for vehicles the combination with a system of pipes comprising an upper and a lower connected together, a forcing and an exhaust fan communicating with the pipes, and wind-wheels arranged in open-ended tubes outside the vehicle, and connections between the wind-wheels and fans; substantially as and for the purpose set forth.

8. In a ventilating apparatus for vehicles, the combination with a system of pipes located within such vehicle, two fans arranged respectively near opposite ends of the vehicle and connected to the pipes, and valves arranged on opposite sides of each connection, open-ended tubes on the outside of the vehicle, adjacent to the fans, and a pair of wind-wheels in each tube, and connections between the same and the fans; as and for the purpose set forth.

9. In a ventilating apparatus for vehicles, the combination with a system of pipes arranged within the vehicle, of wind-wheels arranged in pairs at opposite sides of the vehicle, and with fans on opposite sides of the wheels at the respective ends of such vehicle; as and for the purpose set forth

572,445. SECTIONAL EXPANSION-TAP.

BENJAMIN W. PRENTICE, Worcester, Mass., assignor to Vernon F. Prentice and Albert F. Prentice, same place. Filed Mar. 10, 1896. Serial No. 582,676. (No model.)

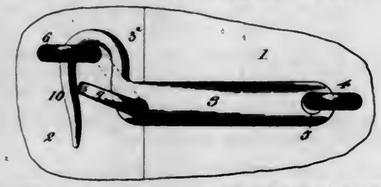


Claim.—1. The within-described sectional expansion-tap, comprising in combination the axial stem formed with a tapered seat and having screw-threaded portions at either ends of the taper, the series of radially-projecting splines disposed longitudinally on said tapered seat, the series of independent detachable segmental sections having conically-beveled ends, and straight edges that are adjustably supported on said tapered seat, each section internally fitted with a longitudinal groove to receive the respective splines, and externally provided with cutting-points and clearance-grooves, as described, the internally-beveled annular collars mounted on the stem adjacent to and embracing the ends of the several sections, and the screw-nuts arranged upon the threaded stem adjacent to said collars, all substantially as set forth.

2. In a screw-threading tap, the threading-cutters made in dual form, as shown, with the narrow incision or channel 6 extending longitudinally of the body and dividing the raised portions of the thread-cutter between the regular clearance-grooves into a series of primary cutting-points and a series of secondary cutting-points, substantially as set forth.

572,446. GATE OR DOOR HOOK.

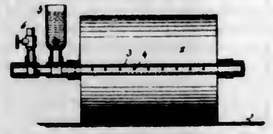
JAMES M. PROCTOR, Sturgeon, Mo. Filed May 18, 1896. Serial No. 591,948. (No model.)



Claim.—A hook for gates and doors composed of an arm 3 having a perforated corner 9, a gooseneck-head 3^a projecting from the upper corner of the free end of the arm, and a link 7 fitting in the perforation of the corner 9 and the free end of which is adapted to rest against the outer arm of the gooseneck-head when the link is in its normal position; said link being shorter than the distance between said perforation and the top of the gooseneck-head, whereby when said head is made to engage a staple the free end of the link will swing upwardly away from the outer arm of the gooseneck-head and then drop again, when it passes the staple, against the outer arm of the head, substantially as set forth.

572,447. PAVING-ROLLER.

FREDERIC E. PUFFER, Newton, Mass., assignor to the Warren-Scharf Asphalt Paving Company, New York, N. Y. Filed June 4, 1896. Serial No. 594,338. (No model.)

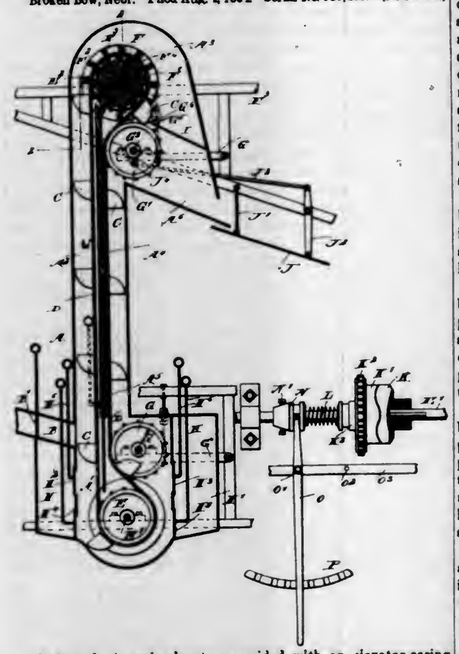


Claim.—1. A roller combined with a jet-tube extended across the roller and having its jet-opening facing the same, said jet-tube having an oil cup or reservoir leading into the tube and a steam-pipe or pressure-inlet leading into the tube for expelling the oil therefrom through the jet-openings substantially as described.

2. The combination with a roller, of a jet-tube arranged in proximity to and provided with a plurality of jet-openings facing the periphery of the roller, means for feeding oil to said tube, and means for introducing steam to the jet-tube for expelling the oil therefrom through the jet-openings onto the periphery of the roller, substantially as described.

572,448. GRAIN-ELEVATOR.

JAMES D. REAN and MOSES LEWIS, Broken Bow, Nebr. Filed Aug. 4, 1894. Serial No. 519,469. (No model.)



Claim.—1. A grain-elevator provided with an elevator-casing containing the usual elevating-buckets, and comprising a grain-receiving compartment, and relief-chambers on opposite sides of the said compartment and each having an inlet and an outlet gate, substantially as shown and described.

2. A grain-elevator comprising sprocket-chains carrying buckets, a casing in which move the said chains and buckets, a grain-receiving compartment formed in the lower part of the said casing, relief-chambers on opposite sides of the said compartment, and inlet and outlet gates for each of the said chambers, to connect the interior of the chambers with the receiving-compartment, substantially as shown and described.

3. A grain elevator comprising a casing containing elevator-chains carrying buckets passing over sprocket-wheels, and a second set of sprocket-wheels for tightening or loosening the said chains, pivoted arms carrying the shaft of the said second set of sprocket-wheels, and adjustable links connected with the said arms, substantially as shown and described.

4. In a grain-elevator, the combination with a casing having an outlet-chute, of a riddle onto which discharges the said chute, links suspending one end of the riddle, levers suspending the other end of the riddle, and means for oscillating the riddle, substantially as described.

5. A grain-elevator provided with a drum, over which pass the grain-carrying buckets, the said drum being provided with flanges having pockets opening at their inner ends into transverse pockets formed in the periphery of the drum, substantially as shown and described.

6. A grain-elevator provided with a drum formed on its periphery with transverse pockets, sprocket-wheels held on the said drum and forming underflow-spaces with the said pockets, and flanges held on the ends of the drum next to the said sprocket-wheels, the said flanges being formed on their inner faces with pockets opening into the said underflow-spaces, substantially as shown and described.

7. A grain-elevator provided with a clutch mechanism for the driving-shaft, comprising a clutch secured to the shaft and having a cam-face, a driving sprocket-wheel mounted to turn loosely on the said shaft and having a cam-face to engage the cam-face of the said clutch, a spring pressing on the hub of the sprocket-wheel and holding its cam-face in engagement with the cam-face of the clutch, a two-part sleeve, one part of which is movably mounted on the shaft and the other adjustably secured to said shaft, and a shifting fork engaging the movably-mounted part of the sleeve, whereby the clutch is rendered automatic and provision made for adjusting the tension of the spring, substantially as described.

8. A grain-elevator provided with a clutch mechanism for the driving-shaft, comprising a clutch secured to the shaft and having a cam-face, a driving sprocket-wheel mounted to turn loosely on said shaft and having a cam-face engaging the cam-face of the said clutch, a spring pressing on the hub of the said sprocket-wheel, a two-part sleeve, one part of which is movably mounted on the shaft, and the other adjustably secured to said shaft, a shifting fork engaging the movable part of the sleeve, and a notched segment with which the shifting fork is adapted to be engaged, whereby provision is made for temporarily holding the movable part of the sleeve in the position to which it has been moved by the shifting fork while the other part of the sleeve is adjusted on the shaft to regulate the tension of the spring, substantially as described.

9. An elevator sprocket-chain, comprising connecting-links and bracket-links connected with each other, the bracket-links each having one of its sides offset laterally out of alinement with the corresponding sides of the links, the said offset portion of the side of the link serving to receive a bucket-bracket, substantially as described.

10. An elevator sprocket-chain, comprising connecting-links, and bracket-links connected with each other by integral loops engaging plain ends of the adjacent links, each bracket-link having one of its sides projected laterally out of alinement with the corresponding sides of the links, and side connections fitting on the laterally-projecting portions of the sides and adapted to compensate therefor, substantially as described.

11. An elevator sprocket-chain, comprising connecting-links, and bracket-links connected with each other by integral loops engaging plain ends of adjacent loops, each bracket-link having one of its sides projected laterally out of alinement with the corresponding sides of the links, the said set-out sides of some of the bracket-links being round and the remainder square, and bucket-brackets fitting on the laterally-projecting portions of the sides and compensating therefor, substantially as described.

12. In a grain-elevator, the combination with a casing having an outlet-chute, an endless elevator-chain and a tension-wheel engaging said chain, of a riddle suspended at the mouth of the outlet-chute and means for oscillating the riddle from the tension-wheel, substantially as described.

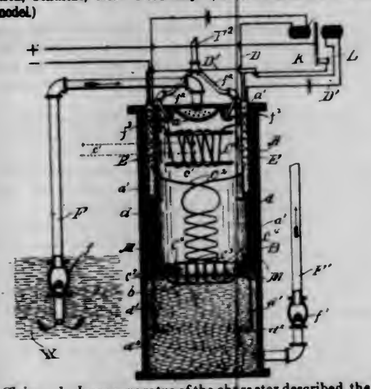
13. In a grain-elevator, the combination with a casing having an outlet-chute, an endless sprocket elevator-chain, and a sprocket-wheel engaging the chain and serving as a tension-wheel, of a riddle, links suspending one end of the riddle, levers suspending the other end of the riddle, and links connecting the levers with cranks on the said sprocket-wheel shafts, substantially as described.

14. In a grain-elevator, the combination with an endless sprocket-chain provided with buckets, of pivoted arms, sprocket-wheels arranged adjacent to the sprocket-chain and engaging the same, and means for adjustably supporting the free ends of the said arms, substantially as described.

15. A grain-elevator comprising a casing having a receiving-compartment at its lower end, and a discharge-chamber at its upper

end, the compartment and chamber being connected by a vertically-disposed leg, an endless chain of buckets mounted in the casing, relief-compartments one on each side of the receiving-compartment and having an inlet and outlet communicating therewith, and an oscillating screen at the outlet of the discharge-chamber, substantially as herein shown and described.

572,449. ELECTRIC STEAM AND GAS ENGINE. FRANCIS A. RICE, Telluride, Colo. Filed May 9, 1896. Serial No. 590,904. (No model.)



Claim.—1. In an apparatus of the character described, the combination with a vessel having inlet and outlet pipes and partially filled with a liquid, of a steam-generator supported by the said liquid, a heating-coil within said vessel, an electric conductor connecting said heating-coil and steam-generator with the source of electricity, and means for alternately opening and closing the said electric circuit, substantially as described.

2. In an apparatus of the character described, the combination with a plurality of vessels having inlet and outlet pipes and partially filled with a liquid, of a steam-generator supported by the said liquid in each vessel, a heating-coil within each of said vessels, electric conductors connecting said heating-coils and steam-generators with the source of electricity, and means for alternately opening and closing the said electric circuits, substantially as described.

3. In an apparatus of the character described, the combination with a vessel lined with a porous non-conductor of heat and partially filled with a liquid, of an electric steam-generator supported by said liquid, a heating-coil within the said vessel and above the said steam-generator, means for cooling said heating-coil, an electric conductor connecting the said heating-coil and steam-generator with the source of electric current, means for alternately making and breaking the said electric circuit, and means for conducting the aforesaid liquid to and from the said vessel, substantially as described.

4. In an apparatus of the character described, the combination with a plurality of vessels partially filled with a liquid, of an electric steam-generator in each of said vessels supported by said liquid, a heating-coil within each of said vessels and above the said steam-generators, electric conductors connecting the said heating-coils and steam-generators with the source of electrical current, means for alternately making and breaking the said electric circuit, and means for conducting the aforesaid liquid to and from the said vessels, substantially as described.

5. In an apparatus of the character described, the combination with a plurality of closed vessels, of inlet and outlet pipes connected to the said vessels, an electric steam-generator carried within each of the said vessels, an electric heating device also carried within each of the said vessels, means for periodically cooling the said coils; electric connection between the source of electric current and the said steam-generators and heaters and means for alternately switching the current from one vessel to another, substantially as described.

6. In an apparatus of the character described, the combination with a plurality of vessels partly filled with a liquid, of inlet and outlet pipes connected to the said vessels, a steam-generator within each of the said vessels and supported by the said liquid, a heating-coil within each of the said vessels, means for periodically spraying the said coils; electric conductors connecting said heating-coils and steam-generators with the source of electricity, and means for alternately switching the said electric current from one heating-coil and steam-generator to another, substantially as described.

7. In an apparatus of the character described, the combination with a plurality of vessels partly filled with a liquid, of an electric steam-generator in each vessel consisting of a float carrying a plurality of conducting-plates and supported by said liquid, a heating-coil in each vessel above said generators, electric conductors connecting the said generators and heating-coils with the source of electric current; means for alternately opening and closing the aforesaid electric circuits, and inflow and outflow pipes connected with the aforesaid vessels by which the liquid is conveyed to and from the same, and a pipe passing from the lower portion of each cylinder to the upper portions of the others, substantially as described.

8. In an apparatus of the character described, the combination with a plurality of vessels partly filled with a liquid, of an electric steam-generator in each vessel and floating upon and partly immersed in said liquid, a heating-coil within each of the said vessels and above the said steam-generator, electric conductors connecting the said heating-coil and steam-generator of each vessel with the source of electric current, means for alternately switching the current from one of the heating coils and steam-generators of one vessel to similar parts of another vessel, pipes connecting the lower portion of one vessel with the upper portion of another vessel, and means for conducting the aforesaid liquid to and from the said vessels, substantially as described.

9. In an apparatus of the character described, the combination with a vessel partly filled with liquid, of an electric steam-generator consisting of a float carrying a plurality of conducting-plates and supported by said liquid, a heating-coil above said generator, electric conductors connecting the said generator and heating-coil above said generator with the source of electric current, means for alternately opening and closing the aforesaid electric circuit, and an inflow and outflow pipe each provided with a check-valve, connected with the aforesaid cylinder by which the liquid is conveyed to and from the same, substantially as described.

10. In an apparatus of the character described, the combination with a source of electricity, of a cylindrical vessel lined with a porous non-conductor of heat and adapted to be partially filled with a liquid, an electric steam-generator consisting of a float carrying a plurality of electric conducting-plates and adapted to be periodically supported by the said liquid, a heating-coil within the said vessel and above the steam-generator, an electric conductor connecting the said heating-coil and steam-generator with the source of electric currents, metallic contact-pieces carried by the said steam-generator, guide-rods near the sides of said cylindrical vessel each traversed by an electric conductor and terminating at its lower end in a contact-piece, contact-pieces at the upper ends of said guide-rods and connected to separate electric conductors, means operated by said contact-pieces for opening and closing the circuit, and pipes for conveying the liquid to and from the aforesaid cylindrical vessel, substantially as described.

11. In an apparatus of the character described, the combination with a vessel lined with a porous non-conductor of heat partially filled with a liquid, of an electric steam-generator consisting of a float carrying a plurality of conducting-plates and supported by said liquid, a heating-coil carried above said generator, electric conductors connecting the said generator and heating-coil with the source of electric current, means for alternately opening and closing the aforesaid electric circuit, and an inflow and outflow pipe connected with the aforesaid cylinder by which the liquid is conveyed to and from the same, substantially as described.

12. In an apparatus of the character described, the combination with a closed vessel adapted to be partially filled with a liquid, of an electric steam-generator consisting of a float carrying a plurality of electric conducting-plates and adapted to be periodically supported by said liquid, a heating-coil within the said vessel and above the steam-generator, an electric conductor connecting the said heating-coil and steam-generator with the source of electric currents, metallic contact-pieces carried by the said steam-generator, guide-rods near the sides of said vessel each traversed by an electric conductor terminating at its lower end in a contact-piece, contact-pieces at the upper ends of said guide-rods and connected to separate electric conductors, electromagnets traversed by the said electric circuits, a switch in a separate circuit and operated by said electromagnets, and means for conveying the liquid to and from the aforesaid cylindrical vessel substantially as described.

13. The combination with a source of electricity and a source of liquid supply, of a closed vessel, with a pipe leading from the source of liquid supply into the upper part of said vessel, and an outlet for liquid near the base of said vessel, of an electric steam-generator mounted within said vessel, a heating-coil also within said vessel and above the steam-generator, electric conductors connecting said source of electricity with said heating-coil and said steam-generator, and means for making and breaking the said electric circuit, substantially as described.

14. In an apparatus of the character described, the combination, with a vessel partly filled with a liquid, of an electric steam-generator floating upon and partly immersed in said liquid, a heating-coil within said vessel and above the said steam-generator, electric conductors connecting the said heating-coil and steam-generator with the source of electric current, means for alternately making and breaking the said electric circuit, and a source of liquid supply, with pipes leading therefrom to said vessel, and a delivery-pipe for conducting the aforesaid liquid from the said vessel, substantially as described.

15. The combination with a source of electricity and a source of liquid supply, of a closed vessel, lined with a porous non-conductor of heat with a pipe leading from the source of liquid supply into the upper part of said vessel, and an outlet for liquid near the base of said vessel, of an electric steam-generator mounted within said vessel, a heating-coil within said vessel and above the steam-generator, and means for periodically cooling the same, electric conductors connecting said source of electricity with said heating-coil and steam-generator, and means for making and breaking the said electric circuit, substantially as described.

16. In an apparatus of the character described, the combination with a vessel lined with a porous non-conductor of heat and partly filled with a liquid, of an electric steam-generator floating upon and partly immersed in said liquid, a heating-coil within the said vessel and above the said steam-generator, electric conductors connecting the said heating-coil and steam-generator with the source of electricity, means for alternately making and breaking the said electric circuit, and a source of liquid supply, with pipes leading therefrom to said vessel, and a delivery-pipe for conducting the aforesaid liquid from the said vessel, and a sprayer for cooling the aforesaid heating-coil, substantially as described.

17. In an apparatus of the character described, the combination with a plurality of cylindrical vessels partially filled with a liquid, and lined with a porous material, of an electric steam generator in each vessel consisting of a float carrying a plurality of conducting-plates and supported by said liquid, heating-coils carried above said generators, electric conductors connecting the said generators and heating-coils with the source of electric current means for alternately opening and closing the aforesaid electric circuits, and inflow and outflow pipes connected with the aforesaid cylinders by which the liquid is conveyed to and from the same, substantially as described.

18. In an apparatus of the character described, the combination with a closed vessel adapted to be partly filled with a liquid and lined with a porous non-conductor of heat, of an electric steam-generator consisting of a float carrying a plurality of electric conducting-plates and adapted to be periodically supported by the said liquid, a heating-coil within the said vessel and above the steam-generator, sprayers for cooling said coil, an electric conductor connecting the said heating-coil and steam-generator with the source of electric currents, metallic contact-pieces carried by the said steam-generator, guide-rods near the sides of said vessel each traversed by an electric conductor terminating at its lower end in a contact-piece, contact-pieces at the upper ends of said guide-rods and connected to separate electric conductors, electromagnets traversed by the said electric circuits, a switch in a separate circuit and operated by said electromagnets, and means for conveying the liquid to and from the aforesaid cylindrical vessel, substantially as described.

19. The combination with a source of electricity and a source of liquid supply, of a plurality of closed vessels, with pipes leading from the source of liquid supply into the upper part of said vessels, and outlets for liquid near the base of said vessels, of an electric steam-generator mounted within each of the said vessels, a heating-coil also within each of the said vessels and above the steam-generator, sprayers for cooling the said heating-coils, electric conductors connecting said source of electricity with said heating-coils and steam-generators, and means for making and breaking the said electric circuits, substantially as described.

20. In an apparatus of the character described, the combination with a plurality of vessels partly filled with a liquid, of an electric steam-generator within each vessel floating upon and partly immersed in said liquid, a heating-coil within each of the said vessels and above the said steam-generators, means for cooling the said heating-coils, electric conductors connecting the said heating-coils and steam-generators with the source of electric current, means for alternately making and breaking the said electric circuits, and a source of liquid supply, with pipes leading therefrom to said vessels, and delivery-pipes for conducting the aforesaid liquid from the said vessels, substantially as described.

21. The combination with a source of electricity and a source of liquid supply, of a plurality of closed vessels lined with a porous non-conductor of heat, with pipes leading from the source of liquid supply into the upper part of said vessels, and outlets for liquid near the base of said vessels, of electric steam-generators mounted within said vessels, heating-coils also within the said vessels and above the steam-generators, electric conductors connecting said source of electricity with said heating-coils and steam-generators, and means for making and breaking the said electric circuits, substantially as described.

22. In an apparatus of the character described, the combination with a plurality of vessels partly filled with a liquid and lined with a porous non-conductor of heat, of an electric steam-generator floating upon and partly immersed in said liquid of each vessel, a heating-coil within each of the said vessels and above the said steam-generators, means for cooling the said heating-coils, electric conductors connecting the said heating-coils and steam-generators with the source of electric current, means for alternately making and breaking the said electric circuits, and a source of liquid supply, with pipes leading therefrom to said vessels, and a delivery-pipe communicating with each vessel for conducting the aforesaid liquid from the said vessels, substantially as described.

23. In an apparatus of the character described, the combination with a source of electricity, of a cylindrical vessel lined with a porous non-conductor of heat adapted to be partially filled with a liquid, an electric steam-generator consisting of a float carrying a plurality of electric conducting-plates and adapted to be periodically supported by the said liquid, a heating-coil within the said vessel and above the steam-generator, a sprayer for cooling the said heating-coil, an electric conductor connecting the said heating-coil and steam-generator with the source of electric currents, metallic contact-pieces carried by the said steam-generator, guide-rods near the sides of said cylindrical vessel each traversed by an electric conductor and terminating at its lower end in a contact-piece, contact-pieces at the upper ends of said guide-rods and connected to separate electric conductors, means operated by said contact-pieces for opening and closing the circuit, and pipes for conveying the liquid to and from the aforesaid cylindrical vessel, substantially as described.

572,450. BICYCLE-BELL CLAMP. EDWARD D. ROCKWELL, Bristol, Conn. Filed Sept. 12, 1896. Serial No. 605,603. (No model.)



Claim.—1. In a clamp, the combination with a frame provided with parallel sides, and opposite key-slits, of a band-clip, means for securing it to the frame at one end, and a winding-key at the other end, adapted to enter the key-slits in the frame, substantially as set forth.

2. In a clamp, the combination with a frame provided with opposite parallel sides, and key slits therein, of a band-clip, means for securing it at one end to the frame, a winding key secured at the other end, adapted to enter the slits, the width of the band being slightly narrower than the distance between the sides of the frame, whereby, when the key is inserted into the key-slits, the band is confined between the frame sides against lateral displacement, substantially as set forth.

3. In a clamp, the combination with a frame provided with opposite parallel sides, and key-slits in the sides provided with rounded ends, of a band-clip, means for securing it at one end to the frame, and a winding-key secured at the other end, adapted by pressure to be forced over the rounded ends of the key-slits into them, substantially as set forth.

572,451. VALVE. ELIAS I. ROWE, Troy, N. Y., assignor to The Rensselaer Manufacturing Company, same place. Filed Mar. 5, 1895. Serial No. 540,610. (No model.)

Claim.—1. The combination of the valve-casing, the gates therein, the nut on which the gates are hung, and the stem engaging said nut for raising and lowering the gates, with means for holding the gates in raised position when the stem is removed, substantially as described.

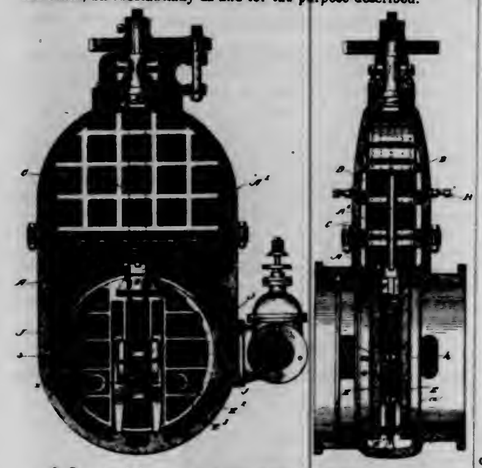
2. The combination of the casing, the valve-stem for raising and lowering the gates, and the pair of opposed gates suspended on the stem having pairs of interlocking lugs and sockets on their opposed faces, with the diametrically opposite guide-wings between the gates, for the purpose and substantially as described.

3. The combination of the valve-casing, the valve-stem, and the opposite gates suspended on said stem; having recesses in their outer faces; with the bolts tapped through the casing and adapted to engage the recesses in the gates and hold them raised, substantially as described.

4. In combination with the valve-casing, the ways on opposite sides thereof, the gates, and the devices for raising and lowering the gates; of the sockets E^2 on one gate and the studs E^3 on the other whereby the two gates are so connected together that one cannot rotate without the other; of the non-corrosive diametrically opposite guide-wings between the gates adapted to prevent rotation of the gates within the casing, and the connections between the guide-wings and the gates, substantially as and for the purpose described.

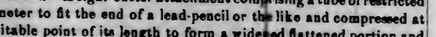
5. The combination of the valve-casing having vertical grooves as B, the ways placed in said grooves, and the soft-metal packing as-

curing the ways in the grooves, with the valve-stem, the gates hung thereon and the diametrically opposite guide-wings adapted to engage the ways and prevent rotation of the gates within the casing; the sockets E^2 on one gate and the studs E^3 on the other whereby the two gates are so connected together that one cannot rotate without the other, all substantially as and for the purpose described.



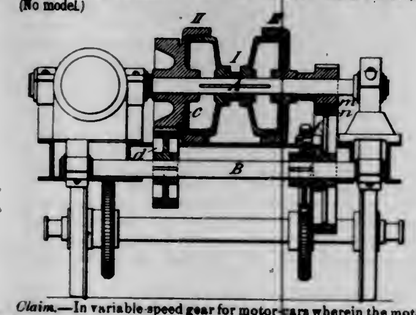
6. In a straightway valve, the combination of the two-part casing, the vertical grooves B, on opposite sides thereof the ways in said grooves, the valve stem, and its operating devices; with the gates suspended on said stem having interlocking lugs and sockets on their opposed faces and the diametrically opposite wings to prevent rotation of the gates by contact with the ways, substantially as and for the purpose described.

572,452. CIGAR-CUTTING ATTACHMENT FOR LEAD-PENCILS. MATHILDE SCHOTT, Brooklyn, N. Y. Filed June 12, 1895. Serial No. 552,563. (No model.)



Claim.—A cigar-cutter attachment comprising a tube of restricted diameter to fit the end of a lead-pencil or the like and compressed at a suitable point of its length to form a widened flattened portion and provided in said flattened portion with an enlarged opening extending close to the edges thereof, and a movable knife or cutter working in said tube between the flattened sides and across the opening, substantially as shown and for the purpose described.

572,453. DRIVING-GEAR FOR MOTOR-CARS. HERMANN SCHUMM, Cologne, Germany, assignor to the Gas-Motoren-Fabrik-Deutz, Cologne-Deutz, Germany. Filed June 30, 1896. Serial No. 597,630. (No model.)



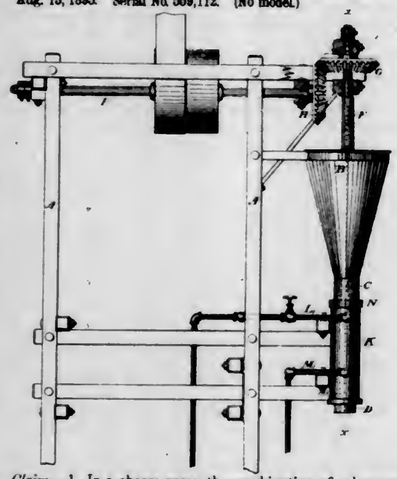
Claim.—In variable-speed gear for motor-cars wherein the motor-shaft A running at a constant speed, imparts a fast or slow motion to an intermediate shaft by means of fast-speed gear *c d*, and slow-speed gear *m n*, the combination with the intermediate shaft B of a slow-speed toothed wheel *n* mounted loose thereon and carrying a ratchet-wheel *e* gearing with a pawl *f* carried by the shaft B, which ratchet-gear transmits the motion to the shaft B when the wheel *n* is being driven by shaft A and wheel *m* but when the shaft B is driven through the fast-speed gear, the pawl *f* will be automatically disengaged from the ratchet-wheel *e* by centrifugal action, and will thus prevent the motion of shaft B from being imparted to the slow-speed gear, substantially as described.

572,454. TILE. ANTHONY SHELMERDINE, Liverpool, England, assignor to the National Opalite Glazed Brick and Tile Syndicate, Limited, London, England. Filed Oct. 24, 1895. Serial No. 566,769. (No specimens.) Patented in England June 26, 1893, No. 12,472.



Claim.—A slab or sheet of glass, as opal or colored or partly-colored glass, having a granular back, consisting of finely-broken glass or sand fixed thereon by a fluxing material.

572,455. CHEESE-PRESS. LOUIS SIGMUND, Naperville, Ill. Filed Aug. 13, 1895. Serial No. 559,112. (No model.)

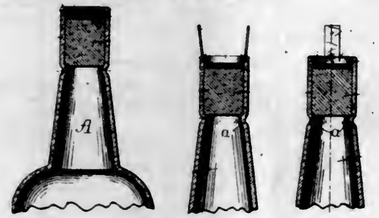


Claim.—1. In a cheese-press, the combination of a hopper having a flanged extension, a cylinder having a flange abutting against the flange of said extension, a jacket encircling the cylinder, with its end engaging the cylinder-flange, and a flanged coupling engaging the jacket and the hopper-flange, substantially as and for the purpose shown.

2. In a cheese-press, the combination of a hopper having a flanged extension, a cylinder, having a portion of its interior tapered, and provided with a flange abutting against the flange of said extension, a jacket encircling the cylinder, steam-pipes communicating with the space between the jacket and cylinder, at opposite points, and a flanged coupling, engaging the jacket and the hopper-flange, substantially as and for the purpose set forth.

572,456. NON-REFILLABLE BOTTLE. FRANCIS P. SIVITER, U. S. Army. Filed Apr. 7, 1896. Serial No. 586,540. (No model.)

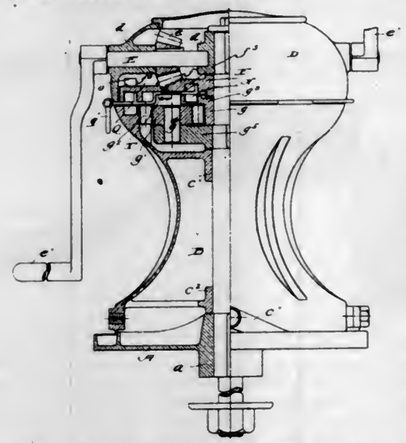
Claim.—1. The combination, with a bottle having a neck adapted to receive a cork or stopper, and having a pair of thin strips formed integral therewith on opposite sides of the mouth thereof in the manufacture of the same, of a stopper fitting in said neck, and the said strips being adapted to be softened by heat and bent over upon each other above said stopper, and to be easily broken when the stopper is to be removed, substantially as described.



2. The combination, with a bottle having a neck adapted to receive a cork or stopper, and having a pair of thin strips formed in recesses on opposite sides of the mouth thereof, by drawing out the glass in the manufacture of the said bottle, of a stopper fitting in said neck, and a protective disk imposed upon said stopper, the said strips adapted to be softened by heat and bent over upon said protective disk, and then fused together, substantially as described.

3. A bottle provided with a pair of thin strips extending upward from opposite sides of the mouth thereof and formed thereon by drawing out the glass in the manufacture of the bottle, the said strips being adapted to be bent over across the mouth of the bottle and overlap each other and to be fused together, by the application of heat, after the insertion of the cork, substantially as described.

572,457. CAPSTAN. HENRY L. SMITH, Seekonk, Mass., assignor to the American Ship Windlass Company, Providence, R. I. Filed June 3, 1896. Serial No. 594,141. (No model.)



Claim.—1. In a crank-capstan, substantially such as herein described, the combination with a crank-operated driving-shaft, a rotatable driving disk or plate geared with said shaft, a capstan-barrel, and a compound gear, of two independent sets of pawls all carried by said rotatable driving disk or plate and adapted to engage with said capstan-barrel or with the compound gear, and a single pawl-tripper also carried by the rotatable driving disk or plate in operative relation to all of the pawls and adapted to throw one set of pawls into engagement with the barrel or the other set of pawls into operative relation to the compound gear, whereby the single pawl-tripper may control the pawls and cause the capstan-barrel to be rotated in either direction and at variable speeds from the driving-shaft, as set forth.

2. In a crank-capstan, the combination with a capstan-barrel, of a driving mechanism substantially such as specified, embracing a compound gear, two sets of pawls of reverse hand, and a single pawl-tripper carried by the driving mechanism and arranged at all times in operative relation to the two sets of pawls, said pawl-tripper engaging normally with one set of pawls to hold the same out of action and free from the other set of pawls to adapt the latter or free set of pawls to engage with said capstan-barrel and compound gear, whereby the capstan-barrel may be rotated in either direction by adjustment of the pawl tripper and at either fast or slow speed by reversal of the crank-shaft of the driving mechanism, as set forth.

3. In a crank-capstan, substantially such as described, the combination with a crank-operated driving-shaft, and a rotatable driving disk or plate geared thereto, of a capstan-barrel having a plurality of pawl-pockets, two independent sets of pawls of reverse hands all carried by said rotatable disk or plate and two pairs of which pawls are arranged to engage alternately with said capstan-barrel, a compound gear engaging with said capstan-barrel and arranged in such relation to the driving disk or plate as to enable two other pairs of pawls to engage alternately with said compound gear, and a single slidable pawl-tripper carried by said rotatable driving plate or disk in operative relation at all times to the whole series of pawls and adapted to permit two pairs of pawls to engage with the capstan-barrel or with the compound gear, for purposes described, substantially as set forth.

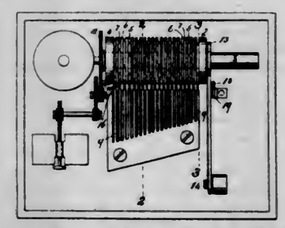
4. In a crank-capstan, the combination with a driving-shaft, a capstan-barrel, a compound gear, and a rotatable driving disk or plate, of two sets of pawls of reverse hand carried by said driving disk or plate in position to engage with said capstan-barrel and with one member of the compound gear, and a slidable tripper-plate carried by said driving-disk in operative relation to all the pawls and adapted to hold one set of pawls out of action while allowing the other sets of pawls to engage with the barrel and compound gear, each pawl having a beveled face and a beveled heel or lug to ride upon a projection on the pawl-tripper plate, as and for the purposes described.

5. In a crank-capstan, the combination with a driving-shaft, a barrel, and a compound gear, of a rotatable driving disk or plate between said driving-shaft and compound gear, and provided with a plurality of pawl-pockets two sets of vertically-slidable pawls of reverse hand which are fitted in the pockets of driving plate or disk and either set of pawls adapted to have its members engage with said barrel or the compound gear according to the direction of rotation of the driving-shaft, and a slidable pawl-tripper attached to said driving plate or disk and having means to engage with either set of pawls to throw them out of operative relation to the barrel and compound gear and leave the other set of pawls free to engage with said barrel and compound gear, as set forth.

6. In a crank-capstan, the combination with a driving-shaft, a barrel, and a compound gear, of a driving plate or disk, a set of pawls of one hand carried by said driving plate or disk, as O, O', P, P', another set of pawls of reverse hand, as M, M', N, N', also carried by said driving plate or disk, and a pawl-tripper slidably attached to the driving disk or plate and engaging with either set of pawls to throw them out of operative relation to the barrel and compound gear, as and for the purposes described.

7. In a crank-capstan, the driving plate or disk having a number of pawl pockets, the two sets of pawls of reverse hand slidably fitted in the pockets of said disk or plate and each pawl having a beveled heel, and a pawl-tripper attached to said driving disk or plate and having two sets of cam-lugs corresponding in number to the pawls of the two sets, each set of cam-lugs arranged to ride against the beveled heels of its corresponding set of pawls to raise them when the pawl tripper is in one position and to lower said pawls when the tripper is reversed, in combination with a capstan-barrel, a driving-shaft geared to the plate or disk, and a compound gear, the whole arranged and combined for service as and for the purposes described.

572,458. MECHANICAL MUSICAL INSTRUMENT. OTTO SORGAN, New York, N. Y. Filed Feb. 14, 1896. Serial No. 579,307. (No model.)



Claim.—1. A roller or cylinder combined with tongues or contactors, said cylinder having a depression or groove allowing said cylinder to be moved longitudinally from and into place past the contactors substantially as described.

2. A musical instrument having a non-rotary shaft fixed therein and provided with a free end portion, and a roller or cylinder adapted to rotate upon said shaft and to slip onto and off of said shaft while the latter remains in its fixed position in the instrument, substantially as described.

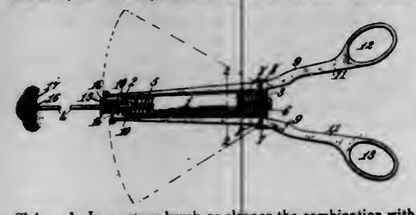
3. A cylinder having slots or cuts with picks or interruptions,

sounding-tongues made to project into said slots so as to lie in the paths of the picks, and dampers having arms made to extend parallel with the tongues into said slots substantially as described.

4. A cylinder having slots or cuts with picks or interruptions, sounding-tongues made to project into said slots so as to lie in the paths of the picks, and dampers having spring supported forks made to embrace the tongues, said dampers having arms made to extend parallel with the tongues into said slots substantially as described.

5. A cylinder having a coved or depressed part, and tongues with which the cylinder can register its coved part in order to be longitudinally mounted or dismounted, and a stop with which the cova part is made to register during mounting or dismounting substantially as described.

572,459. ROTARY BRUSH OR CLEANER. JOSEPH W. STARRITT, Richmond, Va. Filed Apr. 2, 1896. Serial No. 585,963. (No model.)



Claim.—1. In a rotary brush or cleaner the combination with a rotary brush-spindle journaled and extending longitudinally in a suitable casing and having secured thereon a brush and a drum or spool, of a spring for rotating said brush-spindle in one direction, pivoted oscillating levers extending longitudinally at opposite sides of the brush-spindle, and cords wound about said drum or spool and attached at their ends to the ends of said oscillating levers, whereby when said levers are oscillated the brush-spindle is rotated by said cords and spring alternately in opposite directions, substantially as described.

2. In a rotary brush or cleaner, the combination with a tubular casing 1 having heads 2 3 inserted in its opposite ends, of a rotary brush-spindle 4 journaled in said heads and having mounted thereon a fixed drum or spool 15, a coiled spring 5 disposed within said casing and attached at one end to the casing and at its other end to the brush-spindle, lugs 7 on the opposite sides of the rear end of the casing, bent oscillating levers 9 pivoted to said lugs and provided at their rear ends with eyes or loops 12 13 adapted to be engaged by the finger and thumb of the operator, and cords wound about said drum or spool and attached at their ends to the forward ends of the oscillating levers, substantially as described.

572,460. NUT-LOCK. JOSEPH P. VAN DERVEER, Clanton, Ala. Filed Oct. 1, 1896. Serial No. 607,577. (No model.)



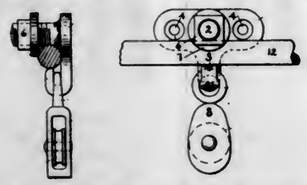
Claim.—1. In a nut-lock, the combination with an ordinary bolt and nut, of a covering plate adapted to be placed over the bolt to embrace the nut, said covering-plate having means which engage a fixed object and a concentric series of perforations or recesses; together with a supplemental nut, and a pawl carried by said nut to engage the perforations or recesses in the covering-plate, substantially as shown and for the purpose set forth.

2. In a nut-lock, the combination with an ordinary bolt and nut, of a covering-plate which engages the nut and a fixed object, and a supplemental nut in engagement with the bolt, one of the parts having a series of perforations or recesses and the other a pawl which engages therewith, substantially as shown and described.

3. In a nut-lock, the combination with an ordinary bolt and nut, of a covering-plate E which engages the nut and a fixed object and is provided with a series of perforations or recesses, a supplemental nut F in engagement with the bolt, a pawl or spring-bar F' secured to the supplemental nut and provided with a loop *f* and adjoining straight portion; together with a link G in engagement with the spring bar or pawl, substantially as shown and for the purpose set forth.

4. In a nut-lock, the combination with an ordinary bolt and nut, of a covering-plate constructed to present inwardly-projecting members, a base which contacts with a stationary object, an opening for the bolt, and a series of perforations or recesses surrounding said opening; together with a supplemental nut, a spring-bar secured thereto and provided with a loop and adjoining straight portion, and a link in engagement with the spring-bar, substantially as shown and for the purpose set forth.

572,461. AWNING-FIXTURE. FRANK A. WAGNER, Cleveland, Ohio. Filed Apr. 8, 1896. Serial No. 586,682. (No model.)



Claim.—1. The combination in an awning-fixture, of a plate, a post projecting therefrom, one or more hooks depending from said plate, and a flanged nut threaded to said post, substantially as and for the purpose set forth.

2. The combination in an awning-fixture, of a plate, a post projecting therefrom, one or more hooks depending from said plate, an awning-rod carried by said hooks, and a nut threaded to said post and bearing on the front of said rod, substantially as and for the purpose set forth.

3. The combination in an awning-fixture, of a plate, a post projecting therefrom, one or more hooks depending from said plate, sheave-blocks suspended from and an awning rod carried by said hooks, and a nut threaded to said post and bearing on the front of said rod, substantially as and for the purpose set forth.

572,462. LIQUID-BLACKING BRUSH. LEMUEL M. WHISENHANT, Perdue Hill, Ala. Filed May 16, 1896. Serial No. 591,804. (No model.)



Claim.—The combination with a blacking brush of ordinary construction of a dauber therefor, made up of a casing adapted to contain liquid blacking having a brush upon its lower end and an opening therethrough, a tube extending upwardly from said opening provided with perforations at points near its lower end, a cap for said tube normally covering the perforations therein, a screw normally bearing against the upper end of said cap and means whereby said screw may be turned, substantially as and for the purpose described.

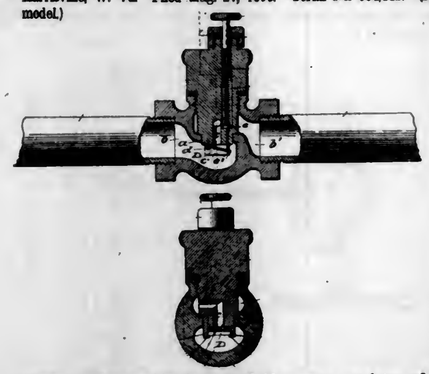
572,463. BICYCLE-TIRE. ROBERT S. WILLIAMS, Merchantville, N. J. Filed June 8, 1896. Serial No. 594,725. (No model.)



Claim.—1. The combination of an inflatable main tire, with a supplementary tire, having ribs on its inner surface so constructed that when the main tire is inflated there will be permanent channels between the outer face of the inflated tire and the inner face of the supplementary tire, substantially as specified.

2. The combination of an inflatable tire, with an elastic supplementary tire having ribs on its inner surface so constructed that when the main tire is inflated there will be permanent channels between the outer face of the inflated tire and the inner face of the supplementary tire, substantially as specified.

572,464. FLUID-PRESSURE REGULATOR. ISAIAH W. WOODS, Harrisville, W. Va. Filed Aug. 27, 1896. Serial No. 604,112. (No model.)



Claim.—1. The combination in a fluid-pressure regulator, of a valve-casing having two chambers separated by a partition with an opening through the same; a plug located in the valve-casing and provided with a passage-way connecting the chambers therein; a swinging valve or gate adapted to move toward the inlet end of the passage-way; together with a tension device consisting of a spring-actuated plunger bearing against the swinging valve and an adjusting-screw for regulating the spring-pressure upon said valve, substantially as shown and for the purpose set forth.

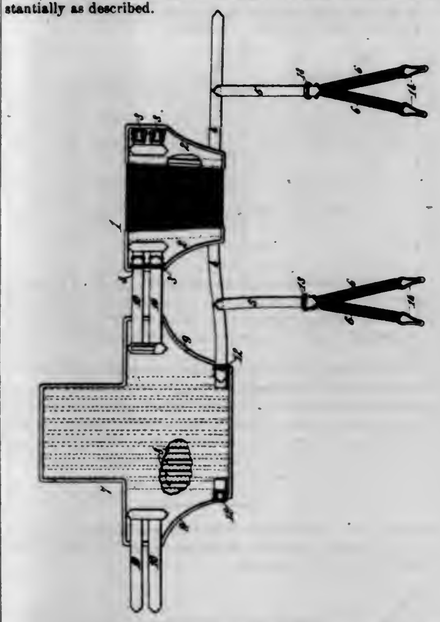
2. The combination in a fluid-pressure regulator, of a valve-casing having two chambers separated by a partition with an opening through the same; a plug located within the valve-casing and provided with a passage-way connecting the chambers; a swinging valve located in the inlet-chamber and adapted to move toward the inlet end of the passage-way of the plug; a rod positioned in the plug and bearing against the free end of the valve; a spring bearing upon the rod, and a thumb-screw for adjusting the tension of the spring to increase or diminish the pressure upon the swinging valve, substantially as shown and for the purpose set forth.

3. The combination in a fluid-pressure regulator, of a valve-casing having chambers connected to induction and eduction pipes; a plug located within the valve-casing and provided with a passage-way connecting the chambers and with depending wings or guides on opposite sides of the inlet end of said passage-way; a swinging valve or gate located between the wings or guides; together with a tension device consisting of a rod positioned in a vertical opening through the plug and bearing upon the free end of the swinging valve, said rod having a collar rigidly secured thereto, a helical spring encircling the rod and in engagement with the collar, and a hollow thumb-screw bearing upon the upper end of the spring to increase or diminish the pressure of the rod upon the swinging valve, substantially as shown and for the purpose set forth.

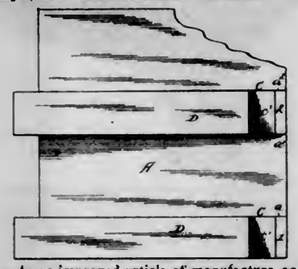
4. The combination in a fluid-pressure regulator, of a valve casing having chambers connected to induction and eduction pipes; a plug located within the valve-casing and provided with a passage-way connecting the chambers and with depending wings or guides on oppoelte sides of the inlet end of said passage-way; a swinging valve or gate located between the wings or guides so that the free end thereof will be adjoining the end wall of the chamber opposite the inlet end thereof; together with a tension device consisting of a rod positioned in a vertical opening through the plug and bearing upon the free end of the swinging valve or gate, said rod having a rigid collar, a helical spring mounted upon the rod to bear upon the collar, a thumb-screw bearing upon the upper end of the spring to increase or diminish the pressure of the rod upon the valve, and a nut and washer encircling the upper part of the thumb-screw, substantially as shown and for the purpose set forth.

572,465. ABDOMINAL SUPPORTER. SALLIE M. WOOLFOLK and NANNIE U. NEY, Orange, Va. Filed Nov. 29, 1895. Serial No. 570,468. (No model.)

Claim.—In an abdominal and dorsal support and hose-supporter, combined, a continuous back portion formed in a single piece supported by stays, and having lateral extensions above and below which said continuous portion extends, a front portion also formed in one piece and having elastic webbings interposed between and connected to two side pieces supported by stays, straps to connect the lateral extensions of the back to the upper ends of the side pieces, single straps to connect the lower ends of the side pieces to lower end of the back portion, and straps secured to said single straps at or near the middle points of the latter and provided with hose-clasps, substantially as described.

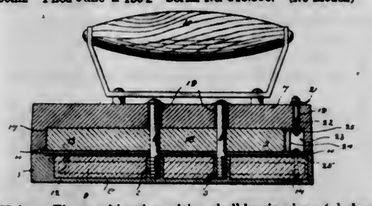


572,466. EGG-CARRIER. JOHN W. ALMACK, Coshocton, Ohio. Filed May 2, 1896. Serial No. 590,020. (No model.)



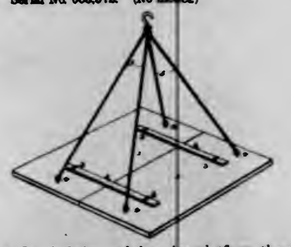
Claim.—As an improved article of manufacture, an egg-carrier, comprising a top, bottom and sides formed from an integral piece of pasteboard or other suitable material, a serpentine strip C so bent as to form portions *c'*, a flat strip D running longitudinally of the said egg-carrier, and in conjunction with strip C forming egg cases, substantially as set forth and described.

572,467. ELECTRIC HEATER. BURTON E. BAKER, New Britain, Conn. Filed June 4, 1894. Serial No. 513,390. (No model.)



Claim.—The combination with a shell having lugs 4, ledges 2 and stumps 5, of a resistance block and wire within the shell, screws 14 to which the ends of the resistance-wire are connected, a closing-plate 3 resting on the ledges 2 and the stumps 5, the said screws 14 passing through the closing-plate, the top plate 7 resting on the lugs 4 and having a recess in its under side, a non-conducting packing in said recess, and insulated screws which pass through the top plate the packing and the closing-plate and engage the stumps.

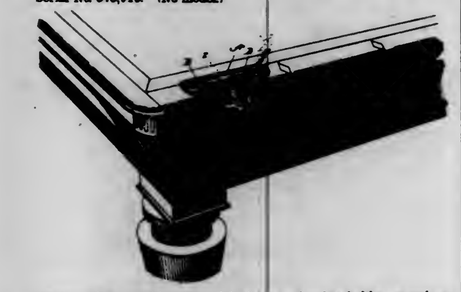
572,468. HOISTING AND DUMPING PLATFORM. JAMES D. BROWN and JOSEPH A. CLEAVELAND, Great Valley, N. Y. Filed Aug. 20, 1896. Serial No. 603,372. (No model.)



Claim.—1. In a hoisting and dumping platform, the combination of the two sections, the parallel bars hinged thereto, the eyes and hoisting-ropes and the bars secured to the under sides of said sections and projecting beyond the inner edges thereof, substantially as described.

2. In a hoisting and dumping platform, the combination with the sections, the parallel bars hinged thereto, the bars secured to the under sides of said sections and projecting beyond the inner edges thereof, the eyes and the hoisting-ropes, of the flaring spring-arms secured to one section, the oppositely-beveled catch secured to the other section, the pivoted cam, the operating-rod and the spring, substantially as and for the purpose described.

572,469. CIGAR-TRAY. JOSEPH BUCHTEL, Portland, Oreg., assignor of one-half to Eugene D. White, same place. Filed Dec. 31, 1895. Serial No. 573,916. (No model.)



Claim.—The combination with the tray having bridge members, of the upper clamping member pivotally attached to the bottom of said tray, the soft material covering the bottom of said tray and member, the lower clamping member pivotally connected to the upper one, and the interposed spring adapted to spread the handle portions of said clamping members, substantially as shown and described.

572,470. SAW-SHARPENING DEVICE. JOHN BURKE, Janesville, Wis. Filed Mar. 27, 1896. Serial No. 585,079. (No model.)

Claim.—1. In a saw-filing machine the combination with a clamp and means for moving same, of a yoke having a plurality of bearings, a file-arbor adapted to be mounted in any one pair of said bearings a file secured on said arbor and means for rotating said arbor.

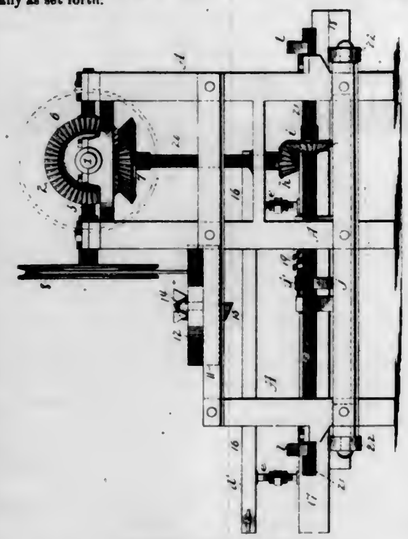
2. In a saw-filing machine the combination with a clamp and means for moving the same to feed the saw, of a two-part yoke having a plurality of bearings, an arbor adapted to be mounted in any one pair of said bearings, means for locking the two parts of the yoke together, means for rotating the arbor and a file secured on said arbor.

3. In a saw-filing machine the combination with a rotary file of a clamp, extensible legs supporting the clamp and means for feeding the clamp toward and away from the saw and means for moving it longitudinally.

4. In a saw-filing machine, the combination with a file, of a feed-bar, means for intermittingly moving the feed-bar longitudinally, means for intermittingly and automatically moving it vertically, and a saw-clamp carried by said feed-bar.

5. In a saw-filing machine, the combination with a file, a feed-bar and a clamp, of a worm and shaft, a friction-wheel on the worm-shaft, a rotary shaft, and a segment carried by the rotary shaft and adapted to engage the friction-wheel on the worm shaft.

6. In a saw-filing machine the combination with a file, a clamp and a feed-bar, the clamp and feed-bar being secured together of means for moving the feed-bar longitudinally, a rotary shaft, cams thereon, and levers resting under the feed-bar and cams and operated by the latter for moving the feed-bar and clamp vertically, substantially as set forth.



572,471. CAN-COVER. GEORGE E. BURNHAM, Minneapolis, Kans. Filed Feb. 11, 1896. Serial No. 578,872. (No model.)



Claim.—The combination with the can, of a cover having a depending flange fitted within said can and provided with an opening in the top thereof with a closure therefor, an expansible band mounted on the upper edge of the cover and having ears extending at right angles therefrom, a screw-bolt threaded in the said ears and an elastic band around the outer surface of the expansible band, all substantially as described.

572,472. ANODE FOR ELECTROLYTIC PROCESSES. HAMILTON Y. CASTNER, London, England. Filed July 26, 1895. Serial No. 557,238. (No specimens.) Patented in England Oct. 20, 1893, No. 19,089, and in France Aug. 11, 1894, No. 240,684.

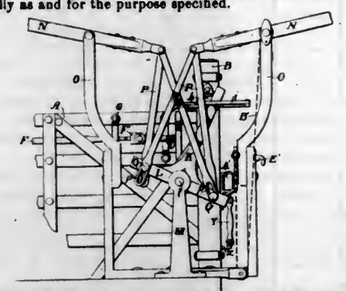
Claim.—1. The process of producing carbon electrodes for electrolytic processes which consists in submitting a shaped electrode of gas-retort or like carbon while protected from contact with air to the intense heat produced by passing an electric current therethrough, substantially as and for the purpose described.

2. A carbon electrode for electrolytic processes composed of graphitized carbon of decreased density and increased conductivity as compared with a gas-retort or like carbon from which it has been produced and also more capable of withstanding the combined action of chlorin, oxygen and water, as described.

572,473. FARM-GATE. LOUIS P. COTA and ISAAC L. EDWARDS, Aurora, Ill. Filed Aug. 13, 1895. Serial No. 559,131. (No model.)

Claim.—1. The combination of the gate, the pivoted frame or part, connections between it and the gate, an operating-lever, and a connection between the latter and the frame on each side of the pivot

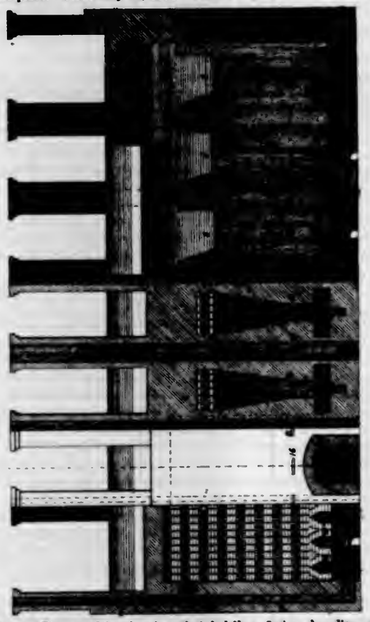
thereof, adapted to allow movement of the frame, independent of the lever, after being started by the latter, whereby said lever, by alternate action on said connections, may open and close the gate, substantially as and for the purpose specified.



2. The combination of the gate, the swinging frame or part connected therewith, the operating-lever, and the two bars having slotted connections with said part on opposite sides of its center, substantially as and for the purpose set forth.

3. The combination of the swinging gate, the lever connected therewith having a slotted arm, the swinging frame or part having an arm engaging said slotted arm, the two operating-levers, and the two bars extending between each lever and the swinging part, having slotted connections with the latter upon opposite sides of its pivot, substantially as and for the purpose shown.

572,474. BRICK-KILN. JOHN T. CULLEN, Edwardsville, Ill., assignor of two-thirds to John J. Coldiron and James Walter Wooten, same place. Filed May 28, 1894. Serial No. 512,587. (No model.)



Claim.—The combination in a brick-kiln, of the plurality of direct leads from the furnace to the interior of the kiln, the openings being approximately equidistant apart, dampers in the said direct leads, the fire-bags 6 expanded at their tops, and provided with dampers, a plurality of chimneys opening from the upper part of the kiln, and provided with dampers and a plurality of chimneys provided with dampers leading from flues under the perforated floor of the kiln; substantially as described.

572,475. GATE. ALBERT DAVISON, Belvidere, Ill. Filed Mar. 17, 1896. Serial No. 583,540. (No model.)

Claim.—1. The combination of the crane having a vertically-elongated bolt-seat, the gate movable vertically upon the crane and the bolt movable longitudinally along the gate and into and out of the vertically-elongated bolt-seat of the crane substantially as set forth.



2. The combination of the crane having the vertically-elongated bolt-seats on opposite sides the latch-post having the opposite vertically-elongated bolt-seats, the gate hinged to and movable vertically upon the crane, the oppositely-movable bolts seating in the bolt-seats of the hinge-post and crane the lever for operating the bolts and the lever by which to lift the gate substantially as set forth.

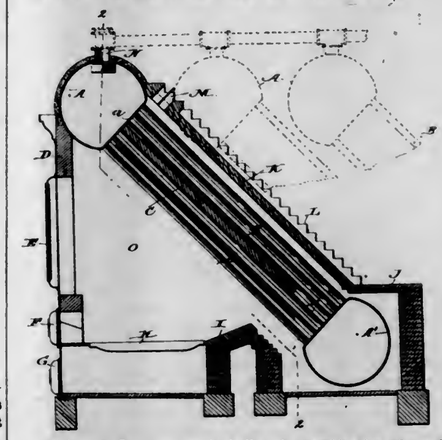
3. The combination of the crane, a vertically-elongated bolt-seat closed at both ends at or near the hinged end of said crane, the gate jointed to the swinging end of said crane and the bolt movable longitudinally along the gate and into and out of the bolt-seat upon the crane substantially as shown and described.

4. The combination of the crane having upper and lower beams, the gate having a bearing sliding vertically between said beams and the lever arranged between said upper and lower beams of the crane and engaging the bearing of the gate substantially as set forth.

5. The combination of the crane having upper and lower beams, a guide-rod connecting said beams near their swinging ends, the opposite battens connecting said beams near their swinging ends, the gate having an eye sliding on said guide-rod and the lever pivoted to and between said battens and between the upper and lower beams and engaged with the eye on the gate all substantially as shown and described.

6. The combination of the latch-post and crane having latch-seats, the gate jointed to said crane and having reversely-operating longitudinally-movable latches movable into and out of the latch-seats of the crane and latch-post the lever by which to throw said latches into and out of latched position and a button by which the said lever may be locked in position to hold the latches in their seats substantially as shown and described.

572,476. WATER-TUBE BOILER. CHARLES EDGERTON, Philadelphia, Pa. Filed Feb. 3, 1896. Serial No. 577,885. (No model.)



Claim.—1. In a water-tube boiler, the combination of a cylindrical drum having a flat side, water-tubes secured in said flat side, and transverse braces of a U-shaped cross-section made straight through their middle parts and riveted to the interior of the flat sides of the drum and having their ends curved to correspond to the circle of the drum and riveted to the circular sides substantially as shown and described.

2. In a water-tube boiler, the combination of a cylindrical drum having a flat side, two sets of water-tubes connecting therewith, one for downward, and the other for upward circulation, a series of nar-

row braces arranged upon the inside of the flat portion of the boiler and between the rows of tubes, and broad U-shaped braces arranged in the same relation to the drum but receiving between its flanges the tubes for the downward circulation substantially as and for the purpose described.

572,477. BOTTLE. DOLPH EDWARDS, Sanford, Fla., assignor of one-half to John C. Thorpe, same place. Filed July 8, 1896. Serial No. 598,417. (No model.)



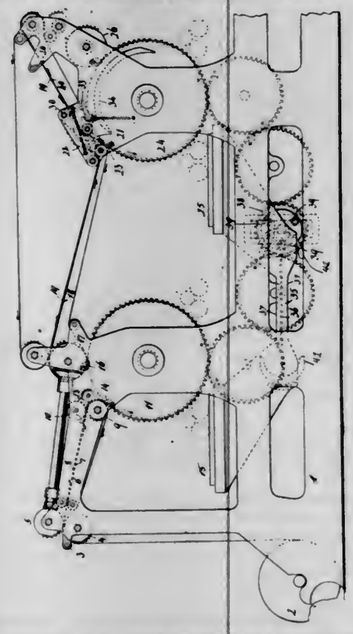
Claim.—1. The neck having an internal circumferential groove and a perforation leading thereto through which the key may be inserted, the securing-plug having an external circumferential groove and fitted in the neck with the said grooves in register or coincident and the key in said grooves and locking the securing-plug in place substantially as shown and described.

2. The improved bottle herein described comprising the neck provided internally and externally with circumferential grooves arranged opposite each other and provided above said grooves with an internal circumferential groove and with a perforation leading thereto through which the key may be inserted, the sealing-plug fitting in said neck below its said pair of grooves, the securing-plug fitted in the neck above the pair of grooves and having an external groove and the key all substantially as and for the purposes set forth.

3. A bottle-neck having an internal groove, and a hole through the neck of the bottle leading to said groove, the securing-plug having a groove registering with the internal groove in the bottle-neck and the key passed through the hole in the neck and into the grooves of the said neck and plug all substantially as shown and described.

4. A bottle-neck having internal and external circumferential grooves arranged opposite each other and rendering the bottle breakable at such point without slivering and having between such grooves and the mouth of said neck an internal circumferential groove for the locking-key and a hole through the neck leading to said groove for the insertion of the locking-key substantially as shown and described.

572,478. PRINTING-PRESS. GEORGE P. FENNER, New London, Conn. Filed Nov. 21, 1895. Serial No. 569,692. (No model.)



Claim.—1. A press provided with feeding-rollers, impression-cylinders and type-beds respectively made to print different sides of the sheet, a delivery-roller and carriers for moving the sheet from one cylinder toward another, a stop for arresting the sheet and fingers or pressers made to move an edge of said sheet into engagement with the second impression-cylinder substantially as described.

2. A press provided with feeding-rollers and with a cutting or perforating roller with which one of said feeding-rollers is made to coöperate, combined with supplemental feed-rollers adapted to tear off the sheet at the place of cutting or perforation, impression-cylinders and type-beds respectively made to print different sides of the sheet, a delivery-roller and carriers for moving the sheet from one cylinder toward another, a stop for arresting the sheet, and fingers or pressers made to move an edge of said sheet into engagement with the second impression-cylinder substantially as described.

3. A printing-press comprising two type-beds, combined with two impression-cylinders, a conveyer or carrier for taking a sheet from one cylinder to another, and fingers or pressers normally separated to allow a sheet to pass therebetween, and mechanism substantially as described to actuate said fingers and move the sheets into engagement with the second impression cylinder substantially as described.

4. The combination in a printing-press, of type-beds, with two impression-cylinders, the first one of which is made to grasp the leading end or head of the sheet, and devices actuated by the second impression-cylinder for causing the tail end of the sheet to be engaged by said second impression-cylinder to reverse the direction of travel of the sheet, substantially as described.

5. A printing-press, comprising two impression-cylinders, one of which is made to grasp the leading end or head of the sheet while the other, or second impression-cylinder, is made to grasp the tail of the sheet to reverse the direction of travel thereof, combined with type beds and fingers or pressers actuated by the second impression-cylinder and made to move the tail of the sheet into engagement with said second impression-cylinder, substantially as described.

6. A press provided with feeding-rollers and with a cutting or perforating roller with which one of said feeding-rollers is made to coöperate, combined with supplemental feed-rollers adapted to tear off the sheet at the place of cutting or perforation, tapes or carriers between the feeding-rollers and the supplemental feeding-rollers, impression-cylinders and type-beds respectively made to print different sides of the sheet, a delivery-roller and carriers for moving the sheet from one cylinder toward another, a stop for arresting the sheet, and fingers or pressers made to move an edge of said sheet into engagement with the second impression-cylinder, substantially as described.

7. A press provided with feeding-rollers, impression-cylinders and type-beds respectively made to print different sides of the sheet, carriers for moving the sheet from one cylinder to another, stop fingers for arresting the sheet, and fingers or pressers made to move an edge of the sheet to engaging position by said second impression-cylinder, said stop fingers being alined so as to bring the sheet into adjustment for proper engagement by said second impression-cylinder substantially as described.

8. A printing-press for printing different sides of a sheet comprising a pair of printing-surfaces one of which is made to hold the sheet at its head while passing between said surfaces, and then to release said sheet, combined with a second pair of printing surfaces, carriers made to convey the sheet past said second pair of printing-surfaces until the tail of said sheet is in position to be grasped by one of said last-named surfaces, one of said last-named surfaces being made to grasp the tail of the sheet for moving said sheet between said last-named surfaces in the reverse direction to that in which said sheet arrived at said second pair of surfaces substantially as described.

9. A press provided with feeding-rollers, impression-cylinders and type-beds respectively made to print different sides of the sheet, carriers for moving the sheet from one cylinder to another, stop-fingers for arresting the sheet, and fingers or pressers made to move an edge of the sheet to engaging position by said second impression-cylinder, said fingers being made to form parts of levers and said second impression-cylinder being provided with a cam for actuating said finger-levers substantially as described.

10. A press provided with impression-cylinders and type-beds, respectively made to print different sides of the sheet, carriers for moving the sheet from one cylinder to another, and fingers or pressers actuated by the second impression-cylinder and made to move one edge of the sheet into engagement with said second impression-cylinder, said carriers being spaced or interrupted to leave the edge of the sheet free for actuation by the fingers or pressers, substantially as described.

11. A printing-press comprising two impression cylinders, one of which is made to grasp the leading end or head of the sheet, the second impression-cylinder being made to grasp the tail of the sheet and reverse the latter, combined with type-beds and with fingers or pressers made to move said sheet-tail into engagement by said second impression-cylinder, and stationary supports or pivots for said fingers or pressers, substantially as described.

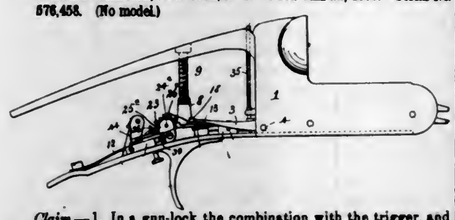
572,479. MACHINE FOR MAKING TWINE OR CORD. GEORGE FLORENCE, Newnan, Ga., assignor of one-half to R. D. Cole, Sr., same place. Filed Dec. 19, 1895. Serial No. 572,673. (No model.)



Claim.—1. In a machine of the character described, the combination with a rotating former-spindle, of a plurality of bobbin-supports rigidly connected to said former-spindle and rotating therewith, and a plurality of superimposed disks each provided with guides, secured above said bobbin-supports and rotating with said former-spindle, substantially as described.

2. In a machine of the character described, the combination with a rotating former-spindle, of a plurality of bobbin-supports adapted to rotate with said former-spindle, and a plurality of superimposed disks secured to said former-spindle and each provided with guides in the form of inverted frustums of cones, substantially as described.

572,480. SINGLE-TRIGGER LOCK FOR DOUBLE-BARREL GUNS. FRANK D. GRANGER, New York, N. Y. Filed Jan. 22, 1896. Serial No. 576,458. (No model.)



Claim.—1. In a gun-lock the combination with the trigger, and a plurality of sears, of a sliding sear-plate connected with the trigger, and means for shifting the same connected with and operated by the movement of the trigger.

2. The combination with a trigger, and a plurality of sears, of a sliding sear-plate on the trigger, a toothed wheel on the trigger engaging the plate, and means for turning the wheel.

3. The combination with a trigger, and a plurality of sears, of a sliding sear-plate on the trigger, a toothed wheel on the trigger engaging the plate, and a pawl normally stationary relative to the trigger for actuating the wheel.

4. The combination with a trigger, and a plurality of sears having lateral arms, of a sear-plate having lateral projections and sliding on the trigger, a toothed wheel on the trigger engaging the plate, and a pawl normally stationary relative to the trigger for actuating the wheel.

5. The combination, with a horizontally-sliding sear-plate, of an oscillating cam-surface, an indicator operated by said surface, and connections between said surface and the sear-plate whereby the former is shifted with the latter.

6. The combination, with a movable sear-plate, and an indicator, of a part having a cam-surface and moving transversely to the indicator and engaging the same, and a pivoted lever connected with said part and operated by the sear-plate.

7. The combination, of a trigger, a plurality of sears, mechanism whereby the latter are separately actuated by the trigger, a part having a cam-surface, an indicator operated by the same, a lever oscillating transversely to the indicator and connected with said part, and means whereby said mechanism actuates the lever.

8. The combination, of a trigger, a plurality of sears, mechanism whereby the latter are separately actuated by the trigger, a relatively stationary pawl engaging upon the return of the trigger a part of said mechanism carried by the trigger to shift said mechanism from one sear to the other, and means for limiting the return of the trigger and preventing jar-off.

9. The combination, of a trigger, a plurality of sears, mechanism whereby the latter are separately actuated by the trigger, a relatively stationary pawl engaging upon the return of the trigger a part of said mechanism carried by the trigger to shift said mechanism from one sear to the other, and the dog 40 and hook 39 for preventing the return, downward or forward movement of the trigger when the recoil takes place.

10. The combination of a trigger, a plurality of sears, mechanism whereby the latter are separately actuated by the trigger, a relatively stationary pawl engaging upon the return of the trigger a part of said mechanism carried by the trigger to shift said mechanism from one sear to the other, and a dog, stop or catch which controls the trigger at the time of recoil and prevents the return, downward or forward movement of the same.

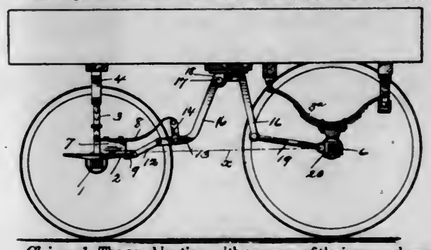
11. The combination of a trigger, a plurality of sears, mechanism whereby the latter are separately actuated by the trigger, a relatively stationary pawl engaging upon the return of the trigger a part of said mechanism carried by the trigger to shift said mechanism from one sear to the other, and means for preventing jar-off consisting of stops or catches such as a hook and a dog, one of which is movable, situated respectively on the trigger and fixed part of the lock, a spring controlling the movable stop, and means for throwing out one of said stops to permit the return, downward or forward movement of the trigger after a complete pull.

12. The combination with a trigger, of a hook on the same, a sliding and oscillating dog for engaging the hook to control the trigger, a spring controlling the dog, and means on the trigger for throwing the dog out of line with the hook to permit the return of the trigger.

13. In a single-trigger lock, means for preventing jar-off, consisting of the combination of a plurality of sears, mechanism for actuating said sears upon the backward movement or pull of the trigger, and a relatively stationary device or pawl engaging a part of said mechanism only after the recoil of the gun, to shift the said mechanism to another sear, substantially as set forth.

14. In a single-trigger lock means for preventing jar-off consisting of a trigger and sears, a sear-plate adapted to be shifted from one sear to another, a toothed wheel for shifting said plate, and a pawl arranged to take a new tooth on said wheel after the recoil and on the secondary pull of the trigger.

572,481. VEHICLE RUNNING-GEAR. BENJAMIN F. HALDEMAN, Pittsburg, Pa. Filed Mar. 23, 1896. Serial No. 584,508. (No model.)



Claim.—1. The combination, with a wagon, of the improved reach or tension apparatus, composed of a lever, having an upward bend and pivoted to the wagon-body at its angle, and links, pivoted to the pendent ends of said lever and connected with the front and rear axles, respectively, substantially as shown and described.

2. The combination, with a wagon, having a rear spring adapted to yield backward, of the improved adjustable reach or tension apparatus, composed of the inverted-U-shaped lever, attached at its angle to the wagon-body, and links, pivotally connected with the axles and pendent ends of the lever, which are normally above a straight line joining the axles, whereby, when the wagon-body is depressed, the links approach said line and thus practically lengthen the tension apparatus, as specified.

3. The combination, with a wagon having a rear spring adapted to yield backward, of a reach or tension apparatus composed of a lever arranged lengthwise of the wagon and having an upward bend and pivoted to the wagon-body at the front end of its top portion, links connected with the respective front and rear axles and the pendent ends of said lever which are normally above a straight line drawn between the axles, as and for the purpose specified.

4. The combination, with the wagon and the reach, or tension apparatus, composed of a lever and links connected with the rear axle

and fifth-wheel, of a spring rigidly secured to the fifth-wheel and flexibly connected at its rear end with said lever, as shown and described.

572,482. TEA-STRAINER. RALPH S. HAMILTON, Providence, R. I. Filed June 30, 1896. Serial No. 597,604. (No model.)



Claim.—The herein-described article of manufacture, comprising a spouted and handled vessel provided with a perforated cup-shaped strainer hinged by its outer edge to the outer edge of said vessel and adapted to lie within the same.

572,483. BAROMETER-INKSTAND. JOHN R. HANDY, Jameson, Mo. Filed Mar. 24, 1896. Serial No. 584,652. (No model.)

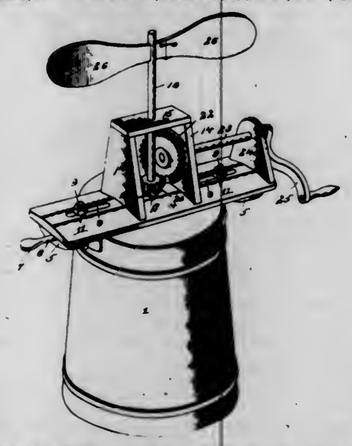


Claim.—1. A barometer-inkstand having a communicating dip-up and an overflow or expansion chamber communicating by an opening in its bottom with the interior of the reservoir, said chamber being open at its top to the exterior air, said dip-cup having a vertical passage the lower end of which lies in said cup and the upper end communicates with the interior of the reservoir, substantially as described.

2 A barometer-inkstand having a dip-cup communicating with a reservoir for the ink, and a separately-inclosed overflow, or expansion chamber, the lower end of the latter having an inlet and outlet opening for the ink below the normal level of ink in the dip-cup and an opening in its top for the inflow and outflow of air, substantially as described.

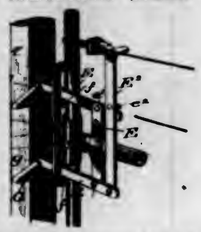
3. A barometer-inkstand having a vertical overflow or expansion chamber extending from a point below the top of the ink-reservoir to a point below the normal level of ink in the dip-cup, the lower wall of said chamber having an ink-inlet, and the upper wall an outlet, to the exterior, and a passage extending from the top of the reservoir to the level of the ink in the dip-cup the upper end of said passage communicating with the interior of the reservoir, substantially as described.

572,484. CHURN. JOHN A. D. HARPER and DANIEL R. SMITH, Magnolia, Ark. Filed Nov. 23, 1894. Serial No. 529,761. (No model.)



Claim.—In a churn attachment, the combination with a receptacle having a tapering body and the dasher, of a horizontal base-plate adapted to be arranged transversely above the receptacle and provided with oppositely-located longitudinally-disposed slots, dasher-operating mechanism supported on top of the base-plate, oppositely-located clamp-shoes 10, arranged below the base-plate and provided with upwardly-disposed threaded stems carrying binding-nuts 11, and having a vertical and longitudinal adjustment in said longitudinally-disposed slots, said clamp-shoes being provided with inner beveled faces 12 corresponding to the taper of the body of the receptacle, segmental shoe-plates 13 fitted to the inner beveled sides of the clamp-shoes, fixed brackets depending from the extremities of the base-plate, and set-screws 6, mounted in said brackets and working against the outer sides of said clamp-shoes, substantially as set forth.

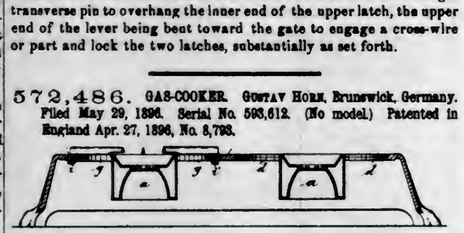
572,485. GATE-LATCH. WILLIAM J. HAYS, Decatur, Ill. Filed Feb. 26, 1896. Serial No. 580,778. (No model.)



Claim.—1. In a gate the combination with the upper and lower horizontal latches pivoted near their inner ends, of a lever pivoted at its lower end to the inner extremity of the lower latch, and provided with a pin to engage the inner end of the upper latch, the upper end of the lever having a lateral extension to engage a portion of the gate and lock the two latches, substantially as set forth.

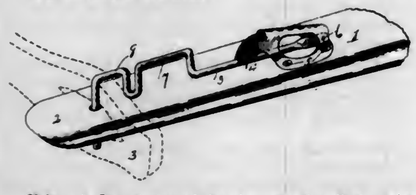
2. The combination with the gate having a vertical bar and a keeper at its free edge, of latches pivoted near their inner ends to the ends of the said bar and projecting through the keeper beyond the front end of the gate to engage the strikes, and a lever pivoted at its lower end to the inner end of the lower lever and having a transverse pin to overhang the inner end of the upper latch, the upper end of the lever being bent toward the gate to engage a cross-wire or part and lock the two latches, substantially as set forth.

572,486. GAS-COOKER. GUSTAV HORN, Brunswick, Germany. Filed May 29, 1896. Serial No. 593,612. (No model.) Patented in England Apr. 27, 1896, No. 8,793.



Claim.—A gas-stove comprising a frame having a cooking-aperture and a flange around the said aperture, in combination with a burner provided with arms resting on the said flange, and a movable ring having lugs engaging with the frame to lock it and the burner in place, all substantially as set forth.

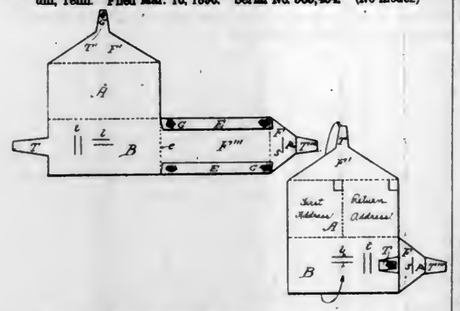
572,487. TRACE-HOLDER. GODFRIED LAUBE, Huron, S. D., assignor of one-half to A. Vandenburg, same place. Filed Sept. 9, 1896. Serial No. 605,245. (No model.)



Claim.—1. In a device of the character described, a piece of sheet metal bent to form a housing, ears formed with said housing for attachment to a singletree, an arm pivoted to said housing, said arm being bent to form a loop and having its end bent at right angles to the body, curved extensions formed with the housing, said extensions being beveled along their lower edges, as and for the purpose described.

2. A trace-holder consisting of a piece of sheet metal bent to form a housing, ears formed with said housing for attachment with the singletree, an arm pivoted in said housing, said arm having its outer end bent at right angles to the body, an extension formed with said housing, said extension having a curved end to engage said arm and hold it in a closed position, substantially as described.

572,488. ENVELOP. CHARLES LEE and EDWIN J. BALDWIN, Cardiff, Tenn. Filed Mar. 16, 1896. Serial No. 583,404. (No model.)



Claim.—1. In an envelop, the combination with one member having a double transverse slit in its body and a tongue at its end; of a contiguous member folded upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, and a tongue projecting from the outer end of the flap, substantially as and for the purpose set forth.

2. In an envelop, the combination with the back member having in its body double transverse and longitudinal slits, and a side flap provided with a lateral tongue; of a contiguous member folded upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, and a tongue projecting from the outer end of the flap, substantially as and for the purpose set forth.

3. In an envelop, the combination with the back member having in its body double transverse and longitudinal slits, a side wing, and a flap continuing beyond the outer edge thereof and provided with a tongue; of a contiguous member folding upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, and a tongue projecting from the outer end of the flap, substantially as and for the purpose set forth.

4. In an envelop, the combination with the back member having in its body double transverse and longitudinal slits and provided with an end tongue, two opposite side wings, flaps continuing beyond the outer edges thereof, and a tongue on each flap, one tongue being transversely perforated; of a contiguous member folding upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, and a tongue projecting from the outer end of the flap, substantially as and for the purpose set forth.

5. In an envelop, the combination with the back having in its body two parallel pairs of slits and a single pair at right angles thereto, and a long flap having a tongue for engagement with said single pair; of the front adapted to fold transversely upon the back, two flaps carried by said front, and tongues on these flaps adapted for engagement with said two pairs of slits, one tongue being perforated across its neck, as and for the purpose set forth.

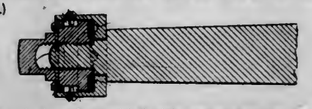
6. In an envelop, the combination with one member having in its body two pairs of longitudinal and one pair of transverse slits and provided with an end tongue, two opposite side wings, flaps continuing beyond the outer edges thereof, and a long tongue on each flap, one tongue being transversely perforated; of a contiguous member folding upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, and a tongue projecting from the outer end of the flap, substantially as and for the purpose set forth.

7. In an envelop, the combination with the back member having a longitudinal double slit, another member folded longitudinally thereon, narrow interned-edge strips on this folded member gummed to the back to form a pocket, and means for closing the open end of such pocket; of an address member folded transversely across the pocket, and having at its outer edge a flap and a gummed tongue, adapted to engage with said slits, as and for the purpose set forth.

8. In an envelop, the combination with the back member having a longitudinal double slit, another member folded longitudinally thereon, narrow interned-edge strips on this folded member gummed to the back to form a pocket, and means for closing the open end of such pocket; of two opposite side wings, flaps continuing beyond the outer edges thereof, and gummed tongues on such flaps, as and for the purpose set forth.

9. In an envelop, the combination with one member having a double transverse slit in its body and a tongue at its end; of a contiguous member folding upon the first and having a flap continuing beyond the end corresponding with said end tongue and provided with a transverse slit, a tongue projecting from the outer end of the flap, narrow edge strips on this folded member gummed to the back to form a pocket, and an address member folded over and secured to the whole, as and for the purpose set forth.

572,489. HUB-ATTACHING DEVICE FOR VEHICLE-AXLES. RICHARD LEHMANN, Brooklyn, N. Y., assignor of one-half to John A. Quell, same place. Filed May 22, 1896. Serial No. 592,650. (No model.)

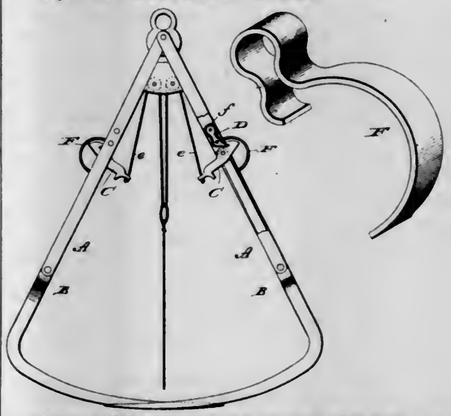


Claim.—1. An axle provided with a non rotary cap, a nut adapted to screw onto the axle and connected to the cap, said nut being rotatable independently of the cap and having longitudinal play respectively thereto, and a spring or washer interposed between the cap and nut for normally pressing or holding them apart substantially as described.

2. An axle provided with a non-rotary cap, a nut adapted to screw onto the axle and connected to the cap, said nut being rotatable independently of the cap and having longitudinal play respectively thereto, and a spring or washer interposed between and tending to separate the cap and nut, said spring and nut having engaging lugs and seats for connecting the spring detachably and non-rotatably to the nut, and said spring and cap having an engaging stud and recesses substantially as described.

3. An axle provided with a non-rotary cap, a nut adapted to screw onto the axle and connected to the cap, said nut being rotatable independently of the cap and having longitudinal play respectively thereto, and a spring or washer interposed between and tending to separate the cap and nut, said spring and nut having engaging lugs and seats for connecting the spring detachably and non-rotatably to the nut, said spring and cap having an engaging stud and recess, and said nut being provided with a detachable diaphragm or disk, said diaphragm and cap having engaging lugs and seats for locking the nut against rotation substantially as described.

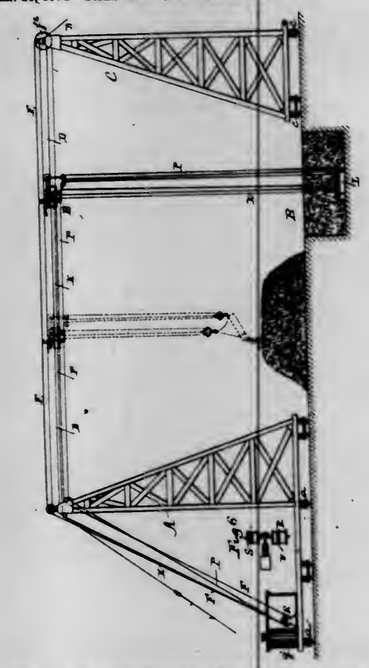
572,490. HAY-FORK. OVERTON H. LEWIS, Richards, Mo. Filed May 21, 1896. Serial No. 592,491. (No model.)



Claim.—1. The combination with a horse hay-fork having arms between which are rigidly secured stops, said arms carrying pivoted tines with catches which engage the stops; of spring-metal shields F which are bent at one of their ends to embrace the stops, the other part of the shields being shaped to extend outwardly beyond the arms and below the stops the free ends engaging the outer edges of the arms, substantially as shown and for the purpose set forth.

2. In combination with a horse hay-fork comprising a frame made up of parallel bars, tines pivoted between said parallel bars or plates, the upper end of each tine carrying a catch; of stops rigidly secured between the parallel bars or plates and shaped to present inwardly-curved side edges, and a shield F made up of a single strip of flat spring metal bent or looped at one end to conform to the configuration of the stop, as shown, the other part of said strip being curved in the segment of a circle and the outer end spread to engage the outer edges of the parallel bars below the upper end of the tine, substantially as set forth, whereby the shield will give when the tines impinge against the same.

572,491. CABLEWAY FOR CONVEYING AND DUMPING ROCK, &c. CHARLES H. LOCKER, Glasgow, Va. Original application filed Jan. 9, 1894, Serial No. 496,248. Divided and this application filed Mar. 29, 1894. Serial No. 505,572. (No model.)



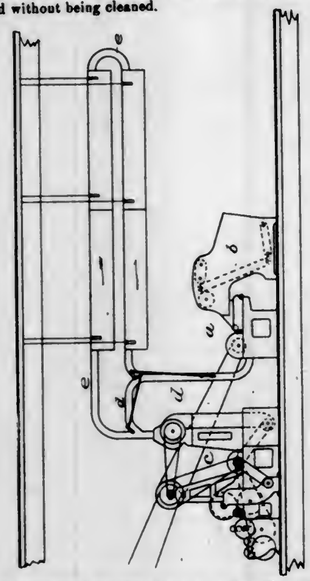
Claim.—1. The combination of a main supporting cable or track, a carriage traveling thereon, a drive-rope for moving the carriage, two independent ropes hanging from the carriage and connected to the front and rear ends of the bucket, two drums of the same diameter for operating the two independent ropes, a drum of different diameter therefrom, a frame extending across the drum formed of two shafts connected at their ends, and a rope guide sliding on said two shafts and through which the rope runs, said frame being pivoted in bearings and adjustable so as to hold the rope-guide at proper angle to the rope, substantially as and for the purposes set forth.

2. The combination of a main supporting cable or track, a carriage traveling thereon, a drive-rope for moving the carriage, two independent ropes hanging from the carriage and connected to the front and rear ends of the bucket, two drums of the same diameter for operating the two independent ropes, a drum of different diameter therefrom, a frame extending across the drum and formed of two shafts, one of which is pivoted in stationary bearings and the other having an adjusting-arm connected thereto and passing through an adjusting-sleeve, and a rope-guide sliding on the two shafts of said frame and through which the rope runs, substantially as and for the purposes set forth.

3. The combination of a main supporting cable or track, a carriage traveling thereon, a drive-rope for moving the carriage, two independent ropes hanging from the carriage, and connected to the front and rear ends of the bucket, two drums of the same diameter for operating the two independent ropes, a drum of different diameter therefrom, a frame extending across the drum formed of two shafts, a rope-guide having sleeves sliding on said shaft and through which the rope runs, an operating-lever, and an arm connecting said lever with the rope-guide by means of a pin on the lever entering a slot in the arm, substantially as and for the purposes set forth.

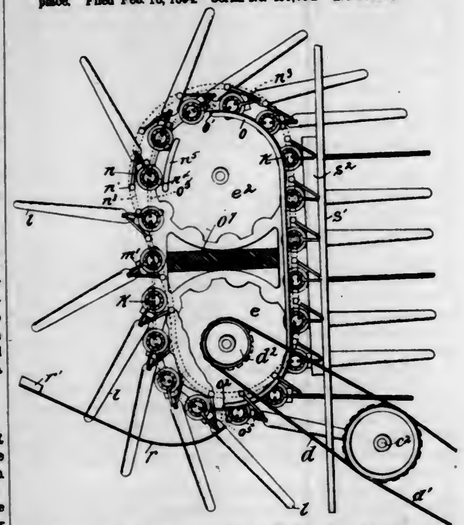
572,492. CONVEYER FOR TREATING COTTON STAPLE OR OTHER FIBER. ALBERT H. MORTON, Lowell, Mass., assignor to the Kitson Machine Company, same place. Filed July 20, 1896. Serial No. 599,960. (No model.)

Claim.—1. In a conveyer between fiber-treating machines, the combination with a conduit or conveyer provided with screens or grids for screening or cleaning the fiber, of a supplemental conduit or conveyer between the two machines, and connected with the said conduit or conveyer, so that the fiber may be transferred through either of said conduits or conveyers, and gates or doors for shutting either of said conduits or conveyers to the passage of fiber therethrough, whereby the fiber may be transferred and cleaned, or be transferred without being cleaned.



2. In a conveyer between fiber-treating machines, the combination with a conduit or conveyer provided with screens or grids for screening or cleaning the fiber, of a supplemental conduit or conveyer between the two machines, and connected with the said conduit or conveyer, so that the fiber may be transferred through either of said conduits or conveyers, gates or doors for shutting either of said conduits or conveyers to the passage of fiber therethrough, whereby the fiber may be transferred and cleaned, or be transferred without being cleaned, and a single device for controlling said gates or doors simultaneously, and in unison.

572,493. COTTON-PICKING MACHINE. WILLIAM A. TURNER, Chicago, Ill., assignor to the Chicago Cotton Picker Company, same place. Filed Feb. 10, 1894. Serial No. 499,764. (No model.)



Claim.—1. The combination with a picking-finger having an oblong transverse section, of means for axially rotating said finger while in the plant, a pair of cleaning surfaces between which said picking-finger is adapted to be passed flatwise, and means for stopping said finger flatwise with the plane of the opening between the cleaning-surfaces, substantially as described.

2. In a cotton-picking finger, the combination with a central support, of a pair of plates mounted one upon each side of said support, said plates tapering in width toward the free end of the finger and provided upon the edge with teeth or serrations slanting toward the free end, substantially as described.

3. A cotton-picking finger comprising the plates l^4 l^5 tapering in width and provided upon their edges with teeth slanting toward the narrow ends, said plates being mounted upon the central support l^3 formed integral with the shank l^2, substantially as described.

4. In a cotton-picking machine, the combination with the axially-rotatable flat picking fingers having a motion of translation in a closed path, of means for rotating the same during a portion of the cycle of translation, and means for maintaining the fingers with the dimension of width lying in a horizontal plane during another portion of the cycle, and a pair of cleaning-fingers between which said picking-fingers are adapted to be passed, substantially as described.

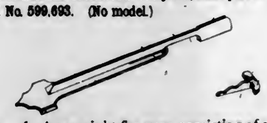
5. The combination with the vertical suppart, of the picking-fingers journaled therein and carrying the pinions k, the sprocket-wheel k^3, the sprocket-chain k^4 passing over said wheel k^3 and the lower of said pinions k engaging the opposite sides of intermediate pinions to rotate all of said picking-fingers in the same direction, the bevel-pinion k^2, the cup-shaped bevel-gear k^3 engaging therewith, said pinion k being mounted upon the same shaft with said bevel-gear k^2.

6. The combination with the axially-rotatable support; of the cam-roller n', the cam-channel n^3 in which said roller is adapted to travel, the cam-roller n^4 carried upon said support, and the cam-surface adapted to be engaged thereby to rotate the support, substantially as described.

7. The combination with an axially-rotatable picking-finger, comprising a central support and a pair of parallel plates mounted upon opposite sides thereof, picking-points located between the planes of said plates, and cleaning-surfaces between which said finger is adapted to be passed while moving parallel to the plane of said plates.

8. The combination with a picking-finger having picking points or surfaces upon two of it sopposite sides, of means for axially rotating said finger while in the plant, a pair of cleaning or stripping surfaces between which said picking-finger is adapted to be passed, and means for stopping the axial rotation of said finger with the sides not provided with picking-points in the plane of the opening between the cleaning-surfaces, substantially as described.

572,494. GUN-SIGHT. ANDREW E. VEON, Brainerd, Minn., assignor of one-half to Edward W. Lynch, same place. Filed July 18, 1896. Serial No. 599,693. (No model.)

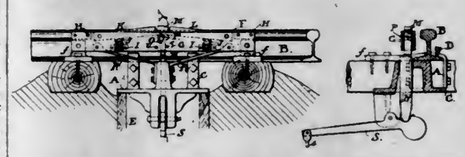


Claim.—1. A rear sight for guns, consisting of a sight-bar formed of a straight piece of metal mounted on its edge at the rear end thereof to a supporting-bar attached to means for securing it to the barrel of a gun, said sight-bar having its upper edge cut away from the rear end thereof to a point intermediate of the middle of said bar and the front end thereof, the remaining part of the edge being provided with a longitudinal groove in its upper surface, substantially as shown and described.

2. A rear sight for guns, consisting of a sight-bar formed of a straight piece of metal mounted on its edge at the rear end thereof to a supporting-bar attached to means for securing it to the barrel of a gun, said supporting-bar provided with a longitudinal slot at its forward end, said sight-bar having its upper edge cut away from the rear end thereof to a point intermediate of the middle of said bar and the front end thereof, the remaining part of the uncut-away edge being provided with a longitudinal groove in its upper surface, the lower edge of said sight-bar recessed for a distance and provided with means engaging in the slotted end of said supporting-bar for elevating the forward end thereof, substantially as shown and described.

3. A rear sight for guns, consisting of a sight-bar formed of a straight piece of metal mounted on its edge at the rear end thereof to a supporting-bar attached to means for securing it to the barrel of a gun, said supporting bar or plate provided with a longitudinal slot for a distance in its front end and having the end thereof bent upward, said sight-bar having its upper edge cut away from the rear end thereof to a point intermediate of the middle of said bar and the front end thereof, the remaining part of the uncut-away edge being provided with a longitudinal groove in its upper surface, the lower edge of said sight bar recessed for a distance intermediate of the front end and the middle of said bar to receive a stepped wedge for elevating said bar, said stepped wedge provided with a cross-head and the upper edge of said wedge engaging with the end of said supporting bar or plate and resting in the slot therein, substantially as shown and described.

572,495. AUTOMATIC SIGNAL PRESSURE-HEAD. JAMES H. WINSPEAR, Omaha, Nebr. Filed May 18, 1896. Serial No. 591,967. (No model.)



Claim.—1. An actuating device for working a pivoted lever, one end of which lever is attached to a train of gears or machine for railway signaling, opening and closing gates or switches, consisting of a pressure beam holding between its two side plates two bars bolted at one end flush with such plates and joined together in loose shackle at the other ends with the upper section or head of a drive pin; said bars resting on springs in such a manner as to elevate the ends of the bars and shackled pin above the upper edge of the beam side plates; said bars and pin being held down on the springs by a cross pin through the drive-pin working in slots in side plates of beam; such shackled pin controlled in its length of forward and backward oscillation between the two beam-plates by two cross-pins through pressure-beam, the lower section of driving-pin held and working up and down in an orifice through base-casting and seated on one end of a lever pivoted to base, said base-casting securely fastened and braced to rail and beam, so that when device is properly placed in position alongside of the rail of a railroad or tramway the wheel of any vehicle passing over such device on such rail of the railroad or tramway in one direction will drive down the upper section of pin against the lower section of pin driving it in turn against the end of the pivoted lever upon which it is seated and raising with force opposite end of lever, but a wheel of a vehicle passing over the device on a rail in opposite direction will drive down the upper section of pin forward of the lower pin, leaving the lower section of pin and pivoted lever undisturbed, substantially as and for the purposes set forth.

2. The combination of pressure-beam F holding the two bars K and L in loose shackle with drive-pin M, which drive-pin is controlled in its forward and backward oscillation by cross-pins T and U and in its up oscillation on springs J J by cross-pin P working in slot O lower drive-pin N working up and down in an orifice through base-casting A and seated on one end of pivoted lever S, placed in position to rail of railroad or tramway so that the wheel of a vehicle passing over and along such rail in one direction will press and drive down the two bars K and L and shackled drive-pin M against the lower pin N seated on lever S, or when passing on rail in opposite direction will press down drive-pin M forward of lower pin N, substantially as and for the purposes set forth.

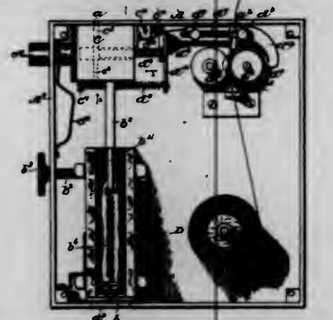
3. An actuating device, consisting of a pressure-beam, holding between its two slide plates two bars bolted at one end flush with said plates and joined together in loose shackle at the other ends with a drive-pin, said bars resting on springs in such a manner as to elevate the end of the bars and drive-pin above the upper edge of the beam side plates, bars and drive-pin held down on the springs by a cross-pin through the drive-pin working in slots in side plates of beam, such shackled drive-pin controlled in its length of forward and backward oscillation between the two beam-plates by cross-bolts through pressure-beam so that when device is properly placed alongside of a rail of a railroad or tramway a wheel of a vehicle passing over device on said rail in one direction will press drive-pin down vertically, and when passing in opposite direction such wheel will press drive-pin down, forward and at an acute angle, substantially as and for the purposes set forth.

572,496. COIN-CONTROLLED APPARATUS. JAMES S. BARCUS, New York, N. Y. Filed Oct. 10, 1895. Serial No. 565,257. (No model.)

Claim.—1. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to make a partial revolution in either direction without imparting motion to the said roller, a detent normally holding the roller against rotation, and mechanism connecting the feed-roller and the coin-carrier, substantially as described.

2. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to be brought into locked engagement with the roller, a detent normally holding the roller against rotation, and mechanism connecting the roller and the coin-carrier, substantially as described.

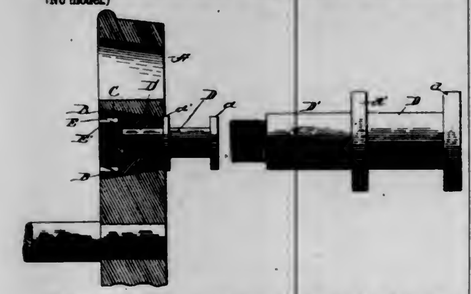
3. The combination of a coin-carrier, a feed-roller having one end provided with a projection or shoulder, a shaft loosely connected with the roller and carrying pins extending approximately at right angles to the shaft, one of which pins is adapted to engage the shoulder on the roller, and a rod connecting with the coin-carrier and engaging the other pin, substantially as described.



4. The combination of a coin-carrier, a feed-roller having one end provided with a projection or shoulder, a shaft loosely connected with the roller and carrying pins extending approximately at right angles to the shaft, one of which pins is adapted to engage the shoulder on the roller, and a rod connecting the feed-roller and the coin-carrier and having a hook engaging the other pin, substantially as described.

5. The combination of a coin-carrier, a feed-roller, a shaft loosely connected with the roller and adapted to make a partial revolution in either direction without imparting motion to the said roller, a detent normally holding the roller against rotation, mechanism connecting the feed-roller and the coin-carrier, and a coin-detaining device, substantially as described.

572,497. CRANK-PIN. ROBERT BRADY, Dayton, Ohio, assignor of three-fourths to William F. Chamberlin, S. Hoovel Chamberlin, and Willard D. Chamberlin, same place. Filed Apr. 20, 1896. Serial No. 588,347. (No model.)

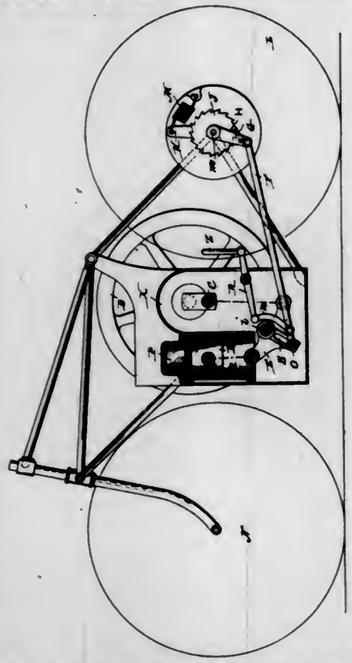


Claim.—1. The combination with the crank or wheel having a conical aperture formed therein, of a crank-pin seating against the crank or wheel at the smaller end of the aperture, conical clamping blocks fitted in said aperture and having a central bore fitting the shank of the crank-pin and a locking-nut on the rear end of the crank-pin bearing against the larger end of the clamping-blocks; substantially as described.

2. The combination with the crank or wheel having a conical aperture formed therein, and a sectional clamping-block having its outer surface fitted to the conical aperture and a cylindrical internal aperture, a crank-pin having a collar seating against the crank or wheel at the smaller end of the aperture and a cylindrical shank extending through the aperture in the sectional clamping-block and a locking-nut screwing on the rear end of the crank-pin and cooperating with the sectional clamping-block to hold the parts in adjusted position; substantially as described.

3. The combination with the crank or wheel having the conical aperture therein and the crank-pin seating against the crank or wheel at the smaller end of the aperture and having the shank projecting through said aperture, of the split clamping-block surrounding said shank and having the external conical surface fitting the aperture and central enlarged recess at the rear end and the locking-nut screwing on the shank of the crank-pin and seating in said recess; substantially as described.

572,498. MOTOR-VEHICLE. EMIL CAPITAINE, Leipsic, Germany, assignor to George T. Harris, Philadelphia, Pa. Filed Feb. 24, 1896. Serial No. 580,308. (No model.)



Claim.—1. In a motor-vehicle, the combination with the piston of a petroleum or other like motor, of mechanism operating to transmit the power impulse thereof direct to the driving-wheel of the vehicle, consisting of a centrally-pivoted lever E directly actuated by the piston, a ratchet-wheel J loosely journaled upon the axle of the driving-wheel, a connection between one arm of said lever and the ratchet-wheel whereby the latter is operated, and a spring connected to the ratchet-wheel and to the driving-wheel and adapted to be brought under tension and exert a propelling force upon the driving-wheel when the ratchet-wheel is actuated, substantially as specified.

2. In a device of the character described, the combination with the piston, of a frame supporting the motor, a fly-wheel journaled in said frame, a centrally-pivoted lever E, connecting devices actuated thereby, a ratchet-disk J loosely journaled upon the axle of the driving-wheel, and a spring M between the same and adapted to be brought under tension upon the partial rotation of the ratchet, substantially as described.

3. The combination in a device of the character described, of a supporting-frame, a motor the piston of which is directly connected with a centrally-pivoted rocking lever, a fly-wheel journaled in the frame and driven by said rocking lever, a spring mounted upon the driving-wheel of the vehicle, devices partially rotatable upon the axle thereof and adapted thereby to exert a tension upon the spring, and connecting actuating devices between the same and the pivoted rocking lever; substantially as described.

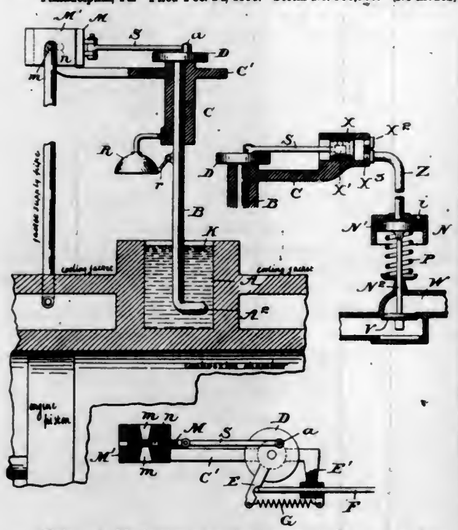
4. The combination in a device of the character described of a supporting-frame, a motor, a centrally-pivoted rocking lever E, slotted at S, the rod F vibrated thereby, driving mechanism actuated by said rod; and devices to adjust the throw of the rod F, consisting of the link *n*, the rod R and the operating-bar Z; the same being constructed and operating substantially as described.

5. The combination in a device of the character described, of a supporting-frame, a motor, a centrally-pivoted three-armed lever, one of whose arms is directly connected to the piston of the motor, a fly-wheel connected with the opposite arm of said lever, a ratchet-disk loosely mounted on the shaft of the driving-wheel, connecting actuating devices between the said disk and the third arm of said lever, and a spring connected to said driving-wheel and to the disk, and adapted to be put under tension by the actuation of said disk, substantially as specified.

6. The combination in a device of the character described, of a supporting-frame, a motor, a centrally-pivoted three-armed lever one of whose arms is directly connected to the said piston, a fly-wheel

connected with the opposite arm of said lever, a ratchet-disk loosely mounted upon the axle of the driving-wheel, a lever for operating the same, a connecting-rod from said lever to the third arm of the centrally-pivoted lever, means for varying the throw of the said rod, and a spring connected to an arm of said ratchet-disk and to the driving-wheel, substantially as specified.

572,499. APPARATUS FOR REGULATING TEMPERATURE OF COMBUSTION-CHAMBERS AND VAPORIZERS OF PETROLEUM-MOTORS. EMIL CAPITAINE, Leipsic, Germany, assignor to George T. Harris, Philadelphia, Pa. Filed Feb. 24, 1896. Serial No. 580,309. (No model.)



Claim.—1. Mechanism operating automatically, at a predetermined temperature, to govern a cold-water or cold-air supply, in engines of the character described, consisting of the combination with fusible metal, a vessel to contain the same, arranged contiguous to or integral with the chamber to be cooled, a rod with one end inserted in the fusible metal, a disk mounted on the other end of said rod, a supporting-frame for the disk and rod, water-controlling devices actuated by the partial rotation of the disk, spring mechanism to reciprocate the disk in one direction, and mechanism actuated by the engine to reciprocate the disk in the opposite direction; substantially as described.

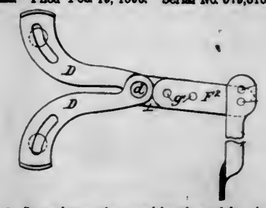
2. The combination with engines of the character described, and with devices adapted to supply a cooling current of water or air thereto, of mechanism operating automatically to actuate said water or air supplying devices, consisting of a chamber integral with or contiguous to the chamber to be cooled, a readily-fusible metal therein, a rod immersed by one end in said metal, a disk mounted on the rod, connecting actuating devices between the disk and the water-supplying devices, and means to actuate the disk when such actuation is permitted by the melting of the fusible metal; substantially as described.

3. In an engine of the class described, the combination of a tank or receptacle contiguous to or integral with the wall of the chamber to be cooled, and containing easily-fusible material, means for supplying a cooling fluid to said wall, valve mechanism controlling said supply, and a device partially immersed in said fluid and operatively connected with said valve mechanism, said device being arranged to be operated by a moving part of the engine while said material is in a fused state, and to be rendered inactive by the hardening of said material, substantially as specified.

4. The combination in engines of the character described, of a chamber A, fusible metal contained therein, a rod B, a supporting-frame C, having sleeve C, a disk D mounted on the rod B and having an arm E, a bracket E', on the frame, a spring G between the arm E and bracket E', a rod F driven by the engine and adapted to contact the arm E when it shall be released by the melting of the fusible metal, a cold water or air supplying device, and connecting actuating devices between the same and the disk D; substantially as described.

5. The combination in engines of the character described, of a chamber integral with or contiguous to the chamber to be cooled, and containing readily-fusible metal of actuating devices governed thereby, that is to say, will be actuated when such fusible metal is molten and will otherwise be normally quiescent, and water-supplying mechanism controlled by such actuating devices, consisting of air-pump X, piston cylinder N, spring-controlled piston N^2 and water-valve V, W; the same being constructed, combined and operating, substantially as and for the purpose set forth.

572,500. SKATE. HENRY D. CARRYL, New York, N. Y., assignor to the Lamb Manufacturing Company, Jersey City, N. J., and Chicopee Falls, Mass. Filed Feb. 19, 1896. Serial No. 579,818. (No model.)



Claim.—1. In a skate, the combination with a bar or plate having a roughened surface and having a longitudinal slot, of a slide composed of a plate and studs fixed thereto, said studs entering said slot and movable longitudinally thereto with the plate, and a wedge interposed between said plate and said roughened surface and adapted to engage the latter, said wedge being slotted longitudinally to engage said studs loosely with freedom for longitudinal movement with respect thereto, substantially as shown and described.

2. In a skate, the combination with a foot-plate, serrated or roughened, of a slide mounted to move longitudinally on said foot-plate, a heel-dog formed on said slide, and a wedge interposed between said slide and said foot plate and adapted to engage the serrated or roughened surface thereof, substantially as shown and described.

3. In a skate, the combination with a foot-plate, slotted longitudinally and serrated or roughened, of a slide, studs secured to said slide and engaging in said slot, a heel-dog formed on said slide, and a wedge interposed between said slide and said foot-plate and slotted to engage said studs with freedom for limited longitudinal movement, substantially as shown and described.

572,501. SKATE. HENRY D. CARRYL, New York, N. Y., assignor to the Lamb Manufacturing Company, Jersey City, N. J., and Chicopee Falls, Mass. Filed Feb. 19, 1896. Serial No. 579,819. (No model.)



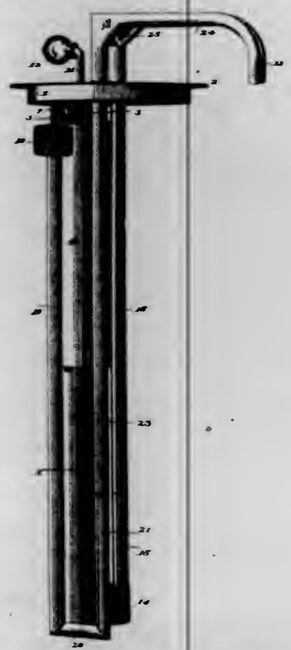
Claim.—1. In a skate, the combination with a toe plate and heel-plate having overlapping tongues, one of said tongues being adapted to engage the other tongue, of a sliding heel-dog formed to embrace both of said tongues and to be moved thereon to prevent or permit the disengagement of the one of said tongues from the other, substantially as shown and described.

2. In a skate, the combination with a toe-plate and a heel-plate having overlapping tongues, one of said tongues being adapted to engage the other tongue to prevent longitudinal movement, and a slide formed to embrace both of said tongues and to be moved thereon to prevent or permit disengagement of the one tongue from the other, of toe-clamps carried by said toe-plate, a clamping-lever carried with said heel-plate and having an eccentric stud, and a link to which said toe-clamps are connected, said link being formed to engage said eccentric stud at different points in its own length, substantially as shown and described.

3. In a skate, the combination with a foot-plate composed of a toe-plate and a heel-plate adjustable longitudinally with respect to each other, of sliding toe-clamps carried by said toe-plate, a longitudinally sliding heel-clamp mounted on said heel-plate, a clamping-lever carried by said heel-plate and a link to which said toe-clamps are connected, said link being formed for adjustable engagement with said clamping-lever, substantially as shown and described.

572,502. LAMP-FILLER. ERNEST T. DARLING, Colfax, Ill., assignor of two-thirds to Frank Hanks and Otis E. Crouch, same place. Filed June 1, 1896. Serial No. 593,901. (No model.)

Claim.—1. In a device of the class described, the combination with a drip-pan, the vertically-alining cylinders supported thereby, a valved outlet in the upper cylinder and a valved inlet in the lower end of the lower cylinder, a plunger-rod arranged in the two cylinders and pistons carried by the rod and fitting the cylinders between the valves, of a valved discharge-tube leading from the lower cylinder and having a loose telescopic section passing through the pan loosely and terminating above and at one side of the same in a discharge, and a valved suction-tube comprising telescopic sections passing loosely through the pan and connected to the discharge-tube so as to move therewith and at its other end connected to the upper end of the upper cylinder, substantially as specified.

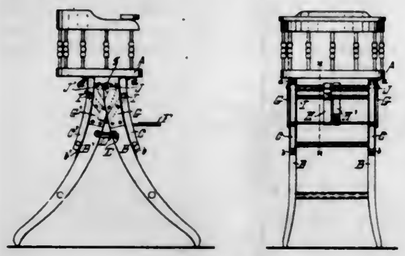


2. In a device of the class described, the combination with the flanged pan 1, the alining cylinders 4 and 5 supported thereby, the outlet-valve in the upper end of the former cylinder, the inlet-valve in the lower end of the latter cylinder, the valved chamber 14 leading from the lower end of the cylinder 5 and having the telescopic discharge-tubes 15 and 16, the latter passing through the pan and adjustable therein and terminating in the spout 17, of the plunger 11 having the handle 12 above the pan and within the cylinders having the heads 12 and 13, the chamber 18 having a valve 22 leading from the upper end of the cylinder 4, the suction-tube 19 leading from the chamber and having the lateral branch 20 and vertical branch 21, the telescoping section 23 arranged thereon and terminating in the suction end 24 connected to and terminating coincident with the spout 17, substantially as specified.

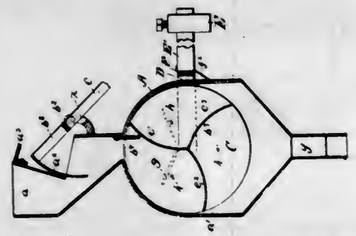
3. In a device of the class described, the combination with a support, the vertically-alining cylinders arranged thereunder, the upper cylinder being of greater diameter than the lower cylinder and communicating with the latter, an overflow-opening located in the upper cylinder and an induction-opening located in the bottom of the lower cylinder, a piston common to both cylinders, piston-heads arranged on the piston and fitting said cylinders, and an inwardly-opening valve located over the induction-opening in the bottom of the lower cylinder, of a discharge tube leading from the lower cylinder above the valved induction-opening thereof and terminating in a spout above the cylinders, an outwardly-opening valve located at the juncture of the discharge-tube and lower cylinder, an overflow-tube terminating in a spout and arranged in close relation with the spout of the discharge-tube and extending through the support and connected at its upper end to the upper end of the cylinder, and an upwardly-opening valve arranged at said point of connection, substantially as specified.

572,508. CHAIR. WILLIAM H. DAVY, Pewaukee, Wis. Filed Feb. 21, 1896. Serial No. 580,167. (No model.)

Claim.—A chair, consisting in the combination of the seat, the curved front and rear legs provided with metallic plates at their upper ends hinged together to form a one-way joint, seat-supporting bars hinged to the seat and legs, cross-rungs connecting the upper ends of the legs and the upper ends of said bars, and toggle-jointed levers connecting the cross-rungs of the legs with those of the bars, whereby the seat may be supported by the bars and levers when the legs are used as rockers, substantially as described.



572,504. AUTOMATIC WEIGHING AND FILLING APPARATUS. HENRY P. DENNIS, Peoria, Ill., assignor of two-thirds to John H. Ellis and Albertus D. Potter, same place. Filed Jan. 11, 1894. Serial No. 496,557. (No model.)



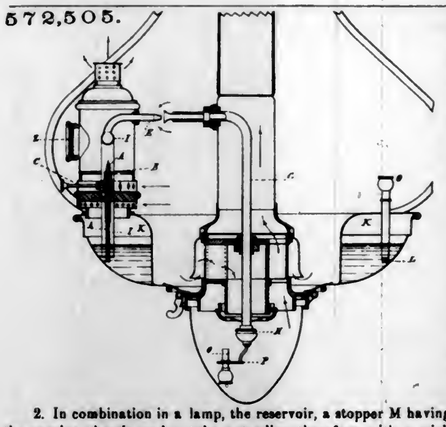
Claim.—1. In an automatic weighing apparatus, the combination with a casing, and a weight-beam, of a rotatable weighing-receptacle arranged within the casing and connected with the weight-beam to move vertically therewith, said receptacle consisting of two parallel heads or disks, and a series of plates or partitions connecting said disks, a stationary stop lying in the path of the said plates or partitions of the weighing-receptacle when the latter is in its uppermost position, a guide and stop bar rigidly secured to the casing adjacent to one of the heads or disks of the weighing-receptacle, and a series of laterally-projecting guide-rollers carried by said head or disk, one in line with each of the pockets or compartments of the receptacle, and adapted to successively contact with the said guide and stop bar on the casing, substantially as and for the purpose set forth.

2. In an automatic weighing apparatus, the combination with a casing, and a weight-beam, of a rotatable weighing-receptacle arranged within the casing and connected with the weight beam to move vertically therewith, said receptacle being divided into a series of compartments or pockets, a stationary V-shaped stop secured to the inner face of the casing and having its members extending at an angle to, and in opposite directions from, the path of vertical movement of the axis of the receptacle, and guide-rollers carried by the receptacle, one in line with each pocket or compartment thereof, and situated at equal distances from the axis of the receptacle, adapted to contact with said V-shaped stop and guide, substantially as set forth.

572,505. LAMP. PIERRE L. GIRARDET, Paris, France, assignor to René Augustin Poltrimol, same place. Filed Sept. 3, 1892. Serial No. 445,021. (No model.) Patented in Belgium Aug. 27, 1889, No. 87,519; in England Aug. 27, 1889, No. 16,393; in France Nov. 14, 1889, No. 201,923; in Italy Aug. 16, 1892, No. 32,501; in Switzerland Aug. 18, 1892, No. 5,501, and in Russia July 11, 1895, No. 14,257.

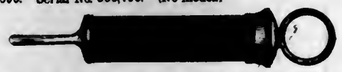
Claim.—1. In combination, the main reservoir, the main burner arranged centrally thereof, the generator arranged at one side of the main burner, and on the reservoir, said generator comprising the inverted-U-shaped tube having a nipple at the junction of its side members extending radially inward toward the axial line of the lamp, the heating-burner, the main burner arranged axially of the lamp and the conduit leading thereto from the radially-extending nipple, substantially as described.

572,505.



2. In combination in a lamp, the reservoir, a stopper M having the opening therein and a tube extending therefrom with a wick therein, and the lighter O adapted to the opening in the stopper and to the tube thereof, said lighter carrying a wick, substantially as described.

572,506. SYRINGE. ISAAC Q. GURNEE, Butler, N. J. Filed Apr. 9, 1896. Serial No. 586,790. (No model.)

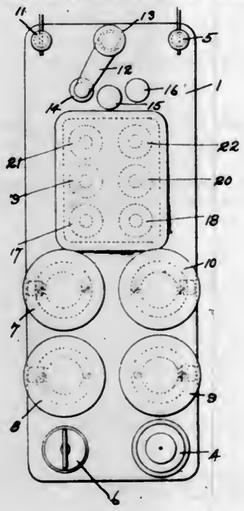


Claim.—1. In a syringe, the combination of a barrel or cylinder, a cap for closing the barrel, a plunger and rod, and positive interlocking mechanism between the cap and the outer end of the rod only, whereby the cap can be manipulated by means of the rod only when the latter occupies its innermost position, substantially as described.

2. The herein-described article of manufacture comprising a barrel or cylinder having a flared opening, a screw-cap for closing the flared opening, a plunger and rod, and positive interlocking pieces carried upon the cap and upon the handle of the rod for the purpose of rotating the cap in either direction.

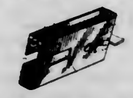
3. The herein-described article of manufacture comprising a barrel or cylinder, a detachable sleeve located upon the end of the barrel and provided with a flaring interior portion, a screw-cap fitting on said sleeve, and positive interlocking pieces carried upon the cap and upon the handle of the rod for the purpose of rotating the cap in either direction.

572,507. CURRENT-CONTROLLING DEVICE. JOHN J. HOGAN, New Haven, Conn., assignor to the Eastern Electric Company, same place. Filed July 24, 1896. Serial No. 600,349 (No model.)



Claim.—The herein-described apparatus for taking off specific low-voltage currents of measured quantity from large currents of high potential, consisting of a suitable base-board 1, connecting-plug 3, fuse-receptacle 4 and safety-fuse, snap-switch 6, a plurality of incandescent lamps in multiple arc, a plurality of resistance-coils 17, 18, 19, 20, 21, 22, a series of contact-buttons 14, 15, 16, in graduated circuit with said resistance-coils, radial switch-arm 12, contacting with said buttons, and binding-posts 5, 11; all substantially as and for the purpose specified.

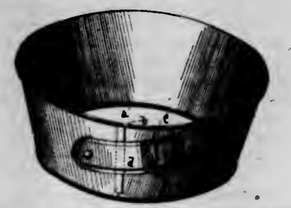
572,508. CLASP FOR DRESS-SHIELDS. FRANK F. HURD, Denver, Colo. Filed Dec. 19, 1895. Serial No. 572,704. (No model.)



Claim.—1. The clasp for dress-shields herein described as having each of its jaws provided with a slot to receive the respective wings of a dress-shield.

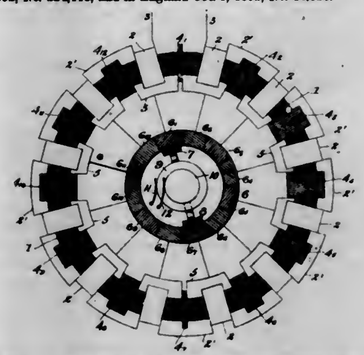
2. The combination with a two-winged dress-shield of a clasp, each of whose jaws is provided with means, as a slot, for engaging the respective wings of the shield, and for holding the junction of the wings of the dress-shield to the joint of the clasp.

572,509. CAKE-PAN. THOMAS A. WILSON, Alton, Mo. Filed Sept. 7, 1895. Serial No. 561,794. (No model.)



Claim.—In a cake-pan, the combination, with a bottom having an upwardly-extending cone-shaped tube, of a divided rim having an inner flange at its lower edge and a strengthening-roll at its upper edge, said roll having a projecting rib at one end arranged to enter the roll of the opposite end, a lip secured to one end of the rim and arranged to overlap the other end when the said ends are in alinement, and means for locking the ends together, substantially as described and for the purpose set forth.

572,510. METHOD OF AND APPARATUS FOR TRANSFORMING ALTERNATING ELECTRIC CURRENTS. MAURICE HUTIN and MAURICE LEBLANC, Paris, France, assignors to the Société Anonyme pour la Transmission de la Force par l'Électricité, same place. Filed Nov. 4, 1892. Serial No. 450,925. (No model.) Patented in France Sept. 3, 1892, No. 224,118, and in England Oct. 6, 1892, No. 17,826.



Claim.—1. The method of converting alternating electric currents into currents of one direction or vice versa by dynamic induction, which consists in varying the coefficient of mutual induction of the circuits of a transformer or transformers in accordance with the law of variation of the alternating currents received or delivered by the said transformer or transformers, substantially as described.

2. The method of converting alternating electric currents into currents of one direction or vice versa, by inductional transformers, which consists in varying, for successive phases of the alternating current received or delivered by one circuit, the number of effective turns of the other circuit, in accordance with the law of variation of the alternating current, substantially as described.

3. The method of converting sinusoidal alternating currents into currents of one direction or vice versa, by inductional transformers, which consists in varying, for successive phases of the alternating current received or delivered by one circuit, the number of effective turns of the other circuit, in accordance with a sinusoidal law, substantially as described.

4. The method of converting a number of dephased alternating currents into a single constant current of one direction or vice versa, which consists in producing in two or more inductional transformers, in accordance with a sinusoidal law, dephased variations of the number of effective turns of the coiled circuits delivering or receiving currents of one direction, substantially as described.

5. The method of transforming a plurality of alternating currents of the same frequency and uniform phase difference into an undirectional current of substantially constant electromotive force, which consists in collecting such fractional portions of the currents as shall vary as the squares of the sines of the alternating-current phases, and superimposing the same, substantially as described.

6. An inductional transformer consisting of a magnetic ring-core and two circuits disposed upon the same, one of which is closed upon itself and comprises two equal, oppositely-wound groups of coils, and means for tapping the same at continuously-shifting diametrically opposite points, substantially as described.

7. An inductional transformer containing two circuits upon a common magnetic core, one of said circuits being closed upon itself and composed of a series of coils graduated in accordance with a sinusoidal law, and means for tapping said circuit at continuously-shifting diametrically opposite points, substantially as described.

8. A transformer for converting alternating currents into currents of one direction or vice versa, composed of coils for the reception or delivery of alternating currents and, in inductive relation thereto, coils for the delivery or reception of currents of one direction, and means for varying the coefficient of mutual induction of the two sets of coils in accordance with a sinusoidal law, substantially as described.

9. A transformer for converting alternating currents into currents of one direction or vice versa, composed of coils for the reception or delivery of alternating currents and, in inductive relation thereto, coils for the delivery or reception of currents of one direction, and means for varying the effective number of the turns of the latter in accordance with the law of variation of the alternating currents, substantially as described.

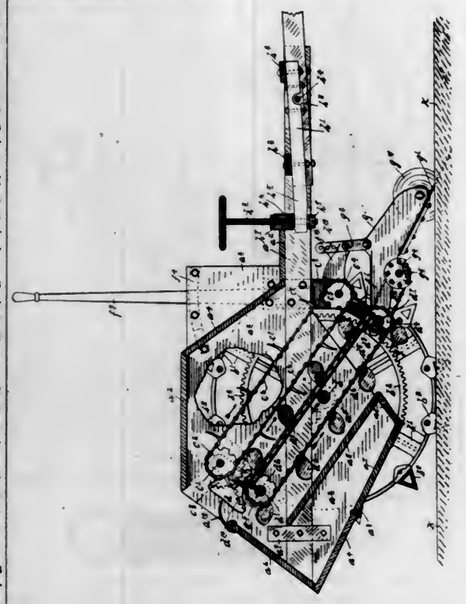
10. A transformer for converting alternating currents into currents of one direction or vice versa, composed of coils for the reception or delivery of alternating currents and, in inductive relation thereto, coils for the delivery or reception of currents of one direction, and means for varying the effective number of the turns of the latter in accordance with a sinusoidal law, substantially as described.

11. An inductive apparatus for the conversion of two or more dephased alternating currents into a single constant current of one direction or vice versa, consisting of two or more independent inductional tranformers, each transformer having alternating-current coils and a series of straight-current coils, each series of straight-current coils being graduated in accordance with a sinusoidal law, and the different series being interconnected to establish a shift of phase between the graduations, and a commutator and brushes for tapping the connected series simultaneously, substantially as described.

572,511. POTATO-DIGGER. HENRY M. GROVER, Anoka, Minn., assignor of one-half to John H. Miles, same place. Filed Mar. 21, 1895. Serial No. 542,589. (No model.)

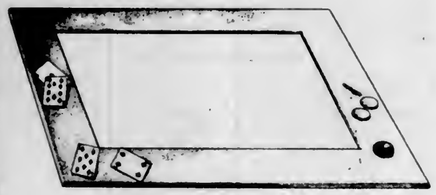
Claim.—1. In a potato-digger, the combination with supporting and driving wheels, of an endless elevator having a pair of carrier-shafts spaced apart by a swinging frame, one of which shafts is provided with a driven gear wheel that receives motion from said driving-wheel and serves also as the counter-shaft for imparting motion to other parts of the machine, and parallel pivoted hangers, supporting said carrier-frame for permitting the driven gear-wheel carried thereby to be swung into and out of gear with said driving-wheels, substantially as described.

2. The combination with the supporting and driving wheels b' b^3, of the elevator having the carrier-shaft d^3 with pinions d^5 engageable with the driving-gears, the scoop-shovel g g' pivoted to said shaft d^3, the pivoted hanger d supporting the shaft d', the sprockets d^2 and d^4 on said shafts d' and d^3, the carrier d^6 with buckets d^4 mounted on said sprockets, the pivoted castings f f' f^3 with hand-lever f^3, in the arms f' of which is mounted the shaft d^3 and the other arms f^2 of which are connected by the links g^3 to said scoop g g', substantially as described.



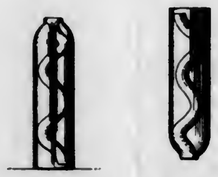
DESIGNS.

26,348. PICTURE-FRAME. ALFRED J. RIPLEY, Long Branch, N. J. Filed Oct. 27, 1896. Serial No. 610,232. Term of patent 3½ years.



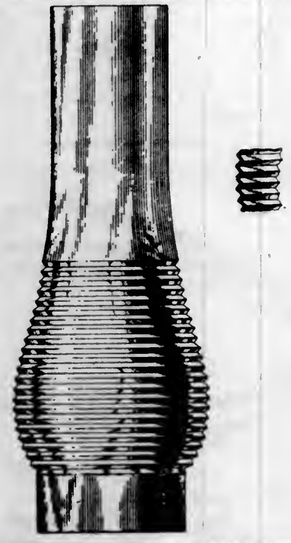
Claim.—The design for a picture-frame herein shown and described.

26,349. BOTTLE-STOPPER. GEORGE W. BEAN, Philadelphia, Pa. Filed Feb. 29, 1896. Serial No. 581,399. Term of patent 7 years.



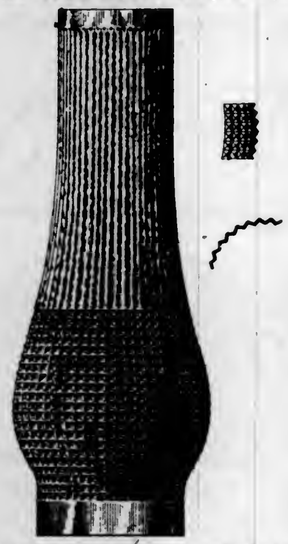
Claim.—The design for a bottle-stopper and sprinkler, substantially as described and shown.

26,350. LAMP-CHIMNEY. GEORGE W. BLAIR, Pittsburg, Pa. Filed Oct. 28, 1896. Serial No. 610,375. Term of patent 14 years.



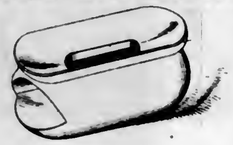
Claim.—The design for lamp chimneys or globes substantially as herein shown and described.

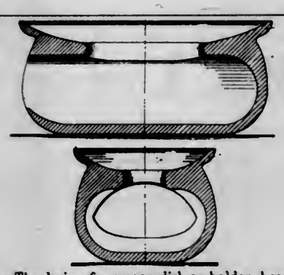
26,351. LAMP-CHIMNEY. GEORGE W. BLAIR, Pittsburg, Pa. Filed Oct. 31, 1896. Serial No. 610,762. Term of patent 14 years.



Claim.—The design for lamp-chimneys substantially as herein shown and described.

26,352. SOAP DISH OR HOLDER. EDWARD L. SNYDER, Brooklyn, N. Y. Filed Oct. 29, 1896. Serial No. 610,513. Term of patent 14 years.





Claim.—The design for a soap dish or holder, herein shown and described.

26,353. STAIR-CARPET BUTTON. ROBERT H. WARREN, Newark, N. J. Filed Oct. 30, 1896. Serial No. 610,639. Term of patent 7 years.



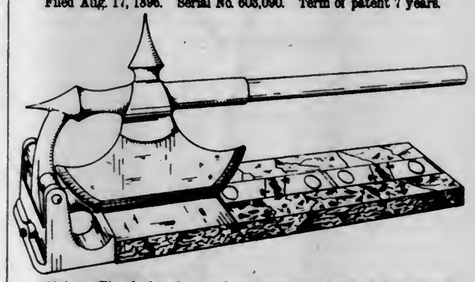
Claim.—The design for a stair-carpet button herein shown and described.

26,354. TOBACCO-PIPE MOUNTING. EDWARD S. SMITH, Waterbury, Conn. Filed Oct. 29, 1896. Serial No. 610,512. Term of patent 7 years.



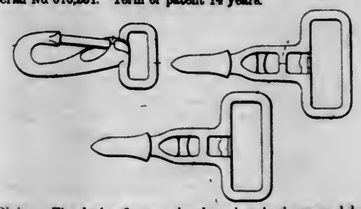
Claim.—The design for a tobacco-pipe mounting as shown and described.

26,355. TOBACCO-CUTTER. WILLIAM BAYLEY, Springfield, Ohio. Filed Aug. 17, 1896. Serial No. 603,090. Term of patent 7 years.



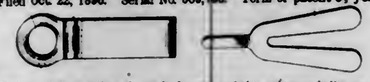
Claim.—The design for a tobacco-cutter, substantially as herein shown and described.

26,356. SNAP-HOOK. CHARLES H. SMITH, New Haven, Conn., assignor to The O. B. North & Company, same place. Filed Oct. 27, 1896. Serial No. 610,231. Term of patent 14 years.



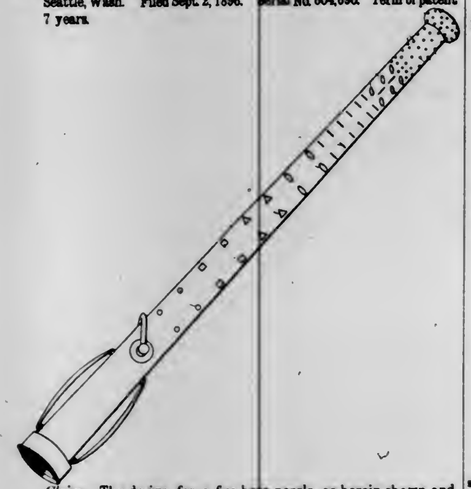
Claim.—The design for snap-hooks as herein shown and described.

26,357. BALANCE-WEIGHT. LYDIA J. BROWN, New Haven, Conn. Filed Oct. 22, 1896. Serial No. 609,736. Term of patent 3½ years.



Claim.—The design for a balance-weight substantially as shown and described.

26,358. FIRE-HOSE NOZZLE. WILLIAM KELLY and OLAF G. OLSON, Seattle, Wash. Filed Sept. 2, 1896. Serial No. 604,690. Term of patent 7 years.



Claim.—The design for a fire-hose nozzle, as herein shown and described.

26,359. HOSE-REEL FRAME. THOMAS N. SMITH, Independence, Mo., assignor of one-half to William A. Symington, same place. Filed July 18, 1896. Serial No. 599,742. Term of patent 14 years.



Claim.—The design for a hose-reel frame, substantially as herein shown and described.

26,360. THIMBLE FOR BICYCLE-FORK ENDS. CHARLES F. MEILINK, Toledo, Ohio, assignor to the A. L. Moore Company, Cleveland, Ohio. Filed Sept. 3, 1896. Serial No. 605,199. Term of patent 14 years.



Claim.—The design for a thimble for bicycle-fork ends, substantially as herein shown and described.

26,361. CLAMP FOR BICYCLE-HANDLES. LEWIS P. HALLADAY, Marion, Ind. Filed May 9, 1896. Serial No. 590,950. Term of patent 3½ years.



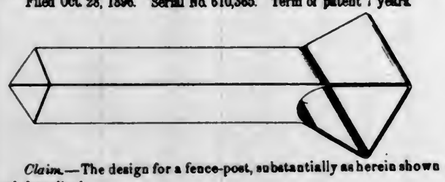
Claim.—The design for a clamp for bicycle-handles, substantially as shown and described.

26,362. HORSE-COLLAR. BONAPART ALLEN, Buford, Ga. Filed Sept. 23, 1896. Serial No. 606,788. Term of patent 7 years.



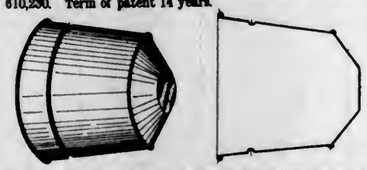
Claim.—The design for a horse-collar substantially as herein shown and described.

26,363. FENCE-POST. WILLIAM H. THOMAS, Jenkintown, Pa. Filed Oct. 28, 1896. Serial No. 610,365. Term of patent 7 years.



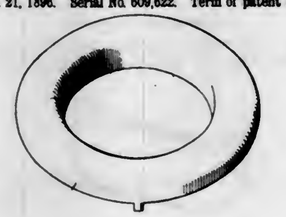
Claim.—The design for a fence-post, substantially as herein shown and described.

26,364. SHEET-METAL CAN. CHARLES W. HART, Troy, N. Y., assignor to Harriet A. Hart, same place. Filed Oct. 27, 1896. Serial No. 610,230. Term of patent 14 years.

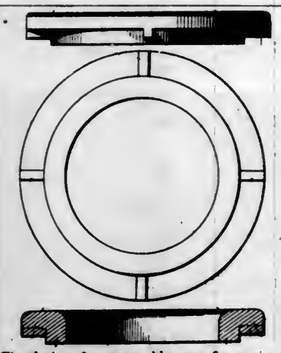


Claim.—The design for a sheet-metal can herein shown and described.

26,365. SEAT FOR COMMODES, &c. JEAN NICHOLS, Denver, Colo. Filed Oct. 21, 1896. Serial No. 609,622. Term of patent 14 years.

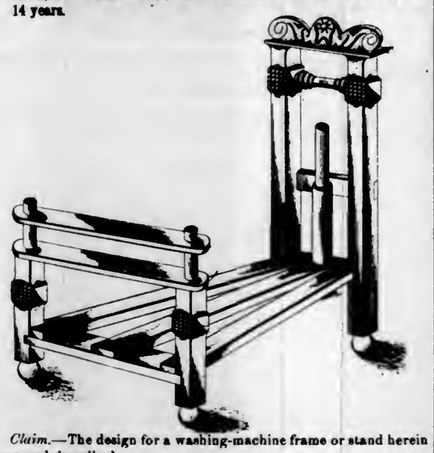


26,365.



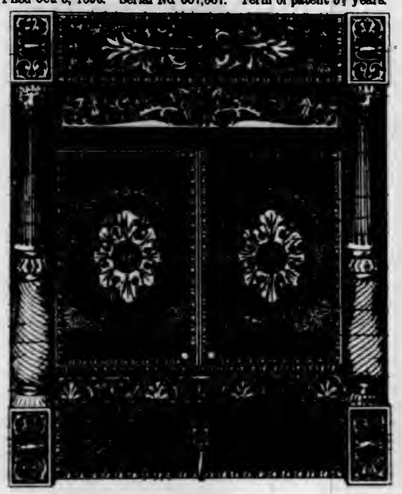
Claim.—The design for a portable seat for commodes and the like, substantially as herein shown and described.

26,366. WASHING-MACHINE FRAME. ZOHER DOYLE, Spring Creek, Mo. Filed Oct. 28, 1896. Serial No. 610,371. Term of patent 14 years.



Claim.—The design for a washing-machine frame or stand herein shown and described.

26,367. FIREPLACE-FRONT. MORRIS I. COHEN, Chicago, Ill. Filed Oct. 3, 1896. Serial No. 607,807. Term of patent 3½ years.



Claim.—1. The design for a fireplace-front, substantially as herein shown and described.

2. In the design for a fireplace-front the door substantially as herein shown and described.

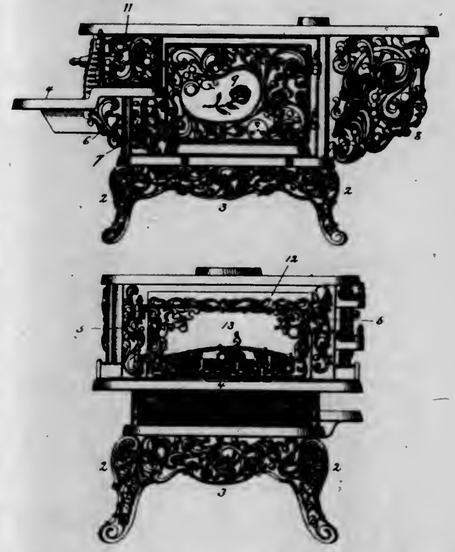
3. In the design for a fireplace-front the hood substantially as herein shown and described.

26,368. HEATING-STOVE. LEVI J. LENNOX, Detroit, Mich. Filed Sept. 19, 1896. Serial No. 606,445. Term of patent 7 years.



Claim.—The design for the heating-stove herein shown and described.

26,369. COOKING STOVE OR RANGE. JOHN J. GRAVES, Buffalo, N. Y., assignor to Sherman S. Jewett & Co., same place. Filed Oct. 20, 1896. Serial No. 609,467. Term of patent 7 years.



Claim.—1. In a design for a cooking stove or range, the design for the base, substantially as shown and described.

2. In a design for a cooking stove or range, the design for the oven-door, substantially as shown and described.

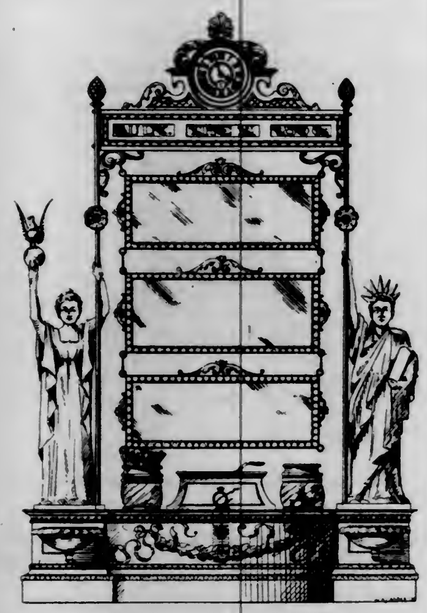
3. In a design for a cooking stove or range, the design for the reservoir 8, substantially as shown and described.

4. In a design for a cooking stove or range, the design for the door 11, at the end of the fire-chamber, substantially as shown and described.

5. In a design for a cooking stove or range, the design for the door 12 at the front of the stove, substantially as shown and described.

6. The design for a cooking stove or range, substantially as shown and described.

26,370. ADVERTISING-STAND. MAX BLUMENTHAL, Chicago, Ill. Filed Sept. 14, 1896. Serial No. 605,803. Term of patent 3½ years.



Claim.—The design for an advertising-stand, substantially as shown and described.

26,371. KITCHEN-CABINET. SAMUEL BAXTERN WEBB, Personville, Tex. Filed Oct. 28, 1896. Serial No. 610,370. Term of patent 7 years.



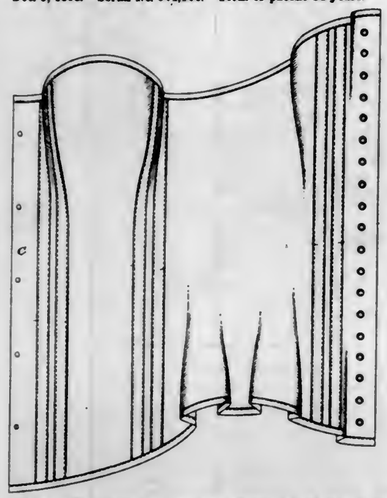
Claim.—The design for a kitchen-cabinet, substantially as herein shown and described.

26,372. LACE CURTAIN. ARTHUR WILLIAM WILDE, Philadelphia, Pa., assignor to John H. Bromley, Joseph H. Bromley, Edward Bromley, and William H. Bromley, same place. Filed Oct. 27, 1896. Serial No. 610,228. Term of patent 7 years.



Claim.—The design for a lace curtain substantially as shown and described.

26,373. CORSET. DE VER H. WARNER, Bridgeport, Conn. Filed Dec. 5, 1895. Serial No. 571,196. Term of patent 14 years.



Claim.—The design for corsets substantially as shown and described.

26,374. LADY'S COLLAR. DAVID KIRCH, New York, N. Y. Filed Sept. 9, 1896. Serial No. 605,335. Term of patent 3½ years.



Claim.—The design for a lady's collar, composed of the similar and opposite side portions, having angular front points and square rear ends, and an intermediate piece B, having an angular lower edge, and a straight top edge extending between the parts A, A, as shown and described.

TRADE-MARKS

REGISTERED DECEMBER 1, 1896.

29,220. WATCH-MOVEMENTS. NEW YORK STANDARD WATCH COMPANY, Jersey City, N. J. Filed Oct. 22, 1896.

AJAX

Essential feature.—The word "AJAX." Used since October 19, 1896.

29,221. PRINTED BLANKS AND ENVELOPS. POSTAL TELEGRAPH-CABLE COMPANY, New York, N. Y. Filed Oct. 24, 1896.



Essential feature.—A circular arrangement of twisted cable and a belt or zone of the inclosed space filled in more or less completely with solid color, forming an arch. Used since January, 1888.

29,222. MEN'S SHOES. HAMILTON, BROWN SHOE COMPANY, St. Louis, Mo. Filed Oct. 7, 1896.

5 MILLIONS

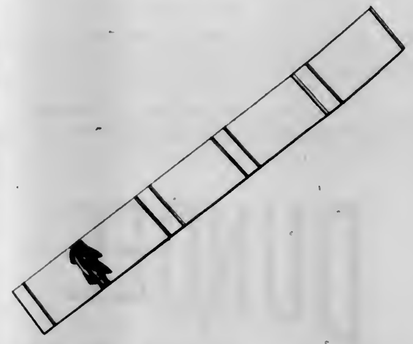
Essential feature.—The figure "5" and the word "MILLIONS." Used since January, 1891.

29,223. MEN'S SHOES. HAMILTON, BROWN SHOE COMPANY, St. Louis, Mo. Filed Oct. 7, 1896.

WATCH US.

Essential feature.—The words "WATCH US." Used since January, 1892.

29,224. SALTED AND BONELESS FISH. J. W. BEARDSLEY'S SONS, New York, N. Y. Filed Oct. 3, 1896.



Essential feature.—A comparatively narrow band in color with a representation of a mutilated or part of a fish thereon. Used since September 15, 1896.

29,225. CANNED LOBSTER. EMIL A. HOLMBERG, New York, N. Y. Filed Sept. 14, 1896.



Essential feature.—A figure of a regal crown surmounted by a Maltese cross and having the letters "H. F. P. Co." on the front of the base-rim, with the words "EXTRA CROWN LOBSTER" in a circular line under the crown, and the words "EXPRESSLY FOR THE RUSSIAN MARKET" in the same circular line over the crown, and, together with the other words, forming a complete circle. Used since January 1, 1895.

29,226. BAKING-SODA, SALERATUS, AND BAKING-POWDERS. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed Oct. 23, 1896.



Essential feature.—A representation of a swan. Used since June, 1877.

29,227. WHEAT-FLOUR. HOOK BROS. & ASTON, Zanesville, Ohio. Filed June 29, 1896.

29,227.



Essential feature.—A representation of a hemisphere surmounted by an eagle and a banner extending across the hemisphere. Used since May 1, 1896.

29,228. FARINACEOUS FOOD PRODUCTS. THE H-O (HORNBY'S OATMEAL) COMPANY, New York, N. Y. Filed Aug. 14, 1896.

DUNDEE

Essential feature.—The word "DUNDEE." Used since April, 1891.

29,229. SAUCES. GUSTAV A BECKER, New York, N. Y. Filed Oct. 22, 1896.



Essential feature.—A representation of a chef attired in the conventional costume—a jacket, apron, and cap. Used since October 7, 1896.

29,230. LAGER-BEER. CHICAGO BREWING COMPANY, Chicago, Ill. Filed June 9, 1896.

LIQUID Malt Food

Essential feature.—The words "LIQUID MALT FOOD" arranged in two lines, the word "Liquid" being composed of shaded bronze letters, and the words "Malt Food" being composed of red shaded script. Used since May 25, 1896.

29,231. REMEDY FOR COLDS, LA GRIPPE, INFLUENZA, HAY-FEVER, AND KINDRED AILMENTS. ERNEST E. DIXON & CO., Gainesville, Ga. Filed Oct. 24, 1896.

GRIP-SULE

Essential feature.—The compound word "GRIP-SULE." Used since January 1, 1891.

29,232. TOILET PREPARATIONS, INCLUDING SOAP. VICTOR KLOTZ, Paris, France, and New York, N. Y. Filed Nov. 3, 1896.

DAUPHINE

Essential feature.—The word "DAUPHINE." Used since June 15, 1896.

29,233. CLEANING AND POLISHING POWDERS AND SOAPS. THE ELECTRO SILICON COMPANY, New York, N. Y. Filed Oct. 19, 1896.

Electro-Silicon

Essential feature.—The compound word "ELECTRO-SILICON." Used since 1867.

29,234. LYE AND CAUSTIC POTASH. ELIJA N. HALL, New York, N. Y. Filed Oct. 14, 1896.



Essential feature.—A representation of a five-pointed star with one point upward, said star being in part of solid color and in part shaded and being surrounded by a ring, band, or wreath of solid color. Used since January 1, 1881.

29,235. LYE AND CAUSTIC POTASH. ELIJA N. HALL, New York, N. Y. Filed Oct. 14, 1896.



Essential feature.—A representation of a ball upon a five-pointed star with one point upward, said star being in part of solid color and in part shaded and the whole being surrounded by a ring, band, or wreath of solid color. Used since January 1, 1881.

29,236. ASBESTOS CEMENT FOR FINISHING WALLS. J. B. KING & CO., New York, N. Y. Filed Apr. 29, 1896.

WINDSOR ASBESTOS CEMENT

Essential feature.—The words "WINDSOR ASBESTOS CEMENT." Used since March, 1896.

29,237. READY-MIXED PAINTS. THE FRANCIS-FROST COMPANY, LIMITED, Toronto, Canada. Filed Nov. 2, 1896.



Essential feature.—The words "ARK BRAND" with a representation of an ark. Used since March 1, 1895.

29,238. SEWING-MACHINES AND ATTACHMENTS. THE DAVIS SEWING MACHINE COMPANY, Dayton, Ohio. Filed Nov. 2, 1896.

DELIGHT

Essential feature.—The word "DELIGHT." Used since August, 1892.

29,239. OIL AND OTHER STOVES. PLYMOUTH STOVE FOUNDRY CO., Plymouth, Mass. Filed Oct. 9, 1896.



Essential feature.—A representation of the landing of the Pilgrims. Used since October 1, 1894.

29,240. VEHICLE-TIRES AND PARTS THEREOF. DUNLOP PNEUMATIC TYRE COMPANY, LIMITED, London, England. Filed Sept. 30, 1896.



Essential feature.—A portrait and the facsimile of the signature "J. B. DUNLOP." Used since October 1, 1893.

29,241. ANTIRATTLERS FOR THILL-COUPLINGS. JOHN W. WILLARD, Boston, Mass. Filed Nov. 3, 1896.

HANDE

Essential feature.—The word "HANDE." Used since August 10, 1896.

29,242. ANTIRATTLERS FOR THILL-COUPLINGS. JOHN W. WILLARD, Boston, Mass. Filed Nov. 3, 1896.



Essential feature.—A representation of a human hand adjusting an antirattler within or to a thill coupling. Used since August 10, 1896.

29,243. SULKY-CULTIVATORS, STALK-CUTTERS, HARROWS, BEAN-HARVESTERS, AND CORN-PLANTERS. THE OHIO CULTIVATOR COMPANY, Bellevue, Ohio. Filed May 31, 1895.

FAMOUS OHIO

Essential feature.—The words "FAMOUS OHIO," the word "FAMOUS" printed in lower-case or small block-style type, with the last word, "OHIO," printed in upper-case or capitals of the same style of type. Used since January, 1891.

29,244. PITCH-PINE BOARDS, TIMBER, AND DEALS. WILLIAM S. KEYSER, Pensacola, Fla. Filed Apr. 17, 1896.

W.S.KEYSER & CO.
SPECIAL

Essential feature.—The firm-name "W. S. KEYSER & CO." and the word "SPECIAL." Used since November, 1895.

PHOTO-LITH. THE NORRIS PETERS CO. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE FRASCH.

Decided October 31, 1896.

PATENTABILITY — PROCESS OF PURIFYING OIL — USE OF COPPER MATTE.

In a process of purifying oil the use of pulverized copper matte to remove the "skunk" from the oil is an improvement upon the use of a mixture of pulverized copper oxid and pulverized iron oxid of such character as is not to be expected from those versed in the art, and required invention.

APPEAL from the Examiners-in-Chief.

TREATMENT OF PETROLEUM.

Application of Herman Frasch filed July 14, 1890, No. 358,712.

Messrs. W. Bakewell & Sons and *Mr. C. J. Hedrick* for the applicant.

SEYMOUR, *Commissioner:*

This is an appeal from the decision of the Examiners-in-Chief sustaining the action of the Primary Examiner in rejecting the following claims:

1. In the art of distilling petroleum-oils containing sulfur compounds of the character specified, the improvement which consists in eliminating the sulfur by subjecting the oil during the process of distillation either in a liquid or vaporous condition to roasted and pulverized copper matte, substantially as described.

2. The process of treating oil of the Lima class, for removal of the "skunk," by subjecting the "skunk"-bearing oil during a distillation thereof to a pulverulent purifying material of metallic oxid having a basis of iron and copper in the intimate union resulting from a melting together of their compounds and admixture in the molten state and consisting of roasted and pulverized copper matte, the purifying material being used in the body of oil in distillation or brought into contact with the vapors after they have been given off from said body, substantially as described.

The references are patents to Parsons, April 13, 1869, No. 88,978; Frasch, February 21, 1888, No. 378,246; Pitt, March 13, 1888, No. 379,492; British Patent No. 2,882 of 1860, to Bowditch.

The two claims do not differ in substance from each other. The second claim merely states with more detail the steps of the process.

The process set forth by this case is an improvement over the process covered by the appellant's patent No. 378,246, which has been the reference principally relied upon as an anticipation of the appealed claims, and is therefore the only reference that need be considered.

The object of the process of the application and of the patents is the treatment of that class of oils known as "Lima" oil to remove the sulfur compounds which give to this oil the peculiarly offensive odor known as "skunk." In the patent Frasch distils the oil with suitable metallic oxids or suitable compounds of such oxids dissolved in or mixed with the oil, and by so doing the removal of all or of practically all of the sulfur compounds is effected. When he uses the oxid or compound in the solid state, it is preferably in as fine a powder as practicable. Two of the oxids mentioned in the patent as suitable for use are ferric and cuprous, and it is stated that by distilling the oil with one or more of these oxids the sulfur compounds are broken up and sulfur is precipitated as a sulfid or sulfids. This patent covers the treatment of Lima oils with a powder obtained by roasting and pulverizing one of the given suitable oxids or a mixture of two or more of such powders.

The present application is for a specific improvement upon the patent, and consists in the use of pulverized copper matte to remove the "skunk" from the oil. To render the matte suitable for his purpose, the appellant takes partially-reduced native sulfid of copper containing about sixty per cent. of copper and forty per cent. of iron and sulfur, and after grinding it to a powder places the powdered matte in a furnace and roasts it. By the roasting the copper, iron, and sulfur are each oxidized. The sulfur dioxid goes off as a gas, leaving the oxid of iron and the oxid of copper fused together.

It seems that this powder of oxidized copper matte has never been used in the purification of oil, and yet I am not able to agree with the contention of the appellant that it is in itself a new article of manufacture, copper matte having been known for an indefinitely long period. The mere change in its physical state involved in reducing it to powder cannot be assumed to be new. It is not a patentable change, and references to patents do not meet such case.

Yet I am impressed with the contention of the appellant, grounded upon his affidavits, that a better result is obtained from the use of powdered matte for purifying oils than is obtained from the use of iron oxid and copper oxid mechanically mixed. We cannot positively assert of any chemical reaction that we know by what it is brought about. We know the final result, and by it and by the tangible and knowable we must be guided. Whether in the appellant's intimate mixture of oxids the iron acts as a carrier for the copper or whether thereby a greater surface of copper is exposed to be acted on by the sulfur in the oil I will not attempt to determine.

From an examination of the specimen of powdered copper matte which the appellant has submitted to me it is found that no separation of the particles can be effected by a magnet, but all the particles are attracted equally, though with less force than is the case with pure iron oxid; but with a mixture of pulverized iron oxid and copper oxid the same simple test will readily effect a complete separation. I must conclude, therefore, first, that powdered copper matte is not the same thing as a mechanical mixture of powdered copper oxid and powdered iron oxid; second,

that the use of powdered copper matte will effect the purification of oils by the use of a smaller quantity of the powder than would be required if the mechanical mixture of two oxids were employed.

From these facts I reach the further conclusion that the use of pulverized copper matte for purifying oils is an improvement upon the use of the mixture of pulverized copper oxid and pulverized iron oxid of such character that, if new, it constituted an improvement such as is not to be expected from those versed in the art and required invention.

Hence the conclusion that the appellant is entitled to these claims, and the decision of the Examiners-in-Chief is therefore reversed.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court of Appeals—First Circuit.

LONG *et al. v.* POPE MANUFACTURING COMPANY.*

Decided July 14, 1896.

1. LONG—STEERING-HEADS FOR ROAD-VEHICLES—NOT INFRINGED.
Claim 5 of Letters Patent No. 281,091, granted July 10, 1883, to George A. Long, for an improved steering-head for road-vehicles, construed and *Held* not infringed.
2. SPECIFICATION—FAILURE TO DESCRIBE INVENTION CLEARLY—EFFECT OF ON DECISION OF JUDICIAL TRIBUNAL.
Where a patent fails to state the inventor's conception of the state of the art, the particular advance which he understood himself to have accomplished, or the parts of his device or its functions, except incidentally and in a crude and incomplete manner, *Held* that if judicial tribunals misapprehend the scope of the invention the cause will lie in the want of a full and frank disclosure on the face of the patent of what it was, and as this is the fault of the inventor, or in law attributable to him, he must accept the result as one of his own making.
3. CLAIMS—INTERPRETATION OF—FUNCTIONS NOT MENTIONED.
The fact that an inventor claims only certain functions for his invention does not prevent him from reaping the advantage of any other function within the claim, as properly construed, available without a modification of the machine which involves the use of further inventive faculty, although known to him and omitted in the specification without fraud or not known to him. (*Reece Co.* v. *Globe Co.*, 61 Fed. Rep., 958.)
4. SPECIFYING FUNCTIONS—BROADENING CLAIMS.
So much of the mere form given in the specification, drawings, and claim as is necessary to accomplish all the functions expressly enumerated is essential and must be retained. A function afterward discovered cannot be used to broaden a claim, and such function is available to the patentee only when the patent, construed in the light of the circumstances existing when it is applied for, is broad enough to embrace it. When there is nothing to show that the new function was in the mind of either the inventor or of the Patent Office when the patent issued, it cannot be said that if the patent be narrow on its face it should be broadened out by construction to cover this new function.
5. CONSTRUCTION OF PATENT—PAPER PATENT—NEW FUNCTIONS OF THE INVENTION—BROADENING THE INVENTION.
It would establish a very dangerous precedent to give to a mere paper patent which has lain dormant for years a breadth not contemplated on its face by reason of some new function discovered long after its issue and after that function had been availed of in practice by others. Such precedent, if established, would on the whole operate more to entrap honest manufacturers than to advance the useful arts.

APPEAL from the Circuit Court of the United States for the District of Massachusetts.

STATEMENT OF THE CASE.

This was a suit in equity by George A. Long and others against the Pope Manufacturing Company for alleged infringement of Letters Patent No. 281,091, issued July 10, 1883, to George A. Long, for an improved steering-head for road-vehicles. The circuit court held that there was no infringement and dismissed the bill. (70 Fed. Rep., 855.) The complainants appeal.

Before COLT, PUTNAM, and NELSON, Judges.

Mr. Jas. E. Maynadier for the appellants.

Mr. Wm. A. Redding and *Mr. Edmund Wetmore* for the appellee.

PUTNAM, *J.:*

This patent was taken out in 1882, and, so far as it comes in issue here, it has not been put into practical use. Therefore in determining the inventor's conception of the functions of the claim in issue, of the condition of the art, and of the improvement which he gave to the public our safest resource, after so long a lapse of time, is the patent itself. For these purposes the patent is very meager. It fails to state the inventor's conception of the state of the art, the particular advance which he understood himself to have accomplished, or the parts of his device or its functions, except incidentally and in a crude and incomplete manner. If, therefore, judicial tribunals misapprehend the scope of the invention, the cause will lie in the want of a full and frank disclosure on the face of the patent of what it was, and as this is the fault of the inventor, or, in law, attributable to him, he must accept the result as one of his own making.

The claim in issue is as follows:

5. The improved steering-head for road-vehicles, consisting of shoulder g^2, cap i^2, check-nut j^2, sleeve k^2, and balls n^2, in combination with the stem of the crotch h^2, substantially as described.

The only references to this claim in the specification are a drawing showing the parts and the following:

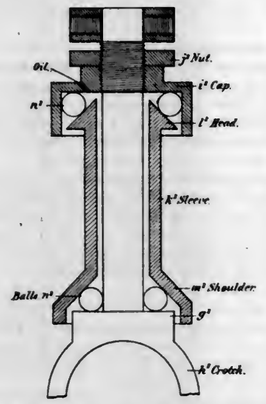
My improvement in the steering-post consists of the shoulder g^2, above the crotch h^2, cap i^2 at the upper end, secured by check-nut j^2, sleeve k^2, with head l^2 and shoulder m^2, and the balls n^2, the arrangement being such that the cap i^2 and check-nut j^2 may be set down readily from time to time whenever the parts may wear slack; and in practice the cap i^2 will fit over head l^2, and the flange of shoulder m^2 will fit over the shoulder of the crotch so tightly as to exclude the dust, and thus insure the most lasting and easy-working contrivance.

It will be observed that the head l^2, over which the substantial controversy in this case arises, is not expressly named in the claim in issue. The same must be said with reference to the particular locations of the balls n^2, on which the complainants rely as establishing the most important function which they claim for their patented device. In this particular both stand on the same footing, and the complainants must accept the head l^2 as an element in the combination if they claim the locations of the balls n^2 as an element. They cannot take the one and reject the other. It may be that a strict comparison of the claim in issue with the specification and a stringent application of the requirements of the law with reference to the construction of claims would defeat the claim for want of a proper enumeration of the elements which necessarily enter into it; but we are not required to determine any question of that character. The claim enumerates expressly sleeve k^2, followed by the words "substantially as described." The description of the sleeve k^2, as shown in the drawing, made a part of the specification, may be construed to carry with it the head l^2 and also the shoulder m^2, which likewise is not

*Rehearing denied August 17, 1896.

specified in the claim. We therefore accept as valid the claim in issue and give to it and make a part of it these elements which are enumerated in the specification and shown in the drawing, although not expressly stated in the claim.

An enlarged reproduction of the steering-post shows thus:

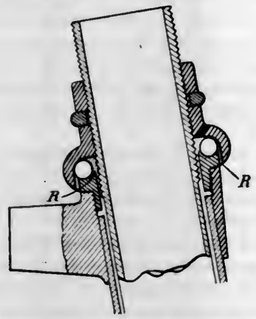


It will be seen that the only functions expressly claimed are convenience in setting down the check-nut and exclusion of dust; but by settled rules this fact does not prevent the inventor from reaping the advantage of any other function within the claim, as properly construed, available without a modification of the machine which involves the use of further inventive faculty, although known to him and omitted in the specification without fraud or not known to him. (*Reece Buttonhole Mach. Co.* v. *Globe Buttonhole Mach. Co.*, decided by this court and reported in 67 O. G., 1720; 10 C. C. A. 194; 61 Fed. Rep., 958, 966.) An additional function is thus stated by the complainants:

The Long steering-head differs in principle from the prior art; for the balls which take the weight in all prior steering-heads are on opposite sides of the stem, with the result that in steering the initial movement of the stem is on an axis which passes diagonally through the stem, while in the Long head it is on an axis which passes on one side of the stem.

The complainants' propositions relative to the alleged "dust-shedding" function do not impress us.

The only differences in the respondent's machine are shown in the following drawing of the head of respondent's steering-post:



The only particular in which this is alleged to differ substantially from complainants' device is in the exterior slope of complainants' head l^2, which, as shown in the patent, is a straight hypotenuse, while in respondent's head it is curved and shows a lip or groove. We are satisfied that the function now claimed, and which we have described, is a useful one, and that, in view of it, the device shows an advance in the state of the art. Indeed, the circumstances under which the respondent is availing itself of it confess this. The only question, therefore, is whether the substitution of the curved surface with a groove or lip, or with both, avoids the claim, so that there is no infringement. The addition of the lip and groove, or either of them, cannot avail the respondent, within the well-known rule that infringement is not usually avoided by adding new elements to those enumerated in the claim. We have, therefore, left for consideration only the curvilinear line substituted for the straight one. That this mere change of form does not of itself determine the question was settled in *Winans* v. *Denmead*, (15 How., 330.) There the patent covered an improved car for the transportation of coal. It showed no form but that of an inverted cone, and for aught that appeared the inventor had in his mind no other whatever. Yet the court held that a car having a pyramidal form infringed. Such a form was within the function which the inventor had conceived when he applied for the patent, and this was plain on the face of the application. The Court said, at page 343, as follows:

Where form and substance are inseparable, it is enough to look at the form only. Where they are separable—where the whole substance of the invention may be copied in a different form—it is the duty of courts and juries to look through the form for the substance of the invention; for that which entitled the inventor to his patent, and which the patent was designed to secure. Where that is found, there is an infringement; and it is not a defense that it is embodied in a form not described and in terms claimed by the patentee.

On the other hand, in *Reece Buttonhole Mach. Co.* v. *Globe Buttonhole Mach. Co.*, (67 O. G., 1720; 10 C. C. A., 194; 61 Fed. Rep., 958,) already cited, we referred at page 197, 10 C. C. A., and page 963, 61 Fed. Rep., to—

the rules of interpretation found in the decisions of the courts, and in text-books, which appertain solely to inventions plainly and essentially narrow;

and at page 197, 10 C. C. A., and page 961, 61 Fed. Rep., we also stated another rule, as follows:

On the other hand, it is true that words and phrases which might have been omitted, on the presumption that they relate to non essentials, may be introduced in such direct and positive manner as to leave the courts no option except to regard them as affecting the objects and limitations of the instrument in question.

We are therefore to apply the foregoing rules to the case at bar. If the functions of the invention were solely those stated in the specification, the claim must clearly have a narrow range, while if the other function now suggested is permitted to aid in controlling its construction it is entitled to a broad one. It is plain, nevertheless, on all rules that so much of the mere form given in the specification, drawings, and claim is essential and must be retained as is necessary in order to accomplish all the functions expressly enumerated therein. This last proposition is only an application of the well-known rule that patents, like other instruments, are to be construed by what appears on their face—

in the light of all the circumstances and of the apparent purposes of the parties to them. (*Reece Buttonhole Mach. Co.* v. *Globe Buttonhole Mach. Co.*, *ubi supra*, at page 194, 10 C. C. A., and page 928, 61 Fed. Rep.)

Of course, as usual with other instruments, this applies only when construction is needed, and not when the patent is clear on its face. It is only the circumstances existing at the time the patent is applied for which are to be taken into consideration in its construction. A function afterward discovered cannot be used to broaden it, and such a function is available to the patentee only when the patent, construed in the light of the circumstances existing when it is applied for, is broad enough to embrace it. In the case at bar there is nothing to show that the function now claimed for the invention was in the mind of either the inventor or of the Patent Office when the patent issued. Therefore it cannot be said that, if the patent be narrow on its face, it should be broadened out by construction to cover this new function. That claim 5 is thus narrow is clear. There is nothing in the patent to suggest that it is to be construed beyond what the drawing itself exhibits. In this particular *Weir* v. *Morden*, (43 O. G., 753; 125 U. S., 98, 106, 107; 8 Sup. Ct., 869,) where a narrow construction was given to a patent, is very much akin. There appear on the face of the specification some things which have especial force in calling for a narrow and precise construction. For example, the check-nut *j*³ is made an express element in the combination. This would hardly be the case if a broadly new function, like that now claimed, was to be covered by it. Moreover, the function particularly described in the specification is that of setting down the set-screw "readily from time to time whenever the parts may wear slack." Indeed, this may be said to be the only function expressly stated, the other, that of excluding the dust, being apparently mentioned only incidentally. For this availability of the set-screw the straight hypotenuse is essential, giving the ball two bearings only and allowing it to be pressed down from time to time as the parts wear loose. In the respondent's device the ball has a bearing at the base, so that the function thus expressly relied on could have no special or peculiar application. A construction of the claim in controversy which would under any circumstances exclude this special function is, as we have said, not admissible. If this invention had been put in early use, and so continued with a long public acquiescence, it might, perhaps, have safely received therefrom a practical construction more favorable to the complainants; but in view of the rapidity with which mechanical improvements advance in this age it would establish a very dangerous precedent to give to a mere paper patent, which has lain dormant for years, a breadth not contemplated on its face by reason of some new function discovered long after its issue and after that function had been availed of in practice by others. There appear in this case some elements which perhaps would render it not inequitable to permit that result here; but the precedent, if established, would on the whole operate more to entrap honest manufacturers than to advance the useful arts.

The decree of the circuit court is affirmed, with the costs of this court for the appellee.

U. S. Circuit Court—Northern District of New York.

EDISON ELECTRIC LIGHT COMPANY *v.* KAELBER.

Decided November 12, 1896.

1. STIERINGER—SAFETY-CATCHES FOR ELECTRIC-LIGHT CIRCUITS—INFRINGEMENT NOT PROVEN.
   Letters Patent No. 281,576, granted July 17, 1883, to Luther Stieringer, for an improvement in safety-catches for electric-light circuits, not proven to have been infringed and bill dismissed.
2. TESTIMONY—INFRINGEMENT.
   Testimony on behalf of complainant that there was no arrangement between complainant and defendant whereby the latter should procure articles from the former to be used at a particular place is very far from a denial that the particular articles in dispute could be purchased in the open market and does not amount to a charge of infringement.
3. INFRINGEMENT—AGENT DEFENDANT—QUIA TIMET ACTION.
   The expression "was awarded to the Western Electric Company through its agent, Mr. Kaelber" is not sufficient to establish the character of Mr. Kaelber's agency or to justify an apprehension of infringement from him. A *quia timet* action will not lie unless there is something to fear.
4. SAME—SAME—LIABILITY.
   A series of guesses will not suffice to inculpate a defendant. Neither will the fact that he received a bid for alleged infringing devices in behalf of another party, in the absence of any threat on his part and in the absence of any showing of profit resulting to him, render him liable.

FINAL hearing in equity.

Mr. Frederic H. Betts and *Mr. L. F. H. Betts* for the complainant.

Mr. Charles A. Brown for the defendant.

COXE, *J.*:

The defendant is sued as agent of the Western Electric Company for the infringement of Letters Patent No. 281,576, granted to Luther Stieringer July 17, 1883, for an improvement in safety-catches for electric-light circuits.

The defendant insists at the outset that no infringement is shown.

The issue of infringement, as made up by the pleadings, is as follows: The bill alleges that the defendant, as agent of the Western Electric Company, the said company, and the Buffalo State Hospital, confederating together, have contracted to erect, sell, and use an electric plant involving the use of the safety-catch of the patent—

and have infringed the said Letters Patent as aforesaid, and are now infringing the same * * * by erecting, selling and using and causing to be erected, sold and used as aforesaid * * * the improvements covered by said Letters Patent.

The bill alleges, further, that by reason of the said infringement great injury will result to the complainant and great gains to the defendant. In short, the bill charges that the defendant has made a contract which involves infringement, that he has actually infringed, is infringing, and has received great gains and profits by reason thereof. All this on information and belief.

The answer, which is on oath, contains a positive denial of the charge of infringement in language as clear and explicit as it is possible to employ.

What is the proof?

In September, 1893, the managers of the State hospital at Buffalo advertised for bids for the installation of an electric plant at that institution, pursuant to specifications which were issued to bidders.

The complainant and the Western Electric Company both competed for the work, and on or about the 2d of October, 1893, it—

was awarded to the Western Electric Company through its agent, Mr. Kaelber.

Thereupon the complainant wrote to the Western Electric Company that the installation of the Buffalo plant would infringe a fundamental patent owned by it covering the so-called "feeder" system. The patent had at that time been upheld by the courts, but was subsequently overthrown. No allusion was made in this letter to the patent now in controversy.

The paragraphs of the Buffalo specifications of which it is sought to predicate infringement are as follows:

There is to be no woodwork about the switchboard. All switches shall be built upon the board, and not upon separate bases bolted to it. As far as practicable, all instruments, terminals, fuse-blocks and other apparatus are to be attached to the board in the same manner.

Cut-outs shall be entirely of porcelain and brass with porcelain covers. When in cabinets they have mica covers. All fuses carrying over ten amperes shall have brass terminals stamped with the capacity. Rosettes used with moldings shall be mounted on square porcelain bases and shall be fused. All pendants shall be hung from rosettes.

All canopy cut-outs shall be of porcelain double-poled and fastened to wall or fixture.

All work shall be done in accordance with the rules and regulations of the Buffalo Board of Fire Underwriters.

The complainant's expert witness testifies, in substance, that it would be impossible to perform a contract embodying these specifications without infringing the Stieringer patent.

The defendant's expert, on the contrary, expresses an equally positive opinion that the specifications can be carried out without infringing the patent and explains how this can be done. He also testifies that devices embodying all the combinations of elements of the claims in controversy—

have been for sale in the market by the complainant or its licensee without any mark or notice that they are manufactured under any patent. This is so to my personal knowledge.

I do not understand that this proposition is denied. The complainant's manager, Mr Hughes, testifies that there was no arrangement between the complainant and Kaelber whereby the latter should procure articles from the former to be used at the Buffalo hospital. This is very far from a denial that the particular articles in dispute could be purchased in the open market, and especially so in view of Mr. Hughes's further testimony that the complainant sells the Stieringer safety-catches in the general market "subject to existing contracts." He is asked:

Is it possible that, if the patent had been installed, any articles which might come within the description of Patent No 281,576 are those manufactured by the General Electric Company?—Ans. I am not prepared to say that it is impossible.

There is no evidence that a contract was made or that any plant was installed at the Buffalo hospital. In fact, the entire case against the defendant rests upon the aforesaid statement of Mr. Hughes that the contract—

was awarded to the Western Electric Company, through its agent Mr. Kaelber.

Omit the last five words and there is absolutely nothing connecting Kaelber with the transaction. If this loose statement is sufficient to establish agency at all, what was the character of the agency? Was he a general agent or was he a special agent only to represent the Western Company before the hospital board? For aught that appears he may have represented the Western Company as Mr. Crowell represented the complainant, or he may have been simply an attorney-at-law to hand in the company's bid and receive the award in case the bid was accepted. It is manifest that there can be no well-grounded apprehension of infringement from such an agent. A *quia timet* action will not lie unless there is something to fear.

There is not a particle of evidence to show that Kaelber ever infringed, or threatened or agreed to infringe, or assisted any one else to infringe, or that he was in a position where he could do or would be likely to do any of these things.

It is impossible to inculpate this defendant except by a series of guesses which equity will not tolerate. Kaelber has said nothing and done nothing blamable. When the hospital board concluded to accept the Western Company's bid, they communicated the fact to him. This was all. If upon such proof a party can be held as a wrong-doer, subject to an injunction and an accounting, and compelled to pay a bill of costs, few will be safe.

In any view the real defendant is the Western Electric Company. The real injury, if any, has been inflicted by it. Viewed in its most favorable light for the complainant, Kaelber's action placed the Western Company in a position where it might infringe. The moment the contract was made, assuming that it compelled infringement, there was reason to fear that company, but not the defendant. He has made no threat. An injunction against him would not have stopped the work. To make him pay for profits which he has never received would be an injustice.

But in order to test the question still further let it be assumed that the Western Electric Company and not Kaelber is the defendant. How then does the case stand? There is an allegation of infringement on information and belief and a positive denial under oath. There is no proof of actual infringement. There is proof that a contract was awarded the company which if carried out pursuant to the specifications may involve infringement and may not. There is, as before stated, no proof that a contract was actually entered into or a plant installed. There is proof that the infringing devices were sold in the open market by the complainant or its licensees. *Non constat*, the Western Company may have had a quantity of these on hand when it made the bid.

Remembering that the burden of proving infringement is upon the complainant and that even in a *quia timet* suit there must be well-grounded proof of an apprehended intention to violate the patent-right, it is thought that there is a failure to prove a case against the defendant.

It would seem that the complainant may have overlooked the fact that Kaelber is the sole defendant, for in the brief it is argued that enough has been shown to indicate that there was a fair probability that the safety-catches of the patent would be installed at Buffalo. The brief proceeds:

If the defendant did not actually install such apparatus as is described and illustrated in the patent in suit, the burden was upon it to have proved it.

There can be no pretense upon this proof that the burden was upon Kaelber to prove this, for the reason

that the hypothesis upon which the proposition is founded fails wholly as to him.

The Western Electric Company is not a party. It evidently declined the invitation of the bill to "subject itself to come within the jurisdiction of this court."

As to the only defendant who is before the court, the complainant's difficulty is not with the law, but with the facts. The rule of law is plain and simple; but the proof does not bring the defendant within the rule. Too much is left to uncertainty and speculation. Should the court decree for the complainant, it could never rid itself of the painful doubt that it may have done an injustice to an absolutely blameless man.

The bill is dismissed.

U. S. Circuit Court—Western District of Pennsylvania.

BENNETT & SHEPHERD *v.* SCHOOLEY.

Decided November 18, 1896.

1. SUPPLEMENTAL BILL IN THE NATURE OF A BILL OF REVIEW—NEW EVIDENCE—DILIGENCE.

A party asking relief by bill of review must satisfy the court that the evidence upon which he relies could not, with the exercise of due diligence, have been secured prior to the hearing.

2. PROOF OF CARE IN SECURING EVIDENCE.

Proof that respondent wrote to a firm of attorneys instructing them to send him copies of all patents relating to a certain subject does not amount to proof that such attorneys made a search to discover all such patents, though they sent a number, and presumption in favor of such search having been made is negatived by the discovery of the patents now urged in the place where prudence would have suggested a search.

SUR APPLICATION for leave to file a supplemental bill in the nature of a bill of review.

Mr. A. S. Pattison and *Mr. J. M. Nesbit* for the plaintiffs.

Messrs. Strawbridge & Taylor for the respondent.

BUFFINGTON, *J.*:

This is an application by the respondent for leave to file a supplemental bill in the nature of a bill of review. There has been a hearing upon proofs, opinion filed, decree entered adjudging complainants' patent valid and that respondent had infringed certain claims, and a reference to a special master for accounting. The alleged ground for the present application is after-discovered evidence—namely, United States Patent No. 273,441, granted March 6, 1883, to J. H. Bevington, and English Patent No. 2,908, granted in 1867 to Marmaduke Wilkin and John W. Clark, which are alleged to disclose the invention shown by Beckwith in the patent in suit.

The principle is well settled that to warrant the relief here sought the party asking it must, *inter alia*, satisfy the court that he could not, with the exercise of due and reasonable diligence and care, have obtained such evidence prior to the hearing of the cause. (*Hitchcock* v. *Tremaine*, Fed. Cas. No. 6,540; *Reeves* v. *The Keystone Bridge Company*, Fed. Cas. No. 11,661; *Baker* v. *Whiting*, Fed. Cas. No. 786; *Page* v. *Holmes Co.*, 2 Fed. Rep., 333.)

Tested by this standard we are clearly of opinion the petitioner has not shown himself entitled to the relief sought. Patent No. 298,935, to J. H. Bevington, was by him offered in evidence and examined and considered by his expert witness. It expressly referred to the Bevington patent now sought to be shown as after-discovered evidence in these words:

> The object of this invention is to improve certain devices on which I have already obtained Letters Patent No. 273,441, dated March 6, 1883, and to which reference is had in this specification.

With such notice of the existence of the prior patent then and there brought home to him he cannot urge it as after-discovered evidence.

As to the English patent, the respondent has not met the burden the law casts on him. The only proof is that after conference with his then local counsel he wrote a firm of patent solicitors in Washington for copies of all patents prior in date to the patent in suit relating to the subject of torpedoes; that they sent him a number of patents, but the two patents now complained of were not among them. There is no proof as to the nature of search made by the firm to which he sent, or, indeed, that any was made. We cannot presume such search was made. Indeed, if presumptions were to avail, the presumption is rather against the theory of a thorough search. The patents sent did not include the Bevington patent now complained of, and which was covered by the respondent's request. Then, too, respondent's affidavits show that on search by his Philadelphia counsel, made in preparation for the present application, the English patent was found in the place in the Patent Office where prudence suggested a search be made. In the absence of all affirmative proof that such a search was made by the parties to whom respondent first applied we think we are justified in assuming that if such search had been made when the bill was filed it would have resulted as the present one did—viz., in finding the English patent.

Respondent's application will be discharged at his cost.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 10. TUESDAY, DECEMBER 8, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
DISBARRED ATTORNEYS	1433
PREPARATION OF SPECIFICATIONS AND AMENDMENTS FOR THE PRINTER	1433
WOMEN INVENTORS	1433
INDEXES TO FOREIGN PATENTS	1433
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	1433
AMENDMENT TO THE RULES OF PRACTICE	1433
PRIVILEGES OF THE SCIENTIFIC LIBRARY	1434
ISSUE OF DECEMBER 8, 1896	1434
APPLICATIONS UNDER EXAMINATION	1434
PATENTS GRANTED	1435
REISSUES	1586
DESIGNS	1587
TRADE-MARKS	1590
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Couch *v.* Finnegan	1595
DECISIONS OF THE U. S. COURTS—	
Bryant *v.* Seymour, Commissioner of Patents	1599
Hien *v.* Pungs	1600
Pelton *v.* Evered	1600

Disbarred Attorneys.

(ORDER NO. 1,108.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 14, 1896.

It is hereby directed that any person who has been disbarred from practice before the Patent Office by order of the Commissioner be denied access to the files of the Office, either in his own capacity or as the representative of any other person or firm.

JOHN S. SEYMOUR,
Commissioner.

Preparation of Specifications and Amendments for the Printer.

The Examiners are directed before passing applications to issue to carefully examine all the papers and see that they are in such shape and condition as to avoid all possibility of error being made by the printers. Whenever interlineations or erasures have been made in the specifications or amendments which would lead to confusion and mistake, the Examiners should require the entire specification to be rewritten before passing the case to issue.

Women Inventors.

The Patent Office has published and has for sale a volume containing a list of women inventors to whom patents have been granted by the United States from 1790 to July 1, 1888. 44 pages. Paper covers, 50 cents.

An Appendix to the above, covering the period from July 1, 1888, to October 1, 1892. One volume, 18 pages. Paper covers, 25 cents.

Appendix No. 2, October 1, 1892, to March 1, 1895. One volume 28 pages. Paper covers, 25 cents.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth $10 00
INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pages—
Bound half-turkey 2 50
Bound in cloth 1 25
Paper covers 1 00

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.
Argentine Republic.
Belgium.
Brazil.
Costa Rica.
Denmark.
Haiti.
Honduras.
Italy.
Mexico.
Netherlands.
Norway.
Peru.
Portugal.
Russia.
San Salvador.
Servia.
Sweden.
Switzerland.

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Amendment to the Rules of Practice

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of December 8, 1896.

Patents	432—No. 572,512 to No. 572,943, inclusive.
Designs	17—No. 26,375 to No. 26,391, inclusive.
Trade-Marks	47—No. 29,245 to No. 29,291, inclusive.
Prints	None.
Labels	None.
Reissues	3—No. 11,577 to No. 11,579, inclusive.
Total issue	499

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	4	...	New Hampshire	...	...
Arizona Territory	...	...	New Jersey	26	1
Arkansas	3	...	New Mexico Territ'y	...	...
California	13	...	New York	64	11
Colorado	4	...	North Carolina	1	...
Connecticut	18	...	North Dakota	1	...
Delaware	...	...	Ohio	24	1
District of Columbia	4	...	Oklahoma Territory	1	...
Florida	1	...	Oregon	...	...
Georgia	6	...	Pennsylvania	52	4
Idaho	...	...	Rhode Island	3	1
Illinois	32	3	South Carolina	...	...
Indian Territory	2	..	South Dakota	1	...
Indiana	...	...	Tennessee	3	...
Iowa	8	...	Texas	9	...
Kansas	7	...	Utah	1	1
Kentucky	3	2	Vermont	3	...
Louisiana	1	1	Virginia	1	...
Maine	4	...	Washington	...	...
Maryland	6	1	West Virginia	2	...
Massachusetts	28	4	Wisconsin	17	2
Michigan	16	...	Wyoming	...	...
Minnesota	10	1	U. S. Army	1	...
Mississippi	...	...	U. S. Navy	...	...
Missouri	15	1			
Montana	...	...	Total to citizens of the United States	403	34
Nebraska	4	...			
Nevada	...	...			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	...	...	Mexico	...	...
Australia	...	...	Netherlands	...	...
Austria-Hungary	...	...	Newfoundland	...	...
Barbadoes	...	...	New South Wales	1	...
Belgium	...	...	New Zealand	...	...
Bermuda	...	...	Norway	...	...
Brazil	...	...	Orange Free State	...	...
Canada	2	1	Peru	1	...
Canary Islands	...	...	Queensland	...	...
Cape Colony	...	...	Russia	...	...
Ceylon	...	...	Scotland	1	...
Chile, Republic of	...	...	South African Republic	...	...
Colombia	...	...	South Australia	...	...
Cuba	...	...	Straits Settlements	...	...
Denmark	...	...	Sweden	...	...
England	19	4	Switzerland	...	...
France	2	2	Victoria	1	1
Germany	12	5	West Australia	...	...
Guatemala	...	...			
India	...	...			
Ireland	1	..	Total to citizens of foreign countries	40	13
Italy	...	...			

APPLICATIONS UNDER EXAMINATION.

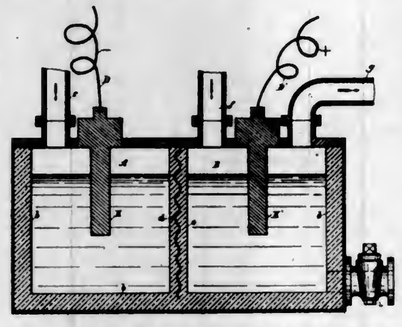
Condition at Close of Business December 1, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Nov. 2	Nov. 23	176
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 2	Nov. 18	90
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Nov. 2	Nov. 4	208
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Nov. 4	Nov. 3	233
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Nov. 2	Nov. 3	225
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Nov. 2	Nov. 2	180
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Nov. 2	Nov. 2	191
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Nov. 2	Oct. 28	148
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Nov. 3	Oct. 10	221
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 2	Oct. 10	314
	Between one and two months.			
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Oct. 24	Nov. 19	131
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Oct. 31	Nov. 9	251
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Oct. 31	Nov. 3	164
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Oct. 31	Nov. 2	260
255	XII. Mechanical Engineering, Store-Service, etc.	Oct. 26	Nov. 1	258
93	XXI. Textiles, etc.	Oct. 22	Oct. 30	193
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 26	Oct. 29	394
248	XVIII. Steam-Engineering, etc.	Oct. 21	Oct. 29	136
215	XVII. Paper Manufactures and Printing	Oct. 19	Oct. 29	148
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Oct. 2	Oct. 19	430
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Oct. 24	Oct. 18	191
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Oct. 12	Oct. 17	402
253	X. Carriages and Wagons	Oct. 22	Oct. 16	361
246	I. Tillage and Fences	Oct. 12	Oct. 16	328
120	IX. Hydraulics, Fire-Extinguishers, etc.	Oct. 27	Oct. 13	242
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Oct. 10	Oct. 12	369
106	II. Farm Stock, Products, etc.	Oct. 6	Sept. 30	292
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes.	Sept. 8	Oct. 8	1224
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Sept. 4	Oct. 8	356
102	XIX. Stoves and Furnaces	Sept. 18	Sept. 17	472
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Sept. 8	Sept. 9	267
	Between three and four months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Aug. 26	Nov. 10	546
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 8	Oct. 6	926
	Total number of applications awaiting action			10,327
	Under one month in arrears.			
	Designs	Nov. 11	Nov. 21	142
	Trade-Marks	Nov. 7	Nov. 10	62

PATENTS

GRANTED DECEMBER 8, 1896.

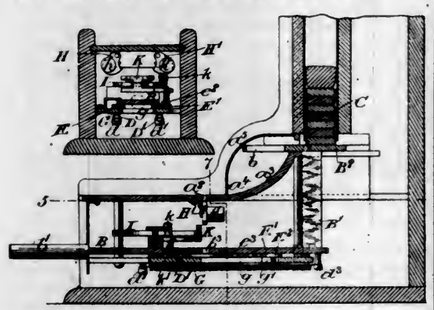
572,512. PROCESS OF MANUFACTURING PHOSPHATES OF ALKALIES. HEINRICH ALBERT, Biebrich, Germany, assignor to the Chemische Werke, vormals H. & E. Albert, same place. Filed Jan. 28, 1896. Serial No. 577,149. (No specimens.)



Claim.—1. The herein described process of manufacturing phosphates of the alkalies which consists in forming a bath of phosphoric acid and a bath of one or more of the soluble salts of the alkali metals, associating the said two baths together in an electrical circuit, the said baths being separated by a porous diaphragm and thereupon electrolyzing the said combined baths by passing a current of electricity therethrough, whereby a mono, di or tri basic phosphate of the alkali employed is produced at the cathode.

2. The herein described process for the manufacture of caustic alkalies which consists in forming a bath of phosphoric acid and a bath of one or more of the soluble salts of the alkali metals, associating the said two baths together in an electrical circuit, the said baths being separated by a porous diaphragm and thereupon electrolyzing the said combined baths by passing a current of electricity therethrough, whereby a mono, di or tri basic phosphate of the alkali employed is produced at the cathode, and treating the phosphate of the alkali produced with lime, substantially as described.

572,513. VENDING-MACHINE. FRANK D. ARTHUR, New York, N. Y. Filed Jan. 25, 1896. Serial No. 576,825. (No model.)



Claim.—1. A suitable casing, a reciprocating bar extending from within to the exterior of the casing and provided with an opening for the reception of a coin, means for directing the coin to the opening in the bar, a support for the coin beneath the bar arranged to hold the coin in the opening in the reciprocating bar during a predetermined length of movement of the bar, a dog for holding the bar locked and under the control of the coin carried by the bar to be released, a ratchet-toothed dog in position to engage the edge of the coin and thereby prevent a return movement of the reciprocating bar until the coin has been discharged and a discharge mechanism under the control of the bar, substantially as set forth.

2. A suitable casing, a reciprocating bar extending from within to the exterior of the casing and provided with an opening for the reception of a coin, means for directing a coin from the exterior of the casing to said opening in the reciprocating bar, discharge mechanism under the control of the bar, a stationary plate beneath the bar provided with an opening having a contracted portion of such width as to prevent a coin of the proper size from passing through and thereby retaining it in the opening in the said reciprocating bar and with an enlarged portion of such width as to permit the coin to fall through, a spring-actuated dog for holding the reciprocating bar normally locked and under the control of the coin carried by the bar to release the dog and a spring-actuated ratchet-toothed dog in position to engage the coin carried by the bar to prevent the return movement of the reciprocating bar until the coin has been discharged, substantially as set forth.

3. The combination with a coin controlled operating-bar, a discharging mechanism, and means for directing a coin to the bar, of scales interposed in the passage-way of the coin for controlling the passage of coins with respect to the weight and a permanent magnet located at the side of the passage-way for obstructing the passage of coins with respect to substance, substantially as set forth.

4. The combination with a coin controlled operating-bar, a discharge mechanism and means for locking the bar normally against movement sufficient to operate the discharge mechanism while permitting it a limited movement, of means for obstructing coins other than those intended to pass to the coin-controlled bar and an ejecting mechanism under the control of the operating-bar during its preliminary movement to throw the obstructed coin out of the passage-way of a subsequent coin, substantially as set forth.

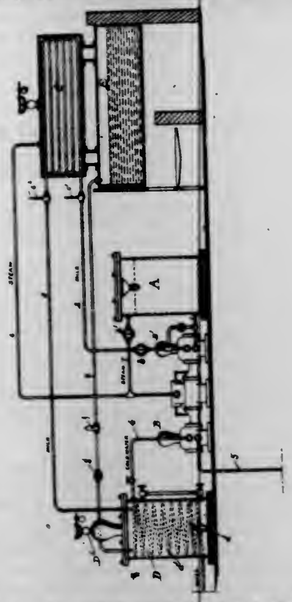
5. The combination with a coin-controlled operating-bar, a discharge mechanism and means for directing a coin to the bar, of scales interposed in the passage-way of the coin for controlling the passage of coins with respect to the weight, a permanent magnet located at the side of the passage-way for obstructing the passage of coins with respect to substance and ejecting mechanism under the control of the operating-bar for ejecting any coins which may be retained by the magnet or scales, substantially as set forth.

572,514. APPARATUS FOR STERILIZING LIQUIDS. FRANK M. ASHLEY, Hawthorne, N. J. Filed Mar. 19, 1895. Serial No. 542,337. (No model.)

Claim.—1. In an apparatus for the sterilization of milk and the like, a receptacle for the milk or other liquid to be sterilized, a source of steam supply, pipes leading from said source of steam supply into said receptacle, a heating-chamber through which the liquid passes and connections between said chamber and the source of steam supply, a second receptacle for the milk or other liquid located at the opposite end of the system from the first receptacle, a conduit extending between the same and the source of steam supply, a conduit for the milk or other liquid extending between the heating chamber and said second receptacle and means for cooling the liquid in said second receptacle while it is under steam-pressure, whereby steam is supplied simultaneously to the receptacles on opposite ends of the system and the pressures practically counterbalanced; substantially as described.

2. In an apparatus for the sterilization of milk and the like, a receptacle for the milk or other liquid to be sterilized, a source of steam supply, pipes leading from said source of steam supply into said receptacle, a heating-chamber through which the liquid passes and connections between said chamber and the source of steam supply, a second receptacle for the milk or other liquid located at the opposite end of the system from the first receptacle, a conduit extending between the same and the source of steam supply, a conduit for the milk or other liquid extending between the heating-chamber and said second receptacle and means for cooling the liquid in said second receptacle while it is under steam-pressure, whereby steam is supplied simul-

taneously to the receptacles on opposite ends of the system and the pressures practically counterbalanced, said steam-pipe between the source of steam supply and the cooling-receptacle being provided with a reducing-valve: substantially as described.



3. In the herein described system for sterilizing and subsequently cooling milk or other liquid, receptacles located at either end of the system, conduit-pipes leading from the one to the other and an intermediate heating-chamber through which the liquid passes, a source of steam supply and connections between said source of steam supply and the heating-chamber and also the liquid-receptacles and means for cooling the liquid in one of said receptacles; substantially as described.

572,515. APPARATUS FOR STERILIZING LIQUIDS. FRANK M. ASHLEY, Hawthorne, N. J. Filed Mar. 19, 1895. Serial No. 542,338. (No model.)

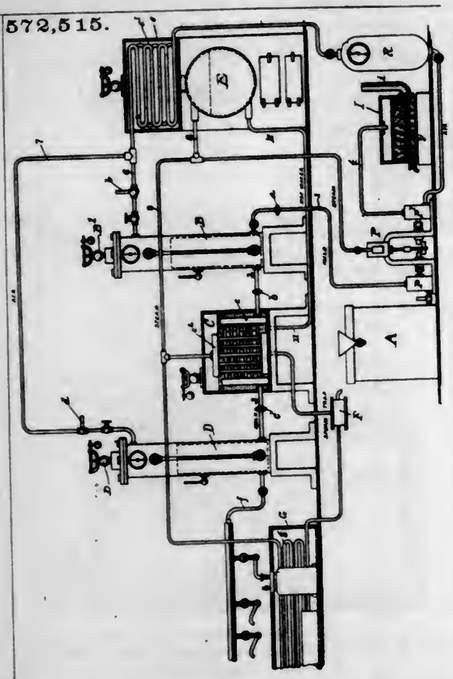
Claim.—1. The herein-described apparatus for sterilizing milk and the like comprising a receptacle for the milk or other liquid to be sterilized, a series of receptacles for said milk as B D, a heating-chamber arranged between said receptacles B D and connecting with each of said receptacles, means for forcing the liquid to be sterilized from the first-containing-receptacle through the two receptacles B D and the heating-chamber, a source of steam supply and connections between the source of steam supply and the heating-chamber, connections between said source of steam supply and a suitable pump for causing circulation of the liquid to be sterilized, a source of hot-air supply also connected to said pump whereby said hot air is forced through suitable conduits, and connections between the source of hot-air supply and each of the receptacles B D.

2. In an apparatus for sterilizing milk or the like, a source of steam supply, a milk-containing receptacle such as B, means for forcing hot air under pressure through said source of steam supply and into said milk-containing receptacle B, a heating-chamber also connected with the source of steam supply and in connection with the chamber B, whereby the milk or other liquid to be sterilized is heated to the proper temperature; substantially as described.

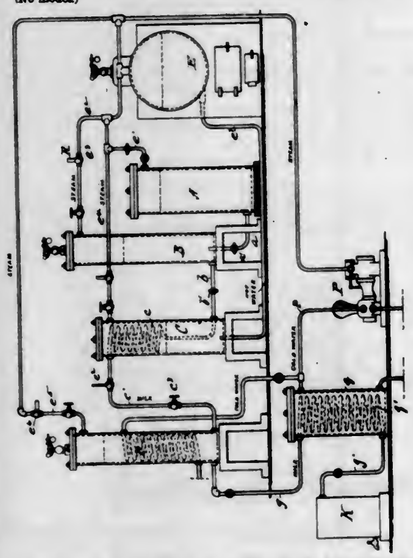
3. In an apparatus for sterilizing milk and the like, a source of liquid supply, a liquid-containing receptacle as B with means for forcing the liquid thereinto, means for supplying air under pressure to said receptacle B and means for heating said air to a high temperature before it enters into contact with the milk, and means for heating said milk while under pressure, above the boiling-point; substantially as described.

4. In the herein-described apparatus, the chambers B D, with means for supplying hot air at varying pressures respectively to said receptacles, a heating-chamber intermediate the two receptacles and connected with each of them, and means for forcing the liquid to be sterilized from a source of supply through the receptacles B D and the heating-chamber; substantially as described.

572,515.



572,516. APPARATUS FOR STERILIZING LIQUIDS. FRANK M. ASHLEY, Hawthorne, N. J. Filed Mar. 21, 1895. Serial No. 542,572. (No model.)

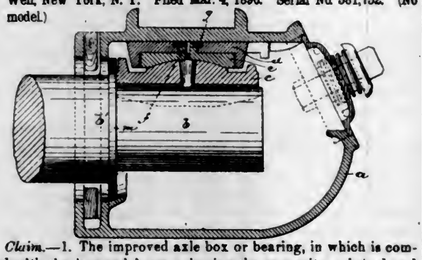


Claim.—1. The herein-described apparatus for sterilizing milk or other liquids comprising a receptacle into which the liquid is forced, means for supplying pressure to the liquid in said chamber, a second chamber provided with a coil and connections between the coil and the first chamber with means for heating the coil, a third chamber with connections between said chamber and the second chamber, and means for keeping the liquid in said third chamber under pressure with means for cooling it in said chamber while under pressure; substantially as described.

2. The herein described apparatus for sterilizing milk or other liquids comprising a receptacle as A, a source of steam supply, a second receptacle as B with a liquid-conduit between said receptacles, connections between the source of steam supply and both said receptacles for maintaining pressure upon the liquid therein, a heating-chamber in connection with the second liquid-receptacle with means for supplying heat thereto for heating the liquid, and a cooling-chamber D in connection with the heating-chamber, and connections between said cooling-chamber and the source of steam supply whereby the liquid is cooled under steam-pressure; substantially as described.

3. In the herein-described apparatus, the receptacles A B, with connections between the same, a source of steam supply and connections between the same and both said receptacles, a third receptacle C provided with a coil in connection with the receptacle B, the body of said receptacle C being also connected with the source of steam supply whereby the liquid in the coil is heated, a fourth receptacle as D with connections between it and the coil in the third receptacle, with connections between said receptacle D and the source of steam supply, and a cooling-coil arranged in said receptacle D; substantially as described.

572,517. CAR-AXLE BOX AND BEARING. JACKSON R. BAKER, Jersey City, N. J., assignor, by direct and mesne assignments, to A. J. Weil, New York, N. Y. Filed Mar. 4, 1896. Serial No. 581,752. (No model.)



Claim.—1. The improved axle box or bearing, in which is combined with the box and brass *c*, having the convexity, a key *d*, and an intermediate concave bearing having a pivot extending up into the key, substantially as set forth.

2. The improved axle box or bearing in which are combined the box, brass, intermediate bearing having a pivotal rivet and washer *g*, all arranged and operating, substantially as set forth.

3. In combination with the car-axle having the shoulder *b'*, a journal-box, a brass arranged in said box and seated on said journal and carrying the said box and its load, and a loose collar *m*, also arranged in said box and lying between said brass and the shoulder of the journal, the said collar projecting from the journal beyond the shoulder thereof, substantially as set forth.

572,518. CAR-BRAKE. WILLIAM S. G. BAKER, Baltimore, Md. Filed Sept. 25, 1896. Serial No. 606,940. (No model.)

Claim.—1. The combination with the truck-frame of the brake-shoes, the suspending links and springs held under compression at all times to produce a tension on the links, for the purpose specified.

2. The combination of the truck-frame, the brake-shoes, the brake-beam, links suspending the shoes and beam from the truck-frame, and springs held under compression and interposed between the truck-frame and the brake-beam.

3. The combination of the truck-frame, the brake-shoes, the brake beam to which they are connected, links suspending the shoes and beam from the truck-frame, springs held under compression and interposed between the truck-frame and the brake-beam, and other springs for withdrawing the brake-shoes from the wheels.

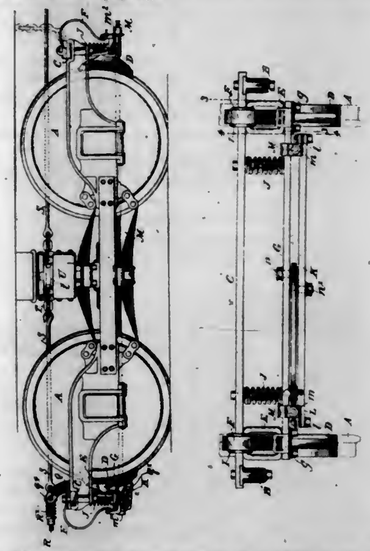
4. The combination of the truck-frame, the blocks having the grooved flanges, the suspending-links seated in the grooved flanges, and the brake-shoes supported by the links.

5. The combination of the truck-frame, the slotted blocks adapted to slide onto the truck-frame and having grooved flanges as described, the links seated in the grooved flanges, and the brake-shoes supported by the links.

6. The combination of the brake-beam, the brake-shoes secured to the brake-beam and having the grooved flanges, the supporting-links seated in the grooved flanges, and means for supporting the links at their upper ends.

7. The combination of the brake-beam, the brake-shoes, the links suspending them, the slotted arms extending from the brake-shoes, the leaf-springs having their lower ends extending through the slots in the arms, and connections between the leaf-springs and the truck-frame, and between the upper ends of the supporting-links and the truck-frame.

8. The combination of the truck-frame, the supporting-links, the withdrawing-springs, blocks on the truck-frame having grooved flanges to support the links, and groove-seated for the leaf-withdrawing springs, and the brake-shoes supported by the links and connected with the withdrawing-springs.



9. The combination of a brake-beam, an equalizing-beam, slotted brackets connecting the brake-beam with the equalizing-beam, and an operating-lever pivotally connected with the brake-beam and equalizing-beam.

10. The combination of the brake-beams, the equalizing-beams, slotted brackets connecting the brake-beams and equalizing-beams, and brake-rods passing through the brackets to connect the equalizing-beams at opposite ends of the truck.

11. The combination of the brake-beams, the equalizing-beams, the slotted brackets connecting the brake-beams and equalizing-beams the brake-rods extending through the brackets and heads on the rods seated in sockets in the brackets.

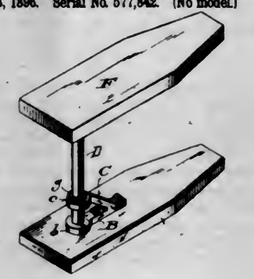
12. The combination of a brake-beam, an equalizing-beam, and brackets formed with flanges secured to the equalizing-beam, and with slots through which the brake-beam extends.

13. The combination of an operating-lever formed with a curved enlargement and a curved recess, and a link having a slot, the opposite walls of which correspond with the enlargement or recess, for the purpose specified.

14. The combination of a link, one end of which is formed of one piece of metal with a slot having opposite curved walls and a brake-operating lever formed with a curved enlargement and a recess conforming to the walls of the slotted link.

15. The combination of the brake-levers at opposite ends of a car, rods connected with the levers, chains connected with the rods, guide-pulleys between which the chains extend, a horizontally-pivoted lever centrally arranged between the trucks of an eight-wheeled car, and rods connecting the chains with the centrally-arranged lever.

572,519. IRONING-TABLE. AUSTIN BENEDICT, Merrill, Wis. Filed Feb. 3, 1896. Serial No. 577,842. (No model.)



Claim.—1. A knockdown ironing-table comprising a suitable base, a socket-bracket fast on the base central of the same adjacent to an extremity thereof, a lateral lug in the socket, a socket-fitting standard having a longitudinal lug-engaging recess, whereby it is held against rotation when in said socket, a collar on the standard arranged to bear upon the aforesaid socket to prevent strain on said lug, a plate on the upper end of the standard, and an ironing-board having one end thereof secured to the plate.

2. A knockdown ironing-table comprising a suitable base, a bracket that being fast on the base central of the same at one end thereof consists of a lower horizontal arm having an eye-terminal, a diverging upper arm, having an eye-terminal in register with the one aforesaid and a lateral lug in the lower eye of the bracket; a standard engageable with both eyes of said bracket and provided with a longitudinal recess engageable with said lug, a plate on the upper end of the standard, and an ironing-board having an end thereof secured to the plate.

572,520. HINGE-PIN FOR BREAKDOWN GUNS. ALBERT D. BLANCHARD, Wichita, Kans. Filed June 10, 1896. Serial No. 594,935. (No model.)

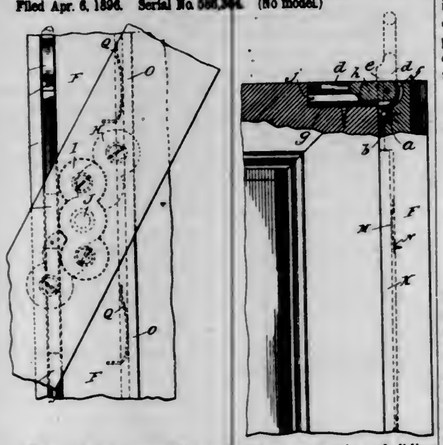


Claim.—1. In a breech-loading gun, in combination with the barrel and stock-frame, an oscillating conical-shaped hinge-pin, the barrel-lug, and a spiral spring for holding said pin to automatically keep the breech base and barrel of said gun tight together.

2. In a breech-loading gun a conically-shaped pin provided with a flat surface on one side the stock-frame having a conical-shaped hole adapted to receive said conical pin said pin adapted to oscillate in said hole, and a barrel-lug having a flat surface, against which said flat surface of said pin presses.

3. In the herein-described breech-loading gun, having a conical-shaped pin provided with a flat surface the stock-frame having a conical-shaped hole adapted to receive said pin, a barrel-lug having a flat surface against which the flat surface of said pin presses, and a spring for automatically keeping said conical-shaped pin tight in said conical-shaped hole for the purpose specified.

572,521. REVERSIBLE WINDOW. SILAS S. BRADSHAW, Brooklyn, N. Y., assignor of one-half to Charles Lyons, Jr., New York, N. Y. Filed Apr. 6, 1896. Serial No. 586,364. (No model.)



Claim.—1. In a reversible window, the combination of sliding strips, a sash pivoted to the strips, a plurality of longitudinal grooves in the sliding strips, in each of which there are spring actuated sealing rods or bars adapted to close the joints between the strips and the sash and the frame, respectively, for the purposes set forth.

2. In a reversible window, the combination of sliding strips, a sash pivoted to the strips, devices adapted to draw the sash and strips toward each other, and to hold them in their closed position, a plurality of longitudinal grooves in the sliding strips, in each of which there are spring-actuated sealing rods or bars, adapted to close the joint between the strips and the sash and the frame, respectively, for the purposes set forth.

3. The combination in a window of a sash, sliding strips therefor, pivots connecting the sash and the strips, spring-actuated sealing rods or bars, located between the opposing surfaces of the sash and the strips, and cam-acting locking devices adapted to draw the sash and strips together and to hold them together, for the purposes set forth.

4. The combination in a window of a sash, sliding strips therefor, pivots connecting the sash and the strips, spring-actuated sealing-rods, located in the sliding strips and adapted to close the joint between the strips and the sash, and devices adapted to draw the sash and strips together, and to hold them together, for the purposes set forth.

5. The combination in a window of a sash, the stiles whereof are flat on their edges, sliding strips therefor, pivots connecting the sash and strips, a recess or groove in the sliding strips, adapted to receive a sealing-rod, spring-actuated sealing-rods, located in the said grooves, adapted to engage with the flat surface of the sash-stiles and locking devices to draw the sliding strip and sash toward one another, and to hold them together, for the purposes set forth.

6. The combination in a window of a sash, sliding strips therefor, pivots connecting the sash and the strips, spring-actuated sealing rods or bars located in a groove or recess in the sliding strips, and confined therein at one point only throughout their length, said strips being adapted to outward and also to lateral movement, for the purposes set forth.

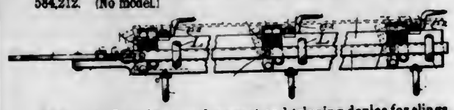
7. The combination in a window, of a sash, the lateral edges of the stiles whereof are flat, sliding strips for the sash, pivots connecting the sash and the strips, spring actuated rods or bars located between the opposing surfaces of the sash and strips, cam-acting locking devices to draw the strips and sash toward one another, and hold them together, and spring-actuated sealing rods or bars, located in the sliding strips and adapted to seal the joints between the strips and the window-frame, for the purposes set forth.

8. A tilting window, comprising a sash, pivoted sliding strips, and a combined joint-closing and rattle-preventing device, composed of a continuous spring-actuated rod or bar having curved ends, located in a recess in the sliding strips and constructed and arranged to close the joint between it and the window-frame, and means connected with the sliding strip, to limit the outward movement of the said rod or bar when the sliding strips are removed from the window-frame, for the purposes set forth.

9. The combination in a window of a sash, sliding strips therefor, pivots connecting the sash and the strips, locking devices to draw and hold said parts together, comprising a pivoted latch on the sliding strips and a striker-plate having lugs with cam-like surfaces, which engage with the latch to draw said parts toward each other, and to hold them together, for the purposes set forth.

10. The combination in a window of a sash, sliding strips therefor, pivots connecting the sash and the strips, and a device for drawing said parts together, and locking them in operative position, comprising a pivoted latch located upon the sliding strips and a striker-plate having upwardly-projecting lugs with cam like surfaces which engage with the latch, and means upon the latch to prevent its extremity from engaging said striker-plate, for the purposes set forth.

572,522. SUPPORT AND TRIPPING DEVICE FOR SLINGS. AMAN BROUSSARD, New Iberia, La. Filed Mar. 21, 1896. Serial No. 584,212. (No model.)



Claim.—1. In an improved support and tripping device for slings, the combination with a beam, and means for supporting the same, of a plurality of hooks rigidly attached to said beam, bent levers corresponding to said hooks, and having the lower arm weighted and the upper arm hook shaped, eyes adapted to slip over the weighted arms of said levers, and to lock the same in position, and means for simultaneously moving said eyes into or out of engagement with all of said weighted arms, substantially as described.

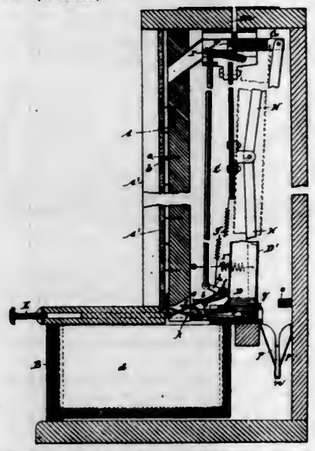
2. In an improved support and tripping device for slings, the combination with a beam and means for supporting the same, of a plurality of hooks rigidly attached to said beam, bent levers corresponding to said hooks and having the lower arm weighted, and the upper arm hook-shaped, pivoted eyes adapted to slip over the weighted arms of said levers and to lock the same in position, a sliding rod adapted to simultaneously operate all of said eyes, and means for moving said rod in either direction, substantially as described.

3. In an improved support and tripping device for slings, the combination with a beam and means for supporting the same, of a plurality of hooks rigidly attached to said beam, bent levers corresponding to said hooks and having their lower arms weighted, and the upper arms hook-shaped, pivoted eyes adapted to slip over the weighted arms of said levers and to lock the same in position, a sliding rod adapted to simultaneously operate all of said eyes, a tripping-lever and connections for moving said rod in either direction, and means for operating said tripping-lever, substantially as described.

4. In an improved support and tripping device for slings, the combination with a beam and means for supporting the same, and a bar projecting from said beam, of a plurality of hooks rigidly attached to said beam, bent levers corresponding to said hooks, and having their lower arms weighted, and their upper arms hook-shaped, eyes adapted to slip over the said weighted arms and to lock the same in position, a sliding rod adapted to simultaneously operate all of said eyes, a bell-crank lever pivoted to said projecting bar and connected to said rod, and a link and tripping-lever connected to said bell-crank lever, with ropes for pulling on said tripping-lever or said link, substantially as described.

5. In an improved support and tripping device for slings, the combination with a beam and means for supporting the same, of a plurality of hooks rigidly attached to said beam, on one side thereof, bent levers pivoted to said beam on the opposite side thereof, and having their lower arms weighted and their upper arms hook-shaped and bent outward, pivoted eyes adapted to slip over the weighted arms of said levers, and to lock the same in position, a sliding rod adapted to simultaneously operate all of said eyes, means for moving said rod in either direction and a sheath inclosing one side of said beam and the moving parts contiguous thereto, substantially as described.

572,523. COIN-CONTROLLED VENDING-MACHINE. CHARLES BURTON, Salt Lake City, Utah, assignor to Charles H. Kraft, same place, and Fred L. Shoch, Philadelphia, Pa. Filed Mar. 7, 1896. Serial No. 582,170. (No model.)



Claim.—1. In a vending-machine, the combination with a board having pins for deflecting coins and marked spaces for their exit, of the receiving-drawer divided into compartments by a number of narrow, independently removable boxes, said boxes being separated from each other and affording compartments between them, substantially as shown and described.

2. In a vending-machine, a hopper for containing a supply of disks or cards and the recessed, sliding bar located over the coin-receiving drawer, said bar being supplied with a disk-tripping mechanism and operating in connection with the hopper, substantially as described for projecting and delivering one of said disks or cards, the parts being combined and arranged substantially as and for the purposes set forth.

3. In a vending-machine, the arms for arresting the coins, said arms being located under the marked spaces, hung upon a rock-shaft, and arranged to be moved by the descending rod bearing upon an arm on the rock-shaft, an arm *l* attached to said shaft, and a tripping-lever mounted in the slide-bar, the parts being combined and arranged substantially as and for the purposes set forth.

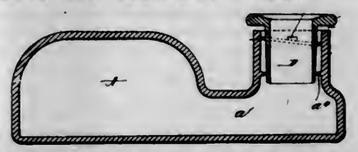
4. In a vending-machine, the slide-bar movable beneath the lower mouth of the hopper, a tripping-lever mounted in said bar, a rock-shaft carrying an arm for operating on the tripping-lever, a descending rod connected with the rock-shaft, and a hinged lever connected with the slide-bar and carrying a slotted slide for moving the coin, the parts being combined and arranged substantially as shown and described.

5. In a vending-machine, the combination with rod C, and the rock-shaft carrying the coin-arresting arms actuated by said rod, of hinged lever H, slotted bar G, hinged block I, and a slide-bar connected with lever H, substantially as shown and described.

6. In a vending-machine, the slide-bar connected with the hinged lever and operating therethrough and through the connected, slotted block, to force the admitted coin forward, said bar being recessed at the inner end and supplied with a disk-tripping lever and operating to deliver a single disk from the hopper when the coin is admitted, the parts being combined and arranged substantially as shown.

7. In combination with the hopper, D', and the slide-bar, E, having the disk-tripping mechanism, the incline, *q*, to facilitate the removal of the disk from the slide when the disk is elevated and the slide-bar retracted, substantially as shown and described.

572,524. MUCILAGE-BOTTLE. HARRY M. CANAN, Altoona, Pa. Filed June 30, 1896. Serial No. 597,561. (No model.)

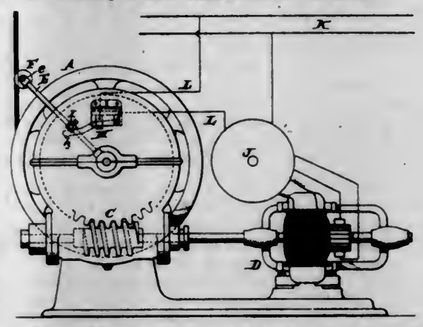


Claim.—1. A mucilage-bottle, provided with a neck, near the lower end of which is an inwardly-directed annular flange, said neck being also provided at or near its upper end with an inwardly-directed shoulder or projection, and a tubular plug which is adapted to be inserted into the neck, said tubular plug being provided at its upper end with an annular flange or rim which extends outwardly over the neck, and on the body portion thereof, below said rim or flange with a spiral flange which extends part way around the same, and in connection with which the inwardly-directed shoulder or projection is adapted to operate, substantially as shown and described.

2. A mucilage-bottle, provided with a neck, near the lower end of which is an inwardly-directed annular flange, said neck being also provided at or near its upper end with an inwardly-directed shoulder or projection, and a tubular plug which is adapted to be inserted into the neck, said tubular plug being provided at its upper end with an annular flange or rim which extends outwardly over the neck, and on the body portion thereof, below said flange or rim with a spiral flange which extends part way around the same, and in connection with which the inwardly-directed shoulder or projection is adapted to operate, and the outer walls of the tubular plug being inclined downwardly and inwardly, substantially as shown and described.

3. A mucilage-bottle, provided with a neck, near the lower end of which is an inwardly-directed annular flange, said neck being also provided at or near its upper end, with an inwardly-directed shoulder or projection, and a tubular plug which is adapted to be inserted into the neck, said tubular plug being provided at its upper end with an annular flange or rim which extends outwardly over the neck, and on the body portion thereof, below said flange or rim with a spiral flange which extends part way around the same, and in connection with which the inwardly-directed shoulder or projection is adapted to operate, and the outer walls of the tubular plug, being inclined downwardly and inwardly, and the upper surface of the rim or flange at the top thereof, being slightly concave, substantially as shown and described.

572,525. ELECTRIC ELEVATOR. JOHN P. CASEY, Bloomsburg, Pa. Filed Aug. 23, 1894. Serial No. 521,089. (No model.)



Claim.—In an electric elevator, the combination of a winding-drum, a hoisting cable lifting a cage and normally under tension, an electric motor to operate the winding-drum, a motor circuit, a regu-

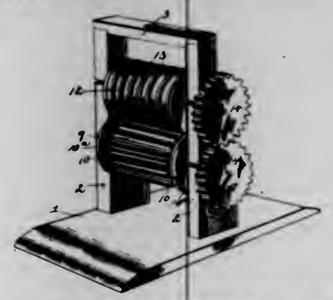
lator to control the operation of the motor for normal work, a stationary electric cut-out switch having a pivoted circuit-breaking arm for opening the motor-circuit in case of accident with great rapidity, a pivoted lever having a grooved roller-guide resting against the hoisting-cable and normally held out of contact with the switch-arm but adapted upon breaking of the cable or of its becoming slack to fall and strike the switch causing it to open the motor-circuit quickly.

572,526. ATTACHMENT FOR PEN STOCKS OR HOLDERS. FREDERICK C. CUCKSON, Duane, N. Y. Filed Apr. 22, 1896. Serial No. 588,594. (No model.)



Claim.—An attachment for pen stocks or holders comprising a tubular sleeve having rearward and inwardly directed spring-arms at one end and rearward and inwardly directed spring-arms at the other, said spring-arms at each end being adapted to bear upon the pen stock or holder, substantially as shown and described.

572,527. MEAT-TENDERER. RICHARD DELONG, Torch Lake, Mich. Filed Mar. 31, 1896. Serial No. 585,636. (No model.)



Claim.—In a meat-tenderer, the combination of a base having standards projecting upwardly therefrom, crushing-rolls journaled in said standards, one of said crushing-rolls provided with a series of transverse corrugations, the other roll provided at its ends with plain peripheral heads and having a series of longitudinal corrugations intermediate said heads, said roll also having peripheral juice grooves formed at the ends of and intersected by said longitudinal corrugations, said juice-grooves adapted to collect the juice pressed from the meat being operated upon and retain the same on the roll, substantially as set forth.

572,528. HOOK AND EYE FOR GARMENTS. ALICE DONNELLON, Brooklyn, N. Y. Filed Jan. 24, 1895. Serial No. 536,049. (No model.)

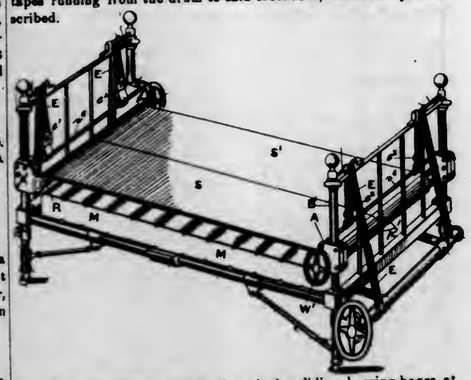


Claim.—As a new article of manufacture a garment-fastening of the hook-and-eye kind consisting of two parts A and B adapted to engage each other each of said parts consisting of a single piece of wire which is bent to form a hook A and eye B, two laterally-extended keepers a^3 and b', that comprise balanced spring-coils having transverse openings, that are arranged to relieve the engaging portions of the greatest strain; and two reversed points a' a, which enter the said opening after passing through the material of the garment, the said parts being also constructed to lie flat and close against the face of the material in a manner similar to that of the ordinary sewed hook and eye, substantially as described.

572,529. BEDSTEAD FOR INVALIDS. ANNA M. DOUGLAS, Leamington, England. Filed Jan. 29, 1896. Serial No. 577,322. (No model.) Patented in England Apr. 19, 1895, No. 7,842.

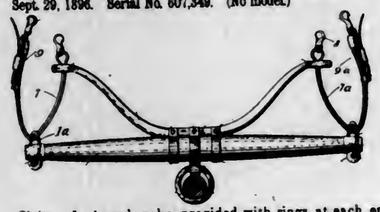
Claim.—1. In combination, the bedstead, the vertically-movable bearing-boxes, the rollers journaled therein, the sheet connected to said rollers, a winding-drum, and connections between said drum and the bearing-boxes of the rollers for raising and lowering the same, substantially as described.

2. In combination with the posts of a bedstead, the sockets sliding on said posts, rollers carried by said sockets, a sheet connected to said rollers, cross-rods connecting the sockets, a winding-drum and tapes running from the drum to said cross-rods, substantially as described.



3. In combination, the bedstead, the sliding bearing-boxes at each end thereof, the rollers journaled in said bearing-boxes, the sheet connected to said bearing-rollers at the top of each end of the bedstead, a drum beneath one end, bearing-rollers beneath the opposite end and tapes connected to said drum and extending over said bearing-rollers and connected with the bearing-boxes, substantially as described.

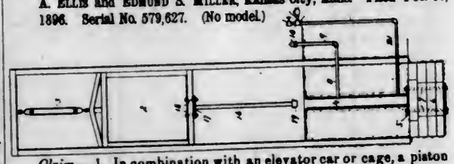
572,530. NECK-YOKE. LEWIS ELDRIDGE, Marilla, N. Y. Filed Sept. 29, 1896. Serial No. 607,349. (No model.)



Claim.—1. A neck-yoke, provided with rings at each end, and one ring depending from the center to support the wagon-pole, in combination with a curved bar rigidly secured at the center to the neck-yoke and extending upward and longitudinally each way from the center and terminating in eyes adapted to receive the fastening-straps, substantially as described.

2. The combination with a neck-yoke of a curved bar, rigidly secured at the center and curving upward and outward from the center each way and provided with means at each end for securing the fastening-straps, for the purposes described.

572,531. PNEUMATIC CUSHION FOR ELEVATORS. CHARLES A. ELLIS and EDMUND S. MILLER, Kansas City, Kans. Filed Feb. 17, 1896. Serial No. 579,627. (No model.)



Claim.—1. In combination with an elevator car or cage, a piston depending vertically and centrally therefrom, a pneumatic tube arranged to receive the same below the lower landing or floor, a pipe communicating with the tube above its middle, a perforated cap for the upper end of said pipe, and a spring-actuated valve within said cap, and seated normally upon the upper end of said pipe, substantially as shown and described.

2. In combination with an elevator car or cage, a vertically-perforated piston depending vertically and centrally from and carried by said car or cage, a pneumatic tube having its lower end closed and its upper end open, and arranged with its upper end about coincident with the bottom floor or landing of the building wherein the elevator is located, and bolted to a suitable foundation at its lower end, a pipe communicating with said tube above its middle, a perforated cap upon its upper end, a spring-actuated valve within said cap and normally seated to prevent the escape of air from said pipe, a second pipe communicating with the lower end of said tube and with the outside air, and provided with a globe-valve and a check-valve, all arranged substantially as and for the purpose set forth.

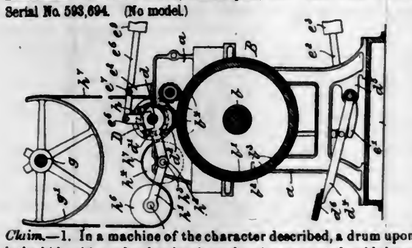
572,532. FINISHING-ROLL. WILLIAM EVANS, Philadelphia, Pa. Filed Oct. 15, 1895. Serial No. 565,752. (No model.)



Claim.—1. In a finishing roll or cylinder, two series of oppositely-arranged helical blades, one series being shorter than the other series, both describing equal angles to a line vertical of the roll, each series abutting against the other and terminating in a line parallel with the horizontal center line of the roll and passing through a point of abuttal of a blade of one series against one of the other series, substantially as described.

2. In a finishing roll or cylinder, two series of oppositely-arranged helical blades, one series terminating at one end in the longitudinal center of the roll and the other abutting against the other series at and beyond the longitudinal center of the roll, both series of blades being arranged at the same angle and the outer terminals of both series of blades and the points of abuttal at the longitudinal center of the roll, all being in a line parallel with the horizontal center line of the roll, substantially as described.

572,533. MACHINE FOR TREATING HIDES, SKINS, OR LEATHER. WILLIAM EVANS, Philadelphia, Pa. Filed June 1, 1896. Serial No. 593,694. (No model.)



Claim.—1. In a machine of the character described, a drum upon which the hide, skin or leather is adapted to be supported, said drum consisting of a metal core or barrel of cylindrical form, upon the outer periphery of which are formed two series of undercut grooves, one series being arranged longitudinally of the drum and the other at right angles to the first series, a layer of plastic material surrounding said core or barrel and pressed into the grooves, and an outer layer of rubber or analogous material united to the layer of plastic material but not entering said grooves, substantially as and for the purposes described.

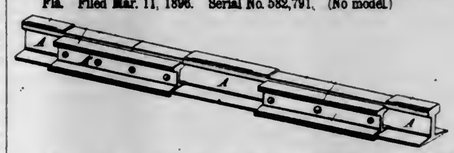
2. In a machine of the character described, a fleshing or analogous cylinder, vertically-movable boxes supporting the same, a treadle mechanism pivotally secured to said boxes and adapted to lower said boxes and cylinder, a series of counterpoising weighted levers adapted to elevate said treadle and thereby to indirectly elevate the boxes, and a series of counterpoising weighted levers pivotally secured to the boxes and adapted to directly elevate the same, substantially as and for the purposes described.

3. In a machine of the character described, a fleshing or analogous cylinder, vertically-movable boxes supporting the same, vertically-disposed links pivotally connected at one end to said boxes, treadle-arms pivoted at one end in the frame of the machine and pivotally connected at the other ends of said links, counterpoising weighted lever-arms adapted to impinge upon the treadle-arms below the pivotal connection of said arms with said links to normally raise said arms and links, and counterpoising weighted lever-arms pivotally connected with said boxes and normally adapted to directly elevate the same and said cylinder, substantially as and for the purposes described.

4. In a machine of the character described, a working roll or cylinder, vertically-movable boxes supporting the same, an arm pivoted in the frame of the machine, one end of said arm being secured to the boxes, a pulley adapted to rotate at the other end of said arm, a main driving-pulley, a pulley secured to and adapted to directly drive the working roll or cylinder, and a belt passing around the main driving-pulley, the driving-pulley of the roll or cylinder and the pulley on the pivoted arm, all arranged so that the driving-pulley of the roll or cylinder may be driven directly from the main driving-pulley and the roll or cylinder may be vertically movable with respect to said driving-pulley, substantially as and for the purposes described.

5. In a machine of the character described, a fixed driving-shaft, a pulley actuated thereby, a fleshing or analogous cylinder having a range of movement vertically, an arm pivoted in the frame of the machine and carrying at one end a pulley adapted to drive the cylinder, a pulley supported on the other end of said arm, an idle-pulley supported intermediately between said two pulleys and a belt in engagement with said driving-pulley located under the two pulleys carried by said arm and over said idle-pulley, substantially as and for the purposes described.

572,534. RAILWAY-RAIL. WILLIAM C. FERGUSON, Jacksonville, Fla. Filed Mar. 11, 1896. Serial No. 582,791. (No model.)



Claim.—1. In a composite railway-rail, a main-line tread-bearing portion provided with alternately raised and depressed upper surfaces of relatively variable lengths and secured to an auxiliary flange-bearing portion, substantially, as specified.

2. In a composite railway-rail, a sectional flange-bearing portion, provided with upper- depressed flange-bearing surfaces of relatively variable lengths and secured to an auxiliary tread-bearing portion, substantially, as specified.

3. In a composite railway-rail, a main-line tread-bearing portion provided with alternately raised and depressed upper surfaces of relatively variable lengths in combination with an auxiliary flange-bearing portion provided with upper, depressed, flange-bearing surfaces of relatively variable lengths, substantially, as specified.

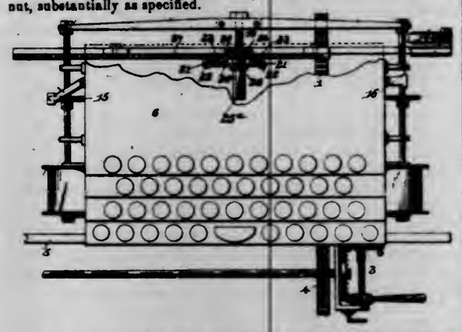
4. A composite railway-rail having a main-line, tread-bearing portion provided with alternately raised and depressed upper surfaces of relatively variable lengths, and a sectional flange-bearing portion provided with upper depressed, flange-bearing surfaces of relatively variable lengths, substantially, as specified.

572,535. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn. Filed July 14, 1896. Serial No. 599,102. (No model.)

Claim.—1. In a type-writing machine, the combination with a carriage and an axially-movable ribbon-spool, of a feed-screw mounted for movement parallel with and connected to the spindle of said spool, a feed-nut engaging said screw and held from axial displacement, and means for communicating rotary motion to said nut during the movement of the carriage parallel with the line of writing, substantially as specified.

2. In a type-writing machine, the combination with a carriage and a ribbon-spool mounted for axial movement transverse to the line of writing, of a feed-screw mounted for movement parallel with and connected to the ribbon-spool spindle, a feed-nut engaging the screw and held from axial movement, and a rack meshing with the feed-nut to communicate rotary motion to the latter, substantially as specified.

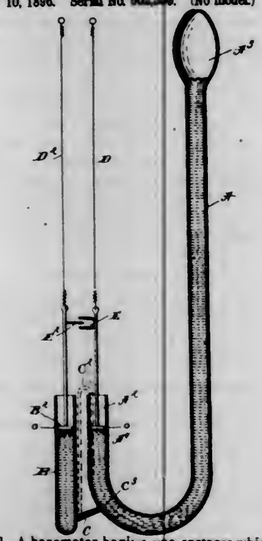
3. In a type-writing machine, the combination with a frame having carriage-guides, and a carriage mounted upon said guides, of ribbon-spools mounted for axial movement transverse to the line of writing, a bar connecting the ribbon-spool spindles for simultaneous movement, a feed-screw arranged parallel with the spool-spindles and attached to said bar at an intermediate point, a feed-nut engaging the screw and mounted upon the carriage for rotary movement whereby axial movement is communicated thereby to the screw, and a rack carried by said frame and meshing continuously with the feed-nut, substantially as specified.



4. In a type-writing machine, the combination with a carriage and axially movable ribbon-spools mounted thereon, of a feed-screw mounted for movement parallel with and connected to the ribbon-spool spindles, a feed-nut mounted for rotary and held from axial movement and having an elongated hub or sleeve through which the screw extends, an adjustable pin or key carried by said hub to engage the screw, and means for communicating rotary motion to the feed-nut, substantially as specified.

5. In a type-writing machine, the combination with a supporting-frame having carriage guides, a carriage mounted upon said guides, and axially-movable ribbon spools mounted upon the carriage for movement transverse to the line of writing of parallel vertical supporting-rods on the carriage, a yoke provided with terminal clamp-shoes engaging said supporting-rods and having adjusting means to secure the same against displacement, a feed-screw mounted for movement parallel with and connected to the spool-spindles, a feed-nut engaging the screw and mounted in the yoke whereby it is held from axial movement, and a rack on said frame engaging the feed-nut, substantially as specified.

572,536. **BAROMETER.** WILLIAM T. FLOURNOY, Marionville, Mo. Filed Aug. 10, 1896. Serial No. 602,340. (No model.)



Claim.—1. A barometer having two surfaces which move in the same direction one more rapidly than the other in case of quick changes of atmospheric pressure.

2. A barometer having two surfaces combined with a connecting-tube having a small orifice and electrical-bell wires connecting with floats upon the surface substantially as and for the purpose specified.

3. In combination with a barometer a second tube, B, connected with a tube, C, having a small orifice, and floats, A^4, and B^3, connected with wires D D^3, having a fork E, and a tongue, E^3, all substantially as shown and described for the purpose specified.

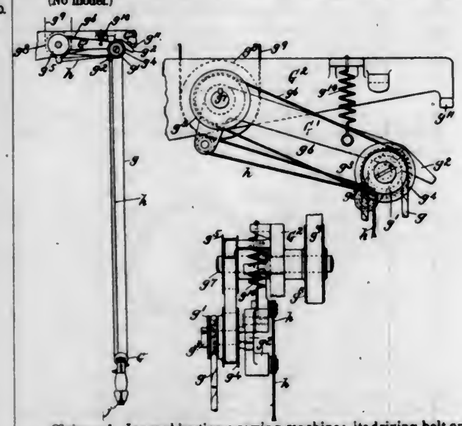
572,537. **FOLDING BOX.** ALBERT J. GARY, Denison, Iowa. Filed May 14, 1896. Serial No. 591,554. (No model.)



Claim.—1. The herein-described folding box, made up of a bottom having side and end strips secured thereto, ends hinged to said end strips and adapted to fold inwardly therefrom, sides hinged to said side strips and adapted to fold inwardly therefrom, stops upon the inside of said side pieces at points near their outer ends, and lugs or shoulders having inclined faces secured to said side pieces, between which and said stops, the end pieces are adapted to fit and be secured when in their open positions, substantially as and for the purpose described.

2. The herein-described folding box, made up of a bottom having side and end strips secured thereto, one of said side strips being slightly wider than the other, ends hinged to said end strips and adapted to fold inwardly therefrom, sides hinged to said side strips and adapted to fold inwardly therefrom, both of said side pieces and the side strips to which they are secured being unitedly of the same width, stops upon the inside of said side pieces at points near their outer ends, lugs or shoulders having inclined faces secured to said side pieces between which and said stops, the end pieces are adapted to fit and be secured when in their open positions, and a lid or cover adapted to fit over said side and end pieces, substantially as and for the purpose described.

572,538. **SEWING-MACHINE.** NAPOLEON GODDU and GEORGE GODDU, Winchester, Mass. Filed July 27, 1895. Serial No. 557,335. (No model.)

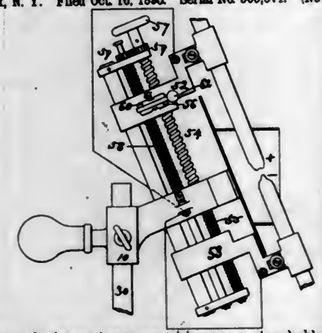


Claim.—1. In combination a sewing-machine; its driving-belt on which the sewing-machine is suspended; means for actuating the driving-belt; and means for moving the driving-belt bodily in a vertical plane to lift and lower the sewing-machine while it is driven by the driving-belt; all organized substantially as described to permit the sewing-machine while in operation to be tipped and tilted and also moved up, down and sidewise to sew from the shank on one side of a shoe-sole, and about the fore part and toe to the shank on the other side.

2. In combination a sewing-machine; its driving-belt in which the sewing-machine is suspended; means for actuating the driving-belt; means for moving the driving-belt bodily in a vertical plane to lift and lower the sewing-machine while it is driven by the driving-belt; and a finger-lever for starting and stopping the sewing-machine, all organized substantially as and for the purpose specified.

3. In a sewing-machine, guide-foot *j* adapted to be guided by a lip on the work; looper-foot *j'* parallel with guide-foot *j*, supplementing it as a guide foot, and provided with a threadway through it to enable it to act as a looper; and mechanism to hold looper-foot *j'* in one position to supplement guide-foot *j* and hold the thread close to the work so that the needle passes over it, and to retract it when it is required to act as a looper, all substantially as described.

572,539. **ELECTRIC-ARC LAMP.** CHARLES GOODYEAR, Jr., New York, N. Y. Filed Oct. 16, 1895. Serial No. 565,871. (No model.)



Claim.—1. An arc-lamp comprising two carbon-holders, feeding mechanism having two adjustments, the one feeding the carbons substantially uniformly and the other feeding them differentially or at different rates, and means for changing from one adjustment to the other at will, whereby the said lamp may be converted at will to alternating-current or constant-current operation, substantially as set forth.

2. In combination in a hand-feed for arc-lamps, mechanical connections for feeding one of the carbons, two coöperating connections for feeding the other carbon at two different rates of feed, and means for connecting either of the said coöperating connections at will, whereby the lamp may be converted into an alternating or a direct current lamp, substantially as set forth.

3. In combination in feed mechanism for arc-lamps, and with the carbon carriers or holders, a feed-screw giving travel to one of the said holders, two cooperating screw connections of different pitch for the other of the said holders and means for connecting one or the other of the said screw connections to give travel to the second of said holders, substantially as set forth.

4. In combination in feed mechanism for arc-lamps and with the carbon carriers or holders therefor, two parallel screw-threaded rods geared together, a pair of clutches for one of the said carbon-holders, means for causing the said clutches to engage with either of the said screw-threaded rods, and a screw-threaded continuation of one of the said rods threaded into and giving travel to the other of said carbon-carriers, substantially as set forth.

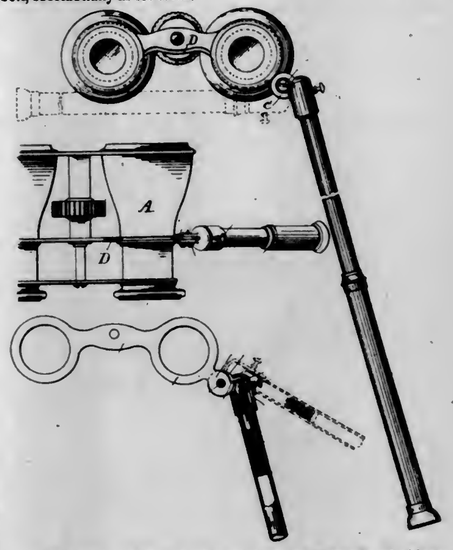
572,540. **OPERA-GLASSES.** FRANCIS A. HARDY, Evanston, Ill. Filed Apr. 7, 1896. Serial No. 586,496. (No model.)

Claim.—1. The combination with an opera-glass having an ear projecting downward from the right-hand ring of the intermediate cross-bar and lying in the plane thereof, of a handle hinge-jointed to said ear and adapted to fold against the under side of the glass, and means for locking the handle and glass when brought to the relative positions necessary for use, substantially as set forth.

2. The combination with an opera-glass having a perforated ear projecting downward from the intermediate cross-bar and lying in the plane thereof, of a handle having a perforated ear, a pivot-pin occupying the perforations of said ears and connecting the handle and cross-bar, and means for locking or unlocking the ears, the parts being so arranged that the handle may be folded against the under side of the glass, substantially as set forth.

3. The combination with an opera-glass and its handle of a hinge-joint connecting the handle to the intermediate cross-bar of the glass and adapted to permit the handle to be folded against the under side of the glass and a lock for locking the joint, when the handle is brought to a given position with relation to the glass, and thereby preventing the handle from folding against the under side of the glass until the joint is again unlocked, substantially as set forth.

4. The combination with an opera-glass and its handle, of a hinge-joint connecting the handle to the intermediate cross-bar of the glass and adapted to permit the handle to be folded against the under side of the glass, and a lock, having a spring-actuated bolt, adapted to automatically lock the joint when the handle is brought to a given position with relation to the glass, and means for withdrawing said bolt, substantially as set forth.



5. The combination with an opera-glass and its handle, of a hinge-joint connecting them and adapted to permit the handle to be folded against the under side of the glass, said joint consisting of a perforated ear projecting from the glass and having a shoulder, a perforated ear, carried by the handle, and a pivot, a bolt carried by the handle and adapted to engage said shoulder, a spring for moving said bolt in one direction and means for moving it in the other direction, substantially as set forth.

6. The combination with an opera-glass and its handle, of a hinge-joint connecting them and adapted to permit the handle to be folded against the under side of the glass, a bolt arranged within the handle and adapted to lock the joint, and a pin projecting from the bolt and through a slot in the handle, substantially as set forth.

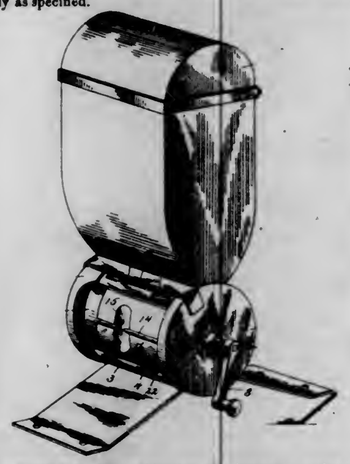
7. The combination with an opera-glass and its handle, of a hinge-joint connecting them, said joint consisting of a non-circular perforated ear projecting from the glass, a perforated ear projecting laterally from the handle and a pin occupying said perforations, and a bolt arranged within the handle and adapted to be inserted between the non-circular ear and the side to the handle, substantially as set forth.

572,541. **MATCH-SAFE.** JOHN W. HART, LUTHER GRIFFITH, and MCALLISTER GOODWIN, Pittsburg, Kans. Filed June 29, 1895. Serial No. 554,502. (No model.)

Claim.—1. In a match-safe, the combination of a hopper, a cylindrical casing communicating with the hopper and provided with an outlet-opening, a cylinder mounted in the casing and provided with a match groove or seat to receive a match from the hopper, and a flange on the casing concentric with the cylinder adapted to overhang the end of the groove or seat when the latter is opposite the outlet-opening and engage the butt-end of a match in the groove, substantially as specified.

2. In a match-safe the combination of a hopper, a casing communicating with the hopper and having an outlet-opening, a cylinder mounted in the casing and having a match groove or seat and a key or crank whereby it may be turned to expose said groove or seat at the outlet-opening, a coaxial drum carried by the cylinder, a spring or elastic band attached at one end to the drum and at the other end to the casing and adapted to be strained by the forward movement of the cylinder and return the same to its normal position when released, and means for limiting the rotary movement of the cylinder in both directions, such means being adapted to be disengaged from the cylinder to allow a complete revolution of the drum to reel the spring or band thereon and thus increase the tension of the spring or band, substantially as specified.

3. In a match-safe, the combination of a hopper, a casing communicating with the hopper and provided with an outlet-opening, a cylinder mounted in the casing and having a match groove or seat and means whereby it may be turned to expose the match groove or seat at the outlet-opening, resilient means for returning the cylinder to its normal position, and a spring-catch adapted to engage sockets in the cylinder to limit the forward and return movements thereof, substantially as specified.



4. In a match safe, the combination of a hopper, a casing communicating with the hopper and having an outlet-opening, a cylinder mounted in the casing and having a match groove or seat and means whereby it may be turned forward to expose said groove or seat at the outlet-opening, a drum carried by the cylinder, a spring or elastic band attached at one end to the drum and at the other end to the casing and adapted to be reeled upon the drum during the forward movement of the cylinder, an igniting-block arranged in an inclined position contiguous to one end of the cylinder, and a guard arranged in the casing around the drum to protect the spring or elastic band from injury by an ignited match, substantially as specified.

5. In a match safe, the combination with a hopper, and a casing communicating with the hopper and having an outlet-opening, of a rotary cylinder mounted in the casing and provided with a match groove or seat and an operating key or handle, means for returning the cylinder to its normal position after each forward movement, an igniting-block arranged in the path of the heads of the matches, a flange arranged contiguous to the outlet-opening in the casing to engage the butt-end of a match and hold it temporarily in the groove or seat in the cylinder, and a guide-spring arranged in the hopper to hold the butt-ends of the matches in contact with the side of the hopper adjacent to said flange, substantially as specified.

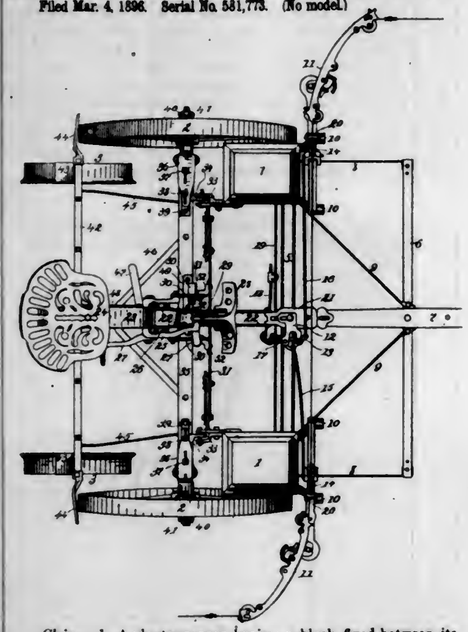
572,542. CAR-COUPLING. WILLIAM H. HATFIELD, Sulphur Springs, Ala. Filed Apr. 17, 1896. Serial No. 587,941. (No model.)



Claim.—1. In a car-coupler, the combination with a draw-head, a knuckle comprising a slotted arm and a semicylindrical body arranged in the mouth of the said draw-head, the swinging member pivoting the said knuckle to the front of the draw-head, a coupling-pin and lifting device, substantially as set forth.

2. In a car-coupler, the combination with a draw-head, a knuckle comprising a slotted arm and a semicylindrical body arranged in the mouth of the said draw-head, the swinging member pivoting the said knuckle to the front of the draw-head, the coupling-pin passing down through the said draw-head, a cross-pin K passing through the upper end of the coupling-pin, a bifurcated lifting-lever keyed to the rock-shaft and engaging with the pin K, a rock-shaft for operating said lifting-lever, substantially as set forth.

572,543. CORN-PLANTER. GEORGE D. HAWORTH, Decatur, Ill. Filed Mar. 4, 1896. Serial No. 581,773. (No model.)



Claim.—1. A planter-runner having a block fixed between its wings, a shank having its runner-entering portion shaped to conform to the block, and a bolt detachably connecting the shank with the block.

2. A planter-runner having a block fixed between its wings, somewhat to the rear of the conjunction thereof, a shank having its runner-entering portion shaped to conform to the front surface of the block, and a bolt passing through the block and into the shank.

3. A planter-runner having a block fixed between its wings, somewhat to the rear of the conjunction thereof, holes through the block in different directions, a shank having its runner-entering part shaped to conform to the front surface of the block and tap-bolts extending through the openings of the block and into the shank.

4. A planter-runner, a block fixed between the wings of the runner, such block having a substantially vertical upper part and a downward and backward extension, a shank having its runner-entering part shaped to conform to the vertical part and the oblique extension thereof, and tap-bolts extending one through the vertical part of the block and the other through the oblique projection, and both of them entering the shank, all in combination, substantially as set forth.

5. A planter in which a portion of the runner-entering part of the shank is fixed in the runner, and the complement of such runner-entering part is bolted to such fixed portion.

6. In a corn-planter, a vertical rocking second drop-valve having a lateral extension, and a detachable plate fitting under the lateral extension of the valve and sustaining the valve vertically.

7. In lifting mechanism for planters, of the class described, the combination of a lift-arm, as 25, having teeth, as 25^a, and a hand-lever 27 slotted at 27^a to receive a pin of the arm, and toothed at 27^b to engage the teeth of the arm.

8. In a planter, the combination of an axle-bar, spindle-brackets for the carrying-wheels saddled onto the ends of the axle-bar, bolts to bind the brackets to the axle-bar, and set-bolts, in the inner ends of the brackets, adapted to bear against the surface of the axle-bar and regulate the inclination of the wheels.

9. In a planter, the combination of an axle-bar having tubular spindles, a line of shafting extending through the spindles and connecting with the wheels, and a clutch in the line of shafting.

10. In a planter, the combination of an axle-bar having tubular spindles, a line of shafting extending through the spindles and connecting with the wheels, a clutch in the shafting, and a clutch-shifter adapted to be actuated by raising and lowering the front frame of the planter, substantially as set forth.

11. In a planter, the combination of an axle-bar having tubular spindles, short shafts extending through the spindles, a long shaft having longitudinally-sliding connection with one of the short shafts and endwise clutch-contact with the other short shaft, a slide on the axle-bar in engagement with the long shaft, an inclined plane on the slide, and a finger on the front frame of the planter adapted to engage the inclined plane, the short shafts being connected with the wheel-hubs, substantially as set forth.

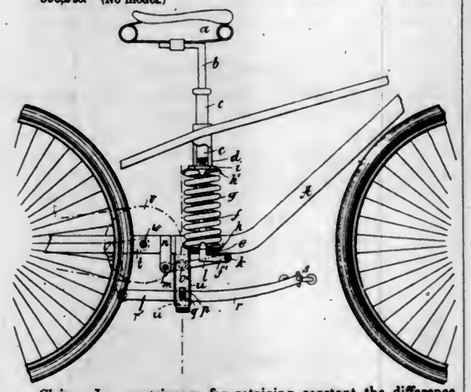
12. A forked check-row lever, for planters, having a latch swung across its open end, substantially as set forth.

13. A forked lever for check-row planters, such lever having a latch pivotally connected with one bar and recessed to receive the opposite bar, substantially as set forth.

14. In a cross-wire planter, the combination of brackets attached to the seed-hoppers, check-row heads attached to the brackets, a drop-actuating movement attached to the planter-frame between and independent of the check-row heads, and rods connecting the levers of the check-row heads with the drop-actuating movement, substantially as set forth.

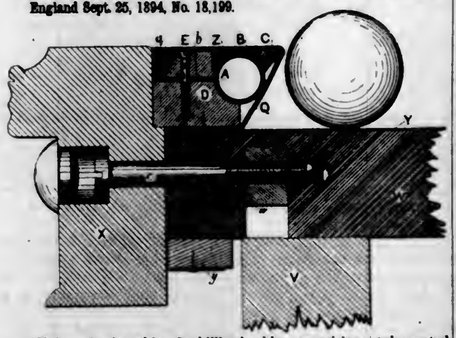
15. A planter in which the wheels are connected together by means including a shiftable clutch, such means being capable of holding the wheels against independent rotation in both directions when the clutch is engaged and of permitting free rotation in both directions when the clutch is disengaged.

572,544. CYCLE. GEORG C. W. HIPPERLING and WILHELM A. D. HIPPERLING, Wandsbeck, Germany. Filed May 4, 1896. Serial No. 590,240. (No model.)



Claim.—In a contrivance for retaining constant the difference between the saddle and the pedals of cycles the combination of the two levers *l l*, linked to the saddle-rod, with the bolt *k*, the spring *g*, the stationary bolt *m*, on which the levers *l l* are turned, the bolts *o*, the connecting-rods *u*, the bolt *q*, which on the yielding of the saddle *a*, yields as much as the bolts *o*, so that as the lever-arms of the lever *l* have the same proportion, as the treadle-lever arms, the pedal *s* always remains equidistant from the saddle, as described.

572,545. BILLIARD-TABLE. ALFRED C. IVES, London, England. Filed Mar. 11, 1895. Serial No. 541,339. (No model.) Patented in England Sept. 25, 1894, No. 18,199.



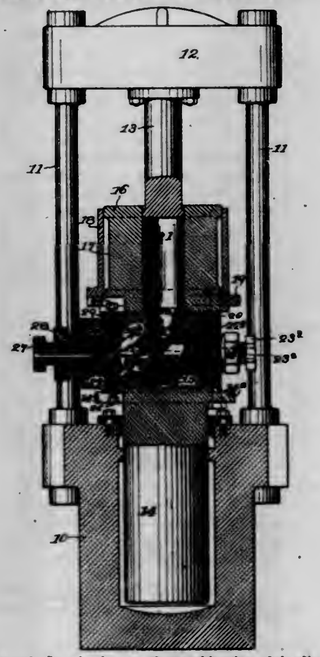
Claim.—1. A cushion for billiard-tables comprising a tube seated in a recess in the edge of the table, and a nosing or cap supported directly upon the tube providing a flush surface and a contact edge projecting beyond the face of said tube, substantially as described.

2. A cushion for billiard-tables comprising a tube seated in a recess in the edge of the table and a nosing or cap surmounting the tube, having a concave lower face conforming to the tube and a plane upper face with a contact edge projecting beyond the face of said tube, substantially as described.

3. cushion for billiard-tables comprising an inflatable tube A and a fabric encircling the tube, the ends of the fabric being laid together and confined between clamping devices, substantially as described.

4. In combination, the divided block D, the tube A inclosed by pocket B, having web *b* extending between the parts of the block D, and the cap C formed to seat upon and partially cover the tube and abutting against a shoulder on the block D, together with the covering Q, the whole forming a cushion for billiard-tables, substantially as described.

572,546. LEAD-PRESS. EDGAR H. JOHNSON, Seymour, Conn. Filed Jan. 24, 1896. Serial No. 576,694. (No model.)



Claim.—1. In a lead press, the combination of the die-block provided with the central vertical opening, and the transverse opening, and the removable cylindrical sleeve provided with the two exterior grooves, terminating in the two diametrically opposite openings at the end of the sleeve, and located transversely in the die-block in line with the axis of the central vertical opening substantially as described.

2. In a lead-press the combination of the die-block, provided with the central vertical opening and the transverse opening and the removable cylindrical sleeve provided on its outer circumference with a series of grooves beginning at the top of the sleeve, and branching off into a series of diametrically opposite openings at the end of the sleeve, substantially as described.

3. In a lead-press the combination of a die-block provided with the central vertical opening and the transverse opening, and the removable cylindrical sleeve provided with the two exterior grooves terminating in the two diametrically opposite openings at the end of the sleeve, and located transversely in the die-block, in line with the axis of the central vertical opening, and the cylindrical core-die mounted concentrically in the sleeve and provided with means, substantially as described, for longitudinal adjustment for the purpose set forth.

4. In a lead-press the combination of the supply-cylinder, 16, the die-block, 15, interposed between the piston, 14, and the supply-cylinder, 16, and held together by the bolts, 20, the die-block provided with the central vertical opening, 15^a, and the transverse opening in line with the axis of the central vertical opening, and the removable sleeve 22, with the grooves 22^a, and 22^b, terminating in diametrically opposite openings at the end of the sleeve, substantially as, and for the purpose described.

5. In a lead-press the combination of the ram, 13, the supply-cylinder, 16, provided with the supply-chamber, 21, and superimposed

on the die-block, 15, the die-block being provided with the central vertical opening, and the transverse opening, the removable cylindrical sleeve, 22, mounted in the transverse opening of the die-block, and provided with the two grooves 22^a and 22^b, terminating in the two diametrically opposite openings, 22^c and 22^d, at the end of the sleeve, and the core-die, 23, supported concentrically in the sleeve, and provided with the screw-thread 23^a, for adjustment substantially as described.

6. In a lead-press, the combination of the ram, 13, the supply-cylinder, 16, provided with the supply-chamber, 21, the die-block, 15, provided with the vertical central opening, 15^a, and the transverse opening extending across the vertical central opening, the sleeve, 22, having the curved grooves, 22^a, and 22^b, the hollow core-die, 23, supported by the sleeve, the tube-die, 24, mounted in the annular collar, 25, with means for central adjustment, and means for holding against rearward displacement, substantially as described, and for the purpose set forth.

7. In a lead-press, the combination of the piston, 14, the die-block, 15, the supply-cylinder, 16, the ram, 13, the die-block provided with the central vertical opening and the transverse opening in line with the axis of the central vertical opening, the sleeve, 22, with the grooves 22^a, and 22^b, terminating in the diametrically opposite openings 22^c, and 22^d, at the end of the sleeve, the hollow core-die, 23, and tube-die, 24, the annular collar, 25, and means for central adjustment consisting of, substantially as described, a series of oppositely-disposed set-screws, 26, and means for holding the same against rearward displacement, as the hollow set-screw, 27, and set-screw, 28, substantially as described and for the purpose set forth.

572,547. SUPPORT FOR MAPS. JOHANN P. JUNGELS, Gross Glogau, Germany. Filed July 7, 1894. Serial No. 516,865. (No model.) Patented in Germany May 3, 1892, No. 65,177.

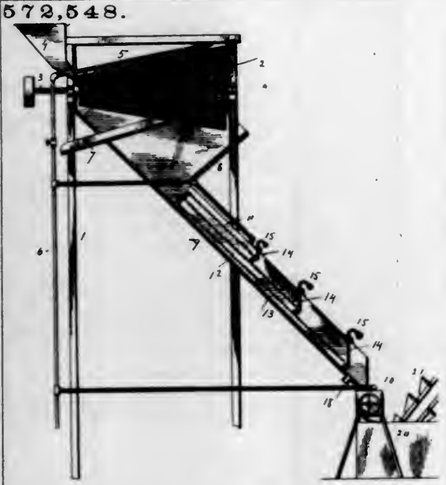


Claim.— In a support for cards or maps, &c., the combination of a stand, a round rod movable and adjustable therein by means of a tightening-screw and provided at the head end with a bridge-piece having two uprights, a shaft journaled in the uprights and having disk-like ends, arms pivoted to the disk-like ends and provided with adjustable hooks, and an adjusting arrangement consisting of a collar adjustable on the said stand, and an outrigger being turnably fixed to said collar, and a clamp; as and for the purpose set forth.

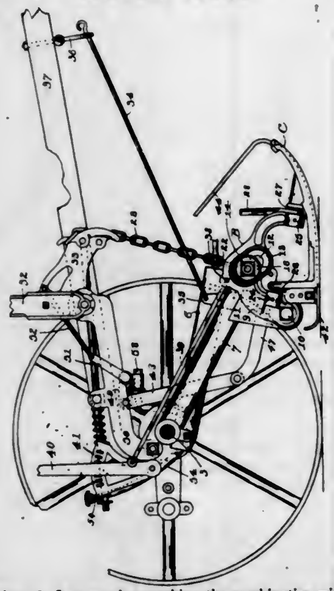
572,548. APPARATUS FOR SEPARATING SULFUR FROM COAL. ISAAC M. KELLEY, Clarksburg, W. Va., assignor of one-fourth to Lloyd Reed, same place. Filed Apr. 25, 1896. Serial No. 589,028. (No model.)

Claim.— The combination with the rotatable screen, composed of sections having different-sized meshes, of the water distributing pipe, the conductor leading from a point below the juncture of said sections, the hopper located below the screens and a chute provided with a series of screens one below and projecting beyond another, of different lengths and sizes of mesh, and the gates at the lower ends of the screens provided with weighted levers, substantially as specified.

572,548.



572,549. MOWER. SAMUEL V. KENNEDY, St. Paul, Minn. Filed Apr. 1, 1895. Serial No. 544,063. (No model.)



Claim.—1. In a mowing-machine, the combination with the finger-bar shoe and the main frame having a pivot-stud adjacent the shoe, of the hanger hinged to said shoe and mounted on said pivot, the stud-and-slot connection between said hanger and frame, whereby the rotary movement of the hanger on its pivot is limited, and means for longitudinally adjusting the position of the stud in said slot, so as to aline the finger-bar.

2. In a mowing-machine, the combination with the finger-bar shoe and the main frame, of the pivot-stud projecting laterally from said frame slightly above, and in the rear of, said shoe, the arched hanger hinged to said shoe and mounted upon said pivot-stud, and provided with a circularly-curved slot having said pivot for its center, the stud upon the frame projecting through said slot, the head or washer upon the end of said stud engaging said hanger and holding it in place on said stud, and means for adjusting the distance of said head or washer from said frame.

3. In a mowing-machine, the combination with its frame, of the depending lug carried by said frame, the arched hanger pivoted by its rear leg to said lug, the stud and curved slot connection for the top or arch of said hanger with said frame, the means for adjusting the position of the stud in said slot, so as to laterally vary the position of said hanger, the shoe hinged to the legs of said hanger forward of its pivot, and the finger-bar carried by said shoe.

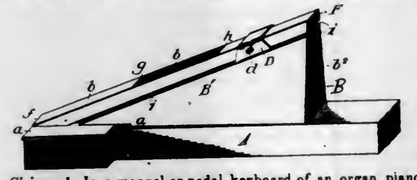
4. In a mowing-machine, the combination with its frame, of the arched hanger pivoted by its rear member to the frame, the finger-bar shoe hinged to both members of the hanger, the means upon the frame for limiting the rotary movement of the hanger on its pivot, and the means for laterally adjusting the angular position of the hanger with relation to the frame.

5. In a mowing-machine, the combination with the main frame and the finger-bar shoe, of the arched hanger hinged to said shoe having pivotal support upon the frame in the rear of the finger-bar, a curved guide concentric with said pivot, and the stud engaging said guide, said guide and stud being arranged one upon the frame and the other upon said hanger, the means for laterally adjusting the hanger in said stud-and-guide connection, and the means for turning said hanger upon its pivot to tilt the finger bar.

6. In a mowing-machine, the combination with its frame, of the arched hanger pivoted by its rear member to the frame and provided with a slot concentric with its pivot, the headed stud engaging said slot and connected to said frame, the interposed removable washers arranged upon said stud between said hanger and said frame, and the finger-bar shoe hinged to both members of the hanger.

7. In a mowing-machine, the combination with the main frame, of the depending lug carried thereby, the arched hanger having its rear member pivoted to said lug, the stud and-slot connection for the arch of the hanger with the frame, the curve of the slot being concentric with the pivot, the means for laterally adjusting said hanger to and from said frame at the point of said stud-and-slot connection, the shoe hinged to the limbs of said hanger, the finger-bar carried by said shoe, its divider-shoe, and the heels upon said shoes projecting rearward an equal distance from the points of the guards.

572,550. MUSICAL INSTRUMENT. CHARLES CLEMENTS-KROPF, Newark, N. J. Filed Oct. 11, 1893. Serial No. 487,902. (No model.)



Claim.—1. In a manual or pedal keyboard of an organ, piano or similar instrument, the combination of an ordinary long key-lever with a triangular finger or foot pressure device, not wider than the narrow portion of the long key, the upper front portion of the pressure device forming an ascending touch-surface from the top of the front end of the key-lever to the back of the keyboard; substantially as specified.

2. In a manual or pedal keyboard the combination of an ordinary short key-lever, with a triangular finger or foot pressure device, arranged upon the upper front portion of the short key with its acute-angular portion beyond the front end thereof and with its hypotenuse to form a new, elevated and uninterruptedly-descending touch-surface from the back of the keyboard down beyond the end of the lever; substantially as set forth.

3. In a keyboard the triangular finger and foot pressure device combined with and arranged upon the top front portion of a manual or pedal key-lever to form an ascending pressure-surface, carrying thereon the small auxiliary finger or foot pressure device E, D, substantially as set forth and shown.

4. In a manual or pedal keyboard the small auxiliary finger or foot pressure device being adjustable to and movable upon the inclined top portion of a triangular finger or foot pressure device; substantially as specified.

5. In a manual or pedal keyboard the combination with the upper front portion of a short or long key-lever, of a triangular finger or foot pressure device, and of a small auxiliary pressure device adjustably and movably arranged upon the pressure-surface of the triangular device; substantially as described and shown.

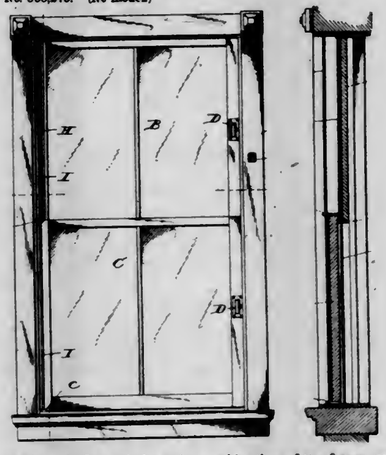
6. In an organ, piano or similar instrument, the pedal or manual keyboard, consisting of ordinary long and short key-levers having a triangular pressure device united to their upper front portion; substantially as and for the purpose specified.

7. In a musical instrument the keyboard consisting of ordinary long and short key-levers, bearing upon their upper front portion a triangular finger or foot pressure device, having a narrow, elevated and inclined touch-surface, ascending from the front top surface of a long lever up and close to the backboard of the keyboard, or descending from the backboard downward and beyond the extreme front end of the short key lever; substantially as set forth.

8. In a keyboard the manual and the pedal key-levers having upon their upper front portion a triangular finger or foot pressure device, and having a small auxiliary finger or foot pressure device adjustable and movable upon the pressure surface of the triangular device; substantially as and for the purpose specified.

9. In combination with ordinary key-levers or inclined pressure-surface, a small auxiliary finger or foot pressure device, having the rounded and elastic touch-surface E, combined with a spring-clasp D, arranged to be movable to differing locations upon the inclined pressure surface, and to be adjustable to differing height of its touch-surface; substantially as and for the purpose set forth.

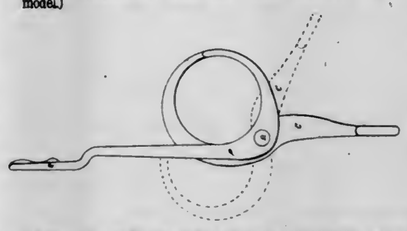
572,551. WINDOW. MAX LESSER, Cincinnati, Ohio, assignor of one-half to Henry Hottinger, same place. Filed Apr. 20, 1896. Serial No. 588,273. (No model.)



Claim.—1. In a window, the combination of the frame, vertical rods mounted therein, movable sash mounted thereon, the upper sash being grooved to allow the outer vertical rod to take loosely into said groove to permit the upper and lower sash to fit snugly together and thereby dispense with the usual parting-strip, substantially as described.

2. The combination in a window, of the frame, vertical rods, movable sash, each having a claw-hook secured thereto, a T-shaped slide attached to the cord connecting the counterpoise-weight thereto, said slide being adapted to engage with said claw-hook or be released therefrom and attached to bracket, as desired, substantially as shown and described.

572,552. THILL-TUG. ARCHIBALD L. LINDSAY, Wyoming, Pa., assignor of two-thirds to William R. Chapin, same place, and John W. Howarth, Scranton, Pa. Filed June 1, 1896. Serial No. 593,739. (No model.)

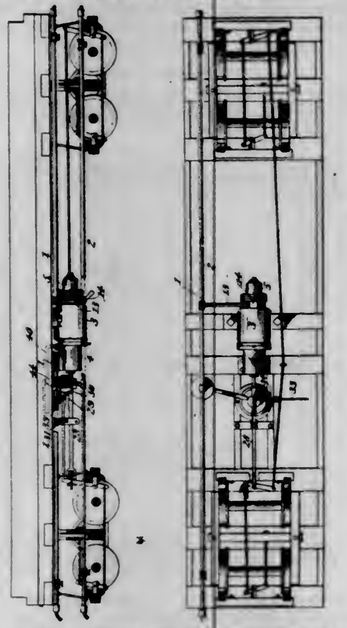


Claim.—1. A shaft-tug consisting of the combination of the carrying-hook having means for suspending it from the back-band, with a retaining-hook pivoted near its center to the shank of the carrying-hook, the lower end running down behind and below the thill having means to fasten the belly-band thereto, the upper end curved to fit over the top of the thill to hold it in place when the lower end is pulled down, and to release it when the lower end is pulled out and up, substantially as described and shown.

2. A shaft-tug consisting of the combination of a double carrying-hook having means for suspending it from the back-band with a re-

taining-hook pivoted between its ends and between the arms of the double hook the lower end running down behind and below the thill, having means to fasten the belly-band thereto, the upper end curved in such a manner that when the belly-band is buckled it will draw down over the top of the thill and hold it firmly in place, and when the belly-band is loosened the thill is released, substantially as described and shown.

572,553. AIR-BRAKE. WILLIAM MABLE, Fort Collins, Colo. Filed July 8, 1895. Serial No. 555,275. (No model.)



Claim.—1. The combination with brake mechanism and means for actuating the same, of fluid-pressure locking devices for engaging and securing the brake mechanism in operative position, said locking devices being adapted to remain in operative relation with the brake mechanism after the reduction of pressure, substantially as specified.

2. The combination with fluid-pressure brake mechanism, of fluid-pressure locking devices for the brake mechanism to secure the latter in operative position, said locking devices being actuated simultaneously with the brake mechanism and remaining in engagement therewith after the reduction of pressure, substantially as specified.

3. The combination with fluid-pressure brake mechanism, of locking devices for securing the brake-shoes at the desired adjustment, and means exposed to train-pipe and brake-cylinder pressure for respectively releasing and applying the locking devices, substantially as specified.

4. The combination with fluid-pressure brake mechanism, of locking devices for securing the brake-shoes at the desired adjustment, and means for operating said locking devices including a piston exposed at one side to direct train-pipe pressure to disengage the locking devices from the brake mechanism and at the opposite side to brake-cylinder pressure to apply the locking devices, substantially as specified.

5. The combination with a fluid-pressure brake mechanism, of locking devices for securing the brake mechanism at the desired adjustment, means for operating the locking devices including a piston exposed at opposite sides to train-pipe and brake-cylinder pressure to respectively release and lock the brake mechanism, and a cut-out-valve mechanism for controlling the application of train-pipe pressure to the said piston, substantially as specified.

6. The combination with fluid-pressure brake mechanism including a train-pipe, of locking devices for securing the brake mechanism at the desired adjustment, means for operating the locking devices including a piston exposed to direct train pipe pressure, whereby the piston is moved by said pressure to release the brake mechanism, a cut-out-valve mechanism for controlling the application of train-pipe pressure to the said piston, and means operated by fluid-pressure for actuating said cut-out-valve mechanism, substantially as specified.

7. The combination with a fluid-pressure brake mechanism including a train-pipe, of locking devices for securing the brake mechanism at the desired adjustment, means for operating said locking devices including a piston exposed to train-pipe pressure and adapted to be moved thereby to release the brake mechanism, cut-out-valve mechanism for controlling the application of train-pipe pressure to said piston, and means including an auxiliary train-pipe for actuating the cut-out-valve mechanism and thereby prevent the application of train-pipe pressure to the piston, substantially as specified.

8. The combination with a fluid-pressure brake mechanism including a train-pipe, of locking devices for securing the brake mechanism at the desired adjustment, means for operating the locking mechanism including a piston exposed to train-pipe pressure and adapted to be moved thereby to release the brake mechanism, a cut-out valve mechanism for controlling the application of train-pipe pressure to the piston, the same including a valve, a cylinder, and a piston-head connected to the valve and operating in the cylinder, and means for applying fluid-pressure to the piston to close said valve, substantially as specified.

9. The combination with a fluid-pressure brake mechanism having a train-pipe, of locking devices for securing the brake mechanism at the desired adjustment, means for operating the locking devices including a piston exposed to train-pipe pressure and adapted to be moved thereby to release the brake mechanism, cut-out valve mechanism for controlling the application of train pipe pressure to the piston, the same including a valve, a cylinder, a piston connected to the valve and operating in the cylinder, and a spring for retracting the valve and allowing the application of train-pipe pressure to the piston, and means for applying fluid-pressure to the piston to close the valve, substantially as specified.

10. The combination with a fluid-pressure brake mechanism having a brake-cylinder, of locking devices for securing the mechanism at the desired adjustment, means for operating the locking devices including a piston exposed to fluid-pressure in the brake-cylinder, whereby said piston is moved to bring the locking devices into engagement with the brake mechanism, and means for moving said piston in the opposite direction to release the brake mechanism, substantially as specified.

11. In a fluid pressure brake mechanism, the combination with an auxiliary reservoir, a brake-cylinder, a train-pipe, brake-cylinder valve mechanism interposed between the train-pipe and the auxiliary reservoir, and a brake-rod, of locking devices for securing the brake-rod at the desired adjustment, a brake-cylinder piston loosely connected to the brake-rod and adapted to move the latter in a direction necessary to apply the brakes and to move in the opposite direction independently of the brake-rod, and means for operating said locking devices, substantially as specified.

12. In a fluid-pressure brake mechanism, the combination with an auxiliary reservoir, a brake-cylinder, a train-pipe, brake-cylinder valve mechanism interposed between the train-pipe and the auxiliary reservoir, and a brake rod, of a brake-cylinder piston loosely connected to the brake-rod to communicate motion thereto in one direction and move independently thereof in the opposite direction, locking devices for securing the brake-rod at the desired adjustment, means for operating said locking devices including a locking-cylinder in communication with the brake-cylinder, and a piston operating in the locking cylinder and having its stem connected to the locking devices, whereby the locking-cylinder receives pressure from and is exhausted through the brake-cylinder, substantially as specified.

13. In a fluid pressure brake mechanism, the combination with a train-pipe, an auxiliary reservoir, a brake cylinder, and a piston operating in the brake-cylinder, of a conductor in communication at one end with the brake-cylinder and provided at the other end with a port communicating with the auxiliary reservoir, a brake-cylinder valve mechanism interposed between the train-pipe and the auxiliary reservoir and including a valve-chamber in communication with the train-pipe by means of a plurality of passages, a cut-out valve for controlling said passages and adapted to open communication through either passage with the chamber, a valve for controlling the port in the conductor, a piston-head arranged in the valve-chamber to operate between the outlet ends of said passages, the valve-chamber having a channel controlled by the piston-head for communicating pressure from the chamber to the auxiliary reservoir, and a slide-valve controlling brake-cylinder exhaust-ports and connected to the piston-head for operation thereby, substantially as specified.

14. In a fluid-pressure brake mechanism, the combination with a train-pipe, an auxiliary reservoir, a brake-cylinder, a brake-piston operating in said cylinder, and a brake-cylinder valve mechanism interposed between the train-pipe and the auxiliary reservoir and including a valve for controlling communication between the auxiliary reservoir and the brake-cylinder, of a conductor for conveying pressure from the auxiliary reservoir to the brake-cylinder, said conductor being provided with brake-cylinder exhaust-ports, a slide-valve controlling the exhaust-ports and a connecting-rod 24 between the slide-valve and the valve controlling the communication of pressure from the auxiliary reservoir to the brake-cylinder, substantially as specified.

15. In a fluid-pressure brake mechanism, the combination with a train-pipe, an auxiliary reservoir, a brake-cylinder, a brake-piston operating in the cylinder, and brake-cylinder valve mechanism interposed between the train-pipe and the auxiliary reservoir, of a conductor arranged axially in the auxiliary reservoir communicating at one end with the brake-cylinder and provided with a port communicating with the auxiliary reservoir, a valve forming a part of said brake cylinder valve mechanism arranged to control said port, the conductor being provided with exhaust-ports, and a slide-valve for controlling the exhaust-ports connected for simultaneous operation with the said valve, the slide-valve being channeled to allow back pressure from the brake-cylinder into the conductor and through the exhaust-ports to exhaust the brake-cylinder, substantially as specified.

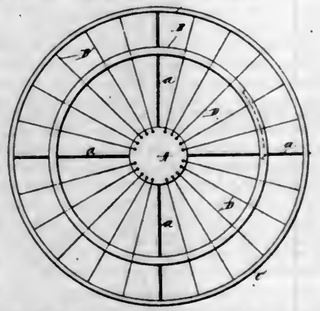
572,554. ENVELOP. WALTER S. MAYER, Galveston, Tex. Filed Sept. 15, 1896. Serial No. 605,925. (No specimens.)



Claim.—1. As an improved article of manufacture an envelop consisting of a blank having a central quadrangular flap, with extensions at opposite sides thereof, adapted to be folded over and joined at their meeting edges, a lower flap, of same length as the central one, the margin thereof being in a right line for said length, which in practice is upturned over the folded side flaps and in conjunction therewith composes a pocket-receptacle, said upturned flap having extending from either side wing-flaps, the edges of which are in curved lines, that when the upturned flap is fastened to form said pocket are overturned on the opposite face of the envelop and adhered thereto, all in combination with an upper closing-flap which is of same length as the body of the device said closing flap having at each side, wing extensions with curved marginal edges, and a tongue extending from median point of its outer edge which tongue and side wings after said closing-flap is turned downwardly are bent over the opposite face of the envelop partially overlapping the side wings of the lower upturned flap all of said side wings when folded over, in the manner described, will have their terminals at a common meeting-point, substantially as described.

2. An envelop consisting of a quadrangular central blank having flap extending at each side thereof, a lower flap of same length as the central blank, having extending from opposite sides semicrescent-shaped wing-flaps, an upper flap having extending from each side semicrescent-shaped wing-flaps, and from median point of its width a conical tongue-flap, all of said elements of the device composed integrally of one piece of paper, the outer edges of the main flaps and wings provided with strips of adhesive mucilage, the side flaps adapted to be folded over and their meeting edges connected, over which the lower flap is upturned to compose a receptacle pocket, the wings of said lower flap being then folded over to the opposite side of the pocket, substantially as described.

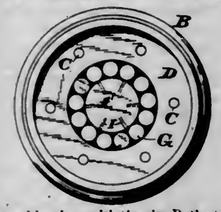
572,555. MUSICAL HOOP. JOHN H. MILLEDGE, Marlin, Tex. Filed Apr. 23, 1896. Serial No. 588,745. (No model.)



Claim.—1. In a musical wheel, the combination with a central disk or hub, and a rim or tire connected therewith, of a hollow ring which is placed between said disk or hub and said rim or tire, a plurality of wires which are connected with said disk or head and passed through said ring, and connected with said rim or tire, and a ball which is placed in said ring, substantially as shown and described.

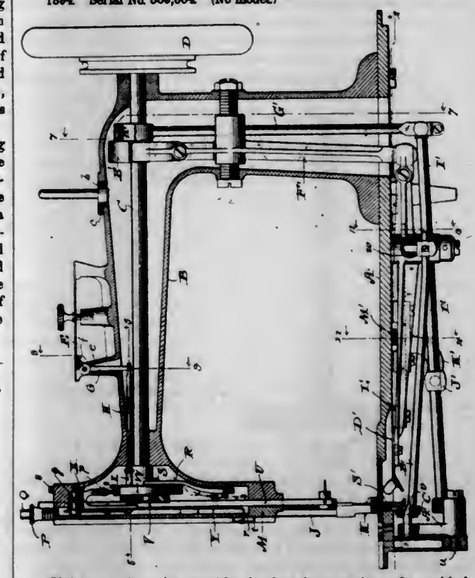
2. In a musical wheel, the combination with a central disk or hub, and a rim or tire, connected therewith, of a hollow ring which is placed between said disk or hub and said rim or tire, a plurality of wires which are connected with said disk or head and passed through said ring, and connected with said rim or tire, and a ball which is placed in said ring, said ring being provided with oblong slots through which said wires are passed and said ball being free to roll there through and to come in contact with said wires, substantially as shown and described.

572,556. CAR-WHEEL. JOHN A. MILLER, Indianapolis, Ind. Filed May 11, 1896. Serial No. 591,024. (No model.)



Claim.—The combination, with the rim D, the two disks E bolted to the rim, one on each side thereof and the cylindrical roller G, of the axle A having the ends or heads A' of greater diameter than the axle, said heads having grooves on their inner sides running from the periphery of the heads toward the axial line of the axle and said axle having threaded portions next to the heads substantially as described and for the purposes specified.

572,557. SEWING-MACHINE. LEE A. MILLER, Milwaukee, Wis., assignor of one-half to Samuel B. Fuller, Watertown, Wis. Filed May 2, 1894. Serial No. 509,804. (No model.)



Claim.—1. A sewing-machine having the arm thereof provided with a spring tension-plate having a free end, a vertical tubular branch on the arm, a head recessed at its inner end in line with the draft of the spool-thread and trunnioned in said arm branch under the free end of the tension-plate, a shank depending from this trunnioned head, an angular lever fulcrumed inside of the machine-arm and having one of its ends extended outward through a slot in said arm, and a link-rod that has free longitudinal play in a solid portion of the aforesaid arm and connects the trunnioned head-shank with the inner end of the angular lever, in combination with the feed mechanism, reciprocative needle, and the presser-foot having a lifter arranged to be swung up against the outer end of said lever.

2. A sewing-machine having the feed mechanism thereof combined with a tubular spring-controlled presser-foot shank provided with a vertical slot, a tapped sleeve loose in the presser-foot shank and provided with a lug that extends through said slot, a vibratory lever arranged to operate against the lug, and a screw-threaded vertical stem engaging the sleeve but held against other than rotary movement therein, whereby said sleeve may be vertically adjusted to regulate the position of its lug with respect to the vibratory lever.

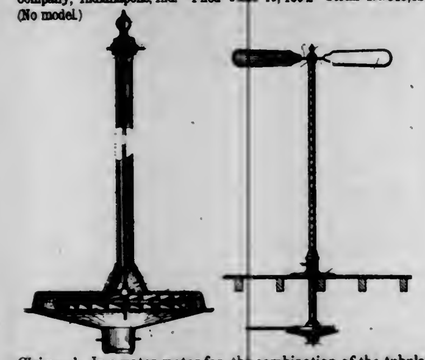
3. A sewing-machine having the feed mechanism thereof combined with a tubular spring-controlled presser-foot shank provided with a vertical slot, a sleeve fast on the upper end of the shank and provided with a block extension engaging a guide-slot in opposition to a lifting device, a tapped sleeve loose in said shank and provided with a lug extending through the slot therein, a screw-threaded stem engaging the sleeve and provided with a rigid collar that impinges the upper end of the aforesaid shank within the sleeve thereon, a stop extending in from said sleeve above the collar, a bell-crank lever having an arm thereof opposed to the sleeve-lug, and a cam on the machine-shaft operative against the other arm of the lever.

4. A sewing-machine provided with a suitably-supported bell-crank, a shuttle-lever, a swivel on the lever, a tilting rod longitudinally adjustable in the swivel and loose in an arm of the bell-crank, a feed-bar having an opening engaged by an angular portion of the tilt-rod, and suitable means for actuating said bell-crank and shuttle-lever.

5. A sewing-machine having the under side of its bed-plate provided with a guide, an arm in loose engagement with the guide, a swivel supported by the arm, a vibratory lever loosely engaging the swivel, a lever connected to said arm, a screw rotative below the bed-plate and adjustable from above the same, a nut on the screw, and a link connecting the latter lever and nut, a bell-crank having an arm thereof connected to the former lever, and a feed-bar, having longitudinal reciprocation incidental to action of said crank.

6. A sewing-machine having the under side of its bed-plate provided with a guide, an arm in loose engagement with the guide, a swivel supported by the arm, a vibratory lever loosely engaging the swivel, a lever connected to said arm, a screw rotative below the bed-plate and adjustable from above the same, a nut on the screw, a link connecting the latter lever and nut, a pointer on the nut engaging a slot in the bed-plate, a scale adjacent to the pointer, a bell-crank having an arm thereof connected to the former lever, and a feed-bar, having longitudinal reciprocation incidental to action of said crank.

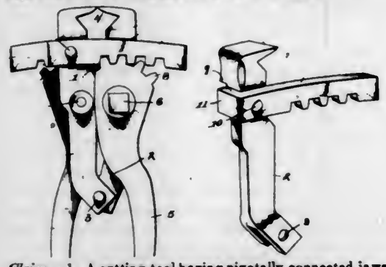
572,558. WATER-MOTOR FAN. WILLIAM J. MINGLE, Lancaster, Pa., assignor, by mesne assignments, to the Specialty Manufacturing Company, Indianapolis, Ind. Filed June 19, 1894. Serial No. 515,021. (No model.)



Claim.—1. In a water-motor fan, the combination of the tubular casing for the vertical shaft, the casing for the water-wheel on its lower end, said water-wheel secured to the lower end of said shaft and arranged horizontally in said casing, its center being somewhat to one side of the center of said casing, the water-inlet pipe arranged to discharge against said wheel at the side of said casing which is thus provided with the largest free space, the water-outlet, a fan on the upper end of said shaft, and a bearing between said upper end and the upper end of the tubular vertical casing, substantially as set forth.

2. In a water-motor fan, the combination, of the vertical tubular casing, and the horizontal cylindrical casing secured together, the fan shaft mounted in said vertical casing by being hung from a bearing at its upper end, the water-wheel on the lower end of said shaft in said horizontal casing, the water-inlet and water-outlet, a fan mounted on the upper end of said shaft by means of a removable hub, and a universal bearing between said shaft and the casing at its lower end, all substantially as set forth.

572,559. CUTTING-TOOL. JAMES L. MCFARLANE, Medina, Wis. Filed Feb. 14, 1896. Serial No. 579,292. (No model.)



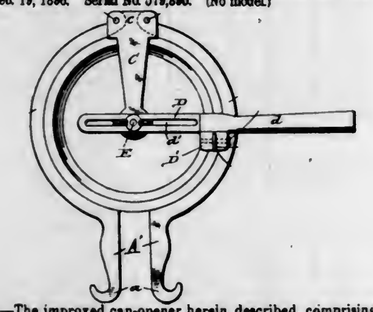
Claim.—1. A cutting-tool having pivotally-connected jaws, operating levers or handles fulcrumed respectively upon the jaws between their pivotal point and their free ends, and connections between each lever or handle and the jaw upon which the other lever or handle is fulcrumed, substantially as specified.

2. A cutting-tool having jaws provided with rearward extensions or shanks pivotally connected at their extremities, operating levers or handles fulcrumed respectively upon the extensions or shanks of said jaws and provided with toothed segments, and racks carried respectively by the jaws, the toothed segment of each lever or handle meshing with the rack secured to the opposite jaw, substantially as specified.

3. A cutting-tool having jaws provided with rearward extensions or shanks pivotally connected at their extremities, operating levers or handles fulcrumed respectively upon the extensions or shanks of the jaws and provided with toothed segments, a rack secured to each jaw in the plane of the toothed segment of the lever or handle mounted upon the other jaw and engaged thereby, and a guide or shoulder carried by each jaw in contact with the opposite side of the rack from that which is engaged by the toothed segment, substantially as specified.

4. A cutting-tool having jaws provided with rearward extensions or shanks arranged in a common plane and pivotally connected at their extremities, operating levers or handles fulcrumed, respectively, upon the extensions or shanks of the jaws upon opposite sides of the plane thereof and provided with toothed segments, a rack secured to each jaw in position for engagement by the toothed segment on the lever fulcrumed upon the other jaw, means for guiding and resisting the thrust of each rack caused by the pressure of the segment in engagement therewith, and lateral extensions or shoulders on said racks to engage the outer sides of the jaws to which they are secured, substantially as specified.

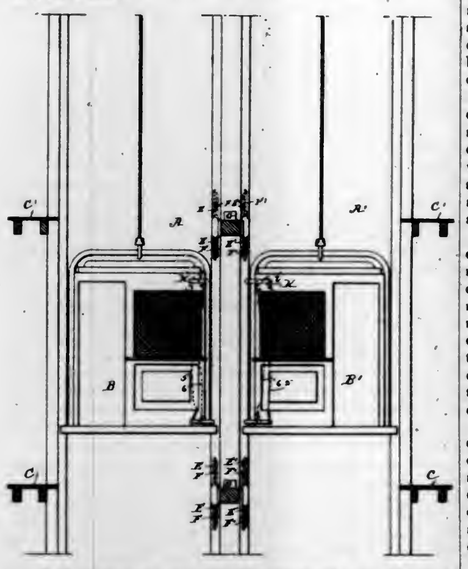
572,560. CAN-OPENER. SETH A. NICHOLS, Fowlerville, Mich. Filed Feb. 19, 1896. Serial No. 579,896. (No model.)



Claim.—The improved can-opener herein described, comprising two clamps each substantially semicircular in form with extensions at one end provided with hooks, the arm extending within the space inclosed by the semicircular arms and having its outer end pivotally connected with the adjacent ends of said arms, an operating-lever formed at one end with a handle portion and its other end with an elongated slot, a thumb-screw passed through said slot into the arm at the center of the circle described by the semicircular portions and a cutter carried by said operating-lever, all substantially as herein shown and described and for the purpose specified.

572,561. ELEVATOR SIGNAL APPARATUS. STACY R. OPDYKE, Jr., Philadelphia, Pa. Filed Apr. 24, 1894. Serial No. 508,756. (No model.)

Claim.—1. In an elevating apparatus, the combination with a source of electric-current supply, a normally open circuit, contacts in said circuit normally in contact, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit, and means independent of the car to close said circuit.



2. In an elevating apparatus, the combination with a source of electric current supply, a normally open circuit, spring-contacts in said circuit normally in contact, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit, and means independent of the car to close said circuit.

3. In an elevating apparatus, the combination with a source of electric-current supply, a normally open circuit, contacts in said circuit normally in contact, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car in one direction to separate said contacts and include the signal carried by said car in said circuit, and in the movement of the car in the other direction, to move out of line with said contacts, and means independent of the car to close said circuit.

4. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and being normally out of contact with the magnet, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit.

5. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, a signal carried by said car, a device carried by said car, and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said contact.

6. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit held in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and held out of contact with the magnet when the circuit is open, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit.

7. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact arms in said circuit held in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and held out of contact with the magnet when the circuit is open, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit.

8. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit held in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and held out of contact with the magnet when the circuit is open, of an elevator-car, a signal carried by said car, a device carried by said car and adapted in the movement of said car to separate said contacts and include the signal carried by said car in said circuit, and in its further movement to break the circuit between said contacts.

9. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts.

10. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit normally in contact, the lower end of said arms being insulated from each other, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, a signal, and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts, and in the further travel to strike the insulated portion of contact-arms and break the circuit at the contacts.

11. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit, and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts.

12. In a elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact-arms in said circuit normally in contact, the lower end of said arms being insulated from each other, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts, and in the further travel to strike the insulated portion of spring contact-arms and break the circuit at the contacts, and the further movement to first strike the insulated portion of contacts and break the circuit at contact, and then pass beyond the contact-arms when said contact-arms return to contact restoring the circuit at that point.

13. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car and adapted to swing in one direction and provided with a counterbalance, a signal and electrical connection between said signal and the arm, and the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and the contacts.

14. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, contact-arms in said circuit normally in contact, the lower end of said arms being insulated from each other, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, and adapted to swing in one direction and provided with a counterbalance, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts, and in the further travel to strike the insulated portion of contact-arms and break the circuit at the contacts.

15. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact-arms in said circuit normally in contact, an electromagnet in said circuit, the armature of said magnet controlling said circuit, and normally out of contact with the magnet, of an elevator-car, an arm secured to said car, and adapted to swing in one direction and provided with a counterbalance, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate

said contacts and form electrical connection between the arm and contacts.

16. In an elevating apparatus, the combination with a source of current supply, a normally open circuit, spring contact-arms in said circuit normally in contact, the lower end of said arms being insulated from each other, an electromagnet in said circuit, the armature of said magnet controlling said circuit and normally out of contact with the magnet, of an elevator-car, an arm secured to said car and adapted to swing in one direction and provided with a counterbalance, a signal and electrical connection between said signal and the arm, the arm in the travel of the car being adapted to separate said contacts and form electrical connection between the arm and contacts, and in the further travel to strike the insulated portion of spring contact-arms and break the circuit at the contacts, and the further movement to first strike the insulated portion of contacts and break the circuit at contact and then pass beyond the contact-arms when said contact arms return to contact restoring the circuit at that point.

17. In an elevating apparatus, the combination with a plurality of elevator-cars, of a source of electric-current supply, a normally open circuit, a plurality of contacts in said circuit equal in number and adjacent to the travel of the cars, and means to close said circuit, a signal carried by each car, a device carried by each of said cars, each device being adapted in the movement of its car to separate the contacts corresponding to said car and to include the signal carried by said car in the circuit.

18. In an elevating apparatus, the combination with a plurality of elevator-cars, of a source of electric-current supply, a normally open circuit, an electromagnet in said circuit, the circuit being controlled by the armature, said armature being normally out of contact with the magnet, a plurality of contacts in electrical connection with the magnet, and said contacts being equal in number and adjacent to the travel of the cars, a signal carried by each car, a device carried by each of said cars, each device being adapted in the movement of its car to separate the contacts corresponding to said car and to include the signal carried by said car in the circuit.

19. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a device having a movement corresponding to the movement of the car, normally open circuits including said device, the signal, and the contacts, and a circuit-closing device at each floor, whereby, when the circuit-closing device at any floor is operated and the first-named device makes connection with the corresponding contact, the circuit is completed to the signal.

20. The combination with an elevator-car provided with a signal and mechanism for operating the car, of two series of contacts, the contacts of each series corresponding to the floors, devices having a movement corresponding to the movement of the car, one device being adapted to make contact with one series of contacts in the movement of the car in one direction, and the other device with the other series, in the movement of the car in the other direction, normally open circuits including said devices, the signal and the contacts, and circuit-closing devices, two at each floor, corresponding with said two series of contacts, whereby, when either of said circuit-closing devices at any floor is operated and the corresponding device of said first-named devices makes connection with the corresponding contact, the circuit is completed to the signal.

21. In combination with a series of elevator-cars, each provided with a signal, and mechanism for operating the car, of a series of contacts corresponding to the floors for each elevator, devices corresponding in number to the car and each having a movement corresponding to the movement of its corresponding car, normally open circuits including said devices, the signals and the contacts, and a circuit-closing device at each floor, whereby, when the circuit-closing device at any floor is operated and any of the first-named devices makes connection with the contact corresponding to that floor, the circuit is completed to the signal of the car corresponding to the device making contact.

22. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a device having a movement corresponding to the movement of the car, normally open circuits including the signal and the contacts and a circuit-closing device at each floor, whereby when the circuit-closing device at any floor is operated and the first-named device makes connection with the corresponding contact, the circuit is completed to the signal.

23. The combination with an elevator-car provided with a signal and mechanism for operating the car, of two series of contacts, the contacts of each series corresponding to the floors, devices having a movement corresponding to the movement of the car, one device adapted to make connection with one series of contacts in the movement of the car in one direction, and the other device with the other series, in the movement of the car in the other direction, normally open circuits including the signal, and the contacts and circuit-closing devices, two at each floor, corresponding with said two series of contacts, whereby, when either of said circuit-closing devices at any floor is operated and the corresponding device of said first-named devices makes connection with the corresponding contact, the circuit is completed to the signal.

24. In combination with a series of elevator-cars, each provided with a signal, and mechanism for operating the car, of a series of contacts corresponding to the floors for each elevator, devices corresponding in number to the car and each having a movement corresponding to the movement of its corresponding car, normally open circuits including signals and the contacts, and a circuit-closing device at each floor, whereby, when the circuit-closing device at any floor is operated and any of the first-named devices makes connection with the contact corresponding to that floor, the circuit is completed to the signal of the car corresponding to the device making contact.

25. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, normally open circuits including the brush the signal and each of the contacts, and a circuit-closing device at each floor whereby when the circuit is connected at any floor and the brush makes connection with the corresponding contact the circuit is completed to the signal.

26. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, normally open circuits each including the signal the brush and one of the contacts, a switch at each floor in the circuit to its corresponding contact, whereby upon the closing of the switch at any floor the circuit is connected to its corresponding contact and is completed to the signal when the brush makes contact with the contact corresponding to said switch.

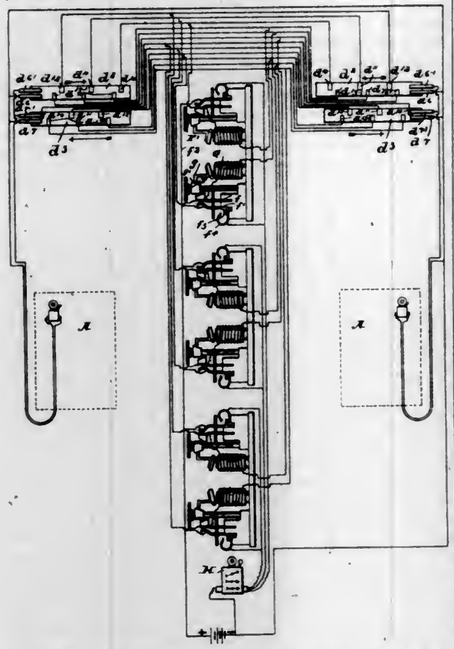
27. In combination with an elevator-car provided with a signal and mechanism for operating the car, of two series of contacts, the contacts of each series corresponding to the floors, a brush for each series of contacts, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car, the brush of one series being adapted to make contact with its series of contacts in the movement of the car in one direction, and the other brush with its contacts in the movement of the car in the other direction, normally open circuits each including the signal in the car and one of the contacts and the brushes, two switches at each floor, one switch in the circuit to its corresponding contact in one series of contacts, the other in the circuit to its corresponding contact with the other series of contacts, whereby, dependent upon which switch is closed, the circuit to the signal in the car is closed when the brush is in contact with the contact corresponding to that of the switch.

28. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors for each elevator, a brush for each series of contacts, and means to give a relative movement between the contacts and brush of each elevator corresponding to the movement of said elevator, normally open circuits, each including a signal and the corresponding contact of the series of contacts corresponding to said signal and its corresponding brush, a switch at each floor in the circuit to the corresponding contacts of all the series of contacts, whereby, when the switch is closed, the first brush of the series which makes contact with the contact corresponding to the switch will close the circuit to the signal.

29. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of two series of contacts for each elevator, the contacts of each series corresponding to the floors, a brush for each series of contacts, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car, the brush of one series of each pair of series of contacts being adapted to make contact with its series of contacts in the movement of the car in one direction, and the brush of the other series of each pair of series of contacts in the movement of the car in the other direction, normally open circuits, each including the signal in the car and one of the contacts and its brush, two switches at each floor, one in the circuit to the corresponding contacts of all of one of the pairs of series of contacts, the other in the circuit to corresponding contacts of all of the other of the pairs of series of contacts.

30. In combination with an elevator-car provided with a signal, and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush corresponding to the movement of the car common to all the contacts, and means to give a relative movement between the contacts and brush, normally open circuits including the contact, the brush and the signal in the car, and a switch device at each floor, the arrangement being such that when the switch is operated and the brush makes contact with contacts corresponding to the switch operated, the corresponding car-signal is operated.

572,562. ELEVATOR SIGNAL MECHANISM. STACY B. OPDYKE, Jr., Philadelphia, Pa. Filed Oct. 8, 1894. Serial No. 525,195. (No model.)



Claim.—1. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to but not located at the floors, a brush common to all the contacts, said brush being located outside and detached from the car, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car relative to the floors, normally open circuits including the brush, the signal and each of the contacts, and a circuit-closing device at each floor whereby when the circuit is connected at any floor and the brush makes connection with the corresponding contact the circuit is completed to the signal.

2. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to but not located at the floors, a brush common to all the contacts, said brush being located outside and detached from the car, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car relative to the floors, normally open circuits each including the signal, the brush, and one of the contacts, a switch at each floor in the circuit to its corresponding contact, whereby upon the closing of the switch at any floor the circuit is connected to its corresponding contact and is completed to the signal when the brush makes contact with the contact corresponding to said switch.

3. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car relative to the floors, normally open circuits each including the brush, signal and one of the contacts, a switch at each floor in the circuit to its corresponding contact provided with a spring or equivalent device adapted to hold said switch open, an electromagnet adjacent to said switch, the armature of which is provided with a locking device adapted to hold said switch closed when the magnet is inactive, and release said switch when energized, a circuit including said switch and electromagnet and its corresponding contact, a second series of contacts corresponding to the floors, and a brush, the brush and contacts being given a relative movement corresponding to the movement of the car, said last-mentioned contacts being arranged so that the brush makes contact with the corresponding magnet-contact after the brush of the first-mentioned contacts has made contact with the corresponding contact.

4. In combination with an elevator-car provided with a signal and mechanism for operating the car, of two series of contacts, the contacts of each series corresponding to but not located at the floors, a brush for each series of contacts, said brush being located outside and detached from the car, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car, the brush of one series being adapted to make contact with its series of contacts in the movement of the car in one direction, and the other brush with its contacts in the movement of the car in the other direction, normally open circuits each including the signal in the car, and one of the contacts and said brush, two switches at each floor, one switch in the circuit to its corresponding contacts in one series of contacts, the other in the circuit to its corresponding contact of the other series of contacts, whereby, dependent upon which switch is closed, the circuit to the signal in the car is closed when the brush is in contact with the contact corresponding to that of the switch.

5. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of a series of contacts corresponding to, but not located at, the floors for each elevator, a brush for each series of contacts, said brush being located outside and detached from the car, and means to give a relative movement between the contacts and brush of each elevator corresponding to the movement of said elevator relative to the floors, normally open circuits, each including a signal and the corresponding contact of the series of contacts corresponding to said signal and its corresponding brush, a switch at each floor in the circuit to the corresponding contacts of all the series of contacts, whereby when the switch is closed the first brush of the series which makes contact with the contact corresponding to the switch will close the circuit to the signal.

6. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of two series of contacts for each elevator, the contacts of each series corresponding to but not located at the floors, a brush for each series of contacts, said brush being located outside and detached from the car, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car relative to the floors, the brush of one series of each pair of series of contacts being adapted to make contact with its series of contacts in the movement of the car in one direction, and the brush of the other series of each pair of series of contacts in the movement of the car in the other direction, normally open circuits, each including the signal in the car and one of the contacts and its brush, two switches at each floor, one in the circuit to the corresponding contacts of all of one of the pairs of series of contacts, the other in the circuit to corresponding contacts of all of the other of the pairs of series of contacts.

7. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical circuit to the signal through said contact operated by the plunger, the brush and the contact of the series corresponding to said floor.

8. In combination with an elevator-car provided with a signal and mechanism for operating the car, of two series of contacts, the contacts of each series corresponding to the floors, a brush for each series of contacts, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car, the brush of one series being adapted to make contact with its series of contacts in the movement of the car in one direction, and the other brush with its contacts in the movement of the car in the other direction, a source of current supply, two devices at each floor, each consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical circuit to the signal through the last mentioned contact operated by the plunger of one of said devices, its corresponding contact of one series of contacts and its corresponding brush, and electrical circuit to the signal through the last-mentioned contact carried by the plunger of the other of said devices its corresponding contact of the other series of contacts, and its corresponding brush.

9. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors for each elevator, a brush for each

series of contacts and means to give a relative movement between the contacts and brush of each elevator corresponding to the movement of said elevator, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electric circuits through said contact to the signals in the cars through the contact of each of the series corresponding to said floor and its corresponding brush.

10. In combination with a series of elevator-cars, each provided with a signal and mechanism for operating the car, of two series of contacts for each elevator, the contacts of each series corresponding to the floors, a brush for each series of contacts, and means to give a relative movement between the contacts and their corresponding brushes corresponding to the movement of the car, the brush of one series of each pair of series of contacts being adapted to make contact with its series of contacts in the movement of the car in one direction, and the brush of the other series of each pair of series of contacts in the movement of the car in the other direction, two devices at each floor, each consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electric circuit through said last-mentioned contact of one of said devices to the signals in the cars through the corresponding contacts of one set of series of contacts and its brushes, and through said last-mentioned contact of the other of said devices to the signals in the cars through the corresponding contacts of the other set of series of contacts and its brushes.

11. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection to the signal through said contacts operated by the plunger and the contact of the series corresponding to said floor and its brush, an electromagnet adjacent to said plunger, the armature of which is provided with a locking device adapted to engage and hold said plunger when the magnet is inactive and release said plunger when energized, electrical connection between the magnet and one pole when the plunger is down, a second set of contacts corresponding to the floors, and a brush given a relative movement corresponding to the movement of the car, said last-mentioned contacts being arranged so that the brush makes contact with its corresponding magnet-contact after the brush of the first-mentioned contact has made contact with its corresponding contact and electric circuit through said magnet its corresponding contact and its brush.

12. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection to the signal through said contact operated by the plunger, the contact of the series corresponding to said floor and its brush an electromagnet adjacent to said plunger, the armature of which is provided with a locking device adapted to engage and hold said plunger when the magnet is inactive and release said plunger when energized, electrical connection between the magnet and one pole when the plunger is down, a second set of contacts corresponding to the floors and a brush given a relative movement corresponding to the movement of the car, said last-mentioned contacts being arranged so that the brush makes contact with its corresponding magnet-contact after the brush of the first-mentioned contact has made contact with its corresponding contact, and electric connection between said magnet and the other pole of current supply through its corresponding contact and said contact-brush, a second contact operated by the plunger in electrical connection with first-mentioned contact of plunger, a contact in line of movement of said second plunger-contact, and a circuit including a signal, the last-mentioned contact and plunger-contact.

13. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection to the signal through said contact operated by the plunger, the contact of the series corresponding to said floor and its brush an electromagnet adjacent to said plunger, the armature of which is provided with a locking device adapted to engage and hold said plunger when the magnet is inactive, and release said plunger when energized, electrical connection between the magnet and one pole when the plunger is down, a second set of contacts corresponding to the floors, and a brush given a relative movement corresponding to the movement of the car, said last-mentioned contacts being arranged so that the brush makes contact with its corresponding magnet-contact after the brush of the first-mentioned contact has made contact with its corresponding contact and electric connection between said magnet and the other pole of current supply through its corresponding contact and said contact-brush, a second contact carried by the plunger in electrical connection with first-mentioned contact of plunger, a contact in line of movement of said second plunger-contact but in such position that the plunger must be forced below the catch to make connection, and a circuit including a signal, the last-mentioned contact and plunger-contact.

14. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger, a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection to the other pole of current supply from said contact, carried by the plunger and through the signal the contacts of the series corresponding to said floor and the contact-brush, a catch to hold said plunger when closed, a second contact operated by the plunger in electrical connection with first-mentioned contact of plunger, a contact in line of movement of said second plunger-contact, and a circuit including a signal the last-mentioned contact and plunger-contact.

15. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to the floors, a brush common to all the contacts, and means to give a relative movement between the contacts and brush corresponding to the movement of the elevator-car, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection to the other pole of current supply from said contact operated by the plunger, and through the signal the contacts of the series corresponding to said floor and the contact-brush, a catch to hold said plunger when closed, a second contact operated by the plunger in electrical connection with the first-mentioned contact of plunger, a contact in line of movement of said second plunger-contact but in such position that the plunger must be forced below the catch to make connection, and a circuit including a signal the last-mentioned contact and plunger-contact.

16. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a commutator-disk rotated corresponding with the car, contacts corresponding with the floors, a brush adapted to make connection with the contacts, normally open circuits to the signal through each of the contacts and its brush, a switch at each floor in the circuit to its corresponding contact, whereby upon the closing of the switch at any floor the circuit is connected to its corresponding contact and is completed to the signal when the brush makes contact with the contact corresponding to said switch

17. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a pair of commutator-disks rotated, corresponding with the car, contacts corresponding with the floors upon each disk, a brush for each disk, the brush at one disk being adapted to make connection with its contacts in the rotation of the disks in one direction and the other brush to make connection with the contacts in the movement of its disk in the other direction, normally open circuits including the signal in the car and each of the contacts, two switches at each floor, one switch in the circuit to its corresponding contact in one series of contacts, the other in the circuit to its corresponding contact of the other series of contacts, whereby, dependent upon which switch is closed, the circuit to signal in the car is closed, when the brush is in contact with the contact corresponding to that of the switch.

18. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a pair of commutator-disks, rotated, corresponding with the car, contacts corresponding with the floors upon each disk, a brush for each disk, said brushes being pivotally secured, a pawl attached to each brush working in corresponding racks secured to said disks said pawls being oppositely set to as to hold each brush off of the commutator in one direction of movement but in opposite direction with reference to each other, normally open circuits including the signal in the car and each of the contacts, two switches at each floor, one switch in the circuit to its corresponding contact in one series of contacts, the other in the circuit to its corresponding contact of the other series of contacts whereby dependent upon which switch is closed, the circuit to signal in the car is closed when the brush is in contact with the contact corresponding to that of the switch.

19. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a commutator-disk, rotated, corresponding with the car, contacts corresponding with the floors, a brush adapted to make connection with the contacts, a source of current supply, a device at each floor consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger, a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection through the signal between said contacts operated by the plunger and the contact of the series corresponding to said floor, and electrical connection between the brush and the other pole of the source of current supply.

20. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a pair of commutator-disks rotatated corresponding with the car, contacts corresponding with the floors upon each disk, a brush for each disk, the brush of one disk being adapted to make connection with its contacts in the rotation of the disks in one direction and the other brush to make connection with the contacts in the movement of its disk in the other direction, a source of current supply, two devices at each floor, each consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection through the signal between the last-mentioned contact operated by the plunger of one of said devices and its corresponding contact of one series of contacts and electrical connection through the signal between the last-mentioned contact operated by the plunger of the other of said devices and its corresponding contact of the other series of contacts and electrical connection between the brushes and the other pole of current supply.

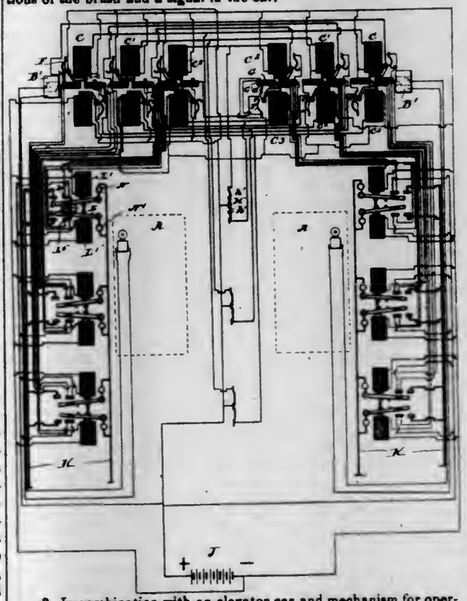
21. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a pair of commutator-disks rotated corresponding with the car, contacts corresponding with the floors upon each disk, a brush for each disk, said brushes being pivotally secured, a pawl attached to each brush working in corresponding racks secured to said disks, said pawls being oppositely set so as to hold each brush off of the commutator in one direction of movement but in opposite directions with reference to each other, a source of current supply, two devices at each floor, each consisting of a contact in electrical connection with one pole of the source of current supply, a spring-plunger a contact adapted in the movement of the plunger to be brought in contact with the last-mentioned contact, electrical connection through the signal between the last-mentioned contact carried by the plunger of one of said devices and its corresponding contact of one series of contacts and electrical connection through the signal between the last-mentioned contact carried by the plunger of the other of said devices and its corresponding contact of the other series of contacts, and electrical connection between the brushes and the other pole of current supply.

22. In combination with an elevator-car provided with a signal and mechanism for operating the car, of a series of contacts corresponding to but not located at the floors, a brush outside the car having a movement corresponding to the movement of the car relative to the floors and common to all the contacts, means to give a relative movement between the contacts and brush, normally open circuits including the contact, the brush and the signal in the car, and a switch device at each floor, the arrangement being such that when the switch is operated and the brush makes contact with contact corresponding to the switch operated, the corresponding car-signal is operated.

572,563. ELEVATOR SIGNAL APPARATUS. STACY B. OPDYKE, Jr., Philadelphia, Pa. Filed Dec. 18, 1894. Serial No. 532,150. (No model.)

Claim.—1. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, devices consisting essentially of an electric magnet corresponding to each floor and each provided with a spring-actuated armature, the spring acting against the magnet, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, normally open independent circuits each including the armature of one of said last-mentioned magnets, the corresponding circuit being closed when its corresponding armature is retracted, contact devices by which the brush in its movement is adapted to include itself in the circuit, and electrical connection between said brush and a signal in the car.

2. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, devices consisting essentially of an electric magnet corresponding to each floor and each provided with a spring-actuated armature, the spring acting against the magnet, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, independent electrical connection from one pole of the source of current supply to said armature, a contact corresponding to each armature in electrical connection with the other pole of current supply, the aforementioned brush being divided by insulation into two active parts one of which is in alinement with said contact, the other in alinement with said armature when the magnet corresponding to the armature is deenergized, and electrical connection between said portions of the brush and a signal in the car.



3. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, two devices corresponding to each floor, each device consisting essentially of an electric magnet, and each provided with a spring-acted armature the spring acting against the magnet, one device of the pair set on one side of the line of travel of the brush, and the other on the opposite side, the devices of the pair being oppositely set, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, independent normally open circuits, each including an armature of one of said magnets, the corresponding circuit being closed when its corresponding armature is retracted, contact devices by which said brush in its movement in one direction is adapted to include itself in one armature-circuit, and in the other direction in the other of said circuits, and electrical connection between said brush and the signal in the car.

4. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, two devices corresponding to each floor, each device consisting essentially of an electric magnet and each provided with a spring-acted armature the spring acting against the magnet, one device of the pair set on one side of the line of travel of the brush and the other on the opposite side, the devices of the pair being oppositely set, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, independent electrical connection from one pole of the source of current supply to said armature, a contact corresponding to each armature in electrical connection with the other pole of current supply, the aforementioned brush being divided by insulation into two active parts one of which is in alinement with said contacts, the other in alinement with said armature when the magnet corresponding to the armature is deenergized, and electrical connection between said portions of the brush and a signal in the car.

5. In combination with a series of elevator-cars and mechanism for operating the same, of a series of brushes corresponding to the cars, means to cause each brush to move proportionately with the movement of its corresponding car, devices consisting essentially of an electric magnet corresponding to each floor and each provided with a spring-actuated armature, the spring acting against the magnet, a circuit from each floor including the magnets of all the cars corresponding to said floor, a switch device at each floor included in the circuit to its corresponding magnets, independent normally open circuits each including the armature of one of the corresponding floor-magnets, the circuit being closed when the corresponding armature is retracted, contact devices by which the brushes are adapted in their movement to include themselves in said last-mentioned circuits, and electrical connection between said brushes and the signal in its corresponding car.

6. In combination with a series of elevator-cars and mechanism for operating the same, of a series of brushes corresponding to the cars, means to cause said brush to move proportionately with the movement of its corresponding car, devices consisting essentially of an electric magnet corresponding to each floor and each provided with a spring-actuated armature, the spring acting against the magnet, a circuit from each floor including the magnets of all the cars corresponding to said floor, a switch device at each floor included in the circuit to its corresponding magnets, an independent electrical connection from one pole of the source of current supply to the armatures of corresponding magnets, a contact corresponding to each magnet in electrical connection with the other pole of current supply, the aforementioned brushes each being divided by insulation into two active parts one of which is in alinement with corresponding contacts, and the other in alinement with corresponding armatures when the magnets corresponding to said armatures are deenergized, and electrical connection between said parts and a signal in the car.

7. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, two devices corresponding to each floor, each device consisting essentially of an electric magnet, and each provided with a spring-acted armature the spring acting against the magnet, one device of the pair set on one side of the line of travel of the brush, and the other on the opposite side, the devices of the pair being oppositely set, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, independent normally open circuits, each including an armature of one of said electromagnets, said circuit being closed when the corresponding armature is retracted, and electrical connection between said brush and a signal in the car, the face of said brush being insulated, contact devices by which the brush in its movement in one direction presents its active portion to the armature-circuits of one set of devices, and its inactive portion to the armature-circuits of the other set, and vice versa in its movement in the other direction.

8. In combination with an elevator-car and mechanism for operating the same, of a brush and means to cause said brush to move proportionately with said car, two devices corresponding to each floor, each device consisting essentially of an electric magnet and each provided with a spring-acted armature, the spring acting against the magnet, one device of the pair set on one side of the line of travel of the brush and the other on the opposite side, the devices of the pair being oppositely set, a circuit to each magnet from its corresponding floor, a switch device at each floor included in the circuit to its corresponding magnet, independent electrical connection from one pole of the source of current supply to said armature, a contact corresponding to each armature in electrical connection with the other pole of current supply, the aforementioned brush being divided by insulation into two active parts, one of which is in alinement with said contacts, the other in alinement with said armature when the magnet corresponding to the armature is deenergized, and electrical connection between said portions of the brush and a signal in the car, the face of said brush being insulated, so that in its movement in one direction it presents its active portion to the armature of one set of devices and its inactive to the other set, and vice versa in its movement in the other direction.

9. In combination with a series of elevator-cars and mechanism for operating the same, of a series of brushes, one for each car, and means to cause corresponding brush to move proportionately with its corresponding car, of a series of electromagnets for each floor corresponding to each of the floors provided with pivoted armatures acted on by springs against the action of the magnet, a circuit including all the magnets corresponding to the same floor, and a switch device at the floor corresponding to the magnets, a contact corresponding to each of the magnets, spring contacts adjacent to each magnet electrical connection with one pole of source of supply and the armatures of one of the series of magnets, and electrical connection between the spring-contact and the contact of each magnet, and the contacts and next armature of corresponding magnets, and electrical connection between the last contact and pole of current supply other than that of the first armature, the armatures being adapted to make contact with their corresponding spring-contacts when the circuit to the magnet is broken, the brushes being divided by insulation, one of which in its movement is in alinement with the armature of its series when said armature is against the spring-contacts and the other part in alinement with the contacts, and electrical connection between said parts and a signal in the car.

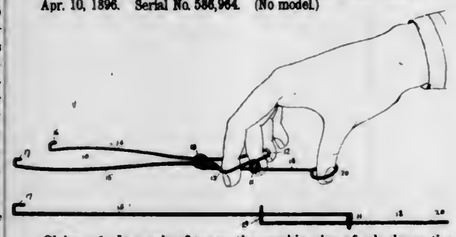
10. In combination with an elevator-car and means to operate the same, of a threaded shaft rotated by the movement of the car, a nut working on the threaded portion of said shaft, a brush carried by said nut, electrical connection between said brush and a signal in the car, a device corresponding with each floor in line of movement of said brush and in positions to be reached by said brush when the car is approaching the floor corresponding to said device, a source of current supply and circuits including each of said devices whereby in the movement of the brush the signal in the car is included in the circuits corresponding to the floors.

11. In combination with a source of current supply, a contact-plate, electrical connection with one pole of current supply and said plate, spring-contacts each normally in contact with said plate, electrical connection between each contact and an electromagnet, and from the magnets to the other pole of current supply, whereby either spring-contact may be separated from the plate and the circuit to its magnet broken independent of the circuit to the other magnet.

12. In combination with a series of elevator-cars and means for operating the same, of a series of brushes and means to move each brush corresponding to the movement of its car, a series of contacts, G, G′, for each car corresponding to the floors and in line of movement of said brush, a signal at each floor for each car, a source of current supply, electrical circuit to each signal including the pivoted armature, of a magnet corresponding to each signal, and a contact in line of movement of each said armatures whereby when the magnet corresponding to the armature is energized the circuit is completed to the signal corresponding to said magnet, electrical connection between one pole of a current supply and the corresponding contacts G in series, and electrical connection between each contact G′ and its corresponding magnet, and from the magnet to the other pole of current supply.

13. In combination with an elevator-car and means for operating the same, of a brush and means to move said brush corresponding to the movement of the car, a signal at each floor, a source of current supply, electrical circuit to said signal, including the pivoted armature of a magnet corresponding to each signal, and a contact in line of movement of each of said armatures, whereby when the magnet corresponding to the armature is energized the circuit is completed to the signal corresponding to said magnet, contacts, as G, G′, G², corresponding to each floor and in line of movement of said brush, electrical connection between one pole of a source of current supply and contact G, electrical connection between the contact G² and a contact adapted to make contact with the armature of magnet and electrical connection between the magnet and other pole of current supply.

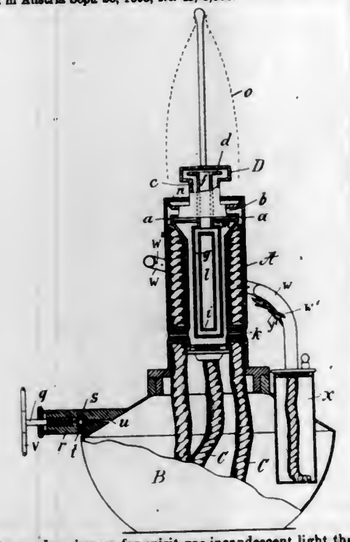
572,564. TONGS. OSCAR L. OWEN, Whitinsville, Mass. Filed Apr. 10, 1896. Serial No. 586,964. (No model.)



Claim.—1. In a pair of tongs, the combination of a body portion formed of a piece of wire bent to form an eye or loop substantially in the middle of said piece, finger-sockets at each side of said loop, and integral, normally open spring-arms, and a wire operating-rod extending through said eye, and having a clamping-section at one end for engaging the spring-arms, and a loop or thumb-socket at the opposite end, said parts being arranged so that the spring-arms can be controlled and operated with one hand, substantially as described.

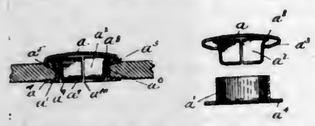
2. In a pair of tongs, the combination of a body portion having spring-arms 14 and 15, which normally stand in a spread or open position, a central guide or eye 11, finger-sockets 12 and 13 at each side of said guide or eye, and an operating-rod 18 extending through said guide, and having a clamping-section 19 at one end, and a loop or thumb-socket 20 at the other end, the parts being arranged so that the spring-arms can be controlled and operated with one hand, substantially as described.

572,565. BURNER FOR SPIRIT-GAS INCANDESCENT LIGHTS. ALBIN PERLICH, Leipsic, Germany. Filed June 29, 1895. Serial No. 554,512. (No model.) Patented in Switzerland June 10, 1895, No. 10,460; in Luxemburg June 10, 1895, No. 2,317; in Belgium June 11, 1895, No. 116,020; in France June 13, 1895, No. 248,141; in Sweden June 13, 1895, No. 6,833; in Norway June 14, 1895, No. 4,389; in Italy June 17, 1895, XXX, 39,060, and LXXVI, 356; in England June 17, 1895, No. 11,726; in Hungary June 26, 1895, No. 3,110; in Canada June 28, 1895, No. 51,035, and in Austria Sept. 20, 1895, No. 45/3,398.



Claim.—In a burner for spirit-gas incandescent light the combination of the hollow ring A, forming a Bunsen burner and containing the wicks C, with the cross-pipe *b*, the short pipe *c*, the flange *d*, the internal pipe *f*, the burner-head D, the tubular frame *g* with openings *i* for discharging the heated spirit-gas and the openings *k* for the admission of air as and for the purpose set forth.

572,566. FASTENER FOR GLOVES. WILLIAM S. RICHARDSON, Boston, Mass., assignor to the Ball and Socket Fastener Company, same place and Nashua, N. H. Filed Nov. 21, 1894. Serial No. 529,448. (No model.)

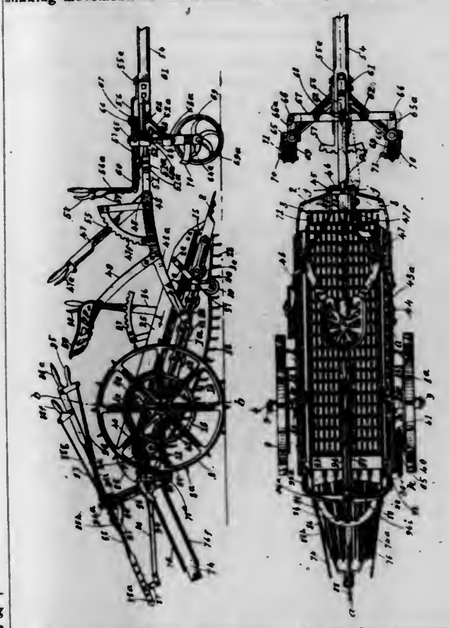


Claim.—In a fastener of the character specified, the cap *a*, the fastening-eyelet *a′*, the slit barrel a^3 having the lower lip a^2 surrounding the said entrance a^7 and the narrow enlargement a^8 which forms a surface upon which the flange of the fastening-eyelet is turned, but which is loosely held between the eyelet and the cap whereby the spring action of the socket-entrance is unrestricted, as and for the purposes set forth.

572,567. POTATO-DIGGER. WILLIAM REUTHER and JOHN REUTHER, Elma, N. Y. Filed Apr. 9, 1896. Serial No. 586,832. (No model.)

Claim.—1. In a potato-digger, the combination with the elevator-supporting frame, of an endless sprocket-chain mounted on sprocket-gearing on each side of the elevator-frame, a series of transverse bars provided with teeth pivotally mounted in said chains so that the teeth will hang downward when at the lower side of the chain and free to act by gravity, a longer tooth extending from each transverse bar forward far enough to permit its point to rest on the bar in front of it, and thereby keep all the teeth in said bars in a substantially horizontal position when at the upper side of the endless chains and thereby bring the openings through the elevator-screen closer together at the top than at the bottom, and means for operating the elevator, substantially as described.

2. In a potato-digger, the combination with the elevator-supporting frame, of an endless sprocket-chain mounted on sprocket-gearing on each side of the elevator-frame, a series of transverse bars provided with teeth, pivotally mounted in said chains, a longer tooth extending from each transverse bar far enough to rest its point on the bar in front of it, a short agitating-tooth inclining downward from each transverse bar, and a series of rollers over which the agitating-teeth are drawn while the machine is in operation, for giving the required shaking movements to the elevator, substantially as described.



3. In a potato-digger, the combination with the elevator-supporting frame, of an endless sprocket-chain mounted on sprocket-gearing on each side of the elevator-frame, a series of transverse bars provided with teeth pivotally mounted in said chains, a longer tooth extending from each transverse bar far enough to rest its point on the bar in front of it, and an agitating device whereby the required shaking movements are imparted to the elevator while the machine is in operation, as set forth.

4. In a potato-digger, the combination with the elevator and its inclining teeth of a supporting-bar, a crank-shaft mounted upon the axle, a crank rigidly secured at one end to the said shaft and pivotally connected at the other to the supporting-bar, a series of rollers and their supporting-bearings mounted at suitable intervals along the top of the said supporting-bar, and an operating-arm connected to the lower end of said supporting-bar, whereby the said supporting-bar and its series of rollers may be adjusted up or down and thus give a greater or less shaking movement to the elevator, substantially as set forth.

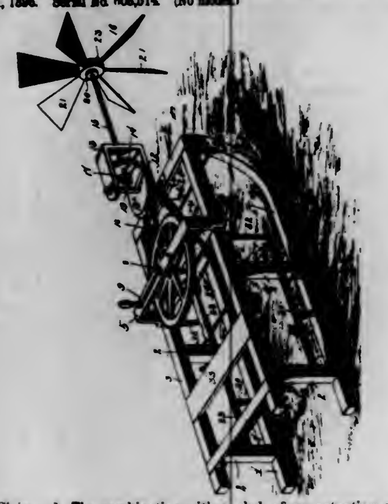
5. In a potato-digger, the combination of the supporting side frame pieces of the machine with two side shields, each shield having two side arms pivoted at their upper ends thereto, and having their lower ends pivoted to the supporting side frame-pieces of the machine so that the two side arms supporting each shield will be substantially parallel with each other and inclined forward the weight of the shields keeping them in their forward position, and stops for limiting their forward movement, whereby a stone or other obstruction coming in front of either or both of the shields will move them backward and upward so that the obstruction can pass under the shield or up over the elevator substantially as described.

6. In a potato-digger, the combination with the elevator, its short downward and forward inclining teeth 26, of a supporting bar 28, having its rear portion pivoted to a crank mounted loosely on the axle and carrying a series of rollers over which the depending elevator-teeth pass, a short crank-arm to which the front end of the bar, 28, is pivoted, and mechanism substantially as above described connected with said short crank-arm for raising or lowering the rollers and thereby adjusting the shaking movements of the elevator.

7. In a potato-digger, the combination with a draft-pole connected by an eyepiece with the draft-frame of the machine, of a frame having two vertical wheel-carrying bars mounted in vertical bearings therein, one at each side of the machine and each carrying a front wheel, a crank-arm secured to the top of each wheel-carrying bar

having their opposite ends connected by a transverse connecting-bar, an angular operating-arm pivoted by a pin 55, to the draft-pole and extending horizontally under the transverse connecting-bar to which it is connected by a pivotal pin and then upward, terminating in a handle, and means substantially as above described for locking said handle-bar to any point to which it may be adjusted and thereby setting the wheels to any angle desired for the purposes described.

572,568. SLED-PROPELLER. JAMES C. ROBERTSON, Glenglade, Pa., assignor of one-third to Thomas Price, Vintondale, Pa. Filed Aug. 21, 1896. Serial No. 603,514. (No model.)

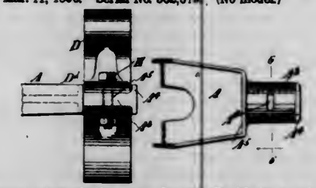


Claim.—1. The combination with a sled, of an actuating propeller-wheel mounted on a longitudinal shaft, a frame mounted on a vertical axis on said sled and adapted to swing in a horizontal plane, and having the propeller-shaft journaled therein, mechanism for actuating said propeller, and means for rocking said frame and changing the angle of the propeller, substantially as and for the purpose described.

2. The combination with a sled, of a frame journaled on a substantially vertical axis thereon, a screw-propeller mounted on a shaft journaled in said frame, a hand-power wheel operatively connected to said propeller-shaft for imparting rotary motion thereto, a steering bar or handle arranged within reach of the operator, and connections between the same and said bearing-frame whereby the latter may be swung about its axis, substantially as and for the purpose described.

3. The combination with a sled, of a propeller, mechanism for actuating the same, brake-levers arranged on opposite sides of the sled and having pointed extensions adapted to be projected below the plane of the runners, foot-rests on said brake-levers whereby they may be depressed, springs for uplifting said levers, and stationary foot-rests located at each side of the sled and acting as stops for the brake-levers, substantially as described.

572,569. BRAKE-BEAM. CARL J. ROSEN, Jr., Topeka, Kans. Filed Mar. 11, 1896. Serial No. 582,819. (No model.)

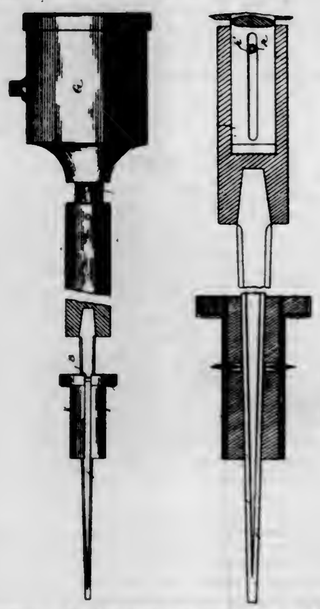


Claim.—1. A brake-beam made of malleable iron and having its ends formed with a rounded-off top and bottom, and a vertically-disposed aperture for the passage of the bolt for fastening the brake-shoe in place on said end, substantially as shown and described.

2. A brake-beam, having hollow end portions provided with rounded faces and adapted to receive brake-shoes having lips to engage the rounded faces of the end of the beam, substantially as set forth.

3. The combination of a brake-beam having its end provided with rounded upper and lower surfaces and having a slot formed transversely in said surfaces, a brake-shoe having lips to engage the upper and lower surfaces of the end of the brake-beam, and a bolt carried by said lips and passing through said slot, substantially as set forth.

572,570. FLUE-CUTTER. THOMAS DE COURSEY ROTH, Buffalo, N. Y. Filed Apr. 14, 1896. Serial No. 587,527. (No model.)



Claim.—1. In a flue-cutter, the combination with the sectional body carrying the cutters and having the tapered, rectangular opening therethrough, with dovetail recesses and projections extending longitudinally of said rectangular opening, of the relatively long wedge, rectangular in cross-section, and having dovetail recesses and projections corresponding to the recesses and projections in the sectional body; substantially as described.

2. In a flue cutter the combination with the cylindrical sectional body portion having the flange at one end, and cutters mounted in the cylindrical face of said body portion, with a rectangular aperture formed in the meeting faces of the sections and dovetail recesses and projections arranged longitudinally in said aperture, of the wedge rectangular in cross-section fitting in said aperture and having corresponding dovetail recesses and projections for holding the sections of the body together and bearing-shoulders on the sections and wedge respectively adjacent their meeting surfaces; substantially as described.

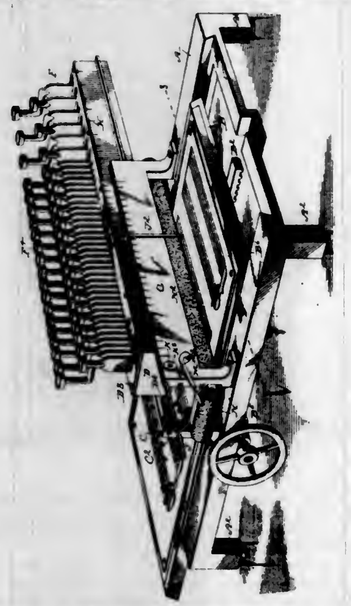
3. In a flue-cutter the combination with the cylindrical sectional body portion and wedge connecting the sections by means of dovetail recesses or projections as described, of the flange on the sectional body portion having radial antifriction-rollers mounted in its inner face; substantially as described.

4. The combination with the rotary cutter, of the motor connected for simultaneous rotation with said cutter and having a limited longitudinal movement, whereby said motor may be employed as a hammer for advancing the cutter; substantially as described.

5. The combination with the rotary expansible cutter for cutting laterally and the wedge for expanding said cutter, of the motor connected with said wedge for rotating the cutter and having a limited longitudinal movement with bearing-shoulders interposed between the motor and wedge whereby the motor may be employed as a hammer for advancing the wedge and expanding the cutter; substantially as described.

6. The combination with the rotary cutter, the wedge for expanding the same, the sleeve connected with said wedge and the motor, of a motor-shaft for rotating the sleeve and a pin-and-slot connection between the motor-shaft and sleeve, with shoulders interposed between said parts whereby the motor may be given a limited longitudinal movement and be operated as a hammer while rotating the sleeve; substantially as described.

572,571. MUSIC-WRITING MACHINE. ROBERT M. SAINT, Des Moines, Iowa. Filed Apr. 4, 1896. Serial No. 586,185. (No model.)



Claim.—1. A music-writing machine, comprising a base, a frame mounted therein to move longitudinally of the base, means for moving said frame, a track-frame fixed to the base, a carriage mounted in said track-frame to freely slide transversely of the base, a number of type-bearing keys mounted in the carriage, an indicator slidingly mounted in the track-frame to point to the key to be used and also to the point where said key will imprint upon the paper, and means for operating said indicator, for the purposes stated.

2. A music-writing machine, comprising a base, a frame mounted therein to move longitudinally of the base, means for moving said frame, a track-frame fixed to the base, a carriage mounted in said track-frame to freely slide transversely of the base, a number of type-bearing keys, mounted in the carriage, a rack-bar slidingly mounted on the track-frame, an indicator fixed thereto with one point adjacent to the keys on the carriage and the other point adjacent to the paper, a shaft mounted in the track-frame, a pinion thereon to engage the rack, a ratchet-wheel on its other end, a thumb-lever bearing a spring-actuated pawl designed to engage the ratchet, and means for limiting the movement of the lever, substantially as and for the purposes stated.

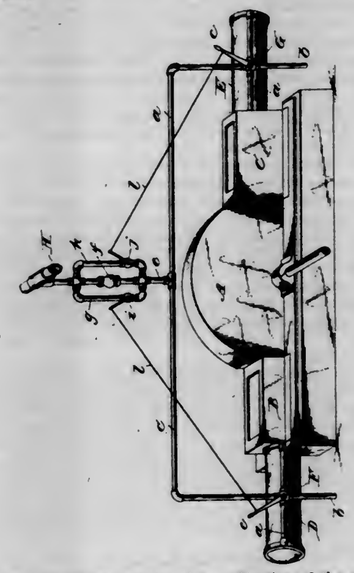
3. In a music-writing machine, the combination of a base, a frame mounted therein, to freely slide longitudinally, a hand-wheel located at the side of the machine and a rack and pinion connected therewith for moving the frame, a track-frame fixed to the base, a type-bearing carriage slidingly mounted thereon free to move laterally of the machine, a bar slidingly mounted in the track-frame, an indicator fixed thereto, and a thumb-lever, pawl, ratchet and pinion connected therewith and with the rack, said thumb-lever being so arranged relative to the aforesaid hand-wheel that the same hand may be used to grasp the hand-wheel and operate the thumb-lever at the same time, substantially as set forth.

572,572. WOOD-PULP GRINDER. ARTHUR D. SCHAEFFER and CHARLES H. DALE, Hartford City, Ind. Filed June 17, 1895. Serial No. 553,157. (No model.)

Claim.—1. The combination in a wood-pulp grinder, of suitable grinding-stones, wood-pockets in proximity thereto, pressure-cylinders coöperating with said pockets, a pressure-supply pipe for said cylinders, a reducing-valve for said supply-pipe, and means to increase the pressure upon the active pockets when any one of the series of pockets is rendered inactive.

2. In a wood-pulp grinder, the combination with the grinding-stone, of wood-pockets, pressure-cylinders coöperating with said pockets, a pressure-supply pipe for said cylinders, a reducing-valve to control the pressure from said pipe, and means for automatically increasing the pressure upon the active pockets when pressure is cut off from any pocket in the series.

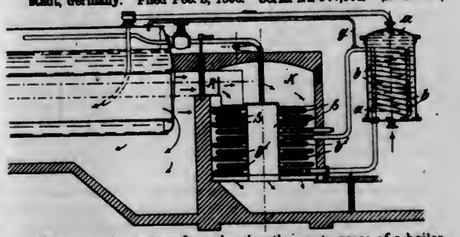
3. In a wood-pulp grinder, the combination with the grinding-stone, of wood-pockets, pressure-cylinders coöperating with said pockets, a pressure-supply pipe for said cylinders, a reducing-valve in said pressure-supply pipe, by-passes from said pressure-supply pipe around said reducing-valve to the pressure-cylinders, and means for bringing into operation any one of said by-passes to increase the pressure on the active pockets when any one of the series of pockets is rendered inoperative.



4. In a wood-pulp grinder, the combination of the grinding-stone, of wood-pockets located in proximity thereto, pressure-cylinders in said wood-pockets, a pressure supply pipe for said cylinders, a reducing-valve in said pressure-supply pipe, by-passes from said pressure-supply pipe around said reducing-valve to the said pressure-cylinders, cut-off valves for said pressure-cylinders, and means for automatically bringing into operation said by-pass pipes, to increase the pressure on the active pockets when any one of the series of pockets is rendered inoperative.

5. In a wood-pulp grinder, the combination with the grinding-stone, of wood-pockets located in proximity thereto, pressure-cylinders for said pockets, a pressure-supply pipe for said cylinders, a reducing-valve between said pressure-supply pipe and said pressure-cylinders, by-passes from said pressure-supply pipe around said reducing-valve, cocks in said by-passes, cut-off valves for said pressure-cylinders, and connections between said cut-off valves and said by-pass cocks, whereby when a cut-off valve is closed to render inoperative any one of the series of pockets a by-pass cock will be opened to increase the pressure on the active pockets.

572,573. FEED-WATER HEATER. WILHELM SCHMIDT, Ballenstädt, Germany. Filed Feb. 3, 1896. Serial No. 577,961. (No model.)



Claim.—1. As a means for exhausting the waste gases of a boiler-furnace, the combination with a steam-boiler and furnace, of a hollow heating-body arranged within the way of the waste gases of said furnace, and of another hollow heating-body connected at both ends with said former body, arranged within a feed-water heater, and communicating with the steam-space of said boiler, said hollow heating-bodies containing pure water, for the purpose as described.

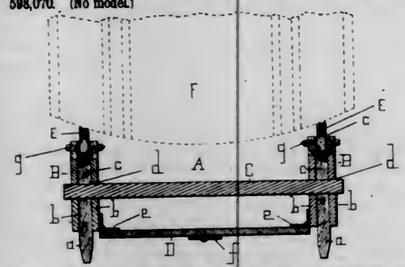
2. As a means for exhausting the waste gases of a boiler-furnace, the combination with a steam-boiler and furnace, of a set of coils arranged within the way of the waste gases of said furnace, and of another set of coils connected at its lower end with the lower end of said former set, and at its upper end with the upper end of the said former set as well as with the steam-space of said boiler; said sets of coils containing pure water, for the purpose as described.

3. As a means for exhausting the waste gases of a boiler-furnace, the combination with an upright steam-boiler and furnace, of a set of coils arranged above said boiler within the way of the waste gases of said furnace; another set of coils arranged above said former set, and connected at its lower end with the lower end of the said former set; a third set of coils arranged within a feed-water heater, and connected at its lower end with the upper end of said second set, and communicating at its upper end with the upper end of the first set by the mediation of a water-trap, said sets of coils containing pure water, for the purpose as described.

4. As a means for exhausting the waste gases of a boiler-furnace, the combination with an upright steam-boiler and furnace, of a set of coils arranged above said boiler within the way of the waste gases of said furnace; another set of coils arranged above said former set, and connected at its lower end with the lower end of the said former set; a third set of coils arranged within a feed-water heater, and connected at its lower end with the upper end of said second set, and communicating at its upper end with the upper end of the first set by the mediation of a water-trap; said sets of coils containing pure water; the water-space of said trap being connected by a pipe with the first set of coils; a cock or valve inserted into said pipe, for the purpose as described.

5. As a means for exhausting the waste gases of a boiler-furnace, the combination with a steam-boiler and furnace, and with an enlarged conduit communicating at its upper end with said furnace and at its lower end with said chimney, of a set of coils arranged within said enlarged conduit; another set of coils arranged within a feed-water heater, and connected at both ends with said former set; said two sets of coils containing pure water; a steam-superheating set of coils arranged above said first set, and connected at one end with the steam-space of the said boiler; a regulating-valve arranged between the said enlarged conduit and the said furnace, for the purpose as described.

572,574. **KNOCKDOWN RACKING-STAND FOR BARRELS.** CHARLES W. SCOTT, Jr., Stockton, N. J., assignor of one-half to Frederic R. Armstrong, Camden, N. J. Filed July 6, 1896. Serial No. 598,070. (No model.)



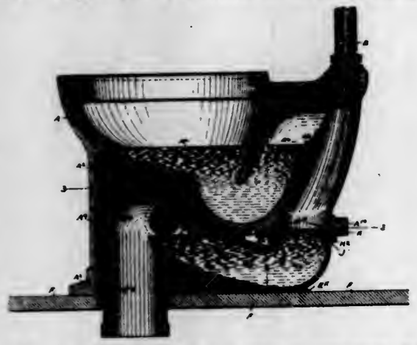
Claim.—1. In a knockdown racking-stand, the combination of open-space ends, divided hinged brace, and inclined antifriction barrel carrying wheels, as shown and described.

2. In a knockdown racking-stand, the combination of open-space ends, removable brace, divided hinged brace, and inclined antifriction barrel-carrying wheels, as shown and described.

572,575. **SIPHON WATER-CLOSET.** WILLIAM SCOTT, Medford, Mass., assignor to the Dalton-Ingersoll Company, of Massachusetts. Filed Oct. 21, 1890. Serial No. 368,859. (No model.)

Claim.—1. A flushing closet-bowl, in one piece of earthenware, and containing a trap, one leg of which is a passage leading upward from the lower portion of the chamber of the bowl and the other and discharging leg a passage in continuation of said bowl-passage and at the rear of the bowl, a passage in downward continuation of said discharging trap-leg, a flange at and projecting laterally from the discharging end of said discharging trap-leg and a pedestal situated below and continuous along the front and each side of the bowl and shaped to form a chamber therewithin, which is open at and about said bowl-flange, in combination with a metal trap, at its receiving-leg joined to said bowl-flange and therefrom lying and inclosed within said pedestal-chamber substantially as described, for the purpose specified.

2. The combination with the discharge of an earthenware closet-bowl and a metal pipe in continuation of the discharge of said bowl, of appliances to join said pipe to said bowl, consisting of a flange projecting laterally about the discharge of the bowl, a metal ring, split radially, and shaped and adapted to surround said pipe and the under side of said bowl-flange, a packing-ring in one piece adapted to fit within and upon the face of said split ring at the under side of said bowl-flange, and means adapted to be applied to said split ring to close it above said metal pipe and to fasten it with the packing to said bowl-flange substantially as described, for the purposes specified.



3. A lever for operating valves of tanks of water-closets, made in parts, one fulcrumed on the tank and another detachably attached to said fulcrumed part and having earpieces N⁵, N⁶, substantially as described, for the purposes specified.

4. In a water-closet apparatus, the combination with a metal trap, of a bowl, outlet, and hollow pedestal, all made from a single piece of earthenware, the pedestal inclosing the said trap and constructed to form a horizontal outwardly-extending flange at its junction with the outlet, and means for securing together said flange and trap, substantially as described.

5. In a water-closet apparatus, the combination with a metal trap, of a bowl, outlet, and hollow pedestal, all made from a single piece of earthenware, the pedestal having sides extending down to a common base-level so as to incase the trap, the outlet having a perforated outwardly-extending flange adjoining the pedestal, a packing-ring, bolts or screws projecting upwardly through the flange and packing-ring, and exteriorly-arranged nuts engaging with the protruding threaded ends of the bolts or screws, substantially as described.

6. A water-closet bowl, outlet, and hollow pedestal, all made from a single piece of earthenware, the walls of the pedestal all extending down to a common base-level, and the pedestal and outlet being constructed to form at their junction a horizontal outwardly-extending perforated flange, substantially as and for the purpose set forth.

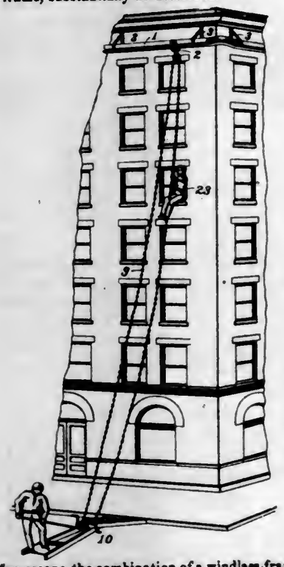
572,576. **FIRE-ESCAPE.** ERIC O. SJOLANDER, Cedar Bayou, Tex., assignor of one-half to Emere Rheaum, Chambers County, Tex. Filed Feb. 3, 1896. Serial No. 578,572. (No model.)

Claim.—1. In a fire-escape, the combination of an endless chain, a windlass-frame composed of two detachable sections oppositely inclined and disposed at an angle, their inner connecting ends being elevated, one of said sections being adapted to receive the weight of the operator, whereby the chain is maintained taut, and a drum mounted on the windlass-frame at the angle thereof and receiving the endless chain, substantially as described.

2. In a fire-escape, the combination of a track, a hanger, an endless chain connected with the hanger, a drum receiving the endless chain, a windlass-frame carrying the drum and composed of two sections arranged at an angle and detachably connected, one of the sections being provided with a platform adapted to receive the weight of the operator, whereby the chain is maintained taut, and a brake-lever fulcrumed on the windlass-frame, arranged to engage the chain adjacent to the drum and having its handle portion arranged above the platform of the windlass-frame in convenient reach of the operator, substantially as described.

3. In a fire-escape, the combination of a track, a hanger, an endless chain connected with the hanger, a drum receiving the endless chain, a windlass-frame carrying the drum and composed of two sections detachably connected, arranged at an angle and adapted to receive the weight of the operator to maintain the chain taut, a brake-lever fulcrumed on the windlass-frame and arranged to engage the chain adjacent to the drum, and a spring-actuated pulley slidingly connected with the windlass-frame and arranged to engage the chain, substantially as described.

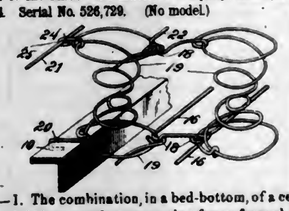
4. In a fire-escape, the combination of a windlass-frame, a drum journaled thereon, a shaft arranged in suitable ways and located adjacent to the drum, a pulley mounted on the shaft, substantially U-shaped springs located at the ends of the shaft, provided with eyes for the reception of the latter and secured at their outer terminals to the windlass-frame, substantially as described.



5. In a fire-escape, the combination of a windlass-frame composed of two sections detachably connected and arranged at an angle, a drum mounted on one of the sections, a crank-handle connected with the drum, curved guides mounted on the windlass-frame, located at opposite sides of the drum, and adapted to prevent an endless chain from becoming twisted, a brake-lever fulcrumed on the windlass-frame and arranged adjacent to the drum, and a spring-actuated pulley located adjacent to the latter, substantially as described.

6. In a fire-escape, the combination of an endless chain, means for operating the same, and a life-belt or support composed of two sides, one of the sides being provided at intervals with eyes, and hooks located at opposite ends of the sides, one of the hooks being adapted to engage the endless chain and the other to engage said eyes, substantially as and for the purpose described.

572,577. **SPRING BED-BOTTOM.** JOHN G. SMITH, Chicago, Ill., assignor to the Union Wire Mattress Company, same place. Filed Oct. 23, 1894. Serial No. 526,729. (No model.)



Claim.—1. The combination, in a bed-bottom, of a centrally open, rectangular, rigid lower spring-supporting frame formed of bars which are unyielding laterally, resilient stringers extending from side to side of the said frame and detachably connected thereto, springs supported on the said stringers, a tie-frame at the tops of the springs, and connections between the springs and the tie-frame, substantially as set forth.

2. The combination, in a bed-bottom, of a rigid lower spring-supporting frame formed of bars which are unyielding laterally, resilient stringers detachably connected with the said frame, springs supported directly upon the said stringers, a tie-frame surrounding the springs at their upper ends, the said tie-frame being, as compared with the lower frame, relatively light and non-rigid, and connections between the tie-frame and the springs, substantially as set forth.

3. The combination, in a bed-bottom, of a lower spring-supporting frame having side bars of angle-iron with the vertical flanges or members thereof inside of the outer edges of the said bars, and end bars connecting the side bars, and a bank of springs supported by the said frame, the outermost or side springs of the bank being provided with hooks which are detachably connected with the horizontal flanges or members of the side bars of the lower frame, substantially as set forth.

4. The combination, in a bed-bottom, of a lower spring-supporting frame having side bars of angle-iron with downward-turned vertical flanges or members, and end bars also of angle-iron, the horizontal portions of the end bars being turned outward and resting upon and connected to the horizontal members of the side bars, near their ends, a bank of connected springs, and supports for the said bank of springs provided with hooks turned upward and detachably connected with the horizontal members of the end bars of the lower frame, substantially as set forth.

5. The combination, in a bed-bottom, of a rigid lower spring-supporting frame consisting of side bars, 12 and 13, of angle-iron, the vertical flanges or members of the said side bars extending downward and arranged along the inner edges of the horizontal members, and end bars, 10 and 11, formed also of angle-iron with their vertical members extending upward and arranged along the inner edges of the horizontal members, which latter rest directly upon and are connected to the horizontal members of the side bars, resilient stringers, 16, provided at their ends with upturned hooks which detachably catch over the edges of the horizontal members of the end bars, and a bank of springs supported upon such stringers, the outermost or side springs being provided with downturned hooks which detachably catch over the edges of the horizontal members of the side bars, substantially as set forth.

6. A bed-bottom adapted to be placed in and removed from a bedstead, and comprising a rigid frame the end bars of which are arched upward, longitudinally-arranged stringers connected with and supported solely by the said end bars, and a bank of springs supported by the said stringers, substantially as set forth.

7. A bed-bottom adapted to be placed in and removed from a bedstead, and comprising a rigid frame, the end bars of which are of angle-iron with their horizontal members or flanges turned outward, the bars being arched upward, longitudinally-arranged resilient stringers provided at their ends with hooks which engage with the edges of the horizontal members of the end bars, and a bank of springs supported upon the said stringers, substantially as set forth.

8. The combination, in a bed-bottom, of a lower, rigid, supporting-frame, a relatively light upper tie-frame, and springs supported by the said lower frame and arranged between it and the tie-frame, the said springs being formed with reversely-coiled end portions which are connected at the middle parts of the springs by reversed bends the springs being connected to each other, and to the said lower and upper frames, substantially as set forth

9. The combination, in a bed-bottom, of a lower supporting-frame formed of angle-iron, resilient stringers supported thereby, a bank of springs supported upon the said stringers, the said springs being formed with reversely-coiled portions at their opposite ends, which portions are connected at the middle parts of the springs by reversed bends, a tie-frame, 21, formed of wire, and connections between said tie-frame and the upper ends of the springs, substantially as set forth.

572,578. WITHDRAWN.

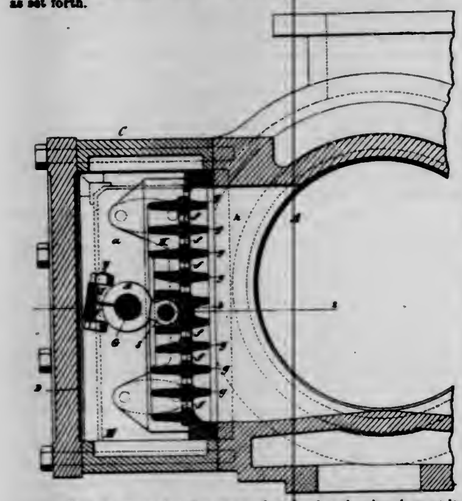
572,579. **VALVE FOR STEAM-ENGINES.** ELIJAH F. SPAULDING, Bound Brook, N. J., assignor to the American Engine Company, same place. Filed Apr. 10, 1896. Serial No. 586,924. (No model.)

Claim.—1. In a steam-engine, the valve-chest having the chambers at its opposite extreme ends connected with the exhaust, and the reciprocating slide-valve in said chest and composed of the connected heads each comprising the sides *a*, *c*, *b*, the latter having the series of openings *f*, and the former the packing-strips M, combined with the cut-off valves having the openings *r* and arranged in contact with said side *b* between the sides *a*, *c*, and adapted to have a transverse reciprocation, while said heads have a longitudinal reciprocation, and the valve-rod connected with said heads and said cut-off valves; substantially as set forth.

2. In a steam-engine, the valve-chest having the chambers at its opposite extreme ends connected with the exhaust and having also the central inlet for steam, the reciprocating slide-valve in said chest and composed of the heads E, E, located within the chambers at the opposite ends of said chest and each comprising the sides *a*, *b*, and the side *c* having the openings *f*, the rods F connecting said heads, and the packing-strips M in said sides *a*, combined with the cut-off valves having the openings *r* and arranged in contact with said side *b* between the sides *a*, *c*, and adapted to have a transverse reciprocation, while said heads have a longitudinal reciprocation, and the valve-

rod connected with said heads and said cut-off valves; substantially as set forth.

3. In a steam-engine, the valve-chest having the chambers at its opposite extreme ends connected with the exhaust and having also the central inlet for steam, and the connected heads E, E, located in said chambers and leaving the space between them entirely open for live steam, said heads being provided with packing at their outer edges to prevent the live steam from reaching the exhaust, and with the series of ports adapted to communicate with the usual ports leading to the cylinder, and said heads being of a size to completely close said chambers in a transverse direction, combined with the cut-off valves having a transverse reciprocation and provided with ports which may be moved into alinement with or out of alinement from the ports in the said heads constituting the slide-valve, and the reciprocating valve-rod connected with said slide and cut-off valves and adapted to turn axially and thereby operate the latter; substantially as set forth.



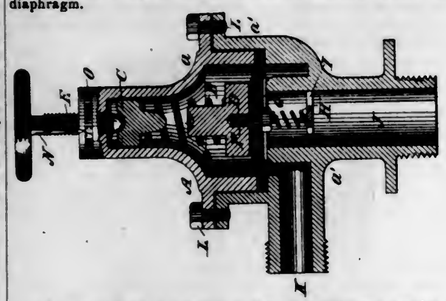
4. In a steam-engine, the steam-chest having the chambers at its extreme ends connected with the exhaust and having also the central opening for steam, and the reciprocating slide-valve in said chest and composed of the connected heads each comprising the sides *a*, *c*, *b*, the latter having the series of openings *f* and the former extending entirely across between all the adjacent walls of said chest to cut off the live steam from the exhaust, while the sides *c* permit the live steam filling all the central part of the steam chest to pass outward beyond them, combined with the cut-off valves having the openings *r* and arranged in contact with said side *b* between the sides *a*, *c*, and adapted to have a transverse reciprocation, while said heads have a longitudinal reciprocation, and the valve-rod connected with said heads and said cut-off valves; substantially as set forth.

5. In a steam-engine, the reciprocating slide valve composed of the heads E, E, each comprising the sides *a*, *c*, *b*, the latter having the series of openings *f*, combined with the cut-off valves H having the ports or openings *r* and arranged against said side *b*, the reciprocating valve-rod G connected with said heads E, the sleeves *x* secured upon the said valve-rod between said sides *a*, *c*, and the sleeves *y* integral with said sleeves *x* and carrying the pins and sleeves *w*, said sleeves *z*, *z*, *w*, being seated in said slide-valves, and said valve-rod being adapted to reciprocate said slide-valve and also to impart a transverse reciprocating motion to said cut-off valves; substantially as set forth.

572,580. VALVE. PHILIP SPITTELBERG, Brooklyn, N. Y. Filed Mar. 30, 1896. Serial No. 585,328. (No model.)

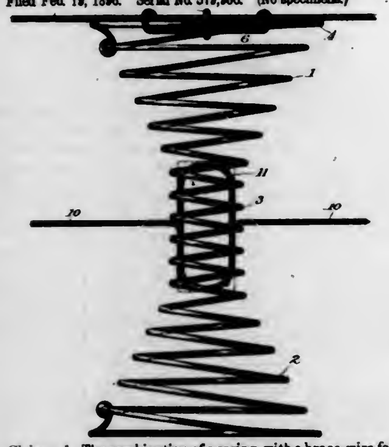
Claim.—1. In a valve, the combination of a sectional valve-stem composed of an upper and lower section, with a flexible diaphragm attached to and operated by the lower valve-stem section, such lower valve-stem section being so arranged as to be operated by a spring connecting it with the upper valve-stem section, when the valve is used as a relief or blow-off valve, and by the direct impact of the upper valve-stem section, when the valve is used as a shut-off valve, all substantially as shown and described and for the purposes specified.

2. In a valve, the combination of the valve-chamber A, composed of two sections, *a* and *a'* connected by screws L, L, the valve-stem sections C and D, the set-screw E and spring F operating the valve-stem sections C and D, the diaphragm G attached to the valve-stem section D and held circumferentially between the valve-chamber sections *a* and *a'*, and the relief-spring H placed underneath the diaphragm G and arranged to exert an upward pressure against such diaphragm.



3. In a valve, the combination of the sectional valve-chamber A, the valve-stem sections C and D, the spring B connecting such sections, the diaphragm G held circumferentially between the sections *a* and *a'* of the chamber A and affixed to and operated by the valve-stem section D, the relief-spring H, placed under the diaphragm G, and a gage for regulating the pressure, consisting of the pointer N and graduated scale or index O, all substantially as described and for the purposes specified.

572,581. UPHOLSTERY. JOHN A. STAPLES, Newburg, N. Y. Filed Feb. 19, 1896. Serial No. 579,930. (No specimens.)



Claim.—1. The combination of a spring, with a brace-wire formed with a loop extending above and below the brace-wire and fitting within and engaging the spring interiorly, substantially as set forth.

2. The combination of a spring formed with a cylindrical portion, with a brace-wire extending transversely through the cylindrical portion and having a loop extending above and below the brace-wire and fitting closely within and engaged by the cylindrical portion of the spring, substantially as set forth.

3. The combination of a spring, with two or more brace-wires extending through the spring at an angle to each other and formed with bent portions or loops extending above and below the brace-wire and which closely fit within the spring one within the other and brace the spring in several directions, substantially as set forth.

4. The combination of a double-cone spring having a central cylindrical portion, with a brace-wire extending transversely through the cylindrical portion of the spring and formed with a loop which fits closely within and is engaged by said cylindrical portion, substantially as set forth.

5. The combination of a spring, with an edge-wire brace, a clip adapted to engage the brace-wire and a segment of the top coil of the spring, and a pin or wire engaging between the clip and spring-coil, as set forth.

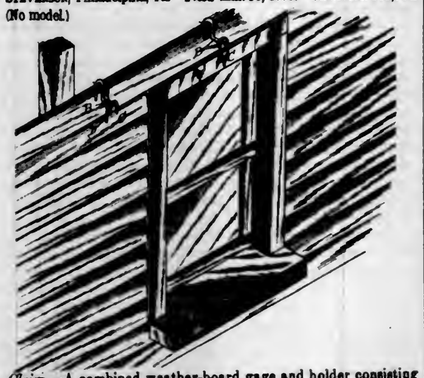
6. The combination of a spring, with an edge-wire brace, a double-ended wire clip adapted to engage the brace and a segment of the top coil of the spring, and a bent pin or loop embracing the clip and brace-wire and engaging between them and the spring-coil, as set forth.

7. The combination of a spring, with an edge-wire brace, a double-ended clip engaging the brace and a segment of the top coil of the spring, said clip being formed with a central depression or notch, and a pin or wire seated in said notch or depression and engaging the spring-coil, as set forth.

8. The combination of a spring, with an edge-wire brace, and a clip adapted to secure the brace to a coil of the spring, said clip comprising a single wire or metal strip having open loop ends, as set forth.

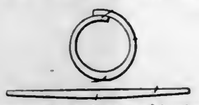
9. The combination of a spring, with a corrugated-edge-wire brace, a double-ended clip engaging the corrugated-wire brace and a segment of the upper coil of the spring, and formed with a central notch or depression, and a pin or wire engaging the notch or depression and a notch of the corrugated brace-wire, as set forth.

572,582. WEATHER-BOARD GAGE AND SUPPORT. WILLIAM STEVENSON, Philadelphia, Pa. Filed Mar. 30, 1896. Serial No. 585,364. (No model.)



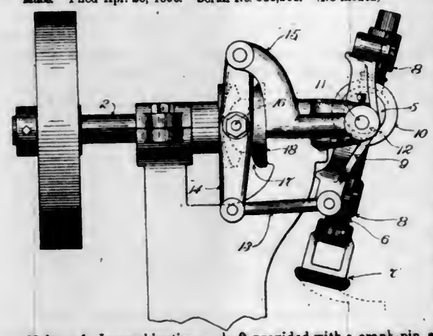
Claim.—A combined weather-board gage and holder consisting of a hook to engage over the top of a board, and a horizontal portion, to gage the board and to support the same, and a wire rotatably mounted on the said arm to press upon the boards, substantially as described.

572,583. PROCESS OF MAKING METAL TUBES. PETER SWANGER, Washington, Pa. Filed Dec. 5, 1895. Serial No. 571,101. (No model.)



Claim.—The process for making metal tubes, which consists in producing a blank thicker at its transverse center than at its edges and gradually tapering in thickness from its center to its edges, bending said blank into tubular form with its edges overlapping, heating and welding the edges and then reducing the walls of the tube to uniform thickness, for the purpose described.

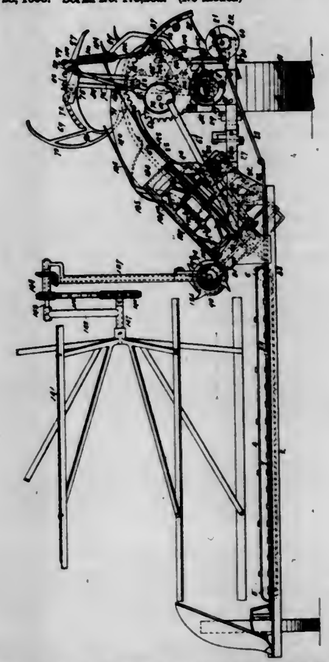
572,584. MECHANICAL MOVEMENT. EUGENE H. TAYLOR, Lynn, Mass. Filed Apr. 20, 1896. Serial No. 588,261. (No model.)



Claim.—1. In combination, a shaft provided with a crank-pin, a plunger, a block free to slide transversely of the said plunger and receiving the said crank-pin, a frame in which the plunger is mounted to move longitudinally, a rotating cam, and connections intermediate the said cam and the said frame to move the frame laterally, substantially as described.

2. The combination with the plunger, and a head carried thereby, of a cylindrical block fitted to a cylindrical opening which is formed transversely through the said plunger, a shaft carrying a crank-pin which passes diametrically through the said cylindrical block, a swinging frame or yoke in which the said plunger is mounted to move longitudinally, a cam, and connections intermediate the said cam and the said swinging frame or yoke whereby to vibrate the latter, substantially as described.

572,585. SELF-BINDING HARVESTER. EDGAR M. TOUSLEY, Jamestown, N. Y., assignor to The Tousley Harvester Company. Filed May 23, 1893. Serial No. 475,252. (No model.)



Claim.—1. In a self-binding harvester an apertured deck reaching from the platform-carrier to the stubble side of the machine-packers working through the deck, and retaining-fingers held over the deck in combination with an elevated oscillating frame, a needle and trip carried by the said frame above the deck, a knotter held in or beneath the deck and reciprocating kickers provided with rods which reach back to the deck, substantially as described.

2. In a self-binding harvester, an oscillating frame, a master-wheel carried thereby, a rod held at a fixed point at one end and connected at the other to the master-wheel off the center thereof, in combination with a pinion for turning the master-wheel and a clutch for putting said pinion in and out of gear, substantially as described.

3. In a self-binding harvester an oscillating frame and a master-wheel and needle held by and moving therewith in combination with an off-center hub on the master-wheel and a connecting-rod applied to said hub and connected to an arm or lever for operating the needle, substantially as described.

4. In a self-binding harvester a master-wheel formed with an off-center hub and carried by a frame and connected by a rod to a fixed point, said rod being connected to the master-wheel at one side of its center in combination with a rod connecting the said hub to a crank or arm for operating the needle, a pinion for turning the master-wheel, a clutch for putting the pinion in and out of gear, a trip carried by the oscillating frame, and a yoke controlled by the trip for actuating the clutch, substantially as described.

5. In a self-binding harvester an elevated oscillating frame carrying a needle and trip, the latter connected with a rod provided with an arm or lever in combination with a rod connected at one end to said arm or lever and at the other to a pivoted yoke, a master-wheel provided with a cam for intermittently retaining the upper end of

said yoke, a pinion for revolving the master-wheel and a clutch applied to said pinion, the yoke being provided at its lower end with an arm or stud to engage and disengage the clutch, substantially as described.

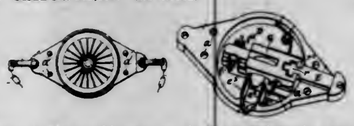
6. In a self-binding harvester a constantly-rotating shaft and a pinion and clutch applied thereto and an apertured deck reaching from the platform-carrier to the stubble side of the machine and an oscillating frame carrying the needle and trip above the deck, the knotter in or beneath the deck, and a master-wheel at the front of the machine said master-wheel being formed with an off-center hub at its front surface for operating the needle, and a cam and cogs on the inner surface for operating the knotter, in combination with a rod attached at one end to a fixed point at the other to the master-wheel at one side of its center and a pivoted yoke controlled by the trip and master-wheel for actuating the clutch for putting the binding mechanism in and out of gear, substantially as described.

7. A master-wheel journaled on a shaft, a constantly-rotating shaft 52, and a pinion mounted thereon, meshing with the master-wheel and formed with an arm 111 and provided with a spring 110 and a notched wheel 107 fixed on the shaft, a clutch-pawl 112 mounted on said arm and acted upon by a spring and formed with a stud 112^a and toe 112^b in combination with a dog 106, mounted upon the shaft, acted upon by the spring 110 and formed with the head, a projection 106^a and stud 106^c, substantially as shown and described.

8. The master-wheel formed with cams 103^a and 103^b and the yoke 103 formed with a stud or roller 103^c and provided with a lateral arm 105 and acted upon by the trip in combination with the pawl 112 112^a, the pinion 63, notched wheel 107 and the clutch-dog 106 having the projection or head 106^b, substantially as described.

9. The deck formed of spaced sections, mounted to slide upon their support and the oscillating frame provided with sliding tubes on which the needle and knotter are mounted in combination with a screw 151 and connecting-rods 150 connected to the needle-sleeve and to a sliding block through which the screw passes for adjusting the deck, needle and knotter for long or short grain, substantially as described.

572,586. PADLOCK. WILLIAM P. TROAST, Lancaster, Pa., assignor to the Slaymaker-Barry Company, same place. Filed Apr. 16, 1895. Serial No. 545,857. (No model.)



Claim.—1. The combination, in a lock, of a bolt having shoulders on opposite sides thereof, a jaw having a recess therein constructed to embrace both said sides of the bolt, and shoulders in opposite sides of said recess and adapted to interlock with the shoulders on both sides of the bolt.

2. The combination, in a lock, of a bolt having shoulders on opposite sides thereof, jaws, each of which has a recess therein constructed to embrace both said sides of the bolt, and shoulders in opposite sides of the recess of each of the locking-jaws and adapted to interlock with the shoulders on both sides of the bolt.

3. The combination, in a lock, of a bolt having shoulders on opposite sides thereof, a pair of lever-jaws, each of which has a recess therein constructed to embrace both said sides of the bolt, shoulders in opposite sides of the recess of each of the locking-jaws and adapted to interlock with the shoulders on both sides of the bolt, and an expanding spring located between the rear arms of the levers, for the purpose specified.

4. The combination, in a lock, of a bolt, a pair of levers adapted to close upon each other and secure the bolt in a fixed position, trunnions formed with each of said levers and constituting the fulcrums thereof, and means for securing the trunnions in position.

5. The combination, in a lock, of a bolt, a pair of levers having trunnions thereon, collars embracing the corresponding trunnions of the levers, and jaws on the levers in front of the trunnions and adapted to lock the bolt in a fixed position.

6. The combination, in a lock, of a bolt, a pair of spring-actuated levers having trunnions thereon, collars embracing the corresponding trunnions of the levers, and jaws on the levers in front of the trunnions and adapted to lock the bolt in a fixed position.

7. The combination, in a lock, of a bolt, a pair of levers having trunnions thereon, collars embracing the corresponding trunnions of the levers, jaws on the levers in front of the trunnions and adapted to lock the bolt in a fixed position, and an expanding spring located between the arms of the levers in rear of said trunnions, for the purpose specified.

8. In a lock, the combination, with a bolt, of a pair of levers having trunnions on the sides thereof, collars embracing the trunnions, jaws on the levers and in front of the trunnions, said jaws being adapted to embrace said bolt and lock the same in a fixed position, and an expanding spring located between the arms of the levers in rear of said trunnions, for the purpose specified.

9. The combination, in a lock, of a case having a bolt-opening therein, a pair of vibrating jaws, a bolt constructed to engage said bolt-opening and interlock with the vibrating jaws, a spring engaged between said jaws and adapted to be released therefrom by the disengagement of the jaws from the bolt, to eject the bolt from the case.

10. In a lock, the combination, with a case having a bolt-opening, of a pair of levers disposed lengthwise in front of said opening, trunnions on the sides of the levers and engaging grooves in the case, means for binding the trunnions in their relative positions, jaws on the front arms of the levers and having T-shaped recesses therein, an expanding spring located between the arms of the levers and behind the trunnions, and a bolt constructed to engage the bolt-opening and having a T-shaped head adapted to interlock with the T-shaped recesses in said jaws.

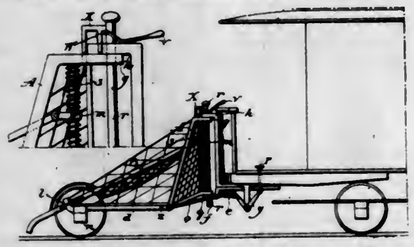
11. In a lock, the combination, with a case having a bolt-opening, of a pair of levers disposed lengthwise in front of said opening, trunnions on the sides of the levers and engaging grooves in the case, means for binding the trunnions in their relative positions, an expanding spring located between the arms of the levers behind the trunnions, jaws on the front arms of the levers and having T-shaped recesses therein, ribs extending inward from the bolt-opening and ranging with the stem of said T-shaped recesses and having their free edges forming a prolongation of the top and bottom surfaces of the key-opening, and a bolt constructed to engage said bolt-opening and having a T-shaped head adapted to interlock with the T-shaped recesses in the jaws.

12. In a lock, the combination, with a case having a bolt-opening, of a pair of levers disposed lengthwise in front of said opening, trunnions on the sides of the levers and engaging grooves in the case, means for binding the trunnions in their relative positions, an expanding spring located between the arms of the levers in rear of the trunnions, jaws on the front arms of the levers and having T-shaped recesses therein, transverse grooves formed in the inner faces of the levers behind said recesses, a bolt constructed to engage said bolt-opening and having a T-shaped head adapted to interlock with the T-shaped recesses in the jaws, and a spring engaging said transverse grooves in the levers and adapted to eject the bolt when disengaged from said levers.

13. In a lock, the combination, with a case having a bolt-opening, of a key-guide perpendicular to the direction of said bolt-opening, a pair of levers disposed lengthwise in front of said opening, trunnions on the sides of the levers and engaging grooves in the case, means for binding the trunnions in their relative positions, an expanding spring located between the arms of the levers in rear of the trunnions, a jaw forming the front arm of the lower lever and connected with the rear arm thereof by a neck playing in a groove in rear of said key-guide, a jaw forming the front arm of the upper lever and passing over the rear end of the key-guide, the free ends of said jaws having T-shaped recesses formed therein, and a bolt constructed to engage said bolt-opening and having a T-shaped head adapted to interlock with the T-shaped recesses in the jaws, substantially as and for the purpose specified.

14. The combination, in a lock, of a bolt having a T-shaped head, a pair of levers adapted to vibrate in a plane perpendicular to the faces of the case and having T-shaped recesses in their front ends, said recesses being constructed to embrace the edges of said head, trunnions on the sides of the levers, collars embracing the trunnions, and an expanding spring between the arms of the levers in rear of said trunnions, for the purpose specified.

572,587. CAR-FENDER. JOSEPH T. WARD, Philadelphia, Pa. Filed Oct. 9, 1895. Serial No. 565,175. (No model.)



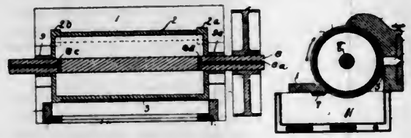
Claim.—1. The combination with a car-fender centrally pivoted to the car in front of the dashboard so that it will swing to right or left of levers actuated by pedals protruding above platform of car as means of swinging the fender to right or left and springs acting upon levers as means to retain fender in normal position when pedals are released, substantially as described.

2. A car-fender composed of two frames, the rear one inclined slightly from the perpendicular and receding from the pivot-rod securing same to car and having hinged at its lower corners on each side arms extending forward horizontally; said arms supporting at their front ends a second frame adapted to fit between said arms and extend nearly to the rear middle line of first frame and detachably secured to a link adapted to move between spiral springs upon a perpendicular bar placed in front of the pivot-rod, said second frame also provided with long slots adapted to permit it to slide upon the pivots at the front ends of the arms extending from the first frame, substantially as described.

3. A car-fender centrally pivoted to end of car having pivot-bar engaging the two arms of the fender with the two arms of the car, said bar provided with wedge-shaped key adapted to drop into slots in arm of fender and arm of car to form a rigid joint; with the lever to act upon and raise pivot-rod and release key from arms for the purposes substantially as described.

4. A car-fender composed of two frames, the rear frame inclined slightly from the perpendicular and receding from the pivot-rod securing same to car on each side away from the car, said frame having hinged at its lower front corners on each side arms extending forward nearly horizontally provided near their front ends with shoulders adapted to engage with car-wheels, and at their extreme front ends pivoted to a second frame adapted to fit between the said two arms and extending nearly to the rear middle line of the first frame, said second frame at its rear middle point detachably secured to a link adapted to move between spiral springs upon a perpendicular bar placed in front of the pivot-rod, the said second frame provided with long slots adapted to permit said frame to slide upon the pivots at the front ends of the arms of the first frame substantially as described.

572,588. METHOD OF AND APPARATUS FOR MAKING SHEETED WAX AND ARTIFICIAL HONEYCOMB FOUNDATIONS. EDWARD B. WEED, Medina, Ohio, assignor to the A. I. Root Company, same place. Filed Nov. 25, 1895. Serial No. 570,093. (No model.)



Claim.—1. The herein-described process of making sheet-wax consisting of first making the wax plastic, second, in subjecting the plastic wax to pressure, and, third, in forming the wax into sheets, substantially as described.

2. The herein-described improvement in the art of making wax consisting in making the wax plastic and subjecting the plastic wax to pressure, substantially as described.

3. The herein-described improvement in the art of making sheet-wax, consisting in forcing the wax while in a plastic state through an opening between dies, substantially as described.

4. The herein-described improvement in the art of making sheet-wax consisting in making the wax plastic and then forcing it by pressure between the walls of an opening whereby the wax is made highly cohesive, substantially as described.

5. A machine for making sheet-wax, consisting of a pan, a roller adapted to be partially submerged in wax in the pan, a scraper to regulate the amount of wax carried from the pan by the roller, a chamber into which wax is diverted from the roller, and an opening from the chamber through which wax is forced out of the chamber, substantially as described.

6. A machine, for making sheet-wax, consisting of a pan, a roller adapted to be partially submerged in wax in the pan, a scraper to regulate the amount of wax carried from the pan by the roller, a chamber into which wax is diverted from the roller, a guide to divert wax from the roller into the chamber, and an opening through which wax is forced from the chamber, substantially as described.

7. The combination, in a machine for making sheet wax, of a roller, a chamber in front of the roller, a scraper for diverting wax from the roller into the chamber, a retaining-plate above the chamber, and an outlet from the chamber, substantially as described.

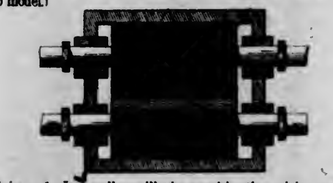
8. In a machine for making sheet-wax, the combination of a pan, a hollow roller adapted to be partially submerged in wax in the pan, connections to the roller whereby a current of water may be caused to flow through the roller, a chamber into which wax may be diverted from the face of the roller, said chamber being provided with an opening through which wax may be forced from the chamber, substantially as described.

9. In a machine for making sheet-wax, the combination of a pan, means for heating the pan, a hollow roller adapted to be partially submerged in wax in the pan, connections to the roller whereby a current of water may be caused to flow through the roller, and a chamber into which wax is diverted from the face of the roller, substantially as described.

10. In a machine for making sheet-wax, the combination of a frame, a roller, a pan below the roller, means for keeping wax warm in the pan, and a slotted opening through the frame through which wax is forced from the roller, substantially as described.

11. In a machine for making sheet-wax, a chamber, an outlet from the chamber, means for adjusting the size of the said outlet, and means for subjecting wax in the chamber to pressure and forcing wax through the outlet, substantially as described.

572,589. ROLLER-MILL. ROSIA W. WELCH, Baltimore, Md., assignor of five-sixths to Michael A. McCormick, Michael Mullen, and Joseph S. Taylor, same place. Filed Jan. 20, 1896. Serial No. 576,067. (No model.)

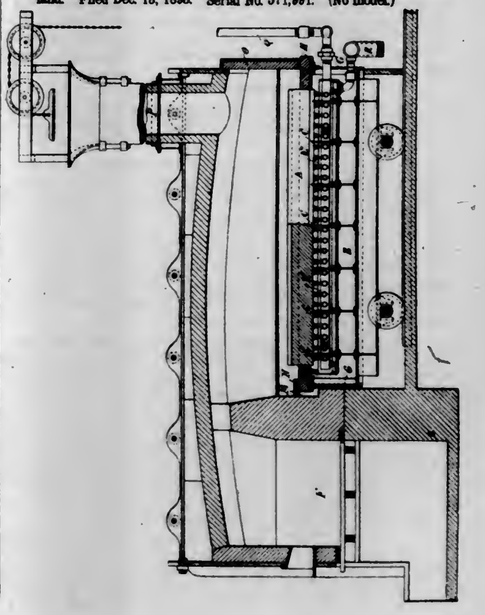


Claim.—1. In a roller-mill, the combination with a roller having its convex face formed into a series of fine longitudinal ribs by grooves parallel to its axis, of a coacting roller similarly grooved and also provided with analogous circumferential grooves, substantially as set forth.

2. The combination with a roller having its convex face formed into ribs by small grooves parallel to its axis, of a coacting roller similarly grooved and further provided with analogous circumferential grooves deeper than the longitudinal grooves which they cross.

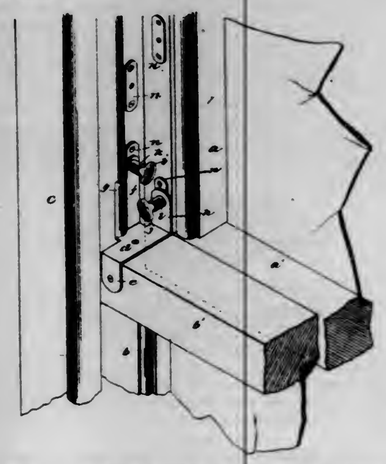
3. The combination with a roller having its convex surface milled both longitudinally and circumferentially to form approximately pyramidal projections, of a coacting roller milled longitudinally only, and means for imparting to the two different rates of surface speed.

572,590. APPARATUS FOR MANUFACTURING ARMOR-PLATES. ALEXANDER WILSON and FREDERIC STUBBS, Sheffield, England. Filed Dec. 13, 1895. Serial No. 571,991. (No model.)



Claim.—The combination of a furnace having an opening at one end, rails on the floor of the furnace, a car running on the rails, a platform on the trolley dividing the furnace into two chambers, an opening in the platform of suitable size to receive an armor-plate and jets arranged to supply water to the under side of the plate.

572,591. SASH-FASTENER. ALVIN N. WOODARD, Mansfield, Ohio, assignor of three-fourths to James T. Sawhill, John L. Sawhill, and Abraham Small, same place. Filed May 9, 1896. Serial No. 590,844. (No model.)



Claim.—1. The herein-described sash-fastener, or window-lock, comprising a male member, composed of a horizontal piece *d*, the upper projection *f* extending laterally from the horizontal piece *d* and adapted to the jamb of the window and provided with a set-screw *i*, one or more female members with which the set-screw cooperates, a second upward projection *h*, extending from one end of the horizontal piece and in line with the stile of a sash, and having a set-screw *j* for cooperation with female members in said stile, substantially as set forth.

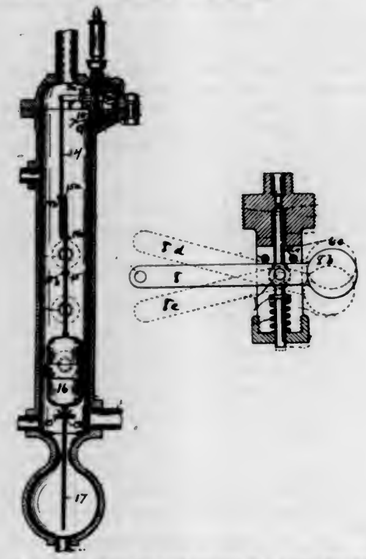
2. As an improved article of manufacture, the herein-described sash-fastener, or window-lock, composed of the horizontal piece *d*, lip *e*, upward projection *f* having a set-screw for engagement with a complemental member, and also having the curved extension *g* to receive the sash-cord, and the projection *h* having a set-screw for cooperation with a complemental female member, substantially as specified.

572,592. SAFETY WATER-COLUMN FOR STEAM-BOILERS. ALLEN J. WRIGHT, Cleveland, Ohio. Filed Oct. 14, 1895. Serial No. 565,554. (No model.)

Claim.—1. In a water-column, the combination of a comparatively short, horizontally-arranged, bodily-moving lever, a counterpoise on one end of said lever and a pendent rod at the other end of said lever provided with a float a single vertically-operating valve-stem and valve connected to the said lever at right angles thereto, a whistle provided with a seat for receiving said valve, means for normally forcing the valve up in the valve-seat of the whistle, and a stationary fulcrum above the lever and disconnected from the valve and valve-stem, the entire mechanism being arranged within the outer casing of the water-column, substantially as described.

2. In a water-column, the combination of a comparatively short, horizontally-arranged, bodily-moving lever, a counterpoise on one end of said lever and a pendent rod at the other end of said lever provided with a float, a single vertically-operating valve-stem and valve connected to the said lever at right angles thereto, a single whistle provided with a seat for receiving said valve, stationary fulcrum-pins above said lever and disconnected from the valve and valve-stem, and a spring for normally holding the valve in the valve-seat of the whistle and automatically returning it to its position when moved away from the same, the entire mechanism being arranged within the outer casing of the water-column, substantially as described.

3. In a water column, the combination of a bodily-moving lever provided on its inner end with a counterpoise, a telescopic rod attached to the outer end of said lever, a float at the lower end of said rod, fixed fulcrum-pins above the lever, a single valve-stem and valve secured to the lever at right angles thereto, a single whistle provided with a valve-seat for said valve, a spring for normally holding the valve in the valve-seat and automatically returning it when it is drawn away from the same, substantially as described.



4. In a water-column, the combination of a bodily-moving lever provided on its inner end with a counterpoise, a vertical telescopic rod secured to the outer end of said lever, a float at the lower end of said rod having a pendent guiding-stem, fixed fulcrum-pins above the lever, a single valve-stem and valve secured to said lever at right angles thereto, a single high and low water alarm, a collar on the valve-stem below the lever, and a spring bearing upon the collar for normally holding the valve in the valve-seat of the alarm and for automatically returning the valve when it is drawn away from the valve-seat, substantially as described.

5. In a water-column, the combination of a comparatively short, horizontally-arranged, bodily-moving lever, a counterpoise on one end of said lever and a pendent rod at the other end of said lever, a float, a rod connected to the float, said rod having longitudinal movement on the rod connected to the lever, stops for limiting the movement of said rod, a vertically-operating valve-stem and valve connected to the said lever at right angles thereto, a whistle provided with a seat for receiving said valve, and a stationary fulcrum above the lever, the entire mechanism being arranged within the outer casing of the water-column, substantially as described.

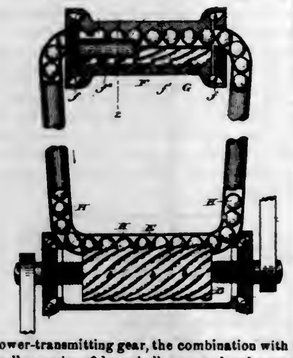
6. In a water-column, the combination of a comparatively short, horizontally-arranged, bodily-moving lever, a counterpoise on one end of said lever and a pendent rod at the other end, a float, a rod connected to said float and capable of longitudinal movement on the rod connected to the lever, a vertically-operating valve-stem and valve connected to the lever at right angles thereto, a whistle provided with a seat for receiving said valve, means for normally forcing the valve up in the valve-seat of the whistle, a stationary fulcrum above said lever, the construction and operation being such that the valve in the whistle will be opened by raising or depressing either end of the lever, substantially as described.

572,593. POWER-TRANSMITTING GEAR. FINIS M. BARNEY, Elm Creek, Nebr. Filed Nov. 15, 1895. Serial No. 569,083. (No model.)

Claim.—1. In a power-transmitting gear, the combination with a worm, of a tube adjacent thereto, and an endless series of loose balls held in said tube, the tube being cut away on one side to permit the balls to engage with the worm, and a receiving-hub adapted to be moved by said balls, substantially as described.

2. In a power-transmitting gear, the combination with a worm, of a casing containing a semicircular passage-way adjacent thereto and passing around the same, an endless series of loose balls held in said passage-way in engagement with the worm, and a receiving-hub adapted to be moved by said balls, substantially as described.

3. In a power-transmitting gear, the combination with a worm having semicircular helical grooves, of a casing containing a semicircular passage-way adjacent to said worm, and extending from one end thereof to the other, an endless series of loose balls adapted to pass through said passage-way in engagement with the grooves, and a receiving-hub adapted to be moved by said balls, substantially as described.



4. In a power-transmitting gear, the combination with a driving-shaft, of an endless series of loose balls engaged and moved thereby, a stationary grooved shaft and a receiving-hub mounted thereon and having internal grooves at an angle to the groove in the shaft to be engaged by said moving balls, substantially as described.

5. In a power-transmitting gear, the combination with a driving-shaft, of an endless series of loose balls, engaged and moved thereby, a stationary grooved shaft and a receiving-hub mounted thereon and having parallel helical grooves to be engaged by said balls, substantially as described.

6. In a power-transmitting gear, the combination with a driving-shaft, of an endless series of loose balls engaged and moved thereby, and a receiving-hub mounted on a stationary shaft having a helical groove, said hub being provided with internal grooves to be engaged by said moving balls, substantially as described.

7. In a power-transmitting gear, the combination with a driving-shaft, of an endless series of loose balls, engaged with and moved thereby, and a receiving-hub mounted on a stationary shaft having a helical groove, said hub being provided with internal helical grooves of an opposite pitch to the groove in the shaft, and adapted to be engaged by said moving balls, substantially as described.

8. In a power-transmitting gear, the combination with a stationary grooved casing, of a driving-worm therein, a stationary grooved shaft, a receiving-hub mounted thereon, having internal grooves at an angle to the one in the shaft, and an endless series of loose balls engaging with the grooves in the driving-worm, and passing through the receiving-hub, substantially as described.

9. In a power-transmitting gear, the combination with a stationary grooved casing, of a driving-worm therein, a stationary grooved shaft, a receiving-hub mounted thereon and having internal helical grooves of the opposite pitch to those on the driving-worm, and an endless series of loose balls engaging with the grooves in said worm, shaft and hub, substantially as described.

10. In a bicycle, the combination with a crank-shaft, of a driving-worm mounted thereon, a grooved casing surrounding said worm, an internally-grooved hub for the rear wheel, a stationary shaft on which said hub is mounted, said shaft having a groove from one end to the other at an angle to the grooves in the hub, hollow lower braces extending from the casing around the crank-shaft to the ends of the groove in the stationary rear shaft, and an endless series of loose balls contained in said hollow braces and engaged with the worm and hub, substantially as described.

11. In a bicycle, the combination with a spirally-grooved crank-shaft and a grooved rear driving-wheel hub, of a grooved casing surrounding the crank-shaft, a shaft for supporting said hub having a groove at an angle to those in said hub, an endless series of loose balls, and means for conveying said balls from the crank-shaft to the rear wheel-hub on one side of the wheel, through said hub, and back on the other side of said wheel, substantially as described.

12. In a cycle, the combination with the crank-shaft and the driving-wheel, of an endless medium for transmitting power from said shaft to said wheel, said medium passing axially along said crank-shaft, and from said shaft to the hub of the wheel on one side of the same, then axially along the hub of said wheel, and back to the crank-shaft on the opposite side of the wheel, substantially as described.

572,594. SHADE SUPPORTER OR BRACKET. JOSEPH P. BAUMGARTNER, Philadelphia, Pa. Filed May 28, 1896. Serial No. 593,375. (No model.)

Claim.—1. A shade supporter, consisting of a body portion with a projecting lug, a threaded stem mounted in said lug, an internally-threaded sleeve engaging said stem, a plate attached to said sleeve and substantially parallel with said body portion, and a roller-bearing also connected with said sleeve.



2. In a shade-supporter, a suitable body portion, an arm mounted thereupon, a bearing on said arm, means for locking the latter an internally-threaded sleeve, a threaded stem attached to said body portion, and engaging said sleeve, a roller-bearing attached to said sleeve, and means on the latter, but at an angle thereto and adapted to engage a window-frame.

3. In a shade-supporter, a body portion, a flange projecting therefrom adapted to engage the beading of a window-frame, a slotted bar supported on said body portion, an arm having a bearing therein attached to said bar, a threaded stem attached to said body portion, a threaded sleeve engaging said stem, an arm having a bearing therein attached to said sleeve, and a plate also attached to said sleeve at an angle thereto for engaging the back of the window-frame.

4. In a shade-supporter, a suitable body portion having an arm provided with a bearing, a lug extending from said body portion, a threaded stem mounted on said lug, a threaded sleeve engaging said stem, an arm attached to said sleeve and having a bearing therein, and a plate also attached to said sleeve but at an angle thereto and adapted to engage the back of the window-frame.

5. In a shade-supporter, a suitable body portion, having an arm mounted thereupon and provided with a bearing, an internally-threaded sleeve, a threaded stem attached to said body portion and engaged in said sleeve, a roller-bearing attached to said sleeve, and a plate also mounted on the latter but at an angle thereto and adapted to engage the back of a window-frame.

6. In a shade-supporter, a body portion, an arm thereon, a roller-bearing on said arm a threaded stem on said body portion, a sleeve adapted to rotate on said stem after said supporter is in position, and means on said sleeve for engaging a window-frame, when said sleeve is rotated.

7. In a shade-supporter, a body portion, an arm, thereon, provided with a bearing, a stem suitably mounted on said body portion, a sleeve engaging said stem, a bearing attached to said sleeve and means for engaging the back of the window-frame.

8. In a shade-supporter, a suitable body portion, an arm mounted thereupon, a bearing on said arm, means for locking the latter, an internally-threaded sleeve, a threaded stem attached to said body portion, and engaging said sleeve, a roller-bearing attached to said sleeve, and means on the latter adapted to engage a window-frame.

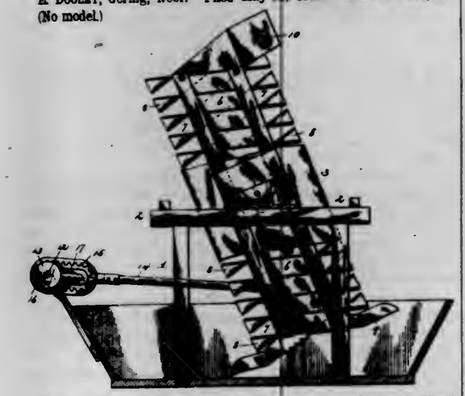
572,595. CONNECTION FOR VEHICLE-TOPS. DAVID H. BUCHER, Carthage, Ohio. Filed June 18, 1896. Serial No. 596,029. (No model.)

Claim.—1. In a coupling, the combination of a cylindrical member, having an annular groove A^3 therein, and another complementary member B, and a ferrule C made of elastic metal and united at its rear end to member B, and being divided from its free end backward by slits C^3, parallel to the axis of the ferrule, and an internal annular groove F therein, and an exterior thread and inclosing locking-nut, and a ring G elastic and split, and of a thickness greater than the depth of groove A^3, and thereby forming a ridge projecting out and beyond the peripheral surface of the cylinder, and received into the groove F of the ferrule, after the fingers thereof have been spread apart, and brought over the cylinder and sprung over the ring, substantially as and for the purposes specified.

2. In a coupling, the combination of a cylindrical member, having an annular groove A^3 therein, and another complementary member B, and a ferrule C made of elastic metal and united at its rear end to member B, and being divided from its free end backward by

slits C^3, parallel to the axis of the ferrule, and an internal annular groove F therein, and an exterior thread and inclosing locking-nut, and a ring G elastic and split, and of a thickness greater than the depth of groove A^3, and thereby forming a ridge projecting out and beyond the peripheral surface of the cylinder, and received into the groove F of the ferrule, after the fingers thereof have been spread apart, and brought over the cylinder and sprung over the ring, the screw-threaded portion of the ferrule being tapered toward its free end and the nut conversely tapered, for approximating the several fingers of the ferrule, and causing them to tightly embrace the cylinder, substantially as and for the purposes specified.

572,596. WATER-ELEVATOR. WILLIAM CLAYPOOL and CHARLES E. DOOLEY, Gering, Nebr. Filed May 25, 1895. Serial No. 550,667. (No model.)



Claim.—1. In an elevator, an oscillatory plunger having inclined blades tapered continuously toward their discharge ends and connected in series the reduced discharge end of each blade being arranged slightly above the plane of the broad receiving end of the connected blade whereby backflow is prevented, guards 8 interposed vertically between the connected ends of the blades, and means for depositing the material to be elevated upon the lowermost blade or chute, substantially as specified.

2 In an elevator, an oscillatory plunger provided with inclined blades connected in series and arranged in sets, the blades in each set being parallel and the blades in one set being inclined oppositely to those in the other, a diagonally-disposed web or partition separating the sets except at their connected extremities, and means for depositing the material to be elevated upon the lowermost blade, substantially as specified.

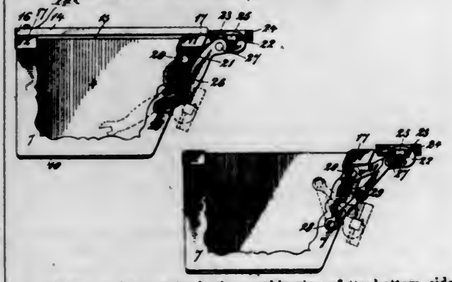
3. In an elevator, an oscillatory plunger provided with inclined blades connected in series and arranged in vertical sets, an interposed partition separating the sets except at their connected extremities, the blades being reduced or tapered continuously in width toward their discharge ends, and means for depositing the material to be elevated upon the lowermost blade, substantially as specified.

4. In an elevator, an oscillatory plunger having twin sets of communicating oppositely-inclined blades, said blades being inclined upward toward their discharge ends whereby the plunger must be inclined at a greater angle than the blades in order to cause the material to be elevated to advance toward the discharge ends of the blades by gravity, and a shifting fulcrum for the plunger arranged at an intermediate point of its height whereby the bearing-point is advanced in the same direction as the load to occupy a position in the vertical plane of the center of gravity, substantially as specified.

5. In an elevator, an oscillatory plunger provided with a series of inclined blades arranged in vertical sets, each blade in one set being in communication at its opposite ends with higher and lower blades in the other set, said plunger being fulcrumed at an intermediate point whereby the portion below the fulcrum approximately counterbalances the portion above the same, and the fulcrum being of shifting construction and consisting of interlocking toothed bearing-plates and rockers carried respectively by a frame and the casing, whereby as the plunger is inclined to move the contents of the blades alternately toward the opposite ends thereof the bearing-point is moved in the same direction, or toward the weighted ends of the blades, to maintain the bearing-point in the vertical plane of the center of gravity, substantially as specified.

6. In an elevator, an oscillatory plunger having a cross sectionally rectangular elongated casing or shell, a longitudinal partition arranged in the plane of one of the diagonals of the casing and terminating at its lateral edges short of the angles of the casing to form intervals by which the spaces upon opposite sides of the partition communicate, twin sets of inclined blades arranged, respectively, upon opposite sides of the plane of said partition with the reduced end of each blade communicating with the broad end of a blade upon the opposite side of the partition, means for depositing material to be elevated upon the lowermost blade, and a shifting fulcrum arranged upon the casing at a point between its extremities and consisting of stationary toothed bearing-plates and segmental toothed rockers secured to the casing and meshing with the teeth of the bearing-plates, whereby as the plunger is inclined to move the contents of the blades alternately toward the opposite ends thereof the bearing-point is moved in the same direction or toward the weighted ends of the blades to maintain the bearing-point in the vertical plane of the center of gravity, substantially as specified.

572,597. WASHTUB. JOHN CONWAY, Union, N. J., assignor of two-thirds to Bernard Feeney and Walter I. McCoy. Filed May 1, 1895. Serial No. 547,714. (No model.)



Claim.—1. In a washtub, the combination of the bottom, sides and end slabs 1, 2, 3, 4, with the bottom skeleton frame-piece 6 extending from end to end of the tub and formed with front and rear flanges 8, 9, the two one-piece end frames 7 comprising the upright flanged corner portions and the connecting flanged base portion, means for securing the bottom and end frames together and clamps securing the upright portions of end frames to slabs at top, substantially as set forth.

2. In a washtub, the combination of the bottom, sides and end slabs 1, 2, 3, 4, with the bottom skeleton frame-piece 6 extending from end to end of the tub and formed with front and rear flanges 8, 9, the two one-piece end frames 7 comprising the upright flanged corner portions and the connecting flanged base portion which also has a seat or sill 10 below the bottom slab-supporting flange, bolts securing the bottom frame to the end frames, and clamps securing the slabs to the corner portions of the end frames at top, substantially as set forth.

3. The combination of the stone slabs, the frame consisting of the main parts 6, 7 and the clamps 11, 12 having fingers 18 and flanges 19 arranged and adapted to clamp the slabs to the frame at top, substantially as set forth.

4. The combination of the stone slabs 1, 2, 3, 4, the supporting-frame thereof consisting of the bottom frame 6 end frames 7 and clamps 11, 12 extending above the edges of the tub and a lid or cover for said tub supported upon said clamps, substantially as and for the purposes set forth.

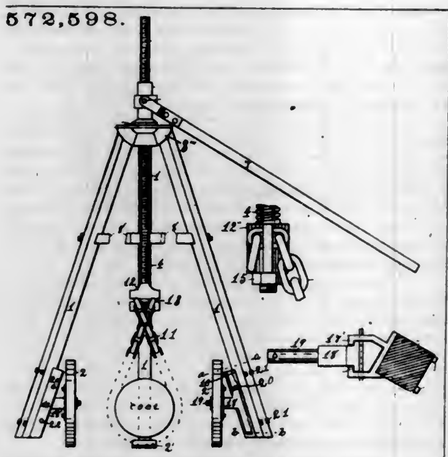
5. The combination of the tub, the ironing-board, the arms having hooks to receive said ironing-board and hinged to the said tubs and the supporting-brackets for said ironing-board, all arranged and adapted to operate, substantially as set forth.

6. The combination of the tub, supporting-frame 6, 7, the arms 21 hinged to said frame and having hooked ends 22, the ironing-board 24 having end lugs 23 to engage said hooked ends of the arms 21 and the supporting-bracket 26 for said arms 21, all arranged and adapted to operate, substantially as set forth.

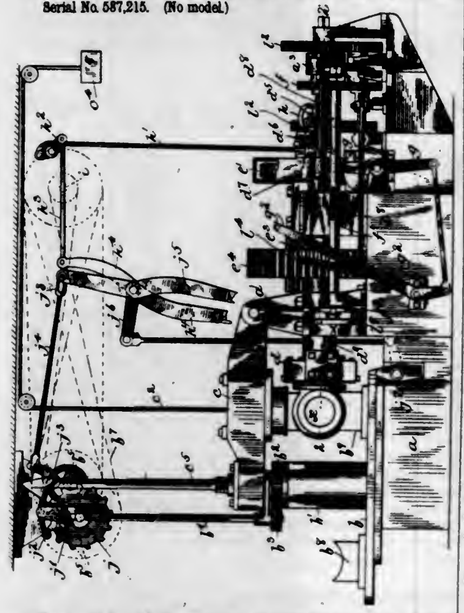
572,598. STUMP-PULLER. FRANK H. DEAN, Seymour, Wis. Filed Mar. 11, 1896. Serial No. 582,790. (No model.)

Claim.—A truck device for a three-legged stump-puller, consisting of a socket-piece provided with an angular gibbed slot arranged lengthwise of a leg, said piece bolted thereto and having a projecting ledge at its lower end for supporting the lower end of said leg, and also a ledge across a part of said slot at its lower end, in combination with an axle-shank adapted for sliding within and lengthwise of said slot, said shank having an axle end extending outward therefrom and a wheel mounted for revolution upon said axle, said shank being arranged for movement lengthwise of said slot and for being held at predetermined points in said lengthwise movement, substantially as described.

572,598.



572,599. FACING-MACHINE. WILLIAM W. DOOLITTLE, Chicago, Ill., assignor to The Crane Company, same place. Filed Apr. 11, 1896. Serial No. 587,215. (No model.)



Claim.—1. In a facing-machine the combination with a main casting or bed, carrying a cutter-head, of a rotating table resting thereon, and one or more auxiliary tables rotatably pivoted on said rotating table, and having their axes of rotation at right angles to the axis of said cutter-head, substantially as described.

2. In a facing-machine the combination with a rotating cutter-head, a casting or bed, and a rotating table resting on said casting or bed, of a power clamping-arm extending above said rotating table and said cutter-head, substantially as shown and described.

3. In a facing-machine, the combination with a cutter-head, a rotating table, having its axis at right angles to the axis of said cutter-head, power devices for turning said table, and a catch for holding the same in place, of a single handle whereby said catch is released and said power-turning devices are thrown into action, substantially as described.

4. In a facing-machine the combination with a rotating table, and an auxiliary table pivoted thereon, and a cutter-head having its axis at right angles to said tables, of an adjusting device for varying the position of said auxiliary table, substantially as described.

5. In a facing-machine the combination with a clamping-arm and an auxiliary table, of a bearing-plate laterally adjustable relative to said auxiliary table, substantially as described.

6. In a facing-machine the combination with a clamping-arm and a bearing-plate; of a series of washers whereby said bearing-plate may be vertically adjusted relative to said clamping-arm, and a universal joint between the adjacent faces of two of said washers, substantially as described.

7. In a facing-machine the combination with a rotatable table of a clamping-arm, and mechanism for operating the same comprising a threaded shaft operated by reversible gearing, substantially as described.

8. In a facing-machine the combination with a cutter-head, of a cutter-bar, containing a gang of cutters, and mechanism for imparting to said cutters a lateral feed, substantially as described.

9. In a facing-machine the combination with a gang of cutters, of mechanism, whereby said cutters are forced into the work, and mechanism whereby said cutters are given a lateral feed, substantially as shown and described.

10. In a machine for facing surfaces of metal, the combination with a cutter-head, of a cutter-bar containing a gang of cutters, mechanism for forcing said cutters into the surface to be faced, and mechanism for imparting to said cutters a lateral feed, substantially as described.

11. In a facing-machine the combination with a cutter-head, of a gang of roughing-cutters, a series of smoothing-cutters, both carried by said head, and mechanism, substantially as described, whereby said gang of roughing-cutters is adapted to be retracted to permit the smoothing-cutters to be brought into operation.

12. In a facing-machine the combination with a cutter-head, of a bar containing a gang of cutters, devices whereby said bar may be projected into or retracted from operative position, mechanism substantially as described, for actuating said devices, and means separate from said projecting devices for feeding the cutters into the work.

13. In a machine for facing surfaces of metal, the combination with a cutter head and spindle for turning the same, of a cutter-bar containing a gang of cutters, and a shaft within said spindle adapted to impart to said cutter-bar a radial feed, substantially as described.

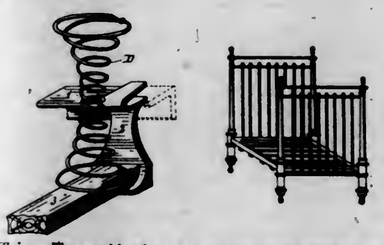
14. In a facing machine, the combination with a cutter-head and spindle for turning the same, of a cutter-bar containing a gang of cutters, and a shaft within the spindle adapted to impart to said bar a radial feed, by movement at a speed varying from the rapidity of rotation of the spindle itself, substantially as described.

15. In a facing-machine the combination with a cutter-head, of a gang of cutters, mechanism for imparting to said cutters a radial feed, and mechanism for retracting said cutters out of operative position automatically after the completion of the radial feed, substantially as described.

16. In a facing-machine the combination with a cutter-head, a spindle for turning the same, and a feed-screw coacting with said spindle, of a split nut engaging said feed-screw, and a quick-motion lever for rapidly moving said cutter-head up to and out of operative position, substantially as described.

17. In a facing-machine the combination of a cutter-head, a spindle for turning the same, a bar containing a gang of cutters, power mechanism for imparting to said bar a radial feed, a clutch for throwing said last-named mechanism into and out of operation, and devices whereby said radial feed may be operated by hand when said power mechanism is thrown out of engagement by said clutch, substantially as described.

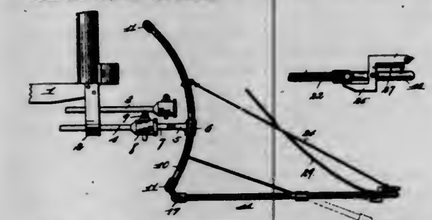
572,600. SLAT-HANGER FOR BEDS. OSCAR S. FOSTER, Utica, and FRED E. WILCOX, Syracuse, N. Y., assignors to Foster Bros., Utica, and Fred E. Wilcox, Syracuse, N. Y. Filed July 30, 1892. Serial No. 441,767. (No model.)



Claim.—The combination with an iron-angle bedstead-rail and a slat, of a slat-hanger having a hook-shaped head 2^a gripping the horizontal web of the rail from both upper and under sides, the body portion of the hanger depending from a point on the head inside of

the inner edge of the rail and also having a slat-supporting shoulder 2^b, substantially as set forth.

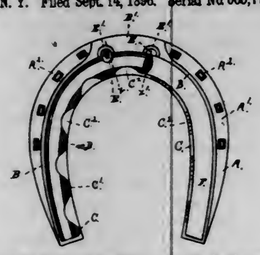
572,601. CAR-FENDER. JESSE A. GRAHAM, St. Louis, Mo., assignor of one-half to D. P. Shields, same place. Filed Mar. 10, 1896. Serial No. 582,669. (No model.)



Claim.—1. In a car-fender, a bottom comprising two pieces hinged together on a line transversely of the car-track, means of holding the rear one of said pieces rigidly in position relative the car, and means of holding the forward one of said pieces normally in position relative to the car, a feeler in front of said bottom and connections between said feeler and said forward piece by which the forward edge of said forward piece is dropped to the car-track or pavement before reaching an obstruction, for the purposes stated.

2. In a car-fender, a bottom comprising two pieces hinged together on a line transversely of the car-track, means of holding the rear one of said pieces rigidly in position relative the car, and means of holding the forward one of said pieces normally in position relative to the car, a feeler in front of said bottom and connections between said feeler and said forward piece by which the forward edge of said forward piece is dropped to the car-track or pavement before reaching an obstruction, and a back extending upwardly from the rear edge of said stationary bottom, for the purposes stated.

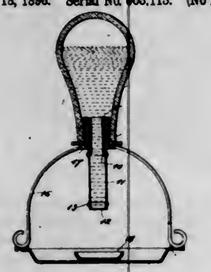
572,602. SOFT-TREAD HORSESHOE. FREDERICK W. HAHN, New York, N. Y. Filed Sept. 14, 1896. Serial No. 605,776. (No model.)



Claim.—1. The frame A having the thin horizontal flanges A′, the inner flange C provided with lugs C^3, the flanges B uniting with and merging into a solid broad and heavy calk B′, the lug E, and the sink E′, in combination with the packing D, as and for the purpose described.

2. The frame A having nail-flanges A′, inner flange C, outer flanges B uniting with and merging into the broad and heavy calk B′, and the lug E located on the calk and having its base formed below the tread of the calk by the sink E′ and its inner wall flush with the inner wall of the calk, in combination with the packing D, as and for the purpose described.

572,603. MUCILAGE-BOTTLE. GEORGE F. HARE, Limerick, Ireland. Filed Aug. 18, 1896. Serial No. 603,113. (No model.)



Claim.—1. A mucilage-bottle provided with a neck, and a tube which is mounted therein, the outer end of which is provided with a flexible tube, which communicates therewith, and the free end of which is closed, and perforated, said bottle being adapted to be held in an inverted position, so that the mucilage will flow downward into said flexible tube, substantially as shown and described.

2. A mucilage-bottle provided with a neck, and a tube which is mounted therein, the outer end of which is provided with a flexible tube, which communicates therewith, and the free end of which is closed, and perforated, said bottle being adapted to be held in an inverted position, so that the mucilage will flow downward into said flexible tube, and being also provided with a base-support having side arms which are brought together at their upper ends, and connected with a plate or head through which the tube in the neck of the bottle, passes, substantially as shown and described.

3. A mucilage-bottle provided with a neck, and a tube which is mounted therein, the outer end of which is provided with a flexible tube, which communicates therewith, and the free end of which is closed, and perforated, said bottle being adapted to be held in an inverted position, so that the mucilage will flow downward into said flexible tube, and being also provided with a base-support having side arms which are brought together at their upper ends, and connected with a plate or head through which the tube in the neck of the bottle passes, and said base-support being also provided with a detachable receptacle, substantially as shown and described.

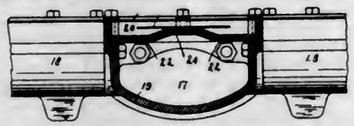
4. A mucilage-bottle and support therefor, consisting of a suitable dish-shaped base provided with side arms or supports which are brought together at their upper ends, and connected with an annular plate or head, said mucilage-bottle being also provided with a neck in which is placed a tubular plug or stopper, and a tube which is inserted thereinto, and the outer end of which is provided with a flexible tube, the free end of which is closed and perforated, substantially as shown and described.

572,604. CROSSCUT-SAW. AMANIAS HARMAN, Roann, Ind. Filed Aug. 19, 1893. Serial No. 483,582. (No model.)



Claim.—In a crosscut-saw, the blade or body having chisel or cleaning teeth arranged in pairs, each pair of which chisel or cleaning teeth are formed at the outer end of a single shank contracted at its base and provided with a triangular notch disposing the points of the teeth close together, and with outer and inner edges at right angles with the side of the saw, said blade or body also having oppositely-set cutting-teeth arranged in pairs and alternating with the pairs of chisel or cleaning teeth, each pair of cutting-teeth having outer tapered cutting portions and an intermediate vertically-disposed supplemental clearing-space, and oppositely-inclined main clearing spaces or notches F, formed between and separating the pairs of cutting and cleaning teeth, said main clearing-spaces being provided with flared mouths between the adjacent points of the cutting and cleaning teeth, substantially as described.

572,605. STRAINER FOR FILTERS. OMAR H. JEWELL, Chicago, Ill., assignor to the O. H. Jewell Filter Company, same place. Filed Feb. 26, 1896. Serial No. 580,830. (No model.)

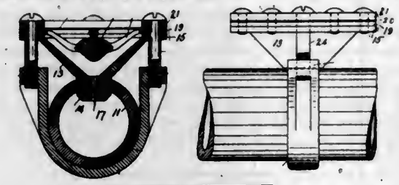


Claim.—A strainer-pipe for filters consisting of two U-shaped portions connected together, the upper portion having one or more water-orifices, a strainer carried by said upper portion, and a deflector between said strainer and said orifice or orifices, substantially as described.

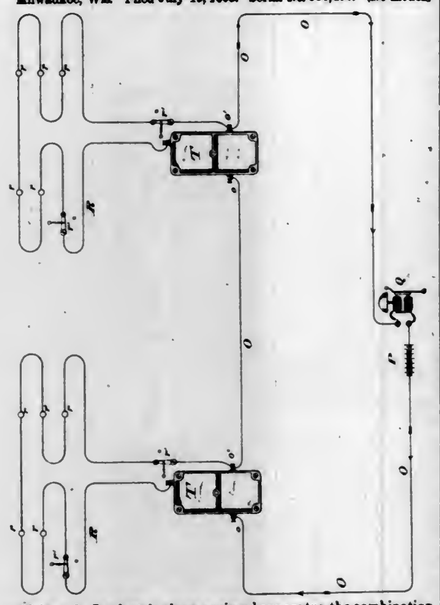
572,606. SCREEN FOR FILTERS. OMAR H. JEWELL, Chicago, Ill., assignor to the O. H. Jewell Filter Company, same place. Filed Apr. 7, 1896. Serial No. 586,610. (No model.)

Claim.—In a strainer, the combination with a body, having a base

15, of a ring 19, a deflector supported thereby, and a ring 21, substantially as and for the purpose specified.



572,607. ELECTRIC SIGNAL APPARATUS. GEORGE KNOWLES, Milwaukee, Wis. Filed July 19, 1895. Serial No. 556,497. (No model.)



Claim.—1. In electric alarm or signal apparatus, the combination with a main circuit, including a receiving and a number of transmitting devices adapted to indicate the source of the alarms or signals, of means associated with each transmitting device for rendering it inoperative when interrupted by another and thereby preventing interference or confusion of signals, such means comprising a branch circuit around each transmitting device, and a branch-circuit controller consisting of a rotary contact connected with the main circuit and movable synchronously with the associated signal-transmitting device, a movable contact in the branch circuit adapted to engage with said rotary contact, and means for automatically shifting said movable contact to close said branch circuit whenever the main circuit is broken while the associated signal-transmitting device is "spacing," substantially as and for the purposes set forth.

2. In electric alarm or signal apparatus, the combination with a main circuit, including a receiving and a number of transmitting devices adapted to indicate the source of alarms or signals, of means associated with each transmitting device for rendering it inoperative when interruped by another, and thereby preventing interference and confusion of signals, such means comprising a branch circuit, a branch-circuit controller consisting of a contact-wheel, an armature-lever in the branch circuit adapted to engage with said contact-wheel, a magnet for operating said lever to open or close said branch circuit, and a detent for holding said lever in position to maintain said branch circuit closed during interference, substantially as and for the purposes set forth.

3. In electric alarm or signal apparatus, the combination with a main circuit, including a receiving and a number of signal-transmitting devices adapted to indicate the source of signals transmitted thereby, of means associated with each transmitting device for rendering it inoperative when interrupted by another and thereby preventing interference and confusion of signals, such means comprising a branch circuit, a continuous rotary conducting-contact connected with the main circuit, an armature-lever in the branch circuit adapted to engage with said rotary contact, a magnet arranged to actuate said lever for opening or closing the branch circuit, a catch or detent for holding said lever in position to maintain the branch circuit closed, and means for automatically releasing said catch or detent, substantially as and for the purposes set forth.

4. In an electric alarm or signal apparatus, the combination with a main circuit, including a receiving and a number of signal-transmitting devices adapted to indicate the source of signals, of means associated with each transmitting device for rendering it inoperative whenever it is interrupted by another and thereby preventing interference and confusion of signals, such means comprising a branch circuit, a continuous rotary conducting-contact connected with the main circuit, an armature-lever connected with the branch circuit and movable into and out of engagement with said rotary contact, a magnet arranged to actuate said lever, and a circuit-controller consisting of a series of contacts in connection with the main circuit corresponding in number and arrangement with the spaces between the number groups of the associated transmitting device, and movable synchronously therewith, a contact-drag in the path of the said movable series of contacts and in a branch circuit with said magnet, and a device arranged to close a break in said branch circuit whenever a break occurs in the main circuit while said drag is in engagement with any of said series of movable contacts, substantially as and for the purposes set forth.

5. In an electric alarm or signal system, the combination with an electric circuit including receiving apparatus, of transmitting mechanism consisting of a break or number wheel having a continuous conducting-surface connected with and included in said circuit, and a series of insulating-spaces arranged to produce the desired signal, an armature-lever provided with an electrical contact also connected with said circuit and movable in engagement with said conducting-surface into and out of the path of said insulating-spaces, and an electromagnet in said circuit for actuating said lever, substantially as and for the purposes set forth.

6. In an electric alarm or signal system, the combination with an electric circuit, including receiving apparatus, of transmitting mechanism comprising a break or number wheel having a conducting contact-surface connected with and included in said circuit and insulating-spaces arranged and grouped to produce a given signal, an armature-lever provided with an electrical contact connected with said circuit and movable in engagement with said conducting-surface into and out of range with said insulating-spaces, a magnet for actuating said lever and a magnet for actuating said break or number wheel, both included in said circuit, substantially as and for the purposes set forth.

7. In automatic electric signaling apparatus, the combination with an electric circuit including receiving apparatus, of transmitting mechanism comprising a break or number wheel having a conducting contact-surface in said circuit, and insulating-spaces grouped to produce a given signal, a contact connected with said circuit and movable into and out of the path of said insulating-spaces, a magnet for actuating said contact, a vibrating arm for turning said number wheel, a magnet connected with the main circuit for actuating said arm, a short circuit around said magnet through the conducting-contact of the number-wheel, and a circuit-controller operated by said vibrating arm for alternately opening and closing said short circuit, substantially as and for the purposes set forth.

8. In an automatic electric signal-transmitting system, the combination with an electric circuit, including receiving apparatus, of a break or number wheel provided with home and trouble stops, a catch or detent movable into and out of the path of said stops, a branch circuit provided with one or more circuit-controllers, a magnet in said branch circuit for operating said detent, a circuit-controller in said branch circuit comprising a spring-strip or movable arm and a contact, a rim or flange movable with said break-wheel and adapted to press and hold said spring-strip or arm out of engagement with the opposing contact, and spring-actuated bridge-pieces connected with said stops and adapted when released to close notches or breaks in said rim or flange, substantially as and for the purposes set forth.

9. In an automatic electric signal-transmitting system, the combination with an electric circuit including receiving apparatus, of a break or number wheel provided with home and trouble stops movably connected therewith, a detent or catch movable into and out of the path of the home stop, a magnet arranged to actuate said detent, a branch circuit governing the operation of said magnet and provided with one or more circuit-controllers, a catch movable into and out of the path of both home and trouble stops, a magnet in said branch circuit for actuating said catch, a circuit-controller in said branch circuit comprising a spring-strip or movable arm, and an opposing contact, a rim or flange movable with said break-wheel and adapted to press and hold said spring-strip out of engagement with the opposing contact, and spring-actuated bridge-pieces connected with said stops and adapted when released to close breaks in said rim or flange, substantially as and for the purposes set forth.

10. In automatic electric signal apparatus, the combination with a main circuit, including suitable receiving mechanism, of signal-transmitting mechanism consisting of a break-wheel provided with a continuous conducting-surface connected with the main circuit and provided with insulating-spaces grouped to produce the desired signals, an armature-lever also connected with the main circuit and having a contact movable in engagement with the conducting-surface of the break-wheel into and out of the path of its insulating-spaces, and a magnet in the main circuit for actuating said lever; and mechanism for rendering said signal-transmitting mechanism inoperative during interference and for maintaining circuit for the transmitting devices, comprising a branch circuit adapted when closed to decenergize the signal-magnet, a branch-circuit controller consisting of a continuous conducting-surface movable synchronously with the break-wheel and connected with the main circuit, of an armature-lever movable into and out of contact therewith, and of a magnet for actuating said lever; and an arm or conductor connected with said magnet and provided with a contact insulated therefrom, and located in the path of conducting-surfaces of the break-wheel corresponding in number and position with the spaces between its number groups, the signal armature-lever being constructed and arranged when retracted from the path of the insulating-spaces of the break-wheel to electrically connect said insulated contact with said arm, substantially as and for the purposes set forth.

11. In electric signal apparatus the combination with a main circuit, including receiving mechanism, a break-wheel and contact with which the break-wheel coöperates to transmit signals through said circuit, of means for preventing confusion of signals in the event of interference, comprising a branch circuit adapted when closed to render the signal-transmitting mechanism inoperative and to maintain the circuit for the transmission of signals by other instruments, a circuit-controller for opening and closing said branch circuit, a magnet for operating said circuit-controller to close the branch circuit when interference takes place, a catch for holding said circuit-controller closed, and a releasing-wheel independent of and operated by the break-wheel to disengage said catch after interference ceases and the interfering instrument has transmitted its complete signal, substantially as and for the purposes set forth.

12. In electric signal apparatus, the combination with a main circuit, a break-wheel for transmitting signals, of means for rendering the break-wheel inoperative, comprising a branch circuit, a detent arranged to engage and stop said break-wheel, a magnet for disengaging said detent, a circuit-controller arranged to close the branch circuit when interference occurs, a catch for holding said circuit closed, and a releasing-wheel carried by said detent and operated by the break-wheel to release said catch at the proper time to permit at least one revolution of the break-wheel after interference ceases, substantially as and for the purposes set forth.

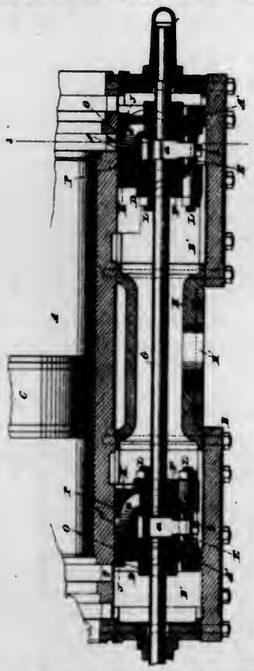
13. In electric signal apparatus the combination with a main circuit, including receiving mechanism, a break-wheel for transmitting signals, and means including a branch circuit for rendering the break-wheel inoperative during interference, a movable detent for arresting and holding the break-wheel, a magnet for disengaging said detent, a movable contact lever or arm controlling the branch circuit and having an extension adapted to hold said detent out of engagement with the break-wheel when the branch circuit is closed, a magnet arranged to shift said contact-lever and close the branch circuit through its contact when interference occurs, a catch for holding said lever in its abnormal or closed position, and a releasing-wheel carried by said detent independent of and operated by the break-wheel to release said catch at the proper time to allow a complete signal to be transmitted by the break-wheel after interference ceases, substantially as and for the purposes set forth.

14. In electric signal apparatus, the combination with a main circuit, including a receiving instrument, of a break-wheel provided with a contact-surface connected with said circuit and having insulating-spaces grouped to produce the desired signal, an armature-lever having a contact also connected with said circuit and movable into and out of the path of said insulating-spaces, a branch circuit, a magnet arranged to close said branch circuit when interference occurs, and a differentially-wound magnet arranged to actuate said armature-lever, and having one winding in the main circuit and the other in the branch circuit, substantially as and for the purposes set forth.

15. In non-interfering electric signal apparatus, the combination with a main circuit, including receiving mechanism, of a transmitting device, comprising a break-wheel having a series of number groups, a circuit-controller comprising a wheel provided with a series of conducting-surfaces electrically connected with the main circuit and separated from each other by insulating surfaces or spaces corresponding in number and arrangement with the number groups of the signal-transmitting device, a branch circuit having a break and including a contact in the path of said conducting-surfaces, and a movable part arranged to automatically close said break in the branch circuit when-ever another transmitting device breaks the main circuit while the first-mentioned transmitting device is spacing, substantially as and for the purposes set forth.

16. In non-interfering electric signal apparatus comprising a main circuit, including a receiving device and a number of transmitting devices, means comprising a branch circuit and circuit-closer associated with each transmitting device for rendering it inoperative in case of interference, and a releasing-wheel independent of and actuated by the associated transmitting device to open said branch circuit and render said transmitting device operative when the interfering transmitting device has completed its signal, substantially as and for the purposes set forth.

572,608. VALVE FOR STEAM-ENGINES. CONRAD KNUDSEN, Bound Brook, N. J., assignor to the American Engine Company, same place. Filed Apr. 10, 1896. Serial No. 586,905. (No model.)



Claim.—1. In a steam-engine the reciprocating slide-valve composed of the connected heads comprising the sections J, K, having at their inner facing sides the ports M, N, and provided with the interior chambers *d*, *e*, leading to the outlet-port *f*, combined with the cut-off valves located between said frames J, K, and provided in their opposite sides with the ports or slots T adapted to be brought into or out of alinement with the said ports M, N, and means for reciprocating said heads longitudinally and said cut-off valves transversely; substantially as set forth.

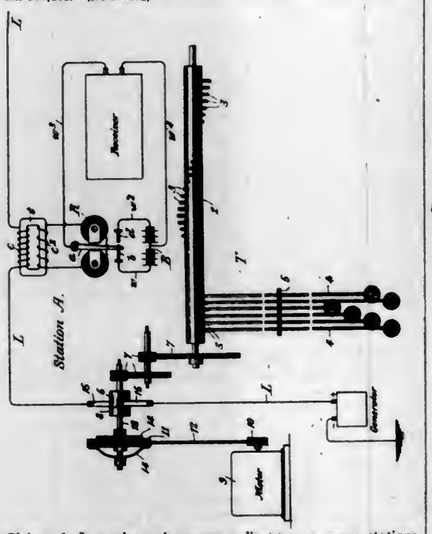
2. In a steam-engine the reciprocating slide-valve composed of the connected heads comprising the frame or sections J, K, having in their facing sides the ports M, N, and provided with the chambers *d*, *e*, leading to the outlet-port *f*, combined with the cut-off valves E composed of the opposite slotted sides connected together by lugs and adapted to move against the facing sides of said heads, the valve-rod for reciprocating said heads, and the cranks on said valve-rod engaging said cut-off valves and adapted to impart to the same a transverse reciprocating motion; substantially as set forth.

3. In a steam-engine the reciprocating slide-valve composed of the connected heads comprising the frames or sections J, K, having the ports M, N, in their facing sides, and provided with the interior chambers *d*, *e*, leading to the outlet-port *f*, combined with the cut-off valves located between said facing sides and provided with the slots or ports T, the valve-rod connected with said heads, and the cranks *a* secured upon said valve-rod and engaging said cut off valves, said cranks being alit in line with said valve-rod and provided with the tightening-bolt and also with the recesses which engage said cut-off valves; substantially as set forth.

4. In a steam-engine the reciprocating slide-valve composed of the connected heads comprising the frames or sections J, K, having the ports M, N, in their facing sides and provided with the interior chambers *d*, *e*, leading to the outlet-port *f*, combined with the cut-off valves E composed of the slotted sides having the recesses Y and connected together by the cross-bars W, the valve-rod passing through said heads and the recesses Y of said cut-off valves, and the cranks *a* secured upon said valve-rod and provided with recesses engaging said cross-bars; substantially as set forth.

5. In a steam-engine the reciprocating slide-valve composed of the connected heads containing in their facing sides the series of ports M, N, leading to an outlet-port *f*, combined with the cut-off valves located between said facing sides and having in their opposite sides the ports or slots T adapted to be brought into or out of alinement with said ports M, N, and means for longitudinally reciprocating said slide-valve and transversely reciprocating said cut-off valves; substantially as set forth.

572,609. TELEGRAPH SYSTEM. BENJAMIN F. MERRITT, Orange, N. J., and JOHN M. JOY, New York, N. Y., assignors to the Printing-Telegraph News Company, New York, N. Y. Filed June 27, 1896. Serial No. 597,175. (No model.)

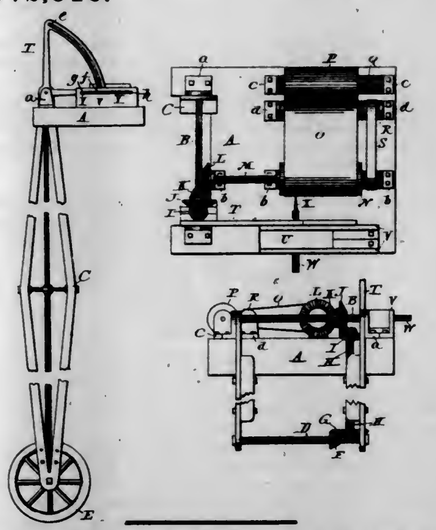


Claim.—1. In a telegraph system, a line, two or more stations thereon, a transformer and a receiver at each of said stations, each operated by the corresponding transformer and a local battery, an electrical generator for supplying a constant current to said line, a driven rotary circuit-breaker in said line, and a transmitter connected with and controlling the motion of said circuit-breaker, all in combination, substantially as described.

2. In a telegraph system, a line, two or more stations thereon, a transformer and a receiver at each of said stations, each operated by the corresponding transformer and a local battery, an electrical generator for supplying a constant current to said line, a driven rotary circuit-breaker in said line at each station, and a transmitter at each station connected with and controlling the motion of the corresponding circuit-breaker, all in combination, substantially as described.

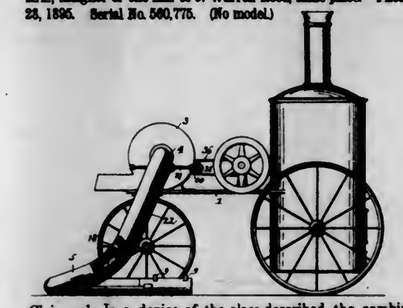
3. In a telegraph system, a line, two or more stations thereon, a transformer and receiver at each of said stations, each receiver being connected with and operated by the corresponding transformer and a local battery, an electrical generator for supplying a constant current to said line, a transmitter, and a circuit-breaker in the control of said transmitter, all in combination, substantially as described.

572,610. MACHINE FOR SOUNDING AND DRAWING PROFILES OF BEDS OF RIVERS, &c. ROBERT MCDOWALL, Owen Sound, Canada. Filed Jan. 27, 1896. Serial No. 577,092. (No model.)



Claim.—The combination in a machine for sounding and drawing the profile of the beds of rivers &c. of a platform A, bearings *a*, *a*, *b*, *b*, *c*, *c*, *d*, *d*, shaft B, arm C, shaft D, wheel E, beveled cog-wheels F, and G, shaft H, beveled cog-wheels I, J, K, and L, shaft M, rollers N, Q, and R; the elliptical quadrant T, containing elliptical slot *e*, *f*, frame V, V, containing slots *g*, *h*, *g*, *h*, pencil-carriage U, with arms Y, Y, pencil-case W, with pencil X, and spring Z all substantially as set forth.

572,611. COTTON-PICKER. CHARLES C. NEIGHBOURS, Fort Smith, Ark., assignor of one-half to J. Warren Reed, same place. Filed Aug. 28, 1895. Serial No. 560,775. (No model.)



Claim.—1. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having a movable part adapted to engage and separate the cotton from the bolls, a flexible conductor connecting the nozzle with the suction-fan, a flexible shaft operatively connected with the movable member of the nozzle, and means for communicating motion to the shaft, substantially as specified.

2. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior casing and an interior rotary winged member for separating the cotton from the bolls, a flexible conductor connecting the casing of the nozzle with the casing of the suction-fan, a flexible shaft operatively connected with the rotary member of the nozzle, means for communicating motion to the shaft, and a flexible tube inclosing the shaft and consisting of a coiled-wire body having a flexible sheath or covering, substantially as specified.

3. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior cylindrical casing, and an interior cylindrical rotary member provided with interior spirally-disposed wings located at its front and rear ends, antifriction-rolls mounted upon the casing and projecting at their inner edges into guide-grooves formed in the exterior surface of the rotary member, a flexible conductor connecting the casing of the nozzle with the casing of the suction-fan, and means for communicating motion to the rotary member of the nozzle, substantially as specified.

4. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having a rotary member, a flexible conductor connecting the nozzle-casing with the fan-casing, a flexible shaft operatively connected with the rotary member of the nozzle and terminating at one end contiguous to the fan-casing, and gearing interposed between the flexible shaft and the shaft or spindle of the fan, said gearing consisting of shafts and inter-

meshing pinions for conveying motion around the casing of the fan to that side contiguous to the point of attachment of the flexible conductor, substantially as specified.

5. In a device of the class described, the combination with a suction-fan and means for operating the same, of a nozzle having an exterior cylindrical casing and an interior cylindrical rotary member provided with interior spirally-disposed wings located at its front and rear ends, a flexible conductor connecting the casing of the nozzle with the casing of the fan, and means including a flexible shaft for communicating motion to the rotary member of the nozzle, substantially as specified.

572,612. BOUQUET-HOLDER. AUGUST NICOLAUS and WILLIAM J. DELMAR, Bridgeport, Conn., assignors of one-third to Ernest A. Fear, Plattsville, Conn. Filed Oct. 6, 1896. Serial No. 607,979. (No model.)

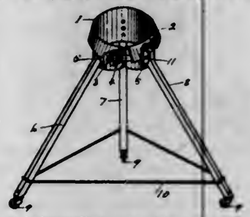


Claim.—1. A bouquet-holder consisting essentially of a frame provided with a spring-tongue, a holder pivoted in said frame and provided with an opening to receive the stem of a flower or bouquet, said tongue bearing upon the holder below the opening and acting to move the holder toward the closed position.

2. A bouquet-holder comprising a frame consisting of side pieces and a cross-piece with a spring-tongue extending therefrom, and a holder having an opening to receive the stem of a flower or bouquet and pivoted in the frame opposite to the cross-piece, said tongue passing into the opening and bearing upon the holder below the opening whereby the holder is moved toward the closed position.

3. A bouquet-holder consisting essentially of a frame provided with a spring-tongue and with suitable means as a pin whereby it may be attached to a garment, and a holder pivoted in said frame, and provided with an opening to receive the stem of a flower or bouquet, said tongue bearing upon the holder below the opening as and for the purpose set forth.

572,613. BABY-WALKER. GRANVILLE F. PACKARD, Fort Wayne, Ind. Filed May 21, 1896. Serial No. 592,397. (No model.)

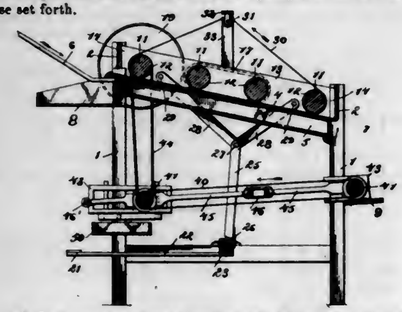


Claim.—1. A baby-walker comprising, an adjustable waist-belt of flexible material, having its upper edge turned or folded outwardly, and its meeting ends secured by an adjustable strap and buckle, the brackets secured to the exterior of the waist-belt, the legs 6, 7 and 8 having their upward ends curved outwardly and pivotally attached in the brackets 5 by a rivet or bolt as shown, and having suitable casters upon their lower ends, and the cord 10 adapted to limit the outspreading of the legs and for adjustment of the height of the waist-belt as described and shown and for the purpose stated.

2. In a tripod baby-walker, a flexible waist-belt having proper means for adjustably securing its meeting ends and provided with a plurality of equidistant metallic brackets fixed thereto as shown, in combination with the supporting-legs pivotally mounted in said brackets as described, and the cord or cable uniting the lower ends of the said legs for the purpose specified and by which the said belt may be vertically adjusted all substantially as described and shown and for the purpose stated.

572,614. MANGLE. CHARLES S. PAUL, Faribault, Minn. Filed Apr. 27, 1896. Serial No. 589,317. (No model.)

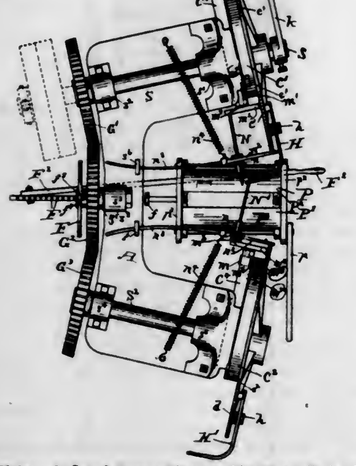
Claim.—1. In a mangle, the combination with the framework having oblique side braces connecting its legs and upright guides in the latter, a box-shaped steam-chest supported by said framework between such braces, a steam-inlet pipe at the upper end of the chest, an outlet-pipe at the lower end thereof, and a return-apron beneath said chest; of side bars having their ends mounted in said guides of the framework, a treadle at the inlet end of the machine, connections between said treadle and side bars for raising the latter when the treadle is depressed, a series of rolls journaled in said side bars, means for rotating them in unison, connections between one of the rolls and the return-apron, a cross-bar extending across the machine and supported by said side bars, pulleys carried by the cross-bar, and tapes extending around the rolls and over said pulleys, as and for the purpose set forth.



2. In a mangle, the combination with the ironing-table, a series of rotating rolls extending across the same, and a folding-table carried by the framework beneath the delivery end of the ironing-table; of guideways carried by the framework, boxes sliding therein, rollers journaled in such boxes, a return-apron connecting said rollers, means for driving the latter, and a frame connecting the axles of the apron-rollers and having a handle across its front end, as and for the purpose set forth.

3. In a mangle, the combination with the ironing-table and ironing-rolls, and the folding-table beneath the delivery end of the ironing-table; of guideways carried by the framework and one pair of them standing above such folding-table, boxes moving in said guideways, rollers journaled in the boxes, a return-apron moving over said rollers, a belt between one of such rollers and an ironing-roll, rods at the sides of the machine connecting the axles of the apron-rollers, turnbuckles in such rods, and a handle connecting the front ends of these rods, all as and for the purpose set forth.

572,615. BROOM-SEWING MACHINE. LEANDER PELTON, Des Moines, Iowa. Filed Apr. 26, 1893. Serial No. 471,906. (No model.)



Claim.—1. In a broom-sewing machine, a needle having a longitudinally-movable sleeve thereon arranged to close the barb of the needle when moved closely thereto and to open it when moved therefrom, in combination with a second needle having a like sleeve thereon, and mechanism for advancing one of the needles, for moving the sleeve near to the barb on the other needle, and for moving such other needle around the advanced needle, and means for retracting the advanced needle and for then advancing the needle which has been moved around; substantially as described.

2. In a broom-sewing machine two longitudinally-movable barbed needles, in combination with mechanism arranged to alternately longitudinally advance and retract each of the needles, and mechanism to move each of the needles, when retracted, around the barb of the other needle, when such other needle is advanced, so as to lay a thread from the barb of the needle which is retracted into the barb of the needle which is advanced; substantially as described.

3. In a broom-sewing machine, the combination of two longitudinally-movable barbed needles, each needle constructed to be advanced through the body of a broom, receive a thread in its barb, and to then be retracted and pull the thread through such body of the broom, mechanisms for so advancing and retracting the needles, and each needle constructed to be moved, when retracted, around the barb of the other needle, when such other needle is advanced, sufficiently to lay the thread from the barb of the needle which is retracted into the barb of the needle which is advanced, with mechanism arranged to so move the needles when retracted; substantially as described.

4. In a broom-sewing machine, the combination with a work-support, of two longitudinally-reciprocating bars, each on different sides of the work-support, a spindle rotatably mounted on one end of each of said bars, and a hooked needle mounted on each of said spindles with the axial line of said needle in a plane parallel to the axial line of its spindle, mechanism for longitudinally reciprocating said bars, and mechanism for turning the spindles at predetermined times; substantially as described.

5. In a broom-sewing machine, the combination with a broom-press of two reciprocating barbed needles pointed in opposite directions and provided with sleeves, means for moving the barb-closing sleeves, and mechanism for alternately advancing and retracting the needles and for moving the point of the retracted needle around the longitudinal part of the advanced needle, the sleeve of the retracted needle holding the thread within the barb of said retracted needle during said movement around the advanced needle.

6. In a broom-sewing machine, the combination of two needles pointed in different directions, cam mechanism for alternately reciprocating said needles, and a rack-and-pinion mechanism arranged to alternately move said needles when retracted, out of the path of reciprocation thereof, in a circular path around the barb of the other needle, when such other needle is advanced, for the purposes set forth.

7. In a broom-sewing machine, the combination with a broom-press of two needles connected by cranks to separate slides, cams for alternately reciprocating said slides and thereby so relating the needles that the same functionate, spur-gears secured to the axles of said cranks, and rack-gears adapted to alternately rotate said spur-gears at intervals, and when the slides are, respectively, retracted; substantially as described.

8. In a broom-sewing machine, the combination of two longitudinally-movable barbed needles geared to act alternately, one of such needles having its barb on the upper side thereof and the other having its barb on the under side thereof, in the longitudinal movements thereof, respectively, the point of both needles beveled backward from the edge thereof on which the barb is made, with mechanism for alternately driving the needles longitudinally, and means for moving each of the needles, when retracted, around the barb of the other needle when such other needle is advanced; substantially as described.

9. In a broom-sewing machine, the combination of two longitudinally movable barbed needles, one of such needles having the barb on the upper side thereof in its longitudinal movement, and the other having its barb on the under side thereof in its longitudinal movement, with two arms moving around separate shafts and passing by the respective needles in opposite directions, one of such arms taking the thread from one of the barbs and the other taking the thread from the other barb, and mechanism for driving the needles and the rotating arms; substantially as described.

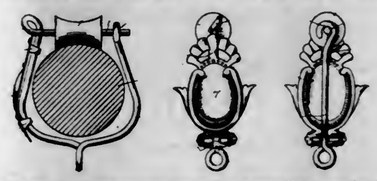
10. In a broom-sewing machine, the combination of two longitudinally-movable barbed needles geared to act alternately, with two arms moving around separate shafts and passing by the respective needles in opposite directions, such arms geared so that one thereof passes by and takes the thread from one of the needle-barbs, and the other passing by the other needle in the opposite direction takes the thread from the barb thereof, and mechanism for driving the needles and the rotating arms; substantially as described.

11. In a broom press, a post, shafts rotatably mounted in the post near the upper end thereof, jaws loosely mounted on the shafts, respectively, gear-teeth on the lower end of the jaws concentric with the shafts, respectively, such gear-teeth intermeshing, eccentrics secured on one of the shafts, links loosely mounted on the shafts with the eccentrics in one end of the links, and a lever secured to one of the shafts; substantially as described.

12. In a broom-sewing machine, the combination with a broom-press of two alternately-reciprocating needles geared to engage with a single thread, each needle attached at one end thereof to a crank, means for longitudinally reciprocating the needles, and mechanism for alternately operating said crank at intervals.

13. In a broom-sewing machine, the combination of two alternately reciprocally moving needles, mechanism for moving the needles when retracted, respectively, around the longitudinal path thereof, and two rotating arms arranged, respectively, to rotate in planes parallel with the plane in which the needles move, respectively, longitudinally, and thereby to remove from the broom the free or unused end of the thread.

572,616. DEVICE FOR SUSPENDING CURTAINS. JOHN PURSELL, New Haven, Conn. Filed May 19, 1896. Serial No. 592,201. (No model.)



Claim.—1. A removable device for suspending curtains formed from a single piece of wire and provided with a loop to receive a curtain-pole, a horizontal bar which carries a roller to engage a pole and an eye which is engaged by the bar to retain the device in place on the pole.

2. A removable device for suspending curtains formed from a single piece of wire and consisting of a loop to receive a curtain-pole, a horizontal bar which carries a roller to engage the pole, a coil at the intersection of the bar with the loop and an eye which is engaged by the bar as and for the purpose set forth.

572,617. RECEPTACLE FOR PASTE. AUGUST N. RITZ, Milwaukee, Wis. Filed Oct. 28, 1895. Serial No. 567,086. (No model.)



Claim.—1. A receptacle having a nozzle, and a section of rubber tubing, primarily uniform as to diameter, in stretch on the nozzle to constitute a spreader for material ejected from the receptacle.

2. A receptacle having a nozzle provided with a flanged stem extension, and a section of rubber tubing, primarily uniform as to diameter in stretch on said stem extension of the nozzle.

3. A receptacle having a nozzle, a section of rubber tubing, primarily uniform as to diameter, in stretch on the nozzle, and a nozzle-cap provided with a sealing-plug that comes within the spreader when said cap is positioned.

4. A squeeze-tube having its nozzle provided with a stem extended beyond the thread for the usual screw-cap, and a section of rubber tubing, primarily uniform as to diameter, in stretch on the stem.

5. A squeeze-tube having its nozzle provided with a flanged stem extended beyond the thread for the usual screw-cap, and a section of rubber tubing, primarily uniform as to diameter, in stretch on the stem.

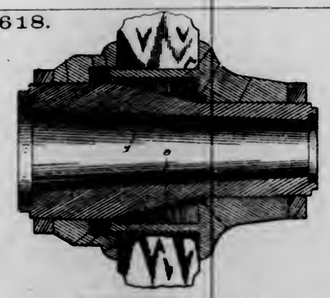
6. A squeeze-tube having a section of rubber tubing maintained on its nozzle to constitute a spreader for ejected material, and the nozzle-cap provided with a sealing-plug that comes within the spreader when said cap is positioned.

7. A squeeze-tube having a taper-mouth nozzle, a section of rubber tubing maintained on the nozzle to constitute a spreader for ejected material, and the nozzle cap provided with a conical sealing-plug that comes within the spreader when said cap is positioned.

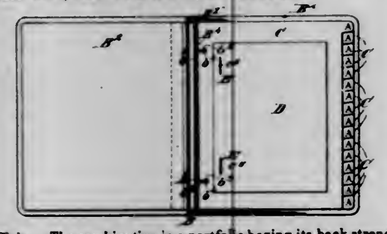
572,618. WHEEL-HUB. GUY SHERMAN, Lawrence, Kans. Filed June 25, 1896. Serial No. 596,965. (No model.)

Claim.—An axle-box threaded at each end and having intermediate its ends, a conicocylindrical seat and also provided at each side of said seat with cylindrical portions of different diameters, in combination with a slide-collar surrounding the smaller cylindrical portion of the box at one side of the seat and provided with longitudinally-extending webs the extremities of which bear upon the larger cylindrical portion of the box, an opposing slide-collar surrounding the larger cylindrical portion of the box and embracing the extremities of the webs, and nuts on the ends of the axle-box, substantially as and for the purpose described.

572,618.

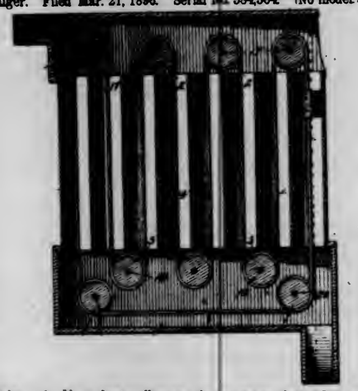


572,619. PAPER-FILE. ALBERT B. SKINNER, St. Louis, Mo. Filed Mar. 6, 1895. Serial No. 540,743. (No model.)



Claim.—The combination in a portfolio having its back strengthened by the stiffening-piece B', of a pair of clips B^4 B^4, arranged within the portfolio, one between the middle and the top of the back, and the other between the middle and the bottom, and each being composed of a base *b*, having rigidly attached thereto the arm b^2 having a hook b^4, and a spring-pin b^3, said arm and pin being in one piece, and the said clips being attached in place by fastening their respective bases to said stiffening-piece transversely; and two or more sheets C C, each formed of a strip *c*, and a part *c'*, of stiff paper, connected together by means of a piece of fabric c^2, and each strip *c* having two clip-holes therein, guarded by eyelets, and each part *c'* having two fastener-holes through it, guarded by eyelets, and the sheets C being held in place by the spring-pins b^2 b^3, passing through their clip-holes, substantially as described.

572,620. CLEANER FOR DUST-COLLECTORS. JOHN F. STAIGER and GUS W. GRABERT, Mount Vernon, Ind.; said Grabert assignor to said Staiger. Filed Mar. 21, 1896. Serial No. 584,304. (No model.)



Claim.—1. In a dust-collector, the combination of a series of tubes and a cleaner comprising a traveling belt passing alternately in opposite directions through the series of tubes, and having its lower or return portion in a lower plane than the lower ends of its folded portions, and a brush applied to the said belt and movable therewith through the series of tubes, substantially as and for the purpose set forth.

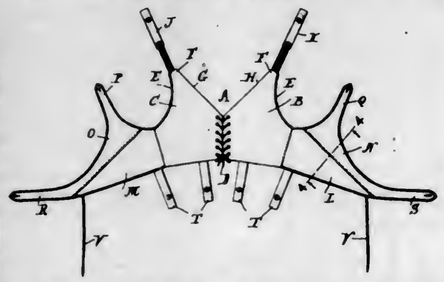
2. In a dust-collector, the combination of a series of tubes, pulleys arranged at opposite ends of and between adjacent tubes, the extreme lower pulleys being in a lower plane than the intermediate pulleys at the lower ends of the tubes, a belt passing over and supported by the said pulleys and adapted to travel alternately in opposite directions through the series of tubes, the lower or return portion of the belt being straight and supported below the intermediate pulleys by the said extreme lower pulleys, and a brush applied to and movable with the belt, substantially in the manner and for the purpose specified.

3. In a tubular dust-collector, the combination of a pulley arranged opposite and between the adjacent ends of contiguous tubes, a belt passing through the tubes and over the pulley, and a brush applied to the belt and divided centrally so as to pass by and clear the pulley, substantially as set forth.

4. In a dust-collector for mills, the combination of a pulley arranged opposite and between the ends of adjacent tubes, a belt passing through the said tubes and over the pulley, and a brush comprising two heads spaced apart and connected at an intermediate point to the said belt, substantially in the manner set forth for the purpose described.

5. In a dust-collector for mills, the combination of two sets of pulleys set staggering and arranged opposite the ends of adjacent tubes, the terminal pulleys at one end of the collector being arranged out of line with the pulleys at the same end of the collector to support the return portion of the belt, an endless belt supported by the said pulleys and passing alternately through the series of tubes, and a divided brush applied to the belt and movable therewith through the series of tubes, and adapted to clear the said pulleys, substantially in the manner specified.

572,621. BUST-GIRDLE. LOUISE G. STITT, Chicago, Ill. Filed Apr. 1, 1896. Serial No. 585,750. (No model.)



Claim.—1. A bust-girdle, comprising a body portion, having shoulder-straps formed thereon, adapted to be passed over the shoulders, said body portion also having end pieces formed thereon, arranged to cross each other in front of the body and adapted to be respectively secured to said shoulder-straps; as and for the purpose set forth.

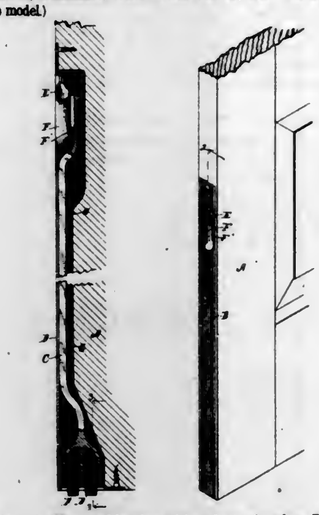
2. A bust-girdle comprising a body portion having shoulder-straps secured thereto, end pieces also formed on said body part and respectively arranged to be passed from one side of the wearer across the front of the body and to be secured to the shoulder-strap on the opposite side, and means for detachably fastening the end pieces together at the point where they cross each other; as and for the purpose set forth.

3. A bust-girdle, comprising the body part having shoulder-straps secured thereto, adapted to be passed over the shoulder of the wearer, arm-straps, also secured to said body part and arranged to be passed underneath the arms and to be secured to said shoulder-straps, said body part also provided with end portions arranged to be passed from one side of the wearer across and in front of the body and to be attached to the shoulder-strap on the opposite side; as and for the purpose set forth.

4. A bust-girdle, comprising a body portion, composed of two parts, each part provided with a shoulder-strap, an arm-strap and an end portion, means for adjustably attaching the two parts of said body portion together, said arm-straps arranged to be passed under the arm and to be attached to the shoulder-strap on the same part of the body portion, and each end portion arranged to be passed across the front of the body of the wearer and attached to the shoulder-strap on the opposite body portion; as and for the purpose set forth.

5. A bust-girdle comprising a body portion having shoulder-straps and side portions, each side portion composed of two parts attached together at their meeting edges, said meeting edges being convex with respect to each other, thereby forming a bulge, and straps or end pieces formed on the outer of said side portions and adapted to be passed across the front of the body of the wearer and attached to the shoulder-strap on the opposite side; as and for the purpose set forth.

572,622. DOOR STOP OR HOLDER. PETER WESTRA and SIKKE WESTRA, Kalamazoo, Mich. Filed Oct. 29, 1895. Serial No. 567,268. (No model.)



Claim.—1. The combination with a door of a plate B, extending down around the bottom of the outside corner and under the same with an opening therethrough under the door and a depression F, on the outer edge of the door with a slot F', therein; a vertical rod C, carried in suitable guides inside of said plate B; a thumb-screw E, projecting through the slot F', into the rod C, for adjusting the same; and eccentric rollers D, D, within the opening of the bottom plate B, concealed by the door on a pivot at the lower end of the rod C, extending in the direction of the door all coacting together substantially as described for the purpose specified.

2. The combination with a door of a plate extending around the lower corner of the same with an opening to the under side of the door a vertical rod or bolt adjustable within said plate and an eccentric roller within the opening of the plate concealed by said door and a pivot on the bottom of said bolt extending in the direction of the door to carry said roller as specified.

572,623. INKSTAND. WILLIE A. WILKINS, Travis, Tex. Filed Aug. 10, 1896. Serial No. 602,334. (No model.)



Claim.—1. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by said operating-plate, a cover for the ink-well, and means actuated by the operating-plate whereby the cover normally remains on the ink-well, but is raised therefrom when the plate is depressed.

2. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by said operating-plate, a cover for the ink-well, an arm pivotally connecting the cover with the operating-plate, and a connection between the arm and the base.

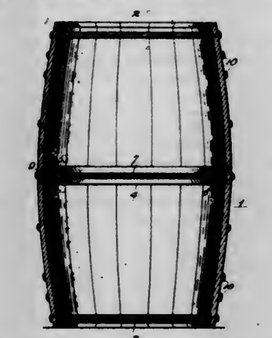
3. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by the operating-plate, an arm pivoted to the operating-plate a connection between the arm and the base, and a cover for the ink-well which is pivoted to the arm in such manner that its normal tendency is to assume a vertical position.

4. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by the operating-plate, an arm pivoted to the operating-plate and provided with a fork, a connection between the arm and the base, and a cover for the ink-well which has trunnions that are pivoted in the members of the fork in such manner that the tendency of the cover is to assume a vertical position.

5. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by the operating-plate, an arm pivoted to the operating-plate an upright pivoted to the bracket and connected to the base, and a cover connected to the arm.

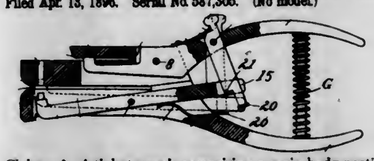
6. In an inkstand, the combination with a base, of an operating-plate pivoted thereto, an ink-well carried by the operating-plate, an arm pivoted to the operating-plate and provided with a fork, an upright pivoted to the arm and connected to the base, and a cover for the ink-well which is provided with trunnions that are journaled in the members of the fork and are so disposed in relation to the cover that the tendency of the latter is to assume a vertical position.

572,624. BARREL. JAMES L. ALLEN, Kansas City, Mo. Filed Dec. 26, 1895. Serial No. 573,320. (No model.)



Claim.—The combination with a barrel provided internally with a centrally-located annular groove, of a ring 4 of width to fit snugly within said groove, and having its inner sides converging inwardly, as shown at 5, and provided at the apex of said converging sides with an annular V-shaped groove 6, a head 7, fitting tightly in said groove so as to provide a central partition for the barrel, and a gasket 9, fitting in an external annular groove of the ring 4, and also fitting in the annular groove of the barrel, substantially as shown and described.

572,625. TICKET-PUNCH. FREDERICK P. BECKER, Chicago, Ill. Filed Apr. 13, 1896. Serial No. 587,305. (No model.)



Claim.—1. A ticket-punch comprising a main body portion provided with slots to receive the tickets to be punched, and also with female dies in combination with an arm pivoted in said body portion and provided with a male die, and one or more die-levers also pivoted in said main body portion and provided with male dies and means whereby, when said pivoted die-arm is actuated said die-levers are also actuated, as and for the purpose set forth.

2. In a ticket-punch, a main body portion provided with female dies, the die-arm pivoted therein and provided with a male die, the die levers also pivoted in said main body portion, and connections between said die-arm and each of said die-levers whereby when said die-arm is actuated said die-levers are also actuated, as and for the purpose set forth.

3. In a ticket-punch, a main body portion provided with female dies, a die-arm pivotally mounted in said main body portion and provided with a male die, one or more die-levers pivotally mounted in said main body portion and detachable connections between each of said die-levers and said die-arm whereby when said die-arm is actuated said die-levers may or may not be actuated, as and for the purpose set forth.

4. In a ticket-punch, a main body portion provided with a handle part and also provided with ticket-slots and female dies, a die-arm pivotally mounted in said body part and provided with a cooperating handle part, means normally acting to separate said handle part; said die-arm also provided with a male die, one or more die-levers provided with a male die and connections between said die-arm and said die-levers for actuating the same simultaneously, as and for the purpose set forth.

5. In a ticket-punch, a main body part provided with ticket-slots and female dies in combination with a die-arm pivotally mounted therein and provided with a male die, one or more die-levers also mounted in said main body part and provided with male dies, swinging arms corresponding in number to the number of die-levers pivotally mounted in said die-arm, each of said die-levers constructed to

receive a swinging arm whereby when said die-arm is actuated said die-levers are also actuated, as and for the purpose set forth.

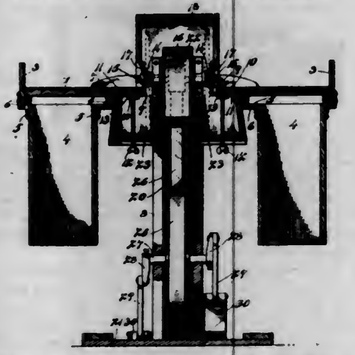
6. In a ticket-punch, a main body part provided with a plurality of ticket-slots and female dies, a die-arm pivotally mounted in said body part and provided with a male die, a swinging arm pivotally mounted in said die-arm, a die-lever pivotally mounted in said main body part and provided with a male die, said die-lever being slotted at the end thereof to receive said swinging arm and means whereby said swinging arm may be held in or out of engagement as may be desired with the slot in said die-lever, as and for the purpose set forth.

7. In a ticket-punch, a main body part provided with a plurality of ticket-slots and female dies, a die-arm pivotally mounted in said main body part and provided with a male die, a swinging arm pivotally mounted in said die-arm and provided with shoulders inclined with respect to each other, a die-lever provided with a male die and pivotally mounted in said main body part, said die-lever provided with an open-ended slot adapted to receive said swinging arm, and means for engaging one or the other of said inclined shoulders to maintain said swinging arm in or out of engagement with the slot in said die-lever, as and for the purpose set forth.

8. In a ticket-punch, a main body part provided with a ticket-slot and a plurality of female dies, a die-arm pivotally mounted thereon and provided with a male die, a swinging arm pivotally mounted in said die-arm and provided with shoulders inclined with respect to each other, a die-lever pivotally mounted in said body part and provided with a male die and slotted to receive said swinging arm, and a spring arranged to engage one or the other of said inclined shoulders, whereby said swinging arm is maintained in or out of engagement with said die-lever, as and for the purpose set forth.

9. In a ticket-punch, a main body part provided with ticket-slots and female dies, a die-arm pivotally mounted thereon and provided with a male die, a plurality of die-levers pivotally mounted in such main body part and each provided with a male die, a plurality of swinging arms pivotally mounted in said die-arm, each of said die-levers provided with an open-ended slot adapted to receive a swinging arm, each swinging arm provided with shoulders adapted to engage the edges of its corresponding die-lever, as and for the purpose set forth.

572,626. FISH-CUTTING MACHINE. ELMER I. BELL, Whiting, Me. Filed Aug. 3, 1896. Serial No. 602,164. (No model.)



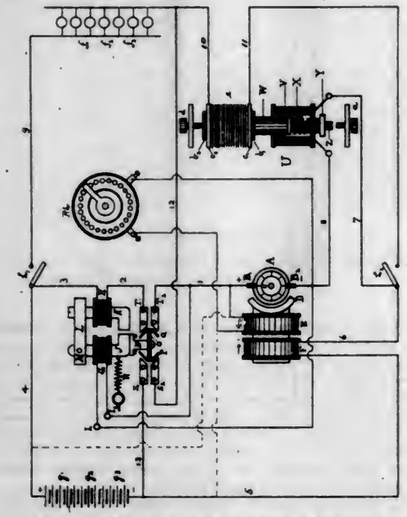
Claim.—1. A fish-cutting apparatus having a cutting-table, a stationary knife, a vertically-yielding hood arranged at one edge contiguous to and in the plane of said stationary knife, a movable knife for coöperation with the stationary knife, and means for operating the movable knife, substantially as specified.

2. A fish-cutting apparatus having opposite cutting-tables and an intermediate opening, a vertically-movable hood arranged over said opening, oppositely-located upper and lower knives carried respectively by the hood and the tables contiguous to said opening, movable knives for cooperation with said stationary knives, and means for operating the movable knives, substantially as specified.

3. A fish-cutting apparatus having cutting-tables arranged upon opposite sides of an intermediate opening communicating with a waste-chute, a vertically-yielding hood arranged over said opening, stationary knives carried respectively by the hood and the inner edges of the tables, the upper knives which are carried by the hood being yieldingly held in their operative positions, rotary armed knives for cooperating with the stationary knives, and means for communicating motion to the rotary knives, substantially as specified.

4. A fish-cutting apparatus having horizontal cutting-tables provided with outer side guards and an intermediate opening communicating with a waste-chute, stationary knives arranged upon the tables at their inner edges, means for adjusting said knives laterally, contiguous parallel guards, rotary armed knives for coöperating with the stationary knives and adapted to pass between the same and said parallel guards, fish-receptacles mounted to slide under the tables and adapted to project at their front sides beyond the front edges of the tables, side guide-chutes arranged contiguous to the front edges of the tables, and means for operating the rotary knives, substantially as specified.

572,627. SYSTEM OF AUTOMATIC ELECTRIC REGULATION. WILLIAM L. BLISS, Brooklyn, N. Y. Filed May 6, 1896. Serial No. 590,431. (No model.)



Claim.—1. The herein-described method of automatically maintaining constant the electromotive force on the translating devices in a working circuit supplied by a storage battery, and of controlling the current and electromotive force of the dynamo which charges said storage battery, consisting in demagnetizing the field of said dynamo by the charging-current as the speed of said dynamo increases, and in increasing the resistance in said working circuit as the electromotive force of said dynamo increases with increasing speed.

2. The herein-described method of automatically maintaining constant the electromotive force on the translating devices in a working circuit supplied by a storage battery and of controlling the current and electromotive force of the dynamo which charges said storage battery, consisting in strengthening the field of said dynamo by the discharge-current which said storage battery delivers to said working circuit to aid said dynamo and to increase the electromotive force of the same when said dynamo runs at a speed too low to enable the same to operate said translating devices in said working circuit, and in decreasing the resistance in said working circuit as the electromotive force of said dynamo decreases with decreasing speed.

3. The herein-described method of automatically maintaining constant the electromotive force on the translating devices in a working circuit supplied by a storage battery, and of controlling the current and electromotive force of the dynamo which charges said storage battery, consisting in strengthening the field of said dynamo by the discharge-current which said storage battery delivers to said working circuit to aid said dynamo and to increase the electromotive force of the same when said dynamo runs at a speed too low to enable the same to operate said translating devices in said working circuit, in decreasing the resistance in said working circuit as the electromotive force of said dynamo decreases with decreasing speed, and in establishing a direct connection between said storage battery and said working circuit by short-circuiting all apparatus through which the discharge-current from said storage battery to said working circuit would otherwise have to pass whenever said dynamo is disconnected from said storage battery and said working circuit.

4. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo charges said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo which furnishes the normal excitation for and determines the polarity of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit and an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, substantially as described.

5. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo charges said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo which furnishes the normal excitation for and determines the polarity of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit and an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, substantially as described.

6. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo which furnishes the normal excitation for and determines the polarity of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit, an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, and an automatic electromagnetic circuit-breaker which controls the connection between said dynamo and said storage battery and working circuit having one coil connected as a shunt to the armature of said dynamo and the other coil connected in series with said armature of said dynamo substantially as described.

7. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo which furnishes the normal excitation for and determines the polarity of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit, an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, an automatic electromagnetic circuit-breaker which controls the connection between said dynamo and said storage battery and working circuit having one coil connected as a shunt to the armature of said dynamo and the other coil connected in series with said armature of said dynamo, and an automatic electromagnetic switch which removes a short circuit from said coarse-wire coil and said variable resistance immediately after said circuit-breaker closes and connects said armature of said dynamo with said storage battery and working circuit and which switch replaces a short circuit on said variable resistance and said coarse-wire coil just before said circuit-breaker opens substantially as described.

8. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field coil on said dynamo connected as a shunt to said storage battery said fine-wire coil in this manner furnishing an approximately constant and separate excitation of the field of said dynamo, and a working circuit containing translating devices connected as a shunt to the armature of said dynamo substantially as described.

9. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo connected as a shunt to said storage battery said fine-wire coil in this manner furnishing an approximately constant and separate excitation of the field of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, and a variable resistance in series with the translating devices in said working circuit said variable resistance being so arranged and so controlled that a constant electromotive force is maintained on the translating devices in said working circuit independently of the variations in the electromotive force of the armature of said dynamo substantially as described.

10. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo connected as a shunt to said storage battery said fine-wire coil in this manner furnishing an approximately constant and separate excitation of the field of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit, and an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant substantially as described.

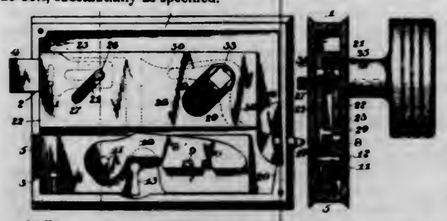
11. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo is charging said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo connected as a shunt to said storage battery said fine wire coil in this manner furnishing an approximately constant and separate excitation of the field of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit, an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, and an electromagnetic circuit-breaker which controls the connection between said dynamo and storage battery and working circuit having one coil connected as a shunt to the armature of said dynamo and the other coil connected in series with said armature of said dynamo substantially as described.

12. The combination in a system of electric lighting of a dynamo, a storage battery, a coarse-wire field-coil on said dynamo connected in series with said storage battery and the armature of said dynamo in such a manner that when said dynamo charges said storage battery the current flowing through said coarse-wire coil tends to demagnetize the field of said dynamo, a fine-wire field-coil on said dynamo connected as a shunt to said storage battery said fine-wire coil in this manner furnishing an approximately constant and separate excitation of the field of said dynamo, a working circuit containing translating devices connected as a shunt to the armature of said dynamo, a variable resistance in series with the translating devices in said working circuit, an electromagnet responsive to the variations in the electromotive force of said dynamo said electromagnet controlling said variable resistance in such a manner that the electromotive force on the translating devices in said working circuit will remain constant, an automatic electromagnetic circuit-breaker which controls the connection between said dynamo and said storage battery and working circuit having one coil connected as a shunt to the armature of said dynamo and the other coil connected in series with said armature of said dynamo, and an automatic electromagnetic switch which removes a short circuit from said coarse-wire coil and said variable resistance immediately after said circuit-breaker closes and connects said armature of said dynamo with said storage battery and working circuit and which switch replaces a short circuit on said variable resistance and said coarse-wire coil just before said circuit-breaker opens substantially as described.

572,628. GRAVITY-LOCK. GEORGE R. BROBECK and LEE D. LEWIS, Tulso, Ind. Ter. Filed Feb. 20, 1896. Serial No. 580,056. (No model.)

Claim.—1. The combination with a casing, of a latch-bolt mounted for longitudinal sliding movement, an operating-weight mounted to slide obliquely with relation to the bolt and having a pin operating in a transverse slot in the bolt, whereby downward movement of the weight causes the extension of the bolt, and means, adapted to be

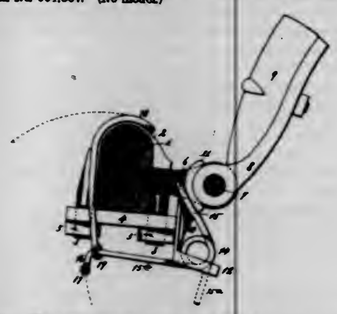
manually operated, for elevating the weight and thereby retracting the bolt, substantially as specified.



2. The combination with a casing, of a latch bolt mounted to slide longitudinally, a weight provided with parallel-spaced cheeks between which the inner extremity of said bolt is arranged, a pin carried by the weight to engage a transverse slot in the bolt, and means for imparting upward and rearward movement in an inclined direction to the weight to retract the bolt, substantially as specified.

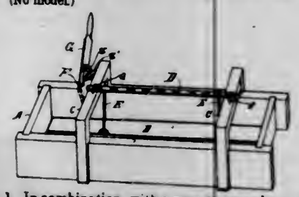
3. The combination with a casing, of a weight mounted for upwardly and rearwardly inclined movement, a guide-pin fixed to the casing being arranged to project through an upwardly and rearwardly inclined slot in said weight, and the weight being centrally cut away or recessed to form opposite parallel cheeks, a bolt having a reduced web or tongue arranged between said cheeks of the weight and slotted longitudinally to receive said guide-pin, a second pin carried by the weight and fitting in a transverse slot in the web or tongue of the bolt, and means for communicating upward and rearward movement to the weight to retract the bolt, substantially as specified.

572,629. ANTIRATTLER ATTACHMENT FOR THILL-COUPLINGS. WILLIAM H. BROCKSMITH, Carrollton, Mo. Filed Aug. 5, 1896. Serial No. 601,807. (No model.)



Claim.—The combination with a thill-coupling, of an antirattler attachment, consisting of a plate bearing against the front side of the clip member, and provided with forwardly-projecting hook-arms 12, at its lower end, and a segmental shoe extension engaging the socket member, a spring comprising two hinge-coils 14, which rest against said plate and are embraced at their outer sides by the hook-arms 12, a loop pressing forwardly against the shoe extension of the plate, and a loop below the hinge-coils, and a bail, pivotally connected to said last-mentioned loop, and bent to hook form at its opposite end to fit over and engage the rounded top portion of the clip, substantially as described.

572,630. WAGON-DUMP. JOHN B. COURTNER, Coopersville, and ALBERT R. COURTNER, Fruitport, Mich. Filed Feb. 27, 1896. Serial No. 581,032. (No model.)

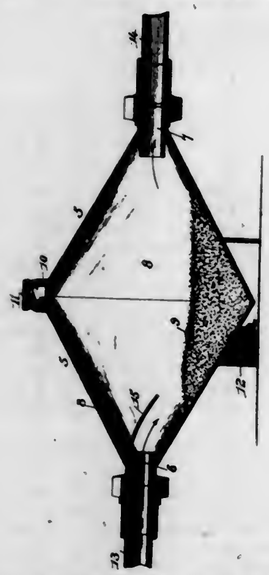


Claim.—1. In combination, with a wagon or car box, a loose bottom in longitudinal sections resting on the bunks that support the box, and a shaft and cords for raising the center edges of said sections to dump the load, a ratchet-wheel secured near the end of said shaft and a lever pivoted upon the shaft and provided with a pawl with which to turn the shaft, substantially as set forth.

2. The combination with a wagon or car box, of a detached bottom made in longitudinal sections, a shaft and cords for dumping said bottoms, and a lever and ratchet for operating said shaft, with bunks arranged to be adjusted in opposite directions across the box to bring the bearing of the bottom sections in position to facilitate the dumping thereof, and a gear-wheel and levers for adjusting the same, substantially as specified.

3. The combination with a wagon or car box of a detached bottom made in longitudinal sections hinged together in the center, and a shaft and lever for operating the same, with adjustable bunks arranged to lengthen and shorten, rollers for supporting the bottom on the bunks, and the adjustable bunks on the stationary bunks, substantially as set forth.

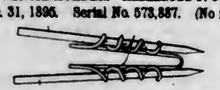
572,631. BEER-PUMP CLEANER. JOHN J. GEIGER, Clyde, Ohio. Filed Feb. 5, 1896. Serial No. 578,161. (No model.)



Claim.—1. A device for cleansing apparatus for dispensing malt beverages, the same comprising a vessel or receptacle having oppositely-flaring walls forming a depressed chamber between its ends to receive the cleaning agent, nozzles at the extremities of the vessel having their inner ends in horizontal alinement and in a plane above the said chamber, a strip attached to the inner end of the ingress-nozzle above the opening therein and extending into the vessel, and inclining across the path of the stream of water escaping from the nozzle to turn the water out of its natural course and into the aforesaid chamber, and means for connecting the ingress-nozzle to a water-fixture and the egress-nozzle to the dispensing apparatus to be cleansed, substantially as specified.

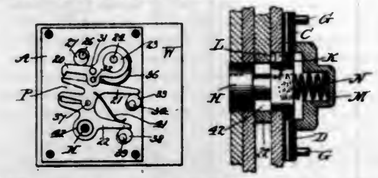
2. A device for cleansing apparatus for dispensing malt beverages, the same comprising a vessel gradually flaring from its ends toward an intermediate point, presenting the appearance of two funnels united at their bases or enlarged ends, and having an opening in its side for the admission of a cleaning agent, nozzles at the ends of the vessel and extending into the latter a short distance, a deflector applied to the inner end of the ingress-nozzle and means for connecting the nozzles with a water-fixture and the apparatus to be cleansed, substantially as described.

572,632. PENCIL-HOLDER. ALEXANDER P. GILLESPIE, Pittsburg, Pa. Filed Dec. 31, 1895. Serial No. 573,857. (No model.)



Claim.—As a new article of manufacture, a pencil-holder consisting of a piece of spring-wire centrally bent to form a loop A, whose separate legs or sides are bent back on each other and twisted into spiral coils parallel with and close to the said legs, substantially as shown and described.

572,633. LOCK. ELISHA GRAY, Highland Park, Ill. Filed Nov. 8, 1895. Serial No. 568,263. (No model.)



Claim.—1. In a lock, a bolt, means for operating the same, and means for locking or releasing said bolt-operating means comprising a lever, and an eccentrically-mounted disk, said disk being arranged to constantly bear against said lever and adapted, when moved, to vary the position of said lever; as and for the purpose set forth.

2. In a lock, a bolt, means for operating the same, and means for locking or releasing said bolt-operating means, and an eccentrically-mounted rotary disk arranged to constantly bear against said locking and releasing means, and adapted when rotated to vary the position thereof; as and for the purpose set forth.

3. In a lock, a bolt, means for operating the same, a lever arranged to lock or release said bolt-operating means, and independently-mounted eccentrics arranged to act at different points on said lever, as and for the purpose set forth.

4. In a lock, a bolt, means for operating the same, a lever arranged to lock or release said bolt-operating means, independently-mounted eccentrics arranged to act on said lever, and means for constantly maintaining said lever in engagement with said eccentrics, as and for the purpose set forth.

5. In a lock, a bolt, means for operating the same, a compound lever, arranged to lock or release said bolt-operating means and an eccentric arranged to vary the position of said compound lever whereby it is moved into locking or releasing positions, as and for the purpose set forth.

6. In a lock, a bolt, means for operating the same, a compound lever, arranged to lock or release said bolt-operating means and eccentrics arranged to act upon said lever at different points to move the same into locking or releasing position, as and for the purpose set forth.

7. In a lock, a bolt, means for operating the same, a compound lever arranged to lock or release said bolt-operating means, eccentrics arranged to act upon said lever at different points to move the same into locking or releasing position and means for maintaining said lever in engagement with said eccentrics as and for the purpose set forth.

8. In a lock, a bolt, means for operating the same, a compound lever arranged to lock or release said bolt-operating means, eccentrics arranged to act upon said lever at different points to move the same into locking or releasing position and springs arranged to yieldingly maintain said lever in engagement with said eccentrics, as and for the purpose set forth.

9. In a lock, a bolt, means for operating the same, means for locking or releasing said bolt-operating means, an eccentrically-mounted disk arranged to constantly bear against, and when rotated, to move said locking or releasing means into or out of locking or releasing position, and means carried by said disk for indicating the releasing position of said locking and releasing means; as and for the purpose set forth.

10. In a lock, a bolt, means for operating the same, a lever arranged to lock or release said bolt-operating means, an eccentrically-mounted disk arranged to peripherally engage said lever, and adapted to move the same into and out of locking or releasing positions, and means carried by said disk for indicating the releasing position of said lever; as and for the purpose set forth.

11. In a lock, a bolt, means for operating the same, a compound lever, arranged to lock or release said bolt-operating means, an eccentric arranged to move said lever into or out of locking or releasing positions, and means for indicating the position of said eccentric corresponding to the releasing position of said lever, as and for the purpose set forth.

12. In a lock, a bolt, a plunger adapted to operate said bolt, a perforated lever through which said plunger is arranged to pass and means for moving said lever whereby said perforation is brought into or out of register with said plunger, as and for the purpose set forth.

13. In a lock, a bolt, a rotatable plunger arranged to operate said bolt, means for holding said plunger out of operative position comprising a lever, and an eccentric for varying the position of said lever, as and for the purpose set forth.

14. In a lock, a bolt, a plunger for operating the same, a lever arranged to engage said plunger and maintain the same in position to hold said bolt in projected or locked position, and an eccentrically-mounted disk, arranged to control the positions of said lever; as and for the purpose set forth.

15. In a lock, a bolt, a plunger, for operating said bolt provided with a rib or projection, a spline-groove adapted to receive said rib or projection when said plunger is in position to project said bolt, and means normally tending to seat said projection, as and for the purpose set forth.

16. In a lock, a bolt, a plunger for operating the same provided with a rib or projection, a grooved seat adapted to receive said rib or projection when said plunger is moved endwise whereby said plunger is held against rotation, and means for locking said plunger against endwise movement, as and for the purpose set forth.
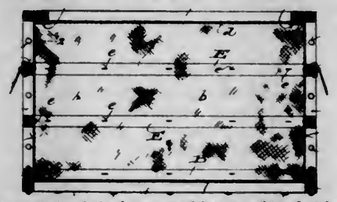
17. In a lock, a bolt, an operating-plunger therefor, means for holding said plunger in position to maintain said bolt projected, comprising a lever and an eccentric for varying the position of the same, as and for the purpose set forth.

18. In a lock, a bolt, a plunger actuated by the rotation thereof to project said bolt into locking position, said plunger being movable endwise into position to be rotated, means normally tending to hold said plunger out of rotative position, a lever arranged to lock said plunger against endwise movement, and means for varying the position of said lever; as and for the purpose set forth.

19. In a lock, a bolt, an endwise-movable plunger adapted to rotate to operate said lock, means for locking said plunger against rotation, a spring arranged to oppose the endwise movement of said plunger and normally holding said plunger out of rotative position and means for locking said plunger against endwise movement comprising a lever, and means for controlling the position of said lever, as and for the purpose set forth.

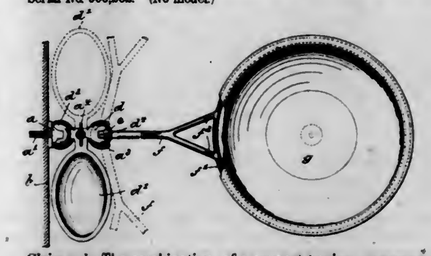
20. In a lock, a bolt, a plunger adapted to be moved endwise into and out of position to operate said bolt, a perforated compound lever, said plunger arranged to pass through said perforation and means for moving said compound lever whereby said perforation is brought into and out of position to permit the endwise movement of said plunger, as and for the purpose set forth.

572,634. DYER'S BASKET. CHARLES M. GREEN, Highland Park, Ill. Filed July 1, 1895. Serial No. 554,536. (No model.)



Claim.—A dyer's basket comprising a series of end, side and bottom sections, each consisting of a skeleton frame with an inner reticuled lining, and with said sections rigidly but detachably connected together, a series of supporting-plates and corner-braces secured within the upper part of said basket, wholly below the top edges of said end and side frames, and a top or cover section supported upon said plates within said upper part of the basket, wholly inside of, and just flush with, the tops of said frames, substantially as set forth.

572,635. COMBINED SOAP-CUP AND HOLDER FOR WASHBASINS. THEODORE S. HEINEKEN, Burlington, N. J. Filed Sept. 18, 1896. Serial No. 606,202. (No model.)

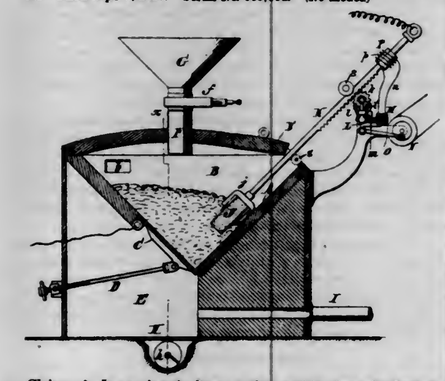


Claim.—1. The combination, of a support having a concave recess at its free end, a bracket carrying a soap-cup and adapted to be secured to said support, wings formed at right angles to said soap-cup, each of said wings being hollowed out to form, interchangeably with the recess of the support, a socket, an arm provided with a ball adapted to rotate horizontally and vertically in said socket, and

a hoop carried by said arm and adapted to support a washbasin, substantially as and for the purposes described.

2. The combination, of a support having a concave recess formed at one end, a forked lower portion adapted to fit over an upright, a clamp and bolt adapted to secure the fork of the support to the upright, a bracket carrying a soap-cup and adapted to be secured to said support, wings formed at right angles to said soap-cup, each of said wings being hollowed out to form interchangeably with the recess of the support a socket, an arm provided with a ball adapted to rotate horizontally and vertically in said socket, and a hoop carried by said arm and adapted to support a washbasin, substantially as and for the purposes described.

572,636. ELECTRIC FURNACE. JAMES E. HEWES, Philadelphia, Pa. Filed Sept. 8, 1896. Serial No. 605,061. (No model.)



Claim.—1. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, and electric circuits for supplying current to the movable and stationary electrodes.

2. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, a gas-escape flue or chimney opening from the furnace-chamber to one side of the movable electrode, and electric circuits for supplying current to the movable and stationary electrodes.

3. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, means to feed the materials to be smelted into the furnace-chamber between the electrodes, and electric circuits for supplying current to the movable and stationary electrodes.

4. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, a gas-escape flue or chimney opening from the furnace-chamber to one side of the movable electrode, means to feed the materials to be smelted into the furnace-chamber between the electrodes, and electric circuits for supplying current to the movable and stationary electrodes.

5. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, and means to feed the movable electrode obliquely relatively to the stationary electrode.

6. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, means for locking the stationary electrode in a closed position, and electric circuits for supplying current to the movable and stationary electrodes.

7. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, means for locking the stationary electrode in a closed position, a closed receiving chamber into which the smelted materials are received, and electric circuits for supplying current to the movable and stationary electrodes.

8. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, means for locking the stationary electrode in a closed position, a closed receiving-chamber into which the smelted materials are received, a grate or screen for separating the solid smelted material from the dust, ash, &c., arranged in the lower part of the receiving-chamber, and electric circuits for supplying current to the movable and stationary electrodes.

9. In an electric furnace, the combination of a furnace chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary electrode arranged at an angle to the lower part of the hearth, means for locking the stationary electrode in a closed position, a closed receiving-chamber into which the smelted materials are received, a grate or screen for separating the solid smelted material from the dust, ash, &c., arranged in the lower part of the receiving-chamber, a conveyer below the screen or grate for removing the materials which pass through the grate or screen, and electric circuits for supplying current to the movable and stationary electrodes.

10. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, an electrode movable parallel and close to said hearth, a normally stationary hearth, means for locking the stationary electrode in a closed position, a closed receiving-chamber into which the smelted materials are received, a grate or screen for separating the solid smelted material from the dust, ash, &c., arranged in the lower part of the receiving-chamber, a conveyer below the screen or grate for removing the materials which pass through the grate or screen, an exhaust flue opening from the receiving chamber to draw off dust, and electric circuits for supplying current to the movable and stationary electrodes.

11. In an electric furnace, the combination of a furnace-chamber having an inclined hearth, a movable electrode movable parallel and close to the inclined hearth, a hinged electrode arranged at an angle to the lower part of the inclined hearth, means for supplying materials to be smelted to the furnace-chamber arranged above the extreme lower part of the inclined hearth, and a closed receiving-chamber inclosing the hinged electrode and adapted to receive the contents of the furnace-chamber when the hinged electrode is lowered or moved.

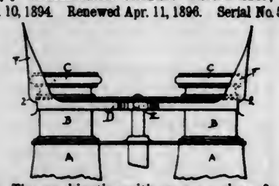
12. In an electric furnace, the combination of a furnace chamber having an inclined hearth, a movable electrode movable parallel and close to the inclined hearth, a hinged electrode arranged at an angle to the lower part of the inclined hearth, means for supplying materials to be smelted to the furnace-chamber arranged above the extreme lower part of the inclined hearth, a closed receiving-chamber inclosing the hinged electrode and adapted to receive the contents of the furnace-chamber when the hinged electrode is lowered or moved, and an exhaust-flue opening from the receiving-chamber to draw off the dust therefrom.

13. The method of producing calcium carbid which consists in subjecting an excess of lime and carbon over that required to produce the carbid to the action of an electric arc in a closed chamber, then discharging the carbid and associated carbon lime and half-fused substances into a closed chamber, and while in the disturbed condition produced thereby sucking off the fine dust and particles from the solid carbid.

14. The method of producing calcium carbid which consists in subjecting an excess of lime and carbon over that required to produce the carbid to the action of an electric arc in a closed chamber, then discharging the carbid and associated carbon lime and half-fused substances into a closed chamber, and while in the disturbed condition produced thereby sucking off the fine dust and particles from the solid carbid, then screening the associated matters from the solid carbid, and finally removing the cleansed carbid from the closed chamber.

15. In an electric furnace the combination of an electrode, a conductor through which the current is fed to the electrode, an iron tube encircling the conductor, a coil around the iron tube, a rotary feeding device for the electrode, ratchet-and-pawl devices for operating the rotary feeding devices, power devices for operating the pawls, and electromagnetic devices under the control of the current in the coil for throwing the pawls into or out of action.

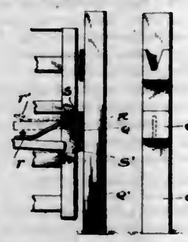
572,637. OPERA-GLASS SHIELD. SABINA HEYN, Omaha, Nebr. Filed Sept. 10, 1894. Renewed Apr. 11, 1896. Serial No. 587,234. (No model.)



Claim.—1. The combination with an opera-glass of a shield comprising a central spring-strap, said spring-strap terminating at each end in an outwardly-extending eye-shade formed to partly encompass the lens-holders of said opera-glass, all substantially as and for the purpose set forth.

2. The combination with an opera-glass of a shield comprising a spring-strap, D, having the central spring-bow, E, and terminating in outwardly-extending dished integral eye-shades, F, formed to partly encompass the lens-holders, B, of said opera-glass, said shield being removably held upon said opera-glass, all substantially as and for the purpose set forth.

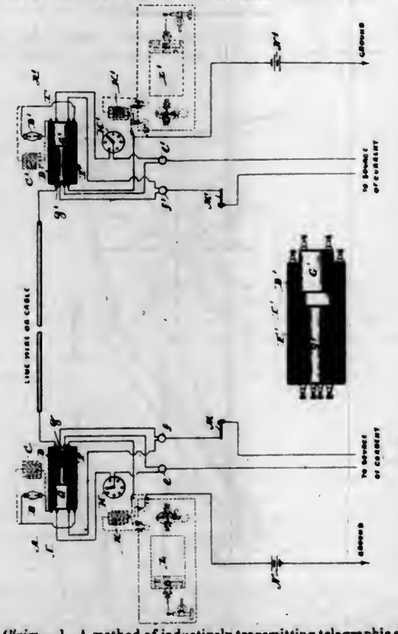
572,638. GATE-LATCH. HENRY HODEL, Congerville, Ill. Filed Aug. 6, 1896. Serial No. 601,913. (No model.)



Claim.—1. In combination with a tilting gate, a bar K mounted on a bracket journaled to the gate, means for rocking said bracket, and an angle-latch pivoted at the free end of the gate, the forward end of the said bar rocking the latch as the bar is raised, substantially as shown and described.

2. A latch for a tilting gate, consisting of the bracket H journaled in the gate-stripe, the rods G connecting the arms of the bracket, with operating-handles E, the bar K mounted on and turning with the said bracket, and the catch R pivoted to the free end of the gate and having one end looped and working over a pin on the end of the said bar, a hooked portion of the said catch being adapted to extend beyond the end of the gate, substantially as and for the purpose set forth.

572,639. TELEGRAPHY. ISIDOR KITSEE, Philadelphia, Pa. Filed Feb. 20, 1896. Serial No. 580,051. (No model.)



Claim.—1. A method of inductively transmitting telegraphic signals between two telegraphic stations joined by a single line-wire or cable which consists in setting up or establishing at one station two sets of rapidly recurring primary current impulses, the secondary inductive effect of which is nullified upon the home receiving instruments, while the secondary current impulses transmitted to the distant station are caused to set up or establish tertiary current impulses which act upon receiving instruments located at that station.

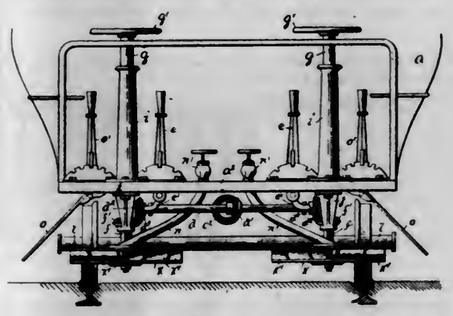
2. A method of simultaneously transmitting in opposite directions two sets of telegraphic signals over a single line-wire joining two stations, which consists in nullifying the secondary effects of two sets of rapidly-recurring primary current impulses established or set up at each transmitting-station upon the home receiving instruments, and in setting up or establishing over the line rapidly-recurring secondary current effects, which in turn are caused to set up or establish at the distant stations rapidly-recurring tertiary effects upon receiving instruments located at said stations.

3. In a system of telegraphy means for generating at independent stations rapidly-recurring electrical impulses; means at each of said stations for transmitting the impulses at will; additional means in the nature of independent induction-coils adapted to divide the transmitted currents into two paths; secondary induction-coils one at each station and both included in the main line; a tertiary coil at each station located in inductive relation to the aforesaid coils, in combination with a receiving instrument or instruments at each station included in circuit with the tertiary coil, substantially as described.

4. In a system of telegraphy means at independent stations for generating rapidly-recurring electrical impulses; signal-transmitting mechanism in circuit with said generating means; an induction system at each station comprising two primary coils connected in multiple with the current-generating mechanism, and a secondary coil at each station connected in circuit with a line-wire joining the stations, in combination with a tertiary coil at each station which surrounds all of the before-mentioned coils and includes in its circuit a signal-receiving instrument or instruments.

5. A system of telegraphy embracing a source of current supply at each station; a line-wire joining said stations; signal-transmitting devices in circuit with each source of current supply; two induction-coils at each station connected in multiple with a source of current supply; a secondary induction-coil at each station located in the inductive field of one of the aforesaid coils, in combination with a tertiary coil at each station which surrounds or incloses all of the before-mentioned coils and includes in its circuit a receiving instrument or instruments; the several coils at each station being provided with means for adjusting them in such manner that the home instruments will not be affected when the home key is actuated and will respond only for currents transmitted from the distant station, all substantially as described.

572,640. STREET-SPRINKLER. HENRY W. KNIGHT, Toledo, Ohio. Filed Apr. 1, 1895. Serial No. 543,986. (No model.)



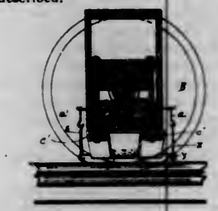
Claim.—A centrifugal water-sprayer comprising a vertical shaft, a horizontal disk rigid therewith, radial buckets arranged on the upper face thereof, a horizontal plate having an open center and resting on the buckets and the water-distributing chamber loose on the shaft in said open center and having the perforated bottom, substantially as described.

572,641. OIL-CATCHING DEVICE. JOHN H. KRIMER, Golden Rod, Pa. Filed Dec. 2, 1895. Serial No. 570,795. (No model.)

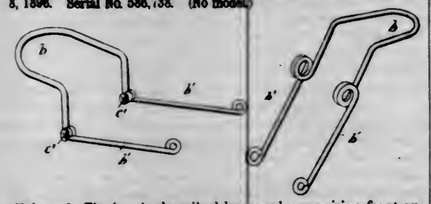
Claim.—1. A journal-box for cars, combined with a drip-pan E supported under the box, supports for the pan, the plate O, and the wires *d*, for supporting the plate under the rear end of the pan, so that the plate will steady the pan in position, all combined and arranged to operate, substantially as shown.

2. A journal-box for cars, bolts for securing the box in position, and the pan, suspended under the box for catching the waste oil, and having the recesses *b* in its sides to catch over the nuts, combined with the support for the pan, and a plate that is suspended upon the

rear end of the pan for the purpose of steadying the pan in position, substantially as described.



572,642. KNEE-PAD. JOHN E. R. LAIRD, Elgin, Tex. Filed Apr. 8, 1896. Serial No. 586,738. (No model.)



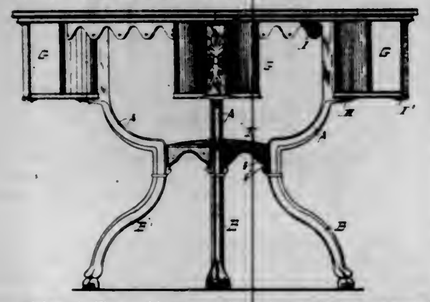
Claim.—1. The herein-described knee-pad comprising front approximately U-shaped clamp, the downwardly-depending arms therefrom, the longitudinal legs, the freely-movable connections uniting said clamp and legs, the fastening means attached thereto to fit a human limb, and an outer covering for the said clamp, arms, and legs, for the purpose set forth.

2. The combination with a knee-pad, of the front approximately U-shaped clamp, the downwardly-extending arms, the longitudinal legs extending therefrom, the connection between the arms and longitudinal legs to allow them to be freely movable, the fastening means therefor, the outer covering for said clamp and legs and the interior padding for the knee, as set forth.

3. A knee-pad consisting of an approximately U-shaped frame with downwardly-extending arms, the longitudinal legs secured thereto, a spring-hinge connecting said downwardly-exteuding arms and the longitudinal legs, the outer covering for said frame and the securing means attached to said frame and adapted to be fastened to or fit a human limb, for the purpose set forth.

4. A knee-pad comprising a frame consisting of an approximately U-shaped clamp having downwardly-exteuding arms and longitudinal legs hinged to said arms, and a covering for said frame, as described.

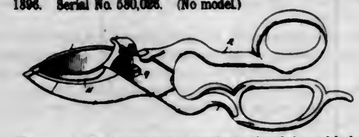
572,643. TABLE. ARTHUR LANGE, Milwaukee, Wis. Filed Feb. 29, 1896. Serial No. 581,280. (No model.)



Claim.—1. The combination of the table-top, the legs composed of detachable sections united in a vertically-extensible joint, the thumb-screw for locking said joint at any point of adjustment, and the platform located at the lower ends of the upper sections, and provided with downwardly-projecting flanges *f* adapted to fit into a socket *f'* in each of the legs whereby the latter are braced and securely bound together, substantially as described.

2. The combination of the table-top, the jointed metallic leg-sections A and B, one of said sections being provided with a socket C in its lower end and the other of said sections having a pin B' adapted to fit into said socket, a thumb-screw adapted to lock the respective sections together, a platform connecting the lower ends of the upper leg-sections and adapted to brace the same, and a box attached to each leg near its upper end and provided with a rounded rear corner *g*, substantially as described.

572,644. SHEARS. ADOLPH C. LEHR, Clyde, Ohio. Filed Feb. 20, 1896. Serial No. 580,026. (No model.)



Claim.—1. The combination with a pair of shear-blades pivotally connected and provided with handles as described, of a clutch pivotally connected to one of said blades at a point between its pivot and point, the said clutch being extended back of its pivot to form a handle which projects within reach of the operator's finger and is capable of moving independently of either shear-blade handle in both directions, whereby the blades may be partially opened before the clutch is released, substantially as described.

2. The combination with a pair of shear-blades pivotally connected and provided with handles as described, of a clutch pivotally connected to one of said blades at a point between its pivot and point, a handle extension on said clutch by means of which it may be operated independently of the shear-blade handles, and a lateral extension or stop-lip on said clutch located between the pivot of the shear-blades and their points and crossing the plane of the blade opposite that to which it is pivoted, the arrangement being such that a limited opening of the blades may be effected before the clutch is released, substantially as and for the purpose described.

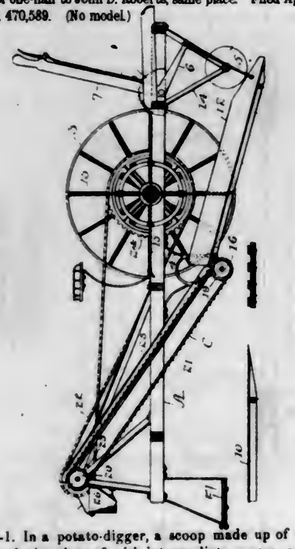
572,645. COMPOSITION OF MATTER. ST. VRAIN LE SIEUR, St. Louis, Mo., assignor of one half to CYTUS A. Peterson, same place. Filed Feb. 19, 1896. Serial No. 579,964. (No specimens.)

Claim.—1. A composition of matter comprising gilsonite, a bitumen melting at 300° Fahrenheit or more, carbonate of lime, and carbonate of magnesia, substantially as described.

2. A composition of matter comprising sand, asphalt, a residuum oil lighter than water, carbonate of lime, and a bituminous limestone containing substantially thirty per cent. of carbonate of magnesia substantially as described.

3. A composition of matter comprising sand, asphalt, petroleum residuum oil lighter than water, and a bituminous limestone composed substantially of one-third each of bitumen, carbonate of lime, and carbonate of magnesia.

572,646. POTATO-DIGGER. HENRY L. LONG, St. Paul, Minn., assignor of one-half to John D. Roberts, same place. Filed Apr. 17, 1893. Serial No. 470,589. (No model.)



Claim.—1. In a potato-digger, a scoop made up of angle-bars arranged lengthwise thereof with intermediate spaces, and having their forward ends chamfered to an edge, and a carrier leading from said scoop, made up of transverse angle-bars with intermediate spaces, substantially as described.

2. In a potato-digger, the scoop composed of longitudinal T-shaped bars with intermediate spaces, the forward ends of said bars being chamfered to form a cutting edge, substantially as described.

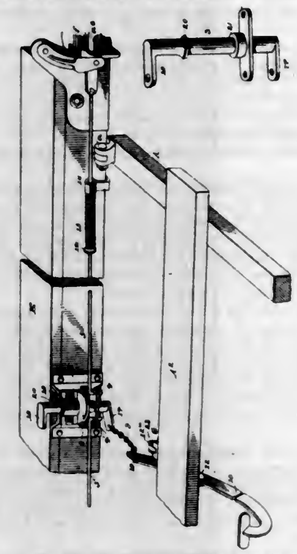
3. In a potato-digger, a scoop having longitudinal T-shaped bars with intermediate spaces, the ends of said bars being chamfered to a horizontal edge and the cleaning-forks working between said bars, substantially as described.

4. In a potato-digger, the scoop made up of longitudinal T-shaped bars with intermediate spaces, the ends of the bars being chamfered to form a cutting edge, means for adjusting the position of the forward end of the scoop, means for carrying the contents backward from said scoop, and an endless carrier to receive said contents, substantially as described.

5. In a potato-digger, the combination of the scoop made up of longitudinal T-shaped bars with intermediate spaces, and the endless carrier made up of transverse angle-bars with intermediate spaces, substantially as described.

6. In a potato-digger, the combination with a vehicle, of the scoop hung underneath the axle and composed of longitudinal T-bars with intermediate spaces having their forward ends chamfered to a cutting edge, means for adjusting at will the height of the forward end of the scoop, the wheel-colters adjacent to the forward end of the scoop, the cleaning-forks rotating between the bars and adapted to force the contents backward, the endless carrier made up of transverse angle-bars, the chute and the interposed tines, substantially as described.

572,647. HORSE HAY-RAKE. CHARLES H. MASON, Shortsville, N. Y., assignor to the Empire Drill Company, of New York. Filed June 24, 1896. Serial No. 596,723. (No model.)



Claim.—1. The combination with the dumping hay-rake having clutches for connecting its rocking head with the ground-wheels, of the box or bearing having a cap or cover provided with a horizontal flange and a stop-lug on the box below the flange, of the vertical rock-shaft journaled in said box or bearing and having oppositely-projecting apertured arms under the said flange and limiting the rotation of the shaft by engaging the stop-lug in the manner described, oppositely-extending spring-pressed rods having bent inner ends held in the apertured arms by said horizontal flange, a releasing-arm at the upper end of the shaft, an abutment on the frame in front and in the path thereof, a setting-arm at the lower end of the shaft and a foot-lever connecting to said setting-arm, substantially as set forth.

2. In a dumping hay-rake the combination of the box or bearing having a cap provided with a horizontal flange at its lower end, a stop-lug below the flange, a vertical rock-shaft mounted in said box and having clutch-operating arms under said flange and in the plane of the stop-lug, a setting-arm at the lower end of the shaft and a releasing-arm at its upper end, substantially as set forth.

3. A dumping hay-rake consisting in a frame A, the rake-head hinged thereto and provided with ground-wheels, the angle-bracket G secured to frame A and having a depending member and a rearwardly-projecting abutment, a foot-lever pivoted to said depending member, a vertical rock-shaft on the front side of the rake-head and having a bearing or box provided with a stop-lug 7; said shaft having oppositely-projecting arms 4, 4', in the plane of the stop-lug, a releasing-arm 19 at its upper end to engage the abutment and a setting-arm 17 at its lower end connected to the rear end of the foot-lever, rods extending from the arms 4, 4', to the ends of the rake-head, pawls pivoted to the rake-head and connected to said rods and ratchet-wheels on the ground-wheels for engagement by said pawls to dump the rake, substantially as set forth.

4. The box or bearing 6 formed at one side of its lower end with an inwardly-projecting stop-lug 7 and having a cap 18 bolted to its front side and provided at its lower edge with the horizontal flange 8, substantially as set forth.

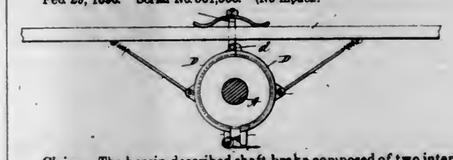
572,648. CHIN-REST FOR HORSES. JOHN F. MCLENNAN, Chicago, Ill. Filed Mar. 21, 1896. Serial No. 584,283. (No model.)



Claim.—1. As an improved article of manufacture, a chin-rest for horses, comprising a frame substantially U-shaped, widened at its bottom and bent at its upper portion to form springs and rearward extensions adapted to be connected to the check-rein or strap, and a cushion located on the lower portion of the frame, substantially as described.

2. As an improved article of manufacture, a chin-rest for horses, composed of the frame A, formed substantially U-shaped, and spread or widened at its lower portion, its upper portion having springs *a'*, and rearward extensions provided with loops a^3, to engage the check-rein or strap, the pneumatic cushion E, located on the widened and lower portion of the frame, and a covering enveloping said cushion and securing it to the frame, substantially as described.

572,649. SHAFT-BRAKE. JOHN J. STOVER, Erwinna, Pa. Filed Feb. 29, 1896. Serial No. 581,360. (No model.)



Claim.—The herein-described shaft-brake composed of two inter-hinged jaws having annular corrugations, said jaws being provided with lugs at the ends of the sections, the lugs at one end of the sections forming a hinged connection, a chain connected with the lug at the end of one of the sections, a pulley mounted in the lug at the end of the other section over which said chain passes and by means of which the sections are forced together, laterally-extending lugs formed on said sections, rods pivotally connected with the last-mentioned lugs, springs connecting the free ends of the rods with the support and adapted to separate the sections, said sections being supported by means of a spring-supported bolt or rod, and adapted to operate in connection with a corrugated pulley as set forth.

572,650. COTTON-CONDENSER. JAMES M. COCHRAN, Jackson, Tenn. Filed May 7, 1896. Serial No. 590,536. (No model.)

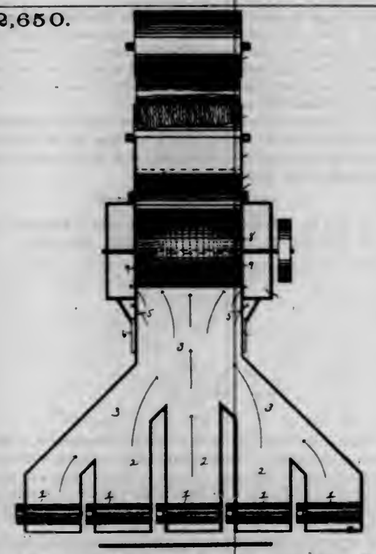
Claim.—1. In a condenser adapted to form a continuous bat of uniform thickness, a drum having a hollow interior and openings or perforations leading into said hollow interior, the perforations or openings at the ends of the drum being more numerous than at the middle of the drum, a perforated flange located at each end of the drum and adapted to form the edges of the bat.

2. In a condenser adapted to form a continuous bat of uniform thickness, a drum having a hollow interior and perforations or openings leading into said hollow interior the perforations or openings at the ends of the drum being larger than those at the middle of the drum, a perforated flange located at each end of the drum and adapted to form the edges of the bat.

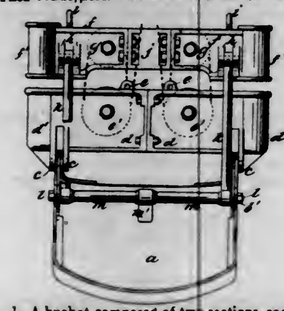
3. In combination with a condenser-inclosure, a flue leading to said inclosure, said flue having perforations in its sides, and shutters adapted to close said perforations.

4. In a condenser a pair of drums one located above the other, one drum having at each end a flange extending up along the end of the other drum, the flanges having perforations.

572,650.



572,651. DREDGING-BUCKET. WILLIAM A. COLLINS, Bayonne, N. J. Filed Oct. 23, 1895. Serial No. 566,578. (No model.)



Claim.—1. A bucket composed of two sections, each comprising a side and ends; each side being approximately a section of a sphere in contour, and each end having projecting wings or webs, substantially as described.

2. A sectional cross-frame composed of back and front plates, the outer sections being formed with sockets, substantially as described.

3. A sectional cross-frame composed of parallel plates, the outer sections being formed with sockets and the central section comprising offset wear-plates, substantially as described.

4. A sectional cross-frame composed of back and front plates, the outer sections being formed with sockets, and sheaves journaled between said plates, substantially as described.

5. A bucket composed of two sections each comprising a side and ends, and each side being approximately a section of a sphere in contour; in combination with an upper and a lower sectional cross frame or bridge composed of back and front plates; the outer sections of said frames being formed with sockets, sheaves journaled between said plates; arms or links connecting each side of the bucket to the upper cross-frame, and means for opening and closing said bucket, substantially as described.

6. An upper and a lower cross-frame composed of back and front plates and formed with end, pole, sockets and guides; in combination with small sheaves journaled in the upper, and large sheaves journaled in the lower frame, and a bifurcated chain attached to the lower frame and passing around each of said sheaves, substantially as described.

7. In dredging mechanism, an upper and a lower cross frame or bridge, each composed of parallel sides or plates; a two-part bucket journaled in lugs on the lower cross-frame, and arms or links journaled in lugs on the upper frame and to the bucket, and means for opening and closing said buckets, substantially as described.

8. In dredging mechanism, an upper and a lower cross frame or bridge, each composed of parallel sides or plates; a two part bucket journaled in bifurcated lugs depending from the lower cross-frame, and arms or levers journaled in bifurcated lugs on the upper frame, and in projecting wings or webs on said bucket; and means for moving the upper and lower frames toward and from each other, substantially as described.

9. An upper cross-frame, comprising a series of back and front plates, and offset central and removable wear-plates or sections; in combination with a lower cross-frame, and a two-part bucket pivoted therein and connected to the upper frame by arms or links, substantially as described.

10. A two-part bucket pivoted in a frame; an independently-movable hood for each part of said bucket adapted to project above the same when the bucket is closed, and attached to said frame by pivots and chains, substantially as described.

11. A two-part bucket pivoted in a frame; an independently-movable hood for each part of said bucket adapted to project above the same when the bucket is closed, and to pass partially within the same when the bucket is opened; said hoods being attached to said frame by pivots and chains, substantially as described.

12 A cross-frame composed of a suitable number of sections, comprising back and front plates, outer sockets, and internal lugs adjacent thereto; in combination with a two-part bucket pivoted in said lugs; an upper cross-bridge; arms or links connecting said bucket to said upper bridge, and means for moving said frames toward and from each other, substantially as described.

13. An upper and a lower cross-frame; a two-part bucket pivoted in the latter and comprising sides and ends, said ends having projecting wings or webs; arms or links hinged or pivoted in said wings or webs, and in lugs on the upper frame, substantially as described.

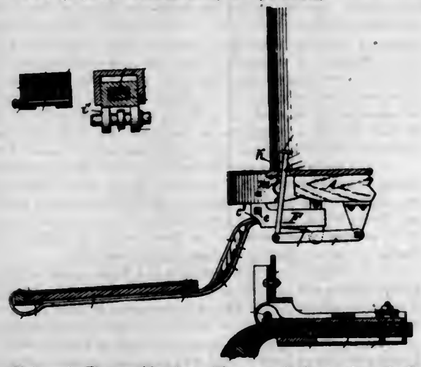
14. A bucket composed of two sections, each comprising a side and ends, and each side being approximately a section of a sphere in contour; in combination with an upper and a lower cross frame or bridge each composed of back and front plates and containing sheaves; a bifurcated chain attached to one of said cross-frames and passing around the sheaves in both; a separate chain attached to the upper frame, and connecting arms or links, substantially as described.

15. A two-part bucket, each part comprising a side having a lug or eye, and ends; in combination with an upper and a lower cross-frame, and arms or links connecting each part of said bucket to the upper frame; a rod or bolt passing through said arms and eyes, and sleeves surrounding said rod and located between said eyes and said arms for protecting said bolts and holding said arms in position, substantially as and for the purposes described.

16. An upper and a lower cross-frame; a two-part bucket pivoted in the latter and comprising sides each having a central lug, and ends having projecting wings or webs; arms or links journaled in lugs on the upper frame, and hinged or pivoted to said wings or webs by a rod or bolt passing through said wings, arms or links and central lug; and headed or flanged sleeves adapted to surround said rod or bolt and hold the arms or levers in alinement, substantially as described.

17. A lower cross-frame composed of the plates *d*, sockets *d'*, lugs *c*, and eyes *e*, and carrying the sheaves *d'*; an upper cross-frame composed of the plates *f*, and *j*; sleeves *f'*, lugs *h* and rings *i*, and carrying the sheaves *g*, in combination with the bucket *a*, *b*, *b'* and arms or links *k*, all combined and arranged to operate, substantially as described.

572,652. PILOT FOR CARS. ROBERT DUNBIBE, Buffalo, N. Y. Filed Aug. 5, 1896. Serial No. 601,760. (No model.)



Claim.—1. The combination with a car-platform, of vertically-swinging sockets pivoted at their front ends to the car-platform, whereby their free rear ends are capable of swinging downwardly and forwardly, retaining devices for holding the rear ends of the sockets in their normal elevated position, and a pilot or life-guard having supporting arms or shanks arranged in said sockets, substantially as set forth.

2. The combination with a car-platform, of vertically-swinging sockets pivoted at their front ends to the car-platform, whereby their free rear ends are capable of swinging downwardly and forwardly, retaining devices for holding the rear ends of the sockets in their normal, elevated position, a pilot or life-guard having supporting arms or shanks removably arranged in said sockets, and means for confining said shanks in the pivoted sockets, substantially as set forth.

3. The combination with a car-platform and brackets of inverted-trough shape secured to the under side of the platform, of vertically-swinging sockets pivoted at their front ends to said brackets and adapted to fit between the side walls thereof, retaining devices for holding said sockets in their normal elevated position, and a pilot having supporting arms or shanks adapted to fit into said sockets, substantially as set forth.

4. The combination with a car-platform, of a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an arm connected with the free rear end of said socket, and means for retaining said rock-shaft in position, substantially as set forth.

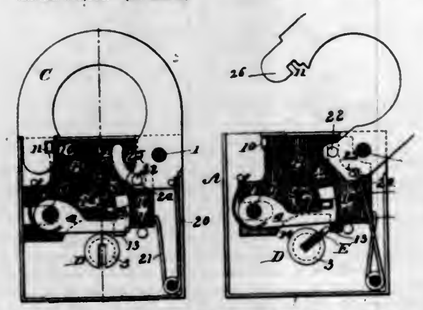
5. The combination with a car-platform, of a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an actuating-arm, and an arm connected with the free rear end of said socket, and a treadle connected with said actuating-arm and extending upward through the car-platform, substantially as set forth.

6. The combination with a car-platform, of a vertically-swinging socket or pocket pivoted at its front end to the car-platform, a transverse rock-shaft journaled on the platform and having an actuating-arm, and an arm connected with the free rear end of said socket, a treadle connected with said actuating-arm and extending upward through the car-platform, and a catch interlocking with said treadle, substantially as set forth.

7. A pilot or life-guard comprising an open rectangular frame composed of wooden side and end bars, a central cross-bar of wood, and diagonal wooden braces extending from the outer corners of the frame to the inner end of said central cross-bar, inner metallic corner-pieces having sockets for the reception of the adjacent side and end bars, outer metallic corner-pieces having sockets for the reception of the adjacent side and end bars and the outer ends of said diagonal braces and a filling or covering attached to said side and end bars, substantially as set forth.

8. A pilot or life-guard having upwardly and rearwardly extending attaching-arms, each composed of a pair of separated metallic straps or leaves and a filling-strip interposed between said straps, the front portions of the straps being secured to the pilot-frame and their rear portions extending beyond said filling-strip and forming shanks whereby the pilot is attached to a car, substantially as set forth.

572,653. PADLOCK. WILLIAM E. DYER and FRANK SOLEY, Philadelphia, Pa.; said Soley assignor to said Dyer. Filed Dec. 23, 1895. Serial No. 573,101. (No model.)

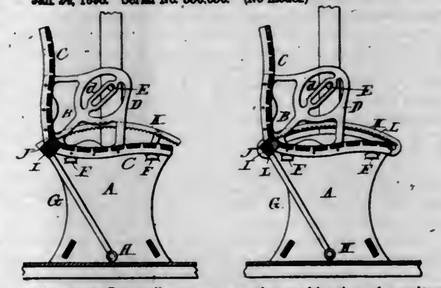


Claim.—1. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, and surfaces on the shackle and the bolt consisting in a pin on the one part engaging with a slot on the other having contact in a line of travel concentric with the pivot of the shackle for all open positions of the shackle, whereby the bolt is withheld in an unlocked position at all open positions of the shackle.

2. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, a pin in the heel of the shackle, and a slot in the bolt receiving said pin and curved concentrically with a point which coincides with the pivot of the shackle when the bolt is withdrawn, and adapted for the purposes described.

3. In a padlock, the combination of a suitable case, a pivoted shackle, a bolt, a pin in the heel of the shackle, and a slot in the bolt receiving said pin and having a portion parallel with the throw of the bolt, and another portion curved concentrically with a point which coincides with the pivot of the shackle when the bolt is withdrawn.

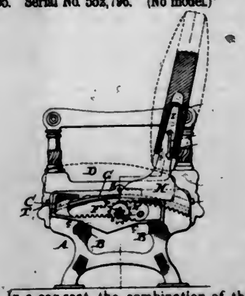
572,654. CAR-SEAT. HENRY S. HALE, Philadelphia, Pa. Filed Jan. 24, 1896. Serial No. 536,056. (No model.)



Claim.—1. In a railway-car seat, the combination of a unitary seat and back structure provided on its ends with arms, a pin-and-slot connection between said arms and a stationary part, stationary curved racks located adjacent to the ends of the unitary seat and back structure, and pinions journaled in the unitary seat and back structure at the point of union of the seat and back portions and engaging the curved racks, whereby the unitary seat and back structure may be reversed and in reversing will turn on the axis of the pinions which travel in engagement with the curved racks.

2. In a railway-car seat, the combination of a unitary seat and back structure provided on its ends with arms, a pin-and-slot connection between said arms and a stationary part, stationary curved racks located adjacent to the ends of the unitary seat and back structure, pinions journaled in the unitary seat and back structure at the point of union of the seat and back portions and engaging the curved racks, whereby the unitary seat and back structure may be reversed and in reversing will turn on the axis of the pinions which travel in engagement with the curved racks, and pivoted supporting arms or frame hinged to the seat and back structure at the point of union of the seat and back portions and pivoted to the floor or stationary frame.

572,655. CAR-SEAT. HENRY S. HALE, Philadelphia, Pa. Filed June 14, 1896. Serial No. 552,796. (No model.)



Claim.—1. In a car-seat, the combination of the main frame a shifting seat-back, segmental racks carried by the shifting seat-back and moving therewith, a shaft journaled in the main frame in stationary bearings, and pinions carried by the shaft and meshing with the movable racks carried by the shifting seat-back.

2. In a car-seat, the combination of the main frame of the shifting seat-back provided on its ends with sockets, segmental racks provided with upwardly-extending arms engaging the sockets on the ends of the shifting seat-back whereby the seat-back is carried by the movable racks and moves therewith, a shaft journaled in the main frame, and pinions carried by the shaft and meshing with the movable racks which carry the shifting seat-back.

3. In a car-seat, the combination of the main frame having transverse guides at each end, shifting arms guided in said transverse guides and movable bodily from one side of the main frame to the other, a seat-back detachably secured to the shifting arms by means of socket-pieces fitting upon the arms, and an automatic locking device for

locking the back to the said arms at the extreme position of the back and unlocking it when in an intermediate position.

4. In a car-seat, the combination of the main frame having transverse guides at each end, a longitudinal shaft journaled in said main frame and provided at each end with a pinion, a segmental rack guided upon the guides at each end of the main frame and meshing with the pinions, a seat-back secured to the segmental racks and movable with them, and a lock located between the extreme positions occupied by the seat-back and adapted to engage the segmental rack in either of its extreme positions upon the main frame.

5. In a car-seat, the combination of the main frame having transverse guides at each end, a longitudinal shaft journaled in said main frame and provided at each end with a pinion, a segmental rack guided upon the guides at each end of the main frame and meshing with the pinions, a seat-back secured to the segmental racks and movable with them, a seat-cushion, a reciprocating and tilting frame for the seat-cushion provided with a rack, and a pinion upon the longitudinal shaft meshing with the said rack for moving it and the cushion in a direction opposite to the movement of the back and simultaneously therewith.

6. In a car-seat, the combination of the main frame having transverse guides at each end, a longitudinal shaft journaled in said main frame and provided at each end with a pinion, a segmental rack guided upon the guides at each end of the main frame meshing with the pinions, a seat-back secured to the segmental racks and movable with them, a seat-cushion, a frame at each end of the main frame supporting the cushion when being shifted provided with a rack near the lower part, and pinions upon the longitudinal shaft meshing with the rack of the seat-frames.

7. In a car-seat, the combination of the main frame, a longitudinal shaft journaled in the main frame and provided at each end with a large and small pinion, a seat-back provided with racks located on one side of the longitudinal shaft and meshing with the large pinions thereon, a seat-cushion, and shifting frames for said seat-cushions provided with racks located upon the opposite side of said longitudinal shaft and meshing with the small pinions thereon, whereby the seat-back and seat-cushion are simultaneously moved in opposite directions and to different extents.

8. In a car-seat, the combination of the main frame, a longitudinal shaft journaled on the main frame and provided at each end with a large and small pinion, a seat-back provided with racks located on one side of the longitudinal shaft and meshing with the large pinions thereon, a seat-cushion and shifting frames for said seat cushion provided with racks located upon the opposite side of said longitudinal shaft and meshing with the small pinions thereon whereby the seat-back and seat-cushion are simultaneously moved in opposite directions and to different extents, and a lock for locking the seat-back in its extreme positions.

9. In a car-seat the combination with the main frame and movable side arms carried thereby, of a seat-back detachably carried by said side arms by means of socket-pieces receiving the arms, and an automatic gravity-actuated lock between the socket-pieces and the side arms for locking the back to the arms when the back is in an inclined position and unlocking it and permitting the back to be detached and removed when in an upright position.

10. In a car-seat, the combination with the side arms provided with racks, the seat-back carried by the side arms, a shaft journaled in the main frame and pinions on the shaft meshing with the racks carried by the side arms, of a shifting seat-cushion and power-transmitting connections between the seat-cushion and the shaft on the main frame, whereby the rotation of the shaft through the rack and pinions when the back is moved will shift the seat-cushion.

11. In a car-seat the combination of the main frame, a shifting seat-back, segmental racks carried by the shifting seat-back one at each end thereof and moving therewith, and pinions journaled on stationary bearings at approximately the middle of the sides of the main frame and engaging the movable racks carried by the shifting seat-back.

12. In a car-seat, the back-shifting mechanism, embracing a segmental rack, of less than the width of the car-seat, carried by the shifting back and moving therewith, and a pinion meshing with the segmental rack and carried in stationary bearings in the car-seat frame, whereby, when the seat-back is shifted, the segmental rack travels upon the toothed pinion and rotates it in its stationary bearings.

13. In a car-seat the main frame, the back-shifting mechanism embracing a segmental rack structure of less width than the width of the car-seat carried by the shifting back and moving therewith, and a pinion structure meshing with the segmental-rack structure and carried by the main frame, in combination with a movable seat-cushion, and means controlled by the pinion-and-rack mechanism for lowering said seat-cushion upon moving the back over it.

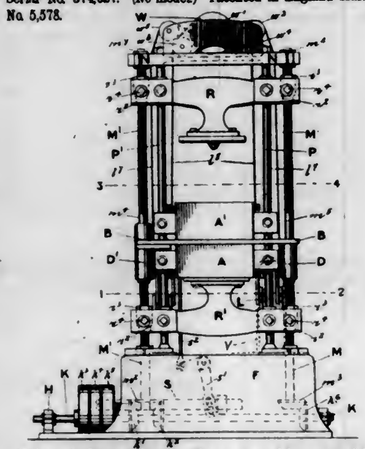
14. In a car-seat the combination of the main frame, a shifting seat-back, segmental racks carried by the shifting seat-back one at each end thereof and moving therewith, pinions journaled on stationary bearings at approximately the middle of the sides of the main frame and engaging the movable racks carried by the shifting seat-back, a movable seat-cushion, racks meshing with the pinions for shifting the seat-cushion, and guides for lowering the seat-cushion when the back is being moved toward a vertical position above the seat-cushion and vice versa.

15. In a car-seat, the combination with the side arms provided with racks, the seat-back carried by the side arms, a shaft journaled in the main frame and pinions on the shaft meshing with the racks carried by the side arms, of a shifting seat-cushion and power-transmitting connections between the seat-cushion and the shaft on the main frame, whereby the rotation of the shaft through the rack and pinions when the back is moved will shift the seat-cushion, and suitable guides for lowering the seat-cushion when the back is being moved toward a vertical position above the seat-cushion and vice versa.

16. In a car-seat, the combination of the main frame having transverse guides at each end, a longitudinal shaft journaled in said main frame and provided at each end with a pinion, a segmental rack guided upon the guides at each end of the main frame and meshing with the pinions, a seat-back secured to the segmental racks and movable with them, a lock located between the extreme positions occupied by the seat-back and adapted to engage the segmental rack in either of its extreme positions upon the main frame, and suitable guides for lowering the seat-cushion when the back is being moved toward a vertical position above the seat-cushion and vice versa.

17. In a car-seat, the combination of the main frame, the shifting back, a shifting seat-cushion supported by the main frame, connections between the shifting back and seat-cushion for shifting the latter when the former is moved, and cam-guides between the seat-cushion and main frame having swell and non-swell portions on each side so disposed that when the seat-cushion is being shifted the non-swell portion on one side is acting simultaneously with the swell portion on the other side, whereby the seat-cushion is lowered bodily at the center while the seat-back is being shifted over it.

572,656. **MOLDING-MACHINE.** FREDERIC W. T. HARTLAND and ARTHUR MALPAS, West Bromwich, England. Filed Jan. 7, 1896. Serial No. 574,627. (No model.) Patented in England Mar. 16, 1895, No. 5,578.



Claim.—1. In combination, the upper and lower sand-boxes, the upper and lower rams, the vertical guides for the rams and sand-boxes, means for raising and lowering the upper and lower sand-boxes, means for raising and lowering the upper and lower rams, the pattern-plate fitting between the upper and lower sand-boxes and the spring-bushes connected with and operating to raise the pattern-plate when the upper sand-box and ram are lifted, substantially as described.

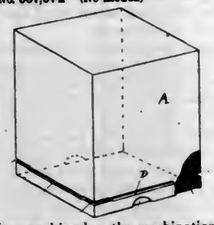
2. In combination, the sand-boxes, the rams with means for operating the same, the pattern-plate fitting between the rams and the spring-bushes D, D', acting on the pattern-plate, said plate being pivotally supported to be swung aside by turning on one bushing and detachably engaging the other bushing, substantially as described.

3. In combination, the upper and lower sand-boxes, the upper and lower rams, means for raising and lowering the sand-boxes, the screw-rods for raising and lowering the rams, the pattern-plate B, and the spring-bushes for raising the same, said bushes being on the screw-rods, substantially as described.

4. In combination, the sand-boxes, the rams operating from opposite sides of the sand-boxes, the shaft P, the shaft P' thereon, and the levers L', L connected to said shafts respectively and connected to the upper and lower sand-boxes, substantially as described.

5. In combination, the sand-boxes, the upper and lower rams, the screws for operating the rams, the driving-shaft connected with the screws, the pivoted frame T, the belt-shifter S connected thereto, said frame T being arranged to control the action of the lower ram, the weight on the frame T to hold the same normally vertically and the stud r^6 on the lower ram to move along the side of the frame T and to rest upon the top and bottom thereof, substantially as described.

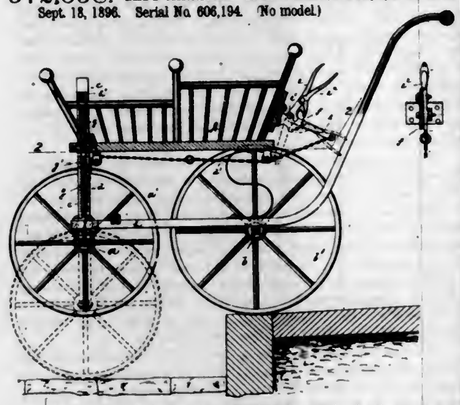
572,657. **PACKING-CASE.** FRED S. MACROALD, Portland, Me., assignor to the Casco Paper Box Company, of Maine. Filed Apr. 11, 1896. Serial No. 587,074. (No model.)



Claim.—1. In a packing-box the combination of an outside case and an inside case, of slots on the corners of the outer case of similar slots on the inner case and adapted to register with the slots on the outside case, substantially as and for the purposes set forth.

2. In a packing-box in combination an outside case provided with slots at its corners, of an inner case capable of being inserted in said outer case and also provided with slots on its corners and adapted when said case is placed in position, to register with slots in the outer case and a binder adapted to be inserted through said slots in the outer and inner case substantially as and for the purposes set forth.

572,658. **BABY-CARRIAGE.** CONRAD MARX, Brooklyn, N.Y. Filed Sept. 18, 1896. Serial No. 606,194. (No model.)



Claim.—1. A baby-carriage having front wheels that are vertically movable and are adapted to be projected with their tread below the tread of the rear wheels, substantially as specified.

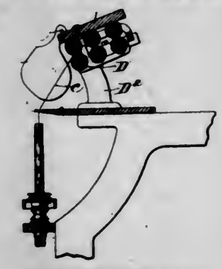
2. A baby-carriage having a vertically-movable front axle, means for raising and lowering said axle, and wheels mounted upon said axle, and adapted to be projected with their tread below the tread of the rear wheels, substantially as specified.

3. A baby-carriage having a spring-actuated front axle which is vertically movable, means for moving the axle against the action of the spring, and means for locking the axle in position, substantially as specified.

4. A baby-carriage provided with a front axle, vertically-movable slides to which such axle is connected, means for raising and lowering the axle together with its slides, and means for locking the axle in position, substantially as specified.

572,659. **SPINNING OR TWISTING MACHINE.** JOHN R. MONTGOMERY, Windsor Locks, Conn., assignor of three-fourths to George M. Montgomery, same place, and George Draper & Sons, Hopedale, Mass. Filed May 13, 1896. Serial No. 591,383. (No model.)

Claim.—The combination with a set of drawing or delivery rolls and the top or clearer board cooperating with said rolls, of a series of separators connected loosely to the upper front end of said board and extended down in front of the said rolls to operate, substantially as described.



572,660. **DRYING-TRAY.** HENRY A. ORR, Bedford, England. Filed Oct. 25, 1895. Serial No. 566,898. (No model.) Patented in England Jan. 14, 1895, No. 896.



Claim.—1. A tray comprising the bottom, the sides *b*, *b'* and guides arranged outside the said sides *b*, *b'* said guides ending a short distance above the top and bottom of said sides, substantially as described.

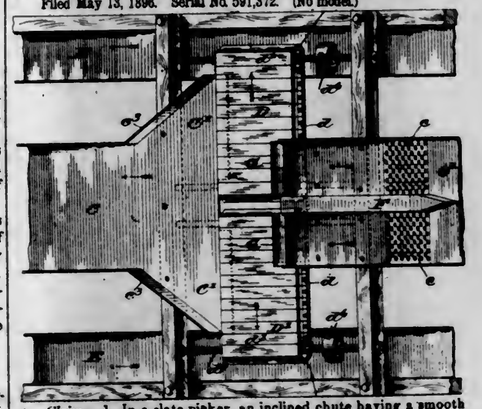
2. A tray comprising two tray members, each member being composed of a bottom and two opposite sides, said tray members being arranged at right angles to each other whereby the two opposite sides of each tray will form a complete wall around the tray, substantially as described.

3. A tray comprising two tray members arranged at right angles to each other, each member being composed of two opposing sides, a bottom and guide-blocks on the outside of the opposing sides, said tray member being arranged with their bottoms superimposed, substantially as described.

4. A tray comprising a pair of tray members arranged with their bottoms superimposed and at right angles to each other, each of said tray members comprising the said bottoms and two opposing sides with the guide-blocks *d* ending a short distance above the bottom and top of said sides, one of the said tray members being inverted in respect to the other, substantially as described.

5. A tray comprising the slatted bottom, the parallel sides *b*, *b'* between the edges of which the ends of the slats are held and the blocks *d*, *d'*, on the sides *b*, *b'* connecting the same together.

572,661. **SLATE-PICKER.** DAVID E. PHILLIPS, Mahanoy City, Pa. Filed May 13, 1896. Serial No. 591,372. (No model.)



Claim.—1. In a slate-picker, an inclined chute having a smooth bottom, combined with a suitable plane roughened-slate retarding-surface, and means to move the latter transversely to the chute, for

the purpose of removing the slate, &c., collected by the retarding-surface, substantially as described.

2. In a slate-picker, an inclined chute for the coal, combined with a movable retarding-surface interposed in the chute, means to move the same at an angle transversely to the chute, and an apron in the bottom of the chute and extending over a portion of the retarding-surface, substantially as described.

3. In a slate-picker, an inclined chute for the coal, combined with a movable retarding-surface interposed in the chute, means to move the same at an angle to the chute, and an adjustable apron in the bottom of the chute and extending over a portion of the retarding-surface, substantially as described.

4. In a slate-picker, an inclined chute, having two oppositely-movable retarding-surfaces interposed opposite each other and substantially transversely therein, said chute being relatively narrow at the upper side of said retarding-surface and wide at the lower side thereof, substantially as described.

5. In a slate picker, an inclined chute, having a plurality of movable retarding-surfaces interposed substantially transversely therein, one below another, said chute being relatively narrow at the upper sides of said retarding-surfaces and wide at the lower sides thereof, and aprons secured in the bottom of the chute and extending over a portion of the upper sides of the retarding-surfaces, substantially as described.

6. In a slate-picker, an inclined chute having two oppositely-movable retarding-surfaces interposed substantially transversely therein, the chute being provided with two relatively narrow delivery portions to deliver the coal to said respective retarding-surfaces, and having its receiving portion below said retarding-surfaces laterally extending at either side in the direction of movement of said retarding-surfaces, substantially as described.

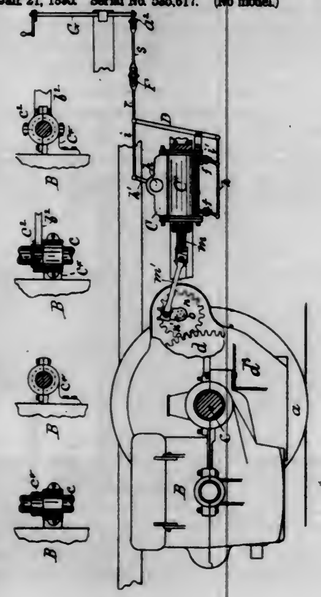
7. In a slate-picker, an inclined chute, a retarding-surface in and movable transversely to the direction of inclination of the said chute, and means to move said surface continuously with an intermittent velocity in one and the same direction, substantially as described.

8. In a slate-picker, an inclined chute, an imperforate retarding-surface interposed in the chute, means to jog said surface up and down, and means to forwardly move the same, substantially as described.

9. In a slate-picker, an inclined chute, an imperforate retarding-surface interposed in the chute, means to jog said surface up and down, and means to forwardly move the same, with an intermittent velocity, substantially as described.

10. In a slate-picker, an inclined chute, pivotally secured at its upper end, combined with a plane retarding-surface of slate interposed within the chute, and means to move the latter laterally relatively thereto, substantially as described.

572,662. POWER-BRAKE. WILLIAM ROBINSON, Boston, Mass. Filed Jan. 21, 1895. Serial No. 535,617. (No model.)



Claim.—1. In a power-brake, the combination of a cylinder with its piston, a stop-cock controlling the free passage of air from one side of said piston to the other, stop-cocks located at opposite ends of said cylinder and connecting the interior of the same with the outer air and mechanism connecting said various stop-cocks in one system whereby they may all be operated by a single movement, substantially as described.

2. In a power-brake mechanism, the combination substantially as described, of a cylinder with its piston and piston-rod, a stop-cock controlling the passage of air from one side of said piston to the other, stop-cocks located near the opposite ends of said cylinder and opening outwardly from the interior of the same, mechanism connecting said various stop-cocks in one system whereby they may be operated simultaneously, and means for connecting the piston-rod of said cylinder to the car-axle, said means being adapted to produce reciprocating motion in said piston-rod.

3. In a power-brake, the combination, substantially as described, of a cylinder with its piston and piston-rod, a stop-cock controlling the passage of air from one side of said piston to the other, stop-cocks located near the opposite ends of said cylinder and opening outwardly from the interior of the same, mechanism connecting said various stop-cocks in one system whereby they may be operated simultaneously, a gear-wheel secured to the car-axle, a pinion engaging said gear-wheel, the pinion or pinion-shaft being provided with a crank, and a connecting-rod connecting said piston-rod and crank together, the movement of said piston-rod controlling the movement of said pinion and gear-wheel.

4. In a power-brake, the combination, substantially as described, of the cylinder with its piston and piston-rod, said cylinder being provided with an open passage connecting the opposite ends thereof, a stop-cock adapted to open or close said passage, stop-cocks located at opposite sides of said piston and opening outwardly from said cylinder, and mechanism arranged to first close said first-named stop-cock and next to gradually approximately close said second-named stop-cocks, thus producing an air-cushioning resistance to the movement of said piston at each side thereof and tending to bring the same to a full stop.

5. In combination, a brake apparatus arranged to retard or stop the revolution of the car-axle and its wheels, through the direct action of an air pump, or compressor, connected to said axle, said pump being provided with stop-cocks or valves, two floating-levers connected together and arranged to move in unison and parallel to each other, one of said levers being connected to and controlling the operation of the stop-cocks or valves of, said braking apparatus, said levers, respectively, being connected to the brake-staffs or controlling devices on the respective platforms of the car, whereby said braking apparatus may be operated and controlled from either end of the car, substantially as described.

6. In combination, substantially as described, two power-brake devices arranged respectively to control or stop the two axles with their wheels of a car or truck, through the direct action of air pumps, or compressors, connected to said axles, said pump being provided with stop-cocks or valves, two floating-levers connected together and arranged to move in unison, said levers respectively, being connected to and controlling the operation of the stop-cocks or valves of, the respective brake devices, said levers, respectively, being also connected to the brake-staffs or controlling devices on the respective platforms of the car, whereby both of said braking devices may be operated and controlled from either end of the car.

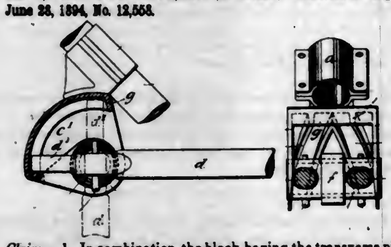
7. In combination, the floating-levers F F' connected to and controlling the operation of the brake mechanism, said floating-levers being connected together and moving in unison, and being connected, respectively, by the rods or devices *s*, *s'*, to crank-levers secured to the brake-staffs, whereby the brake apparatus is applied by turning the brake staff or controller in one direction and released by turning the same in the opposite direction, the operation of said crank-levers upon said brake mechanism being direct and positive in whichever direction said crank-levers may be turned, substantially as described.

572,663. PHOTOGRAPHIC-PLATE LIFTER. SAMUEL C. SMITH, Philadelphia, Pa. Filed Nov. 30, 1895. Serial No. 570,636. (No model.)



Claim.—In a photographic-plate lifter, the combination with an oblong piece of sheet metal bent to an angle of ninety degrees or less, of the U-shaped wire attached at its base to the angle of the sheet-metal piece and having its arms bent to form spring-clasps for engaging the side of the photographic tray, substantially as described.

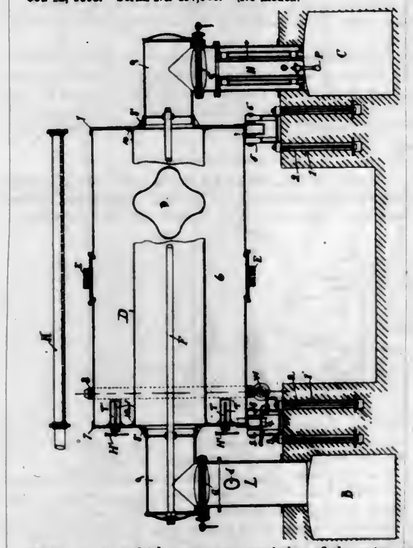
572,664. BICYCLE-REST. SIDNEY R. SPENCER, London, England, assignor to the Automatic Cycle Stand, Limited, same place. Filed Mar. 4, 1896. Serial No. 581,768. (No model.) Patented in England June 28, 1894, No. 12,553.



Claim.—1. In combination, the block having the transverse pivot adapted to rotate therein and extending from side to side thereof, the supplemental pivots extending across the main pivots, the arms pivoted on the supplemental pivots to move with the main pivots, the cams on the block and the spring arranged within the block and between the laterally-swinging supporting-arms, said spring being attached to the block at one end and to the transverse pivot at the other end, substantially as described.

2. In combination, a block carrying a transverse rotary pivot-pin, the cross-pivots thereon, and the arms pivoted on the cross-pins and having short extensions beyond said pins and the cams on the block engaging said short extensions of the arms, substantially as described.

572,665. MALTING APPARATUS. HERMANN STIER, Cincinnati, Ohio, assignor of one-half to Albert Schwill & Co., same place. Filed Oct. 12, 1893. Serial No. 487,979. (No model.)



Claim.—1. A malting apparatus consisting of the outer perforated drum 6 and the inner perforated drum D provided with concave sides, said drums revolving together, fixed, imperforate drums 9 journaled in the ends of the drum D and connected with air-supply pipes, means for revolving the perforated drums, and means for forcing the air into the inner drum and thence outwardly through the periphery of the outer drum, substantially as described.

2. A malting apparatus consisting of the outer perforated drum 6, and the inner perforated drum D provided with concave sides, said drums revolving together, fixed, imperforate drums 9 journaled in the ends of the drum D, air-supply pipes connected with the drums 9, sprayiug, heating and cooling devices arranged in said pipes, means for revolving the perforated drums, and means for forcing the air into the inner drum and thence outwardly through the periphery of the outer drum, substantially as described.

3. In a malting apparatus, the combination with the perforated revolving drum 6, of an interior perforated drum D secured to the heads of drum 6 and revolving therewith and provided with concave sides, substantially as shown and described.

4. A malting apparatus, consisting of the outer perforated drum 6, the inner perforated drum D of irregular shape in cross-section, said drums being fixed to revolve together upon suitable rollers, upon which the periphery of the outer drum rests, means for forcing air into the interior of the inner drum, thence outwardly through the periphery of the outer drum, and means for applying a spray of water to the periphery of the outer drum simultaneously with the forcing of the air outward therethrough, whereby the charge is kept at the appropriate moisture and temperature, substantially as described.

5. In a malting apparatus the combination with the perforated revolving drum 6 and the interior drum D secured thereto, of one or more pendulous thermometers H' each consisting of a tube bent at a right angle and journaled in a stuffing-box secured in the head of the drum 6 and provided with a pendulous weight for maintaining the thermometer-tube in an upright position, and a reticulated casing secured within the drum and incasing the inner end of the thermometer, substantially as shown and described.

6. A malting apparatus comprising an outer perforated drum, an inner perforated drum of irregular shape in cross-section, the two drums being adapted to revolve together; means for forcing air into the interior of the inner drum, thence outwardly through the periphery of the outer drum, and means for applying a spray of water to the periphery of the outer drum simultaneously with the forcing of the air outward therethrough, substantially as described.

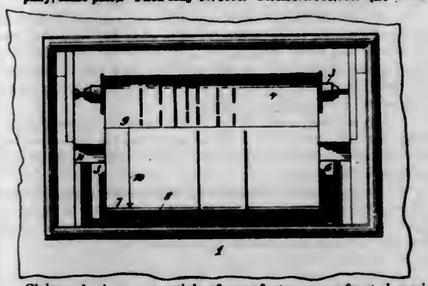
7. A malting apparatus comprising an outer perforated drum and an inner perforated drum of irregular shape in cross-section, adapting it to turn over and more thoroughly mix and distribute the grain falling thereon, fixed imperforate drums journaled in the ends of said inner drum, air-supply pipes connected with said imperforate drums, spraying, heating and cooling devices combined with said pipes, means for revolving the two perforated drums, and means for forcing air into the inner drum and thence outwardly through the periphery of the outer drum, substantially as described.

8. In a malting apparatus, the combination with an outer perforated drum and an inner perforated drum, the two adapted to revolve together, of a pendulous thermometer consisting of a tube bent at an angle and journaled in suitable bearings provided therefor in the head of the outer drum, a pendulous weight for maintaining the thermometer in an upright position, and a reticulated casing arranged in the space between the two drums and incasing the inner end of the thermometer, substantially as described.

9. In a malting apparatus, the combination of an outer perforated drum, and an inner perforated drum adapted to revolve together, said inner drum having an irregular or star-shaped cross-section, whereby it is adapted to turn over the grain falling thereon and more thoroughly mix and distribute the same as the two drums revolve, substantially as described.

10. In a malting apparatus, the combination with an outer revolving drum, of a peripherally-perforated drum arranged within said outer drum and having an irregular external surface providing a series of concavities which are adapted to be brought successively into position to receive the grain falling thereon from the sides of the outer drum as the latter revolves, whereby the grain is turned over and thoroughly mixed and distributed, substantially as described.

572,666. STOP-INDICATOR FOR MUSICAL INSTRUMENTS. HARRY B. TREMAINE, New York, N. Y., assignor to the Æolian Company, same place. Filed May 15, 1896. Serial No. 591,696. (No model.)

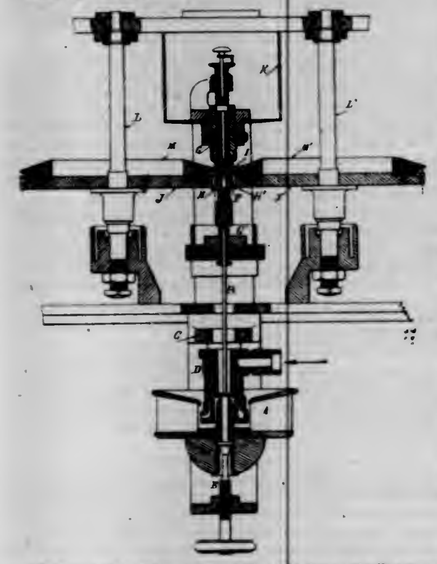


Claim.—1. As a new article of manufacture, a perforated music-sheet for self-playing musical instruments having stop-indicating characters at desired points thereon, said characters being arranged on opposite sides of a dividing-line, those on one side of said line indicating one class of stops and those on the opposite side of the line indicating stops of another class, and an indicating or notification mark or marks arranged upon the sheet said indicating-characters being placed in advance of the notification mark or marks, substantially as described.

2. As a new article of manufacture, a perforated music-sheet for self-playing musical instruments having stop-indicating characters at desired points thereon which characters correspond to the various stops on the musical instrument, and an indicating mark or marks arranged upon the sheet, said indicating-characters being located in advance of the indicating mark or marks, substantially as described.

3. In an automatic musical instrument, the combination with the stops thereof bearing suitable index-characters, of a music-sheet for controlling said instrument, a series of similar indicating-characters arranged at various points on the music-sheet, said characters being arranged on opposite sides of a dividing-line, those on one side of said line indicating one class of stops, and those on the opposite side of said line indicating another class of stops, a notification line or mark extending transversely across the music-sheet in rear of each set of indicating-characters, and a line or mark running parallel with the sides of the music-sheet between the characters and notification-mark, substantially as described.

572,667. TURBINE. HYACINTHE TRENTA, Lyons, France. Filed July 25, 1896. Serial No. 600,544. (No model.) Patented in France June 12, 1896, No. 254,717.



Claim.—1. In combination, a turbine wheel, a vertically-extending flexible shaft, carrying the said wheel at its lower end said shaft being free at its lower end to move laterally with the wheel and a rotary bearing held against lateral vibrations at the upper end of the shaft whereby the lateral oscillations will occur exclusively in the flexible portion of the shaft, substantially as described.

2. In combination, the turbine wheel having a socket in its lower portion, the flexible shaft, means for suspending the shaft at its upper end, the said wheel being fixed to the lower end and means for centering and limiting the movement of the lower end of the shaft with the turbine consisting of a fixed pin extending into the socket of the wheel, substantially as described.

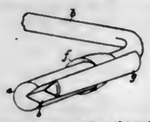
3. In combination, the turbine wheel, the shaft having the bell-shaped rim I, the two fellies M, M' engaging the rim for suspending the shaft and rotary carrying means for supporting the fellies, substantially as described.

4. In combination, the shaft, the pinion thereon, the gear-wheels J, J', meshing with the pinion and provided with fellies M M' engaging an overhanging rim on the shaft and the turbine wheel at the lower end of the shaft, substantially as described.

572,668. RAIL-BOND. IRVIN R. WALKER and LARS G. NILSON, Sioux City, Iowa. Filed Sept. 9, 1896. Serial No. 605,279. (No model.)

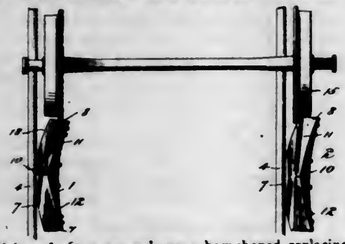
Claim.—1. A rail bond or connection for electrical conductors consisting of a wire, rod, bar or strip of metal having terminal lugs, with a V or sector shaped portion cut away, substantially as described.

2. A rail bond or connector for electrical conductors, consisting of a wire, rod, bar or strip of metal having terminal lugs adapted to be inserted in holes in the rails with an eccentrically-enlarged portion *f* on each of said lugs, substantially as shown and for the purposes specified.



3. A rail bond or connector for electrical conductors, consisting of a main portion *b*, eccentric enlargement *f*, terminal lugs *a a*, a tapered slot *e* extending through said lugs, and a tapered wedge *g* adapted to be driven into said slot *e*, substantially as described and for the purposes set forth.

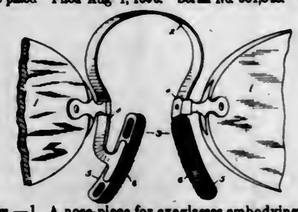
572,669. CAR-REPLACER. ROBERT E. ALEXANDER, Forest City, Pa. Filed Feb. 17, 1896. Serial No. 579,553. (No model.)



Claim.—1. In a car-replacer, a bow-shaped replacing member having an elevated central portion 10, and provided with grooves extending longitudinally upward and crossing each other at the top of said elevated portion, and thence extending downward, and a lip 14, located opposite the intersection of the grooves as and for the purpose specified.

2. In a car-replacer, a member having a curved side adapted to lie next the rail, a wheel-guiding surface sloping from base to apex thereof and provided with a longitudinal concavity or groove, in combination with a lip, such as 14, located opposite the apex, whereby the wheel is prevented from slipping off laterally, substantially as described.

572,670. EYEGLASSES AND SPECTACLES. WILLIAM BAUSCH, Rochester, N. Y., assignor to the Bausch & Lomb Optical Company, same place. Filed Aug 1, 1896. Serial No. 601,348. (No model.)



Claim.—1. A nose-piece for eyeglasses embodying a supporting-plate and a covering of woven netting or gauze adapted to contact with the nose of the wearer, substantially as described.

2. A nose-piece for eyeglasses embodying a perforated supporting-plate and a piece of woven gauze or netting rounded as shown and having its edges attached to the supporting-plate, said gauze being adapted to be brought in contact with the nose of the wearer, substantially as described.

3. In spectacles and eyeglasses a pad for resting on the wearer's nose and embodying a base-plate and a covering of fine woven gauze or netting attached thereto, substantially as described.

572,671. CARRIAGE-CURTAIN FASTENER. THOMAS H. C. BEALL, McCordsville, Ind. Filed July 1, 1896. Serial No. 597,759. (No model.)

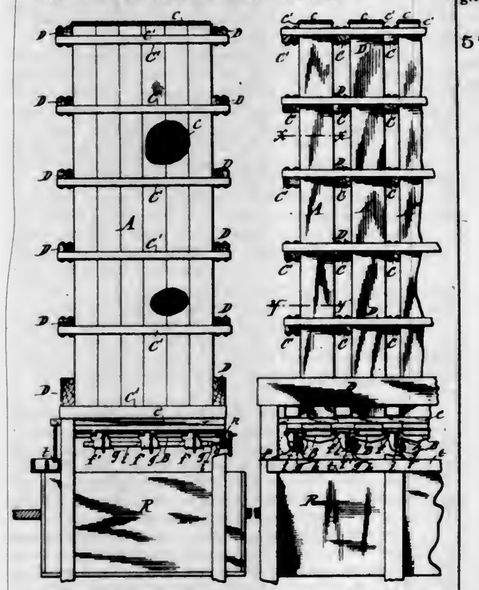
Claim.—1. The herein-described carriage-curtain fastener made up of a base-piece permanently secured to the side of the carriage, having a recess in one side thereof and a head-piece attached to the curtain made up of a pair of arms pivotally connected to each other, a spring for normally urging the inner ends of said arms together and a lug upon the inner surface of one of said arms which is adapted to fit within the recess in said base-piece, substantially as and for the purpose described.

2. The herein-described carriage-curtain fastener, made up of a base-piece permanently secured to the side of the carriage, having a recess in one side thereof and a groove upon the opposite side, and a head-piece attached to the curtain, made up of a pair of arms pivotally connected to each other, a spring for normally urging the inner ends of said arms together, a lug upon the inner surface of one of said arms adapted to fit within the recess in said base-piece and a spline upon the adjacent surface of the other of said arms adapted to fit within the guide-groove in said base-piece, substantially as and for the purpose described.



3. The herein-described carriage-curtain fastener, made up of a base-piece having a threaded extension by means of which it may be attached to the side of the carriage, a shoulder adjacent to said threaded extension and a wedge-shaped outer end having a recess in one side and a guide-groove upon its opposite side, and a head-piece, made up of a pair of arms pivotally connected to one another, a spring for normally holding the inner ends of said arms together, a lug or shoulder having a beveled outer end upon the inner side of one of said arms and adapted to engage the recess in said base-piece and a spline upon the adjacent face of the other of said arms adapted to fit within the guide-groove in said base-piece, substantially as and for the purpose described.

572,672. FILTERING APPARATUS. KIRK S. BLANCHARD, Albion, N. Y., assignor of two-thirds to Rufus E. Boschert, Syracuse, N. Y. Filed Nov. 4, 1895. Serial No. 567,792. (No model.)



Claim.—1. The combination with the side walls of a filtering-tank, of a bottom therefor hinged at one side, a guide at the other side of said bottom, and a wedge movable on said guide and engaging said bottom, to sustain the latter in closed position and cause it to open gradually, as set forth.

2. The combination with the side walls of a filtering-tank, of a bottom hinged at one edge to the base of one of said side walls, guides under the base of the opposite side wall, wedges sliding in said guides and sustaining said bottom in its closed position, and a longitudinally-movable rod connected to the wedges to operate them simultaneously, as set forth.

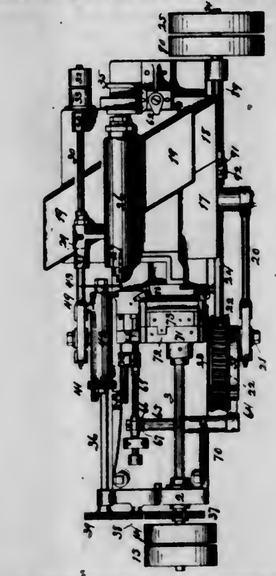
3. The improved filtering-tank formed with vertically-prolonged walls and having the two side walls thereof in proximity to each other, the inner faces of said walls being channeled vertically and covered by strainers extending straight across the channels, liquid-exits extending outward from the bases of the channels, an imperforate bottom hinged at one edge to the base of one side of the tank, and movable wedge-shaped supports holding said bottom in its closed position and causing it to open gradually, as set forth.

4. The combination of the filtering-tank formed with vertically-prolonged parallel side walls disposed in proximity to each other and provided with vertical draining-channels in their inner faces and liquid-exits at the bases of said channels, strainers extending across the channels, an imperforate bottom hinged at one edge to the base of one of said side walls, guides under the base of the opposite side wall, wedges sliding in said guides and sustaining the aforesaid bottom in its closed position, and a longitudinally-movable rod connected to the wedges to operate them simultaneously as set forth.

5. The combination of a plurality of filtering tanks, each formed with vertically-prolonged side walls disposed in proximity to each other and provided with vertical draining-channels in the inner faces thereof and liquid-outlets at the bases of said channels, strainers extending across the channels, a bottom plate hinged at one edge to the base of one of the side walls of the tank, guides under the opposite side wall, wedges riding on said guides and supporting the bottom plate in its closed position and a longitudinally-movable rod connected to said wedges to operate them simultaneously, said tanks being disposed side by side with longitudinal beams between them, similar beams extending along the exteriors of the two outer tanks, tie-beams extending across the ends of the set of tanks and secured to the longitudinal beams, and a gutter extending around the base of the set of tanks and communicating with the aforesaid liquid-outlets as set forth and shown.

6. In combination with the tank A and the bottom B hinged at one of its edges to the base of one of the side walls of the tank, the guides *g g* secured to the opposite side wall, the wedges *h h* riding in said guides, the coupling-bar *i* connected to said wedges, the bracket *n* fixed to the base of the tank and the screw *o* supported on said bracket and connected to the coupling-bar *i* to move the same longitudinally as set forth.

572,673. TYPE-MAKING MACHINE. ALEXANDER T. BROWN, Syracuse, N. Y. Filed Mar. 8, 1894. Serial No. 502,818. (No model.)



Claim.—1. The combination with a traversing table, a slide mounted diagonally thereon and a chuck upon the slide of a rotating cutter adapted to point the type-blank carried by the chuck.

2. The combination with a traversing table, a slide mounted diagonally thereon, and a chuck upon the slide, of a base-shaping cutter, and a cutter adapted to point the type-blank.

3. The combination with a traversing table, a slide mounted diagonally thereon and a chuck upon the slide, of a base-shaping cutter, a second cutter adapted to point the type-blank, and a matrix-die adapted to swage the type-character upon the pointed end of said blank.

4. In a machine for making type from a coil of wire, the combination with a reciprocating chuck, holding a type-blank severed from the wire, of a reciprocating and rotating cutter engaging with the end of the blank projecting from said chuck, as and for the purposes set forth.

5. In a type-making machine, a bed, a standard thereon, and a vertically-reciprocating slide mounted in a guide in said standard, in combination with an oscillating die-holder journaled in said slide, and a rocking bearing-bar connected to a crank upon the die-holder and to said bed, and means to actuate said slide.

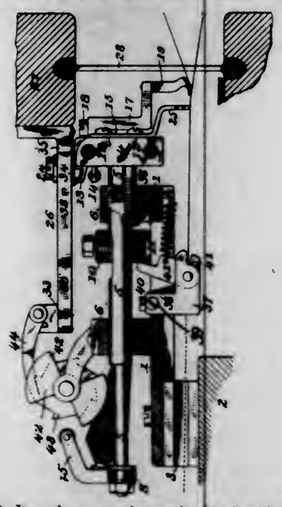
6. In a type-making machine, a reciprocating chuck, in combination with an oscillating shaft, having a lateral arm, provided with a die-seat, and means to oscillate said shaft.

7. In a type-making machine, a bed, a standard thereon provided with ways, a slide in said ways and a die-holder mounted and adapted to oscillate in said slide, in combination with a chuck to hold a type-blank and reciprocated in a direct line toward and from the die, and means to vertically reciprocate said slide and rock the die upon the end of the type-blank held by the chuck in engagement therewith.

8. In a type-making machine, the combination with a traversing table, a chuck mounted thereon, and a driving-gear connected by a pitman to said table, of a worm driving said gear, a shaft driving said worm, a pulley upon said shaft, a sleeve upon said shaft and a pulley upon said sleeve a clutch having one member upon said sleeve and the other upon and adapted to be traversed upon said shaft, a cam upon the drive-gear shaft and a shifting-rod engaging with said cam to shift the movable member of said clutch and suitable means to shift the driving-belt from one pulley to the other.

9. In a type-making machine, a bed, a traversing table thereon, a slide traversing said table diagonally, a blank-holding chuck upon said slide, and means to traverse said table and the slide thereon, a rotating cutter brought thereby into alinement to point the wire, a chuck brought thereby into position to receive the pointed wire, a cut-off, a cutter to which the chuck is next brought by said movement into position to point the end of the type-blank projecting from the chuck, and a matrix-die to which the chuck is thereafter brought for swaging the pointed end of the type-blank, in combination.

572,674. APPARATUS FOR WEAVING SELVAGES. GEORGE BROWNING, Hinsdale, Ill., assignor of two-thirds to William A. Johnson and Harry F. Maydwell, same place. Filed Mar. 9, 1896. Serial No. 582,481. (No model.) Patented in France Apr. 11, 1896, No. 255,466; in Belgium Apr. 11, 1896, No. 120,842, and in England Apr. 11, 1896, No. 7,714.



Claim.—1. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a needle-carriage, means for giving the same a lineal lateral and longitudinal reciprocation, a loop-forming needle attached to said carriage and carrying separate thread, and means whereby the separate thread is supported and delivered to the needle substantially as set forth.

2. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a needle-carriage, means for giving the same a lateral and longitudinal reciprocation, the same consisting of a cam-plate 26, secured to the reed-cap of the loom, a loop-forming needle attached to said carriage and carrying a separate thread and means whereby the separate thread is supported and delivered to the needle, substantially as set forth.

3. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, and means whereby the separate threads are supported and delivered to the needles, substantially as set forth.

4. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, the same consisting of a cam-plate 26, secured to reed-cap and provided with inclined operating-faces one of which is set in advance of the other, a pair of loop-forming needles attached to said carriage and carrying separate threads, one of such needles being adapted to operate in advance of the other, and means whereby the separate threads are supported and delivered to the needles, substantially as set forth.

5. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, means whereby the separate threads are supported and delivered to the needles, and a centrally-arranged shears actuated by the longitudinal movement of said carriages to nip the weft-threads, substantially as set forth.

6. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, means whereby the separate threads are supported and delivered to the needles, and a centrally-arranged shears actuated by the longitudinal movement of said carriages to nip the weft-threads, such shears being made laterally adjustable on the bed of the mechanism, substantially as set forth.

7. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, means whereby the separate threads are supported and delivered to the needles, and a centrally-arranged shears actuated by the longitudinal movement of said carriages to nip the weft-threads, such shears consisting of a pair of outer stationary blades, and a central moving blade, substantially as set forth.

8. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, means whereby the separate threads are supported and delivered to the needles, and a cam having an intermittent movement and adapted to engage and hold the needle-carriages in a dormant condition at regular intervals, substantially as set forth.

9. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon, stops 36, on the main frame, a pair of loop-forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26 on the reed-cap for operating the mechanism, substantially as set forth.

10. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, an adjustable stop 10, on said frame, a pair of laterally-moving needle-carriages mounted on said frame, stops 36 on the main frame, a pair of loop-forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26, on the reed-cap for operating the mechanism, substantially as set forth.

11. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon, each consisting of a sliding head 13, laterally-adjustable slide 15, and vertically-adjustable bracket 17, a pair of loop-forming needles secured to said brackets, stops 36, on the main frame, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26 on the reed-cap for operating the mechanism, substantially as set forth.

12. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon, stops 36, on the main frame, a pair of loop-forming needles upon said carriages, each needle being of a downwardly-curved formation and provided with eyes 22 and 23, and a thread-protecting groove 21 at front, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26, on the reed-cap for operating the mechanism, substantially as set forth.

13. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon, stops 36 on the main frame, a pair of loop-forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26, on the reed-cap for operating the mechanism, the same being formed with inclined faces 29 and 30, and straight faces 31 and 32, substantially as set forth.

14. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon, stops 36, on the main frame, a pair of loop-forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26 on the reed-cap for operating the mechanism, the same being formed with a shoulder 33 near its point that is adapted to engage one of the posts 24, to push the needle-carriage backward against the stops 36, substantially as set forth.

15. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, a pair of laterally-moving needle-carriages mounted thereon stops 36 on the main frame, a pair of loop-forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame and a cam-plate 26 on the reed-cap for operating the mechanism, the same being formed, with a pair of lateral lugs 35 that are adapted to force the needle-carriages backward out of the way of the loom-reed, substantially as set forth.

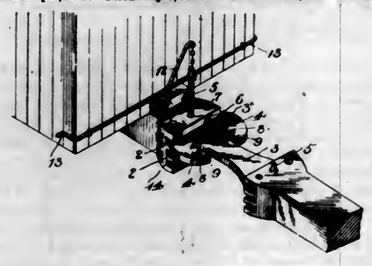
16. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a stationary supporting-frame, a longitudinally-moving carrying-frame, an adjustable stop 10, on said frame, a pair of laterally-moving needle-carriages mounted on said frame, stops 36, on the main frame, a pair of loop forming needles upon said carriages, cop-carrying spindles 7 on said carrying-frame, a cam-plate 26 on the reed for operating the mechanism, and a spring-dog 34 attached to the cam that is adapted to engage and draw the needle-carriages into their forward position, substantially as set forth.

17. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a needle-carriage, means for giving the same a lateral and longitudinal reciprocation, a loop-forming needle attached to said carriage and carrying a separate thread, a cloth-positioning plate 25, and means whereby the separate thread is supported and delivered to the needle, substantially as set forth.

18. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, a cloth-positioning plate 25, and means whereby the separate threads are supported and delivered to the needles, substantially as set forth.

19. In a selvage-weaving mechanism, in which a separate thread is employed to form the selvage, the combination of a pair of needle-carriages, means for giving the same a lateral and longitudinal reciprocation, the same consisting of a cam-plate 26, secured to the reed-cap and provided with inclined operating-faces, one of which is set in advance of the other, a cloth-positioning plate 25, a pair of loop-forming needles attached to said carriages and carrying separate threads, one of such needles being adapted to operate in advance of the other, and means whereby the separate threads are supported and delivered to the needles, substantially as set forth.

572,675. APPLIANCE FOR COUPLING CARS. CLARE M. DORN, Chautauqua, N. Y. Filed May 6, 1896. Serial No. 590,424. (No model.)



Claim.—1. In a car-coupler the combination with the draw-head of jaws pivoted therein by their inner ends, and having on the inner edges of their free ends, the series of V-shaped indentures; the link having at either end the slot-like apertures and carrying upon one end the projections 9, adapted to be received by the V-shaped indentures upon the jaws, substantially as described and for the purpose named.

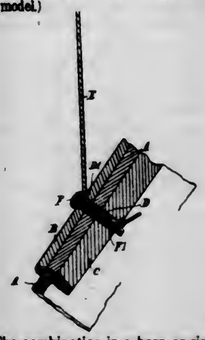
2. In a car-coupler the combination with a draw-head provided with a series of transverse recesses reaching across the entire face thereof, of jaws pivoted in one of said recesses having on their pivoted end the lateral arms 4^a, provided with aperture 10, and upon the inner edge of their free ends the V-shaped indentures 8; and a link having slotted apertures at either end and having one end provided with projections 9, and the rounded end 3^x, the latter adapted to engage with the lateral arms and force the said projections into registration with said V-shaped indentures, substantially as described and for the purpose named.

572,676. TREATMENT OF PETROLEUM FOR REMOVING SULFUR COMPOUNDS. HERMAN FRASCH, Cleveland, Ohio, assignor to the Solar Refining Company, of Ohio. Filed July 14, 1890. Serial No. 358,712. (No specimens.)

Claim.—1. In the art of distilling petroleum-oils containing sulfur compounds of the character specified, the improvement which consists in eliminating the sulfur by subjecting the oil during the process of distillation either in a liquid or vaporous condition to roasted and pulverized copper matte, substantially as described.

2. The process of treating oil of the Lima class, for removal of the skunk, by subjecting the skunk-bearing oil during a distillation thereof to a pulverulent purifying material of metallic oxid having a basis of iron and copper in the intimate union resulting from a melting together of their compounds and admixture in the molten state and consisting of roasted and pulverized copper matte; the purifying material being used in the body of oil in distillation or brought into contact with the vapors after they have been given off from said body; substantially as described.

572,677. STRING-FASTENING FOR SOUNDING-BOARDS OF MUSICAL INSTRUMENTS. GEORGE GODWIN, London, England, assignor to Daniel Mayer, same place. Filed July 27, 1896. Serial No. 600,689. (No model.)



Claim.—1. The combination in a harp or similar musical instrument, of a sound-board comprising reinforcing-strips arranged in contact with the board and provided with peg-holes for the passage of the strings, metallic tubes or ferrules passing through the holes and securing the stripe to the board, pegs fitting into said ferrules and each having a longitudinal groove, and the strings having portions of their length confined between the said ferrules and pegs and received into the grooves of the latter, substantially as described.

2. The combination in a harp or similar musical instrument, of a sound-board comprising reinforcing-strips arranged in contact with the board and provided with peg-holes for the passage of the strings, metallic tubes or ferrules passing through said holes and flared at each end to confine the strips in place, and headed pegs fitting in said ferrules and securing the lower ends of the strings, the said pegs each having a longitudinal groove extending into the under side of the head thereof and receiving portions of the string, substantially as described.

3. The combination with the sounding-board and the upper and lower strips thereof, each having coinciding holes extending through the board and strips, of metallic tubes inserted in said holes and provided at their ends with means which secure the parts together, substantially as described

572,678. MEANS FOR AND METHOD OF PREVENTING CORROSION OF METALS. MAX W. HEINIG, Brooklyn, N. Y. Filed Oct. 2, 1895. Serial No. 564,401. (No model.)



Claim.—1. A metal body having its surface covered with thin animal membrane placed thereover and secured thereto by means of the inherent adhesive property of the membrane, to form an air-tight covering for the same for the purpose of preventing the corrosion of the metal, substantially as described.

2. The combination with a metal body, of a tubular animal membrane drawn thereover, and integrally secured to the surface thereof to form an air-tight covering for the same, substantially as described.

3. As an article of manufacture, a corset-steel covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, substantially as described.

4. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and a protector of suitable material snugly secured around said membrane covering, substantially as described.

5. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and a protector of paper wrapped around and cemented to said membrane covering, substantially as described.

6. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, and the fastening-clasps secured by rivets passed through said steel and membrane, substantially as described.

7. As an article of manufacture, a corset-steel, covered with animal membrane, secured thereto by means of the constituent adhesive property of the membrane, a protector of suitable material snugly secured around said membrane covering, and the fastening-clasps secured by rivets passing through said steel and through the intervening covering and protector, substantially as described.

8. As an article of manufacture, a corset-steel having a tubular covering of gut drawn thereover and secured directly thereto, the end of the tube beyond the ends of the steel being closed, thereby completely enveloping the inclosed steel for the exclusion of air and moisture, substantially as described.

9. As an article of manufacture, a corset-steel having a tubular covering of gut drawn thereover and secured thereto by means of the inherent adhesive constituent of the gut, the said gut being wrapped over upon itself at the ends of the steel to thus completely inclose the steel at every point, substantially as described.

10. As an article of manufacture, a corset steel having a tubular covering of gut integrally secured thereto in its normal state by means of the constituent adhesive property of the gut, substantially as described.

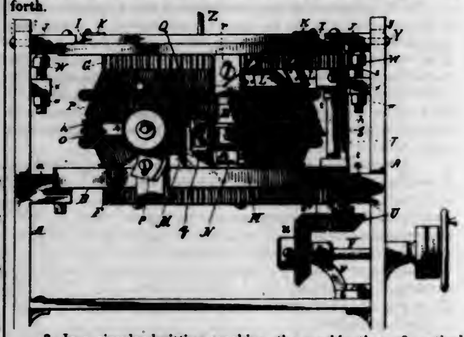
11. The method of securing animal membrane to metal, consisting of first wetting the membrane, spreading the same directly on the metal, and pressing the same into intimate contact therewith, whereby the adhesive constituents of the membrane are dissolved somewhat and brought into close relation with the surface of the metal so as to cement the membrane thereto, substantially as described.

12. The method herein set forth, consisting of cleaning the animal membrane, wetting the same and allowing it to dry, again wetting it, pressing it into intimate contact with the surface of the metal to be covered, and allowing it to dry thereon, substantially as described.

572,679. CIRCULAR-KNITTING MACHINE. DANIEL HURLEY, Bennington, Vt., assignor to Charles Cooper, same place. Filed Jan. 24, 1895. Serial No. 536,099. (No model.)

Claim.—1. In a circular-knitting machine, the combination of upper and lower brackets on the main frame, upper cap-plate and lower annular bed-plate supported by and secured to said brackets, each of said plates having an annular recess at its inner periphery, upper and lower supporting-rings each provided with a flange fitting in the recess of its cap or bed plate whereby the supporting-rings are carried by and revolved within the cap and bed plates, upper and lower needle-cylinders connected to the supporting-ring to revolve therewith, gear-rings also connected to said supporting-ring, and suitable gearing to impart uniform movement to both cylinders, as and for the purpose set forth.

2. In a circular-knitting machine, the combination with stationary brackets on which the lower needle-cylinder is supported, of vertically-adjustable brackets to which the upper needle-cylinder is connected, screw heads or nuts secured to a fixed portion of the frame of the machine, and jack-screws working in said nuts and engaging the under side of the adjustable brackets, as and for the purpose set forth.

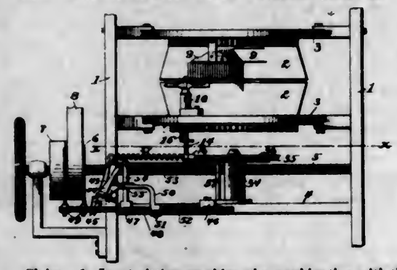


3. In a circular-knitting machine, the combination of vertical standards provided with slots near their upper ends, stationary brackets on said standards below said slots, a lower needle-cylinder supported by said stationary brackets, adjustable brackets connected to said standards by suitable devices passing through said slots and upper needle-cylinder supported by said adjustable brackets, screw heads or nuts secured to the standards below said slots, and jack-screws working in said screw heads or nuts and engaging the under sides of the adjustable brackets whereby the upper needle-cylinders are vertically adjusted, as and for the purpose set forth.

4. In a circular-knitting machine, the combination with two oppositely-arranged conical needle-cylinders of the same size and form supported on the main frame, said cylinders having a space between their opposing edges and said edges being rounded on their inner surfaces, each of said cylinders having formed in its periphery a series of grooves for the reception of needles, a series of needles supported in said grooves and crossing each other on a line midway of the space between the cylinders whereby the finished work may be taken upwardly or downwardly from the needles, as and for the purpose set forth.

5. In a circular-knitting machine, the combination with two oppositely-arranged conical needle-cylinders of the same size and form, supported on the main frame having a space between their opposing edges which are rounded on their inner faces, a series of needles in grooves in the periphery of said cylinders, the needles of the respective cylinders crossing each other on a line midway of the space between the cylinders whereby the finished work may be taken upwardly or downwardly within the cylinders, of an interchangeable bracket within the cylinders adapted to be secured to the upper or lower cylinder for holding a rod for operating the take-up above or below the cylinders, as and for the purpose set forth.

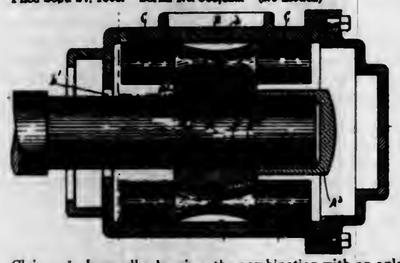
572,680. STOP ATTACHMENT FOR KNITTING-MACHINES. DANIEL HURLEY, Bennington, Vt., assignor to Charles Cooper, same place. Filed Feb. 28, 1896. Serial No. 581,140. (No model.)



Claim.—1. In a knitting-machine, the combination with the belt, of a spring-actuated sliding rod 48, a belt-shipper on said rod engaging the belt, a shaft journaled in a suitable bearing on the frame of the machine, a tripping-lever, a dog, and a hand-lever secured on said shaft to turn therewith, an angle-arm on the rod 48 engaging said dog to lock the rod against the action of its spring, a spring-actuated rod 53 engaging the tripping-lever, and a tripping device actuated by defects in the knitted fabric and serving to lock the rod 53 against the action of its spring, substantially as and for the purpose set forth.

2. In a knitting-machine, a belt-shipping mechanism, consisting of a pivoted bar, a lever pivoted at one end on said bar, a spring connecting the free end of the bar to the frame of the machine, a projection on the bar engaging said lever, a shaft journaled on the frame of the machine, a tripping-lever, a dog, and a hand-lever secured to said shaft to turn therewith, a spring-actuated sliding rod carrying a belt-shipper, an angle-bar on said rod with which the dog engages to hold the sliding rod against the action of its spring, a rod pivoted at one end to the pivoted bar and engaging at its other end the said tripping-lever, and a tripping device to engage the free end of the lever on the pivoted bar to hold it against the action of its spring, substantially as and for the purpose set forth.

572,681. ROLLER-BEARING. BENJAMIN S. LAWSON, Red Bank, N. J., assignor to the Roller-Bearing Truck Company, New York, N. Y. Filed Sept. 27, 1895. Serial No. 563,822. (No model.)

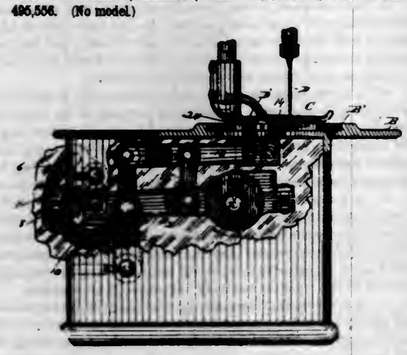


Claim.—1. In a roller-bearing, the combination with an axle or shaft provided with a peripheral engaging face formed convex in cross-section; of an outer casing, and independently-adjustable antifriction-rollers interposed between the axle or shaft and the outer casing, and having their peripheral faces free to roll in contact with each other, said rollers having their extremities rolling in contact with the inner face of the casing and out of contact with the axle or shaft, and their central portions rolling in contact with said engaging face and out of contact with the inner face of the casing, substantially as described.

2. In a roller-bearing, the combination with an axle or shaft provided with a projecting peripheral engaging face formed convex in cross-section; of an outer casing, and independently-adjustable antifriction rollers interposed between the axle or shaft and the outer casing and having their peripheral faces free to roll in contact with each other, each of said rollers being formed with a contracted substantially central portion formed with a concave peripheral face engaged with said projecting peripheral face and separated from the inner face of the outer casing, and each of said rollers having its extremities engaged with the inner face of the casing and separated from the axle or shaft, substantially as specified.

3. In a roller-bearing, the combination with an axle or shaft provided with a projecting pin or shoulder, a sleeve mounted on the axle or shaft and having its inner peripheral face formed with a groove for receiving the pin or shoulder and its outer peripheral face formed convex in cross-section, and a cap mounted on the axle or shaft for engaging the sleeve and holding the same in its normal position; of an outer casing, and independently-adjustable antifriction-rollers having their central portions rolling in contact with the outer peripheral face of the sleeve, and their extremities rolling in contact with the inner face of the outer casing, substantially as and for the purpose set forth.

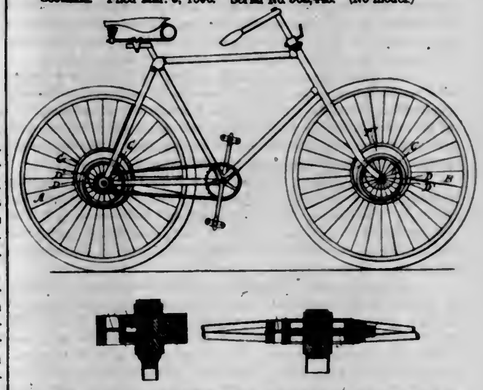
572,682. FEEDING MECHANISM FOR SEWING-MACHINES. JOSEPH M. MERROW, Mansfield, Conn. Filed Jan. 3, 1894. Serial No. 495,556. (No model.)



Claim.—1. In a feed mechanism, such as described, the combination with the feed-carrier 13; the lever 11, to the upper end of which feed-carrier 13 is pivoted; the rocker 3 pivoted to the frame and provided with a wing 6; the link 10 connecting lever 11 to the wing 6 of rocker 3; the driving-eccentric; the eccentric connection 2 one end whereof engages the driving-eccentric while the other is connected to the rocker below its pivot and a link 15 joining the eccentric connection and feed-carrier, substantially as described.

2. In a feed mechanism for a sewing-machine, the combination of the driving-eccentric the eccentric connection 2 supported at one end upon the eccentric and at the other upon the rocker 3; rocker 3 pivotally supported upon the frame above the point of attachment of the eccentric connection; the lever 11 vertically arranged and pivotally supported below the eccentric connection; link 10 connected at one end to the lever 11 and at the other end to the wing 6 of rocker 3 to one side of the pivot of the latter; and the feed-carrier 13 horizontally arranged above the eccentric connection and connected to the latter by link 15 and to the upper end of lever 11; substantially as described.

572,683. WHEEL FOR CYCLES. JAMES MCCONOCHY, Glasgow, Scotland. Filed Mar. 9, 1896. Serial No. 582,443. (No model.)



Claim.—1. A wheel comprising a pair of parallel intermediate rims, a pair of parallel inner rims provided with a hub and located within and arranged eccentrically to the intermediate rims, and the division-plate located between the intermediate rims and also between the inner rims; substantially as described.

2. A wheel comprising a pair of parallel intermediate rims, a pair of parallel inner rims provided with a hub and located within, and arranged eccentrically to, the intermediate rims and the division-plate secured to the intermediate rims, and extending between the inner rims; substantially as described.

3. A wheel comprising a pair of parallel intermediate grooved rims providing tracks, a pair of parallel inner grooved rims provided with a hub and located within, and eccentrically to, the intermediate rims, the tires secured to the inner grooved rims and fitting in the grooves of the intermediate rims and the division-plate secured to the latter and extending between the intermediate rims and also between the inner rims; substantially as described.

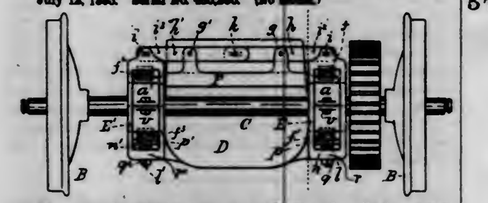
572,684. WATER-MOTOR. ABRAM D. OLES, Unadilla, N. Y. Filed Dec. 29, 1894. Serial No. 533,368. (No model.)



Claim.—In a water-motor, the combination of a disk or wheel having secured thereto a number of cups or buckets each formed with a curved bottom and a cut-out portion on one side thereof, a jet-open-

ing arranged to one side of the plane of the cups or buckets and directing a jet of water onto the cups or buckets within the radius of the wheel, in a plane approximately parallel with the face of the disk or wheel whereby the direction of the water is reversed and through centrifugal force will be thrown to the edge of the cups or buckets away from the center and there discharged, substantially as in the manner explained.

572,685. CAR-MOTOR. WILLIAM ROBINSON, Boston, Mass. Filed July 12, 1893. Serial No. 480,260. (No model.)



Claim.—1. In combination, substantially as described, a motor, springs supporting one end of the same, and a series of levers supported on suitably-arranged bearings or fulcrums formed independently of said motor and its journal-boxes, said levers being arranged to distribute and equalize the pressure of said motor on said springs.

2. In combination, substantially as described, a motor arranged to drive an axle, springs supporting one end of said motor elastically upon said axle, and levers supported on fulcrums formed independently of the motor and its journal-bearings, said levers operating to equalize the pressure of said motor on said springs, thereby preserving the proper alinement of said motor with reference to said axle.

3. In combination, substantially as described, a motor spring-supported on a car-axle, levers engaging said motor, and suitably-arranged fulcrums supporting said levers, said fulcrums being formed independently of said motor and its journal-boxes and said levers being arranged to distribute and equalize the pressure of said motor on its supporting-springs.

4. In combination, substantially as described, a motor arranged to drive a car-axle, springs arranged to support one end of said motor flexibly with reference to said axle, a bridge or device formed independently of said motor and its journal-boxes, said device being provided with fulcrum-bearings, and levers pivoted in said fulcrum-bearings, said levers having their outer ends pivotally connected to the motor and their inner ends flexibly connected together, said levers operating to distribute and equalize the pressure of said motor on said springs.

5. In combination, substantially as described, a car-axle, a motor arranged to drive the same, said motor having one end flexibly supported by said axle and being adjustable on springs in a vertical plane, relatively to said axle, and a series of levers, with their fulcrum-supports formed independently of said motor and its journal bearings, said levers being arranged to distribute and equalize the pressure of said motor on said springs during the varying conditions of service.

6. The combination, substantially as described, of a car-truck, a motor arranged to drive the same, said motor having one end flexibly supported on springs, said springs being in turn supported by the axle driven by said motor, a bridge supported by the journal-boxes and provided with fulcrum-bearings, and levers fulcrumed in said bearings, said levers being arranged to equalize the pressure of said motor on said supporting-springs.

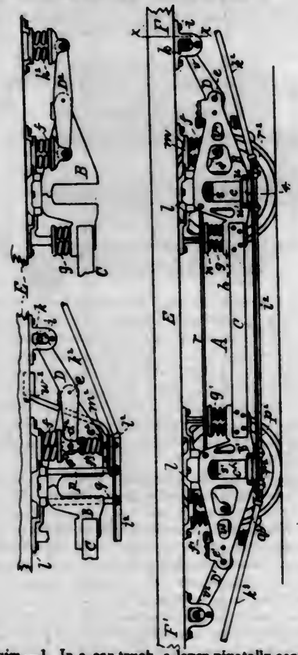
7. The combination, substantially as described, of a motor-truck, a motor arranged to drive the same through power applied to the axle at a point outside of the center of said axle, said motor having one end supported by springs, said springs, in turn, being supported by said driven axle, and levers supported on fulcrum bearings formed independently of the motor and its journal-boxes, said levers being arranged to neutralize the irregular torsional strain of said mechanism and to distribute and equalize the pressure on said supporting-springs.

8. In combination, substantially as described, a bridge provided with fulcrum-bearings and supported by the axle journal-boxes, a motor having one end resting on springs supported by said shaft or axle driven by said motor, and levers supported in the fulcrum-bearings of said bridge, said levers being arranged to transfer and equalize the pressure of said motor on said supporting-springs.

9. In combination, substantially as described, the car-axle C, the journal-boxes *a*, *a'* supported by said axle, springs supported by said journal-boxes, the motor D supported by said springs and arranged to drive said axle through the gear-wheels *c'*, *d*, fulcrum-bearings *g*, *g'* also supported by said boxes *a*, *a'*, but independent thereof, and the levers A, A' arranged to equalize the pressure of said motor on its said supporting-springs, thus preserving proper alinement between said gear-wheels.

10. In combination with an elastically-supported electric machine driving an axle or shaft through meshed gearing, a parallel-motion mechanism consisting, essentially, of levers engaging said electric machine and having fulcrum-bearings formed independently of the shaft or axle thereof, said levers being arranged to preserve proper alinement between the meshing gears of said machine by equalizing the load on the elastic supports of said machine, substantially as described.

572,686. CAR-TRUCK. WILLIAM ROBINSON, Boston, Mass. Filed Mar. 7, 1894. Serial No. 502,745. (No model.)



Claim.—1. In a car-truck, a lever pivotally connected to a portion of the truck extended outwardly beyond the journal-box, said lever having one end flexibly connected to the main frame or car-body and the other end supporting a spring or springs interposed between the end of said lever and said main frame or car-body, said spring forming the only spring connection between said lever and car-body, substantially as described.

2. In a car-truck, a lever pivotally connected to a portion of the truck-frame extended outwardly beyond the journal-box, said lever having one end flexibly connected to the car-body or main frame by means of a link and the other end arranged to exert an upward compression on the bottom of a spring or springs, said upward compression being caused and controlled by the vertical pressure of the car-body or main frame on the flexibly-connected end of said lever, substantially as described.

3. In a car-truck, a lever pivotally connected to a portion of the truck-frame, said lever having one end flexibly connected to the car-body or main frame by means of a link and the other end supporting a spring or springs interposed between the end of said lever and said car-body or main frame, substantially as described.

4. In a car-truck, the combination, substantially as described, of levers pivotally connected to saddles or portions of the truck-frame extending outwardly beyond the journal-boxes, the whole length of said levers being outside of the line of said journal-boxes, and the car-body or main frame flexibly supported by said levers, springs being interposed between said car-body and one end only of said levers.

5. In a car-truck, levers having fulcrum-bearings located outwardly beyond the journal-boxes, said levers having one end flexibly connected to the car-body or main frame and the opposite ends located vertically between two sets of springs and controlling the compression of the same, the opposite ends of said springs having bearings against portions of the truck or car-body, substantially as described.

6. In a car-truck, levers having fulcrum-bearings on the truck, and having one end connected flexibly to the car-body or main frame and the opposite ends provided with two sets of springs, one set above and one below said levers, one set of said springs being arranged to support the car under its normal load, and the other set to come into play to reinforce the resistance of the first, with a gradually-increasing pressure, as the load is abnormally increased, substantially as described.

7. In a car-truck, levers having fulcrum-bearings located outwardly beyond the journal boxes, said levers having one end connected flexibly to the car-body or main frame and the opposite ends provided with two sets of springs, one set of said springs being arranged to support the car with its normal load, and the other set to be brought into play to reinforce the first, with a gradually-increasing resistance, as the load becomes excessive, substantially as described.

8. In a car-truck, the combination, substantially as described, of the saddle or frame B straddling the journal-box, the lever D, having a fulcrum-bearing toward the outer end of said saddle, one end of said lever being flexibly connected to the main frame E, springs *f* interposed between the opposite end of said lever and said main frame E, said springs *f* forming the sole spring-support between said lever and said main frame E and springs *g* interposed between the truck-frame and said main frame E at the opposite side of the journal-box from said lever D.

9. In combination, substantially as described, the truck-frame supported on equalizing-springs interposed between said frame and the journal boxes, said frame being provided with fulcrum-bearings toward its outer ends, levers fulcrumed in said bearings and having one end flexibly connected to the car-body or main frame, springs having their compression under control of the opposite ends of said levers and affording the sole spring connection between said levers and said car-body or main frame, and pedestal-posts rigidly connected to said main frame and movably engaging said truck-frame.

10. In a car-truck the brake-hanger support constructed with two bearing-points adapted to allow the brake-hanger to be supported thereon at different distances from the axle center, substantially as described.

11. The combination, substantially as described, of the pedestal-post *p*, the truss-casting l^3 having one end fitted to the bottom of said post and the outer end provided with a socket or projection affording an abutment for the end of the truss-bar k^3, and the tie-brace i^3 secured to said post *p* and casting l^3 by means of the nut r^3 on the lower end of said post, said tie-brace i^3 being placed below said truss-casting l^3 and further secured thereto by means of the bolt u^3 passing through said tie-brace and truss-casting near the outer end of each.

12. The combination, substantially as described, of the pedestal-post *p*, the truss-casting l^3 having one end fitted to the bottom of said post and the other end forming an abutment for the end of the truss-bar k^3, and the body-brace m^3 secured to said truss-casting, independently, by the bolt t^3.

13. The combination, substantially as described, of the pedestal-post *p*, the truss-casting l^3 having one end fitted to the bottom of said post and the other end forming an abutment for the end of the truss-bar k^3, the body-brace m^3 placed above said casting l^3 and secured thereto independently by the bolt t^3 and tie-brace i^3 placed on the post *p* below said truss-casting l^3, said post *p*, tie-brace i^3, truss-casting l^3 and body-brace m^3 being rigidly secured together by the nut r^3 on the end of said post, and the bolt u^3 passing through said body-brace, truss-casting and tie-brace.

14. In a motor-truck, the motor-supporting arch-bar provided, at its ends, with vertical orifices or eyes formed by bending the flat ends of said bar around into the form of loops, substantially as described.

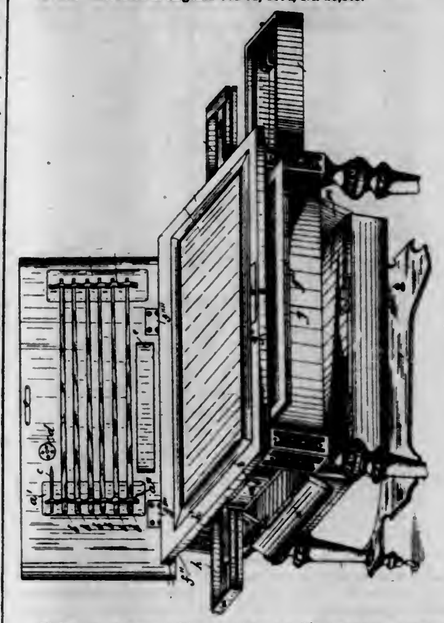
572,687. CURTAIN POLE AND FIXTURE. FREDERICK J. SCHLOER, Trenton, N. J. Filed Feb 8, 1896. Serial No. 578,604. (No model.)



Claim.—1. A curtain-pole clasp or fixture formed of wire bent at its center to form a substantially circular portion, crossed and bent to form oppositely-disposed extensions, and a concaved plate through which the vertical portion of said clasp is passed, substantially as described.

2. A curtain-pole clasp or fixture formed of spring-wire bent at its center to form a substantially circular portion, crossed and bent to form oppositely-disposed extensions, and a plate through which the vertical portion of said clasp is passed, said plate being convex upon its under face to conform to the curvature of the passage through the pole with which the same is to be used, substantially as described.

572,688. CONVERTIBLE GAME-TABLE. ARTHUR C. D. SEIFERT, Chemnitz, Germany. Filed Dec. 26, 1894. Serial No. 532,994. (No model.) Patented in England Oct. 31, 1894, No. 20,875.



Claim.—1. A game-table comprising a table-top, a compartment open at both ends and the folding game-board occupying the compartment when closed and projecting beyond the ends of the table-top when opened; substantially as described.

2. A game-table comprising a table-top, a compartment open at both ends and located beneath the table-top, and the folding game-board occupying the compartment when closed having tongue-and-groove connection with the sides of the compartment and projecting beyond the table-top when opened; substantially as described.

3. A game-table comprising a table-top, a front upper compartment, a front intermediate compartment open at both ends and located beneath the front upper compartment, the rear upper compartment open at both ends, and the lower compartment located beneath the said rear upper compartment and the said front intermediate compartment; substantially as described.

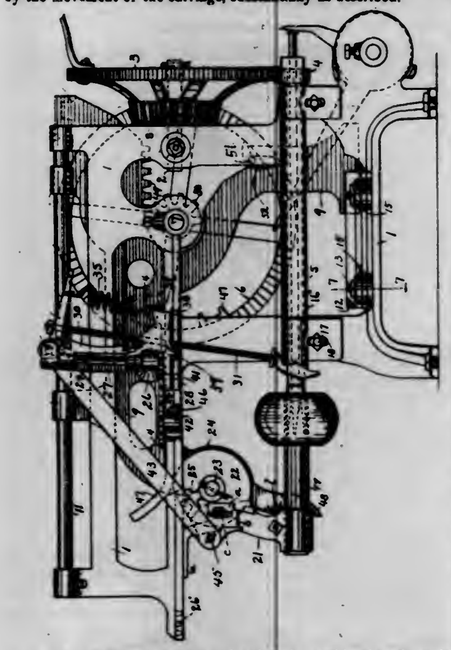
572,689. APPLE-PARER. HENRY A. TRIPP and WALTER TRIPP, Sodus, N. Y. Filed May 6, 1896. Serial No. 590,472. (No model.)

Claim.—1. In a machine for paring, the combination of the main frame, a movable knife-carriage having a slot, a wheel provided with studs one of which is arranged to bear on a wall of said slot and move the carriage through its path in one direction, said carriage having a socket or bearing arranged with relation to the other wheel-stud to begin the return of the carriage, and a gear on the wheel arranged to engage a rack on the carriage to complete the return, substantially as described.

2. In a machine for paring, the combination of the main frame, a movable knife-carriage having a slot, a wheel provided with studs one of which is arranged to bear on a wall of said slot and move the carriage through its path in one direction, said carriage having a socket or bearing arranged with relation to the other wheel-stud to begin the return of the carriage, and a gear on the wheel arranged to engage a rack on the carriage to complete the return, said rack and gear being arranged to be engaged a little after the last-named stud and bearing become inoperative to provide a momentary rest for the carriage, substantially as described.

3. In a machine for paring and coring, the combination of a main frame, a movable knife-carriage, a knife, a fork-shaft provided with a fork, devices for moving the knife away from the fork in the line of its shaft, and devices for lifting it away from the said line, said latter devices comprising a pivoted link connecting a rotating knife-

support with a rotating corer-support, said supports being rotatable by the movement of the carriage, substantially as described.



4. In a machine for paring and coring, the combination of a main frame, a knife-carriage, a corer supported on said carriage, a fork to hold the article for paring and coring, a fork-shaft, and devices for adjusting each end of said shaft to aline it with the corer, substantially as described.

5. In a machine for paring and coring, the combination of a main frame, a knife-carriage, a corer supported on said carriage, a fork-shaft and fork, said carriage being adjustable to aline the corer with the fork-shaft, substantially as described.

6. In a machine for paring and coring, the combination of a main frame, a knife-carriage, a corer supported on said carriage, a fork to hold the article for paring and coring, a fork-shaft, and devices for adjusting each end of said shaft to aline it with the corer, said carriage being adjustable to aline the corer with the shaft, substantially as described.

7. In a machine for paring, the combination of a main frame, a knife-carriage, a swinging knife-frame, a knife-holding stock fixed to a supporting-bar 31 loosely connected to the swinging frame, and a detachable spring to hold the stock engaged therewith, said spring maintaining said connection and the stock and its supporting-bar being together entirely removable from the machine by the detachment of the spring, substantially as described.

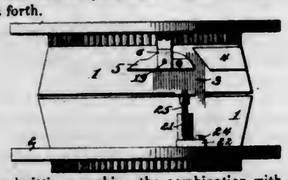
8. In a machine for coring, a main frame, a corer, a carriage for the corer, a pivoted corer-supporting arm, and an apple-discharging arm fixed to and movable with said carriage and having a projection *l* adapted to bear on and partially surround and hold the corer-support when the corer is at work, substantially as described.

9. In a machine for coring, a main frame, a corer, a carriage for the corer, a pivoted corer-supporting arm, and an apple-discharging arm fixed to and movable with said carriage and having a projection *l* adapted to bear on and partially surround and hold the corer-support when the corer is at work, said discharging-arm being adjustable, substantially as described.

572,690. CAM AND WORK-PRESSER FOR KNITTING-MACHINES. WILLIAM T. BARRATT, Bennington, Vt., assignor to Charles Cooper, same place. Filed Feb. 28, 1896. Serial No. 581,151. (No model.)

Claim.—1. In a knitting-machine, a draw-up cam consisting of two parts hinged together and adjustable relative to each other, and means to lock the parts together in their adjusted position, substantially as and for the purpose set forth.

2. In a knitting-machine, a draw-up cam consisting of two parts hinged together by a knee-joint, each of said parts having a halved out portion which portions fit one within the other, one of said portions having an elongated opening and the other a threaded opening, and a screw passing through the elongated opening into the threaded opening to lock the two parts together, substantially as and for the purpose set forth.



3. In a knitting-machine the combination with the cylinder-supporting ring, of a bracket secured to said ring and provided with an elongated opening and grooves in its vertical arm and a vertical threaded opening extending from its lower edge into the elongated opening, a draw-up cam consisting of two parts hinged together and provided with pins projecting from its face into the vertical grooves in the arm and with a threaded opening, a screw passing through the elongated opening in the bracket into the threaded opening in the cam and a screw in the vertical threaded opening in the bracket to engage the other screw, substantially as and for the purpose set forth.

4. In a knitting-machine the combination with the needle-operating cams, the needles and the lower cylinder-supporting ring, of a hollow standard secured to said ring, a post adjustably supported in the hollow standard, and a presser-finger adjustably secured to the top of the post to engage and press the knitted fabric out of the path of the needles when the cam operates on them to give them their return movement, substantially as and for the purpose set forth.

572,691. COIN-RECEPTACLE. JULIUS BRENINGER and ERNEST F. KLEE, New York, N. Y. Filed Jan. 31, 1896. Serial No. 577,530. (No model.)



Claim.—1. A coin-receptacle consisting of a casing containing a spring-piece, said spring-piece serving as a support and pressure device for a single pile of coins, a slot in said casing for the reception and discharge of a coin, and a notch in said casing, opposite the slot, exposing the edge of the upper coin, to facilitate its removal through the aforesaid slot, substantially as set forth.

2. A casing to contain a coin or other disk, consisting of a solid base, a curved piece of spring material upon said base, said piece being arranged to support the coin, a wall having a slot therein, and a notch formed at its opposite portion, a cover for said casing, the said cover having a longitudinal slot, closed at one end and communicating at its other end with the aforesaid notch, substantially as set forth.

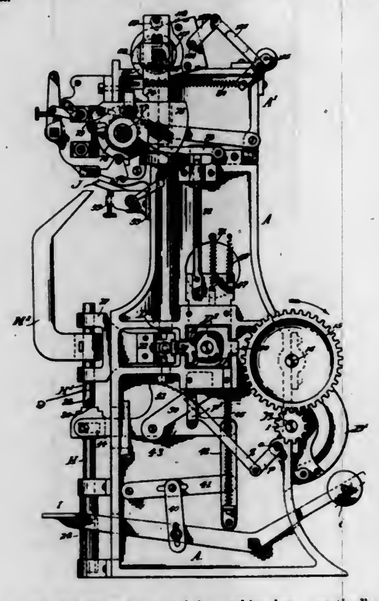
3. A button consisting of a casing to contain coin or the like, having a curved piece of spring material within said casing to support the coin, a plate adjacent to said casing, and a shank connecting said casing and plate, the said shank being formed of a narrow strip adapted to fit within an ordinary slit buttonhole and to be incapable of rotation therein, substantially as set forth.

572,692. NAILING-MACHINE FOR BOOTS OR SHOES. JOSEPH A. CAVALLI, San Francisco, Cal. Filed Jan. 21, 1895. Serial No. 535,648. (No model.)

Claim.—1. In a nailing-machine, and in combination, a main frame having a horizontally-vibrating upper part carrying wire driving and cutting mechanism; a shaft journaled in the main frame and carrying an actuating-cam; a pivoted shoe-horn standard; a vertical shaft journaled in the main frame and extending into the movable part of the said frame; a lever secured upon said shaft and connected to said shoe-horn standard, and connections operated by said cam for moving said lever, and thereby vibrating said standard and the upper part of said frame in unison, substantially as described.

2. In a nailing-machine, a main frame having a horizontally-vibrating upper part carrying wire driving and cutting mechanism; a cam-shaft journaled in the main frame and carrying an actuating-cam; a pivoted shoe-horn standard; a vertical shaft journaled in the main frame and secured to the upper movable frame; an angular lever secured to said shaft and connected to the shoe-horn standard; and a block on one arm of said lever capable of adjustment relatively to said vertical shaft; whereby the movement of said lever, standard and movable frame, can be varied, substantially as described.

3. In a nailing-machine, a group of cams, each having an invariable stroke and all mounted upon a common shaft; in combination with a vertically-movable and oscillating shoe horn or holder; an oscillating wire feeding and driving mechanism; a reciprocating wire-cutter, and adjustable connections from said cams to said separate mechanisms, whereby the invariable strokes of the cams can produce variable strokes by adjusting such connections, substantially as set forth.



4. In a nailing-machine and in combination, a vertically-adjustable shoe horn or holder; a variable stop or cam connected thereto and adjusted by its upward movement; driving-gearing engaged and disengaged by a sliding clutch; a brake for the variable stop connected to said clutch and set by its engagement with the driving-gearing; wire feeding and driving rollers intermittently operated; and a sliding rod for actuating such rollers having a stop to bear upon said cam, and thereby regulate the feed of the wire according to the position of said cam, substantially as set forth.

5. A work-support or shoe-holder for a nailing-machine, composed of a vertically-movable standard formed in two parts pivoted together, an oscillating extension of said standard and a shoe-horn secured to said oscillating extension, substantially as described.

6. In combination with the vertically-movable shoe horn and standard, the cam F, a reciprocating slide surrounding such cam and having a pawl and a quadrant-rack connected to said standard whereby said standard receives a vertical vibration substantially as described.

7. In a nailing-machine, and in combination a rotary cam E, a vertically-reciprocating slide, a pivoted plate carrying pawls, a ratchet-wheel, a spring for operating said ratchet-wheel, gearing connected to said ratchet-wheel, and wire-feeding rollers operated by such gearing, substantially as described.

8. In a nailing-machine, and in combination a rotary cam E, a slide-bar 74, connected to and operated by said cam having a stop 69, an adjustable cam 68, for limiting the stroke of said slide-bar, the pivoted plate 75 connected to said slide-bar and having pawls, a ratchet-wheel, wire-feeding rollers, gearing connecting the ratchet-wheel shaft to said wire-feeding rollers, and a spring for driving said ratchet and gearing when the connections between said cam and slide-bar are released by said cam, substantially as described.

9. In a nailing-machine the main frame A, in combination with the oscillating frame A', a turn-table on which said frame A' oscillates, a shaft journaled in the main frame and secured to the oscillating frame, and means for oscillating said shaft, substantially as described.

10. In a nailing-machine and in combination, a shoe horn or holder, rolls for feeding continuous wire and having a rotary motion only in a vertical plane whereby they feed and drive the wire by a single motion, and reciprocating cutters, arranged relatively to the shoe-horn and to the feeding and driving rollers so as to sever the driven portion of the wire from the continuous wire, substantially as described.

11. In a nailing-machine, wire feeding and driving mechanism, wire-cutting mechanism, an oscillating shoe horn or holder vertically movable, a shaft, having cams connected to such mechanisms, driving-gearing, a clutch for engaging and disengaging said driving-gearing, a treadle C^9, for causing said clutch to engage the driving-gearing, and a spring for disengaging the clutch when said treadle is released; all in combination with an independent mechanism having a supplementary treadle, but connected to the treadle C^9; said independent mechanism being normally inoperative, but capable of being set in such position relatively to the cam-shaft as to be acted upon by said cam-shaft, to release the main treadle, and thus to disengage the clutch mechanism, substantially as and for the purposes set forth.

572,698. LADDER. GILES R. CHITTENDEN, Niles, Cal. Filed Aug. 5, 1896. Serial No. 601,715. (No model.)



Claim.—1. In a ladder, the means for securing the steps to and between the uprights, consisting of metallic straps encircling the steps and uprights and secured to both.

2. In a ladder, the means for securing the steps to and between the uprights, consisting of an endless metallic strap secured to and extending between the uprights, and into which between said uprights, the step is fitted and secured.

3. In a ladder, the combination of the uprights, the metallic straps secured to and between said uprights, and the wedge-shaped steps fitted tightly into said straps and secured thereto.

4. In a ladder, and in combination with its uprights and top, a guide-frame hinged to said top and adapted to swing to and from the uprights and legs pivoted in said frame and adapted to swing sidewise, said legs extending above their pivotal centers, with the extended portions guided in the hinged frame.

5. In a ladder, and in combination with its uprights and top, a guide-frame hinged to said top and adapted to swing to and from the uprights and legs pivoted in said frame and adapted to swing sidewise, said legs extending above their pivotal centers and a line attached to their upper ends whereby they may be drawn together to cause the legs to diverge to position.

6. In a ladder, and in combination with its uprights and top, a guide-frame hinged to said top and adapted to swing to and from the uprights, legs pivoted in said frame and adapted to swing sidewise, said legs extending above their pivotal centers, a brace hinged at its forward end and slidably connected at its rear end with the guide-frame, and lines connected with said brace and with the upper ends of the legs whereby when the brace is moved down, the legs are spread to position.

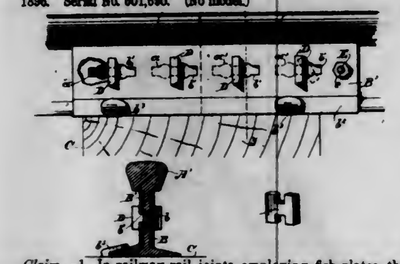
7. In a ladder, and in combination with its uprights and top, a guide-frame hinged to said top and adapted to swing to and from the uprights, legs pivoted in said frame and adapted to swing sidewise, said legs extending above their pivotal centers, a brace hinged at its forward end and having a sleeve at its rear end, a guide-bar on the guide-frame and upon which the sleeve of the brace is adapted to slide up and down, and lines connected with said brace and with the upper ends of the legs whereby when the brace is moved down the legs are spread to position.

8. In a ladder, and in combination with its uprights and top, a guide-frame hinged to said top and comprising parallel-spaced strips, and adapted to swing to and from the uprights, legs pivoted in said

frame, between said strips, having their upper ends extended above their pivotal centers and guided between the strips, said legs adapted to swing sidewise, and a brace hinged at its forward end and slidably connected at its rear end with the guide-frame.

9. In a ladder and in combination with its uprights and top, a guide-frame hinged to said top and adapted to swing to and from the uprights, legs pivoted in said frame and adapted to swing sidewise, a brace hinged at its forward end and a sleeve at its rear end, and a guide-bar on the guide-frame and upon which the sleeve of the brace slides up and down.

572,694. RAILWAY-RAIL JOINT. CHARLES J. COCHRAN, Sisson, Cal., assignor of one-half to George H. Flett, same place. Filed Aug. 5, 1896. Serial No. 601,695. (No model.)



Claim.—1. In railway-rail joints employing fish-plates, the fastening therefor comprising holes in the rail-webs and in the fish-plates, and I-bolts adapted to pass through and to turn in said holes when alined, and to be confined therein when turned and the holes thrown out of full alinement by the sliding of the plates.

2. In railway-rail joints employing fish-plates, the fastening therefor comprising the holes in the rail-webs, the holes in the fish-plates having an enlarged portion and a contracted extension, and the I-bolts, the shanks of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement, the bolts are locked.

3. In railway-rail joints employing fish-plates, the fastening therefor comprising holes in the rail-webs and in the fish plates, and I-bolts adapted to pass through and to turn in said holes when alined and to be confined therein when turned and the holes thrown out of full alinement by the sliding of the plates, and means for holding said plates from sliding.

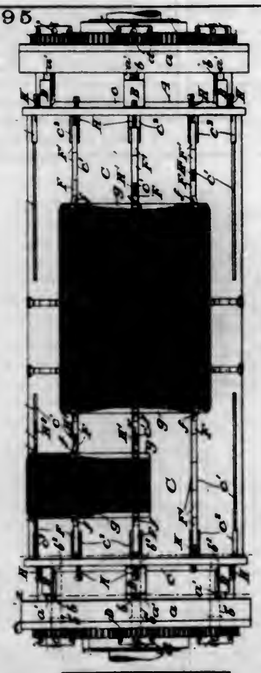
4. In railway-rail joints employing fish-plates, the fastening therefor comprising the holes in the rail-webs, the holes in the fish-plates having an enlarged portion and a contracted extension, and the I-bolts, the shanks of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement the bolts are locked, and means for holding said plates from sliding.

5. A railway-rail joint comprising the fish-plates, one of which is spiked to the ties, said plates having the holes with enlarged portions and contracted extensions, said holes being adapted to aline or coincide with holes in the rail-webs and to be thrown out of alinement or coincidence therewith by the sliding of the plates, and the I-bolts, the shanks of which are adapted to turn in the holes of the rail-webs and in the enlarged portion of the plate-holes, but not in the extensions of the latter and whose heads are adapted to pass horizontally through the holes in the rail-webs and plates when alined, but when turned vertically, to traverse said holes and extend beyond, whereby when the bolts are turned and the plates are moved sidewise to throw the holes out of alinement, the bolts are locked.

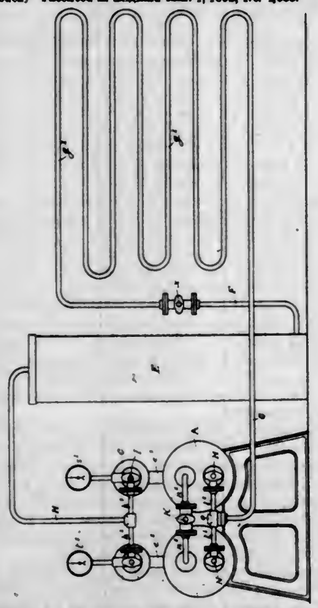
572,695. HOLDER FOR ELECTROTYPE AND STEREOTYPE PLATES. EDGAR H. COTTRELL, Stonington, Conn., assignor to C. B. Cottrell & Sons, Westerly, R. I. Filed Nov. 26, 1892. Serial No. 453,175. (No model.)

Claim.—The slab or turtle provided with dovetail grooves along its surface, said grooves having widened portions, clamps and follow-blocks seated in the grooves, and adjusting-screws for forcing the clamps and blocks along the grooves, in combination with means for supporting the slab or turtle in position to receive a printing-plate, substantially as set forth.

572,695.

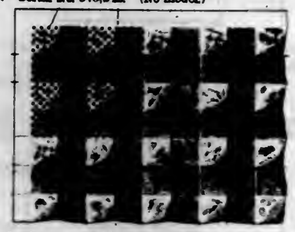


572,696. REFRIGERATING MACHINERY. RICHARD J. CRACKNELL, Rochester, England. Filed Feb. 9, 1895. Serial No. 537,775. (No model.) Patented in England Mar. 1, 1892, No. 4,035.



Claim.—In refrigerating machinery working on the ammonia-absorption principle, the combination of two ammonia containers, one generating vessel being adapted to act as an absorber while the second is being used as a generator, and the said second acting as a generator while the other is being used as an absorber, and so on, alternately and indefinitely, and means for causing the ammonia-gas, passing from one container to the other, to produce a circulation or agitation of the liquor in the latter, whereby the amount of gas passing from one container to the other is increased, consisting of a chamber surrounding the end of the gas-entry pipe, said chamber having a tap leading thereunto, the other end of which dips below the surface of the liquid ammonia in an absorbing vessel.

572,697. SCREEN. GEORGE W. CROSS, Pittston, Pa. Filed Jan. 13, 1896. Serial No. 575,342. (No model.)



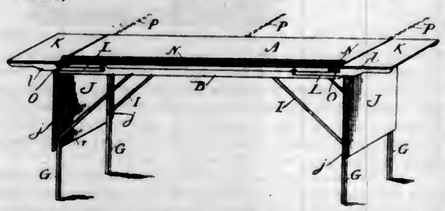
Claim.—1. A screen-surface provided with separated, integral, perforated elevations having rounded apices, substantially pyramidal in form as set forth.

2. A screen-surface provided with separated, integral, numerously-perforated elevations having rounded apices and approximately straight sides converging toward said apices, substantially as set forth.

3. A screen-surface having perforations therein and struck up between two substantially parallel lines, and between two other substantially parallel lines crossing the first-mentioned lines, whereby a series of separate, adjacent, integral perforated elevations is produced, substantially as set forth.

4. A screen-surface having perforations therein and struck up in the form of two series of substantially parallel ridges, crossing one another, whereby separate, adjacent, integral perforated elevations are produced occupying substantially the entire surface of the screen-surface, substantially as set forth.

572,698. WORK-TABLE FOR PAPER-HANGERS. FELIX R. DAUDELIN, Chicago, Ill. Filed Apr. 15, 1896. Serial No. 587,659. (No model.)



Claim.—1. In a combined table and tool-box, the combination with the table-top and parts secured to the under side thereof and forming therewith a shallow box, of a hinged cover adapted to extend over the entire area of the box and close it, parts of the cover, when unfolded, being adapted to serve as legs for supporting the table, substantially as set forth.

2. The combination with a table-top and strips secured to the under side thereof and forming therewith a shallow box, of hinged legs, sheathing secured to the legs, arms hinged to the box and a table-top extension secured to the arms, substantially as set forth.

3. In a table, the combination with the top thereof, of arms pivoted to the under side of the top, a table-top extension carried by the arms, the distance from the pivots of the arms to the inner end of the extension being equal to the distance from the pivots to the end of the table, and hinged legs having a portion which engages and supports the extension when the legs are unfolded, substantially as set forth.

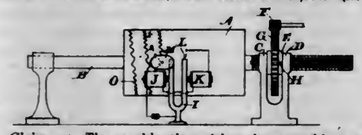
4. In a combined table and tool-box, the combination of the table-top, parts secured to the under side thereof and forming therewith a shallow box, hinged legs, sheathing secured to the upper portions of the legs, pivoted arms, and table-top extensions secured to the outer portions of the arms, the parts being so proportioned and arranged that the inner ends of the extensions will meet the ends of the top when the parts are unfolded and will meet the lower edges of the sheathing when the parts are folded and form therewith a cover for the box, substantially as set forth.

5. The combination of a table-top having strips B and C secured to the under side thereof and extending along its edges and ends respectively, strips F, hinges connecting them to the strips C, legs secured to the strips F, sheathing secured to the legs, arms L pivoted to the strips B and the table-top extensions K secured to the arms L, the length of the arms, the length of the table-top extensions, the distance between the inner end of the table-top extensions and the pivots of the arms and the location of the pivots of the arms being such that when the arms are unfolded the table-top extensions will meet the ends of the table and when the arms are folded up the table-top extensions will meet under the table, substantially as set forth.

6. The combination with a table-top of a straight-edge, perforated offset-brackets secured to the ends of the straight-edge and extending downward past the ends of the table, and movable bolts secured to the edge of the table and adapted to be inserted in or withdrawn from perforations in the brackets whereby when in place they form pivots about which the straight-edge may be moved, and whereby they may be withdrawn and the straight-edge removed, substantially as set forth.

7. The combination of a table-top, strips C secured to the under side thereof at its ends and having notches c, strips F hinged to the strips C and legs secured to the strips F, substantially as set forth.

572,699. CHRONOMETRIC APPARATUS. BEVERLY W. DUNN, U. S. Army. Filed Jan. 25, 1892. Serial No. 419,136. (No model.)

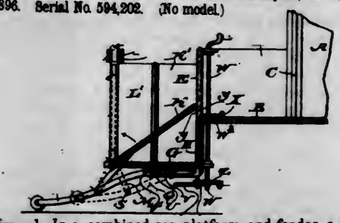


Claim.—1. The combination with a photographic receiver, such as a cylinder having a rotary and longitudinal movement, a tuning-fork having a perforated screen in the path of a ray of light, means for vibrating the said fork and a recording apparatus acting upon the same receiver for indicating the beginning and end of the interval of time to be measured.

2. The combination with a photographic receiver, means for indicating thereon absolute divisions of time such as are made by a vibrating body, and a recording apparatus directing a ray of light on the said receiver, means for producing a ray of light in said recording apparatus at the beginning and end of the interval of time to be measured.

3. The combination with a photographic receiver of means indicating thereon absolute divisions of time such as are made by a vibrating body, and a recording apparatus consisting of a tube, electric terminals therein in connection with secondaries of an induction-coil, and circuit-controllers corresponding to the beginning and end of an interval of time to be measured, whereby an electric spark is produced in said recording apparatus at the said periods.

572,700. COMBINED CAR PLATFORM AND FENDER. HARRINGTON FITZGERALD and GEORGE H. ZANE, Philadelphia, Pa. Filed June 4, 1896. Serial No. 594,202. (No model.)



Claim.—1. In a combined car platform and fender, a platform having a partition with a passage therein, a step in advance of said platform, a sectional fender pivotally mounted in advance of said partition on said step, and having a section covering the same.

2. In a device of the character described, a car-platform having a partition thereon, a passage through said partition, a step in advance of the latter, and doors on the side of said step, substantially as described.

3. In a device of the character described, a car-platform having a partition thereon with a passage therethrough, a step, doors in advance of said partition at a side of said step, means for actuating said doors, and a fender pivotally mounted in advance of said partition, substantially as described.

4. In a device of the character described, a car-platform, a step in advance thereof, doors on each side of said step, uprights at the forward corners of the latter, and frames pivoted to said uprights and adapted to form a fender, substantially as described.

5. In a device of the character described, a car-platform, a step in advance thereof, a fender pivotally mounted on said step, and hav-

ing a frame and forwardly-projecting arms, said frame being adapted to be placed in upright or inclined position, slotted plates under said step, and pins in said arms adapted to engage the slots in said plates, substantially as described.

6. In a combined car platform and fender, a car-platform, a step in advance thereof, uprights located at the forward corners of said step, a frame pivotally mounted near the lower portion of said uprights, and split sleeves or clips adapted to sustain said frame in an upright position when desired, substantially as described.

7. In a combined car platform and fender, a car-platform, a step in advance thereof but on a lower level, doors hinged at the side to said step, and means for operating said doors in unison, substantially as described.

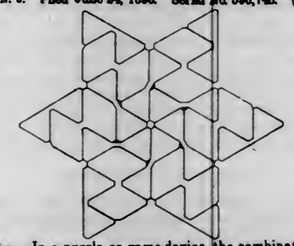
8. In a combined platform car and fender, a car-platform, a step in advance thereof but on a lower level, and a fender pivotally mounted with respect to said step, in combination with doors located at the side of said step, and means for operating said doors, substantially as described.

9. In a combined car platform and fender, a step, a door at the side of the fender with mechanism for operating the same, a second door hinged to said first-mentioned door, and a rod pivoted at one end to an arm secured to said second door, and at its other end to a fixed point, said parts being combined substantially as described.

10. A door-operating mechanism, a car, a plurality of doors on each side thereof, said doors being hinged to each other a connection from one of said doors on each side to a fixed point a bar movably mounted, a slotted rod extending from said bar to one of said doors, a pin engaging the slot in said rod, a link extending from said bar to one of said doors, a slotted extension on said link and a pin engaging the same, substantially as described.

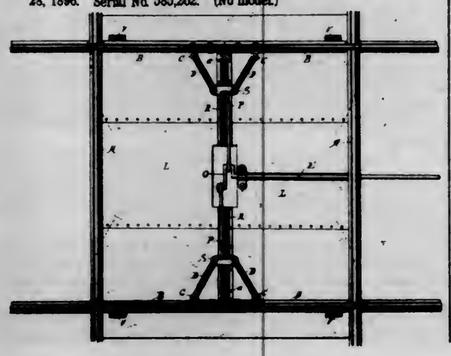
11. In a combined car platform and fender, a door at the side of the feader, an upright rotating rod having suitable bearings, an arm rigidly secured to the lower end of said rod, an arm connected with said door, a link connecting said arms having a slotted portion, and a fixed pin entering the slot therein, said parts being combined substantially as described.

572,701. **PUZZLE OR GAME DEVICE.** WILLIAM GEBERT, Trenton, N. J. Filed June 24, 1896. Serial No. 596,743. (No model.)



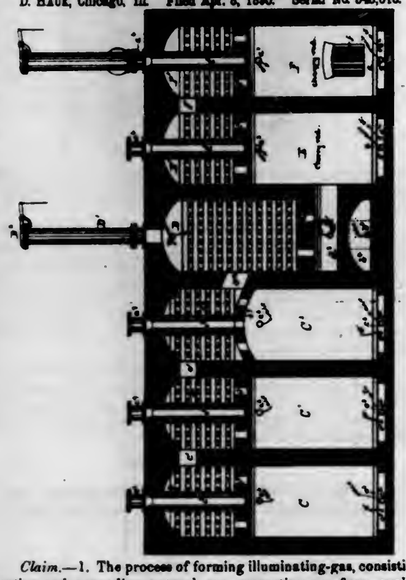
Claim.—In a puzzle or game device, the combination with a plurality of blocks of three different styles of shapes, an equal number of each of which are employed, one set consisting of two diamond-shaped portions united by a central portion, another set consisting of triangular portions united at their ends by a connecting portion, and the third set consisting of two triangular portions united at their opposite ends by a connecting portion, as herein shown and described.

572,702. **RAILROAD-CROSSING.** DANIEL GRUHLKEY, Marseilles, Ill., assignor of one-half to William H. Gruhlkey, same place. Filed Mar. 28, 1896. Serial No. 585,202. (No model.)



Claim.—In a railroad-crossing the combination of the unbroken main rails the cross-rails, the swing-rails forming a section of the cross-rails between the main rails and arranged on a higher plane than the main rails so as to swing over them, the sliding heads and their guide-rail, the rods for connecting the swing-rails respectively with the sliding heads, and the means for reciprocating said sliding heads and swinging said swing-rails all arranged to operate substantially as and for the purpose set forth.

572,703. **MANUFACTURE OF ILLUMINATING-GAS.** CHARLES D. HAUE, Chicago, Ill. Filed Apr. 8, 1895. Serial No. 545,018. (No



Claim.—1. The process of forming illuminating-gas, consisting in heating and expanding natural gas, generating gas from coal, and superheating the same, and intermingling and combining the natural gas with the coal-gas so obtained, and passing the combined gases through a body of heated carbon, introducing hydrocarbons into the combined gases and then passing the gases and vapors through another body of heated carbon and then through a mass of heated refractory fixing material, substantially as set forth.

2. The process of forming illuminating-gas, consisting in heating and expanding natural gas, passing steam through a mass of heating carbon and forming water-gas and at intervals during the formation of the water-gas dropping small regulated quantities of bituminous coal onto the mass of incandescent coal, superheating the gases so obtained and intermingling and combining them with the natural gas, passing the combined gases through a body of heated carbon, introducing hydrocarbons into the combined gases and then passing the gases and vapors through another body of heated carbon and then through a mass of heated refractory fixing material, substantially as set forth.

3. As steps in the process of forming illuminating-gas, heating and expanding natural gas, generating gas from coal, and superheating the same, intermingling and combining the natural gas with the coal-gas so obtained, and passing the combined gases through a body of heated carbon, introducing hydrocarbons into the combined gases, and fixing the gases and vapors, substantially as set forth.

4. As steps in the process of forming illuminating-gas, heating and expanding natural gas, generating gas from coal, and intermingling and combining the natural gas with the coal-gas so obtained, passing the combined gases through a body of heated carbon, introducing hydrocarbons into the combined gases, and fixing the gases and vapors, substantially as set forth.

5. As steps in the process of forming illuminating-gas, heating and expanding natural gas, generating gas from coal, intermingling and combining the natural gas with the coal-gas so obtained, passing the combined gases through a body of heated carbon, introducing hydrocarbons into the combined gases, and then passing the gases and vapors through another body of heated carbon, substantially as set forth.

6. As steps in the process of forming illuminating-gas, heating and expanding natural gas, generating gas from the coal intermingling and combining the natural gas with the coal-gas so obtained,

introducing hydrocarbons into the combined gases, and then passing the gases and vapors through a body of heated carbon, substantially as set forth.

7. As steps in the process of forming illuminating-gas, passing natural gas through the body of heated refractory material, and generating gas from coal and superheating the same, and carrying the superheated coal-gas into the same body of refractory material with the natural gas to assist in expanding the natural gas and maintaining the heat thereof and to combine therewith, substantially as set forth.

8. A gas apparatus inclosed within a vertical cylindrical casing having a central fixing-chamber provided with a gas-eduction pipe leading through the top body thereof, and around the same a series of gas generating and treating chambers on the same general horizontal plane, said chambers communicating with each other successively, and one of the chambers communicating with the central chamber, substantially as set forth.

9. A gas apparatus inclosed within a vertical cylindrical casing having a central fixing-chamber and around the same a series of gas generating and treating chambers, said chambers communicating with each other successively, and one of the chambers communicating with the central chamber, and a passage-way leading under one of the outer chambers into the base of the central fixing-chamber to give access thereto, substantially as set forth.

10. A gas apparatus inclosed within a vertical cylindrical casing, having a series of generators provided with superheating-chambers above them, containing refractory material, a mixing-chamber with which one of the superheaters communicates and which opens into the side of a heating-chamber for containing carbon, a second such heating-chamber containing carbon, carbureting-chambers above said two chambers communicating with each other and passages leading from the second chamber containing carbon, substantially as set forth.

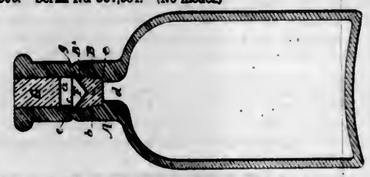
11. A gas apparatus inclosed within a vertical cylindrical casing having a central fixing-chamber and around the same a series of gas generating and treating chambers, said chambers communicating with each other successively and one of the chambers communicating with the central chamber, and relief-pipes leading from the central fixing-chamber and from one of the gas-treating chambers, substantially as set forth.

12. A gas apparatus, having a series of generators provided with superheaters above them containing refractory material, a mixing-chamber with which one of the superheaters communicates, said chamber containing refractory material, and having a natural-gas inlet at the upper end thereof, and the lower end of said chamber opening into the side of a heating-chamber for containing carbon, substantially as set forth.

13. A gas apparatus having a series of gas-generators provided with superheaters above them, containing refractory material, a mixing-chamber, containing refractory material and having a natural-gas-inlet pipe at the upper end thereof, a port opening from one of the superheaters into the side of the mixing-chamber below the top of the refractory material, substantially as set forth.

14. A gas apparatus having a central fixing-chamber and around the same a series of gas-generators and treating-chambers communicating with each other successively, one of said chambers containing the refractory material and having at the base thereof a combustion-chamber, having a side opening therefrom, and having a passage-way leading under said combustion-chamber into the base of the central fixing-chamber to obtain access thereto, substantially as set forth.

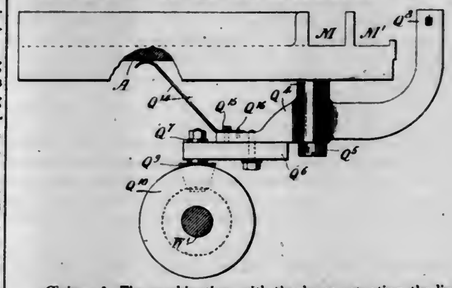
572,704. **BOTTLE-STOPPER.** GEORGE A. HOFFMAN, Millersburg, Pa., assignor of one-half to Harry G. Bogar, same place. Filed Apr. 15, 1896. Serial No. 587,651. (No model.)



Claim.—1. The combination of the neck of a bottle provided with a groove *g* in its periphery and a cylindrical passage *a* in its upper end, and under said passage a truncated conical chamber *b* having its wide upper end wider than the passage *a*, and under said chamber a passage *d* narrower than said chamber, an annular shelf *e* being between them, with a truncated conical stopper B resting upon said shelf and having a conical cavity in its upper end, and an imperforated cone of resilient sheet metal having its sides resting within the cavity of the stopper B and its edge abutting against the overhanging shoulder *c* of the chamber *b* substantially as described.

2. The combination of the neck of a bottle provided with a groove *g* in its periphery and a cylindrical passage *a* in its upper end, and under said passage a truncated conical chamber *b* having its upper end wider than the passage *a*, and a shelf *e* in the lower end, with a truncated conical stopper B resting upon said shelf, and an imperforated cone of resilient sheet metal resting upon said stopper B and having its edge abutting against the overhanging shoulder *c* of the chamber *b*, and an elastic cork G within the cylindrical passage *a* of the neck of the bottle substantially as described.

572,705. **TYPE-DISTRIBUTING MACHINE.** CHARLES D HUGHES, Brooklyn, N. Y., assignor to the Empire Type Setting Machine Company, New York, N. Y. Filed Mar. 7, 1896. Serial No. 582,280. (No model.)

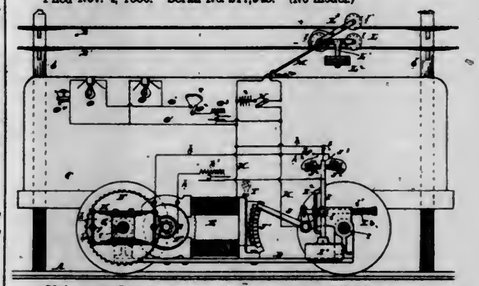


Claim.—1. The combination, with the lever actuating the line-closing mechanism, of an extended arm, substantially as described provided at its extremity with a device whereby the lever is subjected to a desired amount of friction, and its motion thereby retarded.

2. The combination, with the lever-arm actuating the line-closing mechanism, of an extended arm, placed at the end of the lever, substantially as described, provided at its extremity with a device, capable of being adjusted, with respect to its position upon the arm, whereby the lever is subjected from time to time to a certain amount of friction and its motion thereby retarded.

3. The combination, with the lever-arm actuating the line-closing mechanism, of an extended arm placed at the end of the lever, substantially as described and a spring attached to said arm engaging with the surface of the bed-plate of the machine, whereby the line-closing mechanism is subjected to a certain amount of friction.

572,706. **ELECTRIC RAILWAY.** RUDOLPH M. HUNTER, Philadelphia, Pa., assignor to The Electric Car Company of America, same place Filed Nov. 4, 1886. Serial No. 217,945. (No model.)



Claim.—1. In an electric vehicle, the combination of an electric motor mechanically connected to propel the vehicle, a reversing-switch mechanically independent of the motor-brushes to reverse the polarity of one of the elements of the motor, motor-circuits on the car for supplying current to the motor from a source of electric supply, a switch for cutting the motor from the source of electric supply, and switch devices for short-circuiting the armature and field-magnets and maintaining them in series to make the motor act as a generator to arrest or retard the movement of the car.

2. The combination of a vehicle, an electric motor having a frame by which it is sleeved to one of the axles of the vehicle, a spur-gearing between the axle and the motor shaft, and an elastic connection between the gearing and the axle consisting of leaf-springs connected to the axle at one end and to the spur-wheel at the other end.

3. The combination of a car, a source of electric energy, a series electric motor to propel the car, a reversing-switch for one of the elements of the motor, means to short-circuit the motor as an entirety relatively to the source of energy, and means consisting of adjustable

resistances in series with the armature and field-magnet when short-circuited.

4. In an electric car, the combination of an electric motor to propel the car, circuits on the car for supplying current to the motor, and switch devices to cut the entire motor out of circuit and to short circuit the armature and field-magnet in series through an adjustable resistance.

5. In an electric car the combination of an electric motor to propel the car, circuits on the car for supplying current to the motor, a switch to short-circuit the motor as an entirety, a variable resistance in series with the armature and field-magnets against which the short-circuited motor is required to force the current generated in its moving element, and a reversing-switch for reversing the current in one of the elements of the motor.

6. In an electric railway the combination of an electrically-propelled vehicle, an electric motor on said vehicle, a motor-circuit a source of electric supply, an electric-light circuit in multiple-arc connection with the motor one or more electric lamps in said circuit, a light-extinguishing resistance and a switch to cut in or out said light-extinguishing resistance.

7. In an electric railway, outgoing and return conductors extending along the railway, a car, an electric motor to propel the car, traveling contacts with the car for supplying current from the conductor to the motor on the car, means for simultaneously short-circuiting the field-magnets and armature of the motor, a variable resistance against which the motor works when short-circuited, and a switch for reversing the motor while maintaining the field-magnets and armature in series.

8. The combination of a railway, a line conductor extending along the railway, a traveling vehicle, an electric motor for propelling the vehicle carried by the axles, an automatic current-regulator for the motor carried by the axles independent of the vehicle-body so as not to be affected by the vibrations of the car-body and a current-collecting device moving with the vehicle for making a traveling connection with the conductor and supplying current to the regulator and motor extending from the line conductor to the regulator and motor, and a mechanical connection between said collecting device and vehicle-body at a point between the line conductor and regulator and motor.

9. The combination of a vehicle, an electric motor to propel said vehicle, a source of electric energy, a regulator consisting of a resistance-chamber in series with the coils of the field-magnet, electric circuits from the source of energy to the motor, a reversing-switch for the armature independent of the resistance-changer, and an automatic gravity-actuated lever or pendulum to vary the resistance of the resistance-changer in accordance with the inclination of the vehicle in going up a grade.

10. The combination of an electrically-propelled vehicle, an electric motor on the vehicle, a source of electric power, circuits for supplying current to the motor on the vehicle, a regulator for controlling the current flowing through the motor, a pivoted lever carried by the axle independent of the car-body so as not to be affected by the swinging of the car-body and weighted at its lower part, and a connection between the resistance-changer and pivoted lever.

11. In an electric railway, the combination of a source of electric supply, an electrically-propelled vehicle, an electric motor having circuits maintaining its field-magnet and armature in fixed series relation, a motor-circuit, a regulator to control the power of the motor, and gravity-actuated means on the car to directly control the regulator.

12. In an electrically-propelled vehicle, the combination of an electric motor to propel the vehicle, a reversing-switch for the armature of the motor, a switch for short circuiting the armature while maintaining it in series with the field-magnets, circuits for maintaining the field-magnets in magnetized condition, and adjustable resistances adapted to be interposed in the armature-circuit to vary the resistance of the armature to rotation when acting as a brake, to arrest or retard the vehicle.

13. In an electric railway, the combination of a source of electric supply, an electrically-propelled vehicle having a car-body on springs, an electric motor on said vehicle, a switch to control the current in the armature, and automatic gravity-actuated mechanism carried upon the axles independent of the car-body to actuate said switch.

14. The combination of the vehicle, an electric motor on said vehicle, a switch J to control the power of the motor, a gravity-actuated lever I carried by the axles independent of the car-body, and a connection between said switch J and lever I whereby the switch is automatically moved.

15. The combination of the vehicle, an electric motor on said vehicle, a switch to control the power of the motor, a gravity-actuated lever pivoted at the middle on a transverse axis, and a connection between said switch and lever both above and below the middle pivot so that a movement of lever either forward or backward will move the switch in the same direction.

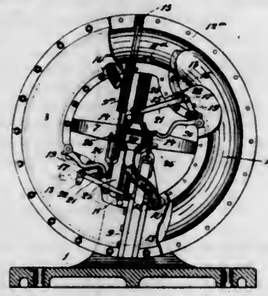
16. In an electric railway, an outgoing conductor, in combination with a traveling vehicle, a current-collecting device carried with the vehicle and making a traveling contact with the outgoing conductor, an electric motor to propel the vehicle journaled to the axle which it rotates and having its free end movably supported relatively to the axles, a motor-circuit between the collecting device and motor, an elastic mechanical power-transmitting connection between the motor-shaft and axle whereby the motor may obtain a portion of a revolution before the collector and vehicle are moved, a return-circuit extending along the railway, and a suitable contact device moving with the vehicle for the return-circuit.

17. The combination of the axle *c*, the springs H H secured thereto, a power-wheel loosely supported on the axle, pins or studs *f* on said power-wheel, links *h* connecting the springs with the pins or studs, an electric motor E, and power-transmitting mechanism between said motor and power-wheel.

18. In an electrically-propelled vehicle the combination of the axle, the power-wheel loosely supported thereon, a spring formed of flat steel plates secured to the axle, and connected at its free end to the power-wheel, the electric motor, and a connection between the motor-shaft and power-wheel.

19. The herein-described method of braking an electrically-propelled car which consists in cutting the motor out of the line-circuit, short-circuiting the field and armature while maintaining them in series relation, and gradually decreasing the resistance in the short circuit.

572,707. ROTARY ENGINE. RUDOLPH LANZONE and EDWARD LANZONE, South River, N. J. Filed Apr. 14, 1896. Serial No. 587,494. (No model.)



Claim.—1. A rotary engine comprising a rotating, annular cylinder, provided with one or more movable cut-off heads, and with inlets and outlets for a fluid under tension, automatic mechanism for operating said heads and for controlling the admission and exhaust of said fluid, and an abutment mounted in the bore of said cylinder, said abutment being free and sustained in its position only by gravity, as set forth.

2. A rotary engine comprising a rotatively-mounted shaft, having in it a passage for the supply of steam or other fluid to the engine and an exhaust-passage, an annular cylinder fixed on said shaft and provided with ports to admit the fluid and ports for the exhaust, arranged in pairs, cut-off slides, one between each pair of ports in the cylinder, an abutment 12, in the bore of the cylinder and provided with a cam 12^a for operating the slides and valves, the said valves, in the main shaft, and mechanism, carried by the cylinder, for operating said slides and valves through the medium of the said cam, substantially as set forth.

3. In a rotary engine, the combination with the rotatively-mounted cylinder, having inlet-ports for a fluid under tension, an abutment mounted in the bore thereof, a hollow shaft on which said cylinder is mounted, and a valve 23 in said shaft, the plug of which is adapted to admit steam and to cut it off, of the spring 30, its tip engaging the plug, a governor G, carried by the shaft and having a movable ring 32, and a sheath 31, carried by said ring and embracing said spring, whereby the movement of said ring under the influence of the governor-balls serves to cause the sheath to inclose more or less of the spring and vary its stiffness, substantially as and for the purposes set forth.

572,708. BEER-BOTTLING APPARATUS. CHARLES MELDRUM, Buffalo, N. Y., assignor of one-half to Jacob P. Loring, same place. Filed July 15, 1896. Serial No. 599,955. (No model.)

Claim.—1. In an apparatus for bottling beer, the combination with the tubular conductor having valved outlets at one end and a cylindrical inlet-orifice at its other end standing at right angles to its body and provided with an annular shoulder, and a vent-tube adjustable through such orifice, the conductor having a socket in its lower side opposite the end of the inlet-orifice; of a rod passing loosely through said socket and through the orifice, a cross-piece centrally pivoted to its upper end, a rubber washer surrounding its lower end beneath said socket, a metallic ring also surrounding it just above said washer, and a cam pivoted in the lower end of the rod, all as and for the purpose set forth.

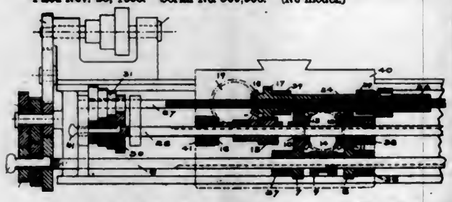


2. In an apparatus for bottling beer, the combination with the tubular conductor having valved outlets at one end and a cylindrical inlet-orifice at its other end standing at right angles to its body and provided with an annular shoulder, and a vent-tube adjustable through such orifice, the conductor having an upwardly-flaring socket in its lower side opposite the end of the inlet-orifice; of a rod passing loosely through said socket and through the orifice, a cross-piece centrally pivoted to its upper end, and clamping means on its lower protruding end outside the conductor, as and for the purpose set forth.

3. In an apparatus for bottling beer, the combination with the tubular conductor having valved outlets at one end and a cylindrical inlet-orifice at its other end standing at right angles to its body and provided with an annular shoulder, the conductor having an upwardly-flaring socket in its lower side opposite the end of the inlet-orifice; of a rod passing loosely through said socket and through the orifice and having a T-head at its upper end, a cross-piece having a central depression in which the T-head rests, and clamping means on its lower protruding end outside the conductor, as and for the purpose set forth.

4. In apparatus for bottling beer, the combination with an L-shaped conductor whose upright arm is adapted to enter the bung in the bottom of the barrel, an annular flange around it, a rubber washer resting on the flange, and means for removably clamping such washer and flange tightly against the barrel around its hole; of a chamber at the outer end of the other arm of the conductor, oppositely-opening hooks on the sides thereof, a cover having a number of valved outlet-tubes and provided with apertured lugs, and bolts in the latter adapted to be tightened in said hooks, as and for the purpose set forth.

572,709. LATHE. EDWARD J. MCCLELLAN, New York, N. Y. Filed Nov. 23, 1895. Serial No. 569,960. (No model.)



Claim.—1. In a lathe, the combination with a differentially rotating screw and nut to feed the carriage of said lathe, and a graduated hand-wheel geared to said rotary nut for the purposes of measurement, substantially as described.

2. The combination in a lathe, of a rotary feed-nut made in two portions which are keyed together but free to slide on each other longitudinally, and a feed-screw, said nut being cut with a multiple thread and having one of the threads in one of the portions of the nut cut out so as not to bear upon the feed screw, for the purposes substantially as described.

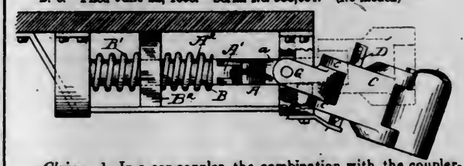
3. The combination in a lathe, of a carriage and a rotary nut carried thereon, said rotary nut being made in two portions which are keyed together but free to slide on each other longitudinally, said nut being cut with a multiple thread and having one of the threads in one of the portions of the nut cut out so as not to bear upon the feed-screw, and each portion of said nut being capable of being connected to effectively feed said carriage independently, for the purposes substantially as described.

4. The combination in a machine, of a feed-screw made with a multiple thread, and two feed-nuts fitted thereon, one of said nuts having one of the threads cut out so as not to bear upon the feed-screw, thus reserving one of the threads of the screw to the sole use of one of the nuts, for the purposes substantially as described.

5. The combination in a lathe, of a rotating feed-screw and a differentially-rotating nut thereon, to feed the carriage of said lathe, said screw being cut with a multiple thread, and said differentially-rotating nut being geared to a graduated hand-wheel and consisting of two portions keyed together but free to slide on each other longitudinally, and having one of the threads in one of the portions of said nut cut out so as not to bear upon the feed-screw, thus reserving one of the threads of the screw to the sole use of one of the nut portions, for the purposes substantially as described.

6. The combination in a lathe, of carriage 40, two rotary nuts 50 51 keyed together, sleeve 52 containing the nut 51, bearing 53 and binder-bolt 54, substantially as shown and described.

572,710. CAR-COUPLING. GEORGE R. J. NEWMAN, Washington, D. C. Filed June 22, 1895. Serial No. 553,631. (No model.)



Claim.—1. In a car-coupler, the combination with the coupler-head, of a draw-bar comprising two independent longitudinally-movable sections, a pivotal connection between each section and the draw-head, an attaching-section having pivotal connection with each of said movable sections, and a spring substantially as described.

2. In a car-coupler, the combination of a draw-head, a draw-bar comprising vertically-hinged sections and horizontally hinged sections and pivotal connection between the head and the draw-bar, whereby the head has a vertical and horizontal movement, substantially as described.

3. In a car-coupler, the combination with the draw-bar of the head, a hinged connection between the same and draw-bar permitting the head to swing vertically, a vertically-movable latch, a swinging jaw, and a fixed stop below the latch, substantially as described.

4. In a car-coupler, the combination with a draw-bar, of a head hinged thereto having a vertical movement, a laterally-swinging jaw having a bevel on its upper outer corner, and means for locking the head in a horizontal position, substantially as described.

5. In a car-coupler, the combination of a vertically-swinging head, having a swinging jaw, and means carried by the head for raising and retaining the same in a raised position by the movement of the opposite head, substantially as described.

6. In a car-coupler, the combination with the vertically-swinging head having a swinging jaw, of an abutment below the head, a reciprocating holding-pin and a longitudinally-movable plunger for raising the head and retaining the same in position substantially as described.

572,711. SHEDDING-MOTION FOR LOOMS. GEORGE OLDHAM, Philadelphia, Pa. Filed July 3, 1896. Serial No. 598,031. (No model.)

Claim.—1. In a loom, the combination with a dobby-frame, of a series of harness-levers mounted thereon, draw-bars pivoted on said harness-levers, reciprocating knives engaging said draw-bars to operate the harness-levers, means for reciprocating said knives, mechanism actuated by the pattern-chain to throw said draw-bars into operative relation to said knives, a series of locking-bars pivoted to the harness-levers, a locking-frame cooperating with said locking-bars to secure the harness-levers against movement, said locking-frame automatically releasing said locking-bars when they are subjected to an excessive strain.

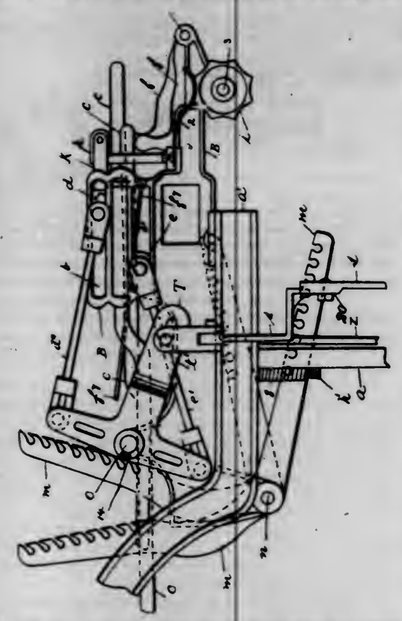
2. In a loom, the combination with a dobby-frame, of a series of harness-levers mounted thereon, notched draw-bars pivoted on said harness-levers, reciprocating knives engaging said draw-bars to operate the harness-levers, means for reciprocating said knives, a series of feelers operated by the pattern-chain to throw said draw-bars into operative relation with said knives, a locking-frame or holdback for said draw-bars, and means whereby the operator may throw said locking-frame from its operative position.

3. In a loom, the combination with a dobby-frame, of harness-levers mounted thereon, draw-bars pivoted on said levers, means for operating said draw-bars, a locking-frame or holdback for said draw-bars, a series of auxiliary locking-bars pivoted to said harness-levers and independent locking mechanism for said last-named bars.

4. In a loom, the combination with a dobby-frame, of harness-levers mounted thereon, draw-bars pivoted on said levers, means for operating said draw-bars, a spring-held locking-frame or holdback for said draw-bars, means whereby the operator may release said draw-bars at will, a series of auxiliary locking-bars pivoted on said harness-levers, a spring-held locking-frame for said last-named bars, said frame automatically releasing the said locking-bars when undue strain is exerted on them.

5. In a loom, the combination with the dobby-frame, of a series

of harness-levers mounted thereon, draw-bars pivoted on said harness-levers and provided with notches on their upper and lower edges, reciprocating knives engaging said notched draw-bars, the locking-frame K engaging the notches c^3 on the upper edges of said draw-bars, a rod f^1 by means of which the operator may lift the locking-frame K and release the draw-bars, a series of auxiliary locking-bars F provided with the notches f^3, a spring-held locking-frame E having a rounded lower edge E' which engages the notches f^3 on said bars F and secures them and the harness-levers against movement under normal strain, and means for raising and lowering said locking-frame E.



6. In a loom, the combination with a dobby-frame, of a series of harness-levers mounted thereon, notched draw-bars pivoted to said harness-levers, means for controlling said draw-bars, reciprocating knives engaging said draw-bars, an operating-lever for said knives, eccentric drive-gears for moving said lever, an adjustable rod connecting said drive-gears and said lever, auxiliary locking-bars pivoted to said harness-levers, a locking-frame for said last-named bars, an operating-rod for said locking-frame, and an actuating-cam carried by one of said drive-gears to move said rod and actuate the locking-frame.

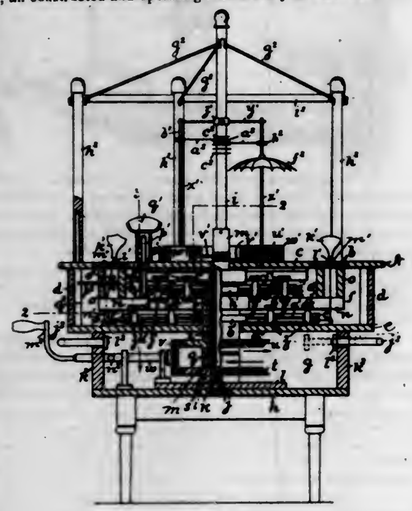
7. In a loom, the combination with the dobby-frame, of a series of harness-levers, means for actuating said levers, and locking mechanism which secures said levers against normal strain at predetermined intervals but automatically releases them if undue pressure be brought to bear upon them.

572,712. MERRY-GO-ROUND. OLAUS OLSON and JOHAN A. JOHANSON, Brooklyn, N. Y. Filed Oct. 17, 1895. Serial No. 565,940. (No model.)

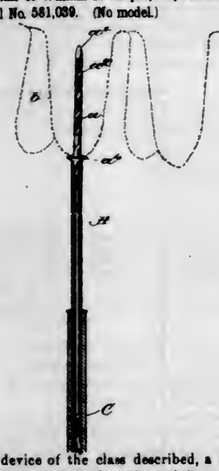
Claim.—1. The combination of the central stationary shaft *i*, stationary floor *e*, chambers *f* and *g*, above and below said floor respectively, hollow shaft *x* surrounding the stationary shaft, spider *y* and disk *c* carried by said shaft; the hollow shaft *p* surrounding shaft *x* and having a step-bearing on the hub of shaft *x*, spider *n* and annular platform *b*, carried by said spider, and the bevel-wheels *t*, *u*, and pinion *v* in chamber *g* and gearing said shafts with the driving-shaft substantially as described.

2. The combination of the central stationary shaft *i*, hollow shaft *x* surrounding said stationary shaft, hollow shaft *p* surrounding and having a step-bearing on shaft *x*, spiders *n* and *y* carried on said shafts *p* and *x* respectively, carrying-rolls *s* and *c* supporting said spiders respectively, radial axles and collars, and the rings controlling said rolls said spiders having the rails running on the rolls all substantially as described.

3. The combination of the stationary shaft *i*, detachable sleeve *m* surrounding said shaft, wheel *t* having its support on the bed-plate, hollow shaft *p* having a step-bearing on the hub of said wheel *t*, spider *n* carried on shaft *p*, annular platform *b* supported by standards *o*, on said spider, bevel-wheel *u* on sleeve *p*, said wheels *t*, and *u* geared with the driving-pinion *v* for turning reversely to each other, the hollow shaft *x* extending upward within shaft *p* and surrounding sleeve *m*, the spider *y* mounted on said shaft *x* above spider *n*, and the disk *c* mounted on said spider *n* in the plane of annular platform *b*, all constructed and operating substantially as described.



572,713. COW-MILKER. JOHN E. O'SULLIVAN, Hayden Row, Mass., assignor of one-half to William F. Draper, Hopedale, Mass. Filed Feb. 27, 1896. Serial No. 581,039. (No model.)

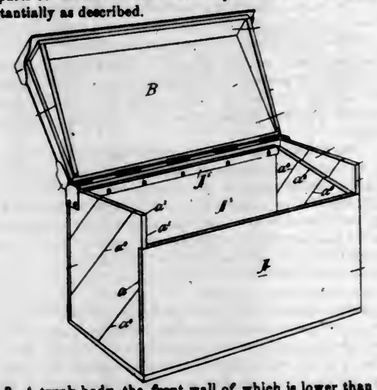


Claim.—In a device of the class described, a milk-conducting tube having a spiral groove extending through its walls, from the exterior to the interior thereof, and through which at any point in the length of the groove the milk may enter laterally from the teat, substantially as described.

572,714. TRUNK. FRANK J. PALICA, Racine, Wis. Filed Jan. 18, 1895. Serial No. 536,316. (No model.)

Claim.—1. A trunk-body, the front wall of which is lower than its end and rear walls, combined with a hinged lid having a top wall fitting within the upper margins of the rear and end walls of the body and provided with a depending front wall which fits between the end walls of the body and rests upon the upper edge of the front wall of the body and with end strips which enter within and are in contact with said end walls of the body, substantially as described.

2. A trunk-body, the front wall of which is lower than its end and rear walls, and which is provided with ledges on the inner faces of its end walls, combined with a hinged lid having a top wall which enters and fits between the upper margins of the end walls, and provided with a depending front wall which rests on the top of the front wall of the body and also with end strips which enter within the upper parts of the end walls of the body and rest on the said ledges, substantially as described.



3. A trunk-body, the front wall of which is lower than its end walls, and which is provided with inclined ledges on the inner faces of said end walls, combined with a hinged lid having a top wall which enters and fits between the upper margins of the end walls, and provided with a depending front wall and also with end strips which enter within the upper parts of the end walls and are inclined on their lower edges to fit the said inclined ledges, substantially as described.

4. A trunk-body, the front wall of which is lower than the end and rear walls, and which is provided with ledges on the inner faces of its end walls, combined with a hinged lid provided with a top wall which fits within the margins of the end and rear walls, and having a depending front wall which rests on the front wall of the body, and end strips which rest on the said ledges of the body, substantially as described.

5. A trunk-body, the front wall of which is lower than the end and rear walls, and which is provided with inclined ledges on the inner faces of its end walls, combined with a hinged lid provided with a top wall which fits within the upper margins of the end and rear walls, and having a depending front wall which rests on the front wall of the body, and end strips which are inclined on their lower edges to fit against the said inclined ledges of the body, substantially as described.

6. A trunk-body, the front wall of which is lower than the end and rear walls, and which is provided with inclined ledges on the inner faces of its end walls, combined with a hinged lid provided with a top wall which fits within the upper margins of the end and rear walls and having a depending front wall which fits within the end walls and rests on the front wall of the body, and end strips which are attached at their front ends to the front wall of said lid and are inclined on their lower edges to fit against the said inclined ledges of the body, substantially as described.

7. A trunk-body, the front wall of which is lower than its end and rear walls, combined with a hinged lid which is of the full length of the space, and enters between the end walls of the body and is provided with a depending front wall which fits between the end walls and rests on the front wall of the body, said lid having corner-pieces secured to the top and front walls with their outer walls at a distance from the outer faces of the lid so as to form sockets to receive the front corners of the end walls of the body, substantially as described.

8. A trunk-body, the front wall of which is lower than its end and rear walls, and which is provided with ledges on the inner faces of its end walls, combined with a hinged lid having a depending front wall which rests on the front wall of the body and provided with end strips which enter within the end walls of the body and rest on said ledges, said lid having corner-pieces secured to the lid with their end walls at a distance from the outer faces of the lid so as to form sockets to receive the corners of the ends of the body, substantially as described.

9. A trunk-body, the front wall of which is lower than its end and rear walls, and which is provided with ledges on the inner faces of its end walls, and provided with end strips which enter within the end walls of the body, and a depending front wall which fits between the said end walls and rests on the front walls of the body, and provided with end strips which rest on said ledges and also with corner-pieces which form sockets to receive the corners of said end pieces of the body, substantially as described.

10. A trunk-body, the front wall of which is lower than its end and rear walls, combined with a hinged lid having a top wall which fits within the end walls of the body, and a front wall which fits between the said end walls and rests on the front wall of the body and having also end pieces which enter within the end walls of the body and are attached to the said front wall of the lid, and metal corner-pieces comprising side, front and top flanges, of which the front and top flanges are secured to the top and front walls of the lid with the side flanges at a distance from the lid to form sockets for the ends of the body, substantially as described.

11. A trunk provided with a lid fitting between its end walls, said lid being provided with metal valance-strips attached to the ends of the lid and extending over the top edges of the end walls, and corner-hinges, each comprising a lower section which is secured to the outer face of the rear wall, and an upper section having top and side flanges, of which the top flange is secured to the top of the lid and to the rear end of the valance-strip and projects from the end of the lid to support the side flanges at a distance therefrom equal to the thickness of the end wall of the body thereby forming a socket to receive the adjacent upper edge of the end wall, substantially as described.

12. A trunk provided with a lid fitting between its end walls, and corner-flanges each comprising an upper section having top and side flanges of which the top flange is secured to the top of the lid and supports the side flanges at a distance from the end of the lid, thereby forming a socket to recive the adjacent upper edge of the end wall of the body, and a lower section pivotally connected with the upper section and provided with a rear flange secured to the rear wall of the body and with a side flange secured at its lower edge to the end wall of the body and adapted to overlap and protect the side flange of the upper section, substantially as described.

13. A trunk-body, the front wall of which is lower than its end and rear walls, and is provided with a hinged lid having a top wall which enters and fits between the upper margins of the end walls and is provided with a depending front wall which rests on the top of the front wall of the body, and also with end strips which enter within the upper parts of the end walls of the body and rest on the said ledges, said end walls of the body being made of wood, the grain of which extends at an upward inclination toward the upper front corners of the walls, substantially as described.

14. A trunk-body, the front wall of which is lower than its end and rear walls and which is provided with ledges on the inner faces of its end walls, formed by rabbeting the upper parts of the same, combined with a hinged lid having a top wall which enters and fits between the upper margins of the end walls and is provided with a depending front wall which rests on the top of the front wall of the body, and also with end strips which enter within the upper parts of the end walls of the body and rest on the said ledges, said end walls being made of wood, the grain of which extends at an upward inclination toward the upper front corners of said end walls, substantially as described.

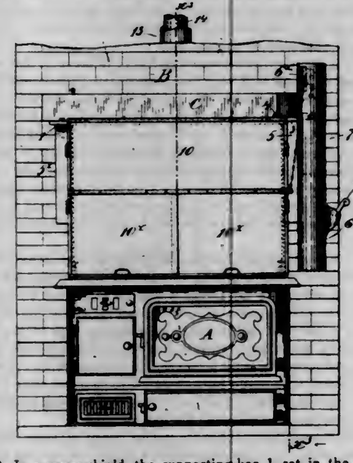
15. A trunk-body having a front wall of less height than its end and rear walls, combined with a hinged lid provided with a top wall adapted to fit within the end and rear walls of the body, and with a depending front wall adapted to fit between the end walls of the body and rest upon the front wall thereof, said lid being also provided with end strips adapted to enter within the end walls of the body, and attached at their ends to the front wall of the lid, and strengthening-cleats applied to the lid and extending at their ends past the ends of the lid to the outer surface of the end walls of the trunk-body, substantially as described.

16. A trunk-body having a front wall of less height than its end and rear walls, and a hinged lid having a top wall which fits within the end and rear wall of the body and provided with a depending front wall adapted to fit between the end walls of the body and rest upon the front wall thereof, and also provided with end strips attached at their front ends to the front wall of the lid, and adapted to enter within the end walls of the body, and metal strips applied to the edges of the lid and projecting beyond the same to overlap the end and rear walls of the body, substantially as described.

17. A trunk-body having a front wall of less height than its end and rear walls, combined with a hinged lid having a top wall which fits within the end and rear walls of the body and provided with a depending front wall adapted to fit between the end walls of the body and to rest upon the front wall thereof, and also provided with end strips attached at their front ends to the front wall of the lid and adapted to enter within the end walls of the body, a strengthening-cleat secured to the front of the lid and extending past the ends of the same to the outer faces of the ends of the body, and corner-pieces applied over the ends of the cleat and forming sockets to receive the upper front corners of the end walls of the trunk-body, substantially as described.

572,715. RANGE-SHIELD. HENRY J. PHILLIPS, Cranford, N. J. Filed Feb. 11, 1896. Serial No. 578,944. (No model.)

Claim.—1. The combination with a chimney-breast having a lintel across the recess therein, of the supporting-bar 1, mounted at its ends in recesses under the lintel, the screw 2 driven up through the bar 1 and bearing on the lower face of the lintel, and the folding flaps of the shield hinged to said bar 1, substantially as set forth.



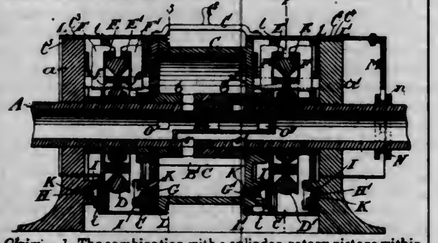
2. In a range-shield, the supporting-bar 1, set in the chimney-breast, the hinge-plates 5 and 5×, secured adjustably to the same, and the casing 6, also secured to said bar I, in combination with the end plates 8 and 8×, hinged to the respective hinge-plates, fastening devices for said end plates, the flaps hinged together and to the said bar 1, the counterweight in the casing 6, and the connector which couples said weight to the flaps, substantially as set forth.

3. In a range-shield, the combination with a supporting-bar for the flaps of the shield and the said flaps hinged together and to the said bar, of the casing for the counterweight mounted on the chimney-breast and provided with a pawl-detent 12, the weight 7 in said casing and provided with teeth adapted to be engaged by said pawl when the latter is set in operative position, and the flexible connector connecting said weight with the flaps, substantially as set forth.

4. In a range-shield, the combination with the bar 1, the hinge-plate 5, having a slotted bracket 3 and screw 4, whereby it is adjustably secured to the end of the bar 1, the said bracket and screw, the casing 6 formed integrally with the said hinge-plate and bracket 5, and the hinge-plate 5× secured to the other end of the bar 1, of the folding plates of the shield hinged to said bar and hinge-plates, substantially as shown, and the counterweight and chain.

5. The combination with the range and its pipe 14, the flared tube 13, in the flue and loosely embracing the pipe 14 therein, of the sliding damper, 15, on the pipe and adapted to close the lower end of said tube, substantially as set forth.

572,716. **REVERSING MECHANISM FOR ROTARY ENGINES.** WILLIAM E. PRALL, Jr., New York, N. Y. Filed Apr. 8, 1896. Serial No. 586,675. (No model.)



Claim.—1. The combination with a cylinder, rotary pistons within the cylinder, clutching-shoes for locking the rotary pistons to the cylinder and toggle devices for holding the clutching-shoes in position of means for changing the normal inclination of the toggle devices with respect to the radial line of rotation, to reverse the engine, substantially as set forth.

2. The combination with the rotary cylinder, the rotary pistons within the cylinder and clutching devices carried by the cylinder for locking the cylinder to and releasing it from the pistons, of sleeves having their inner faces connected with the clutching devices and means for moving the sleeves and thereby changing the normal inclination of the clutching devices to reverse the movement of the pistons, substantially as set forth.

3. The combination with a longitudinally-movable shaft, a rotary cylinder, rotary pistons within the cylinder and means for clutching the pistons to and releasing them from the cylinder, the longitudinally-movable shaft and the hubs of the pistons being provided with inlet and exhaust ports for the actuating fluid, of means for simultaneously moving the shaft and changing the inclinations of the clutching devices to reverse the movement of the pistons, substantially as set forth.

4. The combination with the longitudinally-movable shaft provided with inlet and outlet ports, the pistons mounted to rotate on the shaft and provided with inlet and outlet ports in their heads, and the cylinder mounted to rotate freely, of clutching devices for locking the pistons alternately to a stationary support and to the cylinder and means for simultaneously shifting the inclination of the clutching devices and moving the shaft, substantially as set forth.

5. The combination with a shaft, pistons loosely mounted on the shaft, a cylinder loosely mounted on the pistons and means for admitting the actuating fluid to and exhausting it from between the pistons, of a set of clutching-shoes for locking the pistons to and releasing them from the cylinder, toggle-clips for holding the shoes in position, a rotary ring yieldingly connected with the clutching-shoes and means for rotating the ring in opposite directions to change the inclinations of the toggle-clips, substantially as set forth.

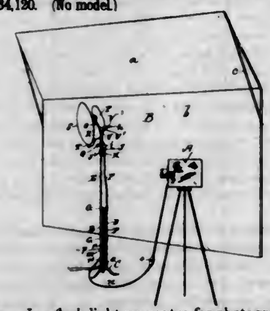
572,717. **CHAIR.** JAMES W. RANKIN, Deep River, Conn. Filed Mar. 24, 1896. Serial No. 584,711. (No model.)



Claim.—1. The combination with the base of a rocking-chair the sides of which are convex on their lower surface, of side bars, on which said base is supported, said side bars being provided at one end with casters or rollers which are secured thereto, and at the opposite ends with spring-supported casters or rollers, the supports for said casters or rollers consisting of strong wire springs which are bent centrally to form spring-rings, and one end of which is carried backwardly and downwardly, and provided with a roller, substantially as shown and described.

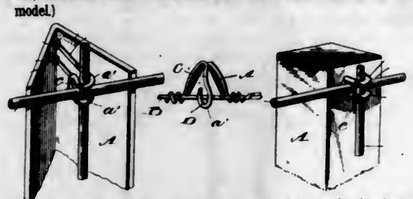
2. A support for rollers or casters adapted to be secured to chairs, or other articles, comprising a spring bent in the middle, to form a ring or rings and one end of which is carried backwardly and downwardly and provided with a roller, and the other being carried backwardly and upwardly and bent into a ring, beyond which the end of the spring is bent at right angles to the main portion thereof, substantially as shown and described.

572,718. **FLASH-LIGHT APPARATUS FOR PHOTOGRAPHIC PURPOSES.** HENRY R. RATHBUN and FREDERICK BEBBY, Pawtucket, R. I.; said Rathbun assignor to said Bebby. Filed Jan. 7, 1895. Serial No. 534,120. (No model.)



Claim.—In a flash light apparatus for photographic purposes, the combination of a stand, a portion of which is adapted to form an electric conductor, with a cartridge provided in itself with an electric wire adapted to ignite the charge of flashing powder, and also provided in itself with means for pressing the igniting-wire against the conducting portions of the stand substantially as described.

572,719. **FENCE.** WILLIAM H. REPPETO and JEREMIAH M. MARTIN, Greenville, Ohio. Filed Feb. 24, 1896. Serial No. 580,455. (No model.)



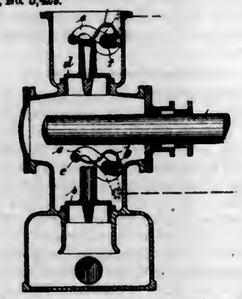
Claim.—1. The combination with an upright and a horizontal wire, of a looped part having its ends secured to said upright, and having at its center a hook terminating at a distance from the upright, and receiving the horizontal wire in said hook, and a vertical rod passed through the looped part formed by said hook and bearing against the outer face of the horizontal wire; substantially as described.

2. The combination with an upright, of a wire having its ends held to said upright and bent at its center to form a hook terminating at a distance from said upright, and two looped parts at right angles to the hook and formed by the bend thereof, a horizontal wire passed through the hook and between the loops, and a vertical rod passed through the loops in the hook and bearing against the outer face of the horizontal wire; substantially as described.

3. The combination with an angular upright, of a wire bent at its center to form a loop, and substantially parallel arms with hooks with the ends of the wire passed through openings in the angle of the upright and bent in opposite directions against the outer face thereof, a longitudinal wire held between said arms in the bend of the loop, and a rod passed vertically through the hooks of the parallel portions and bearing against the outer face of the longitudinal wire; substantially as described.

4. The combination with an angular upright, of a wire bent at its center to form a loop, and substantially parallel arms with hooks, with the ends of the wire passed through openings in the angle of the upright and bent in opposite directions against the outer face thereof, a longitudinal wire held between said arms in the bend of the loop, and a rod passed vertically through the hooks of the parallel portions and bearing against the outer face of the longitudinal wire, the arms of said bent wire being arranged in substantially the same vertical plane; substantially as described.

572,720. **VALVE-GEAR.** ALOIS RIEDLER, Berlin, Germany. Filed Jan. 26, 1895. Serial No. 536,345. (No model.) Patented in Germany Mar. 20, 1891, No. 60,447, and Mar. 27, 1892, No. 64,772, and in England Mar. 26, 1891, No. 5,429.

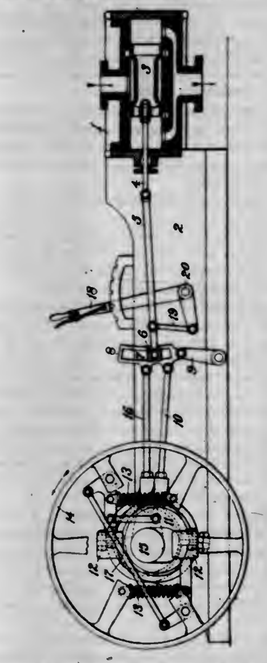


Claim.—1. In a pump, the combination with a valve, of a valve-gear disconnected from the valve, thus permitting the valve to open automatically when the gear is lifted from the valve, said gear comprising a spindle and a lever secured to the spindle, and a positively-operated spring-controlled valve-closing arm connected to the spindle and adapted to be relieved from positive contact with the valve at or prior to its opening, and to contact with and bear on the valve before or at the closing of the latter while the valve-gear continues its movement through its operative stroke and after the closing movement of the valve has ceased, substantially as set forth.

2. The combination in a valve-gear for pumps of a valve not connected to said gear, which latter after being removed from the valve leaves it free to open automatically with a positively-operated valve-closing arm, said arm being formed by a spring, one end of this spring being connected with the gear and the other end being loose, so that this loose end separates from the gear when the valve is stopped and the gear continues its movement, substantially as set forth.

3. The combination in a valve-gear for pumps of a valve not connected to said gear, which latter after being removed from the valve leaves it free to open automatically, with a positively-operated valve-closing arm, one end of the arm being connected with the gear, the other end under the influence of a spring, which allows said end of the arm to separate from the gear when the valve is stopped and the gear continues its movement, substantially as set forth.

572,721. **VALVE-GEAR.** FRANCIS M. RITER, Braddock, Pa. Filed Mar. 9, 1896. Serial No. 582,386. (No model.)



Claim.—1. In a fluid-pressure motor, a valve mechanism controlling the distribution of motive fluid, and two independent reversing-gears connected to the valve mechanism and adapted to independently reverse the valve functions, substantially as set forth.

2. In a fluid-pressure motor, a valve mechanism controlling the distribution of motive fluid, and two independent adjustable reversing-gears connected to the valve mechanism, one of which is adapted to be controlled or adjusted by hand, and the other by means of a governor, substantially as set forth.

3. In a fluid pressure motor, a valve mechanism and two independently-adjustable reversing devices each controlling the cut-off of the motive fluid in both ends of the cylinder and adapted to independently reverse the valve functions substantially as set forth.

4. In a fluid-pressure motor, the combination with a valve mechanism of two independent adjustable devices controlling the cut-off of the motive fluid, one adapted to be operated by hand and the other by a governor, substantially as set forth.

5. In a valve-gear for a reversing-engine, the combination, with valve mechanism for controlling the distribution of motive fluid, of a shifting link, or block, and an adjustable eccentric connected to the valve mechanism, substantially as set forth.

6. In a valve-gear for a reversing-engine, the combination, with a valve mechanism for controlling the distribution of motive fluid, of two or more independent reversing-gears connected to the valve mechanism and adapted to vary the cut off of the motive fluid without substantial variation of lead, substantially as set forth.

7. In a valve-gear, the combination, with a link having adjustable connection with a valve-rod, of an eccentric connected to the link at or near one of its ends, and an eccentric connected to the link at an intermediate point, substantially as set forth.

8. In a valve-gear for fluid-pressure motors, the combination with a link having adjustable connection with a valve-rod, of means for varying the adjustment to reverse the motor and a single adjustable eccentric connected to the link and adapted to control both the forward and back motions of the motor, substantially as set forth.

9. In a valve-gear, the combination, with a link having adjustable connection with a valve-rod, of a fixed eccentric connected to the link at or near its middle point, and an adjustable eccentric connected to the link at or near one of its extremities, substantially as set forth.

10. In a valve-gear, the combination with a link having adjustable connection with a valve-rod, of an eccentric connected at or near one of the ends of the link, and an eccentric connected to an intermediate point on the link, and which is adapted to impart to the point on the link to which it is connected substantially the same motion as would be imparted by two eccentrics connected at or near the opposite ends of the link, substantially as set forth.

11. In a valve-gear, the combination, with a link, of a fixed eccentric whose center is substantially in line with the engine-crank and which is connected to the link at or near the middle point of the link, and an adjustable eccentric connected to a point at or near the extremity of the link, substantially as set forth.

12. In a valve-gear, the combination, with a link having an adjustable connection with a valve-rod, of a guide for the link, a fixed eccentric connected to the link at or near its middle point and an adjustable eccentric connected to the link at or near one of its extremities, substantially as set forth.

13. In a valve-gear, the combination, with a slotted link of a block fitted in the slot and connected to a valve-rod, a fixed eccentric connected to the link at or near its middle point, an adjustable eccentric connected to the link at or near one of its ends, a governor for shifting the adjustable eccentric and means for relatively adjusting the link and block by hand, substantially as set forth.

14. In a valve-gear, the combination, with the valves of two cylinders, of two fixed eccentrics, two links, each of which is connected to a valve-rod and, at or near its middle point, to one of the fixed eccentrics, an adjustable eccentric, and connections from the adjustable eccentric to one end of each of the links, substantially as set forth.

15. In a valve-gear, the combination, with the valves of two cylinders, of two fixed eccentrics, two links, each of which is connected to a valve-rod and, at or near its middle point, to one of the fixed eccentrics, an adjustable eccentric, direct connections from the adjustable eccentric to one end of one of the links and to an arm on a rock-shaft, and a connection from the rock-shaft to one end of the other link, substantially as set forth.

16. The combination, in a fluid-pressure motor, of a valve gear having a relatively-adjustable link-and-block connection between the distribution-valve and its driving mechanism, a brake for stopping or checking the motion of the engine, and means, connected to the valve-gear and to the brake, for simultaneously applying the brake and shifting the block-and-link connection to stop the engine, substantially as set forth.

17. In a fluid-pressure motor, the combination, with a valve mechanism and an adjustable cut-off and reversing device, of an automatic governor connected thereto and adapted to vary the cut-off of the motive fluid, and means controlled by the governor for operating the reversing device to effect a reversal of the engine, substantially as set forth.

18. In a fluid-pressure motor, the combination, with a valve mechanism and an adjusting cut-off and reversing gear, of an automatic governor connected thereto and adapted to vary the cut-off of the motive fluid, and a fluid-pressure-actuated device controlled by the governor and adapted to operate the reversing mechanism, substantially as set forth.

19. In a fluid pressure motor, the combination, with a valve mechanism, of an adjustable link or block, an automatic governor connected thereto and adapted to vary the cut-off of the motive fluid, and means for effecting a reversal of the motor which is in operation during the ordinary movements of the governor, but which is operative by an excessive movement of the governor to effect a reversal of the engine, substantially as set forth.

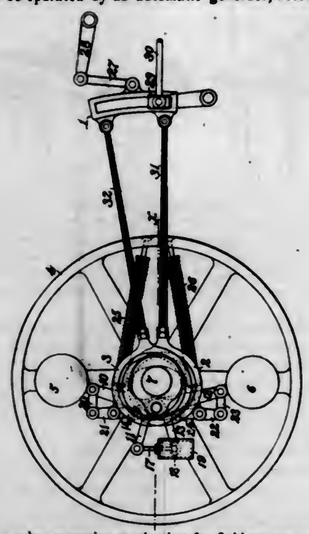
572,722. VALVE-GEAR. FRANCIS M. RITES, Ithaca, N. Y. Filed July 31, 1896. Serial No. 601,186. (No model.)

Claim.—1. In a fluid-pressure motor, the combination, with an adjustable link device, of two shifting eccentrics each of which is connected to the link at or near one of its extremities, substantially as set forth.

2. In a fluid-pressure motor, the combination, of an adjustable link device for controlling the cut-off of motive fluid, and two independent shifting-eccentric governors connected with the link device at or near its opposite extremities, substantially as set forth.

3. In a fluid-pressure motor, the combination, of an adjustable link device connected to the distributing-valve, and two shifting eccentrics adapted to be reversely adjusted by a sudden change of load, substantially as set forth.

4. In a reversing-gear, the combination of two shifting eccentrics connected to an adjustable link or frame at or near its opposite extremities, a manually-operated adjusting mechanism connected to the link or frame, and mechanism connected to the eccentrics and adapted to be operated by an automatic governor, substantially as set forth.



5. In a valve-operating mechanism for fluid-pressure motors, the combination, of two shifting eccentrics, governing mechanism connected to each of the eccentrics, and compensating connections adapted to effect corresponding movements of the two systems and to permit unequal or opposite movements under the force of inertia, substantially as set forth.

6. In a valve-operating mechanism for fluid-pressure motors, the combination, of two governing devices, each comprising a shifting eccentric and an unbalanced governing-weight, and a dash-pot device through which the governing devices are connected, substantially as set forth.

7. In a valve-operating mechanism for fluid-pressure motors, the combination, of two governing devices, each comprising a shifting eccentric and a rigidly-connected centrifugal weight, and means connecting the governing devices whereby they are balanced as to gravity, substantially as set forth.

8. In a valve-operating mechanism for fluid-pressure motors, the combination, of two independent governing devices each adapted to control the distribution of motive fluid and connected together through the medium of a dash-pot device and thereby balanced as to gravity, substantially as set forth.

572,723. TRISAZO DYE. CHRISTIAN RUDOLPH, Offenbach-on-the-Main, Germany, assignor to The Firm of K. Oehler, same place. Filed Apr. 10, 1896. Serial No. 586,931. (Specimens.) Patented in England July 10, 1893, No. 13,402, and in Germany Oct. 23, 1894, No. 86,009.

Claim.—1. The within-described process of making new trisazo dyestuffs consisting in first forming intermediate products by combining the paradiamins, as for instance benzidin, with a metaamidooxysulfo-acid of the benzene series which contains the OH group and the NH_2 group in the so-called "meta" position, then combining these intermediate products with metaphenyleadiamin or resorcin and finally causing diazonaphthionic acid to act upon the thus resulting intermediate dyestuffs.

2. As a new article of manufacture, the new trisazo dyestuffs derived from the intermediate products formed by the combination of paradiamins and the metaamidooxysulfo-acids of the benzene series which contain the OH group and the NH_2 group in the so-called "meta" position, the said dyestuffs forming a black powder which is soluble in water giving brown to brown-red solutions and soluble in concentrated sulfuric acid giving violet to blue solutions, and dyeing unmordanted cotton from an alkaline bath brown-red to corinth, substantially as herein described.

572,724. PIPE-CLEANER. ANDREW P. RUHELY, Chicago, Ill. Filed Apr. 6, 1896. Serial No. 586,298. (No model.)

Claim.—1. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto, having two pipe connections and having two pairs of ports, both individuals of one pair leading into the chemical-chamber and the individuals of the other pair leading to the pipe connections respectively; a valve or plug seated and adapted to rotate in said valve-body, having portways and a seating-surface which are relatively arranged so that the plug at one position separates the two pairs of ports from each other, and at another position separates the individuals of each pair from each other, and at the third position closes one individual of each pair.



2. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto, having two pipe connections and having two pairs of ports, both individuals of one pair leading into the chemical-chamber and the individuals of the other pair leading to the pipe connections respectively; and a rotating valve or plug seated in said valve-body and having two portways symmetrically situated with respect to an axial plane through the plug, and adapted in one position of the plug to communicate one with an individual of each pair of ports, and the other with the other individual of each pair, one of said portways being adapted at another position of the plug to communicate with both individuals of the second pair.

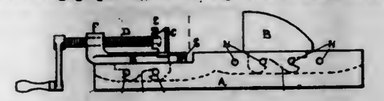
3. In a pipe cleaner, the chemical-chamber having the valve-body or plug-seat adjacent thereto and rigid therewith, said valve-body having four ports leading from the seat, two of them being parallel and leading into the chemical-chamber, the other two being parallel and at right angles to the first two and leading to the water connections respectively; and the plug seated in said body having two portways adapted to register one with one individual of each pair and the other with the other individual of each pair of ports, and to be rotated to cause one of said portways to register with both individuals of the second pair.

4. In a pipe-cleaner, a chemical-chamber and a valve-body or plug-seat adjacent thereto and rigid therewith, said plug-seat having two water-pipe connections and having two pairs of ports, one pair of said ports leading into the chemical-chamber, and the individuals of the other pair leading out to said water-pipe connections respectively; a rotating valve or plug seated in said valve-body or plug-seat and cut away at opposite sides to make its thickness at such reduced portion not greater than the distance between the individuals of said pairs of ports, and adapted at will to be seated in position to separate the ports leading to the chemical-chamber from the ports leading to the water connections, or to be seated between the individuals of both said pairs of ports, or to be seated over one port of each pair.

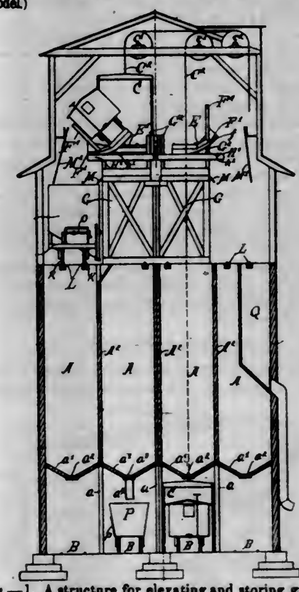
5. In a pipe-cleaner, in combination with the chemical-chamber and the valve-body or plug-seat at the bottom thereof, said valve-body having two ports leading from the plug-seat into the bottom of the chemical-chamber, and two additional ports leading laterally to suitable water connections; a rotatable valve or plug seated in the plug-seat, and cut away at opposite sides to make its thickness at the reduced portion not greater than the distance between the individuals of the said pairs of ports, said valve having a handle oblique to the planes at which said plug is cut away: substantially as set forth.

572,725. FURNITURE-CLAMP. FRANK SCHWEITZER, Grand Rapids, Mich. Filed June 29, 1895. Serial No. 554,463. (No model.)

Claim.—In a furniture-clamp, the combination with a bar having longitudinal grooves formed in one edge, pins passing transversely through said grooves, a head-stock having a projection adapted to rest within either of said grooves and provided with a plurality of hooks adapted to engage the said pins and hold the projection to its seat in the groove, a spring attached to one end of said projection and bearing against the bar and operating to hold the hooks in engagement with the pins, a movable jaw carried by the head-stock, and a tail-stock provided with a projection having a plurality of hooks for engaging said grooves and pins, substantially as described.



572,726. GRAIN-STORAGE ELEVATOR. MARQUIS F. SEELEY and JENNIE Y. SEELEY, Chicago, Ill. Filed Aug. 8, 1894. Serial No. 519,764. (No model.)



Claim.—1. A structure for elevating and storing grain, comprising storage-bins, a vertically-movable elevated platform, a tipple located above the bins, track-rails also located above the bins but below the tipple, and wheeled hoppers resting on said track-rails for transferring grain from the tipple to the bins, substantially as described.

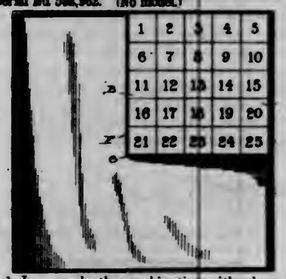
2. A structure for elevating and storing grain, comprising storage-bins, a vertically-movable elevator-platform, a tipple located above the bins, track-rails also located above the bins but below the tipple, wheeled hoppers resting on said track-rails for transferring grain from the tipple to the bins, and means for weighing the grain when in the hopper, substantially as described.

3. A structure for elevating and storing grain, comprising storage-bins, two vertically-movable elevator-platforms, tipples located side by side above the level of the bins, track-rails also located above the level of the bins, and a wheeled hopper resting on the track-rails, said track-rails being provided with cross connections or switches by which the hopper may be transferred from one track to another, substantially as described.

4. A tipple for grain-cars, comprising a platform provided with curved supports or rockers, and a frame on which the said platform is supported, which frame is provided with supporting-surfaces on which the said supports or rockers rest, and on which they roll in the lateral tipping of the platform, and means whereby said frame is adapted to swing transversely to the platform, substantially as described.

5. A structure for elevating and storing grain, comprising storage-bins, a vertically-movable elevator-platform, a tipple located above the level of the bins, said tipple comprising a platform which is movably supported in such manner as to tip both sidewise and endwise, track-rails also located above the bins, and a wheeled hopper resting on the track-rails, substantially as described.

572,727. PUZZLE. ELLIS SHEAR, Chicago, Ill. Filed May 25, 1896. Serial No. 593,962. (No model.)



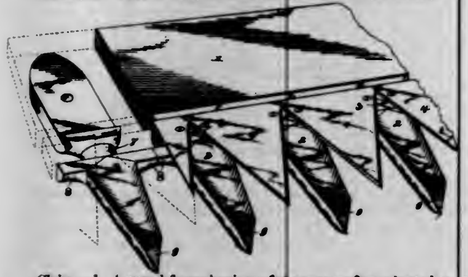
Claim.—1. In a puzzle, the combination with a box or receptacle, of a movable boundary-strip having portions connected to the box and a free portion being adapted for manipulation to define within said box geometrical figures of different areas.

2. In a puzzle, the combination with a box or receptacle of a movable boundary-strip having its ends connected to the box and a free portion consisting of sections flexibly connected together, said strip being adapted for manipulation to define within the box geometrical figures of different areas.

3. In a puzzle, the combination with a square box or receptacle, of a movable boundary-strip having its ends connected to opposite corners of the box, said strip having a free portion consisting of a series of sections flexibly connected together, and being adapted for manipulation to define within the box squares of different areas.

4. In a puzzle, the combination with a series of blocks bearing symbols or designations and adapted for predetermined relative arrangement, of a box or receptacle, and a movable boundary-strip having its ends connected to the box and provided with a free portion consisting of sections flexibly connected together and adapted to define within said box squares of different areas for holding the blocks, substantially as described.

572,728. GUARD FOR CUTTER-BARS. BENJAMIN F. SHEPHERD, Mendon, Ill. Filed Mar. 22, 1894. Serial No. 504,687. (No model.)

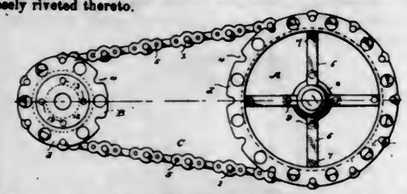


Claim.—1. A guard-finger having a flat upper surface adapted to be traversed by the knives of a cutter-bar, and beveled downwardly-convergent side surfaces intersecting said upper surface in acute angles, the upper surface being scored or serrated in rearwardly-divergent lines extending to the lateral edges or angles, whereby the finger may be side-dressed or ground without obliterating said scores or serrations, substantially as specified.

2. The combination with a cutter-bar having forwardly-tapered knives, of guard-fingers having flat horizontal upper surfaces adapted to be traversed by the knives and terminating contiguous to the front extremities thereof, downwardly-tapered side surfaces intersecting said upper surfaces in acute angles forming cutting edges to coöperate with the knives, and reduced front extremities of which the upper surfaces are inclined downwardly and forwardly from the terminations of said flat upper surfaces of the fingers, the grass or grain being held from slipping by the roughened lateral edges of the fingers caused by scoring the upper surfaces of the fingers in lines intersecting said edges, whereby the fingers may be side-dressed or ground without obliterating the scores, substantially as specified.

572,729. DRIVING MECHANISM FOR BICYCLES. JOHN R. SINCLAIR, Jr., Seymour, Conn., assignor of two-thirds to Edward N. Carrington and Arthur H. Carrington, Derby, Conn. Filed Mar. 19, 1896. Serial No. 583,260. (No model.)

Claim.—1. A chain for bicycles and similar uses consisting of side pieces having holes at their mid-length, bearing-pieces consisting of trunnions which pass through the holes in the side pieces and extend outward therefrom and collars which lie between the side pieces and center pieces which lie between the ends of the side pieces and are loosely riveted thereto.



2. The combination with a driving and driven wheel each of which is provided with side plates having peripheral depressions which register with each other said side plates being separated by a peripheral channel, of a chain comprising side pieces having holes midway of their lengths, bearing-pieces having trunnions which pass through said holes and engage the depressions in the side plates of the wheels and collars lying between the side pieces of the chain and center pieces the ends of which lie between the ends of the side pieces and are loosely riveted thereto.

572,730. ARTICULATED TOY FIGURE. FRED M. SPINDLE, Philadelphia, Pa., assignor to the American Lithographic Company of New York. Filed May 28, 1896. Serial No. 593,380. (No model.)



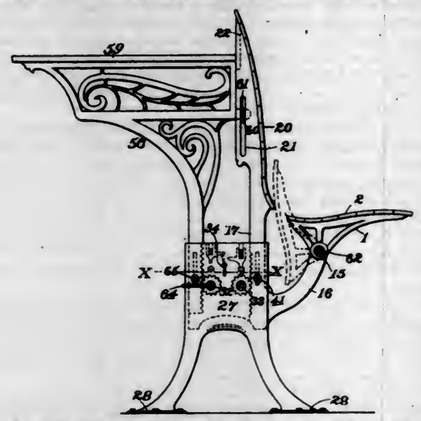
Claim.—1. In an automaton figure, the combination of an exterior, folded upon and secured together by flaps, tongues and slits, a central part adapted to be moved within the exterior, arms inserted through the exterior and secured to the inner part and so formed as to fulcrum upon the end of the slit where inserted through the exterior, means for limiting the movement of the inner part and means whereby representations of open and closed eyes are exhibited through the same apertures, substantially as described and set forth.

2. In an automaton figure, a front part having flaps and slits to fold and fasten at the back, a body part embraced by said flaps, slits in the front part for the insertion of limbs fulcrumed upon the ends of the slits, slits in the body part for securing said members, apertures in the front part and a double set of eye representations on the body part and means to present them for observation through said apertures, substantially as described.

3. In a figure representation of a living object, a front or exterior part having flaps thereon, slits and tongues for the flaps, means to join the flaps and embrace a movable body part, fulcrum-slits in the front part adapted to have arms inserted therethrough and fulcrumed at an end thereon, slits in the body part for securing said arms or moving members, apertures through the front part eye representations upon the body part and means to present such representations before said apertures, substantially as described.

572,731. ADJUSTABLE SCHOOL DESK AND SEAT. SILAS SPRINGSTEEN and HIRAM HARRIS, Holland, Mich. Filed Apr. 1, 1896. Serial No. 585,756. (No model.)

Claim.—1. In an adjustable school desk and seat, the combination of standards having suitable orifices, pinions provided with extended hubs constructed to movably fit orifices in the standards, corresponding seat-frames each consisting of a projecting arm, a main upright slotted portion and a lateral extension having a plurality of slots, a clamping-rod and bolts adapted to pass through slots in said seat-frames and orifices in said standards, racks formed integral with or fixed upon said seat-frames and arranged to engage said pinions, and means for operating said pinions, substantially as described.



2. In an adjustable school desk and seat, the combination of standards having suitable orifices, pinions provided with extended hubs constructed to movably fit orifices in the standards, corresponding seat-frames each consisting of a projecting arm, a main upright portion and a lateral extension having a plurality of slots, said upright portion possessing upper and lower longitudinal slots, a clamping-rod and bolts adapted to pass through slots in said seat-frames and orifices in said standards, racks formed integral with or fixed upon said seat frames, desk frames having lugs arranged to engage the upper slots in the upright portions of said seat-frames, said desk-frames having longitudinal slots, racks formed integral with or fixed upon said desk-frames, and means for operating said pinions, substantially as described.

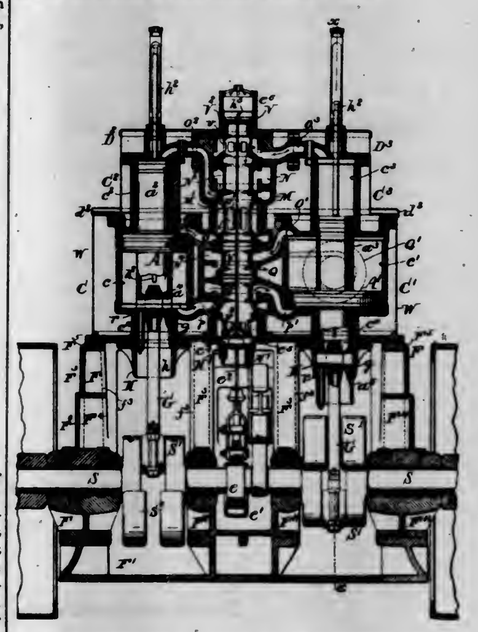
3. In an adjustable school desk and seat, the combination of standards having suitable orifices and keyholes, pinions provided with extended hubs constructed to movably fit orifices in the standards, bolts 47 and 50, said standards having projecting lugs adapted to guide the bodies and lower ends of said bolts, springs formed to be arranged between said bolts and body-guiding lugs, and a key adapted to operate said bolts, substantially as described.

4. In an adjustable school desk and seat, the combination of standards having suitable orifices, pinions provided with extended hubs constructed to movably fit orifices in the standards, means for operating said pinions, bolts borne by said standards and adapted to engage and lock said pinions, means for operating said bolts, seat-frames each consisting of a projecting arm, a main upright portion and a lateral extension having a plurality of slots, said upright portions possessing upper and lower longitudinal slots, a clamping-rod and bolts adapted to pass through slots in said seat-frames and orifices in said standards, racks formed integral with or fixed upon said seat-frames, desk-frames having lugs arranged to engage the upper slots in the upright portions of said seat-frames, said desk-frames having longitudinal slots, racks formed integral with or fixed upon said desk-frames, and a hollow brace constructed to connect opposite frames, substantially as described.

572,732. STEAM-ENGINE. GEORGE S. STROWE, New York, N. Y., assignor to the Balanced Locomotive and Engineering Company, same place. Filed Nov. 12, 1894. Serial No. 529,260. (No model.)

Claim.—1. In a compound engine two pistons A A′ of different sizes adapted to serve as intermediate and low-pressure pistons, trunks a^3 a^3 of substantially the same size projecting one from the piston A and the other from the piston A′ and adapted to serve as high-pressure pistons, trunks a^4 a^4 of the same size as the trunks a^3 a^3 projecting in the other direction and adapted to serve as cross-heads, suitable cylinders for said pistons and means for admitting steam to and permitting its exhaust from the various cylinders.

2. In a compound engine, two pistons A A′ of different sizes adapted to serve as intermediate and low-pressure pistons, trunks a^3 a^3 of substantially the same size projecting, one from the piston A and the other from the piston A′ and adapted to serve as high-pressure pistons, trunks a^4 a^4 of the same size as the trunks a^3 a^3 projecting in the other direction and adapted to serve as cross-heads, suitable cylinders for said pistons, ports for steam leading to the cylinders and a single valve for covering and uncovering these ports to govern the admission and exhaust of steam to and from the cylinders.



3. The combination in a compound steam-engine of two high-pressure single-acting pistons, a double-acting intermediate piston arranged tandem with one of said high-pressure pistons, a double-acting low-pressure piston arranged tandem with the other high pressure piston, a tubular valve having a passage N^3 adapted to connect a live-steam port N alternately with steam-conduits c^3 c^3 leading respectively to one end of the cylinders c^3 c^3 which inclose the high-pressure pistons, an opening or openings for admitting the steam exhausted from these cylinders c^3 c^3 into the tubular interior of the valve, openings for permitting the escape of steam from the interior of the valve alternately into the top and bottom of the double-acting intermediate cylinder, and passages N^4 N^5 for conducting the steam exhausted from the intermediate cylinder alternately into the top and bottom of the low-pressure cylinder and for permitting its final exhaust.

4. In a compound engine, two cylinders c c^3 arranged tandem, two cylinders c′ c^3 also arranged tandem, double-acting pistons A A′ adapted to reciprocate in the cylinders c c′ respectively, a single-acting trunk-piston a^3 secured to the pistoo A and operating in the cylinder c^3, a trunk secured to the piston A′ and operating in the cylinder c^3, and means for admitting live steam to the cylinders c^3 c^3 conducting the steam once expanded in these cylinders to the cylinder c and from this cylinder after the second expansion to the cylinder c′.

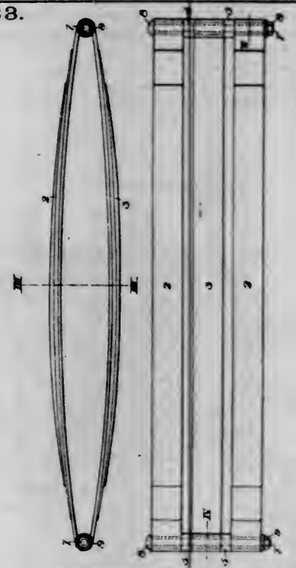
572,733. VEHICLE-SPRING. HENRY C. SWAN, Oshkosh, Wis. Filed June 9, 1896. Serial No. 594,863. (No model.)

Claim.—1. A spring-coupling having outer spring-sections 2, 2 and an intermediate spring-section 3 curved in the opposite direction from the outer spring-sections, a pin passing through the eyes of said sections, and integral collars on said pin between the eye of the middle sections and the eyes of the outer sections.

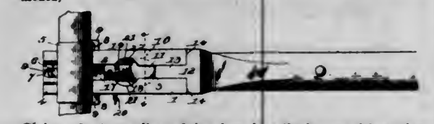
2. A spring-coupling having outer spring-sections 2, 2 and an intermediate spring-section 3 curved in the opposite direction from the outer spring-sections, a pin passing through the eyes of said sections, and integral collars on said pin between the eye of the middle sections and the eyes of the outer sections, said pin being tubular and having a through-bolt.

3. A spring-coupling wherein at least three spring-sections are mounted upon a pin having a rib for engaging the eye of the middle spring and collars for confining and separating it from the other sections.

572,733.



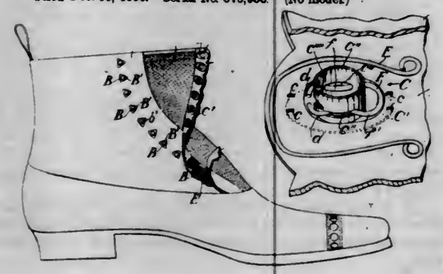
572,734. THILL-COUPLING. GEORGE C. THOMPSON and THOMAS C. EDWARDS, Salinas, Cal. Filed June 13, 1896. Serial No. 595,439. (No model.)



Claim.—1. A coupling of the class described, comprising a bearing-block having a convex outer end and provided with a longitudinal channel forming a front guide-slot and enlarged intermediate of its ends to form a bearing-socket and having opposite notches forming an entrance to the same, a coupling member comprising an iron or strap, provided with concave shoulders bearing against the convex end of the bearing-block, a longitudinally disposed neck rigid with the strap or iron and arranged in the guide-slot, and a ball rigid with the neck and arranged in the bearing-socket, and means for retaining the ball in the bearing-socket, substantially as described.

2. A coupling of the class described, comprising a bearing-block having a convex outer end and provided with a longitudinal channel, forming a front guide-slot, enlarged intermediate of its ends to form a bearing-socket and having its inner end threaded, a coupling member composed of an iron or strap having concave shoulders to fit against the convex end of the bearing-block, a longitudinal neck rigid with the iron or strap and arranged in the guide-slot, and a ball rigid with the neck and arranged in the bearing-socket of the block, a longitudinally-disposed screw mounted in the threaded portion of the channel and engaging the ball to retain the same in the bearing-socket, and a clamping screw mounted on the bearing-block and engaging the longitudinal screw, substantially as described.

572,735. FASTENER. WALTER V. THOMPSON, Pasadena, Cal. Filed Feb. 11, 1896. Serial No. 578,938. (No model.)



Claim.—1. The combination set forth of the upper member provided with the metallic eyelet; the independent stiffening-loop arranged encircling the eyelet and extending outward close to the edge of the upper member and extending thence along approximately parallel with such edge; and the covering fastened upon the upper member and arranged to cover the stiffening members and the eyelet.

2. The combination set forth of the base member having the stud fixed thereto; the upper member provided with the opening larger than the barrel of the eyelet; the eyelet having the side wall of its barrel provided with the opening therein and arranged in the opening in the upper member; the spring, chambered within the opening in the upper member and arranged to project through the opening in the barrel and to engage the stud when the stud is inserted into the barrel, said eyelet being provided with prongs adapted to enter the upper member and to hold the eyelet rigidly in position with relation to the upper member.

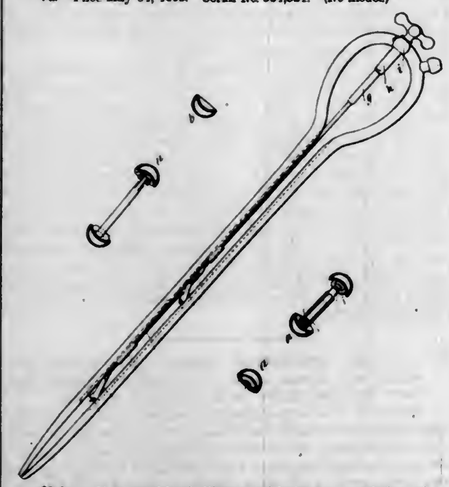
3. The combination set forth of the base member having the stud attached thereto; the upper member provided with the opening larger than the barrel of the eyelet; the eyelet, comprising a base having prongs adapted to be clenched upon the upper member, a barrel having slotted sides, and the upper member or cap of the eyelet adapted to fit upon the upper end of the barrel and to be secured thereto; and the spring arranged within the chamber in the upper member and having its side members projecting through the slots in the barrel and adapted to engage the stud when the stud is inserted into the barrel.

4. In combination, the stud; the eyelet having its side wall provided with the opening, and its front wall provided with a shoulder arranged to engage and support the stud when the stud is in place in the barrel, and the spring arranged projecting through the opening in the barrel and to engage the stud.

5. In combination, the base or under member provided with the studs; the upper or overlapping member provided with the clasp-eyelets arranged to chamber the studs; the independent stiffeners, each arranged surrounding an eyelet, and each having its outer end bent downward to hold the edge of the upper member firmly and smoothly down upon the base member; and the protecting-strip secured upon the upper member to cover and hold the stiffeners in position.

6. The combination set forth of the base member provided with the stud; the upper member; the eyelet secured to the upper member, having the side walls of its barrel slotted and its front wall provided with the shoulder arranged to engage the stud when the stud is in place in the barrel; the spring arranged to project through the slots in the barrel and to engage the stud, and the elastic inserted in the upper member and arranged to draw the shoulder of the eyelet into engagement with the stud.

572,736. DILATING-IRRIGATOR. FREDERIC C. TICE, Roanoke, Va. Filed May 31, 1895. Serial No. 551,321. (No model.)



Claim.—1. A combined dilator and irrigator, consisting of two hollow, separable arms united at one end, and having holes or perforations in their free ends and adapted to be supplied with and discharge an irrigating fluid, a rod mounted to slide on one of said arms, and means connecting said rod with the other arm, whereby the said arms may be directly separated or retracted without sliding movement of one arm upon the other, substantially as described.

2. In a combined dilator and irrigator, the combination of two hollow, separable arms, united at one end and having holes or perforations in their free ends, and adapted to be supplied with and discharge an irrigating liquid, a sliding rod mounted on one of said arms, links connecting said rod with the other arm, and means for sliding said rod to effect the positive separation and approach of said arms, substantially as described.

3. In a combined dilator and irrigator, the combination of two hollow, separable arms united at one end and having holes or perforations in their free ends, and adapted to receive and discharge an irrigating liquid, one of said arms being provided with a longitudinal groove or channel, a rod mounted to slide in said groove, links connecting said rod with the other arm, and means for sliding or moving said rod to effect the positive separation and approach of said arms, substantially as described.

4. In a combined dilator and irrigator, the combination of two hollow, separable arms united at one end and having holes or perforations in their free ends, and adapted to receive and discharge an irrigating liquid, one of said arms being provided with a longitudinal groove and clips bridging said groove, a rod mounted in said groove and under said clips and means for connecting said rod with the other arm, whereby upon movement of said rod in opposite directions the arms will be separated and brought together respectively, substantially as described.

5. In a combined dilator and irrigator, the combination of two hollow, separable arms, having holes or perforations in one end of each of said arms and adapted to receive and discharge an irrigating fluid, a rod mounted on the inside of one of said arms, links connecting said rod with the other arm, and a screw-threaded sleeve for positively moving said rod to separate or bring together the said arms, substantially as described.

6. In a combined dilator and irrigator, the combination of two hollow, separable arms, having holes or perforations in one end thereof and adapted to receive and discharge an irrigating fluid, one of said arms being provided with clips or loops slotted longitudinally, a rod adapted to slide under said clips or loops, links connecting said rod with the other arm, and means for sliding said rod when confined under said clips or loops, substantially as described.

7. In a combined dilator and irrigator, the combination of two hollow, separable arms having holes or perforations in one end and adapted to receive and discharge an irrigating fluid, a rod mounted to slide upon one of said arms, links connecting said rod to the other of said arms, one of said links remote from the end of said rod having a sliding connection with said rod and being shorter than the remaining link, substantially as described.

8. In a combined dilator and irrigator, the combination of two hollow, separable arms, united at one end and provided near said end with a fluid supply or inlet device, a rod mounted to slide upon one of said arms, an end link and an intermediate link connecting said rod with the other arm, the end link being of a greater length in proportion to its distance from the union of the arms than the length of the intermediate arm in proportion to its distance from the union of said arms, substantially as described.

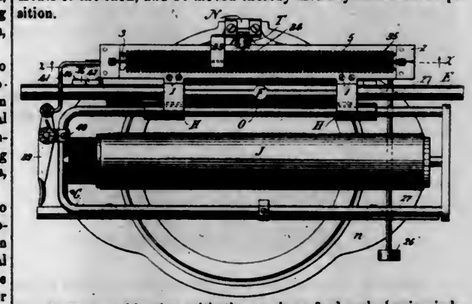
9. A combined dilator and irrigator, comprising hollow, separable arms adapted to be supplied with and discharge an irrigating fluid independently of and also in conjunction with its dilating function, and means to separate said arms, consisting essentially of a longitudinally-movable rod arranged upon one of the arms and connected by movable joints with the other arm, substantially as described.

10. A combined dilator and irrigator, comprising hollow, separable arms adapted to be supplied with and discharge an irrigating fluid independently of and also in conjunction with its dilating function, and means to separate said arms, consisting essentially of a longitudinally-movable rod, slotted clips upon one of the arms adapted to retain the rod while in use and permit its longitudinal movement and also adapted to admit of the ready removal or detaching of the rod for cleansing purposes, and links connected with said rod and connecting with the other arm, substantially as described.

572,737. TYPE-WRITING MACHINE. CHARLES W. WALKER, Bridgeport, Conn., assignor to the Yost Writing Machine Company, New York, N. Y. Filed Sept. 14, 1894. Serial No. 522,976. (No model.)

Claim.—1. A carriage feed-rack comprising a series of independently-movable feed-teeth consisting each of a body portion, the shoulders, the projections, and the cut-away, and a suitable supporting and guiding frame for said teeth.

2. The combination with a carriage feed-rack, comprising two parallel bars having an intermediate longitudinal slot and formed with a series of pairs of opposing vertical slots, and comprising also a series of independent, vertically-movable feed-teeth having each a body portion, shoulders, projections, and a cut-away, of a permanently-fixed holding-dog adapted to engage the body portion of each tooth, and a vertically and laterally movable spring-actuated feeding-dog adapted in upward movements to engage the under sides of said projections and successively lift each tooth, and adapted also to be engaged by the faces of the said projections, during the step-by-step feeding movements of the rack, and be moved thereby laterally to its normal position.



3. The combination with the carriage feed-rack, having independent vertically-movable feed-teeth, a holding-dog, a vertically and laterally movable spring-actuated feeding-dog, a pivoted switch having the stops 20 and 21, and a finger-key connected to said switch for moving either one of said stops into operative relation to said feeding-dog.

4. The combination with a feed rack having independent vertically-movable feed-teeth comprising each a body portion, shoulders, projections, and a cut-away, of a permanently-fixed holding-dog, a feeding-dog consisting of two side members connected together and embracing said holding-dog, means for depressing said feeding-dog, a spring for moving said dog laterally at the time of depression, a stop for limiting its lateral movement, a spring for elevating said feeding-dog, and a stop for limiting its elevation.

5. The combination with the carriage feed-rack comprising two separated bars having a series of opposed vertical slots, and independent, vertically-movable feed-teeth consisting each of a body portion, shoulders, projections and a cut-away, of a fixed holding-dog, a vertically and laterally movable feeding-dog, a connecting-rod attached at its upper end to said feeding-dog, a space-key connected to said rod at its lower end, a type-movement, thrust-rods, character-keys, a circular universal bar, a vertical spindle mounted in the center thereof, a lever connected at one end to said spindle and at its other end loosely connected to said connecting-rod, a spring for said spindle-lever, a spring for moving the feeding-dog laterally, and a spring for moving the connecting-rod and the feeding-dog vertically.

6. The combination with the carriage feed-rack having independent vertically-movable gravity-returned feed-teeth comprising each a body portion, lateral shoulders and downward projections, and suitable dogs for cooperating therewith, of means for forcing down said feed-teeth and insuring their proper presentation to the dogs in the event of said teeth accidentally sticking in their guides or ways.

7. The combination with the carriage feed-rack having independent vertically-movable teeth adapted to return by gravity and comprising a body portion, lateral shoulders and downward projections, and suitable dogs cooperating therewith, of spring-fingers arranged above said teeth and acting to force them down into proper working position relatively to said dogs in case said teeth should accidentally stick in their guides or ways.

8. The combination with a carriage feed-rack having a series of independent vertically-movable feed-teeth, and suitable dogs for cooperating therewith, of a release-bar hung beneath said teeth and adapted to simultaneously lift all of said teeth out of operative relation to said dogs.

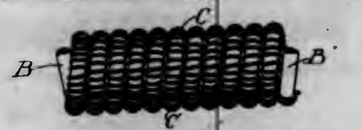
9. The combination with a carriage feed rack having a series of independent vertically-movable feed-teeth, and suitable dogs for cooperating therewith, of a release-bar hung beneath said teeth by obliquely-arranged links pivoted to said rack, the spring-actuated finger-lever, and the intermediate connecting-rod.

10. The combination of a carriage feed-rack having independent vertically-movable feed-teeth consisting each of a body portion, shoulders, projections and a cut-away, a holding-dog bifurcated at its upper end, a feeding-dog, and a liftable release-bar arranged within said bifurcated portion of the holding-dog and with its upper edge occupying the cut-away portions of the entire series of teeth.

11. The combination with the carriage feeding mechanism, of the connecting-rod w made in two parts and having threaded ends which are united by a turnbuckle v, the adjustable abutment 31 having a threaded shank or part whereby the said abutment may be screwed up or down on one portion of the said two-part connecting-rod, the spring-actuated spindle-lever connected at one end to engage said abutment and at its other end to the spindle, the universal ring, thrust-rods, the type-movement, and the character-keys.

12. The combination, with an escapement mechanism comprising a series of independently-movable feed-teeth, and means for moving one of the said teeth at a time to produce letter-spacing of the carriage, of a release-bar mounted in proximity to said series of feed-teeth and extending for the length of the same, and adapted to simultaneously move all of said feed-teeth out of operative relation to the means by which they are normally individually actuated.

572,738. ELASTIC TUBULAR TIRE. LOUIS J. WILDE, New York, N. Y., assignor of one-half to Maurice Salvin, same place. Filed May 5, 1896. Serial No. 590,336. (No model.)



Claim.—1. As a new article of manufacture, an elastic tubular tire comprising a tire having fitted therein a compound coil composed of a solid cylindrical flexible core spirally wound with resilient wire and the core thus wound formed into a spiral coil adapted to fit within the tubing, substantially as shown and described.

2. In an elastic tire, the combination of an elastic tube; and a cylindrical flexible core spirally and loosely wound with resilient metal wire and formed into a secondary or compound coil adapted to be placed within and constitute a resilient core to said elastic tube, substantially as shown and described.

3. In an elastic tire, the combination of an elastic tube; and a flexible core with apertured center, said core spirally and loosely wound with flat resilient wire and the said core so wound formed into a secondary spiral coil adapted to fit within said elastic tubing, substantially as shown and described.

4. In an improved tire, the combination of an elastic tube A, and a compound coil comprising a cylindrical flexible core B, spirally wound with wire C, and then re-coiled, said compound coil adapted to fit within the elastic tubing A, substantially as shown and described.

572,739. DRAWING-BOARD. DANIEL R. BENEDICT, Kenosha, Wis., assignor of one-half to Charles A. Tarbell, same place. Filed Jan. 27, 1896. Serial No. 576,965. (No model.)



Claim.—In a measuring instrument, the combination, of a square or rectangular base-piece, provided near one side edge with a downwardly-extending outwardly curved recess, or with downwardly-extending oppositely-curved recesses, a square or rectangular open frame provided on its under side, near one side edge, with a downwardly-extending outwardly-curved finger, or with downwardly-extending outwardly-curved fingers, said finger or fingers adapted to fit the corresponding recess or recesses of the base-piece, and opposite side scales, substantially as described.

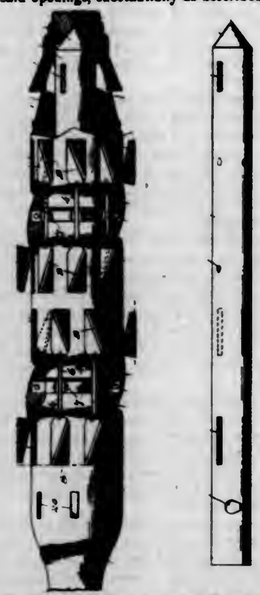
572,740. FLUE-CLEANER. ROBERT H. BLACK, Homestead, Pa. Filed Apr. 18, 1896. Serial No. 588,094. (No model.)

Claim.—1. The combination with the main body or shell having the central bore, as described, and provided with radial openings communicating therewith, of a series of radially-movable chippers or hammers arranged in said openings, and a revolving valve arranged in the bore and operating substantially as described.

2. The combination with the outer shell, of the rotary valve mounted therein, provision for actuating the valve, and the chippers or hammers connected with the outer shell and adapted to be actuated, substantially as described.

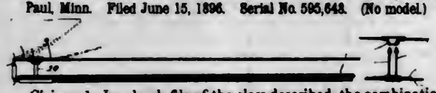
3. The combination with the outer shell provided with radial openings arranged in longitudinally-aligned pairs, of the double chippers fulcrumed on the shell intermediate said openings, and the rotary valve arranged within the shell and provided with alternately-disposed ports for actuating the chippers alternately in opposite directions, substantially as described.

4. The combination with the outer shell provided with the circular series of radial openings as described, of a rotary valve located within the shell and having a port communicating successively with said radial openings, and the radially-movable chippers or hammers working in said openings, substantially as described.



5. The combination with the outer shell, and the radially-movable chippers or hammers, of the rotary valve journaled in the shell, and one or more discharge nozzles communicating with the valve, extending radially therefrom and having their extremities deflected tangentially, substantially as described.

572,741. BOOK-FILE. FREDERICK G. BRADBURY, St. Paul, and NILS NILSON, Minneapolis, Minn., assignors to George W. Hughes, St. Paul, Minn. Filed June 15, 1896. Serial No. 595,643. (No model.)



Claim.—1. In a book-file of the class described, the combination with the covers thereof, of the paper-holding attachments upon one, and the automatic locking devices upon the other adapted by the closing of the covers to engage said attachments, so as to retain the papers thereon.

2. In a book-file of the class described, the combination with its covers, of the paper puncturing and holding attachments carried by one cover, and the automatic locking devices carried by the other cover, adapted to engage said puncturing attachments by the closing of the covers.

3. As an improved article of manufacture, a book-file of the class described, comprising in combination, the bottom cover, the back rigidly connected thereto, the two-part upper cover having hinged connection and also hinged to said back, the puncturing-studs upon the bottom cover, and the sockets carried by the rear section of the upper cover, adapted to automatically engage said studs by the closing of the covers so as to lock the same to said upper cover.

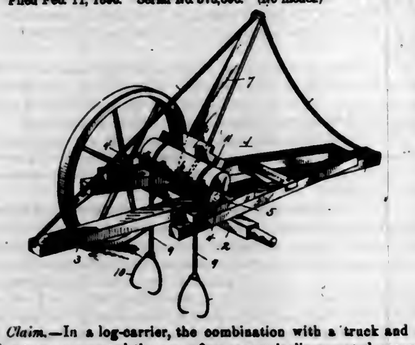
4. As an improved article of manufacture, a book-file of the class described, having puncturing-studs upon one cover, and automatic locking-sockets for said studs upon the other cover, the hinge connecting said covers, and a hinge in said second cover intermediate of said sockets and its free end.

5. In a device of the class described, a puncturing-stud made up of a plurality of standards with concave cutting-lips constituting a sectional hollow punch.

6. In a device of the class described, a puncturing-stud made up of a plurality of standards having concave cutting-lips, constituting sections of a hollow punch, and a locking-socket adapted to engage said stud so as to retain papers arranged thereon.

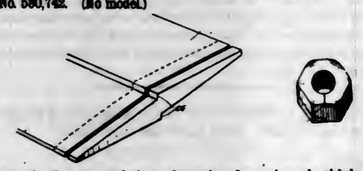
7. In a file of the class described, in combination, the covers hinged to each other, the puncturing-stud upon one, the socket carried by the other, and adapted by the closing of the covers to cause an interposed sheet to be impaled upon the stud, the socket interlocking with said stud to hold said covers closed and retain said sheet upon said stud.

572,742. LOG-CARRIER. JOSEPH A. CARROLL, Beaumont, Tex. Filed Feb. 11, 1896. Serial No. 578,898. (No model.)



Claim.—In a log-carrier, the combination with a truck and a sliding tongue mounted thereon, of an eccentrically-mounted operating drum or roller having a cylindrical surface, lifting or grappling chains attached to the drum or roller, the same resting upon the rear surface of the drum or roller, and depending vertically from the rearmost point thereof, an operating-lever arranged in alinement with or continuation of that diameter of the drum which embraces the axis thereof, and a draft-chain extending from the lever directly to a fixed point on the sliding tongue in advance of the truck, whereby the draft upon said lever is on a straight line connecting the points of attachment of the draft-chain to the lever and tongue, substantially as specified.

572,743. NUT. MILTON A. CLENHAM, San Francisco, Cal., assignor of one-fifth to Henry Sylvester, same place. Filed Feb. 25, 1896. Serial No. 580,742. (No model.)



Claim.—1. A nut consisting of a strip of metal made thickest in the center, tapering in each direction therefrom and coiled so that the thinner ends overlap upon the opposite sides of the thickened central portion of the nut-blank.

2. A nut consisting of a strip of metal made thickest in the center, tapering in each direction therefrom and formed with shoulders on opposite sides of its thickened portion, said strip being coiled until the ends overlap the thickened portion and abut against said shoulders.

3. A nut-blank made thickest in the center, tapering in opposite directions therefrom and formed with shoulders on opposite sides of its thickened central portion.

4. A nut consisting of a strip of metal made thickest in the center, tapering in each direction therefrom, and having two diagonally opposite sides parallel to form the ends of the nut when coiled, said strips being coiled so that the thinner ends overlap upon the opposite inclined sides.

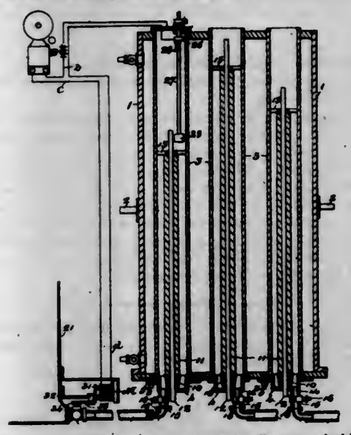
5. A nut consisting of a strip of metal having its middle portion of a thickness equal to the depth of the nut, and tapered therefrom in each direction toward the ends, said strip being coiled so that the thinner ends overlap upon opposite sides of the thicker portion of the blank.

6. A nut formed from a strip of metal made thickest at the middle point and tapering toward the ends, having shoulders upon opposite sides at or near the middle of the strip, and the ends of said strip formed to fit the shoulders and abut upon them when coiled.

7. The method of manufacturing nuts which consists in heating and rolling a plate so that its central portion shall be thicker than its ends and shall be provided with shoulders which extend along the center of opposite sides of the plate; then severing nut-blanks from said plate while the latter is in a heated condition; and then coiling the blank, while heated, so that the ends overlap the thickened portion and abut against said shoulders, and the cut surface forms the interior wall of the nut.

572,744. APPARATUS FOR CASTING PRINTERS' ROLLERS. CHARLES W. CRUTSINGER, St. Louis, Mo. Filed Aug. 15, 1896. Serial No. 602,872. (No model.)

Claim.—1. In an apparatus for casting printers' rollers, a suitable mold-receptacle, a series of molds open at both ends disposed therein, a detachable plate for temporarily closing the bottom of each mold, a suitable inlet-pipe communicating with each plate, whereby the molds can be filled either singly and simultaneously, or at different times, and rollers of variable lengths and of different or the same composition can be cast simultaneously or independently, the said plate serving to support and center the lower end of the core inserted in each mold, and means for centering and supporting the opposite end of the core within the mold, substantially as set forth.



2. In an apparatus for casting printers' rollers, a suitable mold-receptacle, a series of molds open at both ends disposed therein, a detachable plate temporarily closing the bottom of each mold, each plate having a suitable inlet-opening whereby the molds can be filled either singly and simultaneously, or at different times, and rollers of variable lengths and of different or the same composition can be cast simultaneously, or independently and at different times, and whereby upon removal of the plates the rollers can be removed singly, a central opening formed in the base of each plate, a plug inserted in said opening, a core supported directly on said plug, a rod passing through the core and having its projecting end passed through the plug whereby the lower end of the core is properly centered within the mold, a spider for centering the upper end of the core within the mold, substantially as set forth.

3. In an apparatus for casting printers' rollers, a suitable mold-receptacle, a series of molds disposed therein, a detachable independent plate adapted to temporarily close the bottom of each mold, means carried by the plate for centering the lower end of the core in the mold and supporting the same, a series of composition-supply tanks, and pipe connections between the supply-tanks and the detachable plates, whereby the molds can be filled either simultaneously, or independently and at different times, and rollers of variable lengths and of different or the same composition can be cast simultaneously, or independently and at different times, and be removed singly, substantially as set forth.

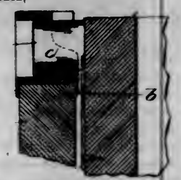
4. In an apparatus for casting printers' rollers, a suitable receptacle, a series of molds disposed therein, a float loosely supported from the top of each mold, a plate for guiding said float, a suitable electric circuit, an alarm or indicator forming a part of the circuit, said float being adapted to close the circuit for a predetermined height of the composition in the mold, a suitable valve or cock for the admission of the composition into the mold, and intermediate connections between said cock or valve and the electric circuit for controlling the cock and cutting off the composition upon the closing of the circuit, substantially as set forth.

5. In an apparatus for casting printers' rollers, a suitable receptacle, a series of molds disposed therein, an inlet-pipe for the bottom of each mold, a composition-supply tank, pipe connections between the inlet-pipe to the mold and the said supply-tank, a float depending a suitable distance into each mold, a guide-plate for guiding said float, an electric circuit adapted to be closed by the float for any predetermined elevation or height of the composition in the mold, an energizing-magnet forming a part of the circuit, a tilting lever one arm of which constitutes the armature for said magnet, the second arm of said lever having a series of ratchet-teeth, a pinion meshing with said ratchet, said pinion cooperating with the stem of the valve leading from the supply-tank, whereby upon the closing of the circuit the supply of composition from the tank is shut off, substantially as set forth.

6. In an apparatus for casting printers' rollers, a suitable cup having outwardly-extending flanges adapted to be secured to the bottom of the receptacle below the opening of the molds of the same, a curved slot having an enlarged end formed along each flange, a screw projecting from the bottom of the receptacle and adapted to be passed through the slot of each flange, a retaining-head for each screw, a central opening formed in the base of each cup for the passage of the gudgeon of the roller, a pipe leading into said cup for delivering composition into the same, a flanged coupling-plate carried at the bottom of the said pipe, inclined grooves formed in said plate the said grooves forming jointly a beveled guideway, an elbow having an enlarged upper end or flange beveled to correspond to the guideway carried by the pipe leading to the cup, whereby a ready coupling is effected between the elbow and the pipe leading to the cup, and suitable pipe connections between the elbow and the supply-tank for the mold, substantially as set forth.

7. In an apparatus for casting printers' rollers, a suitable receptacle, a series of molds open at both ends disposed therein, a detachable plate for temporarily closing the bottom of each mold, a pipe leading to each plate for admitting composition into the mold, whereby the several molds can be filled simultaneously, or independently at different times with the same or different composition to the same or variable heights, and the several rollers removed singly and without material trimming, one or more supply-tanks, and suitable pipe connections between any supply-tank and one or more of the plates leading to the molds, substantially as set forth.

572,745. BEARING AND JOURNAL FOR WASHING-MACHINES. CONRAD DIETZ, West Covington, Ky. Filed June 23, 1896. Serial No. 596,644. (No model.)

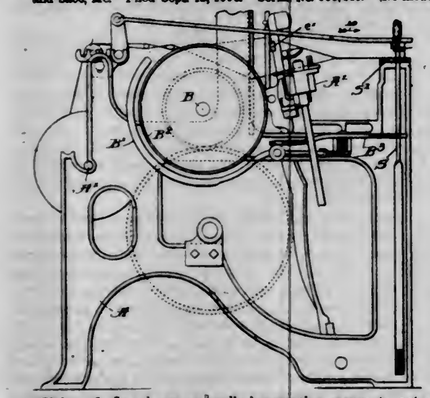


Claim.—1. A bearing having outer closed top and lower inner flange adapted to retain a journal therein and an open inner top to permit the journal, when inverted, to be detached therefrom, substantially as set forth.

2. A bearing provided with a closed outer and open inner top in combination with a journal adapted to be moved laterally therein when inverted, and detached therefrom, substantially as set forth.

3. A bearing provided with a cut-out portion on its upper side, in combination with a journal provided with a shoulder on one side, said shoulder being adapted to enter the cut-out portion of the bearing when the journal is inverted, thereby allowing the journal to be moved laterally, and detached, substantially as set forth.

572,746. LOOM. WILLIAM F. DRAPER and JAMES H. NORTHROP, Hopedale, Mass., assignors to the Northrop Loom Company, same place and Saco, Me. Filed Sept. 12, 1896. Serial No. 606,440. (No model.)



Claim.—1. In a loom, normally-inoperative means to act upon and increase the tension of the warp, combined with mechanism operative upon stoppage of the loom, to move said means and thereby increase the warp-tension, substantially as described.

2. In a loom, normally-inoperative means to act upon and increase the tension of the warp, stopping mechanism for the loom, and intermediate devices, controlled by operation of the stopping mechanism, to move the means for increasing the warp-tension, substantially as described.

3. In a loom, normally-inoperative means to act upon the warp between the warp-beam and the fell of the cloth, a dog connected with said means, operative upon stoppage of the loom, and a bunter to cooperate with and move the dog, substantially as described.

4. In a loom, a movable whip-roll, to act upon the warp, combined with mechanism operative upon stoppage of the loom, to move the whip-roll and thereby increase the tension of the warp, substantially as described.

5. In a loom, a movable whip-roll to act upon the warp, stopping mechanism for the loom, and intermediate devices, controlled by operation of the stopping mechanism, to move the whip-roll against and thereby increase the tension of the warp substantially as described.

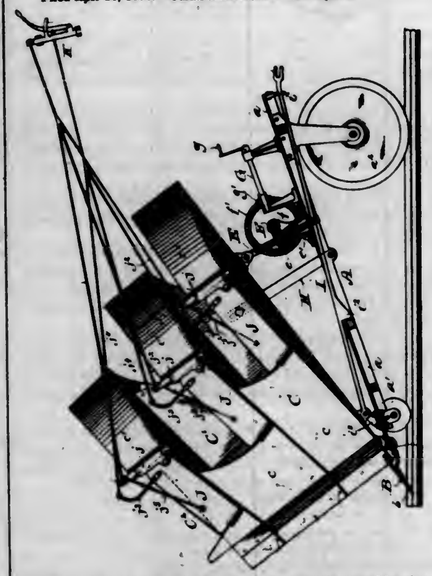
6. In a loom, a whip-roll, mounted upon a swinging support, a dog connected with said support, a cooperating bunter, and means operative upon stoppage of the loom to move the dog into position to be engaged by the bunter, whereby the whip-roll will be swung to increase the warp-tension, substantially as described.

7. In a loom, normally-inoperative means to act upon and increase the tension of the warp, a dog connected therewith, the lay, and a bunter thereon to cooperate with said dog, combined with stopping mechanism for the loom, and connections between it and the dog, to move the latter into position to be engaged by the bunter when the stopping mechanism is operated, substantially as described.

8. In a loom, the lay and a bunter thereon, a movable whip-roll, a normally-inoperative dog connected therewith, to be engaged by the bunter, and controlling means for the dog, operative upon stoppage of the loom, to move the dog into operative position, whereby the whip-roll is moved against and to increase the tension of the warp, substantially as described.

9. In a loom, normally-inoperative means to act upon and increase the tension of the warp, a connected dog, a bunter to engage and move the dog, a dog-controller, and a shipper-lever, movement of the shipper-lever to stop the loom operating the controller and thereby bringing the dog into the path of the bunter, substantially as described.

572,747. SNOW-PLOW. ADAM EVER, Port Washington, Wis. Filed Apr. 10, 1896. Serial No. 586,933. (No model.)



Claim.—1. In a snow-plow for railways, the combination of a truck provided at its front end with a scraper rigidly immovably secured thereto and projecting forwardly and downwardly toward its front edge close to the track, a number of pairs of chutes arranged one pair above another, and hinged or pivoted to the front part of the truck, and an adjustable connection between said truck and chutes at a distance to the rear from their hinge or pivot connection, substantially as and for the purposes set forth.

2. In a snow-plow for railways, the combination with a suitable truck, of a number of pairs of chutes mounted upon said truck and arranged one pair above another, partitions between the chutes having openings therein gates hinged or pivoted in said openings so as to be turned to either side and discharge the snow from both chutes of each pair at the opposite side of the plow, and means for simultaneously turning said gates from the center to either side, and vice versa, substantially as and for the purposes set forth.

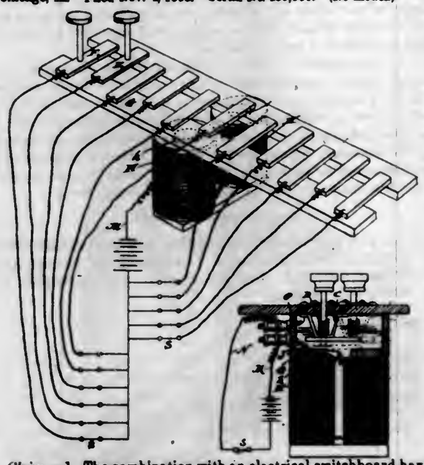
3. In a snow-plow for railways, the combination of a truck and a number of chutes arranged in pairs one above another and mounted upon said truck, vertically-disposed turning posts arranged centrally between said chutes, gates pivoted at their rear ends to said posts and provided with upwardly-projecting arms, a main turning post provided with a lever fulcrumed thereto and with a cross-rod connected on opposite sides of the post by cables with cross rods or arms of the turning posts to which said gates are pivoted, and cables connecting the upwardly-projecting arms of said gates with said lever, substantially as and for the purposes set forth.

4. In a snow-plow for railways, the combination of a suitable truck, chutes hinged or pivoted at or near the bottom and front end to said truck, one or more screws pivoted to the bottom of said chutes at a distance to the rear from their hinge or pivot connection with the truck, worm-gears carried by the truck and threaded on said screws, worms meshing with said gears, and a crank for turning said worms, substantially as and for the purposes set forth.

5. In a snow-plow for railways, the combination of a truck, chutes hinged or pivoted at or near the bottom and front end of the plow to said truck, and a thrust-bar pivoted at its front end to the bottom of the chutes and provided at its rear end with a coupling for the attachment of a locomotive, substantially as and for the purposes set forth.

6. In a snow-plow for railways, the combination of a truck having a forwardly and downwardly inclined platform or frame which is provided at its front end with a scraper rigidly secured thereto, a number of chutes arranged in pairs one pair above another, and hinged or pivoted at or near the bottom and front end to said truck, an adjustable supporting connection between said chutes and truck for changing the inclination of the chutes, and a thrust-bar pivoted at its front end to the bottom of the chutes near the front end of the plow, and provided with a projection adapted to engage with and propel the truck independently of the chutes, said bar having at its rear end provision for the attachment thereto of a locomotive, substantially as and for the purposes set forth.

572,748. ELECTRIC SWITCHBOARD. EDMOND A. FORDYCE, Chicago, Ill. Filed Nov. 4, 1893. Serial No. 489,969. (No model.)

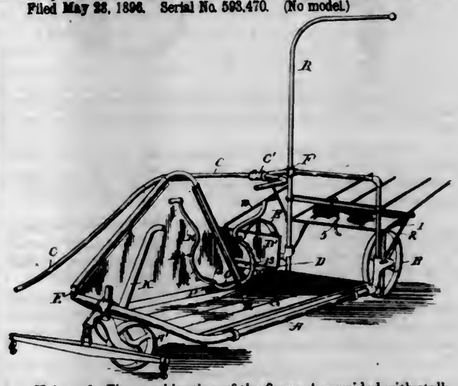


Claim.—1. The combination with an electrical switchboard having a plurality of keys or circuit-closers and a controlling-magnet having a connector common to the series of circuit-closers and electrical circuits corresponding in number to the circuit-closers at the keyboard and normally open thereat and each including the controlling-magnet and each of said circuit-closers having a controlling device or switch normally closed, substantially as and for the purpose described.

2. An electrical switchboard having a plurality of keys or circuit-closing devices each provided with a contact-piece, a controlling-magnet having a connector common to the series of and a plurality of electrical circuits corresponding to the several keys, each including its respective key and the controlling-magnet and a second circuit-controller for each branch circuit, substantially as described.

3. The combination with an electrical switchboard having a base, a plurality of keys or circuit-closing devices slidably mounted in said base and normally upheld by springs, a controlling-magnet having a connector or contact-piece common to the several keys, strips of non-conducting or insulating material interposed between the several keys below the base, and a series of normally open electrical circuits, one for each key, and each of said circuits including the controlling-magnet and having a second circuit-controller therein, substantially as described.

572,749. CORN-HARVESTER. THOMAS A. GALT, Sterling, Ill. Filed May 28, 1896. Serial No. 593,470. (No model.)

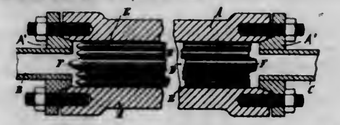


Claim.—1. The combination of the frame A provided with stalk-gathering sides E, the gatherer C, knife D, plate D', reversible stalk-guide F, and the binder H, substantially as shown and for the purpose described.

2. The combination of the knife-bearing stem 7, plate D', knife D seated thereon, sleeve 6, brace 10 provided with a vertical slot 9, and a set-screw 8, substantially as shown and for the purpose specified.

3. The combination of the bar O provided with transverse openings 11, 11, and suitably supported on standards P, binding-levers M and N provided with bolt-openings in their lower ends, and the transverse bolts 12 adapted to be passed through the said openings in said levers, and through any of the openings 11, respectively, substantially as shown and for the purpose described.

572,750. STEAM-GENERATOR. JEAN B. GRANJON, Chatonnay, France. Filed Feb. 18, 1896. Serial No. 579,728. (No model.) Patented in France Aug. 17, 1895, No. 249,615.



Claim.—1. In a steam-generator, the combination with a furnace, of a tube, rods arranged in the interior of the tube and adapted to be removed endwise from the latter, means for temporarily holding the rods firmly in position, liquid inlet and outlet pipes, adapted to communicate with the interior of the tube, and means removably secured to the tube and temporarily closing the ends of the latter, for the purpose specified.

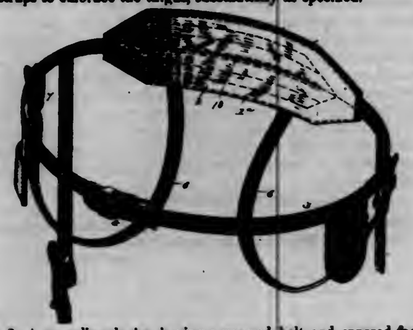
2. In a steam-generator, the combination with a furnace, of a tube, rods arranged in the interior of the tube and adapted to be removed endwise from the latter, a key adapted to temporarily hold the rods firmly in position, heads removably secured to the ends of the tube and temporarily closing the latter, and liquid inlet and outlet pipes extending through the heads and communicating with the interior of the tube.

572,751. GRAPPLING DEVICE FOR CARPENTERS. JAMES O. HANNA, Amity, Ark., assignor of one-half to Walter W. Matthews, same place. Filed Jan. 22, 1896. Serial No. 576,447. (No model.)

Claim.—1. A carpenter's grappling device for the purpose named having a spurred belt to embrace the hips, and means for fastening the same to the body of the wearer, substantially as specified.

2. A carpenter's grappling device for the purpose named having

a spurred belt to embrace the hips of a wearer, and auxiliary holding-straps to embrace the thighs, substantially as specified.



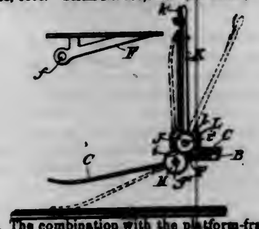
3. A grappling device having a spurred belt and spurred foot-pads, and means for securing the same in place, substantially as specified.

4. A grappling device having a spurred belt, spurred foot-pads, flexible connections between the foot-pads and the belt, and knee-bands for confining said connections at intermediate points, substantially as specified.

5. A grappling device having a spurred belt, spurred foot-pads, side or leg straps connecting the foot-pads with the belt, and spurred knee-bands secured to the side or leg straps and embracing the legs of the wearer at intermediate points, substantially as specified.

6. A grappling device having a spurred belt consisting of a spurred body-pad to embrace the hips and means for holding the same in place, said pad being longitudinally slitted to yield with the movements of the body, substantially as specified.

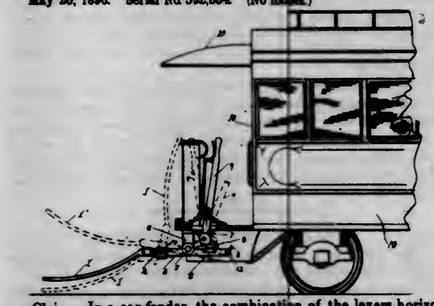
572,752. CAR-FENDER. SAMUEL J. HARRIS, Millville, Mass. Filed Mar. 26, 1896. Serial No. 585,142. (No model.)



Claim.—1. The combination with the platform-frame at the forward end of the street-car, of the hinged scoop, the mutilated gear H, the interlocking gear J and the hand-lever K to place and hold the scoop in an approximately horizontal position, substantially as described.

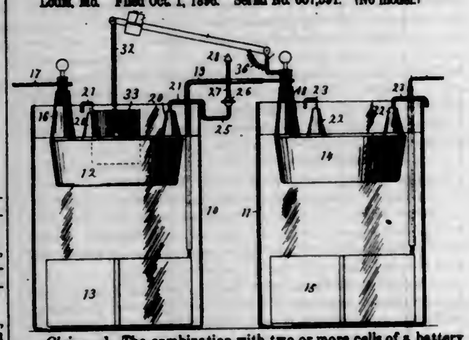
2. The combination with the platform-frame at the forward end of the street-car, of the hinged scoop, the mutilated gear H, the interlocking gear J, the notched wheel M affixed to the gear J and the hand-lever fitted with a latch or bolt to engage the notches of the wheel M, substantially as described.

572,753. CAR-FENDER. GEORGE R. HOAK, Pittsburg, Pa. Filed May 20, 1896. Serial No. 592,334. (No model.)



Claim.—In a car-fender, the combination of the levers horizontally hung under the car-platform and connected together at their inner or rear ends, the cross-bar hinged to the forward ends of said levers and having secured thereto the fender, proper, the cross-rod also hung upon the under side of said car-platform and carrying fixed cams bearing upon the said levers, and the hand-lever secured to said cross-rod and provided with a pawl in engagement with a rack secured to said car-platform, substantially as set forth.

572,754. AUTOMATIC CIRCUIT-CLOSING DEVICE FOR GALVANIC BATTERIES. JOHN D. HOLMES and WEBSTER L. HEATH, St. Louis, Mo. Filed Oct. 1, 1896. Serial No. 607,591. (No model.)



Claim.—1. The combination with two or more cells of a battery connected in series, of circuit closing devices actuated by the rise and fall of the fluid of said cells for closing a metallic circuit through any cell when the fluid in it has fallen to a predetermined level.

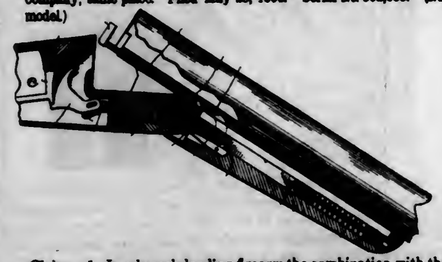
2. The combination with two cells of a battery connected in series, of a fixed contact in electrical communication with one element of one cell, and a movable contact in electrical communication with the corresponding element of the other cell and controlled by the rise and fall of the fluid in one of said cells, whereby electrical communication will be established between said corresponding elements when the fluid in one cell falls to a predetermined level.

3. The combination with two cells of a battery connected in series, of a fixed contact in electrical communication with one element of one cell, a movable contact in electrical communication with the corresponding element of the other cell, and a float in said first-named cell and governing the movement of said movable contact.

4. The combination with two cells of a battery, of a fixed contact in electrical communication with one element of one cell, a movable contact in electrical communication with the corresponding element of the other cell, a float in one of said cells and governing the movement of said movable contact, and means for varying the point at which said contacts will meet.

5. The combination with two cells of a battery connected in series, of a fixed contact carried by and in electrical communication with one element of one of said cells, a movable contact carried by and in electrical communication with the corresponding element of the other cell, and a float situated in said first-named cell and governing the movement of said movable contact, whereby electrical communication will be established between said elements when the fluid in the first-named cell has fallen to a predetermined level.

572,755. EJECTOR MECHANISM FOR BREAKDOWN GUNS. GEORGE A. HOSEE, Syracuse, N. Y., assignor to the Syracuse Arms Company, same place. Filed May 25, 1896. Serial No. 593,935. (No model.)



Claim.—1. In a breech-loading firearm the combination with the hammer, of an extractor, an ejector and a rock-shaft operatively connected with the hammer for releasing the ejector, substantially as described.

2. The combination with the hammer, of the extractor, means for moving the extractor to start the cartridge-shells, the ejector, the detent for engaging with said ejector, and the rock-shaft having an arm engaging the hub of the hammer and a projection on its opposite end for engaging the ejector-detent, substantially as described.

572,756. TELEPHONE-TRANSMITTER. ROBERT L. HUNTER and HENRY R. HIGGINS, Minneapolis, Minn. Filed May 23, 1896. Serial No. 592,771. (No model.)

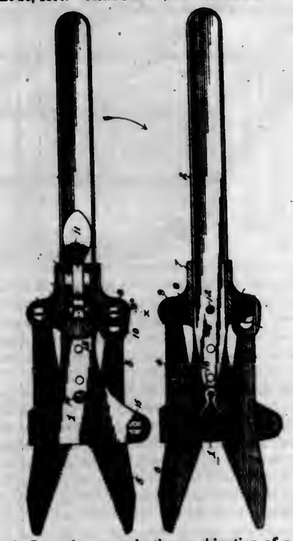


Claim.—1. The combination of the fixed base, its line-terminals, the transmitter, and interlocking means for securing the transmitter to said base and electrically connecting it with said terminals.

2. In combination, the base provided with line-terminals, and with a socket in its outer face, and the transmitter fitted to said socket, and adapted to detachably interlock with said base, and having contacts adapted to engage with said terminals when thus interlocked.

3. In combination, a base having its faces socketed and fitted with line-terminals, the transmitter fitted to the front or outer socket and having contacts adapted to engage said terminals, and the automatic locking device for securing the same therein.

572,757. PIPE-WRENCH. ANDREW F. JACKSON, Oklahoma, Okla. Filed June 29, 1896. Serial No. 597,390. (No model.)



Claim.—1. In a pipe-wrench, the combination of a handle provided at its outer end with a casing, a pair of jaws having shanks arranged within the casing, said jaws being provided beyond the same with inner engaging faces, and a slide mounted on the handle and connected with the inner ends of the shanks, substantially as described.

2. In a pipe-wrench, the combination of a handle, a casing arranged at the outer end of the handle, a slide mounted on the handle, and a pair of jaws arranged within the casing, projecting outward therefrom and having their inner ends pivotally connected with the slide, one of the jaws being capable of a limited longitudinal movement independent of the slide, substantially as and for the purpose described.

3. In a pipe-wrench, the combination of a handle provided at its outer end with a casing, a slide mounted on the handle, a pair of jaws extending outward from the casing and provided with shanks arranged within the same and pivotally connected with the slide, one of the shanks being provided with a longitudinal slot receiving its pivot, and a locking device for securing the slide to the shank, substantially as described.

4. In a pipe-wrench, the combination of a handle, a casing arranged at the outer end of the handle and provided at one side of the wrench with an antifriction-roller, a slide mounted on the handle and provided at opposite sides with ears, outwardly-diverging jaws provided with shanks arranged within the casing, one of the shanks being provided at its inner end with a perforation, and the other shank having a longitudinal slot, pivots arranged in the perforation of the slot and connecting the shanks to the slide, and a spring arranged within the casing and interposed between the shanks, substantially as described.

5. In a pipe-wrench, the combination of a handle, a casing arranged at the outer end of the handle, a slide mounted on the handle, a locking device for securing the slide at the desired adjustment, a pair of jaws extending outward from the casing and provided with shanks arranged within the same and pivoted to the slide, a spring interposed between the shanks of the jaws, composed of two curved sides and constructed of a single piece of metal bent to form an eye at the inner terminals of the sides, a fastening device passing through the eye of the spring and securing the same to the casing, substantially as described.

572,758. LOCK BOTTLE-STOPPER. JAMES W. JACOBS, Jeffersonville, Ind. Filed Mar. 17, 1896. Serial No. 583,554. (No model.)



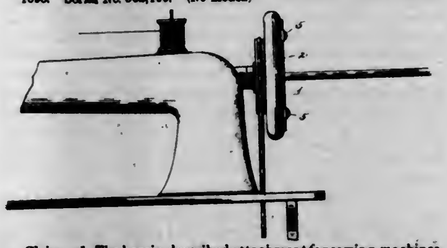
Claim.—1. The combination with a stopper and a plate on the inner end thereof, of a rod, a threaded shank secured thereto and pivoted wings on the inner end of said shank, as set forth.

2. The combination with a stopper having a longitudinal opening screw-threaded, of a plate on the end of the stopper, a rod, a shank connected therewith, and having exterior threads, and pivoted wings on said shank, as set forth.

3. The combination with a stopper with plate and threaded opening, of a rod carrying a screw-threaded portion provided with a pivoted wing, and a spring pawl on said plate, as set forth.

4. The combination with the stopper having a plate on one end and a central screw-threaded opening, of a rod, a shank detachably connected therewith and having exterior screw-threads, and a slot, wings pivoted in said slot, and a spring-wire pawl on the end of the stopper and working through an opening in the plate, substantially as shown and described.

572,759. APPARATUS FOR MAKING TUFTED ARTICLES. WHEELER M. JAMISON and FRANK TUTTLE, Auburn, Ky. Filed Sept. 11, 1895. Serial No. 562,169. (No model.)



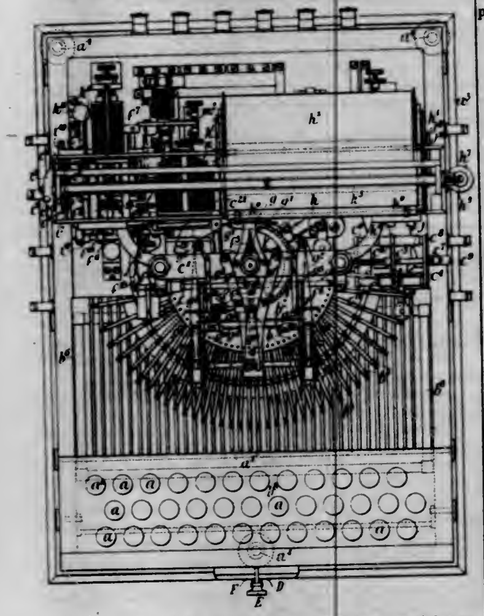
Claim.—1. The herein-described attachment for sewing-machines, comprising a base-plate, a pair of parallel arms carried thereby and adapted to receive and hold a former or bobbin, and a flexible band or strip attached to said plate and adapted to be looped around the hand or fly wheel of a sewing-machine, substantially as described.

2. The herein-described attachment for sewing-machines, comprising a base-plate, parallel arms carried thereby and adapted to hold a former or bobbin between them, and a band or strip having a sliding connection with said plate and adapted to be looped around the hand or fly wheel of a sewing-machine, substantially as described.

3. The herein-described attachment for sewing-machines, the same comprising a slotted base-plate, a pair of parallel arms secured thereto and adapted to receive a former or bobbin, a flexible strap or band having one of its terminals slidingly engaged in one of the slots of said plate, and the other terminal longitudinally slotted, and a securing device passing through the slotted terminal of said band or

strap and also through the slotted base plate, substantially as and for the purpose specified.

572,760. PRINTING-TELEGRAPH. LEO KAHN, London, England. Filed Dec. 30, 1895. Serial No. 573,761. (No model.)



Claim.—1. In printing telegraphic transmitting or receiving apparatus the combination of a series of spring-pins arranged in the arc of a circle, finger-keys connected to the said pins, a circuit-closing device in connection with the said keys, an arm arranged to work over the pins and provided with a movable hook projection and armature operatively connected, a magnet the armature of which is adapted to engage with the said hook and close the line-circuit, a weight or spring for operating the arm in one direction, a magnet for operating it in the other direction, a magnet for operating the armature on the arm, a series of type arranged in the arc of a circle and connected with the said arm, and a magnet the armature of which is arranged to close the line-circuit, all substantially as described.

2. In a printing-telegraph the combination with the revolving spindle provided with a synchronizing arm, and a series of stop-pins adapted to be moved into the path of said arm, of a weight loosely mounted on said spindle and means connecting said spindle with the weight for movement in one direction only, substantially as described.

3. In the printing-telegraph the combination with the revolving spindle, synchronizing arm and series of stop-pins adapted to be moved into the path of said arm, of a weight loosely mounted on said spindle and having a part provided with ratchet-teeth and a part connected with said spindle having a pawl engaging said teeth, whereby said weight will move with said spindle in one direction only, substantially as described.

4. In a printing-telegraph, the combination with the spindle, the synchronizing arm, a series of stops adapted to be moved into the path of said arm, a series of movable type carried by said spindle, a stationary plunger for impressing said type, the paper-carriage and a screw for operating the same, of means for starting said synchronizing arm and moving one of said stops into its path, a printing-magnet for operating said plunger and the said screw, and means for returning the parts to their initial positions, substantially as described.

5. In a printing-telegraph the combination with the synchronizing arm, and a series of stops adapted to be moved into the path of said arm, of a magnet for returning said arm to its initial position, the printing-magnet a bar operated by the printing-magnet to close a circuit through the returning-magnet, and a part operated by said bar for breaking the circuit through the printing-magnet, substantially as described.

572,761. CHIMNEY-PROTECTOR. WILLIAM LANPRECHT, Sedan, and EDWARD C. KRIEGER, Cuero, Tex. Filed July 21, 1896. Serial No. 599,997. (No model.)

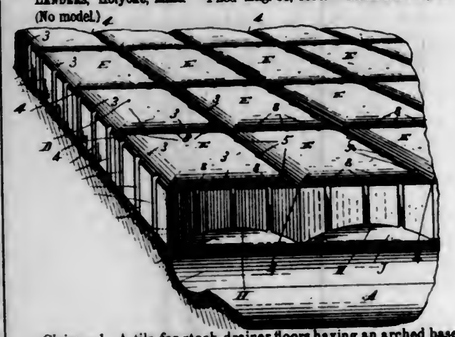
Claim.—1. A chimney-protector composed of two plates lying in the same straight plane and having their meeting edges flanged and apertured to receive fastenings by means of which the plates are secured together, and having approximately semicylindrical sections formed at the meeting edges and intermediate of their ends and which unitedly form a collar or thimble, substantially as shown for the purpose described.



2. A chimney-protector comprising a plate having a collar or thimble intermediate of its edges, and having offsets formed at its opposite edges to correspond with the outline of the shingles bordering upon the opening closed by the said protector, substantially as set forth.

3. A chimney-protector comprising a plate having a collar or thimble intermediate of its edges, and having corresponding offsets at its opposite edges and a deflected portion at its lower end to secure a snug fit with the shingles bordering upon the sides and lower end of an opening in a slanting roof, substantially as set forth.

572,762. DRAINER-FLOOR AND TILE THEREFOR. DENNIS J. LANDERS, Holyoke, Mass. Filed Aug. 31, 1896. Serial No. 604,353. (No model.)



Claim.—1. A tile for stock-drainer floors having an arched base, oppositely-arranged flat borders at the bases of said arch, and liquor-passages in the borders of said tile forming free conduits between the upper and lower sides of said tile, the area of said conduits increasing from the top downward, and having an opening in the borders of said arch greater than the width of said borders and communicating with said arched base, substantially as described.

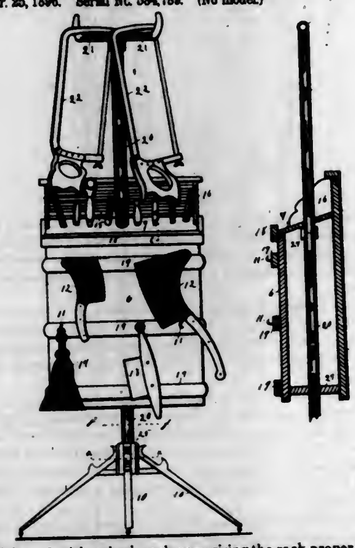
2. A stock-drainer floor consisting of a suitable base having a trough therein, several rows of floor-tiles laid end to end on said base, having interengaging borders, on the upper edges of which are curves inclining downwardly, thereby forming a series of intersecting channels 4, on said floor, an arched liquor conduit under each row of tiles communicating with said trough, and liquor-passages between said tiles communicating with said channels and conduit, the area of said passages increasing from the top downward and having an opening in the borders of said arch greater than the width of said borders, substantially as described.

572,763. MAIL-BAG FASTENER. FREDERICK LANGLOTZ, Cincinnati, Ohio. Filed Mar. 28, 1896. Serial No. 585,261. (No model.)

Claim.—In a device of the class described, the combination of a bag provided at one side of its mouth with a flap, and having a series of slots or openings at the opposite side of the mouth, a series of staples or keepers mounted on the inner face of the bag adjacent to the inner end of the flap and adapted to project through the slots or openings at the opposite sides of the bag, and a lock mounted on the inner face of the flap at the outer end thereof, whereby it is concealed within the bag and protected when the flap is folded, said lock comprising a casing provided at one end with a keyhole, and having a series of slots or openings, a spring located at the other end of the casing, a reciprocating locking-bar mounted in the staples or keepers of the casing and having one end engaged by the spring and provided at its other end with a head located adjacent to the keyhole, and a series of bolts or arms mounted on the locking-bar and adapted to engage the staples or keepers, substantially as described.



572,764. BUTCHER'S TOOL-RACK. JAMES H. LANGTON, Centreville, Mich., assignor of one-half to Orsin L. Palmer, same place. Filed Mar. 25, 1896. Serial No. 584,789. (No model.)



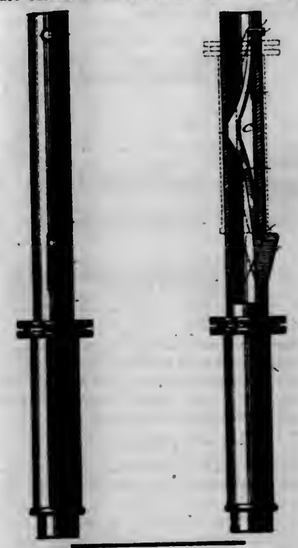
Claim.—1. A butcher's rack comprising the rack proper, the sectional supporting-rod with coupling-collar, and provided with the base and with the upper meat-saw arms, said supporting collar and rod forming a pivotal support upon which the rack can be turned at the will of the user, substantially as set forth.

2. The combination, of the tool-rack proper, a sectional supporting-rod provided with base, and a collar coupling said sections and also forming a supporting-shoulder for the tool-rack, substantially as set forth.

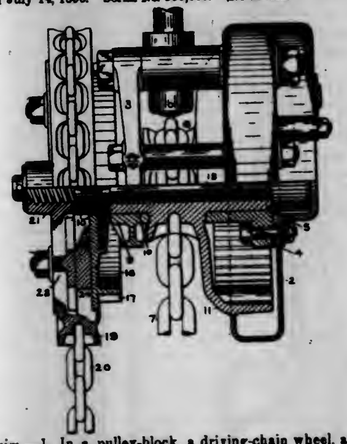
572,765. RETAINER AND STOP FOR UMBRELLAS OR PARASOLS. WILLIAM MORRISON, Philadelphia, Pa. Filed Apr. 9, 1896. Serial No. 586,771. (No model.)

Claim.—1. A retainer for the runner of an umbrella or parasol consisting of a shank having diverging limbs, a stationary bearing-face, a stop-pin, and a head, said pin and head extending laterally from the outer ends of the opposite limbs of the shank and both being adapted to project outside of the stick within which said shank is located and with which it is locked by said stop-pin and head the runner being adapted to be held simultaneously by said pin and head.

2. A hollow umbrella or parasol stick provided with two openings in the wall thereof, in combination with a retainer for the runner consisting of a shank provided with a bearing-face, limbs diverging from said face and a locking and stop pin and a shouldered head on the opposite ends of said limbs extending in the same direction therefrom, said pin and head passing through said openings and projecting in part outside of the same for simultaneously holding the runner.



572,766. PULLEY-BLOCK. OLIVER M. MOWAT, Pittsburg, Pa. Filed July 14, 1896. Serial No. 599,069. (No model.)



Claim.—1. In a pulley-block, a driving-chain wheel, a driving-shaft having screw-threaded engagement therewith, radially-movable shoes mounted upon the chain-wheel and arranged to contact with a friction wheel or ring, and means for preventing the movement of the friction-wheel in one direction; substantially as described.

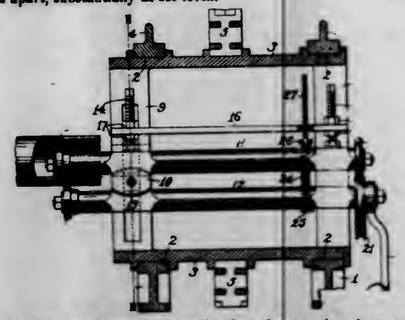
2. In a pulley-block, a driving-wheel having a screw-threaded engagement with a driving-shaft, and provided with radial slots, shoes adjustably mounted in said slots, a friction-wheel revolubly mounted upon the shaft and arranged to contact with the shoes, and means for preventing movement of the friction-wheel in one direction; substantially as described.

3. In a pulley-block, a driving-wheel having a screw-threaded engagement with a driving-shaft, and provided with radial slots, shoes adjustably mounted in said slots, a friction-wheel revolubly mounted upon the shaft and arranged to contact with the shoes, and a pawl arranged to engage ratchet-teeth upon the friction-wheel; substantially as described.

572,767. PIPE-SHEARS. THOMAS B. NUTTALL, Pittsburg, Pa., assignor of one-half to Joshua Rhodes, Allegheny, Pa. Filed June 30, 1896. Serial No. 597,552. (No model.)

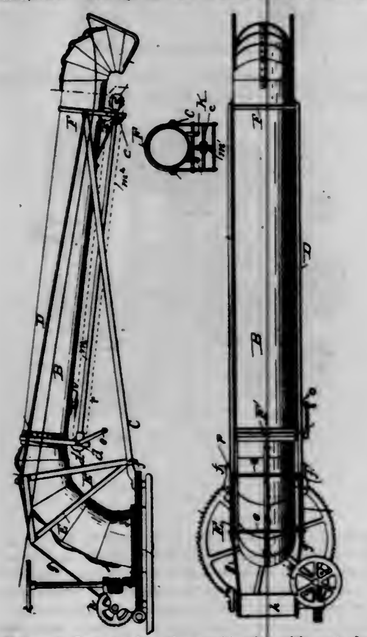
Claim.—1. In a pipe-shears, the combination of a rotating drum, two shear-shafts pivotally connected near their front ends and adjustable radially of the drum, cutters mounted on the front ends of

the shear-shafts, and means for forcing the rear ends of the shear-shafts apart, substantially as set forth.



2. In a pipe-shears, the combination of a rotating drum, two shear-shafts pivotally connected near their front ends and adjustable radially of the drum, cutters mounted on the front ends of the shafts, and means actuated by the movement of the shear-shafts for forcing the rear ends apart, substantially as set forth.

572,768. PNEUMATIC STACKER. FRANK A. PEAVEY, Port Huron, Mich. Filed Apr. 10, 1896. Serial No. 586,994. (No model.)

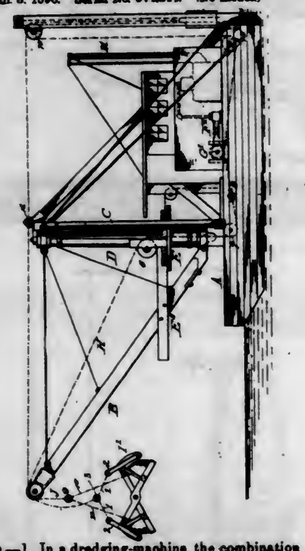


Claim.—1. In a stacker, the combination with a stacker-pipe, and a support therefor, of two triangular levers one on each side of the pipe and each pivoted to said support, a yoke straddling the pipe, rods connecting said yoke to the pivoted ends of said levers, members connecting said yoke with the upper ends of said levers, flexible members for operating said levers engaging along the upper edges of the levers and positively connected to the levers at their uppermost points, substantially as described.

2. In a stacker, the combination with a stacker-pipe, its elbow formed of hinged sections and adapted to be straightened out horizontally, and a support for the pipe, of two triangular levers one on each side of the pipe and pivoted to the support, a yoke straddling the pipe, members connecting said yoke and the pivoted ends of said levers, members connecting said yoke and the upper ends of said levers, and means for operating the levers, said levers adapted to be turned down on the support, substantially as described.

3. In a stacker, the combination with the stacker-pipe and a support therefor, of two triangular levers one on each side of the pipe and pivoted to the support, a yoke straddling the pipe, rods connecting said yoke and the pivoted ends of said levers, rods attached to said yoke and having a detachable engagement with the upper ends of said levers, and means for operating said levers, substantially as described.

572,769. DREDGING APPARATUS. WILLIAM B. PLESS, San Francisco, Cal., assignor to the Pless Dredging and Reclamation Company. Filed Jan. 3, 1896. Serial No. 574,211. (No model.)



Claim.—1. In a dredging-machine, the combination of a bucket with a movable counterbalance, devices connecting said bucket and counterbalance together, mechanism for raising said counterbalance and independent mechanism for raising the bucket, substantially as described.

2. In a dredging-machine the combination of a bucket with a movable counterbalance, a chain connecting the bucket with the counterbalance, a winding-drum, and an independent chain extending from the drum to the counterbalance, for hoisting the latter, substantially as described.

3. In combination in a dredging-machine, the bucket a chain adapted to close and hoist the bucket, a counterbalance-weight approximating the weight of the bucket, a cord or chain connecting the counterbalance with the bucket and tending normally to open the same, said counterbalance aiding in the hoisting of the bucket and opening the same when the closing and hoisting chain is slackened, substantially as described.

4. In a dredging-machine, the combination of a bucket, with a movable counterbalance, a chain directly connecting the bucket with the counterbalance, a winding-drum, a chain extending from the drum to the counterbalace for hoisting the latter, and means for stopping the drum and holding the counterbalance in suspension, substantially as described.

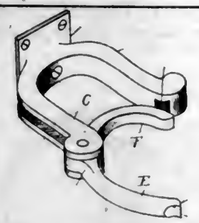
5. In combination with the hull of a dredger, its swinging boom and suspended bucket, a guide-frame on the hull projecting beyond its edge, a counterbalance movable in said guide-frame, and mechanism connecting said counterbalance and bucket, substantially as described.

6. In a dredger and in combination with the laterally-swinging boom and the bucket suspended from said boom, an elevated structure on the hull having guide pulleys attached thereto, a chain extending from the bucket between said pulleys a vertically-movable counterbalance to which said chain is directly connected, and winding machinery connected to said counterbalance, substantially as described.

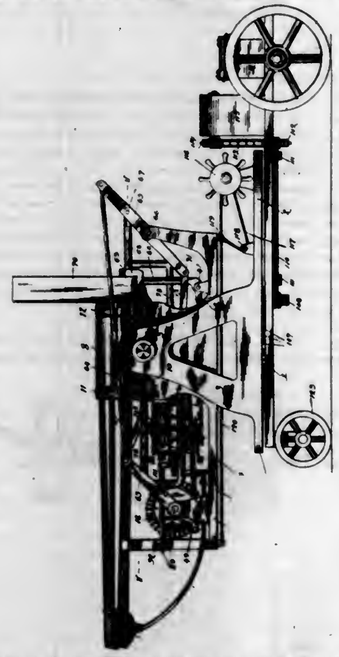
572,770. BICYCLE-HOLDER. ALFRED R. PUTNAM, Milan, Mich. Filed Mar. 26, 1896. Serial No. 585,169. (No model.)

Claim.—A bicycle-holder comprising a substantially U-shaped bracket, a bifurcated locking member pivoted in one arm of the bracket, a spring acting to normally hold the locking member open, the point *b* on the locking-arm of the locking member and the notch *d* in the outer end of the opposite arm of the bracket with which the point is adapted to engage to hold the locking member closed, substantially as described.

572,770.



572,771. AUTOMATIC MACHINE-GUN. ROMULUS R. RICHMOND, Chariton, Iowa. Filed June 19, 1896. Serial No. 596,197. (No model.)



Claim.—1. In a rapid-firing machine-gun, the combination of a trunnioned gun-bed, a series of barrels mounted thereon, a series of cylinders corresponding in number to said barrels adapted to work in conjunction therewith, mechanisms for bringing about the several operations of the cylinders, a main shaft from which said mechanisms receive their actuations, a reservoir, means for connecting said reservoir with the barrels of the gun whereby a portion of the gases of explosion pass from said barrels to the reservoir, a power-cylinder communicating with said reservoir, and means—such as a piston and rod—for bringing about the movements of the main shaft, substantially as shown and described.

2. In a rapid-firing gun, a swiveled platform, a gun-bed trunnioned to said platform, a series of gun-barrels mounted upon said bed, a series of cylinders adapted to work in conjunction with said barrels, means for aiming the barrels, mechanisms for loading, firing, turning the cylinders and ejecting the used shells, a main shaft for operating the several mechanisms, a power-cylinder having a piston adapted to slide therein, said piston being connected to the main shaft by a suitable rod, valve mechanism for controlling the induction of compressed gas to the power-cylinder, a reservoir-tank for retaining the compressed gas, and means for admitting gas to said reservoir under pressure from the gun-barrels, substantially as shown and described.

3. In a rapid-firing machine-gun, the combination of a carriage, a swiveled platform mounted thereon, mechanism for turning said platform, a gun-bed trunnioned upon the platform, mechanism for swinging said bed, a series of gun-barrels mounted upon the bed, a series of cylinders corresponding with the number of barrels, each cylinder having four firing-chambers therein which are adapted to be successively brought into alinement with the bores of the barrels, magazine-chutes so arranged that the bottom cartridges therein will lie in alinement with certain of the chambers, hammers for firing the cartridges when brought into alinement with the gun-barrels, ejectors adapted to force the used shells out of the chambers, means for revolving the cylinders intermittently step by step, means for locking said cylinders after being revolved, mechanisms for bringing about these several movements, a main shaft carrying a series of arms for imparting motion to said mechanisms, a power-cylinder having a piston therein, said piston being connected by a rod to a suitable arm carried by the main shaft, a reservoir for containing gas under pressure, valve mechanism for controlling the induction of said gas from the reservoir to the power-cylinder, tubes leading from the barrels to the reservoir, and check-valves arranged within the passages of said tubes, substantially as and for the purposes set forth.

4. In a rapid-firing machine-gun, the combination of a carriage, a swiveled platform mounted thereon, mechanism for turning said platform, a gun-bed trunnioned upon the platform, mechanism for swinging said bed, a series of gun-barrels mounted upon the bed, a series of cylinders corresponding with the number of barrels, each cylinder having four firing-chambers therein which are adapted to be successively brought into alinement with the bores of the barrels, magazine-chutes so arranged that the bottom cartridges therein will lie in alinement with certain of the chambers, loading-plungers for forcing the bottom cartridges of the magazines within the proper chambers of the cylinders, hammers for firing the cartridges when brought into alinement with the barrels, ejectors for forcing the used shells from out the cylinders, locking-bolts adapted to hold the cylinders against movement when the firing takes place, mechanisms for bringing about the movements of said parts, a main shaft journaled upon the gun-bed, a series of arms carried by said shaft for effecting the movements of the mechanisms, a beveled gear loosely mounted upon said shaft, a pin projecting from said shaft into engagement with a slot formed in the hub of said gear whereby the latter is caused to revolve in two directions and dwell, a pinion meshing with said gear, a shaft upon which said pinion is secured, a double lever carried upon the opposite end of said shaft, ratchet-arms pivoted to the cylinder, links for connecting the ends of the double lever to the ratchet-arms, pawls carried by said arms, ratchets with which said pawls are adapted to engage, and means for effecting the movements of the main shaft, substantially as shown and described.

5. In a rapid-firing machine-gun, the combination of a carriage, a swiveled platform mounted thereon, mechanism for turning said platform, a gun-bed trunnioned upon the platform, mechanism for swinging said bed, a series of gun barrels mounted upon the bed, a series of cylinders corresponding with the number of barrels, each cylinder having four firing chambers therein which are adapted to be successively brought into alinement with the bores of the barrels, magazine-chutes so arranged that the bottom cartridges therein will lie in alinement with certain of the chambers, loading-plungers for forcing the bottom cartridges of the magazines within the proper chambers of the cylinders, hammers for firing the cartridges when brought into alinement with the barrels, ejectors for forcing the used shells from out the cylinders, locking-bolts adapted to hold the cylinders against movement when the firing takes place, mechanism for bringing about the movements of said parts, a main shaft journaled upon the gun-bed, a series of arms carried by said shaft for effecting the movements of the mechanisms, a beveled gear loosely mounted upon said shaft, a pin projecting from said shaft into engagement with a slot formed in the hub of said gear whereby the motion of the shaft is communicated to the hub, a pinion meshing with said gear, a shaft upon which said pinion is secured, a double lever carried upon the opposite end of said shaft, ratchet-arms pivoted to the cylinder, links for connecting the ends of the double lever to the ratchet-arms, pawls carried by said arms, ratchets with which said pawls are adapted to engage, a reservoir-tank, tubes leading from slots formed in the gun-barrels to said tank, check-valves interposed between said slots and tank and so arranged as to permit the inflow of gas to the tank but prevent its outflow, a power-cylinder communicating with the tank by pipes, valves arranged within said pipes for controlling the induction and exhaust of gases to and from the power-cylinder, a piston-rod connected to a piston adapted to slide within the power-cylinder, an arm secured upon the main shaft carrying a pin with which a slot in said piston-rod engages, and valve mechanism connected to the piston-rod for bringing about the proper movements of the induction and exhaust valves, substantially as and for the purposes set forth.

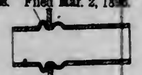
6. In combination with a gun of the character described, a reservoir-tank, tubes leading from said tank to slots in the barrels of the gun whereby a portion of the gases of explosion is admitted to the reservoir, a power-cylinder communicating with said reservoir, and means for effecting the loading and discharging of the gun from the power cylinder, as specified.

7. In combination with a gun of the character described, two barrels mounted upon a suitable bed, cylinders adapted to work in conjunction therewith, a reservoir-tank adapted to hold gas under

pressure, tubes leading from said reservoir to slots formed in said barrels, a power-cylinder communicating with said reservoir, valves 99 interposed between the communication between the reservoir and power-cylinder, valve mechanism for operating said valves in time with the movement of the piston within said cylinder, and mechanisms adapted to be actuated by the movements of said piston to operate the cylinders, substantially as and for the purpose set forth.

8. In a gun of the character described, two barrels mounted upon a suitable bed, two cylinders adapted to work in conjunction therewith, a power-cylinder having a piston arranged to slide therein, and means for conveying a portion of the gases of explosion from the barrels to said cylinder whereby the piston will be caused by suitable connections to actuate the several mechanisms for bringing about the loading and firing of the gun, substantially as shown and described.

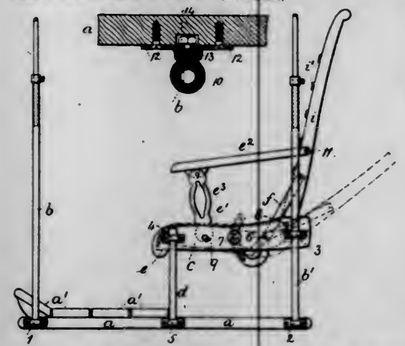
572,772. STOPPER ATTACHMENT FOR BOTTLES. ANDREW J. ROBINSON, Boston, Mass. Filed Mar. 2, 1896. Serial No. 581,471. (No model.)



Claim.—1. As an improved article of manufacture, a stopper attachment for bottles, comprising a tube, and washer arranged thereon, shoulders or wrinkles on said tube on either side of said washer, and bearing against the latter to hold it in place, said shoulders being formed by shortening the tube in the direction of its length, and screw-threads formed on said tube, above the upper shoulder, or wrinkle.

2. As an article of manufacture, a stopper attachment for bottles comprising a tube, a washer arranged thereon, and a corrugation arranged to engage said washer, to hold the latter in place, said corrugation being composed of the walls of the tube and formed by shortening the latter in the direction of its length, and means for holding the washer against the corrugation.

572,773. SWING. GEORGE ROCKWELL, Bainbridge, N. Y. Filed June 8, 1896. Serial No. 594,646. (No model.)

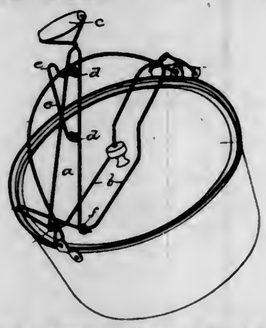


Claim.—1 In a swing, the combination with a seat, of side bars for carrying the seat and means for adjustably supporting the seat, a platform, suspending-rods, and pivots upon the platform and side bars connected to the rods, said pivots each consisting of a socket through which the rod passes, a plate adapted to be connected to the platform or side bar and having a collar and a bolt passing through said plate and through the socket and bearing against the rod to clamp the socket to the rod and form a pivot between the socket and plate, substantially as set forth.

2. In a swing, the combination with a platform, side bars, pivots connected thereto, and rods connected to said pivots and suspending the platform and side bars, of a seat and back pivoted together, pivots connecting the side pieces of the seat to the side bars and slotted sectors pivoted to the side pieces of the back and to the side bars and clamping-bolts passing through the side bars and slot of the sectors whereby the adjusted position of the seat and back are rigidly held in relation to one another, substantially as set forth.

3. In a swing, the combination with a seat and side bars for supporting the same, and rods by which said parts are suspended, of pivots each consisting of a socket 10 and hub thereon, a plate 12 and screws for connecting the same upon the framework of the swing, a collar 13 integral with said plate, a bolt 14 passing through the plate 12 and through the hub of the socket 10 and holding said parts together, clamping the suspending-rod that passes through the socket 10, substantially as set forth.

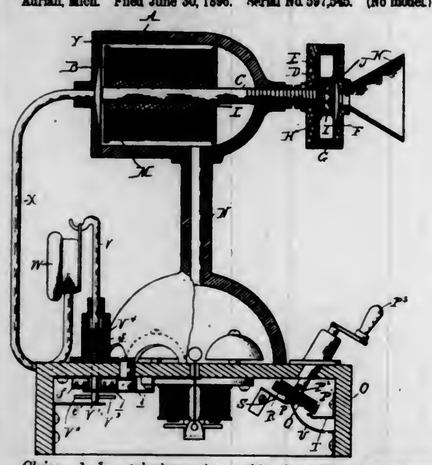
572,774. COVER-HOLDER FOR CULINARY POTS OR KETTLES. HERSCHEL A. SCHERNERHORN, Waterman, Ill. Filed Apr. 1, 1896. Serial No. 585,682. (No model.)



Claim.—1. A cover-holder for pots and kettles consisting of two arms each made of two substantially corresponding branches or lengths of wire, the wires of the upper being hinged to the wires of the lower, and having one of said wires provided with a lateral device which reaches over the other wire thereof, as and for the purpose specified.

2. A cover-holder for pots and kettles consisting of two arms each made of two substantially corresponding branches or lengths of wires, the wires of the upper arm being hinged to the wires of the lower arm, and having one of said wires provided with a lateral device which reaches over the other wires thereof, and the wires of the lower arm extending beyond the point of articulation at a suitable angle and forming a suitable toe, as and for the purpose specified.

572,775. TELEPHONIC APPARATUS. CARL J. SCHWARZE, Adrian, Mich. Filed June 30, 1896. Serial No. 597,545. (No model.)



Claim.—1. In a telephone, the combination with a microphone-transmitter, a transformer therefor, having primary and secondary windings with a magnetic core, and a battery in local circuit with said microphone and primary winding, of vibrating diaphragms arranged in proximity to the opposite ends of said core, the one being in mechanical contact with said microphone and the other forming the receiver, and means for pulsating or alternating the current in said primary winding to induce an alternating signal current and at the same time agitate the microphonic material in the transmitter.

2. In a telephone, the combination with a transmitter of a transformer therefor, comprising a bell-shaped permanent magnet having a diaphragm across its mouth forming one of the poles thereof, a soft-iron core extending into proximity to said diaphragm forming the opposite pole and primary and secondary windings inclosed within the magnet, said transformer constituting the receiver.

3. The combination with the microphone-transmitter, the transformer and the bell, of a line circuit including the secondary winding of the transformer, and the branches *c* and *d* each containing a break and the former including the bell-magnet; a local circuit including the microphone, the primary coil of the transformer, the battery and a break, and a single switch controlling said breaks adapted in one position to open the branch *d* and the local circuit and in its other position to close said branch and local circuit and open the bell branch *c*.

4. The combination with the microphone-transmitter, the transformer and the bell, of a line-circuit including the secondary winding of the transformer and the branches *c* and *d* each containing a break and the former including the bell-magnet; a shunt around the transformer connected to the branch *d*, a local circuit including the microphone, the primary coil of the transformer, the battery and a break, and a single switch controlling said breaks adapted in one position to open the branch *d* and local circuit and in its other position to close said branch and local circuit and open the branch *c* and the shunt.

5. The combination with the microphone-transmitter and the transformer having its secondary coil included in the line-circuit, of a local circuit including the microphone, the primary coil of the transformer and the battery, a normally open branch circuit including the battery and primary coil, and means such as a commutator for closing said branch and alternating the current in the primary coil.

572,776. INTERCHANGEABLE SLAT FOR SHUTTERS, BLINDS, &c. MORRIS SHINSKY, Newark, N. J. Filed Mar. 18, 1896. Serial No. 583,655. (No model.)



Claim.—1. An article of manufacture consisting of a plate adapted to be secured at one end of a shutter-slat, having a centrally-situated longitudinal channel and an abutment made integral with said plate and at one end of said channel, and a spring controlled pin lying in said channel and protruding from the free end thereof, substantially as shown and described.

2. An article of manufacture consisting of a plate adapted to be secured at one end of a shutter-slat, having a centrally-situated longitudinal channel and an abutment made integral with said plate and at one end of said channel, a pin lying in said channel and protruding from the other end thereof and a spring arranged between said abutment and the pin, substantially as and for the purposes set forth.

3. In a fastening for a detachable shutter-slat, the combination with the slat of a plate adapted to be secured at one end thereof and having a centrally-situated longitudinal channel, an abutment made integral with said plate and at one end of said channel and a pin and a spring lying in said channel between the slat and the plate, the pin protruding from the free end of said channel and the spring lying between the pin and the abutment substantially as described.

4. An interchangeable shutter-slat having retroflex longitudinal edges, a plate secured at one end thereof, by means of said edges, and having a centrally-situated longitudinal channel and an abutment made integral with said plate, the abutment being situated at one end of the channel, and a spring-controlled pin lying in said channel and protruding from the free end thereof, substantially as shown and for the purposes described.

572,777. ELECTRIC-ARC LAMP. THOMAS SPENCER and CHRISTIAN TORRING, Jr., Philadelphia, Pa., assignors to The Helios Electric Company, same place. Filed May 6, 1896. Serial No. 590,407. (No model.)

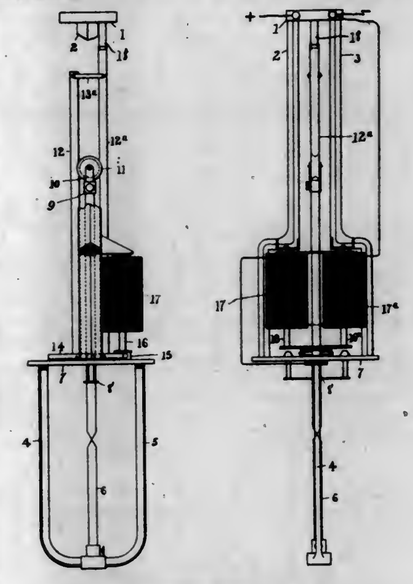
Claim.—1. A feed-regulator for an arc-lamp comprising parallel pivotally-connected rods, a carbon-carrier mounted between the rods, and engaging its facing sides only, a carbon pivotally supported thereby, a fixed guide-plate near the lower extremity of the carbon, and electromagnetic devices for causing the rods to approach or recede from one another under fluctuation of current.

2. A feed-regulator for an arc-lamp comprising parallel rods pivotally connected by transverse, rigid links, a roller engaging the rods and guided thereby, a carbon-holder mounted on the axis of the roller, and a fixed guide-plate near the lower extremity of the carbon for centering it relatively to the cooperating carbon.

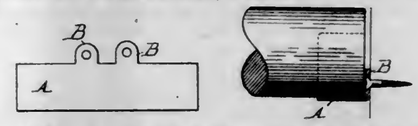
3. A feed-regulator for an arc-lamp comprising two parallel rods forming a guideway for a carbon-carrier, rigid links pivotally connecting the rods, arms 14, 14^a secured to the rods, the latter bearing on a fixed part of the lamp and the former being connected to an armature controlled by a regulating-magnet.

4. A feed-regulator for an arc-lamp comprising two parallel rods pivotally connected by rigid links, arms 14, 14^a the latter bearing on a fixed part of the lamp and the former being connected to an armature controlled by a regulating-magnet, roller 11, and carbon-carrier supported thereby.

5. A feed-regulator for an arc-lamp comprising two parallel rods pivotally connected by rigid links, arms 14, 14^a the latter bearing on a fixed part of the lamp and the former being connected to an armature controlled by a regulating-magnet, a roller 11, carbon carrier supported thereby, and a guide near the arc for centering the movable carbon.



572,778. POLE-SOCKET. JOHN H. STEVENSON, Ann Arbor, Mich., assignor to the Ann Arbor Manufacturing Company, same place. Filed Apr. 30, 1896. Serial No. 589,685. (No model.)



Claim.—1. A pole-socket formed of a single piece of sheet metal bent into an upwardly-opening segment of a circle, slightly greater than a half circle and securing-lugs struck up from one edge intermediate its ends.

2. A pole-socket formed of a single piece of sheet metal having struck up from one edge intermediate its ends apertured securing-lugs, and bent into a segment of a circle slightly greater than a half, and inclined entering lips at the top.

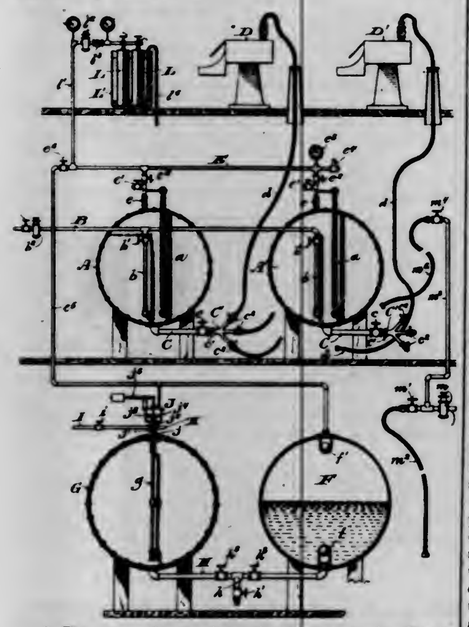
3. A pole-socket formed of a single piece of sheet metal comprising the body portion A bent into a segment of a circle slightly greater than the half, the two central apertured securing-lugs B bent at right angles to the body portion and projecting substantially the thickness of the metal beyond the rear edge thereof, the parts being arranged as and for the purpose described.

572,779. PROCESS OF AND APPARATUS FOR RECLAIMING GAS EMPLOYED IN DISPLACING LIQUIDS. JACOB F. THEURER, Milwaukee, Wis., assignor to the Pabst Brewing Company, same place. Filed Dec. 4, 1893. Serial No. 492,673. (No model.)

Claim.—1. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing gas into a vessel containing the liquid to be displaced and thereby expelling said liquid therefrom, then filling said vessel with other liquid under pressure, thereby forcing the gas therefrom through a separate passage leading out of the upper part thereof into a reservoir which is disconnected from the source of liquid supply and drawing the gas from said reservoir to displace other liquid in the same or in other vessels, substantially as and for the purposes set forth.

2. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing the gas from the vessel in which it has displaced a liquid, through a passage leading out of the upper part of said vessel into a receiver connected therewith, but is disconnected from the source of liquid supply by refilling said vessel with a liquid under pressure, drawing the gas from said receiver to displace other liquid, and in maintaining

the pressure in said receiver above a certain point, substantially as and for the purposes set forth.



3. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing the gas from the vessel in which it has displaced a liquid, through a passage leading out of the upper part of said vessel into a receiver connected therewith, but is disconnected from the source of liquid supply by refilling said vessel with a liquid under pressure, drawing the gas from said receiver to displace other liquid and in restoring the pressure in said receiver when it falls below a certain point by means of fluid pressure other than that afforded by the gas itself substantially as and for the purposes set forth.

4. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing the gas from the vessel in which it has displaced a liquid, into a receiver connected therewith, by refilling said vessel with a liquid under pressure, drawing such gas from said receiver to displace other liquid, and maintaining a constant gas-pressure in said receiver by increasing and diminishing the pressure of an interposed liquid, according to the varying volume of gas contained in said receiver, substantially as and for the purposes set forth.

5. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing the gas alternately from one vessel into another vessel containing liquid by alternately refilling said vessels with liquid to be subsequently displaced by said gas, substantially as and for the purposes set forth.

6. The process of recovering and reusing gas employed to displace liquids for bottling and other purposes, which consists in forcing the gas alternately from one vessel into another vessel containing liquid by refilling said vessels alternately with liquid under pressure to be subsequently displaced by said gas, and in maintaining the requisite quantity and pressure of gas by connecting said vessels with a reservoir containing gas under greater pressure, substantially as and for the purposes set forth.

7. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel for holding the liquid to be displaced, having an outlet connection with the lower part thereof, a source of liquid under pressure which is greater than the normal gas pressure required to displace the liquid, adapted to be connected and disconnected with said vessel, a gas-receiver connected with the upper part of said vessel and adapted to receive gas therefrom when said vessel is filled with liquid and means for maintaining gas under sufficient pressure in said receiver to expel the liquid from said vessel when the liquid supply connection thereto is closed, substantially as and for the purposes set forth.

8. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a receiver having a valve-controlled connection for putting it in communication with the upper part of a vessel containing a liquid to be displaced by gas taken from said receiver, a valve-controlled connection for drawing off liquid from the lower part of said vessel, a source of liquid under pressure having a valve controlled connection with, or for attachment to, said vessel, a gas-reservoir connected with said receiver and a reducing-valve between said reservoir and receiver for supplying waste and maintaining a certain pressure in the reservoir, substantially as and for the purposes set forth.

9. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel having a valve-controlled liquid-outlet connection leading from the lower part thereof, a gas tank or receiver having a valve-controlled connection with the upper part of said vessel, and a fluid-pressure tank connected with the bottom of said receiver and containing a liquid, substantially as and for the purposes set forth.

10. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of two or more tanks or vessels, each having a liquid-outlet connection leading out of the lower part thereof, a liquid-supply pipe having valve-controlled connections with said tanks and with a source of liquid under pressure, and a valve-controlled gas connection between the upper parts of said tanks, substantially as and for the purposes set forth.

11. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of two or more tanks or vessels, each having a liquid-outlet connection at the bottom, a gas connection between the upper parts thereof, and a liquid-supply pipe connecting each of said tanks with a source of liquid under pressure, and provided with a reducing-valve, substantially as and for the purposes set forth.

12. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of two or more tanks or vessels, each having a liquid-outlet connection at or near the bottom and a gas connection with each other at or near the top provided with float-valves, and a liquid-supply pipe connecting each of said tanks with a source of liquid under pressure greater than the gas-pressure required to expel liquid from said tanks, substantially as and for the purposes set forth.

13. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel having a valve-controlled discharge connection at the bottom, a gas-receiver having a valve controlled connection with the upper part of said tank, and a water-supply pipe connected with a source of pressure greater than that required to expel the liquid from said tank, provided with a reducing-valve and with a detachable connection for attachment to said tank or vessel, whereby the gas which has displaced the liquid therein may be completely forced back into said receiver, substantially as and for the purposes set forth.

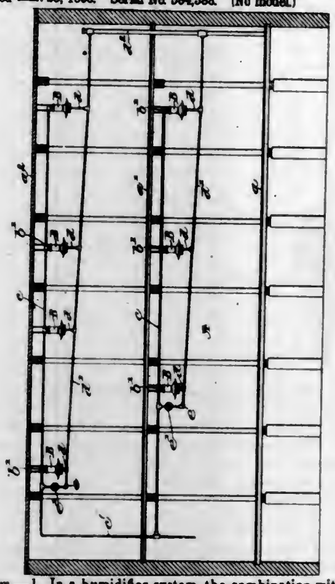
14. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel for containing the liquid to be displaced, having a liquid-outlet connection at or near the bottom, a gas-receiver connected with the upper part of said tank and a fluid-pressure connection with the lower part of said receiver provided with an automatic pressure-regulating valve, substantially as and for the purposes set forth.

15. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel for containing the liquid to be displaced, having a liquid-outlet connection at or near the bottom, a gas-receiver connected at or near the top with the upper part of said tank and connected at or near the bottom with a source of liquid under pressure, and float-valves controlling the liquid-inlet and gas-outlet openings of said receiver, substantially as and for the purposes set forth.

16. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of a tank or vessel for containing the liquid to be displaced, having an outlet connection at or near the bottom, a gas-receiver connected with the upper part of said tank, a fluid-pressure tank supplied with liquid and connected with a source of fluid-pressure and at the bottom with the bottom of said receiver, and an automatic pressure-regulating device controlling the supply connection of said fluid-pressure tank and connected with the upper part of said gas-receiver, substantially as and for the purposes set forth.

17. In apparatus for recovering and reusing gas employed to displace liquids for bottling and other purposes, the combination of two or more tanks or vessels, each having a valve-controlled outlet connection at the bottom, a liquid-supply pipe having separate valve-controlled connections with said tanks, a gas-pipe having separate valve-controlled connections with the upper parts of said tanks, a gas-receiver having a valve-controlled connection with said gas-pipe, and a gas-reservoir having a connection with said gas-pipe, provided with a reduction-valve for restoring and maintaining the pressure therein, substantially as and for the purposes set forth.

572,780. **HUMIDIFIER SYSTEM AND APPARATUS.** RICHARD C. ULBRICH, Boston, Mass., assignor to William Firth, Winchester, Mass. Filed Mar. 23, 1896. Serial No. 584,388. (No model.)



Claim.—1. In a humidifier system, the combination with one or more humidifiers, and inlet and return pipes for the same, of a connection independent of said humidifiers, or either of them, between the inlet and supply pipes, and means to control said connections, substantially as described

2. In a humidifier system, the combination with one or more usual humidifiers, and inlet and return pipes for the same, of one or more connections between the said inlet and return pipes and independent of said humidifiers, and valves in and to control the said connections and to control the inlets and returns for the several humidifiers, substantially as described.

3. A humidifier apparatus containing a suitable casing, a spraying device arranged therein, a return or outlet at the bottom of said casing, and a removable cone covering said outlet removal of which gives access to said outlet, substantially as described.

4. A humidifier apparatus containing a suitable casing, a spraying device arranged therein, and an outlet at or near the bottom of said casing, and a ring supported above the bottom of said casing, and a removable cone arranged on said ring and normally covering said outlet, substantially as described.

5. A humidifier apparatus containing a suitable casing, a spraying device arranged therein, an outlet at the bottom of the casing, a valve controlling the same, and a removable cone normally covering said outlet and its valve removal of the cone permitting the free access to said valve, substantially as described.

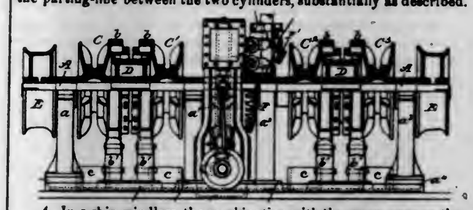
6. In a humidifier apparatus, the combination with a suitable casing, of a support arranged within the same, an exteriorly threaded nozzle tapped in said support, a supporting-yoke threaded on said nozzle, and a spraying screw or point threaded in said yoke, all to operate, substantially as described.

572,781. **SHIP'S WINDLASS.** EDWIN H. WHITNEY, East Providence, R. I., assignor to the American Ship Windlass Company, Providence, R. I. Filed June 17, 1892. Serial No. 437,066. (No model.)

Claim.—1. The combination with a ship-windlass, having on its shaft appropriate wildcats, locking-gear driving-heads, and a worm-gear with its driving-head, of a pair of inverted vertical engines, mounted on a bed-plate common to the windlass, and a combined worm-shaft and crank-shaft, mounted in bearings closely adjacent to the surface of the bed-plate, the worm on said shaft being beneath the worm-gear, and the cranks being beneath the engines, the bed-plate being recessed for affording crank-pits for the engines, substantially as described.

2. The combination with the worm-gear of a ship-windlass, and a pair of inverted vertical engines, of a worm beneath the worm-gear, and a combined worm and crank shaft, provided with longitudinally-adjustable bearings adjacent to the worm, substantially as described.

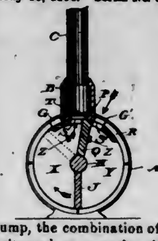
3. The combination with the worm-gear of a ship windlass, of a worm beneath the gear, a pair of inverted vertical engines and a reversing-valve attached to the sides of the cylinders, and overlapping the parting-line between the two cylinders, substantially as described.



4. In a ship-windlass, the combination with the worm-gear on the windlass-shaft, of a double-threaded worm which is below the gear, and longitudinally conforms to the periphery thereof, a worm-shaft, having longitudinally-adjustable bearings, both movable toward each other, and friction-disks on said shaft, interposed between the worm and said bearings, substantially as described.

5. In a ship-windlass, the combination with the worm-gear on the windlass-shaft, of a worm below said gear, inverted steam-engines, and a combined worm and crank shaft, provided at its end adjacent to the engines with a balance-wheel having radial mortises, for enabling the shaft and windlass to be revolved by the use of handspikes, substantially as described.

572,782. **PUMP.** HUBBARD D. B. WILLIAMS, Mansfield, Ohio, assignor of three-fourths to Arnold Kallmerten and Carl F. Grueninger, same place. Filed May 18, 1896. Serial No. 591,897. (No model.)



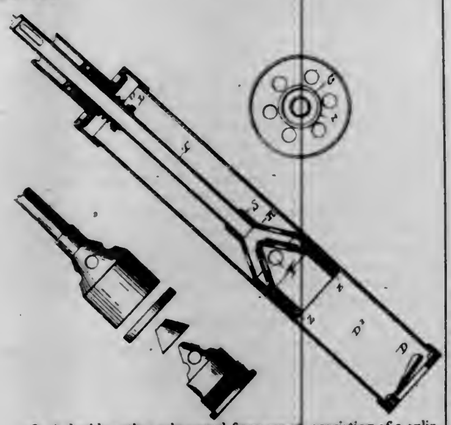
Claim.—1. In a pump, the combination of a circular casing provided with inlet-ports situated on opposite sides of a vertical line drawn centrally through said case, an eduction-pipe leading from said case at a point between the inlet-ports thereof and having an upwardly-opening check-valve, a shaft journaled centrally in the case and carrying a wing-like piston arranged to oscillate within said case, a regulator-valve Q, R, fitted to play loosely within the upper part of said case and consisting of the depending member Q which rests upon said shaft and the segmental member R fitted against the circular part of the casing and provided with ports adapted to coincide alternately with the inlet-ports of the case and with the outlet-port to the eduction-pipe, and means for oscillating the central shaft, as and for the purposes described.

2. In a pump, the combination with a circular casing having spaced inlet-ports G, G', a valved eduction-pipe connected to said case at a point between said inlet ports, and a central transverse shaft journaled in the case and carrying a wing-like piston, of a regulator-valve fitted loosely in said case and exposed to the impact of the escaping liquid to be swayed back and forth in the case as the liquid is forced from the chambers X, Y, said valve comprising the connected members Q, R, of which the member Q is fitted loosely on the central shaft, and the member R is of segmental form and fitted against the circular casing over the inlet-ports therein, said segmental member having outlet-ports S, S' each adapted to coincide alternately with an inlet-port and with the port to the eduction-pipe, and the stops Z, Z, fixed in the casing on opposite sides of the valve member Q to limit the oscillating play of the valve, as and for the purposes described.

572,783. **DOUBLE-ACTING SUBMERGED FORCE-PUMP.** HUBBARD D. B. WILLIAMS, Mansfield, Ohio, assignor of three-fourths to Arnold Kallmerten and Carl F. Grueninger, same place. Filed Aug. 7, 1896. Serial No. 602,062. (No model.)

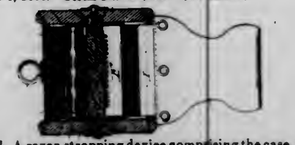
Claim.—1. In a double-acting submerged force-pump in combination with a cylinder having induction-ports at the upper and lower ends, and tubular piston-rod, a piston composed of a hollow cylinder having a cone-shaped top, the said cone provided with induction-ports, a sleeve formed upon the top of the piston and threaded upon the inside, a sleeve having a cone-shaped top, provided with induction-ports, the said sleeve provided with a flanged bottom, leather

packing placed upon the flange and adapted to be held in position by clamping the same between the flange and lower edge of the piston, a cone-shaped valve placed upon the top of the inner cone the said valve having a port through the center of the top, to allow the water in the lower portion of the cylinder to pass through the same, the said valve so arranged to open and close ports at each stroke of the piston, the piston adapted to receive the water into the interior of the same from both strokes of the piston, substantially as shown and described.



2. A double-acting submerged force-pump, consisting of a cylinder or barrel having the valved inlet at the lower end and the inlets at the upper end, the cap at the upper end of the cylinder having the depending sleeve, the ring-valve fitting on said sleeve, the spring coiled around the sleeve and having its upper end bearing against said ring-valve, the flange on the sleeve against which the other end of the spring presses, the tubular piston-rod passing through the sleeve, the conical plunger secured to the lower end of the piston and having openings, the conical cap fitting in the plunger and having openings, and the conical check-valve fitting on the conical cap within the plunger.

572,784. RAZOR-STROP. GRANT C. BLASDELL, Hazleton, Pa. Filed June 6, 1896. Serial No. 594,530. (No model.)



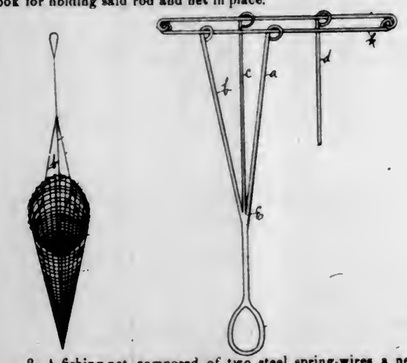
Claim.—1. A razor-stropping device comprising the case, the shaft extending centrally through the same from end to end, one of the ends of said shaft provided with a fixed sleeve thereon, and the other end slotted and provided with a removable sleeve thereon, the winding-drum, the spring thereon, one end of which is held in the slotted end of the shaft by the removable sleeve, and the other end connected to the winding-drum, and the strop adapted to be wound on said drum, substantially as described.

2. A razor-stropping device provided with a case having a spring winding-drum therein with inwardly-extending flanges on the periphery of its ends in combination with a razor-strop provided with a pin which extends across the drum and the ends of which are adapted to be inserted under said flanges and thereby removably attach the strop to the drum, substantially as described.

3. In a device for stropping razors the case provided with a central shaft having a fixed bearing-sleeve on one end and its opposite end slotted and provided with a removable bearing-sleeve, a spring winding-drum on the said shaft having circular holes in the center of its ends the edges of which revolve on the bearing-sleeves, and the outer peripheries of said ends provided with circular flanges, in combination with a razor-strop and a pin on the inner end thereof adapted to engage the said circular flanges and thereby removably attach the strop to the drum, substantially as described.

572,785. FOLDING MINNOW-NET. ENOCH BREEDING, Fort Worth, Tex. Filed Jan. 6, 1896. Serial No. 574,481. (No model.)

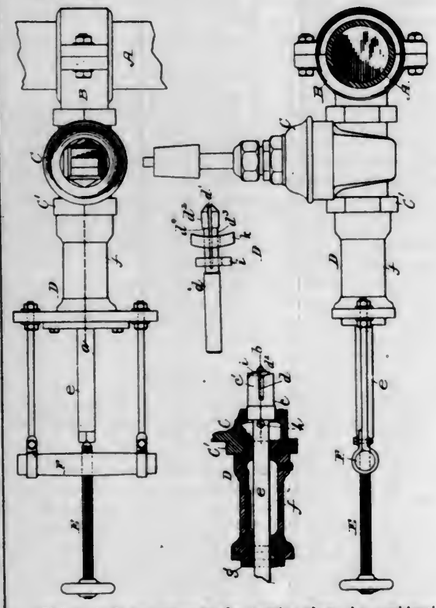
Claim.—1. A fishing-net composed of a net, two steel spring-wires looped together for spreading said net and making a circular rim for said net, a rod for holding said wires in a circular position, said rod having a loop in its end by which it is attached to one of said wires and a notch in the other end in which the other wire is held, and a hook for holding said rod and net in place.



2. A fishing-net composed of two steel spring-wires, a net attached to said wires, said wires having loops by which they are attached together, a rod having a loop in one end and a notch in the other for holding said wires in a circular position, three upright rods or wires constituting a handle for the device having their upper ends welded together, loops in their lower ends by which said rods are put on said steel spring-wires, said loops being bent whereby all of said rods and wires can be folded together, a cord for holding said rods in place, and a hook for holding said cord in place.

3. In a net for catching minnows for fish-bait the combination of a net, steel spring-wires for spreading said net, a rod for holding said wires in a circular position, upright rods having bent loops in one of their ends and being welded together at the other end, whereby said net can be placed on the bottom of the water when set, and whereby said net can be folded into a small package for convenient carrying.

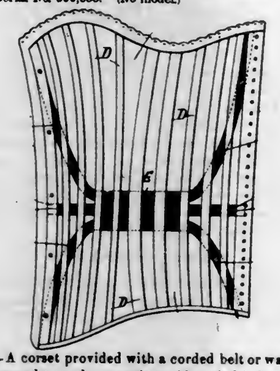
572,786. APPARATUS FOR TAPPING PIPES OR MAINS. WILLIAM DOWNEY, Worcester, Mass. Filed Oct. 6, 1896. Serial No. 608,016. (No model.)



Claim.—1. In an apparatus for tapping pipes, the combination of rotary and longitudinally sliding spindle *e*, with the hollow reamer *c* mounted thereon; the central split drill *d* also mounted on spindle *e* and having the separate parts of its pointed end sprung apart or expanded in their normal state, also having a substantially cylindrical-shaped head with a shoulder back of it, and the loose holding-ring *i* adapted to fit over said drill-head to hold it in a contracted condition until pushed back therefrom, substantially as and for the purpose set forth.

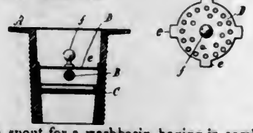
2. In an apparatus for tapping pipes, the combination of valve C, rotary and longitudinally-sliding spindle *e* and sleeve or casing *f* in which said spindle is fitted, with the hollow reamer *c* mounted on the end of spindle *e*; the central split drill *d* also mounted thereon and having the separate parts of its pointed end sprung apart or expanded in their normal state, also having a substantially cylindrical-shaped head with a shoulder back of it, and the loose holding-ring *i* adapted to fit over said drill-head to hold it in a contracted condition until pushed back therefrom, substantially as and for the purpose set forth.

572,787. CORSET. LEWIS A. DOWNS, Chicago, Ill. Filed July 20, 1896. Serial No. 599,855. (No model.)



Claim.—A corset provided with a corded belt or waist-piece, the stay-strips, secured to and connecting said corded belt with the back and front in a horizontal plane, the companion stay-strips curving upwardly and connecting the corded belt with the top of the corset, front and back, and the companion stay-strips, curving downwardly and connecting the corded belt with the bottom of the corset front and back, substantially as described.

572,788. STRAINER FOR DISCHARGE-SPOUTS FOR WASH-BASINS. ALEXANDER DUKE, Brooklyn, N. Y. Filed Jan. 28, 1896. Serial No. 577,193. (No model.)



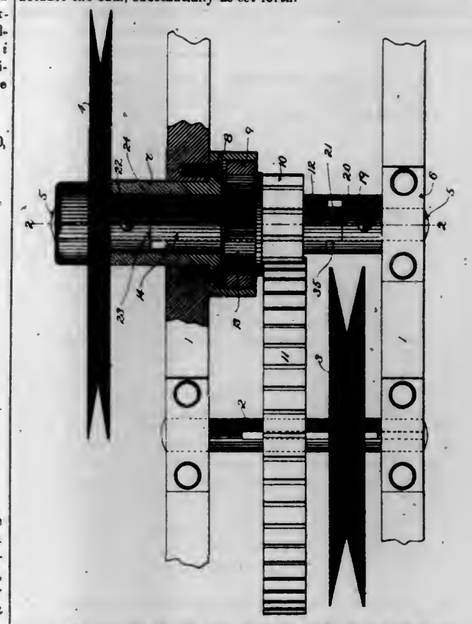
Claim.—A spout for a washbasin having in combination with a cross bar therein a sieve D of perforated material of disk form with lugs *e* in one and the same plane and made integral therewith in such a manner as to impinge against the inner surface of the spout by frictional contact of the offsets *e* and so as to rest on the cross bar when introduced from an upward direction leaving a space between the periphery of the disk and the inner surface of the spout, and provided with a handle *f* to facilitate the introduction and removal of the strainer from the spout, substantially as shown and described.

572,789. BRAKE MECHANISM FOR ELEVATORS. STILLMAN M. FAY, Boston, Mass., assignor to John T. Macdonald, Jr., same place. Filed Mar. 17, 1896. Serial No. 583,501. (No model.)

Claim.—1. The combination in a brake mechanism with the shaft upon which said mechanism is mounted, a fixed housing in proximity to said shaft, and a yielding or expansible part intermediate said shaft and said housing and engaging the latter when the brake is set, of a cam intermediate said shaft and said yielding or expansible part for expanding the latter, substantially as described.

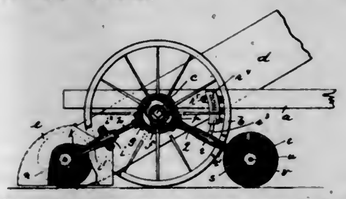
2. The combination with a shaft, of a brake mechanism therefor comprising a fixed part located in proximity thereto, a split ring mounted on said shaft and normally out of engagement with said fixed part, and means for expanding said split ring comprising a cam mounted on said shaft and movable therewith, means to oppose the rotation of said cam, and a block intermediate said split ring and said cam, whereby as the cam is moved relatively to said block the latter will be forced into the opening in said ring and will expand the same into engagement with said fixed part, substantially as set forth.

3. The combination with a shaft, of a brake mechanism therefor comprising a fixed part located in proximity thereto, a split ring mounted upon said shaft and adapted to engage with said fixed part, a dog on said shaft engaging the hub of said ring with lost motion to actuate the ring, a rotatable cam for expanding said ring, and a dog on said shaft engaging the hub of said cam with lost motion to actuate the cam, substantially as set forth.



4. The combination with the actuating-shaft and the operating-wheel for said shaft, of a rotatable cam, means to oppose the movement of the said cam, a fixed brake device, an expanding brake device rotating with said shaft and expanded by the action of the said cam, the lifting-wheel actuated from the said shaft, and devices to rotate the said expanding brake device and cam from the actuating-shaft with lost motion, substantially as described.

572,790. STREET-SWEEPER. ALFRED GARTNER, Newark, N. J., assignor to Plummer S. Page, Scranton, Pa. Filed Apr. 27, 1896. Serial No. 589,195. (No model.)

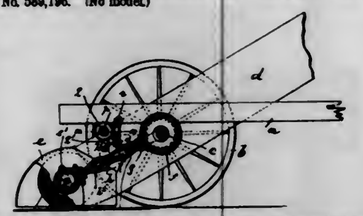


Claim.—1. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator-casing fulcrumed on the axle of the rear wheels, a revolving brush mounted at the lower end of said casing, a link on each side of the casing and fulcrumed on the axle, an auxiliary brush mounted at the lower end of said links and parallel to the revolving brush, means for transmitting the motion from the axle to the revolving brush and to the auxiliary brush, a curved arm projecting from each link, a guide-block secured to the truck and adapted to engage said curved arm, and a spiral spring in said block and bearing against said arm, all said parts, substantially as and for the purposes described.

2. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator casing fulcrumed on the axle of the rear wheels, a bracket-plate secured on each side of the casing, the revolving brush carried by said bracket-plates and arranged at the lower end of the casing, a link on each side of the casing and also fulcrumed on the axle and arranged at an obtuse angle to the casing, an auxiliary brush carried by said links and arranged parallel to the revolving brush and in front of the casing, a curved arm projecting from each

link, a guide-block secured to the truck and adapted to engage said curved arm, a spiral spring in said block and bearing against said arm, a beveled gear mounted on the axle, a beveled pinion meshing into said beveled gear, a shaft supporting said pinion, and having its bearings on the link, a beveled pinion mounted at the lower end of said shaft, a beveled gear meshing into said pinion and mounted on the auxiliary brush-carrying shaft, and means for transmitting the motion from the beveled gear on the axle to the revolving brush, all said parts, substantially as and for the purposes described.

572,791. STREET-SWEEPER. ALFRED GARTNER, Newark, N. J., assignor to Plummer S. Page, Scranton, Pa. Filed Apr. 27, 1896. Serial No. 589,196. (No model.)



Claim.—1. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator-casing fulcrumed on the axle of the rear wheels, a bracket-plate or link also fulcrumed on the axle and on each side of the casing, a revolving brush at the lower end of the elevator-casing and carried by said links, a curved arm or extension projecting from the link and provided with a series of teeth, a shaft traversing the elevator-casing, a gear mounted on said shaft and engaging the teeth on the curved arm, a pawl pivotally secured on the casing and engaging the gear, and means for transmitting the motion of the rear axle to the revolving brush, all said parts, substantially as described.

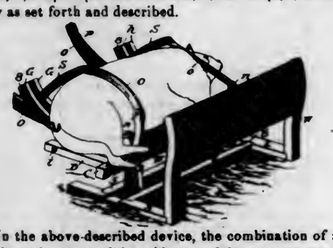
2. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator-casing fulcrumed on the axle of the rear wheels, a bracket plate or link also fulcrumed on the axle and on each side of the casing, a revolving brush at the lower end of the elevator-casing and carried by said links, an arm or extension projecting from the link and provided with an elongated curved slot, a curved guide-block projecting from the casing and engaging said slot, a series of teeth arranged on said curved arm, in an arc parallel to the slot, a shaft traversing the elevator-casing, a gear-wheel mounted on said shaft and engaging the teeth on the arm, a pawl pivotally secured on the elevator-casing and controlling the gear-wheel, and means for transmitting the motion from the rear axle to the revolving brush, all said parts, substantially as and for the purposes described.

3. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator-casing fulcrumed on the axle of the rear wheels, a link also fulcrumed on the axle and on each side of the casing, a revolving brush arranged at the lower end of the casing and carried by said links, a beveled gear mounted on the rear axle, a shaft supported by said links, a beveled pinion at the upper end of said shaft and engaging the beveled gear on the axle, a beveled pinion at the lower end of said shaft, a beveled gear meshing into said beveled pinion and mounted on the revolving brush-carrying shaft, a curved arm projecting from the link and provided with a series of teeth, a shaft traversing the elevator-casing, and a pawl controlled gear mounted on said shaft and engaging the teeth on the curved arm, all said parts, substantially as and for the purposes described.

4. In a street-sweeper, the combination with the truck on wheels, of an inclined elevator-casing fulcrumed on the axle of the rear wheels, a hood arranged on the lower end of said casing and provided at each side with a curved elongated slot, a bracket-plate or link also fulcrumed on the axle of the rear wheels and on each side of the casing, a shaft, carried by said links, arranged at the lower end of the casing and penetrating the elongated curved slots of the hood, a brush mounted on said shaft, a beveled gear also mounted on said shaft, a beveled gear secured on the rear axle, a shaft supported by said link, a beveled pinion at each end of the shaft and engaging the beveled gears on the axle and the revolving-brush-carrying shaft respectively, and means for raising and lowering the links simultaneously and yet independent of the casing, all said parts, substantially as and for the purposes described.

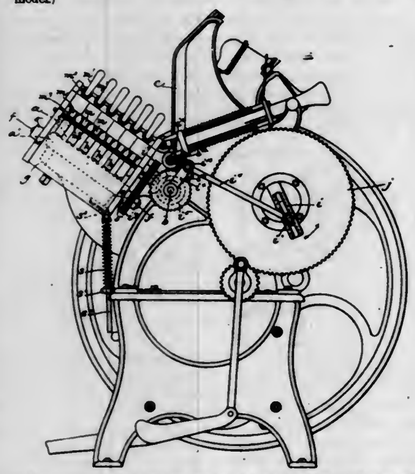
572,792. HOG CATCHING AND LIFTING MACHINE. OLUS GAVES, Estherville, Iowa. Filed May 2, 1896. Serial No. 590,001. (No model.)

Claim.—1. In a hog catching and lifting machine, the combination of a ground frame, pivot-pins rigidly attached to cross-bars of said ground-frame, supports, *a* and *b*, journaled to said pivot-pins, sockets situated in the upper ends of said supports, an operating-frame, said operating-frame hinged in said sockets, and the parallel standards, A and G, containing the holding mechanism, the holding mechanism, the said holding mechanism consisting of curved arms, 1, pivoted within said parallel standards, strips, *o*, pivoted to said arms and strips, S, strips S pivoted to levers, O, and strips, *o*, levers, O, substantially as set forth and described.



2. In the above-described device, the combination of a ground-frame, pivot-pins secured in said ground-frame, supports journaled to said pivot-pins, sockets in the upper ends of said supports, an operating-frame, said operating-frame hinged in said sockets, parallel standards, G and A, containing the holding mechanism, the holding mechanism, said mechanism consisting of curved arms, 1, pivoted within said parallel standards, strips, *o*, pivoted to said arms and strips, S, said strips S pivoted to levers, O, and strips, *o*, levers O, the parallel standard, G, said standard sliding in the groove, *c*, and on the rod, *i*, a lever for raising and lowering the operating-table, substantially as set forth and described.

572,793. STRIP-FEEDING ATTACHMENT FOR PRINTING-PRESSES. GEORGE O. GODDARD, Brockton, Mass., assignor to Fred S. Tolman, same place. Filed Jan. 30, 1896. Serial No. 577,392. (No model.)



Claim.—1. In a printing-press, the combination with an oscillating platen and a rotary driving-shaft, journaled in fixed bearings, of a feed roll or cylinder journaled in bearings which move with the platen, a crank affixed to the driving-shaft, and connecting mechanism intermediate the said feed-cylinder and crank, said mechanism having means for compensating for the varying positions of the platen and feed-cylinder, and for intermittently rotating the feed-cylinder.

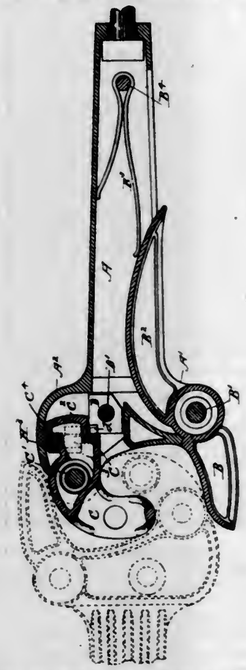
2. In a printing-press, the combination with an oscillating platen and a rotary driving-shaft, of a feed roll or cylinder journaled in bearings which move with the platen, a crank which moves with the driving shaft, a gear mounted to rotate on the center of oscillation of the platen, connections between said gear and the crank, whereby an intermittent rotation is imparted to the gear from the continuously-revolving crank, and connections between the gear and feed-cylinder whereby the intermittent rotation of the gear is transmitted to the feed-cylinder.

3. In a printing-press, the combination with an oscillating platen and a rotary driving-shaft, of a feed roll or cylinder journaled in bearings which move with the platen, a crank which moves with the driving-shaft, a gear mounted to rotate on the center of oscillation of the platen, a ratchet affixed to said gear, an arm mounted to oscillate on said center and provided with a pawl, a rod connecting said arm with the crank, and connections between said gear and the feed-cylinder.

4. In a printing-press, the combination with an oscillating platen and a rotary driving shaft, of a strip-feeding mechanism comprising a feed roll or cylinder journaled in bearings which move with the platen, a crank movable with the driving-shaft, intermediate connections through which the continuous revolution of the crank is converted into an intermittent rotation of the feed-cylinder, said connections including a ratchet and pawl and means for displacing the pawl from its operative position to make said feeding mechanism temporarily inoperative.

5. A printing-press comprising an oscillating platen, a feed-cylinder and coöperating pressure-rolls at one end of the platen, a series of presser-feet at the opposite end of the platen, intermediate guides on the surface of the platen, and means for intermittently rotating the feed-cylinder.

572,794. CAR-COUPLING. JOHN GOETTEL, Boston, Mass. Filed Nov. 15, 1895. Serial No. 569,062. (No model.)

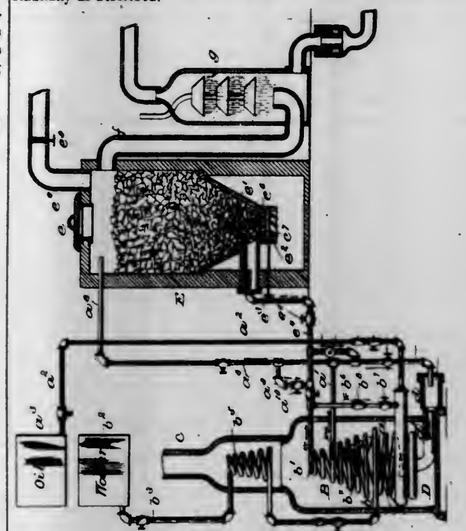


Claim.—In a car-coupling the swinging jaw C having a rearward projection C^3 made with a vertical rabbet C^4 adapted to receive the lock-block D, and the lock-block D, with the bent lever H pivoted at H' and having an overhanging end H^1 adapted to engage with the lock-block D substantially as and for the purpose set forth.

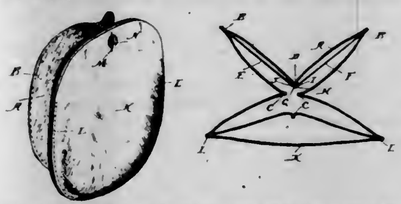
572,795. APPARATUS FOR MANUFACTURING GAS. GEORGE H. GREGORY, Somerville, Mass. Filed Oct. 11, 1893. Serial No. 487,874. (No model.)

Claim.—1. In an apparatus for the manufacture of gas, a gas-conduit through which a hydrocarbon is passed; a water-conduit through which water is passed to generate steam; a gas-burner for and to heat said conduits, and supplied with gas from the said gas-conduit; an air-mixing device between said gas conduit and burner whereby air and gas pass to the burner together; connections between the outlet of said steam conduit and the inlet of said gas-conduit; a cupola containing carbon through which gas from the gas-conduit is caused to pass; a steam jet device to supply steam to said cupola; connections between the gas-conduit and said steam-jet device whereby gas or steam or both may be injected toward said carbon from said jet device; and valves for and to regulate the flow of gas and steam to their several connections, substantially as described.

2. In an apparatus for the manufacture of gas, a gas-conduit, through which a hydrocarbon is passed; and an outlet-pipe from said conduit; a water-conduit through which water is passed to generate steam; a gas-burner for and to heat the said conduits and supplied with gas from the first-named or gas-conduit; an air and gas mixing device between said gas conduit and burner, whereby air and gas pass to the burner together; a cupola containing carbon; a steam-jet device connected with said gas-conduit to supply steam and gas to the said cupola, the steam so supplied being decomposed by the incandescent carbon; and connections between the said cupola and the outlet-pipe for the gas-conduit whereby the decomposed elements of the steam, together with gases arising from the incandescent carbon may be mixed with the gas issuing from the said gas-conduit, substantially as described.



572,796. COMBINED PUZZLE PURSE AND RECEPTACLE. WILLIAM GROSS, Philadelphia, Pa. Filed May 29, 1896. Serial No. 593,661. (No model.)



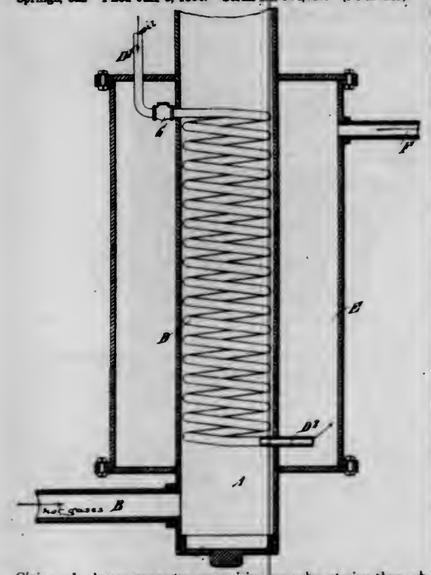
Claim.—1. In a device of the character described, a purse formed of a number of sections of suitable material having a single straight edge and curved edge, the curved edges of each pair of sections being stitched together, the straight edge of one pair stitched to the straight edge of the adjacent pair leaving the last two straight edges unstitched, cords threaded through the last two straight edges and knotted, said edges being turned inward, said cords extending alternately from the adjacent curved edges and a receptacle formed with the first-named sections by a section provided with a flap, as and for the purpose described.

2. The herein-described combination of a number of sections having certain of their edges stitched together, the edges G and H, turned inward, the cords E and F, passing through said edges having knots I and J, formed thereon respectively, the opposite end of said cords being secured to the outer edges of the sections, whereby the edges G and H, may be drawn apart or closed, and a receptacle formed with the first-named sections, by a section K, being secured thereto, said section K, provided with a flap M, adapted to be closed or opened, substantially as and for the purposes set forth.

3. In a device of the character described, a purse formed of a number of sections of suitable material having a single straight edge and a curved edge, the curved edges of a pair of sections being stitched together and the straight edges of each pair being stitched to the straight edges of the adjacent pair leaving the last two edges unfastened, cords threaded through the unturned edges of the last two straight edges and knotted, said cords extending alternately

from the adjacent curved edges and a receptacle formed with said purse by a section having the outline of two of the sections after being stitched together, the outer edges of said section being stitched to the edges of two adjacent sections and having one end unstitched leaving a flap adapted to be secured to the sections by any suitable means as and for the purpose described.

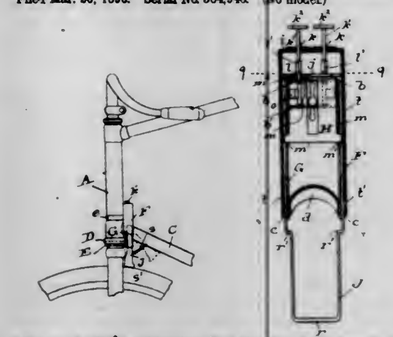
572,797. GAS-GENERATOR. JESSE R. HATHAWAY, Santa Fé Springs, Cal. Filed Jan. 3, 1896. Serial No. 574,719. (No model.)



Claim.—1. A gas-generator comprising an exhaust-pipe through which pass the hot products of combustion from a gas-engine, a coil of pipe arranged in said exhaust-pipe and connected at one end with an oil-supply and adapted to discharge at its other end the generated gas, a gas-reservoir surrounding the exhaust-pipe and into which discharges the gas-discharge end of said coil of pipe, and a safety-valve arranged in the upper end of said coil of pipe and opening into said reservoir, as set forth.

2. A gas-generator, comprising an exhaust-pipe through which pass the hot products of combustion from a gas-engine, a coil of pipe arranged in said exhaust-pipe and connected at one end with an oil-supply and adapted to discharge at its other end the generated gas, a gas-reservoir surrounding the exhaust-pipe and into which discharges the gas-discharge end of said coil of pipe, a removable cap for said exhaust-pipe to permit of introducing a flame or burning fuel therein to heat said coil of pipe, and a safety-valve arranged on the upper end of said coil of pipe, substantially as shown and described.

572,798. BICYCLE-LOCK. JUSTUS W. HELLWIG, Baltimore, Md. Filed Mar. 26, 1896. Serial No. 584,940. (No model.)



Claim.—1. The combination, in a bicycle, of the front tube and swell-flange the latter having a slot; the swiveled post in said tube and the collar on the post below said flange, and said collar also having a slot; a case secured to the front tube; a vertically-moving bolt sliding in said case and when down engaging the slots in both the swell-flange and collar and preventing the post from swiveling; and a key to move said bolt, substantially as and for the purpose set forth.

2. The combination in a bicycle, of the front tube of the frame; the lower front bar of the frame; the swiveled post in said tube; a lock device having two connected parallel locking members each of which move on opposite sides of said lower front bar and when down engage both the said front tube and said post, and thereby prevent the post from swiveling; a double detent to engage both locking members and hold them immovable in either the up or down position; a revoluble stem in the case which must be first set in a predetermined position before the locking members can be moved; and a key to move said locking members.

3. The combination in a bicycle, of the front tube of the frame; the lower front bar of the frame; the swiveled post in said tube; and a lock device having two parallel members each of which move on opposite sides of said lower front bar and engage both the said front tube and said post, and thereby prevent the post from swiveling.

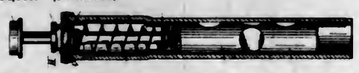
4. In a bicycle, the combination of the front tube of the frame; the post which swivels in said tube; a lock device which in a certain position engages both of said parts to prevent the post from swiveling; and a device coacting with said lock device to prevent the front wheel from revolving.

5. In a bicycle, the combination of the front tube of the frame; the post which swivels in said tube; a lock device having two parallel members and vertically movable and engaging both the front tube and said post; and a tire-presser coacting with said lock device.

6. In a bicycle, the combination of the front tube of the frame; the post which swivels in said tube; a lock device having two parallel members and vertically movable and engaging both the front tube and said post; and a tire-presser having two arms each provided with a shoulder, *r'*, and said arms pivoted to the two parallel members of the lock device and having a limited independent movement at the said pivot connection.

7. A bicycle-lock device having in combination two vertically-movable bolts, and a rectangular case made in two parts, F, F', each part carrying two opposite walls and said parts sliding together endwise, one of said parts having a concave bottom, *d*, and at each lower part of said bottom a slot, *e*, through which the said bolts project.

572,799. DISTENTION-VALVE FOR MUSICAL INSTRUMENTS. HIRAM F. HENRY, Cleveland, Ohio. Filed Mar. 25, 1896. Serial No. 584,863. (No model.)



Claim.—1. A valve for musical instruments, comprising a casing, a valve fitted to slide therein and provided with a valve-stem, and a spring having its lower end connected with the valve and resting with its other end on an outwardly-facing shoulder or bearing on the casing, substantially as shown and described.

2. A valve for musical instruments, comprising a casing provided at its outer end with an enlarged bore forming an upwardly-facing shoulder, a valve fitted to slide in said casing and provided with a stem extending to the outside thereof, a coiled spring tapering toward one end and having its larger end in engagement with said shoulder while the inner end of the spring is secured to the valve, substantially as described.

3. In a musical instrument, substantially as described, the combination of the barrel or valve-casing, the valve fitted therein and having the stem, and the coil-spring encircling the valve-stem, said spring being connected at its lower end with the valve and having at its upper end an approximately-circular bearing concentric with the valve whereby as the valve is depressed the spring will be distended and the spring being arranged concentric with the valve whereby to overcome the crowding over of the valve against one side of the casing, substantially as shown and described.

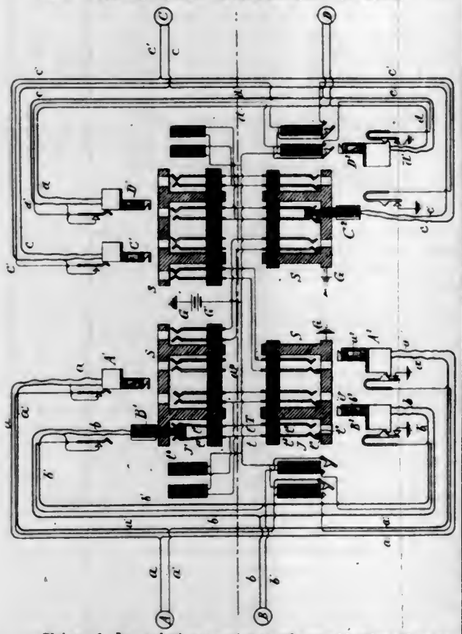
572,800. SCREW-DRIVER. HIRAM F. HENRY, Cleveland, Ohio. Filed Mar. 25, 1896. Serial No. 584,864. (No model.)

Claim.—1. The tool herein described consisting of the handle having at its lower end a central downwardly-projected spindle, having at its inner or upper end an annular enlargement and an annular recess surrounding such enlargement and having surrounding such recess a flange having the series of teeth, the tool-shank having in its upper end a socket to receive the spindle of the handle, having a flange surrounding the upper end of such socket and inclosing an annular recess separated from the socket and coincident with the recess in the lower end of the handle, said flange having a series of teeth in position for engagement by those of the handle, the spring fitted at its opposite ends in the recesses in the handle and tool-shank and devices connecting the handle and shank, substantially as shown and described.



2. The tool herein described consisting of the handle having at its lower end a central downwardly-projected spindle having at its inner or upper end an annular enlargement and an annular recess surrounding such enlargement and having surrounding such recess a flange having the series of teeth, the tool-shank having in its upper end a socket to receive the spindle of the handle, having a flange surrounding the upper end of such socket and inclosing an annular recess separated from the socket and coincident with the recess in the lower end of the handle, said flange having a series of teeth in position for engagement by those of the handle, the spring fitted at its opposite ends in the recesses in the handle and tool-shank and the tool-shank having an enlarged portion surrounding its upper end, and the cap held to the handle and having an inwardly-extending flange fitting below such enlargement of the tool-shank, all substantially as shown and described.

572,801. TELEPHONE-EXCHANGE. MYRON F. HILL, Cambridge, Mass. Filed July 16, 1895. Serial No. 556,118. (No model.)



Claim.—1. In a telephone-exchange, the combination of an answering division, a distributing division, and line-circuits each connected to two plugs, one plug at each division.

2. In a telephone-exchange, the combination of an answering division, a distributing division, and line-circuits each connected to two plugs, one plug at each division, and circuit-connecting apparatus between said divisions.

3. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to two plugs, one plug at each division, circuit-connecting apparatus between said divisions, and call-receiving devices at said answering division for said line-circuits.

4. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to two plugs, one plug at each division, and call generators or devices at said distributing division adapted to signal over said line-circuits.

5. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits, each connected to two plugs, one plug at each division, circuit-connecting apparatus between said divisions, and an operator's telephone at said answering division adapted to be connected to said line-circuits.

6. In a telephone-exchange, in combination two divisions of boards, an answering division, and a distributing division, line-circuits each connected to a plug at one division and another switching device at the other division, and circuit-connecting apparatus between said divisions.

7. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to a plug at the answering division and to another switching device at the distributing division, and circuit-connecting apparatus between said divisions for interconnecting said line circuits.

8. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to a plug at the distributing division and to another switching device at the answering division, and circuit-connecting apparatus between said divisions.

9. In a telephone-exchange, the combination of an answering division, a distributing divison, line-circuits, each connected to two plugs, one at each division interconnecting or trunk-line circuits between said divisions for interconnecting said line-circuits, and annunciators for said line-circuits at said answering division.

10. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to a plug at the distributing division and another switching device at the answering division, call-receiving devices at the answering division for said line circuits, and interconnecting circuits or trunks between said divisions, terminating at each division in spring jacks or plug-sockets, and a signaling device for each trunk at the distributing division.

11. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to a plug at each division, trunk-line circuits between said divisions for interconnecting said line-circuits, and automatic disconnectors at each division to disconnect trunk terminals and line-plugs at the will of a subscriber.

12. In a telephone-exchange, the combination of an answering division, a distributing division, line-circuits each connected to a plug at each division, trunk-lines between said divisions for interconnecting said plugs terminating at each division in spring-jacks or plug-sockets, and automatic ejectors at each jack for ejecting said plugs therefrom at the will of a subscriber.

13. In a telephone-exchange, in combination, an answering division, a distributing division, line circuits each connected to a plug at said answering division and to another switching device at the other division, a call receiving device for each line-circuit at said answering division, and an automatic restoring device for said call device operated by the act of taking up the line-plug for use.

14. In a telephone-exchange, in combination, an answering division, a distributing division, line-circuits each connected to a plug at the distributing division and to another switching device at said answering division, call receiving devices, one for each line-circuit at the answering division, and switching devices at said distributing division for rendering said call-receiving devices inoperative while the line-circuits are in use at the distributing division.

15. In a telephone-exchange, in combination, an answering division, a distributing division, line-circuits each connected to a plug at said distributing division and to another switching device at said answering division, interconnecting circuits between said divisions, call-receiving devices at said answering division for said line-circuits, circuit-changing apparatus at said distributing division operated automatically by the act of taking up a plug for switching purposes to render said call apparatus irresponsive to a subscriber's call.

16. In a telephone-exchange, in combination, an answering division, a distributing division, line-circuits each connected to a switching device at each division, trunk-circuits between said divisions, call-annunciators at said answering division for said line-circuits at said answering division, a substation-telephone and call set in each of said line-circuits, each set including a switch-lever in a local circuit insulated from the main-line circuit, a transmitter and battery in said local circuit, and call and telephone apparatus in main-line branches connected to insulated contacts on said lever, said circuits

being opened and closed by the switching movements of said lever, and call-sending apparatus at the distributing division for operating said call apparatus at the substation set.

17. In a telephone-exchange, an answering division of boards divided into sections, a distributing division of boards also divided into sections, a different group of substation-lines connected to terminals at each distributing-section, the substation-lines at said distributing division being also connected to terminals, one for each line, at said answering division, connecting-circuits between each section of one division and each section of the other division, calling apparatus at said distributing division for signaling to substations, operator's telephone sets at each section of each division adapted to be interconnected for orders, and plug-and-cord connecting apparatus for connecting said substation-lines with said connecting-circuits.

18. In a telephone-exchange, an answering division of boards divided into sections, a distributing division of boards also divided into sections, a different group of substation-lines connected to terminals at each distributing-section, the substation-lines at said distributing division being also connected to terminals, one for each line, at said answering division, connecting-circuits between each section of one division and each section of the other division, and automatic disconnecting and restoring apparatus for said terminals, operated from substations.

19. In a telephone-exchange, a substation including transmitter, receiver, and bells, a switch for the transfer of circuits from telephone to signaling apparatus, a line-circuit, a switch device at central for switching said line for use, a call-annunciator at central for said line-circuit in circuit with an operating device at said substation, a retaining-circuit closed by the operation of said annunciator while indicating a call, and a circuit-breaker in said retaining-circuit under the control of an operator for opening said retaining-circuit for the purpose of restoring said indicator.

20. In a telephone-exchange, a substation including transmitter, receiver, and bells, a switch for the transfer of circuits from telephone to signaling apparatus, a line-circuit having a switching device at central, a call-indicator at central for said line-circuit in circuit with an operating device at said substation, a retaining-circuit for said call-indicator closed automatically by the operation of said indicator, and a circuit breaker in said retaining-circuit for opening said retaining-circuit by the act of switching said line-circuit for use at central.

21. In a metallic-circuit telephone-exchange, an answering division divided into answering-sections, a distributing division divided into distributing-sections; metallic line-circuits, each provided with two switching-terminals, one terminal at each division, the terminals at the answering division distributed among the answering-sections, and the terminals at the distributing division distributed among the distributing-sections, local connecting-circuits or trunk-lines extending from each answering-section to all the distributing-sections; whereby the number of sections in each division may be indefinitely increased.

22. The combination in a divisional exchange, line-circuits having terminal devices at each division, a trunk conductor extending between two divisions, a signal located at one terminal of said trunk conductor, a circuit including said signal and an electric generator normally closed at the other terminal of the trunk conductor, and a circuit-breaker at the latter terminal operated automatically by the act of making connection thereat, so that said circuit is opened and remains open as long as said trunk is connected thereto.

23. In combination, a divisional exchange, line circuits having terminal switching devices at each division, a trunk conductor extending between two divisions, a signal located at one terminal of said trunk conductors, a circuit including said signal and a source of electric current normally closed at the other terminal of the trunk conductor, and a circuit-breaker at the latter terminal operated automatically by the act of making connection thereat, so that said circuit is opened when said connection is made.

24. In combination, a divisional switchboard, a distributing division, an answering division, operators' sections on each division, groups of metallic circuits, one group connected to switching-terminals on each section of the distributing-board, the two limbs of each metallic circuit connected to two metallic switching-contacts respectively at its section on the distributing division, switching-terminals for said metallic circuits at said answering division, said terminals being partitioned among said answering-sections, each terminal comprising two metallic contacts connected to the two limbs of its metallic circuit respectively, and trunk-lines between each answering-section and each distributing-section, whereby any line calling at an answering-section may by means of the proper trunk-line secure connection to the desired subscriber at some one section on the distributing division.

25. In a divisional exchange, a distributing division, an answering division, line circuits connected to switching devices at both divisions, trunk-circuits extending between said divisions, and a combined busy-test and subscriber's call at said distributing-board.

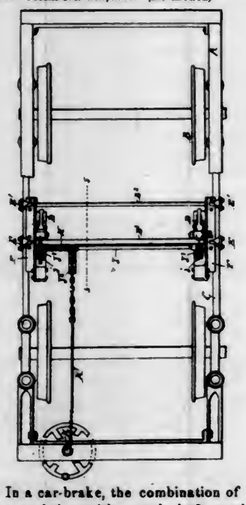
26. In a divisional exchange, a distributing division, an answering division, line-circuits each connected to a switching device at each division, trunk conductors extending between said divisions for connecting a circuit at one division with a circuit at the other division, a common source of current at central, call-receiving devices, one for each line-circuit at the answering division, said call-receiving devices adapted to be operated by said source of current at the will of a subscriber.

27. In a switchboard, a plug, a flexible two conductor set of cords, extensible springs in circuit therewith and so connected thereto as to exert a pull on said plug, and one or more tubes insulated from each other, and adapted to act as a guide for said springs and cords.

28. In a switchboard, a metallic face, studs or posts integrally formed therewith, blocks of insulating material mounted on said posts, contact-springs mounted on said blocks and plugs adapted to pass through said switchboard to make contact with said springs, said plugs have sunken contact-pieces adapted to escape connection with said switchboard.

29. In combination a switchboard having a metallic body, a ground connection therefor, contact-springs, one adapted to be grounded, said grounded contact-spring being normally connected to said metallic switchboard for its ground connection, and adapted to be disconnected from said switchboard upon the insertion of a plug.

572,802. CAR-BRAKE. SOLON G. HOWE, Detroit, Mich. Filed Apr. 11, 1896. Serial No. 587,083. (No model.)



Claim.—1. In a car-brake, the combination of a brake-shoe, a knuckle-lever engaged therewith, a rock-shaft provided with an eccentric, and a flexible connection connecting the outer end of said eccentric with said lever, substantially as and for the purpose described.

2. In a car brake, the combination of a brake-shoe, a knuckle-lever, a rock-shaft provided with a lever-arm J^2 and with eccentrics J', flexible connections connecting the outer portions of said eccentrics with said lever, and means connected with said lever-arm to actuate the rock-shaft, said flexible connections riding upon the upper edge of the corresponding eccentric adjacent thereto in the application of the brake, substantially as and for the purpose described.

3. In a car-brake, the combination of a brake-shoe, a knuckle-lever having one of its arms adjustable, and a rock-shaft to actuate said lever, substantially as and for the purpose described.

4. In a car-brake, the combination of a brake-shoe, a knuckle-lever connected therewith and with the frame of the car-truck, a drag-bar connected with said frame and with the brake shoe, means to actuate the knuckle-lever, and a lifting device to retract the shoe, said drag-bar and knuckle-lever connected with said shoe on opposite sides of the longitudinal center of the shoe, and said lifting device connected with the shoe intermediate the drag-bar and knuckle-lever, substantially as and for the purpose described.

5. In a car-brake, the combination of a brake-shoe, a knuckle-lever to actuate the brake-shoe, a rock-shaft provided with an eccentric, a flexible connection connecting the outer portion of the eccentric with the knuckle-lever, a lever-arm J^2 connected with said rock-shaft, and means connected with the outer end of said lever-arm to actuate the rock-shaft, said arm J^2 arranged to bring the pulling strain on the knuckle-lever at essentially right angles to the longest diameter of the eccentric in applying the brake, substantially as and for the purpose described.

6. In a car-brake, the combination of a brake-shoe, a knuckle-lever to actuate the brake-shoe, means to actuate the knuckle-lever, said knuckle-lever adapted to have a lateral movement, substantially as and for the purpose described.

7. In a car-brake, the combination of a brake-shoe, a knuckle-lever to actuate the shoe, and means to keep the knuckle-lever in a perpendicular position when suspended over the track, and to allow said lever to yield when riding upon a curve or switch, substantially as and for the purpose described.

8. In a car-brake, the combination of a brake-shoe, a knuckle to actuate the shoe, a support for the upper end of the lever, a hinge-case at the upper and lower joints of said lever, and springs within said case bearing on the side of the adjacent arms of said lever, substantially as and for the purpose described.

9. In a car-brake, a brake-shoe constructed with a shoe-holder case, and a shoe-holder plate, said case being detachably connected by an oscillatory engagement with said plate, substantially as and for the purpose described.

10. In a car-brake, the combination of a brake-shoe, and a knuckle-lever to actuate the shoe, said brake-shoe constructed with a shoe-holding plate, with which the knuckle-lever has a jointed connection, and with a shoe-holder case, said case being detachably connected by an oscillatory engagement with said plate, substantially as and for the purpose described.

11. In a car-brake, a brake-shoe constructed with a shoe-holder case, a shoe-holding plate, a removable and adjustable heel-cap, and with a removable toe-cap, substantially as and for the purpose described.

12. In a car-brake, a brake-shoe constructed with a shoe-holder case, a shoe-holder plate, and with toe and heel caps, said toe-cap constructed with a depending flange to fit into the groove of the rail, substantially as set forth.

13. A brake-shoe having in combination a shoe-holding case, blocks engaged in said case, and a shoe-holding plate, said case having an oscillatory engagement with said plate, substantially as and for the purpose described.

14. In a brake-shoe, the combination of a shoe-holding plate, a shoe-holder case, having an oscillatory engagement therewith, a heel-cap and a spring-latch engaging the heel-cap with said plate, substantially as and for the purpose described.

572,803. DEVICE FOR INSPECTING BOTTOMS OF STREAMS, &c. EDWARD L. HUBBARD, Baltimore, Md. Filed May 1, 1896. Serial No. 589,859. (No model.)



Claim.—A metallic tube heavy at the bottom, and closed with plate-glass, a second tube C, attached to the said main tube A, one side thereof extending below the said main tube, a glass plate situated in the lower, inclined end of the said tube C, a lamp E situated in the bottom of said tube C, an air-tube F for supplying air to the said lamp, means for attaching said device to the bow of a boat or other vessel, substantially as set forth.

572,804. DEVICE FOR OPERATING SHUTTERS. ROBERT H. IRELAND, New York, N. Y. Filed Feb. 18, 1896. Serial No. 579,744. (No model.)

Claim.—1. The combination of the shutter, a link pivoted at one end to said shutter, two links both pivotally connected at one end with the said first link and a rod along which the opposite ends of said two links slide, substantially as set forth.

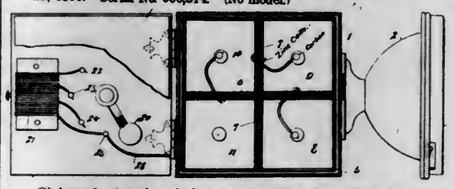
2. The combination of a shutter, grating or the like, a bar extending across the space closed by the shutter, grating or the like, two sleeves mounted to slide on the bar, links of different lengths each connected at one end to one of the sleeves, both such links being coupled at their other ends to the same shutter, and means for holding the sleeves against movement on the bar, substantially as set forth.

3. The combination of a shutter, grating or the like, a bar extending across the opening closed by the shutter, grating or the like, sleeves on the bar, a link coupled at one end to the shutter, links of different lengths each coupled at one end to the front end of the first-mentioned link and at its other end to one of the sleeves, and means for holding the sleeves against movement, substantially as set forth.

4. The combination of a shutter, grating or the like, a bar extending across the opening closed by the shutter, grating or the like, sleeves mounted to slide on the bar, pivotally-connected links coupled to the sleeves and connected with the shutter, a projection on one of the sleeves, and a hook carried by the shutter arranged to engage said projection, substantially as set forth.



572,805. ELECTRIC LAMP. LOUIS A. JACKSON, New York, N. Y., assignor to the Acme Electric Lamp Company, same place. Filed July 25, 1896. Serial No. 600,514. (No model.)



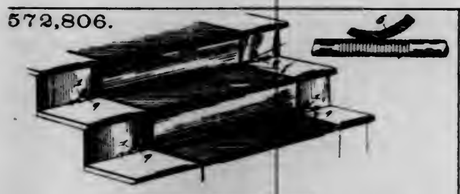
Claim.—1. An electric lamp, comprising a metal casing, an incandescent lamp supported thereon, a battery comprising a series of cells within the casing, the shell of each cell forming a battery element, a cover for the casing, a rheostat supported by said cover, and having electrical connection through the casing with the lamp filament, a contact between said lamp-filament and one of the cell-shells, and means for closing the circuit between the rheostat and battery, substantially as specified.

2. An electric lamp, comprising a metal casing having an opening in its front, a reflector attached to said front and having a lamp-socket, an incandescent lamp removably mounted in said socket, a battery container or box of insulating material removably placed in the casing, and comprising a battery-cell arranged in each chamber, each cell comprising a carbon element and a zinc element, the said zinc element forming the shell for the cell, one of said shells having a portion exposed at an opening formed in the container or box, whereby the same may be engaged by a contact on the incandescent lamp, a cover of insulating material for the casing, a rheostat arranged on the inner side thereof and having electrical connection with the metal casing, contact-pins having engagement with the rheostat and extended through the cover, a switch-arm mounted to rotate on said cover, and a spring-yielding finger on the inner side of the cover in electrical connection with the switch-arm and adapted for engagement with a battery element, substantially as specified.

572,806. CARPET-HOLDER. MICHAEL J. KENOK, St. Louis, Mo., assignor of one-half to James P. Farrell, same place. Filed June 1, 1896. Serial No. 593,819. (No model.)

Claim.—In a carpet-holder, a rod having a ratchet-faced portion and an eccentric having a ratchet-face designed to engage the ratchet-faced portion of said rod, substantially as specified.

572,806.



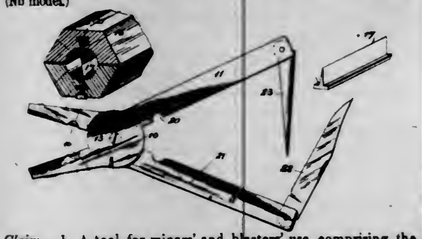
572,807. WAGON-AXLE. CONRAD J. KILIAN, Milwaukee, Wis., assignor to the United States Axle and Skein Company, same place. Filed July 19, 1895. Serial No. 556,494. (No model.)



Claim.—1. In a wagon-axle the combination with a metallic body having a tapering spindle and a squared portion next to said spindle, of a sleeve or skein having a tapering bore corresponding with but a little larger than said spindle, and a squared recess or seat in the larger end of said bore, adapted to engage the corners of the squared portion of the axle-body, and a bushing of pliable material such as paper adapted to fill the space between the skein and spindle and to produce a tight fit between them, substantially as and for the purposes set forth.

2. The combination of a square metallic axle-body having a conical spindle equal in diameter at its larger end to a side of the square body, of a metallic sleeve or skein having a tapering hole corresponding in shape with but a little larger than said spindle, and seats or squared recesses in the larger end of said hole fitted to engage with the corners of the axle-body, and to prevent the skein from turning thereon, and corresponding with the corners of a square circumscribing the greatest circumference of said spindle, but being wholly outside of the greatest circumference of the hole in said skein, and a bushing of paper or analogous material which is rendered pliable and durable by treatment with suitable material such as oil or white lead, adapted to fill the space between said skein and spindle and thus produce a tight fit and prevent rattling and wear, substantially as and for the purposes set forth.

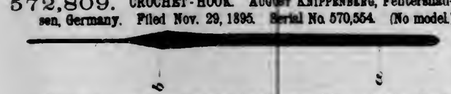
572,808. TOOL FOR MINERS' AND BLASTERS' USE. MARTIN KILLIAN, Central City, Colo. Filed Aug. 11, 1896. Serial No. 602,407. (No model.)



Claim.—1. A tool for miners' and blasters' use, comprising the pivoted jaws and handles, the jaws being provided with longitudinal grooves in their meeting faces and knives secured to said jaws and having their cutting edges in the same plane as the meeting faces of the jaws, whereby said edges contact when the jaws are closed, the jaws being further provided with transverse recesses or openings across which the knives extend, as and for the purpose set forth.

2. A tool for miners' and blasters' use, comprising the pivotally-connected handles provided with serrated recesses 20 and pivoted knife-blade and punch, and the jaws having longitudinal grooves in their meeting faces and the T-slots opening into said grooves and arranged to receive T-shaped knives which extend into the grooves and have their cutting edges in the same plane as the meeting faces of the jaws and the transverse recesses or openings in such meeting faces over which the knives extend and have their cutting edges contacting at the open portion made by the recesses, as set forth.

572,809. CROCHET-HOOK. AUGUST KNIPPENBERG, Fehtershausen, Germany. Filed Nov. 29, 1895. Serial No. 570,564. (No model.)



Claim.—1. An integral crochet-hook, comprising a shank, a hook at the end thereof, and a flattened portion *b* therein, as and for the purpose described.

2. An article of manufacture, comprising an integral crochet-hook of wire having a hook, a shank, and a flattened portion *b* in the said shank.

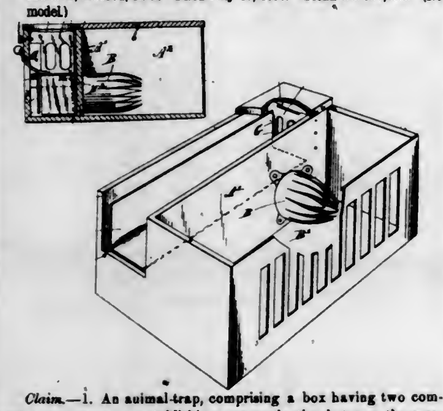
572,810. WEATHER-STRIP. ELI KOCH, Harrisburg, Pa. Filed Sept. 18, 1896. Serial No. 606,293. (No model.)



Claim.—1. A weather-strip for windows and doors formed of a single piece, one edge provided with a shallow, longitudinal cavity having a bottom circular in cross-section, the other edge of said strip formed with a longitudinal bead, and a plane wall perpendicular to said bead, said strip having a rib between said cavity and said bead, and a plane face formed on said rib at a right angle to the perpendicular wall in the beaded edge of said strip, substantially as shown and described and for purpose specified.

2. A weather-strip having one of its edges formed with a shallow, longitudinal cavity circular in cross-section, the other edge of said strip having a bead formed thereon and a plane wall from the termination of said bead to the outer surface of said strip and perpendicular to said bead, said strip having a rib between said bead and said cavity, a plane face formed on said rib and at a right angle to said perpendicular wall, said strip, when cut into two parts and the opposite edges thereof placed together at right angles to each other, adapted to form a close joint, substantially as shown and described.

572,811. SELF-SETTING ANIMAL-TRAP. FERDINAND E. KRAUTH, Hebron, N. D. Filed July 16, 1896. Serial No. 599,352. (No model.)

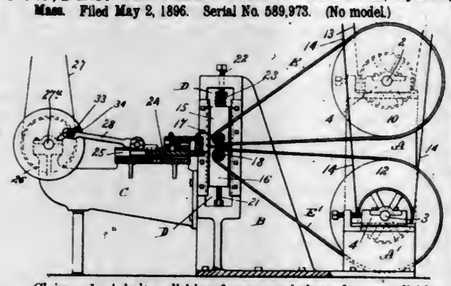


Claim.—1. An animal-trap, comprising a box having two compartments, a passage establishing communication between the compartments near the bottom, a guard at said passage, in one compartment, an L-shaped tilting trap in the other compartment, having a weight to return it to normal position, and a gate pivoted adjacent to the inner end of the trap, to swing in the vertical plane, and having at the front side an integral lug engaging and supporting the trap and at the opposite side an integral feed-box, the gate further having openings at said box, substantially as described.

2. An animal-trap, comprising a box having two compartments, a passage establishing communication between the compartments near the bottom, a guard at said passage, in one compartment, an L-shaped tilting trap in the other compartment, having a weight to return it to normal position, and a gate pivoted adjacent to the inner end of the trap, to swing in the vertical plane, and having at the front side an integral lug engaging and supporting the trap and at the opposite side an integral feed-box, the gate further having openings at said box, and the box having an opening in its end wall at the feed box, substantially as described.

3. An animal-trap, comprising a box having two compartments connected with each other at their lower portions, a trap-door made L shape in cross-section and fulcrumed in one of the said compartments, a feed-gate provided with a bait-receptable, access to which is had by slots in the said gate, the said feed-gate being pivoted at its upper end in the said box and extending downwardly at the end of the said trap-door, the said gate being formed with a lug adapted to engage one end of the lower member of the trap-door to hold the latter in a set position, a set-screw in the said box to engage the upper member of the said trap-door to permit of properly setting the latter relative to the said lug, and a weighted handle on the upper member of the said trap-door, substantially as shown and described.

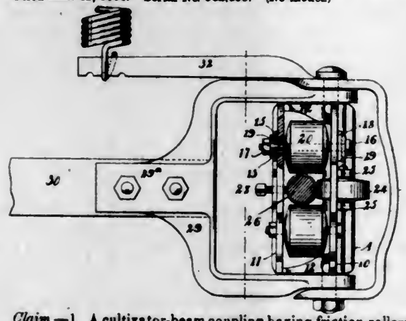
572,812. BELT POLISHING-FRAME. JOHN LONGDEN, Bay State, Mass. Filed May 2, 1896. Serial No. 589,973. (No model.)



Claim.—1. A belt polishing-frame consisting of two polishing-belts one of said belts running on two rigidly-held axes, and the other of said belts running on one fixed and one movable axis, said movable axis and one of said fixed axes being in close proximity to each other, a work-holding table and means for securing a piece of work thereon, and means for imparting a reciprocating movement to said table, toward and from the said two axes lying in proximity to each other, substantially as described.

2. In a belt polishing-frame two oppositely-running belts, each provided with a driving-shaft and a driven arbor which are respectively adjustable in horizontal and vertical directions, said arbors running in close proximity to one another, combined with a work-holding table which has a reciprocatory movement toward and from said last-named arbors, and work-clamping devices on said table, and a connecting-rod engaging with one end of said table and with a slotted crank whereby the degree of movement given to said table may be varied, combined with means for rotating said belts and said slotted crank, substantially as described.

572,813. CULTIVATOR-BEAM COUPLING. GIDEON D. MITCHELL, Newton, Kans., assignor to himself and Albert E. S. Danner, same place. Filed Mar. 12, 1896. Serial No. 582,855. (No model.)



Claim.—1. A cultivator-beam coupling having friction-rollers arranged for engagement with the top and bottom and front of an axle, the coupling being adapted to have free movement on the axle, as and for the purpose specified.

2. In a cultivator-beam coupling, the combination, with the body of the coupling, of friction-rollers located therein and arranged to receive the axle between them, sundry of the said rollers being adjustable, as and for the purpose specified.

3. In a cultivator-beam coupling, the combination, with the body of the coupling, of friction-rollers located therein and arranged to receive an axle between them, sundry of the said rollers being adjustable, and locking devices for the adjustable rollers, as and for the purpose described.

4. In a cultivator-beam coupling, the combination, with the body portion of the same, of friction-rollers located above and below the center and at one side of the coupling, the said rollers being adapted to receive the axle of the cultivator between them, sundry of the said rollers being mounted upon shafts which are passed through elongated openings in the body, the said shafts having a head at one end and a locking-nut at the opposite end, and locking-plates having their opposing faces serrated, located between the heads of the shafts and the body of the coupling, and also between the body of the coupling and the lock-nuts on the shafts, as and for the purpose specified.

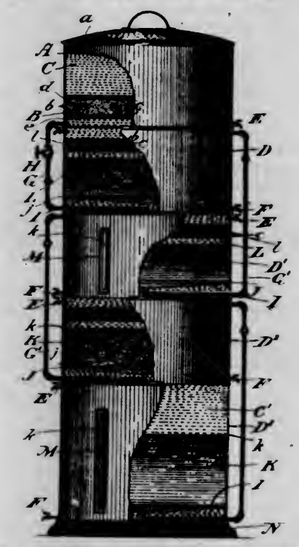
5. In a cultivator-beam coupling, the combination, with a body portion provided with friction-rollers arranged for engagement with the axle, of devices for adjusting the said rollers to and from the axle, and a locking device carried by the body and extending therein at a point between the friction-rollers, being adapted for clamping engagement with an axle, as and for the purpose specified.

6. The combination, with an axle and a sheath loosely mounted thereon, of a beam-coupling through which the axle is passed, the said coupling being provided with friction-rollers for engagement with the axle or its sheath, and a locking device carried by the coupling and adapted for engagement with the said sheath, as and for the purpose set forth.

7. In a cultivator-beam coupling, the combination, with a body portion comprising two side plates having friction-rollers arranged between them to receive an axle between them, of a yoke pivotally connected with the body and adapted for engagement with the cultivator-beams, as and for the purpose specified.

8. In a cultivator-beam coupling, the combination, with a body portion having friction-rollers arranged to receive an axle between them, of a yoke pivotally connected with the said body and adapted for engagement with the cultivator-beams, a draft device likewise pivoted upon the body, independent of the said yoke, and a spring-lever attached to one end portion of the aforesaid draft device, as and for the purpose specified.

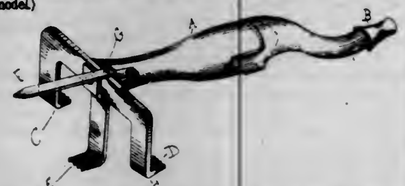
572,814. OIL-FILTER. ALLAN T. MORROW, Hamilton, Canada. Filed Sept. 11, 1895. Serial No. 562,182. (No model.)



Claim.—1. In an oil-reservoir, the combination of an unfiltered-oil reservoir, a series of filtering-chambers superimposed upon each other and adapted to contain both oil and water, each of said chambers being provided with a perforated false bottom extending entirely across it and adapted to separate or break up the oil into small particles, a filter in each of said chambers, oil-pipes on the outside of the chambers arranged to conduct the oil from the unfiltered-oil reservoir to the bottom of the filtering-chamber immediately subjacent, and for conducting the oil from the upper part of each filtering-chamber to the lower part of the next subjacent filtering-chamber and under its perforated false bottom, cocks for withdrawing the oil, and means for regulating the flow of the unfiltered oil, substantially as described.

2. In an oil-filter, the combination with an unfiltered-oil reservoir A, a ledge *c* near the bottom thereof, a sawdust filter B resting on said ledge *c*, filtering-chambers D, D', D² and D³, each provided with a perforated false bottom I, a packing-ring J supporting the packing *j* and charcoal filter L, and an oil-pipe arranged on the outside of the filter to conduct the oil from the oil-reservoir underneath the perforated false bottom of the first filtering-chamber, oil-pipes arranged on the outside in each of the chambers and arranged to conduct the oil from the upper part of each filtering-chamber to the lower part of the next subjacent filtering-chamber and under its false bottom, and a regulating-valve H controlling the oil from the oil-reservoir, substantially as shown and described.

572,815. PAN HOLDER AND LIFTER. HERBERT W. NICHOLS, Marietta, Ga., assignor of two-thirds to Robert N. Holland and Wm. E. Gilbert, same place. Filed July 11, 1896. Serial No. 598,819. (No model.)



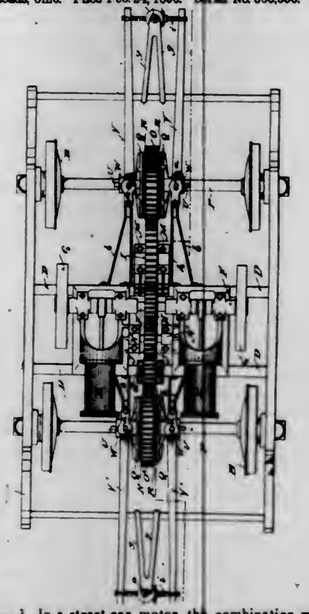
Claim.—A combined pan, plate and stove-lid lifter consisting of the handle A, lifter B, feet C, and E and arm F, substantially as shown and described.

572,816. POWER-TRANSMITTING DEVICE. JOHN S. NICHOLS, Edgerton, Minn. Filed Apr. 28, 1896. Serial No. 589,406. (No model.)



Claim.—A power-transmitting device comprising a pitman having a slot formed in the end thereof, two box-sections arranged within the slot, keys running longitudinally with the box-sections and holding such sections from lateral displacement within the slot, a mounted crank-disk, a wrist-pin fixed to the crank-disk and mounted in the box-sections, a strap passing around the end of the pitman, a nut-bearing confined by the inner side of the strap and located within the slot, a screw having a squared portion, the screw cooperating with the nut and engaging the outer box-section, and a second strap passed over the first strap and held by means independent of the means which hold the first strap, the second strap having a squared orifice receiving the squared portion of the screw so as to lock the same, substantially as described.

572,817. STREET-CAR MOTOR. JACOB M. OLINGER, Vienna Cross-Roads, Ohio. Filed Feb. 24, 1896. Serial No. 580,350. (No model.)



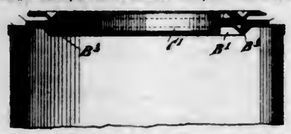
Claim.—1. In a street car motor, the combination with a train of spur-gears receiving motion from the main driving-shaft, one gear of said train of gears being loosely mounted on one of the car-axles, of slidable friction clutches also mounted on said car-axle and adapted to rotate therewith, and having each a hub or extension with a groove extending around the same, a collar fitted in each groove with lugs or projections, a forked lever for each clutch with elongated holes in said forks through which the lugs or projections extend, said levers being pivoted at their inner ends to slide said friction-clutches into and out of engagement with said loosely-mounted spur-gear, and means for operating said levers to positively move them in either horizontal direction, from the car-platform.

2. In a street-car motor, the combination with the platform and the axle, of a spur-gear loosely mounted on the axle, and having a friction-surface on each of its sides, a frictional clutch rotatably and slidingly mounted on the axle, one on each side of said spur gear-wheel, a lever for each friction-clutch extending forward and under the platform, a right and left hand screw-threaded shaft engaging with the forward ends of said levers, a rotatable hand-shaft accessible above the platform and extending below it, a gearing connecting said hand-shaft and said screw-threaded shaft, substantially as shown and described.

3. In a street-car motor, a loosely-mounted spur-gear adapted to engage with one or more frictional clutches, an annular projection on one or both sides of said loosely-mounted spur-gear, a covering of paper or other suitable material adapted to fit over said projection and be fastened to said gear, as shown and described.

4. In a street-car motor, the combination with the car-truck, a gas-engine mounted thereon, a main driving-shaft, driven thereby and having a driving-pinion secured thereto, a loosely-mounted spur-gear, with frictional surfaces on its sides, on each car-axle, intermediate spur-gears of a differential number, between said driving-pinion and said loosely-mounted spur-gears respectively, and in mesh therewith, frictional clutches also mounted on each car-axle and keyed thereto, levers for moving said frictional clutches into and out of frictional contact with the frictional surfaces of said loosely-mounted spur-gears, and means for operating said levers from the car-platforms, as shown and described.

572,818. SHEET-METAL CAN. FRANK H. PALMER, Brooklyn, N. Y. Filed Jan. 28, 1896. Serial No. 577,177. (No model.)



Claim.—1. A can having a centrally-apertured top and having an annular recess concentric to the aperture of the top, the top having an outwardly bent flange, a packing-ring concentric to the aperture of the top, the inner edge of the packing-ring being clamped by the flange and the packing-ring extending over the annular recess, and a cover having a centrally-depressed portion snugly fitting within the aperture of the top, the cover also having an outwardly-extending portion formed with a rib capable of being pressed into the recess in the top and of pushing the packing-ring within said recess, the outwardly-extending portion of the cover being capable of projecting beyond the periphery of the ring, substantially as described.

2. A can having a centrally-apertured top and having an annular recess outward from the aperture of the top, the top having an outwardly-extended flange, a packing-ring, the inner edge of which is held by the flange and the packing-ring extending over the annular recess, and a cover having a centrally-depressed portion fitting within the aperture of the top, the cover also having an outwardly-extending portion formed with a rib capable of being pressed into the recess in the top and of pressing the packing-ring within said recess, substantially as described.

3. A can having an apertured top, a cover having a depressed portion fitting within the aperture of the top, one of said parts having a flange at its edge and a packing-ring, the edge of which is held by the flange, the packing-ring extending horizontally over the top of the can and outward from the aperture therein, the top and cover respectively having an interlocking rib and recess into which the packing-ring is pressed, substantially as described.

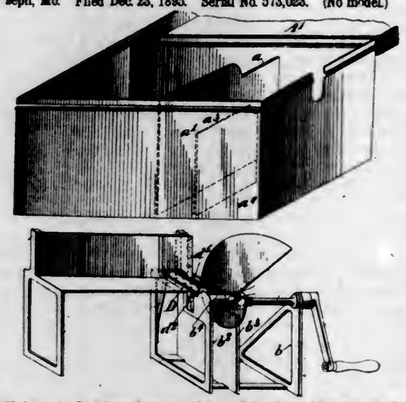
4. A can having an apertured top, a cover fitting over the top, one of said parts having at its edge a flange, and a packing-ring, the edge of which is held by the flange, the cover and top respectively having an interlocking rib and recess into which the packing-ring is pressed, substantially as described.

5. In a can, an apertured top therefor, a cover resting on the top, one of the two last-named elements having a flange, and a packing-ring one edge of which is permanently held by the flange, the cover and top respectively having an interlocking rib and recess into which the packing-ring is pressed, substantially as described.

572,819. PROCESS OF MAKING NITRITES. LEWIS G. PAUL, Huddersfield, England. Filed July 24, 1896. Serial No. 600,336. (No specimens.)

Claim.—The herein-described process for the production of an alkaline nitrite, which consists in melting an alkaline nitrate together with the caustic compound of the same alkali, and adding sulfur to the melt, substantially as specified.

572,820. BREAD BOX AND SLICER. CHARLES PERSON, St. Joseph, Mo. Filed Dec. 23, 1895. Serial No. 573,023. (No model.)



Claim.—1. In a bread-cutter, the combination with a supporting-frame, a rotating shaft mounted in the frame, and a cutter on said shaft; of a feed roller mounted in the frame at right angles to the cutter, and provided with an angular portion, means for imparting a step-by-step motion to the feed-roller, and a spring having one end engaging the angular portion of the feed-roller, substantially as and for the purpose set forth.

2. In a bread-cutter, the combination with a supporting-frame provided with a platform for supporting the bread to be sliced, of a rotary shaft mounted in the frame and provided with a laterally-projecting pin at its inner end, a cutter mounted on the shaft, a feed-roller mounted in the frame at the end of the platform and at right angles to the cutter-shaft and provided with an angular portion and radial fingers adapted to be engaged by the pin of the cutter-shaft, and a spring engaging the angular portion of the roller to stop it at the end of each step in its rotation, substantially as described.

3. In a bread-cutter, the combination with a supporting-frame provided with a platform for supporting the bread to be sliced, said platform being provided with an adjustable back, of a rotary shaft mounted in the frame and provided with a laterally-projecting pin, a cutter on the said shaft, a feed-roller having projecting points and mounted in the frame at the end of the platform and at right angles to the cutter-shaft, said roller having an angular portion at one end and provided at the other end with radial fingers adapted to be engaged by the pin of the cutter-shaft, and a spring secured to the frame and having its free end resting against the angular portion of the feed-roller, substantially as described.

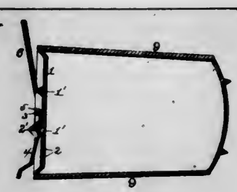
4. In a bread-cutter, the combination with a supporting-frame having a platform, of a rotary cutter mounted in the frame, a feed-roller at right angles to the cutter and at the end of the platform, means for imparting step-by-step movement to the feed-roller, a rest-bar between the cutter and feed-roller and provided with an upright at one end, a back guide having one end secured to an upright of the frame and screws connecting the other end of the guide to the upright of the rest-bar, substantially as described.

5. The combination with the bread-cutter, comprising a plurality of uprights one of which is solid, a platform, a rotary cutter, and a feed-roller, of a box for receiving the cutter, said box having a partition extending entirely across the same, and a second partition extending partially across the box, said second partition registering with the solid upright of the frame to form a complete partition when the cutter is in the box and forming a compartment for the sliced bread, substantially as described.

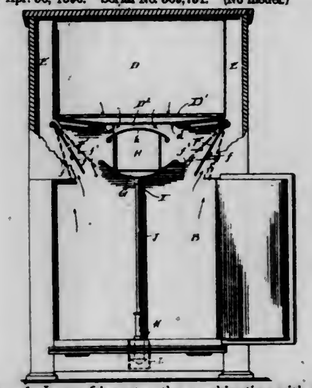
572,821. KETTLE BAIL AND COVER. CHARLES PETERSON, Omer, Mich., assignor of one-half to Angus McDonell, same place. Filed Mar. 30, 1896. Serial No. 585,490. (No model.)

Claim.—The cover, having the raised ring 1' around its center, and the rod 3 passed through the ring to form a part of the hinge, combined with the supplemental part 4, having its inner end formed into a hook to catch under the rod, and provided with a raised ring 2 to catch over the ring 1', and thus prevent the part 4 from becoming accidentally detached, substantially as shown.

572,821.



572,822. REFRIGERATOR. EDWARD L. PHIPPS, Milford, Mich. Filed Apr. 30, 1896. Serial No. 589,731. (No model.)



Claim.—1. In a refrigerator, the combination with the box or case, having the provision-chamber in its lower portion and the cooling-chamber in its upper portion, of the ice-box supported in said cooling-chamber, and having an opening in its bottom, and an air passage or flue at each end, the oblique, pivoted downwardly-extending wings to each side of the said opening, the pivoted points of said wings being adjacent to the lower corners of said box and slightly outside the vertical plane of its ends, whereby they may be adjusted to control either the said end passages or the bottom openings, and the drip pan or trough underneath the said opening, substantially as specified.

2. In a refrigerator, the combination with the refrigerator box or case, having the provision-chamber in its lower portion and the cooling-chamber in its upper portion, an open-top ice-box supported in said cooling-chamber, with an air flue or passage at each end, and a transverse opening in its bottom, a drip-trough supported underneath the said opening, the oblique wings upon each side of said trough, and the water-cooler supported in said trough, and extending through an opening in the front of the case, substantially as specified.

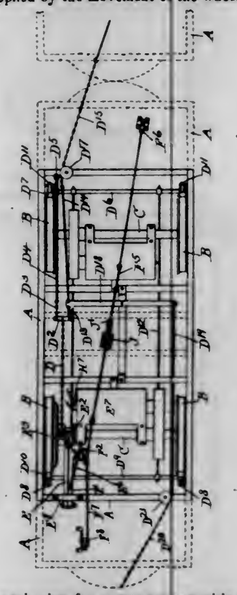
3. In a refrigerator, the combination of the refrigerator box or case, the open-top ice-box supported within the upper portion thereof, its ice-rack and bottom opening, an air passage or flue at each end of the said box, the oblique adjustably-pivoted wings below the said box, the drip-trough underneath the bottom opening of the ice-box and between the said wings, its trapped discharge, and the water-cooler removably supported in said trough, and having its end portion engaging an opening in the front wall of the same case, substantially as specified.

4. In a refrigerator, the combination with an ice-box, having an opening in its bottom, of the trough or drip-pan supported underneath the said opening, and having its edge portions extended beyond the edges of said opening, of a water-cooler supported in said trough, said cooler having its outer end portion seated in an opening in the front wall of the refrigerator box or case, and having also a convex, removable cover, substantially as specified.

572,823. STREET-CAR BRAKE. WILLIAM G. PRICE, Chicago, Ill., assignor of one-half to Menard K. Bowen, same place. Filed June 8, 1896. Serial No. 594,739. (No model.)

Claim.—1. A brake for street-cars or the like comprising a brake-shoe opposed to the car-wheel, a disk in proximity to one of the car-wheels, a projecting hub rigid with said disk and surrounding a sleeve keyed to the axle so that it cannot be moved away from said disk, two levers with bifurcated ends which engage said hub, said levers supported by the car so that they have a relative movement, a screw working in threads in one of said levers and bearing against the other lever, a connection between said screw and an operating-handle, and

an operative connection between said disk and the brake-shoe whereby the brakes are applied by the movement of the wheel.



2. A brake mechanism for street-cars comprising a brake-shoe, a frictioual device opposed to one of the car-wheels and operatively connected with said brake-shoe, a connection between said frictional device and an operating-handle whereby the frictional device may be brought into contact with the wheel, and a brake-releasing device associated with said mechanism and adapted to disconnect the frictional device from the wheel when said wheel ceases to rotate.

3. A brake mechanism for street-cars comprising a brake-shoe opposed to the car-wheel, a movable disk in proximity to one of the car-wheels and provided with a projecting hub, a sleeve connected with the axle of the car and surrounded by said projecting hub, a key contained within a slot partly in the sleeve and partly in the axle, whereby the movement of the sleeve along the axle in one direction is prevented, the sleeve being at the same time connected with the axle, an operating-handle connected with the said disk so as to control its position, and an operative connection between said disk and the brake-shoe whereby the movement of the operating handle applies the brake.

4. A brake mechanism for street-cars comprising a brake-shoe opposed to the car-wheel, a disk in proximity to one of said car-wheels, and provided with a projecting hub, said projecting hub and disk mounted upon a sleeve connected with the car-axle, an annular projection on said hub provided with an opening for oil, a circular wick in said opening adapted to make contact with said sleeve, a connection between said disk and an operating-handle whereby the position of the disk may be controlled, and an operative connection between said disk and said brake-shoe, substantially as described.

5. A brake mechanism for street-cars comprising a brake-shoe opposed to the car-wheel, a frictional surface connected with one of the car-wheels, a disk provided with a projecting hub, opposed to said frictional surface and mounted upon a sleeve on the car-axle, two levers having bifurcated ends which engage said projecting hub, said levers being movable with relation to each other and adapted when so moved to come in contact with said sleeve and a projection on said hub, a screw working in threads in one of said levers and bearing against the other, the outer end of said levers being supported upon the car in such a manner that they may be moved laterally with relation to said car, a connection between said screw and an operating-handle whereby the screw may be turned by a movement of the handle, and an operative connection between said disk and the brake-shoe whereby a movement of the disk in either direction applies the brake.

6. A brake mechanism for street-cars comprising one or more brake-shoes, a frictional device opposed to one of the car-wheels, and operatively connected with said brake-shoes, a connection between said frictional device and an operating handle whereby the frictional device may be brought into contact with the wheel, a brake-releasing device associated with said mechanism and adapted to disconnect the frictional device from the wheel when said wheel ceases to rotate, said brake-releasing device comprising a centrifugally-operated circuit making and breaking device associated with a moving part of the car, a magnet or solenoid in circuit therewith, and associated with the brake mechanism so that when energized it acts to release the brake.

7. A brake mechanism for street-cars comprising a brake-shoe, a frictional device opposed to one of the car-wheels and operatively connected with said brake-shoe, a connection between said frictional device and an operating-handle whereby the frictional device may be brought into contact with the wheel, and a brake releasing device associated with said mechanism and adapted to disconnect the frictional device from the wheel when said wheel ceases to rotate, said brake-releasing device comprising centrifugal weights connected with a rotating part of the car and provided with contacts normally in contact with an opposed contact so as to complete an electric circuit when the weights are stationary but out of contact therewith when the weights are revolving so as to break said circuit, an electromagnet or solenoid connected in circuit with said centrifugal weights, said solenoid provided with a movable part which engages a part of the brake mechanism when said solenoid is energized and moves it so as to release the brakes.

8. A brake-releasing device for street-cars comprising a centrifugally-operated circuit-breaking device connected with a rotating part of the car and adapted to complete an electric circuit when the rotating part is stationary and adapted to break such circuit when the rotating part is in motion, an electric magnet or solenoid in circuit with said circuit-breaking device and provided with a movable part adapted to be connected with the brake mechanism when said solenoid is energized and move such mechanism so as to release the brakes.

9. A brake-releasing device for street-cars comprising a centrifugally operated circuit-breaking device connected with a rotating part of the car and adapted to complete an electric circuit when the rotating part is stationary and to break such circuit when the rotating part is in motion, said circuit-breaking device comprising weights connected together so as to eliminate the action of the force of gravity, an electromagnet or solenoid in circuit with said circuit-breaking device, provided with a movable part adapted to be connected with the brake mechanism when said magnet or solenoid is energized and move such mechanism so as to release the brakes.

10. A brake for street-cars or the like comprising a brake-shoe opposed to the car-wheel, a disk mounted upon the car-axle in proximity to one of the car-wheels, two levers in proximity to said disk and adapted to be moved with relation to each other, one of said levers adapted to bear against some part of the disk, the other lever provided, with an opposed bearing-surface, means associated with said levers by which the ends associated with the disk may be separated, thereby pressing the disk against the wheel, the outer end of said levers supported upon some part of the truck or car frame so that they are free to move laterally with relation to the car and an operative connection between said disk and said brake-shoe.

11. A brake mechanism for street-cars comprising a brake-shoe, a frictional device opposed to one of the car-wheels and operatively connected with said brake-shoe, a connection between said frictional device and an operating-handle whereby the frictional device may be brought into contact with the wheel, and a brake-releasing device associated with said mechanism and adapted to disconnect the frictional device from the wheel when said wheel ceases to rotate, said brake-releasing device consisting of centrifugal weights linked together, and connected with a rotating part of the car, said weights provided with contacts adapted to make contact with an opposed conductor when the weights are stationary, said contacts being moved so as to be out of contact therewith when the weights are rotating, said weights and said opposed conductor being connected respectively with a source of electrical supply, and an electromagnet or solenoid, a moving part associated with said solenoid and provided, with an opening through which passes a rod connected with the operating-handle of the brake, a spring connected with said movable part, the whole so arranged that when said solenoid or magnet is energized, said movable part clamps said rod and moves it so as to release the brakes.

12. In a brake for cars the combination of a brake proper with means for setting same, comprising a movable friction device opposed to a moving part on the axle, a fixed bearing in rigid relation to said moving part, two parts interposed between said moving part and the fixed bearing, a screw device associated with said two parts and adapted when operated to separate them so as to apply the movable friction device to the moving part, said screw device interposed between the axle and the ends of said two parts.

13. A brake mechanism for cars comprising a brake proper, a movable disk in proximity to one of the car-wheels and provided with a projecting hub, a collar fixed to the car-axle, two levers with bifurcated ends which partly surround the axle between the hub and the collar, the bifurcated ends of said levers loosely engaging said axle, the axle engaging ends of said levers being open, so that the levers may be removed from or connected with said axle by a longitudinal movement of said levers, an operating device for separating said levers so that one bears against the collar, the other against the hub.

14. A brake mechanism for cars comprising a brake proper, a movable disk in proximity to one of the car-wheels and provided with a projecting hub, a collar fixed to the car-axle, two levers with bifurcated ends which partly surround the axle between the hub and the collar, an operating device for separating said levers so that one bears against the collar, the other against the hub, and a hand-lever adjustably connected with the device for separating the levers.

15. A brake mechanism for cars comprising a brake proper, a movable disk in proximity to one of the car-wheels and provided with a projecting hub, a collar fixed to the car-axle, two levers with bifurcated ends which loosely engage and partly surround the axle between the hub and the collar, an operating device for separating said levers so that one bears against the collar, the other against the hub, a hand-lever adjustably connected with the device for separating the levers, and a disk on one of said levers, comprising part of such adjusting device.

16. In a brake mechanism the combination of a car-wheel with an opposed movable friction-plate, a fixed stop or collar on the car-axle, two associated relatively-movable parts interposed between the disk and the collar and loosely supported on the car-frame, a device for forcing them apart located between the axle and the free ends of said relatively-movable parts, and controlling connections from such device to the brake-handle.

17. In a brake device the combination of a wheel with an opposed movable and rotatable friction-plate, a fixed collar or the like, two parts loosely connected with the axle and interposed between the friction-plate and the collar, and movable with reference to each other, said parts supported loosely on the frame of the car, a device for separating the two movable parts, interposed between the axle and the ends of said parts and connections from the disk to the brake proper.

18. In a brake device for cars a brake proper, a collar fixed to the axle, a movable disk in proximity to a wheel and provided with a projecting hub which actuates the chain or rope to apply the brakes, a portion of said hub being reduced in size so as to support or carry a mechanism, which is interposed between the collar and large portion of the hub, which is used to force the disk against the wheel.

19. In a brake device for cars a disk on an axle opposed to a wheel, the hub of the disk surrounding a sleeve, which rests against a car-wheel and which is keyed to the axle so as to prevent movement along the axle in the direction away from the said car-wheel, a flange on said sleeve and means interposed between the flange and hub to force the disk against the wheel.

20. In a brake device for cars a brake proper, a collar fixed to the axle, a movable disk in proximity to a wheel and provided with a projecting hub which winds up the chain or ropes to apply the brakes, a portion of said hub being reduced in size and cylindrical in shape so as to support a mechanism which is interposed between the collar and large portion of the hub which is used to force the disk against the wheel.

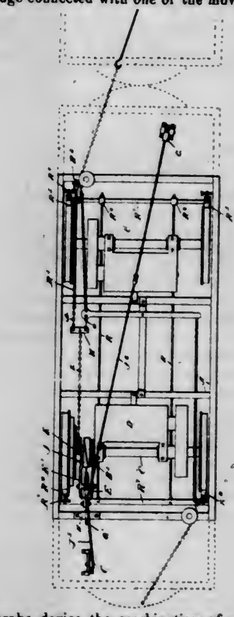
21. In a car-brake device the combination of a movable rotatable friction device opposed to the car-wheel, with a fixed opposed surface and two intermediate parts loosely supported on the frame, their outer surfaces movable with reference to each other and adapted when such outer surfaces are moved from each other to engage one the fixed part, the other the movable part and thus force the movable friction part against the wheel.

572,824. STREET-CAR BRAKE. WILLIAM G. PRICE, Chicago, Ill., assignor of one-half to Menard K. Bowen, same place. Filed June 8, 1896. Serial No. 594,740. (No model.)

Claim.—1. In a brake device the combination of a wheel with a disk adapted to be frictionally held against the wheel and when rotated to set the brakes, a fixed stop or collar on the axle, two movable parts interposed between the disk and the stop, and a wedge-shaped device adapted to be inserted between the movable parts and to separate them, one of said movable parts provided with a projecting end which extends beneath said wedge-shaped piece and acts as a bearing for the same.

2. In a brake device the combination of a wheel with a disk adapted to be frictionally held against the wheel and when rotated to set the brakes, a fixed stop or collar on the axle, two movable parts interposed between the disk and the stop, and a wedge shaped piece adapted to be inserted between the movable parts and to separate them, the two movable parts loosely connected and loosely supported on the frame of the car.

3. In a brake device the combination of a wheel with a disk adapted to be frictionally held against the wheel and when rotated to set the brakes, a fixed stop or collar on the axle, two movable parts interposed between the disk and the stop, and a wedge-shaped piece adapted to be inserted between the movable parts and to separate them, the wedge connected with one of the movable parts.



4. In a brake device the combination of a wheel with a disk adapted to be frictionally held against the wheel and when rotated to set the brakes, a fixed stop or collar on the axle, two movable parts interposed between the disk and the stop, and a wedge-shaped piece adapted to be inserted between the movable parts and to separate them, the wedge connected with one of the movable parts, said movable part supported in a comparatively fixed relation to the axle.

5. In a brake device the combination of a car-wheel with a friction-disk adapted when rotated to set the brakes, a stop or collar on the axle, two movable parts interposed between the collar and the disk, one of them surrounding and thus secured to the axle, a wedge adapted to be forced between the two parts to set the friction device, said wedge consisting of two projecting arms, one on each side of the axle, substantially as described.

6. In a brake device the combination of a car-wheel with a friction-disk adapted when rotated to set the brakes, a stop or collar on the axle, two movable parts interposed between the collar and the disk, one of them surrounding and thus secured to the axle, a wedge adapted to be forced between the two parts to set the friction device, said wedge connected to the brake-handle through one of the movable parts.

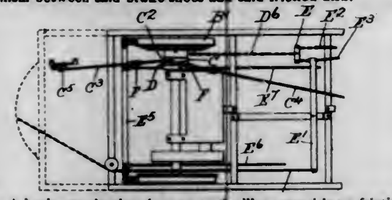
7. In a brake device for street-cars a friction device on one axle opposed to a wheel, which winds up a chain or rope so as to apply the brake-shoes to the car-wheels, means provided to reduce the pressure or braking power on one set of brake-shoes to an amount approximately equal to the friction or braking power of the friction device.

8. In a brake device, the combination of two sets of brakes proper adapted to operate at different points, and a frictional device for setting the brakes associated directly with one of such braking devices, the braking effect of the frictional device and associated braking device being approximately equal to the braking effect of the other braking device.

572,825. STREET-CAR BRAKE. WILLIAM G. PRICE, Chicago, Ill., assignor of one-half to Menard K. Bowen, same place. Filed June 12, 1896. Serial No. 595,298. (No model.)

Claim.—1. A brake mechanism for cars comprising a friction-disk opposed to a moving part of the car, two toothed parts associated with said disk, the teeth of said parts being in engagement, one of said parts provided with a stop connected with said disk, the other part being provided with a stop connected with some part of the car, whereby their lateral motion is limited, a split washer adapted to be inserted between one of said rings, and the stop associated with the car, and a holding device for said washer adapted to hold the two parts in position, an operating-handle connected with one of said parts so that they may be moved with relation to each other, one or more

brake-shoes associated with the wheels of the car and connecting mechanism between said brake-shoes and said friction-disk.



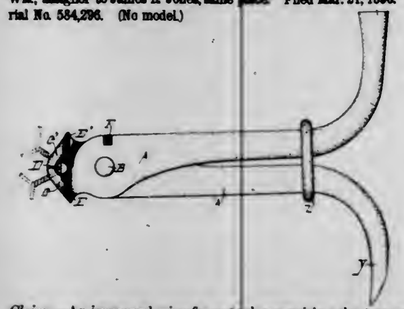
2. A brake mechanism for cars or the like comprising a friction-disk upon the car-axle, and opposed to a part connected with said axle, two rings surrounding said axle and provided with wedge-shaped teeth normally in engagement, one of said rings engaging said disk or a part thereof, a collar surrounding the axle and in proximity to the other ring and adapted to limit its lateral motion, a split washer adapted to be inserted between said toothed ring and the collar on the axle when the parts become worn, a ring surrounding said collar, and connected therewith by a set-screw or the like, said ring adapted to project over said washer and hold it in place, a connection between one of said rings, and an operating handle on the car, one or more brake-shoes associated with the wheel of said car, said brake-shoes being operatively connected with said disk.

3. A friction-disk for car-brakes provided with a projecting hub, an annular recess in said hub adapted to contain oil, a wick in said groove adapted to conduct the oil to the bearing-surface of said hub, an opening or oil-hole by which the oil may be conveyed to said receptacle, a protecting-shield or the like within said receptacle, surrounding said opening and adapted to prevent the oil from flowing out when said hub is rotated.

4. In a brake mechanism for street-cars, the combination of the brake-setting device with a moving part, the two adapted to be frictionally connected, and relatively-movable parts which when operated force the brake-setting device against its opposed movable part, and a sectional removable annular adjusting-washer, and a stop recessed to receive the same, said washer adapted to engage one of said relatively-movable parts.

5. A brake mechanism for cars containing a brake-setting device, a moving part with which it is adapted to be operatively engaged, means for bringing the two parts into engagement, comprising two relatively-rotatable parts, engaging on inclined surfaces, stops for limiting the lateral motion of said relatively-rotatable parts, a split washer adapted to be inserted between one of said stops and one of said parts, and a holding device adapted to hold said split washer in position.

572,826. WIRE-FENCE TOOL. JOHN H. QUIGLEY, Milwaukee, Wis., assignor to James R. Jones, same place. Filed Mar. 21, 1896. Serial No. 584,296. (No model.)

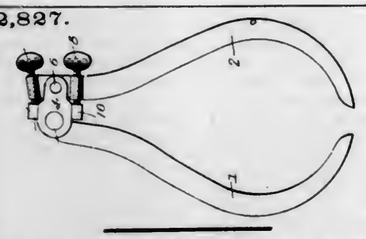


Claim.—An improved wire-fence tool, comprising the two members A and A' pivoted together near their upper ends, having on the jaw part the flanges E E', the outer edges of which are adapted, when the jaws are closed, to form an ellipse, and the curved projections C C' for engaging the wire, substantially as described.

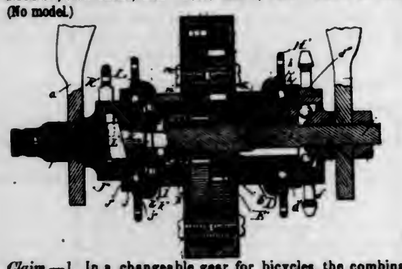
572,827. CALIPERS. AUGUST F. RADANT, Wausau, Wis. Filed June 15, 1896. Serial No. 595,586. (No model.)

Claim.—In an instrument of the character described, the combination with the legs, one of which is formed with a circular ear, the plates to which said leg is pivoted, and the other leg also pivoted to said plates and provided at opposite sides of the pivotal point with adjusting-screws, of the friction-shoe impinging against said ear and formed with lugs against which the inner ends of said screws are adapted to bear; substantially as described.

572,827.



572,828. DEVICE FOR CHANGING GEAR OF BICYCLES. JACOB REDDING, New Castle, Ind. Filed Mar. 9, 1896. Serial No. 582,461. (No model.)



Claim.—1. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a gear-wheel rigid on the sprocket-sleeve, a cog-sleeve rotatably supported on the supporting-shaft having cogs thereon, differential pinions journaled on the spoke-disk and rigidly secured together, the smaller pinion meshing with the gear-wheel and the larger pinion meshing with the cogs on the cog-sleeve, a clutch-sleeve slidingly secured on the cog sleeve normally clutching the cog-sleeve to the spoke-disk, a cam-face on one end of the clutch-sleeve, and means engaging the cam-face for sliding the clutch-sleeve out of engagement with the spoke-disk for releasing the cog sleeve from the disk and locking the cog-sleeve from rotation, substantially as described.

2. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a gear-wheel rigid on the sprocket-sleeve, a cog-sleeve rotatably supported on the supporting-shaft having cogs thereon and provided with an aperture, differential pinions journaled on the spoke-disk and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cogs on the cog-sleeve, a clutch-sleeve slidingly secured on the cog-sleeve normally clutching the cog-sleeve to the spoke-disk, a cam-face on one end of the clutch-sleeve, and means engaging the cam-face for sliding the clutch-sleeve out of engagement with the spoke-disk and engaging the aperture in the cog-sleeve for locking the said sleeve from rotation, substantially as described.

3. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a cog-sleeve rotatably supported on the shaft, gearing connecting the cog-sleeve to the spoke-disk and the spoke-disk to the sprocket-sleeve, a clutch-sleeve slidingly secured on the cog-sleeve normally clutching the cog-sleeve to the spoke-disk and means for sliding the clutch-sleeve out of engagement with the spoke-disk for releasing the cog-sleeve from the disk and locking the cog-sleeve from rotation, substantially as described.

4. In a changeable gear for bicycles, the combination with a supporting shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a gear-wheel rigid on the sprocket-sleeve, a cog-sleeve rotatably supported on the supporting-shaft having cogs thereon and provided with an aperture, differential pinions journaled on the spoke-disk and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cogs on the cog-sleeve, a clutch-sleeve slidingly secured on the cog-sleeve normally clutching the cog-sleeve to the spoke-disk, a cam-face on one end of the clutch-sleeve, a rod engaging the cam-face for sliding the clutch-sleeve out of engagement with the spoke-disk for releasing the cog-sleeve from the disk, a lever for operating the rod and a spring extension formed integral with the lever and interposed between the lever and rod for forcing the rod into the aperture in the cog-sleeve after the clutch-sleeve has been moved the required distance, substantially as described.

5. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a gear-wheel rigid on the sprocket-sleeve, a cog-sleeve rotatably supported on the supporting-shaft having cogs thereon, differential pinions journaled on the spoke-disk and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cog-sleeve, a clutch-sleeve slidingly secured on the cog-sleeve, a coiled spring surrounding the cog-sleeve and bearing against the clutch-sleeve for normally clutching the clutch-sleeve to the spoke-disk, and means for sliding the clutch-sleeve out of engagement with the spoke-disk against the tension of the spring for releasing the cog-sleeve from the disk and locking the cog-sleeve from rotation, substantially as described.

6. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying a sprocket rotatably supported on the shaft, a casing and spoke-disk rotatably supported on the shaft, the casing and spoke-disk being formed integral, a gear-wheel rigid on the sprocket-sleeve and within the casing, a cog-sleeve rotatably supported on the shaft having cogs on its inner end and extending within the casing, a cone-nut on the shaft for holding the cog-sleeve in position extending within the casing and provided with an aperture, the cog-sleeve and sprocket-sleeve arranged to revolve in dependent of each other, differential pinions journaled within the casing and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cogs on the cog-sleeve, means for clutching the cog-sleeve to the spoke-disk and means extending through the aperture in the cone-nut for unclutching the cog-sleeve from the spoke-disk and locking it from rotation, substantially as described.

7. In a changeable gear for bicycles, the combination with a supporting shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a cone-nut rigidly secured to the opposite end of the shaft, a spoke-disk rotatably supported on the sprocket-sleeve and cone-nut, a gear-wheel rigid on the sprocket-sleeve, a cog sleeve rotatably supported on the supporting-shaft and prevented from longitudinal outward movement by the cone-nut, differential pinions journaled on the spoke-disk and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cogs on the cog-sleeve, means for clutching the cog-sleeve to the spoke-disk, and means for unclutching the cog-sleeve from the spoke-disk and locking the said sleeve from rotation, substantially as described.

8. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying the sprocket rotatably supported on the shaft, a spoke-disk rotatably supported on the sprocket-sleeve, a cog-sleeve rotatably supported on the shaft, gearing connecting the cog-sleeve to the spoke-disk and the spoke-disk to the sprocket-sleeve, means for clutching the cog-sleeve to the spoke-disk and means for unclutching the cog-sleeve from the spoke-disk and locking it from rotation, substantially as described.

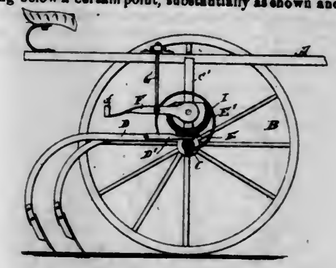
9. In a changeable gear for bicycles, the combination with a supporting-shaft, of a sprocket-sleeve carrying a sprocket rotatably supported on the shaft, a casing and spoke-disk rotatably supported on the sprocket-sleeve, the casing and spoke-disk being formed integral, a gear-wheel rigid on the sprocket-sleeve and within the casing, a cog-sleeve rotatably supported on the shaft having cogs on its inner end and extending within the casing, the cog-sleeve and sprocket-sleeve arranged to revolve independent of each other, differential pinions journaled within the casing and rigidly secured together, one pinion meshing with the gear-wheel and the other pinion meshing with the cogs on the cog-sleeve, means for clutching the cog sleeve to the spoke-disk, and means for unclutching the cog-sleeve from the spoke-disk and locking it from rotation, substantially as described.

572,829. CULTIVATOR OR PLOW. FERDINAND REIMERS, Davenport, Iowa. Filed Sept. 2, 1896. Serial No. 604,634. (No model.)

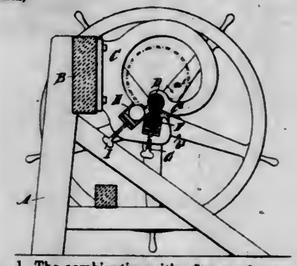
Claim.—1. In a cultivator or plow, the combination of the plow-beams pivoted to swing horizontally, a shifting lever upon each side of the cultivator, pivoted to swing vertically, and connections between said shifting levers, whereby their movements will alternate, and bevel-gears upon said shifting levers and plow-beams, substantially as shown and described.

2. In a cultivator or plow, the combination of plow-beams pivoted to swing horizontally, a shifting lever upon each side of the cultivator, pivoted to swing vertically, a pivoted equalizing-lever, links connecting the same with the shifting levers, and a bevel-gear connection between the shifting levers and the plow-beams, substantially as shown and described.

3. In a cultivator or plow, the combination of a beam having a stub pivoted to the axle to swing horizontally only, the outer beam portion being pivoted thereto to swing vertically, and a spring consisting of a flat bar attached to the axle and curved over the same to engage the vertically-swinging portion of the beam and prevent its dropping below a certain point, substantially as shown and described.



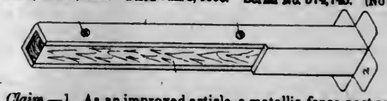
572,830. MACHINE FOR FORMING ORGAN-PIPES. HERBERT RICHARDSON, London, England. Filed Apr. 9, 1896. Serial No. 586,786. (No model.)



Claim.—1. The combination with a frame, of two rollers, one end of each roller being extended beyond the adjacent end of the other roller, a hand-wheel fixed to each extended end whereby the rollers may be manually turned in opposite directions, and a deflecting-roller capable of movement toward and from the space between the first rollers, substantially as described.

2. The combination with a frame, of two rollers mounted therein, each roller having one end extended beyond the adjacent end of the other roller, and a hand-wheel fixed to the extended end of each roller whereby the rollers may be manually turned in opposite directions, substantially as described.

572,831. FENCE-POST. JOHN A. ROUTSONG and JOSEPH C. ROUTSONG, Xenia, Ohio. Filed Jan. 8, 1896. Serial No. 574,745. (No model.)



Claim.—1. As an improved article, a metallic fence-post comprising the rectangular hollow lower portion, having the lower ends turned outwardly at right angles forming feet, and the upper portion cut away on one side from the upper end to a point at or near the center, substantially as described.

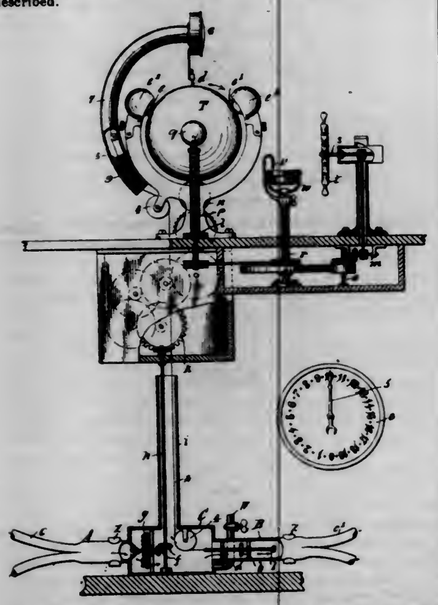
2. The combination with a metallic fence-post comprising the rectangular hollow lower portion, having the lower ends turned outwardly at right angles forming feet, and the upper portion cut away on one side from the upper end to a point near the center, of the rectangular wooden post, inserted in said metallic post and secured thereto by means of screws, substantially as described.

572,832. NAUTICAL REGISTERING APPARATUS. PEDRO SAMOHOD, Lima, Peru. Filed May 23, 1896. Serial No. 592,755. (No model.)

Claim.—1. A nautical registering apparatus, comprising a globe mounted so as to be capable of a universal movement, a stationary marker adapted for engagement with said globe, and means controlled by the ship's progress for imparting movement to the said globe, substantially as described.

2. A nautical registering apparatus, comprising a globe mounted so as to be capable of a universal movement, a stationary marker adapted for engagement with said globe, a channel extending through the vessel and opening into the water at both ends so that water will flow through said channel when the vessel is in motion, a motor actuated by the water flowing in said channel, and an operative connection between said motor and the globe to impart a rotary motion to the latter, substantially as described.

3. A nautical registering apparatus, comprising a globe mounted so as to be capable of a universal movement, a stationary marker adapted for engagement with said globe, a motor located in the water in such a manner as to be actuated when the ship is in motion, and an operative connection between said motor and the globe, substantially as described.



4. A nautical registering apparatus, comprising a globe supported on balls so as to be capable of universal movement, a stationary marker adapted to engage said globe, and means for automatically rotating the globe when the vessel is in motion, substantially as described.

5. A nautical registering apparatus, comprising a globe mounted on balls so as to be capable of universal movement, a motor adapted to be actuated automatically when the vessel is in motion, said motor being operatively connected to one of the supporting-balls to rotate said ball about a horizontal axis, a stationary marker adapted to engage the globe, balls rotatable about vertical axes and engaging the said globe, means under the control of an operator, for turning said balls to rotate the globe about a vertical axis, a compass, and a pointer connected to said controlling mechanism and adapted to register with the needle of the compass, substantially as described.

6. A nautical registering apparatus, comprising a globe mounted so as to have universal movement, a motor actuated automatically by the ship's motion, and connected to said globe to turn the same about a predetermined axis, an operating mechanism under the control of an attendant, and engaging said globe to rotate it about an axis approximately perpendicular to the first-named axis, and a stationary marker engaging said globe, substantially as described.

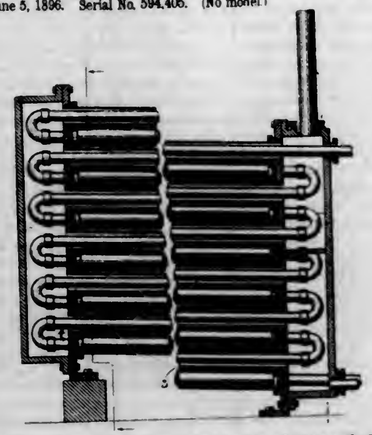
7. The combination with a longitudinal tube located below the water-line and adapted to receive water at one end and discharge it at the other, a piston mounted to slide in said tube, a spring opposing a resistance to the action of the water on the piston, a speed-indicator, and a connection between said indicator and the sliding piston, substantially as described.

572,833. RIB-TIP HOLDER FOR UMBRELLAS OR PARASOLS. HEYWARD SCUDDER, Boston, Mass. Filed Feb. 14, 1896. Serial No. 579,226. (No model.)



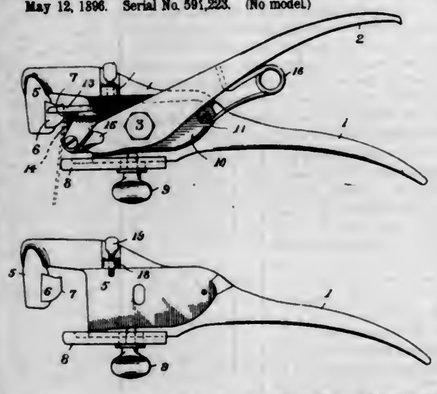
Claim.—An umbrella having a pin secured to the stick thereof, the pin having a slotted portion forming a spring part, and a clamping-section having an eye cooperating with said slotted portion of the pin and movable thereon, the eye being capable of pressing the said spring part against its spring tendency whereby a continual frictional contact is established between the eye and pin, substantially as described.

572,834. CONDENSER. JOHN D. SMITH, New York, N. Y. Filed June 5, 1896. Serial No. 594,405. (No model.)



Claim.—A condenser, comprising a series of staggered condensing-pipes, a rear header, a front header, the said pipes being inclined downward from the rear to the front header, and the said rear header being open throughout its length and common to all the pipes, a circulating-pipe extended through the several condensing pipes, an inclined transverse partition in the front header, a pipe leading through said partition and extended nearly to the bottom of the front header, an outlet at the lower end of the front header, and a feed-pipe leading into the front header, above its partition, substantially as described.

572,835. SAW-SET. WILLIAM H. SMITH, Oakville, Conn. Filed May 12, 1896. Serial No. 591,223. (No model.)

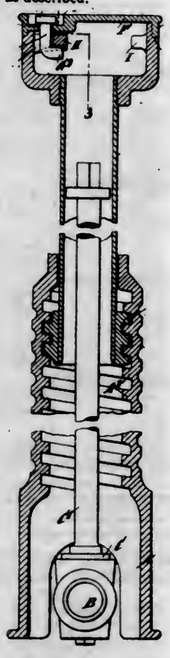


Claim.—1. In a tool of the class described, the combination with the head supporting a die, of a plate 10 secured to said head and bearing a guide for the saw, means for adjusting said plate and guide, a movable operating-die pivoted to said plate, and an operating-lever having connections with said die for manipulating the same, substantially as described.

2. The combination in a saw-set, of a head having a stationary die secured therein, a plate pivoted to said head and bearing guides to straddle the die mentioned, screws 3 and 18 for adjusting said plate and guide with relation to the die, a pivoted operating-die supported by said plate and having a toggle connection with an operating-handle, and an adjustable plate 8 secured to the under side of the head, substantially as and for the purposes described.

572,836. STOP-BOX. ISAAC SORSOLEIL, Owatonna, Minn. Filed Jan. 11, 1896. Serial No. 575,152. (No model.)

Claim.—A stop-box, comprising a pipe adapted to surround the valve-stem and provided at its upper end with a head formed with a cam having an elongated aperture extending approximately tangentially, a cover loosely fitted on said head and provided with an aperture, and a bolt extending through the apertures of the cover and of the cam and provided with an arm extending at an angle to its shank, substantially as described.



572,837. CARBURETER. EDWARD I. P. STAEDE, Mankato, Minn. Filed Oct. 2, 1896. Serial No. 607,651. (No model.)



Claim.—1. A carbureter, comprising a tank adapted to contain a volatile liquid, a chamber located in the bottom portion of the tank, means for supplying air to the said chamber, and coils located within the chamber, extending outward therefrom in an upwardly and in a downwardly direction, each coil being provided with an inlet within the said chamber, as and for the purpose specified.

2. A carbureter, comprising a tank adapted to contain gasolene, an air-supply pipe extending within the tank to a point near its bottom and terminating at its lower end in an air-tight chamber, and coils located within the said chamber, the ends of the said coils extending one upward and the other downward, beyond the outer faces of the chamber, each coil being provided with an inlet within the chamber, as and for the purpose specified.

3. The combination, with a tank adapted to contain gasolene or other volatile liquid, a gas-offtake pipe connected with the said tank, and an air-supply pipe extending into the said tank and terminating at a point near the bottom of the same, of an air-tight chamber connected at its center with the air-supply pipe, and a series of coils arranged concentrically within the said chamber, each coil being provided with an upwardly and a downwardly extending leg, which legs extend through and beyond the top and bottom portions of the said chamber, each coil being provided with an inlet-opening near the junction of its bottom with the lower leg, the said inlet-opening being within the chamber, as and for the purpose specified.

4. A carbureter, consisting of a tank provided with an air-supply pipe and a gas-offtake pipe, an air-tight chamber located near the bottom of the tank, connected with the air-supply pipe, and coils located within the said chamber, having their ends carried one upwardly and the other downwardly, beyond corresponding surfaces of the said chamber, each coil being provided with an inlet-opening located within the said chamber at the junction of its downwardly-extending member with its body, as and for the purpose specified.

572,838. AUTOMATIC GAS-PRESSURE REGULATOR. KARL M. STAHL, New York, N. Y. Filed Mar. 5, 1896. Serial No. 581,930. (No model.)



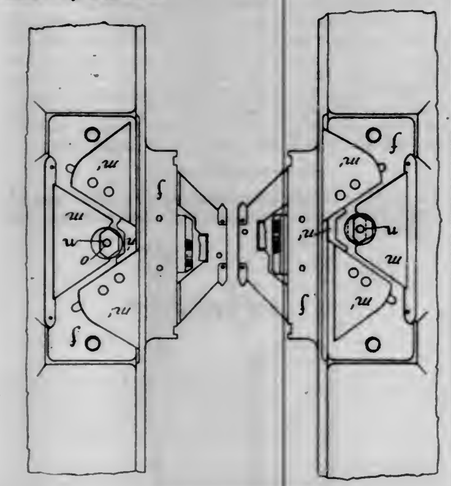
Claim.—1. The combination of a main tube provided with a stationary interior guide-sleeve, a regulating-tube guided in said sleeve closed at the upper end, said regulating-tube being provided with an adjustable collar at its upper end, and a slot below said collar, a piston at its lower end of the regulating-tube, a helical spring interposed between the stationary sleeve and the piston, a receiver containing carbonic acid under pressure, means for supporting said receiver on the main tube, and a valved supply-pipe connecting said receiver with the main tube, substantially as set forth.

2. The combination, of a main tube provided with a stationary interior guide-sleeve, a sliding and spring-actuated regulating-tube closed at its upper end, an adjustable collar at the upper end of the regulating-tube and a slot below said collar, a piston at the lower end of the regulating-tube, a receiver for carbonic-acid gas or other gas under pressure, a holder applied to the upper end of the main tube and provided with a bore registering with openings in the main tube and stationary sleeve, and a valved gas supply tube connecting the receiver with said holder, substantially as set forth.

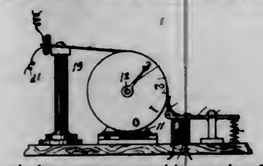
3. The combination of a main tube having a detachable plug at its upper end, a stationary sleeve in the upper part of the main tube, a regulating-tube guided in said sleeve, closed at the upper end and provided with a collar at its upper end and with a slot below said collar, a piston at the lower end of the regulating-tube, a helical spring interposed between the stationary sleeve and the piston, a holder provided with a sleeve, means for attaching said sleeve to the main tube, a receiver for carbonic acid gas under pressure, and a valved gas-supply pipe connecting the receiver with the holder, said holder having a bore connectiag the supply-tube with registering openings of the main tube and stationary sleeve and with an interior annular channel in said sleeve, substantially as set forth.

572,839. KNITTING-MACHINE. HEINRICH STOLL and FRIEDRICH MAERKLIN, Reutlingen, Germany. Filed Apr. 6, 1895. Serial No. 544,784. (No model.) Patented in Germany Nov. 24, 1893, No. 77,951.

Claim.—In a knitting-machine, the combination, with a carriage, and an inner and an outer cam secured to the carriage and having a raceway between them, said outer cam having a concavity at its inner end, of a rotatable stud mounted in the carriage, a cam-block rigidly secured to said stud and located in the concavity of the outer cam, said cam-block having two operating faces on opposite sides of the block removed from the axis of rotation of the stud and at unequal distances from such axis, each face, when in operative position, projecting inward beyond the inner end of the outer cam, a spring normally tending to force the cam-block downward, a knob at the upper end of the stud and provided with a downward-projecting teat, and a block fixed to the carriage and provided with two recesses one hundred and eighty degrees apart and arranged to receive the teat, substantially as set forth.



572,840. TELEPHONE SYSTEM. ALFRED F. SWAN, Bayonne, N. J. Filed July 11, 1895. Serial No. 555,594. (No model.)

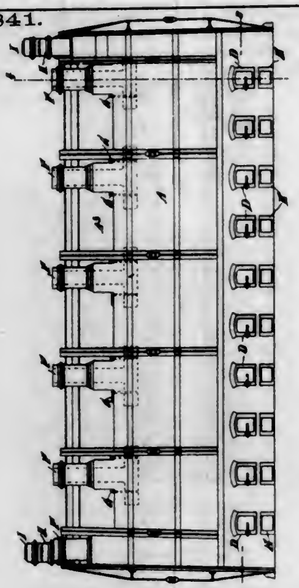


Claim.—A telephone system, comprising a series of telephones in circuit, a switch-barrel for each telephone, each switch-barrel having at its ends a plurality of insulating and conducting strips, the insulating-strips of one end being out of alinement with the insulating-strips of the other end, two pairs of brushes for each switch-barrel, one being arranged to cut the telephone in and the other to cut it out of circuit, a pawl-and-ratchet mechanism operated by makes and breaks in the circuit to turn each switch-barrel, and means as a push-button for making and breaking the circuit, all substantially as described.

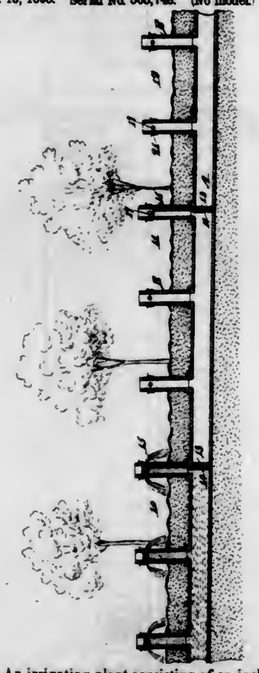
572,841. KILN. ANDREW THAISON, Laredo, Tex. Filed Feb. 12, 1896. Serial No. 578,974. (No model.)

Claim.—A kiln, comprising an arched chamber adapted to receive the bricks or other articles to be burned, furnaces arranged in the sides of the chamber and located directly opposite each other, main draft-flues arranged at the sides of the kiln directly above the inner end of said furnaces and each having branch flues leading from opposite sides thereof and opening into the arched roof of the chamber at an angle to the main flue, the openings of the branch flues being above and alternating with the inner ends of the said furnaces, whereby the hot products of combustion discharged from the furnaces pass upwardly and sidewise through the material to be burned insuring a complete circulation of the said products of combustion through the material, dampers located in each branch flue, a draft-flue leading from the arched roof of the chamber at each end thereof, and a draft-flue for each corner of the chamber, each of the said flues opening into the upper part of the chamber above the material to be burned, as and for the purpose set forth.

572,841.



572,842. IRRIGATING PLANT. ALLAN W. TOWNE, Pomona, Cal. Filed Oct. 15, 1895. Serial No. 565,742. (No model.)



Claim.—An irrigating plant consisting of an inclined trunk-pipe, a gate for the trunk-pipe, and a series of hydrants rising from the trunk-pipe on each side of the gate, the gate forming in the trunk-pipe two divisions, and the hydrants of each division having their discharge-orifices respectively in the same horizontal plane, substantially as described.

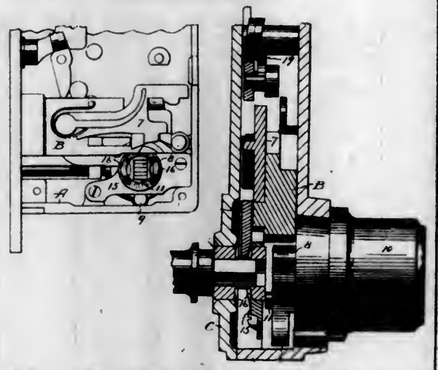
572,843. CANOPY FOR BICYCLES. JUNIUS T. B. VAN VECHTEN, Brooklyn, N. Y., assignor of one half to James A. Lowe, Leonia, N. J. Filed June 16, 1896. Serial No. 595,803. (No model.)

Claim.—1. A folding canopy-frame having longer and shorter longitudinal bars, and removable intermediate and end bars arranged transversely of said longitudinal bars and the T-head, hinged spreaders provided with adjusting-clamps engaging the main standard of the canopy-frame, and a removable cover connected with the transverse bars of the canopy-frame, substantially as specified.



2. The combination with the main standard having a seat in a T-head at its top, of the bars 8, 9, the removable end bars, the removable intermediate bar seated in the T-head the supporting-clamps 19, 19 removably secured to the bars 8, 9, the pins engaging the holes in the T-head and in the intermediate transverse rod, and the canopy-cover removably connected to the end bars and intermediate transverse bar, substantially as specified.

572,844. LOCK. HENRY G. VOIGHT, New Britain, Conn., assignor to the Russell & Erwin Manufacturing Company, same place. Filed Apr. 25, 1896. Serial No. 589,058. (No model.)



Claim.—1. The combination with a lock arranged to have its bolt thrown by the application of a key from one side and by the hub of a thumb-turn or knob from its other side, with connecting devices for connecting the thumb-turn hub with the key-actuated bolt-throwing bit whenever said hub is turned from its normal position substantially as described.

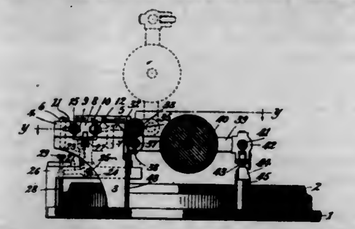
2. In a lock of the class described the combination of a lock-bolt, a bolt-throwing bit for acting on said lock-bolt, a thumb-turn hub also arranged for acting on said lock-bolt, and means for connecting said thumb-turn hub and bit whenever the said hub is turned into a position to engage said lock-bolt and for disconnecting them whenever the said hub is turned into its farthest position from engagement with said lock-bolt, substantially as described and for the purpose specified.

3. In a lock of the class described the combination of a bolt-throwing bit, a thumb-turn hub and means for imparting an endwise movement to said hub through its rotation for connecting and disconnecting it from said bit, substantially as described and for the purpose specified.

4. In a lock of the class described, the thumb-turn hub, bearings at each end of said hub, and cams or inclines on the confronting faces of said bearings for imparting an endwise movement to said hub, substantially as described and for the purpose specified.

5. In a lock of the class described the combination of the thumb-turn hub for throwing the lock-bolt, with the cap-plate supporting said hub by one end, and the bridge within the lock-case for supporting said hub at its other end, substantially as described and for the purpose specified.

572,845. TYPE-WRITING MACHINE. CHARLES W. WALKER, Bridgeport, Conn., assignor to the Yost Writing Machine Company, New York, N. Y. Filed Aug. 2, 1894. Serial No. 519,234. (No model.)



Claim.—1. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, forwardly-projecting horizontal arms secured to said movable bar and provided with open hooks, and a platen-carrier detachably connected to said hooks.

2. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms secured to said movable bar and provided with open hooks, and a platen-carrier provided with an elevated pintle for said hooks, the rear rod of the platen-carrier being arranged to lie underneath and contiguous to the backs of said hooks.

3. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms on said movable bar provided with open hooks, and a platen-carrier composed of side and end bars and an independent elevated pintle-rod.

4. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball bearings, a letter-spacing mechanism, part of which is carried by said movable bar, antifriction-balls, arms secured to said movable bar and provided with hooks and grooves or cut-aways, a platen-carrier hinged to said hooks, and fixed stops for said arms.

5. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, antifriction-balls a perforated link for coupling two of said balls on one side of said movable bar, and a platen-carrier connected to said movable bar.

6. In a type-writing machine, the combination with fixed guide-bars having ball-bearings, of an intermediate movable bar provided with ball-bearings, a single antifriction-ball arranged on one side of said movable bar, a pair of antifriction-balls coupled together by a link arranged on the other side of said movable bar, and a platen-carrier connected to said movable bar.

7. In a type-writing machine, the combination of a movable, guided bar provided with forwardly-projecting horizontal hooks, a platen-carrier detachably hinged to said open hooks at its rear side and supported thereby, and provided at its front side with a supporting antifriction-roller adapted to travel upon a track or way.

8. In a type-writing machine, the combination of the letter-spacing mechanism, the movable, guided bar carrying the feed-rack of the spacing mechanism and provided with ball-bearings, antifriction-balls, the forwardly-extending horizontal arms 31, 32 connected to said movable bar and provided with hooks at their front ends, and the platen-carrier provided with a hinge-rod.

9. In a type-writing machine, the combination in a paper-carriage of fixed guide-bars having ball-bearings, an intermediate movable bar having ball-bearings, a pair of antifriction-balls, connected together by a link, arranged on one side of said movable bar, and a single antifriction-ball arranged on the other side of said bar and to alternate with the pair of coupled antifriction balls, thereby providing three points of bearing for said movable bar.

10. In a type writing machine, the combination of a bar or carriage provided with open hooks, and a platen-carrier having side and end bars and an elevated pintle adapted to said hooks, substantially as described.

11. In a type-writing machine, the combination of a bar or carriage having slotted or grooved arms 31 and 32, fixed stops, as 49 and 51 therefor, and a platen-carrier hinged to said arms, substantially as described.

12. In a type-writing machine, the combination of a bar or carriage having ball-bearings and antifriction-balls therefor, two of which are coupled together by a link which loosely embraces said balls diametrically, so that they may project on each side of said link and run freely in their associated bearings, substantially as described.

13. In a type-writing machine, the combination of a bar or carriage having ball-bearings and antifriction-balls, two of which are coupled together by a link which loosely embraces said balls diametrically, so that they may project on each side of said link and run freely in their associated bearings, and a platen-carrier hinged to said bar or carriage, substantially as described.

14. In a type-writing machine, the combination with fixed horizontal guide-bars having ball-bearings facing each other and fixed stops, of an intermediate movable bar or carriage having on each vertical side a ball-bearing, antifriction-balls arranged in said bearings, the ball-embracing link operating as set forth and a platen-carrier connected to said movable bar or carriage, substantially as described.

15. In a type-writing machine, the combination of a movable bar or carriage running on antifriction-balls, disposed on opposite sides of said bar or carriage, a ball-coupler which loosely embraces at least two of said balls diametrically, so that they may project on each side thereof and run freely in their associated bearings, and fixed stops for the ends of said coupler to abut against, substantially as described.

16. In a type-writing machine, the combination of a track, a carriage, ball-bearings between the track and carriage, and a bar having openings, the balls being loosely confined in said openings.

572,846. BUTTON-FASTENER. HERMANN F. WELKE, Hagen, Germany. Filed Apr. 27, 1895. Serial No. 547,389. (No model.) Patented in Germany Feb. 18, 1894, No. 73,464.



Claim.—1. In a device for connecting buttons to articles, the combination with the jaw for holding the button, a recess to receive the button, a concavity formed in said jaw to form or guide the pin, a spring to rest upon the head of the button and a spring-actuated lever-arm acting in connection with the spring substantially as and for the purpose set forth.

2. In a device for connecting buttons to articles, a spring to engage the head of the button, a lever-arm having a forward extension to engage the spring, a spring connected to said lever-arm and to the operating-handles, and acting substantially as and for the purpose set forth.

3. In a device for connecting buttons to articles, the pin-holding jaw, a recess formed therein having a concave face, a spring-plate to hold the pin arranged over said recess, an arm to play in said recess, and connected with the opposite jaw, substantially as described whereby to automatically control the tension of the spring as set forth.

572,847. SLEIGH-KNEE. HERMAN WEHLE and HENRY WEHLE, Medford, Wis. Filed Apr. 4, 1896. Serial No. 586,202. (No model.)



Claim.—1. A sleigh-knee, comprising an upper or body portion and side flanges, the upper or body portion having a lug located at each side of its center, a clamp adapted for attachment to the body of the sleigh and located upon the upper central portion of the knee and having lateral movement between the said lugs, the said clamp being provided with side flanges adapted to engage with the side flanges of the knee, and guide devices connected with the flanges of the clamp and controlled by stop devices on the flanges of the knee, as and for the purpose specified.

2. The combination with an arched sleigh-knee, comprising an upper or body portion and depending side flanges provided with elongated slots at one side of the center, and outwardly-projecting studs at the opposite side of the center, of a clamp adapted for attachment to the body of the sleigh and located upon the upper central portion of the knee having lateral movement thereon, flanges projected from the said clamp, and slotted to receive the studs of the knee, and a pin passed through the flanges of the clamp and through the elongated openings in the flanges of the knee, as and for the purpose set forth.

3. The combination, with an arched sleigh-knee, comprising an upper or body portion and side flanges, the upper or body portion having a lug at each side of its center, the flanges being provided with elongated slots at one side of the center and outwardly-projecting studs at the opposite side of the center, of a clamp adapted for attachment to the body of the sleigh, having recesses in its sides whereby it may have lateral movement on the knee, the said recesses registering with the lugs of the knee, flanges projected from the said clamp, slotted to receive the studs of the knee, and a pin passed through the flanges of the clamp and through the elongated openings in the flanges of the knee, as and for the purpose specified.

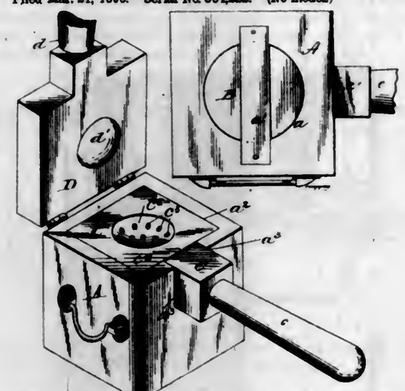
4. The combination, with a sleigh-knee having an upwardly-arched center and horizontal feet at its extremities, the knee comprising substantially an upper body portion and side flanges pendent therefrom, the body portion being provided with a lug at each side of its center upon its outer face, the flanges of the knee having each an elongated horizontal slot at one side of its center, and a stud consisting of a head and shank projected from the outside of each flange at the opposite side of their centers, of a clamp adapted for attachment to a sleigh-body, located between the said lugs and fitted to the convexity of the central portion of the knee, the said clamp being provided with recesses in its side surfaces arranged to receive the lugs on the knee, whereby the clamp may have lateral movement on said knee, flanges projecting from the bottom portion of the said clamp, each flange having a slot in one end to receive the shank portion of the studs on the knee, and a bolt passed through the flanges of the clamp and through the elongated openings in the flanges of the knee, for the purpose set forth.

572,848. STRAINER FOR ARTESIAN WELLS. MARK D. WHEELER, Redfield, S. D. Filed Nov. 9, 1895. Renewed Nov. 12, 1896. Serial No. 611,906. (No model.)



Claim.—The combination with a well-tubing having sections A and A' connected to each other by a coupling B so as to leave an annular space between the adjoining ends of said sections; of a strainer consisting of the part C the lower portion of which is perforated and provided with a threaded aperture, the upper end of the part C being threaded; together with a threaded sleeve or thimble C' in engagement with the upper end of the part C and having upwardly and outwardly projecting spring-arms c' with blocks or heads at their free ends, substantially as shown and for the purpose set forth.

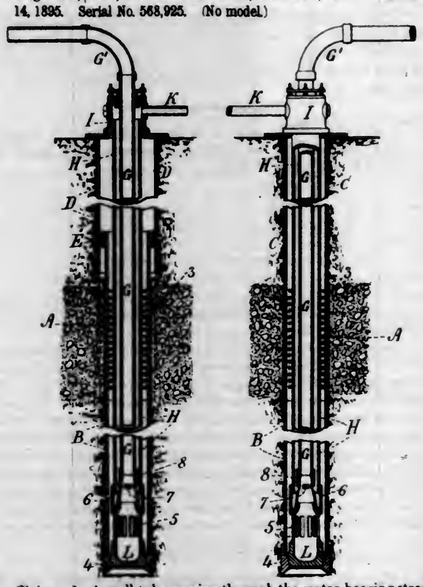
572,849. LEMON-SQUEEZER. JOHN T. WHITE, New York, N. Y. Filed Mar. 21, 1896. Serial No. 584,222. (No model.)



Claim.—1. The combination of the holder, A, having the bore, *a*, and the rabbet, a^2, at the top and around this bore; the upper jaw, D, hinged to the holder and having the handle, *d*; and the removable lower jaw, C, provided with the perforations, c^3, fitting into the rabbet, a^2, and having the handle, C', with the removable receptacle, B, placed within the bore, *a*, as set forth.

2. The combination of the holder, A, having bore, *a*, the rabbet, a^2, at the top and around this bore and the notch, a^3; the upper jaw, D, hinged to the holder and having the handle, *d*, with the removable jaw, C, fitting into the rabbet, and having the angular neck, *c'*, fitting the notch, a^3, and the handle, C', as set forth.

572,850. WATER-RAISING APPARATUS. GEORGE R. YOUNG, Ridgewood, N. J., and CLIFFORD SHAW, New York, N. Y. Filed Nov. 14, 1895. Serial No. 568,925. (No model.)



Claim.—1. A well-tube passing through the water-bearing strata to the desired depth and having perforations at such water-bearing strata, the lower end of such tube having a contracted seat, in combination with a plug fitting such seat and closing the lower end of the well-tube, an uptake pipe and an air-pipe extending down to near the bottom of the well, there being an opening or openings for the air to pass with the water into the uptake-pipe, substantially as set forth.

2. A well-tube passing through the water-bearing strata to the desired distance, closed at the bottom and perforated at such water-bearing strata for the passage of water, an uptake-pipe and an air-pipe descending to near the bottom of the well, openings for the discharge of the air into the water in the uptake-pipe, a larger well-tube extending from the surface to the water-bearing strata or nearly so, and a packing between the same and the well-tube, substantially as set forth.

3. A well-tube passing through the water-bearing strata to the desired depth and having perforations at such water-bearing strata, in combination with a plug for closing the lower end of the well-tube and an air-pipe connected with such plug and an uptake-pipe extending down to near the bottom of the well, there being an opening or openings for the air to pass into the water within the uptake-pipe, substantially as and for the purposes set forth.

572,851. HANDLE ATTACHMENT. LOY B. YOUNG, Newport, Ark. Filed May 12, 1896. Serial No. 591,220. (No model.)



Claim.—1. A device of the class described, comprising a stick, holders secured on the said stick and formed with semicircular bearings adapted to receive the handle of a broom or a like article, and a clamp held between the said holders, comprising a yoke adapted to engage the handle, and a thumb-screw screwing in the yoke and engaging the said stick, substantially as shown and described.

2. A device of the class described, provided with a holder formed with a semicircular bearing for the handle of a broom or a like article, and with like bearings extending in an opposite direction and adapted to engage a stick, in combination with a clamp, substantially as shown and described.

572,852. COMPOSITION OF MATTER FOR ABRADING ARTICLES. EDWARD G. ACHESON, Monongahela City, Pa. Filed Apr. 17, 1895. Serial No. 546,090. (No specimens.)

Claim.—1. A new composition of matter composed of silicide of carbon bonded with a bond containing a flux and clay substantially free from alkali; substantially as described.

2. A new composition of matter composed of silicide of carbon bonded with clay substantially free from alkali, and feldspar; substantially as described.

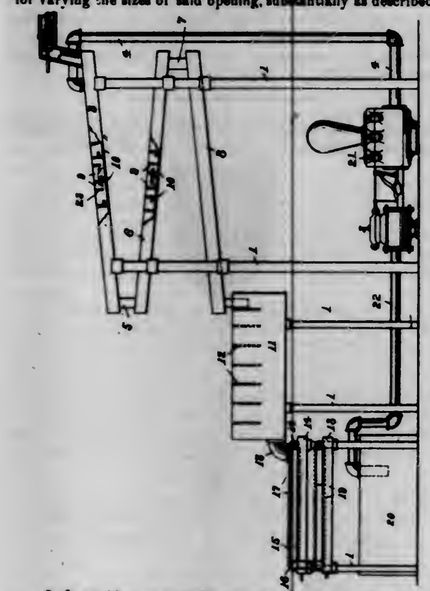
572,853. DETERGENT. JOSÉ ALTIMIRA, New York, N. Y. Filed July 3, 1896. Serial No. 597,920. (No specimens.)

Claim.—The herein-described composition of matter consisting of water, soap-bark, essence of peppermint, ashes of cork-tree bark, soda-ash, chlorid of lime, and ashes of grape-vines in or in about the proportions specified.

572,854. RUBBER-SEPARATOR. WILLIAM F. ASKAM, Shelton, Conn. Filed May 12, 1896. Serial No. 591,238. (No model.)

Claim.—1. In a rubber-separating apparatus, the combination of a trough through which rubber is conveyed, dams arranged crosswise of said troughs, diaphragms arranged between said dams and crosswise of said trough in a manner to form a passage under said diaphragms and over the dams, substantially as described.

2. In a rubber-separating apparatus, the combination of a trough, means for feeding ground rubber therein, means for conveying water into said trough, dams arranged crosswise of said trough and provided with angular extensions, diaphragms arranged between said dams and crosswise of said trough and having an opening thereunder, means for varying the sizes of said opening, substantially as described.



3. In a rubber-separating apparatus, the combination of a trough through which rubber is conveyed, means for delivering rubber and water into said trough, dams arranged crosswise of said trough and provided with angular extensions, diaphragms arranged between said dams to detain the flow of water, a tank 11 adjacent to and connected with said trough, diaphragms in said tank extending below the water-line thereof, substantially as described.

4. In a rubber-separating apparatus, the combination of one or more troughs suitably arranged, means for delivering rubber and water into said troughs, dams and diaphragms alternately arranged in said troughs, a receiving-tank connected with said troughs and provided with diaphragms depending from the top and having passages thereunder, means to receive and separate the water and rubber, substantially as described.

572,855. ROCK-DRILL. JOE. F. BAUBLET and FRANK C. PRIESTLY, Denver, Colo. Filed Mar. 19, 1896. Serial No. 583,865. (No model.)

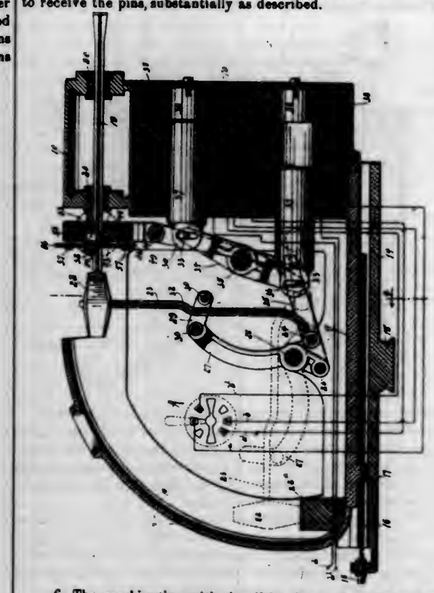
Claim.—1. A rock-drill, comprising a drill-holder and a swinging hammer having its shank pivoted to a rigid support which slides back and forth with the swinging of the hammer, substantially as described.

2. In a rock-drill, the combination of the tilting walking-beam, the tilting rocking arm, the link connecting one end of the rocking arm with the walking-beam, the swinging hammer having its shank pivoted on the aforesaid link, and a sliding connection between one end of the rocking arm and the hammer-shank, substantially as described.

3. A rock-drill, comprising a drill-holder, a swinging hammer, a tilting walking-beam, a pair of reciprocating armatures pivotally connected with opposite ends of the walking beam, an operative connection between one end of the walking-beam and the hammer-shank, a tilting lever worked from the opposite end of the walking-beam, and mechanism operated by the lever to turn the drill-holder, substantially as described.

4. A rock-drill, comprising a drill-holder, a swinging hammer, a tilting walking-beam, a rocking arm connected with the shank of the hammer, a link connection between the rocking arm and one end of the walking-beam, the said link carrying the hammer-shank, a tilting lever connected with the opposite end of the walking-beam, and means for turning the drill-holder by the tilting of the lever, substantially as described.

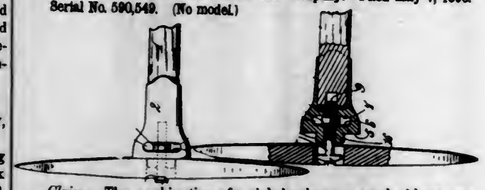
5. The combination with the drill-holder, the drill having a collar thereon, the hammer, the hammer-swinging mechanism, and the tilting lever worked by the hammer-swinging mechanism, of the washer engaging the collar on the drill, the sleeve carried by the lever, held on the washer and connected therewith by ratchet-teeth, the outwardly-projecting pins on the sleeve, and the guide-plates having slots to receive the pins, substantially as described.



6. The combination with the tilting lever, the drill holding and turning mechanism carried thereby, and the squared collar on the drill, of the spring-pressed latch carried by the lever and provided with a socket to engage the squared collar, substantially as described.

7. A rock-drill, comprising a pair of reciprocating armatures, magnets to operate the armatures, a walking-beam tilted by the reciprocation of the armatures, a swinging hammer, and an operative connection between the hammer and the walking-beam, substantially as described.

572,856. PICK. CHARLES R. BARKER, St. David, Ill., assignor to the What Cheer Drill and Miners Tool Company. Filed May 7, 1896. Serial No. 590,549. (No model.)

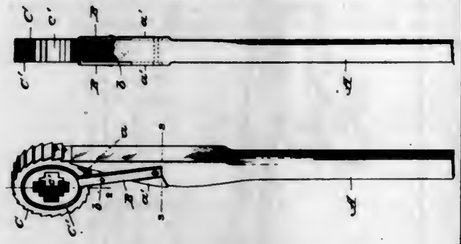


Claim.—The combination of a pick having a central, oblong eye provided at the sides with opposite notches, a metallic handle-socket having at one end projecting studs which enter the pick-eye, a longitudinal bolt-hole, and a transverse nut-receiving slot intersecting said bolt-hole, a rotary nut arranged in said slot between the inner and outer edges thereof and exposed at the sides of the slot so that it can be readily grasped and rotated, and a separate bolt passing into the bolt-hole through said nut and provided at its outer end with a rigidly-fixed oblong head which in one position is adapted to pass through the pick-eye and in another position to span said pick-eye and enter the said opposite notches thereof, substantially as described.

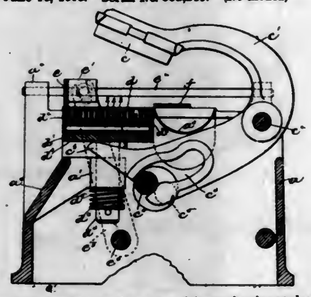
572,857. WRENCH. LUTHER H. BARNES, Nemaha City, Nebr. Filed Jan. 9, 1896. Serial No. 574,923. (No model.)

Claim.—1. In a wrench, the combination, of a handle-bar having one end reduced to form a pawl, plates pivoted to the handle-bar and provided with inwardly-bent ends, means for limiting the swinging movement of the plates upon the handle-bar; together with a ratchet-wheel having a central opening or socket and intermediate annular recesses with which the bent ends of the pivoted plates engage, substantially as shown and for the purpose set forth.

2. The combination in a wrench, of a handle-bar A having a reduced end to form a pawl, a shoulder a' formed on each side of the handle-bar, plates B B pivoted to the handle adjacent to said shoulders and provided with inwardly-bent ends, and a cross-bar b connecting the plates to each other beyond the edge of the handle; together with a ratchet-wheel C having a central nut-receiving opening and an intermediate annular recess on each side, the bent ends of the plates B being in engagement with said annular recesses, substantially as shown and for the purpose set forth.



572,858. RAISIN-SEEDER. SAMUEL B. BLISS, Pasadena, Cal. Filed June 10, 1895. Serial No. 552,213. (No model.)



Claim.—1. A raisin-seeder comprising a horizontal pump-impaling bed composed of a plurality of closely-set vertical pins, an elastic presser movable toward and from the bed, an ejector movable in the spaces between the pins, the said presser being adapted to force raisin-pulp into the spaces between the pins and leave the seeds on the ends of the pins, a spring for normally holding the ejector downward, means for positively raising the ejector, and a scraper movable across the ends of the pins.

2. A raisin-seeder comprising a fixed horizontal pulp-impaling bed composed of a plurality of closely-set vertical pins, a movable elastic presser having a smooth or plain surface, an ejector mounted on a vertically-movable stud and movable in the spaces between the pins, a spring for pressing the stud downward, means for positively raising the stud, a sliding scraper adapted to remove seeds from the tops of the pins, and means for removing seeds from said scraper.

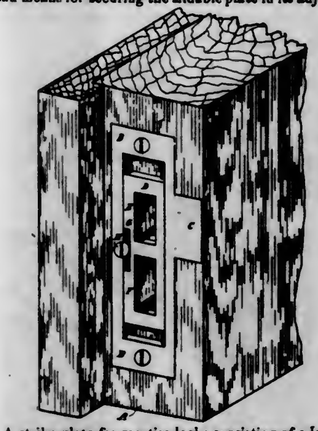
3. A raisin-seeder comprising a supporting-frame, an impaling-bed composed of a base-plate with a plurality of projecting wires or teeth and detachably engaged with the supporting-frame, a stud d^4 vertically movable in a socket in the frame, a carrier d^3 on the stud and having guides d^7, a plate d' fitting said guides, and an ejector supported by said plate d', substantially as described.

4. A raisin-seeder comprising a supporting-frame having horizontal guide-rods c^2, the impaling-bed composed of a base part and a plurality of pins, wires, or teeth, the stripping or ejecting plate movable on or between the said wires, pins, or teeth, a presser having an elastic exterior for properly impaling the raisin on the impaling-bed, a scraper for removing the fruit and seed from the face of the impaling-bed and having slides c' fitted to said guide-rods, and a second scraper for removing adhering matter from the first-mentioned scraper.

5. A raisin-seeder comprising a supporting-frame, a carrier fitted to move on said frame, a perforated stripper-plate detachably engaged with said carrier, an impaling-bed composed of a base-plate and a plurality of wires projecting upwardly therefrom through the perforations in the stripper-plate, said base-plate being detachably engaged with the supporting-frame, and a movable locking device whereby the stripper-plate and impaling-bed may be detachably secured to the frame.

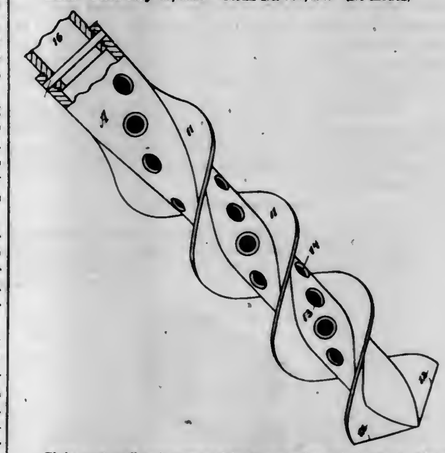
572,859. STRIKE-PLATE FOR LOCKS. ROSALIND H. BOWER, San Francisco, Cal. Filed Apr. 15, 1896. Serial No. 587,580. (No model.)

Claim.—1. A strike-plate for mortise-locks consisting of a plate to be secured to the door casing, having a slot formed longitudinally in it wholly inside of its margins and having an outwardly-projecting strike from one edge, said plate having the vertical side walls of its slot formed with tongues, a second plate fitted to slide within the slotted portion of the first-named plate and having its vertical edges grooved to receive said tongues, said slidable plate having two independent openings, one for the latch and the other for the bolt of the lock, and means for securing the slidable plate in its adjusted position.



2. A strike-plate for mortise-locks consisting of a longitudinally-slotted plate, means for securing it to the casing, said plate having tongues upon its vertical parallel sides, a second plate of less length than the channel in the outer one having grooves adapted to fit the tongues in the outer plate and openings to receive the latch and bolt of the lock, a beveled channel formed longitudinally in one side of the plate, a countersunk semicircular opening in the adjacent edge of the outer plate and a screw adapted to lock the two at any point of their adjustment with relation to each other.

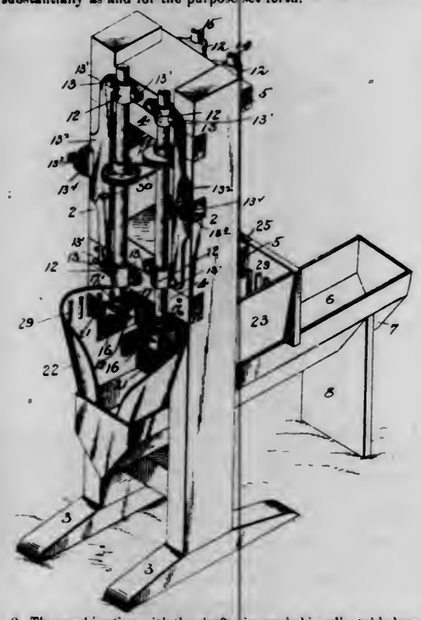
572,860. WELL-POINT. HENRY K. BREARLEY, West Duluth, Minn. Filed July 15, 1896. Serial No. 599,256. (No model.)



Claim.—A well-point comprising a tapering tubular body, flanges located exteriorly of the body and carried spirally around the same in opposite directions, the flanges being of even width throughout their length except at the bottom and at the top, the lower ends of the flanges being tapered to meet the apex of the lower end of the body which is closed and of conical form, the tapering portions of the flanges forming cutting edges which are diametrically opposite, the said body being provided with openings therein arranged at intervals in spiral order from top to bottom, the said flanges being substantially V-shaped in cross-section, and the body provided at the top with an interior thread and a locking-pin, as and for the purpose set forth.

572,861. MACHINE FOR PAINTING OR VARNISHING SURFACES. WARREN F. BRENNER, Washington, D. C., assignor to the Washington Venetian Blind Company, same place. Filed Apr. 7, 1896. Serial No. 586,560. (No model.)

Claim.—1. The combination with the frame, the vertical shafts 14 and 15 journaled therein and provided with brushes at their lower ends and means to rotate said shafts in opposite directions, of the casing 23 encompassing said brushes and provided with the vertical ribs 29, substantially as and for the purpose set forth.



2. The combination with the shafts, journaled in adjustable boxes secured to the framework and provided with vertically-adjustable brush-heads, having radially-adjustable brushes secured thereto and provided with a collar and set-screw, for vertical adjustment on said shafts, of the hood or casing, the walls of which partially encircle said brushes and are provided with vertical ribs, adapted to engage the brushes and remove the surplus material from the same, substantially as and for the purpose specified.

3. The combination with the frame, provided with the tank 6, having the open hood 22, and casing 23, of laterally-adjustable shafts 9, 10 and 14, 15, provided with the vertically-adjustable brush-heads 16, carrying the radially-adjustable brushes 21, substantially as and for the purpose specified.

572,862. ROD-PACKING. FRANKLIN BROWN, Philadelphia, Pa., assignor to Thomas Cunningham, Lucien Brown, George Brown, Frank P. Pendleton, and John A. S. Brown, same place, and Horatio B. Lincoln, Worcester, Mass. Filed Apr. 8, 1895. Serial No. 544,916. (No model.)



Claim.—The combination of a fibrous packing comprising opposite triangular strips, and upper and lower cushioning-strips filling the V-shaped spaces between said triangular strips, with a soft-metal face-plate applied to the inner triangular strip and having its upper and lower portions bent inward at an acute angle and engaging the angles of said triangular side strip, substantially as specified

572,863. KEY-SEATING MACHINE. CHARLES J. CARNEY, Dunkirk, N. Y., assignor to the Brooks Locomotive Works, same place. Filed Mar. 14, 1896. Serial No. 583,245. (No model.)

Claim.—1. The combination in a machine for cutting key-seats in axles, &c., of the two heads, means for holding the axle between the said heads, a longitudinally-movable carriage on each head, a tool carrier mounted on each carriage, a tool-shaft on each carrier having a cutting-tool thereon, adjusting devices for the carrier so as to regulate the depth of cut, means for driving the cutting-tools and means for feeding the carriages, substantially as described.

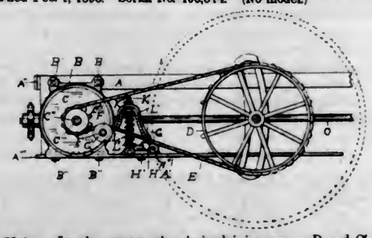


2. The combination in a key-seating machine adapted to cut two seats simultaneously one at an angle to the other, of the two heads, centers thereon upon which the axle is mounted, a carriage on each head, a carrier on each carriage, a cutting-tool on each carrier, devices for adjusting the tool to the work and means for feeding the carriages toward and from each other and means for driving the tools, substantially as described.

3. The combination in a key-seating machine, of the bed-plate, the fixed head having ways thereon, the adjustable head also having ways, a carriage adapted to the ways of each head, a fixed carrier mounted on each carriage, a hand-screw for adjusting the said carrier, a tool-shaft on each carrier, cutting-tools thereon, a worm-shaft at each side of the machine, one worm geared to the cutting-tool of one carriage and the other worm geared to the cutting-tool of the other carriage, a feed-screw in each head engaging with the carriage, a feed-shaft geared to the set-screws and means for throwing the screws into and out of gear with the shaft, substantially as described.

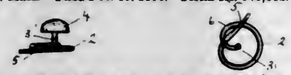
4. The combination in a key-seating machine, of the two heads, centers thereon for the axle, a carriage on each head, means for driving the carriages in unison, a tool-carrier mounted on each carriage, a milling-tool thereon and means for revolving said milling-tool, the mechanism for driving the milling-tool being geared to the mechanism for feeding the carriage so that the milling-tool will be fed along the shaft as it is revolving, substantially as described.

572,864. SPROCKET-CHAIN TIGHTENER. GEORGE H. CARVER, Piano, Ill., assignor to the Piano Manufacturing Company, Chicago, Ill. Filed Feb. 1, 1893. Serial No. 460,514. (No model.)



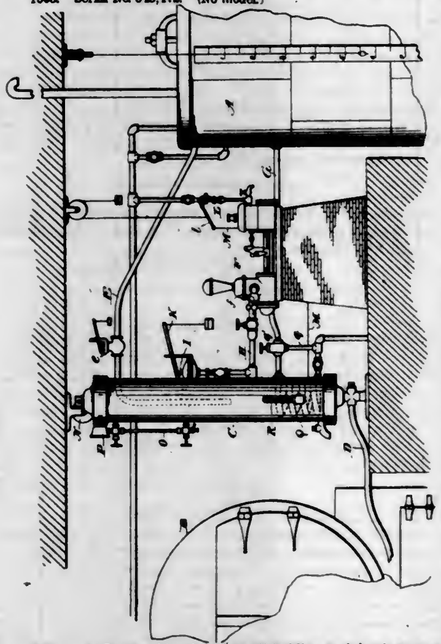
Claim.—In a harvester, the chain driving gears, D and C, in combination with a driving-chain, E, applied thereto, the arm or lever, G, pivoted at one end to the frame and extending up at the side of and above the lower section of the chain and then bending downward to a point below said chain-section, a roller mounted on a pin at the free end of said bent lever and projecting underneath the chain, a pin or bolt, K, pivoted to the frame at one end just below the upward curve of the lever and extending up through the latter at the curve thereof, a spring, L, applied to the pin and arranged to force the lever upward on the said bolt, and an adjusting device on the bolt adapted to regulate the movement of the lever thereon, substantially as described.

572,865. DETACHABLE FASTENING. EVERETT D. CHADWICK, Boston, Mass. Filed Feb. 19, 1896. Serial No. 579,882. (No model.)



Claim.—A detachable fastening for shirt-studs and similar articles, consisting of a shank 3 prolonged to form a flat coil 2 disposed substantially at right angles to the said shank and having its free end 5 arranged to normally lie across a portion of the said coil 2 and project slightly beyond the same, all substantially as and for the purpose set forth.

572,866. MECHANISM FOR BURNING OIL. COLIN W. CLAYBOURNE, Indianapolis, Ind., and MARTIN MOORE, Detroit, Mich., assignors to the Claybourne Burner Company, Chicago, Ill. Filed Mar. 28, 1895. Serial No. 543,472. (No model.)



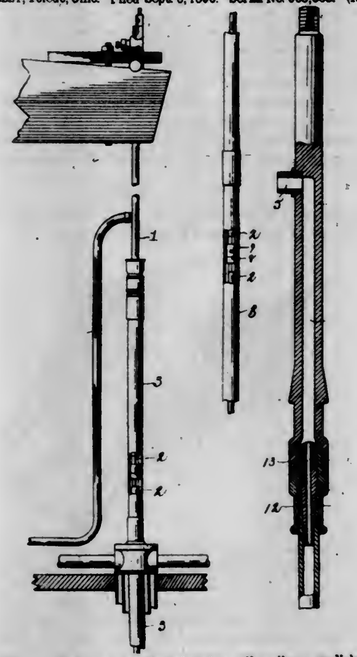
Claim.—1. The combination of an oil-holding tank having an outlet to a burner, and means for heating oil in the tank only at, or near, said outlet, substantially as and for the purpose specified.

2. The combination of an oil-supply tank, a pressure-tank, means for conveying oil to the latter from the former, said pressure-tank having an oil-outlet at its lower end, to a burner, and a heating-coil within the tank only at the lower end thereof, substantially as and for the purpose shown.

3. The combination of an oil-supply tank, a pressure-tank to hold oil, a suitable device to force oil into said pressure tank from the supply-tank, means for regulating the pressure in the pressure-tank, an outlet from the latter to a burner, and means for heating oil in said pressure-tank only at or near said outlet, substantially as and for the purpose specified.

4. The combination of an oil-supply tank, a pressure-tank, a steam-pump for forcing oil from the former to the latter, means operated by the pressure in the pressure-tank for controlling the movements of the pump, a heating-coil in the pressure-tank connected with the steam-exhaust of the pump, and a valved pipe connecting the pressure-tank and the supply-tank to return oil to the latter from the former when the pressure therein exceeds a certain point, substantially as and for the purpose set forth.

572,867. MEANS FOR CLEANING OIL-WELLS. WILLIAM CONNELLY, Toledo, Ohio. Filed Sept. 8, 1896. Serial No. 605,063. (No model.)

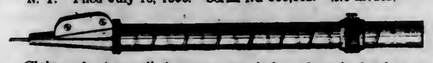


Claim.—1. In a means for cleaning oil-wells, a polished rod, sucker-rod sections, each provided with a longitudinal bore, a steam-pipe in communication with a suitable supply of steam and the bore of the polished rod, coupling devices between the same provided with a longitudinal bore, and an opening communicating with the bore and the exterior of the sucker-rod within the well.

2. In a means for cleaning oil-wells, a polished rod provided with a longitudinal bore, a hollow plug secured in the polished rod in communication with a steam supply and with the bore of the polished rod, tubular sucker-rod sections secured together and to the polished rod through the medium of interposed couplings, said couplings being provided with a longitudinal bore in communication with the bore of the polished-rod and sucker-rod sections respectively, and an opening communicating with the bore and the exterior of the sucker-rod sections within the well.

3. In a means for cleaning oil-wells, tubular sections of sucker-rods and couplings interposed between the sections comprising coupling-sections, tapered plugs secured within the coupling sections for expanding and securing the ends of the sucker-rod sections within the coupling sections, the plugs being provided with a longitudinal bore.

572,868. PENCIL-SHARPENER. CONSTANT E. COUBY, New York, N. Y. Filed July 18, 1896. Serial No. 599,602. (No model.)



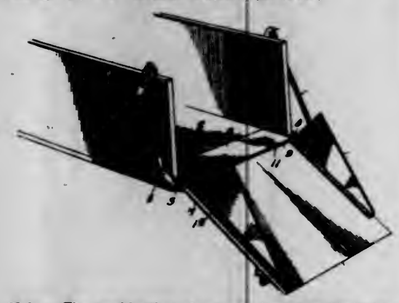
Claim.—1. A pencil-sharpener consisting of a tube having a conical tip and a knife located at the tip, the tube being provided with a spiral slot, and a sleeve held to travel on the tube and provided with an inward projection entering the spiral groove of the body of the sharpener, being likewise adapted to enter the pencil contained in the said sharpener, as and for the purpose set forth.

2. A pencil-sharpener comprising a body-tube having a spiral groove and terminating at one end in a conical tip, the conical tip having an opening, and a knife supported at an angle to the exterior of the conical tip with its cutting edge at the aforesaid opening, and a sleeve held to travel on the body of the sharpener and provided with a set-screw passed through the spiral slot in the said body and adapted to enter the pencil surrounded by the body, as and for the purpose set forth.

3. A pencil-sharpener, the same consisting of a body-tube having a spiral slot therein and terminating at one end in a conical tip, the said tip having a longitudinal opening therein, a tubular cushion located in the contracted end of the tip, a supporting-plate attached at one margin of the longitudinal opening in the tip, extending outward at an angle to the said tip and located diagonally of the tip, a knife secured upon the said support, the cutting edge whereof extends within the longitudinal opening of the tip, a sleeve held to travel on the body of the sharpener, and a set-screw carried by the sleeve and extending within the body-tube through the spiral slot thereof, as and for the purpose set forth.

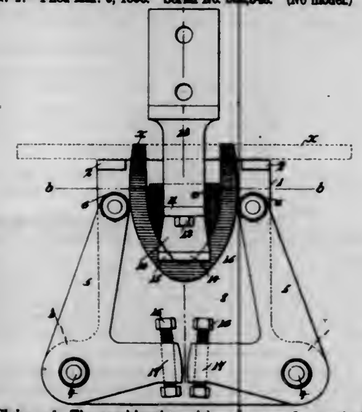
4. A pencil sharpener comprising the tube provided with a knife and a spiral slot, a sleeve arranged to travel on said tube, and a set-screw adapted to enter an opening in said sleeve and said slot and to project into the pencil inclosed by said tube, as and for the purpose set forth.

572,869. WAGON END-GATE. SAMUEL S. CRAWFORD, Holt, Mo. Filed Apr. 27, 1896. Serial No. 589,263. (No model.)



Claim.—The combination of a wagon-body provided with rearwardly-extending bearing plates, an end-gate provided at its bottom with eyes having their upper edges arranged in substantially the same plane as the upper face of the bottom of the body, a pintle-rod arranged in the eyes and the bearing-plates and hinging the end-gate to the body in substantially the same plane as the upper face of the bottom thereof, a shield hinged at its rear edge to the end-gate at a point immediately above the said pintle-rod and having its lower face arranged contiguous to the pintle-rod, said shield being loosely arranged on the upper face of the bottom of the body and adapted to slide backward and forward thereon when the end-gate is opened and closed, and being arranged flat upon the upper face of the bottom of the body when the end-gate is in a vertical, a horizontal or a downwardly-inclined position, and wings mounted on the end-gate adjacent to the inner faces of the sides of the wagon-body, substantially as described.

572,870. HORSESHOE-MACHINE. JOHN W. CROW, New York, N. Y. Filed Mar. 9, 1896. Serial No. 582,348. (No model.)



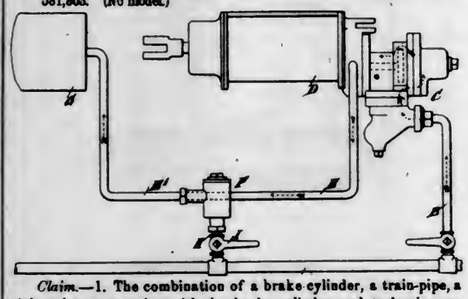
Claim.—1. The combination with a frame, of a vertically-movable plunger, a die fixed to the plunger, two bell-crank levers fulcrumed on the frame each having an upwardly-extended arm and each bell-crank lever also having an inwardly-extended arm, the inwardly extended arms being approximately at right angles to the line of movement of the plunger, and a screw carried and movable in each of the said latter arms, such screws being engaged by the plunger, substantially as described.

2. The combination with a frame, of a vertically-movable plunger, a bracket secured to the lower end of the plunger and having at its lower end an outwardly-projecting flange, a die rigidly connected with the plunger and having the bracket extended laterally beyond a portion of the die, two bell-crank levers fulcrumed on the frame, each lever having an upwardly-extended arm and each lever also having an inwardly-extended arm, the latter arms being normally located approximately at right angles to the line of movement of the plunger, and a screw carried by the latter arm of each bell-crank lever, the screws being adjustable longitudinally with the plunger and capable of being engaged by the flange of the bracket, substantially as described.

3. The combination with a frame, of a vertically-movable plunger, a bracket depending from the plunger and having at its lower end an outwardly-extending flange, a die secured to the plunger and having the flange of the bracket projected laterally beyond each side of the die, and two bell-crank levers fulcrumed on the frame, each bell-crank lever having an upwardly-extending arm and each bell-crank lever also having an inwardly-extending arm, the latter arms being normally at approximate right angles to the line of movement of the plunger and capable of being engaged by the flange of the bracket as the plunger descends, substantially as described.

4. The combination with a frame having at its upper portion two laterally-projecting lugs, of a plunger vertically movable with relation to the frame, a bracket depending from the lower end of the plunger and having at its lower end an outwardly-extending flange, a die secured to the plunger and located between the bracket and the frame, the die having the flanged portion of the bracket extended beyond the respective sides of the die, two bell-crank levers fulcrumed on the frame, each bell-crank lever having an upwardly-projecting arm between which arms the die moves and each bell-crank lever also having an inwardly-projecting arm normally extended approximately at right angles to the line of movement of the plunger, and a screw carried by each latter arm, the screws being adjustable longitudinally with the plunger and capable of being engaged by the flanged portion of the bracket, substantially as described.

572,871. FLUID-PRESSURE BRAKE. ALEXANDER DALLAS and OSCAR P. AMICK, Herington, Kans. Filed Mar. 4, 1896. Serial No. 581,803. (No model.)



Claim.—1. The combination of a brake-cylinder, a train-pipe, a triple valve coöperating with the brake-cylinder and train-pipe, an auxiliary reservoir, a pipe leading from the auxiliary reservoir to the triple valve, a feed-valve casing in communication with the train-pipe and having a curved channel interposed between sections of the pipe from the auxiliary reservoir to the triple valve and the casing also having a nozzle projecting from an opening in the casing and into the curved channel, and a valve within the valve-casing, substantially as described.

2. A feed-valve having a casing, one end of which is formed with an opening and the casing also having an opening in one side and also having a curved channel adjacent to said opening and a nozzle projecting from the opening and into the channel, a bushing within the casing, the bushing forming a valve-seat and cylinder and having openings near each end, a piston movable in the bushing and susceptible to the simultaneous action of pressure from each opening, and a valve actuated by the piston, substantially as described.

3. A feed-valve having a casing with two fluid-openings, the casing also having a nozzle projecting from one fluid-opening and a channel adjacent to said fluid-opening and into which channel the nozzle projects, a bushing located within the casing and forming a valve-seat and cylinder, the bushing having an opening near the valve-seat, a cap engaging the end of the bushing opposite the opening therein, the cap having an opening forming a passage into the bushing, a piston operating in the bushing and susceptible to the simultaneous pressure of fluid from each fluid opening, and a valve actuated by the piston, substantially as described.

4. A fluid-valve having a casing with two fluid-openings, a nozzle projecting from one fluid-opening, a channel into which the nozzle extends, a bushing within the casing and forming a valve-seat, the bushing also having an opening near the valve-seat, a piston operating within the bushing and susceptible to pressure by fluid at each fluid-opening, and a valve actuated by the piston, substantially as described.

5. In a fluid-pressure brake system, a train-pipe, an auxiliary reservoir, a brake-cylinder, a triple valve operated by a mere preponderance of fluid-pressure, means establishing communication between the triple valve and the auxiliary reservoir, means establishing communication between the triple valve and the train-pipe, and a feed-valve communicating with the means for establishing communication between the auxiliary reservoir and the triple valve and also communicating with the train-pipe, the feed-valve being loaded to normally close and to require for its operation a preponderance of fluid-pressure in the train-pipe greater than that reqired to operate the triple valve, substantially as described.

6. In a fluid-pressure brake system, an auxiliary reservoir, a brake-cylinder, a train-pipe, a triple valve, means establishing communication between the train-pipe and the triple valve, means establishing communication between the auxilary reservoir and the triple valve and a feed-valve communicating with the means establishing communication between the auxiliary reservoir and the triple valve and with the train-pipe and establishing and controlling communication between such latter parts, the feed-valve requiring for its operation a preponderance of pressure in the train-pipe greater than that required to operate the triple valve, substantially as described.

7. In a fluid-pressure brake system, an auxiliary reservoir, a brake-cylinder, a train-pipe, a triple valve, means establishing communication between the triple valve and the auxiliary reservoir, means establishing communication between the triple valve and the train-pipe and a feed-valve establishing a controlled communication between the train-pipe and the means connecting the auxiliary reservoir and the triple valve, the feed-valve having a nozzle directing the flow of fluid from the train-pipe toward the auxiliary reservoir and away from the triple valve, substantially as described.

8. In a fluid-pressure brake system, a brake-cylinder, an auxiliary reservoir, a triple valve with which the auxiliary reservoir communicates, a train-pipe with which the auxiliary reservoir communicates, and a feed-valve controlling a communication between the train-pipe and the auxiliary reservoir, the feed-valve requiring for its operation a greater preponderance of pressure in the train-pipe than that which is required for the operation of the triple valve, substantially as described.

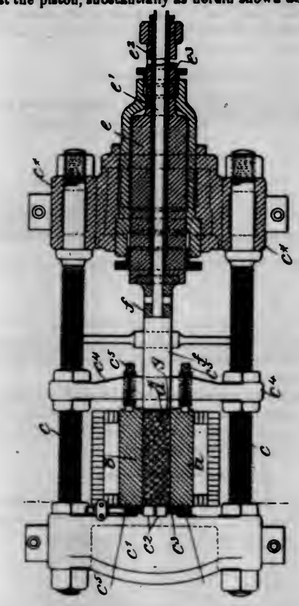
9. In a fluid-pressure brake system, an auxiliary reservoir, a brake-cylinder, a train-pipe, a triple valve having communication with the brake-cylinder and the train-pipe, means establishing communication between the auxiliary reservoir and the triple valve, and means establishing communication between the train-pipe and the means for connecting the auxiliary reservoir and the triple valve, the means leading from the train-pipe being capable of directing a current of fluid into the means connecting the auxiliary reservoir and the triple valve and in a direction toward the auxiliary reservoir and away from the triple valve, substantially as described.

572,872. APPARATUS FOR MANUFACTURING WIRE, &c., FROM COPPER. GEORGE A. DICK, London, England. Filed Apr. 13, 1894. Serial No. 507,428. (No model.)

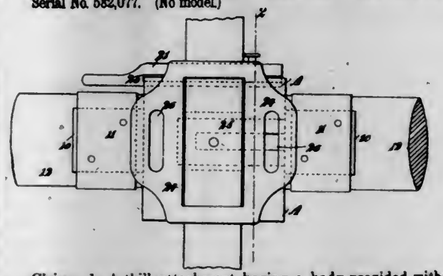
Claim.—1. In a device of substantially the character specified, the combination of a frame composed of the screw-threaded side pieces or bars at the ends carrying cross-heads, a pressure-chamber open at both ends for containing the heated alloy, suitable means for mounting it in the frame consisting of a cross-bar working on the side pieces or bars and carrying set-screws which bear against the said chamber and set-screws carried by the end piece or cross-head, a die also carried by the end piece or cross-head, an aperture in the cross-head for the passage of the squeezed metal and a suitable plunger or piston working in the chamber and actuated by a hydraulic ram carried by the frame, substantially as shown and described.

2. In a device of substantially the character specified, the combination of the frame, a pressure-chamber mounted in said frame, a die located at one end of the chamber and suitable means for removably securing it in place on the end piece consisting of a pair of jaws pivoted to the end piece and adapted to surround the die and a set-screw for holding the jaws around the die, and a piston also carried by the frame and working in the chamber, substantially as shown and described.

3. In a device of substantially the character specified, the combination of the pressure-chamber for containing the heated alloy, a die, a piston working in the chamber and a thin disk of metal formed with annular corrugations placed in front of the piston and of a higher melting-point than the plastic alloy or metal under treatment so that it retains its rigidity in the presence of the heated metal and expands under pressure so as to prevent the squeezing of the plastic metal past the piston, substantially as herein shown and described.



572,873. DEVICE FOR ATTACHING HARNESS TO VEHICLE-SHAFTS. FREDERICK DICKERSON, Windom, Minn. Filed Mar. 6, 1896. Serial No. 582,077. (No model.)



Claim.—1. A thill attachment having a body provided with a horizontally-extending and undercut slot opening at the front of the body and also provided with a horizontal slideway communicating with two transversely-extending bores or passages, one of which is also in communication with the undercut slot, a buckle having a stud projecting and movable in the undercut slot, a U-shaped bolt, the arms of which are respectively movable in the bores or slots, a spring pressing the U-shaped bolt, and a spring-pressed slide movable in the slideway and capable of holding the bolt in a position opposed to the tendency of the spring thereof, substantially as described.

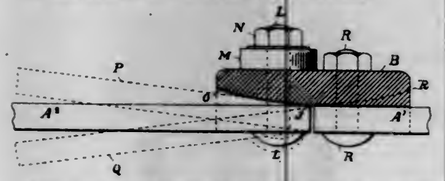
2. A thill attachment having a body portion provided with a slot opening at the forward end of the body portion, the body portion being also provided with a bore or passage intersecting the slot, a bolt movable in the bore or passage, a spring pressing the bolt outward from the bore or passage, a slide capable of holding the bolt against the pressure of the spring, a spring pressing the slide to engagement with the bolt, and a buckle provided with a stud movable in the slot and normally engaged by the bolt to prevent the disengagement of the stud from the body, substantially as described.

3. A thill attachment having a body provided with a slot and with a bore intersecting the slot, a slide formed with a slot, a spring pressing the slide inward, a bolt having a stud movable in the slot of the slide, a spring pressing the bolt, and a buckle provided with a stud movable in the slot and engaged by the bolt to prevent the disengagement of the stud with the body, substantially as described.

4. A thill attachment having a body portion provided with a slot

opening at the forward end of the body portion, the body portion being also provided with a bore or passage intersecting the slot, a bolt movable in the bore or passage, a spring pressing the bolt outward from the bore or passage, a slide capable of holding the bolt against the pressure of the spring, and a spring pressing the slide to engagement with the bolt, the slot being capable of receiving a portion of a buckle, substantially as described.

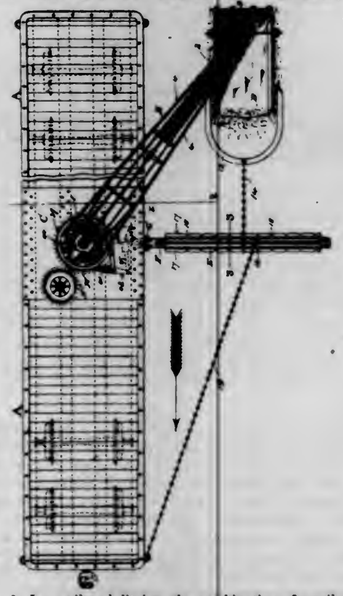
572,874. TROLLEY-WAY. MICHEL DILLENBURG, San Francisco, Cal. Filed Apr. 30, 1896. Serial No. 589,626. (No model.)



Claim.—1. In a trolley-way, the movable switch-bar A^2, clamping-bolt L, spring M, the latter maintaining an elastic clamping strain when the bar A^2 is moved for switching purposes, in the manner substantially as described.

2. In a trolley-way, the movable switch-bar A^2, clamping-bolt L, spring M and hanger B, the latter carved or beveled on its front or bearing face to permit movement of the bar A^2, in the manner and for the purposes substantially as described.

572,875. RAILROAD-DITCHER. WILLIAM B. DODDRIDGE, St. Louis, Mo. Filed Aug. 3, 1896. Serial No. 601,434. (No model.)

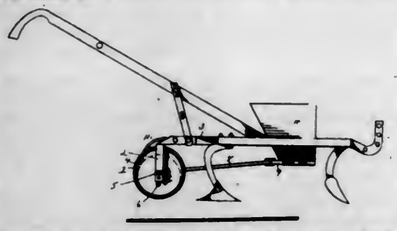


Claim.—1. In a railroad ditcher, the combination of a railroad-car, a beam projecting from the car and secured thereto by a double-hinge joint, a scoop, a chain connecting the beam to the scoop, and a chain connecting the beam to the car, the beam having depressions for holding the said chains, substantially as described.

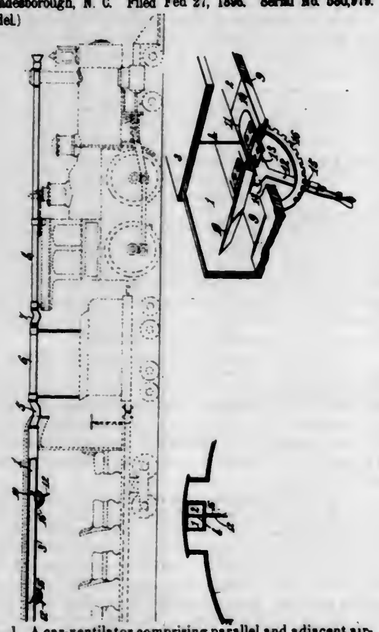
2. In a railroad-ditcher, the combination of a railroad-car, a beam projecting from the car and secured thereto by a double-hinge joint, a chain connecting the beam to the scoop, a chain connecting the beam to the car, and a crane or derrick, the beam having depressions for holding the said chains, substantially as described.

572,876. PEA-PLANTER. RALPH B. DUNHAM, Warthen, Ga. Filed Sept. 23, 1896. Serial No. 606,731. (No model.)

Claim.—An attachment for planters consisting of two rollers suitably journaled, an eccentric interposed between said rollers and holding them apart, said eccentric adapted to operate the slide of the planter, a spring-rod secured to the planter and extending between the rollers and adapted to keep the space between the rollers free from stones, &c.



572,877. VENTILATOR FOR RAILWAY-CARS. JOSEPH I. DUNLAP, Wadesborough, N. C. Filed Feb. 27, 1896. Serial No. 580,979. (No model.)

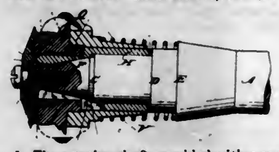


Claim.—1. A car-ventilator comprising parallel and adjacent air-conduits extended longitudinally the entire length of a car and provided at their ends with flexible couplings for connecting with similar conduits on adjoining cars, each conduit being arranged to communicate with the interior of the car through openings provided with valves that open only in one direction for each condait, the valves in one conduit being adapted to open only in a forward direction and the valves in the other conduit being adapted to open only in a rearward direction, whereby one conduit will serve for exhaust of foul air from the car and the other for admission of pure air, according to the direction of movement given to the car, substantially as described.

2. A car-ventilator comprising two parallel and adjacent air-conduits extended longitudinally the entire length of a car and communicating therewith through openings provided with valves that open only in one direction for each conduit, the valves in each conduit being hinged or pivoted in line with and adjacent to the hinge or pivot of a corresponding valve in the other conduit so that the valves in one conduit will open only in a forward direction and the valves in the other conduit only in a rearward direction, springs for normally closing said valves, a lever for each pair of adjacent valves in the said conduits, the said lever being provided with arms having lugs projecting laterally in opposite directions to bear on and open said valves alternately according to the direction of movement imparted to the lever, and means for locking said lever at any angle, substantially as described.

3. In a car-ventilator, the combination of a pipe supported on the locomotive and extended in front of the same with an open flared end, a pipe supported on the tender and coupled to the pipe on the locomotive, parallel and adjacent longitudinal conduits in each car and coupled to the pipe on the tender, each of said parallel and adjacent conduits being adapted to communicate with the interior of a car through series of openings provided with valves that open only in one direction for each conduit, or forward in one conduit and rearward in the other, springs for closing said valves, levers for opening the valves, and locking mechanism for each lever to hold the valves open at any required angle, substantially as described.

572,878. SOLE-TRIMMING MACHINE. JOHN B. EMERY, Lynn, Mass. Filed Jan. 18, 1896. Serial No. 575,980. (No model.)



Claim.—1. The rotating shaft provided with a series of shoulders of differential circumferences, and a taper, adapted to support a longitudinally-slotted sleeve, the said sleeve provided with differential circumferences and a taper adapted to embrace the said shaft, the trimmer covering the ends of the shaft and the sleeve and the clamping-screw arranged to enter the shaft in a manner to confine the said trimmer and its herein-described coacting accessories, with the flexible sleeve, rigidly upon the shaft, to obviate lateral motion occasioned by wear of the shaft end, or bore of the cutter, substantially in the manner and for the purpose specified.

2. The multishoulder shaft provided integrally near its end with an external taper-spindle terminating in a circular bearing and having an internal threaded socket; the sleeve or jacket having internally a cylindrical bore and a diminished taper terminating at its smaller end in a circular bearing in proportion to fit the identical bearing of said shaft, the bore and taper abutting against an annular interoal shoulder, said taper subdivided by longitudinal intersections in a manner to form a series of expanding and contracting sectional coacting taper and segmental bearing-surfaces, the apertured disk or shield provided at its center with a circular rearward depression to receive the circular bearing of the taper-spindle and the clamping-screw adapted, when the described devices are assembled, to be turned into the threaded socket of said spindle in a manner to force the sleeve over the spindle-taper and expand the segments of said sleeve beyond their normal circumference substantially in the manner specified.

3. The combination in a sole-trimming machine of a rotating shaft provided with a series of shoulders and an internally-threaded taper-spindle, a sleeve or jacket provided with an internal annular shoulder adapted to coact with the outward shoulder of the taper-spindle, and an internal flexible taper-bearing conforming to the taper-spindle of the shaft, a sole-edge trimmer adapted to receive said flexible bearing provided with a hub to operate against the outward shoulder of the sleeve to press the latter farther upon the taper-spindle, a feather-edger having an independent yielding support, a vamp-guard provided with an apertured central depression and means substantially as described, for compressing the sleeve and its coacting devices upon the taper-spindle to expand said flexible taper and unify the rotation of the trimmer and shaft.

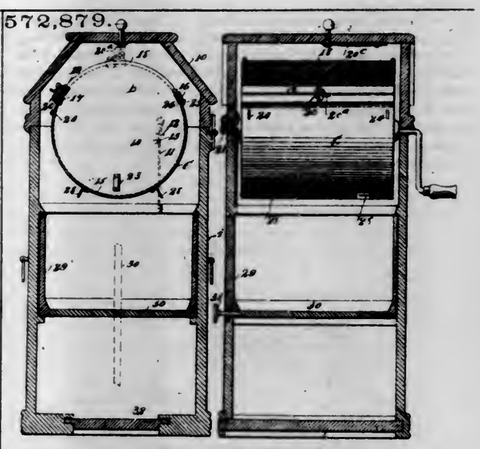
4. The feather-edger adapted to yield before endwise pressure, the trimmer arranged to receive the force of the guard and transmit it to the sleeve, and the said guard provided with means to embrace the reduced circular end of the shaft or spindle, in combination therewith the revoluble shaft having a taper-spindle internally threaded, the clamping-screw adapted to draw the guard against the trimmer, the sleeve having rigid and expansible ends, the former to embrace the shaft, the latter to embrace the taper in a manner to expand and securely fit the bore of the trimmer, and means to cushion the sleeve against the action of the screw and its coacting devices, substantially in the manner set forth.

572,879. ASH-SIFTER. JOHN W. FEE, Chicago, Ill., assignor of one-half to William H. Price, same place. Filed Sept. 9, 1895. Serial No. 561,945. (No model.)

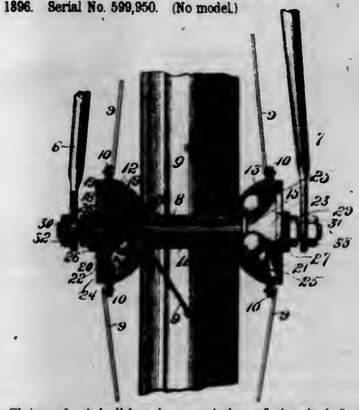
Claim.—1. In an ash sifter, the combination with a frame, of a sifter proper removably supported by the frame, a shield capable of partially surrounding the sifter and provided with feet whereby the sifter may be supported upright without the frame, and means for removably securing the shield on the sifter, substantially as described.

2. In an ash-sifter, the combination with a frame of a removable perforated sifting-cylinder and a shield capable of partly embracing the cylinder and of closing part of its perforations, the shield having means for securing it to the cylinder and also having means for preventing the cylinder from rolling without the frame, substantially as described.

572,879.



572,880. BALL-BEARING. EDWARD FLANNIGAIN, St. Louis, Mo., assignor of one-half to Frank W. Klocke, same place. Filed July 20, 1896. Serial No. 599,950. (No model.)



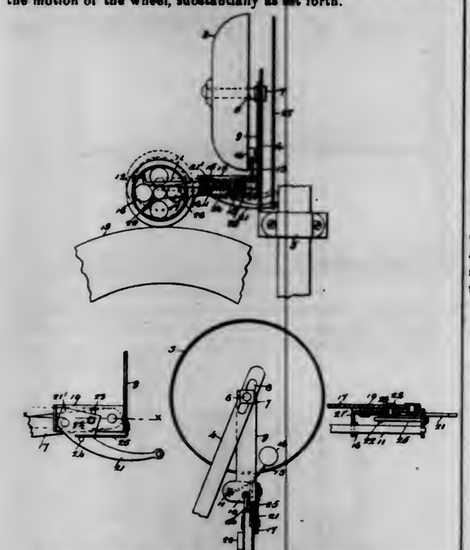
Claim.—1. A ball-bearing consisting of the shaft 5, the tube 11 mounted loosely upon said shaft, the hemispherical cups 12 and 13 formed integral with the ends of said tube 11, the spiders 14 and 15 upon the shaft 5 and within the cups 12 and 13, respectively; each of said spiders consisting of the ring 16 and the arms 17 formed integral with said ring; the bearing-balls 18 mounted upon said arms 17, the cones 20 and 21 mounted upon the ends of said shaft and against the bearing-balls 18, said cones having concaved annular surfaces 22 and 23 respectively, against which said bearing-balls operate, and means of holding said cones and said tube adjustably in position, substantially as specified.

2. A ball-bearing consisting of the shaft 5, the tube 11 mounted loosely upon said shaft, the hemispherical cups 12 and 13 formed integral with the ends of said tube 11, the spiders 14 and 15 upon the shaft 5 and within said cups 12 and 13 respectively; each of said spiders consisting of the ring 16 and the arms 17 formed integral with said ring; the bearing-balls 18 mounted upon said arms 17, the cones 20 and 21 mounted upon the ends of said shaft and against the bearing-balls 18, said cones having concaved annular surfaces 22 and 23 respectively, against which said bearing-balls operate, and means of holding said cones and said tube adjustably in position; which means consist of the nuts 26 and 27, one upon each end of said shaft and outside of said cones, and the jam-nuts 28 and 29, one upon each end of said shaft and outside of said nuts 26 and 27, substantially as specified.

572,881. BICYCLE-BELL. PAUL FLUCKS and GEORGE P. MCDONNELL, St. Louis, Mo. Filed July 28, 1896. Serial No. 600,784. (No model.)

Claim.—1. In a bicycle alarm-bell, a suitable bell, means for securing the same to the frame of the machine, a swinging arm carrying at its free end a roller adapted to normally contact with the tire of the wheel, a plate to which said arm is pivoted, a rocking stem

carried by said plate, a hammer carried by the stem, a spring for normally pressing the hammer against the bell, a deflected end forming a part of the stem, a lug carried by the side of the contact-roller adapted to intermittently ride over the deflected end of the stem and rock the same and trip the hammer carried thereby against the tension of the spring controlling the hammer, the said spring restoring the parts to their normal position and bringing the free end of the hammer in contact with the bell and thus sounding an alarm during the motion of the wheel, substantially as set forth.



2. In a bicycle alarm-bell, a suitable bell, means for securing the same to the frame of the machine, a swinging arm carrying at its free end a roller adapted to normally contact with the tire of the wheel, a U-shaped plate to which said arm is pivoted, a rocking stem passed through the arms of the plate, a hammer carried at one end of the stem, a torsional spring encircling the stem and having one end bearing against the base of the hammer and the opposite end secured to the outer arm of the plate, the said stem projecting a suitable distance beyond the U-shaped plate and having a deflected end, a lug carried by the side of the contact-roller adapted to intermittently ride over the deflected end of the stem and rock the same and trip the hammer carried thereby against the tension of the torsional spring, the said spring restoring the parts to their normal position and bringing the free end of the hammer in contact with the bell and thus sound an alarm during the motion of the wheel, substantially as set forth.

3. In a bicycle alarm bell, a suitable bar depending from the stem of the bell, a roller carrying arm, a U-shaped plate secured to or forming a continuation of the bar, to which the roller carrying arm is pivoted, a lever pivoted to said plate, an inwardly-projecting pin carried by the lever near the pivotal point of the same, a spring-plate having one end secured to the base of the bar and having its free end bearing down on the pin projecting from said lever whereby the latter is kept in a depressed position, a slot formed in the U-shaped plate, a pin passed through said slot and effecting a connection between the spring-controlled lever and the roller-carrying arm, whereby with the depressed position of the lever the roller carried by the arm is kept in contact with the tire of the wheel, and means under the control of the rider for tilting the lever against the action of the spring-plate and thus disengaging the roller from contact with the tire, substantially as set forth.

4. In a bicycle alarm-bell, a suitable arm having a slotted upper end, adapted to be respectively secured to the forked end of the steering-rod and the stem of the bell, a bar adapted to be also secured to the stem of the bell, whereby accurate adjustment in the position of said arm and bar may be effected, a roller-carrying arm carried by said bar, means for keeping the roller in contact with the wheel-tire, means for disengaging the roller from the tire, and intermediate connections between the roller and the bell for sounding an alarm during the motion of the wheel and during the contact between the roller and the tire of the wheel, substantially as set forth.

5. In a bicycle alarm-bell, a suitable bell adapted to be carried by the machine, a roller-carrying arm in proximity to the bell, a spring-controlled lever for normally effecting contact between the roller and tire of the wheel, a cord having one end secured to the free end of the lever, a roller carried by the handle-bar over which said cord passes, and a controlling-arm pivoted adjacent to one of the handles of the handle-bar to which the opposite end of the cord is attached, whereby the rider upon the swinging of the arm draws the cord against the resiliency of the spring controlling the lever, disengages the roller from the tire, substantially as set forth.

572,882. JOURNAL-BOX. CHESTER D. FLYNT, Brooklyn, N. Y., assignor of one-half to John T. Jones, same place. Filed Sept. 22, 1896. Serial No. 606,671. (No model.)



Claim.—In a journal-box, the combination, of the journal, the bearing-block, a lining therefor consisting of asbestos fabric charged with graphite, a spring-base beneath the journal, and a pad mounted on said spring-base formed with a soft retaining-surface as described and containing a supply of said graphite, which is arranged to be held against the under surface of the journal by said spring-base, substantially as set forth.

572,883. DUST-GUARD FOR JOURNAL-BOXES. CHESTER D. FLYNT, Brooklyn, N. Y., assignor of one-half to John T. Jones, same place. Filed Oct. 7, 1896. Serial No. 608,149. (No model.)



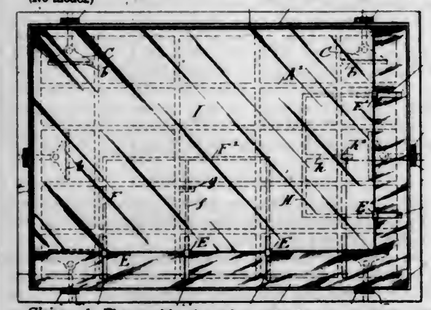
Claim.—1. A dust-guard for journal-boxes composed of a ring or annulus of expansible material having an exterior of wool, the fabric supporting the same being wound spirally on said ring or annulus, substantially as set forth.

2. A dust-guard for journal-boxes composed of a coiled-wire ring or annulus filled with wool and covered with a strip of sheepskin wound spirally thereon with the wool side out, substantially as set forth.

3. A dust guard for journal-boxes composed of an elastic ring covered with fabric and a woolly outside surface, substantially as set forth.

4. A dust-guard for journal-boxes, composed of a coiled-wire annulus covered with a strip of sheepskin wound spirally thereon, substantially as set forth.

572,884. REGISTRY-BLOCK FOR ELECTROTYPES. CHARLES FORSMAN, New York, N. Y. Filed Feb. 6, 1896. Serial No. 578,232. (No model.)



Claim.—1. The combination of a main frame provided with a rabbet-groove, a backing-plate mounted on the main frame, in the rabbet-groove, and having a space all around the edges of the same, means for adjusting the backing-plate in the rabbet-groove of the main frame, and means for locking an electroplate on the backing-plate, substantially as set forth.

2. The combination of a flat rectangular main frame, a backing-plate mounted on the main frame and provided with an abutment-flange at one end and one side, said backing-plate being of less length and width than the space of the frame in which it is contained, gripper-jaws guided in the backing-plate and adapted in connection with the abutment-flange to lock an electroplate in position on the backing-plate, and means for adjusting the backing-plate on the main frame, substantially as set forth.

3. The combination of a main frame, a backing-plate mounted on the main frame and provided with depending shoulders, longitudinally-adjustable shanks guided in the main frame, shoes hinge-jointed to said shanks and adapted to engage said shoulders, and means for locking the electroplate in position upon the backing-plate, substantially as set forth.

572,885. POTATO-DIGGER. LARS FREDERICKSON, Pewaukee, Wis. Filed Mar. 19, 1896. Serial No. 583,868. (No model.)



Claim.—1. A potato-digging implement comprising a fork of suitable dimensions provided with a handle, an upwardly-extending transverse guard in rigid connection with the rear portion of the fork, a frame in pivotal connection with said fork to close down outside the tines of same, and a slide-plate on the fork-handle in link connection with said frame.

2. A potato digging implement comprising a fork of suitable dimensions provided with a handle, an upwardly-extending transverse guard in rigid connection with the rear portion of the fork, permanent side guards on said fork, a frame in pivotal connection with the aforesaid fork to close down outside the side guards and tine-points thereof, and a reciprocative plate on the fork-handle in link connection with the frame.

3. A potato-digging implement comprising a fork of suitable dimensions provided with a handle having a longitudinal slot, a frame in pivotal connection with the fork to close down outside the tines thereof, a reciprocative plate on the fork-handle having a grip-shank engaging said slot, and a link connecting the plate with said frame.

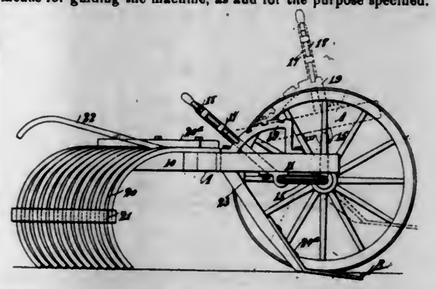
4. A potato-digging implement comprising a fork of suitable dimensions provided with a handle having a longitudinal slot, a frame in pivotal connection with the fork to close down outside the same, a guide-plate fast on the fork-handle provided with a slot in register with the one aforesaid, another plate reciprocative in the guide-plate, a grip-shank extending from the reciprocative plate through said slots, and a link connecting said reciprocative plate with the aforesaid frame.

5. A potato-digging implement comprising a fork of suitable dimensions provided with a longitudinally-slotted handle, upturned rear lugs and side guards extending from the lugs in the same direction as the tines; a screen-guard on the fork at the rear thereof, a screen-frame pivoted to said lugs to close down outside the tine-points and side guards, and a reciprocative plate on the fork-handle in link connection with the screen-frame.

572,886. POTATO-DIGGER. EDMUND B. FRINK, Oxford, Mich. Filed Dec. 14, 1895. Serial No. 571,724. (No model.)

Claim.—1. A potato-digger, having a wheel-supported frame means for raising and lowering the said frame, a spade or shovel of skeleton form, the blade whereof is of substantially triangular shape and has a downward and forward inclination, supports attached to the frame and connected with the shanks of the shovel or spade blade, rake teeth secured to the rear end of the frame and having a diagonal arrangement, and a tie-bar connected with all of the teeth and serving to give them concerted action and equal elasticity, substantially as shown and described.

2. A potato-digger, having a frame provided with a diagonal rear bar, an arched axle upon which the frame has pivotal support, the said axle being provided with horizontal spindles at its ends, supporting-wheels loosely mounted on the said spindles, a lever connected with the body portion of the axle, a locking device for the lever, beams projected forwardly and downwardly from the frame to a point below the axle, a spade or shovel of skeleton construction, the blade whereof is substantially triangular and given a downward and forward inclination, its shanks being secured to the aforesaid bars or beams, a series of rake teeth secured to the rear diagonal bar of the frame and following the inclination thereof, a tie-bar connected with all of the said teeth and located at a point between their ends, and means for guiding the machine, as and for the purpose specified.

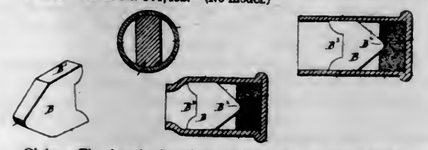


572,887. BOOT OR SHOE. EDWARD G. GALLAGHER, South Framingham, Mass. Filed June 1, 1896. Serial No. 593,703. (No model.)



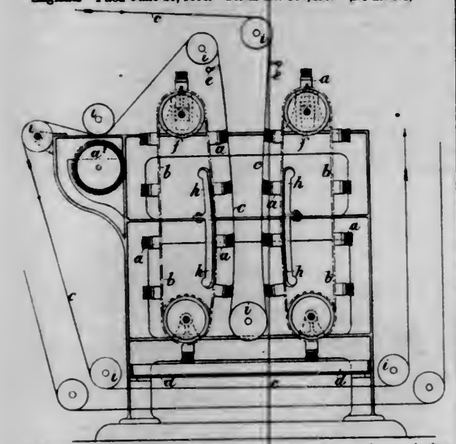
Claim.—A boot or shoe comprising a primary inner sole, an upper and an upper extension stitched to the primary inner sole, a marginal sole or casing placed upon the outer face of the primary inner sole, a secondary inner sole placed upon the outer face of the marginal sole, a welt stitched with the upper extension to the secondary inner sole, the said extension holding the marginal sole in place, an outer sole secured to the welt, and an inflatable sole or cushion inserted in the chamber surrounded by the marginal sole and provided with a projecting valve, the secondary inner sole having an orifice for the insertion and removal of said cushion.

572,888. PRIMER. JOHN GARDNER, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Dec. 9, 1895. Serial No. 571,482. (No model.)



Claim.—The herein described primer for cartridge-shells, consisting of a sheet-metal primer-body and a flat sheet-metal anvil, the said primer-body having its open inner end contracted to form a cylindrical, longitudinally-projecting, thickened and condensed and therefore reinforced retaining-neck, smaller in diameter than the remaining portion of the said primer-body, and the said anvil having straight corresponding bearing edges, a pointed outer end forming a high percussion-surface, and an indented inner end forming a clearance-space, the pointed outer end of the anvil resting upon the fulminate located within the closed outer end of the primer-body, and the retaining-neck of the primer-body being smaller in diameter than the width of the anvil which it holds firmly in place within the primer-body against the force of the fulminate when exploded, and the clearance-space of the anvil and the neck of the body coacting to permit the quick union of the fire of the fulminate and the drawing of the same together into a single flame which passes outward through the neck to the powder, substantially as set forth.

572,889. APPARATUS FOR WASHING PRINTERS' BLANKETS. ROSS GEMMELL and FREDERICK BUXTON, Whaley Bridge, near Stockport, England. Filed June 29, 1896. Serial No. 597,435. (No model.)



Claim.—1. In apparatus for washing blankets used on printing or padding machines, the combination of an endless chain, provided with brushes or their equivalents adapted to be drawn by the motion of the chain against the surface of the blanket to be washed, with perforated spray-pipes for spraying the blankets, and means for presenting the blanket to the brushes, all substantially as set forth.

2. In apparatus for cleansing blankets, the combination of guide and tension rollers over which the blanket passes, with an endless chain provided with brushes or their equivalents and adjustable guiding-plates, substantially as and for the purposes set forth.

3. In apparatus for cleansing blankets, the combination of guide and tension rollers over which the blanket passes, with endless chains provided with brushes adapted to move downward against the surface of the blanket, spray-pipes, and a receptacle beneath the brushes, all substantially as and for the purposes set forth.

572,890. VANILLIN PARAPHENETIDIN. CARL GOLDSCHMIDT, Frankfort-on-the-Main, Germany. Filed Sept. 26, 1896. Serial No. 607,094. (No specimens.)

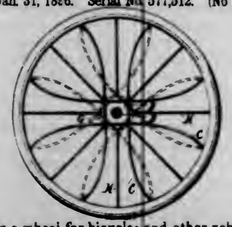
Claim.—1. The herein-described process of manufacturing a new pharmaceutical product by acting upon vanillin with paraphenetidin, substantially as set forth.

2. As an article of manufacture the new pharmaceutical preparation, being vanillin paraphenetidin and having the properties of forming yellow crystals, melting at 97° centigrade, being insoluble in ether, but dissolving somewhat readily in cold water, from which it dissolves with three molecules of water of crystallization, dissolving very easily in hot water.

572,891. METHOD OF TOUGHENING MANGANESE-STEEL CASTINGS. ROBERT A. HADFIELD, Sheffield, England. Filed June 13, 1896. Serial No. 595,431. (No specimens.)

Claim.—The process herein described of toughening manganese-steel castings, consisting in heating them, beginning with the furnace in a cold state, applying the heat very gradually until the casting is visibly red, then continuing the heat to an orange heat and finally plunging in cold water, substantially as described.

572,892. WHEEL FOR BICYCLES. GEORGE HAYES, New York, N. Y. Filed Jan. 31, 1896. Serial No. 577,512. (No model.)



Claim.—1. In a wheel for bicycles and other vehicles, a hub held in position centrally by a double system of flexible and resilient spokes curving and radiating therefrom toward the rim of the wheel with a double system of rigid spokes rigidly holding a collar encircling the hub suitably distanced therefrom, but not attached thereto, serving as a restricting medium against excess of motion, or vibration of the hub, and also arranged with regard to the hub and within exterior flanges thereof to restrict the hub against any lateral motion or swing essentially as set forth.

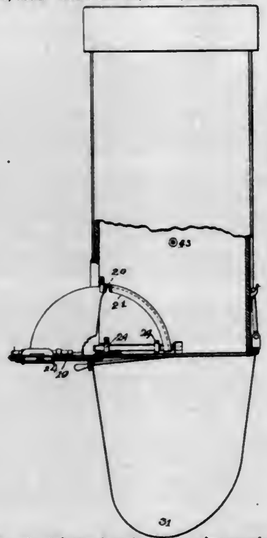
2. A wheel for bicycles and other vehicles having its hub surrounded by an encircling collar, or supplemental nave, suitably distanced therefrom, the interior or main hub sustained flexibly and resiliently by a set or system of eight curved spokes at each end thereof, each set composed of four pieces of metal wire, the two sets constituting two faces of the wheel and comprising in all sixteen spokes, the supplemental nave sustained rigidly by a double system of straight rigid spokes and all constructed, arranged and combined essentially as set forth.

3. In a wheel for bicycles and other vehicles, the combination of the clutch-plates E, with the hub, the plate having its back face grooved to receive the spokes secured to the hub and covering the spokes as set forth.

4. In a wheel for bicycles and other vehicles, the combination of rim A, hub B, spokes C, covering or clutch plates E, collar, nave or restricting-ring G, and spokes H, all constructed, arranged and combined essentially as set forth.

5. In a wheel for bicycles and other vehicles, a double facing of metal spring-wire spokes consisting of four wires to each face held against the hub by a grooved covering-plate, each and every spoke-wire extending from the rim at one point to the rim at another point in one piece, curving as the arc of a circle and all sustaining the hub of the wheel flexibly and resiliently essentially as set forth.

572,893. LETTER-BOX. JAMES W. HEWES, Baltimore, Md. Filed Feb. 28, 1894. Serial No. 501,804. (No model.)



Claim.—1. A letter-box having a slot-opening, a flap, to close said opening pivoted at its upper edge and opening inward, a guard-table pivoted inside the box and an elbow-lever pivoted inside the box having one end engaging the flap and the other end engaging the guard-table as set forth.

2. A letter-box having a slot opening, a flap to close said opening pivoted at its upper edge, swinging inward and having a cam on its inner surface, a guard-table pivoted inside the box also provided with a cam and an elbow-lever pivoted inside the box, having its ends engaging the cams on the flap and guard-table, substantially as set forth.

3. A letter-box having a slot opening, a flap to close said opening pivoted at its upper edge, swinging inward and having a cam on its inner surface, a guard-table pivoted inside the box also provided with a cam and an elbow-lever pivoted inside the box, having curved ends, one of which engages the cam on the flap while the other engages the cam on the guard-table, substantially as set forth.

4. A letter-box having a slot-opening, a flap to close said opening pivoted at its upper edge and opening inward, a guard-table pivoted inside the box and having its inner edge formed into teeth with their bases separated by circular openings and an elbow-lever pivoted inside the box having one end engaging the flap and the other end engaging the guard-table, as set forth.

5. The indicator mechanism herein described comprising the outer recessed plate with opening, the circular plate in the recess and having announcements thereon, the cross strip inside the circular plate having an inward-projected pin, and the elastic circular plate inside said strip, connected with the announcement-plate and having perforations to engage the pin on the cross-strip, substantially as set forth.

572,894. PENHOLDER. WILLIAM HINCHLIFFE, Huntsville, Ala. Filed July 21, 1896. Serial No. 600,043. (No model.)



Claim.—1. A penholder having a pen-case formed with a longitudinal slot having a bead along its side edges and a stop at its inner end, substantially as specified.

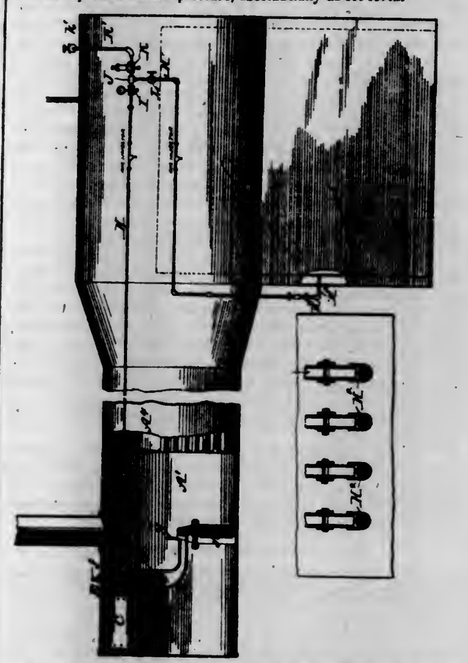
2. A penholder having a metal pen-case formed with a longitudinal slot having its edges stiffened and the inner end notched and pressed inward to form a stop for the pen, substantially as shown and described.

572,895. HURRICANE-LANTERN. HARRY D. HINES, Birmingham, England. Filed Apr. 3, 1896. Serial No. 586,099. (No model.)

Claim.—In a lantern, the combination with the tubular frame *c*, *c*, of the globe-supporting gallery *b* arranged to slide vertically on said frame, the wire frame *g* connected at its lower ends to said gallery and provided at its upper end with horizontal bent arms g^3, the globe-cap *d* attached to the frame *g*, the spring *h* for depressing the frame, gallery and cap, and the handle lever *i* hinged to the upper portion of the tubular frame and provided with arms i^3 bent at right angles to the handle portion of said lever and operating when the handle-lever is turned down to abut the under side of the arms g^3 and raise the frame *g* against the tension of the spring, the said arms g^3, when the handle-lever is turned up, resting upon the upper portion of the tubular frame and limiting the downward movement of the frame *g* substantially as described.

572,896. SMOKE-CONSUMING FURNACE. JOSEPH W. HOGAN, Atlanta, Ga. Filed Mar. 30, 1896. Serial No. 585,371. (No model.)

Claim.—1. The combination with a boiler-furnace, of a receiver or superheater within the smoke box, a pipe connecting the receiver with the exhaust-pipe and having a check-valve, and a discharge-pipe leading from the receiver to the desired point and provided with an automatic governor-valve to open when the steam in the receiver reaches a predetermined pressure, substantially as set forth.



2. The combination with the receiver or superheater, of means for charging it with exhaust-steam to constitute a reserve power, a pipe or pipes to carry the expanded steam from the receiver to the desired points, and an automatically-operating valve controlling said pipe substantially as set forth.

3. The combination with a boiler-furnace, of a receiver or superheater located in the smoke-box and having a check-valved supply pipe or pipes connecting it with the exhaust pipe or nozzle, and a discharge-pipe leading from the receiver, to discharge upwardly into the stack and provided with an automatic governor-valve to open when a predetermined pressure is reached, substantially as set forth.

4. The combination with the receiver located in the upper forward part of the smoke-box and spaced therefrom, of a check-valved supply pipe or pipes connecting said receiver with the upper contracted end of an exhaust-pipe, and a discharge-pipe leading downwardly from the receiver to the upper extremity of the exhaust and discharging upwardly therewith into the stack, said discharge-pipe being provided with a governor-valve opening automatically at a predetermined pressure from within the receiver, substantially as set forth.

5. The combination with the receiver or superheater within the smoke-box, and a check-valved supply pipe or pipes connecting it with the exhaust-pipe, of a pipe leading from said receiver and discharging the expanded exhaust-steam into the fire-box and the pipe connecting with the boiler, said pipe having an automatic-valve mechanism, substantially as set forth.

6. The combination with the receiver or superheater within the smoke-box and a check-valved supply pipe or pipes connecting it with the exhaust-pipe, of an offtake pipe leading forwardly from the receiver and provided at the head of the boiler with a check-valve, a branch pipe leading to the fire-box an automatic regulating-valve beyond the branch pipe and a live-steam pipe connected with said regulating-valve to supply the branch pipe with steam for the fire-box when pressure decreases in the pipe leading from receiver, the check-valve in the latter pipe preventing live steam from passing to the receiver or superheater, substantially as set forth.

7. The combination with the receiver or superheater within the smoke box, and a check-valved pipe or pipes connecting it with the exhaust-pipe, of an offtake leading from the receiver and provided with an air-injector and a branch pipe discharging into the fire-box, substantially as set forth.

8. The combination with the receiver or superheater having a check valved connection with the exhaust pipe, of an offtake-pipe leading from the receiver to the head of the boiler and provided with

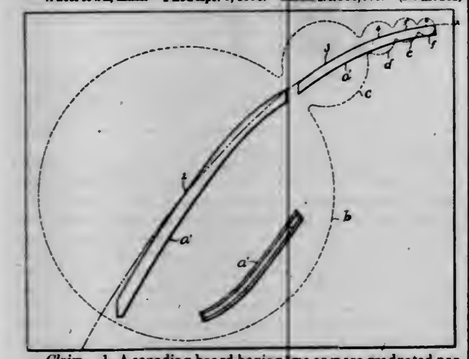
a branch pipe discharging into the fire box, air-injectors in the offtake-pipe and its branch, a check-valve between the offtake-pipe in advance of its branch pipe, an automatic regulating-valve at the other side of the branch pipe, and a live-steam pipe leading from the top of the boiler to said automatic regulating-valve to supply the branch pipe with live steam when said valve opens, substantially as set forth.

9. The combination with the receiver or superheater having a check-valved connection with the exhaust-pipe, of an offtake-pipe leading from the receiver to the head of the boiler and there provided with a check-valve having a screw to hold it raised from its seat when desired, a branch pipe leading from the check valve provided with a hand-operated valve and discharging into the fire-box, a live-steam pipe leading from the top of the boiler to the branch pipe and having an automatic governor-valve opening to the live steam when the back pressure decreases sufficiently, the offtake-pipe serving to carry live steam to the receiver or superheater when the check-valve is raised by said screw, substantially as set forth.

10. The combination with the receiver or superheater in the smoke-box and having a supply-pipe connecting it with the exhaust-pipe and provided with a check-valve, an offtake pipe leading from the receiver to discharge a blast upwardly into the stack and provided with an automatic governor-valve, a second offtake-pipe leading from the receiver to the head of the boiler and there provided with a check-valve and a branch pipe discharging into the fire-box, and a live-steam pipe leading from the top of the boiler to the said branch pipe and provided with an automatic regulating-valve opening when back pressure in the branch pipe decreases sufficiently, substantially as set forth.

11. The combination with a series of steam or air discharging pipes or nozzles entering the fire-box, of a supply-pipe to which all of the nozzles are coupled, and a centrally-apertured washer or diaphragm within each coupling, the apertures increasing in size from the inlet end of the supply-pipe, substantially as set forth.

572,897. SOUNDING-BOARD FOR PIANOS. WILLIAM H. HOWE, Watertown, Mass. Filed Apr. 9, 1896. Serial No. 586,770. (No model.)



Claim.—1. A sounding-board having two or more graduated portions extending across the board to accord with the scale, one of said graduated portions being of greatest strength or resistance at the middle, and gradually diminishing toward the edge, and a bridge over which the strings pass extending across said graduated portions, substantially as described.

2. A sounding-board having several graduated portions, extending from the base toward the treble end of the board, and bridges over which the strings pass extending across said graduated portions, substantially as described.

3. A sounding-board having a graduated portion confined within a marginal strip of an established thickness, said graduated portion being made of greater strength or resistance at the middle than at the edges, substantially as described.

4. A sounding-board having a series of graduated portions, extending across the board to accord with the scale, and confined within marginal strips of an established thickness and bridges diametrically crossing said graduated portions, substantially as described.

5. A sounding-board having a series of graduated portions, extending from the base toward the treble end of the board, each portion having an established point of a certain thickness, strength or resistance, and each portion being gradually reduced in thickness, strength or resistance, from its established point.

6. A sounding-board having a series of circular graduated portions, each portion having an established point of a certain thickness, strength or resistance, and each portion reduced in thickness, strength or resistance radially from such point.

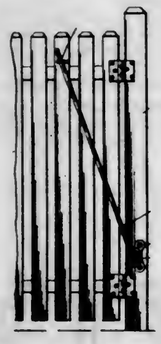
7. A sounding-board having a series of graduated portions, extending from the base to the treble end of the board, each portion toward the treble end covering less area than the preceding portion, and each portion having an established point of a certain thickness, strength or resistance, from which point the board is diminished or reduced radially, substantially as described.

8. A sounding-board having a series of graduated portions, extending from the base to the treble end of the board, each portion toward the treble end covering less area than the preceding portion, and each portion having an established point of a certain thickness, strength or resistance, from which the board is diminished or reduced radially, the thickness, strength or resistance of the board at each established point of the series as they approach the treble end being less than the preceding one, substantially as described.

572,898. LINIMENT. CHARLES G. JOHNSON, Helmetta, N. J. Filed June 8, 1895. Serial No. 552,138. (No specimens.)

Claim.—The liniment described composed of the fluid extract of manure brought to a viscous consistency, sulfuric acid, alcohol, hydrochloric acid, and nitric acid, substantially in the proportions set forth.

572,899. GATE-SPRING. JOHN J. LARIMER, Crab Tree, Pa. Filed Jan. 11, 1896. Serial No. 575,137. (No model.)



Claim.—1. The combination of a spring-arm adapted to be loosely secured to the gate, a laterally-projecting head secured to the rear of the hinged edge of the gate, said head being formed with a passage-way, and the coil formed in said spring-arm adjacent to the head, said coil terminating with the spring extremity which is confined in said head passage-way, substantially as shown and described.

2. The combination of the horizontally-projecting head having a longitudinal passage-way and a depression in its rear end, lugs E defining the outer portion of said passage-way, and the spring-arm loosely secured to the gate and coiled at its lower end about the head, the coil extremity being extended through the longitudinal passage-way and projected at an angle into the depression at the rear end of the head, for the purpose substantially as herein shown and described.

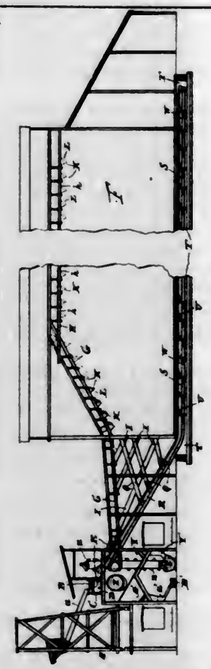
572,900. MECHANISM FOR UNLOADING, STORING, AND RELOADING COAL. WILLIAM A. LATHROP, Wilkes-Barré, Pa. Filed Apr. 1, 1896. Serial No. 585,820. (No model.)

Claim.—1. In a mechanism for handling coal, &c., the combination of a storage building or inclosure, a conveyer on the outside of the latter, and a series of chutes or passages communicating with the inclosure at different heights and extending to the conveyer, substantially as and for the purpose specified.

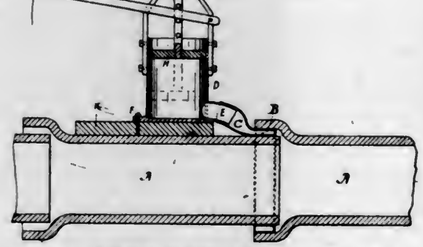
2 In a mechanism for handling coal, &c., the combination of a storage building or inclosure, a conveyer outside of the latter, a conveyer within the building, means for placing the same at a series of points in communication with the space within said building, and a series of chutes or passages extending from the latter at different heights and on the exterior of the building to the first named conveyer, substantially as and for the purpose shown

3. In a mechanism for handling coal, &c , the combination of a storage building or inclosure, a conveyer above, and one below, the storage-space, and each adapted to communicate with the latter at a series of points, and running each to the exterior of the building, and chutes or passages exterior to the building and extending therefrom at points at different heights to each of said conveyers, substantially as and for the purpose set forth.

572,900.



572,901. MAKING JOINTS OF PIPES HAVING BELL ENDS. GUSTAV LEHLBACH, Jersey City, N. J. Filed July 27, 1895. Serial No. 557,383. (No model.)



Claim.—1. In a device for filling the joints of connecting pipe-sections with cement, the combination with the receptacle D, having an open upper end adapted to allow the withdrawal of the piston, the bail fastened to said receptacle at its opposite ends and turned over and above the open end of the receptacle, a piston separable from said receptacle, a piston-rod having said piston at one end and at its upper opposite end bearing at one of its sides against one side of the bail and at its opposite side provided with a series of bearings, and a hand-lever fulcrumed upon said bail and adapted to press against the side of the piston rod and hold it against the bail when forcing down the piston, substantially as set forth.

2. The combination with a receptacle for fluid cement mortar, a piston and means for operating the same, a duct from said receptacle, and a textile cover pervious to air in connection with said duct and adapted to be applied to the pipe-joint, substantially as set forth.

3. The combination with a receptacle for fluid cement mortar, a piston and means for operating the same to force the fluid cement mortar from said receptacle, a duct of porous textile fabric in connection with said receptacle to receive the mortar therefrom and a textile cover adapted to be fastened over the pipe-joint, said parts being arranged and adapted to operate, substantially as set forth.

4. In a device for filling the joints of connecting pipe-sections with cementitious matter, the combination with the mortar-receptacle D, separate and independent of the said sections, a cover adapted to extend around the pipe and convey the mortar into the joint formed by said sections, a duct connecting said receptacle and cover, a bail serving as a guide or bearing, a piston, a piston-rod extending from said piston to said bail, and having bearing *o*, and a lever fulcrumed on said bail, and engaging said piston-rod to depress the same, substantially as and for the purposes set forth.

5. In a device for filling the joints of connecting pipe-sections with fluid cementitious matter, the combination with the receptacle D, having an open upper end, a spout at its lower end, and a bail extending over and above said open end and recessed to receive the piston-rod, a piston, a piston-rod, extending from said receptacle upward through said open end of the receptacle and engaging the said bail, a lever engaging the piston-rod, and means for transmitting the fluid cementitious matter to the joint under pressure, substantially as set forth.

6. In a device for filling the joints of connecting pipe-sections with fluid cementitious matter, the combination with the receptacle D, separate from and independent of the pipe-sections, and having an open upper end adapted to allow the withdrawal of the piston, a bail extending over said open end, a piston separable from said receptacle, a piston-rod having a series of bearings, and adapted to press against said bail, a duct leading from said receptacle to said pipe section and a cover for conveying the cementitious matter around the joint under pressure of said piston, substantially as set forth.

7. In a device for filling the joints of connecting pipe-sections with solidifiable cementitious fluid, the combination with a cylindrical receptacle D, separable from and independent of the pipe-sections, mounted upon a bed-plate K, and, at its upper end, having an opening to allow the insertion of the mortar and the withdrawal of the piston, a bail extending over and above said opening, a piston and its rod the latter bearing at one side of said bail, a lever bearing against said piston-rod at the side opposite that engaged by the bail, a duct leading from the receptacle to the pipe-sections, and a cover, all said parts being arranged and combined substantially as set forth.

8. The combination with a cylinder, independent of and separate from the pipe-sections, its piston and means for operating said piston in said cylinder, a duct leading from said cylinder to said pipes, and a band-like cover of textile fabric adapted to be fastened over the joint formed by the meeting ends of the pipe sections, and form a receptacle with said meeting ends, substantially as set forth.

9. The device for filling the joints of pipes with cementitious matter consisting of a receptacle D, separable from and independent of the pipe and open at its upper end, a bail extending over and considerably above the open end, of said receptacle, a lever fulcrumed at one side of said bail a piston working within the receptacle, a piston-rod a series of lateral projections, and bearing on said bail, and held thereagainst by said lever, said lever being loosely fulcrumed to allow a free transfer from bearing to bearing, a duct and means for leading the cementitious matter, around the pipe, substantially as set forth.

10. The combination with the cylindrical receptacle for mortar separable from and independent of the pipes, a duct consisting of flexible textile fabric leading to a cover adapted to surround the pipe at the joint formed by the sections, said cover consisting of a band of textile fabric adapted to be bound around the pipe over the joint to close the same, and a piston and means for operating the same, all arranged and operating, substantially as set forth.

11. In a device for filling the joints of connecting pipes with a solidifiable cementitious fluid, the forcing apparatus comprising a cylinder, open at its lower end to allow an ejection of the fluid under pressure, and open at its upper end to allow the removal of the piston, a piston hugging the walls of said cylinder and removable from said cylinder through said upper openings, a bail or guide G, extending over said open upper end, a piston-rod, having a series of projections at one side and bearing on said bail at the other, and a lever loosely fulcrumed on said bail and movable laterally away from the piston-rod to admit a free transfer from one projection to the next, said parts being arranged and combined, substantially as set forth.

572,902. TREE EXTRACTOR AND CARRIER. HENRY P. LENTZ, Columbus, Ohio, assignor of one-half to Charles W. Heyl, same place. Filed Sept. 5, 1896 Serial No. 605,205. (No model.)

Claim.—1. In a tree carrier and extractor the combination with the front truck *a*, a coupling-frame *c* having its forward end connected therewith and a ground-roller *d* journaled beneath the rear portion of said coupling frame, of a rear truck, a carrier-frame supported on the axle of said rear truck and means for detachably and adjustably supporting the rear portion of said coupling frame in connection with said rear truck, substantially as and for the purpose specified.

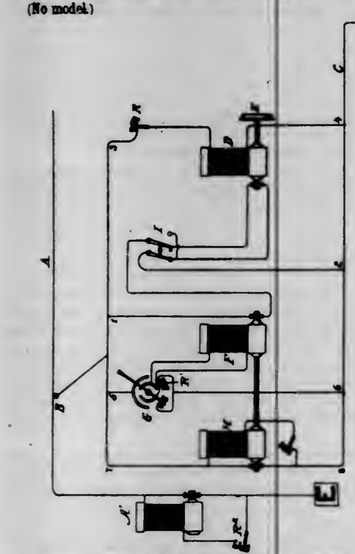
2. In a tree carrier and extractor the combination with the forward truck, a coupling-frame connected with said forward truck and

a roller journaled beneath said coupling-frame, of the rear truck, a tree-carrier frame mounted on said rear truck, side boards on the forward end of said carrier-frame, a windlass-shaft journaled from said rear truck, chains depending from said shaft, said chains having a detachable connection with said coupling-frame and means for rotating said shaft, substantially as and for the purpose specified.



3. In a tree extractor and carrier the combination with the forward truck, a coupling-frame connected with the king-bolt thereof, a chain connecting said king-bolt with said coupling-frame at a point in rear of the axle and a roller journaled beneath said coupling-frame, of a rear truck, a tree-carrier frame mounted thereon and means for detachably connecting said rear truck with said coupling frame, substantially as and for the purpose specified.

572,903. REGULATING ELECTRIC MOTORS. HARRY W. LEONARD, New York, N. Y. Filed June 24, 1892. Serial No. 437,829. (No model.)



Claim.—1. The method of varying the speed of an electric motor consisting in supplying the same with current from a source of constant electromotive force in series with the current from a dynamo-electric machine whose field is variable and reversible, and in varying and reversing the field of said dynamo-electric machine to vary the electromotive force at the motor from zero to a maximum, substantially as set forth.

2. The combination of an electric motor, a source of supply for said motor, and a regulator consisting of an electromotive-force-producing device located between the source and the motor and whose electromotive force is variable independently of the electromotive force of the circuit across which the motor-armature is connected, substantially as set forth.

3. The combination of an electric motor, a source of supply for said motor, a dynamo-electric machine located between the source and the motor and whose electromotive force is variable independently of the electromotive force of the circuit across which the motor-armature is connected, and means for varying and reversing the electromotive force of said dynamo to regulate said motor, substantially as set forth.

4. The combination of an electric motor, a source of supply for said motor, and a regulating device in series with the armature of said motor and acting sometimes to receive energy from the line and sometimes to return energy to the line, substantially as set forth.

5. The combination with a source of supply and a circuit extending therefrom, of an electric motor, a regulating dynamo-electric machine connected in series with said motor across said circuit, said dynamo being adapted to produce an electromotive force variable independently of the electromotive force of said circuit, and a dynamo-electric machine mechanically connected with the regulating-dynamo and electrically connected with the supply-circuit, substantially as set forth.

6. The combination of a number of dynamo-electric machines whose fields are in multiple with each other and whose armatures are in series with each other, and means for varying and reversing the field of one of said machines, substantially as set forth.

7. The combination of a source of practically constant potential, a circuit extending therefrom, a shunt-dynamo-electric machine in a cross-circuit from the source, and another cross-circuit containing in series the armature of an electric motor and the armature of a dynamo-electric machine having a variable field and mechanically connected with the first-mentioned dynamo, substantially as set forth.

8. The combination with a source of electric energy, of three dynamo-electric machines, all of whose armatures are connected therewith, which are adapted to run as two motors and one generator, or two generators and one motor, at different times, substantially as set forth.

9. The combination with a source of electric energy, of a motor driven thereby, a generator mechanically connected with and driven by said motor, and a working motor whose armature is supplied with energy from both the source and said generator, the electromotive force of the generator being variable independently of the electromotive force of the circuit across which the armature of the working motor is connected, substantially as set forth.

10. The combination of a source of electric energy, a motor driven thereby, a translating device which has no electromotive force upon its terminals, except when current is passing through it, connected in series with the motor, and means whereby the mechanical energy of said motor is converted into electrical energy and used in multiple with the source to supply said translating device, substantially as set forth.

11. The combination of a source of electric energy, a constantly-revolving motor connected therewith, a generator driven by said motor, and a variable-speed motor supplied with energy from both the source and said generator acting in multiple with each other, substantially as set forth.

12. The combination with a translating device which has no electromotive force upon its terminals except when current is passing through it, of two generators simultaneously supplying current thereto, said generators being connected in multiple with each other and one being operated by power derived from the other, substantially as set forth.

13. The combination with a source of electric energy, of an electrically-propelled vehicle having three dynamo-electric machines, one of said machines being connected to the driving mechanism of the vehicle, the other two having their armatures mechanically connected together and rotating independently of the motion of the vehicle and having field-windings connected in multiple, and the armature of one of said machines being connected across the source in series with the armature of the machine connected to the driving mechanism of the vehicle, substantially as set forth.

14. The combination with an electric motor, of an electromotive-force regulator having a motor-winding and a generator-winding the generator-winding being in shunt with the line and the motor-winding being in shunt with the line and in series with a motor to be regulated, substantially as set forth.

15. The method of operating a translating device which has no electromotive force upon its terminals except when current is passing through it, which consists in placing in circuit with the translating device a device or devices which absorb the watts represented by the product of the amperes through the translating device times the difference between the volts desired upon the terminals of the translating device and the volts of the supply-circuit, and simultaneously utilizing in the production of useful electrical power the watts so absorbed, substantially as set forth.

16. The method of operating an electric motor at any desired speed, which consists in placing in circuit with the motor a device or devices which absorb the watts represented by the products of the amperes through the motor times the difference between the volts desired upon the motor and the volts of the supply-circuit, and simultaneously utilizing in the production of useful mechanical power the watts so absorbed, substantially as set forth.

17. The method of operating an electric motor at any desired speed, which consists in placing in circuit with the motor, a device or devices which absorb the watts represented by the product of the amperes through the motor times the difference between the volts desired upon the motor and the volts of the supply-circuit, and converting the watts so absorbed into mechanical energy which is converted into useful electrical energy, substantially as set forth.

18. The method of operating an electric motor at any desired speed, which consists in placing in circuit with the motor, a device or

devices which absorb the watts represented by the product of the amperes through the motor times the difference between the volts desired upon the motor and the volts of the supply-circuit, and converting the watts so absorbed into electric energy and simultaneously utilizing in the motor the electric energy so converted, substantially as set forth.

19. The method of operating an electric motor at any desired speed, which consists in placing in circuit with the motor, a device or devices which absorb the watts represented by the product of the amperes through the motor times the difference between the volts desired upon the motor and the volts of the supply-circuit, and simultaneously converting the watts so absorbed into electric energy having the voltage desired at the motor and supplying said converted energy to the motor, substantially as set forth.

20. The method of operating an electric motor which consists in placing in electrical connection with it a transformer of electric energy having one or more moving parts which receives electric energy in series with the motor and delivers electric energy in multiple with the motor, or vice versa, and varying the voltage at which the electric energy is received or delivered to control the speed of the motor, substantially as set forth.

21. The method of operating an electric motor at any desired speed and torque which consists in placing in electrical connection therewith a transformer of electric energy having one or more moving parts and having two sections, one section being connected in series with the motor and the other section in shunt to the motor and operating the transformer so that its series section receives energy and the shunt-section delivers energy or vice versa, and varying the voltage at which the electric energy is received or delivered to control the speed to the motor, substantially as set forth.

22. The method of operating an electric motor or motors, which consists in placing in electrical connection with a source of supply for the motor and also with the motor or motors, means for transforming electric energy into mechanical energy or vice versa, and simultaneously utilizing in the operation of the motor or motors practically without waste the energy so transformed, substantially as set forth.

23. The method of generating and regulating a supply of electric energy, which consists in generating current, passing same into a multiple arc-distribution system and through a source of variable electromotive force, and causing the electromotive force of the variable source to both oppose and assist the electromotive force of the source of supply, whereby the variable source of electric energy is enabled to regulate an amount of electric energy of twice the capacity of the regulator, substantially as set forth.

24. The method of regulating the electromotive force at the terminals of a translating device, consisting in so placing in the circuit, mechanically independent of the source, a dynamo-electric machine whose electromotive force is independent of the electromotive force of the conductors across which the translating device is connected, and whose kilowatt capacity is less than that required for operating the translating device, that by varying and reversing the electromotive force of said dynamo it will both assist and oppose the electromotive force of the source to vary the electromotive force at the terminals of the translating device, substantially as set forth.

25. The method of obtaining from a source of electromotive force a different and controllable electromotive force at the terminals of a translating device with a minimum waste of energy, consisting in placing in the path of the current leading to the translating device the armature of a dynamo-electric machine which is mechanically connected with the armature of a dynamo-electric machine having a shunt field-winding and acting sometimes as a motor and sometimes as a generator, and operating the first-named machine as a motor to reduce the electromotive force at the terminals of the translating device, and as a generator to raise the electromotive force at the terminals of the translating device, substantially as set forth.

26. The method of converting into electrical energy the power represented by retarding a moving load, which consists in causing the moving load to drive a generator, supplying from said generator current to a motor electrically connected with the said generator, driving by said motor a second generator, the armatures of said generators and motor being electrically connected together, and supplying by said second generator current to other translating devices, substantially as set forth.

27. The method of converting into electrical energy the power represented by retarding a moving load, which consists in causing the moving load to drive a generator, supplying from said generator current to a motor having a reversible field and connected in series with the said generator across a source of electric energy, driving by said motor a second generator, and supplying by said second generator current to other translating devices, substantially as set forth.

28. The combination with a source of electric energy, a multiple-arc distribution leading therefrom and across which a translating device is connected, of a transformer of electric energy having two electromotive-force-producing windings, one of which is in series between the source and the translating device and the other of which is in multiple with the translating device, relative to the source, each of said windings being in a magnetic field whose polarity is independent of the direction of current through its respective electromotive-force-producing winding, substantially as set forth.

29. The combination with a source of electric energy, of a translating device which has no electromotive force upon its terminals except when current is passing through it, and an electric-energy transformer having two electromotive-force-producing windings electrically connected together, the first receiving electric energy, and delivering mechanical energy to the second, and the second transforming the mechanical energy so received into electric energy and delivering it back to the first, substantially as set forth.

30. The combination of two electromotive-force-producing windings, both having practically equal watts at all times, one receiving and the other delivering electric energy or vice versa, both being electrically and mechanically connected together and the voltage upon the terminals of the two windings being normally different, and a translating device connected therewith, substantially as set forth.

31. The combination of a generator supplying a part of the current required by two motors whose armatures are in series with each other relative to said generator, one of which motors drives the said generator, substantially as set forth.

32. The combination of a source of electric energy, a circuit extending therefrom, two dynamo-electric machines H and F electrically connected therewith and mechanically connected together, a dynamo-electric machine D whose armature is connected in multiple arc with the machine H and in series with the armature of the machine F, said machine F being adapted to produce an electromotive force variable and reversible independently of the electromotive force upon the armature-terminals of the machine D, substantially as set forth.

33. The combination of a source of electric energy, a circuit extending therefrom, two dynamo electric machines connected electrically therewith and mechanically connected together, one of said machines having upon its terminals a practically constant electromotive force, and the other having a field magnetism independent of its own electromotive force and producing a variable electromotive force, said latter machine being connected in series with a translating device, the electromotive force upon whose terminals is regulated by varying the electromotive force of said latter machine, substantially as set forth.

34. The combination of a source of electric energy, a circuit extending therefrom, two dynamo electric machines connected electrically therewith and mechanically connected together, one of said machines having upon its terminals a practically constant electromotive force, and the other having a field magnetism independent of its own electromotive force and producing a variable and reversible electromotive force, said latter machine being connected in series with a translating device, the electromotive force upon whose terminals is regulated by varying and reversing the electromotive force of said latter machine, substantially as set forth.

35. The combination of two dynamo-electric machines A' and H, the electromotive force at the terminals of which is practically constant, and two dynamo-electric machines F and D in series with each other, the electromotive force of each being variable, and the speed of one of the latter machines being practically constant and the speed of the other variable, substantially as set forth.

36. The combination with a source of practically constant electromotive force, a dynamo-electric machine having a constant field, a dynamo-electric machine having a variable and reversible field, the armatures of said machines being connected in series, and means mechanically connected with the said second dynamo-electric machine for receiving energy from or delivering energy to said second dynamo-electric machine, substantially as set forth.

37. The combination with a source of practically constant electromotive force, of a dynamo-electric machine having a practically constant field and variable speed, a dynamo-electric machine having a variable and reversible field, and means for maintaining said machine at a practically constant speed, the armatures of said dynamo-electric machines being connected in series across the source, substantially as set forth.

38. The combination with a source of electric energy, of a dynamo-electric machine having a practically constant speed and a field magnetism independent of its own electromotive force and whose armature is connected in series across the source with that of a motor of variable speed, the variations of speed in the motor being accomplished by variations in the field of the dynamo-electric machine, substantially as set forth.

39. The combination with a source of electric energy, of a dynamo-electric machine running at a practically constant speed and having a variable and reversible field, and a dynamo-electric machine running at a variable speed and having a practically constant field, the armatures of said machines being connected in series with each other,

across the source whereby the speed of the latter machine is controlled by variations in the field of the first-named machine, substantially as set forth.

40. The combination of a dynamo-electric machine running at a practically constant speed and having a variable and reversible field, and a dynamo-electric machine running at a variable speed and having a practically constant field, the armatures of said machines being connected in series with each other across a source of practically constant electromotive force, whereby the speed of the latter machine is controlled by variations in the field of the first machine, substantially as set forth.

41. The method of operating an electric motor at any desired speed from rest to full speed, which consists in causing a current to flow through a device electrically connected with the motor while the motor is in operation, and absorbing by means of said device the watts represented by the product of the amperes through the motor times the difference between the volts desired upon the motor and the volts of the supply-circuit, and simultaneously utilizing in the production of useful power the watts so absorbed, substantially as set forth.

42. The method of operating an electric motor at any desired speed from rest to full speed, which consists in operating a transformer of electric energy having one or more moving parts, which transformer receives electric energy in series with the motor and delivers electric energy in multiple with the motor, or vice versa, substantially as set forth.

43. The method of operating an electric motor at any desired speed from rest to full speed which consists in operating a transformer of energy which delivers energy to the motor, said transformer at certain speed of the motor receiving energy in series with the motor, and at other speeds of the motor receiving energy in multiple with the motor, and in either case delivering energy to the motor, substantially as set forth.

44. The combination of two electromotive-force-producing windings, both having practically equal watts at all times, one receiving and the other delivering energy, or vice versa, both being, under all operative conditions, electrically and mechanically connected together, means for maintaining one winding at practically constant voltage and means for varying and reversing the voltage on the other winding, substantially as set forth.

45. The combination of two electromotive-force-producing windings, both having practically equal watts at all times, one receiving and the other delivering energy, or vice versa, both being, under all operative conditions, electrically and mechanically connected together, the voltage of one of the windings being varied and reversed in practice, and a translating device, which has no electromotive force upon its terminals, except when current is passing through it, connected in series with the latter, substantially as set forth.

46. The method of securing through the armature of a dynamo-electric machine by means of a small current from the source of supply, a much larger current, which consists in placing in electrical connection with the armature of the dynamo-electric machine a generator-winding and a motor-winding, which generator-winding supplies current to the said motor-winding, substantially as set forth.

47. The combination with a source of electric energy, of an armature whose speed is to be regulated connected in series with a regulating-armature, the two armatures being in series under all operative conditions and the regulating-armature being in a reversible field and which field is independent of the electromotive force of the regulating-armature, substantially as set forth.

48. The combination of a generator of electric energy whose armature is connected with a constant electromotive-force-supply circuit, a transformer of electric energy connected with said generator, and means whereby the said generator in being brought to rest continually delivers electric energy into said supply-circuit, substantially as set forth.

49. The combination with a source of electric energy, of a transformer of electric energy, a translating device acting as a dynamo-electric generator in multiple with the source to supply energy to other translating devices through said transformer, the speed of said transformer being practically constant, and the speed of the generator varying from full speed to rest, substantially as set forth.

50. The combination of three dynamo-electric machines whose armatures are connected in series, two being motors, and means for rendering the voltage upon the terminals of each of the three armatures practically independent of fluctuations of the current through their armatures, substantially as set forth.

51. The combination with a source of electric energy, of a translating device, the armature of a dynamo-electric machine connected between the source and said translating device and running in a variable field whose strength is independent of the electromotive force of the armature, and a dynamo-electric machine mechanically connected with said armature and electrically connected with the supply-circuit, substantially as set forth.

52. The method of reducing the electromotive force upon the terminals of a translating device connected to a constant electromotive-force circuit which consists in passing the current supplied to the translating device, through the armature of an electric motor whose field is connected across the circuit, and driving by said armature a shunt-generator connected across the circuit, substantially as set forth.

53. A local closed loop connected to a source of electric energy, there being in series in the closed loop and in combination therewith three armatures, one being a generator-armature and one a motor-armature, substantially as set forth.

54. A closed loop connected to a source of electric energy, there being in series in the closed loop and in combination therewith two armatures, one being a generator-armature and the other a motor-armature, and means for reversing the motor-armature, substantially as set forth.

55. The method of operating an electric motor at any desired speed from rest to full speed which consists in inductively developing in series with the armature of the motor between the source of supply and the motor a unidirectional electromotive force variable from zero to the electromotive force of the source of supply which is independent of the speed of the motor and independent of the current through the motor, substantially as set forth.

56. The method of operating an electric motor at any desired speed from rest to full speed which consists in developing in series with the armature of the motor, by means of a revolving winding, an electromotive force between the source of supply and the motor which is variable from zero to the electromotive force of the source, independent of the speed of revolution of the revolving winding, substantially as set forth.

57. The combination with a source of constant electromotive force, a motor driven thereby, a generator driven by said motor, said generator being in series with the source, and a motor whose armature is in series with both the source and said generator, and whose field is independent of its armature electromotive force, substantially as set forth.

58. The combination of two generators located at distant points and supplying current in multiple with each other to the same motor-armature, one of the generators being so connected mechanically as to be driven by said motor-armature, substantially as set forth.

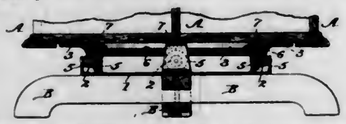
59. The method of operating at several different automatic speeds an electric motor which is connected to a constant-electromotive-force source, which consists in developing in series with the motor between it and the source a regulable electromotive force which is constant for each different automatic speed, substantially as set forth.

60. The combination with a translating device, the electromotive force upon whose terminals is to be regulated, of a regulating dynamo-electric machine whose armature is in series with the translating device, the field strength of the said regulating dynamo being practically independent of the electromotive force upon and current through the translating device, substantially as set forth.

61. The method of operating at variable speed an electric motor connected to a constant-electromotive-force-supply circuit which consists in taking from the supply-circuit an amount of energy, practically equal to that required to operate the motor without waste of energy, and transforming said energy and supplying it to the motor in such a manner that the volts will be practically proportional to the speed desired and the amperes practically proportional to the torque required, substantially as set forth.

62. The combination with a source of electric energy, a multiple-arc distribution leading therefrom and across which a translating device is connected, of a transformer of electric energy having two electromotive force-producing windings, one of which is in series between the source and the translating device and the other of which is in multiple with the translating device, relative to the source, one winding being adapted to receive electric energy while the other delivers electric energy, and vice versa, substantially as set forth.

572,904. REVOLVING FILE CASE OR CABINET. BENJAMIN MIGOU, Anniston, Ala. Filed Apr. 6, 1896. Serial No. 586,393 (No model.)

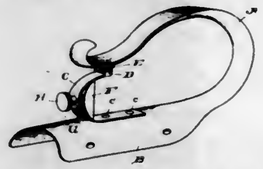


Claim.—1. The combination, with a case, or cabinet proper, of a ring, adapted to be secured to the base of the same, and having a lateral flange or shoulder, and a metal base-frame having lugs one of which is extended to form a hook that engages the ring shoulder, and flanged rollers journaled in said lugs, and whereon the lower edge of said ring rests and travels, substantially as shown and described.

2. The combination, with the flanged ring, secured to the base of the cabinet proper, of the base-frame having rollers, and lugs extended upward and forming hooks as specified, said frame and lugs being constructed integrally of cast malleable iron, or other metal having a degree of flexibility that adapts the hooks to be bent inward to engage said ring, as shown and described.

3. As an improved article of manufacture, the spider, or cruciform bearing for a book-cabinet, the same being constructed of cast malleable iron, having integral, vertical lugs at the end of each arm, one of which is extended and shaped into a hook, as shown and described.

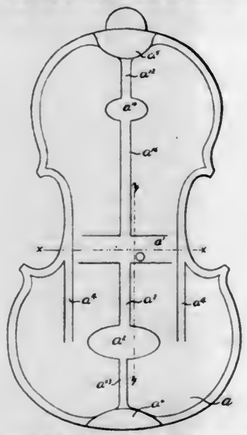
572,905. CHECKREIN-HOOK. CHARLES L. MCINTIRE, South Norridgewock, Me. Filed July 18, 1896. Serial No. 599,682. (No model.)



Claim.—1. As an improved article of manufacture, a checkrein-hook comprising the rigid hook A provided with a U-shaped spring C, the free end of which is provided with ears D between which is journaled a roller E, in combination with the block F, and thumb-screw H, substantially as and for the purpose set forth.

2. As an improved article of manufacture, a checkrein-hook comprising the rigid hook A having the U-shaped spring C, having ears D, between which is journaled the roller E, in combination with the block F, the curved face G of which is of a greater circle than the bend in the spring, and adjustable with reference to said bend in the spring by means of the thumb-screw H, substantially as and for the purpose set forth.

572,906. STRINGED INSTRUMENT. EDGAR MCNICHOL, Jonesport, Me. Filed Apr. 9, 1896. Serial No. 586,773. (No model.)



Claim.—1. The back of a violin or other instrument of the viol family having its lower lobe gradually reduced in thickness from a central thickened area toward the waist and the waist reduced in thickness from a transverse thickened area embracing post contact toward the lower lobe, substantially as described.

2. The back of a violin or other instrument of the viol family having a thickened transverse area in its waist portion embracing the sounding-post contact, and a thickened portion at the central part of the lower lobe, and a thin portion between said thickened portions, substantially as described.

3. The back of a violin or other instrument of the viol family having a transverse thickened area in its waist portion embracing the sounding-post contact, and a thickened transverse portion embracing the central area of the lower lobe, and a thin portion between said thickened portions provided with a narrow central longitudinal projection a^3, substantially as described.

4. The back of a violin or other instrument of the viol family having a transversely-thickened waist portion embracing the sounding-post contact, and a thickened central area in the lower lobe, and a thin portion between said thickened portions provided at each side with a narrow longitudinal projection a^4 arranged in continuation of the long central portion of the D's, substantially as described.

5. The back of a violin or other instrument of the viol family, having a thickened portion at the waist embracing or including the sounding-post contact, a central thickened area in the upper lobe, and a thin portion between said thickened portions, substantially as described.

6. The back of a violin or other instrument of the viol family, having a thickened portion at the waist, a central thickened area in each lobe and a thin portion between said thickened portions, substantially as described.

7. The back of a violin or other instrument of the viol family "worked out" to present a central longitudinal projection extending inward from the upper and lower ends where the back joins the end blocks toward the centers of the lobes, substantially as described.

8. The front or top of a violin or other instrument of the viol family having its waist depressed longitudinally from the upper to the lower lobes, and also depressed transversely in opposite ways from a central line passing from end to end of said back, substantially as described.

9. The front or top of a violin or other instrument of the viol family having its waist depressed on a longitudinal line between the upper and lower lobes, which depression embraces or includes the sounding-post contact, substantially as described.

10. The back or top of a violin or other instrument of the viol family having attached marginal portions which rest upon the rim, substantially as described.

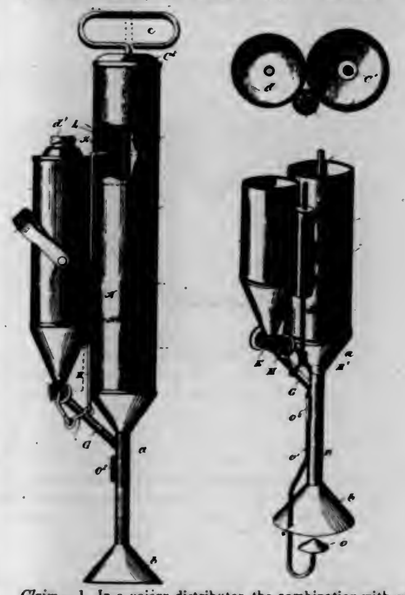
11. The back or top of a violin or other instrument of the viol family having attached marginal portions which rest upon the rim arranged with the grain running in a direction towards the median longitudinal line of the back or top, substantially as described.

12. In a violin or other instrument of the viol family, the combination with the rim of a lining-strip e' applied thereto, having its grain running from top to back of the instrument, substantially as described.

13. In a violin or other instrument of the viol family, corner-blocks made tapering from back to top, substantially as described.

14. In a violin or other instrument of the viol family, the back having a thickened central area of its lower lobe gradually made thinner toward the waist with a transverse thickened portion crossing the waist and embracing the post-contact, and upon which the post may rest, substantially as described.

572,907. POISON-DISTRIBUTER. WILLIAM H. NORTON, Mexico, N. Y. Filed Feb. 27, 1896. Serial No. 580,932. (No model.)



Claim.—1. In a poison-distributer, the combination with an air-cylinder and piston, of a powder-chamber and valve, the valve-shaft

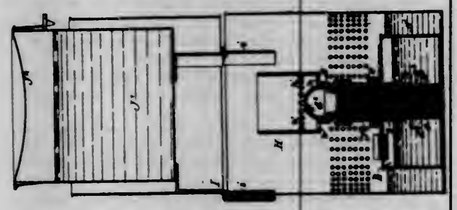
and operating-rod, said rod being operated by the rear movement of the piston and a spring for throwing the rod forward substantially as shown and described.

2. In a poison-distributer, the combination with an air-cylinder having a discharge-spout of a piston working therein, a powder-chamber, a discharge-tube, a rotary cut-off valve and the rod and link and spring for operating said valve, the rear end of said rod contacting with the piston upon the rear stroke substantially as shown and described.

3. In a poison-distributer, the combination with an air-cylinder, having a discharge-spout, of a piston working in said cylinder, a powder-chamber, the valve case, valve and discharge-tube, the cranked valve-shaft the link and rod, said rod having a hooked rear end projecting into the air-cylinder, and a coiled spring surrounding said rod substantially as and for the purposes described.

4. The combination with a discharge-spout, of a guide, the conical body held in front of discharge-spout and the wire attached thereto and adapted to fit in the guide on spout substantially as shown and described.

572,908. PORTABLE STOVE AND BURNER. JOHN P. PETERS, Philadelphia, Pa. Filed Oct. 9, 1894. Serial No. 525,427. (No model.)



Claim.—1. The combination in a lamp of the central stem having a head forming a gas-chamber at its upper end, an outlet for said chamber, an annular wick surrounding said stem, a perforated cylinder mounted on the head of the stem above the annular wick and forming a flame-chamber, substantially as described.

2. The combination in a lamp, of the central stem having an overhanging head, a gas-chamber in said head, an outlet therefor, an annular wick, a wick-holder having its upper portion tapered so that it can be adjusted against the under part of the head and inclose the annular wick without closing the outlet of the gas-chamber, substantially as described.

3. The combination of the casing, air-inlet openings therein, a lamp within the casing, clips adapted to the casing, an additional casing mounted on the clips, said clips being formed to receive a cooking vessel, substantially as described.

572,909. COFFEE OR TEA POT. HIRAM L. RICHARDSON, Gainesville, Ga. Filed June 30, 1896. Serial No. 597,611. (No model.)

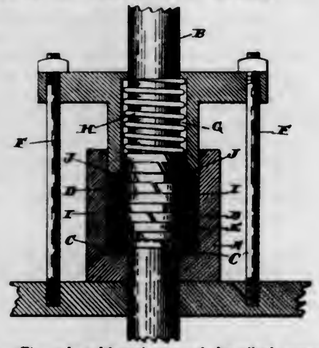


Claim.—1. A pot of the class described, comprising a pot proper, a lid therefor provided with an enlarged opening, a bag suspended within the pot from said opening and adapted to receive the material from which the beverage is made, a trap also supported in said enlarged opening and adapted to prevent escape from the pot of the flavor and strength of the contents thereof, said trap comprising a funnel and a cup suspended below and spaced from said funnel, the upper edge of said cup being cut at suitable intervals to form attaching-tabs adapted to be secured to the funnel to suspend the cup therefrom, said cup being also arranged in such relation to the opening of the funnel as to form a hydraulic seal therefor, and means for closing the opening in the lid of the pot, substantially as set forth.

2. A pot of the class described, comprising a pot proper, a lid therefor provided with an enlarged opening, a flange projecting into the pot from the sides of said opening and having its inner edge bent to form a substantially horizontal support, a bag suspended within the pot from said support and adapted to receive the material from which the beverage is made, a trap also mounted upon said support and adapted to prevent escape from the pot of the flavor and strength of the contents thereof, said trap comprising a funnel, a cup suspended below and spaced from said funnel, the upper edge of said cup being cut at suitable intervals to form attaching-tabs bent out of alinement with the main portion of the cup and adapted to be secured to the funnel to suspend the cup spaced a slight distance therefrom, said cup being also arranged in such relation to the opening of the funnel as to form a hydraulic seal therefor, and a transverse handle-bar secured to the funnel, and means for closing the opening in the lid of the pot, substantially as set forth.

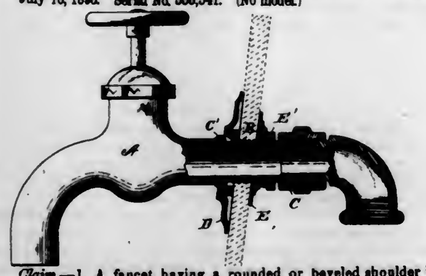
3 A pot of the class described, comprising a pot proper, a lid therefor having an opening provided with a depending flange, and a cap for closing said opening, a detachable bag suspended from the flange within the pot and adapted to receive the material from which the beverage is made, and a trap supported detachably within said flange above said bag and having its upper edge frictionally engaging the flange so as to bind the bag thereto, said trap being adapted to prevent escape from the pot of the flavor and strength of the contents thereof, substantially as set forth.

572,910. ROD-PACKING. CLARK F. RIGBY, Mannington, W. Va. Filed Nov. 19, 1895. Serial No. 569,433. (No model.)



Claim.—The rod-packing shown and described comprising the rod, the stuffing-box, the bottom ring C therein, the split packing-rings on ring C, and surrounding the rod, the body of soft packing surrounding the packing-rings and resting on ring C, the portion of ring C on which the body of soft packing rests flared inwardly, the expansive coiled spring H surrounding the rod and bearing on the top packing-ring and yieldingly holding said rings to their work without excessive pressure or twisting or jamming, and the adjustable gland inclosing the spring and holding it to its work and provided with the extension inclosing the upper rings and having the beveled end pressing the soft packing against the rings, substantially as described.

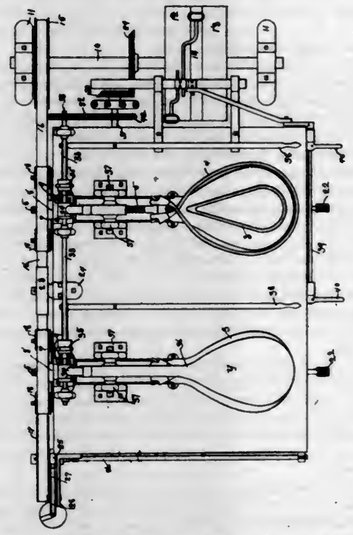
572,911. FAUCET. CHARLES R. SCHMIDT, Baltimore, Md. Filed July 10, 1895. Serial No. 555,541. (No model.)



Claim.—1. A faucet having a rounded or beveled shoulder in combination with clamping-rings having beveled or rounded central openings of larger diameter than the outside diameter of the faucet-shank, and a nut having a rounded or convex face seating against one of said rings.

2. A faucet having a threaded shank or stem, and a rounded shoulder at the inner end of the said shank, in combination with clamping-rings loosely fitting on said shank and capable of oblique arrangement thereon, and a nut having a rounded or convex face seating against one of said rings, substantially as described.

572,912. COLLAR-MACHINE. WYLIE B. SHADBURN, Buford, Ga. Filed Aug. 30, 1895. Serial No. 561,029. (No model.)



Claim.—1. In a horse-collar machine, the combination with a suitable supporting-frame, and a shaping-block secured upon said supporting-frame; of a loop surrounding said block; means for drawing said loop tight upon a collar on said block, and means for releasing the same; a pounder adapted to shape the collar; and means for operating said pounder, substantially as described.

2. In a horse-collar machine, the combination with a suitable supporting-frame, and a plurality of shaping blocks secured upon said frame; of a plurality of loops, one for each of said shaping-blocks; means for drawing one or more of said loops tight at one time; and means for releasing the same; a plurality of pounders, and means for operating one or more of said pounders at one time, substantially as described.

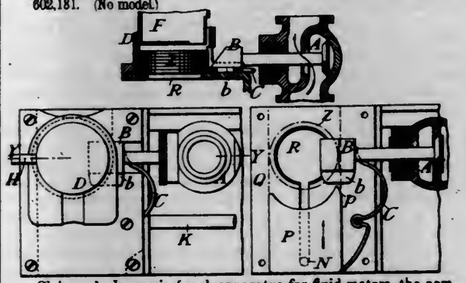
3. In a horse collar machine, the combination with a suitable supporting-frame, and a shaping-block secured upon said frame; of a loop surrounding said shaping-block; means for drawing said loop tight upon a collar on said shaping-block, and means for releasing the same; a pounder pivoted upon said supporting-frame; a cam mounted upon said shaft and adapted to operate said pounder; and means for rotating said shaft, substantially as described.

4. In a horse-collar machine, the combination with a suitable supporting-frame, and a shaping-block secured upon said frame; of a loop surrounding said shaping-block; means for drawing said loop tight upon a collar on said shaping-block, and means for releasing the same; a pounder pivoted upon said frame; a shaft journaled in said frame; a cam mounted loosely upon said shaft, and adapted to operate said pounder; means for rotating said shaft; and means for throwing said cam into and out of action during the rotation of said shaft, substantially as described.

5. In a horse-collar machine the combination with a suitable supporting-frame and a plurality of shaping-blocks secured upon said frame; of loops surrounding said shaping-blocks; means for tightening one or more of said loops at one time; means for releasing the same either singly or together; a plurality of pounders pivoted upon said support; a shaft journaled upon said support; means for rotating the same; a plurality of cams loosely mounted upon said shaft and adapted to operate said pounders; and means for throwing each of said cams into and out of action during the rotation of said shafts substantially as described.

6. In a horse-collar machine the combination with a suitable supporting frame and a plurality of shaping-blocks secured upon said frame; of loops surrounding said shaping-blocks; means for tightening one or more of said loops at one time; means for releasing the same either singly or together; a plurality of pounders pivoted upon said support; a shaft journaled upon said support; means for rotating the same; a plurality of cams loosely mounted upon said shaft and adapted to operate said pounders; means for throwing each of said cams into and out of action during the rotation of said shafts and means for holding each of said pounders out of contact with said shaping-block when desired, substantially as described.

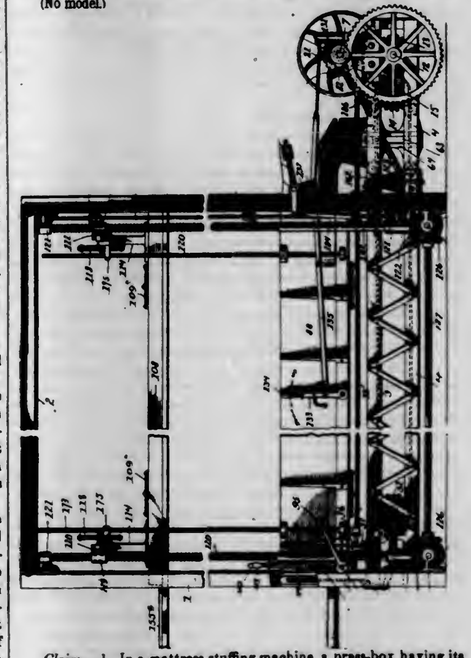
572,913. COIN-FREED APPARATUS FOR FLUID-METERS. JOHN F. SINNANCE, London, England, assignor to the Wright's Gas Meter Syndicate, Limited, same place. Filed Aug. 8, 1896. Serial No. 602,181. (No model.)



Claim.—1. In a coin-freed apparatus for fluid-meters, the combination with a cylinder having a slot for the introduction of a coin, and a spring-plunger for moving the coin in the cylinder, of a stop-valve having a sliding stem constructed with a head having an inclined face acted on by the peripheral edge of the coin when the latter is moved by the plunger, a reciprocatory plate moving in a plane substantially parallel with the plane of movement of the valve-stem and its head for sliding the coin out of the cylinder, a spring acting to close the valve, and means for reciprocating said plate, substantially as described.

2. In a coin freed apparatus for fluid-meters, the combination with a cylinder having a slot for the introduction of a coin, and a spring-plunger for moving the coin in the cylinder, of a stop-valve having a horizontally-sliding stem constructed with a head having an inclined face acted on by the peripheral edge of the coin when the latter is moved by the plunger, a horizontally-reciprocating plate moving in a plane parallel with the plane of movement of the valve-stem and its head for sliding the coin out of the cylinder, a spring acting to close the valve and engaged with and acted upon by the said plate, and means for reciprocating the plate, substantially as described.

572,914. MACHINE FOR STUFFING MATTRESSES. EDWIN H. STEPHENSON, Boston, Mass. Filed May 25, 1896. Serial No. 592,974. (No model.)



Claim.—1. In a mattress-stuffing machine, a press-box having its bottom wall sloping or inclined downwardly from its side edge portions toward its longitudinal central portion, substantially as described.

2. In a mattress-stuffing machine, the combination with a press-box, of a press-box cover having its acting face sloping or inclined upwardly from its side edge portions toward its longitudinal central portion, substantially as described.

3. In a mattress-stuffing machine, the combination with a press-box having its bottom wall sloping or inclined downwardly from its side edge portions toward its longitudinal central portion, of a press-box cover having its acting face sloping or inclined upwardly from its side edge portions toward its longitudinal central portion, substantially as described.

4. In a mattress-stuffing machine, the combination with a press-box, and a press-box cover, sloping or inclined from their side edge portions toward their longitudinal central portions, of a plunger-head having its upper and lower edges sloping or inclined in opposite directions toward the middle of its length, substantially as described.

5. The combination in a mattress-stuffing machine, of a press-box, a plunger-head movable in the press-box, a carriage movable beneath the press box and connected with the plunger-head, a chain-belt mechanism, switching or shifting devices connecting the carriage with the chain-belt mechanism for reversing the travel of the carriage at the limit of its forward and backward strokes, a rising-and-falling cover movable into and out of the press-box and operatively-connected mechanisms connected with the said cover and with the said chain-belt mechanism, for raising and lowering the cover and imparting motion to the chain-belt mechanism, substantially as described.

6. The combination of a press-box having a longitudinal slot in its bottom wall, and a plunger head movable in said press-box, of horizontal rails or tracks arranged horizontally beneath the press box, a carriage traveling on said rails or tracks under the press-box, a shank connecting the carriage with the plunger-head and traversing the longitudinal slot in the bottom wall of the press-box as the carriage moves, a chain-belt mechanism located beneath the press-box and carriage and provided with devices which operate to move the carriage forward and then reverse its direction of travel, a gate for opening and closing one end of the press-box, and lever-and-tappet mechanism acted upon by the carriage as it moves backward and forward to positively open and also close the gate, substantially as described.

7. The combination with a press-box, and a plunger-head movable therein, of a carriage movable beneath the press-box and connected with the plunger-head, an endless traveling belt, connections between the belt and carriage, a power-driven mechanism for imparting motion to the belt, a clutch for throwing the endless belt into and out of operative connection with the power-driven mechanism, a clutch-actuating lever automatically operated by the action of the carriage to move the clutch and thereby disengage the power-driven mechanism from operative connection with the belt to stop the motion of the latter, a gate for opening and closing one end of the press-box, and lever-and-tappet mechanism acted upon by the carriage as it moves backward and forward to positively open and also close the gate, substantially as described.

8. The combination with the press-box, and a plunger-head movable therein, of a carriage traveling back and forth beneath the press-box, an endless chain belt located under the press box and provided with devices which connect with the carriage and operate to move it back and forth, a power-driven shaft, gearing connecting the power-driven shaft with the belt, a clutch for throwing the power-driven shaft into and out of operative connection with the gearing which actuates the belt, a lever connected with the clutch and actuated by the direct action of the carriage for moving the clutch to throw the power-driven shaft out of operative connection with said gearing, a gate for opening and closing one end of the press box, and lever-and-tappet mechanism acted upon by the carriage as it moves backward and forward to positively open and also close the gate, substantially as described.

9. The combination with a press-box having a longitudinal slot in its bottom wall, and a plunger-head movable in the press-box, of rails or tracks arranged horizontally beneath the press-box, a carriage having wheels traveling on the rails or tracks, a shank connected with the plunger-head and the carriage and traversing the longitudinal slot in the bottom wall of the press-box as the carriage moves beneath the latter, endless traveling belts extending under the press-box, switching or shifting devices connecting the belts with the carriage and operating to move the latter forward and then reverse its direction of travel, a power-driven shaft geared to the belts for imparting motion thereto, a clutch for throwing the belt-operating gearing into and out of operative connection with the power-driven shaft, a clutch-lever connected with said clutch and automatically operated by the carriage at the limit of its movement in one direction to move the clutch and throw the power-driven shaft out of operative connection with said gearing, a gate for opening and closing one end of the press-box, and lever-and-tappet mechanism acted upon by the carriage as it moves backward and forward to positively open and also close the gate, substantially as described.

10. The combination with a press-box, and a plunger-head movable therein, of a carriage traveling back and forth beneath the bottom wall of the press-box and connected with the plunger-head, a gate arranged to open and close one end of the press-box, and tappet-and-lever mechanism acted upon by the carriage as it moves backward and also as it moves forward to positively open and also close the gate, substantially as described.

11. The combination with a press-box, and a plunger-head movable therein, of a gate arranged to close one end of the press-box, a carriage traveling beneath the bottom wall of the press-box and with which the plunger-head is connected, an endless traveling belt provided with devices which connect it with the carriage and operate to move the latter forward and then reverse its direction of travel while the belt moves in one direction, and mechanism automatically operated by the carriage as it moves forward and backward to positively open and also close the gate, substantially as described.

12. The combination with a press-box, and a plunger-head movable therein, of a gate arranged to open or close one end of the press-box, a rock-shaft connected with the gate, a rock-shaft provided with tappets, a connection between the said rock-shafts, and a traveling carriage connected with the plunger-head and provided with devices for operating the said tappets as the carriage moves forward and backward to automatically open and close the gate, substantially as described.

13. The combination with a press-box, and a plunger-head movable therein, of a carriage movable back and forth beneath the press-box and connected with the plunger head, an endless belt for moving the carriage backward and forward, tappet-and-lever mechanism automatically operated by the carriage in both its backward and forward movement to positively open and close the gate, substantially as described.

14. The combination with a press-box, and a plunger-head movable therein, of a traveling carriage connected with the plunger-head, an endless belt extending under the press-box and provided with devices which connect it with the carriage and operate to move the latter forward and then reverse its direction of travel while the belt moves in one direction, means for imparting motion to said belt, and tappet-and-lever mechanism automatically operated by the carriage in both its forward and backward movement to positively open and close the gate, substantially as described.

15. The combination with a press-box, and a plunger-head movable therein, of a carriage traveling beneath the bottom wall of the press-box and connected with the plunger-head, an endless belt connected with the carriage for moving the same forward and backward, a gate arranged to open and close one end of the press-box, a rock-shaft connected with the said gate, a rock-shaft provided with tappets, a connection between said rock-shafts, and devices mounted on the carriage and arranged to operate said tappets as the carriage moves forward and backward to automatically open and close the gate, substantially as described.

16. The combination with a press box, and a plunger-head movable therein, of a traveling carriage connected with the plunger-head, means for moving the carriage backward and forward, a gate arranged to open and close one end of the press-box, a rock-shaft connected with said gate, a rock-shaft provided with tappets, a connection between said rock-shafts, and dogs or pawls mounted on the carriage and arranged, respectively, to automatically operate said tappets to open and close said gate, substantially as described.

17. The combination with a press-box, and a plunger-head movable therein, of rails or tracks extending under the press-box, a carriage traveling on said rails or tracks beneath the bottom wall of the press-box, means for moving the carriage backward and forward, a gate arranged to open and close one end of the press-box, a rock shaft provided with tappets, connections between the tappet-carrying rock-shaft and the said gate, and devices mounted on the carriage for operating said tappets as the carriage moves backward and forward to automatically and positively both open and close the gate, substantially as described.

18. The combination with a press box, and a plunger-head movable therein, of a carriage traveling beneath the press-box and provided with vertically-slotted portions and dogs or pawls, endless traveling belts extending under the press-box, shifting boxes or blocks connecting the belts with the slotted portions of the carriage and operating to move the carriage forward and then reverse its direction of travel, mechanism for imparting motion to the belts, a gate arranged to open and close one end of the press box, and a tappet mechanism connected with the gate and actuated by the dogs or pawls of the carriage as it moves forward and backward to automatically and positively open and close the gate, substantially as described.

19. The combination with a press-box, and a plunger-head movable therein, of a carriage traveling back and forth beneath the press-box and connected with the plunger-head, mechanism for moving the carriage backward and forward, a gate arranged to open and close one end of the press-box, a counterbalance-weighted rock-shaft connected with said gate, a tappet-carrying shaft connected with the counterbalance-weighted rock-shaft, and dogs or pawls mounted on the carriage and arranged to strike the tappets of the tappet-carrying shaft as the carriage moves backward and forward to open and close the gate, substantially as described.

20. The combination in a mattress stuffing machine, of a press-box divided longitudinally into lateral sections, each comprising a plurality of extensible and contractible parts, two sets of right and left hand screw-threaded shafts, independent gearing at the inner ends of the said sets of screw-threaded shafts, and a coupling connecting the inner ends of two of said shafts, substantially as described.

21. The combination with an expansible and contractible press-box, a cover movable into and out of the press-box, and an expansible and contractible cover, of means for expanding and contracting the press-box, and connections between said press-box and said cover, whereby the cover is expanded and contracted simultaneously with the press-box, substantially as described.

22. The combination with an expansible and contractible press-box, and an expansible and contractible cover coöperating therewith, of right and left hand screw-threaded shafts for expanding and contracting the press box, and connections between the movable sections of the press-box and the movable sections of the cover, whereby the latter is expanded and contracted by the action of the movable sections of the press-box, substantially as described.

23. The combination with an extensible and contractible press-box, of vertically-movable cover-supports, a press-box cover having laterally-movable side sections, and hangers connected with said side sections and provided with roller-bearings mounted on said supports, substantially as described.

24. The combination with an extensible and contractible press-box, and vertically-movable cover-supports, of a cover having laterally-movable sections, hangers attached to said sections and movable back and forth on said cover-supports, and connections between said hangers, substantially as described.

25 The combination with an expansible and contractible press-box, and vertically-movable cover-carrying beams or girders, of a cover having laterally-adjustable side sections, hangers attached to said side sections and provided with bearings engaging said beams or girders, lazy-tongs connecting said hangers, and lazy-tongs connecting the laterally-movable sections of the cover with the main body portion thereof, substantially as described.

26. The combination with an extensible and contractible press-box, and vertically-movable cover-supports, of a cover having laterally-movable side sections, hangers attached to said side sections and movable back and forth on said cover-supports, and guide-rods engaging the press box and said hangers, whereby the expansion or contraction of the press-box causes the hangers to move on the said supports, substantially as described.

27. The combination with an expansible and contractible press-box, and an expansible and contractible cover movable into and out of the box, of guide rods engaging the press-box and connected with the cover-supports, whereby the press-box and cover are simultaneously adjusted, substantially as described.

28. The combination with an extensible and contractible press-box, and an expansible and contractible cover movable bodily in a vertical plane and held substantially horizontal in its movements, of connections between the cover and press-box, whereby the cover is guided and widened or narrowed when the press box is widened or narrowed, substantially as described.

29. The combination with the laterally-adjustable press-box of a mattress-stuffing machine, of vertical screw-threaded shafts geared together at the base of the machine, horizontally-arranged transverse beams or girders having nuts engaging the shafts, a laterally-adjustable press-box cover, hangers suspending the cover from said beams or girders and laterally adjustable thereupon, power-driven mechanism for rotating the screw-threaded shafts in one direction, means for reversing the motion of said shafts, and means for stopping the shafts whenever required, substantially as described.

30. The combination with an extensible and contractible press-box, and an extensible and contractible plunger-head movable therein, of devices for connecting the plunger-head with the press-box, so that the adjustment of the latter effects the adjustment of the plunger-head, and means for expanding and contracting the press-box, substantially as described.

31. The combination with a press-box having laterally-movable side sections provided with eyes or loops, of an extensible and contractible plunger-head having devices for engaging said eyes or loops, and means for expanding or contracting the press box, whereby the plunger-head is at the same time expanded or contracted, substantially as described.

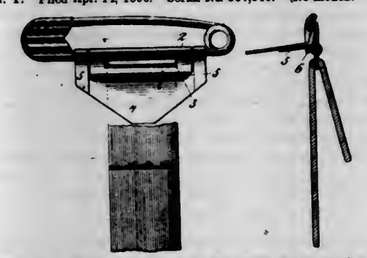
32. The combination with a press-box, and a traveling carriage provided with a plunger-head, of driving mechanism for actuating the carriage, a clutch for throwing the driving mechanism into and out of operative connection with said carriage, and a clutch-operating mechanism provided with a movable pin which is adapted to be acted upon by part of the carriage for automatically shifting the clutch, and means for withdrawing said pin to enable the clutch to be operated manually, substantially as described.

33. The combination with a press box, and a traveling carriage provided with a plunger-head to move in the press-box, of driving mechanism for actuating said carriage, a clutch for throwing the driving mechanism into and out of operative connection with the carriage, a clutch-operating mechanism provided with a spring-pressed pin arranged to be acted upon by a part of said carriage when it reaches the limit of its back stroke to automatically shift the clutch and stop the motion of the carriage, and means for retracting said pin, so that the clutch can be operated to throw the driving mechanism into operative connection with said carriage for starting the same, substantially as described.

34. The combination in a mattress-stuffing machine, of a laterally-adjustable press box, vertical screw-threaded shafts geared together, horizontally-arranged beams or girders provided with screw-nuts engaging said screw-threaded shafts, a laterally-adjustable press-box cover, hangers suspending the cover from said beams or girders and adjustable thereupon, power-driven mechanism geared to the screw-threaded shafts for raising and lowering the beams or girders and the press-box cover, a clutch for throwing the power-driven mechanism into and out of operative connection with the screw-threaded shafts, and mechanism operated by the horizontally-arranged cover-carrying beams or girders to actuate the clutch and thereby throw the power driven mechanism out of operative connection with the screw threaded shafts whenever it is desired to stop the ascent or descent of the press-box cover, substantially as described.

35. The combination with a press-box having an opening and closing gate at one end, and a plunger movable in the press-box, of a traveling carriage provided with dogs or pawls and connected with the plunger, means for moving the carriage back and forth, a rock-shaft provided with tappets which are acted upon by the dogs or pawls of the carriage as the latter moves forward and backward, and connections between the rock-shaft and the gate, whereby the gate is positively raised and also lowered by the action of the dogs or pawls of the carriage upon the tappets of the rock-shaft, substantially as described.

572,915. CLASP OR BUCKLE. CHARLES W. STIMSON, New York, N. Y. Filed Apr. 14, 1896. Serial No. 587,519. (No model.)



Claim.—1. In a safety-pin clasp, the combination, with a safety-pin, of frame and tongue plates connected to a bar of the safety-pin by joining tongues wrapped around said bar, the frame-plate having an opening through which the band may pass and having a pinch-bar against which said band may bear, and the tongue-plate having a projecting tongue arranged when the clasp is closed, to lie within said opening and press the band against the said pinch-bar, substantially as described.

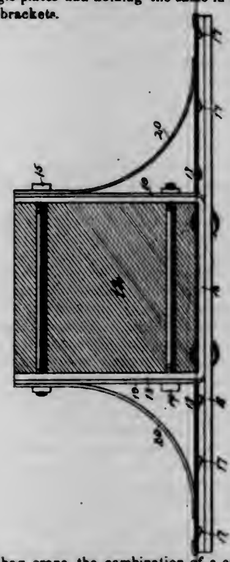
2. In a clasp, the combination, with a frame having an opening through which a band may pass, of a tongue-plate hinged to said frame, and having a projecting tongue curved eccentrically to the axis of the hinge and lying within said opening, and arranged, when the tongue-plate is turned into a position parallel to the frame, to press the band against the edge of said opening by a gradually-increasing pressure, substantially as described.

572,916. MAIL-BAG CRANE. JOHN L. SULLIVAN, Albia, Iowa. Filed Aug. 31, 1896. Serial No. 604,474. (No model.)

Claim.—1. In a mail-bag crane, a bag-hanging device comprising a bracket serially notched to receive a bag-ring, and a spring in opposition to the notched face of the bracket to maintain or retain a ring in contact therewith.

2. In a mail-bag crane, a yoke, a bracket fixed to said yoke, angle-plates in opposition to the bracket, and supplemental springs pressing said angle-plates into approximation to the bracket.

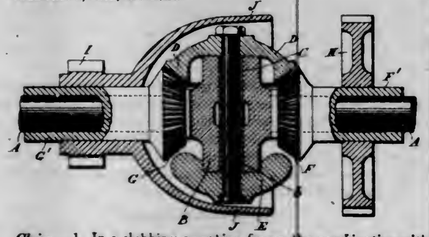
3. In a mail-bag crane, a yoke fixed to the crane, a bracket having notched faces to receive mail-bag rings, angle-plates fixed to the yoke in opposition to the notched faces of the bracket and springs engaging said angle-plates and holding the same in proximity to or contact with the brackets.



4. In a mail-bag crane, the combination of a crane-arm and a bag-hanging device comprising the bracket or bar provided with a series of notches in each of its end portions and laterally extended in opposite directions from the crane-arm, and spring-arms located in opposition to the notched faces of the said bracket or bar, whereby bag-rings are retained normally in the said notches.

5. A crane-arm, a yoke 13 embracing three sides of said crane-arm, angle-plates 19, 19 located in contact with said yoke and on opposite sides of the crane-arm, a bolt 14 extended through and connecting said angle-plates yoke and crane-arm, supplemental springs 20, 20 mounted in the angles of said angle-plates and impinging against the lower outer end portions thereof, a bolt 15 extended through and connecting the springs, angle-plates, yoke and crane-arm and a bracket or bar 16 fixed at its central portion to the central portion of the yoke 13, the end portions of said bracket or bar extend approximately through the lower outer ends of the said angle-plates and are provided with notches 17 in their faces adjacent said angle-plates, the springs 20, 20 serving to retain the angle-plates in approximation to the notched face of the bar or bracket.

572,917. JACK OR APPARATUS FOR INSURING DIFFERENTIAL MOTION ON SLUBBING OR ROVING FRAMES. EDMUND TWEEDALE, SAMUEL TWEEDALE, and JOSEPH SMALLEY, Manchester, England. Filed Mar. 7, 1896. Serial No. 582,286. (No model.) Patented in England Mar. 5, 1892, No. 4 342.

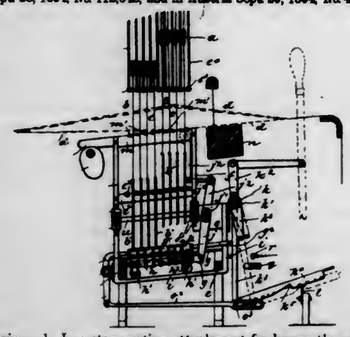


Claim.—1. In a slubbing or roving frame, the combination with the driving shaft, a boss fast on the said shaft, a cross-shaft through the said boss, a bevel gear-wheel D fast on one end of the said cross-shaft, and a concave weight fast on the other end thereof, of a bevel gear-wheel F having a sleeve loosely mounted on the driving-shaft, and meshing with the bevel gear-wheel D, a driving-wheel connected to the sleeve of the said bevel gear-wheel F, and adapted to drive the latter, a second sleeve G' loosely mounted upon the driving-shaft, a bevel-gear G thereon also meshing with the bevel gear-wheel D, and a gear-wheel I on the said sleeve G', substantially as described.

2. In a slubbing or roving frame, the combination with the driving-shaft, a boss fast on the said shaft, a cross-shaft through said boss at right angles to the driving shaft, a bevel gear-wheel on one end of the said cross shaft, and a weight fast on the other end thereof, of a bevel gear-wheel F having a sleeve loosely mounted on the main shaft, and meshing with the bevel gear-wheel D, a driving wheel H connected to the sleeve of the said bevel gear-wheel, and adapted to drive the latter, a second bevel gear-wheel G revolubly mounted on the driving-shaft and also meshing with the bevel gear-wheel D, and a gear-wheel rigidly connected to said bevel gear-wheel G, substantially as described.

3. In a slubbing or roving frame, the combination with the driving-shaft, a boss fast on the said shaft, a cross-shaft through the said boss, a saucer-shaped bevel gear-wheel D fast on one end of the said cross-shaft, and a saucer-shaped counterbalance-weight fast on the other end thereof, of a bevel gear-wheel F loosely mounted on the driving-shaft, and meshing with the bevel gear-wheel D, a driving-wheel connected to said bevel gear-wheel F and adapted to drive the latter, a second bevel gear-wheel G loosely mounted on the driving-shaft and gearing with the bevel gear-wheel D, and a gear-wheel driven by said bevel gear G, substantially as described.

572,918. WARP STOP-MOTION FOR LOOMS. JOHN VICKERMAN, Longford, England, assignor to Paul Whiting, Lamy, N. Mex. Filed June 22, 1895. Serial No. 553,653. (No model.) Patented in England July 20, 1892, No. 13,256, and June 7, 1893, No. 11,130; in France Sept. 27, 1894, No. 228,690; in Germany Sept. 23, 1894, No. 81,218; in Belgium Sept. 28, 1894, No. 112,042, and in Austria Sept. 29, 1894, No. 45/179.



Claim.—1. In a stop-motion attachment for looms, the combination with the heddles, having eyes for the passage of the warp-threads, and the weights or lingoes, of the section-grates, the section-levers connected therewith, the knocking-off rod, the frames connected therewith against which the said levers are adapted to strike, and the reciprocating grate and means for operating the same, the stopping mechanism and the connections between the same and the knocking-off rod, substantially as described.

2. In a stop motion attachment for looms, the combination with the heddles, having eyes for the passage of the warp-threads and the weights or lingoes, of the section grates, the section-levers connected therewith, the knocking-off rod, the frames secured thereto, the reciprocating grate, the levers connected therewith, and the cam for operating said levers, and the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

3. In a stop motion attachment for looms, the combination with the heddles, provided with eyes for the passage of the warp-threads, and the weights or lingoes, of the section-grates, the section levers connected therewith, the knocking-off rod, the frames secured thereto, the pivoted fingers formed with notches connected with said levers, the rails with which said notches are adapted to engage, the reciprocating grate, and means for operating the same, the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

4. In a stop-motion attachment for looms, the combination with the heddles, provided with eyes for the passage of the warp-threads, and the weights or lingoes, of the section-grates, the section-levers connected therewith, the knocking off rod, the frames secured thereto, the pivoted fingers connected with said levers, provided with notches, the rail with which said notches are adapted to engage, the reciprocating grate, the levers connected therewith, and the cam for operating the same, and the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

5. In a stop-motion attachment for looms, the combination with the heddles, having eyes for the passage of the warp-threads, and the weights or lingoes, of the section-grates the section-levers connected therewith, the knocking-off rod, the frames secured thereto, the pivoted fingers provided with notches, the rail with which said notches engage, the slotted rods connected with said fingers, the levers pivoted thereto, the reciprocating grate, and means for operating the same, and the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

6. In a stop-motion attachment for looms, the combination with the heddles, having eyes for the passage of the warp threads, and the weights or lingoes, of the section-grates, the section-levers connected therewith, the knocking-off rod the frames secured thereto, the notched fingers pivoted to said levers, the rail, the slotted rod connected with said fingers, the levers pivoted thereto, the reciprocating grate, the levers connected therewith and the cam for operating the same, and the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

7. In a stop-motion attachment for looms, the combination with the heddles, having eyes for the passage of the warp-threads, and the weights or lingoes, of the section grates, the section-levers connected therewith, the knocking-off rod, the frames secured thereto, the notched fingers pivoted to said levers, the rail, the slotted rods connected with said fingers, the levers pivoted thereto and the transverse guide wires or cords between which the heddle-wires pass, and the stopping mechanism and connections between the same and the knocking-off rod, substantially as described.

572,919. MAGAZINE-GUN. JAMES M WHITTEMORE, Washington, D. C. Filed July 11, 1885. Serial No. 171,330. (No model.)



Claim.—1. In combination with the breech-block and the locking brace pivoted thereto, the hammer having a portion adapted to engage the locking-brace when the breech-block is fully open, and move said brace to its locking position, substantially as and for the purpose specified.

2. In combination, with the breech-block and the locking-brace pivoted thereto, the hammer having its lower portion adapted to engage a part of the locking-brace to press the same toward a locking position, at any point in the hammer's movement from a full-cock, substantially as and for the purpose set forth.

3. In combination with the pivoted breech-block, the locking-brace pivoted thereto, the recoil-block and the hammer having the heel of its cam adapted at a full-cock position to engage the locking-brace to throw it out into locking position before the firing-pin projects from the breech-block face, substantially as and for the purpose described.

4. In combination with the pivoted breech-block and the hammer within the same pivoted on the same pin therewith, the locking-brace pivoted to the rear side of the breech-block adapted to be engaged by the heel of the hammer-cam, substantially as and for the purpose described.

5. In combination with the pivoted breech-block and the hammer within the same, the locking-brace pivoted to the block and engaged by a portion of the hammer, and means substantially as described for swinging the locking-brace on its pivot and rotating the breech block, all substantially as set forth.

6. In combination with the breech-block and the locking-brace pivoted thereto provided with a groove, the lever provided with a stud or projection playing in the groove and a spring engaging the lever and tending to keep its upper end swung back to hold the brace in locking position, substantially as and for the purpose described.

7. In combination with the breech-locking mechanism and the unlocking-lever engaging and actuating such mechanism, the spring in the recess in the recoil-block having one arm engaging the rear side of the lever, substantially as and for the purpose described.

8. In combination with the locking-brace for the breech-block, the lever for operating the locking brace, the spring bearing against a portion of the lever below its pivot so as to tend to normally keep the end of the lever, which engages the brace, swung so as to keep the brace out in locking position, substantially as and for the purpose described.

9. In combination with the pivoted breech-block, the recoil-block behind the same having a recoil surface, the locking-brace pivoted to the breech-block adapted to rest on the recoil-surface when swung out, the hammer within the breech-block, engaging the breech-block with the rear or heel portion of the cam, and the lever provided with a stud or arm engaging a groove in the side of the brace, substantially as and for the purpose described.

10. In combination with the breech mechanism adapted to retract and swing the hammer back as the breech is unlocked and opened, the trigger and the hammer provided with a safety-notch, a full-cock notch and an intermediate firing-notch adapted to be engaged by the trigger nose or sear before the breech mechanism has moved far enough to operate the extractor, substantially as and for the purpose described.

11. In combination with the recoil-block provided with a recoil-surface, the pivoted breech-block, the locking-brace pivoted thereto, means substantially as described for limiting the swing of the brace with reference to the breech-block, a lever provided with a stud engaging a portion of the brace, the hammer swinging within the breech-block, having the heel of its cam adapted to engage a portion of the brace and provided with a safety, a full, and an intermediate firing-notch, a suitable trigger to engage such notches and a mainspring to operate the hammer, substantially as and for the purpose described.

12. In combination with the magazine substantially in line with the chamber of the gun, and a suitable spring feed mechanism within the magazine, the swinging breech-block, the magazine-stop and a shoulder on the block adapted to engage and operate the lever of the stop, substantially as and for the purpose described.

13. In combination with the magazine so arranged and constructed as to throw a cartridge forward into the chamber in the barrel, a bridge piece extending between said magazine and said chamber adapted to support and guide the cartridge in its passage from the magazine into the chamber, substantially as and for the purpose described.

14. In combination with the magazine, substantially in line with the chamber in the barrel and the spring-feed mechanism within the magazine, the pivoted breech-block having a groove in its rear side, and the magazine-stop operated by the lever-arm projecting forward into the groove and engaged at its forward end by a shoulder on the block at the end of the groove when the latter is swung back and down to open the breech, substantially as and for the purpose described.

15. In combination with a magazine a magazine-stop consisting of the lever having one end adapted to project into the magazine in position to engage a cartridge-flange, a lever pivoted to the former lever at a point between its pivot and its cartridge-flange-engaging end, a spring between the levers, and a rigid bearing for the second lever between its pivotal and its free end, substantially as and for the purpose described.

16. In combination with the magazine the lever having one end adapted to be projected into the magazine, the second lever between such lever and the magazine pivoted to the lever at a point between its pivot and its end, the spring tending to force the free ends of the levers apart and the fulcrum-bearing for the second lever, substantially as and for the purpose described.

17. In combination with the breech and ejector mechanism, the swinging gate normally standing at an angle behind the breech mechanism in position to guide the ejected shell out to one side, substantially as and for the purpose described.

18. In combination with the breech and ejector mechanism and with the magazine having its mouth substantially in line with the breech-chamber, the gate adapted to stand normally at an angle across the space between the breech-chamber and magazine, and a spring tending to keep the gate in its normal position, substantially as and for the purpose described.

19. In combination with the swinging gate, the arm thereon and the spring engaging such arm adapted to swing the gate normally inward to stand at an angle behind the breech, substantially as and for the purpose described.

20. In combination with the magazine having its mouth substantially in line with the breech chamber in the barrel, the swinging gate, the spring adapted to keep it normally swung so as to stand at an angle across the space between the magazine and chamber and a spring-latch adapted to engage the gate when it has been swung outward, and to hold it from returning to its normal position until the latch is raised, substantially as and for the purpose described.

21. In combination with the gate and the spring mechanism tending to swing it inward across the passage between the magazine and the breech chamber, the spring above the gate having the lug or pin adapted to ride up over the edge of the gate as the gate swings outward and to engage and hold it as it swings inward, and the breech-block adapted when it rises to close the breech to engage the spring, to cause the pin or lug to release the gate, substantially as and for the purpose described.

22. In combination with the gate normally kept swung in position to guide the ejected shell out to one side, and adapted to be swung outward by the passage of a cartridge from the magazine into the chamber, a spring-latch mechanism adapted to let the gate swing outward and to engage it as it swings back and hold it with its forward end behind the cartridge in the chamber, and the breech-block adapted to operate the latch to release the gate as it moves to close the breech, substantially as and for the purpose described.

23. In combination with the slotted magazine-tube, the follower within the same having lugs or pins engaging the slots in the tube, the fixed bar passing through the tube and the slots therein, and the spring in the tube between the follower and the fixed bar, substantially as and for the purpose described.

24. In combination with the tube adapted to be drawn out longitudinally, provided with longitudinal slots, the follower having projections extending into the slots in the tube, the fixed bar extending through the tube and the slots therein, and the spring between the follower and the bar, substantially as and for the purpose described.

25. In combination with the stock of the gun, the tube extending longitudinally through it provided with diametrically opposite longitudinal slots, the follower within the tube provided with lugs or projections engaging the slots in the tube and adapted to be engaged by the forward ends of the slots as the tube is pulled out, the fixed bar at the rear end of the stock passing through the tube and the slots therein and the spring in the tube between the follower and the bar, substantially as and for the purpose described.

26. In combination with the passage through the stock, the longitudinally-movable tube in the same provided with longitudinal slots extending nearly to its ends, the follower within the tube having arms or projections playing in the slots, the rigid bar passing through the tube and the slots near the rear end of the tube, the supplemental magazine-chamber opening into the tube-passage in the stock and suitable stop mechanism adapted to regulate the discharge of cartridges from the magazine-tube, substantially as and for the purpose described.

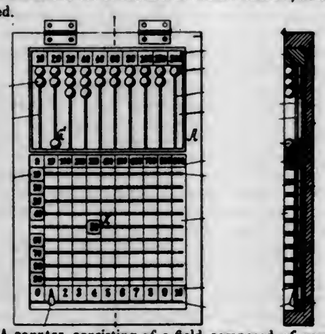
27. In combination with the longitudinally-movable magazine-tube, and the spring and follower within the same, means substantially as described, whereby the follower is drawn back by the drawing out of the tube and the supplemental magazine substantially at right angles to the tube-passage and near its rear end, so that its contained cartridges can be fed into the tube-passage when the tube is drawn out, substantially as and for the purpose described.

28 In combination with the magazine-tube passage extending longitudinally through the upper portion of the stock, the longitudinally-movable magazine-tube therein containing a suitable follower and feed-spring and the supplemental magazine in the stock, substantially at right angles to and opening into the magazine-tube passage near its rear end, adapted to hold a series of cartridges, substantially as and for the purpose described.

572,920. GAME-COUNTER. CHARLES WIDMER, Sr., Brooklyn, N. Y. Filed Mar. 19, 1896. Serial No. 583,900. (No model.)

Claim.—1. A counter having a field composed of numbered columns provided with movable markers to travel longitudinally of said columns, and another field composed of numbered columns provided with movable numbered markers which travel across the same in a plane at right angles to the line of movement of the first-mentioned markers, substantially as described.

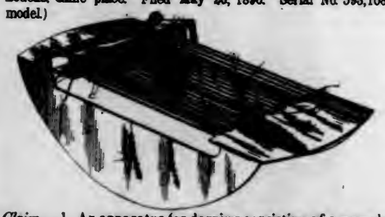
2. A counter having a field composed of numbered columns provided with movable markers to travel longitudinally of said columns, another field composed of numbered columns provided with movable markers which travel across the same in a plane at right angles to the line of movement of the first-mentioned markers, and an index movable across one set of columns at one end thereof, substantially as described.



3. A counter, consisting of a field composed of numbered columns provided with movable markers to travel longitudinally of the same, another field composed of columns numbered at their opposite ends and provided with movable markers to travel across the same, and an index movable across one end of the last-mentioned columns to coöperate with the numbers at such end, substantially as described.

4. A counter comprising fields with numbered columns, one of said fields having markers adapted to travel along the columns and the other field having markers adapted to travel across the columns, and rotary cylinders placed outside the boundaries of the fields and provided with actuating-handles substantially as described.

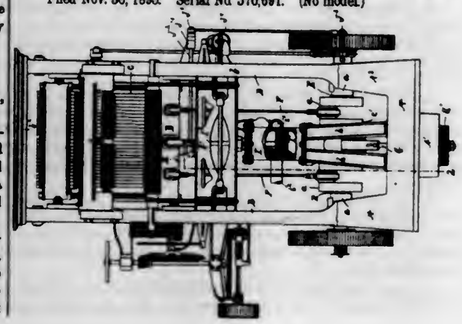
572,921. DARNING APPARATUS. JOHN H. WILDAY, Philadelphia, Pa., assignor of two-thirds to Robert W. Hutton and Zachariah K. Loucks, same place. Filed May 26, 1896. Serial No. 593,108. (No model.)



Claim.—1. An apparatus for darning consisting of a warp-holder, formed of sheet metal bent to form clamp sides and having a central opening, hooks formed on the edge of the ends of the central opening, ears formed upon the holder, a warp-opener pivoted to said ears by a pintle, said pintle being of a length to allow the opener to slide sidewise, said opener being of angular form, tongues formed on one section of the opener, said tongues being concaved on their lower edges, as and for the purpose described.

2. An apparatus for darning consisting of a warp-holder formed of sheet metal bent to form clamp sides and having a central opening, hooks formed on the ends of the opening, ears formed upon the holder, a pintle slidable in said ears, an angular opener secured on the pintle and adapted to slide between and strike against the ears and thereby limit the movement of the pintle and tongues formed on the opener, as and for the purpose described.

572,922. GANG-SAW MILL. WILLIAM M. WILKIN, Erie, Pa. Filed Nov. 30, 1895. Serial No. 570,691. (No model.)



Claim.—1. In a gang-saw mill, the combination of the base having the projections A^2; the superstructure B resting on said projections; a saw-sash in said superstructure; a crank-shaft provided with two cranks *e*; bearings for said shaft on said projections A^2, said cranks *e* being between said bearings; pitmen located within the frame of the superstructure connecting said cranks with said saw-sash; a chair extending from the main base over the crank-shaft between the said pitmen; and an engine on said chair having its piston connecting with said sash.

2. In a gang-saw mill, the combination of the base having the well A′ and projections A^2; the superstructure resting on the projections A^2; the saw-sash in said superstructure; a crank-shaft having diametrically opposite cranks *e e* and *e′*; bearing for said shaft on projections A^2 between which said cranks are located; the pitmen connecting said cranks *e e* with the sash; said pitmen being located within the frame of the superstructure; a counterweight located in the well of the base; a pitman connecting said counterweight with said crank *e′*; a chair extending from the main frame over the crank-shaft between the sash pitmen; and an engine on said chair having its pitman connected with said saw-sash.

3. In a gang-saw mill, the combination of the base having the well A′ and projections A^2; the superstructure resting on the projections A^2; the saw-sash in said superstructure; a crank-shaft having diametrically opposite cranks *e e* and *e′*; bearing for said shaft on the projection A^2 between which said cranks are located; the pitmen connecting said cranks *e e* with the sash; said pitmen being located within the frame of the superstructure; a counterweight located in the well of the base; a pitman connecting said counterweight with said crank *e′*; a chair extending over the crank-shaft between the sash-pitmen and covering the crank *e′* said chair being supported by legs or standards with an opening between them opposite the crank *e′*; and an engine on said chair having its piston connected with said saw-sash.

572,923. AUTOMATIC CIRCUIT-CLOSER. EDWIN C. WILLIAMS, Clarksville, Tenn., assignor of one-fourth to Seely Dunn, same place. Filed May 9, 1896. Serial No. 590,896. (No model.)



Claim.—1. In an automatic circuit-closer, a fixed contact-point, a movable contact-point normally contacting with the fixed point and magnetically controlled in a direction away from said fixed point, an air-cup provided at one side with a flexible movable diaphragm and at its opposite side with a normally-closed leak-valve, and suitable connections between the flexible diaphragm and the movable contact, substantially as set forth.

2. In an automatic circuit-closer, a suitable base, a fixed contact-point supported above the base, an electromagnet supported above the base, a swinging armature supported at one end of the magnet and carrying a contact-point opposite the fixed contact-point, an air-cup provided with a flexible diaphragm, and adjusting connections between said flexible diaphragm and the said armature to retard the movement of the latter away from the magnet, substantially as set forth.

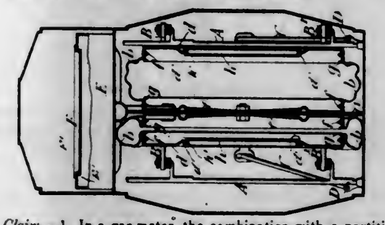
3. In an automatic circuit-closer, a suitable base, a fixed contact-point supported above the base, an electromagnet, a swinging armature supported at one end of the magnet and carrying a contact-point working opposite the fixed point, an air-cup provided at one side with a flexible movable diaphragm and at its opposite side with a normally-closed leak-valve, and adjusting connections between said diaphragm and said armature, substantially as set forth.

4. In an automatic circuit-closer, the base, a fixed contact-point supported above the base, an upright supporting-plate carrying a pair of electromagnets arranged above the base, a bearing-bracket fitted on the base at one end of the electromagnets, a swinging armature plate pivotally supported within said bracket and carrying a short upwardly-disposed contact-arm having a contact-point working opposite the fixed contact-point, a retractile spring suitably connected at one end to the said contact-arm and at its other end to a fixed point of attachment, an air-cup supported in an upright position on the base and provided at one side with an interiorly-threaded flange and in its outer closed side with a normally-closed leak-valve, a flexible diaphragm arranged within the air-cup, an exteriorly-threaded clamping-ring engaging the threaded flange of the cup and binding the peripheral edges of the flexible diaphragm therein, a metallic compression plate or disk suitably fastened at a central point to the outer side of said diaphragm and provided with an offstanding socketed connecting-post, a swinging lever pivotally supported at one side of the supporting-plate for the magnets and suitably connected at one end to said connecting post, a connecting-rod connected at one end with the other end of said swinging lever and at its opposite end to said armature-plate, and an adjusting-spring arranged within the air-cup and pressing outward against the inner side of the flexible diaphragm, substantially as set forth.

5. In an automatic circuit-closer, a suitable base, a fixed contact-point supported above the base, an electromagnet, a swinging armature supported at one end of the magnet and carrying a contact-point working opposite the fixed point, a suitably-arranged air cup provided at one side with a flexible diaphragm and in its opposite side with a valve-opening, adjusting connections between said diaphragm and said armature, and a spring-adjusted valve lever pivotally mounted at one end on the outer side of the air cup and carrying at its opposite end a valve disk normally covering said valve-opening, substantially as set forth.

6. In an automatic circuit-closer, the combination with a telegraph-key; of an electromagnet, a swinging armature supported at one end of the magnet and carrying a contact-point, a fixed contact-point arranged opposite the contact-point carried by the armature, branch-line wires respectively connected with said fixed and movable contact points and with the separate main-line terminal connections with the telegraph key, a local-battery circuit including said electromagnets and having a circuit-closer operated by the movement of the key lever of the telegraph-key, and a retarding device having suitable connections with said armature to retard the movement of the contact-point carried thereby toward the fixed point, substantially as set forth.

572,924. DRY GAS-METER. FRANK WRIGHT, London, England. Filed Feb. 4, 1896. Serial No. 578,022. (No model.)



Claim.—1. In a gas-meter, the combination with a partition of bellows, the heads *c* of which are removably secured to said partition, the heads *d* of said bellows formed with a central opening and the conical lip forming the edge of said opening, covers each having a conical boss fitting the conical lips of the heads *d* of the bellows and removable therefrom, studs secured to said heads *d* above and below the opening therein and arms connecting said studs to a flag-rod, substantially as described.

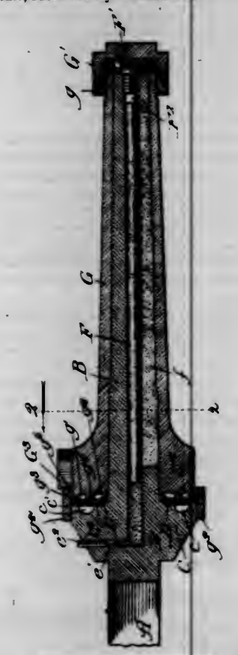
2. In a gas-meter, the valve-chamber E struck up from sheet metal with an oval opening having an inwardly-projecting conical lip E′, and the valve-chamber cover F provided with a conical boss F″ having a gas-tight fit in the conical lip of the valve chamber, and removable therefrom, substantially as and for the purposes described.

572,925. AXLE AND AXLE-BOX. MCKENDREE F. BISHOP, Alameda, Cal. Filed Jan. 17, 1896. Serial No. 575,875. (No model.)

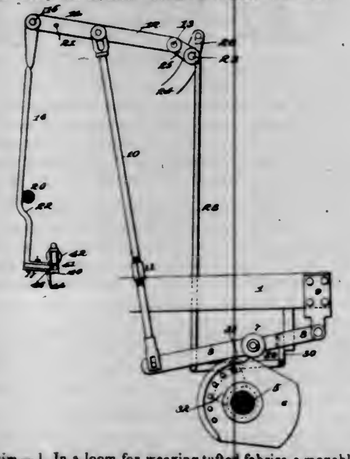
Claim.—1 The combination of an axle spindle provided with an inner shoulder having a channel or groove in its face, an axle-box provided with an inner shoulder having a channel or groove in its face and lugs on its outer surface, an interposed packing between the shoulder on the axle-spindle and the shoulder on the axle-box, and means for holding the axle-spindle and the axle-box in an assembled position, substantially as described

2. The combination of an axle-spindle provided with an inner shoulder having a channel or groove in its face and provided with a longitudinal hole having a lateral opening or passage extending to the outer edge of the spindle, the longitudinal hole and lateral opening or passage being adapted to contain a lubricant, an axle-box provided with an inner shoulder having a channel or groove in its face, an interposed packing between the shoulder on the axle-spindle and the shoulder on the axle-box, and means for closing the outer end of the longitudinal hole in the axle-spindle and holding the spindle and box in a removable position, substantially as described.

3 The combination of an axle-spindle, an axle-box, means for holding the box in removable position upon the spindle, a longitudinally-adjustable nut, *g*, on the outer end of the axle box, and an axle-cap, *G'*, screw-threaded on the box-nut, *g*, to inclose the outer end of the box and spindle, substantially as described.



572,926. LOOM. GEORGE BORLAND and ARTHUR K. SHERWOOD, Thompsonville, Conn., assignors to the Hartford Carpet Company, same place. Filed Feb. 18, 1895. Serial No. 538,893. (No model.)



Claim.—1. In a loom for weaving tufted fabrics, a movable yarn-holder upon which the tuft-yarns are wound, and a tuft-yarn clamp acting directly upon said tuft-yarns, all substantially as described.

2. In combination with a tuft-yarn beam bearing tuft yarns, a clamp to engage said yarns between their free ends and the tuft-yarn beam, all substantially as described.

3. In combination in a loom, a carriage bearing a tuft-yarn beam and quills or guides, and a clamp to engage the tuft-yarns borne on the beam, between said beam and the quills, all substantially as described.

4 In a loom for weaving tufted fabrics, a movable yarn-holder upon which the tuft-yarns are wound, a series of tuft-yarn tubes connected thereto and movable therewith, and a tuft-yarn clamp acting directly upon the said tuft-yarns, all substantially as described.

5. In combination, a carriage bearing a tuft-yarn beam and quills or guides, and a yielding clamp to engage the yarns borne on the beam between it and the quills, all substantially as described.

6. In combination, a carriage bearing a tuft-yarn beam and quills or guides, a clamp extending lengthwise of the tuft-yarn beam to engage the tuft yarns borne on the beam between it and the quills, all substantially as described.

7. In a loom, in combination with a tuft-yarn beam bearing tuft-yarns, clamp-arms bearing a yielding clamp, the yielding clamp, and means for actuating the clamp to engage the tuft-yarns between the beam and their free ends, all substantially as described.

8. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, means for moving it to a position adjacent to the tuft-yarn beam, and means for moving it to engage the tuft-yarns borne on the beam, all substantially as described.

9. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, means for guiding the clamp to a position near the tuft-yarn beam, means for moving said clamp to said position, and means for causing the clamp to engage the tuft-yarns, and a guide-pin in engagement with the guide-surface on the clamp-arm, all substantially as described.

10. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, a sprocket-wheel shaft, a spring holding the clamp-arm normally in engagement with the sprocket-wheel shaft, a guide-surface on the clamp-arm in engagement with the sprocket-wheel shaft to guide said arm to its position adjacent to the tuft-yarn beam, means for moving the clamp to said position, and means for causing it to engage the tuft-yarns, all substantially as described.

11. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, a frame pivoted to one end of the clamp-supporting means and secured to a lifting-shaft, the lifting-shaft, a lifting-rod connected with the lifting-shaft and in operative engagement with a lifting-cam, and a lifting-cam, all substantially as described.

12. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, a frame adjustably pivoted to one end of the clamp-supporting means and secured to a lifting-shaft, the lifting-shaft, a lifting-rod connected with the lifting-shaft and in operative engagement with a lifting-cam, and the lifting-cam, all substantially as described.

13. In combination with a tuft-yarn beam bearing tuft-yarns, a clamp, means for supporting the clamp, a frame pivoted to the clamp-supporting means and adjustably secured to a lifting-shaft, the lifting-shaft, an adjustable rod connected with the lifting-shaft and in operative engagement with a lifting-cam, and the lifting-cam, all substantially as described.

14. In a loom, in combination with a tuft-yarn beam bearing tuft-yarns, a frame supporting a clamp and adjustably secured to supports borne on the lifting-shaft, the lifting-shaft, the supports adjustably secured to the lifting-shaft, a lifting-rod connected with the lifting-shaft and in operative engagement with the lifting-cam, and the lifting-cam, all substantially as described.

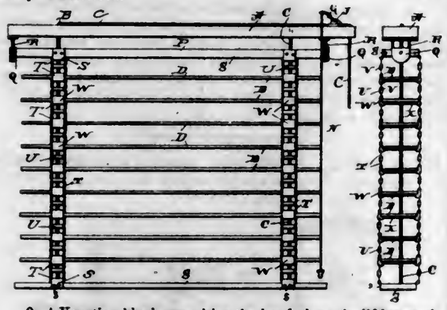
15. In a loom, in combination with a tuft-yarn beam bearing tuft yarns, a frame secured to a lifting-shaft, the lifting-shaft, a clamp pivoted to the frame, a lifting-rod connected to the lifting-shaft, the lifting-cam for operating the lifting-rod, a rock-shaft bearing the lifting-shaft, a clamp-rod connected with the rock-shaft, and a cam for operating the clamp-rod, all substantially as described.

16. In a loom, in combination with a tuft-yarn beam bearing tuft yarns, a frame having a clamp pivoted thereto, means for swinging the frame in a vertical plane, a rock-shaft pivotally connected with the frame, a bent lever secured to the rock-shaft, a spring secured to one arm of the bent lever, a clamp-rod secured to the other arm of the bent lever and in operative engagement with a cam on the cam-shaft, and the cam, all substantially as described.

17. In a loom, in combination with a tuft-yarn beam bearing tuft-yarns, a clamp arm supporting a clamp, a cam on the arm forming a guide-surface in engagement with a guide-pin, a guide-pin, and means for moving the clamp to engage the tuft-yarn borne on the beam, all substantially as described.

572,927. VENETIAN BLIND. CARL CEDERBERG, Sydney, New South Wales, assignor to Henry Shute, Ashfield, New South Wales. Filed Apr. 30, 1895. Serial No. 547,705. (No model.) Patented in England Dec. 27, 1894, No. 25,137.

Claim.—1. In a Venetian blind, the combination of the head-piece, the series of slats with the lifting-cord, the links, the link-carrier P and the connection between the link-carrier and the head-piece consisting of the loop R depending from the head-piece and having parallel sides with a cross-piece at their lower end and the grooved bearing-plates Q engaging the depending loop, said plates being carried by the ends of the link-carrier plate whereby the blind may be raised against the head-piece or inclined in the said loop, substantially as described.

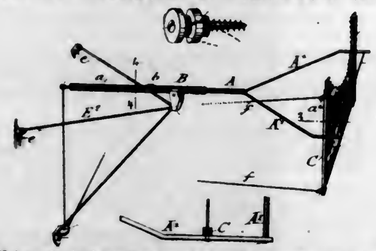


2. A Venetian blind comprising the head-piece, the lifting-cords, the series of slats and the links carrying the same and consisting of the loops T, the hinge-bars W of trefoil form and having the three eyes, the cross-bars *x* carried by the said hinge-bars and the cross-pieces V connecting the loops T, said cross-pieces having lugs at their ends engaging the loops T, substantially as described.

3. In a Venetian blind, the combination of the head-piece, the slots, the operating-cords, and the controlling device for the cord comprising the pivoted plate forked at one end to avoid contact with the cord and having a foot H at the other end to engage the cord, the chock-piece L arranged on the head-piece adjacent to the foot H and adapted therewith to form a kink in the cord and means for operating the controlling device.

4. In combination in a Venetian blind, the series of slats with supporting and operating means therefor, and the locking device consisting of the bar having bearings at the top and bottom of the blind, said bar having projections B' arranged to engage the edges of the slats, substantially as described.

572,928. PHOTOGRAPHIC VIGNETTER. WILLIAM EDDOWES, Newark, N. J. Filed Aug. 22, 1896. Serial No. 603,573. (No model.)

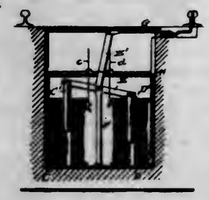


Claim.—1. A vignetting attachment for photographic cameras, consisting of a supporting frame or tripod attached to the camera; a block at the converging ends of the tripod-arms, an adjustable frame supported pivotally on said block, a vignette-holder pivoted to the outer end of said adjustable frame, and cords connected respectively with the adjustable frame and with the upper and lower ends of the vignette-holder for adjusting the relative position of the vignetter toward the axis of the lens-tube, substantially as set forth.

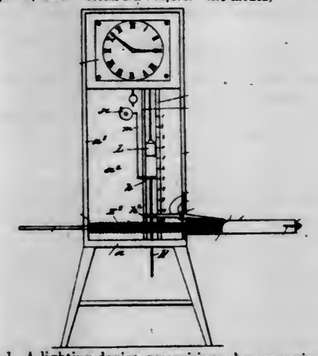
2. A vignetting attachment for photographic cameras, consisting of arms, forming a tripod, attached to the front part of the camera, a block connecting the converging ends of said arms; a tube pivoted to said block, a frame for the vignette-holder, the shank of which is adapted to slide in said pivoted tube, means for adjusting the shank in said tube, a vignette-holder pivoted to the outer end of the sliding frame, a cord attached to the inner end of the pivoted tube and guided to one side of the camera-bed, a double cord applied to the upper and lower ends respectively of the vignette-holder, and means for guiding said cords along the opposite side of the camera-bed, so as to permit the adjustment of the vignette-holder, either upward and downward, forward and backward, relatively to the lens-tube, substantially as set forth.

572,929. ELECTRIC SWITCH. CHARLES H. HABERER, Louisville, Ky., assignor of one-half to Willis W. Barnes, same place. Filed Feb. 27, 1896. Serial No. 580,948. (No model.)

Claim.—The combination with a switch movable in both directions, of a pair of hollow helices having each a movable core, a lever to opposite arms of which the said cores are connected, said lever having a third arm, a bent link-bar connecting this third arm to the switch, a pair of stationary track contact-plates located one in advance of the other at the proper distance from the switch and electrically connected each with one of the said helices, a movable contact carried by the car, a source or supply of electricity, and proper connections for completing the circuit through either of the said helices when the contact on the car is brought into engagement with the track contact which is connected with that helix, substantially as specified.



572,930. LIGHTING DEVICE. GEORGE J. HACKER, Mokena Ill. Filed Apr. 14, 1896. Serial No. 587,491. (No model.)



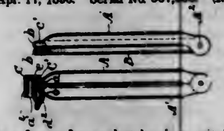
Claim.—1. A lighting device, comprising a box or casing, in the bottom of which is mounted a transverse spring-operated rod, which is adapted to be projected at one side thereof, by said spring, said box or casing being also provided with a projecting strip or plate, the outer end of which is adapted to hold a match which is adapted to be projected and ignited by said spring operated rod, and said box or casing being also provided with a pivoted lever, the outer end of which is adapted to hold said rod in the withdrawn position, and the inner end of which is connected with a vertically-movable rod, which is adapted to be operated by a weight connected with a clock mechanism which is located in the upper part of said box or casing, substantially as shown and described.

2. A lighting device, comprising a box or casing in the bottom of which is mounted a transverse spring-operated rod, which is adapted to be projected at one side thereof, by said spring, said box or casing being also provided with a projecting strip or plate, the outer end of which is adapted to hold a match which is adapted to be projected and ignited by said spring-operated rod, and said box or casing being also provided with a pivoted lever, the outer end of which is adapted to hold said rod in the withdrawn position, and the inner end of which is connected with a vertically-movable rod, which is adapted to be operated by a weight connected with a clock mechanism which is located in the upper part of said box or casing, said vertically-movable rod being also connected with an alarm-bell or other similar device, substantially as shown and described.

3. A lighting device comprising a box or casing, in the bottom of which is mounted a transverse spring-operated rod, which is adapted to be projected at one side thereof, by said spring, said box or casing being also provided with a projecting strip or plate, the outer end of which is adapted to hold a match which is adapted to be projected and ignited by said spring-operated rod, and said box or casing being also provided with a pivoted lever, the outer end of which is adapted to hold said rod in the withdrawn position, and the inner end of which is connected with a vertically-movable rod, which is adapted to be operated by a weight connected with a clock mechanism which is located in the upper part of said box or casing, said vertically-movable rod being adapted to move between two vertical guide-plates one of which is provided with a scale which represents

the hours of the day and which are arranged to correspond with the hours of the day on the dial of the clock, substantially as shown and described.

572,931. POCKET-BOOK FRAME AND CATCH. GEORGE HAVELL, Newark, N. J., assignor to the Havell Manufacturing Company, same place. Filed Apr. 17, 1896. Serial No. 587,906. (No model.)



Claim.—1. In a frame for pocket-book or satchel, the combination, with two frame-pieces jointed by pivots to each other at their ends, of a joint-strip of double-bead cross-section, having rivet-wires inclosed within one of the beads and projected upon the inner side of the strip for engagement with the outer edge of one of the frame-pieces, substantially as herein set forth.

2. In a frame for pocket-book or satchel, the combination, with two frame-pieces of U shape in cross section, of a joint-strip of double-bead cross-section having the body of a rectangular staple inclosed within one of the beads and its ends projected upon the inner side of the strip and extended through the edge of one of the frame-pieces and clenched within the channel of the same, substantially as herein set forth.

3. In a frame for pocket-book or satchel, the combination, with two frame-pieces having each a tapering channel and bead at the edge upon their contiguous corners, of a joint-strip of double-bead cross-section corresponding in width to the beads upon the edges of the frame-pieces, with rivet-wires inclosed within one of the double beads and projected upon the inner side of the joint-strip and clenched within the bead of one of the frame-pieces, the whole arranged and operated substantially as herein set forth.

4. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a joint strip having a seat at the middle of its length to receive a latch-casing, flanges extended from the edges of the strip at the opposite ends of such seat, and rolled over upon the top of the strip into a double bead, a latch-casing secured upon the said seat and rivet-wires inclosed within one of the beads and projected upon the inner side of the strip and clenched within the said frame-piece, the whole arranged and operated substantially as set forth.

5. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a joint strip having a seat at the middle of its length to receive a latch-casing, double beads formed upon the strip at the opposite ends of such seat, and a latch-casing fitted upon the seat and provided at each end with a stud extended within the double bead, to secure the casing upon the strip, substantially as herein set forth.

6. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon the side to admit a detachable latch-piece, with ears at the ends of the opening, as described, a latch-piece adapted to pass through the opening and vibrate within the casing, and having lugs upon the sides to engage the said ears, and a spring to hold the lugs normally in engagement with the ears, substantially as herein set forth.

7. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon one side to admit a detachable latch-piece, a slot upon the opposite side to receive the tail of the latch-piece, a latch-piece with tail to engage such slot, and lugs to retain it within the casing, and a spring to press the latch-piece normally toward the frame-piece, substantially as herein set forth.

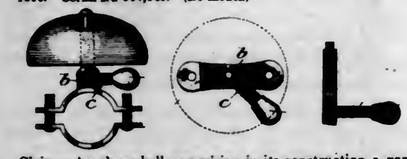
8. In a frame for pocket book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon the side to admit a detachable latch-piece, with ears at the ends of the opening, as described, a latch-piece adapted to pass through the opening, and having lugs upon the sides to engage the said ears and a detachable spring adapted to pass through the same opening and having a member to engage the interior of the casing to hold it normally therein, substantially as set forth.

9. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon the side to admit a detachable latch-piece, with ears at the ends and rib a' at the top of the opening, as described, the latch-piece adapted to pass through the opening and having the lugs c' to engage the said ears, and the detachable flap-spring h adapted for insertion through the opening and provided with the lip i to engage the interior of the rib a', as and for the purpose set forth.

10. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon the side, with ears f' at the ends and rib a' at the top of the opening, as set forth, the latch-piece adapted to pass through the opening and having the lugs c' to engage the said ears, and the detachable flap-spring h having the lip i to engage the interior of the rib a' and having the tongues upon the ends of the flap to contact laterally with the ears f', the whole arranged and operated substantially as herein set forth.

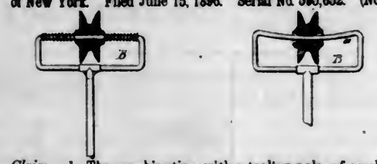
11. In a frame for pocket-book or satchel, the combination, with one of the frame-pieces, of a latch-casing having an opening upon the side to admit a latch piece and spring, a latch-piece hinged transversely in the casing, and projected from the opening, and a folded spring arranged transversely in the casing, and having upon its lower flap lips extended outside of the casing, to increase their flexibility substantially as set forth.

572,932. BICYCLE-BELL. ALBERT R. HUBB, Bristol, Conn., assignor to the New Departure Bell Company, same place. Filed June 30, 1896. Serial No. 597,649. (No model.)



Claim.—An alarm-bell comprising in its construction a gong or bell proper, a central standard for the same, a striker-arm consisting of a straight length of helically-coiled wire connected at one end with the standard and provided at its outer end with a striker, the construction being such that the striker-arm will support the striker normally out of contact with, but in such relation to, the gong, that the striker may be pressed in any direction away from the bell, and when released be thrown by the resilient action of the arm against the bell to sound the same.

572,933. TROLLEY FOR ELECTRIC RAILWAYS. HENRY A. SEYMOUR, Washington, D. C., assignor to the General Electric Company, of New York. Filed June 15, 1896. Serial No. 595,652. (No model.)



Claim.—1. The combination with a trolley-pole, of an elongated support attached to the upper end thereof, a carrier adapted to travel on said support and a trolley-wheel mounted on said carrier, substantially as set forth.

2. The combination with a trolley-pole and an elongated support at the upper end thereof, of a carrier adapted to travel on said support, a trolley-wheel mounted on said carrier and means for normally maintaining said carrier and trolley-wheel in and automatically returning them to their position centrally between the ends of said elongated support, substantially as set forth.

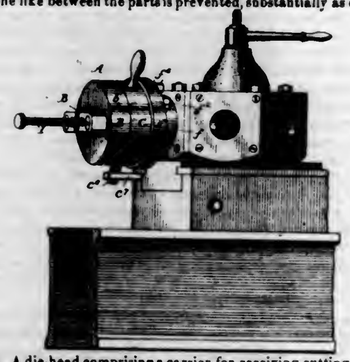
3. The combination with a trolley-pole, of an elongated support attached to the upper end thereof, said support being inclined in both directions from the center, a carrier mounted to travel on the support, the opening through said carrier being enlarged at both ends and a trolley-wheel mounted on said carrier, substantially as set forth.

572,934. DIE-HEAD FOR SCREW-CUTTING. WILLIAM J. SMITH, New Haven, Conn., assignor to the Geometric Drill Company, of Delaware. Filed Aug. 31, 1896. Serial No. 604,404. (No model.)

Claim.—1. A die-head comprising a carrier for receiving cutting-dies, movable dies, a spring-actuated rotatable cam connected to the dies, a lock for connecting the cam to the carrier, and a stop connected to the cam and arranged in a position to be struck by the article on which the screw is cut, whereby when the stop is pressed the cam is released and allowed to rotate, substantially as described.

2. A die-head designed to be attached to a lathe, comprising a carrier for receiving cutting-dies, movable dies arranged on the carrier, a spring-actuated cam connected with the dies, a stop connected with the cam and arranged in a position to be struck by the article on which a screw is cut, a lug on the lathe, and means attached to the cam and designed to be engaged by the lug on the lathe, whereby the dies may be automatically separated when a screw of predetermined size has been cut, and the dies moved automatically into position for operation, substantially as described.

3. A die head comprising a carrier for receiving cutting-dies, a spring-actuated cam connected with the dies, and a locking and releasing sleeve capable of movement toward and away from the cam, the sleeve being provided with an overhanging flange closing the opening between the cam and the sleeve, whereby admission of dirt and the like between the parts is prevented, substantially as described.



4. A die-head comprising a carrier for receiving cutting-dies, and having a shank adapted for attachment to a lathe formed integral with the carrier, a rotating cam connected with the cutting-dies, and means for locking and releasing the dies consisting of a sleeve capable of moving toward or away from the cam and having a projection engaging an opening in the cam, substantially as described.

5. A die-head comprising a carrier for receiving cutting-dies and having a shank provided with longitudinal openings, formed with the carrier, a spring-actuated rotating cam arranged adjacent to the dies, a locking and releasing sleeve arranged adjacent to the cam and having pins projecting through the sleeve and into the longitudinal openings in the shank, and a projection on the locking and releasing sleeve engaging the cam, substantially as described.

6. A carrier for receiving die-cutters, cutting-dies, a rotating cam connected with the cutting-dies, and an adjustable stop connected with the cutting-dies, the stop being hollow and being provided with one open and one closed end, whereby the length of a screw cut before the article worked upon comes in contact with the stop, may may be regulated by a longitudinal adjustment of the stop and by reversing the position of the stop, substantially as described.

7. A die-head comprising a carrier, movable cutting-dies arranged thereon, a cam connected with the cutting-dies, a locking and releasing sleeve arranged adjacent to the cam, and a spring whereby a pressure is exerted to move the locking and releasing sleeve toward the cam, substantially as described.

8. A die-head comprising a carrier, cutting-dies arranged on the carrier, a cam-ring connected with the cutting-dies, a spring attached at one end to the cam-ring, a collar receiving the other end of the spring, and a locking and releasing sleeve arranged adjacent to the cam, and provided with a spring having a tendency to move it toward the cam, substantially as described.

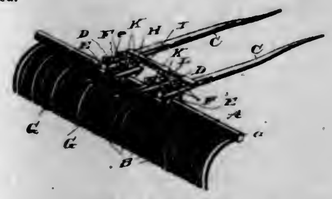
9. A die-head comprising a carrier and shank made in one piece, the shank being provided with longitudinal openings, cutting-dies arranged on the carrier, a cam-ring engaging the cutting dies, a locking and releasing sleeve arranged on the shank and connected thereto by screws or pins passing through the longitudinal openings in the shank, and a spring adapted to exert pressure to move the locking and releasing sleeve toward the cam, substantially as described.

10. A die-head for screw-cutting, comprising radially-movable cutting-dies, a cam connected with the cutting-dies, and by which the cutting-dies are moved simultaneously, and an adjustable stop, whereby the movement of the cam is regulated and the same is locked to retain the cutting-dies in operative position, whereby by adjusting the stop the distance apart of the cutting-dies when in position for operation is regulated, substantially as described.

11. A die-head of the kind described comprising a frame having a carrier for receiving cutting-dies, a shank for attachment to a lathe, the carrier and shank being made in one piece, die-holders having lugs, a ring capable of being attached solidly to the carrier, the ring being provided with grooves, and an adjustable stop whereby the ring is capable of adjustment to bring the lugs on the die-holders to abut against the ends of the grooves in the ring when the tool is in position for use, irrespective of the size of the screw to be cut, substantially as described.

572,935. INTERCHANGEABLE WEEDER AND RAKER. ALFRED S. TOPPING, Hart, Mich., assignor of one-half to Frederick A. Luther. Filed Oct. 7, 1896. Serial No. 608,102. (No model.)

Claim.—In an interchangeable weeder and raker, the combination of the cylindrical head or tooth-bar A, provided with a longitudinal groove a, to receive the bent tooth ends, and having staples a', embedded in said groove; curved spring-teeth B, passing through the head A, and secured within the groove by means of the staples; the shafts C, adjustably secured to the head; the grip-clevises D; the interposed hollowed metallic blocks E; the securing-nuts F; and the adjustable handles G, with their clevises H, blocks I, and thumb nuts K, all constructed, arranged and operating as hereinbefore shown and described.



572,936. CIDER-PRESS AND JUICE-EXTRACTOR. JOHN T. WATERS and GUY CLOPTON, Gainesville, Ga., assignors to themselves and W. I. Hobbs, same place. Filed June 29, 1896. Serial No. 597,449. (No model.)



Claim.—1. A device for the purpose described comprising a base member having a presser-face and a juice-collecting portion, a fruit-holding pocket hinged to the base for lateral and vertical movement and a hinged presser-lever having a plunger portion adapted to enter the fruit-pocket substantially as shown and for the purposes described.

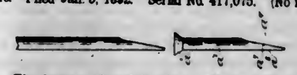
2. The combination of a base member having a juice-collecting groove surrounding its presser-face, said groove having outlets, of a fruit-holder hinged to the base for lateral movements having a pocket and a presser-lever also hinged to the base and having a plunger to engage the fruit-pocket, said holder and lever being arranged to move laterally in unison as and for the purposes described.

3. The combination with the base member having an apertured juice-collecting groove and a receiver held thereunder and the turn-post B, of the holder F hinged to the post B, said holder having side members f, and a central apertured block f'' and the lever G hinged to the post B, having a plunger portion G' adapted to fit the aperture in the block f'', said lever G being hinged to fit between the said members f all arranged substantially as shown and for the purposes described.

4. A device for the purposes described comprising a base member having a juice-collecting portion surrounding its presser face, a fruit holder having a pocket, and a presser-lever having a plunger member adapted to enter the fruit-pocket, said fruit-holder and lever being hinged to the base to swing vertically and laterally independently or in unison as set forth.

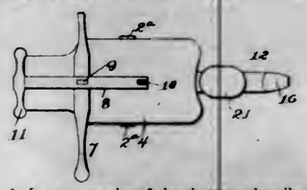
5. The combination with the base A having a juice-collecting portion and the turn-post B, of the holders F, consisting of side members f f and an apertured block f'' one of such members f being cut away as at f^3 and the lever G having a presser-plunger G' said lever and holder being hinged to the turn-post to swing upward all arranged substantially as shown and for the purposes described.

572,937. SOLE-NAIL. HORACE WEEKS, Boston, Mass., assignor, by mesne assignments, to the Suffolk Nailing Machine Company, Portland, Me. Filed Jan. 5, 1892. Serial No. 417,075. (No model.)



Claim.—The improved article of manufacture herein described, the same comprising a nail made of wire, having a plain cylindrical shank of the gage of the wire, and a head formed of a section of the wire between two shanks, whereby a section of the wire is caused to extend uniformly from all sides of the shank, and the point of which is formed by the removal of a section of its side at the end of the shank and extending straight across the same, leaving the remainder of the pointed end of the shank the size of the original wire, and giving it a wide, flat, beveled side, as and for the purpose set forth.

572,938. CAR-COUPLING. WILLIAM U. WILES, Curtis, Ala. Filed Aug. 17, 1896. Serial No. 603,065. (No model.)



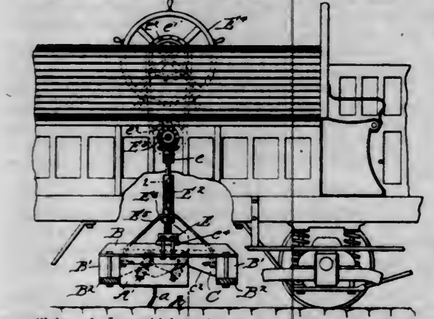
Claim.—1. In a car-coupler of the character described, a draw-bar composed of top and bottom portions pivoted together with a portion of their faces in engagement, and the portions forward the pivots also in engagement, combined with a spring to hold one of the said portions in normal position, and the hand-levers connected together and standing at an angle to each other for operating the said latter portion from the sides of the car and the platform thereof, as set forth.

2. In a car-coupler, a draw-bar comprising top and bottom portions pivoted together, a spring secured to one portion with its free end engaging the other portion, a side handle, and an inclined handle adapted to extend over the car-platform, as set forth.

3. The pivoted portions constituting a draw-bar, a spring controlling the movement of one of said portions, and means for operating the said portion from the car-platform and sides of the latter, comprising a cross-lever and a lever supported on an incline above the draw-bar and extending over the platform, combined with a tongue depending from the said portion, substantially as and for the purpose set forth.

4. The combination in a car-coupler of the character described, the pivoted portion constituting a draw-bar, a spring controlling one of said portions, a projection integral with the spring-controlled portion, and a tongue depending downwardly and forwardly from the said projection, a cross-lever, and an inclined lever supported from the cross-lever and connected to the draw-bar, as set forth.

572,939. VEHICLE-BRAKE. CHARLES B. FAIRCHILD, New York, N. Y., assignor of one-eighth to Daniel W. Healey, Chicago, Ill. Original application filed Dec. 3, 1895. Serial No. 570,948. Divided and this application filed Feb. 18, 1896. Serial No. 579,717. (No model.)



Claim.—1. In a vehicle-brake, the combination of a brake-brush, consisting of a rigid back in which are secured a plurality of brush-teeth, said brush being maintained in contact with a suitable support, which is movable toward and from the road-bed or pavement, cam-surfaces formed on said brush-back and on said block or support, respectively, such, that movement of said brush, longitudinally of said support, will operate to advance or retract said brush, relatively to said support, stops to maintain said support in permanent longitudinal adjustment, relatively to the car, stops to limit the longitudinal movement of said brush relatively to said support, means to maintain said brush, normally, at the limit of its retraction, relatively to said support, and means to lower and raise said support, to depress the free end of the brush-teeth into and to raise them out of contact with the road-bed or pavement, substantially as described.

2. In a vehicle brake, the combination of a brake-brush consisting of a rigid back in which are secured a plurality of resilient brush-teeth, said brush being maintained in contact with a suitable support, which is movable toward and from the road-bed or pavement, cam-surfaces formed on said brush-back and on said block or support, respectively, such, that movement of said brush, longitudinally of said support, will operate to advance or retract said brush, relatively to said support, stops to maintain said support in permanent longitudinal adjustment, relatively to the car, stops to limit the longitudinal movement of said brush, relatively to said support, means to maintain said brush, normally, at the limit of its retraction, relatively to said support, and means to lower and raise said support, to depress the free ends of the brush-teeth into and to raise them out of contact with the road-bed or pavement, substantially as described.

3. In a vehicle-brake, the combination of a brake-brush, consisting of a rigid back in which are secured a plurality of brush teeth, said brush being maintained in contact with a suitable support, which is movable toward and from the road-bed or pavement, duplicate cam-surfaces formed on said brush-back and on said block or support, respectively, one set at each end thereof, said cam-surfaces being such that movement of said brush, longitudinally of said support, will operate to advance or retract said brush, relatively to said support, stops to maintain said support in permanent longitudinal adjustment upon the car, stops to limit the longitudinal movement of said brush, relatively to said support, means to maintain said brush, normally, at the limit of its retraction, relatively to said block or support, and means to lower and raise said block or support to depress the free ends of the brush-teeth into and to raise them out of contact with the road-bed or pavement, substantially as described.

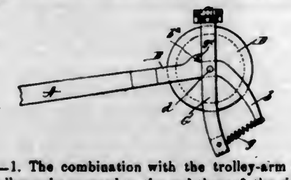
4. In a vehicle-brake, the combination of a brake-brush, consisting of a rigid back in which are secured a plurality of brush-teeth, a channel formed longitudinally in the back of said brake-brush, a block or support, movable, bodily, toward and from the road-bed or pavement in suitable rigid guides, which operate to maintain said block in permanent longitudinal adjustment upon the car, said block or support being fitted to the channel in the brush-back, duplicate cam-surfaces formed on the contacting sides of said brake-brush and block or support, one at each end thereof, said cam-surfaces being such that movement of said brush, longitudinally of said block or support, will operate to advance or retract said brush, relatively to said support, stops to limit the longitudinal movement of said brush, relatively to said block or support, tension-springs connecting said block or support and brush, whereby said brush will be maintained, normally, retracted, relatively to said block or support, a nut rigidly supported above the middle of said block or support, a screw threaded through said nut and adapted to impinge on said block or support, a lifting-bar attached to said block or support, which embraces said screw above a collar secured to said screw and means to rotate said screw, substantially as described.

5. In a vehicle-brake, the combination of a brake-brush, consisting of a rigid back in which are secured a plurality of brush-teeth, a channel formed longitudinally in the back of said brake-brush, a block or support movable, bodily, toward and from the road-bed or pavement in suitable rigid guides, which operate to maintain said block in permanent longitudinal adjustment upon the car, said block or support being fitted to the channel in the brush-back, duplicate cam-surfaces formed on the contacting sides of said brake brush and block or support, one at each end thereof, said cam-surfaces being such that movement of said brush, longitudinally of said block or support, will operate to advance or retract said brush, relatively to said support, stops to limit the longitudinal movement of said brush, relatively to said block or support, tension-springs connecting said block or support and brush, whereby said brush will be maintained, normally, retracted, relatively to said block or support, a nut rigidly supported above the middle of said block or support, elastic cushions or washers inserted under the ends of said nut, a screw threaded through said nut and adapted to impinge on said block or support, a lifting bar attached to said block or support, which embraces said screw above a collar secured to said screw and means to rotate said screw, substantially as described.

6. In a vehicle-brake, the combination of a brake-brush, consisting of a rigid back in which are secured a plurality of brush-teeth, a channel formed longitudinally in the back of said brake-brush, a block or support, movable, bodily, toward and from the road-bed or pavement in suitable rigid guides, which operate to maintain said block in permanent longitudinal adjustment upon the car, said block or support being fitted to the channel in the brush-back, duplicate cam-surfaces formed on the contacting sides of said brake-brush and block or support, one at each end thereof, said cam surfaces being such that movement of said brush longitudinally of said block or support, will operate to advance and retract said brush, relatively to said support, stops to limit the longitudinal movement of said brush, relatively to said block or support, tension-springs connecting said block or support and brush, whereby said brush will be maintained, normally, retracted, relatively to said block or support, a nut rigidly supported above the middle of said block or support, elastic cushions or washers inserted under the ends of said nut, a screw threaded through said nut and adapted to impinge on said block or support, a lifting bar attached to said block or support, which embraces said screw above a collar secured to said screw, the upper end of said screw being tubular and a shaft being fitted thereto and splined therein, a bevel-gear thereon, which meshes with a bevel-gear secured to a horizontal shaft, a hand-wheel pivoted on the car, sprocket-wheels on said hand-wheel and said horizontal shaft, and a chain belt adjusted to said sprocket-wheels, substantially as described.

7. In a vehicle brake, the combination of a brake brush, consisting of a rigid back in which are secured a plurality of resilient brush-teeth, a channel formed longitudinally in the back of said brake-brush, a block or support, movable, bodily, toward and from the road-bed or pavement in suitable rigid guides, which operate to maintain said block in permanent longitudinal adjustment upon the car, said block or support being fitted to the channel in the brush-back, duplicate cam-surfaces formed on the contacting sides of said brake-brush and block or support, one at each end thereof, said cam-surfaces being such that movement of said brush longitudinally of said block or support, will operate to advance and retract said brush, relatively to said support, stops to limit the longitudinal movement of said brush, relatively to said block or support, tension springs connecting said block or support and brush, whereby said brush will be maintained, normally, retracted, relatively to said block or support, a nut rigidly supported above the middle of said block or support, elastic cushions or washers inserted under the ends of said nut; a screw threaded through said nut and adapted to impinge on said block or support, a lifting-bar pivoted to said block or support, which embraces said screw above a collar rigidly secured to said screw and means to rotate said screw, substantially as described.

572,940. SUPPORT FOR TROLLEY-WHEELS. CHRISTIAN F. L. ORTH, New York, N. Y. Filed Apr. 16, 1896. Serial No. 587,779. (No model.)



Claim.—1. The combination with the trolley-arm of a trolley-car, of a trolley-yoke secured to the end thereof, the sides of which are downwardly curved, a trolley-wheel mounted in said yoke, the shaft of which extends beyond the sides thereof, and a supplemental yoke mounted on said shaft, the end of which is connected with the ends of the sides of the trolley-yoke, and the sides of which are directed upwardly, and provided at the upper ends thereof, with heads or wheels by which the space between said sides is closed, substantially as shown and described.

2. The combination with the trolley-arm of a trolley-car, of a trolley-yoke secured to the end thereof, the sides of which are downwardly curved a trolley-wheel mounted in said yoke, the shaft of which extends beyond the sides thereof, and a supplemental yoke mounted on said shaft, the end of which is connected with the ends of the sides of the trolley yoke, and the sides of which are directed upwardly and provided at the upper ends thereof with heads or wheels by which the space between said sides is closed, said supplemental yoke being composed of spring metal, substantially as shown and described.

3. The combination with the trolley-arm of a trolley-car, of a trolley-yoke secured to the end thereof, the sides of which are downwardly curved and are provided with projecting stops, a trolley-wheel mounted in said yoke, the shaft of which extends beyond the sides thereof, and a supplemental yoke mounted on said shaft, the end of which is connected with the ends of the sides of the trolley yoke, and the sides of which are directed upwardly, and provided at the upper ends thereof, with heads or wheels by which the space between said sides is closed, said supplemental yoke being composed of spring metal, and the sides thereof, which are pivotally supported abut against said projecting stops formed on the trolley-yoke, substantially as shown and described.

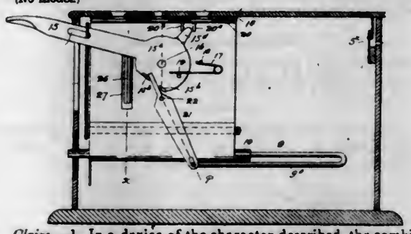
572,941. CYCLE. ANDREW A. MUNRO, Flushing, N. Y. Filed June 25, 1895. Serial No. 553,996. (No model.)

Claim.—1. In a monocycle, the combination of a single wheel, a semicircular rod supported above said wheel and carrying the friction-wheel to contact with the periphery of the wheel, the uprights, the transverse rods having slots at each end to receive the ends of the axles of the friction-wheels, brace-rods, the handle-bar, a curved rod supporting said handle-bar and connecting-rods pivotally secured to the rear ends of said curved rods and to the transverse rods whereby the front friction-wheel may be thrown into close frictional contact with the periphery of the wheel, substantially as described.

2. The combination with a wheel, the axle of which is provided with crank-shaft carrying pedals, of a fork or upright, the bifurcated ends of which are connected with the axle of the wheel, and transverse rods connected with the fork and extending obliquely thereto, the forward end of said rods being provided with a transverse slot and a friction-wheel mounted in said slot, the rear rods being provided with longitudinal slots, brace rods connected with the bifurcated portions of the fork and with the rear extremity of the rear transverse rods, a curved rod extending half-way around the periphery of the wheel and carrying at its ends guards or plates or scrapers to remove matter adhering to the tire of the wheel, said curved rod being connected with the ends of the transverse rods, a block through which said curved rod passes, said block being also provided with a tubular projection in which projection the stem of the fork is secured, a saddle secured to said block, the forward end of said curved rod being jointed or hinged and having a slot, a rod *f'* pivoted to the stem of the fork provided with a slot adapted to receive a pin upon the bifurcated portions of the fork, the lower ends of said rods *f* being pivoted to the forward portion of the transverse rod, an S-shaped rod *f'*, pivoted to the stem of the fork and extending through the slot in the curved rod, the rear end of said S-shaped rod being pivotally connected with the upper ends of the rods *f'*, and handle-bar provided with handles secured to the upper end of the S-shaped rod, whereby the forward friction-wheel can be readily thrown in contact with the tire of the wheel by the backward pull upon the handle-bar, substantially as described.



572,942. MATCH-IGNITING AND CIGAR-CUTTING DEVICE. MAX FISCHER, Denver, Colo. Filed Feb. 12, 1896. Serial No. 579,104. (No model.)



Claim.—1. In a device of the character described, the combination with a suitable casing, of the match-receptacle, the trough located in the bottom of said receptacle and journaled in the ends thereof, an auxiliary receptacle below said trough and forming a continuation of the main receptacle, a plunger connected with the auxiliary receptacle and adapted to reciprocate therein, the igniting-jaws attached to said receptacle, and in line with the plunger, a spring-held thumb-lever pivoted to the match-receptacle, the trough being provided with a curved arm engaging an aperture in the thumb-lever, a suitable connection between said lever and the plunger, whereby as the lever is operated, the plunger is actuated, substantially as described.

2. In a device of the character described, the combination with a suitable casing, of the match-receptacle attached thereto, a trough located in the bottom of said receptacle and journaled in the ends thereof, an auxiliary receptacle located below said trough, a plunger connected with the auxiliary receptacle and adapted to reciprocate therein, igniting-jaws attached to the auxiliary receptacle and in line with the plunger, the spring-held thumb-lever pivoted on the match-receptacle, a spring-held plate hinged to the receptacle and interiorly located, said plate being provided with a cam projecting through a slot in one side of the receptacle and occupying a position in the path of the thumb-lever, and a suitable connection between the thumb-lever and the trough and plunger, substantially as described.

3. In a device of the character described, the combination with the casing, of the match-receptacle attached thereto, a trough located in the bottom of said receptacle and pivoted in the interior thereof, an auxiliary receptacle located below said trough, a reciprocating plunger connected with the auxiliary receptacle, igniting-jaws attached to the receptacle and located in line with the plunger, the spring-held thumb-lever pivoted on the receptacle exteriorly, a spring-held plate hinged to the receptacle and interiorly located, said plate being provided with a cam located in the path of the thumb-lever, a reciprocating knife attached to an apertured plate connected with the top of the match-receptacle, and a suitable connection between the thumb-lever and the knife, the trough and the plunger, whereby as said lever is operated said elements are actuated, substantially as described.

4. In a device of the character described, the combination with a suitable casing, of the match-receptacle attached thereto and provided with an apertured extension-plate at the top, a knife movably attached to said plate, a spring-held thumb lever pivoted on the receptacle and exteriorly located, a trough pivoted in the bottom of the receptacle and having a curved arm engaging an aperture in the thumb-lever, an auxiliary receptacle located below the main receptacle, a reciprocating plunger attached to the auxiliary receptacle, igniting-jaws attached to said receptacle in line with the plunger, and a suitable connection between the thumb lever, the knife and the plunger, whereby as the lever is operated, the said elements are actuated, substantially as described.

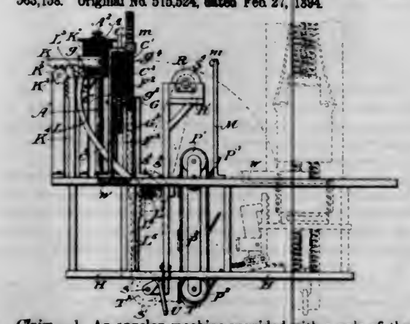
572,948. LAMP-BURNER. ALFRED S. KEACH, Providence, R. I. Filed July 23, 1895. Serial No. 556,909. (No model.)



Claim.—In a lamp-burner, the combination of the beveled wick-tube *j*, and the perforated plate *b* provided with the slot *d*, the spur-wheel shaft *c* for raising and lowering the wick, the catch-wheel *g* provided with the hook-teeth, and arranged on the shaft *c* exteriorly of the wick-tube, and the extinguisher *e* pivotally held in the slot *d*, and provided with the hook-formed catch-arm *f* adapted for hook engagement with the teeth of the catch-wheel *g* at its downwardly-moving side, substantially as described.

REISSUES.

11,577. MACHINE FOR FIXING THREADS IN ENVELOPS. MAX GRUBE, San Francisco, Cal. Filed Sept. 20, 1895. Serial No. 563,158. Original No. 515,524, dated Feb. 27, 1894.



Claim.—1. An envelop-machine provided with a pair of thread-holders arranged opposite each other at each end of the envelop to apply the thread thereon, and a reciprocating thread-delivering nipper adapted to draw the thread between and deliver it to the thread-holders, substantially as shown and described.

2. In a machine for fixing threads in envelops, the combination with the envelop-holding table and frame, of a pair of thread-carriers provided with thread-holders, a reciprocating thread-delivering nipper having a rectilinear movement adapted to take hold of and lay a line of thread across from one thread-carrying holder to the other, a spool or bobbin supplying the thread to the delivering-nipper, a thread-cutter to sever the thread thus drawn, and mechanism to produce the movements of said parts, substantially as described.

3. An envelop-threading machine provided with a thread-supply, a reciprocating single thread-delivering nipper, a thread-gumming device and two thread-carriers, each having thread holders to grasp the ungummed part of a partially-gummed thread and deliver it to a partially folded envelop, substantially as described.

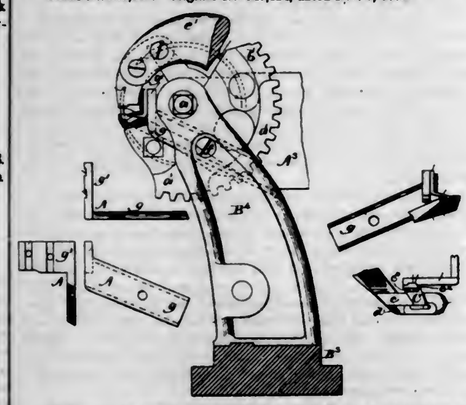
4. The combination with the flap-folding mechanism of an envelop-machine, of carrier-arms provided with thread-holders and mounted on a horizontal shaft to move in a circular path and deliver the thread to a partially-folded envelop, the spool-holder, the thread-guide, the reciprocating thread-delivering nipper having a rectilinear movement across the path described by the carrier-arm thread-holders, and a thread-cutter, these devices being actuated at proper intervals to draw and lay a thread from the supply-spool across the open thread-holders of the carrier-arms, sever the thread and finally by the forward movement of said carrier-arms to lay the thread upon the partially-folded envelop, substantially as set forth.

5. In a machine for fixing threads in envelops, the combination with the thread-supply, of an envelop-holding bed or platform, the thread-holders and a gumming device adapted to take a supply of adhesive material from a trough or receptacle and apply the same to the thread between the holders, substantially as described

6. In a machine for fixing threads in envelops, the combination with the thread-carrying arms, thread-holders on the free ends thereof, means for opening and closing said thread-holders, an envelop-holding table, mechanism for folding the flap in position over the thread, and the endless envelop-carrier consisting of belts mounted on rollers, the boards forming compartments carried by said belts to receive the envelops from the thread-carrying arms and deliver them from the machine, substantially as described.

7. In a machine for fixing threads in envelops, the combination with the reciprocating bar C, of the thread-delivering nippers provided with spring-actuated thread-seizing nippers consisting of the heads D and loops d^3 extending on the side of heads D, a spool-holder, a thread-guide tube B^3 between the spool and the bar C, a pair of levers E, E, working on pivots E', E', having their front ends E^2 a short distance above the said levers and connected by links E^4, E^4, to a sliding bar E^5, and mechanism to produce the movements in relative time to each other as set forth.

11,578. WELT-BEVELING ATTACHMENT FOR SOLE-SEWING MACHINES. JOHN B. HADAWAY, Brockton, Mass. Filed July 17, 1896. Serial No. 599,327. Original No. 549,124, dated Nov. 5, 1895.



Claim.—1. In combination with the stitch-forming mechanism of a sewing-machine, a work-support; mechanism for feeding the work, a knife located just in the rear of the needle and awl slot in said work-support and movable with said feed mechanism and adapted to cut a section of a beveled shaving from the upper surface of the welt at each retraction of said feed mechanism:

2. In combination with the stitch-forming mechanism of a sewing-machine, a work-support; mechanism for feeding the work; a knife located just in the rear of the slot in said work-support and having its cutting edge slightly inclined to a horizontal plane and movable with said feed mechanism; and adapted to cut a section of a beveled shaving from the upper surface of the welt at each retraction of the feed mechanism.

3. In combination with the stitch-forming mechanism of a sewing-machine, a work-support; mechanism for feeding the work; a knife located just at the rear of the slot in the work-support, and having its cutting edge slightly inclined to a horizontal plane and oblique to the line of feed of the work and movable with said feed mechanism, and adapted to cut a section of a beveled shaving from the upper surface of the welt at each retraction of the feed mechanism.

4. In combination with the stitch-forming mechanism of a sewing-machine, a work-support having the rear or inner portion of its upper surface rabbeted or cut away as described; mechanism for feeding the work; a knife carried by said feed mechanism and movable in said rabbet or cut-away space, whereby a section of a beveled shaving is cut at each retraction of the feed mechanism.

5. In combination with the stitch-forming mechanism of a sewing-machine, a work-support having the rear or inner portion of its upper surface rabbeted or cut away, as described; mechanism for feeding the work; a knife carried by said feed mechanism and movable therewith, and located above said rabbet with its front end adjacent to the slot in said support, for the passage of the needle, and having a portion of its cutting edge at its front end turned downward from its main body as described.

6. In combination with the stitch-forming mechanism of a sole-sewing machine, a work-support having the rear or inner portion of its upper surface rabbeted or cut away as described; mechanism for feeding the work; a cutter carried by said feed mechanism and movable therewith, and adapted to cut a section of a beveled shaving from the upper surface of the welt at each retraction of said feed mechanism; and a guard or gage to determine the thickness of said shaving.

7. The combination with the stitch-forming mechanism of a shoe-sewing machine, of mechanism for feeding the work, and welt-beveling mechanism arranged to bevel the welt during the sewing operation, substantially as described.

8. The combination with the stitch-forming mechanism of a shoe-sewing machine, of mechanism for feeding the work, a movable cutter arranged to bevel the welt during the sewing operation, and means for actuating said cutter, substantially as described.

9. In a welt-beveling attachment for shoe-sewing machines a welt-beveling knife having a portion of the cutting edge at its front end turned downward from its main body, and means for adjusting said knife to regulate the depth of cut, substantially as described.

10. The combination with the stitch-forming mechanism of a shoe-sewing machine, of mechanism for feeding the work, welt beveling mechanism for beveling the welt, and means for operating the welt-beveling mechanism while the work is held by the stitch-forming mechanism, substantially as described.

11. The combination with the stitch-forming mechanism of a shoe-sewing machine, of mechanism for feeding the work, a cutter arranged to bevel the welt and means for adjusting the cutter to determine the thickness of the shaving cut from the welt, substantially as described.

11,579. PROCESS OF SOFTENING BASE BULLION. GEORGE A. MARSH, Carnegie, Pa. Filed Nov. 6, 1896. Serial No. 611,295. Original No. 569,293, dated Oct. 13, 1896.

Claim.—1. As an improvement in the art of treating bullion containing lead, arsenic, antimony, and other oxidizable impurities, but substantially free from zinc, the method herein described for removing arsenic, antimony, and other oxidizable impurities, which consists in melting the bullion, heating the molten bullion to a temperature at which litharge will be reduced by the arsenic and antimony, *i. e.* about a bright-red heat, and then promoting the formation of litharge or oxid of lead in the molten bullion by any known means of oxidizing, and thereby permitting of the reduction of the litharge by the arsenic and antimony, and the consequent elimination of such impurities, substantially as set forth.

2. As an improvement in the art of treating bullion containing lead, arsenic, antimony, or other oxidizable impurities, but substantially free from zinc, the method herein described for removing the arsenic, antimony, and other oxidizable impurities which consists in melting the bullion, heating the molten bullion to a temperature at which litharge will be reduced by arsenic and antimony, *i. e.* about a bright-red heat, and then promoting the formation of litharge and other oxids by forcing a fluid into the molten bullion, whereby the molten bullion is agitated, subjecting large surfaces of the metal to the oxidizing action of the air, and opportunity is afforded for the reduction of the litharge by the arsenic and antimony, substantially as set forth.

3. As an improvement in the art of treating bullion containing lead, arsenic, antimony, and other oxidizable impurities, but substantially free from zinc, the method herein described for removing the arsenic, antimony, and other impurities, which consists in melting the bullion, heating the bullion to a temperature at which litharge will be reduced by arsenic and antimony, *i. e.* about a bright-red heat, promoting the formation of litharge or oxid of lead in the molten bullion by any known means of oxidizing, and thereby permitting of the reduction of the litharge by the arsenic and antimony, and the consequent elimination of such impurities, and finally subjecting the softened bullion to any suitable desilverizing process, substantially as set forth.

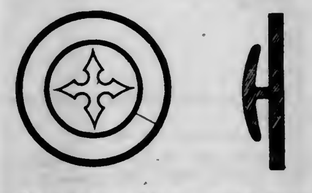
DESIGNS.

26,375. BADGE. FREDERICK M. OEHLEY, Yonkers, N. Y. Filed Sept. 18, 1896. Serial No. 606,306. Term of patent 3½ years.



Claim.—The design for a badge substantially as herein shown and described.

26,376. BADGE. RICHARD FRENCH STONE, Indianapolis, Ind. Filed Mar. 2, 1896. Serial No. 581,587. Term of patent 3½ years.



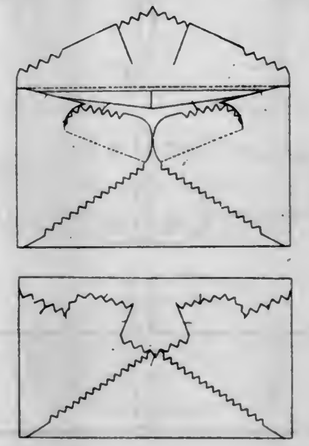
Claim.—The design for a "medical" badge or insignia as herein shown and described.

26,377. NURSING-NIPPLE. HENRY MEIER, New York, N. Y. Filed Sept. 29, 1896. Serial No. 607,375. Term of patent 14 years.



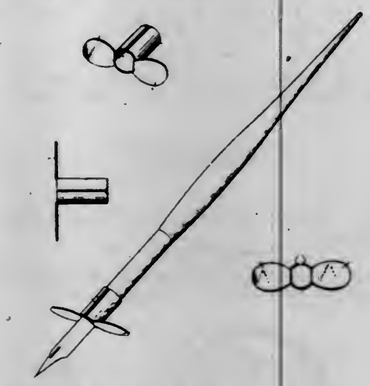
Claim.—The design for nursing-nipples, substantially as shown.

26,378. ENVELOP. WILLIAM L. BROBST, Cicero, Pa., assignor of two-thirds to Mary E. Hicks, same place, and Nancy Wykoff, Hammersley's Fork, Pa. Filed Oct. 28, 1896. Serial No. 610,369. Term of patent 14 years.



Claim.—The design for an envelop, substantially as herein shown and described.

26,379. PEN-GUARD. ALVIN NELSON WOODARD, Mansfield, Ohio, assignor of one-half to Abraham Small, same place. Filed Oct. 28, 1896. Serial No. 610,372. Term of patent 14 years.



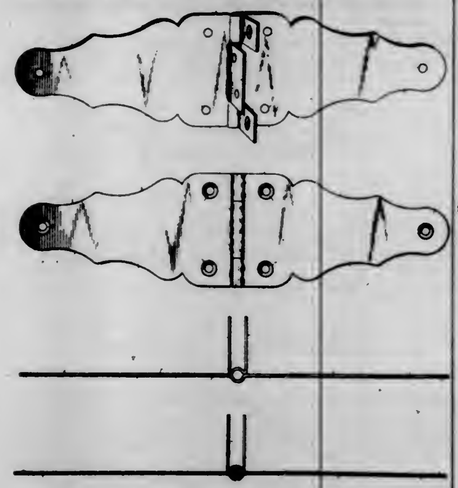
Claim.—The design for a penholder-guard, substantially as herein shown and described.

26,380. OPEN LINK. WILLIAM HARDEN, Jamesport, Mo. Filed Oct. 9, 1896. Serial No. 608,420. Term of patent 14 years.



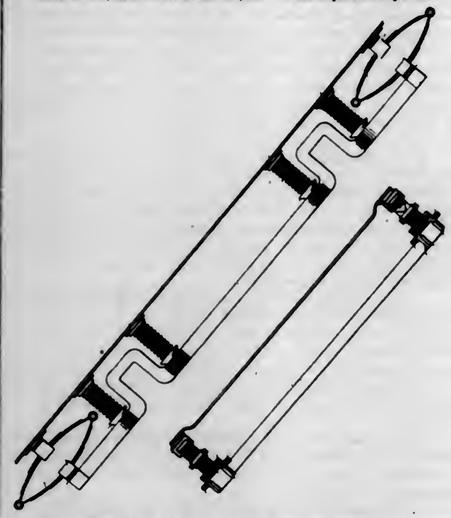
Claim.—The design for an open link, substantially as herein shown and described.

26,381. STRAP-HINGE. TOLIVER LYNN CHISHOLM, Atoka, Ind. Ter., assignor of one-third to Robert M. Grubbs, same place. Filed Oct. 21, 1896. Serial No. 609,617. Term of patent 7 years.



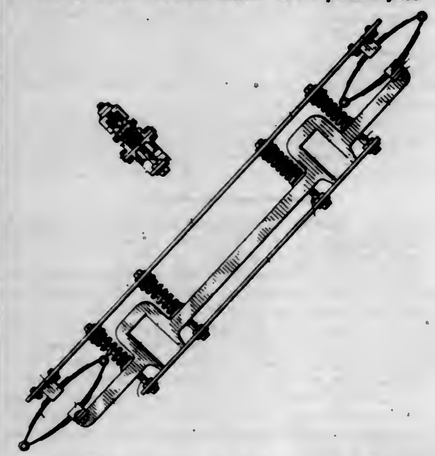
Claim.—The design for a hinge, substantially as herein shown and described.

26,382. CAR-TRUCK FRAME. GEORGE M. BRILL, Philadelphia, Pa. Filed Feb. 4, 1893. Serial No. 461,075. Term of patent 14 years.



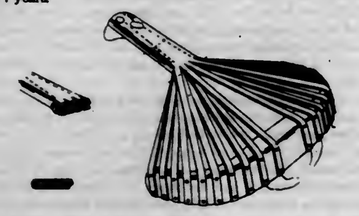
Claim.—The design for a car-truck frame, substantially as herein shown and described.

26,383. TRUCK SIDE FRAME. GEORGE M. BRILL, Philadelphia, Pa. Filed Apr. 6, 1894. Serial No. 506,634. Term of patent 14 years.



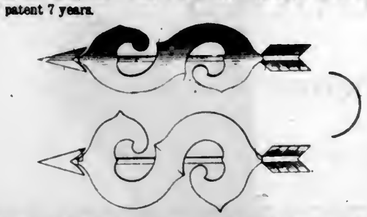
Claim.—The design for a truck side frame, substantially as herein shown and described.

26,384. SUPPORT FOR SADDLE-SEATS. BENJAMIN S. SEAMAN, Canton, Ohio. Filed Oct. 12, 1896. Serial No. 608,666. Term of patent 7 years.



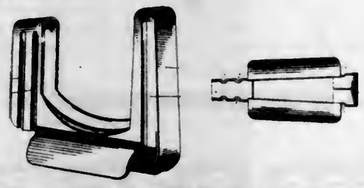
Claim.—The design for a bicycle-saddle-seat support, substantially as shown and described.

26,385. NAME-PLATE FOR VELOCIPEDES. GEORGE T. MCINTOSH, Cleveland, Ohio. Filed Oct. 3, 1896. Serial No. 607,804. Term of patent 7 years.



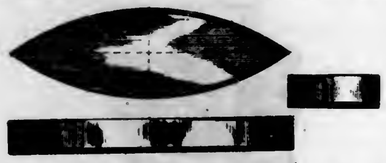
Claim.—The design for a name plate for velocipedes and other light vehicles, substantially as shown and described.

26,386. TEMPORARY CARTRIDGE-HOLDER. THOMAS C. JOHNSON, New Haven, Conn., assignor to the Winchester Repeating Arms Company, same place. Filed Sept. 23, 1896. Serial No. 606,793. Term of patent 14 years.



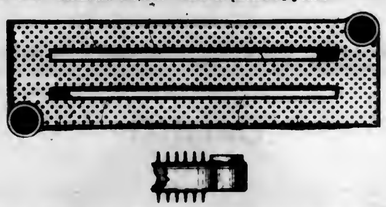
Claim.—The design for a temporary cartridge-holder, as herein shown and described.

26,387. DISPLAY-TRAY. LOUIS WOLFSHEIM, New York, N. Y. Filed July 25, 1896. Serial No. 600,557. Term of patent 7 years.



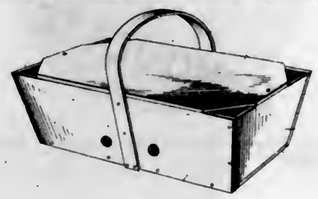
Claim.—The design for a display-tray, substantially as herein shown and described.

26,388. RADIATOR. JOSEPH SCHERER, Buffalo, N. Y. Filed Oct. 21, 1896. Serial No. 609,619. Term of patent 3½ years.

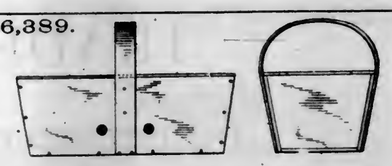


Claim.—The design for a pin-radiator section, substantially as herein shown and described.

26,389. FRUIT-BASKET. THERON R. WOODRUFF, Mentor, Ohio. Filed Oct. 26, 1896. Serial No. 610,153. Term of patent 7 years.



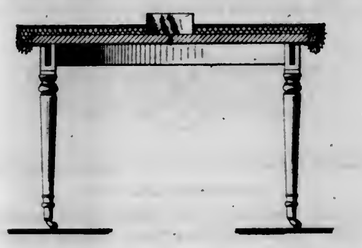
26,389.



Claim.—The design for a fruit-basket, substantially as herein shown and described.

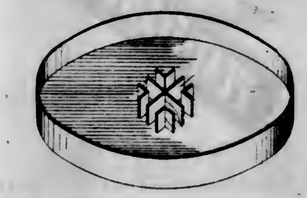
26,390. GAME-BOARD. ROBERT CHAMBERS NORMAN, Melbourne, Victoria. Filed July 2, 1896. Serial No. 597,905. Term of patent 14 years.





Claim.—The design for a game-board substantially as herein shown and described.

26,391. GAME-BOARD. WILLIAM KAMPFER, Brooklyn, N. Y. Filed Sept. 12, 1896. Serial No. 605,674. Term of patent 3½ years.



Claim.—The design for a game-board as herein shown and described.

TRADE-MARKS

REGISTERED DECEMBER 8, 1896.

29,245. NEWSPAPERS. THE PRESS PUBLISHING COMPANY, New York, N. Y. Filed Oct. 27, 1896.



Essential feature.—The words "SUNDAY COMIC WEEKLY" and a picture of the States of Liberty between two globes, surrounded by a halo of light. Used since July 15, 1896.

29,246. WATCHES, MOVEMENTS, AND PARTS OF WATCHES. AMERICAN WALTHAM WATCH COMPANY, Boston and Waltham, Mass. Filed Nov. 6, 1896.

MAXIM

Essential feature.—The word "MAXIM." Used since October 14, 1896.

29,247. GARMENT-CLASPS. I. B. KLEINERT RUBBER COMPANY, New York, N. Y. Filed Nov. 14, 1896.



Essential feature.—The letter "K." Used since July 1, 1896.

29,248. FLANNELS MADE WHOLLY OR IN PART OF PEAT FIBER. BRION & PATÉ, Rheims, France. Filed Nov. 10, 1896.



Essential feature.—The compound word "PEAT-FLANELLE," in connection with a representation of a stork and the letters "B" and "P." Used since July 18, 1895.

29,249. FLANNELS MADE WHOLLY OR IN PART OF PEAT FIBER. BRION & PATÉ, Rheims, France. Filed Nov. 10, 1896.



Essential feature.—A red band with gold borders bearing a representation of a stork with the letters "B" and "P." Used since July 18, 1895.

29,250. WOOLEN CLOTH. OAKLAND MANUFACTURING COMPANY, Baltimore, Md. Filed Nov. 7, 1896.



Essential feature.—The words "FLEECE BRAND," associated with a representation of a man engaged in the operation of shearing the fleece from a sheep. Used since September, 1896.

29,251. WRAPS, BOAS, HOODS, COLLARETTES, AND OTHER GARMENTS. WM. B. RILEY & Co., Philadelphia, Pa. Filed Nov. 6, 1896.

DANCO

Essential feature.—The word "DANCO." Used since September 29, 1896.

29,252. WRAPS, BOAS, HOODS, COLLARETTES, AND OTHER GARMENTS. WM. B. RILEY & Co., Philadelphia, Pa. Filed Nov. 6, 1896.

DANQUÈTTE

Essential feature.—The word "DANQUÈTTE." Used since October 21, 1896.

29,253. KNIT MITTENS. STAR KNITTING COMPANY, La Crosse, Wis. Filed May 2, 1896.



Essential feature.—A representation of a mitten and the words "THIS IS THE GUSSET" connected thereto by a dotted line having two lower branches connecting, respectively, to the band and thumb portions of said mitten. Used since February 15, 1896.

29,254. LADIES' CORSETS. JOSEPH BECKEL & Co., New York, N. Y. Filed Nov. 11, 1896.

ISABELLE

Essential feature.—The word "ISABELLE." Used since October 1, 1895.

29,255. SHIRTS. GEORGE H. BABCOCK, Westerly, R. I. Filed Oct. 31, 1896.



Essential feature.—A representation of a bird and the words "BABCOCK'S FAMOUS HOME AT WESTERLY" inclosed by a rectangular border. Used since since July 1, 1896.

29,256. OVERGAITERS, LEGGINGS, SHOE NAILS, PEGS, DRESSING, CEMENT, BLACKING, INK, INSOLES, AND LACES. A. FINCKE SONS, Syracuse, N. Y. Filed Oct. 3, 1896.



Essential feature.—A representation of a globe and the contour of the continents shown thereon. Used since July 1, 1887.

29,257. BOOTS AND SHOES. RUFUS H. LARCOM, Beverly, Mass. Filed Nov. 12, 1896.



Essential feature.—The words "GOLDEN ROD." Used since November 1, 1891.

29,258. BOOTS AND SHOES MADE OF LEATHER OR OF LEATHER AND CLOTH. GEORGE R. HOYES, Boston, Mass. Filed Nov. 9, 1896.



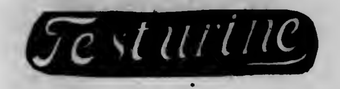
Essential feature.—A representation of a key together with the word "INTERNATIONAL." Used since September 1, 1896.

29,259. REMEDY FOR DYSENTERY OR BOWEL COMPLAINTS. MARGARET DRYER, Owensborough, Ky. Filed Oct. 26, 1896.



Essential feature.—The letters "M. D." upon the face of a shield. Used since January 1, 1896.

29,260. REMEDIES FOR KIDNEY AND SIMILAR DISEASES. TESTURINE COMPANY, Chicago, Ill. Filed Nov. 2, 1896.



Essential feature.—The word "TESTURINE." Used since October 29, 1896.

29,261. OIL OF EUCALYPTUS OR RHEUMATIC OIL. J. BOSISTO & Co., Richmond, Victoria. Filed Oct. 31, 1896.



Essential feature.—The word "PARROT," a device or representation of a parrot seated upon a bough, and the names "BOSISTO'S" and "J. BOSISTO & Co." Used since August 19, 1877.

29,262. REMEDY FOR WOUNDS AND SORES. CHEMISCHE FABRIK RHENANIA, Aix-la-Chapelle, Germany. Filed Nov. 6, 1896.

AMYLOFORM

Essential feature.—The word "AMYLOFORM." Used since May 22, 1896.

29,263. REMEDY FOR WOUNDS AND SORES. CHEMISCHE FABRIK RHENANIA, Aix-la-Chapelle, Germany. Filed Nov. 6, 1896.

DEXTROFORM

Essential feature.—The word "DEXTROFORM." Used since June 1, 1896.

29,264. REMEDY FOR WOUNDS AND SORES. CHEMISCHE FABRIK RHENANIA, Aix-la-Chapelle, Germany. Filed Nov. 6, 1896.

GLUTOFORM

Essential feature.—The word "GLUTOFORM." Used since June 1, 1896.

29,265. REMEDY FOR WOUNDS AND SORES. CHEMISCHE FABRIK RHENANIA, Aix-la-Chapelle, Germany. Filed Nov. 6, 1896.

GLUTOFORM-CLASSEN

Essential feature.—The word "GLUTOFORM-CLASSEN." Used since June 1, 1896.

29,266. TONIC BITTERS FOR THE STOMACH. WILLIAM T. THOMPSON and JAMES D. WILSON, Lexington, Ky. Filed Oct. 29, 1896.



Essential feature.—A picture of a woman walking through a swamp of cattails and a basket containing a "Q. T. B." bottle. Used since July 1, 1896.

29,267. LAGER-BEER. THE HENRY ZELTNER BREWING COMPANY, New York, N. Y. Filed Oct. 1, 1896.

OLD FASHIONED

Essential feature.—The words "OLD FASHIONED." Used since March 15, 1894.

29,268. CLARET-WINE. SCHMIDT & ZIEGLER, New Orleans, La. Filed Oct. 12, 1896.



Essential feature.—A monogram formed by the letters "S" and "Z." Used since January 1, 1895.

29,269. WHISKY. CHARLES J. GALLAGHER, Philadelphia, Pa. Filed June 25, 1896.



Essential feature.—Two concentric circles, between which are the words "GALLAGHER & BURTON, PHILADELPHIA," and inside of the smaller of which circles are inserted the words "TRADE MARK, FINE RYE WHISKIES" and the letters "G. & B." and the numerals "1877." Used since 1884.

29,270. PREPARED COCOA. JAMES EPPS & COMPANY, (LIMITED,) London, England. Filed Nov. 9, 1896.



Essential feature.—A pictorial representation of the radiant sun and the name "JAMES EPPS & CO." printed across the central portion thereof. Used since 1877.

29,271. MOLASSES CANDY. WALTER W. CANDY, St. Louis, Mo. Filed Nov. 9, 1896.

"Yellow Jacket"

Essential feature.—The words "YELLOW JACKET." Used since May 1, 1896.

29,272. CHEESE. THISTLE CHEESE COMPANY, Utica, N. Y. Filed Nov. 2, 1896.

THISTLE

Essential feature.—The word "THISTLE." Used since July 1, 1896.

29,273. MUSTARD AND SPICES. SADLER, FIRTH & ROSS, LIMITED, London, England. Filed Oct. 2, 1896.



Essential feature.—A representation of a yeoman of the guard of the sovereign of Great Britain, commonly known by the name "beef-eater." Used since 1876.

29,274. SPICES, CONDIMENTS, AND BIRD-FOOD. E. R. DURKEE & Co., New York, N. Y. Filed Nov. 11, 1896.



Essential feature.—A representation of three birds' heads with distended wings, forming a three-side figure. Used since October 9, 1896.

29,275. SPICES, CONDIMENTS, AND BIRD-FOOD. E. R. DURKEE & Co., New York, N. Y. Filed Nov. 11, 1896.



Essential feature.—A representation of an insect in connection with a wreath of flowers and leaves. Used since October 9, 1896.

29,276. SPICES, CONDIMENTS, AND BIRD-FOOD. E. R. DURKEE & Co., New York, N. Y. Filed Nov. 11, 1896.



Essential feature.—A representation of a plate with crossing table-cutlery. Used since October 9, 1896.

29,277. SPICES, CONDIMENTS, AND BIRD-FOOD. E. R. DURKEE & Co., New York, N. Y. Filed Nov. 11, 1896.



Essential feature.—A representation of a bird with spread wings and a water-lily upon the surface of a sheet of water. Used since October 9, 1896.

29,278. GROUND OR MILLED CEREALS. THE SHELBY MILL COMPANY, Shelby, Ohio. Filed Nov. 10, 1896.



Essential feature.—A picture of a leaf or seal, ears of grain projecting beyond the leaf or seal, a scroll arranged forward of the leaf or seal, and the name "PRIZE WINNER" arranged in suitable proximity to the picture. Used since October 1, 1896.

29,279. WHEAT-FLOUR. JOHN R. KIRBY, Yardville, N. J. Filed Nov. 30, 1894.



Essential feature.—The words "ELECTRIC LIGHT" and a representation of the upper part of an electric-light bulb with zigzag rays emanating from it. Used since July 1, 1886.

29,280. WHEAT-FLOUR, COFFEE, POTATO-FLOUR, STARCH, SOAPS, SYRUPS, SALERATUS, AND CIGARS. GRONSETH & OLSEN, Duluth, Minn. Filed Nov. 10, 1896.

VIKING

Essential feature.—The word "VIKING." Used since January 1, 1893.

29,281. BAKING-POWDERS, SPICES, EXTRACTS, AND SODA-WATERS. HEWLETT BROS., Salt Lake City, Utah. Filed Aug. 8, 1896.



Essential feature.—A representation of three crowns with an eagle surmounting the same. Used since August 8, 1894.

29,282. SALT THAT SERVES AS A COVERING LAYER FOR MOLTEN ZINC AND TIN. THE FIRM OF TH. GOLDSCHMIDT, Essen-on-the-Ruhr, Germany. Filed July 28, 1896.

"Anticinit"

Essential feature.—The word "ANTICINIT." Used since May 28, 1896.

29,283. DYES. THE MAYPOLE SOAP SYNDICATE, LIMITED, London, England. Filed Nov. 13, 1896.

MAYPOLE

Essential feature.—The word "MAYPOLE." Used since November 16, 1895.

29,284. PREPARATION USED IN THE LAUNDRY FOR COLORING PURPOSES. THE MAYPOLE SOAP SYNDICATE, LIMITED, London, England. Filed Nov. 13, 1896.

MAYPOLE

Essential feature.—The word "MAYPOLE." Used since November 16, 1895.

29,285. LAUNDRY SOAP. ALLEN B. WRISLEY COMPANY, Chicago, Ill. Filed Nov. 9, 1896.

OLD COUNTRY

Essential feature.—The words "OLD COUNTRY." Used since 1876.

29,286. PAINT AND VARNISH REMOVERS. HARRISON BROS. & Co., Philadelphia, Pa. Filed Nov. 9, 1896.

RESOLVO

Essential feature.—The word "RESOLVO." Used since October 28, 1896.

29,287. CEMENT FOR MENDING PUNCTURES IN PNEUMATIC TIRES. ARCHDALE WILSON & CO., South Hamilton, Canada. Filed Oct. 29, 1896.



Essential feature.—The word "LEAKSTOP," with a representation of a bicycle with rider and the following words: "EUREKA! WE HAVE FOUND IT" and "THE CYCLIST'S BEST FRIEND." Used since August, 1896.

29,288. LEATHER AND LEATHER PNEUMATIC TIRES FOR BICYCLES AND OTHER WHEELS. ALEXANDER F. MUNRO and GEORGE O. HITCHINGS, Boston, Mass. Filed Aug. 7, 1896.



Essential feature.—The word "RUBBERA," inclosed by a representation of a pneumatic tire, and the letters "M" and "H" printed thereon. Used since June 15, 1896.

29,289. CYCLES. BOLTE CYCLE MANUFACTURING COMPANY, Milwaukee, Wis. Filed Mar. 25, 1896.



Essential feature.—The word "LEAGUE." Used since December 7, 1895.

29,290. TYPE-WRITER SUPPLIES. AMERICAN WRITING MACHINE COMPANY, Ilion and New York, N. Y. Filed Nov. 5, 1896.

"INVINCIBLE"

Essential feature.—The word "INVINCIBLE." Used since January 15, 1894.

29,291. KITCHEN-BOILERS, SINKS, BATH-TUBS, WATER-CLOSETS, AND TANKS. L. WOLFF MANUFACTURING COMPANY, Chicago, Ill. Filed Nov. 5, 1896.



Essential feature.—A representation of a wolf's head. Used since October 24, 1896.

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

COUCH *v.* FINNEGAN.

Decided November 26, 1896.

1 INTERFERENCE—INVENTORSHIP—ACQUIESCENCE IN USE.

After C. learned of F.'s patent he continued to make the patented article and made no protest about F.'s marking the article "Patented" and did not claim the article so marked as his own invention until after his employers had got into trouble with the owners of the patent This conduct is not that of a person who had made the invention.

2. SAME—SAME—FAILING TO CLAIM THE INVENTION IN PRIOR PATENT.

C. obtained a patent which discloses all the improvements embraced in the issue before he filed his present application; but such patent contained no claim to the present interfering subject-matter. This is significant of the fact that C. did not consider himself the inventor of the invention in question.

APPEAL from the Examiners-in-Chief.

REVOLVERS.

Application of Elbert M. Couch filed March 26, 1894, No. 505,075. Patent granted Peter H. Finnegan August 29, 1893, No. 504,154.

Mr. Marcellus Bailey for Couch.

Mr. Geo. D. Robinson and *Mr. Allen Webster* for Finnegan.

SEYMOUR, *Commissioner:*

This is an appeal taken by Couch from the decision of the Examiners-in-Chief holding that Finnegan was the original inventor of the following issue:

1. In a revolving firearm of the class described, a cylindrical case, a cartridge-cylinder having an intermittent rotary movement in said case and having recesses in its periphery, combined with a safety-latch pivotally hung on the border of said case, one end of which passes through said border, a spring under one end of said latch, operating to retain the opposite end thereof normally in engagement with any one of said recesses, substantially as set forth.

2. In a revolving firearm of the class described, the cylinder-case having the integrally-formed tubular breech-block centrally located therein, said block having a slot through its side, extending from its extremity to its base, whereby the nose of the hammer may be passed therethrough, substantially as set forth.

3 The case having the finger-rests on its border, one behind the other, combined with a safety-latch pivotally hung on the border of said case, and having one end opposite the forward end of said projection and its opposite end extending through said border in proximity to the periphery of the cylinder, said rear rest serving as an abutment for the finger for carrying the arm, thereby leaving the outer end of said latch free, combined and operating substantially as set forth.

4. In a revolving firearm of the class described, means for locking and removing the cover of the cylinder-case, consisting of sections of inwardly-extending flanges on the borders of said case, at the end of one of which flanges is a stop to arrest the circular movement of the case-cover, combined with a cover having sections of flanges thereon to engage under those of said case, one of said cover-flanges having a cam at one end to engage with one end of one of said case-flanges, thereby causing the cover to be lifted from the case when turned in one direction, substantially as set forth.

Couch disclaims count 3 of the issue, and therefore it need not be considered.

The inventions which form the subject-matter of this controversy are improvements upon the "protector-revolver" manufactured under Patent No. 273,644 by the Minneapolis Fire Arms Company prior to July, 1892. On May 10, 1892, Finnegan and his business associate, C. E. Corrigan, entered into a contract with the Minneapolis Company for the exclusive agency for the sale of the protector revolver in the State of Illinois. After a few sales were made it developed that the revolver was defective in that the safety-catch was not automatic and was not easily operated with one hand and that the center-post or breech-block, fastened to the case by screws, would become loose after firing a few times and cause the magazine to be thrown out of alinement. The cap was fastened to the case in such a way that fire and gas would escape and burn the hand when the revolver was fired, and when replacing the cap on the case it would not fit except in one position. The barrel being screwed to the case frequently caused a rough joint, which would prevent accurate firing. Thinking that the revolver, if improved to overcome these defects, would be valuable, Finnegan set about overcoming the objections, and during the summer of 1892 he conceived and disclosed to others the improvements which form the subject-matter of counts 1, 2, and 3 of the issue, these improvements consisting of an extra lug on the front of the case, having a sloti through which a spring-pressed lever or safety-catch was pivoted, so that the catch could be under the control of the finger when the pistol was to be fired, and a center-post solid with the case, the post being cut away, so that the hammer could be inserted therein. In June, 1892, Finnegan, with others, obtained from the Minneapolis Fire Arms Company an option for three months for the purchase of the patent under which the protector-revolver was being manufactured and for the machinery used in making these revolvers. About July or August, 1892, he called upon Edwin Smedley, a manufacturer of Dubuque, Iowa, and requested figures as to the cost of the manufacture of a revolver with these improvements.

Smedley testifies that Finnegan showed him the old style of revolver and explained that he wanted the center-post solid with the body, a trigger attachment to prevent the revolver from firing should it fall, and a catch to fasten the cap to the edge of the case. Finnegan called again in about a month to inquire if Smedley could get out ten thousand revolvers for the World's Fair. Owing to the amount of work on hand Smedley concluded that he could not fill the order and advised Finnegan to apply to some arms-manufacturing establishment.

At the time Finnegan obtained the option to buy out the Minneapolis Fire Arms Company that company was negotiating with C. M. Loring, of the Machinery Construction Company, of Rochester, N. Y.,

to manufacture the protector-revolver for them. During July and August, 1892, about the time Finnegan was negotiating with Smedley, he also began negotiations with Loring direct from Chicago about the manufacture of these revolvers. Loring visited Finnegan at Chicago several times, and during a conversation about the protector-revolver Finnegan explained to him in a general way his several improvements. Loring informed Finnegan that if such improvements were to be made considerable change would be necessary in the tools that Duckworth was using to manufacture the old protector-revolver. Duckworth was a manufacturer located at Springfield, Mass., who had been making the old style of revolver for the Minneapolis Fire Arms Company. At one of these visits Loring told Finnegan that he would have Palmer, who was then superintendent of his factory at Rochester, go to Springfield with Finnegan to look over the tools and machinery in Duckworth's shop.

On November 19, 1892, Finnegan left Chicago to make the trip to Springfield for the purpose of inspecting the tools in Duckworth's shop, as proposed by Loring. He was met at Rochester by Palmer, who accompanied him to Springfield. Palmer states that on this trip, while on the train, Finnegan explained to him the improved safety-catch, and that he made a memorandum of it in his note-book. This book is offered in evidence. They arrived in Springfield November 21, 1892, where they met Duckworth and examined the tools in his shop.

Before this trip was made to Springfield Finnegan organized a company to manufacture the improved revolver, this company being incorporated October 24, 1892, under the name of the Chicago Fire Arms Company. Prior to the incorporation of this company Finnegan prevailed upon certain persons to take stock in the company by showing them the old-style revolver and explaining the improvements he intended to make.

William Hamilton, a machinist, who subscribed for stock September 24, 1892, testifies that during July or August, 1892, Finnegan took one of the old-style revolvers apart and told him that he was going to make the center-post and barrel solid with the case and cut a slot down through the post to admit the arm of the hammer and that he was going to have a slot cut in the finger rest or lug on top of the case, behind the barrel, and place a trigger or pawl therein—the safety-catch.

J. R. Koetter, the president of the company, testifies that in the latter part of August, 1892, Finnegan spoke to him about making the barrel and center-post solid with the case, and that the safety-catch would be put on the front of the case instead of the rear, as in the old revolver shown to him.

William T. Williams, another stock-holder, testifies that in August, 1892, Finnegan asked him to subscribe for stock in the company that was being organized, and told him that he was going to improve the old-style revolver by making the center-post and barrel in one piece with the case, that he was going to change the safety-catch, and that he would attach the cap to the case, so as to prevent escape of gas. In a subsequent interview Finnegan explained the improvements by means of sketches.

John B. Farrel testifies that in August, 1892, Finnegan requested him to subscribe for stock, and showed him a revolver and explained by sketches the improvements which he intended to make—a solid barrel and center-post, safety-catch, and some way of fastening the cap to the case.

C. D. Stanwood testifies that in July, 1892, in an interview with C. E. Corrigan, who asked him to subscribe for stock, Corrigan showed him one of the old-style revolvers, when he at once saw the defects in the safety catch, and upon his calling Corrigan's attention to this Corrigan told him that Finnegan had thought of putting a catch on the front of the casing, above the barrel, that would be operated by the first finger pressing a lever. In another interview with Corrigan on August 12, 1892, Corrigan told him about the other improvements—the solid barrel and center-post—that Finnegan was to put on, and also that the cap was to be fastened to the edge of the case, which, if carried out, would materially add to the value of the revolver. He also states that he did not subscribe for stock until he knew that these improvements were to be made.

The sketches said to have been used by Finnegan in explaining the improvements to some of these witnesses are not produced, and all the e witnesses are interested to the extent of being stock-holders, yet from their testimony and the testimony of Smedley and Palmer, two disinterested witnesses, it is thought that Finnegan had a full conception of the subject-matter of counts 1 and 2 of the issue, and disclosed the same to others as early as August, 1892, and that at this time he had conceived the idea of fastening the cap to the rim of the case in some way, the specific means for doing this being stated by count 4 of the issue.

Shortly after Finnegan's and Palmer's trip to Springfield Finnegan met Loring and Palmer in Minneapolis, and he was informed that the tools and machinery in Duckworth's shop were of little use in manufacturing the revolver with the improvements, and that Loring could not put the amount of money in the special tools and machinery required for such work. As Finnegan wanted a large number of revolvers for the World's Fair, he was anxious to have some one make these pistols at once, and on December 6 he and Palmer met at Springfield and again looked over the tools and machinery in Duckworth's shop. They came to the conclusion that these tools were not suitable for the work and that special tools could not be got ready to make the revolvers in time for the World's Fair. They then went to the office of the Ames Sword Company, and Finnegan made a preliminary verbal bargain with that company, through J. P. Woodworth, its superintendent, to make the revolvers. Palmer testifies that at this interview Finnegan, in his presence, explained to Woodworth exactly how he wanted the improved safety-catch put on the revolver, and that they talked of making new dies for drop-forging. Woodworth, on the other hand, denies that there was any such interview, and states that he knew nothing about the safety-catch about the 6th or 7th of December, the date of this interview.

These negotiations on the 6th and 7th of December, 1892, resulted in a written contract, dated December

27, 1892, between the Chicago Fire Arms Company and the Ames Sword Company, by which the latter agreed to manufacture twenty-five thousand revolvers in all respects like a model to be furnished by the Arms Company. This model was furnished to the Ames Company January 31, 1893, and accepted. During these negotiations Finnegan gave instructions to Duckworth to make a model with the improved safety-catch thereon, and at the same time he spoke to Duckworth in a general way about other improvements—more particularly about the manner of fastening the cap to the case, which he states he had conceived about December 1, 1892. He states that the reason he did not have Duckworth put on all these improvements was because it would require many changes in the tools and he was anxious to get out the revolver for the World's Fair.

Duckworth began on working drawings for the revolver about December 5, 1892. The work of construction was begun December 14. Shortly after making the drawings Duckworth, under Finnegan's direction, took one of the old Minneapolis revolvers, soldered a lug on the outside of the case, cut an opening through the case, and mounted therein a safety-catch which operated substantially like the catch shown in "Couch Exhibit No. 3."

Some time in December, 1892, or early in January, 1893, Couch was employed by the Ames Company for the express purpose of designing and making tools for the manufacture of the revolver contracted for by the Chicago Arms Company. He went to work on January 9, 1893, and on that day he began a model revolver, which was completed January 20, 1893, and contained all the improvements covered by the issue. During the time this model was being made Finnegan was a constant visitor at the Ames shop, and a great part of the time he spent in consultation with Couch and frequently complimented Couch for his skill and ability in making this model. After the model was completed it was delivered to Finnegan, who took it to his attorney to have an application for a patent prepared. This application was executed on January 26, 1893, filed February 10, 1893, and Patent No. 504,154, involved in this interference, was issued August 29, 1893, and is assigned to the Chicago Fire Arms Company. Finnegan, with the knowledge of Woodworth, subsequently obtained several foreign patents.

The revolvers furnished by the Ames Company under the contract with the Arms Company contained all the improvements in controversy, and each revolver was stamped "Pat. Aug. 29, '93," the date of Finnegan's patent.

Each party claims the model revolver made by Couch in the shops of the Ames Company between January 9 and 20, 1893, as the reduction to practice of his invention. Finnegan claims that Couch simply embodied the Finnegan ideas in this revolver as instructed by Finnegan, while, on the other hand, Couchs claims that he received no instructions from Finnegan about the construction of this revolver, but that the ideas or improvements embodied therein are his own.

The question is which of the two parties is the inventor of the improvements embodied in the revolver made by Couch. Finnegan is a patentee, and the burden is upon Couch to overcome the presumption that Finnegan is the prior inventor by evidence sufficient to overthrow the patent and to establish Couch's claims beyond a reasonable doubt.

Couch alleges that he invented the first count of the issue—the safety-catch—on December 15, 1892, in Woodworth's office, while there to see about making tools for a revolver that the Ames Company was contemplating making; that Woodworth handed him a sample revolver, and after examining it he told Woodworth that he did not like the safety-catch and that he could devise something better, and that he then made a sketch showing what he would put on. Woodworth asked him to leave the sketch, so that it could be shown to Finnegan. The sketch is not produced, and Couch says he has not seen it since it was made. What it illustrated or what was explained to Woodworth is not stated. Neither is it stated what the sample revolver showed. Finnegan denies that he ever saw the sketch.

Woodworth being called upon to corroborate Couch's statement says that the first he knew of this improved safety-catch was when it was explained to him by Couch some time after an interview he had with Finnegan on December 6 or 7, 1892, and before Couch went to work for the Ames Company on January 9, 1893. The exact date he cannot give. Evidently he is mistaken as to this. Before the interview of December 6, 1892, Finnegan had conceived of this improvement and disclosed it to others, and he was anxious to have it put on a revolver, and as at this time he was negotiating with Woodworth to make a revolver for him it seems reasonable that he explained such improvement to Woodworth. Finnegan and Palmer state definitely and clearly that this improvement was explained to Woodworth at this time.

Furthermore, it is shown that on December 5, 1892, Duckworth began drawings for this improvement, which was disclosed to him by Finnegan, and he embodied this in a working revolver soon after, the safety-catch being substantially the same as the one shown by "Couch Exhibit No. 3."

As to counts 2 and 4 of the issue, Couch testifies that he invented count 2 between January 9 and 20, 1893, at the shops of the Ames Company. In making this improvement he took a case of a Duckworth revolver, made a separate breech-block, and secured it solid to the case. He incorporated several other improvements, one of which was the cap covered by count 4. He also states that he met Finnegan for the first time about January 12 or 14, 1893, in the shops where he was making these improvements, at which time he explained them to Finnegan in the presence of Woodworth and Smith.

In this connection Woodworth testifies that he knew nothing of the solid breech-block and barrel or the new cap attachment prior to January 9, 1893, and that Couch informed him about these improvements. Smith says he first learned of them a day or two after Couch began to work for the Ames Company; that Couch then claimed them as his own, and he heard Couch explain them to Finnegan, who gave the credit

of them to Couch. Finnegan denies this and states positively that he explained these improvements to Woodworth and Couch at different times during December, 1892, and prior to the employment of the latter by the Ames Company. For the reasons given I prefer the statements of Finnegan to those of Woodworth.

Couch took the testimony of several other witnesses to show that he invented the improvements that went on the model revolver. Of these Bradford, the treasurer of the Ames Sword Company, testifies that he understood that the improvements on this model revolver were Couch's and that Finnegan constantly explained to him that the improvements had been made by Couch. Duckworth, who made the model for Finnegan having the safety-catch, states that Finnegan had told him about the improvements, but that he did not know that Finnegan told him who invented them. Finnegan, however, spoke of Couch making the model revolver, and from that he supposed that Couch was the inventor.

Bannister, a machinist employed by Duckworth to work on the model ordered by Finnegan, testifies that while he was working on the model Finnegan told him that the Ames shops were going to make a model with a solid breech-block and barrel, and that the cap would be fastened on the case; that Finnegan did not claim these improvements, but gave credit to Couch. Squier, a bookkeeper employed by Duckworth, states that in the latter part of January, 1893, Finnegan told him that Couch made several improvements, but Finnegan did not claim them as his own. Bradley, the assistant superintendent of the Ames Company, says that he knew Couch made all the improvements and that he did not know that Finnegan made any claim as inventor.

All this evidence about Couch being the inventor of these improvements is rumor and hearsay, except the alleged admissions of Finnegan, and these Finnegan denies. Not one of these witnesses has knowledge of the fact or states positively and definitely that Couch was the inventor. The testimony of Finnegan contradicts these witnesses, and Finnegan states that to some of these witnesses he spoke of the improvements as his own. The witness Stanwood says that during his visit to the shops of the Ames Company between January 17 and 22, 1893, he met Couch, who spoke about the improvements he was putting on a revolver, and he always spoke of them as Finnegan's ideas, which he was carrying out by making a model.

From the contract itself between the Ames Company and the Arms Company there is justification for holding that Finnegan was the inventor of these improvements. This contract is for the manufacture of a large number of revolvers for a certain price, the revolvers to be made like a model to be furnished by the Arms Company. All the revolvers furnished under this contract had the improvement shown by the model made by Couch. Woodworth states that the contract did not call for these improvements on the revolvers. Bradford substantially states that the contract was entered into before it was definitely settled what model was to be used and what this model represented. Koetter, however, denies this and says that under the contract the Ames Company was compelled to furnish revolvers having these improvements thereon.

It does not seem credible that a company such as the Ames Sword Company would enter into a contract to manufacture thousands of revolvers at a fixed price, and which had to be delivered at a certain time, without knowing just what kind of revolver was to be made.

Couch testifies that Finnegan told him between January 12 and 20, 1893, that he had Pratt & Whitney, during the fall of 1892, figure on the cost of tools and machinery to make the revolver in Chicago and that he was glad that the negotiations were not satisfactory, because if they had been he would have been making the old-style pistol without the improvements. Sponsel, the foreman of the gun department of the Pratt & Whitney Company during 1892, is called as a witness to show that Pratt & Whitney made an estimate for such tools, and he testifies that in October, 1892, he figured on the cost of making tools and machinery to be used in the manufacture of a revolver like "Couch Exhibit No. 1"—the old-style revolver. This testimony is taken, presumably, for the purpose of supporting the claim that when Finnegan was negotiating during December, 1892, with the Ames Company for the manufacture of a revolver it was the old-style revolver and not the one with the improvements. Mr. Pratt, the president of the Pratt & Whitney Company, however, produces letters and records that prove conclusively that this estimate was made at the request of the Minneapolis Fire Arms Company in February, 1892, and it does not appear that Finnegan had anything whatever to do with it.

It is also contended on behalf of Couch that the revolvers contracted for were to be similar to the one Finnegan was having made by Duckworth, which was to be used as the model, but subsequently to the date of the contract a new model was agreed upon. However this may be, the contract has not been modified or changed in any particular and all the revolvers delivered to the Arms Company under the contract contained all the improvements involved in this controversy, and each revolver was stamped with the date of Finnegan's patent.

The conduct of Couch after he knew that Finnegan had obtained a patent for these improvements is not satisfactorily explained. On direct examination Woodworth states that he did not know that Finnegan had applied for a patent for these improvements until after the patent was granted, and that he had no recollection of ever taking or sending a model of a revolver with the improvements thereon to Finnegan's attorneys from which an application for a patent was to be prepared. It is shown, however, by a letter from these attorneys that Woodworth did send this model or knew it was sent, and on cross-examination he says he must have known that Finnegan was taking steps to obtain a patent as early as May 20, 1893, the date of this letter, and probably he knew as early as February 14, 1893, that Finnegan was taking steps to obtain a patent on the improvements shown by the model made by Couch. He also knew or heard that Finnegan had spent large sums of money in

obtaining foreign patents. In view of the relations between Woodworth and Couch it seems probable that Woodworth would have communicated to Couch what he knew about Finnegan's application for a patent if he thought that Finnegan was patenting something that did not belong to him. Couch, however, says that the first he knew that Finnegan claimed to be the inventor of the improvements he had put on the revolver was the last of August or first of September, 1893, when Smith told him that Finnegan had patented these improvements. However this may be, according to Couch's own statement it was not until December, 1893, or January, 1894, that he protested to Finnegan about patenting improvements made by Couch. After Couch learned that Finnegan had patented the improvements he continued to make for the Arms Company the revolver with the improvements thereon, and he knew that such revolvers were being marked during the summer and fall of 1893 with the words "Pat. Aug. 29, '93," as being manufactured under Finnegan's patent. He made no protest about the revolver being so marked, and he did not lay claim to these improvements until he had an application for patent prepared, which was filed March 24, 1894, after his employers had got into trouble with the Arms Company over their alleged failure to deliver the revolvers as called for by the contract. This conduct is not that of a person who had made the invention.

Another significant fact that goes to show that Couch did not consider that he was the inventor of these improvements is that on December 20, 1893, he filed an application which became a patent March 13, 1894, No. 516,476. This patent shows all the improvements here involved, yet he made no claim in the patent to such improvements. He offers the explanation that the reason he did not make claims for the improvements was because he was in a hurry to get the patent out before Finnegan could lay claim to what was covered by it, as Finnegan had done in reference to the parts involved in this controversy.

There are other parts of the record that might be noted, but I think enough has been reviewed to show that Finnegan conceived of the improvements covered by the issue and disclosed them before he met Couch, and that, while Couch actually made revolvers embodying the improvements, in doing so he was simply carrying out Finnegan's ideas under Finnegan's instructions.

It is thought that Couch has failed to overcome Finnegan's patent and that Finnegan is the first and only inventor of the matter involved in this controversy.

The decision of the Examiners-in-Chief is affirmed.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

BRYANT *v.* SEYMOUR, COMMISSIONER OF PATENTS.

Decided November 17, 1896.

1. BRYANT—SHOE—COMMISSIONER'S DECISION AFFIRMED.

   Upon a consideration of the merits of the case, *Held* that there was no sufficient reason to disturb the decision of the Commissioner of Patents.

2. APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

   Appeal from the decision of the Commissioner of Patents, nearly a year after such decision, is brought in violation of Rule 20 of the rules of this court, and should not be entertained, especially when no excuse for the delay is urged.

3. RULES OF THE COURT—TIME OF APPEAL—BINDING POWER OF SUCH RULE.

   While some rules of court may be modified in special cases, they are in general as binding upon the court as upon parties and counsel, and rigid adherence is required to time-rules which are intended to have the effect of statutes.

IN the matter of the application of George Bryant for reissue of Letters Patent.

Mr. Alex. P. Browne and *Mr. Marcellus Bailey* for the appellant.

Mr. W. A. Megrath (law-clerk) for the Commissioner of Patents.

MORRIS, *J.*:

This is an appeal from the decision of the Commissioner of Patents refusing an application for a reissue of Letters Patent.

The decision of the Commissioner, as appears from the record, was made on May 24, 1895, and this appeal was not taken until April 8, 1896, nearly a year after the decision. By the rules of this court, which were in force at the time that decision was rendered and for upward of seven months prior thereto and which were promulgated in pursuance of the express terms of the Acts of Congress of February 9, 1893, and July 30, 1894, creating this court and defining its powers, the appeal comes too late and cannot be considered. The second section of Rule 20 provides that appeals from the decisions of the Commissioner of Patents—

> shall be taken within forty days from the date of the ruling or order appealed from, and not afterwards;

and the present appeal has been taken in plain disregard of that rule. Not even an excuse is sought to be given for the delay. Now, while some rules of court, from their peculiar nature and application, may have in them an inherent element of elasticity that would justify their modification from time to time in special cases, rules of court are intended to be a law for the court itself, as well as for parties and counsel, until they are changed in pursuance of the same power under which they have been promulgated; and to no rule is rigid adherence required more than to those which prescribe the time within which appeals are to be taken, and which in their nature, as long as they are in force, are intended to have the effect of statute.

Before these rules were promulgated there was much controversy in regard to the time to be allowed for the taking of appeals from the Commissioner of Patents, and this rule was made for the express purpose of setting the controversy at rest. We do not feel that we are at liberty ourselves to disregard the rule or to permit it to be disregarded by parties to proceedings in the Patent Office.

We come to this conclusion more readily in the present case for the reason that even upon a consideration of the merits of the case we see no sufficient reason to disturb the decision of the Commissioner of Patents.

The appeal will be dismissed, and the clerk of this

court will certify this opinion and the proceedings in the cause to the Commissioner of Patents in accordance with the law.

Court of Appeals of the District of Columbia.

HIEN *v.* PUNGS.

Decided December 1, 1896.

1. APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA—LIMITATION OF TIME.
   There is no justification for the theory that, since Revised Statutes 4894 gives an applicant a possible two years in which to prosecute his application, he has two years in which to take an appeal to the Court of Appeals of the District of Columbia.
2. APPEAL—ALTERATION OF TIME.
   The right of appeal is not a vested right, but may be altered by statute or by rule of court made in pursuance of statutory authority to enact such rule.
3. APPEAL RULE BINDING AFTER PROMULGATION.
   Even if there were no rule at the time the right of appeal accrued, after the promulgation of a rule regulating the time for taking appeals the appellant became bound by it.

Mr. Wm. H. Singleton for the appellant.

No appearance for the appellee.

Mr. W. A. Megrath (law-clerk) for the Commissioner of Patents appeared as *amicus curiæ* on motion to dismiss the appeal.

MORRIS, *J.:*

This is an appeal taken on May 12, 1896, from a decision rendered by the Commissioner of Patents on June 9, 1894, and the appeal was not filed in this court until June 2, 1896, nearly two years after the rendition of the Commissioner's decision.

We have just determined in the case of "in the matter of the application of George Bryant" that no such appeal can be entertained by us. It comes too late. There is no justification for the delay and no attempt to excuse it. Whether the case is to be governed by the rules of this court promulgated on September 29, 1894, whereby a limitation of forty days was provided for appeals, or by the rules in force prior thereto, which provided for a general limitation of twenty days for appeals to this court, the right of appeal is now barred.

The theory of the appellant seems to be that he had two years wherein to file his appeal, and this theory is based upon section 4894 of the Revised Statutes of the United States, wherein it is provided that—

> all applications for patents shall be completed and prepared for examination within two years after the filing of the application, and in default thereof, or upon failure of the applicant to prosecute the same within two years after any action therein, of which notice shall have been given to the applicant, they shall be regarded as abandoned by the parties thereto, unless it be shown to the satisfaction of the Commissioner of Patents that such delay was unavoidable.

But even if we assume that before the promulgation of the rules of this court on September 29, 1894, there was justification for this theory, there was no justification for it after the date of such promulgation. The right of appeal is not a vested right that may not be altered by statute or by rule of court made in pursuance of statutory authority to enact such rules, and when the rule of this court regulating the time for taking appeals was promulgated the appellant became thereafter bound by it, and, having the full time limited by the rule, he has no just cause of complaint.

The appeal in this case must be dismissed, and it is accordingly dismissed.

The clerk of this court will certify this opinion and the proceedings in the cause to the Commissioner of Patents in accordance with the law.

Court of Appeals of the District of Columbia.

PELTON *v.* EVERED.

Decided November 10, 1896.

APPEAL—FAILURE TO PRINT RECORD.

The parties failing to print the transcript of record, the appeal was dismissed.

APPEAL from the Commissioner of Patents.

Mr. T. J. W. Robertson for the appellant.

Messrs. Parker & Burton for the appellee.

MORRIS, *J.:*

This cause having been called for hearing in its regular order, and it appearing to the court that the parties have failed to print the transcript of record, it is therefore, in pursuance of the eighteenth rule of this court, now here ordered and adjudged by this court that this appeal be and the same is hereby dismissed.

THE

OFFICIAL GAZETTE

OF THE

United States Patent Office.

[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 11. TUESDAY, DECEMBER 15, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
BELGIAN PATENTS	1601
WITHDRAWAL OF CASES FROM ISSUE	1601
DISCLAIMER	1601
EXTRACTS FROM THE RULES OF PRACTICE, ETC	1601
INDEXES TO PATENTS ON ELECTRICITY	1601
PUBLISHERS' CATALOGUES	1602
ISSUE OF DECEMBER 15, 1896	1602
APPLICATIONS UNDER EXAMINATION	1602
PATENTS GRANTED	1608
REISSUES	None.
DESIGNS	1772
TRADE-MARKS	1777
PRINTS	None.
LABELS	None.
COMMISSIONER'S DECISIONS—	
Foster and Foster *v.* Bent	1781
Schmertz *v.* Appert	1784
DECISIONS OF THE U. S. COURTS—	
Buck's Stove and Range Company *v.* Kiechle *et al*	1785

Belgian Patents.

In reply to an inquiry from this Office notice has been received, through the Minister of the United States at Brussels, from the Belgian patent authorities, that it is not deemed advisable to publish their patents *in extenso*, and that no fuller description than that contained in the short abstract of the *Recueil Officiel* will be given. Complete copies may be obtained from the Belgian Patent Office on payment of the expense of reproduction.

Withdrawal of Cases from Issue.

Hereafter all amendments proposed to allowed applications which involve a withdrawal from issue, and all petitions and requests relating thereto, shall be filed with the docket clerk, Mr. J. M. Emory, and transmitted by him to the Primary Examiner for report. If the Examiner shall report favorably to the admission of such amendment, the matter will be laid before the Commissioner for immediate determination. If the Examiner shall report unfavorably, the case will be docketed and will be heard and decided by the Commissioner in regular course, unless good reasons shall appear for immediate action.

DISCLAIMER.

376,053.—*John H. Stonemetz*, Erie, Pa. IMPROVEMENT IN WEB-PRINTING MACHINES. Patent dated January 3, 1888. Disclaimer filed December 11, 1896, by the present assignees, *The Campbell Printing Press and Manufacturing Company*, of New York, N. Y.

Enters its disclaimer—

"To the eighth claim of said Letters Patent and that part of the thing patented in said Letters Patent which is set forth in said eighth claim, which eighth claim of said Letters Patent is in the following words, to wit:

"8. The combination, in a printing-machine, of stationary type-beds and a traveling carriage conveying impression-cylinders and inking-rollers back and forth over said beds, with web-carrying rollers on said traveling carriage, stationary and adjustable web-carrying rollers on the frame-work of the machine, and means, substantially as described, for intermittently drawing the web forward, substantially as and for the purpose set forth."

Extracts from the Rules of Practice in Relation to the Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

Indexes to Patents on Electricity.

Indexes to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1890, have been issued, and are for sale. These indexes, arranged alphabetically, numerically, and by classes, comprise the following volumes, the prices of which are given below:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Vol. 4. Appendix No. 4, July 1, 1884, to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Vol. 5. Appendix No. 5, July 1, 1885, to June 30, 1886. One volume, 54 pages In paper covers, $1.50.

Vol. 6. Appendix No. 6, July 1, 1886, to June 30, 1887. One volume, 52 pages. In paper covers, $1.50.

Vol. 7. Appendix No. 7, July 1, 1887, to June 30, 1888. One volume, 68 pages. In paper covers, $1.50.

Vol. 8. Appendix No. 8, July 1, 1888, to June 30, 1889. One volume, 72 pages. In paper covers, $1.50.

Vol. 9. Appendix No. 9, July 1, 1889, to June 30, 1890. One volume, 84 pages. In paper covers, $1.50.

Vol. 10. Appendix No. 10, July 1, 1890, to June 30, 1891. One volume, 98 pages. In paper covers, $1.50.

Vol. 11. Appendix No. 11, July 1, 1891, to June 30, 1892. One volume, 86 pages. In paper covers, $1.50

Vol. 12. Appendix No. 12, July 1, 1892, to June 30, 1893. One volume, 80 pages. In paper covers, $1.50.

Vol. 13. Appendix No. 13, July 1, 1893, to June 30, 1894. One volume, 70 pages. In paper covers, $1.50.

Vol. 14. Appendix No. 14, July 1, 1894, to June 30, 1895. One volume, 63 pp. In paper covers, $1.50.

Publishers' Catalogues.

This Office would be pleased to receive from manufacturers and publishers such catalogues, circulars, price-lists, or other advertisements relating to the sciences and mechanical arts as are published by them for gratuitous distribution; but notice is hereby given such manufacturers or dealers who feel disposed to send their publications that not less than three copies should be forwarded in order that the subjects may be properly indexed, classified, and subclassified in the Scientific Library for convenient and ready reference.

Issue of December 15, 1896.

Patents	491—No. 572,944 to No. 573,434, inclusive.
Designs	28—No. 26,392 to No. 26,419, inclusive.
Trade-Marks	34—No. 29,292 to No. 29,325, inclusive.
Prints	None.
Labels	None.
Reissues	None.
Total issue	553

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	1	....	New Hampshire	2	....
Arizona Territory	....	....	New Jersey	16	1
Arkansas	1	....	New Mexico Territ'y	1	....
California	10	1	New York	79	11
Colorado	7	....	North Carolina	1	....
Connecticut	19	1	North Dakota	1	....
Delaware	....	....	Ohio	27	1
District of Columbia	3	....	Oklahoma Territory	1	....
Florida	1	....	Oregon	7	....
Georgia	3	....	Pennsylvania	71	....
Idaho	....	....	Rhode Island	5	....
Illinois	56	....	South Carolina	....	....
Indian Territory	....	....	South Dakota	....	....
Indiana	22	....	Tennessee	....	....
Iowa	7	1	Texas	11	....
Kansas	5	1	Utah	....	....
Kentucky	2	....	Vermont	....	....
Louisiana	5	....	Virginia	2	1
Maine	4	....	Washington	3	....
Maryland	4	....	West Virginia	2	....
Massachusetts	42	7	Wisconsin	6	....
Michigan	14	1	Wyoming	....	....
Minnesota	9	....	U. S. Army	....	....
Mississippi	....	....	U. S. Navy	1	....
Missouri	21	....			
Montana	1	....	Total to citizens of the United States	476	26
Nebraska	4	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	....	....	Mexico	....	....
Australia	....	....	Netherlands	....	....
Austria-Hungary	3	....	Newfoundland	....	....
Barbadoes	....	....	New South Wales	1	....
Belgium	....	....	New Zealand	....	....
Bermuda	....	....	Norway	....	....
Brazil	....	....	Orange Free State	....	....
Canada	5	1	Peru	....	....
Canary Islands	....	....	Queensland	....	....
Cape Colony	....	....	Russia	1	....
Ceylon	....	....	Scotland	....	....
Chile, Republic of	....	....	South African Republic	....	....
Colombia	....	....	Spain	1	....
Cuba	....	....	Straits Settlements	....	....
Denmark	....	....	Sweden	1	....
England	10	4	Switzerland	3	....
France	3	....	Victoria	2	....
Germany	13	3	West Australia	....	....
Guatemala	....	....			
India	....	....			
Ireland	....	....	Total to citizens of foreign countries	43	8
Italy	....	....			

APPLICATIONS UNDER EXAMINATION.

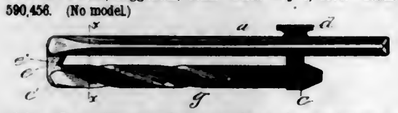
Condition at Close of Business December 8, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Nov. 9	Nov. 30	207
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 9	Nov. 25	105
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Nov. 9	Nov. 19	257
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Nov. 10	Nov. 11	217
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Nov. 9	Nov. 11	182
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Nov. 10	Nov. 10	229
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Nov. 10	Nov. 9	209
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone Working, Vegetable Cutters and Crushers.	Nov. 9	Nov. 9	172
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Nov. 9	Nov. 9	261
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Nov. 9	Nov. 5	166
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 9	Oct. 13	290
	Between one and two months.			
351	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Nov. 6	Nov. 28	129
215	XVII. Paper Manufactures and Printing.	Oct. 31	Nov. 9	153
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Oct. 9	Nov. 9	373
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Nov. 6	Nov. 7	159
255	XII. Mechanical Engineering, Stores-Service, etc.	Nov. 4	Nov. 6	233
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Nov. 2	Nov. 5	164
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 27	Nov. 5	348
93	XXI. Textiles, etc.	Nov. 5	Nov. 4	182
248	XVIII. Steam-Engineering, etc.	Oct. 24	Nov. 3	180
120	IX. Hydraulics, Fire-Extinguishers, etc.	Nov. 2	Nov. 2	205
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Oct. 8	Oct. 28	373
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Oct. 19	Oct. 27	363
253	X. Carriages and Wagons	Oct. 29	Oct. 26	359
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Oct. 24	Oct. 26	322
246	I. Tillage and Fences	Oct. 20	Oct. 19	318
106	II. Farm Stock, Products, etc.	Oct. 14	Oct. 12	280
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Nov. 3	Oct. 10	271
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes.	Oct. 1	Nov. 1	1190
102	XIX. Stoves and Furnaces	Sept. 18	Sept. 19	369
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Sept. 8	Sept. 18	235
	Between three and four months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Sept. 4	Nov. 21	466
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 8	Oct. 20	822
	Total number of applications awaiting action			9,739
	Under one month in arrears.			
	Designs	Nov. 16	Dec. 2	127
	Trade-Marks	Nov. 23	Nov. 27	71

PATENTS

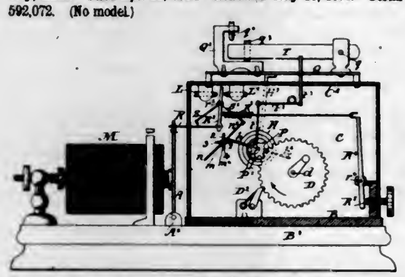
GRANTED DECEMBER 15, 1896.

572,944. ATTACHMENT FOR DRILL-GRINDING MACHINES. JOHN H. AGESEN, Higganum, Conn. Filed May 6, 1896. Serial No. 590,456. (No model.)



Claim.—In combination, the support-bar *a*, the butt-holder *c*, and the point-holder *e* provided with converging faces *e'* and point-rest *f*, all substantially as described and for the purposes set forth.

572,945. MECHANICAL TELEGRAPH-SOUNDER. WILLIAM W. ALEXANDER, Kansas City, Mo., and MANCELLUS C. GILLHAM, Kansas City, Kans. Filed Apr. 23, 1894. Renewed May 18, 1896. Serial No. 592,072. (No model.)



Claim.—1. A mechanical telegraph signaling instrument consisting of an electromagnet, its armature, an oscillating lever R^3 connected therewith, a retractile spring R^2 attached to said lever, adjustable stops on opposite side of said lever, a pivot shaft for said lever, hooked arms S and S^2 secured to said shaft and a pivoted arm n^2 to engage with said arms S and S^2, pallets and a crank upon the pivot-shaft m^2 of the arm n^2, a springy connecting-rod uniting said crank with a pivoted sounder-lever, pivoted arms h h^2 to engage alternately with the pallets on the shaft m^2, a coiled spring mounted upon the pivot-shaft of the arms h h^2 and having one end connected to a pinion P, with means to rotate said pinion substantially as described.

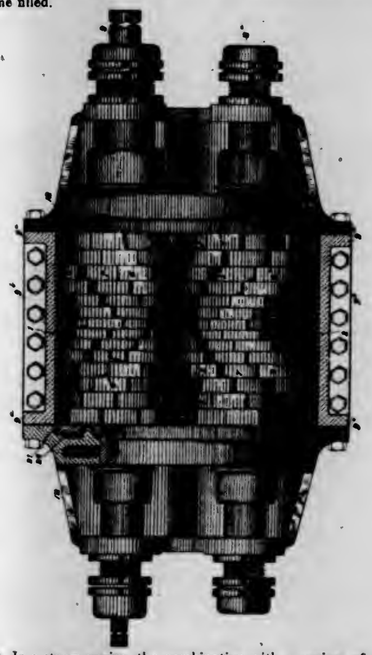
2. In a telegraph signaling instrument the combination of an electromagnet, its armature, an oscillating escapement connected therewith, rotary arms n n^2 engaging with said escapement-pallets upon their shaft, arms h h^2 for engagement with said pallets, a shaft carrying a coiled hair-spring and a crank, a springy connecting-rod uniting said crank to a sounding lever, a pinion connected with the hair-spring and means to rotate said pinion substantially as described.

3. In a telegraph signaling instrument the combination of an electromagnet, its armature, an oscillating and a rotary escapement with a coiled hair-spring upon the shaft carrying the controlling arms of the rotary escapement, a crank upon said shaft, a soundiog-lever, a connecting-rod uniting said crank with the sounding-lever, a pinion connected with the hair-spring and means to rotate said pinion substantially as described.

4. In a telegraph signaling instrument the combination of an electromagnet, its armature, an escapement connected with said armature, a sounding-lever, a springy connecting-rod uniting said sounding-lever with a crank upon a shaft carrying a coiled hair-spring, a pinion connected with said hair-spring and means to rotate said pinion substantially as described.

572,946. STEAM-ENGINE. CHARLES A. BACKSTROM, New York, N. Y., assignor to George Westinghouse, Pittsburg, Pa. Filed Jan. 13, 1896. Serial No. 575,269. (No model.)

Claim.—1. A steam-engine consisting of a casing and a pair of drums provided with a plurality of intermeshing zigzag gear-tooth pistons and corresponding grooves diverging in helical lines from the central plane of the drums and each extending over a portion of the circumference to the ends thereof, said grooves, in conjunction with the contiguous portions of the casing, constituting sets of expansion-chambers, said casing being provided with a port for admitting steam at the meeting-points of the successive grooves and gear-tooth pistons during the rotation of the drums, and with means for exhausting the steam after it has become expanded to the effective limit, and said casing and pistons serving to cut off the steam from the sets of expansion-chambers successively when the initial chambers become filled.



2. In a steam-engine, the combination with a casing, of a plurality of rotary drums provided with helically arranged, intermeshing, zigzag gear-tooth pistons and with corresponding grooves which, in conjunction with contiguous portions of the casing, constitute expansion-chambers, said casing being provided with means for admitting steam to the initial chambers successively, and with one or more exhaust-ports for permitting the escape of the steam from the inclosing casing after it has become expanded to its effective limit, and said pistons, in conjunction with said casing, serving to cut off the steam from the initial chambers successively after the same become filled.

3. A multiple-piston steam-engine consisting of a plurality of rotatable drums each of which is provided with a plurality of sets of zigzag gear-tooth pistons, and a casing provided with inlet and exhaust ports, the spaces between said gear-tooth pistons and casing constituting a plurality of sets of expansion-chambers helically disposed and pitched in opposite directions from the middle of the drums, those of each set being successively opened for the admission of steam as the drums rotate, the steam being successively introduced into the

initial chambers, cut off therefrom, and then progressively expanded into the succeeding chambers, whereby it is caused to act upon a constantly-increasing piston area.

4. A multiple-piston steam-engine consisting of a casing provided with inlet and exhaust ports and a plurality of rotatable drums each of which is provided with a number of helically-disposed, zigzag gear-tooth pistons of progressively-increasing thickness from the middle to the ends of the drums, the spaces between said pistons and casing constituting sets of expansion-chambers those of each set being of progressively-increasing capacity from the middle to the ends of the drums, the steam being successively introduced into the middle chamber, cut off therefrom, and then progressively expanded in the succeeding chambers, whereby it is caused to act upon a constantly-increasing piston area.

5. The combination with a casing, of a pair of cylindrical, rotatable drums for the reception and direct utilization of steam expansively, each composed of a series of disks or plates respectively provided with a plurality of peripheral teeth each of which has a perfect gear-tooth contour, said disks or plates being assembled so that the teeth of adjacent plates break joints, whereby helical, zigzag or stepped gear-tooth pistons and corresponding grooves are formed, said grooves and the adjacent portions of the casing constituting expansion-chambers, and cut-off points.

6. In a steam-engine, the combination with a casing, of a pair of rotatable drums for the reception and direct utilization of steam expansively, each composed of a series of disks or plates each of which has a plurality of peripheral gear-teeth, the teeth of each successive plate, beginning at each end of the drum, being set in advance of those of the preceding plate, thereby forming a series of zigzag or stepped gear-tooth pistons and corresponding grooves which diverge from the central plane of the drum and extend to its ends, said grooves and the adjacent portion of the casing constituting expansion-chambers, and cut off points.

572,947. LINOTYPE-MACHINE. GEORGE A. BATES, Brooklyn, N. Y., assignor to the Mergenthaler Linotype Company, of New York. Filed Mar. 7, 1896. Serial No. 582,259. (No model.)



Claim.—1. In a linotype-machine, a slug-trimming knife a spring tending to urge the same in one direction and a rotary liner having portions of varying thickness to support the knife in different positions.

2. In a linotype-machine, the combination of the sliding knife, a spring urging the same backward and two rotary liners each with portions differing in thickness to hold the knife forward.

3. In a linotype-machine, the combination of the knife block or support, the sliding knife, the spring urging the same backward, the rotary liners with portions differing in thickness and the eccentric to urge the knife forward.

4. In a linotype-machine and in combination with an adjustable knife, a movable liner or knife-support provided with portions varying in thickness and bearing characters to guide the attendant in adjusting the same.

572,948. ROSSING-MACHINE. ALBERT E. BEALS, Norwich, N. Y. Filed June 22, 1896. Serial No. 596,369. (No model.)

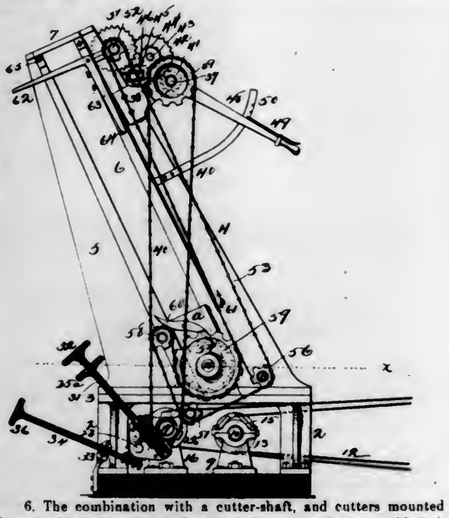
Claim.—1. The combination with revolving cutters, of log-supporting rollers mounted upon eccentrics adapted to be shifted to raise or lower the log with relation to said cutters.

2. The combination with revolving cutters, of log-supporting rollers part of which are mounted upon eccentrics and adapted to be shifted to raise or lower the log with relation to said cutters.

3. The combination with a cutter-shaft, and a cutter or cutters mounted thereon, of log-supporting rollers eccentrically mounted on said shaft, and normally upon the same axial center as the cutters.

4. The combination with parallel roller-shafts, and cutters mounted thereon of log-supporting rollers eccentrically mounted upon each shaft each of which is normally upon the same axial center as the cutters upon the same shaft.

5. The combination with a cutter-shaft and cutters mounted thereon, of log-supporting rollers carried by eccentrics upon said shaft and normally having their peripheries in planes exterior and parallel to the circle of rotation of the cutters, and means to shift said rollers eccentrically to change their planes and lower the log to permit said cutters to cut.



6. The combination with a cutter-shaft, and cutters mounted thereon of log-supporting rollers carried by eccentrics upon said shaft adjacent to its ends and normally supporting the log above the cutters, and means to shift either of said rollers eccentrically and separately to lower either end of the log into position to be engaged by said cutters.

7. The combination with a cutter-shaft, and cutters mounted thereon of log-supporting rollers carried by eccentrics upon said shaft adjacent to its ends and normally supporting it above the cutters, and means to shift said rollers eccentrically together to lower the whole log into engagement with said cutters, or to shift either roller eccentrically and separately to lower either end into engagement with a cutter or cutters.

8. The combination with parallel cutter-shafts and cutters mounted thereon arranged in alternation with reference to their respective shafts, of log-supporting rollers carried by said shafts and means to vary the vertical position of said rollers without changing the plane of either of said shafts.

9. The combination with parallel cutter-shafts, and cutters mounted thereon, rollers carried by eccentrics upon said shafts adjacent to said cutters and normally supporting a log clear of said cutters, and means to raise and lower the log bodily or as to either end while being rotated upon said rollers to regulate the cut of said cutters by operating part or all of said eccentrics.

10. The combination with parallel cutter-shafts, and cutters mounted thereon, and log-supporting rollers carried by eccentrics upon said shafts, and constituting the bottom of the log-chamber, and means to raise and lower the log therein while being rotated by shifting part or all of said eccentrics.

11. The combination with parallel cutter-shafts and cutters mounted thereon and log-supporting rollers carried by said shafts, of power-driven log-rotating rollers mounted in a swinging frame whereby said rollers are caused to follow the contour of an irregular-shaped log, and regulate the cut of said cutters.

12. The combination with a cutter-shaft and the cutters thereon of a sleeve upon said shaft an eccentric upon said sleeve, and a ring free to rotate upon said eccentric while supporting a log, and means to shift said eccentric to vary the plane of said ring and raise or lower the log.

13. The combination with a cutter-shaft and the cutters thereon of sleeves upon said shaft, an eccentric upon each sleeve, and a ring free to rotate upon each eccentric while supporting a log, and means to shift said eccentrics singly or jointly to raise or lower either end of the log separately, or the entire log bodily.

14. The combination with multiple cutter-shafts, cutters mounted thereon, sleeves upon part of said shafts, eccentrics upon said sleeves, roller-rings free to rotate upon said eccentrics, and rollers upon the other shafts, said rollers and rings jointly supporting a log, and means to shift both of said eccentrics to lower the log, or to shift either one separately to lower either end of the log, and regulate the cut of said cutters.

15. The combination with the cutter-shafts, cutters mounted thereon, and the log-supporting rollers carried by said shafts, of a vertically-reciprocating frame above said shafts, and log-rolling rollers carried thereby, whereby said log-rollers can be adjusted to logs of different sizes.

16. The combination with the cutter-shafts, cutters mounted thereon, and the log-supporting rollers carried by said shafts, of a vertically-reciprocating frame above said shafts, cutters and rollers, a swinging frame pendent from the other frame and log-rolling rollers carried thereby, whereby said log-rollers can be adjusted to logs of different sizes, and will follow the contour of a log irregular in shape and rotate it.

17. In a rossing-machine a log-chamber consisting of multiple shafts cutters mounted thereon, and log-supporting rollers carried by said shafts, constituting the bottom thereof, in combination with a frame vertically adjustable and adapted to be reciprocated to open or close said chamber, and log-rolling rollers carried by said frame and engaging with a log in said chamber to rotate it.

18. In a rossing-machine the combination with a cutter-shaft the cutters thereon, sleeves loose upon said shaft, eccentrics upon said sleeves, roller-rings upon said eccentrics, and gears upon said sleeve, of a shaft parallel to said cutter-shaft provided with a gear 24 engaging with one of said gears, a sleeve on said shaft provided with a gear, 29 meshing with the other of said gears, and means to rotate said shaft and sleeve separately to shift the corresponding eccentric, or to rotate both said shaft and sleeve and shift both eccentrics simultaneously.

19. In a rossing-machine the combination with log-supporting rollers loosely mounted upon eccentrics upon sleeves upon the cutter-shaft, of a worm-actuated shaft to rotate one sleeve and its eccentric, a worm-actuated sleeve to rotate the other sleeve and its eccentric, and a worm engaging with said shaft and sleeve to rotate both sleeves and said eccentrics, whereby either roller is shifted separately, or both are shifted simultaneously.

20. In a rossing-machine the combination with a revolving cutter-shaft and the cutters thereon, of independently-rotatable sleeves around said shaft, and log-supporting rollers mounted upon bearings secured to and eccentric to said sleeves and means to rotate said sleeves separately or simultaneously to shift one or more of said rollers in relation to said cutters.

21. In a rossing-machine the combination with the cutter-shaft and cutters thereon, of log-supporting rollers upon and normally concentric with said shaft, and means to shift them vertically to lower a log into position to be engaged by said cutters.

22. In a rossing-machine multiple parallel cutter-shafts cutters upon them spaced apart so as to cut different but merging paths around a log, log-supporting rollers upon said shafts, each in alinement with a cutter upon the opposite shaft, whereby each roller will take its bearing against the log in the path cut by its opposite cutter.

23. In a rossing-machine a base, standards erected thereon with a way between them, a frame mounted and adapted to be reciprocated in said way, log-rolling rollers carried by said frame, and means to support said frame when elevated combined with a suitable bark-cutting mechanism, and a log-supporting device.

24. In a rossing-machine, a base, standards erected thereon with a way between them, a frame mounted and adapted to be reciprocated in said way and a shaft, a driving-gear, and log-rolling rollers carried and driven by said shaft, and means to support said frame when elevated combined with a suitable bark-cutting mechanism and a log-supporting device.

25. In a rossing-machine, a log-rolling mechanism comprising a driving-shaft, a frame adapted to swing thereon, log-rolling rollers mounted in said frame and means to drive them actuated by said shaft, in any position they may assume combined with suitable log-supporting rollers and suitable cutters.

26. In a rossing-machine, a log-rolling mechanism comprising a shaft, a frame adapted to swing thereon, log-rolling rollers mounted in said frame and means to drive them actuated by said shaft in any position they may assume, in combination with the cutter-shafts, the cutters thereon, and log-supporting rollers on said shafts.

27. In a rossing-machine, the combination with the cutter-shafts and cutters and log-supporting rollers mounted thereon, of a frame mounted in ways above said shafts and comprising, blocks in said ways, a shaft journaled in said blocks, a ratchet-wheel and pawl controlling the rotation of said shaft, log-rolling rollers carried by said shaft and driven by it, a drive-wheel upon said shaft, and means to drive when permitted by said ratchet.

28. In a rossing-machine a log-rolling mechanism comprising a base, standards erected thereon and provided with ways, a frame mounted in said ways log-rolling rollers carried by said frame, a driving sprocket upon said frame, a ratchet-and-pawl mechanism regulating the rotation of said sprocket, a driving-belt connected to a train of driving-gears and means to reverse said belt, whereby when it is driven in one direction it will drive said log-rolling rollers and in the other direction it will raise said frame and rollers in said ways without driving said rollers and means to support the logs, and to cut the bark therefrom while being rolled.

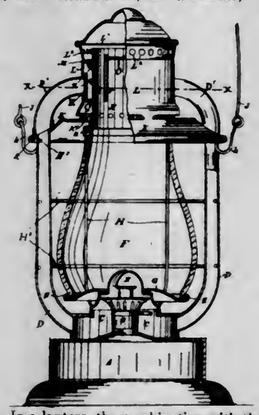
29. In a rossing-machine a frame mounted in suitable ways log-rolling rollers carried and driven by a shaft journaled in said frame, a ratchet-and-pawl mechanism regulating the revolution of said shaft, a driving-sprocket on said shaft a driving-belt actuated by a train of driving-gearing and means to reverse said belt, whereby when driven in one direction it will drive said rollers, and in the other direction it will elevate said frame, and a trip to release said pawl from said ratchet when said frame is elevated.

30. In a rossing-machine the combination with log-rolling rollers and a train of belting and gearing for driving them, and a swing-frame carrying pinions for reversing said belting; of a brake operating upon the terminal gear of said train and comprising a ring partly encircling a disk upon the shaft carrying said gear, a block rotatably mounted between the arms of said ring, arms thereon engaging the said swing-frame, whereby said arms are sprung apart when said frame is swung in either direction and the brake is released.

31. In a rossing-machine, the combination with log-rolling rollers, of a train of gearing to drive them, of a disk upon the shaft of the terminal gear, reversing-pinions brought into engagement with said gear by the swinging of a frame upon which they are mounted, a ring brake-shoe partly encircling said disk a block rotatably mounted between the terminals of said shoe and arms thereon engaging with said frame to partially rotate said block and release said brake whenever said pinions are swung to reverse said terminal gear.

32. A train of gearing comprising a driving-gear, a terminal gear and a frame carrying intermediate pinions adapted to be respectively brought into engagement with the terminal gear by the swinging of said frame in combination with a brake operative and normally in position to stop said terminal gear, and comprising an expansible ring brake-shoe provided with parallel terminals, and means to spread said terminals apart by the swinging of said frame to bring either pinion into engagement with said terminal gear and release the shoe.

572,949. TUBULAR LANTERN. CHARLES BERGNER, Rochester, N. Y., assignor to the C. T. Ham Manufacturing Company, same place. Filed July 8, 1895. Serial No. 555,300. (No model.)



Claim.—1. In a lantern, the combination with the base containing the oil-pot and burner and the air-chamber around the latter, the globe, the tubes independent of the globe connected to the air-chamber and open at their upper ends, the vertical guard-wires, the horizontal ring connected permanently to their upper ends and to the tubes, and an intermediate horizontal guard-ring, of the top plate hinged to the top ring of the guard-frame having the dome, the spring-pressed sleeve therein, the tube-sections connected to the dome and cooperating with the upper ends of the lower tubes when the top is closed, substantially as described.

2. In a lantern, the combination with the base containing the oil-pot, burner and air-chamber, the globe, the vertical tubes independent of the globe connected to the air-chamber, the vertical guard-wires intermediate the tubes, the ring connected permanently to their upper ends and to the tubes and the intermediate guard-ring, of the top plate having the perforated dome, the spring-pressed sleeve therein having the apertures and cooperating with the top of the globe and forming an air chamber between the sleeve and dome, the tube-sections on the plate open at their lower ends and opening into the air-chamber, the vertical stripe extending across said tube-openings, a hinge connection between the top plate and the ring on the base, arranged between the tubes, and a catch for holding the top plate down with the tube-sections engaging the ends of the tubes on the base, substantially as described.

3. In a lantern, the combination with the base containing the oil-pot, burner and an air-chamber around the burner, the globe, the tubes rising from the air-chamber independent of the globe, and a guard permanently connected to the tubes and base, of the lantern-top having a dome hinged to the guard-frame between the tubes and in the plane thereof, the tube-sections thereon, the spring-pressed sleeve in the dome, the catch for holding the top to the guard, the globe and the perforated plate, substantially as described.

4. In a lantern, the combination with the lantern-frame having the oil-pot and burner, of the globe-supporting plate loose on the burner, provided with the laterally-projecting handle, the globe loose on said plate, and a guide on the frame engaged by the handle, substantially as described.

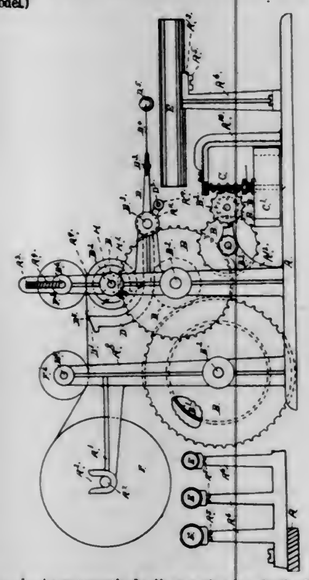
5. In a lantern, the combination with the frame, the oil-pot and burner, of the globe, the globe-plate resting loosely on the burner having the depression near its edge and the raised central portion, and a guide for the upper end of the globe, whereby the globe-plate may be tilted on the burner, the lateral movement of the bottom of the globe prevented and a lighted match may be introduced between the globe and plate for lighting the wick, substantially as described.

6. In a lantern, the combination with the frame, having the vertical guard-wires, the oil-pot and burner, of the globe, the globe supporting plate loose on the burner and having the depression near its edge and the handle or loop engaging the guard-wire and projecting substantially in line with the slot in the burner, substantially as described.

7. The combination with the lantern-base, air-tubes secured thereto and a guard secured to said tubes and base and adapted to have the globe inserted from above, of a lantern-top hinged to the top of said guard and containing a metallic chimney, an air-inlet chamber surrounding the chimney and tube, and elbows secured to said chamber and adapted to fit upon the open upper ends of the air-tubes when the top is closed down, substantially as set forth.

8. In a lantern, the combination with the base containing the oil-pot and burner and the air-chamber around the latter, the globe, tubes independent of the globe and connected to the air-chamber and open at their upper ends, and a fixed guard encircling the globe and adapted to have the globe inserted from above, of a lantern-top hinged to said guard and containing the dome and tube-sections connected with the dome and cooperating with the upper ends of the tubes when the top is closed, substantially as described.

572,950. MUSIC-BOX. FRANK J. BERNARD, Jersey City, N. J., assignor, by direct and mesne assignments, to the American Music Box Company, West New York, N. J. Filed May 9, 1895. Serial No. 548,784. (No model.)



Claim.—1. An automatic feeding mechanism for feeding a perforated music-sheet G, in combination with the pivoted lever D, having spring D^4, and hammer D^5, and stop-rod D^2, as and for the purpose described.

2. An automatic feeding mechanism for feeding a perforated music-sheet G, in combination with the pivoted lever D, having spring D^4, and hammer D^5, and stop-rod D^2, provided with the rubber sleeve D^6, as and for the purpose described.

572,951. BOTTLE-STOPPER. ALFRED L. BERNARDIN, Evansville, Ind. Filed Apr. 25, 1896. Serial No. 589,069. (No model.)



Claim.—1. As an improved article of manufacture, the seal-stopper formed of a soft, flat rubber body, or disk, having a central vertical opening, the rigid tube which lines said opening, and is adapted for reception of an extracting-tool, the sides of the disk being extended radially free of or beyond said tube, as shown, whereby the disk is adapted for compression within a bottle-neck and direct engagement with a shoulder therein, and an independent protector applied to and secured on the lower side of the disk and covering the open end of the tube, substantially as shown and described.

2. The improved seal-stopper composed of a soft-rubber body portion, having a central opening, or passage, a rigid tube, lining said opening and extending completely through said body, and a protective lining applied over the tube and opening, on the under side of the stopper, substantially as shown and described.

3. The improved seal stopper composed of a soft-rubber disk, having a central opening, a rigid tube extending entirely through it and provided at its middle with an internal shoulder for engagement of an extracting-tool, and a protector for the under side of the disk and tube, substantially as shown and described.

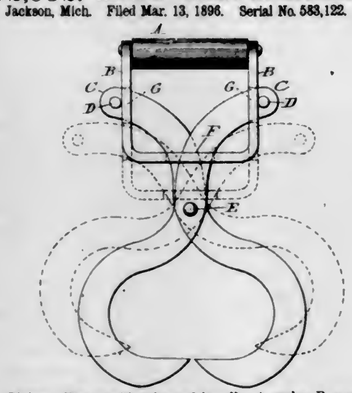
4. The improved seal stopper composed of an elastic disk, having a central, transverse opening, or passage, extending through it, a rigid tube provided with an exterior circumferential projection on its body, which is embedded in the surrounding portion of the disk, and a protective lining for the under side of the disk, as shown and described.

5. The improved seal-stopper composed of an elastic disk, having a central, transverse opening, a rigid tube provided with a circumferential, annular swell and a coincident interior recess or groove, said swell fitting in a recess in the disk, and a protector for the under side of the disk, as shown and described.

6. The improved seal-stopper composed of an elastic disk provided with a central transverse opening, or passage, a sheet-metal tube fitted in the latter and extending through it, and provided with a lateral base-flange, a central, circumferential, internal groove, and an exterior circumferential swell, or projection, and a protective lining for the under side of the stopper, as shown and described.

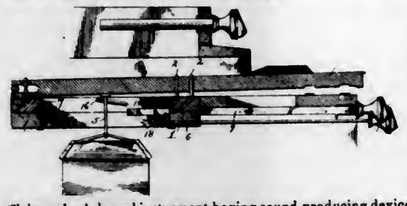
7. As an article of manufacture, a tube for use in connection with an elastic disk forming a seal-stopper, the same having a body provided with a lateral base-flange and a circumferential exterior swell and corresponding internal groove, as shown and described.

572,952. ICE-TONGS. CHARLES S. BIRD and EDWARD D. WESTON, Jackson, Mich. Filed Mar. 13, 1896. Serial No. 583,122. (No model.)



Claim.—The combination of handle, A, yoke B, provided with slots F, G, G, curved tongs C, C, pivoted together and passing through said slots, and the stop-pins, D, D, in the upper ends of the tongs, substantially as shown, and described.

572,953. KEYBOARD. JOHN F. BLACK, Carl Junction, Mo. Filed Apr. 9, 1896. Serial No. 586,871. (No model.)



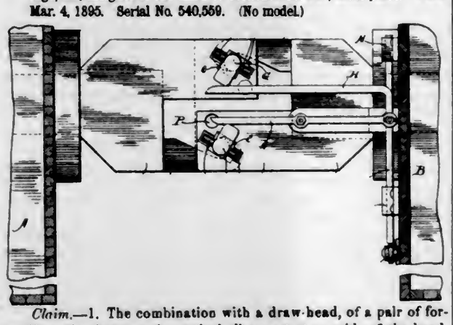
Claim.—1. A keyed instrument having sound-producing devices, a laterally-movable keyboard, yielding means for returning the keyboard, when released, to its normal position, a plurality of exposed draw-stops, and independent connections between the different draw-stops and the keyboard for moving the latter, respectively, through intervals of different lengths in opposition to the tension of said yielding means, each connection also serving to hold the keyboard in its adjusted position during the extension of the draw-stop by which said connection is operated.

2. A keyed instrument having sound-producing devices, a laterally-movable keyboard including a frame, yielding means for returning the frame to its normal position when released, and operating devices for moving the frame against said yielding means, the same consisting of spaced slides mounted for movement transverse to the frame and provided with bevel or cam faces to coöperate with corresponding faces on the frame, the inclination of the several cam-faces varying to produce a movement of the frame through different intervals, said slides being adapted to be actuated by exposed stops or handles, substantially as specified.

3. A keyed instrument having sound-producing devices, a laterally-movable keyboard including a sliding frame, yielding devices for returning the frame when released to its normal position, and an operating device for moving the frame against said yielding devices, the same consisting of a slide mounted for movement transverse to the frame and provided with a beveled or cam face to coöperate with a corresponding face on said frame, substantially as specified.

4. A keyed instrument having sound-producing devices including pegs, a laterally-movable keyboard including a sliding frame and having keys arranged respectively in operative relation with said pegs, means for communicating motion to the frame to arrange the keys in operative relation with different pegs, and a trip or lifting device including a crank-shaft extending continuously under the keys and adapted to elevate the same out of operative relation with said pegs, and means as an exposed handle for actuating the trip or lifting device, substantially as specified.

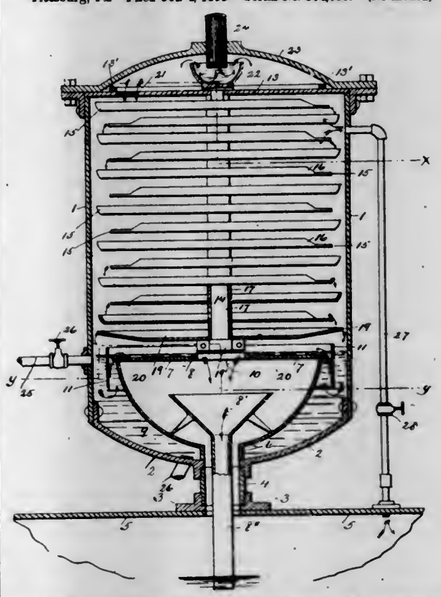
572,954. AUTOMATIC CAR-COUPLER. JOSEPH J. BOLGER, Chicago, Ill., assignor of one-third to Cornelius Meerse, same place. Filed Mar. 4, 1895. Serial No. 540,559. (No model.)



Claim.—1. The combination with a draw-head, of a pair of forwardly-projecting arms in vertical alinement at one side of the head, a pin pivotally carried by the upper arm so as to swing transversely thereto and having a bearing in the lower arm, and an inturned hook projecting forwardly from the opposite side of the head, substantially as described and for the purpose set forth.

2. The combination with a pair of cooperating draw-heads, of a pair of vertically-alined, forwardly-projecting arms on each head, a pin pivoted within the upper arm of each pair so as to swing transversely to the line of draft and having a bearing in the lower arm in the line of draft, a forwardly-projecting inturned hook carried by each draw-head and so disposed as to coöperate with the pin of the opposite head, a bar mounted to slide transversely to the line of draft, an arm rigidly fixed to the bar, a second arm pivoted to one of the draw-heads and in pivotal engagement with the bar, such arms being adapted each to engage one of the pins to swing it when moved by the slide-bar, substantially as described and for the purpose set forth.

572,955. COMBINED HEATER AND PURIFIER. JAMES BONAR, Pittsburg, Pa. Filed Oct. 4, 1895. Serial No. 564,635. (No model.)



Claim.—1. In a device of the character described, a casing having suitable connections, a plate near the top of the casing provided with a flange or upwardly-projecting portion and settling-pans having flanges, as and for the purpose described.

2. In a device of the character described, a casing having suitable connections, a plate near the top of the casing provided with a flange or upwardly-projecting portion settling-pans having annular flanges and means for controlling the flow of water, as and for the purpose described.

3. In combination with an apparatus such as described, the pipe 27, in communication with the boiler and with the top of the apparatus and a three-way cock connected to said pipe whereby live steam may be introduced into the top of the heater and dangerous gases withdrawn from the same, as described.

4. In an apparatus such as described, the plate 13, suspending the settling-pans having an annular flange 13′ or other means for confining the flow of water over the surface of the same, as and for the purpose set forth.

572,956. PROCESS OF MOUNTING CHROMOS. PETER L. BONNEY, Hyde Park, Mass. Filed Aug. 5, 1896. Serial No. 601,713. (No model.)

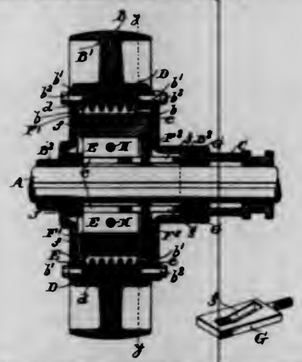


Claim.—The process of mounting chromos and other pictures on glass consisting of applying to the glass a coat of cement at a temperature of about 80° Fahrenheit, moistening the back of the picture with cold water, laying the dry front face of the picture on the cemented face of the glass and smoothing it down, substantially as described.

572,957. FRICTION-CLUTCH. SAMUEL BROWN, Philadelphia, Pa. Filed Oct. 29, 1895. Serial No. 567,233. (No model.)

Claim.—1. In a friction-clutch, the combination of a friction-ring carried by the driven pulley and provided with an internal grooved

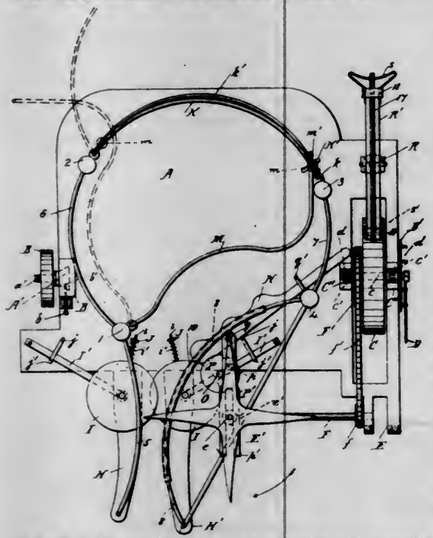
face, a sectional friction-plate having its periphery provided with grooves corresponding with the grooves of the friction-ring and composed of members E', E', loosely connected by bolts H, intermediate springs I acting on the sections of the friction-plate tending to hold the members contracted, cam-pieces F interposed between the members of the friction-plate, and means acting on said cam-pieces to turn them and expand the sections of the friction-plate.



2. In a friction-clutch, the combination of a friction-ring carried by the driven pulley and provided with an internal grooved face, a sectional friction-plate having its periphery provided with grooves corresponding with the grooves of the friction-ring and composed of members E', E', loosely connected by bolts H, intermediate springs I acting on the sections of the friction-plate tending to hold the members contracted, cam-pieces F interposed between the members of the friction-plate, arms carried by the cam-pieces, and slides having cam slots or grooves engaging the arms of the cam-pieces and adapted when moved to actuate the cam-pieces and force the sections of the friction-plate apart.

3. In a friction-clutch, the combination of a friction-ring carried by the driven pulley, a sectional friction-plate composed of two members E', E', cam-pieces F arranged between the members and adapted when turned to force the two members E', E', outward, arms carried by the pieces F, and slides having cam slots or grooves engaging the arms of the pieces F and adapted when moved to actuate them and rock the cam-pieces F.

572,958. CORN-HARVESTER. BENJAMIN BUCHER, White House, Ohio. Filed Feb. 8, 1896. Serial No. 578,577. (No model.)



Claim.—1. In a corn harvester, the combination, with a traveling platform, of rearwardly and outwardly diverging arms having their rear ends pivoted to the platform, disk cutters journaled on pins at the free ends of the said arms, and springs operating to press forward the free ends of the said arms, substantially as set forth.

2. In a corn-harvester, the combination, with a traveling platform, of rearwardly and outwardly diverging arms having their rear ends pivoted to the platform, guide-rods connected to the said arms, eyes for the said guide-rods to slide in, springs encircling the guide-rods and operating to press forward the free ends of the said arms, stops for limiting the motion of the arms, and disk cutters journaled on pins at the free ends of the said arms, substantially as set forth.

3. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of reciprocatory packing mechanism operating to press the fodder in successive layers against the shocker-gate, and means for opposing a frictional resistance to the movement of the shocker-gate, substantially as set forth.

4. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of a discharge-gate provided with a yielding curved bar engaging with the free end of the shocker-gate and opposing a frictional resistance to its motion, and packing mechanism operating to press the fodder against the shocker-gate, substantially as set forth.

5. In a corn-harvester, the combination, with a supporting-post, and a shocker-gate hinged at one end to the said post; of a discharge-gate provided with a yielding curved bar engaging with the free end of the shocker-gate and opposing a frictional resistance to its motion, means for adjusting the said curved bar and packing mechanism operating to press the fodder against the shocker-gate, substantially as set forth.

6. In a corn-harvester, the combination, with the packer-arms, of a vertical shaft, a packer-frame supported from the said shaft, a crank-shaft carried by the free end of the said frame, driving devices coupling the two said shafts, means for operating the packer-arms from the crank-shaft, and means for adjusting the position of the free end of the said frame, substantially as set forth.

7. In a corn-harvester, the combination, with the shaft *e*, and the packer-frame carried by it; of a crank-shaft journaled in the free end of the said frame, packer-arms, connecting-rods pivoted at one end to the packer-arms, operatively connected with the said crank-shaft, and provided with forks at their other ends engaging with the shaft *e*; and driving devices, coupling the two said shafts, substantially as set forth.

8. In a corn-harvester, the combination, with a traveling platform, of a stubble cutter provided with cutting devices and runners, and flexible connections attaching the stubble-cutter to the machine below the said platform and permitting it to have a limited movement in every direction substantially as set forth.

9. In a corn-harvester, the combination, with a traveling platform; of a stubble-cutter comprising two runners coupled together at their rear ends, and cutting-disks journaled on pins projecting from the runners; and chains connecting the front ends of the runners with the machine below the platform, substantially as set forth.

572,959. PUMP. MATTHEW T. CHAPMAN and MARK C. CHAPMAN, Aurora, Ill. Filed Aug. 8, 1891. Serial No. 402,164. (No model.)

Claim.—1. In a pump, the combination with a well-tube, of a pump-cylinder within said tube, pumping mechanism in said cylinder, a tube 8, flexible packing 23, and nuts 22 and 24 at opposite sides of said packing, said nuts being screwed upon said tube 8, and said nut 24 being screwed into the upper end of the pump-cylinder, substantially as described.

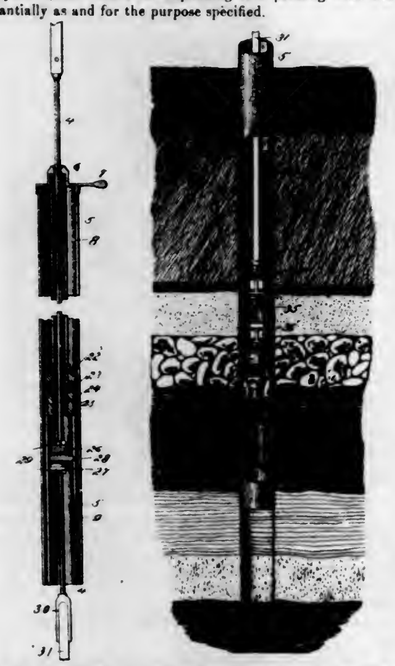
2. In a pump, the combination with a well-tube, of a pump-cylinder within said tube, pumping mechanism in said cylinder, a tube 8, packing in said well-tube above said pump cylinder, a rotatable cap upon the upper end of the well-tube and secured to said tube for rotating the latter, and means for compressing the packing by rotating the tube 8, substantially as described.

3. In a pump, the combination with a well-tube, of a pump-cylinder within said tube, pumping mechanism in said cylinder, a tube 8, flexible packing 23, nuts 22 and 24 at opposite sides of said packing, said nuts being screwed upon said tube 8, and said nut 24 being screwed into the upper end of the pump cylinder, and springs or stops 25, substantially as described.

4. In a pump, the combination with a pump-case, and a well-tube 5 extending above the pump-case and having a rotatable cap 6, of a pump-cylinder within said tube, pumping mechanism in said cylinder, a tube 8 connected to said cap 6 whereby said tube may be rotated, removable packing in said well-tube above said pump-cylinder, and means for compressing the packing by rotating the tube 8, substantially as described.

5. In a pump, the combination with a well-tube, a pump-tube therein, and pumping mechanism, of a support for said pump-tube, a grip-cylinder below said support, packing between said support and grip-cylinder, and means for expanding said packing, substantially as described.

6. In a pump, the combination with a well-tube, a pump-tube therein, and pumping mechanism, of a support for said pump-tube, a grip-cylinder below said support, packing between said support and grip-cylinder, and means for expanding said packing from below, substantially as and for the purpose specified.



7. In a pump, the combination with a well-tube, a pump-tube therein, and pumping mechanism, of a support for said pump-tube, a grip-cylinder below said support, packing between said support and grip-cylinder, means for expanding said packing, and a valve in said grip-cylinder, substantially as described.

8. In a pump, the combination with a well-tube, a pump-tube therein, and pumping mechanism, of a support for said pump-tube, a grip-cylinder below said support, packing between said support and grip-cylinder, said grip-cylinder being adapted to be screwed upon said support to expand the packing, substantially as described.

9. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, and wedges between said wedge-shaped tube and the well-tube, substantially as described.

10. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, and means for exerting pressure upon said wedges in an upward direction for expanding them against the well-tube, substantially as described.

11. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, and a grip-cylinder below said wedges, said grip-cylinder and wedge-shaped tube being adjustably connected, whereby upward pressure may be exerted upon said wedges, substantially as described.

12. The combination with a well-tube, of a pump-cylinder therein, a wedge shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, a grip-cylinder below said wedges, said grip-cylinder and wedge-shaped tube being adjustably connected, whereby upward pressure may be exerted upon said wedges, and packing between said grip-cylinder and the wedge-shaped tube, substantially as described.

13. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, means for exerting pressure upon said wedges in an upward direction for expanding them against the well-tube, washers 42 and 44, and packing 43 between said washers, substantially as described.

14. The combination with a well-tube, of a pump-cylinder therein, a wedge shaped tube below and supporting said pump-cylinder, wedges between said wedge shaped tube and the well-tube, and springs 49 connected to said pump cylinder and projecting between said wedges and the well-tube, substantially as described.

15. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, and a grip-cylinder below said wedges, said grip-cylinder and wedge-shaped tube being adjustably connected, whereby upward pressure may be exerted upon said wedges, and springs 49 connected to said pump cylinder and projecting between said wedges and the well-tube, substantially as described.

16. The combination of the grip-cylinder provided with the transverse bar 46, the valve 47 arranged in the bottom of the grip-cylinder, a threaded tube connected to the upper end of the grip-cylinder and provided with a wedge shaped upper end, a packing 43 arranged upon said tube, collars 42 44, above and below said packing, wedges 41 disposed between the wedge-shaped end of said tube and an exterior tube 5, and a tube 32 arranged within the tube 5 and attached to the tube 40; whereby the parts are firmly supported in the exterior tube and the column of lifted water given a double support by the check-valves 36 and 47, substantially as specified.

17. In a force-pump, the combination of the tube 5, having the upper non-leaking packing 23, and tubes 8 and 9, pump-rod 4, 31, with the upper working piston 28 and lower working piston 34, having the packing 35 and check-valve 36, tube or working barrel 32, supported upon or by the wedges 41, and the grip-cylinder 45, whereby the working parts, the packings, and check-valve supports may all be placed within the tube or well through the top of the pump without disturbing the exterior tube, substantially as set forth.

18. The combination with a well-tube, of a pump-cylinder therein, a wedge-shaped tube below and supporting said pump-cylinder, wedges between said wedge-shaped tube and the well-tube, a grip-cylinder below said wedges, said grip-cylinder being screwed upon the lower end of said wedge-shaped tube, whereby upward pressure may be exerted upon said wedges, substantially as described.

19. The combination with a well-tube 5, of a vertically-adjustable cylinder 9 arranged therein, a nut 24 screwed into the upper end of the cylinder 9, a tube 8 screwed into said nut, a packing 23 arranged over said nut, a nut 22 screwed on the tube 8 over said packing, a pump-rod passing through the tube 8, and means for rotating said tube 8, whereby the packing may be compressed to hold the cylinder in place and prevent the passage of water therepast or be released to permit the removal of the parts, substantially as described.

20. The combination with a well-tube 5, of a cylinder 9 arranged in the upper portion and a tube 32 arranged in the lower portion thereof, a pump-rod 4 31, a piston 28 arranged in the cylinder 9 and carried by the pump-rod 4, a valved piston 34 arranged in the tube 32 and fixed on the pump-rod 31, packing attached to the upper end of the cylinder 9, and means for expanding said packing and for removing the same from above to permit of the removal of the working pistons, substantially as described.

21. In a pump, the combination with a tube 5 forming the wall of the well, an adjustable check-valve in said tube, a lower piston, a cylinder 32 in which said lower piston moves, a wedge-shaped tube supporting said cylinder 32, wedges supporting said wedge-shaped tube, a grip-cylinder screwed to said wedge-shaped tube, and packing between said grip-cylinder and the said wedges, of a cylinder 9, a piston in said cylinder 9, said cylinder and piston being adjustable in the well-tube 5, and removable packing at the upper end of said tube 9, whereby all the pumping mechanism may be inserted or removed from the well without removing the parts of the pump, substantially as described.

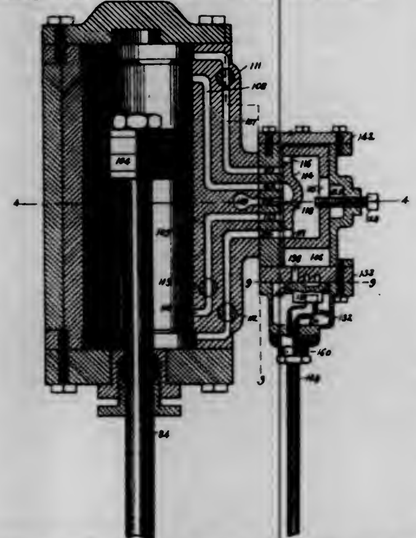
22. The combination with a well-tube, of a wedge-shaped supporting device, wedges between said supporting device and the well-tube, and a device adapted to be screwed upon the lower end of said supporting device to expand the wedges, the whole forming a removable foundation to support the parts of the well-tube above it substantially as described.

23. The combination with a well-tube, of a foundation, a pump-cylinder carried thereby, packing 38 at the lower end of said pump-cylinder, said packing having a band 56, a tube 51 having shoulders 60, a cone 37 adapted to enter and expand said packing 38, a cage 55, and a valve 36 in said cage, substantially as described.

572,960. STEAM-ENGINE. MATTHEW T. CHAPMAN and MARK C. CHAPMAN, Aurora, Ill. Filed July 29, 1895. Serial No. 557,465. (No model.)

Claim.—1. In a steam-engine, the combination with a cylinder and piston, of a valve-chamber, passages affording communication between said valve-chamber and said cylinder, a cylindrical valve in said valve-chamber, said valve having a port for the admission of steam thereinto and ports opposite said first mentioned port for the admission of steam to said passages, and means for controlling the movement of said valve in said valve-chamber for controlling the admission of steam to said passages, substantially as described.

2. In a steam engine in combination with a cylinder and piston, a valve-chamber 106, passages affording communication between said valve-chamber and said cylinder, a cylindrical slide-valve 114 in said valve-chamber, said slide-valve having a port 115 at one side of the valve for admission of steam thereto, and ports 116, 117 and passage 118 in the side of the valve opposite the port 115 for the admission of steam to said passages, passages for conducting steam from said valve to said cylinder, a passage for admitting steam into said cylindrical valve, a bolt 128 projecting into said port 115 and means for controlling the movement of said valve in said valve-chamber.



3. The combination with a cylinder and piston, of a valve-chamber communicating therewith, a valve in said chamber, said chamber having longitudinal passages in its walls to operate said valve, and transversely-movable auxiliary-valve mechanism at one end of said valve-chamber for controlling the admission of steam into said valve-chamber at its ends, substantially as described.

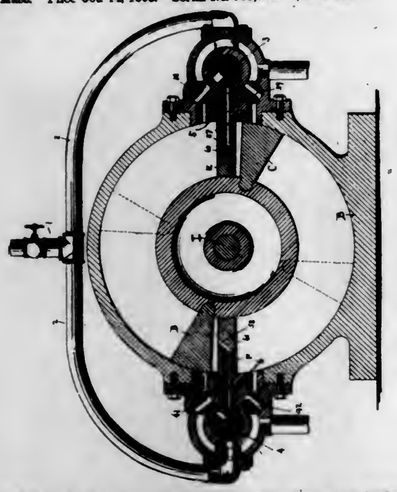
4. The combination with a cylinder and piston, of a valve-chamber 106, passages affording communication between said valve-chamber and said cylinder, a cylindrical slide-valve 114 in said valve-chamber, said slide-valve having ports 115 116 117 and passage 118, passages for conducting steam from said valve to said cylinder, a passage for admitting steam into said cylindrical valve, means for controlling the movement of said valve in said valve-chamber, a transversely-movable slide-valve 130, valve-chamber 131, and means for moving said slide-valve 130 to control the admission of steam into said valve-chamber 106 above or below said cylindrical valve, substantially as described.

5. The combination with a cylinder and piston, of a valve-chamber, passages making communication between said valve-chamber and said cylinder, a cylindrical slide-valve in said chamber having ports 115, 116, 117 and 118, passages for conducting steam from said valve to said cylinder, a passage for admitting steam into said cylindrical valve, means for controlling the movement of said valve in said chamber, a transversely-movable slide-valve 130, and means for moving said slide-valve to admit steam to the cylindrical valve, substantially as described.

6. The combination with a cylinder and piston, of a valve-chamber 106, passages affording communication between said valve-chamber and said cylinder, a cylindrical slide-valve 114 in said valve-chamber, said slide-valve having ports 115 116 117 and passage 118, passages for conducting steam from said valve to said cylinder, a passage for admitting steam into said cylindrical valve, means for controlling the movement of said valve in said valve-chamber, a transversely-movable slide-valve 130, valve-chamber 131, crank-shaft 148 connected to said slide-valve 130, said shaft having cams 154 155, a cross-head connected to said piston, and a roller 153 carried by said cross-head, said roller being adapted to engage said cams, substantially as described.

7. The combination with a cylinder and piston, of a valve-chamber communicating therewith, a valve in said valve-chamber, passages for conducting steam into the ends of said valve-chamber, and a transversely-movable auxiliary valve arranged at one end of the valve-chamber for controlling the admission of steam into said valve-chamber at its ends, substantially as described.

572,961. ROTARY ENGINE. MERRILL E. CLARK, Worcester, Mass. Filed Oct. 14, 1895. Serial No. 565,580. (No model.)



Claim.—1. In a rotary engine, the combination of a cylinder and piston and disk and eccentric attached to the main shaft, said disk being provided with a cam-path and said eccentric being operatively connected with suitable cut-off mechanism and an abutment provided with a port through which the fluid may be conveyed to the piston, and connecting and operating mechanism intermediate said disk and said abutment, and suitable valve mechanism and means for operating the same, whereby the abutment may be withdrawn from the path of the piston and returned to its initial position substantially as described.

2. In a rotary engine, the combination of a cylinder and two pistons, secured on opposite sides to the piston-hub, and disk and eccentric attached to the main shaft, said disk being provided with a cam-path, and said eccentric being operatively connected with suitable cut-off mechanism, and two abutments provided with ports, with outlets on opposite faces of said abutments through which the fluid may be conveyed to the pistons, and connecting and operating mechanism intermediate said disk and said abutment, and suitable valve mechanism, and means for operating the same, whereby the abutments may be withdrawn from the path of the revolving pistons, and returned to their initial positions, and the fluid cut off at any desired part of the stroke, and the engine reversed, substantially as described.

3. A rotary engine, comprising the following elements, in combination: a cylinder, two rotary inlet-valves supplied with suitable ports, intermediate rotary cut-off valves and suitable exhaust ports, two pistons, secured on opposite sides to the piston-hub, two abutments provided with ports, having outlets upon opposite faces of said abutments, a disk attached to the main shaft, provided with a cam-path and mechanism for operatively connecting said disk with said abutments, an eccentric attached to said main shaft, operatively connected with the governor, suitable valve mechanism and means for operating the same, substantially as described.

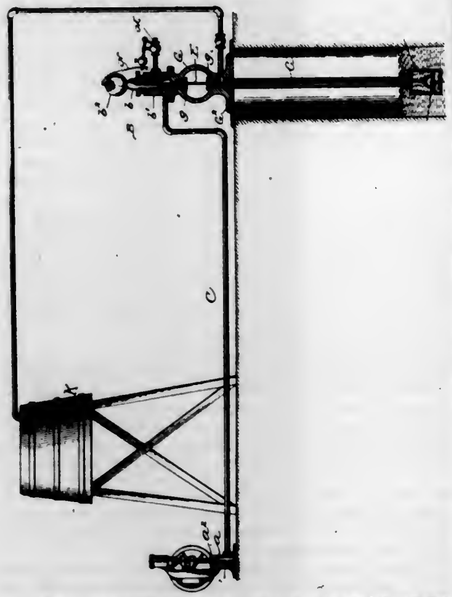
4. In a rotary engine, the combination of a cylinder, provided with a suitable pocket, within which the abutment may be withdrawn, a piston, a cam upon the main shaft, an abutment adapted to receive oscillatory motion and provided with a main port, which is closed when the abutment is within the pocket, and an opening connecting its outer face and the main port through which a supply of fluid may be admitted, when the abutment is within the pocket, and a second opening between said main port and said pocket, and connecting and operating mechanism intermediate said cam and said abutment, whereby the abutment may be withdrawn from the path of the piston and returned to its initial position, substantially as described.

5. In a rotary engine, the combination of a cylinder provided with a suitable pocket, within which the abutment may be withdrawn, a wedge-shaped piston, an abutment pivotally secured at one end and adapted to receive oscillatory motion, and provided with a main port which is closed when the abutment is within the pocket, and an opening connecting its outer face and the main port, through which a supply of fluid may be admitted when the abutment is within the pocket, and a second opening between said main port and said pocket, whereby the piston, as it revolves, may push the abutment out of the piston-path, and the abutment may be returned to its initial position, substantially as described.

6. In a rotary engine, the combination of a cylinder provided with a suitable pocket within which the abutment may be withdrawn, a wedge-shaped piston, an abutment pivotally secured at one end and adapted to receive oscillatory motion and provided with a main port, which is closed when the abutment is within the pocket, and an opening connecting its outer face and the main port, through which a supply of fluid may be admitted when the abutment is within the pocket, and a second opening between said main port and said recess, and means for holding the abutment out of frictional contact with the piston-hub, whereby the piston, as it revolves, may push the abutment out of the piston-path, and the abutment may be returned to its initial position, without retarding the motion of the piston-hub, substantially as described.

7. In a rotary engine the combination of a cylinder provided with a suitable pocket within which the abutment may be withdrawn, a wedge-shaped piston, an abutment, pivotally secured at one end, and adapted to receive oscillatory motion, and provided with a main port which is closed when the abutment is within the pocket, and an opening connecting its outer face and the main port, through which a supply of fluid may be admitted, when the abutment is within the pocket, and a second opening between said main port and said pocket, the said abutment being also provided with a shoulder adapted to find a bearing on a recess in the side of the cylinder, whereby the piston, as it revolves, may push the abutment out of the piston-path, and the abutment may be returned to its initial position, without retarding the motion of the piston-hub, substantially as described.

572,962. PUMP. WILLIAM CLARKSON, Cleburne, Tex. Filed Mar. 4, 1896. Serial No. 581,771. (No model.)

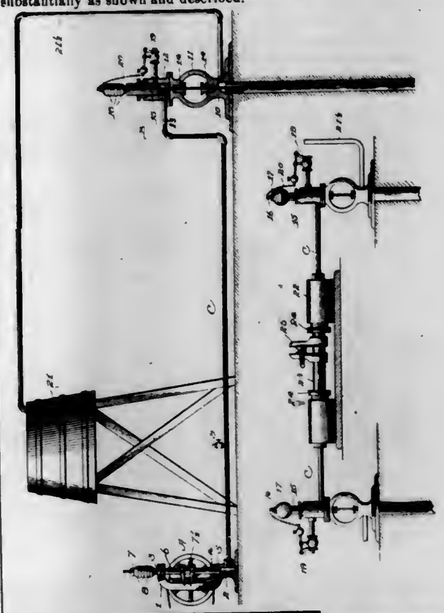


Claim.—In a pump having a driving-ram and pumping-ram, connected by a pressure-pipe, the combination of the upright cylinder *b* open at its upper end and provided with a safety-valve, a vertically-acting plunger entering the open end of said cylinder and projecting above the same, means for connecting said safety-valve and the projecting end of said plunger, and a pump or sucker rod attached to said plunger.

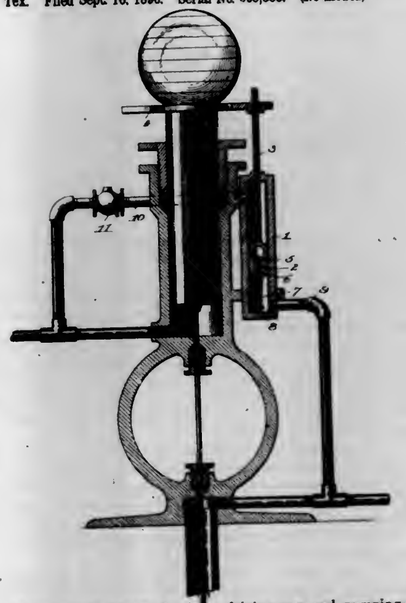
572,963. HYDRAULIC PUMP. WILLIAM CLARKSON, Cleburne, Tex. Filed May 13, 1896. Serial No 591,209. (No model.)

Claim.—1. In a pumping apparatus the combination with a cylinder and adjustably-weighted plunger working therein and connected to a pumping-piston, of a second cylinder and an adjustably-weighted plunger working therein, a connection containing a liquid column between the fluid-spaces of said cylinders such that said weighted plungers and their connected parts may counterbalance each other, and devices for applying pressure to said liquid column for lifting the piston actuating plunger, substantially as described.

2. A hydraulic pump consisting of two cylinders arranged in horizontal alinement and having a horizontal plunger between them common to both, separate pipes connecting each of said cylinders with an upright cylinder provided with a plunger having detachable weights and said weighted plungers adapted to counterbalance each other through the medium of a liquid column contained in said pipes and cylinders and bearing upon opposite ends of said horizontal plunger, substantially as shown and described.



572,964. HYDRAULIC PUMP. WILLIAM CLARKSON, Cleburne, Tex. Filed Sept. 10, 1896. Serial No. 605,355. (No model.)

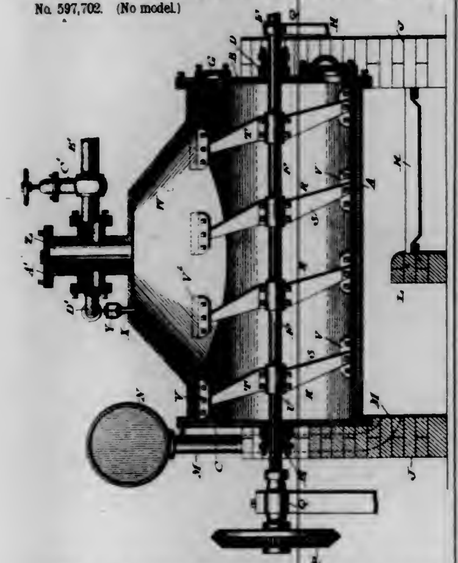


Claim.—1. In a pump having a driving-ram and pumping-ram connected by a pressure-pipe, the combination with the pumping ram having a vertically-acting plunger of a feed-pump for the pressure-pipe having a vertically-acting plunger or piston connected to and operated by said pumping-ram plunger, a connection between the supply-pipe or water tank and said feed-pump, a connection between

said pressure-pipe and feed-pump, and means for automatically operating said feed-pump by said pumping-ram plunger to supply waste or leakage in the pressure-pipe, substantially as shown and described.

2. In a compound pump, the combination with a pumping-ram having a gravitating plunger actuated by water under pressure, of a feed pump for the pressure-pipe having a piston connected to and operated by the pumping-ram plunger, a valve seated in said piston having a depending stem and a spring mounted upon said stem which normally retains said valve in its seat, a pipe connecting the lower end of said feed-pump with the supply-pipe, and a pipe connecting the upper end of said pump with the pressure-pipe; substantially as shown and described.

572,965. APPARATUS FOR MAKING FERTILIZERS. HERBERT F. COURTNEY and FREDERICK SCHWARTZ, Philadelphia, Pa., assignors of one-third to Jesse B. Kimes, same place. Filed July 1, 1896. Serial No. 597,702. (No model.)



Claim.—1. In an apparatus of the character named, a cylinder, a shaft rotatably mounted therein, means for heating said cylinder, paddles mounted on said shaft, said paddles having their ends out of vertical alinement with each other, and being mounted in staggered order upon said shaft, an inlet-passage for the introduction of night-soil to the cylinder, means for exhausting the gases and vapors evolved from said cylinder, and means for introducing oil of vitriol into the latter.

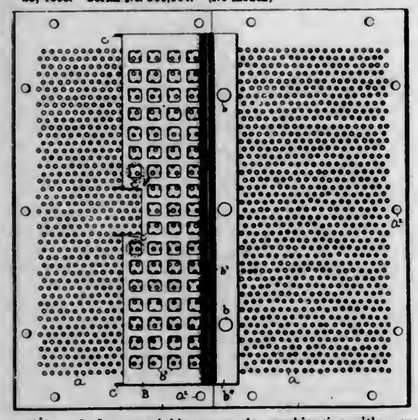
2. In an apparatus of the character named, a stationary cylinder having in the upper central portion, an extension W, a rotatable shaft mounted in the ends of said cylinder and provided with paddles thereon, the inlet-passage Z leading into said extension, the cap A′ for said inlet-pipe, the inlet-pipe X with valve Y, and the exhaust-pipe B′ leading from said inlet-passage Z.

3. In an apparatus of the character named, a stationary cylinder having an extension W in its upper central portion, the rotatable shaft F with the blades S, T thereon, the inlet-passage Z leading into said extension W, the inlet-pipe X, the outer exhaust-pipe B′ leading from said passage Z and having the valve C′ therein and the gas-escape pipe D′ leading from said passage.

4. In an apparatus of the character described, a cylinder, a shaft rotatably mounted therein, paddles mounted on said shaft, said paddles being made in sections and having their ends out of vertical alinement with each other and being mounted in staggered order upon said shaft, means for heating the cylinder, a valve for introducing oil of vitriol to the interior of the cylinder, and means for exhausting the gases or vapors evolved from said cylinder.

5. In an apparatus of the character named, a shaft rotatably mounted therein, paddles mounted on said shaft and having scrapers attached to their heads, said paddles being made in sections and having their ends out of vertical alinement with each other, and being mounted in staggered order upon said shaft, means for heating the cylinder, a valve for introducing oil of vitriol to the interior of said cylinder, and means for exhausting the gases or vapors evolved from said cylinder.

572,966. SCREEN. GEORGE W. CROSS, Pittston, Pa. Filed Nov. 23, 1895. Serial No. 569,901. (No model.)



Claim.—1. In a revoluble screen, the combination with a screening-surface, of a tumbler located in the interior of the screen and revolving therewith, said tumbler consisting of a perforate plate or sheet arranged substantially parallel with the screening-surface and extending over only a portion thereof, and having an inclined forward edge by which the tumbler is secured in place and up which the material will be moved to the upper perforate surface of the tumbler, substantially as and for the purposes set forth.

2. In a revoluble screen, the combination with a screening-surface, of a tumbler located in the interior of the screen and revolving therewith, said tumbler consisting of a plate or sheet having perforations of larger size than those of the screening-surface, and arranged substantially parallel with the screening-surface and extending over only a portion thereof, and having an inclined forward edge by which the tumbler is secured in place and up which the material will be moved to the upper perforate surface of the tumbler, substantially as and for the purposes set forth.

3. In a revoluble screen, the combination with a screening surface, of a tumbler located in the interior of the screen at the point between two adjacent segments, said tumbler consisting of a perforate plate or sheet arranged substantially parallel with the screening-surface and extending over only a portion thereof, and having an inclined forward edge by which the tumbler is secured in place by the bolts or rivets for holding said adjacent segments together, substantially as and for the purposes set forth.

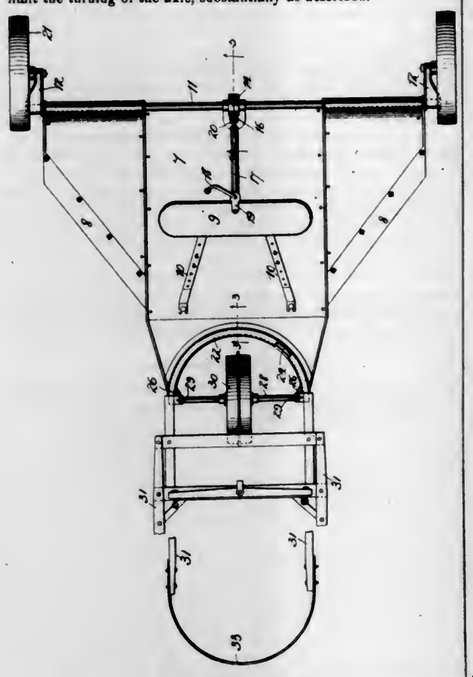
4. In a revoluble screen, the combination with a screening-surface, of a tumbler located in the interior of the screen and revolving therewith, said tumbler consisting of a perforate plate or sheet arranged substantially parallel with the screening-surface and extending over only a portion thereof, having an inclined forward edge by which the tumbler is secured in place, and having downturned lugs or ears for supporting its after edge, substantially as set forth.

5. In a revoluble screen, the combination with screen-segments, of a perforate tumbler having one edge secured to the margin of a segment adjacent to the joint between said segment and the next adjoining segment, integral downturned lips on said tumbler for maintaining the opposite edge of the same in position relatively to the screening-surface, and bolts passing through said screening-surface and the tumbler adjacent to said downturned lips, substantially as described.

572,967. CORN-HARVESTER. JOSEPH DAIN, Jr., Carrollton, Mo. Filed Feb. 21, 1895. Serial No. 539,177. (No model.)

Claim.—1. In a corn-harvester, the combination of a platform provided with cutting-knives on its rear outer sides, a semicircular slide-box mounted on the forward portion of said platform and having a slot in its front edge, a semicircular sliding bar arranged to move freely within said slide-box, vertical supports secured to the ends of said sliding bar, an axle adjustably journaled in said supports, and one or more wheels mounted on said axle, substantially as described.

2. In a corn-harvester, the combination of the platform supported on wheels, the cutting-knives mounted on the rear outer sides of the platform, a semicircular slide-box mounted on the forward portion of the platform and having in its front edge a slot extended from end to end of said box, a semicircular sliding bar arranged to move freely within said slide-box, vertical supports secured to the ends of said sliding bar, an axle for the forward wheel or wheels adjustably mounted in said supports, and a stop located centrally in the slide-box to limit the turning of the axle, substantially as described.



572,968. COMPOSITION FOR GLASS. KARL H. DANGLER, Steubenville, Ohio. Filed Feb. 10, 1896. Serial No. 578,785. (No specimens.)

Claim.—A composition for glass-pots and the like, consisting of three hundred and eighty two parts clay, two hundred and sixty parts kaolin, two hundred and eighty-five parts quartz, forty parts ground white sandstone, twenty-two parts calcite, six parts flint, and five parts common salt, as specified.

572,969. COMPOSITION FOR FIRE-BRICK. KARL H. DANGLER, Steubenville, Ohio. Filed Feb. 10, 1896. Serial No. 578,786. (No specimens.)

Claim.—A composition for fire-bricks and the like, consisting of six hundred parts clay, three hundred parts ground white sandstone, forty parts crystal sand, twenty-five parts fluor-spar, and thirty-five parts calc-spar, as specified.

572,970. VEHICLE-STARTER. CHARLES DIETZ, Chicago, Ill. Filed May 4, 1895. Serial No. 548,087. (No model.)

Claim.—1. The combination with a vehicle and its trucks, of the sliding reach connections provided with stops, the ratchet-wheels upon the axles and the operating pawls and levers operated by the sliding reach connections to move the ratchet-wheels, substantially as shown and described.

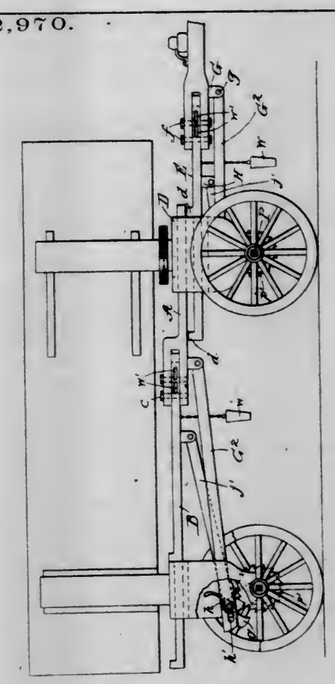
2. The combination with the vehicle and trucks, of the sliding reach connections united as described and provided with front and rear stops, the tongue, the levers connected with the reach connections and carrying pins, the pawls oppositely arranged and the ratchet-wheels, all arranged substantially as shown and described.

3. The combination in a vehicle of a sectional reach and sliding draw-bar having loose connection with the tongue, of oppositely-faced ratchet-wheels on the axle, and levers and pawls connected with the tongue and draw-bar for transferring the initial strain to the periphery of the ratchet-wheels in starting or backing, substantially as described.

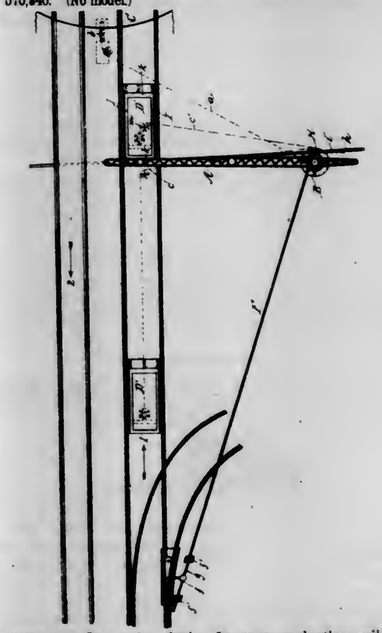
4. The combination with the running-gear of a vehicle, of a slotted draw-bar, bolts for securing said draw-bar, and a removable wedge adapted for insertion into the slots of the draw-bar, to lock the latter against longitudinal movement, substantially as shown and described.

5. The combination of sectional reach, A, B, draw-bar, E, having stops *d*, *d*, and starting-gear, substantially as described.

572,970.



572,971. SAFETY APPARATUS FOR STREET OR OTHER RAILWAYS. FRANK DOWD, Cleveland, Ohio. Filed Dec. 2, 1895. Serial No. 570,840. (No model.)



Claim.—1. In a safety device for street and other railways, a swinging gate, the main or pivotal post of which is provided with mechanism to which is connected means for operating buffers located respectively in advance and in the rear of the gate proper, substantially as shown and described.

2. A safety device for street and other railways, comprising a swinging gate, a buffer located immediately in the rear of said gate and serving to act as a stop for the same when the said gate is in a closed position, and a buffer located in advance of the gate, substantially as shown and described.

3. A safety apparatus for street and other railways, comprising a swinging gate, mechanism connected to and leading from the gate-post for operating a spring-bolt, mechanism leading to a buffer in the rear of said gate to lift said buffer, and lifting means leading to a buffer in advance of said gate, substantially as shown and described.

4. The combination with a safety apparatus for street-railways, of a swinging gate the main post of which is provided with a cog-wheel, a rod gearing with said cog-wheel and leading to a switch-point, whereby said switch-point is operated by the swinging movement of the gate, substantially as shown and described.

5. In combination with a safety apparatus for street and other railways, of a safety-gate, a rod leading therefrom to a switch-point, said rod being provided with an inclined portion at or near its other end, a bell-crank lever connected to said switch-point, the long arm of which contacts with the inclined portion of said rod, whereby when the rod is reciprocated by the swinging movement of the gate the switch-point will be manipulated, substantially as shown and described.

6. A safety apparatus for street and other railways, comprising a swinging gate, a pulley secured to the main or pivotal post thereof, means connected to said pulley for operating a spring-bolt, means also connected to said pulley for lifting a buffer in the rear of the gate, and mechanism also connected to said pulley for lifting a buffer in advance of the gate, substantially as shown and described.

7. A safety device for street and other railways, comprising a swinging gate, the lower portion of the main post of which is provided with a pulley, connections with said pulley, whereby a buffer in the front and rear of said gate, and a spring-bolt are simultaneously operated, substantially as shown and described.

8. A safety device for street and other railways, comprising a swinging gate, mechanism secured to the lower portion of the main post of said gate, and means connected with said mechanism whereby a spring-bolt is operated and two buffers lifted, one buffer in advance and the other in the rear of the gate, all substantially simultaneously by a partial rotation of the gate, substantially as described.

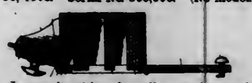
9. A safety apparatus for street-railways, comprising a swinging gate, buffers connected therewith, one buffer in advance and the other in the rear of the gate, said buffers normally occupying a position substantially flush with the road-bed but caused to assume an upright or a position above the road-bed by or through the swinging movement of the gate, substantially as decribed.

10. A safety apparatus for street and other railways, comprising a swinging gate, mechanism connected with the main post thereof for operating buffers, one buffer being arranged in advance and the other in the rear of said gate, and mechanism also connected with said post and gate for simultaneously sounding an alarm and displaying danger-signals when the gate shall have assumed the closed position, substantially as described.

11. In an apparatus for street and other railways, a swinging gate, means connecting the main post thereof with one or more buffers, said buffers being provided with a depending yoke portion normally occupying a position below the road bed or surface, substantially as shown and described.

12. An apparatus for street and other railways, comprising a swinging gate, a pivotal post, mechanism secured to the lower portion of said post, and means connecting the lower portion of the post with two buffers, a spring-bolt, and a duplicate gate respectively, substantially as shown and described.

572,972. EDUCATIONAL APPLIANCE. HENRICH ECKHARDT, Toledo, Ohio, assignor of one-half to Henry Bartelt, Cedarburg, Wis. Filed Aug. 30, 1895. Serial No. 560,990. (No model.)

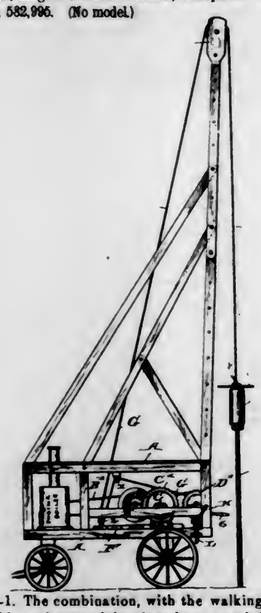


Claim.—1. In an educational appliance, the combination of a case having side extensions projecting above its top, said top provided with a transverse groove, a supporting-plate extending across the top of the case from a medial point of one side extension to a corresponding point of the other extension, said plate being located back of the groove, and adapted to serve as a back support for character-blocks, and a slide of substantially the length of the back supporting-plate, said slide adapted to fit movably within the groove, substantially as described.

2. In an educational appliance, the combination, of a case having side extensions projecting above its top, and provided with a transverse groove extending from one side extension to the other, a supporting-plate extending across the top of the case from a medial point of one of said extensions to a corresponding point of the other extension, said plate being located back of the groove, a slide of substantially the length of the back plate, said slide adapted to fit movably within the groove, and character-blocks adapted to be fitted in the space between the supporting-plate and the slide, and to rest against said supporting-plate, said block being of such length as to extend above the upper edges of the supporting-plate and the slide, whereby they may be readily removed by finger-grasp, substantially as described.

3. In an educational appliance, the combination, of a case having side extensions projecting above its top, said top provided with transverse grooves, extending the length of the top, the outer groove provided with an inwardly-extending lip or tongue, a supporting-plate extending across the top of the case from a medial point of one of said extensions to a corresponding point of the other extension, said plate being located back of the grooves, a slide fitting movably the outer groove, and provided on its face, near its lower end with a longitudinal dovetail groove adapted to receive the projecting lip or tongue of the outer groove, and character-blocks arranged between the slide and the supporting-plate, and resting against the supporting-plate, the lower ends of said blocks fitting the inner groove, substantially as described.

572,973. WELL-DRILLING MACHINE. LORENZO D. ENNES, Lyons, Ind., assignor to Carrie C. Ennes, same place. Filed Mar. 13, 1896. Serial No. 582,996. (No model.)



Claim.—1. The combination, with the walking-beam of a well-drilling machine, of a revolving loosely-mounted frame carried by wheels or cranks and provided with sheaves between which the ends of said walking-beam pass, substantially as shown and described.

2. The combination, in a well-drilling machine, of the walking-beam by which the rope is given its reciprocating movement, and a means for driving said walking-beam consisting of a loosely-mounted frame carried by wheels or cranks and provided with sheaves or rollers which form the contact devices for said walking-beam.

3. The combination, in a well-drilling machine, of the weight-carrying rope, a walking-beam for operating said rope, and mechanism for operating said walking-beam consisting essentially of a loosely-mounted frame carried by wheels or cranks and provided with contact-surfaces bearing upon said walking-beam.

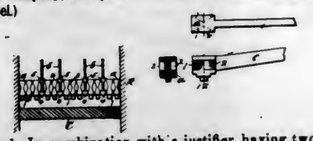
4. The combination, in a well-drilling machine, of the weight-carrying rope, a walking-beam for operating the same, and mechanism for driving said walking-beam consisting of a shaft, a pair of gear-wheels thereon, a loosely-mounted frame hung between said gear-wheels eccentric to the axis of the shaft, rollers carried in said frame which come in immediate contact with the walking-beam, and a second shaft having a corresponding pair of gear-wheels which mesh with the gears carrying the loosely-mounted frame, substantially as shown and described.

5. The combination, in a well-drilling machine, of the walking-beam by which the drill-rod is operated, and a revolving loosely-mounted frame carried by wheels or cranks, and provided with sheaves between which one end of said walking-beam passes, the ends of one or both the shafts of said sheaves being carried by adjustable bearings in said frame, with set-screws for adjusting said frame, substantially as set forth.

6. In a well drilling machine, the combination, of the walking-beam by which the drill-rope is given its reciprocating movement, means for driving said beam consisting of a loosely-mounted frame with suitable bearings therefor and carried by wheels or cranks, and a weight mounted on the same end of said walking-beam to which said drill-rope is connected, substantially as set forth.

7. The combination, in a well-drilling machine, of the weight-carrying rope, the mechanism for operating said rope, the rope-winding drum, a windlass-shaft for winding said drum bearing a spur-wheel, and a second shaft bearing a corresponding spur-wheel engaging therewith, said spur-wheels being formed as shown and described to operate as a continuous but shifting detent, substantially as shown and described.

572,974. MEANS FOR JUSTIFYING TYPE. BEN L. FAIRCHILD, New York, N. Y., assignor, by mesne assignments, to the Mergenthaler Linotype Company, same place. Filed July 31, 1890. Serial No. 360,487. (No model.)



Claim.—1. In combination with a justifier having two inclined surfaces, one in advance of the other, a type having parallel outer surfaces and recessed to cooperate with the justifier substantially as shown.

2. In combination with two type having inclined justifying-surfaces and a justifier adapted to move between said type and provided with a justifying-wedge engaging said surfaces and with a follower-wedge holding the type apart substantially as described.

3. In combination with a composed line of type, the wedge justifier adapted to slide forward through the line in a direction perpendicular to the type-faces.

4. In combination a type having at its side a surface extending from the front backward at an inclination, in combination with a justifier having a correspondingly-inclined surface and moving in a direction perpendicular to the face of the type.

5. In combination with a composed line of type, a justifying device movable through the line in a direction perpendicular to the face of the type and adapted to be protruded at the front substantially as described and shown.

572,975. ICE-CREEPER. DANIEL M. FORSYTH, Franklin, Ind. Filed Feb. 8, 1896. Serial No. 578,595. (No model.)



Claim.—1. A device to prevent a person from slipping on icy surfaces, comprising sole-plates roughened on their lower sides and having lugs or clips at their outer edges, one of the plates having a series of oblong openings at its front end, and the other plate having a stud at its front end of corresponding shape to the said openings and having its edges notched or undercut to make adjustable and pivotal connection with any one of the said series of openings in the manner set forth, and means for drawing the rear ends of the plates together to clamp the said lugs or clips upon the edges of the sole, substantially as specified.

2. An antislipping device to be applied to the sole of a boot or shoe, the same comprising sole-plates having pivotal connection at their front ends and formed with pendent lugs at their rear ends, one of the lugs having a threaded opening, and the other lug having a slot extending through its edge and a recess in its outer side, and a clamp-screw removably fitted in the said slot and having a head to enter the recess of the slotted lug and adapted to screw into the threaded opening of the other lug, substantially as and for the purpose set forth.

3. An antislipping device to be applied to the sole of a boot or shoe, comprising sole-plates having lugs or clips at their outer edges and roughened on their lower sides, a series of oblong openings at the front end of one plate, a stud of oblong form applied or formed on the front end of the opposite plate and having its edges notched or undercut, and adapted to make adjustable and pivotal connection with any one of the said series of oblong openings, pendent lugs at the rear ends of the plates, one lug having a threaded opening, and the other lug a slot and a recess in its outer side, and a clamp-screw adapted to operate in the said threaded opening of the apertured lug and removably fitted to the slotted lug, and having a head to enter the said recess, substantially as and for the purpose described.

572,976. BICYCLE-HUB. WILLIAM R. FOX, Grand Rapids, Mich., assignor to the Fox Machine Company, same place. Filed Nov. 16, 1895. Serial No. 569,168. (No model.)

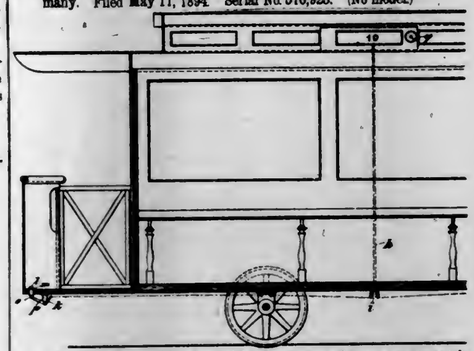


Claim.—1. In combination, the hub having an interior annular flange at one end only, the ball-cup resting against said flange, the ball-cup fitted to the opposite end of the hub, the sleeve interposed between said cups and having its ends abutting centrally against the same, and the balls and cones, substantially as described.

2. In combination, the hub, the ball-cups, the flat plates 9 closing the mouths of the cups, the disks 10 within the ends of the hub, said disks having inwardly-turned flanges bearing against the faces of the disks 9, and forming pockets, felt filling within said pockets and the balls and cones, substantially as described.

3. In combination, the hub having an inwardly-extending flange 3 near one end, the ball cup bearing against said flange, the tube 6 having one end sustained centrally of the hub by said flange and having said end abutting centrally against said ball-cup, an annular disk 7 interposed between the tube and hub near the other end for sustaining said other end, a second ball cup abutting centrally against said other end and the balls and cones, substantially as described.

572,977. STATION-INDICATOR. MAXIMILIAN FÜRST, Berlin, Germany. Filed May 11, 1894. Serial No. 510,923. (No model.)



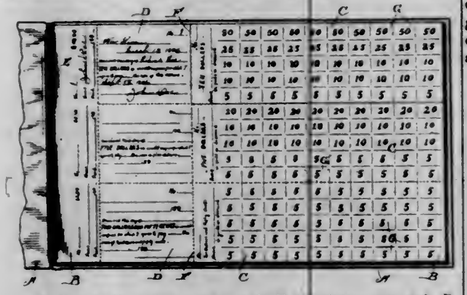
Claim.—The combination with a tram-car of a compartment in the roof thereof a large roller *c* journaled within the compartment, smaller rollers c^3, c^3 also journaled therein, one above the other and adjacent to the inner open end of the compartment, an endless band traveling over said rollers *c*, c^3, c^3, the portion of said band intermediate the rollers c^3 c^3 being adapted to be displayed to the occupants of the car, ratchet-teeth on the roller *c*, a lever *e* pivoted within the compartment, said lever having projecting portions e', e^3, adapted to alternately engage the ratchet-teeth when the lever is tilted, an operating-cord attached to the portion e' of lever *e* and adapted to be operated from a platform of the car, and means for winding the roller *c*.

572,978. CREDIT-COUPON SYSTEM. WILLIAM R. GILLETTE, New Haven, Mich. Filed Apr. 30, 1896. Serial No. 589,793. (No model.)

Claim.—1. In a credit-coupon system, a number of credit-coupons and promissory-note stubs detachably connected together and detachably connected to a permanent stub, all combined in book form in combination with individual cover which holds the detached credit-coupons all combined substantially and for the purposes set forth.

2. In a credit-coupon system, a series of permanent stubs, detachable promissory-note stubs and credit-coupons, bound in book form

substantially as set forth in combination with an individual cover holding the detached credit-coupon, the stubs, promissory-note stubs, credit-coupons and individual covers, having memoranda thereon and spaces for identification, all combined as set forth.

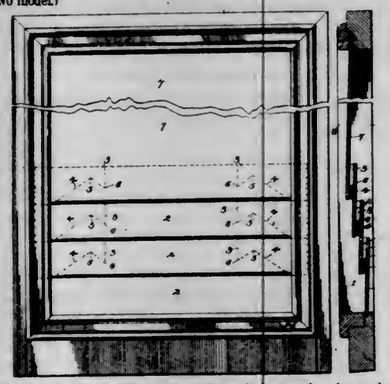


3. In a credit-coupon system, stubs E, promissory-note stubs D, credit-coupons C, in combination with individual covers as H, as set forth.

4. In a credit-coupon system, stubs E and D, credit coupons C, in combination with covers as H, gummed to receive the credit-coupon, as set forth.

5. In a credit-coupons system a book comprising credit-coupon and accompanying stubs, detachably connected in said book in combination with individual covers as H, for carrying the credit-coupon as set forth.

572,979. **CAR-VENTILATING WINDOW.** FRED D. GLOVER and ALBERT H. SMITH, Duluth, Minn. Filed Feb. 11, 1896. Serial No. 578,393. (No model.)



Claim.—1. The combination with a window-sash, of a series of horizontal slats having their edges overlapped and separated, and deflecting-pieces arranged between such lapping edges adjacent to the ends of the slats, substantially as and for the purpose described.

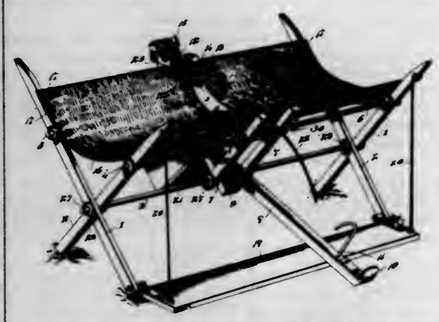
2. The combination with a window-sash, of a series of slats of glass or other transparent material having the edges lapped and separated, and air-deflectors of similar material arranged between the slat edges and adjacent to the ends of the slats, substantially as and for the purpose described.

3. In a window-sash, the combination with the frame of a series of slats having their edges overlapped and separated, and a number of spacing-pieces located between the slats and having their edges inclined to form air-deflectors, substantially as described.

572,980. **FODDER-BINDER.** CHARLES A. GORDON, Scruggs, Mo., assignor of one-half to Charles A. Sullens, same place. Filed Mar. 28, 1896. Serial No. 585,253. (No model.)

Claim.—1. In a fodder-binder, the combination of crossed bars, a longitudinal rod pivotally connecting the bars at their point of crossing, other longitudinal rods connecting the bars near their upper ends, linked connections uniting the longitudinal rods at their ends and intermediate of their ends, a flexible support or apron having connection with the upper ends of the aforesaid bars and a temporary binder, the parts being disposed to admit of the structure folding, substantially in the manner set forth for the purpose described.

2. In a fodder binder, the combination of end pieces composed of crossed bars, a longitudinal rod connecting the end pieces and extending through the said bars at the point of crossing, upper longitudinal rods connecting corresponding bars of the end pieces, connections uniting the upper longitudinal rods at different points in their length to distribute the strain and admit of the structure folding, stay-bars connecting the lower longitudinal rod with the respective upper longitudinal rods, an apron or flexible support secured to the upper ends of the crossed and stay bars and a temporary binder, substantially as and for the purpose set forth.

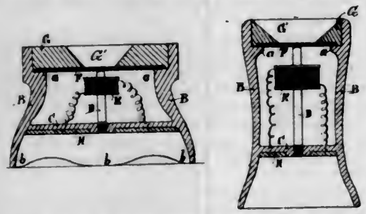


3. In a fodder-binder, the combination of end pieces composed of crossed bars, a longitudinal rod pivotally connecting the bars at the point of crossing, upper longitudinal rods connecting corresponding bars, parallel stay-bars connecting the lower and an upper longitudinal rod, another stay-bar connecting the opposite longitudinal rod with the lower longitudinal rod and coming opposite the space between the parallel stay-bars, a flexible support secured to the upper ends of the crossed and stay bars and having a notch opposite the space between the upper ends of the parallel stay-bars, and a clamp-band adapted to pass through the notch in the support and secured to that portion of the upper longitudinal rod coming between the upper ends of the parallel stay-bars, substantially as set forth.

4. The combination with a folding fodder-binder comprising crossed bars pivotally connected at the point of crossing, of a foot-board having pivotal connection with the lower ends of corresponding crossed bars, and connections between the outer portion of the foot-board and the upper ends of the opposite crossed bars, substantially as set forth for the purpose described.

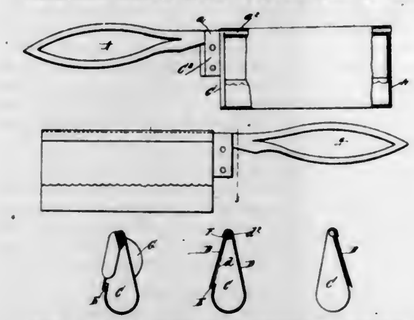
5. The herein-described portable and folding fodder-binder, comprising crossed bars, a longitudinal rod pivotally connecting the crossed bars, upper longitudinal rods connecting corresponding crossed bars, connections uniting the upper rods at different points in their length, parallel stay-bars connecting an upper with the lower longitudinal rod, another stay-bar connecting the opposite with the lower longitudinal rod and coming opposite the space between the parallel stay-bars, a cutter, staple and hook applied to the upper end portion of the latter stay-bar, a spring-holder applied to one of the parallel stay-bars, a twine-box supported by the stay-bar bearing the cutter, a lever having a foot-rest at its outer end and mounted upon the lower longitudinal rod, a clamp-band having connection with that portion of the upper rod coming between the parallel stay-bars, a hook near the outer end of the said lever to engage with the free end of the clamp-band and with the staple near the upper end of the stay-bar bearing the cutter, a flexible support secured to the upper ends of the several bars, a foot-board having pivotal connection with the lower ends of corresponding end bars, and connections between the outer portion of the foot-board and the adjacent upper ends of the crossed bars, substantially as set forth.

572,981. **RESONATOR FOR PIANOS.** FRANÇOIS L. GOULVIN, Valence, France. Filed Apr. 30, 1894. Serial No. 509,545. (No model.)



Claim.—The herein-described device consisting in the combination with the casing provided with supporting-feet, and having an offset *a*, of the bridge-piece C integral with the casing, the rod D screwed to said bridge-piece, a bobbin E upon said rod, the bridge-piece H, the diaphragm F resting upon the shoulder or offset, *a*, the wooden disk G arranged over the diaphragm and provided with an orifice G', all as and for the purpose specified

572,982. **DEVICE FOR SCALING FISH.** HENRY W. GRENNELS, Denver, Colo. Filed Apr. 15, 1896. Serial No. 587,628. (No model.)



Claim.—1. In a fish-scaler, the combination with a handle of a rod or wire secured thereto, a blade connected with said rod or wire, and a casing adapted to be detachably connected with said rod or wire, said casing being provided with a longitudinal opening in one side thereof, over which said blade projects, substantially as shown and described.

2. In a fish-scaler, the combination with a handle, provided with a rod or wire and a plate secured adjacent thereto, of an open-ended casing which is adapted to be connected with said wire or rod, and the end of which is closed by said plate, said casing being provided with an oblong opening in one side thereof, and said handle and said rod or wire being provided with a blade which projects over said opening, substantially as shown and described.

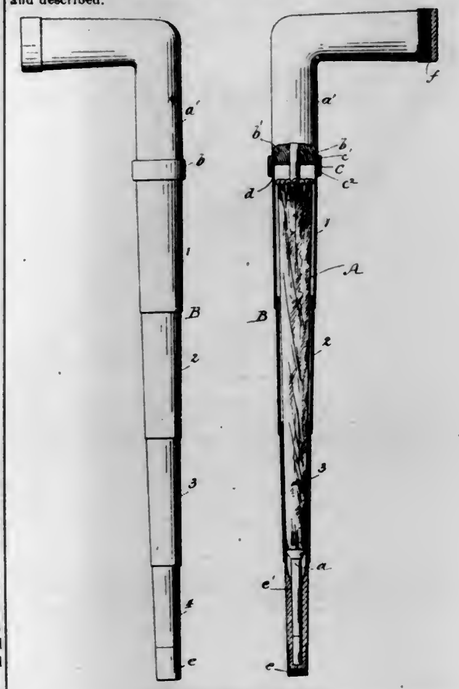
3. In a fish-scaler, the combination with a handle provided with a rod or wire, and a plate secured adjacent thereto, of an open-ended casing which is adapted to be slid onto said wire or rod, and the end of which is closed by said plate, said casing being provided with an oblong opening in one side thereof, and said handle and said rod or wire being provided with a blade which projects over said opening, the edge of said blade being provided with notches or recesses, and said casing at its outer side being elliptical in cross-section, and being so formed as to project below the edge of said blade, substantially as shown and described.

4. In a fish-scaler, the combination with a handle provided with a rod or wire, and a plate secured adjacent thereto, of an open-ended casing, which is adapted to be slid onto said wire or rod, and the end of which is closed by said plate, said casing being provided with an oblong opening in one side thereof, and said handle and said rod or wire being provided with a blade which projects over said opening the edge of said blade being provided with notches or recesses, and said casing at its outer side being elliptical in cross-section, and being so formed as to project below the edge of said blade, and said casing being also provided adjacent to the handle with a projection, or flange, by which it is held in position, substantially as shown and described.

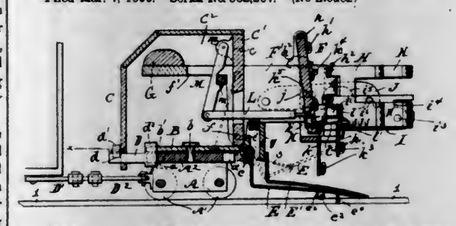
5. In a fish-scaler, the combination with a handle, provided with a wire or rod, as a^2, and a blade as B, secured thereto, of a detachable casing as D, which is provided at one side with a longitudinal bore or passage into which said wire or rod is adapted to be inserted, in one side of which is formed a slot through which said blade passes, said casing being provided with an oblong opening in one side which is covered by said blade, and the side thereof opposite the longitudinal bore or passage, being elliptical in cross section, and being projected below the edge of the blade, substantially as shown and described.

572,983. **COMBINED WALKING-STICK AND UMBRELLA.** EDWARD E. GREENE, New York, N. Y., assignor to himself and Gamaliel R. Christie, same place. Filed Jan. 13, 1896. Serial No. 575,208. (No model.)

Claim.—As a new article of manufacture, a combined walking-stick and umbrella consisting of umbrella A, having a stick *a*, handle *a'*, ring *b* in lower end of handle *a'*, said ring having annular grooves *b'* engaging with flange *c'* of collar C, said collar having an interior thread c^3 engaging with flange *d* in upper section of casing B, having a ferrule *e*, a screw-cap *f* attached to said handle and a socket *c'* in the lower end of the casing B, all operating substantially as shown and described.



572,984. **CAR-FENDER.** DOMENICO GUARINO, New York, N. Y. Filed Mar. 7, 1896. Serial No. 582,207. (No model.)



Claim.—1. A car-fender comprising a truck having mounted thereon a turn-table, a wheel-guard and a box, the said box having mounted thereon a rearwardly-weighted carrier and a trip-lever adapted to engage with said carrier, which carrier comprises two side walls, a swinging front wall and hinged doors adapted to fold over upon the said front wall, and a swinging weighted guard which engages with slotted hooks adapted to maintain the said doors in an open position, substantially as shown and described.

2. In a car-fender, the combination of a truck adapted to be coupled to the front of a car, said truck having mounted thereon a turn-table, wheel-guards, a box upon which is mounted a rearwardly-weighted carrier and a trip-lever adapted to engage with said carrier, and swinging sectional doors; with a swinging guard and hooks adapted to engage with the said doors, said guard adapted to operate the said trip-lever and release the swinging doors, substantially as shown and described.

572,985. **APPARATUS FOR HOLDING YARN-SKEINS.** JULIA T. HAMMONDS, Lebanon, Ill. Filed Sept. 4, 1896. Serial No. 604,832. (No model.)

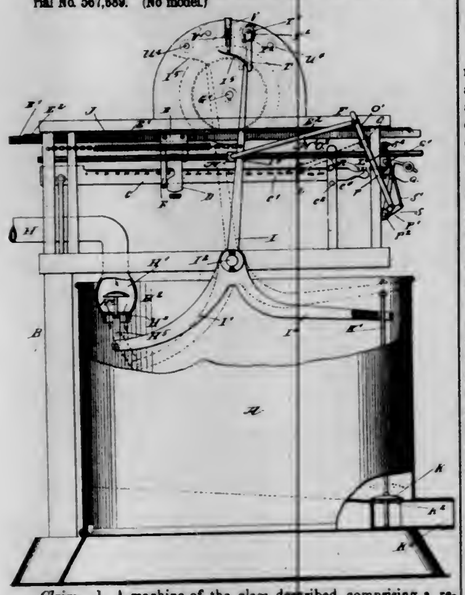
Claim.—1. An apparatus for use in winding yarns, silks and other materials, consisting of two uprights having curved upper ends and provided with supporting-arms, combined with a spring for drawing the uprights toward each other, and a brace composed of two parts for rigidly adjusting the upper ends of the uprights in relation to each other, substantially as shown and described.

2. The two uprights provided with curved upper ends and the

supporting arms, combined with a spring for drawing the lower ends of the uprights against the opposite sides of a suitable support, and a brace composed of two parts, one of which is provided with a headed stud, and the other with a notched slot in which the headed stud catches, substantially as shown and described.



572,986. WEIGHING AND REGISTERING MACHINE. GEORGE A. HANNA and FRANK E. FAIRMAN, Whittemore, Iowa; said Fairman assignor to Theodore A. Swanson, same place. Filed Nov. 2, 1895. Serial No. 567,689. (No model.)



Claim.—1. A machine of the class described, comprising a receptacle provided with an inlet valve and an outlet-valve, a scale-beam carrying the said receptable, a lever for controlling the said inlet-valve and outlet-valve, a tripping device actuated from the said scale-beam and connected with the said lever, and means, substantially as described, for resetting the said tripping device and actuating the said lever, to set the latter in position to close the outlet-valve and open the inlet-valve, as set forth.

2. In a machine of the character described, the combination of a receptacle having an inlet and an outlet, valves controlling the inlet and outlet of the receptacle, a lever connected to the valves at opposite sides of its pivotal point and arranged when moved to close one valve and open the other valve, said lever being arranged normally to hold the inlet-valve closed and the outlet valve open, a weighing device connected to said receptacle and arranged to weigh the contents thereof, and means controlled by the weighing device when operated to hold the lever in one position, whereby the inlet-valve is maintained open and the outlet-valve is maintained closed, substantially as set forth.

3. In a machine of the character described, the combination of a receptacle having an inlet and an outlet, valves controlling the inlet and outlet of the receptacle, a lever connected to said valves and arranged to hold one valve open while the other valve is closed, said lever being arranged normally to hold the inlet-valve closed and the outlet-valve open, a scale-beam operatively connected with the receptacle to weigh the contents thereof, a locking device to hold the lever when the same is moved to shift the positions of the inlet and outlet valves, and means actuated from the movement of the scale-beam to release said lever and permit the same to assume its normal position, substantially as set forth.

4. In a machine of the character described, the combination of a receptacle having an inlet and an outlet, valves controlling the inlet and outlet of the receptacle, a movable bar connected to said valves and arranged to hold one valve open while the other valve is closed, said bar being normally arranged to hold the inlet-valve closed and the outlet-valve open, a scale-beam operatively connected to the receptacle to weigh the contents thereof, a locking device to hold the bar when the same is moved to shift the positions of the inlet and outlet valves, and means actuated from the movement of the scale-beam to release said bar and permit the same to assume its normal position, substantially as set forth.

5. In a machine of the character described, the combination of a receptacle having an outlet and an inlet, valves controlling the outlet and inlet of the receptacle, a lever connected to said valves and arranged to hold one valve open while the other valve is closed, said lever being arranged normally to hold the inlet-valve closed and the outlet-valve open, a bar connected to said lever and arranged to move therewith, a locking device to engage said bar and hold the same in position when the lever is moved to shift the positions of the valves, a scale beam operatively connected to the receptacle and arranged to weigh the contents thereof, and means actuated from the movement of the scale-beam for releasing said bar and permitting the lever to move said valves to their normal positions, substantially as set forth.

6. In a machine of the character described, the combination of a receptacle having an inlet and an outlet, valves controlling the inlet and outlet of the receptacle, a movable bar connected to said valves and arranged to hold one valve open while the other valve is held closed, said bar being normally arranged to hold the inlet-valve closed and the outlet-valve open, a shaft mounted to turn and having one arm loosely connected to the said movable bar and arranged to move the same in one direction, whereby the normal position of said valve is reversed, a locking device arranged to engage said bar and hold the same when moved, a scale-beam operatively connected to the receptacle and arranged to weigh the contents thereof, and means actuated by the movement of said scale-beam to release said bar and permit the valves to assume their normal positions, substantially as set forth.

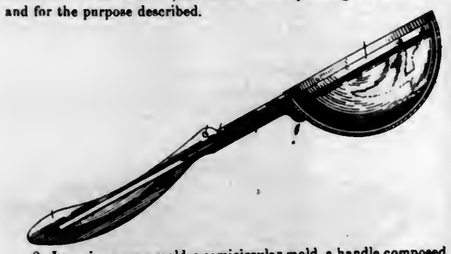
7. In a device of the character described, the combination of a receptacle having an inlet and an outlet, valves controlling the inlet and outlet of the receptacle, a slide-bar connected to the valves and arranged to hold one valve open while the other valve is held closed, said bar being normally arranged to hold the inlet-valve closed and the outlet-valve open, a shaft mounted to turn, a link connecting said shaft with the slide-bar, whereby when the shaft is turned said slide-bar is moved to shift the valves from their normal positions, a catch arranged to engage said slide-bar and hold the same when moved, a scale-beam operatively connected to the receptacle and arranged to weigh the contents thereof, a tripping device actuated by the movement of the scale-beam, said tripping device being connected to the catch and arranged when the scale-beam moves, to release said slide-bar and permit the valves to assume their normal positions, and a connection between said shaft and the tripping mechanism, substantially as set forth.

8. In a machine of the character described, the combination of a receptacle having valves, a lever controlling the valves of the receptacle, a scale-beam connected to the receptacle and arranged to weigh the contents thereof, a poise on the scale-beam, a movable part having graduations to indicate pounds, means for moving the poise on the scale-beam when said movable part is operated, a type-wheel actuated by the movement of said movable part, and means actuated by the said lever for feeding a strip of paper past said type-wheel, substantially as set forth.

9. In a machine of the character described, the combination of a receptacle having valves, a lever controlling the valves of the receptacle, a scale-beam connected to the receptacle and arranged to weigh the contents thereof, a poise on the scale-beam, a movable part graduated to indicate pounds and connected to and adapted to move the poise on the scale-beam, a type-wheel controlled by said movable part, means for feeding a strip of paper past said type-wheel, and an impression-bar actuated by said lever and arranged to press the paper against the type-wheel, substantially as set forth.

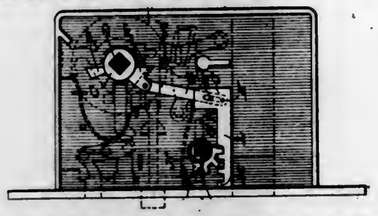
572,987. ICE-CREAM MOLD AND DIPPER. CHARLES W. HARMON, JAMES R. HARMON, and CHARLES L. BOYD, Allegheny, Pa. Filed Apr. 9, 1896. Serial No. 586,860. (No model.)

Claim.—1. In combination a mold provided with a hollow handle, cutters working in the mold and a torsion spring-rod located and secured within the handle, and a lever for operating the cutters, as and for the purpose described.



2. In an ice cream mold, a semicircular mold, a handle composed of two sections secured together and to the mold, a spring rod in said handle rigidly secured near the outer end of the handle, said rod having a flattened portion to form the spring, cutters rigidly secured to the end of the rod extending in the mold and an operating-lever secured to the rod and operating through a slot in the handle said lever carrying a pressure knob or button, substantially as shown and described.

572,988. KEYHOLE-GUARD. JACOB S. HECKER, Philadelphia, Pa. Filed Jan. 4, 1896. Serial No. 574,348. (No model.)



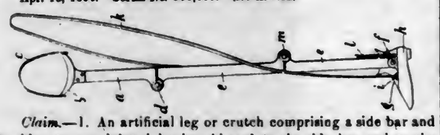
Claim.—1. In a lock, a casing with a keyhole therein, a knob-shaft with a collar thereon, a plate or guard adapted to cover said keyhole, a rod connected with said collar, a rack pivotally connected with said rod and having a connection with said plate, and a pin on said casing in the path of said rod, said parts being combined substantially as described.

2. In a lock, a casing with a keyhole therein, a plate adapted to cover said keyhole and provided with a rack, a rotatable sleeve within said casing having teeth engaging said rack, suitable connections between said plate and the knob-shaft of the lock and a key adapted to engage in said sleeve, and having a neck for rotation in the wall of the casing, said parts being combined substantially as described.

3. In a lock, a sliding guard, within the casing for a keyhole in said casing, a rotatable sleeve for actuating said guard, a key engaging said sleeve having a neck for rotating in the wall of the casing, and a spring between the inner end of said key and the casing, said parts being combined substantially as described.

4. In a lock, a guard for a keyhole in the casing thereof, a rotatable sleeve mounted in said casing and engaging and operating said guard, an escutcheon with a slot therein, and a key engaging said sleeve and provided with a pin in said slot in said escutcheon, said parts being combined substantially as described.

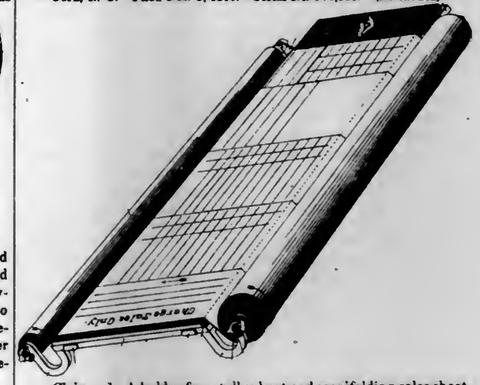
572,989. ARTIFICIAL LEG. HERMANN HEINICKE, Reinickendorf, Germany, assignor of one-half to Bertha Herting, same place. Filed Apr. 18, 1896. Serial No. 588,063. (No model.)



Claim.—1. An artificial leg or crutch comprising a side bar and shoulder-strap, a jointed leg-bar hinged to the side bar and to the foot, and a strap fitted to the upper end of the leg-bar to pass over the shoulder and secured at its lower end to the forward part of the hinged foot, substantially as described.

2. In an artificial leg or crutch the combination with a side bar *a*, fitted with an arm support and strap, a jointed leg-bar *c*, hinged to the lower end thereof, hinged foot *h* shoe *g* pivoted to the leg-strap *k*, and spring *l*, connecting the lower end of the leg and the heel of the shoe, substantially as described.

572,990. HOLDER FOR TALLY-SHEET AND MANIFOLDING DETACHABLE SALES-SHEET SYSTEMS. ALBERT R. HILTON, New York, N. Y. Filed Feb. 3, 1896. Serial No. 577,839. (No model.)



Claim.—1. A holde for a tally-sheet and manifolding sales-sheet system, comprising an oblong base having at the ends thereof supporting curved brackets, paper-roll rods or shafts mounted in the free ends of said brackets, said shafts or rods provided with buttons or knobs and arms secured to the ends of said base and the outer ends thereof engaging said shafts or rods so as to maintain the same under tension, substantially as and for the purposes described.

2. A holder for a tally-sheet and manifolding sales-sheet system, comprising an oblong base provided at the ends with curved supporting-brackets having the free ends slitted, rods or shafts provided with adjustable buttons or knobs and a tally-sheet in roll form on each of them, said rods or shafts engaging the slits of said brackets, catches or clasps pivoted to said brackets and adapted to engage said shafts or rods, arms secured to said base and engaging said shafts or rods adjacent to said buttons or knobs, and a tablet provided with a manifolding sheet and fly or sales sheets inserted between said tally-sheet and base, substantially as and for the purposes described

572,991. CHAIN. LYMAN D. HOWARD, Philadelphia Pa., assignor to Joseph A. Jeffrey, Columbus, Ohio. Filed Jan. 7, 1891. Serial No. 377,026. (No model.)



Claim.—1 The combination with a chain-link having a socket with a relatively narrow transverse throat, and a spherical bushing adapted to be inserted in said socket through said throat when in a non-working position, and said bushing having a recess, of an adjacent link having an end bar adapted to be inserted in said recess through the said throat while its link is in a non-working position relative to the first link, whereby said end bar and said bushing are secured in said socket when the last aforesaid link is turned into working relation to the first link, substantially as set forth.

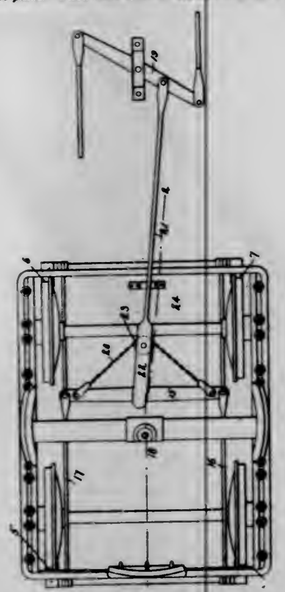
2. The combination with a chain link having a socket as at C, of a bushing of substantially spherical shape detachably fitted in the socket and having a recess or seat for a bar, of a link having a cross-bar adapted to be seated in the said recess, and means for connecting the bar with the bushing whereby they are held from moving independently of each other, substantially as set forth.

3. The combination of the chain-link having the cross-bar formed with an extension a^3, angular in cross section and lying in a plane transverse or inclined to the longitudinal plane of the chain-link, the detachable bushing having a throat or recess adapted to receive the said cross bar and extension a^3, and a link provided with an open socket having lateral passages of greater diameter than that of said end bar, and a passage, as at *b*, for the insertion of the said bushing, substantially as set forth.

4. The combination with the chain-link having a hook with a spherical socket, a spherical bushing detachably fitting in said socket and having a recess, of an adjacent link having an end bar adapted to be seated in said recess, and a pin for securing said bar and said bushing together, substantially as set forth.

5. The combination with a chain-link having a socket, and a spherical bushing fitting detachably in said socket, and having a substantially U-shaped recess, of an adjacent link having an end bar adapted to be seated in said recess, said end bar lying normally in planes oblique to the longitudinal plane of the links, substantially as set forth.

572,992. BRAKE CONNECTION FOR TRUCKS. MOSES G. HUBBARD, Jr., Chicago, Ill., assignor to the McGuire Manufacturing Company, same place. Filed June 6, 1895. Serial No. 551,849. (No model.)



Claim.—1. In a car-brake for pivotal trucks, the combination of a main actuating-lever attached to the car-body, a pair of brake-actuating levers carried by the truck, and a flexible connection between said brake-actuating levers and the said main actuating-lever carried by the car-body, the said flexible connection consisting of a traveling member connected with the main actuating-lever and a flexible device connecting the traveling member with the brake-actuating levers, substantially as and for the purpose specified.

2. In a brake for pivotal motor-cars having two or more actuating-levers attached to the truck, an equalizing-bar forming a connection between the ends of said levers, and a flexible member attached at its ends at or near the ends of said equalizing-bar, in combination with a connecting-rod having a sheave-wheel in or near its end for engaging with and traveling upon said flexible member, substantially as described.

3. In a car-brake for pivotal trucks, a main actuating-lever attached to the car-body, a pair of brake-actuating levers carried by the truck, and a connection between the actuating-lever carried by the car-body and the actuating-levers carried by said truck, said connection consisting of a connecting-rod pivoted at one end to the actuating-lever carried by the car-body, and having a sheave wheel or roller at its other end, and a flexible member constructed to connect with and travel on said sheave wheel or roller to complete the connection between the actuating-lever carried by the car-body and the actuating-levers carried by the truck, substantially as described.

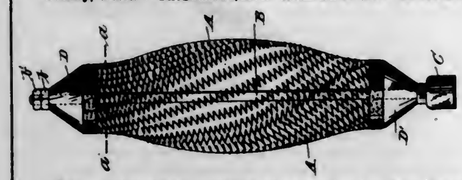
4. In a brake for pivotal motor-trucks, a pair of actuating-levers carried by the truck, an equalizing-bar, connections between the ends of said actuating-levers and said equalizing-bar, and a flexible member connected with said equalizing-bar at or near its ends, in combination with a connecting-rod having a sheave wheel or roller near its end arranged to travel on said flexible member and said equalizing-bar, substantially as described.

572,993. TOOL-BOX FOR BICYCLES. LOUIS E. HUDSON, Ellisburg, N. Y. Filed Jan. 22, 1896. Serial No. 576,382. (No model.)



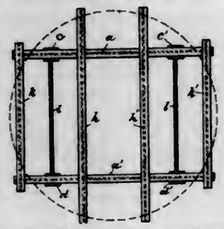
Claim.—A tool-box for attachment to bicycles, comprising an oblong body portion, provided with a cover pivotally connected with one end thereof so as to be moved horizontally spring fastenings or clamps on the opposite ends of the said body portion and cover adapted to engage with each other, said cover having formed in its top a longitudinal groove adapted to receive the under side of a frame-rod, hinged jaws on said box, a cover adapted to clasp the frame-rod, and a screw to hold said jaws about the frame-rod, all constructed and arranged substantially as herein shown and described.

572,994. TUBE OR PIPE CLEANER. ALBERT JACKSON, North Fitzroy, Victoria. Filed June 30, 1896. Serial No. 597,636. (No model.)



Claim.—A flue-cleaner consisting of a central rod or stem, bosses D, D', thereon, and a series of helical coils arranged spirally between the bosses, said coils and bosses being cast together, substantially as described.

572,995. WATER-TOWER. WILLIAM H. JACKSON and BERKLEY H. MOSS, Des Moines, Iowa. Filed Nov. 1, 1895. Serial No. 567,579. (No model.)



Claim.—1. In a metallic support, the combination with the four vertical posts, of the two main beams *a a'* resting thereon, the points of support being at a distance from the ends of the beams, the outer transverse beams *k K* resting upon the main beams and situated beyond the points of support where the main beams rest upon the posts, the transverse beams *h K* resting upon the main beams and situated between the points of support where the main beams rest upon the posts, the ends of said beams *h K* extending beyond the main beams, said structure adapted to support an object upon the transverse beams thereof, whereby the beams *h K* are subjected to a cantaliver action or negative moment about the points where the same rest upon the main beams, while the main beams are subjected to a cantaliver action or negative moment about the points of support thereof upon the vertical posts, substantially as described.

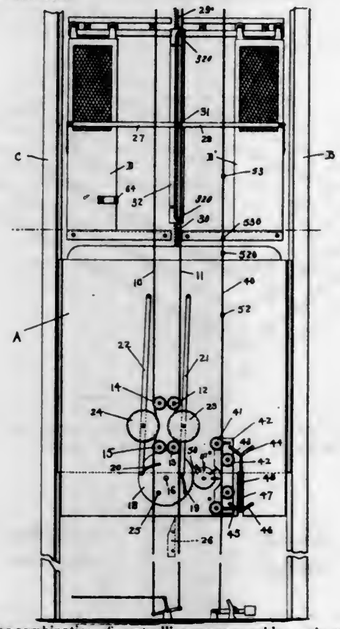
2. In a metallic tank-support, the combination with two pairs of vertical posts, of two main beams, one resting upon each pair of said posts, the points of support where the main beams rest upon the posts being at a distance from the ends of the beams to provide projecting ends upon the main beams not otherwise supported than by the vertical posts, transverse beams supported upon said main beams, some of said transverse beams being supported upon the projecting ends of said main beams and some resting between the points of support of the main beams to subject the main beams to a negative moment about the points of support, substantially as and for the purpose set forth.

572,996. ELEVATOR ATTACHMENT. EBENEZER C. JENKINS, Shrewsbury, Mass. Filed Apr. 6, 1896. Serial No. 586,307. (No model.)

Claim.—1. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, and means for moving said take-up devices at different relative speeds, so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

2. The combination of controlling ropes or cables, guide pulleys mounted on the car, an oscillating take-up device for each of said controlling ropes or cables, and means for simultaneously moving said take-up devices at different relative speeds so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

3. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, and a cam for simultaneously operating said take-up devices so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.



4. The combination of controlling ropes or cables, a pivoted arm and a deflecting-pulley for each of said ropes, and a cam for simultaneously actuating said arms so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

5. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, and a shaft carrying an operating-lever and a cam-disk, said cam-disk being connected to simultaneously actuate the take-up devices so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

6. The combination of controlling ropes or cables, guide-pulleys mounted on the car, a pivoted arm and deflecting-pulley for each controlling-rope, and a shaft carrying an operating-lever and a cam-disk, said cam-disk having slots for simultaneously operating the pivoted arms, substantially as described.

7. The combination of an elevator-car, controlling devices carried by said car, stopping devices mounted in the elevator-well, and means for moving said stopping devices into position to actuate said controlling devices, substantially as described.

8. The combination of an elevator car, controlling devices carried by said car, stopping devices mounted in the elevator-well, and means carried by the car for moving said stopping devices into and out of operative position, substantially as described.

9. The combination of an elevator-car, controlling devices carried by said car, a rope or cable mounted in the elevator-well, stops mounted on said cable, and means for shifting the cable to bring the stops into and out of operative position, substantially as described.

10. The combination of an elevator-car, controlling devices carried by said car, a rope or cable mounted in the elevator-well, stops mounted upon said cable, and foot-controlled connections mounted in the elevator car for bringing the stops into and out of operative position, substantially as described.

11. The combination of an elevator-car, controlling devices carried by said car, a rope or cable mounted in said elevator-well, a plurality of stops mounted on said rope, and means for shifting the cable so that the stops may act successively to retard the motion of the car, and then stop the same, substantially as described.

12. The combination of an elevator-car, a controlling mechanism carried by said car, a disk connected to said controlling mechanism and having projecting arms or forks, a rope or cable, stops mounted on said cable, and means for shifting the rope or cable to bring the stops into position to engage with said arms or forks, substantially as described.

13. The combination of an elevator-car, controlling devices carried by said car, a rope or cable mounted in the elevator-well, stops mounted on said cable, a slide having guide-pulleys for engaging said rope or cable, and foot controlled connections for shifting said slide to bring the stops into and out of operative position, substantially as described.

14. The combination of a door, a link connected to said door, a slotted guide, a stud or roller carried by the link and fitting into said slotted guide, and springs for normally keeping the link in its central position to hold the door closed, substantially as described.

15. The combination of an elevator-car, a door leading into the elevator-well, a link connected to said door, a slotted guide for receiving a stud or roller carried by said link, and means carried by the elevator-car for engaging the stud or roller, substantially as described.

16. The combination of an elevator-car, a door leading into the elevator-well, a link connected to said door, a stud or roller carried by said link, a slotted guide for receiving said stud or roller, and means mounted in the elevator-car for engaging said stud or roller to open the door, said slotted guide being provided with inclined or switch sections, substantially as and for the purpose set forth.

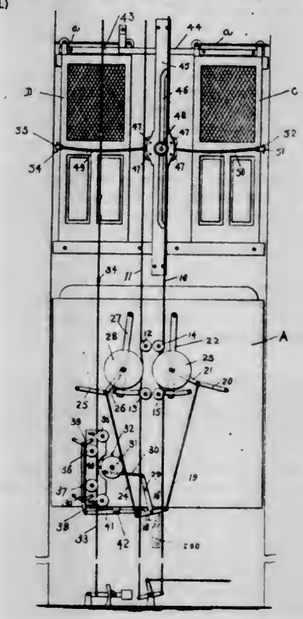
17. The combination of an elevator-car, a controlling device mounted in said car, a door leading into the elevator-well, a lock for the controlling device, and an actuating device for releasing the lock when the elevator-door is closed, said parts being arranged to leave a clearance between the lock and its actuating device when the car is in motion.

18. The combination of an elevator-car, an operating-lever mounted in said car, a spring-catch for engaging said operating-lever, an elevator-door, and a cam-plate mounted on the elevator-door for releasing the spring-catch from the operating-lever when the elevator-door is closed, said parts being arranged so that the spring-catch will be shifted to allow a clearance between said catch and the cam-plate, when the operating-lever is shifted from its central position, substantially as described.

19. The combination of an elevator-car, an operating-lever 17 mounted in said car, a spring-catch 61 for engaging said operating-lever, said spring-catch being provided with cam-sections 65 at each side of its retaining-notch, an elevator-door D, and a cam-plate 64 mounted on the elevator-door for releasing the spring-catch from the operating-lever when the elevator-door is closed, substantially as described.

20. The combination of an elevator-car, a controlling-lever mounted in said car, a door leading into the elevator-well, and a catch or trigger carried by and extending from said controlling-lever, and arranged to hold the door open while the car is opposite the landing and to release the door when the controlling-lever is shifted, substantially as described.

572,997. ELEVATOR ATTACHMENT. EBENEZER C. JENKINS, Shrewsbury, Mass. Filed Apr. 29, 1896. Serial No. 589,604. (No model.)



Claim.—1. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, links arranged to move said take-up devices at different relative speeds, and means for simultaneously operating said links so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

2. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, a pair of toggle levers or links connected to move each of said take-up devices, and means for simultaneously operating said toggle-levers so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

3. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, a pair of toggle levers or links connected to move each of said take-up devices, an operating-lever and rock-shaft, and connections from said rock-shaft to simultaneously operate said toggle levers so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

4. The combination of controlling ropes or cables, a take up device for each of said controlling ropes or cables, a pair of toggle levers or links connected to move each of said take-up devices, a controlling-lever and rock-shaft, and links for connecting the toggle-levers with arms extending from the rock-shaft, substantially as described.

5. The combination of controlling ropes or cables, a pivoted arm, and a deflecting-pulley for each of said controlling ropes or cables, and links connected to simultaneously actuate said pivoted arms at different relative speeds, so that the amount drawn up on one rope will equal the amount let out on the other rope, substantially as described.

6. The combination of controlling ropes or cables, guide-pulleys mounted on the car, a pivoted arm and a deflecting-pulley for each of said controlling-ropes, a pair of toggle levers or links connected to move each of said pivoted arms, an operating-lever and rock-shaft, and links connecting the toggle-levers with arms extending from the rock-shaft, substantially as described.

7. The combination of controlling ropes or cables, a take-up device for each of said controlling ropes or cables, toggle levers or links connected to each of said take-up devices, and means for automatically operating said toggle levers or links to stop the car opposite the desired landing, substantially as described.

8. The combination of an elevator-car, a controlling mechanism carried by said car, a pivoted disk, a plurality of stopping devices, means for moving said stopping devices into position to operate the pivoted disk, and a pitman for connecting said controlling mechanism with the pivoted disk, substantially as described.

9. The combination of a door leading into an elevator-well, a vertically-movable slide, a flexible connection between the door and slide, means carried by the elevator-car for engaging with and moving the slide to automatically open the door, and means for causing a frictional resistance to the motion of the slide, substantially as and for the purpose set forth.

10. The combination of a door leading into an elevator-well, a vertical guideway, a slide mounted in said guideway, a flexible connection between the door and said slide, means carried by the elevator-car to engage with and actuate said slide to automatically open the door, and a washer and spring for causing a frictional resistance to the motion of the slide, substantially as described.

11. The combination of elevator-doors arranged in different vertical planes so as to slide past each other, a movable slide, a flexible connection from each of said doors, to the movable slide, and means for shifting the movable slide to simultaneously open said elevator-doors, substantially as described.

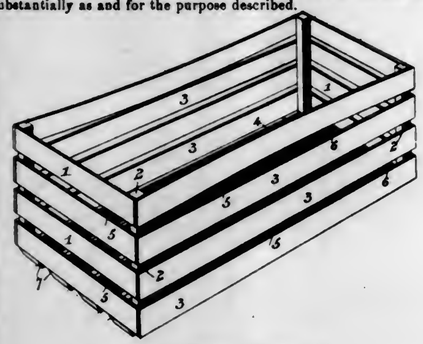
12. The combination of two elevator-doors arranged in different vertical planes so as to slide past each other, a movable slide, a flexible connection from each of said doors to the slide, and means carried by the elevator-car for actuating the slide to simultaneously open the elevator-doors, substantially as described.

572,998. SHIPPING-CRATE. JOHN H. JEWETT, Menominee, Mich. Filed Sept. 25, 1895. Serial No. 563,625. (No model.)

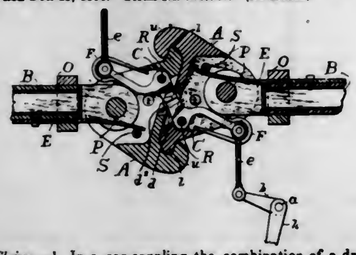
Claim.—1. A shipping-crate consisting of suitable ends, sides and bottom composed of slats and joined together to form a rectangular crate, one of the slats of the sides being bowed inward for the purpose of binding against a similar crate placed within the primary crate, whereby the nested crates are prevented from separating, substantially as described.

2. A nest of four equal and similar crates having their sides, ends and bottoms composed of slats, two of said crates being placed side by side with their ends resting in a third crate, and a fourth crate placed in inverted position over the projecting ends of the first two crates, one or more of the slats of each crate being bowed inward, whereby the outer crates are adapted to frictionally engage the inner crates, substantially as described.

3. A shipping-crate having suitable sides, ends and bottom composed of slats, one of the slats being made of greater length than the others but having its ends in planes coincident with the ends of the other slats, whereby an inward flexure is imparted to the long slat, substantially as and for the purpose described.



572,999. CAR-COUPLING. WILLIAM JOHNSON, Penn Yan, N. Y. Filed Dec. 15, 1890. Serial No. 375,047. (No model.)



Claim.—1. In a car-coupling the combination of a draw-head and buffer provided with the described interlocking hook and flange projections formed integral therewith, and adapted to interlock with a like mating or interchangeable draw-head, and to be pivotally attached to a draw-bar or body of a car, the abutting face of said draw-head being formed normally at an oblique angle to the center line of the car and coupling, and means adapted to automatically lock and to securely hold a pair of said coupling or draw-heads interlocked or coupled, and to resist the pulling strain thereon substantially as and for the purpose specified.

2. In a car-coupling the combination of the described interlocking draw-head adapted to be pivotally attached to a draw-bar or body of a car, the face of said draw-head formed to stand normally at an oblique angle to the center line of the car and draw-head, and provided with an automatic locking device attached thereto and adapted to hold a pair of said draw-heads coupled together to couple the cars, and means adapted to prevent said draw-head from being turned to an inoperative position upon said draw-bar or car, when not coupled together, substantially as and for the purpose specified.

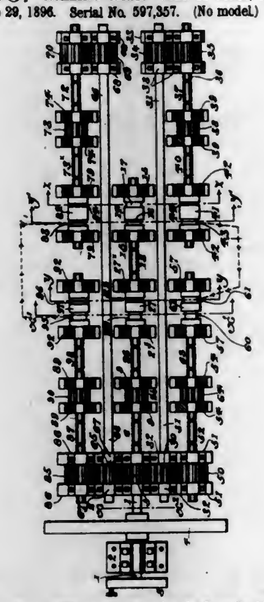
3. In a draw-head or coupling formed with the described interlocking projections and adapted to be pivotally attached to a draw-bar or car, the combination therewith of a locking and releasing lever pivotally attached to said draw-head upon one side of the center line thereof, the outer end of said lever adapted to abut against a like end of the lever of a mating draw-head to couple the cars, and the other end of said lever being formed of sufficient length to extend back of and beyond the center of the pivot by which said draw-head is attached to a car, to prevent the pulling strain on said lever end from operating to hold a pair of said draw-heads interlocked when it is desired to uncouple the cars, substantially as and for the purpose specified.

4. In a car-coupling of the kind described, the combination of the described interlocking draw-head, and buffer A, pivotally attached, or hinged to the draw-bar B, provided with a locking and releasing device, and the spring E, adapted to move or turn said draw-head to an uncoupled position, as shown in Fig. 5, substantially as and for the purpose specified.

5. In a car-coupling, the combination of the described interlocking draw-head and buffer A, pivotally attached or hinged to the draw-bar B, adapted to turn horizontally thereon, the pivot pin or bolt P, the spring E, adapted to move or turn said draw-head as described, and the locking and releasing lever C, pivotally attached to the said draw-head A, and adapted to hold said draw-head, interlocked with a like interchangeable draw head or coupling, to couple the cars, and to release said draw-heads, or couplings, from an interlocked position, to uncouple the cars, substantially as and for the purpose specified.

6. In a car-coupling, adapted to couple cars automatically, the combination comprising the described, interlocking draw-head and buffer A, provided with the groove *n*, and openings *d*, and d^3 and pivotally attached, or hinged to the draw-bar B, adapted to turn horizontally thereon, the spring E, adapted to turn the said draw-head or coupling as described, the locking and releasing lever C, pivotally attached to the said draw-head A, by means of the pivot pin or bolt R, and provided with the slot-opening *d'*, said lever C, being adapted to be moved out, through the opening *d*, in the face of said draw-head by means of the spring F, and to be withdrawn therefrom, by means of the connecting-rod *e*, and levers *b*, and *h*, substantially as and for the purpose specified.

573,000. ROLLING-MILL. JOHN R. JONES, Philadelphia, Pa. Filed June 29, 1896. Serial No. 597,357. (No model.)



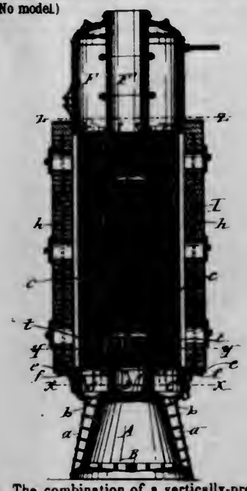
Claim.—1. In a rolling-mill, a main shaft, rolls 10 and 14 actuated thereby, rolls 27 and 20 located in proximity to said rolls 10 and 14 respectively, rolls 62 and 56, 41 and 47 arranged in pairs in front of said rolls 27 and 14, rolls 97, 91 and 82, 78 arranged in pairs in the rear of said rolls 27 and 14, and means for actuating the above rolls.

2. In a rolling-mill, a main shaft, the rolls 10 and 14 actuated thereby, and provided with the grooves 11, 12 and 16, 17 respectively, a roll 27 arranged in proximity to said roll 10 and having the grooves 28 and 29 therein, a roll 20 arranged in proximity to said roll 14 and having the grooves 18 and 19 therein, roll 62 and 56 having grooves therein and located in front of said rolls 27 and 10, rolls 41 and 47 having grooves therein and located in front of said rolls 14 and 20, rolls 97 and 91 having grooves therein and located back of said rolls 27 and 10 rolls 82 and 78, having grooves therein and located back of said rolls 14 and 20, and means for actuating said rolls.

3. In a rolling-mill, a main shaft, rolls 10 and 14 in alinement therewith and actuated thereby, rolls 27 and 20 located above and below said rolls 10 and 14 respectively, rolls 62 and 56, 41 and 47 in advance of said rolls 27 and 14, rolls 97 and 91, and 82 and 78 in the rear of said rolls 27 and 14, means for actuating said rolls and means for imparting to said rolls different variations of speed, substantially as described.

4. A main shaft 1, having the gear 5 mounted thereon, a gear 8 actuated from said main shaft, gears 25 and 24 in mesh therewith, sets of rolls 27, 10 and 14, 20 actuated by said gears 25, 8 and 24, gears 30 and 50 adapted to intermesh, the gear 53 actuated from said gear 50, the gear 64 in mesh therewith, rolls 62 and 56 actuated by said gears 64 and 53, the shaft 31 upon which said gear 30 is mounted, a gear 34 mounted on said shaft 31, a gear 35 having suitable bearings and meshing with said gear 34, a gear 38 actuated by said gear 35, a gear 49 in mesh with said gear 38, rolls 41 and 47 actuated by said gears 38 and 49, gears 65, 85 suitably supported and in mesh with each other, the gear 88 actuated by said gear 85 and in mesh with the gear 99, the rolls 91 and 97 actuated by said gears 88 and 99, a shaft 66 upon which said gear 65 is mounted, said shaft carrying also the gear 69, the gear 70 in mesh with said gear 69, the gear 73 actuated by said gear 70, the gear 75 in mesh with said gear 73 and rolls 82, 78 actuated by said gears 73 and 75, substantially as described.

573,001. STEAM-BOILER. ROBERT JOY, Oswego, N. Y., assignor to Thomson Kingsford, same place. Filed Mar. 9, 1896. Serial No. 582,335. (No model.)

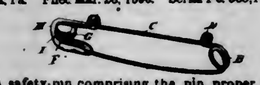


Claim.—1. The combination of a vertically-prolonged combustion chamber, an annular water-chamber at the base of said combustion-chamber, the fire-box formed with water-legs supporting upon their upper ends the said water-chamber, said chamber having ports in its bottom to communicate with the interior of the water-legs, and the portions of the chamber between the ports forming ties to prevent the spreading of the chamber, a combined water and steam chamber on the upper end of the combustion-chamber and provided with a central vertical smoke-flue, an annularly-arranged series of water-tubes connecting the two water-chambers and diaphragms across the space surrounded by the series of water-tubes as set forth.

2. The combination of an upright conical fire-box formed with water-legs, an annular water-chamber seated upon the upper ends of said water-legs and provided with ports communicating with the interior of the water-legs, an upright cylindrical combustion-chamber rising from the outer periphery of said water chamber, a water-chamber seated in the upper end of the combustion-chamber and provided with a vertical smoke-flue over the center of the combustion-chamber, an annularly-disposed series of vertical water-tubes connecting the two water-chambers and supporting the upper of said chambers, and diaphragms across the space surrounded by the series of water-tubes, said upper water-chamber being movable vertically in the combustion-chamber to allow the water-tubes to freely expand and contract as set forth.

3. In combination with the fire-box two water chambers arranged one above the other and above the fire-box and provided with vertical flues through their centers for the passage of the products of combustion, an annularly-disposed series of water-tubes connecting said water-chambers, and a combustion-chamber inclosing said series of tubes, clamps secured to a plurality of the inner tubes, and diaphragms supported on said clamps as set forth.

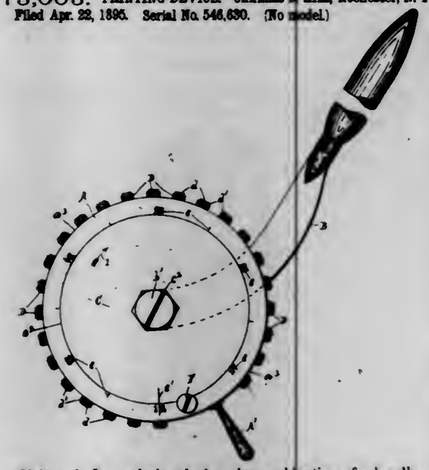
573,002. SAFETY-PIN. ROBERT KELSO and MORRIS ROSENBAUM, Philadelphia, Pa. Filed Mar. 28, 1896. Serial No. 585,170. (No model.)



Claim.—A safety-pin comprising the pin proper and a back a coil formed at the junction of the back and the pin, coils on the back wound in opposite directions, a flattened extension of the back curved to form a loop, the end of said extension being reduced and bent up to engage the under side of the back, a guard of sheet metal bent around a portion of the loop and held in place by engaging with the

end of the loop and ears formed on the guard to bear against the sides of the loop, as and for the purpose described.

573,003. PRINTING DEVICE. CHARLES B. KIRK, Rochester, N. Y. Filed Apr. 22, 1895. Serial No. 546,630. (No model.)



Claim.—1. In a printing device, the combination of a handle, a frame A connected to the handle and having one of its side faces provided with an annular recess, said frame being provided with a series of guides a^4 extending radially from its peripheral face and having their inner ends communicating with said recess, the outer ends of the guides a^4 being formed substantially circular in cross-section and the inner ends thereof being formed angular in cross section and of less width than said outer ends, a disk C arranged in the recess a^3 and having its inner side face provided with a projecting spiral cam *c*, and an additional projecting spiral cam *c'* arranged with its extremities diametrically opposite to the extremities of the cam *c*, and type-bars D movable in the guides a^4 and engaged with the adjacent faces of the frame A and the disk C, the outer ends of the type-bar being formed substantially circular in cross-section and the inner ends thereof being formed of angular cross-section and of less thickness than said outer ends, and each of said type-bars having a transverse groove provided with convex faces formed in its outer end for engaging one cam, and an additional groove formed in its inner end for engaging the other cam, substantially as and for the purpose set forth.

2. In a printing device, the combination of a frame, type-bars guided in the frame and movable beyond its outer peripheral face, one of said bars being removable from the frame, a cam for varying the position of the remaining type-bars, and graduations upon one of the remaining type bars for indicating the adjustment of the remaining type-bars when said one of the type-bars is removed, substantially as described.

573,004. PAPER-TUBE MACHINE. WALTER H. KNIGHT and FRANCIS O. BLACKWELL, Schenectady, N. Y., assignors to the Builder's Insulating Tube Company, Lynn, Mass. Filed Feb. 13, 1895. Serial No. 538,297. (No model.)

Claim.—1. In a machine for making paper tubes, the combination of a rotatable sleeve, a stationary mandrel projecting into said sleeve at one end, two stationary reels adapted to supply paper tape through the opposite end of said sleeve to said mandrel, a third reel mounted upon the rotatable sleeve, and suitable guide-rolls also mounted upon the sleeve and adapted to wrap the tape from the third roll spirally about the two longitudinally-formed tapes at their point of exit from the rotatable sleeve, substantially as set forth.

2. In a machine for making paper tubes, the combination of the rotatable sleeve supported in suitable bearings, a stationary rigid strip projecting into said sleeve from one end, a perforated stationary disk supported upon said strip within the opposite end of the rotatable sleeve, a stationary mandrel projecting from said disk and supported independently of the rotatable sleeve, two stationary reels for supplying paper tape longitudinally to the mandrel within the sleeve and the third reel rotating with said sleeve and adapted to wind its paper tape spirally about the two longitudinally-formed tapes at the point of exit from the sleeve, and means for feeding the formed paper tube along the mandrel, substantially as set forth.

3. In a machine for making paper tubes, the combination of the rotatable sleeve journaled in suitable bearings, a stationary rigid strip 7 projecting longitudinally into the sleeve from one end, a perforated disk 6 mounted upon the strip 7 and supported in the opposite end of the rotatable sleeve, a stationary mandrel projecting through the perforated disk 6 and having its inner end rigidly supported upon the strip 7 independently of the sleeve, two stationary reels for supplying paper tape longitudinally to the mandrel within the sleeve, guide-rolls and pasting rolls for the tapes, a third roll rotating with said sleeve and adapted to wind the paper strip spirally around the two longitudinally-formed strips at the point of exit from the rotatable sleeve, and means for feeding the formed tube along the mandrels, substantially as set forth.



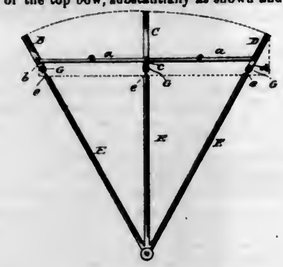
573,005. SELF-WATERING TROUGH. JOHN E. KORDICK, Bridgewater, Iowa. Filed Feb. 1, 1896. Serial No. 577,701. (No model.)



Claim.—The improved valve for controlling the passage of water from a tank into a watering-trough consisting essentially of the horizontally-disposed spout D, formed in one piece and exteriorly threaded at one end to engage a threaded aperture in the tank and having the depending cup-shaped portion *c*, at its opposite end and also provided in its upper side above said cup-shaped portion *c*, with the interiorly-threaded, vertically-disposed aperture *d*, the casting E having the annular portion provided with exterior threads engaging therewith, the vertically-disposed openings *f*, in the annular portion, and the diametrical wall *e*, arranged between the openings *f*, and extending from a point adjacent to the under side of the annular portion for the application of a wrench and provided with the central vertical opening, the valve arranged below the casting E, and having the central stem arranged and adapted to move in the opening of the diametrical wall and also having packing upon its upper side, the rigid rod loosely connected with the upper end of the valve-stem and the float mounted and secured on said rod, all as and for the purpose set forth.

573,006. CARRIAGE-TOP CONNECTION. ANIS KRIDER, Chicago Heights, Ill. Filed Sept. 30, 1895. Serial No. 564,201. (No model.)

Claim.—In a carriage top of the folding type, the combination with the side bows E having threaded shanks *e*, at their upper ends, of the top or cross bows C, and D, the swivel-thimble or screw-socket G, adapted to receive the end *e* of the side bow, said thimble having a headed swivel member *g'*; and the keeper-plate F, having an aperture for the member *g'*, said plate being adapted to be screwed to the lower end of the top bow, substantially as shown and described.

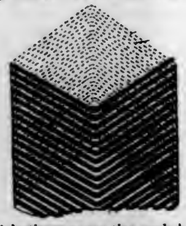


573,007. CARRIAGE-TOP CONNECTION. ANIS KRIDER, Chicago Heights, Ill. Filed July 10, 1896. Serial No. 598,684. (No model.)



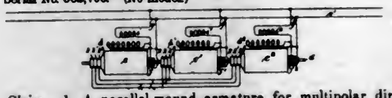
Claim.—In a carriage-top connection, the combination with the props having reduced threaded ends, of the nuts adapted to engage said threaded ends, the sockets to which said nuts are swiveled, said sockets being adapted to receive the top bows from the carriage, and also slotted at the sides to receive the hinge-bows of said top, substantially as shown and described.

573,008. FABRIC FOR TIRES. PETER KRUMSCHEID, Boston, Mass. Filed May 10 1895. Serial No. 548,825. (No model.)



Claim.—A semielastic unwoven tire made by laying side by side alternately a thread of fiber and a strip of rubber then upon this structure laying also side by side alternately a thread of fiber and a strip of rubber each thread and strip of the second structure crossing the threads and strips of the first at an angle, the two structures being cemented together all substantially as and for the purpose set forth.

573,009. DIRECT-CURRENT DYNAMO-ELECTRIC GENERATOR. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Mar. 11, 1896. Serial No. 582,766. (No model.)



Claim.—1. A parallel-wound armature for multipolar direct-current machines provided with alternating-current connections between points in its winding of normally equal potential through which leading and lagging currents may be transmitted to equalize the magnetic circuits of the machine.

2. The method of equalizing the magnetic circuits of a multipolar direct-current machine having a parallel-wound armature which consists in setting up and transmitting leading and lagging currents between a plurality of sections of the armature-winding of normally equal potential.

3. The method of equalizing the magnetic circuits of a parallel-wound multipolar direct-current machine which consists in producing leading and lagging multiphase currents and transmitting the same between and through different sections of its armature-winding of normally equal potential.

4. A parallel-wound armature for multipolar direct-current machines provided with a plurality of connections between different portions of its winding of normally equal potential through which leading and lagging currents may be transmitted to equalize the magnetic circuits of the machine.

5. In a multipolar direct-current dynamo-electric machine, the combination with the field-magnet, of a parallel-wound armature and a plurality of conducting-rings each connected to the winding at a plurality of equidistant points, whereby apparent energy may be transmitted to equalize the magnetic circuits of the machine.

6. In a multipolar direct-current generator, a parallel-wound armature having alternating-current leads connecting a plurality of points of normally equal potential.

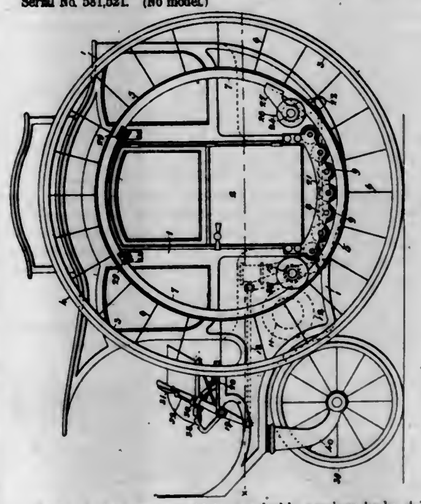
7. A multipolar direct-current generator having a parallel-wound armature provided with balancing alternating-current leads connecting points in the winding ninety degrees apart.

8. A plurality of direct-current generators mechanically driven at approximately the same speed and connected in parallel to direct-current mains and alternating-current leads connecting their armature-windings, whereby the machines are maintained in balance.

9. A plurality of direct-current generators having parallel-wound armatures each of which has alternating-current connections between points of normally equal potential in combination with alternating-current leads connecting said armature-windings.

10. A plurality of direct-current generators mechanically driven at approximately the same speed and connected in parallel to direct-current mains and each provided with armature-balancing conductors connecting points in its winding of normally equal potential and all connected by alternating-current leads, whereby the machines are maintained in balance.

573,010. MOTOR-VEHICLE. GOTTHOLD LANGER, St. Louis, Mo., assignor of one-half to George W. Rarer, same place. Filed Mar. 2, 1896. Serial No. 581,521. (No model.)



Claim.—1. In a motor-vehicle, a suitable carriage-body, drive-wheels adapted to support said body, a motor, a drive-shaft for said motor, suitable gripping devices rotated by said shaft, and means under the control of the operator for varying the amount of grip on either wheel whereby the speed of each wheel and the direction of travel of the carriage is controlled, substantially as set forth.

2. In a motor-vehicle, a suitable carriage-body, a motor carried thereby, a drive-shaft for said motor, suitable drive-wheels, suitable driving mechanism interposed between the drive shaft and wheels, suitable brake mechanism for the drive-wheels, and means carried by the carriage-body for simultaneously controlling the driving and brake mechanism on each side of the carriage-body, the mechanism on one side being adapted to be controlled independently of that on the other side, substantially as set forth.

3. In a motor-vehicle, a suitable carriage-body, drive-wheels for the same, an outer and inner rim for each wheel, a rib carried by the inner rim, a motor, a drive-shaft for the motor, and means carried by the drive-shaft for gripping the rib of the inner rim of either or both wheels, during the revolution of said drive-shaft, substantially as set forth.

4. In a motor-vehicle, a suitable carriage-body, drive-wheels for the same, an outer and inner rim for each wheel, a bevel-rib forming

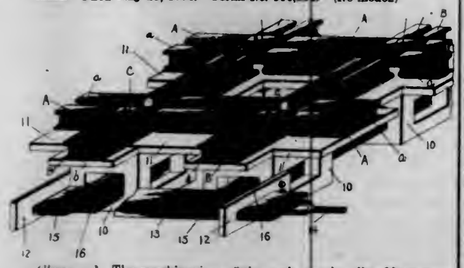
a part of each inner rim, a suitable motor, a drive-shaft for the motor, a driving and gripping disk carried at each end of the drive-shaft, said driving and gripping disk comprising a relatively stationary section and a movable section, the movable section being adapted to be shifted toward the stationary section whereby the rib is gripped and impelled with the rotation of the two sections, substantially as set forth.

5. In a motor-vehicle, a suitable carriage-body, drive-wheels for the same, an outer and inner rim for each wheel, a bevel-rib carried by the inner rim of each wheel, a motor, a drive-shaft for the motor, suitable bearings for the shaft, a tubular portion forming a part of each bearing and embracing the shaft, an inclined end for said tubular portion, a hub having a lever-arm loosely mounted on the shaft adjacent to the tubular portion of the bearing and having an inclined end coöperating with the inclined end of the tubular portion of the bearing, a stationary rotating disk carried by the free end of the shaft, said terminal disk having an inclined or bevel face adapted to coöperate with one of the inclined faces of the rib, a cup slidingly feathered about the shaft and having a terminal disk adapted to be shifted toward the opposite inclined face of the rib, said second or movable disk also having an inclined face adapted to coöperate with the inclined adjacent face of the rib, ball bearings interposed between the rotatable hub and the base of the cup, and suitable devices for oscillating the lever-arm of the hub whereby the movable or sliding cup and the disk carried thereby may be shifted toward the relatively stationary disk and toward the rib, and whereby the rib may be firmly gripped between the two disks and impelled during the rotation of the drive-shaft carrying the disks, substantially as set forth.

6. In a motor-vehicle, a suitable wheel, an outer and inner rim for the same, a bevel-rib forming a part of the inner rim, and means for gripping said rib and impelling the wheel, substantially as set forth.

7. In a motor-vehicle, a suitable carriage-body, a motor for the same, a drive-shaft for said motor, drive-wheels, an outer and inner rim for each wheel, a rib forming part of the inner rim, suitable rollers carried by the carriage-body and adapted to rest and travel over the rib, a driving and gripping disk carried at each end of the drive-shaft and adapted to embrace the rib, a rear shaft carried by the carriage-body, a grooved roller at each end of the shaft also adapted to embrace the rib of the inner rim, additional rollers carried by the carriage-body and adapted to bear against the outer face of the rib, a brake shoe or lever adapted to rock about the rear shaft, a rocking lever carried at each end of the drive-shaft and adapted to control the driving and gripping disks, a brake-operating lever pivoted to the carriage and adapted to be locked into position, and suitable connections between the said brake-operating lever, and the rocking lever carried by the drive-shaft, and the brake-lever carried by the rear shaft for simultaneously controlling the driving and gripping disks and the brake lever and shoe forming a part thereof, substantially as set forth.

573,011. RAILROAD-CROSSING. AUGUSTE LAVOIE, Fitchburg, Mass. Filed July 23, 1896. Serial No. 600,390. (No model.)



Claim.—1. The combination of the main-track rails of intersecting or crossing railroads, and four sections or bridge pieces, each of said bridge-pieces being mounted so as to pivot or turn substantially about one end thereof, one of said bridge-pieces being arranged substantially at each corner of the square formed by the intersecting track rails, said bridge pieces being mounted so that they may be brought into alinement with the main-track rails of either road, substantially as described.

2. The combination of track-rails of intersecting or crossing railroads, and four sections or bridge-pieces, one of said bridge-pieces being pivoted substantially at each outer corner of the square formed by the intersecting track-rails, longitudinally-movable slides connected to actuate the bridge pieces, and means for simultaneously moving said slides, substantially as described.

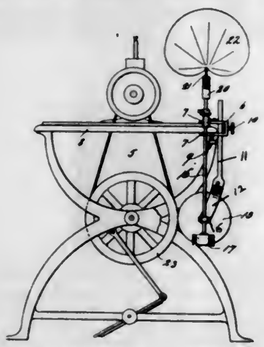
3. The combination of track-rails of intersecting or crossing railroads, and four sections or bridge-pieces, one of said bridge pieces being pivoted substantially at each outer corner of the square formed by the intersecting track-rails, vertical shafts connected to said bridge-pieces, crank-arms secured thereon, longitudinally-movable slides, pin-and-slot connections between the slides and the crank-arms, and means for simultaneously moving said slides, substantially as described.

4. The combination of the track-rails of intersecting or crossing railroads, four movable sections or bridge pieces arranged to be brought into alinement with the track-rails of either road, longitudinally-movable slides connected to actuate said bridge-pieces, an operating-slide and pin-and-slot connections between the operating-slide and the longitudinally-movable slides, substantially as described.

5. The combination of the track-rails of intersecting or crossing railroads, and four movable sections or bridge-pieces, one of said bridge-pieces being pivoted substantially at each outer corner of the square formed by the intersecting track rails, vertical shafts connected to said bridge-pieces, crank-arms secured thereon, longitudinally-movable slides, pin-and-slot connections between the slides and crank-arms, an operating-slide and pin, and slotted connections between the operating-slide and the longitudinally-movable slides, substantially as described.

6. The combination of corner pieces or castings 10, supporting-plates mounted on said corner-pieces, track-rails of intersecting railroads mounted upon said plates, guide-rails arranged parallel with said track-rails, movable sections or bridge-pieces C pivoted substantially at each outer corner of the square formed by the intersecting track-rails, vertical shafts 17 connected to said bridge-pieces and journaled in the castings 10, crank-arms 18 secured to said shafts, longitudinally-movable slides 16, pin-and-slot connections between the slides 16 and the crank-arms 18, an operating slide 13 and pin-and-slot connections between the operating-slide 13 and the slide 16, substantially as described.

573,012. FAN ATTACHMENT FOR SEWING-MACHINES. JOHN T. LEE, Atlanta, Ga. Filed July 17, 1896. Serial No. 599,545. (No model.)



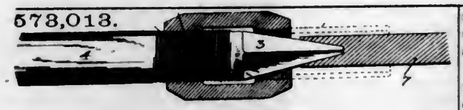
Claim.—The combination with a sewing-machine or similar article, of the herein-described fan attachment, adapted to be detachably connected therewith, consisting of a clamp 6, provided with jaws, one of which is provided with a set-screw 9 for attachment to the table of the machine, said clamp being provided with another set-screw 10, a bar 11 mounted in openings formed in said jaws, and adjustably secured thereto by the last-mentioned set-screw, said bar having formed on the lower end thereof a yoke 12, a friction-roller 13 mounted in said yoke, and adapted to bear on the drive-wheel of the machine, a sleeve 14 connected with said clamp, a rod 16 mounted in said sleeve and provided upon the lower end thereof with a friction-roller 17, said rod being also journaled in a head 15 formed on said yoke 12, and a head 20 mounted on the upper end of said rod 16, provided with a socket, and a fan adapted to be secured on said head, and to be operated by the machine, as set forth.

573,013. NIPPLE-HOLDER. WILLIAM LEE, Altoona, Pa., assignor, by direct and mesne assignments, of five-sixths to E. O. Geesey and C. S. Myer, same place. Filed May 23, 1896. Serial No. 592,743. (No model.)

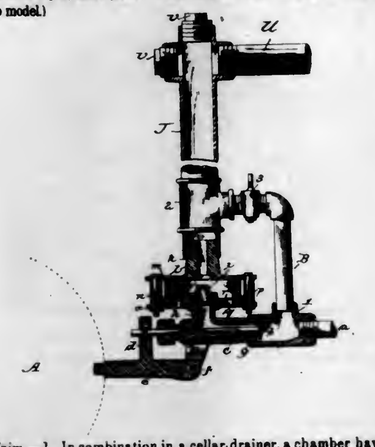
Claim.—1. In combination in a chuck, the threaded support, the sleeve having right and left hand threads at its opposite ends and a supplemental guide detachably connected with the support, substantially as described.

2. In combination, the sleeve, the support 4, threaded into the same and having a tapered end and a supplemental support detachably connected thereto.

573,013.



573,014. CELLAR-DRAINER. WILLIAM LEE, Altoona, Pa., assignor, by direct and mesne assignments, of five-sixths to E. O. Geesey and C. S. Myer, same place. Filed May 23, 1896. Serial No. 592,749. (No model.)



Claim.—1. In combination in a cellar-drainer, a chamber having a discharge-nozzle and inlet openings from the cellar, a jet-nozzle projecting into the said chamber, a valve controlling the inlet-openings and arranged at the base of the inwardly-projecting jet-nozzle, the water-supply pipe connecting with the chamber from below and the valve and float controlling said supply-pipe, substantially as described.

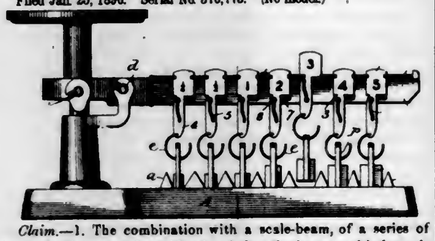
2. In combination in a cellar-drainer, the chamber having the outlet-nipple, and the inlet-openings for the drainage-water, a jet-nozzle extending into the chamber centrally thereof, a passage-way leading from the main or water supply to the jet-nozzle, and the leather valve arranged about the central jet-nozzle and controlling the inlets into the chamber from the cellar, substantially as described.

3. In combination in a cellar-drainer, the chamber *m* having an outlet-nozzle leading therefrom, a jet-nozzle projecting into said chamber, a supply-pipe leading thereto with a valve and float for controlling the same, and the valve-inlet for the chamber leading from the cellar, the said jet-nozzle being adjustable toward and from the outlet-opening, substantially as described.

4. In combination with a chamber *m*, having valved inlet-openings, an outlet-passage, an injector-nipple, a valve controlling the passage to the injector and a valved by-pass, substantially as described.

5. In combination, an inlet-pipe, a valve controlling the inlet-passage, a float operating said valve, a chamber having perforations in its bottom, a valve covering said perforations, a centrally-arranged injector, an outlet-passage above said injector and a by-pass pipe between the inlet-passage and the outlet-pipe, substantially as described.

573,015. WEIGHING-SCALE. WILL G. LENKER, Sunbury, Pa. Filed Jan. 25, 1896. Serial No. 576,775. (No model.)



Claim.—1. The combination with a scale-beam, of a series of poises, a fixed support for said poises below the beam, and independently-movable devices constructed to lift said poises separately into engagement with the beam and to lower them onto said fixed support, substantially as described.

2. The combination with a scale-beam, and a series of poises supported below said beam, of a corresponding series of independently-movable pick-up devices arranged upon the beam, whereby the poises may be lifted into engagement with the beam, substantially as described.

3. The combination with a scale beam, and a series of poises supported beneath the said beam, of a corresponding series of pick-up devices independently movable and supported upon the beam, each pick-up being disengaged from its poise when in its inoperative position, and having connections for engaging and raising its poise when it is rendered operative, substantially as described.

4. The combination of a scale-beam, a series of poises, and a corresponding series of independently-movable pick-up devices upon the beam, said devices having panels or spaces numbered to indicate the weights to which they correspond, substantially as described.

5. The combination with a scale-beam, and a series of poises, of a corresponding series of pick-up devices mounted upon the beam and vertically movable thereon, finger-keys for lifting said devices, and notches or shoulders on said devices for holding them in their raised position, substantially as described.

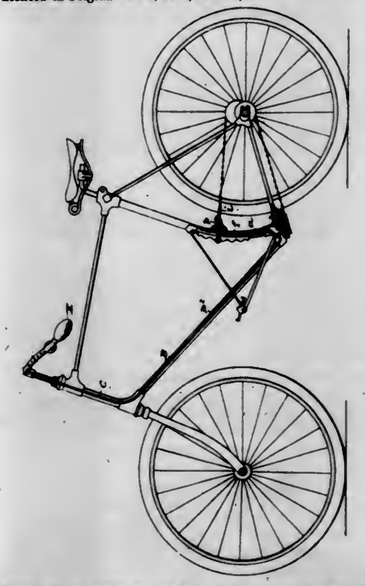
6. The combination of a scale-beam, a series of poises and a corresponding series of pick-up devices, each device having a notch for latching it when raised, and a diagonal guide-slot arranged to hold it in a perpendicular position when down and also when the notch is engaged with the scale-beam, substantially as described.

7. The combination with a scale-beam, and a series of poises upon a stationary support, said poises being provided with bails, of a series of movable pick-up devices mounted upon the beam, said pick-up devices having loops which hang within and free from the bails of the poises when the pick-ups are inoperative, and which engage the bails and raise the poises when the pick-ups are operated, substantially as described.

8. The combination with a scale-beam, a series of poises upon a fixed support, and a corresponding series of pick-up devices carried by the beam and independently movable thereon, of a scale on said beam, and a poise mounted on and adapted to slide along said beam and to be set by said scale, substantially as described.

9. The combination with the scale-beam, having guides, and the series of poises, of the vertically-movable pick-up devices mounted in said guides upon the beam and each consisting of a sheet-metal plate having a tablet to receive the weight-figure, a notch upon one side, an outwardly-bent extension upon the other side to form a finger-key, and a depending loop to engage a poise, substantially as described.

573,016. TREADLE MECHANISM. FREDRIK LJUNGSTRÖM, Stockholm, Sweden. Filed Mar. 21, 1896. Serial No. 584,344. (No model.) Patented in Belgium Oct. 2, 1895, No. 117,704.

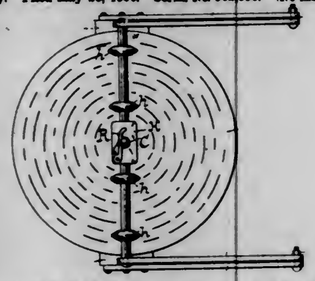


Claim.—1. In combination in a vehicle, the ratchet drive wheel, the chain, the treadle, the adjustable connection between the treadle and chain comprising the rack on the treadle-arm and the traveling bow and pawl and means for controlling the said adjustable connec-

tion comprising the air-bulb at the pawl to move the same and to travel therewith, the air-bulb within reach of the rider, and the air-pipe between the said bulbs the said air-pipe allowing the pawl to travel along the treadle-arm, substantially as described.

2. In combination in a ratchet driving-gear for vehicles, the drive wheel and chain, the treadle-arm, the adjustable connection between the same and the chain comprising the rack, the traveling bow and the double pawl and means for controlling the double pawl consisting of the air-bulb interposed between the parts thereof, the air-bulb within reach of the rider and the pipe connecting the air-bulbs, substantially as described.

573,017. NOTE-DISK HOLDER. OSKAR P. LOCHMANN, Leipsic, Germany. Filed May 20, 1896. Serial No. 592,359. (No model.)



Claim.—1. A note-disk holder supported on a hinged arm or arms and adapted to swing in parallel lines with respect to the plane of the note-disk, substantially as and for the purpose set forth.

2. A note-disk holder supported on hinged arms having their axis of oscillation parallel to the plane of the disk, combined with a center-pin and a locking device for the note-disk holder, substantially as described.

3. A note-disk holder supported on hinged arms having their axis of oscillation parallel to the plane of the disk, combined with a grooved center-pin and a spring-pressed catch on the holder adapted to engage with the center-pin, substantially as described.

573,018. MUSIC-BOX. OSKAR P. LOCHMANN, Leipsic, Germany. Filed May 20, 1896. Serial No. 592,360. (No model.)

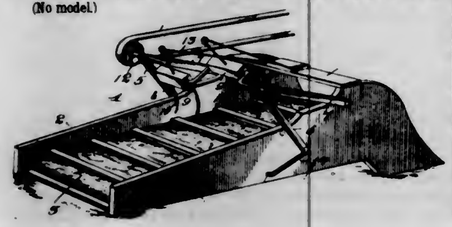


Claim.—1. In a music-box, a driving-disk located back of the playing mechanism and placed in connection with the operating-motor, and an attaching device adapted to retain the note-disk, located in front of the playing mechanism and placed in operative connection with the driving-disk; whereby the note-disk can be removed and exchanged without removing the driving-disk, substantially as described.

2. In a music-box, the combination of the note-disk spindle, a driving-disk attached to the spindle and located back of the playing mechanism, and an auxiliary disk mounted on the same spindle and adapted to receive and retain the note-disks, substantially as described.

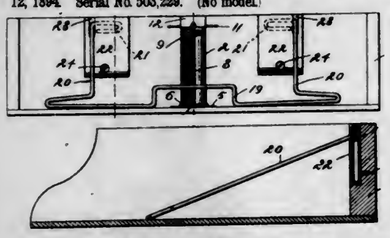
3. In a music-box, the combination of a motor, a pinion operated by the same, a note-disk spindle, a driving-disk attached to the spindle and meshing into the pinion, an auxiliary disk mounted on the same spindle and constructed to receive and retain the note-disk; said two disks being on opposite sides of the playing mechanism, substantially as described.

573,019. BAND CUTTER AND FEEDER ATTACHMENT. JOHN A. LOVETTE, Manhattan, Kans. Filed Mar. 31, 1896. Serial No. 585,640. (No model.)



Claim.—In combination, a feeder for threshing-machines, a shaft having crank portions, forks journaled upon the crank portions of the shaft, rods having connection with the forks for giving proper direction thereto, arms having pivotal connection with the feeder and apertured to receive the aforesaid shaft, other arms receiving the said shaft, and a transverse rod having its end portions bent to form spring-arms to automatically engage with the sides of the feeder to hold the said shaft in an adjusted position, and having the terminal portions of the spring-arms bent inward to form pivotal connection with the lower ends of the last-mentioned arms, and adapted to be turned to adjust the crank-shaft to any required elevation, substantially as and for the purpose set forth.

573,020. FILE-BOX. WILLIAM LUMLEY, Chicago, Ill. Filed Mar. 12, 1894. Serial No. 503,229. (No model.)



Claim.—1. In a file-box, the combination with a box or tray having a recess therein, of a plate secured in the upper end of said recess and being provided with an upturned tongue, said plate and tongue having formed therein an aperture, an impaling-pin adapted to fit in said aperture and having a foot-piece at its lower end, and a socket at the bottom of the box, provided with a spring upon which said foot-piece rests, substantially as set forth.

2. In a file-box, the combination of the box or tray having a recess formed in the side thereof and said recess being provided with a transverse cut, a plate embedded in said cut and having an upturned tongue and said tongue and plate being provided with an aperture partly in each, an impaling-pin adapted to fit in said aperture and means for holding the other end of said pin in place, substantially as set forth.

3. In a file-box, the combination with a box or tray, of a folded spring-plate secured to said tray and a presser-arm having a flat head pinched between the folds of said plate, substantially as set forth.

4. In a file-box, the combination with the box or tray, of a slotted spring-plate secured to the said box or tray, and a presser-arm having a portion projecting through said slot, and a flat head on such portion arranged to be pinched by said spring-plate, substantially as set forth.

5. In a file-box, the combination with a box or tray, of a presser-arm having a flattened head bent at substantially right angles thereto, a flat spring-plate secured to said box and bearing against said head and having a slot for the passage of said arm, the end of said plate being turned over the said flattened head so as to prevent its upward displacement, substantially as set forth.

6. In a file-box, the combination with a box or tray, of a spring-plate folded upon itself and secured to said box and having its extremities turned upwardly from the bottom of the box, one of said extremities being slotted and the presser-arm having a flattened head pinched between the folds of said plate, substantially as set forth.

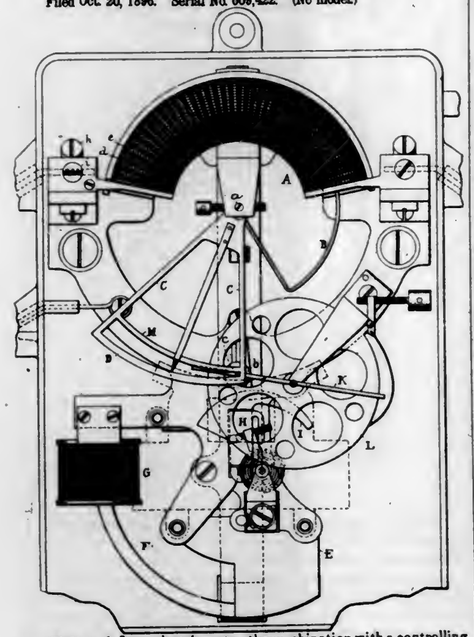
7. In a file box, the combination with a box or tray, of a folded spring plate secured to the side thereof and having its extremities provided with opposed slots, a presser-arm having a stem adapted to fit in said slots and a flattened head on said stem arranged between the folds of said plate, the folds of said plate being turned over said head, substantially as set forth.

8. In a file box the combination with a box or tray and a presser-arm having a flattened head, of a spring-plate folded upon itself and forming a flexible tongue between which tongue and the other fold of said plate said flattened head is loosely confined, the free extremity of said tongue being bent toward the other fold of said plate so as to prevent said head from slipping out of place, substantially as set forth.

9. In a file-box the combination with a box or tray, of a U-shaped plate having a slit formed through both sides of its free extremities, a presser-arm passing through said slit and having a flattened head arranged between the folds of said plate, both extremities of said plate being bent upwardly over said head, substantially as set forth.

10. In a file box, the combination with a box or tray, of a spring-plate secured thereto and having its free extremity provided with a slot, a presser-arm having a flattened head pinched or pressed by said plate and said arm being arranged in said slot and having its movement limited in one direction by the end of said slot, and means for preventing said head from moving in the other direction, substantially as set forth.

573,021. ELECTRIC METER. WILLIAM D. MARKS, Philadelphia, Pa., assignor to the American Electric Meter Company, same place. Filed Oct. 20, 1896. Serial No. 609,422. (No model.)



Claim.—1. In an electric meter, the combination with a controlling ampere-meter, of means for automatically tapping the ampere-meter, substantially as and for the purpose set forth.

2. In an electric meter, the combination with a controlling ampere-meter, a register and a motor which intermittently acts on the register to an extent controlled by the ampere-meter, of means operated by the motor for automatically tapping the ampere-meter, substantially as set forth.

3. In an electric meter, the combination with a controlling ampere meter and an eccentric arc or cam moved thereby, of a pawl-arm operating a register, and a motor acting intermittently on the pawl-arm through a distance controlled by the adjustment of the ampere-meter, said pawl-arm being limited in both directions of its movement by said ampere-meter, whereby the ampere meter has a dead-beat movement and the overthrow of the pawl-arm is prevented, substantially as set forth.

4. In an electric meter, the combination with a controlling ampere-meter and a register operating pawl-arm, of an eccentric arc or cam and a concentric arc moved by the ampere-meter, the pawl-arm playing between the eccentric and concentric arcs and striking such arcs at the limits of its movement, substantially as set forth.

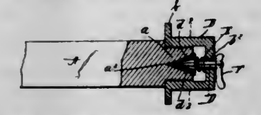
5. In an electric meter, the combination with the ampere-meter and the register-operating pawl-arm, of the inverted arch composed of a frame having side pieces C, the eccentric arc or cam D and concentric arc M, substantially as set forth.

6. In an electric meter, the combination with a register and a motor acting intermittently on the register, of a controlling ampere-meter determining the extent of the movement of the register by the motor, said ampere-meter having a single solenoid-core and a single solenoid-coil wound with two or more separate wires connected so that the two or more currents act cumulatively upon the core, substantially as and for the purpose set forth.

7. In an electric meter provided with a controlling ampere-meter adapted to receive the currents of two or more circuits, the combination with the ampere-meter core, of the arch-shaped solenoid-coil wound with two or more wires, and the divided abutments upon which the solenoid-coil is supported and to which the ends of the wires are separately connected, substantially as set forth.

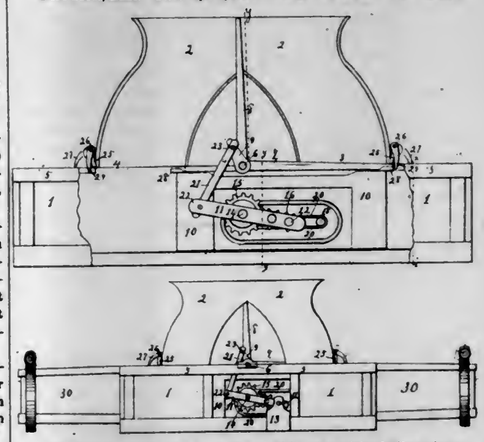
8. In an electric meter provided with a controlling ampere-meter adapted to receive the currents of two or more circuits, the combination with the ampere-meter core, of the arch shaped solenoid-coil wound with two or more wires, and the divided abutments upon which the solenoid-coil is supported and to which the ends of the wires are separately connected, the connection of one of the wires with the abutments being crossed, substantially as set forth.

573,022. NUT-LOCK. JONATHAN MARTIN, Topeka, Kans. Filed Apr. 16, 1896. Serial No. 587,758. (No model.)



Claim.—The combination with the end of a spindle, which is screw-threaded and provided with a conical cavity or socket in the end thereof, the apex of which is directed inwardly, and having ratchet-teeth formed on its side walls, and a nut which is provided with a circular chamber in the inner end thereof, the walls of which are screw-threaded and the outer end of which is closed and provided with a central angular opening and an angular shaft which is adapted to pass through said opening and is provided at its inner end with a conical head which is adapted to enter said cavity or socket and which is provided with teeth adapted to engage with those formed on the walls of the cavity or socket to lock the nut upon this spindle, said shaft being also provided with a spiral spring, which is mounted thereon between the head thereof and the closed end of the nut which is adapted to force said head into said socket to lock the same therein, and said shaft being provided at its outer end with a lever which is pivotally connected therewith and by means of which the head may be withdrawn from the socket against the action of the spring when it is desired to remove the nut substantially as shown and described.

573,023. BALING-PRESS. BENJAMIN F. MARTINDALE, Wichita, Kans., assignor of one third to Edwin R. Mead and Edward E. Hale, Fort Scott, Kans. Filed Apr. 6, 1896. Serial No. 586,365. (No model.)



Claim.—1. In a baling-press the combination with a baling-chamber and a reciprocating traverser operating therein, of a feed-chamber communicating with the baling-chamber in the path of the traverser, rocking arms operating in said feed-chamber to carry the material therefrom into the baling-chamber, a rock shaft on which said arms are mounted, a crank-arm mounted on said shaft, a pitman connected to said crank-arm, a rocking bearing-block mounted on a shaft journaled on the press-frame to which said pitman is connected, a drive-wheel mounted on a shaft journaled in said bearing-block, a cam-leafed pinion mounted on said shaft, studs fixed in the traverser with which said pinion engages, a guideway on the traverser around said studs, and a wrist roller on the shaft of said drive-wheel adapted to travel in said guideway, substantially as and for the purpose set forth.

2. In a baling-press the combination with a baling chamber and a reciprocating traverser operating therein, of a feed-chamber communicating with the baling-chamber in the path of the traverser, a rock-shaft journaled on the press frame, rocking arms mounted on said shaft, a crank-arm on said shaft, a pitman connected with said crank-arm for operating said rocking arms, detents mounted on a rocking shaft journaled in brackets supported on the press-frame, a trip-lever

mounted on said shaft and a lug on the traverser adapted to engage said trip-lever, substantially as and for the purposes set forth.

3. In a baling-press having a suitable baling-chamber, the combination with a feed-chamber communicating with the baling-chamber, and rocking arms operating in said feed-chamber, of detents mounted on a rock-shaft journaled in brackets on the press-frame adapted at certain times to engage said rocking arms, and a trip-lever on said shaft for actuating said detents to release said rocking arms from engagement therewith, substantially as set forth.

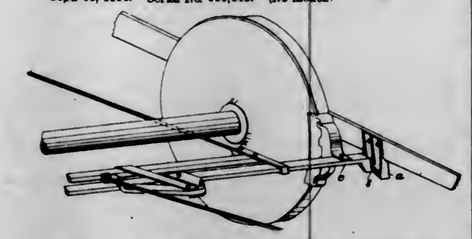
4. In a baling-press the combination with a baling chamber, a reciprocating traverser operating therein and the traverser-reciprocating mechanism, of a feed-chamber communicating with the baling-chamber in the path of the traverser, a rock-shaft journaled on the press-frame, rocking arms mounted on said shaft operating in said feed-chamber, a crank-arm on said shaft, a pitman connected with said crank-arm, and a rocking bearing-block mounted on a shaft journaled on the press-frame in which is mounted the traverser-reciprocating mechanism and to which said pitman is connected, so that as the traverser is reciprocated said rocking arms will be operated, substantially as set forth.

5. In a baling-press the combination with a baling-chamber and a reciprocating traverser operating therein, of a rocking bearing-block mounted on a shaft journaled on the press-frame, a drive-wheel mounted on a shaft journaled in said bearing-block, a cam-leafed pinion mounted on said drive-wheel shaft, studs mounted on the traverser with which said pinion engages, guides on the traverser forming a guideway around said studs, a wrist-roller on said drive-wheel shaft traveling in said guideway, and suitable gearing for actuating said drive-wheel, substantially as and for the purposes set forth.

6. In a baling-press the combination with a suitable baling-chamber, a reciprocating traverser operating therein and a rocking bearing-block in which is mounted the traverser-actuating mechanism, of a feed-chamber provided with a feed-opening communicating with said baling-chamber in the path of the traverser, rocking feed-arms operating in said feed-chamber, and a rock-shaft on which said arms are mounted connected with said bearing-block so that with the rise and fall of said bearing-block said feed-arms will be rocked to carry the material fed into the press through said feed-openings, substantially as set forth.

7 In a baling press the combination with a baling-chamber having a compression-chamber at each end thereof, a reciprocating traverser acting alternately in said compression-chambers and a rocking bearing-block in which is mounted the traverser-actuating mechanism, of a feed-chamber provided with feed-openings communicating with said compression-chambers, rocking feed-arms operating in said feed-chamber, and a rock-shaft on which said arms are mounted connected with said bearing-block so that with the rise and fall of said bearing-block said feed-arms will be rocked to carry the material fed into the press alternately through the one and the other of said feed-openings into said compression-chambers, substantially as set forth.

573,024. CAR-BRAKE. THOMAS MILLER, New York, N. Y. Filed Sept. 16, 1896. Serial No. 606,015. (No model.)



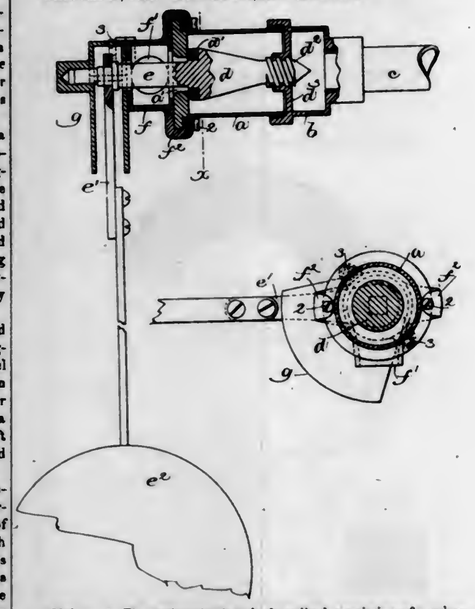
Claim.—1. In a self-receding braking device, a brake-beam, and guide-brackets having inclined slots for the reception of the ends of the brake-beam, substantially as described.

2. In a self-receding braking device, the combination with the brake-beam and brake-shoes, of a member having inclined slots for the reception of the ends of said brake-beam, substantially as described.

3. In a self-receding braking device, the combination with the brake-beam having angular projections at each of its ends, and brake-shoes carried by said brake-beam, of brackets having inclined slots for the reception of the projections on said brake-beam, substantially as described.

4. In a self-receding braking device, the combination with the truck-frame, of a brake-beam carried thereby, brake-shoes secured to the beam, and brackets mounted on the truck-frame and having inclined slots for the reception of the ends of the brake-beam, substantially as described.

573,025. TANK-VALVE. BENJAMIN F. MILLS, Cambridge, MASS. Filed Jan. 27, 1896. Serial No. 576,936. (No model.)



Claim.—1. The tank-valve herein described, consisting of a valve-case having an interior valve-seat, a valve contained in said case, having a screw-threaded projection d^3 at one end, a support therefor, a valve-stem e projecting through the outlet of the valve-case, and made smaller in cross-sectional area than said outlet to leave a passage around it, a support for the outer end of said valve-stem e, and a ball-carrying arm e' attached to said stem e, near said outer end support, and ball carried by it for turning said valve and thereby moving it toward and from its seat, substantially as described.

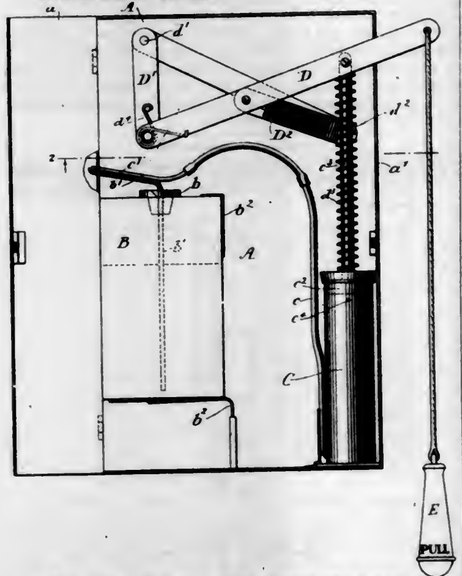
2. The tank-valve herein described, consisting of a valve-case having an interior valve-seat, a valve contained in said case, having a screw-threaded projection d^3 at one end, a support therefor, a valve-stem e projecting through the outlet of the valve case, and made smaller in cross sectional area than said outlet to leave a passage around it, a support for the outer end of said valve-stem e, and a ball-carrying arm e' attached to said stem e, near said outer end support, and ball carried by it for turning said valve and thereby moviug it toward and from its seat, and a shell f adjustably secured to said valve-case over the outlet thereof and having a central passage through it for the stem e, and also having a laterally-projecting nozzle f', substantially as described.

3. The tank-valve herein described, consisting of a valve-case having an interior valve-seat, a valve contained in said case, having a screw-threaded projection d^3, a support therefor, a valve-stem projecting through the outlet of the valve-case, a shell f having a nozzle secured to the valve-case next to and communicating with the outlet, and having a passage through it for said valve-stem, a ball-carrying arm attached to said stem outside of said shell f, and ball carried by it, and a shell, as g, inclosing the outer end of said stem and having a recess in which said ball-carrying arm works, substantially as described.

4. The tank-valve herein described, consisting of a valve-case having an interior valve-seat, a valve contained in said case, and having a screw-threaded projection d^3, a support therefor, a valve-stem projecting through the outlet of the valve-case, and a ball attached to said stem by an arm, for turning said valve and thereby moving it toward and from its seat, and a shell g having a support for the end of the stem, and a recess in which the ball-carrying arm works, substantially as described.

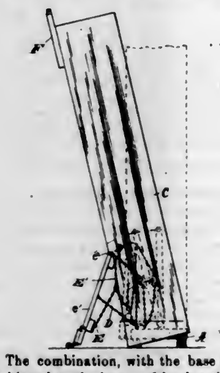
5. The tank-valve herein described, consisting of a valve-case having an interior valve-seat, a valve contained in said case, and having a screw-threaded projection d^3, a support therefor, a valve-stem projecting through the outlet of the valve-case, and a ball attached to said stem by an arm, for turning said valve and thereby moving it toward and from its seat, and a shell f having a nozzle, secured to the valve-case next to and communicating with the outlet, and having a passage through it for the valve-stem, and a shell g placed next to said shell f, and having a support for the end of the stem, and a recess in which the ball-carrying arm works, substantially as described.

573,026. OPERATING MECHANISM FOR AIR-FORCING APPARATUS. FREDERICK J. MITCHELL, New York, N. Y. Filed Dec. 4, 1895. Serial No. 571,037. (No model.)



Claim.—The combination with the inclosing case, of an air-forcing device provided with a piston-rod, a swinging link D', a toggle joint consisting of the members D and D^2 of equal length, the member D^2 being pivoted to a fixed support within the case and the member D being pivoted to the link D' and being prolonged beyond its juncture with the member D^2, such prolonged portion of the member D being connected with the piston-rod of the air-forcing device within the case, a handle connected with the prolongation of the member D outside the case for operating the piston-rod and a spring arranged to return the parts to their normal position when the handle is released, substantially as shown and described.

573,027. FOLDING BED. JOSHUA H. MORRISON, Connersville, Ind. Filed Oct. 1, 1895. Renewed Aug. 20, 1896. Serial No. 603,427. (No model.)



Claim.—1. The combination, with the base A, and the body C, of the board B, hinged to the base and having the levers B' secured to its ends, the upper ends of said levers being pivotally secured to the sides of the bed body, the section c' of the body hinged at its upper edge to the body, and mechanism consisting of chains and pulleys arranged substantially as shown and described, whereby the section c' together with the chains will form a truss to support the head of the bed at proper height when the bed is opened out for use.

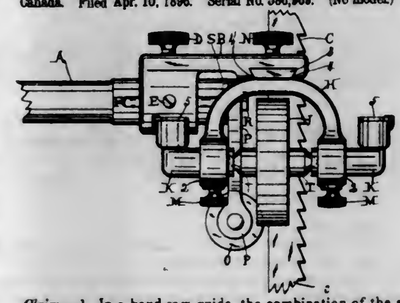
2. In a folding bed, the combination with the bed-body and a base separate from the body, of a pair of levers pivotally secured at their lower ends to the base and at their upper ends to the bed body, pulleys secured in pairs one above the other substantially as shown, a section of the body hinged so as to swing out at the bottom as the bed is lowered, chains or cables having their upper ends secured to the bed-front and passing thence around the pulleys in the manner substantially as shown and having their lower ends secured to the hinged section of the body, and legs to support the foot of the bed.

3. In folding bed, the combination with the body and a base on which the bed stands when folded up, of a pair of levers hinged at their lower ends to the base and at their upper ends to the body whereby a double pivotal connection of the body with the base is secured, and mechanism consisting of a hinged section of the body lower pulleys a, and superimposed pulleys b', chains or cables passing around said pulleys and secured at their ends in the manner substantially as shown, whereby the supporting-point of the bed will be shifted toward the middle of the body as the latter is lowered, and whereby the inner end of the bed will be supported, substantially as described.

4. The combination with the base A, body C, and levers B' of the hinged section c' connected with the base and levers in the manner as described, and the chain E connecting the section c' with the base and forming a stop to keep the section from spreading farther than a predetermined distance, and thereby providing a safe and positive support for the inner end of the bed.

5. In a folding bed, the combination with the body C having the hinged lower section c' which stands slightly at an incline when the bed is closed, and said body having the weights W and the folding head-board G, of the base A, the board B having the levers B', said board being hinged to the base and said levers being pivotally secured to the body of the bed, the pulleys b' and the pulleys a secured below the pulleys b', the chains or cables D arranged substantially as shown, and the chain or cable E, all as and for the purposes specified.

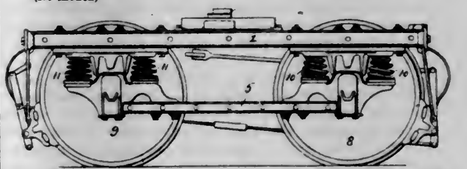
573,028. BAND-SAW GUIDE. WILLIAM MCBETH, Hamilton Canada. Filed Apr. 10, 1896. Serial No. 586,969. (No model.)



Claim.—1. In a band-saw guide, the combination of the adjustable side wheels, supported by the curved arms H, having upper beveled slides 3, to fit and slide in the jaws of framework B, for adjustment, and secured by set-screws N, and capable of horizontal adjustment on arm A, having slot F, the pin E, and the set-screw D substantially as described and set forth.

2. In a band-saw guide the adjustable side wheels, supported by the curved arms H, having upper slides, for side adjustment in frame B, with set-screws N, and capable of horizontal adjustment on arm A, having slot F, and pin E, and set-screw D, in combination with the rear wheel O, in fork connection secured to said arm A, by screw R, and pin S, substantially as described and set forth.

573,029. PIVOTAL CAR-TRUCK. WILLIAM A. MCGUIRE and MOSES G. HUBBARD, Jr., Chicago, Ill., assignors to the McGuire Manufacturing Company, same place. Filed June 6, 1895. Serial No. 551,840. (No model.)



Claim.—1. In a four-wheeled car-truck, the combination with an upper frame and a centrally located bolster adapted to be pivotally connected with the body of the car, bearings on said upper frame

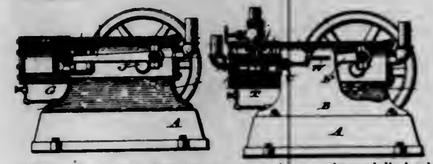
and bolster adapted to bear upon the body of the car and keep said upper frame and car-body substantially parallel, a lower frame, a pair of driving-wheels, and a pair of guiding-wheels journaled in said lower frame, of springs of greater carrying capacity mounted upon said lower frame upon the end carrying the driving-wheels and bearing upon said upper frame, and springs of less carrying capacity mounted upon said lower frame at the end carrying said guiding-wheels and bearing upon said upper frame, substantially as described.

2. A four-wheeled truck for motor-cars having a centrally-located bolster adapted to be pivotally connected with the car-body, bearings on the truck and bolster adapted to hold said truck and car-body substantially parallel to one another, and two sets of springs, one at each end of said truck, of different carrying capacity, and adapted to distribute the load upon the ends of said truck in proportion to the carrying capacity of said springs, substantially as described.

3. In a four-wheeled car truck, the combination with an upper frame, a centrally-located bolster adapted to be pivotally connected to a car-body, and bearings on said upper frame and bolster, adapted to keep said frame and car-body when mounted thereon in substantially parallel position, of a lower frame, an axle journaled at each end of said lower frame, wheels mounted upon said axles, and two sets of springs of different carrying capacity bearing upon said upper and said lower frames, and adapted to distribute the load upon said axles in proportion to the respective carrying capacity of said springs, substantially as described.

4. In a four-wheeled car-truck, the combination with an upper frame, a centrally-located bolster adapted to be pivotally connected with the car-body, and bearings on said upper frame and bolster adapted to keep said frame when in position substantially parallel with said car-body, of a lower frame, driving axle and wheels journaled at one end of said lower frame, guiding axle and wheels journaled at the other end of said lower frame, and two sets of springs, one set bearing upon said upper and lower frames at the end carrying the driving axle and wheels, and the other bearing upon said lower and upper frames at the end carrying said guiding-wheels, said last-named springs being of less carrying capacity than the springs at the driving-wheel end of said truck, substantially as described.

573,030. SINGLE-ACTING STEAM-ENGINE. HENRY NADIG and PHILIP NADIG, Allentown, Pa. Filed June 16, 1896. Serial No. 595,721. (No model.)



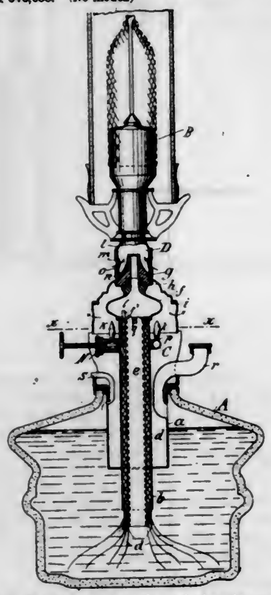
Claim.—1. In a single-acting steam-engine, a substantially horizontal crank casing, a steam-cylinder attached to one end thereof and forming a continuation of said casing, the lower portion of the latter being adapted to be filled with a suitable lubricant, a valve-chest adjacent said cylinder, a port near the extremity of said chest leading into said cylinder, a valve in said chest, consisting of a plurality of heads of different diameters suitably connected, an inlet-port for live steam opening into the space between said heads, one of the latter being adapted to open and close the inlet-port to the cylinder, an exhaust connection leading from the outer end of said valve chest, a rod extending from said valve, a rock-arm to which said rod is attached, an eccentric-rod also attached to said rock-arm, and means for actuating said eccentric-rod.

2. A single-acting steam-engine having a substantially horizontal crank-casing, a cylinder mounted thereupon, and forming a continuation thereof, and having one end open to the interior of said casing, the latter being adapted to receive a suitable lubricant, a valve-chest adjacent said cylinder, a port intermediate the latter and said chest, a controlling-valve mounted in the latter, consisting of a plurality of balanced pistons, a port in said chest for the admission of live steam opening into the space between said pistons, a rock-arm fulcrumed on the crank-casing, a valve-rod intermediate said rock-arm and valve, and a shifting eccentric mounted on the crank-shaft and adapted to actuate said rock-arm.

3. In a single-acting steam-engine, a horizontally-extending closed crank-casing, a crank-shaft having bearings therein, a cylinder mounted on said casing, having one end open to the interior thereof, a valve-chest located adjacent said cylinder, an exhaust connection leading from the end of said chest, a valve composed of a plurality of heads joined together, live steam being admitted between said heads, a piston within said cylinder, a connecting-rod intermediate said crank-shaft and piston, a rod leading from said valve to a rock-arm, connections from said rock-arm to a shifting eccentric, and weighted levers and springs for imparting the proper movement to said eccentric, according to different variations of the load.

4. In a single acting engine, a horizontally extending closed receptacle serving as a crank-casing, the sides of the latter serving as bearings for a crank-shaft, an outlet from said crank-casing for the escape of vapors therefrom, a cylinder mounted on said casing, and having an end open to the interior thereof, a drip leading from an end of said cylinder to the interior of said casing, a siphon-overflow connected with said casing, a valve-chest adjacent said cylinder, a controlling-valve therein, said valve having a plurality of heads suitably connected, an inlet-port for live steam opening into the space between said heads, one of the latter being adapted to control the inlet-port to the steam-cylinder, and an exhaust coonection leading from the outer end of said valve-chest.

573,031. INCANDESCENT BURNER FOR FLUID COMBUSTIBLES. EMIL H. C. ORHLMANN, Berlin, Germany. Filed Feb. 4, 1896. Serial No. 578,055. (No model.)



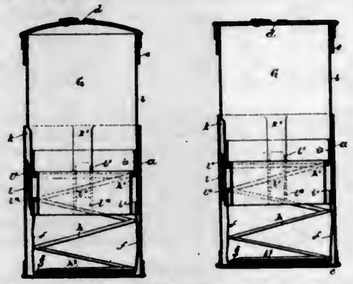
Claim.—1. In an incandescent lamp for burning vaporized hydrocarbons, the combination with a suitable reservoir, of a burner, consisting of a wick-tube carrier detachably connected with said reservoir, a wick-tube passing vertically therethrough, a supplemental tube which is adapted to be inserted through the wick, and by which said wick is held in said wick-tube, a retort mounted on the upper end of said wick-tube, a vapor-nozzle mounted on said retort, a supplemental vapor-burner surrounding the upper end of said wick-tube below said retort, and provided with a regulating-valve, a hood supported by said vapor-nozzle, and inclosing said retort, a tube surrounding said nozzle, and forming a mixing chamber, and provided with means for regulating the admission of air thereto, and an incandescent burner mounted above said mixing-chamber, substantially as shown and described.

2. An incandescent lamp for burning vaporized hydrocarbons, the combination with a suitable reservoir, of a burner, consisting of a wick-tube carrier detachably connected with said reservoir, a wick-tube passing centrally therethrough, a supplemental tube which is adapted to be inserted through the wick, and by which said wick is held in said wick-tube, a retort mounted on the upper end of said wick tube, a vapor-nozzle mounted on said retort, a supplemental vapor-burner surrounding the upper end of said wick-tube below said retort, and provided with a regulating-valve, a hood supported by said vapor-nozzle, and inclosing said retort, a tube surrounding said nozzle, and forming a mixing-chamber, and provided with means for regulating the admission of air thereto, and an incandescent burner mounted above said mixing-chamber, said supplemental burner being also provided with a tube, which communicates with said retort, substantially as shown and described.

3. An incandescent lamp for burning vaporized hydrocarbons, the combination with a suitable reservoir, of a burner, consisting of a wick-tube carrier detachably connected with said reservoir, a wick-

tube passing vertically therethrough, a supplemental tube which is adapted to be inserted through the wick, and by which said wick is held in said wick-tube, a retort mounted on the upper end of said wick-tube, a vapor-nozzle mounted on said retort, a supplemental vapor-burner surrounding the upper end of said wick-tube below said retort, and provided with a regulating-valve, a hood supported by said vapor-nozzle, and inclosing said retort, a tube surrounding said nozzle, and forming a mixing-chamber, and provided with means for regulating the admission of air thereto, and an incandescent burner mounted above said mixing-chamber, said supplemental burner being also provided with a tube which communicates with said retort, and said supplemental burner being located within the upper end of the wick-tube carrier, substantially as shown and described.

573,032. BOX FOR DISTRIBUTING PULVERULENT MATERIAL. CARL OESTERHELD, Gotha, Germany. Filed July 20, 1896. Serial No. 599,935. (No model.)



Claim.—1. A box for sprinkling pulverulent substances consisting of two telescopic vessels one of which has a discharge-opening in combination with a collapsible cylinder connecting them, and a replacing spring acting to force out the inner vessel substantially as set forth.

2. A box for sprinkling pulverulent substances, consisting of two telescopic vessels, one of which has a discharge opening in combination with a spring acting to force outward the inner cylinder and elastic bands surrounding the outer cylinder substantially as set forth.

3. A box for sprinkling pulverulent material, consisting of two telescopic vessels *a* and *b*, the latter having discharge-opening *d* in combination with flexible cylinder *f* connecting the bottoms of cylinders *a b* and arranged within the former, the spring *h* within this flexible cylinder, and an internal attachment of the inner cylinder *b*, arranged to receive the upward pressure of this spring substantially as set forth.

4. The cylinder or vessel *b* provided with a discharge opening and circumferentially corrugated at intervals, in combination with elastic compressing-bands, which fit into these corrugations, and an outer cylinder or vessel *a* which receives the said inner cylinder telescopically and to which one end of each of the said bands is attached substantially as set forth.

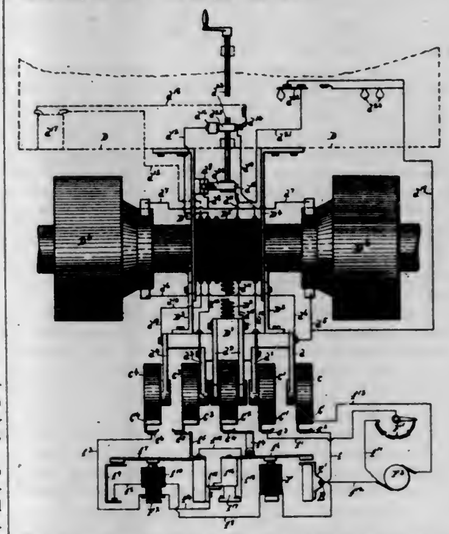
5. The combination of telescopic cylinders *a* and *b* the latter having a discharge-opening with the collapsible contained cylinder *f*, the stepped cylinder *i* attached to the inner wall of cylinder *b*, the spiral spring *h* within cylinder *f* bearing against a flange of cylinder *i* to force outward the cylinder *b*, and the coöperating elastic bands *l l* which fit into corrugations of the latter cylinder and are attached thereto, one end of each band being also attached to cylinder *a* substantially as set forth.

573,033. ELECTRIC-RAILWAY SYSTEM. BYRON E. OSBORN, Auburn, N. Y. Filed Apr. 10, 1896. Serial No. 587,013. (No model.)

Claim.—1. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting pieces for connecting said conductors, electromagnets for operating the connecting-pieces, additional electromagnets for governing the operation of the former electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose set forth.

2. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, permanent magnets for holding the connecting-pieces in their normal position, additional electromagnets for governing the operation of the former electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose specified.

3. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, switches for completing and breaking the circuits connected to said electromagnets, additional electromagnets for actuating the switches and governing the operation of the former electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose described.



4. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, additional electromagnets for governing the operation of the former electromagnets, switches operated by the former electromagnets for completing and breaking the circuits connected to the additional electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose specified.

5. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, additional electromagnets for governing the operation of the former electromagnets, means operated by the connecting-pieces for normally completing the circuits connected to the additional electromagnets, permanent magnets for holding the connecting-pieces and said means in their normal position, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose set forth.

6. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operatiog the connecting pieces, switches for completing and breaking the circuits connected to said electromagnets, additional electromagnets for actuating the switches and governing the operation of the former electromagnets, additional switches operated by the former electromagnets for completing and breaking the circuits connected to the additional electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, subetantially as and for the purpose specified.

7. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, switches for completing and breaking the circuits connected to said electromagnets, addi-

tional electromagnets for actuating the switches and governing the operation of the former electromagnets, means operated by the connecting-pieces for normally completing the circuits connected to the additional electromagnets, permanent magnets for holding the connecting-pieces and said means in their normal position, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose described.

8. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, additional electromagnets for governing the operation of the former electromagnets, helical coils surrounding the additional electromagnets and connected in the circuits leading to the former electromagnets, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose set forth.

9. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, a conductor for conveying the main current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, additional electromagnets for governing the operation of the former electromagnets, helical coils surrounding the additional electromagnets and connected in the circuits leading to the former electromagnets, means operated by the connecting-pieces for normally completing the circuits connected to the additional electromagnets, permanent magnets for holding the connecting-pieces and said means in their normal position, and means carried by the vehicle for controlling the operation of the additional electromagnets, substantially as and for the purpose specified.

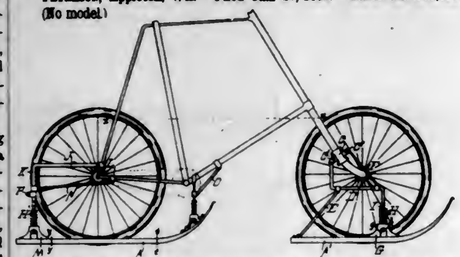
10. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, an exposed conductor for conveying the current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, a second exposed conductor for conveying a current of reduced energy to said electromagnets, additional electromagnets for governing the operation of the former electromagnets, a third exposed conductor connected to the additional electromagnets and means carried by the vehicle for engaging the exposed conductors and controlling the operation of the electromagnets, substantially as and for the purpose described.

11. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, an exposed conductor for conveying the current to the vehicle, independently movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, a second exposed conductor for conveying a current of reduced energy to said electromagnets, additional electromagnets for governing the operation of the former electromagnets, a third exposed conductor connected to the additional electromagnets, means operated by the connecting-pieces for normally completing the circuits connected to the additional electromagnets, permanent magnets for holding the connecting-pieces and said means in their normal position, and means carried by the vehicle for engaging the exposed conductors and controlling the operation of the electromagnets, substantially as and for the purpose set forth.

12. In an electric-railway system, the combination of a moving vehicle, a concealed conductor for the passage of the main current, an exposed conductor for conveying the current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, a second exposed conductor for conveying a current of reduced energy to said electromagnets, additional electromagnets for governing the operation of the former electromagnets, a third exposed conductor connected to the additional electromagnets, a generator, a fourth exposed conductor connected to the generator and to the electromagnets for operating the connecting-pieces, a fifth exposed conductor connected to the source of a current of reduced energy, and means carried by the vehicle for engaging the exposed conductors and controlling the operation of the electromagnets, substantially as and for the purpose specified.

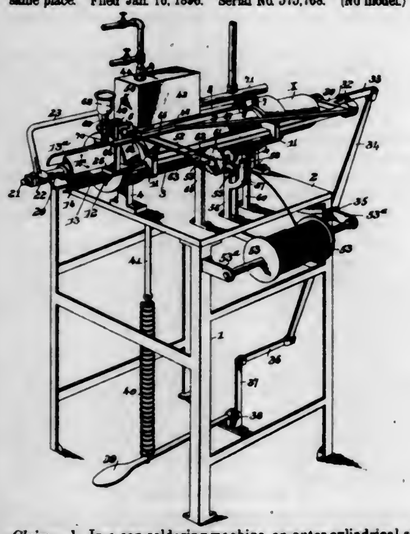
13. In an electric-railway system, the combination of a moving vehicle, a concealed continuous conductor for the passage of the main current, an exposed sectional conductor for conveying the current to the vehicle, independently-movable connecting-pieces for connecting said conductors, electromagnets for operating the connecting-pieces, a second exposed sectional conductor for conveying a current of reduced energy to said electromagnets, additional electromagnets for governing the operation of the former electromagnets, a third exposed sectional conductor connected to the additional electromagnets, means operated by the connecting-pieces for normally completing the circuits connected to the additional electromagnets, permanent magnets for holding the connecting-pieces and said means in their normal position, a generator, an exposed continuous conductor connected to the generator and to the electromagnets for operating the connecting-pieces, a second exposed continuous conductor connected to the source of a current of reduced energy, and means carried by the vehicle for engaging the exposed conductors and controlling the operation of the electromagnets, substantially as and for the purpose described.

573,034. SNOW-SHOE ATTACHMENT FOR BICYCLES. EMIL A. PETERSON, Appleton, Wis. Filed Jan. 27, 1896. Serial No. 576,929. (No model.)



Claim.—A snow-shoe attachment for bicycles, consisting in the combination with the bifurcated shoes through which the wheels are adapted to project, clamps C adapted to be removably attached to the front fork of the bicycle and provided with offset-arms connected by suitably-braced rods with the front shoe, whereby the latter is connected with the bicycle on each side at a single point of attachment, and connecting-rods extending from both ends of the rear shoe, and removably attached to the bicycle-frame rods, substantially as described.

573,035. CAN-SOLDERING MACHINE. WALTER J. PHELPS and EDWIN PHELPS, Baltimore, Md., assignors of one-half to Hosea F. Going, same place. Filed Jan. 16, 1896. Serial No. 575,768. (No model.)



Claim.—1. In a can-soldering machine, an outer cylindrical shell or casing, having a longitudinal top slot, a stationary cylindrical expansible core arranged within said shell or casing and extending the entire length thereof, the soldering-iron, and means for sliding a can-body longitudinally between said shell or casing and said core, substantially as set forth.

2. In a can-soldering machine, a cylindrical shell or casing having a longitudinal top slot, a rigidly-supported stationary expansible core arranged within the shell or casing and normally snugly fitting the interior thereof, a soldering-iron arranged to extend within said top slot, and a carrying device for positively carrying a can-body under the soldering-iron and between said core and the shell or casing, substantially as set forth.

3. In a can-soldering machine, a cylindrical shell or casing, a suitably-arranged soldering-iron, a stationary expansible core snugly fitting within the shell or casing and extending the entire length thereof, and means for carrying a can-body between the core and the shell or casing and against said soldering-iron, substantially as set forth.

4. In a can-soldering machine, a cylindrical shell or casing provided with a continuous longitudinal top slot, a suitably-arranged soldering iron, carrying mechanism for the can-bodies, and means for adjusting the distance between the edges of said top slot to slightly vary the diameter of the shell or casing, substantially as set forth.

5. In a can-soldering machine, a stationary cylindrical shell or casing having a continuous longitudinal top slot and a flared mouth at one end, a rigidly-supported stationary hollow cylindrical expansible core snugly fitting the interior of the shell or casing and extending the entire length thereof, said expansible core having a longitudinal top space coinciding with said top slot, and projecting out of and beyond the flared end of the shell or casing to form a receiving end for the unsoldered can-body a soldering-iron arranged to extend within the top slot of the shell or casing, and means for sliding a can-body longitudinally between the shell or casing and the stationary core therein, substantially as set forth.

6. In a can-soldering machine, the shell or casing provided with a continuous longitudinal top slot and upwardly-projecting lugs located at directly opposite sides of said top slot, adjusting-screws mounted in said lugs to slightly vary the diameter of the shell or casing, a soldering-iron arranged to extend within said top slot, a cylindrical core arranged within said shell or casing, and means for carrying a can-body between the core and the shell or casing and under said soldering-iron, substantially as set forth.

7. In a can-soldering machine, a cylindrical shell or casing having a continuous longitudinal top slot, a soldering-iron arranged to extend into said top slot, a cylindrical expansible core snugly fitting within the shell or casing and comprising a central core-rod extending longitudinally of the shell or casing, oppositely-located collars fitted on the rod, a circular group of parallel-spaced segmental plates, and expanding-springs arranged between said segmental plates and said collars, and a carrying device for the can-body, substantially as set forth.

8. In a can-soldering machine, a cylindrical shell or casing having a continuous longitudinal top slot, the soldering-iron, a cylindrical expansible core snugly fitting within the shell or casing and comprising a central longitudinal core-rod extended beyond one end of the shell or casing, oppositely-located collars fitted on the rod and having peripheral sockets, a circular group of parallel-spaced segmental plates having cleat-irons on their inner sides concentric with said collars, and expanding springs arranged in said sockets and normally pressing against said cleat irons, a rigid supporting-rod suitably connected with the extended end of the core-rod, and a carrying device for the can-body, substantially as set forth.

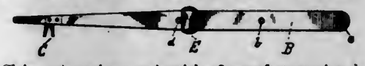
9. In a can-soldering machine, a cylindrical shell or casing provided with a continuous longitudinally-disposed top slot and in its opposite sides with diametrically opposite guide slots, a soldering iron arranged to project into said top slot, a stationary cylindrical expansible core arranged within and extending the entire length of the shell or casing and having at opposite sides longitudinal spaces coinciding with said guide-slots, a pair of reciprocating carrier-bars mounted to slide in said guide-slots and each provided with a series of inwardly-projecting spring-adjusted catch-dogs normally projecting into the longitudinal side spaces of the core, the catch-dogs of the opposite carrier-bars being oppositely arranged in pairs to simultaneously engage successive can-bodies, a cross-head connection between one end of said carrier-bars, and suitable treadle mechanism connected with said cross-head connection to provide for the reciprocation of the carrier-bars in both directions, substantially as set forth.

10. In a can-soldering machine, a cylindrical shell or casing provided with a longitudinal top slot, a cylindrical core arranged within the shell or casing, a heater-box arranged above the shell or casing and provided in its bottom with a longitudinal slot and in one end with a vertically-disposed slot, a burner arranged within the upper part of said heater-box, a soldering iron arranged within the heater-box and projecting through the bottom slot thereof into the top slot of the shell or casing, said soldering-iron being provided near one end with oppositely projecting pins disposed above the bottom of the heater-box and at its opposite end with a headed screw projecting through the slot in one end of the heater-box, and a suitable carrier device to move the can-bodies under the soldering-iron between the shell or casing and the core, substantially as set forth.

11. In a can-soldering machine, a cylindrical shell or casing provided with a longitudinal top slot, a cylindrical core arranged within the shell or casing, a soldering-iron arranged to project into said top slot and provided at its front lower edge with a solder recess or pocket, a carrier device for the can-body, a suitably-arranged spool or reel carrying a solder strip, and feed mechanism, controlled by the movement of said carrier device, to provide for feeding the solder strip into said solder recess or pocket during the time that a can-body is passing one half of its length under the iron, substantially as set forth.

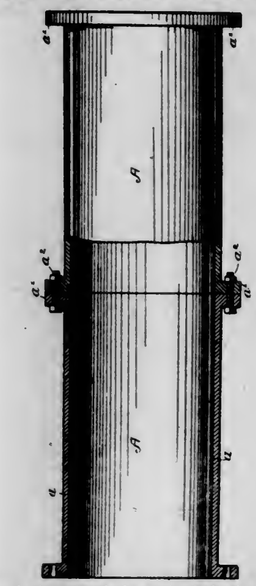
12. In a can-soldering machine, a cylindrical shell or casing provided with a top slot, a cylindrical core arranged within the shell or casing, a soldering iron arranged to project into said top slot, a reciprocating-carrier device for the can-body, a track-rail fitted to and reciprocated with said carrier device, said track-rail having a front horizontal portion and a rear inclined portion, a suitable holder for a strip of solder, a suitably-arranged pair of friction feed-rolls gripping the strip of solder therebetween to feed the same against one side of the soldering-iron, and a ratchet device operatively connected with one of said feed-rolls and having a movable feed-lever carrying at one end a track-roller resting on said track-rail, substantially as set forth.

573,036. DIAMOND-TWEEZERS. LOUIS A. PIAGET, Paterson, N. J. Filed Nov. 25, 1895. Serial No. 570,013. (No model.)



Claim.—As an improved article of manufacture a jeweler's tweezers, having the tongs A and B, the claws C and D secured to said tongs at right angles thereto and near the ends thereof, a sliding loop encircling said tongs and stops secured to said tongs to limit the backward and forward movement of said sliding loop, constructed substantially as shown and described.

573,037. PNEUMATIC-DESPATCH TUBE. CHARLES F. PIKE, Philadelphia, Pa. Filed May 31, 1895. Serial No. 551,219. (No model.)



Claim.—1. A pneumatic-despatch tube having a smooth bore and trackways consisting of depressed longitudinally-disposed grooves sunk in the inner walls of the tube, substantially as described.

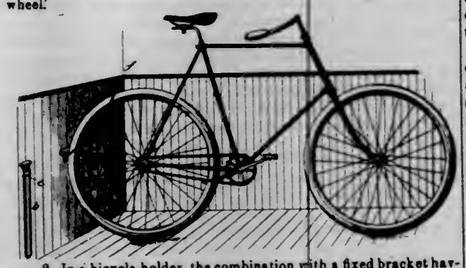
2. A pneumatic-despatch tube having a smooth circular bore and trackways consisting of two depressed longitudinally-disposed wheel guides or grooves provided integrally in the body of the tube, said wheel guides or grooves being depressed in the walls of the tube beyond the line of the inner diameter of the tube, one groove being disposed diametrically opposite the other, substantially as described.

3. A pneumatic-despatch tube consisting of a main carrier-chamber circular in cross-section and grooved trackways integrally provided longitudinally in the walls of the said tube opposite each other, said grooved trackways having rounded inner walls opening into said main chamber and disposed beyond the line of the inner wall of the main chamber, substantially as described.

573,038. BICYCLE-HOLDER. CHARLES J. RYDER, Patchogue, N. Y. Filed Mar. 16, 1896. Serial No. 583,441. (No model.)

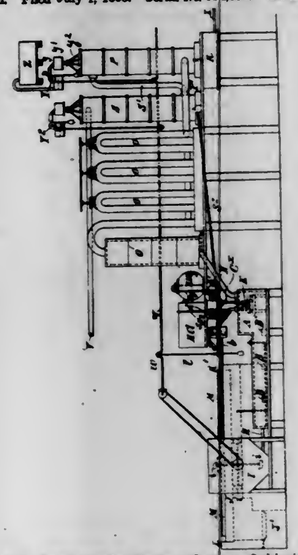
Claim.—1. In a bicycle holder, the combination with a fixed bracket, of a loop hinged thereto and provided with a cross-tie, adapted to engage the bracket above the hinge as an abutment for sustaining the loop at a fixed angle to receive the tire and resist the force required to drive it into the loop and to cause the latter to be bowed

and thereby to increase the clamping function of the loop upon the wheel.



2. In a bicycle-holder, the combination with a fixed bracket having a bulge provided with a rib, with a loop hinged to said bracket below said bulge-rib and provided with a cross-tie arranged to engage said bulge-rib in meeting bearings across the hinged end of the loop to sustain it equally at both sides in position to clamp and hold the wheel in the way described.

573,039. APPARATUS FOR MAKING CHLORIN. SAMUEL A. SADLER and ROBERT H. WILSON, Middlesborough, England, assignors, by mesne assignments, to the American Alkali Company, Limited, London, England. Filed July 1, 1895. Serial No. 554,657. (No model.)



Claim.—1. Apparatus for the manufacture of chlorin comprising the acid-supply vessels, a series of mechanical feeders operated in unison to supply the required relative proportions of the different liquids, means for operating said mechanical feeders, a decomposer to which the measured quantities of acid are delivered, and means for purifying the gases evolved in the decomposer.

2. Apparatus for the manufacture of chlorin comprising a decomposer in which the mixed acids are decomposed and chlorin and other gases are evolved, a scrubber or dephlegmating column, a pipe connecting this column with the decomposer, a series of pipes through which the gases pass connected with the scrubber, means for cooling these pipes, a tower into which the gases pass from the cooling-pipes, a pipe connecting the tower with the cooling-pipes, means for supplying sulfuric acid to said tower, another tower adjacent to said first-mentioned tower, a pipe connecting the two towers, means for supplying water to the second tower, and connections between the second tower and the decomposer for returning hydrochloric acid to the decomposer.

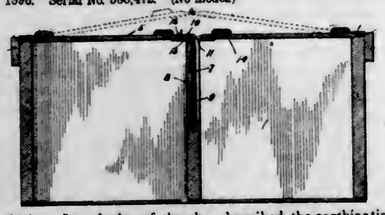
3. Apparatus for the manufacture of chlorin, comprising a decomposer in which the mixed acids are decomposed and chlorin and other gases and vapors are evolved, a vat for containing sulfuric acid, a tank adjacent to the vat, pipe connections between the decomposer and the tank, a mechanical lifter for transferring sulfuric acid from the tank to the vat, vessels containing hydrochloric acid and nitric acid, receivers having pipe connections with the vat and with the acid-containing vessels, pipes leading from the decomposer, bailers for transferring acid in regulated quantities from the receivers to the decomposer, and means for scrubbing, cooling, washing and purifying the gases evolved in the decomposer.

4. Apparatus for the manufacture of chlorin, comprising a decomposer, vessels containing hydrochloric acid, nitric acid and sulfuric acid, receivers having pipe connections with said acid-containing vessels, funnels in the receivers having pipe connections with the decomposer, the rotary bailing-cups for transferring acid in regulated quantities into the funnels and thus feeding it to the decomposer, and means for scrubbing, concentrating and purifying the gases evolved in the decomposer.

5. Apparatus for the manufacture of chlorin, comprising a decomposer in which the mixed acids are decomposed and chlorin and other gases and vapors are evolved, vessels containing hydrochloric acid and sulfuric acid, receivers having pipe connections with the acid vessels, funnels having pipe connections with the decomposer, mechanical bailers for transferring acid in regulated quantities to the funnels, towers into which the gases flow from the decomposer, a mechanical bailer for supplying sulfuric acid in measured quantities to one of the towers, a mechanical bailer for supplying water in regulated quantities to the other tower, and means for simultaneously operating all of said bailers, substantially as described.

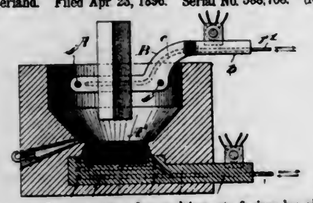
6. Apparatus for the manufacture of chlorin, comprising a decomposer provided with a series of weirs at the bottom dividing it into a series of compartments but arranged below the level of the decomposer so that acids are caused to pass over the weirs and any intermixing of the liquid at the lower level with that of the higher level is prevented, heating-coils arranged in the compartments of the decomposer, overflow vessels E arranged at one end of the decomposer, pipes passing down into said overflow vessels, and means for supplying acid to said pipes.

573,040. LID FOR CRATES. WILLIAM H. H. SALLEE, Rutledge, Mo., assignor of one-half to A. E. McQuoid, same place. Filed Feb. 24, 1896. Serial No. 580,472. (No model.)



Claim.—In a device of the class described, the combination of a body provided at its ends with keepers, a transverse partition arranged within the body, a resilient catch mounted on the partition and provided at its top with a curved band forming an engaging head and disposed longitudinally of the crate, a cover composed of two sections having their outer ends engaging the keepers and hinged at their inner ends, each section being provided at its inner end with a slot for the reception of the head of the catch, and cleats secured to the upper face of the cover at the inner end of the sections to house the head of the catch and prevent the same from being bent, or otherwise injured, when crates are piled upon one another, substantially as and for the purpose described.

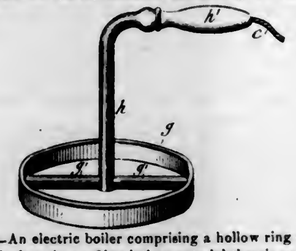
573,041. ELECTRIC FURNACE. MARTIN SCHINDLER, Neuhausen, Switzerland. Filed Apr 23, 1896. Serial No. 588,708. (No model.)



Claim.—1. In apparatus for melting or fusing by electricity, a holder for the positive electrode consisting of a clamp composed of two independent sections, each provided with a half-seat or bearing for the electrode and with a continuous circulating channel or passage having inlet and outlet, and clamping-bolts for clamping said sections together, for the purpose set forth.

2. In apparatus for melting or fusing by electricity, a holder for the negative electrode consisting of a block of metal having a countersunk seat or bearing for such electrode, a flat shank and an internal continuous channel or passage around such seat having its inlet and outlet at the end of said shank, for the purpose set forth.

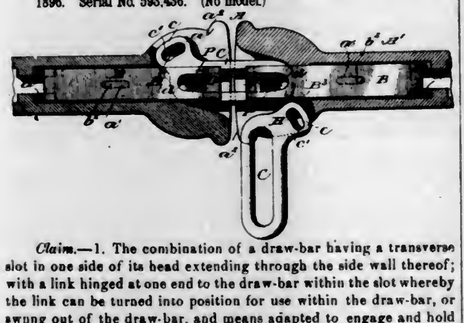
573,042. ELECTRIC BOILING APPARATUS. FRIEDRICH W. SCHINDLER-JENNY, Kennelbach, Austria-Hungary. Filed Feb. 27, 1894. Serial No. 501,702. (No model.) Patented in Austria-Hungary Aug. 22, 1891, No. 37,527 and No. 13,686; in Switzerland Aug. 29, 1891, No. 4,180; in France Sept. 3, 1891, No. 215,905; in Belgium Sept. 4, 1891, No. 96,270; in England Oct. 2, 1891, No. 16,767, and in Italy Dec. 31, 1891, CCCI, 30,685.



Claim.—An electric boiler comprising a hollow ring or annular water-tight body, a base of insulating material therein, one or more electric conductors secured to said base, a handle, and a brace connecting said handle and annular body, the electric conductors passing through said brace and handle, substantially as and for the purposes described

---

573,043. CAR-COUPLING. CHARLES SCHLEICHER, Louisville, Ky., assignor of one-half to John Henry Sumser, same place. Filed May 28, 1896. Serial No. 593,436. (No model.)



Claim.—1. The combination of a draw-bar having a transverse slot in one side of its head extending through the side wall thereof; with a link hinged at one end to the draw-bar within the slot whereby the link can be turned into position for use within the draw-bar, or swung out of the draw-bar, and means adapted to engage and hold the link when it is in position for use and relieve its hinge of draft strain, for the purpose and substantially as described.

2. The combination of the draw-bar A having open slot a^3 in its side; with the laterally-swinging link C hinged at its end within the slot a^3, and means for locking the link when swung inward and relieving its hinges of draft strain, for the purpose and substantially as described.

3. The combination of a draw-bar having a transverse slot in one side of its head extending through the side wall thereof, with a link hinged at one end to the draw-bar within the slot, whereby the link can be turned into position for use within the draw bar, or swung out of the draw-bar, and the tumbler B having projecting head B' adapted to bite the inner end of the link when it is swung into the draw bar, for the purpose and substantially as described.

4. The combination of the draw-bar A having open slot a^3 in its side, with the laterally-swinging link C, hinged at its end within the slot a^3, the pin, and the tumbler B having projecting head B', all substantially as and for the purpose set forth.

5. The combination of the draw-bar having a slot in one side of its head, the laterally-swinging link having a slotted lip at one end and the hinge-bolt transfixing said lip and securing the link to the draw-bar, substantially as and for the purpose set forth.

6. The combination of the draw-bar having a slot in one side of its head, the laterally-swinging link having a slotted lip at one end and the hinge bolt transfixing said lip and securing the link to the draw-bar, with the locking-pin, and the tumbler, all substantially as and for the purpose set forth.

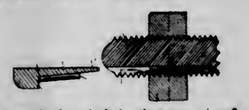
7. In a car-coupling the combination of the draw-bar and pin and link, with the tumbler having a head projecting beyond the pin-openings of the draw-bar, and having a slot in its head for the passage of the pin, and a pin-upholding ledge in the slot, substantially as and for the purpose described.

8. In a car-coupling, the combination of the tumbler having a head provided with a slot and pin upholding ledge in the slot substantially as described, and a pin on its bottom engaging a slot in the draw-bar; with the draw-bar having inclined guides for the rear end of the tumbler, and the pin and link, all substantially as and for the purpose described.

9. The combination of the draw-bar having guides *a*, and pin-openings substantially as described; with the tumbler B having upturned head B' provided with slot D, and ledge *d*; substantially as and for the purpose described.

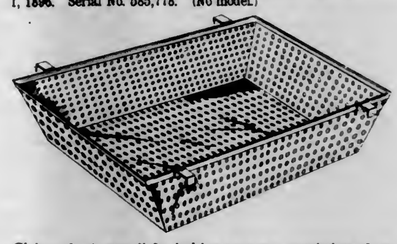
10. The combination of the draw-bar having guides *a*, and pin-openings substantially as described; with the tumbler B having upturned head B' provided with slot D, and ledge *d*; and the pin on the tumbler engaging a slot in the draw-bar to limit the motion of the tumbler, and the pin and link all substantially as and for the purpose set forth.

573,044. NUT-LOCK. THOMAS SEELY, Tampa, Fla. Filed Mar. 13, 1896. Serial No. 583,025. (No model.)



Claim.—In a nut-lock, a bolt having a groove formed therein, a nut threaded on said bolt, a key adapted to slide in said groove, said key having a head with a shoulder to limit its movement, cutting-ridges formed on one edge of the key, ending in an undercut forming a shoulder and a pointed cutting-surface and a bit having a beveled surface leading to the undercut portion, as and for the purpose described.

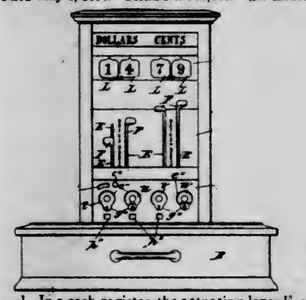
573,045. BAKE-PAN. ROBERT C. SNYDER, Colfax, Ill. Filed Apr. 1, 1896. Serial No. 585,778. (No model.)



Claim.—1. A utensil for baking purposes, consisting of an outer pan having apertures in the bottom and side walls, and an inner pan also provided with apertures, removably suspended within the outer pan without touching the same, whereby spaces are left between the two pans at the bottom and all around the walls thereof, substantially as and for the purpose specified.

2. The herein-described pan for baking purposes, consisting of an outer pan having openings in the bottom and side walls suitable for the free admission of air, and an inner pan of finely-perforated or foraminous material, removably suspended within the outer pan with an intervening space all around, permitting the free circulation of heated air between the two vessels, substantially as and for the purpose specified.

573,046. CASH-REGISTER. ELIJAH F. SPAULDING, Bound Brook, N. J. Filed July 1, 1896. Serial No. 597,710. (No model.)



Claim.—1. In a cash-register, the actuating lever F, and the plate X connected to be moved by said lever and having the rack, com-

bined with means for actuating said plate by the movement of the cash drawer, the registering dial bearing numerals, and gearing intermediate said dial and said rack whereby the movement of the latter from the cash-drawer is caused to effect the revolution of said dial; substantially as set forth.

2. In a cash-register, an actuating-lever having an exposed end, and a support bearing an exposed column of numerals in convenient relation to said lever, combined with a bank of tablets bearing numerals corresponding with said exposed column of numerals, a set of independent tablet-rods connected with said tablets, a device connected with and adapted to be moved by said actuating-lever to a proper position below said tablet-rods, and a carriage or slide adapted to be moved inward upon the closing of the cash-drawer and to elevate said device for moving upward the proper tablet to be exposed; substantially as set forth.

3. In a cash-register, the actuating-lever, a support bearing an exposed column of numerals in convenient relation to said actuating-lever, a bank of tablets bearing numerals corresponding with the numerals on the said exposed column, and tablet-rods connected with said tablets, combined with a device connected with and adapted to be moved below said rods by said actuating-lever, a carriage adapted to be moved inward to engage and elevate said device, means for locking said carriage at its inward position while the cash-drawer is closed, and means for freeing said carriage when the actuating-lever is returned to its normal position; substantially as set forth.

4. In a cash-register, the actuating-lever, and the movable plate connected to be moved by said lever and having the rack, combined with the bank of tablets bearing numerals, a cam arranged to be actuated from the cash-drawer for elevating said plate to expose the proper tablet, the registering-dial bearing numerals corresponding with the numerals on said tablets, and gearing intermediate said dial and said rack whereby the latter from the cash-drawer is caused to effect the revolution of said dial; substantially as set forth.

5. In a cash-register, a bank of tablets bearing numerals, the actuating-lever having an exposed end, and the support bearing the exposed column of numerals adjacent to said actuating-lever, combined with the sliding plate connected with and adapted to be moved by said actuating-lever to a proper position below said tablets, and a cam arranged to be actuated by the movement of the cash-drawer for elevating said plate to expose the proper tablet; substantially as set forth.

6. In a cash-register, the actuating lever, and a support bearing the exposed column of numerals in convenient relation to said lever, combined with a slide having a guiding head or block connected with and adapted to be moved by said actuating-lever, the set of tablets bearing numerals corresponding with the said exposed column of numerals, tablet-rods connected with said tablets, a plate guided on said block or head and adapted to be thereby moved below said tablet-rods, a lever connected with said slide and adapted to contact with said plate, and a slide or carriage adapted to be moved inward by the closing of the cash-drawer and elevate said plate and the tablet directly above the same; substantially as set forth.

7. In a cash register, the actuating-lever, and a support bearing the exposed column of numerals adjacent to said lever, combined with the slide having a block or head and connected with and adapted to be moved by said actuating-lever, the vertically-movable plate guided on said block or head and adapted to be thereby carried to the desired position, the set of tablets bearing numerals corresponding with the said exposed numerals, the set of tablet-rods connected with said tablets and arranged to be engaged by said plate, a cam-shaped lever connected with said slide and freely engaging a projection on said plate, and a sliding carriage adapted to be moved against said cam-shaped lever for compelling the latter to elevate said plate and the tablet above it; substantially as set forth.

8. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals adjacent to said lever, combined with the slide connected with and adapted to be moved by said lever, the vertically-movable plate carried by said slide, the bank of tablets bearing numerals corresponding with the said exposed numerals, the tablet-rods connected with said tablets and arranged to be engaged by said plate, and means substantially as described for elevating said plate and the tablet above it and locking the same in their upward position; substantially as set forth.

9. In a cash-register, the series of banks of tablets bearing numerals, the actuating hand-levers, and the support bearing the exposed numerals corresponding with the numerals on said tablets, combined with the sliding plates connected with and adapted to be moved by said actuating-levers to proper positions below said tablets, the pivoted or hinged arms having their free ends adapted to engage said plates, the series of cams arranged to move said hinged arms against said plates for elevating the latter and exposing the proper tablets, and means for actuating said cams; substantially as set forth.

10. In a cash-register, the series of actuating hand-levers, and the support bearing the exposed numerals in convenient relation thereto, combined with the independent sliding plates connected with said levers, the pivoted or hinged arms having their free ends adapted to engage said plates, the series of cams arranged to move said arms against said plates for elevating the latter, the series of registering-dials, mechanism substantially as described intermediate said plates and dials for revolving the latter from the former when said plates are actuated by said cams, and means for actuating said cams from the cash drawer; substantially as set forth.

11. In a cash-register, a series of actuating-levers, and the independent sets of tablets bearing numerals, one set being provided for each of said actuating-levers, combined with independent devices connected with said levers and adapted to be given position thereby with relation to said tablets, and means intermediate said devices and the cash-drawer whereby upon the movement of the latter the said devices will be elevated to move upward those tablets bearing numerals corresponding with the positions at which said actuating-levers are arrested; substantially as set forth.

12. In a cash register, the actuating-lever having the toothed segment, and a support bearing the exposed column of numerals in convenient relation to said actuating-lever, combined with the slide having the rack in engagement with the said segment and having at its inner end the guiding block or head, the series of tablets bearing numerals corresponding with the numerals of said exposed column, the tablet-rods connected with said tablets, a plate on said guiding-head, the register-dial bearing numerals corresponding with the numerals on said tablets, and graduated gearing intermediate said plate and dial for imparting the requisite degree of movement from the former to the latter; substantially as set forth.

13. In a cash register, the actuating-lever, and a support bearing the exposed column of numerals, combined with the set of tablets bearing numerals corresponding with the numerals of the said exposed column, a movable plate connected with and adapted to be moved below said tablets by means of said actuating-lever, means actuated by the cash-drawer for moving said plate upward to expose said tablets, means for locking the tablets in their exposed position, the registering-dial, and means connected with said plate for imparting motion to said dial; substantially as set forth.

14. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals, combined with the set of tablets bearing numerals corresponding with the numerals on said exposed column, the tablet-rods connected with said tablets, the plate connected with and adapted to be moved below said tablet-rods by said actuating-lever and having a rack, means for elevating said plate against said rods, the registering-dial, the shaft therefor, and the pinion-wheel upon the said shaft to be engaged by said rack upon the upward movement of said plate, whereby said plate is enabled to both expose the proper tablet and register the numeral thereon on said dial; substantially as set forth.

15. In a cash register, the actuating-lever, and a support bearing the exposed column of numerals in convenient relation to said lever, combined with the bank of tablets bearing numerals corresponding with the numerals of said exposed column, the tablet-rods connected with said tablets, a movable plate connected with said actuating-lever and adapted to be thereby moved to a proper position below said tablet-rods, means for elevating said plate and the tablet above it during the closing of the cash-drawer, means for locking said tablet in its exposed position while the said actuating-lever is in its elevated position and the cash-drawer is closed, and means for freeing said tablet and said cash-drawer when said actuating-lever is returned to its lower position; substantially as set forth.

16. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals in convenient relation to said lever, combined with the bank of tablets bearing numerals corresponding with the numerals on said exposed column, the tablet-rods connected with said tablets, the plate connected with the actuating-lever and adapted to be moved thereby below the proper tablet to be exposed, means connected with the cash-drawer for moving said plate and tablet upward upon the closing of the cash-drawer, the registering-dial, and means intermediate said plate and said dial for imparting movement from the former to the latter during the ascent of the plate; substantially as set forth.

17. In a cash-register, the actuating lever, and a support bearing the exposed column of numerals, combined with the set of tablets bearing numerals corresponding with the numerals of said exposed column, the tablet-rods for said tablets, a plate connected with and adapted to be moved by said actuating-lever to a proper position below said tablet-rods, a sliding carriage connected with the cash-drawer for elevating said plate and the tablet above it, the rack upon the said plate, the registering-dial, and gearing intermediate said rack and dial for imparting motion from said plate to the dial; substantially as set forth.

18. In a cash-register, the actuating lever, and a support bearing the exposed column of numerals in convenient relation to said lever, combined with the set of tablets bearing numerals corresponding with the numerals of the said exposed column, the tablet-rods for said tablets, a plate connected with and adapted to be moved by said actuating-lever to a proper position in relation to said tablet-rods, means for imparting to said plate an invariable upward throw against the proper tablet-rod, the register-dial, and means intermediate said plate and said dial for imparting from the former to the latter a graduated movement corresponding with the numeral on the tablet exposed; substantially as set forth.

19. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals in convenient relation to said lever, combined with the set of tablets bearing numerals corresponding with the numerals on the said exposed column, the tablet-rods for said tablets, a plate adapted to be moved below the said rods from the said actuating-lever, means for throwing said plate upward against the proper tablet to expose the latter, the registering-dial, and means for imparting the motion of said plate to said dial to an extent corresponding with the numeral on the exposed tablet; substantially as set forth.

20. In a cash-register, the actuating-lever, and a support bearing exposed column of numerals, combined with the set of tablets bearing numerals corresponding with the numerals in said exposed column, the registering-dial also bearing numerals corresponding with the numerals in said exposed column, a device connected with and adapted to be given a position below the proper tablet by said actuating lever, means connected with the cash-drawer for moving said device upward to expose the tablet and having an invariable movement, and means intermediate said device and said registering dial for imparting a variable movement to the latter corresponding with the numeral on the exposed tablet; substantially as set forth.

21. In a cash-register, the actuating-levers, and a support bearing the column of numerals in convenient relation to said actuating-levers, combined with the slides connected with said levers and adapted to be independently operated therefrom and each having upon its inner end a guiding block or head, the independent plates on said guiding blocks or heads, the sets of tablets bearing numerals corresponding with the numerals of the said exposed column, tablet-rods connected with said tablets and arranged to be engaged by said plates, cam-levers connected to said slides and engaging said plates, the movable carriage adapted to contact with said cam-levers and cause the same to elevate said plates and the tablets directly above the same, the registering-dials, and means intermediate said plates and said dials for imparting motion from the former to the latter; substantially as set forth.

22. In a cash-register, the actuating-levers, and a support bearing the exposed column of numerals, combined with the independent sets of tablets bearing numerals corresponding with the numerals on the said exposed column, the independent tablet-rods for the said tablets, the slides adapted to be independently moved by said actuating-levers and having upon their inner ends guiding blocks or heads, the independent vertically-movable plates on said guiding blocks or heads and arranged to engage said tablet-rods, the cam-shaped levers connected with said slides and engaging said plates, the carriage adapted to be moved inward against said cam-shaped levers to elevate said plates and the tablets above them, the racks upon the outer faces of said plates, the registering-dials, and means intermediate said racks and dials for imparting movement from the former to the latter; substantially as set forth.

23. In a cash-register, the actuating-levers, and a support bearing the column of exposed numerals, combined with the sets of tablets bearing numerals corresponding with the numerals on said exposed column, the slides connected with said levers and adapted to be moved thereby, the guiding blocks or heads upon the inner ends of said slides, the plates guided upon said blocks or heads and arranged to engage the tablet-rods, the cam-shaped levers connected with said slides and engaging said plates, the carriage adapted to be moved inward against said cam-shaped levers to effect the elevation of said plates and the tablets directly above the same, the registering-dials, means intermediate said plates and said dials for imparting motion from the former to the latter, and means for carrying from one to another of said dials; substantially as set forth.

24. In a cash-register, the actuating-levers, and a support bearing the exposed column of numerals, combined with the independent sets of tablets corresponding with the numerals on the said exposed column, the tablet-rods for said tablets, the plates independently connected with said actuating-levers and arranged when moved upward to engage said tablet-rods, means connected with the cash drawer for simultaneously elevating said plates, the registering-dials, and means intermediate said plates and dials for independently rotating the latter from the former; substantially as set forth.

25. In a cash-register, the actuating-levers, and a support bearing the exposed column of numerals, combined with the sets of tablets bearing numerals corresponding with the numerals of the said exposed column, the tablet-rods for said tablets, the plates connected with and adapted to be moved by the actuating-levers and arranged to engage said tablet-rods, a carriage connected with the cash-drawer whereby on the closing of the latter the said plates are caused to elevate and expose the tablets, the series of registering-dials, independent means intermediate the respective plates and dials for communicating motion from the former to the latter, and means intermediate said carriage and said dials for effecting the carrying from one to another of said dials; substantially as set forth.

26. In a cash-register the actuating-levers and a support bearing the exposed column of numerals in convenient relation to said levers, combined with the sets of tablets bearing numerals corresponding with the numerals on the exposed face of the register, the independent slides connected with and adapted to be moved independently by said actuating-levers, the plates carried by said slides and adapted to have an independent vertical movement against the tablet-rods, the carriage connected with the cash-drawer and adapted on the closing of the latter to elevate all of said plates and effect the exposure of the tablets directly above the same, means for locking said carriage at its inward position, the series of registering-dials, means intermediate said plates and dials for independently rotating the latter from the former in accordance with the numerals exposed on said tablets, and means for automatically driving said carriage outward when the said actuating-levers are returned to their lower position; substantially as set forth.

27. In a cash-register, the actuating-levers, and a support bearing the exposed column of numerals in convenient relation to said levers, combined with the sets of tablets bearing numerals corresponding with the numerals on said exposed column, the tablet-rods for said tablets, sliding plates connected with said actuating-levers to be moved by the latter below the particular tablets to be exposed, the sliding carriage connected with the cash-drawer and adapted on the closing of the latter to elevate said plates and said tablets to be exposed, means for locking the carriage in its inward position, the registering-dials, means intermediate said plates and dials for imparting motion from the former to the latter, means for freeing said carriage by the lowering of the actuating levers, and means for ejecting said carriage and drawer when freed by said levers; substantially as set forth.

28. In a cash register, the actuating-levers, and a support bearing the exposed column of numerals, combined with the sets of tablets bearing numerals corresponding with the numerals of said exposed column, the tablet-rods for said tablets, the slides connected with said actuating-levers, the plates carried by said slides and adapted to be thereby moved below the tablets to be exposed, the cam-shaped levers connected with the said slides and engaging said plates, the sliding carriage connected with the cash-drawer and adapted on the closing of the latter to contact with said cam-shaped levers and elevate said plates and the tablets directly above the same, the cross-head having the pawl to hold said carriage at its inward position, the arm on said cross-head to be engaged by said carriage when the latter is at its outward position, the pawl-arms formed on the ends of said cross-head, the weighted levers arranged to engage said pawl-arms when said carriage is at its outward position, the spring acting against said cross-head, and pins connected with said actuating-levers for engaging said bell-crank levers when the carriage is at its inward position and thereby free said cross-head and permit said spring to tilt the same and elevate said pawl free of said carriage; substantially as set forth.

29. In a cash-register, the actuating-levers, and a support bearing the exposed column of numerals in convenient relation to said actuating-levers, combined with the sets of tablets bearing numerals corresponding with the numerals of said exposed column, the tablet-rods for said tablets, sliding plates connected with and adapted to be moved by said actuating-levers to a proper position to engage said tablet-rods, a carriage connected with the cash-drawer and adapted to be moved inward for the purpose of elevating said plates and the tablets directly above the same, the registering-dials, means intermediate said plates and said dials for communicating motion from the former to the latter, and means connected with said carriage for effecting the carrying from one dial to another; substantially as set forth.

30. In a cash register the actuating levers, and a support bearing the exposed column of numerals in convenient relation to said levers, combined with the sets of tablets bearing numerals corresponding with the numerals of said exposed column, the sliding plates connected with said levers and adapted to be moved by the same to a proper position below said tablet-rods, a sliding carriage connected with the cash-drawer and adapted upon its inward motion to elevate said plates and the tablets directly above the same, the registering-dials, means intermediate said plates and dials for communicating motion from the former to the latter, the series of cam-bars connected with said carriage, the vertically-acting pawls arranged to be engaged by said cam bars, and pinions on the dial-shafts to be engaged and rotated by said vertically-acting pawls when they are acted upon by said cam-bars; substantially as set forth.

31. In a cash register the actuating-levers, and a support bearing the exposed column of numerals, combined with the sets of tablets

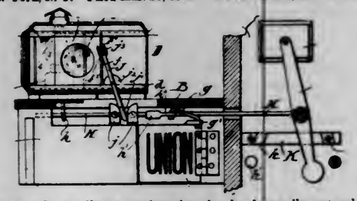
bearing the numerals corresponding with the numerals on the said exposed column, the tablet-rods for said tablets, the sliding plates connected with and adapted to be moved by said actuating-levers in position to engage said tablet-rods, a sliding carriage connected with the cash-drawer and adapted upon being moved inward to elevate said plates and the tablets directly above the same, the registering-dials, mechanism intermediate said dials and said plates for communicating motion to the former from the latter, the cam-bars connected with said carriage, the vertically-movable pawls arranged in proper relation to said dials, the sliding plates carrying said vertically-acting pawls, and projections on said dials for moving said plates whereby the said vertically-acting pawls are carried into and out of alinement with the said cam-bars for operating the registering-dials from the latter; substantially as set forth.

32. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals, combined with the set of independent tablets bearing numerals corresponding with the numerals of said exposed column, the registering-dials, means connected with the cash-drawer for exposing the proper tablets and correspondingly operating said dials on and by the closing of said cash-drawer, and means connected with said cash-drawer for effecting the carrying from one to the other of said dials on and by the opening of said cash-drawer; substantially as set forth.

33. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals therefor, combined with the set of independent tablets bearing numerals corresponding with the numerals of said exposed column, means substantially as described for exposing the proper tablet on and by means of the closing of the cash-drawer, and means for freeing said exposed tablet and ejecting the said drawer upon the return movement of said actuating-lever; substantially as set forth.

34. In a cash-register, the actuating-lever, and a support bearing the exposed column of numerals therefor, combined with the set of tablets bearing numerals corresponding with the numerals of said exposed column, the plate connected with and adapted to be moved with relation to the tablet to be exposed by said actuating-lever, the carriage adapted to move with the drawer and to effect the movement of said plate to expose the tablet, the sleeve having the downwardly-extending arms and carried by the said carriage, the projections on the cash-drawer to be respectively engaged by said arms, and means for freeing said arms from the drawer on the opening of the latter; substantially as set forth.

573,047. RAILWAY-STATION SIGNAL. ARTHUR A. SPRAGUE, New York, N. Y. Filed Mar. 26, 1896. Serial No. 584,927. (No model.)

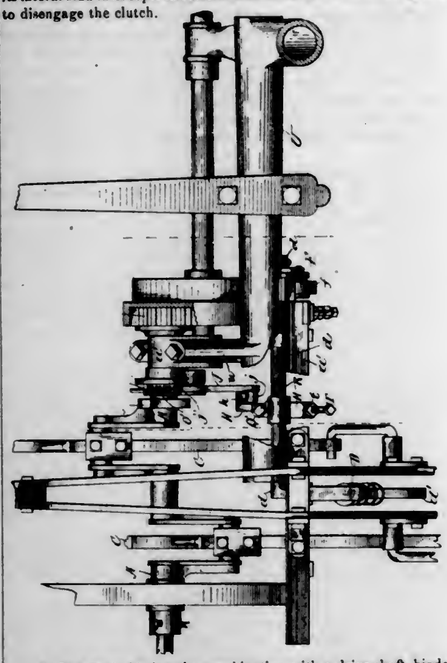


Claim.—In a railway-station signal, a horizontally extended colored board or bracket having colored doors hinged to either side thereof and a casing adapted to contain a lamp mounted thereon, said casing being opaque in its rearward portion and having transparent windows in the forward end thereof, and a sliding framework carrying colored lenses mounted therein; in combination with a horizontally-extended rod which is in engagement with a double-forked lever adapted to operate the said sliding framework and with rods connected to the said doors, whereby the doors and framework may be simultaneously operated by oscillatory movement imparted to the said rod which rod is connected at its inner end to an operating-lever, substantially as shown and described.

573,048. TRIP MECHANISM FOR GRAIN-BINDERS. BENJAMIN F. STEWART, Chicago, Ill. Filed Apr. 22, 1896. Serial No. 588,686. (No model.)

Claim.—1. In a grain-binder, the combination with the binder mechanism, of a drive-shaft, a spring-clutch for engaging the drive-shaft with the binder mechanism, a yielding trip-arm for receiving the pressure of the forming gavel, a rock-shaft for carrying the trip-arm, and a longitudinally and laterally adjustable trip-stop fixed to the rock-shaft and being so disposed as to disengage the clutch while the gavel is accumulating, and to be thrown out of connection therewith as the trip-arm yields to the pressure of the gavel.

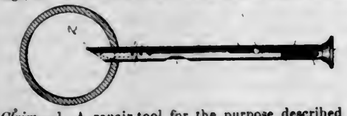
2. In a grain-binder the combination with the binder mechanism, a drive-shaft, a spring-clutch for connecting the binder mechanism with the drive-shaft, and a trip for automatically disengaging the clutch and comprising a rock-shaft, an arm carried by the rock-shaft for receiving the pressure of the forming gavel and a spring to resist such pressure, of an arm for controlling the clutch and having a lateral stud at its end, and a longitudinally and laterally adjustable trip-arm fixed to the rock-shaft and having a lateral stud at its end, said trip arm being so held by the shaft while the gavel is forming that its lateral stud intercepts the lateral stud of the clutch-controlling arm to disengage the clutch.



3. In a grain-binder the combination with a drive-shaft, binder mechanism, a clutch-block mounted upon the drive-shaft, and a spring-pawl connected with the binder mechanism for engaging the clutch-block and having a trip arm extending radially from the center of its rotation, of a trip-arm for receiving the pressure of the forming gavel, a rock-shaft for carrying such arm, a hub fixed upon such shaft and having lugs, a trip-stop comprising an arm having a longitudinal slot to receive one of such lugs and being in lateral adjustable engagement with another of such lugs, and an adjusting-screw set in the end of the trip-stop and bearing against the lug within its longitudinal slot.

4. In a grain-binder the combination with the binder mechanism, of a drive-shaft, a clutch for engaging the binder mechanism with the drive-shaft and being normally in engagement, a longitudinally and laterally adjustable trip-stop so disposed as to normally disengage the clutch, mechanism for yieldingly receiving the pressure of the forming gavel, such gavel-receiving mechanism and the trip-stop being so connected that the yielding of the former disconnects the latter from the clutch.

573,049. TOOL FOR REPAIRING PNEUMATIC TIRES. DAVID A. SYME, Elmhurst, Ill., assignor of one-third to Otto H. Fleischer, Chicago, Ill. Filed Oct. 24, 1895. Serial No. 566,712. (No model.)



Claim.—1. A repair-tool for the purpose described having in combination a tube provided with a point and having a cement-outlet near said point, a portion of the tube between the point and said cement-outlet being imperforate throughout its circumference, and a plunger fitting within and closing said tube, substantially as set forth.

2. A repair tool for the purpose described having in combination a tube provided with a point, a cement-outlet formed therein near said point, said tube having an imperforate portion throughout its circumference between said point and cement-outlet, and a plug-

admission orifice between which and said point said cement-outlet is formed, and a plunger fitted within and closing said tube, substantially as set forth.

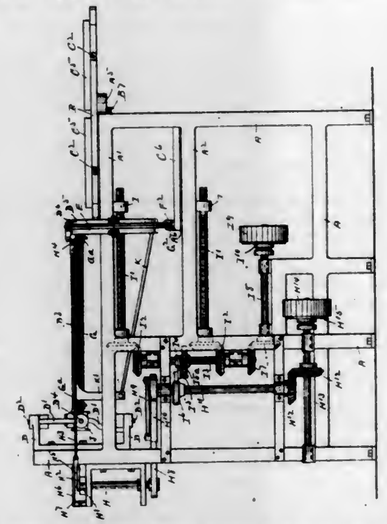
3. A repair-tool for the purpose described having in combination a tube provided with the inserting end and having a cement outlet formed therein near said end, a plunger arranged in said tube and having a button 9, said tube being provided with a longitudinal slot for said button, and said slot having a stop for arresting the movement of said button, substantially as set forth.

4. A repair-tool for the purpose described having in combination a tube provided with a point and having a cement-outlet formed therein near said point, a plunger arranged in said tube and having a button 9, and said tube being provided with a longitudinal slot for the movement of said button and said slot having the offset 11 and notch 12, substantially as set forth.

5. A repair-tool for the purpose described having in combination a cylindrical tube provided with a point, a plug and cement-admission orifice 4 formed therein in said tube near the point, a cement-outlet formed in said tube between the point and said orifice, said tube between said point and said outlet and between said outlet and orifice being imperforate throughout its circumference, and a plunger fitted within said tube and adapted to close said orifice, substantially as set forth.

6. A repair-tool for the purpose described having in combination a tube provided with an inserting end, a cement-outlet near said end and a side orifice for the admission of cement to said tube, said tube also having an imperforate portion throughout its circumference between said cement-outlet and side orifice, and a plunger located in said tube, substantially as and for the purpose set forth.

573,050. MOLDING-MACHINE FOR FORMING WARPED OR IRREGULAR SURFACES. EDWARD L. TAFT, Gardner, Mass., assignor of one-half to James L. Chapman, Fitchburg, Mass. Filed June 12, 1894. Serial No. 514,339. (No model.)



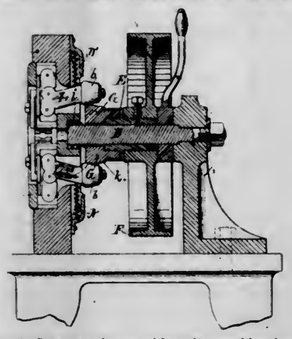
Claim.—1. In a wood-molding machine for forming a warped or irregular surface, the combination of a vibrating frame capable of vibrating in a horizontal plane, of a pair of revolving cutter-heads carried by said frame; said cutter-heads having parallel axes but different planes of rotation, a pattern-surface, a pair of pattern-rolls carried by said frame over said surface, said rolls being operatively connected with said cutter-heads, whereby each of said cutter-heads is raised or lowered independently of the other, and means for feeding the work transversely to the line of movement of said cutter-heads as they are carried by said vibrating frame, substantially as described.

2. In a wood-molding machine for forming warped or irregular surfaces, the combination with a frame pivoted at one end so as to be capable of a traversing movement in a horizontal plane, and also of an angular movement in a vertical plane, of a revolving cutter carried by said pivoted frame, a pattern-roll carried by said pivoted frame in contact with the pattern-plate, a pattern-plate by which the vertical movement of said frame is controlled, a yoke carried by said frame and capable of a vertical sliding movement in ways on said frame, a revolving cutter connected with said vertically-sliding yoke and a pattern-roll carried by said yoke and in contact with said pattern-plate, whereby said yoke and connected cutter is given an independent movement in a vertical plane, substantially as described.

3. The combination of the frame D^2, yoke D^5, revolving cutter F' carried by said frame, yoke E capable of a vertical movement along ways on said yoke D^5, a cutter G' carried by said yoke E, pattern-rolls F^2 and G^2 carried by said yokes D^5 and E, and a pattern-plate in contact with said pattern-rolls, whereby said cutters are raised and lowered independently of each other, as determined by the configuration of said pattern-plate, substantially as described.

4. The combination with the frame D^2, pivoted at one end so as to be capable of a vibrating motion in a horizontal plane, of the actuating mechanism, consisting of a rocking shaft H, cross-bar H' attached to said shaft, links H^2, H^2 pivoted to said cross-bar, rods H^3, H^3 pivoted to said frame D^2 and to said links H^2, H^2 and links H^4, H^4 pivoted upon a fixed stud and upon the ends of said rods H^3, H^3, a revolving cutter carried by said frame D^2, substantially as described.

573,051. SWAGING-MACHINE. JEROME C. TAFT, Providence, R. I. Filed Sept. 17, 1894. Serial No. 523,304. (No model.)



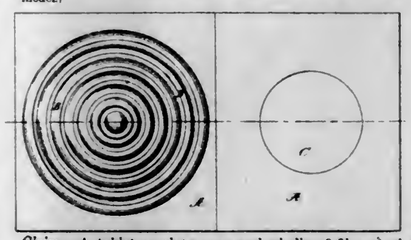
Claim.—1. In a swaging-machine, the combination of the opposite swaging-dies, and the revolving beaters adapted for forward and backward movement, with the toggle-jointed levers having a projecting arm adapted for engagement with the beaters, and means for moving the beaters forward and backward while the machine is in operation, substantially as described.

2. In a swaging machine, the combination of the opposite swaging-dies, and the inclined revolving beaters, with the toggle-jointed levers, provided with rollers arranged on the long arms of the levers, to receive the action of the beaters, substantially as described.

3. In a swaging-machine, the combination of the opposite swaging-dies, and the inclined revolving beaters, with the toggle-jointed levers, provided with tapering rollers, arranged on the long arms of the levers to receive the action of the beaters, substantially as described.

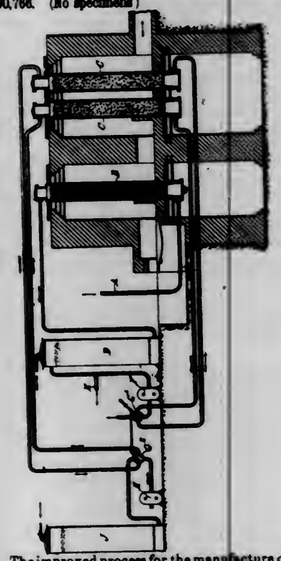
4. In a swaging-machine, the combination of the sets of opposite dies with the revolving beaters provided with opposite inclined surfaces, and connections between the beaters and dies, whereby the sets of opposite dies may have an independent closing movement, substantially as described.

573,052. FLAT-IRON SUPPORT. MARK S. THOMPSON, New York, N. Y., assignor to the H. W. Johns Manufacturing Company, same place and Jersey City, N. J. Filed Dec. 26, 1895. Serial No. 573,267. (No model.)



Claim.—A tablet or plate composed wholly of fibrous asbestos and adhesive material, compressed into a firm, solid structure, having a recess for the reception of wax in one part, and corrugations at another part, for the support of a flat-iron, for the purposes set forth.

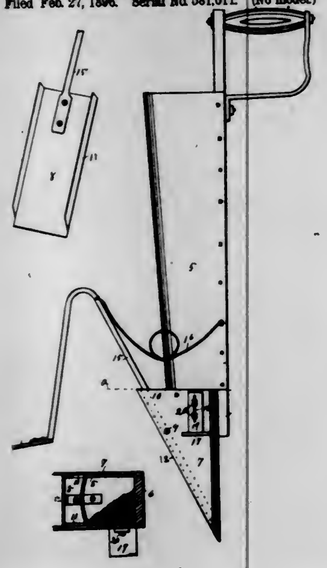
573,053. PROCESS OF MANUFACTURING CARBONIC-ACID GAS. BENJAMIN T. L. THOMSON, London, England. Filed May 8, 1896. Serial No. 590,766. (No specimens.)



Claim.—1. The improved process for the manufacture of carbonic-acid gas consisting in passing steam through heated carbon so as to produce carbonic oxid and hydrogen and subsequently passing these resultant gases through a heated oxid (such as oxid of copper) or other material capable of giving up its oxygen to hydrogen so as to produce steam and to carbon monoxid so as to form carbonic acid, substantially as described.

2. The improved process for the manufacture of carbonic-acid gas consisting in passing steam through heated carbon so as to produce carbonic oxid and hydrogen exhausting these resultant gases through a washer or purifier, then passing them through a heated oxid or material capable of giving up its oxygen thereto so as to produce carbonic acid and steam, then to and through a second washer for the carbonic-acid gas and a condenser for the steam, substantially as set forth.

573,054. POTATO-PLANTER. JAMES W. UNDERHILL, Pine Grove, Mich. Filed Feb. 27, 1896. Serial No. 581,011. (No model.)



Claim.—The combination, of the U-body or spout portion, a point having its sides closed throughout its entire slanting portion leaving no opening at 10, the gate with inwardly-turned edges and set well in from the outer side edges of the point, and the vertically-adjustable combined step and gage, the same being located on one of the sides of the planter, the same having the vertical elongated slot, and bolts therein separated from each other and separated from each end of said slot, substantially as set forth.

573,055. PEDAL-CRANK FOR BICYCLES, &c. WILLIAM J. VALENTINE, Warrensburg, N. Y. Filed July 26, 1895. Serial No. 557,197. (No model.)



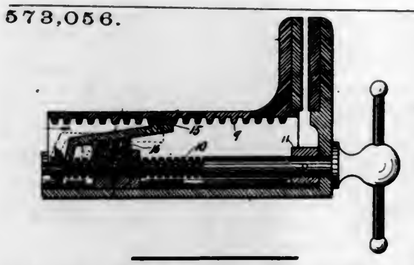
Claim.—1. In a pedal-crank for bicycles or other vehicles, the combination of the hub having an eccentrically-arranged driving-shaft secured thereto, which hub comprises a disk having two notches in the periphery thereof located diametrically opposite to each other and upon an imaginary line which exactly bisects the face of the hub and the end of its attached shaft; and an annular flange upon the face thereof, and a crank comprising a circular box, a radial arm and a spring-pressed lever led along the arm of said crank to a point opposite the pedal, and operated from the same, said box being fitted snugly over the said annular flange and pivotally attached to the said hub at the center thereof, and said lever being in normal engagement with one of the notches of the circular disk and being adapted to bear upon the face of said disk during the operation of adjusting the crank; substantially as shown and described.

2. In a pedal-crank for bicycles or other vehicles, the combination of the hub having an eccentrically-arranged driving-shaft secured thereto, which hub comprises a disk having two notches in the periphery thereof located diametrically opposite to each other upon an imaginary line which would exactly bisect the face of the hub and its attached shaft, and an annular flange upon the face thereof; with the crank which comprises a circular box and a radially-projected arm having a spring pressed lever pivotally secured in a recess thereof, and extending along the arm of crank and operated by the foot without withdrawal from the pedal, said box being snugly fitted over the flange of the hub and pivotally attached to said hub by means of a spindle and said lever adapted to bear upon the face of the hub during the process of adjustment and to engage with the notches thereof when the device is being operated; substantially as shown and described.

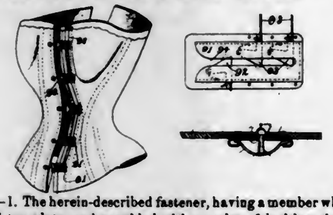
573,056. VISE. JAMES M. VAN METER, Cambridge City, Ind. Filed May 20, 1895. Serial No. 549,918. (No model.)

Claim.—In a clamping-vise, the combination with a fixed jaw-frame and a movable jaw-frame adapted to slide longitudinally along said fixed jaw-frame, of retaining-lugs on the end of said fixed jaw-frame, and rear-end retaining-lugs on said movable jaw-frame, both of said lugs arranged to contact to form a stop.

573,056.



573,057. GARMENT FASTENER. OTTE VAN OOSTRUM, Portland, Oreg. Filed Nov. 2, 1895. Serial No. 567,706. (No model.)



Claim.—1. The herein-described fastener, having a member which has a slotted top plate, and provided with a series of locking-pieces, adapted for engagement with a stud, the outermost locking-piece being reversed, substantially as described.

2. The herein-described fastener, having a series of separate locking-pieces adapted to successively engage a stud, the locking-pieces having movement independent of one another, substantially as described.

3. The herein-described fastener, having a plurality of locking devices adapted to engage a stud, the locking-pieces having operating-cords extending in opposite directions, substantially as described.

4. The combination with a garment of a series of studs and a series of coacting fasteners, each of which consists of a plurality of locking devices for successively engaging one of the studs, and an operating-cord connecting the corresponding locking-pieces of each fastener, substantially as described.

5. The herein-described fastener having a plurality of independent locking-pieces for successively engaging a stud, one of said locking-pieces being reversed to engage and disengage the stud by a movement opposite to that of the others, substantially as described.

573,058. GARMENT-FASTENER. OTTE VAN OOSTRUM, Portland, Oreg. Filed Nov. 27, 1895. Serial No. 570,269. (No model.)



Claim.—1. A fastener for wearing-apparel, comprising a headed stud and a socket member having an orifice for receiving the head of the stud and which permits a sliding movement of the stud in said socket member in the plane of the latter, and a spring-acted follower for the head, the follower having a movement approximately in the plane of the socket member, the stud acting to move said follower both in being entered and disengaged from the socket substantially as described.

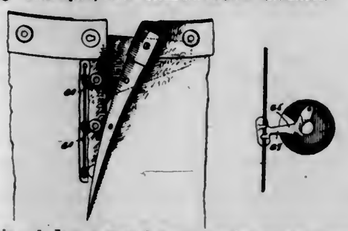
2. The herein-described fastener for wearing-apparel, comprising a stud having a head projecting beyond the shank, and a socket member having a keyhole-orifice and a spring-acted follower at the larger end of said orifice, the stud being movable into the narrowed portion of the orifice, and the follower exerting a pressure toward said narrowed portion of the orifice, substantially as described.

3. The herein-described fastener for wearing-apparel, comprising a stud and a socket member having an orifice in which said stud has a sliding movement in the plane of the socket member, and a spring-acted follower having a beveled surface adjacent to the orifice, the follower having a lateral movement toward and from the orifice, the stud acting to move said follower both in being entered and disengaged from the socket substantially as described.

4. The herein-described fastener for wearing-apparel, comprising a stud having a flattened shank and projecting head, and a socket member having a keyhole-orifice for receiving the stud and in which the latter has sliding movement, for engaging the head with the socket at opposite sides of the narrower part of the orifice, and a spring-acted follower serving to press the stud into the narrowed part of said orifice, substantially as described.

5. In a garment-fastener, a socket member of eyelet form, having a front plate formed with a keyhole-orifice, a plate back of the front plate and spaced from the latter, a spring-acted follower between said plates for engaging a stud entering the keyhole-orifice, and a tubular member having at its front or upper edge a flange, said flange and the edges of the two plates being clamped together, and the inner or opposite edge of the tubular part forming a second clamping-flange for completing the eyelet and securing the socket member to the garment, substantially as described.

573,059. GARMENT-FASTENER. OTTE VAN OOSTRUM, Portland, Oreg. Filed Apr. 9, 1896. Serial No. 586,834. (No model.)



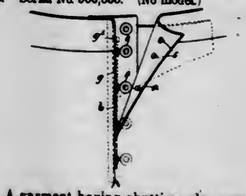
Claim.—1. In a garment-fastener, a socket member, comprising a front plate having an orifice for the entrance of a button-head, a washer having an orifice, an intermediate plate having an offset edge clamped by the front plate and raised approximately perpendicularly inward from said edge, the intermediate plate having also a tubular neck at the center extending through and clamping the washer at the orifice of the latter, the washer and the opposing edge of the front portion of the socket serving to clamp the latter to the garment, and a spring-acted clutch-piece between the front plate and the intermediate plate, said clutch-piece being offset rearwardly, the offset outer end lying at the back of the socket, substantially as described.

2. In a garment-fastener, a socket member comprising a front plate having an orifice, a washer, an intermediate plate, and a clutch-piece between the front plate and the interior plate and having a projecting outer end, the said outer end being offset and lying at the back of the socket, substantially as described.

3. In a garment-fastener, a button member comprising a plate having an orifice, and a second spring-acted plate radially slitted and carrying a stud adapted to be projected through the orifice of the first named plate, substantially as described.

4. In a garment-fastener, a socket member comprising a front plate having a central orifice, a second plate back of the front plate and spaced therefrom to form a chamber directly within the front plate, and a clutch-piece having its body in said chamber, and an operating-arm offset from the body, the offset arm extending rearwardly through the said second plate at a point at one side of the center and lying substantially flat at the back of the socket member, substantially as described.

573,060. GARMENT. OTTE VAN OOSTRUM, Portland, Oreg. Filed Apr. 9, 1896. Serial No. 586,835. (No model.)

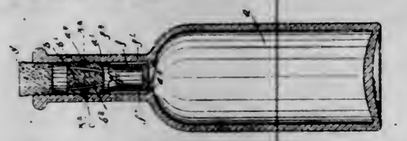


Claim.—1. A garment having abutting edge portions at its open part, an inner flap secured along one of such edge portions and extending by its free edge beneath the opposite abutting edge portion, said opposite abutting edge portion at points inward from the extreme edge having a series of fasteners, at the inner surface, and the underlapping free edge of the said inner flap having fasteners on its outer surface, cooperating with those on the opposed inner surface of the said opposite edge portion, substantially as described.

2. A garment having abutting edge portions at its open part, an inner flap secured along one of such edge portions and extending by its free edge beneath the opposite abutting edge portion, said opposite abutting edge portion at points inward from the extreme edge having a series of fasteners, at the inner surface, and the underlapping free edge of the said inner flap having fasteners on its outer surface, cooperating with those on the opposed inner surface of the said

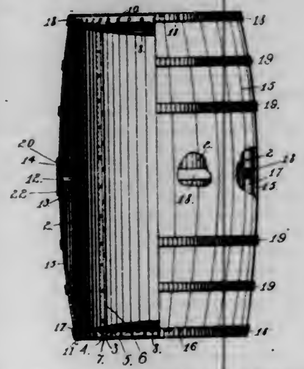
opposite edge portion and an operating-cord connected with one series of the fasteners for simultaneously releasing the same, substantially as described.

573,061. **NON-REFILLABLE BOTTLE.** FREDRICK T. VANSTRUM and JOHN P. VANSTRUM, Minneapolis, Minn. Filed Feb. 20, 1896. Serial No. 580 012. (No model.)



Claim.—The combination with a bottle provided in its neck-passage with the valve-seat a^2, of the gravity-actuated cup-shaped sealing-valve f, formed with the longitudinal peripheral grooves f', and having the walls of its open end beveled or sharpened outward so as to form notches at the outer ends of said grooves f', and the lock-stopper b securable in the neck of said bottle and provided with a multiplicity of fluid passages b^2 extending completely through the body of said stopper, eccentric to its center, but in position to discharge into the cavity of said valve substantially as described.

573,062. **METALLIC BARREL.** IRA VAN TILBURG, St. Paul, Minn. Filed Jan. 27, 1894. Serial No 498,185. (No model.)



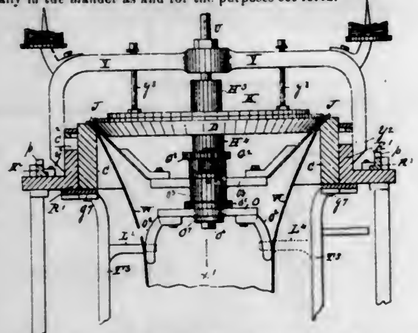
Claim.—1. As an improved article of manufacture, a stave-jacketed metallic barrel composed of a sheet-metal cylinder having each end bent to form a flange at right angles with the body of the cylinder, the concave heads each having an outwardly-projecting circumferential flange fitted to said cylinder, and abutting against the cylinder-flange, and the rivets securing said head-flange to said cylinder.

2. As an improved article of manufacture, a stave-jacketed metallic barrel composed of a sheet-metal cylinder having each end inturned to form a flange at right angles with its body, the concave heads each having an outwardly-projecting flange fitting to said cylinder and abutting against but not connected with its inwardly-turned end, the wooden staves surrounding said cylinder, the medially-arranged bung tube extending through said cylinder and staves, and the hoop interposed between said staves and cylinder, with its ends abutting against said tube.

573,063. **ROTARY KNITTING-MACHINE.** EUGENE VERMILYEA, Waterford, N. Y., assignor of two-thirds to Seth T. Harshaw, Lansingburg, and Campbell & Clute, Cohoes, N. Y. Filed June 21, 1895. Serial No. 553,601. (No model.)

Claim.—1. In a rotary knitting-machine the combination of a cylinder provided with vertically-arranged needles; cams whereby said cylinder-needles are caused to rise and descend; means by which the yarn is carried beneath the beards of said vertical needles when the latter are raised; a presser whereby the beards of said cylinder-needles will be closed when descending to cast off their stitches; a dial-wheel having radially-arranged needles and provided with cams whereby said dial-needles are forced outwardly and drawn inwardly; a presser whereby the beards of the dial-needles are closed when being drawn inwardly; and a casting-off plate adapted to engage with the under side of the dial-needles when the latter are being drawn inwardly and force the stitches therefrom, substantially as shown and described.

2. The combination with the vertical spring-needles N', constructed to be operated substantially as described; of the sinker-bar B^3, operated to deliver yarn to said vertical spring-needles; the presser A', operated to press in the beards of said vertical spring-needles; the horizontally-arranged and radially-placed spring-needles N^3, operated to be moved outwardly and inwardly substantially as described; the presser A^3, and the casting-off plates J, J, each made with the edge or lip h, constructed to engage with the under side of said horizontally-arranged needles when the latter are drawn inwardly, substantially in the manner as and for the purposes set forth.



3. The combination with the dial wheel D, having the downcast hub H^4, of the vertical shaft or stud U, on which said dial wheel journals; the gear-wheel G^5, mounted to turn on the lower end of said shaft U, and provided with a plate O, having downwardly and outwardly extended arms O^3, O^3, adapted to engage with and be turned by the depeuding legs T^3, of a revolving take-up mechanism: the shaft g^6, having mounted upon its lower end the gear-wheel G^4, adapted to mesh into the gear-wheel G^5, and on its upper end the gear-wheel G^2; and the gear-wheel G^3, mounted on the dial-wheel hub, and adapted to mesh into the gear-wheel G^2, substantially in the manner as and for the purposes set forth.

4. The combination with the dial-wheel D, having the downcast hub H^4 carrying a gear-wheel, of the stationary stud or shaft U; the gear-wheel G^5, mounted to turn on the lower end of said shaft or stud; the plate O having the laterally-extended arms O^3, O^3, and secured to the lower side of said gear-wheel G^5; gears connecting said gear-wheel G^5, with the gear-wheel on the dial-wheel hub; a revolving take up mechanism provided with inwardly-projecting arms L^4, L^4; a collar C^5, secured to said stud or shaft U; and the cast-off plates J, J, upwardly projected from said collar substantially in the manner as and for the purposes set forth.

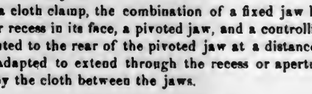
5. The combination with the cylinder C, provided with a geared rack g^7 and a driving-wheel G', of the shaft U, the dial-wheel D, having the downcast hub H^4, operated to be rotated substantially as described, of the collar C^5, connected to said shaft U, and the cast-off plates J, J, upwardly projected from said collar, constructed and arranged to be operated substantially in the manner as and for the purposes set forth.

6. The combination of the yoke with the presser A^3, having a sleeved passage-way in its upper end of the rod a^9, provided with the depending leg l^3, at its outer end, and at its inner end pivoted to the yoke; of the pattern-ring R^3, having the projection p, on its upper surface; the vertical shaft e^5, provided with the pinion P^2 at its upper end, and having the encircling spring e^6; the ratchet-wheel E; sprocket-wheel E^2; pattern-chain M, having tappets t^3; the pawl p^3, having the crank-arm b^3; and cam-roller b^4; a revolving take-up mechanism having the depending legs T^3, T^3, provided with the arm T^2, and the arm I^3, and the spoke-wheel m^3, arranged on the shaft e^5, constructed and arranged to operate substantially in the manner as and for the purposes set forth.

7. The combination with the stationary shaft or stud U; of the dial-wheel D, having the hub H^4, downwardly projected from its under side, and provided with the gear-wheel G^3, the gear-wheel G^6, arranged to turn on said shaft U, at its lower end; the plate O connected to said gear-wheel G^5, and provided with arms O^3, O^3, adapted to engage with and be turned by the sides of a revolving take-up mechanism; and the gear-wheels G^4, and G^2, communicating motion from said gear-wheel G^3, to said gear-wheel G^3, substantially in the manner as and for the purposes set forth.

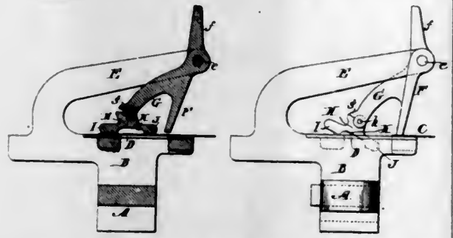
573,064. **SMOKING-TUBE.** JOHN VETTER, Philadelphia, Pa. Filed Apr. 14, 1896. Serial No. 587,545. (No model.)

Claim.—1. A smoking tube provided with a perforated cap or cover at one end, a stem with a mouthpiece at the other, a plug with a conical point connected with said stem said plug having internal converging channels merging into a central channel of said plug and stem, and a perforated disk engaging the conical point of said plug, substantially as and for the purposes described.



2. A smoking-tube provided with a stem having a mouthpiece, a detachable flanged conical pointed plug with openings or channels leading to the central internal channel of the plug and stem, and a perforated centrally-beveled body disk connected with said plug, substantially as and for the purposes described.

573,065. **CLOTH-CLAMP FOR TEXTILE MACHINERY.** CHAS. WEICHELT, Philadelphia, Pa., assignor to the H. W. Butterworth & Sons Company, of Pennsylvania. Filed Oct. 8, 1896. Serial No. 608,252. (No model.)



Claim.—1. In a cloth-clamp, the combination of a fixed jaw, with a movable jaw movable to or from the fixed jaw, and a controlling-finger hinged to the rear of the movable jaw provided with a rear fulcrum extension adapted to come in contact with the fixed jaw and a forward controlling extension adapted to be received and temporarily sustained by the cloth.

2. In a cloth-clamp, the combination of a fixed jaw, with a movable jaw movable to or from the fixed jaw, and a controlling-finger hinged to the rear of the movable jaw provided with a rear fulcrum extension adapted to come in contact with the fixed jaw and a forward controlling extension adapted to be received and temporarily sustained by the cloth, and a stop to limit the backward swinging motion of the controlling-finger upon the movable jaw.

3. In a cloth-clamp, the combination of a fixed jaw having a recess or aperture in its face, a movable jaw pivoted to the fixed jaw so as to move to or from it and provided with a rear extension, and an inverted T-shaped controlling-finger loosely connected to said rear extension and having its rear part adapted to come into contact with the fixed jaw and its forward part to play freely through the recess or aperture of said jaw.

4. In a cloth clamp, the combination of a fixed jaw having an aperture or recess in its face, a pivoted jaw, and a controlling-finger loosely jointed to the rear of the pivoted jaw at a distance from its pivot and adapted to extend through the recess or aperture unless sustained by the cloth between the jaws.

573,066. **ELECTRIC-RAILWAY CONSTRUCTION.** GEO. WESTINGHOUSE, Pittsburg, Pa., assignor to the Electro-Magnetic Traction Company, Washington, D. C. Filed June 8, 1896. Serial No. 594,653. (No model.)

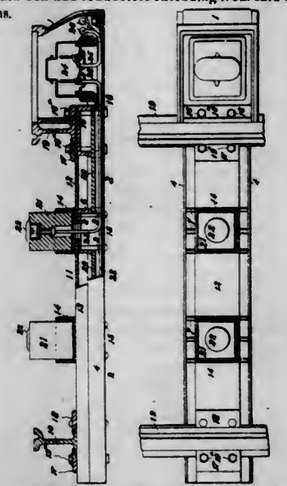
Claim.—1. A structure for surface-contact electric railways, comprising a switch-box, a beam provided with contact-supporting devices and extending laterally from said switch-box beneath both track-rails, and means for clamping both the switch-box and the beam to the track-rails.

2. A structure for surface contact electric railways comprising a switch-box, a beam bolted thereto and extending laterally therefrom beneath both track-rails, contact-carrying blocks and chairs therefor, means for fastening the chairs to the beam, and means for clamping the structure to the track-rails.

3. A structure for surface contact electric railways comprising a switch-box, a beam bolted thereto and extending laterally therefrom, chairs supported on said beam, and conduits connecting said chairs with each other and with the switch-box.

4. A structure for surface-contact electric railways comprising a switch-box, a supporting-beam extending laterally therefrom, chairs located on said beam, a strengthening-beam on said chairs, boxes located on said strengthening-beam above said chairs, means for clamping said beams, boxes and chairs together and means for clamping the structure to the track-rails.

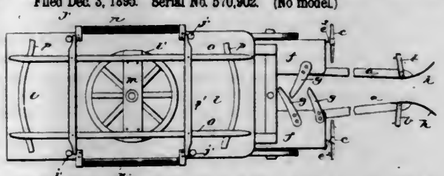
5. In a structure for surface-contact electric railways, a plurality of contact-pins, insulating-blocks therefor, a supporting and protecting frame comprising chairs, strengthening and supporting beams, retaining-boxes for said blocks and a switch-box all bolted together, a switch in said box and conductors extending from said switch to said contact-pins.



6. A structure for electric railways comprising two parallel beams, chairs located between said beams, a switch-box bolted to said beams and one of said chairs, a switch in said box, contact-pins, conductors connecting said pins and said switch, conduit-sections for said conductors, insulating-blocks for said pins, retaining-boxes for said blocks, and means for clamping said structure to the track-rails.

7. A structure for electric railways, comprising two beams spaced apart and having a closed conduit therein, a switch-box and switch, contact-pins, and conductors extending therefrom through the conduit to said switch, insulating-supports for said pins and means for clamping the structure to the track-rails.

573,067. **CORN-HARVESTER.** JAMES W. WHITE, Lincoln, Ill. Filed Dec. 3, 1895. Serial No. 570,902. (No model.)



Claim.—1. The combination of the running-gear k, body k', float l, secured on the top of said body, provided with turning table l', having rollers l^3; end rollers m', and side rollers n; frame i, adapted to work on the upper face of said float, substantially as shown and described and for the purposes set forth.

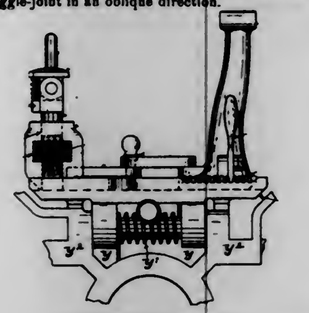
2. In combination with the float l, having the turning table l'; rollers l^3, m' and n, the frame i, consisting of the side bars o, having in their under faces the grooves o', and catches o^3, end pieces p, and intermediate pieces p', substantially as shown and described and for the purposes set forth.

573,068. **JACK FOR SOLE-MACHINES.** ERASTUS E. WINKLEY, Lynn, Mass., assignor to the Goodyear Shoe Machinery Company, Boston, Mass. Filed Feb. 7, 1896. Serial No. 578,424. (No model.)

Claim.—1. In a jack for sole-machines the combination, with a suitable support and movable heel and toe standards, of a guideway, a guide movable along the guideway, and suitable connections between the guide and standards, whereby a movement of the guide moves the standards simultaneously in opposite directions, substantially as described.

2. In a jack for sole-machines the combination, with a suitable support and movable heel and toe standards, of an oblique guideway, a guide movable along the guideway, and suitable connections between the guide and standards, whereby a movement of the guide produces a movement of the standards in opposite directions, substantially as described.

3. In a jack for sole-machines the combination, with a suitable support and movable heel and toe standards, of a toggle-lever pivoted at opposite ends to the toe and heel standards, and means to move the toggle-joint in an oblique direction.



573,069. PRESSING FORM FOR SOLE-LAYING MACHINES. ERASTUS E. WINSLEY, Lynn, Mass., assignor to the Goodyear Shoe Machinery Company, Boston, Mass. Filed Feb. 21, 1896. Serial No. 580,260. (No model.)



Claim.—1. In a pressing-form for sole-laying machines the combination, with a suitable support therefor, of an elastic pad comprising heel and shank sections, and an independent toe-section, arranged to tip longitudinally to vary its longitudinal inclination, and movable longitudinally toward and from the shank-section, substantially as described.

2. In a pressing-form for sole-laying machines the combination with a suitable bed, of a series of independent supports on said bed, a series of independent elastic pad-sections mounted upon said supports, and an elastic reinforcing-strip interposed between each section and its support and covering substantially the edge-pressing portion of each section, substantially as described.

3. In a pressing-form for sole-laying machines the combination, with a suitable support therefor, of a series of independent pad-sections, means for tipping said sections to adjust their longitudinal inclination, and means for longitudinally moving said sections to approximate or separate their adjacent ends, substantially as described.

4. In a pressing-form for sole-laying machines the combination with a suitable bed, of a series of supporting-plates supported from said bed, a series of hollow elastic pad-sections mounted upon said plates, means for tipping the plates to adjust their longitudinal inclination, and means for longitudinally moving the plates to approximate or separate their adjacent ends, substantially as described.

5. In a form for sole-laying machines the combination with a suitable bed, of a series of independently-movable supports secured to said bed, independent toe and heel pressing sections and a projected shank-pressing section mounted upon said supports, and a yieldingly-supported shank-block interposed between the shank-pressing section and its support, substantially as described.

6. In a pressing-form for sole-laying machines the combination, with a suitable support therefor of an elastic pressing-pad, comprising an independently-movable section, and a longitudinally tipping and sliding support for said section, substantially as described.

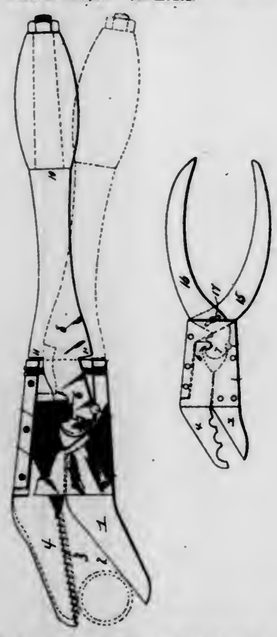
7. In a pressing-form for sole-laying machines the combination, with a suitable bed, of an elastic pressing-pad comprising an independently-movable section, an independent support for said section, and a sliding and tipping connection between said support and bed, substantially as described.

8. In a pressing-form for sole-laying machines the combination, with a suitable bed, of an elastic pressing-pad comprising an independently-movable section, a longitudinally-slotted plate supporting said section, and connections between the plate and bed arranged to reciprocate along the slotted portion of the plate and having provision for a tipping movement of the plate, substantially as described.

9. In a pressing-form for sole-laying machines the combination, with a suitable bed, of a series of independently-movable supporting-plates supported from said bed, a series of elastic pad-sections including a projected shank-section mounted upon said plates, and an elastic reinforcing-strip covering substantially the edge-pressing portions of said pad-sections, substantially as described.

10. In a pressing-form for sole-laying machines, the combination, with a suitable bed, of a pressing-pad comprising an independently-movable section, and a support for said section interposed between the same and the bed, and legs on said support arranged to engage opposite sides of the bed, substantially as described.

573,070. WRENCH. JOHN R. WOOD, Beverly, Mass. Filed July 18, 1896. Serial No. 599,685. (No model.)

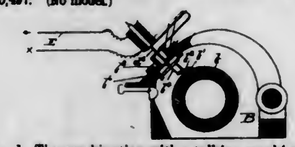


Claim.—1. In a wrench, the combination with a pair of jaws, the inner surfaces of which converge with relation to each other, and one jaw rigid, and the other non-pivotal and movable endwise or longitudinally with relation to the other, of a handle for operating said movable jaw, substantially as set forth.

2. In a wrench, the combination with two jaws, one of which is non-pivotal and movable endwise, of a handle pivoted to one jaw and connected with the other so as to pull endwise upon and move the movable jaw in the direction in which the latter is swung by the movement of the wrench.

3. In a wrench the combination with a fixed jaw and a casing connected therewith, of a longitudinally-movable jaw having a shank which fits and slides within the casing, a handle pivoted within the casing and constructed and adapted to impart a longitudinal sliding movement to the movable jaw, and springs located within the casing and arranged to bear upon the opposite sides of the handle-lever at a point in rear of its pivotal bearing, substantially as set forth.

573,071. TALKING-MACHINE APPARATUS. EDWARD H. AMET, Waukegan, Ill. Filed Sept. 21, 1894. Renewed June 13, 1896. Serial No. 595,497. (No model.)

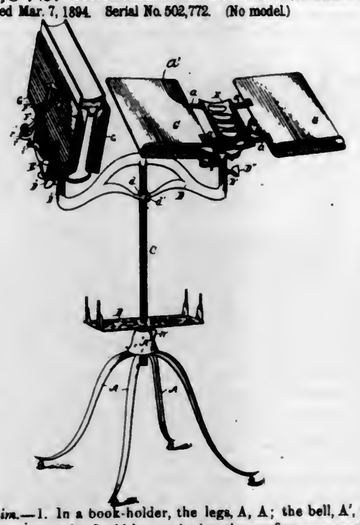


Claim.—1. The combination with a talking-machine located at a central station, of a motor running the same continuously, a variable-resistance pile connected with and operated by the needle of the talking-machine, a primary circuit in which said pile is included, a secondary or telephone circuit leading to a series of substations, each of which is furnished with a time-train, a coin or token controlled circuit-breaker and a telephone adapted to be included in the telephone-circuit when said telephone-circuit is broken through the time-train by operation of the coin or token, substantially as specified.

2. The combination with a talking-machine located at a central station, of a variable resistance connected with and operated by the needle of the talking-machine, a primary circuit in which said variable resistance is included, a telephone-circuit, and a series of telephones therein located at a series of substations, and a series of slot-machine or coin-controlled mechanisms at said substations for putting said telephones in and out of circuit, substantially as specified.

3. The combination with a telephone-circuit, of a series of telephones located at a series of substations and adapted to be included in said circuit, a series of slot-machines or coin controlled mechanisms at said substations for putting said telephones in and out of circuit, a talking machine at a central station and means for transmitting its sound-vibrations to said telephone-circuit, substantially as specified.

573,072. BOOK-HOLDER. MAURICE E. BLOOD, Kalamazoo, Mich. Filed Mar. 7, 1894. Serial No. 502,772. (No model.)



Claim.—1. In a book-holder, the legs, A, A; the bell, A', to engage the upper ends of said legs on its interior surface; a corrugated, elastic metal wedge, N, driven between the legs inside the bell to hold the same securely by the elastic force of the wedge for wedging the legs apart against the bell, substantially as shown.

2. In a book-holder, the combination of the bell, A'; legs, A, A, the upper ends of which are engaged by the said bell A', on its inside; corrugated elastic metal wedge, N, between said legs to clamp them against the interior of the bell; standard, C, centrally located through said bell; a flange or cap, B, over the bell and around the standard; and a thumb-screw for forcing the flange or cap in one direction against the standard while the bell is forced in the opposite direction to clamp the standard securely in place, as specified.

3. In a book-holder, the combination of the bell, A'; legs, A, A, the upper ends of which are engaged by the bell, A'; a wedge, N, between said legs to clamp them against the interior of the bell; standard, C; a shelf or bracket, B, and thumb-screw, N', for moving the bracket and bell in the opposite direction to clamp the standard, coacting together as specified.

4. In a book-holder, the Y-shaped casting, I; the yoke, H, hung at each side to the outer and upper ends of the casting, I, the yoke, H, having pivoted at its outer ends the arms, F, F, and the arms, F, F, having the wing-boards, G, G, pivoted from their free ends and the wings, G, G, connected together from their lower edges by the support, E; and links, *a*, *a*, all adapted to operate together substantially as specified.

5. In a book-holder, a yoke, H, mounted on the upper ends of a forked or Y-shaped casting and adapted to oscillate transversely through the forked part of the Y-shaped casting; a transverse slot in the forked part and thumb-screw in the yoke working in the slot to hold the yoke in the proper position relative to the Y-shaped casting, in combination with arms pivoted at each end of the yoke and wing-boards pivoted at each free end of the arms; links depending from the wing-boards; and a support for the book hinged at either side to the free ends of the links, all operating together substantially as and for the purpose specified.

6. In a book-holder, a yoke having a hollowed-out portion in the center, its extreme ends extending upward and outward and having arms pivoted on its extreme ends, the free ends of said arms having wing-boards pivoted to them; links depending from the wing-boards, the free ends of said links on one wing-board being connected to the free ends of the links on the opposite wing-board by means of a support, E, all adapted to operate together to hold the book substantially as shown.

7. In a book-holder, a yoke or frame having arms, F, F, pivoted at its outer ends; wing-boards, G, G, pivoted to the arms, F, F, a series of metallic links with a support, E, connecting the wing-boards together; and means, such as the spring L, having suitable connections with the wing-boards for pulling the wing-boards toward each other when the wing-boards are standing vertically or pulling them in opposite directions when they are extended toward a horizontal position, substantially as and for the purpose specified.

8. In a book-holder, the wing-boards, G, G, hinged to arms, F, F, the arms, F, F, hinged to a yoke, H; a spring operating on rods or links, K, K, connected to the wing-boards in such a manner as to pull the wing-boards toward each other when they are nearly closed or to pull them apart when they are extended out from each other, the whole operating together in such a manner that the wing-boards will be self-adjusting to books of varying thickness and exert a constant pressure on either a thick or thin book when the book is closed, substantially as and for the purpose specified.

9. In a book-holder, the combination of the yoke, H; arms, F, F, pivoted to the upper end of the said yoke to each side; wing boards, G, G, pivotally connected to the upper end of said arms, F; a support, E, below and between said wing-boards; links, *a*, *a*, connecting the support, E, thereto; and rods, K, pivotally connected to the lower portion of said wing-boards; a spring, L, below said yoke, H, to put tension upon the rods, K, K, all coacting together substantially as specified.

10. In a book-holder, the combination of the yoke, H; arms, F, F, pivoted to the outer ends thereof; wing-boards, G, G, suitably supported and pivotally connected to the upper ends of the arms, F, F; rods, K, K, connected to said wing-boards; a post, *u*, projecting downwardly from between said wing-boards; spring, L, on said post, *u*; a yoke, *m*, over the spring, L, connected to the rods, K, all coacting as specified.

11. In a book-holder, the combination of the yoke, H, with guides, *r'*, at each end thereof, with hooks, *f*, *f*, to each side thereof; arms, F, with pins, *i'*, *i'*, therein to rest in the hook, *f*, *f*, with the stop, *r*, between the same for passing over and against the guide, *r'*, to prevent the pivot-pins *i'*, *i'*, from becoming displaced, as specified.

12. In a book-holder, the combination of the casting, I, with the opposite ends thereof projecting upwardly and bearing inwardly-pointing pins integral therewith; a yoke, H, having openings to each side, with slots below leading to said openings to receive the inwardly-projecting pins which are passed up to the said openings through the slots to form a bearing for the yoke to operate upon to permit of adjusting the yoke so that it will hold the book at any convenient angle, as desired.

13. In a book-holder, the combination of two wing-boards one for each side of the book; a support connected by link connections to the lower edges of said wing-boards; a yoke, H, below the lower edge of said wing-boards expanding well out to either side; arms, F, pivoted to said wing-boards near their upper or outer edge and pivoted to each side of said yoke; a spring, L, below said yoke connecting by suitable rods pivotally to the lower part of each wing-board at the outside, connected so that the action of the spring when the book is closed shall be within the pivotal connection of the lower ends of said arms and when the book is open shall be outside of the pivotal connection of said arms with the yoke to hold the book adjustably closed or lock it open, for the purpose specified.

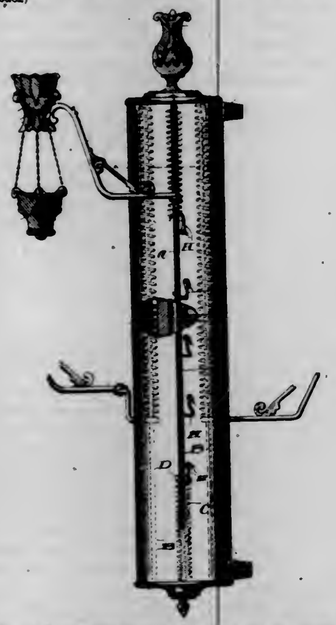
14. In a book-holder, the combination of two wing-boards one for each side of the book; a support connected by link connections to the lower edges of said wing-boards; a yoke, H, below the lower edge of said wing-boards expanding well out to either side; suitable means of tilting said yoke to adjust the angle of the book; arms, F, pivoted to said wing-boards near their upper or outer edge and pivoted to each side of said yoke; a spring, L, below said yoke connecting, by suitable rods, pivotally to the lower part of each wing-board at the outside, connected so that the action of the spring, when the book is closed, shall be within the pivotal connection of the lower ends of said arms, and when the book is open, shall be outside of the pivotal connection of said arms with the yoke to hold the book adjustably closed or lock it open, for the purpose specified.

15. In a book-holder, the combination of wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a suitable yoke below the wing-boards extending to each side of the book; arms pivotally connected to the outer ends of said yoke and also pivotally connected near the upper or outer edges of said wing-boards so that the weight of the book will tend to press the wing-boards against the sides thereof when the book is closed and the weight of the book will be thrown well out beyond the pivotal connection of said arms and yoke when the book is open, so that the book will remain automatically either in the open or closed position as desired, for the purpose specified.

16. In a book holder, the combination of the wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a yoke, H, below the lower edge of said wing-boards expanded well out; arms, F, pivoted to said wing-boards near the upper or outer edge and pivoted to each side of said yoke; a spring, L, below said yoke connecting, by suitable rods, pivotally to the lower part of said wing-boards at the outside, connected so that the action of the spring, when the book is closed, shall be within the pivotal connection of the lower ends of said arms and, when the book is open, shall be outside of the pivotal connection of said arms with the yoke to hold the book adjustably closed or lock it open, for the purpose specified.

17. In a book-holder, the combination of the wing-boards for each side of the book connected by flexible connections to form a support below for the back of the book; a suitable yoke below the holder extending to each side of the book; suitable means of tilting said yoke to place the book at a convenient angle; arms pivoted to the outer ends of said yoke and upper or outer edges of said wing-boards so that the weight of the book will tend to press the wing-boards against the sides thereof, when the book is closed, and the weight of the book will be thrown well outside the pivotal connection of said arms and yoke when the book is open, so that the book will remain automatically either in the open or closed position, as desired.

573,073. FLOWER-STAND AND BRACKET THEREFOR. RUA E. BURKE, Spokane, Wash. Filed Sept. 30, 1895. Serial No. 564,057. (No model.)

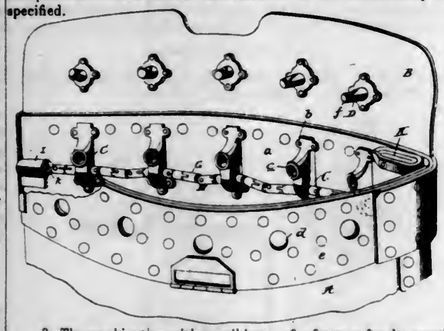


Claim.—A flower-stand comprising a body portion; longitudinal fixed guide-rods carried by said body portion; springs coiled around said guide-rods, and each fixed at its outer end relatively to its respective guide-rod; brackets slidable on said guide-rods, and secured to the free ends of said springs; and holding means for securing the brackets in their adjusted positions longitudinally of the guide-rods.

573,074. MAIL-BAG FASTENER. MILES S. CODY, Stockton, Cal., assignor to the Universal Mail Equipment Improvement Company. Filed Aug. 25, 1896. Serial No. 603,916. (No model.)

Claim.—1. The combination with a mail-bag; of a fastener for the mouth thereof comprising female members secured to one wall and male members secured to the opposite wall or flap, pivoted keepers adapted to engage said male members, and a flexible rod free from threads or gears and adapted to strike said keepers so as to disengage the keepers from the male members when turned in its bearings and to allow the keepers to return to their normal positions while the rod has been turned in the position which disengaged the keepers and male members, substantially as specified.

2. The combination with a mail-bag; of a fastener for the mouth thereof comprising female members secured to one wall and male members secured to the opposite wall or flap, pivoted keepers, and a rod composed of a plurality of flexibly-connected sections having both endwise and transverse play at the joints and adapted when turned or partially turned in one direction to disengage the keepers from the male sections and allow the keepers to return to their normal positions without further movement of the rod substantially as specified.



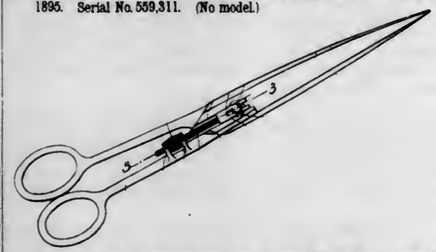
3. The combination with a mail-bag; of a fastener for the mouth thereof comprising female members secured to one wall and male members secured to the opposite wall or flap, pivoted keepers, and a rotatable or partially rotatable bar or rod for manipulating the keepers, said rod being composed of key-sections (such as F) to engage the keepers, and links (as G) flexibly connected to the key sections, substantially as specified.

4. The combination with a mail-bag; of a fastening for the mouth thereof comprising female members secured to one wall and male members secured to the opposite wall or flap, pivoted keepers adapted to engage the male members, springs backing said keepers, springs contacting with the male members, and a flexible rod adapted to disengage the keepers from the male members substantially as specified.

5. The combination with a mail-bag; having apertures in one wall and also having a closure-flap, of female lock members secured to one of the inner walls of the bag and having projections to enter said apertures, male lock members secured to the closure-flap, springs to engage the male members, spring-backed pivoted keepers, and a flexible rod having key-sections to engage the keepers, substantially as specified.

6. A bag-fastener having the bar or rod H, journaled in bearings and composed of the key-sections F, and the links G, said rod being permanently connected to a lock at one end and adapted to cooperate with suitable means on the walls of the bag to secure the mouth thereof substantially as specified.

573,075. SHEARS. IGNAZ DONNAL, Chicago, Ill. Filed Aug. 15, 1895. Serial No. 559,311. (No model.)



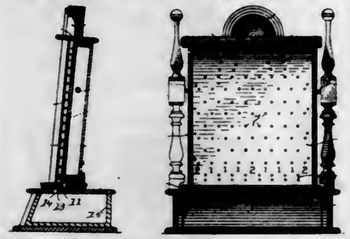
Claim.—1. The combination with a pair of shear-blades, of a pivot-pin having a beveled head, a wedge carried by one of said blades acting on the beveled head of said pivot-pin, means for keeping said wedge in alinement with the shear-blade in which it is mounted, and an actuating-screw and thumb-nut to drive said wedge, substantially as described.

2. The combination with a pair of shear-blades one of which is provided with a groove on its exterior face, of a flattened pivot-pin having a beveled head, a forked wedge embracing said pivot-pin and free to move longitudinally on said grooved shear-blade, and an actuating-screw and thumb-nut to drive said wedge, substantially as described.

3. The combination of the blades of a pair of shears, a pivot-pin passing through said blades, a forked wedge embracing said pivot-pin, said wedge being adapted to pass beneath a head on said pivot-pin, and actuated by a screw and thumb-nut on one of said blades; said actuating-screw being arranged longitudinally of said shear-blade; and a spring-washer placed beneath said forked wedge, all substantially as described.

4. The combination of a pair of shear-blades, a headed pivot-pin passing through said blades, and flattened to receive a forked wedge embracing said pivot-pin, said pivot-pin having a beveled head, to engage with said forked wedge; a forked wedge actuated by a screw and thumb-nut upon one of the blades of said shears, and a slotted spring-washer embracing said pivot-pin, beneath said forked wedge, all substantially as described.

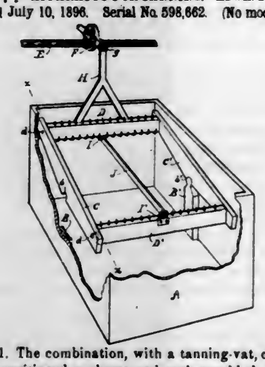
573,076. BONUS-DETERMINING DEVICE. JUDSON H. DROBISCH, Decatur, Ill. Filed June 22, 1896. Serial No. 596,466. (No model.)



Claim.—1. A bonus determining device comprising a hollow base having a slot, a frame supported swingably above the base, such frame having a coin-receiving slot in its upper end, a plurality of tortuous passages merging one into others, receptacles at the lower terminations of the passages, and a slot in its bottom below the receptacles and adapted to register with the slot in the base when the frame is suitably swung, substantially as set forth.

2. A bonus-determining device comprising a hollow base having a slot, a strip on the base immediately in the rear of the slot, a frame mounted swingably on the base and having a plurality of passages and receptacles for coin, and also having a slot extending below the receptacles and embracing the strip on the base, such slot being wider than the strip, substantially as set forth.

573,077. APPARATUS FOR TANNING. EDWIN DU BOIS, Ralston, Pa. Filed July 10, 1896. Serial No. 598,662. (No model.)

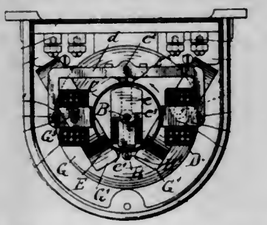


Claim.—1. The combination, with a tanning-vat, of a pair of oscillatory bars positioned as shown and each provided with a series of hooks or leather supports above and below its center of vibration, the upper series of hooks being in different vertical planes from the lower series on each bar for the purpose set forth, a driving mechanism, and connections between the driving mechanism and the bars whereby they are given simultaneous vertical and oscillatory motions, substantially as described.

2. The combination, with a tanning-vat, of a frame composed of side bars and cross-bars, the cross-bars being journaled in the side bars, a driving mechanism, a connection between the driving mechanism and frame whereby the frame is given a vertical motion within the vat and the cross-bars of the frame an oscillatory motion, and hooks or leather supports on the cross-bars so located that adjacent sides of leather suspended therefrom are made to move in opposite directions by the oscillations of the cross-bars.

3. The combination, with a tanning-vat, of a rocking frame therein composed of side bars pivoted in the vat and cross-bars journaled in the ends of the side bars, a connecting-rod between the cross-bars, a driving mechanism, a pitman actuated by the driving mechanism to rock the frame and oscillate the cross-bars, and hooks or leather supports on the cross-bars so located that adjacent sides of leather suspended therefrom are made to move in opposite directions by the oscillations of the cross-bars.

573,078. WATTMETER. THOMAS DUNCAN, Fort Wayne, Ind. Filed Apr. 29, 1896. Serial No. 589,511. (No model.)



Claim.—1. The combination with the armature, of a field due to and varying with the current in amperes flowing in the series coil, an asynphased field representing the electromotive force in volts and varying directly as the pressure, and means for inducing an independent torque between said voltage field and the armature.

2. The combination with the armature, of a field due to and varying with the current in amperes flowing in the series coil, an asynphased field representing the electromotive force in volts and varying directly as the pressure, and means for diverting the flux of the latter field to induce an independent torque on the armature.

3. The combination with the cylindrical armature, of field coils and core inducing a field varying with the current in amperes, a shunt or volt coil and core inducing a field varying with the electromotive force in volts, and a magnetizable diverter located opposite said shunt-coil and on the other side of the armature-shell.

4. The combination with the cylinder armature, of field coils and core inducing a field varying with the current in amperes, a shunt coil and core inducing a field varying with the electromotive force in volts, a paramagnetic diverter located opposite said shunt or volt coil and on the other side of the armature-shell, and means for adjusting said diverter.

5. The combination with the cylindrical armature, of field coils and core inducing a field varying with the current in amperes, a shunt coil and core axially at right angles to the axis of the field-coils and inducing a field varying with the electromotive force in volts, and a magnetizable diverter located opposite said shunt-coil and on the other side of the armature-shell.

6. The combination with the cylindrical armature, of field coils and core inducing a field varying with the current in amperes, a shunt coil and core axially at right angles to the axis of the field-coils and inducing a field varying with the electromotive force in volts, a magnetizable diverter located opposite said shunt or volt coil and on the other side of the armature-shell, and means for adjusting said diverter relatively to the axis of said shunt-coil.

7. The combination with the cylindrical armature, of field coils and core external thereto and inducing a field varying with the current in amperes, a shunt coil and core inclosed within the armature and inducing a field varying with the electromotive force in volts, and a magnetizable diverter located opposite the volt-coil externally to the armature.

8. The combination with the cylindrical armature, of field coils and core external thereto and inducing a field varying with the current in amperes, a shunt coil and core inclosed within the armature and inducing a field varying with the electromotive force in volts, a magnetizable diverter located opposite the volt or shunt coil, externally to the armature, and means for the adjustment of the proximate face of said diverter laterally in relation to the magnetic axis of said volt-coil.

9. The combination with the armature, and with a field-magnet, of a shunt-core and a shunt-coil wound upon one end of said core.

10. The combination with the armature, and a field-magnet, of a shunt-core arranged with one end intersecting the axis of the field-magnet, and a shunt-coil wound upon the opposite end only of said core.

11. The combination with the armature, and with a field-magnet, of a shunt-core enlarged at one end, and a shunt-coil wound upon the smaller end thereof.

12. The combination with the armature, and with a field-magnet, of a shunt-core enlarged at one end and arranged with said enlarged end intersecting the axis of said field-magnet, and a shunt-coil wound upon the reduced end only of said shunt-core.

13. The combination with the armature of a field-core having an elongated yoke and insetting poles, field-coils wound upon said poles, a shunt-core, and a shunt-coil wound upon said shunt-core.

14. The combination with the armature of a field-core having an elongated yoke and insetting poles, field-coils wound upon said poles, a shunt-core, and a shunt-coil wound upon one end only of said shunt-core.

15. The combination with the armature, of a field-core having an elongated yoke and insetting poles at opposite ends of a diameter through the armature, field-coils wound upon said poles, a shunt-core enlarged at one end, and a shunt-coil wound upon the smaller end of said shunt-core.

16. The combination with the armature, of a field-core having an elongated yoke and insetting poles at opposite ends of a diameter through the armature, field-coils wound upon said poles, a shunt-core enlarged at one end and arranged with said enlarged end between the poles of the field-core, and a shunt-coil wound upon the smaller end of said shunt-core.

17. The combination with the armature, of a field-core having an elongated yoke and insetting enlarged poles at opposite ends of a diameter through the armature, field-coils wound upon the enlarged poles, a shunt-core, and a shunt-coil wound upon one end only of said shunt-core.

18. The combination with the armature, of a field-core having an elongated yoke and insetting enlarged poles at opposite ends of a diameter through the armature, field-coils wound upon the enlarged poles, a shunt-core enlarged at one end, and a shunt-coil wound upon the smaller end of said shunt-core.

19. The combination with the armature, of a field-core having an elongated yoke and insetting enlarged poles at opposite ends of a diameter through the armature, field-coils wound upon the enlarged poles, a shunt-core enlarged at one end and axially at right angles to the axis of the field-core, and a shunt-coil wound upon the smaller end of said shunt-core.

20. The combination with the armature, of a field-core having an elongated yoke and insetting enlarged poles at opposite ends of a diameter through the armature and external thereto, field-coils wound upon said enlarged poles, a shunt-core enlarged at one end and located within the armature with its enlarged end between the poles of the field core, and a shunt-coil wound upon the smaller end of said shunt-core.

21. The combination with the armature, of a field-core having an elongated yoke and insetting enlarged poles at opposite ends of a diameter through the armature and external thereto, field-coils wound upon said enlarged poles, a shunt-core enlarged at one end and located within the armature axially at right angles to the axis of the field-coils, and a shunt-coil wound upon the smaller end of said core.

22. The combination with the armature, and with the field-coils, of the shunt-coil with its iron core, reduced at the end upon which the coil is wound, and an inductive resistance in the shunt-circuit, adapted to permit a flow of current varying with the electromotive force.

23. The combination with the armature, and with the field-magnet, of a shunt-core inclosed within said armature, a shunt-coil wound upon one end only of said core, and an inductive resistance in the shunt-circuit adapted to permit a flow of current varying with the electromotive force.

24. The combination with the armature, and with the field core having enlarged inturned poles and field-coils wound upon said poles, of the shunt-core enlarged at one end, the shunt-coil wound upon the smaller end of said core, and the inductance coil with its laminated U-shaped core, connected in series in the shunt-circuit.

25. The combination with the armature, and shunt core and coil, of a magnetizable diverter pivotally adjustable with reference to the axis of said core and coil, and means whereby said diverter may be adjusted bodily and laterally.

26. The combination with the armature, and shunt core and coil, of a magnetizable diverter adjustable in and out with reference to the periphery of said armature.

27. The combination with the armature, and shunt core and coil, of a magnetizable diverter adjustable in and out with reference to the periphery of said armature, and means for its lateral adjustment along said periphery.

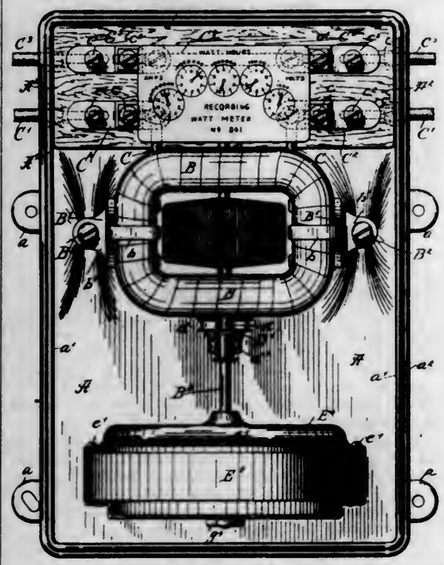
28. The combination with the armature, and shunt coil and core, of a magnetizable diverter adjustable pivotally and also in and out with reference to the periphery of the armature, and means for its bodily and lateral adjustment along said periphery.

29. The combination with the meter-spindle, of the cylindrical armature carried thereby, the fixed sleeve encircling said spindle within the armature and supported from the meter-frame, the iron core-punchings built upon said sleeve to form a shunt-core, and the shunt-coil wound upon said punchings.

30. The combination with the meter-spindle, of the cylindrical armature carried thereby, the fixed sleeve encircling said spindle and supported from the meter-frame, the core-punchings built upon the upper line of said sleeve within the armature, the shunt-coil wound upon the core thus formed, the adjustable arm supported upon the lower line of said sleeve, and the magnetizable diverter carried at the outer end of said arm.

31. The combination with the field and shunt coils, of a closed-circuit armature and means for its adjustment into or out of the field.

573,079. METER FOR MEASURING ELECTRIC CURRENTS. THOMAS DUNCAN, Fort Wayne, Ind. Filed May 7, 1896. Serial No. 590,512. (No model.)



Claim.—1. In a drag or brake, the combination with radially-disposed magnets, one or more, of a paramagnetic ring embracing their poles and in close proximity thereto, and means for inducing relative motion between said ring and magnets in the plane of the latter.

2. In a drag or brake, the combination with radially-disposed magnets, one or more, of a paramagnetic ring surrounding their outer poles, an intermediate ring of copper or equivalent material and means whereby relative rotary motion is imparted between the magnets and intermediate ring.

3. In a drag or brake, the combination with rotating radial magnets, one or more, of a surrounding fixed paramagnetic ring serving as a shield against external lines of force and as an element of the retarding agencies.

4. In a drag or brake, the combination with rotating radial magnets, one or more, of a surrounding fixed paramagnetic ring, and an intermediate ring of copper or equivalent material.

5. In a drag or brake, the combination with the meter-spindle, of one or more permanent magnets fixed thereto and outsetting radially therefrom, and a surrounding stationary paramagnetic ring fixed in the plane of the rotation of said magnets and normally serving as a keeper.

6. In a drag or brake, the combination with one or more rotating permanent magnets fixed radially to their spindle, of a surrounding stationary paramagnetic ring normally serving as a keeper, and an intermediate stationary ring of copper or equivalent material for the generation of eddy-currents when the magnets are revolving.

7. In a drag or brake, the combination with one or more radial magnets, of a paramagnetic ring surrounding their outer poles, and a paramagnetic cover shielding the interannular space and magnets therein.

8. In a drag or brake, the combination with one or more radial magnets, and a paramagnetic ring surrounding their poles, of the detachable paramagnetic cover secured to said ring.

9. The combination with the meter spindle, of a multipolar permanent magnet having radiating limbs, and a fixed paramagnetic ring surrounding the outsetting poles of said magnet in close proximity thereto.

10. The combination with the meter-spindle, of a multipolar permanent magnet having radiating limbs, a fixed paramagnetic ring surrounding the outsetting poles of said magnet in close proximity thereto, and a ring of copper or equivalent material, forming a closed circuit, interposed between said paramagnetic ring and the poles of the magnets.

11. The combination with the field-coils and armature, of the spindle sustaining said armature, the outsetting brake-magnets, one or more, and the paramagnetic ring surrounding the outer poles of said magnets.

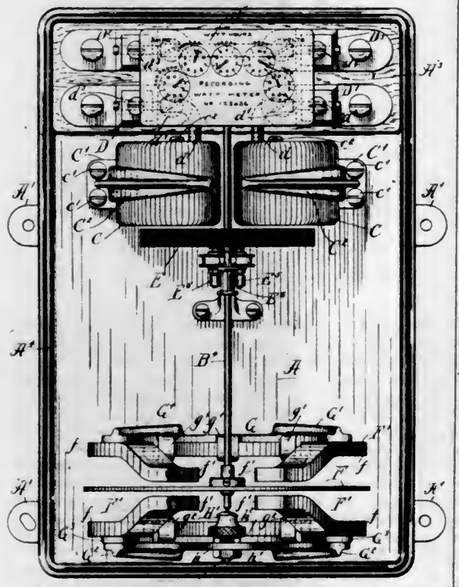
12. The combination with the field-coils and armature, of the spindle sustaining said armature, the outsetting brake-magnets, one or more, the paramagnetic ring surrounding the outer poles of said magnets, and the intermediate ring of copper or equivalent material.

13. The combination with the field-coils and armature, of the spindle sustaining said armature, the outsetting brake-magnets, one or more, the paramagnetic ring surrounding the poles of said magnets, and the paramagnetic cover shielding the space between the spindle and said ring.

14. The combination with the spindle and with the series coils, of the individual clamps for each series coil, constructed with outsetting flanges, the screw-bolts passing through said flanges and securing the clamps to the supporting-brackets, and the washers interposed between said flanges.

15. The combination with the spindle and the magnets which it supports, and with the surrounding paramagnetic ring, of the jewel-post in which said spindle is stepped, and the supporting-bar for said post, secured beneath and to said ring and diametrically thereof.

573,080. ELECTRIC METER. THOMAS DUNCAN, Fort Wayne, Ind. Filed July 22, 1896. Serial No. 600,087. (No model.)



Claim.—1. A disk armature comprising a plurality of sector or segment wound coils lying flatwise in the disk with their arcs toward the periphery thereof, in combination with sector or segment wound series coils laid parallel with the plane of the disk with their arcs overlying the arcs of the armature-coils.

2. In combination with the disk armature and armature-spindle, the segment-wound series coils having an insetting jog in the chordal limbs.

3. In combination with the series coils having an arcal outer reach and an insetting jog in the inner reach, the armature-coils also wound with an arcal outer reach and an insetting jog in the inner reach.

4. In combination with the segment-wound series coils, the supporting-clamps therefor having outsetting curved arms to embrace the arcal reaches of said coils, and transverse fingers to embrace them at the junction of the arc and the chord.

5. In combination with the meter-spindle, an adjustable upper bearing therefor and means for removing said bearing from the spindle and returning it thereto without disturbing its adjustments.

6. In combination with the meter-spindle, a support for the upper bearing thereof, an upper bearing for the spindle adjustably mounted in said support, and means for the removal of said support from its location adjacent to the end of the spindle, and its return thereto, carrying with it said bearing without disturbing its adjustment.

7. In combination with the meter-spindle, an overhanging bracket-arm movable away therefrom and an upper bearing for the spindle mounted in said arm.

8. In combination with the meter-spindle, an overhanging bracket-arm movable away therefrom, an upper bearing for said spindle mounted in said arm, and means for adjusting said bearing in the arm.

9. In combination with the meter-spindle and its attachments, the removable upper bearing for said spindle, and the series coils having an opening between them through which the spindle may be drawn sidewise bodily with its attachments.

10. In combination with the meter-spindle and its attachments, the upper bearing therefor mounted and adjustable in a bracket arm movable away from said spindle, and the series coils having an opening between them through which the spindle may be drawn sidewise.

11. In combination with the meter-spindle, and the armature and brake-disk, the removable upper bearing for said spindle, the series coils having an opening between them for the sidewise withdrawal of the spindle and its attachments, and the fixed brake magnets opening at the same side, for the withdrawal of the brake-disk with said spindle.

12. In combination with the meter-spindle, the hinged overhanging bracket-arm, the upper bearing for said spindle mounted in said bracket-arm, and a fastening device for said arm whereby it may be rigidly fixed to hold the bearing against the spindle.

13. In combination with the meter-spindle and its worm, the hinged overhanging bracket-arm, the registering-train and its worm-wheel mounted at the outer end of said arm, the upper bearing for said spindle also carried by said arm adjacent to the registering-train, and a fastening device to lock said arm rigidly into position.

14. In combination with the meter-spindle, removable overhanging bracket-arm and upper bearing mounted in said arm, the lower bearing set in the jewel-post, and the screw-cap for said lower bearing.

15. In combination with the meter-spindle, the hinged overhanging bracket-arm, the upper bearing mounted in said bracket-arm, and the bracket to which said arm is hinged, having a prolongation beyond the pivotal point for the alinement and support of the arm.

16. In combination with the brake-disk, the brake-magnets having turned-down poles and arranged one on each side of the disk with both poles of each individual magnet on the same side of the disk.

17. In combination with the brake-disk, brake magnets having turned-down poles both upon the same side of the disk, and arranged with their bodies parallel with the plane of the disk and upon opposite sides thereof.

18. In combination with the brake-disk, the brake-magnets, the bracket therefor having outsetting overhung arms provided with clamping fingers for the upper magnet, and a subtending table upon which the jewel-post for the lower end of the spindle is supported, and a plate adjustable along said table and carrying the lower magnet.

19. In combination with the brake-disk, circular permanent magnets arranged individually on opposite sides of the disk, having their body portions parallel with the plane of the disk and their poles dipped or bent down toward the surface of the disk.

20. In combination with the armature coils the armature-spider having outsetting radial arms with upper and lower teeth turned alternately in either direction to clamp the coils.

21. A commutator composed of an alloy of silver and nickel, substantially as described.

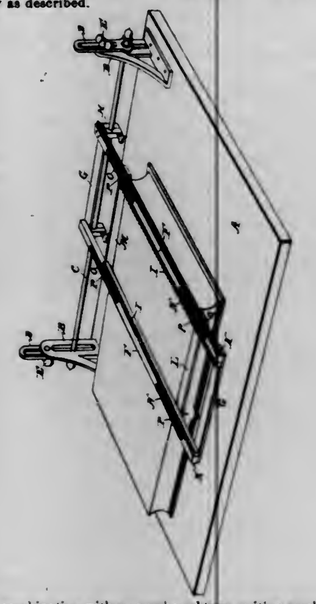
573,081. TYPE-WRITING MACHINE. GEORGE C. ELLIOTT, Chicago, Ill., assignor, by mesne assignments, to W. P. Hatch, New York, N. Y. Filed Dec. 20, 1890. Renewed May 21, 1896. Serial No. 592,486. (No model.)

Claim.—1. The combination with an overboard type-writing machine of a supplemental frame having a sliding connection with said machine and a vertically-adjustable pivotal support for said frame at one end thereof only, said frame being horizontally adjustable upon said support, substantially as described.

2. The combination with an overboard type-writing machine of a supplemental frame having a longitudinally-sliding connection with said machine, a transverse pivotal support for said frame at one end thereof only, and transverse adjustable bars on said frame near the ends thereof respectively, for engaging the upper and lower edges of a book or like object, substantially as described.

3. The combination with an overboard type-writing machine, of a supplemental frame having a longitudinally-sliding connection therewith, a transverse vertically-adjustable pivotal support for said frame at one end thereof only, and transverse, adjustable bars on said frame near the ends thereof respectively for engaging the upper and lower edges of a book or like object, substantially as described.

4. The combination with an overboard type-writing machine of a supplemental frame having a sliding connection with said machine, said frame being horizontally adjustable on its pivotal support, and transverse adjustable bars on the frame near the ends thereof respectively for engaging the upper and lower edges of a book or like object, substantially as described.

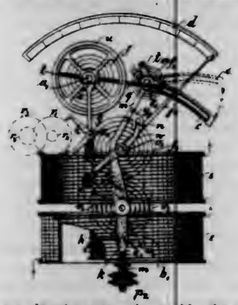


5. The combination with an overboard type-writing machine and a supplemental frame having a sliding connection therewith, of a pivotal guide-rod to which one end of said frame is secured, and vertically adjustable journal-bearings for the ends of said rod, substantially as described.

6. The combination with an overboard type-writing machine and a supplemental frame having a sliding connection therewith, of a pivotal guide rod, a table, standards thereon, and journal-bearings for said rod adjustably and slidingly connected with said standards, substantially as described.

7. The combination with an overboard type-writing machine and a supplemental frame having a sliding connection therewith of a guide-rod to which one end of said frame is secured, a table, slotted standards secured thereto through which the ends of said rod freely work, slotted slides in which the ends of said rod are journaled, and set-screws working through the slots in the slides and engaging the standards, substantially as described.

573,082. ELECTRIC METER. CARL EBERS, Berlin, Germany, assignor to Emanuel Bergmann, same place. Filed Oct. 10, 1895. Serial No. 565,255. (No model.) Patented in Germany June 21, 1892, No. 80,299; in Austria-Hungary Nov. 6, 1893, No. 60,660 and No. 95,352; in England Nov. 9, 1893 No. 21,327; in France Nov. 11, 1893, No. 233,983; in Belgium Nov. 13, 1893, No. 107,145, and in Switzerland Feb. 21, 1894, No. 8,124.



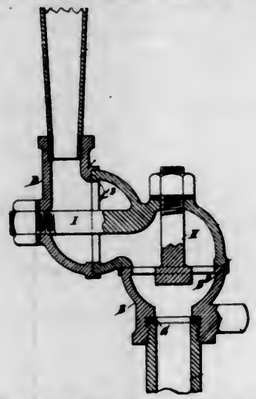
Claim.—1. In an electric meter; the combination with the oscillatory balance spiral spring of a clock work of an arm secured to said spiral spring, movable abutments for said arm and magnets adapted to be influenced by the current to be measured for the movement of said abutments into such position that they limit the free space for the oscillations of the said balance-spring substantially for the purpose set forth.

2. The combination with the oscillatory balance spiral spring of a clockwork, of a second counter-spring connected with the balance-spring by a lever-arm, and magnets adapted to be influenced by the current to be measured adapted to control the operative length of said lever arm and thus adjust the counter action of the second spring upon the first substantially as and for the purpose set forth.

3. The combination of an oscillatory balance-spring of a clock-work with a counter-spring connected to its outer end magnets, and means for causing the magnets to control the arc of oscillation of such counter-spring for the purpose set forth.

4. The combination of the balance-spring of a clock work and an arm attached to said spring, of a scale, a pointer adapted to be moved before said scale, magnets adapted to be influenced by the current to be measured means for causing the magnets to control the arc of oscillation of said balance-spring and means for connecting said magnets with the pointer for the purpose set forth.

573,083. LAWN-SPRINKLER. ISAIAH H. GINGRICS, Cadillac, Mich. Filed Oct. 7, 1895. Serial No. 564,833. (No model.)



Claim.—The herein-described lawn-sprinkler, consisting of a stationary section, constructed to be attached to a service-pipe and having a horizontal bar extending across the center of its upper end and a vertical bolt rising from said bar; an intermediate section comprising two cups extending at approximately right angles with each other, the outer wall of one of said cups being engaged by said bolt and the opposite end thereof being seated upon the upper edge of said stationary section so as to turn in a horizontal plane thereon, said cup also having a horizontal bolt extending through and beyond the outer cup of said intermediate section; and an outer section extending at approximately right angles with the latter cup and seated thereon so as to turn in a vertical plane upon the same, the front vertical wall of said outer section being engaged by said horizontal bolt; and a nozzle attached to said outer section.

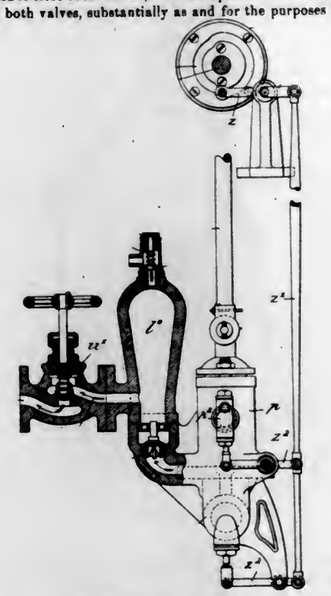
573,084. PROCESS OF MAKING SOAP. LOUIS GOTTSCHALK, Chicago, Ill., assignor of two-thirds to Harry J. Gotthelf and Frank R. Baker, same place. Filed Mar. 2, 1896. Serial No. 581,566. (No specimens.)

Claim.—1. The process of utilizing tank-water, which consists in mixing with it an ingredient capable of freeing oxygen in the mixture, then subjecting the mixture to heat, then adding thereto a caustic-soda solution, then subjecting the mixture to heat, substantially as described.

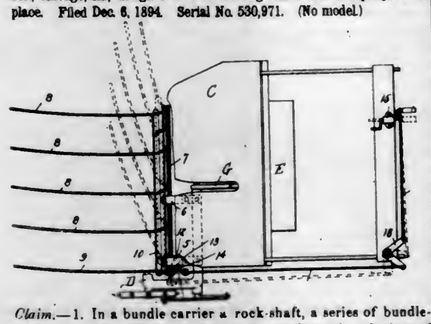
2. The process of utilizing tank-water, which consists in mixing with it an ingredient capable of freeing oxygen in the mixture, then subjecting the mixture to heat, then adding thereto a caustic-soda solution, then subjecting the mixture to heat, and then mixing it with soap as ordinarily prepared, substantially as described.

573,085. FEED-PUMP. JAN GRUBINSKI, Warsaw, Russia. Filed Apr. 10, 1896. Serial No. 586,960. (No model.)

Claim.—In a feed-pump, a cylinder having an inlet at its lower end and an outlet at its upper end, valves controlling the inlet and outlet, two arms each adapted to control one of said valves, a link pivotally connected with said arms, a piston traversing said cylinder, a rod operating said piston and a cam-disk adapted to actuate both piston-rod and link, whereby upon the downstroke of the piston the link is adapted to close both valves and on the upstroke thereof it is adapted to open both valves, substantially as and for the purposes described.



573,086. BUNDLE-CARRIER FOR HARVESTERS. PAUL HANSON, Chicago, Ill., assignor to the Deering Harvester Company, same place. Filed Dec. 6, 1894. Serial No. 530,971. (No model.)



Claim.—1. In a bundle carrier a rock-shaft, a series of bundle-supporting arms, pivotally supported at the grainward ends thereof by said rock-shaft, a bar loosely connecting all of said arms at a point intermediate the ends thereof, a lever pivotally mounted upon said rock-shaft and connected to said bar, and means for rocking said lever; as and for the purpose set forth.

2. In a bundle-carrier, a pivoted support, a series of bundle-supporting arms pivotally supported thereon, a bar loosely connecting all of said arms, a lever pivotally mounted on said support and connected to said bar, and means for rocking said lever, whereby said support is rocked and said bar moved endwise, thereby elevating or lowering said arms and distending or folding the same; as and for the purpose set forth.

3. In a bundle-carrier for harvester-machines, a rock-shaft, a series of bundle-supporting arms, pivotally supported at the grainward ends thereof by said rock-shaft, a bar loosely connecting said arms at a point intermediate the ends thereof, a lever pivotally mounted intermediate the ends thereof upon said rock shaft and secured at one end to said bar, and means connected to the other end of said lever for rocking the same, whereby said arms may be folded and distended and raised and lowered at will; as and for the purpose set forth.

4. In a bundle-carrier, a rock-shaft, bundle-supporting arms pivotally mounted at one end upon said rock-shaft, a bar capable of movement independent of said shaft and loosely connecting said arms intermediate the ends thereof, a bell crank lever, pivotally mounted upon said rock-shaft to swing upon an axis at right angles to the axis of said rock-shaft, and having one end connected to said bar, and means connected to the other end of said lever for actuating the same, whereby said shaft is rocked and said bar moved endwise, as and for the purpose set forth.

5. In a bundle-carrier for harvester-machines a framework, hangers secured thereto, a shaft journaled in said hangers, a series of arms pivotally supported by said shaft, a lever carried by said shaft and having a lug thereon adapted to engage a hanger, connections between said lever and arms whereby said arms are sustained in elevated position, and means for disengaging said lug, whereby said shaft may be rocked to lower said arms; as and for the purpose set forth.

6. In a bundle-carrier for harvester-machines a framework, hangers supported thereby, a shaft journaled in said hangers, a series of arms pivotally supported by said shaft, a bar loosely connecting said arms, a lever pivoted intermediate its ends to said shaft and connected at one end to said bar, said lever provided with a lug adapted to engage a hanger, whereby said arms are supported in elevated position, and means, under control of the driver, for disengaging said lug, whereby said shaft and arms may be rocked; as and for the purpose set forth.

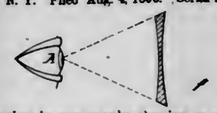
7. In a bundle-carrier, a pivoted support, a series of bundle supporting arms pivotally supported on said support, a bar loosely connecting all of said arms, a lever pivotally mounted on said support, said lever directly connected to said bar, and means for rocking said lever, whereby said support is locked and said bar moved endwise, thereby elevating or lowering said arms and distending or folding the same; as and for the purpose set forth.

8. In a bundle-carrier, a series of bundle-supporting arms, a rock-shaft, said arms being pivotally supported at one end thereof upon said shaft, a control-bar, capable of movement independent of said rock-shaft, and arranged to loosely connect said arms intermediate the ends thereof, a lever pivotally mounted intermediate its ends upon said rock-shaft, the axis of its pivotal support arranged to intersect the axis of said rock-shaft at right angles, said lever connected at one end thereof to said control-bar, and means connected to the opposite end of said lever for actuating the same; as and for the purpose set forth.

9. In a bundle-carrier a framework, a shaft journaled therein, a series of cradle-arms supported by said shaft, a lever mounted upon said shaft whereby the same may be rocked to raise or lower said arms, and a pivoted lug carried by said lever adapted to engage a part of the framework to support said arms in their elevated position, and means for disengaging said lug; as and for the purpose set forth.

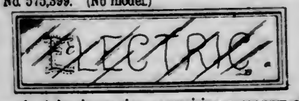
10. In a bundle-carrier a perforated rock-shaft, a series of bundle supporting arms, having their inner or grainward ends upturned and arranged to arch over and be received in the perforations in said shaft, a control-bar provided with a series of perforations through which said arms are arranged to pass, said control-bar arranged intermediate the ends of said arms and in a lower plane than said rock-shaft, a lever pivotally mounted upon said shaft to swing upon an axis at right angles to the axis of said shaft, said lever connected to said bar, and means for actuating said lever, whereby said shaft is rocked and said bar moved endwise, as and for the purpose set forth.

573,087. LENS, SPECTACLES, OR EYEGLASSES. ANDREW H. HART, Brooklyn, N. Y. Filed Aug. 4, 1896. Serial No. 601,588. (No model.)



Claim.—A frameless lens or eyeglass having an edge partially or wholly beveled to form part of a truncated cone whose apex will be substantially at the eye of the wearer when the glass is in use.

573,088. ELECTRIC SIGN. FREDERICK H. HAWKINS, New York, N. Y., assignor to L. A. Hayward, same place. Filed Jan. 13, 1896. Serial No. 575,399. (No model.)



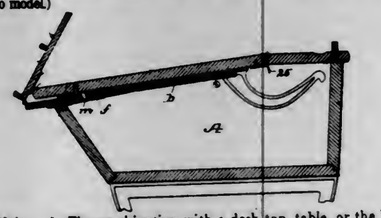
Claim.—1. A luminous sign comprising a vacuum-chamber having a transparent face and also having a back wall and a partition-wall between the back wall and face, a filament or plurality of filaments of carbon or other suitable material arranged in said cham-

ber between the partition-wall and face thereof and shaped to form a letter, figure or symbol and conductors arranged between the partition and back walls and connected to the filaments and adapted to be electrically connected with an electric generator, substantially as and for the purpose specified.

2. A luminous sign comprising a vacuum-chamber having a transparent face, a filament or plurality of filaments of carbon or other suitable material arranged in said chamber and adapted to be electrically connected with an electric generator and shaped to form a letter, figure or symbol, and a corresponding letter, figure or symbol formed on a background in rear of the filament letter, figure or symbol, substantially as specified.

3. A luminous sign comprising a vacuum-chamber having two transparent faces and also having a longitudinal central partition-wall, filaments of carbon or other suitable material arranged in said chamber on opposite sides of the partition-wall and shaped to form a letter, figure or symbol and conductors connected to the filaments and arranged in the partition and adapted to be electrically connected with an electric generator, substantially as specified.

573,089. BOOK-REST FOR SCHOOL-DESKS, TABLES, &c. CHAS. F. HAYNES, Boston, Mass. Filed July 22, 1896. Serial No. 600,157. (No model.)



Claim.—1. The combination with a desk-top, table, or the like, of a sliding leaf mounted thereunder and comprising two parts or members hinged together at their adjacent edges; the outer member of the leaf having a flat upper face to rest against, and in adjustable sliding contact with, the front edge of said desk or table top, when said member is swung up into its operative position; whereby when the leaf is drawn out the outer member thereof may be adjusted at any desired angle by simply moving the inner leaf member a slight distance in or out, substantially as set forth.

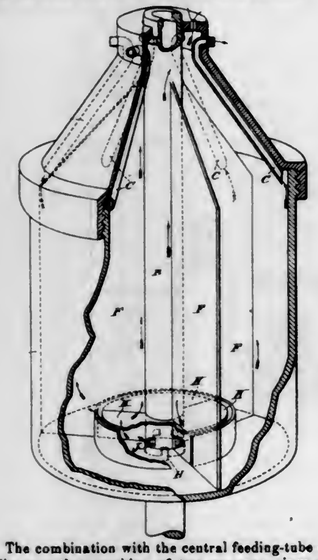
2. The combination with a desk-top, table, or the like, of a flat leaf sliding beneath the same on suitable guides, said leaf being composed of two parts or members hinged together, the outer portion of the leaf when drawn out being adapted to turn or fold over at an angle against and in adjustable contact with the front edge of the desk top or table to form a book support or rest, and said outer portion being provided on its upper side adjacent to its hinged edge with one or more rubber cushions adapted to contact with the front edge of the desk-top or table and by their frictional contact therewith, hold the outer section in its adjusted position substantially as described.

3. The combination with a desk-top or table, of a flat leaf sliding on guides beneath the same and composed of two parts or members hinged together, the outer portion of the leaf when drawn out being adapted to turn or fold over against and in adjustable contact with the front edge of the desk top or table to form a book-rest, and said outer portion of the leaf being provided on its upper side adjacent to its hinged edge with one or more rubber friction-cushions for contact with the said front edge of the desk-top, and the inner portion of the leaf being provided on its under side with one or more rubber friction-cushions for contact with the front edge of the body of the desk to prevent the sliding leaf from slipping when adjusted in position, substantially as described.

573,090. CENTRIFUGAL MACHINE. JOHN G. KLENK, Philadelphia, Pa. Filed May 12, 1896. Serial No. 591,252. (No model.)

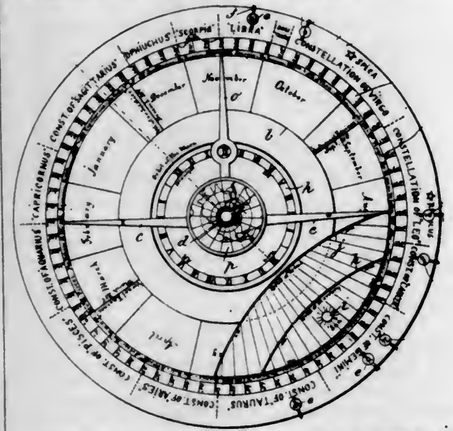
Claim.—1. In a centrifugal machine, in combination, a bowl, milk and cream outlets at the top of said bowl, a central feeding-tube removably carried by said bowl, two or more wings carried by said tube and extending outwardly to the inner wall of the bowl, dividing said bowl into two or more chambers, means for locking said tube and wings to said bowl, outlets at or near the bottom of said tube, and a horizontal plate or disk substantially as described carried by said tube and wings and placed above said outlets in said tube.

2. In a centrifugal machine, in combination, a bowl, milk and cream outlets at the top of said bowl, a central feeding-tube removably carried by said bowl, two or more wings carried by or formed integrally with said tube dividing said bowl into two or more compartments, means for locking said tube and its connected parts to said bowl, outlets at or near the bottom of said tube, a horizontal plate or disk carried by said tube and wings and placed above said outlets, and a ring of somewhat greater diameter than the diameter of said plate or disk carried by said wings the bottom of which is adapted to rest upon the bottom of the bowl and the top of which is approximately on the same level as that of said plate or disk.



3. The combination with the central feeding-tube of a centrifugal milk-separating machine of two or more wings carried by or formed integrally therewith, milk-outlets at or near the bottom of said tube, and a horizontal plate or disk carried by said tube and wings placed above said outlets and extending outward about half the width of said wings.

573,091. ZODIACAL CHART. JOSUA LINDAHL, Chicago, Ill., and CALEB LINDAHL, National Military Home, Los Angeles County, Cal. Filed Nov. 9, 1895. Serial No. 568,458. (No model.)

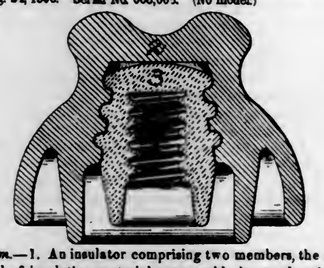


Claim.—1. In a zodiac-chart, the combination of two disks *a b*, of different sizes pivoted together centrally, the smaller one upon or in front of the other and representing the relative positions of the earth and sun, and provided with a dial of terrestrial time, the other provided with representations of the signs of the zodiac, a dial of celestial longitude and the months of the year, and a set of detachable tags to be fastened to it to represent the positions of the various planets.

2. In a zodiac-chart the combination of two disks *a b*, of different sizes pivoted together centrally, the smaller one upon or in front of the other and representing the relative positions of the earth and sun, and provided with a dial of terrestrial time, the other provided with representations of the signs of the zodiac, a dial of celestial longitude and the months of the year, and a set of detachable tags to be fastened to it to represent the positions of the planets, and also a calendar-hand.

3. In a zodiac-chart, a revolving disk provided with representations of the earth in the center and the sun revolving around the earth and carrying with it the orbits of the inferior planets, approximately as these orbits present themselves to observers on the earth, in combination with another revolving disk provided with representations of the signs of the zodiac, a dial of celestial longitude and the months of the year, and a set of detachable tags adapted to be fastened to it to represent the positions of the various planets, said disks pivoted together centrally the former upon or in front of the latter substantially as described.

573,092. INSULATOR. FRED M. LOCKE, Victor, N. Y. Filed Aug. 24, 1896. Serial No. 603,665. (No model.)

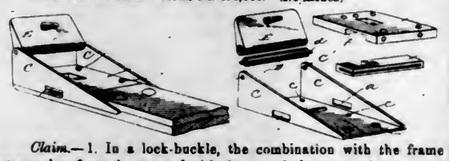


Claim.—1. An insulator comprising two members, the outer one composed of insulating material puncturable by an electric current, and an inner member of less puncturable insulating material within the other and provided with a suitable recess to receive an insulator-support.

2. An insulator comprising two members, one consisting of insulating material having high surface resistance, but puncturable by electricity, as porcelain, and the other consisting of insulating material having high resistance against puncture, and low surface resistance applied to the former opposite to the points thereof most liable to puncture.

3. An insulator comprising two members respectively composed of insulating materials having different degrees of puncturability, and having varying degrees of surface resistance connected together and adapted to be supported substantially as shown and described as a means for insulating currents of very high voltage.

573,093. LOCK-BUCKLE. MATTHEW W. LYNCH, Madison, Wis. Filed Dec. 30, 1892. Serial No. 456,818. (No model.)



Claim.—1. In a lock-buckle, the combination with the frame stamped up from sheet metal with the oppositely-arranged transverse openings, the tongue carried by the frame, the pivot-pin passing through the tongue having reduced ends received in openings in each side of the frame, of the independent lock-case secured in the frame and having the transverse channel registering with the transverse openings in the frame, the locking-bolt sliding in said channel and having the ends within the opening in the frame, and the pin carried by the bolt working in a slot in the bottom of the frame for limiting the movement of the bolt, and the tumblers for holding the bolt.

2. In a lock-buckle, the combination with the sheet-metal frame formed with the ears at each side, the tongue pivoted thereon, of the independent tumbler-case secured in the frame and having the transverse channel in the lower face, the locking-bolt sliding in said channel, having the spring-pressed locking-pin for holding the bolt in unlocked position and the tumbler carried by the block for holding the locking-bolt in locked position.

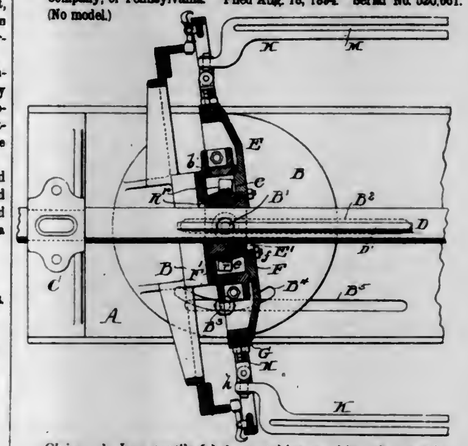
573,094. DEVICE FOR CLOSING BOTTLES. JOHANN MACEK, Buda-Pesth, Austria-Hungary, assignor to Alexander Frankl. Filed Nov. 20, 1894. Serial No. 529,786. (No model.) Patented in Hungary June 23, 1894, No. 652, and in Switzerland Oct. 29, 1894, No. 9,175.

Claim.—1. A siphon-head having a central transverse valve chamber, the siphon-tube leading thereto, a discharge-pipe, said head having a spindle in the side thereof leading from said valve-chamber, a valve for closing said discharge-pipe, the spindle carrying said valve, an elongated elastic sleeve inclosing said spindle, and extending transversely of the bottle-neck to said valve-chamber, its end projecting over the mouth of said siphon-tube, and means for contracting said sleeve, substantially as described.



2. A siphon-head having a valve-chamber and a spindle-opening therein, a discharge pipe leading from said valve chamber, a valve, the spindle, and the elastic sleeve surrounding said spindle its entire length in the valve-chamber, said sleeve forming a backing for the valve and a protecting-covering for the said spindle and adapted to bear on the rear wall of the valve-chamber around said spindle-opening and to exert a tension to normally keep said valve seated, and means for contracting said sleeve, substantially as described.

573,095. TEXTILE-STRETCHING DEVICE. WILLIAM C. MACKINNEY, Philadelphia, Pa., assignor to the H. W. Butterworth & Sons Company, of Pennsylvania. Filed Aug. 18, 1894. Serial No. 520,661. (No model.)



Claim.—1. In a textile-fabric-stretching machine, the combination of two sets of clamps or fabric-holding devices arranged in circles and in which the plane of one set of clamps or holding devices is at an angle to the plane of the other set of clamps or holding devices, suitable supports for said two sets of clamps or holding devices, a series of intermediate supporting-bars extending between two sets of clamps or holding devices, means for rotating the supports for said clamps and intermediate supporting-bars at equal speeds, and an intermediate rotating support common to the bars extending from both heads adapted for supporting the adjacent ends of the bars to hold them against inward sagging at a point intermediate of the two sets of clamps or holding devices.

2. In a textile-fabric-stretching machine, the combination of two sets of clamps or fabric-holding devices arranged in circles and in which the plane of one set of clamps or holding devices is at an angle to the plane of the other set of clamps or holding devices, suitable supports for said two sets of clamps or holding devices, a series of intermediate supporting-bars extending between two sets of clamps or holding devices, means for rotating the supports for said clamps or holding devices and intermediate supporting-bars at equal speeds, an intermediate support for said supporting-bars to hold them against sagging at a point intermediate of the two sets of clamps, and means to adjust the said intermediate support so as to impart a greater or less curvature or outward projection to the supporting-bars at points intermediate of their ends.

3. In a textile-fabric-stretching machine, the combination of two revolving heads, a series of clamps or means for holding the edges of

the fabric carried upon the peripheries of said heads, bearings for said revolving heads for holding them at an angle to each other, in combination with a series of extendible supporting-bars arranged between the two heads and connected at their outer ends with the said heads by pivoted joints, an intermediate support revolving with the said shaft for supporting the said bars in a plane intermediate of the two heads, and means to adjust the bars radially upon the said intermediate support to vary the outward curvature of said bars at their intermediate parts.

4. In a textile-fabric-stretching machine, the combination of two adjustable pedestals or standards having horizontal bearings at top, two heads journaled in the bearings of said pedestals or standards and having their peripheries extended backward over said bearings so as to be substantially in line with a vertical plane through the bearings of said standards, and means upon the peripheries of said heads for holding the fabric, the construction being such that the two heads may be rotated in planes at an angle to each other and adjusted about said bearings as a center.

5. In a textile-fabric-stretching machine, the combination of two adjustable pedestals or standards having horizontal bearings at top, two heads journaled in the bearings of said pedestals or standards and having their peripheries extended backward over said bearings so as to be substantially in line with a vertical plane through the bearings of said standards, means upon the peripheries of said heads for holding the fabric, extensible supporting-bars arranged between the two heads for supporting the fabric intermediate of the said heads and means to rotate said heads and supporting-bars at equal speeds.

6. In a textile-fabric-stretching machine, a bed-plate, a pedestal adjustable thereon about a vertical axis and having an overhanging bearing at its upper part, a head having its central portion journaled in said bearing and its outer rim or perimeter arranged in a plane substantially through the said vertical axis, a rotating power shaft, adjustable connections between the shaft and heads whereby they are rotated with the shaft, and suitable holding devices for holding the fabric to the said rim or perimeter, the construction being such that the adjustment of said heads and pedestals may be made without materially varying the speed of the perimeter or rim at its receiving and delivery points.

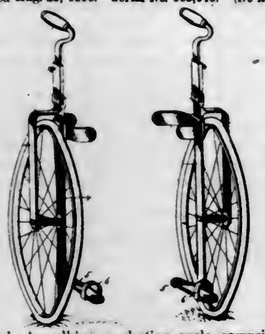
7. The combination of the pedestal B adjustable upon a vertical axis, a rotating head journaled in said pedestal and having a rim or perimeter extended backward so as to lie substantially in a plane through and between the bearing and vertical axis of the pedestal, a rotating shaft extending through the head and bearing, and a universal power-transmitting device between the said shaft and rotating head.

8. The combination of the pedestal B adjustable upon a vertical axis, a rotating head journaled in said pedestal and having a rim or perimeter extended backward so as to lie in a plane substantially through the bearing and vertical axis of the pedestal, a rotating shaft extending through the head and bearing, a universal power-transmitting device between the said shaft and rotating head, clamping devices carried upon the head adjacent to its rim, and cam devices adjustable with the pedestal for operating the said clamps at specified intervals.

9. The combination of the base or bed plate, a vertical pedestal adjustably secured to the said base or bed plate whereby it may be adjusted about a vertical axis and also horizontally and further provided with an overhanging bearing of large diameter, a rotary power-shaft journaled upon said base or bed plate and arranged substantially over the vertical axis of the pedestal and extending through the bearing thereof, a stretching-head having a central portion journaled in the said overhanging bearing and extending backward at its periphery so as to come substantially into line with a transverse plane through the vertical axis of the pedestal and further provided with devices for clamping or holding the fabric to be stretched during its rotation, and adjustable or compensating power-transmitting connections between the rotating shaft and head.

10. The combination of the base or bed plate, a vertical pedestal adjustably secured to the said base or bed plate whereby it may be adjusted about a vertical axis and also horizontally and further provided with an overhanging bearing of large diameter, a rotary power-shaft journaled upon said base or bed plate and arranged substantially over the vertical axis of the pedestal, a stretching-head having a central portion journaled in the said overhanging bearing and extending backward at its periphery so as to come into substantial line with a transverse plane through the vertical axis and further provided with devices for clamping or holding the fabric to be stretched during its rotation, adjustable or compensating power-transmitting connections between the rotating shaft and head, and supporting-bars for the fabric having their outer edges substantially in alinement with the outer periphery of the head and universally pivoted to the head substantially in a plane through the axis of the pedestal.

573,096. SKATING-CYCLE. TILLMAN A. MARTEENY, Kansas City, Mo. Filed Aug. 25, 1896. Serial No. 603,913. (No model.)



Claim.—1. A walking or skating cycle, comprising a wheel, a frame pivotally mounted upon the axle of said wheel, and provided with a foot-plate and leg clasp, and a handle bar having a pivoted connection with said frame, substantially as described.

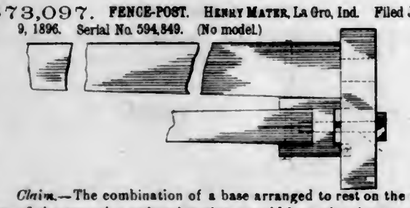
2. A walking or skating cycle, comprising a wheel, a frame pivotally mounted upon the axle of said wheel and provided with a foot-plate and a leg-clasp, and an extensible and contractible handle-bar, having a pivoted connection with said frame, substantially as described.

3. A walking or skating cycle, comprising a wheel, a frame pivotally mounted upon the axle of said wheel and provided with a foot-plate and an adjustable leg-clasp, and a handle bar having a pivoted connection with said frame, substantially as described.

4. A walking or skating cycle, comprising a wheel, a frame pivotally mounted upon the axle of said wheel and provided with a foot-plate and an adjustable leg clasp, and an extensible and contractible handle-bar having a pivoted connection with said frame, substantially as described.

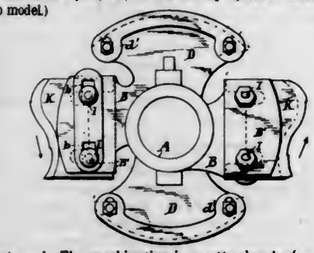
5. A walking or skating cycle, comprising a wheel, an arched bracket or yoke pivotally mounted upon the axle of said wheel, having its inner arm extended downwardly and provided with a foot-plate, a leg-clasp adjustably mounted upon said inner arm above the axle of the wheel, a sleeve pivotally connected to said arched bracket or yoke, a handle-bar adjustably mounted in said sleeve, and provided with a handle or gripping-surface, all arranged substantially as herein shown and described.

573,097. FENCE-POST. HENRY MATER, La Gro, Ind. Filed June 9, 1896. Serial No. 594,849. (No model.)



Claim.—The combination of a base arranged to rest on the surface of the ground, a pedestal resting on said base, the pins securing the legs of said pedestal to the base, a post mounted within said pedestal, an aperture in the lower portion of said base, a pin extending therethrough and into the post, and an opening on the side in close proximity to the pedestal for the reception of a pole or the like, substantially as described.

573,098. KNIFE AND CUTTER-HEAD FOR LATHES. LOUIS G. MERRITT, Lockport, N. Y. Filed July 5, 1894. Serial No. 516,572. (No model.)



Claim.—1. The combination in a cutter-head, of a hub provided with wings extending in parallel planes on diametrically opposite sides thereof, and each extending equally on opposite sides of the shorter diameter of the ellipse formed by the plane of said wings cutting the cylinder of rotation, cutting-blades secured to the wings and so arranged that each cutting edge will also occupy equal spaces on opposite sides of the shorter diameter of the ellipse, whereby the center of the cutting edge engages the work perpendicularly thereto and the adjacent portions thereof approximately so, substantially as and for the purpose specified.

2. The combination in a molding cutter-head for turning-machines, of a hub provided on opposite sides with wings set at a great angle to the axis of the said wings lying in the same plane of rotation and extending equally on opposite sides of a plane passing through the middle of the cutter-head at right angles thereto, the wings being provided with knives the edges of which are interrupted so that only the downward portions of each can engage the work, substantially as specified.

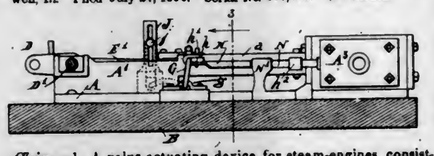
3. The combination in a cutter-head for turning-machines, of a hub having two oppositely-extending wings set at a great angle to the axis of the shaft, each wing provided with an oppositely-faced seat a cutter-knife thereon, the cutting edges each being interrupted and occupying equal spaces on opposite sides of the shorter diameter of the ellipse formed by the plane of said wings cutting the cylinder of rotation and the oppositely-extending flanges provided with adjustable segments to prevent the work from being drawn into the cutter-head substantially as specified.

573,099. POTATO-CUTTER. SAKAYE MISAMI, Oakland, Cal. Filed May 23, 1896. Serial No. 592,714. (No model.)



Claim.—In a potato slicer, the combination with handle-levers hinged together, of a curved compression-box connected to one lever and open at the top, a removable bottom for said compression-box which bottom consists of an open frame and series of cutting-knives crossing each other in the form of a grating, and a curved plunger connected to the other handle-lever and adapted for insertion in the compression-box; substantially as described.

573,100. VALVE-GEAR FOR ENGINES. PAUL MUNDT, Broadwell, Ill. Filed July 27, 1896. Serial No. 600,733. (No model.)



Claim.—1. A valve-actuating device for steam-engines, consisting of a block sliding vertically on a standard secured to the bed-plate and having a transverse opening through which the connecting-rod of the engine slides, and a rocking link connected with said block and with the valve-rod of the engine, substantially as set forth.

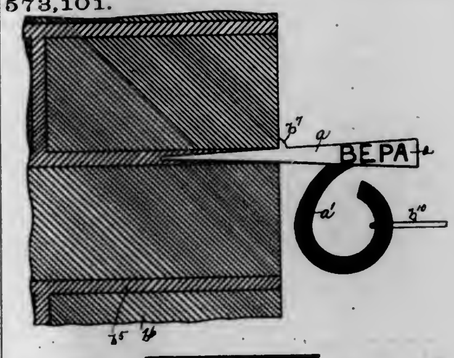
2. In a steam-engine the combination of a main frame, a cylinder, a piston-rod working in said cylinder, a steam-chest, a valve-rod working in said steam-chest, a rotatable crank-shaft and crank, a connecting-rod connecting said crank with said piston-rod, a slotted standard secured to the main frame, a block K fitting on the connecting-rod and slidably connected with said standard and a rocking link G connected with said block and with said valve-rod, as set forth.

3. In a steam-engine, the combination of a main frame, a slotted standard secured thereto, a reciprocating connecting-rod, a block K having a transverse opening k' through which the connecting-rod passes and slidably connected with said standard, a block M fitting in the transverse opening in the block J and having a convex surface, a screw k^3 in the block K bearing on the convex surface of the block M, a rocking link G connected with the block K and a rod H connecting said rocking link with the valve-rod, as set forth.

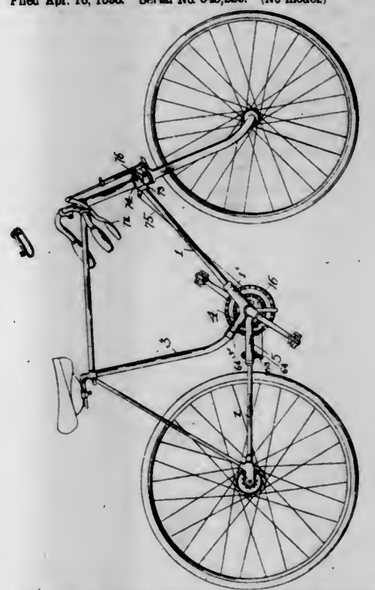
573,101. WALL INSULATOR. JAMES J. O'NEILL, Boston, Mass. Filed Dec. 19, 1895. Serial No. 572,700. (No model.)

Claim.—An electric insulator of the class described consisting of the tapering member *a* provided with a lug forming a stop, and the curved or hooked insulated member *a'* extended from the member *a* intermediate of its ends, substantially as described.

573,101.



573,102. CHAINLESS CHANGE-GEAR BICYCLE. JOHN C. PRATT, Hartford, Conn., assignor of one-half to Albert K. Pettingill, Boston, Mass. Filed Apr. 10, 1895. Serial No. 545,229. (No model.)



Claim.—1. A bicycle comprising the crank shaft, the driving-gear thereon, the gearing at the rear axle, the driving-shaft leading thereto, the central sleeve surrounding the crank-shaft and having a bearing for the driving shaft, the yoke having its ends held to the ends of the sleeve, the rear fork extending from the yoke and the bearing in the yoke for the driving-shaft, said shaft extending through one side of the rear fork and the gear thereon meshing with the driving-gear, substantially as described.

2. A bicycle comprising the crank-shaft, the sleeve about the same connected with the frame and composed of two sections with the connecting-loop between them, the driving-gear arranged on the crank-shaft within the loop portion, the yoke secured to the ends of the sleeve and about the crank-shaft, the rear fork connected to the yoke, the driving-shaft, the bearings therefor in the yoke and sleeve and the gear intermediate of said bearings arranged on said driving-shaft, substantially as described.

3. In combination in a chainless bicycle, the combination of the crank-shaft, the gear thereon, the sleeve about the crank-shaft, the driving-shaft extending to the rear wheel and the bearing for the said shaft carried by the sleeve extending transversely across and within the same and having a threaded shank engaging the sleeve, said shank having also a perforation through it for the crank-shaft, substantially as described.

4. In combination in a chainless bicycle, the crank-shaft, the two-part sleeve surrounding the same, the loop connecting the sleeve-sections and having upwardly-inclined portions, the frame-bars secured

to said inclined portions, the driving-gear arranged between the sleeve-sections, the yoke connected to the sleeve-sections, the rear fork connected to the yoke, the driving-shaft, the gear thereon meshing with the driving-gear and the bearings for the driving-shaft in the yoke and sleeve, respectively, substantially as described.

5. A chainless change-gear bicycle comprising the crank-shaft, the double gear thereon, the driving-shaft, the pair of gears loose thereon, the friction clutch-blocks about the shaft and between the same and the gears, the said shaft being slotted and the clutch-levers arranged in said slot and adapted to force the blocks outwardly and means for operating the clutch levers, substantially as described.

6. In a chainless change-speed bicycle, the combination of the frame, the crank-shaft, the driving-gear, the driving-shaft slotted at its forward end, the gears about the slotted part and the levers pivoted at their outer ends at opposite ends of said slot having their arms extending inwardly lapping by each other and slotted and the sliding fork for operating the levers, said levers having clutching portions at their outer pivoted ends, substantially as described.

7. In combination in a chainless change-gear bicycle, the frame, the main driving-gear, the driving-shaft having the slot, the sleeve fixed to the shaft, the segmental blocks in said sleeve and conforming to the curve thereof, the clutch-levers in said slot arranged to act on the clutch-blocks and means for operating the clutch-levers, substantially as described.

8. In combination in a chainless change-speed bicycle, the crank-shaft, the driving gear, the driving-shaft having a slot, the gears about the same and the two pairs of clutch-levers, one pair having double arms and the other single arms, said arms lapping by each other and slotted, and the fork-slide for operating the clutch-levers, said slide having pins extending through a slot in the side of the shaft, substantially as described.

9. In combination, in a chainless change-gear bicycle, the gears and the clutch mechanism comprising the clutch-levers, the sliding fork, the sleeve connected thereto, means for operating the sleeve in opposite directions consisting of two shafts arranged on opposite sides of the sleeve having the arms thereon, those of one shaft being a quarter-turn from those on the other shaft and means for moving the shafts step by step in one direction, substantially as described.

10. In combination in a chainless bicycle, the gearing, the clutch mechanism, the hand-lever at the handle-bar, the pawl-and-ratchet mechanism operated step by step and the clutch-shifting device arranged to be operated one way at one action of the pawl and ratchet and be operated the reverse way at the next action of the same, substantially as described.

11. In combination in a chainless bicycle, the gearing, the clutch mechanism, the shifting sleeve, the two shafts one on each side of the sleeve and having wiper-arms a quarter-turn from each other to engage the sleeve alternately, the pinions for operating the shafts and the pawl and ratchet with connections for operating the same, substantially as described.

12. In combination in a chainless bicycle, the gearing, the clutch mechanism, the shifting sleeve connected thereto having grooves, the guide pins upon which the sleeve slides and the rotary shafts having wiper-arms for engaging the sleeve with means for operating the shafts, substantially as described.

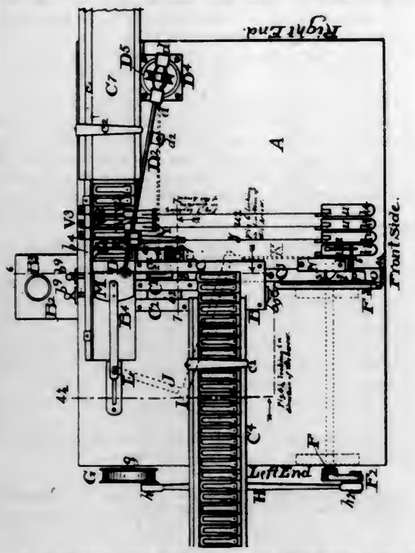
13. In combination, the change-gear mechanism, the brake lever and rod, the lever pivoted to the frame and connected with the change-gear mechanism and a clutch on the brake-rod arranged to operate the lever, said clutch and lever being moved into and out of line by turning the head and handle-bars, substantially as described.

14. In combination, the change-gear mechanism, the brake lever and rod, the yoke-lever pivoted to the frame and the spring-catch on the brake-rod arranged to operate the yoke lever when moved down but to yield and pass the same when moved up, substantially as described.

15. In combination, the rear fork, the axle extending between them, the nuts 82× and 88, the inner nut 82 on a threaded part of the shaft for holding the axle on the inside of the fork, the cone-bearing threaded on the said nut 82, the gear 78 having the shoulder-hub, the rear wheel having a hub to receive the threaded end of the gear-hub, and the cup-bearing 95 screwed into the wheel-hub, substantially as described.

573,103. ORGAN-REED-TUNING MACHINE. CHARLES N. RAND, Geneva, Ohio, assignor of one-half to Emery Galen Wetherbee, Painesville, Ohio. Filed Dec. 24, 1894. Serial No. 532,897. (No model.)

Claim.—1. In an organ-reed tuning machine, the combination of the table A, block B mounted on the table, slots b, b^3, through said block and table in communication with air-chamber B^3, guide-strips C: C', C², on the block for holding reeds over said slots, valves b^5, b^6, b^8, b^9, set in grooves in the block, screws b^7, b^7, for adjusting said valves, shaft c^3 set in the side of the block B, arm or anvil c^4 on its inner end within the slot b, lever c^5 on its outer end, spring c^6 on the shaft between the block and lever, adapted for turning the anvil up in the slot b to support the tongue, substantially as described.



2. In an organ-reed-tuning machine, the combination of the shaft D^3, bar D mounted on the swinging end of the shaft, and the shaft journaled in the yoke D^2, mounted on the swivel-block D^4, pulley D^5 on the shaft, spring d^3 on the table and bearing against the shaft, curved top post X mounted on the table, angle-lever Y pivoted on the top of the post X, connecting-rod y connecting lever Y with the key k^3 at the front side of the table, levers V and V' pivotally mounted on the table by the side of the post X, connecting-rods u^3 connecting said levers with the keys k^3 and k^4, constructed and adapted to operate for manipulating the bar shaft substantially as described.

3. In an organ-reed-tuning machine, the combination with the push feed-bar C^3 and the vibrating lever F^3, mounted on the rock-shaft F, of the tripper p fulcrumed at its middle onto the bar C^3, spring s for holding the tripper in normal position, post t' mounted on block N, angle-lever t, pivoted at its angle to the post t', having its lower end bearing against the tripper, its upper end connected by rod t^3 to the arm t^2 on key k', and adapted for operating the tripper and throwing it into the path of the vibrating lever F^2 as and for the purpose specified.

4. The combination in an organ-reed-tuning machine with the block B, guides C C' on said block, and the push feed-bar C^3, of the inclined reed-tray C^4, adapted to deliver reeds by gravity onto the block as the push bar conveys them forward from the base of the column, substantially as described.

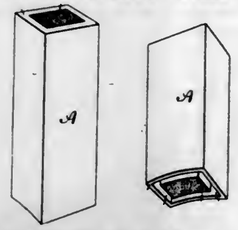
573,104. COMBINED BICYCLE PANTS-GUARD AND LOCK. HENRY A. RAUERT, Portland, Oreg., assignor of one-half to Robert Swain, same place. Filed June 19, 1896. Serial No. 596,153. (No model.)



Claim.—1. A combined bicycle-lock and pants-guard comprising a metallic spring curved in substantially circular form, its ends lying adjacent to each other when said spring is not under tension, one of said ends carrying a tongue, and the other a spring-lock, the latter being provided with an aperture to receive said tongue, said tongue and aperture being so arranged on the opposite ends of the spring that the tongue will enter the aperture when said ends are brought together and so lock said ends together, substantially as described.

2. A combined bicycle-lock and pants-guard comprising a metallic spring curved in substantially circular form, its ends curved in reverse circles, as shown, one of said circles inclosing a spring-lock, and the other carrying a tongue, said circular ends lying adjacent to each other when the spring is not under tension, the lock being provided with an aperture for the tongue arranged relatively to the tongue so that the latter will enter the aperture when the curved ends are brought together, and so lock said ends together, substantially as described.

573,105. COLLECTING-BRUSH. EDWARD R. RAYMOND, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 5, 1896. Serial No. 601,699. (No model.)

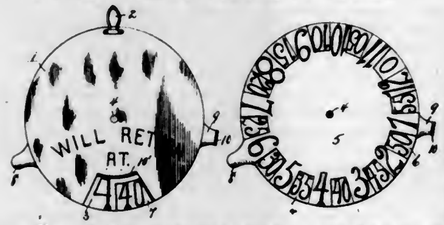


Claim.—1. As a new article of manufacture, a collecting-brush for a dynamo-electric machine, composed of a core of conducting material, and a layer of insulating material upon the outside of the core.

2. As a new article of manufacture, a collecting-brush for a dynamo-electric machine, composed of a core of conducting material surrounded by insulation.

3. As a new article of manufacture, a dynamo-brush having a core of conducting material surrounded by a solid insulator, and an air-space between the insulator and the core.

573,106. INDICATOR. WILLIAM F. REICHENBACH, Rochester N. Y. Filed June 11, 1896. Serial No. 595,179. (No model.)



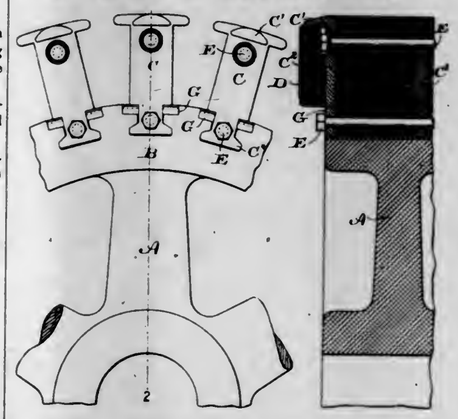
Claim.—1. The combination of the disks 1, 5 and 6 each of the last two disks being independently rotatable with respect to each other and with respect to disk 1 through an entire circle and each provided with numbers of different denominations and a fastening permitting the independent rotation of the disks, the upper or front disk 1 being provided with a notch, and the disk 5 with smaller notches, and the disks 5 and 6 having their respective numbers arranged in circles adjacent the paths of the notches, whereby numbers on the lower disk may be exposed through the notch in the one next above and whereby numbers on both lower disks may be simultaneously exposed through the notch in disk 1, and finger-pieces on the lower disks to manipulate the same, substantially as described.

2. The combination of the disks 1, 5 and 6 each of the latter disks being independently rotatable with respect to each other and with respect to disk 1 through an entire circle and each provided with numbers of different denominations and a fastening permitting the independent rotation of the disks, the upper or front disk 1 being provided with a notch, and the disk 5 with smaller notches, and the disks 5 and 6 having their respective numbers arranged in circles adjacent the paths of the notches, whereby numbers on the lower disk may be exposed through the notch in the one next above and whereby numbers on both lower disks may be simultaneously exposed through the notch in disk 1, and a disk 12 arranged centrally within the notches of the other disks and itself provided with a notch, said disk 1 having a circle of figures arranged directly beneath the path of the notch in disk 12, substantially as described.

3. The combination of the disks 1, 5 and 6 each of the latter disks being independently rotatable with respect to each other and with respect to disk 1 through an entire circle and each provided with numbers of different denominations and a fastening permitting the independent rotation of the disks, the upper or front disk 1 being provided with a notch, and the disk 5 with smaller notches, and the disks 5 and 6 having their respective numbers arranged in circles adjacent the paths of the notches, whereby numbers on the lower disk may be exposed through the notch in the one next above and whereby numbers on both lower disks may be simultaneously exposed through the notch in disk 1, and a disk 12 arranged centrally within the notches of the other disks and itself provided with a notch and having a finger-piece 11 formed of metal cut from the adjacent notch, said disk 1 having a circle of figures arranged directly beneath the path of the notch in disk 12, substantially as described.

4. In an indicator the combination of a central fastening and a plurality of circular rotatable indicating-disks suitably marked and provided respectively with integral finger-pieces 15 and 16 extending outwardly from and beyond their main circular peripheries, said pieces having each a diagonally cut-away edge situated opposite to that of the other piece, the pieces being otherwise equal and similar, whereby a dissimilar outline is produced in otherwise similar finger-pieces for convenience in distinguishing and manipulating them when contiguous, substantially as described.

573,107. SECURING FIELD-MAGNET POLES. HENRY G. REIST, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 24, 1896. Serial No. 603,698. (No model.)



Claim.—1. The combination with a revolving field-magnet structure, of pole-pieces separated from each other, and arranged on the periphery of said field-magnet structure, said pole-pieces being composed of laminated material, and being dovetailed into the periphery of said revolving structure, and means for taking up the play of the parts.

2. The combination with a revolving field-magnet structure, of pole-pieces projecting from the periphery of said field-magnet structure and separated from each other, said pole-pieces being each composed of a bundle of lamina, and outside clamping-plates, the several parts being bolted together, the pole-pieces being dovetailed to the periphery of said revolving structure, and keys for taking up the play of the parts, as herein set forth.

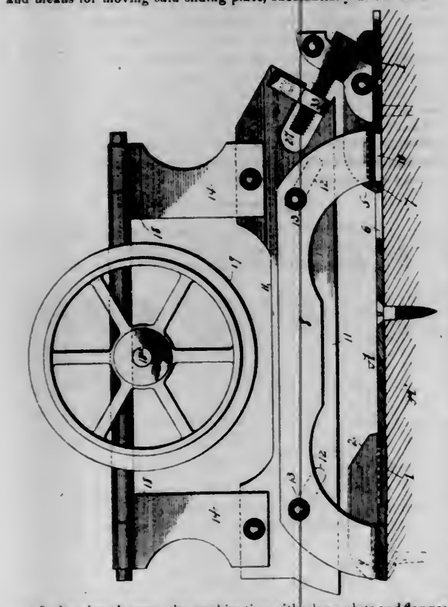
573,108. DOOR-HANGER. MARCUS C. RICHARDS, Aurora, Ill. Filed Feb. 7, 1896. Serial No. 578,421. (No model.)

Claim.—1. In a door-hanger, the combination with a base-plate, of flanges on said plate having tongues, one of said tongues having a depending lip, a frame engaging said tongues, means for normally locking said frame in place, and devices connected with said frame for engagement with a door-supporting truck, substantially as set forth.

2. In a door-hanger, the combination with a base-plate having an elongated slot therein, of flanges on said base-plate having tongues, one of said tongues having a lip depending into said slot, a frame engaging said tongues, means for normally locking the frame in place, and devices connected with said frame for engaging a door-supporting truck, substantially as set forth.

3. In a door-hanger, the combination with a base-plate, of a frame connected thereto, said frame being made in a single piece bent upon itself, a slide-plate disposed between the members of said frame and having elongated slots, pins passing through the parallel members of the frame and through said elongated slots, and a frame attached to the sliding plate for engagement with a door-supporting truck, substantially as set forth.

4. In a door-hanger, the combination with a base-plate and flanges thereon having tongues, of a frame engaging said tongues, said frame being made from a single piece of metal bent upon itself, a sliding plate disposed between the members of said frame and having diagonally-disposed elongated slots, pins passing through the members of the frame and through said elongated slots, a bearing-frame attached to the sliding plate for engagement with the door-supporting truck and means for moving said sliding plate, substantially as set forth.



5. In a door-hanger, the combination with a base-plate and flanges thereon having tongues, of a frame engaging said tongues, said frame comprising two parallel members, a sliding plate disposed between said members and having elongated slots, pins passing through the members of the frame and said elongated slots, arms secured to said sliding plate, said arms having sleeves at their upper ends, and a bar adapted to rest on the upper ends of said arms and having pintles to enter said sleeves, substantially as set forth.

573,109. EYE-FORMING MACHINE FOR PICKS, &c. CONRAD ROSSMAN, Pittsburg, Pa. Filed Sept. 3, 1896. Serial No. 605,172. (No model.)

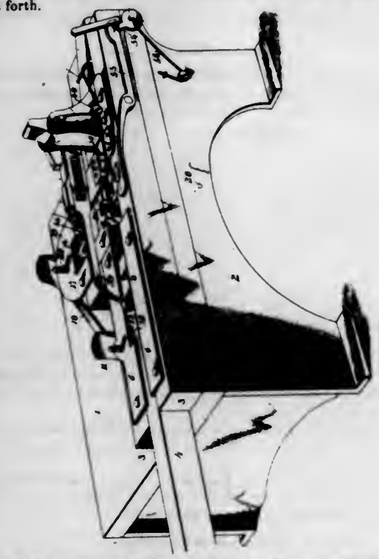
Claim.—1. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a catch to interlock with and secure one of the mandrels while the other mandrel is advancing to the work, and a releasing mechanism actuated by the movable mandrel to liberate the catch, whereby in a continued advance of the primary actuated mandrel the two mandrels will move together, substantially as set forth.

2. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a locking mechanism for securing one of the mandrels while the other mandrel is advancing to the work, and a trip having connection with the movable mandrel and actuated thereby to effect a release of the locking mechanism and the retarded mandrel, substantially as set forth.

3. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a locking mechanism for one of the mandrels, and an adjustable trip actuated by the movable mandrel to effect a release of the locking mechanism at a predetermined stage of movement of the movable mandrel, substantially as set forth.

4. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a locking mechanism for one of the mandrels, a bar having connection with the movable mandrel, a trip mounted upon the bar and adapted to effect a release of the locking mechanism, and means for adjusting the trip upon the bar, whereby the release of the locking mechanism can be effected at any stage of movement of the movable mandrel, substantially as set forth.

5. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, one of the mandrels having an inclined shoulder, a catch bar having a corresponding inclined shoulder to engage with the inclined shoulder of the retarded mandrel, a dog for maintaining the stop-shoulders in engagement, and a trip actuated from the primary movable mandrel to effect a release of the catch-bar, substantially as and for the purpose set forth.



6. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a catch-bar to engage with and retard one of the mandrels during the advance of the other mandrel to the work, a dog for engaging with and securing the catch-bar, an arm in connection with the dog, and a trip actuated from the other or primary movable mandrel for effecting a release of the catch-bar, substantially as set forth.

7. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a shaft having a spur in engagement with one of the mandrels, a resetting-spring for the last-mentioned mandrel, and a lever adapted to engage with a projecting portion of the said shaft to hold the mandrel projected against the action of the resetting-spring until the said lever is actuated, substantially as and for the purpose set forth.

8. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, a shaft having a spur engagement with one of the mandrels, a lever secured to the said shaft and having an offset, a resetting-spring, and a lever adapted to interlock with the offset lever to hold the mandrel projected against the action of its resetting-spring, substantially as specified.

9. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, means for retarding the movement of one of the mandrels while the other mandrel is advancing to the work, a trip actuated by the movable mandrel to effect a release of the retarded mandrel, a shaft having spur engagement with the retarded mandrel, a lever secured to the said shaft and having an offset, a resetting-spring, and a lever adapted to interlock with the offset lever to hold the retarded mandrel projected against the action of the resetting-spring, substantially as set forth.

10. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, dies located opposite the meeting ends of the mandrels, a movable block carrying one of the dies, a lever having a cam portion to engage with the movable block, a sliding link connection between the lever and movable block, and means for transmitting movement to the lever from the primary movable mandrel, substantially as set forth.

11. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, gripping-dies located opposite the meeting ends of the mandrels, and a vertically-adjustable tool-support arranged below the gripping-dies, substantially as set forth.

12. In a machine for forming the eyes of tools and implements, the combination of oppositely-disposed cooperating mandrels, dies located opposite the meeting ends of the mandrels, a movable block carrying one of the dies, a cam-lever having a sliding link connection with the movable block, a second lever having a cog to enter a recess in the primary movable mandrel, and a link connection between the two levers, substantially as and for the purpose set forth.

13. A machine for forming the eyes of tools and implements, comprising oppositely-disposed cooperating mandrels, dies located opposite the meeting ends of the mandrels, means for positively actuating one of the dies from the movable mandrel, an adjustable tool-support beneath the dies, a catch-bar for engaging with the other mandrel and retarding it during the advance of the aforesaid movable mandrel, a dog for engaging with the catch-bar, an adjustable trip actuated by means of the movable mandrel for releasing the dog, a shaft having spur engagement with the retarded mandrel, a lever having an offset and secured to the said shaft, a resetting-spring, and a lever for interlocking with the offset lever to hold the retarded mandrel projecting against the action of the resetting-spring, substantially as set forth.

573,110. STOCK-MARKER. DEWITT C. SHANNON, Cherokee City, Ark. Filed Feb. 7, 1896. Serial No. 578,411. (No model.)



Claim.—1. In a stock-marker, the combination with members pivoted together and provided with jaws, of an open cutting knife or blade secured to one of said jaws, and an extractor connected to the other jaw and adapted to operate in said cutting-knife to remove therefrom the piece cut from the animal.

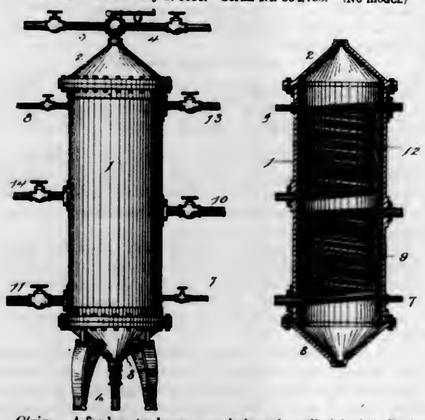
2. In a stock-marker, the combination with members pivoted together and provided with jaws, of a V shaped cutting blade or knife secured to one of said jaws, and an extractor fastened to the other jaw and fitting snugly in the cutting-blade.

3. In a stock-marker, the combination with members pivoted together and provided with jaws, of a bent cutting-blade secured to one of said jaws and an extractor having a vertically-extending portion connected to the other jaw and a horizontally-extending portion fitting snugly within and adapted for movement in the cutting-blade.

4. In a stock-marker, the combination with members pivoted together and provided with jaws, of a spring for keeping said jaws normally separated, a fastening-plate secured to one of the jaws, a V-shaped cutting-blade connected to the fastening-plate, and an extractor bent into substantially right-angular shape and having one portion connected to the other jaw and the other portion fitting snugly within and movable in the cutting blade or knife.

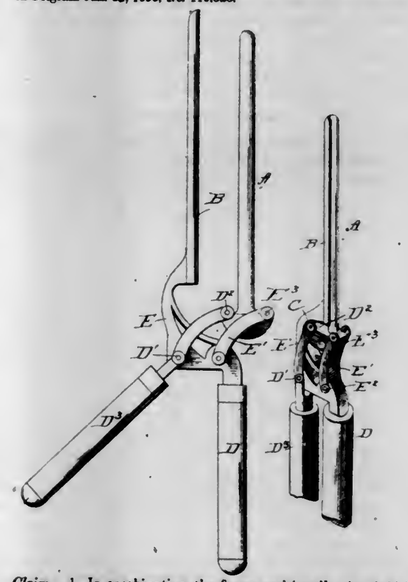
5. In a stock-marker, the combination with members pivoted together and provided with jaws, of a fastening-plate secured to one of the members and provided with a bent slot, and a bent or open cutting-knife received in the slot and secured to the fastening-plate.

573,111. FEED-WATER HEATER. WILBUR L SHEPARD, Elmwood, Conn. Filed July 2, 1896. Serial No. 554,705. (No model.)



Claim.—A feed water heater consisting of a cylindrical shell with conical ends, supported vertically by legs projecting from one of the conical ends and having an opening through the apex of each cone, a valve at the apex of the top cone controlling both a safety blow-off and a scum blow-off, a valve at the apex of the bottom cone controlling a mud blow-off, a water-inlet pipe passing into the shell near the bottom and a water-outlet pipe passing out of the shell near the top, a cylindrical coil of pipe of one diameter located within and below the middle of the shell with its lower end extending out of the shell near the bottom and its upper end extending out of the shell below the middle, and a cylindrical coil of pipe of much smaller diameter located within and above the middle of the shell with its upper end extending out of the shell near the top and its lower end extending out of the shell above the middle, substantially as specified.

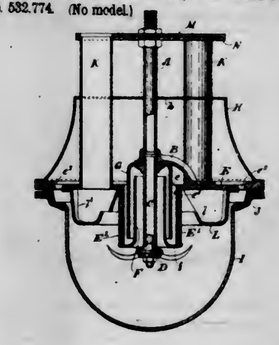
573,112. CURLING-IRON. GEORGE SKINNER, London, England. Filed Nov. 30, 1895. Serial No. 570,690. (No model.) Patented in England Dec. 18, 1894, No. 24,644; in France Feb. 20, 1896, No. 251,368, and in Belgium Jan. 31, 1896, No. 119,323.



Claim.—1. In combination, the frame and handle, the rigid jaw connected thereto rigidly, the movable jaw, the hand-lever pivoted to the frame and connected to the movable jaw, and the guiding means for giving the movable jaw a parallel movement in relation to the fixed jaw, the pivoted handle swinging in the arc of a circle toward and from the rigid handle substantially as described.

2. In combination, the fixed jaw and frame, the movable jaw, the link E' connecting the movable jaw with the frame and the hand-lever for operating the movable jaw pivoted to the frame and pivotally connected to the movable jaw to form with the link E' a parallel movement, the said frame having a fixed handle toward and from which the hand-lever swings pivotally in the arc of a circle substantially as described.

573,113. REGENERATIVE LAMP. HERBERT SMITH, Bayonne, N. J., and THOMAS GORDON, New York, N. Y. Filed Dec. 24, 1894. Serial No. 532,774. (No model.)



Claim.—1. The combination of a central gas-pipe, a burner or burners secured to its lower end, a shell F surrounding the gas-pipe and forming with the same an annular conduit for air, a shell G surrounding shell F and forming therewith an air-conduit, a shell E' supporting shell F and forming with shell G an air conduit, a shell L surrounding the shell E' and forming therewith a conduit for the escape of waste products, and a plate E supporting shells L and E' and having air-inlet openings and openings for the escape of waste products and a plurality of flues each separately communicating with the atmosphere, substantially as specified.

2. The combination of a central gas-pipe, a burner or burners secured to its lower end, a shell F surrounding the gas-pipe, and forming with the same an annular conduit for air, a shell G surrounding shell F and forming therewith an air-conduit, a shell E' supporting shell F and forming with shell G an air-conduit, a shell L surrounding the shell E', and forming therewith a conduit for the escape of waste products, a plate supporting shells L and E' and having air-inlet openings and openings for the escape of waste products, a shell H surrounding the escape-flue, flues K extending from the plate E, and each separately communicating with the atmosphere, and a combustion-chamber supported by the plate E, substantially as specified.

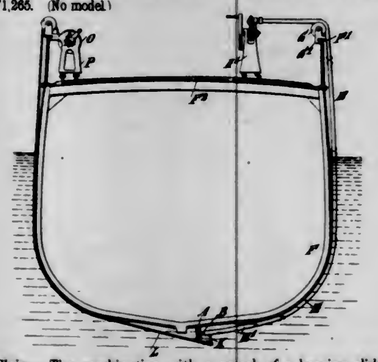
573,114. FAN ATTACHMENT FOR ROCKING-CHAIRS. ROBERT TAGGART, Decatur, Ill. Filed Apr. 2, 1896. Serial No. 585,891. (No model.)



Claim.—1. In a fan attachment for rocking-chairs, the combination of a clamp secured to the rocker of the chair, the upper frame of said clamp extending beyond the rocker, a vertical revolving shaft, a bearing for said shaft in said clamp, means for adjusting the shaft in the bearing, a spring-actuated toothed segment, a gear on said vertical shaft meshing with said toothed segment, the downwardly-extending arm or lever yieldingly held against the oscillating motion of the chair and adapted to operate said toothed segment, substantially as described

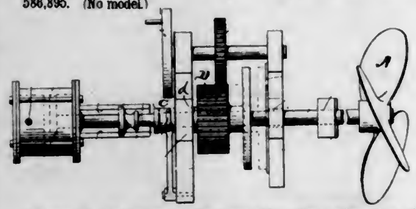
2. A fan attachment for rocking-chairs comprising a vertical revolving shaft carrying a fan, a clamp attached to the rocker, a bearing for said revolving shaft in said clamp, adjusting means for said shaft in said bearing, a spring-actuated toothed segment, gearing on the revolving shaft meshing with said toothed segment, an arm or lever adapted to operate the revolving shaft by the oscillation of the chair, substantially as described.

573,115. SCOURING-BRUSH FOR CLEANING SHIPS' BOTTOMS. CHARLES P. TURNER, New York, N. Y. Filed Dec. 6, 1895. Serial No. 571,265. (No model.)



Claim.—The combination with a vessel, of a bearing slidably mounted on one gunwale of the vessel, a pulley in the bearing, a flexible shaft passing over the pulley, a power-transmitting device carried by the deck of the vessel and connected to the flexible shaft, a brush driven by the flexible shaft, a flexible connection attached to the brush, a winding device having a part slidably connected with the other gunwale of the vessel, and a pulley carried by the winding device over which the flexible connection passes to said device, substantially as described.

573,116. GOVERNOR FOR PROPELLERS. GEORGE D. TURNER, Cleveland, Ohio, and GEORGE W. CUMMINGS, Monroe Centre, Mich.; said Turner assignor to said Cummings. Filed Apr. 9, 1896. Serial No. 586,895. (No model.)



Claim.—1. In a governor for a propeller, the combination with a rotatably and longitudinally moving propeller-shaft, provided with a friction-disk rigidly attached to said shaft, of a piston-rod axially in line with said propeller-shaft and a cylinder for operating the same, substantially as and for the purpose shown and described.

2. In a governor for a propeller, the combination with a rotatably and longitudinally moving propeller-shaft provided with a friction-disk rigidly attached to said shaft, of a friction-shoe suitably disposed and adapted to be engaged by the face of said friction-disk, substantially as and for the purpose shown and described.

3. In a governor for a propeller, the combination with a propeller shaft rotatably and longitudinally movable in suitable bearing, of a piston-rod, provided with an end disk, rotatable on said piston-rod and a cylinder for operating the same, substantially as and for the purpose shown and described.

4. In a governor for a propeller, the combination with a propeller-shaft rotatably and longitudinally movable in suitable bearings, said shaft being provided with a collar, of a movable pawl adapted to engage said shaft between the said collar and bearing and prevent longitudinal motion of said shaft, substantially as and for the purpose shown and described.

5. In a governor for a propeller, a propeller-shaft rotatably and longitudinally movable in suitable bearings, provided with a friction-disk rigidly attached thereto; and a gear-wheel also attached to said shaft and having the pinion-wheel connected with suitable power and adapted to mesh with the said gear-wheel; arranged substantially as and for the purpose shown and described.

6. In a steam-governor for a propeller, a propeller-shaft rotatably and longitudinally movable in suitable bearings, a friction-disk rigidly attached to said shaft adapted to engage a friction-shoe fixed to a standard suitably disposed; a spring yielding rod to prevent too sudden contact between said friction-disk and friction-shoe, a gear-wheel also attached to said propeller-shaft and having its face of sufficient width to always mesh with a power-driven pinion-wheel and a collar on said shaft arranged substantially as and for the purpose shown and described.

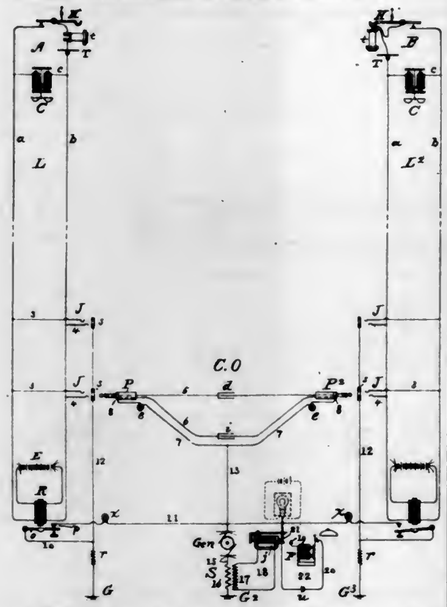
573,117. TELEPHONE-CIRCUIT LINE-SIGNAL. THOMAS C. WALSH, Jr., and CHESTER H. ARNOLD, Boston, Mass., assignors to the American Bell Telephone Company, same place. Filed July 20, 1896. Serial No. 599,923. (No model.)

Claim.—1. A telephone-circuit provided with a call-signal a signaling-current generator furnishing current therefor, a secondary line-signal in a local circuit, and a polorized electromagnetic device in inductive relation with the circuit of said generator, controlling the said secondary signal.

2. In a telephone-circuit central-station apparatus a call-signal lamp and a signaling-current generator combined with a secondary line-signal operated by a polarized electromagnetic device and an induction-coil having its primary in circuit with said generator, and its secondary in circuit with the said electromagnetic device, substantially as specified.

3. The combination with the telephone-circuit, a visual call-signal therefor, and a generator supplying current for said signal, of a polarized electromagnetic circuit-controlling device in a local circuit inductively associated with the circuit of said generator, and a secondary or auxiliary call-signal appliance in an independent local circuit controlled by said electromagnetic device.

4. A telephone substation-circuit, a call receiving relay included therein at the central station, a generator of signaling-current in a circuit controlled by said relay, and a call signal lamp included in said generator-circuit in combination with a secondary call signal or alarm in a normally open local circuit, a polarized electromagnetic device controlling said local circuit, and an induction-coil interposed between said electromagnetic device and said generator-circuit.



5. The combination in a telephone system of a substation-circuit, a call-signal lamp therefor, in the normally open circuit of a call-current generator, and means for closing said generator-circuit and giving the signal when the current in the substation-circuit is strengthened; with a secondary or auxiliary call-signal common to a number of substation-circuits, a polarized electromagnetic appliance controlling the operation thereof, the said appliance being in inductive relation with the circuit of the call-current generator, and adapted to be operated by fluctuations in the strength of current in said circuit in response to changes produced in the streogth of the substation-circuit current, substantially as specified.

573,118. PILE FABRIC. ALBERT WEBB, Worcester, and GEORGE M. WHITTALL and FRANCIS B. FAWCETT, Kidderminster, England. Filed Apr. 24, 1895. Serial No. 546,972. (No specimens.)

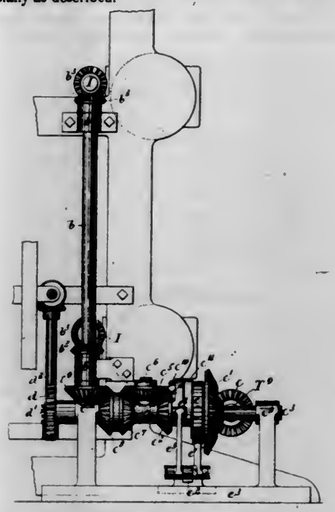


Claim.—A fabric comprising the figure-warp *e* forming rows of tufts, the weft-threads 2 and 4 holding the rows of tufts, the two warp-threads, *a* and *b* passing over the weft-threads 2 and 4, the wefts 1 and 3 between the tufts and between the warps *a* and *b*, and the stuffer-warps binding the wefts 1, said tufts being thus bound by the two wefts 2 and 4 and the two warps *a* and *b* and by the side pinch obtained by the wefts 1 and 3, substantially as described.

573,119. EMBROIDERING-MACHINE. RUDOLPH WEBB, Nottingham, England. Filed July 7, 1891. Serial No. 398,727. (No model.) Patented in England June 4, 1890, No. 8,669, and June 9, 1891, No. 9,760; in Switzerland June 25, 1891, No. 3,973, and in Germany June 30, 1891, No. 66,724.

Claim.—1. In an embroidery-machine such as described, the combination with the pantograph-frame, the needle-bar, and its operating mechanism, the cording or braiding guide and the operating-shaft therefor, of an epicyclic train of wheels, an indicating-pointer connected to the epicyclic wheel, and means for adjusting both coincidently; substantially as described.

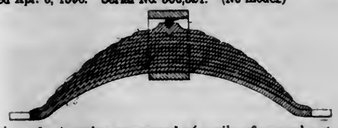
2. In an embroidery-machine, such as described, the combination with the pantograph-frame, the needle-bar and its operating mechanism, the cording or braiding guide and the operating-shaft therefor, of an epicyclic train of wheels, mechanism for adjusting the epicyclic wheel according to the direction of the movement of the pantograph-frame, and means for reciprocating the epicyclic train; substantially as described.



573,120. PROJECTILE-COATING. CHARLES Y. WHEELER, Allegheny, Pa. Filed July 13, 1896. Serial No. 599,041. (No specimens.)

Claim.—A projectile having a protecting-coating composed of plumbago, or graphite, and silicate of soda, substantially as set forth.

573,121. LEAF-SPRING. GEORGE H. WILLIAMS, Boston, Mass. Filed Apr. 6, 1896. Serial No. 586,321. (No model.)

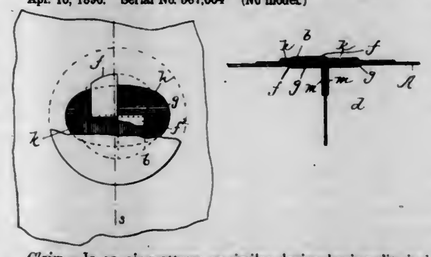


Claim.—1. A spring composed of a pile of curved, set and tempered leaves, and a surrounding band, combined with a rocker interposed between the shortest leaf and the band, and a pin carried by the band to act as a pivot for the rocker and effect the clamping of the leaves in the band, substantially as described.

2. A spring composed of a pile of curved, set and tempered leaves, a closed surrounding band, and a rocker interposed between the shortest leaf and the band and having a key-seat, combined with a key entering said seat to act on said rocker and clamp the leaves in the band, and adapted to act as a pivot for the rocker, substantially as described.

3. A spring composed of a closed band, a pile of curved, set and tempered leaves inclosed within the band, a rocker mounted on the shortest leaf and a pin adapted to serve as a pivot for the rocker, substantially as described.

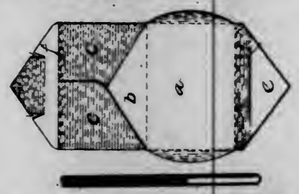
572,122. AIR GOODS. ALBERT A. YOUNG, Greenwood, Mass., assignor to the Mechanical Manufacturing Company, Nashua, N. H. Filed Apr. 10, 1896. Serial No. 587,004 (No model.)



Claim.—In an air-mattress or similar device having slits in its walls, a flexible stay passed through said slits and provided with wings adapted to be arranged at right angles to the body of the stay and

secured to the inner faces of said walls adjacent said slits, the outer ends of the stay being split and the members thus formed secured to the outer surface of the walls at opposite sides of the slits whereby the strain of the stay on the walls is distributed between the inner and outer wall surfaces substantially in the manner described.

573,123. ENVELOP. WILLIAM ALBERS, Pittsburg, Pa. Filed Jan. 20, 1896. Serial No. 576,157. (No model.)



Claim.—1. In an envelop consisting of the front and back portions, the back portion being provided with wings or flaps gummed on one side, the front portion being provided with flaps gummed on the reverse side, and having a flap partially gummed and provided with a slot extending longitudinally in alinement therewith, substantially as shown and described.

2. In an envelop, the back portion thereof having wings arranged on its ends and a tongue at the top, said tongue having V-shaped slots and being gummed on one side to the base of the said slots, and on the other side over the entire surface, substantially as shown and described.

3. In an envelop, the combination of the front and back portions, the back portion being provided with wings gummed on one side, and a tongue gummed on one side, and partially gummed on the other, said tongue being provided with V-shaped slots, the front portion being provided with flaps adapted to fold over the back portion, and having a flap partially gummed on one side and a slot in said flap, all parts being arranged, substantially as shown and described.

573,124. ATTACHMENT FOR CASKETS. MATHIAS ALTMEYER, Wheeling, W. Va. Filed Aug. 6, 1896. Serial No. 601,869. (No model.)



Claim.—1. An attachment for caskets and coffins consisting of a swinging stop applied to the side of the same at the lower edge thereof.

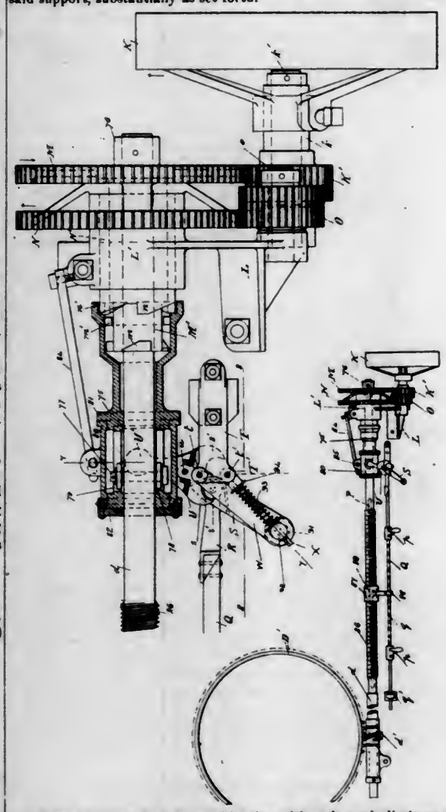
2. An attachment for caskets and coffins consisting of a covering or base-plate provided with a quadrantal slot, and a bent lever pivoted on said plate and provided with a stud or handle projecting through the said slot.

573,125. PNEUMATIC STACKER. GUSTAF A. ANDERSON, Waynesborough, Pa., assignor to The Geiser Manufacturing Company, same place. Filed Apr. 20, 1895. Serial No. 546,726. (No model.)

Claim.—1. In a straw-stacker, the combination, with the inner section of a discharge-pipe, and a support secured parallel with the said pipe-section and projecting beyond its upper end; of an outer slidable pipe-section provided with a longitudinal supporting-device operatively connected with the projecting end of the said support, and a guide secured to the lower part of the said slidable pipe-section and engaging with the main portion of the said support, substantially as set forth.

2. In a straw-stacker, the combination, with the inner section of a discharge-pipe, and a support secured parallel with the said pipe-section and projecting beyond its upper end; of an outer slidable pipe-section having a longitudinal supporting-plate secured to it; rollers carried by the projecting end of the said support and arranged under the said plate; and a guide secured to the lower part of the said pipe-section and engaging with the main portion of the said support, substantially as set forth.

3. In a straw-stacker, the combination, with the inner section of a discharge-pipe, and a support secured parallel with the said pipe-section and projecting beyond its upper end; of an outer slidable pipe-section provided with a longitudinal supporting device operatively connected with the projecting end of the said support; arms secured to the lower part of the said slidable pipe-section, and guide-rollers carried by the said arms and arranged above and below the said support, substantially as set forth.



4. In a straw-stacker, the combination, with a telescopic discharge-pipe, of a stationary support secured to the lower pipe-section and projecting beyond its upper end, a slidable longitudinal supporting-bar secured to the upper and slidable pipe section under the said stationary support, and means for supporting the said bar from the projecting end portion of the stationary support, substantially as set forth.

5. In a straw stacker, the combination, with the inner section of a discharge-pipe, and a tubular support secured parallel thereto and provided with sheaves at its ends; of an outer slidable pipe-section, and a flexible connection attached to the said slidable pipe-section, passing over the said sheaves, through the said support, and affording a means for operating the slidable pipe-section, substantially as set forth.

6. In a straw-stacker, the combination, with the inner section of a discharge-pipe, and a tubular support secured parallel thereto and provided with chain-sheaves at its ends; of an outer slidable pipe-section; a chain connected to the said slidable pipe-section, passing over the said sheaves and through the said support; and a catch for engaging with the said chain and preventing the outer pipe section from sliding, substantially as set forth.

7. In a straw-stacker, the combination, with a base, a forked bracket pivoted to the base, a discharge-pipe, and a single support arranged centrally over the top of the discharge pipe, said support being secured to the said bracket and having an end portion projecting rearwardly behind its fulcrum; of a lifting and sustaining device arranged between the said projecting end of the support behind the bracket and the rear portion of the said base, substantially as set forth.

8. In a straw-stacker, the combination, with a base, a discharge-pipe, and a support for the discharge-pipe arranged parallel therewith and pivotally supported from the said base and having an end portion projecting rearwardly behind its fulcrum; said end portion being a prolongation of the main portion of the said support, of a sustaining device arranged between the said rearwardly-projecting end and the base, substantially as set forth.

9. The combination, with the base, and the forked bracket pivoted thereto; of the handle-shaft provided with a worm and journaled transversely in the upper part of the said bracket, a horizontally-arranged winding-drum and a worm-wheel connected together and driven by the said worm, a guide-sheave carried by the said base, guide-sheaves supported by the said bracket, and a lifting-cord secured to the said drum at one end, passing over and around the said guide-sheaves, and having its other end secured to the said base, substantially as set forth.

10. The combination, with the outer slidable section of a discharge-pipe, two strengthening-rings secured one at each end of the said pipe-section and provided with pockets, a distance-piece extending longitudinally of the said pipe-section and having its ends secured in the said pockets, and a supporting-plate overlapping the said distance-piece and secured to it and to the said pipe-section; of a support secured parallel with the pipe-section and provided with antifriction devices engaging with the overlapping edges of the said plate, substantially as set forth.

11. In a straw-stacker, the combination, with a pivoted telescopic discharge-pipe, of a slidable weight operatively connected with the slidable section of the said pipe, the said weight and slidable pipe-section being constrained to move in opposite directions, whereby the resistance of the pipe to being raised is rendered more uniform, substantially as set forth.

12. In a straw-stacker, the combination, with the inner section of a discharge-pipe, and a tubular support secured parallel thereto and provided with sheaves at its ends; of an outer slidable pipe-section, a flexible connection connected to the said slidable pipe-section, passing over the said sheaves and through the said support; and a weight secured to the said connection inside the said tubular support, substantially as set forth.

13. In a straw-stacker, the combination, with a telescopic discharge-pipe, and a deflector-pipe at its outer end; of a supporting-bracket, and a shaft journaled therein; two chain-sheaves carried by the said shaft and formed of equal diameter; driving mechanism and disengaging devices permitting the said sheaves to be revolved singly or simultaneously; and two chains passing around the said sheaves and operatively connected with the sliding pipe-section and with the deflector-pipe, respectively, substantially as set forth.

14. In a straw stacker, the combination, with a telescopic discharge-pipe, and a deflector-pipe at its outer end; of a supporting-bracket, and a shaft journaled therein; a chain-wheel secured on the said shaft, a chain engaging with the said wheel and operatively connected with the slidable pipe-section; a hand-wheel mounted concentric with the said shaft; clutch mechanism for connecting the hand-wheel to the said shaft; a chain-wheel secured to the said hand-wheel; and a chain engaging with the last-said chain-wheel and operatively connected with the deflector-pipe, substantially as set forth.

15. In a straw-stacker, the combination, with a discharge-pipe, and a spring for counterbalancing the weight of the said pipe; of a compensating device interposed between the said spring and the pipe and operating to maintain the pressure of the spring substantially in equilibrium with the resistance of the said pipe when being raised or lowered to different angles, substantially as set forth.

16. In a straw-stacker, the combination, with a discharge-pipe, and a pivoted arm connected with the said pipe; of a spring for counterbalancing the weight of the said pipe, and guides operating to automatically vary the distance between the pivot of the said arm and the point at which the pressure of the said spring is applied to it, whereby the pressure of the said spring is compensated and maintained substantially in equilibrium with the resistance of the pipe when being raised or lowered to different angles, substantially as set forth.

17. In a straw-stacker, the combination, with a telescopic discharge-pipe, and a slidable weight operating to cause the said pipe, when placed at any one angle, to oppose a substantially uniform resistance to being raised irrespective of the position of its slidable pipe-section; of a spring for counterbalancing the said resistance of the pipe; and a compensating device operating to maintain the pressure of the spring substantially in equilibrium with the said resistance when the said pipe is raised or lowered to different angles, substantially as set forth.

18. In a straw-stacker, the combination, with a base; and a discharge-pipe and a forked bracket connected together and pivoted to the said base; of springs carried by the said base one on each side of the discharge-pipe and pressing against the lower projecting ends of the said bracket, and guides on the said base operating to vary the distance between the pivots of the said arms and the points at which the pressure of the said springs is applied to them, substantially as set forth.

19. In a straw-stacker, the combination, with a base; and a discharge-pipe and a bracket connected together and pivoted to the said base; of a guide secured to the said base, a spring carried by the said guide, a slidable front plate bearing against the said spring, a connecting-rod pivoted to the said front plate and operatively connected with the projecting end of the said bracket, and carved guides on the said base operating to vary the distance between the pivot of the said bracket and the point of application of the pressure of the said spring, substantially as set forth.

20. In a straw-stacker, the combination, with a base; and a discharge-pipe and a bracket connected together and pivoted to the said base; of a spring supported by the said base, a slidable front plate bearing against the said spring, a connecting rod pivoted to the said front plate at one end and provided with a pin and rollers at its other end, and guides on the said base engaging with the outer rollers and causing the inner rollers to roll upon the projecting end of the said bracket as the said pipe is raised or lowered, substantially as set forth.

21. In a straw-stacker, the combination, with a base; and a discharge-pipe and a bracket connected together and pivoted to the said base; of a horizontal guide having a cylindrical end portion and pockets in its sides; bolts arranged in the said pockets, clamping the said guide to the base, and provided with screw-threaded projecting ends; a spring carried by the said guide, a rear plate and nuts for adjusting the pressure of the said spring, and a front plate and intermediate connections interposed between the said spring and bracket, substantially as set forth.

22. In a straw-stacker, the combination, with a revoluble base for supporting the discharge-pipe, a driving-shaft, and intermediate driving mechanism operatively connecting the said shaft and base; of a toothed wheel M provided with a long hub and a clutch-jaw and journaled on the said shaft, a toothed wheel N provided with a clutch-jaw and journaled on the said hub between the wheel M and its clutch-jaw, a slidable sleeve splined to the said shaft and provided with clutch-jaws for engaging with the aforesaid clutch-jaws, two toothed pinions gearing into each other and respectively into the two said wheels, and means for revolving one of the said pinions, whereby the wheels M and N are revolved in opposite directions, substantially as set forth.

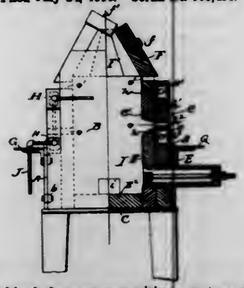
23. In a straw-stacker, the combination, with a revoluble base for supporting the discharge-pipe, a driving-shaft, intermediate driving mechanism operatively connecting the said shaft and base, two clutch-jaws journaled on the said shaft, and driving devices operating to revolve the clutch-jaws in opposite directions; of a pin passing through a hole in the said shaft and provided with rollers on its ends, and a slidable sleeve provided with slots engaging with the said rollers, and having clutch-jaws for engaging with the aforesaid clutch-jaws, substantially as set forth.

24. In a straw-stacker, the combination, with a revoluble base for supporting the discharge-pipe, a driving-shaft provided with a screw threaded portion, intermediate driving mechanism operatively connecting the said shaft and base, and driving devices and clutch mechanism operating to revolve the said shaft in opposite directions; of a tappet engaging with the said screw-threaded portion, a guide preventing the said tappet from revolving, a tappet-rod operatively connected with the said clutch mechanism, and two adjustable stops secured to the said tappet-rod in the path of the said tappet, substantially as set forth.

25. The combination, with the driving-shaft *d*, the clutch-jaws *m* and *n* mounted concentric with the said shaft and revolving in opposite directions, and the slidable sleeve splined to the said shaft and provided with clutch jaws *m'* and *n'* for engaging with the aforesaid clutch-jaws; of a tappet-rod; and intermediate pivoted lever mechanism provided with an operating-spring substantially as set forth and interposed between the said tappet-rod and sleeve, the said spring-operated lever mechanism operating to cause the intergearing clutch-jaws to be more firmly pressed together when the tappet-rod is moved to disengage the clutch-jaws and then to suddenly uncouple the said clutch-jaws, substantially as set forth.

26. The combination, with the driving-shaft *d*, the clutch-jaws mounted concentric with the said shaft and revolving in opposite directions, and the slidable sleeve splined to the said shaft and provided with clutch-jaws for engaging with the aforesaid clutch-jaws; of a stationary bracket having two pivot-pins *t* and *t'*; the levers U secured on the ends of the pins *t*, operatively connected with the said slidable sleeve, and provided with the projections *s* and *s'*; the levers S pivoted to the levers U and provided with slots 91, and bosses for engaging with the said projections; the radius-links pivoted to the pins *t* and provided with a pin 92 slidable in the said slots 91; the rod pivoted on the pin *t'*, slidable in a hole in the pin 92, and provided with the operating-spring 93; and a tappet-rod pivotally connected to the said levers S and operating to effect the reversal of the direction of the revolution of the said driving-shaft when moved longitudinally, substantially as set forth.

573,126. BLANK FURNACE AND BURNER. HARVEY R. AUMAN, Reading, Pa. Filed July 24, 1896. Serial No. 600,438. (No model.)



Claim.—1. A blank-furnace, comprising a rectanguiar fire-chamber, a burner entering the same, chills supported upon bricks, the inner faces of said chills being formed with ribs, bricks having grooves receiving said ribs, a second series of chills, situated above the other chills and having ribs on both their inner and lower faces, bricks supported by said ribs on the inner and lower faces of the latter chills, the bricks pendent from the upper chills and the top surfaces of the lower chills being relatively located to provide open spaces between them, and the walls of the chamber being formed with inlets to said spaces, and inlets to the spaces above the upper chills.

2. A blank-furnace, comprising end plates B, B, front and rear plates A A clamped to said end plates, a bottom plate, a fire-brick lining for said end and bottom plates, brick layers for the front and rear plates, chills supported on said layers and having ribs on their inner faces, bricks having grooves receiving said ribs, a second series of chills, situated above the other chills and formed with ribs on both their inner and lower surfaces, bricks supported by said ribs, the bricks pendent from the upper chills being located relatively to the lower chills to provide open spaces between them, fire-bricks forming the top of the chamber and inclined toward each other to form a contracted top opening, the bottoms of the latter bricks being located relatively to the tops of the upper chills to provide open spaces above the latter, cover-bricks for reducing the size of the contracted top opening, inlets to the spaces above the chills, and a burner entering the chamber, substantially as described.

3. A blank-furnace, comprising end and front and rear plates, one of said plates being formed integral with a tube extending inward into the fire-chamber and outward beyond said plate, said tube forming the body of a hydrocarbon-burner and being formed with a lateral inlet at a point outside the wall of the fire-chamber, a burner-pipe extending through said tube and having spraying means, fire-bricks forming linings for the inner walls of the furnace, said bricks being arranged around the inner projecting end of said tube, and chills supported at different points and lined on their inner surfaces by said bricks, said bricks being arranged to provide open spaces above the chills and said walls being formed to provide inlets to said spaces.

573,127. FIREPROOF CONSTRUCTION. CHARLES A. RALPH, Pittsburg, and ELISHA P. S. WRIGHT, Avalon, Pa. Filed Jan. 21, 1896. Serial No. 576,290. (No model.)



Claim.—1. A fireproof tile having a clip embedded therein, said clip having a horizontal portion and a vertical pliable tongue projecting therefrom, substantially as set forth.

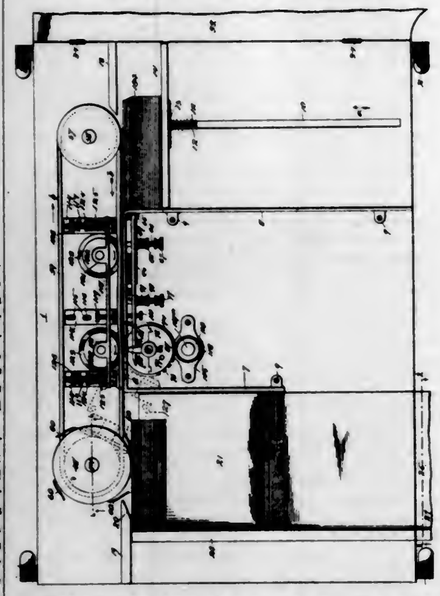
2. The combination of a beam or girder, a fireproof tile having pliable tongues projecting therefrom adapted to engage the flange of said beam, said tile having dovetailed seats, and side tiles having beveled edges adapted to engage said seats, substantially as set forth.

3. A fireproof tile having a U-shaped pliable clip embedded therein, substantially as set forth.

4. The combination of a beam or girder, supporting a concrete floor, a fireproof tile supported against the base thereof, side tiles resting on said tile, and clips embedded in said floor adapted to engage the upper edges of said side tiles, substantially as set forth.

5. In a mold for forming concrete tiles, the combination of a pattern-board having openings therein, supports in line with said openings beneath said pattern-board adapted to support the ends of a U shaped clip, and a frame inclosing the space for the concrete, substantially as set forth.

573,128. MAIL-STAMPING MACHINE. JOHN H. BARR, Kansas City, Mo., assignor of fifty-one one-hundredths to Charles V. Fyke, same place. Filed Dec. 7, 1895. Serial No. 571,324. (No model.)



Claim.—1. A mail-stamping machine, comprising a suitable table structure, a guide-plate fixed thereon, an endless traveling belt arranged opposite to and projecting beyond each end of said plate, a follower forcing letters stacked edgewise successively into frictional contact with said belt at one end of said plate, which conveys them through the passage formed between the same and the plate, means to force them forwardly and away from said belt after they have emerged from said passage, and a delivery-table superposed relative to the first-named table and inclined upwardly and forwardly, to receive said letters as they are forced forward and maintain them in a substantially upright position, substantially as set forth.

2. In a mail-stamping machine, the combination of a pair of superposed table structures, the upper one being arranged at an angle to the lower and at its rear end extending through a slot in and pivoted below said first named table, substantially as set forth.

3. In a mail-stamping machine, the combination of a pair of superposed table structures, the upper one being arranged at an angle to the lower and at its rear end extending through a slot in and pivoted below said first-named table; said table being formed in two sections hinged together, a brace pivoted to the outer section and provided with teeth to engage a part of the first-named table structure, and a brace extending at an angle to the same whereby said sections may be disposed at an angle to each other, substantially as set forth.

4. A mail-stamping machine, comprising a suitable table structure, a plate fixed thereon, an endless traveling belt mounted adjacent to and opposite said plate and held with a yielding pressure adjacent to and opposite said plate in order that it may by friction convey mail successively past the face of said plate, a lever pivoted upon the framework and provided with a time-stop arm, and with a notch outward of the same, a spring to hold said time-stop arm normally projected through an opening in said guide-plate to check the passage of the mail, a rotating stamping-cylinder to make the required impression upon each letter, and a roller-carrying arm projecting from the shaft of said cylinder and arranged to pass through said notch and trip said time-stop by operating the lever at a predetermined time in each revolution, substantially as set forth.

5. A mail-stamping machine, comprising a suitable table structure, a plate fixed thereon, an endless traveling belt mounted adjacent to and opposite said plate and held with a yielding pressure adjacent to and opposite said plate in order that it may by friction convey mail successively past the face of said plate, a lever pivoted to the framework and provided with a time-stop arm, and with a notch outward of the same, a spring to hold said time-stop arm normally projected through an opening in said guide-plate to check the passage of the mail, a rotating stamping-cylinder to make the required impression upon each letter, a roller-carrying arm projecting from the shaft of said cylinder and arranged to pass through said notch and trip said time stop by operating the lever at a predetermined time in each revolution, and an adjustable set-screw to limit the spring-actuated movement of said lever.

6. A mail-stamping machine, comprising a suitable table structure, a guide-plate fixed thereon, belt-wheels mounted thereon, a pair of belts connecting the same and having their front portions extending adjacent to and opposing said gnide-plate, a spring-actuated plate, rollers carried by said plate and bearing against the rear sides of said front portions of the belts, a presser-foot and a stamping-cylinder projecting through said plate and opposing said rollers and the interposed portions of the belts, and means to cause the rotation of the stamping-cylinder and one of said belt-wheels, and consequently the operation of said belts, substantially as set forth.

7. A mail stamping machine, comprising a suitable table structure, a guide-plate fixed thereon, belt-wheels mounted thereon, a pair of belts connecting the same and having their front portions extending adjacent to and opposing said guide-plate, a spring-actuated plate, rollers carried by said plate and bearing against the rear sides of said front portions of the belts, set-screws to limit the forward movement of said roller-carrying plate, a presser-foot, and a stamping-cylinder projecting through said plate and opposing said rollers and interposed portions of the belts, and means to cause the rotation of the stamping-cylinder, one of said belt-wheels, and consequently the operation of said belts, substantially as set forth.

8. A mail-stamping machine, comprising a suitable table structure, a guide plate secured thereon, a pair of belt-wheels each provided with two peripheral grooves, belts connecting said wheels and engaging said grooves, angle-plates secured to the table between the front and rear portions of said belts, guide-posts projecting rearwardly from the vertical portions of the same, a plate mounted loosely upon said posts, springs holding said plate yieldingly advanced, a set screw to limit the advance movement of said plate, rollers journaled in said plate and projecting through the same and provided centrally with peripheral flanges which project between the front portions of said belts, a spring-actuated presser-foot projecting through the opening in said guide-plate and opposing one of said rollers, and a stamping-cylinder projecting through another opening in said plate, and opposing the other roller, substantially as set forth.

9. A mail-stamping machine, comprising a suitable table structure, a guide-plate fixed thereon, belt-wheels arranged at opposite ends of said guide-plate, endless belts connecting said wheels, one of which is provided with peripheral flanges which project outwardly beyond said belts, whereby the mail-matter, as it successively emerges from between said belts and said guide plate, is deflected forwardly and away from the face of the belts, substantially as set forth.

10. A mail-stamping machine, comprising a suitable table structure, a guide-plate thereon, a pair of belt-pulleys, belts connecting the same and adapted to convey mail past the face of said plate, flanges upon one of said wheels which project beyond the outer sides of the belts, and a series of arms projecting from said flanges, which are adapted to force forward each letter as it emerges from between said belts and said guide-plate, substantially as set forth.

11. In a mail-stamping machine, the combination with a suitable table structure having an opening, a cylindrical stud projecting upwardly through said opening, a plate secured upon the table and provided with an opening which registers with the table-opening, a hollow shaft journaled upon said stud within the openings of the table and said plate, and a cylinder mounted rigidly upon said shaft and provided peripherally with an ink-absorbent pad, substantially as set forth.

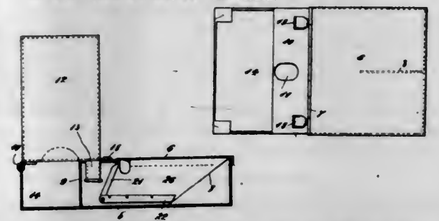
12. In a mail-stamping machine, the combination with a suitable framework and a stub-shaft projecting therefrom, of a hollow shaft journaled upon said stud, and perforated above the same, a liquid-tight partition within said shaft below said perforations, a cylinder mounted rigidly upon said shaft and peripherally grooved and perforated, and an absorbent pad fitting in said groove and communicating by way of the aforesaid apertures with the ink contained within the perforated shaft and cylinder, substantially as set forth.

13. In a mail-stamping machine, the combination with a suitable framework and a stub-shaft projecting therefrom, of a hollow shaft journaled upon said stud, and perforated above the same, a liquid-tight partition within said shaft below said perforations, a cylinder mounted rigidly upon said shaft and peripherally grooved and perforated, and an absorbent pad fitting in said groove and communicating by way of the aforesaid apertures with the ink contained within the perforated shaft and cylinder, and an adjustable plug closing the upper end of the perforated shaft, by which the ink may be forced through the apertures of the shaft and the cylinder, thus providing a presser-feed, substantially as set forth.

14. In a mail-stamping machine, the combination with a suitable table structure, a bearing-sleeve secured thereto, a shaft journaled in said sleeve and provided with a chamber in its upper portion and with an aperture connecting said chamber with the journal, and a screw-plug closing the upper end of said shaft, substantially as set forth.

15. In a mail-stamping machine, a stamping-cylinder provided peripherally with integral canceling-bars and postmarking-type, date-stamping type fitting in recesses in said cylinder and provided with dowel-pins engaging recesses in the cylinder, a plate dovetailed upon the cylinder and overlapping said date-type, and a set-screw securing said plate firmly in position, substantially as set forth.

573,129. MUCILAGE-BOTTLE. CHRISTIAN A. BIORN, Piermont, N. Y., assignor of one-half to John M. Jones, same place. Filed Aug. 22, 1896. Serial No. 603,596. (No model.)



Claim.—1. In a mucilage stand or receptacle, the combination with a suitable box or casing provided with a cover which is hinged thereto, centrally thereof, of a mucilage reservoir or vessel mounted in the rear end of said box or casing and provided with a neck which projects downwardly thereinto, said box or casing being provided at its front end with a downwardly and backwardly inclined plate or wall, and beneath the mucilage vessel or receptacle with a vertical partition by which a chamber is formed, which is open at the top, and a brush-cleaning frame mounted in said box or casing and adapted to be operated by the hinged cover, substantially as shown and described.

2. In a mucilage stand or receptacle, the combination with a suitable box or casing, having a cover which is hinged thereto, centrally thereof, of a mucilage reservoir or vessel mounted on the rear end of said box or casing, and provided with a neck which projects downwardly thereinto, said box or casing being provided at its front end with a downwardly and backwardly inclined plate or wall, and said hinged cover being provided with downwardly-directed arms which are pivotally connected with a brush-cleaning frame which when said hinged cover is closed, rests at the bottom of the box or receptacle, and when said cover is raised, is projected forwardly and upwardly over said partition plate or wall, substantially as shown and described.

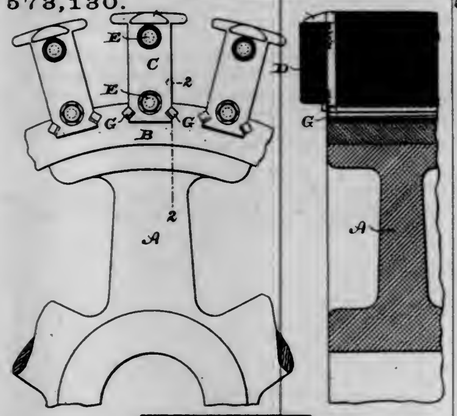
3. In a mucilage stand or receptacle, the combination with a suitable box or casing, having a cover which is hinged thereto, centrally thereof, of a mucilage reservoir or vessel mounted on the rear end of said box or casing, and provided with a neck which projects downwardly thereinto, said box or casing being provided at its front end with a downwardly and backwardly inclined plate or wall, and said hinged cover being provided with downwardly-directed arms which are pivotally connected with a brush-cleaning frame which when said hinged cover is closed, rests at the bottom of the box or receptacle, and when said cover is raised, is projected forwardly and upwardly over said partition plate or wall, and said brush-cleaning frame being provided with transverse wires by which the surplus mucilage is removed from the brush, and the sides of the box or casing in front of the hinge of the cover being provided with notches or recesses which are adapted to receive the handle of the brush, substantially as shown and described.

573,130. ATTACHING FIELD-MAGNET POLES. FRANCIS O. BLACKWELL, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Aug. 24, 1896. Serial No. 603,702. (No model.)

Claim.—1. The combination with a revoluble field-magnet structure, of laminated pole-pieces separated from each other and arranged and located in sockets on the periphery of said revoluble structure, registering notches in the lower end of said pole-pieces in said sockets, and keys located in said registering notches securing the pole-pieces to the periphery of said revoluble structure, as set forth.

2. The combination with a revoluble field magnet structure, having sockets in its periphery, of pole-pieces separated from each other and seated in said sockets, said pole-pieces being formed of a bundle of laminated and outside plates bolted together, and registering notches in said sockets and in the inner ends of said pole-pieces, and keys located in said registering notches and securing the parts together, as set forth.

573,130.



573,131. HAME-FASTENER. GEORGE C. BOSTWICK, Kansas City, Kans., assignor of one-half to Samuel M. Hall, same place. Filed July 15, 1896. Serial No. 599,316. (No model.)



Claim.—1. In a hame-fastener, the combination with the main or body portion having a hinge extension carrying a hook at its outer end, of a link having a hook at its outer end, the inner end of said link being reduced, the bifurcated lever in which the link is pivoted, the members of said lever having laterally-projecting studs and toothed or notched flanges carried by the main or body portion and which the studs engage and between which the lever and link operate substantially as shown and described.

2. An improved hame-fastener comprising a main or body portion having a hinge extension carrying a hook at one end, a connecting-link having a hook at its outer end, the bifurcated lever to which the link is attached, the members of said lever having laterally-projecting studs, and the toothed or notched flanges carried by the main or body portion and which the lateral studs are adapted to engage substantially as shown and described.

3. In a hame-fastener the combination with the main or body portion, having a tongue, of an extension having a groove in which the tongue fits and the pivot connecting said body and extension and passing through the tongue, the hook at the outer end of said extension, the link having a hook at its outer end and a lever to which the inner end of said link is attached, said lever being connected to the main or body portion substantially as shown and described.

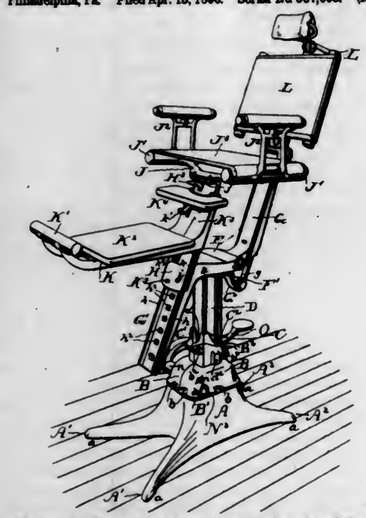
4. In a hame-fastener, the combination with the main or body portion constructed substantially as shown and described, of the hinge extension having a hook at its outer end, the connecting-link having a hook at its outer end, said link being reduced at its inner end, the bifurcated lever having a beveled outer end, the reduced end of the link being pivoted between the members of the lever, said members having laterally-projecting studs at either end adapted to engage the toothed or notched flanges of the main or body portion all arranged substantially as shown and described.

573,132. MANUFACTURE OF SOLUTIONS OF TETRANITRO-CELLULOSE. EMILE BROWNERT, Mulhouse, Germany, assignor to Theodore Schlumberger. Filed Apr. 14, 1896. Serial No. 587,516. (No specimens.)

Claim.—1. In the process of manufacturing collodion pyroxylin, the improvement consisting in adding thereto a substance (such as calcium chlorid) which renders it soluble in alcohol, which is itself not a solvent of collodion pyroxylin and then dissolving in alcohol, substantially as described.

2. As a new article of manufacture, the product of the described process, being collodion pyroxylin dissolved in alcohol with the addition of a substance such as calcium chlorid, and being slightly inflammable, not liable to spontaneous decomposition or to explosion from concussion, substantially as described.

573,133. DENTAL CHAIR. ARTHUR W. BROWNE, Prince's Bay, N. Y., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed Apr. 15, 1896. Serial No. 587,693. (No model.)



Claim.—1. The combination, in a dental chair, of the pedestal provided with the detachable cap having the guideways, the cylinder, the plunger vertically adjustable in the cylinder, and the support for the chair-frame partially surrounding the cylinder and adjustable in the guideways of the pedestal-cap, substantially as set forth.

2. The combination of the pedestal, its detachable sectional cap having the guideways, the cylinder, the plunger adjustable in the cylinder, and the support actuated by the plunger and adjustable in the guideways in the pedestal-cap upon opposite sides of the cylinder, substantially as and for the purpose set forth.

3. The combination of the raising and lowering support, means for actuating it, the chair-frame mounted to rock on the support and provided with the seat-supporting portion extending downwardly from about the level of the jointed connection of the frame with its support, the chair-seat, its long carrier having guideway connection with said downwardly-projecting portion of the frame and adjustable up and down thereon, and the detent devices for adjustably engaging the carrier with the frame, substantially as and for the purpose set forth.

4. The combination of the raising and lowering support, the chair-frame partaking of the movements of the support and provided with the downwardly-extending seat-supporting portion, the chair-seat, its carrier adjustable up and down upon the downwardly-extending portion of the frame, means for securing the seat-carrier in its position of adjustment, the foot-board provided with the carrier adjustable up and down the seat-carrier, and means for securing the foot-board carrier in its position of adjustment upon the seat-carrier, substantially as set forth.

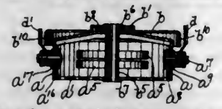
5. The combination of the forked back-pad carrier, the flexible pad, its side bars having connection with the carrier-forks, the clamp-bolts engaging with one of said side bars, and the slotted lugs by which said bar is adjustably connected with the carrier-fork by the clamp-bolts, said bar adapted to be partially rotated when the clamp-bolts are moved in the slots of the lugs, substantially as set forth.

6. The combination of the pedestal constituting a liquid-reservoir and provided with the detachable cap, the supporting-frame within the pedestal and detachably connected with the cap, and the raising and lowering mechanism carried by said frame within the pedestal and removable therefrom with the pedestal-cap, substantially as set forth.

7. The combination of the chair-frame, the pedestal constituting a liquid-reservoir and provided with the detachable cap, the vertically-adjustable support for the chair-frame having guideway connection with the pedestal-cap, the plunger for actuating the support, the plunger-cylinder, the pump, the valve mechanism for the pump and cylinder, and the supporting-frame within the pedestal and carried by its cap and serving to support the plunger-cylinder, the pump, and the valve mechanism, substantially as and for the purpose set forth.

8. The combination of the chair-frame having the upwardly-projecting back portion, the downwardly-projecting front portion and the intermediate portion, the raising and lowering support upon which the chair-frame is mounted by way of its intermediate portion to rock, the seat, its carrier having engagement with and vertically adjustable upon the front portion of the frame, the back pad, and its carrier having engagement with and vertically adjustable upon the back portion of the frame, substantially as set forth.

573,134. THERMOSTAT. CHARLES BURGHER, Newton, Mass., assignor to the Boston Automatic Fire Alarm Company, Portland, Me. Filed Aug. 3, 1896. Serial No. 602,137. (No model.)

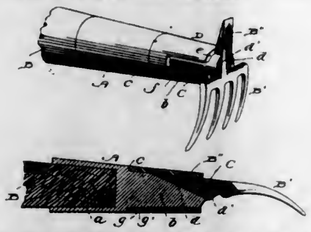


Claim.—1. In a thermostatic instrument, the combination with a shell or casing provided with a reticulated or foraminous bottom having a plurality of holes or openings and provided at its opposite end with a spider or open frame having a raised center portion, and a cap or cover attached to and supported above the said casing or shell by the said raised center portion of the said spider to leave an air space or passage, and active members secured within the said casing or shell, substantially as described.

2. In a thermostatic instrument, the combination of the following instrumentalities, a shell or casing a opened at its opposite ends, and provided at one end with a spider having a raised center portion, a foraminous bottom a' detachable from the casing a, a cover b supported on the raised center portion of the spider and provided with a depending flange outside of said casing a, a tube b^2 extended through the foraminous bottom, the spider and the cap and acting to secure the said bottom and cap to the shell, and active members within the shell and protected by the foraminous bottom, substantially as described.

3. In a thermostatic instrument, the combination of the following instrumentalities, a casing or shell composed of a ring or body a having a foraminous bottom, and a spider at its opposite end, a cap for the opposite end of said shell and provided with a depending flange forming an air-space with the body a, a hollow connection joining said cap to said shell and spider, and active members secured within said casing, substantially as described.

573,135. CONVERTIBLE RAKE AND FORK. MARION T. BURKET, Lima, Ohio, assignor of one-half to George Hall, same place. Filed Jan. 17, 1896. Serial No. 575,893. (No model.)

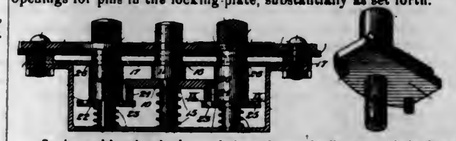


Claim.—In a convertible rake and fork, the socketed ferrule and solid tenon or end piece b, the latter having the longitudinal recess d which extends through one side of the tenon and through the distal end thereof, the bottom wall of said recess being inclined to the longitudinal axis of the ferrule, and said tenon further provided with the spaced jaws d' which project beyond the end face of the tenon, combined with a head B having the tapered shank B'', the working face of the head and the inclined side of the shank facing in the same general direction and said shank being fitted between the jaws d', the pivot C connecting the shank and jaws and lying in a plane with or within the solid distal end of the tenon, and a slotted non-slidable sleeve fitted on the tenon to have a limited turning movement thereon and having the cam formed face e to ride against the beveled shank B'', substantially as described.

573,136. COMBINATION-LOCK. DANIEL J. CABLE, Pittsburg, Pa., assignor of one-half to Charles J. Petgen, same place, and D. S. Scott, Fitchburg, Pa. Filed Jan. 23, 1896. Serial No. 576,500. (No model.)

Claim.—1. In a lock of the class described, a vertically-movable locking-plate engaging a hasp-plate, and register-plate provided with openings for pins in the locking-plate, said pins entering the openings in the register-plates in a plane parallel with the vertical axis of said register-plates, when the lock is unlocked; substantially as set forth.

2. In a lock of the class described, a movable locking-plate provided with an upturned lip for engagement with a hasp-plate, a stem supporting the locking-plate having bearings in the case of the lock, one end of such stem constituting a push-button, a coiled spring surrounding the other end bearing against the bottom of the case and the locking-plate respectively; and register-plates provided with openings for pins in the locking-plate, substantially as set forth.



3. A combination-lock consisting of a vertically-movable locking-plate and a push-button for depressing such plate, and revoluble register-plates provided with openings within the periphery of the plates for pins in the locking-plate; substantially as set forth.

4. A combination-lock consisting of a vertically-movable spring-controlled locking-plate provided with downwardly-projecting pins, and revoluble register-plates provided with perforating openings for such pins within the circumference of the register-plates, substantially as set forth.

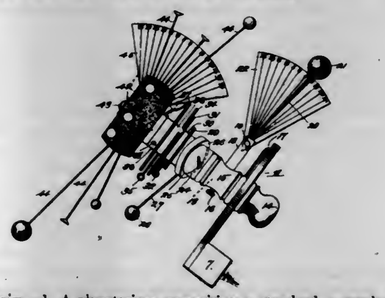
5. A combination-lock consisting of a vertically-movable spring-controlled, locking-plate provided with an upturned lip and downwardly-projecting pins, and revoluble register-plates provided with perforating openings for such pins, mounted on stems having bearings in the case of the lock and provided with dial plates secured to the upper part of the stem substantially as set forth.

6. A combination-lock consisting of a vertically-movable spring-controlled locking-plate provided with an upturned lip and downwardly-projecting pins, and revoluble register-plates provided with blind and open holes for such pins, mounted on stems having bearings in the case of the lock provided with dial-plates secured to the upper part of the stems, and a button for turning the stem, substantially as set forth.

7. In a lock of the class described, in combination with a vertically-movable locking-plate provided with a downwardly-projecting pin, a revoluble stem provided with a register-plate having a perforating hole near its periphery, a circular dial-plate furnished with characters adjustably secured to the stem, and a mark on the top plate of the lock by which the dial-plate is set so as to bring the hole in the register-plate into alinement with the pin on the locking-plate, substantially as set forth.

8. In a lock of the class described, in combination with a locking-plate provided with a downwardly-projecting pin a revoluble stem provided with a circular register-plate having one open and a number of blind holes, a circular dial-plate furnished with an equal number of characters with all of the holes, and having in its center an equilateral polygonal opening fitting on a correspondingly-shaped extension of the pin, such polygonal opening and stem corresponding in the number of its sides to the number of the openings in the register-plate and to the number of characters on the dial-plate, substantially as set forth.

573,137. PLANETARIUM. JAMES M. CHANEY, Independence, Mo. Filed Feb. 3, 1896. Serial No. 577,785. (No model.)



Claim.—1. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to said standard, a collar thereon, and adapted to be set to an angle to the horizon corresponding to the latitude of the place of observation, and a representation of the sun arranged to turn with said collar and adjustable in a plane at right angles to its rotatable movement, for the purpose set forth.

2. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon and adapted to be set at an angle to the horizon corresponding to the latitude of the place

of observation, a representation of the sun arranged to turn with said collar, and adjustable in a plane at right angles to its rotatable movement, and a guide arranged adjacent in a certain relation to said representation of the sun, whereby the latter may be quickly set to its proper declination, substantially as set forth.

3. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon and adapted to be set at an angle to the horizon corresponding to the latitude of the place of observation, a rod pivotally supported by an arm of said collar, a ball or enlargement secured to said arm to represent the sun, and means to clamp said arm at any desired point in its adjustment, substantially as described.

4. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the same, a collar thereon adapted to be set at an angle to the horizon corresponding to the latitude of the place of observation, and provided with a bifurcated arm, a clamping-screw extending through the bifurcated end of said arm, a rod pivoted to said screw within said bifurcation so that it may be adjusted in a plane radial of the axis of the collar, and a ball, or representation of the sun, secured to the outer end of said rod.

5. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon adapted to be set at an angle to the horizon corresponding to the latitude of the place of observation, a graduated disk or table arranged at right angles to the axis of said collar, and a representation of the sun arranged to turn with said collar and adjustable relative to said graduated disk or table, substantially as described.

6. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon adapted to be set at an angle to the horizon corresponding to the latitude of the place of observation, and provided with an arm, and with an index-finger in the same longitudinal frame relative to the axis of the collar, a rod pivoted to said arm to swing in said plane, and provided with a ball at its opposite end to rotate the sun, and a graduated disk arranged at right angles to the axis of said collar, and adjacent to said index-finger, substantially as and for the purpose set forth.

7. A planetarium, having a base provided with a graduation indicating the degrees of latitude, a shaft supported from said base and a revoluble collar arranged at an angle to the horizon corresponding to the latitude of the place of observation, as represented by said graduation, and a representation of the sun arranged to turn with said collar, and adjustable in a plane at right angles to its rotatable movement to get its proper declination at any given place, substantially as described.

8. A planetarium, having a base provided with a graduation indicating the degrees of latitude, a shaft supported from said base and a revoluble collar arranged at an angle to the horizon corresponding to the latitude of the place of observation, as represented by said graduation, a representation of the sun arranged to turn with said collar, and adjustable in a plane at right angles to its rotatable movement, to get its proper declination at any desired place, and a disk provided with graduations from noon to midnight and from midnight to noon, whereby the sun may be set to its proper declination at any given time and place, substantially as described.

9. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon and adapted to be set to an angle to the horizon corresponding to the latitude of the place of observation, and provided with an obliquely-arranged groove, and a moon-carrying ring or annulus adjustably mounted in said groove, substantially as and for the purpose set forth.

10. A planetarium, comprising a base, a standard, a quadrant, an arm arranged radially of said quadrant and provided with a shaft adapted to be set to an angle to the horizon corresponding to the latitude of the place of observation, a rotatable collar thereon, provided circumferentially with an annular groove arranged at the required obliquity, a rod projecting from said ring and provided with a ball or enlargement to represent the moon, and means to fix the revoluble collar upon said shaft, at any required point in its adjustment, substantially as described.

11. A planetarium, comprising a base, a standard, a quadrant, an arm arranged radially of said quadrant, and provided with a shaft set to an angle to the horizon corresponding to the latitude of the place of observation, a rotatable collar thereon having a circumferential and obliquely-arranged groove, a ring adjustable within said groove and carrying a representation of the sun, a graduated or declination disk secured to said rotatable collar, and a graduated or lunar-month disk arranged adjacent thereto, whereby the orbit of the moon may be traced day by day, substantially as described.

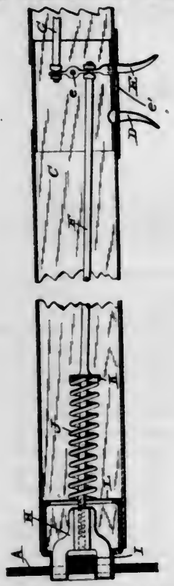
12. A planetarium, provided with a shaft set to the angle corresponding to the colatitude of the place of observation, a rotatable collar thereon having a circumferential and obliquely-arranged groove, a ring adjustable within said groove and carrying a representation of the moon, a graduated or declination disk secured to said rotatable collar, a graduated or lunar-month disk arranged adjacent thereto, and a graduated or calendar-month disk arranged adjacent to the lunar-month disk, substantially as and for the purpose described.

13. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon, and set to an angle to the horizon corresponding to the latitude of the place of observation and provided circumferentially with an obliquely-arranged groove, a ring adjustably mounted in said groove and carrying a representation of the moon, in combination with a sphere or disk rotatable on the same axis as said collar and representing the earth, and means to adjust said collar and said ring, in order to place the moon in its proper position relative to the earth at any given time, substantially as described.

14. A planetarium, comprising a standard, a quadrant thereon, a shaft coupled to the standard, a collar thereon and set to an angle to the horizon corresponding to the latitude of the place of observation and carrying a representation of the moon which is adjustable in a plane extending longitudinally of the axis of the said collar, a sphere or disk rotatable upon the same axis as said collar, and a guide arranged adjacent to the representation of the sun, whereby the latter may be set to its proper declination or position relative to the earth at any given time, substantially as described.

15. A planetarium, comprising a horizontal base, a vertical standard projecting therefrom, a plate secured vertically to said standard and provided on its face with the graduated quadrant representing degrees from the equator to the pole, an arm pivoted coincidently with the axis of said quadrant and provided with an index-finger extending radially and adjacent to the face of said quadrant, a table or hour-disk secured to and extending at right angles from said pivoted arm, a shaft journaled in said disk or table and extending parallel to said arm, a collar revolubly mounted upon said shaft and provided with an index-finger adjacent to said hour-disk, and provided with a sun-carrying rod which is adjustable longitudinally of said shaft and extending radially of its axis, a second revoluble collar mounted upon said shaft, an obliquely-arranged ring rotating upon the same and carrying the moon, a sphere or disk rotatably mounted upon said shaft, which represents the earth, headed pins carried by and extending radially of said globe or disk to indicate the location of the various planets and stars, and means to set the sun and moon at their proper declinations at any given time and place, whereby their positions relative to the earth may be ascertained, substantially as described.

573,138. SHADE-HOLDER. BENJAMIN CONNER, Philadelphia, Pa. Filed Mar. 18, 1896. Serial No. 583,720. (No model.)



Claim.—1. The combination with the shade cords or wires, and the uprights having grooves in which they are located, of the casing at right angles to the length of the cords and adjustable in length, a fixed handle on one part, a handle pivotally mounted between its ends on the other part and working through a slot within the casing, rods within the casing and at their adjacent ends connected with the pivoted handle upon opposite sides of its pivot, clamps carried by the opposite ends of said rods and bifurcated to engage and grasp said wires or cords and the springs around the rods, substantially as specified.

2. The combination with the shade cords or wires, and the uprights having grooves in which they are located, of the casing at right angles to the length of the cords and adjustable in length, a fixed handle on one part, a handle pivotally mounted between its ends on the other part, and working through a slot within the casing, rods within the casing and at their adjacent ends connected with the pivoted handle upon opposite sides of its pivot, clamps carried by the opposite ends of said rods and bifurcated to engage and grasp said wires or cords, springs around the rods, and casings around the clamps and between which and collars on the rods said springs are located, substantially as and for the purpose specified.

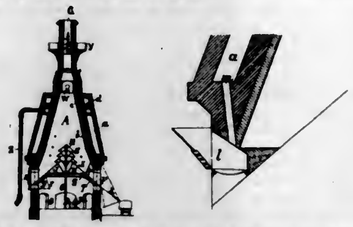
3. The combination with the shade cords or wires, and the uprights having grooves in which they are located, of the casing at right angles to the length of the cords and adjustable in length, a fixed handle on one part, a handle pivotally mounted between its ends on the other part and working through a slot within the casing, rods within the casing and at their adjacent ends connected with the pivoted handle upon opposite sides of its pivot, clamps carried by the opposite ends of said rods and bifurcated to engage and grasp said wires or cords, springs around the rods, casings around the clamps and between which and collars on the rods said springs are located, and means for adjusting said rods at their point of connection with the pivoted lever, substantially as and for the purpose specified.

573,139. GEM-SETTING. DENNIS W. COSTIGAN, Providence, R. I. Filed Apr. 13, 1896. Serial No. 587,409. (No model.)



Claim.—The improved cluster gem-setting herein described, consisting of a series of circular cups made from one piece of sheet metal and each united integrally with the next adjacent member of the group or series by a neck or connecting portion and provided with prongs projecting outwardly between said neck or connecting portions, substantially as specified.

573,140. CALCINING-FURNACE. AUGUST DAUBER, Bochum, Germany. Filed Jan. 19, 1894. Serial No. 497,463. (No model.) Patented in Germany Mar. 17, 1892, No. 66,276; in France June 15, 1892, No. 222,351; in Belgium Aug. 12, 1892, No. 100,924; in England Sept. 5, 1892, No. 15,880; in Italy Apr. 10, 1893, No. 33,735, and in Austria-Hungary May 13, 1893, No. 7,461 and No. 49,852.



Claim.—1. In a furnace for continuously calcining and roasting limestone, cement, gypsum, dolomite and like materials the combination with a conical shaft A, base C supporting the same, pillars B upholding said base, radial girders D, a ring-girder H, delivery-cone E supported by said girders, lanterns L, closing-cap M and a table J with valves K arranged therein below the cone E as described and shown.

2. In a furnace for continuously calcining and roasting limestone, cement, gypsum, dolomite and like materials the combination with a conical shaft A, base C supporting the same, pillars B, upholding said base, radial girders D, and a ring-girder H, a delivery-cone E, lanterns L, closing-cap M, a table J with valves K underneath said cone, of hinged doors R S, with bars T and spikes U, connected to bars T, said furnace having openings F into which said spikes extend, the whole substantially as illustrated and described.

3. In a furnace for continuously calcining and roasting limestone, cement, gypsum, dolomite and like materials the combination with a conical shaft A, the base C supporting the same, pillars B, upholding the said base, radial girders D, ring-girder H, and delivery-cone E, supported by said girders, lanterns L, cap M, the table J, valves K therein, doors R S, bars T, spikes U, connected therewith, the fireplaces *l*, said furnace having outlet-openings therein on each side of said fireplaces, the channels *m*, gas jacket *a* and openings *b*, substantially as described.

4. In a furnace for continuously calcining and roasting limestone, cement, gypsum, dolomite and like materials the combination with a conical shaft A, a base C, supporting the same and pillars B upholding said base, radial girders D and a ring-girder H, a delivery-cone E, lanterns L and a cap M, a table J, valves K, and doors R S, bars T, spikes U, fireplaces *l*, and a gas-jacket *a* with openings *b* in the upper work of the stack, outlet *c* and channels *d* for the furnace-gases, for the purpose set forth.

573,141. THEATRICAL STRUCTURE. BENJAMIN F. DUNN and JOHN C. BROMAUGH, Kansas City, Mo. Filed Feb. 17, 1896. Serial No. 579,618. (No model.)



Claim.—1. A theater structure, having the auditorium inclosure or wall curved in form, and provided with a comparatively large opening at the front of the stage, and also painted in imitation of nature's scenery, movable house-wings, arranged in rear of said wall and provided with notches adapted to register and form openings, and an interior scene arranged in the rear of all said openings formed by said notches, substantially as described.

2. A theater structure, having the auditorium inclosure or wall curved in form, and provided with a comparatively large opening at the front end of the stage, and also painted in imitation of nature's scenery, movable house-wings, arranged in rear of said wall at both sides of said opening and adapted conjointly when moved together to form houses of various styles, and provided at their lower inner corners with registering notches to form a single opening, and a movable platform in the rear, upon which different interior settings may be built, so that by moving said platform different interior views of the same house or of other houses may be disclosed through said house-opening substantially as described

3. A theater structure, having the auditorium inclosure or wall curved in form, and provided with a comparatively large opening at the front of the stage, and also painted in imitation of nature's scenery, a curved set piece arranged in rear of the auditorium inclosure or wall and bridging its opening, and painted to represent natural scenery, and provided with an opening, and a movable platform in the rear upon which different interior settings may be built, so that by moving said platform different interior views may be disclosed through the opening of said naturally-painted set piece, substantially as described.

573,142. METHOD OF AND MEANS FOR REMOVING PARAFFIN FROM OIL-WELLS. FRANCIS A. FLANIGEN, Washington, D. C. Filed Apr. 7, 1896 Serial No. 586,580. (No model.)

Claim.—1. The method of removing paraffin from oil-wells, which consists in heating a paraffin solvent, circulating the solvent in the

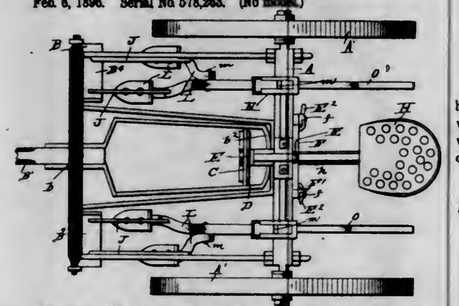
well and its crevices, thereby dissolving the paraffin by contact with the hot solvent and removing the solvent and contained paraffin from the well.



2. The method of removing paraffin from oil-wells, which consists in heating a paraffin solvent to the boiling point, circulating the solvent in the well and its crevices, augmenting the heat and maintaining the circulation of the solvent, thereby dissolving the paraffin by contact with the solvent, and removing the solvent and contained paraffin from the well.

3. A device for removing paraffin from oil-wells, consisting of a heater provided with a surrounding casing having a contracted upper end and forming a chamber between the heater and the casing.

573,143. CULTIVATOR. THOMAS C. FLEMING, Ayr, Nebr. Filed Feb. 6, 1896. Serial No. 578,263. (No model.)



Claim.—1. The combination with a pivotally-mounted tongue, of a segment carried by a rocking shaft, a frame secured to the rear end of the tongue and a chain having its ends attached to said frame and passed over said segment, substantially as described.

2. The combination with a pivotally mounted tongue, of a segment carried by a rocking shaft, a frame secured to the rear end of the tongue and a chain having its ends attached to said frame and passed over said segment, and means for locking said segment to form a stiff-tongue cultivator, substantially as described.

3. The combination with a pivotally mounted tongue, of a segment carried by a rocking shaft, a frame secured to the rear end of the tongue and a chain having its ends attached to said frame and passed over said segment, and means for locking said segment to form a stiff-tongue cultivator, a cross-bar secured to said shaft and depending rods connected therewith and carrying foot-rests, substantially as described.

4. The combination with a pivotally-mounted tongue, of a segment carried by a rocking shaft, a frame secured to the rear end of the tongue and a chain having its ends attached to said frame and passed over said segment, and means for locking said segment to form a stiff-tongue cultivator, a cross bar secured to said shaft and depending rods connected therewith and carrying foot-rests, which are adjustable on said rods, substantially as described.

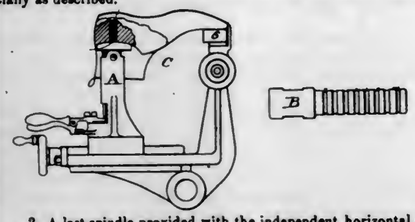
5. The combination with a pivotally-mounted tongue, of a segment carried by a rocking shaft, a frame secured to the rear end of the tongue and a chain having its ends attached to said frame and passed over said segment, and means for locking said segment to form a stiff-tongue cultivator, a cross-bar secured to said shaft and depending rods connected therewith and carrying foot-rests, which are adjustable on said rods, and guides for the vertical rods, substantially as described.

6. In a cultivator, the combination with the axle and the curved guide thereon, of the shovel-standard having a T-head working in said guide and a pivoted lever having one end pivotally connected with said standard, substantially as described.

7. In a cultivator, the combination with the axle and the curved guide thereon, of the shovel-standard having a T-head working in said guide and a pivoted lever having one end pivotally connected with said standard, and means for adjusting said guide lengthwise of the axle, substantially as described.

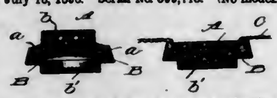
573,144. JACK FOR SHOE-MACHINES. FRANK E. FRANCIS, Auburn, Me., assignor to the Goodyear Shoe Machinery Company, Boston, Mass. Filed July 1, 1896. Serial No. 597,673. (No model.)

Claim.—1. The combination with the component parts of a last-supporting jack, of the grooved or corrugated last-spindle, substantially as described.



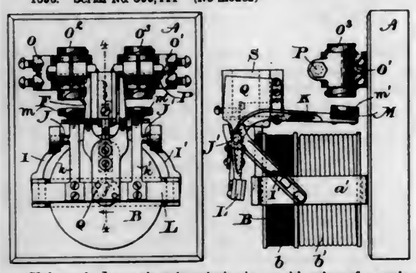
2. A last-spindle provided with the independent horizontal parallel grooves or depressions, substantially as described.

573,145. CAR-SEAL. WILLIAM T. GILBERT, Brooklyn, N. Y. Filed July 18, 1896. Serial No. 599,713. (No model.)



Claim.—A seal embodying in its organization a bail-wire C, a hat-shaped soft-metal plug A with upwardly-extending crown, formed with wire channels *b*, a sheet-metal cup B having converging side wall and a countersink or depression *b'*, corresponding with the crown of the soft-metal plug, substantially as and for the purposes set forth.

573,146. SWITCH. EDWARD M. HEWLETT, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed July 16, 1896. Serial No. 599,444. (No model.)



Claim.—1. In an electric switch, the combination of a stationary electrode, a movable electrode, a blow-out magnet provided with a movable pole-piece, and an armature adapted to actuate the movable electrode and the pole piece.

2. In an electric switch, the combination of a stationary electrode, a movable electrode supported by a portion of the blow-out-magnet structure and insulated therefrom, and a pole-piece for the magnet adapted to move with the movable electrode.

3. In an electric switch, the combination of a plurality of stationary electrodes, a blow-out magnet provided with a movable pole-piece, a contact secured to the pole-piece, and an energizing-coil on the magnet for actuating the switch and blowing out the arc formed by the interruption of the circuit at the contacts.

4. In an electric switch, the combination of an energizing-coil, a core for the coil provided with pole-pieces, arms secured to the pole-pieces forming a support for a movable frame, an electrode moving with the frame, and a magnet-pole secured to the frame and adapted to blow out the arc formed between the electrodes.

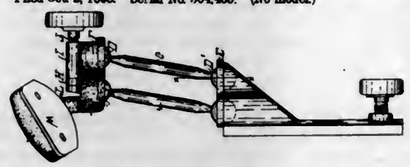
5. In an electric switch, the combination of pole-pieces situated on the sides of the energizing-magnet, arms secured to the pole-pieces forming a support for a movable frame, a pole-piece secured to the core of the magnet, a chute supported by the pole-piece, and a pole-piece mounted on the movable frame.

6. In an electric switch, the combination of binding-posts secured to the base, adjustable contacts mounted in the posts, a contact-piece adapted to bridge the space between the contacts, a pivoted frame carrying the contact-piece, a chute in which a pair of contacts are located, and a blow out magnet-pole carried by the moving frame.

7. In an electric switch, the combination of a blow-out magnet having a stationary pole-piece provided with an enlarged face, and a movable pole-piece also provided with an enlarged face, the two faces being so arranged that they are parallel to the direction of movement of the armature which actuates the moving pole-piece.

8. In an electric switch, the combination of binding posts secured to the base, screw-threaded carbon contacts mounted in the posts, clamping-bolts for securing the contacts in place, copper contacts engaging with the carbon contacts, and a movable frame actuated by a magnet for closing the circuit between the carbon and copper contacts.

573,147. HEAD REST. GEORGE T. HIGGINS, Milwaukee, Wis. Filed Oct. 2, 1895. Serial No. 564,403. (No model.)



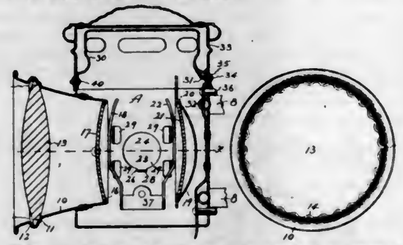
Claim.—1. A head-rest consisting in the combination of a supporting-standard, a shell supported from said standard by a tripod-support, the spindles forming the respective members of said tripod and connected with said shell and standard by ball-and-socket joints, means for locking the spindles at any desirable position of adjustment, and suitable head-cushions supported from said shell, substantially as described.

2. A head-rest consisting in the combination of a supporting-standard, one or more spindles, each connected therewith by a ball-and-socket joint, the head-cushions and the shell arranged to support the same, said shell being also connected with the spindle or spindles by ball-and-socket joints, together with a plate adapted to be drawn forcibly against the under side of said shell to bind the ball in said sockets, substantially as described.

3. A head-rest consisting in the combination with the supporting-standard, of the spindles connected therewith by ball-and-socket joints, the shell connected with the upper ends of said spindles by ball-and-socket joints, the plate provided with openings of less diameter than said balls, adapted to fit over the projecting portions of said balls, the flange attached to said plate and projecting upward through a slot in said shell, and a screw, adapted to engage in a recess in said flange to draw said plate upward, and bind the balls rigidly in the sockets, together with the head-supporting cushions carried by the shell, substantially as described.

4. A head-rest, consisting in the combination of the standard, and the adjustable shell supported therefrom, the head-supporting plates supported pivotally from said shell, the coiled springs connecting the sides of said plates respectively, and the covering of plush or similar material attached to said plates and springs and covering the space between them, substantially as described.

573,148. LANTERN. WILLIAM C. HOMAN, Meriden, Conn., assignor to the Edward Miller & Company, same place. Filed May 4, 1896. Serial No. 590,174. (No model.)



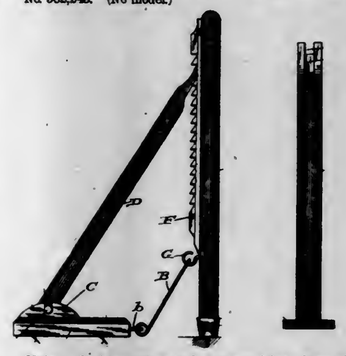
Claim.—1. In a lantern, a lens-tube having the lens-seat and adjacent internal groove, and a spring-ring of wavy wire adapted to fit on the front face of the lens and inner side of said groove, substantially as described and for the purpose specified.

2. In a lantern, the body having a side opening for furnishing access to the interior of the lantern, and provided with the notch or recess 26 at its lower edge, elastic lugs cut from separate openings in the metal of said lantern-body by the sides of said side opening, and the cover-slide fitted within said lugs and having at its lower end a semicircular recess and the stop 28 at the middle thereof, said stop being adapted to rest in the said notch or recess 26 when the said side opening is closed by said cover-slide, substantially as described.

3. In a lantern, the combination of the lantern-body having a spring-catch 32, with the inner and outer domes having catch-engaging portions, the inner dome being caught by the inner face of said spring catch and the outer dome by its outer face, substantially as described and for the purpose specified.

4. In a lantern, the combination of a lantern-body, the spring-catch secured thereto, having a holding-recess on its inner face and a holding projection on its outer face, the inner and outer domes adapted to engage the said opposing holding-faces, substantially as described, whereby the act of unlocking the outer dome locks the inner one.

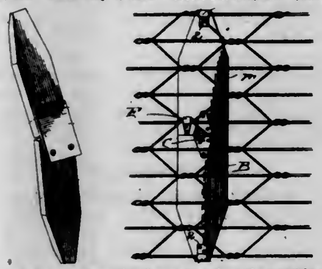
573,149. CARPET-STRETCHER. EUGENE E. HULL, JESSE S. FORNEY, and JOHN A. FEIST, Silver Cliff, Colo. Filed Mar. 7, 1896. Serial No. 582,243. (No model.)



Claim.—1. A carpet-stretcher, comprising a base-piece with teeth the casing thereon with semicircular recesses, a lock-bar having at its lower end a cross portion mounted in said recesses and its other end formed with a notch, a rod flexibly connected with one end of said base-piece and having a point at one end and provided upon its face adjacent to the lock-bar with a longitudinally-disposed ratchet, the said lock-bar having also a tooth located in its notch to receive the teeth of the ratchet with which the tooth of said bar engages, all substantially as and for the purpose specified.

2. The carpet-stretcher described, comprising a base piece with teeth, a bar pivotally mounted on said base-piece having at its upper end a notch and a tooth located therein, a rod provided at one end with a point and upon its face with a rack-bar with which the tooth of the pivoted bar engages and a bail pivotally connected with said rod and with the base plate, all substantially as described.

573,150. WOVEN-WIRE STRETCHER. JOHN W. HUTCHISON, Gower, Mo. Filed July 7, 1896. Serial No. 598,325. (No model.)



Claim.—1. In a woven-wire-fence stretcher, the combination with members hinged together and adapted for engagement with the upper and lower portions of the fence, of a plate detachably secured to both the respective members and adapted for locking said members together in extended position.

2. In a woven-wire-fence stretcher, the combination with members hinged together, of catches located on each member and adapted for engagement with the upper and lower portions of the fence, a plate, and removable screws passing through the plate, and into said members whereby they are held in locked and extended relation.

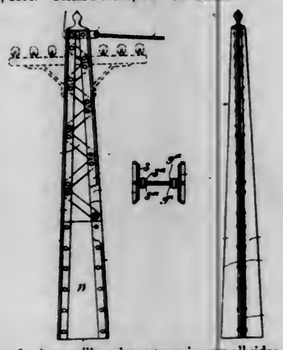
3. In a woven-wire-fence stretcher, the combination with members hinged together, of catches or irons located at the ends of the members and adapted for engagement with the upper and lower portions of the fence, and a plate secured to both the members and adapted for locking said members in extended relation.

4. In a woven-wire-fence stretcher, the combination with members hinged together, of rests or catches connected to the members at their ends, said rests or catches comprising a base which is suitably fastened to the member, and an offset portion between which and the

member the wire of the fence is received, and means for locking the members together in extended position or releasing them.

5. In a woven-wire-fence stretcher, the combination with members hinged together, catches connected to the members at the free ends thereof, being adapted to receive the upper and lower portions of the fence an additional catch or rest connected to one of the members near its hinged end which receives an intermediate portion of the fence, of means for locking the members together in extended relation.

573,151. COLUMN. PHELPS JOHNSON, Montreal, Canada. Filed Jan. 21, 1896. Serial No. 576,355. (No model.)

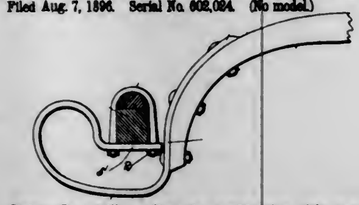


Claim.—1. A metallic column tapering on all sides and composed of a tapered central web-section, and four tapered lengths of angle-iron disposed to form four outside corner-sections of a quadrangular structure and each corner section having two side portions, one of which is of the same width throughout its entire length and secured to the web-section and the other of tapering width and projecting at right angles to the web-section, for the purpose set forth.

2. A metallic column tapering on all sides and composed of a tapered central web-section, and four tapered lengths of angle-iron disposed to form four outside corner-sections, of a quadrangular structure and each corner-section having two side portions one of which is of the same width throughout its entire length and secured to the web-section and the other of tapering width and projecting at right angles to the web-section, with single reinforcing-plates extending over the outside surfaces of the tapered side portions of two adjacent corner-sections and secured to such sections, for the purpose set forth.

3. A metallic column tapering on all sides and composed of a tapered central web-section, and four tapered lengths of angle-iron disposed to form four outside corner-sections of a quadrangular structure and each corner-section having two side portions, one of which is of the same width throughout its entire length and secured to the web-section and the other of tapered width and projecting at right angles to the web-section with one or more cross-arms secured rigidly between said length of angle-iron and projecting laterally of the column, for the purpose set forth.

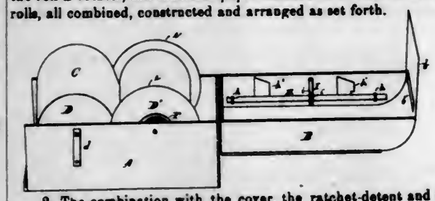
573,152. THILL-COUPLING. CLARENCE R. JONES, Alton Bay, N. H. Filed Aug. 7, 1896. Serial No. 602,024. (No model.)



Claim.—In a thill coupling, the combination with an axle and a shaft, of a clip which straddles the axle and is provided with screw-threaded arms, nuts on the arms, and a spring which is bent at one end into a clamping-plate through which the arms of the clip pass, said spring being then bent into a rearwardly-disposed arc-shaped portion, thence into a downwardly and forwardly exteeding portion that lies beneath and parallel to the clamping plate, and being finally exteeded upwardly and curved forwardly and connected to the shaft.

573,153. INDEXER. JOHN W. KEA, Minden, La. Filed Aug. 17, 1896. Serial No. 603,069. (No model.)

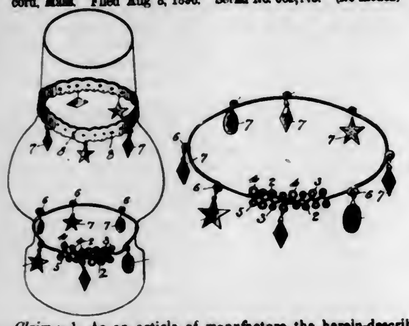
Claim.—1. The box A having a horizontally-slotted overlapping cover B, the roll D provided with a suitable detent mechanism, the roll D' having motor-spring on its shaft and flanges between which the roll D rotates, and the index-paper fastened at its ends to the said rolls, all combined, constructed and arranged as set forth.



2. The combination with the cover, the ratchet-detent and the roller-disks, of a brake H working in cover-guides A and provided with the blocks *h' h'*, one of said blocks being adapted to throw out the detent and both arranged to contact with the disks as and for the purposes set forth.

573,154. WITHDRAWN.

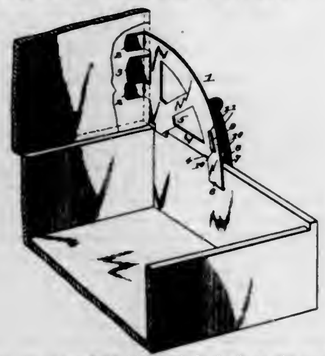
573,155. LAMP-CHIMNEY PROTECTOR. JOSEF KULHAN, Concord, Mass. Filed Aug 8, 1896. Serial No. 602,175. (No model.)



Claim.—1. As an article of manufacture the herein-described securing device for lamp-chimneys consisting of the metal collar having a series of perforations and provided with a series of depending sections resting in direct contact with the outer surface of the chimney and adapted to ornamentation, and hooks formed upon either end of the collar and arranged to engage in apertures provided in the contiguous ends thereof, as and for the purpose set forth.

2. The herein-described lamp-chimney protector and temperature equalizing device substantially as shown, consisting of the metal collar adapted to expand and contract in sympathy with the chimney and carrying heat-absorbing contact-points arranged to depend therefrom and lie in direct contact with the surface of the chimney and means for adjusting the ends of said collar in contact with each other, as and for the purpose named.

573,156. BOX-LID HOLDER. WILLIAM T. MARSH, Rich Hill, Mo. Filed May 12, 1896. Serial No. 591,260. (No model.)



Claim.—1. A box-lid holder made in the form of a quadrant and having spaced lips for engaging the box-lid, a flap or extension for engaging one surface of the end of the box, and a clamping-jaw pivotally connected to the body of the holder and arranged opposite said flap for engaging the opposite surface of the end of the box, substantially as described.

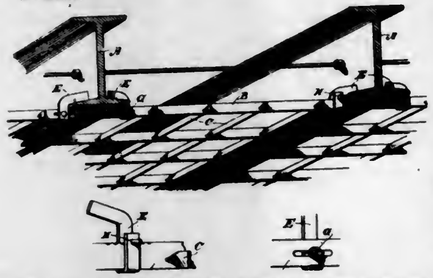
2. In a box-lid holder, the combination with the main body thereof having provision for engaging the box-lid and provided with a depending extension bearing against the inner surface of the box, in combination with a movable jaw for engaging the outer surface of the box, and a spring interposed between the movable jaw and the body of the holder, said spring being U-shaped and having its terminal portions inserted through openings in said jaw and body and clenched against the same, substantially as described.

573,157. SPRAYER OR SPRINKLER. EDWARD J. MEYER, Lock Haven, Pa. Filed Sept. 26, 1895. Serial No. 563,691. (No model.)



Claim.—A nozzle having a conical recess and within said nozzle a loosely-fitted conical sprayer having its outer or base edge cut away or rounded, and held in place by a transverse rod, the inner opening of the nozzle being fitted to a screw-threaded projection for attachment to a section of hose, all substantially as shown and described.

573,158. METALLIC FURRING FOR BUILDINGS. JOHN T. MCCORNICK, San Francisco, Cal. Filed July 17, 1896. Serial No. 599,502. (No model.)



Claim.—1. A metallic furring for buildings consisting of rectangular bars crossing each other, those extending in one direction having slots perforated in them to receive those which extend in the other direction, the latter being twisted and interlocked at the point of junction, and both sets of bars standing with the edges in the same direction, and curved clamps or hangers having one end adapted to engage the girder-flanges, and the other bent to engage and interlock with the bars, and a means for adjustably securing the hangers to the bars.

2. A clamp or hauger for securing metallic furring to girders and other supports, consisting of a bent bar or plate having one end adapted to engage the girder or support and the other bent at right angles so as to engage the metallic bar or part of the furring which is to be supported by it, and a means for adjustably securing the hanger and the bar together whereby the hanger is prevented from turning and disengaging from the girder or support and the furring is adjusted with relation to said girder.

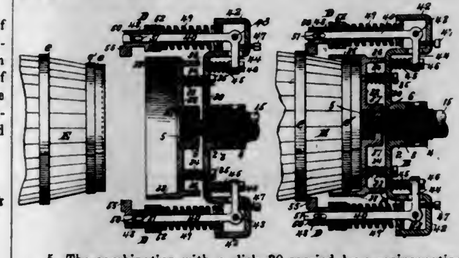
573,159. BARREL-HOOPING MACHINE. HENRY U. PALMER, Brooklyn, N. Y. Filed June 29, 1894. Serial No. 516,058. (No model.)

Claim.—1. A driving-head having a series of automatically and independently radially adjustable cushioned hoop-driving arms, substantially as described.

2. The combination of a series of automatically and independently radially adjustable cushioned hoop-driving arms, and an end hoop driving disk having a guiding-flange, substantially as described.

3. The combination of a series of automatically and independently radially adjustable hoop-driving arms, and a cushioned end hoop-driving disk having a guiding-flange, substantially as described.

4. The combination with a disk 30, of a series of independently spring-pressed arms 40 pivotally mounted on said disks, sleeves 48 having a limited sliding movement on the arms 40, cushioned springs 49 for the sleeves 48, and means for adjusting the tension of the springs 49, substantially as described.



5. The combination with a disk 30 carried by a reciprocating rod 15, of an end hoop-driving disk 32 having a limited movement toward and away from the disk 30 and having a sleeve adapted to slide on the end of the reciprocating rod 15, cushion-springs between said disks, and a series of automatically and independently radially adjustable cushioned driving-arms D carried by the disk 30, substantially as described.

6 The combination of a disk 30, a series of automatically and independently radially adjustable cushioned driving-arms D carried by the disk 30, and a cushioned end hoop-driving disk 32 carried by the disk 30, substantially as described.

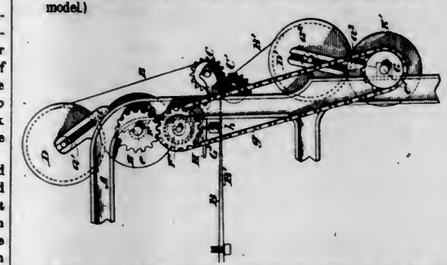
7. The combination of two hoop-driving heads, each comprising a series of automatically and independently radially adjustable cushioned driving-arms and a cushioned end hoop-driving disk; guide-rods for said driving-heads; and means for oppositely reciprocating said driving-heads, substantially as described.

8. The combination of two hoop driving heads, each comprising a series of automatically and independently radially adjustable cushioned hoop driving arms and an end hoop-driving disk; and means for oppositely reciprocating said driving-heads, substantially as described.

9. The combination of two hoop-driving heads, each comprising a series of automatically and independently radially adjustable cushioned hoop-driving arms and an end hoop-driving disk having a guiding-flange; and means for oppositely reciprocating said driving heads, substantially as described.

10. The combination of two hoop-driving heads, each having a series of automatically and independently radially adjustable cushioned hoop driving arms; and means for oppositely reciprocating said driving-heads, substantially as described.

573,160. LET-OFF MECHANISM FOR LOOMS. ISAAC E. PALMER, Middletown, Conn. Filed Mar. 10, 1894. Serial No. 503,097. (No model.)



Claim.—1. In combination, independent supports for different sets of warp, rollers bearing against the warp on the said supports, a shifting gear mounted to rotate with the roller engaged with the warp on one of said supports, an independent gear mounted in position to engage the said shifting gear when the latter is thrown into operative position and gear for connecting said independent gear with the roller engaged with the warp on another warp-support whereby the said warp-supports are caused to feed at predetermined rates or one of said warp-supports is permitted to feed independently of the other as may be desired, substantially as set forth.

2. In combination, independent supports for different sets of warp, rollers bearing against the warp on the said supports, a shifting gear mounted to rotate with the roller engaged with the warp on one of said supports, an independent gear mounted in position to engage the said shifting gear when the latter is thrown into operative position, a gear for connecting said independent gear with the roller engaged with the warp on another warp-support whereby the said warp-sup-

ports are caused to feed at predetermined rates or one of said warp-supports is permitted to feed independently of the other as may be desired, and a tension device arranged to act upon said independent gear and through it upon the feed-regulating rollers, substantially as set forth.

573,161. ELECTRIC-ARC LAMP. CHARLES RICHTER and RICHARD T. ESCHLER, Camden, N. J., assignors of one-third to Samuel B. Goff, same place. Filed Mar. 26, 1896. Serial No. 585,020. (No model.)



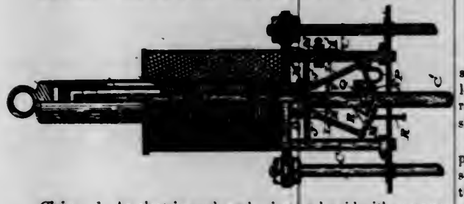
Claim.—1. An electric-arc lamp, having a chamber with a cap for holding the positive carbon, and a conical-shaped open lower end, a cup with means for holding the negative carbon, and a spring which is connected with said cup and supports said chamber, said spring embracing a neck on said chamber, and said parts being combined substantially as described.

2. In an electric-arc lamp, a chamber having an open lower portion with a neck thereon, a cup inclosing said lower portion and a spring embracing said neck and connected with said cup, said chamber resting on said spring, said parts being combined substantially as described.

3. In an electric-arc lamp, a cup, an arc-inclosing chamber, and a coiled spring, the latter being reeved in said cup, and engaging said chamber to yieldingly support the same, substantially as described.

4. In an electric-arc lamp, an arc-inclosing chamber practically closed at top, and formed with a contracted lower end, the bottom of which is open, a support for the negative carbon, and a spring on said support engaging a neck or shoulder on said chamber for holding the latter, substantially as described.

573,162. ELECTRIC-ARC LAMP. CHARLES RICHTER and RICHARD T. ESCHLER, Camden, N. J., assignors of one-third to Samuel B. Goff, same place. Filed Apr. 9, 1896. Serial No. 586,814. (No model.)



Claim.—1. An electric-arc lamp having a solenoid with an armature, guide-rods for said armature connected with the body of said solenoid, a stop on said rod for said armature, an air-pump on said solenoid having a plunger connected by links with said armature, said parts being combined substantially as described.

2. In an electric-arc lamp, a solenoid with an armature having a cross-head guided on rods depending from the metallic body of said solenoid, links pivoted to ears on said cross-head, and plates pivotally connected with said links, and having rollers mounted thereon adapted to contact with a carbon said parts being combined substantially as described.

3. A clutch formed with a leaf, a roller mounted on said leaf, an elastic arm on said leaf and a roller on said arm substantially as described.

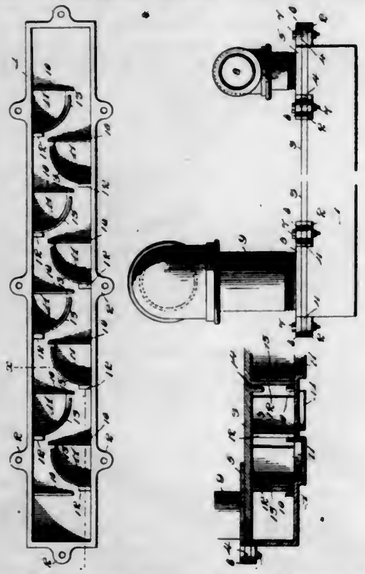
4. In an electric-arc lamp, a clutch formed of leaves, links pivotally connected with said leaves, a core attached to said links, and a roller mounted on either of said leaves, adapted to engage the carbon of the lamp, substantially as described.

5. In an electric arc lamp, a solenoid with an armature having a cross-head with links connected therewith, plates pivotally attached to said links and having rollers mounted thereon, and a weighted dog mounted on one of said plates, said parts being combined substantially as described.

6. In an electric-arc lamp a solenoid with an armature having a cross-head, clutch-plates pivotally connected by links with said cross-head and carrying rollers in recesses therein and an elastic arm connected with one of said plates, and carrying a roller adapted to bear against a carbon which is between said plate-rollers, and a flexible cable connecting said arm and the body of the solenoid, said parts being combined substantially as described.

7. In an electric-arc lamp, a solenoid with an armature having a cross-head, links pivoted to said cross-head, clutch-leaves pivoted to said links and carrying rollers mounted in recesses therein, an arm connected with one of said leaves, a roller on said arm, a flexible cable connecting said arm with the metallic body of the solenoid, and a spring connected with said links, said parts being combined substantially as described.

573,163. AMALGAMATOR. JOHN A. RIFFLE, Denver, Colo., assignor of one-sixteenth to James Higson, same place. Filed Sept. 1, 1896. Serial No. 604,564. (No model.)



Claim.—1. In an ore-separator, a casing or sluiceway having a series of pockets at intervals in the length of its bottom, deflectors located in advance of the pockets, and curved plates arranged in the rear of the pockets and considerably higher than the deflectors, substantially as and for the purpose set forth.

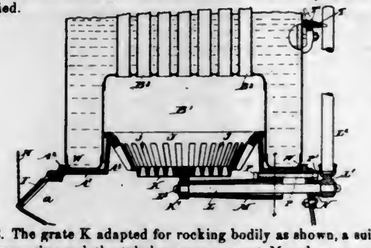
2. In an ore-separator, a casing or sluiceway having a series of pockets at intervals in the length of its bottom, the pockets of one series alternating with and coming opposite the spaces formed between the pockets of the adjacent series, straight deflectors arranged in advance of the pockets and disposed in parallel relation, and curved plates located in the rear of the pockets, substantially as set forth.

3. In an ore-separator, a casing or sluiceway having a series of pockets at intervals in the length of its bottom, the pockets of one series alternating with the pockets of the other series and the two sets of pockets bordering upon the side walls of the casing and having their front sides straight and their rear sides curved, straight deflectors located in advance of the pockets, and curved plates arranged in the rear of the pockets and considerably higher than the deflectors, and the deflectors and curved plates having their outer ends touching the side walls of the casing, substantially as set forth.

4. The herein-described ore-separator, comprising a casing having a supply-pipe communicating therewith at one end and a discharge-pipe at the opposite end, and formed at intervals in the length of its bottom with a series of pockets disposed in alternate relation, the front sides of the pockets being straight and their rear sides curved, and having inwardly-extending ribs at its sides and depending flanges at its top, straight deflectors located in advance of the pockets and about in vertical alinement with the depending flanges, and curved plates at the rear of the pockets and having their outer ends secured to the aforesaid ribs, substantially as set forth.

573,164. GRATE. JOHN S. ROAKE, Brooklyn, N. Y. Filed Jan. 30, 1894. Serial No. 498,431. (No model.)

Claim.—1. The shaking and dumping grate K, and a suitable stationary rim to enable it to retain fuel and allow its moderate combustion in combination with a suitable ash-pit and an arm rigidly secured at its outer end to the furnace-base and extending beneath the dumping-grate, together with an operating-shaft parallel with and also supported by said arm and having its inner end connected to the central portion of the grate at its under side, substantially as herein specified.



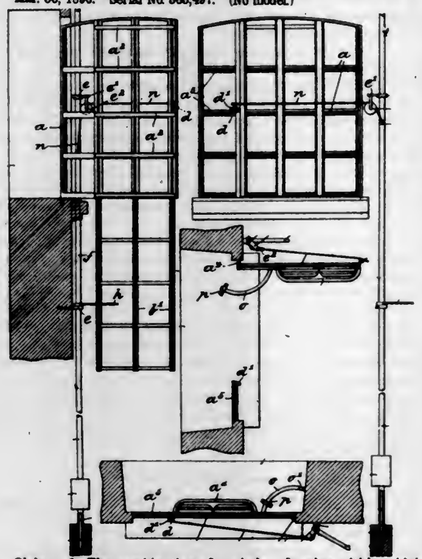
2. The grate K adapted for rocking bodily as shown, a suitable stationary rim; and the tubular grate-support M and means as the dovetail M', cleats A^4, embracing the latter, bolt P and nut P', connecting to the support M for holding and releasing it, in combination with each other and with the rocking shaft L, socket L' on such shaft, and handle L^2 for rocking it, all arranged for joint operation substantially as herein specified.

3. The shaking and dumping grate K and suitable stationary rim, the grate support M, having an outer dovetailed portion engaging cleats fixed in relation to the base portion, in combination with each other and with the rocking shaft L, and its operating means, substantially as specified.

4. The shaking and dumping grate K and relatively stationary rim, of a grate support M, having the outer dovetailed portion, a bolt P, locking dovetailed portion in engagement with cleats, and securing an outer bearing-piece N, in combination with each other and with a rocking shaft and its operating means, the shaft bearing both in said support and piece N, substantially as herein specified.

5. The base-casting A having the horizontal portion forming a bearing for the boiler-body, and provided with the inner lip or rim A^3, supporting the stationary grate J, the shaking and dumping grate K, the grate-support M beneath, and having its outer part secured on the under side of the horizontal portion of the base portion in combination with each other and with an operating-shaft supported by said support and having its inner end connected to the central portion of the grate, substantially as herein specified.

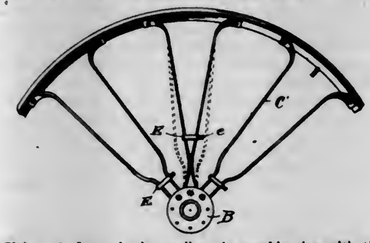
573,165. SAFETY-WINDOW IN SHAPE OF A LADDER. FRANZ SCHERRER, Essen-on-the-Ruhr, Germany. Filed Aug. 2, 1894. Renewed Mar. 30, 1896. Serial No. 585,497. (No model.)



Claim.—1. The combination of a window-framing within which a ladder is adapted to be nested, with mechanism for opening the framing consisting of a weighted rod adapted to fall vertically, a chain connecting the rod with the framing and a handle adapted to turn the rod into position in which it may fall vertically, substantially as and for the purposes described.

2. The combination of a window-framing, a ladder vertically movable thereon, a rod and mechanism controlled thereby for opening the framing, a quadrant-shaped strap secured to the lower end of said framing and having a recess at its free end, and a staple secured to the casement and forming a guide for said strap, the recessed end of the strap adapted to slip into engagement with the staple when the framing is opened to thereby lock the framing in open position, substantially as and for the purposes described.

573,166. WHEEL. THOMAS R. SHIBERT, North Indianapolis, Ind. Filed Aug. 7, 1895. Serial No. 558,468. (No model.)

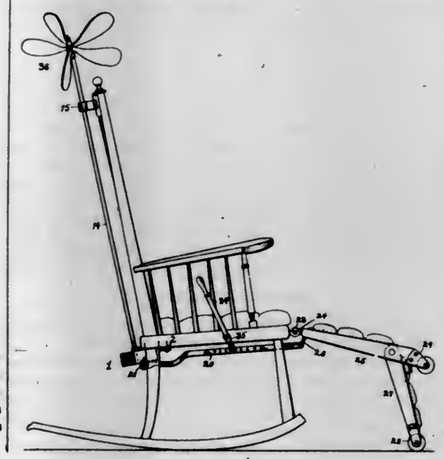


Claim.—1. In a wheel or pulley, the combination with the rim and a two-part hub having male and female lugs, of bent elastic spokes made in integral pairs which are riveted at their outer ends to the rim and have their inner ends secured between the lugs of the two-part hub, said spokes being assembled so the curve of each spoke will be in general direction opposite to the direction of the curvature of the next adjacent spoke and the shape of the spokes such that when forced together the members of each pair will contact with each other at a distance from the hub, less than one-fourth of the length of the spoke.

2. In a wheel or pulley, the combination, with the rim and a two-part hub having male and female lugs, of bent elastic spokes made in integral pairs which are riveted at their outer ends to the rim and have their inner ends secured between the lugs of the two-part hub, said spokes being assembled so the curve of each spoke will be in general direction, opposite to the direction of the curvature of the next adjacent spoke and the shape of the spokes such that when forced together the members of each pair will contact with each other at a distance from the hub less than one-fourth of the length of the spoke and a binding-clasp for each pair of spokes having a set-screw, substantially as described and for the purposes specified.

573,167. AUTOMATIC FAN DEVICE AND ROCKING-CHAIR. PAUL SERGE-KISSLOW, East Orange, N. J., assignor, by direct and mesne assignments, to Ezekiah Smith Stretch, same place. Filed Jan. 22, 1896. Serial No. 576,373. (No model.)

Brief.—The fan-shaft is actuated by a spring-motor situated on the rear of the chair. The spring of the motor is wound up by pawl-and-ratchet mechanism operated by lever 20, which is oscillated by the foot-rest and also lever-arm 34.



Claim.—1. In a fan attachment for chairs, the combination with a spring-motor attached at the rear of a chair-seat, a fan shaft revoluble by said motor, ratchet-and-pawl mechanism for winding the motor-spring and actuated by devices extending and vibrated beneath the chair-seat, substantially as set forth.

2. In a fan attachment for chairs, the combination with a spring-motor attached at the rear of a chair-seat, a fan-shaft revoluble by said motor, ratchet-and pawl mechanism for winding the motor spring, the latter actuated by devices extending and vibrated beneath the chair through the medium of manually-operated means, substantially as set forth.

3. In a fan attachment for chairs, the combination with a spring-motor attached to the chair, a fan shaft revoluble by said motor, ratchet-and pawl mechanism for winding the motor-spring and operated by an arm comprising relatively-yielding spring sections, together with connections for vibrating the arm and manually controlled from the chair, substantially as set forth.

4. In a fan attachment for rocking-chairs, the combination with the spring-motor attached to the chair and carrying the fan shaft and spring winding ratchet-and-pawl mechanism, operating connections extending to the front of the chair and secured to a limb-rest pivotally adjustable and having rollers, said rest also carrying a relatively-movable section 27, also provided with rollers, substantially as set forth.

573,168. BICYCLE COSTUME. JACOB SILBERMAN, New York, N. Y. Filed Sept. 14, 1896. Serial No. 605,697. (No model.)



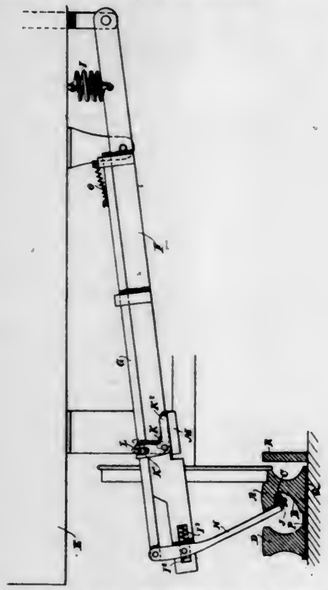
Claim.—1. In a bicycle costume, the combination of a skirt slit or divided at the back thereof for a portion only of its height and provided with side plackets or flies at the top thereof whereby the top of the back of the skirt constitutes a barn-door flap, a pair of trousers permanently secured by their upper front edge to the upper front edge of the skirt and provided with side plackets or flies whereby the rear of the trousers is formed into a barn-door flap, the said rear being free to be flapped down independently of the adjustment of the skirt when the barn-door flap of the skirt is buttoned in place, whereby the said barn-door flap may be lowered into proximity with the open part of the divided skirt.

2. In a bicycle costume, the combination of a skirt divided at the back and provided with side plackets or flies at the top thereof whereby the top of the back of the skirt constitutes a barn-door flap, a pair of trousers permanently secured by their upper front edge to the upper front edge of the skirt and provided with side plackets or flies whereby the rear of the trousers is formed into a barn-door flap, the said rear being free to be flapped down independently of the adjustment of the skirt, and a temporary fastening device at the back of the garment adapted to temporarily secure the top of the back of the skirt to the top of the barn-door flap of the trousers, whereby the said barn-door flap may be lowered into proximity with the open part of the divided skirt when the barn-door flap of the skirt is buttoned into place.

573,169. ELECTRIC RAILWAY. ANSON SPRAGUE, San Leandro, Cal. Filed Mar. 30, 1896. Serial No. 585,394. (No model.)

Claim.—1. In an electric railway, a channeled insulated surface-rail having a conductor fixed to it, a pivotally-secured lever having a trolley to engage the conductor, a lever by which the trolley-lever is carried and a slide connected with the latter lever and adapted to move the trolley into and out of contact with the conductor.

2. In an electric railway, the main rail having a groove or channel formed beneath the overhanging top of the rail, said groove or channel being insulated, a continuous conducting-wire fixed within the insulated groove or channel, a guard-rail extending parallel with the main rail and forming a continuous channel between the two, lever-arms provided with trolley-wheels to enter said channel and engage the conductor, a lever-arm fulcrumed on the car and having the trolley-lever fulcrumed in its outer end, and a slide connecting with the trolley-lever above its fulcrum and adapted to move the trolley-wheel into and out of contact with the conductor.



3. In an electric railway, the combination, of the main rail having a conducting-wire fixed to it, a lever fulcrumed on the car, a trolley pivotally suspended from the lever and a slidable bar for rocking the trolley about its point of suspension to move it into and out of contact with the conductor.

4. In an electric railway and car, a continuous channeled rail, a conducting-wire protected and insulated within the groove or channel of the rail, a lever-arm fulcrumed upon the car and means whereby said arm is moved about its fulcrum to depress the outer end, a second lever-arm fulcrumed upon the first one extending downward having a trolley-wheel journaled upon its lower end, a bar slidable upon the top of the first-named lever-arm and connected with the trolley-lever so as to turn the latter about its fulcrum, and a mechanism for sliding said bar when the lever is depressed so that the trolley-wheel is thrown into contact with the conducting-wire and is removed therefrom when the lever commences to rise.

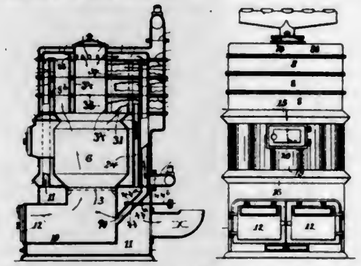
5. In an electric railway, a grooved insulated rail, a conducting-wire secured along within the groove beneath the head of the rail, a supplemental guard-rail parallel thereto forming a continuous channel between the two, an arm carrying a trolley-wheel at its lower end having the upper end fulcrumed upon a lever which is vertically movable upon the car, a bar slidable upon the top of said lever to which the upper end of the trolley-arm is connected and a contact bell-crank lever fulcrumed upon the car-lever and connected with the slidable bar so that when the latter is depressed, the slidable bar is moved to throw the trolley into contact with its conducting-wire and when the lever is raised the slidable bar first moves the trolley out of contact with the wire and into line with the channel between the rails so that it can be lifted clear therefrom.

573,170. HEATER. GEORGE A. WATSON, Toronto, Canada, assignor to John Barclay, Montreal, Canada. Filed Apr. 6, 1896. Serial No. 586,459. (No model.)

Claim.—1. An integral annular section for hot-water heaters formed of a series of separate annular water-chambers forming the wall of the section and each inclosing a separate heating-space.

2. A section for hot-water heaters, formed of two water-chambers and a series of independent separate annular water-passages connecting said chambers and forming the wall of the section, and each passage inclosing a separate heating-space, with flow connections from one, and a return connection to the other, of said chambers.

3. A section, for hot-water heaters, formed of two water-chambers and a series of independent separate annular water-passages connecting said chambers, each passage inclosing a separate heating-space, and heat-passages extending from said heating-spaces through said water-chambers with flow connections from one, and a return connection to the other, of said chambers.



4. In a hot-water heater, the combination of, an ash-pit section formed with a jacket having an outlet to the open air, a grate, an annular fire-pot section arranged above said ash pit section and formed of a series of separate vertical annular water-chambers arranged side by side and each inclosing a separate heating space connected at its lower end with said jacket, one or more water sections located above said fire-pot and a top water-section located above said water-sections, said water-sections having a series of vertical passages therethrough connecting the spaces inclosed by said annular water-chambers with a space formed by said top section, and a series of passages connecting the space formed by said top section with the fire-pot, a flow and return connection with the body of water contained in said heater, for the purpose set forth.

5. In a hot-water heater, the combination of, an ash-pit section formed with a jacket having an outlet to the open air, a grate, an annular fire-pot section arranged above said ash-pit section and formed of a series of separate vertical annular water-chambers arranged side by side and each inclosing a separate heating-space connected at its lower end with said jacket, one or more water-sections located above said fire-pot and a top water-section located above said water-sections, said water-sections having a series of vertical passages therethrough connecting the spaces inclosed by said annular water-chambers with a space formed by said top section, and a series of passages connecting the space formed by said top section with the fire-pot, a flow and return connection with the body of water contained in said heater, and an independent heated air supply from the ash-pan to the fire-pot, for the purpose set forth.

6. In a heater, the combination with a main flue or flues connecting the fire-chamber with the chimney connection, of a secondary conductor or passage independent of the grate-section and said main flue or flues and connecting said under side of the grate with the fire-chamber, for the purpose set forth.

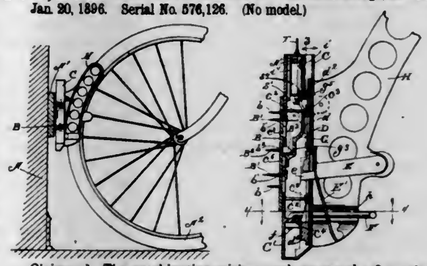
7. In a heater, the combination with a coal-magazine and main flue or flues connecting the fire-chamber with the chimney connection, of a secondary flue or flues independent of the grate-section and of the main flue or flues and connecting said under side of the grate with said coal-magazine, for the purpose set forth.

8. In a hot-water heater, the combination of, an ash-pit section formed with an ash-pan section smaller than and set within said ash-pit section and located near the top thereof to form a jacket or chamber surrounding said ash-pan on all sides excepting the front and top thereof said front portion communicating with an opening in the front of the casing, and said jacket or chamber communicating with the chimney; a grate located at the top of said ash-pan section; a fire-pot section arranged above and resting upon said ash-pit section and formed of two circular water chambers located one above the other and connected by a series of tubes and a U-shaped portion to form independent water-passages from one to the other of said circular water chambers; a series of tubes each of which extends from the lower side of said lower circular chamber to the upper side of said upper circular chamber and located within and being of less diameter than said first-mentioned tubes; one or more water-sections located above said fire-pot section and provided with a series of vertical passages corresponding in size with and connected to the passages formed by the smaller tubes through said fire-pot section, a second circle of vertical passages and a tube leading from the fire-pot upward through all of the said water-sections; a water-back formed by a rearward extension from each of said water-sections and a vertical dividing-diaphragm extending from said central tube rearward to the rear of said extension, communicating openings between said sections and located on either side of said diaphragm; a top section located above said water-sections and formed to present a water-chamber, a chamber communicating with all of the vertical passages through said water-sections, and an air-chamber encircling the upper perforated end of a central tube extending vertically therethrough and corresponding to the central tube of said water-sections, said tube being provided with a cover, a rearward extension corresponding to said water-back and having a communication with same; a pipe connected with and extending from said circular air-space to and connected with the ash-pan; a damper for opening or closing said pipe; and flow and return connection to connections from said top section and the lower circular chamber of the fire-pot section respectively, for the purpose set forth.

9. In a hot-water heater, the combination of, an ash-pit section; a grate located at the top of said ash-pit section; a fire-pot section arranged above and resting upon said ash-pit section and formed of two circular water-chambers located one above the other and connected by a series of tubes to form independent water-passages from one to the other of said circular water-chambers; a series of tubes each of which extends from the lower side of said lower circular chamber to the upper side of said upper circular chamber and located within and being of less diameter than said first-mentioned tubes; one or more water-sections located above said fire-pot section and provided with a series of vertical passages corresponding in size with and connected to the passages formed by the smaller tubes through said fire-pot section, a second circle of vertical passages and a tube leading from the fire-pot upward through all of the said water-sections; a top section located above said water-sections and formed to present a water-chamber a chamber communicating with all of the vertical passages through said water-sections, and an air-chamber encircling the upper perforated end of a central tube extending vertically therethrough and corresponding to the central tube of said water-sections; a pipe connected with and extending from said circular air-space to and connected with the ash-pan; a damper for opening or closing said pipe; flow connections from said top section and return connections to the lower circular chamber of the fire-pot section, for the purpose set forth.

10. In a hot-water heater, the combination of, an ash-pit section formed with a jacket having an outlet to the open air, a grate, a fire-pot section arranged above said ash-pit section and having heat-passages therethrough, one or more water-sections located above said fire-pot and having a series of heat-passages therethrough connected with the fire-pot and additional heat-passages connected with the heat-passages of the fire-pot sections, and a top water-section located above said water-sections inclosing a space and communicating with all of the heat-passages of said water-sections, a flow and return connection with the body of water contained in said heater, an open-ended vertical fuel-magazine extending from the fire-chamber to the top of the heater and provided with a cover and a heated-air supply, from the ash-pan to the upper end of said magazine, for the purpose set forth.

573,171. BICYCLE-RACK. HENRY WESTPHAL, Chicago, Ill. Filed Jan. 20, 1896. Serial No. 576,126. (No model.)



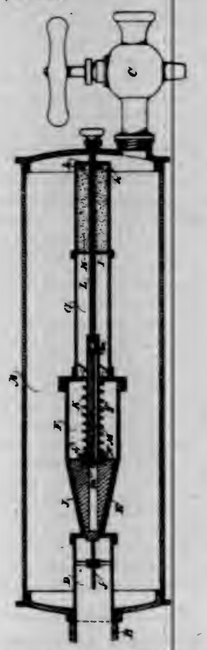
Claim.—1. The combination with a rack or stand, of a pair of latches pivotally secured therein and adapted to engage the wheel of a bicycle, a locking mechanism located in the rack, a sliding bar having at its upper portion means to engage the lock, and inwardly-inclined slots in its lower part for the latches, and a lever fulcrumed to the rack and adapted to engage the sliding bar and raise the same by the pressure of the wheel, substantially as described.

2. The combination with a rack or stand, of a pair of latches pivotally secured therein and adapted to engage the wheel of a bicycle, a locking mechanism located in the rack, a sliding bar having at its upper portion means to engage the lock and provided in its lower part with inwardly and downwardly inclined slots for the latches, said slots terminating in vertical openings, and a lever fulcrumed to the rack and adapted to engage the sliding bar and raise the same by the pressure of the wheel, substantially as described.

3. The combination with a rack or stand, of a pair of latches pivotally secured therein, a locking mechanism located in the rack,

a sliding bar having at its upper part means to engage the lock, an opening d^{10}, and means at its lower part to engage the latches, means for raising the bar, retaining devices secured to a support, a dog having an arm g^3, and pivoted to the casing, and adapted to engage one of the retaining devices, a casing having openings in its rear for the reception of the retaining devices, and an opening c^{10}, in its face for the insertion of a pin or the like to pass through the opening d^{10}, in the bar and to contact with the arm g^3, of the dog, substantially as described.

573,172. BEER-DRAWING APPARATUS. JOHN R. YOUNG, San José, Cal., assignor of three-fourths to Charles M. Gardner, Louis H. Hartmann, and John Shields, Jr., same place. Filed July 27, 1896. Serial No. 600,624. (No model.)



Claim.—1. In a beer-drawing apparatus, the combination, of a reservoir, a pressure-chamber contained within the same in line with the liquid passage from the keg, said chamber having a conical valve-seat at its forward end, a long conical valve movable longitudinally in the forward portion of said chamber and closing the entrance thereto, and adapted to be opened by the pressure from the keg, to permit the beer to pass around it in an attenuated stream, and a spring in the chamber behind the valve and acting in conjunction with the pressure in said chamber to automatically close the valve against the pressure from the keg.

2. In a beer-drawing apparatus, the combination of a pressure-chamber communicating with the liquid-passage from the keg, a long conical valve intervening and controlling said communication, a spring acting behind the valve in conjunction with the pressure in the chamber to automatically close said valve against the pressure from the keg, and a means for relieving the valve of the spring as the pressure in the keg decreases.

3. In a beer-drawing apparatus, the combination of a pressure-chamber communicating with the liquid-passage from the keg, a long conical valve intervening and controlling said communication, a spring acting behind the valve in conjunction with the pressure in the chamber to automatically close said valve against the pressure from the keg, and a means for relieving the valve of the spring as the pressure in the keg decreases, consisting of a sliding washer bearing against the spring, an adjusting-screw and intervening connections to move the washer to press the spring away from the valve.

4. In a beer-drawing apparatus, the combination of a pressure-chamber communicating with the liquid-passage from the keg, a controlling-valve in said communication, said valve having a hollow slotted stem, a spring around said stem and acting upon the valve to normally close it, a sliding washer intervening between the spring and valve, a rod in the hollow stem having a cross-pin playing in the slot of said stem behind the washer whereby the latter presses the spring away to relieve the valve, and an adjusting-screw for moving said rod.

5. In a beer-drawing apparatus, the combination of the tube forming the pressure-chamber and the conical valve-seat in communication with the liquid-passage from the keg, the conical valve in said seat, the spring in the pressure-chamber for closing the valve and the filter communicating with the pressure-chamber.

6. A beer-drawing apparatus comprising a reservoir-casing having at one end a faucet, a pressure-chamber in said casing having its forward end made conical and communicating with the liquid-passage from the keg, a long conical valve movable longitudinally in the tube and closing against the conical end thereof, and adapted to be opened by the pressure from the keg, to permit the beer to pass, and a spring in the pressure-chamber behind the valve and acting on the latter to normally hold the latter closed.

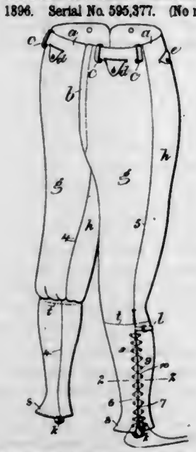
7. A beer-drawing apparatus comprising a reservoir casing having at one end a faucet, an entrance-tube at the other end, communicating with the liquid-passage from the keg, a pressure-chamber within the casing having at one end an apertured head and at the other a long conical valve-seat communicating with the entrance-tube, a long conical valve in said seat, and a spring in the pressure-chamber acting on the valve to close it in conjunction with the pressure in the chamber.

8. A beer-drawing apparatus comprising a reservoir-casing having at one end a faucet, an entrance-tube at the other end, communicating with the liquid-passage from the keg, a pressure-chamber within the casing having at one end an apertured head and at the other a long conical valve seat communicating with the entrance-tube, a long conical valve in said seat, a spring in the pressure-chamber acting on the valve to close it in conjunction with the pressure in the chamber, a tube communicating with the apertured head of said chamber and a filter communicating with said tube and with the interior of the reservoir casing.

9. A beer-drawing apparatus comprising a reservoir-casing having at one end a faucet, an entrance-tube at the other end, communicating with the liquid-passage from the keg, a pressure-chamber within the casing having at one end an apertured head and at the other a long conical valve-seat communicating with the entrance-tube, a long conical valve in said seat, a spring in the pressure-chamber acting on the valve to close it in conjunction with the pressure in the chamber, a sliding washer bearing on the spring and adapted by its movement to relieve the valve of said spring, an adjusting-screw passing into the casing and connections therefrom to move said washer.

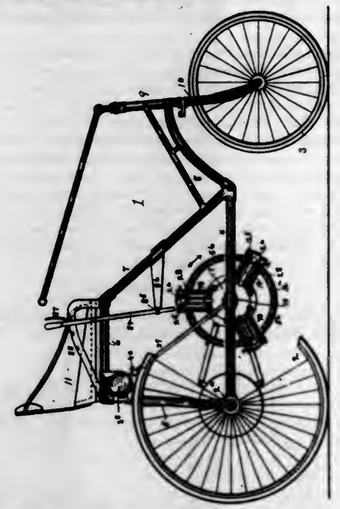
10. In a beer-drawing apparatus, the combination of a pressure-chamber communicating with the liquid-passage from the keg, a suitable valve intervening and controlling said communication, a spring acting on the valve in conjunction with the pressure in the chamber to automatically close said valve against the pressure from the keg, and a means for relieving said valve of the spring as the pressure in the keg decreases.

573,173. BICYCLE-TROUSERS. MAURICE ARON, New York, N.Y. Filed June 13, 1896. Serial No. 595,377. (No model.)



Claim.—As a new article of manufacture, the bicycle-trousers herein described, comprising a garment having the upper part of each leg loose and bagging and with outer and inner seams down to and below the knee and at that point and downward contracted to form a tightly-inclosing cover for the leg, with the inner seam continued, and having an outer opening from the knee to the bottom, the edges at the opening overlapping and provided with means for fastening such overlapped edges the one upon the other, and the fabric of the front and back portions extending the entire length of the legs, substantially as set forth.

573,174. MOTOR OR ENGINE. STEPHEN M. BALKER, New York, N. Y., assignor of one-half to William H. Humphrey, Norfolk, Conn. Filed Jan. 23, 1896. Serial No. 576,498. (No model.)



Claim.—1. In a gas or oil engine, the combination of a crank-shaft having a bore, a casing rotative thereon, a plurality of cylinders carried by said casing, each cylinder having a port or channel leading to it, an air and an oil supply pipe leading to each of said ports or channels, pistons connected with the crank, means for supplying oil to one of said pipes for each cylinder from the bore in said shaft, and for also supplying air to the corresponding air-pipe, valves for simultaneously controlling the passage of air and oil from the corresponding port or channel to the cylinder and arranged to be opened by suction within the cylinders, and means for exhausting the spent charge from said cylinders, substantially as described.

2. The combination of a crank-shaft, with a casing rotative thereon, said shaft having a bore at one portion leading to said casing and a bore in its other portion that is closed at the inner end, a cylinder carried by said casing, a piston connected with the crank, an air-supply pipe for the cylinder leading into said casing, an oil-supply pipe leading to a chamber or channel in the casing, said shaft having an aperture leading from its bore to said chamber or channel, a chamber or channel to which said oil-pipe leads, and connected with the cylinder, a valve for controlling the passage of air and oil to the cylinder and means for exhausting an exploded charge from said cylinder, substantially as described.

3. The combination of a crank-shaft having a bore, closed at its inner end with a casing rotative on said shaft, a cylinder and piston, air and oil pipes communicating with said cylinder, a valve for controlling the passage of air and oil to said cylinder, a bearing or extension carried by said casing, a chamber therein communicating with said oil-pipe, a bushing therein surrounding said shaft, said shaft having an aperture connecting its bore with said chamber, and means for exhausting an exploded charge from said cylinder, substantially as described.

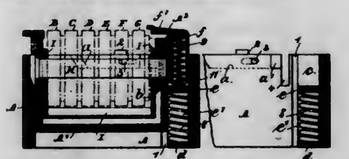
4. The combination of a crank-shaft having a bore, a casing rotative thereon, a cylinder carried by said casing, a piston, a plate on said cylinder having an inlet channel or port leading thereto, oil and air supply pipes leading to said channel or port, the oil-supply pipe connecting the bore of said shaft with said channel or port, a valve for controlling said channel or port, an exhaust port or channel in said plate, a valve therein, means for operating said valve, and a perforated tube connected with said exhaust channel or port, substantially as described.

5. The combination of a crank-shaft having a bore, with a rotative casing, a cylinder, a pipe forming communication between the cylinder and the casing, a piston, means for supplying said cylinder with oil from the bore in the shaft, an exhaust port and valve, and a perforated tube connected therewith, substantially as described.

6. The combination of a crank-shaft, a casing rotative thereon, a plurality of cylinders carried thereby, pistons in said cylinders, means for supplying said cylinders with a propulsive medium, exhaust ports and valves for said cylinders, and curved perforated tubes connected with said exhaust-ports, to carry off the spent propulsive medium, said tubes acting as a balance-wheel for the casing, as and for the purposes specified.

7. The combination of a crank-shaft, with a casing rotative thereon, cylinders and pistons, means for supplying the cylinders with a propulsive medium, exhaust ports and valves for said cylinders, a plurality of eccentrics connected together and respectively connected with said valves, and means for rotating said eccentrics by the rotation of said casing, substantially as described.

573,175. NUMBERING-HEAD. OSWALD BARTUSCH, Brooklyn, N. Y., assignor to William A. Force & Co., New York, N. Y. Filed Nov. 22, 1895. Serial No. 569,824. (No model.)



Claim.—1. In a number-head, the number-wheels and their case A′ having a slide-block A^3 at one end and a slideway 10, of a block *f* fitting the slideway 10, and having an overhanging portion *f*′ to receive a printing character such as a period, a spring for elevating the block *f* and means for limiting its movement, a box A to receive the case and its number-wheels, and means for elevating the case within the box, substantially as specified.

2. In a number-head, the number-wheels, and their case A′ having a slide-block A^3 at one end with opposite edge ribs and an intermediate slideway 10, of a block *f* fitting the slideway 10 and having an overhanging portion *f*′ to receive a printing-character such as a period in line with the printing-characters of the number-wheels, a spring to elevate the block *f* and means for limiting its movement, a box A to receive the case and its number-wheels and having grooves for the ribs of the case, and springs grouped adjacent to the blocks A^3 and *f* for elevating the case within the box, substantially as specified.

3. In a number-head, the case A′ the number-wheels, pawls, pawl block and frame and a lever *b* pivoted to the case and operating the number-wheels, of a box A receiving the case A′ and in which the latter is movable vertically, a bolt *a* having a head *a*′ and a finger-piece 2, and a mortise, and longitudinally movable in a groove in one side of the box A, a pin 3 to hold said bolt in place, and said box having a notch to receive the head *a*′ and a vertical slot 4 to receive the end of the lever *b* which is held in place by the bolt *a*, substantially as and for the purposes set forth.

4. In a number-head, a box A having a slideway at one end and adjacent shoulders *c c*′, a plate *d* carrying studs 8 and connected to the base of the box, a plate *e* and helical springs *e*′ around the studs 8 and acting to raise the plate *e* against the under sides of the shoulders *c c*′, in combination with number-wheels and their case A′ having a slide-block A^3 at one end moving in the slideway of the box A and resting upon the plate *e* whereby the case is elevated to a normal position by the springs *e*′ and plate *e*, substantially as set forth.

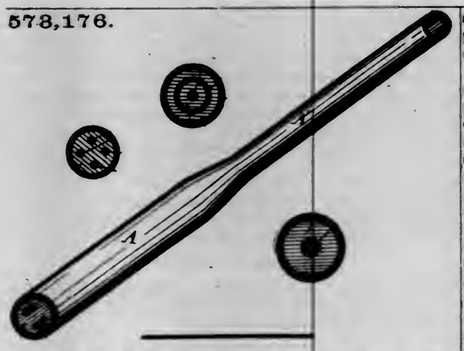
5. In a number-head, the number-wheels and their case A′ having a slide-block A^3 at one end and a slideway 10, of a block *f* fitting the slideway 10 and having an overhanging portion *f*′, a spring 9 acting upon the block *f* to elevate the same and a foot-piece 11 for limiting the upward movement, a box A to receive the case and number-wheels the plate *d* studs 8, springs *e*′ and a plate *e* to raise the case, substantially as specified.

6. In a number-head, the combination with a box A, of number-wheels and a carrying-case A′ therefor, a plate *e* and springs for elevating the case A′, a depressible slide-block *f* in slideways at one end of the case A′ having an overhanging portion *f*′ upon which is a character such as a period, a spring bearing upon the aforesaid plate *e* and acting to elevate the slide-block *f*, substantially as specified.

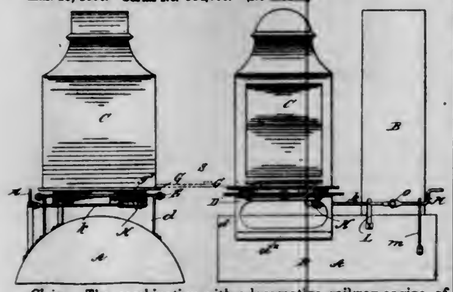
573,176. ELECTRIC CABLE. FRANÇOIS BOREL, Cortaillod, Switzerland. Filed Jan. 7, 1896. Serial No. 574,606. (No model.)

Claim.—The herein described improvement in electric cables consisting in a conductor of copper, an inclosing tube of copper, and intervening asbestos forming the insulating material, such asbestos not being injured by heat and not injuring the conductor in the rolling or drawing operations, substantially as specified.

573,176.

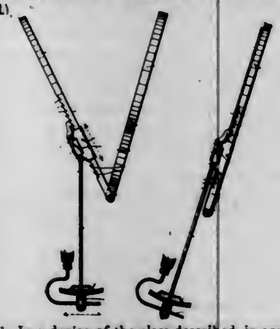


573,177. HEADLIGHT. OSCAR A. CONSTOCK, Amboy, Ill. Filed Mar. 25, 1896. Serial No. 584,780. (No model.)



Claim.—The combination with a locomotive railway-engine, of the herein-described headlight revolubly mounted thereon, consisting of a casing provided with a base-plate G, to which is secured a circular plate *g* having an annular depending rim g^2, the periphery of which is provided with serrations or teeth g^3, and having also an annular outwardly-directed rim or flange g^4, said plate *g* being revolubly mounted in the annular plate E mounted on supports *d* secured to the boiler of the engine, said plate E having an upwardly-directed rim E^2 upon which the flange g^4 of the plate G rests, said plate E having an annular depending flange F^2 provided with cross-bars F^3 united by a central circular base-plate F^4, to which the plate G is pivotally connected by means of a bolt and nut, keepers secured to the under side of the cross-bars F^3, and worm-gearing revolubly mounted in said keepers, adapted to engage the ratchet-teeth g^3 of the plate *g*, and a shaft K connected with said worm-gearing, and having connections with a crank-handle mounted adjacent to the cap, whereby the headlight may be turned in any direction, as herein set forth and described.

573,178. CHIN-SUPPORT FOR LAYING OUT THE DEAD. FERDINAND K. FALES, Syracuse, N. Y. Filed Apr. 28, 1896. Serial No. 589,470. (No model.)



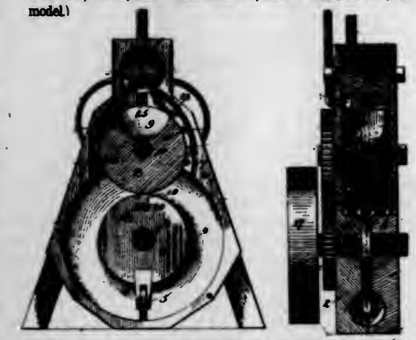
Claim.—1. In a device of the class described, in combination, a segment-shaped head-band, a segment-shaped lever pivotally connected therewith, and a pendent segment-shaped jaw-band pivotally suspended from the lever aforesaid, substantially as described.

2. In a device of the class described, in combination, a segment-shaped head-band, a segment-shaped lever pivotally connected by its lower ends to the lower extremities of the head-band, a segment-shaped jaw-band adjustably retained by the lever member, and a chin-plate mounted upon the lower portion of the jaw-band, substantially as described.

3. The combination, in a device of the class described, of a segment-shaped head-band having concaved sides, a segment-shaped lever pivotally connected at its ends to the extremities of the head-band, clasps or carriers upon the straight lengths of the lever and longitudinally movable thereon, a jaw-band of segment shape depending from said clasps by pivotal connection therewith of its extremities, a chin-plate mounted centrally upon the jaw-band, and a lip-plate also connected with said band contiguous to the chin-plate, substantially as described.

4. The combination, in a device of the class described, of a segment-shaped head-band having curved extremities, a segment-shaped lever hinged by its extremities to the ends of the head-band, and adapted when closed to pass over the head-band, teeth on the forward edges of the straight portions of the lever, clasps or carriers upon said serrated portions and adapted to longitudinal travel, spring-pawls to said clasps and normally engaging the serrated edges, a segment-shaped jaw-band pivotally hung from the aforesaid clasps by its extremities, a chin-plate secured to the jaw band at its lower central portion, and a lip-plate located forward of and above the chin-plate, and adjustably mounted upon a curvilinear support having indirect connection with the jaw-band at its central portion, substantially as described, and for the purposes set forth.

573,179. ROTARY ENGINE. JAMES A. GOODNER and JAMES M. CRITTON, Mesca, Colo. Filed June 30, 1896. Serial No. 597,609. (No model.)



Claim.—1. In a rotary engine, the combination of a casing having a steam-chest, a compartment and chamber, and having supply and exhaust passages between the steam-chest and the compartment and chamber, a valve located in the steam-chest and provided with a cavity to establish communication between the exhaust-passages of the compartment and chamber, a piston operating in the chamber, and a rotating valve or abutment fitted in the compartment and provided with a pocket to establish communication between the supply-pipe and chamber during a portion of its revolution and adapted to communicate with the exhaust-passage during a portion of the same revolution and at a time when the supply of live steam to the chamber is cut off, whereby the live steam confined in the said pocket expands and assists materially in driving the piston, substantially as set forth.

2. In a rotary engine, the combination of a piston, and a rotary valve or abutment having a pocket, which latter during a portion of the revolution of the said valve establishes communication between the steam supply and the chamber in which operates the piston, and which pocket during a portion of the same revolution of the valve communicates with a by-passage leading into the aforesaid chamber, whereby the live steam contained in the said pocket serves to drive the engine by its expansive force, substantially as set forth.

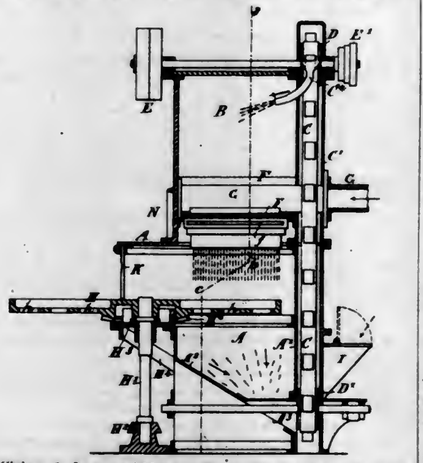
3. In a rotary engine, the combination of a casing having a compartment and chamber in which operate, respectively, a rotating valve or abutment and a piston, the rotating valve having a pocket, and a valve operating in a steam-chest for stopping, starting and reversing the engine, the latter valve being provided with a middle and side cavities, the middle cavity establishing communication between the exhaust-passage and the exhaust-pipe, and a side cavity establishing communication between an exhaust-passage of the said chamber and a similar passage of the compartment, whereby the live steam confined in the pocket of the rotating valve can escape to the aforesaid chamber to assist in driving the piston by expansive force, substantially as described.

4. In a rotary engine, the combination of a casing provided with a steam-chest, a compartment, and a chamber, the compartment and chamber intersecting, supply and exhaust passages between the steam-chest, compartment and chamber, a rotating valve operating in the compartment and having a pocket, a piston operating in the said chamber, and a valve located in the steam-chest for starting, stopping and reversing the engine, and provided with a middle and side cavities and an approximately T-shaped passage communicating with the middle cavity and with the exhaust-passages, substantially as shown and described.

5. In a rotary engine, the combination of a casing having a circular compartment and an annular chamber intersecting and provided with a space midway the sides of the annular chamber, a rotating valve or abutment located in the compartment and having a pocket in its periphery, a revoluble disk operating in the said space and bearing a piston to travel in the annular chamber and sweep through the pocket of the rotating valve, and spring-actuated abutments located in recesses upon opposite sides of the aforesaid space and revoluble disk and adapted to bear against the peripheral surface of the rotating valve, the combined length of the spring-actuated abutments and the thickness of the revoluble disk equaling the thickness of the said rotating valve, substantially as shown for the purpose described.

6. A rotary engine embodying in its organization similar parts or halves having recesses formed in their meeting faces which when the parts are united provide a steam-chest, a compartment, an annular chamber, and exhaust-passages, the latter establishing communication between the steam-chest and annular chamber and between the steam-chest and compartment, a revoluble disk bearing a piston, which latter is adapted to travel in the said chamber, a rotating valve or abutment operating in the compartment and provided with a pocket through which is adapted to sweep the piston, and which pocket is adapted to communicate with the exhaust-passage between the compartment and steam-chest and to establish communication between a supply-pipe and the aforesaid chamber, packing-strips and abutments to bear against the periphery of the rotating valve or abutment to secure a steam-tight joint, supply-pipes between the steam-chest and compartment, means for causing the rotating valve and revoluble disk to operate in unison, and a valve located in the steam-chest for starting, stopping and reversing the engine, and provided with a middle and side cavities, the middle cavity establishing communication between an exhaust-passage and the exhaust-pipe, and an end cavity adapted to connect the other exhaust-passage and the exhaust-passage between the compartment and steam-chest, substantially in the manner and for the purpose set forth.

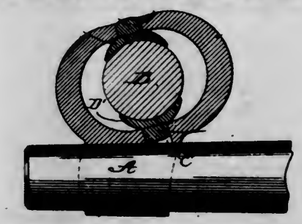
573,180. SAND-BLAST AND APPARATUS EMPLOYED IN OPERATING BY SAND-BLASTS. ALFRED GUTMANN, Ottensen, Germany. Filed Nov. 3, 1894. Serial No. 527,836. (No model.) Patented in England Mar. 21, 1887, No. 4,217; in Belgium Mar. 31, 1887, No. 76,784, and in Austria-Hungary Aug. 24, 1887, No. 11,762 and No. 36,786.



Claim.—1. In a sand-blast apparatus, the combination with a rotating table H, of sand-blast nozzles F' F^3 G' of a width corresponding approximately with the length of the radius of the table, substantially as herein described.

2. In a sand-blast apparatus, the combination with a rotating table H and sand-blast nozzles F' F^3 G', of an upper sand-receiver B above said table and a lower sand-receiver A' A^3 below said table and an elevator C for retransporting the sand from the lower to the upper receiver; substantially as herein described.

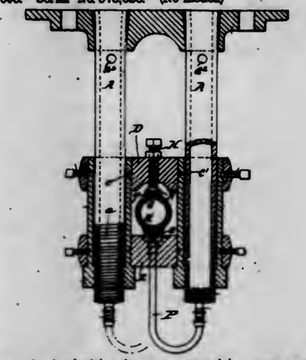
573,181. NECK-YOKE CENTER. WILLIAM E. HAIGHT, New Milford, Ill. Filed Apr. 15, 1896. Serial No. 587,623. (No model.)



Claim.—1. In a neck-yoke center the combination with the pole and neck yoke of a fitting provided with means for engaging the pole and means for engaging the neck-yoke and in which the neck-yoke is pivoted, the axis of said neck-yoke pivots being inclined forwardly so that it is oblique to the axis of the pole or tongue, substantially as described.

2. In a neck-yoke center the combination with the pole and neck-yoke of a fitting provided with a sleeve for engaging the pole and with a ring in which the neck-yoke is pivoted, the axis of said neck-yoke pivots being inclined forwardly so that it is oblique to the axis of the pole or tongue, substantially as described.

573,182. SHAFTING-HANGER. ISAAC N. HAMILTON, Reading, Pa., assignor of one-half to James H. Carpenter, same place. Filed Dec. 23, 1895. Serial No. 573,028. (No model.)



Claim.—1. A shafting-hanger comprising two parallel guides, sleeve-nuts thereon, cross-head carriers mounted on said sleeve-nuts and jointly movable therewith, and shaft-box pivotally mounted between the carriers substantially as set forth.

2. A shafting-hanger comprising two parallel tubular guides adapted to serve as oil-reservoirs, and shaft-box adjustably mounted upon said guides and in communication with said oil-reservoirs substantially as set forth.

3. In a shafting-hanger the combination with fixed guides arranged to serve as oil-reservoirs, of an adjustable shaft-box having a flexible oil connection therewith substantially as set forth.

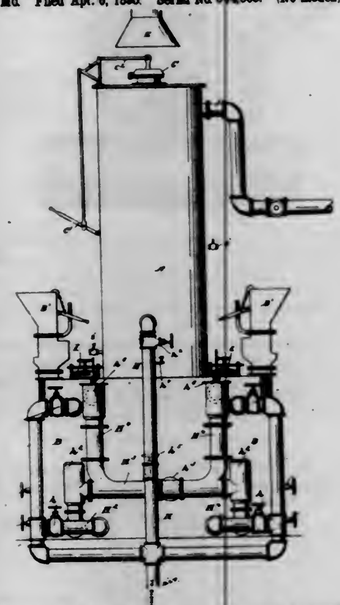
4. In a shafting-hanger the combination with parallel guides screw-threaded at their lower ends, of sleeve-nuts rotatable thereon, and cross-head carriers for the shaft-boxes mounted upon said sleeves and fixedly attachable thereto by means of set-bolts engaging circular grooves in the sleeves, substantially as set forth.

5. In a shafting-hanger the combination with an oil-reservoir of a shaft box having a bottom pocket for absorbent material, a lining metal filling a recess in the box surrounding said pocket, and a connecting-tube between said bottom pocket and the oil-reservoir substantially as set forth.

6. In a shafting-hanger the combination with an oil-reservoir of a shaft-box having an interior bottom recess *m'*, a separately-formed pocket for absorbent material screw-threaded and inserted upwardly into said recess, a metal lining for the box filling the recess around said pocket and engaging the screw-threaded portion of the latter, and a tubular connection between the projecting end of said box and the oil-reservoir substantially as set forth.

7. The combination with the box-carriers of the box formed with a curved saddle having an oblong recess, the cap-piece riding on said saddle with a boss engaging the recess, and the set-bolt, all substantially as set forth.

573,183. GAS-GENERATOR. THOMAS HENNESSY, Grand Forks, N. D., assignor to the American Incandescent Gas Company, Kansas City, Mo. Filed Apr. 6, 1895. Serial No. 544,805. (No model.)



Claim.—1. In a gas generator and carbureter, the combination with the generators having fire-chambers and charging-hoppers therefor, said hoppers having diagonal passages leading to the fire-chambers thereof, of the superheater having an interior checker brick construction, said generators and superheater formed in the same structure, an air-heating appliance supported above the superheater for heating and conveying secondary air thereto, and consisting of an annular hood having communication with an annular chamber located in the top of the superheater, air pipes or passages for conveying primary air to the generators, passages for conveying air and the products of combustion from the generator to the superheater, an oil-pipe communicating with a coil vaporizer or atomizer at the upper end of the superheater, a water-gas pipe leading from the generators to the upper end of the superheater, and a connection between said oil-pipe and water-gas pipe, substantially as set forth.

2. In a gas generator and carbureter, the combination with the generators and superheater, of a valve at the upper end of the superheater, an air-heating hood over the superheater, having communication with a heating-hood in the top of the superheater, a coiled vaporizer or atomizer disposed in the upper end of the superheater, an oil pipe leading to said vaporizer, a water-gas pipe connected with the oil-pipe, a steam-pipe also connected with the oil-pipe, and valves for regulating said pipes, by means of which either steam or water-gas may be employed in carrying the oil into the superhester.

3. In a gas generator and carbureter, the combination with the superheater, of the air-heating appliance at the upper end thereof consisting of a hollow-walled hood supported above the superheater and an annular chamber supported on the superheater and having alternate division-plates, together with the pipe connecting the hood and the said chamber, substantially as described.

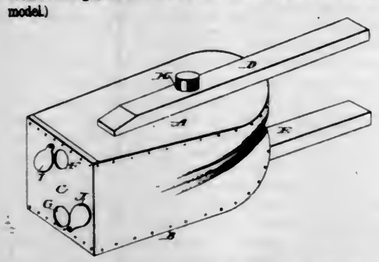
4. In a gas generator and carbureter, the combination of the generators, the intermediate superheater, the tubular grates for the generators, the charging hoppers at the upper end of the generators, having valve-bottoms, the valve at the upper end of the superheater, the atomizing and vaporizing pipes below said valves, the air-heating appliance consisting of the hood and the annular chamber and the appropriate air-conveying passages connecting with the generators, the superheater and the upper air-heating appliance, all arranged substantially as described.

5. In a gas generator and carbureter, the combination with the generators and the superheater located between said generators, of the atomizing coil-pipes at the upper end of the superheater, the oil-pipe connected thereto, the air-conveying pipes or passages connecting with the generators, the pipes or passages for heating and conveying secondary air to the superheater and likewise having suitable valves, the steam-conveying pipes which enter the generators and convey steam thereto, which will pass through the fuel, and the hot air pipe leading from one of the secondary-air pipes to the oil-conveying pipe, all arranged to operate, substantially as described.

6. In a gas generator and carbureter, the combination with the generators and superheater located therebetween, of the gas conveying pipes leading from the top and bottom of the generators to the superheater, the pipes or passages for conveying primary and secondary air to the superheater, the water-heating pipe forming the grates in the generators, whereby the hot water therein may be used to heat adjoining compartments, the air-heating hood located above the superheater, a pipe connecting the hood to an annular chamber supported on the superheater and having alternate division plates, all substantially as set forth.

7. In a gas generator and carbureter, the combination with the generators and superheater, of charging mechanism on said generators, a valve device at the upper end of the superheater, means for operating the apparatus either with an upward or downward draft of air, a heating-hood located above the superheater, a heating-chamber in the top of the superheater, connecting-pipes putting said hood, heating-chamber and superheater in communication; a vaporizer formed in the upper wall of the superheater, and means for conveying the oil thereto under fluid-pressure, all substantially as set forth.

573,184. INSECT-POWDER DUSTER. PETER E. HOFFMAN, Whitesborough, N. Y. Filed Nov. 30, 1895. Serial No. 570,637. (No model.)



Claim.—1. In an insect-powder duster the combination of the two parts A and B, the part A having the transverse opening H and the longitudinal passage F with the bellows-covering and the hinge between the parts substantially as set forth.

2. In an insect-powder duster, the combination of the two bellows parts A and B hinged together, the part A provided with an opening H and the passage F, the part B with the passage G, the covering for the bellows, the handles therefor, and the covers or lids I and J, substantially as set forth.

573,185. FEED-TABLE FOR ROLLING-MILLS. SIGMUND V. HUBER, Pittsburg, Pa. Filed Feb. 29, 1896. Serial No. 581,244. (No model.)

Claim.—1. In a feed-table for rolling-mills, the combination of a plate for receiving an article from the rolls, two or more series of positively-driven rollers for feeding the article to the rolls, an adjustable apron for directing the article from the plate to either series of feed-rollers and means for pushing the article laterally from the plate to the apron, substantially as set forth.

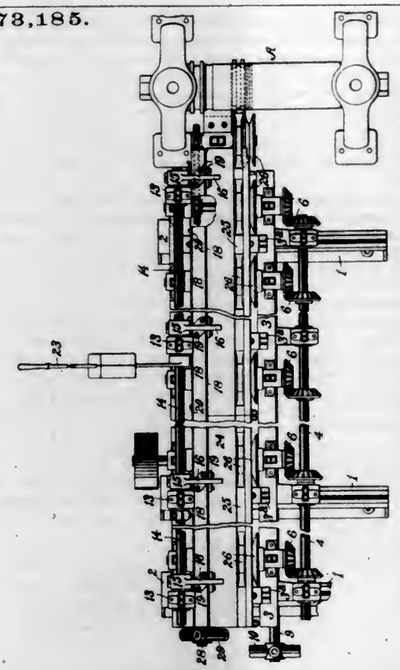
2. In a feed-table for rolling-mills, the combination of a box consisting of a stationary bottom and one or more laterally-movable sides for receiving an article from the rolls, positively-driven rollers for feeding the article to the rolls, and an apron for receiving the article from the box and directing it to the feed-rollers, substantially as set forth.

3. In a feed-table for rolling mills, the combination of a box for receiving the article from the rolls, positively-driven rollers for feeding the articles to the rolls, means adapted to transfer the article from the box to the rollers and permit the axial rotation of the article during such transfer, and means for effecting the lateral adjustment of the box and feed-rollers, substantially as set forth.

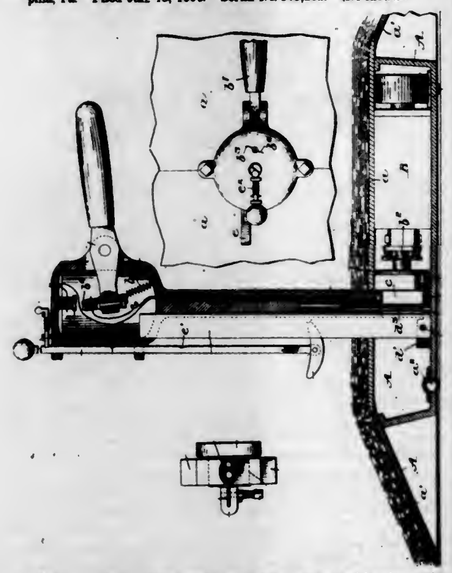
4. In a feed-table for rolling-mills, the combination of a box for receiving an article from the rolls, two or more series of positively-driven rollers for feeding the article to the rolls, an apron for directing the article from the box to the rollers, means for shifting the box, and means for adjusting the box and apron with reference to the feed-rollers, substantially as set forth.

5. In a feed-table for rolling-mills, the combination of a box for receiving an article from the rolls, means for shifting one side thereof toward and from the other side, means for moving three sides of the box transversely of the fourth side, positively-driven feed-rollers for feeding the article to the rolls, and an apron for directing the article from the box to the feed-rollers, substantially as set forth.

573,185.



573,186. CLOTH-CUTTING MACHINE. GEORGE IHROP, Philadelphia, Pa. Filed Jan. 13, 1896. Serial No. 575,202. (No model.)



Claim.—1. In a cloth-cutting machine, the combination, of a basal casing, an electromotor contained therein, a vertically-reciprocative knife extending into said casing, operative connections between the lower confined end of said knife and the motor, a guide for the knife, a contact making and breaking device, and electrical connections between said device and the motor, substantially as described.

2. In a cloth-cutting machine, the combination, of a basal casing, an electromotor contained therein, a crank connected with the shaft of said motor, a bed-block in the casing, a cross-head connected with said crank and guided in the bed-block, a vertically-reciprocative knife connected at its lower end with the cross-head, a standard to which the knife is fitted, a contact making and breaking device, and electrical connections between said device and the motor, substantially as described.

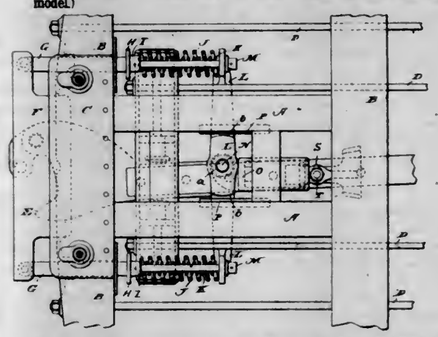
3. In a cloth-cutting machine, the combination, of a basal casing, an electromotor therein, a standard rising from the casing provided with a hollow head, a vertically-reciprocative knife fitted to the standard, operative connections between said knife and motor, a hand-lever extending into said head, and electric connections between said lever and the motor, substantially as described.

4. In a cloth-cutting machine, the combination of a basal casing, an electromotor therein, a standard rising from the casing provided with a hollow head, a vertically-reciprocative knife fitted to and guided in said standard and head, operative connections between said knife and motor, a hand-lever extending into said head, a contact-piece on the cap of said head, a coacting contact-piece on the inner arm of the hand-lever, and electrical connections between said contact-pieces and the motor, substantially as described.

5. In a cloth-cutting machine, the combination of a basal casing, an electromotor therein, a crank on the armature-shaft of the motor, a bed-block in the casing, a cross-head connected with the said crank and guided in the bed-block, a vertically-reciprocative knife connected with the cross-head, a standard provided with a hollow head, a hand-lever extending into said head, and electric connections between said lever and the motor, substantially as described.

6. In a cloth-cutting machine, the combination of a base, a motor therein, a vertically-reciprocative knife, a standard supporting and guiding said knife, operative connections between the knife and motor, a presser-foot, a guide-rod therefor, provided on its inner edge at intervals with notches, and a spring-actuated bolt adapted to engage the successive notches as the rod is drawn up, substantially as described.

573,187. BUFFER-PLATFORM FOR RAILROAD-CARS. THOMAS L. MCKEEN, New York, N. Y., assignor to the Trojan Car Coupler Company, Troy, N. Y. Filed Sept. 14, 1896. Serial No. 605,846. (No model.)



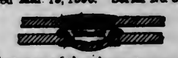
Claim.—1. In combination with the frame of the car, draw-bar E and main platform C, the buffer-platform F, the side stems G formed with collars H and projections I, the coil-springs Q, R, nuts M, equalizer-bar L, follower-shoe O constructed as described and pivoted to the equalizer-bar, springs Q and R contained within the shoe, and follower-stop S pivotally connected to the draw-bar, substantially as and for the purpose set forth.

2. The equalizer-bar formed with the projections *b*, *b*, in combination with the plates P secured to the beams A and provided with lips or projections *c*, whereby the lateral and forward movements of the equalizer-bar are checked, substantially as hereinbefore set forth.

3. In combination with the equalizer-bar L, shoe O and draw-bar E, the stop S pivoted to the draw-bar, extended laterally at its rear end and formed with vertical webs *d*, substantially as and for the purpose set forth.

4. The follower shoe O formed with the pintle N for connection with the equalizer bar, and with an interior cylindrical projection P', substantially as and for the purpose set forth.

573,188. FASTENER FOR GLOVES. WILLIAM S. RICHARDSON, Boston, Mass. Filed Mar. 19, 1896. Serial No. 583,882. (No model.)



Claim.—1. In a fastener of the character specified, a socket member having the entrance to the socket and the ball-grasping device formed of wire as specified, and provided with offset ears adapted to

secure it to a holder in a manner to locate the said entrance and grasping device in the opening of said holder or upon the outer side thereof, as and for the purposes specified.

2. The combination of the wire socket-entrance and ball-gripping device having ears a^3, a^3 arranged in relation thereto as specified, the holder B with which the said wire section is combined as set forth, the said holder having an inclined central section and flange b^3, as and for the purposes specified.

3. In combination with the holder B having the conical section or anvil b^2 and the flange b^3 arranged in relation to the anvil or conical section as specified, the wire socket-piece attached to the holder B by ears as indicated, and a driving-fastening to engage said holder, as and for the purposes described.

573,189. CHUCK. ERNEST H. VOGEL, New York, N. Y. Filed Feb. 11, 1896. Serial No. 578,829. (No model.)



Claim.—1. The combination of a tool-chuck having clamping-jaws, means for operating said jaws to cause a preliminary clamping of a tool, and means for setting the jaws finally and simultaneously rigidly locking the parts of the chuck, said means being operated by the means which effect the preliminary clamping.

2. The combination of a tool-chuck having clamping-jaws, means for primarily setting said jaws, and automatic means for finally setting the jaws and simultaneously locking the parts of the chuck to clamp a tool in fixed position.

3. The combination of a chuck, having clamping-jaws, a hand-ring, mechanism actuated by said hand-ring for setting the jaws primarily, and mechanism for finally setting said jaws and simultaneously locking the parts also actuated by said hand-ring, said ring being turned in the same direction for both the preliminary and final setting of the jaws.

4. In a tool-chuck, the combination of a center piece, jaws guided in said center piece and provided with lugs, an exterior conical sleeve having interior screw-threads adapted to engage the lugs on said jaws, an axially-turning handle-ring adapted to engage said sleeve, and means for locking said sleeve after the final adjustment of the jaws.

5. In a tool-chuck, the combination of a center piece, jaws guided in said center piece and provided with lugs, an exterior conical sleeve having interior screw-threads adapted to engage the lugs on said jaws, an axially-turning handle-ring adapted to engage said sleeve, and means disposed between said handle-ring, sleeve and center piece for locking the sleeve in position.

6. In a tool-chuck, the combination of a center piece, jaws guided in said center piece and provided with lugs, a sleeve having interior screw-threads adapted to engage said lugs, an axially-turning handle-ring adapted to engage said sleeve, and a pawl-and-ratchet mechanism disposed between said handle-ring, sleeve and center piece for locking said sleeve after the final setting of the jaws.

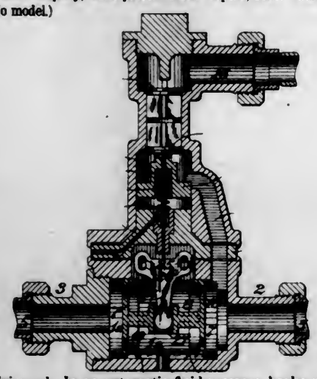
7. The combination of a center piece, having a conical front end, and a stationary collar at the rear end, jaws guided in inclined grooves of said center piece and provided with lugs at the rear ends, a conical sleeve having a cylindrical rear portion and an internal grooved thread engaging said lugs, a handle ring extending around said rear portion, means for connecting the handle-ring and rear portion, spring-cushioned blocks guided in recesses of the center piece and a pawl-and-ratchet mechanism interposed between the rear portion and the center piece and adapted to lock the sleeve when the jaws are finally set to the tool to be clamped, substantially as set forth.

8. The combination of a center piece having a grooved conical front end and a stationary collar at the rear end, jaws guided in the grooves of said center piece and provided with lugs at their rear ends, a conical sleeve having a cylindrical rear portion and an internal grooved thread in the conical portion engaging the lugs on the jaws, a handle-ring extending around said rear portion, spring-cushioned blocks located in recesses of the center piece and actiug on the sleeve and handle-ring, a lug at the interior of the handle-ring engaging a recess in the rear portion of the sleeve, inclined cam-faces at the rear end of said rear portion and front of the handle ring, and antifriction-balls interposed between said cam faces, substantially as set forth.

9. The combination of a center piece having a grooved conical front end and a stationary guide-collar at the rear end, jaws guided in inclined grooves of said center piece and provided with lugs at their rear ends, a conical sleeve having a cylindrical rear portion and an internal grooved thread engaging said lugs, a handle-ring extending around said rear portion, means for connecting the handle-ring and rear portion, spring-cushioned blocks guided in recesses of the center piece and engaging said sleeve and handle-ring, a spring-pawl located in the rear portion of the sleeve, and adapted to engage ratchet-teeth in the circumference of the center piece and spring-cushioned blocks, and means by which said spring-pawl is actuated by the handle-ring so as to lock the sleeve to the center piece when the jaws are set into their final clamping position, substantially as set forth.

10. The combination of a center piece having a grooved conical front end and a stationary guide-collar at the rear end, jaws guided in inclined grooves of said center piece, a conical sleeve having a cylindrical rear portion, means for clamping the jaws to the tool to be held, a handle-ring extending around the cylindrical rear portion of the sleeve, means for connecting the handle-ring and rear portion, spring-cushioned blocks located in recesses of the center piece and engaging the rear portion of the sleeve and the handle-ring respectively, cam-faces on the adjacent ends of said rear portion and handle-ring, antifriction-balls interposed between said cam-faces, and a pawl-and-ratchet mechanism interposed between the rear portion of the sleeve and the center piece and actuated by the handle-ring, so as to produce the locking of the sleeve and jaws when finally clamped to the tool to be held, substantially as set forth.

573,190. FLUID-PRESSURE AUTOMATIC BRAKE. GEORGE WESTINGHOUSE, Jr., Pittsburg, Pa., assignor to the Westinghouse Air Brake Company, same place. Filed Sept. 3, 1895. Serial No. 561,283. (No model.)



Claim.—1. In an automatic fluid-pressure brake apparatus, the combination, substantially as set forth, of a train-pipe release-valve, a movable member fitted in the line of traverse of fluid-pressure between a train-pipe and a triple-valve device, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said movable member, and mechanism interposed between the movable member and the release-valve, for imparting opening movement to the latter in and by the movement of the former.

2. In an automatic fluid-pressure brake apparatus, the combination, substantially as set forth, of a train-pipe release-valve, a movable member fitted in the line of traverse of fluid-pressure between a train-pipe and a triple-valve device, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said movable member, a bearing upon which said movable member is fitted to transverse, in and by the action of a rapid and material reduction of train-pipe pressure, and mechanism interposed between the movable member and the release valve, for imparting opening movement to the latter in and by the movement of the former.

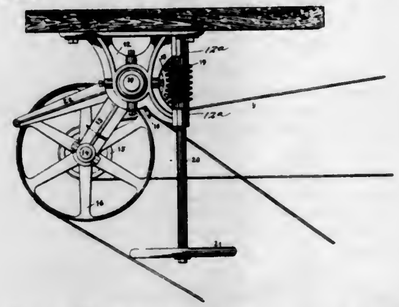
3. In an automatic fluid pressure brake apparatus, the combination, substantially as set forth, of a train-pipe release-valve, a casing having connections leading to the train-pipe and to a triple-valve device, respectively, a partition fitted between the connections of said casing, and movable therein by variation of train pipe pressure, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said partition, and mechanism, actuated by said partition, for effecting opening movement of the release-valve.

4. In an automatic fluid-pressure brake apparatus, the combination, substantially as set forth, of a train-pipe release-valve, a movable member fitted in the line of traverse of fluid-pressure between a train-pipe and a triple-valve device, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said movable member, a bearing upon which said movable member is fitted to traverse in and by the action of a rapid and material reduction of train-pipe pressure, a stop which prevents movement, in one direction, of said movable member from normal position, and mechanism interposed between the movable member and the release valve, for imparting opening movement to the latter in and by the movement of the former.

5. In an automatic fluid-pressure brake apparatus, the combination, substantially as set forth, of a casing having connections leading to the train-pipe and to a triple-valve device, respectively, a movable member fitted in said casing between the connections thereof, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said movable member, a train pipe release-valve controlling communication between the casing and a discharge-passage, mechanism interposed between the movable member and the release-valve, for imparting opening movement to the latter in and by the movement of the former, and a check-valve controlling communication between the train-pipe release-valve and the discharge passage.

6. In an automatic fluid pressure brake apparatus, the combination, substantially as set forth, of a casing having connections leading to the train pipe and to a triple-valve device, respectively, a movable member fitted in said casing, between the connections thereof, a continuously open passage, of limited transverse area relatively to the train-pipe, past or through said movable member, a train-pipe release-valve controlling communication between the casing and a discharge-passage, a piston normally subject to equal degrees of pressure on its opposite sides, and connected to said release-valve, a valve controlling a port through which variation of the relative degree of pressure on the opposite sides of said piston may be effected, and means for actuating said valve in and by the movement of said movable member.

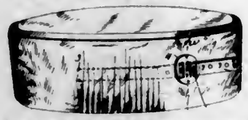
573,191. COUNTER-SHAFT AND BELT-TIGHTENER. EUGENE C. WESTON, Gallatin, Mo. Filed Feb. 10, 1896. Serial No. 578,772. (No model.)



Claim.—1. The combination of bearings, a rock-shaft mounted in the bearings, arms fixed to the rock-shaft, a counter-shaft revolubly mounted in the arms, a pulley carried by the counter-shaft, a belt passing around the pulley, a toothed sector fixed to the rock-shaft, a worm meshing with the toothed sector, and bearings for the worm, the bearings being supported by one of the bearings for the rock-shaft, substantially as described.

2. The combination of two hanger-bearings, one of which is formed with two supplemental bearings, the line of which is at right angles to the line of the main bearing, a rock-shaft journaled in the hanger-bearings, arms fixed to the rock-shaft, a counter-shaft carried by the arms, a pulley carried by the counter-shaft, a belt passing around the pulley, a toothed sector fixed to the rock-shaft, and a worm journaled in the supplemental bearings of one of the hanger-bearings and meshing with the toothed sector, substantially as described.

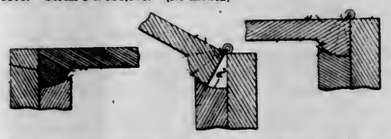
573,192. HAT OR CAP. WILL J. WORDEN, Detroit, Mich., assignor to the W. & W. Manufacturing Company, same place. Filed July 3, 1896. Serial No. 598,007. (No model.)



Claim.—1. A cap or hat having a strap attached at one end to the side of its crown and extending partly around the same, and also having a buckle connected to the side of its crown and provided with loops receiving the strap and an integral resilient tongue engaging and adapted to adjustably hold the strap, substantially as and for the purpose set forth.

2. A cap or hat having a strap attached at one end to the side of its crown and extending partly around the same and provided at intervals in its length with indentations, and also having a buckle connected to the side of its crown and provided with a resilient tongue having a teat or projection adapted to take into the shallow indentations of the strap and thereby adjustably hold the said strap, substantially as and for the purpose set forth.

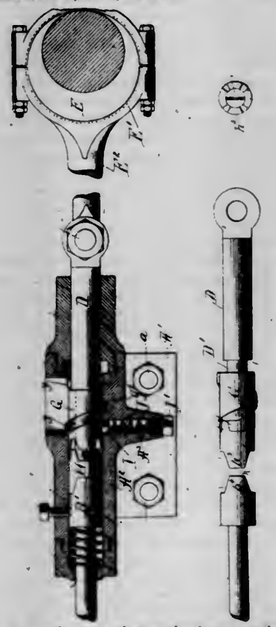
573,193. WEATHER-STRIP. HARRY W. ALBRIGHT, York, Pa., assignor of one-half to James C. Spyker, same place. Filed Feb. 12, 1895. Serial No. 538,120. (No model.)



Claim.—1. The combination, in a weather-strip, of a door-jamb having a curved recess therein, and a tongue on the door, curved eccentric to the recess in the door-jamb and adapted to engage therewith, for the purpose specified.

2. The combination, in a weather-strip, of a door having a curved tongue, the arc whereof is struck from the center of the hinge, and a strip on the door-jamb, having a curved recess eccentric to the curve of the tongue, the arcs of both curves and the surface of the door-jamb intersecting at a common point, substantially as and for the purpose specified.

573,194. VALVE-ACTUATING MECHANISM. GEORGE ALDERSON, La Salle, Ill., assignor to Charles Brunner, Peru, Ill. Filed May 4, 1896. Serial No. 590,124. (No model.)



Claim.—1. A valve actuating mechanism comprising a reciprocatory actuating member, a tappet member rotatively mounted and reciprocating with said actuating member, an engaging part upon said tappet member adapted to be brought into and out of register with a corresponding part connected with the valve by rotation of the tappet member, and means operated by the movement of the actuating member for rotating said tappet member during the throw of the actuating member, consisting of a collar rotatively mounted on said actuating member and adapted to engage the tappet member.

2. A valve-actuating mechanism, comprising a reciprocatory actuating member, a tappet-head rotatively mounted upon said actuating member, an engaging part upon said tappet head adapted to be brought into and out of register with a corresponding part connected with the valve, and means for rotating said tappet-head during the

throw of the actuating member, comprising spiral screw-threaded connections between a rotative part reciprocating with the actuating member and a fixed part of the bearing.

3. A valve-actuating mechanism, comprising a bearing, a reciprocatory actuating member mounted therein, a tappet-head rotatively mounted on said actuating member, an engaging part on said tappet-head adapted to be brought into and out of register with a corresponding part connected with the valve, and means for rotating said tappet-head during the throw of the actuating member, comprising a sleeve-section loosely mounted upon the actuating member and having screw threaded engagement with a fixed part of the bearing, and means for intermittently locking said tappet-head and the sleeve-section so as to rotate together.

4. A valve-actuating mechanism, comprising a bearing, a reciprocatory actuating member mounted therein, a tappet-head rotatively mounted upon said actuating member, an engaging part upon said tappet head adapted to be brought into and out of register with a corresponding part connected with the valve-actuating mechanism, and means for rotating said tappet-head during the throw of the actuating member, comprising a sleeve-section loosely mounted upon the actuating member and having screw-threaded engagement with the bearing, said collar-section being movably mounted upon the reciprocatory actuating member so as to have a limited endwise movement thereon, and the proximate ends of the collar and tappet-head being provided with interlocking parts, whereby the tappet will be rotated only during the retractive movement of the actuating member.

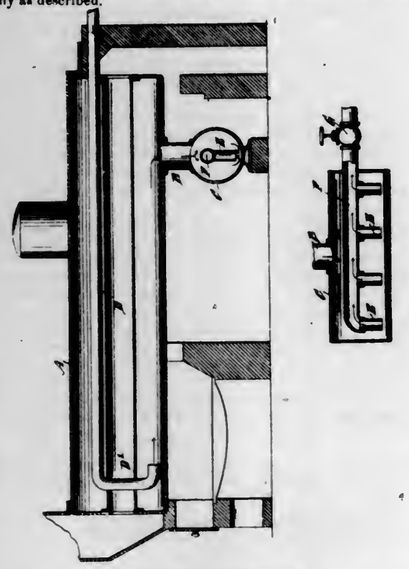
5. A valve-actuating mechanism, comprising a bearing, a reciprocatory actuating member mounted therein, a tappet-head rotatively mounted upon said actuating member, an engaging part upon said tappet head adapted to be brought into and out of register with a corresponding part connected with the valve-actuating mechanism, and means for rotating said tappet-head during the throw of the actuating member, comprising a sleeve-section loosely mounted upon the actuating member and having screw-threaded engagement with the bearing, said collar-section being movably mounted upon the reciprocatory actuating member so as to have a limited endwise movement thereon, and the proximate ends of the collar and tappet-head being provided with interlocking parts, whereby the tappet will be rotated only during the retractive movement of the actuating member, and the pitch of the screw-thread on the collar being such, with relation to the throw of the actuating member that the collar will be rotated a fractional part of a revolution upon each reciprocation.

6. A valve-actuating mechanism, comprising a bearing, a reciprocatory actuating member mounted therein, a tappet-head rotatively mounted on said actuating member, an engaging part on said tappet-head adapted to be brought into and out of register with a corresponding part connected with the valve, and means for rotating said tappet-head during the throw of the actuating member, comprising a sleeve-section loosely mounted upon the actuating member and having screw threaded engagement with a fixed part of the bearing, a friction device arranged to act upon said collar and prevent it from movement under the influence of momentum or jar of the machine, and means for intermittently locking said tappet-head and the sleeve-section so as to rotate together.

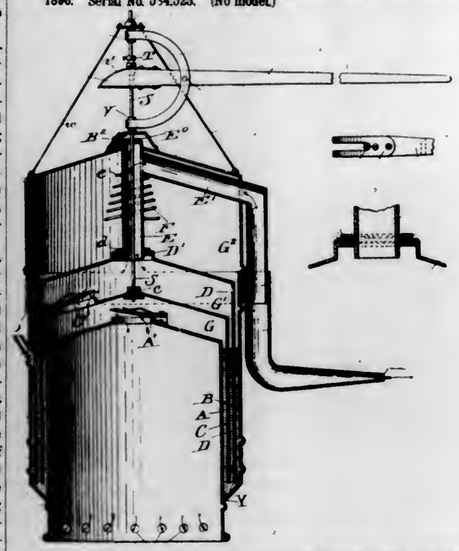
7. A valve-actuating mechanism, comprising a tubular bearing, a reciprocatory actuating rod mounted therein, a tappet-head rotatively mounted upon the end of said actuating-rod and provided at its forward end with alternate teeth and intervening recesses, a valve-rod arranged to extend within the opposite end of the tubular bearing and provided at its end with a non rotative tappet-head, provided with corresponding teeth and intervening spaces adapted to intermesh with those of the tappet-head upon the actuating-rod, and means for rotating the tappet-head carried by the actuating-rod so as to bring it alternately into and out of position to register with the tappet-head of the valve-rod, comprising a sleeve-section loosely mounted upon the actuating-rod and having screw-threaded engagement with a part of the bearing, said collar being movably mounted upon the actuating-rod so as to have a limited endwise movement thereon, and the proximate ends of the collar and tappet-head being provided with interlocking parts, whereby the tappet-head will be rotated only during the retractive movement of the actuating-rod, a spring acting on the valve-rod so as to hold it normally projected toward the actuating-rod, and operative connections between the actuating-rod and the crank-shaft of the engine, substantially as described.

573,195. BOILER. LEWIS M. BARLOW, Donaldsonville, La. Filed Apr. 16, 1896. Serial No. 587,855. (No model.)

Claim.—A boiler having an opening near one end, a mud-drum located beneath and communicating with the boiler through such opening, a pipe extending longitudinally in the mud drum and passing out one end thereof, the pipe having a series of nipples communicating with it and extending downwardly to the lower portion of the mud drum, the nipples also communicating with the mud-drum, and a feed-pipe extending into the boiler and having its discharge-orifice located adjacent to the end of the boiler which end is opposite the mud drum, such orifice discharging toward the mud-drum, substantially as described.



573,196. BLOWER. SAMUEL BARROW, Kempton, Ind., assignor to Frank B. Hart and John G. Brown, Lafayette, Ind. Filed Mar. 23, 1896. Serial No. 584,523. (No model.)



Claim.—1. In a blower of the character described, the combination with an inner and outer cylinder having an annular chamber between the two, partially filled with sealing fluid, the inner cylinder having a closed top with an aperture therein, and openings near the bottom thereof, of a valve opening upward and normally closing said aperture, a vertically-movable cylinder open at the bottom and projecting into said sealing-chamber, and provided with an aperture in the top thereof, with an upwardly-opening valve covering said aperture, means for reciprocating said cylinder, a second vertically-movable cylinder inclosing this vertically-movable cylinder and projecting down into said sealing-chamber, with an outlet from the latter cylinder for the escape of air, and a coil spring placed above said second vertically-movable cylinder and adapted to be engaged thereby and bear down on the same when the said cylinder reaches a predetermined height, substantially as described.

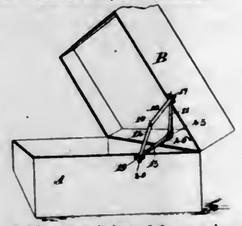
2. In a blower of the character described, the combination with an inner and outer cylinder having an annular chamber between the two partly filled with sealing fluid, the inner cylinder having a closed top with an aperture therethrough and openings near the bottom thereof, of a valve opening upward and normally closing the aperture in the top of said inner cylinder, a vertically-movable cylinder open at the bottom and projecting into said sealing-chamber, and provided with an aperture in the top thereof, with an upwardly-opening valve covering said aperture, means for reciprocating said cylinder, and a second vertically-movable cylinder inclosing the two inner cylinders and projecting down into said sealing-chamber, and adapted to be lifted by the pressure of air therein contained, with an outlet from the latter cylinder for the escape of air, substantially as described.

3. In a blower of the character described, the combination with an inner and outer cylinder having an annular chamber between the two, partly filled with sealing fluid, the inner cylinder having a closed top with an aperture therethrough, and openings near the bottom thereof, of a flap-valve opening upward and normally closing the aperture in the top of said inner cylinder, a vertically-movable cylinder open at the bottom and projecting into said sealing chamber, and provided with an aperture in the top thereof with an upwardly-opening flap valve covering said aperture, and a second cylinder inclosing this vertically movable cylinder and projecting down into said sealing-chamber, with an opening in the top thereof, a twyer-pipe projecting down through said opening, and a packing ring surrounding said pipe, substantially as described.

4. In a blower of the character described, the combination with an inner and outer cylinder having an annular chamber between the two, partly filled with sealing fluid, the inner cylinder having a closed top with an aperture therethrough, and openings near the bottom thereof, of a flap-valve opening upward and normally closing the aperture in the top of said inner cylinder, a vertically-movable cylinder open at the bottom and projecting into said sealing-chamber, and provided with an aperture in the top thereof with an upwardly opening flap-valve covering said aperture, and a second cylinder inclosing this vertically-movable cylinder and projecting down into said sealing-chamber, with an opening in the top thereof, a twyer-pipe projectiug down through said opening, a packing-ring surrounding said pipe, and a coil-spring also surrounding said pipe and adapted to be engaged by said cylinder as it rises due to the pressure of air therebeneath, substantially as described.

5. In a blower of the character described, the combination with a vertically-movable cylinder and a reciprocating rod connected thereto, of a curved yoke revolubly mounted on said rod with upper and lower bearings for said yoke, a set-collar secured to said rod, and a hand-lever pivoted in said yoke and adapted to engage said set-collar, substantially as described.

573,197. HINGE. LOUIS BARTELMES, Brooklyn, N. Y. Filed June 24, 1896. Serial No. 596,709. (No model.)

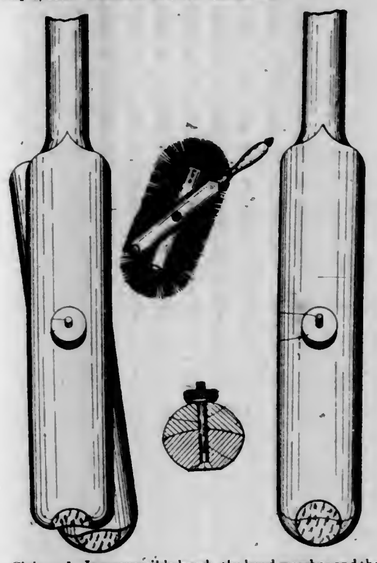


Claim.—1. A hinge consisting of front and rear links pivotally connected at their inner ends and at their outer ends, and a spring coiled around a support projected from the connection between the inner ends of the rear links, the ends of the spring being carried loosely through keepers at the outer end pivots of the said links, as and for the purpose specified.

2. In a hinge, the combination, with a pair of front and a pair of rear links, each pair of links being pivotally connected at their inner ends, and the links of the front and of the rear pairs being pivotally united at their outer ends; the outer pivot-pins having eyes at their outer ends, of attaching-plates loosely mounted upon the inner ends of the outer pivot-pins, a sleeve loosely mounted upon the connecting pivot-pin of the rear links, and a spring coiled around the said sleeve, the ends of which spring are carried through the eyes belonging to the end pivot-pins of the said links, substantially as and for the purpose specified.

3. A hinge, having two toggle-links, each composed of two pivotally-connected members, the adjacent ends of the toggle-links being pivoted to each other, and a coiled spring carried by one link and having its terminals respectively connected to the outer portions of the members of said link, substantially as described.

573,198. BRUSH. BYRON S. BAXTER, Providence, R. I. Filed July 2, 1895. Serial No. 554,719. (No model.)



Claim.—1. In a reversible brush, the head member and the handle member, one of said members being convexed from one side edge to the other, and the other of said members being concaved from one side edge to the other, in combination with a suitable pivot-bolt of sufficient length to permit the members to be reversed without detachment, extending through the handle member and provided exterior thereto with a nut adapted to be operated to seat one of the said members in the other member, as set forth.

2. A reversible brush, comprising the brush-head member convexed throughout its length from one side edge to the other, the brush-handle member concaved to conform with the said convex surface of the head, the pivot-bolt of sufficient length to permit the members to be reversed without detachment extending through both brush members, and a suitable thumb-nut, the latter being operated to seat the head member, as set forth.

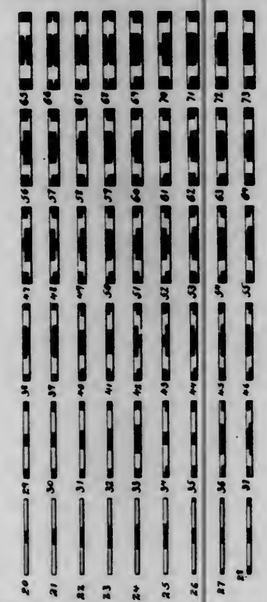
573,199. MATRICES AND APPARATUS FOR DISTRIBUTING SAME. WILLIAM BERRI, Brooklyn, N. Y. Filed Feb. 7, 1895. Serial No. 537,671. (No model.)

Claim.—1. A series of matrices whereof each matrix is equipped with duplicate sets of shoulders for effecting the distribution of the matrices, and the corresponding shoulders of the one matrix have a different relative position, or a different thickness in a direction perpendicular to the plane of the matrix, or a different width in a direction parallel to the plane of the matrix, from the position, thickness, or width, of the corresponding shoulders of all the other matrices, substantially as described.

2. In apparatus for distributing matrices, and in combination with matrices having duplicate sets of shoulders, two sets of distributing-rails, whereof each rail is adapted to support one of the shoulders of a matrix, and said rails being provided with slots so that each transverse set of slots forms a group whereof the position of a slot or its thickness parallel to the rails or its width perpendicular to the rails differs from the position or the thickness or the width of the corresponding slot in every other group of slots, substantially as described.

3. In apparatus for distributing matrices as described the combination of two sets of distributing-rails, whereof each rail is adapted to support one of the shoulders of a matrix, said rails being provided with slots so that each transverse set of slots forms a group whereof the position of a slot or its thickness parallel to the rails or its width perpendicular to the rails differs from the position or thickness or width of the corresponding slot of every other group, drive-chains parallel to the rails and fingers on the chains adapted to propel the matrices along the rails, substantially as described.

4. In machines for distributing matrices, the combination with a plurality of rails provided with distributing-slots, of an inclined rail rising from said first-named rails, and alternating separating and releasing levers adjacent to said inclined rail and adapted to separate and release the matrices at said rail one by one, substantially as described.



5. The combination with the distributing-rails B C C', of an inclined rail rising from the end of the distributing-rails, alternating-motion levers W W' cooperating to arrest, release and separate matrices, and rotating cams adapted to reciprocate said levers in opposite directions, substantially as described.

6. The combination in a machine for distributing matrices of the rail B^2 and the levers W W' cooperating to arrest, release and separate matrices descending on the rails B^2, a cam X provided with a projection for lifting the lever W and also with a projection for lifting the lever W' as the lever W is descending and a plate Z operatively connected with said lever W', substantially as described.

7. In machines for distributing matrices, the combination with pulleys of drive-chains the links of which are alternately double and single, a lateral finger on each part of the double links, and two such fingers on each single link, substantially as described.

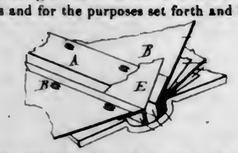
573,200. BOTTLE. ALONZO P. ELIVEN, Brooklyn, N. Y. Filed Nov. 12, 1895. Serial No. 568,690. (No model.)



Claim.—A bottle, of the character described, the neck of which is provided with an exterior annular enlargement or shoulder *b* and an interior annular shoulder and above which is formed an annular groove *d'*, a glass stopper adapted to close the lower end of the neck of the bottle, an upper plug provided with an outwardly-directed annular groove adapted to register with the groove in the neck of the bottle and a ring K adapted to engage said groove and retain the upper plug in position, substantially as and for the purpose set forth.

573,201. BINDER. JACOB H. BRUNNER, Peoria, Ill., assignor of one-half to Ariando H. Anderson, same place. Filed Apr. 23, 1896. Serial No. 588,749. (No model.)

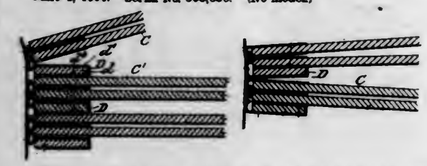
Claim.—1. A binder for books and music consisting of a stub fastened within a book and having a fly portion forming a part of said stub, a series of openings or slots cut in said fly portion, and a leaf having lips designed to enter the slots and interlock therewith substantially as and for the purposes set forth and described.



2. A binder consisting of a stub having a flexible hinge and a fly portion, a series of openings in said fly portion, a sheet having a series of lips formed therewith to correspond with and interlock with said openings in the said stub or fly portion substantially as set forth and for the purposes described.

3. In a binder consisting of a stub fastened within a book, a series of openings made in said stub, a fly portion forming part of said stub and containing said openings, a page for binding having a series of lips formed therewith to engage the said openings substantially as set forth and described.

573,202. BOOK. WILLIAM BUCKRATH, New York, N. Y. Filed June 1, 1896. Serial No. 593,838. (No model.)



Claim.—1. In a book, a double leaf consisting of two sheets and an intermediate flexible hinge portion of textile material secured to the two sheets, in combination with a stub connected to one of the sheets by a flexible hinge-strip of textile material.

2. In a book, a double leaf consisting of two sheets of cardboard, and an intermediate flexible hinge portion of textile material secured to the two sheets, in combination with a stub of cardboard connected to one of the sheets by a textile hinge strip, the said hinge strip being folded and pasted around and covering the front edge of the stub, substantially as set forth.

3. In a book, a series of sheets arranged in pairs, each pair connected by a flexible strip, in combination with a series of stubs, one stub arranged between each pair of sheets and the next pair, the stubs being connected to every alternate sheet by hinge-strips of textile material and bodily fastened to the remaining sheets of the series, substantially as set forth.

4. In a book a series of double leaves connected together by flexible strips in combination with spreading stubs one for each double leaf, each stub being attached to one leaf and connected to the other leaf of the same double leaf by a flexible strip, substantially as set forth.

5. In a book a series of sheets arranged in pairs each pair connected by a flexible strip, in combination with a series of stubs, one stub arranged between each pair of sheets and the next pair the stubs being connected to every alternate sheet by hinge strips of textile material and bodily fastened to the remaining sheets of the series, the sheets and stubs being all attached to a flexible strip as, E, substantially as set forth.

573,203. COUPLING FOR ROLLS. JOHN F. BUDKE, Cannonsburg, Pa. Filed Aug 19, 1895. Serial No. 559,706. (No model.)

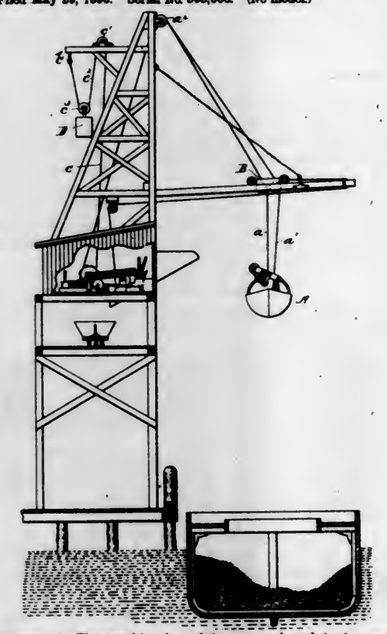


Claim.—1. A spindle for coupling members of a train of rolls, having one or more longitudinal recesses, extending from each of its ends toward its middle, the central planes of the recesses of one end being, respectively, radially angular to those of the recesses of the other end, substantially as set forth.

2. A roll for use in a train for rolling metal, having one or more longitudinal recesses on each of its end portions or wabblers, the central planes of the recesses of one of the wabblers being, respectively, radially angular to those of the recesses of the other wabbler, substantially as set forth.

3. The combination, in a train of rolls for rolling metal, of a spindle having one or more longitudinal recesses extending from each of its ends toward its middle, the central planes of the recesses of one end being, respectively, radially angular to those of the recesses at the other end, rolls having their wabblers recessed correspondingly with the ends of the spindle, and coupling-boxes having internal projections adapted to engage the recesses of the spindle and wabblers, substantially as set forth.

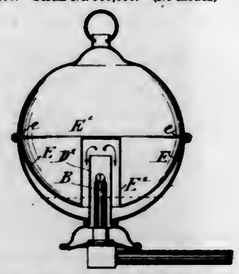
573,204. STEAM-SHOVEL. JEREMIAH CAMPBELL, Chelsea, Mass. Filed May 29, 1896. Serial No. 593,606. (No model.)



Claim.—1. The combination of the steam-shovel A, the opening and closing drum C', the hoisting-drum C, the opening and closing rope *a'* extending to the drum C', the hoisting-rope *a* extending about the drum C over the pulley *c'* to the point *c*, and the weight D carried upon said rope *c* between said pulley *c'* and the said point of attachment, as and for the purposes described.

2. The combination of a steam-shovel adapted to be raised and lowered, a trolley for moving it horizontally, and a balancing-weight D connected with the shovel to counterbalance it in part.

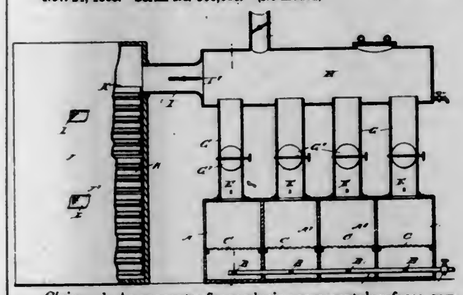
573,205. GAS-HEATER. JOHN W. CARTER, Brooklyn, N. Y. Filed June 18, 1896. Serial No. 596,963. (No model.)



Claim.—1. A gas heating-stove consisting of an outer cup-shaped shell provided with an ascending flue extending upward from its bottom and open at both ends and adapted to receive a gas-pipe, an inner cup-shaped shell disposed in said outer shell and united therewith at its upper edge, said inner shell being provided with a descending flue closed at its upper end and surrounding said ascending flue forming a mixing-space between them, a shallow mixing-chamber being formed at the lower part of the stove between said shells into which chamber said descending flue opens, said outer shell being provided with jet-openings.

2. A gas heating-stove consisting of an outer cup-shaped shell provided with an ascending flue extending upward from its bottom and open at both ends, and adapted to receive a gas-pipe, an inner cup shaped shell disposed in said outer shell and united therewith at its upper edge, said inner shell being provided with a descending flue closed at its upper end and surrounding said ascending flue forming a mixing-space between them, a shallow mixing chamber being formed at the lower part of the stove between said shells into which chamber said descending flue opens, said outer shell being provided with jet-openings, and a dome-shaped top fitting tightly over said cup-shaped shells.

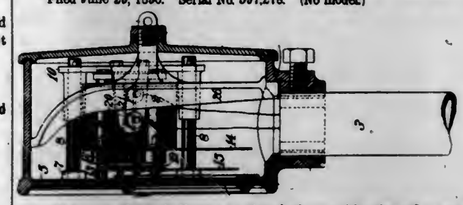
573,206. APPARATUS FOR PRODUCING ORNAMENTAL SURFACES. RAFAEL J. CHAVES and CHARLES C. HERMAN, Pana, Ill. Filed Nov. 21, 1895. Serial No. 569,660. (No model.)



Claim.—1. An apparatus for producing ornamental surfaces, comprising a plurality of furnaces, each having a burner in its bottom and provided with a wire-netting above the burner for supporting a pigment, and with a hydrocarbon-supply pipe projecting into the furnace above the said netting and discharging thereon, a mixing-chamber above the furnaces, pipes connecting the furnaces with the mixing-chamber, and a receptacle connected with the mixing-chamber and provided with means for supporting the material to be ornamented, substantially as herein shown and described.

2. In an apparatus for producing ornamental surfaces, the combination with a receptacle for holding the material to be ornamented, of a furnace connected with the receptacle and having a burner in its bottom, a perforated pigment-support above the burner, and a hydrocarbon-tank provided with a pipe discharging into the said furnace above the said perforated support.

573,207. INDICATOR OR SIGNAL. JOHN P. COLEMAN, Swissvale, Pa., assignor to the Union Switch and Signal Company, same place. Filed June 29, 1896. Serial No. 597,278. (No model.)



Claim.—1. In an indicator or signal, the combination of a case or shell, one or more supporting bars or rods having one end secured in the case or shell, one or more sleeves adapted to fit over said bars, and signal-operating mechanism supported by said sleeves, substantially as set forth.

2. In an indicator or signal, the combination of a case or shell, one or more bars or rods having one end secured in the case or shell, one or more sleeves adapted to fit over said bars, magnets supported by said sleeves, a plate attached to the magnets, and a disk attached to the armature of the magnets, substantially as set forth.

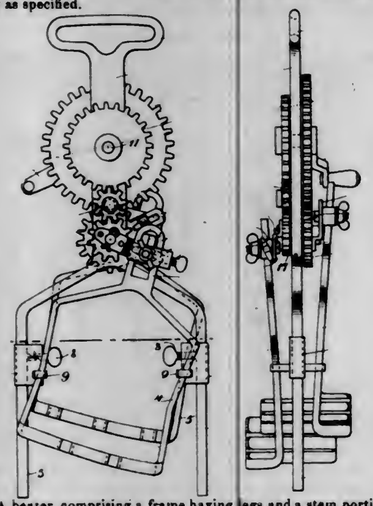
3. In an indicator or signal, the combination of a case or shell having a glass covered opening in one end, a removable cover for the case or shell, a bar having a length greater than the diameter of the case or shell, a shoulder on one side of the case or shell for holding one end of the bar as against outward or longitudinal movement, and means for detachably securing the cover to the bar, substantially as set forth.

573,208. BATTER-MIXER, &c. STEPHEN H. COOMBS, Helena, Mont. Filed July 27, 1896. Serial No. 600,691. (No model.)

Claim.—1. A beater, comprising a frame having legs, guides mounted on said legs, beaters having side members movable through the guides, and means for imparting vertical and lateral movements

to the beaters, one in an opposite direction to the other, substantially as specified.

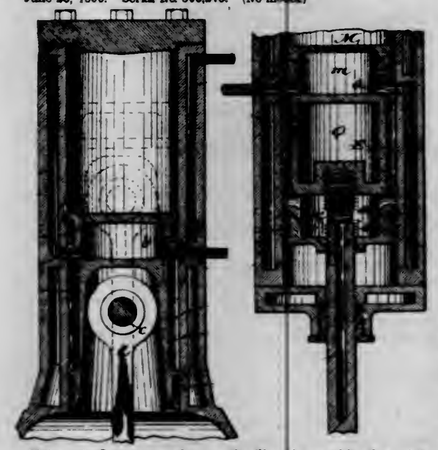
2. A beater, comprising a frame having parallel legs, guide-blocks adjustably mounted on said legs, guide-eyes extended outward from said guide-blocks, beaters having side members movable through said guide-eyes, and gearing for imparting a vertical and lateral movement to said beaters, one in an opposite direction to the other, substantially as specified.



3. A beater, comprising a frame having legs and a stem portion, guides on the legs of the frame, beaters having their side members movable through said guides, a crank-pin adjustably mounted on each beater, and gearing comprising crank-arms engaging with said wrist-pins, substantially as specified.

4. A beater, comprising a frame having parallel legs and a stem portion, guides adjustably mounted on the legs, beaters having their side members extended loosely through said guides, each beater having a slotted stem portion, a wrist pin block adjustably mounted on each stem portion, a wrist-pin carried by said block, and a chain of gearing for operating the beaters, comprising pinions having slotted crank-arms engaging with the wrist-pins, substantially as specified.

573,209. GAS-ENGINE. FITZ E. CULVER, Chicago, Ill. Filed June 20, 1896. Serial No. 596,275. (No model.)



Claim.—1. In a gas-engine, or the like, the combination with a cylinder, of a trunk-piston having a chambered head and longitudinal grooves in its peripheral surfaces, such grooves being of as great length as the stroke of the piston and having both terminals intermediate of the ends of the piston and being open to the chamber in its head, and eduction and discharge ports in the cylinder-walls, each registering with one of the grooves throughout the entire stroke of the piston.

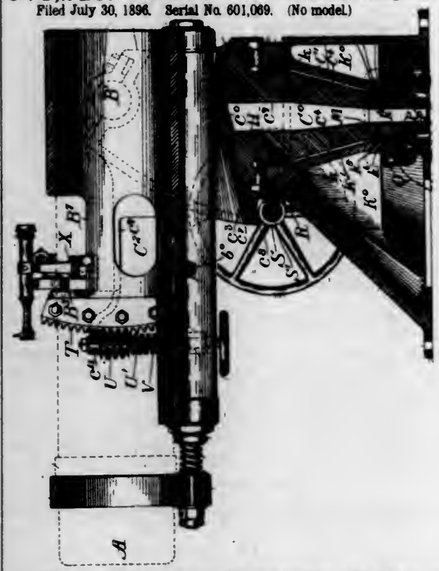
2. In a gas-engine, or the like, the combination with a cylinder, of a piston having a chamber within its head, and induction and eduction ports in its walls communicating with the chamber, and cylinder-ports registering with the said piston-ports, whereby fluid may be circulated through the piston.

3. In a gas-engine, or the like, the combination with a cylinder, of a trunk-piston, packing-rings encircling the piston, a chamber in the head of the piston, longitudinal grooves in the peripheral surface of the piston wholly between the packing-rings, and of a length as great as the stroke of the piston, ports leading from such grooves to the piston chamber, and cylinder-ports registering continuously with such grooves

4. In a double-acting gas engine, or the like, the combination with a cylinder, of a chambered piston, a piston rod apertured longitudinally from its inner end, its aperture being open to the chamber of the piston, ports in the walls of the cylinder and opening to its chamber, and ports in the cylinder registering with such piston-ports.

5. In a gas-engine or the like the combination with a cylinder, of a trunk-piston having a chambered head and longitudinal grooves in its peripheral surfaces, such grooves having both of their terminals intermediate of the ends of the piston and being open to the chamber in its head, and eduction and discharge ports in the cylinder-walls, each registering with one of the grooves.

573,210. GUN-MOUNT. ROBERT B. DASHIELL, Washington, D. C. Filed July 30, 1896. Serial No. 601,069. (No model.)



Claim.—1. In a gun-mount, the combination with a lower carriage and two bearing-rings mounted therein at some distance apart vertically, the upper being of a greater diameter than the lower and antifriction-rollers mounted in an annular groove in said lower carriage exterior to said upper ring, of an upper carriage mounted above said lower carriage, and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion engaging said bearing-rings, and a rocking slide trunnioned in said upper carriage, substantially as described.

2. In a gun mount, the combination with a lower carriage and two cylindrical bearing-rings mounted therein at some distance apart vertically, the upper being of a greater diameter than the lower, and antifriction-rollers mounted in an annular groove in said lower carriage, exterior to said upper ring, of an upper carriage mounted above said lower carriage and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion in lateral engagement with said bearing-rings, and a rocking slide trunnioned in said upper carriage, substantially as described.

3. In a gun-mount, the combination with a lower carriage and two bearing-rings mounted therein at some distance apart vertically, the upper being of a greater diameter than the lower, and cone-rollers mounted in an annular groove in said lower carriage exterior to said upper ring, of an upper carriage mounted above said lower carriage and normally resting on said cone-rollers, and provided with a downwardly-projecting portion engaging said bearing-rings, and a rocking slide trunnioned in said upper carriage, substantially as described.

4. In a gun-mount the combination with a carriage and a rocking slide trunnioned therein, of a segmental rack secured to the rocking slide and a worm for turning the rack mounted on the carriage, and a spring adapted to take up the downward pressure on said worm as the gun recoils, substantially as described.

5. An elevating-gear for gun carriages of the character described, comprising a segmental rack secured to the rocking slide, a shaft journaled in a fixed portion of the gun-carriage, a worm splined on said shaft, and engaging said rack, a spring interposed between said worm and the lower journal-bearing of said shaft, and means for turning said shaft, substantially as described.

6. An elevating-gear for gun carriages of the character described, comprising a segmental rack secured to the rocking slide, a shaft journaled in a fixed portion of the gun carriage, a worm held against turning on said shaft, but longitudinally movable thereon, engaging said rack, a spring interposed between said worm and the lower journal-bearing of said shaft, and means for turning said shaft, substantially as described.

7. In a gun-mount, the combination with a carriage and a rocking slide trunnioned therein, of a segmental rack secured to the rocking slide, a shaft journaled in a fixed portion of the gun-carriage, a worm splined on said shaft and engaging said rack, a spring interposed between said worm and the lower journal-bearing of said shaft, and means for turning said shaft, substantially as described.

8. In a gun mount, the combination with a gun-carriage having an arm projecting to the rear thereof with journal-bearings in said arm, a shaft journaled in said bearings, a worm splined on said shaft and engaging said rack, a spring interposed between said worm and the lower journal-bearing of said shaft, means for turning said shaft, and a segmental rack secured to said rocking slide and engaging said worm, substantially as described.

9. In a gun-mount, the combination with a lower carriage and two bearing-rings mounted therein at some distance apart vertically, of an upper carriage mounted above said lower carriage and provided with a downwardly-projecting portion engaging said bearing-rings, with screw threads on a part of said downwardly projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

10. In a gun-mount, the combination with a lower carriage and two cylindrical bearing-rings mounted therein at some distance apart vertically, of an upper carriage mounted above said lower carriage and provided with a downwardly-projecting portion in lateral engagement with said bearing-rings, with screw-threads on a part of said downwardly-projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, and a rocking slide trunnioned in said upper carriage, substantially as described.

11. In a gun-mount, the combination with a lower carriage and two bearing-rings mounted therein at some distance apart vertically, and antifriction-rollers mounted in an annular groove in said lower carriage, of an upper carriage mounted above said lower carriage, and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion engaging said bearing-rings, with screw-threads on a part of said downwardly-projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

12. In a gun-mount, the combination with a lower carriage and two cylindrical bearing-rings mounted therein at some distance apart vertically, and antifriction-rollers mounted in an annular groove in said lower carriage, of an upper carriage mounted above said lower carriage and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion in lateral engagement with said bearing-rings, with screw-threads on a part of said downwardly-projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, and a rocking slide trunnioned in said upper carriage, substantially as described.

13. In a gun-mount, the combination with a lower carriage in the form of an inverted frustum of a cone inclosed in an outer frustum of a cone forming a closed chamber, with doors in said chamber, and two bearing-rings mounted in said lower carriage at some distance apart vertically, of an upper carriage mounted above said lower carriage and provided with a downwardly-projecting portion projecting into said inverted frustum of a cone, engaging said bearing-rings, with screw-threads on a part of said downwardly-projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

14. In a gun-mount, the combination with a lower carriage in the form of an inverted frustum of a cone inclosed in an outer frustum of a cone forming a closed chamber, with doors in said chamber, and two cylindrical bearing-rings mounted in said lower carriage at some distance apart vertically, of an upper carriage mounted above said lower carriage and provided with a downwardly-projecting portion projecting into said inverted frustum of a cone, in lateral engagement with said bearing-rings, with screw-threads on a part of said downwardly-projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

15. In a gun mount, the combination with a lower carriage in the form of an inverted frustum of a cone inclosed in an outer frustum of a cone forming a closed chamber, with doors in said chamber, and two bearing-rings mounted in said lower carriage at some distance apart vertically, and antifriction-rollers mounted in an annular groove in said lower carriage, of an upper carriage projecting into said inverted frustum of a cone mounted above said lower carriage, and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion engaging said bearing-rings, with screw-threads on a part of said downwardly projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

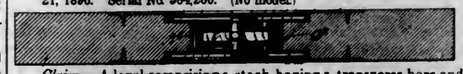
16. In a gun-mount, the combination with a lower carriage in the form of an inverted frustum of a cone inclosed in an outer frustum of a cone forming a closed chamber, with doors in said chamber, and two cylindrical bearing rings mounted in said lower carriage at some distance apart vertically, and antifriction-rollers mounted in an annular groove in said lower carriage, of an upper carriage projecting into said inverted frustum of a cone mounted above said lower carriage and normally resting on said antifriction-rollers, and provided with a downwardly-projecting portion in lateral engagement with said bearing-rings, and a rocking slide trunnioned in said upper carriage, with screw threads on a part of said downwardly projecting portion, a nut engaging said screw-threads, with antifriction-bearings between said nut and said lower carriage, and means for turning said nut, substantially as described.

17. In a gun-mount of the character described, a lower carriage in the form approximately of an inverted frustum of a cone within a frustum of a cone, the two cones being rigidly connected together and openings through the outer cone with doors covering the same, whereby a combined gun support and locker is provided, substantially as described.

18. In a gun-mount of the character described, a lower carriage in the form approximately of an inverted frustum of a cone within a frustum of a cone the two cones being rigidly connected together with webs connecting the two, and openings through the outer cone with doors covering the said openings, whereby a combined gun support and locker is provided, substantially as described.

19. In a gun-mount of the character described, a lower carriage in the form approximately of an inverted frustum of a cone within a frustum of a cone, the two cones being rigidly connected together, and openings through the outer cone whereby a combination gun support and locker is provided, substantially as described.

573,211. LEVEL. THOMAS F. DECK, Swanton, Ohio. Filed Mar. 21, 1896. Serial No. 584,266. (No model.)



Claim.—A level comprising a stock having a transverse bore and recesses at opposite sides of the stock concentric with the bore, bearing-plates seated in the bore, one of said plates having an annular rim engaging with the other plate, dial-plates secured in the recesses, rollers having journal-bearings in the dials and plates a weighted shaft journaled on said rollers, pointers on the ends of said shaft, and transparent covers for the dials, substantially as specified.

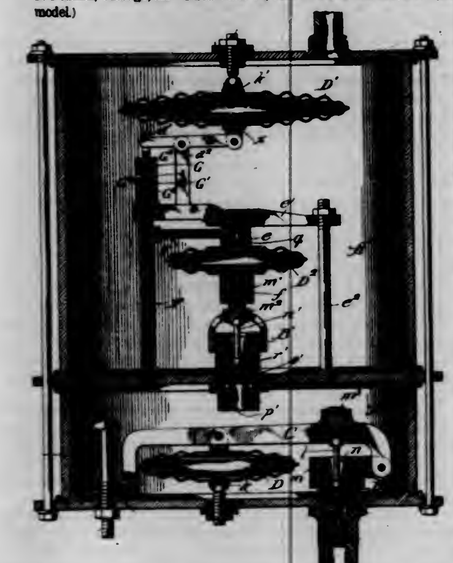
573,212. BOTTLE-STOPPER. HENRY FRIEDMAN, New York, and HERMAN M. KOELBEL, Brooklyn, N. Y. Filed Apr. 15, 1896. Serial No. 587 631. (No model.)



Claim.—1. A bottle-stopper, comprising a casing having a semi-spherical outer end, and provided with a slot in one side of the said end, a ball-valve having a central bore and provided with a discharge-pipe leading from said bore and extending out through the slot of the casing, and serving as a handle for manipulating the valve and a longitudinally-apertured stopper proper having its upper end secured in the casing and forming a seat for the said valve, substantially as described.

2. A bottle-stopper, consisting of a casing having its lower portion internally screw-threaded, and provided with a semispherical upper end having a slot in one side, a ball-valve having a central bore and provided with a discharge-pipe leading from the bore of the valve and extending out through the slot of the casing, and serving as a handle for manipulating the valve and a stopper proper provided with a central pipe and screwing into the casing with its upper end into contact with the valve and forming a seat therefor, substantially as herein shown and described.

573,213. FLUID-PRESSURE-REDUCING APPARATUS. HENRY F. FULLER, Chicago, Ill. Filed June 12, 1896. Serial No. 595,256. (No model.)



Claim.—1. In a pressure-reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a flexible diaphragm inclosed in said chamber and affording a close chamber exposed about its exterior to the pressure therein and controllably connected with said valve, a secondary pressure chamber having an outlet, and an inlet equipped with a valve for controlling communication between the two said chambers, and a flexible diaphragm inclosed in said secondary pressure-chamber under exposure to the pressure therein and connected with said valve in the secondary chamber to operate it by the movement of said diaphragm, substantially as described.

2. In a pressure-reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a hollow flexible diaphragm inclosed in said chamber and affording a close chamber exposed about its exterior to the pressure therein and controllably connected with said valve, a secondary pressure-chamber having an outlet, and an inlet equipped with a valve for controlling communication between the two said chambers, and a hollow flexible diaphragm inclosed in said secondary pressure-chamber under exposure to the pressure therein and connected with said valve in the secondary chamber to operate it by the movement of said diaphragm, substantially as described.

3. In a pressure reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a hollow flexible diaphragm inclosed in said chamber and affording a close chamber exposed about its exterior to the pressure therein, a lever connected with said valve and with the diaphragm to be actuated by its movement to operate the valve, a secondary pressure-chamber having an outlet, and an inlet equipped with a valve for controlling communication between the two said chambers, and a hollow flexible diaphragm inclosed in said secondary pressure-chamber under exposure to the pressure therein and connected with said valve in the secondary chamber to operate it by the movement of said diaphragm, substantially as described.

4. In a pressure reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a hollow flexible diaphragm inclosed in said chamber and affording a close chamber exposed about its exterior to the pressure therein, a lever connected with said valve and with the diaphragm to be actuated by its movement to operate the valve, a supplemental actuating-spring confined against said lever, a secondary pressure-chamber having an outlet and an inlet equipped with a valve for controlling communication between the two said chambers, and a hollow flexible diaphragm inclosed in said secondary pressure-chamber under exposure to the pressure therein and connected with said valve in the secondary chamber to operate it by the movement of said diaphragm, substantially as described.

5. In a pressure reducer, a pressure chamber having an outlet and two inlets each equipped with a valve, a hollow flexible diaphragm inclosed in said pressure-chamber, under exposure to the pressure therein and connected with the valve of one of said inlets, and a hollow flexible diaphragm communicating with the other of said inlets, substantially as described.

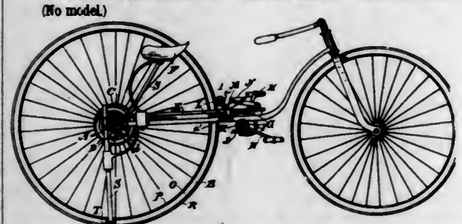
6. In a pressure reducer, a pressure-chamber A having an outlet and two inlets, each equipped with a valve, a hollow flexible diaphragm D′ inclosed in said pressure-chamber and connected with the valve of one of said inlets, and a hollow flexible diaphragm D^2 communicating with the inlet controlled by the valve connected with said diaphragm D′ and connected with the valve of said other inlet, substantially as described.

7. In a pressure-reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a hollow flexible diaphragm inclosed in said chamber and exposed to the pressure therein, a lever connected with said valve and with the diaphragm to be actuated by its movement to operate the valve, a secondary pressure-chamber having an outlet and two inlets each equipped with a valve, a hollow flexible diaphragm inclosed in said secondary pressure-chamber under exposure to the pressure therein, and connected with the valve in one of said inlets, and a third hollow flexible diaphragm communicating with the other of said inlets, substantially as described.

8. In a pressure-reducer, the combination of a primary pressure-chamber having an inlet equipped with a valve, a hollow flexible diaphragm D inclosed in said chamber, a lever connected with said valve and with the diaphragm to be actuated by its movement to operate the valve, a supplemental actuating-spring confined against said lever, a secondary pressure-chamber having an outlet and two inlets each equipped with a valve, a hollow flexible diaphragm D′ inclosed in said secondary pressure-chamber and connected with the valve in one of said inlets, and a third flexible hollow diaphragm D^2 in said primary pressure chamber, communicating therewith and with the inlet controlled by the valve connected with said diaphragm D′, and connected with the valve of said other inlet, substantially as described.

9. A pressure reducer comprising, in combination, a primary pressure-chamber A having an inlet equipped with a valve, a hollow flexible diaphragm D inclosed in said chamber, a lever connected with said valve and with the diaphragm to be actuated by its movement to operate the valve, a supplemental actuating-spring confined against said lever, a secondary pressure-chamber A′ having an outlet and two inlets, said inlets being equipped respectively with the spring-valves B^2 and f^2, a hollow flexible diaphragm D′ inclosed in said secondary chamber and having a lever connection with the valve f^2, and a hollow flexible diaphragm D^2 in and communicating with the primary pressure-chamber and with said inlet controlled by the valve f^2 and having a lever connection with the valve B^2, the whole being constructed and arranged to operate, substantially as described.

573,214. CONSTRUCTION AND PROPULSION OF VEHICLES. JOHN GAMBETTA, Stockton, Cal. Filed Dec. 30, 1896. Serial No. 573,811. (No model.)



Claim.—1. A vehicle having a wheel-shaft, pinions mounted thereon with clutch mechanisms whereby rotation in one direction will engage them with the shaft, and rotation in an opposite direction will disengage them therefrom, and vertically-movable rack-bars engaging pinions upon said shaft and having wheels journaled in their lower ends to form contact with the ground when passing over irregularities of the surface whereby the racks transmit additional power to the shaft.

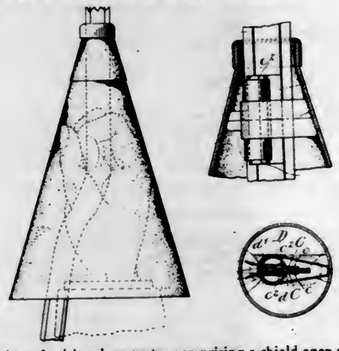
2. A vehicle having a wheel-shaft provided with pinions, and vertically-movable rack-bars engaging said pinions and having their lower ends to form contact with the ground when passing over irregularities of the surface whereby additional power is applied through the racks to the wheel-shaft.

3. In a vehicle, a vertically-slidable bar having one end to contact with the ground when passing over irregularities of the surface and having the opposite portion so connected with the wheel-shaft that the movement of the bar, due to its contact with the irregularities of the surface, will transmit additional power to the shaft.

4. A vehicle having a wheel-shaft, pinions mounted thereon with clutch mechanisms whereby rotation in the forward direction will engage them with the shaft, and rotation in the opposite direction will disengage them therefrom, toothed rack-bars engaging the pinions, and mechanism whereby they are reciprocated so as to apply power to rotate the wheel-shaft, and supplemental vertically-movable rack-bars engaging pinions upon the wheel-shaft and having wheels journaled in their lower ends to form contact with the ground when passing over irregularities of the surface whereby the supplemental racks are moved and power applied through them to the wheel-shaft.

5. In a vehicle, a wheel-shaft, and mechanism through which power is applied to rotate the wheel-shaft in a forward direction, in combination with a brake-bar extending across the vehicle, a pair of rollers, one above and one below each end of the brake-bar, oppositely extending arms connecting the brake-bar with the rollers, knee-levers one of which has a fixed connection on the frame while the other connects with the brake-bar, and a foot-piece at the junction of the knee-levers whereby the brake may be applied.

573,215. HAND-PROTECTOR. CHARLES H. GLEIM, Portland, Oreg. Filed Apr. 8, 1895. Serial No. 544,852. (No model.)



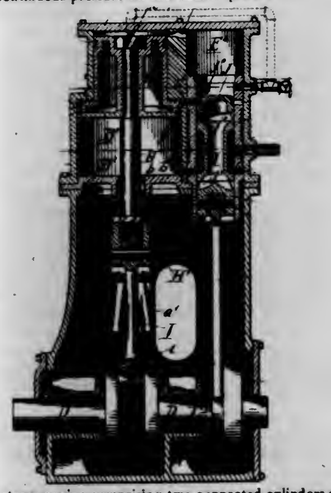
Claim.—1. A hand-protector comprising a shield open at its rear end and provided with a contracted opening at its forward end for the passage of the object to be grasped, and a friction-clasp secured to the shield adjacent to the opening therein and provided with spring actuated clamping-jaws adapted for engagement with the rein or other object inserted through said opening, substantially as described.

2. A hand-protector comprising a shield open at its rear end and provided with an opening at its forward end for the passage of the object to be grasped, a friction-clasp secured to the shield adjacent to the opening therein and provided with spring-actuated clamping-jaws adapted to engage an object which is inserted through said opening, and an expansible closure applied to the opening of the shield to close the same tightly about the object inserted therethrough, substantially as described.

3. A hand-protector comprising a shield open at its rear end and provided with an opening at its forward end for the passage of the object to be grasped, and a friction-clamp secured to the shield adjacent to the opening therein, and comprising two clamping-jaws each provided with a thumb-piece, and a spring acting to force said jaws together, substantially as described.

573,216. STEAM-ENGINE. HALBERT B. HALVORSEN, Chicago, Ill., assignor of one-half to William K. Millholland, same place. Filed June 6, 1896. Serial No. 594,471. (No model.)

Claim.—1. The combination with a plurality of connected cylinders of different diameters opening one into the other, of connected pistons therein of which the smaller piston is of trunk form and is subject to continuous pressure giving a constant pressure on the crank-pin in both the forward and backward stroke of the piston and the larger piston is subject on its surface exterior to the smaller or trunk piston to high-pressure steam acting in the same direction as the continuous pressure on the smaller piston; said larger piston being also subject to low-pressure steam acting on its full area to counterbalance the continuous pressure on the smaller piston.



2. A steam-engine comprising two connected cylinders of different diameters opening one into the other and connected pistons within the cylinders of which the smaller piston is of trunk form, the smaller of said cylinders being in constant communication with the steam-boiler so that the steam therein exerts a constant pressure in one direction on the smaller piston and the larger cylinder being constructed to receive steam at both ends, the high pressure steam acting on the surface of the larger piston outside of the smaller one, in the same direction as the constant pressure from the boiler, and the low-pressure steam acting on the full area of the larger piston in opposition to said constant pressure of steam from the boiler.

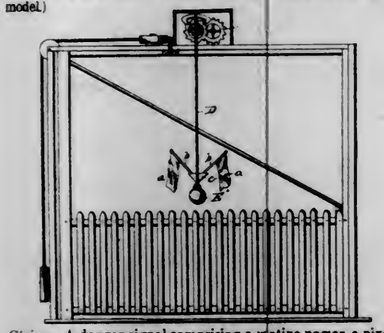
3. A steam-engine comprising two connected cylinders of different diameters and connected pistons within the cylinders of which the smaller piston is of trunk form, the smaller of said cylinders being in constant communication with the steam-boiler so that the steam therein exerts a constant pressure in one direction on the smaller piston and the larger cylinder being constructed to receive steam at both ends, the high-pressure steam acting on the surface of the larger piston outside of the smaller one, in the same direction as the constant pressure from the boiler, and the low-pressure steam acting on the full area of the larger piston in opposition to said coostant pressure of steam from the boiler, the said larger cylinder being provided with a steam-valve to control the admission and egit of steam to and from the same.

573,217. SOUNDING WHEELED TOY. SAMUEL V. HARBAUGH and GUSTAVUS RUDIGER, Sr., Baltimore, Md., assignors of one-third to Hyland P. Stewart, same place. Filed Apr. 1, 1896. Serial No. 585,748. (No model.)



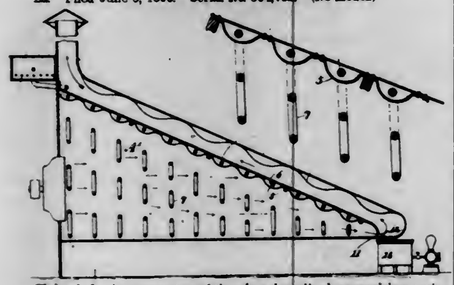
Claim.—The herein-described toy consisting of the stick or pole, the body or frame carried by the stick or pole and comprising the block *a*, having its forward portion reduced and provided with recesses *c*, in its upper side, the side strips *d*, connected to opposite sides of the reduced portion of the block *a*, and having their forward ends enlarged and rounded, the metallic strips *g*, connected to the edges of the strips *d*, and extending laterally inward from the same and the cover-plates F, connected to the upper and lower sides of the block *a*, and strips *d*, the wheel carried by the frame or body and arranged between the strips *d*, thereof, the circular series of pins *j*, carried by the wheel and extending laterally from one side of the same, the smaller circular series of teeth *k*, extending laterally from the opposite side of the wheel; and teeth *k*, being arranged alternately with respect to the teeth *j*, and the springs D, E, secured in the recesses *c*, of block *a*, and adapted to be engaged by the pins *j*, *k*, respectively, substantially as and for the purpose set forth.

573,218. DANGER-SIGNAL. HENRY HARRIS and FRANCOIS BERNARDIN, Antwerp, Ohio. Filed Mar. 21, 1896. Serial No. 584,297. (No model.)



Claim.—A danger-signal comprising a motive power, a pivotally-suspended rod actuated thereby, a socket on the lower end of the rod adapted to receive interchangeable signals, and a weight capable of being illuminated attached to said rod, substantially as described.

573,219. EVAPORATING-PAN. LEON F. HAUSTMAN, New Orleans, La. Filed June 8, 1896. Serial No. 594,702. (No model.)



Claim.—1. An apparatus of the class described, comprising a casing, an evaporating-plate arranged within said casing and inclined downward and forward, a plate secured to the under side of said evaporating plate and forming chambers to receive steam-pipes, a wave like plate arranged over the evaporating-plate, an air-blower for forcing air over said evaporating-plate, means for heating said air, and a liquor-tank at the upper end of and having communication with the evaporating-plate, substantially as specified.

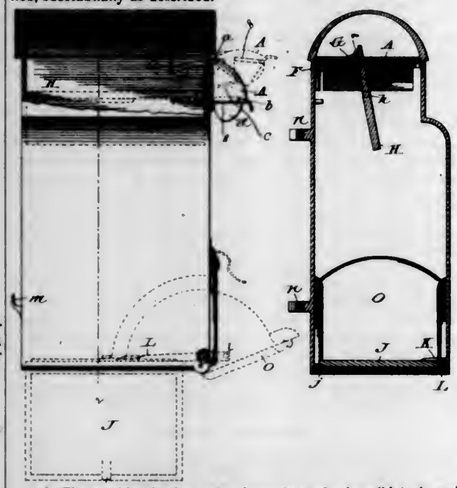
2. In an apparatus of the class described, a casing, the top wall of which is inclined downward and forward to form an evaporating-plate, a wave like top plate arranged over the same, heating-pipes arranged transversely against the under side of said evaporating plate, coiled pipes below the heating-pipes, means for forcing air over said plate, means for heating said air, and means for supplying liquor at the upper end of said evaporating-plate, substantially as specified.

3. An apparatus of the class described, comprising a casing having a chamber in its lower portion, a series of coiled pipes arranged therein, a steam-pipe communicating with said coiled pipes, a blower arranged in the rear end of the casing and adapted to force air over the coiled pipes, a downwardly and forwardly inclined evaporating-plate forming a top for said casing, a transversely-corrugated plate secured to the under side of said evaporating-plate, steam-pipes leading to the chambers formed by said corrugations, a liquor-tank, steam heating-pipes arranged in said tank, a pipe arranged transversely at the upper end of the evaporating-plate and having perforations, and a communication between said transverse pipe and the liquor-tank, substantially as specified.

573,220. SAFETY STREET LETTER-BOX. JAMES W. HENTZ, Baltimore, Md. Filed Oct. 28, 1890. Serial No. 369,625. (No model.)

Claim.—1. In combination with the box having a suitable mouth or opening and provided with an outward-projecting lip or flange at the bottom of said opening, of a hood or drop-lid hinged at the top of said opening and having an upward-opening auxiliary lid hinged at its lower edge, in a position to be intercepted by said lip or flange and prevented from opening while the hood is closed, as set forth.

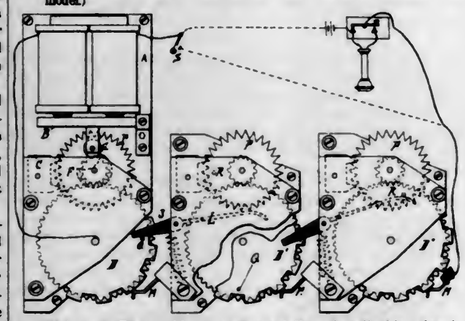
2. In combination with the box having a suitable mouth or opening and provided with an outward projecting lip or flange at the bottom of said opening, of a hood or drop-lid, hinged at the top of the opening, and an auxiliary lid hinged to the inside of the hood having flanges to rest on the lip and support the hood in its raised position, substantially as described.



3. The combination in a safety letter-box, of a drop-lid A pivoted by hinges *a*, *a*, an auxiliary lid B, pivoted to lid A by hinges *b*, *b*, the lip C projecting from the bottom of the mouth of the box, the lever F attached to the drop-lid, the safety-cover or table H pivoted at *h*, *h*, and the rod G connecting the lever F and safety-cover H, as and for the purposes set forth.

4. The combination in a letter-box of a delivery-door hinged to one side thereof and a drop-bottom hinged at one edge and having a catch, a bolt sliding inside the box to engage said catch, the door, bottom and bolt being located with relation to each other so that the bolt cannot be withdrawn to drop the bottom, when the door is closed, as set forth.

573,221. ELECTRIC SIGNALING APPARATUS. FELIX R. HERZOG and SCHUYLER S. WHEELER, New York, N. Y.; said Wheeler assignor to said Herzog. Filed Jan. 25, 1886. Serial No. 189,665. (No model.)



Claim.—1. The combination substantially as described in a signal-transmitting instrument of two or more separately-variable transmitting mechanisms, each including a motor, together with shifting devices.

2. The combination substantially as described of separately-variable signal-transmitting mechanisms, each including a motor, together with shifting devices, and means whereby the operation of one transmitting mechanism brings into action the next transmitting mechanism.

3. The combination substantially as described in an electric signaling instrument of separately-driven and separately-variable signal-transmitting mechanisms, each provided with a detent, and all except the last, provided with a shifting device.

4. The combination substantially as described in an electric signaling instrument of a transmitting mechanism which transmits a portion of the whole signal that can be transmitted by the instrument, another signal-transmitting mechanism, which transmits another portion of the signal, a separate motor for each, shifting devices between the two and a magnet controlling the operation of the whole.

5. The combination substantially as described in an electric signaling instrument of a normally-inoperative characteristic signal transmitter controlled by one motor device, and a separate variable signal-transmitter, controlled by a second motor device.

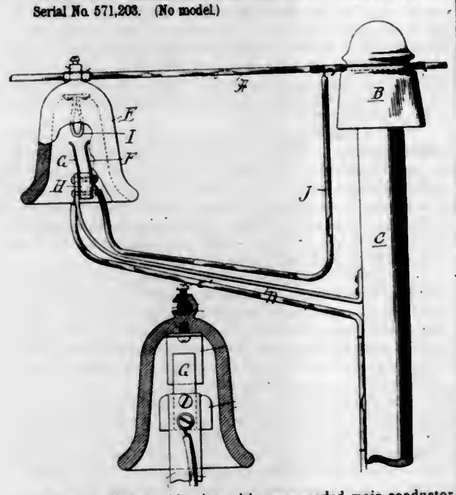
6. The combination, in a signal-transmitting instrument, of several variable transmitting mechanisms, each including a motor; together with shifting devices, the whole being organized so that one, several, or all, of the movements may be operated, as desired.

7. The combination in a signal-transmitting instrument of two or more separately-variable transmitting mechanisms, each including a motor, together with shifting devices; each mechanism and its transmitting element being so adjusted with relation to the shifting devices that the time from the beginning of its operation until it shifts in the next mechanism varies according to the signal transmitted.

8. The combination in the signal-transmitting instrument of two or more separate transmitting mechanisms each including a motor and a shifting device whereby the first mechanism operated controls the next.

9. The combination in a signal-transmitting instrument of two or more separate transmitting mechanisms each including a motor and a shifting device on each prior operating mechanism and a detent on each subsequently-operating mechanism; said detent mechanically releasing the subsequently-operated mechanism on the completion of the signal transmitted by the one operating ahead of it.

573,222. AUTOMATIC GROUNDING DEVICE FOR ELECTRIC CONDUCTORS. GEORGE A. JEWETT, Chicago, Ill. Filed Dec. 6, 1895. Serial No. 571,203. (No model.)



Claim.—1. The combination with a suspended main conductor and its supports, of a contact device embracing stationary and movable parts, through which said conductor may be connected with the ground, and an open bottomed hood surrounding both parts of the contact device, said hood and the movable part of the contact device being attached to the conductor at a distance from its supports, and the movable part of the contact device being supported by the conductor above the stationary part thereof and in a position to be engaged by the same in its descent, the parts being so arranged that the hood will act as a weight to aid in bringing the movable part of the contact device into engagement with the stationary part thereof, and also as a means for holding the parts of the contact device in operative relation, substantially as described.

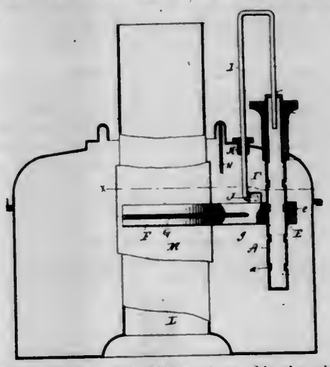
2. The combination with a suspended main conductor and its supports, of a contact device embracing stationary and movable parts, through which the conductor may be connected with the ground, and an open-bottomed hood surrounding both parts of the contact device and having insulated attachment to the movable part thereof; said hood and said movable part of the contact device being attached to the conductor at a distance from its support, and the movable part of the contact device being supported by the said main conductor above the stationary part thereof, substantially as described.

3. The combination with a suspended main conductor and its supports, of a contact device embracing stationary and movable parts, through which the said conductor may be connected with the ground, and an open-bottomed hood of insulating material surrounding both parts of the contact device, said hood and the movable part of the contact device being attached to the conductor at a distance from its support, and the said movable part of the contact device being supported by the conductor above the said stationary part thereof, substantially as described.

4. The combination with a suspended main conductor and its supports, of a contact device embracing stationary and movable parts, a branch wire connecting the main conductor with the stationary part of the contact device and a wire connecting the stationary part of the contact device with the ground, and an open-bottomed hood surrounding both parts of the contact device, said hood and the movable part of the contact device being attached to the conductor at a distance from its supports, and the said movable part of the contact device being supported by the conductor above the said stationary part thereof, substantially as described.

5. The combination with an electric conductor of a contact device embracing a stationary and a movable part, said stationary part comprising two contact-plates insulated from each other and connected one with the conductor and the other with the ground and the movable part consisting of a tongue adapted to enter between said plates and a hood also attached to the conductor and surrounding the said tongue, substantially as described.

573,223. WICK-ADJUSTER FOR CENTRAL-DRAFT LAMPS. NILS JOHNSON, Meriden, Conn., assignor to the Meriden Bronze Company, same place. Filed Nov. 27, 1893. Serial No. 492,126. (No model.)



Claim.—1. In a central-draft lamp, the combination with a wick-holder, of an externally-threaded operating-screw directly connected by means of its external threads with the said wick-holder for raising and lowering the same, and a draw-bar connected with the wick-holder independent of the connection of the same with the said operating-screw and extending upward through the top of the lamp-fount, substantially as set forth, and whereby the wick-holder may be raised and lowered by the screw or by the draw-bar which when operated causes the screw to rotate in one direction or the other.

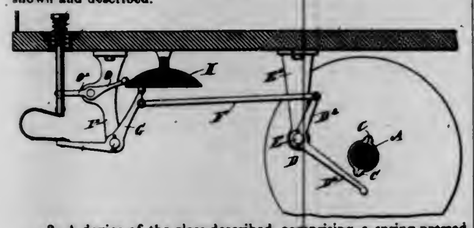
2. In a central-draft lamp, the combination with the wick-holder thereof, of an externally-threaded operating-screw mounted in the lamp-fount for rotation therein, and directly connected by means of its external threads with the wick-holder for raising and lowering the same, and a draw-bar connected at its lower end with the wick-holder independently of the connection of the same with the said operating-screw, and extending upward through the top of the lamp-fount, and downward into the screw which affords a bearing for it, substantially as described.

3. In a central-draft lamp, the combination with a wick-holder comprising two jaws and a short tube upon which they are swiveled, and which has an internally-projecting screw-thread, of an operating-screw mounted in the lamp-fount and having an external screw-thread taking into the thread of the short tube through which the screw passes, projecting at its upper end above the lamp-fount, and furnished with an operating-nut, and a draw-bar connected with the wick-holder independently of the connection of the same with the said operating-screw, extending upward through the lamp-fount and downward into the operating-screw which affords a bearing for it, substantially as described.

573,224. ACTUATING DEVICE FOR STREET-CAR GONGS. THOS. KELLY, New Orleans, La. Filed June 10, 1896. Serial No. 594,936. (No model.)

Claim.—1. A device of the class described, comprising a bell-crank lever adapted to receive a vibratory motion from a projection on a car-axle, a bell or gong, a pivoted striker, means for connecting the said striker with one arm of the said bell-crank lever, an arm con-

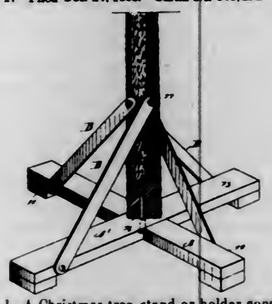
nected with the striker, a foot-piece under the control of the motorman and connected with the said arm, and a spring for yieldingly connecting the said parts and responding to the vibrating action of the said lever to cause the striker to sound the bell, substantially as shown and described.



2. A device of the class described, comprising a spring-pressed foot-piece under the control of the motorman, a pivoted striker adapted to sound a bell and provided with an arm connected with the said foot-piece, a bell-crank lever, means for connecting the said striker with one arm of the said bell-crank lever, projections on the revolving part of the car adapted to engage the other arm of the said bell-crank lever whenever the said spring-pressed foot-piece is held in a lowermost position and the said arm is thereby drawn into the path of the said projections, and a spring for yieldingly connecting the said parts and producing responsive vibrating action of the said lever to cause the said striker to sound the bell, substantially as shown and described.

3. A device of the class described, comprising a spring-pressed foot-piece, a striker connected with the said foot-piece and adapted to sound a bell whenever the said foot-piece is quickly pushed and released, a spring connected with the said foot-piece, a second striker connected with the said spring and likewise adapted to sound the said bell, a bell-crank lever connected with the said second striker, and projections held on a revolving part of the car, and adapted to engage the said bell-crank lever, to vibrate the same and cause the second striker to sound the said bell, substantially as shown and described.

573,225. CHRISTMAS-TREE STAND. HENRY W. KUETS, New York, N. Y. Filed Dec. 27, 1895. Serial No. 573,424. (No model.)



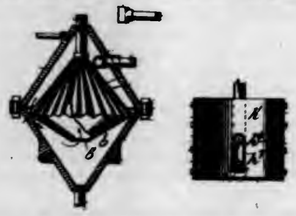
Claim.—1. A Christmas-tree stand or holder consisting of base members detachably secured together in substantially cruciform shape, and braces pivotally attached to opposite sides of the members, the said braces being fitted at their free ends to receive fastening devices and adapted for attachment to the trunk of a tree at said free end, as and for the purpose set forth.

2. A Christmas-tree holder or stand, the same consisting of detachable interlocking base or body members, one of the members being provided with a pin at its junction with its fellow member, and a series of braces pivoted to opposite sides of the said members at a predetermined point between their centers and outer ends, the opposite ends of the braces being free and adapted for engagement with the trunk of a tree placed upon the said pin, the said upper ends of the braces being further adapted for attachment to the trunk of the tree, as and for the purpose set forth.

3. A stand for a Christmas-tree, comprising base members crossed loosely one upon the other and wholly detachable one from the other, braces pivotally attached to the side faces of the base-pieces near the ends and fastening devices at the free ends of said braces adapted to be engaged into the body of a tree, substantially as described.

4. A tree holder or stand, comprising the base or body members, means whereby said members may be detachably secured in cruciform shape, and braces arranged on opposite sides of and foldable alongside said base members, the braces of each base member being pivoted near their outer ends to such members, one brace being pivoted near one end and the other brace near the other end of the member supporting said two braces, and the latter being formed near their free ends for attachment to the tree-trunk, substantially as shown and described.

573,226. BOILER-CLEANER. ALONZO M. LAWSON, Washington, D. C. Filed June 2, 1896. Serial No. 594,032. (No model.)



Claim.—1. In a boiler-cleaner, the combination, with a casing, of a hollow sediment-collector within the casing and provided with an opening at its bottom, a return-pipe communicating with the interior of the sediment-collector, an inlet-pipe communicating with the interior of the casing above the opening at the bottom of the sediment-collector, and a surface blow-off device connected to the casing above the inlet-pipe, and outside the sediment-collector, substantially as set forth.

2. In a boiler-cleaner, the combination, with a casing having a conical top, of a hollow sediment-collector within said casing and having an opening at its bottom, a return-pipe communicating with the interior of the collector, an inlet-pipe communicating with the interior of the casing above the opening at the bottom of said collector, and a surface blow-off device connected to the conical top of the casing above the inlet-pipe, and outside the sediment-collector, substantially as set forth.

3. In a boiler-cleaner, the combination, with a casing, of a hollow sediment-collector within said casing and provided with a conical top and an inverted-cone-shaped bottom having an opening, of a surface blow-off device connected to the casing above the sediment-collector, an inlet-pipe connected to the casing between the surface blow-off device and the sediment-collector, a return-pipe communicating with the interior of the collector, and a sediment blow-off below the sediment-collector, substantially as set forth.

4. In a boiler-cleaner, the combination, with a casing, of a hollow sediment-collector having its diameter enlarged at one point, and provided with an opening in its bottom of less area than said enlargement, a return-pipe, communicating with the interior of the sediment-collector and having an area less than that of said opening, and an inlet-pipe communicating with the interior of the casing above the sediment-collector, substantially as set forth.

5. In a boiler-cleaner, the combination, with a casing, of a sediment-collector within the casing, an inlet-pipe communicating with the interior of the casing, and means held in fixed relation to the inlet-pipe and in rigid connection with the end of the same, for distributing the water in both directions, whereby a continuous circulatory motion of the water is prevented, substantially as set forth.

6. In a boiler-cleaner, the combination, with a casing, of a sediment-collector within the casing, an inlet-pipe communicating with the interior of the casing, and a water-distributer secured to the inlet-pipe and provided only with opposite laterally-projecting openings, whereby a continuous circulatory motion of the water is prevented, substantially as set forth.

7. In a boiler-cleaner, the combination, with a casing, of a sediment-collector within the casing, an inlet pipe communicating with the interior of the casing and a T on the end of the inlet-pipe and arranged to discharge the water into the casing in opposite lateral directions, substantially as set forth.

8. The combination with a boiler of a pipe extending into said boiler and provided with an apertured end the open area of said apertured end being less than the internal cross-sectional area of said pipe.

9. In a skimming device for boiler-cleaners, the combination, with a plate having a wall, of a pipe provided with a downward-extending apertured end, the open area of said apertured end being less than the internal cross sectional area of the said pipe, substantially as set forth.

10. In a skimming device for boiler cleaners, the combination, with a plate having a wall, of a pipe projecting through said wall and provided with a downward-extending end having an opening, said opening having a less area than the internal cross-sectional area of the pipe, substantially as set forth.

11. In a skimming device for boiler-cleaners, the combination, with a plate having a wall, of a pipe provided with a plurality of openings, the total area of all the openings being less than the internal cross-sectional area of the said pipe, substantially as set forth.

12. In a skimming device for boiler-cleaners, the combination, with a plate having a curved wall, said wall being provided with inward-extending ends, of a pair of wings arranged to overlap each other and having flanges provided with hooked ends engaging the inward-extending ends of the curved wall, substantially as set forth.

13. In a skimming device for boiler-cleaners, the combination, with a circular plate having a concentrically-curved wall provided with inward-extending ends and a pair of wings arranged to overlap each other and provided with flanges having hooked ends engaging the inward extending ends of the curved wall, of a pipe projecting through the curved wall and provided with a downward-bent end, said end having holes at or near the bottom, one of the holes facing the wall and one hole on each side of the pipe facing the inward-bent ends, the combined area of all the holes being less than the area of said pipe, substantially as set forth.

14. In a boiler-cleaner, the combination, with a casing, of a sediment-collector having a corrugated top and located inside the casing, and an inlet-pipe connected to the casing above the sediment-collector, substantially as set forth.

15. In a boiler-cleaner, the combination, with a casing, a hollow sediment-collector within the casing and provided with a conical top corrugated inside and out, and having an opening, of an inlet-pipe communicating with the interior of the casing above the sediment-collector, and a return-pipe communicating with the interior of the sediment-collector, substantially as set forth.

573,227. BRAKE-SHOE. ALVA A. LINDLEY, Oskaloosa, Iowa. Filed Apr. 4, 1896. Serial No. 586,247. (No model.)



Claim.—1. A brake-shoe having an extension provided with a head having a tapering surface, a support for the shoe, provided with a recess shaped to receive the extension from the shoe, and a locking device carried by the head and located opposite the wider portion of the shoe extension, as and for the purpose specified.

2. The combination, with a brake-shoe having a central T extension, the head portion whereof is beveled upon its under face, of a brake-head having bearing against the shoe near its top and near its bottom, being provided with a central substantially T-shaped slot, having its wider member tapering to correspond to the taper of the head portion of the shoe extension, the wider end of the T-slot being at the outside portion of the head, and a locking device adapted to cross the wider and outer end of the said T-slot, as and for the purpose specified.

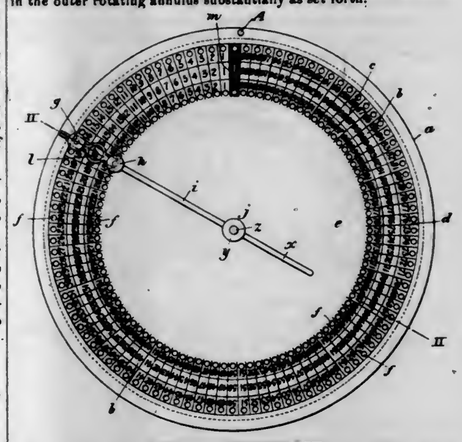
3. The combination, with a brake-shoe having a tapering extension from the central portion of its forward face, of a head adapted for attachment to a brake-beam and provided with a tapering slot shaped to receive the extension from the shoe, the wider end of the slot being at the outer face of the head, and a locking-pin carried by the head and crossing the wider end of the slot therein, the said pin serving to prevent the extension of the shoe from leaving the aforesaid head, as and for the purpose specified.

573,228. CALCULATING-MACHINE. GEORGE W. MACKENZIE and THOMAS C. SLOANE, Beaver, and WILLIAM P. HANNA, Pittsburg, Pa.; said MacKenzie and said Sloane assignors of one-fourth of their right to said Hanna. Filed Apr. 11, 1895. Serial No. 545,404. (No model.)

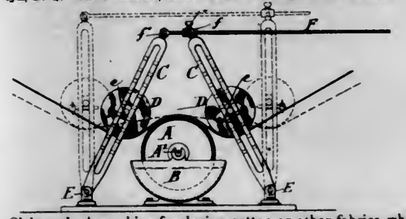
Claim.—1. In a mechanical calculating machine the combination with a series of movable circular concentric disks and annuli bearing scales, of an operating-arm *i* pivoted on a pin secured to the base at the center of the machine, and a similarly-pivoted controlling-arm *x* secured upon the pin, and having a downwardly projecting end and capable of being set on the central pin by a thumb-nut, so as to rigidly locate the downwardly-projecting end in the path of the arm *i* for limiting the motion of such arm *i* substantially as set forth.

2. A mechanical calculating-machine consisting of a base provided with a circular concentric stationary disk, and a series of movable circular concentric disks and annuli, bearing scales, rotatably mounted on a base, an indicator *m* mounted on a stem *o* pivotally set on the stationary disk, a controlling-spring *p* and a pin *q* projecting from the stem *o* into the path of a pawl *n* mounted on the outside movable disk substantially as set forth.

3. A mechanical calculating-machine consisting of a base provided with a circular concentric stationary disk and a series of movable circular concentric disks and annuli bearing scales, rotatably mounted on a base, shifting or tens-carrying mechanism located in such base between the outer and inner disks consisting of a train of two intermeshing gear-wheels *s*, *v*, one of which is in mesh with a rack *w* on the inner disk and the other provided with a ratchet-wheel *t* the teeth of which project into the path of a tooth *r* mounted in the outer rotating annulus substantially as set forth.



573,229. APPARATUS FOR DYEING. HERMAN A. METZ, Brooklyn, N. Y. Filed June 26, 1896. Serial No. 596,999. (No model.)



Claim.—1. A machine for dyeing cotton or other fabrics, which consists in a transfer-roller, a color-trough in which the same is rotated, a tension roller at each side of said transfer-roller, independent holders for said rollers, arranged one at each side of the transfer-roller, said holders being constructed and provided with means for the separate and vertical adjustment of the tension-rollers, and means for adjusting the said holders and tension-rollers toward or from the transfer-roller, substantially as set forth.

2. A machine for dyeing cotton or other fabrics, which consists of a transfer-roller, a color-trough in which the same is rotated, a tension-roller at each side of said transfer-roller, slotted holders for supporting said tension-rollers at various heights, and means for adjusting said holders and tension-rollers in various relative positions toward the transfer-roller, substantially as set forth.

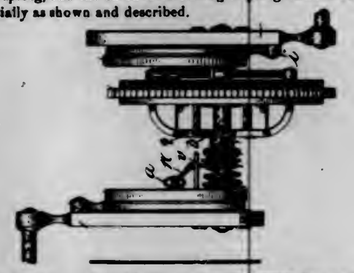
3. A machine for dyeing cotton or other fabrics, which comprises a transfer roller, a color-trough in which said roller is rotated, slotted holders pivoted at their lower ends, means for adjustably connecting the upper ends of said holders, tension-rollers, the shafts of which are supported in said slotted holders, and means for supporting said shafts at a higher or lower position in said holders, substantially as set forth.

4. A machine for dyeing cotton or other fabrics, which comprises a transfer-roller, a color-trough in which said roller is rotated, slotted holders pivoted at their lower ends, a connecting-rod applied to one holder and connected adjustably to the upper end of the other holder, tension-rollers, the shafts of which are guided in the slots of said holders, and means for adjusting said tension-rollers higher or lower in said holders, substantially as set forth.

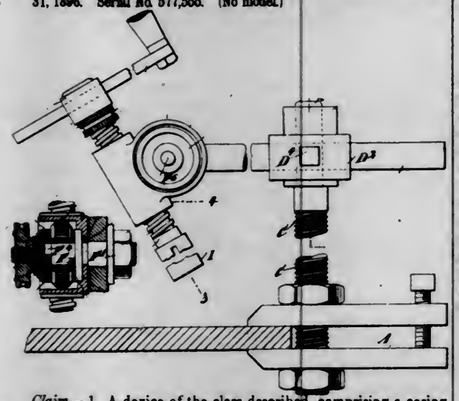
573,230. GEARING FOR BICYCLES. ALEXANDER MOSKIEWICK, Pittsburg, Pa. Filed Feb. 20, 1896. Serial No. 580,045. (No model.)

Claim.—1. In a gear for bicycles, a barrel on the crank-shaft provided on one end with a collar and the other end secured to journaled arms, the outer ends of said arms carrying pins protruding through the main sprocket-wheel and the inner ends being slotted and secured to a journaled plate or arm carrying pins protruding through the main and inner center sprocket, substantially as shown and described.

2. In a bicycle-gear, a truss-frame having the main sprocket-wheel arranged on the crank-shaft within said truss, a barrel on the crank-shaft secured to arms carrying pins protruding through the sprocket-wheel, the inner pins engaging the sprocket and central gear-wheels, and the outer pins on said arms being adapted to engage a catch-lever journaled on the shaft and retained in position by a bolt secured thereto, and to the truss-frame, said bolt being provided with a coiled spring, and the catch-lever having a spring-latch at one end, substantially as shown and described.



573,231. HAND-DRILL. JAMES MCSWEENEY, Pittsfield, Mass., assignor to the R. D. Jones & Sons Company, same place. Filed Jan. 31, 1896. Serial No. 577,556. (No model.)



Claim.—1. A device of the class described, comprising a casing having a bearing for the drill-spindle, a bolt held in the said casing, a worm-wheel mounted to turn loosely on said bolt and in mesh with the external thread of said spindle, washers engaging the faces of said worm-wheel, and means for pressing said washers in contact with the faces of the worm-wheel, substantially as shown and described.

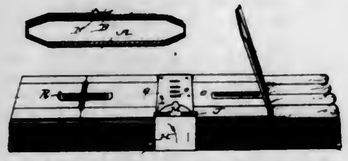
2. In a device of the class described, the combination with a casing, and an exteriorly-threaded drill-spindle mounted in a bearing in the said casing, of a bolt in the casing and having one end projecting therefrom to form a pivot for the casing, a worm-wheel mounted loosely on the bolt in the casing and engaging the drill-spindle, washers on the bolt on opposite sides of the worm-wheel, and a nut on the end of the bolt, substantially as described.

3. In a device of the class described, the combination with a supporting-rod, of a casing having a bearing at one side, a drill-spindle exteriorly threaded and mounted in the bearing of the casing, a bolt in the casing and serving to secure the casing to said arm, a worm-wheel loosely mounted on the bolt and engaging the drill-spindle, washers on the bolt on opposite sides of the worm-wheel, and a nut on the bolt, substantially as described.

4. In a device of the class described, the combination with a supporting-rod having an apertured end, of a casing having a bearing, a threaded drill-spindle mounted on the bearing, a bolt projecting through and secured to the casing to turn therewith, said bolt having screw-threaded ends and provided with a collar at about the middle of its length, one end of the bolt projecting through the aperture of the said rod, a worm-wheel on the bolt in the casing and meshing with the spindle, washers on the bolt on opposite sides of the worm-wheel and nuts on the ends of the said bolt, substantially as described.

5. In a device of the class described, the combination with a post, a head adjustable on the said post, and an arm adjustably secured to the said head and having its other end apertured, of a casing provided with a bearing, a threaded drill-spindle mounted in the said bearing, a bolt secured to the casing to turn therewith and having one end projecting therefrom to pass through the aperture of the said arm, a worm-wheel loosely mounted on the bolt in the casing and meshing with the drill-spindle, washers on the bolt on opposite sides of the worm-wheel, and nuts on the ends of the bolt, substantially as described.

573,232. GLOVE-HOLDER. EPHRAIM R. MABLO, Fort Wayne, Ind. Filed Apr. 16, 1896. Serial No. 587,821. (No model.)



Claim.—1. A glove-holder, consisting of a top and bottom section, one having hinged ends, sliding catches for locking said ends, a band surrounding the sections and having a lip at one end, and a plate having slots to receive said lip to permit adjustment of the sections.

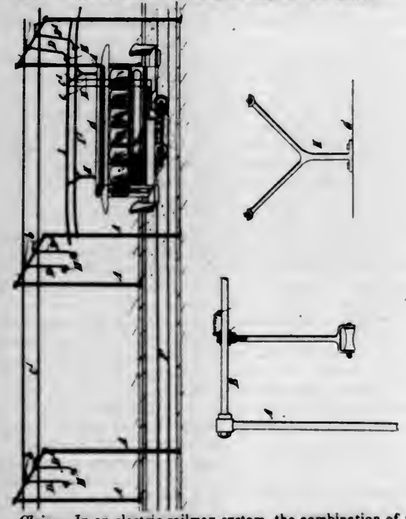
2. A glove holder consisting of the two sections, the hinged flaps on one of the sections and the sliding catches or slotted plates for holding the hinged flaps.

573,233. PROCESS OF PRECIPITATING PRECIOUS METALS FROM THEIR ALKALI CYANID SOLUTIONS. MAX NETTO, Almazarron, Spain. Filed Mar. 16, 1896. Serial No. 583,491. (No specimens.)

Claim.—1. The process herein described of precipitating silver and gold from their alkali cyanid solutions, which consists in acidulating the alkali cyanid solution containing said metals by hydrochloric acid so as to precipitate silver chlorid, separating the precipitated silver chlorid by filtration from the solution, and subjecting the acid filtrate to the action of an electric current so as to deposit the gold on the cathode, substantially as set forth.

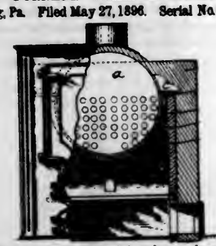
2. The process herein described of precipitating silver and gold from their alkali cyanid solutions, which consists in acidulating the alkali cyanid solution containing said metals with hydrochloric acid so as to precipitate silver chlorid, separating said silver chlorid by filtration, subjecting the acid filtrate to the action of the electric current so as to deposit the gold on the cathode, and regenerating the cyanid solution by the addition of caustic alkali, substantially as set forth.

573,234. ELECTRIC RAILWAY. ANDREW C. O'CONNOR, Lynn, Mass. Filed Oct. 26, 1895. Serial No. 566,953. (No model.)



Claim.—In an electric-railway system, the combination of positive and negative wires arranged over a track, rods extended across the track for supporting the wires, arms mounted to swing on said rods, but insulated therefrom, roller-contacts on the free ends of said arms, permanent electrical connections between the rods and wires, forked standards mounted on a car, bars supported on said standards but insulated therefrom, and connections between the bars and a motor on the car, substantially as specified.

573,235. FURNACE. WILLIAM H. PECK and DAVID R. W. PATTERSON, Pittsburg, Pa. Filed May 27, 1896. Serial No. 593,225. (No model.)



Claim.—1. In a furnace, a semicircular casing formed in sections overlapping each other and supported by a lug or flange engaging in the side wall, said lug or flange extending in close proximity to the boiler-shell to hold the casing in position, substantially as shown and described.

2. In a furnace, the casing around the boiler, arched walls, partitions and side walls for supporting the same, said partitions forming throats or passage-ways, and a series of air-inlets to the said throats to complete the combustion, substantially as shown and described.

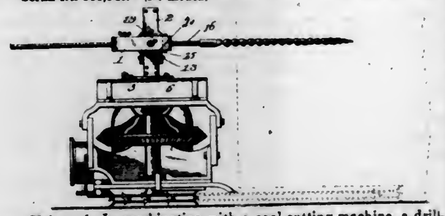
3. In a furnace, the boiler provided with a casing, supported by side walls, partitions arranged underneath said casing to form passage-ways from the combustion-chamber, a series of air flues or ducts leading to said passage-ways, and arched walls over the combustion-chamber and retort, reducing the smoke to a gas before the same reaches the flues, substantially as shown and described.

573,236. MALTED FOOD. CARL RACH, Chicago, Ill. Filed Nov. 9, 1895. Serial No. 568,486. (No specimens.)

Claim.—1. As a new article of food, extract of malt freed from malt-sugar in combination with the solids of milk, substantially as described.

2. The process of freeing the extract of malt from its malt-sugar which consists in mixing the malt-flour with water at a high temperature until the starch reaction ceases, then raising the same to a higher temperature, then evaporating the water until it is brought to a syrupy condition, then thoroughly mixing the same with alcohol until the malt-sugar is dissolved by the alcohol, then drawing off the alcoholic malt-sugar solution, then mixing the residue with milk, then evaporating this mixture to dryness *in vacuo*.

573,237. COMBINED COAL CUTTING AND DRILLING MACHINE. SAMUEL RAYBOULD, Nelsonville, Ohio. Filed Feb. 24, 1896. Serial No. 580,346. (No model.)

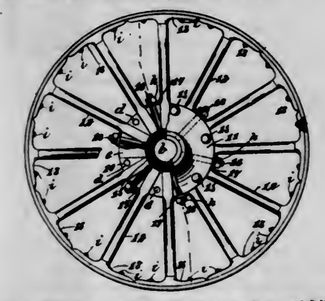


Claim.—1. In combination with a coal-cutting machine, a drill-supporting frame comprising a horizontally-adjustable portion 2 carrying a vertically-arranged idler-gear 14 and a horizontally-arranged driving gear 13 meshing with each other, the axis of gear 13 being at the axis of frame portion 2 and the said gear 13 adapted to engage and be driven by the power-shaft of the cutting-machine, and a drill-carrying-frame portion 1 pivoted to swing vertically on portion 2 and at the axis of gear 14 thereof and having gear 15 with its axis at right angles to the axis of said portion 1 and meshing with gear 14, substantially as shown and described.

2. In combination with a coal-cutting machine, a drill-supporting frame comprising a horizontally-adjustable portion 2 carrying a vertically-arranged idler-gear 14 and a horizontally-arranged driving-gear 13 meshing with each other, the axis of gear 13 being at the axis of said frame portion 2 and the said gear 13 adapted to engage and be driven by the power-shaft of the cutting-machine, a drill-carrying-frame portion 1 pivoted to swing vertically on portion 2 and at the axis of gear 14 thereof and having gear 15 with its axis at right angles to the axis of said portion 1 and meshing with gear 14, and a stop 20 on frame portion 2 to be engaged by portion 1 to prevent gear 15 coming in contact with gear 13, substantially as shown and described.

3. In combination with a coal-cutting machine, a drill-supporting frame comprising a horizontally-adjustable portion 2 carrying an idler-gear 14 and a driving-gear 13 adapted to be engaged and driven by the power-shaft of the cutting-machine, a drill-frame 1 pivoted to swing vertically on said frame 2 and having a gear 15 adapted to be driven by the idler-gear 14, said frame 1 having slot 19 to permit the idler-gear 14 to be disengaged from the driving-gear 13, substantially as and for the purpose described.

573,238. VEHICLE-WHEEL. PARIS RICHARDSON, Deshler, Nebr. Filed Apr. 15, 1896. Serial No. 587,636. (No model.)



Claim.—1. The combination with a tire, spokes, and fellies on the spokes and independent of each other, of a wheel-hub composed of two sections, one slidable on the other, said sections having parallel flanges receiving the inner ends of the spokes between them, bolts and nuts to bind the hub-sections together, a divided ring in the hub, whereon the inner ends of the spokes are seated, radial bolts having engagement with the divided ring and projecting between the spokes, clamping-plates on the outer ends of the radial bolts and resting on the hub-flanges, and nuts for the outer ends of said bolts, substantially as described.

2. In a vehicle wheel of the described construction, the wheel-hub comprising the two circumferentially-flanged hub-sections, one section slidable on the other section, radial spaced recesses in the face of one circumferential flange, spaced bolts engaging perforations in the flanges and having nuts adapted to draw the hub-sections together, a divided ring in the hub between its flanges, radial bolts having their heads engaged with the inner side of the ring and their bodies projecting through the perforations thereof, clamping-plates on the outer ends of the radial bolts, and nuts on said bolt ends pressing said plates on the flanges of the hub, substantially as described.

3. A wheel having a hub provided with two annular flanges, an expansive ring located between the flanges, a series of spokes having their inner portions located between the flanges and bearing on the ring, a tire engaging the outer ends of the spokes, clamping-plates bearing on the outer edges of the flanges, and bolts connected to the clamping plates and to the ring, substantially as described.

573,239. BOTTLE-STOPPER. FREDERICK C. ROCKWELL, Hartford, Conn. Filed Dec. 10, 1895. Serial No. 571,676. (No model.)



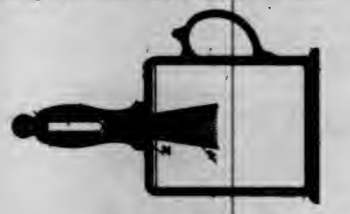
Claim.—1. A bottle-stopper consisting of a hard head with a depending hollow stem having perforated walls and an elastic sealing-body formed of a composition of cork and a binding-gum molded and pressed in a plastic condition to the stem whereby the composition flows through the perforations and there solidifies into a sealing-body having a homogeneous texture of uniform density, substantially as specified.

2. A stopper consisting of a hard head with a depending perforated stem and an elastic sealing-body with a corrugated or grooved exterior surface formed of cork and a binding-gum molded and pressed in a plastic condition into the perforations in the stem, substantially as specified.

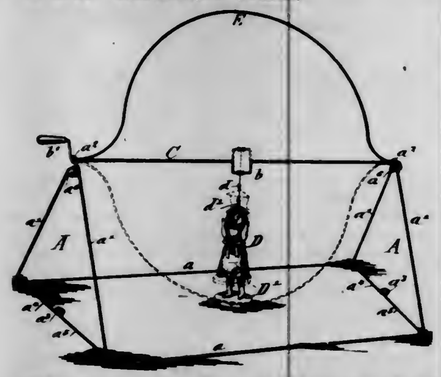
573,240. SHAVING-MUG. BERNARD G. SAVAGE and ALBERT C. L. LOSENHAN, Victor, Colo. Filed Feb. 3, 1896. Serial No. 577,892. (No model.)

Claim.—As a new article of manufacture, a shaving-mug consisting of a cup shaped body having its lower portion reduced and screw-threaded, and a base portion having a threaded flange for engaging

the reduced and threaded portion of the body and a recessed outer face, said base portion having a mirror located on its inner face and provided with a hinged standard on its outer recessed face said standard folding in said recess when not in use, as set forth.



573,241. JUMPING TOY. FRANK P. SEIBT, Brooklyn, N. Y. Filed Jan. 23, 1896. Serial No. 576,574. (No model.)



Claim.—A jumping toy, consisting of a supporting-frame, formed of a base and triangularly-disposed uprights, said base having sectional ends pivoted together and at the sides of the base, while the triangular supports are pivoted at their upper ends, a crank-shaft supported in bearings at the upper ends of the frame, and provided with a central crank portion, a toy figure suspended by a wire link from said crank portion, and a wire rope attached to the crank-shaft and being arranged in the same plane with, but in an opposite direction to said crank portion, substantially as set forth.

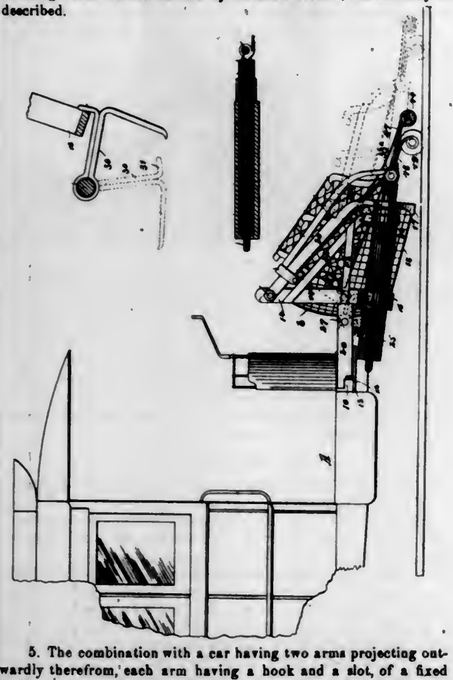
573,242. CAR-FENDER. MARIANO SPARNO and LOUIS RUSSO, New York, N. Y. Filed July 8, 1896. Serial No. 598,423. (No model.)

Claim.—1. In a car-fender, the combination, of a frame adapted for attachment to a car, a second frame having spring-controlled sliding movement upon the attached frame, latches respectively arranged to hold the sliding frame in a forward and in a rearward position, a receiving frame having a hinge connection with the sliding frame and capable of vertical movement, downwardly-pressing springs having bearing upon the upper surface of the receiving-frame, and wheels connected with the lower surface of the said receiving-frame, as and for the purpose set forth.

2. In a car-fender, the combination, of a frame adapted for attachment to a car, a second frame having spring-controlled sliding movement upon the attached frame, latches respectively arranged to hold the sliding frame in a forward and in a rearward position, a receiving-frame hinged to the sliding frame and capable of vertical movement, downwardly-pressing springs having bearing upon the upper surface of the receiving-frame, wheels connected with the lower portion of the said receiving frame, a cushion located on the forward edge of the said receiving-frame, and guards extending laterally and rearwardly from the ends of the cushioned portion of the receiving-frame, as and for the purpose specified.

3. In a car-fender, the combination, of arms projected from the car-body, the arms having sockets formed therein and having recesses at the rear of the sockets, pivoted locking devices supported from the car and arranged to pass below the recesses in the arms projecting from the car, a fender having rearwardly-extending arms provided with offsets to enter the recesses in the arms from the car, and a shaft connected with the fender-arms and arranged to enter the sockets in the projecting arms from the car, as and for the purpose set forth.

4. The combination with a car, of two arms projecting outward from the car, the arms having hooks at their outer extremities and slots formed in their main portions, a fixed fender-section having rearwardly-projecting arms each having a hook, the hooks of the latter arms respectively extending into the slots of the arms on the car and the hooks of the former arms engaging the fixed fender-section, and a sliding fender-section carried by the fixed section, substantially as described.



5. The combination with a car having two arms projecting outwardly therefrom, each arm having a hook and a slot, of a fixed fender-section, and two arms projecting from the fender-section each arm having a hook respectively fitting in the hooks of the arms on the car and the hooks of said car arms being engaged with the fender-section, substantially as described.

6. A car-fender having a fixed fender-section, two tubes held by the fixed fender-section, a rod sliding in each tube, a spring pressing each rod, a shaft journaled in the forward portions of the rods, and a sliding fender-frame pivotally connected to the shaft, the sliding frame being movable with the rods and shaft to project forward of the fixed section, or to lie over said section, substantially as described.

7. A car-fender having a fixed fender-section provided with an upwardly-inclined slideway, a tube held by the fixed fender-section, a rod slidable within the tube, a spring pressing the rod, a shaft connected with the rod, the rod being reciprocal through the tube, and a sliding frame pivotally connected to the rod and movable in the slideway of the fixed section, substantially as described.

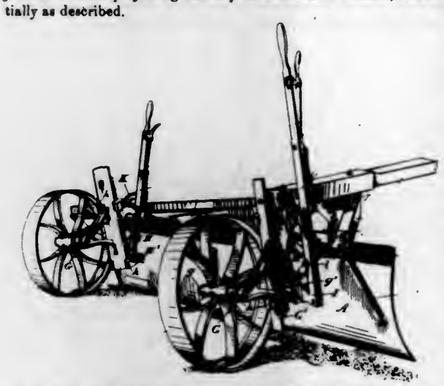
8. In a car-fender, a fixed fender-section, a tube carried by the fixed section, a rod reciprocal within the tube, a shaft connected to the rod, a sliding frame pivoted to the rod and having guided movement on the fixed fender-section, and a receiving fender-section pivotally connected to the rod and projecting forwardly thereof, substantially as described.

9. A car-fender having a fixed fender-section provided with two tubes, a rod movable in each tube, a shaft connected to the forward extremities of the rod, a sliding fender section pivotally connected to the shaft and having movement on the fixed section, a receiving fender-section pivotally connected to the rod and projecting forward thereof, and a spring carried by the sliding section and pressing downward on the receiving-section, substantially as described.

573,243. ROAD-PLANER. JOHN C. STEELE, Vaughan, Canada, assignor of one-half to Alexander H. Dixon, Toronto, Canada. Filed June 15, 1896. Serial No. 595,614. (No model.)

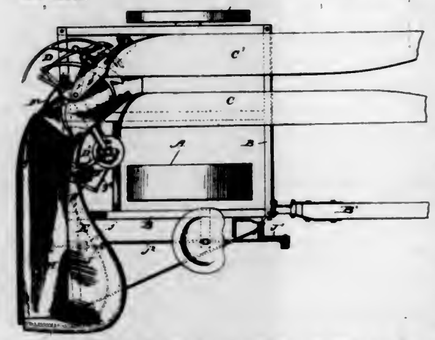
Claim.—1. In combination in a road-planer, the plane-iron, the bracket H secured thereto, and extending parallel therewith, the supporting-wheels, the movable supports therefor and the laterally-extending guides for said supports projecting from said brackets, substantially as described.

2. In combination in a road planer, the plane-iron, the bracket secured thereto parallel therewith, the revoluble quadrant with means for operating the same secured to said bracket parallel therewith, the stationary quadrant, means carried by said operating means engaging said stationary quadrant, the guides carried by said bracket, the rack engaging said revoluble quadrant movable in said guides, the laterally extending bracket projecting from said rack, the wheel and the journal therefor projecting laterally from the said bracket, substantially as described.



3. In a road-planer, the combination with the plane-iron suitably formed, secured to a suitable frame, and placed at an angle therewith, of the carrying-wheels journaled in studs forming part of a bracket attached to or forming part of a vertical rack, a supporting bracket, a strap for securing it to the plane-iron, recessed guiding-wings with oppositely-set grooves designed to receive the rack and means for raising the rack vertically within the guiding-wings as and for the purpose specified.

573,244. SHEAF-CARRIER FOR SELF-BINDING HARVESTERS. JOHN F. STEWARD, Chicago, Ill. Filed June 19, 1895. Serial No. 553,378. (No model.)



Claim.—1. In combination a substantially vertical binder adapted to deliver the bundles in a substantially stubbleward direction, a bundle-carrier located on the stubble side of the binder and adapted to receive the said bundles and sustain them in an upright position, mechanism for moving the completed bundle from the said binder to the said bundle-carrier, said bundle-carrier having a removable platform upon which the butts of the said bundles rest, and tripping mechanism, substantially as described.

2. In combination, a substantially vertical binder, a bundle-support extending stubbleward therefrom onto which the bundles may be moved and there accumulate, said binder having ejecting-arms to operate upon the bundle adjacent to the position of the band placed therearound, the butt-moving mechanism adapted to slide the butts of the individual bundles upon the said bundle-support, means for permitting the said bundles to drop endwise to the ground, and tripping mechanism, substantially as described.

3. In combination, a substantially vertical binder, a bundle support extending stubbleward therefrom upon which the bundles may be moved and there accumulate, and having a falling bottom, said binder having ejecting-arms to operate upon the bundle adjacent to the position of the band placed therearound, the butt-moving mechanism adapted to slide the butts of the individual bundles upon the said bundle-support, means for permitting the said bundles to drop endwise to the ground, and tripping mechanism, substantially as described.

4. In combination, a substantially vertical binder, a bundle-support extending stubbleward therefrom upon which the bundles may be moved and there accumulate, hinged at its forward margin and having the upturned rear margin, said binder having ejecting-arms to operate upon the bundle adjacent to the position of the band placed therearound and having the butt-moving mechanism adapted to slide the butts of the individual bundles upon the said bundle-support, and means for permitting the said bundles to fall endwise to the ground and draw from their support, and tripping mechanism, substantially as described.

5. In combination, a substantially vertical binder, a bundle receiver and carrier adapted to sustain the bundles in a substantially vertical position, said receiver and carrier having a forward limit against which the bundles may lean, a rearward limit to prevent the bundles from tipping rearward while being guided onto the receiver and carrier, and tripping mechanism, substantially as described.

6. In combination, a substantially vertical binder, a bundle receiving and carrying device, said device located on the stubbleward side of the binder and having a surface along which the bundles may be moved, supports to hold the bundles in their substantially erect position, said surface hinged at its front and adapted to fall at its rear edge, and thus permitting the butts of the bundles to strike the ground, and tripping mechanism, substantially as described.

573,245. ELECTRIC SOLDERING-CLUB. PAUL STOTZ, Stuttgart, Germany, and FRIEDRICH W. SCHINDLER-JENNY, Kennelbach, Austria-Hungary. Filed Jan. 14, 1895. Serial No. 534,923. (No model.) Patented in England Sept. 8, 1894, No. 17,129; in France Oct. 10, 1894, No. 241,981; in Sweden Oct. 12, 1894, No. 6,167; in Belgium Oct. 15, 1894, No. 112,249; in Switzerland Oct. 17, 1894, No. 9,352; in Hungary Nov. 9, 1894, No. 1,554; in Austria Nov. 23, 1894, No. 44/6,069; in Germany Nov. 28, 1894, No. 83,405, and in Italy Dec. 31, 1894, CCLII, 37,426.



Claim.—1. An electrically-heated soldering-iron, consisting of the casing, an insulating heat body contained within said casing, a conducting-wire located in said heat body, a soldering member or head separable from the casing, said casing and head fitting one partially within the other and sliding one upon the other, a clamp carried by said iron and connected to said head so as to be detached therefrom, and means for drawing said clamp longitudinally to effect close contact between the meeting surfaces of the casing and head, substantially as and for the purposes described.

2. An electrically-heated soldering-iron consisting of the casing containing an insulating heat-body and conducting-wire, a soldering member or head separable from the casing, said casing and head fitting one partially within the other, a cover to the casing, and clamps adapted to draw the cover and head to their respective places and secure them therein, substantially as and for the purposes described.

3. An electrically-heated soldering-iron, consisting of the casing containing an insulating heat body and conducting-wire, a soldering member or head separable from the casing, said casing and head fitting one partially within the other, a cover to the casing, clamps connected at their lower ends to said soldering member or head, and adjusting means forming a connection between said clamps and cover and adapted to draw the cover and head to their respective places and secure them therein, substantially as and for the purposes described.

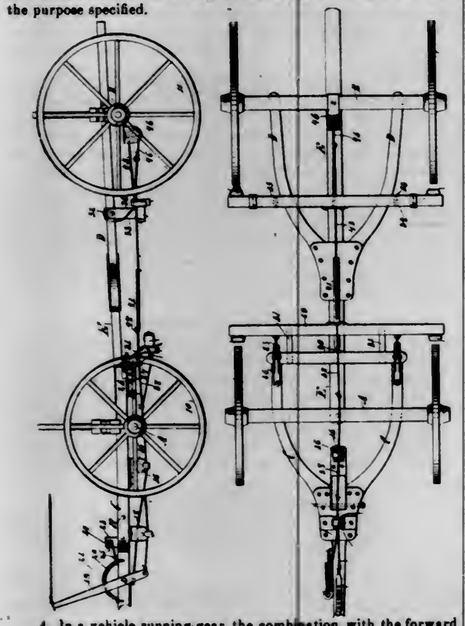
573,246. VEHICLE-BRAKE. VARDIMAN T. SWEENEY, Springfield, Ky. Filed May 22, 1896. Serial No. 592,582. (No model.)

Claim.—1. In a vehicle running-gear, the combination, with a brake beam and a pivoted tongue, of a flexible connection between the tongue forward of its pivot and the brake-beam, and a bearing located at the heel of the tongue, adapted for engagement with the aforesaid yielding connection between the tongue and the brake-beam, as and for the purpose set forth.

2. In a vehicle running-gear, the combination, with a brake-beam, springs normally holding the said beam away from the wheels, a pivoted tongue, and a flexible connection between the said tongue forward of its pivot and the brake beam, of a bearing located at the heel of the tongue, being normally in engagement with the said flexible connection, the said bearing serving when the heel end of the tongue is depressed to cause the flexible connection to draw the brake-beam against the tension of its springs, as and for the purpose specified.

3. In a vehicle running-gear, the combination, with a brake-beam, springs normally holding the said beam away from the wheels, a pivoted tongue, and a flexible connection between the said tongue forward of its pivot and the brake-beam, of a bearing located at the

heel of the tongue, being normally in engagement with the said flexible connection, the said bearing serving when the heel end of the tongue is depressed to cause the flexible connection to draw the brake-beam against the tension of its springs, a lever fulcrumed upon the tongue and attached to the aforesaid flexible connection between the tongue and brake-beam, and a locking device for the said lever, as and for the purpose specified.



4. In a vehicle running-gear, the combination, with the forward hounds, a brake-beam, a tongue pivoted between the said hounds, a flexible connection between the brake-beam and the tongue forward of the pivot-point of the latter, the heel end of the tongue having a bearing on the said connection, of a lever fulcrumed upon the tongue and likewise connected with the brake-beam, a rack for the said lever, and a guard for the lever and rack, as and for the purpose specified.

5. In a vehicle running-gear, the combination, with the forward hounds, a tongue pivoted therein, a brake-beam, and a connection between the brake-beam and the tongue, so made that when the heel of the tongue is depressed the brake-beam will be brought into operation, of a lock-lever carried by the hounds, and a keeper located on the tongue, whereby when the keeper is engaged by the lock-lever the tongue will be held rigid to the hounds, as and for the purpose set forth.

6. In a vehicle running-gear, the combination, with a support, and a bracket attached to the support and provided with a series of apertures, of a brake-beam, and a link connection between the brake-beam and the brackets, the said links being adapted for connection with the brackets at any apertured point therein, as and for the purpose specified.

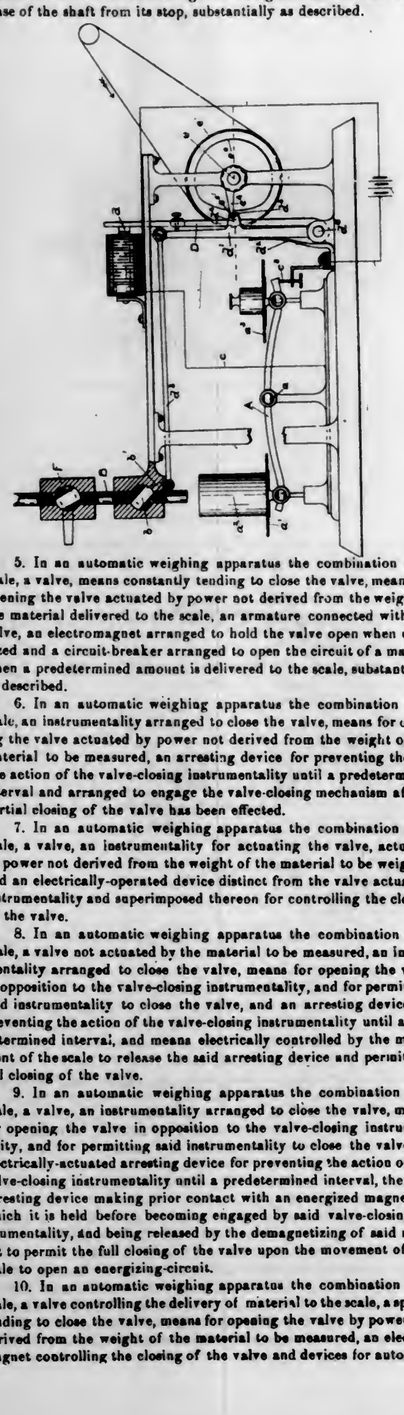
573,247. AUTOMATIC WEIGHING-MACHINE. EDWARD G. THOMAS, Waltham, Mass. Filed Aug. 19, 1895. Serial No. 559,726. (No model.)

Claim.—1. In an automatic weighing apparatus the combination of a scale, a valve controlling the delivery of material to the scale, a spring tending to close the valve, means for opening the valve by power not derived from the weight of the material delivered to the scale and an electromagnet controlling the closing of the valve, as and for the purposes described.

2. In an automatic weighing apparatus the combination of a scale, a valve or its equivalent, a spring tending to hold the valve closed, means for opening the valve actuated by a source of power extraneous to the scale, an electromagnet arranged to control the closing of the valve, and a circuit-breaker in the circuit of a magnet operated by the motion of the scale, as and for the purposes described.

3. In an automatic weighing apparatus the combination of a scale, a valve or its equivalent, a spring tending to close the valve, a shaft, means for rotating the shaft, a cam upon the shaft adapted to open the valve, a magnet or solenoid to control the closing of the valve and a circuit-closer in the circuit of a magnet, as and for the purposes described.

4. In an automatic weighing apparatus the combination of a scale, a valve, a spring tending to close the valve, a shaft means for rotating the shaft, a cam arranged to open the valve, a stop arranged to stop the turning of the shaft at a definite point in its rotation and electrical devices for controlling the closing of the valve and the release of the shaft from its stop, substantially as described.



5. In an automatic weighing apparatus the combination of a scale, a valve, means constantly tending to close the valve, means for opening the valve actuated by power not derived from the weight of the material delivered to the scale, an armature connected with the valve, an electromagnet arranged to hold the valve open when energized and a circuit-breaker arranged to open the circuit of a magnet when a predetermined amount is delivered to the scale, substantially as described.

6. In an automatic weighing apparatus the combination of a scale, an instrumentality arranged to close the valve, means for opening the valve actuated by power not derived from the weight of the material to be measured, an arresting device for preventing the entire action of the valve-closing instrumentality until a predetermined interval and arranged to engage the valve-closing mechanism after a partial closing of the valve has been effected.

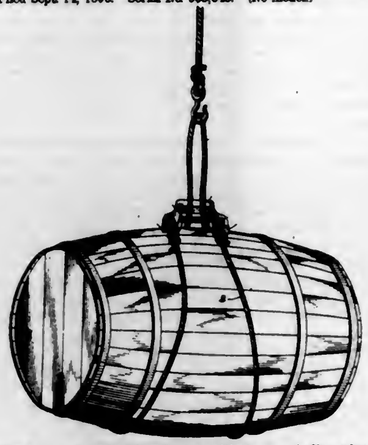
7. In an automatic weighing apparatus the combination of a scale, a valve, an instrumentality for actuating the valve, actuated by power not derived from the weight of the material to be weighed, and an electrically-operated device distinct from the valve actuating instrumentality and superimposed thereon for controlling the closing of the valve.

8. In an automatic weighing apparatus the combination of a scale, a valve not actuated by the material to be measured, an instrumentality arranged to close the valve, means for opening the valve in opposition to the valve-closing instrumentality, and for permitting said instrumentality to close the valve, and an arresting device for preventing the action of the valve-closing instrumentality until a predetermined interval, and means electrically controlled by the movement of the scale to release the said arresting device and permit the full closing of the valve.

9. In an automatic weighing apparatus the combination of a scale, a valve, an instrumentality arranged to close the valve, means for opening the valve in opposition to the valve-closing instrumentality, and for permitting said instrumentality to close the valve, an electrically-actuated arresting device for preventing the action of the valve-closing instrumentality until a predetermined interval, the said arresting device making prior contact with an energized magnet by which it is held before becoming engaged by said valve-closing instrumentality, and being released by the demagnetizing of said magnet to permit the full closing of the valve upon the movement of the scale to open an energizing-circuit.

10. In an automatic weighing apparatus the combination of a scale, a valve controlling the delivery of material to the scale, a spring tending to close the valve, means for opening the valve by power not derived from the weight of the material to be measured, an electromagnet controlling the closing of the valve and devices for automatically releasing said means for opening the valve, after the closing of said valve.

573,248. SLING-PULLEY. FRANKLIN THOMPSON, Brooklyn, N. Y. Filed Sept. 14, 1896. Serial No. 605,843. (No model.)



Claim.—1. A pulley-block comprising spaced diverging arms, united by a connecting portion at one end in combination with a sheave journaled between said arms intermediate said connecting portion and the free ends of the arms, and a rope having its ends fastened in the eyes at the extremities of said arms, substantially as described.

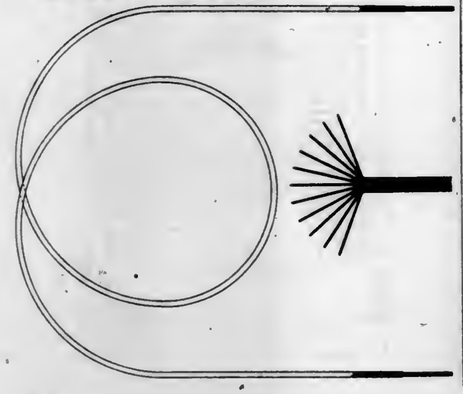
2. A substantially U-shaped pulley-block having spaced arms and a tapering and inwardly-contracting open throat, in combination with a sheave journaled between said arms and located in said throat, and a rope having its ends fastened to the ends of said arms substantially as described.

3. A substantially U-shaped block having spaced arms, and a tapering and inwardly contracting open throat an intermediate tongue projecting between said arms, and terminating in the open throat and sheaves journaled at each side of said tongue between the arms, substantially as described.

4. A substantially U-shaped block having spaced arms each provided at its extremity with an eye, in combination with a cross pin or bolt passing through said arms, a sheave journaled on said pin or bolt, and a sling-rope having its ends fastened in said eyes, substantially as described.

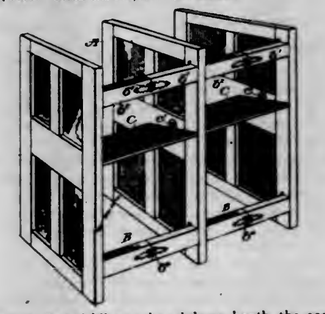
5. A pulley-block having spaced arms the inner adjacent sides of which diverge toward their extremities to form a tapering and inwardly-contracting throat, the opposing inside faces of the inner ends of the arms being parallel, in combination with one or more sheaves arranged between said arms, and a rope having its ends connected to the extremities of said arms, substantially as described.

573,249. LACING-CORD. JAMES P. TOLMAN, Newton, Mass., assignor to the Samson Cordage Works, Boston, Mass. Filed Jan. 15, 1895. Serial No. 534,972. (No specimens.)



Claim.—As an improved article of manufacture, the lacing-cord herein described, the same consisting of a number of flexible, fibrous strands twisted or braided together and having its ends stiffened, hardened and reduced in size and bound together by an adhesive cement, hard at ordinary temperatures, and which permeates the said flexible, fibrous strands so as to solidify and join the same together throughout the bodies of the ends of the cord, substantially as set forth.

573,250. ELECTION-BOOTH. CHARLES G. WEBER, Cincinnati, Ohio, assignor of one-third to Jacob H. Bromwell, same place. Filed Jan. 6, 1896. Serial No. 574,507. (No model.)



Claim.—1. In a folding or knockdown booth, the combination with two or more sides or panels, of cross-bars at the back comprising two members having their outer ends hinged to the sides and their inner ends hinged together so as to be opposed when in position for use and adapted to fold inward upon each other when not in use, means for locking the opposed hinged ends of the cross-bars so as to prevent folding when the sides are separated for use, and a table or desk arranged between the sides or panels hinged to one of said sides so as to swing across from side to side and serve as a support for preparing the ballots and as a brace for holding and retaining the sides separated, whereby said sides may be rigidly held apart or folded closely together for transportation or storage, substantially as described.

2. In a folding or knockdown booth, the combination with two or more sides forming separate compartments, of cross-bars at the back arranged at the upper and lower rear portion of each compartment and comprising two members having their outer ends hinged to the sides and their inner ends hinged together so as to be opposed when in position for use and adapted to fold inward upon each other when not in use, means for locking the opposed hinged ends of the cross-bars so as to prevent folding when the sides are separated for use, a table or desk hinged at one end to one of the sides so as to swing across from side to side and serve as a support for preparing the ballots and as a brace for holding and retaining the free end of said desk to the opposite side, whereby the said sides may be rigidly held apart for use or folded together for transportation or storage, substantially as described.

573,251. COIN-HOLDER. CHARLES A. WEBSTER, Oakland, Cal., assignor of one-half to George B. McClelland, same place, and Milton F. Webster, Spokane, Wash. Filed Apr. 3, 1895. Renewed May 13, 1896. Serial No. 591,440. (No model.)

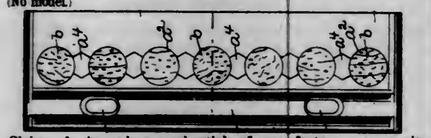


Claim.—1. A coin-holder consisting of plates having longitudinal channels extending from end to end, and having a transverse section sufficient to allow coins of a given dimension to pass freely, springs at the upper end, and springs at the lower end by which the coins are prevented from falling out by gravitation, openings made through the opposite sides of the lower end, whereby the lowermost coin may be grasped between the thumb and fingers and withdrawn from the spring-holders, and a connection at both ends of the device for attaching it to the clothing of the user.

2. A coin-holder consisting of one or more channeled sections adapted to receive coins, springs at the upper end between which the coins are introduced, and springs at the lower end whereby the coins are prevented from falling out by gravitation, openings made in the lower end opposite the lowermost of the coins whershy it may be grasped and removed, hinges by which the sections are united together so that a single coin is contained in each section, a device at the upper end for attaching the holder to the clothing of the user,

and an elastic connection from the lower end by which it is prevented from violent swinging motion.

573,252. BRAKE-SHOE. WILLIAM W. WHITCOMB, Brookline, and FRANK F. COGGIN, Wakefield, Mass., assignors to the Composite Brake Shoe Company, Boston, Mass. Filed Oct. 16, 1896. Serial No. 609,064. (No model.)

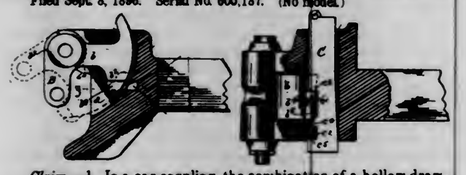


Claim.—1. As an improved article of manufacture, a composite brake-shoe consisting of a metal body portion provided with one or more sockets or openings, and a cork block or section fitted into said opening and retained therein by the expansion of the cork in its socket, substantially as and for the purpose specified.

2. As an improved article of manufacture, a brake-shoe provided with a plurality of sockets a^2 and connecting intervening openings a^4 formed in that part of the body portion in line with the portion of the thread of the wheel worn by the rail, and cork sections or blocks inserted into the sockets a^2 in a compressed state, substantially as and for the purpose specified.

3. As an improved article of manufacture, a composite brake-shoe consisting of a body portion provided with a plurality of sockets or openings, and a plurality of compressed cork sections inserted into said sockets or openings and retained therein solely by the expansion of the cork, substantially as described.

573,253. CAR-COUPLING. GEORGE AABEL, San Francisco, Cal. Filed Sept. 8, 1896. Serial No. 605,187. (No model.)

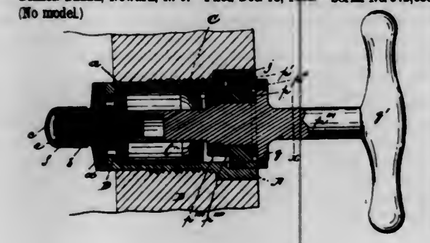


Claim.—1. In a car-coupling, the combination of a hollow draw-head and a knuckle having a rear hook projected into the core thereof, with a lock adapted to keep the knuckle closed in its downward position and also having a hook mating with that of the knuckle, whereby the lock may be kept in a raised position and the knuckle allowed to open, substantially as described.

2. In a car coupling, the combination of a draw-head, a knuckle arranged to protrude and swing therein, the protruding portion of the knuckle having its upper surface partly cut away to form a seat and its rear end provided with a hook below the same, and a lock having a shoulder adapted to engage said seat and a hook thereunder mating with that of the knuckle whereby the lock may be partly raised to unlock the knuckle and its shoulder shifted from its seat to the upper surface of the knuckle upon the opening of the latter, substantially as described.

3. In a car-coupling, the combination of a hollow draw-head having a slot communicating with the core thereof, a knuckle projecting into the core of the draw-head and having a hook arranged to lie within the plane of its slot, and a lock loosely fitted within said slot, said lock having a hook mating with that of the knuckle and a forwardly-located eye whereby it may be pulled up and its lower end caused to swing forward so that its hook will engage the knuckle-hook, substantially as described.

573,254. FAUCET-BUNG AND FLUSHING-KEY FOR SAME. DILLON BERER, Newark, N. J. Filed Dec. 13, 1895. Serial No. 572,035. (No model.)



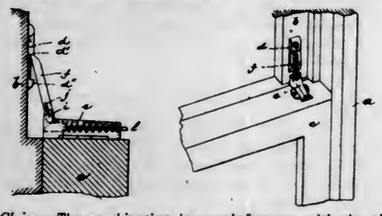
Claim.—1. The improved faucet-bung comprising the body portion having a valve-seat and faucet-seat, an inner and an outer valve and means for holding each to the valve-seat, a strainer covering the inner valve, and a cap secured to the hub of the inner valve and holding said strainer in place and covering said holding means, all combined substantially as set forth.

2. The combination in a faucet-bung, with the bung-body portion adapted to be fastened into the bung-hole of the barrel, and having a key-seat and valve-seat, of a valve-disk *a*, having the hub *g*, and head *h*, a valve-disk *a'*, arranged on the hub *g*, and having a hub *b*, and a cap covering the end of the hub *g*, and fastened to the hub *b*, substantially as set forth.

3. The combination in a faucet-bung with the bung-body portion adapted to be fastened into the bung-hole of a barrel, and having a key-seat and valve seat, of a valve-disk, *a*, having the hub *g* and a head *h*, a valve-disk, *a'*, arranged on the hub *g*, and having the hub *b*, a nut *e*, spring-washer, *f*, and cap *c*, inclosing said nut and washer and fastened to said hub *b*, substantially as set forth.

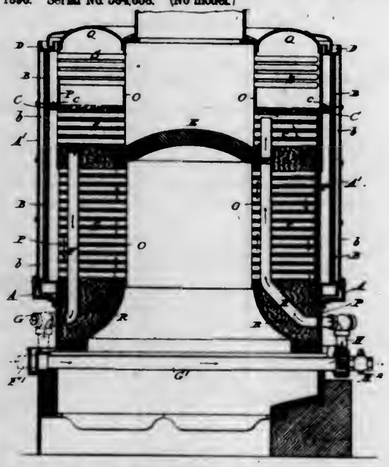
4. The combination with the faucet-bung body having the interior grooves to receive the faucet-lugs, *o*, a valve-seat and a valve having means to receive the key faucet, of a flushing-key comprising a collar adapted to be set into the said bung-body and having peripheral ridges corresponding with and extending into said interior grooves and having forward stop projections *p''*, corresponding with said ridges and a handled key-shank working in said collar and having an integral flange or shoulder *q*, having at its periphery a lateral projection *q'*, limited in its oscillating movements by the forward projections *p*, and means for holding the collar and shank in operative relation, substantially as set forth.

573,255. SASH-FASTENER. FRANK R. BENEDICT, Newark, N. J. Filed Apr. 1, 1896. Serial No. 585,695. (No model.)



Claim.—The combination, in a sash-fastener, with the plate *d*, having a locking shoulder or projection *d'*, of a pivotal and sliding tongue *f*, and a bolt *g*, adapted to enter beneath the extremity of said tongue to hold the same into engagement with the said plate *d*, and a plate providing bearings for said tongue and bolt, substantially as and for the purposes set forth.

573,256. STEAM-BOILER. WILLIAM H. BERRY, Chester, Pa., assignor to the Berry Engineering Company, same place. Filed Mar. 24, 1896. Serial No. 584,658. (No model.)

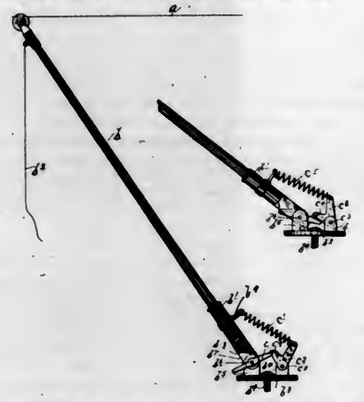


Claim.—1. The combination, with a boiler, of a coil exposed to the heat of the furnace and through which the water in the boiler circulates, the coil being supplied with water from a point near the outer shell of the boiler, above the lowest safety water-level, and discharged at a point at or slightly below the normal water-level, and means, such as described, to cause the water to flow always in one direction, substantially as set forth.

2. The combination, with a boiler, of a coil exposed to the heat of the furnace and through which the water in the boiler circulates, an uptake-pipe connected with the coil and placed within the boiler near the heated inner shell, and a downtake-pipe connected with the opposite end of the coil and rising within the boiler near the cooler outer shell to a point above the lower safety water-level, substantially as set forth.

3. The combination, with a boiler, of a coil exposed to the heat of the furnace, and through which the water in the boiler circulates, an uptake-pipe and a downtake-pipe, within the boiler connected to the opposite ends of the coil, and placed near the inner and outer shells, respectively, and means, such as described, to cause the water to flow always in one direction, substantially as set forth.

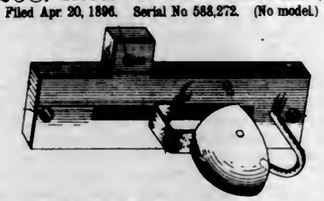
573,257. TROLLEY-POLE SAFETY DEVICE. BÖRRE H. BÖRRESON, Minneapolis, Minn., assignor of one-half to Bertha A. Jackson, same place. Filed July 26, 1895. Serial No. 557,205. (No model.)



Claim.—1. The combination with a trolley-pole, of a tension device therefor having a base or anchor part which is movable with respect to the trolley-pole, and a combined trip and setting device for said movable base or anchor part, comprising a pair of levers that are locked, to set said tension device under strain, by engagement with each other at a point to one side of the dead-center of said levers and are tripped by the direct contact therewith of parts that are rigid with the trolley-pole, substantially as described.

2. The combination with the trolley-pole, and a spring or springs for setting the same under tension, of the bell-crank anchor c^3, for the lower end of the spring, having the notch c^4, and a lever pivoted to the trolley-pole pivot-pin, and operative by the pole to rock said bell-crank anchor and set and hold the same in its tension-producing position, when the pole is pulled down and operative by the pole, when it jumps from the wire, to release the bell-crank anchor and permit the same to rock into its slack-producing position, for allowing the pole to drop into a safe position, substantially as described.

573,258. HAT AND COAT HOOK. CHARLES P. BRAND, Allegheny, Pa. Filed Apr. 20, 1896. Serial No. 588,272. (No model.)



Claim.—A hat and coat hook consisting of a box, an outwardly-extending portion forming a locking-casing, a casing secured in said box, a toothed rack provided in said casing, a spring seated in said casing adapted to bear against said rack-bar, a locking-bar projecting through a slot formed from said locking-casing to said casing around said rack-bar, a lug formed on said locking-bar, a spring to press said bar into engagement with the teeth of the rack-bar, an arm carried by said rack-bar, a cap secured on the outer end of said arm said cap having a downwardly-projecting flange, a hook secured to said casing fitting under said cap, a cover for said casing having a slot through which said arm projects, as and for the purpose described.

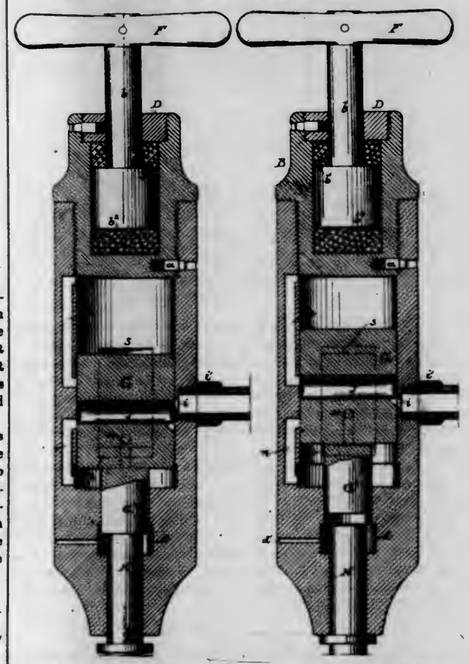
573,259. RADIATOR-SUPPORT. LEROY S. BUNKER, Webster City, Iowa. Filed Aug. 10, 1895. Serial No. 558,826. (No model.)



Claim.—1. A radiator-foot comprising a metal casting having recesses in its sides, and a metal piece fitted in each of said recesses and provided with an inwardly-turned top edge, and with bolt-holes coinciding with holes in the main portion of the foot, and bolts and nuts for clamping the parts together.

2. A radiator-foot comprising a metal casting having recesses in its sides and transverse bolt-holes, and a metal piece fitted in each of said recesses and provided with an inwardly turned top edge, and with bolt holes coinciding with holes in the body of the foot, in combination with the lower end of a radiator loop or section having a rib or outwardly-turned parallel flanges at its bottom end, and bolts and nuts for clamping the parts together.

573,260. IMPACT-TOOL. JOHN F. CLEMENT, Philadelphia, Pa., assignor to the Clement Pneumatic Tool Company, Camden, N. J. Filed May 7, 1896. Serial No. 590,561. (No model.)



Claim.—1. The combination in an impact-tool, of a cylinder having an inlet-port, and conveyer-ports, one of the latter communicating with one end of the cylinder and the other with the opposite end of the same, with a piston reciprocating in said cylinder and having an opening transversely through it which serves to convey the motive fluid from the inlet-port to the conveyer ports alternately as the piston is reciprocated, whereby side pressure upon the piston is prevented.

2. The combination in an impact-tool, of a cylinder having an inlet-port, conveyer-ports, one communicating with one end of the cylinder, and the other with the opposite end of the same, and exhaust-ports for the opposite ends of the cylinder, with a piston reciprocating in said cylinder and serving by its movements to direct motive fluid first to one end of the cylinder, and then to the other end of the same, and an escape-passage formed in said piston and serving to open communication between the forward end of the cylinder and

the forward exhaust-port, on excessive forward movement of the piston in the cylinder.

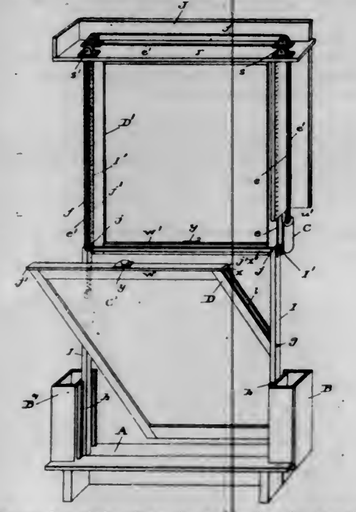
3. The combination in an impact-tool, of a cylinder, a piston reciprocating therein, and a stem detachable from said piston, and projecting forwardly beyond the cylinder, said stem being constructed at its forward end for the reception of a tool-stem.

4. The combination of the cylinder, with the handle confined longitudinally to the cylinder, but free to turn independently thereof.

5. The combination of the cylinder, with the handle having an elastic longitudinal connection with the cylinder but free to turn in respect to the cylinder.

6. The combination of the cylinder, with the handle having a stem with enlarged end, elastic blocks or washers engaging the forward and rear portions of said enlargement of the stem, and a confining ring for said rear washer.

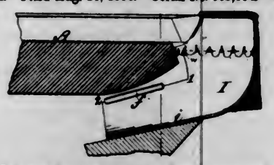
573,261. REVERSIBLE WINDOW-SASH. FRANK CRANDLITT, Baltimore, Md. Filed Aug. 1, 1896. Serial No. 601,303. (No model.)



Claim.—1. In a window-frame the combination of two vertically-sliding strips; a sash between the two strips and pivoted thereto; a counterbalance-weight at one side of the window-frame—said weight provided with two adjustable bolts; and two cords, one attached to each of said side strips and each connected with a different one of said adjustable bolts on the same counterbalance-weight, whereby both cords of the same sash may be kept equally taut between the two strips and the one weight.

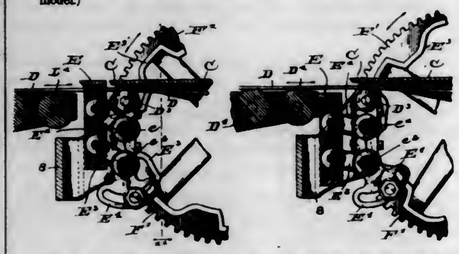
2. In a window-frame the combination of two vertically-sliding strips each having an elongated slot, *p*, through it, a recess, and shoulders, *p'*, at each side of said slot; a sash between the two strips and pivoted thereto and a hole through the sash with a recess, *o*, on the edge adjoining the sliding strip; a clamp-shank, *n*, through the said hole in the sash and provided on its end with a cross-head, *n'*, to enter the said elongated slot in the strip; and a cam, *q*, to operate said shank, whereby the shank is drawn entirely out of the sliding strip when the sash is to be tilted.

573,262. POCKET BILLIARD-TABLE. PATRICK M. CUNNINGHAM, New York, N. Y., assignor to the Brunswick-Balke-Collender Company, same place. Filed Aug. 26, 1896. Serial No. 603,954. (No model.)



Claim.—In combination with the framework and cushion-rails of a concealed alley-way pool table, the usual leathered, pocket-iron; a ball-receiver having a gutter-like portion fitting within the outward extension of one of the ball-conduits of the table, also having its outer, cup-shaped portion united to the pocket-iron leather, and having the upper edges of its gutter-like portion inclined; and obliquely-arranged housings, or confining devices, operating to embrace and hold in place the said upper edges of the ball-receiver; all substantially as and for the purposes hereinbefore set forth.

573,263. BRICK OR TILE CUTTING MACHINE. WILLIAM R. CUNNINGHAM, Frankfort, Ind., assignor to The Wallace Manufacturing Company, same place. Filed Aug 19, 1895. Serial No. 559,766. (No model.)



Claim.—1. The combination, with the cutting mechanism of a brick or tile cutting machine, of a feeding-belt terminating before reaching the cutting mechanism, a separate off-bearing belt running in a substantially level position below and to behind the cutting point, whereby the bricks, as they are successively cut and dropped, will be deposited directly onto the level surface of said belt.

2. The combination, with the cutting mechanism of a brick or tile cutting machine, of a cutting-table, and a vertically-moving, primary brick-support carried by parallel swinging arms, and an off-bearing belt running beneath said primary brick-support, whereby the brick is supported at the level of the cutting table while being cut, and is thence carried by said primary brick-support onto the off-bearing belt while still maintaining its upright position.

3. The combination, in a brick or tile cutting machine, of a revolving reel carrying the cutter structures, said cutter structures carried by rock shafts, cam-arms on the ends of said rock-shafts, and a cam-flange secured to an adjacent point of the framework and extending from a point below the axis of said reel to a point at one side and above said axis, said last-named point being farther away from said axis than said first-named point, whereby said cutter structures are quickly raised after the brick has been cut, and, as the cutter-reel continues on its course, thrown over ready for a succeeding operation, substantially as set forth.

4. The combination, in a brick or tile cutting machine, of a table for receiving the column of clay, a receiving-belt running around loose pulleys thereon, a cutting-table beyond said belt and below the cutting mechanism, and an off-bearing belt running below said table to a point in the rear of the cutting mechanism.

5. The combination, in a brick or tile machine, of a vertically-movable primary brick-support having a divided supporting-face, a duplex off-bearing belt, D, the members whereof are arranged between the members of said primary brick-support, separately-adjustable tightening-pulleys, D^2, therefor, and mechanism for adjusting said tightening-pulleys separately, substantially as shown and described.

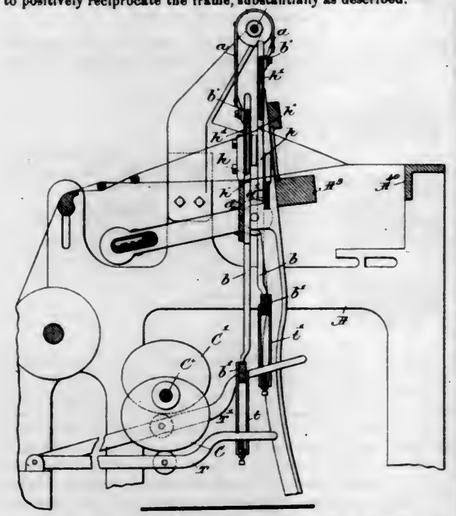
6. The combination, in a brick or tile cutting machine, of a primary brick-support, parallel swinging arms carrying said brick-support, rock-shafts on which said swinging arms are mounted, a projecting arm also connected to one of said rock-shafts, and a cam-flange on a revolving part for operating said arm, and thus causing said primary brick-support to rise and fall with a regular motion, substantially as shown and described.

573,264. LOOM. GEORGE A. DRAPER, Hopedale, Mass., assignor to the Northrop Loom Company, Saco, Me. Filed Aug. 24, 1896. Serial No. 603,678. (No model.)

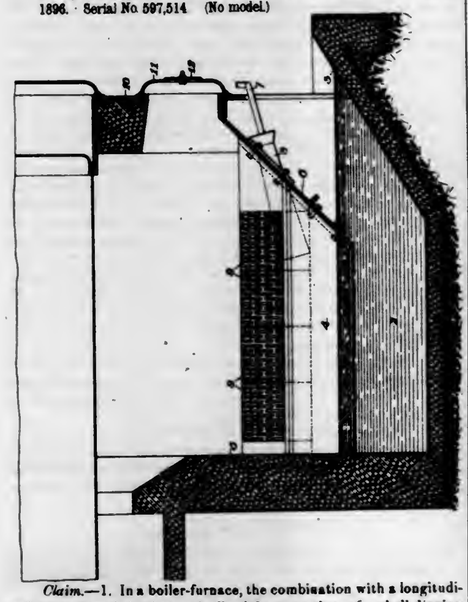
Claim.—1. A heddle-frame provided with a transverse supporting-bar, and a series of longitudinally-slotted metallic heddles through which the bar is extended, the slots in the heddles being longer than the traverse of the frame, whereby the heddles will be positively raised by said bar and will be lowered by gravity, substantially as described.

2. A heddle-frame provided with a transverse supporting-bar, and a series of longitudinally-slotted, flat metallic heddles each having an eye for the reception of a warp-thread, the slot in each heddle through which the supporting-bar is extended being longer than the traverse of the frame, whereby the heddles will descend by gravity to move the warps into the plane of the shed, substantially as described.

3. In a loom, a heddle-frame having a transverse supporting-bar, a series of one-piece, stiff metallic heddles having each a thread eye and a slot near its upper end, to receive said bar, said slots being longer than the traverse of the frame, whereby the heddles will be positively raised by said bar and will descend by gravity, and means to positively reciprocate the frame, substantially as described.



573,265. BOILER-FURNACE. EDWARD J. DUFF, Glengarriff, near Liverpool, England, and ALFRED B. DUFF, Pittsburg, Pa. Filed June 30, 1896. Serial No. 597,514. (No model.)

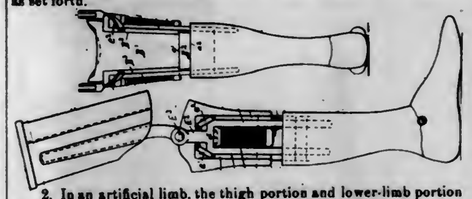


Claim.—1. In a boiler-furnace, the combination with a longitudinal water-trough having an inclined front portion, of a shell dipping thereinto, and having an inclined grating, said grating being arranged so as to give a free space at its lower edge for the passage of the residues into the water trough, an air-pipe leading into the shell below the grating, and air-inlets above the grates; substantially as described.

2. In a boiler-furnace, the combination with a longitudinal water-trough having an inclined front portion for the raking out of ashes, of a shell dipping thereinto and having a double inclined grating, a free space being formed between the side edges of the grating and the walls of the furnace, an air-pipe leading into the shell below the grating, and air-inlets above the level of the grating; substantially as described.

573,266. ARTIFICIAL LIMB. ERICK H. ERICKSON, Minneapolis, Minn. Filed Aug. 8 1896. Serial No. 602,132. (No model.)

Claim.—1. In an artificial limb, the thigh portion and lower-limb portion united by jointed side straps, a socket molded to the stump of the severed limb and slidable vertically between said side straps as guides and with the lower portion reduced and slidable in the upper part of said lower-limb portion, and springs adapted to support said socket and keep it normally in its upper position, substantially as set forth.

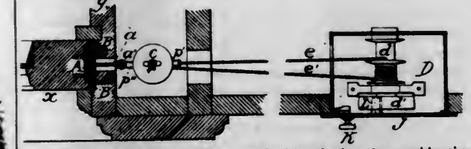


2. In an artificial limb, the thigh portion and lower-limb portion united by jointed side straps, a socket molded to the stump of the severed limb and slidable vertically in channels in the sides of said socket, and elastic straps supporting said socket from said straps, and guard-plates attached to said socket and partially covering said straps, to prevent displacement, substantially as shown and described.

3. In an artificial limb, the thigh portion and lower-limb portion united by jointed side straps, a socket molded to the stump of the severed limb and slidable vertically between said side straps, elastic straps supporting said socket from said side straps independently of said lower-limb section or thigh-section, and a sheath embracing said socket and straps to protect and support the parts, substantially as shown and described.

4. In an artificial limb, the thigh portion and lower-limb portion united by jointed side straps, a socket molded to the stump of the severed limb and having channels in which the side straps are slidable vertically, substantially as set forth.

573,267. BEDSIDE SASH LIFT AND LOCK. DONALD FLETCHER, Denver, Colo., assignor to Julia Fletcher, same place. Filed June 28, 1895. Serial No. 554,334. (No model.)



Claim.—1. In a sash lifting and locking device, the combination of the locking-lug L, with the drum *d*, handle-wheel *d'* and cords *e e'*, the said cords being connected to a window sash substantially as set forth.

2. In a sash lifting and locking device, the combination of the locking-lug L, drum *d* handle-wheel *d'* and the cords *e e'*, the cords being connected to a window-sash and concealed within a wall or partition, substantially as set forth.

3. A receptacle provided with a lid J carrying a locking lug L, in combination with a drum *d* contained within the said receptacle and having a handle constructed to be engaged by said lug, and the cords *e e'* winding on said drum and connected to a window-sash substantially as set forth.

4. A receptacle in combination with winding mechanism contained therein, means for locking the said mechanism by the closing of the lid of said receptacle and cords extending to an object to be lifted, whereby the said object may be lifted and locked by concealed devices, substantially as set forth.

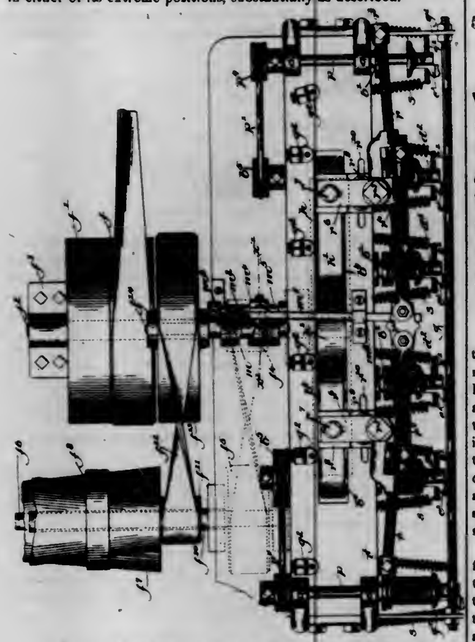
573,268. MACHINE FOR WINDING YARN. HELEN S. HARRIS, Lowell, Mass., administratrix of William R. Harris, deceased, assignor to George W. Harris, same place. Filed Jan. 13, 1896. Serial No. 575,323. (No model.)

Claim.—1. In a winding-machine, the combination with a rotatable driver, the presser and the swinging support therefor, of the automatic stop adapted on filling of the spool to gradually swing the said support and remove the presser from the driver, substantially as described.

2. In a winding-machine, the combination with a rotatable driver, the presser and the swinging support therefor, provided with a hinged stop-plate and an adjustable support for the same, of the automatic stop movable independently of and adapted to act upon said stop-plate and swing the said arm, substantially as described.

3. In a winding-machine, the combination with a rotatable driver, of a presser, a swinging support therefor, and a spring movable from

one to the other side of the fulcrum of said swinging support when the latter is moved from one to the other of its swinging positions whereby the said swinging support tends normally to maintain itself in either of its extreme positions, substantially as described.



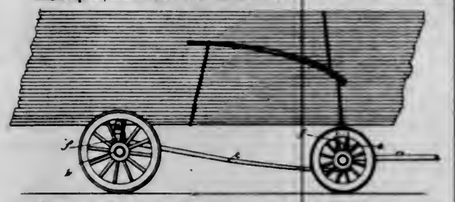
4. In a winding-machine, the combination with a plurality of winding-spindles and mechanisms to rotate the same at different rates of speed, of vibrating thread-guides for the said respective spindles, and means to vary the throw of certain of said thread guides to adapt the same to the spools of the spindles with which they coöperate, substantially as described.

5. In a winding-machine, the combination with a plurality of winding spindles and mechanisms to rotate the same at different rates of speed, of vibrating thread-guides for the several spindles and mechanisms to vary the vibratory movements thereof to adapt the same to the different rotative speeds of their respective spindles, substantially as described.

6. In a winding-machine, the combination with the winding-spindles, one set of thread-guides and reciprocating carrier therefor, of the other set of thread-guides and pivotally mounted carriers therefor connected with and vibrated by the said reciprocating thread-guide carrier, substantially as described.

7. In a winding-machine, the combination with the winding spindles, of the cam shaft, the thread-guide-actuating cam thereon, the thread-guide carrier reciprocated from said cam and adapted to guide the thread to one set of spools, and the pivotally-mounted vibrating thread-guide carrier actuated also from said cam and for another set of spools all operating substantially as described.

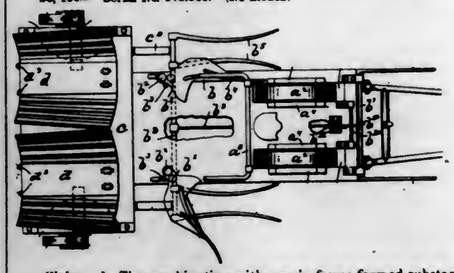
573,269. LUMBER-TRUCK. VICTOR HODELL and ALFRED OLSON, Minneapolis, Minn. Filed Feb 18, 1896. Serial No. 579,734. (No model.)



Claim.—1. The combination with a separable-truck lumber-wagon, of roller-bolsters mounted one on each truck-axle, and independent locking devices, for preventing the rotation of said respective rollers until the time desired, substantially as described.

2. The combination with the truck-axle of a lumber-wagon, of a roller-bolster thereon, the roller of which is provided with a flat-faced groove on its periphery, and a blocking-key engageable with said groove and the body of the bolster, substantially as and for the purposes set forth.

573,270. CORN-HARVESTER. GEORGE O. HOUCK, Springfield, Ohio, assignor of one-half to William H. Houck, same place. Filed Dec. 28, 1895. Serial No. 573,583. (No model.)



Claim.—1. The combination with a main frame formed substantially rectangular and supported at the front by two independent carrying-wheels located within the lines of said frame, hinged cutting-knives adapted to extend laterally from opposite sides of said frame, and an auxiliary table or frame arranged above and extending across the main frame, caster-wheels supported at each end of said auxiliary frame or table in bearings arranged above and central with said table, and recessed openings formed substantially on the arc of a circle from said bearings, bifurcated projections extending from said auxiliary table so as to engage and support said cutting-knives, and semicircular gathering-frames supported on said auxiliary table, substantially as specified.

2. A main frame or platform, and an auxiliary table on said main frame or platform, caster-wheels supporting said auxiliary frame or table at each side, and gathering-frames arranged on said auxiliary table, and hinged support for holding said gathering-frames in position, each of said frames consisting essentially of a semicircular frame adapted when placed together to form a shock, as described, substantially as specified.

3. The combination with the rectangular frame, as described, having the laterally-extending cutting knives on opposite sides thereof, a transverse shaft arranged at the front of said frame and provided at each end with downwardly-extending curved fingers substantially on a line with the respective sides of said frame, a transverse shaft also arranged across said frame below and slightly to the rear of the cutting edge of said knives, and downwardly-extending curved fingers arranged in pairs supported on each end of said transverse shaft and extending forwardly therefrom at the side of said main frame, crank-arms on each of said shafts and a connecting-rod connecting said shafts together, and an operating-lever connected to one of said shafts whereby all of said fingers are adapted to be moved simultaneously, substantially as specified.

4. In a corn-harvester, the combination with a platform and cutting knives, of semicircular gathering-frames arranged on said platform, each of said frames being provided with supporting-rollers and a hinged supporting-brace, substantially as specified.

5. The combination with the cutting devices and an auxiliary table or frame, semicircular gathering and shocking frames on said table, sockets on said table and projections on said frames adapted to engage in said sockets, said frames being further provided with rollers and braces, substantially as specified.

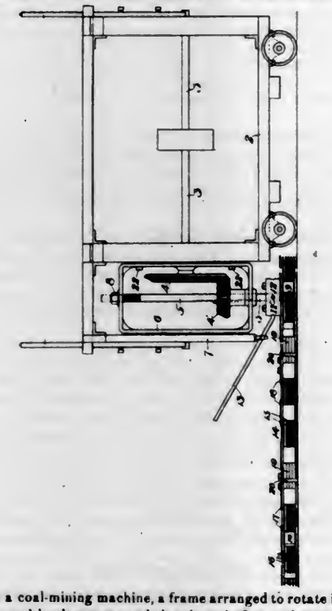
573,271. COAL-MINING MACHINE. JOSEPH M. HOUSEHOLDER, West Elizabeth, Pa. Filed Mar. 19, 1895. Serial No. 542,308. (No model.)

Claim.—1. In a coal-mining machine, a sprocket-chain having links provided with outer saws or cutting-teeth, and alternate links composed of saws spaced apart by intermediate blocks, the latter saws being located in the plane between the saws of the other links; substantially as described.

2. In a coal mining machine, a sprocket-chain having cutting or saw teeth, said chain being provided with pivoted cleaners arranged to operate in either direction; substantially as described.

3. In a coal-mining machine, a sprocket-chain having links provided with outer saws or cutting-teeth, and alternate links composed of saws spaced apart by intermediate blocks, the latter saws being located in a plane between the saws of the other links, said chain having at intervals cleaners arranged to rip out the strips left by the saws; substantially as described.

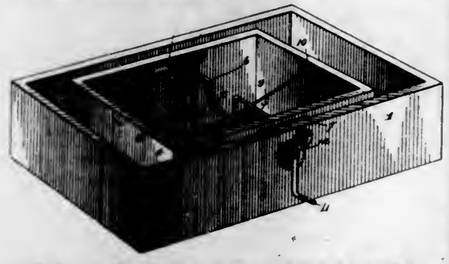
4. In a coal-mining machine, a frame journaled at one side on the main driving-shaft and at the other side in a frame depending from the main body of the machine, and arranged to rotate in a vertical plane and having supported therein a shaft carrying at one end a sprocket-wheel, an arm loosely surrounding said shaft and having a sprocket-wheel, a sprocket-chain passing over the sprocket-wheels upon the shaft and arm respectively and provided with cutting saws or teeth, and means for swinging the arm in a plane at right angles to the plane of rotation of the frame; substantially as described.



5. In a coal-mining machine, a frame arranged to rotate in a vertical plane and having supported therein a shaft carrying at one end a sprocket-wheel, an arm loosely surrounding said shaft and having a sprocket-wheel, a sprocket-chain passing over the sprocket-wheels upon the shaft and arm respectively and provided with cutting saws or teeth, a hub upon the shaft and secured to the arm, and a lever arranged to enter a series of radial holes in the hub and swing the same upon the shaft; substantially as described.

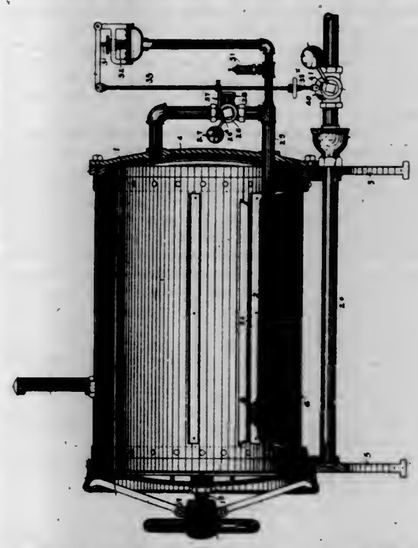
6. In a coal-mining machine, a frame arranged to rotate in a vertical plane and having supported therein a shaft carrying at one end a sprocket-wheel, an arm loosely surrounding said shaft and having a sprocket-wheel, a sprocket-chain passing over the sprocket-wheels upon the shaft and arm respectively and provided with cutting saws or teeth, a hub upon the shaft and secured to the arm, a lever arranged to enter a series of radial holes in the hub and swing the same upon the shaft, and bolts arranged to hold the swinging frame in its different positions; substantially as described.

573,272. SIFTER. JOHN W. JOHNSON, Sheffield, Ala. Filed June 23, 1896. Serial No. 596,609. (No model.)



Claim.—A sifting device having a parallel-sided guide-frame, a sieve fitting and mounted within the guide-frame and provided in its side walls with longitudinal slots, a crank-shaft mounted in bearings in the side walls of the guide-frame and extending through said slots in the side walls of the sieve, said crank-shaft having its crank located between the side walls of the sieve, duplicate pitmen connecting said crank with the opposite end walls respectively of the sieve, whereby motion is communicated to the sieve by tensile strain applied alternately to the pitmen and means for communicating rotary motion to the crank-shaft including an operating crank-arm and speed-multiplying gearing, substantially as specified.

573,273. STERILIZING APPARATUS. GEORGE W. KELLOGG, Rochester, N. Y. Filed Jan. 11, 1896. Serial No. 575,107. (No model.)



Claim.—1. In a sterilizing apparatus, the combination with the chamber for containing dressings, &c., a boiler and a pipe leading from the boiler to the interior of the chamber, of a valve arranged in said pipe and adapted to cut off the steam-supply and open the chamber to the air, and a pressure-regulator for actuating said valve, substantially as described.

2. In a sterilizing apparatus, the combination with the chamber for containing the dressings, &c., the boiler in contact with the chamber, and a steam-pipe leading from the boiler to the interior of the chamber, of a valve arranged in the pipe and adapted to cut off the steam-supply and open the chamber to the air, a heater for the boiler, a controller (as a valve) for the heater, a pressure-regulator, and connections between the regulator, the valve and controller for causing the successive operations of the two latter, substantially as described.

3. In a sterilizing apparatus, the combination with the chamber for containing the dressings, &c., the boiler in contact with the chamber, and a steam pipe leading from the boiler to the interior of the chamber, of a valve arranged in the pipe and adapted to cut off the steam-supply and open the chamber to the air, a burner for heating the boiler, a controller, as a valve, for the burner, a pressure regulator a movable rod actuated thereby controlling the steam-valve, and an adjustable connection between said rod and the burner-controller, substantially as described.

4. The combination with a chamber for containing dressings, &c., and a steam-supply therefor, of a valve adapted to cut off the steam-supply to the chamber and open the latter to the air, and an adjustable pressure-regulator for controlling the operation of said valve, substantially as described.

5. The combination with a chamber for containing dressings, &c., a steam-supply therefor, of an automatic valve adapted to cut off the steam supply to the chamber and open the latter to the air, a retainer for said valve, and a pressure-regulator for releasing said valve-retainer, substantially as described.

6. The combination with a chamber for containing dressings, &c., a boiler connected thereto, and a steam-pipe between the boiler and chamber, of an automatic valve in said pipe for cutting off the steam to the chamber and opening the latter to the air, a retainer for the valve, a burner for heating the boiler, an automatic burner-controller, as a valve, a retainer for the controller, a pressure-regulator, and connections between it and the valve and controller retainers for operating them successively as the pressure increases, substantially as described.

7. The combination with a chamber for containing the dressings, &c., the boiler in contact therewith, the pipe connecting the boiler

and chamber, the automatic valve in the pipe arranged to cut off steam to the chamber, and open the latter to the air, of a burner for heating the boiler, an automatic valve controlling it, and a retainer therefor, a pressure-regulator, a movable rod connected thereto, a retainer thereon for holding the steam-valve, and an adjustable connection between said rod and the burner-valve retainer, substantially as described.

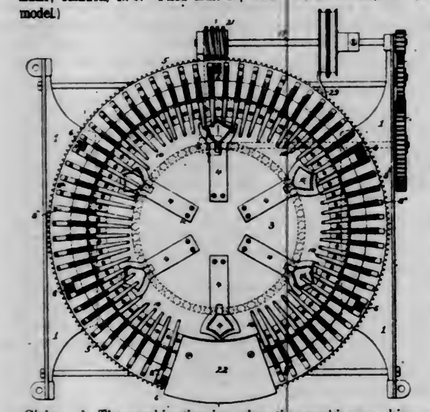
8. In a sterilizing apparatus, the combination with the pressure-regulator having a progressively-moving rod, of an automatic valve for regulating steam to the sterilizing-chamber, a retainer for the valve, a second automatic valve governing the heat to the chamber, a retainer therefor, and adjustable connections between said valve-retainers and the rod of the regulator, whereby the steam-valve retainer will be first operated and then the other retainer, substantially as described.

9. In a sterilizing apparatus, the combination with two automatic valves and retainers therefor, of the pressure-regulator embodying a progressively-moving rod having the head and carrying one of the retainers, the adjustable nut connected with the other retainer and adapted to engage the head on the rod, substantially as described.

10. The combination with the chamber for containing dressings, &c., a steam-chamber in contact therewith and a pipe leading from the steam-chamber to the interior of the sterilizing-chamber, of valve devices for governing communication between the steam-chamber and sterilizing-chamber and between the sterilizing-chamber and the open air, whereby steam may be admitted from the steam-chamber to the sterilizing-chamber to sterilize the contents thereof and communication opened between the sterilizing-chamber and the air, the heat derived from the steam-chamber serving to dry the dressings, &c., in the sterilizing-chamber, substantially as described.

11. The combination with the chamber, the boiler, the gas-burner, the valve for controlling it having the weighted valve and the lug thereon, of the pressure-regulator, the rod connected thereto having the head or projection, the catch or retainer for the valve, and the nut adjustably connected thereto and arranged to engage the head on the rod, substantially as described.

573,274. SHOE-TIP-PUNCHING MACHINE. HORACE LE ROY KEMP, Camden, N. J. Filed Mar. 27, 1896. Serial No. 585,117. (No model.)



Claim.—1. The combination in a shoe-tip-punching machine, of a work-table having thereon a series of tip-clamps, with a punch-carrier having punches adjustable thereon so as to form different patterns, a series of such punches occupying the space between the centers of successive tip clamps, and means whereby the punches are caused to act upon the tips.

2. The combination in a shoe-tip-punching machine, of a work-table having thereon a series of tip-clamps, means for imparting to said table intermittent movements of partial rotation, a punch-carrier having punches adjustable thereon so as to form different patterns, a series of such punches occupying the space between the centers of successive tip-clamps, and means whereby the punches are caused to act upon the tips.

3. The combination in a shoe-tip-punching machine, of a work-table having thereon a series of tip-clamps, a punch-carrier having punches adjustable thereon so as to form different patterns, a series of such punches occupying the space between the centers of successive tip-clamps, and means whereby punches, one of each series, are operated simultaneously as the tips are brought under the same.

4. The combination in a shoe-tip-punching machine, of a work-table having thereon a series of tip-clamps, means for imparting intermittent movements of partial rotation to said work-table, a punch-carrier having punches adjustable thereon so as to form different patterns, a series of such punches occupying the space between the centers of successive tip clamps, and means for moving the punches in a plane at right angles to the plane of movement of the work-table.

5. The combination in a shoe-tip-punching machine, of a work-table having thereon a series of tip-clamps, a punch-carrier having punches adjustable thereon so as to form different patterns, a series of such punches occupying the space between the centers of successive tip-clamps, means whereby the punches are caused to act upon the tips, a toothed annular flange on the work-table, and a worm engaging said teeth and having a thread partly straight and partly inclined whereby it acts alternately to move the table and to lock the same.

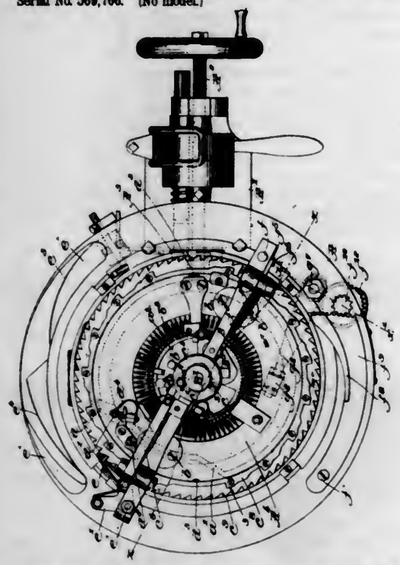
6. A shoe-tip-punching machine in which are combined a punch-carrier having punches adjustable thereon, whereby they may be caused to conform to different patterns, a tip-carrying table movable so as to carry the tip past the punches of the series in succession, and a movable cam-carrier whereby the punches are successively operated.

7. A shoe-tip-punching machine in which are combined a punch-carrier having a series of levers hung thereon, a series of punch-bars adjustable longitudinally on said levers, means for operating the levers, a work-table having one or more tip-carriers, and means for moving said table whereby the tips are caused to pass under the punches in succession.

8. A shoe-tip-punching machine in which are combined a punch-carrier having levers hung thereto, punch-bars adjustable both longitudinally and laterally on said levers, means for operating said levers, and a movable work table having one or more tip-carriers, whereby the tips are caused to pass under the punches in succession.

9 A shoe-tip-punching machine in which are combined a punch-carrier on which the punches are adjustable, whereby they may be caused to conform to different patterns, a moving tip-carrier whereby the tip is caused to pass under the punches in succession, and provision for causing the punches to act upon the tip when the latter is within range of the same, the punches being disposed in groups, and the punches of each group being adapted to act upon a limited area only of the tip.

573,275. CIRCULAR AUTOMATIC RIB-KNITTING MACHINE. GEORGE A. LEIGHTON and JOHN H. RICE, Manchester, N. H., assignors to the Leighton Machine Company, same place. Filed Nov. 22, 1895. Serial No. 569,766. (No model.)



Claim.—1. A knitting-machine containing two sets of needles, devices to effect automatically the withdrawal of the needles of one set of needles from between the needles of the other set of needles, means to automatically rack one set of needles and thus place the individual needles of the racked set in new knitting relation to the needles of the other set, and devices to actuate the set of needles which are not racked in order that they may knit during the racking operation, substantially as described.

2. The needle-cylinder, its series of needles, a hub located inside said cylinder, its needle elevating cam, and a movable device to which it is attached, combined with the dial cam-plate, a cam carried by said plate, means to move said cam intermittingly on said plate, and devices intermediate said cam and the device carrying the needle-elevating cam, whereby the latter cam is automatically depressed to prevent raising the cylinder-needles their full distance, substantially as described.

3. The dial-needle cam-plate, the ratchet loosely mounted thereon, and provided with a cam ring having a series of cams, a pawl to engage and move said ratchet, and a cam device to engage and move said pawl, combined with a pattern-surface to move said cam device into position to be struck by said pawl, substantially as described.

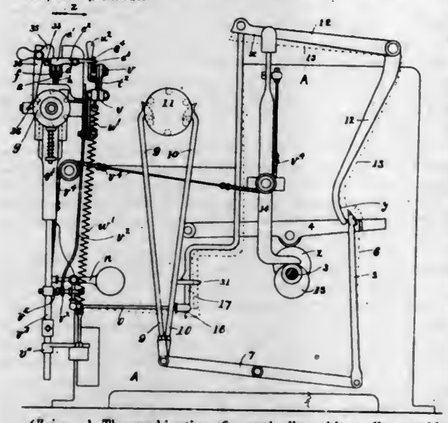
4. A circularly-arranged series of cylinder-needles, a yarn-guide, and a cam to move the hooks of the cylinder-needles away from the yarn guide to draw the yarn and form loops, a cam to push the needles toward the said yarn-guide to take yarn, means to automatically change the position of the latter cam to lessen the movement of the needles toward the said yarn-guide, and a set of plate-needles between which the cylinder-needles work, and a plate-needle cam-plate to actuate said plate-needles, combined with devices to automatically rack the said cylinder-needles with relation to the plate-needles while the plate-needles continue to knit, substantially as described.

5. A circularly-arranged series of cylinder-needles, a yarn-guide, and a cam to move the hooks of the cylinder-needles away from the yarn-guide to draw the yarn and form loops, a cam to push the needles toward the said yarn-guide to take yarn, means to automatically change the position of the latter cam to lessen the movement of the needles toward the said yarn-guide, and a set of plate-needles between which the cylinder-needles work, and a plate-needle cam-plate to actuate said plate-needles, combined with devices to automatically rack the said cylinder-needles with relation to the plate-needles, and to again restore the said cylinder-needles to the position from which they were racked, substantially as described.

6. The needle-cylinder, having an external projection, a movable ring as δ^{13}, carrying a device to engage said projection, a series of needles carried by said cylinder, actuating-cams for said needles, the dial-needle cam-plate, a cam-ring thereon, a lever moved by said cam-ring, and a pin controlled by said lever, combined with a toothed segment, gearing rotated thereby and connections between said gearing and said ring δ^{13} to rotate the same intermittingly at the proper times, substantially as described.

7. The ring δ^{13}, its arm δ^{12}, the needle-cylinder having a projection engaged by said arm, the link g^8 connected to said ring, the eccentric stud embraced by said link, the gear g, its driving-gear f^{15} having an attached ratchet-wheel, and the pawl and pawl carrier to engage said ratchet-wheel, combined with the segment lever, and means to move it to operate, substantially as described.

573,276. SHUTTLE-BOX-OPERATING MECHANISM FOR LOOMS. AMOS LOCKWOOD, Halifax, England. Filed Aug. 3, 1895. Serial No. 558,060. (No model.)



Claim.—1. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder, means for laterally shifting the cylinder at predetermined times; means for intermittently rotating the same; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle-box-shifting mechanism, said devices including abutments overhanging the pattern-cylinder to be actuated by the pattern devices thereon under vertical movement of the cylinder; and means for intermittently varying the relative positions of the said abutments and the cylinder longitudinally of the latter.

2. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; means for intermittently rotating the same; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle-box-shifting mechanism, said devices including one or more levers on a support movable in the direction of the length of the cylinder, said levers having abutments overhanging the latter and adapted to be acted upon by the pattern devices under vertical movement of the cylinder; and means for intermittently moving the lever-support.

3. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; normally inoperative means for converting vertical into rotary movement of the cylinder; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle box-shifting mechanism, said devices including one or more abutments overhanging the cylinder and carried by a support movable longitudinally of the cylinder; means for intermittently moving said support; and a shipper carried by said support and operating at one extreme of the latter's movement to render operative the means for converting reciprocating into rotary movement of the pattern-cylinder.

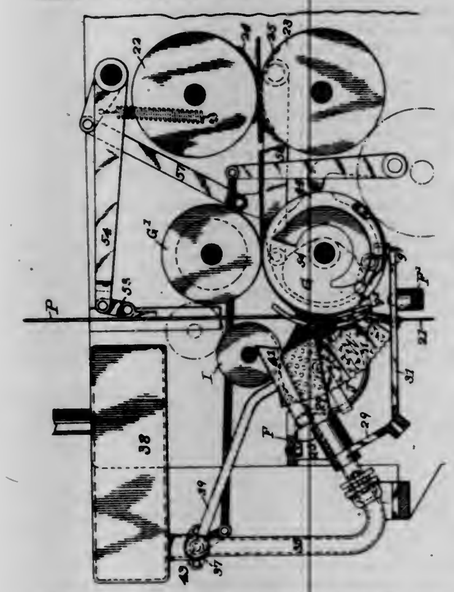
4. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; normally inoperative means for converting vertical into rotary movement of the cylinder; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle-box-shifting mechanism said devices including one or more abutments overhanging the cylinder and carried by a support movable longitudinally of the cylinder and yieldingly impelled in one direction; means for effecting step-by-step movement of said support in both directions; pattern actuated devices for rendering inoperative the said means for producing step by-step movement; and a shipper carried by the said support and operating at one extreme of the latter's movement to render operative the means for converting reciprocating into rotary movement of the pattern-cylinder.

5. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; normally inoperative means for converting vertical into rotary movement of the cylinder; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle-box-shifting mechanism said devices including one or more abutments overhanging the cylinder and carried by a support movable longitudinally of the cylinder and yieldingly impelled in one direction; a cam engaging said support; pawl-and-ratchet mechanism for moving said cam step by step; pattern-operated means for disconnecting said pawl-and-ratchet mechanism; and a shipper carried by the said support and operating at one extreme of the latter's movement to render operative the means for converting reciprocating into rotary movement of the pattern-cylinder.

6. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; normally inoperative means for converting vertical into rotary movement of the cylinder; normally-disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle-box shifting mechanism said devices including one or more levers overhanging the cylinder and carried by a support movable longitudinally of the cylinder; means for moving said support step by step; and a hinged arm on the support and having a cam-surface to coact with a suitable abutment on the frame of the machine, movement of said arm effecting operativeness of the means for converting reciprocatory into rotary movement of the pattern-cylinder.

7. The combination of a vertically and laterally movable rotary pattern-cylinder; means for vertically reciprocating said cylinder; means for laterally shifting the cylinder at predetermined times; normally inoperative means for converting vertical into rotary movement of the cylinder; normally disconnected shuttle-box-shifting mechanism; devices for rendering operative said shuttle box-shifting mechanism said devices including one or more abutments overhanging the cylinder and carried by a support movable longitudinally of the cylinder and yieldingly impelled in one direction; a cam engaging said support; pawl-and-ratchet mechanism for moving said cam step by step; locking mechanism for retaining the cam in its different positions; a lever on the movable support and arranged to be operated by the pattern devices; and means actuated by said lever for releasing the said locking mechanism and disconnecting the pawl-and-ratchet mechanism for the purpose described.

573,277. PAPER-BAG MACHINE. WILLIAM A. LORENZ and EDWARD E. CLAUSSEN, Hartford, Conn., assignors to Albert H. Walker, trustee, same place, and the Consolidated S. O. S. Bag Company, New York, N. Y. Filed Apr. 20, 1896. Serial No. 588,285. (No model.)



Claim.—1. In combination with means for supporting a tucked-paper tube, a suction-finger adapted to engage a tucked side of the tube between the folds thereof, and adapted to unfold that side into a plane wall, substantially as described.

2. In combination with means for supporting a blank of tucked-paper tubing a pair of oppositely-disposed suction-fingers adapted to engage the blank between the members of the tucked sides thereof, and adapted to open them into substantially rectangular form, as specified.

3. In combination with means for supporting a blank of tucked-paper tubing, a pair of opposite-disposed oscillating suction fingers arranged with their axes substantially parallel with the longitudinal position of the part of the blank to be folded, and adapted to vibrate thereon, for the purpose specified.

4. In combination with means for supporting and feeding a paper tube, a pair of oppositely-disposed oscillating suction-fingers, having a cross-section of substantially a closed-V form, with openings through one of the walls thereof, and with means for exhausting the air from the interior thereof, substantially as described.

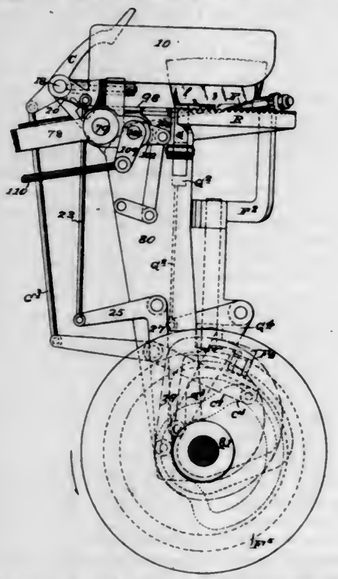
5. In combination with a traveling folding bed adapted to support a blank of tucked-paper tubing, and with a tucker-plate adapted to travel with and define the primary transverse fold thereof, a pair of oppositely-disposed oscillating suction-formers adapted to engage those portions of the intucked sides of the blank which are to form the bag-bottom, with means substantially as described for oscillating the fingers and exhausting the air therefrom in suitable time and relation to the tucker-plate, substantially as described.

6. Means for converting the end of a tucked-paper tube into a box-like form, consisting of suction-boxes adapted to engage with and support the end of the upper ply of the tube, and of a pair of oppositely-disposed oscillating suction-fingers adapted to engage the tucked sides of the blank, and adapted to open those sides into rectangular relation with the outer plies substantially as described.

7. In a machine of the class specified, in combination with means for supporting a blank of tucked-paper tubing, means adapted to engage with and open into a box-like form those portions of the plies thereof which are to form the bottom of the bag, consisting of suction boxes adapted to engage the edges of an untucked side wall of the tube, and with a pair of oppositely-disposed suction-fingers located adjacent thereto and adapted to square out the tucked sides of the blank, substantially as described.

8. In combination with feeding-rolls, the roll J, adapted to open the leading end of the blank, and with a tucker-plate adapted to form the primary transverse fold thereof, means for opening into rectangular form those portions of the tube which are to form the bottom plies of the bag, consisting of suction-boxes adapted to support and form one of the untucked side walls of the tube, and a pair of oscillating suction-fingers adapted to engage with and unfold the tucked portion thereof, substantially as described.

573,278. PAPER-BAG MACHINE. WILLIAM A. LORENZ and EDWARD E. CLAUSSEN, Hartford, Conn., assignors to Albert H. Walker, trustee, same place, and the Consolidated S. O. S. Bag Company, New York, N. Y. Filed Apr. 20, 1896. Serial No. 588,286. (No model.)



Claim.—1. Means for forming the characteristic triangular folds in the side plies of a tucked-paper tube, consisting of oppositely-disposed conical fingers, adapted to swing upon centers substantially coincident with the apexes of the said conical fingers and of the triangular folds, substantially as described.

2. In combination with means for supporting a blank of tucked-paper tubing, means for forming the characteristic triangular folds in the side tucks thereof, consisting of fingers located and remaining in the plane of the side tucks, and adapted to oscillate laterally in the plane of the triangular folds to be made, upon centers located in line with the apexes of those triangular folds, substantially as described.

3. In combination with means for supporting a blank of tucked-paper tubing, means for forming the characteristic triangular folds in the side tucks thereof, consisting of fingers located and remaining in the plane of the side tucks, and adapted to oscillate laterally in the plane of the triangular folds to be made, upon centers located in line with the apexes of the triangular folds, with means for rotating the fingers upon their axes as their arms are thus laterally vibrated, substantially as described.

4. In combination with means for supporting a blank of tucked-paper tubing, a pair of oppositely-disposed fingers, a pair of arms upon which those fingers are mounted, the arms being adapted to vibrate upon axes located substantially in line with the apexes of the respective triangular folds to be made, with means for vibrating the arms, substantially as described.

5. In combination with a traveling folding-bed, oppositely-disposed arms mounted thereon and adapted to vibrate on centers located at a distance apart substantially equal to the distance between the bottoms of the tucks of the blanks, each arm having a finger revolubly journaled thereon, with the line of its axis intersecting that of its arm, with gears and a fixed rack adapted to rotate the fingers as they are moved by their respective arms, substantially as described.

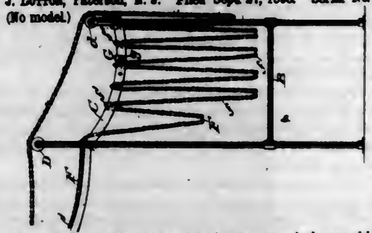
6. In combination with a traveling folding-bed, having a presser-plate, and with fingers carried thereon adapted to fold the front end of the blank down upon the top of the plate, a clip C, carried upon the folding-bed and adapted to engage the thus-turned-back portions of the blank, substantially as described.

7. In combination with a traveling folding-bed, having a presser-plate, and with fingers carried thereon adapted to fold the front end of the blank down upon the top of the plate, side grippers adapted to clamp down upon the presser-plate the side margins of the blank thus turned over upon it by the fingers, substantially as described.

8. In combination with a traveling folding-bed, and with a presser-plate mounted thereon, a pair of fingers also carried upon the folding-bed and located substantially midway between the clamping-surfaces of the folding-bed and the presser plate when the latter is in its raised position, with means substantially as described for elevating the presser-plate when receiving and when discharging a blank, whereby the fingers are enabled to remain in the plane of the side tucks of the blank, substantially as described.

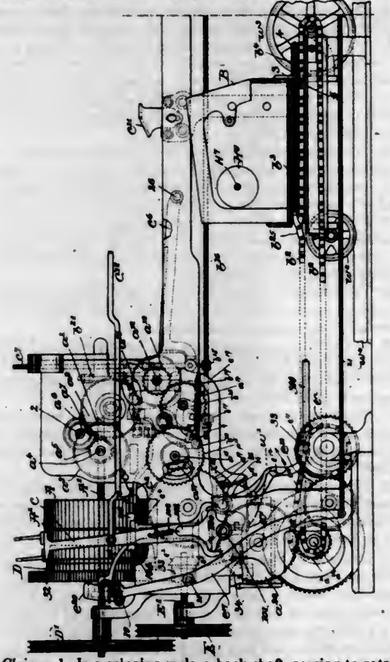
9. In combination with a traveling folding-bed, and with a presser-plate carried thereon, a pair of oscillating arms and a pair of fingers revolubly journaled thereon, the axes of the fingers intersecting the axes of their respective arms on a line passing through the intersection of the folding edge of the presser-plate with the bottoms of the tucks of the blank, substantially as described.

573,279. PATTERN-CHAIN SUPPORT FOR LOOMS. WILLIAM J. LUTTON, Paterson, N. J. Filed Sept. 27, 1895. Serial No. 563,834. (No model.)



Claim.—The combination with the pattern-chain provided with cross-rods of varying lengths, of front and rear standards, and chain-supporting rails extending downwardly and forwardly from the rear to the front standards, each of the said rails being provided with an inwardly-extending flange along which the longer of said cross-rods ride, the said flanges being cut away for a short distance from the rear standards sufficiently to permit the cross-rods of shorter length to drop through, substantially as set forth.

573,280. SPINNING-MULE. JOHN T. MEATS and TRUMAN W. DEAN, Taunton, Mass., assignors to the Mason Machine Works, same place. Filed May 9, 1892. Serial No. 432,343. (No model.)



Claim.—1. In a spinning-mule, a back shaft, gearing to rotate it positively to effect the running out of the carriage, connections between said back shaft and carriage, a scroll-pulley loose on said back shaft, a gear attached to said scroll-pulley and adapted to be rotated by the drawing-in friction, a drum, and a shaft carrying it, combined with a flexible connection attached to said scroll-pulley and to said drum, and with gearing between the drum-shaft and the back shaft, said devices enabling the carriage to be moved with an accelerating and diminishing speed through the said back shaft during the winding on at the inward run of the carriage, substantially as described.

2. In a spinning-mule, a back shaft, gearing to rotate it, a carriage, a series of flexible connections between said back shaft and said carriage for imparting motion from the back shaft to the carriage, and yielding devices joining said connections to said carriage whereby the strain exerted to move the carriage is applied in a yielding manner, to operate, substantially as described.

3. In a spinning-mule, a carriage, flexible connections, and a rod and spring to join said carriage and connections to afford elasticity and ease the shock of starting and stopping the carriage, substantially as described.

4. In a spinning-mule the following instrumentalities, viz: a back shaft, means to rotate it positively, a scroll-pulley loose on said back shaft, a shaft parallel to said back shaft, a drawing-in drum mounted thereon, a carriage, flexible connections between the said back shaft and said carriage, gears between said drawing-in-drum shaft and back shaft combined with a flexible connection between said scroll-pulley and drawing-in drum, whereby the said drawing-in drum is always moved positively or without slip from the scroll-pulley, substantially as described.

5. In a spinning-mule, a back shaft, a scroll-pulley thereon, a drum, a chain or band connecting said scroll-pulley and drum, and gears connecting said drum and back shaft, combined with a chain-gear on the back shaft, and chains driven by said gears and attached to the carriage, to operate, substantially as described.

6. The faller and counter-faller shafts; their attached fingers and chain connecting them, combined with the carriage, a stand thereon and a rack also connected to said chain, said rack being movable on said stand, and a device to move the said rack vertically immediately before winding on, substantially as described.

7. The faller and counter-faller shafts; their attached fingers and chain connecting them, and a rack connected to said chain, a quadrant screw, a lever as m^3, a screw K^8, and gears between said screws, combined with a cam-shaped wing controlled as to its position with relation to said lever by the said quadrant-screw, to operate, substantially as described.

8. The faller and counter-faller shafts; their attached fingers and chain connecting them, combined with a rack also connected to said chain, a stand to guide said rack, and a device to move said rack independently of said chain, a stop-lever as K^{16}, and a stop-wheel to operate, substantially as described.

9. The carriage, its pulleys K^{11}, K^{13}, stop-wheel, and stop-lever, combined with the band K^{16}, the quadrant-screw and devices intermediate said band and quadrant-screw, the locking of the stop-wheel and the stopping of the band effecting the rotation of the quadrant-screw for the purposes set forth.

10. The chain connecting the faller and counter-faller fingers, the rack, and its lifting-lever, the movable cam m, and stop-lever, stop-wheel and band K^{16}, combined with the adjusting device m^3, to operate substantially as described, and determine the time at which the stop lever shall operate during the operation of winding on.

11. The back shaft; its gear b^9; the gear b^8; the sprocket-gears b^6 and b^{10}; and the connected sprocket-chain, and the shaft A^{11}, levers b^{13}, b^{12}, combined with the oscillating change-lever and intermediate connecting devices, to operate, substantially as described.

12. The front-roll shaft, and the roll-clutch a^{19} loose thereon and having a slotted hub, combined with an adjustable stop carried by said clutch, whereby the said clutch may be started more or less in advance of the movement of the shaft preparatory to the running out of the carriage, substantially as described.

13. In a mule, the back shaft provided with sprocket-wheels, and a gear a^{21}, the carriage, the clutch-gear a^{17}, and gears between it and the gear a^{21} to rotate the said back shaft, combined with sprocket-chains extended over said sprocket-wheels and connected to said carriage to move the said carriage in during the winding operation, substantially as described.

14. The quadrant, the nosing-rack carried thereby and free to slide thereon, the winding-on chain, the nosing-chain operatively connected to said rack and to the winding-on chain, and a builder-shoe, combined with devices intermediate said shoe and rack to actuate the latter at the end of each outward throw of the quadrant, and means to hold said rack in place, substantially as described.

15. In a mule, a drum shaft, a taking-in drum thereon; a back shaft; and a scroll-pulley; a winding and taking-in friction; gearing intermediate it and the scroll-pulley gearing, combined with a sprocket chain to connect the said drum-shaft with the said back shaft, substantially as described.

16. The lever b^{16}, the clutch-lever b^{17}, the rod b^{18} connecting them, combined with lever b^{20}, a spring to connect said lever b^{20} to said rod, and the change-lever acted upon by said lever b^{20}, whereby said lever b^{20} is held in a yielding manner in contact with the said change-lever, substantially as described.

17. A mule containing the following instrumentalities, viz:, a scroll-pulley, a taking-in drum, and connecting devices, the said taking-in drum having a cam-like or eccentric projection to aid in diminishing the speed of the carriage at the end of the inward run thereof, substantially as described.

18. The quadrant, its shaft, its screw, the screw K^8, and gearing between the said screws, combined with a cam as *m*, substantially as described.

19. The quadrant, the nosing-rack carried thereby and free to slide thereon, the winding-on chain, the nosing-chain operatively connected to said rack and to the winding-on chain, and the builder-shoe, combined with devices intermediate said shoe and rack to actuate the latter at the end of each outward throw of the quadrant, substantially as described.

20. The carriage, the cylinder-shaft, having an attached ratchet, a loose gear mounted on said shaft and having an attached plate provided with a pawl, and an arm or holder having a collar or hub and mounted loosely on said shaft, combined with a friction device surrounding said hub or collar and connected to said pawl, whereby movement of said clamp over said hub in one direction will disengage said pawl from said ratchet, while movement of said hub in the opposite direction in said clamp will quickly throw the pawl into engagement with said ratchet for winding on, substantially as described.

21. The cylinder-shaft, its attached ratchet, a gear loose on said shaft and having a plate provided with a pivoted pawl, combined with means to act on said pawl and keep said pawl from said ratchet when said gear is being rotated in one direction, and means to effect the quick engagement of the pawl and ratchet when the yarn is to be wound on the spindles, substantially as described.

22. The driving-shaft A', bevel-gear a^2 thereon, shaft a^4, bevel-gear a^5 and gear a^6 thereon; the roller-shaft a^9, the train of gears a^3, a^7, and the gear a^8 loose on the roller-shaft, the sliding clutch a^{10} splined on the said shaft and adapted to engage the gear a^8, the gear a^{11} driven by the gear a^6, the shaft a^{12} having the gear a^{13} fixed to it and driving the intermediate a^{14}, in turn engaging and driving the gear a^{16} mounted on the carriage-clutch shaft a^{15}, the clutch gear a^{17} loose on the said carriage-clutch shaft and engaging the intermediate a^{18}, it in turn engaging a second intermediate a^{20} which meshes with the pinion a^{21} on and rotates the back shaft, substantially as described.

23. In a spinning-mule, the back shaft d^{20}, the shaft b^{11} having the lever b^{12} mounted thereon and driven from the back shaft through the gears b^4, b^5, b^9, b^{10}, and chain b^3; the lever b^{12} mounted on the said shaft b^{11}, its connected rod b^{14}, the swinging lever b^{13} to which the said rod is attached, the rod b^{15} connected to the lever b^{12}, and having a nut 9, the change-lever b^{17}, to which the said rod is connected loosely, a dog b^{19} fast on the said rod b^{18}, the spring b^{19} connected to said dog, the lever b^{20} connected to said spring, the oscillating change lever b^{21} engaged and actuated in one direction by the said lever b^{20}, combined with the carriage-clutch and the lever b^{22} to actuate the same to effect the disengagement of the carriage-clutch at the outer end of the stretch, substantially as described

24. The oscillating change-lever b^{21}, provided with a notch and having a swivel-collar 28, a hook or latch c^{10} to engage said notch; a rod c^7 having a collar c^8, a spring c^9 surrounding said rod and acted upon at one end by said collar c^8 and resting at its other end against the said swivel-collar, a lever c^5 connected with said rod and jointed at its other end to the framework, combined with the carriage having a projection to act upon said lever c^5 during the inward movement of the carriage, and having a second projection to act upon and raise the latch c^{10}, thereby releasing the change-lever, substantially as described.

25. The continuously-rotating taking-in pulley E mounted on the shaft E', having a bevel-gear c^3, the shaft c^4 having the bevel-gear c^3 engaged by the bevel-gear c^3, the friction-shell c^6 splined to said shaft c^4, the friction-cup c^7 loose on said shaft, the bevel-gear c^7 fast on the friction-cup, the back shaft a^{22}, the bevel-gear c^8 loose on the back shaft, the scroll-pulley c^9 connected to said gear c^8 and the chain c^{12}, connected to said scroll-pulley, a drum c^{11} mounted on a shaft and provided with a gear c^{13}, the intermediate gear c^{14} the back shaft, the gear a^{21} thereon, engaged by said intermediate c^{14}, combined with the levers c^{14}, c^{15}, the clutch-lever c^{17}, for releasing the said lever c^{15}, and devices to move the said clutch-lever c^{17} at the outward run of the carriage to effect the release of the lever c^{15}, and the engagement of the taking-in friction, substantially as described.

26. The quadrant, its projecting arm, the nosing-rack mounted to slide thereon, the pawl to engage said rack, the nosing-chain connected to said rack, the winding-on chain to which the nosing-chain is attached, the tin cylinder, gearing between it and the winding-on drum and spindles, combined with a lever adapted to be struck during the inward run of the carriage by the said projecting arm to temporarily impart to the winding-on chain extra motion to increase momentarily the speed of the spindles when winding the nose of the cop, substantially as described.

27. The front-roll shaft a^3 having a longitudinal spline, a clutch surrounding said shaft loosely, a clamp-ring adjustably connected to the hub of said clutch, a pin carried by said clutch-ring extended through the hub of the clutch and engaging the said longitudinal spline, and a spring connected with said shaft to keep the said pin in contact with one side of said spline and hold the clutch in a yielding manner, combined with means to rotate the said clutch-gear to effect the rotation of the roller-shaft, the said clutch-gear moving for a short distance when started, about the shaft, without imparting motion thereto to thus enable the rolls to rest temporarily as the carriage is started out from the beam for the purpose set forth.

28. The front-roll shaft having a longitudinal spline, a clutch free to slide thereon and having a slot in its hub wider than said spline, and a ring surrounding said clutch and having a set-screw and a stop-screw, combined with a spring to keep one wall of the slotted part of the hub against one side of said spline, whereby the motion of the front-roll shaft is retarded when the carriage starts out from the beam, substantially as described.

29. The front-roller clutch, and the drawing-roll clutch-lever b^{14}, combined with the clutch lever and an intermediate adjusting device, whereby the exact time for the disengagement of the roller-clutch may be regulated near the completion of the outward run of the carriage, substantially as described.

30. The quadrant, its connected winding-on chain, the nosing-rack, and nosing-chain connected to it, and to said winding-on chain, combined with means between said quadrant and said nosing-chain to temporarily impart to said winding-on chain extra motion, substantially as described.

31. The cylinder-shaft, its attached ratchet-wheel, a gear mounted thereon loosely and carrying a pawl, means to rotate said gear and pawl about said cylinder-shaft, a holder loose on said cylinder-shaft and having an arm, a friction-clasp surrounding the hub of said holder and connected to one end of said pawl, and a spring to move said holder in one direction, combined with means to operate said holder against the stress of its connected spring, whereby when the holder is released to let said spring assume control of the holder, the said pawl will be instantly put into engagement with a tooth of the said ratchet-wheel preparatory to winding on running in the carriage, substantially as described.

32. The nosing shaft, its connected cop-building former, a cam-shaped lever connected to said nosing-shaft, the quadrant, the nosing-rack carried thereby and having an adjustable screw, and the nosing-chain connected to said rack, combined with devices intermediate said cam shaped shoe and said screw to automatically elevate the said rack and shorten the effective length of the said chain to thus increase the speed of the spindles when the carriage approaches the beam, substantially as described.

33. The change-lever having a portion 37, and the taking-in friction, combined with intermediate devices acted upon by said change-lever to open the said taking-in friction after moving the change-lever preparatory to running the carriage out, substantially as described.

34. The taking-in friction, its opening-lever, and a lever adjustably attached thereto, combined with a carriage to strike the latter lever at the end of its inward run to insure the opening of the taking-in friction, substantially as described.

35. The oscillating change-lever, the main shipper-lever, combined with an intermediate lever c' actuated by said change-lever to ship the belt, substantially as described.

36. The oscillating change lever, the locking-lever, and clutch-lever to move the said locking-lever to release the change-lever, combined with means to turn the said change-lever when freed from the locking-lever, substantially as described.

37. The carriage-clutch, its actuating-lever, and change-lever, combined with the locking-lever coöperating with said change-lever and bifurcated to embrace the said actuating-lever, substantially as described.

38. The carriage-clutch, its actuating-lever, and change-lever, combined with the locking-lever coöperating with said change-lever and bifurcated to embrace the said actuating-lever, and an adjusting device carried by said bifurcated end, substantially as described.

39. In a spinning-mule, the following instrumentalities, viz: a carriage-clutch shaft, a carriage-clutch thereon, means to engage and disengage said clutch, a back shaft, means to rotate it positively, a scroll-pulley loose on said back shaft, a shaft parallel to said back shaft, a drawing-in drum mounted thereon, a carriage, flexible connections between the said back shaft and said carriage, gears between said drawing-in-drum shaft and back shaft, combined with a flexible connection between said scroll-pulley and drawing-in drum, whereby the said drawing-in drum is always moved positively or without slip from the scroll-pulley, substantially as described.

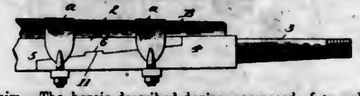
40. The quadrant, the sliding nosing-rack carried thereby and provided with an adjusting device, the winding-on chain connected to the quadrant, the nosing-chain operatively connected to said rack and to said winding-on chain, and means to arrest the said rack at the end of the outward throw of the quadrant and slide the same, combined with a pawl to engage the teeth of the rack and hold the same in the position in which it may be left at the outward movement of the quadrant, substantially as described.

41. The quadrant, the nosing-rack carried thereby and free to slide thereon, the winding-on chain connected to the quadrant, the nosing-chain operatively connected to said rack and to said winding-on chain, and means to hold the said rack in the position in which it may be left after being moved, combined with a lever bearing on said nosing-chain, and an arm carried by said quadrant to contact with said lever at each inward run of the carriage, substantially as described.

42. The carriage, its shaft H^7, the ratchet 5 fast thereon, the loose gear H^6 having the attached plate f^3, its pawl, spring f^7, and friction collar or arm f^4, combined with a lever to actuate said collar or arm in one direction to quickly throw the pawl into said ratchet, substantially as described.

43. The quadrant, the freely-sliding nosing-rack carried thereby, the winding-on chain, the nosing-chain connected to said rack and operatively with the winding-on chain, and the builder-shoe, combined with devices intermediate said shoe and rack to actuate the latter at the end of each outward throw of the quadrant, and a pawl to hold the rack in place, substantially as described.

573,281. VEHICLE-AXLE. JOHN P. MORRIS, Denman, Tex. Filed May 23, 1896. Serial No. 592,867. (No model.)



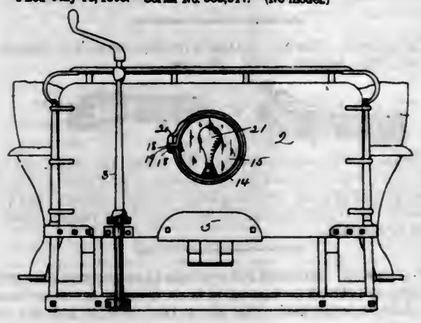
Claim.—The herein-described device, composed of an axletree, and stock and spindle so constructed as to be readily removed from each other and consisting of an axletree 2, a rectangular incut 6 situated on the under side of the axletree 2, circular dovetail recesses 8 and 10, male dovetails 9 and 7, and clips for securing the different parts together, substantially as set forth and described.

573,282. BICYCLE ATTACHMENT. JOHN G. MCNAUGHTON, Salisbury, N. C., assignor of one-half to Leo Shultz, same place. Filed July 14, 1896. Serial No. 599,186. (No model.)



Claim.—A mud-guard for a bicycle having-hinged wings on each side to act as guards for a lady's skirt and a shield for the legs substantially as and for the purpose described.

573,283. HEADLIGHT FOR ELECTRIC CARS. JAMES H. NEAL, Boston, Mass., assignor to Franklin E. Huntress, Somerville, Mass. Filed July 10, 1895. Serial No. 555,517. (No model.)



Claim.—1. The combination with the dashboard of a street-railway car forming a continuous front and extended from side to side of the car-platform and provided with a substantially central hole or opening located below the upper edge thereof to leave a continuous unbroken upper surface extended from side to side of the platform, of a headlight permanently secured to the said dashboard in line with said hole or opening and consisting of a light-containing casing having its rear portion located behind the dashboard in line with said opening and its front portion projecting in front of the said dashboard in line with said opening whereby the distance the headlight projects in front of the said dashboard may be reduced to a minimum, substantially as and for the purpose specified.

2. The combination with the solid or continuous sheet-metal dashboard of an electric street-railway car provided with a hole or opening made in the dashboard intermediate of its sides and top and bottom, and substantially central with relation to the tracks upon which the said car travels, of an electrically-illuminated headlight permanently secured to the said dashboard in line with said hole or opening, and consisting of a casing provided within it with an electric lamp and with a reflecting-surface located behind the said lamp substantially in its focus, the said casing being extended through the said hole or opening to reduce to a minimum the distance the front end of the said casing projects in front of the said dashboard, substantially as and for the purpose specified.

3. The combination with the solid or continuous sheet-metal dashboard of a street-railway car having a hole or opening made in the dashboard substantially central with relation to the track upon which said car travels and intermediate of the top and bottom of the dashboard, of an electrically-illuminated headlight permanently secured to the said dashboard and consisting of a light-containing casing closed at its rear end and provided at its front end with a light-transmitting cover removably secured to said casing, the front portion of the said casing being located in front of the dashboard in line with said opening and the rear portion of said casing being located on the back or rear side of said dashboard in line with said opening, substantially as and for the purpose specified.

4. The combination with the solid or continuous sheet-metal dashboard of a street-railway car having a hole or opening made in the dashboard substantially central with relation to the tracks upon which said car travels and located below the top edge of the said dashboard, of a headlight permanently secured to the said dashboard and consisting of a metal casing composed of a substantially cylindrical body portion closed at its rear end and normally open at its front end, a removable transparent cover for the front end, an annular flange on the body portion intermediate of its ends, the said cylindrical body portion projecting through the opening in the dashboard on opposite sides of the same, and a clamping-ring fitted over one end of the casing and secured to the dashboard and to the annular flange on the opposite side of the dashboard, substantially as and for the purpose specified.

5. The combination with the solid or continuous dashboard of a street-railway car having a hole or opening for the reception of a headlight intermediate of its sides and its top and bottom, of the said headlight permanently secured to the said dashboard and consisting of a casing having a body portion closed at its rear end and normally open at its front end, a transparent cover for the normally open front end removably attached to the said casing, the latter having the rear end of its body portion located behind the dashboard in line with the opening therein, and having its front portion projecting in front of the dashboard in line with the opening therein, and means to permanently secure the said casing to the dashboard, substantially as and for the purpose specified.

6. The combination of a car-dashboard having an opening near its center leaving the dashboard unbroken transversely both above and below said opening, with a headlight or lantern bodily set into said opening and attached to the dashboard at points around the edge of the opening therein.

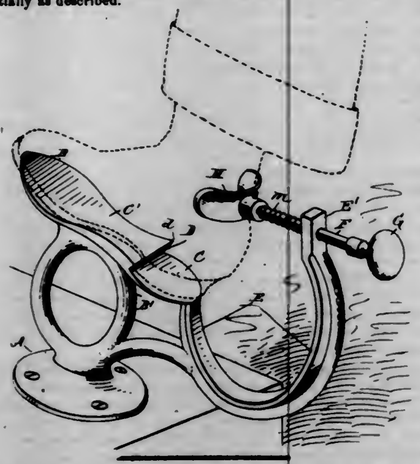
573,284. FOOT-REST FOR BOOT-BLACKS. THOMAS J. PENDERGAST, Easthampton, Mass. Filed Oct. 10, 1896. Serial No. 608,474. (No model.)

Claim.—1. A rest for supporting the foot, an abutment thereon for engaging the forward edge of the heel of the shoe, an adjustable support for the back of the foot, and means for holding said adjustable support forcibly against said foot for effecting said engagement, substantially as described.

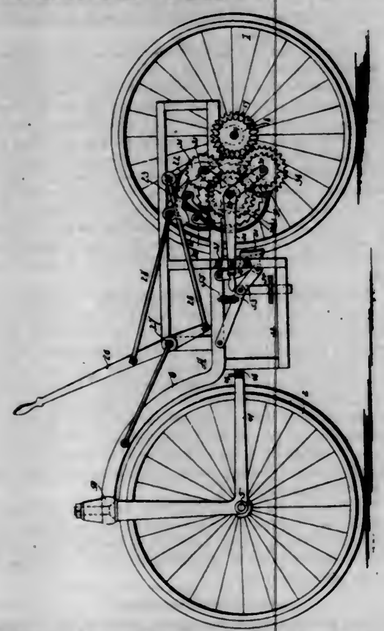
2. A rest for supporting the foot in an upwardly-inclined position, an abutment thereon for engaging the forward edge of the heel of said shoe, a support for the back of the shoe for effecting said engagement, and means for moving said support lengthwise of said foot-rest, and angularly with relation thereto, substantially as described.

3. A rest for supporting the foot in an upwardly-inclined position, an abutment thereon for engaging the forward edge of the heel

of said shoe, a curved arm extending rearwardly from said foot-rest, and a spring-actuated support in said arm for the back of the shoe, for effecting the engagement of said abutment and said heel, substantially as described.



573,285. TRICYCLE. DANIEL M. PRAUTH, Philadelphia, Pa., assignor to the Carriage Cycle Company, of New Jersey. Filed July 26, 1895. Serial No. 557,227. (No model.)



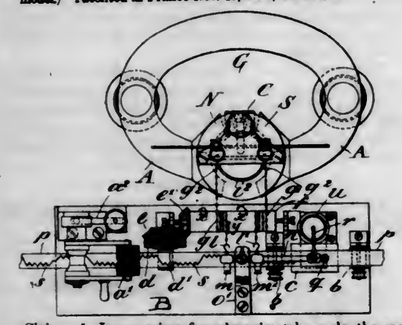
Claim.—1. The combination with the main frame, main wheel, and a laterally-extending seat-frame, of a hinged frame beneath this lateral frame, a wheel connected therewith, and a spring interposed between the hinged frame and seat-frame, substantially as set forth.

2. In a cycle, the combination with a frame, and a propelling-wheel, of a ratchet-toothed wheel, a pair of half shells or sections, pawls pivoted thereto and adapted to engage the teeth of this wheel, an operating-lever, and rods extending from this lever at points on each side of its fulcrum, to the half shells or sections for alternately operating the pawls whereby to impart a continuous motion to the ratchet-toothed wheel, substantially as set forth.

3. In a cycle, the combination of a frame, a propelling-wheel with extended hub, a driving-shaft having a ratchet-toothed wheel thereon, half shells or sections carrying pawls for operating this ratchet-toothed wheel, connecting-rods for operating said sections carrying the pawls, a large and small gear-wheel on the extended hub, and on the driving shaft, and a forked lever carrying two pinions for communicating motion of different speeds from the driving-shaft to the extending hub and for disconnecting the gearing, substantially as set forth.

4. In a cycle, the combination with a frame, a propelling-wheel, an axle, a drive-shaft having a ratchet-toothed wheel thereon, half shells or sections carrying pawls for operating this ratchet-toothed wheel, levers for operating said sections carrying the pawls, a large and small gear-wheel on the axle and on the drive-shaft, and a lever carrying two pinions for communicating motion of different speeds from the drive-shaft to the axle, and for disconnecting the gearing, substantially as set forth.

573,286. RECEIVER FOR SUBMARINE TELEGRAPHS. ALFRED PIEDFORT, Paris, France. Filed Dec. 19, 1895. Serial No. 572,622. (No model.) Patented in France Nov. 13, 1895, No. 238,957.

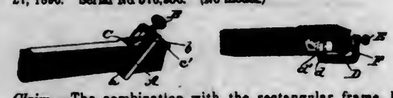


Claim.—1. In a receiver for submarine telegraphs, the combination with a galvanometer, of a mechanical multiplier comprising a rotating barrel *f*, chains *g*, *g'*, wound about said barrel, said chains being connected at one end to the galvanometer-coil directly or indirectly, and at the other end to the operating-lever *n*, at opposite sides of its pivot or fulcrum and at equal distances therefrom, and the said operating-lever *n*, whereby the connectors wrapped about the barrel *f* will be constantly drawn toward the coil of the galvanometer in such a manner that the part of each connector which is attached to said coil may be always floating so as not to produce displacement of the coil about the vertical plane of its support.

2. In a receiver for submarine telegraphs, the combination with means for feeding a strip of record-paper, a galvanometer, and a constantly-rotating barrel, *f*, of a lever *n*, fulcrumed near said barrel, chains *g*, *g'*, wound about said barrel and at one end connected with said lever *n* at opposite sides of its fulcrum and at equal distances therefrom, and at their other end to the coil of the galvanometer, and a recording siphon, carried by the long arm of the lever *n* and adapted to mark characters on the strip of paper passing under it, substantially as set forth.

3. In a receiver for submarine telegraphs, the combination with a galvanometer having a suspended coil adapted to be oscillated by the current flowing in the cable, in a well-known way, a rotating barrel *f*, arranged adjacent to said galvanometer, and an operating-lever *n*, having a relatively long arm, of connectors *g*, *g'*, wrapped about the said barrel *f*, one end of said connectors being coupled to said lever *n* at opposite sides of its fulcrum and at equal distances therefrom, and the other ends of said connectors being in connection with the said suspended coil whereby the oscillations of the coil are communicated to the long arm of the lever *n*, substantially as set forth.

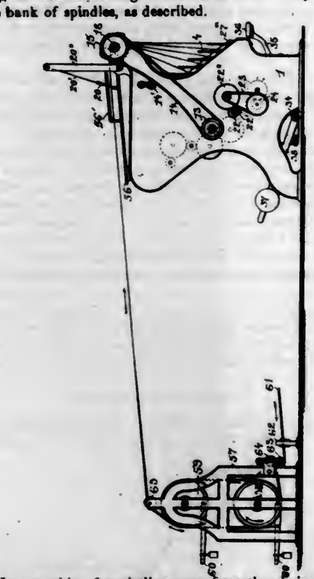
573,287. CLAMP. CHARLES D. PITTIS, St. Joseph, Mo. Filed Jan. 27, 1896. Serial No. 576,956. (No model.)



Claim.—The combination with the rectangular frame, having teeth *a* upon the bottom member and a presser-screw B passing through the upper end of frame, and the plates C having a cross-rib *c* and longitudinal ribs at each side and the end flange *c'* all arranged substantially as described.

573,288. MACHINE FOR WINDING YARN FROM CHAINS ONTO FILLING-BOBBINS. HERBERT L. PRATT, Lewiston, Me., and CHARLES T. UPTON, Lowell, Mass. Filed Aug. 13, 1894. Serial No. 520,132. (No model.)

Claim.—1. In a machine for winding yarn from the chain directly onto the filling-bobbin, the combination with a bank of spindles, mechanism, substantially as described, for operating the spindles, top rolls overhanging the bank of spindles, a cop-forming mechanism for guiding the yarn on the bobbins, and a foot-operated starting and stopping mechanism, of a reed, for separating the threads of the chain, suspended from a point above the top rolls, adapted to swing toward and from the top rolls within reach of the operative and mechanism for bunching the threads leading to two vertical rows of spindles placed over the bank of spindles, as described.



2. In a machine for winding yarn from the chain directly onto filling-bobbins, the combination with the top rolls, of the rods 55 and 55' provided with vertical pins and supported in ways and constructed to slide longitudinally in opposite directions and bunch the yarn to facilitate doffing, as described.

3. In a machine for winding yarn from the chain directly onto filling-bobbins, the combination with the inclined banks of spindles and the vertically-reciprocating frame carrying the guide eyes for laying the yarn on the bobbins, of the rolls 16, 18 and 19, the reed 20, the rods 20', the post 20^9, and the rods 55 and 55' supported on ways, parallel to the top rolls, between the top rolls and the reed, provided with vertically-projecting pins spaced so that in their normal position all the threads of two vertical rows of spindles pass between two pins and constructed to slide longitudinally to move the pins toward each other and bunch the yarn, as described.

4. The combination with the top rolls of a machine for winding yarn from the chain directly onto filling-bobbins, of the rods 55 and 55' provided with pins and suitable slides, and mechanism, substantially as described, constructed to slide the rods in opposite directions to bunch the yarn, as described.

5. In a machine for winding yarn from the chain directly onto filling-bobbins, the combination with the mechanism for driving the spindles, and the cop-building mechanism, of the gear 22^3, the pinion 22 connected with the shaft by a spline when in engagement with the gear 22^3 and loose on the shaft when drawn outward against the nut on the end of the shaft, and the stop-link 22' one end of which is adapted to pass over the shaft and the other large enough to pass over the nut; the whole adapted to connect or disconnect the driving and cop-building mechanism, as described.

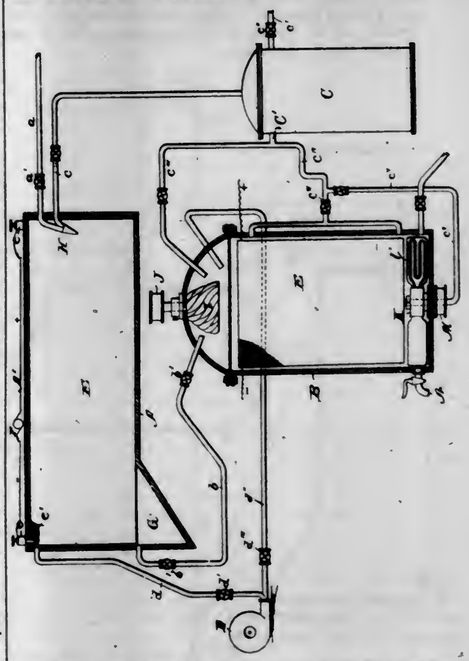
6. The combination, in a machine for winding yarn from the chain directly onto the filling-bobbin, with the inclined bank of spindles, a foot-operated starting and stopping mechanism in front of said bank of spindles, and top rolls overhanging the bank of spindles, of a reed, suspended above the bank of spindles and above the top rolls, adapted to swing toward and from the top rolls to separate and guide the yarn, the table 56, extending from the top rolls to the rear of the machine below the yarn and above the bank of spindles, and mechanism for bunching the threads between two vertical rows of spindles; the whole constructed to control the yarn in passing from the chain to the bobbins, as described.

7. In a machine for winding the yarn from a chain onto the filling-bobbins, the combination with an inclined bank of spindles and mechanism, as described, for operating the spindles, of an inclined frame for supporting the guide-eyes by which the yarn is guided onto the filling-bobbins, said guide eyes being placed in two adjacent vertical rows between two adjacent vertical rows of spindles to facilitate the doffing of the bobbins, and mechanism for reciprocating the inclined frame, as described.

8. In a machine for winding the yarn from a chain onto filling-bobbins, in combination, an inclined bank of spindles arranged in horizontal rows one above and behind the other the spindles being placed so as to form vertical rows, a frame for supporting the yarn-guides, yarn-guides placed to form two adjacent vertical rows between two adjacent vertical rows of spindles, mechanism for operating the spindles and reciprocating the frame and yarn-guides to wind the yarn on the filling-bobbins, and mechanism for bunching the yarn adapted to facilitate the doffing of the bobbin, as described.

9. In a machine for winding the yarn from a chain onto filling-bobbins, in combination, an inclined bank of spindles arranged in horizontal rows one above and behind the other, the spindles being placed so as to form vertical rows, a frame for supporting the yarn-guides, yarn-guides placed to form two vertical rows between alternate adjacent vertical rows of spindles, top rolls overhanging the bank of spindles, a swinging reed, for separating the yarn, within reach of the operative, mechanism for bunching the yarn between the reed and the top rolls, mechanism for driving the spindles and reciprocating the frame carrying the yarn-guides, mechanism for disconnecting the mechanism for operating the yarn-guides and permit of operating the same to wind the yarn below the bobbins before doffing, and spindle-holders provided with a cylindrical portion to receive the yarn, and a disk, larger in diameter than the bobbin, adapted to break the yarn in doffing, as described; the whole constructed to facilitate the exchange of empty for the filled bobbins, as described.

573,289. PROCESS OF PURIFYING AND DECOLORIZING SACCHARINE OR OTHER LIQUIDS. MARSHALL PRIDHAM, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Electric Rectifying and Refining Company, Camden, N. J. Filed Sept. 10, 1896. Serial No. 605,441. (Specimens.)



Claim.—1. The herein-described process of purifying saccharine or other liquids, which consists in subjecting the liquid to the direct action of an electric current and simultaneously passing ozone gas through the liquid, substantially as specified.

2. The herein-described process of purifying saccharine or other liquids which consists in subjecting the liquid *in vacuo* to the direct action of an electric current, and simultaneously passing ozone gas through the liquid, substantially as specified.

3. The herein-described process of purifying saccharine or other liquids which consists in subjecting the liquid to the direct action of an electric current and simultaneously passing ozone gas through the liquid, and subsequently subjecting the liquid so treated to further contact with ozone gas, substantially as specified.

4. The herein-described process of purifying saccharine or other liquids, which consists in subjecting the liquid, while in a state of agitation, to the action of ozone gas, and simultaneously subjecting said liquid to the direct action of an electric current, substantially as specified.

5. The herein-described process of purifying saccharine or other liquids which consists in first reducing the gravity of said liquid by the addition of water, and heating the same, and then subjecting the liquid so treated to the direct action of an electric current, and simultaneously passing ozone gas through the liquid, substantially as specified.

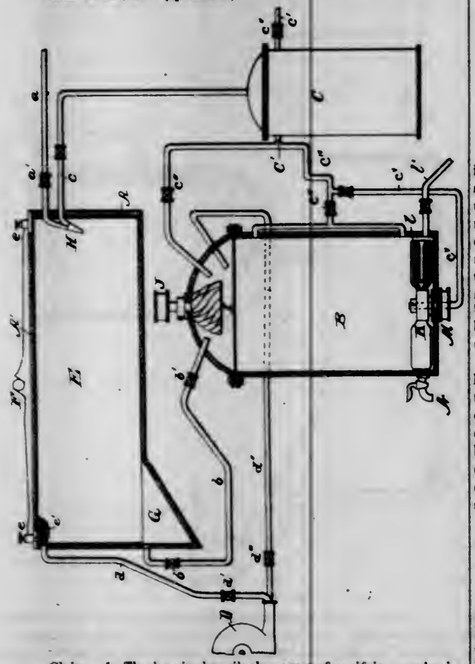
6. The herein-described process of purifying saccharine or other liquids which consists in subjecting said liquid to the action of electrolytically-developed aluminium hydrates and simultaneously passing ozone gas through the liquid, substantially as specified.

7. The herein-described process of purifying saccharine or other liquids, which consists in subjecting said liquid *in vacuo* to the action of electrolytically-developed aluminium hydrates, and simultaneously passing ozone gas through the liquid, substantially as specified.

8. The herein-described process of purifying saccharine or other liquids, which consists in subjecting said liquid to the action of electrolytically-developed metallic decolorizing compounds, and simultaneously passing ozone gas through the liquid, substantially as specified.

9. The herein-described process of treating saccharine or other liquids, which consists in subjecting said liquid *in vacuo* to the action of electrolytically-developed metallic decolorizing compounds, and simultaneously passing ozone gas through the liquid, substantially as specified.

573,290. PROCESS OF PURIFYING AND DECOLORIZING SACCHARINE OR OTHER LIQUIDS. MARSHALL PEIDHAM, Philadelphia, Pa., assignor to the Electric Rectifying and Refining Company, same place and Camden, N. J. Original application filed Sept. 10, 1896, Serial No. 605,441. Divided and this application filed Oct. 15, 1896. Serial No. 608,963. (Specimens.)



Claim.—1. The herein-described process of purifying saccharine or other liquids, which consists in subjecting the liquid to the direct action of an electric current and subsequently passing ozone gas through the liquid, substantially as specified

2. The herein-described process of purifying saccharine or other liquids which consists in subjecting the liquid *in vacuo* to the direct action of an electric current, and subsequently passing ozone gas through the liquid, substantially as specified.

3. The herein-described process of purifying saccharine or other liquids, which consists in subjecting the liquid to the direct action of an electric current and subsequently passing ozone gas through the liquid while the same is in a state of agitation, substantially as specified.

4. The herein-described process of purifying saccharine or other liquids, which consists in first reducing the gravity of said liquid by the addition of water, and heating the same, and then subjecting the liquid so treated to the direct action of an electric current, and subsequently passing ozone gas through the liquid, substantially as specified.

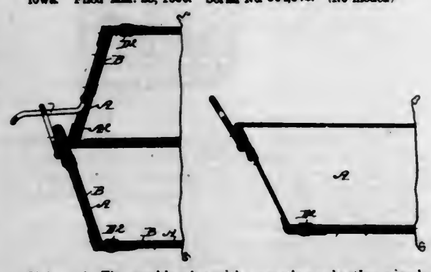
5. The herein-described process of purifying saccharine or other liquids which consists in subjecting said liquid to the action of electrolytically-developed aluminium hydrates and subsequently passing ozone gas through the liquid, substantially as specified.

6. The herein-described process of purifying saccharine or other liquids, which consists in subjecting said liquid *in vacuo* to the action of electrolytically-developed aluminium hydrates, and subsequently passing ozone gas through the liquid, substantially as specified.

7. The herein-described process of purifying saccharine or other liquids, which consists in subjecting said liquid to the action of electrolytically-developed metallic decolorizing compounds, and subsequently passing ozone gas through the liquid, substantially as specified.

8. The herein-described process of treating saccharine or other liquids, which consists in subjecting said liquid *in vacuo* to the action of electrolytically-developed metallic decolorizing compounds, and subsequently passing ozone gas through the liquid, substantially as specified.

573,291. COOKING UTENSIL. JUDSON K. PURINTON, Des Moines, Iowa. Filed Mar. 23, 1896. Serial No. 584,573. (No model.)



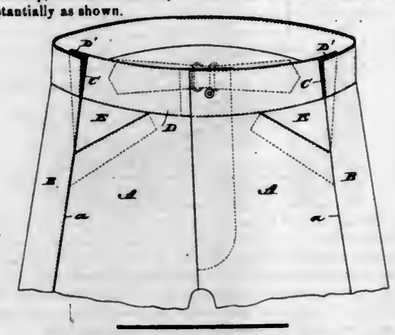
Claim.—1. The combination with a roasting or basting oven having a pan and a cover therefor, of a device at each end comprising a metal ring pivoted to the end of the pan and capable of swinging upwardly to overlap the lower end of the cover, and an elongated metal loop pivoted to the cover and then bent downwardly and finally outwardly from the pan, as required to restrict its downward movement and yet permit it to fold upwardly, said parts being so arranged that they may both fold close to the parts to which they are pivoted and so that the ring may be made to overlap the elongated loop and thus secure the pan and cover together and also hold the loop in a horizontal position or against folding upwardly so that it may be used as a handle substantially as set forth.

2. A sheet-metal cooking utensil having its edges bent to overlap its outer side, asbestos in sheet form placed on its sides and bottom, the upper edges of the asbestos which is disposed upon the sides extending beneath said overlapping edges, corner-pieces, L-shaped in cross-section, to pass under said overlapping edges and beneath the bottom, metal strips L-shaped in cross-section passed around the lower corners and rivets passed through the bottom of the pan and said corner-pieces and bottom strips, substantially as and for the purposes stated.

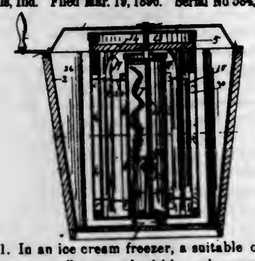
573,292. OVERALLS, &c. CARL J. RAUFFENBEN, Sedalia, Mo., assignor to the J. A. Lamy Manufacturing Company, same place. Filed July 16, 1896. Serial No. 599,343. (No model.)

Claim.—1. A pair of overalls, pants or trousers having front and rear sections or parts A and B, a pocket and a pocket-facing E having extension E' which extends from the rear or lower edge of the pocket-opening to the waistband; together with an extensible waistband partially separated at a point above the extension E' of the pocket-facing, the inner portion of the waistband being adapted to fold as shown at D', substantially as shown and for the purpose set forth.

2. A pair of overalls, pants or trousers, made up of front and rear sections or parts A and B, and waistband D, a pocket-facing E having an extension E' at its rear edge which extends from the pocket-flap to the waistband, the waistband being doubled upon itself to present inner and outer strips or sections, the outer strip being slit to present a flap on a line with the extension E', housings on each side of said flap, and an elastic strip C secured at its ends in said housings, substantially as shown.



573,293. ICE-CREAM FREEZER. LAFAYETTE D. RAILSBACK, Indianapolis, Ind. Filed Mar. 19, 1896. Serial No. 584,003. (No model.)



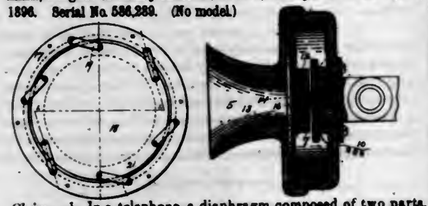
Claim.—1. In an ice cream freezer, a suitable outer receptacle, and a cream-can centrally secured within such receptacle, a movable lining for the outer receptacle having on it ribs for distributing the ice, and means for rotating such movable lining.

2. In an ice-cream freezer, a suitable outer vessel, a cream-can secured within the same, a movable lining for the outer receptacle having secured to it ribs for distributing the ice and also having on its upper end an outwardly-extending annular flange, friction-rollers mounted in the upper end of such outer receptacle on which the flange of the movable lining may be rotated, and means for rotating such movable lining.

3. In an ice-cream freezer, an outer ice-receptacle, a cream-can mounted therein, an ice-receptacle within the cream-can, arms extending down into the cream-can that are triangular in cross-section, a pair of spring-actuated scrapers mounted on such arms which scrape both the inner and outer walls of said cream-can.

4. An ice-cream freezer comprising an outer receptacle, a movable lining therein having ribs for stirring the ice, a stationary cream-can mounted within the receptacle, a stationary freezing-receptacle mounted within the cream-can, a shaft extending down into the inner freezing-receptacle having a wing on it to stir the ice therein, a head mounted on the upper end of such shaft and within the cream-can so as to be rotated by said shaft, arms extending down from said head and carrying suitable scrapers, and a handle-bar secured to the movable lining and to the upper end of said central shaft whereby when said handle-bar is rotated the movable lining with the ribs, the scrapers, and distributer in the central freezing-receptacle will all be rotated.

573,294. TELEPHONE-TRANSMITTER. FOREST A. RAY, Boston, Mass., assignor to Henry A. Clark, trustee, same place. Filed Apr. 6, 1896. Serial No. 586,289. (No model.)



Claim.—1. In a telephone, a diaphragm composed of two parts, a stationary member, and an active member for vibratory movement non contiguous to the stationary member, the periphery or edge of said active member being unconfined except at requisite points for attachment to the stationary member, substantially as specified.

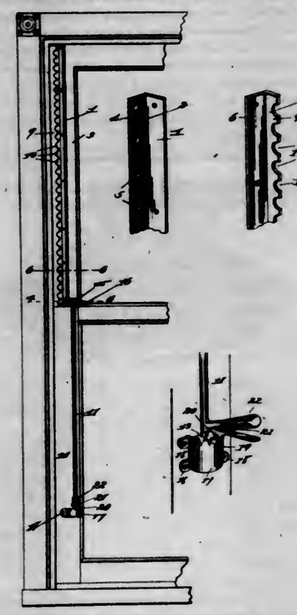
2. In an electric telephone, a diaphragm consisting of two members, a fixed member or ring, a vibrating disk or movable member non-contiguous to the fixed member, and a plurality of flexible supports which interconnect the two members, substantially as set forth and described.

3. In a transmitter the combination with a fixed annular ring, and a vibratory plate non-contiguous to and concentric within said ring, of a plurality of flexible links which interconnect the edges of the plate with the ring, substantially as stated.

4. In a telephone a diaphragm composed of a fixed ring as a support, a vibratory plate non-contiguous to but concentric within said ring, a plurality of flexible links which interconnect the periphery of the plate with the ring, and a membranous band to cover the space between the two members, substantially as described.

5. In a transmitter, an outer casing, a fixed annular ring therein, a concentric vibrating disk, a plurality of flexible links which interconnect the disk with the ring, and a carbon plate affixed to the disk, combined with a stationary carbon plate, an adjustable electrode, a contact-ring between the two carbon plates, and granulated carbon, as a variable-resistance medium, substantially as explained.

573,295. SASH-FASTENER. HENRY S. G. RAY, Louisiana, Mo. Filed June 1, 1896. Serial No. 593,816. (No model.)



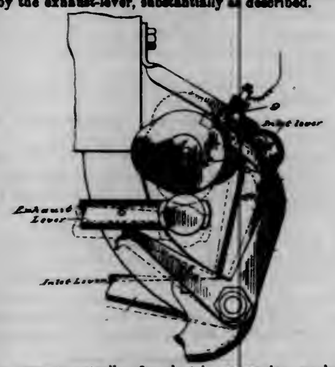
Claim.—1. In a device of the class described, a rack attached to the upper sash, a rack attached to the window-frame, a pin carried by the lower sash, a rod attached to said pin, a pawl attached to said rod and a rack to be engaged by said pawl, substantially as specified.

2. In a device of the class described, a rack attached to the upper sash, a rack attached to the window-frame in such a position that the openings in said racks are in alinement, a pin carried by the lower sash and in position to have its free end engage the openings in said racks as desired, a rod attached to said pin for operating the same, a pawl attached to said rod for controlling the operation of the same, a rack to be engaged by said pawl, and a dog pivotally mounted upon said lower sash and in position to have its free end engage said pin as required to lock said pin in position in engagement with said racks, substantially as specified.

573,296. IGNITER FOR GAS-ENGINES. FRANK J. REITIG, North Manchester, Ind., assignor to the Buckeye Manufacturing Company, Anderson, Ind. Filed Mar. 5, 1896. Serial No. 581,964. (No model.)

Claim.—1. In a current-controlling device for gas-engines, the combination of the inlet and exhaust levers and means for operating

the same, an insulated contact-plate connected to one of the battery-wires, and a lever engaging the inlet and exhaust levers and adapted to be shifted onto the contact-plate by the inlet-lever and removed therefrom by the exhaust-lever, substantially as described.



2. In a current-controller for electric gas-engine sparkers, the combination of the exhaust and inlet levers, the cams for operating the same, an insulated plate connected to one of the battery-wires, and an angle-lever pivoted independently of the inlet-lever and adapted to engage both the inlet-lever and the exhaust-lever and adapted to be shifted onto the contact-plate, substantially as described.

3. In combination with a gas-engine, and a gas-inlet lever and means for operating it, of an insulated contact-plate connected to one of the battery-wires, and a circuit-closing lever and means for shifting said lever onto the contact-plate when the inlet-valve is opened, substantially as described.

573,297. CONSTRUCTION OF VESSELS. RICHARD A. ROBERTS, Brooklyn, N. Y. Filed June 13, 1896. Serial No. 595,971. (No model.)



Claim.—1. A vessel provided with a plurality of keels, air-chambers situated between the said keels and having contracted downwardly-opening mouths, substantially as described.

2. A vessel provided with a plurality of keels, air-chambers situated between said keels and having contracted downwardly-opening mouths, the bottoms of the said air-chambers being provided with transverse corrugations, substantially as shown and described.

3. A vessel provided with a plurality of keels, air-channels between the keels, and air-cavities having contracted downwardly-opening mouths situated between the keels, the channels constituting means for communication between the external air and the air-cavities, substantially as described.

4. A vessel having self-filling air-chambers and corrugations arranged along its bottom, a plurality of keels, and air-channels formed by said keels and constituting a means for communication between the chambers and corrugations and the external air at the vessel's bow, substantially as described.

5. A vessel having a plurality of keels, T-shaped pieces situated between the keels, channels formed by said keels and the T-shaped pieces, air-chambers situated between the vessel's bottom, the keels and the T-shaped pieces, and having communication with the channels, said channels being adapted to conduct air thereto from above the water-line at the vessel's bow, substantially as described.

6. A vessel having a plurality of keels forming air-channels, detachable T-shaped pieces situated between the keels and forming therewith and with the vessel's bottom cavities having contracted mouths communicating with the channels, substantially as shown and described.

7. A vessel having with its bottom E, a false bottom F with perforations, a plurality of keels supporting the false bottom and forming therewith an air channel or channels having external communication above the water-line at the vessel's bow, partitions situated between the bottom E and the false bottom F and forming with the same and the keels air-chambers, said channels and the perforations constituting means for conducting air to the chambers from above the water-line at the bow of the vessel, substantially as described.

578,298. FURNACE-GRATE AND AUTOMATIC STOKER. JAMES G. SANDERSON, Scranton, Pa. Filed Nov. 4, 1895. Serial No. 567,931. (No model.)



Claim.—1. In a furnace-grate, the combination of a stationary frame arranged to carry cross-bars, and a movable frame mounted on wheels or rolls and interior to the stationary frame, said movable frame being also arranged to carry cross-bars, and said cross-bars being provided with a U-shaped groove in their upper side for the reception of the legs of grate plates and bars which are supported by said cross bars, substantially as shown and described.

2. In a furnace grate, the combination of a series of horizontal cross-bars, formed with a U-shaped groove in their upper side and a series of grate plates and bars adapted to be carried by said cross-bars, the cross-bars being so arranged that one end of the grate plates and bars is supported thereon while the other end overlaps and is supported by the grate plates or bars below which in turn are supported by the adjoining cross-bar; substantially as shown and described.

3. In a furnace-grate, the combination of the cross-bars, and the grate-bars independently and movably carried by said cross-bars, each grate-bar having ends projecting at right angles to the surface thereof forming legs, and projections on one side, for the purpose shown and described.

4. A furnace-grate, composed of a number of cross-bars, and a series of independent grate bars of varying widths movably supported by said cross-bars and forming the grate-surface, each grate-bar being formed with legs extending at right angles to the surface thereof and with projections on one side thereof, substantially as shown and described.

5. In a furnace the combination of a grate, means in connection therewith for feeding the fuel from one end of the grate to the other, and means for supplying a greater quantity of air at the middle portion thereof than at the ends, substantially as shown and described.

6. In a furnace in combination with the grate-bars to be moved, the means for moving them consisting of a shaft carrying an arm adapted to engage with the bars, a toothed segment on said shaft, a toothed quadrant of twice the diameter of the segment in engagement with said shaft and suitable means having an adjustable connection with the quadrant for moving the same, substantially as shown and described.

573,299. RED DYE. TRAUGOTT SANDMEYER, Basle, Switzerland assignor to John R. Geigy & Co., same place. Filed Sept. 21, 1896. Serial No. 606,579. (Specimens.)

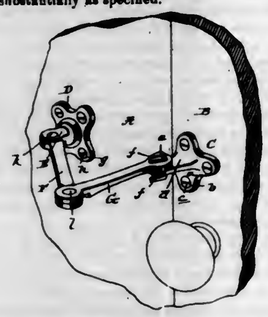
Claim.—1. The process herein described of producing a red coloring dyestuff, which consists in condensing benzaldehydeorthosulfo-acid with an alkylated metaamidophenol, removing one molecule of water from the thus-obtained dihydroxylated tetraethyldiamidotriphenylmethanmonosulfo-acid, and oxidizing the thus-formed derivatives of triphenylmethan oxid, substantially as set forth.

2. The process herein described of producing a red coloring dyestuff, which consists in condensing benzaldehydeorthosulfo-acid with an alkylated metaamidophenol, such as diethylmetaamidophenol, removing one molecule of water from the thus-obtained dihydroxylated tetraethyldiamidotriphenylmethanmonosulfo-acid by treating the same by one of the usual water-removing agents, such as concentrated sulfuric acid, and oxidizing the thus-formed derivative of triphenylmethan oxid, substantially as set forth.

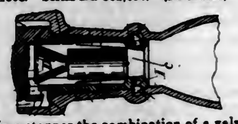
3. The new coloring-matter herein described, being a greenish crystalline powder, scarcely solable in cold water, somewhat better soluble in hot water, very easily soluble in alcohol and acetic acid with a bluish-red shade showing a very bright yellowish-red fluorescence, soluble in hydrochloric acid and diluted sulfuric acid with a yellowish-red shade turning to bluish red by addition of water, producing on silk and wool very pure red shades distinguished by their fastness against the action of alkalies, substantially as described.

573,300. DOOR-CHECK. EDWARD L. SCHAGHT, Chicago, Ill. Filed May 11, 1896. Serial No. 591,138. (No model.)

Claim.—The door-holder described comprising the fixture adapted to be connected to a door and provided with the horizontal projection having the upwardly and downwardly projecting headed studs *c*, *c'*, the bracket-plate adapted to be connected to a door-casing and having a journal-aperture, the rotatable bracket having the trunnion journaled in the aperture of the bracket-plate and secured to said plate, a link or arm connected in a hinged or pivotal manner to said rotatable bracket, and a second link or arm connected in a pivotal or hinged manner with the first-named link or arm and having an aperture shaped in conformity to the heads of the studs of the door-fixture, substantially as specified.



573,301. BOTTLE-STOPPER. JOHN SCHUMACHER, Chicago, Ill. Filed June 8, 1895. Serial No. 552,097. (No model.)



Claim.—1. In a stopper the combination of a valve-seat, a valve, means operating automatically when the bottle is chucked for locking the valve in seated position and holding it seated as against similar subsequent manipulations, and means preventing access to said locking means, substantially as set forth.

2. In a stopper the combination of a valve-seat, a valve, means operating automatically when the bottle is chucked for exerting a slight abnormal pressure upon the valve whereby it is locked in the valve-seat and held locked as against similar subsequent manipulations, and means preventing access to said locking means, substantially as set forth.

3. In a stopper, the combination of a valve seat, a valve, a weight for holding the valve normally seated, said weight being arranged so that when the bottle is tipped past pouring position its influence upon the valve is removed, and when the bottle is chucked it exerts an abnormal pressure upon the valve, means operating automatically for locking the valve seated when it is subjected to such abnormal pressure and holding it seated as against similar subsequent manipulations, and means preventing access to said locking means, substantially as set forth.

4. In a stopper the combination of a valve-seat, and valve, one of which is tapered and one of which has an elastic working surface, said valve and valve-seat being normally in engagement with each other, and a weight for holding the valve normally seated, said weight being so arranged that when the bottle is tipped past pouring position, its influence upon the valve will be removed, and when the bottle is chucked it will exert an abnormal pressure upon the valve, the relative areas of the working surfaces of the valve and valve-seat being such that the abnormal pressure thus exerted by the weight upon the valve causes it to be locked in the valve-seat and held so locked as against subsequent similar manipulations, substantially as set forth.

5. In a stopper the combination of a valve-seat, a valve, a weight resting normally upon the top of the valve, and means for locking the valve seated when it is subjected to an abnormal impact by the weight, substantially as set forth.

6. In a stopper the combination of a valve and valve-seat having locking features that lock the valve seated when subjected to a slight abnormal pressure, a weight holding the valve normally seated, said weight being so arranged that when the bottle is inverted its influence upon the valve is removed, and when the bottle is chucked it exerts an abnormal pressure upon the valve whereby it becomes locked in the valve-seat and held so locked as against similar subsequent manipulations, substantially as set forth.

7. In a stopper the combination of a valve-seat having a downward contraction, a valve having an elastic working surface resting upon the valve-seat, and a weight for holding the valve normally seated, the relative areas of the working surfaces of the valve and valve-seat being such that an abnormal impact of the weight upon the valve causes its working surface to be compressed and locked in the valve-seat, substantially as set forth.

8. In a stopper the combination of a valve-seat having a convex portion and a tapering portion whose surfaces merge, a valve having a working surface resting upon the convex portion of the valve-seat and of slightly greater area than the upper end of the tapering portion, the working surface of the valve being made of elastic material, and a weight for holding the valve normally seated, the construction and arrangement of the parts being such that abnormal pressure upon the valve will compress its working surface and lock it in the valve-seat, substantially as set forth.

9. In a stopper the combination of a valve seat, a valve, a frusto-conical weight arranged above the valve, and a cage containing said valve and weight, the dimensions of the parts being such that when the bottle is tipped the weight may rest with its side flat against the side of the cage, and when in this position will have contact with the ceiling of the cage and with the top of the valve and the bottom of the valve will have contact with its seat, substantially as set forth.

10. In a bottle-stopper the combination of a valve, a cage formed of two parts having overlapping portions, a circumferential groove formed in said overlapping portions, a band in said groove securing said overlapping portions together, the groove being of sufficient depth to receive the band and prevent its projecting beyond the outer surface of the cage substantially as set forth.

11. In a stopper, the combination of a valve, a cage formed in two parts having on their meeting ends complementary tongues and grooves, the outer surfaces of the tongues of both parts being flush and provided with a circumferential groove and a band in said groove securing the parts together, substantially as set forth.

573,302. CONDUCTOR OF ELECTRICITY AND CONDUIT FOR HOLDING SAME. ALEXANDER SELKIRK, Albany, N. Y., assignor of one-half to Robert Bryce, same place. Filed Jan. 30, 1896. Serial No. 577,478. (No model.)



Claim.—1. In an electric conduit, the combination with two metallic rail-form side pieces of equal length and having each a horizontal base portion which is joined with the other, a water-resisting packing between the said joined portions of said side pieces, an end-closing piece at each terminal of said joined rail-form side pieces and secured between the same and having in them longitudinal perforations which are adapted to permit the passage of terminal portions of electric conductors from within to without said conduit, and a water-resisting packing between the edges of said end-closing pieces and the portions of the said rail-form side pieces, of a series of metal sections closing the longitudinal opening between the unjoined edge margins of the said two rail form side pieces and adapted to receive on their exterior sides electric conductors for connection with a working conductor contained within the conduit, water resisting packing between the abutting ends of said metal sections and between the edges of the same and the portions of said rail-form side pieces at which the edges of said sections join, and devices adapted to force the surfaces of the joined portions of the respective pieces toward each other and tightly against the water-resisting packing between, substantially as and for the purposes set forth.

2. In an electric conduit, the combination with two metallic parallel rail form sections of equal length and having each a horizontal base portion extended inwardly for joint with the other, end-closing pieces provided with horizontal perforations calculated to admit the passage of electric conductors, from within the conduit, endwise out from the same, a series of metallic sections having thin lateral edges holding with the upper edge margins of said rail-form sections, and insulating packing material between surfaces at the joints of the several parts or sections in the conduit, of a series of short surface conductors of metal of good conductivity, suitably insulated at their joints with each other and the sections of the top portion of the conduit they are secured to, and calculated to a current of electricity from a conductor within the conduit to one outside and the reverse substantially as set forth.

3. In an electric conduit, the combination with metal rail-form parts or sections of equal length and calculated to comprise the side and bottom portions of the conduit, end-closing pieces provided with perforations which admit through them the passage of end portions of conductors of electric currents, and packing material in the joints

of said parts or sections and said end-closing pieces, of a series of pieces of metal joined with each other and holding with the upper edge margins of the side portions or parts of the conduit and comprising the top portion of the latter, packing material in the joints between said pieces, comprising the top portion of the conduit, and in the joints between the parts of the top portion of the conduit and the side parts of the same, and devices which are calculated to hold all the metal parts of the conduit securely together and joined in a water-tight manner, substantially as and for the purposes set forth.

4. In an electric conduit comprising metal sides, bottom and end-closing pieces joined together with packing material between producing water-tight joints, and having openings through said end-closing pieces for passage of the end portions of conductors contained within the conduit, the combination with the same of a series of metal pieces arranged adjoining each other and holding with the side pieces of the conduit and forming the top portion of the latter, and packing material between the joints of said top pieces and said side pieces, they hold with, calculated to make water-tight joints between the same and metal pieces of good conductivity secured to said top pieces and insulated from contact with the metal of the latter and calculated each to serve as a conductor of electric currents from a conductor within the conduit to one outside the same, substantially as and for the purposes set forth.

5. In an electric conduit, the combination with two angular rail-form pieces which constitute the sides and bottom of the conduit, metal end-closing pieces at the terminals of said rail-form pieces, water-resisting packing in the joints of said pieces with each other and said end-closing pieces, openings having their side surfaces insulated and passing through said metal end-closing pieces in direction of the length of the conduit, and adapted, one, to admit the passage of an end portion of an interior working conductor, and another, for the passage of an end portion of a return-conductor, a metal closing top wall extending the entire length of the rail-form pieces and joined with the same and the upper edges of said end-closing pieces, and a water-resisting packing between the joints of said top wall and the pieces it joins with, of a series of short surface conductors on the outer side of the closing top wall, insulating-packing between said surface conductors and said top wall, and devices of metal of good conductivity applied to the inner side of said metal top-closing wall with insulating-packing between and having connection with the surface conductors on the outer side of said top wall, substantially as and for the purposes set forth.

6. In an electric conduit combining rail-form pieces of equal length, which comprise the side walls and bottom of the conduit, and metal end-closing devices which are perforated in direction of the length of the conduit and have their sides insulated for receiving electric conductors, the joints of the rail-form pieces and end-closing devices being packed with a water-tight resisting packing, a top-closing wall comprising a series of short metal pieces through which magnetic currents may freely pass from a magnet to an armature and return, and water-resisting packing between the abutting ends of said short metal pieces and between their edges and the rail-form pieces they join with, of a series of short electric conductors which are insulated on their lower sides and edges and permanently held in place with the upper sides of said short metal pieces of the top-closing wall, electric conductors applied to the lower sides of said short metal pieces with insulating-packing between and permanently secured with the short electric conductors on the upper sides of said short pieces of the top-closing wall, and a water-resisting and insulating surface covering which is applied to the inner surfaces of all the pieces comprising the side walls, bottom and top wall and end-closing pieces of the conduit, substantially as and for the purposes set forth.

7. The combination with a sectional conduit comprising metal parts which form the sides, bottom and end closing parts thereof with the joints of the same water-tight, metal pieces forming the top portion of the conduit and holding with the metallic side pieces of the same and having their joints with each other and the side pieces of the conduit water-tight, and a series of surface conductors secured with said top portions of the conduit, with insulating substances between the adjoining ends of said surface conductors and the metal of said top portions and calculated each to conduct an electric current from a conductor within the conduit to one outside the same, or the reverse, of a jointed conductor contained within the chamber of the conduit and out of contact with the said surface conductors when in normal situation, yet adapted to be moved at will into an electrical connection with any one or more of said surface conductors, and away from the same, substantially as and for the purposes set forth.

8. The combination with a water-tight rail-form metallic conduit, comprising rail-form pieces of equal length which close the sides and bottom of said conduit, end-closing pieces provided with a perforation for passage of electric conductor from within the conduit out through the same, a top-closing wall of metal and short surface electric conductors in a series extending the whole length of the conduit and secured with the top-closing wall with an insulating-packing between their adjoining ends and between them, and the metal of said top-closing wall, all secured together and constituting a portable electric conduit adapted to be handled and laid as a whole, of a jointed working electric conductor contained within the chamber of the conduit and having its terminal ends secured in the perforations provided in the said end-closing pieces, and mechanism for carrying, at will, portions of said jointed conductor into electrical connection with one or more of the surface conductors, substantially as and for the purposes set forth.

9. The combination with a completed water-tight portable rail-form metallic conduit which comprises side, bottom and top walls and end walls secured together, the end walls being each perforated for passage of a terminal of a working conductor, and a series of separated surface electric conductors which are consecutively secured with a side wall portion thereof and are insulated for electrical separation of each from the other and from the metal of said wall portion and adapted each to have an electric connection with an electric conductor which may be externally applied thereto at will, of a jointed conductor contained within the conduit and mechanism adapted to be operated at will, for electrically connecting one or more portions of said jointed conductor with adjoining surface conductors, by means of devices operated from the outside of the conduit, substantially as and for the purposes set forth.

10. The combination with a metallic side or wall portion of a completely-closed and water-tight portable conduit, of a series of separated surface electric conductors secured to said wall portion and insulated from the metal of the same, a jointed working conductor contained within the conduit and a jointed bed supporting said jointed working conductor at a short distance from the said surface conductors and adapted to move any portion of said working conductor into electrical connection with such surface conductor as may be opposite when a corresponding portion of said jointed bed is arbitrarily moved toward a surface conductor, of the series, by means of mechanism which is operated from without the conduit, substantially as and for the purposes set forth.

11. The combination with a closed conduit having a side portion thereof of metal which is calculated to permit a magnetic current to have passage through it, a series of surface conductors secured with said side portion and separated therefrom and from each other by a non-conducting substance and a jointed live or working conductor in situation out of electrical connection with the surface conductors, of a jointed bed of metal, with a conductor of magnetic currents, supporting the jointed working conductor within the conduit and devices calculated to be operated at will for moving the said bed toward the side of the conduit with which the surface conductors are provided, substantially as and for the purposes set forth.

12. The combination with a closed conduit having a side portion thereof of metal which permits a magnetic current to readily pass through it to an armature beneath, a series of surface conductors secured on the said metal side and insulated from the same by a non-conducting substance, a jointed live or working conductor contained within the conduit, and a jointed metal bed supporting said jointed conductor and adapted to act as an armature of a magnet and be moved toward the said metal side portion of the conduit for carrying the sections of the jointed working conductor into electrical connection with said surface conductors, of a magnet applied to the said metal side of the conduit and attracting the jointed metal bed toward its poles, substantially as and for the purposes set forth.

13. The combination with a closed conduit having a metal side portion which permits a magnetic current to readily pass through it, a series of surface conductors secured to said metal side portion and insulated therefrom, and a series of jointed bed-sections of which any one or more are adapted to be moved toward the surface conductors and also to serve as an armature, and contained wholly within the conduit, of a working conductor comprising a series of jointed sections of metal, of good conductivity, supported on the jointed bed-sections with any one or more thereof adapted to be moved into electrical connection with such surface conductors toward which any one or more of the jointed bed-sections may be moved, and devices adapted to be operated at will for moving one or more of the jointed bed-sections toward the said surface conductors, substantially as and for the purposes set forth.

14. An electric-conduit line formed by the combination of two or more completed similar portable and tight-closed electric conduits having each its end-closing pieces perforated, for passage of an electric conductor, and having each, throughout its entire length, a closing wall portion of metal which permits the passage of a magnetic current and is provided with a series of insulated surface conductors—each conduit, in the combination, containing within its tight-closed chamber a jointed working conductor and a jointed bed which is adapted to be moved, by the operation of a magnet, toward the said surface conductors, and carry one or more of the sections of said jointed working conductor into electrical connection with the same—of an electric conductor introduced into the perforations in the adjoining end pieces of each two adjoining portable electric conduits, thereby producing an electrical continuity of all the jointed working conductors in the several conduits in the said electrical conduit-line, substantially as and for the purposes set forth.

15. An electric conduit line formed by the combination of two or more similar portable tight-closed electric conduits having in each end a closing-piece which is perforated for passage of an electrical conductor, and having each throughout its length a wall of metal through which a magnetic current may pass, and having with said wall a series of insulated surface conductors, each said portable conduit in the conduit-line having within its chamber a working conductor, comprising a series of jointed sections, and also a bed comprising a series of jointed sections of which any one or more is adapted to be attracted by magnetic force toward a surface conductor opposite thereto, and carry one or more of the sections of the working conductor thereon into electrical connection with corresponding surface conductors, and in combination with the same, an electrical conductor passing through the perforations in the adjoining end pieces of each two adjoining portable electric conduits and electrically connecting with the terminals of the working conductor in each adjoining conduit so that each jointed section in the electrically-joined working conductors of the combined conduits in the line may be in electrical connection with all the others in the working line, and mechanism operated at will by which any preferred one or more of the jointed sections of the working conductor may be moved into electrical connection with corresponding surface conductors, in the line, substantially as and for the purposes set forth.

16. In a tight-walled electric conduit, the combination with a return circuit line conductor contained within the conduit, of externally-arranged electric conductors which form essential parts of the conduit and are adapted to receive a return electric current, from a device or thing previously operated by the current, through mechanisms in electrical connection with the outer sides of said electric conductors, and internal electric conductor or conductors between said externally-arranged electric conductors and said return circuit line conductor and adapted to have an electrical connection with each, whereby the current operating the device or thing, may be returned to the source of the current by the way of the said return-circuit line conductor, substantially as and for the purposes set forth.

17. In an electric conduit, the combination with a closing-wall thereof of metal which is a conductor of electricity, an insulating substance between the said closing-wall and the side walls of the conduit with which the former is secured, a series of surface conductors securely connected with said closing-wall and insulated from electrical contact with the metal thereof, of a return-circuit line conductor contained within the chamber of the conduit, and interior electrical conductors which are in electrical connection with both the said return-circuit line conductors and the metal of said closing-wall which has secured with it the said surface conductors, whereby the metal of said closing-wall may be adapted to serve as a conductor between an electric conductor of a return-current, (when externally applied to said closing-wall) and said return-circuit line conductor, substantially as and for the purposes set forth.

18. In an electric conduit, the combination with a closing-wall thereof of metal which is a conductor of electricity, an insulating substance between the said closing-wall and the side walls of the conduit with which the former is secured, a series of surface conductors securely connected with said closing-wall and insulated from electrical contact with the metal thereof, of a jointed working conductor, uniformly supported within the closed chamber of the conduit and out of electrical connection with the inner surfaces of all the said surface conductors, yet adapted to have any of its portions moved, at will, into electrical connection with corresponding surface conductors opposite, a return-circuit line conductor also supported within the conduit and out of electrical connection with the side or bottom walls of the conduit, and electric conductors also contained within the conduit and having electric connections with electric conductors which are adapted to receive, by the way of their exterior surfaces, the electric current when being returned from the device or thing, previously operated by a current before cut out from the jointed working conductor, substantially as and for the purposes set forth.

19. In an electric conduit, the combination with a closing-wall, thereof of metal which is a conductor of electricity, an insulating substance in the joints between said closing-wall and the metal side pieces of the conduit, a series of surface conductors secured within the said closing-wall and insulated therefrom, and a jointed working conductor contained within the chamber of the conduit and adapted to have any of its portions moved, at will, into electrical connection with corresponding surface conductors which may be opposite, of a return-circuit line conductor also contained within the conduit and a series of interior side electric conductors which are in electrical connection with both the return-circuit line conductor and the said closing-wall bearing the said surface conductors, and insulating substances between said interior side return-conductors and the adjoining side walls of the conduit, substantially as and for the purposes set forth.

20. In a close-walled electric conduit, the combination with a closing-wall portion thereof which is a conductor of electricity and adapted to receive by the way of its exterior side a return electrical current from a device or thing which may have been previously operated by the current, and a return-circuit line conductor contained within the chamber of the conduit, of suitable return electric conductors also contained within the chamber of the conduit and having electrical connection with both the said electric conducting closing-wall portion and said return-circuit line conductor, substantially as and for the purposes set forth.

21. In an electric-conduit line comprising a series of similarly-constructed portable and close-walled electric conduits, having, each, its ends closed by an end-closing piece which is perforated to adapt it to receive an electric conductor, and having each a similar closing-wall portion of metal which is adapted to serve as an electric conductor, and each containing a similar return-circuit line conductor and similar suitable conductors which are at all times in electrical connection with both the said closing-wall portion of the conduit and said return-circuit line conductor, and in combination with said conduits, of the series, a series of electric conductors, comprising one between the adjoining end closing pieces of each two adjoining conduits, each said conductor having its end portions thereof passing through the perforations provided in the adjoining end-closing piece and having electrical connection with the end portions of the return-circuit line conductor terminating at each end-closing piece, whereby all the return circuit line conductors in the conduit-line may be electrically connected and adapted to return electric currents, entering any of the conduits by the way of its closing-wall portion, to the source of supply of the current, substantially as and for the purposes set forth.

22. In a close-walled portable conduit having with a side wall thereof a series of surface conductors which are each insulated from contact with the said wall and calculated each to serve as a conductor of an electric current to an exterior conductor, arbitrarily connected with it and in electrical connection with the same, and with a jointed working conductor also contained within the conduit and adjoining said surface conductors, yet not electrically connected therewith, and devices adapted to move any portion of said jointed working conductor into electrical connection with some one or more of said surface conductors, of a distance supply conductor also contained within said conduit and extending from end to end thereof with its terminals adapted to be electrically connected with terminals of similar distance-supply conductors which may be contained within similarly constructed and equipped electric conduits adjoining and connecting thereto, in an electric-conduit line, with each terminal also adapted to be electrically connected—when required—with a terminal of a second or other working conductor which may have its beginning in a distant similar conduit, substantially as and for the purposes set forth.

23. In an electric-conduit line which comprises a series of close-walled portable conduits having each similar inclosing sides and bottom and end walls and a top-closing wall which has with it a series of surface conductors which are insulated from contact with said top-closing wall, and containing within its chamber a jointed working conductor adapted to have portions thereof arbitrarily moved into electrical connection with corresponding surface conductors which may be opposite, a return-circuit line conductor which is electrically connected with the top-closing wall of the conductor, and one or more distance supply conductors which are insulated from each other and from metal pieces adjoining them, said jointed working conductors, return-circuit line conductor and distance-supply conductors, in each conduit, being each electrically connected with the adjoining corresponding similar conductor in adjoining conduits, with the distant terminals of the connected series of jointed working conductors, in the line of joined conduits, suitably connected with the return-circuit line conductor opposite said terminal, while the distant terminal of the distance-supply conductor is electrically connected with the beginning end of a second or other series of jointed working conductors contained within another similar conduit line, and the distant terminal of the return-circuit line conductor is in suitable electrical connection with the beginning end of a similar conductor in the similar conduit-line, substantially as and for the purposes set forth.

24. In a conduit-line comprising a series of close-walled portable electric conduits, each provided with the several kinds of conductors described and respectively connected, kind with kind, throughout one series of conduits in the line, the combination with a beginning section, of a second or other series of jointed working conductors, which is contained within a distant conduit which is the first of a second or other series of electric conduits in the line, and the terminal portion of a distance supply conductor which is contained within the last one of the first or preceding series of conduits, in the conduit-line, of an electric conductor between the said terminal portion of the distance-supply conductor and said beginning section of the second or other succeeding series of the jointed working conductors in the

second or other series of conduits in said conduit-line, substantially as and for the purposes set forth.

25. In a portable close-walled conduit having end closing pieces which are suitably perforated for receiving a terminal portion of an electric conductor contained within the conduit and extending from end to end thereof, the combination with said perforated end-closing pieces, of the said terminal portions of such an electric conductor passed through said perforations and having their outer ends turned against the outer side of each said end-closing piece, substantially as and for the purposes set forth.

26. In a conduit-line comprising two or more portable close-walled conduits, each containing within its chamber one or more electric conductors which extend from end to end of each said conduit and having their terminal portions insulated and passed through suitable perforations provided in the respective end-closing pieces of each adjoining conduit and turned against the outer sides of the said end pieces, of a keying-piece of good conductivity having opposite half portions which are entered respectively in the perforation of each adjoining end-closing piece and applied to the adjoining conductor-terminals secured thereto, whereby each conductor in each conduit may be electrically connected with its adjoining similar conductor contained within an adjoining conduit, substantially as and for the purposes set forth.

27. In an electric-conduit line comprising a series of close-walled portable conduits which are successively joined together by suitable devices, and in combination with the same and a series of surface conductors which are secured successively with the top-closing walls, also of good conductivity, of the conduits in the line, of a continuously-connected jointed working conductor contained within the joined conduits, a return-circuit line conductor also having an electrical continuity and contained within said conduits, and a series of side electric conductors also within the several conduits of the line and in electrical connection with the top-closing walls of the respective conduits in the line and the said return-circuit line conductors, substantially as and for the purposes set forth.

28. In an electric-conduit line, the combination with side and bottom walls and a top-closing wall of short sections of metal through which both magnetic and electric currents may freely pass, water-resisting packing in the joints of said walls, and a series of short surface conductors secured with the respective sections of the said top-closing wall, and insulating substances between said surface conductors and said sections of the top-closing wall, of two or more series of jointed working conductors contained within the conduit-line, a corresponding series of jointed beds, each supporting a jointed working conductor and adapted to be moved toward the sectional top-closing wall and carry portions of the working conductors into electrical connection with corresponding surface conductors opposite, one or more distance-supply conductors also contained within the conduit, an electric conductor between the distant terminal of the first distance-supply conductor and the starting end portion of the second jointed working conductor in the series of working conductors, a similar electric conductor between the distant terminal of each succeeding distance-supply conductor and the respective starting end portion of each succeeding working conductor, a return-circuit line conductor extending in electrical continuity from one end of the conduit-line to the other, and return side electric conductors in electric connection with the sections of the top-closing walls of the conduit-line and the return-circuit line conductor, substantially as and for the purposes set forth.

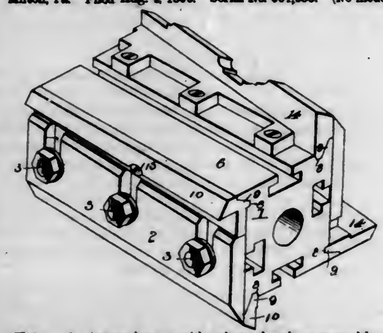
573,303. COMBINED COFFIN-TRUCK, EMBALMING-TABLE, &c. WILLIAM F. SHAW, Columbus, Ohio, assignor of three-fourths to Noah T. Shaw, Charles W. Critchfield, and Orlando W. Aldrich, Franklin County, Ohio. Filed May 12, 1896. Serial No. 591,256. (No model.)



Claim.—1. In a combined embalming-table, pedestal, and coffin-truck, a table composed of hinged parts or sections 1 and 1', legs 5 hinged to the outer end of section 1', legs 5' hinged to one of said sections at or near the middle of the table having their lower ends provided with sockets *c* having longitudinal grooves *d* standing ninety degrees apart, and rollers for said legs having spindles *a* with projecting pins *b* for engaging said grooves whereby the said rollers may be fixed on said legs to stand in a plane parallel to the side of the table or in a plane at right angles thereto, rollers swiveled to the legs 5, the said legs with their rollers being thereby adapted to be folded within the sections of the table, a false leg or support 9 hinged to the outer end of and adapted to be folded against section 1', means for holding all of said legs in standing or upright position, and a foot-rest consisting of a guideway on the table having a toothed edge 19, a base portion 15 having a pin 17, said base portion sliding in the guideway, a foot-resting part 15' hinged to said base portion 15 having a slotted rod engaging and guided by the aforesaid pin 17 to be extended and held horizontally in the plane of the part 15' when the latter is folded upon part 15, and a bolt 20 with a spring for holding the same normally in engagement with the toothed edge 19, substantially as shown and described.

2. The combination with an embalming-table, of a foot-rest comprising a guideway on the table having a toothed edge 19, a base portion 15 having a pin 17, said base portion sliding in the guideway, a foot-resting part 15' hinged to said base portion 15 having a slotted rod 16 engaging and guided by the aforesaid pin 17 to be extended and held horizontally in the plane of the part 15' when the latter is folded upon the part 15, and a bolt 20 with a spring for holding the same normally in engagement with the toothed edge 19, substantially as shown and described.

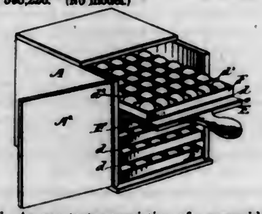
573,304. TEMPLET FOR CUTTER-HEADS. SAMUEL J. SHIMER, Milton, Pa. Filed Aug. 4, 1896. Serial No. 601,655. (No model.)



Claim.—1. A templet or guide adapted to be removably secured to a trapezoidal cutter-head for determining the true cutting edge of a blade or knife secured to said head, the face of which templet takes the convexity of a cylinder of rotation after the diagonally-inclined side of the cutter-head and provided on its inner side with a rib adapted to seat in a corresponding groove in the cutter-head, substantially as described.

2. The combination with a rotatable cutter-head having trapezoidal or oppositely-inclined sides, provided with knife-seats beveled from end to end, and the head in front of said beveled seats provided with a longitudinal groove, of the templet or guide having a rib on its under side seated in one of said grooves, and formed with a hardened elliptical face which takes the convexity of a cylinder of rotation after the diagonally-inclined side of the head, and the blade or blades secured to said sides of the cutter-head, substantially as described.

573,305. EGG-TESTER. JOSEPH H. SMITH and WILLIAM A. LANDIS, St. Cloud, Minn. Filed June 1, 1893. Renewed June 11, 1896. Serial No. 595,226. (No model.)



Claim.—1. An egg tester consisting of a pyramidal lower half or section, a support therefor, a pyramidal cover having in its apex an opening provided with the recess m^2 and at its lower edge a vertical rim L^2 provided with the rectangular opening k^2 substantially as and for the purpose described.

2. An egg-tester consisting of two substantially pyramidal sections, the lower section being of sheet metal constituting reflectors, and provided with a lighting device, the vertical portion uniting said sections and provided with a rectangular opening, and the perforated drawer G for carrying the eggs and adapted when inserted, to close the opening k^2 as specified.

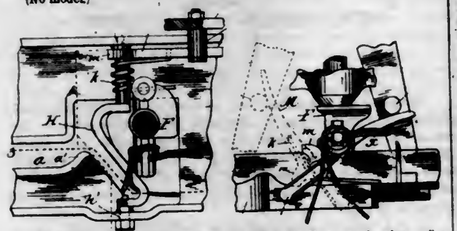
573,306. HARNESS. RIPLEY F. SPENCER, Ashland, Wis. Filed Mar. 13, 1896. Serial No. 583,801. (No model.)



Claim.—1. In harness the combination with a saddle, of a safety-strap extending over and secured to the saddle, saddle-bearers attached to the saddle and passing outwardly through openings in said safety strap, shaft tugs or loops attached to said safety-strap and saddle-bearers, and draft and holdback straps attached to said safety-strap above the shaft-tugs, substantially as and for the purposes set forth.

2. In harness the combination with a saddle, of a safety strap extending over and secured to said saddle, metal pieces attached to said safety-straps and formed with loops or openings, saddle-bearers attached at their upper ends to the saddle and passing through said safety-strap and openings or loops in said metal pieces, shaft tugs or loops attached to the ends of said safety-strap and saddle-bearers and draft and holdback straps attached to the side loops of said metal pieces, substantially as and for the purposes set forth.

573,307. TYING MECHANISM FOR GRAIN-BINDERS. BENJAMIN F. STEWART, Chicago, Ill. Filed July 13, 1896. Serial No. 599,051. (No model.)



Claim.—1. The combination with the binding mechanism of a grain-binder, of a guide bar for intercepting the cord between the knotter and the gavel and being oblique to the plane in which the cord is delivered, whereby the cord is guided laterally, and means for reversing the inclination of the bar with reference to such plane so that it will guide the cord laterally in the opposite direction.

2. The combination with a slotted breastplate, of a guide-bar pivotally mounted so that its axis of rotation extends across the slot of the plate and being oblique to the axis of its rotation, and means for oscillating such guide-bar.

3. The combination with a slotted breastplate and with the binder mechanism, of a guide-bar pivotally mounted so that its axis of rotation extends across the slot of the plate and being oblique to the axis of its rotation, a spring for holding the guide-bar in one of its positions, and mechanism for turning such guide-bar on its pivots in opposition to the spring.

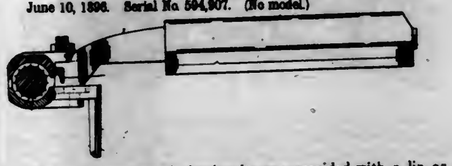
4. The combination with a slotted breastplate and with the binder mechanism, of a guide-bar pivotally mounted so that its axis of rotation extends across the slot of the plate and being oblique to the axis of its rotation, a trip-arm connected with the guide-bar, a spring for holding the guide-bar in one of its positions, and mechanism for turning such guide-bar on its pivots in opposition to the spring.

5. The combination with a breastplate, having a slot through which the binding-cord is brought to the knotter, and a rotative knotter-hook adapted to rest in a position transverse to said slot, of a Z-shaped guide and stripping bar pivotally mounted upon the breastplate so that its axis of rotation extends across said slot and having its diagonal member oblique to its axis of rotation, a spring for holding such guide-bar normally in such position that its oblique portion recedes from the tip of the knotter away from the direction of approach of the cord, and means for turning such bar to a reverse position.

6. The combination with a breastplate, having a slot through which the binding-cord is brought to the knotter, and a rotative knotter-hook adapted to rest in a position transverse to said slot, of a Z-shaped guide and stripping bar pivotally mounted upon the breastplate so that its axis of rotation extends across said slot and having its diagonal member oblique to its axis of rotation, a spring for holding such guide-bar normally in such position that its oblique portion recedes from the tip of the knotter away from the direction of approach of the cord, an orbitally-moving discharge-arm, and a trip-arm projecting from the guide bar and intercepting the orbit of the discharge-arm.

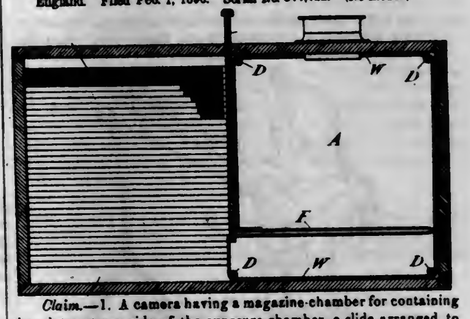
7. The combination with an orbitally-moving discharge-arm, of a reversible cord-guide and stripping-bar, and a trip-arm connected with the bar and intercepting the orbit of the discharge-arm.

573,308. LOOM-TEMPLE. WALLACE I. STIMPSON, Hopedale, Mass., assignor to the Dutcher Temple Company, same place. Filed June 10, 1896. Serial No. 594,907. (No model.)



Claim.—A loom-temple having its cap provided with a lip or guard at the rear side of the roll, to nearly close the cloth-passage therein, substantially as described.

573,309. MAGAZINE-CAMERA. FREDERIC STURMS, Sheffield, England. Filed Feb. 1, 1896. Serial No. 577,722. (No model.)



Claim.—1. A camera having a magazine-chamber for containing the plates at one side of the exposure-chamber, a slide arranged to move between the two chambers in a plane at right angles to that of the plates and having a projecting handle, a plate-frame secured to said slide and arranged to be brought in line with any of the plates in the magazine-chamber, and a flexible stop actuated by the slide and arranged to retain all the plates in position, except the one entering the plate frame; substantially as described.

2. A camera having a magazine chamber for containing the plates at one side of the exposure-chamber, a slide arranged to move between the two chambers in a plane at right angles to that of the plates, a frame adapted to contain one or more of said plates, secured to said slide and arranged to be brought in line with any of the plates in the magazine-chamber, and a flexible stop actuated by the slide and arranged to retain all the plates in position except the one entering the plate-frame; substantially as described.

3. A camera having a magazine-chamber for containing the plates at one side of the exposure-chamber, a slide arranged to move between the two chambers in a plane at right angles to that of the plates, a plate-frame secured to said slide and arranged to be brought in line with any of the plates in the magazine-chamber, and a flexible stop composed of a web or strip having its ends attached to the slide or to the plate-frame on opposite sides of said frame, said stop being actuated by the slide and arranged to retain all the plates in position except the one entering the plate-frame; substantially as described.

4. A camera having a partitioned magazine-chamber for containing the plates at one side of the exposure-chamber, a slide arranged to move between the two chambers in a plane at right angles to that of the plates, a plate-frame secured to said slide and arranged to be brought in line with any of the plates in the magazine chamber, and a flexible stop actuated by the slide and arranged to retain all the plates in position except the one entering the plate-frame; substantially as described.

5. In a camera having a magazine-chamber for containing the plates at one side of the exposure-chamber, a slide provided with rack-teeth, arranged to move between the two chambers in a plane

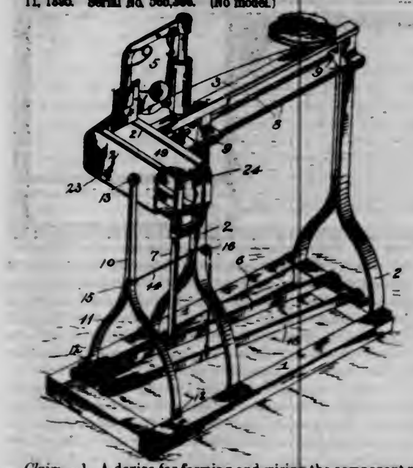
at right angles to that of the plates, a plate-frame secured to said slide and arranged to be brought in line with any of the plates in the magazine-chamber, and a retaining-pin for engaging said rack-teeth and holding the slide in a determined position; substantially as described.

573,310. TIRE-ADJUSTER. JAMES T. TAYLOR, Severy, Kans., assignor of one-half to Sarah F. Newton, John T. Morgan, William F. Morgan, Jackson L. Rader, and John C. F. Raburn, same place. Filed Mar. 27, 1896. Serial No. 585,096. (No model.)



Claim.—In a tire tightener, the combination with the felly-piece A, a right-and-left tightening-screw carried therein, the blocks C, to which the tires are secured, mounted on the threaded ends of said screw, recesses in the upper portions of said blocks adapted to receive projections of the felly-piece, the filling pieces carried on dowels, and the casing or plate M having a projection N designed to be seated in a recess in the felly-piece, and means for holding the said plate in place, and the said screw from turning, all substantially as shown and described.

573,311. MECHANISM FOR WIRING BASKETS. GEORGE B. THAYER and ERSKINE D. WHEELER, Benton Harbor, Mich. Filed Oct. 11, 1895. Serial No. 565,366. (No model.)



Claim.—1. A device for forming and wiring the component parts of a splint or similar basket, consisting of a staple-driving machine, a pair of reciprocal rods having bearing on the frame of said staple-driving machine, a cross head rigidly secured to said rods, a staple-clenching anvil carried by said cross-head, a cross-head rotatably connected with said rigid cross-head, and a basket-form having slide-bearing on said rotary cross-head, substantially as and for the purpose set forth.

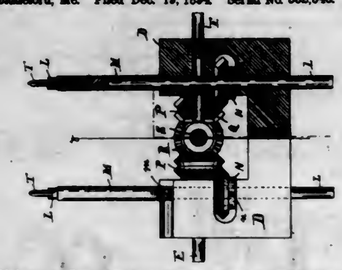
2. A device for forming and wiring the component parts of a splint or other basket, consisting of a staple-driving machine, a pair of rods having limited reciprocal bearing on the frame of said machine, a cross-head rigidly secured to said rods, a staple-clenching anvil carried by said cross-head, a cross-head rotatably connected with said rigid cross-head, a lever having pivotal bearing on the staple-driving machine and a ball or wheel having rotatable bearing on the top of said lever adapted to bear at its upper portion against the bottom of the basket and hold said basket and the basket-form in position with freedom of reciprocal movement, a treadle pivoted on the frame of the said machine, and means, as a cord, connecting said lever and treadle, substantially as and for the purpose set forth.

3. In a machine for wiring splint and other baskets, a staple-driving machine, a cross-head reciprocally mounted thereon, a staple-clenching anvil and a roller carried by said cross-head, a cross-head rotatably connected with said reciprocal cross-head and having upper and lower horizontal grooves in its front portion, a basket-form having upper and lower, inner, division-plates each having slide-bearings in said grooves, and an open slot around the inner edge and corner-stripe extending transversely across said slot, substantially as and for the purpose set forth.

4. The combination with a staple-driver, of a cross-head having non-rotatable support, a staple-clenching anvil carried by and extending beyond the periphery of said cross head, a roller and a notched ring carried by said cross-head, a cross-head loosely connected with said non-rotatable cross-head and having rotatable bearing on said connection, spring pawls having pivotal bearing in recesses in the sides of said rotary cross-head, a basket-form having slide-bearing on said rotary cross-head, an open slot around its inner edge transverse corner strips and a lug extending inwardly from each end of said basket-form, substantially as and for the purpose set forth.

5. The combination with a staple-driver of a horizontally reciprocal cross-head, a staple-clench carried by said cross head, a rotary cross head loosely connected with said reciprocal cross-head, a basket-form having slide-bearing on and adapted to rotate in unison with said rotary cross-head and having a circumferentially-slotted portion to receive the staple clench, substantially as and for the purpose set forth.

573,312. WOOD-MORTISING MACHINE. SAMUEL F. TIBBETTS, Biddeford, Me. Filed Dec. 19, 1894. Serial No. 532,340. (No model.)

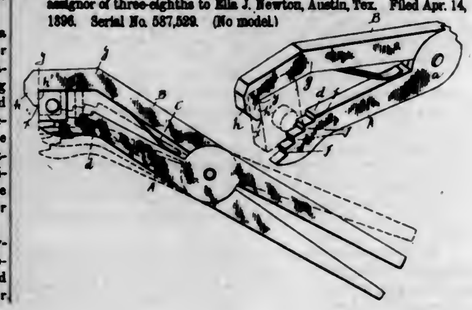


Claim.—1. In a woodworking-machine a tool-holder free to oscillate upon pintles secured in adjustable blocks mounted upon the rails of the machine said tool-holder carrying spindles each adjustably supported in a bevel-wheel, in gear with one face of a double-faced bevel-wheel, the other face of which is in gear with a bevel-wheel mounted upon a shaft to which a rotary motion is imparted substantially as set forth.

2. In a woodworking-machine an oscillating tool-holder carrying two rotating spindles and having two tapering steadying-pieces for each of said spindles the width of the steadying-pieces being about the diameter of the spindles whereby each spindle is held on its two sides in a conical holder, a conical metallic case for holding each pair of said tapering steadying-pieces close to the spindle and also preventing said steadying-pieces from spreading substantially as set forth.

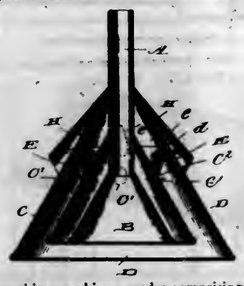
3. In a woodworking-machine a central driving-shaft S, a bevel-wheel R mounted thereon in combination with an oscillating tool-holder D, recessed in its central portion, two double-faced bevel-wheels P mounted upon studs and working in said recess bevel-wheels N, cutter-spindles carried by said wheels N, and two steadying-pieces *d*, *d* for each cutter spindle, and a metallic case around said steadying-pieces and spindle substantially as and for the purposes set forth

573,313. WRENCH. JOHN F. TINER, Sutherland Springs, Tex., assignor of three-eighths to Ella J. Newton, Austin, Tex. Filed Apr. 14, 1896. Serial No. 587,529. (No model.)



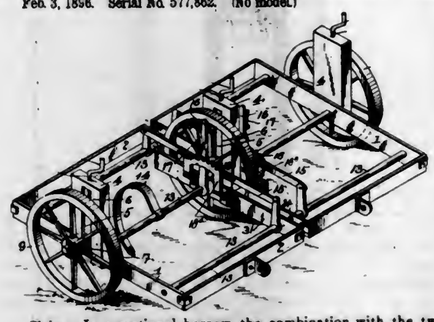
Claim.—In a wrench, the two interpivoted members A and B, having elongated shanks forward of their pivotal point, the shank of one member terminating in an inwardly-bent jaw portion having the claw or shoulder *h*, and the other of said shanks terminating in an outwardly-bent jaw portion the inner face of which is formed with a series of steps or offsets whose longitudinal walls are arranged to be successively brought into substantially parallel relation to the face of the opposite jaw portion adjacent to the claw as the two jaw portions are closed, and whose transverse walls come into similar relation to the inner face of the claw or shoulder *h* substantially as specified.

573,314. CLOTHES-POUNDER. HENRY W. TOLER, Massey, Tex. Filed May 8, 1896. Serial No. 590,768. (No model.)



Claim.—A washing-machine pounder comprising the two concentric cones B and C, secured about a central tube A, the lower ends of the said cones being in the same plane, combined with an outer concentrically-arranged cone D, the lower edge of which extends below the lower edges of cones B and C, and an outwardly and upwardly inclined partition E disposed between the said cones C and D, the lower edge of said partition dividing apertures C' in cone C, the upper edge of said partition dividing elongated apertures *e* in the cone D, whereby direct communication is afforded between the spaces above and below the partition and the outside of the cone D, substantially as shown and described.

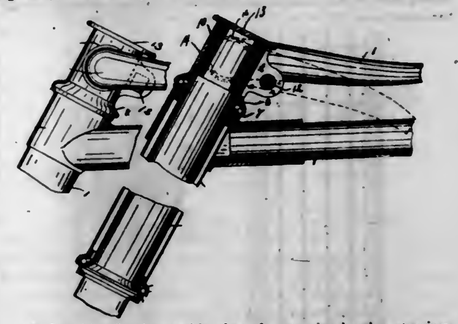
573,315. HARROW. ADAM R. TROUTMAN, Millerstown, Pa. Filed Feb. 3, 1896. Serial No. 577,862. (No model.)



Claim.—In a sectional harrow, the combination with the two rectangular sections, the inner or adjoining sides of which are formed near opposite ends with right-angled bends, the eyes pivotally connecting said sides together, the brackets secured to the outer sides of said frames formed with recesses and overlapping flanges, the vertically-movable bearings located therein the stud-shafts secured to said bearings, the wheels journaled thereon and the regulating-screws, of the bracket secured to the inner side of one of said frames, the vertically-adjustable bearing the stud-shaft secured thereto, the central wheel journaled thereon and located between the inner sides of said frames, the regulating-screw and the rotatable tooth-bars and the teeth, substantially as described.

573,316. BICYCLE. VAN BURTON WILLITS, Indianapolis, Ind., assignor to the Hay & Willits Manufacturing Company, same place. Filed Dec. 17, 1895. Serial No. 572,480. (No model.)

Claim.—1. In a bicycle, the combination of a steering-head, a steering-post extending through such head, a bearing collar loosely mounted on the steering-post at the upper end of the head, a clamp-sleeve carrying the handle-bars placed above the bearing-collar, and a cap that is screwed in the upper end of the steering-post and which engages the sleeve and thereby, when screwed down, adjusts the bearing-collar, substantially as set forth.



2. In a bicycle, the combination of a steering-head, a steering-post therethrough, a bearing-collar rigidly mounted on the steering-post at the lower end of the steering-head, a bearing-collar loosely mounted on the steering-post at the upper end of the steering-head, a clamp-sleeve carrying the handle-bars placed above the bearing-collar, and a cap that is screwed in the upper end of the steering post and which engages the sleeve and thereby, when screwed down, adjusts both bearings, substantially as set forth.

3. In a bicycle, the combination of a steering-head, a steering-post therethrough, a bearing-collar loosely mounted on the steering-post at the upper end of the steering-head, a cap with a depending sleeve that screws into the upper end of the steering-post, and a clamp sleeve above the bearing-collar and engaged by the cap.

4. In a bicycle, the combination of a steering-head, a steering-post therethrough, a bearing-collar loosely mounted on the steering-post at the upper end of the steering-head, a clamp-sleeve above the bearing-collar, the handle-bars carried by such sleeve, and a cap with a depending sleeve that screws into the upper end of the steering-head, such cap engaging the clamp sleeve of the handle-bars, substantially as set forth.

573,317. MEANS FOR ATTACHING STUDS, BUTTONS, &c., TO WEARING-APPAREL. GEORGE W. YOUNGER, London, England. Filed May 14, 1894. Serial No. 511,159. (No model.) Patented in England Jan. 2, 1894, No. 114.



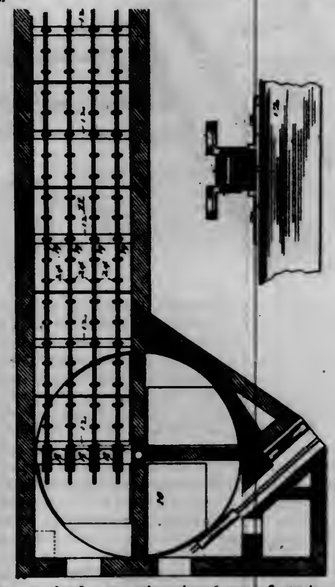
Claim.—A garment-supporter consisting of the loop or clip open at its lower end and having one of its members provided with a threaded socket, a screw-threaded stud passing through said socket and provided at its inner end with a disk or washer, a recess adjacent to said threaded socket wherein the disk or washer may be seated, and an auxiliary clip open at its lower end and located at the back of said first-mentioned clip and adapted to be attached to a garment whereby the disk or washer may hold a portion of another garment parallel with the garment to which the auxiliary clip is attached, substantially as shown and described.

573,318. CONVEYER FOR CARRYING GLASS FROM FLATTENING-OVENS. THEODOR A. ZELLERS and SIDNEY R. BLANCHARD, Ottawa, Ill., assignors to the United Glass Company, Syracuse, N. Y. Filed Dec. 23, 1895. Serial No. 494,572. (No model.)

Claim.—1. A carrier for conveying glass from a flattening-oven through the tunnel or leer, comprising a series of endless link belts or chains, sprocket-wheels journaled at the ends of the tunnel or leer and over which the chains are turned, continuous tracks, one for each chain extending longitudinally through the leer or tunnel and said chains having links some of which have open bodies adapted to engage the sprocket-wheels and other links having side bars antifriction-rollers journaled between said bars and adapted to travel on said track-bars, substantially as described.

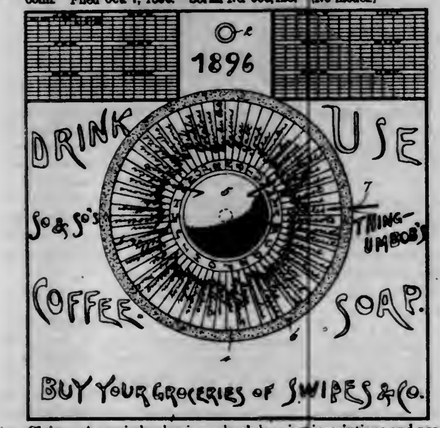
2. In a carrier for conveying glass from a flattening-oven through the tunnel or leer, the combination with a series of endless carrying-chains each composed of link belts, said belts having links thereof provided with antifriction-rollers journaled in the side bars of said links, and lugs projecting laterally from the top edges of said side

bars to form rests or supports for the sheets of glass and tracks arranged beneath the carrying-strands of the chain and composed of channel-bars in which said antifriction-rollers travel, substantially as described.



3. In a carrier for conveying glass from a flattening-oven, the combination with a series of endless carrying-chains composed of link belts, said belts having at suitable intervals links provided with antifriction-rollers journaled therein, lugs projecting from the side bars of said links, buttons or disks of non-conducting material upon said lugs, and tracks or supports arranged beneath the carrying-strands of the chains and composed of channel-bars in which said antifriction-rollers travel, substantially as described.

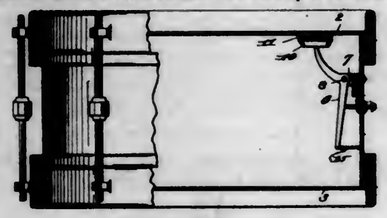
573,319. HOUSEHOLD-REMINDER. GEORGE H. ALBEE, Windsor, Conn. Filed Oct. 7, 1896. Serial No. 608,125. (No model.)



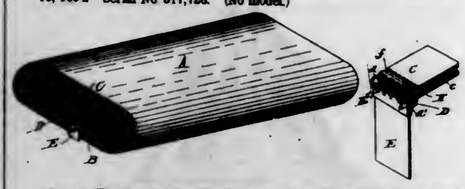
Claim.—A reminder having a back bearing inscriptions and provided with supporting means, and a disk pivotally connected with the back provided with a central cushion and peripheral pad and bearing names radially arranged between the cushion and pad, substantially as specified.

573,320. DRUM. EMILE BOULANGER, St. Louis, Mo. Filed Dec. 27, 1895. Serial No. 573,478. (No model.)

Claim.—In a device for arresting the vibrations of the head of a drum, a lever pivotally attached to the drum-shell having the head faced with sheepskin with the wool in contact with the drum-head, a retractile coil-spring attached to the opposite end of the lever to hold the woolly surface normally out of contact with the drum-head, and an adjusting-screw penetrating the drum-shell and in contact with the arm of the lever by which the pressure of the woolly surface is regulated relative to the drum-head, substantially as set forth.

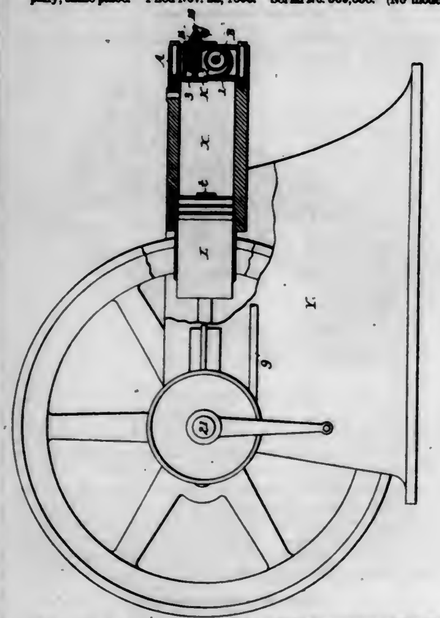


573,321. TAG. SAMPSON H. BROWN, Lockhart, Tex. Filed July 16, 1894. Serial No. 517,728. (No model.)



Claim.—The herein-described improved marking device, the same consisting of a paper or fibrous or textile strip C, of flexible material, doubled upon itself around one of the limbs *d* of the oblong loop or bail D, said strip being lined with a waterproof material coated with an adhesive cement, in combination with said loop or bail and with the tag E, hinged upon the opposite parallel limb *d'*, of the intermediate bail, substantially as and for the purpose shown and set forth.

573,322. VALVE DEVICE FOR GAS-ENGINES. WALKER L. CROUCH, New Brighton, Pa., assignor to the Pierce-Crouch Engine Company, same place. Filed Nov. 22, 1895. Serial No. 569,830. (No model.)

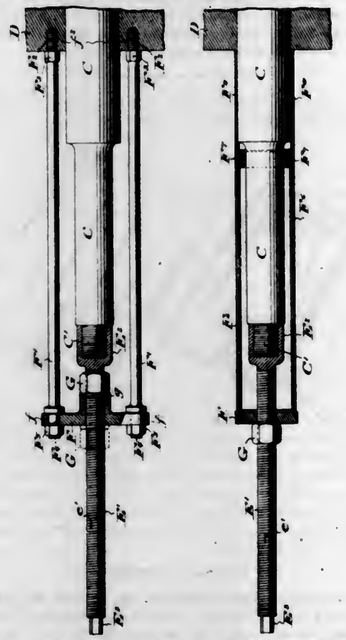


Claim.—1. A gas-engine having its cylinder provided at the rear with a port serving both for the admission of gases to and their discharge from the cylinder, inlet and exhaust passages communicating with said port and a valve constructed to close the communication between both passages and said port when in mid-position and to open communication between said port and one of said passages according to the direction in which the valve is shifted, substantially as described.

2. The combination with the cylinder of a gas-engine of a port, a valve K fitted to said port, a spring for holding the valve in its position to close the port, means for operating the valve positively to open the port during the backward movement of the piston, inlet and exhaust ports, and a valve and means for positively operating the same to put the said inlet and exhaust ports alternately in communication with the port closed by the valve K, substantially as set forth.

3. The combination of a piston-cylinder having a transverse valve-chamber *x* communicating at opposite ends with inlet and discharge ports, and intermediate ports 2, a valve having two pistons sliding in said chamber, and means for positively reciprocating said valve, a port 3 communicating with the ports 2, and a valve K adapted to the port 3, a spring for keeping the valve in its seat, and means for lifting the said valve, substantially as set forth.

573,323. ARMATURE-JACK. WILLIAM A. DRYSDALE, Overbrook, Pa. Filed Aug. 22, 1896. Serial No. 603,572. (No model.)



Claim.—1. In an armature-jack, a member F, provided with openings *f*, bars F', each fitted to a respective opening *f*, as to one extremity F^4, and provided with a screw-thread upon the other extremity F^3, a member E', freely mounted for longitudinal movement in said member F, and provided with a threaded, end socket E^2, a screw-thread *e'*, upon said member E', and a running nut G, fitted to said thread *e'*, substantially as and for the purpose set forth.

2. In an armature-jack, a member F, a fixed bearing in said member F, a brace extending from said member F, parallel with said fixed bearing, a member E', freely mounted for longitudinal movement in said fixed bearing, a threaded coupling end upon said member E', a screw-thread *e'*, upon said member E', and a running nut G, fitted to said thread *e'*, substantially as and for the purpose set forth.

573,324. PROTECTOR FOR RAILROAD DEFECT-CARDS. GUSTAV FENSKY, Chesterton, Ind. Filed July 13, 1896. Serial No. 598,977. (No model.)

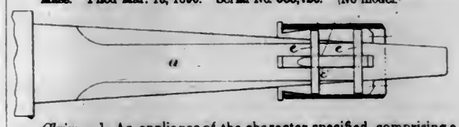
Claim.—1. The herein-described protector for railway defect-cards, consisting of a casing adapted to be secured to a railway-car at any suitable point, a cover hinged to said casing, clamps secured to the inside of said cover and upon the top surface of the bottom of said casing, and connecting-wires strung longitudinally of said parts, beneath which and said clamps the defect-cards are adapted to be inserted

2. The herein-described protector for railway defect-cards, consisting of a casing adapted to be secured to a railway-car at any suitable point, a cover hinged to said casing, a plate also hinged to said casing and fitting within the same, clamps secured to the inner surface of the bottom of said casing, to the inner surface of said cover and to both surfaces of said plate, and connecting-wires strung longitudinally of said parts and located directly above said clamps, beneath which and said clamps said defect-cards are adapted to be inserted.



3. The herein-described protector for railway defect-cards, consisting of a casing adapted to be secured to a railway-car at any suitable point, a cover hinged to said casing having an opening at one point therein and a ledge upon the under surface of its outer edges, clamps upon the inner surface of the bottom of said casing and upon the inner surface of said cover, wires strung longitudinally of said bottom and said cover, beneath which and said clamps the defect-cards are adapted to be inserted, and a spring-catch adapted to fit within the opening in said cover for locking the latter in its closed position, substantially as and for the purpose described.

573,325. WORK-HOLDING DEVICE. EUGENE N. GATES, Hollis-ton, Mass., assignor to Henry F. Coggshall and W. E. Putney, Fitchburg, Mass. Filed Mar. 18, 1896. Serial No. 583,726. (No model.)



Claim.—1. An appliance of the character specified, comprising a plurality of jaws or bearings adapted to cooperate in grasping a piece of work, and a support common to said jaws, one or more of the jaws being loosely connected with the support, adapted to rock thereon, and provided with two alternately-operative grasping edges, each of which is arranged to be thrown outwardly from the support by a rocking movement of the jaw thereon, one grasping edge being thrown outwardly by a movement of the jaw in one direction, and the other by a movement of the jaw in the opposite direction.

2. An appliance of the character specified, comprising a plurality of jaws or bearings adapted to cooperate in grasping a piece of work, a support common to said jaws, one or more of the jaws being loosely connected with the support, adapted to rock thereon, and provided with two alternately-operative grasping edges, each of which is arranged to be thrown outwardly from the support by a rocking movement of the jaw thereon, and means for yieldingly holding said rocking jaw with its grasping edges practically equidistant from the support.

3. An appliance of the character specified, comprising a support formed as a bar or mandrel, a plurality of jaws loosely connected with said support, adapted to rock thereon, and each provided with two alternately-operative grasping edges, each of which is arranged to be thrown outwardly from the support by rocking movements of the jaws, and means for yieldingly holding said jaws with their grasping edges practically equidistant from the support.

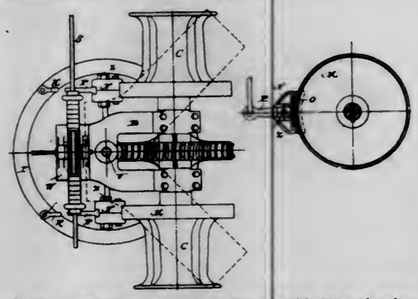
4. An appliance of the character specified, comprising a support formed as a bar or mandrel, a plurality of jaws loosely connected with said support, adapted to rock thereon, and each provided with two alternately-operative grasping edges, each of which is arranged to be thrown outwardly from the support by rocking movements of the jaws, and a spring surrounding the support and engaged with the jaws to yieldingly hold the grasping edges in their normal positions and practically equidistant from the support.

5. An appliance of the character specified comprising a tapering mandrel, a plurality of tapering jaws adapted to oscillate and move lengthwise on the inclined surfaces of the mandrel, said jaws having grasping edges which are parallel with the axis of the mandrel, and means for loosely holding the jaws upon the mandrel.

6. An appliance of the character specified comprising a tapering mandrel, a plurality of tapering jaws adapted to oscillate and move lengthwise thereon, and provided with grasping edges which are parallel with the axis of the mandrel, a collar surrounding the mandrel and engaged with the jaws to hold them loosely against the mandrel, a collar engaged with the outer ends of the mandrel and jaws.

573,326. HOISTING-WINCH. FRANK B. GRATER, Providence, R. I., assignor to the American Ship Windlass Company, same place. Filed Mar. 9, 1896. Serial No. 582,432. (No model.)

Claim.—1. In a winch, a base-plate, a bit or framing provided with a foot which is supported on said base-plate by rolling bearings, and an annular clamp constructed to engage with said foot and hold the bit or framing in position, combined with a drum carrying shaft mounted on said bit or framing, and means for rotating said drum-shaft, substantially as and for the purposes described.



2. In a winch, the combination of a rotatable bit or framing, a power-shaft passing loosely through said bit or framing to rotate freely therein and to serve as an axis for said framing when it is desired to turn the same horizontally, a drum-shaft journaled on the bit or framing and carrying one or more drums which are movable with the framing or bit to face in any desired direction, and gearing substantially such as described to operatively connect the drum-shaft with the power-shaft and permit the framing, drum-shaft and drums to be adjusted horizontally without disconnecting the drum-shaft from the power-shaft, as set forth.

3. In a winch, a rotatable bit or framing, an annular adjustable clamp embracing the foot of said bit or framing to hold the same fixedly in its adjusted position, and a power-shaft passing freely through framing to rotate therein without affecting the same and serving as a vertical axis to the framing when the latter is horizontally turned to face in the desired direction, combined with one or more drums carried by said framing, and adjustable therewith, to face in the desired direction, and gearing for connecting said power-shaft and the drum or drums, as set forth.

4. In a winch, a rotatable bit or framing, and a power-shaft which passes freely through said bit or framing to rotate therein without affecting the position of the same and serving as a center for the horizontal adjustment of said framing, in combination with a drum-carrying shaft journaled on said framing and adjustable therewith to have its drum or drums face in the desired direction, a worm on the power-shaft, and a worm-gear on the drum-carrying shaft, whereby said bit or framing may be turned horizontally without breaking the connection between the power-shaft and the drum-carrying shaft, as and for the purposes set forth.

5. In combination, a rotatable bit or framing, an annular clamp engaging the foot of said bit or framing, a power-shaft arranged to serve as a center of adjustment for said bit or framing, a drum or drums carried by said bit or framing, a worm on said power-shaft, and a worm-gear on the drum-shaft arranged to mesh with said worm on the power-shaft, for the purposes described, substantially as set forth.

6. In a winch, the combination of a rotatable bit or framing mounted to turn as on a vertical axis, an annular clamp arranged to engage with the foot of said bit or framing and having means for holding the clamp and framing in a fixed position, a drum-carrying shaft journaled on the bit or framing and adjustable with the same to have the drum or drums thereon face in the desired direction, and a hand-power mechanism carried by and adjustable with said bit or framing to always preserve the same relation to the drum or drums and operatively connected with the latter as and for the purposes described.

7. In combination, a vertical power-shaft, means for driving the same, a rotatable bit or framing fitted loosely on said power-shaft, a clamp engaging with said bit or framing, a drum-shaft journaled on the bit or framing and carrying a drum or drums, gearing such as described which connects the drum shaft to the power-shaft and permits adjustment of the bit or framing and drum-shaft in a horizontal plane without uncoupling the drum-shaft from said power-shaft, means for throwing such gearing into and out of operative relation to the drum shaft, and a hand power mechanism carried by the adjustable framing and engaging with the drum-shaft, as and for the purposes set forth.

8. In a winch, the bit or framing bifurcated to provide the spaced jaws and having a stem with a vertical opening in a plane between said jaws, combined with a power-shaft passing loosely through said vertical opening in the bit or framing and serving as a vertical axis therefor, a horizontal drum-shaft journaled in bearings on the jaws of the bit or framing, and gearing substantially such as described for operatively connecting the drum-shaft and power-shaft, and arranged to permit adjustment of the bit or framing and drum-shaft in a horizontal plane without disturbing the operative connection between the power-shaft and drum shaft, as and for the purposes described.

573,327. NEEDLE-THROAT FOR SEWING-MACHINES. WILLIAM H. HANNA, Petersburg, Ill. Filed Feb. 14, 1895. Serial No. 538,368. (No model.)

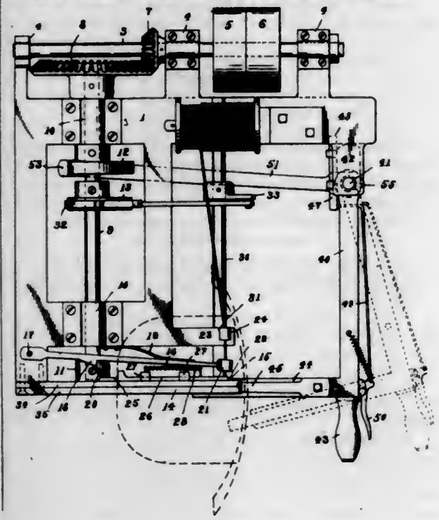
Claim.—A tempered needle throat for sewing-machines, consisting of a longitudinally-tapering base, by which it is adapted to be held in a correspondingly-tapering hole in the work-arm of a sewing-machine, and an upper cylindrical part integral with said base, said cylindrical part and base being pierced by a longitudinal needle-orifice, and a part of said base being cut away, as set forth.

573,328. ROOFING-TILE. MILO HORLOCKER, Park's Mills, Ohio. Filed Oct. 21, 1895. Serial No. 566,314. (No model.)



Claim.—A tile roof consisting of the tile-body *a*, an angular flange extension *b* formed on one side of said body, a raised angular flange *b'* on the opposite side thereof, a raised lip portion *d* on the upper end of the tile-body, extensions of the flanges *b* and *b'* formed in said lip portion, a shoulder *f* on one of said flange extensions, an angular recess in the lower end portion of the plate having a laterally-enlarged head and a shoulder c^4 on the lower end of the plate, substantially as and for the purpose specified.

573,329. STAPLE FORMING AND DRIVING MACHINE. WILLIAM H. JACKSON, Fall River, Mass., assignor to James Marshall, same place. Filed Feb. 21, 1896. Serial No. 580,287. (No model.)



Claim.—1. In a staple forming and driving machine, the combination of the bracket 14 having a recess therein, a rock shaft journaled in said bracket, a radially-swinging finger secured to said shaft and operating in said recess in such a manner as to form a staple by its upward movement, and to force the staple in a hat and sweat-band in its downward movement.

2. In a staple forming and driving machine, the combination of the bracket 14 having a recess therein, a rock-shaft journaled in said bracket, a finger secured to said shaft and adapted to swing radially in said recess to form and drive a staple, semicircular grooves in the side walls of said recess serving to properly guide the staple in its attaching operation.

3. In a machine of the class described, the combination of a frame having a staple-forming recess, a rock-shaft having a finger swinging radially within said recess, means for feeding the wire across the back side of the finger, semicircular grooves in the sides of said recess and bearing-shoulders against which the wire is bent by the finger, a stripper projecting into the path of the movement of the finger to detain the staple, means for operating the rock-shaft and finger to force the staple into the material.

4. In a machine of the class described, the combination of a frame having a staple-forming recess, a rock-shaft having an arm extending into said recess, means for feeding the wire into the recess across the back side of the finger, mechanism for cutting the wire into suitable lengths after it has been fed, a stripper to shift the position of the staple, means to operate the same to drive and clench it into a hat.

5. In a machine of the class described, the combination with a staple forming and driving device, of an automatic vertically-movable hat-support, means for swinging said support to and from the staple-driving device, a yieldable connection between said support and its operating mechanism, whereby said support is permitted to slightly yield with the pressure of the staple-driver, substantially as described.

6. In a machine of the class described, the combination with a staple forming and driving device, of a hat-support adapted to be radially swung into operative connection with said device, means for locking said support in its closed position, automatic means for raising and lowering said support to shift the position of the hat, substantially as described.

7. The combination in a machine of the class described of the feed-lever bearing a clutch, a retaining-clutch adjacent thereto, a staple forming and driving finger mounted on a rock-shaft and adapted to swing within a recess, semicircular grooves in the sides of said recess and bearing-shoulders against which the wire is bent, a cutting-slide adjacent to one of said shoulders, a cam operatively mounted upon said shaft and constituting means for operating said slide.

8. The frame having a bracket 14, the rock-shaft journaled therein, an operating-finger secured to said shaft and adapted to play into a recess of the bracket in combination with the driven shaft 9, connections between said shaft and the rock-shaft whereby the latter and its finger is operated to form and drive a staple.

9. The bracket 14 having a recess therein, a rock-shaft journaled in said bracket and bearing a finger to operate in said recess in combination with the mechanism for operating said rock-shaft, a driven shaft 9, a cam upon said shaft, connections with said cam for operating the cutting-slide, a lever pivoted to the frame and bearing a clutch to automatically grasp and feed the wire, means for engaging and manipulating said lever, substantially as described.

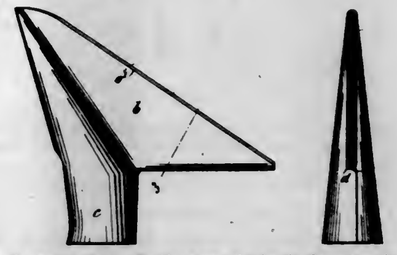
10. A staple forming and driving machine comprising the shaft 9, means for driving the same, a shaft 30 adjacent to said driven shaft, connections between said shafts, whereby the latter is rocked by the former, bracket 14 having a semicircular recess, a finger secured to the rock-shaft aforesaid and designed to operate in said recess, means for feeding the wire the proper distance, mechanism for cutting the wire into proper lengths, substantially as described.

11. A staple forming and driving machine comprising feeding mechanism as shown, a rock-shaft bearing an operating-finger for the purpose of forming a staple, an automatic vertically-movable clenching plate, means whereby said plate is swung with relation to said staple-operating mechanism.

12. A staple forming and driving machine comprising the rock-shaft bearing the operating-finger, a suitable recess in which said finger operates, a pivoted hat-support adapted to be swung to and from said staple mechanism, automatic means for remittently moving said support in a vertical manner, substantially as described.

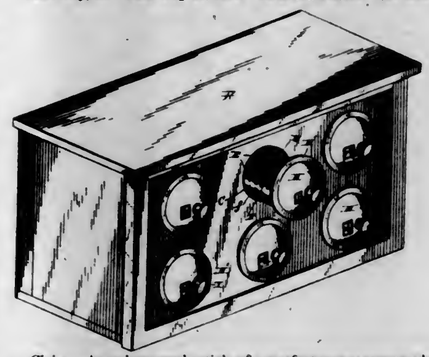
573,330. SPOUT ATTACHMENT FOR KETTLES. MARY S. KJELLSTROM, New York, N. Y. Filed Dec. 6, 1895. Serial No. 571,247. (No model.)

Claim.—1. A device for renovating ribbons, velvets and similar fabrics, comprising a hollow conically-shaped stem, adapted to be set on the end of a steam-conductor and a nozzle for conducting the steam to the fabrics to be renovated, the nozzle having a narrow longitudinal aperture, with one smoothly-finished and acute edge, carried above the other and forming a comb over which the fabrics to be renovated are drawn.



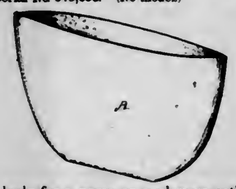
2. An attachment for the spout of a kettle, for renovating ribbons, velvets and similar fabrics, comprising a cone, having a narrow longitudinal aperture with one edge carried above the other and forming a comb over which the fabrics to be renovated are drawn.

573,331. DEVICE FOR HOLDING SCREWS. JOHN H. KNAPP, Pearl City, Ill. Filed Aug. 20, 1896. Serial No. 603,353. (No model.)



Claim.—As an improved article of manufacture a screw-case having a plurality of sliding semicircular receptacles designed to hold screws and the like of varying sizes, and plates within the openings in which the receptacles slide and having flanges at their upper edges by which the receptacles are guided, as set forth.

573,332. PURSE. AUGUST KRESS, West Bend, Wis. Filed Dec. 23, 1895. Serial No. 573,038. (No model.)

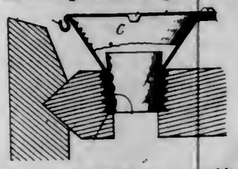


Claim.—A body for a purse or analogous article made from a blank of leather or other suitable material of any desirable proportions in the matter of length and width but having each longitudinal edge thereof provided with a single notch the greatest depth of which touches an imaginary line midway between the ends of said blank transversely of the latter, whereby the bottom seam is discontinuous, and the purse devoid of a V-shaped fullness, the blank being folded on itself wrong side out and having its flaps united to each other by stitching, the product thus formed being subsequently turned to bring the seam inside thereof preliminary to finishing of the article of which it constitutes a part.

573,333. BUNG-HOLE PROTECTOR AND FUNNEL COMBINED. ALBERT KRIMMEL, Detroit, Mich. Filed Feb. 8, 1896. Serial No. 578,556. (No model.)

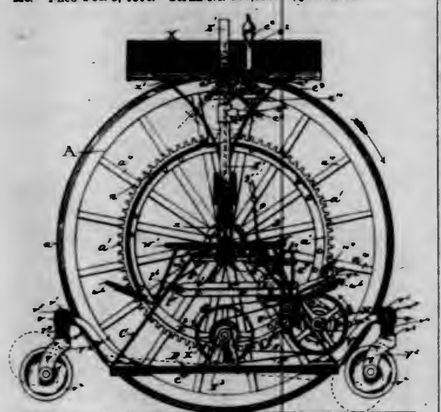
Claim.—1. As a new article of manufacture, a bung bushing having a threaded exterior adapted to be inserted and secured in a bung-

opening of a barrel or cask, a funnel-shaped extension forming a continuation of the bushing, and a sealing-cover for the funnel.



2. As a new article of manufacture, a combined bung-bushing and funnel, consisting of a bushing-section having a threaded exterior and plain interior, a funnel forming an extension of the bushing, and a sliding imperforate cover on the funnel-section, substantially as described.

573,334. WHEELED VEHICLE. JOSEPH J. KULAGE, St. Louis, Mo. Filed Feb. 3, 1896. Serial No. 577,953. (No model.)



Claim.—1. The combination in a vehicle of two main wheels; a body portion; means supporting it between said wheels; a driving-shaft turning in bearings attached to said body; four fast pulleys on said shaft of two different sizes two of the larger size and two of the smaller; two other shafts parallel to the first, both turning in bearings attached to said body, two loose pulleys on each of the latter shafts one on each shaft opposite one of the larger driving-pulleys and one opposite one of the smaller; means by which the two loose pulleys opposite the smaller driving-pulleys may be simultaneously made fast; to their shafts; means by which the two loose pulleys opposite the larger driving-pulleys may be simultaneously made fast to their shafts; means transmitting motion from the driving-pulleys to the pulleys opposite them and means attached to each of the shafts carrying loose pulleys transmitting motion from such shaft to the main wheel next it, substantially as described.

2. The combination in a vehicle of two main wheels; a body means by which it is swung between said wheels; two shafts turning in bearings attached to said body; means communicating motion to said shafts, means transmitting motion from one of said shafts to one wheel and from the other shaft to the other wheel; a fast pulley on each shaft; a band passing partly around each pulley and means by which said bands are separately lightened substantially as, and for the purposes described.

3. The combination in a vehicle of two main supporting-wheels; an axle connecting them, springs supported by said axle parallel guides supported by said springs and a seat sliding backward and forward in said guides substantially as described.

4. The combination in a vehicle of a pair of main supporting-wheels; a pair of gear-rings, one attached to each wheel, and each smooth on its inner side, and having outwardly-projecting teeth; a body swinging between said wheels concentric with their axis, means by which it is connected to said wheels, two brake-shafts turning in bearings; attached to said body, a brake-shoe attached to each shaft, one extending within one of said rings and the other within the other ring a lever attached to each brake-shaft; two other shafts in front of said brake-shafts, bearings attached to said body, in which the two last-named shafts turn; means communicating motion to the latter shaft; a pinion at the outer end of each of said shafts which meshes in with the teeth of the gear-ring attached to the adjoining wheel; a fast pulley on each of said shafts, one of said pulleys being located in front of each of said brake-levers; a brake-band attached to each of said levers and passing over the fast pulley in front of it and all operating substantially as described.

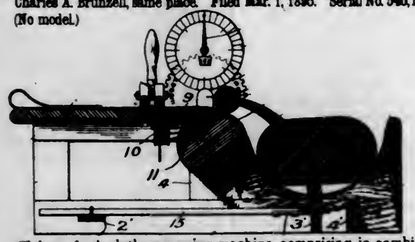
5. The combination of the wheels A, A, gear-wheels a and a' thereto attached, a bent axle having spindles upon which said wheels turn; a body attached to said axle, swinging concentric with the centers of said wheels; and having a platform beneath the axle; a motor carried on said platform below the axle; shafts M and M'; bearings attached to said body in which said shafts turn; pinions R, R, attached to said shafts and meshing in with said gear-rings, means transmitting motion from said motor to said shafts and pinions and through them to said wheels, caster-roller stops attached to said platform before and behind said axle; and the weight of all parts being so proportioned and distributed that the center of gravity of all parts carried by said wheels is lower and farther forward than said axle when the vehicle is at rest and causes the front end of the body of the vehicle to rest upon the front casters when the vehicle stops, substantially as described.

6. The combination in a vehicle of two main wheels; a body portion; means supporting it between said wheels; a driving-shaft turning in bearings attached to said body; four fast pulleys on said shaft of two different sizes, two of the larger and two of the smaller; two driven shafts parallel to the driving-shaft, both turning in bearings; means for transmitting motion from one of the latter shafts to one wheel, and from the other shaft to the other wheel; two loose pulleys on each driven shaft, one on each shaft, opposite one of the larger driving-pulleys; and one opposite one of the smaller; means by which the loose pulleys may be made fast to their shafts; a belt running from each pulley on the driving-shaft to the loose pulley opposite it; and a belt-tightener for each belt, substantially as described.

7. The combination in a vehicle; of two main wheels; a body portion; means supporting it between said wheels; a driving-shaft turning in bearings attached to said body; four fast pulleys on said shaft of two different sizes, two of the larger size and two of the smaller; two driven shafts parallel to the driving-shaft, both turning in bearings attached to said body; two loose pulleys on each driven shaft; one on each shaft opposite one of the smaller driving-pulleys; and one opposite one of the larger; means transmitting motion from the driving-pulleys to the loose pulleys; clutches for making the loose pulleys fast to their shafts; the lever Q; means pivotally attaching said lever to the body of the vehicle; a rocking bar Q^3, engaged by said lever Q; levers q^4, q^4, connected at their upper ends, to the ends of the rocking bars; means pivotally connecting the lower ends of the levers q^4, q^4, to said body; and means connecting said levers q^4, with said clutches, and enabling the operator to make either the loose pulleys opposite the larger driving-pulleys, or the loose pulleys opposite the smaller pulleys fast, by throwing the lever Q to one side or the other; and, to allow the loose pulleys to run loose, by allowing the lever Q, to stand upright, substantially as described.

8. The combination of a pair of supporting-wheels, running side by side; a bent axle connecting said wheels, and upon which they turn, and which axle has the horizontal portion b' having arms b^3, projecting forward and back therefrom; A shaped stands supported by the axle and each resting upon a pair of said projecting arms; and a platform D supported by said A-shaped stands, substantially as described.

573,335. CLOTH-MEASURING MACHINE. JOHN KULLBERG and CHARLIE BRUNZELL, Minneapolis, Minn.; said Kullberg assignor to Charles A. Brunzell, same place. Filed Mar. 1, 1895. Serial No. 540,131. (No model.)



Claim.—1. A cloth-measuring machine, comprising, in combination, a suitable frame, a measuring-roller mounted in bearings therein, a rocking shaft also mounted in said frame, means for rocking the same, arms carried by said shaft, a roller mounted in bearings upon said arms and arranged to bear upon the surface of said first-named roller, an indicating mechanism and means connecting said indicating mechanism with said rocking shaft, whereby as said shaft is rocked said indicating mechanism will be thrown into or out of engagement with said first-named roller.

2. A cloth-measuring machine, comprising, in combination, a suitable frame, a measuring-roller carried thereby having a gear upon its axis, a rock-shaft also carried by said frame and provided with suitable arms, a small roller mounted in bearings in said arms and arranged to be brought into contact or moved away from said measuring-roller when said shaft is rocked, an indicating mechanism, and means connecting said rocking shaft with said indicating mechanism, whereby when said shaft is rocked said indicating mechanism will be thrown into or out of engagement with the gear of the measuring-roller.

3. A cloth-measuring machine, comprising, in combination, a suitable frame, a measuring-roller mounted therein and provided with a gear upon its axis, a rock-shaft also carried by said frame and provided with arms, a roller mounted in bearings in said arms, a pinion upon said rock-shaft, a lever provided with a bevel-gear to engage said pinion, whereby as said lever is moved to and fro said shaft will be rocked, a vertically-movable indicating mechanism carried by said frame in position to be operated by the movement of said measuring-roller, and means connecting said rocking shaft and said indicating mechanism, whereby as said lever is operated said indicating mechanism will be thrown into or out of engagement with the gear carried by the measuring-roller, for the purpose set forth.

4. The combination, in a cloth-measuring machine, of a frame, a measuring-roller mounted in bearings therein and provided with a gear upon its axis, an indicating mechanism also carried by said frame, said indicating mechanism comprising a suitable frame, a large gear mounted therein, a spring for reversing said gear, an indicating-dial carried by said frame, a small gear engaging said large gear, means carried by the shaft of said small gear for operating said indicating-dial, and means for throwing said large gear into or out of engagement with the gear upon the axis of said measuring-roller.

5. The combination, in a cloth-measuring machine, of a measuring-roller mounted in a suitable frame, a gear carried by the axis of said roller, an indicating mechanism carried by the frame of said machine, said mechanism consisting of a suitable frame, a gear 29 mounted in said frame, a spring for reversely actuating said gear 29, a spiral guide upon the face of said gear, a movable lug carried by said frame and arranged to engage said guide, stops upon said guide whereby the travel of said gear 29 is limited, a gear 33 also mounted in said frame and arranged to engage the teeth of said gear 29, an indicating-wheel in position to be operated from the shaft of said gear 33, and means for throwing said gear 29 into engagement with the gear upon the axis of said measuring roller.

6. The combination, in a cloth-measuring machine, of a measuring-roller mounted therein, an indicating mechanism comprising a suitable frame 24, the gear 29, a spring for reversing said gear 29, means for limiting the travel of said gear in either direction, the indicating dial carried by said frame, a gear 33 also carried by said frame and arranged to engage the teeth of said gear 29, the shaft of said gear 33 being provided with the lug to engage the teeth of said indicating dial, the second dial, a hand or pointer carried by the shaft of said gear 33, and means for operating said indicating mechanism when said roller is revolved, whereby the cloth passing over the said roller will be accurately measured and indicated.

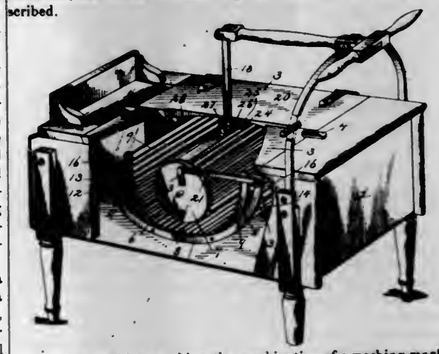
7. A cloth-measuring machine, comprising, in combination, a suitable frame, a measuring-roller mounted therein, and indicating mechanism consisting of a frame 24, the gear 29 carried by said frame, means for limiting the travel of said gear in either direction, a gear 33 also carried by said frame and provided with a lug for engaging the teeth of an indicating-dial 37, means for throwing said indicating mechanism into engagement with said measuring-roller, and a spring arranged within said frame 24 for returning said indicating mechanism to its normal position when disengaged from said roller.

573,336. WASHING-MACHINE. JAMES H. LAWSON, Streator, Ill., assignor of one-half to William A. Bass, Oswego, Ill. Filed Jan. 16, 1896. Serial No. 575,771. (No model.)

Claim.—1. In a washing-machine, the combination of a washing-machine body provided with horizontal ways, a cylindrical rubber journaled in the washing-machine body, a lower rubber extending beneath the cylindrical rubber and extending upward at opposite sides thereof and mounted in the said ways and capable of reciprocation longitudinally with the washing-machine body, and bars pivoted to the lower rubber and eccentrically connected with the cylindrical rubber, substantially as and for the purpose described.

2. In a washing-machine, the combination of a washing-machine body, an upper rubber journaled in the body, a lower rubber capable of movement longitudinally of the washing-machine body and composed of a central section and movable end sections adapted to engage alternately the upper rubber, means for cushioning the end sections, whereby they will be compressed when they engage the upper rubber, and will be caused to move inward as they are carried away from the same to throw the clothes being washed toward the center of the machine, and connections between the rubbers, substantially as described.

3. In a washing-machine, the combination of a washing-machine body provided with vertical ways, a curved track-bar depending from the top of the washing-machine body a rubber journaled in said ways, capable of vertical movement and yieldingly engaging the curved track-bar, and means for operating the rubber, substantially as described.

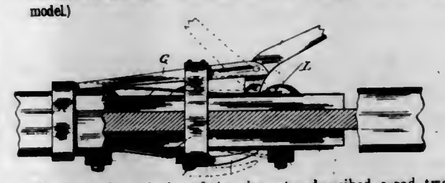


4. In a washing-machine, the combination of a washing-machine body, an upper rubber, a lower rubber comprising a central section, side bars having upward extensions or end portions, end sections pivotally connected with the central section, and springs interposed between the end sections and the end portions or extensions of the side bars, and means for operating the rubbers, substantially as described.

5. In a washing-machine, the combination of a washing-machine body provided with vertical ways, a rubber journaled in said ways and capable of vertical movement, a curved track-bar depending from the top of the washing-machine body and located above the rubber, a yieldingly-supported roller mounted on the rubber and engaging the track-bar and means for operating the rubber, substantially as described.

6. In a washing-machine, the combination with a washing-machine body provided with vertical ways, a rubber journaled in the ways and capable of vertical movement and having an upwardly-extending arm, curved track-bars depending from the top of the washing-machine body, a bearing or bracket loosely mounted on the upward-extending arm rollers journaled on the bearing or bracket and arranged to run on the track-bars, and a spring disposed on the arm and supporting the bearing or bracket, substantially as described.

573,337. MEANS FOR UNLOCKING NUT-LOCKS. JACOB G. LANDES, Norristown, Pa. Filed Mar. 11, 1896. Serial No. 582,725. (No model.)



Claim.—1. In a device of the character described, a rod, two hooks secured thereon, a cam-lever pivoted to the rod, and a spring secured to the rod and adapted to form a bearing-surface for the cam-lever, as and for the purpose described.

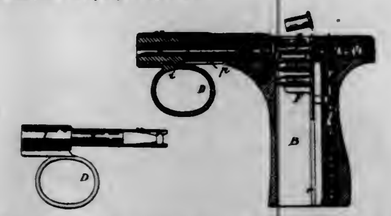
2. In a device of the character described, a rod, two hooks secured thereon, a nose formed on one of said hooks, a cam-lever pivoted to the rod, and a spring secured to the rod and adapted to form a bearing-surface for the cam-lever, as and for the purpose described.

3. In a device of the character described, a rod, a hook secured on one end thereof, a second hook having a curved nose attached to the rod, a lever having a cam end pivoted in the other end of the rod and a spring attached to the rod and extending beneath the cam end of the lever, as and for the purpose described.

573,338. MAGAZINE-PISTOL. PAUL B. LATRIGE, St. Etienne, France. Filed Aug. 14, 1894. Serial No. 520,326. (No model.) Patented in Belgium Feb. 3, 1894, No. 106,488; in France Feb. 13, 1894, No. 236,149, and in Italy Mar. 31, 1894, No. 36 006.

Claim.—1. In a firearm, the combination with the stock or body, of a longitudinally-reciprocating barrel, a spring acting thereon to move it forwardly, a spring-actuated reciprocating firing-pin arranged in the body, an arm on said firing-pin, the breech end of the barrel being provided with a notch with which said arm is adapted to engage

during the rearward movement of the barrel and to disengage from said notch when the barrel has reached the limit of its rearward movement, for the purpose specified.

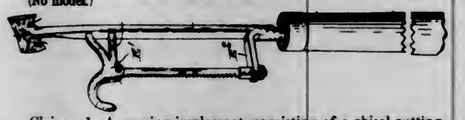


2. In a firearm, the combination with the stock or body, of a longitudinally-reciprocating barrel, a spring acting thereon to move it forwardly, a spring-actuated reciprocating firing-pin arranged in the stock, an arm on said firing-pin having an inclined surface the breech end of the barrel having a notch with which said arm is adapted to engage during the rearward movement of the barrel, and the said body having an inclined surface adapted to engage the inclined surface of the arm to cause it to free the notch of the barrel when the latter has reached the limit of its rearward movement, for the purpose specified.

3. The combination of an outer sleeve, a spring-actuated reciprocating barrel in said sleeve, a magazine perpendicular to the barrel, a spring-actuated cartridge-feeder in the magazine, an ejector pivoted to the outer sleeve and having cam-surfaces toward one end, and a laterally-projecting tooth at the opposite end projecting into the breech and adapted to be operated by the rear end of the barrel as described, a pin on the barrel toward one end and extending through the sleeve and adapted to engage the cam-surfaces of the ejector in the manner specified, for the purpose set forth.

4. In a firearm, the combination of an outer sleeve, a barrel longitudinally reciprocating therein, a spring acting upon said barrel as described, a spring-controlled firing-pin, an arm on said pin, cam-surfaces on the arm, notches in said arm and inner barrel, a magazine perpendicular to the barrel, a spring-controlled cartridge-feeder, an ejector having cam surfaces, a pin or projection on the inner barrel acting upon said cam-surfaces, and a projection on the ejector extending into the breech, as and for the purpose specified.

573,339. PRUNING IMPLEMENT. HENRY C. LOWE and FLOYD C. GANDER, Gandeeville, W. Va. Filed Sept. 5, 1896. Serial No. 605,011. (No model.)



Claim.—1. A pruning implement, consisting of a chisel cutting-head, a suitable shank for carrying the same, brackets projecting from the same, below the cutting-head, a hook formed upon the upper bracket, a saw secured between the brackets below the hook, and a handle, substantially as described.

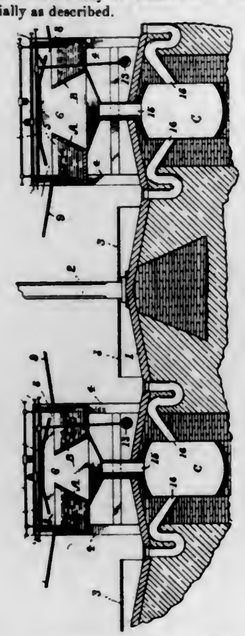
2. A pruning implement, consisting of a chisel-head provided with an upper cutting edge and two lower edges, a shank for carrying the same, the said chisel-head and upper part of the shank being set slightly forward, brackets projecting from the said shank, below the chisel-head, and at right angles to the same, a hook formed upon the upper bracket, a saw removably secured to the said brackets, below the hook, and a handle, substantially as described.

573,340. MEANS FOR CONVEYING STEAM FROM TUBS. JAMES MARSHALL, Fall River, Mass. Filed Jan. 31, 1896. Serial No. 577,559. (No model.)

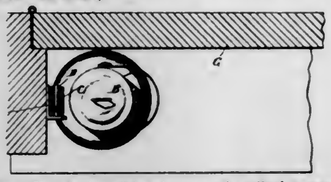
Claim.—1. In a device of the class described, the combination with a double series of sizing-tubs, of a series of housings, partially covering pairs of said tubs, a main vent-pipe, arranged adjacent to said tubs, independent connections between said pairs of tubs and the main vent pipe, means within said vent-pipe whereby said steam and odors are carried off, substantially as described.

2. In a device of the class described, the combination with a series of sizing-tubs, of a main vent arranged adjacent to said tubs, partitions whereby said tubs are partially inclosed, connections between said inclosure and the vent-pipe, and means for carrying off the odors through said pipe, substantially as described.

3. In a device of the class described, the combination with a double series of tubs, of a series of partitions between and dividing the same into pairs, an air-inlet opening above said tubs, connections therefrom with a main vent-pipe having an air-blast therein, means whereby the several pairs of tubs may be disconnected from the main vent-pipe, substantially as described.

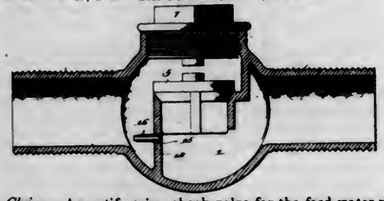


573,341. DEVICE FOR SECURING DELIVERY-RECEPTACLES. WILLIAM H. MILLER, Philadelphia, Pa. Filed Aug. 19, 1896. Serial No. 603,201. (No model.)



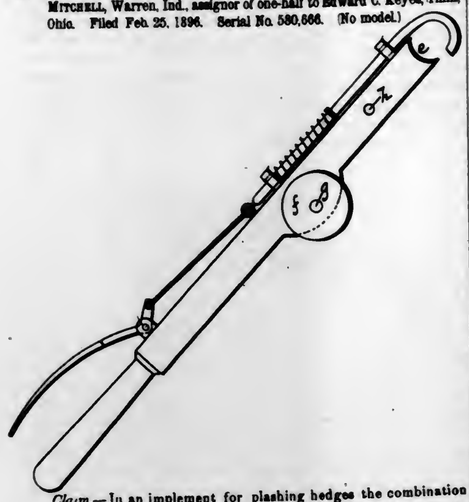
Claim.—In a device of the character described, a can, a strip of metal secured thereto having its upper end bent to form a socket, a right-angled bracket secured to the door-frame, a stationary pin formed with the bracket and running parallel with the door-frame toward the door, said pin being adapted to engage the socket of the strip, and the can being adapted to fit against the door when closed, substantially as described.

573,342. CHECK-VALVE. WILLIAM I. MILLER, Edgar, Nebr. Filed Mar. 13, 1895. Serial No. 541,617. (No model.)



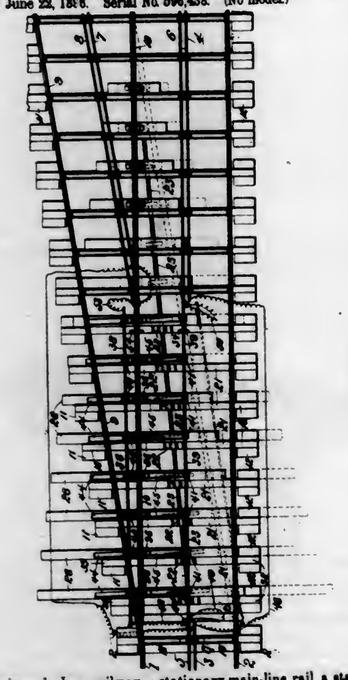
Claim.—An antifreezing check-valve for the feed-water pipes of locomotives to secure a circulation of hot water from the boiler back to the tank or source of water supply, the same consisting of a casing having an inwardly-projecting tubular extension formed at its upper end with a valve-seat, and provided with a lateral opening a distance above its juncture with the lower portion of the casing to prevent said opening from being choked or stopped, or gummed by sediment, oil or other impurity, a short tube projecting from the said opening, and a valve normally held upon the said valve-seat, substantially as and for the purpose set forth.

573,343. IMPLEMENT FOR PLASHING HEDGES. JAMES A. MITCHELL, Warren, Ind., assignor of one-half to Edward C. Keyes, Tiffin, Ohio. Filed Feb. 25, 1896. Serial No. 580,666. (No model.)



Claim.—In an implement for plashing hedges the combination with the body portion provided with a handle, a concave or rearwardly-curved front end and a spool intermediate of its ends mounted on a short laterally-projecting shaft and adapted to carry the plashing-wire, and guiding eyes or staples projecting from the edge of the body portion opposite the spool, of the grasping-bar having a rearwardly-curved hook end, a retracting spring coiled around the grasping-bar, a lever fulcrumed to the body portion of the tool, and a rod connecting the rear end of the grasping-bar with the operating-lever, substantially as specified.

573,344. SWITCH FOR ELECTRIC RAILWAYS. SHADRACH A. MUSTAIN, Rincon, N. Mex., assignor to Bailey J. Mustain, same place. Filed June 22, 1896. Serial No. 596,438. (No model.)



Claim.—1. In a railway, a stationary main-line rail, a stationary side-track rail, a movable switch-rail positioned between said stationary rails, posts supporting said movable rail, sliding bars carrying said posts, rollers under said sliding bars, posts supporting said rollers, toothed racks upon said bars, gear-wheels meshing into and operating said toothed racks, and a shaft connecting said gear-wheels.

2. In a railway, a movable switch-rail, sliding bars carrying said rail, a section of trolley-wire positioned on each side of and parallel with said movable rail, flexible connections between the ends of one of said trolley-wire sections and the main-line trolley-wire, a flexible connection between one of the other trolley-sections and the main-line trolley-wire and a flexible connection between the other end of said last-mentioned section and the side-track trolley-wire.

3. In a railway, a movable switch-rail, sliding bars carrying said rail, recesses in said sliding bars upon each side of said rail, posts movably mounted in said recesses, a section of trolley-wire carried by said posts, there being one section of trolley-wire on each side of said movable rail and in position parallel with said rail, means of operating said sliding bars, and stops to limit the lateral movement of said trolley-wire sections.

4. In a railway, a main-line trolley-wire in two sections, the adjacent ends of said sections being some distance apart, a side-track trolley-wire having one end adjacent one end of one section of the main-line wire, flexible connections between the opposite section of the main-line wire, and said side-track wire and flexible connections between the two sections of main-line wire, connecting-sections of trolley-wire so positioned and operated as to make the main-line wire continuous when the main line is open and to make the side track wire continuous with one section of the main-line wire when the side-track is open.

5. In a railway, a stationary main-line rail, a stationary side-track rail, a movable switch-rail between said stationary rails, mechanism for moving the free end of said movable switch-rail from one of said stationary rails to the other, a motor-operating trolley-wire mounted between the rails of the main line upon each side of the section of track occupied by said movable switch-rail, a brake-operating trolley-wire mounted beside said motor-operating trolley-wire, a ground-wire connecting the end of the brake-operating trolley-wire upon one side of the switch with the end of the brake-operating trolley-wire on the opposite side of the switch, a motor-operating trolley-wire between the side-track rails, a brake-operating trolley-wire between the side track rails, a ground-wire connecting the end of said brake operating trolley-wire with the end of the brake-operating trolley-wire of the main line which is upon the opposite side of the switch, movable sections of the motor operating trolley-wire mounted upon opposite sides of said movable switch-rail, flexible connections between the ends of said movable sections and the ends of the immovable sections, and means of moving said switch rail and said movable sections of trolley-wire, substantially as specified.

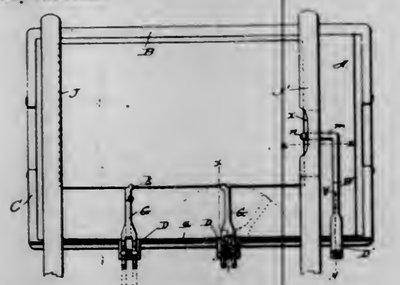
6. In a railway, the sills 11 and 12, the plates 13 and 14 attached to said sills, the posts 15 and 16 attached to said plates, the cross-bar 17 connecting the upper parts of said posts, the braces 18 and 19 having their lower ends attached to the center of said cross-bar and their upper ends attached to the upper ends of said posts 15 and 16 respectively, the rails 1 and 2 having wide wedge-shaped webs mounted with the lower edges of said webs in slots in the upper ends of said posts 15 and 16, bolts passing through said posts and said webs to hold said rails securely in position, the posts 40 and 41 supported by said cross-bar 17, the motor-operating trolley-wire 5 supported by said post 40 and the brake-operating trolley-wire 3 supported by the post 41, substantially as specified.

7. In a railway, the main-line rails 1 and 2, the main-line brake-operating trolley-wires 3 and 4 mounted between said main-line rails 1 and 2, the main-line motor-operating trolley-wires 5 and 6 mounted beside said brake-operating trolley-wires, the side-track rail 9, movable switch-rail 10, the side-track brake-operating trolley-wires 7 mounted between the rails of the side-track, the motor-operating trolley-wire 8 mounted beside said brake-operating trolley-wire 7, the movable trolley-wire sections 38 and 39 mounted upon opposite sides of the switch-rail, the ground-wire 48 connecting the end of the wire 3 with the end of the wire 4, the ground-wire 51 connecting the end of the wire 3 with the end of the wire 7, the flexible connection 49 between the wire 5 and the wire 39, the flexible connection 50 between the wire 39 and the wire 6, the flexible connection 52 between the wire 5 and the wire 38, the flexible connection 53 between the wire 38 and the wire 8, and means of moving said switch-rail and said trolley-wire sections 38 and 39, substantially as specified.

573,345. TYMPAN-GAGE. BERNARD MCGINTY, Doylestown, Pa. Filed Feb. 10, 1896. Serial No. 578,703. (No model.)

Claim.—1. In a feed-gage for printing-presses, the combination of a gage-support, a gage bifurcated and arranged on the said gage-support, a clamping-piece having a body portion resting in the bifurcation of the gage and also having arms resting above the legs of the

gage and depending branches on said arms, and means for connecting the body portion of the clamping-piece and the gage-support, substantially as specified.



2. In a feed-gage for printing-presses, the combination of a gage-support, a gage bifurcated and arranged on the said support, a clamping-piece having a body portion resting in the bifurcation of the gage and also having arms resting above the legs of the gage and means for engaging said legs so as to permit of the clamping-piece being turned by and with the gage, and means for connecting the body portions of the clamping-piece and the gage-support, substantially as specified.

3. In a feed-gage for printing-presses, the combination of a platen, a band connected with the platen and having longitudinal grooves in the exposed sides of its cross-bar, a slide or carriage mounted on the cross-bar of the band and having tongues resting in the longitudinal grooves thereof, and also having a socket and a threaded aperture communicating with the same, a gage bifurcated at one end and having such bifurcated end arranged on the slide or carriage, a clamping-piece having a circular body portion resting in the bifurcation of the gage and also in the socket of the slide or carriage and also having the arms resting above the legs of the gage and the depending branches on said arms, and a screw extending through the body portion of the clamping-piece and into the threaded aperture of the slide or carriage, substantially as specified.

4. In a feed-gage for printing-presses, the combination of a gage-support, having a socket and a threaded aperture communicating with the same, a gage bifurcated at one end and having such bifurcated end arranged on the said support, a clamping-piece having a circular body portion resting in the bifurcation of the gage and also in the socket of the gage-support and also having the arms resting above the legs of the gage and the depending branches on said arms, and a set-screw extending through the body portion of the clamping-piece and into the threaded aperture of the gage-support, substantially as specified.

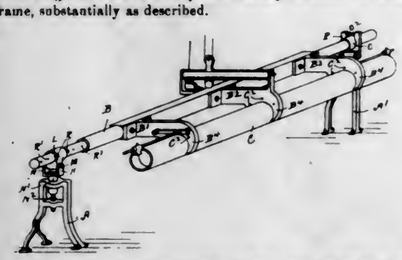
5. In a feed-gage for printing-presses, the combination of a platen, a band connected with the platen and having longitudinal grooves in the exposed sides of its cross-bar, a slide or carriage mounted on the cross bar of the band and having tongues resting in the longitudinal grooves thereof, and also having a threaded aperture, a screw taking through said aperture and adapted to engage the band of the platen, a gage resting on the slide or carriage and engaged and held by the screw and having an inwardly-extending lateral branch, and a gripping-arm shaped to accommodate said gage, substantially as specified.

6. In a feed-gage for printing-presses, the combination of a platen, a band connected with the platen and having longitudinal grooves in the exposed sides of its cross bar, a slide or carriage mounted on the cross bar of the band and having tongues resting in the longitudinal grooves thereof, a gage carried by said slide, a second slide or carriage having tongues resting in the grooves of the cross-bar of the band, and also having a threaded aperture, a screw taking through said aperture and adapted to engage the band of the platen, a gage resting on the second-named slide and engaged and held by the screw thereof and having a lateral inwardly-extending branch and a gripping-arm having its forward side recessed to accommodate the lateral branch of the latter-named gage, substantially as specified.

573,346. WARP-COMPRESSOR. DAVID MCTAGGART, Worcester, Mass. Filed Dec. 6, 1895. Serial No. 571,321. (No model.)

Claim.—1. The combination with a rocking frame and a pressure-roll carried by said frame, of a stand supporting one end of said frame, a rotating screw-threaded pin held in said stands and a sleeve forming one of the bearings for said rocking frame, said sleeve being pivoted to said pin at right angles to its axis and means for supporting the opposite end of said rocking frame, substantially as described.

2. The combination of a rocking frame and a pressure-roll carried by said rocking frame of a pulley E^4 carried by said frame, pulleys F^3 and F^3 held in a fixed pulley-block, a pulley I carried by a movable pulley-block, a cord passing around said pulleys having one end attached to a fixed support, a weight attached to the opposite end of said cord, a short flexible connection connecting the section of said cord between the pulleys F^3 and I to the section of cord between the pulleys F^3 and E^4, a flexible connection between said rocking frame and said movable pulley-block, and means for taking up the same, whereby the strain exerted by said weight will be received by the entire length of cord and its power thereby increased to rock said frame, substantially as described.



3. The combination of a rocking shaft, arms extending from the side of said shaft, a pressure-roll carried by said arms, a bar placed transversely to said rocking shaft and provided with ways for a sliding block, a sliding block sliding on said ways, a pulley E^4 carried by said sliding block, pulleys F^3 and F^3 held by a fixed pulley-support, a pulley I carried by a movable pulley-block, a cord passing around said pulleys with one end attached to a fixed support, a weight attached to the opposite end of said cord, a short flexible connection connecting that section of said cord lying between the pulleys F^3 and I, to that section of the cord between the pulleys F^3 and E^4, a connection between the movable pulley-block and a pivoted lever, and a pivoted lever arranged in the path of said sliding block, whereby said sliding block will depress said lever and said movable pulley-block, thereby causing the strain exerted by said weight to be received by the entire length of said cord, substantially as described.

4. In a warp-compressor, the combination with supporting-stands for holding a warp-beam, a rocking frame and a pressure-roll carried by said rocking frame, of a floor-plate provided with lugs having dovetailed openings between them, dovetailed feet on said stands fitting between said lugs, a bar attached to one of said stands and passing through a mortise in the other stand and a wedge inserted in said bar, whereby said stands are drawn together, substantially as described.

5. In a warp-compressor, the combination with supporting-stands for holding a warp-beam, a rocking frame and a pressure-roll carried by said rocking frame, of a floor-plate provided with lugs having dovetailed openings between them, dovetailed feet on said stands fitting between said lugs, a bar attached to one of said stands and passing through a mortise in the other stand and a wedge inserted in said bar, whereby said stands are drawn together, and an arm projecting from one of said stands, whereby the movement of said stands toward each other, is limited, substantially as described.

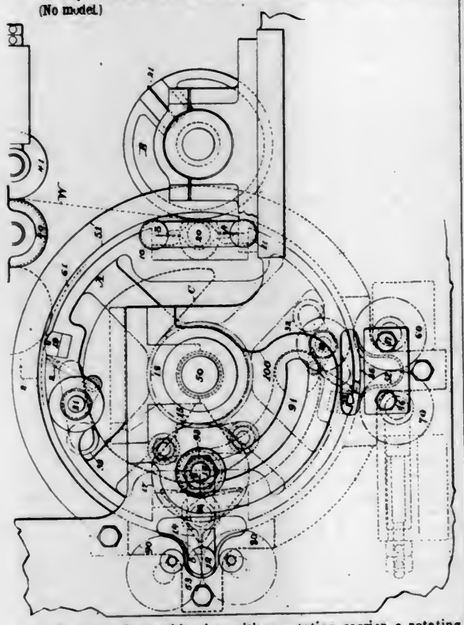
573,347. SASH-LOCK. JOSEPH A. NEWTON, Columbus, Ind. Filed June 22, 1896. Serial No. 596,436. (No model.)



Claim.—1. In combination with the meeting-rails of the sashes of a window, a swinging bar secured to one of said rails, a bracket carried by the opposite rail, a swinging dog pivoted upon said bracket, and a spring carried by the bar for engagement with the rear surface of said bracket, substantially as and for the purposes set forth.

2. In combination with the meeting-rails of the sashes of a window, a block secured thereon having an overhanging lip, a bar pivoted to said block, a spring secured to the free end of said bar and projecting at right angles thereto, a bracket carried by the opposite rail, a dog pivoted upon said bracket said dog having a cam-surface and a toe adapted to engage with the bar, and a knob for withdrawing said dog out of engagement with the bar, as specified.

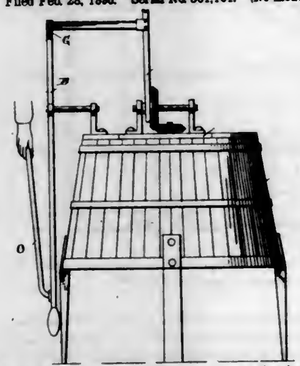
573,348. ROTARY FOLDING-MACHINE. THOMAS M. NORTH, Brooklyn, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed Apr. 25, 1895. Serial No. 547,090. (No model.)



Claim.—1. In combination with a rotating carrier, a rotating folding-blade supported thereby, and two sets of folding-rollers with which said blade may coöperate, of a rotating cam for projecting said blade between the rollers, a wheel, as 17, for rotating the cam, a driving-wheel 18 therefor, and a guideway 91, in which the shaft of the wheel 17 may be adjusted, without disconnecting the wheels 17, 18, so as to cause the blade to operate at one or the other of the two sets of rollers, substantially as described.

2. In combination with a guard 51 and its sockets 52, 53 of a rotating folding-blade, two sets of folding-rollers, a rotating cam for projecting the said blade between one or the other of said sets of rollers, and a removable adjustable stop block, as 85, for closing the unused socket, substantially as described.

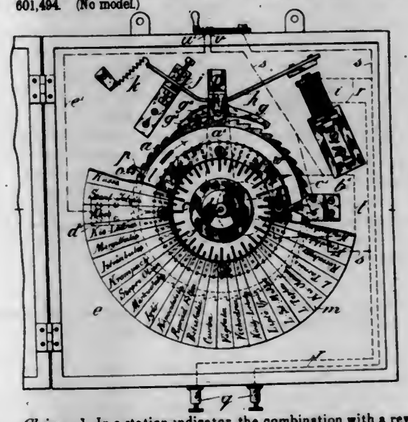
573,349. WASHING-MACHINE. HANS J. PAARMANN, Davenport, Iowa. Filed Feb. 28, 1896. Serial No. 581,161. (No model.)



Claim.—1. In a washing-machine, an operating-lever pivoted upon the cover, combined with a weighted pivoted rod, which is journaled beyond the cover but arranged to swing in unison with the lever, and which has its upper end to project above the top of the body of the washing-machine, and a means for connecting the rod and the lever while the machine is in operation, but which lever and weighted rod are adapted to be disconnected when the cover is to be raised, substantially as described.

2. In a washing-machine mechanism, an operating-lever pivoted upon the cover, combined with a weighted pivoted rod, journaled beyond the cover, and arranged to swing in unison with the lever, its upper end projecting above the top of the body of the machine, and means for connecting the rod and the lever while the machine is in operation; the rod O, attached to the weighted end of rod, and by which the machine is operated; the lever and the weighted rod being adapted to be disconnected when the cover is to be raised, substantially as described.

573,350. STATION-INDICATOR FOR RAILWAYS. ANDREE PÁLFY, Buda-Pesth, Austria-Hungary. Filed Aug. 3, 1896. Serial No. 601,494. (No model.)



Claim.—1. In a station-indicator, the combination with a revolving disk carrying an indicating-plate, of ratchet-teeth upon the periphery of said disk, a spring to rotate the disk in one direction, a pawl mechanism to hold said disk against rotation, an electromagnet to actuate said pawl to permit a movement of the disk, an electric bell, a shunt-circuit connecting said bell with the circuit which actuates said electromagnet, a secondary shunt-circuit leading to terminals adapted to be placed in contact with a conducting-surface on said disk, whereby said secondary shunt-circuit may be completed at intervals through said conducting-surface and a switch adapted to contact with a conductor in either of said shunt-circuits whereby the bell may be actuated through either shunt-circuit as desired, substantially as described.

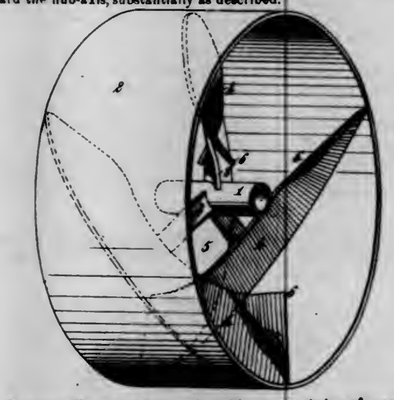
2. In a station-indicator, the combination with a revolving disk carrying an indicating plate, of means for rotating said disk intermittently, a conducting-surface carried by said disk, a series of sliding contact-points located thereon, a contact point adapted to make electrical connection with the conducting surface on the disk, a contact-point adjacent to the disk and adapted to be engaged by the sliding contact-points when the same are shifted, and an electric circuit having a signal bell therein and extending from the contact in connection with the conductor upon the disk to the contact adjacent to the disk, substantially as described.

3. In a station-indicator, the combination with a revolving disk carrying an indicating-plate, of means for rotating said disk intermittently, a circular metallic conducting-plate carried by said disk and provided with a series of radially-arranged sockets therein, a series of contact slides or bars located in said sockets and adapted to be independently shifted therein, a contact-point adapted to make electrical connection with the conducting-surface on the disk, a contact-point adjacent to the disk and adapted to be engaged by the contact slides or bars when the same are shifted outwardly from the disk, and an electric circuit having a signal bell therein and extending from the contact in connection with the conducting-plate to the contact adapted to be engaged by the slides or bars, substantially as described.

573,351. PROPELLER-WHEEL. ELISHA J. PARKER, Dallas, Tex. Filed Sept. 17, 1896. Serial No. 606,160. (No model.)

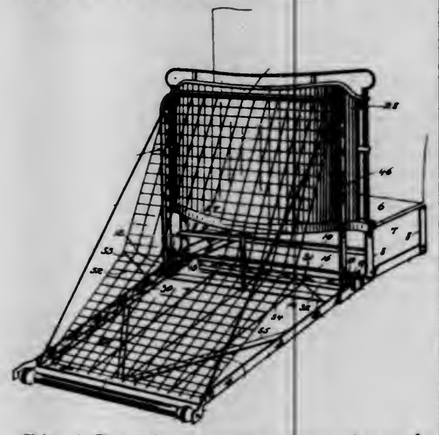
Claim.—1. A propeller-wheel for vessels and boats, consisting of a central hub, a broad rim, a series of spokes connecting said hub and rim, and a series of segmental blades or buckets secured to the outer

portions of the several spokes and to the inner surface of the rim in oblique positions and having the inner corner of each blade twisted toward the hub-axis, substantially as described.



2. A propeller-wheel for vessels and boats, consisting of a central hub, a broad inclosing rim, a series of spokes connected with said hub and rim at an angle to the axis of each, and a series of blades or buckets secured to the inner surface of the rim and to the outer portions of the spokes to afford central spaces for passage of surplus water, each blade having the inner corners of its opposite ends twisted toward the hub-axis and in reverse directions at the blade ends, substantially as described.

573,352. CAR-FENDER. EDGAR E. PERRET, Haverhill, Mass. Filed Sept. 9, 1896. Serial No. 605,309. (No model.)



Claim.—1. The combination with the platform of a car, of a hanging frame connected therewith, a supplemental frame pivotally connected with said hanging frame at the front thereof, and a fender or guard consisting of a main and a supplemental frame, said main frame of the fender or guard being mounted on and adapted to slide in said supplemental frame, and said auxiliary frame being pivotally connected with the rear end of the main frame, and being adapted to be held in an upright position adjacent to the dashboard by springs, said auxiliary frame being also adapted to be folded upon the main frame, in which position the fender or guard may be shoved backwardly beneath the platform, substantially as shown and described.

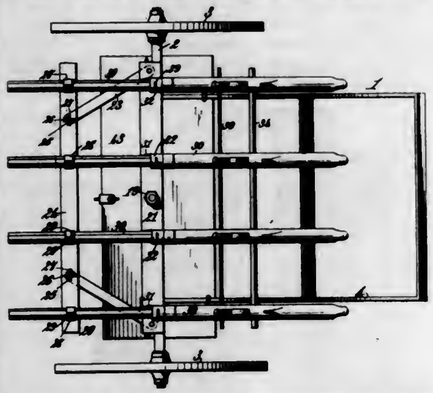
2. The combination with the platform of a car, of a hanging frame connected therewith, a supplemental frame pivotally connected with said hanging frame at the front thereof, and a fender or guard consisting of a main and supplemental frame, said main frame of the fender or guard being mounted on and adapted to slide in said supplemental frame, and said auxiliary frame being pivotally connected with the rear end of the main frame, and being adapted to be held in an upright position adjacent to the dashboard by springs, said auxiliary frame being also adapted to be folded upon the main frame, and said main and said auxiliary frames being provided with a network which is connected with the upper portion of the auxiliary frame, and the outer portion of the main frame, and with guy-ropes or similar devices, which are also connected with the upper portion of the auxiliary and the outer portion of the main frame, substantially as shown and described.

3. The combination with a fender or guard for tramway-cars, which is adapted to be projected in front thereof, and to be held adjacent to the ground, and the forward end of which is depressible, of a shaft mounted between the sides thereof at the forward end, a roller mounted on said shaft, and gear-wheels mounted on each end of said shaft, adjacent to said roller, an arm mounted on said shaft adjacent to each of said gear-wheels, each of which is provided with a pinion which is adapted to operate in connection with the corresponding gear-wheel, a hollow head mounted on said shaft, and inclosing said pinion, said gear-wheel and said arm, and provided with an internal gear by which said pinion is operated, said heads being adapted to come in contact with the ground, and to revolve on said shaft, whereby when the shaft is revolved in the forward direction, the roller mounted thereon, will be revolved in the backward direction, substantially as shown and described.

4. The combination with a car, of a hanging frame secured to the platform thereof, a supplemental frame pivotally connected with said hanging frame, and projecting in front thereof, and a fender or guard consisting of a main frame, and an auxiliary frame pivotally connected with the rear end thereof, said main and auxiliary frames being adapted to be folded together, and the auxiliary frame being held normally in an upright position, a vertically-movable rod or bolt which passes through the platform of the car, and is connected with the supplemental frame, by which the fender or guard is supported, a spiral spring mounted on said rod or bolt, and adapted to force it upwardly, and a lever pivotally supported on the platform, and provided with a dog which is adapted to operate in connection with notches or recesses formed in said rod or bolt, so as to hold it in a depressed position, substantially as shown and described.

5. The combination with a car, of a hanging frame secured to the platform thereof, a supplemental frame pivotally connected with said hanging frame, and projecting in front thereof, and a fender or guard consisting of a main frame, and an auxiliary frame pivotally connected with the rear end thereof, said main and auxiliary frames being adapted to be folded together, and the auxiliary frame being held normally in an upright position, a vertically-movable rod or bolt which passes through the platform of the car, and is connected with the supplemental frame, by which the fender or guard is supported, a spiral spring mounted on said rod or bolt, and adapted to force it upwardly, and a lever pivotally supported on the platform, and provided with a dog which is adapted to operate in connection with notches or recesses formed in said rod or bolt, so as to hold it in a depressed position, and said supplemental frame being provided with pivoted dogs which are adapted to hold the fender or guard in a projected position, said fender or guard being adapted to be folded, and to be passed backwardly beneath the platform of the car, substantially as shown and described.

573,353. PLATOON GUN-BATTERY. RICHARD B. POTTS, Edmond, Okla. Filed May 11, 1896. Serial No. 591,111. (No model.)



Claim.—1. In a platoon-battery, the combination with a wheeled carriage, of a plurality of magazine-guns detachably mounted on said carriage, means for simultaneously charging and setting in firing position said guns, means for simultaneously firing the guns, and a chest carried by the carriage for the storage of the guns and their attachments when detached, substantially as described.

2. In a platoon-battery, the combination with a wheeled carriage, of a gun-supporting frame 20 mounted thereon, a plurality of coincident collars 22 and 28 fixed on said frame for the reception of a plurality of guns, means for simultaneously loading and discharging said guns, and springs 31 arranged on the gun-barrels and operating to engage the collars 22 to prevent the recoil of the guns, substantially as described.

3. In a platoon-battery, the combination with a wheeled carriage, of a gun supporting frame 20 mounted thereon and provided with means for detachably holding a plurality of guns said frame consisting of a bar 21 attached to the carriage by a universal joint, connecting-bars 23 pivotally connected at their rear ends to said bar 21, and a bar 24 detachably connected to the forward ends of the said connecting-bars, substantially as described.

4. In a platoon-battery, the combination with a wheeled carriage, of a gun-supporting frame 20 mounted thereon and consisting of a bar 21 attached to the carriage by a universal joint, connecting-bars 23 pivotally connected at their rear ends to said bar 21, and having swiveled in their forward ends pivot-bolts 25 provided with elongated heads 26, a bar 24 having slots 27 for the reception of the heads of said bolts, and means carried by the said bars 21 and 24 for detachably holding a plurality of guns, substantially as described.

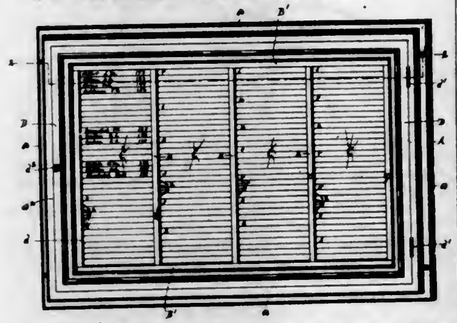
5. In a platoon battery, the combination with a wheeled carriage, of a two-part clamp consisting of a plate 6 fixed on the carriage, a plate 10 movably connected to said plate 6, said plates being provided with cup-shaped recesses 7 and 11, a spindle 17 having a spherical head seated in said recesses, means for clamping the plates 6 and 10 about the spherical head, a gun supporting frame mounted on said spindle, and means for detachably mounting a plurality of guns on said frame, substantially as described.

6. In a platoon-battery, the combination with a wheeled carriage, of a two-part clamp consisting of a plate 6 fixed on the carriage, a plate 10 attached at one end by a hinged connection to the plate 6, a bolt 13 adjustably connecting the other ends of said plates, the said plates being provided with cup-shaped recesses 7 and 11, a spindle 17 having a spherical head seated in said recesses, a gun-supporting frame swiveled on said spindle, and means for detachably mounting a plurality of guns on said frame, substantially as described.

7. In a platoon-battery, the combination with a wheeled carriage carrying a gun-supporting frame, a plurality of magazine-guns detachably mounted on said frame each having a lever 33 for operating the ejecting and loading mechanism, and a trigger 41, and a lever-bar 34 and trigger-bar 39 detachably connected to said levers and triggers for simultaneously loading and firing all the guns, substantially as described.

8. In a platoon-battery, the combination with a wheeled carriage carrying a gun-supporting frame, magazine-guns detachably mounted on said frame and each provided with a lever 33 for operating the ejecting and loading mechanism, and a trigger 41, springs 36 and 42 respectively attached at one end to the said levers and triggers and provided at their free ends with shouldered recesses, and a lever-bar 34 and trigger-bar 39 each provided with a plurality of slots to permit the passage therethrough of the ends of the said levers and triggers, the springs 36 and 42 operating to engage and hold said bars in place, substantially as described.

573,354. OFFICE-DIRECTORY. WALTER W. POWERS, Rochester, N. Y. Filed Oct. 4, 1895. Serial No. 564,660. (No model.)



Claim.—1. In an indicator or directory, the combination of a support provided with engaging shoulders projecting laterally one above the other from its front face, and flexible display-pieces independently supported by the engaging shoulders, said display-pieces being arranged one above the other with their longitudinal edges in close proximity and having their opposite ends formed of reduced width and engaged with said shoulders, substantially as and for the purpose described.

2. In an indicator or directory, the combination of a support, division-bars detachably secured to the front face of said support and provided with engaging shoulders projecting laterally one above the other from the front face of said support, and flexible display-pieces independently supported by the engaging shoulders, said display-pieces being arranged one above the other with their longitudinal edges in close proximity and having their opposite ends formed of reduced width and engaged with said shoulders, substantially as and for the purpose specified.

3. In an indicator or directory, the combination of a support consisting of an outer division provided with a central aperture, an inner division removably supported in the aperture, division-bars secured to the front face of said support and provided with engaging shoulders projecting laterally one above the other from the front face of said support, and flexible display-pieces independently supported by the engaging shoulders, said display-pieces being arranged one above the other with their longitudinal edges in close proximity and having their opposite ends formed of reduced width and engaged with said shoulders, substantially as and for the purpose set forth.

4. In an indicator or directory, the combination of a support formed with a series of perforations, a division-bar provided with a series of separated shoulders, a number of said shoulders being formed with elongated ends arranged in the perforations, and display-pieces having correspouding ends engaged with the shoulders, substantially as and for the purpose set forth.

5. In an indicator or directory, the combination of a support formed with transverse and vertical series of perforations a^2 a^3, vertical bars B having their opposite edges provided with lateral shoulders b arranged with their rear or end edges in close proximity to the adjacent face of the support, and lateral shoulders b' formed with elongated ends passed through the perforations a^2, transverse bars B' provided with lateral shoulders or arms b^2 arranged in the perforations a^3, and flexible display-pieces C arranged one above the other between the bars B B and having their ends c of reduced width and engaged with the shoulders b b', substantially as set forth.

6. In an indicator or directory, the combination of a support formed with transverse and vertical series of perforations a^2 a^3, vertical bars B having their opposite edges provided with lateral shoulders b arranged with their rear or end edges in close proximity to the adjacent face of the support, and lateral shoulders b' formed with elongated ends passed through the perforations a^2, transverse bars B' provided with lateral shoulders or arms b^2 arranged in the perforations a^3, flexible display-pieces C arranged one above the other between the bars B B and having their ends c reduced in width and engaged with the shoulders b b', and a movable door D secured to the main body or support and arranged in front of the display-pieces, substantially as and for the purpose described.

573,355. APPARATUS FOR PURIFYING AND DECOLORIZING SACCHARINE OR OTHER LIQUIDS. MARSHALL PRIDHAM, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Electric Rectifying and Refining Company, Camden, N. J. Filed Sept. 12, 1896. Serial No. 605,631. (No model.)

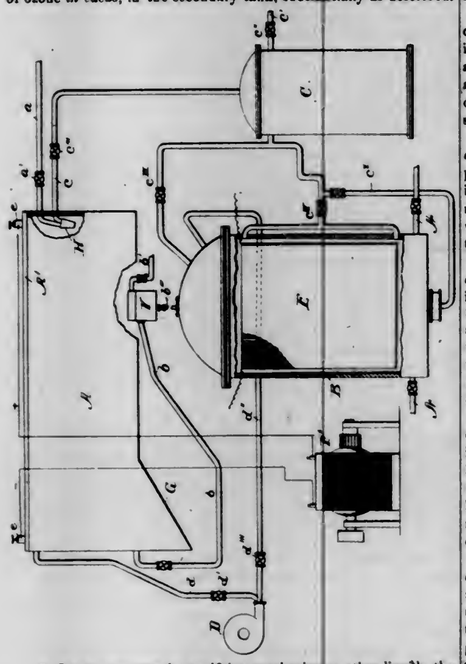
Claim.—1. In an apparatus for purifying saccharine or other liquids, the combination of a tank for holding the liquid to be treated, plates forming positive and negative electrodes placed within the tank and connected to a suitable source of electricity, and collecting-racks in the bottom of the tank for collecting the impurities precipitated from the liquid, substantially as described.

2. In an apparatus for purifying saccharine or other liquids, the combination with the tank containing the liquids to be treated, of plates carrying a metallic decolorizing compound, forming positive electrodes and pitted or cellular plates forming negative electrodes, placed within the liquid in the tank, and electrical connections between said electrodes and a suitable source of electricity, substantially as described.

3. In an apparatus for purifying saccharine or other liquids, the combination with the tank containing the liquid to be treated, of plates carrying a metallic decolorizing compound forming positive electrodes, plates having openings, pits or cells, adapted to receive the electrolytically-deposited metallic compound after it has passed from the positive electrodes through the liquid, and collecting devices in the bottom of the tank for collecting the precipitated impurities, substantially as described.

4. In an apparatus for purifying saccharine or other liquids, the combination with a tank for containing the liquid to be treated, of an ozone-reservoir connected to said tank, and an air-exhauster connected with said tank, electrodes within the tank connected to a suitable source of electricity, whereby the liquid may be subjected to the action of an electric current *in vacuo*, and a secondary tank having

connections with the ozone reservoir and air-exhauster, and a discharge-pipe leading from the first tank to the said tank, whereby the liquid after treatment in the first tank may be subjected to the action of ozone *in vacuo*, in the secondary tank, substantially as described.



5. In an apparatus for purifying saccharine or other liquids, the combination with a main tank for containing the liquid to be treated, means for subjecting said liquid to electrolytic treatment, and a secondary tank provided with connections to the main tank, an ozone-reservoir and an exhaust apparatus connected to the said secondary tank and spraying device in said tank located in line with the inlet for ozone and liquid to said tank, substantially as described.

6. In an apparatus for purifying saccharine or other liquids, the combination with a main tank for containing liquid to be treated, means for subjecting said liquid to the action of an electric current *in vacuo*, a secondary tank provided with connections to an ozone-generator and air-exhauster, and also provided with a liquid-inlet and a spraying device in said latter tank located in line with the inlet of ozone and liquid thereto, whereby the liquid may be introduced in said tank in a finely-divided state and intimately mixed with the ozone gas, substantially as described.

7. In an apparatus for purifying saccharine or other liquids, the combination with a main tank for containing liquid to be treated, means for subjecting said liquid to the action of an electric current, and means for subjecting said liquid to the action of ozone gas *in vacuo*, of a secondary tank provided with connections to an ozone-reservoir and air-exhauster, and also provided with a liquid-inlet and a spraying device located in said tank in line with the liquid-inlet to said tank, substantially as described.

8. In an apparatus for purifying saccharine or other liquids, the combination with a main tank having air-tight joints for holding the liquid to be treated, and means for subjecting said liquid to electrolytic action, of a secondary tank provided with connections to an ozone-reservoir, and an air-exhauster connected with said main tank for exhausting the air therefrom, a pipe leading from the main tank to the secondary tank, and a horizontal agitator rotatably mounted in said secondary tank for agitating the liquid, substantially as described.

9. In an apparatus for purifying saccharine or other liquids, the combination with a tank for holding the liquid, of an inlet-pipe for the liquid, a pipe adapted to connect to an air-exhauster, a supply-pipe adapted to be connected to an ozone-reservoir, a horizontal mechanically-operated agitator in the bottom of said tank, and perforated pipes carried by and moving with said agitator and connected with the ozone-supply pipe, so as to direct the ozone gas upwardly through the liquid in the tank, substantially as described.

10. In an apparatus for purifying saccharine or other liquids, the combination in a tank for holding the liquid for treatment, of an inlet-pipe for the liquid, perforated pipes within the tank, a pipe connecting said perforated pipes with a supply of ozone gas, a horizontal agitator rotatably mounted above the bottom of the tank, and a perforated pipe carried by said agitator and connected to the ozone-supply, substantially as described.

11. In an apparatus for purifying saccharine or other liquids, the combination with a tank for holding the liquid for treatment, of an inlet-pipe for the liquid, a spraying device in line with said inlet-pipe, a pipe leading from a supply of ozone gas into the top of the tank, and discharging near the liquid inlet, and a series of perforated pipes disposed vertically within the tank and connected to the ozone-gas supply, substantially as described.

12. In an apparatus for purifying saccharine or other liquids, the combination in a tank for holding the liquid for treatment, of an inlet-pipe for the liquid, a spraying device in said tank in line with said inlet, a pipe leading from an ozone-gas supply into the top of the tank near the liquid-inlet, a series of perforated pipes vertically disposed within the tank, and an agitator rotatably mounted above the bottom of the tank, substantially as described.

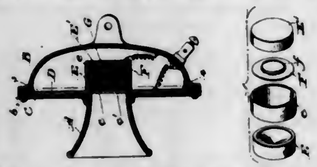
13. In an apparatus for purifying saccharine or other liquids, the combination with a tank for holding the liquid for treatment, of an inlet for the liquid, a spraying device in said tank in line with the inlet an ozone-gas-supply pipe leading into the top of the tank near said inlet, a series of perforated pipes vertically disposed within the tank and connected with the ozone-gas supply, and an agitator rotatably mounted above the bottom of the tank and carrying a perforated pipe communicating with the ozone-gas supply, substantially as described.

14. In an apparatus for purifying saccharine or other liquids, the combination with a tank for holding the liquid for treatment, of an inlet-pipe for the liquid, a horizontal agitator consisting of a hollow hub rotatably mounted above the bottom of the tank and vanes extending from said hub, a pipe communicating with the bottom of said hub and connected to an ozone gas supply, and a perforated pipe carried by the vanes and communicating with said hub, substantially as described.

15. In an apparatus for purifying saccharine or other liquids, the combination with the main tank for containing the liquid to be treated and means for electrolytically treating said liquid therein, of a second tank located below the main tank, connections between said second tank and an air-exhauster and an ozone-gas supply, a reservoir interposed between the two tanks and connected with the discharge of said main tank, and a spraying device in the top of the second tank, and a pipe leading from said reservoir through the top of the said second tank to said spraying device, substantially as described.

16. In an apparatus for purifying saccharine or other liquids, the combination of a main tank for containing the liquid to be treated, means for treating said liquid by electrolytic action, with a tank located below the main tank, a reservoir between the two tanks and connected with the discharge of the main tank, a pipe leading into said reservoir above the liquid-level thereof and connected to a source of air-pressure, a spraying device in the top of the said second tank, and a pipe leading from the reservoir to the spraying device, substantially as described.

573,356. **TELEPHONE-TRANSMITTER.** LEON W. PULLES, Camden, N. J. Filed Nov. 11, 1895. Serial No. 568,643. (No model.)



Claim.—1. In a telephone transmitter the combination of the electrodes, E, E', conducting material, G, and insulating-ring, F, arranged parallel with and between the electrodes E, E, substantially as shown and described

2. In a telephone-transmitter, two or more opposing electrodes yieldingly connected together in such manner as to form a cavity or chamber between them, and an insulating-ring extending into said cavity or chamber between the electrodes, substantially as specified.

3. In a telephone-transmitter, the combination of the electrodes, a chamber between said electrodes, granular conducting material situated in said chamber, a perforated disk of insulating material extending between the two electrodes and adapted to partially cover the face of one of said electrodes.

4. In a telephone transmitter a vibratory plate or diaphragm, two electrodes adjusted to said diaphragm, means for holding said electrodes together in position yieldingly toward each other, a recess or chamber provided in or between the inner faces of the electrodes having inclined walls extending toward the outer edges or circumference of said electrodes, finely-divided conducting material provided in said recess or chamber, and flanged insulating-ring provided between the electrodes the lips of the inner circle of said ring slightly bent to bear against the inner face of one of the said electrodes to retain the finely-divided conducting material at or near the central portion of said electrode, substantially as described.

5. In a telephone-transmitter the combination of two electrodes yieldingly connected together, a concave or cone-shape chamber provided in the inner face of one of the electrodes, free or loosely-held conducting material provided in said chamber and insulating-ring having its inner lips flaring outwardly toward and adapted to bear upon the inner face of the unconcaved disk, substantially as described.

6. In a granulated-carbon telephone-transmitter, a carbon disk provided to the diaphragm connected therewith having a substantially cone-shaped cavity provided in its inner face with the base in a line with its length, a second carbon disk connected with the first disk to the rear of the first disk, tension device for maintaining the relative normal position of the carbon disks when at rest, finely-granulated conducting material provided in said cavity between the inclined walls of said cavity and the inner face of the second disk and insulating flanged ring provided between the said disks for assisting in retaining the granulated conducting material away from the outer edges of the said disk, substantially as described.

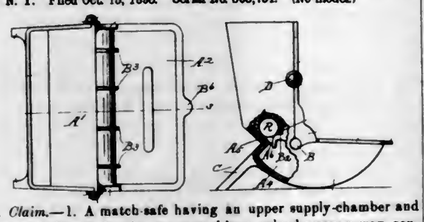
7. In a telephone-transmitter an electrode, E, secured to the diaphragm, a concaved or cone shaped cavity provided in said electrode having inclined walls, *c*, *c'*, second electrode, E', secured to the rear of the first disk, a flexible band, *e*, circumferentially disposed around said disks and holding the same yieldingly together, insulating flanged ring, F, and granulated conducting material provided in said chamber, substantially as described.

573,357. **MANDOLIN.** BENJAMIN N. BETHEY, Champaign, Ill. Filed July 28, 1896. Serial No. 600,848. (No model.)



Claim.—A ribless shell for mandolins and other musical instruments, consisting of the two complemental oval portions of the shell, made up of sheets of veneering on which is mounted a sheet of interwoven strips of wood having solid blocks of wood interposed between the points of intersection of the said strips, substantially as shown and described.

573,358. **MATCH-SAFE.** MARTIN C. RUSSELL, Saratoga Springs, N. Y. Filed Oct. 15, 1895. Serial No. 565,731. (No model.)

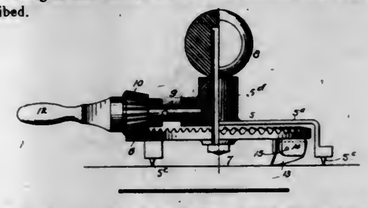


Claim.—1. A match-safe having an upper supply-chamber and an under delivery-chamber connected by a valved passage-way, consisting of an inclined stationary shelf projecting from one side into such passage-way, a tilting platform projecting from the opposite side of the passage-way toward the shelf, and a yielding roller adapted to engage the shelf and platform and close the passage-way between them, and means for tilting the platform, substantially as described.

2. In a sectional match safe, the combination with a pair of semi-spherical lugs, on adjacent sections and in juxtaposition with each other, of a resilient, expansible ring sprung over the heads of the pair of lugs and yieldingly embracing the same, substantially as described.

573,359. **CAN-OPENER.** WILLIAM A. SCHORR and WHEELER R. COLLINS, Denver, Colo. Filed June 26, 1896. Serial No. 596,974. (No model.)

Claim.—In a can-opener, the combination of the frame comprising a central upwardly-projecting lug and a number of radial arms 5^a having depending outer extremities carrying brads 5^c adapted to enter the top of the can, a horizontal gear located beneath the frame and within the space inclosed by the depending frame extremities, a vertical bolt passing through the gear and the lug 5^d of the frame, the handle applied to the upper extremity of the bolt, a horizontal spindle journaled in the frame, a pinion attached to said spindle and meshing with the gear, a crank also attached to the spindle and a detachable knife secured between depending lugs formed integral with the gear and located on its lower surface, substantially as described.



573,360. **BOTTLE-STOPPER.** JOHN SCHUMACHER, Chicago, Ill. Filed June 8, 1895. Serial No. 552,098. (No model.)



Claim.—1. In a stopper the combination of a valve-seat, a valve adapted to seat thereon and having a socket in its under side a guiding-stem occupying said socket, and means preventing the valve or any part carried thereby from coming in contact with any part located above it, substantially as set forth.

2. In a stopper the combination of a valve-seat, a stem rising above it, a valve having a socket in which said stem fits whereby the valve is guided in its movement, and means preventing the valve or any part carried thereby from coming in contact with any part located above it substantially as set forth.

3. In a stopper the combination of a valve-seat, a valve adapted to seat thereon and having a socket in its under side, a guiding-stem occupying said socket, and means for limiting the movement of the valve away from its seat and preventing it or any part carried by it from coming in contact with any part located above it, substantially as set forth.

4. In a stopper the combination of a valve-seat, a valve adapted to seat thereon and having a socket in its under side, a guiding-stem occupying said socket, a cross-head supported by the valve seat ring and supporting the guiding stem, and means for preventing the valve or any part carried thereby from coming in contact with any part located above it, substantially as set forth.

5. In a stopper the combination of a valve-seat, a valve adapted to seat thereon and having a socket in its under side, a guiding-stem occupying said socket, a weight located below the guiding stem, and means connecting the valve and weight, substantially as set forth.

6. In a stopper the combination of a valve-seat, a valve adapted to seat thereon and having a socket in its under side, a hollow guiding-stem occupying said socket, a weight located below the hollow guiding-stem, and means extending through the hollow stem and connecting the valve and weight, substantially as set forth.

7. In a stopper the combination with a valve-seat, and a valve adapted to seat thereon, of a rigid stem extending downward from the valve and having a cross-head, means restraining the stem against lateral movement and a weight resting loosely upon said cross-head, substantially as set forth.

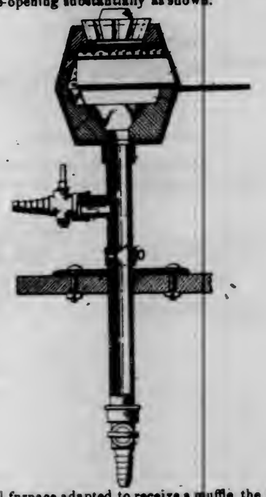
8. In a stopper the combination with a valve-seat and a valve adapted to seat thereon, of a rigid stem extending downward from the valve and having a cross-head and a weight having a central opening through which the stem passes, and a lateral opening occupied by the cross-head, substantially as set forth.

9. The combination with a bottle of a stopper having a valve-seat, a valve adapted to seat thereon, a conical weight located below the valve-seat with its larger end uppermost, and means connecting the valve and weight and permitting the tapering side of the weight to rest upon the neck of the bottle when the bottle is tipped, substantially as set forth.

10. In a stopper the combination of a valve-seat and a valve adapted to seat thereon, a rigid stem extending downward from the valve and having a cross-head and a conical weight having a central opening of larger diameter than the stem, through which the stem passes, and an opening occupied by the cross-head, substantially as set forth.

573,361. **DENTAL FURNACE.** GEORGE W. SCHWARTZ and BERNARD J. CIGRAND, Chicago, Ill. Filed Jan. 31, 1896. Serial No. 577,585. (No model.)

Claim.—1. A dental furnace comprising separate upper and lower members adapted to be clamped together, the upper member having a muffle-opening *m*, extending to its lower edge, the adjacent upper edge of the lower member forming the lower wall of the muffle-opening, the lower member having an outwardly-projecting integral apron R, having its upper surface flush with the upper edge of the lower member and below the opening *m*, and thereby flush with the lower end of the muffle-opening substantially as shown.



2. A dental furnace adapted to receive a muffle, the furnace having a concaved bottom, a burner formed in the bottom thereof, an inwardly-projecting lip at the rear end of the concaved bottom, and a muffle having the outer end resting upon the outer edge of the concaved wall, and its inner end resting upon the said lip, with its rear wall at a point inside the rear end of the concaved bottom to form the passages U, whereby uniformity of circulation under and around the muffle is secured, the same adapted as described.

3. A dental furnace having an upper or dome-shaped wall provided with cavities for the purpose of increasing the heat radiation thereof.

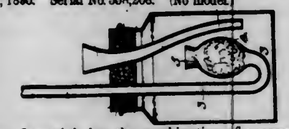
4. A dental furnace, the upper or dome-shaped portion having a longitudinal or oval-shaped opening, and a cap placed therein, the walls of the cap and opening being shaped to form escape-openings for the products of combustion in combination with the muffle placed therein longitudinal the said oblong opening, for the purpose set forth.

5. The combination with a dental furnace, of a burner supply-pipe, a main air-inlet for said pipe, a gas-supply inlet for said pipe situated between the furnace and the main air-inlet, and an auxiliary air-inlet for said pipe situated between the main air-inlet and the gas-inlet to prevent whistling, substantially as described.

573,362. PROCESS OF TANNING. HUGO SCHWEITZER, Englewood, N. J. Filed Jan. 27, 1896. Serial No. 577,053. (No specimens.)

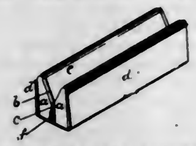
Claim.—The herein-described process of tawing or tanning skins or hides, consisting in the reduction on the animal fiber of bichromate of potash by means of hydroxylamin compounds, such as hydroxylamin, its sulfo-acids and salts, in the presence or absence of any of the nitrogen-sulfone acids which are formed to some extent in the same reaction which produces sulfo-acids of hydroxylamin thereby permitting the use of neutral, weakly-alkaline or weakly-acid solutions for the second bath.

573,363. INHALER. GEORGE W. SHELTON, Webb City, Mo. Filed Aug. 5, 1895. Serial No. 558,206. (No model.)



Claim.—In an inhaler, the combination of a receptacle for containing a medical solution, an air-inlet tube adapted to extend near the surface of the solution in the bottom of the said receptacle, but not into said solution, an air-outlet tube, an upturned portion upon said tube, a bulb upon said upturned portion, and a porous filling in said bulb for holding a suitable chemical, substantially as described.

573,364. PENCIL-POINTER. WILLIAM R. SIMONDS, Canton, Conn. Filed Jan. 2, 1895. Serial No. 533,521. (No model.)



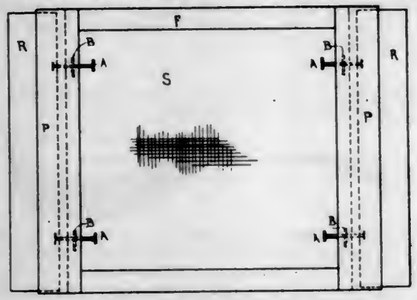
Claim.—1. In combination, the body *a* having convergent faces *b*, the abrading material *e*, and the uncovered recessed opening *c* formed in the body *a*, all substantially as described and for the purposes set forth.

2. In combination, the body *a* having convergent faces *b*, the clamps *d*, and the separable abrading material *e*, all substantially as described, and for the purposes set forth.

3. In combination, the body *a* having convergent faces *b*, the clamps *d*, the rubber band *f*, and the separable abrading material *e*, all substantially as described and for the purposes set forth.

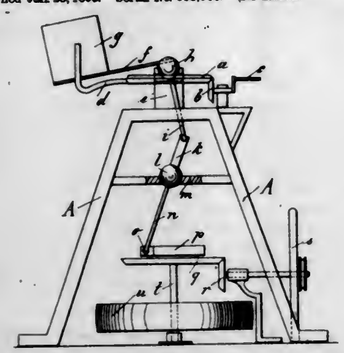
4. In combination, the body *a* having convergent faces *b*, the separable abrading material *e*, and the clamps *d* formed of one piece of metal, all substantially as described and for the purposes set forth.

573,365. ADJUSTABLE WINDOW-SCREEN. JACOB A. SMITH, Holland, Mich. Filed Aug. 20, 1896. Serial No. 603,391. (No model.)



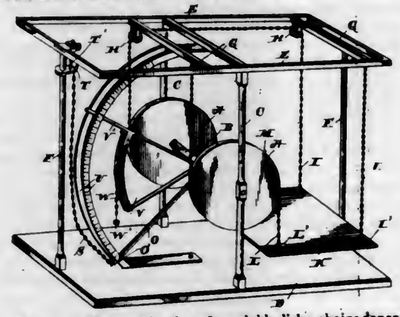
Claim.—In an adjustable screen the combination of the main frame, extensible side strips, locking-bolts, passing through holes in the sides of the main frame and engaging with the extensible strips and provided upon one edge with a series of slots, and the locking-plates adapted automatically to engage with the slots in the bolt and lock the bolt in any position, and to be disengaged by a partial turn of the bolt, substantially as shown and described.

573,366. MOTOR. PAUL STARK, Markneukirchen, Germany. Filed Jan. 23, 1895. Serial No. 535,968. (No model.)



Claim.—In a motor the combination of an eccentrically-mounted weight, a ball *h* about which said weight revolves and an arm *f* to connect said ball and weight, a suitably-driven revolving pulley *p*, an arm *n* mounted by means of a ball-joint eccentrically on said pulley, a ball *l* and extension *k* rigidly attached to said arm *n*, a machine-frame having suitable bearings for the said balls *h* and *l* and a lever *i* fast on said ball *h* and means for connecting said lever to the end of the arm *k* substantially as described.

573,367. WEIGHING-SCALE. JOHN H. STEPHENS, Vernon, Tex. Filed Dec. 19, 1895. Serial No. 572,629. (No model.)



Claim.—1. The combination of revoluble disks, chains depending from the same to one side of the axis of the disks, a weighing-pan supported at one end by said chains, chains I secured to the other end of the weighing-pan and passed over suitably-arranged rollers to the side of the disks opposite the first-named chains and there secured and a weight-indicator actuated with the disks, substantially as shown and described.

2. The combination of revoluble disks, the weighing-pan sustained at one end by the disks at a point to one side of their axis, devices secured to the disks opposite the first-named sustaining devices and extended upward and over the disks and depending to support the other end of the pan and a weight-indicator actuated with the disks, substantially as shown and described.

3. The combination of revoluble disks, the weighing-pan, chains for sustaining one end of the pan which depend from the periphery of the disks, upwardly-extending chains secured to the periphery of the disks diametrically opposite the first-named chains, said second chains being extended over suitable guides for sustaining the other end of the pan and a weight-indicator actuated by the disks, substantially as shown and described.

4. The combination of the revoluble disks, the short chains secured to and depending over the peripheries of the disks, the weighing-pan sustained at one end by the lower extremities of said chains, the second pair of chains secured to the other end of the weighing-pan and extended upward over suitably-arranged rollers and then depending over the peripheries of the disks opposite the first-named chains and secured to said disks and a weight-indicator movable with the disks, substantially as shown and described.

5. The combination of a vibratory counterweight-support having horizontal axis, a weighing-pan arranged at one side thereof, chains L depending from the support to the pan, chains I extending upward from the support opposite depending chains L, an elevated way for chains I whereby they are adapted to depend over the pan and with chains L support the same and a weight-indicator movable with the counterweight-support, substantially as shown and described.

6. An improved scale comprising a framework, a shaft arranged horizontally therein, disks mounted concentrically on said shaft, weighing-pan K, short chains L depending from the disks upon one side and secured to the pan, and rollers H depending from elevated positions in the frame, the long chains I secured at their lower ends to the pan and extended upward to said rollers and downward therefrom and secured to the sides of the disks opposite the chain L, and a counterweight mechanism carried by the said shaft, substantially as shown and described.

7. The combination of the rotatable weighing-disks and axial shaft, the sustaining-chains secured to and leading from the disks as described, beam O, the double scale in which the beam moves, the segment V carried by the axial shaft, the arm extended from the segment to move in said double scale, and the weight-chain on the segment, substantially as shown and described.

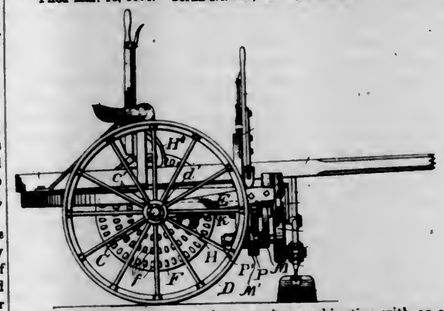
573,368. PLOW. WILLIAM STEPHENS, Franklin, Tex. Filed May 9, 1896. Serial No. 590,960. (No model.)

Claim.—1. In a plow, the combination with the runner 3 and standard 2, of the curved nib or finger 5 formed on the forward end of the runner, shovels 6 fitted at their forward ends under said nib or finger, L-shaped brackets 7 removably bolted to the under side of the shovels and to the opposite sides of the standard, and a U-shaped clip 10 embracing the standard and removably attached at its ends to the shovels, substantially as described.

2. In a plow, the combination with the runner 3 and standard 2, of a curved nib or finger 5, formed on the forward end of the runner in front of the standard, a shovel fitted at its forward end under said nib or finger and provided with means for attachment to the standard, and a colter 11 attached at its lower end to the forward end of the runner in advance of the nib or finger, and fastened at its upper end to the upper end of the standard, substantially as described and for the purpose specified.



573,369. COTTON CHOPPER AND CULTIVATOR. DEWITT C. SUMNERS, Waco, Tex., assignor of one-half to Bert Moore, same place. Filed Mar. 16, 1896. Serial No. 583,445. (No model.)



Claim.—1. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft with a pinion adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a swinging frame, a crank or disk journaled therein, a crank-pin fast on said crank or disk, a chopping-hoe having its handle revolubly connected to said crank-pin, a pivoted support for the upper portion of said hoe-handle, and mechanism driven by said counter-shaft for operating said crank-pin and said chopping knife or blade, substantially as described.

2. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth, a counter-shaft longitudinally disposed in said frame, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a swinging frame suspended from said counter-shaft, a gear-wheel fast on said counter-shaft, a second gear-wheel journaled in said swinging frame and meshing in the first gear-wheel, a crank-arm and a crank-pin rotated by the said second gear-wheel, a chopping-hoe having its handle revolubly connected to said crank-pin, a swinging support for the upper portion of said hoe-handle, and means for raising and lowering said swinging frame and the parts carried thereby, substantially as described.

3. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth, a counter-shaft longitudinally disposed in said frame, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, a hand-lever for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, mechanism driven by said counter-shaft for operating said knife or blade, and means for raising and lowering said mechanism and the cutting-blade operated thereby, substantially as described.

4. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth, a counter shaft revolubly connected to said axle with a pinion adapted to slide longitudinally but held against turning thereon, a hand-lever for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, and mechanism suspended and driven by said counter-shaft for operating said chopping knife or blade, substantially as described.

5. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear wheel fast on said

axle and provided with differential teeth, a counter-shaft longitudinally disposed in said frame and revolubly connected to said axle, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, a hand-lever for moving this pinion to cause it to engage said differential teeth, a swinging frame suspended from said counter-shaft, a hand-lever adapted to raise and lower said swinging frame, a cutting-blade supported from said swinging frame, and mechanism driven by said counter-shaft for operating said cutting-blade, substantially as described.

6. In a cotton-chopper, the combination with an axle and driving-wheels, connected to said shaft by a ratchet-and-pawl gearing, and frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft with a pinion adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, and mechanism driven by said counter-shaft for operating said chopping knife or blade, substantially as described.

7. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing, and a frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth, a counter-shaft longitudinally disposed in said frame, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, mechanism driven by said counter-shaft for operating said knife or blade, and means for raising and lowering said mechanism and the cutting-blade operated thereby, substantially as described.

8. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing, and a frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft with a pinion adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a swinging frame, a combined crank-disk and fly-wheel journaled therein, a crank pin fast on said crank or disk, a chopping-hoe having its handle revolubly connected to said crank-pin, a pivoted support for the upper portion of said hoe-handle, and mechanism driven by said counter-shaft for operating said crank-pin and said chopping knife or blade, substantially as described.

9. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing and a frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth, a counter-shaft longitudinally disposed in said frame, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a swinging frame suspended from said counter-shaft, a gear-wheel fast on said counter-shaft, a second gear-wheel journaled in said swinging frame and meshing in the first gear-wheel, a combined crank-disk and fly-wheel rotated by the said second gear-wheel, a crank-pin fast on said disk, a chopping-hoe having its handle revolubly connected to said crank-pin, a swinging support for the upper portion of said hoe-handle, and means for raising and lowering said swinging frame and the parts carried thereby, substantially as described.

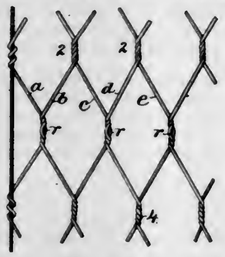
10. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing, and a frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft with a pinion adapted to slide longitudinally but held against turning thereon, a hand-lever adapted to move this pinion in either direction to cause it to engage said differential teeth, a chopping knife or blade, and mechanism driven by said counter-shaft for operating said chopping knife or blade, substantially as described.

11. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing, and a frame mounted on said axle, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft longitudinally disposed in said frame, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, a hand-lever for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, mechanism driven by said counter-shaft for operating said knife or blade, and a hand-lever and mechanism operated thereby for raising and lowering said mechanism and the cutting-blade operated thereby, substantially as described.

12. In a cotton-chopper, the combination with an axle and driving-wheels, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft revolubly connected to said axle with a pinion adapted to slide longitudinally but held against turning thereon, a hand-lever for moving this pinion to cause it to engage said differential teeth, a chopping knife or blade, mechanism suspended on and driven by said counter-shaft for operating said chopping knife or blade and means for lifting said blade and mechanism, substantially as described.

13. In a cotton-chopper, the combination with an axle and driving-wheels connected to said axle by a ratchet-and-pawl gearing, and a frame mounted thereon, of a gear-wheel fast on said axle and provided with differential teeth arranged in a series of concentric circles, a counter-shaft longitudinally disposed in said frame and revolubly connected to said axle, a pinion mounted on said counter-shaft and adapted to slide longitudinally but held against turning thereon, means for moving this pinion to cause it to engage said differential teeth, a swinging frame suspended from said counter-shaft, a hand-lever adapted to raise and lower said swinging frame, a cutting-blade supported from said swinging frame, and mechanism driven by said counter-shaft for operating said blade, substantially as described.

573,370. WIRE-NETTING. HENRY K. SWINCOE, Clinton, Mass. Filed Oct. 17, 1892. Serial No. 449,106. (No specimens.)

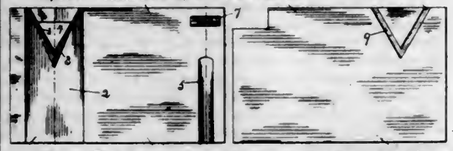


Claim.—1. The herein-described wire-netting composed of a series of continuous wires joined together in the length of the netting by direct and reverse twists.

2. The described wire-netting composed of a series of substantially continuous wires each of which is united to the wire on one side of it by a reverse twist and to the wire on the other side of it by a direct twist, the netting thus presenting transverse rows of reverse twists and transverse rows of direct twists, substantially as described.

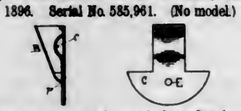
3. The described wire-netting composed of a series of wires, united one to another by transverse rows or series of direct twists, some twisted to the right and others to the left, and transverse rows or series of reverse twists, the right and left direct twists following each other in predetermined order, for the purpose described.

573,371. DIE. JOHN J. THEOBALD, Mount Oliver, Pa. Filed July 17, 1896. Serial No. 599,506. (No model.)



Claim.—The upper and lower dies, one having the rectangular recess or depression, within which, at one end, is arranged the V-shaped cutter, an opening being made through said die, falling within the plane of said cutter, and the other die having a V-shaped recess receiving the V shaped cutter of the aforesaid die, substantially as set forth.

573,372. DOOR-CATCH. FRED W. TOBEY, Grand Rapids, Mich. Filed Apr. 2, 1896. Serial No. 585,961. (No model.)



Claim.—A spring door-catch, consisting of an inelastic soft-metal base-plate having a central chamber and a projection at the inner end of said chamber extending at right angles to the plate, and a spring-plate lying in the chamber and having a widened portion provided with an opening which receives the projection on the base-plate and by which the spring is secured in position, substantially as and for the purposes described.

573,373. BOTTLE OR JUG. LE ROY C. WEBSTER, U. S. Navy. Filed Apr. 20, 1896. Serial No. 588,326. (No model.)



Claim.—1. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk detachably connected to said stopper, and adapted to be inserted through said ribbed and grooved portion under tension with said stopper, and to become detached from said stopper and fall into the bottle when said stopper is withdrawn, substantially as described.

2. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper, and adapted to be inserted through said ribbed and grooved portion under tension with said stopper, and to become detached from said stopper and fall into the bottle when said stopper is withdrawn, substantially as described.

3. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves; of a stopper adapted to fit into said ribbed and grooved portion, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper by a flexible connection, and adapted to be inserted under tension through said ribbed and grooved portion with said stopper, and to become locked against withdrawal with said stopper as soon as it passes the inner ends of said ribs and grooves, substantially as described.

4. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves, and having an annular chamber with a reduced opening leading thereto in the bottom thereof; of a stopper adapted to fit into said ribbed and grooved portion in the neck, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper, and adapted to be inserted with said stopper through said ribbed and grooved portion, and to become detached from said stopper and fall into said annular chamber in the bottom of said bottle when the stopper is withdrawn, substantially as described.

5. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs and grooves, and having an annular chamber with a reduced opening leading thereto in its bottom; of a stopper adapted to fit into said ribbed and grooved portion in the neck, and a disk provided with axial ribs and grooves corresponding to the ribs and grooves in the neck of the bottle, detachably connected to said stopper by means of a flexible connection, and adapted to be inserted under tension through said ribbed and grooved portion with said stopper, and to become detached from said stopper when the said stopper is withdrawn, and fall into said annular chamber in the bottom of the bottle, substantially as described.

6. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs of varying width; of a stopper adapted to fit into said ribbed portion, and a disk provided with axial grooves corresponding with the ribs in said bottle-neck, the said disk adapted to be connected to said stopper and inserted under a torsional strain relative thereto through said ribbed portion of the neck of the bottle and to be relieved from said torsional strain and return to its normal position relative to said stopper upon passing the ends of said ribs in the neck of the bottle, substantially as described.

7. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs therein of varying width; of a stopper provided with axial grooves corresponding to the ribs in the said bottle-neck, and a disk provided with axial grooves similar to those on the stopper, and a flexible connection between said stopper and disk, whereby the two may be inserted under a torsional strain relative to each other through the said ribbed portion of the bottle neck, and be relieved of the said torsional strain as soon as the said disk passes the ends of said ribs, substantially as described.

8. The combination with a bottle or jug having a neck provided with a plurality of vertical ribs therein of varying width; of a stopper provided with axial grooves corresponding to the ribs in said bottle-neck, and a disk provided with axial grooves similar to those on the stopper, and having a central opening therein; a flexible projection on said stopper adapted to engage in said opening in said disk and allow of the said stopper being turned relative to said disk; the said disk and stopper being adapted to be inserted through the ribbed portion of the neck of the bottle under tension on said flexible projection, whereby the said disk will turn and relieve said tension as soon as it passes the ends of said ribs in the neck of the bottle, substantially as described.

9. The combination with a bottle or jug having a neck provided internally with a plurality of vertical ribs; of a stopper adapted to fit into said ribbed portion; a disk composed of two similar sections, each provided with axial grooves corresponding to the ribs in the bottle-neck and connected together by a flexible connection in a superposed position so that the grooves on one are out of line with the grooves on the other, and means for detachably connecting said disk to said stopper, and allowing said disk to be inserted through said ribbed portion of the bottle-neck and be held by said stopper in a suspended position until said stopper is withdrawn, substantially as described.

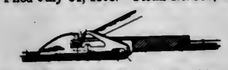
10. The combination with a bottle or jug having a neck provided internally with a plurality of vertical ribs; of a stopper adapted to fit into said ribbed portion; a disk composed of two similar superposed sections each provided with axial grooves corresponding to the ribs in the bottle-neck a flexible connection between said sections normally holding the grooves thereon out of coincidence; a flexible blade carried by said stopper adapted to engage in openings in said sections when the same are in coincidence and to lock them in that position; the said disk being adapted to be inserted in this position through the ribbed portion of the neck of the bottle and be held by said stopper in a suspended position, but to become detached from said stopper and return to its normal position when the said blade is withdrawn therefrom in removing the stopper from the bottle, substantially as described.

573,374. SASH HOLDER AND LIFTER. RALPH H. WHEELER, Mystic, Conn. Filed June 25, 1895. Serial No. 553,992. (No model.)



Claim.—The combination with a window-sash and a rack-bar fixed vertically thereon, of a sash lifter and fastener fixed on the window-frame consisting of pinion K provided with a ratchet-hub outwardly-extending crank-shaft L, gear-wheel N, spring P and a pawl O fixed to the frame, all constructed and combined substantially as herein shown and described.

573,375. FOLDING UMBRELLA. WILLIAM O. WHITNEY, Glens Falls, N. Y. Filed July 31, 1895. Serial No. 557,743. (No model.)



Claim.—1. In a folding umbrella, the combination with the ribs composed of pivoted sections, one each of which has a longitudinal slot at the pivotal joint, of pins applied to each of the other sections and pivotally connecting them with the sections having the longitudinal slots and operating in the latter, whereby the sections of each rib are adapted to have a limited longitudinal movement, hooks on one set of sections, and cross-pins on the opposite sections to be engaged by the said hooks to secure the sections in locked relation, substantially as set forth.

2. In a folding umbrella, the combination of a rib composed of two sections, one of the sections having a longitudinal slot at its end, a hook a short distance from the slot, and a spring to extend across the open end of the hook, a pin applied to the terminal of the other section to engage with the said hook, and a pin pivotally connecting the two sections and passing through the aforesaid slot so as to admit of a limited movement of the sections, whereby the said hook can be disengaged from the end of the section in engagement therewith, substantially as set forth.

3. In a folding umbrella, the combination of a rib formed of sections, one section having a slot, and a pin applied to the other section and operating in the said slot for pivotally connecting the sections and allowing them to have a limited sliding movement the one upon the other, a stretcher, a pin pivotally connecting the extremity of the lower rib-section with the stretcher, and a hook a short distance from the pivotal end of the upper rib-section to engage with the pin pivotally connecting the stretcher and lower rib-section, substantially as set forth for the purpose described.

4. In a folding umbrella, the combination of ribs formed in sections which have pivotal connection and a limited play at the pivots, stretchers connected by pins with the upper ends of the lower rib-

sections, hooks near the pivotal ends of the upper rib-sections to engage with the pins between the stretchers and the lower rib-sections, and springs 25 arranged so that they will maintain the parts or sections of the ribs in locked relation, substantially in the manner set forth.

573,376. BRAKE-SHOE. JOHN L. WICKS, Fitzgerell, Ill. Filed Oct. 26, 1895. Serial No. 567,002. (No model.)



Claim.—The combination with a brake-bar, of a swinging frame pivotally mounted upon said bar and having side arms adapted to rest upon the upper surface thereof, said side arms being provided at their rear ends with enlargements forming depending ears having vertical front edges to bear against the rear side of the brake-bar, a spindle connecting said depending ears below the plane of the upper surface of the brake-bar and arranged at an interval from the rear edge of the brake-bar, and a brake-shoe fulcrumed at its center upon said spindle with its front side out of contact with the brake-bar whereby it is free to rock in either direction from a vertical position to insure a central bearing of its surface upon the periphery of a wheel, substantially as specified.

573,377. PROCESS OF CONSUMING HYDROCARBON GAS. THOMAS L. WILLSON, New York, N. Y., assignor to the Electro Gas Company, of West Virginia. Original application filed Jan. 13, 1896, Serial No. 575,370. Divided and this application filed May 29, 1896. Serial No. 593,660. (No specimens.)

Claim.—The process of producing a smokeless illuminating-flame of high luminosity, which consists in forcing a small stream of acetylene gas through a burner, under conditions substantially as specified, whereby the said acetylene in burning is enabled to appropriate the full amount of oxygen required for its combustion before cooling below its kindling temperature, substantially as described.

573,378. ADJUSTABLE SUPPORT OR REST FOR BICYCLES. GEORGE WOOLLEY, Goulburn, New South Wales. Filed May 11, 1896. Serial No. 591,166. (No model.)



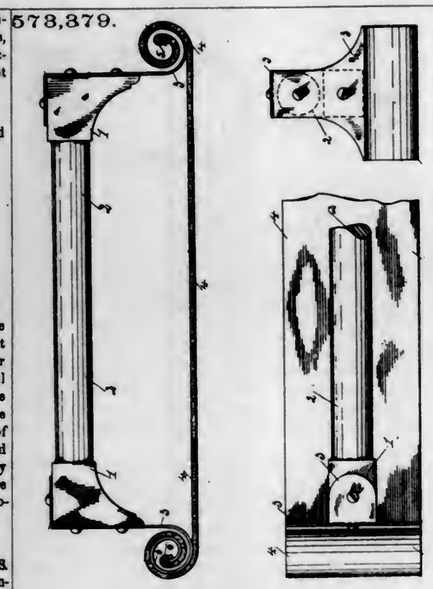
Claim.—1. The combination with a bicycle of a telescopic standard or leg hinged to a plate upon a pivot-pin on the fork of said bicycle and having its upper end adapted to press upon the tire of the front wheel and to catch a holding-spring substantially as herein described and explained.

2. The combination with a bicycle of a standard or leg pivotally connected to a support on the fork, a telescoping leg movable in and out of said standard and having a thumb-piece moving in a slot in the standard and adapted to engage offsets at top and bottom of the said slot, a spring mounted at one end upon the top of the standard and a pin movable lengthwise in a socket-bearing attached to the frame, to engage an opening in the spring upon the head of said standard, substantially as described.

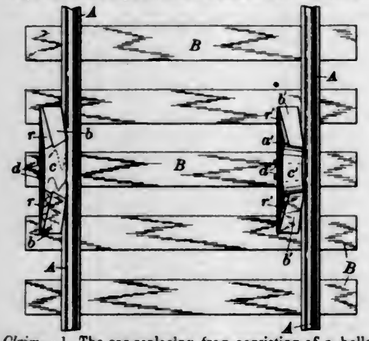
573,379. DEVICE FOR POLISHING SHOES. EDWIN YOUNG, Pittsburg, Pa. Filed July 23, 1896. Serial No. 600,209. (No model.)

Claim.—As a new article of manufacture, the shoe-polisher consisting of the body comprising end portions connected together by a handle, the spring-metal plates secured to said end portions and having their lower ends formed into coils, and the felt strip spanning the space between said coils and having the welts at its ends secured around said coils, all as shown and described.

573,379.



573,380. CAR-REPLACING FROG. WILLIAM A. ADAMS, Elizabeth, N. J. Filed Sept. 14, 1896. Serial No. 605,687. (No model.)



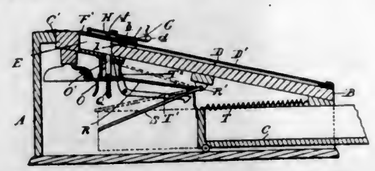
Claim.—1. The car-replacing frog consisting of a hollow, substantially double-wedge-shaped block with rigid spurs formed upon the lower edge of one of its upright sides to which are pivoted by means of suitable pins *p* the holding-dogs *d*, as and for the purpose set forth.

2. The combination, with a car replacing frog of substantially double wedge shape for elevating the outer wheel of a derailed truck preparatory to returning it to the track, of a second frog of substantially double wedge shape having its summit inclined laterally and concaved as described for impelling the inner wheel of the truck both forwardly and transversely of said frog to the adjacent railway-track, as and for the purpose set forth.

3. A car replacing frog consisting of a hollow substantially double-wedge-shaped block having a rectangular base and longitudinally-inclined flat faces rising from the ends of the base and intersecting and terminating in a laterally-inclined concave face forming the summit, whereby a car-wheel rolling upon the same from one end is first permitted to retain its initial course to the upper extremity of the longitudinally-inclined flat face, and is then impelled by said concave upper face of said frog both longitudinally and transversely to insure its lateral dislodgment from the top of the frog, substantially as herein shown and described.

573,381. REGISTERING-MACHINE. LUTHER E. ALLEN, Detroit, Mich. Filed May 28, 1895. Serial No. 550,946. (No model.)

Claim.—1. In a registering-machine, the combination with a top having a series of ball-raceways therein, a supply-chamber at the upper end of the raceways, and balls therein, of sliding gates between the raceways and receptacle, vertically-reciprocating chargers working in the supply-chamber, and having ball-retaining grooves or seats on their upper ends, keys for laterally shifting the gates, and means actuated by the keys for controlling the movement of the chargers in one direction, substantially as set forth.



2. In a registering machine, the combination with a frame, a series of raceways, a supply-chamber, and balls therein, of gates between the raceways and supply-chamber, reciprocating chargers working in the supply-chamber, springs for actuating the chargers in one direction, keys for shifting the gates, means for moving the chargers against the tension of the springs, and means controlled by the keys for controlling said charger-moving means, substantially as described.

3. In a registering-machine, the combination with a casing, a series of raceways therein, a supply-chamber, a series of receptacles, and balls, of gates between the raceways and the receptacles, a series of chargers acting as conveyances to lift the balls from the supply-chamber to the receptacles, a series of keys for shifting the gates and moving the chargers in one direction, and means for moving the chargers in the opposite direction, substantially as described.

4. In a registering-machine, the combination with the ball-races, gates near the upper ends thereof, keys for actuating the gates, ball-receptacles above the gates, a ball-supply chamber, the balls and a series of chargers, one for each receptacle, and means for actuating all the chargers upon the operation of any key.

5. In a registering-machine, the combination with the ball-races, gates near the upper end thereof, keys for actuating the gates, plungers for carrying balls to the gates, the balls and a cash-drawer for actuating the plungers, substantially as described.

6. In a registering-machine the combination with a case having a hinged top, ball-raceways in the top, and a supply-chamber, of gates between the chamber and raceways, means for independently shifting the gates, means for simultaneously removing all of the gates, a series of balls, a cash-drawer, and means actuated by the drawer for transferring the balls from the chamber to the raceways, substantially as described.

7. In a registering-machine, the combination of the casing, an inclined cover thereon, a series of ball races formed in the top of the cover, balls adapted to move therein and the receptacle in the cover at its upper edges below the plane of the ball-races, a gate-frame secured to the cover at the upper end of the races, laterally-movable gates therein, and laterally-movable keys pivoted on the frame and adapted to control the gates.

8. In a registering machine of the kind described, the combination of the cash-drawer, the gate-frame, the actuating key-levers G, the gate *b* controlled thereby, stops for limiting the motion of the keys in one direction the spring-actuated bar H having pins adapted to engage the keys on the opposite side from the stops, and the latch for the drawer actuated by the bar H, substantially as described.

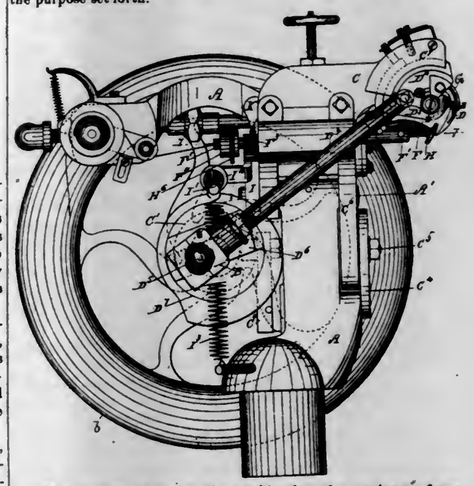
9. In a registering machine of the kind described, the combination of the gate-frame, the key-levers pivoted thereon, the gates therein actuated by the keys, the cash-drawer, a lock for the cash-drawer, a spring-actuated sliding bar H having pins (one for each key) with which the key-levers engage and means for releasing the drawer-lock through said bar H, substantially as described.

10. In a registering-machine, the combination with the ball-races, the gates controlling the same and the receptacle *a* above the gates, of the ball-receptacle, the balls therein, the bar O below the receptacle, the plungers O' on the bar, springs acting normally to hold the said plungers in their lower position, a cash-drawer and connection between the cash-drawer and the plungers for actuating the same as and for the purpose described.

11. The combination with a series of inclined ball-raceways, a ball-supply chamber located at the upper end and below the plane of the same having capacity for a stack or collected series of balls, a series of chargers working in a portion only of the chamber, and having ball receiving recesses at their ends, means for reciprocating the chargers, and gates for the raceways, substantially as described.

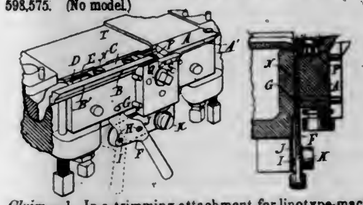
573,382. SEWING-MACHINE. WILLIAM E. BAILEY, Beverly, and ROBERT D. BURNS, Wenham, Mass., assignors to Rufus H. Woodbury, Beverly, Mass. Filed July 30, 1894. Serial No. 518,932. (No model.)

Claim.—1. In a sewing-machine, the combination of a stationary frame, a rocking carrier, a needle, cast-off, and looper carried thereby, a stationary channel-opener, a longitudinally-movable work supporting presser-foot, and a longitudinally-movable looper-spindle connected to the work-supporting presser-foot, substantially as and for the purpose set forth.



2. In a sewing-machine, the combination of a stationary frame having a stationary channel-opener and a longitudinally movable and yielding work-supporting presser-foot, a rocking head carrying a needle, cast-off, and looper, a looper-spindle pivoted and guided in said head and connected to the presser-foot bar, and intermediate connecting mechanism, substantially as described, for actuating said parts from the driving-shaft of the machine, for the purpose specified.

573,383. KNIFE ATTACHMENT FOR LINOTYPE-MACHINES. PHILIP T. BALLS, Melbourne, Victoria. Filed July 9, 1896. Serial No. 598,575. (No model.)



Claim.—1. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length; of a longitudinally-movable blade mounted in said cut-away portion and having a knife-edge in line with said fixed knife-edge; and means for sliding said movable blade longitudinally, substantially as described.

2. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length; of a longitudinally-movable blade mounted in said cut-away portion and having a knife-edge in line with said fixed knife-edge; means for sliding said movable blade longitudinally, and means for clamping said movable blade in a predetermined position, substantially as described.

3. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length; of a slotted movable blade mounted in said cut-away portion, a holding-plate resting upon said movable blade, and screws passing through said holding-plate and the slots in said blade, and holding the same in position and permitting of a longitudinal movement thereof only; and means for sliding said movable blade longitudinally, substantially as described.

4. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife edge extending a portion of its length only, and being cut away for another portion of its length; of a slotted movable blade mounted in said cut-away por-

tion, a holding-plate resting upon said movable blade, and screws passing through said holding-plate and the slots in said blade, and holding the same in position and permitting of a longitudinal movement thereof only; a rearwardly-projecting stud on said movable blade; and a pivoted lever engaging said stud and adapted to move said blade longitudinally, substantially as described.

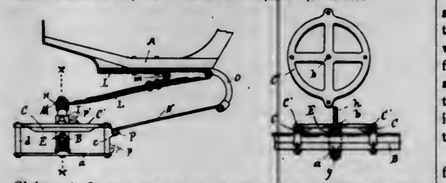
5. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length; of a slotted movable blade mounted in said cut-away portion, a holding-plate resting upon said movable blade, and screws passing through said holding-plate and the slots in said blade, and holding the same in position and permitting of a longitudinal movement thereof only; a rearwardly-projecting stud on said movable blade; a pivoted lever engaging said stud and adapted to move said blade longitudinally, and means for clamping said lever in a predetermined position, substantially as described.

6. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length, and having a longitudinal recess in said cut-away portion; of a movable blade mounted in said cut-away portion, and provided with a longitudinal rib adapted to fit in said longitudinal recess and allow said movable blade to slide into or out of contact with the end of said fixed blade, means for holding said movable blade in said recess, means for sliding said movable blade, and means for clamping the same in a predetermined position, substantially as described.

7. In a trimming attachment for linotype machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length, and having a longitudinal recess in said cut-away portion; of a longitudinally-slotted movable blade mounted in said cut-away portion, and provided with a longitudinal rib adapted to fit in said longitudinal recess and allow said movable blade to slide into or out of contact with the end of said fixed blade, a holding-plate resting upon said movable blade, screws passing through said holding-plate and through the slots in said blade, and holding said movable blade in said recess, means for sliding said movable blade, and means for clamping the same in a predetermined position, substantially as described.

8. In a trimming attachment for linotype-machines, the combination with a stationary part having a fixed knife-edge extending a portion of its length only, and being cut away for another portion of its length, and having a longitudinal recess in said cut-away portion; of a longitudinally-slotted movable blade mounted in said cut-away portion, and provided with a longitudinal rib adapted to fit in said longitudinal recess and allow said movable blade to slide into or out of contact with the end of said fixed blade, a holding-plate resting upon said movable blade, screws passing through said holding-plate and through the slots in said blade, and holding said movable blade in said recess, a stud on the rear side of said movable blade; a pivoted lever engaging said stud, and adapted to slide said movable blade; and a spring-catch adapted to hold said lever in a predetermined position, substantially as described.

573,384. CARRIAGE-GEAR. CHARLES A. BEHLEN, Cincinnati, Ohio. Filed Nov. 15, 1895. Serial No. 569,061. (No model.)

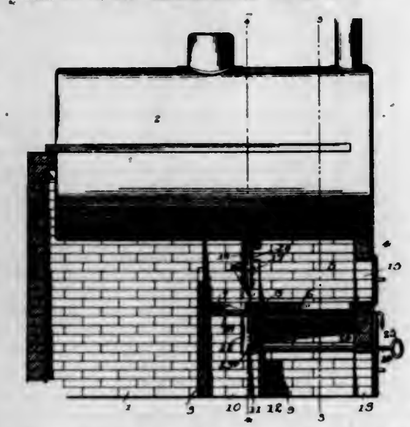


Claim.—1. In a carriage-gear having an extended fifth-wheel support, the combination of side springs L hinged to said support at their forward ends and at their rear ends attached to the carriage-body, and a connecting member hinged at its opposite ends respectively to the fifth-wheel support and the carriage-body said connecting member being parallel with the side springs, and the length of said springs and connecting member between their points of attachment being equal, substantially as described.

2. In a carriage-gear having an extended fifth-wheel support, the combination of side springs L secured to each side of the carriage-body and hinged to the extended support of the fifth-wheel, and a central, parallel connecting member hinged at its forward end to the fifth-wheel support and at its rear end to a bracket depending from the carriage-body, the length of said springs and connecting member between their points of attachment being equal, substantially as described.

3. In a carriage-gear the fifth-wheel ring secured to the bolster and to the yoke-bar *a* at the under side of the axle, fifth-wheel supports connecting said bar to the ring, in combination with a connecting-rod N hinged to one of said fifth-wheel supports at one end, and at the other to a center supported upon the carriage-body, substantially as specified.

573,385. SMOKE-CONSUMING FURNACE. GEORGE A. BELL, Sandwich, Ill., assignor of one-half to Clarence E. Slye, same place. Filed Oct. 15, 1895. Serial No. 565,781. (No model.)



Claim.—1. In a furnace, the combination with the fire-box; of separate front and rear horizontally-alined grates mounted within the fire-box, a pendent hollow baffle-wall provided with hollow trunnions resting in suitable supports, said baffle wall being disposed at a point approximately between the two grates, and suitably-arranged cold-air pipes connected with the hollow trunnions of said baffle-wall, substantially as set forth.

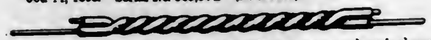
2. In a furnace, the combination with the furnace-casing inclosing the usual fire-box; of separate horizontally-alined front and rear grates mounted within the fire-box, a transverse partition-wall extending above and below the grates at the junction thereof and provided above the plane of the grates with a draft-opening, a swinging adjustable baffle-wall mounted within the draft opening in the partition-wall and of a less width than the vertical width of said draft-opening, opposite vertical draft flues arranged at opposite sides of the rear grate and communicating at their lower ends with the rear ash-pit below such grate, said vertical draft-flues being provided at their upper ends with draft-openings communicating with the portion of the fire-box above the front grate, and opposite cold-air flues arranged at opposite inner sides of the furnace-casing and leading from the front wall thereof to the rear ash-pit under the rear grate, substantially as described.

3. In a furnace, the combination with the fire-box, of separate front and rear horizontally alined grates mounted within the fire-box, a transverse partition wall extending above and below the grates at the junction thereof and provided above the plane of the grates with a draft-opening, said partition-wall being further provided in its front face at opposite sides of the draft-opening with bearing notches, a swinging adjustable baffle-wall having at its upper opposite ends trunnions removably resting in said bearing-notches, and an adjusting device having a suitable detachable connection with one of the trunnions of the baffle-wall, substantially as set forth.

4. In a furnace, the combination with the fire box; of separate front and rear horizontally-alined grates mounted within the fire-box, a pendent hollow baffle-wall supported at a point approximately between the two grates with its lower edge disposed above the plane of the same, and means for circulating cold air through said hollow baffle-wall, substantially as set forth.

5. In a furnace, the combination with the fire-box; of separate front and rear horizontally-alined grates mounted within the fire-box, a transverse partition-wall dividing the space below the grates into separate front and rear ash-pits, a cold-air flue leading from the front of the furnace and opening into the rear ash-pit in front of the rear grate, a pendent hollow baffle-wall provided at its upper opposite ends with hollow trunnions resting in suitable supports, said baffle-wall being disposed at a point approximately between the two grates and having its lower open edge disposed above the plane of the latter; and depending cold-air pipes connected at their upper ends with said hollow trunnions and having their lower ends projecting into the rear ash-pit below the rear grate, substantially as set forth.

573,386. WIRE JOINT. CLARENCE E. BROWN, Chicago, Ill. Filed Oct. 11, 1895. Serial No. 565,374. (No model.)

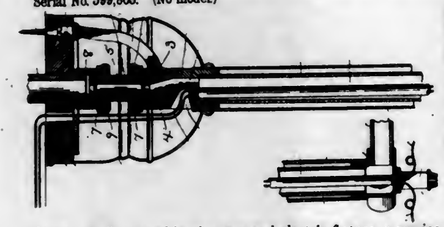


Claim.—1. A joint for connecting wires to convey electrical currents consisting of a sheet of metal foil conversely spirally rolled so that when twisted with wires inserted therein it will inversely tighten spreading out at the ends exhausting the air from the connector and not bulging as a tube or tubes when twisted in a similar manner.

2. A joint for connecting wires consisting of a sheet of metal foil rolled so as to form two rolls, without the use of solder or brazing that will completely cover the wires sought to be connected at the contact-points.

3. A joint consisting of a sheet of metal foil spirally rolled from the sides in opposite directions for the purpose of forming when twisted with inserted wires a perfectly air-tight and water-tight covering for connecting wires without the use of solder or brazing.

573,387. COMBINATION GAS AND ELECTRIC FIXTURE. JAMES E. BROWN and WILLIAM M. BROWN, Toledo, Ohio. Filed July 20, 1896. Serial No. 599,805. (No model.)



Claim.—1. In a combination gas and electric fixture, a service-pipe, a fixture suspended and supported by means independent of the service-pipe, and an insulated coupling interposed between the fixture and the service-pipe.

2. In a combination gas and electric fixture, the service-pipe, a fixture supported by means independent of the service-pipe, a non-conducting coupling interposed between the fixture and the service-pipe, a conduit secured within the gas service-pipe of the fixture and communicating exteriorly thereof at the top and the bottom of the same, and conducting-wires passing therethrough and connecting outside of said body above and below the same.

573,388. EARTH-AUGER. HAMETT A. BROWNLEE, Cadeville, La. Filed May 4, 1896. Serial No. 590,195. (No model.)



Claim.—1. An earth-auger comprising a stem, bits or cutters, strips sprung upward from said cutters for attaching the same to the stem, and a securing means passing through each of said securing-strips and the stem for detachably securing the said cutters to the stem, substantially as shown and described.

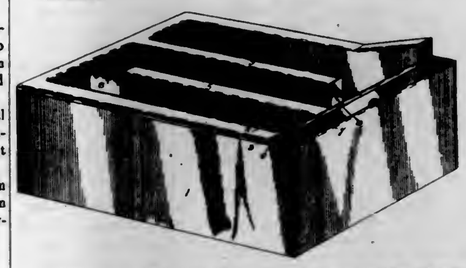
2. An earth-auger comprising a stem, bits or cutters arranged on said stem, each bit or cutter having a securing-strip for attachment to the stem, said securing-strip being formed by cutting the bit inward adjacent its straight side and bending upward the tongue or strip formed by the said cut, and a means for securing the strips to the stem, substantially as described.

3. In an earth-auger, the combination of a stem, two bits arranged obliquely to each other and having opposite cutting edges, and strips G sprung upward from the bits for securing to the stem, substantially as described.

4. An auger-bit of semicircular contour having an upwardly-projecting knife, the said bit being cut radially adjacent its straight side and in line with the base of the said upwardly-projecting knife to form a cutting edge which is a continuation of the said knife, and the strip G formed by the said radial cut adapted to be bent upward to form a securing portion for attachment to a stem, substantially as shown and described.

5. The auger-bit blank having a curved side, a lateral projection at one of the extremities of said curved side, the blank being formed with the slit extending inwardly from said lateral projection to form strip G, substantially as shown and described.

573,389. MILK-HEATING VAT. ROYER S. BUCH and JULIUS BELSER, Elizabethtown, Pa. Filed Apr. 29, 1896. Serial No. 589,571. (No model.)

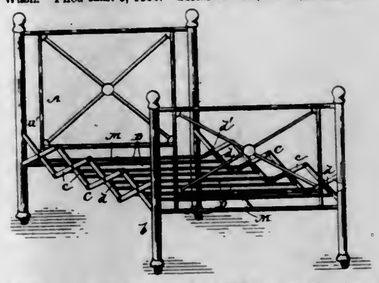


Claim.—1. A milk-heating device having a receptacle for a heating agent, and a tray arranged within said receptacle and provided with a continuous milk-channel formed by alternately-arranged hollow walls, the interior of each hollow wall being in communication at both ends with the interior of the receptacle to allow a free circulation of the heating agent, substantially as specified.

2. A milk-heating device having a casing adapted to contain a heating agent, a tray fitting in the casing and forming a milk-receptacle, the interior of said tray being divided by parallel hollow walls starting alternately from opposite end walls of the tray to form a continuous milk-channel of which the floor declines from the inlet to the outlet end, and openings being formed in the walls of the tray to establish communication between the contiguous end of each hollow wall and the interior of the casing, and a conductor connecting the other end of each hollow wall with the interior of the casing and spanning the channel, whereby each wall is open at both ends to establish a circulation, substantially as specified.

3. In a device of the class described, the combination of an exterior casing, a tray arranged within the casing and provided with a continuous milk-channel formed by interposed hollow walls, each hollow wall being open at both ends for communication with the interior of the casing, and a single gate, of less height than the depth of the channel, adjustably mounted for vertical movement in the channel continuous to its outlet end and adapted to be normally arranged in a depressed position with its upper edge below the upper edges of the hollow walls to allow the passage of milk thereover, substantially as specified.

573,390. EXTENSION-BEDSTEAD. ALBERT BUTZER, Deer Park, Wash. Filed Mar. 6, 1896. Serial No. 582,108. (No model.)

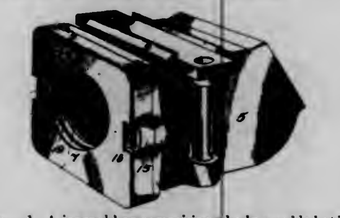


Claim.—1. In an extension-bedstead, the combination of head and foot portions, sides formed of lazy-tongs; said head and foot portions being provided with vertical slots for guiding and bracing the ends of the lazy-tongs and permitting of their adjustment up and down to lengthen or shorten the sides of the bed to different degrees, and means for locking the ends of the lazy-tongs at different points in said slots, substantially as described.

2. In an extension-bedstead, the combination of head and foot portions, sides formed of lazy-tongs, and rack-bars in the head and foot portions adapted to be engaged by the ends of the lazy-tongs whereby the length of the sides may be adjusted at will and said sides locked in their adjusted positions, substantially as described.

3. In an extension bedstead, the combination of head and foot portions, sides formed of lazy-tongs, rack bars on the head and foot portions adapted to be engaged by the ends of the lazy-tongs whereby the length of the bed may be adjusted, and means for throwing said rack bars out of engagement with the said lazy-tongs ends, whereby said lazy-tongs may be extended more or less as desired, substantially as described.

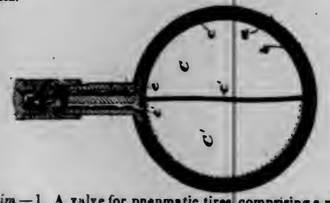
573,391. CAR-AXLE BOX. STEPHEN COLLINS, Portland, Oreg. Filed Apr. 30, 1896. Serial No. 589,713. (No model.)



Claim.—1. A journal-box comprising a body provided at its back with vertical recesses extending from the top to the bottom of the journal-box and forming ways open at the ends, said body having its rear face, between the ways, smooth and vertical, a dust-guard, a rear section completing the back of the journal-box and provided at its inner face with a dust-guard chamber or recess receiving the dust-guard and having the inner face thereof flush with its inner bearing-face and fitting against the adjacent vertical face of the body of the journal-box and adapted to slide vertically and laterally thereon, vertical flanges extending from the inner face of the rear section, projecting beyond the inner face of the dust-guard and arranged in the said ways to slide vertically therein, contiguous perforated bosses 10 and 13, located at opposite sides of the journal-box and formed integral with the body and the rear section, and short bolts passing through said bosses and securing the rear section to the body, substantially as described.

2. An axle or journal box comprising a body, provided at opposite sides adjacent to its rear face with vertical flanges forming recesses or ways, and provided with enlargements or bosses 10, having vertically-arranged elliptical perforations, a rear section completing the axle-box, provided at its inner face with a dust-guard chamber and having vertical flanges at opposite sides fitting against the flanges of the body portion and arranged in the recesses or ways formed by the same and provided with vertically-arranged elliptical perforations, fastening devices connecting the rear section to the body portion of the axle or journal box and passing through the said elliptical perforations, the shorter diameter of the perforations being greater than the diameter of the fastening devices, whereby the axle-box will be permitted both a vertical and a lateral movement, and springs disposed on the fastening devices and yieldingly connecting the parts, substantially as described.

573,392. VALVE FOR PNEUMATIC TIRES. WARREN K. COLLINS, Boston, Mass. Filed July 27, 1896. Serial No. 600,637. (No model.)



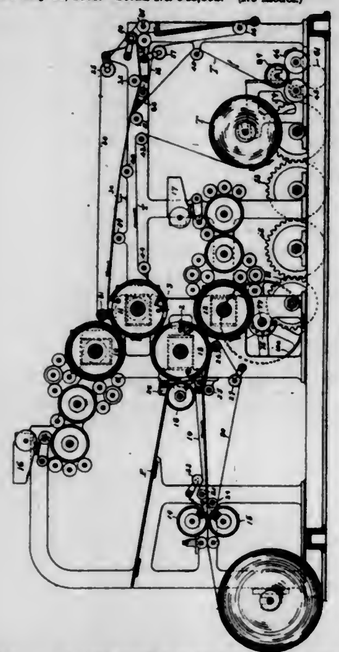
Claim.—1. A valve for pneumatic tires, comprising a nipple having two ports extending therethrough, and a main valve-seat, a sleeve threaded onto the nipple and having an auxiliary valve-seat, a valve between it and the main seat, and a spring on the interior of the auxiliary seat to normally retain the valve against its under side, substantially as described

2. A valve comprising a nipple having a valve-seat and two ports leading therefrom, a valve proper, a detachable valve-controlling sleeve adjustable on the nipple and in which the valve it movable, and a cut-off adapted to be inserted between the valve and valve-seat, to close one of the ports, substantially as described.

3. A removable cut-off device for valves provided with two inlet-ports, consisting of a disk adapted to rest on the valve-seat and having an opening to register with one port, and a lug or projection on the under side of the disk to enter the other port, substantially as described.

4. A valve for pneumatic tires, comprising a nipple having a port therein and forming the main valve-seat, a valve-controller adjustable on the nipple and provided with an auxiliary seat, a valve proper located between the seat, a valve-stem therefor extended through the auxiliary seat, and an adjustable spring on the exterior of the seat, to normally retain the valve against its inner face, substantially as described.

573,393. SHEET-PERFECTING PRINTING-MACHINE AND ITS TYMPAN. LUTHER G. CROWELL, Brooklyn, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, New York, N. Y. Filed May 11, 1895. Serial No. 548,892. (No model.)



Claim.—1. In a perfecting printing-machine, the combination of a tympan-web, with the second impression-cylinder, means for feeding printed sheets thereto, and impaling-pins carried by said cylinder and projecting through the tympan to engage the sheets, and cause the same to travel concertedly, substantially as described.

2. In a perfecting printing-machine, the combination with the second impression-cylinder, provided with impaling pins, and a tympan-web traveling over the same, of a primary impression-cylinder provided with impaling-pins for carrying sheets to and delivering the same in register to the second impression cylinder, substantially as described.

3. In a perfecting printing-machine, the combination of a tympan-web, with the second impression-cylinder, means for feeding sheets thereto, impaling-pins carried by said cylinder and projecting through the tympan to engage the sheets, and cause the same to travel concertedly, and, means for carrying said tympan-web, outward toward the delivery end of the machine, substantially as described.

4. In a perfecting printing-machine, the combination with the second impression-cylinder, a tympan-web traveling over it, and, impaling pins carried by said cylinder and projecting through the tympan to engage the sheets, of a primary impression-cylinder provided with impaling-pins for carrying sheets to the second impression-cylinder, substantially as described.

5. In a perfecting printing-machine, the combination with the second impression-cylinder, a tympan-web traveling over it, and, impaling-pins carried by said cylinder and projecting through the tympan to engage the sheets, and cause the same to travel concertedly, of a primary impression-cylinder provided with impaling-pins for carrying sheets to the second impression-cylinder, and means for feeding sheets to the primary impression cylinder, substantially as described.

6. In a perfecting printing-machine, the combination of a tympan-web, with the second impression-cylinder, means for feeding sheets thereto, impaling-pins carried by said cylinder and means for protruding said pins through the tympan to engage the sheets and withdrawing them to release the sheets, substantially as described.

7. In a perfecting printing-machine, the combination with the second impression-cylinder, a tympan-web traveling over it, and, impaling-pins carried by said cylinder and projecting through the tympan to engage the sheets, of a primary impression-cylinder provided with impaling-pins for carrying sheets to the second impression-cylinder, and means for reciprocating said pins to receive, transfer and discharge said sheets, substantially as described.

8. The combination with the second impression-cylinder and the tympan-web extending over and moving with it, of traveling tapes acting in conjunction with said tympan-web to conduct the printed sheets outward from the printing mechanisms for delivery, substantially as described.

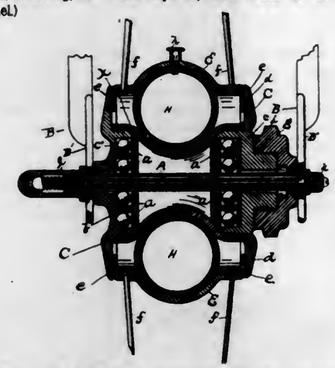
9. The combination with the second impression-cylinder, the tympan-web extending over and moving with it, sheet-controlling pins carried by said cylinder and piercing the tympan-web to engage the sheets, and cause the same to travel smoothly together, of delivery-tapes, and means causing said tapes and tympan-web to run together and form a sheet-carrying pathway extending outward from said cylinder, substantially as described.

10. The combination with the second impression-cylinder and a tympan-web traveling over the same and operating as a lower support for the sheets delivered from said cylinder, of upper tapes coöperating with the tympan to constitute therewith a carrying-pathway, and lower tapes, extending from the point where the tympan-web and upper tapes separate, and coöperating with the upper tapes to carry the printed sheets to the final-delivery mechanism, substantially as described.

11. The combination with the second impression-cylinder, a tympan-web traveling over the same, and tapes coöperating with said tympan as a moving pathway for the sheets, of means for directing the tympan abruptly out of the general plane of said pathway, and lower tapes continuing said pathway, substantially as described.

12. The combination with the second impression-cylinder and a tympan-web traveling over the same and operating as a lower-support for the sheets delivered from said cylinder, of upper tapes coöperating with the tympan to constitute a carrying-pathway, lower tapes extending from the point where the tympan-web and upper tapes separate and coöperating with the upper tapes to carry the printed sheets to the final-delivery mechanism, and conductors for guiding the sheets onward thereto, substantially as described.

573,394. VEHICLE AXLE-BEARING AND HUB. ALBERT E. DAIN, Pittsburg, Pa. Filed Sept. 28, 1896. Serial No. 607,125. (No model.)



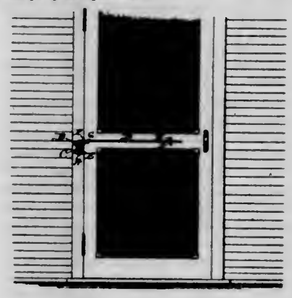
Claim.—1. In a combined pneumatic hub and axle-bearing, the combination of the inflatable tube seated between two concavo-convex plates, the upper one of which is capable of distention by the pressure of the tube, and a series of ball-bearings having a revoluble antifriction-ring interposed between the same, substantially as described.

2. In a combined pneumatic hub and axle-bearing, the combination of two concavo-convex plates, one of which is provided with flanges on both sides, the other with a flange on one side thereof; an inflatable tube interposed between said plates; a series of ball-bearings, and a revoluble antifriction-ring interposed between said bearings, substantially as described.

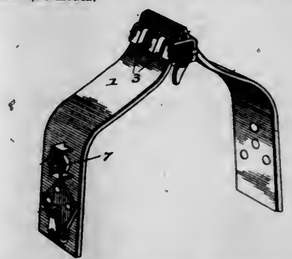
3. The combination of a hub revolubly mounted on an axle, having two annular concavo-convex plates, one of which is provided with flanges on both sides, and the other with flanges on one side thereof; an inflatable tube interposed between said plates; a series of ball-bearings; a revoluble antifriction-ring interposed between said bearings, and cups for said bearings connected to the inner annular concavo plate, substantially as described.

573,395. COMBINED DOOR CLOSER AND STOP. BETHUEL M. DAVIS, Peoria, Ill. Filed Sept. 4, 1894. Serial No. 522,066. (No model.)

Claim.—In a combined door closer and stop the combination of a plate C adapted to be secured to the door-jamb, and having perforated ears D, of an angle-rod having long and short arms, the latter detachably seated in said perforated ears, the former adapted to bear against the door, a perforated block H secured near the free edge of the door and through which the said arm is passed, a set-screw seated in said block to bear on the arm and hold it against movement, and a spring around the short arm of said angle-rod, one end thereof engaging the plate, and the other extended to form a lever F, and having a book G, whereby it may detachably engage the arms, substantially as and for the purpose specified.



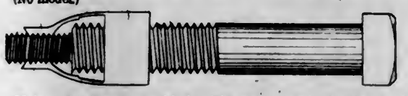
573,396. ADJUSTABLE SPINE-PROTECTING BACK-BAND. JOSEPH P. DRADWYLER, Fort Lamar, Ga. Filed May 8, 1896. Serial No. 590,678. (No model.)



Claim.—1. The herein-described adjustable, spine-protecting back-band, consisting of a pair of strips of wood, bent from their upper ends downwardly, outwardly and downwardly again and formed with depressions or cut-away portions on their rear inner surfaces, loops or staples on the upper ends of said strips and a strap or other fastening device passing through said loops for the purpose of adjusting the size of the band, substantially as and for the purpose described.

2. The herein-described adjustable, spine-protecting back-band, consisting of a pair of strips of wood, bent from their upper ends downwardly, outwardly and downwardly again, and formed with depressions or cut-away portions on their rear inner surfaces to fit snugly the sides of the horse, loops or staples on the upper ends of said strips, a strap or other fastening device passing through said loops for the purpose of adjusting the size of the band and pulleys mounted in suitable bearings on the sides of said strips through which the lines or reins are adapted to pass, substantially as and for the purpose described.

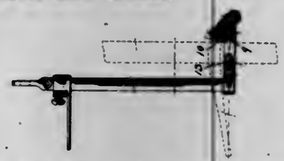
573,397. NUT-LOCK. CHARLES T. DE GRAFFENRIED and ALLEN DE GRAFFENRIED, Savannah, Ga. Filed Mar. 31, 1896. Serial No. 585,591. (No model.)



Claim.—1. A nut provided with spring-arms the free ends of which are inwardly directed and provided with segmental jaws which are screw-threaded on their inner surfaces the screw-thread on the inner surfaces of the jaws being the reverse of that within the nut, substantially as shown and described.

2. The combination with a rod or bolt, provided with a screw-threaded end, and an extension which is also screw-threaded, the screw-thread on the extension being the reverse of that on the rod or bolt, of a nut which is adapted to be mounted on said bolt, and provided with spring-arms, the free ends of which are contracted and provided with segmental jaws, which are also screw-threaded on their inner surfaces, the screw-thread on the jaws being the same as that on the extension of the rod or bolt, substantially as shown and described.

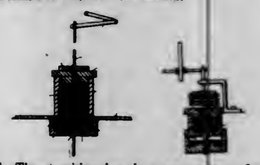
573,398. ELECTRIC-ARC LAMP. ADDISON C. DOBRICK, Chicago, Ill., assignor to The Turner Brass Works, same place. Filed June 13, 1896. Serial No. 595,427. (No model.)



Claim.—1. In an electric-arc-lamp clutch, the combination with the clutch-rod, of the clutch collar, a pair of spaced convergently-disposed bearing wires or pins fitted within the collar at opposite points, and the clutch-lever having a clutch-face disposed opposite the convergently-disposed bearing wires or pins, substantially as set forth.

2. In an electric-arc-lamp clutch, the combination with the clutch-rod; of the clutch-collar mounted at the lower end of said rod and provided in opposite side portions with convergently-disposed sockets or openings, spaced bearing wires or pins detachably fitted in said sockets or openings of the collar and intersecting with the opening through the collar so as to project into said opening to form contact-bearings for the carbon-rod, the clutch-lever having a cam-head pivotally mounted at one side of the clutch-collar and provided with a transverse socket or opening intersecting the inner clutch-face of the head, and a short bearing wire or pin detachably fitted in said socket or opening of the cam-head and intersecting the clutch-face thereof so as to project beyond the surface of said clutch-face and form a third bearing-point of contact for the carbon-rod received in the opening through the clutch-collar, substantially as set forth.

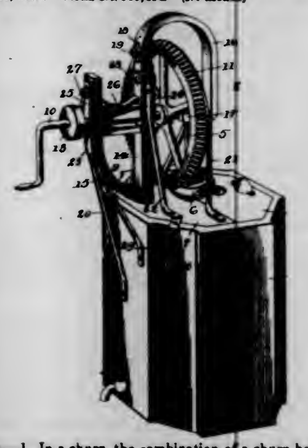
573,399. GAS-METER. JOHN DODD, Cleveland, Ohio. Filed Feb. 3, 1896. Serial No. 577,886. (No model.)



Claim.—1. The combination, in a gas-meter, of a stuffing-box, a seal-chamber, a rotatable shaft passing through the stuffing-box and the seal-chamber, and a disk fixed to the rotatable shaft within the seal-chamber, substantially as described.

2. The combination, in a gas-meter, of a stuffing-box, a seal-chamber having a conical or concave bottom, a rotatable shaft passing through the stuffing box and the seal-chamber, and a disk fixed to the rotatable shaft within the seal-chamber and adapted to fit the bottom thereof, substantially as described.

573,400. CHURN. ROBERT J. FORCE, Jamison City, Pa. Filed Nov. 19, 1895. Serial No. 569,414. (No model.)



Claim.—1. In a churn, the combination of a churn-body, a bearing-bracket mounted thereon, a substantially U-shaped supporting-arm adjustably secured at one end to the bearing-bracket to raise and lower it and provided at its other end with a horizontal portion 17 having a vertical and a horizontal bearing, a vertical dasher-shaft having its upper end journaled in the vertical bearing, a horizontal shaft mounted on the bearing-bracket and having its inner end journaled in the horizontal bearing, and the combined spur and frictional gear-wheels reversibly mounted upon said shafts, substantially as described.

2. In a churn, the combination of a body, a dasher having a shaft, a pinion mounted on the shaft, a bearing-bracket, a horizontal shaft carrying a gear-wheel meshing with the pinion, the vertically-disposed springs mounted on the bearing-bracket and engaging the horizontal shaft and provided with adjusting devices for regulating their tension, substantially as described.

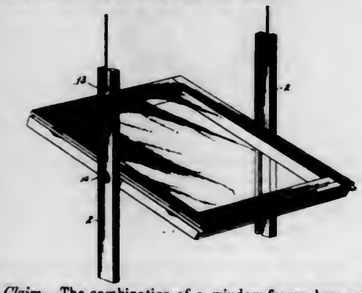
3. In a churn, the combination of a churn-body provided with a cover, a bearing-bracket mounted on the cover of the churn-body and provided at one side with a socket, a brace secured to the churn-body and projecting above the same and having a projection or tenon fitting in the socket, a substantially U-shaped supporting-arm adjustably secured at one end to the bearing-bracket capable of vertical movement thereon and provided at its other end with a horizontal portion 17, having a vertical and a horizontal bearing, a vertical dasher-shaft having its upper end journaled in the vertical bearing, a horizontal shaft mounted on the bearing-bracket and having its inner end journaled on the horizontal bearing, and gearing mounted in the shafts, substantially as described.

573,401. GLOVE, BOOT, OR APPAREL FASTENER. JULIUS FREUND, London, England, and LOUIS SAPPEY, Grenoble, France. Filed Sept. 7, 1895. Serial No. 561,820. (No model.)



Claim.—A fastener composed of two members the one comprising in combination a pin having a cross-head at one end and a base to which it is perpendicular at the other end, plates inclosing said base, a flange inclosing said pin on one of said plates, and a cylinder loosely surrounding said flange; the other member comprising in combination a base-plate, a raised central chamber thereon having in its head a slot adapted to receive the cross-head of said pin when alined longitudinally with said slot, a yielding spring for retaining the said cross-head from revolution in the chamber and means for attaching the base-plate to a fabric.

573,402. WINDOW. THEODORE W. GAEBEL, Lancaster, Pa. Filed June 6, 1896. Serial No. 594,493. (No model.)

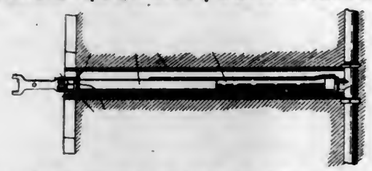


Claim.—The combination of a window-frame, bars adapted to slide therein, escutcheon-plates carried by said bars, a sash between said bars, trunnions projecting from said sash into engagement with the escutcheon-plates, cam-guides secured below the surface of the sash, said guides consisting of a metallic body having a back with sides at right angles thereto, said slides provided with cam-slots, locking-strips fitted within suitable grooves formed in the side rails of the sash and pins projecting from the locking-strips into engagement with the cam-slots, whereby the locking-strips when moved vertically will be caused to move inward or outward as and for the purpose described.

573,403. GAS OR WATER SWITCH. SAMUEL W. GARRISON, Philadelphia, Pa. Filed May 18, 1896. Serial No. 592,046. (No model.)

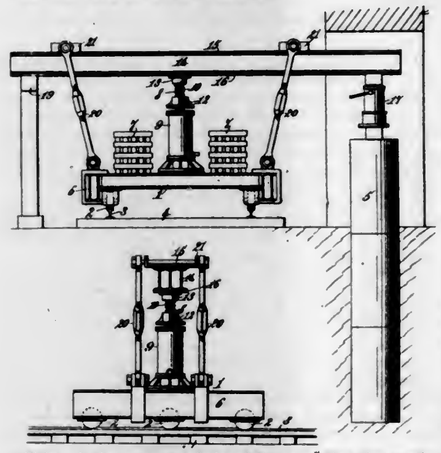
Claim.—1. The combination of the casing, the inwardly-projecting arms, the bearing supported by the inner ends of the arms, the turning rod held in position by the bearing, the casing-cover, and the oppositely disposed angular projections depending from the casing and adapted to be turned to position of engagement of the arms for locking the cover in place, substantially as shown and described.

2. The combination of the casing, the inwardly-disposed projections upon the inner wall thereof, the turning stem inclosed by the casing, the casing-cover, and the oppositely-disposed hooks depending from the under side of the cover and adapted to be turned beneath the inwardly-disposed projections of the casing and thereby hold the cover in place, substantially as shown and described.



3. The combination of the casing, the inwardly-disposed arms or projections upon the inner wall thereof, the central bearing supported by the inner end of the arms entirely free from the said casing, the turning stem inclosed by the casing, the casing-cover, and the oppositely-disposed hooks depending from the under side of the cover and adapted to be turned into engagement with the said inwardly-extending arms between the central bearing and the inner wall of the casing, substantially as shown and described.

573,404. MEANS FOR SINKING WALL OR OTHER SUPPORTING COLUMNS. RICHARD S. GILLESPIE, New York, N. Y. Filed July 15, 1896. Serial No. 599,281. (No model.)



Claim.—1. An apparatus designed for supporting the superincumbent weight of a building-wall and sinking wall-supporting or other columns, consisting of a carriage or platform adapted to support a load the superincumbent weight of which holds the carriage or platform against upward pressure, a horizontally-arranged beam surmounting the carriage or platform, supported therefrom and extending laterally to one side thereof for the purpose of offering resistance to a jack or ram for driving or sinking a column perpendicularly into the earth, and means whereby the column is held against the upward pressure of the jack or ram, substantially as described.

2. A portable apparatus designed for supporting the superincumbent weight of a building-wall and sinking wall-supporting and other columns, consisting of a carriage or platform provided with a ram and adapted to support a load the superincumbent weight of which holds the carriage or platform against upward pressure, a horizontally-arranged beam mounted on the ram and extending laterally to offer resistance to a jack or ram while driving or sinking a column perpendicularly into the earth, and devices for holding the beam down upon the ram and against the pressure of the jack or ram which drives or sinks the columns, substantially as described.

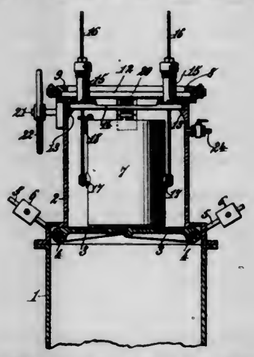
3. An apparatus for driving or sinking wall-supporting and other columns, consisting of a carriage or platform provided with a ram and adapted to support a load the superincumbent weight of which holds the carriage or platform against upward pressure, a horizontally-arranged beam mounted on the ram and extending laterally to offer resistance to a jack or ram for driving or sinking a column into the earth, and connections between the carriage and the beam for holding the latter approximately horizontally and against upward pressure, substantially as described.

4. An apparatus for driving or sinking wall-supporting and other columns, consisting of a carriage or platform provided with a ram and adapted to support a load the superincumbent weight of which holds the carriage or platform against upward pressure, a horizontally-arranged beam mounted upon the ram and extending laterally to offer resistance to a jack or ram for driving or sinking a column perpendicularly into the earth, and longitudinally-adjustable tie-rods connected to the carriage and engaging the horizontally-arranged beam, substantially as described.

5. An apparatus for driving or sinking wall-supporting and other columns, consisting of a carriage or platform mounted on wheels and provided with a ram, a horizontally-arranged beam surmounting the ram and extending laterally to offer resistance to a jack or ram for driving or sinking a column perpendicularly into the earth, and tie-rods secured at opposite sides of the said carriage or platform and provided at their upper ends with pressure-blocks which bear against and hold the horizontally-arranged beam down upon the ram and against upward pressure, substantially as described.

6. An apparatus for driving or sinking wall-supporting and other columns, consisting of a carriage or platform adapted to support a load and having a ram and longitudinal side sills, a horizontally-arranged beam surmounting the ram and extending laterally to offer resistance to a jack or ram for driving or sinking a column perpendicularly into the earth, and tie-rods secured to the longitudinal side sills and engaging the horizontally-arranged beam for holding the latter down upon the ram, substantially as described.

573,405. AIR-LOCK FOR CAISSONS, &c. RICHARD S. GILLESPIE, New York, N. Y. Filed July 20, 1896. Serial No. 599,934. (No model.)



Claim.—1. The combination with an air-lock casing having upper and lower doors or valves, of a cross-bar provided with stuffing-boxes, and means for supporting the cross-bar when lowered into the casing, substantially as described.

2. The combination with an air-lock casing having internal shoulders or supports and upper and lower doors or valves arranged respectively above and below said shoulders or supports, of a cross-bar vided at its end portions with stuffing-boxes and adapted to seat upon and be supported by said shoulders or supports, and bucket-hoisting cables extending through said stuffing boxes adapted to be connected with a bucket, substantially as described.

3. The combination with an air-lock casing having upper and lower doors or valves and a bucket adapted to occupy the space between the upper and lower doors, of bucket-hoisting cables having their lower ends connected with opposite sides of the bucket at points between the upper and lower ends thereof, and means for engaging one of the cables with the upper portion of the bucket to prevent tilting of the latter, substantially as described.

4. The combination with an air-lock casing having upper and lower doors or valves and a bucket adapted to occupy the space between said doors or valves, of a cross-bar provided with stuffing-boxes, a bucket having studs or pins at its opposite sides at points between its upper and lower ends, and cables extending through said stuffing-boxes and connected with the studs or pins of the bucket, substantially as described.

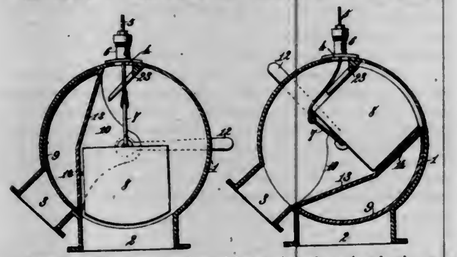
5. The combination with an air-lock casing having internal shoulders or supports and upper and lower doors or valves arranged respectively above and below said shoulders or supports, of a cross-bar provided with stuffing-boxes, a bucket having studs or pins at its sides, and cables extending through the stuffing-boxes and connected with the studs or pins of the bucket, substantially as described.

6. The combination with an air-lock casing having internal supports or shoulders, lower doors or valves, and upper horizontally slid-

ing doors or valves located above said shoulders or supports of the casing, of a cross-bar adapted to rest upon the shoulders or supports and provided with attached stuffing-boxes, a bucket adapted to occupy the air-lock casing, and cables extending through said stuffing-boxes and connected with the bucket, substantially as described.

7. The combination with an air-lock casing, of upper doors or valves having recesses in their contiguous edge portions, a cross-bar having stuffing-boxes adapted to lie in said recesses when the doors or valves are closed, a bucket adapted to occupy the air-lock casing, and cables extending through the stuffing-boxes and connected with the bucket, substantially as described.

573,406. AIR-LOCK FOR CAISSONS, &c. RICHARD S GILLESPIE, New York, N. Y. Filed July 29, 1896. Serial No. 600,943. (No model.)



Claim.—1. The combination with an air-lock casing having a passage to communicate with a caisson, or tunneling apparatus, and another passage for unloading the usual bucket, of a pivoted, rotating door or valve mounted in the casing and movable over either of said passages to alternately open and close the same, substantially as described.

2. The combination with a cylindrical air-lock casing having a passage to communicate with a caisson, or tunneling apparatus, and an inclined bucket discharging passage, of a rotary device journaled in the casing and movable in a circular path over either of said passages to alternately open and close the same, substantially as described.

3. The combination with an air-lock casing having a passage to communicate with a caisson, or tunneling apparatus, and a passage for unloading the usual bucket, of a rotary device journaled in the casing and movable over either of said passages to alternately open and close the same, said rotary device being constructed to tilt or upset the bucket as said device moves into position to cover the passage which leads to the caisson, or tunneling apparatus, substantially as described.

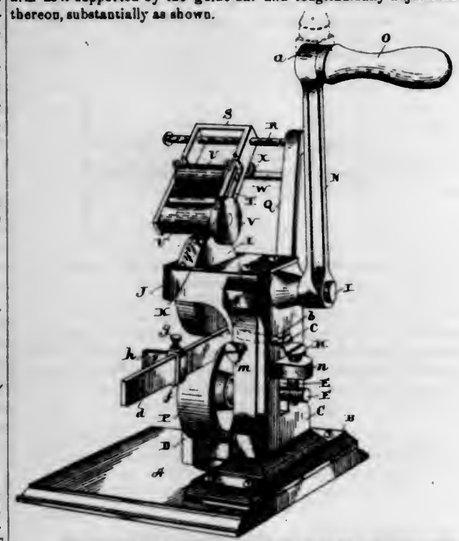
4. The combination with an air-lock casing having a passage to communicate with a caisson, or tunneling apparatus and a passage for unloading the usual bucket, of a rotary device journaled in the casing and movable over either of said passages to alternately open and close the same, said rotary device being constructed to tilt or upset the bucket as said device is turned, and an abutment or stop against which the bucket is adapted to bear when it is tilted or upset, substantially as described.

5. The combination with an air-lock casing, of a rotary door or valve constructed to open and close the air-lock and tilt or upset the air-lock bucket, substantially as described.

573,407. MACHINE FOR EMBOSSING CARDS. ORLANDO C. HALE, Cincinnati, Ohio. Filed Oct. 28, 1895. Serial No. 567,144. (No model.)

Claim.—1. An embossing machine comprising a base having a short vertical upright, the elongated vertical upright having the horizontal extension from its upper end, the impression-roll arranged between and mounted in said two uprights and extending above the short upright, a printing-roll above the impression-roll and mounted in and extending below said lateral extension to coact with the impression roll and so that cards of any length can be inserted from the front between said rolls and the edges thereof be caught by and carried between the rolls, a rotating handle connected with one of said rolls, an elongated horizontal guide arranged opposite the bite of the rolls and between the same and said long upright, adjustable means to shift the guide horizontally between said upright and the rolls, and an inwardly-projecting stop on the guide, substantially as shown and described.

2. An embossing-machine comprising printing and impression rolls, supports therefor, a guide therefor consisting of an elongated bar situated at a point inside the printing-roller and extending transverse the journals of the rollers, a supporting-bar for the guide-bar supported and adjustable horizontally in the plane of the engaging surfaces of the rolls and in a line with their journals, and a laterally-projecting arm as A supported by the guide bar and longitudinally adjustable thereon, substantially as shown.



3. An embossing-machine comprising printing and impression rolls, the tread of the impression roll being below, wider than, and the roll vertically adjustable in relation to the printing-roll, a guide-bar as *d* situated over the tread of the impression-roll, a support for said guide-bar horizontally adjustably supported, the guide-bar *d* being vertically adjustable upon said support to correspond with the adjustment of the impression-roll, and supports for said rolls and said guide-bar support, substantially as described.

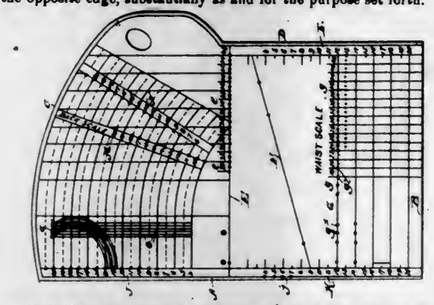
4. A hand-operated card-edge-embossing machine comprising in combination, the base provided with the short upright D, the long vertical upright C having the horizontal extension from its upper end provided with the slot or opening K, the impression-roll between and journaled in the uprights and extending above the short upright, the printing-roll in said slot K, and mounted in and extending below said extension to coact with the impression-roll, the crank-handle secured to the printing-roll, an arm extending up from the long upright, a swinging frame carried by said arm having inking-rolls and bearing by gravity on the printing roll, the printing and impression rolls being so arranged as to permit free and unobstructed access to their biting edges from the front so that cards of any size can have their inner edges passed between the rolls, an elongated horizontal guide arranged behind the bite of the rolls, and a horizontally-adjustable carrier for the guide, substantially as shown and described.

5. In an embossing-machine, the combination of a vertically-rotating impression-roll, an upright extending up beside said roll and having a lateral extension, a printing-roll carried by said extension, an arm extending up from said upright, an elongated horizontal rod extending from the arm a distance above the printing-roll, a swinging depending frame above the printing-roll and of less width than the length of the rod, and at its upper end confined to slide and swing on the arm, inking-rolls in said frame, the lower inking-roll provided at one end with a friction-disk rigid therewith so that the frame can be shifted slightly on the rod and said roll raised from the printing-roll and the disk held thereon by gravity to turn the rolls and distribute the ink thereon, and by shifting the frame in the opposite direction the disk drops beside and away from the printing-roll and said inking-roll rests thereon by gravity, substantially as shown and described.

6. In an embossing-machine, the combination of supports, printing and impression rolls, a horizontal rod above the printing-roll, a depending swinging frame at the upper end swinging and movable on the rod longitudinally thereof, the frame sides having longitudinal slots, inking-rolls having their journals loosely confined in said slots, the friction-disk rigid with and at one end of the lower roll so that the lower roll or its disk will be held by the weight of the frame on the printing-roll according to the position of the frame on the rod, and an adjustable stop mechanism to limit the downward swing of the frame, substantially as shown and described.

573,408. PATTERN OR CHART. MARTHA R. HALL, Newmarket, Ind. Filed Aug 6, 1896. Serial No. 601,911. (No model.)

Claim.—1. A chart for outlining garments having a bust line and scale extending transversely thereof at a point intermediate of its ends, a waist line and scale parallel with and at a distance from the said bust line and scale, the scales of the waist and bust lines corresponding, an oblique line intermediate of the bust and waist lines and extending from one to the other edge of the chart, similar scales at one edge on opposite sides of the bust-line, and having a scale at the other edge below the bust-line and corresponding with the scale at the opposite edge, substantially as and for the purpose set forth.

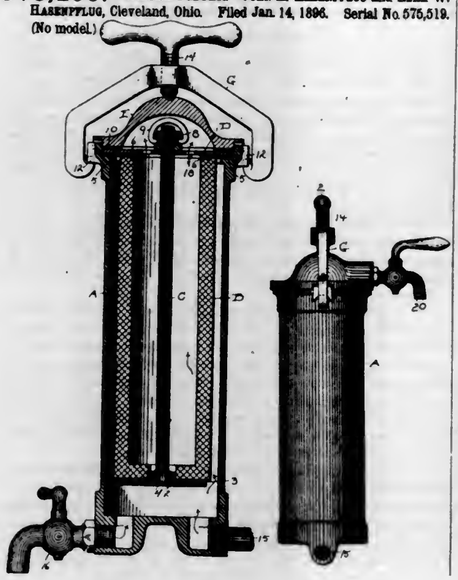


2. A chart for outlining garments, having a bust line and scale intermediate of its ends, and having scales at one edge on each side of the bust-line, and having a neck-scale comprising a series of parallel lines intersecting with lines projecting from the graduations of the upper edge scale, and having oblique scales M and N for determining the slope of the shoulder in conjunction with the said upper edge scale, and provided with a waist line and scale, and having an oblique line to determine the height of the darts, substantially as set forth.

3. The combination with a chart having a series of scales substantially as shown for determining the position of the dots corresponding to the outline of the piece or pieces to be cut, of a delineator having a straight edge, a curved edge, a curved end, and an edge having a straight and curved portion, the curved portion having inwardly-extending dots or openings and the curved edge S having two sets or groups of marks or openings *s* and *s'* for determining the proper position of the curved edge when marking the curved seams and dart-lines upon the pattern, substantially as set forth.

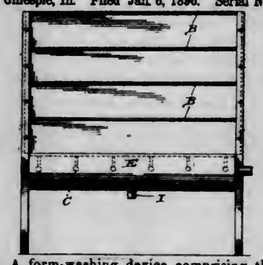
4. The combination with a chart having a series of scales substantially as shown and provided with a graduated waist-line and an oblique dart-line, of a dart-measure of trapezoidal form and having a series of scales substantially as illustrated and adapted to indicate the position and width of the darts upon the waist-line of the chart, substantially as set forth.

573,409. WATER-FILTER. JOHN A. HASENFFLUG and EZRA W. HASENFFLUG, Cleveland, Ohio. Filed Jan. 14, 1896. Serial No. 575,519. (No model.)



Claim.—A filter in which the filtering-tube is removable to be cleansed, comprising the shell or casing of the filter, the filter-stone therein, the flat perforated disk B extending across the top of said stone onto the edge of the said casing and the rod C connecting the stone with said disk, whereby said stone, rod, and disk are locked permanently together for separate handling, in combination with the separate removable dome-shaped cover E resting on the edge of the plate D and having the discharge-cock fixed thereto, the separately-removable yoke G engaging the top edge of casing A and means connected with said yoke to bear upon the top of cover E and keep it in place, said parts packed to prevent leakage and a filtered-water space being formed between said cover E and disk D, substantially as described.

573,410. DEVICE FOR WASHING FORMS. ALEXANDER I. HEMPHILL, Gillespie, Ill. Filed Jan. 6, 1896. Serial No. 574,470. (No model.)

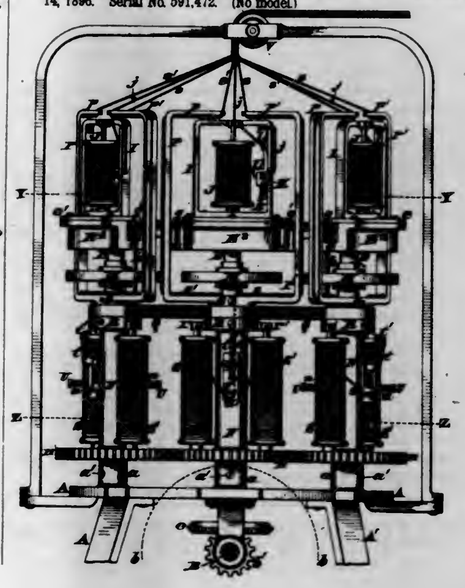


Claim.—1. A form-washing device comprising the frame, the transverse supporting device connecting the end pieces thereof and means for supporting the forms, and a splash-pan in the rear of the supporting device, said splash-pan being provided with flanges and being engaged in grooves in the sides of the frame and detachably supported in position, substantially as described.

2. The form-washing device described, consisting of the end pieces, the rods connecting the same for supporting the forms, the hooks on the lowermost rod, a splash-pan detachably supported on the end pieces and having an outlet for the water, substantially as described.

3. The form-washing device described, consisting of the end pieces, the rods connecting the same for supporting the forms, the hooks on the lowermost rod, a splash-pan detachably supported on the end pieces and having an outlet for the water, said pan being provided with water-receiving portions and oppositely-disposed curved heads to prevent overflow of the water at the sides thereof, substantially as described.

573,411. BRAIDING-MACHINE. JOHN W. HILTON, Cincinnati, Ohio, assignor of one-half to Charles R. Mullen, same place. Filed May 14, 1896. Serial No. 591,472. (No model.)



Claim.—1. The combination, in a braiding-machine, of a series of fixed spindles D, surmounted by heads E, having a circular race *e;* toothed racks G, traversing said race and provided with carriers I, having bobbins J journaled in them; sleeves N surrounding said spindles D, and having fliers P secured to them, which fliers revolve completely around said heads E; a bobbin S applied to each sleeve, and having their threads rove through the flier-arms; one set of gears for driving the racks G through the circular race *e*, and another set of gears for revolving the sleeves N and bobbins S, around the spindles D, all in the manner described, and for the purpose stated.

2. The combination, in a braiding-machine, of a series of fixed spindles D, surmounted by heads E, having a circular race *e;* toothed racks G, traversing said race, and provided with carriers I, having bobbins J journaled in them; gears *g*, *g'*, H, *h*, *h'*, M, for driving said racks; sleeves N surrounding said spindles D, and having fliers P P', and the wheel M secured to them, which fliers revolve completely around said heads; a pair of bobbins S, S', applied to each sleeve, and having their threads rove through the flier-arms; gear-wheels *n*, that operate said sleeves; and a master-wheel O, that drives all the wheels *n*, in the manner described, and for the purpose stated.

573,412. MOUNTING AND DRIVING BOLTING-REELS. JOHN HUTCHISON, Jackson, Mich. Filed July 6, 1896. Serial No. 598,163. (No model.)



Claim.—1. The combination of a rotative shaft, having longitudinal grooves, a sleeve surrounding said shaft, having corresponding grooves and balls in said grooves, movably connecting said shaft and sleeve, substantially as described.

2. The combination of a shaft, having a circumferential series of longitudinal grooves, a sleeve having internal grooves opposite the grooves in the shaft, balls in said grooves connecting said sleeve and shaft, and mechanism for rotating said shaft, and vibrating said sleeve, substantially as described.

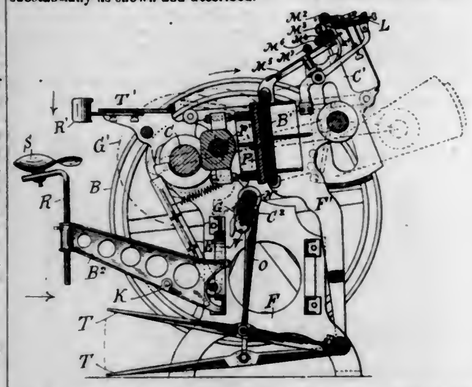
3. The combination of a shaft having a circumferential series of grooves, a sleeve surrounding said shaft, a ball-case connected to said sleeve, and having grooves opposite the groove in said shaft, balls in said grooves connecting said sleeve and shaft and a sleeve-section inserted in the end of said ball-case, substantially as described.

4. The combination of a shaft, a sleeve longitudinally movable on said shaft and rotating therewith, a cylindrical body mounted upon and wholly supported by said sleeve, and means for rotating said shaft and vibrating said sleeve on the same, substantially as described.

5. The combination of a shaft, having one or more circumferential longitudinal grooves, a sleeve having corresponding internal grooves, balls in said grooves connecting the sleeve and shaft, a driving-shaft, an eccentric on said shaft, a yoke rotative on said sleeve, a strap on said eccentric, rods, having spring coils connecting said strap and yoke, a worm-gear on said first-named shaft, a counter-shaft having a worm engaging said gear, and pulleys and a belt connecting said counter-shaft and driving-shaft, substantially as described.

573,418. JOB-PRINTING PRESS. HENRY JOHNSON, New York, N. Y. Filed Nov. 20, 1895. Serial No. 569,498. (No model.)

Claim.—1. In a machine operated by foot-power, a pair of alternating ambipedal treadles connected with a driving-shaft provided with double cranks, in combination with a seat and a steadying-rest, substantially as shown and described.



2. A pair of alternating ambipedal treadles connected with a pair of cranks on a driving-shaft, in combination with a platen and a bed of a printing-press and with a seat for the operator.

3. A job-printing press provided with a pair of alternating ambipedal treadles in combination with a pair of treadle-hooks, a pair of cranks on the driving-shaft of the printing press, a seat-bracket located centrally in relation to the treadles and the cranks, an adjustable seat, an adjustable slide-rest, and a feed-board, substantially as shown and described.

4. A job-printing press provided with a pair of alternating ambipedal treadles in combination with a pair of treadle-hooks, a pair of cranks on the driving-shaft of the printing-press, a movable platen and a movable bed, a seat-bracket located centrally in relation to the treadles and the cranks, an adjustable seat, an adjustable slide-rest, and a feed-board, substantially as shown and described.

5. A job-printing press provided with a pair of alternating ambipedal treadles in combination with a driving-shaft provided with double cranks, a removable seat-bracket supporting an adjustable seat, and an adjustable slide-rest, substantially as shown and described.

6. A job-printing press provided with a pair of alternating ambipedal treadles connected with the driving-shaft provided with double cranks, in combination with an adjustable seat and an adjustable slide-rest, substantially as shown and described.

7. A pair of alternating ambipedal treadles connected with a pair of cranks on a driving-shaft, a pinion on the driving-shaft, a spur-wheel, a platen and a bed of a printing-press, with means for operating them, and a seat for the operator.

573,414. RAILROAD-SIGNAL. GEORGE W. KELLER, Shenandoah, Va. Filed June 2, 1896. Serial No. 593,994. (No model.)

Claim.—1. In a railroad-signal, the combination with a signaling device, of a flexible guard arranged contiguous to the track to be protected, weights connected with the guard and normally supported by the soil contiguous to the tracks, whereby in case of a washout the weights are allowed to settle and increase the tension of the guard, and connections between the guard and signaling device, substantially as specified.

2. In a railroad-signal, the combination with a signaling device, of a flexible guard arranged contiguous to the track to be protected, a draw-rod operatively connected with the signaling device, and detachable connections between the guard and the draw-rod, substantially as specified.

3. In a railroad-signal, the combination with a signaling device, of a flexible guard arranged contiguous to the track to be protected, a draw-rod operatively connected with the signaling device and provided with a notched head, and a trip connected with the extremity of the guard and normally engaged with the notched head of the draw-rod, said trip having a depending extension or shank engaged with a fixed seat and normally occupying an inclined position, whereby when the guard is strained the trip is elevated out of engagement with the head of the draw-rod, substantially as specified.

4. In a railroad-signal, the combination with a signaling device adapted when released to be moved to its operative position, of a rock-shaft having a supporting-arm to normally hold the signaling device in its inoperative position, a spring-actuated draw-rod loosely connected at one end with an operating arm on said rock-shaft, a trip normally engaged with a notch in the draw-rod, and a flexible guard connected to the trip, substantially as specified.

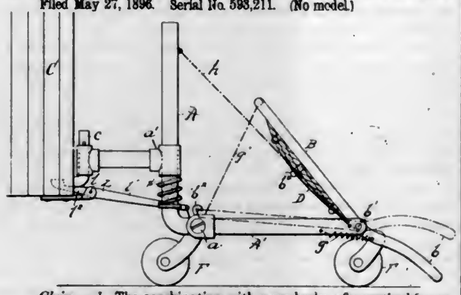
5. In a railroad-signal, the combination with a signaling device, of a rock-shaft operatively connected with the signaling device and having a slotted operating-arm, a draw-rod extending through the slot of the operating-arm and having an adjustable collar to bear against one side thereof, a cushion-spring engaging the opposite side of said operating-arm, adjusting devices for the cushion-spring, an actuating-spring for the draw-rod, and a flexible guard connected with a trip in engagement with said draw-rod, substantially as specified.



6. In a railroad-signal, the combination with a signaling device, of a draw-rod operatively connected with the signaling device and having a notched head, a guide-bracket for the draw-rod provided with a cavity in which the head of said rod is fitted, a trip having a hook in engagement with a notch in said head of the draw-rod and normally held in engagement therewith by the sides of the cavity, and a flexible guard connected with the trip and adapted when strained to draw the hook of the trip beyond the walls of the cavity to allow lateral disengagement of the trip from the draw-rod, substantially as specified.

7. In a railroad-signal, the combination with a signaling device, of rock-shafts mounted upon opposite sides of a track to be protected, one of said rock-shafts being operatively connected with the signaling device, a transverse connecting-rod between said rock-shafts, spring-actuated draw-rods connected, respectively, to the rock-shafts, and flexible guards arranged respectively upon opposite sides of the track and connected with the draw-rods, whereby the signaling device may be operated by an obstruction approaching the track from either side, substantially as specified.

573,415. CAR-FENDER. WILLIAM J. KENDALL, Reading, Pa. Filed May 27, 1896. Serial No. 593,211. (No model.)



Claim.—1. The combination with a car-body, of a vertical frame, arms removably secured to said car-body and adapted to retain said vertical frame in position, a forwardly-extended supplemental frame pivotally connected to said former frame, chains connecting said vertical frame and said supplemental frame, a bed or fender pivotally mounted in said supplemental frame, a lever supported by said car-body, connections between said lever and said vertical frame, and a spring-catch adapted to engage the rear end of said bed or fender and hold the same in a lowered position, substantially as set forth.

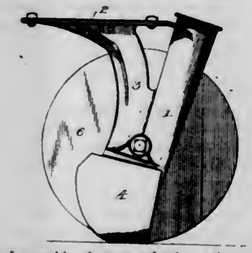
2. The combination with a car-body, of a vertical frame, arms removably secured to said car-body and adapted to retain said vertical frame in position, a forwardly-extended supplemental frame pivotally connected to said former frame, chains connecting said vertical frame and said supplemental frame, a bed or fender pivotally mounted in said supplemental frame, a spring connected to the lower end of said bed or fender and to said supplemental frame, a chain connected to the upper end of said bed or fender and said main frame, a lever pivotally supported by said car-body, connections between said lever and said vertical frame, and means for holding said fender in a lowered position, substantially as set forth.

3. The combination with a car-body having hooks secured to the forward end thereof, of arms having sleeves on their inner ends adapted to pass over said hooks, said arms also having sleeves on their forward ends, a supporting-frame provided with upright arms extending through said forward sleeves and having flanges thereon, springs located between said sleeves and said flanges, a supplemental frame pivotally supported by said former frame, and a bed or fender pivotally mounted in said supplemental frame, substantially as set forth.

4. The combination with a car-body, of arms connected thereto and having sleeves on their outer ends, a supporting-frame provided with vertical arms extending through said sleeves and having flanges thereon, springs located between said sleeves and said flanges, a supplemental frame pivotally connected to the lower end of said former frame, a bed or fender pivotally mounted in the forward end of said supplemental frame, and a spring-catch adapted to engage and hold said bed or fender in a lowered position, substantially as set forth.

5. The combination with a car-body, of arms connected thereto and having sleeves on their outer ends, a supporting-frame provided with vertical arms extending through said sleeves and having flanges thereon, springs located between said sleeves and said flanges, a supplemental frame pivotally connected to the lower end of said former frame, a bed or fender pivotally mounted in the forward end of said supplemental frame, a lever pivoted to said car-body, connections between said lever and said supporting-frame, and a spring catch adapted to engage and hold said bed or fender in a lowered position, as and for the purpose set forth.

573,416. GRAIN-DRILL. JAMES M. KING, Blue Springs, Nebr. Filed Oct. 14, 1895. Serial No. 565,618. (No model.)



Claim.—1. In combination, a seed-tube, a pin or bolt applied to the lower portion of the seed-tube and projecting laterally therefrom, a sheet-metal disk having its outer portion straight and provided centrally with a hub which is mounted upon the aforesaid pin, and a cutting-blade secured directly to the lower end of the seed-tube on the side remote from the disk cutter, and having its front edge coming in the rear of the cutting edge of the disk and curving rearwardly and closely approaching the adjacent side of the disk, and having its lower end in the plane of the lower portion of the said disk and curving outwardly and away therefrom, the disk and cutting-blade diverging toward their rear ends to provide a space for the passage of the seed to the ground, substantially as set forth.

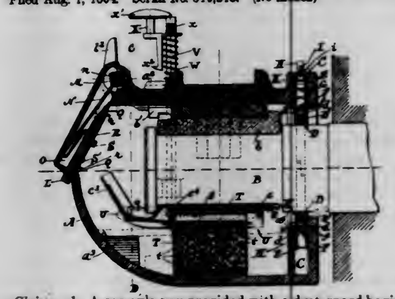
2. The herein-described rotary colter, comprising a straight sheet-metal disk having its central portion dish-shaped and apertured, a hub having an integral end portion projecting through the aperture of the colter and coming flush with a plane touching the inner side of the colter, and means for securing the hub to the central dish-shaped portion of the colter, substantially in the manner and for the purpose described.

3. The herein-described rotary colter having its outer portion straight and having its central portion dish-shaped or concavo-con-

vex and centrally apertured, and a hub having an integral end portion projecting through the aperture of the colter, and provided with an outer annular flange which is placed exterior to and secured against the dish-shaped portion of the colter, substantially as set forth, for the purpose described.

4. The herein-specified rotary colter, having a straight outer portion and having its middle portion dish-shaped or made concavo-convex, and a hub having its end portion extending through the dish-shaped portion of the colter, and terminating in the plane of the said straight portion and having an annular flange which is fitted against the outer side of the dish-shaped portion and which is secured thereto, the bore of the hub flaring in opposite directions from an intermediate point, substantially as set forth, for the purpose described.

573,417. CAR-AXLE BOX. JOSEPH L. PETTIBONE, Oakland, Cal. Filed Aug. 1, 1894. Serial No. 519,213. (No model.)



Claim.—1. A car-axle box provided with a dust-guard having an embossed packing, substantially as shown and described.

2. In a car-axle box, a washer composed of jointed packing and metal plate in combination with a spring bearing thereon and a yoke clamped around the same, substantially as set forth.

3. In a car-axle box, a beveled divided washer in combination with a beveled spring and a partly-beveled yoke encircling the spring and washer, the beveled parts of said spring and yoke being adapted to bear on the beveled ends of said washer, substantially as set forth.

4. In a car-axle box, the combination of a lap-jointed washer having beveled ends, wedge-shaped bars bearing on said beveled ends, a spring having an inclined blade acting on one of said bars, and a yoke having a beveled end bearing on the other bar, said yoke bearing also at the opposite end upon said spring, substantially as described.

5. In a car-axle box, the combination of a dust-guard chamber, a lap-jointed washer therein having beveled ends, wedges on said beveled ends provided with projections bearing on one side of the dust-guard chamber, a beveled spring acting upon one of said wedges, a yoke beveled at one end acting upon the other wedge and encircling the said washer, spring, and wedges, and a casing for the same, substantially as described.

6. In a car-axle box, the combination of a lap-jointed washer, a yoke having slotted ends encircling said washer, and a spring-pressed pointed locking-bar passed through the slotted ends of said yoke, said bar having a handle and a notch whereby it is inserted and secured in the yoke.

7. In a car-axle box, the combination of a cover, an angular hinge-bolt therefor, a spring loosely fitted over said bolt and extending along said cover, a lever turning the bolt, and a catch whereby the cover can be kept open by engaging the upper end of said lever, substantially as described.

8. In a car-axle box, the combination of a cover, an angular hinge-bolt for the same, a spring bent around the angular portion of said bolt and extending along the cover, a lever secured to the bolt, and a catch whereby the cover can be kept closed by engaging the lower end of said lever, substantially as described.

9. In a car-axle box, the combination of a cover, an angular hinge-bolt therefor, a spring extending across the cover and having an angular loop fitted over said bolt, a lever adapted to turn the bolt, and catches whereby the cover can be either kept open or closed by engaging either one or the other end of said lever, substantially as described.

10. In a car-axle box, the combination of a cover having a downwardly-projecting bolt with a detachable packing having a slot with an enlargement adapted to pass over the head and straddle the shank of said bolt, substantially as described.

11. In a car axle box, the combination of a cover, a bolt projecting from the under side thereof, a detachable packing having a slot with an enlargement adapted to pass over the head and straddle the shank of said bolt, and a similarly-slotted removable plate bearing against said packing, substantially as described.

12. In a car-axle box, the combination of the axle, a lubricating-brush, a brush-holding rod located at one side and passing through the top of the box, a catch on the box, and a spring-controlled depressor connected with the upper part of said rod and having a hook adapted to engage said catch, substantially as described.

13. In a car-axle box, the combination of the axle, a lubricating-brush adapted to bear on the axle, a tray for said brush, a supporting sled or frame for said tray, a rod secured to said sled or frame, a spring normally holding up said rod, and a depressor for said spring.

14. In a car-axle box, the combination of the axle, a lubricating-brush composed of capillary material, and a tray for said brush having upwardly-projecting prongs holding up the capillary material and bearing with it on the axle, substantially as set forth.

15. In a car-axle box, the combination of the axle, a lubricating-brush composed of wicks, a slotted tray through which said wicks ascend to the axle, and toothed plates also pointed toward the axle and adapted to hold said wicks within said tray and likewise to gradually come into contact with the axle, substantially as described.

16. In a car-axle box, the combination of the axle, a lubricating-brush, a tray adapted to hold said brush to the axle, and an outwardly-projecting feed-channel hinged to said tray, substantially as described.

17. In a car axle box, the combination of the axle, a lubricating-brush, a holder for said brush, and hooks or prongs projecting rearwardly from said holder whereby the brush is kept down in position when applied to the axle, substantially as described.

18. In a car-axle box, the combination of the axle, a lubricating-brush held up to the axle, a spring-controlled rod adapted to move said brush to and from the axle, a rotary depressor seated upon said rod, and a catch on the box adapted to be engaged by a hook on said depressor, substantially as described.

19. In a car-axle box, the combination of the axle, a lubricating-brush held up to the axle, a spring-controlled rod adapted to move said brush to and from the axle, a depressor for said rod, and a cover having a finger adapted to bear on said depressor.

20. The combination of the open-ended sled and the winged tray sliding and fitting over the same with the brush carried by the tray and the axle.

21. The combination with the box, of the cover, the hinge-bolt and spring working the cover, and the lever freely moving through the bolt, substantially as described.

22. In a car-axle box, the combination of a lateral pocket having an outer opening as a^4, a glass tube inclosed in said pocket and receiving oil from the box therein, a ring seated upon said tube provided with an air-hole registering with a similar hole in the inner side of the pocket, and a plug covering said ring, substantially as shown and described.

23. The combination of the dust-guard chamber, the axle passing through the same, and the dust-guard covered by packing embossed annularly around the axle and transversely across the entrance to the chamber, substantially as described.

24. A car-axle box having an outwardly-projecting side pocket, as a^3, under the cover in front, the upper line of which indicates approximately the height of the under wall at the back, substantially as and for the purpose set forth.

25. In a dust-guard for a car-axle box, the combination of a casing, a lap-jointed washer therein, a yoke surrounding said washer within said casing and having slotted ends projecting above the same, a spring bearing upon the washer, and a notched bar adapted to confine said washer and spring within said yoke, the said bar being passed through the slotted ends of the yoke and having an outwardly-projecting handle, substantially as described.

26. In a car-axle box, the combination of the axle, a slotted tray, a lubricating-brush, and plates having upwardly-pointed teeth adapted to hold up said brush through said tray and bear with the brush on the axle, the said tray being further provided with rearwardly-projecting prongs holding the brush in the tray in proper position with regard to the axle, substantially as described.

27. In a car-axle box, the combination of the axle, a lubricating-brush a tray adapted to hold said brush to the axle, a feed-channel, and links flexibly connecting said channel with said tray, substantially as described.

28. In a car-axle box, the combination of the axle, a lubricating-brush, means for holding said brush and moving it to and from the axle, a depressor, and a cover adapted to work said depressor, substantially as described.

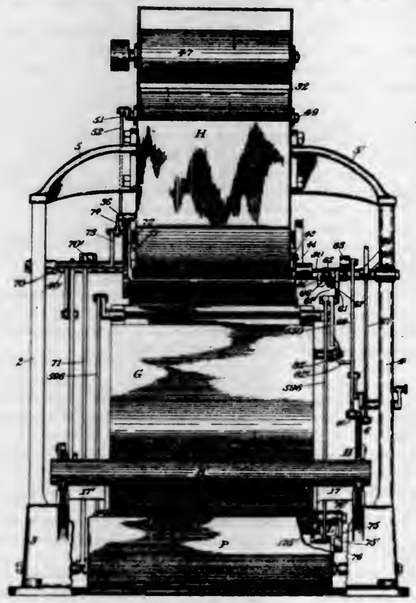
29. In a car-axle box, the combination of the axle, a lubricating-brush, means for holding said brush and moving it to and from the axle, a spring-pressed depressor, a cover adapted to work said depressor, a lever adapted to open and close said cover, and catches for said lever whereby the cover may be kept in a given position, substantially as described.

30. In a car-axle box, the combination of a cover, a hinge-bolt holding and adapted to move with said cover, the said bolt having a slotted end, a lever freely passing and moving through said slotted end and having a projection arranged to lap over the same, and catches whereby the lever is secured in position after opening or closing the cover, substantially as described.

31. A car-axle box provided with a side pocket at a point below and near the cover in its front part, said pocket having an uncovered lateral aperture and a top opening covered by a suitable stopper, and a glass tube running from the mouth of the pocket to the stopped opening and showing through the lateral aperture, substantially as shown and described.

32. In a car-axle box, the combination of the axle, a lubricating-brush, a tray adapted to hold said brush under the axle, a feed-channel, and connecting-links adapted to rest upon the forward part of said tray, said links being fastened to the feed-channel at one end and pivotally secured at the other end to the tray, substantially as described.

573,418. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 3, 1896. Serial No. 594,168. (No model.)



Claim.—1. The combination with a bucket, of a meter adapted to discharge bodily a measured charge of material into said bucket; a valve for controlling the supply of material to said meter; means for supplying a drip-stream to the bucket; and a drip-valve.

2. The combination with a bucket, of a hopper comprising two chambers having discharge outlets leading to said bucket, one of said chambers constituting a measuring-chamber in which a mass of material may be accumulated and from which said mass may be bodily discharged into said bucket, and the other constituting a drip-chamber; means for alternately directing a stream of material to said chambers; and valve mechanism cooperating with said measuring and drip chambers.

3. The combination with a bucket, of a hopper separated into two chambers by a partition having an opening, one of said chambers constituting a meter-chamber and the other a drip-chamber; stream-supply means for said hopper; and a stream-diverter operable in said opening and for shutting off the supply to said meter-chamber on the flow of the drip-stream from the drip-chamber; and valve mechanism coöperating with said chambers.

4. The combination with a bucket, of a hopper separated by a partition into two chambers constituting, respectively, a meter-chamber and a drip-chamber, said partition having an opening; a stream-diverter operable in said opening and for shutting off the supply of material to said meter-chamber when the drip-stream is flowing from the meter-chamber; and valve mechanism operatively connected to said stream-diverter.

5. The combination with a bucket, of a hopper separated into two chambers by a partition having an inclined portion provided with an opening; a relatively-flat plate shiftable into and out of alinement with said inclined portion; actuating means for said plate; and valve mechanism.

6. The combination with a bucket, of a hopper separated into two chambers by a partition; a stream-diverter provided with a counterweighted arm for shifting the same in one direction; means for oppositely shifting said stream-diverter; and valve mechanism.

7. The combination with a bucket, of a hopper separated into two chambers by a partition; a stream-diverter provided with a counterweighted arm; and valve mechanism operatively connected to said stream-diverter.

8. The combination with a hopper having a partition provided with an opening, of a stream-diverter operable in said opening and having a supporting rock-shaft; a counterweighted arm connected to said rock-shaft; a valve; and a rod attached to said counterweighted arm and slidingly connected to said valve.

9. The combination with a bucket, of a meter adapted to discharge bodily a measured charge of material into said bucket; means for supplying a drip-stream to the bucket; a pair of valves; and reciprocally-effective stop devices operative, respectively, with said valves.

10. The combination with a chute, of a pair of valves therefor; instrumentalities for normally holding one of said valves in its closed position; and means carried by and operative with the other of said valves for causing an opening movement of the first-mentioned valve.

11. The combination with a hopper, of a pair of valves therefor; means comprising a latch for holding one of said valves against opening movement; and a device operative with the other valve for tripping said latch.

12. The combination with a hopper, of a pair of valves therefor; means comprising a latch provided with a detent, for holding said valve against movement; and means operative with the other valve for tripping said latch.

13. The combination with a hopper, of a pair of valves therefor; means comprising a latch for holding one of said valves against movement; and an arm rigidly connected to the other valve for tripping said latch.

14. The combination with a bucket having a closer, of a valve, and reciprocally-effective stop devices operative, respectively, with said valve and closer, one of said stops being loosely movable about its support.

15. The combination with a bucket having a closer, of a valve, and reciprocally effective stop devices operative with the valve and with the closer, and having the valve-operative stop device loosely movable independently of the valve about its support.

16. The combination with a bucket having a closer, of a valve and its supporting-shaft provided with a boss; a stop device sleeved on said shaft and provided with a projection adapted to engage said boss; and a coacting stop device operatively connected with said closer.

17. The combination with a bucket provided with a closer and with a chute and its valve, of means embodying a latch for holding said closer against opening movement; and a sleeve on the support for said valve, having a latch-tripping device.

18. The combination with a bucket provided with a closer and with a chute and its valve, of means embodying a latch for holding said closer against movement; a sleeve on the valve-support; and a rod having a latch-tripping device, said rod being connected to said sleeve.

19. The combination with a bucket provided with a closer and with a chute having a valve, of means embodying a latch for holding said closer against movement; a sleeve on the valve-support provided with a counterweight; and a rod operatively connected to said counterweight, said rod having a latch-tripping device.

20. The combination with a bucket provided with a closer and with a chute and its valve, of means embodying a latch for holding said closer against movement; a sleeve provided with a stop device on the valve-support; a latch-tripping device connected to said sleeve; and a stop device operative with the closer and coacting with said first-mentioned stop device.

21. The combination with a chute, of a valve, said valve being so supported as to be opened by the force of a descending mass of material in said chute; means normally holding said valve against opening movement; independent releasing device for said valve; and means for closing said valve.

22. The combination with a chute, of a valve; a shiftable member; and a rod operative with said shiftable member and in sliding connection with said valve.

23. The combination with a suitably-supported valve, of a sleeve on the support of said valve; a stop device connected to said sleeve; a shiftable member; a connection between said shiftable member and valve-support; a bucket having a closer; and a stop device operative with said closer and coacting with said first-mentioned stop device.

24. The combination with a valve and a supporting-shaft therefor and with a bucket provided with a closer, of means embodying a latch for holding said closer against movement; a sleeve on the valve-support and having a latch-tripping device connected thereto and also

provided with a stop device; a scale-beam; a rod operatively connected to said scale-beam and in sliding connection with the support for said valve; and a stop device operative with said closer and coacting with said first-mentioned stop device.

25. The combination with a chute having a valve, of means for normally holding said valve against movement; a bucket; a depressible hopper located to receive a load of material discharged by said bucket; and means operatively connected with said hopper for releasing said valve.

26. The combination with a chute, of a valve; means embodying a latch for holding said valve against movement; a bucket; a depressible hopper located to receive a load of material discharged by said bucket; and a rock-shaft operatively connected to said hopper and having a rock-arm provided with a by-pass device for engaging said latch.

27. The combination with a bucket having a closer, of a depressible hopper located to receive a load of material from said bucket; and means operative with said closer for limiting the movement of said hopper.

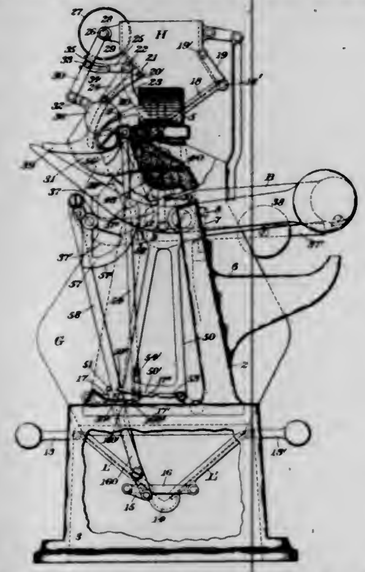
28. The combination with a bucket, of a closer therefor; a depressible hopper located to receive a load of material discharged by said bucket; and segmentally-flanged coacting stop devices operative, respectively, with said closer and hopper.

29. The combination with a bucket and a supporting scale-beam therefor, of a valve; a rod operatively connected to said scale-beam and having a projection thereon; and a cam connected to said valve in position for riding in contact with said projection on the opening movement of said valve.

30. The combination with a bucket and a supporting scale-beam therefor, of a valve; a rod operatively connected to said scale-beam and having a projection thereon; a cam connected to said valve in position for riding in contact with said projection on the opening movement of said valve; and a guide for said rod.

31. The combination with a bucket and with weighing mechanism supporting the same, of a valve; a rod operatively connected to said weighing mechanism and having a projection thereon; and means connected to the valve and in position for riding in contact with the projection of said rod on the opening movement of the valve.

573,419. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 10, 1896. Serial No. 595,014. (No model.)



Claim.—1. The combination with a bucket having two closers united by a toggle, of a rod operative with said closers; a latch for engaging said rod; and means for limiting the action of said rod, should the latch be prematurely tripped during the loading period.

2. The combination of a bucket having two closers united by a toggle; a rod connected to one of said closers; and a latch for engaging said rod.

3. The combination with a bucket having two closers united by a toggle, of a rod operative with said closers; a latch for engaging said rod; and a bucket-supporting scale-beam provided with a device for limiting the action of said rod, should the latch be prematurely tripped during the loading period.

4. The combination with a bucket having a pair of closers, of a valve connected to one of said closers and having a rock-arm; a link connected to said rock-arm and to the other closer; and means for maintaining said closers in their normal positions.

5. The combination of a bucket having two closers united by a toggle, one of which also has a valve; a rod connected to one of said closers; and a latch for engaging said rod.

6. The combination with a chute and with a stream-controlling valve therefor, of a bucket having two closers united by a toggle; and means embodying a latch for holding said closers against opening movement, said latch being operatively connected with the stream-controlling valve.

7. The combination with a valve having a stop device, of a bucket having a closer; a rod operatively connected to said closer; a latch operable for engaging said rod; and a stop device operative with said closer and supported independently of said rod and also coacting with said first-mentioned stop device.

8. The combination with a bucket having two counterweighted closers connected by a toggle, one of which is provided with a valve; a rod also connected to one of said closers; and a latch operable for engaging said swinging rod.

9. The combination with a bucket, of a device operative with the closer and constituting a load-discharge controller; and a scale-beam in operative relation with said bucket, said scale-beam having means for limiting the action of said load-discharge controller.

10. The combination with a bucket having a closer, of closer-supporting means embodying a rod; and a scale-beam for said bucket provided with a stop device for limiting the action of said rod.

11. The combination with a bucket having a closer, of a rod operatively connected to said closer; a latch operable for engaging said rod; and a scale-beam provided with a stop device for limiting the movement of said rod, should the latch be prematurely tripped.

12. The combination with a bucket, of a load-discharge controller; and a scale-beam provided with a flanged stop device, the flange of which is positioned for running in contact with said load-discharge controller during the loading period.

13. The combination with a bucket, of a load-discharge controller; and a scale-beam having a stop device provided with a by-pass, said stop device normally limiting the action of said controller and the latter being operable for tripping said by-pass on its return stroke.

14. The combination with a chute, of a valve therefor provided with a depression in its discharge edge; a drip-valve supported for movement adjacent to said depression; and valve-actuating mechanism.

15. The combination with a chute having a movable wall, of a pulsator for said wall; and a valve controlling the action of said pulsator.

16. In a weighing-machine having a reciprocatory member, the combination with a chute having movable front and rear walls; of means controlled by said reciprocatory member for imparting a pulsatory movement to said walls.

17. In a weighing-machine embodying a reciprocatory member, the combination with a fixed chute having its front wall supported for longitudinal reciprocatory movement and its rear wall for lateral movement, of means controlled by said reciprocatory member for imparting pulsatory movements to said walls.

18. The combination with weighing mechanism, of a chute having a movable wall; a rock-shaft operatively connected to said wall; a valve; and means actuated by the valve for controlling the movement of said rock-shaft.

19. The combination with a chute having a movable wall, of a slotted lever operatively connected to said wall; a valve for the chute; and a driven device having a working stroke between the walls of the slot of said lever, said driven device being controlled by said valve.

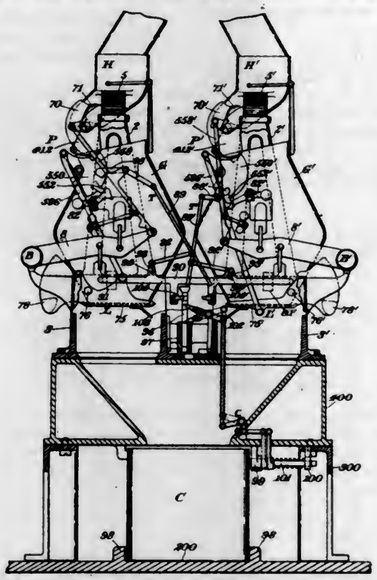
20. The combination with a chute having a movable wall, of a valve for said chute; a lever operatively connected to said wall; and a power-shaft having a rod connected thereto and also to said valve, said rod carrying a device for actuating said lever.

21. The combination with a chute having a movable wall and with a stream-controlling valve for said chute, of a power-shaft having a crank; a lever operatively connected to said chute-wall; and a connecting-rod provided with a ring embracing said crank, said rod having a device for actuating said lever and being also joined to the stream-controlling valve.

22. The combination with a chute having a movable wall, of a power-shaft having a crank; a lever connected to said chute-wall, said lever having a slot; and a connecting-rod provided with a ring embracing said crank, said rod being furnished with a pin having a working stroke between the walls of said slot.

23. The combination with a chute having a movable wall, of a lever having a slot of differential widths, said lever being operatively connected to said wall; a driven device having a movement between the walls of said slot and means for operating said driven device.

573,420. WEIGHING APPARATUS. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 15, 1896. Serial No. 595,535. (No model.)



Claim.—1. The combination of a plurality of weighing-machines and interdependent discharging means, substantially as described, whereby said machines are automatically dischargeable, respectively, each by another.

2. The combination of a plurality of weighing-machines and interdependent discharging means, substantially as described, whereby said machines are automatically dischargeable, respectively, each by another, and each is automatically settable to a non-discharging position.

3. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and alternately-effective latch-trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position.

4. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and alternately-effective latch-trippers; of a reciprocatory latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the latch-tripper to its operative position.

5. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and latch-trippers pivotally connected with a latch-tripper shifter; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position.

6. The combination with a pair of automatic weighing-machines having buckets, bucket closers, latches for said closers, alternately-effective latch-trippers, and shifter-actuating stop cams on the closers; of a latch-tripper shifter operative by said cams, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position.

7. The combination with a pair of automatic weighing-machines having buckets, bucket-closers, latches for said closers, alternately-effective latch-trippers, and shifter-actuating stop-cams on the closers above the axes of said closers; of a latch-tripper shifter operative by said cams, alternately, for shifting the correspondiog latch-tripper to its inoperative position and the other latch-tripper to its operative position.

8. The combination with a pair of automatic weighing-machines having shiftable load dischargers and separately-effective load-discharger-releasing means shiftable alternately to their operative positions, each by the other machine; of an actuator for said releasing means shiftable into and out of operative relation therewith.

9. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and separately effective latch-trippers shiftable alternately to their operative positions, each by the other load-discharger; of a latch-tripper actuator shiftable into and out of operative relation with said latch-trippers.

10. The combination with a pair of automatic weighing-machines having buckets, bucket-closers, latches for said closers, and latch-trippers, each having a trip-lever and a trip-rod pivotally connected with such trip-lever and with a shifter; of a shifter operative by said bucket-closers, alternately, for shifting the corresponding trip-rod to its inoperative position and the other trip rod to its operative position.

11. The combination with a pair of automatic weighing-machines having buckets, bucket-closers, latches for said closers, and latch-trippers, each having a valve-operated trip-lever and a trip-rod pivotally connected with such trip-lever and with a shifter; of a shifter operative by said bucket-closers, alternately, for shifting the corresponding trip-rod to its inoperative position and the other trip-rod to its operative position.

12. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and separately-effective latch-trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position; a latch-tripper actuator shiftable into and out of operative relation with said latch-trippers transversely to said shifter; and a pair of stops carried by the shifter at opposite sides of said latch-tripper actuator and operative alternately for engaging and supporting said actuator when in its operative position.

13. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and separately-effective latch-trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position; a latch-tripper actuator shiftable into and out of operative relation with said latch-trippers transversely to said shifter; and a pair of by-pass stops carried by the shifter at opposite sides of said latch-tripper actuator and operative, alternately, for engaging and supporting said actuator when in its operative position.

14. The combination with a pair of automatic weighing machines having shiftable load-dischargers, latches for said load-dischargers, and separately-effective latch-trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position; a latch-tripper actuator normally in inoperative relation with said latch-trippers; a discharge-chute common to said machines; means for supporting a load-receiver adjacent to said chute; and means, operative by the placing of a load-receiver in position, for carrying the latch-tripper actuator into operative relation with the latch-trippers.

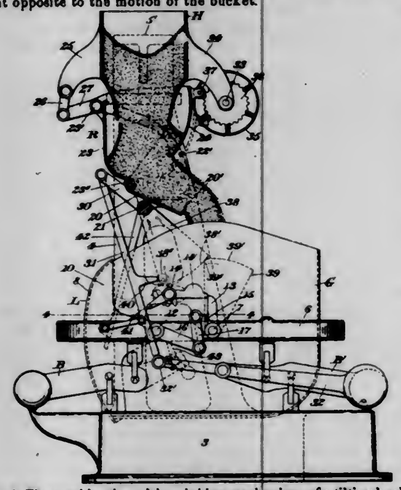
15. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load dischargers, and separately-effective latch-trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position; a latch-tripper actuator normally in inoperative relation with said latch-trippers; a discharge-chute common to said machines; box-guiding means adjacent to said chute; and an operating-arm normally projecting into the path of the box to be filled and operatively connected with the latch-tripper actuator and adapted to be forced outward by the box to thereby carry the latch-tripper actuator into operative relation with the latch-trippers.

16. The combination with a pair of automatic weighing-machines having shiftable load-dischargers, latches for said load-dischargers, and separately-effective latch trippers; of a latch-tripper shifter operative by said load-dischargers, alternately, for shifting the corresponding latch-tripper to its inoperative position and the other latch-tripper to its operative position; a latch-tripper actuator normally reactive into inoperative relation with said latch-trippers; a discharge-chute common to said machines; means for supporting a load-receiver adjacent to said chute; and means operative by the placing of a load-receiver in position, for carrying the latch-tripper actuator into operative relation with the latch-tripper.

573,421. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed July 15, 1896. Serial No. 599,308. (No model.)

Claim.—1 The combination with a bucket having a discharge-outlet: of a closer in position for controlling said outlet, said bucket

and closer being movable about independent axes; a detent for holding said bucket against oscillation during the supply of material thereto; and means connecting said detent with the closer, whereby when the bucket tilts to discharge its load said closer is given a movement opposite to the motion of the bucket.



2. The combination with weighing mechanism, of a tilting bucket; a closer for said bucket, supported by the framework of the machine; means connecting said closer with the bucket, whereby the closer is given a motion opposite to that of the bucket; a latch for holding the closer shut during the filling of the bucket; and means controlled by the weighing mechanism, for tripping the latch.

3. The combination with a frame, of a bucket having projecting trunnions journaled therein, one of which is provided with a rock-arm; and a closer supported in position for regulating the discharge-outlet of the bucket, having a rock-arm connected by a link to said first-mentioned rock-arm.

4. The combination with a frame, of a bucket having projecting trunnions journaled therein, one of which is provided with a rock-arm; a closer supported in position for regulating the discharge-outlet of the bucket, having a rock-arm connected by a link to said first-mentioned rock arm; a detent rigidly connected to said trunnion; a latch for engaging said detent; and a latch-tripping device.

5. The combination with a bucket supported for oscillatory movement, said bucket having an outlet; of a closer for said outlet, having an opening movement in opposition to the movement of the bucket; means operative for maintaining the bucket and closer in their normal positions; a valve supported to receive its closing force from the descending mass of material passing from the supply-spout; and a stop device for preventing movements of the valve or bucket except at the proper times.

6. The combination with a frame, of a bucket journaled therein and having a discharge outlet, the end walls of the bucket adjacent to said outlet being curved; a segmental closer-plate hinged to the frame and adapted, when in its normal position, to bear tightly against said curved walls and also to project below said horizontal bottom; and means for maintaining said bucket and closer in the normal positions thereof.

7. The combination with a chute and with a valve, of an interposed regulator, and a toothed wheel for imparting a vibratory movement to said regulator.

8. The combination with a chute and with a valve, of an interposed regulator connected to one of said parts, and a toothed wheel for imparting a vibratory movement to said regulator.

9. The combination with a chute and with a valve, of an interposed regulator connected to said valve, and a toothed wheel for imparting a vibratory movement to said regulator.

10. The combination with a chute, of a regulator adjacent thereto and self-operative in one direction, and a toothed wheel for imparting an opposite stroke to said regulator, whereby it will be vibrated.

11. The combination with a chute, of a valve, and an interposed regulator consisting of two hinged sections, one of which is connected to said valve.

12. The combination with a chute and with a valve, of a regulator; a pair of suspension-links connected to said regulator, whereby the regulator is self-operative in one direction; and means for imparting an opposite stroke to said regulator.

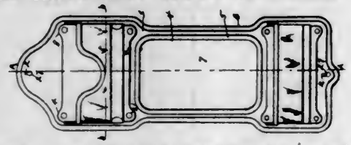
13. The combination with a chute and with a valve, of a regulator; a pair of suspension-links connected to said regulator, whereby the regulator is self-operative in one direction; and a cam for imparting an opposite stroke to said regulator.

14. The combination with a chute, of a valve; an interposed regulator consisting of two hinged sections, one of which is provided with a projection and the other of which is connected to said valve; a pair of suspension-links connected to said regulator by rock-arms; and a cam for engaging said projection.

15. The combination with a chute, of an adjacent oscillating valve supported to receive its closing force from the descending mass of material from said chute, which force is directed against one side of the axis of movement of said valve.

16. The combination with weighing mechanism embodying a shiftable bucket, of a chute; an adjacent oscillating valve supported to receive its closing force from a descending mass of material from said chute, which force is directed against one side of the axis of movement of said valve; and reciprocally-effective stop devices operative, respectively, with said valve and bucket.

573,422. MATCH-RECEPTACLE. WILLIAM C. SCHAPER, St. Louis, Mo. Filed Feb. 19, 1896. Serial No. 579,976. (No model.)



Claim.—1. In an improved match-receptacle, composed of a plate, said plate having its central portion cut out, said cut-out portion having its edges bent to support scraping material placed therein, receptacles secured to the said plate said receptacles stamped and formed of one piece of material, forming a blank, said blank when bent forms the front, bottom, sides and back, and held together by lips and ears, said receptacle held to the plate by rivets passed through said ears substantially as set forth.

2. In a device of the class described, the combination of a plate, receptacles mounted on said plate, said receptacles formed of one piece of stamped material, one of said receptacles composed of a portion 9, wings 12 and 13 attached to the sides thereof, a portion 16, connected to the wing 12, and a portion 15, forming a part of the portion 9, said blank bent and held together by lips and ears, forming the front bottom, sides and back, said receptacle, secured to the plate by rivets passed through said ears, substantially as shown and described.

573,423. CAN-SOLDERING MACHINE. WILLIAM H. SMYTH, Berkeley, Cal. Filed Oct. 24, 1893. Serial No. 489,050. (No model.)

Claim.—1. A gravity-runway adapted to marshal cans from single file into multiple series.

2. A gravity-runway adapted to marshal a multiple series of cans into single file.

3. A marshaling device comprising means adapted to utilizing a can whereby the course of a traveling can is changed.

4. In a machine for operating on cans and other cylindrical bodies a device for marshaling cans consisting of a multiplicity of tracks or runways each component track emerging from its next preceding neighbor and a drop or opening which forms the means of supply from each runway to its next succeeding neighbor.

5. In a machine for operating on cans and other cylindrical bodies, a device for marshaling cans consisting of a multiplicity of tracks each component track merging into its succeeding neighbor and at the point of mergence being provided with a pivoted section.

6. A feeding device adapted to marshal cans from single file into axial alinement.

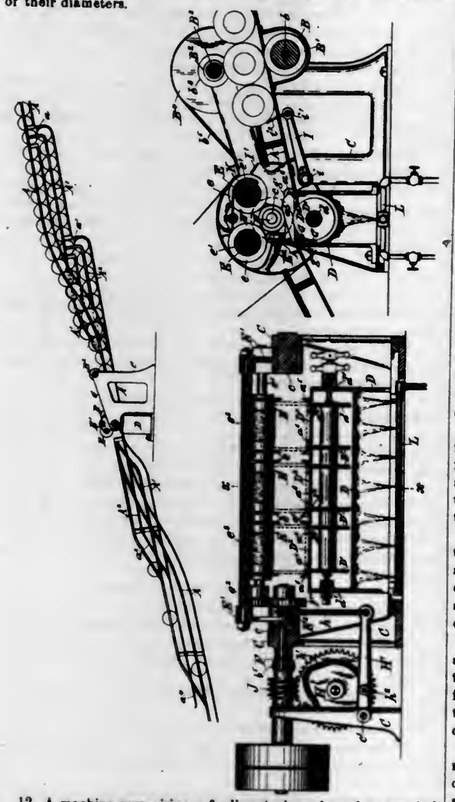
7. A machine comprising a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement, a device for operating upon the cans while so alined, and a discharging device adapted to marshal cans from axial alinement into single file in the direction of their diameters.

8. A machine for operating upon cans, comprising a soldering device and a feeder thereto adapted to marshal cans from single file in the direction of their diameters into axial alinement.

9. In a machine for operating upon cans and other cylindrical bodies a discharging device adapted to marshal cans from axial alinement into single file in the direction of their diameters.

10. A machine comprising a soldering apparatus and a discharging device adapted to marshal cans from axial alinement into single file in the direction of their diameters.

11. In a machine for operating upon cans and other cylindrical bodies the combination of a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement, means for rotating the cans and a discharging device adapted to marshal cans from axial alinement into single file in the direction of their diameters.



12. A machine comprising a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement a soldering device adapted to operate upon the alined cans and a device adapted to marshal the discharged cans from axial alinement into single file in the direction of their diameters.

13. A machine comprising a device adapted to solder a multiplicity of cans simultaneously and a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement and to feed them to the soldering device.

14. A machine comprising a soldering device adapted to solder a multiplicity of cans simultaneously, a feeding device adapted to feed cans to said multiple soldering device and to marshal them from single file into axial alinement, and a discharging device adapted to discharge the cans when soldered and marshal them from axial alinement into single file in the direction of their diameters.

15. A machine comprising a solder-bath and means for applying solder to cans, and a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement and position to receive solder.

16. A machine comprising a solder-bath and means for applying solder to cans, a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement and a device adapted to discharge said cans when soldered and to marshal them from axial alinement into single file.

17. A machine comprising a series of rotating solder-applying disks upon a shaft, means for applying solder to said disks, a feeding device adapted to feed a multiplicity of cans simultaneously to the soldering-disks and means for discharging the cans simultaneously and marshaling them from axial alinement into single file.

18. A machine comprising a series of rotating solder-applying disks means for supplying solder to the disks, and a feeding device adapted to marshal cans from single file into axial alinement and position to receive solder.

19. A machine comprising a series of rotating solder-applying disks, means for applying solder to said disks, a feeding device adapted to marshal cans from single file into axial alinement and position to receive solder, and a discharging device adapted to marshal cans from axial alinement into single file.

20. A machine comprising a series of rotating disks, a solder-bath in which the disks are partly immersed a device adapted to marshal cans from single file in the direction of their diameters into axial alinement and to feed a multiplicity of cans simultaneously to the solder-disks.

21. A machine comprising a series of rotating solder-applying disks, a feeding device adapted to marshal cans from single file in the direction of their diameters into axial alinement and to feed a multiplicity of cans simultaneously to the solder-disks, a solder-bath in which the disks are partly immersed, and means for discharging the cans simultaneously when soldered.

22. A machine comprising a device adapted to solder a multiplicity of cans simultaneously, means for marshaling cans from single file in the direction of their diameters into axial alinement and feeding said cans to the soldering device and means for discharging the cans simultaneously when soldered.

23. A machine comprising flux and solder applying devices and means for feeding a multiplicity of cans thereto and marshaling them from single file in the direction of their diameters into axial alinement.

24. A machine comprising flux and solder applying devices, means for marshaling cans from single file in the direction of their diameters into axial alinement and feeding said cans to the flux and solder devices, and means adapted to receive the cans when soldered and marshal them into single file.

25. A machine comprising means for marshaling cans from single file in the direction of their diameters into axial alinement, a series of flux-applying rolls and means for rotating cans in contact therewith, a series of solder-applying disks and means for rotating cans in contact therewith and a device adapted to receive the cans and marshal them into single file.

26. A machine comprising flux-applying disks and means for rotating cans in contact therewith solder-applying disks and means for applying rotating cans in contact therewith, means for marshaling cans from axial alinement into single file in the direction of their diameters, and a device adapted to remove excess of solder from the cover-joints of the cans.

27. A machine comprising feeding fluxing and soldering devices adapted to operate upon a multiplicity of cans simultaneously to flux the tops and bottoms, a device adapted to marshal the soldered cans from axial alinement into single file and a device adapted to remove the excess of solder from the top and bottom cover-joint simultaneously of each.

28. A soldering-machine comprising a molten-solder bath and means whereby a portion of the liquid solder is formed into a wave or mound above the surface as determined at the edge of the bath and automatic means for applying objects in contact therewith and discharging them from the raised portion of the solder-surface.

29. A soldering-machine comprising a molten-solder bath and means whereby a portion of the liquid solder is formed into a wave or mound above the surface as determined at the edge of the bath and means for applying objects in contact therewith.

30. A soldering machine comprising a molten-solder bath, means whereby a portion of the surface is formed into a wave or mound and means for rotating cans in contact therewith.

31. A machine comprising a molten-solder bath and means for forming a series of waves or mounds above the surface of the solder therein and automatic means for feeding to and applying objects in contact therewith and discharging them therefrom.

32. A machine comprising a molten-solder bath and means for forming a series of waves or mounds above the surface of the solder therein, automatic means for feeding cans to and accurately registering their seams with the raised portion of the solder-surface, and discharging them when soldered.

33. A soldering-machine comprising a floating device adapted to convey and apply solder contained in a molten-solder bath.

34. A solder-applying device which presses against the object soldered by floatage.

35. A connected series of soldering devices adapted to convey and apply solder to a multiplicity of cans simultaneously and to derive from floatage pressure necessary to perform its function.

36. A machine comprising a floating solder conveying and applying disk in a bath of solder.

37. A soldering-machine comprising a rotatable solder conveying and applying disk floating in a bath of solder.

38. A machine comprising a series of floating solder-applying disks upon a shaft in a bath of solder.

39. A machine comprising a series of rotatable solder-applying disks floating in a solder-bath and means for applying the joints of cans in contact therewith.

40. A machine comprising a molten-solder bath a solder convey-

ing and applying disk therein the major segment of which is below the surface of the solder.

41. A machine comprising a solder-bath containing a series of solder-applying disks upon a shaft the axis of which is below the surface of the solder.

42. A machine comprising a receptacle for molten solder means adapted to rotate a can horizontally above the solder and means for applying solder in a stream continuous with the solder-bath to the can.

43. A soldering-machine comprising a molten-solder receptacle and a device adapted to apply the solder in a stream or wave continuous with the solder in the receptacle to a horizontally-rotating can above said receptacle.

44. A machine comprising a molten-solder receptacle and a device adapted to support and apply solder in a stream or wave continuous with the solder in the receptacle to a horizontally-rotating can above said receptacle.

45. A soldering-machine comprising a molten-solder receptacle provided with means for heating solder, and tracks or courses adapted to support a can horizontally and means for applying solder in a stream continuous with that in the bath to the can while so horizontally supported.

46. A soldering-machine comprising a molten-solder receptacle provided with means for heating solder and inclined tracks or courses adapted to support a can with its axis horizontal and means for applying solder to said can while so horizontally supported.

47. A soldering-machine comprising a molten-solder receptacle provided with means for heating the solder, a cover and means through the cover of applying solder to a can.

48. A soldering-machine comprising a molten-solder receptacle having means for heating the solder a cover to said receptacle adapted to support horizontally and means for applying solder through said cover to a can.

49. A soldering-machine comprising a solder-receptacle with heating device, a cover to the receptacle provided with tracks or courses adapted to support a can horizontally above said solder and means for applying solder in a stream continuous with that in the bath to the can.

50. A soldering-machine comprising a solder-receptacle with heating device a cover thereto provided with tracks or courses adapted to support and guide a can its axis horizontal, runways to and from said cover forming continuation of said tracks.

51. A rotating disk adapted to apply solder and to derive its rotation from the object upon which it applies solder and a solder-bath in which it is partly immersed provided with suitable heating device.

52. A rotating disk adapted to apply solder to and derive its rotation from frictional contact with the object to which it applies solder and a solder-bath in which it is partly immersed provided with heating devices for melting solder.

53. A soldering-machine comprising a rotating disk adapted to apply solder to cans and to derive rotary motion therefrom a bath of solder in which it is partly immersed provided with heating devices for melting solder.

54. A soldering-machine comprising a rotatable disk adapted to apply solder to and derive rotary motion from the rotation of a can in contact therewith, a bath of solder in which the disk is partly immersed and heating device for melting solder.

55. A soldering-machine comprising a rotating disk adapted to apply solder to and receive its rotation from a can by frictional contact therewith and a bath in which the disk is partly immersed provided with a heating device to melt solder.

56. A soldering-machine comprising a rotating flux-applying disk a flux-pot in which the disk is partly immersed means for rotating the can in peripheral driving contact with the flux-applying disk, and a solder-applying device connected by a runway with the fluxing device and having means whereby the cans are received and automatically fed to the soldering devices.

57. A machine comprising means for fluxing a multiplicity of cans in axial alinement simultaneously, means for feeding a multiplicity of cans simultaneously to said fluxing device, and a soldering device adapted to solder a multiplicity of cans simultaneously.

58. A machine comprising a series of rotating disks, a flux-pot in which said disks are partly immersed, means for rotating a multiplicity of alined cans in peripheral contact with the flux-disks, a solder-bath and means for applying solder therefrom to the fluxed portion of said cans.

59. A machine comprising a series of rotating disks, a flux-pot in which said disks are partly immersed, means for rotating a multiplicity of axially-alined cans in peripheral contact with the flux-applying disks, a series of solder-applying disks and a solder-bath in which they are partly immersed and spacing and registering devices and means for rotating a multiplicity of cans in peripheral contact with the solder-disks.

60. A machine comprising a fluxing device adapted to flux the top and bottom simultaneously of each of a multiplicity of cans simultaneously, a soldering device adapted to apply solder to the tops and bottoms of a multiplicity of cans simultaneously and means for registering and spacing the cans with the fluxing and soldering devices.

61. A machine comprising means for applying flux to the cover-joints of the tops and bottoms of a multiplicity of cans in axial alinement, and means for registering and soldering the tops and bottoms on cans in axial alinement simultaneously.

62. A machine comprising a soldering device, means adapted to utilize the weight of a can for advancing said can and means for removing excess of solder from the can while being advanced by its own weight.

63. An inclined runway provided with means for removing excess of solder from cans while advancing by gravity.

64. A runway provided with tracks for supporting cans consisting of longitudinal brushes or wipers adapted to advance a can.

65. A gravity-runway for cans formed of inclined longitudinal brushes set parallel to each other.

66. A runway for cans formed of inclined longitudinal rotating brushes set parallel to each other.

67. A runway for cans formed of inclined rotating brushes set parallel to each other and spaced to rotate in contact with the top and bottom of a can.

68. A soldering-machine comprising means for applying solder to a can and means adapted to advance a can by gravity and to remove excess solder therefrom.

69. A machine comprising means for applying molten solder to the head-joint with the body of a can, a discharge-way adapted to receive the soldered can and convey it from the solder-applying devices and means adapted to advance a can by gravity for removing the excess solder while the can is rolling by gravity.

70. A machine comprising a device adapted to solder both top and bottom simultaneously on a can and a device adapted to remove the excess solder and means intermediate of the soldering and excess-removing devices for directing the can from one device to the other and registering the top and bottom in contact with the solder-removing device.

71. A machine comprising means for soldering a top and bottom simultaneously on each of a multiplicity of cans with means for registering the cans with the soldering devices an inclined rotating buff or brush the axis of which lies transverse to the axis of the can and means for rotating the cans in peripheral contact with the rotating brush.

72. A machine comprising means for applying solder to the top and bottom simultaneously of a can and a solder-joint-finishing device consisting of inclined parallel rotating brushes or wipers their axis lying parallel to the path of the cans discharged from the soldering devices and means for rotating cans in peripheral contact with the rotating brushes.

73. A machine comprising means for soldering the top and bottom simultaneously on a can and a discharge-runway provided with a solder-joint finishing device consisting of inclined parallel rotating brushes or wipers located beneath the path of the can spaced to come in contact, one with the top and the other with the bottom as the can rolls down the discharge-runway.

74. A machine comprising flux and soldering devices adapted to perform their functions on the top and bottom of a can simultaneously and a solder-joint-finishing device consisting of two parallel inclined rotating brushes or wipers adapted to remove excess solder from the top and bottom joints of a can simultaneously.

75. A machine comprising means for fluxing and soldering the top and bottom simultaneously of a can and a finishing device adapted to remove the excess of solder from the top and bottom of a can simultaneously.

76. A machine comprising means for feeding a multiplicity of cans simultaneously devices adapted to flux the top and bottom of each and all simultaneously and a finishing device adapted to finish and remove excess of solder from both ends of each can simultaneously, and connections intermediate of the soldering and finishing devices for directing cans from one device to the other and register both ends with the soldering devices.

77. A machine comprising flux-applying disks and means for rotating cans in peripheral driving contact therewith, solder-applying disks and means for rotating cans in peripheral contact therewith and a rotating solder-removing device combined.

78. An oscillating frame, in a runway having tracks or courses to guide a rolling can, adapted by its movement to receive said can and to carry it to position to be operated upon.

79. An oscillating frame, in a runway having tracks or courses to guide a rolling can, adapted by its movement to receive said can and to carry it to position to be operated upon and discharge the same.

80. An oscillating frame, in a runway having tracks or courses to guide rolling cans, adapted by its movement to receive said multiplicity of cans and to carry them into position to be operated upon simultaneously.

81. An oscillating frame, in a runway having tracks or courses to guide a rolling can adapted by its movement to receive said can and carry it into position to be soldered, and a soldering device combined.

82. An oscillating frame in a runway having tracks or courses to guide a rolling can, adapted to receive said can and to carry it into position to be soldered, and a solder-applying disk combined.

83. A machine comprising an oscillating frame in runways having tracks or courses to guide rolling cans adapted to receive said cans and to carry them into position to be soldered, and a soldering device adapted to solder a multiplicity of cans simultaneously.

84. A machine comprising an oscillating frame adapted to feed cans into axial alinement near its center of oscillation and discharge them therefrom, and means for rotating said cans while so alined.

85. An oscillating frame provided with a rotating roll adapted to rotate a can near its center of oscillation.

86. An intermittently-oscillating frame provided with a rotating roll adapted to receive a can near its center of oscillation and means for holding said can while being there rotated.

87. An intermittently-oscillating frame provided with a rotating roll adapted to rotate a can near its center of oscillation, means for feeding the can to and retaining it thereat and discharging therefrom.

88. An oscillating frame provided with a rotating roll adapted to rotate a can near its center of oscillation and a second roll placed to impinge in rolling contact upon the periphery of a can so located.

89. An oscillating frame provided with rotating rolls whose axes are parallel, adapted to rotate a can near their center of oscillation and a third roll or disk adapted to impinge in rolling contact upon the periphery of the can.

90. An oscillating frame provided with a series of rotating rolls adapted to rotate a multiplicity of cans near the center of oscillation.

91. An oscillating frame provided with a parallel series of rotating rolls adapted to rotate near its center of oscillation a multiplicity of cans in axial alinement.

92. A machine comprising an oscillating frame provided with parallel series of rotating rolls adapted to rotate a multiplicity of cans in axial alinement and means for feeding said cans to and discharging them from contact with the rotating rolls.

93. A machine comprising an oscillating frame provided with a rotating roll adapted to rotate a can near the center of oscillation and means for applying solder to the can.

94. A machine comprising an oscillating frame provided with a roll having spacing-flanges, adapted to rotate a multiplicity of cans near the center of oscillation and means for applying solder to said cans.

95. A machine comprising an oscillating frame provided with parallel series of rotating rolls adapted to rotate a multiplicity of cans near the center of oscillation and means for applying solder to said cans.

96. A machine comprising an oscillating frame provided with parallel series of rolls adapted to rotate a multiplicity of cans near the center of oscillation and a series of disks adapted to apply solder to the cans.

97. A machine comprising an oscillating frame provided with a roll adapted to rotate cans near the center of oscillation and position, to receive solder and a solder-bath from which solder is applied to the cans.

98. A machine comprising an oscillating frame provided with rolls adapted to rotate a multiplicity of cans near its center of oscillation, a series of solder applying disks and a bath of solder in which the disks are partly immersed.

99. A machine comprising an oscillating frame provided with rolls adapted to rotate a can near the center of oscillation solder-applying disks and a solder-bath in which the disks are partly immersed.

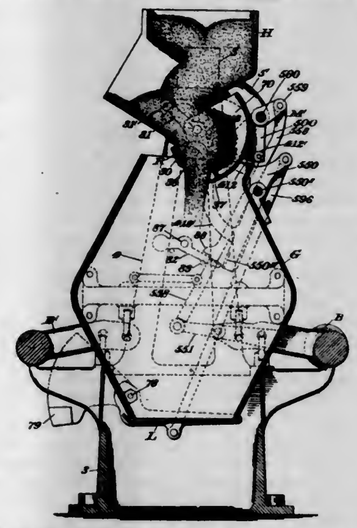
100. A machine comprising an oscillating frame provided with rotating rolls adapted to rotate cans near the center of oscillation solder-applying disks, a bath of solder in which the disks are partly immersed and means for feeding the cans to the solder-disks and discharging them when soldered.

101. A machine comprising an oscillating frame provided with rolls adapted to rotate cans near the center of oscillation means for applying solder to said cans and a device adapted to marshal cans from single file into axial alinement and to feed them to the solder-applying devices.

102. A machine comprising an oscillating frame provided with rolls adapted to rotate cans near the center of oscillation means for applying solder to the cans and a device adapted to receive the soldered cans and marshal them from alinement into single file.

578,424. WEIGHING-MACHINE. FRANK E. THOMPSON, Hartford, Conn., assignor to The Pratt & Whitney Company, same place. Filed Sept. 8, 1896. Serial No. 605,115. (No model.)

Claim.—1. In a weighing-machine, the combination with a supply-chute and with an oscillatory valve therefor, of a stream-regulator supported for oscillatory movement in a plane concentric to the path of movement of the valve; and a holding device for said regulator.



2. In a weighing-machine, the combination with a supply-chute, of a valve pivotally supported for oscillatory movement with its axis in substantially vertical alinement with the middle portion of the discharge end of said chute; and a stream-regulator supported for oscillatory movement in a path concentric to the path of movement of the valve; means whereby the regulator may be adjusted inwardly and outwardly with respect to the discharge end of the hopper; and means for holding said regulator in its adjusted position.

3. In a weighing-machine, the combination with a supply-chute; of a settable stream-regulator supported for adjustment in the arc of a circle transversely of said chute; a hand-operable adjusting device in connection with said regulator; and means for fixedly holding the regulator in its adjusted position.

4. In a weighing-machine, the combination with a chute and with an oscillatory valve having a drip opening; of a stream-regulator supported for adjustment in a path concentric to the path of movement of the valve and having a drip-opening which is cooperative with the drip-opening of said valve; means for actuating said valve; and means for adjusting the regulator and holding the same in its adjusted positions.

5. In a weighing-machine, the combination with a supply-chute having an opening at the lower end of the front wall thereof; of a stream-regulator having a plate located in position for closing said opening and supported on said chute for adjustment in the arc of a circle transversely of said chute; and means for adjusting said regulator to increase or decrease the effective area of the discharge end of the chute.

6. In a weighing-machine, the combination with a supply-chute; of a supply-valve and a stream-regulator pivotally supported for movement in concentric paths and having pivotal points substantially midway between the front and rear walls of the supply-chute; a settable actuator in connection with the stream-regulator; and means for holding the stream-regulator in a set position with relation to the chute.

7. In a weighing-machine, the combination with a supply-chute having a recessed front wall and with an oscillatory valve having a drip-opening; of a stream-regulator having a plate normally located with the upper end thereof in advance of the front wall of the chute and effective for closing the opening of said front wall, and which regulator is pivotally supported on the chute and embodies means whereby said regulator may be adjusted transversely of the discharge end of said chute in a path concentric to the path of the valve and may be fixedly held in its adjusted position.

8. In a weighing-machine, the combination with a chute; of an automatically oscillatory valve pivotally supported in relation to the discharge end of said chute; and a settable regulator pivotally supported in concentric relation with said valve.

9. In a weighing-machine, the combination with a supply-chute and with a supply-valve supported for oscillatory movement in operative relation with the discharge end of said chute; of a stream-regulator supported on said chute for adjustment transversely thereof and

in a plane concentric to the path of movement to the valve; and a detent for holding said regulator in its adjusted positions.

10. In a weighing-machine, the combination with a supply-chute having its front and rear walls terminating in different planes; of a regulating device pivotally supported on said chute for movement in an arc of a circle and in a plane transversely of said chute and comprising a plate located in position to constitute a continuation of the shorter wall of said chute and in a plane intersecting the path of movement of the valve; means for supporting said plate; and a supply-valve supported for oscillatory movement below and in a path concentric to the path of adjustment of said plate.

11. The combination with weighing mechanism, of a bucket having a closer; a supply-chute; a valve supported for oscillatory movement in operative relation with said chute; reciprocally effective actuators, one of which has a linkage connection with the valve and is automatically operable for closing said valve, and the other of which has a linkage connection with the first-mentioned actuator and is automatically operable for simultaneously opening the valve and for resetting said first-mentioned actuator upon the ascent of the bucket; and means operable by the movements of the valve-actuator and the bucket, for locking the closer in its closed position when the valve is open, and the valve in its closed position when the closer is open.

12. In a weighing-machine, the combination with a bucket having a closer, scale-beams supporting said bucket, and a supply-chute; of a bucket-closer actuator embodying a rocker having a stop-face; a latch for engaging the rocker when the closer is in its closed position; a valve supported for oscillatory movement relatively to the supply-chute; a bucket-closer stop having a pivotal support at one side the valve and having a stop-face in cooperative relation with the stop-face of the rocker; a valve-closing actuator having a linkage connection with the valve; a valve-opening actuator operatively connecting the bucket-closer stop and the valve and also operatively connecting said stop and one of the scale-beams and embodying means for engaging the latch and thereby tripping the rocker.

13. In a weighing-machine, the combination with a supply-chute and an oscillatory valve; of a valve-closing actuator comprising a counterweighted lever pivotally supported on the framework below the valve; and a toggle connecting said actuator and valve; a valve-opening actuator comprising a rock-shaft located outside of the pivotal point of said valve and having a linkage connection with the valve closing actuator; and means for operating the valve-opening actuator.

14. In a weighing-machine, the combination with bucket mechanism embodying a bucket and a bucket-closer, and with a supply-chute; of a valve pivotally supported for oscillatory movement below the discharge end of the supply-chute and having its axis of movement in substantial vertical alinement with the longitudinal axis of the bucket; an oscillatory bucket-closer stop pivotally supported outside the axis of the valve and adapted for engaging and preventing the opening movement of the closer while the valve is open; and a valve closing and opening mechanism operatively connecting the bucket-closer stop and valve.

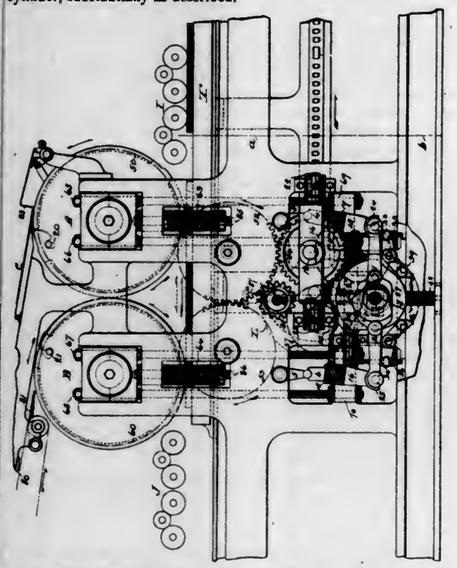
15. In a weighing-machine, the combination with bucket mechanism embodying a bucket and a bucket closer, and with a supply-chute; of a valve pivotally supported for oscillatory movement below the discharge end of the supply-chute and having its axis of movement in substantial vertical alinement with the longitudinal axis of the bucket; an oscillatory bucket-closer stop pivotally supported outside the axis of the valve and adapted for engaging and preventing the opening movement of the closer while the valve is open; a valve closing and opening mechanism operatively connecting the bucket-closer and valve; a stream-regulator pivotally supported on the chute for adjustment in the path concentric to the path of the valve; and means for adjusting said regulator and for holding the same in its adjusted position.

573,425. TRIPPING-MOTION FOR PRINTING-MACHINES. STEPHEN D. TUCKER, New York, N. Y., assignor to Robert Hoe, Theodore H. Mead, and Charles W. Carpenter, same place. Filed Nov. 17, 1892. Serial No. 452,299. (No model.)

Claim.—1. The combination with mechanisms for raising and lowering the impression-cylinders, of rock-arms operating to trip said mechanisms out of action, a revolving tripping-cam having its enlarged part of such relative extent that it can be moved laterally into operative position over said arms but once during each revolution of it, and, means for sliding said cam, substantially as described.

2. The combination with mechanisms for raising and lowering the impression cylinders, of rock-arms for tripping said mechanisms out of action and a sliding tripping-cam for actuating the arms, the rock-arms being mounted in such positions with relation thereto that said cam can only be moved into engagement with said arms when the low part of the cam is opposite the ends of both of said arms, substantially as described.

3. The combination with mechanisms for raising and lowering the impression-cylinders, of tripping rock-arms for disconnecting said mechanisms and a sliding tripping-cam for actuating the rock-arms, the inner ends of which rock-arms are so related to the cam and the latter is so constructed that during its forward rotation it can only be moved into engagement with the rock-arms after its high part has passed the trip arm for the secondary cylinder, thus compelling the tripping action to be first performed with respect to the primary cylinder, substantially as described.



4. The combination with mechanisms for raising and lowering the impression-cylinders, of tripping rock-arms for disconnecting said mechanisms and a sliding tripping-cam for actuating said rock-arms, which rock-arms are mounted with their inner ends at one side of the cam-shaft so related to each other and to said cam that during its forward rotation it shall first operate the tripping rock-arm of the primary cylinder and then operate the tripping rock-arm of the secondary cylinder, substantially as described.

5. The combination with mechanism for raising and lowering an impression-cylinder, of a tripping rock-arm operating to disconnect said mechanism, a tripping-cam for actuating said arm, means for sliding said cam laterally into engagement with the tripping rock-arm and an auxiliary rock-arm moved by the tripping rock-arm to press said cam into and hold it in complete engagement with the tripping rock-arm, substantially as described.

6. The combination with mechanisms for raising and lowering the impression-cylinders, tripping rock-arms operating to disconnect said mechanisms, a tripping-cam for actuating said arms, means for sliding said cam laterally into engagement with the tripping rock-arms, and auxiliary rock-arms respectively moved by the tripping rock-arms to press said cam into and hold it in complete engagement with the tripping rock-arms, substantially as described.

7. The combination with mechanisms for raising and lowering the impression-cylinders and rock-arms operating to trip said mechanisms out of action, of hand-levers independently operative to move said arms, and a rotating guard engaging said levers to control their movements, substantially as described.

8. The combination with mechanism for raising and lowering the impression-cylinders, the tripping rock-arms for disconnecting said mechanisms and the sliding tripping-cam, of the rocking-shaft 40, its arms 41, 42, 43, 44, rock-arms 35, 36 and means connecting the arms 35, 36 and 43, 44, substantially as described.

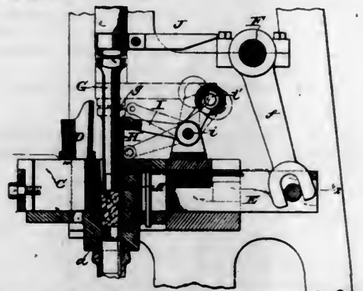
9. The combination with the toggle rock-arms 15, 16 impression cams, 26, 27 and connecting-rods 24, 25 of the sliding cam 30, rock-arms 31, 33 and 32, 34, substantially as described.

10. The combination with the toggle rock-arms 15, 16, impression cams 26, 27, and connecting-rods 24, 25, the sliding cam 30, rock-arms 31, 33 and 32, 34, of the rocking shaft 40, its arms 41, 42, 43, 44, rock-arms 35, 36 and rods 45, 46, substantially as described.

11. The combination with mechanisms for raising and lowering the impression-cylinders, rock-arms operating to trip said mechanisms out of action, a revolving tripping-cam coacting with said rock-arms, and a rock-shaft carrying means for sliding said cam into operative position, of intermediate devices connecting said rock-arms and rock-shaft and operating to compel the tripping operation to be completed when once begun, substantially as described.

12. The combination with mechanisms for raising and lowering an impression-cylinder, a rock-arm operating to trip said mechanisms out of action, a revolving tripping cam coacting with said rock-arm, and a rock-shaft carrying means for sliding said cam into operative position of intermediate devices connecting said rock-arm and rock-shaft and operating to compel a tripping operation to be completed when once begun, substantially as described.

573,426. VENT ATTACHMENT FOR CORKING-MACHINES. WILLIAM O. VILTER, Milwaukee, Wis., assignor to the Vilter Manufacturing Company, same place. Filed May 1, 1896. Serial No. 589,865. (No model.)



Claim.—1. The combination with a corking-machine comprising a cork holder and guide, a compressor and plunger, of a longitudinally-movable vent-rod suspended in the cork holder and guide opposite the compressor so as to be forced by the engagement therewith of a cork into a bottle, and means of automatically retracting said vent-rod from the bottle after it is corked, substantially as and for the purposes set forth.

2. The combination with a corking-machine comprising a cork holder and guide, a compressor and plunger, of a longitudinally-grooved vent-rod, loosely suspended in the cork holder and guide opposite the compressor, a lever to which said rod is pivoted at its upper end, and a projection on the cork-plunger adapted to engage said lever and to withdraw said rod from a bottle as the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

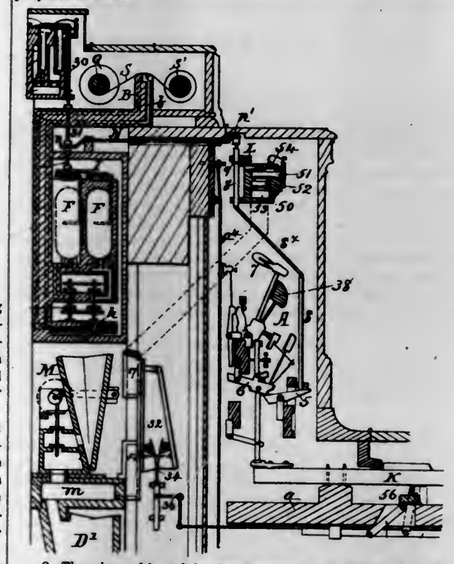
3. In a corking-machine the combination with a cork holder and guide, a compressor adapted to force a cork into the bore of said holder and guide, a reciprocating plunger having a longitudinal groove in one side and adapted to force a cork from said holder and guide into a bottle, of a vent-rod loosely suspended in the bore of the cork holder and guide opposite the compressor and in line with the groove in said plunger, a lever from which said rod is suspended and an arm or projection on the plunger adapted to engage said lever and to withdraw said rod from the mouth of a bottle as the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

4. The combination in a corking-machine with the cork holder and guide, compressor and plunger, of a lever having one arm overhanging the cork holder and guide, a longitudinally-grooved vent-rod pivoted at its upper end to said arm and loosely suspended therefrom in the bore of said holder and guide opposite the compressor, and an incline on the plunger adapted to engage the other arm of said lever and to withdraw the vent-rod from a bottle when the plunger approaches the limit of its advance movement, substantially as and for the purposes set forth.

5. In a bottle-corking machine the combination with the cork holder and guide having a lateral opening in one side, a compressor movable in said opening transversely to the bore of said holder and guide, and a reciprocating plunger movable axially through said holder and guide and provided with an arm or projection formed with an incline, a bell-crank lever one arm of which is provided with a roller in the path of said incline and the other arm projects over the cork holder and guide, and a vent-rod pivoted at its upper end to the overhanging arm of said lever and loosely suspended therefrom in the bore of the cork holder and guide opposite the compressor, substantially as and for the purposes set forth.

573,427. AUTOMATIC PIANO. EDWARD H WHITE and WILLIAM D. PARKER, Meriden, Conn.; said Parker assignor of one-half of his interest to said White. Filed Nov. 29, 1895. Serial No. 570,437. (No model.)

Claim.—1. In an automatic piano, the combination as hereinbefore described, with the piano-action and strings, the connections for automatically playing the piano-action independent of the manual-keys, the cranked rocker-levers extending across the top of the piano-frame, the wind-chest in rear thereof containing the operating-pneumatics, primary pneumatic-controlling devices governed by a perforated music-sheet, and the vertically-moving lift-puppets arranged through the top of said chest, respectively carrying the ends of said rocker-levers and actuated by said operating-pneumatics; of the reed-box arranged above the top of the piano over said chest, provided with reed-cells, reeds, and valves disposed over said lift-puppets, and the upright standing connectors direct from the puppet-heads to the reed-cell valves and receiving motion from said lift puppet together with the rocker-lever, and simultaneously actuated thereby, for the purpose set forth.



2. The channel-board having horizontal air-ducts and vertical holes between said ducts and the auxiliary puppet-pins arranged through said channel-board in line with the lift-puppets and the valve-pitmen, in combination with the pneumatic-chest containing the operating-pneumatics and lift-puppets below said channel-board, and the reed-box with reed-seats, valves and valve-operating pitmen above said channel-board, substantially as set forth.

3. In a combined or automatic piano, having the piano-action, an organ-reed attachment, a pneumatic-operating mechanism, and wind-bellows for inducing air-pressure to work the pneumatics and sound the reeds; the combination with the reed-chest, of an automatic pressure-regulator in the windway between the reed wind-chest and the bellows, and controlling the reed-chest pressure independent of the pneumatic-operating mechanism for the purpose set forth.

4. In an automatic piano, or instrument having a set of reeds or organ attachment, a pneumatic-operating mechanism and wind-inducing bellows, the combination with the windway from the reed wind-chest to the bellows, of the pneumatic pressure-regulator controlling the air-current therethrough, the adjustable resistance spring, or springs, acting upon the regulator-pneumatic, an operating slide or handle at the front of the instrument, and suitable connections from said slide for shifting said resistance spring, or springs, toward or from the hinging end of said regulator-pneumatic at the will of the operator, for the purpose set forth.

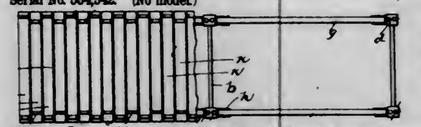
5. In an automatic combination-piano, comprising the upright piano-action, pneumatic-operating mechanism with rocker-levers therefrom extending over the piano-frame, and upright operator-rods in front of said piano-action, arranged for transmitting motion from said rocker-levers to the piano-action independent of the manual-keys; the combination with said rocker-levers and operator-rods, of the reed-box 50 containing reed-cells, reeds, and wind-chest connections, and the reed-cell valves respectively adapted for engagement with lugs on said operator-rods and to be operated by movement of the rocker-levers and operator rods, substantially as shown and described.

6. In combination, with the reed-box having the reed-cell, reeds, playing-valves, wind-chest and intermediate chamber provided with

passages into said wind-chest, and a relief or inlet opening from the exterior into said intermediate chamber, the cut-off valve and valve-operating connections, of a relief-valve controlling said inlet-opening, and adapted for operation in conjunction with the cut-off valve, substantially as set forth.

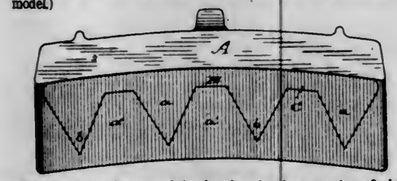
7. The combination with the manual-keys, of the key-stop consisting of a rod or rocking-bar hinged or movably supported upon the key-table beneath the keys, and adapted to elevate or turn up under the same for retaining all of said manual-keys in stationary elevated position, a lifter-link, and a pull connected therewith for operating said stop-bar, as and for the purposes set forth.

573,428. KNOCKDOWN TABLE. GEORGE B. YOST, Columbus, Ohio, assignor to Joel O. Shoup and Charles B. Cowen. Filed July 1, 1895. Serial No. 554,542. (No model.)



Claim.—In a table construction the combination with the supporting-standards consisting of the connected legs, of vertical recesses formed in opposite sides of the upper portions of said legs as described, and clip or cap plates embracing the top and opposite sides of each of said legs, socket-openings in the top plate of said clip or cap and narrower slotted openings communicating with said socket-openings and formed through the sides of the cap, of side bars having vertical key extensions at their ends, said key extensions being adapted to fit within and engage with said cap-openings and leg-recesses and a suitable cover for the frame thus formed, substantially as and for the purpose specified.

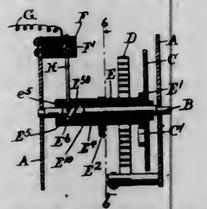
573,429. BRAKE-SHOE. ARCHIBALD BRAKE, Toronto, Canada. Filed Dec. 21, 1894. Renewed Feb. 24, 1896. Serial No. 580,537. (No model.)



Claim.—1. An improved brake-shoe having a series of chilled-metal parts of substantially triangular shape, the bases of said chilled parts being located on one edge of the shoe, each of said bases being connected by a strip of chilled metal, thereby forming a core for the shoe, and a continuous mass of soft metal surrounding said chilled parts; substantially as and for the purpose set forth.

2. An improved brake-shoe having a series of triangular-shaped chilled parts, the bases of said chilled parts being located along one edge of said shoe, each of said bases being cast integral with the next adjacent one, the apex of each chilled part extending beyond the middle of the shoe, and a continuous mass of soft metal surrounding the connected chilled parts; substantially as and for the purpose set forth.

573,430. SELF-WINDING MECHANISM FOR ELECTRIC CLOCKS. CHARLES M. CROOK, Elgin, Ill. Filed Apr. 20, 1896. Serial No. 588,267. (No model.)

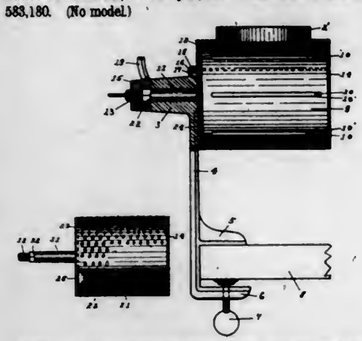


Claim.—1. In combination with the winding shaft, drum or barrel, two contact-pieces rigid therewith, one insulated and the other uninsulated, the insulated piece having a boss oblique to the axis; the winding magnet and the circuit through which it is energized comprising the uninsulated contact-piece, and a spring-arm having a finger adapted to bear upon said contact-pieces and standing in the path of rotation of the oblique boss, the arm being adapted to be sprung aside by the oblique boss to allow the latter, rotating in either direction, to pass the finger, whereby the contact of the finger is shifted from one of said contact-pieces to the other.

2. In combination with the winding shaft, drum or barrel, two contact-pieces rigid therewith, one insulated and the other uninsulated, the winding-spring and the circuit through which it is energized comprising an uninsulated contact-piece, and a spring-arm having a finger which bears on said contact-pieces, the insulated contact-piece having a boss extending in a plane oblique to the axis, and adapted, as it rotates in the direction to wind up the spring, to collide with the finger on the side toward the uninsulated contact piece, and as it rotates in the opposite direction, to collide with said finger on the side toward the insulated piece.

3. In combination, substantially as set forth, the winding shaft, drum or barrel having the two sleeves E^4 and E^5, insulated from each other at a plane oblique to the axis, the sleeve E^5 being further fully insulated and having the oblique boss E^{50} extending along the oblique insulated edge of said sleeve, the winding-magnet and its armature and the circuit through which the magnet is energized, comprising a spring-arm H, having a finger which bears upon the surface of said sleeves and extends in the path of rotation of the oblique boss.

573,431. VEGETABLE CUTTING AND GRATING MACHINE. CHARLES A. LANGER, Fort Wayne, Ind. Filed Mar. 14, 1896. Serial No. 583,180. (No model.)



Claim.—1. In a vegetable cutting and grating machine, a housing-cylinder, having a sheet-metal horizontal shell of uniform diameter, open at its rear end, a feed-hopper opening, exterior opposite flanges rigidly secured to and extending the entire longitudinal length of the said housing-shell with their forward ends projecting beyond the shell-body, and having a cast-metal detachable head provided with lugs for securing it to the said shell by bolts through said flanges and lugs, and an integral concentric journal-bearing for the purpose specified, and also an integral supporting-standard provided with means for securing it to a platform or table and said housing-cylinder being adapted to receive a rotatable cutting or grating drum of uniform diameter open at its rear end, all arranged as described and shown.

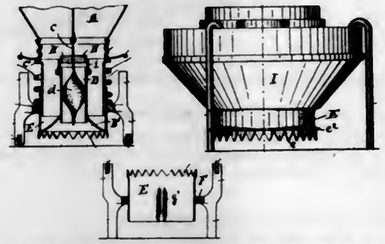
2. In a vegetable cutting and grating machine, the combination of the containing housing-cylinder 1 having a sheet-metal horizontal shell of uniform diameter, having a discharge-opening at its rear end and a feeding-hopper opening 2 and exterior opposite flanges rigidly secured to and extending the entire length of said cylinder-shell with their forward ends projecting beyond the said shell, and having a cast-metal detachable head provided with lugs for securing it to the said cylinder-shell by bolts through said flanges and lugs and an integral concentric journal-bearing for the purpose specified, and an integral supporting-standard provided with means for detachably securing it to a table or platform, the rotatable drum 9 of uniform diameter, open at its rear end and having a series of integral peripheral horizontal cutting-blades 10 and a corresponding series of discharge-openings 10′ and a fixed head 24 having an integral concentric shaft 11 rotatably mounted in said journal and adapted to receive an operating-handle upon the free end thereof, and the said drum being adapted to be revolubly mounted in said cylinder 1 as shown and described.

573,432. DEPOSITING APPARATUS FOR BAKERS' OR CONFECTIONERS' USE. RICHARD MEGSON, Cambridge, Mass. Filed Oct. 23, 1893. Serial No. 488,868. (No model.)

Claim.—1. A tube for bakers' and confectioners' use consisting of an inner tube adapted at its upper end to be secured to a bag or hopper; a central tube or partition secured therein to the lower end of which is secured a cut-off, and an outer tube mounted in a frame provided with legs substantially as set forth.

2. A tube for bakers' and confectioners' use consisting of an inner tube adapted at its upper end to be secured to a bag or hopper,

a small tube secured in the center thereof, a tube near its upper end passing through the wall of the inner tube to form a vent, a cut-off at the lower end of said small tube and an outer tube mounted in a frame provided with two sets of legs said outer tube being straight at one end and serrated at the other end and capable of being reversed substantially as and for the purposes set forth.



3. A tube for bakers' and confectioners' use consisting of an inner tube C, a small central tube D carried by and attached to the tube C, by the tubular dividing-piece I, and partition *c*, a tube communicating between the tubular dividing-piece and the tube C, whereby the atmosphere is admitted to form a vent, a cut-off D′, at the end of the central tube D, and a partition in said central tube in combination with an outer tube E, mounted in a frame having legs *f*, *f*′, and a spiral spring G, around said tubes all arranged and operated substantially as set forth.

4. A tube for bakers' and confectioners' use consisting of an inner tube having a cut-off at its lower end and an outer tube serrated on one of its edges and supported by legs, the inner tube and cut-off being lowered to deposit the dough below the serrated edge of the outer tube and means such as described for imparting a partial rotary motion to said outer tube while the dough is being deposited whereby the upper surface presents a series of curved scallops substantially as set forth.

5. A tube for bakers' and confectioners' use consisting of an inner and outer tube the inner tube having a cut-off at its lower end, said inner tube and cut-off being lowered to deposit the dough around the outer tube, and raised to cut off same, substantially as set forth.

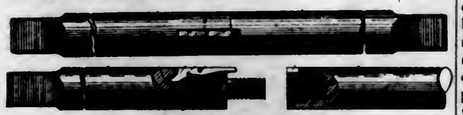
6. A tube for bakers' and confectioners' use consisting of an inner and an outer tube, the inner tube having a cut-off at its lower end, said inner tube and cut-off being lowered to deposit the dough and raised to cut off same in combination with an air-vent leading to the center of said inner tube whereby a ring or a flat circular piece of dough will be deposited according as to whether the air-vent is open or closed substantially as set forth.

7. In a tube for bakers' or confectioners' use a central tube having a spiral partition therein, said tube being secured in a depositing-tube by a screw-thread as described, whereby the dough entering on one side of the partition in the central tube will be deposited on the opposite side, while the dough that passes outside of said central tube will be deposited on the same side in combination with an outer tube for the depositing-tube to work in substantially as set forth.

8. In combination with a depositing-tube a hopper for containing sugar or other material said hopper being connected at its upper end to an inner tube free to slide within an outer tube, said outer tube being near its base formed with two flanges or projections, the lower edge of said hopper working between the said flanges or projections on the outer tube substantially as set forth.

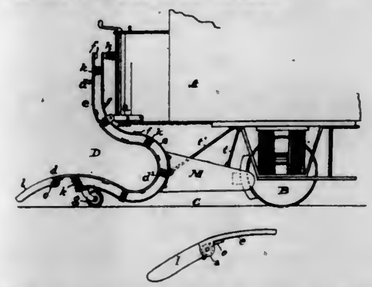
9. In a depositing apparatus consisting of an inner and outer tube, a conical hopper secured to the inner tube but extending around the outer tube, two rings or projections around the lower end of the outer tube, between which rings the lower end of the hopper works to measure and deposit sugar or other material from the hopper substantially as set forth.

573,433. DRILL-ROD COUPLING. JAMES T. MORAN, Ashburn, Va., assignor of one-half to Edward L. Pleasants. Filed Sept. 29, 1896. Serial No. 607,362. (No model.)



Claim.—A drill-rod coupling consisting of a dog, seated in a recess in one of the sections of a shaft, a rearwardly-projecting toe on the dog, a spring in the recess said spring bearing against a projection in the recess and a stop on the dog, a pivot for said dog, and a recess in the companion section, substantially as described.

573,434. STREET-CAR FENDER. BENJAMIN F. SEYMOUR, Cleveland, Ohio, assignor to Benjamin F. Seymour, Jr., Denver, Colo. Filed Jan. 11, 1896. Serial No. 575,098. (No model.)



Claim.—1. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivoted attachment of the fender to the car, swiveling wheels under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and spring-actuated fingers pivoted to the extremities of the outer series of ribs, substantially as described.

2. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and spring-actuated fingers pivoted to the extremities of the outer series of ribs, and a support extending from the pouch portion of the fender to the car on each side, substantially as described.

3. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels with rounded periphery under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, and spring-actuated fingers pivoted to the extremities of the outer series of ribs, and a support extending from the pouch portion of the fender to the car on each side, substantially as described.

4. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, springs interposed between the car and the upper part of the fender, wheels beneath the forward part of the inner series of ribs, spring-actuated fingers pivoted to the extremities of the outer series of ribs, a netting closing the spaces between the outer series of ribs, and a support extending from the pouch portion of the fender to the car on each side, and a guard extending backward from the fender on each side and supported from the car-body, substantially as described.

5. In a street-car fender the combination of resilient ribs formed into a curved pouch-like form and secured together in two series between which springs are interposed, a pivotal attachment of the fender to the car, swiveling wheels with rounded periphery under the forward end of the inner series of ribs, springs interposed between the car and fender and tending to depress its forward end, a netting closing the spaces between the ribs of the fender, spring-actuated fingers pivoted to the extremities of the outer series of ribs, a support extending from the pouch portion of the fender to the car on each side, and a guard extending backward from the fender on each side and supported from the car-body, substantially as described.

6. In a street-car fender the combination of two series of resilient ribs formed into a curved pouch-like portion extending backward beneath the car-platform, and having an upward-extending portion rising in front of the dashboard and a forward-extending portion terminating near the ground, springs interposed between the two series of ribs, a pivotal attachment of the fender to the car, springs interposed between the car and fender above the pivotal point, swiveling wheels with rounded periphery under the forward part of the inner series of ribs, a netting closing the spaces between the ribs of the fender, spring-supported fingers pivoted to the forward extremities of the outer series of ribs, a support extending from the pouch portion of the fender backward to the car, and a guard extending backward from the fender on each side, substantially as described.

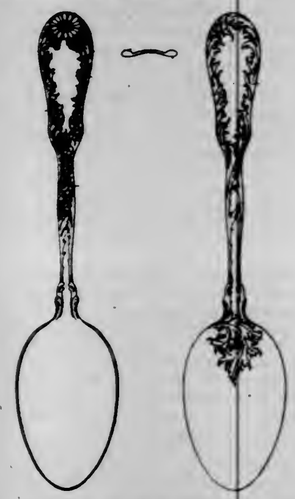
DESIGNS.

26,392. RING. CHARLES KNAPP, Brooklyn, N. Y. Filed Sept. 18, 1896. Serial No. 606,304. Term of patent 3½ years.



Claim.—The design for rings as herein shown and described.

26,393. SPOON, &c. GILBERT L. CROWELL, Jr., Arlington, N. J., assignor to Dominick & Haff, New York, N. Y. Filed Aug. 29, 1896. Serial No. 604,335. Term of patent 14 years.

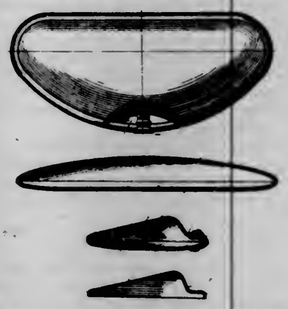


Claim.—1. The design for the obverse side of a handle for a spoon, fork or similar article, substantially as shown and described.

2. The design for the reverse side of a handle for a spoon, fork or similar article, substantially as shown and described.

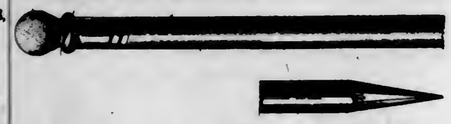
3. The design of a handle of a spoon, fork or similar article, substantially as shown and described.

26,394. EYEGLASS-CASE. JOHN S. SPENCER, New York, N. Y. Filed Nov. 4, 1896. Serial No. 611,053. Term of patent 14 years.



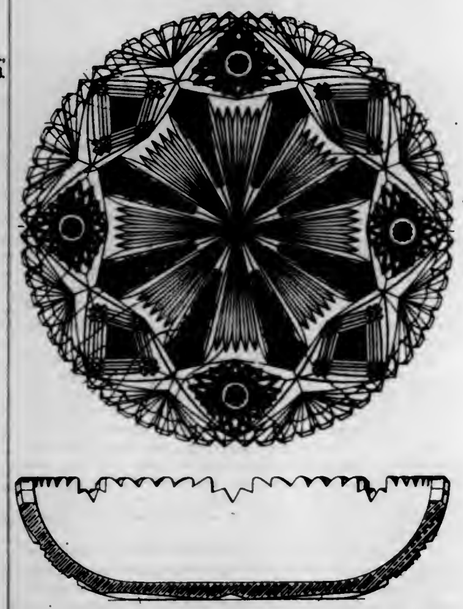
Claim.—The design for an eyeglass-case, substantially as shown and described.

26,395. LEAD-PENCIL. SAMUEL KRAUS, New York, N. Y., assignor to the Eagle Pencil Company, same place. Filed Nov. 9, 1896. Serial No. 611,569. Term of patent 7 years.



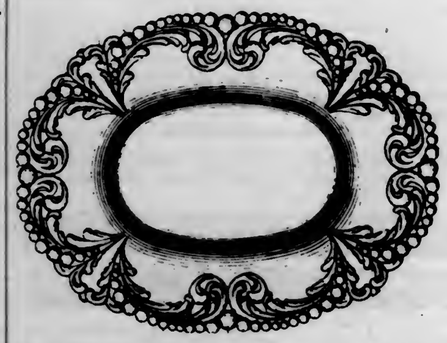
Claim.—The design for a lead-pencil substantially as herein shown.

26,396. GLASS DISH. JOSEPH B. HILL, Philadelphia, Pa., assignor to the Imperial Cut Glass Company, of Pennsylvania. Filed Mar. 28, 1896. Serial No. 585,289. Term of patent 7 years.



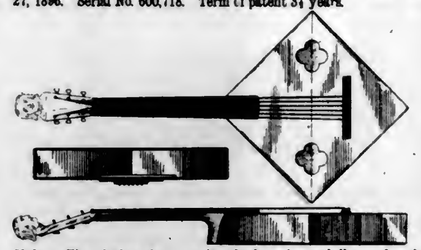
Claim.—The design for a dish, substantially as described and shown.

26,397. DISH. ALBERT A. SOUTHWICK, Providence, R. I. Filed Nov. 6, 1896. Serial No. 611,300. Term of patent 7 years.



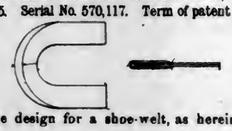
Claim.—The design for a dish or similar article herein shown and described.

26,398. GUITAR-BODY. GUSTAV BEHM, Chicago, Ill. Filed July 27, 1896. Serial No. 600,718. Term of patent 3½ years.



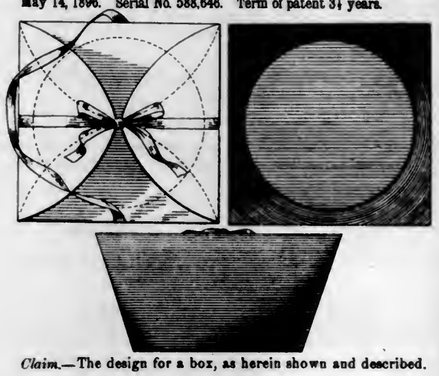
Claim.—The design for a guitar-body substantially as herein shown and described.

26,399. WELT FOR SHOES. JOSEPH WALDEN, Orange, N. J. Filed Nov. 25, 1895. Serial No. 570,117. Term of patent 14 years.



Claim.—The design for a shoe-welt, as herein shown and described.

26,400. BOX. HERMAN A. DEKNATEL, New York, N. Y. Filed May 14, 1896. Serial No. 588,646. Term of patent 3½ years.



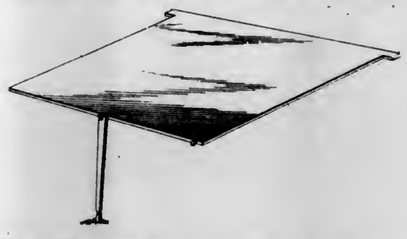
Claim.—The design for a box, as herein shown and described.

26,401. HANDLE FOR PANS, &c. FANNIE L. JACK, Chillicothe, Ohio. Filed Oct. 7, 1896. Serial No. 608,181. Term of patent 7 years.



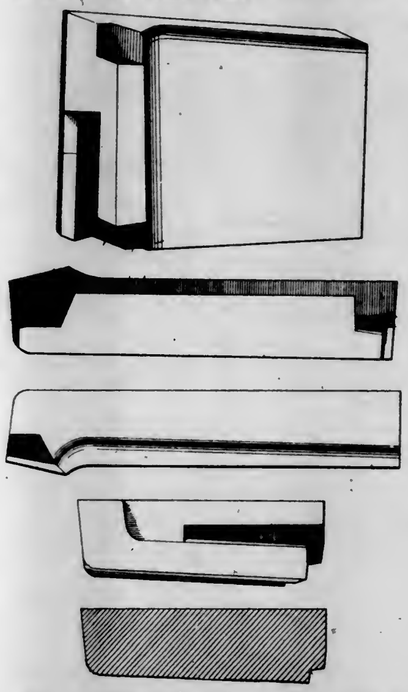
Claim.—The design for a handle for pans and the like, substantially as herein shown and described.

26,402. OVEN-SHELF. ANNA R. GARLING, Bloom Centre, Ohio. Filed Oct. 28, 1896. Serial No. 610,367. Term of patent 7 years.



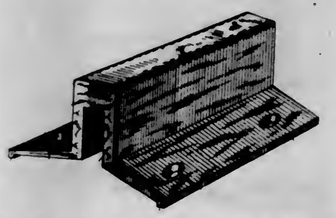
Claim.—The design for an oven-shelf, substantially as herein shown and described.

26,403. FIRE-BRICK. ARTHUR R. CLUNIES, Rochester, N. Y., assignor to the Sill Stove Works, same place. Filed Oct. 3, 1896. Serial No. 607,803. Term of patent 14 years.



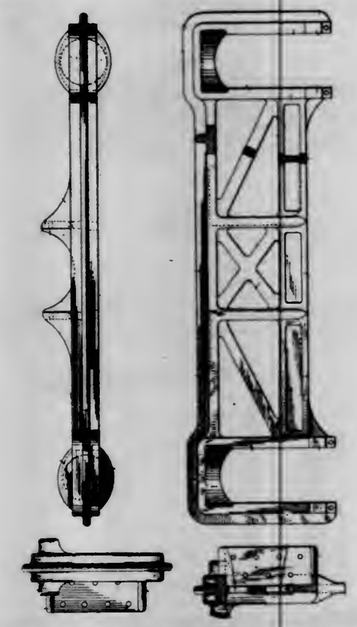
Claim.—The design for a fire-brick, substantially as herein shown and described.

26,404. RAIL-SPLICE. WILLIAM S. PATTERSON, Homestead, Pa. Filed Oct. 13, 1896. Serial No. 608,784. Term of patent 14 years.



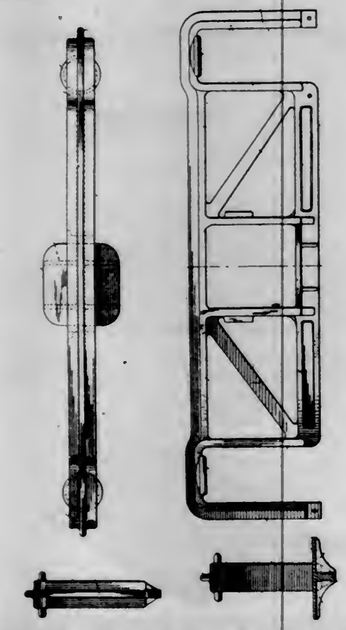
Claim.—The design for a rail-splice as herein shown and described.

26,405. SIDE FRAME FOR CAR-TRUCKS. JOHN A. BRILL, Philadelphia, Pa. Filed Nov. 3, 1896. Serial No. 610,987. Term of patent 14 years.



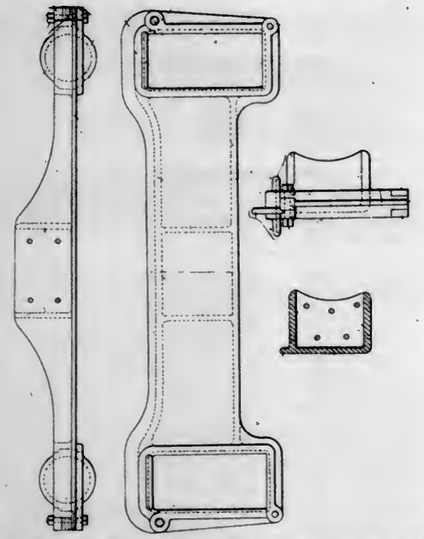
Claim.—The design for a side frame for car-trucks, substantially as herein shown and described.

26,406. SIDE FRAME FOR CAR-TRUCKS. JOHN A. BRILL, Philadelphia, Pa. Filed Nov. 3, 1896. Serial No. 610,988. Term of patent 14 years.



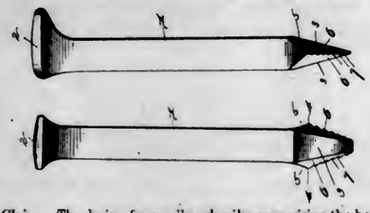
Claim.—The design for a side frame for car-trucks, substantially as herein shown and described.

26,407. SIDE FRAME FOR CAR-TRUCKS. JOHN A. BRILL, Philadelphia, Pa. Filed Nov. 3, 1896. Serial No. 610,989. Term of patent 14 years.



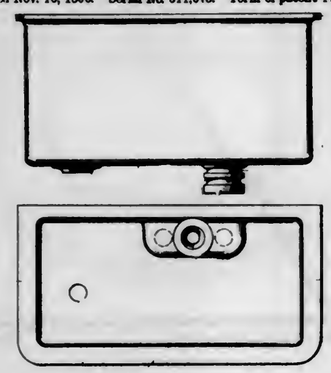
Claim.—The design for a side frame for car-trucks, substantially as herein shown and described.

26,408. RAILROAD-SPIKE. ANDREW BARROWS, East St. Louis, Ill. Filed Apr. 22, 1896. Serial No. 588,644. Term of patent 14 years.

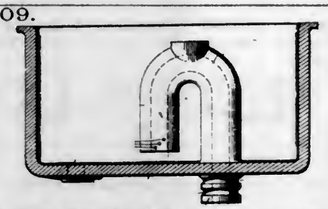


Claim.—The design for a railroad-spike comprising the body, the head, the front rear faces 3 meeting at their lower ends, and joined to the front rear faces of the body of the spike at their upper ends, the bulges 4 at the lower ends of the side faces of the spike, the concaved faces 5 upon the upper sides of said bulges, the triangular faces 6 below said concaved faces and the notches 7 formed in the meeting edges of said triangular faces, as shown and described.

26,409. FLUSH-TANK. BERNARD M. CARNEY, McKeesport, Pa. Filed Nov. 10, 1896. Serial No. 611,675. Term of patent 14 years.

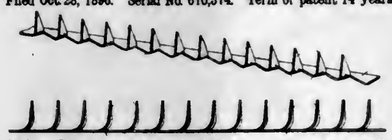


26,409.



Claim.—The design for a flush-tank for water-closets, substantially as herein shown and described.

26,410. FENCE-STRAND. DARIUS C. BENJAMIN, Alpha, Minn. Filed Oct. 28, 1896. Serial No. 610,374. Term of patent 14 years.



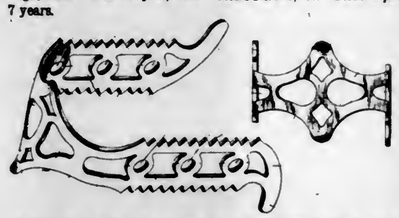
Claim.—The design for a barbed-fence strip, substantially as herein shown and described.

26,411. FORK AND CROWN FOR VELOCIPEDES. AMOS G. MOORE, Chicago, Ill., assignor to the Mason & Mason Company, of Illinois. Filed Nov. 3, 1896. Serial No. 610,984. Term of patent 14 years.



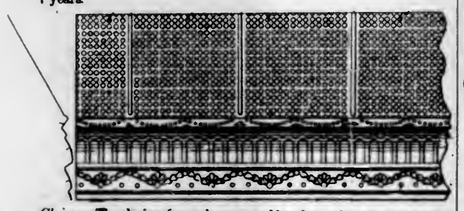
Claim.—The design for a fork and crown for velocipedes, substantially as herein shown and described.

26,412. FOOT-PIECE FOR PEDALS. REYNOLD JANNEY, Westborough, Mass. Filed July 18, 1896. Serial No. 599,740. Term of patent 7 years.



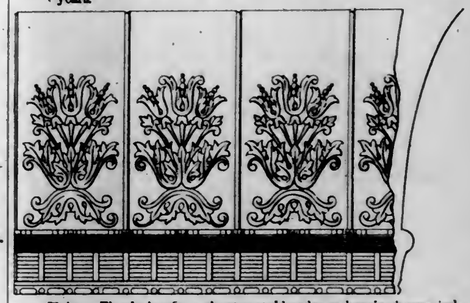
Claim.—The design for a foot-piece for bicycle-pedals, substantially as shown and described.

26,413. METALLIC BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Nov. 9, 1896. Serial No. 611,570. Term of patent 7 years.



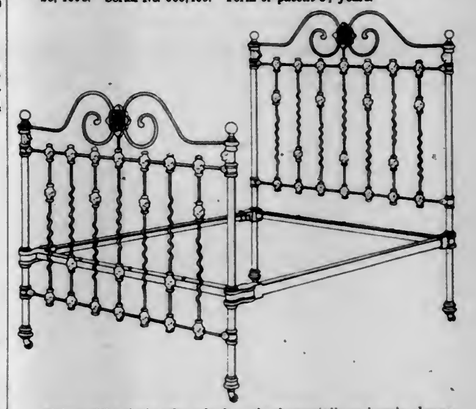
Claim.—The design for a sheet-metal border as herein shown and described.

26,414. METALLIC BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Nov. 9, 1896. Serial No. 611,573. Term of patent 7 years.



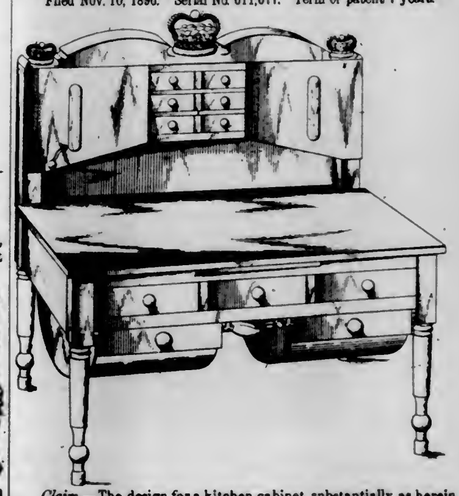
Claim.—The design for a sheet-metal border as herein shown and described.

26,415. BEDSTEAD. GEORGE SEMEL, New York N. Y. Filed Oct. 20, 1896. Serial No. 609,469. Term of patent 3½ years.



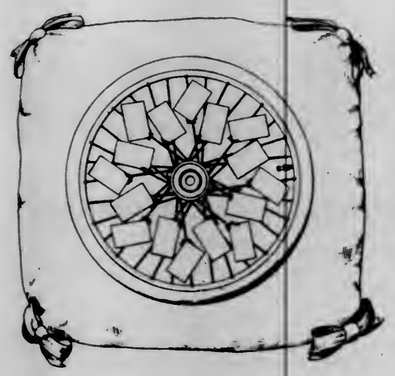
Claim.—The design for a bedstead substantially as herein shown and described.

26,416. KITCHEN-CABINET. WALLACE B. PIGG, Calhoun, Mo. Filed Nov. 10, 1896. Serial No. 611,677. Term of patent 7 years.



Claim.—The design for a kitchen-cabinet, substantially as herein shown and described.

26,417. PILLOW-CASE. ALFRED W. HAMILTON, New York, N. Y. Filed Sept. 28, 1896. Serial No. 607,260. Term of patent 3½ years.



Claim.—The design for pillow cases and the like, substantially as herein shown and described.

26,418. EXERCISING-CLUB. ALFRED M. HEYDRICK, South Norwalk, Conn. Filed Nov. 5, 1896. Serial No. 611,184. Term of patent 7 years.



Claim.—The design for an exercising-club, herein shown and described.

26,419. BIRD-SCARER. WILLIAM A. TAYLOR, Portland, Me. Filed Oct. 16, 1896. Serial No. 609,155. Term of patent 7 years.



Claim.—The design for a bird-scarer substantially as herein shown and described.

TRADE-MARKS

REGISTERED DECEMBER 15, 1896.

29,292. LINEN WRITING-PAPER. MARCUS WARD & COMPANY, LIMITED, London, England, and Belfast, Ireland. Filed Nov. 12, 1896.

ROYAL IRISH LINEN PAPER

Essential feature.—The British coat of arms and the words "ROYAL IRISH LINEN PAPER." Used since June, 1872.

29,293. LINEN WRITING-PAPER. MARCUS WARD & COMPANY, LIMITED, London, England, and Belfast, Ireland. Filed Nov. 12, 1896.

PURE IRISH LINEN

Essential feature.—The words "PURE IRISH LINEN" and a representation of a shamrock with the letters "M. W. & Co." printed thereon. Used since June, 1872.

29,294. LINEN WRITING-PAPER. MARCUS WARD & COMPANY, LIMITED, London, England, and Belfast, Ireland. Filed Nov. 12, 1896.

Royal Irish Linen

Essential feature.—The words "ROYAL IRISH LINEN." Used since June, 1872.

29,295. PRINTED PUBLICATIONS. BURKE & BEYER, Newark, N. J. Filed Nov. 17, 1896.

TOWN TALK

Essential feature.—The words "TOWN TALK." Used since July 15, 1890.

29,296. FASTENING-TABS WHICH ARE ATTACHABLE TO WEARING-APPAREL. MARIE H. MERGENTHALER, Albany, N. Y. Filed Sept. 8, 1896.

Marie

Essential feature.—The word "MARIE." Used since August 10, 1896.

29,297. GLOVES AND HOSIERY. THE FIRM OF MAURICE SAMUEL ESCHE, Chemnitz, Germany. Filed Nov. 21, 1896.

Essential feature.—A pictorial representation of three concentric circles inclosing a globe or map of the world surmounted by an eagle with outstretched wings, crossed branches beneath the same, and the words "NUNQUAM RETROROSUM." Used since 1876.

29,298. LEATHER. KULLMAN, SALZ & COMPANY, INCORPORATED, San Francisco, Cal. Filed Nov. 19, 1896.

MONARCH OF THE OAKS.

Essential feature.—A figure of a bear and the words "MONARCH OF THE OAKS." Used since June 2, 1896.

29,299. TOY TORPEDOES AND TOY PAPER CAPS. M. BACKES SONS, Wallingford, Conn. Filed Oct. 19, 1896.



Essential feature.—A tricolored star. Used since March 1, 1880.

29,300. CLINICAL AND OFFICE INSTRUMENTS AND APPARATUS. HERCULES SANCHE, Detroit, Mich., assignor to the Animarium Company, New York, N. Y. Filed Oct. 24, 1896.



Essential feature.—A representation of a human figure and a cord or wire leading from a part of the figure. Used since September, 1889.

29,301. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Nov. 21, 1896.

D

Essential feature.—The letter "D." Used since January 1, 1896.

29,302. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Nov. 21, 1896.

G

Essential feature.—The letter "G." Used since January 1, 1896.

29,303. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York, N. Y. Filed Nov. 21, 1896.

K

Essential feature.—The letter "K." Used since January 1, 1896.

29,304. TOOTH-BRUSHES. HAMBURGER & COMPANY, New York N. Y. Filed Nov. 21, 1896.

R

Essential feature.—The letter "R." Used since January 1, 1896.

29,305. HOUSEHOLD REMEDIES. ROBERT NORMAN DOWNEY, Athens, Canada. Filed Sept. 14, 1896.



Essential feature.—A representation of a pine branch bearing cones and needles, together with the words "PINE BUD MEDICINE CO." and a monogram of the letters "N D." Used since March 26, 1896.

29,306. LAXATIVE MEDICINES. TARRANT & CO., New York, N. Y. Filed Oct. 16, 1896.



Essential feature.—A design of a circular band or ring, outlined by two concentric circles, and a cross-bar or tablet extending across the band or ring. Used since 1866.

29,307. ANTIPYRETIC AND ANALGESIC PREPARATIONS. ALLEN H. STILL, New York, N. Y. Filed Nov. 14, 1896.

PHENALGIN

Essential feature.—The word "PHENALGIN." Used since November 7, 1896.

29,308. MEDICINAL WINE. ALLEN H. STILL, New York, N. Y. Filed Nov. 14, 1896.

VOLCŌL

Essential feature.—The word "VOLCOL." Used since November 7, 1896.

29,309. REMEDY FOR THE TOBACCO HABIT. WILLIAM J. PATTERSEN, Cresco, Iowa. Filed Nov 11, 1896.



Essential feature.—The compound word "ANTI-NIC" arranged between two parallel horizontal lines within the inner of two circles. Used since February 15, 1896.

29,310. PREPARATION OF WITCH-HAZEL BALSAM. C. T. BOSWORTH & CO., New Bedford, Mass. Filed Nov. 10, 1896.



Essential feature.—A representation of a section of branch of a witch-hazel bush with leaves and a monogram composed of the letters "C. T. B." arranged behind said bush. Used since November 2, 1896.

29,311. CERTAIN NAMED FAT-PRODUCING FOOD. ABBOTT LORING, Boston, Mass., New York, N. Y., and Chicago, Ill. Filed Nov. 20, 1896.

CORPULA

Essential feature.—The word "CORPULA." Used since November 20, 1894.

29,312. NATURAL MINERAL WATER. THE ÆSCULAP BITTER WATER COMPANY, LIMITED, London, England, and Buda-Pesth, Austria-Hungary. Filed Oct. 10, 1896.

ÆSCULAP.



Essential feature.—The head of Æsculapius and the word "ÆSCULAP." Used since 1883.

29,313. ALE. THOMAS MCMULLEN & CO., New York, N. Y. Filed Oct. 27, 1896.

PEACOCKE



Essential feature.—The word "PEACOCK" or the word "PEACOCKE" or the picture of a peacock. Used since August 22, 1896.

29,314. SUBSTITUTE FOR SUGAR. FARBENFABRIKEN, VORMALS FR. BAYER & CO., Elberfeld, Germany. Filed Nov. 16, 1896.

SYCOSE

Essential feature.—The word "SYCOSE." Used since June 1, 1896.

29,315. BUTTER. THE BELLE SPRINGS CREAMERY COMPANY, Abilene, Kans. Filed Nov. 13, 1896.

BELLE



SPRINGS

Essential feature.—The words "BELLE SPRINGS" and a representation of a balance. Used since November 1, 1896.

29,316. CANNED MEATS, FISH, VEGETABLES, FRUITS, AND CONDENSED MILK. WALTER B. TINNE, New York, N. Y. Filed Nov. 16, 1896.

CARMELO

Essential feature.—The word "CARMELO." Used since September 1, 1896.

29,317. SOAP. THOMAS A. KASEY, Salem, Va. Filed Oct. 15, 1896.

29,317.



Essential feature.—The words "KASEY'S SOAP," surrounded by a circular border made up of a number of circular figures connected together by curved lines. Used since January 1, 1883.

29,318. SOAP. CURTIS DAVIS & CO., Cambridge, Mass. Filed Nov. 16, 1896.



Essential feature.—A representation of a winged globe accompanied by a pair of clasped hands. Used since November 2, 1896.

29,319. SOAP. CURTIS DAVIS & CO., Cambridge, Mass. Filed Nov. 16, 1896.

CREST

Essential feature.—The word "CREST." Used since November 2, 1896.

29,320. SOAP. CURTIS DAVIS & CO., Cambridge, Mass. Filed Nov. 16, 1896.

WELKIN

Essential feature.—The word "WELKIN." Used since November 2, 1896.

29,321. SOAP. CURTIS DAVIS & Co., Cambridge, Mass. Filed Nov. 16, 1896.

GO-GET-IT

Essential feature.—The hyphenated word "Go-Get-It." Used since November 2, 1896.

29,322. CHEWING-GUM. THE GROVE COMPANY, Salem, Ohio. Filed Aug. 31, 1896.

PEPSIN

Essential feature.—A representation of a sheet or parchment scroll with the word "PEPSIN" and other descriptive matter thereon, and having a slitted lower edge with curled portions at the sides of the slit, and the representation of a horizontal ribbon scroll having the word "PEPSIN" printed thereon, said ribbon scroll having a narrowed extension at one end disposed obliquely directly adjacent to the sheet or parchment scroll and having printed thereon the name of the originator of the goods. Used since December 21, 1891.

29,323. DYESTUFFS. FARBENFABRIKEN, VORMALS FR. BAYER & Co., Elberfeld, Germany. Filed Nov. 16, 1896.

KATIGEN

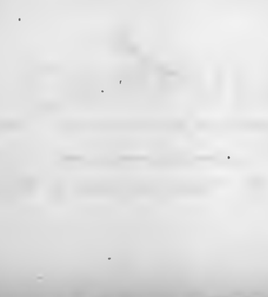
Essential feature.—The word "KATIGEN." Used since January 1, 1896.

29,324. WOOD-FILLERS. C. A. REEVE & Co., Syracuse, N. Y. Filed Nov. 16, 1896.

WHITE SEAL

Essential feature.—The words "WHITE SEAL." Used since October 1, 1895.

29,325. BICYCLES. MARY ELIZABETH JOHNSON, Fitchburg, Mass. Filed Jan. 4, 1896.



Essential feature.—A geometrical figure in the form of a hexagon having concave sides, with an opening corresponding in shape with the outline of the figure and having a band extending diametrically across said opening and connecting two opposite sides of the figure. Used since December 1, 1895.

PHOTO-LITH. WASHINGTON, D.C. THE NORRIS PETERS CO.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

FOSTER AND FOSTER *v.* BENT.

Decided November 30, 1896.

1. PRELIMINARY STATEMENT—MOTION TO AMEND—DENIED ON APPEAL.

Bent's motion to amend his preliminary statement, granted by the Examiner of Interferences, was denied by the Commissioner on appeal, since the facts do not show sufficient ground for the motion.

2. SAME—AMENDMENT TO—PRACTICE OF THE OFFICE.

The practice of the Office should conform to the modern practice in courts, which allows amendments to pleadings upon a proper showing at any stage in the case; but it is not proper to allow an amendment to a preliminary statement at any stage of the case, as a matter of course, whenever asked for, without a showing of facts to justify it.

3. SAME—SAME—CONSIDERATION OF—AFFIDAVITS.

Motions to amend preliminary statements should not be disposed of upon affidavits alone, but upon the entire record.

4. SAME—SAME—WHEN PERMITTED.

Amendments to preliminary statements should be permitted where indisputable facts or clearly-proved circumstances support the necessary inference that a mistake has been made which would defeat the ends of justice and where such facts or circumstances by the exercise of reasonable diligence could not have been found and in fact were not found earlier.

5. SAME—SAME.

The fact that an affiant who is one of the parties did not give the original preliminary statement adequate study, did not follow back the details in his mind, did not at the time it was made recollect anything important about it, and confused the article which he afterward manufactured with the one which he then invented are not sufficient grounds to justify disposing of the original statement by substituting therefor an amended one.

APPEAL on motion.

BED.

Application of Oscar S. Foster and Wm. S. Foster filed August 1, 1895, No. 557,850. Application of George W. Bent, filed August 8, 1894, No. 519,726.

Messrs. Risley, Robinson & Love for Foster and Foster.

Mr. Jas. H. Churchill and *Mr. Jas. H. Lange* for Bent.

SEYMOUR, *Commissioner:*

This is an appeal by Foster and Foster from the action of the Acting Examiner of Interferences in granting Bent's motion to amend his preliminary statement. In his original preliminary statement Bent made oath that he conceived of the invention in the latter part of November or the first part of December, 1893, (the exact date he was unable to give at that time;) that he disclosed the invention to others in December, 1893, having made no drawings or model, but reduced the invention to practice in December, 1893, and had since sold a large number.

The Fosters' testimony was taken with reference to this preliminary statement of Bent's, and their proofs were evidently addressed to the necessity of overcoming it. After their testimony had been completed Bent took testimony contradictory of the preliminary statement, in the face of the Fosters' objection on that ground. Rebuttal testimony was admitted by stipulation September 5, 1896, and the Fosters' case closed. On August 12, 1896, at the close of Bent's testimony, the Fosters gave notice that at the hearing before the Examiner of Interferences motion would be made to expunge Bent's testimony as contradictory of the preliminary statement, and thereupon counsel for Bent gave notice that they would apply to the Patent Office for leave to amend the preliminary statement.

On September 15, 1896, counsel for Bent moved to amend Bent's preliminary statement, and filed therewith such amended preliminary statement, carrying back the date of the conception of the invention, the disclosure to others, and the reduction to practice to July, 1893, five months earlier than the corresponding dates of his first statement.

The grounds upon which this singular motion are made are that Mr. Churchill first prosecuted the case up to the point of the taking of the Fosters' testimony in Utica; that the papers were placed in the hands of the present attorney only a short time before; that the necessity for the amendment of the preliminary statement did not arise until after the taking of the Fosters' testimony; that investigation was immediately begun, and that it was found that something of a case might be made out for an earlier conception and reduction to practice than that stated. Upon this point Bent himself testifies, at interrogatory 64 and following, upon direct examination, that he first learned that a mistake had been made in his preliminary statement after his counsel had returned from the taking of testimony in Utica, when he began to talk with him about the matter and was asked by counsel to look it up and see where they stood. He came to make the statement as at first submitted because his mind went back at once to the bed as it stood in the Whitman room, before a fire occurring late in December had destroyed his warehouse. He states that in fact his mind reverted to the fire and that he did not give the subject sufficient study, did not follow it back in detail, as he had since, and had wholly forgotten at the time this bed of 1893, which contained only a bolt without the shoulder, which was previous, as he says, to the one with a shoulder. He states that his mind

centered on the bed which they decided to use—that is, the one with the shoulder. Then as to corroborating proof, the bill of James Gurney is presented, containing an item for a lot of molds and pattern-molds for beds, which are now thought to be identified with the preliminary construction which Bent calls the July, 1893, bed. Other testimony of this kind was adduced, but it was not discussed before me. I have considered it necessary to examine it for reasons which will be noticed hereinafter.

Joseph Rimmer, a foundryman, seems to have been connected with the construction of the first and second beds made by Bent, and is supposed to have fixed the date of his work with reference to the payment of interest upon his mortgage-note on July 17, 1893, and the reason which he assigns for connecting the two is that if he had not paid this interest before he went to work in the foundry he would have lost time while going out to pay it; but it clearly appears that he was only occasionally employed in the foundry until December, 1893, and obviously until then he might have paid his interest without loss of time at the foundry.

The pattern-molds for beds in the James Gurney bill show nothing of themselves, and Rimmer testifies that they had nothing to do with the first bed; that while it is possible they might have something to do with the second, it is also possible they may not.

The testimony of Miller, the foreman of the foundry, fixes no dates with any satisfaction to the impartial mind. He thinks the construction of the first bed was a short time after Rimmer's leaving his department to go to the foundry; but this is all inference, and so is the attempt to connect it with the termination of Whitman's occupancy of the store-room. It would seem that he probably vacated the room on October 31, and while any of the events connected with the construction of the first and second beds might with equal probability have been put later than October 31 nothing is shown why they should be earlier. Indeed, the whole testimony leaves the impression that all that is testified to might with entire harmony with every fixed event have taken place in November or December.

Bent seems to have submitted his mind to strained constructions and to the force of inference rather than to the statement of fact which can be treated as evidence. When he became aware of the nature of the Fosters' evidence, after his counsel's return from Utica and after he was asked to look up the matter and see where they stood, he seems to have argued with himself and to have learned things from investigation. At interrogatory 81 he was asked when it was that he first definitely learned from his investigations that in July, 1893, he made and set up in his factory at Canal street, Boston, a bed having metallic head and foot frames and embodying the construction found in Bent's exhibit model of July, 1893, bed with post, to which he answered:

> Well, conclusively to my mind, within two days, but it had been tending in that direction for a month or more.

I think that his recurrence to the fire when he made his preliminary statement suggests a more immediate connection between the fire and his first experimental beds than in his later acts he is willing to admit and that he vividly recalled the two in connection because the two were nearly coincident in time.

To dispose of this motion may be to dispose of the case upon the merits; but this follows from the extraordinary course taken respecting the preliminary statement, and while the practice of the Office, properly enough, should be made to conform to the modern practice in courts, to allow amendments to pleadings upon a proper showing at any stage of the case, it does not follow nor would it be proper to go so far beyond this as to allow as a matter of course the amendment of a preliminary statement whenever asked for without a showing of the facts which would justify it. It is not easy to conceive of a case where such amendment would be allowed after opposing counsel had shaped their case with reference to the preliminary statement as first filed and long after the party adducing testimony in contradiction of his own preliminary statement had discovered the necessity of amending it and had given no notice of an intention to do so until after he had taken his testimony. The burden of such a practice would be heavy on opposing parties and their counsel and upon the Office. If such motions were to be disposed of merely upon the affidavits connected with them and without an examination of the cases as presented upon the merits, for the testimony has all been taken, printed, and filed, the absurdity might arise that the affidavits would show a case for amendment, while the record would show that there was failure in making out such case.

In this case the affidavits presented in connection with the motion throw little light upon the real question and in my judgment show no case for allowing an amendment to the preliminary statement; but I am not content with disposing of the motion merely upon the affidavits, although the Acting Examiner of Interferences has seen fit to pursue a different course.

The general contention of the appellee may well be allowed. The preliminary statement should be amended where indisputable fact or clearly-proved circumstances support the necessary inference that a mistake has been made which would defeat the ends of justice—where with all reasonable diligence in ascertaining fact and in making the statement a drawing or a model or an abandoned application or some other fact of clear date and origin has been unearthed which by reasonable diligence could not have been found and which in fact was not found earlier. When this arises, then, except by stipulation, no time should be lost in applying for the amendment, to the end that opposing counsel and parties may shape their case with reference to it. Even then the first preliminary statement remains a part of the case, and while it is not evidence in favor of the party making it it is strong evidence against him, to the effect that the various stages of development of the invention were not of earlier date than as first deliberately set up and sworn to.

In entire fairness to Bent's contention it might be written out in full to read something like this: May a preliminary statement be disposed of by showing that the affiant did not give it any adequate study, did not follow back the details in his mind, did not at that

time recollect anything important about it, and confused the bed which he afterward manufactured with the one which he then invented?

I am not willing to give the first preliminary statement such slight effect. Bent should be taken to have testified under oath in a solemn and ceremonious manner, under a motive to state his best case and with a *bona fide* and adequate attempt to do so. It should be held that he went over in his mind all the circumstances attending the conception of this invention and the making of a bed; that he compared one event with another, and that it was at that time his best recollection that he invented it in December, 1893, and not at an earlier date, and now from a critical examination of all that he has adduced for an earlier date he will not be permitted to urge his own trifling conduct with reference to his first solemn affidavit and to brush it aside. I regard it as the most competent and convincing part of his testimony, and notwithstanding his inconclusive responses to leading questions now setting up a different state of facts I am constrained to believe that the truth lies under his first affidavit.

I have referred to the disposition of the Office to conform its practice somewhat to the proceedings in court. Precisely such cases as the present do not often arise in courts, and reported cases that may be treated as satisfactory precedents are not easily found. That the preliminary statement should be amended when a reasonably clear case is made out and that yet the original sworn statement should have great weight, notwithstanding the amendment, receives some support from the recent English case of the *Germ Milling Co., Limited*, v. *Robinson*, (3 R. P. C., 390.) In that case the plaintiffs brought an action upon a patent to Muir for improvements in the manufacture of meal and flour from wheat and in obtaining a valuable product during such manufacture. At the trial in the court below Muir was a witness in behalf of the plaintiffs, and in the course of his examination-in-chief he stated that he had made flour according to his patented process in June, 1875, and in his cross-examination he stated that the flour which he so made he sold in the ordinary course of business, and it appeared that this sale was before the date of the patent. Under the English statute this was fatal to the patent, and the plaintiffs' counsel, after submitting to the judge that this was only an experimental use of the patented invention, considered that the case was hopeless and abandoned it. Afterward the plaintiffs applied to the Court of Appeals for a new trial on the ground that the patentee had made a slip and was mistaken in what he stated at the trial. Their application was supported by affidavits made by the patentee and by two of his foremen, which were at great length and to the effect that the witness had not refreshed his memory by reference to books and documents which would enable him to speak accurately as to dates; that he was taken by surprise; that he had since ascertained that some of the facts and dates which he deposed to at the trial were incorrect; that it was not possible that his establishment could have turned out the product that he testified at the time had been sold; that he made a series of experiments at the mill and alterations in the mill, which was wholly stopped between the 3d and 19th of May, 1875, which dates he showed by the books kept at the mill, and that this product was made a considerable time after the mill had been started again and could not have been made so early as he had first stated. The three lords justices were unanimous in refusing the application, and Lord-Justice Cotton in the course of his opinion said:

> In my opinion the court has power to grant a new trial where it is satisfied that there has been something done or said inadvertently, and to do so even at the instance of the defeated party, and even where the witness was the witness of the defeated party, if satisfied that there was a mere slip, and that the matter therefore ought to be tried again before the tribunal which has to determine the facts. We can grant a new trial when there is an appeal. We can, on an application, where the case has not been heard before a jury, grant a new trial if we think it right; but we must consider, and I say we must consider very carefully and very strictly, the evidence which is adduced as compared with the evidence which was given at the trial by the witness who is said to have made the slip.

In disposing of this question of fact the lord justice puts emphasis upon the deliberations with which Muir's first story was told, its consistency, and treats the letters and papers put into the case as inconclusive, although I must say that they are connected far more closely with the events testified to than the letters and dates that are relied upon in this case.

Lord-Justice Bowen in the course of his opinion remarked that the court had ample power in this and in every case to examine into the truth and justice of a story and to decide every case upon the merits:

> The fact that it is the party's own witness, or the very party to the case who has made the blunder or slip, does not prevent this court from curing the slip if it be a slip. The power of the court, it seems to me, is just as large to cure a slip made in the witness-box as it is to cure a slip made upon paper. But of course we must be quite sure that in exercising these powers of review we are moving in the direction of justice and not of injustice; because, although we may, no doubt, impose terms upon a person who comes for a new trial, nevertheless we are taking away the fruit of victory from the man who has succeeded.

Lord-Justice Fry, among other things, said:

> I do not for a moment doubt the jurisdiction of this court in cases of miscarriage arising from a slip in the evidence to set that right by directing a new trial, but I am bound to say it appears to me that the jurisdiction is one which must be exercised with the greatest caution, otherwise we should be allowing persons who feel the pressure of a particular piece of evidence to set their case on its legs again by setting aside that evidence. Nor is that caution to be the less applied in a case like the present; on the contrary there are several circumstances in this case which seem to me to render extreme caution requisite.

He notes that the witness in the case was an interested witness; that the error which is alleged is not the mere erroneous statement of the date of a document or some error of that description, but one that could only be made out, if at all, by the parole testimony of the witness; that while the witness says that he has refreshed his memory by certain documents which he says lead him to the conclusion that he was wrong it is nevertheless the link between these documents and the correction of the error which again entirely rests upon the witness's memory, and he is in no way corroborated by any written instrument. The lord justice places the clear story which was told by the witness in the witness-box over against his second story and felt bound to say that to his mind the second story was eminently vague and unsatisfactory.

I have noted these matters at length, because there is hardly an element or a circumstance that is not to be found in this case, except that Bent's second story is far less fortified by any fixed events and dates, far less consistent in itself, than that which was consid-

ered by the court in the very carefully considered case which I have cited.

The contention that Bent had no assistance of counsel in preparing his preliminary statement is one that I do not regard with satisfaction. He, in fact, had the assistance of Mr. Churchill; but the plain statement when he constructed his first bed, when it was built, when it was exhibited, connected, as I have no doubt it was, closely with the fire late in December, 1893, in which the bed presumably was consumed, was not a matter requiring the assistance of counsel.

The motion to amend the preliminary statement, upon all the facts shown, should have been denied, and the appeal from a contrary disposition of it is allowed.

SCHMERTZ *v.* APPERT.

Decided December 4, 1896.

1. INTERFERENCE — MOTION TO DISSOLVE — NO INTERFERENCE — OVERCOMING REFERENCE — RULE 75.

   Appeal by Appert from refusal to grant motion to dissolve, brought upon the ground of no interference in fact and also upon the ground that Schmertz has not overcome French patent to Appert under Rule 75, dismissed upon both grounds.

2. APPEAL — AFFIDAVIT — RULE 75.

   A holding that an applicant has not presented an affidavit sufficient to overcome a foreign patent under Rule 75, since it relates to the merits, is not properly appealable to the Commissioner.

3. AFFIDAVIT UNDER RULE 75 — STATING FACTS.

   An affidavit under Rule 75 should contain not merely the deponent's conclusion that he had invented prior to the time of the reference sought to be overcome, but should state the facts supporting such conclusion.

4. SAME — AIDED BY PRELIMINARY STATEMENT.

   An affidavit under Rule 75 may be aided and supplemented by a preliminary statement made in an interference in which the application is involved.

5. SAME — PRELIMINARY STATEMENT — CONSIDERATION OF BOTH JOINTLY.

   An affiant under Rule 75, when his application becomes involved in interference, is entitled to invoke the doctrine of priority of mere conception. Even though he can show evidence of nothing but mental acts prior to the date of the reference sought to be overcome, it is the duty of the Office to consider whether his conception was sufficiently clear and distinct and whether under all the circumstances of the case his progress was marked by due diligence. This can only be done upon the full record of the case.

APPEAL on motion.

PROCESS OF AND APPARATUS FOR MANUFACTURING WIRE-GLASS.

Applications of Edmund C. Schmertz filed March 19 and April 1, 1895, Nos. 542,335 and 543,946. Application of Leon Appert filed April 27, 1894, No. 509,244.

Mr. Wm. L. Pierce for Schmertz.

Messrs. Pollok & Mauro for Appert.

SEYMOUR, *Commissioner:*

This is an appeal from the decision of the Primary Examiner denying the motion made by Appert for a dissolution of this interference upon the ground that the Examiner erred in holding that there is an interference in fact between the application of Appert and the applications of Schmertz and in holding that the applicant Schmertz has presented such a *prima facie* case as to overcome the French patent to Appert.

The first ground of appeal has been before the Commissioner by prior motion to vacate all proceedings looking to a second interference involving the application of Appert and to order the application to issue, notwithstanding there is an application of another party on file in this Office which interferes with this application. In the decision upon that motion it was held that the records of this Office show that an application is pending with claims which clearly interfere with the claims of Appert, and while I deem it my duty to reëxamine the papers in this case upon this motion it is thought that no reason is shown for changing what was therein considered a disposition of this contention adversely to Appert.

Upon the second ground of appeal, that Schmertz has not presented such a *prima facie* case as to overcome the French patent to Appert, a question is attempted to be brought up on this appeal which was held not appealable on motion in the case of *ex parte Boyer* (C. D., 1889, 249) and *ex parte Donovan*, (C. D., 1890, 109.) Even while so holding, however, the Commissioner did substantially pass upon the sufficiency of the affidavit under Rule 75. Entirely concurring in the views expressed by the Commissioner in the decisions referred to, that this question so concerns the merits that it is not appealable on motion, the appeal might properly be dismissed without further reasons. Yet it may be useful to advert to the affidavit of Schmertz, filed by him under Rule 75, to show what such an affidavit should contain. He deposes that he completed the invention in this country set forth in claims 1, 2, 3, and 4 of this application before October 19, 1893, the date of Appert's French patent; that the said invention so completed, as aforesaid, consisted, essentially, of a casting-table, a leading roll, means for introducing the wire at the rear of the leading roll, a second roller following the first at a suitable distance, the body of the second roll being about twice as high from the bed of the casting-table as the body of the first roll; that said invention so completed, as aforesaid, consisted, so far as the operation of the same was concerned, in casting a ball of glass in front of the leading roll, simultaneously introducing wire as the leading roll was advanced, and at the rear of said roll making a second casting in front of the second roll and rolling said second casting into and upon the original sheet of glass having the wire upon its upper surface, said operation proceeding progressively.

The affidavit is drawn with great art and seems to have led the Examiner to the conclusion that Schmertz had actually made the table, the rolls, and the other elements of a glass-rolling machine for making wire-glass and had put them together and operated them prior to October 19, 1893; and yet on closer inspection we find that the affidavit really says nothing of the kind and says no more than that Schmertz completed the invention prior to October 19, 1893, and that he used these words to mean that he had the intellectual conception of this improvement at that time, omitting to say that he made any machine or any part of a machine.

An affidavit under Rule 75 should contain not merely the deponent's conclusion that he had invented prior to such a time, but should state the facts supporting such conclusion, should state what the inventor did, in order that the Office may see whether he had done sufficient to overcome the patent. The language of Mr. Commissioner Mitchell on this point was:

> To permit an applicant to prevail upon his naked statement that he conceived the invention and disclosed it to others, without stating by what agency the disclosure was made and the details of which it consisted, is to transfer the seat of judgment and decision from the tribunal sitting in the case to the mind of the applicant—a transaction radically defective in principle and contrary to all judicial usage. If the applicant made sketches, he should so state, and produce and describe them; if the sketches were made and lost, and their contents are remembered, they should be reproduced and furnished in place of the originals. The same course should be pursued if the disclosure was by means of models. If neither sketches nor models are relied upon, but it is claimed that verbal disclosures, sufficiently clear to indicate definite conception of the invention, were made, the witness should state as nearly as possible the language used in imparting knowledge of the invention to others. By whatever means the applicant claims to have disclosed the invention he must so present those means to the Examiner as to enable him to determine whether or not the invention was present in the disclosure. The mere naked statement of the applicant that he disclosed the invention is of no avail, either to constitute evidence of disclosure or to impart sufficiency to a statement of facts in themselves inadequate. (*Ex parte Donovan, supra.*)

But subsequently Schmertz filed his preliminary statement, and this affidavit is aided by that instrument, and therein it appears that he conceived the invention during the month of June, 1893, and made sketches; that in July, 1893, he made other sketches of the invention; that during the period extending from August 1, 1893, to December 1, 1893, he made other sketches of the invention; that during the month of December, 1893, he made another sketch of the invention; that during the period extending from January 1, 1894, to January 10, 1894, he made another sketch of the invention; that in the month of June, 1893, he explained the invention to others; that in the month of July, 1893, he again explained the invention to others; that during the period extending from August 1, 1893, to December 1, 1893, he again explained the said invention to others; that during the month of December, 1893, he again explained the invention to others; that during the period from January 1, 1894, to January 10, 1894, he again explained the invention to others; that no model of the invention has been made; that he embodied his invention in a full-sized machine, which was completed about January 16, 1894, and that on or about January 16, 1894, the said machine was successfully operated at a place named.

Construing the affidavit under Rule 75 and the preliminary statement afterward filed by Schmertz together, and this the Examiner was unable to do, because his action in declaring the interference was prior to the filing of the preliminary statement, it seems that Schmertz's case is that he made the invention on its intellectual side only prior to October 19, 1893, when Appert's French patent came out. But I cannot dissolve this interference upon what is set forth in the preliminary statement as mere matter of law, irrespective of the facts and circumstances, for this reason: Schmertz is entitled to invoke the doctrine of priority of mere conception, followed by reasonable diligence in reducing to practice, as set forth in *Christie* v. *Seybold* (C. D., 1891, 18) and elsewhere. Though he did nothing but think prior to the issue of Appert's French patent and preserve the evidence of his thinking, with due corroboration thereof and of his disclosures, still it is the duty of the Office to examine his proofs to see whether his conception was sufficiently clear and distinct, to weigh the circumstances surrounding him in his progress from that point onward to the full embodiment of his invention in a machine in January, 1894, and to consider whether, under all the circumstances of the case, his progress was marked with the requisite diligence. These questions cannot be determined except upon the full record of the case. When that comes to be examined, the question will be the statutory one whether Appert otherwise would not be unjustly obtaining a patent for that which was in fact invented by another who was using reasonable diligence in adapting and perfecting the same. (R. S. U. S., sec. 4920.)

It is considered, therefore, that this appeal must be dismissed upon both grounds, and it is so ordered.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—District of Indiana.

BUCK'S STOVE AND RANGE COMPANY *v.* KIECHLE *et al.*

Decided October 23, 1896.

TRADE-MARK — UNFAIR COMPETITION — DECEPTION.

It is sufficient to justify the interposition of a court of equity if articles manufactured by the defendant are purposely constructed and marked in the similitude of those manufactured by the complainant, with the intention and result of deceiving the trade and the public and inducing them to purchase the articles of the defendant in the belief that they are purchasing those of the complainant.

STATEMENT OF THE CASE.

After stating the requisite facts to show jurisdiction the bill avers that many years ago—to wit, in or about 1866—the complainant adopted as a distinguishing characteristic for its cooking stoves and ranges white-enamel lining—that is to say, a lining of white enamel for the inside of the doors of its cooking stoves and ranges—to the end that the trade and public might come to recognize the cooking stoves and ranges of complainant's manufacture by this peculiarity as a characteristic which would distinguish the cooking stoves and ranges of complainant's manufacture from the cooking stoves and ranges of all other manufacturers of cooking stoves and ranges, the fact being that at the time the complainant adopted the aforesaid distinguishing characteristic and for years thereafter and until the actions of the defendants hereinafter complained of no other cooking-stove manufacturer in the United States had or has made and sold cooking stoves and ranges with oven-doors having the inside thereof lined with white enamel; that the similarity in general style, shape, and design of cooking stoves and ranges made by different stove-manufacturers in the United States is and has been during all the time hereinafter referred to so very similar that to the average purchaser buying a stove or range for use in the household it is difficult to distinguish the stove or range of one manufacturer from the stove or range of another, especially so in view of the fact that the plates comprising the different parts of the stove or range can be and readily are taken apart and used by a rival manufacturer as patterns from which to mold a stove or range of its own in close similitude to the stove or range of the manufacturer who has obtained celebrity in the market for his goods; that complainant since in or about 1866 has used great skill and fidelity in the manufacture of its stoves and ranges, always enameling with white enamel the inner face of its stove and range doors, with the result that for

years last past and long prior to the action of defendants, hereinafter complained of, its stoves and ranges had obtained great celebrity in the market of the United States, especially in the Middle, Northern, Southern, and Western States and in the city of Evansville, Ind., as "White Enamel" stoves and ranges, and were so known by the trade and public in all the territory aforesaid and distinguished by the trade and public from the stoves and ranges of other stove-manufacturers as "White Enamel" stoves and ranges; that in exposing stoves and ranges for sale it is the custom and demand to show the intending purchaser the oven of the stove or range, and to open the oven-door to that end, or, what is also common, to leave at least one of the oven-doors open, so that the oven is in plain view, and that in recognition of this custom and demand as an effective way of impressing on the mind of the trade and public complainant's stoves and ranges and characterizing by a distinguishing feature its stoves and ranges from all others it has since 1866 continuously used and now uses white-enamel lining for the oven-doors of its cooking stoves and ranges, with the result intended and desired, as hereinbefore set forth; that its trade in the manufacture and sale of cooking stoves and ranges with white enamel used, as aforesaid, as a distinguishing feature has steadily increased from year to year; that it was the first to adopt the aforesaid white enamel for an inner lining for oven-doors of cooking stoves and ranges, and that but for the action of defendants, hereinafter complained of, it would now be in the undisturbed enjoyment of the celebrity which it has earned with the trade and public for its cooking stoves and ranges as "White Enamel" stoves and ranges; that the good-will of complainant in the manufacture and sale of cooking stoves and ranges under said name "White Enamel" because of said distinguishing characteristic is of the value of $100,000; that defendants, well knowing the premises, but seeking how they might trade on the reputation of complainant and find a ready sale for their products, without authority of complainant and in violation of its rights and contrary to equity and good conscience have recently, before the filing of this bill, made or caused to be made cooking stoves and ranges in general external appearance similar to complainant's manufacture, enameling the inside face of such cooking stoves and ranges with white enamel, with the result that said cooking stoves and ranges can be and in fact are sold to the trade and by the trade to the public as "White Enamel" cooking stoves and ranges, to the manifest and irreparable injury of complainant, the actions of said defendants hereinbefore set forth being calculated to deceive and resulting in actual deception of the trade and public; that by reason of such wrongful conduct the complainant has suffered loss and damage in the sum of $10,000; that complainant has called the attention of defendants to its aforesaid rights and to defendants' wrongful conduct and asked them to desist, which they have refused to do. The complainant has no adequate remedy at law, and it therefore brings this suit and prays for an injunction and for an accounting of damages.

Mr. Paul Bakewell for the complainant.

Messrs. Morris, Newberger & Curtis for the defendants.

BAKER, *J.*:

The defendants have interposed a demurrer to the complainant's bill. If the question for decision were simply whether the plaintiff could acquire the sole right to use white enamel for the lining of the doors of its stoves and ranges, it would present a question whose solution would prove embarrassing; but the case made upon the bill and admitted by the demurrer is that the defendants are manufacturing stoves and ranges having white-enamel doors in the similitude of those manufactured by complainant and with the fraudulent purpose of palming them off upon the trade and the public as the stoves and ranges manufactured by the complainant. It is not necessary to determine whether the white-enamel lining, which has been long and exclusively used by the complainant for the inner lining of the doors of its stoves and ranges, constitutes a trade-mark or whether it does not. It is sufficient to justify the interposition of a court of equity if the stoves and ranges manufactured by the defendants are purposely constructed in the similitude of those manufactured by the complainant, with the intention and result of deceiving the trade and the public and inducing them to purchase the stoves and ranges of the defendants in the belief that they are purchasing the stoves and ranges of the complainant's manufacture. The imitative devices used upon the stoves and ranges manufactured by the defendants are alleged to be employed by them for the purpose and with the result of deceiving the public, and thereby diverting the trade of the complainant to the defendants. This they have neither the moral nor the legal right to do.

Judge Clifford, in delivering the opinion of the Court in *McLean* v. *Fleming*, (13 O. G., 913; 96 U. S., 245, 254,) says:

> Nor is it necessary in order to give a right to an injunction that a specific trade-mark should be infringed; but it is sufficient that the court is satisfied that there was an intent on the part of the respondent to palm off his goods as the goods of the complainant, and that he persists in so doing after being requested to desist.

And in the recent case of *Coats* v. *Merrick Thread Co.* (63 O. G., 1531; 149 U. S., 562, 566) it is said:

> There can be no question of the soundness of the plaintiffs' proposition that, irrespective of the technical question of trade-mark, the defendants have no right to dress their goods up in such manner as to deceive an intending purchaser and induce him to believe he is buying those of the plaintiffs. Rival manufacturers may lawfully compete for the patronage of the public in the quality and price of their goods, in the beauty and tastefulness of their inclosing packages, in the extent of their advertising, and in the employment of agents, but they have no right, by imitative devices, to beguile the public into buying their wares under the impression they are buying those of their rivals. (*Perry* v. *Truefitt*, 6 Beav., 66; *Croft* v. *Day*, 7 Beav., 84; *Lee* v. *Haley*, L. R., 5 Ch., 155; *Wotherspoon* v. *Currie*, L. R., 5 H. L., 508; *Johnston* v. *Euing*, 7 App. Cas., 219; *Thompson* v. *Montgomery*, 41 Ch. D., 35; *Taylor* v. *Carpenter*, 2 Sand. Ch., 603; *Amoskeag Mfg. Co.* v. *Spear*, 2 Sand. N. Y., 599; *McLean* v. *Fleming*, 13 O. G., 913; 96 U. S., 245; *Boardman* v. *Meriden Britannia Co.*, 35 Conn., 402; *Gilman* v. *Hunewell*, 122 Mass., 139.)

Under the foregoing principles the facts alleged in the bill and admitted by the demurrer are sufficient to constitute a *prima facie* case for relief, and therefore the demurrer must be overruled.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[*BY AUTHORITY OF CONGRESS.*]

VOL. 77—No. 12. TUESDAY, DECEMBER 22, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
PRICE OF PRINTED COPIES OF SPECIFICATIONS AND DRAWINGS.	1787
INDEXES TO PERIODICALS	1787
INDEXES TO FOREIGN PATENTS	1787
OATHS OF APPLICANTS IN FOREIGN COUNTRIES	1787
AMENDMENT TO THE RULES OF PRACTICE	1787
PRIVILEGES OF THE SCIENTIFIC LIBRARY	1788
ISSUE OF DECEMBER 22, 1896	1788
APPLICATIONS UNDER EXAMINATION	1788
PATENTS GRANTED	1789
REISSUES	None.
DESIGNS	1929
TRADE-MARKS	1934
PRINTS	None.
LABELS	None.
DECISIONS OF THE U. S. COURTS—	
J. G. Brill Company *v.* Wilson *et al*	1937
F. E. Kohler & Company *v.* George Worthington Company *et al*	1938
Eastman Company *v.* Getz & Hoover	1938

Price of Printed Copies of Specifications and Drawings.

(ORDER No. 1,094.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., May 25, 1896.

It is hereby ordered, pursuant to an amendment of section 493 of the Revised Statutes, entitled "An act amending the statutes relating to the sale of printed copies of patents," approved May 19, 1896, that the price to be paid for uncertified printed copies of specifications and drawings of patents shall be, for single copies, or any number of unclassified copies, five cents each; for copies by subclasses, three cents each; by classes, two cents each, and for the entire set of patents issued, in one order, one cent each.

This order will be in effect on and after July 1, 1896.

JOHN S. SEYMOUR,
Commissioner.

Indexes to Periodicals.

The following journals containing indexes to periodical literature may be found on file in the reading room of the scientific library:

Astrophysical Journal, Chicago, a monthly title-index of publications on astrophysical and allied subjects.

Electrical World, New York, a weekly digest of electrical articles.

Engineering Magazine, New York, a monthly title-index of engineering articles in the English language only.

Electric Power, New York, a monthly synoptical index of electrical literature, American and foreign.

Journal of the United States Artillery, a bimonthly title-index of current artillery literature.

Proceedings of the Physical Society of London, monthly abstracts of the principal articles on physics published in the American and Continental journals since January 1, 1895.

School of Mines Quarterly, New York, a quarterly synoptical index of articles on analytical chemistry and title index of metallurgical literature.

Indexes to Foreign Patents.

The following indexes to foreign patents have been translated, compiled, and published under the authority of the Commissioner of Patents, and may be obtained as a Patent Office publication at the prices given below:

INDEX TO FRENCH PATENTS, 1791 to 1879, inclusive, (subject-matter,) one volume, 935 pages, bound in cloth $10 00
INDEX TO ITALIAN PATENTS, 1848 to May 1, 1882, (subject-matter,) one volume, 120 pages—
Bound half-turkey 2 50
Bound in cloth 1 25
Paper covers 1 00

Oaths of Applicants in Foreign Countries.

It is hereby directed that oaths accompanying applications for patents made within the following-named foreign countries must be taken before a minister, chargé d'affaires, consul, or commercial agent holding commission under the Government of the United States:

Austria-Hungary.	Netherlands.
Argentine Republic.	Norway.
Belgium.	Peru.
Brazil.	Portugal.
Costa Rica.	Russia.
Denmark.	San Salvador.
Haiti.	Servia.
Honduras.	Sweden.
Italy.	Switzerland.
Mexico.	

Applications filed in this Office presenting oaths not executed in compliance with this order will be treated as incomplete.

Amendment to the Rules of Practice.

The following regulations for the conduct of proceedings in the Patent Office are established:

65. An applicant will be considered to persist in his claim for a patent without altering his specification in case he fail to act in prosecution of the same for six months after the Office action thereon, and thereupon the Examiner will make a re-examination of the case.

134. In appealable cases in which no limit of appeal is fixed, no appeal will be entertained by any tribunal in the Office unless taken within six months from the action which puts the case in condition for appeal, unless it be shown to the satisfaction of the Commissioner that such delay was unavoidable.

68. In every case pending before the Office more than five years, in which the record raises the presumption that there have been intentional delays in prosecution, the Examiner may require the applicant to show cause why the case was not more rapidly prosecuted, and at the hearing thereon, or upon failure of the applicant to appear, the Examiner will determine, under all the circumstances of the case, whether there have been intentional and unreasonable delays in prosecution, and upon finding the fact to be so, he will reject the case for that reason. Present Rules 65, 69, and 134 are repealed, and present Rule 68 is renumbered 69.

The foregoing rules will be in effect on and after April 15, 1895, and will affect pending cases as though the last Office action were upon said date.

Privileges of the Scientific Library.

Persons who are not employés of the Office may, under the supervision and direction of the Librarian, make extracts, in pencil, from descriptions and drawings contained in the Scientific Library, such extracts, when in the nature of copies, not to exceed one-third of the descriptions or drawings from which the copies are made. Violation of this order will subject all persons and parties concerned in the violation to exclusion from thereafter making any such extracts or copies whatever.

Issue of December 22, 1896.

Patents	410	No. 573,435 to No. 573,844, inclusive.
Designs	31	No. 26,420 to No. 26,450 inclusive.
Trade-Marks	16	No. 29,326 to No. 29,341, inclusive.
Prints	None.	
Labels	None.	
Reissues	None.	
Total issue	457	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States	Patents and Designs.	Trade-Marks and Prints.
Alabama	4	....	New Hampshire	....	....
Arizona Territory	1	....	New Jersey	12	1
Arkansas	....	....	New Mexico Ter	....	....
California	9	....	New York	68	4
Colorado	5	....	North Carolina	1	....
Connecticut	25	....	North Dakota	2	....
Delaware	....	....	Ohio	23	....
District of Columbia	1	....	Oklahoma Ter	....	....
Florida	1	....	Oregon	3	....
Georgia	6	....	Pennsylvania	52	1
Idaho	....	....	Rhode Island	4	1
Illinois	40	3	South Carolina	....	....
Indian Territory	1	....	South Dakota	1	....
Indiana	6	....	Tennessee	2	....
Iowa	6	....	Texas	6	....
Kansas	3	....	Utah	3	....
Kentucky	2	3	Vermont	1	....
Louisiana	1	....	Virginia	3	....
Maine	....	....	Washington	6	....
Maryland	5	....	West Virginia	1	....
Massachusetts	43	....	Wisconsin	6	....
Michigan	11	....	Wyoming	....	....
Minnesota	11	1	U. S Army	1	....
Mississippi	3	....	U. S. Navy	....	....
Missouri	18	1			
Montana	4	....	Total to citizens of the United States	402	15
Nebraska	1	....			
Nevada	....	....			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina Republic	..	....	Japan	....	....
Austria Hungary	4	....	Mexico	....	....
Bahama Islands	....	....	Netherlands	....	....
Belgium	....	....	Newfoundland	....	....
Bermuda	....	....	New South Wales	....	....
Brazil	....	....	New Zealand	1	....
British Guiana	....	....	Norway	....	....
Canada	2	....	Porto Rico	....	....
Chile, Republic of	....	....	Portugal	....	....
Colombia	....	....	Queensland	....	....
Costa Rica	....	....	Russia	....	....
Cuba	....	....	San Salvador	....	....
Denmark	....	....	Scotland	....	....
Ecuador	....	....	South Australia	1	....
England	10	....	Spain	....	....
France	7	....	Sweden	1	....
Germany	9	1	Switzerland	2	....
Greece	....	....	Venezuela	....	....
Guatemala	....	....	Victoria	1	....
India	....	....	West Australia	....	....
Ireland	1	....			
Island of Jersey	....	....	Total to citizens of foreign countries	39	1
Italy	....	....			

APPLICATIONS UNDER EXAMINATION.

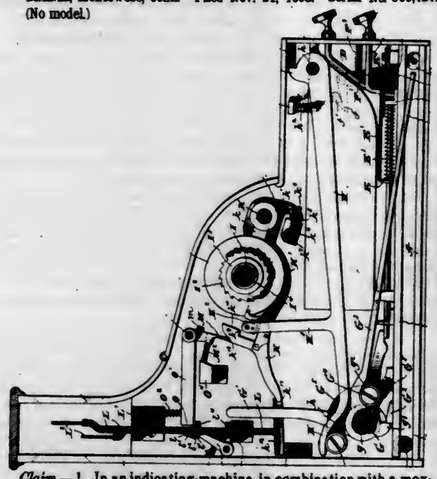
Condition at Close of Business December 15, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Nov. 16	Dec. 7	202
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 16	Dec. 2	92
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Nov. 16	Dec. 2	164
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Nov. 16	Nov. 25	144
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Nov. 16	Nov. 25	221
215	XVII. Paper Manufactures and Printing	Nov. 16	Nov. 23	138
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Nov. 17	Nov. 20	198
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Nov. 16	Nov. 18	199
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc.	Nov. 16	Nov. 17	178
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Nov. 16	Nov. 17	202
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Nov. 16	Nov. 16	156
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Nov. 16	Nov. 6	174
221	XXIII Instruments of Precision, Acoustics, etc.	Nov. 16	Oct. 17	259
	Between one and two months.			
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Nov. 13	Nov. 19	236
248	XVIII. Steam-Engineering, etc	Nov. 12	Nov. 16	110
123	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Nov. 5	Nov. 16	141
120	IX. Hydraulics, Fire-Extinguishers, etc.	Nov. 3	Nov. 16	215
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Oct. 27	Nov. 16	338
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Oct. 26	Nov. 16	339
93	XXI. Textiles, etc	Nov. 11	Nov. 14	194
96	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Oct. 15	Nov. 9	353
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Nov. 7	Nov. 7	315
255	XII. Mechanical Engineering, Store-Service, etc.	Nov. 11	Nov. 6	225
253	X. Carriages and Wagons	Oct. 29	Nov. 5	337
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Nov. 2	Nov. 3	352
246	I. Tillage and Fences	Nov. 12	Nov. 2	273
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Nov. 9	Oct. 28	275
102	XIX. Stoves and Furnaces	Oct. 16	Oct. 26	300
106	II. Farm Stock, Products, etc	Oct. 26	Oct. 21	243
	Between two and three months.			
240	VII. Harvesters, Games and Toys, and Velocipedes	Oct. 1	Nov. 1	1111
	Between three and four months.			
122	XXIV Sewing Machines, Crinoline and Corsets, Apparel, and Toilet.	Sept. 8	Oct. 13	195
111	XXXII Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels etc.	Aug. 17	Sept. 17	523
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	June 29	Nov. 20	654
	Total number of applications awaiting action			9,056
	Under one month in arrears.			
	Designs	Dec. 1	Dec. 7	107
	Trade-Marks	Nov. 23	Dec. 11	55

PATENTS.

GRANTED DECEMBER 22, 1896.

573,435. CASH REGISTER AND INDICATOR. GEORGE L. BARNES, Montowese, Conn. Filed Nov. 21, 1895. Serial No. 569,727. (No model.)



Claim.—1. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable indicator-engaging piece mounted on a support independent of the indicator and adapted to be moved into and out of position to be engaged by the movable frame, and means for moving it into and out of such position, substantially as and for the purpose specified.

2. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable indicator-engaging piece mounted on a support independent of the indicator and having a portion to be engaged by the frame, a spring tending to move the piece into position to be engaged by the frame, and means for moving it out of such position, substantially as and for the purpose shown.

3. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable indicator-engaging piece having a portion to be engaged by the frame, means for moving the piece into position to be engaged by the frame, a lever connected with the piece, and a key to hold such lever, to keep the movable indicator-engaging piece out of position to be engaged by the frame, adapted to be moved to release the lever, substantially as and for the purpose set forth.

4. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable piece engaging the movable indicator and provided with a portion to be engaged by the frame, a spring to move the piece into position to be engaged by the frame, a lever connected with the piece, a movable key to hold the lever in position to keep the movable piece out of position to be engaged by the frame, adapted to be retracted to release the lever, and means for moving the lever back again into position to be reengaged by the key, substantially as and for the purpose described.

5. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable piece engaging the indicator and having a portion to be engaged by the frame, a spring to move the piece into position to be engaged by the frame, a lever connected with the movable piece, a second movable frame, connections between the two frames, whereby movement of the second frame causes the other frame to move, a movable key on the second frame, to engage and hold the lever in position to keep the movable indicator-engaging piece out of position to be engaged by the first frame, and means, on the second frame, for swinging the lever, substantially as and for the purpose specified.

6. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable piece engaging the indicator, having a portion to be engaged by the frame, a spring to move the piece into position to be engaged by the frame, a lever having one arm connected with the movable piece, so as to move therewith, as it moves into and out of position for engagement with the movable frame, a second movable frame, a key movably mounted thereon, to engage and support the other arm of the lever, and a cam on the second frame, to swing the lever to move the movable indicator-engaging piece against the stress of its spring, substantially as and for the purpose shown.

7. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable piece engaging the indicator having a portion to be engaged by the frame, a spring to move the piece into position to be engaged by the frame, a lever having an arm extending up between bearings on the movable indicator-engaging piece, a second movable frame, a key movably mounted thereon, to engage and support the other arm of the lever, and means carried by the second frame to move this arm to cause the lever to move the indicator-engaging piece out of engagement with the first frame, substantially as and for the purpose set forth.

8. In an indicating-machine, in combination with a movable indicator, a movable frame, a movable piece engaging the indicator having a portion to be engaged by the frame, means tending to move the piece into position to be engaged by the frame, a lever having an arm extending up between bearings on the movable piece, a second movable frame, connections between the two frames whereby movement of the second frame causes movement of the first one, a key to engage the other arm of the lever, movably mounted on the second frame, and means on the latter frame for engaging and moving the lever, when such frame has moved a certain distance, substantially as and for the purpose described.

9. In an indicating-machine, in combination with a movable indicator, a movable frame, a swinging lever engaging the indicator, having a portion to be engaged by the frame, and mounted on a fulcrum, so as to be movable with reference thereto to bring its frame-engaging portion into and out of position to be engaged by the frame, means tending to move the lever with reference to its fulcrum, to bring it into position to be engaged by the frame, and means for moving and holding the lever out of such position, substantially as and for the purpose specified.

10. In an indicating-machine, in combination with a movable indicator, a movable frame, a swinging lever engaging the indicator, having a portion to be engaged by the frame and mounted on its fulcrum so as to be movable with reference thereto, to bring its frame-engaging portion into and out of position to be engaged by the frame, a spring to move the lever into position to be engaged by the frame, and means for moving and holding the lever out of such position, substantially as and for the purpose shown.

11. In an indicating-machine, in combination with a movable indicator, a movable frame, a lever engaging the indicator and having a portion to be engaged by the frame, a fulcrum-support for such lever, adapted to allow it to be swung and moved into and out of position to be engaged by the frame, a spring to move it into such position, and a second lever, to retract the first lever, connected with it, so as to allow it to swing with the frame, when it is in engagement therewith, substantially as and for the purpose set forth.

12. In an indicating-machine, in combination with a movable indicator, a movable frame, a lever engaging the indicator and having a portion to be engaged by the frame, a fulcrum upon which the lever has a sliding bearing, a spring to move the lever into position to be engaged by the frame, a second lever having an arm engaging a bearing on the first lever, and a movable key to hold the second lever swung back, to retract the first lever against the stress of its spring, substantially as and for the purpose described.

13. In an indicating-machine, in combination with a movable indicator, a movable frame, an indicator-engaging lever mounted on its fulcrum so as to be capable of sliding as well as swinging thereon, and having a shoulder to be engaged by the movable frame, a spring to move the lever, to bring its shoulder in the path of the frame, a second lever engaging a bearing on the first lever, to hold it back against the stress of its spring, and a movable key for holding the

second lever, adapted to be moved to release the same, substantially as and for the purpose specified.

14. In an indicating-machine, in combination with a movable indicator, a movable frame, an indicator-engaging lever, having a shoulder to be engaged by the movable frame, a fulcrum for such lever engaging a slot in the latter, a spring to slide the lever on its fulcrum, to bring the shoulder on the lever into the path of the movable frame, a second lever engaging a bearing on the first lever, a second movable frame, connections between the two frames, whereby movement of the second frame causes the other to be moved, a key movably mounted on the second frame, to engage and hold the second lever against the stress of the spring acting upon the first lever, and a cam on the second frame to move the second lever, to retract the first one out of engagement with the first movable frame, substantially as and for the purpose shown.

15. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on supports independent of the indicators and having portions to be engaged by the frame, and means for moving the pieces independently, to bring such portions into and out of position to be engaged by the frame, substantially as and for the purpose set forth.

16. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces mounted on supports independent of the indicators and having portions to be engaged by the movable frame, springs to move such pieces into position to be engaged by the frame, and separate means for moving them out of such position, substantially as and for the purpose described.

17. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces, having portions to be engaged by the movable frame, means to move such pieces into position to be engaged by the movable frame, a series of retractors for the separate pieces, to move and hold them out of position to be engaged by the frame, and a series of keys engaging such retractors, substantially as and for the purpose specified.

18 In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces having portions to be engaged by the movable frame, means to move such pieces in position to be engaged by the frame, a series of retractors for the separate pieces, to move and hold them out of position to be engaged by the frame, and means for actuating such retractors, substantially as and for the purpose shown.

19. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces having portions to be engaged by the movable frame, springs to move the pieces into position to be engaged by the frame, a series of retractors connected with the pieces, to move and hold them back against the stress of their springs, and a series of movable keys to engage and hold the retractors, to keep the respective indicator-actuating pieces out of position to be engaged by the movable frame, substantially as and for the purpose set forth.

20. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces having portions to be engaged by the frame, springs to move the pieces into position to be engaged by the frame, a series of retractors connected with the pieces, to move and hold them back against the stress of their springs, a second moving frame, a series of keys movably mounted thereon, for normally supporting the retractors in their piece-retracting positions, connections between the two frames, whereby movement of the second frame causes the first one to move, and means, on the second frame, for camming back any retractor, which has been released by its key before the second frame is moved, substantially as and for the purpose described.

21. In an indicating-machine, in combination with a series of movable indicators, a movable frame, a series of movable indicator-engaging pieces having portions to be engaged by the frame, springs to move the pieces into position to be engaged by the frame, a series of retracting-levers connected with the pieces, a second movable frame connected with the first frame, so as to actuate the same, a series of keys movably mounted on the second frame, and having portions to engage and support the respective retracting-levers, adapted to be disengaged from the same by movement of the keys with reference to the second frame, and means on the latter for camming back any retracting-lever, which has been released by its key, before movement of the second frame, substantially as and for the purpose specified.

22. In an indicating-machine, in combination with a series of movable indicators, a movable frame having a bar, a series of levers for actuating the indicators, each having a sliding bearing upon its fulcrum, and an arm provided with a shoulder adapted to be brought into the path of the bar, by a sliding of the lever on its fulcrum, springs engaging the levers, retracting-levers to move and hold the indicator-actuating levers against the stress of their springs, and means for holding the retracting-levers, adapted to be moved to release any one of them, substantially as and for the purpose shown.

23. In a registering-machine, in combination with a movable registering device, a movable frame, a movable piece for actuating the registering device having a portion to be engaged by the movable frame, a spring to move the piece into position to be engaged by the frame, and a retracting-lever connected with the piece, to move it against the stress of its spring, substantially as and for the purpose set forth.

24. In a registering-machine, in combination with a movable registering device, a movable frame, a movable piece for actuating the registering device, having a portion to be engaged by the movable frame, a spring to move the piece into position to be engaged by the frame, a retracting-lever engaging the piece and a movable key engaging such lever, substantially as and for the purpose described.

25. In a registering-machine, in combination with a movable registering device, a movable frame, a movable piece for actuating the registering device having a portion to be engaged by the movable frame, a spring to move the piece into position to be engaged by the frame, a retracting-lever connected with the piece, a movable key engaging such lever, a second moving frame, and connections between the two frames whereby movement of the second frame actuates the other, substantially as and for the purpose specified.

26. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of movable pieces for actuating the respective registering devices, each having a portion to be engaged by the movable frame, springs to move the pieces into position to be engaged by the frame, retractors connected with the pieces, to move and hold them back against the stress of their springs, and movable keys to engage and hold the retractors, substantially as and for the purpose shown.

27. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of movable pieces for actuating the respective registering devices, each having a portion to be engaged by the movable frame, springs to move the pieces into position to be engaged by the frame, retractors connected with the pieces, to move and hold them back against the stress of their springs, a second movable frame connected with the first one, so as to actuate the same, a series of movable keys to engage and hold back the retractors, and means, on the second frame, for swinging back any retractor which has been released by its key, substantially as and for the purpose set forth.

28. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of movable pieces for actuating the registering devices, each having a portion to be engaged by the movable frame, springs to move such pieces into position to be engaged by the frame, retractors connected with the pieces to move and hold them against the stress of their springs, a second movable frame, connections between the two frames, whereby movement of the second frame causes actuation of the first one, a series of retractor-engaging keys movably mounted on the second frame, and a cam on the latter frame to retract any key-released retractor, substantially as and for the purpose shown.

29. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of movable pieces each having a portion to be engaged by the frame and a part to engage and move the respective registering device, springs to move the pieces to bring them into position to be engaged by the frame and engage the registering devices, retractors connected with the respective pieces, a series of movable keys engaging the retractors, and means for swinging back any retractor which has been released by its key, substantially as and for the purpose specified.

30. In a registering mechanism, in combination with a series of movable registering devices, a movable frame, a series of movable pieces each having a portion to be engaged by the frame and a part to engage and move the respective registering device, the springs engaging such pieces, the series of retractors connected with the respective pieces, a second movable frame, a series of retractor-engaging keys movably mounted upon the second frame, connections between the two frames whereby movement of the second frame causes actuation of the first one, and means for moving back any retractor which has been released by its key, substantially as and for the purpose shown.

31. In a registering-machine, in combination with a movable registering device, a movable frame, a swinging and reciprocating pawl-lever having a portion to be engaged by the frame, and a part to engage and actuate the registering device, a spring to reciprocate the lever, to bring it into position to be engaged by the frame and to engage the registering device, a retracting-lever connected with the pawl-lever, and a movable key to engage and hold the retracting-lever in its pawl-lever-retracting position, substantially as and for the purpose set forth.

32. In a registering-machine, in combination with a movable registering device, a movable frame, a reciprocating and swinging pawl-lever having a shoulder to be engaged by the movable frame, and a part to engage the registering device, a retracting-lever to hold the pawl-lever normally retracted, to keep its shoulder out of the path of the frame, and its registering-device engaging part out of engagement with such device, a spring to reciprocate the pawl-lever, and a key to engage the retracting-lever against the stress of such spring, substantially as and for the purpose described.

33. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of reciprocating and swinging pawl-levers each having a part to engage the registering device, adapted to be brought into and out of such engagement by reciprocation of the pawl-lever, and a portion to be engaged by the movable frame, adapted to be brought into and out of position to be engaged by the movable frame, as the pawl lever is moved to bring its registering-device-engaging part into and out of operative position, the springs engaging the pawl-levers, the retracting-levers connected with the pawl-levers, and the series of movable keys to engage the retracting-levers, substantially as and for the purpose specified.

34. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of pawl-levers each having a pawl-finger, to engage and actuate the respective registering device, and a shoulder, to be engaged by the movable frame, sliding pivotal bearings for the pawl-levers, springs engaging such levers, retracting-levers connected with the respective pawl-levers, and a series of movable keys, each adapted to engage one of the retracting-levers, substantially as and for the purpose shown.

35. In a registering-machine, in combination with a series of movable registering devices, a movable frame, a series of pawl-levers each having a pawl-finger to engage and actuate the respective registering device, and a shoulder, to be engaged by the movable frame, sliding pivotal bearings for the pawl-levers, springs engaging such levers, retracting-levers connected with the pawl-levers, a second movable frame, connections between the two frames whereby movement of the second frame causes the first frame to be actuated, a series of movable keys to engage the retracting-levers, and means for moving back any retracting-lever that has been released by movement of its key, substantially as and for the purpose set forth.

36. In combination with a series of movable indicators, the series of indicator-actuating levers each having an arm with a shoulder, sliding pivotal bearings for the levers, springs to slide the levers on their bearings, a movable frame having a bar extending across the series of arms on the levers, and adapted to engage the shoulder on any lever which is slid forward by its spring, a series of retractors connected with the actuating-levers, and a series of movable keys to engage the retractors, substantially as and for the purpose described.

37. In combination with a series of movable registering devices, the series of actuating-levers therefor, each having a part to engage and actuate the respective registering device, and an arm with a shoulder, sliding pivotal bearings for the levers, springs to slide the levers on their bearings, a movable frame having a bar extending across in front of the arms on the levers, a series of retractors connected with the levers, and a series of movable keys to engage the retractors, substantially as and for the purpose specified.

38. In combination with a series of movable indicators and a series of movable registering devices, the series of actuating-levers each having an arm with a shoulder, a part to engage the respective indicator, and a part to engage and actuate the respective registering device, sliding bearings for the levers, springs to reciprocate the levers to carry their registering-device-actuating parts into operative position, a movable frame having a bar extending across in front of the arms on the actuating-levers, in such position, that the movement of any lever, to bring its registering-device-actuating part into engagement with such device, will bring the shoulder of the arm on such lever into the path of the frame bar, a series of retractors connected with the respective actuating-levers, and a series of movable keys to engage the retractors, substantially as and for the purpose shown.

39. In combination with the series of actuating-levers, for moving parts of the machine, each having an arm provided with a shoulder and having an upwardly-extending face beyond the shoulder, pivotal bearings for the levers, adapted to allow them to be reciprocated, the movable frame having a bar extending across in front of the arms on the levers, springs to move the levers to bring the shoulders on their arms in the path of such bar, a series of retractors connected with the levers, and a series of movable keys to engage the retractors, substantially as and for the purpose set forth.

40. In combination with the series of actuating levers, for moving parts of the machine, each having an arm provided with a shoulder and with a face extending up above such shoulder, pivotal bearings for the levers, adapted to allow them to be reciprocated, the movable frame having a bar extending across in front of the arms on the levers, springs to move the levers to bring the shoulders on their arms into the path of the bar, a series of retractors connected with the levers, a series of movable keys to engage the retractors, and means for moving back any retractor, that has been released by movement of its key, substantially as and for the purpose described.

41. In combination with the series of actuating-levers for moving parts of the machine, each having an arm provided with a shoulder and with an upwardly-extending face above each shoulder, pivotal bearings for the levers, adapted to allow them to be reciprocated, a movable frame having a bar extending across in front of the series of arms on the levers, springs to move the levers to bring the shoulders on their arms into the path of the bar, a series of retractors connected with the levers, a second moving frame, connections between the two frames, whereby movement of the second frame causes the first one to be actuated, a series of retractor-engaging keys movably mounted upon the second frame, each adapted to be moved to release the respective retractor, before the second frame is moved to raise the cross-bar on the first frame above the shoulders on the arms of the actuating-levers, and means for returning to its normal lever-retracting position any retractor so released by its key, substantially as and for the purpose specified.

42. In combination with the series of actuating-levers for moving parts of the machine, each having an arm provided with a shoulder and with an upwardly-extending face above such shoulder, pivotal bearings for the levers, adapted to allow them to be reciprocated, a movable frame having a bar extending across in front of the arms of the levers, springs to move the levers, to carry the arms thereon toward the bar, a series of retracting levers connected with the actuating-levers, a second movable frame, connections between the two frames, whereby movement of the second frame causes the first one to be actuated, keys to engage arms of the retracting-levers, movably mounted upon the second frame, and means actuated by the latter frame to raise the pivotal supports of the retracting-levers, substantially as and for the purpose shown.

43. In combination with the series of actuating-levers, for moving parts of the machine, each having an arm provided with a shoulder and with an upwardly-extending face above such shoulder, pivotal bearings for the levers adapted to allow the levers to be reciprocated, springs to move the levers to carry the arms thereon toward the bar, a series of retracting-levers connected with the actuating-levers, the rocking shaft upon which the retracting-levers are pivoted having eccentric bearings in a supporting-frame, a second movable frame, connections between it and the first movable frame, whereby movement of the second movable frame causes the first one to be actuated, keys to engage the retracting-levers, movably mounted on the second movable frame, a bearing carried by such frame, and a cam-lever attached to the rocking shaft, adapted to be moved and swung by the bearing, as the frame carrying the latter is moved, substantially as and for the purpose set forth.

44. In combination with a movable frame, the series of actuating-levers for moving parts of the machine, each having an arm provided with a shoulder adapted to be brought into the path of the frame by longitudinal movement of the lever, and with a second oppositely-turned shoulder, a stop-wing having its edge in position to engage the second shoulder on the lever-arm, when the lever is moved to take its first shoulder out of the path of the movable frame, pivotal bearings for the levers, adapted to allow them to be reciprocated, and means for moving the levers, to bring the bar-engaging shoulders on their arms into and out of the path of the movable frame, substantially as and for the purpose described.

45. In combination with a movable frame, a series of actuating-levers, for moving parts of the machine, each having an arm provided with the shoulder to be engaged by the frame, and with a second oppositely-facing shoulder, the spring pressed stop wing having its edge adapted to engage the second shoulder on the lever-arm, when the lever is moved longitudinally, to take its first shoulder from the path of the movable frame, pivotal bearings for the levers, adapted to allow them to be moved longitudinally to take the first shoulders on their arms into and out of the path of the frame, and means for so moving the levers, substantially as and for the purpose specified.

46. In combination with a series of movable registering devices, the series of actuating-levers provided with pawl-fingers to engage the ratchet-wheels of the respective registering devices, and with arms having shoulders, pivotal supports adapted to allow the levers to be moved longitudinally to bring their pawl-fingers into engagement with the respective ratchet-wheels, the springs engaging arms on the levers, and a moving bar into the path of which the shoulders on the arms of the levers are brought by the movement of the levers to bring the pawl-fingers into engagement with the ratchet-wheels, substantially as and for the purpose shown.

47. In combination with a series of movable indicators, each having a retaining projection, the movable indicator-supporting wing to engage the projection on any raised indicator, and a movable bar, forced down by a yielding pressure, situated in the path of portions of the indicators, so that such portions will engage it only after the

indicators have been raised to a certain distance above their normal non-indicating positions, substantially as and for the purpose specified.

48. In combination with a series of movable indicators each having a retaining projection and a lug, the movable indicator-supporting wing to engage the projections and hold the indicators, when raised to indicating position, and a spring-pressed movable bar, situated in the path of the lugs on the indicators, at a distance from the lugs, when the indicators are down in non-indicating position, so that it will be engaged by the lug on any indicator, only after the latter has been raised above its normal non-indicating position, substantially as and for the purpose shown.

49. In combination with the movable supporting-wing and the spring-pressed movable bar, the series of movable indicators having the retaining projections with abrupt under faces, and upwardly and outwardly inclined faces at the outer sides of the abrupt faces, and pressure-bar-engaging bearings, standing at a distance below the bar, when the respective indicators are in non-indicating position, and adapted to engage the bar only after the indicators carrying them have been raised above such position, substantially as and for the purpose described.

50. In combination with the movable drawer or till and the frame moving therewith, bearings on such frame, and a swinging frame having arms with cam portions, by engagement with which, as the drawer is being opened, the bearings cam the frame up, and portions which, when the frame is so cammed up, are parallel with the outward travel of the bearings on the drawer-frame, and serve to hold them down to keep the inner end of the drawer-frame down upon its supports, substantially as and for the purpose shown.

51. In combination with the movable drawer or till and the frame moving therewith, the swinging frame having arms with inclines or cam portions, means for limiting the upward swing of such arms, and bearings on the drawer or till frame, engaging the under sides of the arms, substantially as and for the purpose set forth.

52. In combination with the movable drawer or till and the frame moving therewith, the swinging frame having the arms provided with the inclines, bearings on the movable drawer or till frame engaging these arms, to cam them upward, as the drawer or till is opened, abutments on the moving drawer or till frame, and arms on the swinging frame, to be engaged thereby, as the drawer is closed substantially as and for the purpose described.

53. In combination with a movable part of a till, a swinging frame, cam connections between such movable part and the frame, a series of actuating-levers for moving parts of the machine, having shoulders to be engaged by parts of the swinging frame, and means whereby any of such levers may be set into position to be actuated by the frame, substantially as and for the purpose specified.

54. In combination with a movable part of the till and a frame moving therewith, a series of keys movably mounted on such frame, a movable frame, cam connections between it and the other frame, a series of registering devices, a series of levers for actuating the same, having portions to be brought into the path of the movable frame by movement of the levers, and means for actuating the respective registering devices, springs for moving the levers into position to be engaged and actuated by the movable frame, and retracting-levers connected with the actuating-levers, and having arms to be engaged by the keys, substantially as and for the purpose shown.

55. In combination with a movable part of the till and a frame moving therewith, a series of keys movably mounted on such frame, a movable frame, cam connections between it and the other frame, a series of movable indicators, a series of actuating-levers each having a part to engage one of the indicators and a portion to be moved into the path of the movable frame by movement of the lever, springs for moving the levers into position to be engaged and actuated by the movable frame, and retracting-levers connected with the actuating-levers, and having arms to be engaged by the keys, substantially as and for the purpose set forth.

56. In combination with a movable part of the till and a frame moving therewith, a series of keys movably mounted on such frame, a movable frame, cam connections between it and the other frame, a series of movable indicators, a series of registering devices, a series of levers each having a portion to engage one of the indicators, means for actuating the corresponding registering device, and an arm provided with a shoulder to be brought, by movement of the lever, into and out of the path of the movable frame, springs for moving the levers to bring the shoulders on their arms into the path of the movable frame, and the retracting-levers connected with the actuating-levers, and having arms to be engaged by the keys, substantially as and for the purpose described.

573,436. ILLUMINATED-SIGN APPARATUS. JOHN U. BARR, JR., Pittsburg, Pa., assignor of one-half to David J. Richardson, Allegheny, Pa. Filed Dec. 19, 1895. Serial No. 572,641. (No model.)

Claim.—1. An illuminated-sign apparatus, comprising a lens and a source of light, a clock-dial, means for indicating the time, mechanism carrying a picture or pictures, and means for operating the time-indicating apparatus and picture-carrying mechanism; substantially as described.



2. An illuminated-sign apparatus, comprising a lens and source of light, a picture or pictures, a transparent clock dial and hands, and mechanism connected to said picture or pictures and clock-hands whereby the picture or pictures and time indicated by the clock dial and hands are displayed upon a surface at the same time, substantially as described.

3. An illuminated-sign apparatus, comprising a lens and a source of light, a transparent clock-dial, means for indicating the time, mechanism carrying a picture or pictures, and means for operating said time-indicating apparatus and picture-carrying mechanism; substantially as described.

4. An illuminated-sign apparatus, comprising a lens and a source of light, a clock-dial, means for indicating the time, mechanism carrying a picture or pictures, and means for operating said time-indicating apparatus and picture-carrying mechanism, the entire apparatus being contained in a box or case; substantially as described.

5. An illuminated-sign apparatus, comprising a box or case containing a lens and the source of light, a set of pictures within said box or case, a transparent clock-dial between the pictures and lens, a minute and hour hand carried on separate parts, and mechanism connected to said pictures and parts carrying the minute and hour hands whereby the pictures and time indicated on the clock-dial by the minute and hour hands are automatically displayed upon a surface, substantially as described.

6. An illuminated-sign apparatus, comprising a lens and a source of light, a clock-dial, means for indicating the time, mechanism carrying a picture or pictures, means for operating the time-indicating apparatus, and means for operating the picture-carrying mechanism operatively connected to the apparatus for working the time-indicating mechanism; substantially as described.

7. An illuminated-sign apparatus, comprising a lens and source of light, a clock-dial, means for indicating the time, mechanism carrying a picture or pictures, clockwork mechanism for operating said time-indicating apparatus, and clockwork mechanism for operating said picture-carrying mechanism; substantially as described.

8. An illuminated-sign apparatus, comprising a lens and source of light, a clock-dial, means for indicating the time, mechanism carrying a picture or pictures, clockwork mechanism for operating said time-indicating mechanism, and clockwork mechanism for operating said picture-carrying mechanism operatively connected to said first-named clockwork mechanism; substantially as described.

9. In illuminated-sign apparatus, the combination with a box or case, containing a lens and the source of light, of a set of pictures within said box or case, a clock-dial, clock-hands mounted on separate parts, clockwork mechanism for operating the clock-hands, clockwork mechanism connected to the pictures, and mechanism connected to said first clockwork mechanism for operating the second clockwork mechanism to automatically change or shift the pictures, substantially as described.

10. In illuminated-sign apparatus, the combination with a box or case containing a lens and the source of light, of a set of pictures within said box or case, a clock-dial, clock-hands mounted on separate parts, clockwork mechanism for operating the clock hands, clockwork mechanism connected to the pictures, a ratchet-wheel on said first clockwork mechanism, a spring-lever having a pawl thereon engaging with said ratchet-wheel, a shaft connected to said spring-lever, and a lever connected to said shaft at one end and having its opposite end engaging with a pin on a gear-wheel mounted on a shaft in the second clockwork mechanism to automatically change or shift the pictures, substantially as described.

11. In illuminated-sign apparatus, the combination with a box or case containing a lens and the source of light, of a plate or body portion secured within the box or case, a transparent clock-dial secured within said body portion, a transparent plate having the hour-hand secured thereto, a flanged case around the transparent plate, a loose ring within the flanged case having the minute-hand secured thereto, clockwork mechanism secured to said body portion, and gear-faces around said transparent plate and loose ring adapted to engage with gear-wheels on a shaft in the clockwork mechanism, substantially as described

12. In illuminated-sign apparatus, the combination with a box or case containing a lens and the source of light, of a plate or body portion secured within the box or case, a transparent clock-dial secured within an opening in the body portion, a transparent plate having the hour-hand secured thereto, a flanged case around the transparent plate, a loose ring within the flanged case having the minute-hand secured thereto, clockwork mechanism secured to said body portion at one side thereof, gear-faces around the transparent plate and loose ring adapted to engage with gear-wheels on a shaft in the clockwork mechanism, a disk carrying a set of pictures secured on a shaft located within the body portion, clockwork mechanism connected to said shaft, and mechanism connected to said first clockwork mechanism for operating the second clockwork mechanism to automatically change or shift the pictures, substantially as described.

13. An illuminated-sign apparatus, comprising a lens and the source of light, a transparent clock-dial, a transparent plate having the hour-hand secured thereto, a loose ring having the minute-hand secured thereto, and mechanism for operating said transparent plate and loose ring; substantially as described.

14. An illuminated-sign apparatus, comprising a lens and a source of light, a transparent clock-dial, a transparent plate having the hour-hand secured thereto, a flanged case around the transparent plate, a loose ring within the flanged case, and mechanism for operating said transparent plate and loose ring; substantially as described.

15. An illuminated sign apparatus, comprising a lens and source of light, a transparent clock-dial, a transparent plate having the hour-hand secured thereto, a flanged case around the transparent plate, a loose ring within the flanged case, and gear-faces around said transparent plate and loose ring adapted to engage with gear-wheels on a shaft in the clockwork mechanism; substantially as described.

573,437. HAIR-DRIER. RUFUS P. BOWDOIN and HARRY L. BOWDOIN, Wilmington, N. C. Filed Feb. 14, 1896. Serial No. 579,243. (No model.)



Claim.—1. A hair-drier, constructed substantially as herein shown and described, consisting of a cylindrical casing provided with perforated ends, a collar and peripheral teeth, a hollow handle having a removable cap on one end and on the other end a screw-threaded tubular plug adapted to fit in the said collar, a wick-tube in said plug, a sliding sleeve on said tube provided with a cross-head having screw-threaded bolt *g* thumb-nut on said handle, to act on said bolt, to move said sleeve and a rod secured to said plug and passing through said cross-head, said rod being provided with a shoulder for limiting the movement of said sleeve, all arranged and adapted to operate as set forth.

2. In a hair-drier, constructed substantially as herein shown and described, the combination with the casing of a hollow handle, a tubular plug thereon adapted to enter the casing-collar, a wick-tube in said plug, and means for adjusting the wick-tube, as set forth.

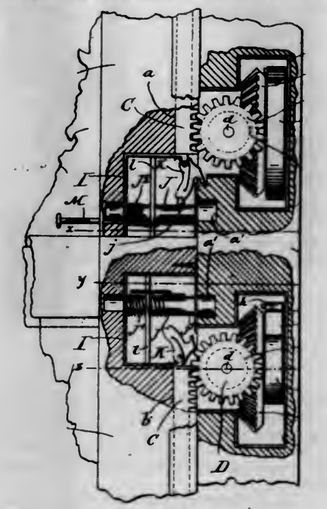
573,438. PROCESS OF MAKING DETERGENT COMPOUNDS. THOMAS C. BURSH, New York, N. Y., assignor of nine-sixteenths to John R. James, Brooklyn, and Edward V. Van Duser, Tompkinsville, N. Y. Filed May 3, 1895. Serial No. 548,030. (No specimens.)

Claim.—The process of forming a renovating compound, consisting in forming a mixture of soap, borax, glycerin, cedar-oil and soft water, raising the mixture to a degree of temperature near but not quite to the boiling-point and maintaining it at that temperature until the several ingredients are completely dissolved and then while the solution is still hot introducing cold water into the mass and agitating the mass and finally allowing the solution to congeal, substantially as set forth.

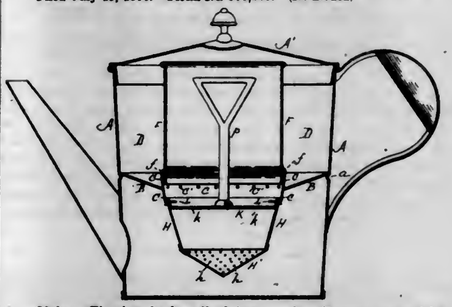
573,439. SASH FASTENER AND SUPPORT. JAMES R. CAHOON, Corning, N. Y. Filed July 31, 1896. Serial No. 601,127. (No model.)

Claim.—1. In a sash fastening and hanging apparatus, the combination of a pinion and beveled gearing and a coiled spring located within the window-frame and a vertical rack upon the edge of the window-sash engaging with the said pinion and beveled gearing, and a spring-pressed bolt also located within the window-sash and means for automatically operating said bolt comprising a spring-pressed pawl which engages with the pinion of the said gearing of the frame and with a projection of the said bolt, substantially as shown and described.

2. As a means for fastening and hanging windows, the combination of a vertical rack secured within the edge of the window-sash and a pinion engaging with said rack secured within a recess of the window-frame, said pinion being in engagement with a beveled gearing, which gearing is secured to a coiled spring for maintaining the sash in position; with a spring-pressed bolt which is secured within a recess of the sash and a spring-pressed pawl for engagement with the said bolt, said pawl adapted to be automatically operated by means of the said pinion, and means for independently operating the bolt comprising a lever attached thereto which leads through the framework of the sash, substantially as shown and described.



573,440. COFFEE-POT. CHARLES H. CHASE, Newport, R. I. Filed July 15, 1896. Serial No. 599,275. (No model.)

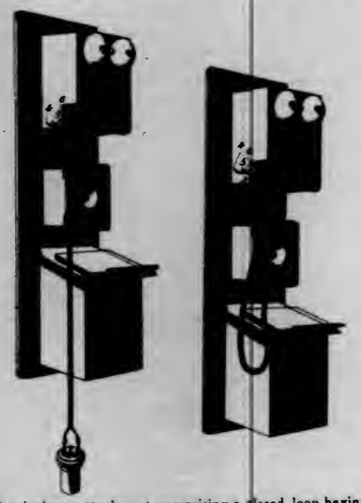


Claim.—The herein-described improved coffee-pot, comprising the ordinary sides A; the downwardly-inclined inward partition B provided on its inner edges with the tapered perforated ring C and supported by said sides; the cylinder F supported by said ring, said cylinder, ring and partition constituting, with the sides of the coffee-pot, a separate water-chamber; the cone-shaped coffee-holder H supported in and by the lower portion of the ring C and provided with the perforated bottom H'; and the perforated disk K' resting in and supported by the upper portion of the sides of the coffee holder H and provided with the handle P extending into the central cylinder, substantially as described.

573,441. TELEPHONE ATTACHMENT. WILLIAM O. CHRISTOPHER, Hillsborough, Tex. Filed Aug. 29, 1895. Serial No. 560,934. (No model.)

Claim.—1. A telephone attachment comprising an oblong loop, insulated for a portion of its length and the main portion of which is sufficiently wide to be passed horizontally over the outer hook end of a telephone switch-lever, said loop being provided at both ends with elongated contracted necks, one of which necks is adapted to engage the shank of said switch-lever in rear of said hook end to allow the loop to normally assume a vertical position, and thereby

detachably lock itself on the switch-lever, and a hook connection between the other contracted neck of the loop and the receiver-wires, whereby a dropping of the telephone-receiver will exert a pull on the switch-lever through the medium of said loop, substantially as set forth.



2. A telephone attachment comprising a closed loop having an insulated portion and adapted to have a detachable locking engagement with a telephone switch-lever in rear of the hook thereof and adapted to be retained in place by said hook, and a loose connection between said loop or link and the receiver cords or wires, substantially as set forth.

573,442. FISH-PLATE AND COUPLING FOR RAILWAY-RAILS. CHARLES M. CHUNN, Powersville, Ga. Filed Feb. 7, 1896. Serial No. 578,361. (No model.)



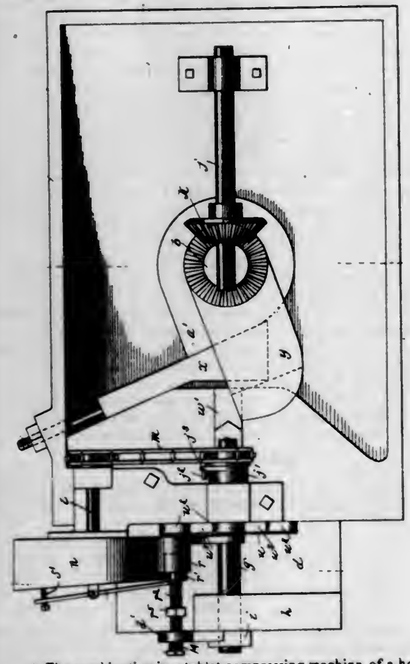
Claim.—The combination with the ends of abutting railway-rails, the adjacent sides of the heads of which are cut away at an angle thus forming a triangular space, of coupling or fish plates, one of which is provided with a triangular head which is adapted to fill said space, and said coupling or fish plates being formed so as to conform to the vertical body portion of the rails and to the base-flanges thereof, and one of said coupling or fish plates being provided with a bottom plate which forms a support for the base-flanges of the rails, substantially as shown and described.

573,443. TABLET-COMPRESSING MACHINE. HORACE L. CLARK, Beaver Dam, Wis., assignor of one-fourth to Augustus Armstrong, Albert Lea, Minn. Filed July 3, 1896. Serial No. 597,989. (No model.)

Claim.—1. A tablet-compressing machine in which are combined a hopper for the reception of the loose material, a measuring-receptacle in operative communication therewith, means for positively feeding the loose material to said measuring-receptacle, a reciprocating plunger adapted to partially compress and force said material out of said measuring-receptacle, a suitable conveyer into which the material is forced, and a compressing-die to which the said partially-compressed material is transferred, substantially as described.

2. In a tablet-compressing machine, the combination of a hopper for the reception of the loose material, a measuring-receptacle in operative communication therewith, a feed mechanism for positively feeding the loose material to the measuring-receptacle at regular intervals, a reciprocating plunger adapted to partially compress and force said material out of said measuring-receptacle, a suitable conveyer into which the material is forced, means for adjusting the longitudinal movement of said plunger whereby the quantity of material to be compressed with each movement may be predetermined and automatically measured, and a compressing die to which the said partially-compressed material is transferred, substantially as described.

3. The combination in a tablet-compressing machine, of a hopper for the reception of the loose material, an adjustable measuring-receptacle, means for positively forcing said loose material into said measuring-receptacle at stated intervals, a rotary conveyer provided with a series of receptacles for receiving said tablets when partially compressed, a compressing-die into operative proximity to which the said partially compressed material is conveyed, and means for actuating said rotary conveyer in harmony with the movement of said measuring device, substantially as described.



4. The combination in a tablet-compressing machine, of a hopper for holding the loose material, a measuring-receptacle in operative connection therewith, a rotary feed mechanism for positively feeding the loose material to said measuring-receptacle, means for automatically measuring the material therein, means for partially compressing the material into a tablet, a compressing-die, and means for removing the partially compressed tablet thereto, substantially as described.

5. The combination in a tablet-compressing machine, of a hopper, a measuring-receptacle directly communicating with said hopper, an adjustable plunger for adjusting the measurement of the material, means for reciprocating said plunger at regular intervals, a rotary sector-shaped feeding device having a series of obliquely-arranged fingers upon its periphery, a series teeth in said hopper arranged to project obliquely over the opening communicating with the measuring-receptacle in a direction opposed to the direction of movement of said sector and arranged to coact with the teeth upon the latter, and means for causing the teeth of the sector to pass the opening only when the measuring-plunger is withdrawn, substantially as described.

6. The combination with a hopper and measuring-receptacle of a tablet-making machine, of the rotary sector-shaped feeding device located in the hopper, said device having a series of obliquely-projecting teeth upon its periphery a feed-opening forming communication between the hopper and measuring-receptacle, and a series of stationary teeth adjusted to coact with the teeth of the rotary feeding device and arranged to project obliquely over said feed-opening in an opposite direction from the course of movement of said device, whereby the material is directed and positively forced into the opening as a result of the opposite inclination of the opposing teeth, substantially as described.

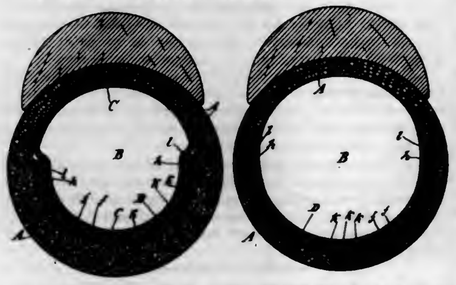
7. In a tablet-making machine, the combination with a measuring-receptacle and means for forcing the material therein, of a reciprocating plunger for forcing the material out of the measuring-receptacle, a rotary disk having a series of openings in its face adapted to register with said measuring-receptacle, a rotary stop mechanism for actuating said disk in harmony with the movement of said plunger, a compressing-die, a compressing-plunger, a secondary plunger within the die, and means for thrusting the latter forward to expel the tablet after compression, substantially as described.

8. The combination in a tablet-machine, of a hopper, a measuring-receptacle in which to measure the tablet, a compressing-die, means for transferring the measured material to the compressing-die, a compressing-plunger adapted to force the partially-formed tablet into the compressing-die, a movable plunger within said die, an adjustable stop for limiting its backward movement to determine the thickness of the tablet, and means for suddenly forcing said plunger forward after the withdrawal of said compressing plunger, substantially as specified.

9 The combination in a tablet-compressing machine, of a stationary compressing-die, means for presenting the material thereto for compression, a reciprocating compressing-plunger, means for actuating the same, a movable plunger within said die, a stop for limiting its backward movement to gage the depth of the die, a lateral projection upon the body of said plunger, and a rotary arm adapted to engage with said projection after each backward movement of the compressing-die, substantially as described.

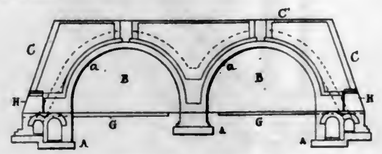
10. The combination in a tablet-compressing machine, of a main shaft and eccentric, a reciprocating bar adapted to be actuated thereby, a measuring plunger and compressing plunger respectively, in operative connection with said bar, a measuring-receptacle, means for feeding the material thereto, a compressing-die, and means for automatically transferring the material from the measuring-receptacle to said compressing-die, substantially as described.

573,444. PNEUMATIC TIRE. LANGLEY CLAXTON, Paterson, N. J., assignor of one-fourth to William P. Herrmann, same place. Filed July 3, 1895. Serial No. 554,787. (No model.)



Claim.—In a pneumatic tire, the combination of a series of metallic strips interposed between the interior air-chamber and the tread of the tire, the said strips being arranged in layers transversely to the tire, the strips of one layer covering the joints of the next layer, and a silken or other soft cord arranged along the edges of said metallic strips but disconnected therefrom whereby it forms a flexible fender or cushion between the metallic strips and the other parts of the tire, substantially as and for the purpose specified.

573,445. BRICK-KILN. CHARLES E. COATES and LLEWELLYN HANCOCK, Woodbridge, N. J. Filed Jan. 25, 1896. Serial No. 576,777. (No model.)



Claim.—1. The combination in a continuous brick-kiln, of a main draft-flue leading to the stack, branch flues from said draft-flue to the upper and lower part of each section of the kiln, and dampers for controlling communication between said branch flues and draft-flue whereby the kiln may be operated with an up-and-down draft, a hot-air flue, branch flues extending therefrom to each section of the kiln, and dampers in the said last-named branch flues and in the hot-air flue for directing the hot air from the cooling-sections to the drying-sections, substantially as set forth.

2. The combination in a continuous brick-kiln, of a main draft-flue leading to the stack, branch flues from said draft flue to the upper and lower part of each section of the kiln, and dampers for controlling communication between said branch flues and draft-flue whereby the kiln may be operated with an up-and-down draft, a hot-air flue, branch flues extending from said hot-air flue to the upper and lower part of each section of the kiln, dampers in said last-named flues for controlling communication between the same and the main hot-air flue, and dampers in the main hot-air flue whereby the hot air from the cooling-sections escapes at the top and bottom of each section, and whereby such hot air may be directed into the drying-sections at the lower or upper parts thereof, or both, substantially as set forth.

3. The combination in a continuous brick-kiln, of two main flues, branch flues extending therefrom to each section of the kiln, and dampers opposite each section of the kiln for controlling communication between said main flues, by the manipulation of which the draft in the main flues may be regulated, substantially as set forth.

4. The combination, in a continuous brick-kiln, of two main flues D and E, branch flues D', D^2 and E', E^2 extending from the main flues respectively to the top and bottom of each chamber, dampers for controlling communication between said branch and main flues, and dampers in the main flue E opposite each chamber, substantially as and for the purpose set forth.

5. The combination, in a continuous brick-kiln, of two main flues D and E, branch flues D', D^2 and E', E^2 extending from the main flues respectively to the top and bottom of each chamber, dampers for controlling communication between said branch and main flues, a flue F connecting the flues D' and E' of adjacent chambers, and dampers in the main flue E opposite each chamber, substantially as and for the purpose set forth.

6. The combination, in a continuous brick-kiln, of two main flues D and E, branch flues D', D^2 and E', E^2 extending from said main flues respectively to the top and bottom of each chamber, dampers for controlling communication between said branch and main flues, separate dampers d' and e' in flues D' and E' respectively, a flue F connecting the flues D' and E' of adjacent chambers, dampers f in said flues F, and dampers h in the main flue E opposite each chamber, substantially as and for the purpose set forth.

7. The combination in a continuous brick-kiln, of two stacks, a main draft-flue extending entirely around the kiln and communicating with both stacks, branch flues extending from said main flue to each section of the kiln, and dampers in said main flue whereby the kiln may be worked independently in two sections in either direction, or as one continuous kiln in either direction, substantially as set forth.

8. The combination in a continuous brick-kiln, of two stacks, a main draft-flue extending entirely around the kiln and communicating with both stacks, branch flues extending from said main flue to each section of the kiln, dampers in the main draft-fine at each side of both stacks, by the adjustment of which the kiln may be worked independently in two sections in either direction, and a damper in each stack for cutting out of use either stack to operate as one continuous kiln with either stack, substantially as set forth.

9. In a continuous brick-kiln, the combination of a main draft-fine extending entirely around the kiln, branch flues extending therefrom to each section of the kiln, two stacks located at opposite points and with which said main draft-flue communicates, a main hot-air flue, branch flues extending therefrom to each section of the kiln, and controlling-dampers for said main and branch flues and said stacks, substantially as set forth.

10. The combination, in a continuous brick-kiln, having a number of chambers or sections, of the main hot-air flue, branch flues extending from said hot-air flue to each section, whereby the hot air from a cooling section is conducted to the drying-sections in advance of the burning-sections, and crossover connections from the sections on one side of the kiln to the sections on the other side of the kiln, whereby the hot air from the cooling-sections on one side of the kiln may be conducted to the drying-sections on the opposite side of the kiln independently of the main hot-air flue, substantially as set forth.

11. The combination, in a continuous brick-kiln, having a number of chambers or sections arranged in two rows with a dividing-wall between the two rows, of a main hot-air flue extending entirely around the structure, branch flues extending from said main hot-air flue to each section, whereby the hot air from a cooling-section is conducted to the drying-sections in advance of the burning-sections, and crossover connections from the sections on one side of the kiln to the sections on the other side of the kiln, whereby the hot air from the cooling-sections on one side of the kiln may be conducted to the drying-sections on the opposite side of the kiln independently of the main hot-air flue, substantially as set forth.

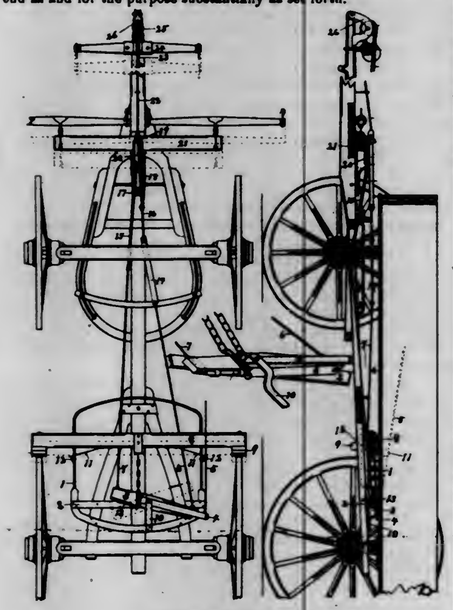
573,446. AUTOMATIC WAGON-BRAKE. JACOB S. COCHRAN, Salina, Kans. Filed Mar. 25, 1895. Serial No. 543,127. (No model.)

Claim.—1. In the combination with a wagon-brake, the hoop 1 and cross-bar 2 riveted together and bolted to the rear bounds of a wagon, in the form and for the purpose substantially as described.

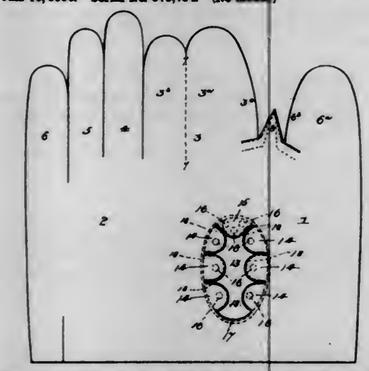
2. In the combination with a wagon-brake, the levers 3 and 4 pivoted and bridled with rod and chain connections, to act in conjunction or independently as described and shown.

3. In an automatic wagon-brake the combination of a slotted iron bed-plate and loop bridle-strap 18 with a draw-pin 19 for double-

trees having a T-shaped foot and slotted hole through same near top end as and for the purpose substantially as set forth.



573,447. GLOVE. JENNINGS COMBS, Milwaukee, Wis. Filed Jan. 16, 1896. Serial No. 575,734. (No model.)

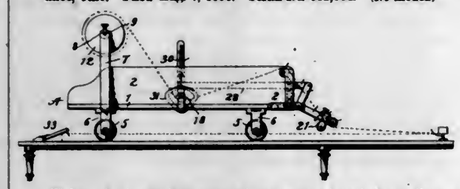


Claim.—1. A glove having a main blank comprising back and palm portions, all of the index and little finger stalls and the backs of the intermediate-finger stalls, and also provided between the inner sides of the index and little finger stalls with a tapered or wedge-shaped reinforcing extension 8 from the base of which extend laterally and downwardly inclined slits by which ears 3^a and 6^a, at the contiguous sides of the index and little finger blanks, are separated at their lower ends from the palm portion of the blank, the side edges of the reinforcing extension being arranged at a more abrupt inclination than the said slits, and auxiliary thumb and intermediate-finger blanks adapted to be secured to the backs which are integral with the main portion of the blank, and to be secured at their lower ends to the palm-fold contiguous to the said inclined slits, whereby the reinforcing extension projects between and is secured to the bases of the intermediate-finger stalls, substantially as specified.

2. A glove having a thumb-hole and provided at each side of said hole with a plurality of integral reinforcing ears or extensions, a thumb-blank secured in the thumb-hole with the said ears or extensions stitched to the outer surface thereof, the stitching being arranged across the base and around the edge of each ear or extension, and a rivet engaging each ear or extension and the thumb-blank out of the lines of stitching and projecting beyond the exposed surface of the ear or extension to protect the stitches, substantially as specified.

3. A glove having a thumb-hole and provided at each side of said hole with a plurality of integral reinforcing ears or extensions and at the inner end of the hole with a further reinforcing ear or extension, a thumb-blank secured in the thumb-hole with the said ears or extensions stitched to the outer surface thereof, the stitching being arranged across the base and around the edge of each ear or extension, and a rivet engaging each ear or extension and the thumb-blank and projecting beyond the exposed surface of the ear or extension to protect the stitches, a plurality of rivets being arranged in the ear or extension which is formed at the inner end of the thumb-hole, substantially as specified.

573,448. CLOTH-LAYING MACHINE. BENJAMIN L. COX, Alliance, Ohio. Filed Aug. 7, 1896. Serial No. 602,061. (No model.)



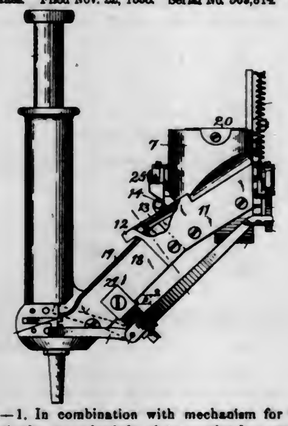
Claim.—1. A carrier mounted on grooved and flat rollers or wheels, the grooved ones adapted to travel on a track and the others on a flat surface, the latter being laterally adjustable, substantially as set forth.

2. The combination with the frame of a cloth-laying machine, of arms pivoted thereto, a pair of rollers carried by the arms, an operating-lever, a rod or pitman extending therefrom to one of the arms in which the rollers are journaled, substantially as set forth.

3. The combination with the frame of a cloth-laying machine, of arms pivoted thereto, a roller journaled in the arms, a strip secured at its ends to said arms, a roller journaled in the ends of this strip, guide-clips connected with the strip, and means for adjusting said rollers up and down, substantially as set forth.

4. The combination with the frame of a cloth-laying machine, of a shaft for carrying the cloth rolled thereon, said shaft having a collar secured thereon and a tension device connected with the frame, and adapted to bear on the collar on the shaft, and means for regulating the tension with which this device bears on the collar, substantially as set forth.

573,449. TACK-DRIVING MACHINE. JOSEPH E. CRIMP, Somerville, Mass. Filed Nov. 22, 1895. Serial No. 569,814. (No model.)



Claim.—1. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing, openings from the interior of said wheel to the buckets thereof, tack receiving and delivering buckets adapted to deliver tacks substantially parallel with the groove of a tack-arranging chute located near the circumference of said tack-elevator wheel, and parallel with the axis thereof, substantially as and for the purpose set forth.

2. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, openings from the interior of said wheel to the buckets thereof, a delivery-opening through the side of the casing from said buckets, buckets for said wheel designed to carry tacks to said opening regardless of the angular inclinations of said wheel, substantially as and for the purpose set forth.

3. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, openings from the interior of said wheel to the buckets thereof, a delivery-opening through the side of the casing from said buckets, and mechanism to move said wheel bucket by bucket opposite said opening, substantially as and for the purpose set forth.

4. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, a hopper connected to said casing which communicates with the interior of said wheel, a delivery-opening through the side of the casing from said buckets, and mechanism to move said wheel bucket by bucket opposite said opening, substantially as and for the purpose set forth.

5. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing, openings from the interior of said wheel to the buckets thereof, a delivery-opening through the side of the casing from said buckets, mechanism to move and then clamp said wheel bucket by bucket opposite said opening, substantially as and for the purpose set forth.

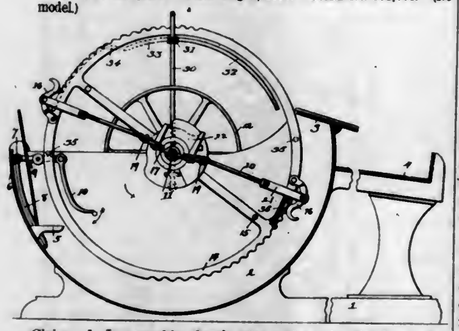
6. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, openings from the interior of said wheel to the buckets thereof, a delivery-opening through the side of the casing from said buckets, an inclined tack-chute located near the circumference of said elevator-wheel and parallel with the axis of revolution thereof, substantially as and for the purpose set forth.

7. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, openings from the interior of said wheel to the buckets thereof, a delivery-opening through the side of the casing from said buckets, an inclined tack-chute located near the circumference of said elevator-wheel and parallel with the axis of revolution thereof, carrying and delivering buckets for said tack-elevator wheel, formed to act as one side of the chute-hopper and mechanism to move and stop said tack-elevator wheel with reference to the opening through the casing, substantially as shown and described.

8. In combination with mechanism for driving loose tacks, a tack-elevator wheel fitted to revolve in a casing which surrounds the same, a delivery-opening through the side of said casing, an inclined tack-chute located near the circumference of said elevator-wheel and parallel to the axis of revolution thereof, an elastic diaphragm located over the upper end of the tack-chute opposite the delivery-opening through the side of the casing, and mechanism to move and stop said tack-elevator wheel with reference to said opening, substantially as and for the purpose set forth.

9. In combination with mechanism for guiding loose tacks, a tack-elevator wheel, fitted to revolve in intimate contact with the sides and ends of the casing said casing having an opening leading to a raceway and designed to receive loose tacks at the interior circumference of its buckets and deliver them at its exterior circumference, said buckets being of sufficient size to receive and carry two or more tacks, substantially as described.

573,450. BRANNING-MACHINE. CHARLES R. DAELLENBACH and JAMES R. PHILLIPS, Ellwood City, Pa., assignors to the Ellwood Tin-Plate Company, same place. Filed Aug. 5, 1896. Serial No. 601,770. (No model.)



Claim.—1. In a machine for cleaning or branning tin plates; the combination of a bran-receptacle, a plate-carrying wheel arranged in the bran-receptacle, means carried by said wheel for holding a plate thereto; means for automatically releasing the plate, a discharge device connected with the bran-receptacle and adapted to force plates from the wheel when said plates are released and a projection on the wheel adapted to engage and actuate the discharge device, substantially as and for the purpose set forth.

2. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle having a support for the plates, a lever having tangs for dislodging the plates from said support, a second lever loosely connected with the said lever, a stationary or fixed cam, a plate-carrying wheel arranged in the bran-receptacle and having an arm adapted to engage the last-named lever, jaws loosely connected with the wheel, a lever fulcrumed on the wheel and adapted to engage the stationary or fixed cam, a lever fulcrumed on the cam-engaging lever, and a connection between the opposite ends of the latter lever and the jaws, substantially as and for the purpose set forth.

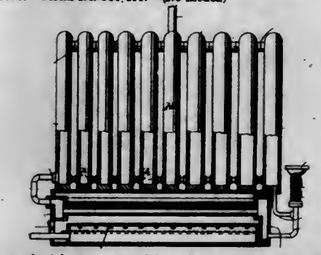
3. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged in the bran-receptacle, a stationary or fixed cam, jaws loosely connected with the wheel and adapted to clamp a plate against the same, a lever fulcrumed on the wheel and adapted to engage the stationary or fixed cam, a lever fulcrumed on the cam-engaging lever, and a connection between the opposite ends of the latter lever and the jaws, substantially as and for the purpose set forth.

4. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged and adapted to turn in said receptacle and having that portion of its periphery against which the plates rest toothed or corrugated and means for holding the plates to the wheel while passing through the bran, substantially as and for the purpose set forth.

5. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle, a plate-carrying wheel arranged and adapted to turn in said receptacle and having that portion of its periphery against which the plates rest toothed or corrugated, a jaw for pressing the plates against the periphery of the wheel while passing through the bran, and a countersunk spring arranged in the periphery of the wheel at the point where the jaw presses against the plates and adapted to force the plates away from the wheel when the jaw is released substantially as and for the purpose set forth.

6. In a machine for cleaning or branning tin plates, the combination of a bran-receptacle having a support for the plates, mechanism for dislodging the plates from said support, a chute, a plate-carrying wheel arranged in the bran-receptacle, a jaw carried by said wheel and adapted to hold plates against the same, means for forcing said jaw toward the wheel at intervals, a pivoted discharge device adapted to force plates from the wheel when the jaw is released and having an arm provided with a shoulder, and a projection on the wheel adapted to engage said shoulder, substantially as and for the purpose set forth.

573,451. HEATER. JOHN E. DAME, Brooklyn, N. Y. Filed Nov. 19, 1895. Serial No. 569,409. (No model.)



Claim.—1. A heater comprising a fire box, a burner located therein, and removable therefrom, and detachable, hollow, heads approximately rectangular in cross-section connected with said fire-box, a plurality of tubes forming a communication between said heads, a radiator composed of separate radiator sections or tubes located above said fire-box, and said radiator sections or tubes being in communication at their lower ends, and said heads forming portions of the end walls of the apparatus and being also in communication with said radiator sections or tubes, substantially as shown and described.

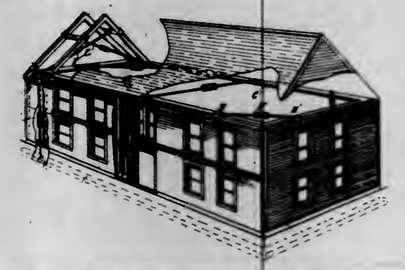
2. A heater comprising a fire-box, a burner located therein, and removable therefrom, and detachable, hollow heads approximately rectangular in cross-section connected with said fire-box, a plurality of tubes forming a communication between said heads, a radiator composed of separate radiator sections or tubes located above said fire-box, and said radiator sections or tubes being in communication at their lower ends, and said heads forming portions of end walls of the apparatus and being also in communication with said radiator sections or tubes, the communication between one of said heads, and the adjacent radiator section or tube being made by a pipe which communicates with the upper part of said head, and the communication between the other head, and the adjacent radiator section or tube being made by a pipe which communicates with the lower part of said head, substantially as shown and described.

3. A heater comprising a fire-box, a burner connected therewith, a number of tubes located in said fire-box and communicating with hollow heads at each end thereof said heads being also in communication with a radiator composed of separate sections or tubes located above said fire-box and the lower ends of which are in communication, said fire-box being also provided with a backwardly-directed extension, through which pass vertical tubes which communicate with the spaces between said radiator sections or tubes, and said extension being also provided with an air-drum which communicates therewith and through which extend air-tubes, substantially as shown and described.

4. A heater comprising a fire-box, a burner connected therewith, a number of tubes located in said fire-box and communicating with hollow heads at each end thereof, said heads being also in communication with a radiator composed of separate sections or tubes located above said fire-box and the lower ends of which are in communication, said fire-box being also provided with a backwardly-directed extension, through which pass vertical tubes which communicate with the spaces between said radiator sections or tubes, and said extension being also provided with an air-drum which communicates therewith and through which extend air-tubes, said drum being also provided with a flue for the escape of the hot air or the products of combustion after the same have passed through said extension and through said drum, substantially as shown and described.

5. A heater comprising a fire-box, a burner connected therewith, a number of tubes located in said fire-box and communicating with hollow heads at each end thereof, said heads being also in communication with a radiator composed of separate sections or tubes located above said fire-box, and the lower ends of which are in communication, said fire-box being also provided with a backwardly-directed extension, through which pass vertical tubes which communicate with the spaces between said radiator sections or tubes, and said extension being also provided with an air-drum which communicates therewith and through which extend air-tubes, said drum being also provided with a flue for the escape of the hot air or the products of combustion after the same have passed through said extension and through said drum, and said drum being also provided with means for carrying off the products of condensation, substantially as shown and described.

573,452. MEANS FOR RIGIDLY CONNECTING PARTS OF BUILDINGS WITH EACH OTHER AND WITH THE FOUNDATIONS. CHARLES DELAHUNT, Olathe, Kans. Filed Aug. 26, 1896. Serial No. 604,039. (No model.)



Claim.—1. A device for securing buildings to their foundations, consisting of a rod having separate adjustably-connected parts adapted to be secured to the foundation, and a cross-bar at the end of the rod connected with separate rafters for the purpose set forth.

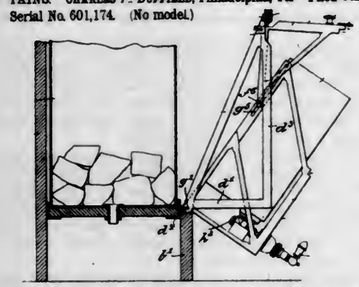
2. A device for securing buildings to their foundation consisting of a rod having separate adjustably-connected parts, one end of one of said parts having a right hand screw-thread, and one end of the other part having a left-hand screw-thread and a turnbuckle connected with said ends of said separate parts of said bar, a plate at one end of said rod and a cross-bar at the other end, having bent ends adapted to engage separate rafters of the building, for the purpose described.

3. In buildings the combination with the walls of said building and the wall-plate and roof-rafters, and also with a footing beneath said building of a bar for connecting adjacent roof-rafters, and means for connecting said bar with said footing, as and for the purpose described.

4. In buildings the combination with the walls of said building and the wall-plate and roof-rafters, and also with the foundation of a rod having separate adjustably-connected parts, one end of said rod having a cross-bar engaging with the adjacent rafters on one side of said roof, and also connected with the wall-plate on the other side of the roof at the other end and means for connecting the wall-plate and the foundation as set forth.

5. In buildings the combination with the oppositely-pitched roof-rafters of said building and the wall-plates supporting said rafters, of cross-bars on each side of and near the apex of the roof and bearing upon adjacent rafters, and rods connected with the respective cross-bars at one end, having separate adjustably-connected parts and connected with the wall-plate on opposite sides of the roof at the other end, as and for the purpose described.

573,453. TILTING APPLIANCE FOR JARS OF SODA-FOUNTAINS. CHARLES F. DUFFIELD, Philadelphia, Pa. Filed July 31, 1896. Serial No. 601,174. (No model.)



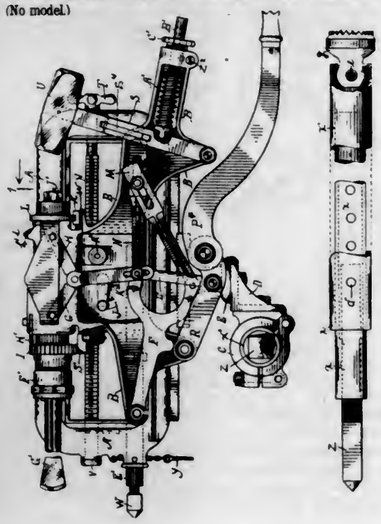
Claim.—1. In a soda-fountain, a substantially triangular-shape fixed frame provided with two box-shaped frames pivoted to said fixed frame and adapted to swing or tilt within the same in opposite directions, substantially as and for the purposes described.

2. In a soda-fountain, fixed frames of substantially triangular shape dividing the syrup-chamber into compartments, substantially box-shaped frames pivoted at their upper ends in said fixed frames and adapted to swing or tilt upward and outward and substantially trapezoidal frames pivoted at their lower rear ends in said fixed frames and adapted to swing or tilt downward and outward, said trapezoidal frames adapted to receive and support the syrup-jars in required position, substantially as and for the purposes described.

3. In a soda-fountain, fixed frames of substantially triangular shape, an upper box-shaped frame pivoted therein, a lower trapezoidal frame pivoted therein and a slotted connection between the upper and lower frames, whereby when the upper frame is drawn outward and upward upon its pivotal support the lower frame is tilted downward and outward, substantially as and for the purposes described.

4. In a soda-fountain, a syrup-jar and its holder provided with frames each adapted to be tilted, the upper frame being suspended so as to tilt upward and outward and the lower frame suspended so as to tilt downward and outward to expose the upper end of said jar, substantially as and for the purposes described.

573,454. HAND-POWER ROCK-DRILLING MACHINE. RIVERIOUS P. ELMORE, Chicago, Ill. Filed Apr. 1, 1896. Serial No. 585,723. (No model.)



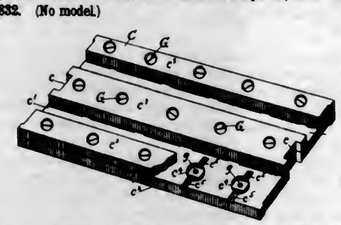
Claim.—1. In a hand-power rock-drilling machine the combination of frame A, frame B adapted to slide upon frame A, and carrying a reciprocating drill-holder S^2 and its spring, screw-rod V, journaled in frame A, and having the hand-wheel T on its outer end, ratchet-wheel *l* splined on said screw-shaft, and seated in a recess in frame B, bell-crank pawl K pivotally connected at its angle to gib *n* by means of pin P having the coil-spring *m* for yieldingly holding said pawl at its point of pivot, said pawl being adapted to engage and turn said ratchet-wheel by means of one of its arms, and the other arm having the lugs O for carrying between them the flange of nut L on the drill-holder for actuating said pawl, nut L, half-nut *y*, and detent-latch K^3, all arranged to operate substantially as and for the purpose set forth.

2. In a hand-power rock-drilling machine the combination of the frame B, the reciprocating drill-holder S^2 having the longitudinal groove P^3, spring bolt or latch *i* having the radial arms *j* near its upper end, and the hollow nut A' adapted to screw into barrel A^4, and having the radial recess P' across its upper end for receiving arms *j*, and the coil-spring introduced in said barrel around said latch and between a shoulder thereon and the lower end of said nut all arranged to operate substantially as and for the purpose set forth.

3. In a hand-power rock-drilling machine the combination of frame B, hammer-handle S pivotally connected at its outer end to said frame, rod B' having its inner end connected with said hammer-handle by a ball-and-socket joint, and having its outer end pass freely through hollow nut C, nut C' screwed into the screw-threaded extension end of said frame B, and the coil-spring A' sleeved on said rod between the head thereof and the inner end of said nut, all arranged to operate substantially as and for the purpose set forth.

4. In a hand-power rock-drilling machine, the combination of the frame A, frame B adapted to slide on frame A, drill-holder S^2 adapted to reciprocate in said frame B and having the flanged nut or head L, and having the groove P^3, hammer-head J' and ratchet-wheel I, coil-spring J^3 sleeved on said drill-holder, pawls H' and K, spring bolt or latch *i* for fitting the groove in said drill-holder, spring-bolt S' screw-shaft V, ratchet-wheel *l* splined thereon, hammer U, and the means for actuating said drill-holder and drill and hammer, all arranged to operate substantially as and for the purpose set forth.

573,455. SECTIONAL BRICK-MOLD. JAMES M. ERVIN, Cleveland, Ohio. Filed Mar. 18, 1895. Renewed Apr. 23, 1896. Serial No. 588,832. (No model.)



Claim.—1. In a mold for bricks and other articles, in combination, a mold-frame having horizontal grooves in two opposite members, a plate lying against each grooved frame member and having a corresponding groove in its rear side, two plates extending between said frame members, abutting the ends of the plates first named and having corresponding grooves in their ends, and movable keys adapted to enter said grooves, substantially as and for the purpose specified.

2. In a mold for bricks and other articles, in combination, a mold-frame having horizontal grooves in two opposite members, a correspondingly-grooved plate lying against each of said grooved frame members, and laterally-movable keys adapted to lie either wholly in the grooves in the frame members, or partly in said grooves and partly in the grooves in the plates which lie against said members, and means for holding said keys in the position last named, substantially as and for the purpose specified.

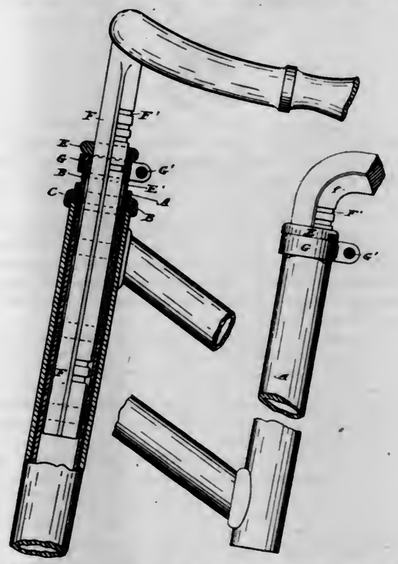
3. In a mold for bricks and other articles, in combination, a mold-frame having horizontal grooves in two opposite members, a correspondingly-grooved plate lying against each grooved frame member, two plates extending between the two grooved frame members abutting the ends of the first-named plates and having corresponding grooves in their ends, laterally-movable keys adapted to lie wholly in the grooves in the frame members, or partly in said grooves and partly in the corresponding grooves in the plates, and mechanism for holding said keys in the last-named position, substantially as and for the purpose specified.

4. In a mold for bricks and other articles, in combination, a mold-frame having horizontal grooves in two opposite members, a correspondingly-grooved plate lying against each grooved frame member, two plates extending between the grooved frame members, abutting the ends of the first-named plates and having corresponding grooves in their ends, laterally-movable keys adapted to lie wholly in the grooves in the frame members, or partly in said grooves and partly in the corresponding grooves in the plates, a stem to each key which extends through a hole in the frame member, and two bars removably secured to the outer sides of said frame members over the ends of said stems, substantially as and for the purpose specified.

5. In a mold for bricks and other articles, in combination, a mold-frame having a space adapted to receive the plates hereinafter mentioned, independent side and end compartment-plates adapted to be removably secured within said space, each plate being composed of a hard-metal front plate, a softer-metal back plate, and mechanism for separably connecting them, substantially as and for the purpose specified.

6. In a mold for bricks and other articles, in combination, a mold-frame having a rectangular compartment within which the compartment-plates may be secured, two independent compartment-plates C C equal in length to one dimension of the said compartment and adapted to lie against opposite walls thereof, two independent compartment-plates B B equal in length to the desired distance between the working faces of said plates C C, means for securing said plates within the mold-frame with the plates C C lying against the ends of the plates B B, each of the independent plates B and C being composed of a hard-metal front plate having a smooth unbroken working face, and a softer-metal back plate removably secured to said front plate, substantially as and for the purpose specified.

573,456. VELOCIPEDE. EDWARD L. EVENS, Malvern, South Australia. Filed Apr. 2, 1896. Serial No. 585,947. (No model.)



Claim.—In combination with the steering-head B, a socket E at the top thereof having a rectangular bore and the projection therein, and the steering-spindle F having a rectangular cross-section to fit the socket and grooves extending about it at different heights, said socket E and steering-head being split and the clamp surrounding the said parts to fix the socket E in place and to clamp the same upon the steering-rod, substantially as described.

573,457. GAGE. ORRIN FORBUSH, Miller's Falls, Mass. Filed Mar. 31, 1896. Serial No. 585,632. (No model.)

Claim.—1. A gage for the purpose described, having relatively-adjustable blades provided with oppositely extending arms or extensions intersecting each other at a plurality of points, and capable of relative adjustment at each of said points to provide for varying the relative positions of the blades angularly and in parallelism, and means for locking said arms at their points of intersection, substantially as specified.

2. A gage for the purpose described, having relatively-adjustable blades provided with slotted arms or extensions intersecting each other at intervals, and clamps engaging the slots in said arms or extensions at their points of intersection, each clamp consisting of a

shouldered thumb-screw, and a nut engaged by the thumb-screw and provided with a lug operating in the slot, substantially as specified.



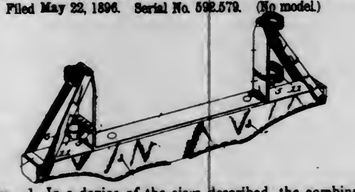
3. A gage for the purpose described, having relatively-adjustable blades provided with angular or V-shaped arms or extensions intersecting each other at spaced points, said arms or extensions being arranged with their interior or reentrant angles facing each other, and clamps for engaging the arms or extensions at their points of intersection, substantially as specified.

4. A gage for the purpose described, having relatively-adjustable blades provided with arms or extensions intersecting each other at spaced points, one of the arms or extensions having spaced cheeks between which the other arm or extension operates, and clamps for engaging the arms or extensions at their points of intersection, substantially as specified.

5. A gage for the purpose described, having relatively-adjustable blades provided with interlocking arms or extensions intersecting each other at spaced points and provided, respectively, with intersecting slots, each arm or extension having outwardly-convergent non-communicating slots, and clamps fitting in the slots at their points of intersection to secure the arms or extensions in different relative positions, substantially as specified.

6. A gage for the purpose described having connected blades which are relatively adjustable angularly and in parallelism, one of said blades having a reduced edge and the other being slotted to receive the reduced edge of the first-mentioned blade when arranged in contiguous positions, and means for securing the blades in their different relative positions, substantially as specified.

573,458. WAGON-STANDARD. EMILE FOUTREL, San Antonio, Tex. Filed May 22, 1896. Serial No. 592,579. (No model.)



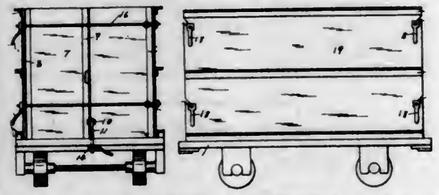
Claim.—1. In a device of the class described, the combination of a bolster provided with a support, a folding standard hinged to the same, an inclined brace pivoted at its lower end to the bolster, detachably secured at its other end to the top of the standard and adapted to swing downward below the upper face of the bolster, and means for supporting the brace when it is folded, substantially as described.

2. In a device of the class described, the combination of a bolster provided with a support, a vertical standard hinged to the support and adapted to swing downward on the bolster in folding, inclined braces arranged in pairs, located at opposite sides of the bolster and pivoted at their lower ends to the same, the upper ends of the braces being detachably secured to the top of the standard, and stake-receiving loops arranged at the top and bottom of the standard, substantially as described.

3. In a device of the class described, the combination of a bolster, a bar secured to the upper face of the bolster and having its ends bent vertically and provided with eyes, vertical standards provided at their upper and lower ends with fastening devices passing through the lower eyes of the standards and the eyes of the bar and hinging the standards to the latter, inclined braces arranged in pairs at opposite sides of the bolster pivoted at their lower ends to the same and provided at their upper ends with perforations, fastening devices passing through the perforations of the braces and the upper eyes of the standards and detachably connecting the parts, stake-receiving loops provided with perforations receiving the said fastening devices, whereby they are secured to the top and bottom of the standards, and hooks mounted on the opposite faces of the bolster and arranged to receive the braces when the latter are folded, substantially as described.

4. In a device of the class described, the combination of a bolster provided with a support, a vertically-disposed standard hinged at its lower end to the same and adapted to fold downward and outward upon the upper face of the standard, and the inclined brace pivoted at its lower end to the bolster, detachably secured at its other end to the standard and adapted to swing inward and downward below the upper face of the bolster, substantially as described.

573,459. SOAP-FRAME. CHARLES W. GATES, Elgin, Ill. Filed Mar. 30, 1896. Serial No. 585,387. (No model.)



Claim.—1. In a soap-frame, the combination of a base portion, two side plates each provided with a vertical flange at each end, end plates flexibly joined to said side plates, said flexible joints being within said end flanges whereby said flanges are adapted to support said end plates when the frame is set up in its normal position, as and for the purpose set forth.

2. In a soap-frame, the combination of a base portion provided with a groove parallel to and just within its perimeter, two side plates each provided with an angle-iron at each end, an end plate hinged to one end of each side plate and adapted to be supported by one of said end angle-irons, said end and side plate adapted to be received in said groove, eyebolts adapted to bind said side plates together, and bolts adapted to bind said end plates to said base, as and for the purpose set forth.

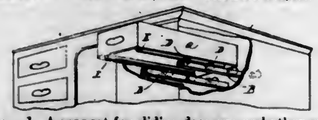
3. In a soap frame, the combination of a base portion, two side plates each provided with an angle-iron at each end, an end plate hinged to one end of each side plate and provided with a projecting flange, a bolt fastened to said flange by means of a pin working in a slot in one end of said bolt, the play of said pin in said bolt being greater than the distance of said pin from said end plate, as and for the purpose set forth.

573,460. DUST-PAN. ANNA C. GEROW, Port Huron, Mich. Filed July 14, 1896. Serial No. 599,103. (No model.)



Claim.—A dust-pan comprising the chamber B, having an upper transverse beaded edge *b* and orifices *d d* in the sides D, D, in combination with the handle O formed with integral spring-arms c c having notches *c' c'* adapted to engage the contiguous beaded edge *b* of the dust-chamber, and having their lower angular ends c^2 c^2 turned horizontally outward to pivotally engage the orifices *d d* from the inside of the sides of the dust-chamber, substantially as and for the purpose set forth.

573,461. SLIDING-DRAWER SUPPORT. FREDERICK HAMILTON, Cranford, N. J. Filed Jan. 25, 1896. Serial No. 576,827. (No model.)

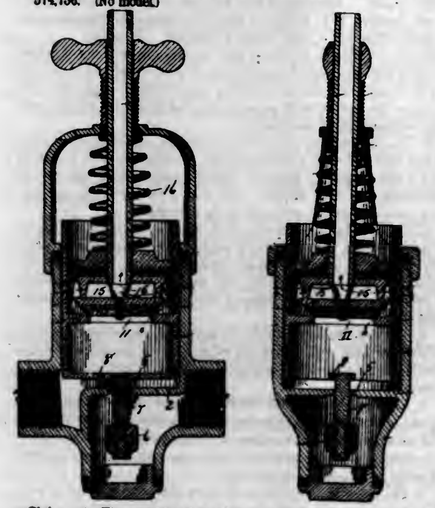


Claim.—1. A support for sliding drawers, and other receptacles, constructed as herein shown and described, consisting of an oblong box or casing the top of which is open, said box or casing being provided with a longitudinal track or rail in the bottom thereof, and transverse partition-plates, and rollers which are spool-shaped or provided with peripheral grooves, said rollers being placed on said track or rail between said partition-plates, and said rollers being adapted to support or receive corresponding tracks or rails, which are secured to the bottom of the drawer or other article to be supported, and said box or casing being provided at its forward end with a similar roller, which is provided with side projections or tenons which are mounted in vertical recesses in the sides of the box or casing, as and for the purpose set forth

2. The combination with a desk or analogous article, of a sliding-drawer support, constructed substantially as herein shown and described, consisting of an oblong open-top box set beneath each side of the desk-drawer, a longitudinal track or rail, in the bottom of each box, transverse partitions in each box, spool-shaped rollers set on the rail between the said partitions, corresponding rails on the drawer-bottom, and a roller at the forward end of each box, set on a shaft, journaled in recesses in the box sides, all arranged as set forth.

3. The combination with a desk or other article, provided with a sliding drawer, of supports for the sides thereof, each of which consists of an oblong box or casing which is open at the top and provided centrally of its bottom with a longitudinal track or way, said box or casing being also provided with rollers having annular grooves which are adapted to be placed on said track or way, and said drawer being provided with a similar track or way which is adapted to be placed in the annular grooves of said rollers, said box or casing being also provided with transverse partitions between which said rollers are placed, and at the forward or outer end thereof, with a roller similar to the rest but provided with end tenons or projections which are adapted to rest in vertical notches or recesses formed in the sides of said box or casing, substantially as shown and described.

573,462. PRESSURE REDUCING AND REGULATING VALVE. LINCOLN H. HAWLEY, Canandaigua, N. Y. Filed Jan. 8, 1896. Serial No. 574,736. (No model.)

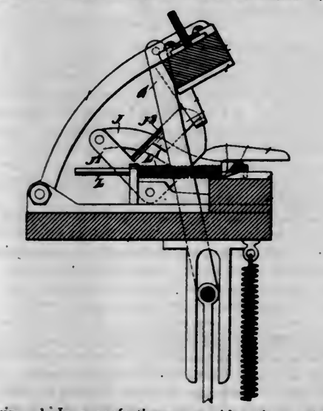


Claim.—1. The combination of the valve-body having an inlet 3 and outlet 4 and inclosing a diaphragm with a valve-opening therein and provided with an extension situated outside the exterior lines of said inlet and outlet and in free communication with the outlet, a valve adapted to close said opening in the diaphragm, a plunger extending above and movable in the valve-body extension and supporting the said valve, a spring tending to open the valve, a packing bearing on the outside of the plunger and on the top of the extension and closing the joint between the plunger and said extension, and a packing-nut bearing upon the packing and provided with a bail adapted for use in manipulating the nut and retaining said spring, substantially as described.

2. In combination the valve-body having an inlet and outlet and a valve-seat, a valve provided with a stem, a hollow plunger comprising a diaphragm, an opening in said diaphragm, a valve to close the opening, said valve having a tubular stem, a packing on the stem above the valve, inlets to the tubular stem below the packing and above the valve, means to close the valve, the first-named valve being adapted to be opened upon a fall of pressure on the delivery side and the other valve adapted to be opened by a rise of pressure, substantially as described.

3. In combination the valve-body having an inlet, an outlet and a valve seat, a valve provided with a stem, a plunger or piston fixed to said stem and having an opening, a valve fitting said opening, a spring adapted to open one valve and close the other and a screw to vary the tension of the spring whereby the same spring and screw can be made to regulate both the supply and the overflow valves, substantially as described.

573,463. CONFECTIONERY-MACHINE. SIMEON J. HICKS, Chicago, Ill. Filed Feb. 12, 1896. Serial No. 578,973. (No model.)



Claim.—1. In a confectionery-machine, the combination with horizontally-arranged fixed knives, and movable knives above the fixed knives, of a comb extending across the fixed knives and having its teeth projecting between the said knives, and means for reciprocating the comb over the fixed knives on the return movement of the movable knives, substantially as described.

2. In a confectionery-machine, the combination with fixed and movable knives, of a reciprocating comb having its teeth projecting between the fixed knives, and means for reciprocating the comb horizontally over the fixed knives, said means being controlled by the movable knives, substantially as described.

3. In a confectionery-machine, the combination with fixed and movable knives, of a spring-pressed comb having its teeth projecting between the fixed knives, and a connection between the comb and the movable knives to operate the former from the latter, substantially as described.

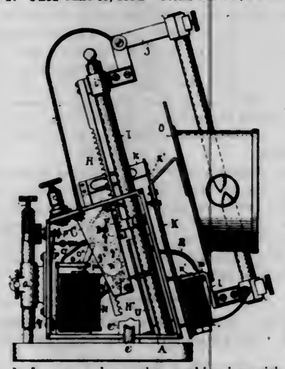
4. In a confectionery-machine, the combination with fixed knives and movable knives adapted to swing toward and from said fixed knives, of a comb adapted to reciprocate laterally over said fixed knives and extending with its prongs between said fixed knives, means for actuating said comb from said movable knives, to cause the comb to move rearwardly, and springs for returning said comb to a forward normal position, substantially as shown and described.

5. In a confectionery-machine, the combination with fixed knives, and movable knives fitted to swing toward and from the fixed knives, of a spring-pressed comb having its teeth projecting between the fixed knives, bell-crank levers, links connecting the comb with the said levers, and means for tilting the bell-crank levers from the movable knives, substantially as described.

6 In a confectionery-machine, the combination with fixed knives, and movable knives fitted to swing toward and from the fixed knives,

of a comb having its teeth projecting between the fixed knives and provided with rearwardly-extending rods, springs surrounding the rods for normally holding the comb in its forward position, bell-crank levers having wedge-shaped projections, links connecting the bell-crank levers with the comb, and catches on the movable knives for engaging the projections of the bell crank levers, substantially as described.

573,464. ELECTRIC-ARC LAMP. EDWARD P. HOPKINS, New York, N. Y. Filed June 13, 1894. Serial No. 514,372. (No model.)



Claim.—1. In an arc-lamp, the combination with the carbon-holders, of a spring clock-train, having an initial tension and mounted in a frame having a fixed position, said clock-train acting to positively feed the carbons together, a regulating-electromagnet for controlling the feeding movement, located in a constantly-closed shunt-circuit around the arc and blocking the clock-movement in the retracted position of its armature, and an electromagnet located in series with the arc and acting to separate the carbons to form the arc independently of the feeding mechanism, whereby varying quantities of current may be passed through the lamp without affecting the regulation thereof, substantially as set forth.

2. In a focusing arc-lamp, the combination with the carbon-holders, of a spring clock-train, having an initial tension and mounted in a frame having a fixed position, said clock-train being connected with the two carbon-holders and acting to feed such carbon-holders positively together with a proper relative rate of movement, a regulating-electromagnet for controlling the feeding movement, located in a constantly-closed shunt-circuit around the arc and blocking the clock-movement in the retracted position of its armature, and an electromagnet located in series with the arc and acting to separate the carbons to form the arc independently of the feeding mechanism, whereby varying quantities of current may be passed through the lamp without affecting the regulation thereof, substantially as set forth.

3. In an arc-lamp, the combination with the two carbon-holders and operating-racks, of pinions of different sizes engaging said racks and fixed to the same shaft, a driving-spring having an initial tension connected with said shaft, an escapement-train connected with said shaft through a pawl and ratchet so as to retard the shaft when driven by the spring and acting to feed the carbons together, and an electromagnet located in a shunt around the arc, the armature of said magnet locking the escapement in its retracted position, whereby varying quantities of current may be passed through the lamp without affecting the regulation thereof, substantially as set forth.

4. In an arc-lamp, the combination with the two carbon-holders and operating-racks, of pinions of different sizes engaging said racks and fixed to the same shaft, a driving-spring having an initial tension connected with said shaft, an escapement-train connected with said shaft through a pawl and ratchet so as to retard the shaft when driven by the spring and acting to feed the carbons together, an electromagnet located in a shunt around the arc, the armature of said magnet locking the escapement in its retracted position, and a striking-magnet in series with the arc, whereby varying quantities of current may be passed through the lamp without affecting the regulation thereof, substantially as set forth.

5. In an arc-lamp, the combination with the positive-carbon holder having a sliding movement, of the negative-carbon holder arranged in advance of the positive-carbon holder so as to produce the crater of the arc on the front side of the positive carbon, a pivoted support upon which the negative-carbon holder is mounted and a magnet in series with the arc moving said support on its pivot for striking the arc, the point of the negative carbon being thereby moved in an arc of a circle laterally away from the positive carbon, substantially as set forth.

6. In an arc-lamp, the combination of the positive and negative carbon holders, and a feeding mechanism feeding them together at a rate proportional to the burning rate of the carbons, a slide carried by the front of the lamp-case upon which the negative-carbon holder is movably mounted, and a striking-magnet also carried by said slide for moving the negative-carbon holder independent of the slide, substantially as set forth.

7. In a focusing arc lamp, the combination with the positive and negative carbons and the slotted light-shield O, of the plate P projecting forward from the back plate of the light shield above its lower slots and partially encircling the negative carbon, substantially as set forth.

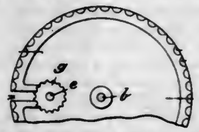
8. In an arc-lamp, the combination with the movement-case A and the carbon-holders, of the light shield O and front plate K for protecting the movement from the heat of the arc by means of the two air-spaces located respectively between the movement-case and the plate K, and between said plate and the light-shield O, substantially as set forth.

9. In an arc-lamp, the combination with the case A and the feeding-motor and controlling-magnet inclosed thereby, of the racks H, H' passing through the top of the case, carbon-holders J, L, connected with said racks, guide-rod I, and guide plate K, substantially as set forth.

10. In an arc-lamp, the combination with the case A inclosing and supporting the mechanism of the lamp, of the tubular clamp *a*, tube c, screw *c'* and post *d* for supporting the lamp and providing for its vertical adjustment, substantially as set forth.

11. In an arc-lamp, the combination with the case A inclosing and supporting the mechanism of the lamp and mounted upon a vertically-adjustable pivoted support, of the screw *e* and spring e^3 for adjusting the lamp laterally, substantially as set forth.

573,465. CAN-OPENER. CHARLES S. HOPPER, Philadelphia, Pa. Filed Oct. 7, 1896. Serial No. 608,106. (No model.)



Claim.—The combination, in a can-opener, of a disk provided with a scalloped periphery adapted to afford a firm hold in the turning thereof and with a fixed pin or spur, and an oblong slot in the body thereof, a cutting-blade provided with a shouldered and threaded stem, said blade having a flat surface on one side and a curved or beveled surface on the opposite side of the same and a thumb-nut adapted to be advanced on the threaded portion of the stem of said blade, substantially as shown and described.

573,466. APPARATUS FOR MAKING WEDGES. JOHN W. HUSSEY, Brooklyn, N. Y., assignor of one-half to Clarence W. Seamans, same place. Filed Apr. 1, 1895. Serial No. 544,038. (No model.)

Claim.—1. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die-plate having a guide-opening, and a retreating gage arranged opposite said opening in the path of said movable die, and means for moving said gage; substantially as described.

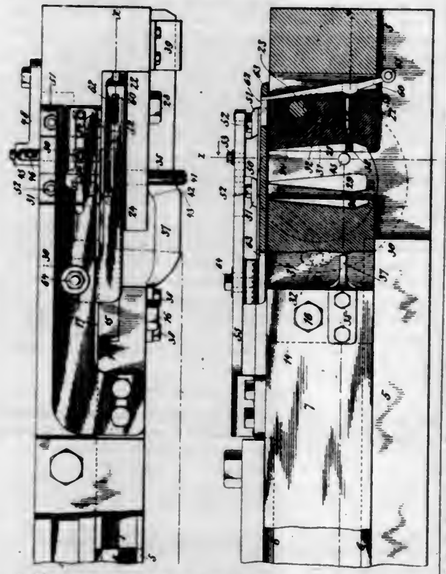
2. The combination with the forming dies, one of which is movable and provided with a shearing edge, a lateral die-plate provided with a guide-opening, a gage-pin opposite said opening and having a transverse slot with beveled walls, and a reciprocating cam-bar acting upon said walls; substantially as described.

3. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die plate having a guide-opening, a retreating gage opposite thereto, and means for temporarily clamping or holding the severed portion of the blank just prior to the forging or pressing operation; substantially as described.

4. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die plate having a guide-opening, and a reciprocating retaining pin or bolt; substantially as described.

5. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die-plate having a guide-opening and a retaining pin or bolt, an operating-lever therefor, a shifting plate for actuating said lever, and cams for moving said plate; substantially as described.

6. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a reciprocating slide to which said movable die is attached, a lateral die-plate having a guide-opening, a movable gage opposite thereto, and standing in the path of the movable die during the feeding of the blank and a cam-bar attached to said slide for retreating said gage to permit the advance of the movable shearing-die; substantially as described.



7. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a reciprocating slide to which said movable die is attached, a lateral die-plate having a guide-opening, a retaining pin or bolt, a lever for actuating same, a transversely-arranged shifting plate for vibrating said lever, and a duplex cam bar or arm for moving said shifting plate and attached to said slide; substantially as described.

8. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die-plate having a guide-opening, an ejector, for expelling the finished article from the fixed die, a lever connected to said ejector, and an actuating-bar for said lever connected to the means for reciprocating the movable die; substantially as described.

9. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die-plate having a guide-opening, a reciprocating gage, a reciprocating clamp or retaining-pin, and an ejector; substantially as described.

10. The combination with the forming-dies, one of which is movable and provided with a shearing edge, a lateral die-plate having a guide-opening and a cold-water chamber, means for supplying the latter, a reciprocating gage, and a reciprocating clamp or retaining-pin; substantially as described.

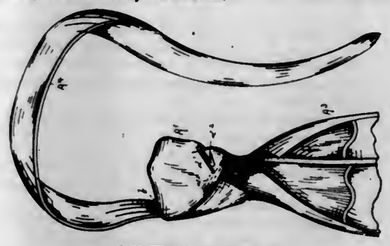
11. The combination of the movable forming-die having a shearing edge, the fixed die having an extension, a gage movable in said extension, a lateral die plate having a guide-opening opposite said gage, and a reciprocating retaining-pin adapted to hold the severed portion of the blank against the wall of said extension; substantially as described.

12. The combination of a fixed die, a slide, a movable gage, a cam-bar for operating the same attached to said slide, a lateral die-plate having a guide-opening opposite said gage, a retaining-pin sliding horizontally in said die plate, a vertically-arranged actuating-lever connected thereto, a horizontally-arranged shifting plate connected to said lever, a movable arm or bracket connected to said shifting plate and formed with a longitudinal slot and two cams for reciprocating said plate, an ejecting-pin movable in the fixed die, a lever connected thereto, and a slotted arm connected to said lever and to the said slide; substantially as described

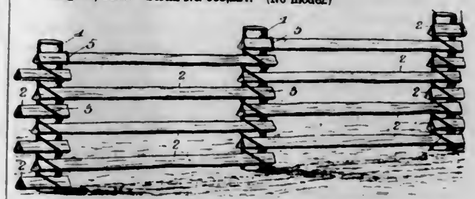
---

573,467. NECKTIE. ALBERT J. KECK, St. Paul, Minn. Filed Feb. 18, 1896. Serial No. 579,790. (No model.)

Claim.—In a necktie, the neckband holding-pin mechanism consisting of a body portion passing out through the rear of the head portion of the necktie and secured by a hinged joint within said head portion, a pin projecting at an angle from the body portion, so that when the body portion is closed down against the neckband portion of the necktie, the pin will enter and hold said neckband in place, and said body portion will protect the fingers of the wearer in releasing the pin, substantially as set forth.

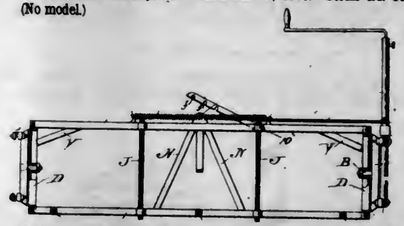


573,468. FENCE. AUGUST KEELER, Layton Corners, Mich. Filed Aug. 19, 1896. Serial No. 603,327. (No model.)



Claim.—A farm-fence comprising the round posts, the rails having their contiguous ends overlapping each other, and the binding-wire secured at its lower end to said post, and having its upper end formed with a loop encompassing the end of the top rail or rider, said rail being adapted to form a lever to tighten the binding-wire against all the rails simultaneously substantially as shown and described.

573,469. BICYCLE OR OTHER VEHICLE COUPLING. ELISHA S. KEELER, New Albany, Pa. Filed Mar. 2, 1896. Serial No. 581,557. (No model.)



Claim.—1. In a bicycle-coupler, the combination of the flexible coupler-frame comprising the upper and lower parallel cross-bars, the vertical end bars pivotally connected to the upper and lower parallel bars, means for attaching the end bars to the frames of two bicycles, and means for yieldingly maintaining the coupler-frame in its normal upright position, substantially as and for the purpose set forth.

2. In a bicycle-coupler, the combination of the coupler-frame comprising the upper and lower parallel bars, the vertical end bars pivotally connected to the upper and lower parallel bars, the attaching-plates pivotally connected to the end bars, means for detachably securing the attaching-plates to the frames of two bicycles, and means for yieldingly maintaining the coupler-frame in its normal upright position, substantially as described.

3. The combination of the flexible coupler-frame comprising the upper and lower parallel bars, the vertical end bars pivotally connected to the upper and lower parallel bars, the attaching-plates, and the springs connecting the upper and lower parallel bars for yieldingly maintaining the coupler-frame in its normal upright position, substantially as set forth.

4. The combination of the coupler-frame comprising the upper and lower parallel bars, the vertical end bars pivotally connected to the upper and lower parallel bars, means for yieldingly maintaining the coupler-frame in its normal upright position, and means for rigidly locking the coupler-frame in any desired fixed position, substantially as set forth.

5. The combination of the coupler-frame comprising the upper and lower parallel bars, the vertical end bars pivotally connected to the upper and lower parallel bars, means for yieldingly maintaining

the coupler-frame in its normal upright position, the brace-piece rigidly connected to the lower parallel bar, and the locking latch pivoted to the upper parallel bar and adapted to have interlocking engagement with the brace-piece, substantially as and for the purpose set forth.

6. The combination of the coupler-frame comprising the upper and lower parallel bars, the vertical end bars pivotally connected to the upper and lower parallel bars, and means for positively controlling the rocking movements of the coupler-frame, substantially as and for the purpose set forth.

7. The combination of the coupler-frame comprising the upper and lower parallel cross-bars, the vertical end bars pivotally connected to the upper and lower parallel cross-bars, the brace-piece rigidly connected to the lower parallel cross-bar, the controlling rock-shaft, and the link connection between the brace-piece and the controlling rock-shaft, substantially as set forth.

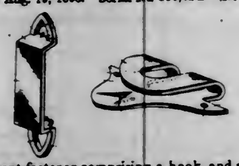
8. The combination of the flexible coupler-frame comprising the upper and lower parallel cross-bars, the vertical end bars pivotally connected to the upper and lower parallel cross-bars, means for maintaining the coupler-frame in its normal upright position, and stop devices for limiting the rocking movements of the said frame in opposite directions, substantially as set forth.

9. The combination of the coupler-frame comprising the upper and lower parallel cross-bars, the vertical end bars having pivotal connection with said parallel cross-bars, the plate spring or springs for maintaining the frame in its normal upright position, and the coiled spring connected to the upper parallel cross-bar and adapted to be detachably connected with a portion of the lower parallel cross-bar, substantially as set forth.

10. The combination of the flexible frame for coupling two bicycles, consisting of the end bars for attachment to the bicycles, the cross-bar pivotally connected at its opposite ends to the end bars, and the spring or springs connecting the end bars and the cross bar, whereby the bicycles are yieldingly maintained in their normal upright positions, substantially as described.

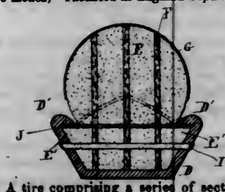
11. The combination of the front or main supporting-frame comprising the upper and lower parallel cross-bars, the vertical end bars having pivotal connection with said parallel cross-bars, and the attaching devices for said end bars; the rear or auxiliary supporting-frame comprising the equalizing-spring, the side connecting-bars to which said equalizing-spring is connected, the attaching devices for said side connecting-bars, the central rod for connecting the main and auxiliary frames, and spring devices for yieldingly maintaining the frames in their normal upright position, substantially as and for the purpose set forth.

573,470. GARMENT-FASTENER. HERMAN KERNGOOD, Baltimore, Md. Filed Aug. 19, 1895. Serial No. 559,724. (No model.)



Claim.—A garment-fastener comprising a hook, and a hasp having extensions at each end of the width of the hasp at their inner ends, tapering outward and provided with an opening and prongs cut out of said extensions and bent downward at a right angle to the plane of the extensions.

573,471. ELASTIC SECTIONAL TIRE FOR VEHICLE-WHEELS. JOSEPH LINDSAY, Dublin, Ireland. Filed Aug. 15, 1896. Serial No. 602,853. (No model.) Patented in England Sept. 27, 1895, No. 18,051.



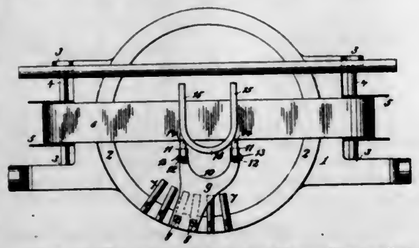
Claim.—1. A tire comprising a series of sections E of yielding material provided with rectangular bases having shoulders on all the four edges, in combination with a wheel-rim D having internal lips D' matching to and engaging two of the shoulders, E', and with the removable cross-plates J matching to and engaging the remaining two shoulders E^2, all adapted to serve substantially as herein specified.

2. A tire comprising a series of sections E of yielding material traversed by sheets of canvas or analogous material F and provided with rectangular bases having shoulders on all the four edges, in combination with a wheel-rim D having internal lips D' matching to and engaging two of the shoulders E', and with the removable cross plates J, matching to and engaging the remaining two shoulders E^2, and with transverse pins I extending through the several bases and further engaging the several sections of yielding material with the rim, all arranged for joint operation substantially as herein specified.

3. A tire comprising a series of sections E, of yielding material provided with rectangular bases having shoulders on all the four edges, in combination with a wheel-rim D having internal lips D' matching to and engaging two of the shoulders E', and with the removable cross-plates J, matching to and engaging the remaining two shoulders E^2, and with cement H joining the several sections but allowing of their detachment when required, all substantially as herein specified.

4. A tire comprising a series of sections E, of yielding material traversed by toughening-webs F and provided with rectangular bases having shoulders E' E^2 on the four edges, in combination with a wheel-rim D having internal lips D' matching to and engaging two of the shoulders, and with the removable cross-plates J matching to and engaging the remaining two shoulders, transverse pins I engaging the several sections of yielding material and cement H uniting the several sections but allowing of their detachment when required, all substantially as herein specified.
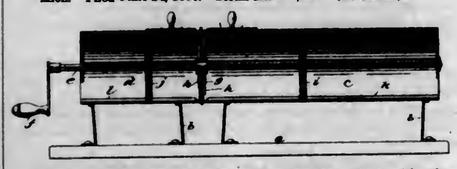
573,472. TYPE-WRITING MACHINE. MORTIMER G. MERRITT, Rome, N. Y., assignor to the Densmore Typewriter Company, Syracuse, N. Y. Filed July 23, 1896. Serial No. 600,220. (No model.)



Claim.—1. The combination of a fixed, inwardly-extending support having projections 11 at its free end, and a ribbon support and guide, consisting of the arms 14, hinged back of the said projections, to said fixed support, and the connected overlying arms 15.

2. The combination of the plate 9 having projections 11 and ears 12, the arms 14, having hinge-pins, the integral overlying arms 15, and the connecting member 16.

573,473. POWDER-MIXING DEVICE. OSSON MILLARD, Flint, Mich. Filed June 24, 1896. Serial No. 596,730. (No model.)



Claim.—1. In a machine for mixing powders, the combination with separate compartments, which are to contain substances to be mixed, of a rotary shaft, a disk placed on said shaft and between said compartments and rotating with said shaft, and means to move the substances toward opposite sides of said disk, substantially as described.

2. In a machine for mixing powders, the combination of separate compartments, a rotary shaft arranged therein, a disk rotating with said shaft, and followers moved toward one another by said shaft, substantially as described.

3. In a machine for mixing powders, the combination of two compartments, a rotary shaft arranged therein, a disk having projecting ribs on opposite faces, and arranged between the adjacent ends of said compartments, and rotated by said shaft, and means to feed the contents of the said compartments toward said disk, substantially as described.

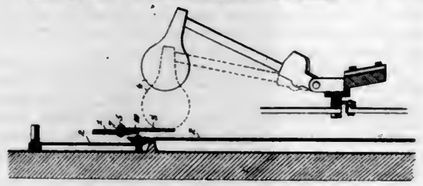
4. In a machine for mixing powders, the combination of two compartments, a rotary shaft arranged in said compartments and having

screw-threads thereon of different pitch in the respective compartments, a disk arranged upon and rotating with said shaft, and followers arranged upon the said shaft within the respective compartments, and operated by the screw-threads on said shaft to cause the said followers to approach the said disk at different speeds, substantially as described.

5. In a machine for mixing powders, the combination with separate compartments in which the ingredients of a mixture are separately contained, a shaft arranged in said compartments, a disk revolving with said shaft and having a close fit with the adjacent ends of said compartments, and followers for moving the ingredients toward opposite sides of the disk to be by it discharged, substantially as described.

6. In a machine for mixing powders, separate compartments for containing the powders, a shaft arranged within said compartments, a disk rotating with said shaft and arranged between the adjacent ends of said compartments, means to feed the powders toward said disk, and spring-stands adapted to move the said compartments toward one another, substantially as described.

573,474. PIANO ATTACHMENT. JESSE H. MOYER, Temple, Tex. Filed May 29, 1896. Serial No. 593,615. (No model.)



Claim.—1. In a device of the class described, a flexible striker having a tongue which is split or bifurcated transversely at its lower extremity to form front and rear faces, and a flat rectangular metallic weight interposed between said faces and exposed at its side and lower edges, substantially as specified.

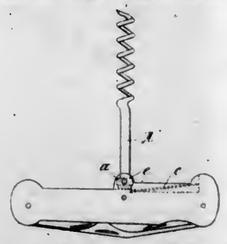
2. In a device of the class described, the combination with a tongue-bar, of tongues mounted for longitudinal adjustment upon the bar, and means for securing the tongues at the desired adjustment, substantially as specified.

3. In a device of the class described, the combination of a longitudinally-slotted tongue-bar, and tongues provided with securing devices engaging said slot and adapted to be adjusted to bring the tongues into the desired positions with relation to the strings of the instrument, substantially as specified.

4. In a device of the class described, the combination of a longitudinally-slotted tongue bar, tongues carried by the bar, and securing-bolts engaging the tongues, respectively, and extending through the slot in the tongue bar, whereby the tongues may be adjusted longitudinally upon the bar, substantially as specified.

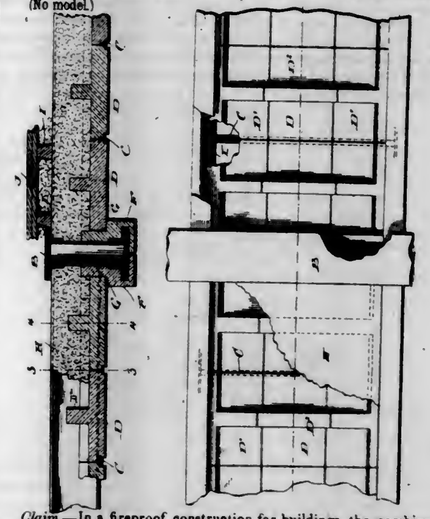
5. In a device of the class described, a tongue-bar having a longitudinal slot, flexible tongues depending from the bar and provided near their upper extremities with round openings, securing-bolts extending through the slot and said openings, respectively, in the tongues, and wear-plates interposed between the tongues and the nuts for securing said bolts at the desired adjustment, whereby the tongues may be adjusted longitudinally and angularly upon the bar, substantially as specified.

573,475. CORKSCREW-KNIFE. CARL H. MÜLLER, Solingen, Germany. Filed June 1, 1896. Serial No. 593,810. (No model.)



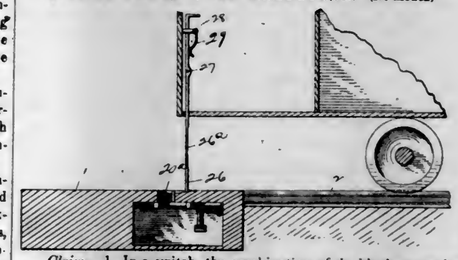
Claim.—A pocket-knife having a pivoted ring mounted at the back thereof, and a corkscrew having a stem and adapted to slide in said ring, a square head to said stem and a flat spring located in the back of the knife and adapted to bear against one side of said head in the manner and for the purpose substantially as described.

573,476. CONSTRUCTION OF FIREPROOF BUILDINGS. PETER MCCABE, New York, N. Y. Filed Mar. 12, 1896. Serial No. 582,927. (No model.)



Claim.—In a fireproof construction for buildings, the combination with the I-beams, T-rails connecting the base-plates of the same, of the skewback and ceiling blocks interposed between the webs of the I-beams, the said skewback blocks having longitudinal webs D^3, a filling of light fireproof material in the spaces between the said webs D^3, the upper surfaces of the said webs and the fireproof filling forming a vaulted surface, of a concrete arch H centered over said vaulted surface, substantially as shown and described.

573,477. RAILROAD-SWITCH. DAVID H. MCCLELLAND, Allegheny, Pa. Filed Apr. 1, 1896. Serial No. 585,847. (No model.)



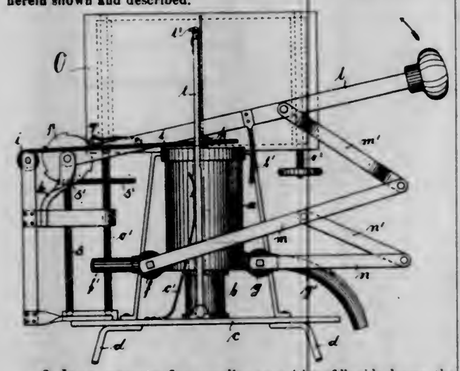
Claim.—1. In a switch, the combination of the block or casting having a cut-away portion to guide the operating device attached to a car, of a pivoted switch-rail, the pivoted bracket attached thereto and having two arms carrying the sliding plates, the lugs on the plates adapted to be pressed upon by the device on the car, and the fulcrum-plate secured to the casting and upon which the bracket is pivoted.

2. In a switch, the combination of the block or casting having a cut-away portion acting as a guide, for the switch-operating device on the car, of a pivoted switch-rail having its free end secured to one arm of the three-armed bracket, the slidable shifting plate held in place by means of the lugs secured beneath the bed, and having projecting above its surface the lugs which are pressed against to operate the shifting plates and switch, and the fulcrum-plate secured to the casting and supporting the pivoted bracket.

3. In a switch, the combination of the block or casting having a cut-away portion and carrying a pivoted switch-rail, a shifting plate secured within the cut-away portion and carrying an upright pin and guides, said guides being adapted to receive the pins of the cross-arms of the supporting-post, and the pins of the shifting plate adapted to engage an adjustable rod secured to the car when said rod is lowered, substantially as shown and described.

573,478. RECORDING APPARATUS. AUGUST G. H. OEHMS, Berlin, Germany. Filed July 15, 1895. Serial No. 556,096. (No model.)

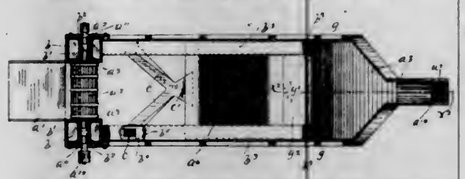
Claim.—1. In an apparatus for recording quantities of liquid drawn, the combination with a measuring vessel, of an inlet and an outlet cock for the same, a piston in said vessel, which piston is moved up and down as the vessel is filled and emptied, a lever for depressing the piston means for recording the movements of the piston on a paper band and means for shifting the band means for operating the inlet and outlet cocks from said lever successively, substantially as herein shown and described.



2. In an apparatus for recording quantities of liquids drawn, the combination with a measuring vessel, of an inlet and an outlet cock on the same, levers for operating said cocks, in such manner that the inlet cock is closed when the outlet cock begins to open and the outlet-cock is closed when the inlet-cock begins to open, a piston in the measuring vessel, which piston can be depressed by the same levers that serve for manipulating the valves means for recording the movements of the piston on a paper band and means for shifting said band successively, substantially as herein shown and described.

3. In an apparatus for recording quantities of liquid drawn, the combination with a measuring vessel, of an inlet-cock and an outlet-cock on the same, a piston in the measuring vessel, a rod on the piston, a cross bar on said piston rod, a ratchet-bar engaging said cross-bar and holding it for a time, a lever for operating the cocks, an angle arm on said lever for throwing out the ratchet-bar, a spring for raising the piston, means for recording the movements of the piston on a paper band and means for shifting the paper band, successively, substantially as herein shown and described.

573,479. THRESHING-MACHINE. GODFREY W. PAPKE, Echo, Minn. Filed Dec. 16, 1895. Serial No. 572,246. (No model.)

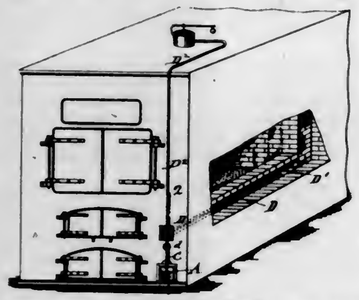


Claim.—1. In a threshing-machine, equipped with a pneumatic stacker and cooperating fan, the combination therewith of the main air-chute discharging into the base of said stacker trunk or tube, a suction tube having its receiving end positioned near the separating-screens and its discharge end opening into the blast from said main air-chute, whereby the blast of air which is drawn off from the main air-chute and passed over the separating-screens, will be again united with the main draft, substantially as described.

2. In a threshing machine, equipped with a pneumatic stacker and a pair of cooperating fans, the combination therewith of the pair of main air-chutes discharging into the base of the stacker trunk or chute, the pair of branch tubes leading one from each of said main air-chutes, to the separating-screens, and a divided suction-tube having its receiving end positioned near the separating-screens and its discharge end opening into the blast from said main air-chute, substantially as described.

3. In a threshing-machine equipped with a pneumatic stacker, the combination with the threshing-cylinder, of the pair of fans *b*, secured on the cylinder-shaft, the fan-cases *b'* inclosing said fans, the air-chutes b^3 leading from said fan-cases *b'*, the hand operated valves b^4 b^5 in said chutes b^3, the branch chutes *c* terminating in nozzle *c'*, and the two-branched suction-passage *g g' g³*, on the inclined rear wall of the thresher-case, substantially as described.

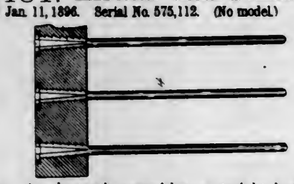
573,480. STEAM-BLOWER. HENRY R. PARSON, Brooklyn, N. Y. Filed Mar. 3, 1896. Serial No. 581,691. (No model.)



Claim.—1. The combination of a steam-blower, an elongated brick-incased chamber arranged above the grate of the furnace, adjacent to the side wall of the furnace, a superheater located in said chamber, a valved steam-supply pipe for connecting the superheater with the steam-blower, and a steam-pipe connecting the superheater with the boiler, substantially as set forth.

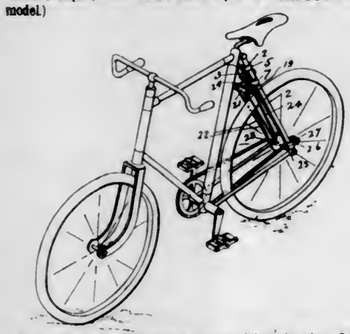
2. The combination of a steam-blower, composed of an exterior casing and a nozzle-frame having inwardly-extending nozzles, an elongated brick-incased chamber arranged above the grate of the furnace adjacent to the side wall of the same, a superheater located in said chamber, a valved steam-supply pipe for connecting the superheater with the nozzle-frame, and a steam-pipe connecting the superheater with the boiler, substantially as set forth.

573,481. RAKE-TOOTH. CHARLES E. PEABODY, Lynn, Mass. Filed Jan. 11, 1896. Serial No. 575,112. (No model.)



Claim.—A rake-tooth comprising a straight body portion, a curved lower extremity, a split, headed upper portion and peripheral projections adapted to be embedded in the material composing the head of the rake, substantially as described.

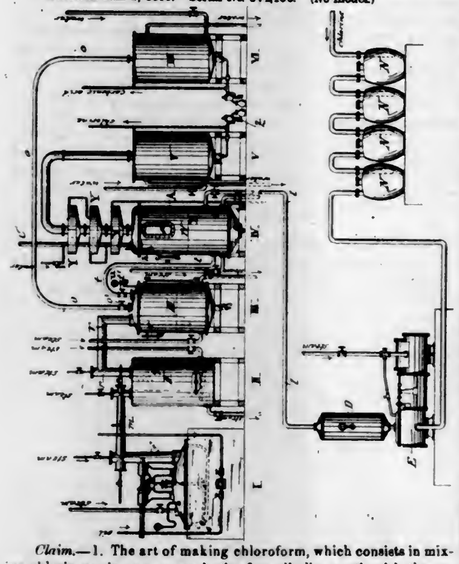
573,482. PORTABLE STAND FOR BICYCLES. EDWARD L. PEISAR, Aspen, Colo. Filed June 10, 1896. Serial No. 595,002. (No model.)



Claim.—1. A bicycle-support comprising the shoe 3 having the integral lugs 4, 5, 6 and 7, dovetail guides 15 and 16, and vertical slot 10, in combination with the oblong nut 17 having the dovetail sides 18 18, the stud 12, the thumb-screw 13 14 and the stud 19 provided with brake-shoe 20, the cross-arm 21 secured to said stud, the pitmen 22 connected at their upper ends to the outer ends of the arm 21, the levers 24 pivoted in brackets secured to the fork and provided with lugs 23, pivoted to the lower ends of the pitmen 22, substantially as and for the purpose set forth.

2. The combination with a bicycle, of a support therefor, comprising an adjustable shoe 3, having a slot 10 and guides 15, 16, the thumb-screw 12, 14, sliding nut 17, provided with the stud 19, having the brake-shoe 20, the cross-arm 21 and the pitmen 22, secured to a lug 23 on the lever 24 fulcrumed in the bracket 27, adjustably secured to the fork, substantially as and for the purpose specified.

573,483. PROCESS OF MAKING CHLOROFORM AND APPARATUS THEREFOR. OTTOKAR PORSCH, Orangeburg, N. Y., assignor to the Electric Chemical Company, New York, N. Y. Filed Feb. 6, 1895. Renewed Jan. 2, 1896. Serial No. 574,156. (No model.)



Claim.—1. The art of making chloroform, which consists in mixing chlorin gas in an aqueous bath of an alkaline earth with the vapors resulting from the distillation of an acetate and permitting said gas and vapors to react in said bath and form chloroform.

2. The art of making chloroform which consists in mixing chlorin gas in a heated aqueous bath of an alkaline earth with the vapors resulting from the distillation of an acetate and permitting said vapor and gas to there react and form chloroform.

3. The art of making chloroform which consists in discharging chlorin gas and the vapors resulting from the distillation of an acetate under pressure into an aqueous bath of an alkaline earth and permitting said gas and vapor to there commingle and react and form chloroform.

4. The art of making chloroform which consists in continuously discharging the vapors resulting from the distillation of an acetate and chlorin gas under pressure into an aqueous bath of an alkaline earth subjected to the action of heat and permitting said vapor and gas to continuously commingle and react in said solution in a heated condition and there form chloroform which continuously rises from said bath.

5. The art of making chloroform which consists in discharging the vapors resulting from the distillation of an acetate and chlorin gas in opposite direction to each other into a body of milk of lime and combining them in presence of an excess of chlorin gas into chloroform.

6. The art of making chloroform which consists in conducting the vapors resulting from the distillation of an acetate into a charge of milk of lime at the lower part of the same, introducing chlorin gas in an opposite direction thereto at the upper part of said charge, and combining both in the presence of the milk of lime directly into chloroform.

7. The art of making chloroform which consists in generating vapors by the dry distillation of a suitable acetate, conducting them simultaneously with chlorin gas under pressure into a charge of milk of lime so as to form chloroform, separating the hydrochloric acid from the chloroform-vapors by condensation, and condensing the chloroform-vapors.

8. The art of making chloroform which consists in conducting the vapors resulting from the distillation of an acetate, and chlorin gas under pressure into a charge of milk of lime, heating said charge to the required temperature and combining the vapors and chlorin gas in the charge directly into chloroform.

9. The art of making chloroform, which consists in conducting the vapors resulting from the distillation of an acetate and chlorin gas, under pressure, into a charge of milk of lime, combining them under excess of chlorin gas directly into chloroform, and purifying and condensing the chloroform-vapors.

10. In an apparatus for making chloroform, the combination of a chloroform-generator charged with milk of lime, perforated supply-coils in said generator respectively for the vapors resulting from the distillation of an acetate and chlorin gas, a steam-coil below the supply-coils, a chamber above the coils, provided with trays for lime, and condensing-pans above the generator.

11. In an apparatus for making chloroform, the combination of a chloroform-generator supplied with a charge of milk of lime, perforated supply coils for the vapors resulting from the distillation of an acetate and chlorin gas respectively, submerged in said charge, a purifier for the vapors connected with the supply-coil, a condenser connected with said purifier for condensing the surplus vapors, and a second condenser connected with the chloroform-generator for condensing the chloroform-vapors.

573,484. BOTTLE. MORITZ ROSENSTOCK, New York, N. Y. Filed June 19, 1895. Serial No. 553,292. (No model.)

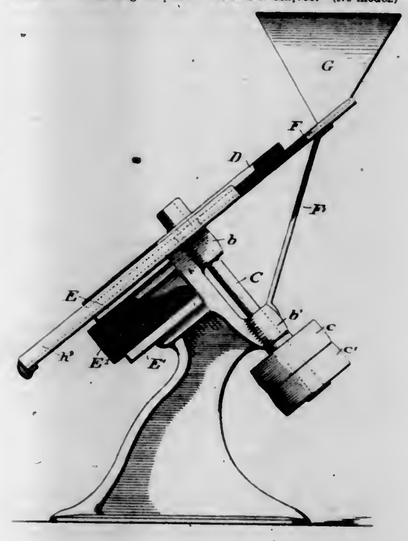


Claim.—1. The combination with the neck of the bottle, of a flange thereon, a screw-thread, or equivalent device, on the neck above the flange, a cap secured to the outside of the neck, the lower edge of which, when in place, abuts against the said flange, and a pawl-and-ratchet connection between the neck and said attachment, the throw of the pawl being less than the depth of the flange so that the cap is permanently secured, substantially as described.

2. The combination with the neck of a bottle, of a flange thereon, a screw-thread, or equivalent device, and a plain surface provided with a depression, both on the neck above the flange, a cap secured to the outside of said neck, the lower edge of which, when in place, abuts against the said flange, and a pawl-and-ratchet connection between the plain surface of the neck and said cap, substantially as described.

3. The combination with the neck of a bottle, of a flange thereon, a screw-thread, or equivalent device, on the neck above the flange, an attachment secured to the outside of the neck of said bottle, the lower edge of which, when in place, abuts against said flange, and a pawl-and-ratchet connection between the neck and said attachment, the pawl being narrower than its ratchet, so that it cannot be tampered with when the lower edge of the attachment is out of contact with the flange, substantially as described.

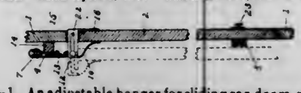
573,485. PROCESS OF AND MACHINE FOR MAGNETIC SEPARATION. RICHARD H. SANDERS and CHARLES T. THOMPSON, Philadelphia, Pa. Filed Aug. 10, 1892. Serial No. 442,709. (No model.)



Claim.—1. The hereinbefore-described process of magnetic separation, which consists in feeding stock into a diffusedly-shunted field between a magnet and a moving armature of substantially continuous mass; conducting the ore through said field suspended in strips supported at the end farthest from the magnet, and thereby delaying the passage of the ore through the field; permitting the gangue to escape during the period of delayed conveyance; removing the ore from the field still supported as aforesaid, and finally discharging it, substantially as set forth.

2. In a magnetic separator, the combination of a stationary magnet; a movable conductor of lines of force, arranged in the described relation to the magnet to produce a diffusedly-shunted field of substantially unvarying intensity and direction, and thereby adapted to convey ore through said field while delaying the passage of such ore through the same; means substantially as set forth for presenting in continuity successive portions of the mass of said conductor to said field; a feeding device arranged in the described relation to said field; a delivery-chute for gangue arranged in relation to said field substantially as set forth; and a delivery-chute for ore leading from a point beyond the limit of said field; whereby the stock is definitely delayed but conveyed through said field, the escape of the gangue is permitted during the period of delayed conveyance, and the ore is removed from the field, substantially as set forth.

573,486. SLIDING CAR-DOOR. STEPHAN SCHALLENBERGER, Fort Wayne, Ind. Filed Apr. 25, 1896. Serial No. 589,004. (No model.)

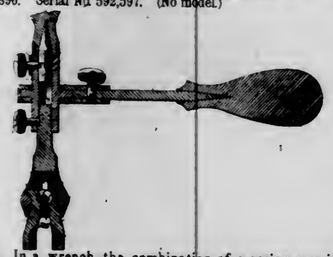


Claim.—1. An adjustable hanger for sliding car-doors, comprising an upper and lower part, having mounted thereon a grooved carrier-wheel adapted to ride upon the trolley switch-rail 4 and a recessed lug 13 integral with the hanger adapted to embrace the lower edge of said switch-rail, the lower part of said hanger constructed as shown, having the box 9 securely fastened to the upper edge of the car-door and having mounted therein the axle 17 and the roller-carriers 12, and the axle 17 being secured to the upper part of the hanger by the bolt 15 as shown in combination with the switch-rail 4 secured to the car above the door substantially as described and shown.

2. The combination of an adjustable hanger for sliding car-doors comprising an upper and lower part, the upper part having mounted thereon a grooved carrier-wheel adapted to ride upon the trolley switch-rail 4 and a recessed lug 13 integral with the said hanger adapted to embrace the lower edge of said switch-rail, the lower part of said hanger constructed as shown, having the box 9 securely fastened to the upper edge of the car-door and having mounted therein the axle 17 and the roller-carriers 12, and the axle 17 being secured to the upper part of the hanger-bolt 15 as shown, in combination with the switch-rail 4, the recessed track-rail 5 and the guide-rail 23 substantially as shown and described and for the purpose stated.

3. In a freight-car, the combination of a sliding car-door movable sidewise supported upon an overhead rail by a hanger 3, and the adjustable hanger-bracket 6, comprising an upper and lower part, the upper part having mounted thereon a grooved carrier-wheel adapted to ride upon the said overhead rail 4, and a recessed lug 13 integral with the said hanger, adapted to embrace the lower edge of the switch-rail, the lower part of said hanger having the box 9 securely fastened to the car-door and having mounted therein the axle 17 and the roller-carriers 12, and the axle 17 being secured to the upper part of the hanger by the bolt 15 as shown in combination with the switch-rail 4, the recessed rail 5 and the guide-rail 23 substantially as shown and described.

573,487. WRENCH. MICHAEL D. SCHALLER, Lowell, N. Y. Filed May 22, 1896. Serial No. 592,597. (No model.)

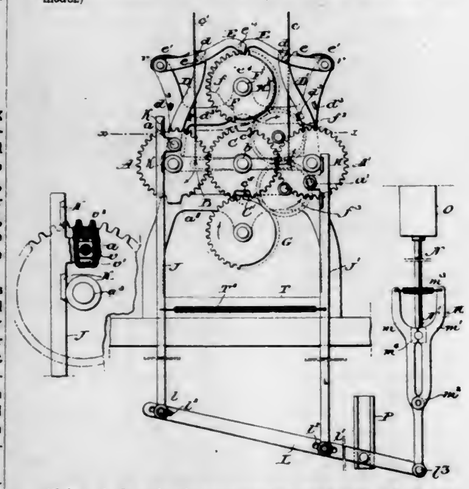


Claim.—1. In a wrench, the combination of a casing provided near near its outer end with side walls, and arms arranged within the casing, pivotally connected and capable of movement longitudinally of the casing, said arms being provided at their inner ends with extensions disposed laterally of the casing and adapted to engage the said side walls thereof, substantially as and for the purpose described.

2. In a ratchet-wrench, the combination of a spindle provided with end sockets, a disk having a smooth periphery and fixed to the spindle, a casing provided with sleeves arranged on the spindle and located at opposite sides of the disk, a lever fulcrumed in the casing and having its engaging end cut at an angle and serrated, a handle having a round shank arranged in one of the end sockets, provided with an annular groove and having a flat face at one side of the groove, a set-screw mounted on the spindle adjacent to the shank of the handle, arranged to engage the groove and provided with a jam-nut, and a wrench-head having a shank detachably secured in the other end socket of the spindle, substantially as described.

3. In a wrench, the combination of a casing provided near its outer end with side walls rounded at their inner faces, said casing being provided with longitudinal slots, arms arranged in the casing, provided at their outer ends with jaws and having curved extensions at their inner ends, and a pivot connecting the inner ends of the arms and arranged in the slots of the casing, substantially as described.

573,488. SHUTTLE-BOX MOTION FOR LOOMS. OTTO W. SCHAUM, Philadelphia, Pa. Filed Mar. 5, 1894. Serial No. 502,366. (No model.)



Claim.—1. In a shuttle-box-actuating mechanism, a fixed stud, a gear A pivoted thereon, a vibrator-lever B pivoted concentrically with the gear A, a vibrator-gear C on said lever adapted to mesh with the gear A, means for vibrating the lever B, suitable shuttle-boxes, a connection from the gear A to the shuttle-boxes and means for locking the gear A independently of the lever B or gear C.

2. In a shuttle-box-actuating mechanism, a fixed stud, a gear A pivoted thereon, a vibrator-lever B pivoted concentrically with the gear A, a vibrator-gear C on said lever adapted to mesh with the gear A, means for vibrating the lever B, suitable shuttle-boxes, a link J pivoted to the gear A and serving to connect said gear with said shuttle boxes, stops for limiting the movement of the link J and operating when engaged to lock the gear A independently of the gear C or lever B.

3. In a shuttle-box-actuating mechanism, studs S S′ firmly secured to the frame of the machine, gears A A′ pivoted on said studs, suitable shuttle boxes, a connection from each of said gears to said shuttle-boxes, vibrator-levers pivoted concentrically with the gears A A′, vibrator-gears C C′ mounted on said levers and adapted to mesh one with the gear A and the other with the gear A′, means for rotating the vibrator-gears in both directions and a lock independent of the gear C or lever B to limit the motion of the gears A A′ in either direction.

4. In a shuttle-box-actuating mechanism, the combination with studs S S′, of gears A A′ pivoted on said studs, levers B D, B′ D′ pivoted concentrically with the gears A A′ and carrying vibrator-gears C C′ respectively, and having locking projections *d d*, means actuated from an indicator mechanism adapted to vibrate the levers B D B′ D′, levers E having projections *e* for engaging with the projections *d d* and locking the levers in a fixed position after they are vibrated and means for actuating the levers E.

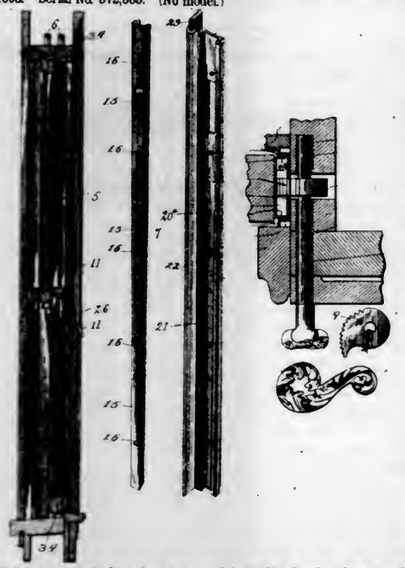
5. In a shuttle-box-actuating mechanism the combination with studs S S′, of gears A A′ pivoted on said studs, levers B D B′ D′ pivoted concentrically with the gears A A′ and carrying vibrator-gears C C′ respectively, and having locking projections *d d*, means actuated from an indicator mechanism adapted to vibrate the levers B D B′ D′, levers E having projections *e* for engaging with the projections *d d* and locking the arms in a fixed position after they are vibrated, and a cam F operating to actuate the levers E to hold the vibrator-arms locked except at such times as the indicator mechanism is adapted to act to vibrate said levers.

6. In a shuttle-box actuating mechanism the combination with a pivoted gear as A, means for rotating said gear in both directions, a link J pivoted eccentrically on said gear, a stop a^2 on the gear and stops K K on the link J adapted to engage with the stops a^2.

7. In a shuttle-box-actuating mechanism the combination with a pivoted gear as A, means for rotating said gear in both directions, a link J pivoted eccentrically on said gear, a stop a^2 on the gear and adjustable stops K K on the link J.

8. In a shuttle-box-actuating mechanism, a gear A having a link J pivoted eccentrically thereto, a vibrator-lever B, a vibrator-gear C thereon meshing with the gear A and adapted to give it half a revolution in both directions, and means for locking the gear A independently of the lever B.

573,489. WINDOW APPLIANCE. JOHN H. SHULL, Wellesley, Mass., assignor of one-half to F. W. Stevens, Boston, Mass. Filed Dec. 18, 1895. Serial No. 572,585. (No model.)



Claim.—1. A window-frame comprising stiles having inner and outer metallic ways, each formed with tapering channels receding from the center, with inwardly-projecting walls, and with outwardly-extending flat portions; substantially as described.

2. A window-frame comprising stiles having inner and outer metallic ways, each formed with tapering channels receding from the center, and inner and outer sashes provided with metallic wedges, each formed with tapering channels receding from the center; substantially as described.

3. A window-frame comprising stiles, having metallic ways provided with slots, sashes having metallic guides and toothed cams projecting through the slots in the ways of the stiles; substantially as described.

4. A window-frame comprising the stops, the ways having tapering channels and located between the stops, and the sashes having wedges working in the channels of the ways; substantially as described.

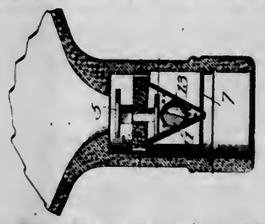
5. A metallic way formed with a tapering channel, with inwardly-projecting walls, with outwardly-projecting flat portions and with a parting-bead; substantially as described.

6. A metallic sash-guide in the form of a wedge having a tapering channel and outwardly-projecting walls; substantially as described.

7. In combination with a window-frame, the grooved strips 27 having the upper portion of the groove cut away in each strip, the sash having attached on one face, metallic flanges working in the grooved strips, an upper sash having metallic flanges bearing on the outside of said strips and means for holding it up consisting of a suitable catch at bottom and a strip at top behind which it enters, as explained.

8. In combination with a window-frame having strips upon its vertical stiles and a top plate extending across said strips; a storm sash or screen fitting between the strips, engaged at its upper end behind the top plate, provided with side flanges which bridge the said strips and secured at its bottom by catches, substantially as set forth.

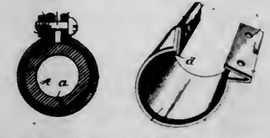
573,490. VALVE-STOPPER FOR BOTTLES. JOSEPH W. SIMONS, Port Chester, N. Y. Filed Apr. 7, 1896. Serial No. 586,506. (No model.)



Claim.—1. The combination of a bottle having in its neck two ledges and a circumferential groove; a disk permanently fitted upon one of the ledges and having an aperture through its center and a number of apertures near its circumference and further having an annular indentation in its outer face; a hollow cone fitted to rest its base in the said indentation; a cup-shaped portion flanged outward to permanently engage the neck of the bottle in the aforesaid circumferential groove and perforated through its bottom; a valve fitted to the inner one of the aforesaid ledges as a seat and having a stem engaging the central aperture of the said disk as a sliding bearing, the said stems being provided with a cap, and a spherical weight located free within the said cone and upon the said cap, substantially as described.

2. The combination of a bottle-neck; a valve and seat therein; a hollow cone with its opening toward the valve and a spherical weight of heavy material covered with a cushion such as soft rubber, located within the cone to engage the outer side of the valve, substantially as described.

573,491. PIPE-PATCH. NATHANIEL E. SMITH, Jersey City, N. J. Filed Sept. 12, 1896. Serial No. 605,663. (No model.)



Claim.—1. A device for closing leaks in pipes comprising a clamp having a circular portion adapted to receive a pipe and inwardly-directed flanges at the ends of said circular portion, and a piece of packing arranged within the circular portion of the clamp and abutting at its ends against the inwardly directed flanges thereof, substantially as and for the purpose set forth.

2. A device for closing leaks in pipes comprising a clamp having a body formed in one piece and provided with a circular portion adapted to receive a pipe and outwardly-directed lugs and inwardly-directed flanges at the ends of the circular portion and means for connecting the lugs, and a piece of packing arranged within the circular portion of the clamp and abutting at its ends against the inwardly-directed flanges thereof, substantially as and for the purpose set forth.

3. The device described for closing leaks in pipes comprising the clamp having the body formed of a single piece of sheet metal curved to form a circular portion for the reception of a pipe and bent inwardly upon itself at the ends of the curved portion and having the inner layers of the lugs of greater width than the outer layers and forming inwardly-directed flanges, and means for connecting the lugs, and a piece of packing arranged within the circular portion of the clamp and abutting at its ends against the inwardly-directed flanges thereof, substantially as and for the purpose set forth.

573,492. HAT-SECURING APPARATUS. EDWIN R. STANDFIELD and WILLIAM BREW, Christchurch, New Zealand. Filed July 11, 1896. Serial No. 598,907. (No model.)

Claim.—1. In apparatus for securing a hat or the like to the head of the wearer, a removable bar of spring material capable of being bent so as to pass within the crown of the hat and to expand therein said spring-bar being of less length than the circumference of the hat whereby it expands to fit a portion of the inside curve thereof, pointed projections carried by said bar adapted to engage the inner surface of the hat to retain it in position, and the hair-grip pivoted to the front of said spring-bar and projecting rearwardly to engage the hair of the wearer, substantially as described.



2. In combination with a spring-support adapted to be fitted to the inside of a hat, a hair-grip carried thereby, an elastic also supported by the spring, a pin in one end of the elastic and a loop on the opposite end, substantially as described.

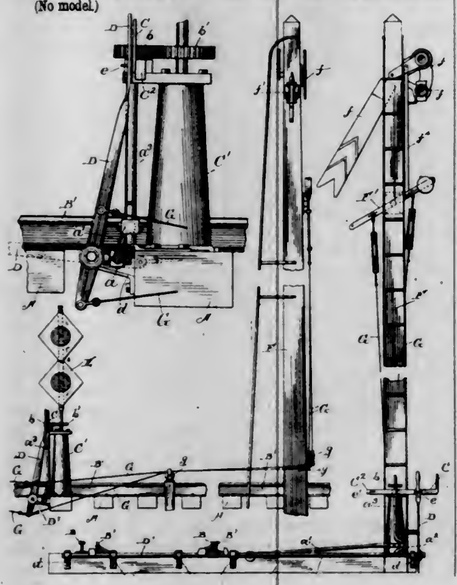
573,493. ELECTRIC BATTERY. ALBERT E. STEPHENSON, Chicago, Ill. Filed June 29, 1896. Serial No. 597,353. (No model.)



Claim.—1. The combination in an electric battery, of the pockets *x* with the battery-case; the said pockets being a part of the battery-casing; the cover A, connected with the battery-casing by a hinge B, the said cover provided with two spring-latches *m*, *m*, fixed on top of said cover at two points of equal distance from the hinge B, extending down the side of the battery-case at a right angle to the plane of said cover in contact with and clutching the screw *o*, the said latches and hinge B connected with the negative electrodes through the screw *o*.

2. The hard-rubber plugs *Z'*, and U-loops in combination with the positive electrodes in connection with switches; the said switches being connected with the negative electrodes through the screws *d* by conducting wires *d'*, the electrodes being suspended in an electrolyte completing an electric circuit through the wires *w*, *w*, to the lamp on the side of the battery-case, substantially as described.

573,494. SAFETY APPLIANCE FOR RAILWAY-SWITCHES. JOHN C. STUART, Chicago, Ill. Filed June 4, 1896. Serial No. 594,229. (No model.)

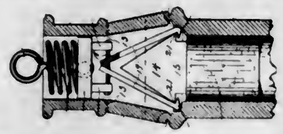


Claim.—1. In a safety appliance for railway-switches the combination with a suitable stand C' of a switch-lever in connection with the stand and having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal, and a locking device in connection with the stand, the operative relation of the switch-lever with regard to the signal-lever being as specified whereby said levers when operated to close the switch and indicate that condition are thrown into connection with the locking device.

2. In a safety appliance for railway-switches the combination with a suitable stand of a switch-lever in connection with the stand and having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal and a rock-shaft in connection with the signal-lever and switch-rails and provided with locking-lugs adapted to engage the switch-rails, the operative relation of the signal-lever with regard to the switch-lever being as specified whereby said levers when operated to close the switch and indicate that condition are brought together.

3. In a safety appliance for railway-switches the combination with a suitable stand of a switch-lever having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal, a rock-shaft in connection with the switch-rails and signal-lever and having locking-lugs adapted to engage the switch-rails, and a locking device in connection with the stand, the operative relation of the switch-lever with regard to the signal-lever being as specified whereby said levers when operated to close the switch and indicate that condition are brought into connection with the locking device.

573,495. BOTTLE. ROBERT E. THURMAN, Victoria, Canada. Filed June 24, 1896. Serial No. 596,737. (No model.)



Claim.—1. A bottle or other vessel, provided with a neck, which is adapted to be closed by a cork or stopper said neck being provided with an upwardly-directed extension, which is oblong in cross-section, and the base of which is larger than the upper part of the neck, said extension being provided with sides which are adapted to be broken out, and a wedge-shaped device which is adapted to be placed upon the cork or stopper, and provided with shoulders or projections at its lower end, and an attachment which is adapted to be inserted into the neck and to be withdrawn therefrom, said attachment being provided with pivotally-suspended jaws or clamps, which are adapted to engage with the shoulders or projections on the wedge-shaped device, and to bear upon the sides which are adapted to be broken out when the attachment is withdrawn from the neck, substantially as shown and described.

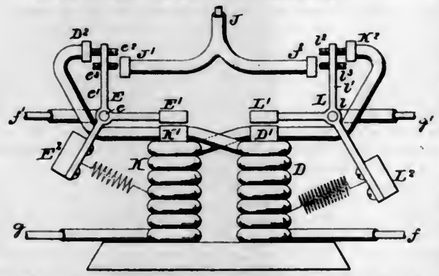
2. A bottle or other vessel, provided with a neck, which is adapted to be closed by a cork or stopper, said neck being provided with a central enlarged portion which is oblong in cross-section, and the sides of which are inclined upwardly, and inwardly, and adapted to be broken out, a wedge-shaped device which is adapted to be inserted into said neck, and to rest upon said cork or stopper, and an attachment which is adapted to be inserted into the neck above said wedge-shaped device, and which is provided with jaws or clamps suspended therefrom, and the lower ends of which are adapted to engage with shoulders or projections formed on said wedge, and to bear upon the inclined sides of the neck, when said attachment is withdrawn therefrom, substantially as shown and described.

3. A bottle or other vessel, provided with a neck, which is adapted to be closed by a cork or stopper, said neck being provided with a central enlarged portion, which is oblong in cross-section, and the sides of which are inclined upwardly and inwardly, and adapted to be broken out, a wedge-shaped device which is adapted to be inserted into said neck, and to rest upon said cork or stopper, and an attachment which is adapted to be inserted into the neck above said wedge-shaped device, and which is provided with jaws or clamps suspended therefrom, and the lower ends of which are adapted to engage with shoulders or projections formed on said wedge and to bear upon the inclined sides of the neck, when said attachment is withdrawn therefrom, said sides of the neck which are adapted to be broken out being separated from the main part thereof, by vertical and transverse grooves, substantially as shown and described.

4. A bottle or other vessel, provided with a neck, which is adapted to be closed by a cork or stopper, said neck being provided with a central enlarged portion, which is oblong in cross-section, and the sides of which are inclined upwardly and inwardly, and adapted to

be broken out a wedge-shaped device which is adapted to be inserted into said neck, and to rest upon said cork or stopper, and an attachment which is adapted to be inserted into the neck, above said wedge-shaped device, and which is provided with jaws or clamps suspended therefrom; the lower ends of which are adapted to engage with shoulders or projections formed on said wedge, and to bear upon the inclined sides of the neck, when said attachment is withdrawn therefrom, said sides of the neck which are adapted to be broken out being separated from the main part thereof, by vertical and transverse grooves, and said attachment with which the clamps or jaws are connected, being provided with means whereby the same may be withdrawn from the neck, substantially as shown and described.

573,496. APPARATUS FOR PREVENTING COLLISIONS ON ELECTRIC RAILWAYS. BENJAMIN C. TILGHMAN, Jr., Philadelphia, Pa. Filed Apr. 13, 1894. Serial No. 507,367. (No model.)



Claim.—1. The combination with the crossing tracks and an electric conductor extending along one track for supplying electricity as a motive power, of means under the control of a train moving along the other track for temporarily cutting the electricity off from a portion of said conductor along the first-named track.

2. The combination with two electrically-operated roads which meet or cross each other, of a source of electrical supply, an insulated sectional conductor connected to said source of electrical supply and adapted to furnish power to a vehicle traveling on a portion of one road, and means operated by one vehicle traveling on a predetermined portion of the other road for cutting off the current from the insulated conductor of the first road.

3. The combination with two electrically-operated roads which meet or cross each other, of a source or sources of electrical supply, two insulated sectional conductors, each connected to a source of electrical supply and adapted, one to furnish power to a vehicle traveling on a portion of one road, and the other to furnish power to a vehicle traveling on a portion of the other and means operated by a vehicle receiving power from either of the insulated sections for cutting off the current flowing to the other section.

4. The combination with two electrically-operated roads which meet or cross each other, of a source or sources of electrical supply, two insulated sectional conductors, each connected to a source of electrical supply and each adapted to furnish power to a vehicle traveling on a portion of one road and means operated by a vehicle receiving power from either sectional conductor for setting an alarm as S.

5. The combination with two electrically-operated roads which meet or cross each other, of a source or sources of electrical supply, two insulated sectional conductors, each connected to a source of electrical supply and each adapted to furnish power to a vehicle traveling on a portion of one road and means operated by a vehicle receiving power from either of the insulated sectional conductors for cutting out the circuit from the other section and simultaneously setting an alarm as S.

6. In an electric railway the combination with a number of sectional power-supply conductors, of a feed-conductor, connections between the feed-conductor and the sectional conductors, a circuit-controller for governing said connection, positive-acting non-magnetic means for normally holding said connections closed, and means operated by the passage of a current from the feed-conductor to one sectional conductor for operating the circuit-controller so as to open the circuit leading to another section whereby rear-end collisions can be prevented.

7. In an electric railway the combination with a number of sectional power-supply conductors of a feed-conductor normally-closed connections between the feed-conductor and the sectional conductors, circuit-controllers consisting of electromagnets the coils of which form part of the connections between the feed-conductor and the sectional power-supply conductor, and armatures operated by each electromagnet for opening a connection leading to another section so as to prevent collisions.

8. In an electrically-actuated road, a sectional power-supply conductor, a feed-conductor normally connected to said sectional conductor, a motor adapted to receive power from said sectional conductor, an alarm in the motor-circuit adapted to remain inoperative during the normal flow of the current and means for cutting out the sectional conductor and grounding it whereby a reverse current will be set up and the alarm operated by the counter electromotive force of the motor while it is in motion.

9. The combination with two electrically-operated roads which meet or cross each other, a source or sources of electrical supply, two insulated sectional conductors, each connected to a source of electrical supply and adapted one to furnish power to a vehicle traveling on a portion of one road and the other to furnish power to a vehicle traveling on a portion of the other, and means operated by a vehicle receiving power from either of the insulated sections for cutting off the current flowing to the other section, and grounding that section.

10. The combination with two independent circuits, of electromagnets D K, each forming part of one of said circuits, an armature actuated by each magnet and serving to open the circuit passing around the other magnet and positively-actuated means for closing the circuits after the current which operated to open them has ceased flowing, said means acting with different force so that if both circuits were opened simultaneously one will be closed before the other.

11. The combination with two electrically-actuated roads which meet or cross each other, of a feed conductor or conductors, sectional power-supply conductors, each adapted to supply energy to a vehicle on different roads, connections leading from a feed conductor or conductors to each of the sectional conductors, a magnet forming part of each of these connections and an armature operated by each magnet and adapted when operated to open the circuit of which the coils of the other magnet form a part.

12. The combination in an electrically-actuated railway of a number of insulated sectional power-supply conductors arranged one behind the other, a feed-conductor normally connected to each sectional conductor, an alarm arranged in a high resistance circuit which connects the otherwise-insulated sectional conductors, means operated by a vehicle on one section for cutting out another section whereby a current will pass to the cut-out section from the adjoining section if said section be grounded and operate the alarm.

13. The combination in an electrically-actuated railway of a number of insulated sectional power-supply conductors arranged one behind the other, a feed-conductor normally connected to each sectional conductor, an alarm arranged in a high-resistance circuit which connects the otherwise-insulated sectional conductors, means operated by a vehicle on one section for cutting out and grounding another section whereby a current will pass to the cut out section from the adjoining sections and operate the alarm.

14. The combination with two independent circuit-magnets D K one in each circuit, a ground-wire J, two armatures, one operated by each magnet and contact-points on each armature so arranged that when an armature is operated by its magnet it breaks the circuit around the other magnet and connects said circuit to the ground-wire.

15. The combination with two independent circuits of magnets D K, one in each circuit, two armatures, one operated by each magnet and each provided with contact-points normally forming part of the circuit around the other magnet and positively-acting means for holding the armatures away from the magnets.

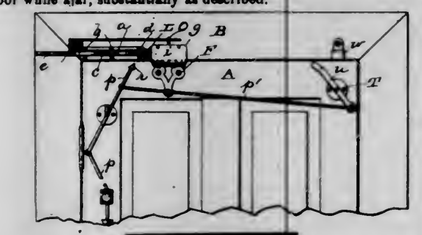
16. The combination with two independent circuits, of magnets D K one in each circuit, two armatures, one operated by each magnet and each provided with contact-points normally forming part of the circuit around the other magnet and positively-acting means acting with different force on each armature for holding said armatures away from the magnets.

17. The combination in an electrically-actuated railway of a number of sectional power-supply conductors arranged one behind the other, a feed-conductor normally connected to each sectional conductor, positively-acting non-magnetic means for normally holding said feed-conductors in circuit with each sectional conductor, means operated by a vehicle while it is receiving energy from one section for cutting out another section, and a conductor for permitting a flow of current when the motor is cut out or disabled whereby the cut-out section may be kept cut out as long as necessary.

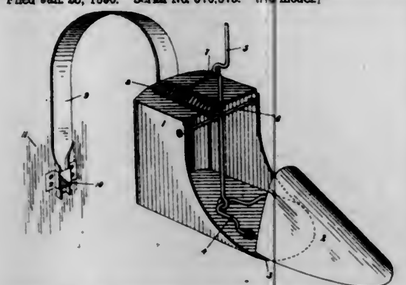
573,497. DOOR CLOSER, CHECK, AND HOLDER. CHRISTIAN J. WAGENER, Pittsburg, Pa., assignor of one-half to Wilbert Lee Slack, same place. Filed July 8, 1895. Serial No. 555,358. (No model.)

Claim.—1. The combination with the door-casing and door, of the bracket c on the said casing provided with the stop notch, *e*, the bracket-casing on the door provided with the spring-controlled wheel adapted to run on the edge of said casing-bracket and to enter said notch to hold the door open, and the spring-lever N, secured to the door and its casing and against the action of which the door is held open by the said wheel and notch, substantially as described.

2. The combination with the door and door-casing, of the bracket c on the said casing, said bracket provided with apertures, *a*, the jointed rod *p*, on said door, said rod provided with a head adapted to enter said apertures when the door is partly open and to lock the door while ajar, substantially as described.



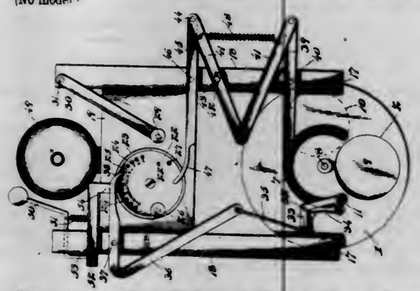
573,498. SHOE-HOLDER. WILLIAM P. WELCH, Grand Forks, N. D. Filed Jan. 25, 1896. Serial No. 576,873. (No model.)



Claim.—1. In a shoe-support, the combination of a hollow heel-section having a forwardly-extending plate, a toe-section slidably mounted upon the said plate, a bail having pivotal connection with the toe-section, and a lever fulcrumed upon the heel-section and having connection with the said bail and adapted to move the toe section upon its supporting-plate, substantially in the manner and for the purpose set forth.

2. In combination, a hollow heel-section having a forwardly-extending plate, a toe-section slidably mounted upon the said plate, a bail pivotally connected with the toe-section, a lever fulcrumed upon the heel-section and having connection with the said bail, a plate applied to the heel section and having crimps or projecting portions, and a pawl carried by the said lever and adapted to engage with the projecting portions of the said plate to hold the toe section in a projected position, substantially as and for the purpose set forth.

573,499. AUTOMATIC PHOTOGRAPHIC SHUTTER. PERY L. WILKERSON, York Station, Ala. Filed June 25, 1896. Serial No. 596,879. (No model.)



Claim.—1. In an automatic shutter, a shutter-box having shutter-openings, a spring-actuated rotary shutter-disk working within the box and having an exposure-opening, separate catch devices for securing the shutter in a set and an open position, suitably-arranged time or clock mechanism having a continuously-moving trip device, and suitably arranged lever connections between the trip device and said catch devices to provide means for automatically releasing the shutter from its set and open positions at predetermined intervals, substantially as set forth.

2. In an automatic shutter, a shutter-box having shutter-openings, a spring-actuated rotary shutter-disk working within the box and having an exposure-opening and an offstanding catch-pin working through a slot in the box, separate catch devices for engaging said catch-pin to hold the shutter-disk in a set and an open position, time mechanism having a rotating trip device, and suitable connections between said trip device and said catch devices for automatically releasing the shutter from its set and open positions at predetermined intervals, substantially as set forth.

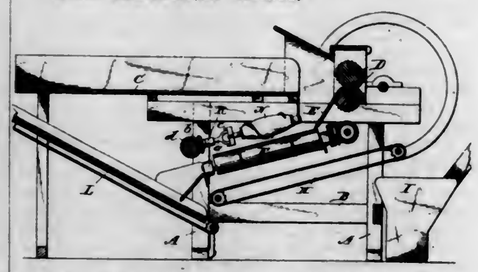
3. In an automatic shutter, a shutter-box, a spring-actuated rotary shutter-disk working within the box and having an offstanding catch-pin working through a slot in the box a motor-casing supported above the shutter-box, clock mechanism mounted within said casing, a rotating trip-dial mounted on one of the shafts of said mechanism and carrying trip-plugs, separate catch devices for engaging the catch-pin at different points, and suitably-arranged trip-levers adapted to be engaged by the trip-plugs of the dial and having operating connections with said catch devices, substantially as set forth.

4. In an automatic shutter, a shutter-box, a spring-actuated rotary shutter-disk having a catch-pin working through a segmental slot in the box, a motor-rotated trip-dial provided near its periphery with a circular series or group of regulating openings and at a point spaced from said series or groups of openings with a single plug-opening, a trip-plug detachably fitted in said single plug-opening, a separate trip-plug adapted to adjustably engage said series of openings, separate catch devices for engaging said catch-pin at different points, and suitably-arranged trip-levers arranged in the path of said trip-plugs and connected with said catch devices, substantially as set forth.

5. In an automatic shutter, a shutter-box, a spring-actuated rotary shutter-disk having a rotary catch-pin working through a segmental slot in the box, a motor-rotated trip-dial provided with suitably-arranged openings, spaced trip-plugs detachably fitted in openings in the dial, a catch-lever pivotally mounted on the shutter-box and having one end thereof normally projected over the segmental slot at one end, a separate catch-lever pivotally supported on the shutter-box and having one end projected over the segmental slot at an intermediate point between the ends of the slot, said catch-levers engaging said catch-pin to hold the shutter-disk respectively "set" and "open," separate oppositely-arranged trip-levers pivotally supported adjacent to the dial and provided at one end with trip-bills disposed in the path of movement of said trip-plugs, a suitable connection between one of said trip-levers and the catch-lever near one end of the segmental slot, and spring-retracted toggle-levers connecting the other trip-lever with the other catch-lever, substantially as set forth.

6. In an automatic shutter, a shutter-box, a spring-actuated rotary shutter-disk, a motor-rotated trip-dial carrying spaced trip plugs, separate catch devices for securing the shutter-disk in a set and an open position, suitably-mounted trip-levers arranged in the path of said trip-plugs and connected with said catch devices, an alarm-bell, an alarm trip-lever carrying a spring-retracted hammer arm and provided at one end with a trip-foot disposed adjacent to one end of one of said other trip-levers in the path of movement of said trip-plugs, and a pivotally-supported brake-arm carrying a pin adapted to engage with the dial to secure the same against rotation, substantially as set forth.

573,500. CORN-HUSKING MACHINE. JOHN J. WOODMAN, Springfield, Ohio, assignor to the E. W. Ross Company, same place. Filed May 20, 1895. Serial No. 549,920. (No model.)

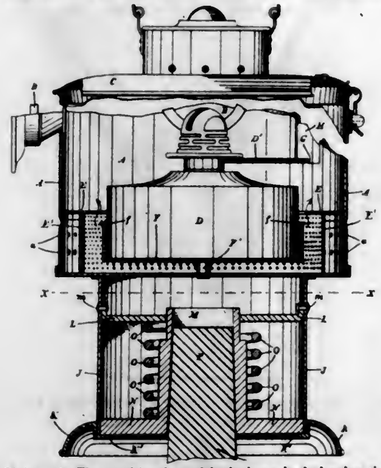


Claim.—1. In a corn-husking machine, the combination with the husking-rollers, of roller mechanism journaled parallel therewith to rotate the corn, driving-gear therefor, and knuckle joint between said roller and driving-gear whereby play may be given said roller to allow the ears of corn to pass thereunder substantially as shown and described.

2. In a corn-husking machine, the combination, with the husking-rollers, of an egg-shaped roller provided with a spiral flange journaled parallel therewith to rotate the corn, driving-gear therefor, and knuckle-joint connecting said roller and driving-gear, substantially as shown and described.

3. In a corn-husking machine, the combination, with the husking-rollers, of an egg-shaped roller, provided with a spiral flange journaled parallel therewith to rotate the corn, driving-gearing therefor, with knuckle-joint connecting said roller and driving-gear, and L-shaped plate resting on the frame and supporting said joint with set-screw to regulate same substantially as shown and described.

573,501. SWITCH AND SIGNAL LAMP. CHARLES BERGENER, Rochester, N. Y., assignor to the C. T. Ham Manufacturing Company, same place. Filed June 22, 1896. Serial No. 596,501. (No model.)

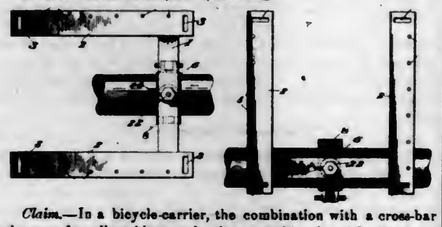


Claim.—1. The combination with the lamp-body having the perforations *a* and the hinged top, of the cup F having the outwardly-turned edge *f* the removable lamp D, the vertically-extending annular perforated plate E around the cup, and the horizontal imperforate ring E having its inner edge extending inwardly beyond the plate E', substantially as described.

2. In a lamp of the character described, the combination with the body and the barrel at its lower end having the internal flange and the rigid plate L having the angular aperture, of the movable plate N adapted to engage the flange in the barrel and having the angular extension moving in the aperture in the plate L, and the spring O arranged between the plates L and N, substantially as described.

3 In a lamp of the character described, the combination with the body and the barrel at its lower end, the base-ring having the depressed internally-projecting flange, the vertical walls of the depressed portion being secured to the barrel, of the plate L having the aperture, the plate N having the sleeve extension passing through the aperture, and the spring O arranged and operating substantially as described.

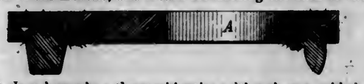
573,502. BICYCLE-CARRIER. HENRY D. CAHILL, Boston, Mass., assignor of one-third to James E. McCafferty, same place. Filed Dec. 29, 1894. Serial No. 533,365. (No model.)



Claim.—In a bicycle-carrier, the combination with a cross-bar and means for adjustably securing it upon a bicycle, of flexible arms projecting from the ends of the cross-bar provided with terminal slots to receive straps, and marginal apertures therein for the reception of strings, substantially as specified.

573,503. HORSESHOE. ALFRED J. CLARK, Lenox, Mass. Filed June 18, 1896. Serial No. 595,959. (No model.)

Claim.—1. In a horseshoe, the combination with a shoe provided with a mortise which is extended deeper in one portion than another, thereby providing a ledge, of a calk having a tenon adapted for reception in the mortise, and means for holding the calk to the shoe.



2. In a horseshoe, the combination with a shoe provided with an oblique or slanting mortise, said mortise being extended at its bottom deeper in one portion than another, thereby providing a ledge, of a calk provided with an oblique tenon which fits in the mortise and rests on the ledge, and a fastening-screw for securing the tenon to the shoe.

3. In a horseshoe, the combination with a shoe having a mortise which is deepened in its bottom at one portion, of a calk provided with a tenon that extends out from or overhangs the calk, said tenon being adapted for reception in the mortise, and means for securing the calk to the shoe.

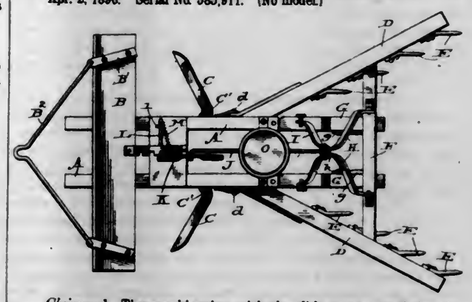
4. In a horseshoe, the combination with a shoe provided with a mortise having oblique ends and being deepened in one portion of its bottom, of a calk provided with a tenon also having oblique ends, said tenon extending out from or overhanging the calk, being adapted for reception in the mortise, and a fastening-screw passing through the overhanging portion of the tenon and of the shoe.

573,504. PLOW ATTACHMENT. JOEL N. COOKS, Stony Creek, Va. Filed Dec. 23, 1895. Serial No. 573,104. (No model.)



Claim.—The combination with a plow, of a cultivating attachment secured to the landside at a point remote from the bottom edge thereof, said attachment consisting of a vertical body portion having its front end tapered to form an inclined entrance-point, and an inclined or slanting moldboard portion having the same pitch as said entrance-point and extending obliquely to the line of draft, and also inclining upward and rearward from its point of union to the body portion, the two portions of the attachment being united at their front ends in the form of the letter V, substantially as described.

573,505. HARROW. JOHN P. DE MOSS, Jr., Grand Pass, Mo. Filed Apr. 2, 1896. Serial No. 585,911. (No model.)



Claim.—1. The combination with the slide-runners and the pivoted harrow-beams, of the lever, connections between the same and the beams, and the short longitudinal beams carrying harrow-teeth in line with the runners, substantially as described.

2. The combination with the slide-runners and the pivoted harrow-beams, of the lever, connections between the same and the beams, and the short longitudinal beams carrying harrow-teeth in line with the runners, and the knives upon opposite sides of the runners, substantially as described.

3. The combination with the slide-runners and the pivoted harrow-beams, of the lever, connections between the same and the beams,

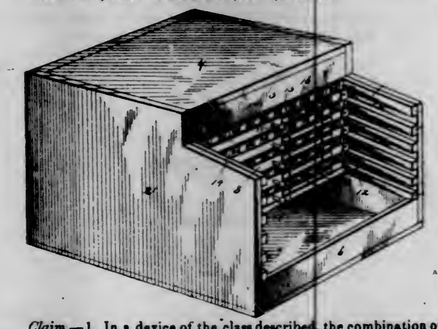
and the short longitudinal beams carrying harrow-teeth in line with the runners, and the knives upon opposite sides of the runners, and the seat mounted on the runners near the rear end thereof, substantially as described.

4. The combination with the slide-runners and the harrow-beams pivotally mounted thereon, of the cross-beam connecting the harrow-beams, the longitudinal beams in line with the runners, the pivoted lever, connections between the same and the cross-beams, substantially as described.

5. The combination with the slide-runners and the harrow-beams pivotally mounted thereon, of the cross-beam connecting the harrow-beams, the longitudinal beams in line with the runners, the pivoted lever, connections between the same and the cross-beams, and the crank-shaft on which the lever is pivoted and the spring connecting the crank thereof with said lever, substantially as described.

6. The combination with the slide runners and the harrow-beams pivotally mounted thereon, of the cross-beam connecting the harrow-beams, the longitudinal beams in line with the runners, the pivoted lever, connections between the same and the cross-beams, and the crank-shaft on which the lever is pivoted and the spring connecting the crank thereof with said lever, and the notched quadrant with which said lever is adapted to engage, substantially as described.

573,506. CALCULATING DEVICE. SILAS N. DODD, Toledo, Iowa. Filed June 6, 1896. Serial No. 594,605. (No model.)



Claim.—1. In a device of the class described, the combination of a cabinet open at its front and provided at its opposite sides with longitudinal ways, slides mounted in the ways and provided with means for detachably securing cards to them, and the transverse bars extending horizontally across the front of the cabinet, located above the slides in position to support stationary indicators and interposed between the said ways, the latter being extended outward beyond the stationary transverse bars to form supports for the slides, when the latter are drawn outward in use, substantially as described.

2. In a device of the class described, the combination of a case or cabinet having its sides and bottom extended horizontally beyond the top and providing a lower receptacle, a series of longitudinal ways arranged on the inner faces of the sides and extended substantially horizontally beyond the top of the casing, a series of transverse bars located above the grooves or ways, and the card-bearing slides arranged in the grooves or ways, substantially as and for the purpose described.

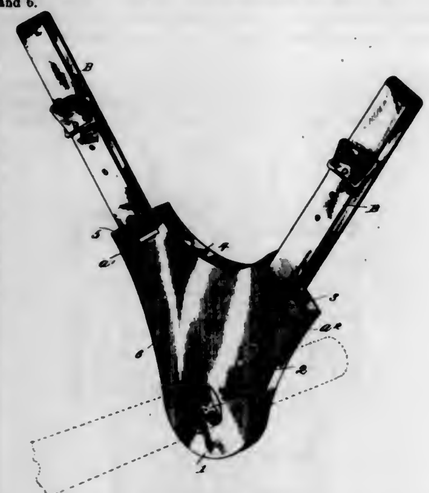
3. In a device of the class described, the combination of a case or cabinet having forwardly-extending sides, and provided at the inner faces thereof with slightly inclined ways, card-bearing slides removably arranged in the ways, and springs arranged in the ways, secured at the inner faces of the sides of the case or cabinet and having their ends engaging the side edges of the slides, substantially as described.

4. In a device of the class described, the combination of a case or cabinet having its sides and bottom extended forward, forming an open front and providing a bottom receptacle, longitudinal cleats arranged on the inner faces of the sides and forming ways, transverse bars 13 connecting the cleats and located above the ways and adapted to receive stationary indicators, reversible slides arranged in the ways and provided at opposite sides with grooves for the reception of cards, springs frictionally engaging the slides, and means for detachably securing the indicator-slips to the front edges of the slides, substantially as described.

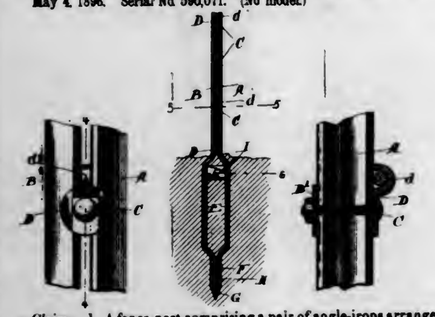
573,507. NECK-YOKE. ROLAND EVANS, Washington, D. C. Filed Oct. 10, 1896. Serial No. 608,472. (No model.)

Claim.—1. A neck-yoke consisting of a pole-piece having approximately a triangular contour and provided with a pole-opening and two strap-openings, one in each corner of the pole-piece, and straps engaging the strap-openings.

2. A neck-yoke consisting of a pole-piece A and the straps B, the pole piece having the opening *a*, and having its outer edge approximately of a triangular contour, following the lines 1, 2, 3, 4, 5, and 6.



573,508. FENCE-POST. HENRY L. FERRIS, Harvard, Ill. Filed May 4, 1896. Serial No. 590,071. (No model.)

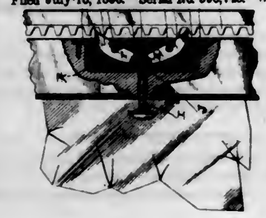


Claim.—1. A fence-post comprising a pair of angle-irons arranged with the inner angles adjacent to each other, washers, D, D′, bolts, C, lying between the angle-irons and connecting the washers, loop, E, prong, F, point, G, having the extension, *g*, and the bolt, H, adapted to secure the point to the prong.

2. A fence-post composed of a pair of angle-irons held together by means of the washers, D, D′, and bolts, C, and formed into a loop, E, and prong, F, and a point, G, having the upward extension, *g*, provided with the eye, *g′*, and the bolt, H, adapted to pass between the angle-irons and through the eye and secure the point to the prong.

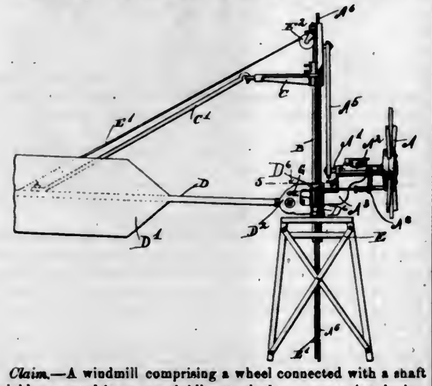
3. The combination with the two members A, B, securely held together above the ground and bent away from each other to form the loop, E, beneath the ground and the prong, F, at the lower extremity of said loop, of the point, G, secured to said members by means of an extension, *g*, therein and a bolt, H; substantially as described.

573,509. SASH-FASTENER. WILLIAM A. GANNELL, Draper, Utah. Filed July 10, 1896. Serial No. 598,740. (No model.)



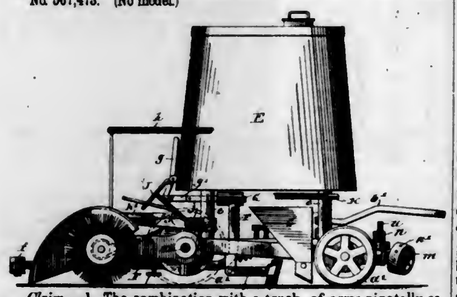
Claim.—The combination with the rack bar, of the casting secured to the side stile of the sash and having oppositely-disposed pivoted catches adapted to engage the rack-bar to hold the window against movement in either direction, the adjacent ends of said catches being provided with semicircular screw-threaded openings, and springs acting upon said catches, and a push-pin engaging said screw-threaded openings in the adjacent ends of the catches and adapted to actuate said catches simultaneously, substantially as specified.

573,510. WINDMILL. FRANK M. GOODHUE, St. Charles, Ill. Filed Oct. 14, 1895. Serial No. 565,611. (No model.)



Claim.—A windmill comprising a wheel connected with a shaft revolubly mounted in an arm rigidly attached to a supporting device, a curved piece F pivotally connected to said arm provided with a brake-shoe F′ projecting on one side thereof, a rod connected with said brake-shoe, a spring F^4 interposed between said rod and brake-shoe, a vane connected with a vane-hinge D^3 rotatably mounted upon said supporting device, said vane-hinge adapted to engage said rod when the parts are in a predetermined position and force the brake-shoe against the hub of the wheel.

573,511. SNOW-PLOW, SWEEPER, SCRAPER, AND SPRINKLER FOR CAR-TRACKS. WILLIAM GRUNOW, Jr., Bridgeport, Conn., assignor to Zalmon Goodsell, same place. Filed Oct. 31, 1895. Serial No. 567,473. (No model.)



Claim.—1. The combination with a truck, of arms pivotally secured on the rear end thereof and carrying wheels on their free ends, the rim of said wheels being provided with a series of holes, the sockets *n* of the truck-adjusting screws operating through said sockets and bearing on the pivoted arms to raise the rear end of the truck, and a jack-screw supported under the forward end of the truck and adapted to raise the same, whereby the truck may be turned around with the jack-screw for a center, substantially as shown and described.

2. The combination with a truck, of a water-tank supported thereon, a supplemental frame pivotally secured in the forward end of the truck, sprinkling devices carried by said frame and a flexible pipe connected between the sprinkling devices and the tank, substantially as shown and described.

3. The combination with a truck, of a platform, posts fitted in sockets, in said platform, a water-tank supported on the posts, a supplemental frame pivotally secured in the forward end of the truck, sprinkling devices carried by said frame, a flexible pipe connection between the sprinkling devices and the tank, a slide-valve beneath the tank, and a lever secured on the tank and adapted to operate the valve, substantially as shown and described.

4. The combination with a truck, of a supplemental frame pivotally secured in the forward end of the truck, a transverse shaft in the forward end of the frame, brush-wheels mounted on the ends of said shaft and the hoods secured adjustably on the shaft and over the brush-wheels, substantially as shown and described.

5. The combination with a truck, of a supplemental frame, pivotally secured in the forward end thereof, an upward extension on said frame, a hand-screw supported on the truck and operating against said extension to raise or lower the frame, arms carried by the frame and supporting sprinkling devices, a shaft mounted in the frame, brush-wheels on the ends of said shaft, hoods adjustably arranged on the shaft and over the brush-wheels a pulley-wheel on the shaft, a larger pulley-wheel on the forward axle, a belt running over said wheels, an enlarged hub on the larger pulley-wheel provided with notches and projections and a lever adapted to throw said sleeve and hub into engagement, substantially as shown and described.

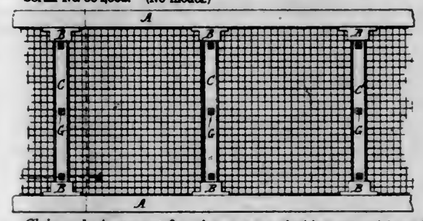
6. The combination with a reversible and vertically-adjustable truck of the character described, of adjustable attachments secured thereto to clean the tracks, sprinkling devices carried by a supplemental frame mounted on said truck, a water-tank supported thereon and flexible connection between the tank and said sprinkler, all combined and arranged as and for the purpose set forth.

7. The combination of a frame secured to a car-truck and comprising two parallel arms, a shaft supported by said arms, the braces connecting the arms, brush-wheels on the ends of the shaft, and hoods adjustably secured on the shaft and over the brush-wheels, substantially as shown and described.

8. The combination of a frame adapted to be secured to a car-truck and comprising two parallel arms, the braces connecting said arms, a shaft supported by the arms and carrying brush-wheels on their outer ends, collars on said arms, hoods arranged over the wheels and having hubs to fit on said collars, and set-screws to fasten the hoods in place, substantially as shown and described.

9. A hood for a brush-wheel having a straight side, a curved top and an outwardly-turned forward end, substantially as shown and described.

573,512. SUPPORT FOR WIRE LATHS AND PARTITIONS. FRANK J. HEARNSHAW, Chicago, Ill., assignor of one-half to Frank Hearnshaw and Aquilla Wintermute, same place. Filed July 1, 1895. Serial No. 554,552. (No model.)



Claim.—1. A support for wire or gauze lathing comprising a bar composed of rigid or inflexible longitudinal sections, brackets or steps for receiving and securing one of said sections to the building-beams, and means for securing the other section to the first-mentioned section, the meeting faces of said sections having interlocking surfaces throughout their length, between which the lathing is clamped, substantially as and for the purpose described.

2. A support for wire or gauze lathing comprising a bar composed of rigid or inflexible longitudinal sections, brackets or steps for receiving and securing one of said sections to the building-beams, and means for securing the other section to the first-mentioned section, one of said sections having a recessed or concaved face throughout its length, and the entire length of the other section being provided with an opposing ribbed or convexed face, between which faces the lathing is clamped, substantially as described.

3. A support for wire or gauze lathing comprising a bar composed of rigid or inflexible longitudinal sections, brackets or steps secured to the building-beams and provided with recesses to receive the ends of one of said sections, and means for securing the other section to the first-mentioned section, the meeting faces of said sections having interlocking surfaces throughout their length, substantially as described.

4. A support for wire or gauze lathing comprising a bar composed of rigid or inflexible longitudinal sections, steps or brackets secured to the building-beams, and provided with sockets to receive the ends of one of said sections, and means for securing the other section to the first-mentioned section, one of said sections having a recessed or concaved face throughout its length, and the entire length of the other section being provided with an opposing ribbed or convexed face, substantially as described.

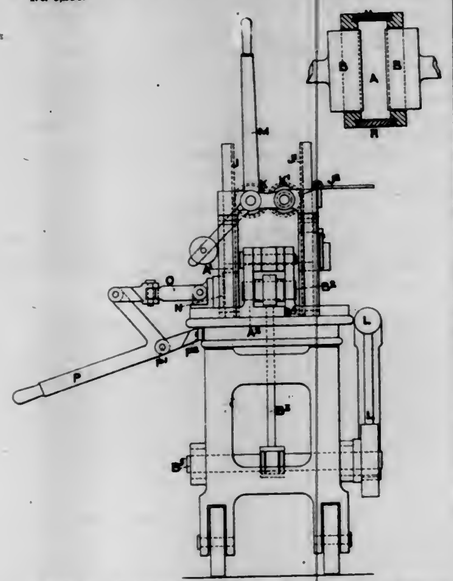
5. A support for wire or gauze lathing comprising a bar composed of rigid or inflexible longitudinal sections, steps or brackets secured to the building-beams and provided with sockets to receive the ends of one of said sections, and bolts passing through both of said sections so as to secure the same together, the meeting faces of said sections having interlocking surfaces throughout their length, between which the lathing is clamped, substantially as described.

573,513. SOLUTION FOR ILLUMINANT MANTLES FOR BUNSEN GAS-BURNERS. WILLIAM HOOKER and LUCY HOOKER, North Fitzroy, Victoria. Filed Aug. 19, 1895. Serial No. 559,777. (No specimens.)

Claim.—1. The hereinbefore-described solution, consisting of sulfate of magnesium, acetate of magnesium, and chrome-alum, all incorporated in the proportions hereinbefore described.

2. The hereinbefore-described solution consisting of sulfate of magnesium, acetate of magnesium and chrome-alum and chromas-potassi, all incorporated in the proportions hereinbefore described.

573,514. APPARATUS FOR PRESSING BRICK. RALPH T. HUGHES, Saltburn, and JOHN GILL, Leeds, England. Filed Feb. 3, 1896. Serial No. 577,949. (No model.) Patented in England Mar. 26, 1895, No. 6,239.



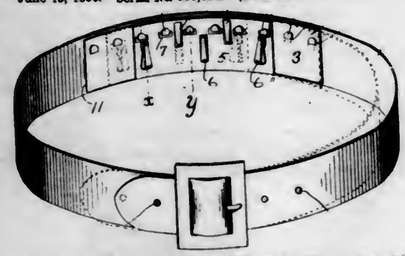
Claim.—1. In a brick-press, the combination, with a stationary mold closed at top and bottom, and provided with open ends, and holes in its sides; of slidable plates normally closing the said open ends, horizontally-arranged presser-blocks slidable in the said holes, and driving mechanism operating to reciprocate the said presser-blocks in opposite directions simultaneously, substantially as set forth.

2. In a brick-press, the combination, with a stationary mold closed at top and bottom, and provided with open ends having dovetailed guide-grooves, and holes in its sides; of slidable plates provided with dovetailed edges and normally closing the said open ends, and opposed presser-blocks arranged horizontally and slidable in the said holes, substantially as set forth.

3. In a brick-press, the combination, with a mold provided with open ends, of plates normally closing the said ends, an operating shaft, B^8, arms B^9 carried by the said shaft and provided with clutch-jaws, lever mechanism operatively connecting the said arms with the said plates, slidable clutch-jaws B^{11} splined on the said shaft, and lever mechanism connected to the said clutch jaws B^{11} and operating to slide them simultaneously in opposite directions, substantially as set forth.

4. The combination, with a mold permanently closed upon all four sides and operating to form sharp square edges on the brick, said mold having open ends and a hole in one side of less area than the said side and not extending to the corners of the mold; of an indenting presser-block working in the said hole, and removable plates normally closing the open ends of the mold, substantially as set forth.

573,515. BELT. HARRIET B. IRETS, Minneapolis, Minn. Filed June 15, 1896. Serial No. 595,654. (No model.)



Claim.—1. The combination, of the belt, with a series of fastenings provided inside the same, a part or strip adjustable thereon, and garment-fastenings provided on said part or strip, substantially as described.

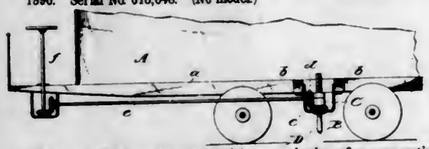
2. The combination, of the belt, provided with a series of fastenings on the inside, with a part or strip adapted to be adjustably secured upon said fastenings, and itself provided with upward and downward turned hooks adapted for use as fastenings for the skirt and waist, substantially as described.

3. The combination, with the belt provided upon its inner surface with a series of hooks, of a plate having a series of openings or eyelets, there being a less number of eyelets than there are hooks, whereby said plate is rendered longitudinally adjustable on said belt, and said plate being also provided with a series of upwardly-turned hooks, for the purpose set forth.

4. In a device of the class described, the combination with the belt, of the plate 3 secured thereto, and provided with a series of openings, the hooks arranged between said belt and said plate, and having one end extending through said openings, a second plate having a series of openings or eyelets to receive said hooks, and said second plate being also provided with a series of upwardly-turned hooks, for the purpose set forth.

5. In a device of the class described, the combination with the belt, of the plate 3 secured thereto, and provided with a series of openings, the hooks arranged between said belt and said plate, and having one end extending through said openings, a second plate having a series of openings or eyelets to receive said hooks, and said second plate being also provided with a series of upwardly and downwardly turned hooks, substantially as described.

573,516. SAFETY-BRAKE FOR STREET-CARS. BAYARD L. KILGOUR, Cincinnati, Ohio. Filed July 29, 1895. Renewed Nov. 21, 1896. Serial No. 613,048. (No model.)



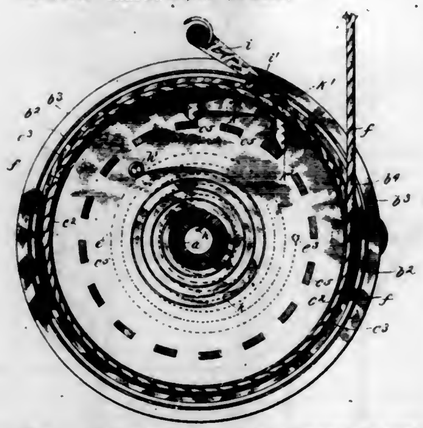
Claim.—1. The combination with a car-body, of a supporting-casing carried thereby, a box or nut provided with a threaded bore mounted thereon, a longitudinally-movable brake provided with a threaded shank which passes through the threaded bore of said box or nut, and means for revolving the nut to raise or lower the brake, substantially as described.

2. The combination with a supporting-casing connected to the body of the car, of a brake consisting of a forked rod adapted to straddle the rail, the upper end of which is provided with a screw-threaded shank, a box provided with a screw-threaded opening through which said shank passes, and means for revolving said box to raise or lower the brake, substantially as described.

3. In a safety-brake, the combination with a car-body, of a supporting-casing connected thereto, a box or nut provided with a screw-threaded bore mounted therein, a forked rod provided with a vertical screw-threaded shank adapted to pass through the bore of said box or nut, shoes provided on the ends of said fork, and means for revolving the said box or nut to raise and lower the brake, substantially as described

4. In a safety-brake, the combination with a car-body, of a supporting-casing secured thereto, a box or nut journaled in said casing provided with a screw-threaded bore, a brake consisting of a forked rod provided with a screw-threaded shank adapted to pass through the bore in said box or nut, a gear connected with said box, and an intermeshing gear mounted on a shaft geared to the brake-handle rod, substantially as described.

573,517. TROLLEY-POLE GOVERNOR. VERNON T. LYNCH, Chicago, Ill., assignor of one-half to John M. Roach, same place. Filed Mar. 4, 1896. Serial No. 581,798. (No model.)



Claim.—1. In a controlling device for trolley-poles, the combination with a reel or drum upon which the rope or cord connected with the trolley-pole is adapted to be wound, of a spring for rotating the said drum to maintain the rope taut, a second reel or drum, a spring for rotating the said second drum to wind the rope thereon, and means controlled by the rapid rotation of the first-named reel or drum as the rope is unwound therefrom for throwing the said second-mentioned spring into action to wind the rope upon the second drum and draw the trolley-arm downward; substantially as described.

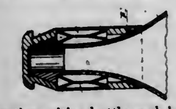
2. The combination with an upwardly-pressed trolley-pole, of a drum about which a rope attached to said trolley-pole is adapted to be wound, a spring for rotating said drum to maintain the rope taut, a second drum whereon the said rope is also adapted to be wound, a spring for rotating the same, a catch normally maintaining said second drum against rotation, a locking device for locking said drums together, and means controlled by the rapid rotation of said first-mentioned drum for actuating said locking device to lock the drums together and for releasing said catch to permit the drums to rotate to wind up the rope upon the second-mentioned drum and draw the trolley-pole downward; substantially as described.

3. The combination with the inner drum about which the rope secured to a trolley-pole is adapted to be wound, of the outer drum provided with an opening through which said rope passes to the inner drum, a spring for rotating the inner drum, said spring having a tension less than the tension of the spring tending to elevate the trolley-pole, a spring for rotating the outer drum and of a tension to overcome the tension of the spring tending to elevate the trolley-pole, a catch for normally maintaining the outer drum against rotation, a series of teeth provided upon the inner drum, and a lever pivoted to the outer drum and resting by the end against said teeth and arranged to thrust a dog between said teeth when rocked through a predetermined distance and at the same time to release said catch, whereby the rapid rotation of the inner drum causes said teeth to strike the pivoted lever to thrust the dog between the teeth carried upon the inner drum and to release the catch, substantially as and for the purpose set forth.

4. The combination with the stationary axle or stud *a*, of the outer drum *b* journaled thereon and provided with an opening in the periphery for the passage of the rope attached to the trolley-pole, a drum *c* situated within said outer drum and journaled upon said stud, helical spring *h* secured at the ends respectively to said stud and said outer drum, a helical spring *e* secured at the ends respectively to said stud and said inner drum, a rocking lever *k* pivoted to the outer drum, a series of teeth c^3 c^5 carried upon the inner drum with which teeth the end of said rocking lever is adapted to engage, a dog k^3 carried upon the opposite end of said lever and arranged to pass between the said teeth when the lever is rocked to thus lock the two drums together, a catch *i* for normally maintaining the outer drum against rotation, said catch being released by said rocking lever, substantially as described.

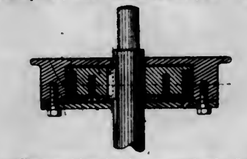
573,518. BOTTLE-CLOSURE. WILTON P. MAYES, Terre Haute, Ind., assignor of one-half to Joseph W. Lauer, same place. Filed Mar. 30, 1896. Serial No. 585,446. (No model.)

Claim.—1. The combination, with a bottle-neck having an external shoulder at its upper part, and a cap provided with an internal annular recess and an internally-flared lower portion fitting around the said bottle-neck; of a locking-spring having a substantially circular middle portion and prongs projecting from the upper and lower ends thereof, certain of the said upper and lower prongs being inclined inwardly and bearing against the said shoulder and against the neck of the bottle respectively, and the remaining prongs engaging with the said recess, substantially as set forth.



2. The combination, with a bottle-neck having an external shoulder at its upper part, of a cap having an internal shoulder at its lower part and a flaring portion E fitting around the said bottle-neck below the said internal shoulder, and a locking-spring arranged between the two said shoulders, substantially as set forth.

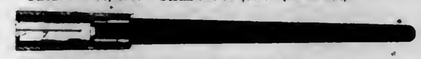
573,519. RAILWAY-CAR WHEEL. JOHN J. A. MILLER, Denver, Colo. Filed Sept. 24, 1896. Serial No. 606,816. (No model.)



Claim.—1. The combination in a car-wheel, of the axle, the disk keyed thereto and having an annular reduced portion or groove in its periphery, a circular row of rollers therein, a tread and flange portion arranged to fit centrally over said disk portion and to rotate on said rollers, and side flanges to said tread and flange portion, one of which is removable, and extending from said tread portion freely over said disk and fitting revolubly on said axle, whereby said tread portion is independent of said axle and rotates on the roller-bearing of said disk portion and the disk portion and axle are free to rotate independent of the tread portion of said wheel, substantially as described.

2. In a car-wheel the combination with the axle and the disk wheel, of a wheel having a tread and flange fitting freely on said axle, an integral solid side on the flange side of the wheel, a deep concentric recess formed in the opposite side and adapted to fit over said disk, a reduced tread portion in the periphery of said disk, a flanged portion on said disk adjacent to the wheel's flange, a circular row of rollers arranged to roll on the tread of said disk and to bear against the periphery of said recess, a side flange detachably secured to the side of said disk adapted to confine said rollers to said tread portion and a flange detachably secured to the wheel adapted to freely confine said disk within said recess, substantially as described.

573,520. PENHOLDER. VERNE E. MINICH, Chillicothe, Ohio. Filed June 30, 1896. Serial No. 597,592. (No model.)



Claim.—1. A penholder consisting of a tenoned stem or handle, a spring-clamp supported on the tenon and having a shoulder thereon, a ferrule provided with an internal flange or projection, the longitudinal movement of the ferrule being regulated by said flange or projection, substantially as set forth.

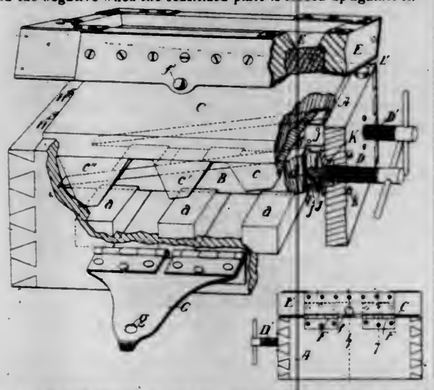
2. A penholder, consisting of a tenoned stem or handle, a spring-clamp supported on the tenon and having a shoulder thereon, a ferrule provided with an internal flange or projection and a shell or sleeve encircling said ferrule, the longitudinal movement of said shell or sleeve being regulated by said flange or projection, substantially as set forth.

3. A penholder, consisting of a tenoned stem or handle, having a shoulder, a spring-clamp, the inner end being restricted, while the outer portion thereof is provided with a series of longitudinal slits, and a shell or sleeve provided with an internal flange adapted to contact with the shoulders formed on the spring-clamp and stem or handle, whereby the longitudinal movement of said shell or sleeve is limited, substantially as set forth.

573,521. PHOTOGRAPHIC-PRINTING FRAME. ALFRED C. MOORE and SAMUEL MCLAUGHLIN, Los Angeles, Cal. Filed Aug. 29, 1895. Serial No. 560,931. (No model.)

Claim.—1. The combination of the bed, the movable bed plate mounted on the bed and adapted to receive a sensitized-metal plate

and negative and to move them through a determined path; a movable transparent plate adapted and arranged to be fastened in the said path through which the bed-plate is adapted to move the negative; means for fastening the transparent plate in such path; and any suitable means adapted and arranged to move the bed-plate in such path and to push it up sufficiently to force the sensitized plate against the negative, and the negative against the transparent plate, and to thus cause perfect contact between the sensitized plate and the negative after the negative has been placed on top of the sensitized plate and the transparent plate has been fastened in place to intercept and hold the negative when the sensitized plate is forced up against it.



2. The combination of the bed; the plate-glass frame provided with the glass plate and hinged and pivoted at one edge to one side of the bed and provided on its other edge with a pivot-stud; a hasp fastened to the bed and provided with a hole to fit upon the pivot-stud; the bed plate arranged in the bed to move toward and from the glass; and means for forcing the bed-plate toward the glass.

3. The contact printing frame provided with the bed and with the plate-glass frame hinged and pivoted to the bed and provided with the leveling-cushions arranged to contact with the plate-glass frame on opposite sides of the pivot thereof to level the same when it is closed down toward the bed.

4. The combination of the bed; the plate-glass frame; the hinges fastened to the bed; the frame-carrying pivot-plate fastened to one edge of the frame; the hinge-carrying pivot-plate fastened to the hinges; and the pivot connecting the hinge-carrying pivot-plate and the frame-carrying pivot-plate.

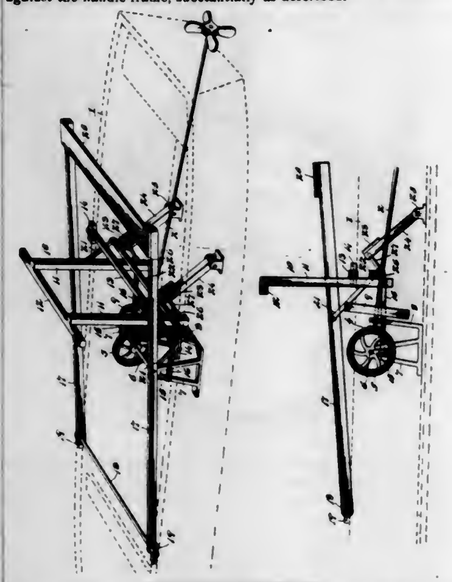
5. The contact-printing frame set forth comprising the bed; the plate-glass frame provided with the glass plate; the frame-carrying pivot-plate fastened to one edge of the frame; the hinge fastened to the bed; the hinge-carrying pivot-plate fastened to the hinge; the pivot connecting the frame-carrying pivot-plate with the hinge-carrying pivot-plate; the pivot stud arranged on the opposite side of the frame; the hasp fastened to the bed and arranged to fit the pivot-stud; the bed-plate arranged in the bed to move toward and from the glass; the wedge arranged to move the bed-plate; and means for operating the wedge.

573,522. PROPELLING MECHANISM FOR BOATS. JAMES H McDONALD, Olympia, Wash. Filed Apr. 24, 1896. Serial No. 588,946. (No model.)

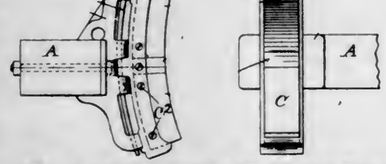
Claim.—1. The combination with the vibratory handle-frame fulcrumed intermediate its ends, of the handle-bar connected to said frame at one side of its fulcrum, the pedals connected thereto upon the opposite side of its fulcrum, connections between said frame and the driving-gear, and the vibratory seat-frame operatively connected to the handle-frame, substantially in the manner and for the purpose specified.

2. The combination with the handle-frame fulcrumed intermediate its ends, of the handle-bar connected thereto upon one side of its fulcrum, the pedal-levers carrying the pedals at their swinging ends and pivoted to the boat-frame, the links or rods connecting the pedal-levers with the handle-frame upon the opposite side of the fulcrum of the handle-frame to that upon which the handle-bar is arranged, and connections between the handle-frame and the driving-gear, substantially as described.

3. The combination with the handle-frame fulcrumed as described and operatively connected to the propeller-shaft, of a vibratory seat-frame comprising a seat mounted upon the free ends of a pair of spaced bars pivoted at their opposite ends to the boat-frame and lying substantially horizontal to permit of the seat having an up-and-down motion, and inclined links or rods interposed between said bars and the handle-frame whereby they are adapted to act as toggle-arms against the handle frame, substantially as described.



573,523. BRAKE-SHOE. JOHN McLACHLAN, Chicago, Ill., assignor to Frank P. Stone, same place. Filed Aug. 15, 1896. Serial No. 602,893. (No model.)



Claim.—1. A brake comprising a shoe adapted to make contact with the wheel and a holding or supporting device therefor, said shoe composed of highly-compressed wood in which the natural fibers remain unbroken and in their natural arrangement, the softer substances having been removed so that the fibers lie in a closer and more intimate contact and relation than when in the natural state.

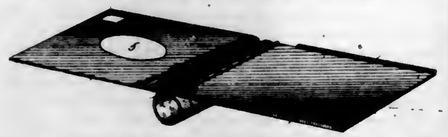
2. A brake for vehicles comprising a brake-shoe adapted to make contact with the wheel, said brake-shoe composed of highly-compressed, fibrous material in which the natural fibers remain unbroken and in their natural arrangement, but from which the softer substances have been largely removed so that the fibers lie in a closer and more intimate contact and relation than when in the natural state.

3. A brake for vehicles or the like comprising a brake-shoe, a holding or supporting device therefor, said brake-shoe consisting of a highly-compressed and substantially homogeneous, moisture-proof block of wood in which the natural fibers remain unbroken and in their natural arrangement but from which the softer substances have been largely removed so that the fibers lie in a closer and more intimate relation than when in their natural state, whereby said shoe will not be injured or mutilated by the friction due to contact with the wheel.

4. A brake-shoe comprising a highly-compressed and substantially homogeneous block of wood in which the natural fibers remain unbroken and in their natural arrangement and from which softer substances have been largely removed so that the fibers lie in a closer and more intimate relation than when in the natural state, the block so positioned that the ends of the fiber are exposed to the wheel.

5. A brake-shoe comprising a highly-compressed and substantially homogeneous block of wood in which the natural fibers remain unbroken and in their natural arrangement, and from which softer substances have been largely removed, so that the fibers lie in a closer and more intimate relation than when in the natural state, the wood so treated as to be proof against charring by the heat developed when in contact with the moving wheel.

573,524. TICKET-CASE. ELBERT S. McMASTER, Grand Forks, N. D. Filed June 1, 1896. Serial No. 593,896. (No model.)



Claim.—1. A coupon or ticket case of substantially cylindrical form having a slot in one side, a supporting-plate hinged to the casing at one side of the slot, and a covering-plate of a size corresponding to the supporting-plate attached to the casing at the opposite side of the said slot, the said slot being closed by a portion of the supporting-plate when the covering-plate is closed thereon, substantially as specified.

2. A coupon or ticket case of approximately cylindrical form having a slot in one side, a supporting-plate hinged to the case at one side of the slot, and a covering-plate having connection with the case at the opposite side of the slot and adapted to be swung with the case toward and from the supporting-plate, one of the plates having a finger-opening to permit contact with the coupon or ticket strip, and the plates lying substantially parallel when brought together, and a portion of the supporting-plate extending over and closing the slot of the case, substantially as specified.

3. A case of the class described, comprising a covering-plate, a casing formed at one end of said covering-plate and adapted to receive a roll of coupons or tickets, a supporting-plate secured to said casing and lying parallel with the covering-plate when the case is closed, a disk carried by the supporting-plate and adapted to close the casing in order to prevent the roll of coupons or tickets being displaced therefrom, and means for retaining said covering-plate upon the supporting-plate, substantially as set forth.

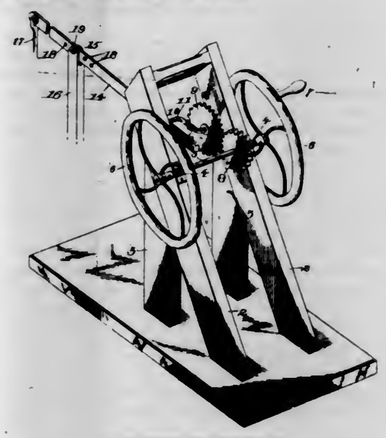
4. A case of the class described, comprising a covering-plate, a casing formed at one end of said covering-plate and adapted to receive a roll of coupons or tickets, a supporting-plate secured to said casing and lying parallel with the covering-plate when the case is closed, said covering-plate being provided with a finger-opening to permit contact with the strip of coupons or tickets in order to assist removal of the same from the case, and also provided with an opening adapted to expose the number of each coupon or ticket, a disk carried by the supporting-plate and adapted to close the casing in order to prevent displacement therefrom of the roll of coupons or tickets, and means for retaining the covering-plate upon the supporting-plate, substantially as set forth.

5. A case of the class described, comprising a covering-plate, a casing formed at one end of said covering-plate and adapted to receive a roll of coupons or tickets, a supporting-plate secured to said casing and lying parallel with the covering-plate when the case is closed, locking-flanges formed at the sides of the supporting-plate and projecting therefrom, said flanges being adapted to embrace the side edges of the covering-plate to lock the latter upon the supporting-plate, and a disk carried by one of the locking-flanges and adapted to close the casing in order to prevent the roll of coupons or tickets being displaced therefrom, substantially as set forth.

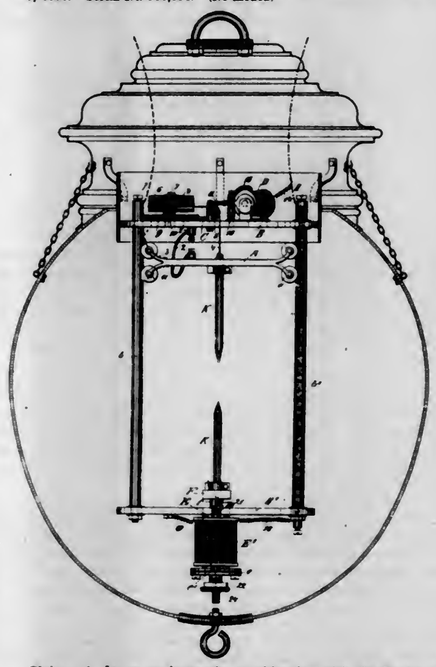
6. A case of the class described, comprising a covering-plate, a casing formed at one end of the covering-plate and adapted to swing with said plate, said casing having one of its ends closed and the other open and adapted to receive a roll of coupons or tickets, a supporting-plate secured to said casing and lying parallel with the covering-plate when the case is closed, said covering-plate being provided with a finger opening to permit contact with the strip of coupons or tickets in order to assist removal of the same from the case, and also provided with an opening adapted to expose the number of each coupon or ticket, locking-flanges formed at the sides of the supporting-plate and projecting therefrom, said flanges being adapted to embrace the side edges of the covering-plate to lock the latter upon the supporting-plate, and a disk carried by one of the locking-flanges, said disk extending from the end of said flange which is adjacent to the open end of the casing and adapted to close said casing in order to prevent the roll of coupons or tickets being displaced therefrom, substantially as set forth.

573,525. POWER ATTACHMENT FOR PUMPS. ALBERT G. NEWMAN and JOHN A. JOHNSON, Jr., Stratford, Iowa. Filed Mar. 23, 1896. Serial No. 584,501. (No model.)

Claim.—The herein-described power for operating pump-levers, comprising a driving-shaft, balance-wheels and means for communicating rotary motion thereto, a crank-shaft mounted parallel with and geared to the driving-shaft and provided with a crank having a longitudinally-extended spindle portion, and a flanged roller mounted upon said extended spindle portion for free movement parallel with the axis of the crank-shaft and adapted to operate in a slotted extremity of the pump-lever, to allow free lateral vibration of the pump-lever without affecting the transmission of motion from the crank-shaft to the lever, substantially as specified.



573,526. ELECTRIC-ARC LAMP. EUGEN HUGO ARTHUR HEINRICH RITTER VON NOLLENDORF, Vienna, Austria-Hungary. Filed Apr. 9, 1896. Serial No. 586,858. (No model.)



Claim.—1. In an arc lamp, the combination with the frame and two carbon-holders thereon, of a drum pivoted on the frame to turn in a horizontal plane, a cord connected to the upper-carbon holder and drum, an escapement-wheel adapted to turn independently of the drum in one direction, means for locking the drum and escapement-wheel together a pallet pivotally mounted on the frame to swing in a horizontal plane, in operative connection with the escapement-wheel, the magnet for operating the pallet and conductors electrically connected with the carbons and magnet; substantially as described.

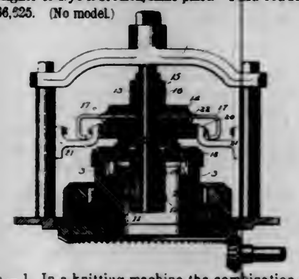
2. In an arc-lamp the combination with the frame and two carbon-holders therein, a drum pivoted to the frame to turn in a horizontal plane, the escapement-wheel mounted on the pivot of the drum,

a cord connected to the upper carbon holder and drum, an electromagnet mounted on the frame, a pallet or lever with two unequal arms and pivoted to swing in a horizontal plane, the short arm of the lever forming an escapement-pawl and engaging the escapement-wheel, the longer arm of said lever constituting the armature of the magnet, and conductors connected with the carbons and electromagnet; substantially as described.

3. In an arc lamp the combination with the frame and two carbon-holders therein, a pivot on the frame, the drum on the pivot, a spring connecting the drum and pivot, an escapement-wheel on said pivot, formed with two sets of teeth, a pawl carried by the pivot and engaging one set of teeth of the escapement-wheel to hold it in operative connection with the drum, a cord connecting the upper-carbon holder and drum, a pallet or lever pivoted on the frame to swing in horizontal plane, having one short and one long arm, the short arm forming an escapement-pawl and engaging the other set of teeth of the escapement and the long arm constituting the magnet armature, the electromagnet in shunt, and conductors electrically connected with the carbons and magnet; substantially as described.

4. In an arc-lamp the combination with the frame and two carbon-holders movable therein of a pivot on the frame a drum on the pivot a spring connecting the drum and pivot an escapement-wheel in operative connection with the drum a cord connecting the upper-carbon holder and drum a pallet engaging the escapement-wheel an electromagnet operating the pallet an armature on the lower carbon-holder a guide and stop for this armature an electromagnet on the frame and a spring in the guide for moving said armature in respectively opposite directions a nut adjustment for the spring and conductors electrically connected with the carbons and electromagnets.

573,527. KNITTING-MACHINE. FRANK A. NYE, Philadelphia, Pa., assignor to Nye & Tredick, same place. Filed Oct. 23, 1895. Serial No. 566,625. (No model.)



Claim.—1. In a knitting-machine the combination with the needles and their operating mechanism of the radially projecting sinkers mounted axially with respect to the needle cylinder above the same and having outwardly, downwardly and inwardly extending ends adapted to act on the yarn and push the same inward between the needles when the sinkers are moved inward, and means for operating said sinkers.

2. In a knitting-machine, the combination with the rotary cylinder and its needles and cams, of a rotary, concentric sinker-bed above the upper edge of the needle-cylinder and having sinkers extending outwardly beyond the plane of the said needles and there projected downwardly and inwardly toward said needles to push the threads therebetween, and a fixed cam for retracting and projecting said sinkers, substantially as set forth.

3. In a knitting-machine, the combination with the frame, the rotary needle-cylinder and needle-operating cams, of a rotary collar or shaft supported concentric with said cylinder and extending down thereinto, a driving connection between the interior of said cylinder and lower end of said collar or shaft, a rotary sinker-bed fixed to said collar or shaft above the upper edge of the needle-cylinder, sinkers mounted on said bed, extending outwardly beyond the plane of the needles and there projected downwardly and inwardly toward said needles to push the threads inwardly therebetween, and a fixed horizontal plate having cams for actuating the said sinkers, substantially as set forth

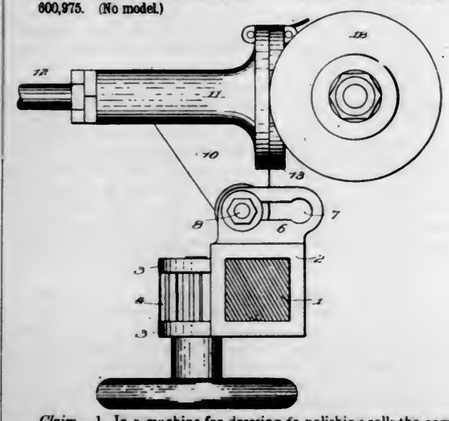
4. In a knitting-machine, the combination with the base-plate, its uprights and a cross-piece connecting their upper ends, of the rotary needle-cylinder mounted on the base, the needle-operating cams, a centrally apertured horizontal plate above the needle-cylinder and rigidly secured to said uprights, cams on the upper side of said plate, a central, vertical, rotary collar or shaft supported from said top cross-piece and extended down through said apertured plate into the needle cylinder, operating connections between the interior of the needle-cylinder and said collar or shaft, a rotary sinker-bed fixed to said collar or shaft above the said plate, sinkers carried by said bed, operated by said cams and extended outwardly beyond said plate and the plane of the needles and there projected downwardly below said plate and then inwardly toward the needles to push the threads therebetween, substantially as set forth.

5. In a knitting-machine the combination with the rotary needle-cylinder, its latch-needles and their operating mechanism, of a rotary sinker-bed mounted axially above the cylinder, radially-projecting sinkers mounted therein and adapted to engage and sink the yarn between the needles, a fixed plate located between the cylinder and sinker-bed, fixed cams on said plate for operating the sinkers and a latch-closer fixed to said plate in position to be encountered successively by the latches of the needles as they are carried past the latch-closer by the rotation of the cylinder.

6. In a knitting-machine the combination of the rotary cylinder, its needles and cams, a rotary sinker-bed mounted centrally above the cylinder, sinkers mounted in the under side of the bed, a plate sustained below the sinker-bed and provided on opposite sides with cams, a rotary dial-plate sustained below the preceding, and dial needles mounted in the upper side of said plate.

7. In a knitting-machine the combination of the rotary cylinder, its needles and cams, the depending hanger-rod extending concentrically within the cylinder, the sleeve loosely encircling said rod, the sinker-bed fixed to the sleeve above the cylinder, sinkers mounted in the under side of said bed, a dial fixed to the sleeve below the sinker-bed needles mounted in the upper side of said dial, suitable driving connections between the cylinder and dial and a fixed plate situated between the sinker-bed and dial, and provided on opposite sides with cams for operating the sinkers and dial-needles.

573,528. APPARATUS FOR DRESSING OR POLISHING ROLLS. ROBERT G. PILKINGTON, St. Louis, Mo. Filed July 29, 1896. Serial No. 600,975. (No model.)



Claim.—1. In a machine for dressing or polishing rolls the combination with a suitable support, of a laterally adjustable vibrating arm, and a power-shaft and tool-shaft journaled thereon; substantially as and for the purposes specified.

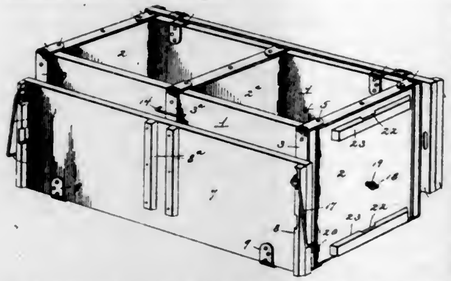
2. In a machine for dressing or polishing rolls, the combination with an adjustable bracket-frame, of a laterally-adjustable vibrating arm, and a power-shaft and tool-shaft journaled on said arm; substantially as and for the purposes specified.

3. In a machine for dressing and polishing rolls, the combination with a vibrating arm, of a power-shaft journaled thereon, a disk loosely journaled on the power-shaft and abutting against the vibrating arm, means for locking the disk to the sleeve, and a tool-shaft journaled on the disk; substantially as and for the purposes specified.

4. In a machine for dressing or polishing rolls, the combination with a movable bracket-frame, of a laterally-adjustable vibrating arm mounted thereon, a power-shaft journaled on said arm, a disk journaled on the power shaft, a tool-shaft journaled on the disk, and means for locking the disk to the vibrating arm; substantially as and for the purposes specified.

573,529. FOLDING SHIPPING-CRATE. JAMES H. POLLARD, Clarence, Mo. Filed May 5, 1896. Serial No. 590,373. (No model.)

Claim.—1. A shipping-crate having parallel sides provided with terminal bracing-straps having their extremities inturned to form upper and lower ears, end walls arranged between the planes of the sides and pivotally connected to said ears to fold between the planes of the sides, top and bottom lids hinged respectively to said sides to fold outwardly and occupy positions parallel therewith, said lids being provided upon their inner sides with cleats to engage the contiguous edges of the end walls, and means for securing the lids in their closed positions, substantially as specified.

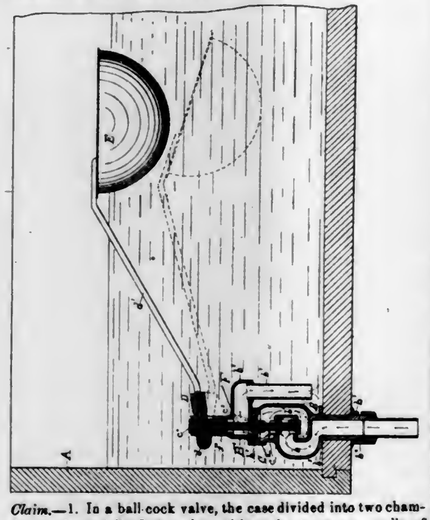


2. A shipping-crate having parallel side walls, end walls arranged between the planes of the side walls and pivotally connected thereto, top and bottom lids hinged respectively to the sides and adapted to fold outwardly to occupy positions parallel therewith, cleats on the extremities of the lids arranged beyond the planes of the end walls, cleats on the outer surfaces of the end walls provided with openings to register with similar openings in said cleats on the lids, and securing-straps engaging said registering openings, substantially as specified.

3. A shipping-crate having parallel side walls terminally connected by pivotal end walls arranged between the planes of the side walls, top and bottom lids hinged, respectively, to the side walls to fold outwardly and occupy planes parallel therewith, said lids being provided with cleats to engage the contiguous edges of the end walls, and locking devices for said lids, the locking device for the top lid having a swinging base-plate adapted to pass through a keeper on the contiguous side wall, and spring-actuated hooks pivotally mounted upon said base-plate and provided with shoulders to engage the extremities of the keeper, the locking device being adapted to be swung laterally to occupy a position in the plane of the lid, substantially as specified.

4. A shipping-crate having parallel side walls terminally connected by interposed pivotal end walls, top and bottom lids hinged, respectively, to the side walls to fold outwardly parallel with the planes thereof, and locking devices for the free edges of the lids, the locking device for the bottom lid consisting of hooks connected to the free edges of the lid and extending upwardly and inwardly to a point contiguous to the centers of the end walls, eyes for engagement by said hooks, and spring-loops embracing the eyes to span the openings thereof and adapted to engage notches in the contiguous extremities of the hooks, substantially as specified.

573,530. BALL-COCK VALVE. JOHN PORTEOUS, Cincinnati, Ohio. Filed Dec. 30, 1895. Serial No. 573,693. (No model.)



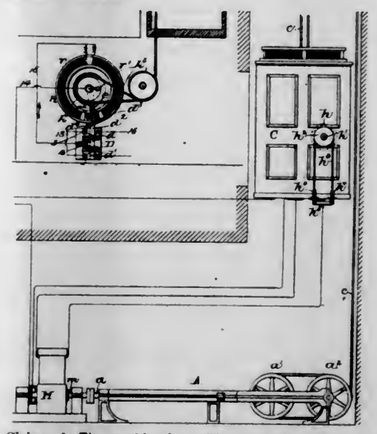
Claim.—1. In a ball-cock valve, the case divided into two chambers by a substantially S-shaped partition, the transverse walls of which have perforations which open communication between said chambers, united pistons controlling said openings, the valve connected to the piston-valves for controlling the exit-opening in the case, a common stem for said pistons and exit-valve, and an actuating-lever to impart endwise movement to said stem to open or close all the valves, substantially as and for the purpose set forth.

2. The combination of the flushing-tank with the valve case, divided into two chambers, having an inlet opening to one chamber and an outlet-opening from the other, the partition dividing said chambers being perforated, piston-valves controlling communication between said chambers, an elastic valve controlling the exit from said case, the said piston and elastic valve being connected, a stem having endwise movement in the case and common to all the valves, and a float-lever to open or close said valves by the fall or rise of the water-line in the tank, substantially as hereinbefore set forth.

3. The combination of the case inclosing two valve-chambers and having a removable head provided with a valve-seat surrounding the outlet from said case, said head having a neck above the outlet branch, piston-valves for controlling the openings between said chambers, an elastic valve upon the stem of the piston-valve to control the discharge from the case, the stem for said valves extending past the discharge branch and into the neck, and provided with a suitable packing, and a lever actuated by a float to impart endwise motion to said stem for the purpose of opening or closing the valves, substantially as hereinbefore set forth.

4. In a ball-cock lever, the combination of the case divided into two chambers by a substantially S-shaped partition, the transverse walls of said partition being perforated to open communication between the said chambers, an inlet to one of said chambers and an outlet from the opposite chamber, piston-valves controlling the communication between said chambers, an elastic valve upon the same stem to control the outlet from the case, said valves being so arranged that the piston-valves cut off communication between the chambers before the elastic valve reaches its seat, a stem having endwise movement to simultaneously move said valves, and means such as shown for actuating said stem, substantially as shown and described.

573,531. ELEVATOR. CHARLES R. PRATT, New York, N. Y., assignor, by direct and mesne assignments, of one-half to the Whittier Machine Company, Boston, Mass. Filed June 29, 1891. Serial No. 397,810. (No model.)



Claim.—1. The combination with a traveling elevator, and an electric motor to operate the same, of a current-regulator and circuit-reverser on the elevator-car, a hand-wheel and a cable connecting it with and to positively operate said current-regulator and circuit-reverser, substantially as described.

2. The combination with a traveling elevator, and an electric motor to operate the same, of a current regulator on the elevator-car, and having a pivoted contact-arm, a sheave to move the same, belted to, and moved by a hand-wheel also on the car, a cam on the said contact-arm and a circuit-reverser operated thereby, substantially as described.

3. The combination with a traveling elevator, and an electric motor to operate the same, of a current regulator on the car, and having a pivoted contact-arm, and means to move the same, and a longitudinally-movable bar, operated by the rotative movement of said contact-arm, and a circuit-reverser controlled by the longitudinal movement of said bar, substantially as described.

573,532. SEPARABLE BUTTON. EUGENE PRINGLE, Gloversville, N. Y., assignor to Madison D. Shipman and Charles E. Bradt, De Kalb, Ill. Filed Mar. 20, 1888. Serial No. 267,842. (No model.)



Claim.—1. A button-head for a fastening device comprising an outer shell or cap connected to an inner closing-piece B having an inwardly-extending annular flange and a central opening, a stud-catch within the cap, and a flanged eyelet passed through the material or fabric from the opposite side into the cap and upset or clenched between the edge of the orifice of the closing-piece and the outer wall or surface of the stud-catch.

2. A post or stud for a separable button having a base-flange, a washer connected to said flange and having an upturned neck surrounding a portion of the stud, and a fastening-eyelet passed over the head of the stud and clenched between the neck of the washer and the outer surface of the stud.

3. A button-head comprising a cap or shell containing a stud-catch having the catch-lips thereof turned down within itself, and said parts secured to the material, substantially as described.

4. A button-head comprising a cap or shell containing a stud-catch having the catch-lips thereof turned downward within its body and its lower end clenched to hold the parts to the material, substantially as described.

5. In a separable button-stud the combination of a post as S having a depression or groove at or near its base-flange, a washer secured to said base-flange and having a central upturned rim encircling said groove or depression with a fastening-washer as G, having a neck *f* adapted to be buried within the cavity at the base of the stud, thereby securing the same to the fabric, substantially as and for the purpose set forth.

573,533. SEPARABLE BUTTON. EUGENE PRINGLE, Gloversville, N. Y., assignor to Madison D. Shipman, Charles E. Bradt, and Samuel E. Bradt, De Kalb, Ill. Filed Apr. 22, 1896. Serial No. 588,586. (No model.)



Claim.—1. A stud catch for a separable button having a curled-over rim, forming within it an anvil and recess for upsetting and receiving the end of an attaching-eyelet for securing the button to the material, substantially as described.

2. A button-head for a separable button consisting of a slitted stud-catch, with terminal lips, a curled-over rim or upper end, forming within it an anvil and recess for the end of a fastening-eyelet, in combination with a fastening-eyelet, substantially as described.

3. A separable button head consisting of a cap, a closing-piece secured thereto, a stud-catch having a curled rim or upper end, and a fastening-eyelet upset within the recess formed within the rim of the stud-catch, substantially as described.

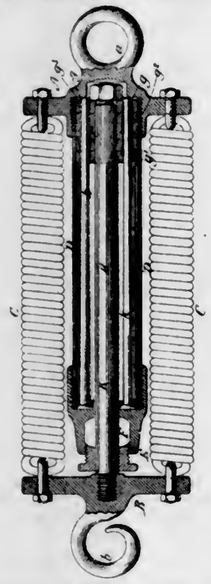
4. A separable button-head consisting of a stud-catch having a curled-over rim forming a recess therein to receive and engage the end of a fastening-eyelet, a cap secured to said catch, and a fastening-eyelet having its end clenched within the recess of the stud-catch, substantially as and for the purpose set forth.

573,534. YIELDING DEVICE. JOSEPH F. RADEBS, New York, N. Y. Filed June 7, 1895. Renewed May 20, 1896. Serial No. 592,368. (No model.)

Claim.—1. The combination of oppositely-moving heads or plates, a cylinder for holding a fluid secured to one of the heads or plates, a piston provided with openings for the flow of the fluid from one face to the opposite, secured to the other head or plate, means for varying the area of these openings with the position of the piston, and springs extending between and secured to the heads, substantially as specified.

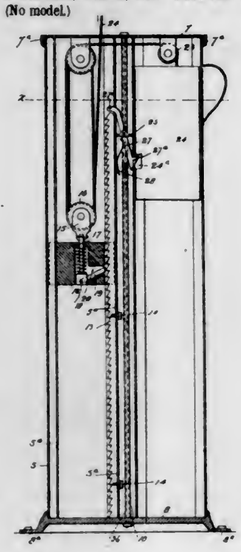
2. The combination of oppositely-moving heads or plates, a cylinder for holding a fluid secured to one of the heads or plates, passages or ducts placing the two ends of the cylinder in communication, a piston supported by the head opposite to that to which the cylinder is secured and movable lengthwise in said cylinder, means for throttling the flow of the fluid through said ducts or passages by the relative movement of the piston and cylinder, and springs extending between and secured to said heads, substantially as specified.

3. The combination with springs attached to plates or heads, of a hollow cylinder, containing a fluid, fastened to one head, and arranged symmetrically with respect to the springs; a piston, working in said cylinder and connected through the medium of a piston-rod with the other head; holes traversing said piston, to allow the flow of the fluid from one end of the cylinder to the other; tapering rods passing into said holes, and prevented from reciprocating with the piston, whereby the opening in the holes is increased or diminished as the piston reciprocates, all arranged substantially as described, to vary the amount of resistance offered to the separation of the plates or heads for different amounts of such separation.



4. The combination with helical springs C, attached to plates or heads A and B, said heads having a ring *a* and a hook *b*, respectively, of a hollow cylinder D, containing a liquid, fastened to the head A, symmetrical to the spiral springs; a piston G, working in the cylinder D, and traversed by holes *g*, and connected to the plate or head B, through the medium of a piston-rod H; tapering rods *k* passing into the holes *g* and prevented from reciprocating with the piston, all arranged substantially as described to increase the amount of resistance offered to the separation of the plates or heads A and B, as the distance between them increases.

573,535. TROLLEY ADJUSTING AND REGULATING DEVICE. CHARLES F. RANDALL, Denver, Colo. Filed Mar. 31, 1896. Serial No. 585,598. (No model.)

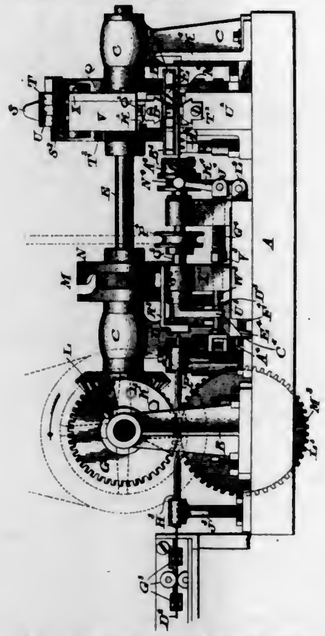


Claim.—1. In a device of the character described, the combination of a casing comprising two compartments 5 and 6, the compartment 5 having a weight provided with a yielding pin, a block and pulley attached to said pin, the pulley being engaged by the trolley-rope, a pawl attached to the yielding pin, a ratchet-bar having a limited movement within the compartment 5, a pulley supported in the upper part of the compartment 5, and over which the trolley-rope passes, another pulley supported in the upper part of the compartment 6 and also engaged by the trolley-rope, a weight located in the compartment 6, and to which the trolley-rope is attached, and a spring-held dog suitably supported and having one extremity normally projecting into the path of the ratchet-bar, while the other extremity engages and supports the weight in the compartment 6, substantially as described.

2. The combination of a casing comprising two compartments, 5 and 6, two weights, one located in each compartment, a yielding pin attached to the weight in compartment 5 and having a limited vertical movement, a pawl pivoted on said pin and a spring-held dog suitably supported and having one extremity normally projecting into the path of the ratchet-bar, and the other extremity engaging and supporting the weight in compartment 6, the trolley-rope being connected with the weights in the two compartments, substantially as described, and for the purpose set forth.

3. The combination with two weights, 12 and 24, of a receptacle adapted to contain said weights, a yielding pin attached to the weight 12, a pawl pivoted on the pin, a vertically-movable ratchet-bar located in suitable proximity to the weight 12, a spring-held dog suitably supported and having one extremity normally projecting into the path of the ratchet-bar, while the other extremity engages and supports the weight 24, and a suitable trolley-rope connected with the weights, substantially as described.

573,536. APPARATUS FOR MANUFACTURING HAIR-PINS. GEORGE REHFUSS, JOHN G. REHFUSS, and MARTIN O. REHFUSS, Philadelphia, Pa., assignors to Clinton C. Hancock, same place. Filed Sept. 17, 1894. Serial No. 523,206. (No model.)



Claim.—1. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, a set of dies provided with grooves and ridges, the grooves of one die being in alinement with the ridges of the other die, one of said dies having pins therein arranged in staggered order, and the other of said dies being recessed for the reception of said pins, in combination with means for supporting and actuating said dies.

2. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, a pair of dies having transverse grooves and ridges therein, the grooves of one die being in alinement with the ridges of the other die, one of said dies having pins therein arranged in staggered order, and the other of said dies having holes therein for the reception of said pins.

3. The herein-described adjustable stripper consisting of the body portions, legs depending therefrom, and means for moving said legs toward or away from each other.

4. In a machine for manufacturing hair-pins provided with convolutions reversely inclined to each other, the combination of mechanism for feeding a wire, with mechanism for cutting, pointing and bending said wire into substantially a U shape, and a pair of dies, having on the working faces thereof, means for bending said wire in one plane, and devices for bending said wire in another plane, but in reverse direction.

5. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, a feeding device for the wire, means for cutting, pointing and bending the same, and dies having transverse grooves, and pins and holes for compressing the limbs of the wire into convolutions reversely inclined.

6. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, dies for forming convolutions reversely inclined, provided with transverse grooves, pins in the upper die located in staggered relation to said grooves, so that the longitudinal space between any two adjacent pins always embraces either the highest or the deepest part of the said die, the lower die being provided with holes for the reception of the pins, and means for actuating one of the said dies.

7. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, dies provided with transverse grooves, pins in the upper die arranged relatively to the grooves, and bent substantially as shown, the lower die having holes therein for the reception of said pins, when the dies contact with each other, and a stripper for removing the pins from the face of said upper die, said parts being combined.

8. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the herein-described stripper, comprising the central body portion M' having the depending leg N', and the pins P' in combination with the body-pieces Q', which have the holes for the reception of said pins and the depending legs R'.

9. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the stripper L' constructed as shown, in combination with the head V' and the plunger U having the slot Z and the head B', the latter having the apertures C' therein, and means for holding said stripper in position.

10. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the feeding device comprising the sector K^2, the disk L^2, and means for actuating the same, the stand T^2 supporting the hollow spindle or stem Q^2, having one of its ends split and beveled as shown, the sleeve Y^4 having the arm R^4, the outer sleeve Q^4 and the bearing therefor, said sleeve Q^4 being adapted to be revolved and to carry thereon the longitudinally-movable sleeve A^4, the block F^4 and the cutter E^2 suitably journaled, and means for moving the stand T^2, the arm R^4 and sleeve A^4.

11. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, means for cutting off a predetermined length of wire, a cutting device, devices for gripping the wire on each side of said cutting device at the proper intervals, the plate B^2 having the pins C^2 for depressing said wire to a point adjacent to the bending device, the reciprocating bar L^2 carrying the rolls H^2 for bending said wire, the stationary piece B^2 and the spring-pressed plunger Z' for holding the wire.

12. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the gears G and M^2, the sector K^2 and disk N^2 attached thereto respectively, the cam-wheels J, N, S^2 and Q, having grooves therein, means for actuating the same in unison, the bell-crank Z^2, the lever E^2, suitable connections therefrom to the device for cutting and pointing the wire, the levers P^2, S and M^2, and connections therefrom to the devices for bending and compressing the wire, the above parts being combined.

13. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the gears G and M^2 having the sector K^2 and disk N^2 attached thereto respectively, the cam-wheels J, N, S^2 and Q, having cam-grooves therein, means for actuating the same, the bell-crank Z^2, the lever E^2, suitable connections therefrom to the device for cutting and pointing the wire, the levers P^2, S and M^2, and connections therefrom to the devices for bending the wire, the above parts being combined.

14. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the herein-described apparatus for holding and bending a predetermined length of wire, comprising the stationary device B^2 having its end C^2 recessed as shown, the plunger Z' adjacent thereto, the reciprocating bar L^2 carrying thereon the rolls H^2, H^2 suitably journaled to movable plates

thereon, the spring A^3, means for supporting the same in position, the die or bed having the projection V' thereon, and means for actuating said bar L^3, said parts being combined.

15. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, the upper and lower dies constructed substantially as shown, having the transverse grooves, and the slots, pins and holes therein, in combination with an adjustable stripper consisting of body portions and legs, the distance between the latter being capable of being varied at will.

16. In a machine for manufacturing hair pins, having limbs provided with convolutions reversely inclined to each other, a slotted plunger, means for actuating the same, a die attached to said plunger, a second die thereunder, devices on the abutting faces of said dies for imparting reversely-inclined convolutions to the article compressed therebetween, and a stationary sectional stripper held in the slot of said plunger.

17. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, means for cutting off a predetermined length of wire, means for propelling the same to a bending device, and mechanism for bending the lengths of wire into U shape, thereby forming a hair-pin, in combination with a set of dies having grooves and ridges on their abutting faces, and pins and holes common to said faces, whereby a limb of said hair-pin is provided with convolutions reversely inclined to each other.

18. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, means for feeding the wire, and cutting off a predetermined length of the same, means for gripping the said wire on each side of the cutter prior to the action of the latter, said means comprising the hollow spindle Q^3 suitably supported and having one end split and the beveled head A^5, the sleeve Y^4 having the depending arm C^5 at one end, and the bevel or incline at the other end, and the outer sleeve Q^4, in combination with the stationary plate D^3 and the lever F^3 carrying the block U^5, means for actuating the same, and means for shaping the wire.

19. In a machine for manufacturing hair pins, having limbs provided with convolutions reversely inclined to each other, the movable stand T^3 and rod W^3 having a shoulder V^3 and spring thereon, the outer rotatable sleeve Q^4 having an extension carrying the cylindrical shell W^4, the latter having a spline and a sliding sleeve thereon, a stationary block secured to the end of said sleeve, a movable block also arranged adjacent thereto, and having a cutter journaled therein, the adjacent faces of said movable block and inclined sleeve being inclined, in combination with means for moving said sleeve and for shaping and compressing the wire, said parts being combined.

20. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, means for feeding, cutting off and pointing a predetermined length of wire, and means for transferring the latter to the bending mechanism, the same comprising the lever P^3 suitably fulcrumed, and the lateral extension-plate B^3 attached thereto, the pins C^3 depending therefrom, the stationary plate D^3, openings therein for said pins, means for actuating said lever, and means for finally shaping the wire, the above parts being combined.

21. In a machine for manufacturing hair-pins having limbs provided with convolutions reversely inclined to each other, mechanism for cutting off and pointing a predetermined length of wire, a device for bending said wire into U shape, thereby forming a hair-pin, and mechanism for propelling said length of wire toward said device, in combination with a set of dies having their abutting faces provided with raised and depressed portions, one of said dies having pins arranged in staggered order, and the other die being provided with holes for the reception of said pins, whereby convolutions reversely inclined to each are produced upon a limb of said hair-pin.

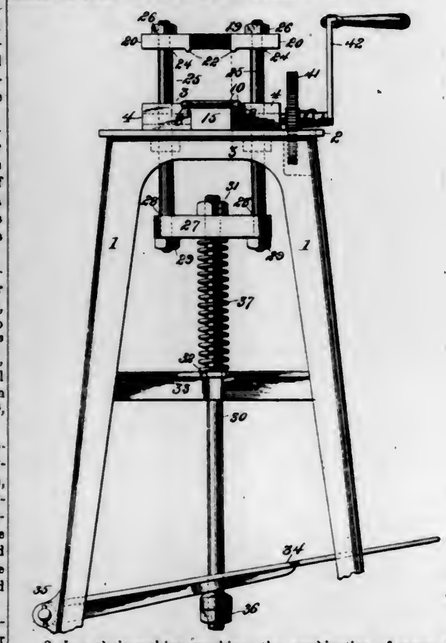
22. In a machine for manufacturing hair-pins, provided with convolutions reversely inclined to each other, the combination of mechanism for feeding a wire with mechanism for cutting said wire, and bending it into substantially a U shape, and a pair of dies, having on the working faces thereof, means for bending said wire in one plane, and devices for bending said wire in another plane but in reverse direction.

23. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, a pair of dies having on the working faces thereof, alining corrugations for bending a wire in one plane, and also devices for bending said wire in another plane but in reverse direction.

24. In a machine for manufacturing hair-pins, having limbs provided with convolutions reversely inclined to each other, a single pair of dies, having on the working faces thereof, means for bending wire in one plane, and also devices for bending said wire in another plane but in reverse direction in combination with means for actuating one of said dies.

573,537. CHAIN-MAKING MACHINE. WILLIAM A. REID, St. Louis, Mo., assignor to the N. O. Nelson Manufacturing Company, same place. Filed May 4, 1896. Serial No. 590,075. (No model.)

Claim.—1. In a chain-making machine, the combination of means for supporting a blank for a flat link, and for supporting an open link with one end before the face of the blank, a bent finger turning on an axis, and which when retracted is in position to strike the back of the blank; and means for causing said finger to turn and bend the end of the blank adjacent to the end of the open link in front of it, first through the opening in the link, and then around said end of the open link and toward the face of the body of the blank, and thus fasten the end of the blank around the end of the link.



2. In a chain-making machine; the combination of means for holding a pair of open links, and a blank for a flat connecting-link in position; a pair of bent fingers; and means for causing the fingers to turn toward each other and bend one end of the blank over the inner end of one of the open links, and the other end of the blank over the inner end of the other open link, substantially as described.

3. In a chain-making machine; the combination of a clamp for holding a pair of open links, and a blank for a flat connecting-link in position; a pair of stops preventing the open links from being drawn inward; a pair of bent fingers; and means for turning said fingers in opposite directions, and thereby bending each end of the blank over the inner end of one of the open links.

4. In a chain-making machine, the combination of the clamping-jaws 3; having the cross-pieces 5; with the recess or socket 12; the jaws 19; means for opening and closing said jaws; the fingers 40. 40; the shafts 38, and 39, to which said fingers are respectively attached, and means for turning said shafts in opposite directions, substantially as, and for the purposes described.

5. In a chain making machine, the combination of the stops 15, and 16, the lower clamping-jaw 3, having openings 6, and 7; and recesses 8, 8, 9, 9, and 12; the upper clamping jaw 19, composed of end pieces 20, 20, and cross-piece 21; and having recesses 23, 23, and projections 22, 22; means for moving said upper jaw to and from the lower one; revoluble shafts 38, and 39; and fingers 40, 40, attached to said shafts, all arranged and operating substantially as described.

6. In a chain-making machine, the combination of a pair of stops; a pair of clamping-jaws between said stops for holding a blank to be operated upon, and links to be connected by the link formed from the blank; means for causing one of said jaws to move toward and from the other; shafts 38, and 39; bearings in which said shafts turn; a finger 40, attached to each shaft; a pair of gear-wheels meshing with each other, and one attached to each shaft; and means for communicating motion in opposite directions to said shafts, substantially as described.

7. In a chain-making machine the combination of a pair of clamping-jaws, the lower one stationary, and the upper one movable; a spring tending to force the upper jaw up out of contact with the lower one; a treadle connected with the upper jaw, and by means of which it is drawn downward; a pair of shafts; bearings in which they turn; a metal-bending finger attached to each shaft; a pair of gear-wheels meshing with each other, and one attached to each of said shafts and a crank attached to one of said shafts, all arranged and operating substantially as described.

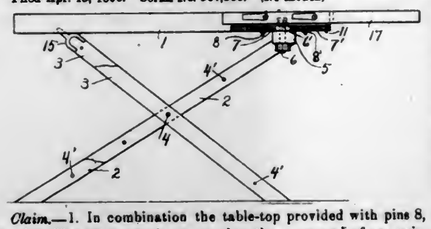
573,538. SHOW-CARD, &c., OR MEANS FOR DISPLAYING VELVETS, &c. RICHARD J. N. RUSDEN, Didsbury, England. Filed May 9, 1896. Serial No. 590,898. (No model.) Patented in England Oct. 5, 1895, No. 18,636.



Claim.—1. The display-card herein described consisting of a background composed of suitable fabric having stamped, embossed or creased thereon or therein, markings representing the natural folds or creases of said fabric when draped, combined with a cut-out figure, substantially as described.

2. The improved show-card, ticket, label or means for displaying velvets, velveteens and other fabrics, consisting of a printed or otherwise produced picture of a figure having parts cut away, in combination with a backing or backings of velvet, velveteen or other fabric, stamped, creased or embossed or pressed with indications of folds, trimmings or markings, designed or modeled to correspond to the shape of the garment and position of the figure, substantially as described and shown.

573,539. IRONING-TABLE. ROBERT W. SCHULTE, Glenfield, Pa. Filed Apr. 13, 1896. Serial No. 587,388. (No model.)



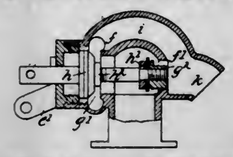
Claim.—1. In combination the table-top provided with pins 8, two pairs of legs, the cross-bar secured to the upper end of one pair, the bolt connected to the cross-bar having an oblong head and a movable plate having an oblong opening to receive the bolt, and curved slots to receive the pins, said pins loosely connecting said plate to the top whereby the legs and top may be locked together, substantially as described.

2. In combination the table-top provided with pins 8, two pairs of legs, the cross-bar secured to the upper end of one pair, the bolt connected to the cross-bar having an oblong head and a movable plate having an oblong opening to receive the bolt, and curved slots to receive the pins, said pins loosely connecting said plate to the top whereby the legs and top may be locked together, said plate having a handle 9 arranged at an angle to the oblong opening in the plate and extending obliquely to near the edge of the top in either the locked or unlocked position of the parts to avoid projecting beyond the edge of the top, substantially as described.

3. In combination the table-top having suitable recesses, two pairs of legs, devices for engaging one pair of legs with said top by a mere entry of the same in said recesses, devices for detachably locking the other pair of legs to said top, said devices comprising a part or projection fixed to the bottom of the table-top, a part or projection connected to the legs and provided with a head, and a movable piece rotatably held to the top, said rotatable piece being engaged by the first-named fixed projection and adapted to engage at will the head of the second-named projection to fasten the legs to the top, substantially as described.

4. In combination, the table-top provided with holes in its edges, the shelf provided with arms adapted to embrace the edges of said top, pivot-pins connecting the arms and said edges, removable additional pins separate from the pivot-pins to fasten the arms and top together, legs to support the top, and pivotal connections between said legs and top, said legs being provided with holes, and the removable additional pins being adapted to fasten the arms to either the top or legs, substantially as described.

573,540. FLUSH-TANK VALVE. CHARLES F. SCHUMACHER, Hartford, Conn. Filed Mar. 15, 1895. Serial No. 541,932. (No model.)



Claim.—1. In a valve in combination with a shell having an inlet terminating in a chamber arranged within the body of the valve, an outlet arranged transversely of the inlet and at one side thereof, ports opening in opposite directions through walls of the chamber, transversely of the inlet and in line with the outlet, a fluid-way communicating between the outlet and the port located farthest from it and extending around the head of the inlet-chamber to the opposite side thereof, a reciprocating valve stem bearing valves appurtenant to the respective valve-seats at the opening at the head of the inlet one valve having its under face presented to the inlet and the other valve having its back toward the inlet, the latter valve being annular and flexible and with its upper surface presented to the pressure of the surface of the water within the inlet and whereby it is forced to its seat, and means for reciprocating the valve-stem, all substantially as described.

2. In combination in a balanced valve, a shell or body part having an inlet terminating in a chamber arranged within the shell, an outlet arranged transversely of the inlet, ports formed transversely of the inlet through opposite walls of the chamber and in line with the outlet and at one side thereof, a communicating passage extending between the outlet and the port farthest away from it and around the head of the inlet-chamber to the opposite side thereof, a reciprocating valve-stem located within the shell and having two valves facing in the same direction one valve lying outside the inlet and the other within it, the latter of flexible material and extending beyond the edges of the clamping parts and adapted to be forced to its seat by pressure of water within the inlet, and means for reciprocating the valve stem, all substantially as described.

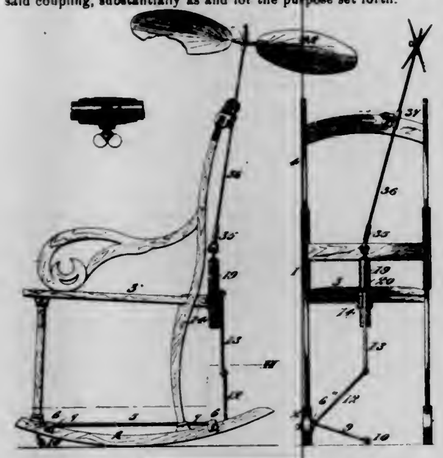
3. In a balanced valve in combination with a shell having an inlet terminating in a chamber arranged within the shell, an outlet from the shell arranged transversely of the inlet, ports oppositely arranged through the walls of the chamber transversely of the inlet and in line with the outlet, a communicating passage between the outlet and the port farthest away from it, a reciprocating valve stem bearing valves appurtenant to the respective valve-seats at the opening to the head of the inlet, both valves facing in the same direction, the valve within the inlet having flexible edges and held between clamps with beveled clamping-faces, and means for reciprocating the valve-stem, all substantially as described.

573,541. FAN ATTACHMENT FOR ROCKING-CHAIRS, &c. CLEMENS SCHURMANN and JOHN J. BROPHY, St. Louis, Mo. Filed Dec. 7, 1895. Serial No. 571,359. (No model.)

Claim.—1. In a fan attachment for rocking-chairs &c., the combination of a fan, a fan-carrying shaft, a screw-rod connected to said fan-carrying shaft, a slotted barrel in which said screw-rod is supported, a support for said barrel adapted to be attached to a chair or similar object, a two-part clutch arranged to traverse said screw-rod, the upper member of said clutch being provided with means of engagement in the spiral of said screw-rod, and the lower member being arranged to travel on said screw-rod without engagement in its spiral, a rock-shaft arranged longitudinally of the rockers adapted to be clamped to the rockers of a chair, a link connected at one end to said rock-shaft, a pintle connecting the opposite end of said link to the lower member of said clutch, said pintle being arranged to travel in the slot in said screw-rod barrel and an arm 9 connected with the rock-shaft and projecting into the space between the rockers, substantially as and for the purpose set forth.

2. In a fan attachment for rocking-chairs &c., the combination of a fan-carrying shaft, a coupling fitting on said shaft and provided with diverging arms provided with a central bore extending therethrough, fan-carrying arms arranged to be inserted in said bore and

have their inner ends meet in an overlapping joint, said fan-carrying shaft passing through said arms at their jointure, and a set-screw in said coupling, substantially as and for the purpose set forth.

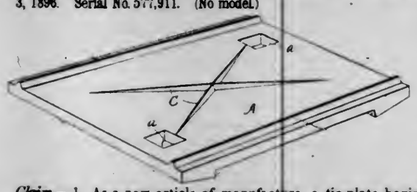


573,542. COMBINED CYCLE-STAND AND MUD-GUARD. DANIEL SCHWARZ and GUIDO LUXEDER, Temesvar, Austria-Hungary. Filed Mar 28, 1896. Serial No. 585,298. (No model.)



Claim.—A combined portable stand and mud-guard for bicycles, consisting of a frame covered with sail-cloth or other suitable material turning on a pivot, which said frame and pivot are attached to the bridge of the bicycle by means of a spring-clip, the said frame being held in position as a mud-guard by a spring-catch on the bridge, and as a stand, by resting the free end upon the ground, substantially as shown and described.

573,543. TIE-PLATE. MORRIS SELLERS, Chicago, Ill. Filed Feb 3, 1896. Serial No. 577,911. (No model.)



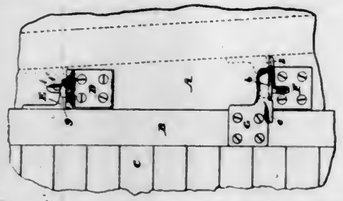
Claim.—1. As a new article of manufacture, a tie-plate having on the bottom thereof ribs crossing each other and tapering from their meeting point to their ends, substantially as described.

2. As a new article of manufacture, a tie-plate having on the bottom thereof two ribs crossing each other at or about the center of the plate, said ribs being tapered from their point of juncture to their ends and adapted to be impressed into a railway-tie and engage the fibers thereof in all directions without cutting or splitting the tie, substantially as described.

3. As a new article of manufacture, a tie-plate adapted to be secured to a tie and having on the bottom thereof longitudinal ribs adjacent to each side and other ribs between said longitudinal ribs, crossing each other at or about their middle and tapering toward the ends, substantially as described

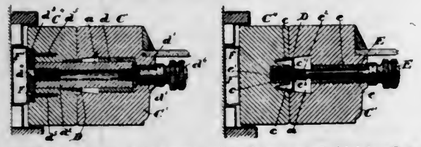
573,544. BLIND-HINGE. JOHN H. SHULL, Boston, Mass., assignor of one-half to Frank W. Stevens, Newton, Mass. Filed Mar. 20, 1896. Serial No. 584,091. (No model.)

Claim.—1. A blind hinge one section of which is provided with a pintle about which the blind may be moved, a cam-plate to move said blind from a perpendicular position as it is moved from a closed to an open position, and a tapering slot formed in said plate and extending in the direction of the width of the blind; and the other section of which is provided with a shoulder to engage said cam, a tapered lug or wedge to engage said tapering slot and lock the blind in open position and with a slot in its under side to receive said pintle and extending in the direction of the width of the blind.



2. In combination with a hinge for the lower end of a blind comprising the section F having the cam-plate *b* the pintle *a* and the tapering slot *c*, and the section G provided with the lug *e* and slot *d*; an upper hinge comprising the section D provided with the pintle *f* having the lug *f'*, and the section E having the opening *g h* and the lug *i*.

573,545. WINDOW-SASH. JOHN H. SHULL, Boston, Mass., assignor of one-half to Frank W. Stevens, Newton, Mass. Filed Apr. 1, 1896. Serial No. 585,731. (No model.)



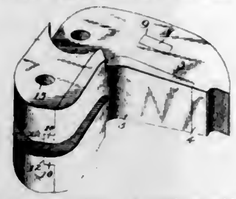
Claim.—1. A window-sash each stile proper of which has formed, in its outer edge, a dovetailed groove extending longitudinally thereof; in combination with a stile extension-bar, pivoted to the outer face of each stile proper, at or near the middle of its length, and provided upon its face next to said stile with two longitudinal grooves having diverging side walls; a locking and packing tongue having two opposing inclined sides, mounted in and extending longitudinally of the groove in said stile and adapted to be moved into the grooves in the stile extension-bar; and means for moving said tongue toward and from said bar.

2 A window-sash each stile proper of which has formed in its outer edge a dovetailed groove extending longitudinally thereof; in combination with a stile extension-bar pivoted to the outer edge of each stile and having in its face next to said stile two longitudinal grooves having diverging side walls; a packing-tongue of sheet metal having an [-shaped cross-section with two opposing sides inclined toward each other and provided with the openings *f* and *g* mounted in the groove in each of said stiles, and movable laterally toward and from the grooves in said bar; the exteriorly and interiorly threaded metal bushings *c* and *c'* set, respectively, in the stile and the stile extension-bar; the screw E provided with the two threaded sections *e'* and *e*, and with the circumferential groove or neck *e²* separating said threaded sections and adapted to engage the narrower part of the opening *g* in the packing-tongue.

3. A window-sash having a dovetailed longitudinal groove formed in the outer edge of each stile; suitable metal bushings set in said stile between the bottom or inner wall of said groove and the inner or molded edge of each stile and at or near the center of the height of said stiles; two stile extension-bars each having two longitudinal grooves formed in its face contiguous to the stile; a pivot-pin set in a fixed position in said bar, and fitted to a bearing in one of said bushings; a clamping-screw fitted to the other of said bushings and screwed into said pivot-pin; the metal packing-tongue D provided with the opening *f* to receive said pivot-pin; and means for moving said tongue laterally toward and from said bar, to pack the joint between said bar and the stile of the sash.

4. The combination in a window of a pair of vertically-sliding bars fitted to the guideways of a window-frame; a sash pivoted to said bars at or near the middle of the height of said sash; a pair of metal angle-plates secured to the meeting-rail end of said sash contiguous to said bars; similar angle-plates secured to the ends of said bars contiguous to the meeting-rail ends of said sash, the angle-plate on the end of a bar and the angle plate contiguous thereto upon the sash being provided, one with a projecting lip, and the other with a rabbet to receive said lip the contact-surfaces between said lip and rabbet being arcs of circles concentric with the axis of the pivot-pin about which the sash may be revolved.

573,546. CAR-COUPLING. ROSS C. SIMMONS, East Tawas, Mich. Filed May 22, 1896. Serial No. 592,596. (No model.)

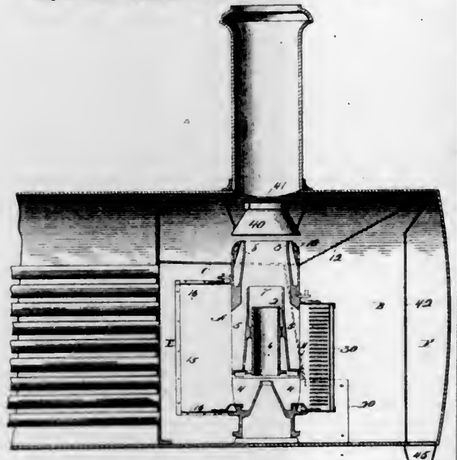


Claim.—1. In a car-coupling, a knuckle provided at its inner face with a removable L-shaped shoe extending over its entire engaging portion, arranged to receive the wear and adapted to be readily detached when worn and replaced by a new one, substantially as described.

2. In a car-coupling, the combination of a knuckle provided at its inner engaging face with a seat, a substantially L-shaped shoe arranged in the seat of the knuckle and completing the inner face thereof, and means for detachably securing the shoe to the knuckle, substantially as and for the purpose described.

3. In a car-coupling, the combination of a knuckle provided at its engaging face with a seat and having notches above and below its link-opening, said knuckle being provided in its arm with a vertical key-opening and having a horizontal recess communicating with the same, a substantially L-shaped key arranged in the seat and provided at its front with lugs fitting in the recesses at the link-opening of the knuckle, a transversely-disposed tongue extending from the shoe, arranged in the recess of the arm of the knuckle and provided with an opening registering with the key-opening, and a removable key arranged in the key-opening and engaging the opening of the tongue, substantially as and for the purpose described.

573,547. EXHAUST APPARATUS. JOHN Y. SMITH, Doylestown, Pa., assignor to the Smith Exhaust Pipe Company, same place. Filed May 21, 1896. Serial No. 592,501. (No model.)



Claim.—1. In an exhaust apparatus, such as described, the combination of the following elements, to wit; a blast or exhaust pipe located in the smoke-box in advance of the flues and having an air inlet or inlets facing the flues; and an imperforate deflector located between the flues and exhaust-pipe in the line of movement of solid particles issuing from the flues; substantially as described.

2. In an exhaust apparatus, such as described, the combination with the exhaust-pipe and flues of the deflector provided with converging vertical walls, the apex of said deflector facing the flues, and the exhaust-pipe being located at the base between the diverging edges of the deflector, substantially as described.

3. In an exhaust apparatus such as described, the combination with the smoke-box, flues, smoke-stack and diaphragm-plate, of the exhaust-pipe located in the smoke-box and projecting through the diaphragm-plate beneath the smoke-stack, and the deflector located in the smoke-box beneath the diaphragm-plate between the exhaust-pipe and flues, said deflector comprising converging vertical plates with the apex facing the flues and the sides extending laterally to or beyond the air-inlet openings of the exhaust-pipe; substantially as described.

4. In an exhaust apparatus, such as described, and in combination with the exhaust-pipe of a deflector for the air inlet openings provided with two series of bars or plates and intermediate slots or openings, the bars of one series being opposite the slots or open spaces between the bars of the other series and slightly removed therefrom to form an open space or passage between the bars of the two series, substantially as described.

5. In an exhaust apparatus, such as described, the combination with the exhaust-pipe provided with an air-inlet opening of a screen or deflector covering said inlet-opening, said screen or deflector comprising two series of horizontal bars or plates lying in different vertical planes, to form a passage between them, the bars or plates of one series alternating with the bars or plates of the other series in vertical succession, so as to bring the bars or plates of the outer series opposite the spaces or openings between the bars or plates of the inner series, substantially as and for the purpose specified.

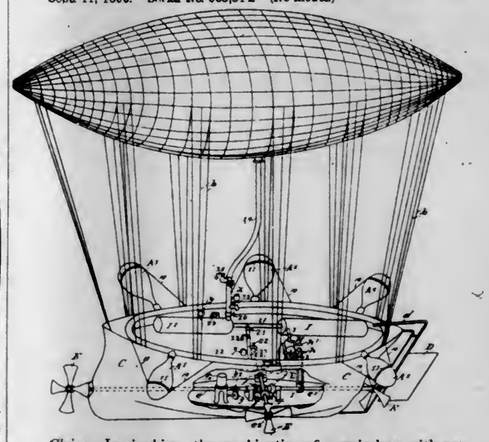
573,548. NIPPERS. JOHN L. SOURS, Anoka, Minn. Filed Aug. 13, 1896. Serial No. 602,615. (No model.)



Claim.—1. Nippers, made up of a pair of pivotally-mounted cutting-jaws having circular or segmental rear ends formed with teeth which mesh one with the other, and a pair of operating-levers having circular or segmental upper ends which mesh with each other and with the teeth on the rear ends of the respective cutting-jaws.

2. Nippers, made up of a pair of parallel plates, a pair of cutting-jaws pivotally mounted between said plates having circular or segmental rear ends which mesh one with the other, and a pair of operating-levers fulcrumed between said plates and having segmental or circular upper ends provided with teeth which mesh with each other and with the teeth on the rear ends of the respective cutting jaws.

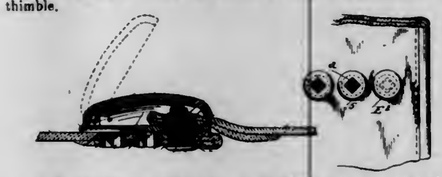
573,549. AIR-SHIP. EDWARD J. ST. CROIX, Seattle, Wash. Filed Sept. 11, 1896. Serial No. 605,514. (No model.)



Claim.—In air-ships; the combination of a main bag, with netting thereover, a basket or car suspended therefrom, a distributing-chamber around said car, with auxiliary bags connecting therewith, a fluid-compressor and storage-tanks therein and conduits connecting said tanks with said chamber and main bag and with said compressor, substantially as shown and described.

573,550. FASTENING-BUTTON FOR GLOVES. JULIUS STEINBERGER, San Francisco, Cal. Filed May 29, 1896. Serial No. 593,529. (No model.)

Claim.—1. In combination with a glove having a thimble secured to the section opposing the flap section, of a fastening-button, and a device by means of which the button is removably secured to the thimble.



2. In combination with a glove, of the flap-section provided with an eyelet, of a button removably and adjustably attached to the opposing section of the glove, a hinged cover or top to said button, and a stud covered by said cover or top which the eyelet of the flap-section engages to fasten the glove.

3. In combination with a glove-fastener, of the flap-section of the glove provided with an eyelet, of a series of thimbles secured to the opposing section of the glove, a fastening-button adapted to be secured within the thimbles, and of a device by means of which the button is removably secured to the thimble.

4. In a glove the combination with the flap-section provided with an eyelet, of a fastening-button, (for uniting the flap section to its opposing section,) the top of which covers the eyelet of the flap-section, and means for removably securing the fastening-button to the section of the glove opposing the flap-section.

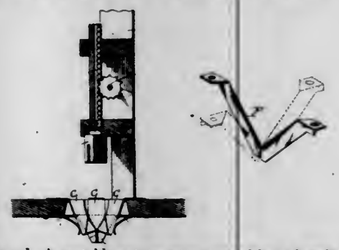
5. In combination with a glove, of the flap-section provided with an eyelet, of the thimble secured to the opposing section, a fastening-button provided with a hinged cover and a base plate, a hollow internal screw-threaded stud projecting above and below the base-plate, and a screw-threaded stem fitting within the hollow stud and by means of which the button is removably secured to the thimble.

6. In combination with a glove or similar article, of the flap-section, of a series of thimbles secured to the opposing section, a fastening-button adapted to be secured within said thimbles, and of a device by means of which the button is removably secured to the thimbles.

7. In a fastening-button for gloves or similar articles the combination with the base-plate, of a hollow internal screw-threaded stud projecting above and below the base-plate, a hinged cover for said base-plate, and of a screw-threaded device connecting with the screw-threaded hollow stud so as to removably secure the fastening-button to the glove.

8. In combination with a glove, of the flap section provided with an eyelet, of a fastening-button for uniting the flap-section to its opposing section, a movable cover to said button which covers the eyelet of the flap-section, and of means for removably and adjustably securing the fastening-button to the section of the glove opposing the flap-section.

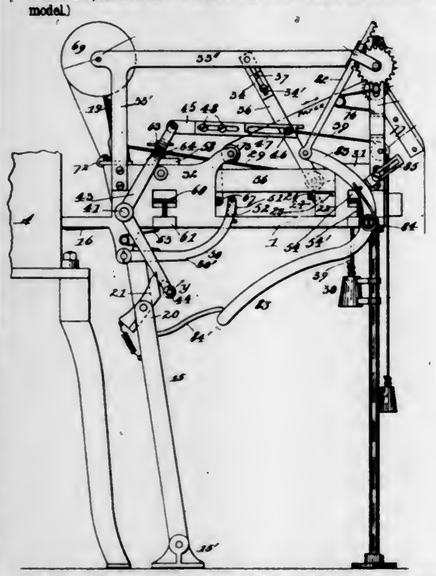
573,551. POTATO-CUTTER. LAMBERT OTERNBERG, Mitchellville, Iowa. Filed July 26, 1895. Serial No. 557,278. (No model.)



Claim.—1. A portable potato-cutter comprising a bench having an opening near one end, blocks hinged in said opening, cutters fastened to the bench in concentric positions to said opening and blocks, a plunger mounted above the bench and provided with a rack, which plunger is arranged for vertical longitudinal reciprocation through the opening in the bench, a shaft, a gear on said shaft meshing with the rack on the plunger, and a pedal mechanism for rotating said shaft to reciprocate said plunger.

2. A portable potato-cutter comprising a bench having an opening near an end, spring-actuated blocks hinged in said opening, V-shaped cutters detachably fastened to the bench in concentric position to said opening and cutters, a plunger mounted in the frame and provided with a pinion to engage the rack and a pulley on its end and a treadle pivoted to the legs of the bench and connected with the pulley on the end of said shaft, all arranged and combined to be operated in the manner set forth.

573,552. MACHINE FOR INKING PRINTING-PLATES. JOSIAH P. STEVENS, Atlanta, Ga. Filed Nov. 25, 1895. Serial No. 570,145. (No model.)



Claim.—1. In a printing-press, a press, a guideway, leading thereto, a die-carriage adapted to move thereon, a lever pivoted over and extending parallel to said guideway, and a presser-plate secured to the free end of said lever, means for feeding a web of paper across same, a shaft and a cam mounted on said shaft and bearing under said presser-plate and means for causing a partial rotation of said cam on the backward movement of the said die-carriage and of dropping said presser-plate on the forward movement thereof.

2. In a printing-press, a press, a guideway, leading thereto, a die-carriage adapted to move thereon, a presser-plate over said guideway means for feeding a web of paper across same, a shaft and a cam mounted thereon and bearing under said presser-plate and means for causing a partial rotation of said cam on the backward movement of the said die-carriage and of dropping said presser-plate on the forward movement thereof.

3. In a printing-press a press and a guideway leading thereto and a die-carriage movable on said guideway, a vertical flange on said guideway, a plate movable therein, a lever pivotally secured to said plate and lying above the said guideway, a presser-plate carried on the free end of said lever and means for causing a movement of said lever respectively downwardly and upwardly upon the advancement or recession of said die carriage.

4. In a printing press, a press, a guideway leading thereto, a die-carriage adapted to traverse same, a lever pivoted on a vertically-movable fulcrum, a presser-foot carried on the free end thereof over said guideway, means for feeding a strip of paper across said presser-foot, means for pressing same downwardly and means for causing a downward and upward movement of said lever respectively on the advancement and recession of said die-carriage.

5. In a printing-press, a press a guideway leading thereto, a die-carriage adapted to slide thereon, a presser-plate mounted so as to have motion vertically over said guideway, a plate carrying a lip on its lower end projecting under said presser-plate and mounted so as to be movable vertically and means for holding same in any set position.

6. In a printing-press, a press, a guideway leading thereto, a presser-plate mounted so as to have motion vertically over said guideway, an upwardly-projecting flange on said guideway near said presser-foot, a plate carrying a lip on its lower end projecting under said presser-plate and mounted on said flange so as to be movable vertically and means for holding same in any set position, consisting of a disk-headed screw engaging a notch in said vertically-movable plate and screwed into the base-plate of the machine.

7. In a printing-press, a press, a guideway leading thereto, a die-carriage movable on said guideway, a presser-plate mounted so as to be movable vertically over said guideway, a plate movable vertically and carrying a lip on its lower end projecting under said presser-plate, a lug on its upper end and a spring interposed between said lug and the upper side of said presser-plate.

8. In a printing-press, a press and a guideway leading thereto, a die-carriage thereon, a lever mounted over said guideway and a presser-foot thereon, means for feeding paper to the under side of said presser-foot a shaft operatively connected to said lever to move same in a vertical plane, a lever connected to the carriage, and a latch thereon adapted to engage the lever on said shaft when carriage is being moved backwardly.

9. In a printing-press, a press and a guideway leading thereto, a die-carriage thereon a lever mounted over said guideway and a presser-foot thereon, means for feeding paper to the under side of said presser-foot, a shaft operatively connected to said lever to move same in a vertical plane, a lever on said shaft, a lever connected to the carriage and a latch thereon adapted to engage the lever on said shaft when the carriage is being moved backwardly, and a lever adapted to engage the lever on said shaft when elevated and extended to contact with and be moved in a direction of disengagement by said carriage.

10. In a printing-press, a press and a guideway leading thereto, a die-carriage thereon, a lever mounted over said guideway and a presser-foot thereon, means for feeding paper to the under side of said presser-foot, a shaft operatively connected to said lever to move same in a vertical plane, a lever on said shaft having a lip on its free end, a lever connected to the carriage and a latch thereon adapted to engage the lever on said shaft when said carriage is being moved backwardly, and a lever having a shoulder adapted to engage the lip on the lever on the said shaft when elevated and extended to contact with and be moved by said carriage to disengagement.

11. In a printing-press, a press and a guideway leading thereto, a die-carriage thereon having a pin projecting from its side, a lever mounted over said guideway and a presser-foot thereon, means for feeding paper to the under side of said presser-foot, a shaft operatively connected to said lever to move same in a vertical plane, a lever on said shaft having a lip on its lower end, an operating-lever connected to said carriage and a latch thereon adapted to engage the lever on said shaft when moved to retract said carriage, and a trip-lever pivoted and lying parallel to the plane of movement of the lever on said shaft and having a shoulder adapted to engage the lip thereon, its free end being extended to a point above the edge of the guideway and carrying a latch provided with an inclined face and limited to movement in one direction from its normal position in the path of the movement of the pin on the carriage.

12. In a printing-press, a press, a die carriage, an operating-lever therefor, and a wiping-plate, and means for drawing a web of paper across the same and rollers between which said web passes, a pinion connected to one of said rollers by an intermittent clutch mechanism, a rack engaging said pinion and means for operatively connecting said rack to a moving element of the device consisting of a curved lever fulcrumed on the frame, and connected at one end with said rack, its other end being extended into the plane of movement of said operating-lever, and a finger on said operating-lever adapted to engage same, and an adjustable motion-limiting abutment for said curved lever.

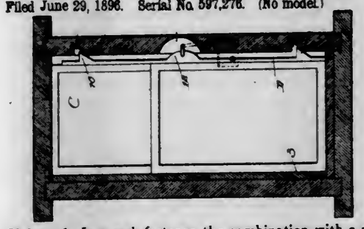
13. In a printing-press, a guideway and a die-carriage movable thereon, means for wiping a die on same, an ink-fountain, oscillating arms carrying a roller on their ends adapted to carry same from contact with the die on its moving carriage and means for causing an oscillation of said arms consisting of a lever pressed to a normal position mounted on the frame, a slotted pitman connecting the upper end thereof with said arms, a lip on the lower end thereof, a notched lever adapted to engage said lip, and means for tripping the said notched lever on the movement forward of the die-carriage.

14. In a printing-press, a guideway and a die-carriage movable thereon, means for wiping a die held on same, an ink-fountain, oscillating arms carrying a roller on their ends adapted to carry same from contact with the die on its moving carriage and means for causing oscillation of said arms consisting of a lever pressed to a normal position mounted on the frame, a slotted pitman connecting the upper end thereof with said arms, a lip on the lower end thereof a notched lever adapted to engage said lip, and means for tripping the said notched lever on the movement forward of the die-carriage, and means for returning said arms to a position to press said roller against the ink-fountain consisting of a weighted cord attached to said arms and passing over a deflecting-pulley.

15. In a printing-press, the combination of a die having its corners beveled with upwardly-facing facets, and a carriage therefor provided with jaws each having its working faces at an angle to each other and correlatively beveled and acting when approached to force the said die downwardly.

16. In a printing-press, a press, a guideway leading thereto, a die-carriage movable on said guideway to a point under said press and having an inclined-faced lug on its side, and a spring mounted on said press and adapted to bear on the side of said die-carriage, press same backwardly and engage said lug, for the printing-press.

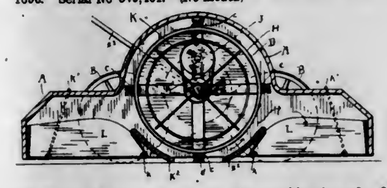
573,553. SASH-FASTENER. WILLIAM H. STOW, Frankfort, Mich. Filed June 29, 1896. Serial No. 597,276. (No model.)



Claim.—1. In a sash-fastener, the combination with a sash, of a presser-bar serving as a combined guide and fastener for the sash, an operating-lever journaled in the window-frame and having a crank-arm pivoted to the presser-bar, and catch mechanism secured to the window-frame and adapted to coöperate with the lever, substantially as described.

2. In a sash-fastener, the combination with a sash, of a combined presser-bar and guide for the sash, said presser bar being provided with guide projections and a pivot-block adapted for reception in the window-frame, a pivoted catch-lever having a crank-arm connected to the pivot-block, and a catch adapted for engagement and with the lever, substantially as described.

573,554. CARPET-SWEEPER. IRA E. STUMP, Canton, Ohio, assignor of one-half to Jacob M. Schneider, same place. Filed Feb. 17, 1896. Serial No. 579,481. (No model.)



Claim.—1. In a carpet-sweeper the combination of a frame, a rotary brush-cylinder mounted therein, a rotary fan mounted within the brush-cylinder, and means for imparting rotary motion of different rapidity respectively to the brush-cylinder and the fan, substantially as and for the purpose specified.

2. In a carpet-sweeper, the combination of a frame provided with operating-wheels, a fixed shaft supported within the frame, a brush-cylinder mounted upon said shaft, friction-wheels attached to hubs on said cylinder adapted to contact with the operating-wheels, a rotary fan mounted upon said shaft and within said brush-cylinder, arms I, supported by said shaft and carrying pulleys J, which contact with the interior of the brush-cylinder, pulleys *g*, upon said fan and a belt connecting said pulleys, all arranged as described.

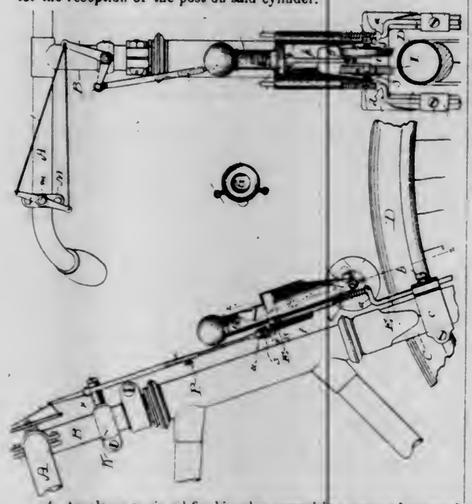
573,555. BICYCLE-ALARM. CLAUDE SWEARINGEN and DAVID S. LEMEN, Milwaukee, Wis. Filed Sept. 2, 1896. Serial No. 604,598. (No model.)

Claim.—1. An alarm or signal for bicycles, comprising supporting-rods adapted to be secured to the fork sides of a bicycle, springs on said rods, an open-bottomed cylinder vertically movable on said rods above said springs, a piston movable within said cylinder, friction-wheels journaled directly in the side walls of said cylinder, and cranked to said piston, and adapted to be suspended over the bicycle-tire, a whistle connected to said cylinder, a post rising from the top of said cylinder, and a cylinder depressing device adapted to be secured to said bicycle and bearing against said post, but free from connection with said cylinder or post.

2. An alarm or signal for bicycles, comprising supporting-rods adapted to be secured to the fork sides of a bicycle and bent inward and then upward, springs on the upper vertical portions of said rods, an open-bottomed cylinder having vertical exterior tubular guides mounted on said rods above said springs, a post rising from the top of said cylinder, a whistle also rising from the top of said cylinder, a piston movable within said cylinder, a pair of friction-wheels journaled directly in the side walls of said cylinder and rigidly united by a double crank-arm, a link connecting said crank-arm to the piston, and a cylinder-depressing device adapted to be secured to the bicycle and bearing against the post on the cylinder but free from attachment thereto.

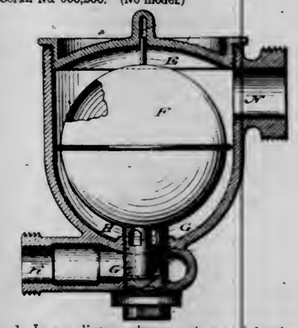
3. An alarm or signal for bicycles, comprising clips adapted to be secured to the fork sides, supporting-rods adjustably secured to said

clips and bent inward above the point of attachment to the clips and then upward, springs on the upper vertical portions of said rods, an open-bottomed cylinder having vertical exterior tubular guides mounted on said rods above said springs, a post rising from the top of said cylinder, a whistle connected to said cylinder, a piston movable within said cylinder, friction-wheels journaled directly in the side walls of said cylinder and cranked to said piston, a handle-bar-post clip having a stud projecting therefrom, a bell-crank lever mounted on said stud, a handle-bar clip having a stud projecting therefrom, a lever centrally mounted on said stud, a cord, wire or chain connecting both arms of said last-named lever with one arm of the bell-crank lever, and an adjustable rod loosely jointed at its upper end to the other arm of the bell-crank lever and having a socket at its lower end for the reception of the post on said cylinder.



4. An alarm or signal for bicycles, comprising an open-bottomed cylinder, a whistle connected thereto, a piston movable within said cylinder, a friction-wheel journaled directly in the side walls of said cylinder and cranked to said piston, a rod for depressing the cylinder to cause the engagement of the friction-wheel with the bicycle-tire but free from attachment to said cylinder, and spring-rods supporting said cylinder and permitting vertical movement thereof independently of the movement caused by said depressing-rod.

573,556. DRAINAGE-VALVE FOR RADIATORS. WILLIAM P. THOMPSON and ROBERT P. THOMPSON, Philadelphia, Pa. Filed July 23, 1896. Serial No. 600,200. (No model.)



Claim.—1. In a radiator valve, a casing, an inlet therefor, a discharge-chamber in the lower portion of said casing, a passage through the lower portion of said casing leading into said chamber, a float in said casing having a tubular valve of substantially uniform diameter attached directly thereto, said valve being adapted to pass through and be guided in said passage an adjustable seat for said valve in said chamber, ports in said valve located in proximity to said float, and means for guiding the latter.

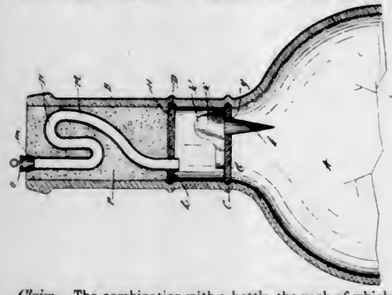
2. In a radiator valve, a casing, an inlet therefor, a float contained in said casing, a tubular valve attached to said float and provided with ports, an outlet-passage leading from said casing, a seat for said valve, a spring located intermediate said valve-seat and float, and means for guiding the latter.

3. A radiator-valve consisting of a casing, a float therein, a tubular valve depending from said float and having ports therein, an outlet from said casing, a seat for said valve, a pin depending from said float within said valve and adapted to play in a suitable socket and a spring intermediate with said float and valve-seat, substantially as described.

4. A radiator-valve consisting of a casing, a float therein, a tubular valve depending from said float and having ports therein, an outlet from said casing, a seat for said valve in said outlet a pin connected with said float within said valve and adapted to play in a suitable socket, and a spring encircling said pin for assisting the unseating of said valve.

5. In a radiator-valve, a casing, an inlet therefor, a discharge-chamber in the lower portion of said casing, a passage leading into said chamber from the interior of said casing, a float in the latter having a tubular valve of substantially uniform diameter, depending therefrom, said valve passing through and being guided in said passage, a plug in alinement with said valve and passing through the base of said chamber into the latter and having its extremity adapted to serve as a seat for said valve, ports in the latter located in proximity to said float, and means for guiding the latter.

573,557. BOTTLE. JOSHUA V. VAN NAME, Mariner's Harbor, N. Y. Filed Nov. 12, 1895 Serial No. 568,729. (No model.)



Claim.—The combination with a bottle, the neck of which is provided near the lower portion thereof with two annular inner recesses or grooves, of an antifilling attachment adapted to be secured within said neck and consisting of a partition-plate adapted to be secured in the lower groove in the bottle-neck, said plate being composed of cork and having formed near one side thereof a port or opening *g* adapted to be closed by a valve K having a depending conical prong *k* adapted to close said opening in said valve, being also provided with a vertical extension above said prong, said prong being longer than the distance between the lower partition-plate and the upper partition-plate H secured in the upper groove in the neck of the bottle, a tube extending from the mouth of the bottle through the upper partition the upper portion of said neck being filled in around said tube with a suitable composition, a small plug or stopper to close the upper end of said tube, substantially as herein set forth and described.

573,558. ELECTRICAL RESISTANCE DEVICE. DETLEF C. VOSS, Malden, Mass., assignor to Henry Hastings, Boston, Mass. Filed Mar. 16, 1896. Serial No. 583,291. (No model.)



Claim.—1. As an article of manufacture, a solidified electric conductor, composed of carbonized fibrous material, a metallic oxid, and a binder, substantially as described.

2. As an article of manufacture, a solidified electric conductor, having normally low resistance, and composed of carbonized fiber metallic oxid and a binder, said conductor remaining permanent in use unprotected from the atmosphere, substantially as described.

3. A resistance-conductor, composed of a conducting substance, of carbonized fiber and metallic oxid, and a binder insoluble in liquid when heated by the normal passage of electricity, substantially as described.

4. The herein-described electrical resistance device, comprising a plurality of short, straight resistance-conductors, in the form of separate open tubes, and arranged together parallel and in close proximity, substantially as described.

5. A resistance conductor consisting of a cylindrical body of homogeneous material, provided with enlarged portions at either end thereof, each of said portions having a circular groove formed in its periphery to receive the electrical connections, substantially as described.

6. A resistance-conductor consisting of a cylindrical body of homogeneous material, provided with enlarged portions in the form of thickened disks at either end thereof, each of said portions having a circular groove formed in its periphery to receive the electrical connections, substantially as described.

7. A resistance-conductor consisting of a corrugated cylindrical body of homogeneous material, provided with enlarged portions at either end thereof, each of said portions having a circular groove formed in its periphery to receive the electrical connections, substantially as described.

8. The combination with a suitable inclosure, of a perforated support therein, and a plurality of tubular resistance-conductors supported thereby, each conductor being centered lengthwise over a perforation of the support, thereby constituting a plurality of flues, substantially as described.

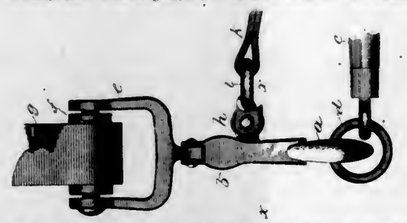
9. A short cylindrical resistance-conductor, approximately straight, and provided at either end with an annular enlargement, the whole being of homogeneous resistance material, substantially as described.

10. The herein-described process, which consists in saturating paper in a strong solution of a metallic oxid, charring the saturated paper, finely comminuting the charred paper, thoroughly mixing said comminuted mass with molasses and gum-arabic, molding the same to desired form, firing the molded mixture, having the heat of the firing raised to an extreme degree, and finally gradually cooling the molded body, substantially as described.

11. The herein-described process, which consists in saturating fibrous material with a strong solution of metallic oxid, charring the same, finely comminuting the charred material, thoroughly mixing said comminuted mass with a binder, such as molasses and gum-arabic, molding the same to desired form, subjecting the same to pressure, firing the molded mixture, under extreme heat, and finally gradually cooling the molded body, substantially as described.

12. The herein-described process, which consists in charring paper, grinding the same to a finely-pulverized condition, mixing with a binder, molding and pressing the said mixture, then firing to incandescence, and finally cooling the fired body, substantially as described.

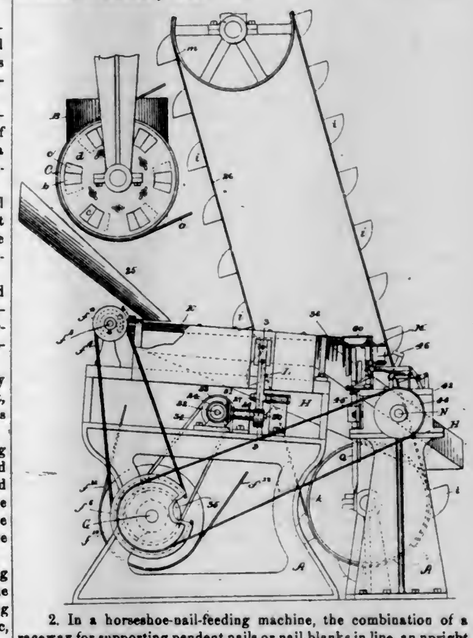
573,559. BREAST-STRAP SLIDE. HENRY D. WARNER, New Britain, Conn. Filed Aug. 23, 1895. Serial No. 560,241. (No model.)



Claim.—In combination hook-body *a*, spring-tongue *b*, roll-bearing fork *e*, standard *h* on side of hook-body, open-mouth strap-eye *i* pivotally attached to said standard and screw *l*, all substantially as and for the purposes set forth.

573,560. MACHINE FOR FEEDING HORSESHOE-NAIL BLANKS. WILLIAM P. WHITMARSH, Quincy, Mass. Filed May 15, 1896. Serial No. 591,692. (No model.)

Claim.—1. A horseshoe-nail-feeding machine, comprising a raceway for supporting nails or nail-blanks in line, means for automatically supplying nails thereto, an upright conductor, a carrier for conveying the nails one by one from the raceway to the conductor and dropping them therein, point foremost, means located beneath the conductor for catching the nail by the head and holding it in a pendent position with its shank inclined to the right or left hand side and subsequently releasing it, and a delivery-conduit arranged beneath the nail catching and holding device and provided with two separate passages, one for receiving the nail when its shank is inclined to the right, and the other when its shank is inclined to the left, said passages being twisted a quarter-revolution respectively in opposite directions, whereby a nail passing through either passage will be delivered with a predetermined side always facing in the same direction, substantially as set forth.



2. In a horseshoe-nail-feeding machine, the combination of a raceway for supporting pendent nails or nail-blanks in line, an upright conductor, a carrier for conveying the nails one by one from the raceway to said conductor and dropping them point foremost within the same, mechanism located beneath the conductor for catching the nail and holding it suspended by the head with its shank inclined to one side and subsequently releasing it, and a delivery-conduit arranged beneath the nail catching and holding device, and provided with two separate passages or branches, one to receive the nail when the shank is inclined to the right, and the other when it is inclined to the left, and said passages or branches being twisted a quarter-revolution respectively in opposite directions, whereby the nails are caused to be delivered from said conduit with a predetermined side always facing in the same direction, substantially as set forth.

3. In a horseshoe-nail-feeding machine, the combination of a raceway for supporting pendent nails or nail-blanks in line, a guide-way for receiving and holding each nail as it leaves the foot of the raceway, a movable stop for holding back the line of nails in the raceway, an upright conductor, a carrier for conveying the nails one by one from the raceway to said conductor and dropping them point foremost within the same, mechanism located beneath the conductor for catching the nail and holding it suspended by the head with its shank inclined to one side and subsequently releasing it, and a delivery-conduit arranged beneath the nail catching and holding device and provided with two separate passages or branches, one to receive the nail when the shank is inclined to the right, and the other when it is inclined to the left, and said passages or branches being twisted a quarter-revolution respectively in opposite directions, whereby the nails are caused to be delivered from said conduit with a predetermined side always facing in the same direction, substantially as set forth.

4. In a horseshoe-nail-feeding machine, the combination of a raceway composed of a pair of rotative rollers for supporting pendent nails or nail-blanks in line, a pair of parallel guide-bars at the foot of said raceway for receiving and holding the nail as it leaves the same, a movable stop for holding back the line of nails in the raceway, a vertical conductor, reciprocating grippers for conveying the nails one by one from the raceway to said conductor and dropping them within the same, a pair of slides or dies located beneath the conductor for catching the nail and holding it suspended by the head with its shank inclined to the right or left according to its axial position when seized by the grippers, and a delivery-conduit located beneath the slides or dies and provided with two separate passages or branches, one to receive the nail when its shank is inclined to the right and the other

when it is inclined to the left, and said passages or branches being twisted a quarter-revolution respectively in opposite directions, whereby the nail is caused to be delivered from said conduit with a predetermined side always facing in the same direction, substantially as described.

5. In a horseshoe-nail-feeding machine, the combination with the nail-supporting raceway and a reciprocating nail-carrier, of the upright conductor having one side open for the entrance of the shank of the nail while held in a pendent position by the carrier, said open side being provided with doors, and means for automatically opening said doors to admit the shank of the nail and closing the same after said shank has passed within the conductor, substantially as set forth.

6. In a horseshoe nail-feeding machine, the combination with the nail-supporting raceway, of the guideway at the foot of the raceway for holding the nail in a pendent position, the movable stop-finger for holding back the line of nails in the raceway, the grippers mounted on a reciprocating slide and means for actuating the same, the reciprocating wedge and the springs for opening and closing said grippers, the upright conductor having an open side provided with doors, and means for opening said doors to admit the shank of the nail and closing the same after said shank has been placed within the conductor by the carrier, substantially as set forth.

7. In a horseshoe-nail-feeding machine, the combination with an upright conductor and mechanism for conveying the nails one by one thereto and dropping them therein, point foremost, of means for catching the nail by the head and holding it in a pendent position with its shank inclined to the right or left hand side according to its axial position when dropped within the conductor, substantially as described.

8. In a horseshoe-nail-feeding machine, the combination with the upright conductor, and mechanism for conveying the nails one by one thereto and dropping them therein, of the reciprocating slides or dies for catching and holding the nail when dropped within the conductor, said dies having their opposing faces shaped to hold the nail by the head in a pendent position with its shank inclined to the right or left hand side according to its axial position when received by the dies, substantially as described.

9. In a horseshoe-nail feeding machine, the nail-delivering device consisting of a conduit having two separate passages united at their upper ends, thence diverging downward and again brought together at their lower ends where they unite in a single oblong delivery-outlet, said passages being twisted a quarter-revolution respectively in opposite directions, and the vertically-sliding partition arranged in the upper part of the conduit, substantially as and for the purpose set forth.

10. In a horseshoe-nail-feeding machine, the combination with an upright conductor and means for automatically dropping the nails one by one point foremost therein, of a device for catching the nail by the head and holding it in a pendent position with its shank inclined to the right or left hand side and subsequently releasing said nail, and a delivery-conduit arranged beneath the nail catching and holding device and having two separate passages, one for receiving the nail when its shank is inclined to the right and the other when its shank is inclined to the left, said passages being twisted a quarter-revolution respectively in opposite directions, whereby a nail passing through either passage will be delivered with a predetermined side always facing in the same direction, substantially as set forth.

11. In a horseshoe-nail-feeding machine, the combination with the nail-conductor and means for delivering the nail thereto and dropping it therein, of the reciprocating nail grasping dies or slides coupled together to move simultaneously in opposite directions by means of a lever and connecting-rod, means for actuating said lever, a spring for closing the slides, and a stop to limit their inward movement to regulate the width of the space between their faces for receiving the nail, substantially as described.

12. In a horseshoe nail-feeding machine, the combination with the raceway for supporting the nails or nail-blanks in line in a pendent position, of a straightening device consisting of a hammer and anvil located beneath said raceway and adapted to act upon the shanks of the nails as they pass through the raceway, and means for actuating the hammer, substantially as described.

13. In a horseshoe-nail-feeding machine, the combination with the upright conductor P, and the reciprocating slides or dies for catching and holding the nail, of the vertically-reciprocating clearer *t*, located within the conductor, and means for actuating the same to cause it to descend to the bottom of the conductor, remain at rest, and then pass down between the dies, substantially as set forth.

14. In a horseshoe-nail-feeding machine, the combination with means for catching and holding the nail by its head in a pendent position with its shank inclined to the right or left hand side, of a delivery-conduit provided with two separate passages, one to receive the nail when the shank is inclined to the right, and the other when it is inclined to the left, and said passages being twisted a quarter-revolution respectively in opposite directions, whereby the nail is caused to be delivered from said conduit with a predetermined side always facing in the same direction, substantially as described.

15. In a horseshoe-nail feeding machine, the combination with means for catching the nail and holding it in a pendent position with its shank inclined to the right or left hand side, of a delivery-conduit provided with two separate passages twisted a quarter-revolution respectively in opposite directions, a movable partition adapted to pass to the right or left side of the shank of the nail according to its position and thereby guide the nail and cause it to pass with absolute certainty through its proper passage or branch to the outlet end of the conduit, substantially as set forth.

16. In a horseshoe nail-feeding machine, the combination with means for catching the nail and holding it in a pendent position with its shank inclined to the right or left hand side, of a delivery-conduit provided with two separate passages twisted a quarter-revolution respectively in opposite directions, a vertically-sliding wedge-shaped partition arranged centrally within the upper portion of the conduit and lying normally beneath the point of the nail when suspended within the conduit, and adapted when raised to pass to the right or left side of the shank of the nail according to its position and thereby guide the nail and cause it to pass with absolute certainty through its proper passage or branch to the outlet end of the conduit, substantially as set forth.

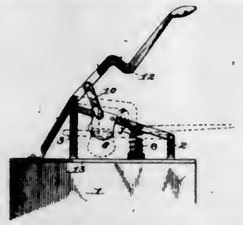
17. In a horseshoe-nail-feeding machine, the combination with the nail-driving conduit having two separate passages or branches twisted a quarter-revolution respectively in opposite directions and provided near its upper end with two spring-partitions 108, of a reciprocating wedge-shaped slide arranged between said spring-partitions and adapted to separate the same in its ascent, and means for actuating said slide, substantially as set forth.

18. In a horseshoe-nail-feeding machine, the nail-delivering conduit composed of an upper portion having two separate passages and a lower detachable portion having corresponding coinciding passages twisted a quarter-revolution respectively in opposite directions, said detachable portion being reversible or interchangeable to reverse the axial movement of the nail in its passage to the outlet end of the conduit, substantially as set forth.

19. In a horseshoe-nail-feeding machine, the nail-delivery conduit composed of an upper portion having two separate passages and provided with spring-partitions, and a reciprocating wedge-shaped slide arranged between said spring-partitions, and having shoulders near its lower end to receive the ends of the same, and a detachable lower portion connected with the upper portion of the conduit by suitable fastenings, and having passages coinciding with the passages of the upper portion and twisted a quarter-revolution respectively in opposite directions, substantially as described.

20. In a horseshoe-nail-feeding machine, the combination with the raceway for supporting pendent nails or nail-blanks in line, of the hopper B, the rotating cylinder C, connected therewith and provided with adjustable outlet-openings, the chutes 25, and H, and the endless belt 26, provided with elevator-buckets for catching and returning the nails to the hopper B, all constructed to operate substantially as described.

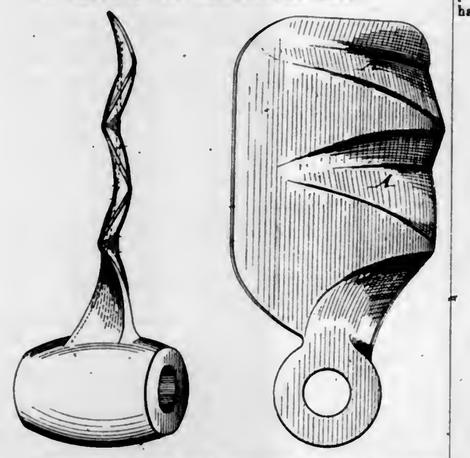
573,561. CORN-HUSKER. JOSEPH WILLMANN, Solms, Tex. Filed June 16, 1896. Serial No. 595,815. (No model.)



Claim.—1. In a corn-husker, the combination with a suitable base, of a pivoted knife-bar, a knife mounted thereon, an operating-lever for said knife, and a pivotal link connecting said lever and knife-bar, said lever being offset intermediate its ends and forming a shoulder adapted to coact with the knife-bar for limiting the movement of said knife and stopping the same before it has passed entirely through the husk, substantially as and for the purpose described.

2. The combination with a suitable base, of a pivoted knife-bar, a knife mounted thereon, a slotted post for guiding the free end of the knife-bar, an operating-lever for the knife, and a link interposed between said lever and the knife-bar, said lever being provided intermediate its ends with an offset or shoulder adapted to strike against the knife-bar for limiting the movement of the knife, substantially as described.

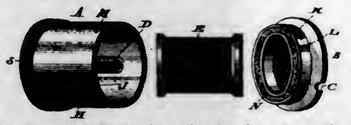
573,562. PROPELLER. FREDERICK WITTRAM, San Francisco, Cal. Filed July 23, 1896. Serial No. 600,283. (Model.)



Claim.—1. A propeller consisting of radial blades, the front edges of which are composed of inclined planes meeting each other at an angle to form a zigzag line, said planes decreasing in depth transversely so that the rear edge of the blade is less irregular.

2. In a propeller, blades extending radially from the hubs with an appropriate pitch, the rear edges of said blades being slightly irregular and the front edges forming zigzag lines caused by the meeting of oppositely-inclined planes whereby transverse valleys are formed, decreasing in depth from the front to the rear of the blade.

573,563. SPOOL-HOLDER. ABRAHAM M. YEAKEL, Perkasie, Pa. Filed Aug. 1, 1896. Serial No. 601,320. (No model.)



Claim.—1. A casing having a closed and an open end and a longitudinally-extending slot with a widened end, a spool-holding spindle secured to said closed end, a cap for the open end of said casing, a cutter on said cap, and a spring on said spindle, adapted to press the spool in the direction toward said cutter, the widened end of said slot being adjacent to said cutter.

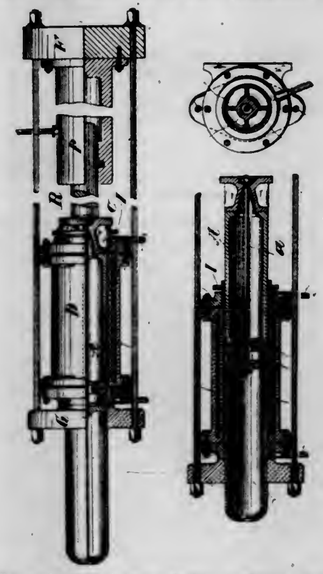
2. A spool-holder consisting of the casing A, having the longitudinally-extending slot H with the widened end J in its side, the spindle D secured to the closed end of said casing, the cap B with the hollow flange L having a slot adapted to engage a pin on said casing, and packing in said flange L, forming a cushion.

3. A spool-holder consisting of a casing, having a closed and an open end and a longitudinally-extending slot with a widened end, a spindle secured to the closed end of said casing, a cap closing the open end of said casing and having a cutter on its rim adjacent to said widened end of the slot, said spindle projecting through said closed end and said cap having a boss thereon.

573,564. METHOD OF PRODUCING CELLULOID ROLLERS WITH PRINTING-SURFACES. HEINRICH ZIEGLER-REINACHER, Aadorf, Switzerland. Filed Sept. 5, 1895. Serial No. 561,506. (No model.)

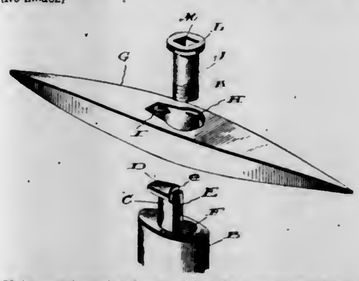
Claim.—1. In the mode of producing cylindrical printing-forms; forming a matrix by producing upon a flexible support a gelatin photographic positive or negative, forming a hollow cylinder therewith having such positive or negative on its interior surface, introducing a cylinder of celluloid into the matrix and effecting the transfer of the positive or negative by the application of heat and pressure, substantially as set forth.

2. The mode of producing cylindrical celluloid printing-forms, which consists in forming a matrix by producing upon a flexible support, as one of sheet metal, a photographic positive or negative of the subject-matter to be reproduced, bending the support into a cylindrical form with the matrix on its inner face, introducing a cylinder of celluloid into the cylindrical matrix, reducing said celluloid cylinder to a plastic state, transferring the subject-matter to the plastic cylinder by pressure and allowing the cylinder to cool and harden prior to its removal from the matrix, substantially as set forth.



3. The mode of producing cylindrical celluloid printing-forms, which consists in forming a matrix by producing upon a flexible support, as one of sheet metal, a photographic positive or negative of the subject-matter to be reproduced, bending the support into cylindrical form with the matrix on its inner face, introducing a hollow cylinder of celluloid into the cylindrical matrix, reducing said celluloid cylinder to a plastic state, transferring the subject-matter to the plastic cylinder by pressure applied from within, and allowing the cylinder to cool and harden prior to its removal from the matrix, substantially as set forth.

573,565. DETACHABLE FASTENING FOR TOOL-HANDLES. AIMÉ BOHY, What Cheer, Iowa. Filed Oct. 22, 1896. Serial No. 609,894. (No model.)

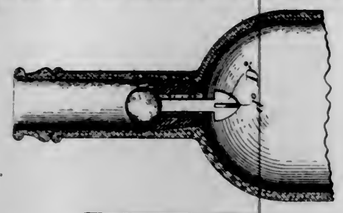


Claim.—A fastening for a tool-handle, consisting of the head having an elliptical-shaped aperture therein, a shouldered portion about a portion of the said aperture, combined with the handle having the extended portion C, having a concaved portion E and offset D, and shouldered as at *e*, and the screw-threaded bolt designed to be inserted through the aperture in the head, and into an aperture in the end of the handle, substantially as shown and described.

573,566. NON-REFILLABLE BOTTLE. ADOLPHUS G. CANADA, Memphis, Tenn. Filed Feb. 18, 1896. Serial No. 579,765. (No model.)

Claim.—In a non-fillable bottle, the combination with a neck to said bottle, and a valve-seat rigidly held within said neck and perforated as shown with an enlarged chamber at the upper end of said perforation, and a valve having a ball adapted to fit snugly in said enlarged chamber, a rigid stem projecting through said perforation, and flat arrow-headed ribs at right angles to each other at the end

of said stem adapted to permit a limited play of said valve-stem in said valve-seat, and to lock said stem in said seat, substantially as described.



573,567. LOCKING MECHANISM FOR SWITCH-LEVERS. ROBERT H. CANFIELD, Corning, N. Y. Filed Apr. 7, 1896. Serial No. 586,505. (No model.)



Claim.—1. An automatic switch-lock comprising a fixed frame or support and a yielding locking-latch sustained by said frame and adapted to engage and lock the switch-lever, in combination with a movable hasp or arm, also sustained by the fixed frame, and adapted when locked to said frame to hold the latch yieldingly in the path of the switch-lever, connections between the latch and hasp to positively disengage the latch from the lever when the hasp is released from the frame and removed, and suitable means for locking said hasp to the frame, substantially as set forth.

2. In an automatic switch-lock, the combination with a frame or support, and a latch to lock the switch-lever, of an arm or hasp adapted to be locked to the frame, or swung outwardly therefrom; the said latch, when the arm or hasp is locked, being held in position thereby to snap into engagement with and lock the switch-lever, and said arm or hasp when unlocked and swung out, serving to retract the said latch and release the switch-lever, substantially as set forth.

3. In an automatic switch-lock, the combination with a frame or support, and a latch pivoted therein, to lock the switch-lever, of a pivoted arm or hasp engaging with its lower end the lower end of the said latch to permit independent movement thereof, and allow the latch to snap into engagement with and lock said lever, a spring interposed between said latch and arm or hasp, and means for locking said arm or hasp to the frame or support; said arm or hasp when unlocked and swung outwardly causing the retraction of the latch from the switch-lever, substantially as set forth.

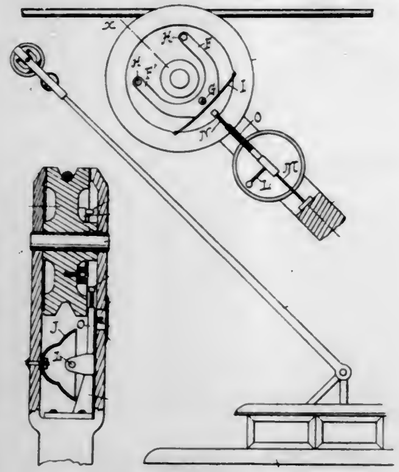
4. The combination with the frame or support having a notch to receive the switch-lever, and a pivoted locking-latch in the frame to enter said notch and lock the switch-lever, of an arm or hasp pivoted at its lower end in the frame and having means for locking its upper end to the frame, and a spring interposed between the latch and said arm or hasp, the said latch when the arm or hasp is locked being adapted to yield to and snap into engagement with the switch-lever and to be retracted when the arm or hasp is unlocked and swung out, substantially as set forth.

5. The combination with the recessed frame having a lever-notch in its upper edge, and the locking-latch pivoted at its lower end in said recessed frame with its upper end projecting into said notch, of an arm or hasp pivoted at its lower end in said frame-recess, and having means for locking its upper end to the frame; the lower ends of the adjacent edges of said levers below their pivots being shouldered to permit independent yielding of the latch and to cause it to be positively retracted when said arm is unlocked and swung out, and a spring between the adjacent edges of the latch and the arm or hasp, substantially as set forth.

6. The combination with the frame having a notch in its upper edge to receive the switch-lever, a recess opening into said notch and a staple on the upper end of its outer edge, of the locking-latch pivoted at its lower end in said recess, and having a hook or nose at its upper end to project into said notch, the arm or hasp pivoting on the same pivot with the latch and having a shouldered lower end to engage the latch below its pivot and press its upper end outwardly and having a slotted upper end to receive said staple, and a spring interposed between the adjacent faces of the latch and arm or hasp; the latch after the arm or hasp has been locked having a yielding movement to permit it to snap into engagement with the switch-lever, substantially as set forth.

7. The combination with the switch-stand, its switch-rod and switch-operating lever having a closed recess in one side, of the automatic locking mechanism comprising a frame or support having a notched upper edge to receive the recessed portion of the switch-lever, a latch in the frame to snap into said lever-recess, and an arm or hasp adapted to be locked to the frame or swung outwardly therefrom to retract the latch and release the switch-lever; the said latch, when the arm or hasp is locked, being adapted to yield and snap into engagement with the switch-lever and automatically lock the switch, substantially as set forth.

573,568. SPEED-INDICATING ALARM. BENJAMIN F. CARD, Brooklyn, N. Y. Filed Nov. 1, 1895. Serial No. 567,598. (No model.)

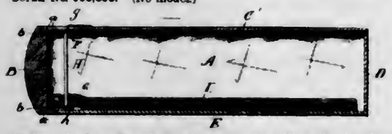


Claim.—1. The combination of a car propelled by electric energy, a pole extending therefrom, a trolley upon the pole and adapted to roll along upon an electric conductor, a centrifugal device governed by the trolley, a bell with its knocker-support, means for securing the adjustment of said support so that the bell will ring at a predetermined speed of the car, and a seal for preventing access to said means.

2. In a car, the combination of a trolley-pole, a trolley thereon, an adjustable signaling device governed by the movement of the trolley adjacent thereto, and means for sealing the adjustable device, substantially as described.

3. The combination of a car propelled by electric energy, a pole extending therefrom, a trolley upon the pole, and adapted to rolling along an electric conductor, a U-shaped lever pivoted at its center within a recess upon the side of the trolley, projections upon the ends of the lever and extending beyond the face of the trolley, and equally distant from the pivot and a spring elastically resisting the movement of the lever in both directions and a bell, whose knocker-support has an adjustable extension, which is within the limits of the path of one of the projections upon the lever when rotated at sufficient speed.

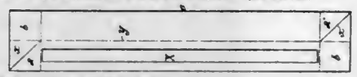
573,569. PAPER-FILE. CHARLES M. CARNAHAN, Newport, Ky., assignor to the Globe Company, Cincinnati, Ohio. Filed Oct. 14, 1896. Serial No. 608,833. (No model.)



Claim.—1. In a file of the character described, the combination of one or more pairs of filing-pin holders secured to the filing-case, the one of each pair having a perforated end and the other of each pair having a perforated end with slits from said perforation to form a flexible ear, of a filing-pin for each pair having a bent end to engage the first-mentioned perforated holder and an opposite head to enter the opposite holder and be engaged by bending into place the flexible ear, substantially as described.

2. In a file of the character described, the combination with the back, B and covers, C, E, of the holders, F, G, with tangs, *b*, entering the back and held in place by said covers, the former provided with perforation, *d*, and flexible ear, *f*, and the latter with perforation, *c*; and the filing-pin, H, having bent end, *h*, and headed end, *g*, substantially as described.

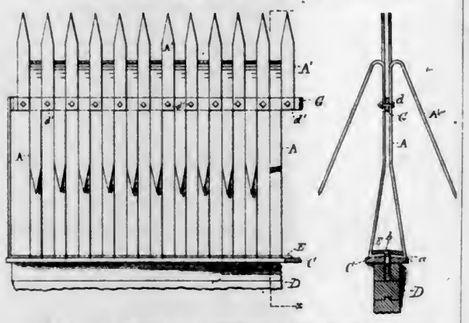
573,570. CORSET-STIFFENER. JOHN S. CROTTY, New York, N. Y. Filed Sept. 26, 1895. Serial No. 563,790. (No model.)



Claim.—1. A stiffener for corsets, &c., comprising a stiffening-blade and a covering consisting of a single strip of fabric folded lengthwise upon itself, with the blade lying within the fold, said folded strip of fabric being longer than the blade and being slitted at opposite ends of the covering projecting beyond the blade, forming two integral end pieces at each end of the covering, one of each pair of end pieces being folded directly over the end of the blade, and the other of each pair of end pieces folded over the previously-folded end piece, substantially as described.

2. A stiffener for corsets, &c., comprising a stiffening-blade and a covering consisting of a single strip of fabric folded lengthwise upon itself, with the blade lying within the fold, said folded strip of fabric being longer than the blade and being slitted diagonally at diagonally opposite corners of the covering projecting beyond the blade, forming two integral end pieces at each end of the covering, one of each pair of end pieces being folded directly over the end of the blade, and the other of each pair of end pieces folded over the previously-folded end piece, substantially as described.

573,571. FENCE-GUARD. SOMMERS CROWELL, Philadelphia, Pa. Filed Sept. 29, 1896. Serial No. 607,321. (No model.)



Claim.—The fence guard consisting of the straps A, having the horizontal base portion *a*, resting upon the fence, and attached upon the fence by the strip E, screwed upon the cap C, the upper portions of the straps being bent down and outwardly from the upright at any angle therefrom, the rail G with the series of intermediate straps A', projecting above the rail G, the extremities of the two series of straps being beveled upon their sides and terminating in points, in combination with the upper edge of a fence, substantially as shown and described

573,572. BAIT-GUARD. WILLIAM R. DALES, Brooklyn, N. Y. Filed Apr. 28, 1896. Serial No. 589,371. (No model.)



Claim.—1. A fish guard for live bait adapted to expose more or less of the bait therein to view from the exterior and formed in sections and means for holding the sections in assembled adjustment when in use, substantially as set forth.

2. A fish-guard for live bait constructed to expose the live bait therein to view from the exterior, the said bait-guard being formed in sections and hooks the shanks of which are utilized to hold the sections in assembled adjustment, substantially as set forth.

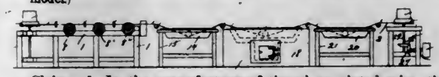
3. The bait-guard composed of translucent sections for the reception of live bait and provided with a groove extending longitudinally of the guard and hooks, the shanks of which are adapted to rest within the groove, substantially as set forth.

4. The bait-guard comprising translucent sections adapted to receive live bait, hooks the shanks of which are adapted to extend along the opposite sides of the guard and a band arranged to embrace one end of the guard and the shanks of the hooks, substantially as set forth.

5. The bait-guard composed of translucent sections, one of the sections having an open end for the projection of the tail of the bait, a hook having its shank extended lengthwise along the guard for the attachment of the line at the front end of the guard and a band for retaining the hook in position at the tail end of the guard, substantially as set forth.

6. The bait-guard composed of sections separable transversely of the guard, hooks arranged to embrace one end and two opposite sections of the guard and a band for holding the shanks of the hooks to the opposite end of the guard, substantially as set forth.

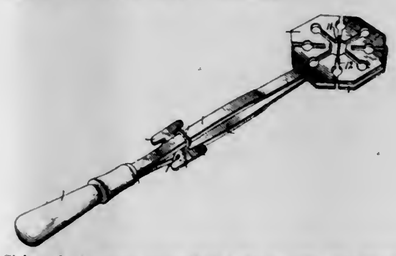
573,573. MANUFACTURE OF TINNED WIRE. FRED H. DANIELS, Worcester, Mass. Filed Jan. 2, 1895. Serial No. 533,550. (No model.)



Claim.—1. In the manufacture of tinned or plated wire, the combination of a drawing-frame, a winding-block, and a tinning or plating apparatus between the drawing-frame and winding-block, to manufacture tinned or plated wire by a continuous process, substantially as set forth.

2. In the manufacture of tinned or plated wire, the combination with the drawing-frame, and the winding-block, of the acid-tank, the metal-tank containing the melted tin or other metal, and the cooling-tank located intermediate said drawing-frame and winding-block, to manufacture tinned or plated wire in a continuous process, substantially as set forth.

573,574. TOASTER. EBENEZER P. DAVIES, Scranton, Pa. Filed Aug. 27, 1896. Serial No. 604,101. (No model.)



Claim.—1. A toaster, comprising a pair of arms, and a spreader disposed between said arms and adapted to be operated so as to force said arms apart and lock the same in such position to permit the insertion therebetween of the article to be toasted, substantially as set forth.

2. A toaster, comprising a pair of arms, and a spreader disposed between said arms, said spreader comprising a plate provided with reversely arranged loops, each of which receives one of the arms and is adapted to slide thereon for retaining the spreader between said arms, said spreader being adapted to be operated so as to force said arms apart and lock the same in such position to permit the insertion therebetween of the article to be toasted, substantially as set forth.

3. A toaster, comprising a pair of arms each of which is provided at one of its ends with a head, a spreader disposed between said arms and adapted to be operated so as to force said arms apart and lock the same in such position to permit the insertion therebetween of the article to be toasted, and a holding-strip carried by one of the heads and provided with prongs adapted to pass through the article to be toasted and retain the same between said heads, substantially as set forth.

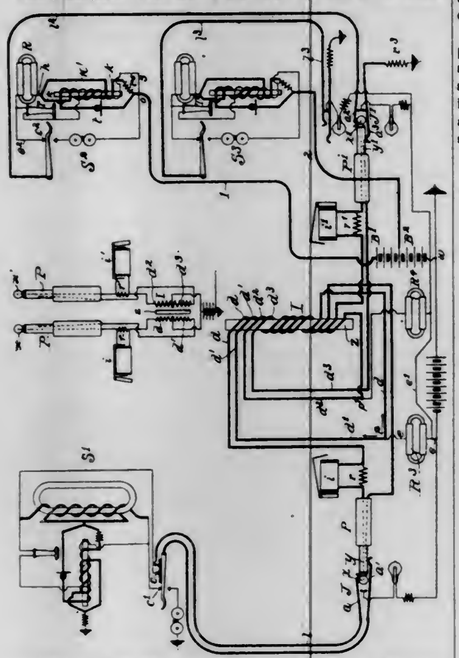
4. A toaster, comprising a pair of arms each of which is provided at one of its ends with a head, and a spreader disposed between said arms and comprising a plate having at each of its ends a T-shaped finger-piece, said plate being also provided at its edges with reversely-arranged loops, each of said loops receiving one of the arms so as to retain the spreader therebetween, said spreader being adapted to be operated so as to force said arms apart and lock the same in such position to permit the insertion therebetween of the article to be toasted, substantially as set forth.

5. A toaster, comprising a pair of arms, a handle secured to one end of said arms, a strengthening-disk attached to one end of said

handle and provided with an opening for receiving the arms of the toaster, said disk being adapted to relieve the handle of the strain incident to the opening of the arms, and a spreader disposed between said arms and adapted to be operated so as to force said arms apart and lock the same in such position to permit the insertion therebetween of the article to be toasted, substantially as set forth.

6. A toaster comprising a pair of arms provided at their outer ends with heads having openings, and a holding-strip arranged on the exterior of one of the heads and having its ends bent at an angle to form prongs, the latter being extended through the adjacent openings of the head and arranged to enter the article to be toasted, substantially as described.

573,575. TELEPHONE-EXCHANGE SYSTEM. WILLIAM W. DEAN, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed June 11, 1896. Serial No. 595,109. (No model.)



Claim.—1. The combination with metallic-circuit and grounded telephone-lines, of a common battery, and an additional battery in circuit with the grounded lines and adapted to supply additional electromotive force to the grounded lines, whereby the standard current may be maintained upon both metallic-circuit and grounded lines.

2. In a telephone exchange system, the combination with a grounded line terminating in one spring of a spring-jack, of a repeating-coil having substantially equal and opposing windings adapted to be connected in said line, and a balancing-resistance adapted to be connected between said windings and ground, whereby the efficiency of the repeating-coil is increased, substantially as described.

3. In a telephone-exchange system, the combination with metallic-circuit and grounded telephone-lines, of a common battery adapted to supply current to said grounded telephone-lines and current in multiple to the two sides of each of the metallic telephone-lines, and an additional battery adapted to be included in circuit with said grounded telephone-lines to reinforce the pressure of said common battery, substantially as described.

4. In a telephone-exchange system, the combination with metallic-circuit and grounded telephone-lines, of a common battery adapted to supply current to said lines, and an additional battery adapted to be included in series with said common battery and in circuit with said grounded lines, substantially as and for the purpose described.

5. In a telephone-exchange system, the combination with grounded and metallic circuit telephone-lines, of a common battery adapted to supply current to said grounded telephone-lines and, in multiple, to the two sides of each of said metallic-circuit lines, and an additional battery adapted to be included in circuit with said grounded lines and in series with said common battery, substantially as and for the purpose described.

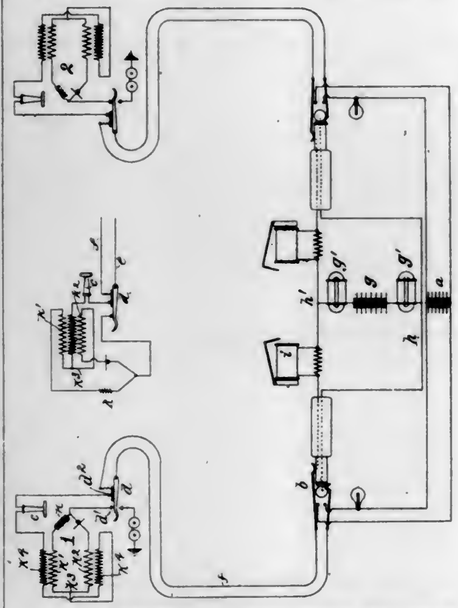
6. In a telephone-exchange system, the combination with metallic-circuit lines grounded at the substation and grounded telephone-lines, of a common grounded battery adapted to supply current to said grounded telephone-lines and, in multiple, over the two sides of each of said metallic-circuit lines, and an additional battery adapted to be included in circuit with said grounded telephone-lines, substantially as and for the purpose described.

7. In a telephone-exchange system, the combination with metallic-circuit and common return telephone-lines, of a common battery adapted to supply current thereto, and an additional battery adapted to be included in circuit with said common return, substantially as and for the purpose described.

8. In a telephone-exchange system, the combination with metallic-circuit and common return telephone-lines, of a common battery adapted to supply current to said common return lines and, in multiple, over the two sides of each of said metallic-circuit lines, and an additional battery adapted to be included in series with said battery and common return, substantially as and for the purpose described.

9. In a telephone-exchange system, the combination with a telephone-line extending to the exchange, of a repeating-coil, having substantially equal and opposing windings, means for connecting one of said windings in series with said line, means for connecting an opposing winding in shunt of said telephone-line, and balancing-resistance adapted to be included in circuit with the latter of said windings, substantially as and for the purpose described.

573,576. COMMON BATTERY TELEPHONE SYSTEM. WILLIAM W. DEAN, St. Louis, Mo., assignor to the Bell Telephone Company of Missouri, same place. Filed Sept. 19, 1896. Serial No. 606,346. (No model.)



Claim.—1. The combination of a local transmitter-circuit comprising an induction-coil and a microphone included in circuit with said induction-coil, and a battery adapted to direct current through the primary and secondary helices of said induction-coil in series, said primary and secondary helices being also connected in series in the path of the voice-currents, substantially as described.

2. In a telephone system, the combination of a local transmitter-circuit comprising primary and secondary helices of an induction-coil and a microphone included in circuit with a telephone-line, and a centralized battery adapted to direct current in series over said line through said primary and secondary helices and microphone, said primary and secondary helices being also connected in series in the path of the voice-currents, substantially as described.

3. In a telephone system, the combination of a main telephone-line, with a centralized battery included in circuit therewith, and a local transmitter-circuit comprising primary and secondary helices of an induction-coil and a microphone, all included, or adapted to be included, in series with each other and with said telephone-line and

battery, said primary and secondary helices being also connected in series in the path of the voice-currents, substantially as described.

4. The combination with a local transmitter-circuit comprising two parallel branches and two primary windings of an induction-coil included one in each of the branches of said transmitter-circuit, of a secondary winding included in series with said primary windings, a microphone included in said transmitter-circuit, and a battery adapted to direct current in parallel through said primary windings and thence in series through said secondary winding, said primary helices being also included in series with said secondary helix in the path of the voice-currents, substantially as described.

5. In a telephone system, the combination of a local transmitter-circuit comprising two parallel branches, of a primary inductive winding included in each of said parallel branches, a microphone included in said transmitter-circuit, a secondary winding included in series with the telephone line and said primary windings, and a centralized battery adapted to direct current in parallel through said primary windings and thence in series through said secondary winding, said primary helices being also included in series with said secondary helix in the path of the voice-currents, substantially as described.

6. In a telephone system, the combination with a telephone-line extending in two limbs to the central station, said limbs being united, or adapted to be united, at the substation, a local transmitter-circuit comprising two parallel paths included, or adapted to be included, in circuit with said telephone-line, a primary winding included in each of said parallel paths, a microphone included in said local transmitter-circuit, a secondary winding included in series with said telephone-line and said primary windings, and a centralized battery adapted to transmit current in parallel through said primary windings and thence in series through said secondary winding, said primary helices being also included in series with said secondary helix in the path of the voice-currents, substantially as described.

573,577. CAROUSEL. GUSTAV A. DENTZEL, Philadelphia, Pa. Filed Mar. 25, 1896. Serial No. 584,723. (No model.)

Claim.—1. In a carousel, the combination of a central post, a central bearing near the upper part of the post, a ring-hub journaled upon said bearing, radial arms secured to said ring-hub, a central pivot upon the top of the post, tie-rods extending from said pivot to said radial arms, two annular platforms arranged below the said radial arms, a central guide for the upper platform, vertical suspension rods or bolts for supporting the annular platforms at different levels from said radial arms, supports for the riders upon each of the platforms, a crank-shaft carried by and upon the under side of the upper platform and driven by a horizontal shaft and pinion, a stationary circular rack or gear supported on a level with the upper platform and with which the pinion meshes, and conducting-rods extending upward and downward between the crank-shaft and the moving supports upon each of the said platforms for simultaneously moving said supports.

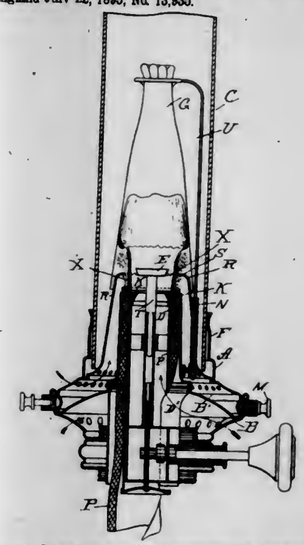
2. In a carousel, the combination of a central pivot-post, two annular platforms of different diameters one arranged above the other, a series of radial arms arranged above the platforms and suspended by tie-rods from a central pivot-post, vertical tie-bolts extending from the radial arms to the lower platform, vertical tie-bolts between the radial arms and upper platform and from the upper platform to the lower platform whereby the lower platform is suspended below and moved with the upper platform, a central guide upon the pivot-post on a level with the upper platform, a guiding device carried by the upper platform and moved in connection with the central guide to hold the said upper platform concentric with the pivot-post and thereby sustain the lower platform against lateral displacement, and power devices for rotating both platforms and radial arms in the same direction.

3. In a carousel, the combination of a central pivot-post, a series of radial arms supported from a pivot upon the said post so as to move concentric therewith, two annular open platforms arranged below said radial arms and at different elevations the lower of which is unsupported at the center, tie-bolts for connecting the radial arms and the two platforms whereby they shall move as a unitary structure, a second set of radial arms extending inwardly from the upper of said platforms and terminating in an angular journal encircling the post, and a journal-bearing secured to the post for receiving the annular journal of the radial arms of the upper platform whereby the said journal and bearing of the radial arms of the upper platform act to sustain the lower platform as well as the upper platform against lateral displacement.

4. In a carousel, the combination of a central post a series of radial arms supported upon a pivot on the post so as to move concentric therewith, two annular open platforms arranged below said radial arms and supported therefrom, a second set of radial arms extending inwardly from the upper of said platforms and terminating in an annular journal encircling the post, a journal-bearing secured to the post for receiving the annular journal of the radial arms whereby the upper platform is concentrically and directly guided about the post, a stationary rack carried by the post adjacent to the bearing of the upper platform, a radial shaft journaled upon the under side of the upper platform, a pinion upon the inner end of the radial shaft meshing with the rack, moving supports upon both the upper and lower platforms, and connecting power devices extending from the radial shaft upward to a point above the upper platform for operating its moving supports and also extending downward to the moving supports upon the lower platform.

5. In a carousel, the combination of an upper series of radial arms centrally pivoted, an upper platform of smaller diameter than the radial arms, a lower platform of a diameter substantially equal to the diameter of the radial arms, suspension bolts or rods for sustaining the two platforms at different levels from the radial arms, a moving stairway connecting the two platforms, a moving screen R moving about the post with the upper platform, a stationary screen R' arranged about the post at a lower level than the upper platform and power devices for rotating the platforms and radial arms.

573,578. ANNULAR LIQUID-COMBUSTIBLE BURNER FOR INCANDESCENT LIGHTS. GERHARD DITMAR, Vienna, Austria-Hungary. Filed Mar. 21, 1896. Serial No. 584,247. (No model.) Patented in England July 22, 1895, No. 13,935.



Claim.—1. In an annular liquid-combustible burner for producing incandescent lights without the aid of a separate gasifying-flame, a hood R forming an annular passage for the outer current of air and having a bent-in edge S, an obstructing ring or flange H in the upper end of wick-tube D and a disk E having tapering edge and whose under edge is arranged about in alinement with the edge S of hood R, substantially as described and shown in the drawings.

2. In combination with an annular burner for incandescent lights, a short tube V for supporting the incandescent body, a tube W re-

ceiving the tube V and extending to near the top of, and held centrally in, the chimney C, substantially as and for the purpose described and shown.

573,579. HORSE-CLEANER. PATRICK M. DONAHOO, Platteville, Wis., assignor of one-third to John C. Donahoo, Cuba City, Wis. Filed Sept. 1, 1896. Serial No. 604,550. (No model.)



Claim.—1. A horse-cleaner consisting of a band of canvas or other suitable fabric, ribs of soft material on the sides of said band, and handles at each end thereof.

2. A horse-cleaner consisting of a band of canvas or other suitable fabric, ribs on each side thereof formed by looped strips of cord or rope, and handles secured to each end of said band, mounted to turn upon strips of wire which are themselves secured in place by strips of leather sewed or otherwise attached to said band.

573,580. WHEEL-PUMP. ISAAC T. DYER, Chicago, Ill., assignor, by direct and mesne assignments, to the Dyer Power Company, same place. Filed Mar. 30, 1896. Serial No. 585,389. (No model.)

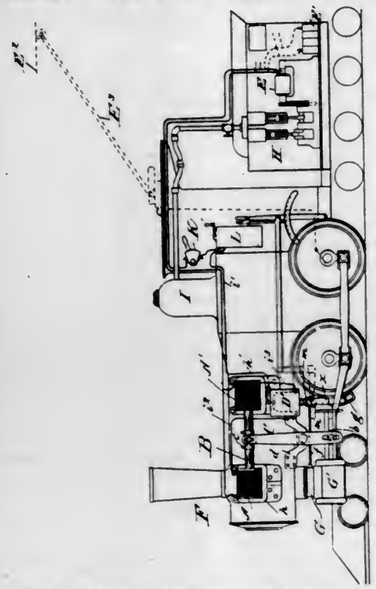


Claim.—1. A wheel-pump device comprising, in combination, a wheel A having a circumferential series of chambers C provided with valve-controlled inlets and outlets, pistons C′ in said chambers, each comprising a head *n* on a hollow stem n^2 reciprocally confined in a chamber and provided with a plug n^6 at its outer end, a shoe n^5 pivotally connected with the plug, and a spring n^{10} confined about the stem, and a hollow axle on which the wheel is mounted and provided with inlets registering with the outlets of said chambers, substantially as and for the purpose set forth.

2. A wheel-pump device comprising, in combination, a wheel A having a hollow center, a circumferential series of chambers C provided with valve-controlled inlets *p* leading to a side of the wheel and valve-controlled outlets *o* leading through said center, pistons C′ in said chambers, each comprising a head *n* fastened in a hollow stem n^2 by a pin n^3 projecting at its opposite ends into guide-grooves in the chamber, a plug n^6 in the outer end of the stem, a shoe n^5 pivotally connected with the plug and a spring n^{10} confined about the stem, and a hollow axle on which the wheel is mounted and provided with inlets registering with the outlets of said chambers, substantially as and for the purpose set forth.

3. In combination with a locomotive-engine, a wheel-pump device comprising a wheel A geared to an axle of the locomotive and having a circumferential series of chambers C provided with valve-controlled inlets and outlets and pistons C′ in said chambers, each comprising a head *n* on a hollow stem n^2 reciprocally confined in a chamber and provided with a plug n^6 at its outer end, a shoe n^5 pivotally connected with the plug, and a spring n^{10} confined about the stem, a hollow axle B on which the wheel is mounted and provided with inlets registering with the outlets of said chambers and an outlet *l*, a receiver D surrounding the axle, and one or more valve-controlled outlet-pipes leading from said receiver, substantially as and for the purpose set forth.

573,581. ELECTRIC ENGINE. ISAAC T. DYER, Chicago, Ill., assignor, by direct and mesne assignments, to the Dyer Power Company, same place. Filed Mar. 30, 1896. Serial No. 585,390. (No model.)



Claim.—1. An electric motor comprising, in combination with an electric generator, a pair of solenoid-magnets and their cores coupled endwise together, a lever connected with said cores to be oscillated by their reciprocating movement and adapted to be connected with the driver of an engine, and a switch device having a pair of stationary contacts in the generator-circuit and a pair of spring-controlled movable contacts adjacent to said stationary contacts and respectively connected, electrically, with said magnets, a pendulously-supported lever extending between said movable contacts, and shifting-lever mechanism engaging said pendulous lever, substantially as and for the purpose set forth.

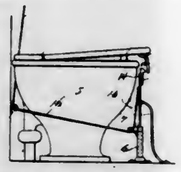
2. An electric motor comprising, in combination with an electric generator, a pair of solenoid-magnets and their cores coupled endwise together, a lever connected with said cores to be oscillated by their reciprocating movement and adapted to be connected with the driver of an engine, and a switch device comprising a frame carrying a pair of stationary contacts in the generator-circuit and a pair of spring-controlled movable contacts adjacent to said stationary contacts and respectively connected, electrically, with said magnets, a lever pendulously supported on said frame to extend toward its free end between said movable contacts, a lever *m* fulcrumed between its ends and engaging at one end the lower end of the pendulous lever, and a lever *m′* engaging with the opposite end of said lever *m*, substantially as and for the purpose set forth.

3. In combination with an engine, a pair of solenoid-magnets A and A′ having the cores B coupled endwise together, a lever C fulcrumed to engage at one end the coupling of said cores and at its opposite end a driving part of the engine, an electric generator, and a switch device contained with the said magnets in the circuit of said generator and having a shifting-lever connection with the cut-off valve of the engine, substantially as and for the purpose set forth.

4. In combination with an engine, a pair of solenoid-magnets A A′ having the cores B coupled endwise together, a lever C fulcrumed to engage at one end the coupling of said cores and at its opposite end a driving part of the engine, an electric generator, and a switch device having a pair of stationary contacts, *l*, *k* in the generator-circuit and a pair of spring-controlled movable contacts *l′*, *k′*, adjacent to said stationary contacts and respectively connected, electrically, with said magnets, a pendulously-supported lever *q* extending between said movable contacts, and shifting-lever mechanism connecting said pendulous lever with the cut-off valve of the engine, substantially as and for the purpose set forth.

5. In combination with an engine, a pair of solenoid-magnets A and A′ having the cores B connected end to end by a coupling *c*, a lever C fulcrumed between its ends on a bearing *d* and engaging at one end the cores at said coupling and at its opposite end a driving part of the engine, an electric generator, and a switch device D having its mechanism inclosed in a box D′ and comprising the frame *r* provided at its ends with stationary contacts *l*, *k* in the generator-circuit and a pair of spring-controlled movable contacts *l′*, *k′* adjacent to said stationary contacts and connected, respectively by wires i^3, i^2, with the magnets A′ and A, a lever *q* pendulously supported in said frame and having lateral projections *p* and *o* respectively adjacent to the contacts *l′* and *k′*, and a head *n* at its lower end, a lever *m* bifurcated at its opposite ends between which it is fulcrumed between its ends to engage at one end said head *n*, and a lever *m′* fulcrumed between its ends to engage at one end the adjacent end of the lever *m* and connected with the cut-off valve of the engine, substantially as and for the purpose set forth.

573,582. FLUSHING DEVICE FOR WATER-CLOSETS. NATHANIEL P. EMMET, Newburg, N. Y. Filed Aug. 4, 1896. Serial No. 601,611. (No model.)



Claim.—1. The herein-described apparatus for operating the valve of a flush-tank in water-closets, which consists of a tubular standard or receiver, adjacent to the basin, a vertically-movable rod mounted therein, and provided at its upper end with a latch-block which is movably connected therewith, a rope, cord or chain connected with said rod, and passing downwardly around a pulley connected with said standard, backwardly to a suitably supported pulley at the rear of the basin, and upwardly to the valve of the flush-tank, and devices connected with the hinged seat of the basin for operating said vertically-movable rod, substantially as shown and described.

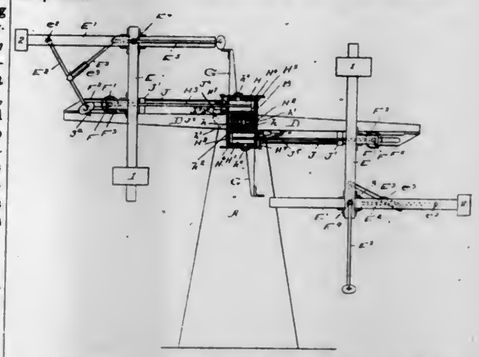
2. The herein-described apparatus for operating the valve of a flush-tank in water-closets, which consists of a tubular standard or receiver, adjacent to the basin, a vertically-movable rod mounted therein, and provided at its upper end with a latch-block which is movably connected therewith, a rope, cord or chain connected with said rod, and passing downwardly around a pulley connected with said standard, backwardly to a suitably-supported pulley at the rear of the basin, and upwardly to the valve of the flush-tank, and devices connected with the hinged seat of the basin for operating said vertically-movable rod, consisting of a rubber or other spring secured to the under side thereof, and adapted to bear on the basin, and a latch-lever pivotally connected with the under side of the seat and adapted to operate in connection with the latch-bolt on the vertically-movable rod, substantially as shown and described.

3. The herein-described apparatus for operating the valve of a flush tank in water-closets, which consists of a tubular standard or receiver, adjacent to the basin, a vertically-movable rod mounted therein, and provided at its upper end with a latch-block which is movably connected therewith, a rope, cord or chain connected with said rod, and passing downwardly around a pulley connected with said standard, backwardly to a suitably-supported pulley at the rear of the basin, and upwardly to the valve of the flush tank, and devices connected with the hinged seat of the basin for operating said vertically-movable rod, consisting of a rubber or other spring secured to the under side thereof, and adapted to bear on the basin, and a latch-lever pivotally connected with the under side of the seat and adapted to operate in connection with the latch-bolt on the vertically-movable rod, said latch-lever being provided with a slot or opening which is adapted to engage with an inclined head formed on said latch-bolt, substantially as shown and described.

573,583. GRAVITY-MOTOR. JOHN N. ERICSSON, Chicago, Ill. Filed Jan. 25, 1896. Serial No. 536,170. (No model.)

Claim.—1. The combination with a rotating wheel, frame or arms and weights, mounted thereon and adapted to shift toward and from the axis of the wheel, frame or arms, of automatic means for shifting the weights actuated independently of the wheel, substantially as specified.

2. The combination with a rotating wheel, frame or arms and weights mounted thereon and adapted to shift toward and from the axis of the wheel, frame or arms, of a steam-motor located at the axis and adapted to effect the shifting of the weights, substantially as specified.



3. The combination with a rotating wheel, frame or arms and weights mounted thereon and adapted to shift toward and from the axis of the wheel, frame or arms, of a shaft supporting the wheel, frame or arms and provided with axial passages h^3, a motor for effecting the shifting of the weights, mounted upon said shaft and receiving its supply of steam from said passages h^3 and connections between said motor and the weights, substantially as specified.

4. The combination with the rotating arms as D, and shifting weights mounted thereon, of a supporting-shaft having axial steam-passages, and steam-cylinders connected each with one of said passages, and also having connecting-passages at their ends whereby the once-used steam in each cylinder may expand into the other cylinder, the pistons of said cylinders being connected to and effecting the shifting of the weights, substantially as specified.

5. The combination with the rotating arms as D, and shifting weights mounted thereon, of a steam-cylinder for each of said arms, having its piston connected to the shifting weights, said cylinders being also connected together by passages so that the once-used steam in each may expand into the other, substantially as specified.

6. The combination with rotating arms or frame D of crosses adapted to swing on the arms or frame and to be shifted toward and from the axis about which the arms or frame revolve, means for shifting said crosses and weights mounted on said crosses, substantially as specified.

7. The combination with rotating arms or frame D of crosses adapted to swing on the arms or frame and to be shifted toward and from the axis about which said arms or frame revolve, means for shifting said crosses and weights attached to said crosses, said crosses being also provided with means whereby they may be locked against swinging during a portion of the revolution of the arms or frame, substantially as specified.

8. The combination with rotating arms or frame D of crosses adapted to swing on the arms or frame and to be shifted toward and from the axis about which said arms or frame revolve, means for shifting said crosses and weights 1, 2, 3 and 4 mounted on the crosses, substantially as specified.

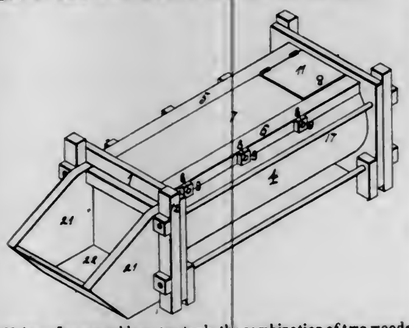
9. The combination with rotating arms or frame D of crosses adapted to swing on the arms or frame and to be shifted toward and from the axis about which said arms or frame revolve, means for shifting said crosses and weights 1, 2, 3 and 4 mounted on the crosses, said crosses being also provided with means whereby they may be locked against swinging during a portion of the revolution of the arms or frame, substantially as specified.

10. The combination with rotating arms or frame D, of crosses adapted to swing on the arms or frame and to be shifted toward and from the axis about which the arms or frame revolve, means for shifting said crosses and weights, some of which are fast upon the crosses and some of which are movably attached thereto, substantially as specified.

11. The combination in a gravity-motor of the rotating arms or frame, the swinging crosses borne by said arms, the swinging weights 4 attached to the crosses, and the rests G rotating with the arms and positioned to sustain said weights during a portion of the revolution, substantially as specified.

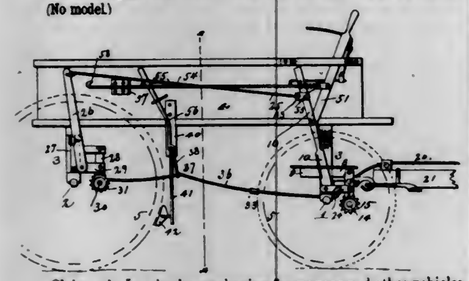
12. The combination of two similar cylinders H and H′, and their pistons, said cylinders having communicating passages at their ends, so that the steam in each may expand into the other, and also having separate inlet and outlet passages, and means for alternately locking the pistons of said cylinders against movement, substantially as specified.

573,584. PORTABLE WATER-TANK. EDWARD D. EYRE, Oregon, Ill. Filed Feb. 13, 1896. Serial No. 579,093. (No model.)



Claim.—In a portable water-tank, the combination of two wooden heads, a metallic body having its lower portion of semicylindrical form, and its upper portion secured to wooden strips bolted together, the body held in place between the heads.

573,585. WAGON-BRAKE. THOMAS J. FARRELL and WILLIAM CLANCY, Virginia City, Mont. Filed Mar. 9, 1896. Serial No. 582,434. (No model.)



Claim.—1. In a brake mechanism for wagons and other vehicles, the combination with the rear wheels, the hubs having cogs thereon, the transverse shaft having a pinion adapted to mesh with said cogs, the pivoted hangers in which said shaft is journaled, the lever pivoted to one of said hangers, the oscillating hooked rod, and the levers for operating and oscillating said rod, of the spool secured to said transverse shaft, and the strap connected therewith and adapted to be connected with the driving-reins of a harness, substantially as described.

2. In a brake mechanism for wagons and other vehicles, the combination with the rear wheels, the hubs provided with cogs, the hangers and the lever and connections, of the transverse shaft, the pinions thereon, the spool and the strap secured thereto and adapted to be connected with the nose-bands of a harness; substantially as described.

3. In a brake mechanism for wagons and other vehicles, the combination with the rear wheels, the hubs provided with cogs, the hangers, the lever and connections, of the transverse shaft, the pinions, the spool, the strap, having a button or stop, the nose-bands connected therewith, the depending rod having a hook through which said strap passes, the brake-beam to which said rod is secured, the downwardly-depending arms, and the brake shoes; substantially as described.

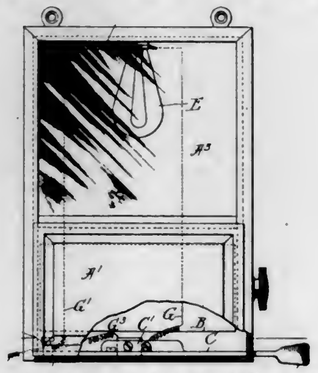
4. In a brake mechanism for wagons and other vehicles, the combination with the front wheels, the hubs provided with cogs, the hanger, the lever and connections, the transverse shaft having a pinion at one end, the spool and the strap secured thereto adapted to be connected with the driving-reins of a harness, of the rear wheels, the hubs provided with cogs, the hangers, the lever and connections, the rod connecting said lever with the front lever, the transverse shaft provided with pinions, the spool and the strap secured thereto adapted to be connected with the nose-bands of a harness; substantially as described.

5. In a brake mechanism for wagons and other vehicles, the combination with the front wheels, the hub provided with cogs, the hangers and connections, the lever the transverse shaft provided with a pinion, the spool and the strap secured thereto and adapted to be connected with the driving-reins of a harness, of the rear wheels, the hubs provided with cogs, the lever, the bar connecting the same with the front lever, the links and hangers, the transverse shaft provided with pinions, the spool, the strap secured thereto and adapted to be connected with the nose-bands of a harness, the stop or button thereon, the depending rod having a loop through which said strap passes, the brake-rod to which said rod is secured, the downwardly-depending arms and the brake-shoes; substantially as described.

6. In a brake mechanism for wagons and other vehicles, the combination with the front wheels, the hubs provided with cogs, the hanger, the lever and connections, the transverse shaft, the spool and the strap secured thereto adapted to be connected with the driving-reins of a harness, of the rear wheels, the hubs provided with cogs, the lever, the rod connecting it with the front lever, the hangers and connections, the transverse shaft provided with pinions, the spool, the strap secured thereto and adapted to be connected with the nose-bands of a harness, the stop or button on said strap, the depending rod having a loop through which said strap passes, the brake-rod, the downwardly-exteuding arms provided with brake-shoes, the lever secured to said brake-bar, the brake lever pivoted to the front of the wagon-body, the yoke, the headed movable and oscillating rod, having its rear end bent into a hook, the lugs, the crank, collar and torsion-spring, the link and rod and the lever pivoted to said brake-lever; substantially as described.

7. In a brake mechanism for wagons and other vehicles, the combination with the front axle, the wheels, the hubs provided with cogs, the bracket, the guide-bars, one of which is provided with teeth, the hanger pivoted to said bracket, the link, the lever pivoted to said bracket, and having a flange, the transverse hinged shaft, the pinion, the spool and the strap secured thereto and adapted to be connected with the driving-reins of a harness, of the rear axle, the wheels, the hubs provided with cogs, the brackets, the hangers pivoted thereto, the links, the lever, the rod connecting the same with the front lever, the transverse shaft provided with pinions, the spool, the strap secured thereto and adapted to be connected with the nose-bands of a harness, the stop or button secured to said strap, the depending rod having a loop through which said strap passes, the brake-bar, the lever secured thereto, the depending arms provided with brake-shoes, the horizontally-movable and oscillatory rod, the hook at the rear end thereof, the lugs, the collar and head, the yoke, the torsion-spring, the brake-lever with which said yoke is connected, the crank, the link and rod and the lever pivoted to said brake-lever; substantially as described.

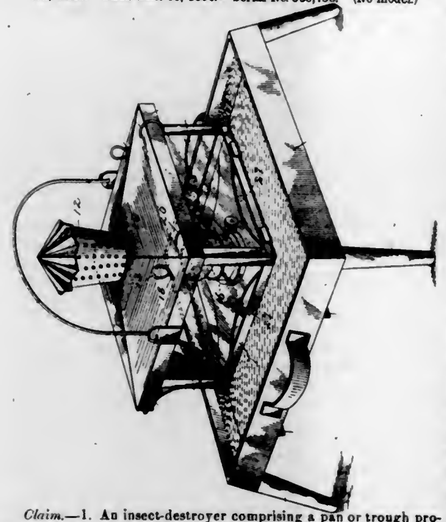
573,586. COMBINED TOILET-PAPER HOLDER AND ADVERTISING DEVICE. WILLIAM FISHER, Chicago, Ill., assignor to Lynden Evans, same place. Filed Oct. 28, 1895. Serial No. 567,173. (No model.)



Claim.—1. A combined toilet-holder and display device, comprising a closed case provided on one side with a transparency, or its equivalent, an incandescent lamp located within the casing and behind said transparency and being connected with a normally open circuit, a paper roll rotatively mounted within the casing, a slot for the passage for the end of the roll from the casing, a fixed jaw adjacent to said slot, a lever pivotally secured to the casing, one end extending through an opening in the side thereof and the other end extending within the casing, a movable jaw arranged to register with the fixed jaw and mounted upon the inner end of said lever, a spring engaging said lever and tending normally to hold the movable jaw against the fixed jaw, a fixed insulated contact or terminal connected to the electric circuit, a contact-terminal located upon the swinging end of the lever, and a conductor or wire leading from said last-mentioned contact-terminal to the lamp, whereby when the lever is moved from the outside of the casing to retract the movable jaw and allow the paper to be withdrawn through the slot in the casing, the terminal carried thereby will contact with the fixed terminal and cut in the lamp, substantially as described.

2. The combination of a case provided at its lower end with a hinged door and upon one face with a transparency or its equivalent, a paper roll rotatively mounted within the casing, a turn button upon the outside of the casing communicating with the paper roll, whereby the latter may be operated, a slot or aperture through the casing through which the end of the paper may be drawn as desired, a fixed jaw with serrated edges located adjacent to said slot, a lever pivoted in the side of the casing, one end of which lever is provided with a suitable thumb-piece to which access may be had from the ontside of the casing, a movable jaw provided with serrated edges adapted to register with the fixed jaw, said movable jaw being secured within the casing to the free end of the lever, a spring secured at one end to the casing and at the other end to the lever, whereby the movable jaw is normally held in contact with the fixed jaw, an incandescent lamp arranged within the casing and behind the transparency and being connected with a normally open electric circuit, a fixed contact or terminal connected with said circuit located within the casing and insulated therefrom, and a movable contact or terminal mounted upon the swinging end of said lever and connected with the lamp, whereby when the lever is moved to withdraw the movable jaw and allow the paper to be withdrawn through the slot, the terminal carried thereby will contact with the fixed terminal and cut in the lamp, substantially as described.

573,587. INSECT-DESTROYER. WILLIAM H. FREEMAN, Lexington, Nebr. Filed Mar. 18, 1896. Serial No. 583,758. (No model.)



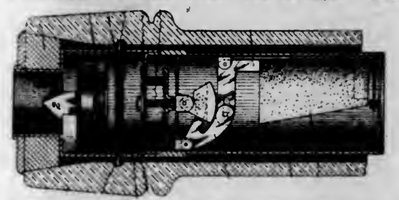
Claim.—1. An insect-destroyer comprising a pan or trough provided with legs and having a central opening and a collar or flange surrounding the same and forming a socket, and a lantern-frame provided with a depending reservoir fitting in the socket of the pan or trough, said lantern-frame being provided adjacent to its top with openings and having depending flanges located outside of the openings, substantially as described.

2. An insect-destroyer comprising a trough, a lantero-frame mounted thereon and comprising a bottom provided with openings, transparent sides provided at their upper edges with openings, one of the sides being hinged to the bottom, and a top hingedly connected with the sides of the lantern-frame and provided beyond the sides with depending flanges extending below the openings of the sides, a lamp, and means for securing the hinged side and the hinged top in their closed position, substantially as described.

3. An insect-destroyer comprising a trough, a lantern frame comprising sides having openings at their upper edges and provided with a supporting rod or wire, a hinged top, and catches mounted at opposite sides of the top and constructed of resilient material and consisting of loops extending through slots or openings of the hinged top, secured at one side to the same, and having at the opposite side outwardly-extending portions engaging the supporting wires or rods of the sides, substantially as described.

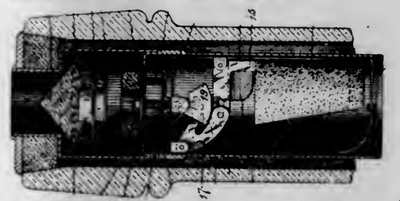
4. An insect-destroyer comprising a trough, a lantern-frame mounted on the trough and provided with a hinged side having a sleeve at its top, and a catch comprising a pair of swinging hooks arranged to engage the top of the lantern-frame, and a connecting shank or pintle arranged in the sleeve of the hinged side, substantially as and for the purpose described.

573,588. BOTTLE STOPPER AND FASTENER. CHARLES K. FUCHS, Waterbury, Conn., assignor of three-fourths to Victory L. Sawyer, same place. Filed Mar. 19, 1895. Serial No. 542,365. (No model.)



Claim.—In combination with the neck of a bottle having an annular groove around its inner wall, a thin shell consisting of an inner tubular section with a float-operated valve borne by this section of the shell and an outer tubular section with a reduced month about which is placed a yielding seal for closing liquid-tight the mouth of the bottle about the end of the stopper, a plate secured to the mouth of the outer section outside the yielding seal, a conical imperforate guard of hard material located within the mouth of the outer section of the shell at the reduced portion to render boring impracticable, a protector inside of the guard to prevent the insertion of a wire, and a rod of stiff spring metal with a bend of less than one-half a circle supported by the outer tubular section of the shell between the wire-protector and the valve and having its ends projecting through the walls of the outer tubular portion into the annular groove around the interior of the neck of the bottle, substantially as specified.

573,589. BOTTLE-STOPPER. CHARLES K. FUCHS, Waterbury, Conn., assignor of three-fourths to Victory L. Sawyer, same place. Filed Mar. 19, 1895. Serial No. 542,366. (No model.)



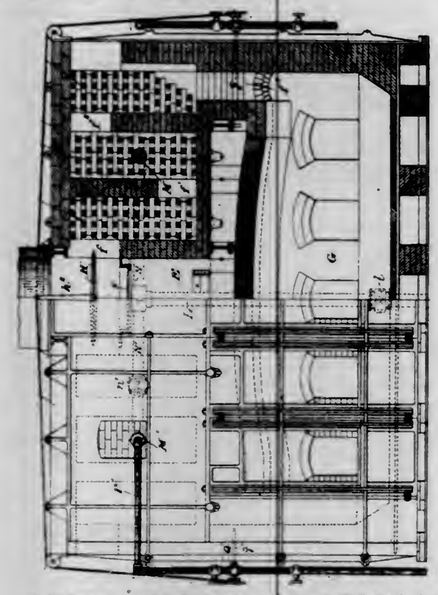
Claim.—A bottle-stopper for the purpose set forth consisting of a sectional shell, one section of which has an outlet at its upper end, a guard supported by the shell below said outlet, separated metallic disks arranged below said guard and having their rims connected with said shell, the other section of said shell provided with a valve-seat, a disk valve that seats thereon, a swinging frame supported at its upper end by the stem of the valve and pivoted at its lower end to a cross-bar which is secured to said shell, the angular lever 15 pivoted to the said swinging frame and having a float secured to one of its limbs, and the angular lever 17 pivoted to said swinging frame and to a limb of said lever 15, and a detached float between the said valve and said disks and adapted to close said valve.

573,590. FURNACE FOR IRON-WORKING. WILLIAM HECKERT, Findlay, Ohio. Filed Nov. 6, 1891. Serial No. 411,071. (No model.)

Claim.—1. The combination in a regenerative furnace of the reducing-chamber, the stack, the regenerating-chambers and flues or conduits connecting the reducing-chamber and stack with the regenerating-chambers, the reversible valve controlling the conduits which connect the regenerating-chambers with the stack and with the hot-air chamber the drum or retort located in one of said regenerating-chambers, the fuel-supply pipe connecting with said drum, and the feed-pipe provided with a series of reduced burners leading into the flues or conduits which connect the regenerating-chambers with the reducing-chamber below said regenerating-chambers substantially as described.

2. The combination with the reducing-chamber, the stack and central hot-air chamber, of a series of vertically arranged regenerating chambers on each side of said hot-air chamber provided with alternate top and bottom openings connecting said chambers with each other, and openings connecting the regenerating-chambers with the stack and with the hot-air chamber, checker-work within said regenerating-chambers, a drum located in one of said regenerating-chambers and a pipe leading therefrom and provided with burners for supplying gas below the regenerating-chambers directly into the hot air before entering the reducing-chamber, a valve for controlling the conduits which connect the regenerating-chambers with the hot-

air chamber and stack, and regulating-valves arranged upon the fuel-conveying pipes, substantially as described.



3. In a regenerating-furnace, the combination with the reducing-chamber, the hot-air chamber above the same, the stack, the regenerating-chambers on opposite sides of the hot-air chamber each provided with checker-work and openings or conduits connecting the same with each other also openings connecting the regenerating-chambers with the hot-air chamber, and the stack and flues connecting same with the reducing-chamber, of a reversible valve controlling the conduits which connect the regenerating-chambers with the hot-air chamber and the stack, a drum arranged in one of the regenerating-chambers and connected to supply-pipes located on opposite sides of the furnace, the said pipes having fuel-burners leading directly into the conduits or flues which connect the regenerating-chambers with the reducing chamber, regulating-valves arranged upon said pipes, and means for reversing the furnace and closing the fuel regulating valves from either side of the furnace, substantially as described.

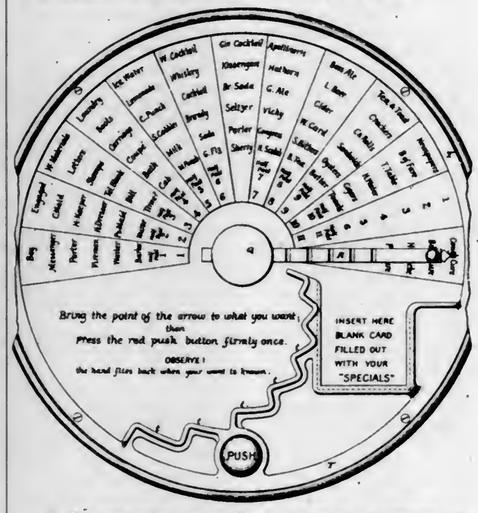
573,591. ELECTRIC SIGNALING APPARATUS. FELIX B. HERZOG and SCHUYLER S. WHEELER, New York, N. Y., assignors, by mesne assignments, to the Herzog Electric Appliance Company, of New York. Filed Mar. 12, 1885. Serial No. 158,530. (No model.)

Claim.—1. The combination, in signaling apparatus, of a transmitter; a signal-changer; together with a signal designator, consisting of an indicating surface or "field," bearing indications grouped in two substantially intersecting directions, cooperating with an indicator, one of these movable with respect to the other in such manner as to designate any desired indication; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

2. The combination, in signaling apparatus, of a transmitter; a signal-changer; together with a signal-designator, consisting of a fixed dial bearing indications arranged in groups or series of two directions, one radial and the other at an angle, to the first, and an indicator radially and concentrically movable, in such manner as to designate any indication; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

3. The combination, in signaling instrument, of a transmitter; a signal-changer; together with a signal-designator, consisting of a dial bearing groups or series of indications arranged in two directions, the one radial and the other circumferential, and an indicator movable in such manner as to designate any indication; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

4. The combination, in signaling instrument, of a transmitter; a signal-changer; together with a signal-designator, consisting of a dial bearing groups or series of indications arranged in parallel rows, and an indicator movable in such manner as to designate any indication; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.



5. The combination, in signaling apparatus, of a transmitter; a signal-changer; together with a signal-designator, consisting of a dial bearing coördinately-arranged groups of indications arranged in radial and circumferential directions, and an indicator radially and concentrically movable in such manner as to designate an indication corresponding to the signal to be transmitted; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

6. The combination, in signaling apparatus, of a transmitter; a signal-changer, consisting of a traveler and controlling the transmitter; a stopping device comprising fixed stopping-points in the path of travel, and means whereby the traveler is engaged by one of these at a predetermined one of several stages of its movement, thereby controlling the signal, substantially as described.

7. The combination, in signaling apparatus, of a transmitter; a signal-changer, consisting of a traveler actuated by a motor, and controlling the transmitter, a stopping device comprising a series of fixed stopping-points in the path of travel, together with regulating devices whereby said traveler can be set so as to be stopped at any one of the stops, thereby controlling the signal, substantially as described.

8. The combination, in signaling apparatus, of a transmitter; and a signal-changer, consisting of a traveler actuated by a motor and controlling the transmitter, a stopping device comprising a series of fixed stopping-points in the path of travel and at different radial distances from a common center, and regulating devices whereby said traveler can be set so as to be stopped by any desired one of the stopping-points, thereby controlling the signal, substantially as described.

9. The combination, in signaling apparatus, of a transmitter and a signal-changer, consisting of a traveler actuated by and adjustable with reference to a central spindle and controlling the transmitter; a stopping device comprising a series of fixed stopping-points in the path of travel, and in different radii of a circle drawn around the central spindle, substantially as described.

10. The combination, in signaling apparatus, of a transmitter and a signal changer, consisting of a traveler actuated by a motor and controlling the transmitter, and a stopping device comprising a series of fixed stopping-points in the path of travel and at different radial distances from a common center, and also in different radii of a circle drawn around said center; together with regulating devices whereby said traveler can be set so as to be stopped at any one of the stops, thereby controlling the signal substantially as described.

11. The combination, in signaling apparatus, of a transmitter and a signal-changer, consisting of a rotating and radially-movable traveler actuated by a motor and controlling the transmitter; a stopping device comprising a series of fixed stopping points in the path of travel and means whereby the said traveler can be adjusted so as to be stopped at any one of these, and thereby limit its circular motion, substantially as described.

12. The combination, in signaling apparatus, of a transmitter, comprising a circuit-controlling wheel constructed to advance a certain number of steps before it reaches a signal-dividing point and another set thereafter; and a signal-changer, comprising an arm moving with respect to the wheel and controlling it, and adjustable to different radial positions which determine a first signal transmitted; and two or more fixed stops arranged at different points in the path of the arm as it revolves; together with a projection on said arm which engages with any desired one of the points and limits the revolution of the circuit-wheel and determines the second signal, substantially as described.

13. The combination, in signaling apparatus, of a transmitter, comprising a circuit-wheel carried by a spindle; and a signal-changer, comprising a crank for turning said spindle and wheel to different positions; an arrester for limiting the revolution of the crank and spindle, and a projection on the crank radially movable with respect to the spindle and adapted to engage with the arrester at different points, thereby limiting the movement of the spindle and wheel, substantially as described.

14. The combination, in signaling apparatus, of a transmitter; a revolving spindle; an arm controlling its revolution and also moving with respect to it; and two or more fixed stopping-points constructed to severally engage said arm during its revolution, and means for determining the engaging-point by the position of the arm, substantially as described.

15. The combination, in signaling apparatus, of a transmitter, comprising a revolving spindle carrying a circuit-wheel; and a signal-changing mechanism, comprising an arm moving with respect to the head of the spindle and provided with position-holding devices, together with two or more fixed stops, respectively engaging said arm according to its position, substantially as described.

16. The combination, in signaling apparatus, of a transmitter; a signal-divider; a signal-changer controlling the signal according to the position of one movable part thereof; and a signal-designator controlled by the signal-changer, comprising a field bearing indications and an index, one of these movable with respect to the other, and indicating by its position how the transmitter is set; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

17. The combination, in signaling apparatus, of a transmitter; a signal divider (for separating a signal transmitted into two separately-variable portions;) a signal-changer controlling both portions of the signal according to the position of one movable part thereof; together with a signal-designator, comprising a multiple dial, coöperating with an indicator, the indicator forming a part of the signal-changer; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

18. The combination, in signaling apparatus, of a transmitter; a signal-divider (for separating a signal transmitted into two separately-variable signals;) a signal-designator, comprising a multiple dial bearing indications arranged in radial groups, and an indicator movable with respect to any desired indication on the dial and controlling the first signal transmitted; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

19. The combination, in signaling apparatus, of a transmitter; a signal-divider; a signal-designator, consisting of a multiple dial bearing two or more sets of indications arranged in substantially radial or concentric groups or series, and an indicator movable with respect to any indication on the dial, and by that act controlling the signal to be transmitted according to the indication; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

20. The combination, in signaling apparatus, of a transmitter; a signal-divider; a signal-designator, comprising a multiple dial bearing groups of indications radially arranged with respect to a common center; an indicator-arm movable with respect to any desired indication, and turning around said center; and two or more fixed stops located at different radial distances so arranged in the path of travel with relation to a projecting part of the arm as severally to engage with it at points corresponding, in their distance from the common center, to the indications at which the arm can be set, substantially as described.

21. The combination, in signaling apparatus, of a transmitter; a signal-designator, comprising a dial provided with rows of indications radially arranged with respect to a common center; and an indicator-arm moving radially with respect to this common center, and provided with position-holding devices retaining it in position to point at any desired indication of a radial row; together with two or more fixed stops in the path of said arm arranged to limit its revolution at different points according to the position in which it is held; together with means whereby the signal transmitted is varied to correspond with the indication, substantially as described.

22. The combination, in a spring actuated automatic variable latent-signal transmitter, of a motor; a winder therefor; an electromagnetic retaining and releasing device; and an unsetting device whereby the instrument may be unset mechanically before it is released electrically, said device being controlled by reversing mechanism so organized that the actuation of the winder in one direction sets the instrument, while its actuation in a reverse direction unsets it, substantially as described.

23. The combination, in a spring-actuated automatic variable latent-signal transmitter, of a motor; a winder therefore; an electromagnetic retaining and releasing device; and an unsetting device whereby the instrument may be unset mechanically before it is released electrically, said device being controlled by a signal-changer; and reversing mechanism so organized that the actuation of the winder in one direction prepares the instrument to transmit a certain number of impulses, and after it has been set, its actuation in another direction lessens this number, substantially as described.

24. The combination, in signaling apparatus, of a transmitter: signal-setting mechanism; a signal-divider (to separate the signal to be transmitted at one transmission into two separately-variable portions); and a signal-changer, comprising the movable arm R cooperating with circuit-controllers, and the position of which determines both signals transmitted, and cooperates with unsetting reversing mechanism, and is so connected and organized that the reversal of its movement after the instrument has been set changes the number of impulses of which one of the signals is to be composed, substantially as described.

25. The combination, in signaling apparatus, of a transmitter; signal-setting mechanism; a signal-divider (to separate the signals transmitted into two separately-variable portions); and a signal-changer, comprising the arm R, movable in two senses, the position of which, with reference to cooperating circuit-controllers, determines both signals; and coöperating unsetting mechanism, so organized and connected that the reversal of the movement of the arm in both of these senses changes the number of impulses in both signals, substantially as described.

26. The combination, in a signal-transmitter, of the indicator-carrying hub Q, carrying a circuit wheel B, and pawl *b*, and turning on the motor-spindle, with a ratchet-disk M, rigidly attached to the spindle, its teeth being shaped so that the break-wheel is carried along when the hub is moved forward, but it is not so carried when it is moved backward, substantially as described.

27. The combination, in a spring-actuated latent-signal transmitter, of the armature which, when unattracted by the magnet operates to lock the train; the cam L, mounted upon an arbor of the train other than the main; and the lock K, whereby the transmitter-wheel can be locked in one of several stages of its revolution, the said lock bearing upon said cam so as to support said armature close to the magnet mechanically, at times when it would otherwise drop back on account of a break in the circuit produced by the signal transmission, and thereby preventing the locking of the train, substantially as described.

28. The combination, in a spring-actuated latent-signal transmitter, of the motor-actuated train, including an arbor carrying a break-wheel; a locking device; another arbor so geared in the train as to make at most one revolution for every advance of the break-wheel one tooth; and a locking-cam carried by said arbor, controlling the lock and operating mechanically to hold the train unlocked during each break in the circuit, substantially as described.

29. The combination, in a spring-actuated latent-signal transmitter, of the motor-actuated train, including an arbor carrying a break-wheel; a locking device; another arbor so geared in the train as to make one revolution for every advance of the break-wheel one tooth; and a cam L, carried by said arbor, controlling the lock, and operating mechanically to hold the train unlocked during each break in the wheel, substantially as described.

30. The combination, with a latent-signal transmitter, of a motor-actuated train; a locking device; and an arbor bearing both the locking-cam L and the escape wheel of the train, substantially as described.

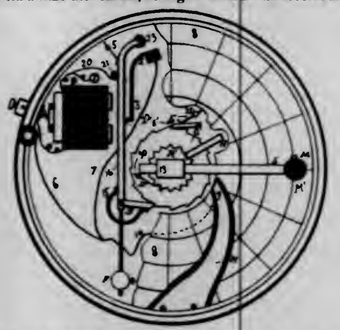
31. In a latent-signal transmitter, a motor-actuated gear-train; a revolving break-wheel; a contact-brush; the cam L; a lock K, so placed with relation to each other that the contact-brush always closes the circuit on the break-wheel whenever the lock K, is opposite the hollow on the cam L, substantially as described.

573,592. ELECTRIC SIGNALING APPARATUS. FELIX B. HERZOG and SCHUYLER S. WHEELER, New York, N. Y.; said Wheeler assignor to said Herzog. Filed Jan. 29, 1886. Serial No. 190,175. (No model.)

Claim.—1. At a sending-station, a transmitter organized to transmit two separate variable signals at one transmission, and at a receiving-station an apparatus comprising two progressively-moving elements, each controlled by a magnet the first magnet being controlled by the first part of the transmission, and the second magnet by the second part.

2. At a sending-station, a transmitter organized to transmit two separate variable signals at one transmission and at a receiving-station

an apparatus comprising two progressively-moving elements each controlled by a magnet, the first magnet being controlled by the first part of the transmission and the second magnet by the second part, together with a time-movement, acting to control the second element.



3. At a sending-station, a transmitter organized to transmit two separate variable signals at one transmission and at a receiving-station an apparatus comprising two step-by-step wheels, each controlled by a magnet, the first magnet being controlled by the first part of the transmission and the second by the second part.

4. At a sending-station, a transmitter organized to transmit more than one series of impulses at each transmission, and at a receiving-station apparatus comprising a separate moving part and a separate magnet for each of the parts of the signal transmitted.

5. A receiving-station apparatus comprising two wheels each controlled by its magnet, the magnets being in branches of a main circuit, together with a time-switch controlling two of these branches.

6. At one station, means for producing two groups of impulses together with a controlled device as a magnet, and at a second station a mechanism controlled by the first group and controlling the device at the first station at the termination of the first group of impulses.

7. A signal-transmitter comprising means for setting it to transmit two sets of signals, a magnet controlling the second set, means controlling a pause after the transmission of the first set, and at a second station, a switch controlling the subsequent energization of the magnet and the delivery of the second set.

8. At one station means for producing two groups of impulses together with a magnet controlling the production of the second group and at another station mechanism arranged to be separately controlled by each group and itself controlling the magnet at the first station, at the termination of the first group of impulses.

573,593. TRACTION-ENGINE AND HARVESTER ATTACHMENT. BENJAMIN HOLT, Stockton, Cal. Filed July 20, 1896. Serial No. 599,841. (No model.)

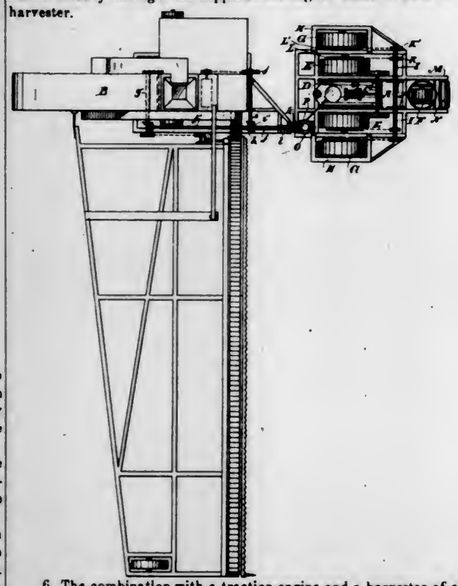
Claim.—1. In combination with a traction-engine and harvester, an independent engine and intermediate connections by which the mechanism of the harvester is driven, said engine being swiveled to the traction engine so as to form the center about which the engine and harvester are turnable.

2. The combination with a traction-engine and a harvester of an independent vertically-disposed engine, mechanism through which the power of said engine is transmitted to drive the machinery of the harvester, a vertically-disposed swivel-joint connection between the traction-engine and the harvester, about which joint the supplemental engine is turnable to maintain its line with the harvester mechanism.

3. The combination with a traction-engine and harvester of a vertically-disposed supplemental engine, swivel-joints fixed to the traction-engine about which the supplemental engine is turnable, steam and exhaust pipes connecting with said supplemental engine having swivel-joints in line with that about which the engine and harvester are turnable.

4. The combination with a traction-engine and harvester and a swivel-joint about which the two are turnable with relation to each other of a supplemental engine centrally disposed in line with said joint, mechanism connecting said engine with the traction-engine boiler and with the harvester mechanism respectively and swivel-joints about which the supplemental engine is turnable to maintain its connection with the harvester mechanism.

5. The combination with the traction-engine and harvester having a swivel-joint by which they are united and about which they are turnable, of a supplemental engine centrally disposed with relation to the swivel-joint, mechanism connecting said engine-shaft with the mechanism of the harvester whereby the latter is driven from the supplemental engine, a band or universal joint connecting said engine with the harvester whereby the power of the traction-engine is transmitted directly through the supplemental-engine frame to haul the harvester.



6. The combination with a traction-engine and a harvester of a vertically-disposed supplemental engine, swiveled joints at top and bottom, and connections by which they are supported from the traction-engine, steam and exhaust pipes connecting the traction-engine with the supplemental engine having swivel-joints in line with the centers about which the supplemental engine is turnable, a universal coupling by which the supplemental-engine shaft is connected with a shaft extending rearwardly to drive the harvester mechanism, a band surrounding the supplemental-engine frame having a joint and yoke by which it is connected with the shaft which drives the harvester mechanism whereby power is transmitted therethrough to haul the harvester.

7. The combination with a traction-engine and a harvester of a supplemental vertically-disposed engine, swivel-joints by which the traction-engine is connected with the harvester and about which the supplemental engine is turnable to maintain its alinement with the harvester, a supplemental shaft connecting with the supplemental-engine shaft and having universal joints between, a mechanism whereby the power of said shaft is subdivided, consisting of a second shaft in alinement therewith having a coupling through which power is transmitted and a shaft journaled at right angles upon the threshing-machine with bevel-gear whereby the power of the primary shaft is transmitted equally through the direct and the transverse shafts to the threshing and cleaning mechanism.

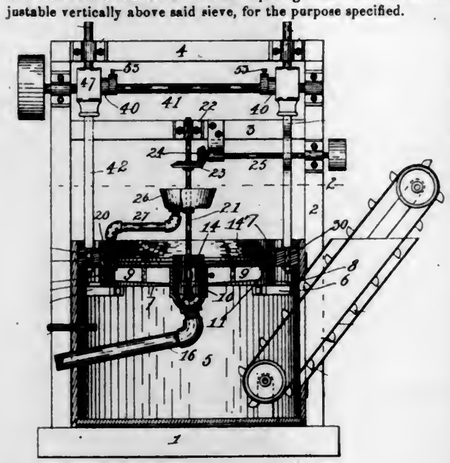
8. A traction-engine connection whereby it is adapted to haul a harvester, in combination with supplemental removable wheels and wheel-frames journaled approximately in line with the main bearing-wheels of the engine, sprocket-wheels and connecting-chains whereby both main and supplemental bearing-wheels are driven directly from the engine, and a roller journaled upon framework extending in front of the steering-wheel substantially as described.

573,594. MACHINE FOR JIGGING ORE. WILLIAM HOOPER, Ticonderoga, N. Y. Filed Sept. 14, 1895. Serial No. 562,549. (No model.)

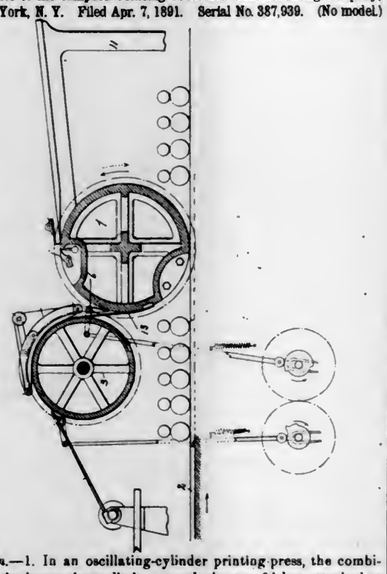
Claim.—1. In a machine for jigging ores, a hutch, a sieve consisting of a ring set in said hutch near the top thereof with a space intervening between said ring and hutch and a screen in said ring, means for feeding ore and water to said sieve, an outlet therefrom for the lighter part of the ore, an imperforate annular plunger situated in the space around the ring, and means for vertically reciprocating said plunger for the purpose specified.

2. In a machine for jigging ores, a hutch, a sieve mounted therein near the top, the screen-bottom of the sieve being imperforate for a short space around its outer edge, an outlet in the center of the sieve for the lighter part of the ore, means for agitating the contents, a conical ring seated in said sieve leaving an opening around its periphery between it and the sieve-frame directly over the imperforate portion of the screen, and a feed-pipe traversing the space between said conical ring and the sieve-frame, for the purpose specified.

3. In a machine for jigging ores, a hutch, a sieve, of smaller diameter than the hutch, supported centrally therein near the top, an annular plunger in the space between said hutch and sieve, a shaft mounted thereover, an eccentric near each end of said shaft, an eccentrically-bored ring mounted on each of the aforesaid eccentrics and means for holding it in any set position thereon, and a cross-head on each eccentric-pitman connecting same to the corresponding side of the annular plunger, a cuff set in the inner opening of said outlet and adjustable vertically above said sieve, for the purpose specified.



573,595. PRINTING-MACHINE. JAMES G. HOYT, Brooklyn, N. Y., assignor to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed Apr. 7, 1891. Serial No. 387,939. (No model.)



Claim.—1. In an oscillating-cylinder printing-press, the combination of the impression-cylinder, a mask-sheet or frisket attached at one end to said cylinder, and an oscillating supporting-cylinder for said frisket, substantially as described.

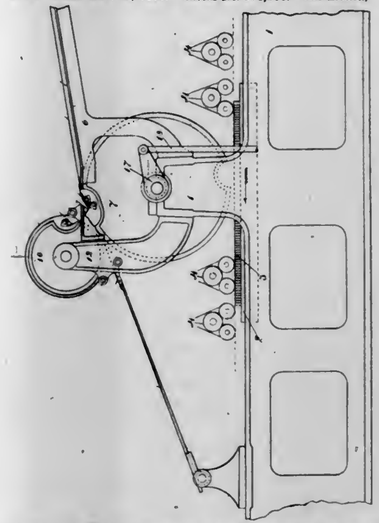
2. In an oscillating-cylinder printing-press, the combination with the impression-cylinder, a mask-sheet or frisket attached at one end thereto, a suitable supporting device for the mask-sheet or frisket, the whole so arranged that the mask-sheet or frisket will move with the impression-cylinder, and a suitable switch adapted to divert the sheet from the impression-cylinder as the cylinder makes its non-printing movement, substantially as described.

3. In an oscillating-cylinder printing-press, the combination of the feed-board, the impression-cylinder, a mask-sheet or frisket secured at one end to said cylinder, and adapted to move therewith, a supporting device for said mask-sheet and a delivery mechanism arranged on the other side of the cylinder relatively to the feed-board, to which the sheet passes tail first, substantially as described.

4. In an oscillating-cylinder printing press, the combination with the impression-cylinder, a mask-sheet or frisket secured thereto, means for carrying the part of the mask-sheet or frisket not on the impression-cylinder, the whole so arranged that the mask-sheet or frisket will move with the impression-cylinder, means for diverting the sheet on top of the mask-sheet, as the cylinder makes its non-printing movement, and means for delivering the sheet from the top of the mask-sheet, substantially as described.

5. In an oscillating-cylinder printing-press, the combination with the impression-cylinder, a mask-sheet or frisket secured thereto, means for manipulating the mask-sheet so that the same will move with the impression-cylinder, and a delivery mechanism adapted to receive the printed sheet tail first from the mask, and deliver the same, substantially as described.

573,596. MACHINE FOR PRINTING FROM COLLOTYPE OR ALBERTYPE PLATES. WINFIELD S. HUSON, Taunton, Mass., assignor to the Campbell Printing Press and Manufacturing Company, New York, N. Y. Filed Nov. 12, 1890. Serial No. 371,211. (No model.)



Claim.—1. The combination in a printing-machine of an impression-cylinder, a transfer-cylinder coöperating therewith and located so that a mask-sheet transferred from the same to the impression-cylinder will be laid on top of the sheet on the impression-cylinder before said sheet reaches the printing-surface, gripper devices arranged in the impression-cylinder and transfer-cylinder so that the mask-sheet will be continuously transferred back and forth between the transfer-cylinder and impression-cylinder, and delivery devices coöperating with the impression-cylinder for taking the printed sheets from the impression-cylinder and delivering the same, substantially as described.

2. The combination in a printing-machine of an impression-cylinder, a reciprocating bed and feed-board, a transfer-cylinder coöperating with the impression cylinder and located on the opposite side thereof relatively to the feed-board, gripper devices arranged in said transfer and impression cylinders so that a mask-sheet will be continuously transferred back and forth between the same, and delivery devices coöperating with the impression cylinder, substantially as described.

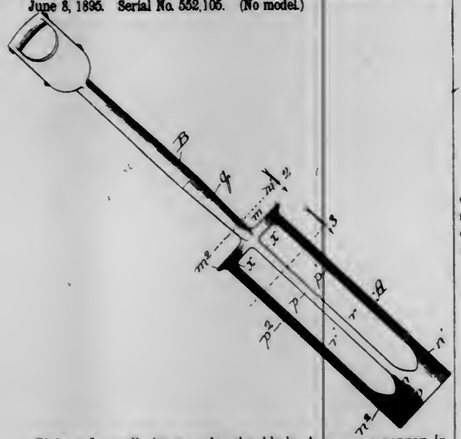
3. The combination in a printing-machine of an impression-cylinder, a transfer-cylinder located in connection with the impression-cylinder between the point where sheets are fed to the same and the point where the impression-cylinder contacts with the printing-surface, gripping devices arranged so that a mask-sheet will be continuously transferred back and forth between the impression-cylinder and the transfer-cylinder, and a shield arranged to keep the mask-sheet in position on the transfer-cylinder, substantially as described

4. In a printing-machine, the combination of an impression-cylinder having a set of gripping devices for the sheet to be printed, and a second set of gripping devices for a mask-sheet, and a transfer-cyl-

inder having gripping devices for alternately delivering the mask-sheet to the impression cylinder and stripping said mask-sheet from the impression-cylinder, substantially as described.

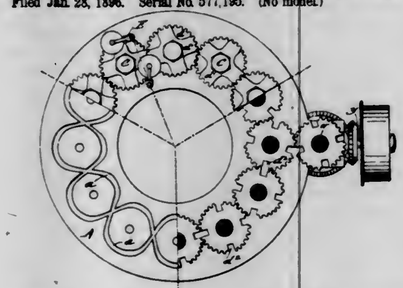
5. In a printing-machine, the combination with an impression-cylinder carrying two sets of grippers, and a transfer-cylinder carrying grippers, the said cylinders being timed together, and the several sets of grippers being operated to coact so that a frisket or mask-sheet fed to the impression-cylinder will be thereafter automatically and alternately transferred from the impression-cylinder to the transfer-cylinder, and from the latter back to the impression-cylinder, as required in course of printing sheets, substantially as described.

573,597. DITCHING-SPADE. LOUIS IWAN, Streator, Ill. Filed June 8, 1895. Serial No. 552,105. (No model.)



Claim.—In a ditching spade, the blade A, concavo-convex in cross-section and formed with the cutting end o, openings r and r', and longitudinal bars p, p' and p^3 at the sides of said openings, said bars having the expanded junctions n, n' and n^3, with said cutting end and being substantially V-shaped in cross-section with the apices extending along their backs, and the bar m at the upper end of said longitudinal bars, beveled on its rear side and flush with the front and rear surfaces of the blade and provided with end extensions having the beveled surfaces v and forming footsteps m' and m^3, as and for the purpose set forth.

573,598. BRAIDING-MACHINE. HENRY JANSSEN, Reading, Pa. Filed Jan. 28, 1896. Serial No. 577,195. (No model.)

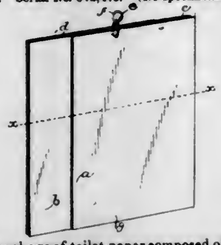


Claim.—1. In a single-plate braiding-machine the combination with the grooved bed-plate of bobbin-carriers guided therein and a series of carrier-driving gears each comprising a lower disk with teeth cut away at intervals to form recesses adapted to engage and traverse the carriers and a superposed disk supplied with teeth at the parts corresponding with said recesses substantially as set forth.

2. In a single-plate braiding-machine as described the combination with the grooved bed-plate of bobbin-carriers guided therein, and carrier-driving gears, each consisting of two toothed disks located one above the other with an intervening space, one of said disks being recessed in its toothed periphery to engage and traverse the carriers, and the other supplied with teeth to complete the gears and recesses to permit the passage of the carriers between them substantially as set forth.

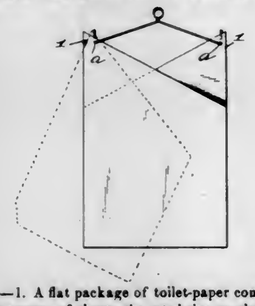
3. In a single-plate braiding-machine as described the combination with the grooved bed-plate and the carrier-driving gears as described, of bobbin-carriers guided in the groove and driven by the gears, each of said carriers having a flange adapted to contact with a side of a driving-gear so as to maintain the carrier in erect position and an opening in the carrier to permit its passage between the disks d' of adjacent gears substantially as set forth.

573,599. TOILET-PAPER. EDGAR JEROME, Norwalk, Conn. Filed Dec. 11, 1895. Serial No. 572,473. (No specimens.)



Claim.—A package of toilet-paper composed of two sets of sheets or groups of sheets so placed that a part of each sheet or group of sheets of one set, is overlapped by a sheet or group of sheets of the other set, in combination with a binding device connecting all the units on one margin.

573,600. TOILET-PAPER. EDGAR JEROME, Norwalk, Conn. Filed Jan. 15, 1896. Serial No. 575,630. (No specimens.)



Claim.—1. A flat package of toilet-paper composed of two sets of sheets or groups of sheets, the sets being so placed that a part of each sheet or group of sheets of one set is overlapped by a sheet or group of sheets of the other set, each set having a single point of suspension which is independent of the point of suspension of the other set, which point is located aside from the center of gravity of each sheet or group.

2. A package of sheets of paper, consisting of assembled units of use, alternately displaced in relation to each other, whereby the edge of one unit lies upon the face of the next succeeding unit in combination with a pronged holding device, having two separated points of attachment, one inserted through the set of alternate units on one side and the other through the alternate units on the other side, substantially as described.

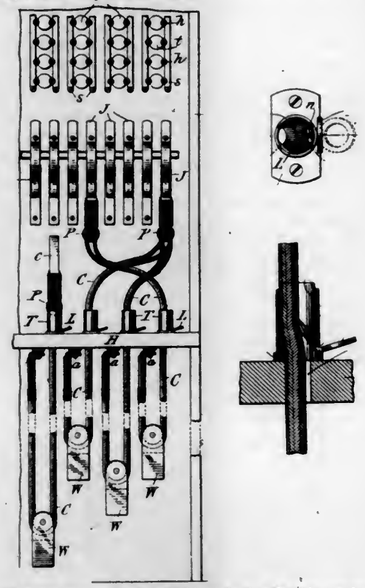
573,601. ELECTRICAL SWITCHING APPARATUS. FRANCIS W. JONES, New York, N. Y. Filed Oct. 15, 1896. Serial No. 608,933. (No model.)

Claim.—1. The combination in a switchboard of a spring-jack, two or more flexible cords, a plug for each cord, a take-up device for each cord and means for locking or holding a cord against the action of said take up device, substantially as described.

2. The combination in a switching apparatus of a spring-jack, a flexible conducting-cord, a take-up device therefor, a plug forming the terminal of said cord having contact-points coöperating with the contact-points in said jack and means for locking or holding said cord at a point between said plug and said take up device whereby said cord, when in use, may be relieved from the influence of said take-up, substantially as described.

3. The combination in a switching apparatus of a spring jack, a flexible conducting-cord, a plug carrying contacts registering with said spring-jack contacts, a take-up device operating to withdraw said cord, and a locking device fixed in position between said plug and take-up to catch and hold said cord, substantially as described.

4. The combination of a series of flexible cords each fixed at one end, a plug for each cord forming the free terminal thereof, a spring-jack to receive such plugs, and a locking device to hold a cord against the tendency to displacement due to manipulation of other cords of the series, substantially as described.



5. The combination in a switchboard of a flexible conducting-cord, passing through an aperture in a table or support, a metal ring or thimble upon the table through which said cord passes having a spring-actuated lock or catch engaging the surface of said cord, substantially as described.

573,602. TUBE. AUGUST KIRSCHBAUM, Solingen, Germany. Filed Mar. 21, 1896. Serial No. 584,342. (No model.)



Claim.—1. A thin metallic tube provided with elastic material such as cork secured under pressure inside it and holding its walls constantly in tension, substantially as set forth.

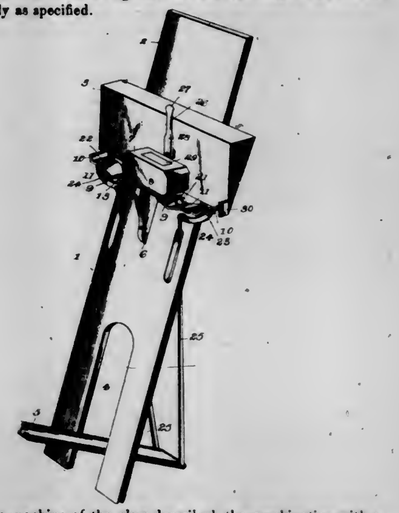
2. A thin metallic tube provided with a filling formed of plugs of cork set in a mixture of disintegrated cork and adhesive material, substantially as set forth.

573,603. FOLDING-MACHINE. CHARLES KLONINGER and JOHN E. BUTTON, Salt Lake City, Utah. Filed Mar. 28, 1895. Serial No. 543,510. (No model.)

Claim.—1. In a machine of the class described, the combination with a forming block or core, of a sectional folder adapted to extend around the block or core and comprising a main or lower member and sectional connected end members, the terminal sections of the end members having curved arms terminating beyond the inner ends of said sections, and means for closing and opening the folder including inflexible pitmen connected solely to the extremities of the arms on the terminal sections of the end members, said arms being adapted to bear at their extremities upon the outer surfaces of the inner sections of the end members to communicate motion thereto, substantially as specified.

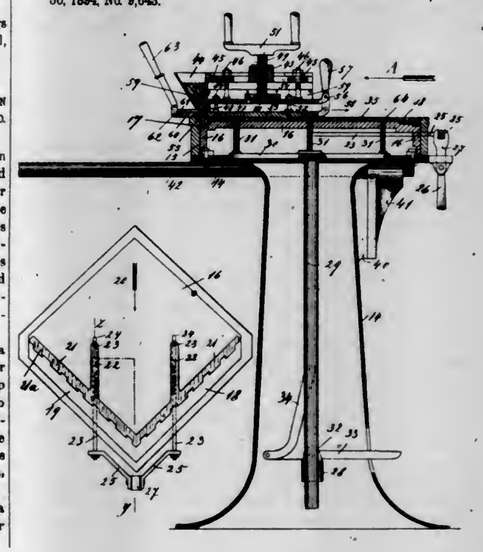
2. In a machine of the class described, the combination with a forming block or core, of a folder having a main or stationary member and pivotally connected sectional end members adapted to overlap the upper side of the block or core, arms attached, respectively, to the terminal sections of the end members and adapted when said sections are folded back to bear at their outer extremities against the outer surfaces of intermediate sections of the end members, and means for imparting upward pressure to said outer extremities of the arms, substantially as specified.

3. In a machine of the class described, the combination with a forming block or core, of a folder having a stationary main member and pivotally-connected sectional end members, each comprising a leaf and a connected flap, the latter being adapted to fold upon the upper side of the block or core, curved arms 24 secured to the terminal sections or flaps of the end members and extending outwardly beyond the pivotal points of the flaps whereby their extremities are adapted to bear against the outer surfaces of said leaves, and means for imparting upward pressure to the extremities of said arms, the same including inflexible pitmen attached to said extremities and adapted to force the same against the outer surfaces of the leaves, substantially as specified.



4. In a machine of the class described, the combination with a forming block or core, of a folder having a stationary main member and pivotally-connected sectional end members each comprising a leaf 11 having an angularly disposed flange provided with a plurality of slots, 21, 22, parallel with the front edges of the members, and flaps 12 having angularly-disposed flanges provided with corresponding slots arranged, respectively, in the planes of those in the flanges of the leaves, and means, including arms attached to the terminal sections or flaps, for communicating motion to the end members and folding the same upon the block or core, substantially as specified.

573,604. ROOFING-TILE MACHINE. GUSTAV KREBS, Halle-on-the-Saale, and ABRAHAM WEIL, Steinheim, Germany. Filed Mar. 22, 1895. Serial No. 542,850. (No model.) Patented in Switzerland Nov. 30, 1894, No. 9,643.

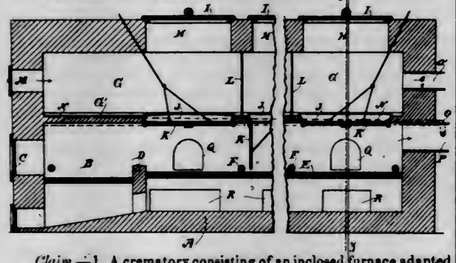


Claim.—1. A press for the manufacture of roofing-tiles, comprising means for forming the depressions in the lower overlapping ledges, of the tile which consists of a bed sunk in a suitable frame conforming to the outline of the tile, a second frame fitting adjustably in recesses formed for it in the bed and means consisting of a thrusting-rod, stirrup and lever for moving the second frame, said frame being also provided with guide-plates and teeth, and of a mold-plate which covers the bed and is furnished with angles for the overlapping ledges and the nose of the tile together with recesses formed in the angles of the same, so that after the cement has been placed upon the mold-plate the teeth of the frame are pressed into the formed overlapping ledges of the tile and the depressions in the latter produced, substantially as shown and described.

2. In a press for the manufacture of tiles comprising suitable means for forming the upper and lower overlapping ledges of the tile, and suitable means for forming tooth-like lugs on the upper ledges, consisting of a funnel adapted to be shifted upon guide-rods, a plate adapted to be shifted vertically, and a second plate having a sliding connection with the first plate and adapted to be moved by a lever, said plate being provided on the sides adjacent to the funnel with recesses corresponding to the tooth-like lugs, substantially as shown and described.

3. In a machine of substantially the character specified, the combination of a suitable base carrying a frame, a movable mold-bottom in said frame, a mold-plate carried by said bottom, for forming the bottom of the tile and the lower overlapping ledges, suitable means in connection with the mold-bottom for forming depressions in the overlapping ledges, and suitable means traveling over the mold-frame for forming the upper overlapping ledges and the teeth therein, substantially as shown and described.

573,605. ODORLESS CREMATORY. CYRENUS W. LENT, Oakland, Cal., assignor of three-fourths to Theodore Swift and Louis Schaffer, same place, and J. W. Swift, San Francisco, Cal. Filed Dec. 9, 1895. Serial No. 571,541. (No model.)



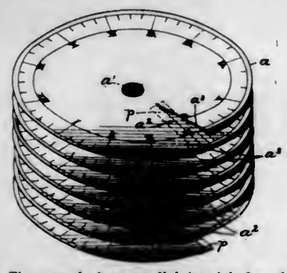
Claim.—1. A crematory consisting of an inclosed furnace adapted to burn the material, a superposed closed drying-chamber having feed-openings at the top with controlling-doors, coincident openings beneath the feed-openings leading from the drying- to the furnace chamber with doors whereby communication between the two is controlled, a transversely-inclined floor extending from one side to the other of the drying-chamber and a longitudinal channel or channels at the lower side of the floor to receive unvaporized liquid contained in the material delivered into the drying-chamber, a pipe with which the channel connects and a main discharge-passage from the furnace and drying-chamber into which the pipe also leads.

2. A crematory-furnace consisting of an inclosed furnace-chamber having a grated floor, means for applying heat therein for the destruction of its contents, door-controlled openings at the sides for the introduction of implements to break up and discharge the burnt mass through the grated floor, a receiving-pit beneath with similar openings for the removal of the clinker after it falls through the grate, a closed drying-chamber situated above the furnace-chamber having door-controlled openings for the introduction of the material to be treated, vertical grated diaphragms fixed at intervals in the length of the drying-chamber to limit the spread of the material, a draft-opening for the introduction of air at one end of said chamber, and a discharge-passage at the opposite end for the delivery of vapors, and door-controlled openings in the floor of the chamber through which the material is delivered by gravitation into the furnace after being dried.

3. A cremating apparatus consisting of an inclosed furnace, with means for applying heat for the destructive distillation of its contents, a grated floor and door-openings for the agitation and discharge of the burnt material, a superposed inclosed drying-chamber with receiving and discharge openings, and an air-inlet passage and valve at one end, a discharge-pipe leading from the furnace to a condenser, an inclined floor with channel for the collection of the liquid portions of the material delivered into the drying-chamber, said channel connecting with the discharge-passage from the furnace, a second discharge-passage from the upper part of the drying-chamber for the conduction of vapors therefrom to the main discharge-pipe, an enlarged combustion-chamber situated within the length of said pipe, and a draft apparatus whereby the vapors are drawn from both furnace and drying chamber and delivered into the condenser.

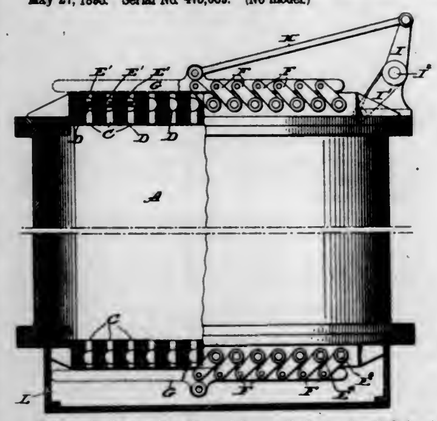
4. A cremating apparatus consisting of a furnace-chamber, a superposed drying-chamber with doors whereby access may be obtained to the two for the introduction and removal of the material, channels in the floor of the drying-chamber for the collection of liquid portions of the mass, a main discharge-passage leading from the rear of the furnace to the condenser, passages connecting respectively with the liquid-collecting channels and the upper part of the drying-chamber and delivering into the main furnace discharge-pipe, a combustion-chamber interposed between the furnace and the condenser, a draft apparatus whereby the products of combustion and the vapors from the drying-chamber are drawn into a discharge-pipe and delivered thence into a condenser, a condenser within which the vapors are condensed and a disinfecting-chamber into which the uncondensed vapors and products of condensation are delivered from the condenser.

573,606. DIAL FOR RECORDING APPARATUS. FREDERICK G. LOUGEE, Providence, R. I. Filed Mar. 4, 1896. Serial No. 581,822. (No model.)



Claim.—The record sheet or dial hereinbefore described, the same consisting of a series of suitable superposed disks *a* joined together and forming a continuous spiral or helix, and having the top and bottom disks thereof cut so as to form free ends, for the purpose specified.

573,607. VALVE. ARTHUR MARIGNAL, Philadelphia, Pa., assignor to the Southwark Foundry and Machine Company, same place. Filed May 27, 1893. Serial No. 475,689. (No model.)



Claim.—1. In combination with a cylinder, a head B having formed in it a series of slots C forming a grid-valve opening, and a series of valve-seats D, one situated in each slot C, a series of rotary valves E secured in the respective seats D, and means for simultaneously operating said valves to open or close the slots.

2. In combination with a cylinder, a head B having formed in it a series of slots C forming a grid-valve opening, and a series of valve-seats D, one situated in each slot C, a series of rotary valves E secured in the respective seats D, reciprocating mechanism, as bar G, for simultaneously actuating said valves, and a series of independent detachable devices as rods F for connecting the separate valves with the said reciprocating mechanism.

3. In a blowing-engine or compressor, the combination with a cylinder-head B having a series of slots C forming a grid-valve opening, and a series of valve-seats C one situated in each slot, a series of rotary valves E one secured in each slot and arranged to seat themselves across the slot on that side of the seat through which the air or gas enters the cavity of the valve-seat, and means for simultaneously actuating said valves.

573,608. TETRAPOD FOR DRILLS. ADOLF E. W. MEISSNER, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed May 2, 1896. Serial No. 589,972. (No model.) Patented in Germany Oct. 3, 1895, No. 85,864.



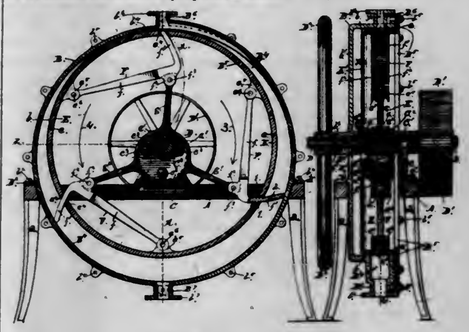
Claim.—1. In a support for drills, the combination with the shaft *a*, of a drill-clamp *b* mounted upon said shaft, means for securing the same in any position of rotation thereon, collars c c' c^2 c^3 rotatably mounted in pairs upon the said shaft on either side of the drill-clamp, four legs secured to the said collars and adapted to be independently spread to positions of wide divergence forming a quadrilateral base for said drill-support, and independent means for locking each pair of legs and collars in any position of adjustment, substantially as described.

2. In a support for drills, the combination with a horizontal shaft *a* of a drill-clamp *b* rotatably mounted upon said shaft, means for securing the same in any position of rotation upon the said shaft, shoulders f f' provided upon the said shaft, one on each side of the drill-clamp, four collars c c' c^2 c^3 rotatably mounted two on each end of the shaft, engaging oblique walls or faces provided upon the said collars, and shoulders in the shape of alternate solid and hollow frustums of cones of the same angle and diameter, four legs d d' d^2 d^3 secured to the said collars, a cap or washer h h' at each end of the said shaft adapted to bear upon the outer face of the adjoining collar, a set-screw g g' provided at each end of the shaft adapted to engage the cap thereon and lock the collars in any position of rotation upon the said shaft; substantially as described.

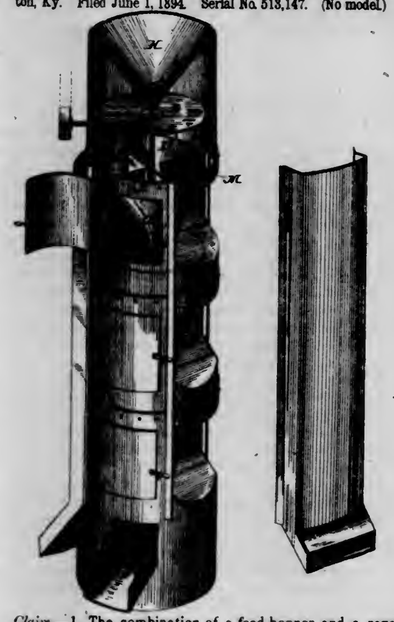
3. In a support for drills, the combination with a drill clamp rotatably mounted upon a horizontal shaft, of means for securing the same upon the said shaft in any position of rotation thereon, shoulders provided upon the shaft upon each side of the said clamp, two collars axially mounted upon each end of the shaft beyond the said shoulders, said shoulders and collars being provided with engaging oblique walls in the shape of alternate solid and hollow frustums of cones of the same angle and diameter, four legs secured respectively to the four rotatably-mounted collars, and adapted to be independently spread to positions of wider and wider divergence from one another as the said collars are rotated to form a quadrilateral base of increasing dimensions, and means for locking the parts in any position of rotation upon the said shaft; substantially as described.

573,609. ROTARY BLOWER. SIMON B. MINNICH, Landisville, Pa., assignor to Mary C. Minnich, same place. Filed Aug. 3, 1892. Serial No. 442,021. (No model.)

Claim.—The hereinbefore-described rotary pump or engine comprising the following instrumentalities: a revoluble body, having a cylindrical rim or circular peripheral wall; transverse slots, at prescribed intervals, through said wall; curved wings or arms, movable out and in, through said slots; beams or bars, having their forward ends rigidly secured to the inner ends of said curved arms, and their rear ends joined to said revoluble body, an eccentric, placed within the revoluble body, having its focus in the axis of revolution, and a side rigidly secured to a pillow-block fixed in position; a shaft-bearing secured to the upper end of said pillow-block, and extended through the focus of said eccentric; a main or driving shaft journaled in said bearing, and having securely attached thereto the center of the revoluble body: eccentric-straps, sleeved on the eccentric; and, eccentric-rods, having one end securely affixed to said straps, and the other end joined to the bars of the curved wings, all substantially as described and for the purpose set forth.



573,610. SAMPLING-MACHINE. CHARLES C. MOORE, Jr., Lexington, Ky. Filed June 1, 1894. Serial No. 513,147. (No model.)



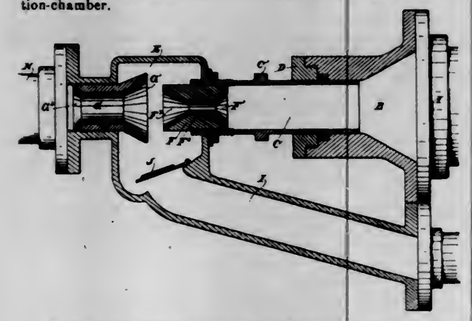
Claim.—1. The combination of a feed-hopper and a revolving horizontal disk, the outlet of the hopper being placed directly over and a short distance above the center of the disk, so that as the material feeds onto the disk, it is thrown off freely by the action of centrifugal force.

2. The combination of a feed-hopper and a revolving horizontal disk, the outlet of the hopper being placed directly over and a short distance above the center of the disk, so that as the material feeds onto the disk, it is thrown off freely by the action of centrifugal force; and a receptacle so constructed that a portion of the circumferential mass which falls from the disk, will be retained as a sample.

3. The combination of a casing; a feed-hopper; a revolving shaft at the center of the casing; upon which shaft is rigidly fixed a disk whose center is a short distance below the outlet of the hopper, the diameter of the disk being less than that of the casing so as to allow the material to pass off the disk; and a receptacle whose diameter is that of the casing, so constructed that a portion of the circumferential mass which falls from the disk, will be retained as the sample; and openings in the side of the casing to allow material to be discarded.

573,611. EJECTOR FOR MINING AND DREDGING. WILLIAM MUIR, Michigan Bluff, Cal. Filed June 1, 1896. Serial No. 593,684. (No model.)

Claim.—1. A supply-pipe, a receiving-chamber with which it is connected, a suction-chamber separated from and in line therewith, a cylindrical sleeve having screw-threads fitting a corresponding screw-threaded opening in the suction-chamber at one end, and a smooth cylindrical portion slidable through a stuffing-box into the receiving-chamber, a means for rotating the sleeve so as to advance or retract it with relation to the suction-chamber, a sleeve adjustable in the discharge end of the cylinder having a central cylindrical passage and conical ends, and a corresponding sleeve fitting the opposite side of the suction-chamber axially in line with the first-named sleeve and with the discharge-pipe, and a suction-pipe connecting with the suction-chamber.



2. A supply-pipe and contracted receiving-head, a cylindrical pipe fitting and slidable in said head and a stuffing-box to make a tight joint therewith, a suction-chamber, having a screw-threaded opening into which the opposite end of the pipe fits with corresponding screw-threads, a means for turning the pipe whereby it may be advanced or retracted within the suction-chamber, a screw-threaded sleeve fitting the interior of the pipe and adjustable with relation thereto independent of the adjustment of the pipe in the suction-chamber, said sleeve having a cylindrical central opening with diverging conical receiving and discharge ends respectively, a second sleeve with cylindrical central portion and conical receiving end opening into the suction chamber at a distance from the first-named sleeve and screw-threads by which it is adjustable so as to regulate its position with relation to the interior of the suction-chamber and to the first-named sleeve, and a supply pipe or passage by which water or gravel is delivered into the suction-chamber.

3. In an apparatus for the propulsion of water and material by a column of water under pressure, a supply and a discharge pipe, and an intermediate suction-chamber with passages axially in line, a cylindrical pipe opening into the suction-chamber at one end and slidably mounted at its opposite end, and a nozzle fitted to said pipe and projecting into the said chamber.

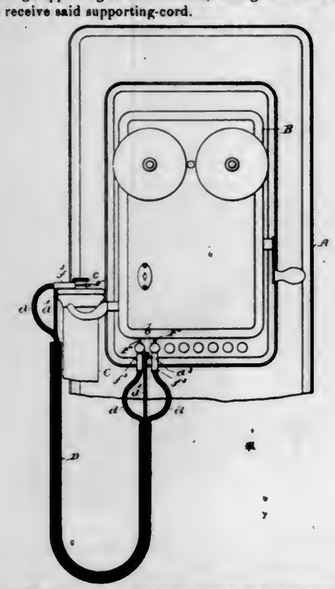
4. In an apparatus for the propulsion of water or material by a column of water under pressure, a supply and a discharge pipe, and intermediate suction-chamber with passages in line, a pipe extending from the supply-pipe and adjustably fitted to one end of the suction-chamber, and provided with a sleeve or nozzle, and a second sleeve opening into the opposite end of the suction-chamber at a distance from the first-named sleeve, and having its opposite end opening into the discharge.

5. In an apparatus for the propulsion of water and material by a column of water under pressure, a supply and a discharge pipe, and an intermediate suction-chamber with passages axially in line, a cylindrical pipe opening into the suction-chamber at one end and slidably mounted at its opposite end, a nozzle fitted to said pipe and projecting into said chamber, and independently adjustable, and a funnel-shaped sleeve fitted into the opposite side of the chamber and longitudinally adjustable with relation to the discharge-pipe.

6. In an apparatus for the propulsion of water or material by a column of water under pressure, a supply and a discharge pipe and intermediate suction-chamber with passages in line, a pipe leading from the supply-passage and entering one end of the suction-chamber, a nozzle carried by the end of the pipe within the suction-chamber having funnel-shaped ends and intermediate cylindrical portion, a sleeve entering the opposite end of the suction chamber and separated a distance from the nozzle, and means whereby water or gravel is delivered into the suction-chamber.

573,612. ELECTRICAL CONNECTING-CORD. CHARLES H. McEVOY, Lowell, Mass. Filed Feb. 24, 1896. Serial No. 580,357. (No model.)

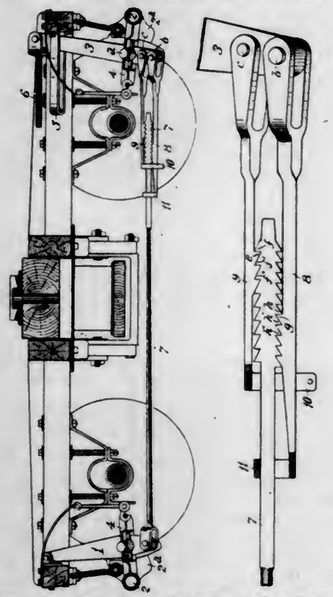
Claim.—1. A flexible electric conductor, comprising a conducting-core, a conducting-tip in electrical connection with said core, a non-conducting supporting-cord and a link, arranged to surround said tip and to receive said supporting-cord.



2. A flexible electric conductor, comprising a conducting-core, a conducting-tip having a pin in electrical connection with said core and having a shell, a non-conducting supporting-cord and a link, arranged to surround the pin of said tip and to receive said supporting cord.

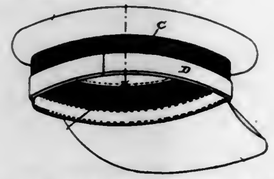
3. A flexible electric conductor, comprising a conducting-core, a conducting-tip in electrical connection with said core, a non-conducting supporting-cord and a link having two eyes, one of which surrounds said tip and the other of which receives said supporting-cord.

573,613. SLACK-ADJUSTER FOR BRAKE-RIGGING. DOMENEC C. O'KAIN, Wilkinsburg, Pa., assignor to Edward H. Goodman, Pittsburg, Pa. Filed June 30, 1896. Serial No. 597,566. (No model.)



Claim.—In a slack-adjuster for brake-rigging, the combination of live and dead levers, a rod or member pivotally connected to one of said levers and provided with teeth on its upper and lower sides at or near its free end, the teeth of one side having a length slightly greater than the normal distance of the brake-shoes from the wheels and two rods or members provided with teeth corresponding in length and adapted to engage the teeth on the other rod or member and so pivoted to the other lever as to have different ranges of movement when shifted by their lever, substantially as set forth.

573,614. HAT OR CAP. MEYER PANOFF, Brooklyn, N. Y. Filed Jan. 15, 1896. Serial No. 575,633. (No model.)



Claim.—A cap comprising a crown portion and a band portion, the band portion consisting of a base-section or rim and a ventilating-section located between the crown portion and the base portion and extending entirely around the said band of the cap and from the base to the crown portion, the said band portion being provided with a covering flap for the ventilating-section, said flap having a free portion unattached to the band and adapted to be folded up or down in relation to the said ventilating-section to cover the whole of the band-section below the crown or to form a roll thereon, substantially as described.

573,615. PROCESS OF INTRODUCING CHROME INTO METALS OR ALLOYS. EMILE PLAGET and JOSEPH BONNET, Paris, France, assignors to the Electro Metallurgical Company, Limited, London, England. Filed Jan. 14, 1896. Serial No. 575,505. (No specimens.) Patented in France Nov. 4, 1893, No. 233,846.

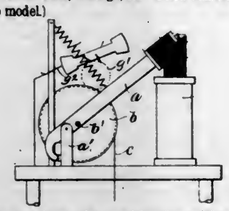
Claim.—A mode of introducing chrome into metals or alloys, the same consisting of the direct introduction into the metal or alloy in fusion of the pure chrome preliminarily coated with an adherent layer of less oxidizable metal whereby the oxidation of the chrome at the moment of its introduction into the metal or alloy is prevented, the temperature of the bath being below the fusing-point of chrome, the latter dissolving in the other metals in fusion, substantially as described.

573,616. TIRE-TIGHTENING WASHER. JAMES POLLOCK, Millburn, Ill. Filed Sept. 3, 1896. Serial No. 604,755. (No model.)



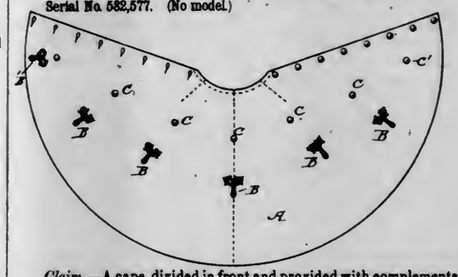
Claim.—As a new article of manufacture, a tire-tightening washer comprising a flat substantially horseshoe-shaped piece of rigid metal having its ends separated by a distance equal to its inner diameter when the ends are closed, having also a series of inner notches so that the ends can be closed without breaking the metal, and shaped so that when closed it forms a ring with an inner circle and a substantially uniform outer elliptical circumference, substantially as and for the purpose specified.

573,617. ELECTRIC-ARC LAMP. PAUL FRANZ HERRMANN QUEISSER, Charlottenburg, Germany, assignor to the Siemens & Halske Electric Company of America, Chicago, Ill. Filed Jan. 24, 1896. Serial No. 576,642. (No model.)



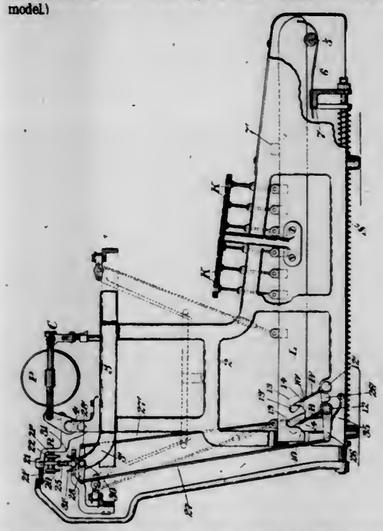
Claim.—In an arc-lamp the combination with an electromagnet having a laminated core, the two ends of which are cut away obliquely in one plane, of a pivoted armature-lever, the movement of which controls the feeding of the carbons, and the laminated armature carried upon said lever and adapted to vibrate between the parallel poles of said core, the axis of the armature being substantially parallel to the oblique face of the ends or poles of the core, the face of the armature opposed to the parallel edges of said poles being tapered to thereby gradually decrease the air-gaps as the armature is attracted; substantially as described.

573,618. CAPE. EDMUND RICE, U. S. Army. Filed Mar. 10, 1896. Serial No. 582,577. (No model.)



Claim.—A cape, divided in front and provided with complemental fastenings thereat, and provided with a series of complemental fastenings, arranged substantially in parallel lines and extending bodily across the garment, whereby the cape may be rolled and secured to carry over the shoulder, substantially as described.

573,619. KEY-OPERATED MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn. Filed Apr. 6, 1896. Serial No. 586,344. (No model.)



Claim.—1. The combination with a plurality of operating devices and a blocking device which, when actuated by one of said operating devices, serves to block and prevent the movement of all the other operating devices; a feed-motion; and means actuated by the blocking device and serving to operate said feed-motion.

2. The combination with a plurality of operating devices, of a plurality of blocking devices, any one of which, when actuated by one of said operating devices, serves to block and prevent the movement of all the other operating devices; and a differential feed-motion operated by said blocking devices.

3. The combination with a plurality of operating devices, of a plurality of blocking devices, any one of which, when actuated by one of said operating devices, serves to block and prevent the movement of all the other operating devices; and a feed device operated by said blocking devices.

4. The combination with a normally clear blocking operating-arm, and with a series of operating-arms also normally clear, of a series of blocking members, each having blocking-surfaces, one for each of said series of arms, respectively; a blocking-member actuator operated by said blocking operating-arm, and located to carry said blocking-surfaces into position to block the movements of their respective non-operated arms; a feed motion operated by said blocking

members; and means connecting the blocking members and feed-motion.

5. The combination with a plurality of normally clear operating-arms disposed side by side; of a rock-shaft disposed transversely of said arms; a blocking member having a series of blocking-surfaces, one for each of said arms, secured to said rock-shaft; a blocking-member actuator having means whereby it is operated by one of said arms, and said actuator located relatively to the operating-arms to oscillate its own blocking-surface to a position clear of its arm, and to oscillate the other blocking-surfaces into position to block the movements of their respective non-operated arms; and a feed-motion operated by said blocking members.

6. The combination with a plurality of normally clear operating-arms disposed side by side, and having a series of registering recesses, one for each of said arms, respectively, of a blocking member having a series of blocking-surfaces, one for each of said arms, respectively, and disposed transversely of said arms, and connected for movement in unison; a plurality of alined stops carried by said arms, one for each of said arms, respectively; a blocking-member actuator having means whereby it is operated by one of said arms, and said actuator located relatively to the other operating-arms to carry its own blocking-surface into the recess of its arm, and to carry the other blocking-surfaces into juxtaposition with the respective stops of the non-operated arms to block the movements of said non-operated arms; and a feed-motion operated by said blocking members.

7. The combination with a plurality of normally clear operating-arms disposed side by side, of a plurality of rock-shafts disposed transversely to said arms; a blocking member secured to each of said rock-shafts, and having a blocking-surface for each of said arms; a plurality of blocking-member actuators having means whereby they are operated, one by each of said arms, respectively, and each of said actuators cooperative with a series of said blocking-surfaces, respectively, and each of said actuators located relatively to the non-operated arms of its respective series of arms to oscillate its own blocking-surface clear of its operating arm, and to oscillate the other blocking surfaces into position to block the movements of their respective non-operated arms; and a differential feed-motion operated by the blocking members.

8. The combination with a plurality of normally clear operating-arms, each constituting, when operated, a blocking operating-arm for the corresponding series of non-operated arms, of a plurality of independently-operative blocking members; a plurality of blocking-member actuators; a reciprocatory carriage; rack mechanism secured to the carriage for actuating the same, and having a short feed movement operated by one of the blocking members, and also having a long feed movement operated by the other blocking member.

9. The combination with a feed-carriage, of a fixed rack and two movable racks; a swinging feed-dog; a shaft on which said dog is mounted; sleeves, each provided with an arm, for swinging said feed-dog; and devices for actuating said sleeves.

10. The combination with a feed-carriage, of differential feed devices in operative relation therewith; a series of operating-arms; two movable blocking members, one for each series of operating-arms; and means actuated by said blocking members for controlling the motion of the differential feed device.

11. The combination with a feed-carriage and racks carried thereby, one of said racks being movable with relation to the other, of a movably-mounted feed pawl; a rock-arm; a connecting-rod; a sleeve carrying a pawl-operating arm; and means for actuating the rock-arm.

12. The combination with a feed-carriage, of a fixed rack; movable racks connected to said fixed rack; a feed-pawl of the pass-by type; a rocking frame to which said pawl is pivoted; rocking sleeves, each carrying a pawl-operating arm; and means for actuating said sleeve.

13. The combination with a feed-carriage, of a fixed rack; movable racks connected thereto; a pivoted feed-pawl; rocking sleeves, each carrying a pawl-operating arm; rock-shafts equipped with means for actuating said sleeves; and two series of operating-arms for actuating said rock-shafts.

14. The combination of a blocking member; a swinging frame connected with said blocking member; and a series of operating-arms, any one of which may be brought into direct contact with said swinging frame.

15. The combination with a series of operating-arms, of a rocking frame having a cross-bar extending beneath all of said arms; and a blocking member actuated by said rocking frame on the depression of an operating-arm.

16. The combination with a series of operating-arms, of a pivoted frame having a cross-bar extending beneath said arms; a blocking member; and a pin-and-slot connection between said blocking member and said frame.

17. The combination with a reciprocatory carriage; of a fixed rack secured to the carriage; a pair of movable racks also secured to the carriage, one at each side of the fixed rack, and having differential feed movements; a feed-dog normally in engagement with said fixed rack; and a pair of key operated actuators adapted, respectively, for actuating said feed-dog into engagement with said movable racks, respectively, to thereby feed the carriage differential distances.

18. The combination with a reciprocatory carriage; of a feed-rack secured to the carriage; a pair of movable racks also secured to the carriage, one at each side of the fixed rack, and having differential feed movements; a feed-dog normally in engagement with said fixed rack; and a pair of oscillatory key-operated actuators adapted, respectively, for actuating said feed-dog into engagement with said movable racks, respectively, to thereby feed the carriage differential distances.

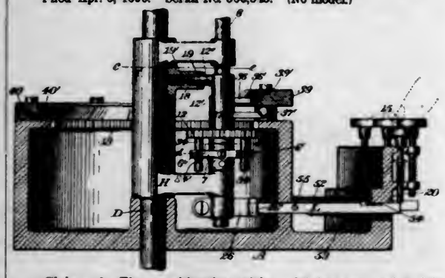
19. The combination with a pair of normally clear operating-arms, each constituting when operated a blocking operating-arm for the non-operated arm; of a pair of independently-operative blocking members; feed mechanism having a short feed movement operated by one of said blocking members and also having a long feed movement operated by the other blocking member; and a driven member operative by said feed mechanism.

20. The combination with a plurality of normally clear operating-arms, each constituting when operated a blocking operating-arm for the corresponding series of non-operated arms; of a plurality of independently operative blocking members; a plurality of blocking-member actuators; a reciprocatory carriage; rack mechanism secured to the carriage for actuating the same, and having a short feed movement operated by each one of a portion of the operating-arms and having also a long feed movement operated by each one of the remaining operating-arms; and operating devices connecting said blocking members and said rack mechanism.

21. The combination with a plurality of normally clear operating-arms, each constituting, when operated, a blocking operating-arm for the corresponding series of non-operated arms; of two independently-operative blocking-bars; feed mechanism having a short feed movement controlled by one of said blocking-bars, and also having a long feed movement controlled by the other of said blocking-bars; and a reciprocatory carriage operative by said feed mechanism.

573,620. GEARING. FRANCIS H. RICHARDS, Hartford, Conn.

Filed Apr. 6, 1896. Serial No. 586,345. (No model.)



Claim.—1. The combination with a driving-gear, of a driven gear; means for carrying the driven gear in a path corresponding with that of the driving-gear; and means controlled by the rotation of the driven gear, and operative for bodily shifting said driven gear into and out of engagement with the driving-gear at a predetermined point in the path thereof.

2. The combination with a driving-gear, a rotatable driven gear bodily shiftable between two extreme positions into and out of gear with the driving-gear; and means for carrying the driven gear in a path corresponding with that of the driving-gear; of a starting-arm connected for rotation and movement in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; and gear-coupling means controlled by such rotation of the driven gear and operative for bodily shifting said driven gear toward and into gear with the driving-gear, to thereby continue the rotation of the driven gear.

3. The combination with a driving-gear, a rotatable driven gear bodily movable into and out of gear with the driving-gear; and means for moving the driven gear in a path corresponding with the path of the driving-gear; of gear-shifting means controlled by the rotation of the driven gear, and operative for bodily shifting said driven gear from one of its extreme positions to the other.

4. The combination with a driving-gear, and fixed cam-surfaces adjacent thereto; of a driven gear; and means controlled by the rotation of said driven gear, and in intermittent engagement with said cam-faces.

5. The combination with a driving-gear; a rotatable driven gear bodily shiftable between two extreme positions into and out of gear with the driving-gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of gear-shifting means controlled by the rotation of the driven gear, and operative for bodily shifting said driven gear from one of its extreme positions to the other, at a predetermined point in the orbit thereof.

6. The combination with a driving-gear; a rotatable driven gear bodily shiftable between two extreme positions into and out of gear with the driving gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of a starting-arm connected for rotation, and orbital movement, in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; and gear-coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the driving-gear, to thereby continue the rotation of the driven gear.

7. The combination with a driving gear; a rotatable driven gear bodily shiftable between two extreme positions into and out of gear with the driving gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of gear shifting means controlled by the rotation of the driven gear, and operative for bodily shifting said driven gear from one of its extreme positions to the other, at a predetermined point in the revolution thereof.

8. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and bodily shiftable into and out of gear with the driving-gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of means for starting the rotation of the driven gear while in its normal position; and gear coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the driving-gear, to thereby continue the rotation of the driven gear.

9. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and bodily shiftable into and out of gear with the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and gear-coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the internal gear, to thereby continue the rotation of the driven gear.

10. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and bodily shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and gear-coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the internal gear, to thereby continue the rotation of the driven gear.

11. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and bodily shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and a pair of gear-shifting coupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear, and located to shift the driven gear and its coupling member bodily on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear.

12. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and bodily shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and a pair of gear-shifting coupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear, and one of said coupling members having a cam-face adapted to coöperate with the other coupling member and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear.

13. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and a pair of gear-shifting coupling-cams, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear, and located to shift the driven gear and its coupling-cam on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear.

14. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; and a pair of gear-shifting coupling members, one in fixed relation with the internal gear, and the other movable in unison with the driven gear and located to engage the first-mentioned coupling member by a toggling movement on the rotation of the driven gear, and one of said coupling members having its working face cam-shaped and located to shift the driven gear on the toggling movement of its coupling member, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear.

15. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and bodily shiftable into and out of gear with the driving-gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of means for starting the rotation of the driven gear while in its normal position; gear-coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the driving-gear, to thereby continue the rotation of the driven gear; and gear-uncoupling means controlled by such continued rotation of the driven gear, and operative for bodily shifting said driven gear to its normal position at a predetermined point in said rotation, to thereby stop the rotation of said driven gear.

16. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; a pair of gear-shifting coupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear, and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear; and a pair of gear-shifting uncoupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear and located to shift the driven gear and its uncoupling member to their normal positions at a predetermined point in said rotation, to thereby stop the rotation of said driven gear.

17. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; a pair of gear-shifting coupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear, and one of said coupling members having a cam-face adapted to coöperate with the other coupling member and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear; and a pair of gear-shifting uncoupling members, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear and located to engage the first-mentioned uncoupling member at a predetermined point in said rotation, and one of said uncoupling members having a cam-face located to shift said driven gear and its uncoupling member to their normal positions on such engagement of the uncoupling members.

18. The combination with a driving internal gear; a rotatable driven gear normally out of gear with said internal gear, and shiftable transversely of the plane of, and into and out of gear with, the internal gear; and means for revolving the driven gear in an orbit about the axis of the internal gear; of means for starting the rotation of the driven gear while in its normal position; a pair of gear-shifting coupling-cams, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear and located to shift the driven gear and its coupling-cam on such rotation of the driven gear, to thereby carry said driven gear into gear with the internal gear, and continue the rotation of the driven gear; and a pair of gear-shifting uncoupling-cams, one connected for rotation and revolution in unison with the driven gear, and the other in fixed relation with the internal gear and located to

shift said driven gear and its uncoupling-cam to their normal positions at a predetermined point in said rotation, to thereby stop the rotation of said driven gear.

19. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and shiftable into and out of gear with the driving-gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of a starting-arm and a gear-shifting coupling member, both carried for rotation and revolution in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; and a gear-shifting coupling member in fixed relation with the driving-gear, and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the driving-gear and continue the rotation of the driven gear.

20. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and shiftable into and out of gear with the driving-gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of a starting-arm, a gear-shifting coupling member, and a gear-shifting uncoupling member, all carried for rotation and revolution in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; a gear-shifting coupling member in fixed relation with the internal gear, and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the driving-gear, and continue the rotation of the driven gear; and a gear-shifting uncoupling member in fixed relation with the driving-gear, and located to shift the driven gear and its uncoupling member to their normal positions at a predetermined point in said rotation, to thereby stop the rotation of said driven gear

21. The combination with a driving-gear; a rotatable driven gear shiftable into and out of gear with the driving-gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of a gear-shifting coupling member movable in unison with the driven gear; a starting-arm connected for rotation and revolution in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; and a gear-shifting coupling member in fixed relation with the driving-gear, and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the driving-gear, and continue the rotation of the driven gear, substantially as specified.

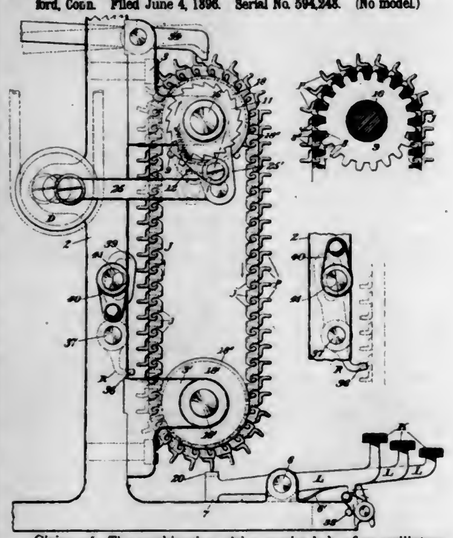
22. The combination with a driving-gear; a rotatable driven gear shiftable into and out of gear with the driving-gear; and means for revolving the driven gear in an orbit about the axis of the driving-gear; of a gear-shifting coupling member in fixed relation with the driven gear; a starting-arm connected for rotation and revolution in unison with the driven gear; a gear-starter interposable in the path of said arm for starting the rotation of the driven gear; and a gear-shifting coupling member in fixed relation with the driving-gear, and located to shift the driven gear and its coupling member on such rotation of the driven gear, to thereby carry said driven gear into gear with the driving-gear, and continue the rotation of the driven gear, substantially as specified.

23. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and bodily shiftable into and out of gear with the driving-gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of a starting-arm connected for rotation and orbital movement in unison with the driven gear, and in position and adapted to push back the gear-starter after being operated thereby; a gear-starter interposable in the path of said arm for starting the rotation of said arm and the driven gear; and gear-shifting coupling means controlled by such rotation of the driven gear, and operative for bodily shifting said driven gear toward, and into gear with, the driving-gear, to thereby continue the rotation of the driven gear.

24. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and shiftable into and out of gear with the driving-gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of means for starting the rotation of the driven gear at either of two separated points in its orbit while out of gear with the driving-gear; gear-coupling means controlled by such rotation of the driven gear, and operative for shifting said driven gear toward, and into gear with, the driving gear, to thereby continue the rotation of the driven gear; an uncoupling-arm connected for rotation and orbital movement in unison with the driven gear; and a pair of uncoupling members in fixed relation with the driving-gear, and one located to engage said uncoupling-arm at such a distance from one starting-point as corresponds to a determined number of rotations of the driven gear and to shift the driven gear to its normal position, and the other located to engage said uncoupling-arm at such a distance from the other starting-point as corresponds to a greater number of rotations of the driven gear and to shift the driven gear to its normal position.

25. The combination with a driving-gear; a rotatable driven gear normally out of gear with said driving-gear, and shiftable into and out of gear with the driving-gear; and means for carrying the driven gear in an orbit corresponding with the driving-gear; of a starting-arm connected for rotation and orbital movement in unison with the driven gear, and in position and adapted to push back the gear-starters, respectively, after being operated thereby; a pair of gear-starters interposable at different points, respectively, in the path of said arm for starting the rotation of said arm and the driven gear; gear-coupling means controlled by such rotation of the driven gear, and operative for shifting said driven gear toward, and into gear with, the driving gear, to thereby continue the rotation of the driven gear; an uncoupling-arm connected for rotation and orbital movement in unison with the driven gear; and a pair of uncoupling members in fixed relation with the driving-gear, and one located to engage said uncoupling-arm at such a distance from one gear-starter as corresponds to a determined number of rotations of the driven gear and to shift the driven gear to its normal position, and the other located to engage said uncoupling arm at such a distance from the other gear-starter as corresponds to a greater number of rotations of the driven gear and to shift the driven gear to its normal position.

573,621. JACQUARD MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 4, 1896. Serial No. 594,248. (No model.)



Claim.—1. The combination with a carrier-belt, of an oscillatory indicating-actuator mounted on said belt and shiftable from an unset to a set position, and vice versa; and means for mechanically shifting said actuator.

2. The combination with a carrier-belt having sockets therein, of a series of oscillatory indicating-actuators mounted in said sockets and shiftable from an unset to a set position, and vice versa; and means for mechanically shifting said actuators.

3. The combination with a carrier-belt having sockets therein, of indicating-actuators mounted in said sockets and shiftable from an unset to a set position, and vice versa, each of said actuators having an expansible furcated shank; and means for mechanically shifting the actuators.

4. The combination with a carrier-belt composed of detachable links, each link having a series of tapered sockets therein; of a series of oscillatory indicating-actuators, each having a tapered expansible furcated shank seated in its socket and adapted to turn therein; and means for mechanically shifting the actuators from an unset to a set position, and vice versa.

5. The combination with a carrier having a socket therein, of an indicating-actuator shiftable from an unset position to a set position, and vice versa, and having a shank seated in said socket and also having a crank connected to said shank.

6. The combination with a carrier having a tapered socket therein, of an indicating-actuator adapted to be oscillated from an unset position to a set position, and vice versa, and having a tapered shank seated in said socket and also having a crank connected to said shank.

7. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and shiftable from an unset position to a set position, and vice versa; and means operative for shifting said indicating-actuator from its unset position to its set position.

8. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and shiftable from an unset position to a set position, and vice versa; and means separate from the indicating-actuator and operative into engagement with said actuator for shifting the same from its unset position to its set position.

9. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and shiftable from an unset position to a set position, and vice versa; and an actuator separate from the indicating-actuator and operative toward the carrier into engagement with said indicating-actuator for shifting the same from its unset position to its set position.

10. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and shiftable from an unset position to a set position, and vice versa; and a key-operated setting-actuator separate from the indicating-actuator and operative into engagement with said indicating-actuator for shifting the same from its unset position to its set position.

11. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and shiftable from an unset position to a set position, and vice versa; and a setting-actuator separate from the indicating-actuator and operative into engagement therewith, one of said actuators having a cam-face coöperative with the other actuator for shifting the indicating-actuator from its unset position to its set position.

12. The combination with a carrier, of an indicating-actuator mounted on said carrier and normally unset, and adapted to be oscillated from an unset position to a set position, and vice versa; and a setting-actuator separate from the indicating-actuator and having a cam-face operative into engagement with said indicating-actuator for oscillating the same from its set position to its unset position.

13. A link having a series of tapered sockets and provided with a series of oscillatory indicating-actuators having tapered expansible shanks mounted in said sockets and shiftable from an unset to a set position, and vice versa.

14. An indicating-actuator embodying a shank; a head parallel with said shank; and a transverse neck connecting said head and shank.

15. The combination with a carrier, of a plurality of oscillatory indicating-actuators mounted on said carrier and normally unset; means for actuating the carrier; actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators; and resetting means for oscillating the set indicating-actuators to their normal positions.

16. The combination with a carrier, of a plurality of transversely-separated longitudinal series of indicating-actuators mounted on said carrier and normally unset; means for actuating the carrier; and a plurality of resetting members, one for each series of indicating actuators, and each having a resetting cam-face for restoring the set actuators of its respective series of indicating-actuators to their normal positions after operation.

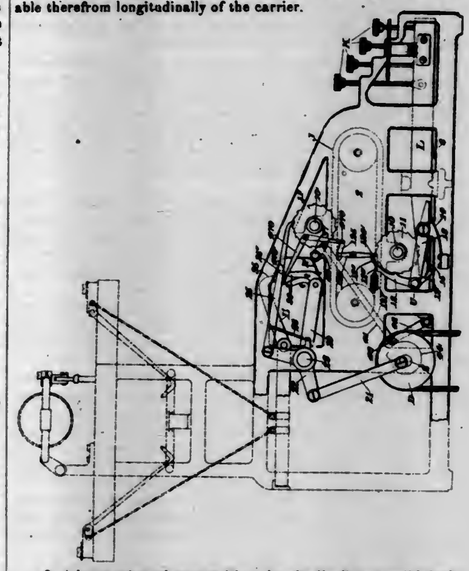
17. The combination with a carrier, of a plurality of transversely-separated longitudinal series of oscillatory indicating-actuators mounted on said carrier and normally unset; means for actuating the carrier; and a plurality of resetting members, one for each series of indicating-actuators, and each having a resetting cam-face for oscillating the set actuators of its respective series of indicating actuators to their normal positions after operation.

18. The combination with a carrier, of a plurality of indicating-actuators mounted on said carrier and normally unset; means for actuating the carrier; actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators; and shiftable resetting means for restoring the set indicating-actuators to their normal positions and movable from an idle position to a working position, and vice versa.

19. The combination with a carrier, of a plurality of indicating-actuators mounted on said carrier and normally unset; means for actuating the carrier; actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators; and resetting means for restoring the set indicating-actuators to their normal positions and adapted to be oscillated from an idle position to a working position, and vice versa.

573,622. JACQUARD MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 5, 1896. Serial No. 594,422. (No model.)

Claim.—1. A jacquard-carrier comprising a body having at its opposite ends, respectively, parallel outwardly-facing forked bearings and a pair of rotary cylinders supported in said bearings and removable therefrom longitudinally of the carrier.



2. A jacquard-carrier comprising a longitudinally-extensible body having at its opposite ends, respectively, parallel outwardly-facing forked bearings and a pair of rotary cylinders supported in said bearings and removable therefrom longitudinally of the carrier.

3. A carrier embodying a plurality of interchangeable parallel truss-bars, each having a fixed transverse bearing at one end thereof and also having at the opposite end thereof a pair of shoulders alined longitudinally of the bar and having registering openings; a plurality of adjustable bearings, one for each truss-bar, disposed in parallelism with the fixed bearings, and each having a shank passed through the openings in the shoulders of its respective truss-bar and adjustable longitudinally of said bar; and a plurality of tie-rods connecting said truss-bars.

4. A carrier comprising a plurality of interchangeable parallel truss-bars, each having an outwardly-facing, fixed transverse forked bearing in one end thereof and also having at the opposite end thereof a pair of inturned shoulders alined longitudinally of the bar and having registering openings; a plurality of adjustable outwardly-facing forked bearings, one for each truss-bar, disposed in parallelism with the fixed bearings, and each having a shank passed through the openings in the shoulders of its respective truss-bar and adjustable longitudinally of said bar; a pair of parallel rotary shafts, one carried in the fixed bearings and the other in the adjustable bearings; a plurality of supporting-wheels secured to said shafts; and tie-rods connecting the truss-bars.

5. A sheet-metal truss-bar having a fixed, transverse bearing at one end thereof and having at the other end thereof integral shoulders alined with said bearing and having registering openings.

6. The combination with a framework having jacquard-supports, of a carrier movable longitudinally between two extreme positions; an endless jacquard inclosing and held extended by said carrier and mounted on said supports and having two runs progressive around said carrier; and jacquard-actuating means for advancing said respective runs.

7. The combination with a framework having jacquard-supports and also having side guides for the jacquard, of a carrier movable longitudinally between two extreme positions; an endless jacquard inclosing and held extended by said carrier and mounted on said jacquard-supports and guided by said side guides and having two runs progressive around said carrier; and jacquard-actuating means for advancing said respective runs.

8. The combination with a framework having jacquard-supporting side guides, of a carrier movable longitudinally between two extreme positions; an endless jacquard inclosing and held extended by said carrier and supported on and guided by said side guides and having two runs progressive around said carrier; and jacquard-actuating means for advancing said respective runs.

9. The combination with a framework having jacquard-supports and also having top guides and side guides for the jacquard, of a carrier movable longitudinally between two extreme positions; an end-

less jacquard inclosing and held extended by said carrier and guided between the jacquard supports, the top guides, and the side guides and having two runs progressive around said carrier; and jacquard-actuating means for advancing said respective runs.

10. The combination with a framework having a pair of channeled bars, each comprising a side guide, a jacquard-support, and a top guide parallel with the jacquard-support; of a jacquard-carrier movable longitudinally between two extreme positions; an endless jacquard inclosing and held extended by said carrier and guided and supported by said channeled bars and having two runs progressive around said carrier; and jacquard-actuating means for advancing said respective runs.

11. The combination with a jacquard-carrier comprising a body having at its opposite ends, respectively, outwardly-facing, parallel, forked bearings and also having a pair of rotary cylinders supported in said bearings and removable therefrom longitudinally of the jacquard; of an endless jacquard mounted on and connecting said cylinders and having its runs movable around the same.

12. The combination with a framework having supports and top guides, of a jacquard apparatus guided between said supports and top guides and removable endwise therefrom and movable longitudinally between two extreme positions and comprising a jacquard carrier and an endless jacquard having two runs progressive around said carrier; and means for advancing the respective runs of said jacquard.

13. The combination with a framework having supports and top guides for a jacquard apparatus, of a jacquard apparatus guided between said supports and top guides and removable endwise therefrom and movable longitudinally between two extreme positions and comprising a jacquard-carrier and an endless jacquard inclosing and held extended by said carrier, and said jacquard having two runs progressive around said carrier; and jacquard-actuating means located outside the jacquard and coöperative with the respective runs thereof for advancing said runs.

14. The combination with framework having jacquard belt supports and also having top guides for the jacquard-belt, of a jacquard-carrier movable longitudinally between two extreme positions; an endless jacquard-belt inclosing and held extended by said carrier and guided between the jacquard belt supports and the top guides and having two runs progressive around said carrier and embodying a plurality of jacquard links having a series of drive openings in their outer faces; and driving sprocket-wheels located outside the jacquard-belt and coöperative with said drive-openings for advancing the respective runs of said belt.

15. The combination with a framework having jacquard-belt supports and also having top guides for the jacquard-belt, of a jacquard-carrier movable longitudinally between two extreme positions; an endless jacquard-belt inclosing and held extended by said carrier and guided between the jacquard-belt supports and the top guides and having two runs progressive around said carrier and embodying a plurality of jacquard-links having parallel series of drive openings in their outer faces; and driving sprocket-wheels outside the jacquard-belt and cooperative with said drive-openings for advancing the respective runs of said belt.

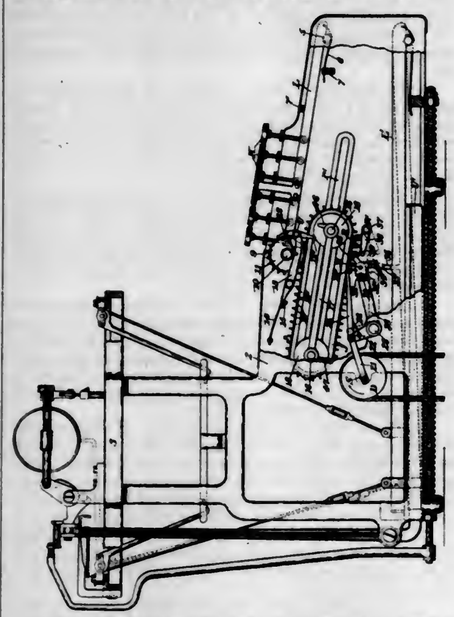
16. The combination with a jacquard and with a plurality of settable indicating-actuators carried by said jacquard and normally unset, of means for actuating the jacquard, key-operated setting-actuators for setting a determined number of said indicating actuators; side guides contiguous to the setting-actuators for holding said actuators against lateral movement; and jacquard-actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

17. The combination with a jacquard and with a plurality of settable indicating-actuators carried by said jacquard and normally unset, of means for actuating the jacquard; a plurality of key-levers; setting actuators secured to said key-levers and operative for setting a determined number of said indicating-actuators; side guides contiguous to the key-levers at points adjacent to the setting-actuators; and jacquard-actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

18. The combination with a jacquard and with a plurality of indicating-actuators carried by said jacquard and normally unset, of means for actuating the jacquard; a plurality of key-levers; setting-actuators secured to and disposed transversely of said key-levers and operative for setting a determined number of said indicating-actuators; side guides contiguous to the key-levers at points adjacent to the setting-actuators; side guides contiguous to the setting-actuators; and jacquard-actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

19. The combination with a jacquard and with a plurality of settable indicating-actuators carried by said jacquard and normally unset, of means for actuating the jacquard; a plurality of key-operated setting-actuators for setting a determined number of said indicating-actuators and having convex working faces coöperative with the indicating-actuators; and jacquard-actuated means operative by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

573,623. JACQUARD MECHANISM. FRANCIS H. RICHARDS, Hartford, Conn. Filed June 8, 1896. Serial No. 594,651. (No model.)



Claim.—1. The combination with a device having two differentially-progressive portions and provided with means for actuating adjacent mechanism, of means for operating said device.

2. The combination with a device having two differentially-progressive portions and provided with means for actuating adjacent mechanism, of means for differentially advancing said progressive portions.

3. The combination with a jacquard having two differentially-progressive portions, of a pair of differentially-operative devices controlling, respectively, said respective portions

4. The combination with a jacquard having two differentially-progressive portions, of a pair of actuating devices operative, respectively, for differentially advancing said respective portions.

5. The combination with an endless jacquard having two differentially-progressive runs, of a pair of actuating devices operative, respectively, for differentially advancing said respective runs.

6. The combination with a jacquard having two differentially-progressive portions, of intermittently-operative means for actuating one of said portions; and means normally continuously operative for advancing the other portion of said jacquard.

7. The combination with a jacquard having two differentially-progressive portions, of a pair of actuating devices normally operative, respectively, for differentially advancing said respective portions of the jacquard; and a pair of devices for separately limiting the movements of said respective portions of the jacquard.

8. The combination with a jacquard having two differentially-progressive portions, of a pair of devices normally operative, respectively, for differentially advancing said respective portions of the jacquard; and a pair of limiters for separately limiting the movements of said respective portions of the jacquard.

9. The combination with a jacquard-carrying means movable between two extreme positions, of an endless jacquard mounted on said carrying means and having two differentially-progressive runs; and a pair of actuating means operative, respectively, for differentially advancing said respective runs.

10. The combination with jacquard-carrying means movable between two extreme positions, of an endless jacquard mounted on and held extended by said carrying means and having two differentially-progressive runs; and a pair of actuating means operative, respectively, for differentially advancing said respective runs.

11. The combination with a carrier movable between two extreme positions, of an endless jacquard supported on and held extended by said carrier and having two runs differentially progressive around said carrier; and a pair of actuating devices operative, respectively, for differentially advancing said respective runs.

12. The combination with a jacquard-operated carrier movable between two extreme positions, of an endless jacquard having two runs differentially progressive around said carrier; and a pair of jacquard-actuating means operative, respectively, for differentially advancing said respective runs.

13. The combination with a jacquard-carrier movable between two extreme positions, of an endless jacquard having two runs differentially progressive around said carrier; a pair of jacquard-actuating means normally operative, respectively, for differentially advancing said respective runs; and a pair of separately-operative limiters for separately limiting the movements of said respective runs at the respective ends of the range of movement of the jacquard-carrier.

14. The combination with a jacquard-operated carrier movable between two extreme positions, of an endless jacquard having two runs differentially progressive around said carrier; a pair of jacquard-actuating means normally operative, respectively, for differentially advancing said respective runs; and a pair of separately-operative limiters movable with the jacquard-carrier for separately limiting the movements of said respective runs at the respective ends of the range of movement of the jacquard carrier.

15. The combination with a jacquard-operated carrier movable between two extreme positions, of an endless jacquard having two runs differentially progressive around said carrier; a pair of jacquard-actuating means operative, respectively, for differentially advancing said respective runs; and a pair of separately-operative limiters fixed on the jacquard carrier for separately limiting the movements of said respective runs at the respective ends of the range of movement of the said carrier.

16. The combination with a jacquard-operated carrier movable between two extreme positions, of an endless jacquard having two runs differentially progressive around said carrier; intermittently-operative means for actuating one of said runs; continuously-operative means for normally advancing the other of said runs; and a pair of separately-operative limiters, one for blocking the operation of the intermittently-operative jacquard-actuating means at one end of the range of movement of the jacquard-carrier and the other for uncoupling the continuously-operative jacquard-actuating means from its run at the other end of the range of movement of said jacquard-carrier.

17. The combination with a framework having suitable ways, of a carrier guided by said ways and movable between two extreme positions; an endless jacquard having two runs differentially progressive around said carrier; and a pair of jacquard-actuating means operative, respectively, for differentially advancing said respective runs.

18. The combination with a framework having suitable supporting-ways, of a carrier supported on said ways and movable thereon between two extreme positions; an endless jacquard having two runs differentially progressive around said carrier; and a pair of actuating means operative, respectively, for differentially advancing said respective runs.

19. The combination with a jacquard-operated carrier movable between two extreme positions and embodying a frame and a pair of parallel rotary cylinders carried by said frame, of an endless jacquard supported by said cylinders and having two runs differentially progressive around said carrier; and a pair of actuating means operative, respectively, for differentially advancing said respective runs.

20. The combination with a jacquard having two differentially-progressive portions, of a pair of jacquard-actuating means operative, respectively, for differentially advancing said respective portions of the jacquard; and means actuated by one of said portions of the jacquard.

21. The combination with an endless jacquard having two differentially-progressive runs, of a pair of jacquard-actuating means operative, respectively, for differentially advancing said respective runs of the jacquard; and jacquard-actuated means operative by one of said runs of the jacquard independently of the movement of the other run.

22. The combination with an endless jacquard having two differentially-progressive runs, of means for recording indications on the first of said runs, means for actuating said run a determined distance on each recordation of an indication; means for advancing the second run of the jacquard differentially relatively to the advance of the first run; and means controlled at the second run by said indications and operative independently of the movement of the first run.

23. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally in their unset positions and shiftable to their set positions; means for actuating the jacquard-belt; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

24. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; means for setting a determined number of said indicating-actuators; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

25. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; selectively-operative means for setting a determined number of said indicating-actuators; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

26. The combination with an endless jacquard-belt, of a circuit of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

27. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; key-operated devices for setting a determined number of said indicating actuators; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

28. The combination with a jacquard-carrier movable between two extreme positions, of an endless jacquard having two runs progressive around said carrier; a plurality of settable indicating-actuators carried by said jacquard and normally unset; a pair of means operative, respectively, for differentially advancing said respective runs; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

29. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators; and resetting means for restoring the set indicating-actuators to their normal positions.

30. The combination with an endless jacquard having two progressive runs, of a plurality of settable indicating-actuators carried by one of said runs and normally unset; means for advancing said runs; means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators; and resetting means between the actuated means and the setting means for restoring the set indicating-actuators to their normal positions.

31. The combination with a jacquard-belt, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; a plurality of key-operated devices, one for each series of indicating-actuators and operative, respectively, for setting the actuators of their respective series of indicating-actuators; and means actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

32. The combination with a jacquard-belt, of a plurality of settable indicating-actuators carried by said jacquard-belt and normally in their unset positions and shiftable to their set positions; means for actuating the jacquard-belt; and a plurality of independently-operative devices actuated by the set indicating-actuators and in inoperative relation with the unset indicating-actuators.

33. The combination with a jacquard-belt, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard-belt and normally unset; means for actuating the jacquard-belt; and a plurality of independently operative devices, one for each series of indicating-actuators and actuated, respectively, by the set actuators of their respective series of indicating-actuators and in inoperative relation with the unset indicating actuators.

34. The combination with a jacquard-belt, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard-belt and spaced equidistantly longitudinally thereof and normally unset; means for actuating the jacquard-belt; and a plurality of independently-operative devices, one for each series of indicating-actuators and actuated, respectively, by the set actuators of their respective series of indicating-actuators and in inoperative relation with the unset indicating-actuators.

35. The combination with a jacquard-belt, of a plurality of transversely separated longitudinal series of settable indicating-actuators carried by said jacquard-belt and spaced equidistantly longitudinally thereof and normally unset and disposed also in transverse series perpendicular to such longitudinal series; means for actuating the jacquard-belt; and a plurality of independently-operative devices, one for each longitudinal series of indicating-actuators and actuated, respectively, by the set actuators of their respective longitudinal series of indicating-actuators and in inoperative relation with the unset indicating actuators.

36. The combination with a jacquard-belt and with means for actuating the same, of normally-unset primary jacquard-belt-actuated

means normally in inoperative relation with secondary actuated means and settable by the jacquard-belt in position for operating such secondary actuated means; secondary actuated means operable by said primary jacquard-belt-actuated means; means for reciprocating said primary jacquard-belt-actuated means between its operated and operating positions; and resetting means for restoring the primary jacquard-belt actuated means to its normal unset position after the operation thereof.

37. The combination with a jacquard and with means for actuating the same, of normally-unset primary jacquard-actuated means normally in inoperative relation with secondary actuated means and settable by the jacquard in position for operating such secondary actuated means; secondary actuated means operable by said primary jacquard actuated means; means for oscillating said primary jacquard-actuated means between its operated and operating positions; and resetting means for restoring the primary jacquard-actuated means to its normal unset position after the operation thereof.

38. The combination with a jacquard and with means for actuating the same, of normally-unset primary means normally in inoperative relation with secondary means and settable by the jacquard in position for operating such secondary means; secondary means operable by said primary means; means for actuating such primary means to its operated and operating positions, alternately; and resetting means normally out of the path of the primary means and operative into engagement with said actuated means on the return of such actuated means to its operated position, for restoring the primary means to its normally-unset position after the operation thereof.

39. The combination with a jacquard, of a plurality of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; normally-unset primary jacquard-actuated means in inoperative relation with the unset indicating-actuators and normally in inoperative relation with secondary actuated means and settable by the set indicating-actuators in position for operating such secondary actuated means; secondary actuated means operable by the said primary jacquard-actuated means; means for actuating said primary jacquard-actuated means to its operated and operating positions alternately; and resetting means for restoring the set indicating-actuators and primary jacquard-actuated means to their normal unset positions after operation.

40. The combination with a jacquard, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; a series of normally-unset independently-settable primary jacquard-actuated devices, one for each series of indicating-actuators and in inoperative relation, respectively, with the unset actuators of their respective series of indicating-actuators and normally in inoperative relation, respectively, with their respective secondary actuated devices and settable, respectively, by the set actuators of their respective series of indicating-actuators in position for operating their respective secondary actuated devices; a series of independently-operative secondary actuated devices, one for each primary jacquard-actuated device and operable, respectively, by their respective primary jacquard-actuated devices; means for simultaneously actuating all of said primary jacquard-actuated devices to their operated and operating positions, alternately; and resetting means for restoring the primary jacquard actuated devices to their normal unset positions after operation.

41. The combination with a jacquard, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; and a plurality of resetting members, one for each series of indicating-actuators and operative, respectively, for restoring the set actuators of their respective series of indicating-actuators to their normal positions after operation.

42. The combination with a jacquard, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; and a resetting-comb disposed transversely of the jacquard and having a plurality of resetting members, one for each series of indicating-actuators and aligned, respectively, with said respective series and operative, respectively, for restoring the actuators of their respective series of indicating-actuators to their normal positions after operation.

43. The combination with a jacquard, of a plurality of transversely separated longitudinal series of settable indicating-actuators carried by said jacquard and normally unset; a plurality of key-operated devices, one for each series of indicating-actuators and operative, respectively, for setting the actuators of their respective series of indicating-actuators; means for actuating the jacquard; and a plurality of devices actuated by the jacquard, one for each series of indicating-actuators and operative, respectively, by the set actuators of their respective series of indicating actuators and in inoperative relation with the unset indicating-actuators.

44. The combination with a jacquard, of a plurality of transversely-separated longitudinal series of settable indicating-actuators carried by said jacquard and spaced equidistantly longitudinally thereof and normally unset; a plurality of independently-operative key-operated devices, one for each series of indicating-actuators and selectively operative for successively setting the actuators of their respective series of indicating-actuators; and means for actuating the jacquard an interval between two indicating actuators on each operation of a key.

45. The combination with a jacquard having two progressive portions, of means for advancing one of said portions; and a combined jacquard-actuating and jacquard-actuated apparatus having its jacquard-actuating movement operative for independently actuating the other portion of the jacquard and receiving its jacquard actuated movement from said other portion of the jacquard on the operation of such portion.

46. The combination with an endless jacquard having two differentially-progressive runs and also having a plurality of settable indicating-actuators normally unset, of the following instrumentalities successively operative in the order named, viz: means for setting a determined number of the indicating-actuators of the first run; and means for advancing said run a determined distance; and the following instrumentalities successively operative in the order named, viz: means for advancing the second run of the jacquard differentially relatively to the advance of the first run; and means actuated at said second run by such set indicating-actuators.

47. The combination with an endless jacquard having two differentially-progressive runs and also having a plurality of settable indicating actuators normally unset, of the following instrumentalities successively operative in the order named, viz: means for setting a determined number of indicating-actuators of the first run; and means for advancing said first run a determined distance; and the following instrumentalities successively operative in the order named, viz: means for advancing the second run of the jacquard differentially relatively to the advance of the first run; means actuated at said second run by such set indicating-actuators; and resetting means for restoring such set indicating-actuators to their normal unset positions.

48. The combination with an endless jacquard having two differentially-progressive runs and also having a plurality of settable indicating-actuators normally unset, of the following instrumentalities successively operative in the order named, viz: means for setting a determined number of the indicating-actuators of the first run; and means for advancing said first run a determined distance; and the following instrumentalities successively operative in the order named, viz: means for advancing the second run of the jacquard differentially relatively to the advance of the first run; normally unset primary actuated means settable at said second run by such indicating-actuators; secondary actuated means operative by such primary actuated means; and resetting means for restoring the primary jacquard-actuated means to the normal unset position thereof.

49. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier; and an oscillatory tumbler carried by said carrier and normally in its unset position and settable by the jacquard, whereby said tumbler is oscillated to its set position.

50. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier; and a plurality of independently-oscillatory tumblers mounted on said carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

51. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; tumbler separating members; a tumbler-carrier carried by said bar; and a plurality of independently oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

52. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; aligned tumbler-separating members formed with registering apertures; a tumbler-carrier carried by said bar and passed through said apertures; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

53. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; aligned tumbler-separating members fixed on said bar and formed with registering apertures; a tumbler-carrier carried by said bar and passed through said apertures; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

54. The combination with a jacquard and with means for actuating the same, of devices for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier; and a plurality of independently-oscillatory tumblers carried by said tumbler carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

55. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; devices carried by said bar for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier carried by said bar; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

56. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; tumbler-separating members carried by said bar; devices also carried by said bar for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier also carried by said bar; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

57. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; tumbler-separating members carried by said bar; tumbler-stops also carried by said bar and between said tumbler-separating members for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier also carried by said bar; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

58. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; alined tumbler-separating members carried by said bar and formed with registering apertures; tumbler-stops also carried by said bar for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier also carried by said bar and passed through the apertures in said tumbler-separating members; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

59. The combination with a jacquard and with means for actuating the same, of a tumbler-carrier bar; alined tumbler-separating members carried by said bar and formed with registering apertures; a plurality of tumbler-stops also carried by said bar, one pair between each pair of tumbler-separating members, for stopping the tumblers in their set and unset positions, alternately; a tumbler-carrier also carried by said bar and passed through the apertures in said tumbler-separating members; and a plurality of independently-oscillatory tumblers mounted on said tumbler-carrier and normally in their unset positions and settable by the jacquard, whereby said tumblers are oscillated to their set positions.

60. The combination with a jacquard, of a plurality of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; a tumbler-carrier; and a plurality of independently-oscillatory tumblers carried by said carrier and in inoperative relation with the unset indicating-actuators and normally in their unset positions and settable by the set indicating-actuators, and each having a face inclined toward the jacquard and adapted to be engaged by its respective indicating-actuator and carried away from the jacquard, to thereby oscillate the tumbler to its set position.

61. The combination with a jacquard, of a plurality of settable indicating-actuators carried by said jacquard and normally unset; means for actuating the jacquard; a tumbler-carrier; and a plurality of independently-oscillatory tumblers carried by said carrier and in inoperative relation with the unset indicating-actuators and normally in their unset positions and settable by the set indicating-actuators, and each having a channeled face inclined toward the jacquard and adapted to be engaged by its respective indicating-actuator and carried away from the jacquard to thereby oscillate the tumbler to its set position, and each tumbler also having its channel in the path of its set indicating-actuator to thereby guide said actuator between the walls of said channel.

62. The combination with an endless jacquard having two differentially-progressive runs, of means for recording successive indications on the first of said runs at determined points transversely of said run; means for actuating said run a determined distance on each recordation of an indication; means for advancing the second run of the jacquard differentially relatively to the advance of the first run; a plurality of selectively settable primary devices controlled at the second run by said indications and operative independently of the movement of the first run; and a plurality of levers, one for each primary device, and operative, respectively, by said respective primary devices.

63. The combination with an endless jacquard having two differentially-progressive runs, of means for recording successive indications on the first of said runs at determined points transversely of said run; means for actuating said run a determined distance on each recordation of an indication; means for advancing the second run of the jacquard differentially relatively to the advance of the first run; a plurality of selectively settable primary devices controlled at the second run by said indications and operative independently of the movement of the first run; a plurality of levers, one for each primary device, and operative, respectively, by said respective primary devices; a plurality of type-arms connected, respectively, with said respective levers; a universal bar operative by said levers; a type-writer carriage; and carriage-feeding mechanism operative by said universal bar.

64. The combination with an endless jacquard having two differentially-progressive runs, of a plurality of settable indicating-actuators carried by said jacquard and normally unset; a plurality of key-operated setting devices for selectively setting successively-determined actuating-indicators; a universal bar operative by said setting devices; means operative by said universal bar for intermittently advancing the first run a determined distance on each setting; means for advancing the second run of the jacquard differentially relatively to the advance of the first run; and a plurality of selectively settable devices operative at the second run by the set indicating-actuators independently of the movement of the first run.

573,624. BUNG. HENRY ROSENTHAL, New York, N. Y. Filed July 28, 1896. Serial No. 600,772. (No model.)



Claim.—1. A bunghole-closure adapted to be driven into the cask or vessel which it closes and having one or more lines of separation whereby the closure when driven inside the cask or vessel, is enabled to separate into sections, substantially as set forth.

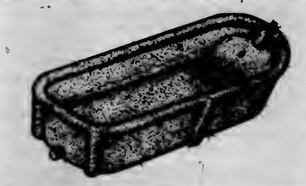
2. A bunghole-closure made in one piece adapted to be driven into the cask or vessel which it closes and having one or more lines of separation whereby the closure when driven inside the cask or vessel, is enabled to separate into sections, substantially as set forth.

3. A bung having a tubular body portion provided with a detachable closure having one or more lines of separation whereby the closure is enabled to separate into sections when detached, substantially as set forth.

4. A bung comprising a tapering tubular body portion and a separate cylindrical closure arranged to separate into sections, substantially as set forth.

5. A bung comprising a tubular body portion and a separate sectional closer therefor and means for securing the parts together, substantially as set forth.

573,625. INVALID'S BATH-TUB. MARGARET O. RUFFNER, St. Louis, Mo. Filed Mar. 2, 1896. Serial No. 581,609. (No model.)



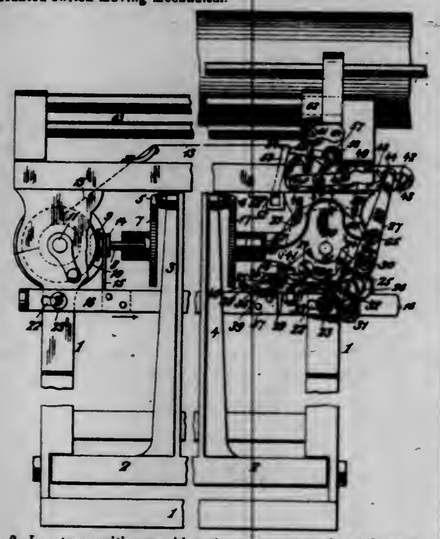
Claim.—1. A bath-tub constructed of rubber or analogous material having a tubular body extending around its upper edge, and vertically-arranged tubular bodies on its side walls, the said tubular bodies capable of being inflated.

2. A bath-tub for invalids, &c., comprising a body constructed of rubber or analogous material, a tubular inflatable body formed integral with and extending around the upper edge of the first-mentioned body, a series of tubular bodies formed integral with the side walls of the first-mentioned body and communicating with the before-mentioned tubular body, an auxiliary section located at the head end of the body of the tub, the space beneath which communicates with the first-mentioned tubular body, an air-valve through which the tubular bodies are inflated, and a discharge-valve located in the body of the tub.

573,626. TYPE-WRITING MACHINE. CHARLES H. SHEPARD, Ilion, N. Y., assignor to The Wyckoff, Seamans & Benedict, New York, N. Y. Filed June 1, 1894. Serial No. 513,137. (No model.)

Claim.—1. In a type-writing machine, the combination of an inking-ribbon, means for moving it longitudinally in two directions, a

switch, a spring-actuated switch-moving mechanism, a latching mechanism connected to the latter, a paper-carriage, and a device thereon for actuating said latching mechanism and causing it to set the spring-actuated switch-moving mechanism.



2. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch, a spring-actuated switch-moving mechanism, a sliding plate connected thereto, a paper-carriage for moving said plate in one direction, and a catch for holding said plate when moved in this direction.

3. In a type writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch, a spring actuated switch-moving mechanism, a sliding plate connected thereto and having simultaneously both an endwise and a widthwise movement, a paper-carriage, and a catch for locking said plate and the switch-moving mechanism.

4. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch, a spring-actuated switch-moving mechanism, a sliding plate connected thereto and provided with a spur, a paper-carriage provided with a lug to engage said spur and move said plate endwise, means for simultaneously causing said spur and lug to gradually part company, and a catch adapted to engage said plate when the disengagement of the spur and the lug has been effected.

5. In a type-writing machine, the combination of an inking-ribbon, means for moving it longitudinally in two directions, a switch, a switch-moving mechanism, a sliding plate provided with an inclined slot and a spur, a fixed pin or pins occupying said slot, a paper-carriage, a pivoted lug thereon, and a catch for said plate.

6. In a type-writing machine, the combination of an inking ribbon, means for moving it longitudinally in two directions, a switch, a switch-moving mechanism, a sliding plate connected thereto and provided with an inclined slot, a notch, a cam and a spur, a paper-carriage provided with a pivoted and weighted lug, a pin or pins occupying said slot, and a spring-actuated catch contrivance consisting of the catch proper, the two pivoted arms, over one of which the ribbon passes, and the spring.

7. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, means for alternately rotating said spools, a switch connected thereto, a spring-actuated switch-moving mechanism, a latching device connected to the latter, a paper-carriage adapted to actuate said latching device, and a catch contrivance adapted to lock the said latching device; the inking-ribbon being arranged to pass over said catch contrivance and to bear down upon the same when the ribbon needs reversing and to thereby cause the said catch contrivance to release the latching device and the spring-actuated switch-moving mechanism

8. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch extending from one ribbon-spool to the other and adapted to be reciprocated, and a switch-moving mechanism consisting essentially of a lever and two oppositely-moving arms adapted one to move the switch in one direction and the other to move it in the opposite direction.

9. In a type-writing machine, the combination of an inking-ribbon, means for moving the same in two directions, a switch connected thereto and provided with a lug, a lever, and two arms attached thereto, one of which is adapted to pull the switch in one direction, and the other to push it in the opposite direction.

10. In a type-writing machine, the combination of an inking-ribbon, means for moving the same in two directions, a switch connected thereto and provided with a lug, a lever provided with two arms pivoted on opposite sides of the fulcrum of said lever, and a spring for pressing said arms together; the arrangement being such that in one movement of said lever one arm is adapted to pull the switch in one direction, and in the movement of said lever in the opposite direction the other of said arms is adapted to push said switch in the opposite direction.

11. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch connected thereto, a lever provided with oppositely-moving pulling and pushing arms, a spring for pressing said arms together, means for depressing one of said arms, and means for lifting the other of said arms during the vibrations of said lever.

12. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch, a lever provided with oppositely-moving spring-pressed pivoted arms, arranged one above the other, and the lowermost arm having a shoulder and a cam to act against the opposite sides or ends of a lug or abutment on the switch.

13. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch having a lug or abutment, a lever, a pair of oppositely moving spring-pressed pivoted arms arranged one above the other, the upper arm having a hook and a cam, and the lower arm a shoulder and a cam.

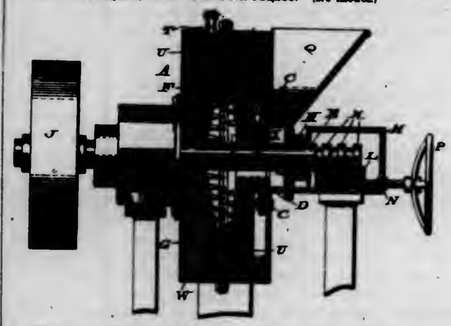
14. In a type-writing machine, the combination of an inking-ribbon, means for moving the same in two directions, a switch connected thereto, a spring-actuated lever carrying oppositely-working switch-moving arms, a latch device connected to said lever, and a catch for said latch device.

15. In a type-writing machine, the combination of an inking-ribbon, means for moving the same in two directions, a switch, a spring-actuated lever provided with oppositely-working switch-moving arms, a sliding plate connected to said lever and adapted to be moved by the paper-carriage, and a catch for said plate and lever.

16. In a type-writing machine, the combination of an inking-ribbon, a pair of ribbon-spools, means for turning said spools, a switch connected thereto, a spring-actuated lever carrying a pair of oppositely-moving arms, a sliding plate connected to said lever and having an inclined slot, a spur, a notch and a cam, a pivoted and weighted lug on the paper-carriage to engage said spur, a catch to engage said sliding plate, a spring, and the arms 53 and 55 adapted to be depressed by the pressure of the ribbon to release said plate and to be elevated by said spring when the pressure of the ribbon is removed.

17. In a type-writing machine, the combination of an inking-ribbon, means for moving the same longitudinally in two directions, a switch connected thereto and extending from one ribbon-spool to the other and adapted to be reciprocated, and a spring-actuated switch-moving mechanism, comprising a lever carrying two oppositely-moving and alternately-working actuating members, one adapted to move the switch in one direction and the other to move it in the opposite direction.

573,627. PAPER-PULPING ENGINE. EDWARD D. SPERR, Providence, Md., assignor to himself and William M. Singerly, Philadelphia, Pa. Filed Apr. 3, 1896. Serial No. 544,233. (No model.)

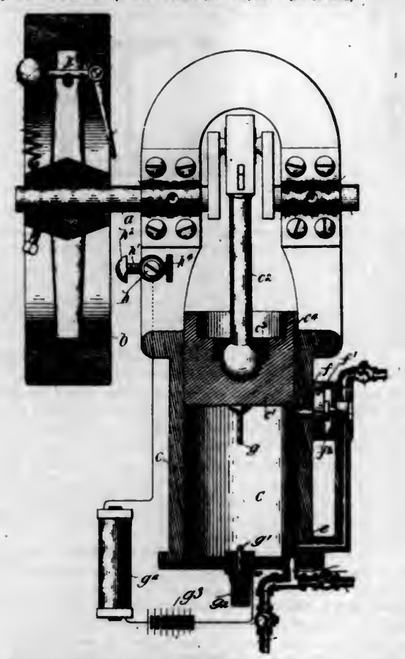


Claim.—1. A paper-pulping engine having a cylindrical casing a stationary bed, a shaft with a runner thereon within said casing having teeth on its periphery, a steam-supply pipe partially encircling said casing, and radial branch pipes leading from said supply-pipe into said casing opposite the periphery of said runner, said parts being combined substantially as described.

2. A paper-pulping engine, consisting of a casing, a hopper, a stationary bed in said casing, a shaft passing through an eye in said bed, a runner secured to said shaft, teeth on the periphery of said runner, a block and screw connected with said shaft for longitudinally adjusting the same and thereby said runner, outlets from said casing, and a steam-supply leading to the periphery of said runner, said parts being combined substantially as described.

3. In a paper-pulp engine, a casing, a bed secured thereto having an eye, a rotatable shaft freely passing through said casing and eye, and a runner on said shaft, said runner and bed having the inner portions of their adjacent faces concave with serrated edges, and provided with intermeshing teeth, and the periphery of said runner having teeth thereon, said parts being combined substantially as described.

573,628. GAS OR VAPOR ENGINE. GEORGE S. TIFFANY, Highland Park, Ill., assignor of one-half to Thomas S. Wheelright, same place. Filed Oct. 2, 1895. Serial No. 564,386. (No model.)



Claim.—1. In a gas or vapor engine the combination with the engine-cylinder, of the piston moving therein, an exhaust-valve controlling the exhaust-port, a reciprocating element arranged to open and close the exhaust-port, one face of said element being continuously subjected to the pressure of the external air, means for placing the opposite face of said reciprocating element in communication with the engine-cylinder while the pressure producing the working stroke exists therein to move said reciprocating element against the pressure of the atmosphere to open the exhaust-valve, and means for placing the said face of the reciprocating element in communication with the engine-cylinder while the decreased pressure due to the suction stroke exists therein to move the reciprocating element by means of the external-air pressure to close the exhaust-valve, substantially as described.

2. In a gas or vapor engine, the combination with the engine-cylinder, of the piston moving therein, an exhaust-valve controlling the exhaust-port, an auxiliary cylinder, an auxiliary piston moving therein and arranged to open and close the exhaust-port, one face of said piston being continuously subjected to the pressure of the external air, means for placing the opposite face of said auxiliary piston in communication with the engine-cylinder while the pressure producing the working stroke exists therein to move the auxiliary piston against the pressure of the atmosphere to open the exhaust-valve, and means for placing the said face of the auxiliary piston in communication with the engine-cylinder while the decreased pressure due to the suction stroke exists therein to move the auxiliary piston by means of the external-air pressure to close the exhaust valve, substantially as described.

3. In a gas or vapor engine, the combination with the engine-cylinder, of the engine-piston moving therein, the exhaust-valve, the auxiliary piston having one face exposed to atmospheric pressure and the other in communication with a port opening into the engine-cylinder at the forward or outward end thereof the engine-piston being arranged to place said port in communication with the engine-cylinder at the forward or outward end of its stroke to thus subject the auxiliary piston to the increased pressure within the engine-cylinder during the working stroke to open the exhaust-valve and to subject the auxiliary piston to the decreased pressure within the engine cylinder during the suction stroke to close the exhaust-valve, said engine-piston being provided with a channel for placing the port in communication with the atmosphere except when the engine-piston is at the forward or outward end of its travel, substantially as described.

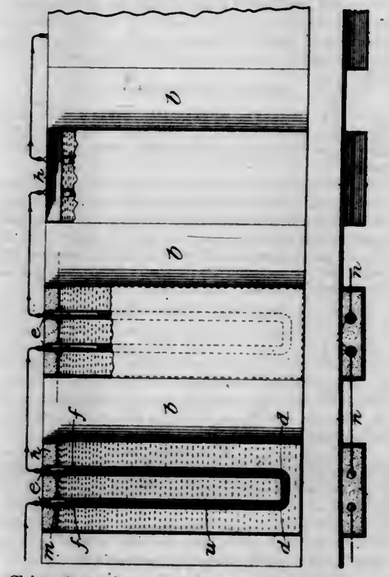
4. In a gas or vapor engine, the combination with an electrical igniter, of a pair of contacts in circuit therewith, said contacts being momentarily brought into engagement during each working stroke of the engine during the time of action of the igniter, and a governor for maintaining the contacts out of engagement to maintain the igniter-circuit open when the speed rises above a predetermined value; substantially as described.

5. In a gas or vapor engine, the combination with an electrical igniter, of a stationary contact, a contact carried upon the fly-wheel adapted to engage the stationary contact as the fly-wheel rotates, and a governor for maintaining the contacts out of engagement when the speed rises above a predetermined value; substantially as described.

6. In a gas or vapor engine, the combination with an electrical igniter, of a governor, a pair of contact-terminals for closing circuit through the igniter controlled by said governor, and means for adjusting the contact-terminals to vary the speed of the engine while running; substantially as described.

7. In a gas or vapor engine, the combination with an electrical igniter, of a pivoted lever carried upon the fly-wheel and adapted to be moved outward by centrifugal force, an arm carried upon said lever and forming one terminal of the electrical circuit through the igniter, a stationary contact-terminal adapted to be engaged once during each revolution by said arm, and means for moving said stationary contact-terminal forward and backward to vary the speed of the engine; substantially as described.

573,629. ELECTRIC HEATER. HARRY L. TYLER, Corning, N. Y. Filed Aug. 6, 1896. Serial No. 601,914. (No model.)



Claim.—1. An electric heater, comprising an electric conductor, an insulating-inclosure within which the conductor is contained, a body of practically non-conducting liquid within the inclosure, and an outer heat-radiating body; substantially as described.

2. An electric heater, comprising an electric conductor, an insulating-inclosure within which the conductor is contained, a body of practically non-expansive non-conducting material within said inclosure, and an outer receptacle containing heat-transmitting material and having heat-radiating walls; substantially as described.

3. An electric heater, comprising an electric conductor, an insulating-inclosure therefor containing glycerin, and an outer receptacle containing a body of heat-conducting material and having heat radiating walls; substantially as described.

4. An electric heater, comprising an electric conductor, an insulating-inclosure within which the conductor is contained, a body of practically non-conducting liquid within said inclosure, and an outer receptacle containing a body of liquid and having heat-radiating walls; substantially as described.

5. An electric heater, comprising an electric conductor, an insulating-inclosure within which the conductor is contained, a body of practically non-expansive liquid within said inclosure, and an outer receptacle containing a body of practically non-expansive liquid and having heat-radiating walls; substantially as described.

6. An electric heater, comprising an electric conductor, an insulating-inclosure therefor containing glycerin, and an outer receptacle containing glycerin and having heat-radiating walls; substantially as described.

7. An electric heater, comprising an electric conductor, an inclosure therefor containing a body of glycerin of such small cross-sectional area as to prevent electrolysis from one part of the conductor to another, and an outer receptacle containing glycerin and having heat-radiating walls; substantially as described.

8. An electric heater, comprising an electric conductor consisting of a spiral wire, a tube containing glycerin and of diameter substantially equal to the diameter of the coils of the spiral, and an outer receptacle containing glycerin and having heat-radiating walls; substantially as described.

9. In an electric heater, an inclosure containing a body of practically non-conducting liquid, and an electric conductor within said liquid, the cross-sectional area of the liquid being such as to prevent electrolysis between different portions of the conductor; substantially as described.

10. In an electric heater, a tube containing glycerin, and an electric conductor within said glycerin, the tube being bent in U form and having sealed ends and leading-in wires; substantially as described.

11. In an electric heater, an outer receptacle, a tube containing a liquid and an electric conductor, and a top or cover for the outer receptacle and from which the tube depends; said cover consisting of a shallow receptacle above whose bottom the tube ends project and containing a plaster-of-paris setting; substantially as described.

12. An electric heater, comprising a series of compartments, whose front wall consists of a sheet of metal bent to form said compartments, and whose rear wall is common to all the compartments, in combination with electric conductors entering the several compartments and in electric connection with each other; substantially as described.

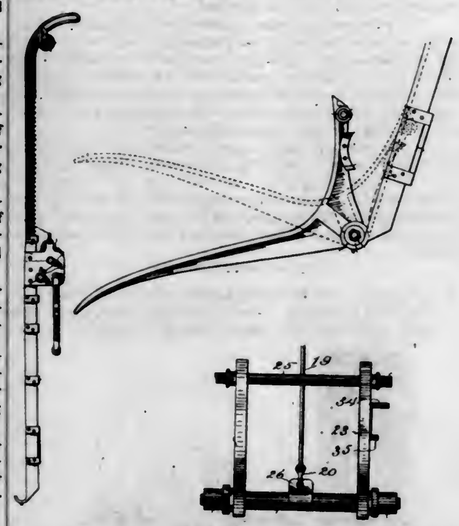
573,630. PORTABLE POWER-SKID. HENRY R. WILLIAMS, Hartford, Conn., assignor of two-thirds to William A. Willard and Lewis W. Ripley, same place. Filed Nov. 25, 1896. Serial No. 570,087. (No model.)

Claim.—1. A skid consisting of a pair of bars curved at their upper ends, a tilting truck having rolls adapted to ride up and down said bars, and elevating means supported by the bars and adapted to be detachably connected with the truck near its center of gravity so the truck will automatically tilt forward to unload at the upper curved ends of the bars and automatically tilt backward for receiving a load at the lower ends of the bars, substantially as specified.

2. A skid consisting of a pair of bars, a truck having two sets of rolls adapted to ride up and down said bars, one set engaging the under side of the bars and the other set engaging the upper side of the bars, said bars having openings near the lower ends to permit the rolls that engage the under side to pass through, and elevating means supported by the bars, said elevating means being adapted to be detachably connected with the truck near its center of gravity, substantially as specified.

3. A skid consisting of a pair of bars, a truck having rolls adapted to ride up and down said bars, elevating means supported by the bars and adapted to be detachably connected with the truck near its center of gravity, and a spring-catch supported by the bars in the path of a part of the truck, said catch being adapted to be unlocked by the descent of the truck which, when the catch is unlocked, is free to automatically tilt forward, substantially as specified.

4. A skid consisting of a pair of extensible bars forming a track with practically a smooth tread, one section of the bars having a rack with teeth on its under side and the other having a rotary shaft with a pinion meshing with the teeth, a truck having rolls adapted to ride up and down the smooth tread-surface of said bars, and elevating means supported by the bars and adapted to be connected with the truck, substantially as specified.



5. A skid consisting of a pair of extensible bars forming a track with practically a smooth tread having curved upper ends, one section of the bars having a rack with teeth on its under side and the other having a rotary shaft with a pinion meshing with the teeth, a tilting truck having rolls adapted to ride up and down the smooth tread-surface of said bars and around the curved upper ends, and elevating means supported by the bars and adapted to be connected with the truck, substantially as specified.

6. A skid consisting of a pair of sectional bars with curved upper ends, said bars being formed of angle-iron arranged parallel so as to open toward each other with one section moving within the other section, rack-teeth formed on one section, and a rotary shaft bearing a pinion in mesh with the teeth supported by the other section, a truck with rolls adapted to ride up and down said bars, a rotary shaft with a drum borne by one of the bar-sections, a pulley borne by the other section, a rope passing over the pulley and connecting the drum with the track, and a catch supported by one of the bar-sections in the path of a part of the truck and adapted to be unlocked by the descent of the truck, substantially as specified.

7. A skid consisting of extensible side bars formed of angle-iron, one section being smaller in cross-section than and slidable within and below the other, power mechanism for adjusting the relative length of said bars, a truck having a pair of rolls adapted to ride up and down on the top of the angle-iron and a pair of rolls adapted to ride up and down on the bottom of the angle-iron, and elevating means supported by the bars and adapted to be connected with the truck, substantially as specified.

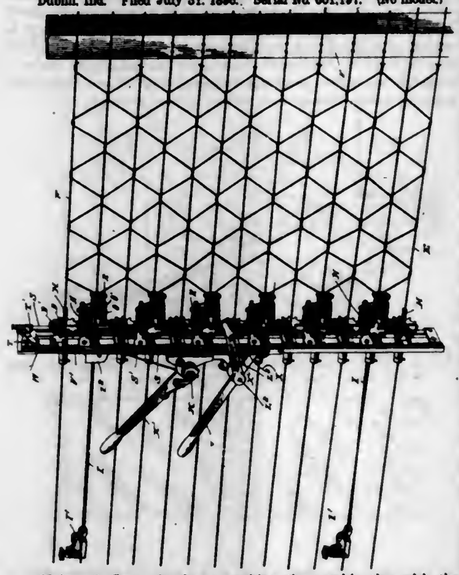
573,631. ART OF TAWING HIDES. GEORGE W. ADLER, Philadelphia, Pa. Filed May 21, 1896. Serial No. 592,503. (No specimens.)

Claim.—1. As an improvement in the art of tawing hides and skins, the subjection of the skin to the action of a bath containing chlorid of chromium, sulfate of sodium, and an organic-acid compound—such as a formate or an acetate; admixed substantially as set forth.

2. As an improvement in the art of tawing hides and skins, the submission thereof to a solution derived from an admixture of sodium sulfate and chromic acid, said acid being then reduced in the solution by an organic reducing agent, then neutralized by adding an alkali, and the precipitated chromic compound decomposed and dissolved in the presence of hydrochloric acid then added to the solution containing same, substantially as set forth.

3. The process of compounding a tawing liquor which consists in dissolving potassium or sodium bichromate in an excess of sulfuric acid diluted with two parts by volume of water to one of acid, reducing the solution by sugar or its alcoholic equivalent, then neutralizing and precipitating the same by the addition of carbonate of soda, and finally dissolving the contained precipitate by exhibiting hydrochloric acid thereto; substantially as set forth.

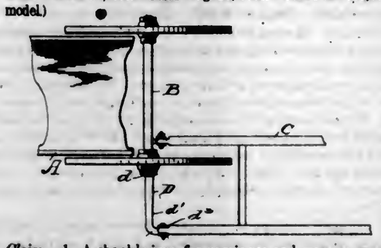
573,632. WIRE-FENCE MACHINE. GEORGE S. ANDERSON and ROBERT ANDERSON, Jeffersonville, Ind., assignors to Samuel Watson, Dublin, Ind. Filed July 31, 1896. Serial No. 601,197. (No model.)



Claim.—1. In a wire-fence machine, the combination with the main frame, of a series of intermeshing pinions, the upper and lower pinions having elongated tubular shafts whereby the machine is supported upon the upper and lower ends of the fence, the winding-shaft arranged upon the main frame, a lever for operating said winding-shaft, the guide-sheaves and cables, said cables passing over the guide-sheaves and attached to the winding-shafts, the rear ends of said cables being adapted to be secured to the wire strands, substantially as shown and described.

2. In a wire-fence machine, the combination with the main frame, of the shifter-bars carrying arms arranged in alternate order, the operating lever and rod, the lever tipped upon the top of the frame and carrying the tooth-segments which are adapted to engage the rack-teeth at the upper ends of the shifter-bars, the intermeshing pinions slotted as described, the combined reel-holder and guide-arm, means for operating the intermeshing pinions, together with means for moving the machine along the horizontal strands, said machine being supported upon said strands, substantially as shown and described.

573,633. SHACKLE FOR WAGON-SHAFTS. HUGH M. APPLEGATE, Unionville, Mo. Filed Aug. 24, 1896. Serial No. 603,706. (No model.)



Claim.—1. A shackle-iron for carriages and wagons comprising a nut and arm extending from the same, and apertured lugs formed upon said arms for receiving the thill-arm, substantially as described.

2. In a shackle-iron for carriages and wagons the combination with a nut of an arm extending laterally and forwardly from the same and apertured upright lugs formed upon the outer end of said arm and adapted to receive the thill-iron

---

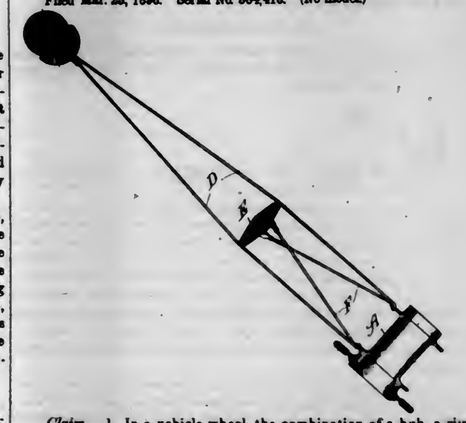
573,634. CRANK-HANGER BEARING FOR BICYCLES. EMILE ASH, Chicago, Ill., assignor, by mesne assignments, of one-half to Frank Thomas Fowler, same place. Filed Mar. 13, 1896. Serial No. 583,049. (No model.)

Claim.—1. In a crank-hanger bearing for bicycles, the combination of a crank-shaft, a disk on such crank-shaft having an internal V-shaped groove therein, an adjusting nut or disk screw-threaded in the hanger portion with its bearing portion arranged inside of the disk and forming one part of the inner V-shaped bearing-groove, a third portion in such hanger with a portion arranged inside the disk and forming the rest of the inner V-shaped bearing groove, and a series of antifriction-balls in such bearing, substantially as described.



2. In a crank-hanger for bicycles, the combination of a crank-shaft having a threaded portion, a disk on the threaded portion of such crank-shaft provided with an internal V-shaped bearing-groove, an adjusting nut or disk screw-threaded in the hanger portion having a projecting outside portion for operating the same and its bearing portion arranged inside of the disk to form one part of the inner V-shaped bearing-groove, a ring portion in such hanger having its bearing portion arranged inside of the disk completing the V-shaped bearing-groove, and a series of antifriction-balls in such bearing, substantially as described.

573,635. VEHICLE-WHEEL. EMILE ASH, Chicago, Ill., assignor, by mesne assignments, of one-half to Frank Thomas Fowler, same place. Filed Mar. 23, 1896. Serial No. 584,416. (No model.)



Claim.—1. In a vehicle-wheel, the combination of a hub, a rim, a bracing-ring interposed between the hub and the rim, and spokes proceeding from the rim to the bracing-ring at one angle and from the bracing-ring to the hub at another angle, substantially as described.

2. In a vehicle-wheel, the combination of a hub, a rim, a bracing-ring interposed between the hub and the rim, secondary spokes extending from the hub to and ending at the bracing-ring, and spokes extending from the hub to the rim and contacting with the edges of the bracing-ring, substantially as described.

573,636. CAR-TRUCK. JOHN C. BARBER, St. Paul, Minn. Filed Apr. 29, 1896. Serial No. 589,589. (No model.)



Claim.—1. The combination with a truck-frame, of a bolster mounted for both vertical and lateral movements on the same, as a base of resistance, base-plates carried by and fixed against lateral movement with respect to said bolster, but free for vertical movement thereon, and springs between said base-plates and said bolster, substantially as described.

2. The combination with a truck-frame and a bolster mounted thereon with freedom for lateral and vertical movements, of fixed roller-bearing plates on the truck-frame, rollers on said fixed plates, movable bearing-plates on said rollers, and bolster-supporting springs on said movable plates, with said movable plates and said springs carried with the bolster, in its lateral movement, but permitting vertical movement of the bolster, in respect to the plates, substantially as described.

3. The combination with a truck-frame, of a truck-bolster, provided with pockets near its ends, roller-bearing plates fixed to the frame, rollers on said fixed plates, movable bearing-plates on said rollers, bolster-supporting springs on said movable plates, and vertical guides, in the pockets of said bolster, engaging with said movable plates, whereby the movable plates and the springs are carried with the bolster, in its lateral movement, while permitting the vertical movement of the bolster, in respect to said plates, substantially as described.

4. In a car truck, the combination with the side frames, of the fixed bearing-plates *f*, the roller-bearings *f'*, the movable bearing-plates f^2, the springs f^4, the shimming-blocks f^3, and a bolster provided with pockets, for receiving said parts f^3 f^4 and f^5, and provided with guides coöperating with the plates f^3, substantially as and for the purpose set forth.

5. A car truck bolster, composed of the channel-bars *g*, cross-ties g^2 g^3 and end caps or filling-pieces g^4, and having pockets in its ends equipped with vertical guides, in combination with the fixed bearing-plates *f*, the rollers *f'*, the bearing plates f^2, the springs f^4, and the shimming-blocks f^3, all arranged, for coöperation, substantially as described.

6. The combination with the bolster-columns *c'* and the saddle-plates c^2, of the gussets c^3, binding said parts together and reinforcing the same, said parts being formed of separate pieces and united by rivets substantially as described.

573,637. WRENCH. HENRY C. BARLOW, Converse, Ind., assignor of one-third to Albert R. Miller, same place. Filed July 18, 1896. Serial No. 599,736. (No model.)



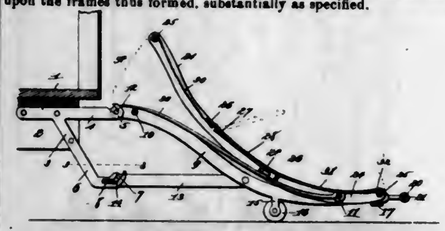
Claim.—1. A wrench comprising a handle, a pair of links pivoted together at their outer ends, provided at their inner engaging faces with teeth and adapted to swing transversely of the end of the handle to vary the distance between them, one of the links being pivoted to the outer end of the handle, a loop detachably engaging the inner end of the other link and extending from one side of the handle and pivoted to the same at a point intermediate of the ends thereof, and at a sufficient distance from the outer end of the handle to cause the jaws to open and close when swung transversely thereof, substantially as described.

2. A pipe wrench, comprising a jaw formed of a series of sections pivoted together and provided at their opposing faces with serrations adapted to engage the sides of a pipe, an operating-handle pivoted to one of said sections, shoulders formed on said section to which the operating-handle is pivoted and adapted to travel around the end of said handle and contact with the sides thereof to limit the movement of said section, one of said sections being also provided in its outer face with a locking-notch located near the outer end thereof and disposed at an angle to said end, said notch being tapered and having its inner end of greater size than its outer one, and a fastening-loop carried by the operating-handle, said loop being adapted to engage the locking-notch and by the shape and arrangement of the latter be retained therein, and also to be operated by the handle to lock and unlock the wrench, substantially as set forth.

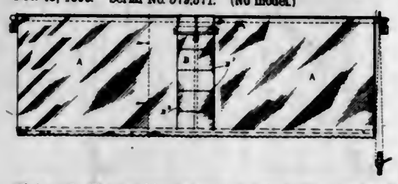
573,638. CAR-FENDER. DAVID O. EMERSON, St. Louis, Mo., assignor of one-half to William S. Walker, Jr., same place. Filed Apr. 16, 1896. Serial No. 587,749. (No model.)

Claim.—1. In combination with a car, the forked brackets 3, the side bars 9 connected to the upper forks of said brackets, the bars 10 and 11 framing said side bars together, the bars 13 pivoted to said side bars and connected to the lower forks of said brackets, the coil-springs 8 at the rear ends of said bars 13, traction-wheels under the forward ends of said side bars, the ears 18 upon the forward ends of said side bars, the bar 20 having the rearwardly-bent ends 19 operating in said ears, the coil-springs 23 upon said ends 19 and between said ears, the side bars 24 pivotally swung upon said ends 19 and between said ears, the side bars 24 pivotally swung upon the rod 11, the rods 25 connecting said side bars, the leaf-springs 33 attached to said rod 11, substantially as specified.

2. In a car-fender, the side bars 9, suitable means of supporting said side bars, the bars 10 and 11 framing said side bars together, the side bars 24 pivotally swung upon the bar 11, the rods 25 connecting said side bars 24, the leaf-springs 33 attached to said bar 11 and underneath said rods 25, the free ends of said leaf-springs 33 resting upon the bar 10, the transverse bars 26 connecting said side bars 24 at points intermediate their ends, the rectangular frame 27 hinged to the upper one of said transverse bars 26 and wire-netting upon the frames thus formed, substantially as specified.



573,639. AWNING. WELLINGTON BENNETT, Chicago, Ill. Filed Feb. 15, 1896. Serial No. 579,371. (No model.)



Claim.—1. The combination with a suitably-mounted roller, of distinct awning sections winding thereon, a second roller mounted parallel to the first, a narrow awning strip winding upon the second roller and lying upon adjacent sections covering the break between them, means for holding the free ends of said sections and strip in line, means for rotating the roller first named, and independent means for rotating the second roller.

2. The combination with an awning-roller, of an awning winding upon said roller and composed of slightly-separated sections, means for rotating said roller, an independently spring-actuated roller mounted alongside the roller first mentioned, and an awning-strip covering the break between adjacent awning-sections and automatically held taut by said spring-roller.

3. The combination with an awning-roller and means for rotating the same, of slightly-separated awning-sections winding upon said roller, a second, independently-revoluble, spring-actuated roller mounted alongside the first, and a strip winding upon the second roller, overlapping two adjacent awning-sections, and provided with transverse stiffening bars to prevent lateral curling.

573,640. CIGARETTE-MACHINE. JAMES A. BONSACK, Philadelphia, Pa., assignor to the Bonsack Machine Company, Salem, Va. Filed June 15, 1894. Serial No. 514,630. (No model.)

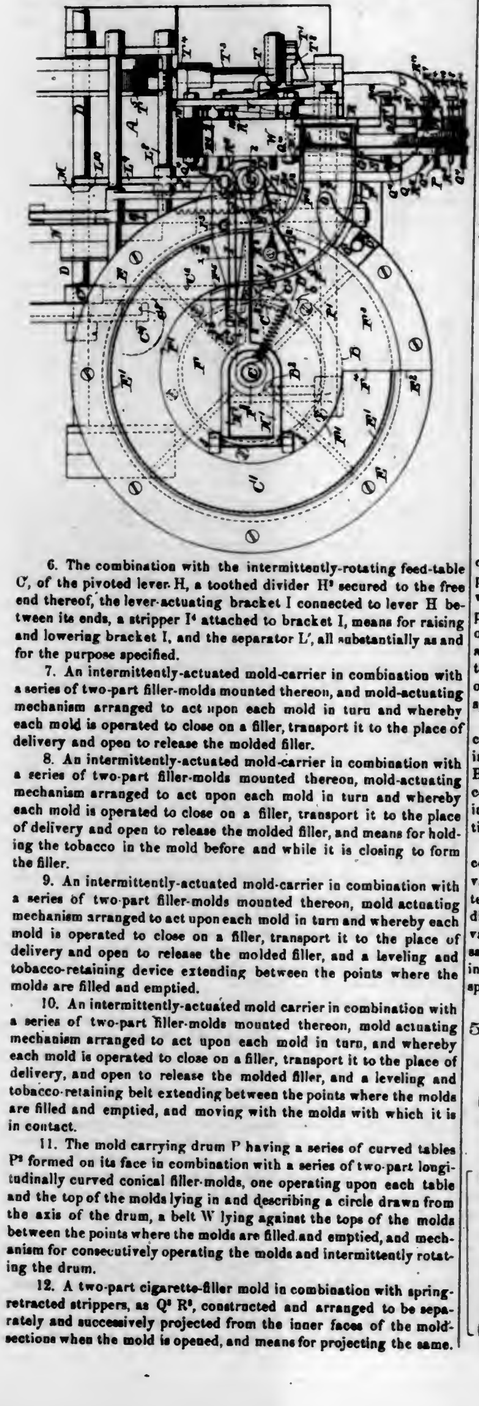
Claim.—1. The combination of the intermittently-rotating substantially horizontal feed table with guide-walls, as E' and F', extending above the face thereof, and an intermittently-acting separator arranged to act alternately with the motion of the table and carry off therefrom the tobacco fed forward by each motion of the table.

2. The combination of the intermittently-rotating substantially horizontal feed-table with guide-walls, as E' and F', extending above the face and around the center thereof, and an intermittently-acting separator arranged to act alternately with the motion of the table and carry off therefrom the tobacco fed forward by each motion of the table.

3. The combination of the intermittently-rotating substantially horizontal feed-table with guide-walls, as E' and F', extending above the face thereof, the outer wall E' being of greater height than the inner wall, and an intermittently-acting separator arranged to act alternately with the motion of the table and carry off therefrom the tobacco fed forward by each motion of the table.

4. The combination of the intermittently-rotating substantially horizontal feed-table with guide walls, as E' and F', extending above the face thereof, a separator as L', a vertically-movable shaft L^4 to which said separator is attached, mechanism for moving said shaft up and down and mechanism for oscillating said shaft whereby the separator is made to engage the tobacco fed forward by the table, carry it away by a circular sweep and return above the level of the tobacco on the table for a fresh charge.

5. The combination of the intermittently-rotating substantially horizontal feed-table with guide-walls, as E' and F', extending above the face thereof, a separator as L', a vertically-movable shaft L^4 to which said separator is attached, mechanism for moving said shaft up and down, mechanism for oscillating said shaft, a pusher-plate L^3 arranged in front of the separator and operated substantially as and for the purpose specified.



6. The combination with the intermittently-rotating feed-table C', of the pivoted lever H, a toothed divider H^3 secured to the free end thereof, the lever-actuating bracket I connected to lever H between its ends, a stripper I^4 attached to bracket I, means for raising and lowering bracket I, and the separator L', all substantially as and for the purpose specified.

7. An intermittently-actuated mold-carrier in combination with a series of two-part filler-molds mounted thereon, and mold-actuating mechanism arranged to act upon each mold in turn and whereby each mold is operated to close on a filler, transport it to the place of delivery and open to release the molded filler.

8. An intermittently-actuated mold-carrier in combination with a series of two-part filler-molds mounted thereon, mold-actuating mechanism arranged to act upon each mold in turn and whereby each mold is operated to close on a filler, transport it to the place of delivery and open to release the molded filler, and means for holding the tobacco in the mold before and while it is closing to form the filler.

9. An intermittently-actuated mold-carrier in combination with a series of two-part filler-molds mounted thereon, mold actuating mechanism arranged to act upon each mold in turn and whereby each mold is operated to close on a filler, transport it to the place of delivery and open to release the molded filler, and a leveling and tobacco-retaining device extending between the points where the molds are filled and emptied.

10. An intermittently-actuated mold carrier in combination with a series of two-part filler-molds mounted thereon, mold actuating mechanism arranged to act upon each mold in turn, and whereby each mold is operated to close on a filler, transport it to the place of delivery, and open to release the molded filler, and a leveling and tobacco-retaining belt exteading between the points where the molds are filled and emptied, and moving with the molds with which it is in contact.

11. The mold carrying drum P having a series of curved tables P^3 formed on its face in combination with a series of two-part longitudinally curved conical filler-molds, one operating upon each table and the top of the molds lying in and describing a circle drawn from the axis of the drum, a belt W lying against the tops of the molds between the points where the molds are filled and emptied, and mechanism for consecutively operating the molds and intermittently rotating the drum.

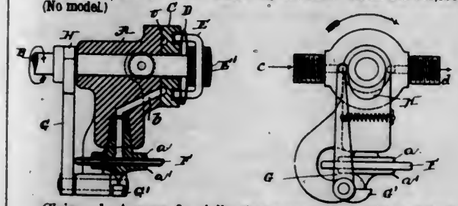
12. A two-part cigarette-filler mold in combination with spring-retracted strippers, as Q^2 R^2, constructed and arranged to be separately and successively projected from the inner faces of the mold-sections when the mold is opened, and means for projecting the same.

13. In combination with a mold-carrying drum P, a series of two-part molds operating upon the face of said drum, mechanism for closing the molds, mechanism for opening the molds to permit the molded fillers to be withdrawn, and mechanism for further opening said molds preparatory to recharging them with tobacco.

14. In combination with a mold-carrying drum P, a series of two-part molds operating upon the face of said drum, mechanism for closing the molds, mechanism for opening the molds to permit the molded fillers to be withdrawn, strippers as Q^2 R^2, mechanism for forcing said strippers through the inner faces of the mold sections to free the fillers, and mechanism for further opening said molds preparatory to recharging them with tobacco.

15. In combination with the mold carrying drum P, a series of fixed mold sections Q secured thereon, a series of coacting sliding mold-sections R also secured to the face of the drum, stripper-plates Q^2 and R^2 having outwardly-extending stems Q^4 R^4 and retracting-springs, a reciprocating mold-opening slide, as T^7, an abutment or ledge V arranged to intercept the stem R^4 and force the strippers R^2 into the movable mold-section as said section is retracted by the slide T^7, and a finger U^2 operated by the lever T^6 and arranged to press against the stem Q^4 and operate the stripper Q^2.

573,641. PUMP FOR RAISING AND MEASURING LIQUIDS. EMIL CAPITAINE, Frankfort-on-the-Main, Germany, assignor to George T. Harris, Philadelphia, Pa. Filed May 22, 1896. Serial No. 592,590. (No model.)

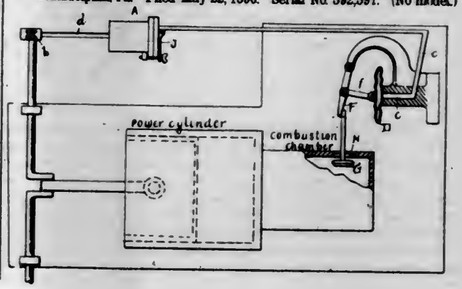


Claim.—1. A pump for delivering measured quantities of fluid, comprising a valve, with means to actuate the same, said valve being provided with a grooved passage-way, inlet and outlet passages with which said grooved passage-way of the valve will register, a diaphragm, with means to actuate the same, a passage way in the body of the pump between the diaphragm and the grooved valve passage, and cam mechanism mounted on the driving mechanism and arranged to alternately distend and contract said diaphragm in proper order of time relatively to the movement of the said valve, substantially as specified.

2. A pump for measuring and delivering small quantities of liquid, comprising the pump-body A provided with passages *c d*, a valve having a grooved passage-way *o* adapted to register therewith, a shaft B adapted to actuate the valve, a diaphragm F and passage-way *b* communicating therewith, and cam mechanism mounted on the driving-shaft and arranged to actuate said diaphragm in proper order of time relatively to the movement of the valve, substantially as specified.

3. A pump for measuring and delivering small quantities of liquid, comprising a pump-body provided with inlet and outlet passages, a valve having a passage-way therein adapted to be brought to register with the said inlet and outlet passages, by proper movement, a diaphragm, a passage-way leading from said diaphragm to the said valve and adapted to be brought into communication with the passage-way thereof, and means for operating said valve and diaphragm in proper order of time relatively to each other, substantially as specified.

573,642. SPEED-REGULATOR FOR GAS ENGINES. EMIL CAPITAINE, Frankfort-on-the-Main, Germany, assignor to George T. Harris, Philadelphia, Pa. Filed May 22, 1896. Serial No. 592,591. (No model.)

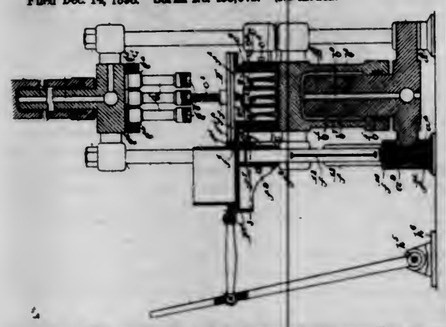


Claim.—1. A speed-regulating mechanism for gas and petroleum engines, comprising a piston-cylinder, a piston therein operatively connected with the crank-shaft of the engine, said cylinder having a rear valve-port, a valve for controlling said port, a spring acting upon said valve to normally hold it open or partially so, to admit air to said cylinder and means operated by a variation of air-pressure in said cylinder and operating to control a supply or exhaust port of the engine, substantially as specified.

2. In a speed-regulating mechanism for gas and petroleum engines, the combination with the piston-cylinder A, of piston *a* and rod *d*, the latter actuated by an eccentric *b* on the crank-shaft of the engine, port *i*, hinged flap-valve J, adjusting-screw H, a spring S; and air-conduit *e* communicating with the piston-cylinder, and means actuated by the air-pressure created thereby and operating to open or close the exhaust valve or fuel-supply ports of the engine; substantially as described.

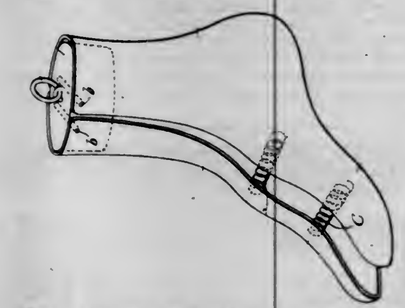
3. In speed-governing devices for engines of the character described, the combination with a piston-cylinder having a rear valve-port, a valve which controls said port, and adapted under normal conditions to admit air therethrough and to be closed by a reduction of air-pressure in said cylinder, and a piston in said cylinder operatively connected with the crank-shaft of the engine, of a valve which controls a supply or exhaust port of the engine, a locking lever arranged to engage the stem of said valve to prevent its operation, a diaphragm connected to said lever, and an air-conduit leading from the cylinder to the said diaphragm, substantially as specified.

573,643. CORE-PRESS. MICHAEL P. COLEMAN, Boston, Mass.
Filed Dec. 14, 1893. Serial No. 493,672. (No model.)



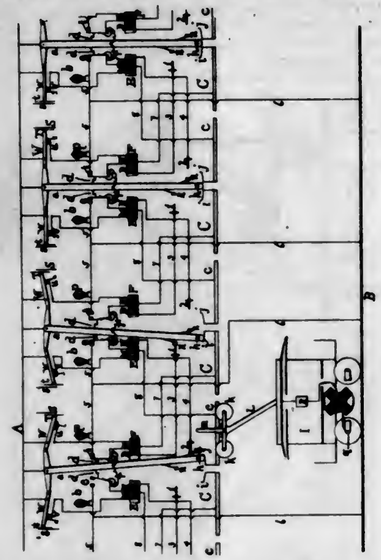
Claim.—The combination of the independently-operating upper and lower presses, the core-plate carried by said lower press, the die-cylinder, resting on said core-plate and connected with the cylinder of said upper press, and the stationary punches, as and for the purpose specified.

573,644. LAST OR TREE. ELEANOR C. COLVER, New York, N. Y.
Filed Feb. 10, 1896. Serial No. 578,668. (No model.)



Claim.—A last consisting of two hollow vertical concave sections, means for pivotally connecting the said sections comprising a plug adapted to fit between the upper portion of the said hollow vertical concave sections provided with spindles for each section, said spindles passing through the said plug in a line parallel with the longest diameter of the last, and having attached to their ends the said vertical sections, and means for expanding transversely the said hollow vertical sections, consisting of springs arranged interiorly and secured to the concave face of the said hollow vertical sections.

573,645. AUTOMATIC SYSTEM OF DISTRIBUTION AND CONTROL FOR ELECTRIC RAILWAYS, &c. WILLIAM H. COOLEY, Brockport, N. Y. Filed Aug. 3, 1896. Serial No. 601,078. (No model.)



Claim.—1. In an electric-railway system, a continuous feeder, a series of working conductors normally unsupplied with current from such continuous feeder sufficient to operate the motor-cars on such system, means, under the control of devices on the motor-cars of such system, for connecting directly to such continuous feeder the working conductors contained on any block in such system on which a first one of such motor cars happens at any time to be, means for preventing a second motor car subsequently arriving on an adjacent block, whether to the rear or in front of such first-named block, from similarly connecting to such continuous feeder the working conductors contained on such adjacent block or section in such system.

2. In an electric-railway system, a continuous feeder, a series of working conductors normally unsupplied with current from such continuous feeder sufficient to operate the motor-cars on such system, means, under the control of devices on the motor-cars of such system, for connecting directly to such continuous feeder the working conductors contained on any block in such system on which a first one of such motor-cars happens at any time to be, means for preventing a second motor-car subsequently arriving on an adjacent block, whether to the rear or in front of such first-named block, from similarly connecting to such continuous feeder the working conductors contained on such adjacent block or section in such system, and means, under the control of such second-named motor-car approaching such first-named motor-car from the rear, whereby, when such first-named car has advanced onto another block or section, such second motor-car may secure a direct connection between such continuous feeder and the working conductors contained on that block on which said second car is located.

3. In an electric-railway system, a continuous feeder, a series of working conductors normally unsupplied with current from such continuous feeder sufficient to operate the motor-cars on such system, means, under the control of devices on the motor-cars of such system, for connecting directly to such continuous feeder the working conductors contained on any block in such system on which a first one of such motor-cars happens at any time to be, means for preventing a second motor-car subsequently arriving on an adjacent block, whether to the rear or in front of such first-named block, from similarly connecting to such continuous feeder the working conductors contained on such adjacent block or section in such system, a system of signals and means for operating the same, indicating to the motorman whose car is located on such an adjacent block in such system, that such first-named block is occupied.

4. In an electric-railway system, a continuous feeder, a series of working conductors normally unsupplied with current from such continuous feeder sufficient to operate the motor-cars on such system, means, under the control of devices on the motor-cars of such system, for connecting directly to such continuous feeder the working conductors contained on any block in such system on which a first one

of such motor-cars happens at any time to be, means for preventing a second motor-car subsequently arriving on an adjacent block, whether to the rear or in front of such first-named block, from similarly connecting to such continuous feeder the working conductors contained on such adjacent block or section in such system, a system of signals and means for operating the same, indicating to the motorman whose car is located on such an adjacent block in such system, that such first-named block is occupied and also the direction in which such first-named motor-car is moving.

5. In an electric-railway system, a continuous feeder, a series of working conductors normally unsupplied with current from such continuous feeder sufficient to operate the motor-cars on such system, means, under the control of devices on the motor-cars of such system, for connecting directly to such continuous feeder the working conductors contained on any block in such system on which a first one of such motor-cars happens at any time to be, means for preventing a second motor-car subsequently arriving on an adjacent block, whether to the rear or in front of such first-named block, from similarly connecting to such continuous feeder the working conductors contained on such adjacent block or section in such system, a system of signals and means for operating the same, indicating to the motorman whose car is located on such an adjacent block in such system, that such first-named block is occupied and also the direction in which such first-named motor-car is moving, just as such first-named motor-car is leaving such first-named block or section in such system.

6. In combination with an electric motor and its supply-circuit, electrically-controlled devices located in a shunt around such motor, constituting means for reversing such motor upon an interruption of the current in such supply-circuit.

7. In combination with an electric motor and its supply-circuit, electrically-controlled devices located in a shunt around such motor, constituting means for changing the position of the brushes of such motor, upon an interruption of the current in such supply-circuit.

8. In combination with an electric motor and its supply-circuit, electrically-controlled devices located in a shunt around such motor, constituting means for reversing the current traversing one of the operative elements of such motor, upon an interruption of the current in such supply-circuit.

9. In combination with an electric motor and its supply-circuit, electrically-controlled devices, located in a shunt around such motor, constituting means for changing the position of the brushes on such motor and for reversing the direction of the current traversing one of the operative elements of such motor, upon an interruption of the current in such supply-circuit.

10. In combination with an electric motor and its supply-circuit, devices electrically controlled by the current supplied to such motor, constituting means for reversing such motor, upon an interruption of the current in such supply-circuit.

11. In combination with an electric motor and its supply-circuit, devices electrically controlled by the current supplied to such motor, constituting means for changing the position of the brushes of such motor, upon an interruption of the current in such supply-circuit.

12. In combination with an electric motor and its supply-circuit, devices electrically controlled by the current supplied to such motor, constituting means for reversing the direction of the current traversing one of the operative elements of such motor, upon an interruption of the current in such supply-circuit.

13. In combination with an electric motor and its supply-circuit, devices electrically controlled by the current supplied to such motor, constituting means for changing the position of the brushes on such motor and for reversing the direction of the current traversing one of the operative elements of such motor, upon an interruption of the current in such supply-circuit.

573,646. BOILER TUBE OR FLUE. JARED R. DE RENER, Glenwood Springs, Colo., assignor of one-half to C. W. Durand, same place.
Filed Apr 17, 1896. Serial No. 587,929. (No model.)

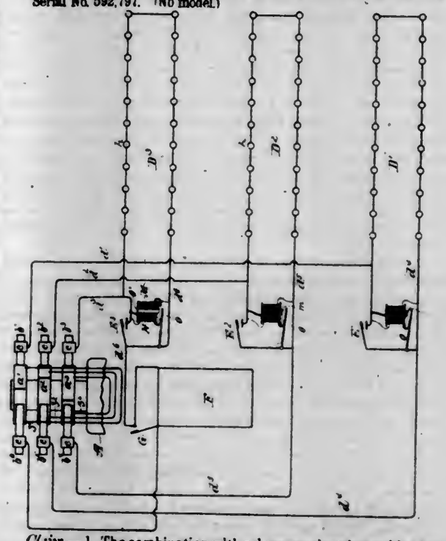
Claim.—1. In a boiler having its end sheets provided with opposite holes or openings, a flue or tube having at one end an outer collar, a nut for binding said collar against one of said sheets, said flue also having an exteriorly-threaded offset or enlargement at its other end, provided with an inner shoulder and a plug fitted in said offset or enlargement for forcing the latter against the walls of the opening in the other end sheet, substantially as set forth.

2. In a boiler having its end sheets provided with opposite holes or openings, one of which is threaded, a flue or tube exteriorly threaded at one end and having an adjoining circumferential collar, a nut on said end for binding said collar against the inner face of one end sheet, the other end of said flue having an exteriorly-threaded offset or enlargement provided with an inner threaded taper, and a tapered plug having an outer thread designed to engage said inner threaded taper of said flue, said offset or enlargement being adapted to fit in the threaded opening of said end sheet, substantially as set forth.



3. The combination with the boiler-sheets having two opposite holes or openings, one of which is threaded, of a flue having at one end an outer thread and collar, and at the other end an exteriorly-threaded offset or enlargement having an inner shoulder, the inner surface of said offset or enlargement being tapered and threaded, a plug having an exteriorly-threaded taper designed to engage said inner threaded taper of said offset and also provided with a flange, and a nut on the other threaded end of said flue, substantially as set forth.

573,647. SYSTEM FOR GENERATING AND DISTRIBUTING ELECTRICAL ENERGY. CHARLES M. GREEN, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed May 23, 1896. Serial No. 592,797. (No model.)

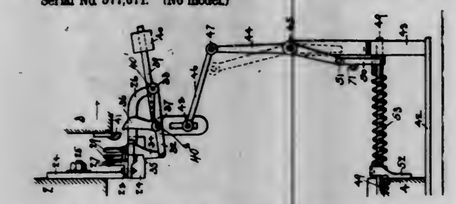


Claim.—1. The combination with a dynamo-electric machine having two or more separate groups or sets of armature coils or bobbins, of two or more separate working circuits, each of which is electrically connected with the positive end of one group of armature-coils and with the negative end of another group of armature coils, and automatic cut-outs for automatically switching out of operation any

one of the working circuits if broken or open-circuited, substantially as set forth.

2. The combination with a dynamo provided with two or more separate sets or groups of armature coils or bobbins, and a commutator for each set or group, of two or more working circuits each having translating devices included therein, said working circuits each being connected between and included in series with the separate groups of armature coils or bobbins, and automatic cut-outs arranged and adapted to provide a shunt-circuit of low resistance around each one of said working circuits, substantially as set forth.

573,648. STOPPING MECHANISM FOR LOOMS. FRANÇOIS MAXIMILIAN JOSEPH GREBNER, Providence, R. I. Filed Feb. 1, 1896. Serial No. 577,671. (No model.)

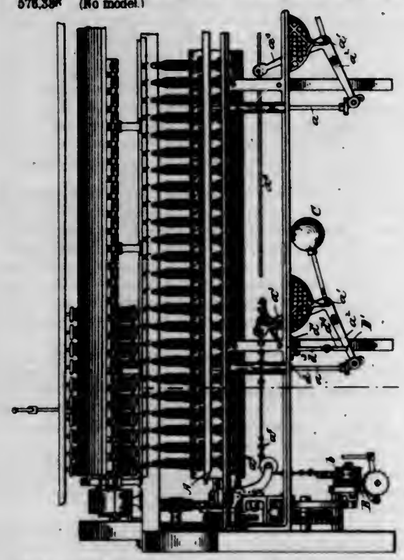


Claim.—1. In a stop mechanism for looms, the combination with shoe-shafts, picker-sticks, swift sticks, a breast-beam and a lay movable to and from the breast-beam and having shuttle-boxes at its ends provided with shuttle-binders, of bent levers pivotally mounted on the breast-beam, each having a finger extending upward and adapted to be moved by the adjacent shuttle-binder, when the latter is pressed outwardly, a bracket secured at or near the center of the breast-beam and having thereon two pivotally-mounted and spring-actuated levers, a wire connecting each of said central levers, respectively, with the nearer of the bent levers first aforesaid, fixed hubs on said shoe shafts, picker-arms mounted loosely on said hubs and provided with means to lock said picker-arms to said hubs, respectively, and means intermediate between said central levers and picker-arms, adapted normally to receive the pressure of said central levers and to be restrained from action by the pressure of either or both of said central levers, but to operate, when relieved from the pressure of both said levers, said locking devices and to loosen the picker-arms from their engagement with said hubs, substantially as shown.

2. In a loom having a breast-beam and lay, shoe-shafts, picker-sticks and swift sticks, shuttle-boxes and shuttle-binders the combination of a hub fastened upon each shoe-shaft and provided with a slotted arm and a bracket, a slotted collar fastened upon each shoe-shaft, a slotted picker-arm loosely mounted on each of said hubs, a cam rotatably mounted on each hub, a sliding key movable on the bracket of each hub into and out of the slots of said hub-arm, collar and picker arm, respectively, by the revolution of said cams, a cross-shaft mounted in suitable supports and surrounded by a spiral spring adapted to turn the same, an arm mounted in said cross-shaft, a rod connection between the arm last aforesaid and said cams, and a holding device engageable with said arm of the cross-shaft and arranged to be set in operation by the simultaneous outward movement of the shuttle-binders in two shuttle-boxes on the race of the lay and means intermediate between said shuttle-binders and holding device, substantially as specified.

3. The improved stop mechanism for looms herein described, consisting of the breast-beam 2 the bent levers 21, 21, mounted on the breast-beam near the ends thereof and having each a finger-rod 23, the lay 3 and shuttle-boxes 6 on said lay the shuttle binders 9, mounted on said shuttle-boxes 6, the catch 41, centrally projecting from said lay, the central bracket 24, on the breast-beam, the lever-support 27, upon said bracket, the curved levers 29, 29, mounted on said support 27, provided with feet at their inner ends, the spiral spring connecting the outer ends of the levers 29, 29, wires 31, 31, connecting the bent levers 21, to the outer ends of the levers 29, respectively, the bracket 26 the arm 32, pivoted at the rear end of said bracket, and having an upright post 34, whose end abuts the feet of the levers 29, 29, an arm 39, having a weight 40 and connected with the arm 32, a swinging latch 36, pivoted to the arm 32 and having its portion below its pivot slotted, the standard 43 the lever 44, mounted upon said standard, a link 46, pivotally connected with the top of the lever 44, and having at its other end a stud adjustably mounted in the slot of the latch 36, a shaft 49, mounted in the standard 43 and in the frame of the loom and actuated by a spiral spring 53, which surrounds it, an arm 50, engageable with the lower end of the lever 44, and extending from the shaft 49, shoe-shafts 54, a hub 55, fastened upon each shaft 54 and having a slotted arm 57, from which extends a bracket 58, a slotted collar 63, fastened to each shaft 54, a rotatable cam 64, loosely mounted on each hub 55, and having an extension 67, a beveled cam-face as shown, mounted on a pivot 68 of each cam 64 and a rod 74 connecting said extensions, a picker-arm 60, loosely mounted on each hub 55, and having a slot, a swift stick movable by each picker-arm, a picker-stick movable by each swift stick, a sliding key 69, movable on each bracket 58 and engageable with the slots of the hub-arm 57, the collar 63, and picker-arm 60, but which key is detachable therefrom by the sliding contact of the beveled face of said rotatable cam 64, a spring connecting said key 69 and arm 57 and a rod connection between each cam 64, and said arm 50 of the shaft 49, all arranged and operating substantially as shown and for the purpose specified.

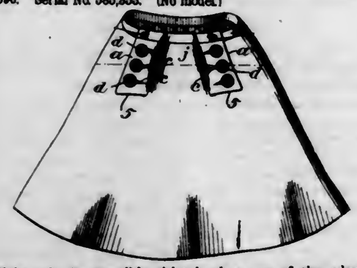
573,649. SPINNING AND TWISTING FRAME. JOHN GREGSON and CHARLES J. MURRAY, Fall River, Mass., assignors to the Whitin Machine Works, Whitinsville, Mass. Filed Jan. 22, 1896. Serial No. 576,338. (No model.)



Claim.—1. In a spinning-frame, the combination with the ring-rail, and its traversing mechanism, including a rock-shaft furnished with a locking portion, of a locking device mounted in the machine and adapted to engage said locking portion to lock the rock-shaft.

2. In a spinning-frame, the combination with the ring-rail, and its traversing mechanism, including a lever-arm, of a combined safety-arm and ring-rail positioner pivotally mounted in the machine, and comprising members which are adjustably connected, whereby said arm may be adjusted in length as described.

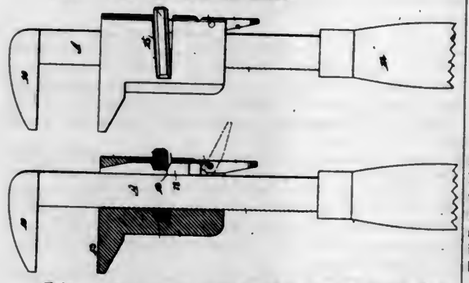
573,650. SKIRT. SAMUEL HAAS, New York, N. Y. Filed Mar. 30, 1896. Serial No. 585,353. (No model.)



Claim.—1. A reversible skirt having one of the edges of its placket provided with an overlapping fly which terminates downward at the bottom of the placket opening and the bottom edge of which is left free or detached from the adjacent parts of the skirt to make it reversible over the other of said edges from one side or face to the other of the skirt, the said fly having a single set of buttonholes and the opposite edge of the placket being provided with duplicate sets of buttons one set on each side of the skirt so that the one set of buttonholes may engage with either set of buttons according to which side or face of the skirt is outward, substantially as herein described.

2. The combination with a reversible skirt having one of the edges of its placket provided with a lapping fly, of a pocket one edge of the opening of which is attached to the other edge of the skirt-placket, the opposite edge of the said opening being free to permit the turning of the said pocket inside out and the reversal of the said pocket to and from either of the reversible sides of faces of the skirt, substantially as herein described.

573,651. WRENCH. LEWIS L. HALL, Bourne, Oreg. Filed July 8, 1896. Serial No. 598,430. (No model.)



Claim.—1. In a wrench, a toothed shank provided with a fixed jaw, a sleeve held to slide on the said shank and connected with the movable jaw, a locking device pivoted in the said sleeve and having a toothed surface arranged for engagement with the corresponding surface of the shank, and a lever-controlled adjusting device engaging with the locking device for the purpose of imparting movement thereto, as and for the purpose specified.

2. In a wrench, the combination, with a toothed shank having a fixed jaw, of a jaw mounted to slide on the shank and provided with an attached sleeve, a link having rocking movement around the shank, a portion of the locking-link being toothed for engagement with the toothed surface of the shank, the said link moving with the movable jaw, an adjusting-bar receiving a portion of the link and mounted to slide within the opening of the movable jaw, and a device for raising and lowering the aforesaid adjusting-bar, as and for the purpose specified.

3. In a wrench, the combination, with a toothed shank and the fixed jaw of the same, of a sliding jaw, a link surrounding the shank and having rocking movement in the sliding jaw, a member of the said link being toothed for engagement with the toothed surface of the aforesaid shank, an adjusting-bar held to slide between the movable jaw and the said shank a connection between the locking-link and the adjusting-bar, whereby the two move together, and a lever arranged to impart movement to the adjusting-bar, as and for the purpose specified.

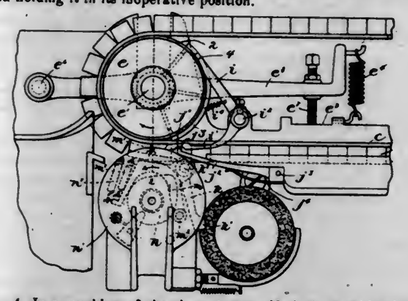
4. In a wrench, the combination, with a toothed shank, a jaw fixed to the shank, a second jaw held to slide on the shank, and a sleeve connected with the movable jaw, a space intervening the rear wall of the movable jaw and sleeve and corresponding wall of the shank, the upper portion of the rear wall of the movable jaw being inclined, of a locking-bar extending around the shank and fulcrumed in the forward portion of the said sleeve, the fulcrum member of the locking-bar being toothed for engagement with the teeth on the shank, an adjusting-bar having a wedge action and mounted to slide between the rear of the movable jaw and its sleeve and the rear of the said shank, and a connection between the locking-bar and adjusting-bar, whereby the two move together, and a device for imparting movement to the adjusting-bar, as specified.

573,652. MAIL-MARKING MACHINE. JOHN S. HANSEN, Medford, Mass., assignor to the American Postal Machines Company, Portland, Me. Filed Jan. 14, 1896. Serial No. 575,422. (No model.)

Claim.—1. In a machine of the character specified, an impression-cylinder comprising a positively-rotated section or carrier, a loose segmental section having a greater radius than the said carrier and in frictional contact therewith and a band passing around said sections.

2. In a machine of the character specified, an impression-cylinder comprising a positively-rotated section or carrier, and a loose segmental section having a greater radius than the carrier, and an endless band passing around said sections combined with means for normally arresting said loose section, and a letter controlled mechanism for displacing said detent.

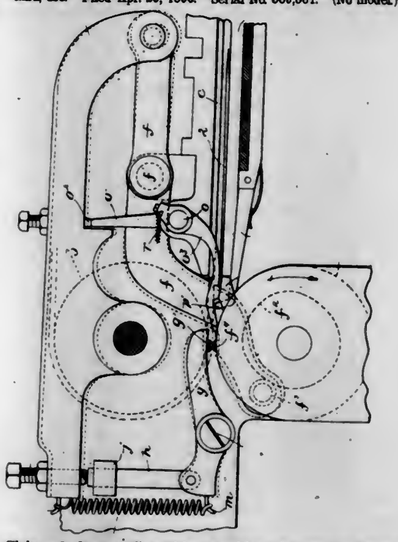
3. In a machine of the character specified, the combination of an impression-cylinder comprising a positively-rotated section and a loose section of greater radius in frictional contact therewith, a letter-carrying band on said cylinder, a printing-cylinder journaled in fixed bearings, and means for normally engaging said loose section and holding it in its inoperative position.



4. In a machine of the character specified, the combination of an impression-cylinder comprising a positively-rotated section and a loose section of greater radius in frictional contact therewith, a letter-carrying band on said cylinder, a printing-cylinder journaled in fixed bearings, an arresting means for normally engaging said loose section and holding it in its inoperative position, and a part for releasing said arresting means carried by the printing-cylinder, said part being operative only when a letter is in contact with the detent.

5. In a machine of the character specified, the combination of an impression-cylinder comprising a positively-rotated section and a loose section of greater radius in frictional contact therewith, a letter-carrying band on said cylinder, a printing-cylinder journaled in fixed bearings, a detent which normally engages said loose section and holds it in its inoperative position, said detent having an arm or extension formed to bear on the back of a letter, a letter-clamp mounted on the printing-cylinder and arranged to precede the printing-dies on said cylinder, and means for alternately projecting and releasing the clamp, the said clamp acting through an interposed letter to displace the detent and press the letter against the band.

573,653. MAIL-MARKING MACHINE. JOHN S. HANSEN, Medford, Mass., assignor to the American Postal Machines Company, Portland, Me. Filed Apr. 29, 1896. Serial No. 589,581. (No model.)



Claim.—1. In a mail marking machine, the combination with printing and impression cylinders and a support for one of said cylinders extending on opposite sides thereof and movable bodily toward and from the other cylinder, of a cam which rotates with that other cylinder, and connections between said cam and support engaging the latter on both sides of the cylinder it carries whereby motion is transmitted from the cam simultaneously to both ends of said support.

2. In a mail-marking machine, the combination with printing and impression cylinders and a support for one of said cylinders, of a cam which rotates with the other cylinder, means for communicating motion from the cam to one end of the support, a movable bearing for the other end of the support, and means for communicating motion from the cam to said movable bearing.

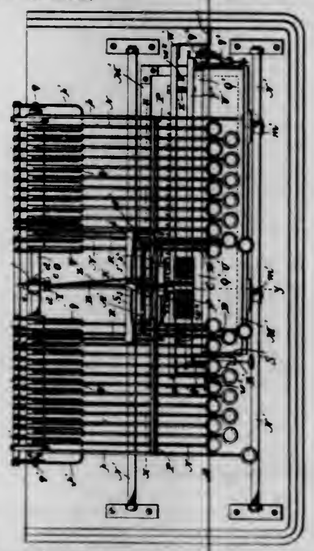
3. In a mail-marking machine, the combination with printing and impression cylinders and a movable support for one of said cylinders, of a cam which rotates with the other cylinder, a lever pivoted between its ends to a fixed support and engaged with one end of the movable support and with the cam, a movable bearing for the other end of the movable support, and means for imparting motion from the cam to said movable bearing.

4. In a mail-marking machine, the combination with printing and impression cylinders and a movable support for one of said cylinders, of a cam which rotates with the other cylinder, a primary lever pivoted between its ends to a fixed support and engaged with one end of the movable support and with the cam, a movable bearing for the other end of the movable support, and a secondary lever pivoted to a fixed support and engaged at one end with the movable bearing and at the other end with the primary lever.

5. In a mail-marking machine, the combination with printing and impression cylinders, of a movable support for one of said cylinders, a cam positively rotated with the other cylinder, a primary lever coacting with said cam and connected with the said movable support, a secondary lever coacting with the primary lever, a spring connecting said movable support and the secondary lever, a movable bearing interposed between the movable support and the secondary lever, and a letter-displaced abutment normally limiting inward movement of the movable support.

6. In a mail-marking machine, the combination with printing and impression cylinders, of an elongated movable support or bar supporting the impression-cylinder, a primary lever pivoted intermediate of its ends to a fixed support and pivotally connected at one end with said movable support, a cam on the journal of the printing-cylinder coacting with the other end of said lever, a secondary lever pivoted intermediate of its ends to a fixed support and bearing at one end against the primary lever, a movable bearing pivotally connected with the other end of said secondary lever and constituting an abutment for the movable support, a guide for said bearing, a spring engaged at one end with the movable support and at the other with the secondary lever, and a letter-displaced abutment normally limiting inward movement of the movable support.

573,654. TYPE-WRITING MACHINE. AUDLEY E. HARNSBERGER and EDWIN WRIGHT, Staunton, Va. Filed May 18, 1895. Serial No. 549,770. (No model.)



Claim.—1. In a type-writing machine, the combination of a suitable paper-support, the type-wheel having several lines of characters, devices for printing from said wheel, keys or levers mounted on a common shaft, and an arm on the latter connected with the type-wheel, said keys being adapted to impart a variable movement to such shaft, substantially as and for the purpose shown.

2. In a type-writing machine, the combination of a suitable paper-support, the type-wheel having several lines of characters, devices for printing from said wheel, the longitudinally-movable shaft carrying said wheel, keys or levers mounted on a common shaft, an arm on the latter, and connections between said arm and the wheel-shaft, said keys being adapted to impart a variable longitudinal movement to the latter, substantially as and for the purpose described.

3. In a type-writing machine, the combination of a suitable paper-support, the type-wheel having several lines of characters, devices for printing from said wheel, the longitudinally-movable shaft carrying said wheel, a rock-shaft connected with the wheel-shaft, a key fixed to the rock-shaft, a key loose thereon, and a projection from said shaft adapted to coöperate with the loose key, substantially as and for the purpose set forth.

4. In a type-writing machine, the combination of a suitable paper-support, a type wheel, a shaft carrying the same mounted in movable bearings, one of which is a sliding plate, a guide for said plate, a series of keys for operating the wheel, and a swinging frame adapted to be moved by each key and having a part to engage the sliding plate to move the type-wheel toward the paper support, substantially as and for the purpose specified.

5. In a type-writing machine, the combination of a paper-support, the type-wheel, its shaft, a sliding plate, a bar engaging said shaft, and connected therewith so as to rotate the same, a yielding connection between the bar and plate, a series of keys adapted to give a variable movement to the plate, and means actuated by each key for moving the type-wheel toward the paper-support, substantially as and for the purpose shown.

6. In a type-writing machine, the combination of a paper-support, the type-wheel, its shaft, a pinion on said shaft, a rack-bar meshing with the pinion, a sliding plate carrying said rack, a yielding connection between the plate and rack, a series of keys adapted to give a variable movement to the plate, and means actuated by each key for moving the type-wheel toward the paper-support, substantially as and for the purpose specified.

7. In a type-writing machine, the combination of a paper-support, the type-wheel, its shaft, mounted in movable bearings, one of which is a sliding plate, a series of keys for operating said wheel, a swinging frame adapted to be operated by each key and having a part to engage the sliding plate to move the type-wheel toward the paper-support, and means for steadying and guiding said wheel as it is moved toward such support consisting of a notched circular piece, and a relatively fixed lug to coöperate with each notch in said piece, substantially as and for the purpose set forth.

8. In a type-writing machine, the combination of the carriage having a rack-bar, the reciprocating key-actuated plate, and the two alternately-acting lugs upon said plate, one of which moves the carriage when the plate is moved in one direction, and the other of which moves said carriage when the plate moves in the opposite direction, substantially as and for the purpose shown.

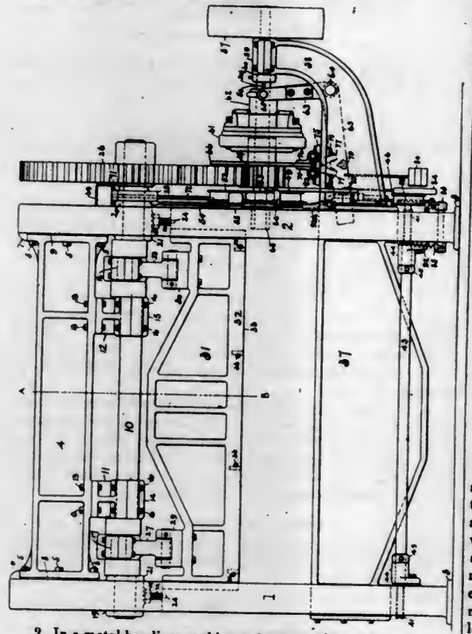
9. In a type-writing machine, the combination of the carriage having a rack-bar, a type-wheel, the sliding plate connected to said wheel, the series of keys for reciprocating said plate, a swinging key-actuated frame, the part thereof for shifting said plate in opposition to the keys, the part carried by said frame for moving the type-wheel toward the paper, and the feeding devices upon said frame for acting upon the carriage rack-bar, substantially as and for the purpose specified.

10. In a type-writing machine, the combination of the type-wheel, the sliding plate connected therewith a series of keys for imparting a variable movement to said plate, and a swinging plate adapted to be moved by each key that is adapted to actuate the type-wheel to cause the same to print, and has portions that engage inclines at opposite ends of the sliding plate to move the same, substantially as and for the purpose set forth.

11. In a type-writing machine, the combination of the type-wheel, the sliding plate connected therewith having a series of notches with inclined sides, a series of keys to coöperate with said notches, a swinging frame adapted to be moved by each key having arms that engage inclines at opposite ends of the sliding plate, and means actuated by the swinging frame to move the type-wheel to cause the same to print, substantially as and for the purpose shown.

573,655. CORNICE-MACHINE. GEORGE HENDERSON, Philadelphia, Pa. Filed Feb. 27, 1896. Serial No. 581,010. (No model.)

Claim.—1. In a plate-forming machine, a framework therefor having independent ends joined by an independent tie, a double-crank shaft carried by the frames and the tie, a cam and a gear upon the shaft, a bracket secured to one frame, a main shaft carried by the bracket, a pulley upon the shaft, a friction clutch upon the shaft consisting of two parts one part revolving with the shaft but free to slide along the shaft, the other part revolving freely upon the shaft and attached to a pinion engaging the gear of the crank-shaft, a disk upon the hub of the pinion, means to connect a weight to the sliding part of the clutch to cause it to engage and revolve the clutch and pinion, and means from the cam upon the crank-shaft to automatically lift the weight, engage friction-plates with the disk, throw the parts of the clutch out of contact and automatically stop the machine at each stroke, substantially as described.



2. In a metal-bending machine, a framework therefor carrying a multiple-crank shaft having a cam and a gear thereon, means to connect the cranks of the shaft with a slide guided in the frames, a main shaft carried by a bracket upon the frame and having a pinion engaging the gear of the crank-shaft, a clutch controlling the pinion, a pulley upon the shaft, a disk upon the pinion, means to force the clutch into engagement by weights, means on the crank-shaft to lift the weights disengage the clutch and apply friction to the disk, automatically at each stroke, and means to disengage the weight-lifting mechanism by hand, substantially as described.

3. In plate-forming machines, means to fixedly connect upper dies to a multiple-crank shaft, lower dies secured on an adjustable table, an independent driving-shaft having means for engagement with the crank-shaft controlled by gravity, means upon the crank-shaft to overcome the gravity, apply friction and stop the upper die automatically at each stroke, and means for the operator to disconnect the automatic mechanism at will, to allow the continuous pressing of the dies, substantially as described.

4. In a cornice-machine, upper dies fixed upon a reciprocating slide worked by a shaft thereto attached by connections of fixed length, lower dies fixed upon a table having means for its adjustment toward or from the upper dies, means to automatically stop the movement of the upper dies after each depression, means to disengage the automatic stopping mechanism, means to disengage the driving mechanism from the pressing mechanism at the will of the attendant, and means to raise or lower the table and the lower dies from the driving mechanism of the machine and at the will of the operator, substantially as described and set forth.

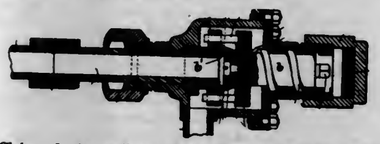
5. In a plate-forming machine, a slide reciprocally driven and carrying a die, a table arranged for upward or downward movement and carrying a die, means for the movement of the table by the power supplied to the machine, and means to lock the table-moving mechanism, substantially as described.

6. In a cornice-forming machine independent end frames united by an independent tie, a multiple-crank shaft suspended from the tie and carried by the frames, a main shaft having driving mechanism engaging the mechanism of the crank-shaft, a slide moved by the crank-shaft and carrying a die, a girder-table carrying a die and having means for its adjustment when required for different depths of cornices, a cam upon the crank-shaft, mechanism from the cam to the stopping mechanism of the main shaft automatically operated at each stroke, means within the control of the operator to disengage the automatic mechanism and means to so lock the disengaging mechanism that revolutions of the crank-shaft may be made until the disengaging-mechanism lock is released by the operator, substantially as described.

7. In a plate-forming machine, a driving-shaft, a pulley thereon, a crank-shaft having a die connected thereto and by it moved, means on the crank-shaft and thereto connected for its driving from the main shaft, automatic mechanism to disconnect the power and stop the crank-shaft after a single revolution, and means by which the operator can throw off or on the automatic mechanism at will to start and stop the crank-shaft within a desired portion of its stroke for the purpose of adjusting the dies, substantially as described.

8. In a plate-forming machine, a slide having upward and downward movement from an attached multiple-crank shaft and having fixed connections thereto, a die thereto attached having multiple projections entering receptacles formed therefor within the slide, and having at right angles therewith connected double-ended and threaded locking-screws, having central concave necks, adapted to hold the die to its place by means of engaging its projections as aforesaid, substantially as described.

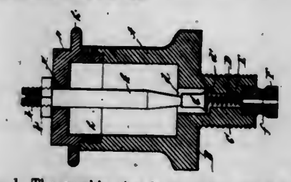
573,656. VALVE. BURTON W. HILL, Somerville, Mass. Filed Jan. 23, 1896. Serial No. 576,515. (No model.)



Claim.—1. An appliance of the character specified, comprising a stationary casing having an outlet, a conduit journaled to turn in the casing and constituting the inlet thereof, an annular valve-seat at the inner end of said conduit communicating with said outlet, a valve opposite said seat having a steep-pitched screw-threaded stem engaged with an internal thread in the casing, whereby the valve may be fully opened by less than a complete rotation thereof and a connection between the conduit and valve, through which rotary motion is communicated from the conduit to the valve to cause a longitudinal movement of the valve.

2. An appliance of the character specified, comprising a stationary casing having a stuffing-box at one end, an internal screw-thread at the other end, and an intermediate outlet, an inlet tube or conduit journaled in the casing and passing through the stuffing-box, said conduit having an annular valve-seat at its inner end communicating with the outlet of the casing; a valve in the casing opposite the said seat and provided with a stem having a steep-pitched screw-thread engaged with the screw-thread in the casing, and a sliding connection between the conduit and valve.

573,657. LUBRICATOR. ALOIS L. HOCHHOLZER and ROBERT E. HILL, Rome, Ga., and JOHN D. RIGGS, Selma, Ala. Filed Aug. 29, 1895. Serial No. 560,900. (No model.)

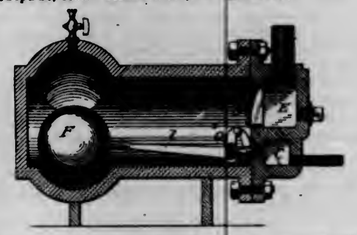


Claim.—1. The combination in an oiling cup of the character described, of the base having a central bore in which is located a spring, a plug provided with a central bore, and upon which rests said spring, a valve supported by said spring and adapted to close the passage through the base of the cup, a cap for said cup and a spindle passing through said cap and adapted to rest upon said valve, the upper end of the said spindle being screw-threaded and carrying a jam-nut, substantially as described.

2. An oiling device of the character described consisting of the cup A, provided with a removable cap H, said cap being provided with a spindle-opening, a spindle passing through said cap screw-threaded upon the upper portion upon which is secured a jam-nut, and the base B of the cup being provided with an annular shoulder *a*, upon which the cap H rests, a spiral spring L connected with said base, the free end of which spring is provided with an upward pro-

jection L', and downwardly-directed hook L^3, which is adapted to enter cavity a', a cover H, provided at one side with a pin M which is adapted to engage the recess N in the above with which communicates a slot O, said base being provided with a screw-threaded shank having a central bore in which is secured a tubular plug, substantially as and for the purpose set forth.

573,658. STEAM-TRAP. STEPHEN H. HOWLAND, Springfield, Mass., assignor of one-half to Charles E. Buell, North Plainfield, N. J. Filed Sept. 28, 1896. Serial No. 607,279. (No model.)

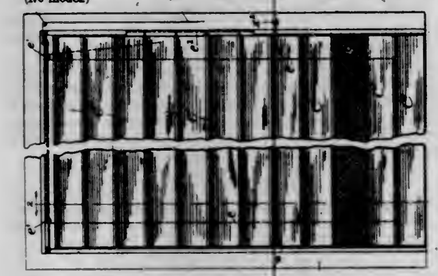


Claim.—1. A steam-trap comprising a head containing a receiving and a discharge chamber, a body detachably secured thereto, and a float-valve mechanism secured to said head, connections with said discharge-chamber whereby water is admitted thereinto at a point above its discharge therefrom, substantially as described.

2. In a steam-trap the combination of the following-named elements: a head provided with an inlet-chamber, a strainer between said inlet-chamber and the body of the trap, an outlet-chamber separated from said inlet-chamber, a valve mechanism secured to said head, connections with said discharge-chamber whereby water is admitted thereinto at a point above its discharge therefrom, and a body that is removably attached to said head.

3. A steam-trap comprising a head that is provided with pipe connections for an inlet-pipe, and an outlet-pipe, a float-valve mechanism secured thereto, and a body removably attached to said head, and means for securing the said body to the said head.

573,659. ADJUSTABLE AND FOLDING SHUTTER OR SCREEN. OLOF HOYER, Chicago, Ill. Filed Aug. 10, 1896. Serial No. 602,219. (No model.)



Claim.—1. The combination with a casing, of a slotted guide-tube secured to each of the walls thereof, a locking-tube, having a vertical slot and a number of recesses, located in each of the guide-tubes, a lever on each of the locking-tubes, a device to turn the levers, a series of rods carrying slats or leaves located in the slots of the tubes, and chains or cords to raise said rods and to adjust the angles of the slots or leaves, substantially as described.

2. The combination with two upright tubes each having a longitudinal slot, of a locking-tube having a longitudinal slot and a number of recesses, and located within the first-named tubes, a lever on each of the locking-tubes, a device to turn the levers, a series of rods each carrying a slat or leaf, and located transversely within the slots of the tubes, chains or cords to raise the rods and to adjust the angles of the slats or leaves, and bolts to lock the locking-tubes within the tubes which surround them, substantially as described.

573,660. MEAT-TENDERER. HARVEY C. HUBBELL, Springfield, Ohio. Filed Mar. 24, 1896. Serial No. 584,606. (No model.)

Claim.—1. In a meat tenderer, the combination with a stationary plate and a hinged plate, of pyramidal cutting-teeth having vertical concavities in their faces and secured to the inner side of each of said plates.

2. In a meat-tenderer, the combination with a stationary plate and another plate hinged thereto, of pyramidal vertically-concave cutting-teeth secured to the inner side of each plate and so arranged with respect to each other that when the plates are brought together the cutting edges of the teeth will all be in line with each other.



573,661. DISPLAY-BOX COVER. GEORGE M. HUDSON, Birmingham, Ala. Filed Mar. 25, 1896. Serial No. 584,806. (No model.)



Claim.—1. A display-top for boxes consisting of a casing designed to hold the articles to be displayed, combined with a board E adjustably held therein and the angle-screws, secured to the casing, and carrying adjusting-nuts adapted to bear against the board, substantially as shown and described.

2. A display-box cover, consisting of the casing provided with angle-screws C having their free ends threaded, thumb-screws working thereon, combined with the board E, the cross-piece F, against which the thumb screws are adapted to bear, and a detachable hinge, whereby the top may be temporarily held to a box, substantially as shown and described.

3. In a display-box cover, the combination with the two sectional casings arranged as described, and hinged together, of the angle-screw C, nut D and board E, of the hinges thereon mounted on a rod G, and an adjusting screw-nut or button working on the threaded end of the said rod, whereby the covers may be detachably held to a box, substantially as and for the purpose set forth.

573,662. TOBACCO-PIPE. HENRY HUNT and HENRY HUNT, Jr., Wilkes-Barré, Pa. Filed Aug. 14, 1896. Serial No. 602,764. (No model.)



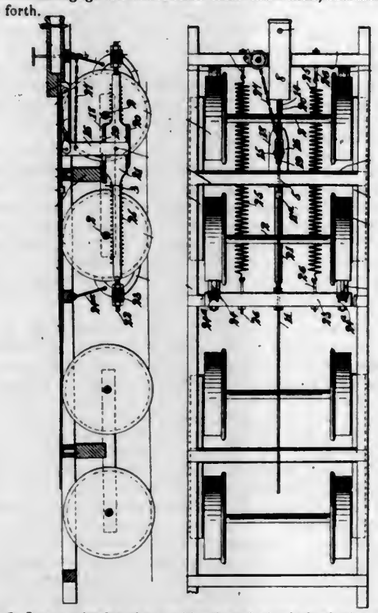
Claim.—1. A tobacco-pipe, comprising the bowl having an integral lateral stem perforated longitudinally to intersect the cavity of said bowl, a tongue-piece extending from said stem and having two opposite longitudinal grooves, one of said grooves alining with the aforesaid perforation, and a mouthpiece incasing said tongue-piece and provided with a ferrule by which it is attached to said stem, the grooves being thereby converted into a smoke-passage and a moisture-chamber, substantially as described.

2. A tobacco-pipe, comprising a bowl, a short integral stem laterally projecting from the bowl, and longitudinally perforated to intersect the cavity therein, a tapered tongue-piece extending from the stem and having less diameter than said stem at the point of junction therewith, the tongue-piece having two opposite grooved passages longitudinal therein, one groove alining with the perforation of the stem, a cylindric tapered mouthpiece incasing the tongue-piece, and converting the grooved formations respectively into a smoke-passage and a moisture-chamber, and a tapered ferrule fast on the end of the mouthpiece and fitted upon the tapered body of the short stem, substantially as described.

573,663. CAR-BRAKE. BENJAMIN F. JACKSON, Sutton, W. Va., assignor of one-half to Marshall L. Hughes, same place. Filed Feb. 14, 1896. Serial No. 579,205. (No model.)

Claim.—1. In a car-brake, the combination of wheels, brake-beams having shoes engaging the wheel-treads, springs connecting the brake-beams and arranged to hold the same with their shoes normally engaging the car-wheels, rods having their inner ends adjacent and having their outer ends connected to the brake-beams, a draw-head, and a lever connected to and arranged to be moved by said draw-head, said lever having engagement with the inner ends of the brake-bars, and being adapted when moved to actuate said brake-rods to move the brake-beams, substantially as set forth.

2. In a car-brake, the combination of wheels, brake-beams having shoes engaging the wheels, a truck-frame whereon the wheels are mounted, a car-body supported on the truck-frame, means for supporting the brake-beams from the car-body, a box carried on the truck-frame and having a passage extending through it, springs connecting the brake-beams and arranged to hold the same with their shoes normally engaging the wheels, brake-rods connected at their outer ends to the brake-beams and having their inner ends arranged to slide in the passage in said box, a pivoted brake-lever having one end engaging the brake-rods and adapted to move the same in opposite directions, a draw-head, and a connection between the draw-head and the lever, arranged when the draw-head is moved to actuate said lever to disengage the brake-lever from the wheels, substantially as set forth.



3. In a car-brake, the combination of wheels, brake-beams having shoes engaging the wheels, a truck-frame whereon the wheels are mounted, a car-body supported on the truck-frame, means for supporting the brake-beams from the car-body, a box carried on the truck-frame and having a passage extending through it, springs connecting the brake-beams and arranged to hold the same with their shoes normally engaging the wheels, brake-rods connected at their outer ends to the brake-beams and having their inner ends arranged to slide in the passage in said box, a pivoted brake-lever having one end engaging the brake-rods and adapted to move the same in opposite directions, a draw-head, a connection between the draw head and the lever, arranged when the draw-head is moved to actuate said lever to disengage the brake-lever from the wheels, a brake-staff having a pawl and-ratchet device, and a chain connected to the lever and arranged to be wound on the brake-staff, substantially as set forth.

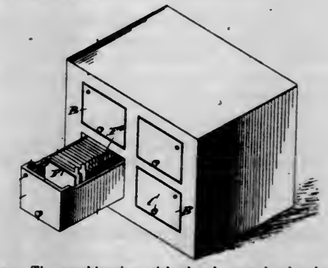
573,664. RUBBER SHOE. WILLIAM B. KINSLEY, Melrose, Mass., assignor to the Boston Rubber Shoe Company, Boston, Mass. Filed Mar. 12, 1896. Serial No. 582,872. (No model.)



Claim.—1. A shoe of the character specified, comprising a rubber body, a cloth lining therefor, a leather top, and a stay-piece stitched to the leather top above the rubber body and vulcanized to the rubber body below the leather top.

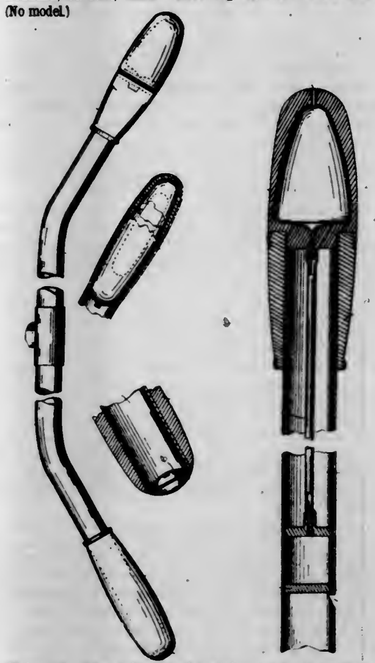
2. A shoe of the character specified, comprising a rubber body, a cloth lining therefor extended above the rubber body, a leather top cemented to the projecting portion of the lining and having its lower edge abutted against the upper edge of the rubber body, and a stay-piece stitched to the leather top and lining above the rubber body, extending downwardly across the joint between the said top and body, and vulcanized to the rubber body below said joint.

573,665. DRAWER FOR HOLDING DOCUMENTS, &c. THOMAS G. KNIGHT, Rockville Centre, N. Y. Filed Aug. 26, 1896. Serial No. 603,955. (No model.)



Claim.—The combination with the drawer having its sides cut out at the top, of the pivot-rod extending longitudinally in said drawer, and adjacent one of said sides above its cut-out portion, the said rod engaging the front and rear ends of the drawer and removably held in the same, receptacles arranged transversely in said drawer, each of which has a perforated upper corner opposite its open end and by which it is received and fulcrumed on said rod and adapted to swing thereon, and cards likewise fulcrumed on said rod, whereby said cards and receptacles may be brought out of the body of the drawer and easy access had to their contents, as and for the purpose set forth.

573,666. WHISTLING BICYCLE HANDLE-BAR. ALBERT H. KOEHLER, St. Paul, Minn. Filed Aug. 29, 1895. Serial No. 560,851. (No model.)



Claim.—1. As an improved article of manufacture a bicycle handle-bar formed with a whistling-orifice through its wall, an included air-chamber communicating with said orifice, and an inlet-valve through the wall of the handle-bar for admitting air to said included chamber.

2. In a bicycle, the tubular handle-bar therefor formed with a whistling-vent, the included reservoir, and means for causing the air to pass from said reservoir through said vent to sound a whistle.

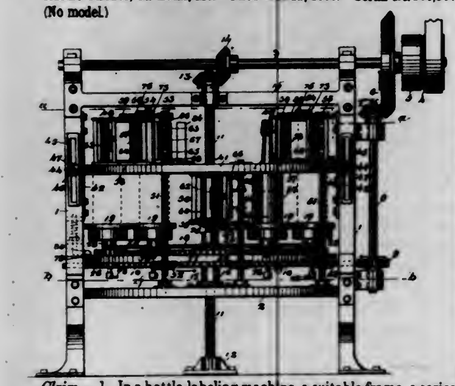
3. In combination with a hollow bicycle handle-bar and its handles, a whistle connected with the interior of said bar, and the elastic pneumatic reservoir included in one of said handles.

4. As an improved article of manufacture, the hollow handle bar having a whistling-vent, and the included pneumatic bulb communicating with said whistling-vent.

5. As an improved article of manufacture, the hollow bicycle handle-bar having one of its handles fitted with a whistle, and the other provided with a compressible elastic pneumatic compartment communicating with said whistle.

6. As an improved article of manufacture, the hollow bicycle handle-bar having a whistle in the end of one handle, the other handle formed hollow with a slotted opening, and the rubber bulb included in said hollow handle, and communicating with said whistle and having a suitable valve-inlet.

573,667. **BOTTLE-LABELING MACHINE.** PAUL KOHL and HENRY PAULUS, St. Louis, Mo. Filed Jan. 22, 1896. Serial No. 576,367. (No model.)



Claim.—1. In a bottle-labeling machine, a suitable frame a series of label devices disposed about the frame, suitable devices for holding the bottles in proper position, means for intermittently advancing the holding devices and feeding the bottles carried thereby to the labeling devices, means for imparting constant axial rotation to each bottle, and means for checking the advance of each bottle from the beginning of, until the completion of the labeling operation, and continuing the advance of each bottle upon the completion of the labeling operation, substantially as set forth.

2. In a bottle-labeling machine, a suitable frame, a series of traveling cups mounted therein for receiving and holding the bottles, suitable devices for advancing the series of cups, means for imparting constant axial rotation to the cups and bottles carried thereby, means for temporarily stopping the advance of the cups during the axial rotation of the same, and suitable labeling devices for wrapping the labels about each bottle during the stopping of the advance movement of the cups, substantially as set forth.

3. In a bottle-labeling machine, a suitable frame, a main drive-shaft mounted therein, a shaft coöperating with said drive-shaft and adapted to be constantly rotated thereby, a gear-wheel keyed to said second shaft, a bottle-carrying gear-wheel loosely embracing said second shaft and adapted to be intermittently advanced by the main drive-shaft, labeling devices adapted to be operated by said bottle-carrying gear-wheel, and suitable cups for holding the bottles carried by the bottle-carrying wheel, and adapted to be constantly rotated axially by the gear-wheel keyed to said second shaft, substantially as set forth.

4. In a bottle-labeling machine, a suitable frame, a transverse drive-shaft mounted thereon, a vertical shaft adapted to be constantly rotated thereby in one direction, a gear-wheel carried by said shaft, a second gear-wheel of larger diameter located below the first gear-wheel and loosely embracing the vertical shaft, a hub forming a part of said larger gear-wheel, a supporting-platform for said hub, an intermittent gear-wheel carried by the main drive-shaft and adapted to impart intermittent rotation to the large gear-wheel in a direction opposite to the smaller gear-wheel, a series of cups carried by the larger gear-wheel exterior to the periphery of the smaller gear, pinions carried by the cups adapted to coöperate with the teeth of the smaller gear-wheel whereby the cups are constantly rotated about their axes in a direction corresponding to the direction of advance of the gear-wheel carrying the cups, and suitable labeling devices operated from the gear-wheel carrying the cups, substantially as set forth.

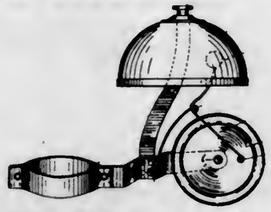
5. In a bottle-labeling machine, a suitable intermittently-advancing gear-wheel, a series of cups mounted adjacent to the periphery thereof, a hollow stem for each cup, a nut carried by the stem on one side of the gear-wheel for preventing displacement of the stem in one direction, a pinion carried by each stem, a gear-wheel for driving said pinion and thus rotating the stem, a series of arms having looped ends adapted to support the several cups above the gear-wheel in which the cups are mounted, said arms radiating and loosely embracing a shaft to which the gear-wheel driving the pinions carried by the stems is keyed, a rod passing through the stem of each cup and projecting below the lower end of the stem, a toe at the end of each rod, a tripping-latch adapted to trip each toe during the advance of the gear-wheel carrying the cups, suitable pivoted jaws carried by each cup, means secured to the upper end of each rod for opening said jaws upon the tripping or rocking of the rod, and suitable devices for closing the jaws after the tripping effect of the latch has ceased, substantially as set forth.

6. In a bottle labeling machine, a suitable cup, a hollow stem for the same, a rod passed through said stem, means for tripping and rocking said rod, arms carried at the upper end of the rod and resting on the bottom of the cup, limiting-pins on said bottom against which the arms may strike, pivoted jaws in the cup, raised ears having curved edges at the bottom of each jaw, said arms adapted upon the tripping of the rod to ride over said ears and open the jaws, and yielding springs adapted to be adjustably interposed between the inner surface of the wall of the cup and the outer wall of each jaw for closing the jaws, substantially as set forth.

7. In a bottle-labeling machine, a suitable label-supply box, a shaft mounted adjacent thereto adapted to be rotated intermittently in one direction a gear carried at the upper end of the shaft, a stud mounted in the box and having a gear coöperating with the gear on the first named shaft, an arm secured to the gear mounted on the stud and adapted to rotate therewith, suitable feed-rollers mounted in the box and having gears meshing with each other and coöperating with the gear carrying the arm, a supply reel or spindle for the sheet labels, means for rubbing adhesive on the sheet after the same has passed the feed-rollers, a knife pivoted to the frame of the machine and adapted to be struck by the revolving arm for chopping the sheet into required lengths, a spring for retracting the knife-blade to its normal position, a controlling-arm loosely embracing the intermittently-rotating shaft, a roller at the free end of the arm conforming to the shape of the part of the bottle to be labeled, means for intermittently advancing the bottles to the gummed side of the sheet, additional means for revolving the bottle axially to cause the sheet confined between the bottle and the roller end of the controlling-arm to wrap about the bottle, and a yielding spring bearing against the controlling-arm whereby as the said arm is pushed aside during the further advance of the bottle, it may be restored to its normal position, substantially as set forth.

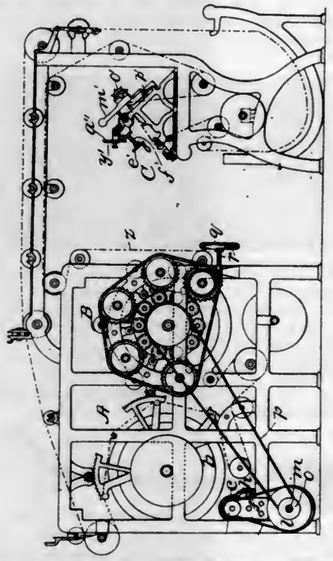
8. In a bottle-labeling machine, a suitable cup, a series of corrugations along the inner wall thereof, jaws pivoted within said cup, a series of corrugations along the outer surfaces of the jaws parallel with the corrugations formed on the cup, and a spring-plate adapted to have its opposite ends received by the depressions between the corrugations for closing the jaws, substantially as set forth.

573,668. **BICYCLE-BELL.** DAVID KOHN, Paris, France. Filed Sept. 17, 1896. Serial No. 606,138. (No model.)



Claim.—In signal-bells for bicycles and the like a laterally-bent metallic support, adapted to be clamped or otherwise secured on the fork of a bicycle, an upright riveted at its lower end in one of the bends of said support, a bell mounted on the upper end of said upright and surmounted by a cap to rigidly hold it in position, a wire pivotally connected at its lower end to the support near the base of the upright, the said wire bent in its middle to form a loop and provided at its upper end with a clapper in combination with a wheel having a rubber tire, adapted to rotate at the farther end of the support by contact with the bicycle-wheel, a pin near the center of said wheel, a pitman secured at one end to said pin, and at the opposite end to the loop of the hammer, and adapted to produce a double stroke of the clapper at each revolution of the wheel, substantially as described and for the purpose hereinbefore set forth.

573,669. **ADJUSTABLE MEANS FOR INSTRUMENTALITIES IN CLOTH-FINISHING MACHINES.** MAXIM LA FOUNTAIN, Jr., Springfield, Vt. Filed Nov. 4, 1895. Serial No. 567,864. (No model.)



Claim.—1. A teasel-cleaner consisting of a driving-pulley, a rotary wire brush mounted in bearings movable between the driving-pulley and the teaseling-cylinder, racks connected with the movable bearings, pinions for moving the racks, a hand-wheel for operating the said pinions, a pulley on the shaft of the rotary wire brush, and a belt connecting the two pulleys, the belt being of such length that when the brush is moved to engage the teasels, the brush will be rotated, and will be quiescent when it is away from the teaseling-cylinder.

2. In a cloth gigging or napping machine, the combination with the napping-rolls and the guide-rolls for letting the cloth on and off the latter, of arms in which the guiding-rolls are journaled, toothed gears or segments forming a part of said arms, a hand-wheel and its shaft, and gearing between the said hand-wheel and its shaft and all of the said toothed gears or segments for moving the same in unison and to the same degree or extent, as set forth.

3. In a cloth gigging or napping machine, the combination with the napping-rolls and the guide-rolls for letting the cloth on and off the latter, of arms in which the guiding-rolls are journaled, toothed gears or segments forming a part of said arms, a hand-wheel and its shaft, gearing between the said hand-wheel and its shaft and all of the said toothed gears or segments for moving the same in unison and to the same degree or extent, and a scale and hand or pointer to indicate the extent and direction of movement or adjustment of the said gears or segments and their adjuncts, as set forth.

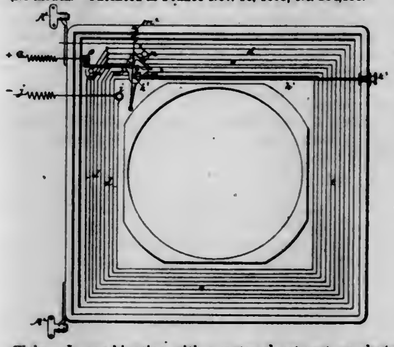
4. In a cloth-shearing machine, the combination with the cloth-rest, a ledger-blade, a rotating shear, and an adjustable frame on which said blade and said shear are supported, of means for adjusting the said frame, a cross shaft for operating the said means in unison and to the same extent, gearing for rotating the said shaft and a single hand-wheel for actuating said gearing, substantially as set forth.

5. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, a cross-shaft having means engaging the studs, for moving them longitudinally, and a hand-wheel for rotating said shaft to adjust the studs and the frame.

6. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, a cross-shaft having means engaging the studs, for moving them longitudinally, a hand-wheel for actuating said shaft to adjust the frame, and a scale and pointer to indicate the extent and direction of adjustment of the said frame.

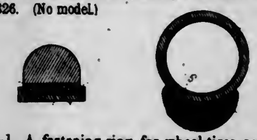
7. In a cloth-shearing machine, the combination with a cloth-rest, an adjustable frame, and a ledger-blade and rotating shear supported on said frame, of a movable stud for each side of the frame, means for adjusting the frame relatively to each stud, a cross-shaft having means for adjusting the studs simultaneously, a worm-wheel on said shaft, and a hand-wheel provided with a worm for engaging and actuating said worm-wheel and shaft.

573,670. **REGULATOR FOR ELECTRIC HEATERS.** ALEXANDRE D. LAGRELLE, Louvres, France. Filed Jan. 29, 1894. Serial No. 498,281. (No model.) Patented in France Nov. 18, 1893, No. 234,155.



Claim.—In combination with a water-closet seat, an electric resistance-coil *d* attached to the frame of the seat and an automatic switch controlling the electrical connection of the resistance and consisting of an expansion-rod *k*, a pivoted spring-actuated piece *m* adjusted to be thrown by said rod, a spring-actuated contact-maker adapted to be thrown out of contact by part *m*, and a spring-actuated latch coöperating with the contact maker, substantially as set forth.

573,671. **RUBBER TIRE.** RICHARD A. LEIGH, Boston, Mass., assignor to Frederick W. Huestis, same place. Filed Feb. 7, 1896. Serial No. 578,326. (No model.)



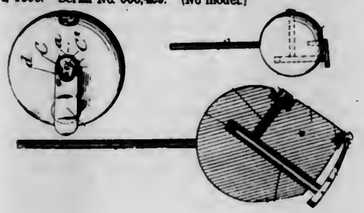
Claim.—1. A fastening-ring for wheel-tires comprising a hard cement-like substance to be applied in a heated condition, whereby adhesion occurs between the wheel-rim and the ring, substantially as explained.

2. A wheel provided with an elastic tread, and a retaining-band interposed between the wheel-rim and the tread, said band to be positioned in a heated condition, when cool to consist of a hard inelastic body, whereby the rim and the tread are held inseparably united, substantially as specified.

3. A rubber tire comprising an elastic tread, a fastening ring composed of a hard cement-like body, and a canvas band between the tread and the ring, the fastening-ring to be heated when applied to the wheel, substantially as stated.

4. A fastening-ring for wheel-tires composed of balata, shellac, asphalt, Burgundy pitch, and sulfur, said ring to be yielding or elastic, when heated, and a hard, inelastic body when cool, substantially as specified.

573,672. **DIAMOND-POLISHING DOP.** EDWARD LOESSER and ERNEST LOESSER, New York, N. Y., assignors of four-ninths to Leon Dreyfus, same place, and Richard Loesser, Brooklyn, N. Y. Filed July 24, 1896. Serial No. 600,429. (No model.)

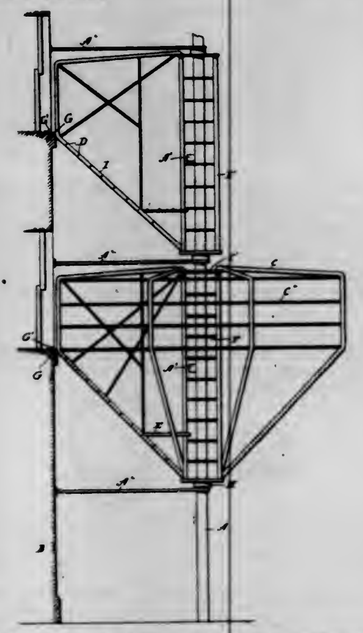


Claim.—1. A diamond-polishing dop, comprising a head, means for applying the same to a diamond-polishing tool, a holding-finger provided with a recessed end by which it is secured against a point of contact on the head of the dop, and means for securing and adjusting the holding-finger, substantially as set forth.

2. A diamond-polishing dop, comprising a head provided with an inclined seat and having means for applying it to a diamond-polishing tool, a bifurcated holding-finger adapted, in connection with said seat, to establish three points of contact with the diamond, and means for securing and adjusting the holding-finger, substantially as set forth.

3. A diamond-polishing dop, comprising a head having a recess and provided with means for application to a diamond-polishing tool, a removable shoe having a flange fitting said recess and provided with a cavity, and means for engaging the diamond and holding the same in the cavity of said shoe.

573,673. COMBINED CLOTHES-DRIER AND FIRE-ESCAPE. JOHN R. LOMAS, West Haven, Conn. Filed May 4, 1896. Serial No. 590,073. (No model.)



Claim.—1. A revolving clothes-drier comprising an inclined ladder leading from a point at or near its outer edge to a point near its center.

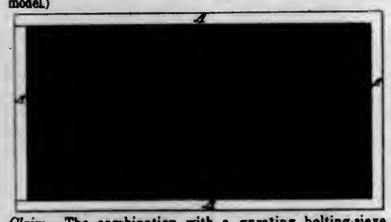
2. A revolving clothes-drier comprising an inclined ladder leading from a point at or near its outer edge to a point near its center, and also comprising a centrally-arranged vertical ladder extending from its upper to its lower end.

3. A revolving polygonal clothes-drier having its several sides occupied by suitable clothes-lines except one side where they are omitted, and which is left open to form a passage-way for an inclined ladder incorporated in and leading from a point at or near the edge of the drier to a point near the center thereof, and the said drier also comprising a centrally-arranged vertical ladder extending from its upper to its lower end.

4. The combination with a perpendicular shaft, of a series of revolving clothes-driers located one above the other on the said shaft, and each containing a centrally-arranged ladder extending from its upper to its lower end, whereby communication between the several driers is provided for, and one or more inclined ladders extending between the shaft and the building adjacent to which it is placed, and forming communication through the driers between the building and the vertical ladders before mentioned.

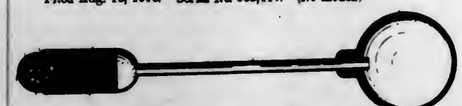
5. The combination with a perpendicular shaft, of lateral stays for connecting the same with the building adjacent to which the shaft is placed, a plurality of revolving clothes-driers mounted upon the shaft, one above the other and between the said stays, and each furnished with a centrally-arranged vertical ladder extending from its upper to its lower end, whereby access between the several driers is provided for, and each drier being also provided with an inclined ladder extending from a point at or near its outer edge to a point near its center, whereby communication between the building and the vertical ladders before mentioned is provided for.

573,674. CLEANER FOR SIEVES OF BOLTING-MACHINES. WILLIAM J. LOUGH, Altamont, Kans., assignor of one-half to Augustus Wolf, Chambersburg, Pa. Filed July 27, 1895. Serial No. 557,354. (No model.)



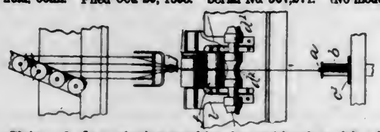
Claim.—The combination with a gyrating bolting-sieve, of a cleaner consisting of one or more chains secured at opposite ends to the frame of the sieve and having such slack as to permit the chain to travel over the face of the screen, in irregular paths as the sieve gyrates, substantially as described.

573,675. FUMIGATOR. WILLIAM M. LUTHER, Buffalo, N. Y. Filed Aug. 18, 1896. Serial No. 603,117. (No model.)



Claim.—As a new article of manufacture a device for smoking plants consisting of a stem or a metal tube, a cylindrical head or bowl at one end thereof, and in communication therewith, said tube having an open outer end a thimble adapted to be inserted into said bowl or head having an outer end of a semispherical form, a hollow elastic ball secured to said stem opposite to said head in any desired manner, said thimble being adapted to receive tobacco or other material, all of the said parts being combined substantially as and for the purposes described.

573,676. SPINNING-MACHINE. JAMES S. MACFARLANE, Mansfield, Conn. Filed Oct. 29, 1895. Serial No. 567,271. (No model.)



Claim.—1. In a spinning-machine, in combination with a driving-roll, a top roll mounted on and moved by the driving-roll, and a draft-roll mounted on and in peripheral contact with the top roll, all substantially as described.

2. In a down-spinning frame, in combination with the driving-roll, a top roll mounted on the driving-roll, and a draft-roll loosely mounted above and in peripheral contact with the top roll and overhanging the periphery of the top roll whereby the thread may pass around below the top roll between it and the draft-roll, and down past the top roll and out of contact therewith, all substantially as described.

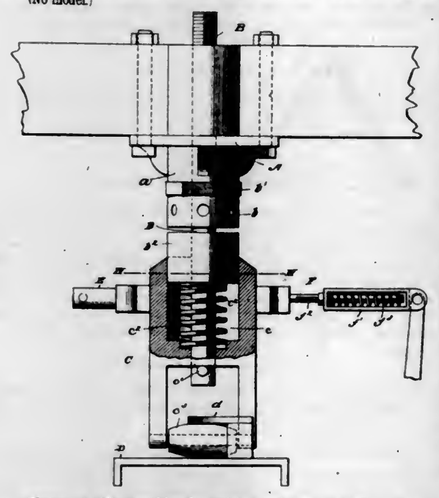
3. In a down-spinning frame in combination, a driving-roll, a top roll mounted above the driving-roll, a draft-roll loosely mounted above and in peripheral contact with the top roll and having a stop-shoulder near the end of the roll, all substantially as described.

4. In a down-spinning machine, in combination, a driving-roll, a top roll supported on and driven by the driving-roll, a draft-roll loosely mounted in bearings in brackets and in peripheral contact with the top roll, and the brackets having the vertically open sockets for the draft-roll pivots, all substantially as described.

5. In a down-spinning frame, in combination with the driving-roll, the top rolls mounted on and driven by the driving roll, the draft-roll having an angular groove near one end forming a stop-shoulder and mounted in bearings above and in peripheral contact with the top roll, and with the periphery of the draft-roll overhanging and projecting beyond the periphery of the rolls below, all substantially as described.

6. In a down-spinning frame, in combination, a pair of rolls mounted one upon the other, means for driving the rolls and guide devices whereby a thread may pass downward below the lower roll, around and between the two rolls, back of the upper roll, and downward free from the lower roll in its path to the bobbin on the spinning-spindle, all substantially as described.

573,677. EQUALIZING DEVICE FOR RAILWAY-BRAKES. JOHN A. MARKLEY, Clifton Forge, Va., assignor of three-fifths to Harry Firmstone, Longdale, Va. Filed July 20, 1896. Serial No. 599,866. (No model.)



Claim.—1. The combination with a railway-car body and a supporting-truck, of mechanism arranged to normally permit upward and lateral movement of the ends of the truck; said mechanism being adapted to be operated to prevent the truck from tilting or canting, and means for operating said mechanism, whereby backlashing or jolting of the car may be avoided, substantially as described.

2. The combination with a railway-car body and a supporting-truck, of brakes adapted to engage the wheels of said truck, mechanism arranged to normally permit upward and lateral movement of the ends of the truck; said mechanism being adapted to be operated to prevent the truck from tilting or canting, and means for simultaneously operating the brakes and said mechanism, whereby backlashing or jolting of the car may be avoided, substantially as described.

3. The combination with a railway-car body and a supporting-truck, of a device or devices interposed between the car-body and truck and provided with locking mechanism adapted to prevent the tilting or canting of the truck, and means for operating the locking mechanism, whereby the pressure of the brake-shoes upon the wheels may be equally distributed and the backlashing or jolting of the cars prevented, substantially as described.

4. The combination with a railway-car body, a supporting-truck and suitable brake-operating mechanism therefor, of a device or devices provided with locking mechanism interposed between the car-body and truck, and means connecting the locking mechanism to the brake-operating mechanism so as to be simultaneously operated therewith, whereby the tilting or canting of the car-truck may be prevented, and the pressure of the brake-shoes upon the wheels equally distributed, substantially as described.

5. The combination with a railway car body, a supporting-truck and suitable brake-operating mechanism therefor, of equalizing devices arranged at the fore and rear portions of the truck and interposed between the same and the car-body, each device comprising a bracket secured to the car, a rod depending from the bracket, a guide block or head yieldingly held upon the rod, and locking mechanism for preventing movement of the guide-block, together with means connecting the locking and brake mechanisms so as to be simultaneously operated, whereby the tilting or canting of the car-truck may be prevented and the pressure of the brake-shoes upon the wheels equally distributed, substantially as described.

6. The combination with a railway car body, a supporting-truck and suitable brake mechanism, of rods depending from the car-body and arranged above the fore and rear portions of the truck, guide blocks or heads yieldingly supported upon the rods so as to move vertically thereon, and connections between the guide-blocks and the trucks so as to permit lateral movement of said truck, locking mechanisms for preventing vertical movement of the guide-blocks, means for connecting the locking mechanisms, together with a yielding connection between one of the locking mechanisms and the brake operating mechanism so as to be simultaneously operated therewith, whereby the tilting or canting of the car-trucks may be prevented and the pressure upon the wheels equally distributed, substantially as described.

7. In a brake-power equalizer for railway-cars, the combination with a rod adapted to be secured to a railway-car body, of a guide block or head and means for yieldingly supporting the head upon the rod, a locking-bolt extending transversely through the guide-block and adapted to abut against a projection carried by the rod so as to prevent upward movement of the guide-block, together with means for operating the locking-bolt, substantially as described.

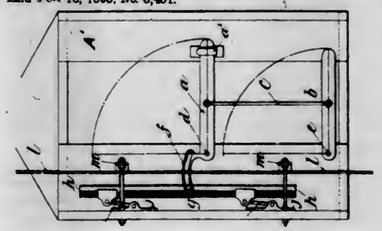
8. A brake-power equalizer for railway-cars, comprising a bracket adapted to be secured to the car-body, a rod depending from the bracket, a guide block or head yieldingly supported upon the rod, means adapted to slidingly hold the guide-block to the truck, a collar rigidly held to the rod and provided with a projection or stem thereon, a locking-bolt extending transversely through the guide-block and adapted to abut against said projection, and means for operating the locking-bolt, substantially as described.

9. A brake-power equalizer for railway-cars, comprising a bracket adapted to be secured to a car-body, a rod depending from the bracket, a collar secured to the rod and provided with a projection or stem thereon, a guide block or head yieldingly supported upon the rod so as to engage the collar, a plate provided with a track adapted to slidingly hold the guide-block to the truck, a locking-bolt passing transversely through the guide-block adapted to engage the projection on the collar, together with means for operating said bolt, whereby vertical movement of the guide-block may be prevented so as to prevent tilting or canting of the truck, substantially as described.

10. A brake-power equalizer for railway-cars, comprising a bracket adapted to be secured to a car-body, a screw threaded rod adjustably held in said bracket and depending therefrom, a collar adjustably secured to the rod and provided with a projection or stem thereon, a guide block or head provided with a recess so as to permit the guide-block to slide over the collar, a spring surrounding the rod and interposed between the guide-block and collar for yieldingly supporting the latter upon the rod, means for limiting the downward movement of the guide-block, a roller arranged upon the end of the guide-block, a plate provided with a track fitting over the roller adapted to permit lateral movement of the truck, a locking-bolt passing transversely through the guide-block adapted to engage the projection or stem on the collar, together with means for operating said bolt, substantially as described.

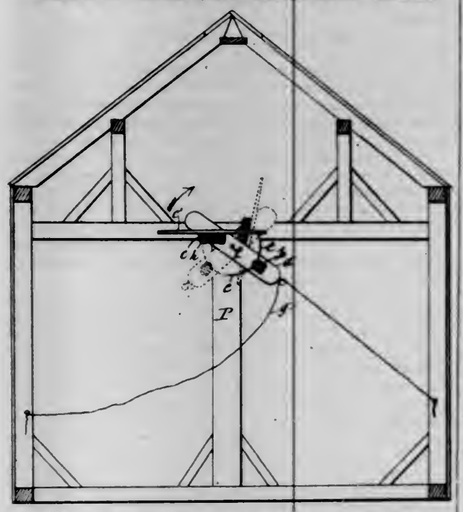
11. A brake-power equalizer for railway-cars, comprising a bracket adapted to be secured to a car-body, a screw-threaded rod adjustably held in said bracket and depending therefrom, a collar adjustably secured to the rod and provided with a projection or stem thereon, a guide block or head provided with a recess so as to permit the guide-block to slide over the collar, a spring arranged in the recess around the rod and interposed between the guide-block and collar so as to permit vertical movement of the guide-block, a pin or projection arranged on the rod for limiting the downward movement of the guide-block, a roller rotatably held in the lower end of the guide-block, a plate adapted to be secured to the truck upon which the roller rests, a curved track or guide carried by the plate and arranged above the roller so as to hold the guide-block to the truck and permit lateral movement of the latter, a locking-bolt passing transversely through the guide-block adapted to engage the projection or stem on the collar, together with a connecting-rod adapted to be secured to the brake-operating lever for operating the locking-bolt, substantially as described.

573,678. HOIST, &c. JAMES W. MARTIN, Manchester, England. Filed Nov. 4, 1895. Serial No. 567,909 (No model.) Patented in England Feb. 18, 1895. No. 3,451.



Claim.—The combination of the hand-rope gripping device, the hand rail or gate, the intermediate lever-and-rod connection, and the rubber or elastic buffers arranged in connection with said hand-rope-gripping device, all as set forth.

573,679. APPARATUS FOR MOWING HAY. THOMAS J. MOREY, Nelson, N. Y. Filed Aug. 7, 1896. Serial No. 602,019. (No model.)



Claim.—1. A mowing apparatus consisting of a frame pivoted on a horizontal axis, a rack pivoted to said frame parallel and eccentric in relation to the axis of the frame, braces on said frame for sustaining the rack in horizontal position, and means for tilting the frame and rack as set forth.

2. A mowing apparatus consisting of a frame composed of two parallel arms pivoted at the center of their lengths on a horizontal shaft and a bar parallel with said shaft uniting said arms, a rack pivoted at opposite ends to the aforesaid arms at corresponding end portions thereof, braces attached to the aforesaid bar and sustaining the rack in horizontal position for receiving the hay, and means for tilting the frame and rack as set forth.

3. A mowing apparatus composed of the arms *a a* pivoted at the centers of their lengths on a horizontal axis, the bar *b* uniting said arms at corresponding ends, the rack-beam *c* pivoted at opposite ends to the free ends of the aforesaid arms and having the slats *c' c'* projecting from opposite sides of the beam, the spring-plate *d* attached at the center of its length to the aforesaid beam, the braces *e* attached to the bar *b* and in position to bear with one end at a time on one of the end portions of the spring-plate, and means for tilting the aforesaid arms as set forth.

4. A mowing apparatus pivoted to and supported on a horizontal shaft and adjustable in length to accommodate the said rack to the width of the space it is to occupy, means for supporting the rack in a horizontal position, and means for tilting said rack to cast the hay &c. to the mow, as set forth.

5. A mowing apparatus composed of the horizontal shaft *f*, secured at opposite ends to fixed elevated supports, the arms *a a* pivoted midway their lengths on said shaft, the bar *b* uniting said arms at one side of the shaft, the rack-beam *c* pivoted to said arms at the opposite side of the shaft, the slats *c' c'* secured at their central portions to said beam, the spring-plate *d* attached to the rack-beam and extending from opposite sides thereof, the braces *e* attached to the bar *b* and the ropes *g g* attached to one end of one of the aforesaid arms, as set forth and shown.

6. The rack-beam *c* composed of end sections and overlapping central portions c^3 c^3, the slats *c' c'* fastened to said portions of the beam and tying the same together, the cross-block A on the under side of the center of the said beam, and the truss chain or rod *i* secured to the end portions of the rack-beam and bearing on the under side of the aforesaid block, all constructed and combined as described and shown.

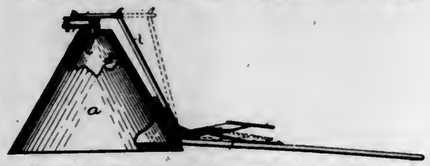
573,680. LID FOR FRYING-PANS, &c. RACHEL A. MORGAN, Braddock, Pa. Filed Sept. 18, 1896. Serial No. 606,236. (No model.)

Claim.—1. In a lid for frying-pans and the like having a cupola on its upper face, said cupola being perforated and having a perforated band around said cupola, substantially as shown and described.



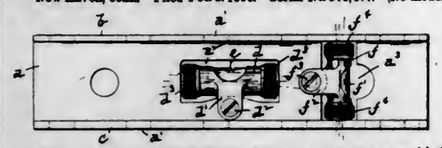
2. A lid consisting of the cover, a cupola on said cover said cupola having a series of perforations around the sides a perforated band around said cupola, said band carrying projections engaging in the perforations in the sides of the cupola, substantially as shown and described.

573,681. ICE-CREAM MOLD AND DISHER. HENRY G. MORRIS, Hoboken, Pa. Filed Sept. 1, 1896. Serial No. 604,546. (No model.)



Claim.—In a disher and mold, the combination of the mold, a handle secured to said mold, cutters journaled in the apex of the mold, a slotted crank-arm secured upon the journal of the cutters at the top of the mold, a pin on said mold, a crank pivoted on said pin, said crank carrying a pin engaging the slotted crank-arm, an operating-lever pivotally secured to the handle, a link connecting said lever and crank, and a spring secured to the handle beneath the operating-lever to return same to its normal position, substantially as shown and described.

573,682. SPIRIT-LEVEL AND PLUMB. WILLIAM M. MORTON, New Haven, Conn. Filed Feb 8. 1896. Serial No. 578,477. (No model.)



Claim.—1. In a spirit-level, the combination with a frame provided with an opening in the upright portion thereof, of a bubble glass case located within said opening and pivotally secured to said frame, said case being provided at each end thereof with an adjustable contact device which contact devices are adtapted to engage the opposite ends of the opening in said frame simultaneously to hold the case in varying positions of adjustment, substantially as set forth.

2. In a spirit-level, the combination with a suitable frame, of a bubble-glass case located within an opening in said frame and provided with a laterally-projecting lug through which passes a pivot-screw entering the frame, said case being provided at its opposite ends with removable screw-caps the outer surfaces of which engage the end walls of the opening in said frame, substantially as set forth.

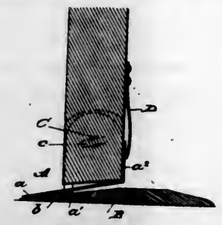
3. In a spirit-level, the combination with a frame composed of three plates of sheet metal, viz: a top plate, a bottom plate, and an intermediate plate standing at a right angle to said top and bottom plates and joining the latter at their center line, of a bubble-glass case located within an opening in said intermediate plate and having a centrally-located, projecting lug which receives a screw passing into said plate at one side of said opening, said case being provided at each end thereof with a removable head each of which heads bears at its outer side against the adjacent end wall of said opening, substantially as set forth.

4. In a spirit-level, the combination with the frame composed of the sheet-metal plates *a b c* joined together substantially in the manner described, said plate *a* being provided with the openings a^2 a^2, of the bubble-glass cases *d* and *f* located in said openings respectively and having the projecting lugs *d' f'* respectively to receive the holding-screws d^2 f^2, said cases being provided with the screw-caps d^3 f^4 respectively, located at their opposite ends and bearing against the adjacent end walls of said openings, substantially as and for the purpose described.

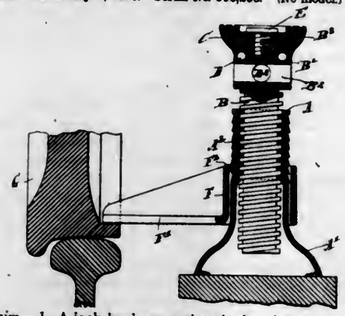
573,683. WEATHER-STRIP. THOMAS J. MOSELEY, Salem, Mo. Filed Sept. 8, 1896. Serial No. 605,213. (No model.)

Claim.—A weather-strip for doors consisting of a frame A presenting inclined bottom plate *a*, side pieces *a'* with inclined slots, and back plate a^2; together with screws which pass through the inclined slots to hold the strip against the lower edge of the door and flat springs D attached to the door to bear upon the back plate to bring

the latter in direct contact with the former when said door is closed, substantially as shown and for the purpose set forth.



573,684. SCREW-JACK. ALEXANDER H. MOYES, Ogden, Utah, assignor to the Ogden Train Jack and Manufacturing Company, same place. Filed July 7, 1896. Serial No. 598,288. (No model.)



Claim.—1. A jack having a casing the interior of which is provided with a screw-thread and the exterior of which is provided with a series of annular teeth, a threaded post operating in the casing and provided with a perpendicular pivot at its upper end, a cap turning on the pivot, means for holding the cap in place, a sleeve loosely embracing the casing and having an internal tooth at its upper portion and at one side such tooth engaging with the annular teeth on the casing, and an arm projecting outward from the sleeve and from a point directly adjacent to the tooth on the sleeve, substantially as described.

2. A jack having a casing, the lower end of which is enlarged to form a base and the upper portion of which is provided with an internal screw-thread and with a series of external annular teeth, a sleeve loosely embracing said upper portion of the casing, the sleeve having a tooth at its upper portion and at one side, an arm projecting outwardly from the sleeve at a point adjacent to the tooth, a threaded post operating within the upper portion of the casing and having an enlarged upper end provided with an orifice and with a pivot rising perpendicularly from the said enlarged upper end, a cap turning around the pivot, and a screw passed into the pivot and having its head engaging a countersink in the cap whereby the cap is held in place, substantially as described.

573,685. FASTENING DEVICE. WILLIAM MUHRO, Brooklyn, N. Y., assignor to the City Metal Works, New York, N. Y. Filed July 11, 1896. Serial No. 598,808. (No model.)



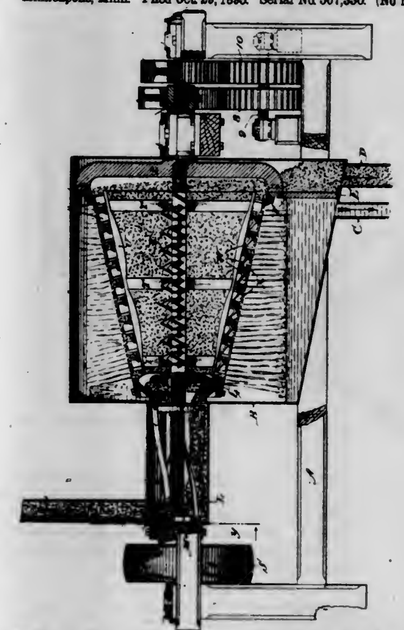
Claim.—1. A fastener comprising two members slidably connected and provided with interlocking devices combined with opposite tongues adapted to overlap for the retention of the fabric, substantially as described.

2. A fastener composed of two members slidably connected, one of which is provided with a series of teeth on opposite sides and the other with a lip adapted to engage with said teeth, combined with tongues forming part of said members and adapted to overlap for the retention of the fabric, substantially as described.

3. A fastener composed of two members slidably connected, one of which is provided with a series of teeth on opposite sides and the other with a lip adapted to engage with said teeth, and with a spring-tongue adapted to maintain said lip in connection with said teeth, combined with tongues forming part of said members and adapted to overlap for the retention of the fabric, substantially as described.

4. A fastener composed of two members slidably connected, one of which is provided with a series of teeth on opposite sides and the other with a lip adapted to engage with said teeth, combined with concentrically-curved tongues forming part of said members and adapted to overlap for the retention of the fabric, substantially as described.

573,686. WHEAT-WASHING MACHINE. JAMES MCDANIEL, Minneapolis, Minn. Filed Oct. 29, 1895. Serial No. 567,330. (No model.)



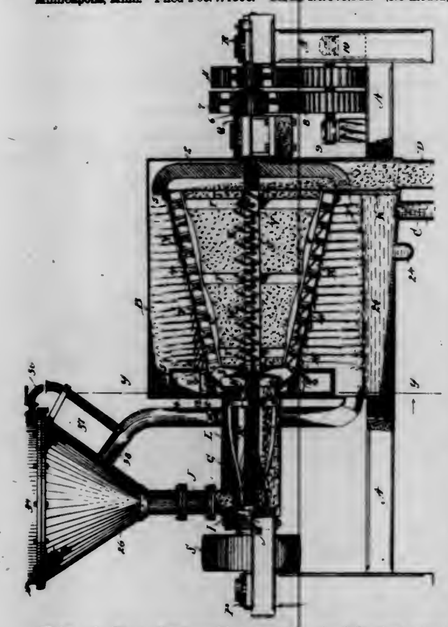
Claim.—1. In a wheat-washing machine, the combination with a casing having a partition, a feed-drum with a feed-pipe through which the commingling wheat and water feed, and a conical straining-drum in the casing with the smaller end next to said feed-drum and discharging at its lower end beyond said partition, whereby the wheat travels downward, of a main shaft with feeding-beaters in the feed drum, spiders fixed on said shaft and in the straining-drum, and having bars substantially in line with the wall of said drum and flighted wings secured to said bars, other spiders mounted to rotate on said shaft independently of it and carrying said straining drum, and an annulus matching the said partition, which together divide the discharging wheat and water and a sleeve extending from said independent spiders, a gear on said sleeve and a gear on said shaft of different diameters, and driving-gears therefor.

2. In a wheat-washing machine, the combination with a shaft, a set of spiders fixed thereto and other spiders independently rotatable thereon, bars carried by the fixed spiders and each bar having fixed flighted wings, and pivoted wipers, and a straining-drum carried by the independently-rotatable spiders, said drum being conical and discharging at its larger end, a gear on the shaft, another gear of a different size connected with the independently-rotatable spiders.

3. In a wheat-washing machine, the combination with a casing and a fixed partition therein occupying a crosswise position, the casing having a wheat-opening at one side of the partition and a water-opening at the other side, of a rotatable shaft in the casing and a conical rotatable straining-drum mounted upon the shaft and having an annulus at its larger end matching with the partition so that the grain from said drum will pass to one side of said partition and the water dropping from the drum will collect at the other side.

4. In a wheat-washing machine, the combination with the straining-drum, and a shaft running therethrough, the drum being rotatable at one speed, and the shaft at another, spiders fixed to the shaft and bars fixed to the spiders, and pivoted wipers carried by the bars and adapted by centrifugal force to swing outward and rub the inside of the drum, said drum being conical so that the wheat travels down an incline while being acted on and discharged by said spiders and wipers.

573,687. WHEAT-WASHING MACHINE. JAMES MCDANIEL, Minneapolis, Minn. Filed Feb. 7, 1896. Serial No. 578,311. (No model.)



Claim.—1. In a wheat-washing machine, the following instrumentalities: a casing having a water and a wheat outlet, a feeding-drum, and a straining-drum in the casing, a revoluble shaft carrying feeding beaters in the feeding-drum, and conveyers in the straining-drum, a water wheat-separator consisting of a vessel opening into the feeding-drum, a valve for said opening, a tank for water, a hopper having an opening to discharge heavy foreign matter into said tank and a lower opening to discharge wheat into said vessel, said vessel having an overflow for light foreign matter.

2. In a wheat-washing machine, the following instrumentalities: a casing having a wheat and a water discharge opening, a straining-drum in the casing, a feeding drum discharging into the straining-drum, a revoluble shaft having conveyers within the straining-drum and feeding devices in the feeding-drum, a fan-casing and its fan near the feed end of the straining-drum, said fan being rotated by said shaft and producing ingoing air-currents through the wheat-outlet and against the discharging wheat, a water wheat-separator consisting of a vessel opening into the feeding-drum, a valve for said vessel, a water tank or supply for said vessel, a hopper having a foreign-matter-discharge opening into said water-supply, and a wheat-discharge opening into said vessel, and an overflow-pipe for said vessel for light foreign matter.

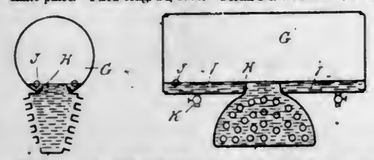
3. The combination with a vessel for wheat and water, provided with a valve-controlled discharge, of a tank or water-supply for said vessel, and a hopper or grain-supply for said vessel, the hopper or grain supply having an upper opening to discharge heavy foreign matter and a lower opening to discharge wheat into said vessel and said vessel having an overflow to discharge light foreign matter.

4. The combination with a wheat and water vessel having a valve-controlled discharge, a tank or water-supply for said vessel, and a hopper or grain-supply for said vessel, the water feeding into said vessel through an extension of the hopper or grain-supply with an ingoing current, such water-opening being also the discharge for heavy foreign matter, and an overflow-pipe for said vessel terminating below the water level in the supply so as to induce such ingoing current and to carry off light foreign matter.

5. The combination with a conical vessel 26 with an opening 27 and a conical valve 29 having an operating-rod and handle, an overflow-pipe 38, a water-tank 34, a hopper 39 with an opening 42 and a valve 43, said elements operating as described for the purpose set forth.

6. In a wheat-washing machine, the combination with a casing having a wheat and a water discharge opening, a feeding-drum, a straining-drum within the casing with its smaller end receiving grain from the feeding drum, a revoluble shaft within said drums, feeding-beaters on said shaft within the feeding-drum, and conveyers on said shaft within said straining-drum, a fan-casing with its fan within the main casing and operating to produce an indrawn current through the wheat-discharge opening into the main casing, said fan being revolved by said shaft, whereby in one continuous operation the wheat is fed, is washed and conveyed, is discharged and is dried.

573,688. STEAM-GENERATOR. JAMES MCGREGOR and JOHN L. JACKSON, Saginaw, Mich.; said McGregor assignor to Edgar D. Church, same place. Filed Aug. 24, 1896. Serial No. 603,772. (No model.)



Claim.—1. In a steam-generator, a steam-dome, a water-space, a connection from the water-space of the boiler into the steam-dome communicating with the latter above the bottom thereof, whereby a sediment chamber is formed in the bottom of the dome, and the water-supply leading into the dome.

2. In a steam-generator, a steam-dome, a water-space, a connection from the water-space of the boiler into the bottom of the dome, a flange around this connection, forming a sediment-chamber in the bottom of the dome, and the water-inlet pipe into the dome.

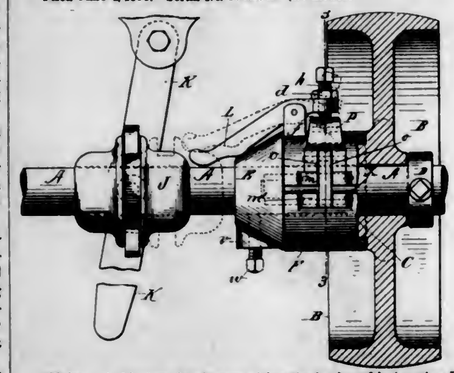
3. In a steam-generator, a steam-dome, a water-space, a connection from the water-space of the boiler in the bottom of the dome, a flange around this connection forming a sediment-chamber in the bottom of the dome, the water-inlet pipe entering one end of the dome, passing around and discharging at the same end, substantially as described.

4. In a steam-generator, a steam-dome provided with an opening in the bottom thereof, a boiler communicating with the dome through said opening, an upwardly-extending flange around said opening whereby a sediment-chamber is formed in the bottom of the dome, and a water-supply leading into the dome.

5. In a steam-generator, a steam-dome provided with an opening in the bottom thereof, a boiler communicating with the dome through said opening, an upwardly-extending flange around said opening whereby a sediment-chamber is formed in the bottom of said dome, a feed-water supply leading into the dome, and a blow-off for said sediment-chamber.

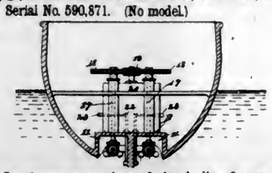
6. In a steam-generator, a steam-dome, the water-tubes, a drum with which the water-tubes connect, said drum extending into and communicating with the steam-dome above the bottom thereof, and a feed-water supply to said steam dome.

573,689. FRICTION-CLUTCH. HUGH MCLEOD, Hatfield, Mass. Filed June 4, 1896. Serial No. 594,284. (No model.)



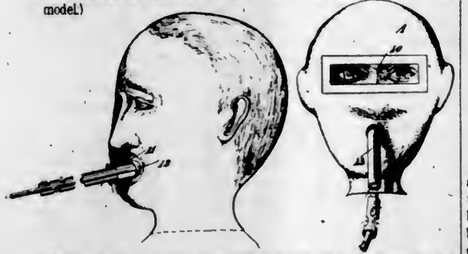
Claim.—A friction-clutch comprising the broken friction-ring F, combined with the collar E, said ring partially encircling said collar, and having outwardly-bent, parallel extremities and means for securing said collar to a revoluble shaft, the lever P, having a pivotal connection with one extremity of said ring, and having a bearing on the opposite extremity thereof, the lever L, also pivoted on said ring, of which one arm thereof engages the free arm of said lever P, the pulley B, having a hub C, the shaft A, and shipper devices whereby vibratory movements are imparted to said lever L, substantially as set forth.

573,690. VESSEL. CONRAD ODINET, New York, N. Y. Filed May 9, 1896. Serial No. 590,871. (No model.)



Claim.—In the construction of the hulls of vessels, a housing erected longitudinally in the central portion of the hull; forming a depression in the said bottom of substantially rectangular shape in cross-section, a keel laid centrally along the under face of the said housing and extending from bow to stern, dividing the depression into two longitudinal channels, said keel projecting below the horizontal line of the hull, gates located in each channel, operated from the interior of the hull, propeller-shafts journaled in each channel, extending substantially the length of the same, propellers secured to the shafts, vertical shafts geared with the propeller-shafts, and a power-shaft geared with the said vertical shafts, as and for the purpose specified.

573,691. INHALER-MASK. ALFRED ORR and ANDREW W. CHAPMAN, Charleston, Mo. Filed Feb. 12, 1896. Serial No. 578,977. (No model.)

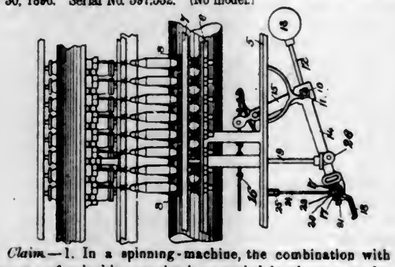


Claim.—1. The combination with a hood adapted to cover the face and head of the wearer, of a respiratory device connected with the said hood and consisting of an inhaling-tube provided with openings for the admission of the air to the interior of the hood, and a second tube of thin and collapsible material secured within the first tube and connected with a mouthpiece, the said inner tube being adapted as a conductor for expired air, as and for the purpose specified.

2. In a hood adapted to cover the head of a person in a substantially air-tight manner, an outer inhaling-tube having an apertured mouthpiece extending within the hood, the said mouthpiece being provided between its inner end and the wall of the hood with openings for the admission of the air to the interior of the hood, and a thin collapsible tube contained within the first tube and connected with the interior of the mouthpiece at its inner end, and adapted as a conductor for the expired air, as and for the purpose specified.

3. In a hood arranged to substantially inclose the head of a person in a substantially air-tight manner, a mouthpiece connected with the said hood, being provided with apertures therein, a flexible tube connected with the said mouthpiece, adapted as a conductor for inhalation purposes, and a tube adapted as a conductor of exhalations, the said exhalation-tube being of a thin collapsible material, connected with the said mouthpiece and extending through the inhalation tube, as and for the purpose set forth.

573,692. SPINNING-MACHINE. HENRY A. OWEN, Whitinsville, Mass., assignor to the Whitin Machine Works, same place. Filed June 30, 1896. Serial No. 597,532. (No model.)



Claim.—1. In a spinning-machine, the combination with the lifter-arm, of a locking mechanism carried by the arm, and a depressing device for the arm operatively connected with the locking mechanism.

2. In a spinning-machine the combination with the lifter-arm, of a locking mechanism pivotally mounted on the arm, and having a device for depressing the arm, and provided with a depressing member, whereby when the depressing member is operated to depress the lifter-arm, the locking mechanism will be moved to lock said arm.

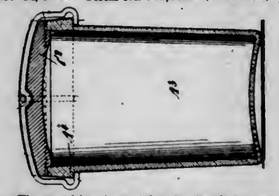
3. In a spinning-machine, the combination with the lifter-arm, of a combined locking device, and depressing portion operatively mounted on the lifter-arm.

4. In a spinning-machine, the combination with the lifter-arm, of a locking device, comprising a counterweighted locking-arm, and a step, mounted on the lifter-arm.

5. The combination with the lifter-arm 14, having the step 18, of a locking mechanism mounted on said arm, and designed to engage the lower rail.

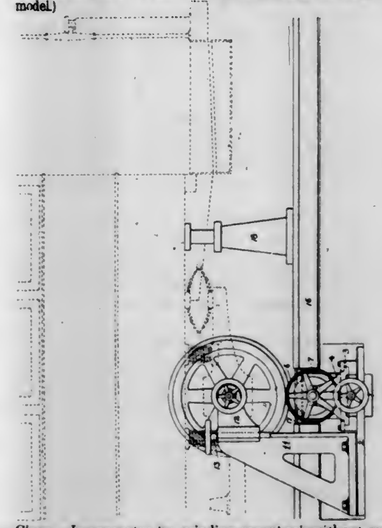
6. The combination with the lifter-arm 14, having the step 18, the stop 19, and the ears 17 17, of the arm 20, pivoted between said ears, and having the step 21, the weight 22, the finger 23, and the rod 24, and the block 25 secured to said rod.

573,693. JAR-CLOSURE. FRANK H. PALMER, Brooklyn, N. Y. Filed Dec. 14, 1895. Serial No. 572,188. (No model.)



Claim.—The combination with a jar having an annular shoulder, and a cover having a convex surface and provided with grooves extending across it at right angles to each other, of two spring-bails having inwardly-bent ends for engaging the shoulder of the jar, one bail being provided at its middle with a downwardly-extending bend to receive the other bail, the body portions of the bails being curved when lying in the grooves and their upper surfaces flush with the upper surface of the cover, and a seal secured to the cover over the bails, substantially as herein shown and described.

573,694. MECHANISM FOR GRINDING CAR-WHEELS. HOWARD A. PEDRICK, Philadelphia, Pa., assignor of one-half to Weston J. Hibbs, same place. Filed Mar. 1, 1895. Serial No. 540,177. (No model.)



Claim.—In apparatus for grinding car-wheels without removing them from the car, the combination of means for supporting the axle of the car when the support of the wheels is removed, grinding-disks for acting on the treads of the wheels, and laterally-adjustable grinder-slides having thereon short sections of rail onto which the wheels can

be run from the main rails, the movement of the grinder-slides carrying said short-rail sections laterally from under the wheels, substantially as specified.

573,695. JOINT FOR MEMBERS OF BICYCLE-FRAMES. WILLIAM A. PENFIELD, Meriden, Conn. Filed Aug. 17, 1896. Serial No. 602,953. (No model.)



Claim.—1. In a joint for the members of tubular bicycle-frames, the combination with two tubes, adapted in size to have their ends telescoped together, and each constructed with a transverse slot; of a segmental key adapted to fit into the said slots, and engage with the side walls or locking-shoulders thereof for preventing the tubes from being longitudinally displaced in either direction; and a retaining-band applied over the key for forcing it inward and holding it in place.

2. In a joint for the members of tubular bicycle-frames, the combination with two tubes adapted in size to have their ends telescoped together, and each constructed with a transverse slot of which the bottom wall of the slot in the smaller tube extends slightly above the ends of the slot in the larger tube; of a segmental key fitting into both of the said slots, and coacting with the side walls or locking-shoulders thereof to hold the two tubes against longitudinal displacement in either direction, and bearing upon the bottom of the slot in the smaller tube so as to spring the said tube into a more intimate binding contact with the outer tube; and a retaining-band frictioned over the end of the larger tube, and forcing the key inward and holding it in place.

3. In a joint, the combination with two members the end of one of which is adapted to be inserted into the end of the other, and each member being constructed with a transverse slot of which the slot of the outer member opens downward into the slot of the other member; of a segmental key adapted to fit into the said slots and engage with the side walls or locking-shoulders thereof for preventing the two members from being longitudinally displaced in either direction, and a retaining-band applied over the key for forcing it inward and holding it in place.

573,696. PENHOLDER. WALTER B. PERRY, Dublin, Ga. Filed Nov. 13, 1896. Serial No. 611,973. (No model.)



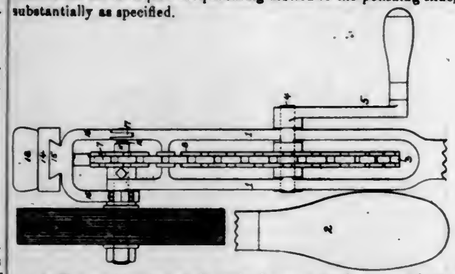
Claim.—1. A penholder comprising a finger-socket, a pen-receiving socket arranged at the end of the finger-socket, and a band support or grip consisting of a circular spring depending from the finger-socket and adapted to be grasped in the hand, substantially as described.

2. A penholder comprising a finger-socket, a pen-receiving socket arranged at the outer end of the finger-socket and located at the top thereof, and an adjustable hand support or grip consisting of a circular spring secured at one end to the bottom of the finger-socket, depending therefrom and having its other end free, whereby the loop of the spring is adapted to be varied in diameter to suit the size of the hand, substantially as described.

3. A penholder comprising a finger-socket composed of a closed outer section or thimble, an inner band and longitudinal strips connecting the band and the outer section or thimble and forming a skeleton socket, a pen-receiving socket mounted on the outer section or thimble, and an adjustable support or grip connected with the finger-socket, substantially as described.

573,697. CLEANING OR POLISHING IMPLEMENT. NICHOLAS A. PETRY, Philadelphia, Pa. Filed June 10, 1896. Serial No. 595,018. (No model.)

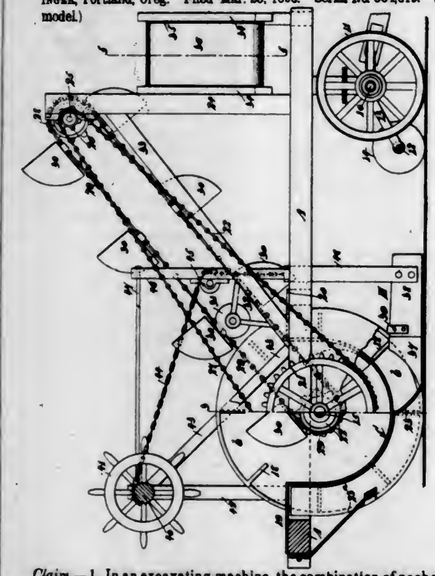
Claim.—1. The combination of the main frame, a supplementary frame pivoted to said main frame, a slide mounted so as to reciprocate on said supplementary frame and carrying a suitable polishing-pad, a shaft mounted in the main frame in line with the pivotal axis of the supplementary frame, and means whereby the rotation of said shaft is caused to impart reciprocating motion to the polishing slide, substantially as specified.



2. The combination of the main frame, a supplementary frame pivoted to said main frame, a slide mounted so as to reciprocate on said supplementary frame and carrying a suitable polishing-pad, a shaft mounted in the main frame in line with the pivotal axis of the supplementary frame, a buffing-wheel carried by said shaft, and means whereby the rotation of said shaft is caused to impart reciprocating motion to the polishing-slide, substantially as specified.

3. The combination of a frame, having at the end a slide adapted to reciprocate across the frame, a shaft having a buffing or polishing wheel secured thereto, means whereby the rotative movement of said shaft is caused to impart reciprocating movement to the polishing-slide, and provision for rotating said shaft, substantially as specified.

573,698. EXCAVATOR. FRANCIS M. PHILLIPS and EUGENE STEBINGER, Portland, Oreg. Filed Mar. 25, 1896. Serial No. 584,819. (No model.)



Claim.—1. In an excavating-machine, the combination of pocket-wheels placed at predetermined intervals apart, a basin located between the pocket-wheels, adapted to receive the material from their pockets, an elevator adapted to remove the material from the basin, and a conveyer placed to receive the material from the elevator, as and for the purpose specified.

2. In an excavator, a frame, the combination of wheels located at the rear of the frame, an axle upon which the wheels are secured, each wheel being provided with interior peripheral pockets, a basin fitted to the lower pockets of the wheels and secured to the said frame, an elevator comprising an endless belt and buckets, driven from the said rear axle, and a conveyer located at the forward portion of the elevator and receiving the material from the buckets, which material is taken up by said buckets from the aforesaid basin, as and for the purpose specified.

3. In a machine for excavating purposes, the combination of a frame, pocket-wheels adapted as supports for the said frame, a basin located between the pocket-wheels, receiving the material from the pockets thereof, a plow placed beneath the basin, having its shares

shaped to deliver the material into the lower pockets of the pocket-wheel, an elevator adapted to take material from the said basin, and scrapers located in advance of the pocket-wheels, having members extending between the said wheels, coinciding with the side lines of the plow, being also provided with members extending forwardly and diverging outwardly, and supports for the said scrapers, as and for the purpose specified.

4. In an excavating-machine, the combination of a frame, a rear axle, pocket-wheels secured upon the said axle, a shaft journaled above the frame, a driving connection between the axle and the said shaft, a fixed basin located between the pocket-wheels and extending over the lower series of pockets, receiving the material from the upper series, a plow secured beneath the basin and arranged to throw material into the lower pockets of the pocket-wheels, scrapers placed in front of the plow and directing material thereto and to the pockets of the pocket-wheels, a support for the said scrapers, and a bucket-elevator driven from the said shaft and guided from the rear axle, the buckets being arranged to take material from the aforesaid basin, as and for the purpose set forth.

5. In an excavating-machine, the combination of a frame, a rear axle, pocket-wheels secured upon the said axle, a shaft journaled above the frame, a driving connection between the axle and the said shaft, a fixed basin located between the pocket-wheels and extending over the lower series of pockets, receiving the material from the upper series, a plow secured beneath the basin and arranged to throw material into the lower pockets of the pocket-wheels, scrapers placed in front of the plow and directing material thereto and to the pockets of the pocket-wheels, a support for the said scrapers, and a bucket-elevator driven from the said shaft and guided from the rear axle, the buckets being arranged to take material from the aforesaid basin, and means, substantially as described, for raising and lowering the scrapers, and colters located in advance of the scrapers, as and for the purpose specified.

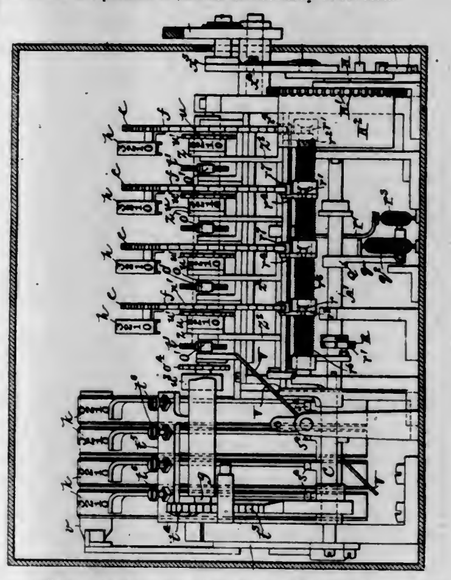
6. In an excavating-machine, the combination of a frame, a rear axle, pocket-wheels secured upon the rear axle, a shaft journaled above the frame, a driving connection between the axle and the said shaft, a fixed basin located between the pocket-wheels and extending over the lower series of pockets, receiving the material from the upper series, a plow secured beneath the basin and arranged to throw material into the lower pockets of the pocket-wheels, scrapers placed in front of the plow and directing material thereto and to the pockets of the pocket-wheels, a support for the said scrapers, a bucket-elevator driven from the said shaft and guided from the rear axle, the buckets being arranged to take material from the aforesaid basin, means, substantially as described, for raising and lowering the scrapers, and colters located in advance of the scrapers, and a gravity-conveyer located in front of the elevator, receiving the material from its buckets and extending beyond one side of the said machine, as and for the purpose described.

573,699. CASH-REGISTER. HENRY POTTIN, Paris, France. Filed Nov. 7, 1893. Serial No. 490,298. (No model.) Patented in France May 3, 1893, No. 229,317, and in Germany Sept. 17, 1893, No. 79,603.

Claim.—1. In a cash-register, the combination of the manipulating-lever and a two-forked arm carried thereby with a pair of pawls pivoted to said lever, a wheel provided with studs arranged to be acted on by the said pawls as shown, a spring-drum for actuating the main shaft, gearing between the said wheel and the said drum, and locking mechanism for the said main shaft arranged to be struck and released by the said two-forked arm at each upward and downward movement of the said manipulating-lever, the arrangement and construction of the said pawls being such that they engage the said studs alternately but always turn the said wheel in the same direction substantially as set forth.

2. In a cash-register, the combination of the manipulating-lever and means connected therewith for winding the driving-spring whether the said lever moves up or down, with a disk carried by the driving-shaft and having two studs or projections arranged one behind the other in the direction of rotation and at unequal distances from the center, a stop-lever in the path of one or the other of these studs as they rotate, an attachment of the manipulating-lever arranged to shift the said stop-lever from one of said positions to the other as the said manipulating-lever moves up or down, and a locking device for said stop-lever which will hold it in either of said positions against accidental displacement, but will yield to allow such shifting substantially as set forth.

3. In a cash-register, the combination of the manipulating lever and means actuated thereby for winding the mainspring, a disk carried by the main shaft driven by said spring and provided with two studs arranged one behind the other in the direction of rotation and at different distances from the center, a stop-lever L arranged to occupy one of two positions alternately and engaging therein one or the other of the said studs to lock the said main shaft, the said stop-lever being further provided with a doubly-notched supplemental arm, a spring-pressed spur engaging one or the other of the said notches according to position, and a two-forked arm carried by the manipulating-lever and arranged to strike the said stop-lever with one arm as it descends and with the other as it rises thereby shifting said stop-lever from one position to another substantially as set forth.



4. In a cash-register, the combination of a spring-driven main shaft with means for stopping it at two different points of its rotation, and devices for successively freeing it from such obstructions substantially as set forth.

5. In a cash-register a spring driven main shaft and a disk carried thereby, provided with two studs or lugs at different distances from its center, in combination with a movable detent arranged to engage one or the other of the said studs according to its position, a spring-catch arranged to lock said detent in either of its positions of engagement but adapted to yield under pressure, and means for overcoming the resistance of the catch and moving the said detent from one position to the other, thereby allowing the main shaft to turn for a partial rotation under the impulse of its spring substantially as set forth.

6. In a cash-register, the disks *f* provided with two sets of teeth *e* and *n*, in combination with the sliding key-racks engaging the former teeth, pinions or gear-wheels engaging the latter teeth and driven thereby, totalizing-indicators turning with the said pinions, mechanism for shifting the said pinions and indicators from the position of such engagement to another position, gearing arranged to engage with the said pinions in this latter position and carrying mechanism cooperating with said gearing and pinions for the purpose set forth.

7. In a cash-register, the disks *f* provided with two sets of teeth *e* and *n*, in combination with actuating devices engaging the former teeth, pinions gearing with the latter teeth, a rock shaft which carries the bearings of the shafts or axial rods on which the said pinions turn, the main shaft of the machine and means operated thereby for oscillating the said rock-shaft so as to throw the said pinions alternately into and out of gear with the teeth *e*, coiled springs wound by the turning of the said pinions, segments attached to these said springs and driven thereby additional gearing making connection between the segment of one decimal place and the pinion of the next higher when the pinions are shifted away from disks *f*, automatic locking devices for said segments and said gearing and means for automatically freeing the same, the arrangement and construction of the said parts and the teeth of the respective gears being calculated for the operation of carrying substantially as set forth.

8. In a cash-register, a series of totalizing-indicators devices for turning them forward as described, means for retaining them against turning backward, a series of coiled springs each of which is connected at one end to one of said indicators and at the other end to a rotary gear, means for automatically locking the said gear and permitting its rotation as needed, a series of gear-wheels arranged in pairs in stationary position the wheels of each pair being in mesh respectively

with one of the spring-actuated gears aforesaid and with a pinion turning with the next higher indicators as part of their aforesaid actuating mechanism and means automatically actuated for holding each pair of said wheels against rotation until the above-described engagement takes place.

9. In the totalizing devices of a cash-register the series of parts mounted to turn on a rod or shaft O consisting of a pinion *o*, indicating-drum *u*, ratchet-wheel *u'* and cam *s*, all integral, a toothed segment O', a disk *x* turning with said segment and having studs *w w'* on one side unequally distant from the center and lug *x'* on the other side and a coiled spring attached at one end to said drum and at the other to a part turning with the said disk and segment, in combination with means for turning forward the said pinion, cam, ratchet and drum, a stop-lever moved by said cam out of position for locking the outer stud *w'* or out of position for locking either stud according to the degree of rotation of the indicating-drum and the said cam, another stop-lever which engages the lug *x'* to lock said disk at the end of a complete rotation, means for automatically freeing the latter stop-lever from such engagement, the wheels *t t'* turning together one engaging the said segment and the other engaging the pinion belonging to the next denominational or decimal place, means for automatically locking these wheels and automatically freeing them for the described operation, and mechanism for automatically shifting the said pinion and segment and all the similar devices of their series into and out of engagement with the said wheels *t t'* substantially as set forth.

10. In a cash-register a series of gears forming part of the totalizing mechanism and arranged in pairs the members of each pair being connected by a coiled spring, in combination with registering and retaining mechanism operating to turn forward one of said gears after each indication of payment and hold it against returning, another series of gears also in pairs but having the members of each pair constructed to turn together, means for throwing into, and out of engagement the said gears, and means for automatically locking them against forward rotation and releasing them therefor as needed in the described operation of carrying, each pair of gears of the latter series connecting a gear at the actuating end of the spring in the first series with the gear at the winding end of the next spring corresponding to the next higher decimal or denominational place.

11. In a cash-indicator, the disks *f* each having three sets of teeth *e*, *n* and *n'* arranged on different parts of its periphery, in combination with actuating-racks engaging teeth *e*, totalizing-wheels engaged and driven, teeth *n*, and a locking-roller forced in between the teeth *n'* by the driving-shaft, a cam on the said main shaft and an intermediate shaft and arms actuated by the said cam to move the said roller into locking position substantially as described.

12. In a cash-register, the combination with the registering-disks and indicating-segments *k* of automatic mechanism for returning the same to their normal position, the said mechanism consisting of a cam on the driving-shaft, a lever actuated thereby, and arms thrown by said lever into contact with the said indicating-segments substantially as set forth.

13. In combination with the registering disks and segments, mechanism for returning them to their normal position, consisting of a cam on the driving-shaft, a lever actuated by said cam, arms actuated by said lever for turning back the several segments, and adjusting devices attached to the said arms for regulating their action on the said segments substantially as set forth.

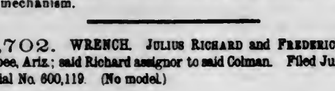
14. In combination with the indicating-segments *k* the devices for returning them to their first position consisting of a cam T^8 on the main shaft a lever acted on thereby, a toothed segment turning with the said lever, a second segment gearing with the first and mounted loosely on the shaft of the registering devices and an arm turning with the second segment and provided with attachments for pressing on the arms or spokes of said segments substantially as set forth.

15. In combination with the registering mechanism including the segments *k*, the cam 8 rotated by the main shaft an arm s^2 actuated by said cam, a shaft s^3 turning with said arm and a series of arms s^4 mounted on said shaft and moving therewith against the arms or spokes of the said segments to correct the results of slipping substantially as set forth.

16. A series of disks *f* each provided with three sets of teeth and forming part of registering mechanism, in combination with sliding racks that engage one of the said sets of teeth and are provided with handles or operating keys, a series of pinions *o* arranged to be thrown into or out of connection with a second set of these teeth, a series of rollers arranged to be thrown into locking engagement with the third set of teeth, a main shaft its cams and intermediate devices for actuating the aforesaid parts substantially as set forth.

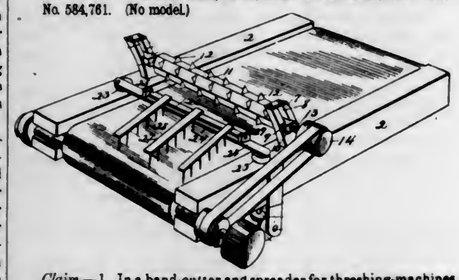
573,700. PACKAGE-TIE. JOSHUA FOSEY, Lima, Pa. Filed Nov. 17, 1890. Renewed May 2, 1894. Serial No. 509,847. (No model.)

Claim.—1. A package-fastener, consisting of a dished plate or button, and a cord attached thereto, at or adjacent to the center of said button, and extending from the under side thereof, the peripheral edge of said button being arranged when in use to bear directly upon the package and upon the free portion of the said cord, which is retained in fastening position solely by friction and the pressure of the button, substantially as specified.



2. A fastening device for package-ties, comprising a dished plate or button having means at or near its center for the attachment of the cord thereto, and having also a serrated peripheral edge adapted, in use, to bear directly upon the package and the cord, substantially as specified.

573,701. BAND-CUTTER AND SPREADER FOR THRESHING-MACHINES. MOSES REGNIER, Ghent, Minn. Filed Mar. 25, 1896. Serial No. 584,761. (No model.)

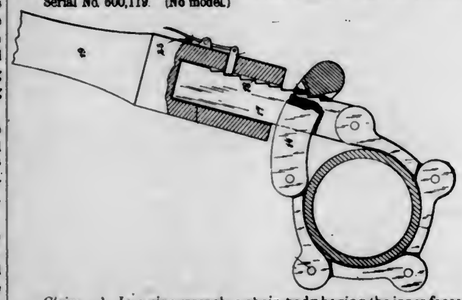


Claim.—1. In a band-cutter and spreader for threshing-machines, an automatically, vertically adjustable band-cutter, an endless feed-apron, a vibrating spreader arranged in front of the knife-roll, said spreader comprising a horizontal bar eccentrically pivoted, a bar pivoted to the upper side of and parallel with the vibrating bar and rigid arms with depending teeth secured to the pivoted bar substantially at right angles thereto, substantially as set forth.

2. In a band-cutter and spreader for threshing-machines, the combination of a band-cutter, an endless apron, a toothed spreader in front of the band-cutter which is mounted on a transverse bar pivoted eccentrically to the upper ends of two vertical shafts, extending through the frame, bevel-gears on the lower ends of the vertical shafts, and mechanism to rotate the cutter and feed-apron, and operate the bevel-gears to vibrate the spreader.

3. In a band-cutter and spreader for threshing-machines a toothed spreader in front of the band-cutter, eccentrically pivoted to the upper ends of short vertical shafts, which extend through the vertical sides of the feed-frame, bevel pinions mounted on the lower ends of said shafts, said pinions meshing with corresponding bevel-wheels mounted on depending brackets secured to the frame, and suitable driving mechanism.

573,702. WRENCH. JULIUS RICHARD and FREDERICK COLMAN, Bisbee, Ariz.; said Richard assignor to said Colman. Filed July 22, 1896. Serial No. 600,119. (No model.)



Claim.—1. In a pipe-wrench, a chain-body having the inner faces of its links concaved to fit to a cylindrical surface, a locking-link located at one end of the said chain-body, and a locking-bar serving as a lever, pivoted to the opposite end of the said chain-body, being adapted to be passed through the locking-link and have locking engagement therewith, as and for the purpose set forth

2. In a pipe wrench, the combination, with the locking-bar or lever thereof, of a handle receiving an end portion of the said locking bar or lever, the said handle being provided with a spring-controlled pawl operated from the exterior of the handle and arranged for locking engagement with the aforesaid locking-bar or lever, as and for the purpose set forth.

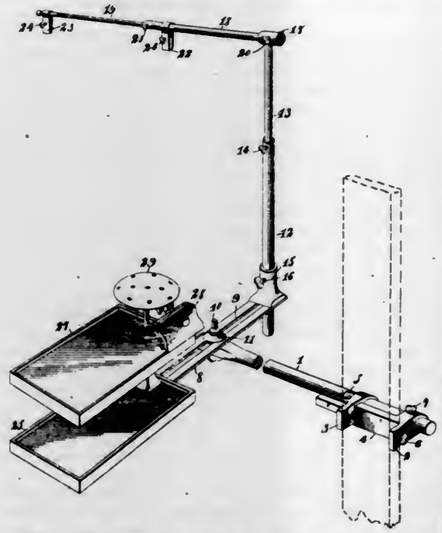
3. In a pipe-wrench, the combination, with a chain-body, the links whereof have a pivotal connection and are provided with concaved inner faces, adapting them to fit closely to a cylindrical surface, a slotted and curved locking-link pivotally connected with one end of the chain-body, the outer wall of the slot of the said locking-link having its surfaces inclined partially upward and partially downward, and a toothed locking-bar or lever, having a hinged connection with the opposite end of the chain-body, the said lever or locking-bar being adapted to pass through the slot in the locking link, the teeth of the locking-bar or lever engaging with the beveled wall of the locking-link, of a handle provided with a socket to receive the free end of the locking-bar or lever, a pawl having sliding movement in the handle and arranged for engagement with the teeth of the locking-bar or lever, and a latch located on the handle, whereby the movement of the pawl is controlled, as and for the purpose set forth.

4. A wrench comprising a body portion constructed of links adapted to clamp an object, a slotted locking-link pivotally connected to one end of said body portion, and a lever pivotally connected with the other end of said body portion and adapted to be passed through the slot in the locking-link, said lever having teeth arranged to be held in engagement with the end wall of the slot in said locking-link, as set forth.

5. In a pipe-wrench the combination of a body portion formed of pivotally-connected links having their inner faces concaved, a locking-link pivotally connected to one end of said body portion and provided with a longitudinal slot, one wall of which is inclined in opposite directions, and a lever pivotally connected with the opposite end of said body portion, and arranged to be passed through said slotted locking-link, said lever being provided with a toothed edge adapted to engage the inclined wall of said locking-link, as set forth.

6. In a pipe-wrench, the combination with a body portion, of a locking-link and a lever pivotally connected to the opposite ends of said body portion, said lever having toothed engagement with said locking-link, and a handle carrying a pawl also in engagement with the teeth of said lever, as and for the purpose set forth.

573,703. EASEL ATTACHMENT. GEORGE A. ROBBINS, Slate Hill, N. Y., assignor, by mesne assignments, of one-half to Frank B. Clark, same place. Filed Mar. 19, 1896. Serial No. 583,935. (No model.)



Claim.—1. An easel attachment, comprising an arm, a clamp thereon for engagement with an easel, a bar adjustably mounted on the arm, a telescopic bar extended vertically from and adjustable with relation to the first-named bar, a telescopic bar mounted horizontally on the vertical bar, and a picture-holding clamp on each member of the horizontal bar, substantially as specified.

2. An easel attachment, comprising an arm adapted for engagement with an easel and for horizontal adjustment with relation thereto, a bar transversely adjustable on the arm, a picture-holder on one end of said bar, a vertical post on the other end of said bar and a disk on said post provided with holes to receive the ends of brush-handles, substantially as specified.

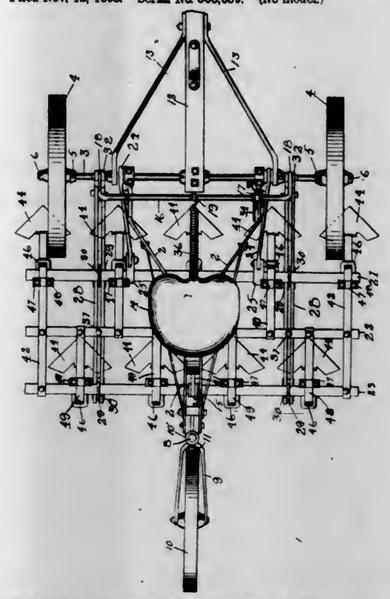
3. An easel attachment, comprising an arm, a picture-holder mounted on the arm, and a clamp for securing the arm to an easel, consisting of a jaw having a bar extended from it, another jaw having an opening through which said bar passes, whereby the jaws may be adjusted with relation to each other, and a set-screw for securing the jaws as adjusted, substantially as specified.

4. An easel attachment, comprising an arm adapted for horizontal adjustment on an easel, a bar adjustable transversely of the arm, a picture holder on the bar, a post mounted on the rod, a tray supported by the rod, a clip adjustably mounted on the post and palette-holding jaws pivoted to the clip, substantially as specified.

5. An easel attachment, comprising an arm for attachment to an easel, a bar mounted on the arm, a picture-holder mounted on one end of said bar, a tray mounted on the other end of said bar, a socket on said tray, a post removably engaging in said socket, a tray mounted to rotate on said post and a palette-holder adjustably mounted on the post, substantially as specified.

6. An easel attachment, comprising an arm, a bar adjustable thereon, a picture-holder supported on one end of said bar, a tray mounted on the other end of said bar, a post having removable connection with the tray, a tray mounted to rotate on the post, and a brush-holder on the post consisting of a disk having holes formed in it, substantially as specified.

573,704. CULTIVATOR. JOHN M. ROBINSON, Bozeman, Mont. Filed Nov. 12, 1895. Serial No. 568,659. (No model.)



Claim.—1. In a machine of the class described, the combination, with the arched frame, of the plow-frame, the tumbling-rod provided with projecting lugs, the U-shaped part carried by said main frame, the bell-crank pivoted thereto, the links connecting the arms of said bell-crank respectively with said plow-frame and one of the lugs on said rod, a lever for rocking said tumbling-rod, and a spring connecting the other lug on said rod with said main frame for the purpose set forth.

2. In a machine of the class described, the combination with the wheeled frame, of the plow-frame, means for raising and lowering the same, the shanks secured to said plow-frame, the shoes provided at the lower end of said shanks the removable plowshares and the right-angled clasp or clamps for adjustably securing said shanks upon said plow-frame, substantially as described.

3. In a machine of the class described, the combination, with the arched frame, of the plow-frame arranged beneath the same, the plows carried by said plow-frame, the tumbling-rod carried on the forward end of said arched frame, the bars 28 provided upon said plow-frame, the links 32 connecting said bars with said tumbling-rod,

said tumbling rod being provided with oppositely-extending lugs 19 and 20, means connecting said lug 20 with the rear of said plow-frame, a lever for operating said tumbling-rod, and a spring 36 connecting said lug 19 with the upper portion of said arched frame, for the purpose set forth.

4. In a cultivator, the combination, with the wheeled frame, of the plow-frame, arranged beneath the same, said frame being rectangular in form and composed of parallel tubes, the right-angled plow-shanks secured to said frame, and having one end depending beneath the same, the plowshares provided on the lower end of said shanks, means for raising and lowering said frame, the bars 28 connecting said frame with the axle, and the clamps 30 for securing said bars to said plow-frame, substantially as described.

5. In a machine of the class described, the combination, with the main frame, of the vertically-movable plow-frame supported beneath the same, the tumbling-rod carried by said main frame and having its ends bent at substantially right angles to the main portion thereof, said rod being also provided with oppositely-extending lugs at or near its central portion, the bars 28 secured to said plow-frame, the links connecting said bars with the ends of said tumbling-rod, and a bell-crank mechanism connecting the rear of said plow-frame with one of the lugs upon said tumbling-rod, whereby when said rod is rocked said plow-frame will be raised or lowered, substantially as described.

573,705. PAPER-GROOVING MACHINE. JOHN T. ROBINSON, Hyde Park, and DEXBROW M. SMITH, Boston, Mass., assignors to J. T. Robinson & Co., Hyde Park, Mass. Filed Aug. 13, 1896. Serial No. 602,643. (No model.)



Claim.—1. In a paper-grooving attachment, a yoke provided with a threaded stud extended from one side of the same, a nut on said stud, two cutting-disks held on said stud by said nut and a plow having its shank placed between said disks and guided and supported by said stud, substantially as described.

2. In a paper-grooving attachment, a yoke provided with a threaded stud extended from one side of the same, and slabbed as at a^3, a nut on said stud, two cutting-disks held on said stud by said nut, and a plow placed between said disks and having its shanks slotted to embrace said stud, one part of said shank serving the purpose of a clearer, substantially as described.

3. In a paper-grooving attachment, a yoke provided with a threaded stud extended from one side of the same, a nut on said stud, two cutting-disks held on said stud by said nut, and a plow having its shank placed between said disks and embracing said stud, and a directing device carried by said plow, to operate, substantially as described.

4. The herein described plow having a backwardly-turned integral shank, one corner of which is located just above the point of the plow to act as a clearer, substantially as described.

5. In a paper-grooving attachment, a yoke having a fixed threaded stud differing in diameter at its inner and outer end and extended from one side of said yoke leaving its threaded end exposed, a threaded nut having a sleeve and screwed on said stud, and two cutting-disks, one of which turns on said stud and the other on the sleeve of said nut, the removal of the said nut permitting the removal of said disks, substantially as described.

6. In a paper-grooving attachment, a yoke having a fixed threaded stud differing in diameter at its inner and outer end and extended from one side of said yoke leaving its threaded end exposed, a threaded nut having a sleeve of substantially the diameter of the base of said stud, and two cutting-disks, one of which turns on said stud and the other on the sleeve of said nut, the removal of the said nut permitting the removal of said disks, substantially as described.

7. In a paper-grooving attachment, a yoke provided with an integral threaded stud extended from one side of the same, two cutting-disks surrounding said stud loosely, a nut to confine said disks on said stud, and a plow having its backwardly-turned integral end formed to embrace said stud between said disks, one corner of said shank lying above the point of said plow and serving as a clearer, substantially as described.

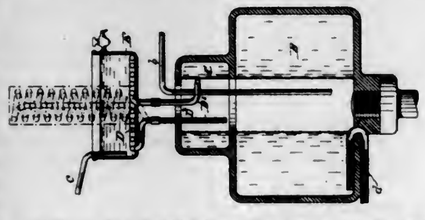
8. In a paper-grooving attachment, a yoke, a stud carried by it, and two cutting disks mounted side by side on said stud, combined with a plow composed of a U-shaped piece of metal, one arm of the plow presenting a point, the other arm constituting the shank of the plow being slotted to embrace said stud between said cutters, the corner of the shank being located just above the point of the plow to act as a clearer, and means to clamp the plow in adjusted position, substantially as described.

573,706. GRAIN-SEPARATOR. REUBEN W. ROSSITER, Minneapolis, Minn. Filed Feb. 24, 1896. Serial No. 580,586. (No model.)



Claim.—In a grain cleaning and separating machine, the combination with a perforated screen, of a pair of rollers, a brush-belt thereon having transverse brush-slats, and a canvas belt or apron drawn over said brush-belt, and yieldingly supported by the transverse brush-slats for holding it flat and preventing vibration thereof, substantially as described.

573,707. CENTRIFUGAL APPARATUS. ERIK G. N. SALENIUS, Stockholm, Sweden. Filed Jan. 16, 1892. Serial No. 418,333. (No model.) Patented in Sweden Sept 8, 1891, No. 4,370; in France Nov. 27, 1891, No. 217,709; in England Dec. 1, 1891, No. 20,959; in Norway Dec. 2, 1891, No. 2,989; in Belgium Dec. 17, 1891, No. 97,607; in Germany Mar. 26, 1892, No. 77,362; in Victoria June 24, 1892, No. 9,752; in New South Wales June 27, 1892, No. 3,829; in Austria-Hungary Nov. 2, 1892, No. 19,146 and No. 42,058; in Queensland Sept. 4, 1893, No. 2,132, and in Finland Sept. 26, 1893, No. 480.



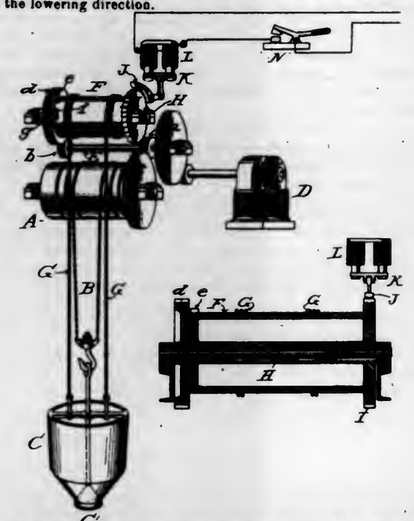
Claim.—1. In a centrifugal apparatus, the combination with a drum, means for supplying milk to said drum, and means for changing the temperature of a liquid, as a refrigerator arranged exterior to said drum, of a skimming-pipe extending from the drum to a receptacle in the refrigerator and adapted to skim the liquid from the drum by the rotation of the latter, and a return pipe extending from the receptacle in the refrigerator to the interior of the drum to return the refrigerated liquid to the drum, said return pipe being adapted and arranged to discharge its contents against the wall of liquid in the drum.

2. In a centrifugal apparatus, the combination with a drum, and a refrigerator consisting of a vessel E, situated adjacent to the drum and containing a substance having a temperature lower than that of the liquid in the drum and a coil D, in said refrigerating substance, of a skimming-pipe D', connected at one extremity with one end of the coil D and having its other extremity inserted in the drum and adapted to skim the liquid from the wall thereof in the drum, a return-pipe D^2, connected at one extremity with the opposite end of the coil D, and having its other extremity inserted in the drum, and means for supplying liquid to said drum.

3. In a centrifugal apparatus, the combination with a drum having two compartments, of a refrigerator adjacent to the drum and containing a coil, a skimming-pipe, one extremity of which is connected with one end of the coil and the other extremity of which extends into one of the compartments of the drum and is adapted to skim the liquid therefrom, by the rotation of the drum, a return-pipe connected at one extremity with the other end of said coil, the other extremity of said return-pipe extending into the other compartment in said drum.

573,708. DISCHARGING MECHANISM FOR BUCKETS, TONGS, &c. HARRY SAWYER, Muskegon, Mich. Filed Aug. 8, 1896. Serial No. 602,163. (No model.)

Claim.—1. In combination with a carrier and with discharging devices applied thereto, a hoisting drum, a trip-drum; cables connecting said drums with the carrier and with the trip mechanism; a motor connected with and serving to drive the hoisting-drum positively in hoisting direction; gearing interposed between the trip-drum and the motor and serving to drive said drum positively in a hoisting direction, but to disconnect therefrom when run in a lowering direction; and means for positively locking the trip-drum against rotation in the lowering direction.

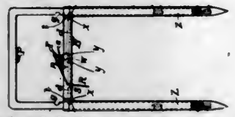


2. In combination with a carrier and a closing device therefor, hoisting-drum A provided with gear-wheel *e*; motor D; shaft E geared to said motor and provided with pinions *a*, *b*; shaft H; gear *d* and drum F carried by said shaft one fast to and the other loose upon the shaft; ratchet wheel I connected and movable with drum F; cable G extending from drum F to the closing device of the carrier; pawl J adapted to engage the ratchet-wheel I; electromagnet L for actuating said pawl; and a switch in circuit with the electromagnet and serving to control its action, substantially as set forth.

3. In combination with bucket C provided with bell C'; hoisting-drum A provided with cable B and gear-wheel *e*; motor D; shaft E geared to said motor and provided with pinions *a b*; shaft H having gear *d* fixed upon it; drum F loosely mounted upon shaft H and provided with ratchet-wheel I; cable G extending from drum F to bell C'; pawl J adapted to engage said ratchet-wheel; electromagnet L for actuating said pawl; and a switch in circuit with the electromagnet and serving to control its action, substantially as set forth.

4. In a hoisting apparatus the combination with a load-carrier and a trip therefor, of a hoisting drum and a trip-drum; a single motor for driving both drums positively in a hoisting direction; a connecting device between one of the drums and the driving power, whereby the driving power is caused to connect positively with said drum in turning in the hoisting direction, but is free to disconnect therefrom when turning in the opposite direction; and means for holding said drum against rotation in the discharging direction while permitting the other to turn backward.

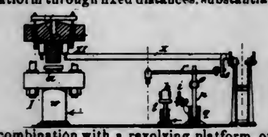
573,709. HAY-FORK. DAVID A. SHANK, Versailles, Mo., assignor of one-half to A. L. Ross, same place. Filed Sept. 14, 1896. Serial No. 605,817. (No model.)



Claim.—In a hay-fork, the combination of the opposite posts, harpoons provided with notches working therein, a double cross-bar connecting said posts, a spring-pressed trip-arm pivoted between said cross-bars, dogs pivoted between said cross-bars, and rods connecting said trip-arm and pivoted dogs, whereby the dogs are thrown into and out of connection with said notches when said trip-arm is actuated, substantially as described.

573,710. HYDRAULIC PRESS. CARL SCHLIMP, Vienna, Austria-Hungary, and RUDOLF CHAROUSEK, Niederseedlitz, near Dresden, Germany. Filed Aug. 17, 1896. Serial No. 603,052. (No model.)

Claim.—1. The combination with a revolving platform, of molds carried by said platform, a hydraulic press having a supplementary chamber and plunger for raising and closing said molds and a main chamber and plunger for compressing said molds, a second hydraulic press adapted to further compress said molds, a third hydraulic press adapted to deliver said molds from said platform, a series of accumulators, pipes connecting said accumulators with said presses, valves for controlling the flow of the fluid in said pipes, and means for rotating said platform through fixed distances, substantially as described.



2. The combination with a revolving platform, of molds carried by said platform, a hydraulic press having a supplementary chamber and plunger for raising said molds and a main chamber and plunger for compressing said molds, a second hydraulic press adapted to further compress said molds, a third hydraulic press adapted to deliver said molds from said platform, a series of accumulators, pipes connecting said accumulators with said presses, valves for controlling the flow of the fluid in said pipes, a pair of cylinders having reciprocating pistons, a rod connecting the said pistons, a pivoted arm connected to said rod, a plurality of projections on said platform adapted to engage said pivoted arm and pipes connecting said cylinders with the aforesaid valves and accumulators, substantially as described.

3. In a system of hydraulic presses, the combination with a revolving platform, of molds carried by the said platform, a hydraulic press having a supplementary chamber and plunger with arms for raising and closing the said molds and a main chamber and plunger for compressing said molds, a second hydraulic press for further compressing said molds, a third hydraulic press adapted to deliver said molds from said platform, a series of accumulators, pipes connecting said accumulators with said presses, valves for controlling the flow of the fluid in said pipes, a pair of cylinders having reciprocating pistons, a rod connecting said pistons, a pivoted arm connected to said rod, a plurality of projections on the said platform adapted to engage said pivoted arm, a second arm connected to said piston-rod, a valve adapted to be opened by said arm, high pressure pipes connecting said valve with said second press, and pipes and valves connecting said cylinders with said accumulators, substantially as described.

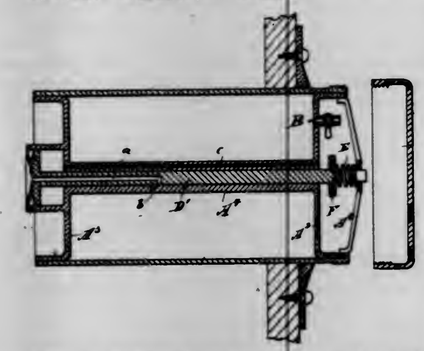
4. In a system of hydraulic presses, the combination with a circular revolving platform, of molds carried by the said platform, a hydraulic press having a supplementary chamber and plunger with arms for raising and closing the molds and a main chamber and plunger for compressing the said molds, a second hydraulic press for further compressing said molds, a third hydraulic press adapted to deliver said molds from said platform, a series of accumulators containing a fluid at different stages of compression, pipes connecting the low-pressure accumulator with all of the presses, a valve for controlling the flow of low-pressure fluid into said presses, a pipe connecting the high-pressure accumulator with the second hydraulic press, a valve for controlling the flow of high-pressure fluid in said pipe, means for simultaneously revolving said platform through fixed distances and operating the said high-pressure controlling-valve and a valve for simultaneously controlling the operation of said means and all of said controlling-valves, and a pump connected with the exhaust from said presses and adapted to pump fluid under pressure into said accumulators, substantially as described.

573,711. BRUSH. ALOYS SCHUCK, Brooklyn, N. Y. Filed Sept. 1, 1896. Serial No. 604,565. (No model.)



Claim.—A brush having a handle, a ferrule for the handle, the upper end of the ferrule being reduced to snugly receive the handle and to form a space adjacent to the upper end of the ferrule and below the lower end of the handle the size of which space is larger than the thickness of the handle, and stock or bristles having their upper ends bound together by a cord, said upper ends being engaged with the lower end of the handle and held within the enlarged space adjacent thereto, the lower end of the ferrule being spread laterally to flatten the brush and being of a thickness less than the thickness of the upper portion of the stock, substantially as described.

573,712. CARBONATING DEVICE. JOHN W. SEAVOLT, Lock 53, Md., assignor of one-fourth to Edmund P. Cotill, Hancock, Md. Filed July 21, 1896. Serial No. 600,001. (No model.)



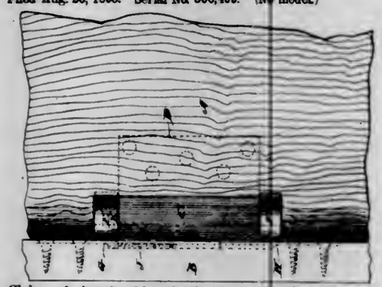
Claim.—1. A carbonating device, comprising a casing adapted to contain carbonic-acid gas under pressure, a cylinder held on the inner end of the said casing, and a spring-pressed piston fitted to slide in said cylinder and adapted to connect the interior of the receptacle with the interior of the said casing, substantially as shown and described.

2. A carbonating device, comprising a casing adapted to contain carbonic-acid gas, a cylinder formed on said casing and opening into the receptacle on which the device is to be applied, a piston fitted to slide in said cylinder and having a piston-rod formed with a channel adapted to register with a port leading to the interior of said casing, and a spring pressing on the said piston-rod, substantially as shown and described.

3. A carbonating device, comprising a casing adapted to contain carbonic-acid gas, a cylinder formed on said casing and opening into the receptacle on which the device is to be applied, a piston fitted to slide in said cylinder and having a piston-rod formed with a channel adapted to register with a port leading to the interior of said casing, a spring pressing on said piston rod, and means for regulating the tension of said spring, substantially as shown and described.

4. A carbonating device, comprising the casing adapted to contain carbonic-acid gas under pressure, and provided with an outwardly-extending cylinder opening into the receptacle on which the device is to be applied, a hollow rod in said casing, and a spring-pressed piston-rod in said hollow rod and having a piston operating in said cylinder, the hollow rod being provided with a port and the piston-rod with a channel extending through the piston and arranged to register with said port, substantially as shown and described.

573,713. SPRING-HINGE. EARL P. SEDGWICK, Chicago, Ill., assignor to the Chicago Hardware Manufacturing Company, same place. Filed Aug. 26, 1895. Serial No. 560,499. (No model.)

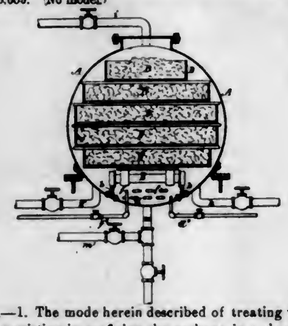


Claim.—1. A spring-hinge having a supplemental arresting spring-plate secured to one member thereof and having a portion thereof disposed in a plane at an angle to the axis of the hinge and a rigid stop secured to the other member of the hinge in a plane at an angle to that of the spring-plate and adapted to engage therewith, whereby to arrest the movement of the door in a plane at right angles to its support, substantially as described.

2. The combination with a spring-hinge, of an arresting device consisting of a spring-plate secured to one member of the hinge and having an end turned angularly to its body and said end having its front edge provided with a central seat or depression, said edge being beveled or inclined in both directions from said seat, and a pin or projection carried by the other member of the hinge and adapted to ride upon the inclined edge thereof and to seat itself in the notch of said edge, substantially as described.

3. In a spring hinge, the combination of a jamb-leaf having a transverse aperture therein, of a flat spring having its shank secured on the rear side of said jamb-leaf and its end projected through an aperture therein, said end having its front edge provided with a central seat or depression and inclined on both sides of said seat and a hinge-barrel carrying a pin adapted to ride upon the inclined edge and to seat itself in the depression or seat of said edge, substantially as described.

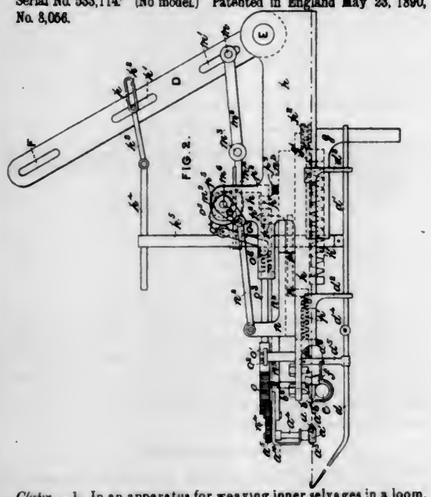
573,714. PROCESS OF AND APPARATUS FOR TREATING GARBAGE. ISAAC M. SIMONIN, Philadelphia, Pa. Filed Aug. 18, 1894. Serial No. 520,659. (No model.)



Claim.—1. The mode herein described of treating wet garbage, said mode consisting in confining the garbage in a closed vessel and subjecting it therein to the action of a solvent of grease or fat, and on the withdrawal of the solvent with grease in solution therein, subjecting the mass to the action of a dry, hot, gaseous fluid, whereby water in the mass will be vaporized and carried off, then again subjecting the mass to the action of a solvent of grease or fat, and finally to the direct action of live steam whereby the solvent remaining in the mass will be vaporized and driven off, to be recovered from the steam by condensation, substantially as specified.

2. In apparatus for treating garbage, the combination of a vessel, means for closing the same, trucks adapted to be run into said vessel, and each having a series of trays mounted one above another, outlets for liquid and vapor from said vessel, an inlet for grease-extracting fluid, another inlet for a water-vaporizing fluid, a closed steam-coil and a steam-discharge pipe within the vessel, substantially as specified.

573,715. SELVAGE-PRODUCING DEVICE FOR LOOMS. WILLIAM SIMPSON, Salford, England, assignor to the Duplex Weaving Appliance Company, Limited, Manchester, England. Filed Dec. 27, 1894. Serial No. 533,114. (No model.) Patented in England May 23, 1890, No. 8,056.



Claim.—1. In an apparatus for weaving inner selvages in a loom, the combination of a cutting device with fingers or grippers on either side thereof normally lying between the selvages and means for imparting to the said fingers or grippers, a lateral diverging motion to enter between the planes of the warp forming the open sheds, from the sides thereof, substantially as and for the purposes set forth.

2. In an apparatus for weaving inner selvages in a loom, the combination of a cutting device with fingers or grippers on either side thereof normally lying between the selvages, and means for imparting to the said fingers or grippers a lateral rotary and diverging motion to enter between the planes of the warp forming the open sheds from the sides thereof, substantially as and for the purposes set forth.

3. In an apparatus for weaving inner selvages, in a loom, the combination of fingers or grippers with hooks *d* for seizing the uncut weft-thread and delivering it to the fingers or grippers, a cutting device and means for actuating the said fingers, hooks and cutting device, substantially as and for the purposes set forth.

4. In an apparatus for weaving inner selvages in a loom, the combination of scissors, and grippers, with a rack, slay and connections between the said rack and slay whereby the rack is actuated by the reciprocating action of the slay, a pinion deriving motion therefrom, a cam-shaft, cams, eccentrics or cranks and reciprocating parts driven therefrom for actuating the grippers and the scissors, substantially as and for the purpose set forth.

5. In an apparatus for weaving inner selvages in a loom, the combination of fingers or grippers normally between the selvages and means for imparting to the said fingers or grippers a lateral diverging motion to enter between the planes of the warp forming the open sheds, from the sides thereof, with a pair of scissors, one blade of which is formed as a lever, the slay, and a reciprocating slide deriving motion from the slay to actuate the lever, substantially as and for the purpose set forth.

573,716. ELECTRIC SIGNAL-OPERATING DEVICE FOR RAILWAY-TRAINS. GEORGE F. SINGER and FRANK K. SINGER, Mingo Junction, Ohio. Filed May 22, 1896. Serial No. 592,585. (No model.)



Claim.—1. A train-signal comprising a battery, and an alarm at each end of the train, circuit-wires in which the batteries and signals are located and a coupling for said wires comprising two casings, a block of insulating material in each casing, resilient contact-fingers secured to opposite sides of the blocks, the free end of each contact-finger being curved inward and then outward, and a thin plate of insulating material extended from the block of each section, between and nearly to the end of the contact-fingers, whereby when the two coupling-sections are placed together the plate of one section will rest upon the plate of the other section, substantially as specified.

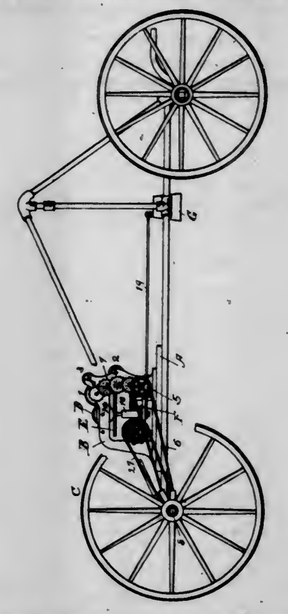
2. A coupling having two duplicate sections, each section consisting in a tube, a block held within the tube and having two oppositely-located and longitudinally-extending grooves in its sides, an insulating-plate projecting outwardly from one end of the block and extending beyond the tube the block being shorter than the tube and arranged so as to leave a space in one end of the tube through which space the insulating-plate passes, and two contact-plates, each plate having one end secured within the respective grooves of the block and the plates being projected through the said space in the tube and beyond the outer end of the insulating-plate, the contact-plates having tendencies to engage each other so that the circuit may be closed when the two sections of the coupling are disconnected, substantially as described.

573,717. GRADE-DELINEATOR. OTTO F. SONNE, Boston, Mass. Filed June 14, 1894. Serial No. 514,593. (No model.)

Claim.—1. In a grade-delineator, the combination of a carriage, a roller over which passes a sheet of paper, gearing connected with the axle of the carriage for driving said roller, a frame, a pencil secured therein, a screw threaded rod for moving said pencil parallel to the axis of said roller, a disk D on the end of said rod, a laterally-movable car, a disk E on said car engaging with and driving disk D, a pendulum, connections between the pendulum and the car for moving the latter, and means for rotating disk E.

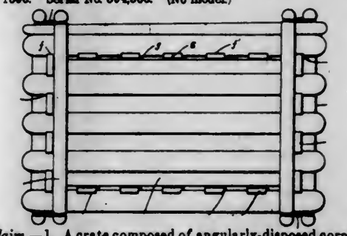
2. In a grade-delineator, a car, means for moving said car laterally, a disk journaled in the car, mechanism cooperating with the said disk for recording grades, and means for rotating said disk, consisting of pulleys fixed to the framework of the machine, an endless belt passing around the disk-spindle and also around the said fixed pulleys, and mechanism for driving one of the fixed pulleys, as set forth.

3. In a grade-delineator, in combination, a pendulum, a car movable thereby, a disk journaled in said car, an endless belt passing around the disk spindle and around fixed pulleys, means for driving said belt, a screw-threaded rod provided with a disk arranged to be driven by frictional contact with the first-mentioned disk, a frame movable laterally by engagement with said screw-threaded rod, a pencil carried by said frame, a recording-surface, and mechanism for moving said surface past the pencil in a direction at right angles to the direction of motion of the pencil, substantially as described.



4. In a grade-delineator, a car, mechanism for laterally moving the car, a disk journaled in said car, mechanism cooperating with said disk for recording grades, and means for rotating said disk consisting of a double-grooved pulley on the disk-spindle, pulleys secured to the framework of the machine, and an endless belt passing around the latter pulleys and twice around the disk-spindle pulley, in such manner that the pulling parts of the belt will act on the latter pulley in opposite directions, in combination with mechanism for driving the endless belt, for the purpose set forth.

573,718. CRATE. ANDREW STRATTON, Augusta, Wis. Filed June 5, 1896. Serial No. 594,386. (No model.)
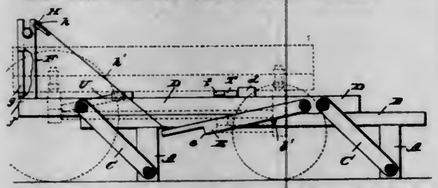


Claim.—1. A crate composed of angularly-disposed corner-posts, interlocking side and end strips overlapping between the posts, a slatted bottom engaging notches in the lowermost side strips, upper side pieces having notches on their under sides, a slatted top and wedge-strips for locking the parts in position, substantially as described.

2. A crate composed of angularly-disposed corner-posts, interlocking sides and end strips overlapping between the posts, a slatted bottom engaging notches in the lowermost side strips, upper side pieces having notches on their under sides, a slatted top and wedge-strips for locking the parts in position, the corner-posts being each composed of two parts joined together at their upper and lower ends, substantially as described.

3. A crate composed of angularly-disposed corner-posts, interlocking sides and end strips overlapping between the posts, a slatted bottom engaging notches in the lowermost side strips, upper side pieces having notches on their under sides, a slatted top and wedge-strips for locking the parts in position, combined with a removable lining, substantially as described.

4. A crate composed of angularly-disposed corner-posts, interlocking sides and end strips overlapping between the posts, a slatted bottom engaging notches in the lowermost side strips, upper side pieces having notches on their under sides, a slatted top and wedge-strips for locking the parts in position, combined with a removable lining, and foldable trays having locks, substantially as described.

573,719. WAGON-BODY LIFTER. EDWIN J. STRONG, Flover, Iowa. Filed Oct. 22, 1896. Serial No. 609,608. (No model.)



Claim.—1. In an apparatus for lifting and supporting wagon-bodies, the combination of the corner-posts located to provide a driveway between the same, longitudinal beams B secured upon the posts on each side of the driveway, levers C pivoted on the opposite sides of said corner-posts, and beams D pivoted between the upper ends of the levers above the stationary longitudinal beams; together with latches or notched bars E pivoted to the movable beams, and pins *b* attached to the stationary beams in position to engage the notched ends of the bars or latches when the movable beams are elevated, substantially as shown and for the purpose set forth.

2. In an apparatus for lifting and supporting wagon-bodies, the combination, of the corner-posts located to provide a driveway between the same, longitudinal beams B secured upon the posts on each side of the driveway, levers C pivotad on the opposite sides of said corner-posts, and beams D pivoted between the upper ends of the levers above the stationary longitudinal beams; together with latches or notched bars pivoted to the movable beams, pins attached to the stationary beams in position to be engaged by the latches or notched bars when the movable beam is elevated, a transverse shaft supported by the apparatus and provided with spools carrying flexible connections which are connected to the pivoted latches, substantially as shown and for the purpose set forth.

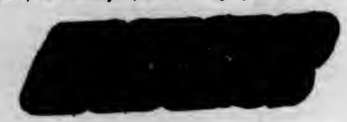
3. In an apparatus for lifting and supporting wagon-bodies, the combination, of the corner-posts located to provide a driveway between them, longitudinal beams B secured upon the posts on each side of the driveway, levers C pivoted to the posts, and beams D pivoted between the upper ends of said levers; latches or notched bars pivoted to the movable beams to engage pins carried by the stationary beams when said movable beams are elevated; together with uprights F on the beams D, a cross bar journaled in the upper ends of said uprights, an open frame carried by said cross bar, stops mounted on the movable beams, a cross-piece adapted to engage said stops and a fixed part of the wagon-body, and a pawl carried by the wagon-body to engage a bolster of the vehicle, substantially as shown and for the purpose set forth.

4. In an apparatus for lifting and supporting wagon-bodies, the combination, of the corner-posts located to provide a driveway between the same, longitudinal beams B secured upon the posts on each side of the driveway, levers C pivoted to the corner-posts, longitudinal beams D pivoted to the upper ends of the levers, means carried by the movable beams which are engaged by the wagon-body to limit the forward movement of said wagon-body upon said beams, latches or notched bars pivoted to the movable beams, and stationary pins with which said latches engage when the beams are elevated; together with a pawl pivoted to the under side of the wagon-body to engage one of the bolsters of the vehicle, substantially as shown and for the purpose set forth.

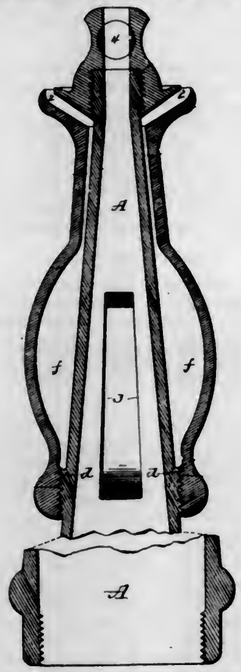
5. In an apparatus for lifting wagon-bodies, the combination, of the corner-posts located to provide a driveway between the same, levers C pivoted to the posts on opposite sides thereof, beams D pivoted between the upper ends of the levers; together with pivoted latches carried by the movable beams, and stationary pins with which said latches engage when the movable beams are elevated; the parts being adapted to be used in connection with a vehicle having a pawl pivoted to the wagon-body to engage one of the bolsters of the vehicle, substantially as shown and for the purpose set forth.

573,720. KNIT FABRIC FOR MATTRESSES. GEORGE F. SUMNER, Canton, Mass. Filed Feb. 24, 1891. Serial No. 382,645. (No specimens.)

Claim.—An improved fabric, particularly adapted to be used for mattresses and cushions, made of two, or more slivers, or ropes of fibers having a little or no twist in them, laid in alternating, parallel lines, and secured together by interknit or binding thread or threads so that these slivers are fastened and held in position in a soft, yielding state, substantially as, and for the purposes set forth.



573,721. NOZZLE. WILLIAM A. SWIFT and WILLIAM W. STEWART, Columbus, Ga.; Shelby Compton administrator of said Swift, deceased. Filed Oct. 5, 1895. Serial No. 564,770. (No model.)



Claim.—1. In a nozzle, the combination with a pipe or nozzle having a deflecting annular flange which extends outwardly at an angle thereto whereby to deflect water coming into contact therewith outwardly, of an adjustable ring or collar back of said flange between which and the flange a passage for water is formed, said ring or collar being of greater diameter at its outer end than the flange and extending forwardly at its extreme outer end whereby to turn the flow of water from its outward direction to a straight forward course or any intermediate angle between a straight forward course and the outward lateral direction induced by the annular flange, and means for maintaining a continuous flow of water from the supply to both apertures of the nozzle, substantially as set forth.

2. In a nozzle, the combination with a pipe or nozzle having a screw-thread formed thereon at or near its outer end, and an outwardly-deflecting annular flange screwed on this thread, of an adjustable annular ring or collar having a greater diameter at its outer end than the flange and projecting forwardly at its outer end whereby to change the direction of the spray passing between the flange and ring or collar from a lateral direction to a straight forward course or to an intermediate angle between the outward and forward direction, and means for maintaining a continuous flow of water from the supply to both apertures of the nozzle, substantially as set forth.

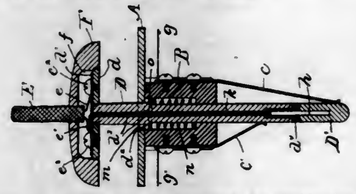
3. In a nozzle, the combination with a pipe or nozzle having a screw-threaded exterior, a shell surrounding the pipe or nozzle and screwed thereon whereby an annular space is formed between them, said pipe or nozzle having communicating openings for the passage of water therefrom into the space between the shell and pipe or nozzle, of an outwardly-projecting flange on the outer end of the pipe or nozzle, and a ring or collar screwed on the end of the outer shell, said ring or collar being of greater diameter at its outer end than the flange and extending forwardly to deflect the water turned laterally by the flange to different angles to a straight forward direction and means for maintaining a continuous flow of water from the supply to both apertures of the nozzle, substantially as set forth.

573,722. VEHICLE FIFTH-WHEEL. FRANCIS L. THOMAS, Youngstown, Ohio. Filed Apr. 13, 1896. Serial No. 587,338. (No model.)



Claim.—In a fifth-wheel for vehicles, the combination with the head-block and axle, the plates on upper and lower side of axle provided with projections, the segments secured respectively to the head-block and axle, the rearwardly-projecting stay-arms on the upper segment, the perch-arms secured to the head-block and to said stay-arms, the spider consisting of the arms secured to the under side of the stay-arms, and the forwardly-extending arms formed with a bolt-hole for engaging with the projection on the axle and provided at opposite sides of said hole with vertical screw-bolts, and the plate on the head-block provided with oppositely-extending apertured lugs with which said screw-bolts engage, of the front and rear lateral lugs on the upper segment formed with shoulders, the spanning-plate located below said lower segment, and the spring-plate pressing against said lower segment, substantially as described.

573,723. ELECTRIC FLOOR-PUSH. HENRY C. THOMSON, Boston, Mass., assignor to the Electric Gas Lighting Company, of Maine. Filed Mar. 28, 1896. Serial No. 585,154. (No model.)



Claim.—1. For an electrical floor-push, the combination of the plate A, insulated plug B attached thereto, the helical spring *n*, the circuit-spring C', and the circuit-spring C, which is longer than C', and a circuit closing pin; all substantially as and for the purposes described.

2. For an electric floor-push, the combination of the perforated cap F threaded as shown and having the chamber *f*, the hollow shank-pin D having the top *d* and the insulating-piece *d'*, and one or more pins d^3, the insulating-piece d^4, the lower extremity D', and the metallic pin *h* connecting the parts D D', substantially as and for the purposes described.

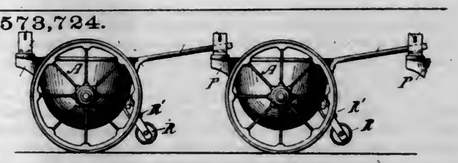
3. For an electric floor-push, the combination of the perforated cap F threaded as shown and having the chamber *f*, the hollow shank-pin D having the top *d* and the insulating-piece *d'*, one or more pins d^3, the insulating-piece d^4, the lower extremity D', and the metallic pin *h* connecting the parts D D', and the plate A, the insulating-plug B, the spring *n*, the circuit-springs C C' and the circuit-wires *e e'*, arranged as described, all substantially as and for the purposes described.

4. In an electric floor-push, the combination of a perforated cap, a connected, headed, hollow shank having its extremities insulated from each other, a pin physically but not electrically connecting the upper and lower portions of said shank, a sustaining-plate, and a plug attached thereto, and proper circuit connections therefor, substantially as shown.

573,724. SLAG-BUGGY-TRAIN COUPLING. JOSEPH L. THOMSON, Bayonne, N. J., assignor to the Orford Copper Company, New York, N. Y. Filed Feb. 21, 1896. Serial No. 580,172. (No model.)

Claim.—In a slag-buggy, the combination with the edge of a pot, of a locking device composed of two vertical lugs placed upon the edge of the pot, between which the handle of another pot having a suitable cross-bar is inserted, so that the same may be coupled up in a line behind the first pot, and a suitable pin for holding down the handle with which the cross-bar on the handle of the second pot engages.

573,724.



573,725. SIGHT FOR FIREARMS. CHARLES G. THUBEN, Oroville, Cal. Filed Sept. 16, 1896. Serial No. 605,979. (No model.)

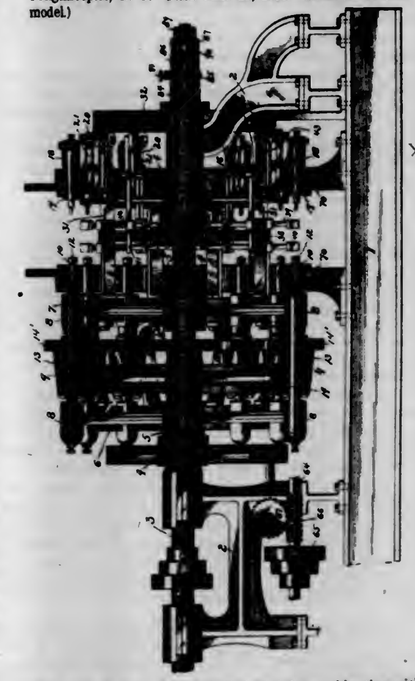


Claim.—1. A gun-sight consisting of two transparent disks, one having a small contrasting spot thereon and the other a contrasting ring, the same being concentric with the line of sight, substantially as described.

2. A gun-sight consisting of two transparent disks, the front one having a small dark opaque spot in the line of sight, and the rear one having a circular hole concentric with the line of sight, and having its edges darkened or otherwise made to contrast with the body of the disks, substantially as described.

3. A gun-sight consisting of two transparent disks, the front one having a small dark opaque spot in the line of sight, and the rear one having a hole concentric with the line of sight, said hole having its edge countersunk and coated with some dark opaque substance, substantially as described.

573,726. MULTIPLE-SPINDLE LATHE. CHARLES P. TOPPING, Poughkeepsie, N. Y. Filed June 25, 1895. Serial No. 554,023. (No model.)



Claim.—1. In a multiple-spindle lathe, the combination with the horizontally-adjustable rotating shaft and means for adjusting the same, of the oppositely-rotating cylinder, the rotatable spindles and cooperating means whereby the speed of said spindles is increased and decreased by the horizontal movement of said shaft, the tail-spindles, and means for moving said tail-spindles to and from the rotatable spindles, substantially as described.

2. In a multiple-spindle lathe, the combination with the horizontally-adjustable rotating shaft, the spiders loosely mounted thereon and rotating in the opposite direction, the rotatable spindles, the tail-

spindles, and the friction-cones on said rotatable spindles, of the driving-wheel secured to said shaft having a beveled periphery engaging with said cones and fixed to and rotating with said shaft, substantially as described.

3. In a multiple-spindle lathe, the combination with the horizontally-adjustable rotating shaft and means for adjusting the same, the spiders loosely mounted thereon and rotatable in the opposite direction, the rotatable spindles, the tail-spindles, and the friction-cones on said rotatable spindles, of the driving-wheel secured to said shaft having a beveled periphery engaging with said cones, substantially as described.

4. In a multiple-spindle lathe, the combination with the bed or base, the brackets, the shaft, driving-wheel the spiders, the rotating and tail spindles, and the friction-cones engaging with said wheel, of the screw-threaded sleeve secured to one of said brackets, the nut engaging therewith, the sleeve, the collar and nut and the collar located in said sleeve, substantially as described.

5. In a multiple-spindle lathe, the combination with the rotating shaft, the oppositely-rotating spiders mounted loosely thereon, the rotatable spindles provided with friction-cones, and the driving-wheel secured to said shaft, of the rotatable spider, the sockets or bearings provided with a lug, the tail-spindles, the slotted segments and adjusting-bolts, the laterally-movable blocks, the pressure-roller, and the cam-ring, substantially as described.

6. In a multiple spindle lathe, the combination with the bed or base, the brackets, the rotating shaft, the oppositely-rotating spiders loosely mounted thereon, the rotatable spindles, the friction-cones, and the beveled driving-wheel fixed to said shaft, of the rotatable spider, provided with sockets or bearings provided with a lug, the tail-spindles, the slotted segments and adjusting-bolts, the laterally-movable spring-actuated blocks, the pressure-rollers and the cam ring, substantially as described.

7. In a multiple-spindle lathe, the combination with the bed or base, the brackets, the rotating horizontally-adjustable shaft, the oppositely-rotating spiders, the friction-cones, the beveled driving-wheel engaging therewith, the sockets or bearings provided with a lug, the tail-spindles, the slotted segments, the adjusting-bolts, the adjustable blocks, the pressure-rollers, and the cam-ring provided with a series of depressions, substantially as described.

8. In a multiple-spindle lathe, the combination with the shaft, the cylinder, the speed-spindles, the friction-cones, the beveled driving-wheel, the tail-spindles and connections, and means for laterally moving the same, of the spider provided with a rim and ring, the radially-movable feeding arms and jaws, the coiled springs encircling said arms the cam, the bracket to which said cam is secured the arms secured to said feeding-arms, the rollers journaled thereto and adapted to engage with said cam, substantially as described.

9 In a multiple-spindle lathe, the combination with the bed or base, the brackets, the rotatable shaft, the oppositely-rotatable cylinder, the rotatable spindles, the friction-pulleys, the beveled driving-wheel fixed to said shaft, the tail spindles, and means for laterally moving the same, of the spider provided with a rim and ring, the spring-actuated feeding arms and jaws, the arms secured thereto, the rollers journaled to said arms, the bracket, the cam adjustably secured thereto with which said rollers engage, and the arm connecting the spider last mentioned with the spider carrying the tail-spindles, substantially as described.

10. In a multiple-spindle lathe of the character described, the combination with the rotatable spider, the spring-actuated feeding-arms provided with jaws, the arms connected therewith, the rollers and cam, of the endless link chain provided with dogs, the hopper, and means for operating said chain, substantially as described.

11. In a multiple-spindle lathe of the character described, the combination with the rotatable spider having a rim and ring, the radial spring-actuated feeding arms and jaws, the arms connected therewith, the rollers journaled thereto, and the cam, of the endless feed-chain, the sprocket-wheels, and means for operating the same, the dogs on said chain, and the spring for holding the blanks or blocks fed by said chain up against the feeding-jaws, substantially as described.

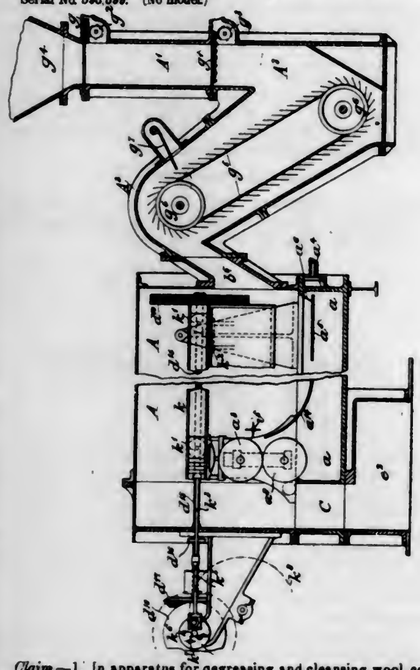
12. In a multiple-spindle lathe of the character described, the combination with the revolving cylinder and rotating and tail spindles, of the rings, the blocks secured thereto, the beveled tool-bridges, the beveled blocks, the bolts passing therethrough, the cam-lever connected therewith, and the removable and adjustable cutters, substantially as described.

13. In a multiple-spindle lathe of the character described, the combination with the bed, the brackets, the rotating shaft, the oppositely-rotating spiders, the plates connecting the same, the rotatable spindles, the friction-cones, the beveled driving-wheel, the tail-spindles, the sockets, the horizontally-movable spring-actuated blocks, the pressure-rollers, the cam-ring formed with depressions, the rings and the adjustable cutters secured thereto, substantially as described.

14. In a multiple-spindle lathe of the character described, the combination with the bed or base, the rotating shaft, the oppositely-rotating cylinder, the friction-cones, the beveled driving-wheel, the rotating spindles, the spider journaled to said shaft and carrying the tail-spindles, the sockets, the spring-actuated blocks, the pressure-rollers, and the cam-ring, of the rim and ring at the inner end of the said cylinder, the feeding arms and jaws, the arms and rollers, the cam, the delivery-chain, and means for operating the same, and the rings and adjustable cutters, substantially as described.

15. In a multiple-spindle lathe of the character described, the combination with the horizontally-adjustable main shaft, the cylinder rotating in the opposite direction, the rotating spindles, the driving-wheel secured to said shaft and coöperating mechanism for driving said spindles the engagement of which is governed by the horizontal movement of said shaft, of the cog-wheel secured to said cylinder, the pinion engaging therewith, the counter-shaft to which said pinion is secured, the beveled pinion on said shaft, the corresponding pinion meshing therewith, the horizontal shaft, the worm wheel, the worm-shaft, the pulleys fixed thereon, and the pulleys on the main shaft, substantially as set forth.

573,727. APPARATUS FOR EXTRACTING FAT FROM WOOL. FREDERICK N. TURNEY, Nottingham, England. Filed May 28, 1896. Serial No. 593,399. (No model.)



Claim.—1. In apparatus for degreasing and cleansing wool, cotton-waste and like materials, the combination with a series of solvent-tanks, of an entrance air-lock provided with a hopper to receive the material in a loose form, a vapor-tight chamber arranged between said air lock and tanks, and in communication with both of them, an endless belt armed with spikes or teeth for raising the material from the lower part of the chamber to the first of the tanks, and a leveling device at the upper part of the belt for forming the material into a continuous or practically continuous sheet or layer, substantially as described.

2. In apparatus for degreasing and cleansing wool, cotton-waste and like materials, the combination of beaters, shogging-frames carrying said beaters, rakes and rocking forks for advancing or feeding forward the materials, and means for operating said beaters, rakes, and forks, substantially as described.

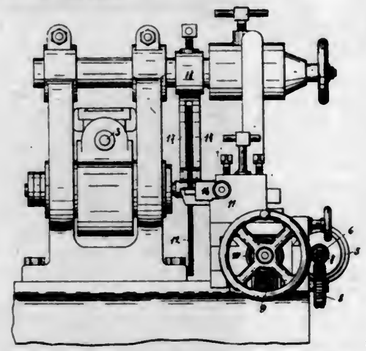
3. In apparatus for degreasing and cleansing wool, cotton-waste, and like materials, the combination of the drying-chamber, perforated rocking trays in said chamber, crank disks carrying said trays, and means for driving said crank-disks with a variable speed, substantially as described.

4. In apparatus for degreasing and cleansing wool, cotton-waste, and like materials, the steam-jacketed evaporator having transverse segmental partitions *m* and revolving wheels *m'* carrying scrapers m^3, and baffle-plates m^5, substantially as and for the purposes described.

5. In apparatus for degreasing and cleansing wool, cotton waste, and like materials, the combination of a degreasing-chamber, beaters, rakes, and forks in said degreasing-chamber, a vertical entrance air lock, sliding doors at the upper and lower ends thereof, an intermediate chamber between said entrance air-lock and degreasing-chamber, an elevator in said intermediate chamber, a hopper above said air-lock, a drying-chamber connected with said degreasing-chamber, rocking trays in said drying-chamber, mechanism for operating said trays, an exit air-lock for removing the dried material, and means for transferring the material from the drying-chamber to the exit air-lock, substantially as described.

6. In apparatus for degreasing and cleansing wool, cotton-waste, and like materials, the combination of a degreasing chamber, solvent-tanks in said degreasing-chamber, perforated false bottoms in said tanks, beaters for beating the material, rakes and forks for advancing the material, a shogging-frame carrying said beaters, rakes, and forks, means for operating the same, a vertical entrance air-lock, sliding doors at the upper and lower ends thereof, an intermediate chamber between said entrance air-lock and degreasing-chamber, an elevator in said intermediate chamber, a hopper above said air-lock, and means for drying the material, and for recovering the used solvent, substantially as described.

573,728. MACHINE FOR PRODUCING METAL SHAVINGS. JACQUES G. ULMANN, Zurich, Switzerland. Filed Apr. 29, 1896. Serial No. 589,548. (No model.)



Claim.—1. In a machine for the production of metallic shavings, the combination with a mandrel for holding the package of plates, mounted in a suitable frame, and a worm-wheel on said mandrel; of a driving-shaft mounted in said frame and capable of rotation and movement in the direction of its axis simultaneously; a worm on said shaft meshing with the worm wheel on said mandrel for rotating said mandrel; a friction-disk mounted in said frame and driven at a uniform speed; a second friction-disk mounted upon said shaft and driven by said first friction-disk for rotating said shaft; a sliding cutter-support mounted in said frame; a second shaft journaled in said frame and driven by said first shaft; a worm on said second shaft, and worm-gearing driven thereby for advancing said sliding cutter-support; an arm having a guideway thereon rigidly mounted on said frame; a sliding block mounted on said guideway and provided with a bearing for said driving-shaft; and a rigid arm connecting said sliding block to said cutter support, for moving said driving-shaft axially, and thus causing the friction-disk thereon to move across the face of the other disk, and increasing the speed of rotation of said shaft, substantially as described.

2. In a machine for the production of metallic shavings, the combination with a mandrel for holding the package of plates, mounted in a suitable frame, and a worm-wheel on said mandrel; of a driving-shaft mounted in said frame and capable of rotation and movement in the direction of its axis simultaneously; a worm on said shaft meshing with the worm-wheel on said mandrel for rotating said mandrel; a friction-disk mounted in said frame and driven at a uniform speed; a second friction-disk mounted upon said shaft and driven by said first friction-disk for rotating said shaft; a sliding cutter-support mounted in said frame; a second shaft journaled in said frame; gearing between said second shaft and said driving-shaft for varying the uniform speed of the former relative to the speed of the latter; a worm on said second shaft, and worm-gearing driven thereby for advancing the said cutter-support; an arm having a guideway thereon rigidly mounted on said frame; a sliding block mounted on said guideway and provided with a bearing for said driving-shaft; and a rigid arm connecting said sliding block to said cutter-support, whereby said sliding block is caused to move with said cutter-support, and increase the speed of rotation of the driving-shaft, substantially as described.

3. In a machine for the production of metallic shavings, the combination with a mandrel for holding the package of plates, mounted in a suitable frame, a worm wheel on said mandrel, and a bifurcated guide for said package of plates, of a driving-shaft mounted in said frame and capable of rotation and movement in the direction of its axis simultaneously; a worm on said shaft meshing with the worm-wheel on said mandrel for rotating said mandrel; a friction-disk mounted in said frame and driven at a uniform speed; a second friction-disk mounted upon said shaft and driven by said first friction-disk for rotating said shaft; a sliding cutter-support mounted in said frame; a second shaft journaled in said frame and driven by said first shaft; means for varying the uniform speed of said second shaft relative to the speed of the first shaft; a worm on said second shaft, and worm-gearing driven thereby for advancing said sliding cutter-support; an arm having a guideway thereon rigidly mounted on said frame; a sliding block mounted on said guide and provided with a bearing for said driving-shaft; and a rigid arm connecting said sliding block to said cutter-support, for moving said driving-shaft axially, and thus causing the friction-disk thereon to move across the face of the other disk, and increasing the speed of rotation of said shaft, substantially as described.

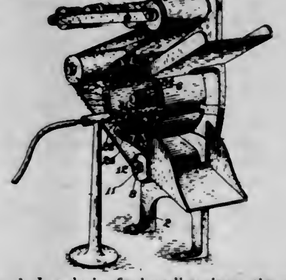
573,729. SKIRT-SLIT HOLDER. CASPER VAN HORSEN, New York, N. Y., assignor of one-half to David Hochner, same place. Filed Apr. 29, 1896. Serial No. 589,590. (No model.)



Claim.—1. A placket-closer comprising two resilient wires members bent into flat zigzag form and arranged in fabric coverings the said casings and their inclosed wires being secured together at one end as set forth.

2. A placket-closer comprising a single strip of resilient wire bent into flat zigzag form and inclosed in a fabric casing, the said wire and its casing being folded centrally to form two members arranged face to face, the folded end of the said closure forming a spring-hinge joint as set forth.

573,730. DEVICE FOR BRANDING CIGARS. LAWRENCE C. WALSH and ROBERT T. TODD, Lawrence, Mass. Filed June 3, 1896. Serial No. 594,117. (No model.)



Claim.—1. In a device for branding cigars, the combination of a main frame-plate, three pulleys triangularly placed and adapted for revoluble attachment to said plate, means for adjusting one of said pulleys toward or from a line joining the axes of the others, a drum contructed for revoluble attachment to said plate between two of said pulleys, said drum having grooves or cigar-holders at intervals across its face, brands constructed to be fixed within said cigar-holders, a belt, means for serving cigars to the cigar-holders of said drum, and mechanism for operating said belt, substantially as described.

2. In a device for branding cigars, the combination of a main frame-plate, three pulleys triangularly placed and adapted for revoluble attachment to said plate, means for adjusting one of said pulleys toward or from a line adjoining the axes of the others, a drum constructed for revoluble attachment to said plate between two of said pulleys, said drum having grooves or cigar holders at intervals across its face, brands constructed to be fixed within said cigar-holders, a belt, means for serving cigars to the cigar-holders of said drum, mechanism for operating said belt, and an adjustable source of heat, substantially as described.

3. In a device for branding cigars, the combination of a main frame-plate, three pulleys triangularly placed and adapted for revo-

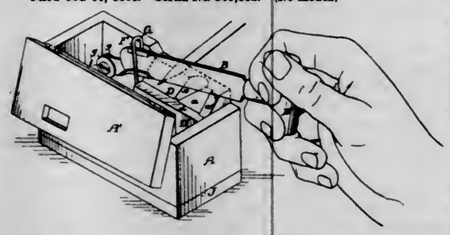
luble attachment to said plate, means for adjusting one of said pulleys toward or from a line joining the axes of the others, a drum constructed for revoluble attachment to said plate, said drum consisting of a disk portion possessing a central hub, an inner flange, an outer flange and cigar-holders or grooves extending between the outer and inner flanges whereby the interval between said flanges is divided into air-chambers, brands constructed to be fixed within the said cigar-holders, a belt, means for serving cigars to the cigar-holders of said drum, mechanism for operating said belt, and an adjustable source of heat, substantially as described.

4. In a device for branding cigars, the combination of a main frame plate, three pulleys triangularly placed and adapted for revoluble attachment to said plate, means for adjusting one of said pulleys toward or from a line joining the axes of the others, a drum constructed for revoluble attachment to said plate, said drum consisting of a disk portion possessing a central hub, an inner flange, an outer flange and cigar-holders or grooves extending between outer and inner flanges whereby the interval between said flanges is divided into air-chambers, brands constructed to be fixed within the cigar-holders of said drum, a belt, devices adapted to bear upon said belt and to maintain constant the pressure contact between belt and drum, means for serving cigars to the cigar holders of said drum, mechanism for operating said belt, and an adjustable source of heat, substantially as described.

5. In a device for branding cigars, the combination of a main frame-plate, three pulleys triangularly placed and adapted for revoluble attachment to said plate, means for adjusting one of said pulleys toward or from a line joining the axes of the others, a drum constructed for revoluble attachment to said plate, said drum consisting of a disk portion possessing a central hub, an inner flange, an outer flange and cigar holders or grooves extending between outer and inner flanges whereby the interval between said flanges is divided into air chambers, brands constructed to be fixed within the cigar-holders of said drum, a belt, a lever comprising two side bars formed for pivotal connection with said plate, a revoluble roller adapted for arrangement between said side bars and a receptacle to receive and retain weights, said receptacle constructed for attachment to the outer ends of said side bars, means for serving cigars to the cigar-holders of said drum, mechanism for operating said belt, and an adjustable source of heat, substantially as described.

6. In a device for branding cigars, the combination of a main frame-plate, three pulleys triangularly placed and adapted for revoluble attachment to said plate, means for adjusting one of said pulleys toward or from a line joining the axes of the others, a drum constructed for revoluble attachment to said plate, said drum consisting of a disk portion possessing a central hub, an inner flange, an outer flange and cigar-holders or grooves extending between outer and inner flanges whereby the interval between said flanges is divided into air-chambers, brands constructed to be fixed within the cigar-holders of said drum, a belt, a lever comprising two side bars formed for pivotal connection with said plate, a revoluble roller adapted for arrangement between said side bars and a receptacle to receive and retain weights, said receptacle constructed for attachment to the outer ends of said side bars, means for serving cigars to the cigar-holders of said drum, mechanism for operating said belt, a receiving-tray suitably attached to said frame-plate, an ejector-wire, and an adjustable source of heat, substantially as described.

573,731. PENCIL-SHARPENER. THOMAS WARING, Camden, N. J. Filed Oct. 16, 1895. Serial No. 565,882. (No model.)



Claim.— 1. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, and a pivoted paring-knife having a loose pivot-joint whereby a certain amount of lateral freedom of the knife is permitted, substantially as specified.

2. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, a pivoted paring-knife having a loose pivot-joint whereby a certain amount of lateral freedom of the knife is permitted, and a guide-loop serving to limit such lateral freedom, substantially as specified.

3. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, and a vibrating knife pivoted so as to have a limited amount of lateral freedom, with a guard rib or projection serving to prevent the cutting edge of the knife-blade from coming into contact with the supporting-bed, or breaking the lead when paring away the wood from around the same, substantially as specified.

4. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, a pivoted clip, and a paring knife engaging with said clip and detachable therefrom, substantially as specified.

5. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, and a paring-knife pivoted so as to have a limited amount of lateral freedom having at its free end a T-shaped handle, substantially as specified.

6. A pencil-sharpening device consisting of a box or receptacle having a table or bed for the support of the pencil, a whetstone secured to the lid of the box, a clip pivoted to the box, and a vibratable paring-knife engaging with but detachable from said pivoted clip, substantially as specified.

573,732. RATCHET-WRENCH. EDWARD T. WARN, Malden, Mont., assignor of two-thirds to Frank Pick and Charles Drosch, same place. Filed Aug. 11, 1896. Serial No. 602,399. (No model.)



Claim.—1. A ratchet-wrench, comprising ring-plates having ratchet-teeth on their inner surfaces, diametrically opposite flanges extended transversely within the ring-plates and secured thereto, guide-bars supported by said flanges, jaws movable on said guide-bars, screws having rotary bearings through the flanges and having engagement with tapped holes in the jaws, each of said screws having a pinion on its outer end, rings having teeth formed on their inner sides to engage with said pinions on the screws, a tubular handle, an adjusting-rod movable longitudinally in said handle, a pinion on the inner end of said rod, adapted for engagement with the teeth of said rings, and pawls pivotally mounted on the handle and adapted for engagement with the ratchet-teeth of the ring-plates, substantially as specified.

2. A ratchet-wrench, comprising ring-plates having ratchet-teeth on their inner surfaces, diametrically opposite flanges extended transversely within the ring-plates and secured thereto, guide-bars supported by said flanges, jaws movable on said guide-bars, screws having rotary bearings through the flanges and having engagement with tapped holes in the jaws, each of said screws having a pinion on its outer end, rings having teeth formed on their inner sides to engage with said pinions on the screws, a tubular handle, an adjusting-rod movable longitudinally in said handle, a pinion on the inner end of said rod, adapted for engagement with the teeth of said rings, pawls pivotally mounted on the handle and adapted for engagement with the ratchet-teeth of the ring-plates, and a spring for moving the adjusting-rod outward, to disengage its pinion from the teeth of the rings, substantially as specified.

3. A ratchet-wrench having two ring-plates composing a frame, two guide-bars extending across the ring-plates, and in rigid connection therewith, two jaws sliding toward and over each other and movable on the guide-bars, screws rotatably held by the ring-plates and having threaded connection with the jaws, a cog-ring, having circumferential movement between the ring-plates, a pinion fixed to each screw, the pinions respectively meshing with the cog-ring, and means for turning the cog-ring, substantially as described.

4. In a wrench, the combination of a handle, a circular band secured to the handle, two ring-plates revoluble within the band and connected to each other, two guide-bars rigidly connected with the ring-plates, two jaws sliding on the guide-bars, a screw for each jaw, the screws being revolubly supported by the ring-plates, a cog-ring circumferentially movable between the ring-plates, a pinion for each screw, the pinions meshing with the cog-rings, means for turning the cog-ring, and means for removably fixing the ring-plates to the band, substantially as described.

5. In a wrench, the combination of a handle, a rod movable through the handle, a band held by the handle, a pawl carried by the handle, a circular frame revolubly held by the band and capable of being engaged by the pawl whereby it may be turned with the band, two jaws held by the frame, revolubly-mounted screws carried by the frame and respectively having connection with each jaw, a cog-ring revoluble in the frame, a pinion fixed to each screw the pinions meshing with the cog-ring, and a pinion on the rod, said last pinion being capable of engaging the cog-ring to move the same and adjust the jaws, substantially as described.

6. In a wrench, the combination of a frame, a handle by which the frame is revolubly carried, means carried by the handle and engaging the frame to turn the same with the handle, a jaw movable within the frame, a revolubly-mounted screw having threaded connection with the jaw, a cog-ring revoluble within the frame, a pinion fixed to the screw and meshed with the cog-ring, and means for turning the cog-ring, substantially as described.

7. In a wrench, the combination with a handle and a band carried by the handle, of a frame revoluble within the band, a jaw removably carried by the frame, means for sliding the jaw, a pinion in connection with said means, a cog-ring revoluble within the frame and meshed with the pinion, and means for turning the cog-ring and for moving the frame with the handle, substantially as described.

573,733. NECKTIE-FASTENER. WILLIAM W. WATERBURY, Mobile, Ala. Filed May 27, 1896. Serial No. 593,343. (No model.)



Claim.—1. A necktie-fastener comprising a plate provided with means for attachment to neckwear and having tongues at or near its opposite ends which face in opposite directions and stand away from the plane of the plate, and having an intermediate detent, substantially as and for the purpose set forth.

2. A necktie-fastener comprising a plate provided with means for attachment to neckwear and having spring tongues at or near its opposite ends facing in opposite directions and standing away from the plane of the plate, and having an intermediate detent, substantially as set forth for the purpose described.

3. A necktie-fastener comprising a plate provided with means for attachment to neckwear and having integral tongues at or near its opposite ends facing in opposite directions, and having an intermediate detent extending about at right angles to the plane of the plate, the said tongues and detent being cut or punched from the body of the plate, substantially in the manner set forth.

4. A necktie-fastener comprising a plate having tongues at or near its opposite ends, and having an intermediate detent standing about at right angles to the plane of the plate and formed with teeth at its outer edge, substantially as and for the purpose specified.

5. A necktie-fastener comprising a plate having oppositely-facing tongues at or near its ends, and formed with a detent intermediate of the tongues curved and toothed on its outer edge, substantially as set forth.

6. A necktie-fastener comprising a plate having oppositely-extending tongues, an intermediate detent, and side catches, and catch-pins applied to the opposite sides or edges of the plate and adapted to coöperate with the said catches, substantially as and for the purpose specified.

7. A necktie-fastener comprising a plate having its opposite ends inclined and provided with oppositely-extending tongues extending about parallel with the inclined ends of the plate, and having an intermediate detent extending about parallel with the tongues, substantially as shown and described.

8. The herein described necktie-fastener, comprising a plate having integral catches and formed with oppositely extending tongues and an intermediate detent provided by being cut or punched from the body of the plate, and pins applied to the plate and adapted to have their points engaged with the aforesaid catches, substantially as described.

573,734. BUFFING OR POLISHING DEVICE. HAROLD A. WEBSTER, Haverhill, Mass., assignor to George H. P. Flagg, trustee, Boston, Mass. Filed Oct. 16, 1895. Serial No. 565,845. (No model.)

Claim.—1. An appliance of the character specified, comprising a rotary holder and flexible longitudinal strips or members arranged substantially parallel with the axis of the holder and secured at their ends thereto, said strips collectively constituting a cushion or support adapted to be distended by centrifugal force.

2. An appliance of the character specified, comprising a rotary holder having at its end portions two series of bearings, and a continuous cord or strip of flexible material engaged with said bearings and extending lengthwise of the holder from one series of bearings to the other, said continuous strip forming a series of parallel stripe collectively constituting a cushion or support adapted to be distended by centrifugal force.

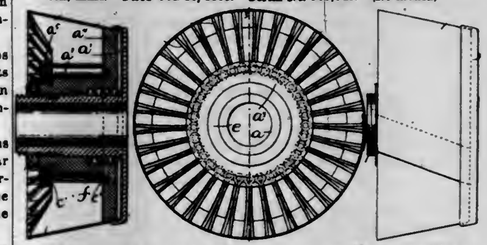


3. An appliance of the character specified, comprising a rotary holder, flexible longitudinal strips or members arranged substantially parallel with the axis of the holder and secured at their ends thereto and also adapted to be distended by centrifugal force, and a cover-protecting tube or sheath placed upon said strips.

4. An appliance of the character specified, comprising a rotary holder, flexible longitudinal strips or members arranged substantially parallel with the axis of the holder and secured at their ends thereto and also adapted to be distended by centrifugal force, a cover-protecting tube or sheath placed upon said strips, and a working cover placed upon said sheath.

5. An appliance of the character specified, comprising a rotary holder having at its end portions two series of bearings, and a continuous cord or strip of flexible material engaged with said bearings and extending lengthwise of the holder from one series of bearings to the other, said continuous strip forming a series of parallel stripe collectively constituting a cushion or support adapted to be distended by centrifugal force, and means for tightening said cord.

573,735. BUFFING OR POLISHING APPLIANCE. HAROLD A. WEBSTER, Haverhill, Mass., assignor to George H. P. Flagg, trustee, Boston, Mass. Filed Oct. 16, 1895. Serial No. 565,846. (No model.)



Claim.—1. An appliance of the character specified, comprising a rotary holder; a series of limp flaps engaged at their inner edges therewith and radiating therefrom, and constituting a cushion; clamping members at one end of the holder covering the edges of the flaps which form one end of the cushion and backing up the same at that end, the edges of the flaps which form the other end of the cushion extending unobstructedly outward from the holder; and a working cover encircling the cushion and supported by the outermost edges thereof said cover being held at one end of the cushion by said clamping members while its opposite end is yieldingly supported by the unobstructed portions of the flaps.

2. An appliance of the character specified, comprising a rotary holder having outwardly-projecting flanges at its ends, one formed as a clamping member and of greater diameter than the other; a cushion composed of a series of limp arms or flaps confined at their inner sides between said flanges, the edges of the flaps which form the inner end of the cushion being covered or obstructed throughout their extent by the larger flange while the edges forming the outer end of the cushion project unobstructedly outward from the smaller flange and are adapted to yield inwardly; a movable clamping member adapted to coöperate with the first-mentioned clamping member; means for adjusting said movable member; and a working cover encircling the flaps and held at one end by the said clamping members, and yieldingly supported at the other end by the unobstructed outer ends of the flaps.

3. An appliance of the character specified, comprising a rotary hub having a flange formed as a clamping member; a collar or sleeve loosely mounted on said hub, and having at one end a flange formed as a clamping member to coöperate with the flange on the hub and at the other end an adjustable flange of less diameter, said flanges on the sleeve having recesses in their confronting sides; a cushion composed of a series of limp arms or flaps confined between the flanges of the sleeve, the edges of the flaps which form the inner end of the

cushion being covered by the larger flange, while the edges which form the outer end of the cushion project unobstructedly outward from the smaller flange, and are adapted to yield; rods engaged with the flaps and with the recesses in the sleeve-flanges; a working cover encircling the flaps and held at one end by the clamping members, its other end being yieldingly supported by the unobstructed ends of the flaps; and a clamp-adjusting nut engaged with the hub and bearing against one end of the sleeve, substantially as and for the purpose described.

573,736. SAFETY DEVICE FOR REVOLVERS. DANIEL B. WESSON and JOSEPH H. WESSON, Springfield, Mass. Filed Apr. 6, 1896. Serial No. 586,339. (No model.)



Claim.—1. In a revolver, and in combination with the cylinder-support thereof, the hammer, mainspring, and trigger, and a hammer-catch in position to engage said hammer and hold it against firing, said hammer-catch being in position to be thrown out of such engagement with the hammer and rendered inert by the cylinder-support when the latter is in position for the proper firing of the weapon, all combined substantially as described.

2. In a revolver, the cylinder and its supporting-piece, the hammer and a spring-actuated catch therefor, and a projection from the cylinder-support impelled by a spring of superior power to that of the hammer-catch, and in position to disengage the same from the hammer when the cylinder is in firing position, all combined substantially as described.

3. In a revolver, the frame, barrel, and cylinder, the supporting-pin of the cylinder and a spring pressing the said pin into a socket in the frame when the cylinder is in firing position, a sliding bolt in the frame and a spring bearing the same into locking engagement with the hammer, said supporting-pin having such relation to the sliding bolt as to disengage the same from the hammer when the cylinder-pin is in normal closed position, all combined substantially as described.

4. In a revolver of the class described, the recoil-plate having a centrally-located socket therethrough, and a center pin in said cylinder automatically engaging in said socket, combined with the hammer, a bolt within the frame of the arm having a pin thereon entering the rear end of said socket for engagement with said center-pin, and an arm thereon for engagement with the tail of the hammer, and a spring moving said bolt toward said center-pin, substantially as set forth.

5. In a revolver of the class described, the recoil plate having a centrally-located socket therethrough, and a center pin in said cylinder automatically engaging in said socket, combined with the hammer having a recess in its border, a bolt within the frame of the arm having a pin thereon entering the rear end of said socket for engagement with said center-pin, and an arm thereon for engagement with said recess in said hammer, and a spring moving said bolt toward said center-pin, substantially as set forth.

573,737. SAW-CLAMP. DERRICK S. WEST and DAWSON JOHNSON, Boston, Mass. Filed Feb. 21, 1896. Serial No. 580,280. (No model.)

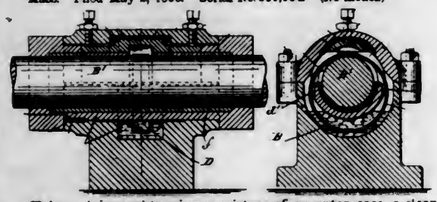


Claim.—1. The portable folding saw-clamp herein described, consisting of the clamping plates 1, 1, with screw-threaded bolt, thumb-nut, and spring, in combination with the jaws 6, 6, pivoted between the clamping-plates near one corner thereof, said plates having bosses 5 to engage with sockets 10 on the said jaws, whereby the latter may be secured at right angles to the plates to serve as a clamp or try-square, or turned into parallel position for compact carriage, substantially as and for the purpose specified.

2. As an improvement in saw-clamps, the corrugated metallic clamping-plates 1, 1, provided with clamping-bolt and thumb-nut about midway between the ends thereof, in combination with pivoted lipped jaws 6, 6, and suitable stops, whereby the said jaws may be held either in a right-angled or a parallel position relatively to the clamping-plates, and by the same clamping means that clamps the plates to the support, substantially as and for the purpose specified.

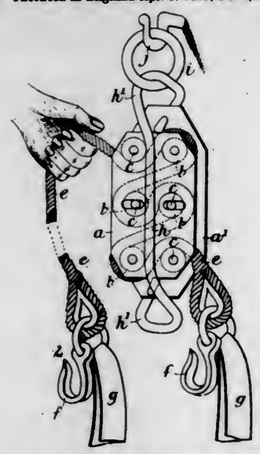
3. The herein-described improvement in saw-clamps, consisting of corrugated sheet metal clamping-plates 1, 1, with intermediate clamping means as described, in combination with the corrugated and lipped sheet-metal jaws 6, 6, pivoted at one corner of the clamping-plates, and provided with stops, whereby the said jaws may be held either at right angles or parallel to the said clamping-plates, and compressed by the same clamping means that secures the plates to the support, substantially as and for the purpose specified.

573,738. JOURNAL-BEARING. PETER J. WESTPHAL, Holyoke, Mass. Filed May 2, 1896. Serial No. 589,984. (No model.)



Claim.—A journal-bearing consisting of an outer case, a sleeve inclosed in said case, which sleeve has a removable cap, one or more set-screws in the outer case the inner ends of which have a bearing on said removable cap for adjusting the same, and a metallic member within said outer case passing under said inner cap and bearing on the upper surface of the shaft within said sleeve and rotating therewith for conveying oil to said shaft from a reservoir beneath it, substantially as described.

573,739. FRICTION PULLEY-BLOCK. EDWIN R. WETHERED, London, England. Filed June 22, 1896. Serial No. 596,535. (No model.) Patented in England Apr. 5, 1895, No. 7,052.



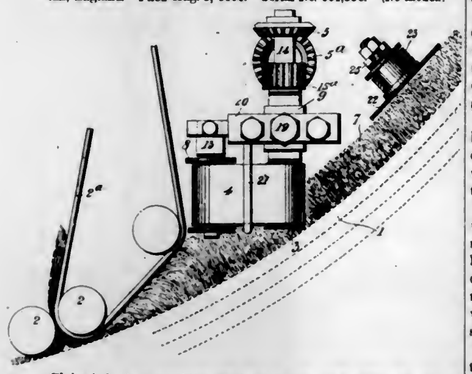
Claim.—1. In a friction pulley-block, the combination with the two cheeks, each provided centrally with two slots directly in line with each other and extending transversely of the cheeks, of stationary pulleys mounted in said cheeks adjacent to the ends of the same and a pair of movable pulleys mounted in said slots, said slots being of such length as to permit the pulleys to approach each other to clamp the rope between them, substantially as described.

2. The combination with the two cheeks, each provided centrally with two horizontal slots directly in line with each other, and extending transversely of said cheeks of stationary pulleys at each end of said cheeks, two movable pulleys mounted in said slots, said slots being constructed to allow the pulleys to approach each other to clamp the rope between them, the rope engaging said stationary pulleys passing around the outside of each of said movable pulleys and having a single portion passing between them, whereby the strain upon the rope will draw said movable pulleys toward each other and clamp the rope between them, and suspending means at each end of said cheeks and a belt secured to each end of said rope, substantially as described.

3. The combination with the pulley block comprising among its members, the two cheeks, stationary pulleys at each end of said cheeks, movable pulleys intermediate said stationary pulleys constructed to approach each other closer than the diameter of the rope and devices at each end of said block for suspending the same, of a rope engaging the stationary pulleys and passing between the movable pulleys, and a belt secured to each end of said rope, and an auxiliary belt secured directly to said pulley-block, substantially as described.

4. In a pulley-block the combination with the cheeks provided with the pulleys, of a suspending-rod secured to one cheek at one end, passing entirely around the other cheek and secured to the opposite end of the first named cheek, said rod having portions at each end of the block in line with the space between the two cheeks and a supension device engaging said rod, substantially as described.

573,740. COMBING-MACHINE. WILLIAM WHALLEY, ARTHUR CLEGG, THOMAS W. BENSON, WILLIAM PARRATT, and JOE ROBINSON, Halifax, England. Filed Aug. 3, 1896. Serial No. 601,536. (No model.)



Claim.—1. In a combing-machine of the class described and in combination, the circular comb, the drawing-off rollers, a pair of open-ended rolls situated inside the comb circle and at an angle thereto, a band carried by one of the rolls, a third roll over which the band also passes, means for adjusting the latter roll, means for adjusting the pressure or nip of the open-ended rolls, means for driving same, and means for supporting the three rolls, said rolls and band being adapted to partly draw out the fibers from the comb-circle before they are presented to the drawing-off rollers, substantially as described.

2. In a combing-machine of the character described, the combination with the circular comb and the drawing-off rollers, of a pair of open-ended nipping-rollers situated inside of the comb-circle and at an angle thereto, a band carried by one of the said rollers, a third roller over which the band also passes, mounted on an adjustable bearing for varying the tension of the said band, a tension device mounted over the nipper rollers for varying the pressure between the said nipping-rollers, means for driving and supporting the said rollers, a rotary beater mounted near said rollers for beating up the fibers protruding from the comb and means for driving the same, substantially as described.

3. In a combing-machine of the character described, the combination with the circular comb and drawing-off rollers, of a pair of open-ended nipper-rollers situated inside the comb circle and at an angle thereto, a slotted frame, shafts carrying said rollers journaled in said frame, gears carried by said shafts, a vertical shaft geared to one of the aforesaid roller-shafts for driving the same, a bearing-block movable in the slot of said frame and adapted to exert a downward pressure on the shaft of one of the said nipper-rollers, a screw mounted in said frame and a spring for varying the pressure of said block on said shaft, an adjustable bearing mounted in said frame, a roller mounted in said bearing, a band passing over said roller and also over one of the said nipper-rollers to partly draw out the fibers from the comb-circle before they are presented to the drawing off rollers, and a rotary beater carried near said rollers for beating up the protruding fibers, and means for driving the said beater, substantially as described.

573,741. ELECTRIC METAL SEPARATOR. HARVEY H. WHITACRE and ANDREW C. WOLFE, Wellsville, Ohio. Filed Nov. 8, 1895. Serial No. 568,325. (No model.)

Claim.—1. The combination of a magnet having the faces of its oppositely-placed poles recessed to form a passage or conduit, and a mass of diamagnetic metal embraced between the opposite faces of the poles and extending longitudinally of said passage and adapted to divide the current and deflect the material toward the poles, substantially as described.



2. The combination of a magnet having the faces of its oppositely-disposed poles recessed to form a passage or conduit, and a partition of diamagnetic metal, extending longitudinally of said passage and embraced between the faces of the oppositely-placed poles, whereby the conduit or passage is divided longitudinally and the efficiency of the magnet greatly increased, substantially as described.

3. The combination with a magnet having poles in proximity to each other and recessed along their opposing faces to form a conduit, and a plate of diamagnetic metal interposed between the pole-faces and projecting within said conduit, and adapted to divide the current and deflect the material toward the poles.

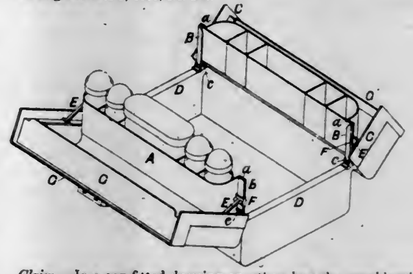
4. The combination with a polar magnet and a cylinder or conduit-pipe of diamagnetic metal embraced by the poles of said magnet, of a normally-closed valve in said cylinder or pipe, and means connected to said valve and operated by said magnet when the same is energized, whereby the valve is open only when the magnet is energized, substantially as described.

5. The combination of a magnetic separator, pipe connections leading to and from the same, a valve in the pipe connections, a source of electrical energy, means for electrically operating the valve and wire connections, whereby when the magnetic separator is energized the valve is operated.

6. In a magnetic separator, the combination of a magnet which, when energized, serves to make the separator operative, with a signaling device comprising an electric circuit and a signal adapted to be actuated by said circuit, and an armature normally closing said circuit to actuate said alarm, but in a position to be attracted by said magnet and break the signal-circuit when the magnet is energized, whereby the alarm is sounded when the magnet is not operative, substantially as described.

7. In a magnetic separator, a magnet in operative relation with the conduit of the separator, a normally-closed valve in said conduit, and a normally-closed signal-operating electrical circuit, and means operated by said magnet for opening said valve and breaking said electrical circuit when the magnet is energized, substantially as described.

573,742. DRESSING-BAG. WILLIAM F. WILLIAMS, London, England. Filed Feb. 5, 1896. Serial No. 578,077. (No model.) Patented in England Jan. 5, 1895, No. 365.



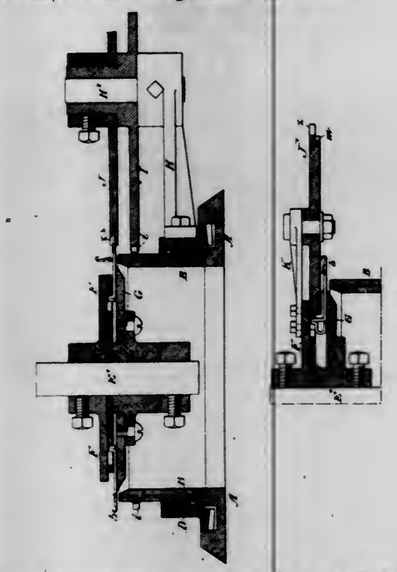
Claim.—In a top-fitted dressing or other bag the combination, with channeled standards pivoted about the bag-head hinges, of carrier-frames for the fittings cranked or provided with return ends and flanges adapted to fit removably in the channeled standards as described.

573,743. RIB-KNITTING MACHINE. LOUIS N. D. WILLIAMS, Ashbourne, Pa., assignor of one-half to Robert W. Scott, Philadelphia, Pa. Filed Sept. 9, 1896. Serial No. 605,322. (No model.)

Claim.—1. The combination of the needle-cylinder, the needle-dial, the cylinder cam-box and the dial cam-plate of a rib-knitting machine, with an externally-located and peripherally-notched pattern disk carried by one of the rotative elements of the machine, and combined with means whereby it is caused to turn around its own axis as it is carried around with said rotating element of the machine.

2. The combination of the needle-cylinder, the needle-dial, the cylinder cam-box and the dial cam-plate of a rib-knitting machine

with an externally-located and peripherally-notched pattern-disk carried by one of the rotative elements of the machine, and constructed to act upon the ends of the dial-needles, said disk being combined with means whereby it is caused to turn around its own axis as it is carried around with said rotating element of the machine.



3. The combination of the needle-cylinder, the needle-dial, the cylinder cam-box, and the dial cam-plate of a rib-knitting machine, with an externally-located and peripherally-notched pattern-disk mounted upon and rotating with one of the rotating elements of the machine, and combined with a spur-wheel meshing with the teeth on the fixed element of the machine, whereby said pattern-disk is caused to rotate around its own axis as it is carried around with said rotating part of the machine.

4. The combination of the needle-cylinder, the needle-dial, the cylinder cam-box and the dial cam-plate of a rib-knitting machine, with an externally-located and peripherally-notched cam-disk, a spur-wheel carrying said disk, a bracket on the cam-cylinder, and a spindle on said bracket upon which the spur-wheel is mounted so as to be free to rotate, said spur-wheel being adapted to mesh with teeth upon the needle cylinder of the machine.

573,744. LATRINE. JAMES A. WILLS, Philadelphia, and LLEWELLYN E. JORDAN, Wilkinsburg, Pa., assignors to the Smead & Wills Warming and Ventilating Company, Philadelphia, Pa. Filed July 25, 1896. Serial No. 600,483. (No model.)

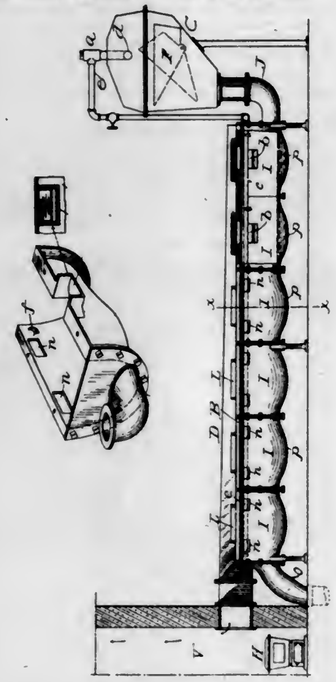
Claim.—1. A latrine having a series of depressions in its bottom, said depressions being transversely and longitudinally curved, the longitudinal curvature being uniform at the opposite ends of each depression, and all being arranged in the same horizontal plane, substantially as shown and described, whereby the bottom forms a continuous horizontal undulated surface from end to end, free from transverse ribs, angles, or steps, as set forth.

2. A latrine having its bottom provided with a series of longitudinally and transversely curved surfaces forming a series of shallow depressions, all arranged in the same horizontal plane, in combination with an inlet or flushing pipe having its mouth made of an elliptical form with its greater diameter arranged transversely of the latrine, the mouth of said pipe being arranged to deliver the water horizontally in the line of the longer axis of the latrine, substantially as shown and described.

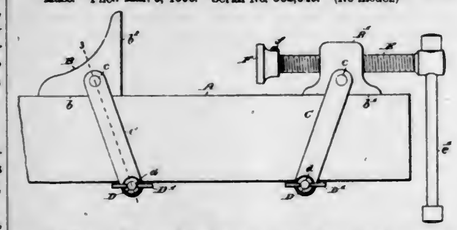
3. A latrine composed of a series of sections, each section being provided with one or more air-inlets at its front under the seat, and an air-outlet at the rear, in combination with an air-duct connecting with all of said air-outlets and with a vent-stack provided with means for drawing air continuously through the same, substantially as shown and described.

4. In combination with a latrine having air inlets and outlets arranged at intervals throughout its length, a ventilating-duct connecting to the several outlets, with a ventilating-shaft, with means for producing a draft through the same, substantially as shown and described.

5. In combination with a latrine having a series of air-outlets connecting with an air-duct common to all of said outlets, one or more valves arranged to regulate and thereby equalize the draft through the several outlets, substantially as shown and described.



573,745. WOODWORKER'S CLAMP. ADDISON WILSON, Lowell, Mass. Filed Mar. 6, 1896. Serial No. 582,046. (No model.)



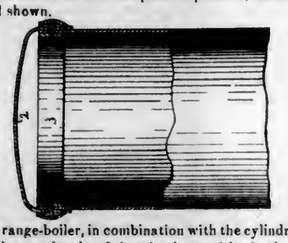
Claim.—1. The combination of a clamp bar a jaw, straps, pivoted thereto at opposite sides thereof, and a screw or bolt passing through said straps below said clamp bar to draw said straps against said clamp-bar, and to hold said jaw by the friction of said straps on said bar as and for the purpose specified.

2. The combination of a clamp-bar two jaws, a pair of straps, pivoted to opposite sides of each of said jaws, and screws or bolts, each passing through both straps of the same pair below said clamp-bar, to draw said straps against said clamp-bar and to hold said jaws by the friction of said straps on said bar, one of said jaws having a gripping surface integral therewith, a screw, turning in the other of said jaws, and a gripping-piece, arranged to swivel upon the point of said screw, as and for the purpose specified.

3. The combination of a clamp-bar a jaw, straps, pivoted thereto at opposite sides thereof, a screw or bolt to draw said straps against said clamp-bar and a gripping-piece pivoted on said screw or bolt and having a roughened or toothed surface to engage said clamp-bar, as and for the purpose specified.

573,746. RANGE-BOILER. ROBERT M. WILSON, Rome, N. Y. Filed Apr. 1, 1896. Serial No. 585,757. (No model.)

Claim.—1. In a range-boiler, the combination with the cylindrical shell and the head, of an inner ring having apertures or cavities; portions of the metal of the head and shell extending into said apertures or cavities to lock the parts in position, substantially as described and shown.

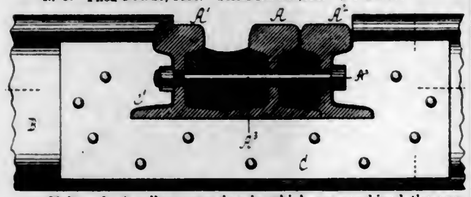


2. In a range-boiler, in combination with the cylindrical shell and the top and bottom heads, of rings having cavities in their outer faces arranged within the shell at both ends; portions of the metal of the shell and heads extending into said cavities and filling them, substantially as described and shown.

3. In a range-boiler, the combination with the cylindrical shell and top and bottom heads; of inner rings arranged within the shell at both ends and having apertures or cavities; a portion of the metal of heads and shell extending into said apertures or cavities; and exterior metal rings covering the joints between the heads and shell, substantially as described and shown.

4. In a range-boiler, the combination with the cylindrical shell and top and bottom heads; of inner metal rings set within the ends of the shell having cavities in their outer faces; a portion of the metal of heads and shell extending into said cavities to lock the parts together; exterior metal rings covering the joints and solder run in to fill the space around the heads and shell within said exterior rings, substantially as described and shown.

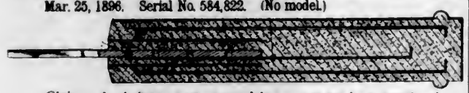
573,747. RAILWAY-CROSSING. WILLIAM C. WOOD, Brooklyn, N. Y. Filed Feb. 29, 1896. Serial No. 581,252. (No model.)



Claim.—1 A railway-crossing in which are combined the continuous rails, as A, of a steam road and rails, as B, of a street-road, with recesses as C', in the rails of the street-road, to receive and support the rails of the steam-road, and reinforcing-plates, as C, secured to the rails of the street-road opposite to their said recesses, substantially as and for the purpose herein described.

2. In a railway-crossing, the street-rails, as B, with recesses as C', and reinforcing plates, as C, opposite to said recesses, in combination with the main stock-rails, as A, of a steam-road, the auxiliary stock-rails, as A^2, the guard-rail, as A', a filling between said rails and screw-bolts, as A^3, uniting the same, substantially as and for the purpose herein described.

573,748. FENCE-POST. ELLERY W. WOOD, Chicago, Ill. Filed Mar. 25, 1896. Serial No. 584,822. (No model.)

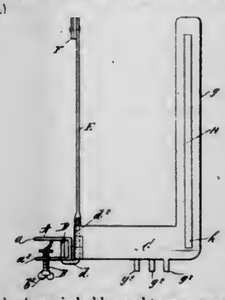


Claim.—1. A fence-post, comprising a cement base portion having metal strengthening-rods embedded therein, a metal tube centrally extending from the top into the cement, and a central rod extending from the cement into the tube and formed with a laterally-bent end, substantially as described and for the purpose specified.

2. A fence-post comprising a cement base portion provided with a central metal tube projecting down into the body thereof, a holding-rod having its lower end in the cement and its upper end extending into the metal tube and formed with a lateral projecting end, a post having its lower end secured on the end of the rod in the tube, and cement in the tube, substantially as specified.

3. A fence post, comprising a cement base portion formed with an annular flange adjacent to its base, strengthening-rods embedded in the cement, a metal tube in the central upper portion of the base, a rod having its lower portion in the base and projecting into the tube, a top post-section fastened to the upper end of the rod in the tube, and cement in the tube, substantially as and for the purposes specified.

573,749. MUSIC HOLDER AND TURNER. MARIA L. W. ZINGERMAN, Long Island City, N. Y. Filed June 9, 1896. Serial No. 594,893. (No model.)

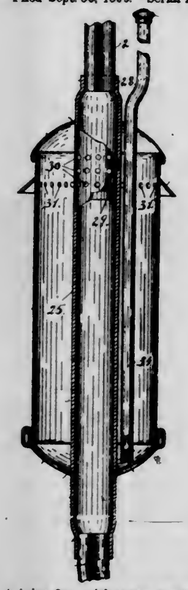


Claim.—1. A music holder and turner, comprising a clamp which is adapted to be secured to a rack or other support, said clamp being provided with a vertical bar, to the upper end of which are pivotally connected two arms, and a plurality of outwardly-directed arms which are pivotally connected with the bottom of said rod or bar, and which are provided with upwardly-directed extensions, to each of which is secured a spring, substantially as shown and described.

2. A music holder or support, comprising a clamp, which is adapted to be secured to a rack or other device, said clamp being provided with an upwardly-directed rod or bar to the upper end of which are pivotally connected two arms, and a plurality of outwardly-directed arms which are pivotally connected with the bottom of said rod or bar and each of which is provided with a downwardly-directed projection, said arms being also each provided with an upwardly-directed extension, each of which is provided with a long spring which is secured to the bottom thereof, substantially as shown and described.

3. A music holder and turner, comprising a clamp A, which is adapted to be secured to a rack or other support, said clamp being provided with an upwardly-directed rod or bar E, to the upper end of which are pivoted two arms as F, and a plurality of outwardly-directed arms pivotally connected with the lower end of said rod or bar and adapted to swing thereon, each of said outwardly-directed arms being provided with an upwardly-directed extension, and each of said extensions being provided with a long spring which is secured to the bottom thereof, and which extends upwardly, substantially as shown and described.

573,750. COMBINED LIGHTNING AND WATER CONDUCTOR. LAWSON ADAMS, Buffalo, N. Y., assignor of one-half to Anton Reith, same place. Filed Sept. 30, 1896. Serial No. 607,416. (No model.)



Claim.—1. A joint for uniting two sections of the connected adjacent pipes, both open on one side and forming a combined lightning

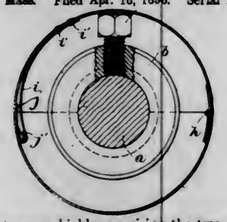
and water conductor, such joint consisting of twin apertured plates having registering surfaces and provided with side-apertured lugs for securing the plates together at the registering surfaces, the sides of the plates opposite the registering surfaces being provided with hollow tapering extensions adapted for union with the ends of the combined lightning and water conductor sections.

2. A joint for uniting two sections of the connected adjacent pipes, both open on one side and forming a combined lightning and water conductor, such joint consisting of twin apertured plates, having registering surfaces, each provided with a hollow projection extending into a similarly-shaped recess in the opposite registering surface and side apertured lugs upon the plates for securing them together at the registering surfaces, the sides of the plates opposite the registering surface being provided with hollow tapering extensions adapted for union with the ends of the combined lightning and water conductor sections.

3. The reservoir for use in connection with the combined lightning and water conductor shown and described, consisting of a cylinder having central openings in its top and bottom, the opening in the bottom being screw-threaded a tube longer than the reservoir and screw-threaded at its lower end adapted for insertion through the opening in the top of the cylinder and for screw-threaded engagement with the opening in the bottom of the cylinder, the tube being plugged near its upper end and having outlet-orifices above the plug and within the cylinder, and a series of outlet-orifices in the side wall of the cylinder adjacent to the orifices in the tube, the projecting ends of which are adapted for union with the combined lightning and water conductor.

4. The reservoir for use in connection with the combined lightning and water conductor shown and described consisting of a cylinder having central openings in its top and bottom, the opening in the bottom being screw-threaded, a tube longer than the reservoir and screw-threaded at its lower end, adapted for insertion through the opening in the top of the cylinder and for screw-threaded engagement with the opening in the bottom of the cylinder, the tube being plugged near its upper end and having outlet-orifices above the plug and within the cylinder, a series of outlet-orifices in the side wall of the cylinder adjacent to the orifices in the tube, the projecting ends of which are adapted for union with the combined lightning and water conductor and an auxiliary tube with open lower end and removable cap or hood upon its upper end, such tube extending from a point above the surface of the ground and vertically through the reservoir to or adjacent to the bottom thereof for gaging the depth of water therein or artificially filling the same.

573,751. SET-SCREW COVER FOR SHAFTING. CARL F. ANDERSON, Everett, Mass. Filed Apr. 16, 1896. Serial No. 587,757. (No model.)



Claim.—A set-screw shield comprising the two semicircular sections having inner bearing edges formed to bear on a shaft and collar, a hinge connecting the sections and located within the casing, a spring-catch attached to the interior of one of the sections and projecting from the same, and a plate or ear affixed to the other section and provided within the casing with a shoulder to engage said catch, the said ear being arranged to enter the section from which the spring-catch projects and prevent lateral movement of either section, one of the sections having an orifice arranged to permit access to the spring-catch, of a displacing device.

573,752. SUCTION-ROLL FOR PAPER-MAKING MACHINES. FRED E. ALLEN, Erie, Pa., assignor of five-eighths to Marion B. Marsh and William F. Weiblen, same place. Filed May 27, 1896. Serial No. 593,247. (No model.)

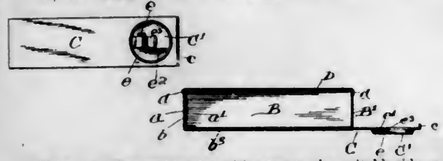
Claim.—1. The combination in a suction-roll, of a hollow cylinder, journals, one of which is hollow, on the heads thereof, a suction-pipe communicating with said hollow journal, a series of longitudinal chambers or pockets around the periphery of said cylinder, openings from each of said chambers or pockets through the shell of the cylinder, valves in said chambers adapted to close the openings through the cylinder-shell, and valve-rod mechanism for intermittently opening said valves, substantially as and for the purpose set forth.

2. The combination in a suction-roll, of a hollow cylinder, journals, one of which is hollow, on the heads of said cylinder, a suction-pipe communicating with said hollow journal, a series of chambers around the periphery of the cylinder, openings through the cylinder-shell in the bottom of each chamber, valves for closing said openings, valve-rods for moving said valves, and cam mechanism for successively operating said valve-rods and valves at a certain point during each rotation of said cylinder, substantially as and for the purpose set forth.



3. The combination in a suction-roll, of a hollow cylinder, journals, one of which is hollow, on the heads thereof, a suction-pipe extending through said hollow journal, substantially to the center of said cylinder, a horizontal pan within said cylinder, secured to and draining into said suction-pipe, a series of equal-sized longitudinal chambers or pockets around the periphery of said cylinder, a series of openings through the cylinder-shell in the bottom of each of said chambers or pockets, valves in each of said chambers adapted to close the openings through the cylinder-shell, a valve-rod connected with the valves in each of said chambers extending out through the ends of each chamber, an arm on each of said valve-rods, and a cam-surface adapted to engage said arms and successively oscillate each valve-rod so as to open the valves connected therewith at one point during each rotation of said cylinder, substantially as and for the purpose set forth.

573,753. BOX. ZEPHANIAH A. BARRETT, Chicago, Ill. Filed Jan 16, 1896. Serial No. 575,727. (No model.)



Claim.—1. The combination with a box having suitable side, end and bottom pieces, of a cover, C, removably secured thereon, the socket, C', and a catch pivoted in said socket having its ends, e', e^3, bent at right angles to the pivot; substantially as and for the purpose set forth.

2. The combination with a box having suitable side, end and bottom pieces, and the grooves, a^3, b^3, of the cover, C, sliding in said grooves, the socket, C', the arm, e^3, pivoted in said socket, the stop, e', and the downturned edge, c; substantially as described.

3. The combination with a box having suitable side, end and bottom pieces, and said side pieces being bent to form grooves, a^3, b^3, of the cover, C, sliding in said grooves, the socket, C', the stop, c, the locking device comprising substantially the wire pivoted in the socket, C', and having the portions, e', e^3, and the portion, e, at right angles thereto, said portion, e^3, being adapted to strike the end of the box when said cover is removed except when held in an inverted position; substantially as described.

573,754. FASTENING DEVICE. WILLIAM S. BECHTOLD, Newark, N. J. Filed May 27, 1896. Serial No. 593,202. (No model.)

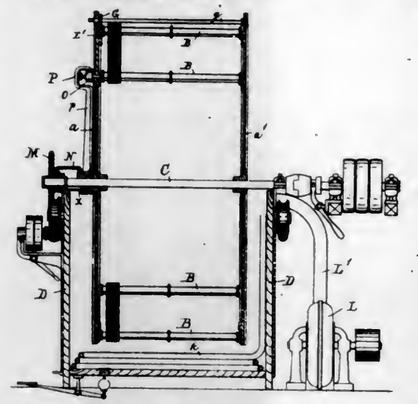


Claim.—1. A fastening device composed of a loop having reëntrant members terminating in laterally-extending prongs lying wholly within the body of the loop, substantially as and for the purpose specified.

2. A fastening device composed of an elastic loop having reëntrant members located in different planes and terminating in lateral, pointed prongs extending at angles to the plane of the loop, and lying wholly within the loop, substantially as and for the purpose specified.

3. A fastening device composed of a loop having reëntrant members terminating in laterally-extending prongs lying wholly within the body of the loop, and a suspension device formed on said loop, substantially as and for the purpose specified.

573,755. APPARATUS FOR DYEING. JULES BERGER, Paris, France. Filed Mar. 9, 1896. Serial No. 582,343. (No model.) Patented in France June 9, 1894. No. 239,169.

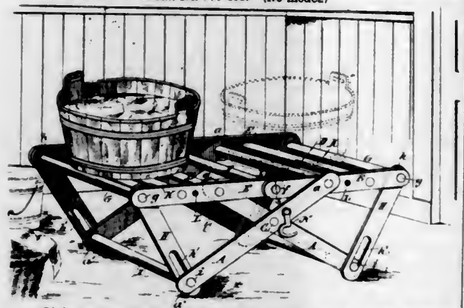


Claim.—1. In apparatus for dyeing yarns, the combination with the vat, of a drum having skein-roller-supporting rings connected with the inner surface of its sides, as described, the rings provided with ears for receiving the journals of the rollers, and the ears of the outer ring inclined in an opposite direction to that of the inner ring, substantially as and for the purpose set forth.

2. In apparatus for dyeing yarns, the combination with the vat, and a drum having skein-roller supports at each side thereof, with rollers having a square cavity in one end, a square rod to fit therein, a screw-stem in the outer end of the square rod, and a sleeve adapted to rotate around the said stem and rod the screw-stem provided with a wheel for operating same, substantially as set forth.

3. In apparatus for dyeing yarns, the combination, with a vat, and a drum having skein-supporting rollers, a sleeve connected with an outer end of each roller and a yoke, the said yoke adapted to be moved inward or outward by means of a crank and a clamp connecting same with the yoke-arm, substantially as set forth.

573,756. COMBINED TUB-SUPPORT, CLOTHES-HORSE, AND IRONING-BOARD. EDWIN L. BERGSTRESSER, Hublersburg, Pa. Filed June 13, 1896. Serial No. 595,485. (No model.)

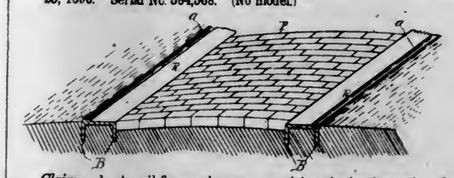


Claim.—1. A combined tub-support and clothes-horse, comprising the crossed members A, the bars E pivoted together at their inner ends and similarly connected at points intermediate of their ends to the upper ends of the members A, and the bars H pivotally connected at their upper ends to the outer ends of the bars E, and having their lower ends adjustably connected to the lower ends of the member A, substantially as described.

2. The combination with the cross-bars A, and the bars E pivotally connected at their inner ends with each other, and at points near such connections pivotally joined to the upper ends of the bars A, and the rungs F and D, of the bars H pivotally joined at their upper ends to the outer ends of the bars E, said bars H having elongated slots h' in their lower ends, the rungs G, and the rungs I, said rungs I having reduced ends adapted to pass through the slots h' and be secured to the lower ends of the bars A, substantially as shown and for the purposes described.

3. A combined tub-support, clothes-horse and ironing-board comprising a series of jointed bars A, E and H, and connecting-rungs G, F and I, so arranged that the bars E are adapted to be adjusted to a horizontal position to form a rest for the tube, or at an angle, said bars E having an opening L arranged to be in the same horizontal plane when the bars are adjusted at an angle, and the board M' having pins N at the rear end adapted to fit the openings L, said board M' preventing the parts forming the clothes-horse from collapsing, and having a hinged support O, and locking means for securely holding the said board in position, all arranged substantially as shown and for the purposes described.

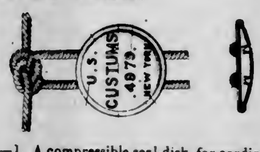
573,757. ROADWAY. ABEL BLISS, New Lenox, Ill. Filed Mar. 23, 1896. Serial No. 584,568. (No model.)



Claim.—1. A rail for roadways comprising the horizontal or flat portion R having the two depending parallel flanges B adapted to be set into the earth, in combination with the fish-plate for connecting the ends of two rails and having the inclined laterally-extending flanges D all arranged to operate substantially as and for the purpose set forth.

2. A rail for roadways comprising the horizontal or flat portion R having the two depending flanges B adapted to be set into the earth and having lateral projections or flanges for replacing wheels on the rail substantially as set forth.

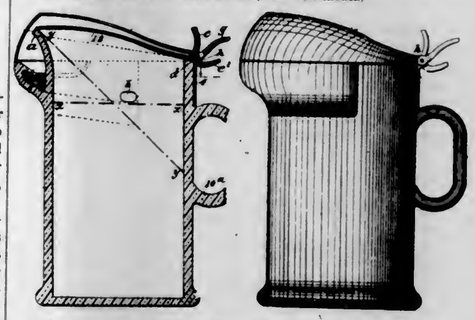
573,758. SEAL. EDWARD J. BROOKS, East Orange, N. J., assignor to the E. J. Brooks & Company, New York, N. Y. Filed Oct. 28, 1896. Serial No. 610,295. (No model.)



Claim.—1. A compressible seal-disk, for cording seals, composed of a back plate forming cord-passages, an internal concavo-convex plate provided with cord-locking prongs projecting from its concave side toward said passages, and an outer cup having a marginal rim which permanently interlocks the three parts with each other, all of suitable sheet metal.

2. The combination, with the ends of a sealing-cord, of a seal-disk of sheet metal comprising a back plate through which the cord extends, an internal plate having prong-forming ragged eyelets to interlock with the cord, and an outer cup having permanent distinguishing marks and permanently interlocked with said back plate by a marginal rim, substantially as hereinbefore specified.

573,759. MOLASSES-PITCHER. SILAS P. BROWN, Canova, S. D. Filed May 16, 1896. Serial No. 591,774. (No model.)



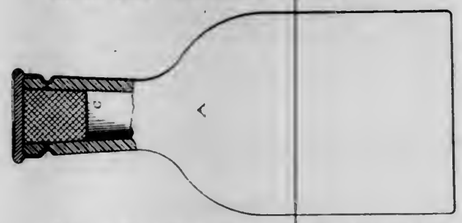
Claim.—1. The combination with a pitcher, of a hinged lid having a depending flange, adapted to cut off the flow of liquid from the pitcher, and also provided with spaced limbs at its rear edge, the upper limb affording means for enforcing the closure of the lid, substantially as described.

2. The combination with a pitcher, of a lid covering the lip on said pitcher and adapted to cut off the flow of liquid from said pitcher, said lid having spaced limbs at its rear edge, and a cover for the pitcher, said cover receiving the upper part of the pitcher and hinged on the same pivot as the lid, said cover having a thumb-piece projecting between the limbs of the lid and apertured to pass over the upper limb of said lid, substantially as described.

3. A pitcher having a lid hinged thereto and the lid having two limbs projecting from near its hinged portion and a cover hinged to the pitcher on an axis the same as the axis of the lid, the cover having a thumb-piece located and movable between the two limbs of the lid, substantially as described.

4. The combination with a body portion, of two independently-movable members pivoted thereto and on the same axis, one member having two limbs projecting from a point adjacent to the axis, and the second member having a thumb-piece independently movable in the space between the two limbs, substantially as described.

573,760. BOTTLE. FREDERICK H. BULTMAN, Cleveland, Ohio. Filed Feb. 6, 1896. Serial No. 578,253. (No model.)

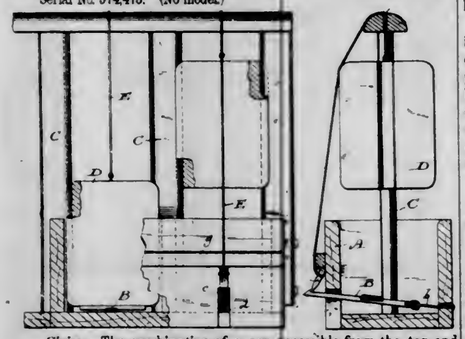


Claim.—1. The bottle having a neck with a shouldered breaking-groove about the same and a smooth even exterior above said groove, in combination with a rigid cap directly in contact with the surface of said neck above said groove and bent inward at its lower portion to engage over the shoulder of the said groove, whereby the bottle is so closed that it cannot be opened without breaking the neck, substantially as described.

2. A bottle provided with a single annular shoulder about its neck and a reduced portion coincident with said shoulder on which the neck is broken off to open the bottle, the exterior of the neck being plain and smooth above said shoulder, in combination with a cap of rigid material pressed into immediate contact with the surface of said neck above and about said shoulder and having its lower edge bent inward to lock on said shoulder, substantially as described.

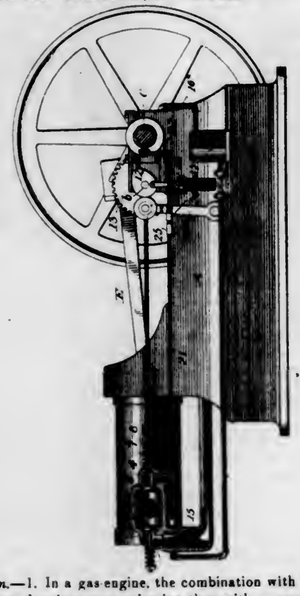
3. The bottle, substantially as described, having a neck with an annular shouldered groove forming a breaking-line when the bottle is opened and said neck having a plain interior and exterior surface above said groove, in combination with a cap of rigid material fitting closely upon the top edge and sides of said neck above the said breaking-line and having its lower edge bent inward and engaged beneath the shoulder of said groove, the said cap being such that the bottle cannot be opened without breaking the neck, and a cork in said neck extending above said breaking-line and bearing directly against said cap substantially as described

573,761. ANIMAL-TRAP. STEFAN CEDZO, Milwaukee, Wis., assignor of one-half to Martin Cedzo, same place. Filed Jan. 6, 1896. Serial No. 574,473. (No model.)



Claim.—The combination of a pen accessible from the top and having a wall thereof provided with a vertical slot and an exterior horizontal rib, a cross-shaped trigger in the pen, a cord connecting one end of the trigger with a wall of the pen opposite said slot through which the other end of said trigger extends, standards rising from said pen, a horizontal beam connecting the standards and provided with a vertical opening, a recurved flexible weight-hanger run through the opening in the beam, and a catch attached to the weight-hanger for arrangement under said pen-rib to engage the outer end of said trigger.

573,762. GAS-ENGINE. JOHN CHARTER, Jr., Sterling, Ill. Filed May 11, 1896. Serial No. 591,121. (No model.)



Claim.—1. In a gas-engine, the combination with the cylinder, of a mixing-chamber communicating therewith, a receptacle within said chamber provided at its upper end with openings and having an inwardly-opening valve at its lower end, and a supply-pipe leading to the receptacle, substantially as described.

2. In a gas-engine, the combination with the cylinder, of a mixing chamber communicating therewith, a receptacle within said chamber provided with a conical bottom, and at its upper end with openings, a valve in the lower end of said receptacle, and a supply-pipe leading to the receptacle, substantially as described.

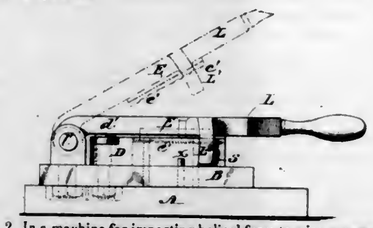
3. In a gas-engine, the combination with the cylinder, of a mixing-chamber communicating therewith, a receptacle within said chamber provided at its upper end with openings and at its lower end with a valve, means for heating the receptacle, and a supply-pipe communicating with the receptacle, substantially as described.

4. In a gas-engine, the combination with the cylinder, of a mixing-chamber communicating therewith, a receptacle within the said chamber provided at its upper end with an opening and at its lower end with a valve, a supply-pipe leading to the receptacle, and regulating and inlet valves in the supply-pipe, substantially as described.

5. In a gas-engine, the combination with the cylinder, of a mixing-chamber, a supply-pipe leading thereto, an inlet-valve, a valve-rod connected thereto and provided with a bearing, a reciprocating lever provided with a bearing normally adapted to make contact with the bearing of the valve-rod to move said rod longitudinally upon the exhaust-stroke of the piston, means for reciprocating the lever, and means for automatically moving the rod laterally to carry its bearing out of the path of movement of the bearing upon the reciprocating lever, substantially as described.

573,763. MEANS FOR IMPARTING HELICAL FORMS TO WIRE. DEWEY A. COBB, Philadelphia, Pa. Filed Oct. 24, 1892. Serial No. 449,876. (No model.)

Claim.—1. In a machine for imparting helical form to wire, the following essential elements in combination, a series or row of projections or bending devices, a second series or row of projections or bending devices alternating with or complementary to the said first series, a third series or row of projections or bending devices, a fourth series or row of projections or bending devices alternating with or complementary to said third series, means for supporting the said several series, and means whereby the said several series are caused to substantially simultaneously impinge upon an interposed straight wire to effect a sinuous bending thereof in two planes at right angles to each other and thereby cause it to take a helical form, substantially as specified.



2. In a machine for imparting helical form to wire, a compression device having coacting jaw or die portions between which the wire to be operated upon is interposed, and which are provided on their inner or working faces with a plurality of projections or bending devices arranged in four longitudinal lines or series projecting toward the wire in different directions, whereby when brought into forcible contact with said wire they effect therein a sinuous bending thereof in planes at right angles to each other and thereby cause it to take a helical form, in combination with means for actuating said jaw or die portions to effect such bending in a substantially simultaneous manner, substantially as specified.

3. In a machine for imparting helical form to wire, the combination of compression devices for effecting sinuous bendings of the wire in one plane, compression devices for effecting similar bendings in a plane at right angles to the first plane, and means for operating the said compression devices substantially simultaneously for the purposes set forth.

4. In a machine for the purpose recited, the combination of the fixed core having the vertical and lateral die portions, the pivoted side arms having the die portions to coöperate with the lateral die portions of the core, the pivoted lever having the die portions to cooperate with the vertical die portions of the core and the flaring lugs to engage and actuate the side arms, all constructed to operate substantially as and for the purpose specified.

5. In a machine for imparting helical forms to the shanks of hair-pins &c. the combination with a fixed part or core provided with vertical and lateral die portions, of laterally and vertically movable parts having each die portions which are complementary to the respective coöperating portions of said fixed part or core, and means for simultaneously actuating said movable parts, substantially as specified.

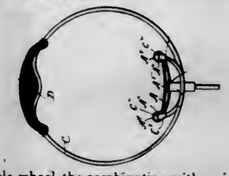
6. In a machine for imparting helical form to wire, the combination of two sets of complementary bending or compression devices arranged to act upon a piece of wire at four points on each portion thereof which is to form one whirl of the completed helix to bend or carry it to the four equidistant points on the periphery or circumference of the finished whirl which divide it into equal parts, together with means for causing the coacting movement or operation of said device, substantially as specified.

7. In a machine for imparting helical form to wire, the combination of two sets of complementary bending or compression devices arranged to act upon the wire at four points on each portion thereof which is to form one whirl of the finished helix to bend or carry it to the four equidistant points on the periphery of the finished whirl which divide it into equal parts, together with means for causing a coacting movement of said devices, the latter being also arranged to effect the bending for each whirl substantially simultaneously but gradually from one end of the wire toward the other, substantially as specified.

8. The combination with a pair of compression-dies arranged to act upon a piece of wire to bend it into sinuous form in one plane, of a second pair of dies arranged to effect a similar bend in a plane perpendicular to the first and at points intermediate thereof, and means for simultaneously actuating said pair of dies, substantially as specified.

573,764. VEHICLE-WHEEL. NELSON D. COE, New Haven, Conn., assignor of one-third to James N. Coe, Norton, Conn. Filed May 4, 1896. Serial No. 590,118. (No model.)

Claim.—1. In a vehicle-wheel, the combination with the rim thereof, of a series of independently formed, radially-arranged, substantially circular wire springs having their ends independently connected with the said rim, a sheet-metal tread applied to the outer portion of the said springs, and having its opposite edges connected therewith at points on opposite sides of the plane of the wheel, and a rubber cushion applied to the outer face of the tread and adapted to substantially cover the same.



2. In a vehicle wheel, the combination with a rim having slotted hollow beads formed upon its opposite edges, of a series of radially-arranged wire springs, having their ends crossed within the rim, and extended in opposite directions, and bent outward and furnished at their ends with heads which are entered into the said hollow beads through the slots therein, a tread applied to the outer portion of the springs, and a cushion applied to the tread, substantially as described.

3. In a vehicle-wheel, the combination with a rim having hollow beads formed upon its opposite edges, the said beads constructed with slots entering their outer edges so as to open laterally outward and having their outer ends extended inward and enlarged so as to open radially or directly outward; of a series of radially arranged wire springs having their ends crossed within the rim and extended in opposite directions, and bent outward and furnished at their ends with heads comprising buttons and shanks and entered into the said hollow beads through the slots therein, for coupling the springs with the rim; a tread applied to the outer portion of the springs, and a cushion applied to the tread.

4. In a vehicle-wheel, the combination with the rim thereof, of a series of radially-arranged wire springs applied to the said rim, a sheet-metal tread having its edges folded to form hollow beads which are slotted at regular intervals to receive the outer portions of the springs which are engaged on opposite sides of the plane of the wheel, and a substantially crescent-shaped cushion applied to the outer surface of the tread.

5. In a vehicle-wheel, the combination with the rim thereof, of a series of independently-formed, radially-arranged, substantially circular wire springs, having their ends independently connected with the said rim, and their outer portions curved inwardly, a sheet-metal tread of bowed cross-section, applied to the inwardly-curved outer portion of the springs, and a rubber cushion applied to the outer face of the tread which it substantially covers.

6. In a vehicle-wheel, the combination with the rim thereof, of a series of radially-arranged, substantially circular wire springs connected with the said rim, a sheet-metal tread of bowed cross-section, having its edges turned outward and inward to form hollow beads which are slotted at regular intervals to receive the outer portion of the springs with which the tread is connected on opposite sides of the plane of the wheel, and a substantially crescent-shaped cushion applied to the outer surface of the tread, and having its edges inserted into the said beads.

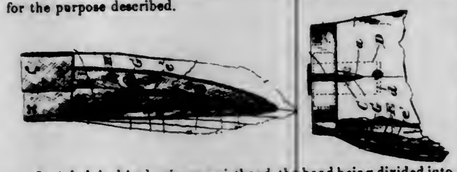
7. In a vehicle-wheel, the combination with the rim thereof, of a series of independently-formed, radially-arranged, substantially circular wire springs, having their ends independently connected to the said rim, a sheet-metal tread having its edges turned outward and inward to form hollow beads which are slotted at regular intervals to receive the outer portion of the springs with which the tread is connected on opposite sides of the plane of the wheel, and a cushion applied to the outer surface of the tread, and having its edges inserted into the said beads.

8. In a vehicle-wheel, the combination with a rim having slotted hollow beads formed upon its opposite edges, of a series of radially-arranged, substantially circular wire springs connected with the said rim, a sheet-metal tread having its edges folded to form hollow beads which are slotted at regular intervals to receive the outer portion of the springs to which the tread is connected by its edges on opposite sides of the plane of the wheel, and a substantially crescent-shaped cushion applied to the outer surface of the tread.

573,765. SKIRT. CHARLES COHN, Baltimore, Md. Filed Aug. 1, 1896. Serial No. 601,305. (No model.)

Claim.—1. As a new article of manufacture, a lady's skirt having within its placket, a reinforcing-strip, the inner fold of which is stitched to the inner fold of the placket, throughout its entire length, while the outer fold is stitched only at the top and bottom, leaving the remaining portion of the strip free or unstitched, which free portion together with the outer fold of the placket, constitutes a pocket-opening, in which a pocket is secured, and a placket-fastener consisting of buttons secured to the inner fold of the reinforcing-strip and buttonholes provided in the free portion of the outer fold thereof, that extend through said strip, so that when the fastener is in use,

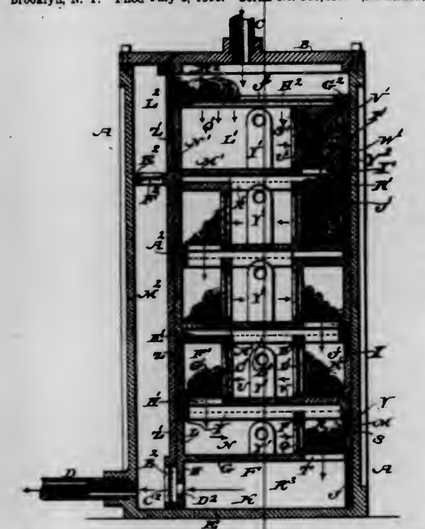
the buttons will lie in the mouth of the pocket, substantially as and for the purpose described.



2. A lady's skirt having a waistband, the band being divided into three sections, the rear division registering with the placket-opening and having a fastening device, the two other or side divisions being provided with pockets in their meeting ends, which receive and contain a strip of elastic material, whose ends are fastened therein some distance away from the said meeting ends, the skirt having its side seams immediately below and in line with the side divisions of the band open for a short distance and provided with small elastic cords, that act in conjunction with the elastic strip in the band divisions to form a yielding connection between the divided parts, substantially as and for the purpose described.

3. A lady's skirt having a waistband, the band being divided into three sections, each of which is constructed of a single piece of material, which is folded to form a double band, between the lower edges of which is stitched the upper part of the skirt, the rear division registering with the placket-opening and being provided with a fastening device, the two other divisions being so disposed as to lie upon the hips of the wearer and having a strip of elastic material extending between and into the double band sections, where its ends are securely fastened some distance away from the ends of such divisions, the skirt having its side seams immediately below and in line with side divisions of the band open for a short distance and provided with small elastic cords, which act in conjunction with the elastic strips in the band, to form a yielding connection between such parts, substantially as and for the purpose shown and described.

573,766. FILTER OR OIL-EXTRACTOR. HENRY A. COLLINS, Brooklyn, N. Y. Filed July 8, 1896. Serial No. 598,411. (No model.)



Claim.—1. A filter consisting of a plurality of boxes superimposed upon each other and provided with partitions, screens and filtering devices, a casing inclosing said boxes, an upright strip adjacent the latter and adapted to hold the same in position, the lower portion of said strip being provided with a passage having a screen therein, while the upper portion of said strip has a laterally-extending member with a screen therein, in combination with a partition supported upon the upper box, said partition having a passage therethrough with a screen therein.

2. In a filter, the herein-described filter-box, having sides and ends, and an open top and bottom, a laterally-extending partition located within said box so as to form upper and lower chambers, an upright partition located in the upper chamber and having a passage therethrough with a screen therein said passage leading to a chamber R, and a passage leading from the latter to the lower chamber of said box.

3. In a filter, the herein-described filter-box, consisting of the sides W and the ends X and Z, the inclosed chamber F' in one end of the said box, the outlet H' leading therefrom, suitable filtering material in said chamber F', a screen in a side thereof, a partition in the other end of the filter-box, whereby a chamber J' having an open top is formed, a screen in said partition, and filtering material in said chamber J'.

4. In a filter, a filter-box having inclosing sides and ends, a chamber in one end of said box having a closed top and open bottom, and an apertured side with a screen therein, a chamber in the opposite end of said box having an open top and closed bottom, and an apertured side with a screen therein, in combination with an intermediate chamber, having an imperforate bottom, and in communication with said end chambers.

5. A filter, consisting of the boxes L', F and U, constructed substantially as described and superimposed upon each other, a casing, a strip for holding said boxes in position, a partition E^3 provided with a screen interposed between said strip and said casing, a partition G^3 provided with the screen J^3 and supported upon the section L', said strip A^3 being provided with a passage B^3 having the screen C^3 therein.

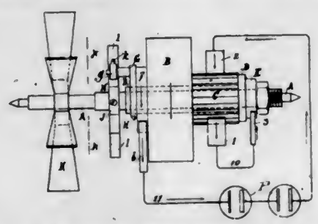
6. A filter consisting of a plurality of boxes superimposed upon each other and provided with filtering devices, a casing inclosing said boxes, an upright strip adjacent the latter and adapted to hold the same in position, the lower portion of said strip having a passage therethrough with a screen therein, while the upper portion of said strip has a laterally-extending member also with a screen therein, thereby forming upper and lower chambers for the reception of oil and purified water respectively, a screen supported on the upper box, an inlet for the upper portion of the filter, an outlet for purified water, and means for withdrawing oil from said upper chamber.

7. In a filter, an upper filter-box, consisting of a plurality of chambers, one of said chambers having an open top and imperforate bottom, and the adjacent chamber having a closed top and open bottom, and an upright screen separating said chambers, said box being of substantially uniform thickness throughout, and being provided with means for preventing it from shifting with respect to the adjacent box.

8. A filter consisting of upper, lower and intermediate filter-boxes, the upper box consisting of a plurality of chambers, one of the latter having an open top and closed bottom, while the adjacent chamber has a closed top and open bottom with an apertured partition separating said chambers, the intermediate boxes having end chambers and open tops and closed bottoms, and closed tops and open bottoms respectively, in communication with each other, and the lower box having upper and lower chambers, in combination with upper and lower oil and water chambers at a side of the filter, and means for withdrawing the contents of said latter chambers.

9. A filter consisting of upper, lower and intermediate filter-boxes, the upper box having a plurality of chambers, one of the latter having an open top and closed bottom, the adjacent chamber being separated therefrom by a screen and having a closed top and open bottom, a screen supported on said upper box, the intermediate boxes being provided with end chambers with screens therebetween, and having open tops and closed bottoms and closed tops and open bottoms respectively, in communication with each other, and the lower box having upper and lower chambers with filtering devices therein, in combination with means for withdrawing the oil and purified water from the filter.

573,767. AUTOMATIC SPEED-REGULATOR FOR ELECTROMOTORS. LOUIS DENAYROUZE, Paris, France. Filed Nov. 26, 1895. Serial No. 570,215. (No model.)

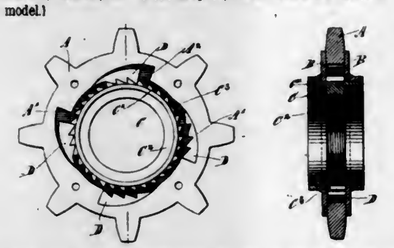


Claim.—1. A governor for electric motors, comprising a contact-disk mounted on the motor-shaft and connected with one brush of the commutator, a disk mounted on, and insulated from, the motor-shaft and provided with a contact, electric connection of said disk with the generator, and a contact having a flexible connection with the shaft and adapted to engage the former contact, substantially as described.

2. A governor for electric motors, comprising a contact-disk mounted on the motor-shaft and connected with one brush of the commutator, a disk mounted on, and insulated from, the motor-shaft and provided with a contact-roller, flexible weighted contact-arms secured to the shaft, one of which is adapted to engage with the former contact, and electrical connections, substantially as described.

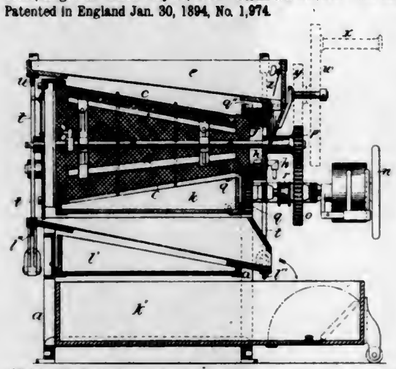
3. A governor for electric motors, comprising a contact-disk mounted on the motor-shaft and connected with one brush of the commutator, a disk mounted on, and insulated from, the motor-shaft and provided with a contact, a hub loosely mounted on the shaft and carrying a contact adapted to engage the former contact, a spring connecting the shaft and sleeve, and electrical connections, substantially as described.

573,768. POWER-TRANSMITTING DEVICE. CHARLES F. DINKLE, Carlisle, Pa. Filed May 18, 1896. Serial No. 591,970. (No model.)



Claim.—A power-transmitting device, comprising a ratchet-wheel C formed of a rim C' having an internal web C^3 to engage the part to be driven and a central annular series of ratchet-teeth C^2 projecting from the periphery of the hub, a sprocket-wheel in the form of an annulus loosely fitting over said ratchet-teeth and provided in its inner wall with wedge-shape recesses A' terminating at their front ends in shoulders A^2, loose wedge-shape pawls mounted in said recesses with their wider ends next to said shoulders and having toothed lower edges to engage the ratchet-teeth in the forward movement of the sprocket and be released therefrom when the sprocket is stationary and the ratchet rotates forwardly, and side flanges B, B, inclosing the sides of the sprocket and ratchet wheels and holding the wedges from lateral displacement, substantially as shown and described.

573,769. FRUIT-CLEANING MACHINE. CALEB DUCKWORTH, Colne, England. Filed July 20, 1895. Serial No. 556,638. (No model.) Patented in England Jan. 30, 1894, No. 1,974.



Claim.—In fruit-cleaning machines, the combination with a conical revolving sieve inclosing a more rapidly revolving conical brush, of an upper reciprocating feeding-sieve, and a lower reciprocating delivery sieve, an intermediate drawer, and a system of levers pivoted at their centers to the framework, and at their upper and lower extremities respectively to the said reciprocating sieve-frames, and a pitman from the principal shaft connected with one of the said levers, to actuate the levers, substantially as hereinbefore described.

573,770. MIRROR. ALANSON C. ESTABROOK, Northampton, Mass. Filed Sept. 11, 1894. Serial No. 522,717. (No model.)

Claim.—1. A mirror comprising in its construction two metal shells, one for the face and one for the back, united at the edges by interlocking flanges, and a reinforce 7 filling the shell for the face throughout that portion of said shell adjacent the mirror-plate to protect the shell from indentation, said reinforce engaging the edges of the mirror-plate to hold the plate in central position, substantially as described.



2. A mirror comprising in its construction two metal shells, one for the face and one for the back, united at the edges by interlocking flanges, the shell for the face engaging the mirror-plate and serving to hold the said plate in place with a yielding pressure, a reinforce filling the face-shell around the mirror-plate to protect the said shell from indentation and hold the mirror-plate in central position, a reinforce for said back shell, and a yielding backing for the mirror-plate, substantially as set forth.

3. A mirror comprising in its construction two metal shells, one for the face and one for the back, united at the edges by interlocking flanges forming a bead, the said bead containing a reinforce 5 to stiffen said bead and protect the same from indentation or bending, and a reinforce filling the shell for the face throughout that portion adjacent to the mirror-plate, and engaging the edges of the mirror-plate to hold the said plate in position, substantially as described.

4. A mirror comprising in its construction two metal shells, one for the face and one for the back, united at the edges by interlocking flanges forming a bead the said bead containing a reinforce to stiffen the same and protect it from indentation and bending, a reinforce filling the shell for the face throughout that portion adjacent the mirror-plate, said reinforce engaging the edges of the mirror-plate and serving to hold the said plate in position, and a yielding backing for the mirror-plate, substantially as described.

573,771. POST-WINDER AND WIRE-FASTENER. CARROL L. ETHERIDGE, Peryear, Tenn. Filed Oct. 31, 1896. Serial No. 610,650. (No model.)



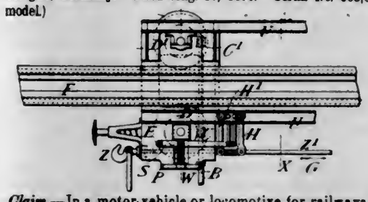
Claim.—1. In a wire fence, a fastening for the wire strands consisting of a tube for each strand, having slotted ends, the slots opening at the ends of the tube, as a means whereby the fence-strands may be fastened to the post, stretched and secured at the opposite sides of the post, within the tube.

2. A fastener and winder for the wires of a wire fence, the body of which is tubular and provided at each end with slots, in its opposite walls, and open at the ends.

3. The combination of a post, a series of tubular winders secured in bores, slotted at each end and projecting at opposite sides of the post, with wire strands engaging both ends of the tubes, and nails engaging the slotted ends of the winders and driven into the post through said slots.

4. As an improvement in wire fences, a post provided with winders for the wires, consisting of tubes driven into bores, and having slotted ends projecting on opposite sides of the post, in combination with wire strands engaging and fastening to both ends of the tubes, and suitable means for fastening the tubes to the post through the slots of the tube binding them at both ends to the post.

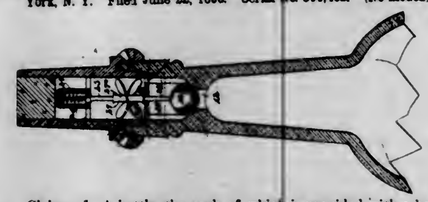
573,772. APPARATUS FOR INCREASING ADHESION OF DRIVING-WHEELS OF MOTOR-VEHICLES FOR RAILWAYS. WILHELM FELDMANN, Nuremberg, Germany, assignor to Eugen Langen's Erben, Cologne, Germany. Filed Aug. 17, 1896. Serial No. 603,034. (No model.)



Claim.—In a motor-vehicle or locomotive for railways with suspended vehicles having driving-wheels acting on the upper side of the

line of rails and guard-rollers bearing against the under side of the rail an arrangement for automatically increasing the pressure of the driving-wheels upon the rail, wherein the guard-rollers E are pressed against the rail by means of elbow-levers connected to the draw-bar, so that such pressure is directly proportional to the tractional force applied to the draw-bar substantially as described.

573,773. BOTTLE AND STOPPER. LOUIS J. A. FERNANDEZ, New York, N. Y. Filed June 22, 1896. Serial No. 596,462. (No model.)



Claim.—1. A bottle, the neck of which is provided with a ball-valve and a seat for the same, a spring-controlled spindle normally resting on the said valve and maintaining the same in its seat, and an apertured partition through which the said spindle passes, located over the said ball-valve, the chamber in which the valve is located having side channels communicating with the openings in the aforesaid partition, as and for the purpose specified.

2. A bottle provided with a valve-seat in its neck and a ball-valve located in the said seat, a spring-controlled spindle serving to normally hold the said valve in its seat, a guard for the upper end of the spindle, an apertured partition through which the spindle passes and located over the ball-valve, and a propeller-like wheel secured to the said spindle above the aforesaid apertured partition, as and for the purpose specified.

3. The combination, with a bottle having a valve-seat, a ball located in the said valve seat, and an apertured partition located above the ball, the wall of the chamber in which the ball is located having channels communicating with the openings in the aforesaid partition, of a neck extension secured upon and entering the main neck of the bottle, a spindle loosely mounted in bearings in the extension of the bottle-neck, the spindle being passed loosely through the apertured partition to a bearing upon the valve, a cap protecting and concealing the upper end of the spindle, a tension device exerting pressure in an inwardly direction on the said spindle, and a propeller-like wheel secured on the spindle between the apertured partition and the cap for the spindle, as and for the purpose set forth.

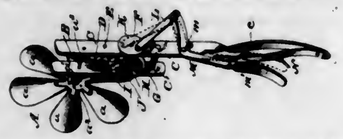
4. The combination, with the neck of a bottle containing a valve and provided with an exterior horizontal channel, of an extension for the neck entering the mouth of the main neck of the bottle, and provided with a flange extending across the top of the mouth of the main neck and down the sides of the same, the pendent portion of the flange having a channel coinciding with the channel in the exterior of the main neck of the bottle, openings being provided in the aforesaid flange leading to the aforesaid channels, a valve-controlled device located in the extension of the neck adapted to have bearing upon the valve, and an apertured partition located over the valve, through which the controlling device loosely passes, as and for the purpose specified.

5. The combination with the neck of a bottle provided with an interior annular shoulder, and having a valve-seat, a ball located in the said valve-seat, and an apertured partition located above the ball and resting on the said annular shoulder, of an extension for the neck adapted to enter the mouth of the main neck and rest on the said apertured partition, and a spindle loosely mounted in the extension of the bottle-neck, the said spindle passing through the said apertured partition and normally resting on the said valve, the inner surface of the main neck of the bottle being provided with channels communicating with the openings in the said partition, as and for the purpose set forth.

573,774. MEANS FOR OPERATING FANS, &c. ALFREDO FLORES, ANTONIO D. FLORES, and MARCOS FLORES, San Antonio, Tex. Filed June 10, 1896. Serial No. 596,065. (No model.)

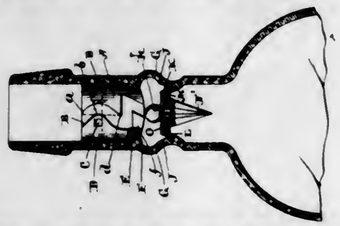
Claim.—1. The improved apparatus, composed of a frame, a rotatable, bladed wheel, multiplying-gearing for rotating such wheel, a spring-pressed lever pivoted to and extending along the frame, and a link connecting said lever and gearing, all operating as shown and described.

2. The improved fan apparatus, composed of the supporting-frame, the fan proper, a counter-shaft, gear, and pinion, the fan-shaft and its pinion, a third shaft, and a ratchet fixed thereon, a gear rotating loose on such ratchet-shaft, and a pawl carried thereby and engaging the ratchet, a pivoted hand-lever, a pivoted link connecting such lever and a crank on the ratchet-shaft, and a spring acting on the lever on the side adjacent to its free end, and serving to restore the lever and pawl-carrying gear to their normal position while the fan, gearing, and ratchet continue to rotate, as specified.



3. The improved hand-fan apparatus, composed of the fan proper, rotative gearing for directly operating it, ratchet-and-pawl mechanism for working such gearing, a frame carrying such apparatus and having a handle extension c, a right-angle lever pivoted to such extension, and its free portion arranged adjacently, and the spring, arranged between the lever and extension c, as shown and described, whereby the operator is enabled to hold the handle and vibrate the lever by the same hand, as specified.

573,775. ANTIREFILLING BOTTLE. THOMAS FOLEY, New York, N. Y., assignor of one-half to Arthur Rathbun Perry, same place. Filed Mar. 22, 1895. Serial No. 542,779. (No model.)



Claim.—1. A device to prevent the refilling of bottles or like vessels, consisting of a stopper A, gravity-locating ball H, and concaved gravity-valve N, in the neck of a bottle or like vessel, substantially as described for the purposes set forth.

2. A device to prevent the refilling of bottles and like vessels, consisting of stopper A, having channels B, a gravity-locating ball H, and a gravity-valve N, concaved on surface adjacent to said ball, substantially as described.

3. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, a ball H and a gravity-valve N, substantially as and for the purposes specified.

4. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B and rabbet E, a ball H and a gravity-valve N, for the purposes specified.

5. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B and lock-pin seats C, a groove D, a ball H, a gravity-valve N, as and for the purposes specified.

6. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, rabbet E, lock-pins P and springs R, a ball H and a gravity-valve N, as and for the purposes specified.

7. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, lock-pins P, rabbet E, a groove D, a flange F, a ball H and a gravity-valve N, as and for the purposes specified.

8. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, rabbet E, a flange F, a circular recess G, ball H and a gravity-valve N, as and for the purposes specified.

9. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, rabbet E, a groove D, lock-pins P, a flange F, a circular recess G, ball H, a gravity-valve N, and a valve-seat L, all as and for the purposes substantially as set forth.

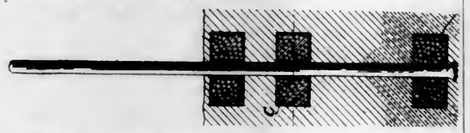
10. A device to prevent the refilling of bottles and like vessels, consisting of a stopper A, having channels B, lock-pin seats C, rabbet E, a groove D, lock-pins P, lock-pin springs R, a flange F, a circular recess G, a ball H, a gravity-valve N and a valve-seat L, all substantially as described and for the purposes set forth.

573,776. NUT-LOCK. WILLIAM H. FOSSETT, Walsenburg, Colo. Filed Apr. 22, 1895. Renewed Sept. 16, 1896. Serial No. 606,059. (No model.)

Claim.—In a nut-lock, the combination of a threaded bolt having a longitudinal groove, a nut adapted to screw on the bolt and having a recess formed in one of its sides, one portion of said recess extending through the nut to the central opening thereof, a dog arranged in said recess and pivoted at one end to the nut, said dog being provided at the lower part of its free end with a downwardly-extending projecting toe arranged to engage the groove in the bolt, said dog having a lug projecting from its free end above the toe and spaced apart therefrom to form a recess between the lug and the toe at the free end of the dog, and a spring arranged in the recess with its outer face approximately flush with the side of the nut and adapted to close said recess, said spring being secured at one end to the nut and having its other end arranged in the recess in the free end of the dog, and adapted to hold the dog with its toe normally in position to engage the groove in the bolt, the walls of the nut at opposite sides of the recess in which the spring and dog are mounted being provided with notches extending below the under side of the spring and adapted for the insertion of a tool to operate the spring and swing the dog pivotally in the recess to disengage its toe from the grooved bolt, substantially as set forth.

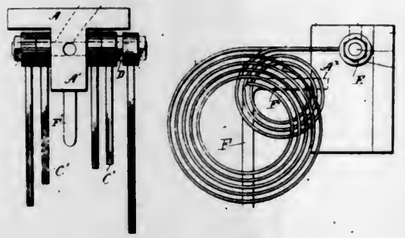


573,777. FENCE-POST OR COLUMNAR PILLAR. STEPHEN D. FRY, Attica, and WILLIAM H. JOHNSON, Veedersburg, Ind., assignors of one-third to Alfred F. Johnson, Veedersburg, Ind. Filed Mar. 4, 1896. Serial No. 581,795. (No model.)



Claim.—A post or column formed of a central standard, preferably metal, and having on its lower end a rigid anchor-block of stone or suitable argillaceous material, and of greater diameter than the standard, and firmly and rigidly connected thereto by means of the flaring enlargement at the lower end of the post, so that the standards cannot slide up or down, and of one or more blocks of stone, or a suitable argillaceous material, and of about the same diameter as the firmly and rigidly connected anchor-block and fitted on the standard above the anchor-block so as to be capable of rising or falling thereon while the standard and anchor-block remain firm in the earth firmly and rigidly connected together during frost, or freezing or thawing actions, substantially as described.

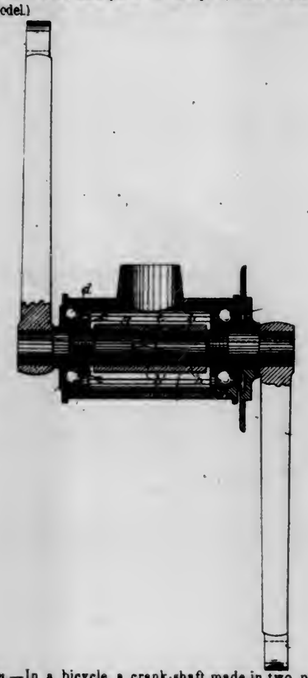
573,778. CLOCK-BELL. SAMUEL A. GALPIN, New Haven, Conn., assignor to the New Haven Clock Company, same place. Filed May 18, 1896. Serial No. 591,920. (No model.)



Claim.—1 In a clock-bell, the combination with a base or sounder having a heavy rib, of a shaft mounted in the said rib and projecting beyond the opposite faces thereof, and a plurality of wire bells connected with the projecting ends of the said shaft, and standing in parallel planes.

2. In a clock-bell, the combination with a sounder having a heavy rib, of a shaft mounted in the said rib and projecting beyond the ends thereof, a plurality of wire bells connected with the projecting ends of the said shaft through collets attached to their outer ends, means applied to the ends of the shaft for firmly securing the bells thereto, and a supporting device adapted to be connected with the sonnder for supporting the sounder and hence the complete bell.

573,779. BICYCLE. JOHN GILLESPIE, Boston, Mass., assignor to George M. Porter, same place. Filed Apr. 6, 1896. Serial No. 586,338. (No model.)



Claim.—In a bicycle, a crank-shaft made in two parts each of which has an inclined overlapping end, combined with a frictional sleeve for holding them together, one of the parts of the shaft being hollow and the other having a solid portion against which a rod may be inserted, to drive the ends apart, substantially as shown.

573,780. TIRE-TIGHTENER. EDWARD GORSUCH, Roaring Spring, Pa. Filed June 16, 1896. Serial No. 595,818. (No model.)



Claim.—The herein-described tire-tightening device, comprising two yokes or links A. A. of approximately U form the draw-bolt B which loosely engages the adjacent end portions of said yokes or links, and whose end portions are oppositely threaded, the loose nuts within said yokes or links and engaging the end portions of said bolt, and the tire-clamps, one of which is pivotally connected to each of said yokes or links, and which consist of flanged plates provided with clamping-screws, substantially as specified.

573,781. TIRE-COUPLING. EDWARD GORSUCH, Roaring Spring, Pa. Filed June 25, 1896. Serial No. 596,912. (No model.)

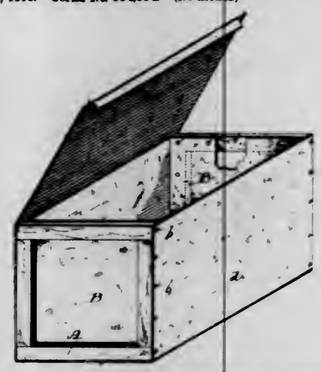


Claim.—1. In a tire-coupling, the combination with the tire whose end portions are approximated, but not overlapped, and are formed on their inner faces with transverse corrugations or teeth, of the felly-plate upon which said end portions seat and which has similar teeth or corrugations for engagement therewith, the tire-bolts extending through slots of said plate and of the felly, and the removable T-shaped washers interposed between the approximated ends of the tire, and having shanks which engage a slot of the said felly-plate, substantially as specified.

2. In a tire-coupling, the combination of the flanged tire whose end portions are approximated but not overlapped, and which are transversely toothed or corrugated on their inner faces, the felly-plate having similar teeth or corrugations for engagement therewith,

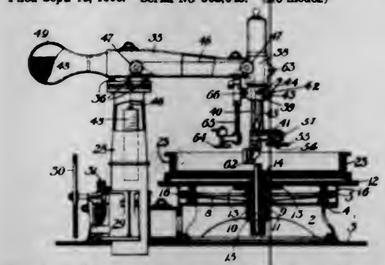
said plate having also bolt-slots, and an intermediate slot, enlarged transversely at one end portion, together with the T-shaped washers designed to be interposed between the approximated ends of the tire, and whose shanks are adapted to engage the said slot and to be inserted into and withdrawn from said slot at its enlarged portion only, substantially as specified.

573,782. BOX. CHARLES M. GREEN, Highland Park, Ill. Filed July 1, 1895. Serial No. 554,534. (No model.)



Claim.—A packing-box, comprising skeleton end frames, having sheets of wood-pulp secured to the inner faces thereof, and a single sheet of wood-pulp bent continuously around and secured to said end frames to form the sides, bottom and top of the box, and an angular strip of sheet metal secured to the front edge of the top or cover portion and provided with holes at the ends thereof, said strip projecting down over the front side of the box to form a strengthening-brace and fastening device, substantially as set forth.

573,783. MOLDING-MACHINE. SAMUEL GROVES, Pittsburg, Pa. Filed Sept. 16, 1895. Serial No. 562,643. (No model.)



Claim.—1. In combination with the vertical tooth-block spindle provided with a supporting-arm at its lower end, a slide secured to the supporting-arm carrying a tooth-forming pattern, a shaft having a bearing in the slide, an eccentric mounted on the end of the shaft, and lateral ribs on the supporting-arm, engaged by the eccentric, whereby the slide may be advanced or withdrawn, substantially as set forth.

2. In a molding-machine, the combination, with the vertically-adjustable tooth-block spindle 40, provided with a socket in its under portion, alining with the center of the tooth-block spindle; of the center-spindle 15, set in the center of the molding-machine, and engaging at its top the socket in the under portion of the tooth block spindle, and the sweep 68 journaled on the spindle 15, substantially as set forth.

3. In a molding machine comprising a flask-supporting table secured to a revolving supporting toothed worm-wheel, in combination with the shaft of the worm, a circular stationary index-plate, concentric with the shaft, provided on its face with a series of concentric rows of holes, a crank arm secured to the shaft having a longitudinal slot, and a spring-controlled pin capable of being adjusted lengthwise of the slot, so as to register with either of such concentric rows of holes, substantially as set forth.

4. The combination, in a molding-machine, of a hollow mast, a hollow balanced jib revolubly secured to the hollow mast, a vertically-adjustable tooth-block spindle supported at the end of the jib, a counterbalancing-weight hanging within the hollow mast secured to the end of a cable passing over sheave-wheels supported in the hollow jib and attached to the tooth-block spindle, with a slide secured to a supporting-arm at the lower end of the tooth block spindle carrying a tooth-forming pattern, an eccentric mounted on the end of a shaft having a bearing in the slide, engaging lateral ribs on the supporting-arm, whereby the slide may be advanced or withdrawn, substantially as set forth..

5. The combination, in a molding-machine, of a hollow mast, a hollow balanced jib revolubly secured to the hollow mast, a vertically-adjustable tooth-block spindle supported at the end of the jib, a counterbalancing-weight hanging within the hollow mast secured to the end of a cable passing over sheave-wheels supported in the hollow jib and attached to the tooth-block spindle, with a slide secured to a supporting-arm at the lower end of the tooth-block spindle carrying a tooth-forming pattern, an eccentric mounted on the end of a shaft having a bearing in the supporting-arm whereby the slide may be advanced or withdrawn, substantially as set forth.

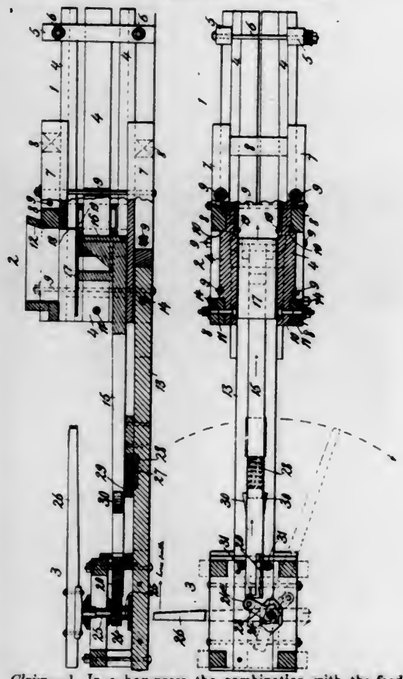
6. In a molding-machine, the combination with a stationary supporting frame provided with an annular trough having at its bottom a concave groove and shoulders at each side of the trough above the groove and below the top of the supporting-frame, an upper revolving supporting-wheel, and a series of balls resting in the groove; of a circular ring resting on the shoulders at each side of the trough and provided at intervals with circular openings fitting over the balls, substantially as set forth.

573,784. TROUSERS-LEG-FOLDING DEVICE. YOUNG E. HOLLOWAY, Woodlawn, Ala., assignor to John Emory Berkstresser, Sylacauga, Ala. Filed Feb. 11, 1895. Serial No. 537,891. (No model.)



Claim.—A trousers-leg-folding device, consisting of a center member C of a dovetail form, two vertical legs A and B curved outwardly and upwardly from the center the legs having their points curved outward, substantially as described.

573,785. HAY-PRESS. CHARLES E. JONES, Hillsborough, Tex. Filed May 27, 1896. Serial No. 593,212. (No model.)



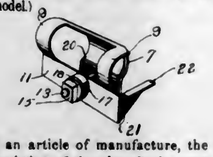
Claim.—1. In a hay-press, the combination with the feed-box portion formed with recesses in its opposite sides, of the tie-box portion fitting partially within the feed box portion and having longitudinal side timbers extending and lying within the recesses formed in the opposite sides of the feed-box portion, bolts passing through the opposite sides of the feed-box portion and through the portions of the side timbers of the tie-box which lie in the recesses of the feed-box portion for the purpose of rendering the tie-box detachable from the feed-box portion, and the power-head portion having a longitudinally-extending beam, the inner end of said beam fitting between the sides of the feed-box portion and secured thereto by a bolt by the removal of which the power-head portion may be detached from the feed-box portion, substantially as and for the purposes described.

2. In a hay press, the combination with the feed-box portion and the power-head portion, of the plunger-beam adapted to travel in a straight line lengthwise of the press and carrying at one end a follower for the feed-box portion and fitting at the opposite end in the power-head portion, a spring for retracting the plunger-beam, friction-rollers located at opposite sides of the plunger-beam at the power-head portion for guiding said beam, and wedge-blocks secured to opposite sides of the plunger-beam and adapted to engage said friction-rollers in the rebound of the plunger beam so as to check the rebound and center the plunger-beam, substantially as and for the purposes described.

3. In a hay-press, the combination with the plunger-beam having teeth on its side at its rear end next to the power-head portion, means for guiding said beam in a straight line lengthwise of the press in its reciprocation, a power-head for moving said beam said power-head consisting of a rotatable block having teeth on its sides to engage the teeth on the side of the power-beam for moving the latter to collect or gather the loose hay and provided with a finger or arm arranged to bear directly against the end of the beam as soon as the teeth of the block disengage the teeth of the beam, and a sweep-lever connected to said power-head block and extending from the block in the direction of its finger or arm and lying at an oblique angle to said finger or arm whereby the pressure of the finger or arm on the end of the plunger-beam is lengthwise instead of laterally thereof, substantially as and for the purposes described.

4. In a hay-press, the combination with the plunger-beam having teeth on its side at the end next to the power-head portion, of the power-head for moving said beam, said power-head consisting of a block formed with teeth on its side to engage the teeth on the side of the plunger-beam and provided with a finger or arm arranged to bear directly against the end of the beam as soon as the teeth of the block disengage the teeth of the beam and having a polygonal shaped opening in its hub, and a sweep lever attached to a shaft fitting in said polygonal opening of the power-head block and adapted to be adjusted therein to change the angle at which the sweep-lever shall stand to the arm or finger of the power-head block, substantially as and for the purposes described.

573,786. ANTIRATTLER FOR THILL-COUPLINGS. HERBERT W. LAWRENCE, Montevideo, Minn. Filed Apr. 29, 1896. Serial No. 589,600. (No model.)



Claim.—1. As an article of manufacture, the herein-described antirattling clip, consisting of the plate 7, the curved forward strips 9 and the plate 11, with the bolt 13 extending through the lower part of the plate 7 and through the plate 11, and provided with the nut 15 and spring-washer 17, for the purpose set forth.

2. As an article of manufacture, the herein-described antirattling clip, consisting of a rear curved plate, curved strips extending forward from the opposite ends of said plate, a plate uniting the ends of said curved strips, and a bolt joining said plates and provided with a suitable nut and with a spring-washer, for the purpose set forth.

3. As an article of manufacture, the antirattling clip comprising the plate 7, the curved strips 9 extending forward from the upper edge of said plate, the plate 11 joining the forward ends of said strips 9, and the projection 21 upon the plate 11 provided with the lip 22, for the purpose set forth.

4. The combination, with the coupling-clip, the thill-iron, the coupling-bolt and its nut, of the antirattling clip comprising the plate 7, extending between the parts of the coupling-clip, the strips extending from the upper forward edge of said plate 7 and bearing upon the forward ends of the coupling-clip, the plate 11 joining the lower ends of said strips, the leather plate 20 arranged between said thill-iron and said plate 7, and the bolt 13 passing through said plates 7 and 11 and provided with the spring-washer 17 and the nut 15, for the purpose specified.

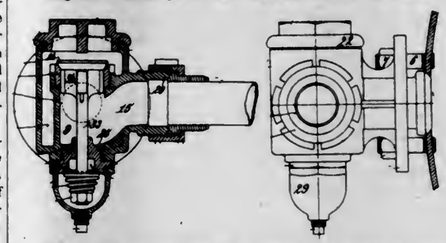
573,787. FRUIT-EVAPORATOR. ADOLPH LEHMANN, Moorefield, Ohio. Filed June 20, 1896. Serial No. 596,353. (No model.)



Claim.—1. In a device of the class described, a framework, wire-netting secured to the top, bottom and end of said framework, cleats situated inside of said framework, trays situated upon said cleats, said trays composed of a rectangular framework, suitable wire-netting secured to the bottom of said tray, cross-rods extending across the bottom of said tray to prevent bagging of netted wire, substantially as set forth.

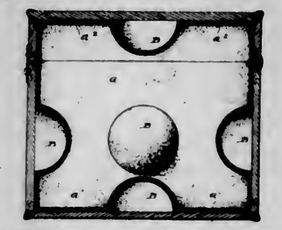
2. In a device of the class herein described, the combination with a frame, bails for supporting said frame, trays situated within said frame, drop sides or curtains linked together and suitably attached to the said frame, spring-keepers situated on the top of the said frame-work, and engaging with the said curtains, substantially as set forth and described.

573,788. BOILER CHECK-VALVE. CHARLES LINSTROM, Vicksburg, Miss. Filed Apr. 21, 1896. Serial No. 588,508. (No model.)



Claim.—The combination with a check-valve casing, of a check-valve disk or plug having a guide-stem extending to and operative from the exterior of the valve-casing, a guide-thimble inserted into the valve-casing and provided with an interior chamber and an escape-channel leading therefrom, a spring arranged on the guide-stem and bearing against the guide thimble, an adjusting-nut mounted on the guide-stem and serving to adjust the tension of the spring, and a removable and replaceable cover-cap covering the outer end of the guide-stem and serving to cover and uncover the said escape-channel of the guide-thimble substantially as described.

573,789. HAT BOX OR TRUNK. MARY LYONS, New York, N. Y. Filed July 25, 1896. Serial No. 600,519. (No model.)



Claim.—1. A hat box or trunk having a lining provided with a rest or support composed of an inner textile material of a springy or elastic nature, such as buckram, and an outer covering of a less resilient nature, as set forth.

2. A hat box or trunk having a lining provided with a rest or support composed of inner layers of textile material of a springy or elastic nature, such as buckram, and an outer covering of a less resilient nature, said covering and inner layers being glued together and shaped into the desired form, substantially as set forth.

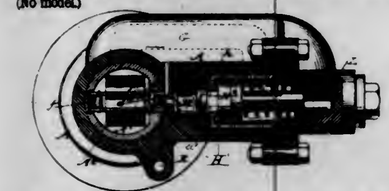
3. A hat box or trunk having a rest or support composed of inner layers of textile material of a springy or elastic nature, such as buckram, and extending from a base, and an outer covering of a different degree of elasticity glued to said rest or support and forming the lining or covering for said base, as set forth.

4. The combination with a receptacle for head-gear, of a hat or bonnet support extending from a base with which it is made integral, and composed of layers of springy or elastic fabric glued together, and an outer covering of a different degree of elasticity also glued thereto, the latter forming the lining or covering for said base, substantially as set forth.

5. A hat box or trunk having a lining provided with a plurality of rests or supports extending inwardly from and integral with said lining along the sides, top and bottom of such box or trunk, and an outer covering for said rests or supports, each of said rests or supports having an inner portion of textile material of greater resiliency than said covering, as set forth.

6. A hat box or trunk having its walls provided with a lining or covering bulged or shaped at one or more points to form a hat or bonnet support, each support having a series of layers of springy or elastic material, such as buckram, glued together and covered by said lining which latter is of a different degree of resiliency from that of said series of layers, substantially as set forth.

573,790. **FLUID-PRESSURE BRAKE.** HARVEY S. PARK, Chicago, Ill., assignor, by mesne assignments, to the Chicago Brake and Manufacturing Company, same place. Filed June 22, 1896. Serial No. 596,485. (No model.)



Claim.—1. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a triple-valve casing having a triple-valve chamber in direct and constant communication with the train-pipe, a piston therein, and a slide-valve actuated by the piston and governing an emergency-passage from the chamber to the brake-cylinder.

2. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a triple-valve casing having a triple-valve chamber in direct and constant communication with the train-pipe, a piston therein, a slide-valve actuated by the piston and governing an emergency-passage for venting train-pipe air to the brake-cylinder in emergency action, and a service-valve for controlling reservoir-pressure in service action.

3. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a triple-valve casing having a chamber in direct constant communication with the train-pipe whose pressure completely fills the chamber, a piston therein normally forced to one end of the chamber and governing a by port or passage to the reservoir, means for preventing the backflow of pressure from the brake-cylinder and a slide valve actuated by the piston and governing ports and passages leading from the chamber and reservoir to the brake-cylinder.

4. In a brake mechanism, the combination with the train-pipe, auxiliary reservoir and brake-cylinder, of a valve-casing having a triple-valve chamber into which the train-pipe leads, a piston therein normally forced against one end of the chamber, a slide-valve actuated thereby, an emergency-passage governed by the slide-valve and leading from the chamber to the brake-cylinder for venting train pipe air thereto in emergency action, and a service-valve independent in action from the slide-valve and operated by reductions of train-pipe pressure to control reservoir-air in service action.

5. In a brake mechanism, the combination of a train-pipe, brake-cylinder, and auxiliary reservoir, a valve-casing having a chamber communicating constantly with the train-pipe, a slide-valve therein whose initial travel operates the brake-release and whose further travel vents train-pipe air from the chamber to the brake-cylinder, and also controls the admission of reservoir-air, and a service-valve controlling reservoir-air in service action.

6. In a brake mechanism, the combination of a train-pipe, auxiliary reservoir, brake cylinder, a piston-actuated service-valve admitting air from the reservoir to the brake cylinder in service action and a slide-valve governing the brake-release, and both the train-pipe air and reservoir-air to the brake-cylinder in emergency action, the slide-valve acting independent of the service-valve piston in such emergency action.

7. In a brake mechanism, the combination of a train-pipe, auxiliary reservoir, brake-cylinder, a triple-valve casing having a chamber in direct and constant communication with the train-pipe, a piston therein, a slide-valve actuated thereby and governing the brake-release, and both the train-pipe pressure and the reservoir pressure to the brake-cylinder in emergency, and a service-valve admitting air from the reservoir to the brake-cylinder in service action.

8. In a brake mechanism, the combination with a train-pipe, auxiliary reservoir and brake-cylinder of a valve-casing having a triple-valve chamber in direct connection with the train-pipe and provided with a by-port communicating through a passage with the reservoir, a piston in the valve-chamber controlling the by-port, a slide-valve actuated by the piston and provided with a chamber, a service-valve located therein and controlling reservoir-pressure to the brake-cylinder in service action, a port or passage from the reservoir communicating with the slide-valve chamber in service action for the admission of air in service action and controlled by the service-valve, a port or passage leading from the slide-valve and forming a communication with the port or passage for the reservoir-air to flow direct to the brake-cylinder independent of the service-valve.

9. In a device for actuating railway-brakes, a balanced slide-valve actuating in a triple-valve chamber having direct and uninterrupted communication with a train-pipe, and governing a passage to the brake-cylinder whereby the train-pipe air is vented from the chamber to the brake-cylinder by the slide-valve.

10. In a brake mechanism, the combination of a train-pipe, auxiliary reservoir, and brake-cylinder, a valve-casing having a chamber communicating directly with the train-pipe and provided with a by-port communicating through a passage with the auxiliary reservoir, a piston in the valve-chamber controlling the by-port, a slide-valve actuated by the piston, a service-valve and a branch pipe or passage leading to the service-valve from said passage to the auxiliary reservoir, the pressure therefrom being controlled by the service-valve in service action.

11. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a valve-casing having a chamber communicating constantly with the train-pipe, a slide-valve controlling the brake-release in partial travel and forming a direct communication between the train-pipe and brake-cylinder, in its full travel, through the valve-chamber and a separate valve governing the admission of auxiliary-reservoir air to the brake-cylinder in service action, and under control of train-pipe pressure.

12. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a valve-casing having a triple-valve chamber in direct and constant communication with the train-pipe, a slide-valve governing the port of a direct emergency-passage from the valve-chamber to the brake-cylinder, a by-passage leading from the valve-chamber to the emergency-passage to supply the same with train-pipe air, and a balancing-valve in the emergency-passage.

13. In a brake mechanism, the combination of a train-pipe, auxiliary reservoir, and brake-cylinder, a valve-casing having a triple-valve chamber communicating directly with the train-pipe, a direct emergency-passage leading from the chamber to the brake-cylinder and governed by the slide valve, such valve being balanced as to this passage by train-pipe pressure exerted on both faces, and a service-valve independent in action from the slide-valve and controlling auxiliary-reservoir pressure in service action.

14. In a brake mechanism, a slide-valve controlling passages to the brake-cylinder from the train-pipe and from the auxiliary reservoir in emergency action, such valve being balanced by train-pipe pressure and auxiliary reservoir pressure exerted on one side of the valve train-pipe pressure alone exerted on the other side.

15. In a brake mechanism, the combination of a train-pipe, an auxiliary reservoir, a brake-cylinder, a valve-casing having a triple-valve chamber in direct and constant communication with the train-pipe, a piston therein, a slide-valve actuated by the piston and governing an emergency-passage from the train-pipe through the valve-chamber to the brake-cylinder, such slide-valve being balanced as to the emergency-passage by the same pressure exerted on both sides.

16. In a brake mechanism, the combination of a slide-valve and a fluid-pressure-controlled locking device for preventing the lifting of the slide-valve in emergency action.

17. In a brake mechanism the combination of a slide-valve and a locking device controlled by extreme excess of reservoir-pressure over train-pipe pressure, for preventing the lifting of the slide-valve in emergency action.

18. In a brake mechanism the combination of a slide-valve a spring holding the valve to its seat and a piston having a stem actuated by variations in train-pipe and auxiliary-reservoir pressure, and adapted to increase the tension on the slide-valve, in the full travel of the piston in emergency action.

19. In a device for actuating railway-brakes, the combination of an emergency-valve and a service valve device whose action in emergency application holds the emergency-valve to its seat.

20. In a brake mechanism, the combination of a casing having a triple-valve chamber, a piston-actuated slide-valve therein having an annexed chamber, a service-valve operating therein and governing the admission of reservoir-air in service application of the brakes, a spring for holding the slide-valve to its seat, and a stem adapted to increase the tension of the slide-valve on its seat, and operated by the service-valve in emergency action.

21. In a railway-brake mechanism, a slide-valve controlling train-pipe air from the triple-valve chamber through a direct passage to the brake-cylinder, in combination with a balancing-valve in the passage, and means whereby the balancing-valve is removed from the passage before the slide-valve acts for emergency purposes.

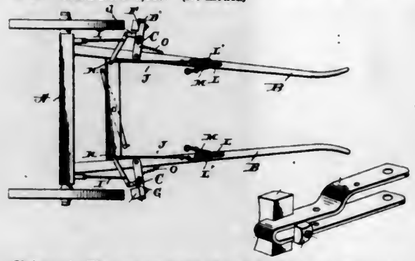
22. In a brake mechanism, the combination with a train-pipe, an auxiliary reservoir, and a brake-cylinder, of a triple-valve casing having a chamber in direct communication with the train-pipe, a slide-valve controlling the brake-release and provided with an annexed chamber communicating at one end with the triple-valve chamber, said slide-valve having a passage leading from its chamber to the brake-cylinder, and a service-valve controlling such passage and comprising a piston traveling in the slide-valve chamber and provided with a stem, normally seated in said passage by train-pipe pressure entering the service-valve chamber from the triple-valve chamber and exerted upon the piston.

23. In a railway-brake mechanism, a balanced slide-valve controlling a direct passage to a brake-cylinder from a triple-valve chamber having constant and direct communication with a train-pipe.

24. In a brake mechanism, the combination of a train-pipe, brake-cylinder, an auxiliary reservoir, a valve-casing having a chamber communicating constantly with the train-pipe, means for preventing the backflow of pressure from the brake-cylinder a slide-valve therein whose initial travel operates the brake-release and whose further travel vents train-pipe air from the chamber to the brake-cylinder.

25. In a brake mechanism the combination of a train-pipe, auxiliary reservoir, brake-cylinder, a service valve, mechanism for actuating the same directly by auxiliary-reservoir pressure upon reduction of train-pipe pressure for admitting pressure from the reservoir to the brake-cylinder in service action, and a piston-actuated slide-valve governing reservoir-pressure in emergency action and independent of the service-valve actuating mechanism.

573,791. **AUTOMATIC BRAKE.** WILLIAM PENDLEY, Hinton, Ga., assignor of one-half to Robert L. Franklin, Calhoun, Ga. Filed Mar. 3, 1896. Serial No. 581,665. (No model.)



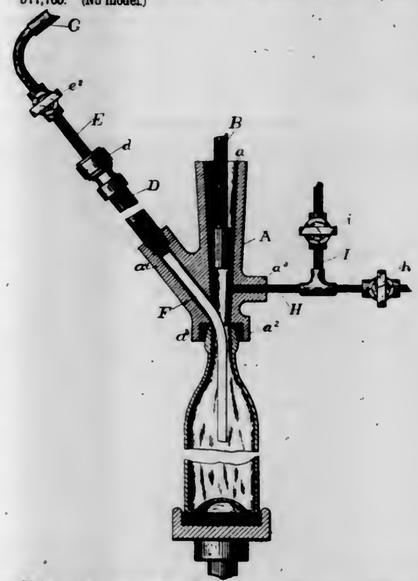
Claim.—1. The combination of the brake-levers fulcrumed to and projecting outward from the shafts in front of the vehicle-wheels, the brake-blocks carried thereby, levers H arranged at the rear of the brake-levers and connected thereto, rods J extended forward from the inner ends of said levers H, and a holdback mechanism adapted to draw said rods forward for applying the brakes, substantially as shown and described.

2. A pull back brake for vehicles comprising a brake-lever having its inner end pivotally connected directly to the shaft and carrying at its outer end a brake-block, an intermediately-pivoted lever having one end connected to the brake-lever intermediate its ends, a guide upon the shaft at a point in front of the brake-lever, a connection having one end connected to the opposite end of the intermediately-pivoted lever and its outer end made flexible and passing around the said guide and carrying an attachment to connect with the holdback of the harness, substantially as described.

3. An improved brake-lever formed of a single piece of strap metal doubled upon itself or looped, the extremities of said looped portion being contracted, the brake-block, the bolt therefor extended through the contracted portion, and the nut for the bolt adapted to clamp the block to the contracted portion, substantially as shown and described.

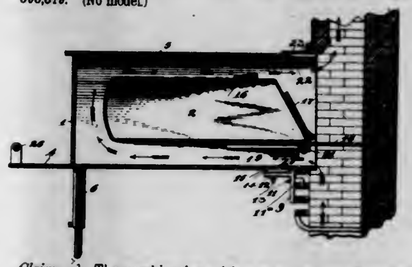
4. An improved brake-lever formed of a single piece of metal doubled upon itself in U form, a brake block and a block-securing device adapted to extend between the parts of the lever and secured thereto on the side opposite the shoe, substantially as shown and described.

573,792. **APPARATUS FOR FILLING AND CORKING BOTTLES.** JOHN C. PENNINGTON, Paterson, N. J. Filed Feb. 1, 1896. Serial No. 577,705. (No model.)



Claim.—An apparatus for filling and corking bottles comprising a corking-cylinder A having a cone-shaped bore and two hollow tests or extensions a^4, a^5 communicating with the cylinder, a tube D secured to the extension a^4 and having a stuffing-box at its outer end, a hollow piston E working in the stuffing-box and carrying a cock e^3, a flexible section of pipe F carried by the inner end of the piston, a pipe G secured to the outer end of the piston and connecting with a supply of liquor, a pipe H secured to the extension a^5 and carrying a cock h constituting an escape-valve, a pipe I coupled to the pipe H and connecting with an air or gas supply, and a cock i for closing the pipe I, substantially as described.

573,793. **STOVE ATTACHMENT.** SAMUEL J. PERRAULT and THEODORE L. BAUER, Natchez, Miss. Filed June 12, 1896. Serial No. 595,319. (No model.)



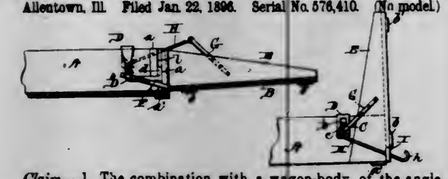
Claim.—1. The combination with a grate or open-front heater, of a cooking attachment comprising a case having an open side, a bracket having adjustable connection with the grate or heater, a plate having pivotal connection with the attachment, and means for adjustably connecting the plate with the bracket, substantially as and for the purpose set forth.

2. The combination with a grate or open-front heater, of a cooking attachment, a vertically-adjustable pivotal connection between the attachment and the grate or heater, and adjustable legs supporting the attachment and provided with rolling supports, substantially in the manner set forth for the purpose described.

3. The combination with a grate or open front heater, of an attachment comprising a case having an oven disposed so as to provide a communicating space at the rear, in the front, and above and below the oven, said case having the rear portion of its top plate cut away, a slide-cover for closing the said cut-away portion of the top plate, and a damper for controlling the circulation of hot air through the case and around the oven, substantially as set forth.

4. The combination with a grate or open-front heater, of an attachment comprising a case provided with an oven which is accessible by means of a door in a side of the case, and having a space entirely surrounding the oven and formed between the latter and the walls of the case, a damper at the lower rear corner of the oven to be projected across the grate or heater, and a cover for controlling an opening in the rear portion of the top plate of the case, substantially as and for the purpose set forth.

573,794. END-GATE. FRANK M. PIERCE and ALBERT C. WARNER, Allentown, Ill. Filed Jan. 22, 1896. Serial No. 576,410. (No model.)



Claim.—1. The combination with a wagon-body, of the angle-bars D, D, each provided with hooked upper ends for bearing over the edge of the wagon-bed, and provided with the slot D′, and the portion D^3 of the angle-bar, being each provided with the lugs *d*, *d*, fitting between the cleats *a*, *a*, of the wagon-bed, the adjustable bars C, C, adjustable within the slots D′, of the angle-bars and having the eyes *c*, *c*, projecting therefrom, the eyes I, I, secured to the lower rear edge of the wagon-bed, the bars F, F, pivoted to the angle-bars and to the end-gate B, upon pins *f*, *f*, and the end-gate B, provided with straps G, G, the bars H, H, pivoted thereto and having hooks at their outer extremities and designed to pass through the eyes *c*, *c*, and I, I, all substantially as described and shown.

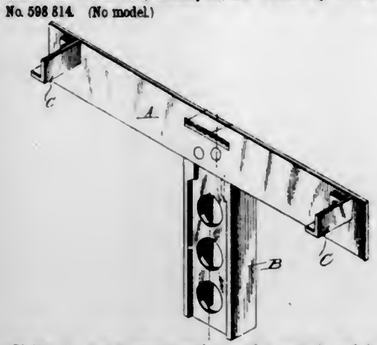
2. The combination with a wagon-body and the cleats thereon, of the angle-bars D, D, the portions D^3, D^3, thereof provided at their extremities with the lugs *d*, *d*, which fit between the pair of cleats on said wagon-bed and the upper ends of the arms of the angle-bars provided with hooks bearing over the top edges of the wagon-bed and at points some distance forward from the rear end of the wagon-bed, the perforated bars F, F, pivoted to the angle-bars at the forward portions of said bars and an end-gate having slots in the lower edge and provided with the pins *f*, *f*, pivoted to said bars F, F, all substantially as described and shown.

3. The angle-bars D, D, the rearwardly-extending arms D^3, D^3, thereof provided with the lugs *d*, *d*, and the upwardly-bearing arms thereof provided with hooks, the perforated bars F, F, pivoted at their forward ends to the angle-bars at the point of the angle of each and perforated at their rear ends to receive pins, in combination with a wagon-bed provided with the cleats at the rear end between which the lugs *d*, *d*, are fitted and over the top edges of the wagon-bed and at points some little distance forward from the rear end thereof the hooks of the angle-bars are fitted, an end-gate slotted at its lower edge and provided with pins projecting at right angles into the said slots, which pins fit into the perforations in the rear ends of bars F, F, all substantially as described and shown.

4. The combination with a wagon-body and an end-gate, of the straps G, G, attached to said end-gate, the slots in the lower edge thereof and the pins *f*, *f*, projecting into the same, the angle-bars D, D, the rearwardly-extending portions D^3, D^3, thereof being provided with lugs *d*, *d*, that fit between the cleats of the wagon-bed, the upwardly-extending portions of the angle-bars provided with hooks bearing over the upper edge of the wagon-bed and the portions of the hooks bearing on the outside of the wagon-bed provided with slots D′, D′, therein, the bars C, C, provided with eyes *c*, *c*, adjustable in the slots D′, D′, in the hooked portions of the angle-bars, the eyes I, I, fixed to the lower edge and at the rear end of the wagon-bed, the rods H, H, pivoted to the straps G, G, at one end and provided each with a hook at its other end adapted when the end-gate is lowered to engage the eyes *c*, *c*, to support the end-gate when in a lowered position and further adapted when the end-gate is raised to engage the eyes I, I, to hold the end-gate in such position, and the perforated bars F, F, pivoted at their forward portions to the angle-bars at the points of the angles thereof and the rear ends thereof pivoted upon the pins *f*, *f*, upon the end-gate, all substantially as described and shown.

5. The combination with the wagon-bed, of the pivoted adjustable hangers F, F, the angle-bars D, D, to which the forward portions of the hangers are pivoted, carrying the adjustable bars C, C, provided with eyes *c*, *c*, the fixed eyes I, I, an end gate pivoted to the rear end of the hangers F, F, and provided with straps G, G, having rods H, H, pivoted thereto at one extremity and adapted to engage the eyes *c*, *c*, to support the board in a lowered position and to engage the eyes I, I, to support the board in a raised position, all substantially as described and shown.

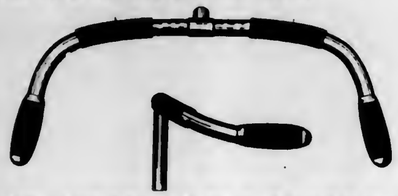
573,795. COMBINED WEATHER-BOARDING AND TRY SQUARE. ROBERT R. POINDEXTER, Indianapolis, Ind. Filed July 11, 1896. Serial No. 598,814. (No model.)



Claim.—1. A try-square consisting of a part A, and handle B, secured together a malleable lip being formed on the end of said handle which projects into a slot in said part A, and is there bent down to clamp said part firmly onto a shoulder formed near the end of said handle, substantially as set forth.

2. A combined weather-boarding and try square consisting of a straight-edge part having arms near each end with their edges in the same plane and extending in a transverse direction, and a handle secured to its center formed with a square shoulder near its end and a malleable lip at its end, rivets extending through said parts, and said lip extended into a slot in said straight-edge part and bent down to clamp it tightly to said shoulder in said handle, substantially as set forth.

573,796. HANDLE. FREDERICK C. ROCKWELL, Hartford, Conn. Filed Aug. 26, 1895. Serial No. 560,516. (No model.)



Claim.—A handle material for sporting and exercising machines and implements composed of a strip of flexible non-elastic fabric with an intimately united outer layer of molded and compressed broken particles of cork and shellac, adapted to be wound into a spiral coil and secured to a core or bar, substantially as specified.

573,797. TENPINS. FREDERICK C. ROCKWELL, Hartford, Conn. Filed Dec. 7, 1895. Serial No. 571,356. (No model.)

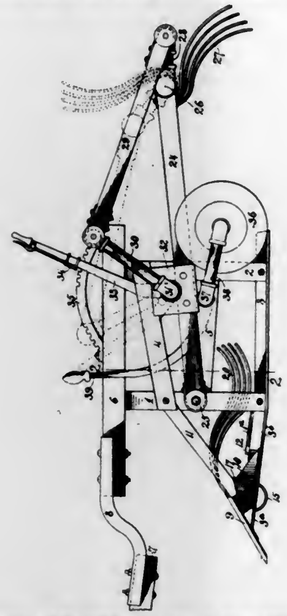


Claim.—1. As a new article of manufacture, a pin for bowling games having an elongated body, neck and head formed of superimposed circular disks of molded and compressed broken particles of cork and shellac cemented and united by pressure, substantially as specified.

2. As a new article of manufacture, a pin for bowling games having an elongated curved body, neck and head formed of molded and compressed sections of broken particles of cork and shellac cemented under pressure about a central core of wood, substantially as specified.

573,798. POTATO-DIGGER. GEORGE W. M. SHEARER, Jackson, Mich. Filed Mar. 4, 1896. Serial No. 581,824. (No model.)

Claim.—1. A root-digger comprising a suitable frame, having a pair of runners by which it is supported in the furrow, a shovel-plow mounted at a low angle on the runners, a cylindrical roller mounted on the runners beneath the shovel plow, and the vibrating dish-shaped riddle consisting of a series of yielding curvilinear rods secured at their forward ends to the shovel plow; substantially as described.



2. A root digger comprising a pair of bow-frames, a pair of runners on which the bow-frames are supported, the side braces, the draft-beam, the coupling, the tongue, a shovel-plow mounted at a low angle on the runners, the diagonal brace-bars, a cylindrical roller mounted on the runners beneath the shovel-plow, and the vibrating dish-shaped riddle consisting of a series of yielding curvilinear rods secured at their forward ends to the shovel-plow; substantially as described.

3. In a potato-digger, the combination of the runners, the bearing-pieces adjustably mounted upon the forward ends of the runners, a cylindrical roller trunnioned in said bearing-pieces, the shovel-plow secured to the runners over the roller and having the downturned edge, and the adjusting-screws working through the downturned edge and bearing against the bearing-pieces, as explained.

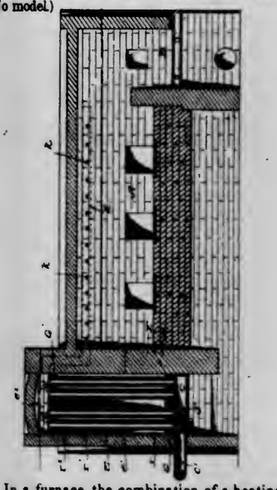
4. In a potato-digger, the combination of a suitable frame carrying means for excavating the ground containing potatoes, and separating them from the ground, and a rake for gathering the potatoes, provided with means for reversing it rearward consisting of a crank on the rake-shaft, a relatively longer crank on a controlling-shaft, a pitman connecting the cranks together, and an operating-lever on the controlling-shaft substantially as set forth.

5. The combination of a suitable frame carrying a plow constructed to dig up potatoes and deliver them to the rear, a pair of rearwardly-extending arms secured at their forward ends on the frame and having intermediate supports, a rake supported in a crank-shaft journaled in the rear ends of said rods, a controlling-shaft journaled in plates mounted upon intermediate points of the rearwardly-extending arms and having cranks longer relatively than the cranks on the rake-shaft and connected by pitmen to the latter, an operating lever secured to the controlling-shaft, and a ratchet for holding said lever substantially as set forth.

6. A root-digger comprising a suitable frame having a pair of runners by which it is supported in the furrow, a shovel-plow mounted at a low angle on the runners, a cylindrical roller mounted on the runners beneath the shovel-plow, the vibrating dish-shaped riddle consisting of a series of yielding curvilinear rods secured at their forward ends to the shovel-plow, the shaft having crank-arms, the wheels mounted on the crank-arms and normally out of contact with the ground, and means for turning the shaft for supporting the frame on the wheels; substantially as described.

7. A root-digger comprising a suitable frame, a pair of side arms pivoted to the forward part of the frame and extending rearwardly, a rake-shaft having crank-arms and provided with yielding teeth coiled thereon and mounted on the rear part of the side arms, the operating-shaft having crank-arms and mounted on the side arms near the rear part of the frame, the pitmen connecting the crank-arm of the shafts, and means for turning the operating-shaft; substantially as described.

573,799. AIR-HEATING APPARATUS FOR FURNACES. WILLIAM STUBBLEBINE, Bethlehem, Pa. Filed Mar. 11, 1896. Serial No. 582,807. (No model.)



Claim.—1. In a furnace, the combination of a heating chamber, the series of protective tiles extending across said chamber and each stack of tiles extending into the opposite walls thereof, and a metallic tube extending through each stack of tiles and removable therefrom without disturbing said stack, as and for the purposes described.

2. In a furnace, the combination with a heating-chamber, of the interlocking tiles arranged end to end and extending across said heating-chamber, and heating pipes or tubes removably fitted in said series of tiles, substantially as described.

3. In a furnace, the combination with a heating-chamber, of the series of superimposed interlocked tiles extending into the walls of the chamber, and removable pipes or tubes fitted within each stack of tiles and detachably fastened in place at one end, substantially as described.

4. In a furnace, the combination with a heating-chamber, of plates on the bottom of said chamber, blast heating tubes or pipes detachably fastened to said plates, and a sectional refractory casing for each tube or pipe, substantially as described.

5. In a furnace, the combination with a heating-chamber having the floor and roof G, G′, of a series of plates protected by the floor from the heat in the chamber, sets of blast-heating pipes or tubes extending from the floor to the roof, and each set of pipes fastened detachably to one of said plates, and the interlocking tiles which incase the pipes or tubes and are joined to the floor and roof of said chamber, substantially as and for the purposes described.

6. In a furnace, a divided chamber in the rear wall, having one compartment connected to the furnace-chamber and to the stack or uptake and having a floor G and the roof G′ which forms the lower and upper air-chambers e', e^3, combined with the removable blast-heating pipes or tubes extending across the heating-chamber and secured in the floor and roof thereof to communicate with the air-chambers e, e^3, and the refractory interlocked tiles which inclose the tubes or pipes and are extending into the floor and roof of said heating-chamber, substantially as and for the purposes described.

573,800. NUT-LOCK. OLOF P. SWANSON, Jobs, Ohio. Filed July 1, 1896. Serial No. 597,753. (No model.)

Claim.—1. The combination of plate A formed with bolt-passages, the plate being formed with slots C which extend toward each other from said bolt-passages, spring-rod F secured to the outer surface of the portion of the plate separating the ends of slots C, said rod extending in line with the slots and its ends adapted to depress backward therein, the rod extremities being adapted to engage the inner surface of the bolt-nuts for the purpose, substantially as herein shown and described.

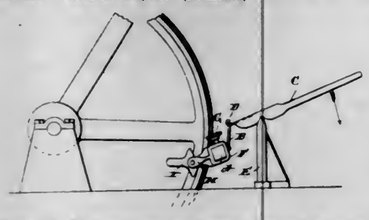
2. The combination of plate A formed with bolt-passages, slots C extended toward each other from said passages but separated and

uncommunicating, spring-rod F secured midway its ends to the portion of plate A separating slots C, the extremities of the rod extending parallel with the slots and adapted to be depressed thereinto, the bolts, and the nuts for said bolts formed with depressions on their inner faces, where they are adapted to engage the extremities of the spring-rod when run upon the bolt, for the purpose substantially as herein shown and described.



3. The combination of the bolts, the plate adapted to embrace the same, said plate being slotted in line with the bolts, and also formed with the central recess, a rod arranged on the outer side of the plate in line with the slots and recess, the clip extended through the recess for holding the rod in position, the extremities of the rod being sprung outward slightly and extending nearly to the bolts, and the nuts having the radial grooves upon their under sides which are adapted to be engaged by the extremities of the rod, substantially as shown and described.

573,801. DEVICE FOR OVERCOMING DEAD-CENTERS. HERBERT H. TYRRELL and CHARLES M. HOLFORD, State Run, Pa. Filed Apr. 25, 1896. Serial No. 589,070. (No model.)



Claim.—1. The combination of a vertically movable carrier, and dogs pivotally secured thereto, said dogs being adapted at one end to engage the band-wheel and at their opposite ends counterweighted, whereby when the carrier is moved upward, the dogs will automatically engage the band-wheel but which will disengage the same when the carrier is moved downward, substantially as shown and described.

2. The combination of a vertically-movable carrier, and dogs pivotally secured thereto and at their inner ends adapted to engage the inner periphery of the band-wheel, the dogs being heavier at their outer ends than at their inner engaging ends, whereby when the carrier is moved upward the dogs will automatically engage the inner periphery of the band-wheel, but which will disengage therefrom when the carrier is moved downward for a new hold, substantially as shown and described.

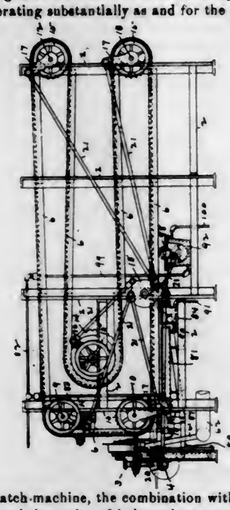
3. The combination of a vertically movable carrier, dogs pivoted thereto and at their inner ends rounded and serrated, said inner ends being arranged to engage the inner periphery of the band-wheel, the outer ends of the dogs being heavier than their inner engaging ends, whereby when the carrier is raised the dogs will automatically engage the inner periphery of the wheel and when lowered will disengage the same, substantially as shown and described.

4. In an appliance of the character described, the combination of a vertically movable carrier adapted to be arranged in a plane parallel with the plane of the band-wheel journal, and devices adjustable longitudinally on said carrier and adapted to engage opposite edges of the band-wheel, substantially as shown and described.

5. The combination of a horizontally-arranged vertically-movable bar, clamps adjustable toward and away from each other on said bar, the arms extended from said clamps, and the wheel-grasping dogs secured to said arms and adapted to engage the periphery of the wheel, substantially as shown and described.

573,802. MATCH-MACHINE. WILLIAM W. ABBOTT, New Haven, Conn. Filed Aug. 27, 1894. Serial No. 521,393. (No model.)

Claim.—1. In a match-machine, two parallel, continuous ways, a series of wholly independent, match-holding plates movably supported at their ends upon said ways and making contact with each other at their side edges, said plates being provided with recesses in their said side edges, and a shaft carrying a toothed wheel the teeth of which are adapted to successively enter the recesses in said plates to cause a progressive movement of the latter upon said ways, combined and operating substantially as and for the purpose set forth.



2. In a match-machine, the combination with the parallel, continuous ways, and the series of independent carrier-plates mounted upon said ways, of a series of shafts located adjacent to said ways and adapted to impart movement to said plates upon the latter, pawl-and-ratchet mechanisms connected with each of said shafts for operating the same in one direction, a main driving-shaft, and intermediate crank connections substantially as described between the latter and each of said pawl-and ratchet mechanisms, whereby said series of plate-moving shafts are operated in unison, for the purpose set forth.

3. In a match-machine, the combination with the endless ways, the carrier-plates mounted on said ways, the series of shafts for moving said plates, and the ratchet-wheels and pawl-carrying levers for operating said shafts, of the rocker lever, rods connecting the same with each of said pawl-carrying levers, the main driving-shaft, and intermediate connections, as the eccentric and eccentric-rod shown and described, between the latter shaft and said rocker lever.

4. In a match-machine, the combination with a series of perforated carrier-plates and a series of loading-punches arranged and operating substantially as described, of a series of hoppers to receive match-sticks in bulk, of a separator-plate movably supported beneath said hoppers and containing a series of grooves or depressions for holding single sticks, means for intermittently causing a to-and-fro movement of said plate, and means for preventing the descent of the sticks from said hoppers during the movement of said plate in one direction, substantially as and for the purpose described.

5. The combination of the series of hoppers having one fixed side and one vertically-movable side provided with a laterally-projecting foot, of the grooved separator-plate, means for periodically imparting a back-and-forth movement to said plate, and means substantially as described for raising the movable sides of said hoppers to their highest position during the movement of said plate in one direction, substantially as and for the purpose set forth.

6. The combination with the series of hoppers having one side thereof provided with outwardly-bent fingers at their lower end, of the series of rolls provided with circumferential grooves to receive said fingers, the grooved separator-plate and means for intermittently imparting a back-and-forth movement to the latter, substantially as described.

7. The combination with the series of hoppers having the movable side provided with the laterally-projecting foot, of the separator-plate provided with the transverse grooves to receive the match-sticks and recessed longitudinally to receive the feet on said hoppers and means for imparting an intermittent back-and-forth movement to said plate, and means for imparting a simultaneous intermittent movement to the movable sides of said hoppers, substantially as set forth.

8. The combination, in a match-machine, of a series of hoppers for holding match-sticks in bulk, with a separator-plate movably supported beneath said hoppers and provided with grooves for holding single sticks and with openings leading from said grooves through the bottom of said plate, means for imparting to said plate an intermittent reciprocatory movement, and means substantially as described for creating an air-suction through the openings in said plate, for the purpose set forth.

9. In a match-machine, the combination with a table having at the under side thereof an air-chamber and provided with a series of openings communicating with said chamber, of a series of hoppers located directly over the openings in said table, a separator-plate movably supported upon said table beneath said hoppers, said plate being provided with transverse grooves for holding match-sticks and with openings leading from the bottom of said grooves to the lower side of said plate, and an exhaust-pump suitably connected with said air-chamber for withdrawing the air therefrom, for the purpose described.

10. The combination with the series of perforated carrier-plates and means for imparting an intermittent movement thereto, of the series of hoppers, the grooved separator-plate and means for causing an intermittent movement thereof, the series of loading-punches and their supporting head, and means substantially as described for imparting an intermittent movement to said head during the periods of rest of said carrier and separator plates, to cause said punches to force a series of match-sticks from the grooves in the separator-plate into the perforations in the carrier-plate.

11. The combination with the grooved separator plate and the series of loading-punches of the guide-plate provided at its under side with grooves adapted to register with those in said separator-plate, and the bottom plate movable in a horizontal plane and adapted to open and close the grooves in said guide-plate, substantially as and for the purpose set forth.

12. The combination with the grooved separator-plate, the loading-punches, the grooved guide-plate, and the movable bottom plate for the latter, of means substantially as described, whereby said punches are caused by their retrograde movement to actuate said bottom plate to open the grooves in said guide-plate, for the purpose set forth.

13. The combination with the endless ways, the series of independent carrier-plates mounted upon said ways and containing perforations as described, and means for causing an intermittent progressive movement of said plates on said ways, of the series of hoppers for holding match sticks in bulk, the grooved separator-plate for separating sticks from said bulk, the movable head carrying the series of loading-punches, the head carrying the series of discharging-punches, and means substantially as described for simultaneously moving said punch-carrying heads in opposite directions between the movements of said carrier-plates, substantially as and for the purpose set forth.

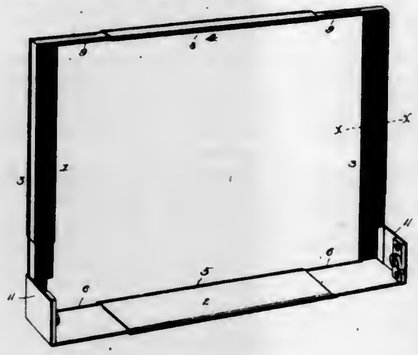
14. The combination with the frame of the machine provided with the endless ways G, of the plates 5 mounted at their ends upon said ways and provided with perforations as described and with the recesses 7, of a series of shafts located adjacent to said ways and carrying toothed wheels to engage the recesses in said plates, and means substantially as described for imparting an intermittent revolving movement to said shafts.

15. The combination with the series of hoppers and the grooved separator-plate 52, of the vertically-adjustable plates 25, carrying the rolls 32, and means, as the main shaft 4 and the intermediate gear connections shown and described, for imparting a revolving movement to said rolls, for the purpose set forth.

16. The combination with the fixed hopper-strips 29, of the movable strips 43, and the levers 46, rods 47 and 48, lever 49, cam 50 on driving-shaft 4, and spring 51, for actuating said strips in both directions, substantially as described.

17. The combination with the series of hoppers and the grooved separator-plate adapted for movement beneath said hoppers, of the series of cover-plates 58 located between said hoppers and adapted to prevent the escape of match-sticks from the separator-plate, substantially as set forth.

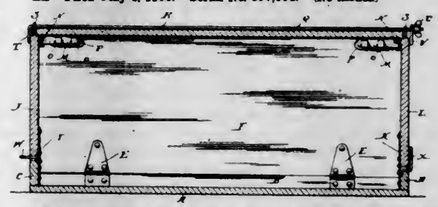
573,803. WINDOW-SCREEN. WILBUR C. ACKLEY, Adrian, Mich. Filed Nov. 4, 1895. Serial No. 567,869. (No model.)



Claim.—1. The combination of a rectangular supporting-frame, an adjustable bottom bracket having telescoping sections and provided with bearings, vertical guides provided with said flanges and composed of adjustable sections telescoping on each other, and a connecting top piece composed of telescoping sections and capable of adjustment similar to the bottom bracket, an adjustable spring-actuated roller journaled in the said bearings and comprising the section 12 provided with a spirally-arranged groove, and the section 13 having a tubular portion with an interior spiral thread engaging the said spiral groove of the section 12 and formed by an exterior spiral depression or groove, a screen mounted on the roller and arranged to run in the said guides and adapted to be connected with the window-sash, substantially as described.

2. The combination of a supporting-frame designed to be mounted on a window, capable of adjustment to suit the size of the same and provided with vertical guides, an adjustable roller journaled on the supporting-frame at the base thereof, and comprising two telescoping sections, one of the sections being provided with an exterior spiral groove and the other section having an interior spiral thread engaging the groove and formed by an exterior depression or groove, and a screen arranged on the roller and adapted to run in said guides, substantially as described.

573,804. FOLDING CRATE. WILLIAM J. AICKLEN, New Orleans, La. Filed July 1, 1896. Serial No. 597,691. (No model.)



Claim.—1. In a folding crate, a bottom, strips secured to said bottom, sides and ends hinged thereto, said sides carrying plates having hooks, and said ends carrying hinged locks vertically slidable on their pintles, and adapted to engage the hooks, as and for the purpose described.

2. A crate of the character described consisting of a bottom, strips B, C and D, secured thereto, a side F, hinged to the strip B, and side G, hinged to the bottom and adapted to fold inwardly thereon in a lower horizontal plane than the side F, ends J, and L, hinged to the strips C, and D, respectively so as to fold upon the side F, locks M, for securing the sides and ends rigidly in their unfolded position, a cover Q, adapted to close the crate, a rod R, for securing said cover in place, said rod having a foot formed on one end and screw-threads on the other, a washer on the rod, a thumb-nut threaded on the rod, and staples S through which said rod is passed, substantially as shown and described.

3. The herein-described combination of a bottom A, strips B, C, and D, secured thereto, a side G, hinged to said bottom and adapted to fold inward thereon, a side F, hinged to the strip B, and adapted to fold upon the side G, ends J, and L, hinged to the strips C, and D, respectively and adapted to fold upon the side F, locks M, carried by the ends, hooks O, carried by the sides said locks and hooks so arranged as to secure the sides and ends in their unfolded position, staples S, projecting upward from the ends, a cover Q, arranged to fit over said staples, a rod R, having an angular end T, said rod being adapted to pass through the staples, a thumb-nut U, for securing the rod in place, and staples W, and X, over which the cover is adapted to be passed and in which the rod may be inserted when the crate is folded, substantially as shown and described.

573,805. PERMUTATION-PADLOCK. GILBERT L. BAKER, Waterford, Cal. Filed May 9, 1896. Serial No. 590,879. (No model.)



Claim.—1. A combination-lock having a core provided with lateral spaced lugs, alternately-arranged stationary and movable tumblers encircling said core, the movable tumblers being arranged in the intervals between said lugs and the stationary tumblers being provided

with notches to receive and engage the lugs, each stationary tumbler being provided with a plurality of notches whereby it may be arranged with different notches in engagement with said lugs to change the combination, and a shackle having its lugs fitted in grooves in the core for engagement by the tumblers, substantially as specified.

2. A combination-lock having a core, alternately-arranged rotary and stationary tumblers fitted upon the core, means for securing the stationary tumblers in different positions, and a shackle for engagement by the tumblers, substantially as specified

3. A combination-lock having a core, and locking-tumblers mounted thereon, a removable cap having a socket fitted upon a projection at one end of the core, a shackle having legs fitted in shackle-openings in the cap, a key engaging registering transverse openings in the projection and contiguous portions of the cap, the key-seat communicating with said shackle-openings, and a removable plug fitting in an exterior opening in alinement with the key-seat and extending to the periphery of the cap, substantially as specified.

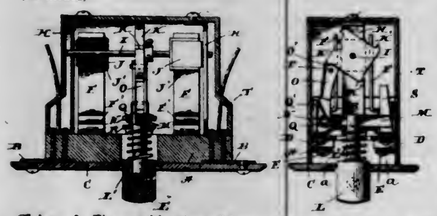
573,806. WRENCH. CHARLES A. BIGELOW, Parker City, and THOMAS C. GATES, Hoodville, Pa. Filed Aug. 13, 1896. Serial No. 602,668. (No model.)



Claim.—1. In a wrench, the combination of a shank, a rigid jaw, a sliding jaw provided with a shank-receiving opening, arranged on said shank and provided at its engaging end with a groove extending outward from the shank-receiving opening and terminating short of the outer end of the sliding jaw to close its outer terminal, and a gripping-head mounted on the sliding jaw and provided with a tongue interlocked with the said groove and introduced therein before the sliding jaw is placed on the shank, whereby when the shank is arranged within the shank receiving opening of the sliding jaw, the gripping-head will be locked in the said groove, substantially as described.

2. A wrench, comprising a shank, a T-shaped head formed at one end of said shank and constituting the rigid jaw of the wrench, a sliding jaw mounted on said shank and having each of its sides at one of its ends laterally extended and in alinement with the ends of the T-shaped head, said sliding jaw being provided with a longitudinal passage to receive the shank, a ridge formed on the shank and extending throughout the length thereof, said ridge being provided with a series of teeth and adapted to enter a guide formed at one side of the longitudinal passage of the sliding jaw, a spring-pressed locking catch fulcrumed in a chamber formed in said sliding jaw, said locking-catch having one of its ends enlarged and provided with teeth adapted to engage with the teeth formed on the shank, and the other end being provided with a right-angled stem passing through an opening leading from the chamber in the sliding jaw to permit said locking-catch being operated, and a gripping-head removably secured to the sliding jaw, said gripping-head being provided with a dovetailed tongue adapted to enter and be held in a dovetailed channel formed in one of the laterally-extended sides at one end of said sliding jaw, said head being adapted to firmly engage the article to which the wrench is applied, substantially as set forth.

573,807. ELECTRIC SWITCH. WALTER BOARDMAN and HARRIS BOARDMAN, Lancaster, Pa. Filed Mar. 28, 1896. Serial No. 585,877. (No model.)



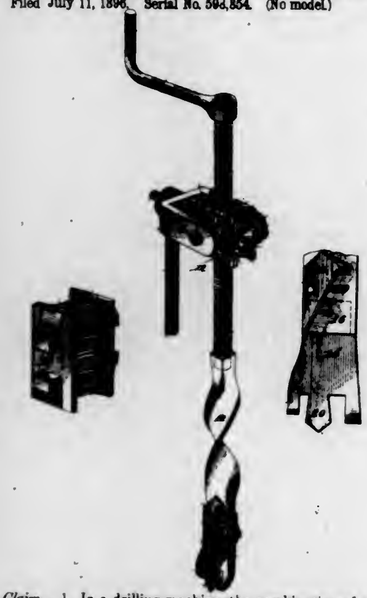
Claim.—1. The combination of base A having an opening, arms S projected from the inner side of the base and in a direction parallel with the longitudinal extent of the base-opening, the push-pin extended through the base-opening, transverse bar M between its ends secured to the inner end of the pin and at one end extended between and guided by the arms S, a switch-throwing device carried by the opposite end of the arm, and a switch, substantially as shown and described.

2. The combination with bar M and arm O, of pivot N connecting the same and projected at each end, and spring Q coiled at its ends about the projecting ends of the pivot and looped over on the arm as at Q', for the purpose substantially as shown and described.

3. In an electric switch, the combination with the push button stem, of plate R through which the stem projects, thus constituting a guide, arms S integral with said plate and extended laterally therefrom, and bar M of the switch mechanism arranged to move between and be guided by said arms, substantially as shown and described.

4. In an electric switch, base A, grooved binding-plates D secured to one side thereof, the overhanging binding-screws E, contact-springs F, a switch adapted to operate between the springs, the latter being arranged upon the opposite side of base A from plate D, and screws G securing the springs to the base and projecting inward to plates D for continuing the circuit, substantially as shown and described.

573,808. DRILLING-MACHINE. WILLIAM BYRON, Audenried, Pa. Filed July 11, 1896. Serial No. 598,854. (No model.)



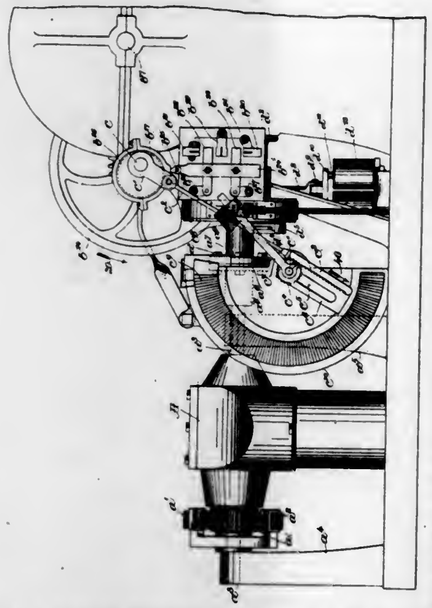
Claim.—1. In a drilling-machine, the combination of a frame, a feed-nut removably fitted to the frame and composed of halves or sections, each section provided in its opposite faces with screw-threads, and adapted to be reversed, means for securing the sections in the frame, and a feed-screw bearing a drill and operating in connection with the screw-threads of the feed-nut sections to advance the drill to its work, substantially as specified.

2. In a drilling-machine, the combination with a frame open at one side, and a bar for closing the open side of the frame, of a feed-nut removably fitted to the frame and composed of sections, each section having screw-threads in its opposite faces and provided with pairs of lugs to engage with the top and bottom sides of the frame and adapted to be reversed, and a feed-screw carrying a drill and adapted to operate jointly with the screw-threads of the feed-nut sections, substantially in the manner set forth for the purpose described.

573,809. ELEVATOR MECHANISM. JOHN H. CLARK, Boston, Mass., assignor to the Whittier Machine Company, same place. Filed July 28, 1890. Serial No. 360,162. (No model.)

Claim.—1. In an elevator mechanism, the combination of the following instrumentalities, viz: two worm-gears in mesh with each other, one of the said gears having its shaft provided with screw-threads, a worm shaft having worms in engagement with the said worm gears, an electric motor, its armature, an independent coupling connecting the said armature shaft directly to the worm shaft, a resistance in circuit with the motor, a lever coöperating with said resistance, a shaft b^{13} provided with an eccentric, a rack-bar connected

to the said eccentric, a pinion in mesh with said rack-bar and to which the resistance-lever is connected, gearing to connect the screw-threaded worm-gear shaft with the shaft b^{13}, an electric brake mechanism, and a pole-changer in circuit with the motor and brake mechanism, substantially as described.



2. In an elevator mechanism, the combination of the following instrumentalities, viz: two worm-gears in mesh with each other, one of the said gears having its shaft provided with screw-threads, a worm-shaft having worms in engagement with the said worm-gears, an electric motor, its armature, an independent coupling connecting the said armature-shaft directly to the worm-shaft, a resistance in circuit with the motor, a lever coöperating with said resistance, a shaft b^{13} provided with an eccentric, a rack-bar connected to the said eccentric, a pinion in mesh with said rack-bar and to which the resistance-lever is connected, gearing to connect the screw-threaded worm-gear shaft with the shaft b^{13}, an electric brake mechanism consisting of a brake-wheel d, a brake-strap, a hub to which the said brake-strap is connected, an electromagnet having its armature connected to said hub, and a pole-changer in circuit with the said electromagnet and motor, substantially as described.

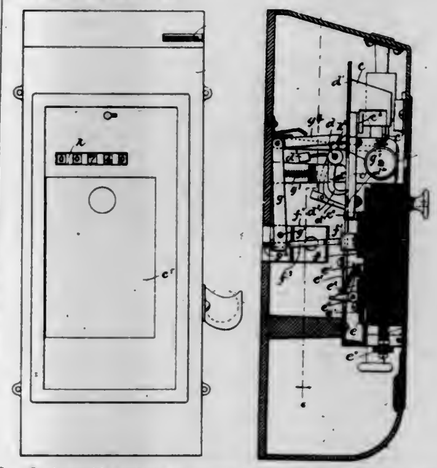
573,810. COIN-CONTROLLED PLAYING-CARD HOLDER. JOS. COUPAL, Winchester, and LUKE E. GRAY, Boston, Mass., assignors of one-third to Joseph Coupal, trustee, Winchester, Mass. Filed Apr. 16, 1896. Serial No. 587,750. (No model.)

Claim.—1. A machine of the character specified, comprising a casing having a coin-slot, a coin-chute therein, a card-holder pivoted to the casing, and a holder locking and unlocking mechanism which is operated by a coin in said chute to unlock the holder and permit its withdrawal from the chute and by a pack of cards in the holder to lock the holder when the latter is returned to the casing.

2. A machine of the character specified, comprising a casing having a coin-slot, a coin-chute therein, a card-holder pivoted to the casing, a coin-controlled holder-unlocking mechanism, and a pack-projecting mechanism operated by the outward movement of the holder.

3. A machine of the character specified, comprising a casing having a coin-slot, a coin-chute therein, a card-holder pivoted to the casing, a coin-controlled holder-unlocking mechanism, a spring-pressed bar movable in the holder to project a pack of cards therefrom, and a detent which locks said bar in its retracted position and is arranged to be displaced by the outward movement of the holder.

4. A machine of the character specified, comprising a casing having a coin-slot, a coin-chute therein, a card-holder pivoted to the casing, a coin-controlled holder locking and unlocking mechanism which is operated by a coin in said chute to unlock the holder and includes a movable block or part projecting into the card-holder and adapted to be moved by pressure exerted through a pack of cards therein to lock the holder.

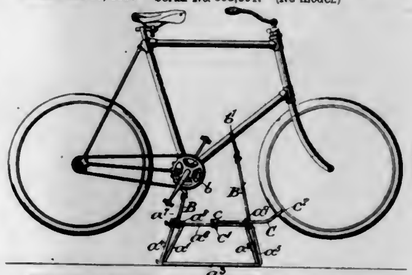


5. A machine of the character specified, comprising a casing having a coin-slot, a coin-chute therein, a card-holder pivoted to the casing, a gravity locking-bolt adapted to normally lock the card-holder, a lever in the coin-chute connected with said bolt and adapted to be operated by a coin to retract the bolt, a detent adapted to secure the bolt in its retracted position, a movable block or part projecting into the card-holder and adapted to receive pressure through a pack of cards, and connections between said block and detent whereby motion is communicated from the block to the detent to release the bolt and lock the card-holder.

6. A coin-controlled card holding and delivering machine comprising a casing, a card-holder movable therein, two coin-chutes in the casing, a holder-locking device controlled by a coin in one chute, a pivoted deflector whereby two coins inserted successively are caused to enter different chutes, means for locking the holder to the casing by pressure through a pack of cards, and means operated by such pressure to release one of the coins.

7. A machine of the character specified, comprising a casing, a primary and a secondary coin-chute therein, one delivering within the casing and the other at the exterior thereof, a holder movable in the casing, a deflector whereby the first of two coins inserted in the casing is guided into the primary chute and the second into the secondary chute, a holder movable in the casing and normally locked therein, a holder-unlocking device operated by a coin in the primary chute, a detent operated by the unlocking of the holder to arrest a coin in the secondary chute, and a mechanism operated by the replacement of the holder in the casing to displace the detent and release the coin from the secondary chute.

573,811. BICYCLE-SUPPORTING STAND. JOHN I. BENTON, New Haven, Conn., assignor of one-half to Charles R. Bishop, same place. Filed June 11, 1896. Serial No. 595,091. (No model.)



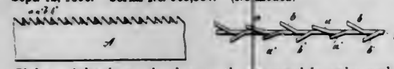
Claim.—1. A bicycle-supporting stand comprising a suitable base consisting of a stationary section and a swinging section, a rear upright uprising from the stationary section and adapted to engage the crank-hanger and a front upright uprising from the stationary section and adapted to engage the front lower brace, substantially as set forth.

2. A bicycle-supporting stand, comprising a rear upright, a front upright, a base consisting of a stationary section and a swinging sec-

tion comprising upper and lower horizontal portions connected by end upright portions, an adjustable arm adapted to slide along the upper horizontal portion of the swinging section and means for securing the arm to said upper horizontal portion, substantially as set forth.

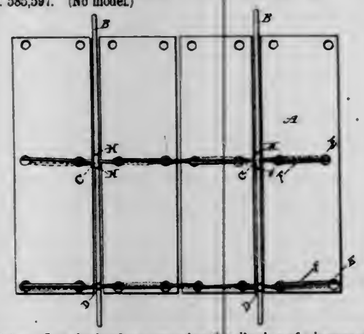
3. A bicycle-supporting stand, comprising a rear upright adapted to engage the crank-hanger, a front upright adapted to engage the front lower brace and a base consisting of a section stationary with respect to the uprights and a swinging section, and a stop on the swinging section adapted to engage one of the uprights to limit the outward swinging movement of the said section, substantially as set forth.

573,812. SAW. FRANK S. BRADLEY, New Haven, Conn., assignor to the West Haven Manufacturing Co., West Haven, Conn. Filed Sept. 12, 1896. Serial No. 605,557. (No model.)



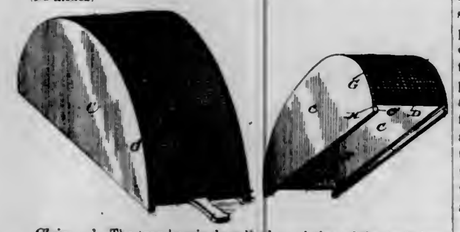
Claim.—A back-saw having teeth arranged in pairs and all of equal length, the teeth of alternate pairs being set in opposite directions slightly beyond the sides of the blade, and the intermediate pairs of teeth also set in opposite directions beyond the points of the teeth first mentioned, substantially as described.

573,813. WIRE ROD FOR JACQUARD-CARDS. JAMES CLEARY and THOMAS M. MILLER, Paterson, N. J. Filed Mar. 31, 1896. Serial No. 585,597. (No model.)



Claim.—In a device for preventing the slipping of a jacquard-card wire the combination with the cards, and the laces connecting the same, of a wire rod provided with one or more curved portions adapted to fit over, and to be secured to the laces, and having an opening or hole on each side of said curved portions, a binding-cord passed about the laces and through said holes to secure said rod and laces together, and a number of wire loops provided with eyes or rings formed at right angles to the loop portion, the loop portion adapted to pass under the laces and the eyes or rings on the said rod, so as to lock the said rod and laces together, substantially as shown and described.

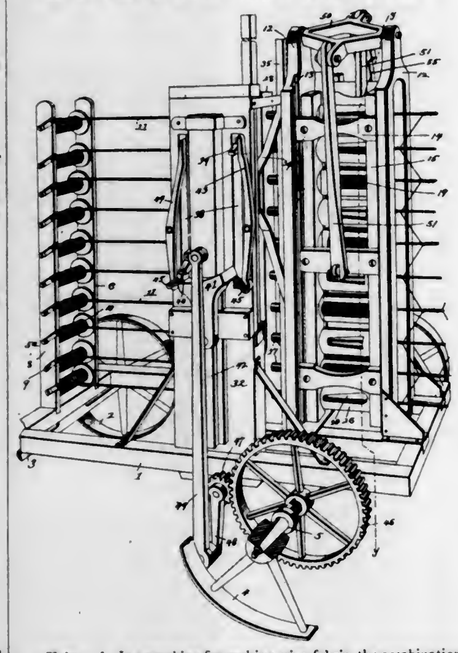
573,814. INSECT-TRAP. THOMAS R. L. DAUGHTREY and ANDREW M. COWART, Punta Gorda, Fla. Filed Sept. 5, 1896. Serial No. 604,923. (No model.)



Claim.—1. The trap herein described consisting of the body having end cross-bars and sides extended between the cross-bars and provided with ways, the bottom sliding in such ways adjacent to the lower edges of the end cross-bars and the removable stop or stops on the upper side of said bottom between the end cross-bars and in position to engage the same substantially as shown and described.

2. The trap herein described consisting of the side plates provided in their inner faces near their lower edges with grooves or ways such side plates and arranged adjacent to the end cross-bars connecting the upper side of said ways, the crown cross-bar connecting said side plates at the crown thereof, the trap-netting having inlets, the bottom sliding in said ways and having at one end an extended handle and the removable stops on the upper side of the bottom between the end cross-bars, said stops being spaced apart and arranged to engage the adjacent end cross-bar substantially as shown and described.

573,815. FENCE-MAKING MACHINE. ROBERT DIAL, Chelsea, Ind. Ter. Filed Sept. 22, 1896. Serial No. 606,626. (No model.)



Claim.—1. In a machine for making wire fabric, the combination of a main frame, a drive shaft journaled therein, reciprocatory slides having bearings, shafts journaled in the frame and having the tubular portions and the flattened and apertured portions arranged between the slides, spool-carriers arranged in the bearings of the slides and adapted in conjunction with the shafts to form wire-twisters, mechanism intermediate of the drive-shaft and the twisters for rotating said twisters, and mechanism intermediate of the drive-shaft and the slides for reciprocating said slides, substantially as and for the purpose set forth.

2. In a machine for making wire fabric, the combination of a main frame, a drive-shaft journaled therein, reciprocatory slides arranged side by side and having semicircular bearing portions in their inner sides, shafts journaled in the frame and having the tubular portions and the flattened and apertured portions arranged between the slides, the spool-carriers arranged on opposite sides of the flattened portions and serving in conjunction with the same to form twisters on the shafts and having the semicircular end portions arranged in the bearing portions of the slides and also having apertures for the passage of twisting wire, the spools journaled in said carriers, mechanism intermediate of the drive-shaft and the shafts of the twisters for rotating the latter, and mechanism intermediate of the drive-shaft and the slides for moving said slides simultaneously in opposite directions, the said mechanisms each having a lost motion and being so timed that the twisters will be rotated while the slides are idle and the slides will be moved while the twisters are at rest, substantially as and for the purpose set forth.

3. In a machine for making a wire fabric, the combination of slides having bearings, rotary shafts arranged between the slides and adapted for the passage of wires and having pinions, spool-carriers arranged in the bearings of the slides and adapted to move therewith in planes on opposite sides of the plane of the shafts, a walking-beam, pitmen connecting the opposite ends of said beam and the slides, a rack-bar engaging the pinions of the shafts, and means for rocking the walking-beam and moving the rack-bar, substantially as and for the purpose set forth.

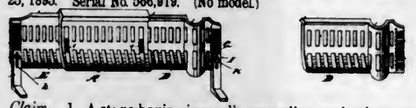
4. In a machine for making wire fabric, the combination of slides having bearings, rotary shafts arranged between the slides and adapted for the passage of wires and having pinions, spool-carriers arranged in the bearings of the slides and adapted to move therewith in planes on opposite sides of the plane of the shafts, a walking-beam, pitmen connecting the opposite ends of said beam and the slides, a rack-bar engaging the pinions of the shaft, a drive-shaft, rack-bars connected by an interposed idler-gear and having lugs, a connection between one of said rack-bars and the walking beam, a plunger having a swinging arm adapted to alternately engage the lugs of the rack-bars, cam-levers for moving said arm, a connection between the drive-shaft and the plunger for reciprocating said plunger, a second pair of rack-bars connected by an interposed idler-gear and having lugs, a connection between one of said rack-bars and the rack-bar which engages the pinions of the twister-shafts, a plunger having a swinging arm adapted to alternately engage the lugs of the rack-bars, cam-levers for moving said arm, and a connection between the drive-shaft and the second plunger for reciprocating said plunger, the parts being so timed that when the plunger connected with the walking-beam is moved in one direction the other plunger connected with the rack-bar engaging the pinions of the twister-shafts will be moved in the opposite direction, substantially as and for the purpose set forth.

5. In a machine for building wire fences, the combination of a frame, a shaft having traction-wheels at its ends and journaled in the frame, a drive-shaft connected by gearing to said traction-shaft and having oppositely-disposed cranks at its ends, slides having bearings, rotary shafts arranged between the slides and adapted for the passage of wires and having pinions, spool-carriers arranged in the bearings of the slides and adapted to move therewith in planes on opposite sides of the plane of the shafts, a walking-beam, pitmen connecting the opposite ends of said beam and the slides, a rack bar engaging the pinions of the shaft, a drive-shaft, rack-bars connected by an interposed idler-gear and having lugs, a connection between one of the said rack-bars and the walking-beam, a plunger having a swinging arm adapted to alternately engage the lugs of the rack-bars, cam-levers for moving said arm, a pitman connected at one end to one crank-arm of the drive-shaft and at its opposite end to the plunger, a second pair of rack-bars connected by an interposed idler-gear and having lugs, a connection between one of said rack-bars and the rack-bar which engages the pinions of the twister-shafts, a second plunger having a swinging arm adapted to alternately engage the lugs of the rack-bars, cam-levers for moving said arm, and a pitman connected to one of the crank-arms of the drive-shaft and the second plunger, substantially as specified.

6. In a machine for building wire fences, the combination of a frame, a rack arranged thereon and carrying wire spools, traction-wheels supporting the frame, slides arranged in the frame in rear of the spool-rack and having bearings, rotary shafts arranged between the slides and adapted for the passage of wires, spool-carriers arranged in the bearings of the slides and adapted to move therewith in planes on opposite sides of the plane of the shafts, mechanism intermediate of one of the traction-wheels and the shafts for rotating said shafts, and mechanism intermediate of one of the traction-wheels and the slides for moving said slides simultaneously in opposite directions, the said mechanisms each having a lost motion and being so timed that the shafts will be rotated while the slides are idle and the slides will be moved while the shafts are at rest, substantially as and for the purpose set forth.

7. The combination of a device to be moved, rack-bars having lugs, a connection between one of the said rack-bars and the device to be moved, a reciprocatory plunger, an arm pivotally connected to said plunger and adapted to engage the lugs of the rack-bars alternately, and cam-levers arranged to be engaged by the lugs of the rack-bars and adapted to move the pivoted arm of the plunger, substantially as and for the purpose set forth.

573,816. FRONT GRATE. FAY O. FARWELL, Dubuque, Iowa, assignor of one-half to the Adams Company, same place. Filed Oct. 25, 1895. Serial No. 566,919. (No model.)



Claim.—1. A stove having inwardly extending projections, combined with a front grate having a curved portion adapted to fit over said projections, and means for vertically adjusting said grate in relation to said projections, substantially as shown.

2. A front grate composed of a central body or plate, and wings that are adjustable thereon, one of said wings being provided with a curved portion, combined with a stove having inward projections, and which projections fit in said curved portion in one of the wings, substantially as described.

573,817. ELECTRIC-LIGHT SUPPORT. ELISHA J. FULGHUM, Traverse City, Mich., assignor of two-thirds to Elijah C. Fulghum and Frank Friedrich, same place. Filed June 24, 1895. Serial No. 553,864. (No model.)



Claim.—1. The combination with a crane-arm having a longitudinal groove, of a block recessed to receive the arm and having a flange or plate extending therefrom and engaging said groove, a spring-drum carried by the block, an electrical wire wound upon the drum, and a lamp connected to the wire, substantially as specified.

2. The combination with a support, of a spring-drum one wall and rim of which is fixed immovably to the support and the opposite wall of which is axially mounted for rotation against the said wall, an electrical wire wound upon the rim of the drum and depending at one end therefrom, and a lamp connected to the wire, substantially as specified.

3. The combination with a crane-arm and support movable thereon, and a friction-disk mounted immovable on the support, of a spring-drum axially supported for rotation in contact with the disk, means for regulating its frictional contact therewith, an electrical wire wound upon the drum and depending at one end therefrom, and a lamp connected to the aforesaid end and counterbalanced by the spring within the drum, substantially as specified.

4. The combination with a support, a block adjustably mounted for horizontal movement along the same, a friction-disk secured to the block, a spring-drum applied to the friction disk, a bearing-screw passed through the block, disk and into the drum, whereby the latter may be adjusted to and from the disk, an electrical wire wound upon the drum and depending at one end therefrom, and a lamp connected to said depending wire, substantially as specified.

5. The combination with a swinging crane-arm and its support, of a block adjustably mounted on the former, a friction-disk applied to the face of the block, a spring-drum adjustably mounted in frictional contact with the disk and adapted to rotate, an electrical wire wound upon the drum and having one end depending therefrom, and a lamp connected to the said depending end, substantially as specified.

6. The combination with a support, of a drum mounted for rotation thereon, said drum having a central perforation and a communicating radial passage formed in one of its walls and leading to its periphery at a point between its flanges, an electrical wire passed through the perforation and passage and having its leading end thereby beyond wound upon the drum and depending therefrom, a spring within the drum and occupying its interior and a lamp connected to said leading end, substantially as specified.

7. The combination with a crane-arm, the same being provided with a longitudinal groove, of a block having a curved recess to fit the arm and provided above the same with a depending plate engaging with said groove, a friction-disk located at the opposite side of the block, a hollow spring-drum axially pivoted for rotation to and against the friction-disk, the L-shaped guide arm terminating in a guide-eye depending from the block, an electrical wire wound upon the drum and having its leading end depending through said eye, and a lamp connected to said end, substantially as specified.

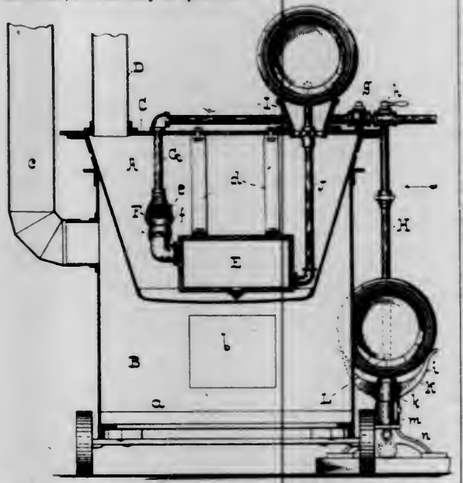
8. The combination with the support, a block located thereon, and a friction disk connected to the block, of the drum chambered at one side and having the central post, the screw passed through the block, friction disk and into the post, the spring secured to and coiled about the post within said chamber and terminating in an eye, the screw passed through the friction-disk and engaging the eye, the electrical wire wound upon the drum and depending at one end therefrom, and the lamp connected to the end of the wire, substantially as specified.

573,818. PITCHING APPARATUS. MAXIMILIAN GUETHLER, Baltimore, Md., assignor of one-half to John B. Adt, same place. Filed Aug. 29, 1896. Serial No. 604,261. (No model.)

Claim.—1. In an apparatus for pitching barrels, the combination of a kettle and means to heat it, a reservoir submerged in the melted pitch in the kettle, an inwardly-opening valve to admit melted pitch from the kettle to the reservoir, and an air-blast to drive the melted pitch from the reservoir to the interior of a barrel, substantially as specified.

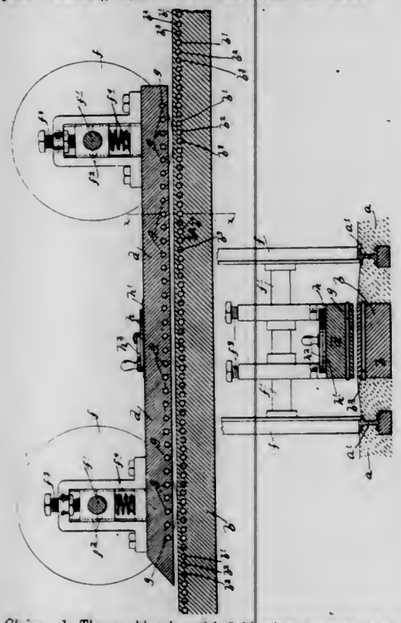
2. In an apparatus for pitching barrels, the combination of a pitch-kettle and means to heat it, a pitch-reservoir submerged in the melted pitch, an inwardly-opening valve to allow of the flow of melted pitch from the kettle to the reservoir, a compressed-air pipe leading into the shell of the said valve, and a second pipe leading to a barrel,

whereby the charge of melted pitch in the reservoir is injected into the barrel, substantially as specified.



3. In an apparatus for pitching barrels, the combination of a furnace, a pitch-kettle in the furnace, a reservoir within the kettle, an inwardly-opening valve leading to the reservoir to admit of the filling of the same with melted pitch, a pipe leading under the inwardly-opening valve, and a second pipe leading to the interior of a barrel, substantially as specified.

573,819. ELECTRIC RAILWAY. PAUL W. LEFFLER, Chicago, Ill., assignor to the Leffler Electro Magnetic Railway Company, same place. Filed Aug. 12, 1895. Serial No. 558,992. (No model.)



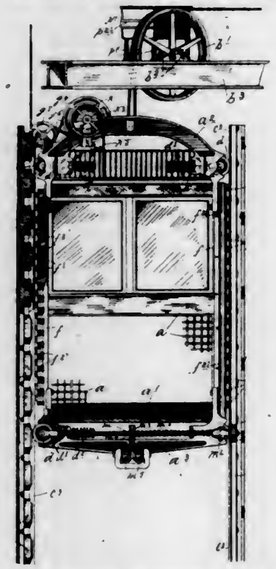
Claim.—1. The combination with field-magnets extending along the line of travel, of a series of cooperating magnetic sections arranged longitudinally of the car, and a controller on the car for rendering said magnetic sections operative or inoperative, cumulatively, in pairs, one on each side of the center of said armature, substantially as described.

2. The combination with a car or other vehicle, of field-magnets extending along the line of travel, an armature on the car, wired by a series of coils that are normally dormant but which become subject to the inductive action of the field to propel the car, and an armature-circuit controller on the car, comprising a series of insulated contact-pieces and a movable conductor engageable with said contact-pieces, said armature-wires being so arranged and connected to said contact-pieces that the successive engagement of said movable conductor with said contact-pieces will close the circuits through said armature-coils cumulatively, in pairs, one on each side of the center of said armature, substantially as described.

3. The combination with a car or other vehicle, of field magnets extending along the line of travel, an armature on the car, wired by a series of coils that are normally dormant but which become subject to the inductive action of the field to propel the car, and an armature-circuit controller on the car, comprising a series of insulated contact-pieces and a movable conductor engageable with said contact-pieces, said wires being so arranged and connected to said contact-pieces that the successive engagement of said movable conductor with said contact-pieces will close the circuits through said armature-coils, cumulatively and progressively from the center of the armature outward in both directions, substantially as described.

4. The combination with a car or other vehicle, of field magnets extending along the line of travel, an armature on the car wired by a series of coils that are normally dormant but which become subject to the inductive action of the field to propel the car, and the armature-circuit controller on the car, comprising the segmentally-arranged series of insulated contact-pieces, and the pivoted segmental conductor engageable with said contact-pieces, said parts being arranged and operating substantially as and for the purposes set forth.

573,820. ELECTRIC ELEVATOR. PAUL W. LEFFLER, Chicago, Ill., assignor to the Leffler Electro Magnetic Railway Company, same place. Filed Aug. 19, 1895. Serial No. 559,702. (No model.)



Claim.—1. In an elevator, the combination with the car provided with an armature, of combined magnetic-field-producing devices and guide extending along the line of travel, for cooperation with said armature and car, to propel and guide the same, substantially as described.

2. In an elevator, the combination with a pair of armatures carried on the car, of a double row of combined magnetic-field-producing devices and guides extending along the line of travel, for cooperation with said armatures and car, substantially as described.

3. In an elevator, the combination with the double row of combined magnetic-field devices and guides extending along the line of travel, of the car having the pair of magnetic armatures and guide-rollers cooperating with said combined field devices and guides, substantially as described.

4. In an electric elevator, the combination with the double row of magnetic-field devices having the continuous guide-surfaces, of the car provided with the magnetic armatures, cooperating with said field-magnets, and the spring-mounted guide-rollers, engaging said guide-surfaces, substantially as and for the purposes set forth.

5. In an electric elevator, the combination with the pair of channel-shaped field cores, having the pole-pieces formed integral therewith, the alternate members of which pole-pieces are wound to give opposite polarities, and the continuous metal guide-bars on said magnets, of the car provided with the pair of non-rotating magnetic armatures, cooperating with said fields, and the spring mounted guide-rollers carried by the car, and engagable with said guide-bars, substantially as described.

6. In an elevator, the combination with the car, of the double row of magnetic-field devices, the pair of magnetic armatures carried by the car, electric connections for said field devices and armatures, and an automatic pole-changer in the armature connections, comprising a commutator operated according to the speed of the car, and two groups of brushes, one group for each armature, said groups being positioned in pairs, one in advance of the other, for engagement with different segments of the commutator, substantially as described.

7. In an elevator, the combination with the car, of the double row of magnetic-field devices in the line of travel, the pair of armatures carried by the car, electric connections for said fields and armatures, and an automatic pole-changer in said armature connections, comprising a commutator operated according to the speed of the car, and two groups of brushes, one group for each armature, fixed for a common adjustment over the face of said commutator, and set with reference to each other, so as to cause the alternations of corresponding magnets of the opposite armatures, at different times, substantially as described.

8. In an elevator, the combination with the car, of the double row of field devices in the line of travel, the pair of magnetic armatures carried by the car, electric connections for said field devices and armature-magnets, an automatic pole-changer in said armature connections, comprising the commutator operated according to the speed of the car, and the two groups of brushes, carried by a common segment, pivoted at the axial center of said commutator, and a hand device for adjusting said segment, extending to within reach of the operator of the car, substantially as described.

9. The combination with a magnetic-field-producing device, extending along the line of travel, of the car provided with the magnetic armature, electric connections for said field device and armature, automatic pole-changing mechanism for said armature connections, comprising the commutator-brushes, the commutator and drive-sheave on a common shaft, and the drive-rope working around said drive-sheave and secured at its ends against endwise movement, substantially as described.

10. In a pole-changer, the combination with the several pairs of brushes located, one pair in advance of the other and secured to a common adjustable segment, of the insulated commutator-sections, and the conductive strips in the lateral insulations of said commutator, electrically connected, to short-circuit said brushes in passing said insulations, substantially as described.

11. In an elevator, the combination with the car, of an armature carried by the car, a magnetic-field-producing device extending along the line of travel, electric connections to said field and armature magnets, a safety-clutch carried by the car, under strain to stop the movement of said car, and an electromagnet energized from said electric connections to said field and armature magnets, whereby, when said connections are energized, said safety-clutch will be held out of action, substantially as and for the purposes set forth.

12. In an electric elevator, the combination with the car, of a magnetic armature carried by the car, magnetic-field devices extending along the line of travel, and having clutch-engaging surfaces, the pair of spring-mounted rock-shafts, carried by the car, having the grip-cams, engageable with this clutch-surface of said field, an armature-lever on said rock-shafts, an electromagnet acting on said armature-lever to hold said grip-cams out of action, and electric connections for energizing said clutch-magnets, fields, and armatures, substantially as described.

13. In an electric elevator, the combination with the car, of the armatures carried by the car, the double row of field devices extending along the line of travel, and having the clutch-engaging surfaces, the pair of spring-mounted rock-shafts carried by the car and having the grip-cams or eccentric blocks, engageable with the clutch-surfaces of said fields, the armature-levers on said rock-shafts, the electromagnets, acting on said armature-levers to hold said grip-cams out of action, and electric connections for energizing said clutch-magnets, fields and armatures, from a common source, substantially as described.

14. The combination with the car or other traveling body, of a supply-conductor, a field formed by a series of electromagnets wired in sets, a common switch in said supply-conductor operated according to the speed of the car, and independent connections from each of said sets of field-magnets to said common switch, whereby, under the movement of the car the circuits through said sets of field-magnets will be successively closed and opened by said common switch, substantially as described.

15. The combination with the car or other traveling body, a supply-conductor, a field formed by a series of electromagnets wired in sets, a common switch in said supply-conductor operated according to the speed of the car and arranged to close the circuits through several of said sets, at one time, and independent connections from each of said sets of field-magnets to said common switch, whereby, under the movement of the car the circuits through said sets of field-magnets will be successively closed and opened by said common switch, substantially as described.

16. The combination, with the car or other traveling body, of the double row of field-magnets, wired in sets, with corresponding sets of each row connected together, a common switch operated according to the speed of the car, and electric connections from each double set of field magnets arranged to close the circuit through several of said double sets, at one time, and to successively close and open the same under the movement of the car, substantially as described

17. The combination, with the car, of the field formed by a series of electromagnets, wired in sets, and a switch, operated according to the speed of the car, comprising the feed-ring connected to the source of energy, the series of insulated contact-pieces connected, one to each of the field-circuits, and the pivoted switch-lever working over said feed-ring and contact-pieces, substantially as described.

18. The combination with the field formed by a series of electromagnets, wired in sets, of the switch, comprising the feed-ring, connected to the source of energy, the series of insulated contact-pieces, connected, one to each of the field-circuits, the pivoted switch-lever working over said feed-ring and contact-pieces, and provided with the worm-gear, and the worm, engaging said worm-gear, driven from and operated according to the speed of the car, substantially as described.

19. The combination with the field formed by a series of electromagnets, wired in sets, of the sheave or pulley, mounted on a stationary support, above said fields, the car provided with a magnetic armature and having a cable passing over said sheave, the worm rotating with said sheave, the series of insulated contact-pieces, the feed-ring, and the pivoted switch-lever working over said feed-ring and contact-pieces, and provided with the worm-wheel engaging said worm, substantially as described.

20. The combination with a supply-conductor, of a series of field-magnets, a switch connected to said supply-conductor, a series of wires from certain of said field-magnets to a common switch, and resistance-coils in branch or shunt connections between said field-wires and said supply-conductor, whereby the circuits through said field-magnets are never broken from said supply-conductor and sparking is thereby prevented, substantially as described.

21. The combination with the supply conductor, of a series of field-magnets, a switch, comprising a series of insulated contact-pieces, each of which is connected to certain of said field-magnets, and a conducting-arm, which is connected to said supply-conductor; and a series of resistance-coils in branch or shunt circuits between said contact-pieces and said supply-conductor, substantially as described.

22. The combination with the double row of field-magnets connected in double sets, of the supply-conductor, the circularly-arranged insulated contact-pieces, each of which is connected to one of the field-circuits, the feed-ring connected to said supply-circuit, the pivoted lever, engaging said feed-ring and contact-pieces, and the series of resistance-coils in branch or shunt circuits between said contact-pieces and said supply-conductor, substantially as described.

23. In an elevator, the combination with the magnetic-field devices extending along the line of travel, of the car provided with armatures, which are spring-mounted for lateral movement, to and from the car, substantially as and for the purpose set forth.

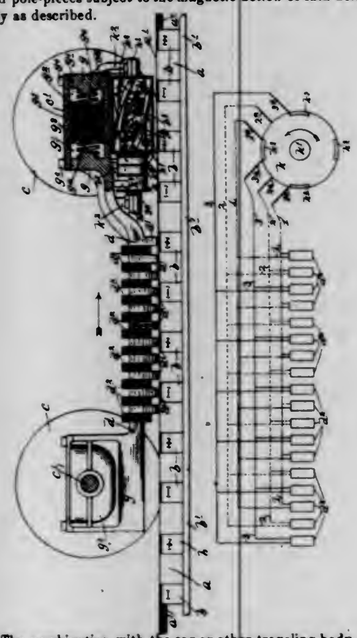
24. The combination with the pair of combined magnetic field devices and guides, extending along the line of travel, of the car-frame, the pair of armatures mounted for movement, to and from said car frame, and provided with guide or keeper rolls, engageable with the guides of said fields, and spring connections between said armatures and said car-frame, tending to retract said armatures from said fields, substantially as described.

573,821. ELECTRIC RAILWAY, &c. PAUL W. LEFFLER, Chicago, Ill., assignor to the Leffler Electro Magnetic Railway Company, same place. Filed Sept. 26, 1895. Serial No. 563,716. (No model.)

Claim.—1. The combination with a car or other traveling body, of field-magnets extending along the line of travel, and a rotary magnetic body, carried by said car-body, having one or more spirally-arranged pole-pieces subject to the action of said field, substantially as and for the purpose set forth.

2. The combination with the car, or other traveling body, of the field magnets extending along the line of travel, the armature carried by the car, and the pole changer, comprising a commutator for alternating the currents through the armature-magnets and a magnetic controller for driving said commutator having one or more spirally-

arranged pole-pieces subject to the magnetic action of said field, substantially as described.



3. The combination with the car or other traveling body, of the field-magnets extending along the line of travel, the non-rotary armature carried by the car, and the rotary pole-changer on the car, comprising a commutator for alternating the currents through the armature-magnets and the magnetic controller, for said commutator, having its pole-pieces arranged to form a series of parallel spiral sections which rotate around an axis parallel to the line of the car's travel and are subject to the magnetic action of said field, substantially as described.

4. The combination with the car or other traveling body, of the field-magnets in the line of travel, the adjacent members of which are excited with a constant and opposite polarity, the non-rotating armature on the car, and the rotary pole-changer on the car, comprising a commutator in the connections to said armature-magnets and the magnetic controller, driving said commutator, having its pole-pieces arranged to form a series of parallel spiral sections, the adjacent members of which pole-pieces are excited with a constant and opposite polarity, substantially as described.

5. The combination with a car, or other traveling body, of field-magnets extending along the line of travel, a rotary magnetic body, having radial arms terminating in spiral pole-pieces, and a magnet-coil wound between said radial arms, against the opposite sides of adjacent arms, whereby adjacent members of said spiral pole-pieces will be given opposite polarities, substantially as and for the purpose set forth.

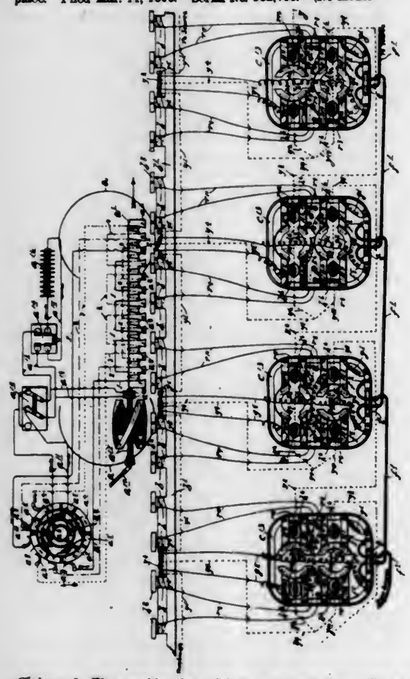
6. The combination with the car, or other traveling body, of the field-magnets in the line of travel, the adjacent members of which are excited with opposite polarity, the non-rotary armature on the car, and the rotary pole-changer on the car, comprising a commutator in the connections to said armature-magnets, the magnetic controller, driving said commutator, having radial arms terminating in spiral pole-pieces, and the coil wound between said radial arms against the opposite sides of adjacent arms, substantially as and for the purpose set forth.

7. The combination with the car or other traveling body, of the field-magnets in the line of travel, the non-rotating armature on the car, and the rotary pole-changer on the car, comprising a commutator in the connections to said armature magnets, and the magnetic controller driving said commutator having radial arms terminating in spiral pole-pieces, the coil wound around said core, and the cylindrical casing of non-magnetic material, inclosing said core, spiral pole-pieces and magnetic coil, substantially as described.

8. The combination with the car or other traveling body, of the field-magnets extending along the line of travel, and the armature carried by said car or traveling body, spring-mounted for a limited movement longitudinally of the car for preventing jars and shocks, substantially as described.

9. The combination with the car or other traveling body, of the field-magnets extending along the line of travel, and the magnetic armature, spring-mounted from the axles of the car-truck by means of the bearing-heads with longitudinal seats, the axle bearings or boxes held within said seat by means of the removable top bars, and the cushioning springs compressed within said seats, one at the front and one at the rear of each of said axle-boxes, substantially as and for the purposes set forth.

573,822. ELECTRIC RAILWAY, &c. PAUL W. LEFFLER, Chicago, Ill., assignor to the Leffler Electro Magnetic Railway Company, same place. Filed Mar. 11, 1896. Serial No. 582,760. (No model.)



Claim.—1. The combination with a car or other traveling body, having an armature, of field-magnets, in the line of travel, and supply-circuit connections for said field, arranged to divide the same into successive sections, adapted to be connected up, in series, into the supply-circuit, and including, as parts thereof, a series of automatic switches which normally cut the field-section magnets entirely out of the supply circuit, but are operative, by the car, to close into the supply-circuit the particular section or sections of the field over which the car is passing, substantially as described.

2. The combination with a car or other traveling body, having an armature, of field-magnets, in the line of travel, and supply-circuit connections, for said field, arranged to divide the same into successive sections, adapted to be connected up, in series, into the supply-circuit, and including, as parts thereof, magnetic switches which normally cut the field-sections entirely out of the supply-circuit, but which are operative, by the armature on the car, to cut in the field section or sections over which the car is passing, substantially as described.

3. The combination with a car or other traveling body, having an armature, of field-magnets, in the line of travel, supply-circuit connections, for said field, arranged to divide the same into successive sections, adapted to be connected up into the supply-circuit, magnetic switches forming parts of said field connections, which switches normally cut said field-sections out of the supply-circuit, but are adapted to cut the same into the supply-circuit, under the influence of the armature on the car, and independent circuit connections for the magnets of said switches, substantially as and for the purposes set forth.

4. The combination with a car or other traveling body, having an armature, of field-magnets in the line of travel, supply-circuit connections dividing the field into successive sections adapted to be connected up, in series, into the supply-circuit, magnetic switches, in said connections, normally cutting out said field-sections entirely, but adapted to cut the same in, when the switch-magnets are energized, an independent circuit for said switch-magnets, and controllers, in said switch-circuit connections, normally cutting out the switch-magnets but adapted to cut the same into the switch-circuit, under the influence of the armature on the car, substantially as described.

5. The combination with a car or other traveling body, having an armature, of field-magnets, in the line of travel, supply-circuit connections for said field, arranged to divide the same into successive sections, adapted to be connected up, in series, in the supply-circuit, and magnetic switch-boxes, in said connections, with switching-contacts for the supply-circuit, which normally afford a direct way or path for the current, entirely independent of the field-magnets, but adapted to establish a by-pass through the magnets of the field sections, independent circuit connections for the switch-magnets, arranged to normally afford a direct or easy path for the switch-circuit current, independent of the switch-magnets but including a magnetic controller subject to the armature on the car, adapted, when thrown out of its normal position, to break the direct path and force the current of the switch-circuit to pass through the switch-magnets, substantially as and for the purposes set forth.

6. The combination with a car or other traveling body, having an armature, of field-magnets, in the line of travel, and supply-circuit connections for said field, arranged to divide the same into successive sections, adapted to be connected up into the supply-circuit, and including, as parts thereof, magnetic switches having controllers operative by the armature on the car and normally closing a direct or easy path for the switch-circuit current, but so arranged, that, whenever one or more controllers are thrown into their open position, by the armature on the car, the only path for the switch circuit current will be from the first controller in closed or normal position, in advance of the armature to the first controller, in normal or closed position, to the rear of the armature, and hence through all the intermediate switch-magnets, substantially as and for the purpose set forth.

7. The combination with a car or other traveling body, having an armature, of field-magnets in the line of travel, and supply-circuit connections for said field-magnets, including a series of switch-boxes provided each with duplicate switches, arranged to normally afford a direct way for the supply-circuit current, independent of the field-magnets, but adapted, under the control of the car, to connect up the field-magnets, in bipartate sections into the supply-circuit, substantially as and for the purposes set forth.

8. The combination with the car or other traveling body having an armature, of the field-magnets in the line of travel, and the supply-circuit connections for said field-magnets, comprising the main feed circuit, the independent switch-magnet circuit, and the duplex switches, arranged to afford a direct way for the supply-circuit current but adapted to connect the field-magnets up in bipartate sections, into the supply-circuit, and having controllers for the switch-circuit connections, normally affording a direct and easy path for the switch-circuit current, independent of the switch-magnets, but adapted, under the influence of the armature on the car, to cut in the switch-magnets and operate the supply-circuit switching-contacts, substantially as and for the purposes set forth.

9. The switch-box frame, composed of the incomplete external casing $c\ c'\ c^2$, as described, the intermediate casing composed of the parts $c^5\ c^6\ c^7\ c^8\ c^9$, as described, and the internal or inside casing consisting of the separable porcelain cup-sections $c^{12}\ c^{13}$, cooperating to form a complete cup of insulating material, for holding the electrical connections in the box, substantially as and for the purposes set forth.

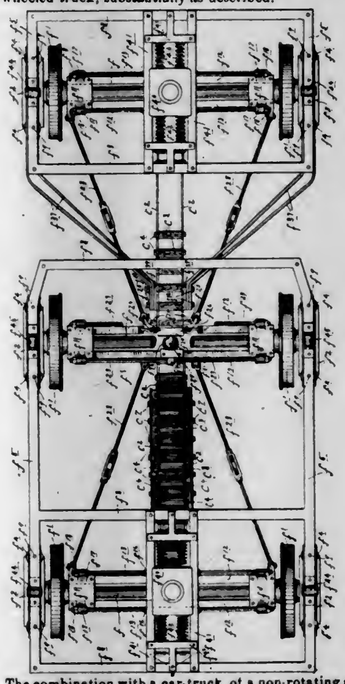
10. The combination with the car or other traveling body, of the field-magnets in the line of travel, and the supply-circuit connections for said field-magnets, including the series of switch-boxes, with switches therein, arranged to afford a direct way for the supply-circuit current, independent of the field-magnets, but adapted, under the control of the car, to connect the field-sections, into the supply-circuit, and the safety-bridges $t\ t'\ t^2\ t^3$ connecting the terminals f^3 and f^4 of the supply-circuit feed-wire sections f^*, at the switch-boxes, substantially as and for the purposes set forth.

11. The combination with a car or other traveling body, having an armature or other magnetic mass, of the field-magnets, in the line of travel, the supply-circuit connections for the field, the switch-boxes in said connections having centrally-pivoted magnetic controllers, subject to the action of said armature or magnetic mass on the car, and covers, for said switch-boxes, composed of non-magnetic material, but provided with soft-iron blocks set therein, on opposite sides of the controller's pivot, substantially as and for the purpose set forth.

573,823. MOTOR-CAR TRUCK. PAUL W. LEFFLER, Chicago, Ill., assignor to the Leffler Electro Magnetic Railway Company, same place. Filed Mar. 21, 1896. Serial No. 584,309. (No model.)

Claim.—1. The combination with a sectional truck, of a sectional armature, carried, one section on each of said truck-sections, and a common universal joint or joints applied to couple together said truck-sections and said armature-sections.

2. A six-wheeled truck having a non-rotating armature, with the truck and the armature each constructed in two rigid sections, coupled together by a common universal joint located at the center of the six-wheeled truck, substantially as described.



3. The combination with a car-truck, of a non-rotating armature, hanger-frames, boxed on the truck-axles and hanger-arms supporting the said armature from the said hanger-frames.

4. The combination with a car-truck and a non-rotating armature, of hanger-frames on the truck-axles, consisting of end boxes on the axles directly inward of the wheels, and transoms connecting the said boxes and embracing the axle, and hanger-arms having their upper ends connected to the said boxes, and their lower ends connected directly or indirectly, to the said armature, substantially as described.

5. The combination with the sectional six wheeled truck and the sectional armature, coupled together by a common universal joint, of the hanger frames mounted on the axles, and the hanger-arms connecting the said hanger-frames with the armature sections, all of which hanger-arms are provided with means for adjusting the same relative to the hanger-frames and the armature-section, substantially as described.

6. The combination with the six-wheeled truck constructed in two rigid sections, comprising, respectively, the four-wheeled forward section and the two-wheeled rear section, of the two corresponding armature-sections, carried by said respective truck-sections, the ball-and-socket joint applied to couple together said armature-sections and said truck-sections, the hanger-frames boxed on the truck axles, the hanger-arms connecting the armature sections with said hanger-frames, and the longitudinal turnbuckle brace-rods f^{26} applied to brace the hanger-frames and the armature-sections, lengthwise thereof, substantially as described.

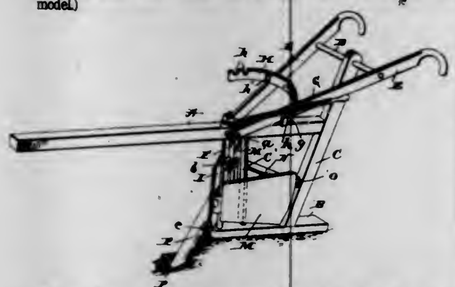
7. The combination with the sectional truck and the sectional armature, of the ball and-socket joint coupling together the armature and the truck sections, the hanger-frame mounted on the central truck-axle, the hanger-arms f^{25}, as described, the yoke f^{24} made fast to the socket member of the ball and-socket joint and to the transoms of said hanger-frame, and provided with hooks f^{26}, engaging over the depressed or central portions of said hanger-arms, substantially as described.

8. The combination with the sectional truck and the sectional armature, of the ball and-socket joint coupling together said truck-sections and said armature section, the hanger-frame mounted on the truck-axles, the rear hanger-arms f^{12} connecting the boxes f^{11} of the rear hanger-frame to the rear end of the rear armature-section, by means of the casing f^{14}, the forward hanger arms f^{12} connecting the boxes f^{11} of the forward hanger-frame with the forward end of the front armature-section, by means of the casting f^{23}, the central hanger-

arms f^{32}, the yoke f^{34} engaging the said arm and made fast to the socket member of the ball-and socket joint and to the transoms of the central hanger-frame, the hooks f^{44} connecting the corners of the casting f^{34} with the said transoms f^{13} of the central hanger, and the diagonal brace-rods f^{35}, made fast, at their inner ends, to the coupling ends of the armature-sections, and, at their outer ends, to the boxes of the front and rear hanger-frames, substantially as described.

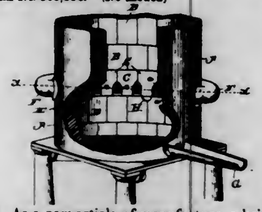
9. The combination with the four-wheeled forward truck-section and the two-wheeled rear truck-section, of the armature-sections carried by said truck-sections, the universal joint coupling together said truck and armature sections, the rigid frame for the four-wheeled section, and the rigid frame for the two-wheeled section, composed of the side bars f^{10} and the bars f^{37}, extending forward from the side bars f^{10} and inward to a junction with the rear armature-section and made fast thereto, near its forward end, substantially as described.

572,824. REVERSIBLE PLOW. ERNST J. LOTER, Northport, Wash., assignor of thirteen-thirtieths to Meyer Abrahams and J. E. Ketchum, same place. Filed May 9, 1896. Serial No. 590,892. (No model.)



Claim.—In a reversible plow, consisting of the beam A, standards C and C' and the handles E E, upon which is mounted the semicircular rack H, having locking-recesses *h*, in combination with the vertical oscillating shaft F, the upper end of which is provided with a hand-lever G, having a rigid pawl *g*, and the oscillating share I, having a removable double-ended point P, and the hinged moldboards M M', provided with pitmen N, pivoted to a common bolt O on the standard C, substantially as and for the purpose specified.

573,825. CUPOLA-FURNACE. JEROME B. MAGILL, Moline, Ill., assignor of one-half to Charles A. Barnard, same place. Filed May 27, 1896. Serial No. 593,330. (No model.)

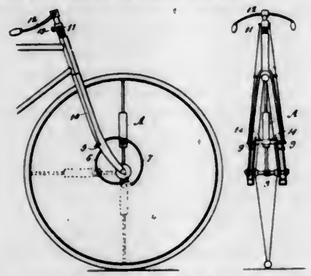


Claim.—1. As a new article of manufacture, a brick for cupolas comprising the brick C formed with the parallel top and bottom *a a'*, its convex outside *b'* formed with a recess *c* and its sector-shaped sides *c'* formed with recesses c^2, substantially as and for the purpose set forth.

2. A cupola comprising the shell A, and a series of sector-shaped bricks C provided with recesses *c* and c^2, laid in the same circular horizontal plane, to form an annular air space E between said shell and the bricks C, and an annular series of air-passages *e* connecting said air-space E with the interior of the cupola, substantially as and for the purpose set forth.

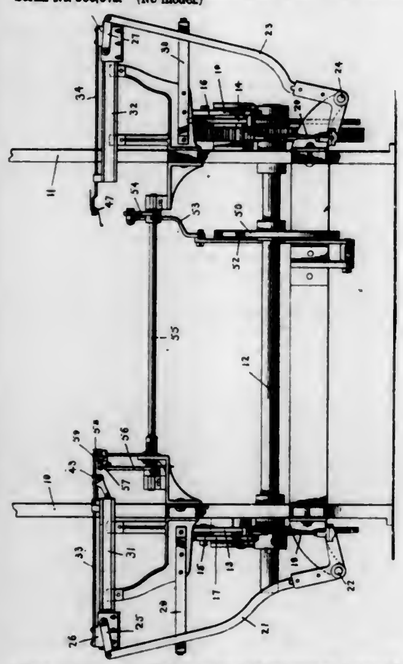
573,826. AUTOMATIC PUMP FOR INFLATING PNEUMATIC TIRES. ROMOLO MAINARDI, Cincinnati, Ohio. Filed Apr. 27, 1896. Serial No. 589,206. (No model.)

Claim.—1. In a pump for automatically inflating pneumatic tires of vehicles, an angular tubular piston-rod having at one end a clip or other suitable fastening device, the opposite end containing a tightly-fitting threaded nut or plug, a threaded tubular screw adapted to engage the said nut and having a collar whereby it may be turned into or out of the nut, the outer extremity of the said tubular screw being adapted to engage the neck of the feeding-tube of the tire; a pump cylinder having suitable valves and adapted to move reciprocally on the said hollow piston rod and provided at suitable points on its surface with trunnions carrying antifriction-rollers to engage within or without the cam-segments 6 and 7, all constructed, arranged and operating substantially as shown and described.



2. In a pump for automatically inflating pneumatic tires, the herein-described angular tubular piston-rod provided near its longitudinal center with perforated piston-head disks and valves between said disks, perforations for the admission of air into the upper end of said piston-rod, the lower end being hermetically closed; a pump-cylinder having suitable valves and adapted to move reciprocally on the said piston-rod and having lateral trunnions bearing antifriction-rollers adapted to engage within and without the cam-segments secured in eccentric relation to the wheel-axis, one of said segments having a free terminal connected to a shifting lever actuated as described and adapted to disengage the antifriction-rollers from the segment and render the pump inoperative substantially as and for the purpose herein specified.

573,827. NEEDLE-LOOM. JAMES E. MARTIN, Worcester, Mass., assignor to the Carpet Loom Company, same place. Filed Feb. 26, 1896. Serial No. 580,872. (No model.)



Claim.—1. In a needle-loom, the combination of a pair of coöperating needles, one of said needles having a split or forked end and the other needle having a cam for engaging and opening the forked end of the first needle and means for operating said needles, substantially as described.

2. In a needle-loom, the combination of a pair of coöperating needles, one of said needles having a split or forked end, one branch of the fork carrying a spur and the other branch having a corresponding recess, the second needle having an eye for the thread and a cam for opening the forked end of the first needle and means for operating said needles, substantially as described.

3 In a needle-loom, the combination of a pair of coöperating needles, one of said needles having a split or forked end, the other needle having a cam for opening the forked end of the first needle, said needles being provided with engaging surfaces for causing them to move out of line as they separate and means for operating said needles, substantially as described.

4. In a needle-loom, the combination of a female needle having a split or forked end, one branch of the fork being provided with a spur, the other branch having a corresponding recess, a male needle having a downwardly-extending projection for opening the forked end of the female needle, the rear edge of said projection being inclined to coöperate with inclined surfaces of the female needle to cause the male needle to ride over the female needle when the needles separate and means for operating said needles, substantially as described.

5. In a needle-loom, the combination of a female needle having a split or forked end, a cam for opening the forked end of the female needle when said needle is drawn back, said cam being mounted so that it will yield to allow the shank of the needle to pass over the same and means for operating said needle, substantially as described.

6. In a needle-loom, the combination of a female needle having a split or forked end, a movable cam, a spring for holding said cam in position to open the forked end of the female needle when said needle is drawn back, and yielding to allow the shank of the needle to pass over said cam when the needle is moved in the opposite direction, and means for operating said needle, substantially as described.

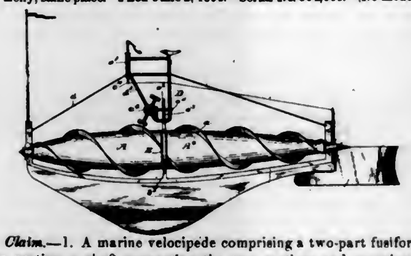
7. In a needle-loom, the combination of a needle for carrying a loop of thread across the loom, means for operating said needle, and a shuttle coöperating with said needle to form a selvage, said shuttle being formed with its greatest width near its head in order to guide the loop of thread around the rear end of the shuttle, substantially as described.

8. In a needle-loom, the combination of a needle for carrying a loop of thread across the loom, means for operating said needle, a movable shuttle, means for reciprocating the shuttle to form a selvage, said shuttle being formed with an extending wing of greatest width near the head of the shuttle, and gradually decreasing in width near the tail of the shuttle whereby the loop of thread will be guided around the rear end of the shuttle, substantially as and for the purpose set forth.

9. In a needle-loom, the combination of a needle for carrying a loop of thread across the loom, means for operating said needle, said needle having a projecting spur, a movable shuttle, means for reciprocating said shuttle to form a selvage, and means for disengaging the loop of thread from the spur when the shuttle has been inserted into said loop, substantially as described.

10. In a needle-loom, the combination of a needle for carrying a loop of thread across the loom, means for operating said needle, said needle having a projecting spur, a movable shuttle for forming a selvage, a movable arm for reciprocating said shuttle, and a wiper carried by said movable arm for disengaging the loop from the spur, substantially as described.

573,828. MARINE VELOCIPEDE. STILES E. MAXON, Portland, Oreg., assignor of one-half to L. W. Wynkoop, J. M. Nickum, and W. J. Kelly, same place. Filed June 2, 1896. Serial No. 594,011. (No model.)



Claim.—1. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame, and a housing or casing for the sprocket-chain, and driving mechanism on the frame for imparting rotary motion to the body portion, substantially as described.

2. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame and a housing or casing for the sprocket-chain, driving mechanism on the frame for imparting rotary motion to the body portion, and a weighted false keel for maintaining an upright position of the velocipede when in use, substantially as described.

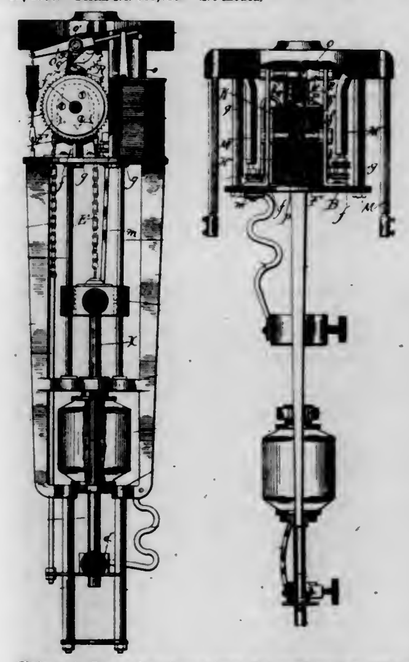
3 A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections and constituting at once a support for the shaft, a seat-frame and a housing or casing for the sprocket-chain, driving mechanism on the frame for imparting rotary motion to the body portion, and a weighted false keel for maintaining an upright position of the velocipede when in use, substantially as described.

4. A marine velocipede comprising a two-part fusiform body portion, a shaft connecting the two sections and carrying a sprocket-wheel, a keel supporting the body, an upright extending from the keel between the two sections, a seat-frame supported by the upright, driving mechanism on the frame for imparting rotary motion to the body portion, and steering mechanism operated from the seat, substantially as described.

573,829. FASTENER OR CLASP FOR ARTICLES OF APPAREL. CHARLES E. MIXER and CAROLINE L. LEWIS, Boston, Mass. Filed Apr. 17, 1896. Serial No. 587,902. (No model.)

Claim.—A fastener or clasp comprising in its construction two members, each formed from a piece of sheet metal, one member consisting of a base-plate provided at the sides of its forward ends with upturned guiding and holding ears *d* and a part bent over upon itself, as at *b*, to form a catch, and the other member also consisting of a plate of metal adapted to be passed between the said ears and having its inner end made into the form of a catch *c*, the construction and arrangement of the parts being such that the latch member may be guided by the ears *d* and slipped under and engaged by the catch to hold the members in clasped position, but enable the same to be buckled or bent back to raise the latch upward and release the member from clasped position, as set forth.

573,830. ELECTRIC-ARC LAMP. JOHN A. MOSHER, Chicago, Ill., assignor to the Adams & Westlake Company, of Illinois. Filed Oct. 22, 1896. Serial No. 609,755 (No model.)

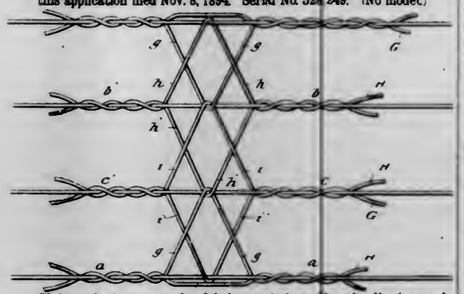


Claim.—1. In an electric-arc lamp the combination with a vertically-reciprocating carbon-holder, of a ratchet wheel, mechanical

connection between the holder and the wheel whereby they move together, a lever, a pawl for cooperating with the ratchet and being pivotally attached to the lever, a spring for holding the pawl to the limit of its movement upon its pivot toward the ratchet-wheel, an electromagnet connected with the lever and adapted to move it to bring the pawl into engagement with the ratchet-wheel so as to raise the carbon-holder, and a retractile spring acting upon the lever in opposition to the electromagnet.

2. In an electric-arc lamp having its electrodes drawn together by gravity, the combination with the carbon-carrier, of a ratchet-wheel cooperating therewith, a lever, a pawl for cooperating with the ratchet-wheel to separate the electrodes and being movably attached to the lever, a spring for holding the pawl in its advanced position upon the lever, an electromagnet having its coil in series with the lamp, connection between the lever and the magnet whereby the latter tends to engage the pawl with the ratchet-wheel, and a retractile spring for opposing the action of the magnet.

573,831. WIRE FENCE. DONALD H. MCPHERSON, Le Roy, N. Y. Original application filed Apr. 14, 1894, Serial No. 507,549. Divided and this application filed Nov. 8, 1894. Serial No. 528,249. (No model.)



Claim.—1. A woven-wire fabric consisting of longitudinal strands and of continuous zigzag filling-wires, each of which filling-wires is devoted to two of the longitudinal strands by having certain portions thereof joined at suitable intervals with one strand and at other intervals formed into transverse filling-loops which extend across the space between the two strands and are fitted on a strand adjacent to the one to which the filling-wire is connected, as and for the purposes described.

2. The combination with longitudinal strands, of continuous zigzag filling-wires, each of which is devoted to two longitudinal strands by having certain portions thereof interlaced, at suitable intervals, with one strand and at other intervals formed with transverse filling-loops which are loosely or slidably connected to a strand adjacent to the one with which said filling-wire is interlaced, as and for the purposes described.

3. In a woven-wire fabric having longitudinal strands, the combination therewith of continuous zigzag double filling-wires which are interlaced with each other at certain intervals with one strand and at other intervals are formed with transverse filling-loops which are loosely connected to adjacent strands at points between the attachment of other filling-wires to the strands, as and for the purposes described.

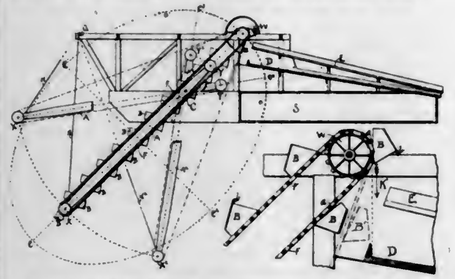
4. The combination with longitudinal strands, of continuous, zigzag, double filling-wires interlaced at suitable intervals with each other and with one strand and at other intervals projected across to adjacent strands, forming transverse filling-loops which are loosely connected to said adjacent strands, the filling-loops of one strand crossing the filling-loops on adjacent strands, as and for the purposes described.

5. The combination with longitudinal strands, of filling-wires each interlaced with one strand at certain intervals and provided between their portions interlaced with the strand, with projecting filling-loops which are slidably connected to an adjacent strand or strands, as and for the purposes described.

573,832. DREDGING-MACHINE. CHRISTOPHER H. OLSON, Tacoma, Wash., assignor to the C. H. Olson Gold Dredger Company. Filed May 11, 1896. Serial No. 591,015. (No model.)

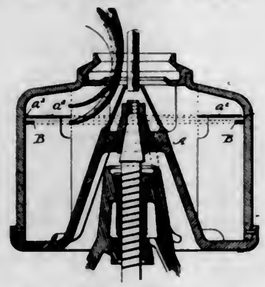
Claim.—1. In a dredging-machine, the combination with a driving-shaft carrying sheaves and a chain of buckets, of a swinging beam provided with pulleys or sheaves at its ends and pivotally mounted at such a point between its ends that, at whatever deflection of the beam from a line drawn through the shafts of its sheaves and the driving-shaft, the bucket-chains will be taut and will present a triangular figure, as set forth.

2. The combination of the pulley-beam pivotally mounted as described, the chain of buckets and driving-sheaves mounted as set forth, of the sluice D located upon the boat adjacent to the downward run of the chain, with or without the screen as set forth.



3. In a dredging-machine, the combination of the pivoted lever-arm A having pulleys X and Y, whose centers occupy the position of the foci of an ellipse, when in line with a sprocket-wheel W whose center occupies the end of the major diameter, said arm pivoted at a point A that will be the center of a circle a quadrant of whose arc will most nearly coincide with the end curve of the ellipse, said arm and wheel being provided with a belt-chain F and buckets B, each alternate bucket having teeth all mounted and used in combination with a scow S, the inclined grating E and the sluice box D all so constructed that the downward movement of the belt will be on such an incline that the sluice-box will be wholly beneath the buckets when dumping, all substantially as described and for the purposes set forth.

573,833. DIRT-ARRESTER FOR LIQUID-SEPARATORS. THOMAS H. SPRINGER, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Springer Separator Company, Incorporated, same place. Filed Oct. 5, 1894. Serial No. 525,005. (No model.)

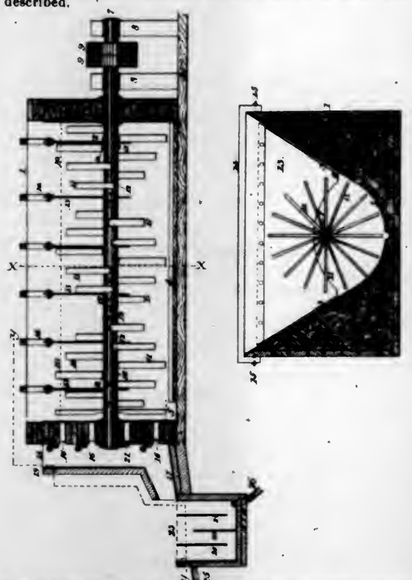


Claim.—In a liquid-separating machine a bowl having inlet and exit tubes a skim-ring supported on a partition within the bowl and being of smaller diameter than the inside of the bowl and whereby an annular passage is formed between the ring and the bowl and a metallic ring secured to the wall of the bowl below the skim-ring at such a distance as to prevent the passage of dirt and the like, as and for the purpose described.

573,834. AMALGAMATOR. JACOB J. STORER and FRANK MARTIN, Helena, Mont., assignors to the United Mill and Furnace Company, of Montana. Filed Sept. 12, 1893. Renewed Apr. 11, 1896. Serial No. 587,232. (No model.)

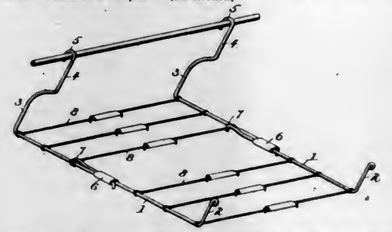
Claim.—1. An amalgamator constructed substantially as herein shown and described, consisting of a tank lined with amalgamated plates, a shaft made to revolve in the longitudinal axis thereof, and carrying amalgamated blades adapted for radial and angular adjustment, preferably arranged in spirals, and a series of vertically adjustable, removable, amalgamated, arresting-plates extending above the water-line and having a space beneath their lower edges for the flow of the water and ore-pulp, all arranged and operated substantially as set forth.

2. The combination with an amalgamator consisting of a tank lined with amalgamated plates and having a longitudinal groove and well in its bottom and a series of adjustable discharge-openings at one end, provided with a revoluble shaft carrying amalgamated blades, and with a series of vertically-adjustable amalgamated arresting-plates, of an inclosed amalgamated apron-plate fixed at the discharge end of the tank, and of a mercury-trap set to receive the material discharged from the said apron-plate, all arranged and operated as herein shown and described.



3. The combination with an amalgamating-tank constructed substantially as herein shown and described, of a revoluble shaft fixed in the longitudinal axis thereof, and provided with angularly and radially adjustable amalgamated copper blades, as set forth.

573,835. DISPLAY-RACK. JAMES M TAYLOR, Dubois, Pa., assignor of one-half to George M. Bilger, Clearfield, Pa. Filed Nov. 5, 1895. Serial No. 568,027. (No model.)



Claim.—1. A display-rack, consisting of the side rods or wires and the cross rods or wires uniting the side wires, each of the side rods or wires formed of two slidably-connected sections, one of which is provided with a hook to engage one of the cross rods or wires, and each of the cross rods or wires being formed of two slidably-connected sections.

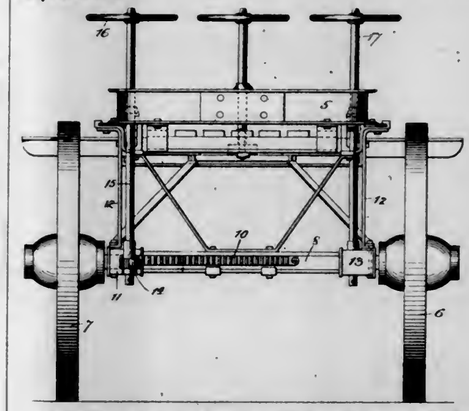
2. A display-rack, consisting of two suspending-arms 4, 4, adjustable parallel sides 1, 1, provided with the hooks 7, 7, and sleeves 6, 6, and the cross-rods 8 substantially as described.

573,836. LOCKING DEVICE FOR EXTENSIBLE AXLES. SAMUEL F. WELCH, Aurora, Ill. assignor to the Western Wheeled Scraper Company, same place. Filed Nov. 30, 1895. Serial No. 570,716. (No model.)

Claim.—1. In a locking device for the extensible axles of vehicles, the combination with a movable rack, of a pinion meshing with said rack for moving it, a longitudinally-movable shaft on which said pinion is mounted, and means independent of the rack and acting on the pinion to lock it against rotation, substantially as described.

2. In a locking device for the extensible axles of vehicles, the combination with an extensible axle, a rack thereon, and a fixed tooth, of a pinion adapted to mesh with said movable rack and movable into engagement with said fixed tooth without moving out of mesh with said rack, substantially as and for the purpose specified.

3. In a locking device for the extensible axles of vehicles, the combination with an extensible axle, a rack thereon, and a fixed projection adjacent thereto, of a lengthwise-movable shaft, and a pinion thereupon and adapted to mesh with said rack and to engage said fixed projection by the lengthwise movement of said shaft, substantially as described.



4. In a locking device for the extensible axles of vehicles, the combination with the extensible axle, a rack secured thereto, and a pinion adapted to mesh with said rack and to be rotated for extending or retracting said axle, of a longitudinally-movable shaft on which said pinion is mounted, and means acting directly upon the pinion for automatically locking it against rotation, substantially as described.

5. In a locking device for the extensible axles of vehicles, the combination with a movable rack, and a fixed projection arranged thereunder, of a vertically movable shaft, a pinion mounted thereupon and adapted to mesh with said rack and to engage said fixed projection by the vertical movement of said shaft, and means for moving said shaft vertically, substantially as described.

6. In a locking device for the extensible axles of vehicles, the combination with a movable rack, a pinion meshing with said rack for moving it, and a rotary vertically-movable shaft carrying said pinion, of independent stationary teeth below the rack and in line with and adjacent to the rack-teeth, the said stationary teeth being adapted to act directly upon the pinion for automatically locking it against rotation, substantially as described.

7. The combination with a movable rack, of a pinion movable in a line parallel with its own axis and meshing with said rack and adapted to be rotated for moving the rack, and means independent of the rack and acting on the pinion to lock it against rotation, substantially as described.

8. The combination with a movable rack, and a fixed tooth or projection, of a pinion meshing with said rack and tooth and adapted to be rotated for moving said rack, said pinion being movable in a line parallel with its own axis out of engagement with said tooth without moving out of mesh with said rack, substantially as described.

9. The combination with a movable rack, and a stationary tooth adjacent to said rack, of a pinion adapted to engage said rack and tooth simultaneously and adapted to be rotated for moving said rack, said pinion being movable in a line parallel with its axis out of mesh with said tooth without moving out of mesh with said rack, substantially as described.

10. The combination with a movable rack, and a stationary tooth adjacent to said rack, of a pinion adapted to engage said rack and tooth simultaneously and movable in a line parallel with its axis out of mesh with said tooth without moving out of mesh with said rack and adapted to be rotated to move said rack, substantially as described.

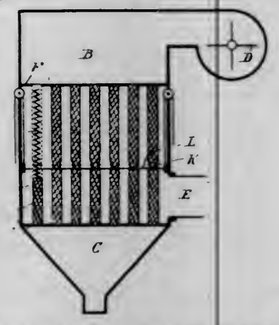
573,837. DUST-COLLECTOR. EDWIN B. WHITMORE, Three Rivers, Mich., assignor of one-half to Lewis Emery, Jr., same place. Filed Feb. 18, 1896. Serial No. 579,693. (No model.)

Claim.—1. In a tubular dust-collector, the combination with the textile tubes of a spiral beater therefor beside the same, and a traveling frame adapted to actuate said beater in its movement.

2. In a tubular dust-collector the combination with the textile tube of means for cleaning the same, consisting of a resilient frame beside the tube, and a traveling frame adapted to strike and cause the frame to beat or shake the tube.

3. In a tubular dust-collector, the combination with the textile tubes of resilient spirals supported concentrically in relation to each tube and a traveling frame having cross-bars adapted to strike the spirals in its movement, substantially as described.

4. In a tubular dust-collector, the combination with the textile tubes of resilient spirals suspended by their ends within each tube free from the sides thereof, a movable frame having cross-bars arranged at slightly less distance apart than the diameter of the spiral to embrace and contract the tube, the parts arranged as and for the purpose described.



5. In a tubular dust-collector, the combination with the textile tubes, of means for cleaning the same, consisting of resilient spirals supported concentrically in relation to each tube and a device for vibrating the spirals for the purpose described.

573,838. PNEUMATIC TIRE. CHARLES W. BERRIDGE, New York, N. Y. Filed Dec. 31, 1895. Serial No. 573,883. (No model.)



Claim.—The combination with the inner and outer tubes of a pneumatic tire, of an interposed leather puncture-preventing and strength-reinforcing strip for the pneumatic tube, said strip corresponding in width to the part exposed to puncture and being saturated with tar on its porous side, and on the other side cemented to the tread portion of the pneumatic tube covered by it substantially as described.

573,839. FIREPROOF STUDDING. PRESTON M. BRUNER, St. Louis, Mo., assignor to the P. M. Bruner Granitoid Company, same place. Filed Mar. 16, 1896. Serial No. 583,384. (No model.)

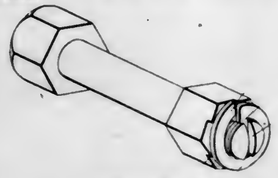


Claim.—1. The herein described method of making fireproof studding, which consists in forming a shell or casing into the shape desired, passing suitable fastening devices through the lapping edges of said shell to hold the same in proper shape while the core is being introduced, and finally introducing the core in a plastic state; substantially as described.

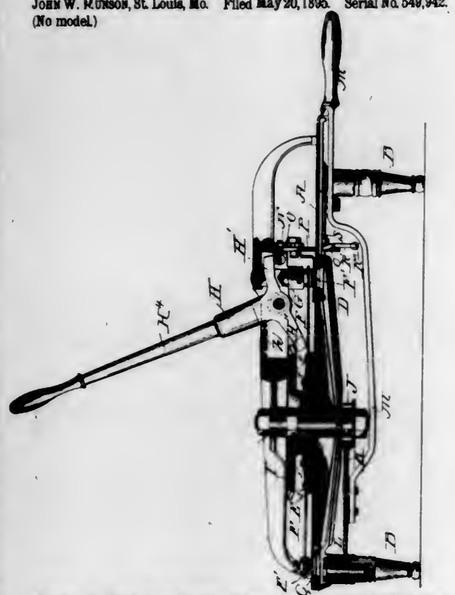
2. The herein-described fireproof studding comprising a shell or casing made of some thin metal or non-combustible material, fastenings which pass through the lapping edges of said shell into the interior to hold the same in place and retain the shape of the shell while it is receiving its core or filling, and a core or filling which is introduced into the shell in a plastic state, which core, when set, binding the fastenings so that the edges of the shell are permanently secured; substantially as described.

573,840. NUT-LOCK. EDWARD W. EDWARDS, Johnstown, Pa. Filed Nov. 13, 1895. Serial No. 568,772. (No model.)

Claim.—In a nut-lock, the combination, with a bolt having an open diametrical slot extending entirely across the threaded end of the bolt, of a nut threaded onto the bolt and provided with a plurality of ratchet-teeth on its face, and a nut-lock washer formed of one piece of metal bent into a ring and having one end projecting diametrically into the ring, the other end having a pawl-tooth, the ring portion surrounding and clamping the threaded end of the bolt, the diametrically-projecting end extending into the slot in the bolt and the pawl-tooth engaging any desired ratchet on the nut, substantially as described.



573,841. STENCIL-CUTTING MACHINE. JOHN A. HOFF and JOHN W. MUNSON, St. Louis, Mo. Filed May 20, 1895. Serial No. 549,942. (No model.)



Claim.—1. In a stencil-cutting machine, the combination with the frame, the matrix-wheel and its shaft, of a pinion on the shaft, a segment for operating the pinion, a bearing-sleeve on which said segment is pivoted, working in a slot in the frame and having a shoulder engaging the frame, a clamping-bolt for said bearing-sleeve passing through the latter and the slot in the frame, and adapted to adjustably secure the sleeve to the frame, substantially as described.

2. The combination with the plunger-operating handle, of a slide-block having thereon a cam-face adapted to be engaged by said handle to operate said block, a dog on the slide-block, a feed-wheel which is operated by the dog, and a spring for holding the dog in its proper relation to the feed-wheel, and returning the block; substantially as described.

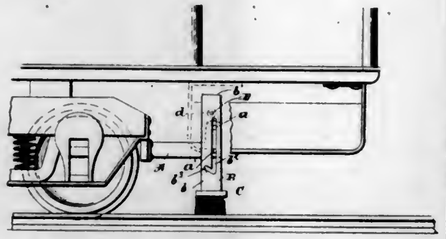
3. The combination with the feed-roller, of idle rollers arranged therebeneath, arms in which said rollers are mounted, means for normally holding said rollers in operative relation to the feed-roller, and a slide engaging said arms and adapted to move the latter with the rollers away from the feed-roller, substantially as set forth.

4. The combination with the feed-rollers, of rollers arranged therebeneath, pivoted arms in which said rollers are mounted, and a spring attached to both arms, for holding the last-named rollers in an operative position; substantially as described.

5. In a stencil-cutting machine, the combination of the stationary frame, a reciprocating plunger mounted in the frame, a lever mounted in the frame for operating said plunger, a matrix, a rotary hub, a yielding arm secured to said hub, means for moving said hub to bring said arm in the path of movement of said plunger, a patrice carried by said arm, means carried by the arm adapted to be positively engaged by the plunger for reciprocating the patrice, a feed mechanism, means for actuating the same comprising a spring-actuated block having a cam-face, and an extension on the lever for moving the block, substantially as described.

6. In a stencil-cutting machine, the combination of a stationary frame, a movable matrix, and movable patrice, a plunger mounted in said frame, a spacer moving with said patrice, a feed mechanism, comprising a sliding block provided with a cam-face, and feed-wheels, and a lever for operating the plunger pivoted to said frame, having a spacing-finger adapted to cooperate with said spacer-wheel, and a projection arranged to engage the block, substantially as and for the purposes set forth.

573,842. TRACK-CLEANER FOR RAILROADS. GEORGE E. TURNER, Marion, Ohio. Filed Apr. 28, 1896. Serial No. 589,399. (No model.)

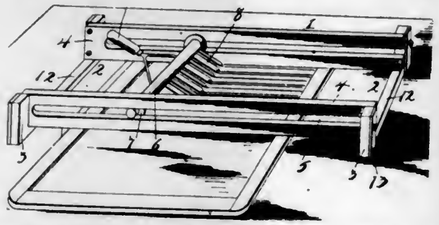


Claim.—1. The combination with the bracket A, provided with the rigid studs a a' of the frame B, provided with the slots b^3 b^3 and the brush C, substantially as and for the purpose specified.

2. The combination with the bracket A, the head of which is provided with the rigid studs a a' projecting on each side thereof in the same line, of the frame B consisting of the parallel sides b b, having two parallel slots b^3 b^3, terminating in inclined slots b^4, into which the studs project, and having the brush C secured thereto, substantially as and for the purpose specified.

3. The bracket A having the laterally-projecting studs a a', on each side thereof in the same line, in combination with the frame B having the slots b^3, the brush C, and the adjustable bolt D carrying the sleeve d, substantially as and for the purpose specified.

573,843. RULING-MACHINE FOR SLATES. E. F. HERMAN WESTENFELD, Toledo, Ohio. Filed Apr. 16, 1896. Serial No. 587,745. (No model.)



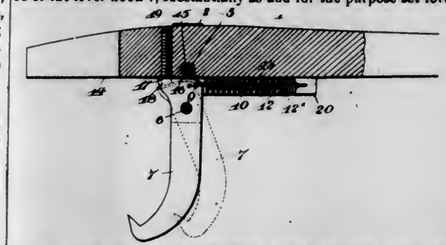
Claim.—1. In a ruling mechanism for slates, a table, a frame having longitudinal ways or guides, a ruling mechanism movably secured therein, and means for adjusting the frame vertically above the table.

2. In a ruling mechanism for slates, a table, a frame having longitudinal ways or guides, a ruling mechanism movably secured therein, plates adjustably secured to the frame having depending rods screw-threaded upon the lower end to receive nuts to attach the plates to the table.

573,844. CANT-HOOK FOR LUMBERMEN. JAMES M. ELLIS, Galesburg, Ill., assignor of one-half to George L. Ellis, same place. Filed May 27, 1896. Serial No. 593,332. (No model.)

Claim.—1. A cant-hook or dog comprising a handle provided with a plane side and a bolt-hole, in combination with an encompassing strap secured thereto by a bolt passing through said bolt-hole, and having its ears or lugs provided with a bolt on which is fulcrumed a lever-hook, formed with a front angular toe, and an anvil-plate secured to the plane side of the handle, and formed with an integral hook to engage one end of a spiral spring, the other end of which is secured to the lower end of the lever-hook opposite its toe, substantially as and for the purpose set forth.

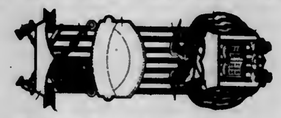
2. A cant-hook or dog comprising a handle 1 having a plane side 14 and a transverse hole 5, and an adjusting set-screw 19, in combination with the strap 2, bolts 3 and 6, on the latter of which is fulcrumed the lever-hook 7 having an angular toe 18 and provided with a spiral spring 10, one end of which is secured to the hook 12 on the plate 13, the forward end of which forms an anvil for the angular toe 18 of the lever-hook 7, substantially as and for the purpose set forth.



3. A cant-hook or dog comprising a handle 1 having a plane side 14, an adjusting-screw 19, and a transverse hole 5, in combination with the strap 2, bolts 3 and 6, the latter of which forms a fulcrum for the lever-hook 7, the plate 13 provided with a hook 12 passing around the bolt 3, and having a hooked end to which is secured the spiral spring 10 connected to the lever-hook 7, substantially as and for the purpose set forth.

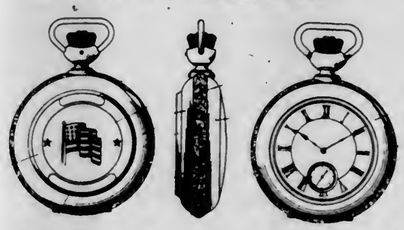
DESIGNS.

26,420. BADGE. THEODORE A. GERNIG, Archbald, Pa. Filed Oct. 21, 1896. Serial No. 609,620. Term of patent 14 years.



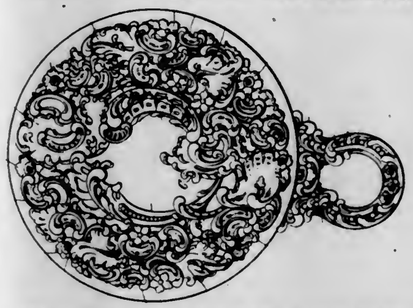
Claim.—The design for a badge substantially as shown and described.

26,421. WATCHCASE. JOHN C. DUEBER, Canton, Ohio. Filed Nov. 9, 1896. Serial No. 611,567. Term of patent 7 years.



Claim.—The design for a watchcase as herein shown and described.

26,422. BACK AND HANDLE FOR MIRRORS, &c. PHILEMON O. DICKINSON, Newark, N. J., assignor to Unger Brothers, same place. Filed Oct. 10, 1896. Serial No. 608,528. Term of patent 3½ years.



Claim.—1. In the design herein set forth, the design for the back of a mirror or similar article, substantially as shown and described.

2. In the design herein set forth, the design for the bandle of the back of a mirror or similar article, substantially as shown and described.

3. The design for the back and handle of a mirror or similar article, substantially as showo and described.

26,423. VIOLIN. ERNEST N. LIVERMORE, Port Townsend, Wash. Filed Oct. 31, 1896. Serial No. 610,763. Term of patent 14 years.



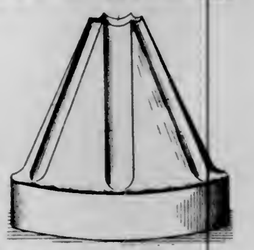
Claim.—The design for a violin, substantially as herein shown and described.

26,424. MANDOLIN. ERNEST N. LIVERMORE, Port Townsend, Wash. Filed Oct. 31, 1896. Serial No. 610,764. Term of patent 14 years.



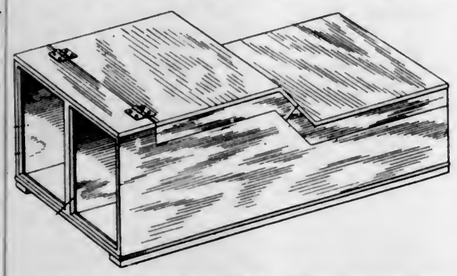
Claim.—The design for a mandolin, substantially as herein shown and described.

26,425. TOY. JAMES BRUCE, Capelton, Canada. Filed Nov. 10, 1896. Serial No. 611,680. Term of patent 7 years.



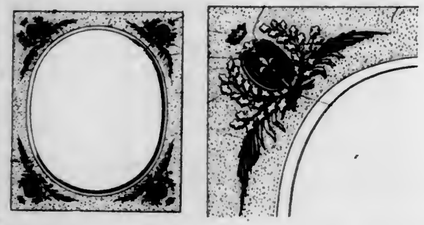
Claim.—The design for a toy, substantially as herein shown and described.

26,426. CASING FOR INDICATORS. HUGO G. HESS, Cincinnati, Ohio. Filed Oct. 29, 1896. Serial No. 610,511. Term of patent 14 years.



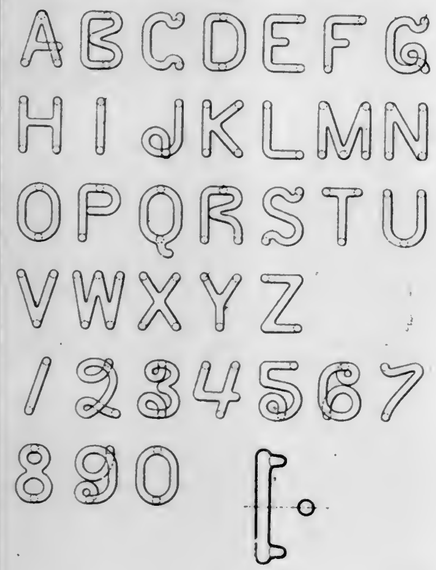
Claim.—The design for a casing for a time and result indicator for race tracks or courses, substantially as herein shown and described.

26,427. PHOTOGRAPHIC CARD-MOUNT. PAUL J. STUPARICH, San Francisco, Cal. Filed Nov. 19, 1896. Serial No. 612,768. Term of patent 3½ years.



Claim.—The design for a photographic card-mount, substantially as shown and described.

26,428. ALPHABET. DANIEL MCFARLAN MOORE, Newark, N. J., assignor to the Moore Electrical Company, New York, N. Y. Filed July 23, 1896. Serial No. 600,308. Term of patent 14 years.



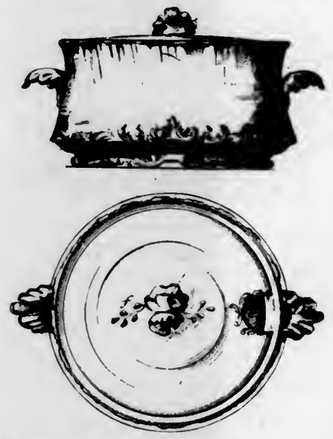
Claim.—The design for an alphabet herein shown and described.

26,429. BOTTLE. HORACE D. WILLIAMS, Poplar Bluff, Mo. Filed Nov. 16, 1896. Serial No. 612,369. Term of patent 14 years.



Claim.—The design for a bottle, substantially as herein shown and described.

26,430. COVERED DISH. GUSTAVE C. C. VOGT, Limoges, France. Filed Nov. 12, 1896. Serial No. 611,891. Term of patent 14 years.



Claim.—The design for a covered dish substantially as shown and described.

26,431. CHAFING-DISH. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,036. Term of patent 3½ years.



Claim.—The design for a chafing-dish, as herein shown and described.

26,432. STAND FOR CHAFING-DISHES. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,032. Term of patent 3½ years.



Claim.—The design for a stand for chafing-dishes, as herein shown and described.

26,433. STAND FOR CHAFING-DISHES. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,033. Term of patent 3½ years.



Claim.—The design for a stand for chafing-dishes, as herein shown and described

---

26,434. STAND FOR CHAFING-DISHES. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,034. Term of patent 3½ years.



Claim.—The design for a stand for chafing-dishes, as herein shown and described.

26,435. STAND FOR CHAFING-DISHES. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,035. Term of patent 3½ years.



Claim.—The design for a stand for chafing-dishes, as herein shown and described.

26,436. COFFEE-POT. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov. 13, 1896. Serial No. 612,031. Term of patent 3½ years.



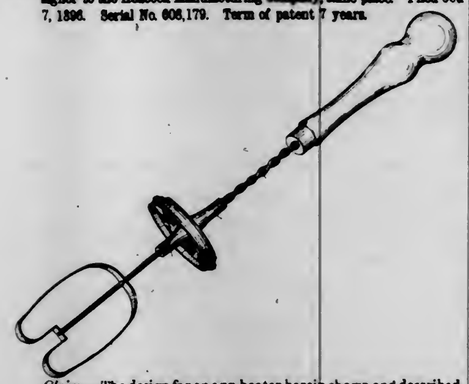
Claim.—The design for a coffee-pot, as shown and described.

26,437. TOASTER. LOUIS WOJIDKOW, Brooklyn, N. Y. Filed Nov 13, 1896. Serial No. 612,037. Term of patent 3½ years.



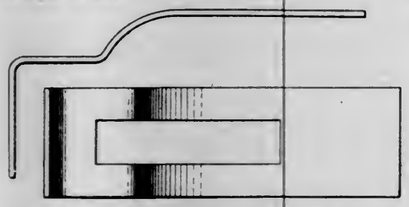
Claim.—The design for a toaster, as herein shown and described.

26,438. EGG-BEATER. GEORGE H. STRELE, Gloversville, N. Y., assignor to the Hexcook Manufacturing Company, same place. Filed Oct. 7, 1896. Serial No. 608,179. Term of patent 7 years.



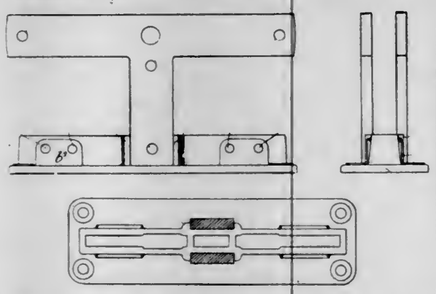
Claim.—The design for an egg-beater herein shown and described.

26,439. GUIDE FOR MAIL-PACKING MACHINES. HENRY E. WAITE, Newton, Mass. Filed Sept. 28, 1896. Serial No. 607,267. Term of patent 14 years.



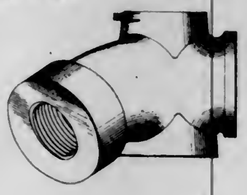
Claim.—The design for a guide for mail-packing machines substantially as shown and described.

26,440. FRAME FOR FORGING-MACHINES. GEORGE SAXON, Openshaw, England. Filed Aug. 10, 1896. Serial No. 602,363. Term of patent 7 years.



Claim.—The design for a forging-machine frame herein shown and described.

26,441. ANGLE-COCK FOR AIR-BRAKE PIPES. FREDERICK A. MCARTHUR, Springfield, Mo. Filed July 11, 1896. Serial No. 598,911. Term of patent 14 years.

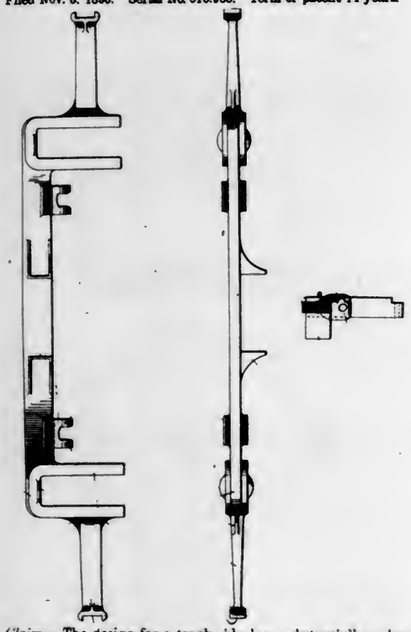


26,441.



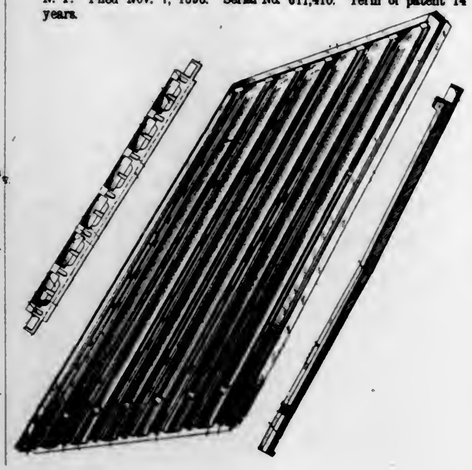
Claim.—The design for an angle-cock for air-brake pipes, substantially as herein shown and described.

26,442. TRUCK SIDE BAR. SAMUEL M. CURWEN, Philadelphia, Pa. Filed Nov. 3, 1896. Serial No. 610,985. Term of patent 14 years.



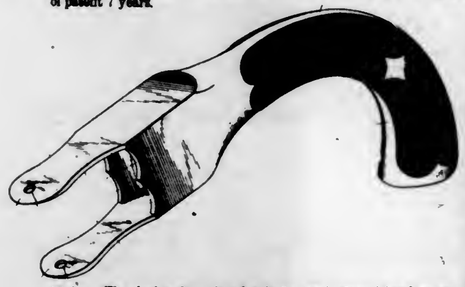
Claim.—The design for a truck side bar, substantially as herein shown and described.

26,443. STALL-FLOOR SUPPORT. JOHN MINOT FISKE, New York, N. Y. Filed Nov. 7, 1896. Serial No. 611,410. Term of patent 14 years.



Claim.—The design for stall-floor supports substantially as shown and described.

26,444. PLOW-HANDLE OR GRIP. LORENZO LITTLE CHRISTIAN, Eureka Springs, Miss. Filed Nov. 19, 1896. Serial No. 612,769. Term of patent 7 years.



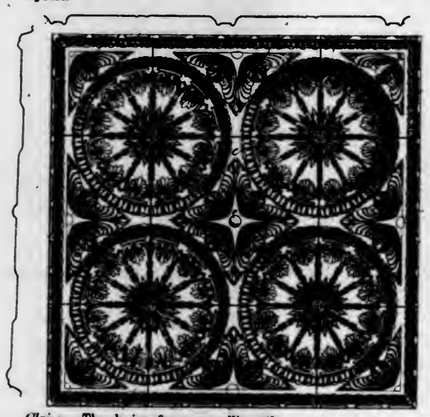
Claim.—The design for a hand-grip for agricultural implements, substantially as herein shown and described.

26,445. BICYCLE-HANDLE. WILLIAM E. BLAKE, Springfield, Mass., assignor to the Blake Manufacturing Company, same place. Filed July 22, 1896. Serial No. 600,170. Term of patent 3½ years.



Claim.—The design for a bicycle-handle substantially as shown and described.

26,446. METALLIC CEILING-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Nov. 9, 1896. Serial No. 611,571. Term of patent 7 years.



Claim.—The design for a metallic ceiling as herein shown and described.

26,447. METALLIC BORDER-PLATE. EDWARD A. LANGENBACH, Canton, Ohio. Filed Nov. 9, 1896. Serial No. 611,572. Term of patent 7 years.



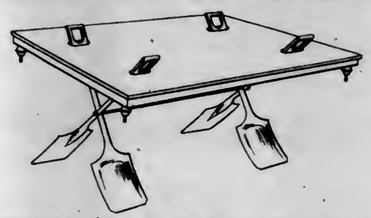
26,447.



Claim.—1. The design for a metallic border for ceilings as herein shown and described.

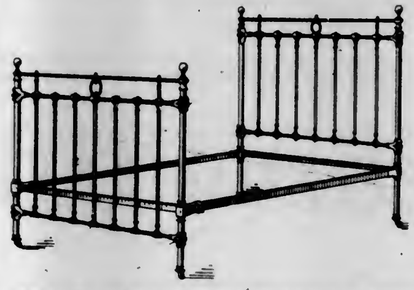
2. In the design for a metallic border, the corner piece, as herein shown and described.

26,448. TABLE. JENNIE FRASER MCKENZIE, Providence, R. I. Filed Nov. 20, 1896. Serial No. 612,904. Term of patent 7 years.



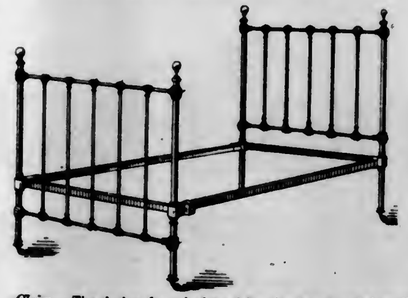
Claim.—The design for a table substantially as shown and described.

26,449. BEDSTEAD. MORTIMER G. MERRITT, Rome, N. Y., assignor to the Rome Metallic Bed Company, same place. Filed July 11, 1896. Serial No. 598,897. Term of patent 3½ years.



Claim.—The design for a bedstead herein shown and described.

26,450. BEDSTEAD. MORTIMER G. MERRITT, Rome, N. Y., assignor to the Rome Metallic Bed Company, same place. Filed July 11, 1896. Serial No. 598,899. Term of patent 3½ years.



Claim.—The design for a bedstead herein shown and described.

TRADE-MARKS

REGISTERED DECEMBER 22, 1896.

29,326. WRITING-PAPER. GEORGE H. TAYLOR, Chicago, Ill. Filed Nov. 25, 1896.



Essential feature.—The words "PLYMOUTH ROCK." Used since February 15, 1895.

29,327. HOSIERY AND GLOVES. THE FIRM OF MAURICE SAMUEL ESCHE, Chemnitz, Germany. Filed Nov. 21, 1896.



Essential feature.—Circles inclosing a representation of an eagle and globe or map and the words "NUNQUAM RETRORSUM" and the letters "M. S. E." Used since 1876.

29,328. COLD CURE AND REMEDY FOR DISEASES OF THE THROAT, LUNGS, AND NASAL ORGANS. JAMES A. SWAN, Passaic, N. J. Filed Nov. 17, 1896.

CONTRA-COLD

Essential feature.—The compound word "CONTRA-COLD." Used since October 20, 1896.

29,329. VETERINARY REMEDIES. E. J. SANDERSON & Co., Madelia, Minn. Filed Aug. 15, 1896.



Essential feature.—A representation of a horse having a collar upon its neck, and a man holding a remedy in one hand and applying the same to a shoulder of the horse with the other hand. Used since May, 1896.

29,330. HOG AND CHOLERA REMEDY. MOORE & Co., Salisbury, Mo. Filed Nov. 11, 1896.



Essential feature.—A representation of a hog with a fowl standing in front of the hog so as to obscure the middle portion thereof. Used since June 13, 1896.

29,331. WINES AND LIQUORS. LOUIS SCHETTER, New York, N. Y. Filed Oct. 20, 1896.



BRUNSWICK CO.

Essential feature.—The words "BRUNSWICK CO." and the figure of a shield bearing a horse rampant and surmounted by an imperial crown. Used since August 1, 1896.

29,332. WHISKY. THE MELLWOOD DISTILLERY COMPANY, Louisville, Ky. Filed Nov. 17, 1896.

RUNNYMEDE

CLUB

Essential feature.—The words "RUNNYMEDE CLUB." Used since August 18, 1896.

29,333. WHISKY. THE MELLWOOD DISTILLERY COMPANY, Louisville, Ky. Filed Nov. 17, 1896.

DUN DEE

CLUB

Essential feature.—The words "DUNDEE CLUB." Used since September 5, 1896.

29,334. WHISKY. THE MELLWOOD DISTILLERY COMPANY, Louisville, Ky. Filed Nov. 17, 1896.

NORMANDY

CLUB

Essential feature.—The words "NORMANDY CLUB." Used since August 18, 1896.

29,335. TOBACCO. HARRISON B. HUNTOON, Providence, R. I. Filed Nov. 24, 1896.

SOLDIER'S

PRIDE.

Essential feature.—The words "SOLDIER'S PRIDE." Used since August 15, 1894.

29,336. SOAP. CHARLES F. GREENBERG, Scranton, Pa. Filed Oct. 28, 1896.

SELF-WASHO

Essential feature.—The compound word "SELF-WASHO." Used since January 1, 1896.

29,337. ILLUMINATING-OILS. STANDARD OIL COMPANY OF NEW YORK, New York, N. Y. Filed Nov. 18, 1896.



Essential feature.—A representation of a figure having the head of an elephant upon the body of a human being seated with crossed legs, having two pairs of arms, one pair beside the body, with the hands resting upon one of the legs, the other pair uplifted and the hands holding implements, the head wearing a coronet or crown. Used since November 12, 1896.

29,338. ILLUMINATING-OILS. STANDARD OIL COMPANY OF NEW YORK, New York, N. Y. Filed Nov. 18, 1896.

DAY-LIGHT

Essential feature.—The compound word "DAY-LIGHT." Used since 1870.

29,339. ILLUMINATING-OILS. STANDARD OIL COMPANY OF NEW YORK, New York, N. Y. Filed Nov. 18, 1896.

GAS-LIGHT

Essential feature.—The compound word "GAS-LIGHT." Used since 1870.

29,340. BICYCLES. STERLING CYCLE WORKS, Chicago, Ill. Filed Nov. 19, 1896.



Essential feature.—The words "BUILT LIKE A WATCH." Used since June, 1893.

29,341. BICYCLES, TRICYCLES, VELOCIPEDES, SUNDRIES, AND ALL ARTICLES RELATING TO A BICYCLE BUSINESS. HIBBARD, SPENCER, BARTLETT & COMPANY, Chicago, Ill. Filed Nov. 24, 1896.



Essential feature.—The word "AJAX." Used since January 15, 1895.

THE NORRIS PETERS CO. PHOTO-LITH WASHINGTON D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

DECISIONS OF THE U. S. COURTS.

U. S. Circuit Court—Eastern District of Pennsylvania.

J. G. BRILL COMPANY *v.* WILSON *et al.*

Decided June 29, 1896.

1. BRILL—STREET-CARS—VOID.
   Letters Patent No. 315,898, granted April 14, 1885, to George M. Brill, for improvements in summer-cars for street or tram railways, *Held* to be void for want of invention.
2. INVENTION—SUBSTITUTION OF MATERIAL.
   An improvement consisting mainly in the use of metal instead of wooden panels for the ends or sides of seats for street-cars does not amount to invention.

STATEMENT OF THE CASE.

This was a suit in equity by the J. G. Brill Company against Edward H. Wilson and others, trading as E. H. Wilson & Co. and as the Lamokin Car Works, for alleged infringement of a patent.

Mr. Francis Rawle for the complainant.
Mr. Bernard Gilpin for the defendants.

ACHESON, *J.*:

The defendants are charged with the infringement of Letters Patent No. 315,898, granted on April 14, 1885, to George Martin Brill, for improvements in summer-cars for street or tram railways. The nature and object of the alleged invention are thus set forth in the specification:

> My invention has relation to that form of cars for street or tram railways known as "open or summer cars," and of that kind provided with transverse seats, and has particular reference to the panels for the ends or sides of the seats, and the manner of securing the panels, seat-arms, and frames to one another, and the panels to the sill-pieces of the car. Heretofore these panels have been made of thin wood or veneering suitably backed and provided with strengthening ribs or cleats, and screwed to the side posts and seat frames. These wooden panels being extremely light and frail soon crack or break, and are susceptible of being readily damaged, besides which, as they do not provide any support for or strengthen the connections of the seat-frame and side posts, the latter have to be made of extra thickness, in order to obtain the requisite strength for supporting the seat frames, and in many cases bent or curved or other metal braces or bars attached to the side posts are used for supporting the seat-frames.
>
> My invention has for its object to overcome the above-described objections or to provide a summer or open street-car with panels which are not liable to cracks, cannot be readily damaged, and which form a support for the seat-frame and strengthen the side-post connections, whereby the thickness of said posts may be reduced, and all sustaining braces or bars for the seat-frame are dispensed with.
>
> My invention accordingly consists of the combination, construction, and arrangement of parts, as hereinafter described and claimed, having reference particularly to a curved or other appropriately-configured panel made of metal, and provided with inwardly-projecting lugs with bolt or screw holes at its bottom and near its top, and with cups or boxes for supporting the ends of foot bars or rungs; second, to a summer-car having side panels bolted to the sill-pieces, and having supporting-lugs for the ends of the seat-frame, which is secured to the panels by a bolt connection known as a "bed-post bolt;" and, third, to a like car having metal panels supporting the seat-frame and the ends of the foot bars or rungs.

Then, after a particular description of the several parts, the specification further states:

> It is evident, therefore, that the use of the metal panels F affords strong and durable end supports for the seat-frames and attached parts, and that said parts may be of a lighter construction than has heretofore been employed in the above-described class of street-cars.

All the claims of the patent are for combinations, and the panel is an element in each of them. One cannot read the above extracts from the specification, especially in connection with the plaintiff's proofs, without perceiving that a "panel made of metal" is the great feature of this patented improvement. The other described details of construction and arrangement are incidental and subordinate. It will be observed that the specification states that—

> heretofore these panels have been made of thin wood or veneering suitably backed.

In substance, the representation is here made that metal panels for the ends or sides of car-seats had never been used in the construction of street-cars before the described improvement was devised. Now, had this been true the patent possibly might be sustained. (*Smith* v. *Vulcanite Co.*, 11 O. G., 246; 93 U. S., 486.) But the proof is clear that as early as the year 1878 the plaintiff built a street-car in which the panels for the ends or sides of the car-seats were made of metal, and this car was successfully used on the Thirteenth and Fifteenth Streets Passenger Railway (Philadelphia) in March, 1879, and thereafter. It is also shown that in 1883 the plaintiff built and delivered to the East Saginaw Company four cars equipped with metal panels of the same construction. Moreover, the metal panel of the Thirteenth and Fifteenth Streets car structure was used in connection with a post, the latter, however, being on the outside of the panel, whereas the post of the patented structure is on the inner side of the panel. Had this old car structure been brought to the attention of the Patent Office Examiner, it may be confidently affirmed, in view of the contents of the file-wrapper, that the patent would not have been allowed, but the original rejection would have been adhered to. The evidence now produced, I think, completely overthrows the presumption of patentability arising from the grant of the patent. There is no novelty in any of the elements of the combinations, and all these elements had been used previously in street-cars for the like purposes as in the patented structure. Whatever may be new in the construction and arrangement of parts seems to have been the result of mere good judgment and the natural outgrowth of mechanical skill. (*Brown* v. *District of Columbia*, 47 O. G., 398; 130 U. S., 87; 9 Sup. Ct., 437; *Florsheim* v. *Schilling*, 58 O. G., 1737; 137 U. S., 64; 11 Sup. Ct., 20.) The improvement of the patent at the most was the mere carrying forward to better results of the original idea embodied in the car structure of 1878,

and therefore was not invention. (*Smith* v. *Nichols*, 21 Wall., 112, 119; *Burt* v. *Evory*, 50 O. G., 1294; 133 U. S., 349; 10 Sup. Ct., 394; *Belding Manufg. Co.* v. *Challenge Corn-Planter Co.*, 67 O. G., 141; 152 U. S., 100, 107; 14 Sup. Ct., 492.) If the Brill patent could be sustained, then in view of the prior state of the art the plaintiff would be limited to the precise form and arrangement of parts described and shown in the patent. (*Bragg* v. *Fitch*, 39 O. G., 829; 121 U. S., 478; 7 Sup. Ct., 978.) Under such a construction of the patent it is questionable whether infringement is shown. The post of the patent is mortised into the sill, whereas the defendants' post is not let into the sill, but fits in a metal socket or cup on the bottom of the panel and is held by a rib on the interior of the panel. These differences are slight, it is true; but where the patented improvement itself is so slight there is great force in the suggestion that these differences are sufficient to avoid the charge of infringement. (*Bernheim* v. *Boehme*, 20 C. C. A., 31; 73 Fed. Rep., 833; *Bragg* v. *Fitch*, *supra*.) This point, however, was not much discussed, and I express no positive opinion thereon, but place my decision upon the lack of invention.

Let a decree be drawn dismissing the bill, with costs.

U. S. Circuit Court—Northern District of Ohio, Eastern Division.

F. E. KOHLER & COMPANY *v.* GEORGE WORTHINGTON COMPANY *et al.*

Decided November 6, 1896

1. PLANT—CURRYCOMBS—NOT INFRINGED.
   Letters Patent No. 220,986, granted October 28, 1879, to Paschal Plant, for an improvement in currycombs, *Held* not infringed by currycombs made under Letters Patent No. 407,313, granted July 16, 1889, to James Du Shane.
2. INFRINGEMENT OF PRIOR PATENT—GRANT OF SUBSEQUENT PATENT—PRESUMPTION CREATED THEREBY.
   The grant of Letters Patent by the United States Patent Office creates a presumption of non-infringement of a prior patent claiming a similar device. (*Ney Manufacturing Co.* v. *Superior Drill Co*, 64 O. G., 1133; 56 Fed. Rep., 152, cited and approved.)

Mr. Charles R. Miller for the complainant.
Mr. Wm. H. Doolittle for the defendants.

RICKS, *J.*:

The complainant brings this suit on Letters Patent No. 220,986, issued October 28, 1879, to Paschal Plant, for an improvement in currycombs. Complainant alleges that it is the owner of said patent, that the defendants are infringing the same, and it prays for an account and a perpetual injunction.

The defendants in their answer claim that they are the assignees of James Du Shane, of South Bend, Ind., to whom a patent was issued on July 16, 1889, No. 407,313. It appears from the pleadings and testimony that nearly thirteen years intervened between the grant of the Plant patent and the commencement of this suit. The defendants in their answer allege that no currycombs were in fact ever made under complainant's patent and that they have no plant or establishment for the manufacture and sale of such currycombs. The complainant's own expert admits that he has never seen a comb made as shown and described in said patent. The defendants' expert says:

> I have never seen any of the Plant currycombs upon the market.

The defendants in their answer aver that the alleged improvement of the complainant—

> hath never been applied to any practical use by the patentee or his alleged assignor, and that currycombs embodying the said alleged improvement are not in the market, nor to be obtained; and that said alleged Letters Patent have not been acquiesced in by the public or by the trade, because the said improvements are of no value.

The defendants are not manufacturers, but are venders and dealers in hardware supplies, and in this line of business deal in currycombs made under the Du Shane patent by the Spring Curry Comb Company, of South Bend, Ind.

It is a little significant that no combs were made under the complainant's patent for thirteen years and that this suit was brought to interfere with the sale of combs made by a responsible manufacturing concern. The infringement ought to be very clear and the rights of the complainant made very plain before the patent should be sustained or an injunction be allowed.

I have examined the briefs of counsel, and, not deeming it necessary to pass upon the question of the validity of the complainant's patent, I go at once to the question of infringement, because I think upon this point the complainant has failed wholly to make out its case. The very respects in which by its specifications, its exhibits, and the opinion of its expert its patent is deemed to be valuable are wholly wanting in the defendants' device. The complainant's comb, it is said, was invented and constructed and sold in the spirit of humanity, to prevent the skin of animals being broken and bruised or the animals roughly treated when their hair and skin was being combed. All this is accomplished by making the comb flexible, so as to yield to the lumps and hollows of the animal's body and hide. In these respects the defendants' comb is entirely different. It is more rigid, constructed more in the nature of the currycomb generally in use, and could be used in the very inhuman and cruel respects referred to by the complainant.

The complainant's patent was granted in 1879. The patent which it is claimed infringes complainant's patent was granted in 1889. The Patent Office had before it the complainant's patent and all other patents showing the state of the art when the Du Shane patent was granted. The presumption of non-infringement referred to by the Court of Appeals in the case of *Ney Manufacturing Co.* v. *Superior Drill Co.* (64 O. G., 1133; 56 Fed. Rep., 152) arises in this case and has not been overcome by any testimony on the part of the complainant.

I think, therefore, no infringement is shown, and the bill must be dismissed for want of proof upon this point.

U. S. Circuit Court—Northern District of New York.

EASTMAN COMPANY *v.* GETZ & HOOVER.

Decided November 25, 1896.

1. EASTMAN AND WALKER—MACHINE FOR MAKING PHOTOGRAPHIC FILMS—VOID.
   Letters Patent No. 358,848, granted March 8, 1887, to George Eastman and William H. Walker, for a machine for making photographic films, examined and *Held* void for want of patentability in view of the prior art.

2. SAME—PROCESS OF COATING PHOTOGRAPHIC PAPER—NON-INFRINGEMENT.
   Letters Patent No. 370,110, granted September 20, 1887, to George Eastman and William H. Walker, for a process of coating photographic paper, examined and *Held* not infringed.
3. SAME—PROCESS OF COATING PAPER—VOID.
   Letters Patent No. 370,111, granted September 20, 1887, to George Eastman and William H. Walker, for a process of coating photographic paper, examined and *Held* void for want of patentability in view of the prior art.
4. TESTIMONY—UNDULY ENLARGING THE RECORD.
   It is bad practice to stuff the records of patent causes with prolix cross-examinations and irrelevant testimony.
5. ANALOGOUS USE—SKILL OF MECHANIC.
   The use of ironing-rolls for smoothing webs of bromid-paper is analogous to their use in making carbon-paper. It requires nothing beyond mechanical skill to increase the distance between such rollers and a set of hang-ups.
6. SAME—NON-INVENTION.
   The application of parts of a sandpapering-machine, used in their ordinary relations, to the manufacture of bromid paper does not involve invention, since the process of coating with glue is closely allied to, if not identical with, that of coating paper with gelatin.
7. INFRINGEMENT.
   A claim for "applying coating material evenly" and for "causing the paper to emerge from the level surface" is not infringed by a process in which the coating emulsion is kept stirred by an agitator.

Messrs. Phillip, Munson & Phelps for the complainant.

Mr. W. A. Jenner and *Mr. George B. Selden* for the defendants.

TOWNSEND, *J.*:

The bill in equity herein alleges infringement of the third claim of Patent No. 358,848, dated March 8, 1887, for a machine for making sensitive photographic films, and of the second, third, and fourth claims of Patent No. 370,110 and of the third claim of Patent No. 370,111, both dated September 20, 1887, for processes of coating photographic paper, all three of these patents having been granted to George Eastman and William H. Walker and duly assigned to this complainant. These patents will be considered in their chronological order.

The machine of Patent No. 358,848, so far as its construction is material in the consideration of the claim in suit, comprises a roll of uncoated paper suitable for photographic films, arranged to revolve in bearings, passing through guide-rolls and around a coating-roll partially submerged in a coating-trough of gelatin emulsion, and thence over driven smooth-faced rolls to a hang-up of looping-slats arranged at such a distance from the coating-roll as to allow the coating to set before reaching the hang-up.

Several weeks consumed in the examination of records, briefs, and paper exhibits, covering more than four thousand pages, have demonstrated that this case more forcibly illustrates—

> the extensive practice which now prevails in patent causes of stuffing the record with prolix cross-examinations and irrelevant testimony—

than *Ecaubert* v. *Appleton* (68 O. G., 1025; 67 Fed. Rep., 917) or *Thomson-Houston Electric Co.* v. *Winchester Ave. R. R. Co.*, (73 O. G., 2155; 71 Fed. Rep., 192.) The patents in suit cover a machine and process so simple as to require only brief expert testimony to explain certain details of operation. Only two or three of the constructions of the prior art require extensive examination or discussion.

The third claim of Patent No. 358,848 is as follows:

> 3. In an organized machine for making sensitive gelatino-argentic paper for photographic use, the combination of one or more driven smooth-faced rolls for maintaining the coated paper in motion, a suitable hang-up machine, and a coating mechanism consisting of a smooth faced roll partially submerged in the coating material, said coating-roll being arranged at such a distance from the hang-up machine as to allow the gelatinous coating to set before it reaches the looping-slat, substantially as described.

The defendants contend, as to said claim, as follows:

First. That it is void, because it appears from the file-wrapper and contents that the original specification described a single driven roll, and that this was stricken out by an amendment requiring a construction with two or more rolls, and that there is no warrant in the specification for the claim of a single driven roll, which was allowed through inadvertence.

Second. That it is either anticipated or void for want of patentable novelty in view of the state of the prior art.

Third. That it is further void because it covers a mere aggregation of ordinary coating devices and a hang-up, each of which was well known in the art, without any coöperating action between them.

Fourth. That, if sustained at all, it must be confined to a claim for two or more driven smooth-faced rolls, in which case defendants do not infringe, as they use a single feed-roll covered with carding-cloth, which has been specifically disclaimed by the patentees.

In view of the facts above mentioned it has seemed best to state only the conclusions reached upon the single question of patentable novelty in view of the prior art.

The complainant claims that—

> the patented process and machine attains the extreme delicacy required for bromid coatings by providing means for maintaining the evenness of the coating until the gelatin has set, these consisting of the smoothing roll or rolls which eliminate the hollows and check and reverse the tendency to flow. * * * And by the uniform and reliable action of the hang up the delicate product is preserved and stored until, by drying, it is completed, instead of being injured or destroyed as it would be by ordinary handling.

For the purpose of considering the question of patentable novelty it will be assumed that complainant's contention, as above stated, is correct.

Prior to this alleged invention various machines for coating paper for photographic and other purposes had been made and publicly described. The state of the prior art is sufficiently shown by the Colas and Bertsch German patents, the Sarony and Johnson British patent, the Johnson British and French patents, the Beaurain and De Launay French patents, and the Allen and Rowell and Anthony machines. Prior to said alleged invention Walker, one of the patentees, had seen the Allen and Rowell machine, and Eastman, the other patentee, had used the Anthony machine, as to which his testimony is as follows:

> Q. In what respect, if any, did the coating device, meaning thereby the emulsion-roller, the emulsion-tank and the emulsion-warming apparatus, differ from the coating device shown in your patents in this suit? A. I think not at all.
> Q. The coating device in the machine that you received from Anthony & Company about 1882 was then substantially the same in construction and mode of operation as the coating device shown by your patent in this suit? A. So far as those parts are concerned they are.
> Q. Did the coating device in this said Anthony machine apply

the emulsion to the face of the paper in a uniform manner, or prevent an excess of the emulsion at the rear side of the paper? A. It did.

Mr. Eastman's testimony as to the coating devices used by them is as follows:

Q You did adopt for practical use in your machine this coating device which was already well-known in the art? A. We finally adopted the smooth-faced, submerged coating-roller.
Q. Without making any substantial modifications in it beyond a change of dimensions? A. Not in the roller.
Q. Nor in the trough or heating devices? A. No.

The coating devices here referred to are those of the Anthony and Allen and Rowell machines. These admissions render it unnecessary to discuss the construction of the Anthony machine.

German patent No. 12,607, granted July 29, 1880, to Colas, and a modification thereof in German patent No. 18,535, granted to Bertsch August 3, 1881, describe machines for applying sensitive liquids to photographic papers. The solution to be used in the Colas patent is for coating blue-print paper. The Bertsch patent describes a machine for applying sensitive liquids on one side of solar-print paper. Each of these machines comprises a partially-submerged coating-roller or a submerging-bar, its equivalent, and driven feed-rollers. Hang-ups are referred to but not described. These constructions would receive more extended consideration were it not for the emphatic testimony introduced by complainant that they were inoperative for coating paper with bromid emulsion.

The testimony as to the practical working of the various machines of the prior art as constructed and operated by the opposing parties is incomprehensibly conflicting and therefore unsatisfactory. The complainant claimed that in the use of these machines the liquid was filled with bubbles and the paper wrinkled because the feeding-disk rested upon the edges of the paper. The first of these objections is immaterial upon the question of infringement, for the surface of defendants' emulsion is kept in constant agitation. As to the second objection, Mr. Eastman, two years and a half after the application for the patent in suit, advocated in a subsequent application the use of such collars bearing upon the edges of the paper as producing a superior quality of paper. In the Johnson French patent the paper ran over a belt, and it would therefore be impracticable for bromid-paper. It shows pegs apparently adapted for a hang-up. There is a suggestion in the Johnson English patent of dispensing with the belt and substituting a driven roll such as is described in the machine patent in suit. The description, however, is somewhat indefinite, and these two patents are only material as suggesting the knowledge of hang-ups and the use of a driven roll in order to keep the surface of the paper smooth.

British patent granted to Sarony and Johnson May 18, 1878, for a machine for making carbon or pigment paper, comprises a combination of all the elements covered by the third claim in suit. Although said claim shows some modification in their arrangement, yet if said machine were satisfactorily proved to be operative such proof alone would dispose of the question of patentable novelty in this case. Eastman admits that said patent describes the coating-roll, trough, heating apparatus, and driven smooth-faced rolls of his machine.

The testimony of complainant that a model constructed by it was inoperative will not be discussed, because the conditions under which it was tested did not permit a fair test of its practicability. The testimony of defendants as to the operativeness of their model is not satisfactory in view of their failure to comply with complainant's request to inspect it in operation. Their alleged successful results were accomplished on machines embodying the described Sarony construction, with certain changes justified by the state of the art at the date of the Sarony and Johnson patent. The complainant admits, however, that with the second model constructed by it and embodying said modifications it successfully filled the machine with twenty long rolls of fourteen-inch heavy paper. In view, however, of Eastman's admission that the Sarony model constructed by him was successful three times out of four in coating bromid-paper and of the striking similarity between the machines of Sarony and of the patent in suit and of the analogous uses for which they were employed and of the slight modifications required to adapt it to the new use, which confessedly were old, I think this patent alone shows lack of patentable novelty in the claim in suit.

It is unnecessary to discuss the hang-ups or the claim for the combination of the other parts of the machine with this mere frame for drying the product, because such hang-ups were well known in the general field of arts requiring a drying process, and therefore, even if there be coöperative action, there is no invention. The specification of the patent says:

Our invention involves * * * a hang-up frame of any approved construction.

Eastman says:

Q. The Sarony and Johnson patent shows that a paper-coating device similar to that used in your patent was known as early as 1878, was it not? A. Yes, at least as early as that, and the hang-up was known when I was four years old.

There is a conflict of expert testimony as to whether it is more difficult to produce an even coating with carbon emulsion or with bromid emulsion. It will, however, be assumed that the bromid emulsion required more delicate treatment.

The Allen and Rowell machine, constructed and used as early as 1877, was adapted for coating paper with various gelatin emulsions, principally carbon films. It comprised a roll of paper passing through a friction-roller into a submerged roller and afterward upwardly over rollers on to a belt supported on a driven roller, over which the paper passes. It did not have the hang-up of the patented combination; but Messrs. Allen and Rowell testify that they knew of such hang-ups long prior to the date of the complainant's invention, and that the only reason why they did not use them was that they had insufficient room and insufficient business to warrant the expense. As already stated, Walker, prior to the date of the patent in suit, had seen this machine in operation.

It is perhaps not satisfactorily proven that the Allen and Rowell machine coated bromid-paper commercially prior to the invention in suit. That it made good carbon-paper is admitted by complainant. That it made some bromid-paper experimentally and some for the market which was sold and practically used is sufficiently shown. That it was not a great success commercially appears to have been largely due to de-

fects in the emulsion rather than in the machine. Complainant claims that it reproduced the Allen and Rowell machine and attempted to coat paper upon it and failed. The evidence as to the way in which this machine was constructed and operated has failed to satisfy me that the machine could not have been successfully operated.

The same objections do not apply to the actual operation of the original Allen and Rowell machine by the representatives of the defendants. The testimony as to their experiments with this machine since the bringing of this suit dispenses with the necessity of further discussing the question of prior use. It is established to the satisfaction of the court that the machine, operated under exceptional circumstances it is true, made good salable bromid-paper, from which satisfactory enlarged prints were subsequently developed. The complainant contends that the tests to which this paper has been exposed are not such as to indicate whether or not it was a salable paper, and it gives various reasons in support of this view, and further claims that it was not given a proper opportunity to test this paper. It appears, however, that defendants offered to permit complainant's experts to examine the paper either at New York or at Buffalo, provided complainant would pay certain expenses connected therewith, and that this offer was declined. In view of the great importance of this evidence upon the question of the operativeness of this machine this court, without passing upon the question as to whether this opportunity was or was not a proper one, is not satisfied that the objections to the tests made by defendants are sufficiently proven. It may be further remarked in support of this conclusion that it is not satisfactorily shown that the alleged defects in the bromid-paper thus coated on the original Allen and Rowell machine or the proved defects in that coated on the machine constructed by complainant were such as to show that the original machine was not a practical one. Furthermore, Eastman, one of the patentees of the patent in suit, testified as to the Allen and Rowell machine which he built as follows:

Q. What particular feature of the work described in the third claim did it not cover? A. It did not make an even coating—uniform coating.
Q. And yet the coating device in that machine is substantially the same as that shown in your patent and used in all your bromid paper machines? A. I have already said that the coating-roll was the same, but it did not coöperate with the other parts like our machine to do the work.
Q. Would a patent practice your invention if the coated paper from one of the top rolls of the Allen and Rowell machine were delivered to a hang-up similar, for instance, to that shown in the Van Deventer patent of 1868? A. If the hang-up device was located at a sufficient distance to allow the emulsion to set before it reached the slat and the hang-up was an operative one.

It also appears that other objections to the paper produced on complainant's model of the Allen and Rowell machine were due to its operation by hand by one not familiar with it, and that said objections might probably have been obviated by an experienced hand-operator or by machinery.

The Allen and Rowell device contained every element of the patent in suit except the hang-up. It is urged that the roller, being covered with cotton cloth, was not smooth-faced. In that sense the rollers of defendants' machines are not smooth-faced. It is claimed that it was not located at a sufficient distance to allow the emulsion to set except under most favorable circumstances, but to increase the distance between the rolls in order to give further time for drying and setting does not involve invention.

Counsel for complainant admit that the driven smooth-faced rolls of the claim in suit are old, but contend that their function as ironing-rolls is new. For the discussion of this contention it will be assumed that said claim is not limited by the specification to a series of such rolls, and that defendants' rolls are feed-rolls and infringe said claim, and that complainant's rolls were here used for the first time to smooth out the hollows in paper coated with bromid emulsion, and that in the operation of the machines of the prior art by the parties they failed to successfully produce bromid-paper. In that event these patentees have first described and claimed the use of the old feed or smoothing rolls with a new kind of gelatin emulsion, and have, as a result, ironed bromid-paper instead of carbon or blue-print paper; but this is merely a double use—the application of an old device to a new subject-matter.

If, resolving every contention of fact in favor of complainant, it be assumed that this patent described and this claim covered a new machine which secured a new result and which is infringed by defendants, it would still fail to show any consideration for the claimed monopoly of the patent. The witnesses and counsel for complainant assert that the new result was accomplished by—

the carrying-roll x which kept the coating even by smoothing out the hollows in the paper and checking and reversing the tendency to flow until the coating became set and the hang-up * * * placed at the proper distance * * * which had the capacity of receiving the coated paper and storing it until dry without the injurious and destructive effects upon such paper of ordinary handling.

But they admit that the older devices thus coated, received, stored, and dried fabrics; that the only material modifications of the patent consisted in increasing the distance between the rollers and hang-ups, so as to allow the thinner solution to stiffen before reaching the hang-ups, and in adding the old hang-up to perform its old functions to secure the old results with a new coating. Inasmuch as this application of the old devices was to an analogous use and as the changes made by the patentee were such as would have occurred to any skilled mechanic to whom was first presented the problem of applying an emulsion of a different consistency from that formerly employed there is no patentable novelty in the alleged invention.

French patent No. 137,736, granted July 10, 1880, to De Launay, for processes and apparatus for the manufacture of glass and emery papers, was not seasonably introduced in evidence and is therefore only relevant as showing the state of the prior art. It shows the same parts, same arrangement, same form of construction, and same operation in a combination substantially identical with that of the claim in suit. That it also describes a sanding device is immaterial. This may be omitted, and the description evidently contemplates the operation of coating the paper with glue independent of the use of sand. The difference between the De Launay coating by transference and the patented coating by submergence is immaterial, as both were old and were known equivalents, and such a modification would not constitute invention.

The single question is whether there is such a transfer from one branch of industry to another as constitutes invention. The question must be answered in the negative for the following reasons: The process of coating paper with glue is closely allied to, if not identical with, that of coating paper with gelatin. The De Launay patent separately describes such a process by means of an apparatus not materially distinguishable from that of the patent in suit. The modification by running the paper in an opposite direction was a well-known one, to which the coating-rolls were already adapted and which was common in the general art of coating-rollers. It may be assumed, however, that the patented machine accomplished a new result. Even if such new result be not merely a higher finish and greater beauty of surface due to the perfection of the machinery employed, and amounting to—

a mere carrying forward or mere extended application of the original thought,

yet, as the trifling changes were such as must have occurred to any mechanic skilled in the art of coating paper as soon as the exigencies of the increased use of bromid-paper presented the problem of increase in quantity, it does not show patentable novelty. It is well settled that a mere change of location of one of the elements of a combination is not patentable. (*McKay* v. *Marshall*, 2 Web.; *Phipps* v. *Yoss*, 26 Fed. Rep., 447; *Troy Laundry Machinery Co.* v. *Bunnell*, 27 Fed. Rep., 810.)

It may well be, as contended by complainant, that—

in no variety of coating-machines had the distance of separation * * * from the hang-up been a matter of significance or importance.

It may well be that the patentees first conceived the idea of the convenience and utility of adding to a coating-machine a hang-up at such a distance that the thin solution would dry before it reached the hang-up, and that by the addition of hang-ups bromid-paper could be coated in larger quantities. The question involved, however, is not so much as to their priority in the perception of the problem as to the patentable novelty of the means they furnished for its solution. Cary was the first to adapt the process of bluing furniture-springs, so as to resist strain, and thereby revolutionized the art of making furniture-springs; but the Supreme Court of the United States, reviewing the case, held—

that the application of an old process or machine to a similar or analogous subject with no change in the manner of application and no result substantially distinct in its nature will not sustain a patent even if the new form of result had not before been contemplated. (*Lovell Mfg. Co.* v. *Cary*, 62 O. G., 1821; 147 U. S., 623, 637.)

Rosenfield was the first to adapt mechanism for opening and closing apertures distant from the operator to railway-car gates; but the Supreme Court of the United States, quoting from the opinion of Judge Wallace, says:

It rarely happens that old instrumentalities are so perfectly adapted for a use for which they were not originally intended as not to require any alteration or modification. If these changes involve only the exercise of ordinary mechanical skill, they do not sanction the patent; and, in most of the adjudged cases where it has been held that the application of old devices to a new use was not patentable, there were changes of form, proportion, or organization of this character which were necessary to accommodate them to the new occasion. The present case falls within this category. (*Aron* v. *Manhattan Railway Co.*, 49 O. G., 1365; 132 U. S., 90.)

In *Knapp* v. *Morse* (65 O. G., 1593; 150 U. S., 228) the Court said:

All that Hall did was to adapt the application of old devices to a new use and this involved hardly more than mechanical skill.

Patents Nos. 370,110 and 370,111, of even date, are for processes of coating photographic paper. The claims of Patent No. 370,110, as to which infringement is alleged, are the following:

1. The herein-described method of producing uniform coatings upon continuous webs or strips of fabric, which consists in applying the coating material in a fluid condition evenly upon the face of the web and in changing the flow of the coating upon the web to regulate and maintain its uniformity, and maintaining the web in motion and its coated surface unobstructed by contact with foreign bodies until the coating has set or hardened sufficiently to prevent running, substantially as described.

2. The herein-described improvement in the art of producing photographic paper, which consists in applying to one face of a web of paper a thin uniform coating or surface of fluid gelatino-argentic emulsion by causing the paper to emerge from the level surface of a body of emulsion, and subsequently maintaining the coated web flat and in motion continuously and uniformly in the same direction, and the surface of the coating undisturbed by contact with foreign substances until the gelatin has set or stiffened sufficiently to prevent running, substantially as and for the purpose set forth.

3. The herein-described process of producing gelatino-argentic fabric for photographic reproductions, consisting in applying to a moving continuous web of fabric a uniform layer of sensitive gelatino-argentic emulsion, keeping said web in motion and the coated side unobstructed until the coated gelatin is set or stiffened sufficiently to prevent flowing, and finally drying said coating.

4. The herein-described method of producing uniform coatings upon continuous webs or strips of fabric, which consists in applying the coating material in a fluid condition evenly upon the face of the web, and subsequently maintaining the web in motion and its coated surface unobstructed by contact with foreign bodies until the coating has set or hardened sufficiently to prevent running, substantially as described.

The third claim of Patent No. 370,111, the only one as to which infringement is alleged, is as follows:

3. The herein-described continuous process of producing gelatino-argentic fabric for photographic reproductions, consisting in applying in a suitable non-actinic light to a moving continuous web of fabric a uniform layer of sensitive argentic-fluid emulsion, keeping said web in motion and the coated side unobstructed until the coated gelatin is set or stiffened sufficiently to prevent flowing, and, finally, while the web is in motion and the coating being applied, depositing that part of the web on which the coating has set or stiffened at rest with relation to its supports to dry.

The defendants do not infringe these claims either by—

applying the coating material evenly upon the face of the web—

or by—

causing the paper to emerge from the level surface of a body,

for they use an agitator constantly in motion in the trough in order to keep the emulsion stirred up and thereby to obtain a better result. It has not been proved by satisfactory evidence that they change the flow of the coating upon the web, as claimed in said third claim and described in said process, namely—

so that at one point it, the web, will travel upward and subsequently downward, or vice versa, thereby arresting or changing the direction of the flow.

Defendants have infringed the third claim of Patent No. 370,111 by depositing the coated web to dry during the application of the coating to another part of the web; but inasmuch as the prior art shows that such a process of depositing a coated substance on supports to dry was common to the whole field of practical arts long before the alleged invention I am unable to find any patentable novelty therein.

In view of the conclusions reached it is unnecessary to pass upon the motions to suppress testimony. Each party has introduced irrelevant testimony and witnesses on each side have made statements which, for various reasons apparent on the record, are entitled to little or no weight. In these circumstances it has seemed desirable to disregard such testimony and to decide the questions presented upon such evidence as was not open to said objections.

The motions to suppress testimony are denied.

Let a decree be entered dismissing the bill.

THE
OFFICIAL GAZETTE
OF THE
United States Patent Office.
[BY AUTHORITY OF CONGRESS.]

VOL. 77—No. 13. TUESDAY, DECEMBER 29, 1896. PRICE—$5 per year.

CONTENTS.

	Page.
BELGIAN PATENTS	1943
DISBARRED ATTORNEYS	1943
NOTICE	1943
EXTRACTS FROM THE RULES OF PRACTICE, ETC	1943
INDEXES TO PATENTS ON ELECTRICITY	1943
PRINTS	1944
ISSUE OF DECEMBER 29, 1896	1944
APPLICATIONS UNDER EXAMINATION	1944
PATENTS GRANTED	1945
REISSUES	2124
DESIGNS	2125
TRADE-MARKS	2130
LABELS	None.
COMMISSIONER'S DECISIONS—	
Ex parte Borton	2137
Johnston v. Stone	2137
Decker v. Loosley	2140
DECISIONS OF THE U. S. COURTS—	
Ross v. Loewer	2141
Shickle, Harrison & Howard Iron Company v. St. Louis Car Coupler Company	2142

Belgian Patents.

In reply to an inquiry from this Office notice has been received, through the Minister of the United States at Brussels, from the Belgian patent authorities, that it is not deemed advisable to publish their patents *in extenso*, and that no fuller description than that contained in the short abstract of the *Recueil Officiel* will be given. Complete copies may be obtained from the Belgian Patent Office on payment of the expense of reproduction.

Disbarred Attorneys.

(ORDER No. 1,108.)

DEPARTMENT OF THE INTERIOR,
UNITED STATES PATENT OFFICE,
Washington, D. C., November 14, 1896.

It is hereby directed that any person who has been disbarred from practice before the Patent Office by order of the Commissioner be denied access to the files of the Office, either in his own capacity or as the representative of any other person or firm.

JOHN S. SEYMOUR,
Commissioner.

Notice.

On the 9th day of February, 1893, the President approved "An act to establish a Court of Appeals for the District of Columbia, and for other purposes," which contains the following:

Sec. 9. That the determination of appeals from the decision of the Commissioner of Patents, now vested in the general term of the Supreme Court of the District of Columbia, in pursuance of the provisions of section seven hundred and eighty of the Revised Statutes of the United States, relating to the District of Columbia, shall hereafter be and the same is hereby vested in the court of appeals created by this act; and in addition, any party aggrieved by the decision of the Commissioner of Patents in any interference case may appeal therefrom to said court of appeals.

Sec. 17. That all acts and parts of acts inconsistent herewith are hereby repealed.

Extracts from the Rules of Practice in Relation to the Preparation of Specifications, Entry of Amendments, Etc.

LEGIBLE WRITING REQUIRED.

45. The specification and claims must be plainly written or printed on but one side of the paper. All interlineations and erasures must be clearly referred to in marginal or foot notes on the same sheet of paper. Legal-cap paper with the lines numbered is deemed preferable, and a wide margin must always be reserved upon the left-hand side of the page.

AMENDMENTS MUST BE SPECIFIC—HOW WRITTEN.

73. In every amendment the exact word or words to be stricken out or inserted in the application must be specified, and the precise point indicated where the erasure or insertion is to be made. All such amendments must be on sheets of paper separate from the papers previously filed, and written on but one side of the paper. Erasures, additions, insertions, or mutilations of the papers and records must not be made by the applicant.

SPECIFICATIONS REWRITTEN.

74. When an amendatory clause is amended, it must be wholly rewritten, so that no interlineation or erasure shall appear in the clause, as finally amended, when the application is passed to issue. If the number or nature of the amendments shall render it otherwise difficult to consider the case, or to arrange the papers for printing or copying, the Examiner or Commissioner may require the entire specification to be rewritten.

Indexes to Patents on Electricity.

Indexes to patents relating to electricity, covering the period of time from July 1, 1882, to June 30, 1890, have been issued, and are for sale. These indexes, arranged alphabetically, numerically, and by classes, comprise the following volumes, the prices of which are given below:

Vol. 1. Index to patents relating to electricity granted by the United States prior to June 30, 1881, with an appendix, July 1, 1881, to June 30, 1882. One volume, 250 pages. In paper covers, $3; bound, $5.

Vol. 2. Appendix No. 2, July 1, 1882, to June 30, 1883. One volume, 50 pages. In paper covers, $1.50.

Vol. 3. Appendix No. 3, July 1, 1883, to June 30, 1884. One volume, 60 pages. In paper covers, $1.50.

Vol. 4. Appendix No. 4, July 1, 1884, to June 30, 1885. One volume, 60 pages. In paper covers, $1.50.

Vol. 5. Appendix No. 5, July 1, 1885, to June 30, 1886. One volume, 54 pages. In paper covers, $1.50.

Vol. 6. Appendix No. 6, July 1, 1886, to June 30, 1887. One volume, 52 pages. In paper covers, $1.50.

Vol. 7. Appendix No. 7, July 1, 1887, to June 30, 1888. One volume, 68 pages. In paper covers, $1.50.

Vol. 8. Appendix No. 8, July 1, 1888, to June 30, 1889. One volume, 72 pages. In paper covers, $1.50.

Vol. 9. Appendix No. 9, July 1, 1889, to June 30, 1890. One volume, 84 pages. In paper covers, $1.50.

Vol. 10. Appendix No. 10, July 1, 1890, to June 30, 1891. One volume, 98 pages. In paper covers, $1.50.

Vol. 11. Appendix No. 11, July 1, 1891, to June 30, 1892. One volume, 86 pages. In paper covers, $1.50.

Vol. 12. Appendix No. 12, July 1, 1892, to June 30, 1893. One volume, 80 pages. In paper covers, $1.50.

Vol. 13. Appendix No. 13, July 1, 1893, to June 30, 1894. One volume, 70 pages. In paper covers, $1.50.

Vol. 14. Appendix No. 14, July 1, 1894, to June 30, 1895. One volume, 63 pp. In paper covers, $1.50.

PRINTS.

39.—Title: "IVY CROWN." (For Cigars and Tobacco.) *American Lithographic Company*, New York, N. Y. Application filed October 10, 1896.

40.—Title: "ARABESQUE." (For Cigars and Tobacco.) *American Lithographic Company*, New York, N. Y. Application filed October 10, 1896.

41.—Title: "CAESAR." (For Soap.) *The United States Printing Company*, Cincinnati, Ohio. Application filed December 3, 1896.

Issue of December 29, 1896.

Patents	524—No. 573,845 to No. 574,368,	inclusive.
Designs	31—No. 26,451 to No. 26,481,	inclusive.
Trade-Marks	57—No. 29,342 to No. 29,398,	inclusive.
Labels	None.	
Prints	3—No. 39 to No. 41,	inclusive.
Reissues	1—No. 11,380.	
Total issue	616	

TO CITIZENS OF THE UNITED STATES.

States.	Patents and Designs.	Trade-Marks and Prints.	States.	Patents and Designs.	Trade-Marks and Prints.
Alabama	5	...	New Hampshire	3	...
Arizona Territory	1	...	New Jersey	23	1
Arkansas	4	...	New Mexico Territ'y	1	...
California	8	1	New York	91	22
Colorado	5	...	North Carolina	...	...
Connecticut	21	2	North Dakota	...	...
Delaware	1	...	Ohio	36	6
District of Columbia	5	...	Oklahoma Territory	1	...
Florida	3	...	Oregon	1	...
Georgia	1	...	Pennsylvania	67	6
Idaho	1	...	Rhode Island	5	...
Illinois	61	2	South Carolina	1	...
Indian Territory	2	...	South Dakota	1	2
Indiana	14	1	Tennessee	2	...
Iowa	13	...	Texas	5	...
Kansas	6	...	Utah	...	...
Kentucky	11	2	Vermont	3	...
Louisiana	3	2	Virginia	3	1
Maine	5	...	Washington	3	1
Maryland	3	1	West Virginia	4	...
Massachusetts	40	3	Wisconsin	10	1
Michigan	14	2	Wyoming	...	...
Minnesota	6	...	U. S. Army	1	...
Mississippi	...	1	U. S. Navy	1	...
Missouri	14	...	Total to citizens of the United States	516	58
Montana	...	...			
Nebraska	4	1			
Nevada	1	...			

TO CITIZENS OF FOREIGN COUNTRIES.

Countries.	Patents and Designs.	Trade-Marks and Prints.	Countries.	Patents and Designs.	Trade-Marks and Prints.
Argentina	...	...	Mexico	1	...
Australia	...	...	Netherlands	...	...
Austria-Hungary	2	...	Newfoundland	...	...
Barbadoes	...	...	New South Wales	...	...
Belgium	...	...	New Zealand	1	...
Bermuda	...	...	Norway	...	...
Brazil	...	...	Orange Free State	...	...
Canada	1	...	Peru	...	...
Canary Islands	...	...	Queensland	...	...
Cape Colony	...	...	Russia	...	...
Ceylon	...	...	Scotland	2	...
Chile, Republic of	...	...	South African Republic	...	...
Colombia	...	...	Spain	...	...
Cuba	...	...	Straits Settlements	...	...
Denmark	...	...	Sweden	2	...
England	13	...	Switzerland	...	...
France	4	1	Victoria	...	...
Germany	12	1	West Australia	...	...
Guatemala	...	...			
India	1	...	Total to citizens of foreign countries	39	2
Ireland	...	...			
Italy	...	...			

APPLICATIONS UNDER EXAMINATION.

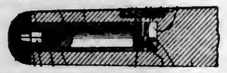
Condition at Close of Business December 22, 1896.

Room No.	Divisions and subjects of invention.	Oldest new application and oldest action by applicant awaiting office action. New.	Amended	No. of applications awaiting action.
	In arrears.—Under one month.			
250	VIII. Furniture, Beds, Store Furniture, etc.	Nov. 23	Dec. 14	253
256	V. Fine Arts, Stationery, Book-Binding, Music, etc.	Nov. 23	Dec. 9	203
91	XVI. Telegraphy, Telephony, Electric Lighting and Signaling.	Nov. 24	Dec. 7	107
223	XXVII. Brushing and Scrubbing, Grinding and Polishing, Laundry, etc.	Nov. 30	Dec. 2	123
251	XIII. Metal-Working, Arms and Projectiles, Nails and Spikes, Needles and Pins, Cutlery, etc.	Nov. 24	Dec. 2	181
98	XXXIV. Railway-Brakes, Draft Appliances, and Rolling-Stock.	Nov. 24	Dec. 2	218
102	XIX. Stoves and Furnaces	Dec. 1	Dec. 1	258
106	II. Farm Stock, Products, etc	Dec. 1	Nov. 30	257
215	XVII. Paper Manufactures and Printing.	Nov. 24	Nov. 28	150
255	XII. Mechanical Engineering, Store-Service, etc.	Nov. 23	Nov. 28	236
243	XXV. Artesian and Oil Wells, Butchering, Mills and Thrashing, Stone-Working, Vegetable Cutters and Crushers.	Nov. 27	Nov. 27	130
211	XV. Plastics, Paper-Making, Paving, Glass, Fuel, Bread-Making, etc.	Nov. 27	Nov. 27	219
209	XIV. Metal-Bending, Wire-Working, Coin-Controlled Apparatus, Farriery, Nut and Bolt Locks, etc.	Nov. 25	Nov. 25	183
248	XVIII. Steam-Engineering, etc	Dec. 1	Nov. 24	128
109	XXII. Fire-Arms, Fishing and Trapping, Navigation, Signals, etc	Nov. 24	Nov. 24	165
128	XXIX. Wood-Working Machines, Carpentry, Coopering and Roofing, etc.	Nov. 24	Nov. 23	143
153	XX. Builders' Hardware, Safes, Dentistry, Undertaking, Artificial Limbs, etc.	Nov. 23	Nov. 23	273
93	XXI. Textiles, etc	Nov. 23	Nov. 19	190
221	XXIII. Instruments of Precision, Acoustics, etc.	Nov. 23	Nov. 5	294
	Between one and two months.			
39	XXXI. Gas, Painting, Hides, Skins and Leather, Alcohol, Oils, Fats, and Glue, etc.	Nov. 19	Nov. 23	282
30	IV. Civil Engineering, Fire-Proof Buildings, Fire-Escapes and Ladders, etc.	Nov. 18	Nov. 23	291
35	XXVIII. Pneumatics, Refrigeration, Air and Gas Engines, etc.	Nov. 16	Nov. 18	292
120	IX. Hydraulics, Fire-Extinguishers, etc.	Nov. 13	Nov. 16	225
258	X. Carriages and Wagons	Nov. 13	Nov. 16	308
87	XXVI. Electricity, Generation, Distribution, Motive Power, Electric Railways, etc.	Nov. 16	Nov. 6	178
258	VI. Chemistry, Explosives, Medicines, Fertilizers, Preserving, Photography, Sugar and Salt, Surgery.	Nov. 7	Nov. 6	351
149	III. Metallurgy, Metal-Founding, Coating, Annealing and Tempering, Electro-Chemistry, etc.	Nov. 18	Nov. 3	257
246	I. Tillage and Fences	Nov. 16	Nov. 2	257
95	XXX. Lamps, Gas-Fittings, Linotyping, Type-Writing Machines, and Optics.	Nov. 1	Oct. 15	298
	Between two and three months.			
111	XXXII. Advertising, Aeration and Bottling, Baggage, Packing and Storing Vessels, etc.	Sept. 24	Dec. 1	418
240	VII. Harvesters, Games and Toys, and Velocipedes.	Oct. 1	Nov. 5	955
	Between three and four months.			
122	XXIV. Sewing-Machines, Crinoline and Corsets, Apparel, and Toilet.	Sept. 9	Oct. 26	137
	Between five and six months.			
105	XI. Boots and Shoes, Clasps, Buckles and Buttons, Harness, Hose and Belting, and Leather-Working Machinery.	July 16	Nov. 18	561
	Total number of applications awaiting action			8,521
	Under one month in arrears.			
	Designs	Dec. 3	Dec. 14	105
	Trade-Marks	Dec. 14	Dec. 15	59

PATENTS

GRANTED DECEMBER 29, 1896.

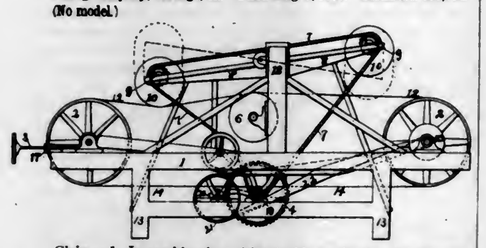
573,845. BILLIARD-CUE. VINCENT AJELLO, New York, N. Y., assignor of one-third to Felix Mainella, same place. Filed May 16, 1896. Serial No. 591,783. (No model.)



Claim.—1. A removable tip for billiard-cues comprising a cylindrical casing resting in a socket in the cue, said casing having a vertical shaft journaled therethrough, said shaft having a beveled pinion upon its inner end which engages with a similar beveled pinion which is mounted upon a longitudinal spindle, which spindle has a squared end, said spindle being journaled through bearings upon the said casing; and a tip proper which has a squared spindle depending therefrom provided with a threaded portion for engagement with the said vertical shaft, substantially as shown and described.

2. As an attachment for billiard-cues, the combination with the socket in the cue of the cylindrical casing having a squared aperture in the head thereof and a vertical shaft journaled through the body thereof, said shaft having a threaded aperture, in its outer end and a beveled pinion upon its inner end which pinion engages with a similar pinion mounted upon a horizontal spindle having a squared end, and a removable tip having a squared spindle extended therefrom which forms part of a depending screw, said squared spindle and screw engaging respectively with the squared aperture of the said head and with the threaded aperture of said shaft, substantially as shown and described.

573,846. MACHINE FOR SANDING BUTTER-TUBS. CHARLES D. ARES, Portland, Ind., assignor to the Creamery Package Manufacturing Company, Chicago, Ill. Filed Aug. 5, 1896. Serial No. 601,734. (No model.)



Claim.—1. In combination with suitable mechanism for presenting the exterior of casks to the exterior of a moving sand belt, the sand-belts 12 and 14, suitably carried on rotating pulleys, and on their outer surfaces provided with a coating of glue and sand and duplicate means for presenting an article to the belts, substantially as shown and for the purpose described.

2. The combination of the sand-belts 12 and 14, suitably carried on the rotating pulleys, and provided on their exterior with a cutting-surface of glue and sand, oscillating beam 8, provided with a tub-chuck at each end, adapted to be alternately presented to said belt, and means substantially as shown for rotating said chucks meanwhile in an opposite direction to the movement of said sand-belts, for the purpose specified.

3. The combination of continuously-rotating belts 12 and 14, provided on their exteriors with an abrading-surface an oscillating beam 8 substantially parallel with said belt chucks 10 seated on the ends of said beam, sprockets 9 seated on the shafts of said chucks, a suitably-driven sprocket-wheel 19, and a sprocket-chain 7, inclosing and rotating the said sprocket-wheels 9, substantially as shown and for the purpose described.

4. The combination of moving endless sand-belts 12 and 14, provided on their exteriors with an abrading-surface an oscillating beam 8, provided at each end with tub-chucks 10, 10, and means, substantially as shown, for rotating said chucks in a direction contrary to the movement of said sand-belts thereunder, for the purpose specified.

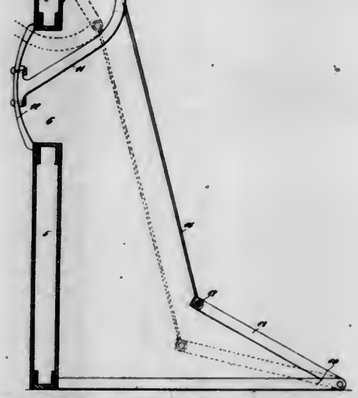
5. The combination of the pulleys 2, and iron bands or bushings 24 and 25, adjustable laterally on the peripheries of said pulleys, substantially as shown and for the purpose described.

6. The combination of the sand-belt-carrying pulleys 2, and sand-belts 12 and 14 provided on their exterior with an abrading-surface, means for laterally shifting said sand-belts on said pulleys, and means for intermittingly presenting to the outside of said sand-belts, the exterior of reversely-rotating butter-tubs or other casks, substantially as shown and for the purpose specified.

7. The combination, of carrying-pulleys, 2, 2, the periphery of each of which is provided with circumferential series of transverse slots, an iron band around the pulley at each series of slots, bolts secured to the bands and projecting through the slots and provided with means for securing them in their adjusted positions, endless belts upon the wheels, and means for presenting hooped articles to the belt in such manner that the hoops will lie between the belts, substantially as set forth.

8. The combination, with a frame, of a supporting-pulley at each end and an upright intermediate the ends, a pulley and an oscillating beam upon the upright, endless belts upon the pulleys, and means at each end of the beam for presenting articles to the belt, substantially as set forth.

573,847. FURNACE-DOOR. ELMER M. ANDRUS, Mitchell, Oreg. Filed Aug. 19, 1896. Serial No. 603,280. (No model.)



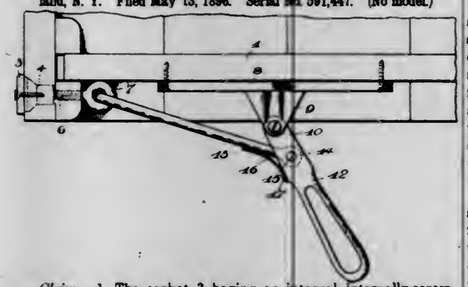
Claim.—1. The herein-described furnace-door support and means for opening and closing the same, which consist of outwardly-directed supports pivotally connected with the wall of the furnace above the door opening, downwardly and backwardly directed arms connected with said supports, which extend through the door-opening and to which the furnace-door is secured, and devices connected with said supports for opening and closing said door by means of the feet, substantially as shown and described.

2. The combination with the wall or end of a furnace, a door-support pivotally connected therewith, above the door-opening, and extending outwardly therefrom, and provided with downwardly and backwardly directed arms which extend through the door-opening, and to which the door is secured, and a pedal, plate or frame pivot-

ally connected with the door of the furnace-room, and operative devices connected therewith, and also pivotally connected with said door-supports, substantially as shown and described.

3. The combination with the front end wall of a furnace, of a door support pivotally connected therewith, above the door-opening, and extending outwardly therefrom, and provided with downwardly and backwardly directed arms which project through the door-opening, and to which the door is secured, said support being also pivotally connected with rods, which are pivotally connected with a pivoted pedal, or foot-plate, substantially as shown and described.

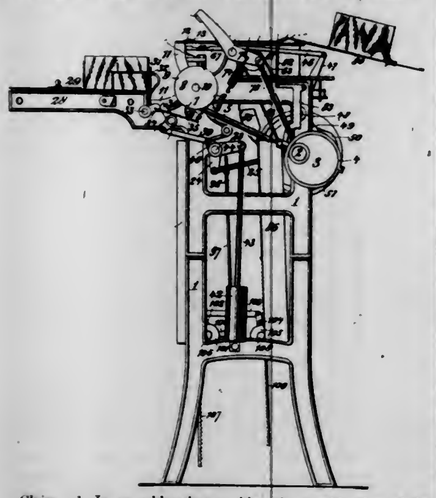
573,848. **END-GATE FASTENING.** WILLIAM H. ARNER, Groveland, N. Y. Filed May 13, 1896. Serial No. 591,447. (No model.)



Claim.—1. The socket 3 having an integral internally-screw-threaded shank 4, the eyebolt 7, the threaded end 6 of which is adjustably secured in said socket, in combination with the hand lever 12, having its bifurcated end fulcrumed in the arms 9 9 of the plate 8, and the horizontal hook 13, pivoted at one end between the bifurcated ends of said lever and its free end adapted to engage the eyebolt 7, substantially as shown and described.

2. The socket 3, having internally-threaded shank 4, the eyebolt 7 adjustably secured therein, in combination with the lever 8, having its end fulcrumed in the arms 9 9 of the plate 8, the hook 13 pivoted at one end to said lever, and having its free end in contact with said eyebolt, and the spring 16 secured at one end to said lever and having its free end in operative contact with said hook, substantially as shown and described.

573,849. **ADDRESSING-MACHINE.** FRANK D. BELKNAP, New York, N. Y. Filed Dec. 19, 1895. Serial No. 572,643. (No model.)



Claim.—1. In an addressing-machine the combination of the main frame and driving-shaft, the rotating frame provided at equally-spaced distances with means for grasping the stencils and envelops, means for feeding the stencils and envelops to the rotating frame at different points in its circumferential travel, and an inking apparatus which runs over the stencil at a point in the circumferential travel of the frame beyond that at which both stencil and envelop have been placed thereon, together with the mechanism which transmits motion from the main shaft to the rotating frame and inking apparatus, substantially as described.

2. In an addressing-machine the combination of the main frame and driving-shaft, the rotating frame, the spring-clips at equally-spaced distances around the circumference of the rotating frame and opening in the direction of rotation, the magazine of stencils and the magazine of envelops arranged at different points around the circumference of said rotating frame, means for lifting the outermost stencil and the outermost envelop from each magazine into the line of travel of the spring-clips, whereby they are picked up by said clips and carried around together by the rotating frame, and the mechanism which transmits motion from the main shaft to the rotating frame, substantially as described.

3. In an addressing-machine, the combination of the main frame and driving-shaft, the rotating frame, the spring-clips at equally-spaced distances around the circumference of the rotating frame and opening in the direction of rotation, the magazine of stencils and the magazine of envelops arranged at different points around the circumference of said rotating frame, suction-fingers and mechanism operated from the main shaft which projects said fingers into the respective magazines and withdraws them into the line of travel of the spring-clips, just prior to the passage thereof, together with mechanism which transmits motion from the main shaft to the rotating frame, substantially as described.

4. In an addressing-machine the combination of the main frame and the driving-shaft, the rotating frame driven intermittently therefrom, means for holding a stencil and superposed envelop thereon, the ink-fount and the ink roller mounted on reciprocating mechanism, driven from the main driving-shaft, which brings said roller alternately into contact with the ink-fount and with the stencil under the envelop, substantially as described.

5. In an addressing machine, the combination of the main frame and the driving-shaft, the rotating frame driven intermittently therefrom, means for holding a stencil and superposed envelop thereon, the ink-fount and the ink-roller mounted on reciprocating mechanism driven from the main driving shaft, which brings said roller alternately into contact with the ink-fount and the stencil under the envelop together with the swinging platen oscillated by mechanism from the driving-shaft, which presses down upon the envelop as the ink-roller runs under the stencil, substantially as described.

6. In an addressing-machine, the combination of the main frame and the driving shaft, the rotating frame driven intermittently therefrom, means for holding a stencil and superposed envelop thereon, the ink-fount and the ink-roller mounted on reciprocating mechanism driven from the main driving-shaft, which brings said roller alternately into contact with the ink-fount and the stencil under the envelop as the ink-roller runs under the stencil, and the discharging-hooks, which draw the envelop from the rotating frame after the swinging platen has been lifted again, substantially as described.

7. In an addressing-machine the combination of the rotating frame which carries the stencil and envelop, the printing mechanism in the line of circumferential travel of said rotating frame, the delivery-table and the reciprocating hooks, which pull the envelop from the rotating frame to the delivery table, substantially as described.

8. In an addressing machine the combination of the rotating frame which carries the stencil and envelop, the printing mechanism in the line of circumferential travel of said rotating frame, the delivery-table, and the reciprocating hooks, which pull the envelop from the rotating frame to the delivery-table, together with the envelop-receptacle and the vibrating fingers which throw the envelop into the receptacle, substantially as described.

9. In an addressing-machine an inking mechanism which is composed of the following parts in combination; an ink-fount, a roller mounted therein, gearing from the driving-shaft of the machine which continuously rotates the roller, a vibrating frame with an inking-roller mounted therein, a spur-wheel on said roller, a gear-wheel on the roller in the fount, a rack along the line of the outermost travel of the vibrating roller, whereby the vibrating roller is caused positively to rotate with the roller in the ink-fount while in contact therewith, and to revolve at a circumferential speed equal to its motion of translation during the outermost portion of its travel, substantially as described.

10. In an addressing-machine an inking mechanism which is composed of the following parts in combination; an ink-fount, a roller mounted therein, gearing from the driving-shaft of the machine which continuously rotates the roller, a vibrating frame with an inking-roller mounted therein, a spur-wheel on said roller, a gear-wheel on the roller in the fount, a rack along the line of the outermost travel of the vibrating roller, whereby the vibrating roller is caused positively to rotate with the roller in the ink-fount while in contact therewith, and to revolve at a circumferential speed equal to its motion of translation during the outermost portion of its travel, together with the discharge hooks on the vibrating frame, and the clamping apparatus by which the article to be printed is held and from which it is withdrawn by the discharge-hooks, substantially as described.

11. In an addressing-machine, the combination of the main frame and driving-shaft, the intermittently-rotating frame provided with clips which carry the stencil-cards, the stencil-receptacle and the chute leading from the receptacle to a point beneath the clips at the point in the circumferential travel of the rotating frame such that the opening of said clips points downward, substantially as described.

12. In an addressing-machine, the combination of the main frame and driving-shaft, the intermittently-rotating frame provided with clips which carry the stencil-cards the stencil-receptacle and the chute leading from the receptacle to a point beneath the clips at the point in the circumferential travel of the rotating frame such that the opening of said clips points downward, together with the vibrating ejector-fingers which positively eject the stencils from the clips and force them to drop down into the chute, substantially as described.

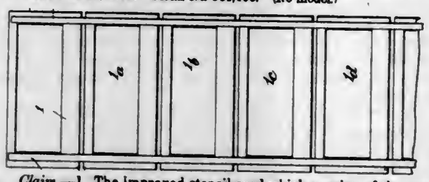
13. In an addressing-machine, the combination of the main frame and driving-shaft, the intermittently-rotating frame provided with clips which carry the stencil-cards the stencil-receptacle and the chute leading from the receptacle to a point beneath the clips at the point in the circumferential travel of the rotating frame such that the opening of said clips points downward, together with the vibrating ejector-fingers which positively eject the stencils from the clips and force them to drop down into the chute, and the reciprocating stop which normally withholds the stencil from falling into the chute, but is withdrawn simultaneously with the downward thrust of the ejector-fingers, substantially as described.

14. In an addressing-machine the combination of the stencil-magazine and stencil-receptacle, the sliding followers therein, gearing which connects said followers and causes one to descend as the other ascends, the driving-shaft, the mechanism operated therefrom to give intermittent motion to the gearing which actuates the followers, said gearing consisting of a rack attached to each follower a pinion meshing therewith and two sets of pawls and ratchet mechanism connected by an intervening link which drive said pinions, substantially as described.

15. In an addressing-machine the combination of the main frame and driving-shaft, the rotating frame, provided at equally-spaced distances with means for grasping the stencil, means for feeding the stencils to the rotating frame and means for feeding the articles to be addressed to the rotating frame in coaction with said stencils, and an inking apparatus which runs over the stencil at a point in the circumferential travel of the rotating frame at or beyond that at which the article to be addressed has been superposed upon the stencil, together with the mechanism which transmits motion from the main shaft to the rotating frame and inking apparatus substantially as described.

16. In an addressing-machine the combination of the main frame and driving-shaft, the rotating frame provided at equally spaced distances with means for grasping the stencil, means for feeding the stencils to the rotating frame and means for feeding the articles to be addressed to the rotating frame in coaction with said stencil, and an inking apparatus which runs over the stencil at a point in the circumferential travel of the rotating frame at a point at or beyond that at which the article to be addressed has been superposed upon the stencil, together with the mechanism which transmits motion from the main shaft to the rotating frame and inking apparatus, and a knife arranged along the line of travel of said articles to be addressed with mechanism transmitting motion from the driving-shaft to said knife, substantially as described.

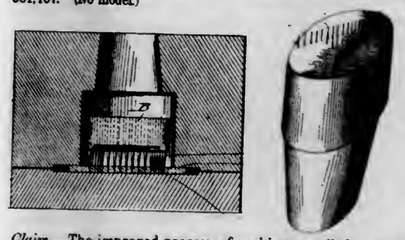
573,850. **STENCIL-CARD.** FRANK D. BELKNAP, New York, N. Y. Filed Feb 28, 1896. Serial No. 581,106. (No model.)



Claim.—1. The improved stencil-card which consists of the combination of the stencil-sheet and rectangular reinforcing-frame which is attached to one side of said sheet by pasting to the two longer sides thereof at intermediate points, and the detached reinforcing-strips which are pasted to the ends of the reinforcing-frame and overlap the stencil-sheets along its ends but do not adhere thereto, substantially as described.

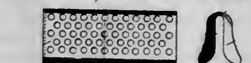
2. The combination of the series of stencil-cards and the flexible connections between their adjacent edges, said connections being capable of flexure through three hundred and sixty degrees whereby they may be folded one upon the other, the space between each two adjacent cards being approximately equal to the width of the cards, substahtially as described.

573,851. **METHOD OF MANUFACTURING STENCIL-TYPE.** FRANK D. BELKNAP, New York, N. Y. Filed Feb. 28, 1896. Serial No. 581,107. (No model.)



Claim.—The improved process of making stenciled type which consists of the following steps; first, forming the letter of needle-points stuck together with any viscous material; second, inserting the points of the needles in a thin strip of material; third, centering the needles and strip of material in a proper mold; fourth, pouring molten metal into the mold to cast the body of the type about the needle-points, substantially as described.

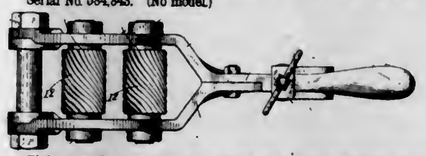
573,852. **BRUSH-CASE.** HYPPOLITE BESSON, London, England. Filed Oct. 23, 1896. Serial No. 609,823. (No model.)



Claim.—1. A case for brushes formed of resilient material having perforated sides which grasp the bristles, and flanges which grasp the brush above the bristles.

2. A case for brushes formed of resilient material having perforated side walls, end flanges, and flanged top edges, forming a chamber in which the head of a brush snugly fits.

573,853. **DEVICE FOR REMOVING SCALE FROM BOILER-TUBES.** FREDERICK G. BIRD, Dunkirk, N. Y. Filed Mar. 25, 1896. Serial No. 584,843. (No model.)



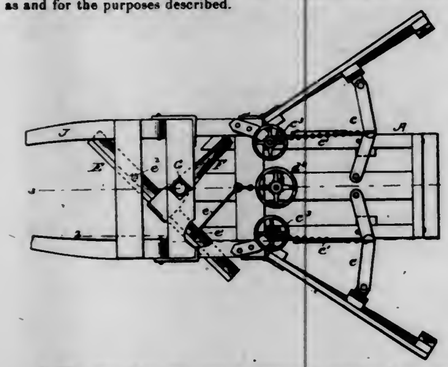
Claim.—1. In a device for taking the scale from boiler-tubes, the combination of two roller-holding frames each consisting of two parts, one part carrying a handle, the other, a removable portion secured by bolts 5, and forming one member of a pair of forked roller-holding frames, corrugated rollers mounted in suitable bearings in said frames, a pivotal pin 9, pivoting the two frames together at the ends, a yoke pivoted to a support near the opposite end of one of the roller-frames, adapted to swing over the ends of the handles, and a hand-screw for drawing the two frames toward each other for the purposes described.

2. In a device for taking the scale off from boiler-tubes, a pair of half-frame portions 1 and 2, the operating handles being an integral part thereof, one having a tightening-yoke pivoted to its under side, in combination with a pair of half-frame portions, bolts 5, for securing them to the handle frame portions, thereby removably securing the corrugated rollers in their bearings, and a bolt 9, for pivoting together the ends of the frame portions carrying the rollers, for the purposes described.

573,854. **SNOW-PLOW.** ALBERT B. BLACK, Lexington, Mass. Filed July 30, 1896. Serial No. 601,004. (No model.)

Claim.—1. The adjustable plow above described consisting of a supporting-frame having two adjustable wings, one on each side thereof and a pivoted moldboard straight in horizontal section and longer than the frame of the plow is wide and adapted to be swung either to the right or left and when so swung to form a wall at an angle to the length of the plow, all as set forth.

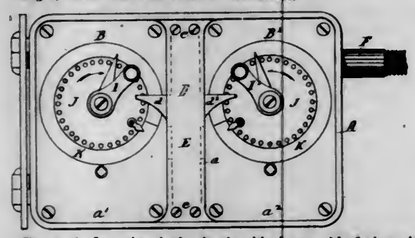
2 The adjustable plow above described consisting of a supporting-frame having two adjustable side wings and a moldboard pivotally hung in front thereof and adapted to be swung to form a continuation of either of said wings, in combination with runners and means whereby said adjustable plow may be lifted upon said runners, as and for the purposes described.



3. The snow plow and runners connected together in substantially the manner above described, said runners being provided with inclines upon their upper surface and the frame of said snow-plow being provided with inclines upon its under surface corresponding with said runner-inclines, in combination with mechanism substantially as described whereby said runners and plow are moved with relation to each other and said plow is lifted upon said runners, as set forth.

4. In combination, a snow-plow and runners, each provided with two or more inclines adapted to cooperate in the manner described and means whereby said inclines may be moved with relation to each other, as set forth.

573,855. TIME-LOCK. IRA G. BLAKE, Worcester, Mass. Filed Aug 5, 1896. Serial No. 601,692. (No model.)



Claim.—1. In a time-lock, the dog-block movably fitting within a chamber at a vertical position in the case, the right or left lateral openings into said chamber across which said dog-block slides as a gate, the plunger-bar (or bars) arranged within said openings for endwise movement into and from said chamber, and the vertically-moving slide having the finger thereon for supporting said dog-block, controlled by the arm of the chronometric mechanism, substantially as set forth.

2. In a time-lock, the case provided with two compartments and having between the same a division or partition with a vertical guideway thereon, a central rear chamber, and a slot through said partition from said guideway into said rear chamber, and the lateral opening for guiding the plunger-bar extending into said chamber, in combination with the chronometric mechanisms, the vertically-movable slide actuated thereby, mounted in said guideway and carrying a finger that extends rearward into the rear chamber, the dog-block fitting within said chamber resting upon said finger and the endwise-movable plunger-bar, for the purposes set forth.

3. A time-lock case provided with an open front compartment for containing the chronometric mechanism, and having a vertical rear chamber with a laterally-directed opening or guideway for a plunger-bar extending from said chamber to the end of the case, and located at the back of said compartment; in combination with the chronometric mechanism, the dog-block within said chamber, the endwise-movable plunger, and means for operating said dog-block controlled by the timing mechanism.

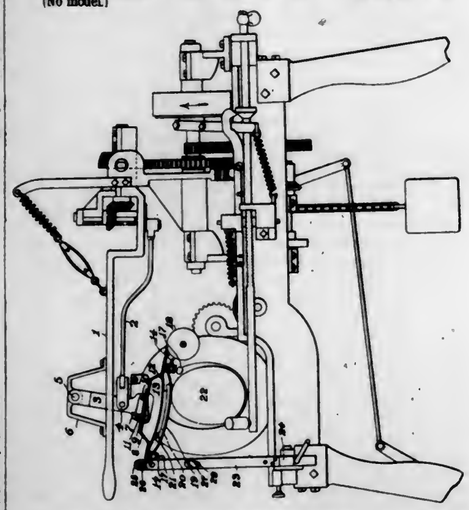
4. In a time-lock, in combination, the two chronometric mechanisms carrying respectively a right revoluble actuator-arm and a left revoluble actuator-arm, the dog-operating slide arranged intermediate to said actuators and provided with oppositely-projecting detents for contact with said actuator arms, the vertically movable dog-block fitting within a chamber between the plunger-bar openings, a connection or finger from said slide engaging and moving said dog-block, a lift spring for elevating said slide and dog-block, and the plunger or unlocking bars adapted for endwise impingement against said dog-block when in locked position, substantially as set forth.

5. The combination with the lock-case having the upright guideway, the rearward slot or opening, and the dog-operating slide mounted in said guideway; of the chambered front piece arranged in front of said slide, and the lifter-spring disposed within said front piece, its ends respectively connected with the front piece and the slide, as and for the purpose set forth.

6. In a time-lock, the lock-case provided with a chamber for inclosing the dog-block, and a series of openings thereinto for receiving the bolt-controlling plunger-bars, the dog-block arranged to move up and down in said chamber, the upright plunger-bar F^3 connected with said dog-block, in combination with means substantially as described operatively in engagement with said dog-block for effecting movement thereof under control of the time mechanism, and a timing mechanism therefor.

7. In a time-lock, the lock case adapted for the accommodation and guiding support of right, left and upright plungers or unlocking-bars severally impinging on the same dog-block and movable toward and from a common position, a single dog-block fitted within a chamber at the junction of the several plunger-guiding openings and adapted for regulating the release of said unlocking-bars, and means controlled by the timing mechanism for shifting said dog-block.

573,856. MACHINE FOR POUNCING CROWNS OF HATS. GEO. E. BRUSH, Danbury, Conn. Filed Sept. 19, 1896. Serial No. 606,415. (No model.)



Claim.—1. In a hat-pouncing machine, the combination of means for properly supporting and revolving the hat, of the pouncing-pad carried by a pendulum and having the rear portion of its operative surface a greater distance radially from the pivot of said pendulum than the forward portion, substantially as set forth.

2. In a hat-pouncing machine, the combination of means for properly supporting the hat, the pendulum, means for supporting the pendulum the pad pivoted thereto whereby a tilting adjustment may be obtained, and means for securing said pad when adjusted, substantially as set forth.

3. In a hat-pouncing machine, the combination of the pouncing-arm, the pendulum carried thereby means for reciprocating said pendulum to and fro, a rotatory support for the hat, and the pouncing-pad carried by said pendulum and having its operative surface effective only from front to rear in direct proportion to the radial distance of such surface from the pivotal point of said pendulum, substantially as set forth.

4. The herein-described pad for a hat-pouncing machine, comprising a bow, boxes pivoted at each end of said bow beneath the same and capable of swinging in a plane at right angles to the length of the bow, the sandpaper strip extending through said boxes, means for clamping said strip within the boxes, and suitable flexible backing between said bow and strip, substantially as set forth.

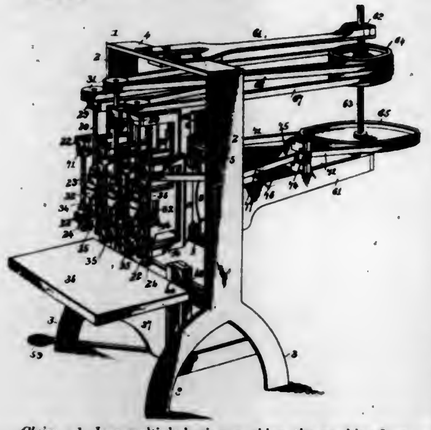
5. The herein described pad for hat-pouncing machines, comprising a bow, boxes pivoted at each end of the bow and beneath the same and capable of swinging in a plane at right angles to the length of the bow, the sandpaper strip extending through said boxes at the bottom of the pad, means for clamping said strip within the boxes, the flat strip secured to the bottom of the bow, the thin web integral with said bow and affording an unyielding abutment axially disposed throughout the length of said strip, and suitable flexible backing intermediate of said strips, substantially as set forth.

6. The combination of the bow having secured to its bottom the flat strip, the thin web integral with said bow and bearing axially against said strip throughout its length, the sandpaper-drum carried by said bow, the boxes pivoted to the under side of said bow at each end and capable of swinging in a plane at right angles to the length of the bow, said boxes being provided with openings and clamping-plates therein, the set-screws extending through the bottoms of said boxes and bearing against said clamping-plates, the sandpaper strip extending through said openings and adapted to be clamped within the boxes by the action of said screws and plates, and flexible backing interposed between said strips, substantially as set forth.

7. The combination with the arm which carries the pouncing-pad, the oval lathe which carries the hat-block and the resilient keeper comprising a stiff spring and a light spring secured together at their lower extremities and a screw driven through the stiff spring and operating against the light spring to throw the same inwardly toward the hat-block, said keeper being secured to the bed of the machine beyond the tip of said block and within the field of travel of said arm, substantially as set forth.

8. The combination of the rotatory hat-block and the arm which carries the pouncing-pad, with the springs 23, 25, secured at their lower extremities to the bed of the machine beyond the tip of the hat-block, the screw 27 driven through the spring 23 against the spring 25 whereby the latter may be distended inwardly toward the hat-block, and the coil-spring 26 connecting the upper extremities of said springs, substantially as set forth.

573,857. BORING-MACHINE. JAMES C. BULLOCK and ELMER J. BULLOCK, Reedsborough, Vt. Filed Jan. 31, 1896. Serial No. 577,587. (No model.)



Claim.—1. In a multiple-boring machine, the machine frame or stand having a pair of horizontal spaced cross-beams, a plurality of vertical oscillatory supporting-posts arranged in the space between said cross-beams and having their upper and lower ends loosely and slidably fitted to the said beams, means for securing the loose ends of said posts in any adjusted position, spindle-carrying brackets, each having an adjustable connection with one of the supporting-posts, and a vertically-movable table, substantially as set forth.

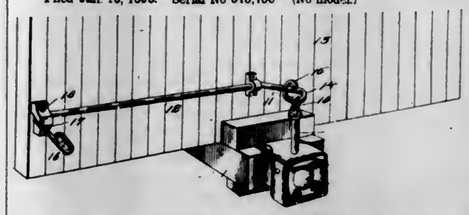
2. In a boring-machine, the machine frame or stand, a vertically-movable table, a series of vertical oscillatory slidable supporting-posts loosely mounted at their upper and lower ends within the machine frame or stand, means for securing the loose ends of said posts in any adjusted position, and spindle-brackets carrying bit-operating spindles and each having a slidable connection with one of said supporting-posts, substantially as set forth.

3. In a boring-machine, the machine frame or stand, a vertically-movable table arranged at one side of the frame or stand, a pair of horizontal spaced cross-beams fitted within the machine frame or stand and provided in their opposing sides with slide-grooves, a series of vertical oscillatory supporting-posts arranged between said cross-beams and provided at one side with grooves or ways and at their upper and lower ends with slide-blocks loosely registering in said slide-grooves and having rounded ends, set-screws mounted in said cross-beams and adapted to impinge against said slide-blocks, and a gang of spindle-brackets carrying vertically-disposed rotary bit-operating spindles, and provided with offstanding slide-arms having a sliding adjustment in the grooves or ways of said supporting-posts, substantially as set forth.

4. In a boring-machine, the machine frame or stand, a vertically-movable work-table supported at one side of the machine frame or stand, a pair of horizontal spaced cross-beams fitted within the machine frame or stand, and the upper of which beams is provided on the upper side thereof with a longitudinal T-groove, a series of oscillatory supporting-posts slidably supported between said cross-beams, a gang of spindle-brackets carrying vertically-disposed rotary bit-operating spindles and provided with offstanding slide-arms having a sliding adjustable connection with said supporting-posts, certain of said spindle-brackets being further provided at their upper ends in a plane above the upper cross-beam with upper supplemental slide-arms, supporting-blocks loosely arranged on top of the upper cross-beams and having vertical bolts, the heads of which engage in said T-grooves, and clamping-bolts passed through said blocks and adjustably engaging said supplemental slide-arms, substantially as set forth.

5. In a boring-machine, the machine frame or stand, a vertically-movable work-table supporting one side of the machine frame or stand, a gang of adjustable spindle-brackets supported above said table, vertically-disposed bit-operating spindles mounted in said brackets and carrying belt-pulleys, certain of said belt-pulleys being disposed in a higher plane than those alternating therewith, a vertical drive-shaft suitably supported at one side of the machine frame or stand and carrying a pair of upper and lower spaced belt-pulleys, a drive-belt passed around said lower belt-pulley and around the bit-spindle pulleys in the lower plane, a pair of drive-belts passed around the upper belt pulley of the drive-shaft, one of which belts is passed around the central one of the elevated bit-spindle pulleys, and the other of which drive-belts is passed around the elevated bit-spindle pulleys alternating with said central pulley, and a take-up pulley adjustably supported on the machine frame or stand and receiving thereabout the drive-belt for the elevated belt-pulleys alternating with said central elevated pulley, substantially as set forth.

573,858. CAR-COUPLING. ROLLIN BURNHAM, Storm Lake, Iowa. Filed Jan. 16, 1896. Serial No 575,758 (No model.)



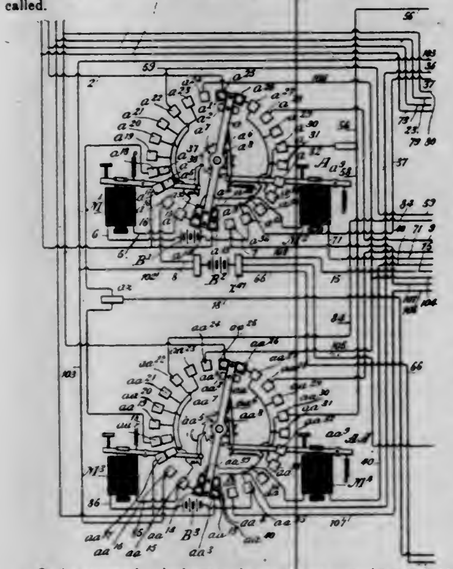
Claim.—In a car-coupling, the combination with a car, of a draw-head mounted thereon and capable of longitudinal movement, a coupling-pin arranged in the draw-head and provided at its upper end with a link or ring, and a transverse rock-shaft journaled on the car and provided with an arm disposed over the draw-head, and bent downward beneath itself and longitudinally of it to form a longitudinal loop to receive the link or ring, and permit the coupling-pin to have a limited longitudinal movement on the arm to agree with the longitudinal movement of the draw-head, the terminal of the loop being curved transversely of the arm and extending upward, over and partially around the same, whereby the rear end of the loop is practically closed to the coupling-pin, when the latter is in its normal position, and the said coupling-pin is permitted to be disconnected from the arm when it is removed from the draw-head, substantially as described.

573,859. AUTOMATIC TELEPHONE-EXCHANGE SYSTEM. ROMAINE CALLENDER, Brantford, Canada. Filed Mar. 19, 1896. Serial No. 583,966. (No model.)

Claim.—1. An automatic exchange system comprising subscribers' lines and individual switches at which they terminate normally under the subscribers' control, and means for giving an independent progressive motion to a switch on the reception of a preliminary impulse from the subscriber normally controlling it.

2. An automatic telephone-exchange system comprising individual switches, each switch normally under the control of its inde-

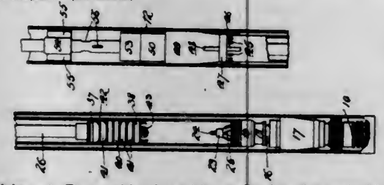
pendent subscriber, means for giving an independent progressive motion to a switch on the reception of a preliminary impulse from the subscriber normally controlling it and additional means for connecting a switch in its progression to some one of a plurality of signal-registering mechanisms for registering the number of the telephone called.



3. An automatic telephone-exchange system comprising individual switches, each switch normally under the control of its individual subscriber, means for giving an independent progressive motion to a switch on the reception of a preliminary impulse from the subscriber normally controlling it and additional means for causing the switches in their progressions to be brought into operative relation with the instrumentalities for interconnecting them.

4. An automatic telephone-exchange system comprising apparatus for indicating separately the units, tens, hundreds, &c. value of the telephone called, a rotary selector for selecting a line in accordance with the numerical value of the combined indication, in combination with a series of individual switches, each switch normally under the control of its individual subscriber but having means for giving any switch an independent progressive motion on the receipt of a preliminary impulse from the subscriber normally controlling it.

573,860. PUMP. MATTHEW T. CHAPMAN, Aurora, Ill., assignor to the American Well Works, same place. Filed June 10, 1895. Serial No. 552,223. (No model.)

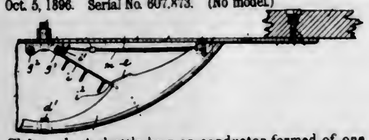


Claim.—1. The combination with a well-tube, of a conical base 15 seated in a correspondingly-shaped packing arranged in the lower end of the well-tube, a check-valve arranged above said base, a pump-cylinder 13 arranged over said valve, a double-acting plunger operating in said pump-cylinder, and a valve 21 arranged over the base, substantially as described.

2. The combination with a well-tube, of a base 15 seated in a packing arranged in the lower end of the well tube a tube 16 secured at its lower end to said base, a sleeve 18 attached to the upper end of the tube 16, a cage connected to said sleeve and provided with valves, a tubular coupling 19 attached at its lower end to said sleeve, and a pump cylinder attached to the upper end of said coupling, substantially as described.

3. The combination of a well-tube 12 and a pump-cylinder 13 arranged therein, of a wedge-shaped tubular base 15 connected to the lower end of the pump-cylinder, the packing 17 expanded within the well-tube by said wedge-shaped base, a check-valve arranged above the base, a plunger operating in the pump-cylinder, and a valve 21 for regulating the admission of water to the space between the pump-cylinder and well-tube, substantially as described.

573,861. SHUTTLE BOW OR CONDUCTOR. ALPHONSE M. CHOUVELON, Paterson, N. J., assignor to Holden Rigby, same place. Filed Oct. 5, 1896. Serial No. 607,873. (No model.)



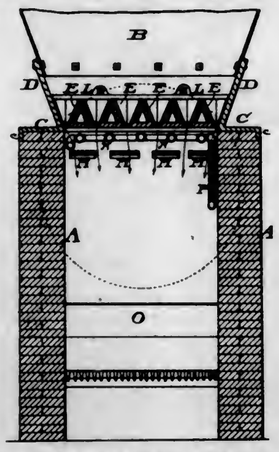
Claim.—1. A shuttle bow or conductor formed of one sheet of metal, bent into a flat bottom, a hood and a back, and having the hood provided at each side of its center with a projection bent at right angles to the bottom, and secured thereto, substantially as and for the purposes described.

2. A shuttle bow or conductor formed of one sheet of metal, bent into a flat bottom, a hood and back, said back being strengthened by having the metal doubled upon itself, and provided on each end with projecting flanges, consisting of three layers of metal, integral with the back, substantially as and for the purposes described.

3. The combination with the back of a shuttle-bow, the bottom projecting at right angles therefrom and integral therewith, a hood formed at the forward portion of said bottom and also integral with the latter and provided at each side of its center with a bent inward projection, a bracket arranged on the back and in the center thereof, a tension-wire fulcrumed on said bracket and adapted to bear against the inward projection of the hood, a block removably secured to the back, and a flat spring secured to said block and adapted to control with its free end the tension-wire, all said parts, substantially as and for the purposes described.

4. The combination with the back of a shuttle-bow, the bottom projecting at right angles therefrom and integral therewith, a hood formed at the forward portion of said bottom and also integral with the latter and provided at each side of its center with a bent inward projection, a bracket arranged on the back and in the center thereof, a tension-wire fulcrumed on said bracket and adapted to bear against the inward projection of the hood, a block removably secured to the back, a flat spring secured to said block and adapted to control with its free end the tension-wire, a spring-plate of less elasticity arranged on said flat spring, and secured with one end to the block, and a sleeve slidingly arranged on said flat spring and spring-plate, substantially as and for the purposes described.

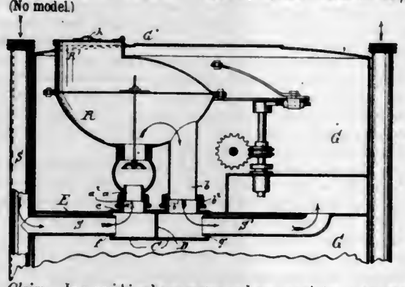
573,862. FURNACE FOR PULVERIZED FUEL. WILLIAM E. CLARKE and JOHN W. MCEACHREN, Cleveland, Ohio. Filed Apr. 6, 1896. Serial No. 586,460. (No model.)



Claim.—1. In a furnace for burning pulverized or fine fuel, the combination with the combustion-chamber, of a fuel-holding hopper B and basin D, triangular bars E E forming the bottom of said basin, and means substantially as described for imparting reciprocal motion to each alternate bar, substantially as and for the purpose set forth.

2. In a furnace for burning pulverized fuel, the combination with the combustion-chamber, the fuel-holding hopper B, basin D and the bars E E, of the water-pipes N N under said bars E E, substantially as and for the purpose set forth.

573,863. COMBINED GAS-METER AND GAS-REGULATOR. JAMES COONS, New York, N. Y. Filed July 10, 1896. Serial No. 598,636. (No model.)



Claim.—In a combined gas-meter and gas-regulator, a gas-meter casing G having a separation-wall E with a chamber C having the studs a' and b', a gas-supply pipe s and a cover G' having a semicylindrical opening, in combination with a gas-regulator R having below the parallel gas-ducts a and b and the nuts a^3 and b^3 and above a hollow semicylindrical projection R' provided with an air-hole h as and for the purposes herein shown and set forth.

573,864. SHUTTLE FOR SEWING-MACHINES. PHILIP DIEHL, Elizabeth, N. J., assignor to The Singer Manufacturing Company, of New Jersey. Filed Mar. 3, 1894. Serial No. 502,177. (No model.)

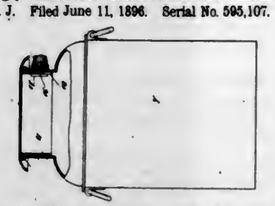


Claim.—1. A sewing-machine shuttle having a thread-cavity provided with a central stud or post having a special roughened or corrugated friction-surface to hold a cop of thread placed thereon stationary relative to the shuttle, said stud or post being constructed with a central thread-delivery passage extending through the same and the side or rear wall of the shuttle, and through which passage the thread, drawn from the periphery of the cop, is led, and said stud or post having also a notch or recess extending to said thread-passage, combined with a radially-movable spring-pressed tension-slide the inner end of which enters said notch or recess to nip the thread passing through said stud or post.

2. A sewing-machine shuttle constructed with a thread-cavity in which is a central stud or post provided with a thread-passage running through the side or rear wall of the shuttle and having a notch or recess extending to said thread-passage, combined with a radially-movable, spring-pressed tension-slide the inner end of which extends into said notch or recess to nip the thread passing through said stud or post.

3. The combination with the shuttle-body A having the thread-cavity b provided with the stud or post b' central of said thread-cavity and having the notch or recess b^3 and the thread-passage c, of the radially-movable tension-slide d the inner end of which extends into said notch or recess, the spring e for yieldingly pressing said slide inward, and the cover g.

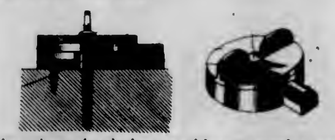
573,865. MILK-CAN. HARRY EMERY and WALTER MORGAN, High Bridge, N. J. Filed June 11, 1896. Serial No. 595,107. (No model.)



Claim.—1. A milk-can or other vessel provided with a neck through one side of which is passed a screw, said neck being also provided with a shoulder or projection through which the screw passes, and a lid or cap having a depending annular rim, which is adapted to be inserted into said neck, and a vertical slot in one side of said rim, through which the screw passes, when the lid or cover is placed in position, substantially as shown and described.

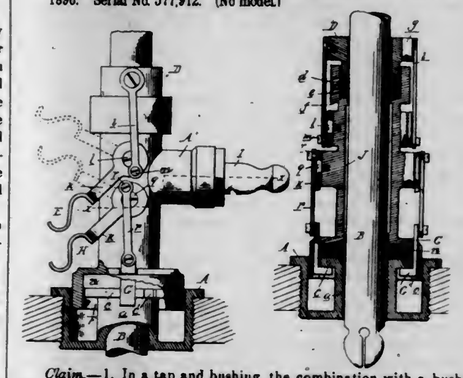
2. A milk can or other vessel provided with a neck, through one side of which is passed a screw, said neck being also provided with a shoulder or projection through which the screw passes, and a lid or cap having a depending annular rim, which is adapted to be inserted into said neck, and a vertical slot in one side of said rim, through which the screw passes, when the lid or cover is placed in position, said shoulder or projection being provided with a chamber in the outer end thereof, and the outer end of said screw being adapted to receive a key by which it is operated, substantially as shown and described.

573,866. SASH-FASTENER. RICHARD ENGLISH, SAMUEL VANN, and ALBERT H. JONES, Albuquerque, N. Mex. Filed Feb. 7, 1896. Serial No. 578,372. (No model.)



Claim.—A securing device comprising two members one of which is fixed and is provided with a circular flange and with a radial flanged recess or recesses, a bolt or bolts slidably arranged in said recess or recesses and carrying at the inner end a pin or pins; and the other of which members is provided with a circular flange fitting the flange of the other member and centrally pivoted to the latter to permit of rotation, and provided in its inner side with a groove or grooves extending from near the center to the flange and engaging said pin or pins, and having means to permit of its being rotated by hand to move the bolts, substantially as described.

573,867. TAP AND BUSHING. ALBERT FISCHER, Detroit, Mich., assignor to the American Tap Bush Company, same place. Filed Feb. 3, 1896. Serial No. 577,912. (No model.)



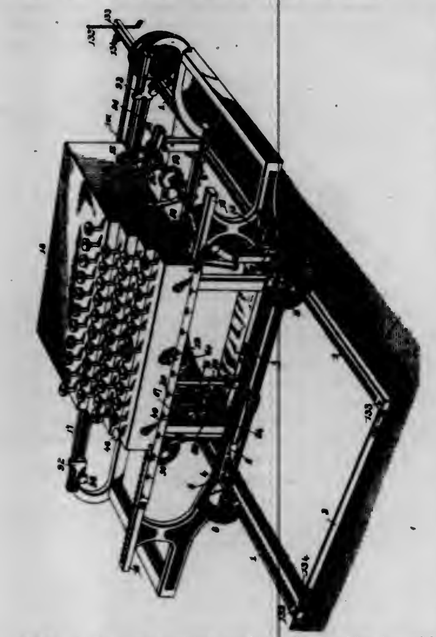
Claim.—1. In a tap and bushing the combination with a bushing and nipple provided with interrupted coupling-flanges, of a tap comprising a tap-tube and a coupling-sleeve formed with a recess adapted to receive the nipple of the bushing and form a seat therefor and sliding coupling bars in the walls of the recess to engage with the flanges of the nipple, and a lever fulcrumed on the coupling-sleeve and having pivoted actuating connection with the sliding-bars, substantially as described.

2. In a tap and bushing, the combination with a bushing having a nipple provided with interrupted coupling flanges, of a tap comprising a sliding tap-tube and a coupling-sleeve formed at its inner end with a recess adapted to receive the nipple, an elastic packing-ring in said recess adapted to form a seat for the nipple, sliding coupling-bars in guide-bearings formed in the walls of the recess, offsets on said coupling-bars adapted to engage with the flanges of the nipple, and a locking-lever fulcrumed upon the coupling-sleeve and having pivotal actuating connection with the coupling-bars, substantially as described.

3. The combination with a bushing having a nipple formed with interrupted coupling-flanges, of a tap consisting of a tap-tube and of a coupling-sleeve having in one end an elastic packing-ring for the

tap-tube and a sliding follower adapted to compress the same, and in the other end a seat for the nipple and sliding coupling-bars adapted to engage with the flanges of the nipple, and two locking-levers having bifurcated arms fulcrumed at diametrically opposite points of the coupling-sleeves and strapped eccentrically connecting the arms of the levers with the follower-sleeve and coupling-bars respectively for actuating the same, substantially as described.

573,868. TYPE-WRITING MACHINE. ROBERT J. FISHER, Athens, Tenn. Filed Apr. 30, 1896. Serial No. 589,696. (No model.)



Claim.—1. In a type-writing machine, the combination with tracks, a frame mounted for movement upon said tracks transverse to the line of writing, and printing mechanism, of a follower-plate adapted to rest upon the page or sheet to receive the impression and engaged by a contiguous portion of the frame to cause the plate to follow the transverse movements thereof, substantially as specified.

2. In a type-writing machine, the combination with a frame mounted for movement transverse to the line of writing and having a front base-bar arranged contiguous to the printing-plane, of a follower-plate adapted to rest upon the page or sheet to receive the impression and provided with a flange for engagement by said base-bar, substantially as specified.

3. In a type-writing machine, the combination of tracks arranged transversely to the line of writing and adapted to rest upon the page of a book to receive the impression, a movable frame mounted upon the tracks and carrying printing mechanism arranged wholly above the plane of the tracks, supporting pins adjustably fitted in openings in the extremities of said tracks and depending therefrom, and means for securing the pins at the desired adjustment, substantially as specified.

4. In a type-writing machine, the combination with tracks, a frame mounted upon the tracks, line-spacing mechanism including pinions engaging racks on said tracks, a ratchet-wheel, and an operating-lever having a pawl to engage the teeth of said ratchet-wheel and communicate motion to the pinions, of a locking-pawl normally held by gravity in engagement with the teeth of said ratchet-wheel to prevent backward rotation thereof, a fixed projection on the frame, and a spring-pressed locking-pin carried by an arm of said pawl for engagement with the projection substantially as specified.

5. In a type-writing machine, the combination with parallel longitudinal carriage-guides, and a carriage mounted thereon, of fixed racks contiguous, respectively, to the guides, pinions carried by and fixed to a common transverse shaft mounted upon the carriage and respectively engaging the racks to prevent irregularity of movement in the carriage, and feeding mechanism operatively connected with the shaft of said pinions, substantially as specified.

6. In a type-writing machine, the combination with parallel longitudinal carriage-guides, and a carriage mounted thereon, of feed-pinions fixed to a common shaft mounted transversely on the carriage, fixed racks arranged respectively contiguous to and parallel with said guides and simultaneously engaged by the pinions, a ratchet-wheel fixed to the shaft of the pinions, and means for communicating a step-by-step rotary movement to the ratchet-wheel, substantially as specified.

7. In a type-writing machine, a carriage-feeding mechanism having a ratchet-wheel, coaxial operating and holding dogs arranged in operative relation with the ratchet-wheel, the holding-dog being capable of movement independently of the operating dog and held in its normal position by spring-tension, means connected with an arm of the operating-pawl for communicating simultaneous oscillatory movement to the dogs, and a trip-lever having a pin arranged in operative relation with a cam on the holding-dog for communicating motion to the latter, substantially as specified.

8. In a type-writing machine, a carriage-feeding mechanism having a ratchet-wheel, coaxial operating and holding dogs, the latter being mounted upon the hub of the former, resilient means for maintaining said dogs normally in operative relation with each other, an actuating-spring connected with the operating-dog for normally holding it ont of engagement with the ratchet-wheel, means for communicating oscillatory movement simultaneously to the dogs, and a trip-lever having a pin arranged in engagement with a cam on the holding-dog, said cam consisting of one side of a V-shaped notch cut in the contiguous edges of the operating and holding dogs, substantially as specified.

9. In a type-writing machine, the combination with a type-bar-supporting ring, of upper and lower clips arranged alternately above and below the plane of writing, the upper clips being provided with parallel side flanges or walls and intermediate longitudinal slots, bolts extending upwardly through perforations in the supporting-ring and said slots in the upper clips, and nuts seated between the flanges of the clips and engaging said bolts, substantially as specified.

10. In a type-writing machine, the combination with pivotal type-bars and key-levers, of rods connecting said parts and provided with tension devices including an adjusting-nut threaded upon one member and swiveled upon the other member of the connection, and a clamp for engaging said nut and securing it at the desired adjustment, substantially as specified.

11. In a type-writing machine, the combination with a type-bar, a key-lever and a draw-rod connecting said parts, of a tension device including a nut threaded upon said rod and provided with a reduced portion, and a clamp including a band encircling said reduced portion of the nut, and a set-screw for tightening the band upon the nut to prevent rotation of the latter, substantially as specified.

12. In a type-writing machine, the combination with a type-bar, a key-lever and a draw-rod, of a nut threaded upon said draw-rod, a link pivotally connected to the type-bar, a clamp fixed to the link and encircling the reduced portion of the nut, and a set-screw for tightening the clamp upon the nut, substantially as specified.

13. In a type-writing machine, the combination with type-bars having pivotal heads, of a shifting-arm adapted to be arranged in the path of trip-arms on said type-heads, said shifting-arm being provided at an intermediate point with a yielding joint, and tension devices for varying the resistance of the joint, substantially as specified.

14. In a type-writing machine, the combination with type-bars having pivotal heads, of a shifting-arm having a pivotal block, a shank pivotally connected to the block, a cam-transversely connecting the shank and block, a tension-spring, and an adjusting-nut for varying the tension of said spring, substantially as specified.

15. In a type-writing machine, the combination with carriage-guides, and a carriage mounted thereon, of a line-stop having a face-plate, a guiding-web fitting in the throat of a cross sectionally T-shaped channel in one of the carriage-guides, a clamping-block fitting in the enlarged portion of the channel in said guide, and a thumb-screw for adjusting the clamping-block with relation to the face-plate, substantially as specified.

16. In a type-writing machine, a sectional type-head divided to form parallel cheeks having registering grooves forming a socket, a type-face having a stem fitting in said socket, and means for relatively adjusting the cheeks to clamp the stem of the type-face, substantially as specified.

17. A sectional type-head having relatively adjustable cheeks, type-faces having stems arranged between the places of said cheeks, and means for adjusting the cheeks to clamp said stems therebetween, substantially as specified.

18. A sectional type-head having relatively adjustable cheeks provided in their contiguous faces with registering grooves combining to form sockets, type-faces having round stems fitting for rotary adjustment in said sockets, and means for adjusting the cheeks to clamp the stems therebetween, substantially as specified.

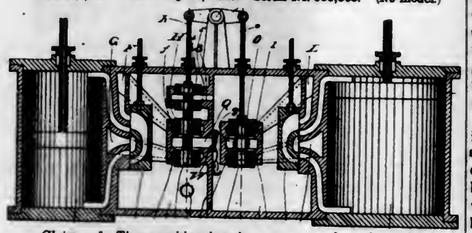
19. A sectional type-head having relatively adjustable cheeks provided in their contiguous faces with registering grooves combining to form sockets, type-faces having round stems of even thickness throughout fitting in said sockets, and means for adjusting the cheeks to clamp the stems therebetween, substantially as specified.

20. In a type-writing machine, the combination with a frame carrying printing mechanism and adapted for movement transverse to the line of writing, of a sheet-holding attachment having parallel transverse guides or tracks upon which said frame is mounted, a roller-platen terminally mounted in said guides or tracks, line-spacing mechanism for operating said platen, and means for holding the machine in its operative position with relation to the platen, and adapted to yield to allow the frame to be moved to expose the platen, substantially as specified.

21. In a type-writing machine, the combination with a frame carrying printing mechanism, of a sheet-holding attachment having a roller-platen, a spring-actuated pressure-roll in operative relation with the platen, a longitudinal guide having spring-actuated pivotal arms adapted to engage and repress said roll, and line-spacing mechanism operatively connected with the platen, substantially as specified.

22. In a type-writing machine, the combination with a frame carrying printing mechanism, of a sheet-holding attachment having a roller-platen, a spring-actuated pressure-roll having terminal supporting arms, a longitudinal guide-bar arranged parallel with and contiguous to the platen and graduated to indicate letter-spaces, said guide-bar having terminal spring-actuated supporting-arms adapted when the bar is elevated to engage the extremities of the pressure-roll, and line-spacing mechanism operatively connected with the platen, substantially as specified.

573,869. COMPOUND STEAM-ENGINE. HUGO W. FORSLUND, Chicago, Ill. Filed July 12, 1895. Serial No. 555,805. (No model.)



Claim.—1. The combination, in a compound engine, of a high and a low pressure cylinder, a separate steam-chest, steam and exhaust passages and a distributing-valve for each cylinder, a passage for conveying steam directly from the source of pressure to the chest of the low-pressure cylinder, and valve mechanism, substantially as described, for controlling the steam and exhaust passages and the direct steam-passage to the chest of the low-pressure cylinder, such valve mechanism being operatively connected and so disposed that the said low-pressure-cylinder chest is opened to the source of pressure when the steam and exhaust passages are closed, and cut off from the source of pressure and opened to the low-pressure cylinder when said steam and exhaust passages are opened.

2. In a compound engine having a high and a low pressure cylinder, each cylinder having a distributing-valve, a steam-chest, and steam and exhaust passages for communication between the cylinder and its chest, the combination with such parts of passages for serving both chests with direct steam-pressure, a valve for controlling the direct steam-passage to the chest of the low-pressure cylinder, and valve mechanism, substantially as described, for controlling the passages leading from the chests to the cylinders, such direct-steam-passage valve and valve mechanism for controlling the said cylinder-passages being operatively connected and relatively so disposed that they open and close their respective passages in alternation.

3. In a compound engine having a high and a low pressure cylinder, each cylinder having a distributing-valve, a steam-chest, and steam and exhaust passages for communication between the cylinder and its chest, the combination with such parts of passages for serving both chests with direct steam-pressure, a valve for controlling the direct steam-passage to the chest of the low-pressure cylinder, valve mechanism, substantially as described, for controlling the passages leading from the chests to the cylinders, such direct-steam-passage valve and valve mechanism for controlling the said cylinder-passages being operatively connected and relatively so disposed that they open and close their respective passages in alternation, a passage whereby the exhaust from the high-pressure cylinder is discharged to the chest of the low-pressure cylinder, and a check-valve for such passage, closable by pressure within the low-pressure cylinder chest.

4. The combination, in a compound engine, of a high and a low pressure cylinder, steam and exhaust passages leading to each cylinder, distributing-valves for each cylinder, a passage leading from the source of pressure, and an exhaust-port, with controlling-valve mechanism, substantially as described, for simultaneously opening the steam-passage of the high-pressure cylinder to the passage leading from the source of pressure, bringing the exhaust-passage of the high-pressure cylinder into communication with the steam-passage of the low-pressure cylinder and opening the exhaust-passage of the low pressure cylinder to the exhaust-port, a chest having passages for communicating with the source of pressure and with the steam and exhaust passages of the low-pressure cylinder, and valve mechanism, substantially as described, for controlling the passages of such chest, such valve mechanism being operatively connected with the controlling-valve mechanism and so disposed with reference thereto that it cuts off the chest from the source of pressure and opens it to the steam-passage of the low-pressure cylinder when the steam-passage of the high-pressure cylinder is opened to the passage leading from the source of pressure, and opens such chests to the source of pressure and cuts it off from the low-pressure cylinder when the high-pressure cylinder is cut off from the passage leading from the source of pressure.

5. In a compound engine having a high and a low pressure cylinder, a steam-passage leading to the high-pressure cylinder, a passage leading from the high-pressure to the low-pressure cylinder, an exhaust-passage leading from the low-pressure cylinder, and starting-valve mechanism for controlling the steam-passage leading to the high-pressure cylinder, the combination with such parts, of a chest for supplying the low-pressure cylinder with a measured quantity of steam for starting, and having passages for communicating with the source of pressure and with the passage leading from the high to the low pressure cylinder, and valve mechanism, substantially as described, for controlling the passages of such chest, said valve mechanism being operatively connected with the starting-valve mechanism and so disposed with reference thereto that it cuts the chest off from the source of pressure and opens it to the passage to the low pressure cylinder when the starting-valve mechanism is shifted to start the engine and opens such chest to the source of pressure and cuts it off from the passage to the low-pressure cylinder when the starting-valve mechanism is shifted to stop the engine.

6. In a compound engine having a high and a low pressure cylinder, a steam-passage leading to the high-pressure cylinder, a passage leading from the high-pressure to the low-pressure cylinder, a check-valve located in said passage to prevent back pressure, an exhaust-passage leading from the low-pressure cylinder, and starting-valve mechanism for controlling the steam-passage leading to the high-pressure cylinder, the combination with such parts, of a chest for supplying the low-pressure cylinder with a measured quantity of steam for starting, and having passages for communicating with the source of pressure and with the passage leading from the high to the low pressure cylinder between the check-valve and the low-pressure cylinder, and valve mechanism, substantially as described, for controlling the passages of such chest, said valve mechanism being operatively connected with the starting-valve mechanism and so disposed with reference thereto that it cuts the chest off from the source of pressure and opens it to the passage to the low-pressure cylinder when the starting-valve mechanism is shifted to start the engine and opens such chest to the source of pressure and cuts it off from the passage to the low-pressure cylinder when the starting-valve mechanism is shifted to stop the engine.

7. The combination in an engine having a primary or high-pressure cylinder and a secondary or low-pressure cylinder, of a steam-chest for each cylinder, two passages leading from each chest to its cylinder, a steam-pipe leading to the chest of the primary cylinder, an exhaust-port for the primary cylinder opening into the chest of the secondary cylinder, an exhaust-port for the low-pressure cylinder, a passage connecting the two chests, a valve for controlling the connection between each chest and the passages leading to its cooperating cylinder and between such passages and their cooperating exhaust-port, and a valve for controlling the passage connecting the two chests, said several valves being operatively connected and so disposed that the chests are open to each other when the cylinder-passages are closed and are cut off from each other when the cylinder-passages are open.

8. In a compound engine having high and low pressure cylinders, a separate steam-chest for each cylinder, passages leading from each chest to its cooperating cylinder, an exhaust-port for the high-pressure cylinder discharging into the chest of the low-pressure cylinder, an exhaust-port for the low-pressure cylinder, operatively-connected cut-off valves for the passages and exhaust-ports leading from each chest, and a steam passage leading from the source of pressure to each chest, the combination with such parts of a valve controlling the passage from the source of pressure to the chest of the low-pressure cylinder, such valve being operatively connected with the cut-off valves and so disposed relatively thereto that the passage from the

source of power to the chest of the low-pressure cylinder and the passages from the chests are opened in alternation

9. The combination in an engine having a primary or high-pressure cylinder and a secondary or low-pressure cylinder, of a steam-chest for each cylinder, two passages leading from each chest to its cylinder, a steam-pipe leading to the chest of the primary cylinder, an exhaust-port for the primary cylinder opening into the chest of the secondary cylinder, a check-valve covering such port, an exhaust-port for the low-pressure cylinder, a passage connecting the two chests, a valve for controlling the connection between each chest and the passages leading to its cooperating cylinder and between such passages and the exhaust-port of their cooperating cylinder, and a valve for controlling the passage connecting the two chests, said several valves being operatively connected and so disposed that the chests are open to each other when the cylinder-passages are closed and are cut off from each other when the cylinder-passages are open.

10. The combination in a compound engine with the high and low pressure cylinders, of an independent steam-chest for each cylinder, steam and exhaust passages leading from each chest to its cooperating cylinder, an exhaust-port leading from the chest of the high-pressure cylinder to the chest of the low-pressure cylinder, an exhaust-port for the low-pressure cylinder, a passage communicating between the chests, a valve for controlling the steam and exhaust passages of each cylinder, such valves being operatively connected so as to move together, a valve for the passage communicating between the chests and operatively connected with the controlling-valves and being so disposed that it opens said passage when the controlling-valves close the steam and exhaust passages and closes said passage when the controlling-valves open the steam and exhaust passages.

11. The combination in a compound engine having a primary and a secondary cylinder each provided with a piston, steam-passages and distributing-valves, of a steam-passage leading from the source of pressure to the distributing-valve of each cylinder independently of the other, a valve for controlling the steam-passage to the primary cylinder, two valves for controlling the passage to the secondary cylinder and being located at different points in said passage, said three passage-controlling valves being mechanically connected so as to move simultaneously and being so disposed relatively with reference to such connection that the valve more remote from the secondary cylinder and controlling its steam-passage moves reversely as to the other two valves, and means for operating such valves.

12. The combination in a compound engine having a primary and a secondary cylinder each provided with a piston, steam and exhaust passages and distributing-valves, of a steam-passage leading from the source of pressure to the distributing valve of each cylinder independently of the other, a valve for controlling the steam-passage to the primary cylinder, two valves for controlling the passage to the secondary cylinder and being located at different points in said passage, said three passage-controlling valves being mechanically connected so as to move simultaneously and being so disposed relatively with reference to such connection that the valve more remote from the secondary cylinder and controlling its steam-passage moves reversely as to the other two valves, and means for operating such valves, the exhaust-passage of the primary cylinder discharging into the steam-service passage of the secondary cylinder between its two valves, and a check-valve located in said exhaust-passage.

573,870. NAME-PLATE FOR BICYCLES, &c. ARTHUR R. GEOFFROY, New York, N. Y. Filed May 9, 1896. Serial No. 590,816. (No model.)



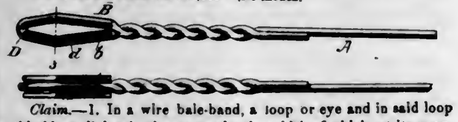
Claim.—The combination with a curved plate adapted to receive on its outer surface a name or inscription, and having a slot, *a*, of a curved and somewhat flexible or elastic yoke which is passed through said slot, a spiral spring placed within the concavity of the plate with one end attached thereto and with its opposite end connected with the inner end of the yoke, and a fastening device for connecting and disconnecting the free end of the yoke to and from the opposite end of the plate, all substantially as and for the purpose herein set forth.

573,871. CARBON-BOOK. J FRANK GREEN, Mansfield, Ohio. Filed Mar. 11, 1896. Serial No. 582,816. (No model.)

Claim.—In a carbon-book, the combination of a back and cover having one end bent to form a temporary holder for the leaves, a metallic strip held in the bends of said back, a block secured to the back at its junction with the cover, a carbon-sheet secured at one end to said block, and a series of leaves in sets of three, with the intermediate sheet of tissue-paper, said leaves being held by the temporary clamp formed at the end of the back; substantially as described.



573,872. BALE-TIE. JOHN W. GRISWOLD, Troy, N. Y. Filed Oct. 4, 1894. Serial No. 524,865. (No model.)



Claim.—1. In a wire bale-band, a loop or eye and in said loop a thimble or lining having an angle, the width of which, at its apex, is less than the diameter of said band-wire, and having the extremities of its arms in contact and seated in an angle at the base of said loop, substantially as described.

2. In a wire bale-band, a loop or eye formed by twisting said band upon itself and a thimble or lining having an external groove or channel wherein the wire of said loop is received, the said thimble having an angle the width of which at its apex is less than the diameter of said band-wire, and having the extremities of its arms in contact and seated in the angle at the base of said loop formed by the twisted-together parts of said band, substantially as described.

3. In a wire bale-band, the integrally-formed loop or eye B and the thimble or lining, C, in said loop, provided with the angle D having the inner, rounded surface *d* and external groove or channel *c*, and having its arms meeting at their extremities *b*; the said extremities being seated in an angle at the base of said loop, substantially as described.

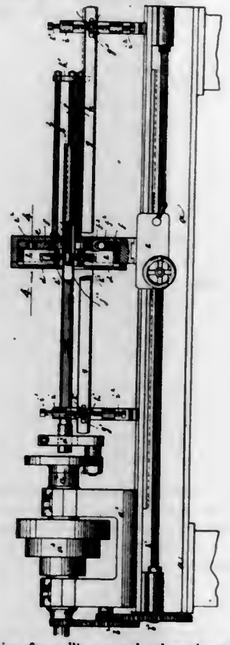
4. In a wire bale-band, the integrally-formed loop or eye B and the thimble or lining C arch-shaped in cross-section and receiving the wire of said loop in its concave periphery, the said thimble being bent to form the angle D and having its arms meeting at their extremities *b*, the said extremities being seated in the angle at the base of said loop, substantially as described.

5. A bale-tie made of wire, having a loop with a pinching angle, and provided with a filling-piece, the ends of which are together.

6. A bale-tie made of wire, having at one end a loop with a pinching angle and provided with a filling-piece having ends which extend back to the median transverse line of the clasp.

573,873. MACHINE FOR ROLLING METAL TUBES. HUGH O. HARRIS, Brooklyn, N. Y., assignor to the Seamless Structural Tube Company, New York, N. Y. Filed May 15, 1896. Serial No. 591,654. (No model.)

Claim.—1. In a machine for rolling metal tubes, the combination of a reciprocating draw-head with radially-adjustable slides that form the draw-hole, and a mandrel secured to and longitudinally movable with the draw-head, substantially as specified.

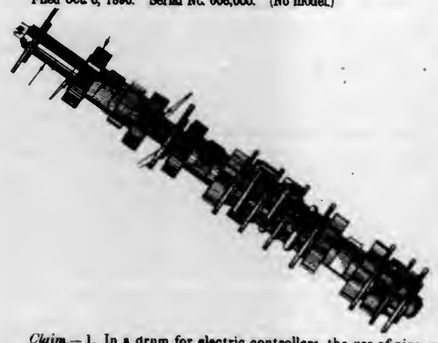


2. In a machine for rolling metal tubes, the combination of a reciprocating draw-head, with a disk *d*, having radial grooves *d'*, a disk *f*, having cam-grooves *f''*, a series of radially-movable slides *e*, having reducing-rolls *e'*, and pins *e²*, and a mandrel which is secured to the draw-head and projects with its free end between the rolls *e'*, substantially as specified.

3. In a machine for rolling metal tubes, the combination of a reciprocating draw-head with radially-movable slides, an oscillating disk having cam-grooves engaging the same, a rail for locking the disk, a mandrel secured to the draw-head, a live-spindle, and means for attaching the work to such spindle, substantially as specified.

4. In a machine for rolling metal tubes, the combination of the following elements: a reciprocating draw-head, a fixed disk having radial grooves, an oscillating disk having cam-grooves, slides engaging the disks, a mandrel secured to the draw-head, a rail engaging the oscillating disk, means for adjusting said rail, a live-spindle and means for locking the work to such spindle, substantially as specified.

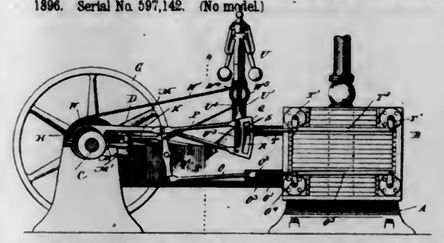
573,874. DRUM FOR ELECTRIC CONTROLLERS. SAMUEL HARRIS, Johnstown, Pa., assignor to the Steel Motor Company, same place. Filed Oct. 6, 1896. Serial No. 608,005. (No model.)



Claim.—1. In a drum for electric controllers, the use of pins extending upwardly and downwardly from the contact-rings of the drum, and recesses on the top and on the bottom of the insulating-disks of said drum, said recesses being adapted to receive said pins.

2. In a drum for electric controllers, in combination, the shaft of the drum, an insulating-tube secured about said shaft, contact-rings and insulating-disks encircling said tube, said rings having pins extending upwardly and downwardly therefrom, which pins are adapted to enter recesses placed on the lower and upper sides of the disks.

573,875. VALVE-GEAR. OSIAS P. HART, Murphysborough, Ill., assignor of one-half to James L. Ralvey, same place. Filed June 27, 1896. Serial No. 597,142. (No model.)



Claim.—1. In a valve-gear for steam-engines the combination with the curved slotted link, of a governor connected therewith and adapted to raise and lower the same, the drive-shaft having an eccentric and a cam-grooved drum, the pitman connected with the eccentric, the lever to which said pitman is connected the link-rods connected with the opposite end of said lever, one of which is connected to the upper end of the slotted link while the other is connected with the exhaust-valve mechanism, an elbow-lever operatively connected with the cam-grooved drum, a lever to which said elbow-lever is attached and the link-rod extending from said lever to the lower end of the slotted link all arranged substantially as shown and described.

2. In a valve-gear for steam-engines, the combination with the drive-shaft and wheels and the cylinder and steam chest, of the governor constructed as described, the slotted link with which said governor is connected, the eccentric and cam-grooved drum, parallel levers pivoted upon the engine-bed and operatively connected with the said eccentric and drum, the inner lever having a link-rod connected to its upper end, the forward end of which link-rod is connected to the lower end of the slotted link, the outer lever having a link-rod connected to its upper end, the forward end of which link-rod connects with the upper end of the slotted link, a link-rod connected to the lower end of the outer lever, the forward end of which connects with the exhaust-valve mechanism, and means for connecting the slotted link with the steam-valve mechanism all arranged substantially as shown and described.

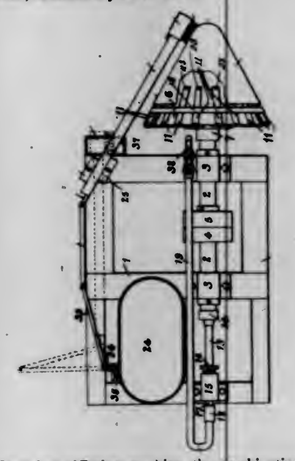
3. In a steam-valve mechanism, the combination with the engine-bed, the drive-shaft and wheels and cylinder and steam-chest, of a governor having a depending shaft, curved slotted link, the hanger pivotally connected to the lower end of the governor-shaft with the lower end of the slotted link, the eccentric mounted upon the drive-shaft, the pitman connected to the said eccentric, a lever to which said pitman is attached, the link-rod connected to the upper end of said lever and attached at its forward end to the upper end of the slotted link, the link-rod attached to the lower end of said lever and connected at its lower end with the exhaust-valve mechanism, the cam-grooved drum mounted also upon the drive-shaft, the elbow-lever adapted to engage said drum, a short pitman connected to said elbow-lever, a lever to which said pitman is attached, a link-rod connecting the said lever with the lower ends of the slotted link, the block sliding in the slot of said link and the steam-valve-operating rod attached to the said block and to the steam-valve mechanism and means for operating the governor from the drive-shaft substantially as shown and described.

573,876. HAT-STIFFENING MACHINE. LEWIS R. HEIM, Danbury, Conn. Filed Jan. 8, 1896. Serial No. 574,726. (No model.)

Claim.—1. The combination of the frame, the hollow shaft journaled in suitable bearings therein, the conical-shaped block secured to the outer end of said shaft, the pipe extending through said shaft and block and capable of revolving in harmony therewith, ducts in said block leading from said pipe to the exterior of the block, the rubber cone around said block and secured to the latter at its rear edge, the pivoted fingers carried by said block and provided with spurs at their extremities, and means for introducing compressed air within said pipe whereby the rubber cone is inflated and the fingers elevated, substantially as set forth.

2. The combination of the frame, the hollow shaft suitably journaled therein, the conical shaped block secured to the outer end of

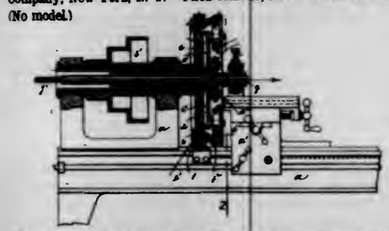
said shaft, the pipe extending through said shaft and block and capable of revolving therewith, the ducts pierced from the outside of said block and leading into the tube, the rubber cone around said block and secured circumferentially to the latter at the rear end of said cone, the pin extending within the tube and having its head secured to the inner wall of the tip of said rubber cone, the pivoted fingers which normally rest upon said cone and are provided with small sharp spurs, resiliently-acting means for preserving the normal position of the fingers, and means for introducing compressed air through the tube after a hat has been placed over said cone, whereby the latter is expanded firmly against such hat and said spurs driven into the hat, substantially as set forth.



3. In a hat-stiffening machine, the combination of the rotary support for the hat, the elevated tank which contains the stiffening compound, the blocks pivoted to the frame of the machine a short distance apart, the arm between said blocks and capable of an independent sliding movement and a swinging movement in harmony with said blocks, the hollow perforated head provided with bristles and secured to the outer extremity of said arm, and the flexible pipe having its extremities respectively connected with said tank and head substantially as set forth.

4. The combination of the rotary block, the passages and ducts in said block and leading to the exterior thereof, the rubber cone around said block and secured thereto at its rear end, the pivoted fingers carried by the block at its rear and normally resting against said cone and provided at their extremities with upwardly-projecting spurs, means for resiliently preserving this normal position of the fingers, and means—as compressed air forced through passages and ducts in said block—for expanding said rubber cone whereby a superimposed hat may be firmly held thereon, substantially as set forth.

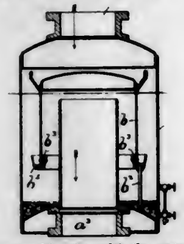
573,877. **MACHINE FOR ROLLING METAL TUBES.** EMIL F. HOLMGREN, Brooklyn, N. Y., assignor to the Seamless Structural Tube Company, New York, N. Y. Filed Mar. 19, 1896. Serial No. 583,873. (No model.)



Claim.—1. In a machine for rolling metal tubes the combination of a revoluble head with radially-movable slides, reducing-rolls and contact-rollers secured to opposite ends of the slides, a mandrel extending between the reducing-rolls, a flaring ring engaging the contact-rollers, and means for shifting such ring, substantially as specified.

2. In a machine for rolling metal tubes the combination of a revoluble head with radially-movable slides, reducing-rolls and contact-rollers secured to opposite ends of the slides, a grooved and flaring ring engaging the contact-rollers, a shifting lever having pins that engage the grooved ring, and means for locking the shifting lever in position, substantially as specified.

573,878. **STEAM-SEPARATOR.** JOHN J. HOPPER, Springfield, Ohio. Filed Aug. 12, 1896. Serial No. 602,511. (No model.)



Claim.—1. The combination with the outer casing having outlet and inlet openings, a depending reservoir, of a drip-trough depending from and below the bottom edge of said reservoir, with the sides of said trough on opposite sides of the edge of said reservoir, and a drain-pipe extending from said trough to the bottom of the casing, substantially as specified.

2. The combination with the outer casing having outlet and inlet openings, and a depending reservoir surrounding the outlet-opening, of a drip-trough secured to the lower edge of said reservoir by spacing-blocks so as to stand below the same with the sides of said trough on opposite sides of the lower edge of said reservoir, substantially as specified.

3. The combination with the outer casing, outlet and inlet openings, a depending reservoir having a drip-trough at the lower edge thereof, said drip-trough being secured to the edge of said reservoir by spacing-blocks, and a drain-pipe from said drip-trough to the bottom of said casing, said drain-pipe being extended into said trough so as to project above the bottom thereof, substantially as and for the purpose specified.

573,879. **HOOK AND EYE.** NETTIE HYLE, Syracuse, N. Y. Filed Jan. 22, 1896. Serial No. 576,405. (No model.)



Claim.—1. A garment hook comprising parallel wire strands, lying closely together, fastening eyes or loops at its opposite ends, and a hook intermediate the eyes, the wire strands forming the front eyes extended backward from the hook, between and under the parallel strands, substantially as described.

2. A garment-hook consisting of the hook portion, 3, the forward loops, 4, the wire forming said loops extended backward from the hook between and under the parallel strands, and the loop 5, at the rear end of the hook, the terminal of the wire forming this loop being wrapped about the parallel base portion of the hook, substantially as described.

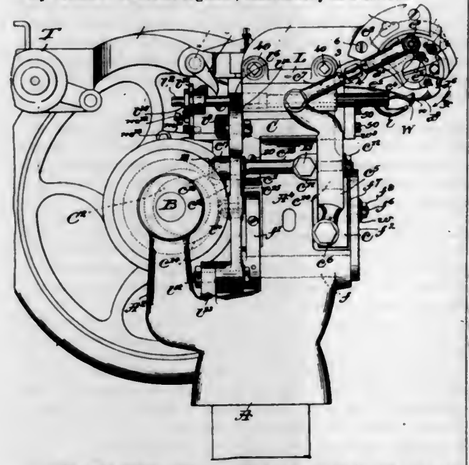
3. An eye to accompany a hook consisting of a single piece of wire bent to form the bight 8, then bent to form the side eyes 9 and having one free end extended from one side eye, across to and connected to the other one.

573,880. **SEWING-MACHINE.** HARRY I. ILLINGWORTH, Lynn, Mass., assignor to Charles E. Riley, Newton, Mass. Filed Sept. 3, 1895. Serial No. 561,281. (No model.)

Claim.—1. In a sewing-machine, an oscillating needle segment, a curved needle carried thereby, a needle-guide, its oscillating carrier, said segment and carrier having a common fulcrum, independent adjustable connections between the segment and carrier, to rock the latter in opposite directions, and means to positively oscillate the needle-segment, substantially as described.

2. In a sewing-machine, an oscillating needle-segment, a needle-guide carrier adjacent thereto, said segment and carrier having a common fulcrum, a connection between the segment and carrier to engage positively, and move the latter in one direction, an independent connection to engage and move it positively in the opposite direction, the segment moving in advance of and thereafter with the carrier in each direction, and means to adjust said connections to regulate the stroke of the carrier, substantially as described.

3. In a sewing-machine, an oscillating needle-segment, its needle, a needle-guide, a carrier therefor adjacent and to be rocked by said segment, one of the oscillating parts having two slots therein, independently-adjustable studs on the other of said parts, to enter said slots, whereby the oscillation of the needle-segment will oscillate the needle-guide carrier through an adjustable stroke, and means to positively oscillate the needle-segment, substantially as described.



4. In a sewing-machine, a needle-guide carrier having two concentric slots therein, a friction-presser to bear upon and prevent accidental movement of the carrier, a needle-segment, means to oscillate it, two independently-adjustable studs thereon, to enter the slots in and positively engage the carrier and to rock the latter in opposite directions, adjustment of said studs determining the stroke of the carrier, and means to positively oscillate the needle-segment, substantially as described.

5. In a sewing-machine, a stationary frame, a swinging head mounted thereon, stitch-forming devices, including a needle-segment, carried by said head, a rocker-arm fulcrumed on the head and connected to the needle-segment, to oscillate it, means supported in the stationary frame, to rock the rocker-arm, and adjusting devices for said means to vary the needle stroke, substantially as described.

6. In a sewing-machine, a stationary frame, a swinging head mounted thereon, an oscillating needle-segment and a carrier supported by said head, a combined cast-off and needle-guide on said carrier, adjustable connections between the segment and carrier, to operate the latter, and a rocker-arm fulcrumed on the head and connected to the needle-segment, combined with a main shaft supported in the frame, an eccentric thereon, and connections between it and the rocker-arm, to rock the latter, substantially as described.

7. In a sewing-machine, a stationary channel-opener, a work-rest, means to move it toward the work yieldingly and thereafter to lock it, a swinging head, an oscillating needle segment mounted thereon, its needle, a coöperating cast-off, a looper rotatable and longitudinally movable in the head, a rocker-arm on the head, an adjustable link connecting it with the needle segment, and means carried by the main frame to rock the arm, substantially as described

8. In a sewing machine, a stationary frame, a channel-guide having an extended supporting-shank, means to attach the guide-shank to the frame, independent adjusting-screws to positively adjust said guide vertically, and means to bodily adjust the said guide laterally in the direction of the line of feed, substantially as described.

9. In a sewing-machine, stitch-forming devices, a longitudinally-movable work-rest, an oscillating lever, connections between it and the work-rest to move the latter, including a normally spring-controlled disk having a wrist-pin in engagement with the work-rest, a friction-brake to at times prevent the spring from operating the disk, and means to oscillate said lever and to control the brake, substantially as described.

10. In a sewing-machine, a longitudinally-movable slide-bar, a work-rest attached thereto, an oscillating lever, a disk pivotally mounted thereon and eccentrically connected to the slide-bar, a spring to normally act upon the disk and thereby move the slide bar outwardly relatively to said lever, and means to at times prevent such relative movement of the disk and lever, whereby the oscillating lever will hold the slide-bar positively at such times, substantially as described.

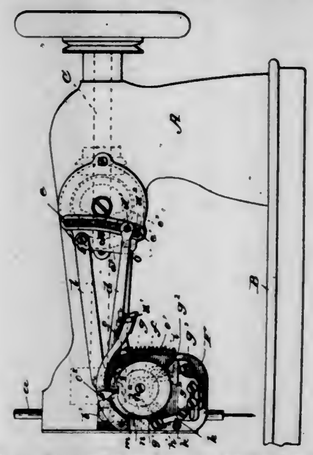
11. In a sewing-machine, a longitudinally-movable slide-bar, an oscillating lever, a disk mounted rotatively thereon and pivotally connected to the slide-bar, a spring intermediate said disk and lever, to cause rotation of the disk and permit a yielding movement of the slide-bar, a friction-brake to lock the disk against the operation of the spring, and independent cams to oscillate the lever and control the brake respectively, substantially as described.

12. In a sewing-machine, stitch-forming devices, a stationary channel guide, a work-rest movable toward and from said guide, an oscillating lever, a normally spring-controlled shaft supported by said lever, a disk on said shaft provided with a wrist-pin, to yieldingly move the work-rest, a brake for said disk, to at times lock it against the spring, and means to oscillate said lever and means to control the brake movement of the lever when the disk is locked carrying the work-rest positively therewith, substantially as described.

13. In a sewing-machine, a looper-spindle having secured thereto a pinion, means to move said spindle longitudinally in its bearings, an actuating segment-gear to engage the pinion and rotate the looper-spindle first in one and then in the other direction, a cam having a uniform rotative movement, and adjustable connections between said cam and segment-gear, to alter the amplitude of oscillation of the looper-spindle, substantially as described.

14. In a sewing-machine, a looper-spindle provided with a pinion, a segment-gear in engagement with said pinion, a rock-shaft having a rocker-arm, means to rock said shaft uniformly, a link connecting said segment-gear and rocker-arm, and means to adjust the link on the arm, to thereby vary the amplitude of oscillation of the looper-spindle, substantially as described.

573,881. **FANCY-STITCH SEWING-MACHINE.** WLADISLAW F. JAGIELSKI, Hanover, Germany, assignor to The Singer Manufacturing Company, of New Jersey. Filed June 26, 1896. Serial No. 597,011. (No model.) Patented in Germany Nov. 15, 1895, No. 87,791; in Austria Dec. 30, 1895, No. 45/4,839, and in Hungary Jan. 14, 1896, No. 4,907.



Claim.—1. In a sewing-machine, the combination with a horizontally-movable needle-bar frame and a needle-bar to reciprocate vertically therein and to be moved horizontally thereby, of a vibrating lever, a connecting-rod joining said lever to the said needle-bar frame, a ratchet-wheel, a cam or pattern wheel rotated by said ratchet-wheel, intermediate connections controlled by said cam or pattern wheel whereby the extent of the horizontal movements of the said needle-bar may be automatically varied, two pawl carrying levers connected with said vibrating lever, and means by which one of said levers may be thrown out of operation while the other continues to work; whereby, at the will of the operator feeding movements may be imparted to said ratchet wheel either at each vertical reciprocation of the needle-bar or at each alternate reciprocation thereof.

2. In a sewing-machine, the combination with a horizontally-movable needle-bar frame and a needle-bar to reciprocate vertically therein and to be moved horizontally thereby, of a vibrating lever, a connecting-rod joining said lever to the said needle-bar frame, a ratchet wheel, a cam or pattern wheel rotated by said ratchet wheel, intermediate connections controlled by said cam or pattern wheel whereby the extent of the horizontal movements of the said needle-bar may be automatically varied, two pawl carrying levers connected with said vibrating lever, means by which one of said levers may be thrown out of operation while the other continues to work, whereby, at the will of the operator feeding movements may be imparted to said ratchet-wheel either at each vertical reciprocation of the needle-bar or at each alternate reciprocation thereof, and means for vary-

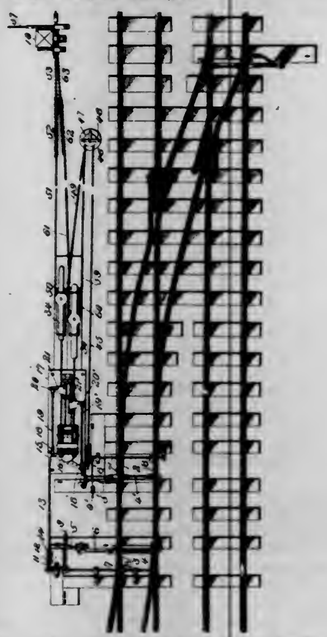
ing the throw of that one of the said pawl carrying levers which is adapted to be thrown out of operation.

3. In a sewing-machine, the combination with a horizontally-movable needle-bar frame and a needle bar to reciprocate vertically therein and to be moved horizontally thereby, of the vibrating lever c^3, the rod d by which said lever is operatively connected with the said needle-bar frame, the ratchet-wheel f, the cam or pattern wheel n rotating with said ratchet-wheel, the pawl-carrying lever g, the link l by which said pawl-carrying lever is connected with the said lever c^3, the pawl-carrying lever g' and the bell-crank lever g^3 operated from the said lever g and operatively but detachably connected with the said lever g'.

4. In a sewing-machine, the combination with a horizontally-movable needle-bar frame, and a needle-bar to reciprocate vertically therein and to be moved horizontally thereby, of the vibrating lever c^3, the rod d by which said lever is operatively connected with the said needle-bar frame, the ratchet-wheel f, the cam or pattern wheel n rotating with said ratchet-wheel, the pawl-carrying lever g, the link l by which said pawl-carrying lever is connected with the said lever c^3, the pawl-carrying lever g' and the bell-crank lever g^3 operated from the said lever g and operatively but detachably connected with the said lever g', the said lever g^3 being provided with the adjustable plate g^4 the position of which determines the extent of feeding movements imparted to said ratchet-wheel by the said pawl-carrying lever g'.

573,882. DISTANT-SWITCH SIGNAL-WIRE COMPENSATOR.

JOSEPH R. JONES, Philadelphia, and JOSHUA W. JONES, Harrisburg, Pa., assignors of one-third to Thomas A. Jones, Philadelphia, Pa. Filed Feb. 29, 1896. Serial No. 581,325. (No model.)



Claim.—1. The combination of a signal and two switches, each switch having a shaft carrying locking-cams and means for operating the signal, with mechanism for operating the switch after the locking-shaft has been operated, intermediate connections between the switch mechanism and the signal arranged to set said signal at the "danger" position when either switch is unlocked, and clutches to take up the slack in said connections substantially as described.

2. The combination of a signal and two switches, each switch having a shaft carrying locking-cams and means for operating the signal, with mechanism for operating the switch after the locking-shaft has been operated, intermediate connections between said mechanism and the signal constructed to hold said signal at the "danger" position until both switches are closed, and clutches to take up the slack in said connections substantially as described.

3. The combination with two switches and their locking and operating mechanism, of a signal, wires for operating said signal connected with said mechanism, and a spring forming part of the connection between the signal and locking and operating mechanism, to allow of the signal remaining at the "danger" position after one of the switches has been closed, substantially as described.

4. The combination with two switches and the locking mechanism thereof and a signal common to both, of the slides 34, 34′ having pulleys 37, the pulleys 47, connections between the signal and the locking mechanism passing around said pulleys 37 and 47, and a compensating device connected with said slides to allow for contraction or to take up the slack of the wires in expansion, substantially as described.

5. The combination with a switch and the locking mechanism thereof, and a signal therefor, of the slides 34, 34′ having pulleys 37, the pulleys 47, connections between the signal and the locking mechanism passing around said pulleys 37 and 47, and a compensating device connected with said slides to allow for contraction or to take up the slack of the wires in expansion, substantially as described.

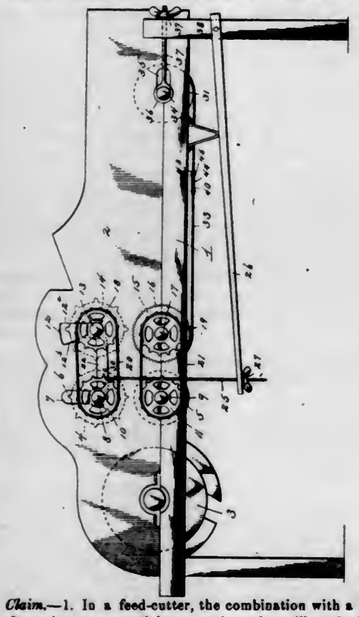
6. The combination in a compensating device, of the weight 33, the chain 31 passing around suitable guide-pulleys through the jaws 21, carrying the dogs 20 and connected with the slides 34, 34′ having pulleys for the signal-operating wires, the weight 33 suspended from said chain, and means substantially as described for operating said dogs and jaws, as set forth.

7. The combination in a compensator, of the lever 16, the rods 19, 19′ connected to said lever, the dogs 20, 20′ connected to said rods, the horizontally-moving slides 22, 22′ working on suitable guides, and having the jaws 21, 21′ carrying the dogs 20, 20′, the chain 41 passing around pulley 40, and having its opposite ends connected to the slides 22, 22′, the chain 31 having its end connected through intervening devices with the wires for operating the signal, and the weight 33 suspended by said chain 31, substantially as described.

8. In a compensator, the combination with slides carrying the clutching-dogs, means for operating said dogs, a compensating weight suspended on a chain connected with the signal-operating wires and acted on by the dogs, of a chain having its opposite ends connected to the slides, and a pulley around which said chain passes, substantially as described.

9. In a switch-wire compensator, the combination of the wires or rods thereof, with a lever as 43 having a series of holes to allow of change of throw, and a curved slotted connection 44 between said wires and lever pivotally connected to the lever, substantially as described and shown.

573,883. FEED-CUTTER. ANTON KALTENBRUNN, St. Nazianz, Wis. Filed Apr. 30, 1896. Serial No. 589,702. (No model.)



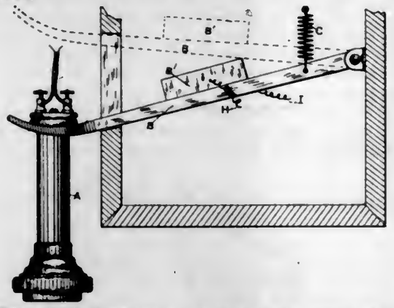
Claim.—1. In a feed-cutter, the combination with a knife-roll, of coöperating upper and lower main and auxiliary feed-rolls, the upper rolls being connected for simultaneous rotation and being adapted to yield upwardly, said auxiliary upper roll being capable of upward yielding movement independently of the main upper roll, yielding tension devices for holding the movable main and auxiliary rolls in operative position, the tension upon the auxiliary roll being less than that upon the main roll, and means for connecting the main and auxiliary rolls to hold them permanently at a uniform distance apart, substantially as specified.

2. In a feed-cutter, the combination with a knife-roll and coöperating main feed-rolls, the upper rolls being vertically movable, of coöperating auxiliary upper and lower feed-rolls arranged in advance of the main feed-rolls, the auxiliary upper feed-roll having its shaft arranged in guides having vertical front sides and rear sides concentric with the main upper feed-roll when the latter is in its normal position, and operating connections between the main and auxiliary feed-rolls whereby the main and auxiliary upper rolls are held at a uniform distance apart in all positions, substantially as specified.

3. In a feed-cutter, the combination with a knife-roll and coöperating main feed-rolls, of auxiliary feed-rolls arranged in advance of the main feed-rolls, the upper main and auxiliary rolls being capable of independent movement toward and from the coöperating lower rolls, and a tension device for the movable rolls including a yoke connected at its extremities respectively to the shafts of said rolls, and a spring-actuated tension-rod attached to the yoke at an intermediate point contiguous to the point of connection of the latter with the main movable roll, whereby the tension upon the main roll exceeds that upon the auxiliary roll, substantially as specified.

4. In a feed-cutter, the combination with a knife-roll and main upper and lower feed-rolls, the upper roll being movable, of auxiliary upper and lower feed-rolls, the upper roll being movable independently of or simultaneously with the movable main roll and operating in guide-slots which are vertical at their front sides and concentric at their rear sides with the main upper roll, a yoke having seats engaging the shafts of the movable rolls, and a spring-actuated tension-rod adjustably connected to the yoke at a point contiguous to the seat which engages the shaft of the main movable roll, whereby greater pressure is applied to the main roll than to the auxiliary roll, substantially as specified.

573,884. AUTOMATIC TELEPHONE-EXCHANGE. ALEXANDER E. KEITH, Chicago, Ill., assignor to the Strowger Automatic Telephone Exchange, same place. Filed Sept. 16, 1893. Serial No. 485,700. (No model.)

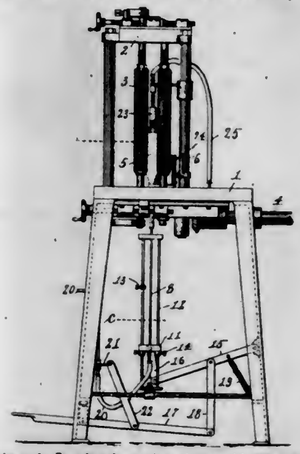


Claim.—1. An automatic telephone-exchange, comprising the combination of release mechanism at the central station operated by a current of electricity which is controlled by a means which is initially started in operation by the gravity of the telephone-receiver, substantially as described; said means comprising two compartments with communicating passages between them, the ends of two wires insulated from each other, and both entering one of said compartments, said wires placed in electrical communication with each other and connect the battery with the release-magnet, through the action of mercury, or some other electric conductor, in the manner substantially as described.

2. An automatic telephone-exchange comprising a releasing mechanism at the central station, said mechanism operated by a current controlled by the telephone-receiver switch, and the telephone-receiver switch comprising a box with a vertical partition in the same having openings in the lower portions thereof and mercury or other electric conductor in said box, and the ends of two wires insulated from each other entering one end of said box, said wires being in connection with a battery and release-magnets, all of said parts being combined substantially as described.

3. An automatic telephone-exchange comprising a releasing mechanism at a central station operated by a current of electricity, means at the substation for completing an electric circuit in which said releasing mechanism is, consisting of a tilting box having means therein adapted to electrically connect or disconnect wires in said circuit, and thereby operating said releasing mechanism and a telephone-receiver adapted to actuate said means by its gravity, said parts being combined substantially as described.

573,885. BOTTLE-WASHER. JOHN I. KIRK and WILLIAM T. REED, Hamilton, Ohio, assignors to Christian Pabst, same place. Filed Dec. 11, 1895. Serial No. 571,755. (No model.)



Claim.—1. In a bottle-washer the combination with a table provided with an aperture or socket, of a non-rotary, reciprocatory jet-tube movable within the socket, a normally-expanded brush upon the extremity of the tube capable of contraction within the socket, and mechanism above the table for sustaining and rotating an inverted bottle and means for reciprocating the tube.

2. In a bottle-washer the combination with a table, a nest of rotary vertical rolls having bearings in a head-plate above the table, and roll actuating mechanism, of a reciprocatory tube piercing the table within the nest of rolls a normally-expanded brush upon the extremity of the tube designed to be contracted when retracted below the surface of the table, and mechanism for actuating the tube to contract and release the brush.

3. In a bottle-washer the combination with a table provided with a seat in its surface for the reception of a bottle, of a nest of vertical rotary rolls having bearings in a head-plate above the table designed to sustain and rotate the bottle, a reciprocatory tube piercing the table concentric with the seat and intermediate of the rolls, a normally-expanded brush upon the extremity of the tube, jet holes piercing the tube transversely, means for reciprocating the tube to retract the brush below the table, roll-actuating mechanism and brushes in contact with the exterior of the bottle.

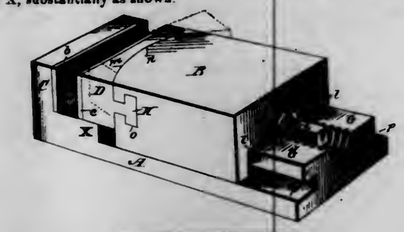
4. In a bottle-washer, the combination with a table and mechanism thereabove designed to sustain and rotate an inverted bottle, of a reciprocatory tube piercing the table, a cross head supporting the tube, cross-head guide-rods, a water-supply pipe provided adjacent to its lower extremity with a valve, a flexible pipe connecting the water-supply pipe and the tube, a spring-retracted lever pivoted to the table and connected with the cross-head by a link, a foot-lever pivoted to the table and directly connected through independent links to the valve in the water-supply pipe and to the spring-retracted lever.

5. In a bottle-washer the combination with a table provided with a tube or bushing extending downwardly from its surface, of a reciprocatory jet-tube having a closed end and movable within the tube or bushing said jet-tube having jet-apertures below the closed end, a normally-expanded brush upon the end of the jet tube and means for reciprocating the jet-tube thereby retracting the brush below the table into the depending tube or bushing, whereby the flow of water may be cut off by the retraction of the tube within the bushing.

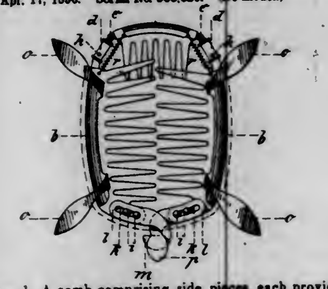
573,886. VISE. EMIL KLINGENBERG and JOHN KLINGENBERG, Commonwealth, Wis. Filed May 25, 1896. Serial No. 592,941. (No model.)

Claim.—In a vise, bed-plate A, provided with the raised central portion in which the screw-threaded concavity E is made, and which has the two lateral guides G formed on its opposite edges; the shoulder X and jaw C made as integral parts of the bed-plate, upon one end; and sliding block B, placed upon the bed-plate and provided with a recess in its under side to receive the screw, and having grooves *l* to receive the guides, and a transverse groove *o* in its front end, com-

bined with the jaw D adjustable upon the grooved end of the block; and the screw F journaled on the under side of the block, and provided with a collar or flange *h*, which bears against the end of the block; the sliding jaw being supported in its movement by the shoulder X, substantially as shown.



573,887. CURLING-COMB. ISMATS G. KRAUS, Berlin, Germany. Filed Apr. 17, 1896. Serial No. 588,029. (No model.)



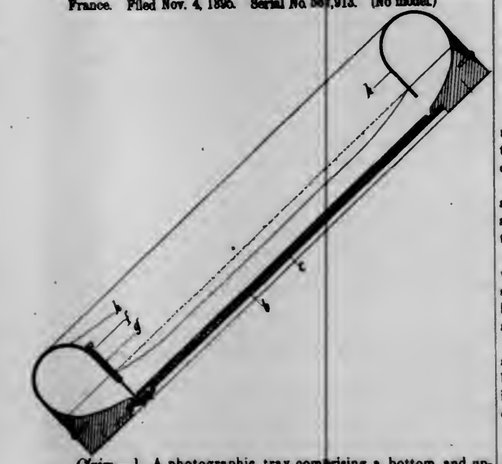
Claim.—1. A comb comprising side pieces, each provided with outwardly-extending arms or projections, and each carrying teeth projecting toward each other, said side pieces at one end being hinged to an end piece, said end piece also carrying teeth projecting toward the teeth of the side pieces, said side pieces at the opposite end being provided with interlocking fasteners.

2. A comb comprising the end and side pieces having teeth and the extensible hinge connections between the said pieces, substantially as described.

3. A comb comprising the side and end pieces *a*, *b*, *b*, and the hinge connections consisting of the sockets *d* and pegs *f* with the slot and pins connecting them, substantially as described.

4. In combination the side and end pieces *a*, *b*, *b*, hinged together and the means for connecting the free ends of the pieces *b*, *b*, consisting of the adjustable pieces *l*, *l*, having interlocking portions, substantially as described.

573,888. DEVELOPING-TRAY. EMILE L. C. LAMBERT, Boulogne, France. Filed Nov. 4, 1895. Serial No. 567,913. (No model.)



Claim.—1. A photographic tray comprising a bottom and upwardly extending sides, said sides having returned portions in substantially the same vertical plane with the margins of the bottom plate whereby a free opening is left within the sides for the placing and removal of the photographic plate, substantially as described.

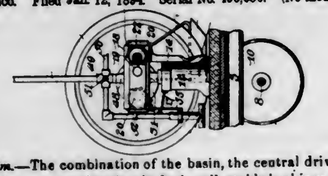
2. A photographic plate comprising a bottom plate, a rim about and beyond the edge of the same, said rim having a returned flange *h* in substantially the same vertical plane with the margin of the bottom with a reservoir beyond said margin and extending around the same, the space within the returned edge being free for the insertion or removal of the photographic plate, substantially as described.

573,889. TUG-HOLDER. SIMEON B. LUCAS, Hinsdale, N. Y. Filed Aug. 7, 1896. Serial No. 602,067. (No model.)



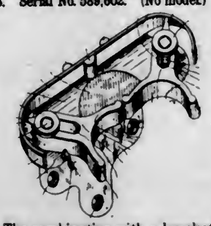
Claim.—The combination with a singletree, of a trace or tug provided with a slit and having a free end, the trace being slipped over the singletree, and a holder comprising an elongated body or backing which is fastened to the singletree, and an integral upwardly-extending spring-arm, the free end of the trace being received between the body and the spring arm.

573,890. EDGE-RUNNER MILL. HENRY MANTEY, Orizaba, Mexico. Filed Jan. 12, 1894. Serial No. 496,656. (No model.)



Claim.—The combination of the basin, the central driving-shaft, the cross beam secured to the shaft, the adjustable bushings supported in the cross beam and formed with eccentric openings extending through them, the axles journaled in the openings, the runners mounted on the axles, and means for adjusting the bushings; substantially as described.

573,891. BRACKET. FRANK D. MARTIN, Perkinsville, Vt. Filed Apr. 29, 1896. Serial No. 589,602. (No model.)



Claim.—1. The combination with a bracket, of slotted clamping members pivoted to the bracket, and adapted to turn and slide on the pivots and means engaging said members to hold them open and closed, as set forth.

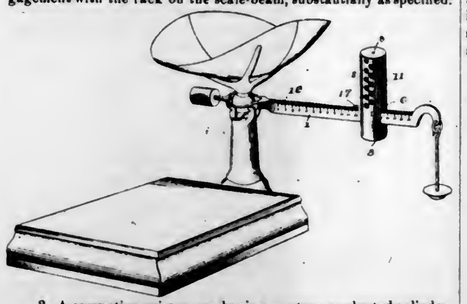
2. The combination with a bracket having diverging arms, of a slotted clamp pivoted upon the arms and adapted to turn and slide simultaneously on the pivots, and a spring held by the bracket to control such movement of the clamps, as set forth.

3. The combination with a bracket having projections, and diverging arms having stop-lugs, a spring held to the brackets by the said projections, and the clamps, slidably pivoted to the arms and having a wing engaged by the free ends of the spring, substantially as set forth.

4. The combination of an angular bracket having projections, and arms provided with pivots and stop-lugs, with a spring secured between the projections and having free curved ends, and the clamping members slidably secured on the pivots and having wings which engage the spring ends, substantially as and for the purpose set forth.

573,892. COMPUTING-SCALE. CASSIUS M. MERRILL, Louisville, Ky. Filed Nov. 14, 1895. Serial No. 568,953. (No model.)

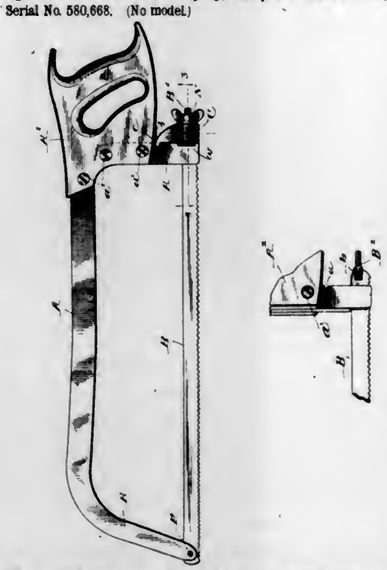
Claim.—1. A computing poise or pea having a rotary graduated cylinder, stationary indicating means to designate different graduations, pinions meshing with a gear on said cylinder and adapted to communicate motion thereto from a rack on a scale-beam, and a switch carrying said pinions whereby either may be arranged in engagement with the rack on the scale-beam, substantially as specified.



2. A computing poise or pea having a rotary graduated cylinder, stationary indicating means to designate different graduations on the cylinder, a gear carried by the cylinder, a switch consisting of a pivotal lever mounted concentrically with said gear, and double pinions mounted upon the switch, each double pinion comprising a pinion meshing with said gear and a second pinion adapted to mesh with a rack on a scale beam, whereby either double pinion may be arranged in operative relation with the rack on the scale beam, substantially as specified.

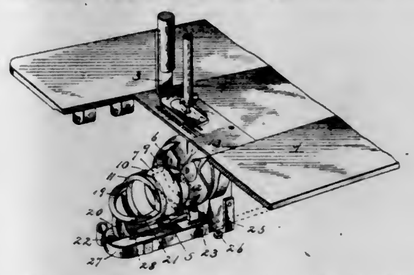
3. A computing poise or pea having an exterior cylinder provided with observation-openings, an interior rotary cylinder provided with graduations adapted to be exposed through said observation-openings, a gear concentric with and carried by the inner cylinder, a switch fulcrumed concentric with the inner cylinder and having a handle projecting through a slot in the exterior cylinder, and double pinions mounted upon the switch and each comprising a pinion arranged in permanent engagement with said gear and a second pinion adapted to be arranged in engagement with a rack on a scale-beam, either of the second pinions being adapted to be arranged in operative relation with the rack by shifting the switch, substantially as specified.

573,893. HANDSAW. GEORGE MEYER, Indianapolis, Ind., assignor to the E. C. Atkins & Company, same place. Filed Feb. 25, 1896. Serial No. 580,668. (No model.)



Claim.—A bow-saw consisting of the bow-shaped frame, a handle on one end thereof, a notch in the outside edge of said end, at a point some distance back from its extremity, both ends of said bow being provided with a narrow slot adapted to receive the ends of the saw, said saw mounted in said slots and secured by a pivot at one end, and at its other end extending through the slot to a point outside the frame and there provided with a screw-threaded shank, the fastening device, C, formed with a perforation to receive the outer end of the saw and the shank, and with an upwardly-projecting arm having a transverse projection on its end which engages with said notch in the frame, and also with forwardly-projecting lips which embrace said frame below said notch, and the thumb-nut on the outer end of said screw-threaded shank, all substantially as shown and described.

573,894. BOBBIN CASE AND HOLDER FOR REVOLVING-HOOK SEWING-MACHINES. ANTHONEY MILLER, Huntingburg, Ind. Filed Dec. 31, 1895. Serial No. 573,959. (No model.)



Claim.—1. The combination with a rotary hook and a bobbin-case, of a holder having an elbow-shaped arm which is pivoted between its ends, a spring for maintaining the holder in operative relation, and a locking-pin to be projected across the path of the said arm to limit the outward movement of the holder without interfering with the free action of the said spring, substantially as and for the purpose set forth.

2. The combination with a rotary hook, and a bobbin-case, of a holder having an arm which is pivoted between its ends, a set-screw arranged to engage with the pivoted arm to regulate the distance between the holder and the rotary hook, a spring for maintaining the holder in working position and a locking-pin projecting across the path of the holder to prevent its outward movement without interfering with the free action of the aforesaid spring, substantially as and for the purpose described.

3. In a sewing-machine, the combination of a rotary hook, a bobbin-case, a slotted support, a holder comprising a ring, and an elbow-shaped arm pivoted within the slotted support and having its upper end forked and bearing the said ring, a spring for maintaining the holder in a normal position, a locking-pin to secure the holder in the required position, a stirrup, and a set-screw for varying the distance between the holder and the rotary hook, substantially as set forth for the purpose described.

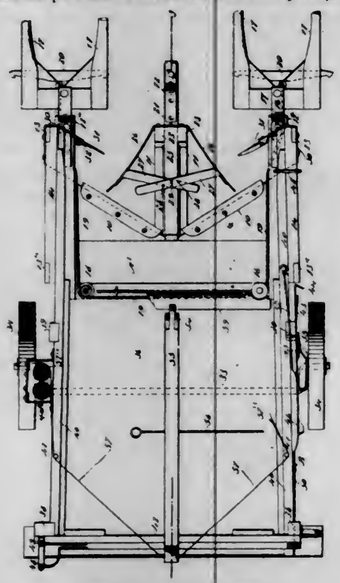
4. The combination with a bobbin-case having a circumferential slot and an oblique slot in its peripheral edge, the oblique slot communicating with the circumferential slot intermediate of its ends and extending through the open edge of the case, of a tension-spring arranged within the bobbin-case and secured thereto and covering the circumferential and oblique slots, and having an extension 15 at its free end contiguous to its inner edge and a point or hook 16 at its outer edge a short distance from the oblique slot and diagonally opposite the extension 15, substantially as shown for the purpose specified.

573,895. CORN-HARVESTER. ORISON C. MILLER, Harveyville, Kans. Filed June 1, 1895. Serial No. 551,391. (No model.)

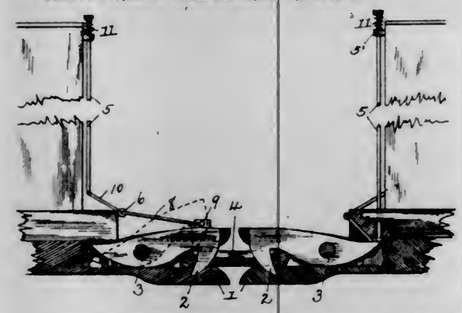
Claim.—1. In a corn-harvester, the combination with a frame and a pair of thills attached to each side thereof, of a central partition, knives extended outward and forward from each side of said partition, adjustable angled guide-bars secured to the partition and extended rearward and laterally, brackets projected from the sides of the frame at the front, and spring-pressed guide-arms pivoted to the brackets and extended at a reverse angle to the guide-bars and normally having their ends in a line, horizontally of the machine, with the ends of the guide-bars whereby the standing corn is bunched and presented to the forward portions of the knives, substantially as specified.

2. In a corn-harvester, the combination with a frame, of a partition therein, knives extended outward and forward from opposite sides of the partition, angled guide-bars secured to the partition and extended rearward and laterally, and spring-pressed guide-arms supported on the sides of the frame and extended at a reverse angle to the guide-bars and normally having their ends in the same vertical

longitudinal plane with the ends of the guide-bars, whereby the corn is bunched and presented to the knives, substantially as specified.



573,896. CAR-COUPLING. LEONIDAS L. MOE, Denver, Colo., assignor to the Denver Automatic Car Coupler Company, same place. Filed Feb. 24, 1896. Serial No. 580,573. (No model.)

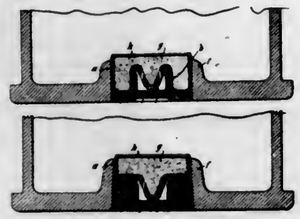


Claim.—1. The combination in a coupling device, of the slotted draw-head 1, the pivoted hook 2 inclosed in the slot in the draw-head and having its acting end supported by the end wall of said slot, the shaft 6 having an arm 8 acting directly on the hook and levers 7 for operating the same, and the rod 5 normally held upward by a spring and having a foot piece on the top thereof, whereby the hook may be raised from either side by the levers 7 or from the top by treading on the foot-piece, substantially as described.

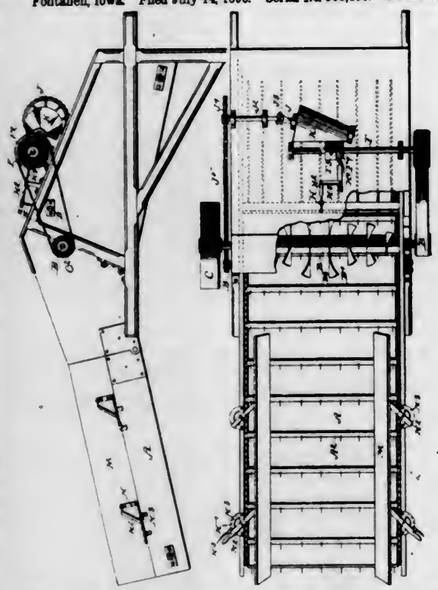
2. The combination in a coupling device, of the slotted draw-head 1, the pivoted hook 2 inclosed in the slot in the draw-head and having its acting end supported by the end wall of the slot, the shaft 6 having an arm 8 acting directly on the hook and levers 7 for operating the same, and the straight rod 5 pressing on the tail of the hook 6 and normally held upward by a spring and having a foot-piece on the top thereof, whereby the hook may be raised from either side by the levers 7 or from the top by treading on the foot-piece, substantially as described.

573,897. PRIMER. FREDERIK MOHR, Magdeburg, Germany, assignor, by mesne assignments, to the Fried. Krupp Grusonwerk, same place. Filed Dec. 27, 1892. Serial No. 456,383. (No model.) Patented in Germany July 9, 1892, No. 74,405; in Belgium Dec. 15, 1892, No. 102,563; in France Dec. 15, 1892, No. 228,408; in England Mar. 7, 1894, No. 4,832; in Austria Apr. 9, 1894, No. 44/1,634; in Italy Apr. 10, 1894, LXXI, 153, and in Hungary Aug. 9, 1894, No. 2,159.

Claim.—The combination with a cartridge formed with a smooth straight bore in its base, of an igniting device having two chambers separated from each other by the anvil, one of these chambers containing the igniting substance and the other the supplementary charge, said igniting device being provided with a smooth straight outer surface and forced axially into the said smooth bore of the cartridge in such manner as to leave the igniting device under constant strains of compression and cause it to maintain a gas-tight closure of the bore, substantially as and for the purpose specified.



573,898. BAND-CUTTER AND FEEDER. WILLIAM MORLEY, Fontanell, Iowa. Filed July 14, 1896. Serial No. 599,196. (No model.)



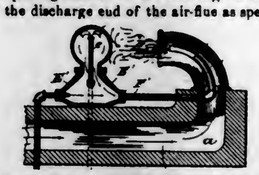
Claim.—1. In a band-cutter and feeder the combination of a conveyer, a speed-controlling device mounted above the conveyer and capable of being raised by means of grain on the conveyer and lowered by gravity, a rotatable shaft on the machine-frame, gearing for connecting it with the conveyer, a cone-shaped gear connected with said shaft for rotation, a brush-wheel slidingly mounted to engage the cone-gear, means for rotating the brush-wheel, and a series of levers for connecting the speed-controlling device with the brush-wheel, substantially as and for the purposes stated.

2. In a band-cutter and feeder, the combination of a suitable endless conveyer, a rock-shaft mounted in the machine-frame, rods fixed thereto to extend over the conveyer, an arm fixed to the shaft and extended upwardly, a shaft mounted on top of the machine-frame, a brush-wheel slidingly mounted thereon, means for connecting said arm and brush-wheel, a second shaft on the machine-frame, a cone-shaped gear fixed thereto, to be engaged by said brush-wheel, and means for driving the endless conveyer from said latter shaft.

573,899. GAS PRODUCER AND BURNER FOR STEAM-BOILERS. JAMES MURPHY, Chicago, Ill. Filed Apr. 15, 1895. Serial No. 545,717. (No model.)

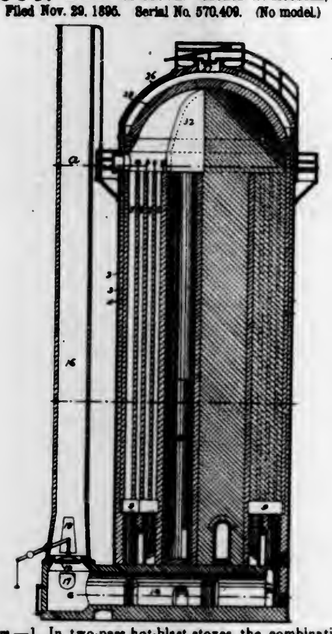
Claim.—1. A gas producer and burner for steam boilers comprising a fire-box provided with an air-flue in its bottom adapted to heat

the air as it enters the fire-box through the flue by means of the heat communicated to the bottom of the fire-box, a retort arranged in front of the discharge end of the air-flue within the fire-box, an oil-pipe entering the retort and having a contracted opening adapted to throw a jet of oil against the interior upper surface of the retort, a gas-chamber arranged beneath and communicating with the retort, a steam-pipe communicating with the gas-chamber and a steam and gas pipe communicating with the gas-chamber opposite from the steam-pipe and passing thence to and entering the air-flue and discharging near the discharge end of the air-flue as specified.



2. In a gas-producer for steam-boilers the combination with a fire-box of a retort placed within the fire-box, an oil-pipe entering the retort and adapted to throw a jet of oil against its upper interior surface, a gas-chamber beneath and communicating with the retort a steam-pipe communicating with the gas-chamber near its bottom, and a steam and gas pipe communicating with the gas-chamber on the opposite side from the steam-pipe, said steam and gas pipe being turned back so as to throw a jet of gas and steam upon the retort as specified.

578,900. HOT-BLAST STOVE. GEORGE W. MCCLURE, Pittsburg, Pa. Filed Nov. 29, 1895. Serial No. 570,409. (No model.)



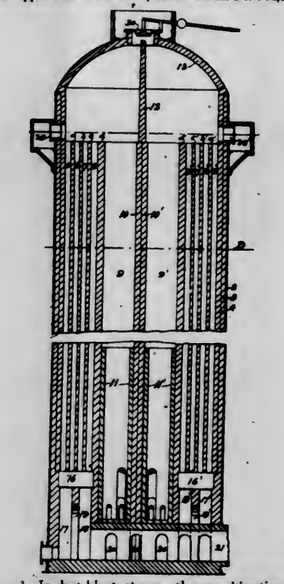
Claim.—1. In two-pass hot-blast stoves, the combination of an exterior cylindrical shell; a dome; a smaller, interior concentric, cylindrical shell extending substantially from the level of the stack-flue to the lower edge of the dome a stack-flue in the base of the stove; three combustion-chambers arranged within said interior cylinder, said chambers communicating with each other at the base but independent from thence upward an independent air inlet for each combustion-chamber and a series of concentric, annular, vertical, flues extending around the stove between the inner and outer cylinders.

2. In two-pass hot-blast stoves, the combination of an exterior cylindrical shell; a dome; a smaller, interior concentric, cylindrical shell extending substantially from the level of the stack-flue to the lower edge of the dome; three combustion-chambers arranged within said interior cylinder, said chambers communicating with each other at the base but independent from thence upward; an independent air-inlet for each combustion-chamber a series of concentric, annular, vertical, flues extending around the stove between the inner and outer cylinders, and walls dividing the dome of the stove into substantially three equal portions, each portion communicating with one combustion-chamber and with substantially one-third of the vertical flues.

3. In two-pass hot-blast stoves, the combination of an exterior cylindrical shell; a dome; a smaller, interior, concentric, cylindrical shell extending substantially from the level of the stack-flue to the lower edge of the dome; three combustion-chambers arranged within said interior cylinder, said chambers communicating with each other at the base but independent from thence upward; an independent air-inlet for each combustion-chamber a series of concentric, annular, vertical, flues extending around the stove between the inner and outer cylinders, and a common outlet from the base of said combustion-chambers to the hot-blast main.

4. In two-pass hot-blast stoves, the combination of an exterior cylindrical shell; a dome; a smaller, interior concentric, cylindrical shell extending substantially from the level of the stack-flue to the lower edge of the dome; three combustion-chambers arranged within said interior cylinder, said chambers communicating with each other at the base but independent from thence upward; an independent air-inlet for each combustion-chamber a series of concentric, annular, vertical, flues, extending around the stove between the inner and outer cylinders; an extension of the vertical flues to the base of the stove; a stack-flue and cross-flues connecting said extension to the stack-flue.

573,901. HOT-BLAST STOVE. GEORGE W. MCCLURE, Pittsburg, Pa. Original application filed Oct. 17, 1895, Serial No. 565,933. Divided and this application filed Jan. 3, 1896. Serial No. 574,199. (No model.)



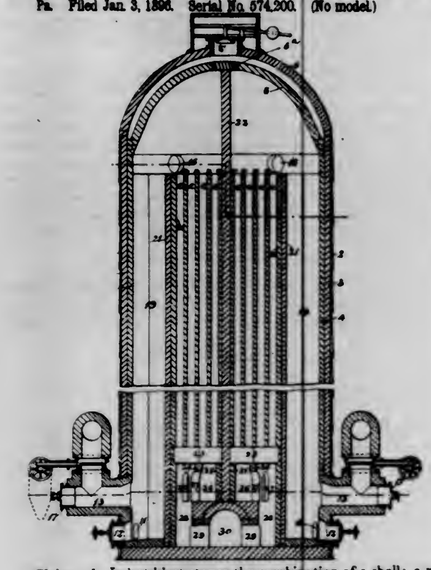
Claim.—1. In hot-blast stoves, the combination of a shell; a stack-flue in the base of said stove; a vertical cross wall dividing the stove into two independent parts above the level of the stack-flue and extending down to said stack-flue; an independent combustion chamber for each division located at the center of the stove against the dividing cross-wall; semicircular vertical flues surrounding said combustion-chamber except at its base; an extension of the semicircular flues to the base of the stove; cross-walls separating said semicircular flues in the base of the stove and communication between said last-mentioned flues and the stack-flue.

2. In hot-blast stoves, the combination of a shell, a dividing vertical wall within said shell; an independent combustion-chamber for each division, located at the center of the stove against the dividing cross-wall and semicircular vertical flues surrounding said combustion-chamber except at its back, semicircular horizontal flues communicating with the bottom of said semicircular vertical flues; vertical flues beneath and communicating with said semicircular horizontal flues; a stack-flue and radial flues connecting said stack-flue with said last-mentioned vertical flues.

3. In hot-blast stoves, the combination of a shell; a vertical dividing-wall in said shell extending clear across the shell from the dome to the stack but at the level of the stack-flue said wall being interrupted at its center; an independent combustion-chamber for each division, located at the center of the stove against the dividing cross-

wall; semicircular vertical flues surrounding said combustion-chamber except at its back: semicircular horizontal flues communicating with said semicircular vertical flues; vertical flues beneath and communicating with said semicircular horizontal flue; a stack-flue and radial flues connecting said stack-flue with said last-mentioned vertical flues.

573,902. HOT-BLAST STOVE. GEORGE W. MCCLURE, Pittsburg, Pa. Filed Jan. 3, 1896. Serial No. 574,200. (No model.)



Claim.—1. In hot-blast stoves the combination of a shell; a vertical wall cutting the stove into substantially two equal divisions; in each division a side combustion-chamber adjacent to the shell; vertical heating-flues in each division between the combustion-chamber and the vertical dividing-wall which prevents communication between the heating-flues of the two divisions and a stack-flue communicating with the heating-flues.

2. In hot-blast stoves, the combination of a shell; a wall dividing the stove into two parts; an oval side combustion-chamber and vertical heating-flues running on arcs in each division, and a stack-flue communicating with the heating flues.

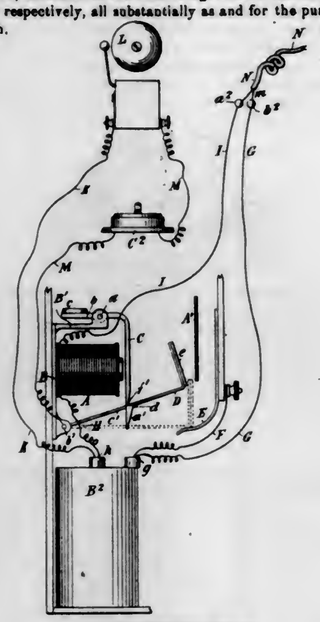
3. In hot-blast stoves the combination of a shell; a vertical wall cutting the stove into substantially two equal divisions; in each division a side combustion-chamber adjacent to the shell; vertical heating-flues in each division between the combustion-chamber and the vertical dividing-wall which prevents communication between the heating-flues of the two divisions; a stack-flue communicating with the heating flues; a gas-inlet, an air-inlet and a hot-blast connection to each combustion-chamber.

4. In hot-blast stoves, the combination of a shell; a wall dividing the stove into two parts; a side combustion-chamber and vertical heating flues in each division; a horizontal flue at the base of each set of said vertical heating-flues; an inner and outer vertical flue beneath each of said horizontal flues; connections between said inner and outer vertical flues; a stack-flue and connections between said stack-flue and said outer vertical flue.

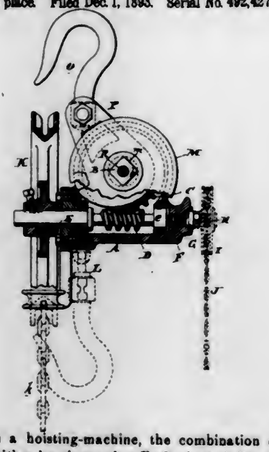
573,903. FIRE-ALARM. JOHN A. MCGARY, New York, N. Y. Filed Apr. 30, 1896. Serial No. 589,811. (No model.)

Claim.—1. The combination with an electric circuit, means for closing the same from an elevation of temperature, and a battery for supplying the current, of an electromagnet, the armature having a counterweight, *c*, and a notch or shoulder, *d*, the bar, D, having the tag, *e*, and slot, *c'*, a contact-piece, E, a wire, F, connecting said contact-piece with one pole of the battery, a bell or audible signaling device, and wires, M, and, K, the one extended from the bar, D, and the other from the battery, and both to the audible signal, substantially as and for the purpose herein set forth.

2. The combination with the electromagnet, A, armature, C, having bent arm, *b*, and counterweight, *c*, the bar, D, having shoulder, *d*, and carrying tag, *e*, a contact-piece, F, a battery, B^2, and a bell or audible signal L, of wires, I, and, G, united to form cable, N, the wire F', uniting the contact-piece with the battery, and the wire, H, extending from the battery to the coil of the magnet, and the wires, M, and, K, extended to the audible signal from the bar, D, and the battery respectively, all substantially as and for the purpose herein set forth.



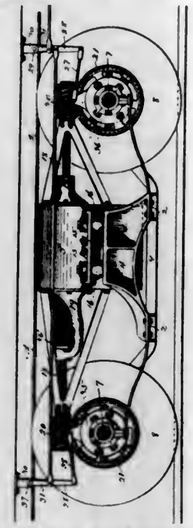
573,904. HOISTING-MACHINE. JOHN A. MCGREGOR, Philadelphia, Pa., assignor to the Edwin Harrington, Son & Company, Incorporated, same place. Filed Dec. 1, 1893. Serial No. 492,427. (No model.)



Claim.—In a hoisting-machine, the combination of the main frame formed with a bearing-socket F of enlarged diameter adjacent to the thrust end of the worm-shaft, a worm-shaft journaled in said frame and having a journal *e* of enlarged diameter journaled in the enlarged bearing-socket F and free to be moved longitudinally therein so as to bring the face of the journal *e* of enlarged diameter into frictional contact with the face of the bearing-socket, or to be moved out of contact therewith, and an adjusting-screw H passing through the end of the socket and bearing on the face of the journal *e*, for moving the worm-shaft and causing the face of the journal to make frictional contact with the face of the socket, or not to make contact therewith, whereby a slow or despatch movement may be imparted to the hoist by the resulting application or removal of friction to the worm-shaft.

573,905. ELECTRIC LOCOMOTIVE. JAMES F. MCLAUGHLIN, Philadelphia, Pa. Filed Mar. 21, 1890. Serial No. 344,782. (No model.)

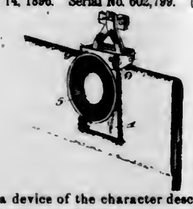
Claim.—1. In an electric locomotive the combination with an electric motor of worms of different pitch, and gearing for the same, interposed between the motor and drive-wheel axles, and means for coupling the motor and axles together through either worm-gear, substantially as described.



2. In an electric locomotive, the combination with an electric motor, of worms of different pitch, one at each end of the armature-shaft, worm gears meshing with the worms and loosely mounted on the drive wheel axles, and clutches on the said axles for coupling the worm-gears thereto, substantially as described.

3. In an electric locomotive, the combination with an electric motor, of worms of different pitch, one at each end of the armature-shaft, worm-gears meshing with the worms and loosely mounted on the drive-wheel axles, and connected and oppositely operating clutches, also mounted on the axles, for coupling the worm-gears thereto, substantially as described.

573,906. BUTTON OR CLASP. JOHN C. MCRAE, Lake Providence, La. Filed Aug. 14, 1896. Serial No. 602,799. (No model.)



Claim.—1. In a device of the character described, the combination with a pair of jaws, one of which carries a button, of a hinge-plate secured to each of said jaws, a pivotal pin connecting the hinge-plates, and a spring-latch for holding the jaws in a locked position, substantially as set forth.

2. In a device of the class described, the combination with a pair of pivoted jaws, of diagonally opposite handle-bars secured to the jaws, and a spring T-shaped latch for holding the handle-bars in a locked position; substantially as set forth.

3. In a device of the character described, the combination with a pair of pivoted jaws, the inner faces of which are serrated, of diagonally opposite handle-bars secured to the jaws, one of said jaws having a T-shaped head, and a spring-latch carried thereby, substantially as described.

4. In a device of the class described, the combination with a pair of pivoted jaws, of handle-bars secured to said jaws, one of said handle-bars being provided with a T-shaped head and carrying a spring-latch, and the other having a U-shaped notch adapted to be engaged by the spring-latch, substantially as described.

573,907. BICYCLE-TIRE. LEMUEL C. NEAL, Lewiston, Idaho. Filed June 27, 1896. Serial No. 597,256. (No model.)

Claim.—1. A wheel-tire composed of a circumferential series of springs each formed from a metal blank, the same being given a U-shaped bend at its central portion to form the free active end of the spring, and the terminal portions thereof being extended in substantially parallel relation, and having their extremities spaced apart and adapted to be inserted into the rim upon opposite sides of the center thereof, substantially as described.

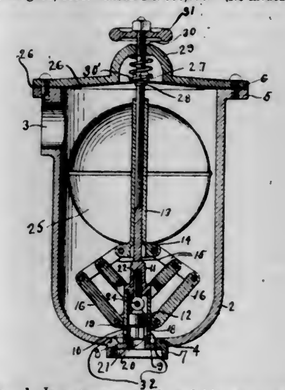


2. A wheel-rim having a central circumferential flange upon its outer surface, in combination with a circumferential series of springs embracing said flange and having their terminals coiled adjacent to their extremities, with the coils seated upon opposite sides of said flange and the extremities of the springs inserted into the wheel-rim at each side of the flange, substantially as described.

3. A wheel rim having a central circumferential flange extending around its outer surface and provided with transverse perforations, in combination with a circumferential series of springs having their inner ends arranged upon opposite sides of said flange, and a lace rove through said perforations and embracing said springs, substantially in the manner and for the purpose described.

4. The combination with a wheel-rim having a circumferential flange extending centrally around its outer surface, of a circumferential series of springs each having a U-shaped bend at its central portion embracing said flange, the terminals of the springs being seated upon either side of said flange, and a flexible sheath or cover surrounding and inclosing said springs and having its longitudinal edges attached to the rim, substantially as described.

573,908. AUTOMATIC STEAM-TRAP. NILS NILSON, Minneapolis, Minn., assignor to the Nilson Manufacturing Company, St. Paul, Minn. Filed Aug. 12, 1895. Serial No. 558,958. (No model.)



Claim.—1. In a steam-trap, the combination, with a casing having an inlet and outlet opening, of a diaphragm arranged therein, a main valve for closing said outlet-opening, and connected to said diaphragm and movable therewith, an auxiliary valve carried by said main valve, and means for moving the same independently of said main valve, substantially as described.

2. In a steam-trap, the combination, with a casing having an inlet and outlet opening, of a diaphragm arranged therein, a main valve having its stem connected to said diaphragm and arranged to close said outlet-opening, an auxiliary valve, a sleeve arranged upon the stem of said main valve, pivotal connections between said sleeve and said auxiliary valve, whereby when said sleeve is raised or low-

ered said auxiliary valve will be opened or closed, substantially as described.

3. In a steam-trap, the combination with the casing having an inlet and outlet opening, of a diaphragm, a main valve arranged to close said outlet-opening, and having its stem connected to said diaphragm, an auxiliary valve, the sleeve carried by said stem, pivotal connections between said sleeve and said auxiliary valve, and a float carried by said sleeve, whereby the same will be raised and said auxiliary valve opened as the water accumulates in said trap substantially as described.

4. In a steam-trap, the combination with the casing having an inlet and outlet opening, of a diaphragm, a main valve connected thereto, and comprising a seat 8, a disk 9 having an opening 20, a tube or cylinder arranged upon said disk, and provided with openings in its side walls, an auxiliary valve arranged within said tube for covering said opening 20, and means for raising said auxiliary valve, and permitting the water to flow from said trap when said main valve is closed, substantially as described.

5. In a steam-trap, the combination with the casing having the inlet and outlet openings, of the valve for closing said outlet-opening, the diaphragm, the stem 11 connecting said diaphragm and said valve whereby the valve will be opened or closed as the diaphragm is depressed or raised, an auxiliary valve covering an opening leading through said main valve, a float carried by said stem, the pivoted arms 15 and 16 supporting said float thereon, and the arms 23 connecting said arms 15 and said auxiliary valve whereby as said float is raised or lowered said valve will be moved simultaneously, substantially as described.

6. In a steam-trap, the combination, with a casing having an inlet and an outlet opening, of a valve arranged to close said outlet-opening, the tube or cylinder carried by the movable portion of said valve, the diaphragm arranged in the upper part of said casing, the stem connecting said diaphragm and said tube, the auxiliary valve arranged within said tube for covering an opening leading through said first named valve, said tube being provided with a series of ports or longitudinal slots in the opposite sides thereof, the float 25, the sleeve carried thereby and slidably arranged upon said stem, the arms 15 and 16 connecting said sleeve and said tube, the arms 23 having one end pivoted to said arms 15 and their opposite ends to said auxiliary valve through said longitudinal slots, whereby when said sleeve is raised or lowered said auxiliary valve will be operated simultaneously, substantially as described.

7. In a steam-trap, the combination, with a casing having an inlet and outlet opening, of a diaphragm arranged therein, a main valve having its stem connected to said diaphragm and arranged to close said outlet-opening, an auxiliary valve carried by said main valve, and adapted to close an opening therein, a float arranged upon the stem of said main valve, pivotal connections between said float and said auxiliary valve, whereby when said float is raised by the accumulated water in the trap said auxiliary valve will be opened, and be permitted to close when the water has passed out of the same, substantially as described.

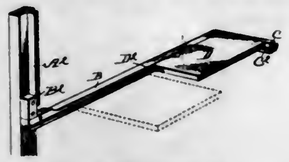
8. In a steam-trap the combination, with a casing having an inlet and outlet opening, a valve arranged in said outlet-opening, a diaphragm arranged in the upper part of said casing opposite said outlet-opening, and connected to the stem of said valve, an auxiliary valve, a series of levers connected thereto, and means adapted to be raised by the accumulated water in the trap for operating said levers and raising said valve, substantially as described.

9. In a steam-trap, the combination with the casing having an inlet and outlet opening, of the diaphragm arranged in the upper part of said casing, the duplex valve for closing said outlet-opening, and comprising a main and auxiliary valve, said main valve having its stem connected to said diaphragm, means for operating said auxiliary valve independently of said main valve, the spring arranged upon said stem above said diaphragm for normally holding said main valve open, the upper end of said stem being threaded, and the hand-wheel provided thereon, for the purpose set forth.

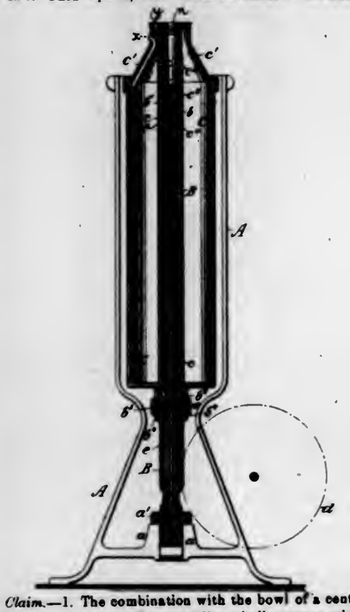
10. In a steam-trap, the combination with the casing having inlet and outlet openings, of a diaphragm therein, a main valve for closing said outlet-opening, and movable with said diaphragm, an auxiliary valve arranged to be raised and lowered simultaneously with said main valve, and means for operating said auxiliary valve independently of said main valve, substantially as described.

573,909. TABLE ATTACHMENT FOR BEDS. JAMES A. NORTON, Odebolt, Iowa, assignor of two-thirds to John R. Mattes and Frank P. Motte, same place. Filed Mar. 13, 1896. Serial No. 583,140. (No model.)

Claim.—A table attachment for beds, comprising two arms grooved on their inner surfaces and pivotally connected with the corner-posts of the head-board of a bed, stops secured to said corner-posts to support the arms in a horizontal plane, a cross-piece at the outer ends of said arms having a shoulder on its inner face, a table-top slidingly mounted in said grooves and designed to rest on said shoulder, and catches for holding said table in place, substantially as set forth.



573,910. CENTRIFUGAL MACHINE. OLOF OHLSSON, Newark, N. J. Filed Sept. 12, 1895. Serial No. 562,289. (No model.)



Claim.—1. The combination with the bowl of a centrifugal machine having an inner wall surrounding a hollow space coincident with the axis of the bowl, of a stationary spindle adapted to fit loosely and freely along its length into said hollow space and bearings upon said spindle at its upper and lower ends for the support of the bowl, substantially as described.

2. The combination with the bowl of a centrifugal machine having an inner wall surrounding a hollow cylindrical space coincident with the axis of the bowl and extending nearly the entire length of the bowl, of a stationary spindle, independent of the bowl and adapted to fit loosely or freely along its length into said hollow space and to reach nearly to the top of the bowl, a bearing upon said spindle at the upper end for the support of the bowl and another bearing lower down on said spindle, and driving mechanism connected with the bowl, substantially as described.

3. The combination with the bowl C of a centrifugal machine, having an inner cylindrical wall *c* surrounding a hollow cylindrical space extending nearly the length of the bowl and coincident with the axis of the bowl, of a stationary spindle B adapted to fit loosely or freely along its length into said space, ball-bearing b^3 b^4 at the upper end of the spindle and ball-bearing b^3 b^4 near its lower end, and mechanism for driving the bowl, substantially as described.

4. The combination with the bowl of a centrifugal machine and a stationary spindle upon and around which it revolves, of a ball-bearing therefor, the balls of which are carried by the rotating bowl, substantially as described.

5. The combination with the bowl of a centrifugal machine having an inner wall surrounding a hollow space coincident with the axis of the bowl, of a stationary spindle adapted to fit loosely and freely along its length into said hollow space, bearings upon said spindle at its upper and lower ends for the support of the bowl, an extension of the bowl projecting along the stationary spindle beyond the end of the bowl and driving mechanism connecting with said extension, substantially as described.

573,911. ELECTRIC-ARC LAMP. LEVI H. PAGE, Chicago, Ill. Filed Mar. 12, 1896. Serial No. 582,958. (No model.)

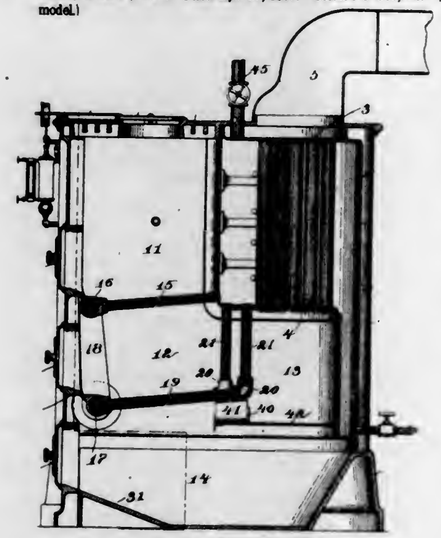


Claim.—1. In an electric lamp, a globe having an air-tight closed lower end and carrying within such end a support for the lower carbon, said globe being annularly enlarged at its upper end to form an interior shoulder, a mica disk removably arranged within said upper end of the globe on said shoulder, and means for tightly binding the edges of the disk on said shoulder, substantially as set forth.

2. In an electric lamp, a globe having an air-tight closed lower end and carrying within such end a support for the lower carbon, said globe being provided at its open upper end with an interior shoulder, a mica shield-disk removably arranged within the upper end of the globe on said shoulder and provided with a central carbon-hole and a series of ventilating openings, and a grooved cap-ring fitting over the upper edge of the globe and provided with an inturned retaining-flange projecting over the upper edge of the disk, substantially as set forth.

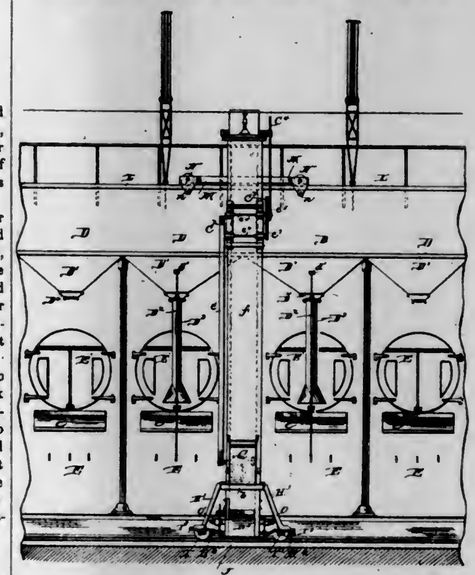
3. In an electric lamp, a cylindrical globe having a removable top cover and provided at its lower end with a narrowed cylindrical neck extension, a metallic globe-supporting cup interiorly tapered to receive said neck extension of the globe in a tight wedging fit, said cup being further provided with an integral centrally upwardly disposed tube portion forming a socket, a short metallic holder-rod fitting at its upper end in said socket and adapted to be clamped within the ordinary chuck at the lower end of the lamp-frame, and a carbon supporting clamp-collar projecting above and fitted on the socket-forming tube portion of said cup, substantially as set forth.

573,912. UPRIGHT-BOILER FURNACE. EDWARD B. PARKHURST, Woburn, Mass. Filed Apr. 23, 1896. Serial No. 588,781. (No model.)



Claim.—An upright boiler having the main water-space thereof entirely at the rear of the main fuel-chamber, and the combustion-chamber beneath the said water space, and also having vertical water-walls extending down around the said combustion-chamber and forward on opposite sides of the fuel-chambers, an upper series of water-grate bars entering the front side or shell of the said main water-space near the lower edge of the said front side, a lower series of water-grate bars having their rear ends joined to vertical connections entering the lower tube-sheet, and a water-box or manifold having upper and lower portions which are connected with each other and also with the front ends of the water-grate bars of the two series, respectively, the said water-box or manifold also communicating with the water-walls, substantially as described.

573,913. PORTABLE ELEVATOR. WILLIAM J. PATTERSON and EDMUND W. HEYL, Pittsburg, Pa., assignors to Joseph A. Jeffrey, Columbus, Ohio. Filed Nov. 9, 1894. Serial No. 528,321. (No model.)



Claim.—1. In a mechanism for feeding boiler-furnaces, the combination with a hopper or receptacle adapted to deliver the fuel at each of several places, and means for initially supplying fuel at each of several places, of the traveling elevator having the motor mounted upon the frame thereof, power-transmitting devices connecting said motor with the elevator-shafting, the guideway for the elevator, the guide-wheels for said guide, and the reversible mechanism for transmitting power from the motor to the said wheels, substantially as set forth.

2. In a mechanism for feeding boilers having an initial supply bin or receptacle with means for delivering fuel at each of several points, and having an upper bin or tank with means for delivering fuel at each of several points, the combination of the track-rail, the bodily-movable elevator, the wheels fitting said track-rail, the supplemental guide for the elevator-frame above the aforesaid track-rail and guide, the motor secured to and traveling with the elevator-frame, power-transmitting devices connecting the motor with the elevator, and the means driven by the elevator for moving bodily the elevator-frame, substantially as set forth.

3. The combination with the elevator-frame of the track-rail or guide, the propelling-wheels mounted on the elevator-frame and engaging with said rail or guide, the endless elevator carried by the frame, gearing mounted on the elevator-frame and driven by the elevator, and means for connecting the propelling wheels with said gearing, substantially as set forth.

4. The combination with the bodily-movable elevator having guides for the bottom and the top thereof, of the motor secured to and moving with the elevator-frame, the elevator driving-shaft G^2, and gearing between the driving-shaft G^2 and the motor, substantially as set forth.

5. The combination with the elevator and its frame mounted on supporting-wheels, of the shaft F^2, the gearing for driving said sup-

porting-wheels, the oppositely-moving chains connecting such gearing with sprockets on the shaft F', and the clutches for engaging said sprockets with said shaft, substantially as set forth.

6 The combination of the bottom guide, the top guide, the horizontally-traveling frame engaging with the upper guide and resting upon and engaging with the lower guide, the elevator, mounted on said frame, and the power mechanism mounted on the same frame, and held by the aforesaid guides, said frame, elevator and power mechanism forming a unitary structure, substantially as set forth.

7. The combination of the elevator, the horizontally-adjustable frame which supports said elevator, the horizontal stationary guide upon which the elevator-frame bears, transporting-wheels engaging with said guide to move the frame, and means on the frame for positively rotating said transporting-wheels while engaging with the guide to cause bodily movement of the elevator and frame, substantially as set forth.

8. The combination of the horizontally-movable frame, the elevator thereon, the upper guide for the frame, the lower guide for the frame, the motor or engine, the support for the motor or engine rigidly connected to the elevator-frame, transporting-wheels, a rotary reversible shaft for actuating the transporting-wheels in either direction, and means connecting the motor or engine with said shaft, substantially as set forth.

9. The combination with the vertically-arranged horizontally-adjustable elevator frame, of a delivery-chute at or near the upper end of said frame, and the stationary guide for said frame, on horizontal lines below the delivery-chute, substantially as set forth.

10 The combination with the vertically-arranged elevator, the vertical frame therefor, the elevator-shaft G³ at the upper end of said frame, the elevator-shaft F', at the lower end of said frame, the supplemental laterally-projecting frame *b*, rigidly secured to the sides of the elevator-frame above the bottom thereof, the laterally expanded or overhanging frame at the upper end of the elevator-frame, and the delivery-chute supported by the said overhanging frame, substantially as set forth.

11. The combination with the vertically-arranged elevator, the horizontally-adjustable frame for said elevator, and the bars or frame M, secured to the elevator-frame and extended beyond the sides thereof, of means below said bars for preventing the elevator-frame from swinging, substantially as set forth.

12. The combination with the vertically-arranged elevator, the horizontally-adjustable frame therefor, the carriage-frame at the lower end of the elevator-frame for giving it vertical support, said frame being extended laterally beyond the elevator-frame and having wheels arranged to provide a relatively expanded supporting-base, and a stationary guide above said carriage engaging with the elevator-frame, substantially as set forth.

13. The combination with the vertically-arranged elevator, the frame therefor, the driving-shaft at the upper or delivery end of the elevator, the shaft at the lower end of and driven by the elevator, means for propelling the elevator and frame bodily laterally, and driving devices interposed between the propelling means and the lower elevator shaft, and actuated thereby, substantially as described.

14. The combination of the elevator, the frame therefor bodily movable laterally, the shaft at the upper end of the elevator, the shaft at the lower end of and driven by the elevator, the transporting-wheels and driving devices, connected to the lower elevator-shaft for positively rotating said wheels, substantially as set forth.

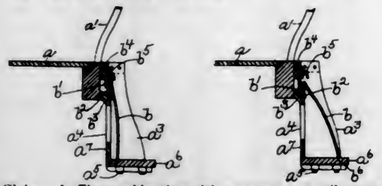
15. The combination of the elevator, the bodily-movable frame therefor, the upper elevator-shaft, a shaft engaging with and driven by the elevator, transporting-wheels for carrying the elevator and frame laterally, and driving devices engaging with the said shaft driven by the elevator and positively rotating the said transporting-wheels, substantially as set forth.

16. The combination with the elevator, having a chain arranged to travel upward on substantially vertical lines, the horizontally-movable transporting-frame for said elevator, a lower guide and an upper guide both engaging with the said frame and arranged to prevent vibration of the elevator and hold it in vertical lines as aforesaid, substantially as set forth.

17. In a system of mechanism for elevating materials and delivering them at either of several points, the combination of the horizontally-movable frame, a vertically-arranged elevator thereon, a receiving-boot at the bottom of the elevator adapted to be moved to either of several points of supply, a series of bins or receptacles parallel to the path of the elevator-frame, transporting devices at the lower end of the elevator-frame, mechanism for positively driving the transporting devices, a frame or platform above the transporting devices, a motor or engine thereon, and a lever accessible from said platform for throwing the driving mechanism into and out of action, substantially as set forth.

18. The combination of the elevator, the bodily laterally-movable frame therefor, the two supporting-wheels I³ I³ at the lower part of said elevator-frame, the two independent trains of gearing for driving said wheels, the shaft for actuating both said trains of gear, and the clutch for throwing said trains of gear into and out of action alternately, substantially as set forth.

573,914. RUNNING-BOARD GUARD FOR STREET-CARS. ETTA W. PHINNEY, Deering, Me., and LIZZIE TRINDER, Boston, Mass.; said Phinney assignor to Mary E. Whitney Deering, Me. Filed Sept. 11, 1896. Serial No. 605,474. (No model.)

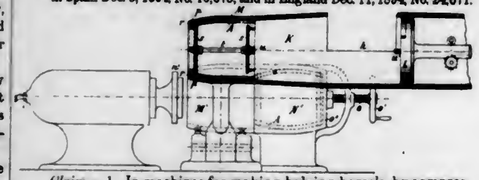


Claim.—1. The combination with an open street-railway car having a running board rigidly fixed thereto, of a guard for said running-board having its lower end movable away from and toward the side of the car to cover and uncover the said running-board, means to loosely attach the upper end of the guard to the car below the level of the car-floor and permit of vertical movement of the guard to enable its lower end to be moved as described, and means to lock the guard in its closed and open positions, substantially as described.

2. The combination with an open street-railway car having a running-board rigidly fixed thereto, of a guard for said running-board secured at its upper end to the car below the level of the floor and movable vertically, a bead attached to the car and provided with a longitudinal slot or groove on its under side for the reception of the upper edge of the guard in its closed position, and means to lock the said guard in its open and closed positions, substantially as described.

3. The combination with an open street-railway car having a running-board rigidly fixed thereto, of a guard *b* provided with eyes *b'*, and guides b^2 on which said eyes are adapted to slide to permit the lower end of the guard *b* to be moved away from and toward the side of the car to cover and uncover the said running board, substantially as described.

573,915. BARREL-MACHINE. JOSEF POLEK, Vienna, Austria-Hungary. Filed Jan. 2, 1895. Serial No. 533,671. (No model.) Patented in Hungary Nov. 28, 1894, No. 1,690; in France Dec. 3, 1894, No. 243,323; in Belgium Dec. 3, 1894, No. 112,975; in Italy Dec. 3, 1894, XXIX, 37,717, LXXIV, 45; in Luxemburg Dec. 3, 1894, No. 2,187; in Germany Dec. 4, 1894, No. 85,641; in Austria Dec. 5, 1894, No. 44/6,265; in Spain Dec. 6, 1894, No. 16,675, and in England Dec. 11, 1894, No. 24,071.



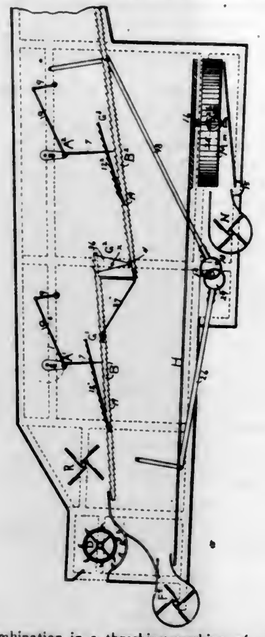
Claim.—1. In machines for making bulging barrels, by compression, from cylindrical blanks, the combination with a piston L of two stationary conical forms or dies N, N', pistons *n*, *n'* placed in line with dies N, N', and of two conical forms or dies M; M' adapted to be swung alternately in line with piston L and with pistons *n*, *n'*; substantially as set forth.

2. In machines for making bulging barrels, by compression, from cylindrical blanks, the combination with a piston L of a feeding-tube K, two stationary conical forms or dies N, N', pistons *n*, *n'* placed in line with dies N, N', and of two conical forms or dies M, M' adapted to be swung alternately in line with piston L and with pistons *n*, *n'*; substantially as set forth.

573,916. THRESHING-MACHINE. CHARLES QUINTUS, FRANK QUINTUS, JOHN RITCHIE, PAUL QUINTUS, PHILIP BEEBE, and FREDERIC LUKERMANN, Freeport, Ill. Filed May 31, 1895. Serial No. 551,317. (No model.)

Claim.—1. The combination of the shaker formed with sections between which is a step or fall, the inclined extensions or aprons carried by the shaker, the rakers mounted above the said extensions or aprons, and means for operating the rakers, substantially as set forth.

2. The combination, in a threshing-machine, of the framework, the shaker adapted to reciprocate as a whole, and provided with the inclined aprons or extensions, the reciprocating rakers above the said inclined aprons or extensions, crank-shafts on which such rakers are mounted, rock-shafts for operating such crank-shafts, the cylinder, and means for operating the shaker, substantially as set forth.



3. The combination in a threshing-machine, of a shaker comprising two sections B' and B³ with a step or fall between their adjacent ends, and the oscillating rakers G² pivoted between the ends of such sections, and having their lower ends connected with the lower section of the shaker and their upper ends arranged at the end of and substantially in the plane of the upper section, whereby they are operated to feed the straw from the upper to the lower section as the shaker is vibrated, substantially as set forth.

4. The combination, in a threshing-machine, of a shaker comprising two sections, with a step or fall between their inner or adjacent ends, and each section being provided with an inclined apron or extension 12', 12^3, forming the steps or falls G' and G³ for the straw, and the oscillating rakers 36 pivoted on a shaft between the inner adjacent ends of the shaker sections, and having their lower ends connected with the lower section, and their upper ends toothed whereby they operate to feed the straw from one to the other section of the shaker, substantially as set forth.

5. In a threshing-machine, the combination of the grain-carrier, means for operating it, a revolving shoe having a sieve-surface upon which the grain is delivered, a brush extending from the center to one side of the sieve surface of the shoe, and means for turning the shoe and the brush, substantially as set forth.

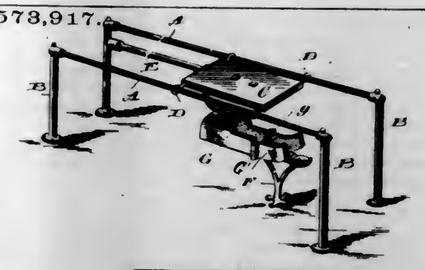
6. In a threshing-machine the combination of the straw-shaker, the grain-carrier, a revolving shoe having a sieve-surface upon which the grain is delivered, and a cone-shaped brush 28 mounted above the said sieve-surface, substantially as set forth.

7. The combination in a threshing-machine, of a straw-shaker, a grain-carrier upon which the grain falls as it separates from the straw, a revolving shoe mounted on a vertical axis, and having a sieve-surface, upon which the grain is delivered, a cone-shaped brush 28 above the said sieve-surface, the gearing for driving the shoe and the brush, and a cleaning-fan N arranged to blow a blast through the sieve surface of the shoe, substantially as set forth.

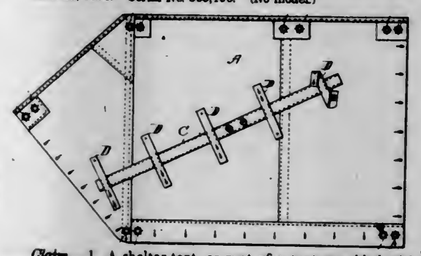
573,917. SHOE-POLISHING MACHINE. JOSEPH T. RAY, 2d, Newport, R. I. Filed Apr. 2, 1896. Serial No. 585,949. (No model.)

Claim.—In a shoe polishing machine, the two horizontal parallel rods A, mounted on suitable legs, the cross head C carrying eyes at its ends adapted to work on same, connecting-rod E on one end of cross-head, the metallic casing G having resilient arms G' with offsets midway their lengths, the inclined member or plate K, having a brush secured on its inner face, suitable connections with the cross-head, all combined substantially as shown and described.

573,917.



573,918. SHELTER-TENT. EDMUND RICE, U. S. Army. Filed Mar. 28, 1896. Serial No. 585,190. (No model.)



Claim.—1. A shelter-tent, or part of a tent, provided with suitable permanent fastenings, and with reinforced portions for the purpose of securing it and preventing tearing when rolled and preventing leakage when used as a tent, substantially as described.

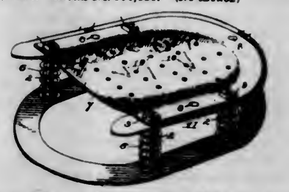
2. A shelter-tent, or part of a tent, provided with reinforced and suitable permanent fastenings for the purpose of securing it when rolled and for holding it in place when worn as a cape, substantially as and for the purpose set forth.

3 The combination in a shelter-tent, or part of a tent, of securing means to form a roll, a reinforce and a guy-strap adapted to be secured to said reinforce to form a fastening when used as a cape, substantially as described.

4. The combination in a shelter-tent, or part of a tent, of securing means to form a roll, a reinforce and a guy-strap adapted to form a fastening when used as a cape and to guy the tent when pitched, substantially as described.

5. The combination in a shelter-tent, or part of a tent, of securing means to form a roll, a reinforce and a guy-strap adapted to form a fastening when used as a cape and to guy the tent when pitched, and to tie the terminals when the tent is rolled, substantially as described.

573,919. KNEE-PAD. JOHN T. RICE, Little River, Tex. Filed Sept. 17, 1896. Serial No. 606,159. (No model.)



Claim.—1. A knee-pad comprising a flat base, an open supporting-frame yieldingly mounted on the base and having its opening conforming to the configuration of the knee, and a pad secured to the supporting-frame, substantially as described.

2. A knee pad comprising a flat open base, an open supporting-frame yieldingly mounted on the base, and a knee-pad secured to the supporting-frame and provided with perforations, substantially as described..

3. A knee-pad comprising a flat elliptical base, a U-shaped supporting-frame yieldingly mounted on and arranged parallel with the base, and a pad secured to the U-shaped supporting-frame, substantially as described.

4. A pad of the class described, comprising a base, guide-bolts secured in said base and extending therefrom, each of said guide bolts having its upper end screw-threaded, a U-shaped supporting-frame disposed above the base and adapted to slide upon said guide-bolts, a cushion secured by suitable means upon the supporting-frame and

adapted to prevent contact of the knee with the surface upon which the pad is placed, said cushion being provided with openings through which the guide-bolts pass to assist in retaining the cushion upon the supporting-frame, and also having perforations for ventilating the pad, coiled springs interposed between the base and the supporting-frame and encircling the guide-bolts, said coiled springs being adapted to yieldingly hold the supporting-frame above the base, and nuts mounted on the threaded ends of the guide-bolts, said nuts being adapted to regulate the tension of the coiled springs and also retain the supporting-frame upon the guide bolts, substantially as described.

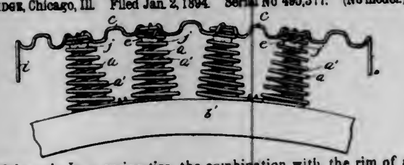
573,920. SPRING-TIRE FOR VEHICLE-WHEELS. JOSEPH RIDER, Chicago, Ill. Filed Oct. 16, 1893. Serial No. 488,238. (No model.)



Claim.—1. In a vehicle-wheel and in combination with the rim thereof, a tire embracing in its structure a circumferential succession or series of coiled springs having their lines of flexion or longitudinal axes radial, a peripheral distinctive part of hard material that so unites said springs as to permit, when a portion of the structure is compressed, automatic shortening of the outer circumference of said tire, and a rubber or other elastic casing or cover.

2. In a vehicle-wheel and in combination with the rim thereof, a tire, embracing in its structure a series of radially-flexing coiled springs a separate peripheral portion of hard material which so unites springs that automatic shortening of the circumferential extent of the outer surface of the tire may occur under compression, a padding of soft material surmounting the metallic or hard portions, and an inclosing casing or covering of rubber or other elastic material.

573,921. SPRING-TIRE FOR VEHICLE-WHEELS. JOSEPH RIDER, Chicago, Ill. Filed Jan. 2, 1894. Serial No. 496,377. (No model.)



Claim.—1. In a spring-tire, the combination with the rim of a vehicle-wheel, of a series of helical springs externally of said rim, in double alinement, or staggered, and a peripheral structure that connects one spring with another of the series at their outer ends.

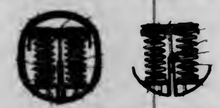
2. In a spring-tire, the combination with the rim of a vehicle-wheel, of a series of helical springs externally of said rim, in double alinement, or staggered, a series of supplemental helical springs respectively concentric with the primary springs, and a peripheral structure that connects one spring with another of the succession at their outer ends.

3. In a vehicle-wheel, and in combination with the rim thereof, a series of coiled springs *a* with an outer tread structure *c*, a spring and section of tread structure being formed of a single piece of wire, substantially as set forth.

4. In a vehicle-wheel and in combination with the rim thereof, a spring *a* and tread portion *c*, composed of a single piece of wire and applied conjointly with counterparts to form a continuous cushion, substantially as set forth.

5. The spring *a*, with the angularly-emanating sinuous extension *c* in counterpart and alternating series, interlocked and mounted about the rim of a vehicle-wheel, substantially as specified.

573,922. SPRING-TIRE FOR VEHICLE-WHEELS. JOSEPH RIDER, Chicago, Ill. Filed Oct. 31, 1896. Serial No. 610,773. (No model.)



Claim.—1. As a new article of manufacture, in a spring-tire, the combination of a base-band that will encircle the rim of a wheel concave in cross-section and adapted to rest in a hollow or trough-like rim, a series of outer arched flexible plates, a spring structure interposed between the said band and the said arched plates, a covering of elastic material, and readily-accessible means for constricting or removably securing the structure, thus formed, upon a wheel-rim, the whole constituting an annular cylindrical cushioning structure adapted to the purpose set forth.

2. In a tire for vehicles, the combination of a band in one or more parts, adapted to encircle a wheel-rim, a double alinement of springs secured at their inner portions to the band, a raised portion or rib connected with said band, that is intermediate of the spring-rows, and a tread portion or band that connects said springs at their outer ends.

3. In a spring-tire the combination of a band to encircle the rim of a wheel, a rib or central raised portion of, or on said band, a series of radially arranged helical springs and extensions joined with said springs that are so connected with the rib or raised part of the band as to permit of spring compression and at the same time restrain "rolling" or undue lateral flexion of the spring structure.

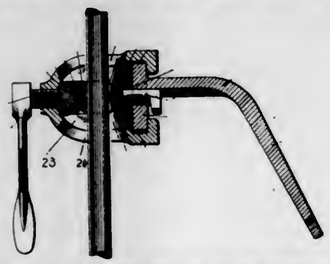
4. In a spring-tire, the combination of a lower band to encircle the rim of a wheel, a series of springs mounted upon and surrounding said band and joined one to another at their outer ends, and a series of arched flexible plates mounted upon said springs.

5. In a tire for vehicles, in combination with an inner or supporting band, a metallic spring structure, an outer band structure perforated, metallic fasteners adapted to be entered into the spring-coils, and a portion of said fasteners suited for insertion through the perforations aforesaid and bent down to secure the parts of the structure substantially as shown and set forth.

6. In a tire, the combination with a lower or base band, and a series of helical springs, of a series of arched transverse plates that are flexibly joined one with another to form a circumferentially extensible and contractible band.

7. In a tire, the combination of a concave inner band, a central rib, plates on either side of said rib as seats for springs, and a series of radially-arranged helical springs in double alinement.

573,923. ADJUSTABLE SUPPORT. FREDERICK A. ROBERTS, Gardner, Mass. Filed Apr. 29, 1896. Serial No. 589,561. (No model.)



Claim.—1. In an adjustable support, the combination of a base or bracket having a circular or disk-shaped head, a yoke, a socket-piece mounted in said yoke, and means for clamping said yoke and socket-piece into engagement with the opposite sides of said head, substantially as described.

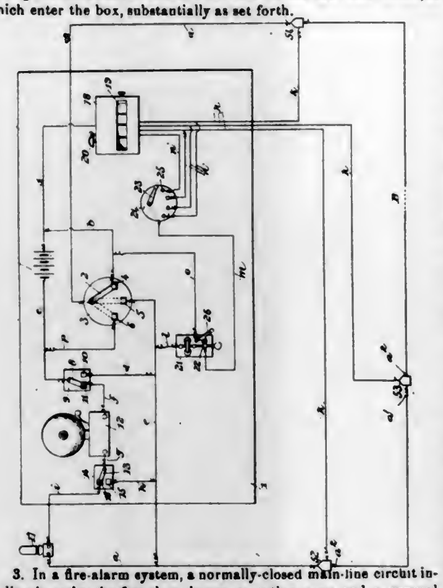
2. In an adjustable support, the combination of a base or bracket having a circular or disk-shaped head, a yoke engaging the rear face of said head, a socket-piece engaging the front face of said head, a pin concentric with the head, and arranged to fit into a recess in the socket-piece, and a clamping device for securing a rod or pipe section in the socket-piece, and clamping the yoke and socket-piece into engagement with said head, substantially as described.

3. In an adjustable support, the combination of a base or bracket having an extending head, a piece or yoke engaging said head, a socket-piece having a lug or projection engaging a groove in the yoke, clamping-sections and a follower mounted in said socket-piece, a clamping-screw for securing a rod or pipe section in the socket-piece, and simultaneously clamping the yoke or socket-piece into engagement with the head extending from the bracket, and a dowel-pin extending from the base or bracket into a recess in the socket-piece for preventing the parts from separating, substantially as described.

573,924. FIRE-ALARM SYSTEM. ALBERT C. ROGERS, Plainfield, N. J. Filed Jan. 25, 1896. Serial No. 576,887. (No model.)

Claim.—1. In a fire-alarm system, a normally-closed main-line circuit including therein in series the fire-boxes, a station-gong and a general gong or whistle, a normally open annunciator-circuit including the main line and an annunciator having a wire connection with each box and with the main line, and a circuit-breaker arranged in each box and adapted to alternately break the main-line circuit and close the annunciator-circuit, substantially as set forth.

2. In a fire-alarm system, a main-line circuit, normally closed and including in series the fire-alarm boxes, a station-gong and a general gong or whistle, a normally open annunciator-circuit including the main line and an annunciator having separate wire connections with each box and a single wire connection with the main line, and means for alternately breaking the main-line circuit in each box, and closing the annunciator-circuit with either of the main-line terminals which enter the box, substantially as set forth.



3. In a fire-alarm system, a normally-closed main-line circuit including in series the fire-alarm boxes, a station-gong and a general gong or whistle, an annunciator-circuit including the main line and an annunciator having a connection with the main line and separate wire connections with each box, and a circuit-breaker arranged in each box and having suitable connections with the wire-terminals in the boxes to provide for alternately breaking the main-line circuit in each box, and closing the annunciator-circuit with either of the main-line terminals which enter the box, substantially as set forth.

4. In a fire-alarm system, a normally-closed main-line circuit including therein in series the fire-boxes, an annunciator-circuit having a separate wire connection for each box, and a circuit breaker arranged in each box and suitably connected with the main line and the annunciator-wire terminals to provide for alternately breaking the main line circuit in each box and closing the annunciator-circuit with either of the main-line terminals which enter the box, substantially as set forth.

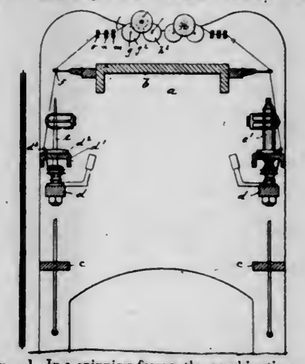
5. The combination with a signaling-box; of a main-line signal-circuit having two wire-terminals entering said box, an annunciator-circuit having a single wire-terminal entering said box, and a circuit-breaker consisting of a suitably-rotated contact-disk arranged in said box and provided on its periphery with spaced groups of contact-teeth and an outer smooth contact portion at one side of said teeth, an auxiliary contact-disk arranged to rotate with and at one side of the toothed contact-disk, said auxiliary contact-disk being provided at one side with a series of offstanding contact-pins projecting into the spaces between the teeth of the main contact-disk, a contact-brush connected with one of said main line-wire terminals and normally bearing on the smooth contact portion of the main contact-disk, an oppositely-located contact-brush connected with the other of the said main-line-wire terminals and adapted to ride over the contact-teeth of the main contact-disk and provided with a supplemental brush normally contacting with said auxiliary contact-disk, and an annunciator-wire brush connected with the annunciator-wire terminal and also adapted to ride over said contact-teeth and said contact-pins, substantially as set forth.

6. In a fire alarm system, a normally-closed main line circuit including therein in series the fire-boxes, and station-gong, a normally open annunciator-circuit including a portion of the main line and an annunciator having a connection with the main line and separate wire connections with each box a circuit-breaker arranged in each box and having suitable connections with the wire-terminals therein to provide for alternately breaking the main-line circuit and closing the annunciator-circuit with either of the main-line terminals which enter the box, and a switch having a lever connected directly with the main line and separate contact-points respectively connected with one pole of the working battery, and with a continuation of the main line, so as to complete the circuit through the gong, substantially as set forth.

7. In a fire-alarm system, a normally-closed main-line circuit including therein in series, the fire-boxes, a working battery, and a station-gong, a normally open annunciator-circuit including a portion of the main line and an annunciator having a connection with the main line and separate wire connections with each box, a circuit-breaker arranged in each box and suitably connected with the wire-terminals therein to provide for alternately breaking the main-line circuit and closing the annunciator-circuit with either of the main-line terminals which enter the box, a switch having a lever directly connected with the main line and three separate contact-points respectively having wire connections with one pole of the battery, with the portion of the main line between the station-gong and the first fire-box, and with the portion of the main line between the battery and the station-gong, a telegraphic instrument having a wire connection with the connection between the intermediate contact-point of the three-point switch and the main line, and a switch having a separate wire connection with each drop of the annunciator, and a single wire connection with the telegraphic instrument, substantially as set forth.

8. In a fire-alarm system, a normally-closed main-line circuit including therein in series the fire-boxes, a station-gong, and a general gong or whistle, a normally open annunciator-circuit including a portion of the main line and an annunciator having a connection with the main line and separate wire connections with each box, a circuit-breaker arranged in each box and having suitable connections with the wire terminals therein, a switch having a lever connected directly with the main line and separate contact points respectively connected with one pole of the working battery, and with the portion of the main line between the general gong or whistle and the first box, a telegraphic instrument having a wire connection with the connection between the main line and one of the points of said switch, said telegraphic instrument being provided with a circuit-closing lever adapted to be thrown into contact with the point of the telegraphic instrument and having a short-circuit wire connection with the wire leading from one pole of the battery to one point of the switch whose lever is connected with the main line, and a switch having a separate wire connection with each drop of the annunciator and a single wire connection with the telegraphic instrument, substantially as set forth.

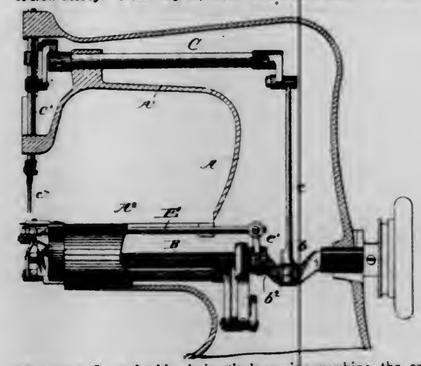
573,925. SPINNING-FRAME. WILLIAM D. ROSENCRANTS, Hohokus, N. J. Filed July 1, 1896. Serial No. 597,699. (No model.)



Claim.—1. In a spinning-frame, the combination with its frame, of two parallel sectional carrying-rollers mounted in said frame, a series of condenser-spools carrying the roving loosely arranged on said sectional rollers and having its roving in frictional contact therewith, means for preventing lateral motion of the condenser-spools, a series of drawing-rollers also mounted in the frame, a spindle-rail traversing the frame, and a series of bobbin-carrying spindles mounted in said spindle-rail, all said parts, substantially as and for the purposes described.

2. In a spinning-frame, the combination with its frame, of two parallel shafts mounted in said frame, a series of rollers on each of said shafts and in close proximity to each other, a series of condenser-spools carrying the roving loosely mounted on said rollers and having their roving in frictional contact therewith, a head or flange on each end of each condenser-spool and engaging the space between adjoining rollers, to thus prevent lateral motion of the said condenser-spools, a series of sets of drawing-rollers, revolving at various speeds, also mounted in the frame, a series of bobbin-carrying spindles mounted in said rail, and a series of thread-guides arranged above said spindles, all said parts, substantially as and for the purposes described.

573,926. DOUBLE-CHAIN-STITCH SEWING-MACHINE. ALBERT ROSTEK, Chicago, Ill., assignor to The Singer Manufacturing Company, of New Jersey. Filed May 25, 1896. Serial No. 592,924. (No model.)

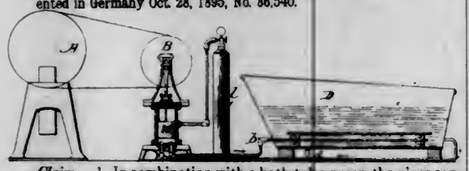


Claim.—1. In a double chain-stitch sewing-machine, the combination with a needle and its operating mechanism, of a thread-carrying looper arranged to reciprocate longitudinally in the plane of the feed of the work, the forward and backward movements of said looper being both in the same path, two alternately-acting loop-spreaders, one for the needle-loops and the other for the looper-loops, and both arranged to reciprocate in a plane transverse to the plane of movement of said looper, a looper-carrier, and operating mechanism for said looper-carrier and loop spreaders.

2. In a double chain-stitch sewing machine, the combination with a needle and its operating mechanism, of a thread-carrying looper arranged to reciprocate longitudinally in the plane of the feed of the work, the forward and backward movements of said looper being both in the same path, a needle-loop spreader and a looper-loop spreader reciprocating together transversely to the plane of movement of said looper, and acting alternately on the needle and looper threads, a looper carrier, and operating mechanism for said carrier and spreaders.

3. In a double-chain stitch sewing machine, the combination with a plurality of needles and their operating mechanism, of a work-supporting arm or cylinder, a driving-shaft extending through the latter and provided at its forward end with a crank or looper operating device, a looper-carrier pivoted at the forward end of said arm or cylinder and provided with a plurality of thread-carrying loopers arranged to reciprocate longitudinally in the plane of the feed of the work, said looper-carrier being operatively connected with said crank or operating device, alternately-acting needle-loop and looper loop spreaders reciprocating in a plane transverse to the plane of movement of said loopers, and a sliding rod, operatively connected with said driving shaft, for operating said loop-spreaders.

573,927. DEVICE FOR FEEDING OXYGEN OR CARBONIC ACID IN CIRCULATING BATHING-WATERS. GUSTAV A. SCHMITZ, Hanover, Germany. Filed May 4, 1896. Serial No. 590,139. (No model.) Patented in Germany Oct. 28, 1895, No. 86,540.

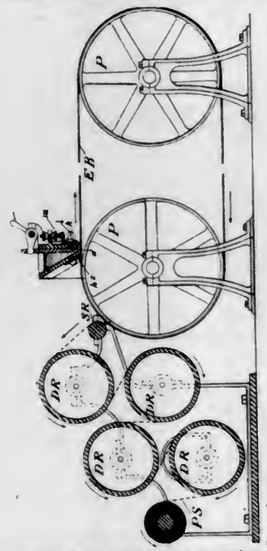


Claim.—1. In combination with a bath-tub a pump, the pipes connecting the same with the tub for the free circulation of water, a gas-tank and a connection between the same and the water-circulating system, substantially as described.

2. In combination with a bath-tub, a pump with its piston, the pipes connecting the same with the tub for the free circulation of the water, a gas-tank and a connection between the same and the pump, the piston of said pump regulating the amount of gas supplied to the circulating system, substantially as described.

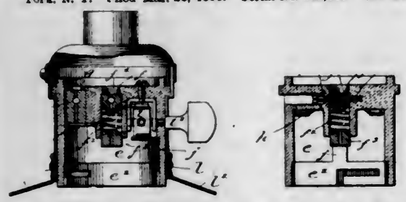
573,928. APPARATUS FOR PRODUCING PYROXYLIN SHEETS. JOHN H. STEVENS, Newark, N. J., and MARSHALL C. LEFFERTS, New York, N. Y., assignors to The Celluloid Company, New York, N. Y., a Corporation of New Jersey. Filed July 17, 1891. Serial No. 399,832. (No model.)

Claim.—1. In a machine for making sheets or strips of pyroxylin compound, an endless carrier, a hopper, means for regulating the rate and quantity of flow of a solution of pyroxylin compound from the hopper and unto the carrier, an adjustable scraper for regulating the thickness of the film flowed, and means for confining the flow of the solution toward the aforesaid scraper, substantially as described.



2. In a machine for making sheets or strips of pyroxylin compound, a hopper having an opening in the bottom thereof, a plate within the hopper for varying the size of said opening, and an adjustable scraper-plate carried on the outside of the hopper, an endless carrier traveling underneath the hopper, and means for confining the flow of the solution toward the scraper, substantially as described.

573,929. INCANDESCENT-LAMP FITTING. ALFRED SWAN, New York, N. Y. Filed Mar. 28, 1896. Serial No. 585,219. (No model.)



Claim.—1. The combination with the neck of an incandescent lamp provided with a bead of glass at or near the end thereof, of a metallic collar placed thereon entirely behind said bead of glass, said collar forming one of the lamp-terminals, substantially as described.

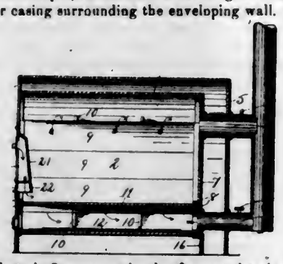
2. The combination with the neck of an incandescent lamp provided with an annular bead, of a metallic collar having inwardly-turned spring-teeth adapted to spring over the bead and rest directly and entirely behind it to hold the collar on the neck of the lamp.

3. The combination with the neck of an incandescent lamp, of a metallic collar placed thereon behind a bead of glass formed on the lamp-neck and a cork or plug closing the end of the lamp-stem and provided with a metallic cap, the leading-in wires of the lamp being separated by the cork and connected respectively with the cap and collar, substantially as described.

4. In an incandescent lamp having its neck surrounded by a metallic collar and provided with a center contact-piece in combination with a cup-shaped socket of insulating material provided internally with a center contact and with a narrow metallic ring placed near the edge of the cup, the ring having an extension *j* reaching into the socket for the purpose set forth.

573,930. HOT-AIR FURNACE. RUXTON S. SWEET and HENRY S. MCBRIDE, Bowling Green, Ohio. Filed Feb. 24, 1896. Serial No. 580,378. (No model.)

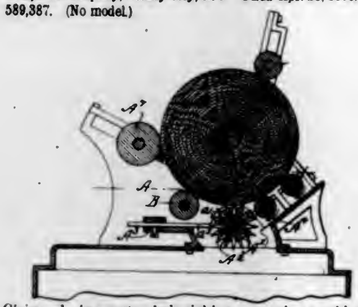
Claim.—1. In a hot-air furnace, a fire-pot closed except at the top, an enveloping wall entirely surrounding the same, a series of vertical walls interposed between the fire-pot and the enveloping wall and extending from the top of the fire-pot to near the bottom of the same, thereby forming a longitudinal flue beneath the fire-pot, a direct-exit flue for the products of combustion leading from the chamber formed by the fire pot, an exit-flue connecting the longitudinal flue, and an outer casing surrounding the enveloping wall.



2. In a hot-air furnace, a circular fire-pot closed except at the top and having a raised lower portion, an enveloping wall entirely surrounding the same, vertical walls extending from the top of the fire-pot to the longitudinal flue formed by the upward curve of the bottom of the same, forming vertical passages connecting the combustion-chamber with the lower longitudinal flue along the entire length of the fire-pot.

3. In a hot-air furnace, a combustion-chamber, a door in the forward end of the same, a draft-regulator secured in the door, a downwardly-extending casing secured to the door in rear of the regulator, a regulator in the front wall of the fire-pot in vertical alinement with the regulator in the door, a downwardly-extending casing secured in rear thereof and in alinement with the casing upon the door whereby the draft is led from either regulator to the bottom of the fire-pot.

573,931. MACHINE FOR PICKING OR OPENING BALES OF COTTON. MAGNUS SWENSON, Chicago, Ill., assignor to the Cotton Ginners Compress Company, Jersey City, N. J. Filed Apr. 28, 1896. Serial No. 589,387. (No model.)

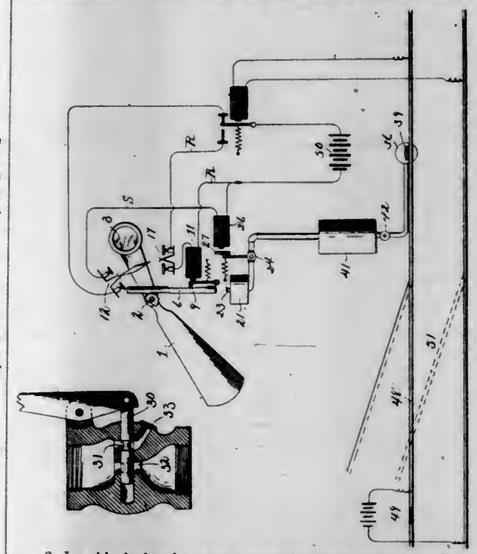


Claim.—1. In a cotton-bale picking or opening machine, the combination of a picker-cylinder, a series of rigid rods or fingers each of which comprises an upwardly bent or curved portion, which passes over and closely adjacent to the body portion of said picker-cylinder and bale supporting and rotating instrumentalities, comprising driven rolls mounted, one in the rear of said picker-cylinder above said rigid fingers and another in front of said picker-cylinder in such position that the ends of the picker-teeth will pass close to the surface thereof, substantially as described.

2. In a cotton-bale picking or opening machine, the combination of a picker-cylinder, a series of rigid rods or fingers each of which is rigidly supported at one end and the free ends thereof being upwardly bent or curved and passing over and closely adjacent to the body portion of the picker-cylinder and bale supporting and rotating instrumentalities, comprising driven rolls mounted, one in the rear of said picker-cylinder above said rigid fingers and another in front of said picker-cylinder, closely adjacent to the free ends of said rigid fingers and in such position that the ends of the picker-teeth will pass close to the surface thereof, substantially as described.

573,932. ELECTROPNEUMATIC BLOCK-SIGNAL SYSTEM. ADELBERT H. THORP, Toledo, Ohio. Filed Apr. 10, 1896. Serial No. 586,961. (No model.)

Claim.—1. In an electropneumatic block-signal system, a weighted semaphore-arm normally indicating a clear-signal, a catch normally engaging with devices to hold the semaphore-arm in a position to indicate a clear-signal, a normally-closed track-circuit, a catch-releasing circuit and a setting circuit controlling pneumatic means for returning the semaphore-arm to a point to indicate "safety," circuit-breakers upon the releasing-circuit and upon the setting-circuit controlled by the movement of the semaphore-arm whereby when the track-circuit is opened by the passage of a train into the block, the releasing-circuit is closed and the catch retracted and the semaphore-arm allowed to rise by gravitation to a point to indicate a danger-signal, the releasing-circuit being opened by the circuit-breaker thereon, when the semaphore-arm has completed its movement which releases the catch to normally be in position to hold the semaphore arm when it is returned pneumatically under the action of the setting-circuit when the track circuit is closed, due to a train leaving the block.



2. In a block-signal system, a semaphore-arm, a vertically-movable rod lowered thereby, a catch for holding the same in a raised position, a track-circuit normally closed but opened by a moving train, a semaphore-releasing circuit controlled by the track-circuit having circuit-breakers controlled by the movement of the semaphore-arm, and a pneumatic means for resetting the semphore-arm, each primarily operated by the track-circuit and then operated by the movement of the semaphore-arm to either release the catch and allow the semaphore-arm to rise by gravitation or to open a valve in the pneumatic means to pneumatically set the semaphore-arm to indicate clear-signals.

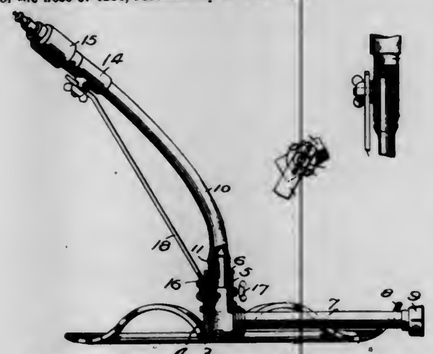
3. In an electropneumatic block-signal system, a semaphore-arm, a rod lowered thereby, a cylinder, a piston secured therein in vertical alinement with the rod, a tank, means for forcing air therein under pressure by means of an air-compressor located adjacent to the track, a pipe connecting the tank and the cylinder having a valve interposed thereon, having a conduit and separate exhaust-conduit leading into the open air, a valve-stem arranged to alternately open or close the two conduits, an armature arranged upon the valve-stem, an electromagnet arranged upon a setting-circuit and a track-circuit for closing the setting-circuit when the track-circuit is closed, due to a train leaving the block.

573,933. LAWN-SPRINKLER. CHARLES L. TRAVIS, Minneapolis, Minn. Filed Aug. 20, 1895. Serial No. 559,906. (No model.)

Claim.—1. The combination, in a lawn-sprinkler, of a suitable base, with a short section of hose or flexible tubing projecting upward from said base, means for conveying water to said hose, the lower end of which is suitably secured upon the base, and revoluble means whereby the upper end of said hose is supported while being free to revolve about the axis of the lower end of the hose or tube, the upper end of the hose having a partial tangential adjustment whereby the stream emitted therefrom will cause said upper end to rotate, substantially as described.

2. The combination, in a lawn-sprinkler, of a suitable base, with a short section of hose or flexible tubing having its lower end secured upon said base, means for conducting water thereto, a nozzle provided upon the upper end of said hose or tube, and a freely-revoluble support

for the upper end of said hose or tube and the nozzle, and whereby the nozzle is held angularly with respect to the axis of the lower end of the hose or tube, substantially as described.



3. The combination, in a lawn-sprinkler, of a suitable base, with a short section of hose or flexible tubing having its lower end secured upon said base, means for conducting water thereto, a nozzle provided upon the upper end of said hose or tube, a freely-revoluble support for the upper end of said hose or tube and the nozzle, and whereby the nozzle is held angularly with respect to the axis of the lower end of the hose or tube, and means in connection with said support whereby the angle of the nozzle may be determined, substantially as described.

4. The combination, in a lawn-sprinkler, of a suitable base, with a short section of hose or flexible tubing having its lower end secured upon said base, means for conducting water thereto, a nozzle provided upon the upper end of said hose or tube, a freely-revoluble support for the upper end of said hose or tube and the nozzle, and whereby the nozzle is held angularly with respect to the axis of the lower end of the hose or tube, and an adjusting device provided in connection with said support whereby the angle or position of the nozzle relative to the lower end of the tube may be changed, substantially as described.

5. The combination, in a lawn-sprinkler, of a suitable base, with a hose connection thereon, a short section of hose or flexible tubing extending upward therefrom and having a tight non-revoluble joint thereon, an elongated tube provided upon the upper end of said hose-section and whereto the nozzle may be attached, a box embracing said tube, and a support whereon said box is adjustable, substantially as described.

6. The combination, in a lawn-sprinkler, of a suitable base, with a hose connection thereon, a short section of hose or flexible tubing extending upward therefrom and having a tight non-revoluble joint thereon, an elongated tube provided upon the upper end of said hose-section and whereto the nozzle may be attached, a box embracing said tube, a support whereon said box is adjustable, and said support being freely revoluble to permit the revolution of the upper end of said hose-section with respect to the lower end and the base, substantially as described.

7. The combination, in a lawn-sprinkler, of a suitable base provided with a hose connection, a short section of hose or tubing extending upward therefrom and provided on its upper end with a suitable nozzle, a box engaging the upper end of said hose or tube, an inclined support revoluble upon the center of the base, upon the upper end of which said box and hence the upper end of the tube and the nozzle are adjustable, substantially as described.

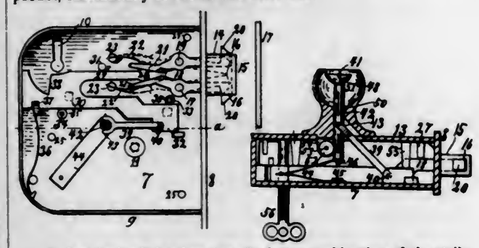
8. The combination, in a lawn-sprinkler, of a suitable base provided with a hose connection, a hose or tube 10 secured thereon by a fixed joint, a nozzle carried upon the upper end of said hose or tube, a revoluble ring provided upon the base, a supporting arm or rod extending therefrom, and an adjustable connection between the upper end of said rod or arm and the upper end of said tube or hose or the nozzle, substantially as described.

9. In a lawn-sprinkler, the combination, with an annular base adapted to rest upon the ground, of an elbow or hose connection provided centrally upon said base, a pipe or tube 7 leading from the outer edge of the base to said elbow, and a flexible hose or tube extending upward from said elbow, substantially as described.

10. A base for a lawn-sprinkler, comprising the ring, the center portion, and the upwardly-curved arms connecting the center portion and the ring, substantially as described.

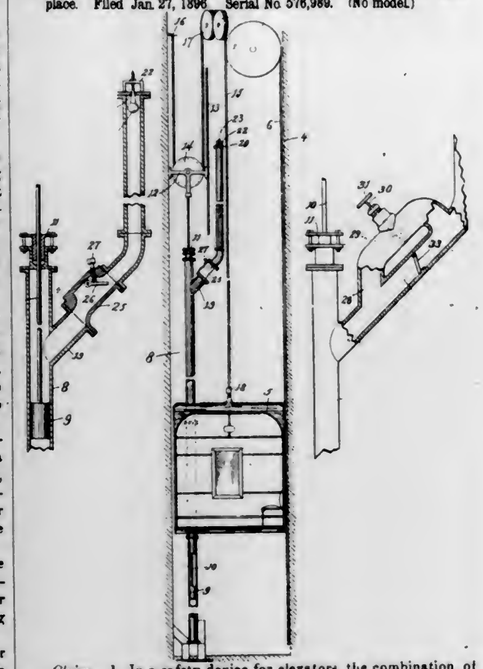
573,934. SLIDING-DOOR LOCK. ALFRED H. C. TREPTE, St. Paul, Minn. Filed Dec. 9, 1895. Serial No. 571,522. (No model.)

Claim.—1. A lock having a striking-plate and a pair of spring-held pivoted levers projecting through the face-plate of the lock and having their front ends formed into hooks adapted to slip through and take hold of the striking-plate, a rigid pocket or socket upon the front face of the lock, surrounding and shielding the hooks between the lock and the striking-plate; a guided slide inside the lock, having an arm entering between and spreading the rear ends of the said levers so as to unlock the hooks on the front ends, a key for moving said slide in between the levers, a spring for retracting the slide when released from the key, and springs for holding the levers normally toward the slide, and their hooks projecting beyond the sides of the pocket, substantially as shown and described.



2. In a lock of the class described, the combination of the striking-plate 17, the hooks 20, for taking hold of said plate, and spring-closed pivoted levers 18, extending from the hooks, the slide 30, normally spring-held toward the rear of the lock and having the notch 38, for a key to engage, and the arm 29 with the rounded end 28, entering between the rear ends 21, of the levers 18; a spring-held push-button upon one side of the lock with a pivoted connecting-rod pushing forward on the slide when the button is pressed on, and upon the other side of the lock a removable key as 56, adapted to engage the notch 38, substantially as and for the purpose set forth.

573,935. SAFETY DEVICE FOR ELEVATORS. PETER W. TRIMBORN, Milwaukee, Wis., assignor of one-half to Anna Trimborn, same place. Filed Jan. 27, 1896. Serial No. 576,989. (No model.)



Claim.—1. In a safety device for elevators, the combination, of an elevator-cage, mechanism for operating said cage, safety mechanism separate from, and independent of, the operating mechanism, said safety mechanism consisting of a main pipe, a piston therein, said main pipe containing a pressure agent located therein on one side of the piston, an auxiliary pipe extending from the main pipe, and a connection between the piston and the elevator-cage, said connection, as the elevator-cage descends, adapted to lift the piston, and thereby carry the pressure-column into the supplemental pipe, and when the elevator-cage ascends to permit the pressure-column by gravity to flow down the supplemental pipe back into the main pipe and against the piston, to assist said piston in its return stroke.

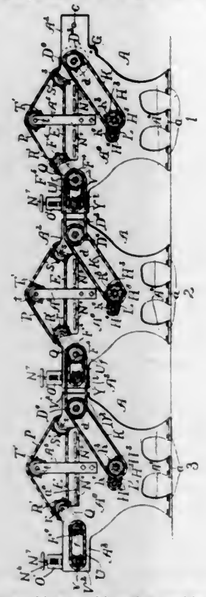
2. In a safety device for elevators, the combination with an elevator cage, of a main pipe, a piston therein, a pressure agent located in the main pipe on one side of the piston, an auxiliary pipe extending from the main pipe, said auxiliary pipe provided with a valve-controlled air-vent, and a connection between the piston and the elevator-cage, said connection, as the elevator-cage descends, adapted to lift the piston and thereby carry the pressure-column into the supplemental pipe, and when the elevator-cage ascends to permit the pressure-column by gravity to flow down the supplemental pipe back into the main pipe and against the piston to assist said piston in its return movement.

3. In a safety device for elevators, the combination with an elevator cage, of a main pipe, a piston therein, said main pipe containing a pressure agent located therein on one side of the piston, an auxiliary pipe extending from the main pipe, said auxiliary pipe having a restricted passage for the flow upwardly of the uplifted pressure agent, and a wider passage for the downflow of the pressure agent, and a connection between the piston and the elevator-cage, said connection as the elevator-cage descends, adapted to lift the piston, and thereby carry the pressure-column into the supplemental pipe, and when the elevator-cage ascends to permit the pressure-column by gravity to flow down the supplemental pipe back into the main pipe and against the piston, to assist said piston in its return stroke.

4. In a safety device for elevators, the combination, with an elevator-cage, of a main pipe, a piston therein, said pipe containing a pressure agent located therein on one side of the piston, an auxiliary pipe extending from the main pipe, a valve within the auxiliary pipe, means for regulating the upward throw of said valve, and a connection between the stem of the piston and the elevator-cage, substantially as described.

5. In a safety device for elevators, the combination, with an elevator-cage, of a main pipe, a piston therein, said pipe containing a pressure agent located therein on one side of the piston, an auxiliary pipe extending from the main pipe, a pivoted valve within the auxiliary pipe, an adjusting-screw adapted to limit the upward throw of the valve, and a connection between the stem of the piston and the elevator-cage, substantially as described.

573,936. WASHING-MACHINE FOR PIECE GOODS. ALEXANDER TURKINGTON, Lafayette, Ind. Filed Apr. 17, 1896. Serial No. 588,011. (No model.)

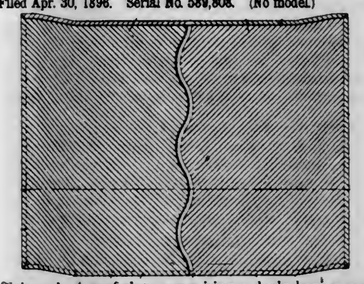


Claim.—1. In a washing-machine, the combination with a tank, of rollers journaled in the said tank and sprocket-wheels on the same shaft with said rollers, an endless apron passing over the said rollers, sprocket-chains attached to the edges of the said apron to engage the said sprocket-wheels, a second endless apron of similar construction passing over similar rollers above the first apron, means for driving both aprons in the same direction, a set of rollers beneath the said aprons, two sets of alternate fast and loose pinions on the said rollers meshing together, a set of yielding rollers above the said aprons geared to the lower rollers, and means for driving the said rollers, substantially as described.

2. In a washing-machine, the combination with a tank, of rollers journaled in the said tank and sprocket-wheels on the same shaft with said rollers, an endless apron passing over the said rollers, sprocket-chains attached to the edges of the said apron to engage the said sprocket-wheels, a second endless apron of similar construction passing over similar rollers above the first apron, means for driving both aprons in the same direction, a set of rollers beneath the said aprons, two sets of alternate fast and loose pinions on the said rollers meshing together, a set of yielding rollers above the said aprons geared to the lower rollers, a roller V, and a yielding roller W, to receive the material from the aprons, and means for driving the several rollers, substantially as described.

3. In a washing-machine, the combination with a tank, rollers journaled in the said tank, endless aprons passing over the said rollers, a set of rollers beneath the said aprons and a set of rollers above the said aprons, frames carrying journal-blocks o' and N to receive the journals of the rollers of the two sets, a screw-rod N' in the said frames bearing on the upper journal-block, a follower N² upon the said screw-rod, a spring within the said frame bearing upon the said follower, means for turning the said screw-rod to adjust the tension of the spring, and means for driving the rollers, substantially as described.

573,937. METAL ROOFING. WILLIAM W. TURNER, Chicago, Ill. Filed Apr. 30, 1896. Serial No. 589,808. (No model.)



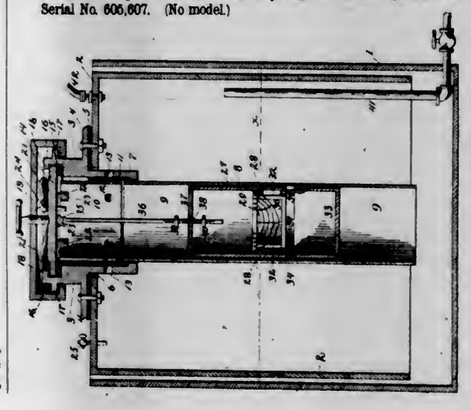
Claim.—1. A roof-plate comprising a body having oppositely-inclined diagonal grooves with a central trough into which the grooves open.

2. A roof-plate comprising a body with oppositely-inclined grooves and a serpentine trough into which the grooves open.

3. A roof-plate comprising a body having oppositely inclined diagonal grooves and being bent up slightly near the sides.

4. A roof-plate comprising a body having oppositely-inclined diagonal grooves and being bent up slightly near the sides, and having a serpentine trough or way into which the grooves open.

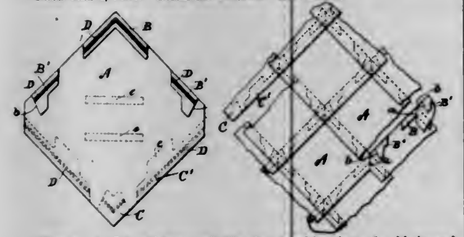
573,938. ACETYLENE-GAS GENERATOR. JOHN H. WAITE, Rock Falls, Ill., assignor to Judd Decker, Sterling, Ill. Filed Sept. 12, 1896. Serial No. 606,607. (No model.)



Claim.—1. In an automatic gas-generator the combination of the cylinder 8, formed of the stationary part 9 and movable part 10; the collar 7 embracing such cylinder; apertures penetrating such movable part 10 and collar 7; and the cover 14 engaging the movable portion of the cylinder 8, substantially as shown and set forth.

2. In a gas-generator the combination of the cylinder 8, composed of the sections 9 and 10; apertures 12 in the movable section 10; and the cover 14 provided with handles 21, lugs 22, recesses 20, and stops 26, with the supports 16, having lugs 18; the relative position of the recesses 20, lugs 18, supports 16, and stops 26 being such, when the cover 14 is in engagement with the movable part of the cylinder 8, as to open the communication between the cylinder 8 and gas-holder 2 when the stops 26 are in contact with the supports 16; and cut off such communication when the recesses 20 coincide with the lugs 18, substantially as set forth.

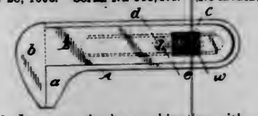
573,939. TILE. WILLIAM A. C. WALLER, London, England. Filed Jan. 4, 1896. Serial No. 574,376. (No model.)



Claim.—1. In an improved tile the combination of a V-shaped ledge B at the upper end, and ridges B′ extending along the upper sides, and separated from ledge B, of an angle-ledge C on the other side and at the bottom, and two side ridges C′ adapted to engage with and between the ledges B B′ of adjacent tiles substantially as described and shown in the accompanying drawings and for the purposes specified.

2. In an improved tile the combination with the V-shaped ledge B at the upper end, the side ridges B′ separated from the projection B the angle-ledge C on the lower side of the tile and the side ledges C′, of the drip-groove D formed in the said ledge, and extending parallel to the sides of the tile substantially as described and shown in the accompanying drawings, and for the purposes specified.

573,940. WRENCH. SIMON W. WARDWELL, Jr., Boston, Mass. Filed May 28, 1896. Serial No. 593,471. (No model.)



Claim.—1. In a wrench, the combination with a handle member provided at one edge with a jaw and having longitudinal channels upon opposite sides, of a movable member having two separated plates parallel throughout and adapted to be introduced longitudinally into and fit said side channels, and a jaw connected to the separated plates, and adjusting devices, substantially as described.

2. The combination in a wrench of the member A having a jaw *a*, channels on opposite sides, a slot *x* with edge racks, a member B having a jaw *b*, two parallel stems fitting the said channels, recesses *w*, and a worm C engaging said racks and extending into the said recesses, substantially as set forth.

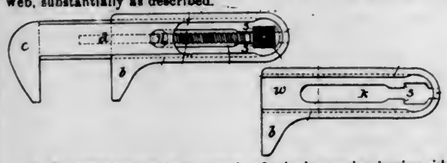
3. In a wrench the combination with the handle member formed with a jaw and with a slot having edge teeth, of a movable member formed with a jaw and with parallel separated stems adapted to fit upon opposite sides of the handle member, said stems being provided with recesses, and a worm in said recesses for engaging the teeth at the edge of the opening in the handle member, substantially as described.

4. A wrench provided with a member A, comprising both the handle and the inner jaw with side channels and with a central slot having edge teeth adapted to engage a worm or other device for shifting the movable member of the wrench, the latter with parallel stem fitting the channels and recessed to receive the worm, substantially as set forth.

573,941. WRENCH. SIMON W. WARDWELL, Jr., Providence, R. I. Filed July 6, 1896. Serial No. 598,191. (No model.)

Claim.—1. In a wrench, the combination with a body member having longitudinal channels upon opposite sides with undercut edges, and provided with a jaw at one edge, of a movable member consisting of a head and a shank, said shank being slotted to form two separated plates parallel throughout and adapted to be introduced longitudinally into and fit the side channels of the body member, the edges of said plates conforming to the edges of the side channels whereby separation of the plates is prevented, and an adjusting device, substantially as described.

2. In a wrench, the combination with a body member having an opening in its end, longitudinal channels upon opposite sides, a jaw, at one edge and a central web provided with an opening contracted near one end to form shoulders, of a movable member having a jaw and parallel separated blades adapted to the channels of the body member, said member being also provided with a threaded opening, a screw extending through the openings in the web, the end of the body member and through that in the movable member, and a head upon said screw bearing upon the shoulders within the opening in the web, substantially as described.



3. The combination in a wrench, of a body member having side channels and a longitudinal opening, a screw supported in the opening to turn without moving longitudinally, a movable member having a jaw, and parallel separated plates provided with transverse openings for reception of a nut adapted to engage the screw, substantially as described.

4. In a wrench, the combination with a body member formed of a single homogeneous piece of metal and having longitudinal channels upon opposite sides, a jaw, and a central web provided with an opening contracted near one end to form shoulders, of a movable member formed with a jaw and with parallel separated blades adapted to the channels of the body member, said movable member being also formed with a screw-threaded opening, and a screw supported in the opening in the body member and engaging the threads of that in the movable member, and having a head bearing against the shoulders, substantially as described.

5. In a wrench the combination with a body member formed of a single homogeneous piece of metal and having longitudinal channels upon opposite sides, a jaw and a central web provided with an opening, of a movable member formed with a jaw and with parallel separated blades, adapted to the channels of the body member, said movable member being provided with a threaded opening and having the inner faces of its separated blades recessed in alinement with the threaded opening, and a screw provided with a head within the opening of the body member and engaging that of the movable member, substantially as described.

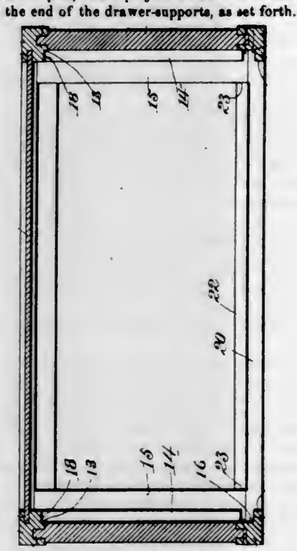
6. In a wrench, the combination with a body member, formed of a single homogeneous piece of metal and having an opening and a jaw, of a movable member formed with a jaw and with parallel separated blades adapted to extend upon opposite sides of the body member and provided with a transverse opening, a connecting-piece provided with a threaded opening and adapted to the opening in the separated blades, a screw within the opening in the body member, and engaging the opening in the connecting-piece, substantially as described.

7. In a wrench, the combination with a body member formed with a jaw and with an opening, of a movable member formed with a jaw and with parallel separated blades constituting the shank of the wrench and adapted to extend upon opposite sides of the body member, said blades being provided with a transverse opening having a contracted mouth, a nut of greater width than thickness adapted to the transverse opening, and a screw within the opening of the body portion engaging the nut, substantially as described.

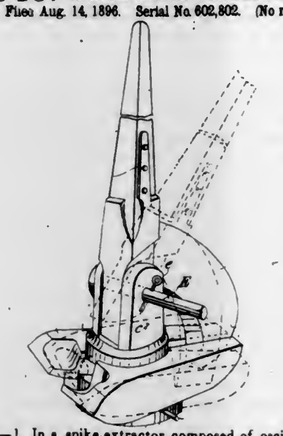
573,942. CASE CONSTRUCTION. WILLIAM H. WATSON, Eau Claire, Wis. Filed Nov. 26, 1895. Serial No. 570,218. (No model.)

Claim.—1. The combination with the top frame, the main frame, the posts of the latter having vertical grooves, a vertical shoulder between the grooves, and a series of notches in and at right angles to the shoulder, the flanged rails, and the flanged drawer-supports, the ends of the said rails being held in certain of the notches by one end of the drawer-supports entering the same notches, as set forth.

2. The combination with the posts having vertical grooves, a vertical shoulder between the grooves, and notches in the shoulder, of the flanged drawer-supports, and the drawer-dividing rails having a drawer stop-flange ending short of the rail ends to form a space between the flange ends and the front posts, said rail ends having a shoulder to fit the front end of the drawer supports, a shoulder engaging the front post, and a projection held in certain of the said notches by the end of the drawer-supports, as set forth.



573,943. SPIKE-EXTRACTOR. ARTEMUS WELSH, Lawrence, Kans. Filed Aug. 14, 1896. Serial No. 602,802. (No model.)



Claim.—1. In a spike extractor composed of oscillating spike-grasping jaws, an intermediate hinged connection consisting of an intermediate vertical pivot, a cap-plate upon the upper end of said pivot, and a nut upon the lower end, and jointed circular grooves and flanges upon the upper and lower surfaces of said jaws and the inner surface of said cap and nut respectively, as and for the purpose described.

2. A spike-extractor composed of oscillating spike-grasping jaws, and an intermediate pivot, a cap upon the upper end of said pivot and a nut on the lower end, a fulcrum-post on said cap, and an operating-lever pivotally connected with said fulcrum-post, a rib on said lever having a wedge at its extremity extending between the rear ends of said oscillating jaws, and jointed circular grooves and flanges on the upper and lower surfaces of the said jaws and the respective inner surfaces of said cap and nut, as and for the purpose described.

3. In a spike-extractor, the combination with the oscillating spike-grasping jaws having grooves in the upper and lower surfaces of said jaws in the arc of a circle, an intermediate vertical pivot concentric at its circumference with said grooves, a cap-plate upon the upper end of said pivot, and a nut on the lower end, and a fulcrum-post on said cap, and an operating-lever having its lower end extending to the upper surface of said cap, and its rear edge inclined rearwardly and upwardly, and a rib on the said lever extending in the direction of and between the rear ends of said jaws, having oppositely-inclined sides, annular flanges on the under side of said cap-plate and the upper side of said nut extending within the grooves in the upper and lower surfaces of the respective jaws for the purpose described.

4. In a spike-extractor the combination with the oscillating spike-grasping jaws having downwardly and rearwardly inclined bearing-surfaces at their forward ends, and an intermediate vertical pivot, a cap-plate upon the upper end of said pivot, a fulcrum-post upon said cap-plate, an operating-lever pivotally connected with said fulcrum-post, a rib connected with the lower end of said lever and extending between the rear ends of said jaws, said jaws having circular grooves in their under surfaces, and a bearing for said jaws connected with the lower end of said pivot, and an annular upwardly-extended flange on the upper side of said bearing, extending within the circular grooves in the respective jaws, as and for the purpose described.

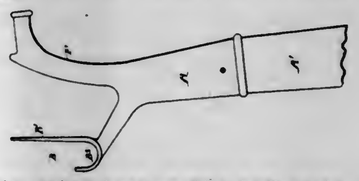
573,944. FIRE-ALARM. ADA H. WEST, Lynchburg, Va. Filed Mar. 30, 1896. Serial No. 585,417. (No model.)



Claim.—1. In an automatic fire-alarm, the combination of a drop-lever having one of its ends bifurcated, a hinge-plate provided with a stud, said stud pivoted to the bifurcated end of the drop-lever, an arm secured to said drop-lever, a circuit-closer disposed below the hinge-plate and adapted to be operated by the drop lever, a combustible cord or other fusible connection secured to said drop-lever and provided with branches, a series of eyes for receiving the fusible connection, and a fusible ball mounted on one of said eyes whereby the drop-lever is normally held out of contact with the circuit-closer, substantially as set forth.

2. In an automatic fire-alarm, the combination of a drop-lever, an arm provided on said drop-lever, a circuit-closer disposed below the drop-lever and adapted to be operated by the arm of the latter, a fusible connection secured to said drop-lever, a series of eyes for receiving the fusible connection, and a fusible ball mounted on one of said eyes, said fusible ball and connection being adapted to normally hold the drop-lever out of contact with the circuit-closer, substantially as set forth.

573,945. PICTURE AND PICTURE-HOOK HANGER. GEORGE W. WILLARD, Detroit, Mich. Filed Mar. 21, 1896. Serial No. 584,228. (No model.)



Claim.—A picture hanger comprising a handle or pole, a socket or ferrule, a shank extending at an angle from the socket and lying in a different plane therefrom, a support for a picture-hook at the end of the shank, said support consisting of two arms of unequal lengths forming a curved seat between them, and an upwardly and outwardly curved hook extending from the socket opposite the picture-hanger, substantially as described.

573,946. FLUE-CLEANER. FRANK C. WILLIAMS, Bellefonte, Pa., assignor of one-half to James D. Seibert, same place. Filed Apr. 1, 1896. Serial No. 585,783. (No model.)

Claim.—1. An improved cleaner comprising a central bolt or rod, the zigzag toggle-arms the collars to which said arms are connected, and the rotating cutters carried by said arms, substantially as shown and described.

2. In a flue-cleaner the combination with the central rod or bolt having the head at one end and threaded at the opposite end, the collars arranged upon said bolt, the parallel zigzag toggle arms or

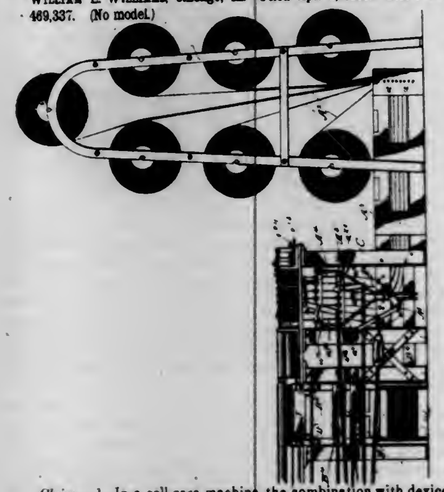
levers, the rotary cutters pivoted in said arms or levers, the coil-spring and the screw-cap all arranged substantially as shown and described.



3. In a flue-cleaner, the combination with the central rod or bolt having a head at one end and threaded at the other end, the collars arranged upon said bolt, the coil-spring arranged between one of the said collars and the head of the bolt, the screw cap or nut arranged upon the opposite end of bolt, swivel connection attached to said cap or nut, the toggle arms or levers composed of parallel zigzag members pivotally connected to the said collars and having a knuckle or joint and the serrated rotary cutters pivotally mounted between the members upon both sides of the knuckle or joint substantially as shown and described.

573,947. MACHINERY FOR MANUFACTURING CELL-CASES.

WILLIAM E. WILLIAMS, Chicago, Ill. Filed Apr. 6, 1893. Serial No. 469,337. (No model.)



Claim.—1. In a cell-case machine, the combination with devices for feeding into position, in parallel planes and with their ends in a plane, a set of sheets corresponding in number to the strips in one set of a completed cell-case and in width to the length of a cell-case strip, of mechanism having a cutting-die for each sheet arranged to form and cut transversely from the end of each sheet a cell-case strip, and means for interlocking transverse strips with the set of strips so formed.

2. In a cell-case machine, the combination with mechanism for holding a set of sheets corresponding in number and relative position to one set of strips in a completed cell-case, of mechanism for holding a second set of strips at right angles to the planes of the sheets of the first set, mechanism for forming across the end of each sheet a cell-case strip, and devices arranged to bring the two sets of strips thus formed into interlocking position.

3. In a cell-case machine, the combination with devices arranged to feed into position, in parallel planes and with their ends in a plane, a set of sheets equal in width to the length of the strips in one set in a cell-case and in number to the strips in said set, of dies lying alongside the end portions of the sheets so placed, punches arranged to pass transversely through all said dies to perforate strips forming the terminal portions of said sheets, and means for detaching the strips thus perforated.

4. The combination with mechanism arranged to hold in registering position a set of sheets equal in number to the strips of one set in a completed cell-case, of mechanism for forming and partially severing a transverse strip at the end of each sheet, devices arranged to feed the sheet simultaneously the width of a strip, and devices arranged to complete the severing after such feeding.

5. In a cell-case machine, the combination with devices for holding as many distinct rolls of stock as there are strips in a cell-case to be formed, means for feeding the stock from the several rolls, means for forming and cutting, transversely, from the end of each sheet of stock a cell-case strip, and means for throwing the strips so formed into interlocking position to form a cell-case.

6. Mechanism for feeding and holding a set of sheets corresponding in number and position to the strips of one set in a completed cell-case, of mechanism for feeding and holding alongside the first set a similar set of sheets perpendicular to the planes of the strips of the first set, means for cutting a transverse strip from the end of each sheet, and means for carrying one set of strips longitudinally into engagement with the other set.

7. The combination with devices for holding with their end margins in a plane a set of sheets equal in number to one set of strips in a complete cell-case, of mechanism for holding a second set of sheets alongside the first set, perpendicular to the latter and with their ends in approximately the plane mentioned, means for severing a strip from each sheet, and means for moving the strips of the second set longitudinally into position to interlock with the strips of the first set.

8. The combination with devices for holding a set of formed cell-case strips in the relative position they occupy in the completed cell-case, of means for holding a second set properly spaced and at right angles to those of the first set, means for moving the second set longitudinally through the strips of the first set, and means for then pushing the marginal strip of the second set laterally to facilitate its interlocking.

9. The combination with devices arranged to feed continuous sheets equal in width to the length of a cell-case strip into position with their ends spaced like the strips forming one set in a completed cell-case, of means for severing all the sheets transversely to form a set of cell-case strips in position, and means for interlocking transverse strips with the set of strips so formed.

10. The combination with mechanism for holding spaced and in registering position a set of formed cell-case strips, of mechanism for springing from their plane form the strips of a transverse set, to permit their interlocking with the strips of the first set, and means for throwing the two sets into interlocking position while the strips are so sprung.

11. The combination with mechanism for feeding in two sets as many sheets as there are strips in a completed cell-case, of means for forming from the two sets of sheets sets of strips that cannot interlock while both are plane, means for springing the strips of one set out of plane form, and means for bringing the two sets into interlocking position.

12. The combination with means for holding one set of strips in position, of mandrels for supporting, respectively, the strips to be interlocked with the strips of said set, devices for bending and holding the strips around said mandrels, respectively, means for carrying the strips so held into interlocking position, and devices for releasing the strips after such position is reached.

13. The combination with means for holding one set of strips, of traveling mandrels arranged alongside said set to support, respectively, strips to be interlocked with the strips of the first set, means for placing strips alongside said mandrels, respectively, and devices traveling with said mandrels and arranged to bend the strips last named about said mandrels, respectively.

14. In a cell-case machine, the combination with devices for feeding two sets of sheets equal in number to the strips forming the two sets in a cell-case, of mechanism arranged to form simultaneously across the ends of one set of sheets the strips of one set, mechanism for forming simultaneously across the ends of the other sheets the strips of the second set, and mechanism arranged to bring simultaneously all the strips of one set into position to interlock with those of the other set.

15. The combination with means for holding one set of strips in position, of mandrels for supporting, respectively, strips to be interlocked with those of said set, means for placing strips alongside said mandrels, respectively, devices for holding each of the strips last named fixed with reference to its mandrel, and means for advancing said mandrels and devices together through the strips of said set and returning them separately.

16. The combination with means for holding in registering position a set of cell-case strips, of a set of transverse rods arranged in line, respectively, with the registering perforations of said set and adapted to carry, respectively, the strips of a transverse set, and means for advancing the rods longitudinally through the perforations of the strips of the first set and again returning them to initial position.

17. The combination with means for feeding sets of sheets corresponding in number and position to one set of strips in a complete cell-case, of means for forming interlocking cuts in the end portions of said sheets while they are in such position, means for interlocking with them a second set of strips, and means arranged to then detach from the sheets first mentioned portions equal in width to the strips interlocked with them.

18. The combination with means for holding a set of strips in registering position, of a set of transverse reciprocating rods lying in the plane of said set and adapted to carry respectively, the strips of a second set to be interlocked with those of the first set, means for placing the strips of said second set in position to be carried by the rods, and means for bending the strips so placed from plane form.

19. The combination with means for holding one set of strips in position, of means for thrusting the strips of a second set through the strips of the first set.

20. The combination with means for holding a set of perforated strips, of devices arranged to bend into form for passing through the perforations strips which cannot pass while unbent, and means for thrusting the strips so bent through the perforations of the first set.

21. The combination with means for holding in position a set of cell-case strips, of devices holding separately all the strips of a set to be interlocked with the first set, and means for simultaneously advancing all the strips of the second set into position for interlocking with the strips of the first set.

22. The combination with devices for feeding into a machine a set of continuous sheets of cell-case stock, of strip-forming dies, and devices connected with the feeding mechanism and arranged to pass over and forcibly clear the faces of the dies when the sheets are fed forward.

23. The combination with the strip-forming die, of a stock-feeding mechanism consisting in part of a device adapted to grip and carry forward the stock and provided with a plate arranged to be carried over the face of the die by the feeding movement.

24. The combination with means for holding in registering position a set of strips having perforations to receive the strips of a second transverse set, of a set of reciprocating rods registering with said perforations and adapted to carry through them, respectively, the strips of the second set, means for placing the strips of the second set, in position to be carried by the rods, means for bending them from plane form, means for advancing the strip-bearing rods longitudinally through the perforations, means for holding the strips so bent during such advance, and means for withdrawing the rods.

25. In mechanism for feeding a set of sheets for forming cell-case strips, a series of bars arranged alongside the paths of the sheets, respectively, a second series of bars lying alongside the bars of the first series, a set of transverse bars connecting the bars of the second series, means for separately adjusting the bars of the second series upon their connecting-bars, and means for at intervals moving the bars of the second series toward and away from the bars of the first series, to clamp and release the sheets.

26. The combination with the set of relatively-fixed parallel bars lying alongside the paths of a series of sheets to be fed, of a second set of bars mounted alongside the bars of the first set, respectively, but upon opposite sides of said paths, means for moving the bars of the second set toward and away from those of the first set to clamp and release the sheets, and means for at intervals moving the two sets, together, parallel to said paths.

27. The combination with means for feeding intermittently a set of parallel sheets from the ends of which sets of strips are to be cut transversely, of die-plates lying alongside the paths of the sheets and provided with a series of openings for strip-forming punches and with a parallel set of openings for a set of transverse strips, and means for threading a set of strips through the openings last named.

28 The combination with a set of dies equal in number to the strips in one set in a completed cell-case, of a set of guide-plates alternating with said dies and forming with them ways for the sheets from which strips are to be cut, said dies and plates being rigidly united and provided with perforations to allow punches to pass transversely through the whole.

29. In a cell-case machine having cutting mechanism in two sets, each set cutting at each operation all the strips which run in the same direction of the case, said cutting mechanism actuated by mechanism whereby only one set of said cutting mechanism is cutting at a time, thereby equalizing the strain on the machine, substantially as shown.

30. The combination with two mechanisms for feeding two sets of stock-sheets, of two mechanisms for forming strips at the ends of the sheets of the sets, mechanism for bringing the strips so formed into position for interlocking, and actuating mechanism arranged to feed the first set of sheets, form strips from the second set of sheets and bring two sets of strips into position for interlocking, all in one period of time, and to form strips from the first set of sheets and feed the second set of sheets in another period.

31. The combination with devices for holding in a plane a set of strips having suitable central registering perforations to receive transverse strips, of a set of reciprocating tubes arranged in line with said perforations to hold, respectively, partially-rolled transverse strips, and means for thrusting the tubes through the perforations in the strips of the other set and again withdrawing them.

32. The combination with means for holding in position a set of centrally-perforated cell-case strips, of a set of transverse tubes mounted in the same plane at one side of the set of strips, a set of needle-rods mounted in line, respectively, with said tubes, means for rolling a second set of strips about said rods, respectively, means for sliding said rods with the rolled strips within the tubes, means for advancing the rods, strips and tubes through the perforations in the strips of the first set, and means for releasing the strips so carried and returning the rods and tubes to their initial positions.

33. The combination with means for holding a suitably-formed set of strips, of means for projecting the strips of a second set through the strips of the first set, and means for pushing the last of the second set laterally to interlock it with the strips of the first set.

34. The combination with means for holding in position a set of suitably-formed strips, of a laterally-open tube carrying a partially-rolled strip through the ends of the strips of said set, and a bar provided with a sharp point arranged to press transversely against said strip to prevent longitudinal displacement.

35. The combination with means for holding a set of centrally-perforated strips in registering position, of transverse needle-rods flattened upon one side for the purpose set forth and arranged to reciprocate through the registering perforations, and means for bending the strips of a second set about said rods, substantially as set forth.

36. The combination with devices for holding in position a set of centrally-perforated strips, of needle-rods provided with lateral projections and arranged in the plane, and at one side, of said strips, means for laterally notching the strips of a second set, means for bending them about the needle-rods, respectively, with their notches in engagement with said projections, means for holding them thus bent, means for sliding the rods through the perforations in the strips of the first set, means for releasing the strips, and means for withdrawing the rods.

37. The combination with the set of bell mouthed tubes, of the needle-rods in line with the tubes, respectively, the clamps for bending strips about the rods, means for placing a set of strips in position alongside the rods, respectively, means for simultaneously actuating all the clamps, means for sliding all the rods within the tubes, and means for simultaneously sliding all the tubes longitudinally to bring the strips contained therein into position to interlock the strips of another set.

38. The combination with means for laterally notching and bringing into position a set of strips to be thrust through the strips of a transverse set, of a set of rods provided with projections corresponding with the notches of the strips of the first set, means for bending the notched strips about the rods, respectively, means for sliding the rods back and forth longitudinally, and means for locking the rods temporarily in exact position at proper points in their paths.

39. The combination with devices for holding a set of strips, of rods to carry through them the strips of a second set, means for bending the last-named strips about said rods, tubes arranged to hold the strips thus bent, means for sliding the tubes and rods through the strips of the first set, and means for locking the tubes at a predetermined point in their paths.

40. The combination with devices for holding a set of formed strips in position, of mechanism for holding, while out of position, a second set of strips to be interlocked with those of the first set, devices arranged to move said mechanism and carry the strips held thereby into position for interlocking with the strips of the other set and to return it to its normal position, and means for locking said mechanism exactly in position at each end of its path.

41. In a machine for the manufacture of cell-cases, substantially as described, having nest H and nest E substantially as described, and cross-heads bearing tubes G' and needle-rods I carrying strips from nest H to nest E, substantially as shown.

42. In a cell-case machine a set of dies arranged in a series for cutting strips of material for a cell-case, one die of the set having smaller notches than the other and a set of punches J^3 with offsets j^{15} for the distance they enter said die, for the purpose described.

43. The combination with devices for holding the ends of a series of sheets in position, of means for forming said ends for interlocking by a set of transverse strips, means for interlocking with them such transverse set, and devices arranged to detach from each of said sheets, after such interlocking, a transverse portion equal to said strips in width.

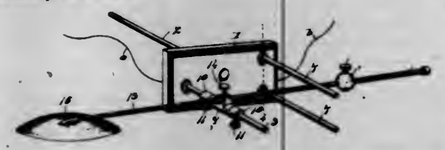
44. In a cell case machine, the combination with a series of transverse cell strip holders, of a longitudinal cell-strip holder for inserting a longitudinal cell-strip through the holes or openings in the series of transverse strips.

573,948. CIRCUIT-CLOSER FOR ELECTRICAL ALARM-CIRCUITS.

JOHN C. WOLLIN, Williamsport, Pa. Filed Sept. 11, 1896. Serial No. 605,520. (No model.)

Claim.—1. A circuit-closer for electrical alarm-circuits comprising a fixedly-positioned oscillatory support included in an electrical alarm circuit, an oscillatory contact-rod adjustably fitted to said oscillatory support, a balance-weight adjustably mounted on the rod at one side of its support, a shallow concavo-convex metallic impact-cup fitted to one end of the contact-rod and adapted to be arranged over the point of escape for compressed air, steam or other gas, and a fix-

edly-positioned contact-post included in the same circuit with the oscillatory support and arranged in the path of the contact-rod, substantially as set forth.



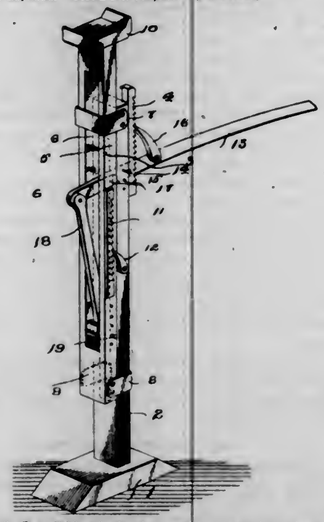
2. A circuit-closer for electrical alarm-circuits comprising a base-block, a fixed pivot-post secured at one end to said base block and having a circuit-wire connection therewith, a pair of spaced contact-posts arranged opposite the pivot-post and fitted at one end to said base-block, one of said contact-posts having a circuit-wire connection therewith, an oscillatory pivot-sleeve loosely mounted on said pivot-post and provided with a rod-opening, an oscillatory contact-rod playing between said contact-posts and adjustably fitted in the rod-opening of said pivot-sleeve, a balance-weight adjustably mounted on the rod at one side of the pivot-sleeve, and a shallow concavo-convex metallic impact-cup fitted to one end of the contact-rod and adapted to be arranged over the point of escape for compressed air, steam, or other gas substantially as set forth.

573,949. NON-REFILLABLE BOTTLE. JOHN W. WOODRUFF, Wise, W. Va. Filed Jan. 28, 1896. Serial No. 577,180. (No model.)



Claim.—The combination with a bottle having a tapered neck and a weakened portion with an annular groove beyond said weakened portion, of a split spring lock-ring, a glass stopper tapered to fit the neck and having an annular groove and grooves disposed lengthwise of the stopper and intersecting the annular groove and a seal between the stopper and a stopper placed in the lower portion of said neck, all substantially as described.

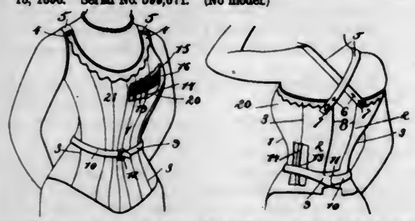
573,950. LIFTING-JACK. WARNER C. WOODWARD, Scranton, Pa. Filed July 23, 1896. Serial No. 600,210. (No model.)



Claim.—1. In a lifting-jack, the combination with a base, of an upright arising therefrom which is provided with a rack, an adjusting-bar carrying a rest and slidable vertically in relation to the upright, and being also provided with a rack, a pivoted operating-lever, a pitman connecting said operating-lever with the adjusting-bar, a pawl pivoted to the upright and adapted to engage with a rack of the adjusting-bar, and a second pawl pivoted to the lever and adapted to engage with the rack of the upright.

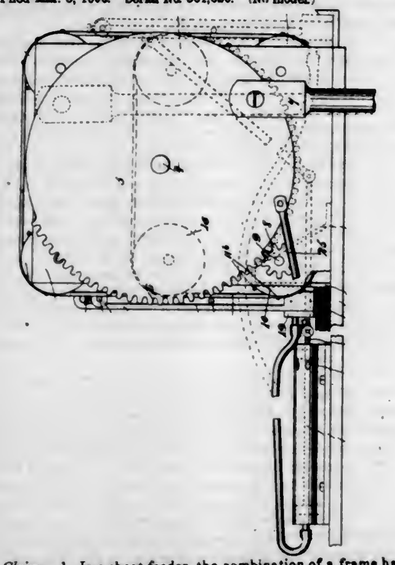
2. In a lifting-jack, the combination with a base, of an upright arising therefrom, a rack connected to the upright, an adjusting-bar provided with a rest, a rack connected to said adjusting-bar, guides for holding the upright and adjusting-bar together, but adapted for relative vertical movement, an operating-lever pivoted to the upright, a pawl pivoted to the lever and adapted for engagement with the rack of the upright, a second pawl pivoted to the upright and adapted for engagement with the rack of the adjusting-bar, and a pitman connected to the operating-lever and adjustably connected to the adjusting-bar.

573,951. CORSET. LUCILE C. WRIGHT, St. Louis, Mo. Filed July 13, 1896. Serial No. 599,671. (No model.)



Claim.—A corset having a closed front and open back, comprising the vertical pockets 13, the stiffeners 14 in said pockets, the intersecting transverse pockets 15, arranged in batteries 16, and the stiffeners 19 secured in said pockets, the crossed shoulder-straps 5 5, and the waist-straps 9 10, the strap 9 being formed with a slot 11 through which the strap 10 passes, the two straps encompassing the waist and secured in front by a buckle 12, substantially as shown and described.

573,952. SHEET-FEEDER. GEORGE B. WURTS, Shreveport, La. Filed Mar. 3, 1896. Serial No. 581,626. (No model.)



Claim.—1. In a sheet-feeder, the combination of a frame having a blank-platform, two endless carriers mounted thereon and adapted to move in parallel planes, a suction-bar supported and moved by the carriers, and means for exhausting the air from said suction-bar, substantially as set forth.

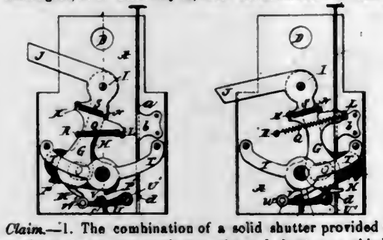
2. In a sheet-feeder, the combination of a frame having a blank-platform, two sets of endless carriers mounted to move thereon in parallel planes, the carriers of each set being opposite each other, rods extending between the carriers of each set, and a suction-bar having arms guided on said rods and provided with means for exhausting the air therefrom, substantially as set forth.

3. In a sheet-feeder, the combination of a frame having a blank-platform, two series of endless belts mounted to move in parallel paths on the frame, the belts of each set being opposite each other and those of one set being inside the belts of the other set, rods extending between the belts of each set, a suction-bar having arms guided on said rods and adapted to be moved by said belts, and means for exhausting the air from the suction-bar, substantially as set forth.

4. In a sheet-feeder, the combination of a frame having a blank-platform, two series of endless belts mounted to move in parallel paths on the frame, the belts of each set being opposite each other and those of one set being inside the belts of the other set, rods extending between the belts of each set, a suction-bar having arms guided on said rods and adapted to be moved by said belts, means for exhausting the air from the suction bar, and means for moving said belts alternately in opposite directions, substantially as set forth.

5. In a sheet-feeder, the combination of a frame having a blank-platform, two sets of endless carriers mounted to move thereon in parallel planes, said carriers having supporting sheaves and having their end portions arranged vertically to the blank-platform and their side portions arranged at right angles to their ends, the carriers of each set being opposite each other, and those of one set being inside the carriers of the other set, rods extending across the space between the carriers of each set, means for moving said carriers in opposite directions, and a suction-bar having arms guided on said rods and provided with means for exhausting the air therefrom, substantially as set forth.

573,953. PHOTOGRAPHIC SHUTTER. ALFRED E. YOUNGER, Huntington, N. Y. Filed July 14, 1896. Serial No. 599,076. (No model.)

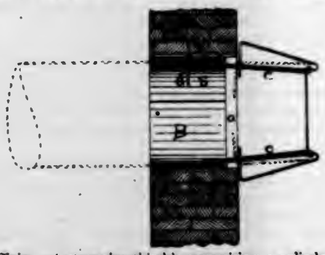


Claim.—1. The combination of a solid shutter provided with a lever and a spring to actuate it, a perforated shutter provided with detents or catches, a spring-actuated latch to engage the apertured shutter, a finger on the solid shutter to release it, a sliding tooth adapted to engage the perforated shutter, and a spring connecting the shutters, put under tension by the movement of the solid shutter, for the purposes set forth.

2. The combination of a solid shutter provided with a lever operated from the exterior of the camera, a spring which actuates said shutter put under tension by movement of the lever, an apertured shutter connected to the solid shutter by a spring, said spring being put under tension by movement of the solid shutter, a catch to retain the exposure-shutter against movement in one direction, and a finger on the solid shutter which actuates said catch, for the purposes set forth.

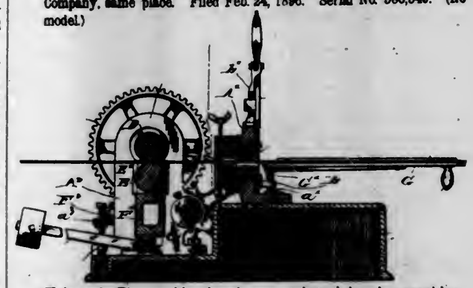
3. The combination of a solid shutter, an apertured exposure-shutter, both pivoted upon the same center, a lever for actuating said shutters in one direction, springs for actuating them in the opposite direction, a spring-controlled latch, and a sliding latch, both adapted to detain the exposure-shutter against movement in one direction, and a finger on the solid shutter which releases said first-named latch, for the purposes set forth.

573,954. STOVEPIPE-THIMBLE. LEMAN ARNOLD, Northville, and MORRIS LARY, Amsterdam, N. Y.; said Arnold assignor to said Lary. Filed June 8, 1896. Serial No. 594,642. (No model.)



Claim.—A stovepipe-thimble comprising a cylinder and a locking device secured thereto, said locking device comprising standards formed from a piece of wire bent upon itself at two points and secured to the cylinder and the out ends of said wire bent outwardly and then inwardly at an angle, for the purpose of forming a shoulder to engage with the inner face of the chimney and the extreme ends of the said wire being bent to allow the finger and thumb of the hand to readily grasp them for the purpose of compressing the shoulders when it is desired to withdraw the thimble from the chimney.

573,955. METAL-STRAIGHTENING MACHINE. ELIAS C. ATKINS and ROBERT COYLE, Indianapolis, Ind., assignors to the E. C. Atkins & Company, same place. Filed Feb. 24, 1896. Serial No. 580,549. (No model.)



Claim.—1. The combination, in a metal-straightening machine, with suitable guide-dies, of a pair of convex-surface rolls, whereby the central portion of the metal may be stretched at the same time the metal is straightened, substantially as set forth.

2. The combination, in a metal-straightening machine, of a pair of guide-dies, a pair of straightening and stretching rolls, a lever F whereby one of said rolls is held flexibly toward the other, and an adjusting-screw F^3 whereby said roll is held up to a certain predetermined position, substantially as shown and described.

3. The combination, in a metal-straightening machine, of the pair of guide-dies, a pair of convex-surface straightening and stretching rolls, one of which is held toward the other by a lever, said lever, and an adjustable weight on said lever, whereby said roll is supported yieldingly and its pressure may be varied, substantially as set forth.

4. The combination, in a metal-straightening machine, of a pair of straightening and stretching rolls, a pair of guide-dies, a rocking head in which said guide-dies are mounted, an arm extending out from said rocking head, a latch mounted on said arm or lever, and a segment with which said latch may engage, substantially as shown and described.

5. The combination, in a metal-straightening machine, of a pair of straightening-rolls, a pair of guide-dies, a rocking head in which said guide-dies are mounted, a pivoted table, and guides on said pivoted table between which the metal plate may pass, substantially as shown and described.

6. The combination, in a metal-straightening machine, with the straightening-rolls and guide-dies, of an adjustable guide-table carrying guides and carried on the same structure carrying said guide-dies, whereby the guide-table may be adjusted to correspond with the guide-dies, substantially as shown and described.

7. The combination, in a metal-straightening machine, of a pair of convex-surfaced straightening and molding rolls, guide-dies mounted in a rocking head, and adjustable guides secured to the standards of the frame adjacent to the rolls, whereby the metal can be guided so that the highest point of the rolls may bear upon any desired portion of its surface, substantially as shown and described.

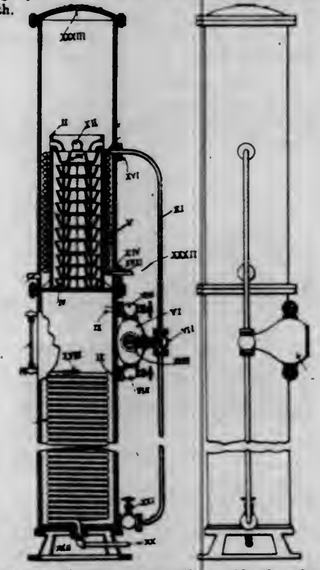
573,956. AMMONIA-GAS GENERATOR. LOUIS H. BACHMANN and OSCAR R. SULZER, Louisville, Ky. Filed May 11, 1895. Serial No. 549,005. (No model.)

Claim.—1. In an ammonia-gas generator the combination of a vessel, a stand-pipe in the upper part or section thereof a series of rectifying-pans within said stand-pipe, an exhausted-liquor coil around said stand-pipe, a steam-pipe in the lower part or section of said vessel, an automatic regulator connected with the lower section or part of said vessel, and a valve applied to said regulator and having pipe connection with said coil in the upper section of said vessel and with the lower section or part of said vessel, substantially as set forth.

2. In an ammonia-gas generator, the combination of a vessel, a stand-pipe in the upper part or section thereof, a series of rectifying-pans therein, an exhausted-liquor coil around said stand-pipe, and the overflow elbow passages or pipes between the top of said stand-pipe and the uppermost pan, substantially as set forth.

3. In an ammonia-gas generator the combination of a vessel, a stand-pipe in the upper section thereof, a series of rectifying pans in said stand-pipe, an exhausted-liquor coil around said stand-pipe, and the steam-pipe coil or pipe in the lower section or part of said vessel

for heating liquor in said lower section of said vessel, substantially as set forth.



4. In an ammonia-gas generator, the combination of a vessel, the stand-pipe in the upper section or part thereof, the exhausted-liquor coil around said stand-pipe, and the series of rectifying-pans having perforated bottoms, to cause the descending strong liquor to finely divide and fall rapidly whereby a large percentage of anhydrous gas is released by the heat supplied to the pans by ascending gases substantially as set forth.

5. In an ammonia-gas generator, the combination of a vessel, a stand-pipe in the upper section or part thereof, a series of rectifying-pans in said stand-pipe and an exhausted-liquor coil around said stand-pipe and a steam or heating coil in the lower section or part of said vessel, said heated lower section having pipe connection with the upper section of said vessel, to heat the liquor therein, substantially as set forth.

6. In an ammonia-gas generator, the combination of a vessel, a stand-pipe therein, a series of rectifying-pans in said stand-pipe, an exhausted-liquor coil around said stand-pipe, a steam-heating pipe in the lower section of said vessel and an automatic regulator comprising a chamber connected to said lower section of said vessel and containing a float connected by a stem to a valve arranged in a separate chamber, connecting with the aforesaid chamber and with said lower section of said vessel and with said exhausted-liquor coil, substantially as set forth.

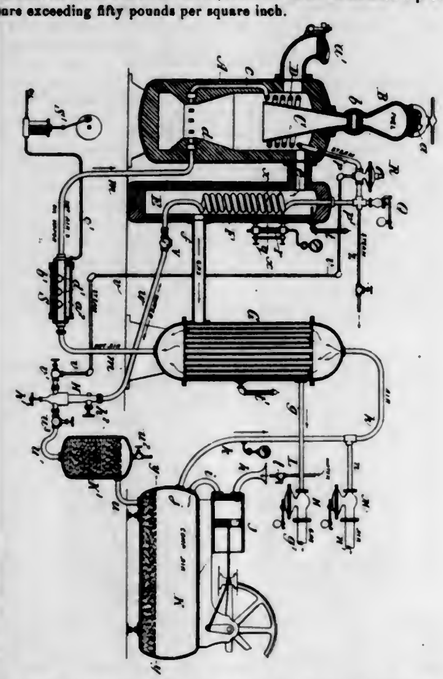
573,957. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. FRANCIS G. BATES, Philadelphia, Pa. Filed May 7, 1896. Serial No. 590,529. (No model.)

Claim.—1. The improved process of making combustible gas which consists in passing preheated air, superheated steam, and hydrocarbon vapors together, through a producer-chamber wherein an elevated temperature is maintained by the combustion of carbonaceous matter, and in which is maintained a pressure in excess of forty-two pounds per square inch or over.

2. The improved process of making illuminating-gas which consists in passing preheated air, superheated steam, and hydrocarbon vapors together, through a producer-chamber wherein an elevated temperature is maintained by the combustion of carbonaceous matter, and in which is maintained a pressure exceeding fifty pounds per square inch, whereby the hydrocarbons are partly oxidized and partly fixed as illuminants.

3. The improved process of making illuminating-gas which consists in passing preheated air, superheated steam, and hydrocarbon vapors together, through a producer-chamber wherein an elevated temperature is maintained by the combustion of carbonaceous matter, and in which is maintained a pressure exceeding seventy-five pounds and approximating one hundred pounds per square inch, whereby the hydrocarbons are fixed at the same high temperature at which the gas is generated, and a gas of high illuminating power is produced.

4. The improved process of making illuminating-gas which consists in passing preheated air, superheated steam, and hydrocarbon vapors together, through a producer-chamber containing a bed of incandescent carbonaceous matter, and in which is maintained a pressure exceeding fifty pounds per square inch.



5. The improved process of making gas which consists in compressing air to a given pressure, forcing water under a superior pressure through a steam-generator whereby it is converted into steam, reducing the consequent increased pressure of the steam to a lower and uniform pressure, introducing the steam and compressed air together under equal pressure to a gas-producer into contact with incandescent carbonaceous matter, whereby they are converted into a fixed gas, passing the hot gas into contact with said steam-generator whereby it is cooled and its heat economized, and finally conducting the gas to the place of use.

6. The improved process of making gas which consists in compressing air to a given pressure, heating said air, forcing water to a higher pressure into a steam-generator, whereby it is converted into steam, reducing the consequent increased pressure of the steam to a uniform lower pressure, superheating the steam, introducing the superheated steam and hot compressed air together under equal pressure to a gas-producer into contact with incandescent carbonaceous matter, whereby they are converted into a fixed gas, passing the hot gas into contact with the superheater and steam-generator in which said steam is generated and superheated, and into contact with the air-heater in which said air is heated, whereby it is cooled and its heat economized, and finally conducting the gas to the place of use.

7. The process of making gas which consists in compressing air, heating it, passing the hot compressed air into contact with a liquid hydrocarbon, whereby it vaporizes the latter and becomes carbureted, generating steam, superheating it, and introducing said steam and carbureted air together into a gas-producer in which an incandescent temperature and a high pressure are maintained, whereby a partial combustion of the hydrocarbon occurs, and the steam, air and hydrocarbon are converted into a fixed gas free from tarry and ammoniacal impurities.

8. The improved process of making illuminating-gas, which consists in compressing air, heating it, passing the hot compressed air into contact with a liquid hydrocarbon, whereby it vaporizes the latter and becomes carbureted, generating steam, superheating it, and introducing said steam and carbureted compressed air together into a gas-producer in which an incandescent temperature and a high pressure exceeding seventy-five pounds per square inch are maintained, whereby the air, steam and hydrocarbon vapor are converted into a fixed illuminating-gas.

9. The improved process of making illuminating-gas, which consists in compressing air, heating it, passing the hot compressed air into contact with a liquid hydrocarbon, whereby it vaporizes the latter and becomes carbureted, forcing water into a steam-generator, whereby it is converted into steam, superheating the steam, introducing the steam and carbureted air together to a gas-producer in which an incandescent temperature and a high pressure are maintained, whereby the steam, air and hydrocarbon vapor are converted into a fixed gas, and passing the hot gas into contact with the superheater and generator in which the steam is made and superheated, and with the air-heater in which said air is heated, whereby it is cooled and its heat is economized.

10. The improved process of making illuminating-gas which consists in pumping air and water together, whereby the air is compressed and the water is heated thereby, forcing the water to a higher pressure into a steam-generator, whereby it is converted into steam, reducing the consequent increased pressure of the steam to a uniform lower pressure, superheating the steam, heating said compressed air, passing the hot compressed air into contact with a liquid hydrocarbon whereby it vaporizes the latter and becomes carbureted, introducing the superheated steam and hot compressed air together to a gas-producer in which an incandescent temperature and a high pressure are maintained, whereby the steam, air and hydrocarbon vapor are converted into a fixed gas, passing the hot gas into contact with the superheater and generator in which the steam is made and superheated, and with the air-heater in which said air is heated, whereby it is cooled and its heat is economized.

11. A gas apparatus comprising a gas-producer, an air-compressor, a steam-generator, conduits for air and steam leading into said producer, the steam-generator arranged to be heated by the hot gases from said producer, means for retaining a heavy gaseous pressure in said producer, means for forcing water into said steam-generator to a higher pressure than that in the producer, and a pressure-governor adapted to reduce the pressure of the steam passing from said generator to the producer to approximately the pressure in the producer.

12. A gas apparatus comprising a gas producer, an air-compressor, a steam-generator, conduits for air and steam leading into said producer, the steam-generator arranged to be heated by the hot gases from said producer, means for retaining a heavy gaseous pressure in said producer, means for forcing water into the apparatus under such pressure, means for forcing said water under higher pressure into the steam-generator, and a pressure-governor adapted to reduce the pressure of the steam passing from said generator to the producer to approximately the pressure in the producer.

13. A gas apparatus comprising a gas producer, a steam-generator arranged to be heated by the hot gases from said producer, means for retaining a heavy gaseous pressure in said producer, a compressed-air reservoir, means for pumping air and water into said reservoir in such contact that the water absorbs the heat liberated by the compression of the air, means for forcing the water from said reservoir into the steam-generator under a higher pressure than that in the producer, a pressure-governor adapted to reduce the pressure of the steam passing from said generator to approximately the pressure in the producer, and conduits for steam and compressed air leading into the producer.

14. A gas apparatus comprising a gas-producer, a steam-generator arranged to be heated by the hot gases from said producer, means for retaining a heavy gaseous pressure in said producer, a compressed-air reservoir, means for pumping air and water into said reservoir in such contact that the water absorbs the heat liberated by the compression of the air, an injector operated by steam from said generator drawing water from said reservoir and forcing it to a higher pressure into said steam-generator, and a pressure-governor adapted to reduce the pressure of the steam passing from said generator to the producer.

15. The combination of a gas-producer A, gas-outflow chamber E, steam-generator F therein, air-heater G, pressure-regulator H controlling the outflow of gas and retaining a high pressure in the producer, air-compressor J, compressed-air reservoir K, an air-conduit leading therefrom through said heater to the producer, means for forcing water into said steam-generator to higher pressure than that retained in the producer by said pressure-regulator, a pressure-governor controlling the outflow of steam from said generator adapted to reduce its pressure to approximately that in the producer, and a conduit for the steam extending thence to the producer.

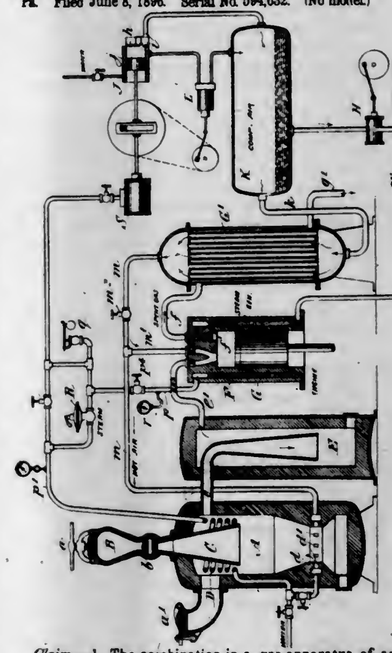
16. The combination of gas-producer A, steam-generator F, gas-pressure regulator H, air compressor J, compressed-air reservoir K, injector H adapted to draw water from said reservoir and force it at higher pressure into said steam-generator, a pressure-governor controlling the outflow of steam from said generator, steam-pipes leading thence to the gas-producer and to said injector, and a compressed-air pipe leading from said air-compressor to the gas-producer.

17. The combination of a gas-compressor A, steam-generator F gas-pressure regulator H, compressed-air reservoir K, means for compressing air into said reservoir and for pumping water thereinto, means for forcing the water therefrom into said steam-generator under a higher pressure, a check-valve V for preventing backflow of water from said steam-generator, and pressure-governor R adapted to reduce the pressure of the steam passing from said generator to the producer.

18. A gas apparatus comprising a gas-producer, a steam generator, an air-compressor, a heater for heating the compressed air therefrom, a conduit for compressed air leading it through said heater and into said producer and a carbureter in connection with said compressed-air conduit between the heater and producer, adapted to introduce a liquid hydrocarbon into contact with the heated air to be vaporized and carried by the air to the producer.

19. A gas apparatus comprising a gas-producer, a steam-generator, an air-compressor, a heater for heating the compressed air therefrom, a conduit for compressed air leading it through said heater and into said producer, a carbureter in connection with said compressed-air conduit, and a force-pump for forcing oil into said carbureter, whereby to introduce the oil into contact with the heated compressed air to be vaporized thereby and carried into the producer.

573,958. GAS APPARATUS. FRANCIS G. BATES, Philadelphia, Pa. Filed June 8, 1896. Serial No. 594,632. (No model.)



Claim.—1. The combination in a gas apparatus, of an air-compressor, an air-heater, a gas-producer, a steam-generator heated by the waste heat given out by the gas, a passage for compressed air leading through said air-heater into said gas-producer, a steam-pipe leading from said generator into the gas-producer, a steam-engine, and a steam-pipe from said generator to said steam-engine, whereby the waste heat of said gas is utilized to generate steam both for making gas and for driving said steam-engine as an auxiliary source of power.

2. The combination in a gas apparatus, of a steam-driven air-compressor, an air-heater, a gas-producer, a steam-generator heated by the waste heat given out by the gas, a passage for compressed air leading through said air-heater into said gas-producer, a steam-pipe leading from said generator to said gas-producer, and a steam-pipe from said generator to the steam-engine driving said air-compressor.

3. The combination in a gas apparatus of a steam-driven air-compressor and a steam driven feed-pump, a compressed-air reservoir into which said compressor discharges, an air-heater, a gas-producer, a passage for compressed air leading from said reservoir through said heater to said producer, a steam-generator heated by the waste heat given out by the gas, a water-pipe from said feed-pump to said steam-

generator, a steam-pipe from said steam-generator leading to the gas-producer, and a steam-pipe from said generator leading to the steam-cylinders of said air-compressor and feed-pump.

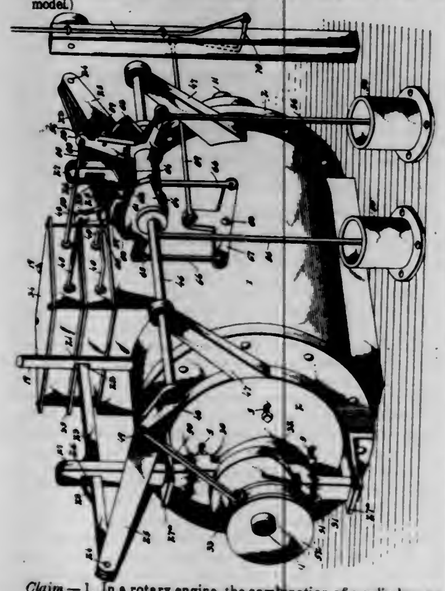
4. The combination in a gas apparatus of a steam-driven air-compressor, an air-heater, a gas-producer, a steam generator heated by the waste heat given out by the gas, a passage for compressed air leading through said air-heater into said gas-producer, a steam pipe leading from said generator, a steam-pressure regulator, a pipe leading from the low-pressure side of the latter through the superheater in the gas-producer and communicating with the inlet-twyers thereof, and a steam-pipe communicating with the high-pressure side of said regulator and leading to the steam-cylinder of said air-compressor, whereby said generator supplies steam both at reduced pressure for making gas, and at high pressure for driving said air-compressor.

5. In a gas-motor engine, the combination of a steam-driven air-compressor, an air-heater, a gas-producer, an engine cylinder, a passage for compressed air leading through said air-heater into said gas-producer and engine-cylinder, a passage for gas leading from said producer to said engine-cylinder, a steam-generator constructed as a jacket around said engine-cylinder, a feed-pump and connecting-pipe for forcing water into said steam-generating jacket, a steam-pipe leading from said generator to said gas-producer, and a steam pipe leading from said generator to the steam-cylinder of said air-compressor.

6. The combination of a gas-producer, a coil of pipe arranged to be heated by the hot gases generated in said producer, a steam-generator, an air-compressor, a passage for compressed air leading to the inlet of the gas-producer, a steam-pipe leading from said generator to the inlet of the gas-producer, a water-inlet to said coil of pipe, and suitable cocks whereby said coil of pipe may be filled with water when starting the fire in the gas-producer, and be utilized as a temporary steam-generator for getting up a pressure of steam during the starting of the fire.

7. The combination of a gas-producer, a superheating-coil therein, a steam-generator, an air-compressor, a compressed-air passage leading therefrom to the inlet of the gas-producer, a steam-pipe leading from said generator to said superheater and thence to the inlet of the gas-producer, a cock for closing said latter steam-passage, and a water-inlet to the bottom of said superheating-coil, whereby said superheating-coil may be filled with water when starting the fire in said gas-producer, and be utilized as a temporary steam-generator for getting up a pressure of steam during the starting of the fire.

573,959. ROTARY ENGINE. RAYMOND BAUER and ALBERT L. BAUER, Wheeling, W. Va. Filed Jan 31, 1896. Serial No. 577,569. (No model.)



Claim.—1. In a rotary engine, the combination of a cylinder provided with opposite end heads having inner recessed sides, and a central partition-disk provided in opposite upper sides with vertically-disposed guide-grooves, inner cylinder-heads adjustably fitted within the opposite ends of the cylinder and the recesses of said end heads, said inner adjustable heads being provided with vertically-disposed guide-grooves longitudinally alined with those in the partition-disk, the horizontal drive-shaft carrying rotating shaft-heads working in each compartment of the cylinder and provided with peripheral piston-flanges, vertically-reciprocating abutment-plates mounted to work within the upper part of the cylinder above said shaft-heads and having their ends slidably engaging in said guide-grooves, said abutment-plates being provided at their opposite ends with short depending guide extensions, means for alternately reciprocating said abutment-plates, and means for controlling the admission and exhaust of steam for each compartment of the cylinder, substantially as set forth.

2. In a rotary engine, the cylinder, a horizontal shaft carrying a rotating head working within the cylinder and provided with a peripheral piston-flange, a reciprocating abutment-plate mounted to slide within the cylinder and working against and away from said shaft-head, said abutment-plate having a stem working outside of the cylinder, an oscillating adjusting-lever pivotally supported at one end and having its other end loosely connected with the stem of said abutment-plate, an adjusting-bar supported to reciprocate at one end of the cylinder and provided at one end with a slot loosely receiving said adjusting-lever and at an intermediate point with a slot receiving the horizontal shaft, said adjusting-bar being further provided at opposite sides of the shaft with separate reversely-disposed bearing-shoulders, a pair of cams mounted on the horizontal shaft at opposite sides of the adjusting-bar and respectively working against the respective bearing-shoulders thereof, and suitably-arranged valve mechanism, substantially as set forth.

3. In a rotary engine, the cylinder, a horizontal shaft carrying a rotating head provided with a peripheral piston-flange working within the cylinder, a reciprocating abutment-plate mounted to slide within the cylinder to and away from the shaft-head and having a stem working outside of the cylinder, an oscillating adjusting-lever pivotally supported at one end and having its other end loosely connected with the stem of said abutment-plate, an adjusting-bar supported to reciprocate at one end of the cylinder and provided at one end with a slot loosely receiving said adjusting lever, a pair of cams mounted on the horizontal shaft and engaging the said adjusting-bar to reciprocate the same, a spring arranged at one side of said adjusting-lever within the slot of said adjusting bar, and suitably-arranged valve mechanism, substantially as set forth.

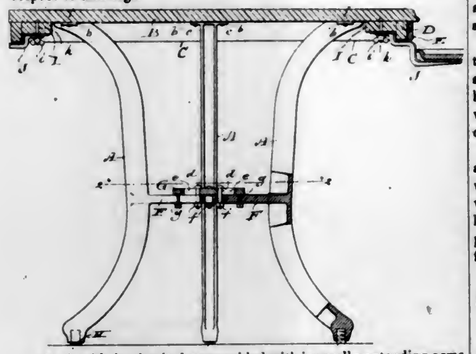
4. In an engine, the combination of a cylinder having separate compartments, and separate sets of supply and exhaust ports for each of said compartments, a valve-chamber arranged on the cylinder over the ports therein, a pair of alternately-reciprocating sliding cut-off valves mounted in said valve-chamber and having steams projecting out of the chamber, a suitably-supported rock shaft having an eccentric connection with the drive-shaft of the engine, a pair of valve-levers loosely mounted on said shaft and having a connection with said valve-stems, a clutch connection between said valve-levers and the rock-shaft to provide for oscillating the levers in one direction, means for oscillating the valve-levers in an opposite direction, and governor-operated cams loosely mounted on the rock-shaft and adapted to engage the said clutch connections to release the valve-levers therefrom, substantially as set forth.

5. In an engine, the combination with the cylinder having suitably-arranged ports, and the drive-shaft; of the valve-chamber, a pair of alternately-reciprocating sliding cut-off valves mounted within said valve-chamber, a rock-shaft mounted at one side of the cylinder and having an eccentric connection with the drive-shaft, a pair of spaced reversely-disposed bell-crank valve-levers loosely mounted on the rock-shaft, a link connection between the upper arms of said bell-crank levers and the valve-stems, oscillating clutch-plates secured fast on the rock-shaft at one side of the bell crank levers and provided each with a peripheral notch, normally spring-depressed clutch-dogs pivotally connected at one end to said bell-crank levers and provided at their other free ends each with a wide clutch tooth adapted to normally engage with the peripheral notch of the oscillating clutch-plate directly therebelow to provide a clutch connection for oscillating the bell-crank levers in one direction, means for oscillating said levers in an opposite direction, governor cam plates loosely mounted on the rock-shaft at one side of said clutch-plates and adapted to ride under and elevate the toothed ends of said clutch dogs, a pivotally-supported oscillating lever having a connection with each of said cam-plates to provide for turning the same, and a speed-governor connection with said oscillating lever, substantially as set forth.

573,960. TABLE. JULIUS BRUSS, Milwaukee, Wis. Filed Mar. 28, 1896. Serial No. 585,197. (No model.)

Claim.—1. A table having each leg thereof provided with a horizontal inwardly-extending arm intermediate of its extremities, a horizontal stay-plate laid against the leg-arms and provided with radial slots opposing the same, bolts engaging the plate-slots and leg-arms, and nuts run on the bolts.

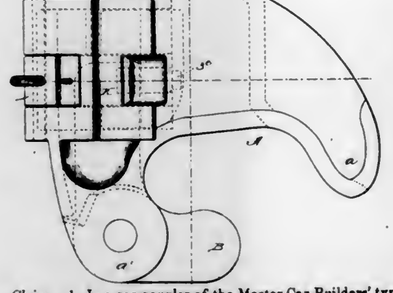
2. A table having its legs provided with inwardly-extending arms intermediate of their extremities, a stay-plate in bolt connection with the arms, and set-screws arranged to vary the angle of the plate with respect to said legs.



3. A table having its legs provided with inwardly-extending arms intermediate of their extremities, a stay-plate in bolt connection with the arms, and set-screws that turn in said arms against the plate.

4. A table having its top provided with an angular valance, blocks set in the corners formed by the valance, pivots depending from the blocks, tray-arms loose on the pivots, and thumb-nuts run on said pivots in opposition to the tray-arms.

573,961. CAR-COUPLING. HARRY C. BURROUP, Chicago, Ill., assignor to William McConway, Pittsburg, Pa. Filed Sept. 23, 1896. Serial No. 606,721. (No model.)



Claim.—1. In a car-coupler of the Master Car-Builders' type, the combination with a knuckle and its tailpiece, of a locking-block arranged laterally of the coupler-head and at an inclination to the path of the tailpiece of the knuckle; substantially as and for the purposes specified.

2. In a car-coupler of the Master Car-Builders' type, the combination with the knuckle and its tailpiece, of a locking-block arranged to move at an angle to the tailpiece of the knuckle and laterally of the coupler-head; substantially as and for the purposes specified.

3. In a car-coupler, the combination of a knuckle provided with a tailpiece, and a transversely-inclined spring-pressed locking-block; substantially as and for the purposes specified.

4. In a car-coupler, the combination with a knuckle provided with a tailpiece having an incline on its front face, of a locking-block arranged at a corresponding incline and transversely of the coupler-head; substantially as and for the purposes specified.

5. In a car-coupler, the combination with a knuckle having a tailpiece, of a locking-block having a spring-pocket, a spring arranged in the pocket of the locking-block, and a resistance-arm secured to the coupler-head and which projects into the spring pocket of the locking-block; substantially as and for the purposes specified.

6. In a car-coupler, the combination of a knuckle provided with a tailpiece, a locking-block, a spring for actuating the same, and a combined spring resistance-arm and kicker; substantially as and for the purposes specified.

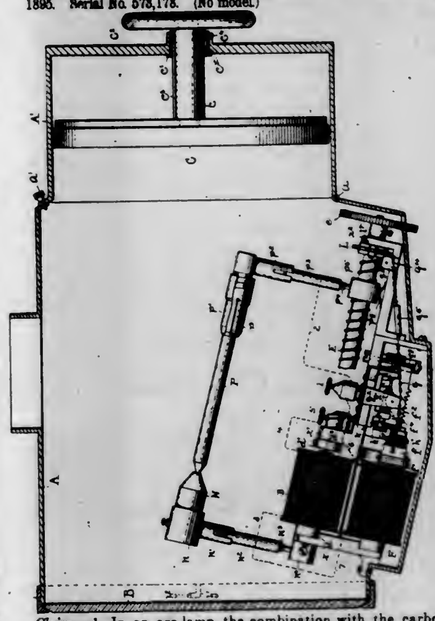
7. In a car-coupler, the combination with a knuckle and its tailpiece, of a spring-actuated locking-block arranged at an angle transversely of the coupler-head, and a combined resistance-arm and kicker; substantially as and for the purposes specified.

8. In a car-coupler, the combination with a coupler-head having an inclined transversely-arranged way for the locking-block said way provided with a cam-abutment, of a locking-block provided with a projection to engage the cam-abutment on the retraction of the block, and a knuckle having a tailpiece which engages the locking block; substantially as and for the purposes specified.

9. In a car-coupler, the combination with a coupler-head having transverse inclined ways for a locking-block, a cam-abutment on one side and a ledge on the opposite side of said ways, of a locking-block having a projection on one face which engages the cam-abutment when the block is retracted and a shoulder which engages the ledge of the coupler-head, substantially as and for the purposes specified.

10. The combination with a coupler-head and a knuckle having a tailpiece, of a locking-block arranged to move at an angle transversely of the coupler-head, the tailpiece of the knuckle being provided with a face corresponding to the plane of movement of the locking-block whereby the locking-block is wedged between the tailpiece and coupler-head; substantially as and for the purposes specified.

573,962. SEARCH-LIGHT. ARTHUR E. COLGATE, New York, N. Y., assignor to George J. Schoeffel, Brooklyn, N. Y. Filed Dec. 24, 1895. Serial No. 573,178. (No model.)



Claim.—1. In an arc lamp, the combination with the carbons, one of which is held stationary when the arc is formed and the other being movable, of a feed-screw for said movable carbon, a clutch for said feed-screw, a shunt magnet for operating said feed-screw through said clutch, a circuit-controller in the shunt-circuit operated by the armature of said shunt-magnet to open the circuit, and means for operating said controllers to close the circuit independently of the movement of the armature, substantially as set forth.

2. In an arc-lamp, the combination with the carbons and a feed-screw therefor, of a clutch for said feed-screw, said clutch consisting of a circular flange and a pivoted arm having a cam edge for engaging the periphery of said flange, a shunt-magnet, and a connection between said pivoted arm and the armature of said magnet whereby when the armature moves in one direction the pivoted arm is caused to grip the circular flange and rotate the feed-screw, substantially as set forth.

3. In an arc-lamp, the combination with the carbons and a feed-screw therefor, of a clutch for said feed-screw, said clutch consisting of a circular flange and a pivoted arm having a cam edge for engaging the periphery of said flange, a shunt-magnet for actuating said piroted arm to rotate the feed-screw, separate means for operating said feed-screw by hand, and means for normally holding said flange and pivoted arm out of engagement to permit the operation of the hand-feed, substantially as set forth.

4. In an arc-lamp, the combination with the carbons and a feeding device therefor, of a clutch operated by a shunt-magnet for auto-

matically actuating said feeding device, separate means for operating said feeding device by hand, and a finger l^7 engaging a stationary stop l^8 for throwing said clutch out of engagement in its normal position to permit the operation of the hand-feed, substantially as set forth.

5. In an arc-lamp, the combination with the carbons and a feeding device therefor, of a series magnet for striking the arc, said magnet having an armature carried by a spring pressed sliding rod, a carbon-holder for one of the carbons extending out to one side of said sliding rod, and a stationary non-magnetic pin projecting from one of the poles of said magnet and with which said armature engages for preventing lateral movements of the carbon-holders, substantially as set forth.

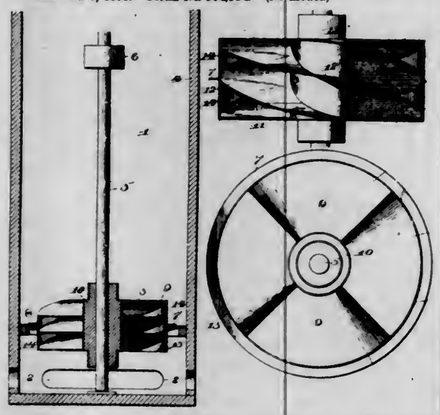
6. The combination with an arc-lamp, of a shunt-magnet for operating the feeding mechanism for the carbons, and a circuit-controller for the shunt-magnet comprising a stationary contact, a laterally-moving contact engaging therewith operated by the armature of the shunt-magnet when near the end of its movement, and a spring surrounding said movable contact to close the circuit independent of the movement of the armature away from its magnet, substantially as set forth.

7. In carbon-holders for arc lamps, the combination with the holder or clamp, of a split sleeve upon which the holder is mounted, an insulated stem or rod upon which said sleeve is forced, and a pin carried by said stem which enters slots in said sleeve to prevent the sleeve turning on said stem, substantially as set forth.

8. In carbon-holders for arc-lamps, the combination of a split sleeve p in which the carbon is placed, a clamping-collar p' engaging over said split sleeve p for clamping the same on the carbon, a split sleeve p^3 secured to the split sleeve p, and an insulated stem p^4 engaging within said split sleeve p^3, substantially as set forth.

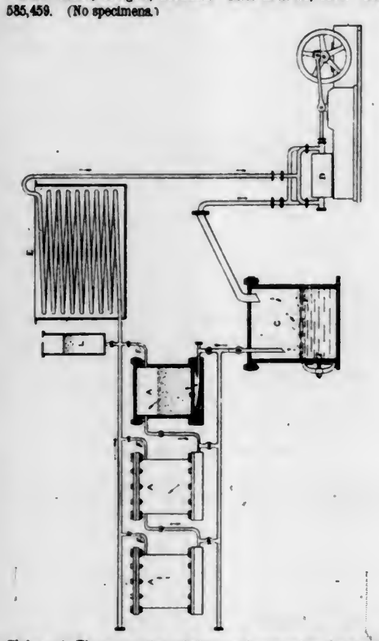
9. In a search-light, the combination of a casing, a reflector in said casing, an arc-lamp whose carbons are arranged obliquely and lying in a plane at right angles to the reflector, one of said carbons being held stationary when the arc is formed and the other being movable, of a feed-screw for said movable carbon, a clutch for said feed-screw, a shunt-magnet for operating said feed-screw through said clutch, a circuit-controller in the shunt-circuit operated by the armature of said shunt-magnet to open the circuit, and means for operating said controller to close the circuit independently of the movement of the armature, substantially as set forth.

573,963. WATER-ELEVATOR. JAMES M. CORN, Tempe, Ariz. Filed Oct. 3, 1895. Serial No. 564,534. (No model.)



Claim.—A water or fluid elevator comprising a vertical casing having openings in its lower end, a horizontal diaphragm located in the lower portion of the casing above the said openings and having a central opening, and a water-lifting wheel mounted upon a shaft and operating in the opening of the said diaphragm, and comprising a hub, a ring or band attached to and encircling the hub, an outer flange carried by the said ring and overlapping the opening in the said diaphragm, and a group of three elevating-wings disposed between and having attachment at their edges with the said hub and the ring or band, each of the said wings comprising a receiving, a middle and a delivery section, the receiving and delivery sections being reversely formed and having their terminal portions about parallel and lying in horizontal planes and jointly with the middle section extending in a spiral direction, the middle section lying midway between and coming opposite the receiving and the delivery ends of the adjacent wings and forming passages therewith of uniform area and capacity, substantially as specified.

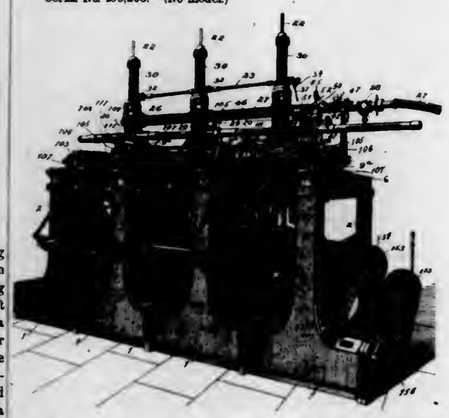
573,964. PROCESS OF PURIFYING AMMONIUM NITRATE. GEORGE CRAIG, Glasgow, Scotland. Filed Mar. 30, 1896. Serial No. 585,459. (No specimens.)



Claim.—1. The extraction of nitrate of ammonium from mixtures containing it, by percolating or digesting the same with anhydrous or high-strength ammonia to dissolve out the nitrate of ammonium, and obtaining it in the solid state therefrom, by evaporating off the solvent substantially as set forth.

2. Purifying impure nitrate of ammonium by combining therewith high-strength ammonia, and recovering it in the solid state by evaporation, substantially as set forth.

573,965. MACHINE FOR PRINTING LINOLEUM OR FLOOR-CLOTH, &c. THOMAS DALE, Kirkcaldy, Scotland. Filed Jan. 13, 1893. Serial No. 458,293. (No model.)



Claim.—1. The combination of the main frame, the cloth-supporting table mounted in the main frame, the transverse track-beams forming part of the main frame, the traveling carriage provided with supporting-wheels which run on said track-beams, the rack-bars secured to said track-beams, the traversing pinions journaled in the traveling carriage and meshing in the rack-bars, means for rotating the pinions in either direction, means for automatically controlling the direction of rotation, and printing mechanism mounted on the carriage, substantially as set forth.

2. The combination of the frame-standards formed with oblong base and vertical column portions secured together at their base portions and arranged in front and rear series, the cloth-supporting table mounted between the two series of standards, the track-beams supported on the tops of the columns of the standards and extending from the front to the rear standards, the traveling carriage mounted on the track-beams, the printing mechanism mounted on the carriage, and means for traversing the carriage, substantially as set forth.

3. The combination of the frame-standards formed with oblong base and vertical column portions arranged in front and rear series, the shoulders 5 projecting inwardly from the standards, the longitudinally-extending bars 4 resting on the flanges 5, the trussed cloth-supporting table mounted upon the bars 4 between the standards, the track-beams supported on the tops of the columns of the standards and extending from the front to the rear standards, the traveling carriage mounted on the track-beams, the printing mechanism mounted on the carriage, and means for traversing the carriage substantially as set forth.

4. The combination of the main frame, the cloth-supporting table mounted in the main frame, the track-beams forming part of the main frame, the traveling carriage carrying the printing mechanism and supported on the track-beams, the rack-bars secured to the track-beams, the traversing pinions meshing with said rack-bars and mounted upon a rotatable shaft journaled in the carriage, oppositely-arranged gear-wheels, loosely mounted upon the rotatable shaft, a driving-pinion gearing with both of said loosely-mounted pinions, a clutch keyed to the rotatable shaft and adapted to be shifted into engagement with either pinion, and means for imparting motion to the driving pinion, substantially as set forth.

5. The combination of the main frame, the cloth-supporting table mounted in the main frame, the track-beams forming part of the main frame, the traveling carriage carrying the printing mechanism and supported on the track-beams, the rack-bars secured to the track-beams, the traversing pinions meshing with the rack-bars and mounted upon a rotatable shaft which is journaled in the carriage, oppositely-arranged gear-wheels loosely mounted upon the rotatable shaft and formed with inner clutch-faces, a driving-pinion gearing with both of said loosely-mounted pinions, a clutch-sleeve keyed to the rotatable shaft and adapted to be shifted into engagement with either of the loosely-mounted pinions, a rock-shaft journaled in the carriage, a rock-arm keyed to the rock-shaft and engaging the clutch sleeve, a second rock-arm also keyed to said rock-shaft, a cam engaging said second rock-arm, and means for intermittently operating said cam for shifting the clutch sleeve and changing the direction of the carriage, substantially as set forth.

6. The combination of the main frame, the cloth-supporting table mounted in the main frame, the track-beams forming part of the main frame, the traveling carriage carrying the printing mechanism and supported on the track-beams, the rack-bars secured to the track-beams, the traversing pinions meshing with the rack-bars and mounted upon a rotatable shaft which is journaled in the carriage, oppositely-arranged gear-wheels mounted loosely upon the rotatable shaft and formed with inner clutch-faces, a driving-pinion gearing with both of said loosely-mounted pinions, a clutch-sleeve keyed to the rotatable shaft and adapted to be shifted into engagement with either of the loose pinions, a rotatable cam, a rock-shaft journaled in the carriage and provided with an arm at one end which engages the clutch-sleeve and an arm at the other end which engages the cam, ratchet-teeth on the cam, an oscillating arm carrying a pawl which engages with the ratchet-teeth, an intermittently-operated rock-shaft, an arm keyed to said rock-shaft, and a pitman connecting said arm with the pawl-supporting oscillatory arm, substantially as and for the purpose set forth.

7. The combination of the main frame, the cloth-supporting table mounted in the main frame, the track-beams forming part of the main frame, the traveling carriage carrying the printing mechanism and supported on the track-beams, the rack-bars secured to the track-beams, the traversing pinions meshing with the rack-bars and mounted upon a rotatable shaft which is journaled in the carriage, oppositely-arranged gear wheels mounted loosely upon the rotatable shaft, a clutch for throwing either gear-wheel into gear with the shaft, a rotatable transverse shaft journaled in the carriage, a gear-wheel keyed to the end of said shaft and gearing with both of the loose gear-wheels, another gear-wheel keyed to the opposite end of said shaft, a ratchet-clutch geared to said last-mentioned gear-wheel, an intermittently-oscillating rock-shaft, and a quadrant keyed to said rock-shaft and gearing with the ratchet-clutch, substantially as and for the purpose set forth.

8. In a linoleum or other cloth printing machine, the combination of a cloth-supporting bed or table, a reciprocating platen-carrying frame supported above the bed or table, a block-carrying platen pivotally attached to the reciprocating frame by a tight joint at one side and a loose joint at the other side to avoid any sucking action of the block by causing one side to lift before the other, a suitable spring or springs interposed in the loose joint, and means for operating the platen-supporting frame, substantially as and for the purpose set forth.

9. In a linoleum or other cloth printing machine, the combination of a cloth-supporting bed or table, a reciprocating printing-block supported in proper relation to said bed or table, a compressed-air or other fluid cylinder, a piston working in said cylinder and connected with the printing-block for operating it, and a reciprocating inking-pad controlled by the movement of the piston and adapted to apply color to the block, substantially as described.

10. In a linoleum or other cloth printing machine, the combination of the main frame, the cloth-supporting bed or table mounted in the main frame, the transverse track-beams forming part of the main frame, the traveling carriage supported on the track-beams, the downwardly-projecting extensions of the carriage forming vertical and horizontal guides or tracks, the reciprocating block-carrying frame mounted in the vertical guides, the reciprocating inking-pad working in the horizontal guides, a compressed-air or other cylinder supported above the block-carrying frame, the piston working in said cylinder, suitable traversing mechanism for moving the carriage back and forth on the track-beams, and means operated by the piston for actuating the block-carrying frame, the inking-pad and carriage-traversing mechanism in proper relation to each other, substantially as and for the purpose set forth.

11. In a linoleum or other cloth printing machine, the combination of a cloth-supporting bed or table, a reciprocating block-carrying frame, a compressed-air or other fluid cylinder, a piston working in said cylinder and connected with the block-carrying frame for operating it, a valve for regulating the supply and exhaust of the cylinder, a lever controlling the valve, a rod depending from the lever and provided with tappet-collars, and a trip-lever pivoted to the depending rod, a sliding rod adapted to move the trip-lever into operative position, a sliding ink-pad adapted to actuate said sliding rod, means for operating the ink-pad, and an arm projecting from the block-carrying frame and adapted to engage the tappet collars and trip lever, whereby the mechanism can be reversed on the whole or half stroke, substantially as set forth.

12. In a linoleum or other cloth printing machine, the combination of a suitable framework, the cloth-supporting bed or table, the traveling carriage supported on the framework above the bed or table, the vertically-reciprocating block carrying frame mounted in said carriage, a notched plate secured to the framework along the path of the carriage, a spring-pressed sliding bolt supported on the carriage, a trip attached to said sliding bolt and adapted to be operated by the vertically-reciprocating block-carrying frame, means for traversing the carriage, and means for operating the block-carrying frame, substantially as and for the purpose set forth.

13. In a linoleum or other cloth printing machine, the combination of the cloth-supporting bed or table, the printing mechanism, a rotatable drum over which the cloth passes from the table, a ratchet-disk keyed to the axle of the drum, a flanged quadrant loosely mounted on the drum-axle and carrying a pawl which is adapted to engage the ratchet-disk, a spring for retracting the quadrant, a compressed-air or other fluid cylinder, a piston working in said cylinder and provided with a piston-rod, a chain secured to the quadrant at one end and to the piston-rod at the other end and working in the groove of the quadrant, and means for controlling the operation of the piston, substantially as set forth.

14. The combination of the main frame, the cloth-supporting table mounted in the main frame, the transversely-traveling carriage, the printing mechanism mounted on the carriage, means for traversing the carriage, and means controlled by the printing mechanism for automatically imparting an intermittent movement to the cloth over the table, substantially as and for the purpose set forth.

15. The combination of the main frame, the cloth-supporting table mounted in the main frame, the traveling carriage, the vertically-movable block-carrying frame mounted in the carriage, means for traversing the carriage, means for drawing the cloth over the table, and means actuated by the vertically-movable block-carrying frame at the extremes of travel of the carriage for setting the cloth-drawing mechanism into operation, substantially as set forth.

16. The combination of the main frame, the cloth-supporting table mounted in the main frame, the vertically-movable block-carrying frame, the cloth-moving drum, the compressed-air or other fluid cylinder, the piston working in said cylinder, a suitable connecting means between the piston and drum, whereby the piston is adapted to intermittently revolve the drum for drawing the cloth forward over the table, a suitable valve controlling the fluid supply and exhaust of the cylinder, and suitable means controlled by the block-carrying frame for actuating said valve for throwing the drum into operation, substantially as and for the purpose set forth.

17. The combination of the main frame, the cloth-supporting bed or table mounted in the main frame, the vertically-movable block-carrying frame, the cloth-moving drum, the compressed-air or other fluid cylinder, the piston working in said cylinder, a suitable connecting means between the piston and drum whereby the piston is adapted to intermittently revolve the drum for drawing the cloth forward over the table, a suitable valve controlling the fluid supply and exhaust of the cylinder, a rock-shaft provided with a rock-arm, means connecting the rock-arm with the valve, a trip-finger keyed to the rock-shaft, and a trip-finger supported on the block-carrying frame, substantially as and for the purpose set forth

18. The combination of the main frame, the cloth-supporting bed or table mounted in the main frame, the vertically-movable block-carrying frame, the cloth-moving drum, the compressed-air or other fluid cylinder, the piston working in said cylinder and provided with a piston-rod, means connected with said piston-rod and the drum for intermittently revolving the drum, a valve controlling the fluid supply and exhaust of the cylinder, means for automatically opening the valve, mechanism actuated by the block-carrying valve for closing the valve, a latching device for holding the valve in locked position, and an arm projecting from the piston-rod and adapted to release the valve from the latching device and allow it to open, substantially as and for the purpose set forth.

573,966. INSULATOR-HANGER. ROBERT DUNCAN, San Francisco, Cal. Filed Dec. 31, 1895. Serial No. 573,964. (No model.)



Claim.—1. In combination with an electric wire, of a hanger for electric insulators consisting of a flat piece of metal bent or cast to removably and loosely fit over the flange of a metal beam, said hanger being retained on said beam by the horizontal tension of said wire substantially as and for the purpose set forth.

2. In combination with an electric wire, of an insulator provided with a bent hook adapted to removably and loosely fit over the flange of a metal beam and retained thereon by the horizontal tension of said wire substantially as and for the purpose set forth.

3. An insulator hanger consisting of plate I, metal hooks A A secured to opposite extremities of said plate and two or more insulators secured to said plate, said hooks being adapted to removably and loosely fit over the flange of a metal beam, substantially as and for the purpose set forth.

573,967. ART OF ENGRAVING. WILLIAM S. EATON, Sag Harbor, N. Y. Filed Jan. 9, 1896. Serial No. 574,894. (No specimens.)



Claim.—1. An improvement in the art of engraving consisting in taking a plate having lines upon its surface, placing a stencil over said lined plate and transferring by means of a pantograph engraver the lines exposed through the stencil and finishing the work by the use of an engraved plate, substantially as described.

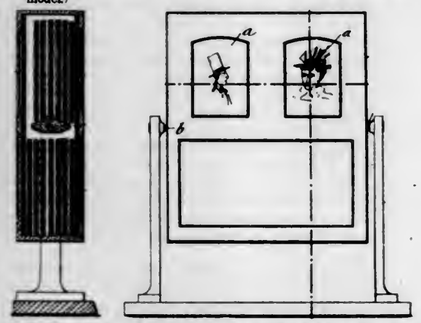
2. An improvement in the art of engraving, consisting in taking a plate having lines upon its surface, placing a stencil over said lined plate and transferring the lines exposed through the stencil; removing the first stencil and placing over the lined plate a second stencil and again transferring the exposed lines, superimposing the same on the lines of the preceding transfer to supply shadows and dark parts, and finally removing the second stencil and finishing by the use of an engraved plate, substantially as described.

3. An improvement in the art of engraving consisting in transferring a part of the lines from a lined plate through stencils and a part from an engraved plate, substantially as described.

4. An improvement in the art of engraving, consisting in taking a lined plate, placing thereon a stencil, transferring the exposed lines to the article being decorated, shifting the lined plate and again transferring the exposed lines to the article, substantially as described.

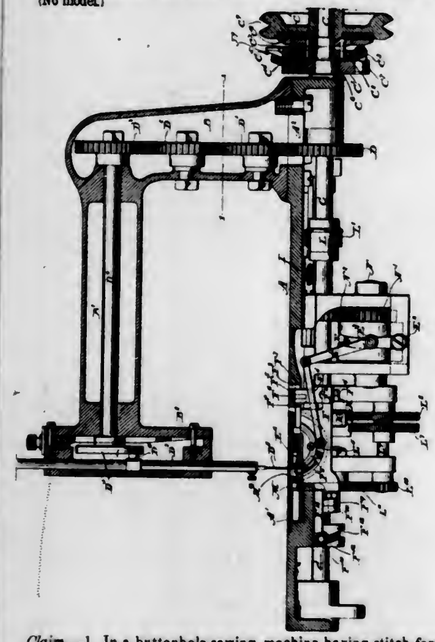
5. In combination with a pantograph-machine, a lined plate and a stencil-plate superimposed on the lined plate, the exposed lines being transferred by the pantograph, substantially as described.

573,968. REVOLVING STAND FOR PHOTOGRAPHS. BAER EPSTEIN, New York, N. Y. Filed Apr. 18, 1896. Serial No. 588,195. (No model.)



Claim.—A revolving picture-stand comprising a box journaled between side standards and having in the upper and lower portions respectively of the front and rear wall openings, a horizontal partition-wall leaving between the same and the front and rear walls spaces, pictures adapted to slide through said spaces, guide-brackets attached inside to the front and rear walls, and plates having the height of the compartments created by the partition-wall, the plates being held within the said guide-brackets and being adapted to slide therein up and down to obscure said pictures, substantially as set forth.

573,969. SEWING-MACHINE. CHRISTIAN FREDERICK and RAYMOND L. PLUMLEY, Wilmington, Del., assignors to the Trump Brothers Machine Company, same place. Filed May 29, 1896. Serial No. 593,544. (No model.)



Claim.—1. In a buttonhole-sewing machine having stitch-forming mechanism substantially as specified, a race-frame as F having a curved raceway F' formed in it, in combination with a race-block adapted to move in said raceway, mechanism for reciprocating said race-block in the curved raceway and mechanism adapted as described to reciprocate the raceway itself substantially in the plane of movement of the race block.

2. In a buttonhole-sewing machine having stitch-forming mechanism substantially as specified, a race-frame as F having a raceway F' formed in it, in combination with a race-block adapted to move in said raceway, mechanism for reciprocating said race-block in the curved raceway, mechanism adapted as described to reciprocate the raceway itself substantially in the plane of movement of the race-block and mechanism adapted to reciprocate said raceway in a direction transverse to the plane of movement of the race-block.

3. In a buttonhole-sewing machine having stitch-forming mechanism substantially as specified, a race-frame as F having a curved raceway F' formed in it, in combination with a slide supported on the frame of the machine adapted to support the race-frame and permit it to move longitudinally and substantially in the plane of the movement of the race-block as specified, mechanism as cam F^{15} adapted to impart such longitudinal movement to the race-frame, a race-block as E^5 and mechanism for reciprocating said race-block in the raceway.

4. In a buttonhole-sewing machine having stitch-forming mechanism substantially as specified and having a main driving-shaft C, the combination of a race-frame as F having a curved raceway F' and adapted to move longitudinally on the machine-frame and substantially in the plane of the movement of the race-block as specified, with mechanism for so reciprocating the race-frame longitudinally, a race-block adapted to move in the curved raceway, a counter-shaft N driven from shaft C, a cam as E actuated by said counter-shaft and means as described whereby said cam imparts reciprocating movement to the race-block.

5. In a buttonhole-sewing machine having a driving-shaft as C a driving-pulley as C^9 clutch mechanism adapted to connect and disconnect the shaft and pulley and a sliding plate M, the combination with said plate of a friction pin as K^6 having a spring as K^5 whereby it is pressed against the plate, a pin-retracting device as cam K^3 and connections between the pin-retracting device and clutch-actuating mechanism whereby the pin is allowed to press against the slide when the machine is in motion and retracted when the clutch is disengaged.

6. In a buttonhole-sewing machine having a sliding plate M, the combination with an adjusting-screw as H having stops H^7 H^8 of a projection as M^5 extending downwardly from the plate M adapted to engage said stops and to abut directly against them.

7. In a buttonhole-sewing machine having a sliding plate M, the combination with an adjusting screw as H of an outer latch-stop H^7 movable in a direction transverse to the axis of the adjusting-screw by which it is supported and found to yield to an outward movement of the sliding plate, a fixed stop H^7 secured to the adjusting-screw and a stop projection M^5 extending down from plate M to engage stops H^6 H^7 as specified.

8. In a buttonhole-sewing machine having a sliding plate M, the combination with an adjusting-screw as H of an outer latch-stop H^7 movable in a direction transverse to the axis of the adjusting-screw by which it is supported and formed to yield to an outward movement of the sliding plate, a fixed stop H^7 also secured to the adjusting-screw, a stop projection M^5 extending down from plate M to engage stops H^6 H^7 as specified, and mechanism for withdrawing and locking stop H^7 out of the path of projection M^5 actuated by the starting mechanism of the machine.

9. In a buttonhole-sewing machine having a driving-shaft and driving-pulley and a clutch for engaging and disengaging said shaft and pulley, a sliding plate as G^4 moving in one direction or the other as the clutch is engaged or disengaged, a spring as J^3 tending to disengage the clutch and to move plate G^4 toward the adjusting-screw, an adjusting-screw H, stops as H^6 H^7 connected thereto, a spring as H^8 tending to hold the adjusting-screw H in its outer normal position, a stop as H^{10} secured to the adjusting-screw and arranged to engage and hold the plate G^4 in position to engage the clutch when the adjusting-screw is in normal position and to release said plate and permit the clutch to open when the adjusting-screw is depressed.

10. In a buttonhole-sewing machine having a driving shaft and driving-pulley and a clutch for engaging and disengaging said shaft and pulley, a sliding plate as G^4 moving in one direction or the other as the clutch is engaged or disengaged, a spring as J^3 tending to disengage the clutch and to move plate G^4 toward the adjusting-screw, an adjusting-screw H, stops as H^6 H^7 connected thereto, the stop H^7 being a latch having a movement at right angles to the adjusting-screw, a spring as H^8 tending to hold the adjusting-screw H in its outer normal position, a stop as H^{10} secured to the adjusting-screw and arranged to engage and hold the plate G^4 in position to engage the clutch when the adjusting-screw is in normal position and to release said plate and permit the clutch to open when the adjusting-screw is depressed, a rod H^6 attached to the end of the latch-stop H^7 and engaged in a slot G^5 of plate G^4 said slot being formed and placed as described so that a movement of plate G^4 to engage the clutch will draw back the latch while giving room to draw back the latch when the plate is in its other position.

11. In a buttonhole-sewing machine a main shaft C having a driving-pulley C^9 journaled on its end in combination with a friction-clutch whereby the shaft and pulley are coupled and of which clutch mechanism the arm C^3 pivoted to and revolving with the shaft is a part, said arm being normally pressed out by a spring as C^4 to engage the clutch, a shaft J free to oscillate in fixed bearings, a cam-arm J^6 secured to said shaft and adapted in one position on said shaft to engage the pivoted clutch-arm C^3 and cause it to move away from the pulley while in the other position of said shaft it is moved out so as not to engage the arm C^3, a spring-buffer J^8 also secured to shaft J and thrown into and out of position to engage the arm C^3 by the movements of said shaft and mechanism for moving shaft J to start and stop the machine.

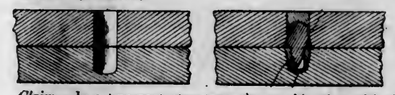
12. In a buttonhole-sewing machine a main shaft C having a driving-pulley C^9 journaled on its end in combination with a friction-clutch whereby the shaft and pulley are coupled and of which clutch mechanism the arm C^3 pivoted to and revolving with the shaft is a part, said arm being normally pressed out by a spring as C^4 to engage the clutch, a shaft J free to oscillate in fixed bearings a cam-arm J^6 secured to said shaft and adapted in one position on said shaft to engage the pivoted clutch-arm C^3 and cause it to move away from the pulley while in the other position of said shaft it is moved out so as not to engage the arm C^3, said arm J^6 having a depression J^{10} near its base to engage and hold the arm C^3, a spring-buffer J^8 also secured to shaft J and thrown into and out of position to engage the arm C^3 by the movements of said shaft and mechanism for moving shaft J to start and stop the machine.

13. In a buttonhole sewing machine having an adjusting-screw H with stops H^6 H^7 secured thereto a slide M, a friction-pin K^6 arranged to press against the said slide and a clutch adapted to couple and uncouple the shaft and driving-pulley, the combination with the sliding plate G^4, the cam K^3 and lever K K' actuating said cam, the clutch-actuating shaft J and its lever-arm J^3 with the T-shaped lever I I' I^2 whereby said parts are moved simultaneously.

14. In a buttonhole-sewing machine the combination with the slide M of a rack M' and a link M^3 said link being pivotally connected at one end to the slide and at the other to the rack.

15. In a buttonhole-sewing machine the combination of the slide M of a rack M' and a link M^3 said link being pivotally connected at one end to the slide and at the other to the rack and lying in a line forming an acute angle to the normal operative position of said rack.

573,970. METALLIC DOWEL-PIN FOR PATTERN-MAKERS. WILLIAM N. GARTSIDE, Richmond, Ind. Filed Nov. 7, 1893. Serial No. 490,278. (No model.)



Claim.—In a two-part structure, the combination with the two parts fitting together, but movable away from each other and having a hole of uniform diameter formed entirely through one and into the other, of a dowel consisting of the two tapering, blunt-ended externally-corrugated body portions driven into said hole with the line of separation at the parting, one of said body portions having a central cylindrical opening in its end face and the other of said body portions having an integral tapering pin formed thereon adapted to fit in the socket in the other body portion when the parts of the structure are brought together; substantially as described.

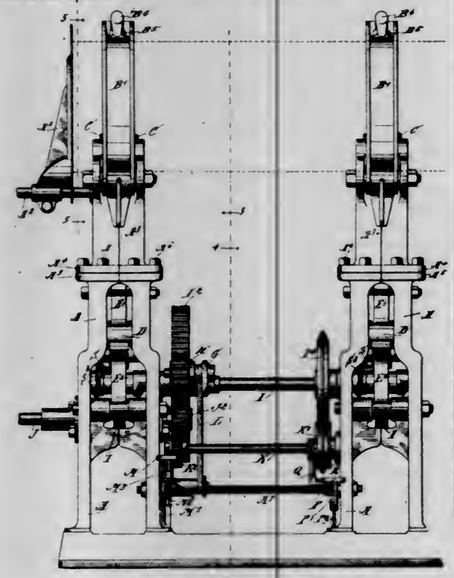
573,971. WOOD-BUNDLING MACHINE. DARWIN A. GREENE, Brooklyn, N. Y. Filed Oct. 11, 1895. Serial No. 565,429. (No model.)

Claim.—1. In a wood-bundler the combination with a cradle C and means for raising and lowering it, of a yoke composed of two parts B', B^2, extending over such cradle, and adapted to open and close to cooperate with the cradle in clamping the wood, all substantially as herein specified.

2. In a wood-bundler, the combination with a cradle C and means for raising and lowering it, of a yoke composed of two parts B', B^2, pivoted below and extending over such cradle, to cooperate with the same in clamping the wood, and with a lock piece B^4 pivoted at the top of the part B^2 and designed to engage the part B', to hold said parts together, all arranged for joint operation substantially as herein specified.

3. In a wood-bundler the combination with a cradle C and means for raising and lowering it, of a yoke composed of two parts B', B^2, extending over such cradle, and adapted to open to allow the wood to be introduced and removed at the top, and to close to form an efficient abutment for the compression, the pivots for such parts being set in the frame in the position below the bundle but at so widely-separated points that gravity can hold the parts either open or closed as required, and with the locking-piece B^4 turning on the pivot B^2 in the one part and having means for taking hold of and releasing its hold

on the other part at will, all arranged for joint operation substantially as herein specified.



573,972. GAME-TABLE. JAMES A. HAMILTON, Indianapolis, Ind. Filed Jan. 16, 1896. Serial No. 575,778. (No model.)



Claim.—1. A game-table of the class described, provided with two or more interchangeable detached center pieces and apartments for containing the additional center pieces, said center pieces being adapted to be alternately fitted into and close an opening in the center of the table top, and a means consisting of cushioned disks operated by a notched slide bar, for instantly throwing said center pieces out of the opening in the table-top, for the purpose of interchanging them, as set forth.

2. The combination of a game table of the class described, having a central opening in the top thereof, with a series of interchangeable center pieces adapted to lie within said opening, and an independent means for instantly lifting said center pieces out of said opening, consisting of a notched slide-bar, and the pins *s*, provided with flat cushioned disks, substantially as described.

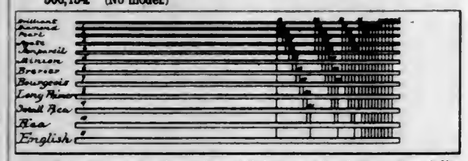
3. In a game-table of the class described, having a frame and a top with a central opening therein, the combination of the interchangeable center pieces B, and B′, with the slide-bar F, having notches G, one side of which is inclined for the purpose of raising and lowering the pins *s*, thereby causing the cushioned-disks E, to lift said center pieces out of the opening in the table-top, substantially as shown and described.

4. In combination in a game-table of the class described, the top A, having the central opening, the interchangeable center pieces B, and B′, the cushioned disks E, attached to the pins *s*, the block D, having the openings *o*, the slide-bar F, having the notches G, and the arm H, and knob *t*, supported by the strips I, and the cleat J, substantially as shown and described.

5. In a game-table provided with drawers C, C′, C″, and C‴, the combination of a top having a central opening and drawer-runs *k*, secured to the lower side of said top, the inner ends *n*, of said drawer-runs projecting past the corners of said opening to form supports for interchangeable center pieces with interchangeable center pieces adapted to fit into and close said opening, and the means for lifting said center pieces, substantially as shown and described.

6. The combination in a game-table of the class described, having a top with a central opening therein, of interchangeable center pieces B, and B′, cushioned disks E, attached to pins *s*, the slide-bar F, having notches G, with the table-frame having one side grooved and provided with runs *m*, to receive an additional center piece, substantially as shown and described.

573,973. SPACING-RULE AND LINING-GAGE. BRET H. HARRIS and GEORGE A. CORBIN, Denver, Colo. Filed Oct. 18, 1895. Serial No. 566,154. (No model.)



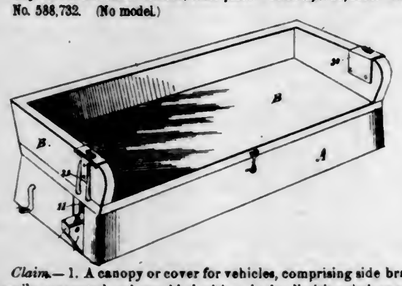
Claim.—1. A spacing-rule and lining-gage having a series of slits of different and graduated widths, substantially as described.

2. A spacing-rule and lining-gage having a series of slits of different and graduated widths at different and graduated distances apart, substantially as described.

3. A spacing-rule and lining-gage having in combination the indicia of certain standard types or characters, and an equal number of slits each corresponding in width to one of the types or characters, substantially as described.

4. A spacing-rule and lining-gage having in combination a series of graduated slits at graduated distances apart, and indicia for combinations, sequences or permutations of the slits and distances, substantially as described.

573,974. FOLDING CANOPY-COVER FOR VEHICLE-SEATS. ALVANES G. HENERY, Malta, Ohio, assignor of one-half to James B. Naylor and Austin A. Coulson, same place. Filed Apr. 23, 1896. Serial No. 588,732. (No model.)



Claim.—1. A canopy or cover for vehicles, comprising side braces pivotally connected and provided with a device limiting their spread, and ribs removably connected with the said braces, as and for the purpose set forth.

2. A canopy or top for vehicles, consisting of side braces pivotally connected, a sleeve mounted to slide upon a central brace and having pivotal connection with the side braces, the said braces being provided with irregular recesses in their upper ends, and ribs adapted to connect corresponding braces, connecting bars attached to the said ribs and provided with sleeves adapted to receive the upper ends of the braces, and latches arranged to enter the recesses in the said braces, as and for the purpose specified.

3. The combination, with a vehicle-seat, comprising a base and a seating-section, the base being of box-like construction, of a canopy the sides of which are arranged to fold, having a hinged connection with the seat-base, and ribs having a detachable connection with the aforesaid sides or braces, whereby the braces when collapsed may be folded down within the base of the seat and the ribs correspondingly placed within the aforesaid base, as and for the purpose specified.

4. The combination, with a seat comprising a base-section of box-like construction, having slots of different lengths in its ends, and a seating-section adapted to cover the base, of a canopy or cover comprising pivotally-connected side braces, shoes secured to the end portions of the base opposite the slots therein, a central brace at each side of the canopy having a hinged connection with the said shoes, and ribs connecting corresponding braces, having a locking engagement therewith yet being removable therefrom, whereby the entire canopy or cover may be folded within the base and beneath its seating-section, as set forth.

5. A vehicle-seat comprising a hollow base and a seating-section adapted to cover the base, a sectional canopy or cover attached to the base of the seat, the side members of the canopy having pivotal and guided connection, and a hinged connection with the base, the hinged connection being such as to enable the canopy to be folded within the base of the seat without detachment therefrom, as and for the purpose specified.

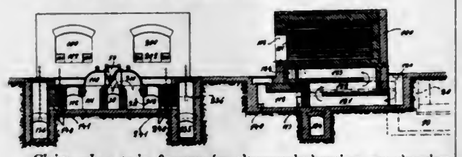
6. A vehicle-seat, and a sectional folding canopy attached to the said seat and arranged to drop below the seating portion of the seat, as and for the purpose set forth.

7. A vehicle-seat comprising a skeleton base, a seating-section adapted to cover the said base, a roller located within the base, means for turning the roller from the exterior of the base, and a folding canopy having a hinge connection with the base, the connection being such as to admit of the canopy being stored within the base below the seat portion thereof, substantially as described.

8. The combination, with a seat comprising a chambered base and a seating-section adapted to cover the said base, of a canopy comprising folding sides having a hinged connection with the sides of the base, detachable ribs connecting the sides of the canopy, and a keeper carried by the seating portion of the aforesaid seat and arranged to receive a member of the sides of the canopy, as and for the purpose set forth.

9. The combination, with a seat comprising a chambered base and a seating-section adapted to cover the said base, of a canopy comprising folding sides having a hinged connection with the sides of the base, detachable ribs connecting the sides of the canopy, and adjustable keepers located at the sides of the seat, said keepers being arranged to receive a member of the side portions of the canopy, and locking devices for the said keepers, whereby they may be held at a point beyond the outer face of the seating-section of the seat, or at a point practically within the plane of the said outer surface of the said seat, as and for the purpose specified.

573,975. TWIN FURNACE FOR ENAMELING AND HEATING WITHOUT MUFFLES. CARL MAXIMILIAN HERRMANN, Dresden, Germany, assignor to the Actien-Gesellschaft für Glas Industrie, vormals Friedr. Siemens, same place. Filed Dec. 19, 1895. Serial No. 572,660. (No model.) Patented in Germany June 19, 1894, No. 80,107.



Claim.—In a twin furnace for alternately heating one chamber and chargiug the other with material not inclosed in muffles the combination with means for shifting the current of heating-gas from the one chamber to the other, of two auxiliary passages each of which connects the gas-supply channel of the one chamber with the channel for the exit of the gases of combustion of the said chamber at a point between the chimney-damper and the chimney, and of a cut-off device in each of these auxiliary passages, essentially as and for the purpose set forth.

573,976. CAPSULE. WILLIAM A. HINCHMAN, Tarentum, Pa. Filed Sept. 30, 1896. Serial No. 607,447. (No model.)

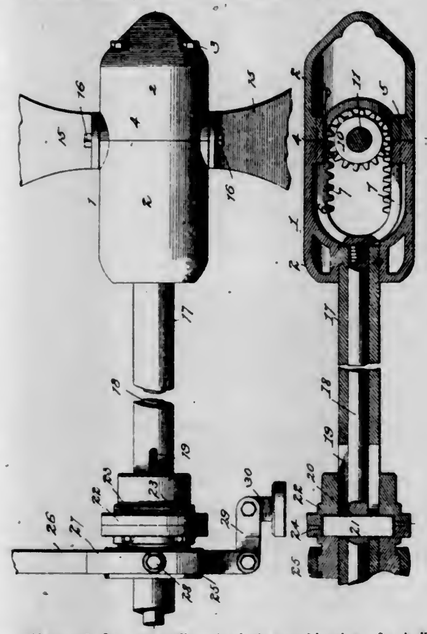


Claim.—1. A compound capsule consisting of an inner soluble shell and an absorptive outer soluble shell provided with an intervening filling, substantially as described.

2. A compound capsule consisting of an inner soluble shell, an absorptive filling between the inner and outer shells, and a string passing through the outer shell and connected with the filling.

3. As an improved article of manufacture, a capsule for rectal and similar applications, consisting of inner and outer soluble shells, an absorptive filling or packing between said shells and consisting of a folded length of fibrous material, and a string or cord inclosing the fold of said packing and extending out through the shells.

573,977. SCREW-PROPELLER. GEORGE W. HUBBARD, Chicago, Ill. Filed June 10, 1896. Serial No. 595,017. (No model.)



Claim.—1. In a propeller-wheel, the combination of a hollow casing or hub having opposite openings in its sides, a loose pin within the casing, pinions journaled on the pin and having hubs projecting through the openings in the casing, a bar having two toothed arms engaging said pinions to move them in opposite directions, propeller-blades secured to the hubs of the pinions, and means to operate the rack-bar substantially as and for the purpose specified.

2. The combination with a hollow driving-shaft and a hollow casing or hub rigidly connected to it and having opposite openings in its sides, of a loose pin within the casing, pinions journaled on the pin and having hubs extending through the openings, propeller-blades secured to the hubs, a double rack-bar engaging with said pinions, a shaft connected to the rack-bar and extending longitudinally within the hollow driving-shaft, devices to connect the two shafts to have common rotary movement and permit the inner shaft to have independent longitudinal movement, and mechanism to move the inner shaft longitudinally, substantially as and for the purpose specified.

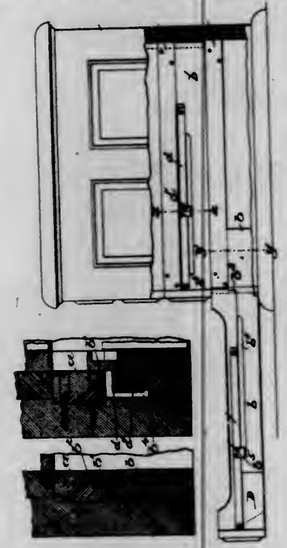
573,978. DRAWER AND SUPPORT THEREFOR. DAVID E. HUNTER, Cambridge, and HERBERT E. DAVIDSON, Watertown, MASS. Filed Mar. 31, 1893. Serial No. 468,595. (No model.)

Claim.—1. The case, the drawer-carrying slides, and runs for and on which the same may slide in the said case, combined with the drawer having its sides between said slides and having long supporting-cleats projecting from its sides freely resting upon the said slides, cooperating portions of said drawer and slides constituting stops to limit the direct outward movement of the drawer, said cleats extending nearly or quite to the front of the drawer, substantially as described.

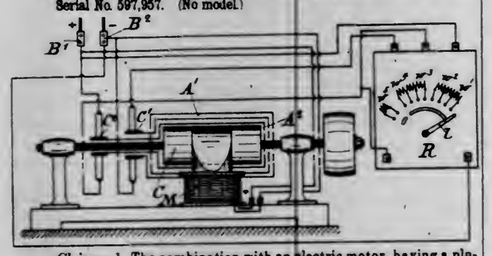
2. The case, and runs secured thereto, combined with slides rabbeted along their outer sides at their upper edges, the rabbets terminating in stops at either end thereof, and a drawer resting upon said slides, long supporting-cleats projecting from its sides resting upon said slides, and vertical ears on the drawer to run in said rabbets and cooperate with said stops, substantially as described

3. A drawer for a card-catalogue or similar case, having grooves channeled lengthwise in the inner faces of its opposite sides, shallow notches being provided in the lower edges of said grooves, said notches

having parallel, vertical walls to prevent lateral movement of the pins held thereby, combined with a block adapted normally to rest on the bottom of the said drawer, said block having at either end a pin projecting laterally therefrom into the adjacent grooves, being positively held thereby against removal, said pins being adapted to rest in said notches when the said block is in normal position, substantially as described.



573,979. APPARATUS FOR VARYING SPEED OF ELECTRO-MOTORS. LUDWIG IMHOFF, Berlin, Germany. Filed July 3, 1896. Serial No. 597,957. (No model.)



Claim.—1. The combination with an electric motor, having a plurality of separate armature-windings preferably wound on one core, separate commutators connected to the respective armature-windings, a switch for placing one or more of the armature-windings in circuit with the source of electricity, and resistances for insertion in series with the motor at every transition from an armature-winding containing a lower number of turns to an armature-winding containing a higher number of turns, substantially as and for the purpose set forth.

2. The combination with an electric motor, having a plurality of separate armature-windings preferably wound on one core, separate commutators connected to the respective armature-windings, and a controlling-rheostat provided with the usual switching arrangements for placing one or more of the aforesaid armature-windings in circuit with the source of electricity, said rheostat having resistances for insertion in series with the motor at every transition from an armature winding containing a lower number of turns to an armature-winding containing a higher number of turns, substantially as and for the purpose set forth.

573,980. RAILWAY-RAIL BOND. BYRON JENNINGS, San José, Cal. Filed Apr. 17, 1896. Serial No. 587,905. (No model.)

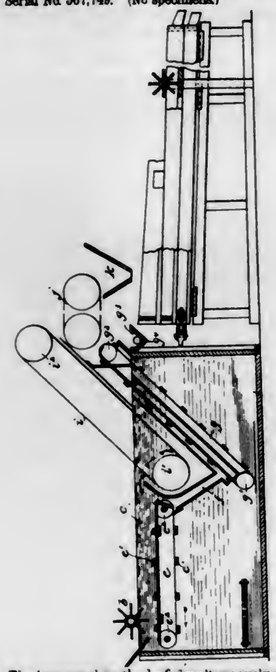


Claim.—1. In a railway-rail joint, a base-plate upon which the meeting ends of the rails are adapted to rest, said plate having a depressed section beneath the joint, a curved flat spring having a thickness equal to the depth of the depression and forming, when straightened, a continuous support with the ends of the plate, for the rail, and means whereby the base-plate is retained in place and the spring-plate held in its depressed condition.

2. In a railway rail joint, a bond for the meeting ends of the rails consisting of a base-plate having a depressed section beneath the meeting ends of the rails and end lugs, a curved spring having a thickness equal to the depth of the depression and forming, when straightened, a continuous support with the ends of the plate, for the rail, side plates fitting and bolted to the webs of the rails having flanges bent with relation to the base-plate, whereby the latter is retained in place and the spring maintained in its depressed condition in the chamber.

3. A railway-rail bond consisting of side plates bolted to the webs of the meeting rails having flanges extending around and beneath the rail-flanges, a base-plate channeled to be engaged by the flanges of the side plates, whereby it is held in close contact with the bottom of the rails, said plate having a depressed chamber beneath the meeting ends of the rails, a curved spring fitting the chamber and which when straightened forms with the plate a solid support for the rail ends, and a copper surface-plate fitted upon it extending across the joint so as to make a continuous electrical connection through the rails.

573,981. METHOD OF PREPARING WOOD CHIPS FOR MAKING PULP. NATHANIEL M. JONES and REGINALD TALBOT, Lincoln, Me.; said Talbot assignor to Charles W. Coffin, Bangor, Me. Filed Nov. 2, 1895. Serial No. 567,749. (No specimens.)

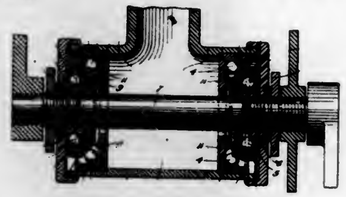


Claim.—The improved method of simultaneously moistening and sorting the clear-wood chips from a mass of chips for cooking in a digester, the process consisting in positively and completely submerging the mass in a liquid of greater specific gravity than the clear-wood chips; then permitting the clear-wood chips individually to scatter and rise through the liquid to the surface thereof, and allowing the knotty chips and other refuse of the mass to remain at the bottom, substantially as described.

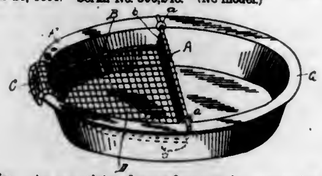
573,982. BALL-BEARING. EDWARD J. KELLY, Monongahela City, Pa. Filed Mar. 13, 1896. Serial No. 583,048. (No model.)

Claim.—1. In a ball-bearing, a bearing-plate provided with an external annular inclosing flange, as 3', constituting a bearing-face, and an internal annular retaining-ridge, as 11, constituting a non-bearing face, substantially as set forth.

2. In a ball-bearing, the combination with one or more rows of balls and their bearings, of a bearing-plate provided with an external annular inclosing flange constituting a bearing-face, and an internal annular retaining-ridge, constituting a non-bearing face, substantially as set forth.

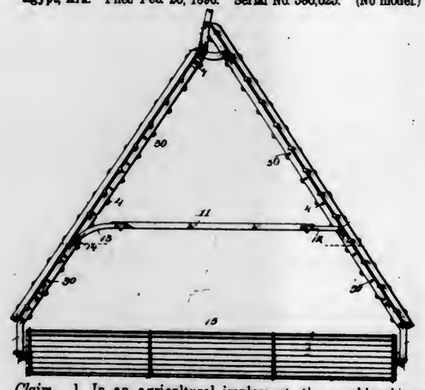


573,983. DISH-DRAINER. JOHN G. KERNER, Chicago, Ill. Filed June 20, 1896. Serial No. 596,240. (No model.)



Claim.—As an article of manufacture, the supporting-rod A, the frame B secured at its ends thereto, said rod and a portion of said frame adapted to rest upon the rim of a pan, the remainder of said frame depending within the pan and the wire-gauze mounted on said frame, substantially as and for the purpose set forth.

573,984. COMBINED HARROW AND ROLLER. FRED O. KINNEY, Egypt, Ark. Filed Feb. 20, 1896. Serial No. 580,025. (No model.)



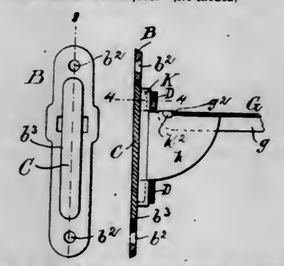
Claim.—1. In an agricultural implement, the combination of frame or toothed bars diverging from their front ends and having one bar projecting in advance of the end of the other bar, and an elbow-shaped clevis having pivotal connection at the elbow with the rearmost bar and having pivotal connection with the other bar a short distance in the rear of its front end and formed from a strip folded upon itself and having its end portions deflected, the parts of the clevis being separated and receiving the front ends of the toothed bars between them, substantially as shown for the purpose described.

2. In an agricultural implement, the combination of frame or toothed bars diverging at their rear ends, an elbow-shaped clevis having the end portions of its short arm pivotally connected to the front ends of the respective bars, and a transverse brace pivotally and adjustably connected to the said frame bars to hold them at the required distance apart and having parallel strap-irons at its ends between which are received the toothed bars, one set of irons being straight and the other set curved, substantially as set forth.

3. In an agricultural implement, a pulverizing roller comprising heads having closed slots or mortises around and contiguous to their peripheral edges, slats fitted into the said mortises and having notches in their edges to receive the closed ends thereof, and fastening means interposed between the rear edges of the slats and the adjacent closed ends of the mortises, substantially in the manner and for the purpose set forth.

4. In an agricultural implement, the combination of circular heads having openings around and contiguous to their peripheral edges and inclining or obliquely disposed to radii of the said heads, a ring having openings corresponding in position, number and form to the openings in the said heads, and slats having notches in their outer edges and fitted in the openings of the heads and ring and engaged positively therewith by having the said notches receiving the outer closed ends of the openings in the said heads and ring, substantially as specified.

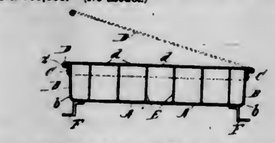
573,985. BRACKET. ALFRED R. KUNZ, Brooklyn, N. Y. Filed Mar. 13, 1896. Serial No. 583,055. (No model.)



Claim.—1. A bracket comprising a plate B which is adapted to be secured to a wall or other support, said plate being provided with a vertical longitudinal slot or opening having a smaller plate C fitting in said slot, said plate B being also provided with loops or projections formed on the front thereof to receive and retain a bolt therein, and a bracket-arm which is detachably connected with said bolt, substantially as shown and described.

2. A bracket comprising a plate which is adapted to be secured to a wall or other support, said plate being provided with a vertical longitudinal slot or opening to receive a hinged bolt which is adapted to be placed therein, said plate being also provided with loops or projections formed on the front thereof for the retention of said bolt when placed therein, said bolt being provided with a plate B to engage with a bracket arm which is detachably connected therewith, and said arm being provided at its outer end with a head in which is formed an opening or openings, and at its inner end with means for attaching it to the said bolt, substantially as shown and described.

573,986. BAKE-PAN. GASTON LAGELOUSE, New York, N. Y., assignor of one-half to Remy Fabien, same place. Filed Sept. 28, 1895. Serial No. 563,989. (No model.)



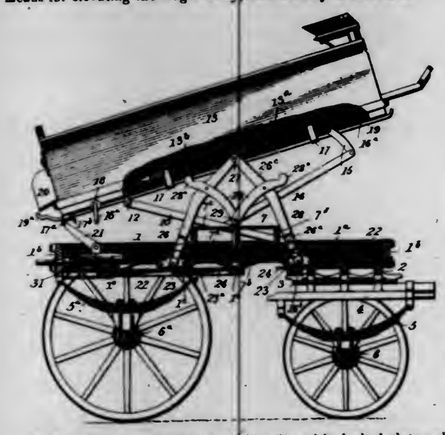
Claim.—A mold or pan for baking bread, substantially as herein shown and described, consisting of a bottom portion which is formed of narrow strips arranged parallel with each other with a narrow strip between the meeting edges adjacent each space thereof, the end of said strip being bent upwardly to form the side of the pan, and a cover also formed of narrow strips between the adjacent edges of which are narrow spaces, said cover being hinged to one side of said pan, and provided with a sliding device upon the outer side thereof, said pan being provided with legs or supports secured at corners thereof, the top of the bottom strip or plates and the side strips or plates are united by a band C, whereby when the dough begins to rise the cover is closed and locked, and the liquid matter contained in the dough is forced through the slots between the adjacent edges of the strips by the compression of the dough, as and for the purpose specified.

573,987. DUMPING-WAGON. EDWARD L. LAYTON, Trenton, N. J., assignor of four-fifths to J. Grumbacher, William Fagan, W. G. Sickell, and W. H. Limberg, same place. Filed Mar. 4, 1896. Serial No. 581,785. (No model.)

Claim.—1. In a dumping-wagon, the combination with the bed-plate and turn table, of a wagon-body, links connected to the body and the turn-table, auxiliary links also connected to the wagon-body and to the first set of links, and means for elevating the wagon-body, substantially as described.

2. In a dumping-wagon, the combination with the bed plate and turn-table, of a wagon-body, links connected to the turn-table and wagon-body, auxiliary links connected to the first set of links, swing-

ing arms interposed between the auxiliary links and wagon-body and means for elevating the wagon-body, substantially as described.



3. In a dumping-wagon, the combination with the bed-plate and turn-table, of a wagon body, links connected to standards on the turn-table and to brackets on the wagon-body, auxiliary links connected to the first-named links, swinging arms interposed between the auxiliary links and wagon-body and means for elevating the wagon-body, substantially as described.

4. In a dumping-wagon, the combination with the bed-plate and wagon-body, of elevating devices comprising levers, screw-shafts, and wheeled carriages connected to the levers and adapted to be moved by the screw-shafts, substantially as described.

5. In a dumping-wagon, the combination of the bed-plate and wagon-body, of elevating devices comprising levers, screw-shafts, carriages connected to the levers, and nuts mounted on the screw-shafts and loosely connected to the carriages, substantially as described.

6. In a dumping wagon, the combination of the bed-plate and wagon-body, of elevating devices comprising levers, screw-shafts, wheeled carriages connected to the levers, housings in the carriages, and nuts mounted on the shafts and inclosed in said housings, substantially as described.

7. In a dumping-wagon, the combination of the bed-plate and wagon-body, of elevating devices comprising levers, screw-shafts, carriages, and nuts mounted on the shafts and connected to the carriages, the levers being connected at the lower sides of said carriages, substantially as described.

8. In a dumping-wagon, the combination of the bed-plate and wagon-body, of elevating devices comprising levers, screw-shafts, carriages, and nuts mounted on the shafts and connected to the carriages, the ends of the levers being bifurcated and embracing the carriages, substantially as described.

9. In a dumping-wagon, the combination with the bed-plate and wagon-body, of elevating devices comprising levers pivoted together, means for operating their outer ends, and auxiliary levers pivoted to the first levers and pivoted together and having extending ends, substantially as described.

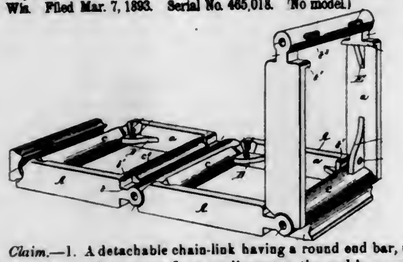
10. In a dumping-wagon, the combination with the bed-plate and wagon body, of elevating devices comprising levers pivoted together, carriages connected to the ends of the levers, means for moving the carriages, and auxiliary levers pivoted to the first levers and pivoted together, the outer ends of the auxiliary levers projecting beyond the first levers, substantially as described.

11. In a dumping-wagon, the combination with the bed-plate and turn-table, of a wagon body, links connecting the wagon-body and turn-table, elevating devices comprising compound levers forming supports for the links, and means for operating the compound levers, substantially as described.

12. In a dumping-wagon, the combination with the bed-plate and turn-table, of a wagon-body, links connecting the wagon-body and turn-table, the links being provided with cross-pieces, elevating mechanism comprising compound levers adapted to support the links and to be held in position by the cross-pieces, and means for operating the compound levers, substantially as described.

13. In a dumping-wagon, the combination with the wagon-body, of the tracks supported beneath the wagon-body and having upwardly-curved ends, a chute provided with rollers running on said tracks, and a pivotal axle for said rollers whereby the rollers may be supported in the upward-curved ends and the chute be extended at an angle therefrom, substantially as described.

573,988. CONVEYER. CHRISTOPHER W. LEVALLEY, Milwaukee, Wis. Filed Mar. 7, 1893. Serial No. 465,018. (No model.)



Claim.—1. A detachable chain-link having a round end bar, upright side bars with insetting flanges adjacent to the end bar, necks or webs connecting the end bar and flanges, and a hook-bar with upright front face adapted to register with the flanges of the preceding link of like construction.

2. A detachable chain-link having a round end bar, upright side bars, hook-bar with upright front face, and corner-braces connecting the side bars with the rear face of the hook-bar and oblique as to the edges to direct the sprocket-tooth.

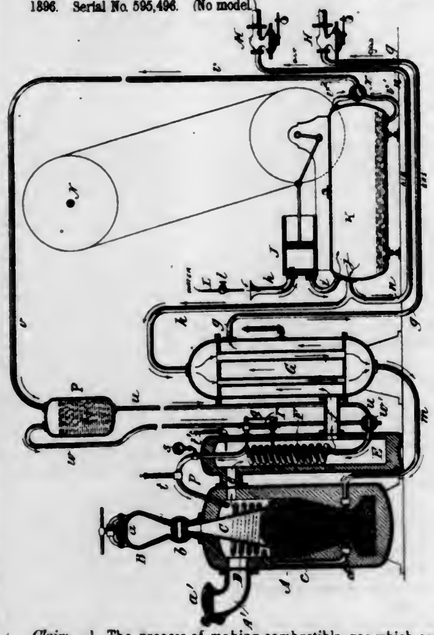
3. A detachable chain-link constructed with a round end bar, upright side bars with insetting flanges adjacent to the end bar, necks or webs connecting said flanges with the end bar, braces between the side bars and flanges in continuation of the webs, and a hook-bar with contracted throat and upright front face.

4. A detachable chain-link formed with a hook-bar with upright front face, and side bars connected with said hook-bar by braces perforated to serve as a means of attachment for extension-plates.

5. A detachable chain-link formed with upright side bars, rounded end bar, hook-bar having upright front face, perforated corner-braces between the side bars and end bars, and recesses or seats at the corners adjacent to said braces.

6. The combination to form a detachable chain-link, of the upright side bars, having insetting flanges, the rounded end bar, the necks between said end bar and flanges, the corner-braces between the flanges and side bars, the hook-bar having upright front face, and corner-braces between said hook-bar and side bars.

573,989. PROCESS OF AND APPARATUS FOR MANUFACTURING GAS. MAURICE LOBOIS, Nantes, France, and FRANCIS G. BATES, Philadelphia, Pa.; said Lobois assignor to said Bates. Filed June 13, 1896. Serial No. 595,496. (No model.)



Claim.—1. The process of making combustible gas which consists in pumping air and water together, whereby the air is compressed

and the water takes up the heat from the air, forcing the water thus warmed through a steam-generating passage, superheating the steam therefrom, heating the compressed air, commingling the hot compressed air and superheated steam, passing the commingled air and steam under pressure through incandescent carbonaceous matter to convert them into a fixed producer-gas, then circulating the hot gas into contact with a superheater and a steam-generator, and through an air-heater, whereby it is cooled and its heat is economized.

2. The process of making combustible gas which consists in compressing air, heating it, generating steam, superheating it, passing the superheated steam and compressed air under pressure exceeding forty-three pounds per square inch through incandescent carbonaceous matter to convert them into a fixed producer-gas, then circulating the hot gas into contact with the passage in which the steam is superheated and into the steam-generator, whereby its heat is utilized to generate and superheat the steam, and circulating the hot gas through the air-heater in which said air is heated, whereby the gas is cooled and its heat is economized.

3. The gas-making apparatus comprising a gas-producer consisting of a metal shell adapted to withstand a high internal pressure and having a lining of non-conducting refractory material, air and steam inlets to the lower part thereof, a gas-outlet from the upper part thereof, a chamber through which the hot gas circulates, a steam-generator in said chamber heated by the hot gas, a superheater receiving the steam from said generator arranged to be exposed to the newly-generated hot gas and connected to deliver superheated steam to the inlet of the producer, an air-compressor, a compressed-air pipe leading therefrom to the inlet of the producer, an air-heater arranged to heat the air on its passage, traversed by the hot gas, whereby the heat of the gas is utilized to generate and superheat the steam and heat the compressed air before their admission to the producer, and a pressure-regulating valve applied to the gas-outlet pipe for retaining the required pressure in the apparatus, substantially as set forth.

4. The combination of a gas-producer having air and steam inlets below and a gas-outlet above, a steam-generator traversed by the hot gas from said producer, a steam-superheater receiving the steam from said generator and arranged to be exposed to the newly-generated hot gas, a source of water for feeding said steam-generator under pressure sufficient to force the steam through the superheater and into the producer, an air-compressor, an air-pipe leading therefrom to the producer, an air-heater for heating the air in its passage, traversed by the hot gas, an outlet-pipe for gas, and a pressure-regulating valve on said outlet-pipe adapted to retain the required pressure in the apparatus, substantially as specified.

5. The combination of a gas-producer, a steam-generator traversed by the hot gas from the producer, an air-heater also traversed by said hot gas, an air-compressor adapted to pump air and water together, whereby the heat of the air is utilized to heat the water, a pipe leading from said compressor through said air-heater to the inlet of the producer, means for introducing the water pumped by said compressor into the steam generator under pressure, a gas-outlet pipe, and a pressure-regulator applied thereto.

6. The combination of a gas-producer having air and steam inlets and a gas-outlet, a steam generator and superheater traversed by the hot gas from said producer, connected to deliver superheated steam to the inlet of the producer, an air-compressor, an air-heater traversed by the hot gas, an air-pipe leading compressed air from said compressor through said air-heater to the producer, an outlet-pipe for gas, an outlet-pipe for compressed air, and pressure-regulating valves on said outlet-pipes adapted to retain in the apparatus a given pressure of gas and air, substantially as specified.

7. The combination of a gas-producer, a steam-generator heated by the hot gas therefrom, an elevated water-reservoir connected to said steam-generator, whereby it carries a head of water sufficient to force the steam from said generator into the gas-producer, an air-compressor, an air heater heated by the hot gas from said producer, a pipe conducting the compressed air from said compressor to said air-heater and thence to the gas-producer, a gas-outlet pipe, and a pressure-regulator applied thereto to maintain a given pressure in the apparatus.

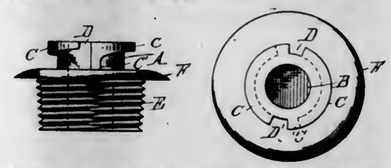
8. The combination of a gas-producer, a steam-generator heated by the hot gas from the producer, an elevated water-reservoir connected to said steam-generator, an air-compressor adapted to pump air and water together, a compressed-air reservoir receiving the compressed air and water, and means for elevating the water therefrom to said reservoir, consisting of a pipe leading thereto from the bottom of said compressed-air reservoir, and a vent from the latter for discharging air therefrom, whereby to lower the pressure therein and thereby cause the superior pressure in the compressed air reservoir to force the water therefrom up into the elevated water reservoir.

9. The combination of a gas-producer, a steam-generator heated by the hot gas from the producer, an elevated water-reservoir connected to said steam-generator, a compressed-air reservoir, means for compressing air into said reservoir, means for pumping water thereinto, and means for elevating the water therefrom to said water-reservoir, consisting of pipes leading from above and below the water-level in said compressed-air reservoir to a valve, a pipe leading from said valve to said water-reservoir, and a vent from the latter for discharging air therefrom adapted for operation in substantially the manner specified.

10. The combination with gas-producer A, steam-generator F, elevated water-reservoir P, compressor J, and air-reservoir K, of pipe *v* communicating from the bottom of the latter to the water-reservoir P, pipe *u* communicating from the bottom of the latter to the steam-generator, vent-pipe *w* communicating from the top of the reservoir P to the open air, and four-way valve *w'* applied at the intersection of pipes *u* and *w*, and adapted to close either of said pipes while it establishes communication through the other, substantially as set forth.

11. The combination with gas-producer A, steam-generator F, elevated water-reservoir P, compressor J and air-reservoir K, branch pipes v' v^3 leading from said reservoir, a pipe *v* leading from said branch pipes to the water-reservoir P, a three-way cock *x* at the junction of said pipes, pipe *u* communicating from the bottom of the water-reservoir to the steam-generator, vent-pipe *w* communicating from the top of the water-reservoir to the open air, and a valve applied to the latter pipe, substantially as set forth.

573,990. TAP-BUSHING. JOHN MOHN, Detroit, Mich., assignor to the American Tap Bush Company, same place. Filed Feb. 11, 1896. Serial No. 578,843. (No model.)



Claim.—1. A tap-bushing composed of an externally-screw-threaded bushing of a length to extend only through a portion of the head of the barrel and provided at the top with a freely-projecting nipple adapted to form the coupling member for a tap, and a horizontal flange at the base of the nipple having its upper face terminating at its outer edges and a tap-hole extending through the nipple and bushing, the combined length of said nipple and bushing being substantially equal to the thickness of the head of the barrel or keg, substantially as described.

2. A tap-bushing composed of an externally-screw-threaded bushing provided around the top with an annular flange having its upper face extended in a substantially horizontal plane to the edge thereof and with a freely-projecting nipple having interrupted coupling-flanges, and a wrench-hold C formed integrally with said coupling-flanges, said nipple and bushing combined being of a length substantially equal to the thickness of the head of the barrel or keg, substantially as described.

3. A tap-bushing composed of the screw-threaded bushing, the annular flange F substantially horizontal throughout arranged around the top of the bushing, the nipple A freely projecting from the top of the bushing, the interrupted coupling-flanges C, the vertical wrench-holds C integrally formed with the coupling-flanges and the tap-hole extending through the nipple and bushing, substantially as described.

573,991. COMBINATION CAN-OPENER. JOHN E. MUNRO, Carlisle, Pa. Filed June 30, 1896. Serial No. 597,528. (No model.)



Claim.—1. In a tool of the kind described, a double-edged blade having a pin passed transversely therethrough, the ends of said pin being bent in opposite directions, substantially as shown and described.

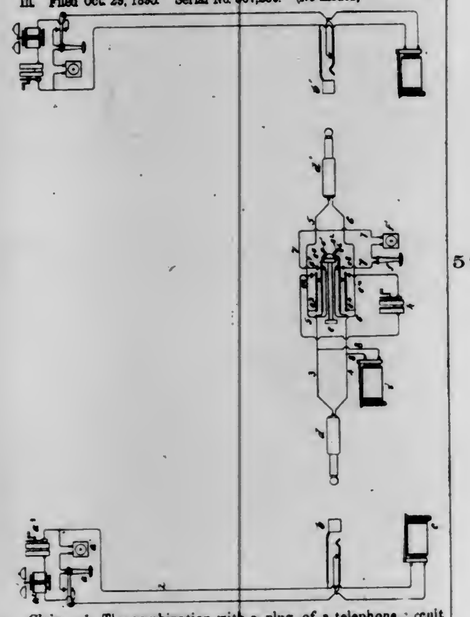
2. In a tool of the kind described, a double-edged blade essentially heart or spear shaped, having a pin passed transversely therethrough, one end of said pin being bent downwardly and the other end bent forwardly, substantially as shown and described.

3. In a combination-tool of the kind described, a blade or head having the double cutting edges and pointed, as described, and a transverse pin rigidly fixed centrally of said blade, said pin having the

right-hand end bent downwardly, and the left-hand end bent forwardly, substantially as shown and described.

4. In a combination-tool of the kind described, the combination with the pointed double-edge blade or head, of the integral shank curved, as described, and carrying the handle at the rear end, and the rigid transverse pin passing centrally through the head or blade, the right hand end being curved downwardly and the left-hand end curved forwardly, substantially as shown and described.

573,992. KEYBOARD APPARATUS. FRANK R. MCBERTY, Downer's Grove, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed Oct. 29, 1895. Serial No. 567,239. (No model.)



Claim.—1. The combination with a plug, of a telephone circuit associated therewith, a generator of signaling-currents, a key constructed to interrupt said telephone-circuit and to connect said generator with the plug, and an instrument through which the severed portion of the telephone circuit is closed by said key; substantially as described.

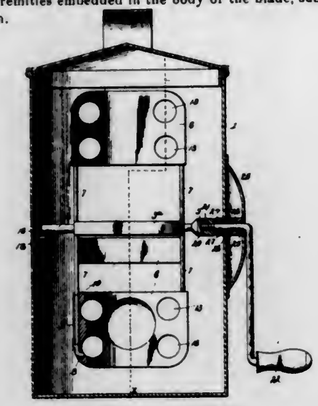
2. The combination with an answering-plug, of a calling-plug, a plug-circuit for the plugs, a generator of signaling-currents, a telephone, and a combined listening and calling key constructed to connect the generator with the calling-plug and the telephone with the answering-plug; substantially as described.

3. The combination with the answering-plug having a telephone associated therewith, of a calling-plug having a generator of calling-currents associated therewith, a plug-circuit for the plugs, and a key constructed to sever the connection between the plugs and to connect the generator with the calling-plug and the telephone with the answering-plug; substantially as described.

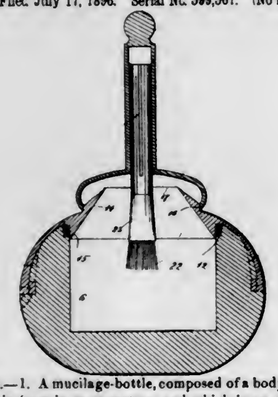
4. In combination two telephone-lines, one provided with a telephone and the other with a signal-bell, a conductor uniting the lines, an operator's telephone and a generator of signaling current, a key connecting said telephone with said first-mentioned line and said generator of signaling-current with said second-mentioned line, and switch-contacts in the key operated in disconnecting the generator in the telephone adapted to complete the conductor uniting the lines, substantially as described.

573,993. CHURN. JOHN C. MCCALLEN, Russellville, Ky. Filed Aug. 23, 1895. Serial No. 560,257. (No model.)

Claim.—In a churn, a dasher comprising a horizontal shaft, a series of radially-disposed dasher-blades having flat sides, each separate blade being further provided therein with oppositely-located pairs of perforations or holes 13, a single central air cup or depression 14 formed in one side between the two pairs of perforations or holes 13, and grooves in its opposite end edges, the cups or depressions 14 of all of the blades traveling in the same circular path and a pair of obtuse-angled rods for each dasher-blade, said rods being secured at their inner ends to the shaft and having their outer ends fastened in the grooves in the ends of the blade and provided with angled extremities embedded in the body of the blade, substantially as set forth.



573,994. MUCILAGE-BOTTLE. EDWIN MCCHESNEY, Cincinnati, Ohio. Filed July 17, 1896. Serial No. 599,561. (No model.)

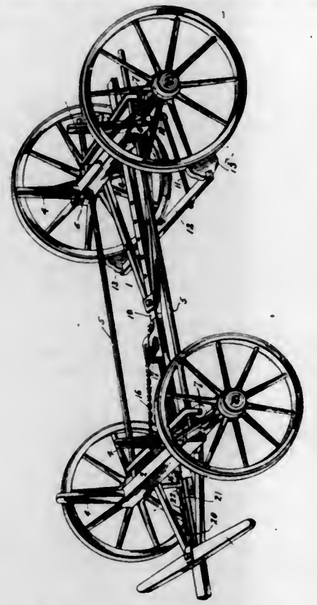


Claim.—1. A mucilage-bottle, composed of a body portion, which is circular in form in cross-section, and which is provided with a detachable top or cover, which extends downwardly thereover to near the middle thereof, said cap being provided with a neck which is conical in form, and the outer wall of which is provided with an annular space, whereby a vertical wall is formed, and a cap or stopper which is circular in form, and provided with an annular bottom, which is adapted to fit over said vertical wall, said cap being provided with a central vertical tubular handle, and a mucilage-brush provided with a handle, which is adapted to be inserted thereinto, substantially as shown and described.

2. A mucilage-bottle, composed of a body portion, which is circular in form in cross section, and which is provided with a detachable top or cover, which extends downwardly thereover, to near the middle thereof, said cap being provided with a neck, which is conical in form, and the outer wall of which is provided with an annular space, whereby a vertical wall is formed, and a cap or stopper, which is circular in form, and provided with an annular bottom, which is adapted to fit over said vertical wall, said cap being provided with a central vertical tubular handle, and a mucilage-brush provided with a split handle, which is adapted to be inserted thereinto, and said top portion or cap being composed of white metal silver-plated and said cap or stopper being composed of pearl, substantially as shown and described.

3. A mucilage-bottle, composed of a body portion which is circular in form in cross-section, and which is provided with a detachable top or cover, which extends downwardly thereover to near the middle thereof, said cap being provided with a neck which is conical in form, and the outer wall of which is provided with an annular space, whereby a vertical wall is formed, and a cap or stopper which is circular in form, and provided with an annular bottom, which is adapted to fit over said vertical wall, said cap being provided with a central vertical tubular handle, and a mucilage-brush provided with a split handle, which is adapted to be inserted thereinto, and the body portion being provided at its upper side with an annular groove, in which is placed a packing ring which is inclosed by an annular flange formed on the neck, substantially as shown and described.

573,995. AUTOMATIC VEHICLE-BRAKE. HENRY C. OSBURN, Scio, Ohio. Filed Apr. 23, 1896. Serial No. 588,737. (No model.)



Claim.—1. In an automatic brake, the combination of a running-gear having front and rear axles and provided with a reach rigidly connected with the rear axle and pivotally connected to the front axle, a sliding frame mounted on the running-gear, capable of a limited longitudinal movement and adapted to receive a body or a load, said sliding frame being provided with side bars arranged to slide on the running-gear, a brake-beam mounted on the running-gear and arranged to engage the hind wheels, and a lever fulcrumed on the running-gear, connected with the brake-beam and arranged to be engaged by the sliding frame, substantially as described.

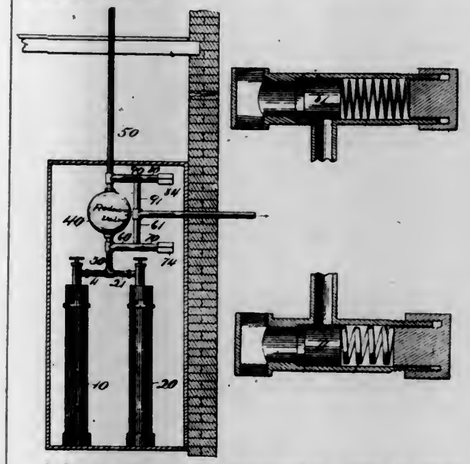
2. In an automatic vehicle-brake, the combination of a running-gear having front and rear axles and provided with a reach rigidly connected with the rear axle and pivotally connected to the front axle, rollers mounted on the running gear and located at opposite sides thereof, a sliding body or load-supporting frame comprising rods disposed longitudinally of the running-gear and arranged upon said rollers, and front and rear bolsters secured to the rods and located adjacent to the front and rear axles, and a brake mechanism mounted on the running-gear and having an operating-lever arranged to be engaged by the sliding frame, substantially as described.

3. In an automatic brake, the combination of a running gear provided at opposite sides with rollers, keepers receiving the rollers, a sliding frame comprising longitudinal side bars arranged in the keepers and mounted on the rollers and the front and rear bolsters, the rear bolster being slidingly mounted on and adjustably secured to the side bars, a doubletree capable of a limited sliding movement longitudinally of the pole, a pulley mounted on the reach and located in rear of the front bolster, a flexible connection passing around the pulley, extending forward therefrom, and connected with the front bolster and with the doubletree, and a brake mechanism mounted on the running-gear and arranged to be engaged by the sliding frame, substantially as described.

573,996. GAS-DISTRIBUTING APPARATUS. ROBERT L. OWEN, Muscogee, Ind. Ter. Filed Mar. 3, 1896. Serial No. 581,722. (No model.)

Claim.—1. In a gas apparatus, the combination of a vessel for containing the gas in a liquid or gaseous form a service-pipe, a reducing-valve between the service-pipe and said vessel, a high safety-valve on the high-pressure side of the reducing-valve, a low safety-valve on the low-pressure side of the reducing-valve, and means for permitting the escape of gas from said safety-valve.

2. A gas distributing apparatus comprising an inclosing casing, two vessels disposed in said casing for containing gas in a liquid or gaseous form under pressure, a pipe connecting said vessels, a reducing-valve, a pipe connecting one side of said reducing-valve with said connecting-pipe, a service-pipe connected with one side of said reducing-valve, a high safety-valve on the high-pressure side of the reducing-valve, a low safety-valve on the low-pressure side of the reducing-valve, and means for permitting the escape of gas from both of said safety-valves.



3. In a gas apparatus, the combination of a vessel for containing the gas in a liquid or gaseous form, a service-pipe, a reducing-valve between the service-pipe and said vessel, a safety-valve on the high-pressure side of the reducing-valve, a safety-valve on the low-pressure side of the reducing-valve, and a branched escape-pipe connecting both safety-valves with the exterior atmosphere.

573,997. PNEUMATIC TIRE. RICHARD PATTISON, New York, N. Y., assignor to himself, Patrick Brownley, and Charles A. Druckleib, same place. Filed Jan. 17, 1896. Serial No. 575,887. (No model.)



Claim.—The combination of a pneumatic tube having a thickened outer surface with an annular groove therein; with a fabric-covered spring-metal ring and a flexible tread having annular grooves therein and notches or openings through the walls separating said grooves, and cross corrugations upon its outer surface, the said parts being cemented to each other within the groove of the pneumatic tube, substantially as shown and described

573,998. GARMENT-PROTECTOR. PETER PEARSON, Menominee, Mich. Filed Apr. 27, 1896. Serial No. 589,158. (No model.)

Claim.—1. A garment-protector comprising a clamp having the jaws thereof spring-controlled, an arm extending from one jaw through an aperture in the other, a lever hinged to the arm to operate upon the apertured jaw, elastic branches extending laterally from the clamp, and skirt-attaching devices secured to said branches.

2. A garment-protector comprising a clamp having a weighted extremity and the jaws thereof spring-controlled, an arm extending from one jaw through an aperture in the other, a lever hinged to the arm to operate upon the apertured jaw, elastic branches extending laterally from the clamp, and skirt-attaching devices secured to said branches.

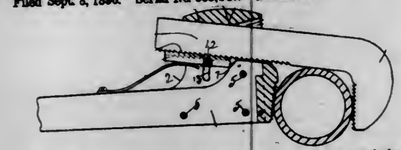
3. A garment protector comprising a clamp, elastic cord in rigid connection with the clamp but extending therefrom in opposite directions, and skirt-attaching devices connected to ends of the cord.

4. A garment-protector comprising a weighted clamp, elastic cord in rigid connection with the clamp, but extending therefrom in opposite directions, and skirt-attaching devices connected to the ends of the cord.

573,998.

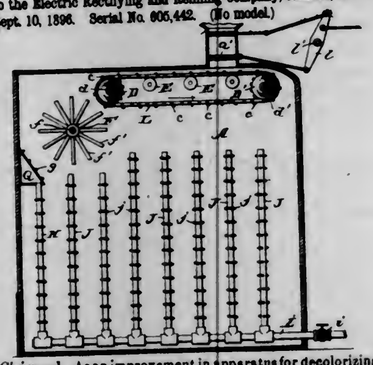


573,999. PIPE-WRENCH. JAMES H. PIERCE, West Bay City, Mich. Filed Sept. 8, 1896. Serial No. 605,147. (No model.)



Claim.—In a pipe-wrench the combination of the stock having on its forward end a stationary jaw, and provided with an upwardly-extending shoulder in rear of said stationary jaw, a yoke secured to said stock in rear of said stationary jaw and provided on its inner face with a fulcrum-point and a supporting-surface in rear of said fulcrum-point, a movable jaw passed through said yoke and with its upper side resting against said fulcrum point and with a ratchet portion on its opposite side, with a pawl-piece having teeth engaging with said teeth in the movable jaw, and with its forward end against said shoulder on the stationary jaw, and a spring for holding the pawl-piece in contact with the movable jaw substantially as set forth.

574,000. APPARATUS FOR DECOLORIZING SUGAR. MARSHALL PRIDHAM, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Electric Rectifying and Refining Company, Camden, N. J. Filed Sept. 10, 1896. Serial No. 605,442. (No model.)



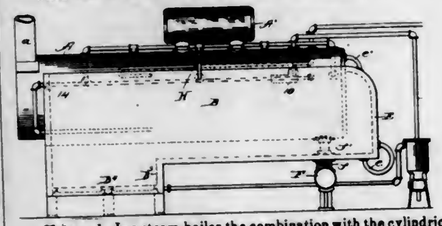
Claim.—1. As an improvement in apparatus for decolorizing solid sugars and other matters, the combination with a suitable vessel and a feeding-hopper for feeding the matter to said vessel, of a conveyer located in said vessel below the hopper for conveying the material horizontally through the vessel, a beater-roll located below the delivery end of the conveyer upon which the material falls and is broken into particles, and means for directing ozone gas against the particles as they fall from below the beater-roll, substantially as described.

2. As an improvement in apparatus for decolorizing solid sugars and other matters, the combination with a vessel, of a feed-hopper for feeding the material to the vessel, a horizontal conveyer in said vessel traveling below said hopper, a beater-roll for breaking the material into fine particles as it falls from the conveyer, a reservoir for ozone gas provided with nozzles for directing jets of ozone gas against said particles, and a pipe connecting said reservoir with an ozone-supply, substantially as described.

3. As an improvement in apparatus for decolorizing sugars and other matters, the combination with a vessel having a feed-hopper through which material is fed to the vessel, of a conveyer mechanism located under the hopper-discharge in the vessel, a beater-roll for breaking the material into fine particles as it falls from the conveyer, an ozone-supply pipe leading into the bottom of the chamber, a series of vertical perforated pipes, communicating with said supply-pipe, and a reservoir connected with said supply-pipe provided with nozzles or perforations for directing ozone jets against the particles of material as it falls down in the vessel, substantially as described.

4. As an improvement in apparatus for decolorizing sugars and other matters, the combination with a vessel, of means for feeding solid sugars or other matters thereto a conveyer for receiving said material and carrying it through the vessel, means for breaking the material into fine particles as it falls from the conveyer, and means for directing ozone gas against the particles as they fall through said vessel, substantially as described.

574,001. STEAM-BOILER. THOMAS M. REES, Pittsburg, Pa. Filed June 15, 1896. Serial No. 595,566. (No model.)



Claim.—1. In a steam-boiler the combination with the cylindrical main boiler having the return-flues therein, of the supplemental or exterior boiler having the bottom portion extending beneath the main boiler in rear of the fire-box with the downward extension forming the rear wall of the fire-box, the sides having the downward extensions forming the sides of the fire-box and the two independent end sections for closing the front and rear spaces in the outer or supplemental boiler, with pipe connections between the main and supplemental or exterior boiler; substantially as described.

2. In a boiler the combination with the cylindrical main boiler having the return-flues therein and the steam dome or chamber, of the exterior or supplemental boiler having the side extending up in proximity to the main boiler the water-circulating pipes connecting the main and supplemental boiler at top and bottom, and steam circulating pipes connecting the top of the supplemental boiler with the steam dome or chamber; substantially as described.

3. The combination with the cylindrical main boiler having the return-flues therein, of the supplemental or exterior boiler formed in sections, with upwardly-extending sides having their upper edges in proximity to the shell of the main boiler and with the space between said main and supplemental boilers closed by fire brick tiles, said supplemental-boiler sections having depending portions forming the fire-box and independent sections closing the front and rear ends of the supplemental boiler to form a completely water-jacketed box and combustion-chamber; substantially as described.

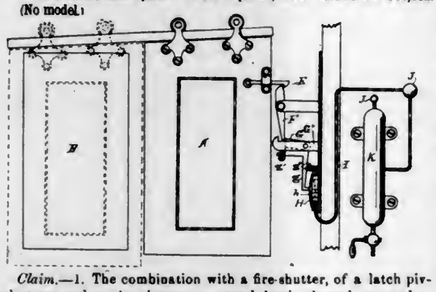
4. In a steam-boiler the combination with the main boiler and the sectional supplemental boiler inclosing the main boiler and forming an inclosed fire box and combustion-chamber, of a mud-drum located beneath the supplemental boiler and a water-leg connecting said mud-drum with the supplemental boiler and with the main boiler; substantially as described.

5. The combination with the cylindrical main boiler and the sectional supplemental boiler inclosing the lower portion thereof to form a water-jacketed fire-box and combustion-chamber, of a water-leg connecting the main and supplemental boilers at the bottom and a mud-drum connection with the supplemental boiler located in line with and immediately below the water-leg; substantially as described.

6. The combination with the main boiler having the return-flues and the supplemental boiler surrounding the lower portion of the main boiler to form the water-jacketed combustion-chamber, of an independent curved section for closing the rear end of the supplemental boiler extending into contact with the end of the main boiler fitting between the sides thereof and above the return-flue and pipe connection between the upper end of said curved section and the main boiler and a pipe connection between the lower end of said curved section and the supplemental boiler; substantially as described.

7. The combination with the main boiler and a supplemental boiler having the sides extending in proximity to the main boiler and the downward extensions forming the sides of the fire-box, of the front section having its upper edge conforming to the shape of the main boiler for closing the front end of the supplemental boiler and having the fire-door openings formed therein; substantially as described.

574,002. AUTOMATIC SHUTTER FOR FIRE PROTECTION. NOAH H. REYNOLDS, Grand Rapids, Mich., assignor of one-half to Charles W. Davidson, same place. Filed Sept. 17, 1895. Serial No. 562,812. (No model.)

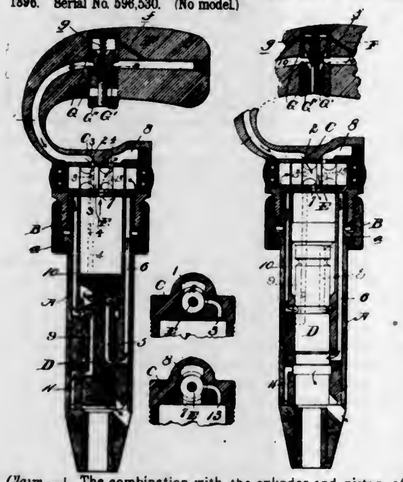


Claim.—1. The combination with a fire-shutter, of a latch pivoted at one end to the shutter, a second latch pivoted to stand at right angles therewith, a lever to hold said latch in contact with the first latch, an air-chamber, an auxiliary chamber having a flexible cover in position to actuate said lever, an air-pipe connecting said chambers, and fusible plugs in said chambers and pipe, substantially as and for the purpose set forth.

2. The combination in a fire-shutter of a series of latches for securing the shutter open, an angle-lever for locking said latches to place, a set-screw for adjusting said angle-lever, an air-chamber, an auxiliary air-chamber having a flexible cover, a spring upon one arm of said angle lever to draw it toward the flexible cover, pipes connecting said chambers, and apertures in said chambers and pipes that will be opened by excessive heat and allow the air to escape, substantially as and for the purpose set forth.

3. In combination with a fire shutter, a latch pivoted at one end to the shutter, a second latch to engage the free end of said latch, an angle-lever to control said second latch, a set-screw to adjust said lever, and means for releasing said lever and latches by the action of heat, substantially as specified.

574,003. ENGINE. FRANK C. RINSCHE, St. Louis, Mo., assignor to the Chouteau Manufacturing Company, same place. Filed June 22, 1896. Serial No. 596,530. (No model.)



Claim.—1. The combination with the cylinder and piston, of a handle-base or cylinder-head at the rear end thereof, a piston-controlling valve in said handle-base, and ports 3 and 13 in the handle-base which coöperate with ports 4 and 14 in the cylinder respectively, when the handle is in different positions relative to the cylinder; substantially as described.

2. The combination with the cylinder and piston, of a handle-base formed with two passages 1 and 8, adapted to be used either for the inlet or exhaust, a valve located in the handle-base to which said passages lead, ports 3 and 13 in the handle-base which are constantly open to said passages respectively, and ports 4 and 14 in the cylinder which register with the ports 3 and 13 respectively when the handle is in certain of its positions, two of said ports, as 3 and 4, being blind when ports 13 and 14 communicate, and vice versa; substantially as described.

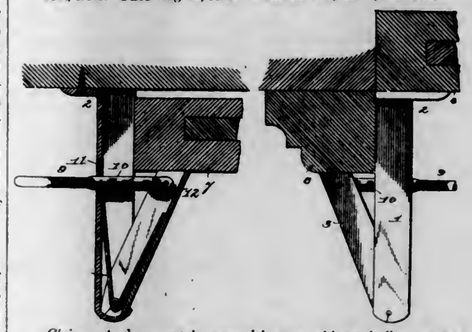
3. In an engine, the combination with the handle through which is formed a passage, of a sleeve arranged across said passage and formed with openings registering with said passage, and a cone-seated valve operating in said sleeve and across the passage; substantially as described.

4. In an engine, the combination with the handle through which is formed a passage, of a sleeve formed with openings registering with said passage, said sleeve being bored to different diameters, a valve operating in said sleeve across the passage, and a spring for seating said valve and closing the passage through the sleeve; substantially as described.

5. In an engine, the combination with the handle through which is formed a passage, a valve arranged to operate across said passage, and a port leading from said passage to behind the valve, whereby, when said passage is used as an inlet-passage, the valve is seated by pressure; substantially as described.

6. In an engine, the combination with the handle through which is formed a passage, of a sleeve formed with openings registering with said passage, a valve operating in said sleeve across the passage, and a port leading from said passage to a point behind the valve; substantially as described.

574,004. DOOR-CATCH. HENRY SCHUMANN and BERT C. ALVORD, Graf, Nebr. Filed Aug. 12, 1896. Serial No. 602,572. (No model.)



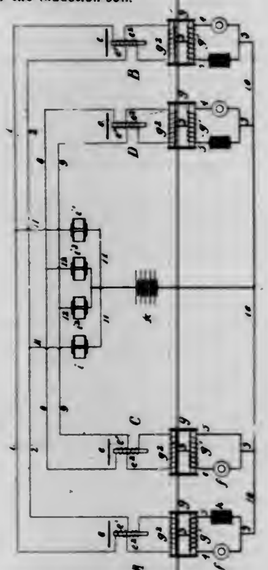
Claim.—A door-catch comprising an oblong hollow casing adapted to be mounted horizontally and provided at its inner end with a vertical attachment-plate, a hollow locking bar pivoted at its outer end within the outer end of the casing, normally arranged at an angle to the same and terminating short of the inner end thereof, whereby the catch is adapted to be mounted on a wall to engage a door or to be mounted on a door to engage the door-casing, a transverse handle passing through the casing and connected to the locking bar, and a spring mounted on the pivot of the locking-bar and having two arms, one arm being arranged within the locking-bar, and the other arm within the hollow casing, substantially as described.

574,005. TELEPHONE-CIRCUIT. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Apr. 20, 1895. Serial No. 546,483. (No model.)

Claim.—1. The combination in a telephone-circuit, of an induction coil, a telephone-transmitter in a closed circuit with the primary helix thereof, and a supply-circuit connected with the central point of said primary helix, the secondary helix of the induction-coil being included in circuit with a receiving-telephone, whereby variations of current in the supply-circuit are prevented from producing undulations of current in the secondary helix.

2. The combination in a telephone-circuit, of an induction-coil having its primary helix in two portions, adapted when traversed serially by a current to magnetize the core of the coil, a current-supply circuit divided into two parallel branches, each branch including one of the portions of said primary helix, a transmitting-telephone in one

of the branches, the normal resistances in the two branches being approximately equal, and a receiving-telephone in circuit with the secondary helix of the induction-coil.



3. The combination with a current-supply circuit comprising the two line conductors of a telephone-line grouped in parallel, and a single return-circuit, the return-circuit being divided at one point into two parallel branches, of a receiving-telephone having two magnet-coils in the different line conductors, respectively, arranged to respond to current circulating in the line-circuit, an induction-coil having its secondary helix in the line-circuit and its primary helix divided into two portions included respectively in the two branches of the return-circuit, a transmitting-telephone in one of said branches, the normal resistances of the branches being approximately equal, the two portions of the primary helix being so related as to direction of current through them that equal currents in the same direction through both branches neutralize each other's effects, whereby variations in the supply-current are prevented from affecting the receiving-telephone.

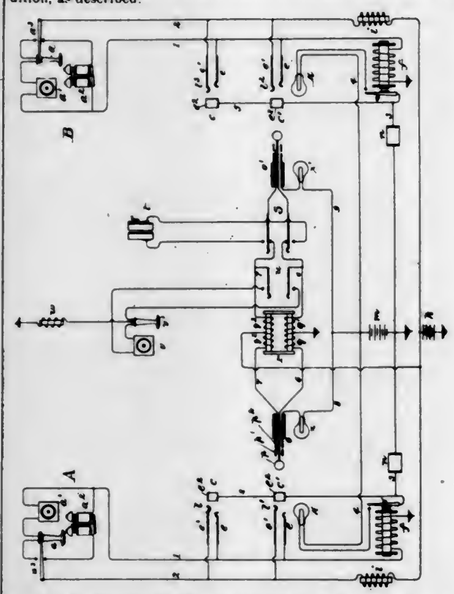
4. The combination with a metallic circuit telephone-line, of a receiving telephone at each terminal station thereof having a magnet-coil in each line conductor, the magnet-coils being arranged to neutralize each other when traversed by currents of the same direction in the line-conductors, a supply circuit comprising the two line conductors grouped in parallel and a single return-conductor, an induction-coil at each station having its secondary helix in the line-circuit and having its primary helix divided into two portions in different parallel branches of the return-circuit, and a transmitting telephone in one of the branches, the normal resistances of the branches being approximately equal, substantially as described.

5. The combination with a telephone-circuit and a supply-circuit for the transmitting-telephone thereof, of an induction-coil having one of its windings included in the telephone-circuit and the other of its windings in the supply-circuit or a portion thereof, a transmitting-telephone in the supply-circuit, and circuit connections about said transmitting-telephone completing a local circuit wherein the transmitting-telephone may create variations of current strength, said local circuit being in inductive connection with said telephone-line, the winding of the induction-coil in the supply-circuit being adapted to oppose the currents in the telephone-circuit created by current in said local circuit, substantially as described.

574,006. TEST SYSTEM FOR MULTIPLE SWITCHBOARDS.

CHARLES R. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 5, 1895. Serial No. 555,042. (No model.)

Claim.—1. In a multiple switchboard, spring-jacks connected in multiple with the line, a test-contact in each jack, all the test-contacts being electrically connected together, means for making connection with the line and simultaneously altering the electrical condition of the test-contacts thereof, a testing-plug adapted to be applied to the test-contacts, and a telephone in circuit therewith adapted to indicate the said altered electrical condition, a connecting-plug and a visible signal in circuit with the plug adapted to indicate said altered condition, as described.



2. The combination with a telephone-line, of several spring-jacks on different sections of a multiple switchboard connected with the line, a test-ring in each spring-jack, means for changing the electrical condition of the test-rings when connection is made with the line, a test-contact adapted to be applied to the test-ring of a spring-jack, and a signaling instrument in circuit therewith to indicate the electrical condition of the test-ring, a connecting plug for insertion into the spring-jack, and a local circuit completed through registering contacts of the connecting-plug and spring jack, a visible signal in the local circuit, and means for diverting current from the visible signal when the line is in use, substantially as described.

3. The combination with a telephone-line connected with several spring-jacks in multiple, of test-contacts in the different spring jacks electrically connected together, means for connecting a source of current with the test-contacts while the line is in use, a testing-plug adapted to be applied to a test-contact having in circuit with it a receiving telephone, a connecting-plug adapted for insertion into the spring-jack, a contact-piece therein registering with the test-contact of the spring-jack, and a branch terminating in the said plug-contact from the circuit of the test-battery, including a visible signal, whereby a click-test and a visible test are provided, substantially as described.

4. The combination with a telephone line connected with different spring-jacks in multiple, of a test-contact in each spring-jack, the different test-contacts being connected together and being grounded, of a relay in the line-circuit responding to current therein controlling the connection of a battery with the test contacts, connecting-plugs having branches from the same battery terminating in contacts adapted to register with the test-contacts of the spring jacks, and a test-plug having a tip adapted for application to a test contact, connected to earth through a receiving telephone, and having a contact-piece adapted to register with the test contacts connected with the battery-circuit and including a lamp signal, substantially as described.

5. The combination with a telephone-line connected with several spring-jacks in multiple, of test-contacts in the different spring-jacks connected together and grounded through a resistance-coil, different connecting-plugs, each having a tip connected through a receiving-telephone to earth, and a sleeve constructed to register with the test-contact of a spring-jack connected through a lamp signal to one pole of a grounded battery, whereby an existing connection with a spring-jack is indicated audibly when the tip of a plug is applied to a test-contact, and visibly when the plug is inserted into the spring-jack, substantially as described.

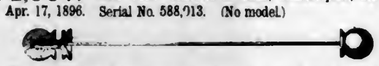
6. The combination with a telephone-line connected with several spring-jacks in multiple, of test rings in the different spring-jacks electrically connected together and to earth through a resistance-coil, a relay in the line-circuit responding to current therein, and a battery whose connection with the test-contacts is controlled by the contacts

thereof, connecting-plugs for insertion into the spring-jacks, each having a tip forming the terminal of a ground branch including a receiving-telephone, a sleeve adapted to register with the test-contact, and a branch from the same battery including a signal-lamp terminating in each such sleeve, whereby both an audible and a visible test-signal are provided to indicate either the existence of current in the line-circuit or the presence of a plug in a spring-jack.

7. The combination with a telephone-line connected with several spring-jacks in multiple, each having a test-contact, of connecting-plugs, a supervisory signal associated with each connecting-plug, and means for causing the display of the signal during the idleness of the telephone of the line with which the plug is connected, and means for diverting the exciting-current from the supervisory signal when connection is made with a different spring-jack of the line, a testing-tip in the plug and a test-circuit terminating therein, including the operator's receiving-telephone, adapted to indicate the busy or idle condition of the line, whereby the operator is enabled to test a line by applying the plug-tip to a test-contact, or by inserting the plug into the spring-jack and observing the supervisory signal, substantially as described.

574,007. HAT-PIN.

ALBERT E. SELF, Philadelphia, Pa. Filed Apr. 17, 1896. Serial No. 588,913. (No model.)

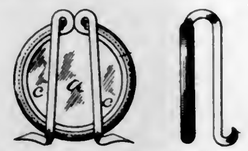


Claim.—1. In a device of the character described, a hat-pin having its end threaded, a bushing having internal threads for the reception of said threaded end and a conical cavity leading thereto, a shank formed with the bushing having external threads and a nut threaded on said shank, as and for the purpose described.

2. In combination with a hat-pin having its end threaded, of a bushing having internal threads for the reception of said threaded end, a shank formed with said bushing, and a nut adapted to engage threads upon said shank for securing the bushing to the hat, as shown and described.

574,008. AUTOMATICALLY-ATTACHABLE BUTTON.

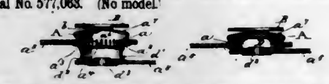
HENRI A. SÉVIGNÉ, Boston, Mass. Filed Mar. 28, 1896. Serial No. 585,302. (No model.)



Claim.—A button or analogous article for ready attachment to a garment comprising in its construction a head or outer part of sheet metal having its under or inner side provided with normally-separated spring arms or shanks the terminals of which are bent downward and inward or backward, and then outward at right angles to the body of the shank to form a holding offset neck or knee *e* upon which all of the draft or pull of the button may be made, the said expanding pikes or pins tending only to hold the button in place, all as hereinbefore set forth and explained.

574,009. FASTENER.

ANTHONY B. SILVERSTON, St. Louis, Mo., assignor of one-half to Charlie Thaw, same place. Filed Jan. 27, 1896. Serial No. 577,063. (No model.)



Claim.—1. In a fastener-socket, an annular concavity on the outside and a corresponding annular convex portion on the inside; a series of perforations dividing said concavo-convex portion into inwardly-curved elastic segments, an annular unbroken outer part joining the outer ends of the segments together and an annular unbroken inner part joining the inner ends of said segments together substantially as described.

2. In a fastener-socket, an annular concavity on the outside and a corresponding annular convex portion on the inside; a series of perforations dividing said concavo-convex portion into inwardly-curved elastic segments; an annular unbroken outer part formed integral with said segments and joining their outer ends together, and an annular unbroken inner part, made integral with said segments and joining their inner ends together substantially as described.

3. In a fastener-socket formed of an elastic material, an annular concavity on the outside, a corresponding convex portion on the inside; a series of perforations dividing said concavo-convex portions into inwardly-curved segments an annular unbroken lip a', joining the inner ends of said segments; the annular unbroken part a^6 joining the outer ends of said segments; and the top a^7 all formed in one piece substantially as described.

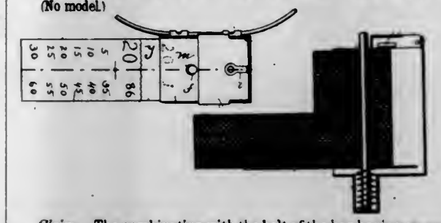
4. A fastener-socket formed in one piece of an elastic material, and having an annular concavity on the outside, a corresponding convex portion on the inside a series of perforations dividing said concavo-convex portions into inwardly-curved segments, an annular unbroken lip a' connecting the inner ends of said segments and the annular unbroken part a^6 joining the outer ends of said segments and the top a^7, and a piece of fabric surrounding said socket and held within the said annular concavity and between the lip a' and the part a^6 substantially as described.

5. The combination in a fastener of a stud; a socket having an annular concavity on the outside, and a corresponding annular convex portion on the inside, a series of perforations dividing said concavo-convex portion into inwardly-curved elastic segments, an annular unbroken outer part, joining the outer ends of the segments, and an annular unbroken inner part joining the inner side of said segments together; and a clasp attached to the outer member of said fastener for the purpose of detachably securing a bow thereto, substantially as described.

6. The combination in a fastener of a stud, a socket formed in one piece and having the inwardly-curved segments a^4 joined together at each end by unbroken annular parts; a ring B, a hinge securing said ring at one side to the outer member of the fastener and a catch securing it to the outer member of the fastener at the other side substantially as and for the purposes set forth.

574,010. APPARATUS FOR SALES-CHECKING.

ALBERT N. SOUTHWICK, New York, N. Y. Filed Mar. 23, 1896. Serial No. 584,449. (No model.)



Claim.—The combination with the belt of the box having an open end and socket in its bottom: the vertical spindle fast in said socket: the spring-pushed follower fitted to slide on said spindle and projecting from the end of said box horizontally: the checks having perforated stubs mounted on said spindle and resting on said follower: the hinged lid having an opening for receiving the free end of said spindle: a lock for said lid: and clips on the side of said box for detachably securing it to said belt in such position that the checks project in line substantially tangent thereto.

574,011. COMBINED CHAIR AND CANE.

ARTHUR E. SPRINGSTED, Bluffton, Ind. Filed Mar. 23, 1896. Serial No. 584,407. (No model.)



Claim.—1. A portable chair formed of two interlocking pairs of pivoted standards, the members of each pair being united by a tongs-joint nearer one extremity than the other, the said pair having a pivotal connection at their lower extremities, as shown, and so arranged as to be compressible at pleasure into the form of a cane, the front and rear legs forming the upper portion of the said cane, and the seat and back frames forming the lower portion thereof, and means for suspending a seat and back fabric 9 upon said frames, substantially as described.

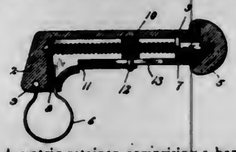
2. In a combined chair and cane, the combination of two pairs of tongs-jointed standards each pair of said standards having a pivoted connection nearer one extremity thereof than the other, and adapted for an interlocking union, whereby one of the said pairs forms the back-frame and fore legs of the chair, and the other pair forms the seat and rear legs thereof, and so arranged that when the said standards are compressed into parallel relation the said legs form the upper portion of a walking stick or cane and the said seat and back

frames form the lower portion thereof, constructed and arranged substantially as described.

3. The combination in a combined chair and cane of the upright standards 1 and 2 united nearest their lower end by a tongs joint or hinge, and having at or near said joint a pivotal plate 10 for the purpose specified, and provided at their upper end with a telescoping connecting-rod adapted to support the upper end of the seat fabric; the oblique standards 3 and 4 pivotally united by a tongs-joint, and pivotally connected at their lower ends with the said upright standards, as shown, and provided at their forward ends with a telescoping connecting-rod adapted to secure the lower end of the seat fabric; and the seat and back fabric 9 detachably secured to said rods, as described, all substantially as and for the purpose specified.

4. In a combined chair and cane the hollow upright standards 1 and 2 pivotally united as shown by a tongs-joint, and provided with the pivoted supporting-plate 10, and with the cross-rod 7 having at its extremities the pivoted arms 11 and 12 for the purpose specified, and having a telescoping connection with the standard 1, in combination with the hollow oblique standards 3 and 4 pivotally united by a tong-joint, and pivotally connected with said upright standards, as shown, and adapted for an interlocking engagement therewith; the rod 6 provided with terminal pivotal arms for the purpose specified, the said rod being telescopically mounted in the standard 3; and the seat and back fabric 9 detachably mounted on said rods, all substantially as described.

574,012. DENTAL MATRIX CARRIER AND RETAINER. JOSEPH M. STROUT, Portland, Me. Filed July 11, 1896. Serial No. 598,888. (No model.)



Claim.—1. A matrix-retainer comprising a barrel having a lateral extension formed with an opening and a retaining-slot, a feed-screw journaled within the barrel, a crown at one end of the barrel and having connection with the feed-screw for rotating the latter, a nut located within the barrel and mounted upon the feed-screw, and a matrix having one end secured in the aforesaid retaining-slot and having its other end passing loosely through the opening in the lateral extension of the barrel and connected with the nut, substantially as set forth.

2. A matrix-retainer comprising a barrel open at one end and having its opposite end closed and provided with a lateral extension formed with an opening, a cap for closing the open end of the barrel, a feed-screw journaled within the barrel and having an end portion projecting through and beyond the cap and held against longitudinal movement, a crown secured to the projecting end of the feed-screw, a nut located within the barrel and mounted upon the feed-screw, and a matrix having one end secured to the lateral extension and having its opposite end passing loosely through the opening in the lateral extension and attached to the aforesaid nut, substantially as and for the purpose specified.

3. A matrix-retainer comprising a barrel having a lateral extension formed with an opening 8 in its bearing-face and an opening 11 at the juncture of the lateral extension with the barrel, a feed-screw journaled within the barrel and provided with means for rotating it, a nut mounted upon the feed-screw and having a projection operating in a longitudinal slot in the inner side of the barrel, and a matrix having one end secured to the aforesaid lateral extension and having its other end passing through the opening 8 in the bearing-face of the lateral extension and out through the opening 11 at the juncture of the said extension with the barrel, and secured to the projection of the nut, substantially in the manner and for the purpose described.

574,013. BOTTLE-STOPPER. FREDERICK B. THATCHER, Pawtucket, R. I. Filed Sept. 1, 1894. Serial No. 521,920. (No model.)



Claim.—In combination in a bottle-stopper consisting of a lower section secured to the neck of a bottle by means of interengaging screw-threaded parts and having a shoulder overlying the top of the bottle, an annular packing located between said shoulder and the top of the neck of the bottle, an upper section secured to the lower section by means of interengaging screw-threaded parts, a valve-chamber located between the sections, an opening extending through each section into the valve-chamber, projections located on the upper section and extending into the valve-chamber and forming ports therebetween, and a valve located in the valve-chamber and adapted to securely close the opening in the lower section and to rest against the end of the projections in the upper section when the bottle is inverted, all substantially as described.

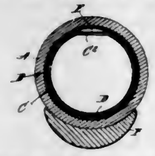
574,014. TANNING HIDES OR SKINS. ROBERT WAGNER and JOHN J. MAIER, Philadelphia, Pa. Filed Sept. 16, 1896. Serial No. 606,049. (No specimens.)

Claim.—1. A single-bath process for tanning hides and skins, which consists in subjecting the same to the action of a solution of whiting, salt, chrome-alum, saltpeter, muriatic acid and water, combined in substantially the proportions specified.

2. A composition for tanning consisting of a solution of whiting, salt, chrome-alum, saltpeter and muriatic acid, combined in substantially the proportions specified.

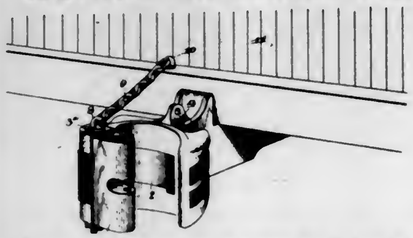
3. The herein-described solution for tanning, consisting of whiting, salt, chrome-alum, saltpeter and muriatic acid, the above ingredients being commingled in water.

574,015. TIRE FOR BICYCLES. FRANK L. WOODHOUSE, Waupun, Wis. Filed Dec. 7, 1895. Serial No. 571,334. (No model.)



Claim.—The herein-described bicycle-tire, composed of a heavy flexible rubber tube A, within which is placed an elastic rubber tube B, and a tube C of canvas within the tube B and a spiral spring D having flat portion C^3 located within the tube C, said tube being substantially circular in form and provided at its outer perimeter with a loose portion, whereby when the tubes A and B are inflated an annular space E is formed between the outer portion of the canvas tube C and the inner portion of the rubber tube, as and for the purpose specified.

574,016. CAR-COUPLING. WILLIAM C. BEAL, Fernandina, Fla., assignor of two-thirds to David E. Maxwell and William D. Ballantine, same place. Filed Mar. 21, 1896. Serial No. 584,278. (No model.)



Claim.—1. In a car-coupling, the combination of a draw-head, a knuckle pivoted to the same and provided at the end of the arm with an inclined rib or flange having upper and lower inclined edges, a vertical flange arranged on the end of the arm and extending downward from the rear or upper end of the inclined rib, and a vertically-movable locking-pin provided at its front with an inclined recess receiving the inclined rib and forming upper and lower shoulders to engage the upper and lower edges of the same, the lower portion of the locking-pin being arranged to engage said vertical flange to limit the outward or opening movement of the knuckle, substantially as described.

2. In a car-coupling, the combination of a locking-pin composed of a longitudinal flange 4^b, and a transverse flange 4^a arranged at the front or outer edge of the longitudinal flange and provided with an inclined recess 5 and a vertical recess 7, extending upward from one end of the inclined recess, a draw-head provided with an opening for the locking-pin and having one of its sides contiguous to and conforming to the configuration of the outer face of the longitudinal flange and the adjacent face of the transverse flange to support the same, and a knuckle provided at the end of its arm with a rib, substantially as described.

3. In a car-coupling, the combination of a draw-head, a knuckle pivoted to the same and provided at the end of its arm with an inclined edge and having a notch or seat at the upper or rear end of the same, and a locking-pin supported upon the inclined edge and arranged to engage the seat or notch automatically when the knuckle is open, whereby the knuckle is locked in its open position, substantially as and for the purpose described.

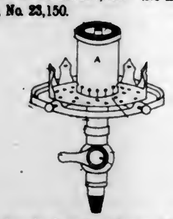
4. In a car-coupling, the combination of a draw-head, a knuckle pivoted to the same and provided at the end of its arm with an inclined rib or flange, having at its upper end a substantially V-shaped notch or seat, and a locking-pin having an inclined recess forming upper and lower shoulders, the upper shoulder being adapted to rest in the notch or seat of the arm of the knuckle, substantially as described.

574,017. CASTER. GEORGE B. MCC. BLUK, Traverse City, Mich. Filed May 23, 1896. Serial No. 592,854. (No model.)



Claim.—In a caster, the frame having a wheel journaled therein, said frame being provided with a vertical passage having its upper and lower ends terminating in bearing-cavities, friction balls disposed in said bearing-cavities, a vertical pintle disposed in and fitting closely said passage and having its lower end formed with a head surrounding the lower cavity and shaped to fit the balls, and a removable collar secured to said pintle over the upper cavity and also shaped to accommodate and fit the balls, said head and collar being adapted to close said bearing-cavities and retain the friction-balls therein, substantially as set forth.

574,018. GAS-BURNER. JOHN F. BURGESS, London, England. Filed July 1, 1896. Serial No. 597,690. (No model.) Patented in England Dec. 3, 1895, No. 23,150.



Claim.—1. The herein-described burner for gas and air, which comprises a Y-tube in which is placed a revoluble air-valve, for admitting air thereto, and below which is placed a pin-valve through which the gas passes, said Y-tube being provided at its upper end with a central tube and an outer tube, whereby an annular chamber is formed into which the gas and air are discharged, and said annular chamber being provided at its upper end with a wire-gauze or other distributing cap, and means for admitting air through said central tube, substantially as shown and described.

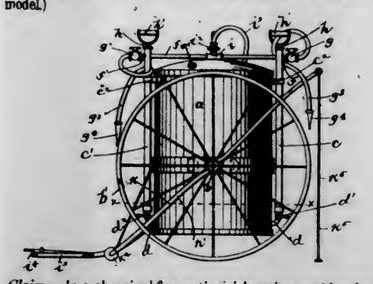
2. The herein-described burner for gas and air, which comprises a Y-tube in which is placed a revoluble air-valve, for admitting air thereto, and below which is placed a pin-valve through which the gas passes, said Y-tube being provided at its upper end with a central tube and an outer tube, whereby an annular chamber is formed into which the gas and air are discharged, and said annular chamber being provided at its upper end with a wire-gauze or other distributing cap, and means for admitting air through said central tube, said burner being also provided at the bottom of the outer tube with an air-distributing plate which is adapted to support a chimney and by which air is admitted to the outer side of the flame, substantially as shown and described.

3. The herein-described burner for gas and air, which comprises a Y-tube in which is placed a revoluble air-valve, for admitting air thereto, and below which is placed a pin-valve through which the gas passes, said Y-tube being provided at its upper end with a central tube and an outer tube, whereby an annular chamber is formed into which the gas and air are discharged, and said annular chamber being provided at its upper end with a wire-gauze or other distributing cap, and means for admitting air through said central tube, said burner being also provided at the bottom of the outer tube with an air distributing plate which is adapted to support a chimney and by which air is admitted to the outer side of the flame, and said Y-tube being also provided at its upper end with a gauze cap or cover, substantially as shown and described.

4. The herein-described burner for burning gas and air, which comprises a Y-tube the lower end of which is provided with a casing through which passes a tube provided with side ports or openings, and in which is mounted a tubular valve provided with corresponding side ports or openings whereby air is admitted into said tube, said tube being also provided below said air-valves with a pin-valve for admitting gas, and said Y-tube being provided at its upper end with an inner central tube, and an outer tube by which an annular chamber is formed, and said annular chamber being provided at its upper end with a gauze cap or cover, and the upper ends of the separate parts of the Y-tube being also provided with gauze caps or covers, substantially as shown and described.

5. The herein-described burner for burning gas and air, which comprises a Y-tube the lower end of which is provided with a casing through which passes a tube provided with side ports or openings, and in which is mounted a tubular valve provided with corresponding side ports or openings, whereby air is admitted into said tube, said tube being also provided below said air-valve with a pin-valve for admitting gas, and said Y-tube being provided at its upper end with an inner central tube, and an outer tube by which an annular chamber is formed, and said annular chamber being provided at its upper end with a gauze cap or cover, and the upper ends of the separate parts of the Y-tube being also provided with gauze caps or covers, and the lower end of the central tube at the upper end of the Y-tube being provided with an outwardly-directed flange, and said outer tube being provided at its lower end with an air-distributing plate which is adapted to serve as a chimney-holder, substantially as shown and described.

574,019. FIRE-EXTINGUISHER. HENRY BUSH, Columbus, Ohio. Filed Aug. 11, 1893. Renewed May 8, 1896. Serial No. 590,783. (No model.)



Claim.—In a chemical fire-extinguisher the combination with the tank *a*, a perforated strainer-cylinder contained therein, pump-cylinders *c c'* connected with said strainer-cylinder as described, valves intervening between said pump and strainer cylinders and pumping plunger-rods in said pump-cylinders, of a transverse pipe *f* connecting the upper portions of said pump-cylinders, hose connections with the upper portions of said pump-cylinders opposite said pipe *f*, intervening valves *g g'*, a central valve in said pipe *f* and a hose connection with said pipe *f* on the outer side of said valve, substantially as and for the purpose specified.

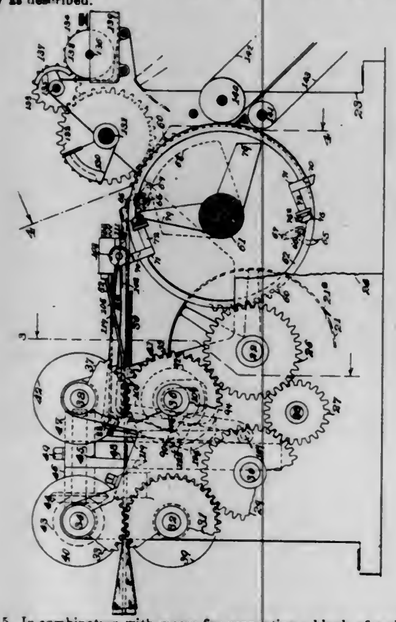
574,020. PAPER-BAG MACHINE. EDWARD E. CLAUSSEN, Hartford, Conn. Filed July 18, 1896. Serial No. 599,609. (No model.)

Claim.—1. In a paper-bag machine the combination of a traveling folding-bed, of the V-plate provided with bevel edges, the oppositely-disposed turning-fingers adapted to enter the tucks of a paper-bag blank and fold the projecting corners of that bag-blank against the beveled edges, and devices cooperating with the V-plate to effect the unfolding of the blank substantially as described.

2. In a paper-bag machine the combination of a traveling folding-bed, the V-plate provided with the beveled edges, the oppositely-disposed turning-fingers adapted to enter the tucks of a paper-bag blank and fold the projecting corners of the bag-blank against the bevel edges and press and hold them upon that V-plate, and devices cooperating with the V-plate to effect the unfolding of the blank substantially as described.

3. In a paper-bag machine the combination of a traveling folding-bed, of a V-plate provided with the forty-five-degree edges and adapted to receive an oscillatory motion to carry the same away and toward the folding-bed, the oppositely-disposed turning-fingers adapted to enter the tucks of a paper-bag blank and fold and press the projecting corners of that blank upon that V-plate and devices to cooperate with the V-plate to effect the unfolding of the blank substantially as described.

4. In comoination with means for supporting a blank of tucked-paper tubing, means for forming the characteristic right angled triangular folds in the side tucks thereof, consisting of a V-plate adapted to be vibrated, the turning-fingers with means for turning the same to fold the projectiug triangular corners against the forty-five-degree edges of the plate, the tucker-plate with means to vibrate the same on an axis passing through the apexes formed by the edges of the V-plate and the edges of the tubiug, combined and operating substantially as described.



5. In combination with means for supporting a blank of tucked-paper tubing, means for forming the characteristic right-angled triangular folds in the side tucks thereof, consisting of a V-plate adapted to be vibrated, the turning-fingers with means for turning the same, and to fold the projecting corners against the forty-five-degree edges of the V-plate the tucker-plate arranged to travel with the V-plate and having its folding edge adapted to travel with and define the primary transverse fold, all parts combined and operating for the purpose set forth.

6. A paper-bag machine comprising the supporting-bed for the tucked-paper tube with means for clamping the same thereto, the V-plate mounted above the paper-bag blank and adapted to be vibrated, means for clamping the projecting triangular corners of the blank to the V-plate, the tucker-plate mounted to the V-plate, means to vibrate the same, all combined and operating for unfolding and opening the tucked-paper tube into the truncated diamond while the bag-blank is carried forward substantially as described.

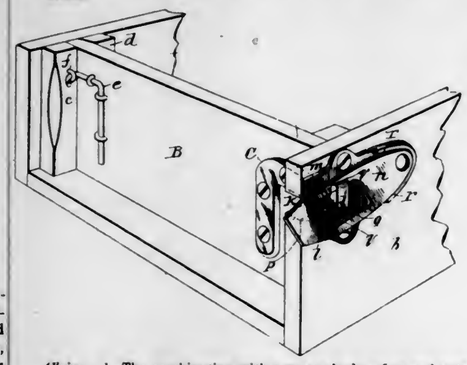
7. In a paper-bag machine the combination of the revolving cylinder provided with one or more front clips, and the oppositely disposed bevel-edged side clips, the V-plate provided with the beveled edges and adapted to receive an oscillatory motion, means for turning the projecting corners of the bag-blank against the beveled edges of the V-plate and hold them in substantially that position, the tucker-plate adapted to define the transverse folding-line across the blank, all combined and operating for unfolding and opening the tucked-paper tube into the truncated-diamond form while the bag-blank is carried forward.

8. In a paper-bag machine the combination of a revolving cylinder provided with one or more front clips and the oppositely-disposed side clips and means for operating the same at predetermined intervals, the V-plate provided with the forty-five-degree edges and means for imparting a vibratory motion to said V-plate, turning-fingers pivotally mounted on the V-plate with means for imparting an oscillatory motion, the revolving tucker-plate pivotally mounted on the V-plate with means for imparting an oscillatory motion thereto, all parts combined and operating to unfold and open the tucked-paper tube into the truncated-diamond form while the bag-blank is being carried forward.

9. In combination with means for supporting a blank of tucked-paper tubing, the V-plate 82 provided with the edges 84 and 85 forming substantially ninety degrees with one another and mounted on arms to which is imparted a vibratory motion by means of a cam, a set of oppositely-disposed turning fingers operatively connected and oscillating with said V-plate and adapted to swing from a position below, to a position above and on top the V-plate, the tucker-plate, the center of rotation of which is in line with the top of the V-plate and the distance from that center to its folding edge substantially equal to the depth of the tucks of the paper tube substantially as described.

10 In combination with means for supporting a blank of tucked-paper tubing, the V-plate provided with the forty-five-degree edges 84 and 85, forming substantially ninety degrees with one another and mounted on arms, to which is imparted an oscillatory motion by means of a cam, a set of oppositely-disposed turning-fingers operatively connected and oscillating with said V-plate and adapted to swing from a position below, to a position above and on top of the V-plate, the tucker-plate provided with trunnions pivoted on both sides of the V-plate in substantially such a position, that the center of rotation is in line with the top of the V-plate, the distance from that center to its folding edge is substantially equal to the depth of the tucks of the paper tube, and means for having said folding edge travel with the bag-blank for the purpose of defining the primary transverse folding-line.

574,021. END-GATE FOR WAGONS. MARTIN I. CONDERMAN, Hornellsville, N. Y. Filed May 23, 1896. Serial No. 592,839. (No model.)



Claim.—1. The combination with a wagon-body, of an end-gate hinged at one end thereto, a locking-bar secured to and projecting beyond the other end of said gate, a notched plate secured to the wagon-body for the reception of the projecting end of the locking-bar, and a spring-catch pivoted to said plate and having a slot therein which is adapted to receive the projecting end of the locking-bar, substantially as set forth.

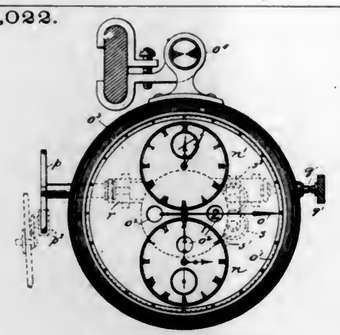
2. The combination with a wagon-body, of an end-gate hinged at one end to one of the side boards of said wagon-body, the end of the other side-board of the wagon-body having a notch or recess, a plate secured to said last mentioned side-board and having a notch or recess coincident with the notch or recess in the side-board, a locking-bar secured to the gate and adapted to project through said notches or recesses, a head at the free end of said locking-bar, and a spring plate or catch attached to the first-mentioned plate and having an opening for the reception of the free end of the locking-bar, substantially as set forth.

3. The combination with a wagon-body, of an end-gate hinged to one of the side-boards thereof, a locking-bar secured to the free end of said end-gate and adapted to enter a recess in the other side-board of the wagon, a head, having shoulders, at the free end of said locking-bar, and a pivoted spring-plate adapted to engage one or the other of the shoulders on said head, substantially as set forth.

574,022. INDICATING DEVICE FOR BICYCLES, &c. ROLAND CONROW, Cinnaminson, N. J. Filed Apr. 9, 1895. Serial No. 545,052. (No model.)

Claim.—The combination of a bicycle or vehicle, an instrument comprising a time-indicator having a set of continuously-moving hands or pointers, and a second set of hands or pointers adapted to be moved with the continuously-moving hands, a distance-indicator, means for imparting motion to the distance-indicator from one of the wheels or other moving part of the machine, and means for putting the distance-indicator and the second set of hands of the time-indicator into and out of action.

574,022.



574,023. CARPET FABRIC. THOMAS R. DORNAN, Philadelphia, Pa. Filed Sept. 10, 1896. Serial No. 605,391. (Specimens.)



Claim.—1. A carpet fabric having binder-warp threads and stuffer-warp threads, and having weft-threads arranged in two planes, with the stuffer-warp threads in an intervening plane between the two weft-planes and forming a substantially flat stiffening or stuffer body, with a plurality of stuffer-warps between the pairs of binder-warps and with weft-threads passing from one weft-plane to the other at points between stuffer-warps and binder-warps and also at points between stuffer-warps only, and having the weft-threads arranged with a greater number in one weft-plane than in the other weft-plane, substantially as set forth.

2. A carpet fabric having warp-threads arranged in sets of six warp-threads each, two being binder-warp threads and four stuffer-warp threads, with binder-warps adjacent and stuffer-warps in groups of four, and having weft-threads arranged in two planes with a greater number of weft-threads in one weft-plane than in the other weft-plane, and with the stuffer-warps in an intermediate plane between the weft-planes and forming a substantially flat stiffening or stuffer body, substantially as set forth.

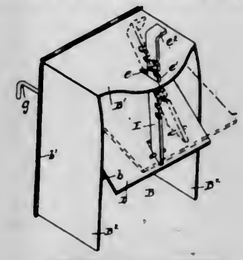
3. A carpet fabric having warp threads arranged in sets of six warp-threads each, two being binder-warp threads and four stuffer-warp threads, with binder-warps adjacent and stuffer-warps in groups of four, and having weft-threads arranged in two planes, the weft-threads in one weft-plane being arranged one in each shed and the other weft-plane containing weft-threads arranged two in a shed, with the stuffer-warps in an intermediate plane between the weft-planes and forming a substantially flat stiffening or stuffer body, and with weft-threads passing from one weft-plane to the other at points between stuffer-warps and binder-warps and also at points between stuffer-warps only, substantially as set forth.

4. A carpet fabric having warp-threads arranged in sets of six warp-threads each, two being binder-warp threads and four stuffer-warp threads, with binder-warps adjacent and stuffer-warps in groups of four, and having weft-threads arranged in two planes, with the stuffer-warps in an intermediate plane between the weft-planes and forming a substantially flat stiffening or stuffer body, the weft-threads being in sets of five weft-threads each, two in one weft-plane in separate sheds and three in the other weft-plane, one weft in one shed and two wefts in another shed, with weft-threads passing from one weft-plane to the other at points between stuffer-warps and binder-warps and also at points between stuffer-warps only, substantially as set forth.

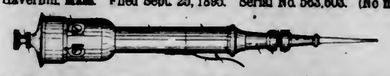
574,024. DEFLECTOR. AMOS EBY, Leaman Place, Pa. Filed Mar. 27, 1896. Serial No. 585,054. (No model.)

Claim.—1. The combination, with a register, of vertical side plates or cheeks, a deflector-plate hinged between the inner edges of the cheeks, the free edge of said deflector-plate being adapted to be adjusted vertically between said cheeks, and means for securing the free edge of said deflector-plate in an adjusted position, for the purpose specified.

2. The combination, with a register, of a deflector comprising a horizontal top plate, vertical side plates or cheeks, hooks constructed to engage the register, a deflector-plate having its upper edge hinged between the inner edges of the cheeks and adjacent to the top plate, and a rack-bar having one end pivoted to the vibrating end of the deflector-plate and the other end passing through a slot in the top plate, the rack on said bar being constructed to engage an edge of said slot, substantially as and for the purpose specified.



574,025. DENTAL PLUGGER OR MALLET. HARRY A. EDGCOMB, Mechanic Falls, Me., assignor of one-half to Howarth Stansfield, Haverhill, Mass. Filed Sept. 25, 1895. Serial No. 563,603. (No model.)



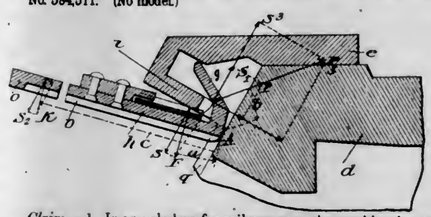
Claim.—1. In an electromagnetic dental plugger or mallet a magnet consisting of a barrel of soft iron flaring inwardly at its upper end and a hollow core of soft iron having a flange that fits in said barrel the said core being wound with insulated wire substantially as set forth.

2. In an electromagnetic dental plugger or mallet a magnet consisting of a barrel of soft iron a hollow core of soft iron having a flange that fits said barrel, said core being wound with wire, contact-ears secured to the outside of said barrel but insulated therefrom to which ears the leading-in and leading-out wires are attached, substantially as set forth.

3. In an electromagnetic dental plugger or mallet, a body having an outer metal tube, an electromagnet on the top of said body said magnet consisting of a barrel and a hollow core having a flange to fit into said barrel, the core extending down into the body and having a metal tube attached to the end thereof, a coil of wire around said core one end of which is connected with a contact-point that passes out through the body and the other end connected to one ear on the barrel, and a wire one end of which is connected to another ear on said barrel and to the outer tube, and a spring-contact to close the circuit substantially as set forth.

4. An a electromagnetic dental plugger or mallet having a magnet with a hollow core at its upper end, an armature on the end of a rod of non-magnetic material that passes through said hollow core, whereby the blow is delivered by the end of the rod directly upon the chuck, when the circuit is complete, and a spring surrounding said rod for raising the armature when the circuit is broken; substantially as set forth.

574,026. OIL-PORT LID FOR RAILWAY-CAR AXLE-BOXES. CHRISTIAN ERDSRINK, Hanover, Germany. Filed Mar. 23, 1896. Serial No. 584,511. (No model.)



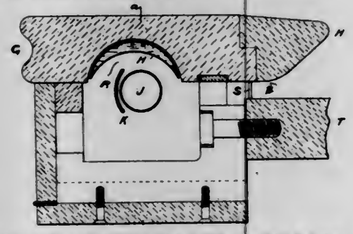
Claim.—1. In an axle box for railway-cars, the combination with the box, of a plate *e* secured to the top thereof, and having a projecting portion bent downward as well as rearward so as to form a hook *i;* a hingeless lid *b* having its upper rim bent forward as well as downward so as to form a hook *g*, the latter taking into the hook *i* of the plate *e;* and a spring *l* secured to the lid, and adapted to press the latter upon its seat in the whole extent of the same and to hold said lid also in its raised position, for the purpose as described.

2. In an axle-box for railway-cars, the combination with the box, of a plate *e* secured to the top thereof, and having a projecting portion bent downward as well as rearward so as to form a hook *i*, a hingeless lid *b* having its upper rim bent forward as well as downward so as to form a hook *g*, the latter taking into the hook *i* of the plate *e;* projections *n* arranged upon the front of the box, and adapted to form stops for the upper edge *m* of the lid; and a spring *l* secured to the lid, and adapted to press the latter upon its seat in the whole

extent of the same, and to hold said lid also in its raised position, for the purpose as described.

3. In an axle-box for railway-cars, the combination with the box, of a plate *e* secured to the top thereof, and having a projecting portion bent downward as well as rearward so as to form a hook, *i*; a hingeless lid *h* having its upper rim bent forward as well as downward so as to form a hook *g*, the latter taking into the hook *i* of the plate *e*; projections *n* arranged upon the front of the box, and adapted to form stops for the upper edge *m* of the lid; ledges *q* arranged at the sides of the box, and extending upward to the outer surface of the lid; ledges *o* arranged at the lower edge and the sides of the lid, and taking into recesses *r* formed within the seat of the lid, and between said ledges *q*; and a spring *l* secured to the lid, and adapted to press the latter upon its seat, in the whole extent of the same, and to hold said lid also in its raised position, for the purpose as described.

574,027. **MEANS FOR LIGHTING BILLIARD-TABLES.** FRANK GALLSWORTHY, Leeds, England. Filed Aug. 22, 1896. Serial No. 603,664. (No model.) Patented in England May 22, 1894, No. 9,904, and in Germany December 14, 1895, No. 84,396.



Claim.—1. In combination with a billiard-table, lighting means arranged around the guard-rail thereof, and supported by the said table to leave the top of the guard-rail free, said lighting means being adapted to illuminate the surface of the table substantially as described.

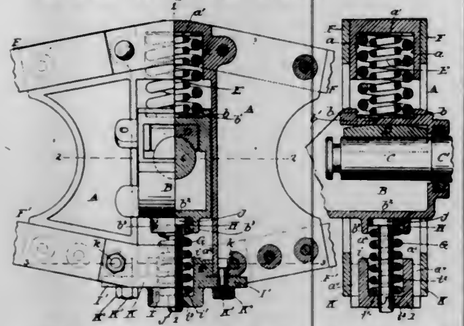
2. In combination with a billiard-table, lighting means arranged within the guard-rail thereof said guard-rail having an opening at its inner side for the diffusion of the light over the table.

3. In combination with a billiard-table, the rail comprising the foundation G, the cushion H at the inner edge thereof, said rail having a cavity with the opening I beneath the cushion, and the lamp within the guard-rail, substantially as described.

4. In combination with a billiard-table having the guard-rail with lighting means therein, the pipe N adapted to protect the parts of the rail from the heat, substantially as described.

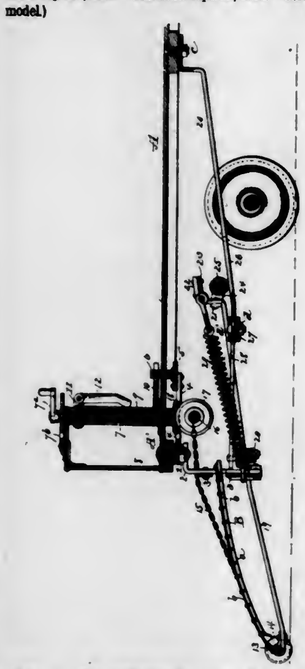
5. In combination with the billiard-table having a guard-rail provided with an opening about its inner side, the lighting means and the reflector for concentrating the light to the opening, said lighting means and reflector being arranged substantially in line with the opening in the guard rail.

574,028. **MEANS FOR SUPPORTING HOUSINGS OF CAR-AXLE JOURNALS IN PEDESTALS.** HORACE L. GEE, Kingston, N. Y., assignor to the Diamond Truck and Car Gear Company, New York, N. Y. Filed July 24, 1895. Serial No. 556,965. (No model.)



Claim.—The combination with a housing, of an axle-journal, contained within a pedestal of a car-truck, and a load supporting spring interposed between the pedestal and said housing and having its end portions seated in recessed seats provided respectively with the pedestal and housing, of a recessed seat integral with the lower side of said housing, a spring-support secured to the lower ends of the horns of the pedestal, and provided with a spring-receiving cup-form seat, and a central perforation in the bottom of said seat, of a tension-spring held under tension and contracted between said housing and spring-support, and the central guide-bolt having its head end within the lower side seat of the housing, and its body portion working in the central bore of the tension-spring with its lower end working through the central perforation in the seat of the spring-support, substantially as and for the purposes set forth.

574,029. **CAR-FENDER.** WILLIAM B. GEORGE, Columbus, Ohio. Filed Sept. 30, 1895. Renewed Sept. 22, 1896. Serial No. 606,680. (No model.)



Claim.—1. The combination with a car and a guide-frame attached thereto, of a fender adapted to pass through said guide-frame, guide-bars attached to the forward end of the fender and extending through said guide-frame, upwardly-bent arms at the rear ends of the guide-bars, a plate connecting said arms, bars connected to the car and guide-frame, arms or brackets secured to the guide-bars, a roller mounted in said arms or brackets and adapted to run on the bars connected to the car and guide-frame, and means for moving said fender forwardly and rearwardly, substantially as set forth.

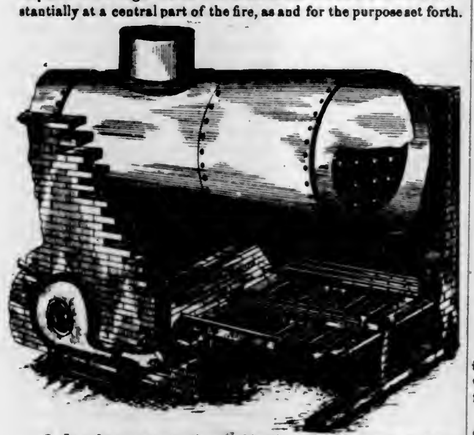
2. The combination with a car, of two bars or levers pivotally connected between their ends to said car, a guide-frame connected with the outer ends of said bars or levers, a fender adapted to pass through said guide-frame, wheels carried by the fender to run on the track, and devices connected with said pivoted bars or levers, whereby to adjust the guide-frame and fender laterally, substantially as set forth.

3. The combination with a car, of two bars or levers pivotally connected between their ends to the front end of the car, a guide-frame connected with the outer ends of said bars or levers, a U-shaped plate or yoke pivoted to the car and pivotally connected with the inner ends of said pivoted bars or levers, a plate secured to said yoke or U-shaped plate and provided with a pin, a shaft carrying a slotted arm to engage said pin, and means for turning said shaft, substantially as set forth.

4. The combination with a car-body, a laterally-movable guide-frame, and a fender having sliding connection therewith, of bars connected at one end to the bottom of the body and having a loose sliding connection at the other end with the laterally-movable guide-frame, substantially as set forth.

574,030. **FURNACE-GRATE.** ELONZO J. GORDON, Greenville, Mich. Filed Jan. 24, 1896. Serial No. 576,664. (No model.)

Claim.—1. In a furnace-grate the combination with the stationary solid bars, of a central auxiliary hollow blast-bar, having a longitudinal partition and inclined graduated faces, each vertical wall of said graduations having a series of blast-apertures, each series being disposed at an angle which will cause the entire blast to reunite substantially at a central part of the fire, as and for the purpose set forth.



2. In a furnace-grate, the combination with the open-grate surface of the closed horizontal bars on each side thereof having an outer vertical wall and an inwardly-inclined face provided with a series of graduations which rise above the plane of the open-grate surface and having a series of blast-apertures passing through the vertical walls of said graduations at an angle to the vertical plane to reunite the blast from each side over the grate-surface, substantially as described and for the purpose named.

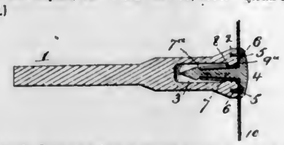
3. In a furnace having blast-bars provided with apertures, and solid bars interposed between said blast-bars, the combination of a blast-supply pipe having a partition-wall therein, and means for effecting a connection between each of said blast-bars and its respective compartment in the blast-supply pipe, substantially as described and for the purpose named.

4. In a furnace provided with hollow blast-bars, the combination of an air-supply pipe; valves for controlling connection between said air-supply pipe and the solid and hollow blast-bars, and means for supplying air under pressure to said pipe, substantially as described and for the purpose named.

5. In a furnace having hollow blast-bars provided with apertures for directing the blast to a central point of the furnace, the combination therewith of a series of solid bars secured together by transverse holders, said holders terminating in trunnions provided with bearings, an operating-lever so attached to said holders that said bars may be tilted simultaneously and an air-supply pipe having a partition-wall therein and air-controlling valves, as and for the purpose set forth.

6. In a furnace-grate the combination with the solid grate-bars of hollow blast-bars having inclined graduated faces provided with a plurality of apertures arranged by series in the vertical walls of said graduated faces, each series of apertures pointing in a direction which will cause the entire blast to reunite at a given point along the median line of the fire-box, substantially as described and for the purpose set forth.

574,031. **DENTAL DISK-HOLDER.** GEORGE B. HAKINS, Norwood, N. Y., assignor to The S. S. White Dental Manufacturing Company, Philadelphia, Pa. Filed June 30, 1896. Serial No. 597,515. (No model.)

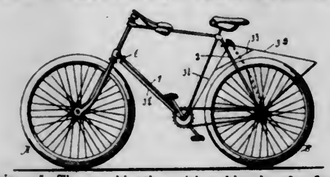


Claim.—1. In a mandrel, a shank having a head and a recess or socket therein, combined with a cap having a projection to enter said socket, and a spring lock or clamp located in said recess or socket and normally acting to grasp said projection, substantially as described.

2. In a mandrel, a shank having a head and a recess or socket therein, combined with a cap having a projection provided with a cone-like head adapted to enter said recess or socket, and a tubular spring lock or clamp located in said recess or socket and adapted to permit said projection and its head to pass therethrough to hold the cap on the head of the mandrel, substantially as described.

3. In a mandrel, a shank having a head and a recess or socket therein, combined with a cap having a projection provided with a cone-like head having a tapered portion 7ª adapted to enter said recess or socket, and a spring lock or clamp composed of a tube having one or more slits at one end, means for securing said lock or clamp on said head and within the recess or socket therein, the bore of said lock or clamp being alined with said recess or socket so as to receive the projection on said cap, substantially as described.

574,032. **MUD-GUARD FOR BICYCLES.** CHARLES M. HITCHCOCK, Utica, N. Y. Filed Oct. 14, 1893. Serial No. 488,117. (No model.)



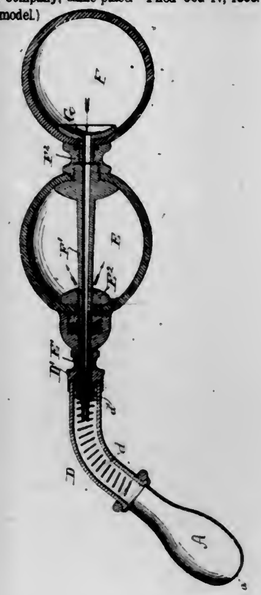
Claim.—1. The combination with a bicycle of a flexible mud-guard, a reel on which the guard is adapted to be wound, pivoted eccentrically and the locking device for the reel, substantially as set forth.

2. The combination in a bicycle of the flexible mud-guard, a radial arm for holding the guard extended over the wheel pivoted adjacent to the center of the wheel, a sliding bar mounted on the pivotal end of the arm and the projection on the frame with which the bar is adapted to engage to hold the guard extended, substantially as set forth.

3. The combination with a bicycle of a flexible mud-guard, means for attaching one end to the frame, a pair of guard-holding arms, a guard-reel to which the other end of the guard is attached mounted eccentrically in the projecting ends of the arms, a locking means for securing the reel with the guard wound thereon engaging with the extended side of the eccentric reel, substantially as set forth.

4. The combination with a bicycle of the flexible mud-guard, holding-arms, an arm-hanger to which the arm is pivoted, having a fixed locking-shoulder and adapted to be secured to the frame, the sliding catch on the arm adapted to engage the shoulder when the guard is fully extended, and hold the arm and guard extended, substantially as set forth.

574,033. **APPLIANCE FOR BLEACHING TEETH.** MERRILL W. HOLLINGSWORTH, Philadelphia, Pa., assignor to The S. S. White Dental Manufacturing Company, same place. Filed Oct. 17, 1896. Serial No. 609,207. (No model.)



Claim.—1. The hereinbefore described method of bleaching teeth, which consists in applying to a tooth in the mouth a holder for bleaching liquid, exhausting the air from the holder, charging the holder with bleaching liquid, and causing a current of electricity to pass through the tooth, substantially as set forth.

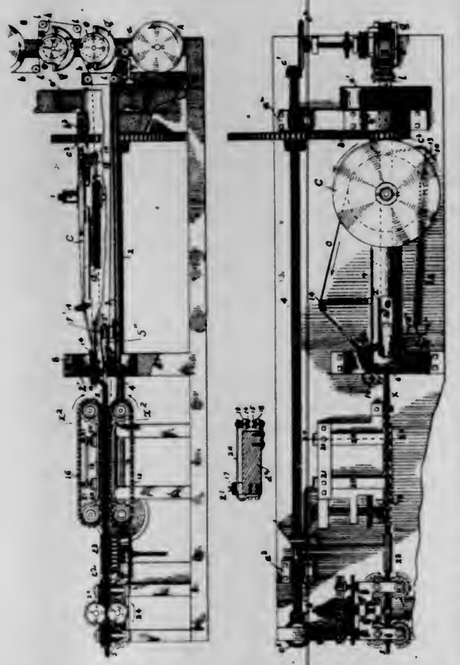
2. In a device applicable to use for treating teeth, the liquid-holder expander consisting of the connected, curved or bowed arms having the shouldered points and provided with the slide, substantially as set forth.

3. In a device applicable to use for treating teeth, the combination of the connecting-tube provided with the metallic socket-cap, and the conductor within the tube and connected with its cap, substantially as and for the purpose set forth.

4. In a device applicable to use for treating teeth, the combination of the liquid-holder, adapted for application to a tooth, and the connecting-tube provided with the socket-cap and conductor, substantially as and for the purpose set forth.

5. In a device applicable to use for treating teeth, the combination of the exhaust-bulb provided with the nozzle, and the injection-bulb provided with a nozzle passing through the exhaust-bulb and its nozzle, substantially as and for the purpose set forth.

574,034. PAPER-TUBE MACHINE. GEORGE H. KNIGHT, Lynn, Mass., assignor to the Builders Insulating Tube Company, same place. Filed Feb. 1, 1895. Serial No. 536,920. (No model.)



Claim.—1. In a machine for the manufacture of tubing out of two or more plies of paper tape; the combination with a fixed central former or mandrel, of a pair of toothed, synchronously-propelled feeding and forming chains and independently adjustable pressure-springs at the receiving and delivering points of said feeding and forming chains; substantially as set forth.

2. In a machine for making paper tubing from three paper tapes or ribbons; the combination of a rotatable sleeve or cage, an included stationary mandrel, a tongue which extends within said sleeve and supports said mandrel on a line coincident with the axis of said sleeve a reel which carries the wrapping-tape and which partakes of the rotation of said sleeve and also revolves about its own axis a pair of toothed and synchronously propelled feeding and forming chains and independently-adjustable pressure-springs at the receiving and delivering points of said chains respectively; for the purpose set forth.

3. In a machine for making paper tubing, the combination of a rotatable sleeve or cage, a compound rotating reel carried thereupon, a stationary mandrel which enters the delivery end of said sleeve, a support for the mandrel within said sleeve, and, attached to said support, and a disk whose funnel-formed orifice encircles, without touching, said mandrel at the point where the mandrel enters the sleeve, substantially as described.

4. In a paper-tube machine; the combination of a rotatable sleeve, a stationary mandrel which enters one end of said sleeve, a perforated disk concentric to but out of contact with said mandrel, and a bushing attached to and revolving with said sleeve and which surrounds said disk; substantially as described.

5. In a machine for making paper tubing; the combination of a rotatable sleeve or cage, a stationary mandrel which enters said sleeve at its delivering end, a support for said mandrel which enters said sleeve at its receiving end, a perforated disk which surrounds without touching said mandrel at its point of entrance into said sleeve and a concentric rotatable bushing which embraces said disk; substantially as set forth.

6. In a paper-tube-forming mechanism, the combination of a mandrel about which the tubing is formed, a rotating sleeve or cage, a compound rotating reel carried thereby a pair of toothed positively-acting feeding and forming chains which are caused to travel synchronously with the tube-wrapping mechanism and independently adjustable pressure-springs at the receiving and delivering parts of said chains respectively; substantially as described.

7. In a paper-tube-forming mechanism; the combination of a stationary mandrel about which the tubing is formed, a rotatable sleeve or cage, a compound rotating reel carried thereby, a pair of toothed positively-acting feeding and forming chains that are caused to travel synchronously with the tube-wrapping mechanism and means for varying the pressure of said feeding and forming chains upon the tubing at the places of reception and delivery; substantially as set forth.

8. In a paper-tube-forming mechanism having a mandrel about which the tubing is formed and having a rotating sleeve or cage; a pair of positively-actuated chains (which are caused to travel synchronously with the tube-wrapping mechanism) for drawing the tube along the mandrel and forming and compacting said tube, and means for varying the tube-pressure at the points of feed entry and delivery respectively which consist of two springs supporting a guide to one of said chains and of means for varying the tension of the respective springs; substantially as set forth.

9. In a paper-tube machine, the combination of a rotatable sleeve or cage, a stationary mandrel therein, a reel supported by and revolving with said sleeve and having an independent rotation and supplying paper tape spirally for the tubing, two reels which supply as many concentric longitudinal tapes, and means for applying paste to the outer and moisture to the inner longitudinal tape; substantially as set forth.

10. In a paper-tube machine using three superposed paper tapes drawn from as many reels; the combination of a pair of drums or cylinders partially immersed in paste and caused to rotate in contact with the respective sides of the intermediate tape *b* and in the opposite direction to its line of travel and a moistening device which consists of a sponge partially immersed in water and against which the innermost tape *a* is drawn.

11. In a paper-tube machine; the combination with a stationary forming-mandrel, of the inclosing rotary sleeve or cage 2 that supports and carries around with it in its rotation, a radially-extending stud or spindle 1, a reel C adapted to revolve thereon and to contain the roll of winding-tape *c*, a fusee 10, a tongue 11 that projects therefrom, a spring 12 which has a flexible connection 13 with said fusee's periphery and a means 12‴ for regulating the spring-tension; substantially as set forth.

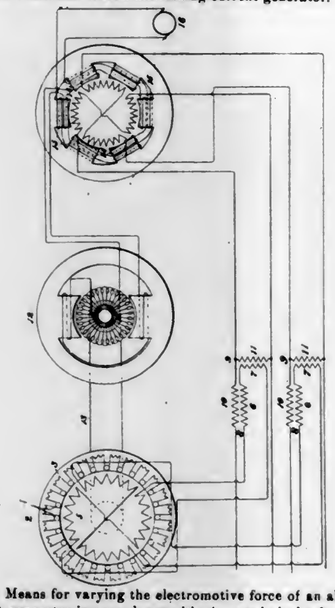
12. In a machine for making paper tubes; the combination of one or more Bunsen burners 22, a gas-regulating cock or valve *d* and a governor connected therewith and with some moving part or member of the machine, substantially as and for the purposes set forth.

574,035. METHOD OF AND MEANS FOR REGULATING ALTERNATING-CURRENT GENERATORS. BENJAMIN G. LAMME, Pittsburg, Pa., assignor to the Westinghouse Electric and Manufacturing Company, same place. Filed Mar. 11, 1896. Serial No. 582,764. (No model.)

Claim.—1. The method of varying the electromotive force of an alternating-current generator as its load varies, which consists in varying the slip of an alternating-current motor driven by current derived from said generator, and producing a field-magnet exciting or regulating current by the power derived from said motor.

2. The method of regulating alternating-current generators and motors which consists in varying the slip of a non-synchronous motor driven by current derived from said generator and driving an exciting or regulating generator by such non-synchronous motor.

3. Means for regulating the electromotive force supplied by an alternating-current generator, comprising two transformers having their primaries connected respectively in shunt and in series with the circuit supplied by said generator, a non-synchronous motor having its primary member connected in series with the secondaries of said transformers, and a direct-current generator driven by said motor and supplying current for producing in whole or in part the field-magnet excitation of said alternating-current generator.

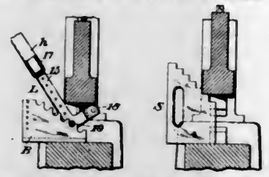


4. Means for varying the electromotive force of an alternating-current generator in accordance with changes in its load, comprising transformers having their primaries connected respectively in shunt and in series with said generator-circuit and their secondaries connected in series with each other, a non-synchronous motor supplied with current from said secondaries, a direct-current generator driven by said motor and supplying current to be utilized for energizing in whole or in part the field-magnets of said alternating-current generator.

5. The combination with an alternating-current generator, of means for varying the electromotive force supplied to its field-magnet coils in accordance with variations in its load, comprising a direct-current generator, a non-synchronous motor for driving the same and means for supplying the primary member of such motor with an electromotive force which is dependent upon the load carried by said alternating-current generator.

6. The combination with an alternating-current generator, of a direct-current generator for supplying in whole or in part the energizing-current for the field-magnets of said alternating-current generator, a non-synchronous motor for driving said direct-current generator, and means for varying the slip of said motor as the load upon the alternating-current-generator circuit is varied.

574,036. LIFTING-JACK. FRANK LOMBARD, Hartford, Conn. Filed Oct. 12, 1896. Serial No. 608,561. (No model.)

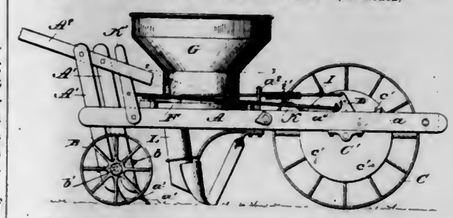


Claim.—1. In a lifting-jack the combination, of a substantially triangular fulcrum-block having two parallel side walls connected at their lower edges by a base portion and having a series of substantially semicircular bearings formed in the inclined faces of said side walls, with their axes located one above the other and in different vertical planes; a lifting-lever having an angularly-disposed lifting-arm at one end thereof and also having two oppositely-disposed trunnions which are removably seated in one pair of fulcrum-bearings; and a locking device engaging the lifting-lever in horizontal alinement with the axis of movement of said lever and adapted for locking the same with its lifting-arm in a vertical position.

2. A lifting-jack comprising a fulcrum-block of substantially triangular form, having two vertically-disposed parallel side walls separated by a longitudinal recess and having a series of stepped bearings in the adjacent inclined faces of said walls and also having a series of transverse pin-holes extending through the said side walls of said block, each in horizontal alinement with a bearing; a lever having a rectangularly-disposed lifting-arm at one end thereof and having oppositely-disposed trunnions at the point of intersection of the longitudinal axes of the two angularly-disposed parts of the lever and having a series of transverse pin-holes at successively different distances from the axes of the trunnion, corresponding to the successively different distances of the fulcrum-block pin-holes from the axes of the successive pairs of bearings, and said lifting-lever being located between the side walls of the fulcrum-block and having its trunnions removably supported in one of said bearings; and a locking device adapted to be extended through the registering pin-holes to lock the lever with its lifting-arm in a vertical plane.

3. In a lifting-jack, the combination of a substantially triangular fulcrum-block having a longitudinal lever-receiving recess and having a series of pairs of substantially semicircular bearings formed in the side walls thereof, with the axes of the successive pairs in different horizontal and vertical planes, and also having a transverse pin-hole in substantial alinement with each axis of each pair of bearings; an angle-lever having oppositely-disposed trunnions located at the angle thereof and normally seated in one of said bearings, and also having a series of pin-holes, each of which is adapted to register with a given pin-hole of the fulcrum-block when the lever is fulcrumed in a bearing; antifriction-roll carried at the outer end of said lever; and a locking device adapted to be extended through the registering pin holes, to lock the lever in its lifting position.

574,037. POTATO-PLANTER. MANDELBERT L. MANLEY, Perry, Mich. Filed June 4, 1896. Serial No. 594,283. (No model.)



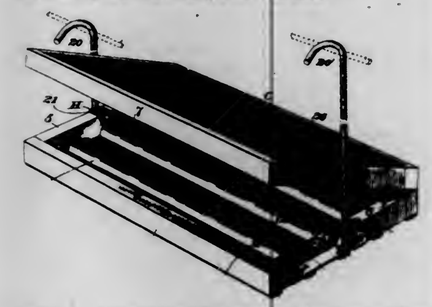
Claim.—1. In a planter, the combination, of a suitably-supported hopper, a rotary feed-wheel made of a single piece and having a series of pockets the upper ends of which are contracted, a knife positioned to lie over the upper face of the feed-wheel so that the pockets will pass beneath the same, the feed wheel having a flange which projects beyond the hopper; recesses in said flange which are inclined on one side and vertical on the other, with which recesses the bent end of a rod engages, and means for operating said rod, said means including a spring-lever, tappets on the front supporting-wheel, and a lever which contacts with the tappets to move the lever against the action of its spring, substantially as shown and for the purpose set forth.

2. In a seed-planter, the combination, of a frame constructed substantially as shown and provided with supporting-wheels, one of the supporting-wheels carrying a disk with projecting pins for engagement with a bell-crank lever, a rod having its rear end bent downwardly, said rod being spring-actuated in one direction and moved in the other direction by the bell-crank lever, and pins on the hereinbefore-mentioned disk, a rotary feed-wheel having pockets located within the hopper and a series of apertures or openings *f* having an inclined surface and vertical shoulder with which the bent end of the spring-actuated rod engages, substantially as shown and for the purpose set forth.

3. In a seed-planter, the combination, of the rotary disk constructed substantially as shown and provided with a flange which projects beyond the hopper, said flange having recesses with one of the sides thereof inclined, a rod having a bent end for engagement with said recesses, the forward end of said rod being connected to a bell-crank lever, a coiled spring mounted on the rod and attached to the same and to a fixed guide, and a disk with projecting pins coacting to actuate the rod, the rod K connected to a hand-lever, the forward end of said rod being bent to lie in the path of the upper member of the bell-crank lever, substantially as shown and for the purpose set forth.

4. In a planter, the combination, of a front or driving wheel C carrying a disk with projecting pins *c'*, a bell-crank lever pivoted to the frame of the planter one member of the lever being bent to lie in the path of the projecting pins, the other member being secured to a rearwardly-extending rod which passes through a suitable guide, a coiled spring carried by the rod and bearing against the guide to effect a movement of the rod in a contrary direction from which it is moved by the bell-crank lever; a rotary feed-wheel above which is mounted a hopper, said feed-wheel having pockets within the hopper and beyond the same a flange with recesses *f* with which the bent ends of the hereinbefore-mentioned rod engages, together with a rod K having bent ends the forward end lying in the path of one of the members of the bell-crank lever the other end engaging with a hand-lever K', the forward movement of said hand-lever being adapted to throw the bell-crank lever in the same direction it is actuated by the wheel C, substantially as shown.

574,088. **ELECTROPLATING APPARATUS.** RICHARD J. MARES, Hartford, Conn., assignor of one-half to William P. O'Toole, same place. Filed Oct. 12, 1896. Serial No. 608,545. (No model.)



Claim.—1. A work holder of the class specified, comprising two elongated parallel conductive sections; a non-conductive stop interposed between adjacent edges and insulating said conductive sections; and a conducting-hanger in connection with each section.

2. A work-holder of the class specified, comprising an opening-frame of non-conductive material, having a floor composed of a series of elongated parallel conductive and non-conductive stops alternating with each other and conductive hangers fixed at opposite ends of said frame and one of said hangers being conductively connected with alternating conductive sections at one end of said frame and the other hanger being conductively connected to alternating conductive sections at the opposite end of said frame.

3. A work-holder comprising two adjacent relatively-insulated conductive sections and two conducting-hangers, one of which is connected to one section at one end and the other of which is connected to the adjacent section at the opposite end.

4. A work-holder of the class specified, comprising a suitable non-conductive frame; a series of relatively-insulated permeable conductive floor-sections secured to said non-conductive frame; and conducting-hangers, one of which is conductively connected with alternating conductive sections at one end of the frame and another of which is conductively connected with intermediate alternating conductive sections at the opposite end of the frame.

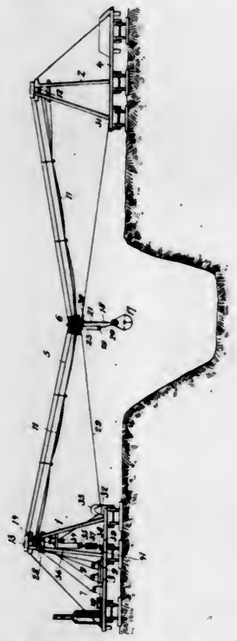
5. A work-holder of the class specified, comprising a suitable non-conductive frame; a series of relatively-insulated permeable conductive floor-sections secured to said non-conductive frame; conducting-hangers, one of which is conductively connected with alternating conductive sections at one end of the frame and another of which is conductively connected with intermediate alternating conductive sections at the opposite end of the frame; and a permeable cover in connection with the section-frame.

574,039. **CONVEYING APPARATUS.** THOMAS S. MILLER, South Orange, N. J. Filed Nov. 30, 1895. Serial No. 570,608. (No model.)

Claim.—1. In a hoisting apparatus, in combination, fall-rope supports, two fall-ropes pendent from said supports in proximity to each other and disconnected from each other below said supports; said fall-ropes being laid with their strands twisted inversely, substantially as described.

2. In a hoisting apparatus, in combination, fall-rope supports, two fall-ropes pendent from said supports in proximity to each other and disconnected from each other below said supports, and a separate fall-block for each fall rope; said fall-ropes being laid with their strands twisted inversely, substantially as described.

3. In a conveying apparatus, in combination, a supporting-cable, a carriage thereon, a fall-rope, a holddown-rope and means for controlling the same, substantially as described.



4. In a conveying apparatus, in combination, a supporting-cable, a carriage thereon, a fall-rope, a holddown-rope, the head and tail towers, means near the bottom of each tower for holding said holddown-rope and means whereby the tension of said rope is controlled, substantially as described.

5. In a conveying apparatus, in combination, a supporting-cable, a carriage thereon, a fall-rope, a holddown-rope, a take-up connected with the same and mechanism whereby the movement of the same may be stayed, substantially as described.

6. In a conveying apparatus, in combination, a supporting cable, a carriage thereon, a fall-rope, a holddown-rope, a sheave 33 under which it passes, a take-up device and means whereby the length of said rope is adjusted, substantially as described.

7. In a conveying apparatus, in combination, a supporting-cable, a carriage thereon, a fall-rope, a holddown-rope, a member on the carriage engaging the same and means for controlling said rope, substantially as described.

8. In a conveying apparatus, in combination, a cable or track way, two fall-ropes, two fall-blocks, a load-carriage containing a sheave for each of said fall-ropes; said sheaves being placed in different planes whereby said fall blocks are held in normal position at an angle with each other, substantially as described.

9. In a hoisting apparatus, in combination, two fall-ropes, and means for supporting the same in proximity; said fall-ropes being laid with their strands twisted inversely, substantially as described.

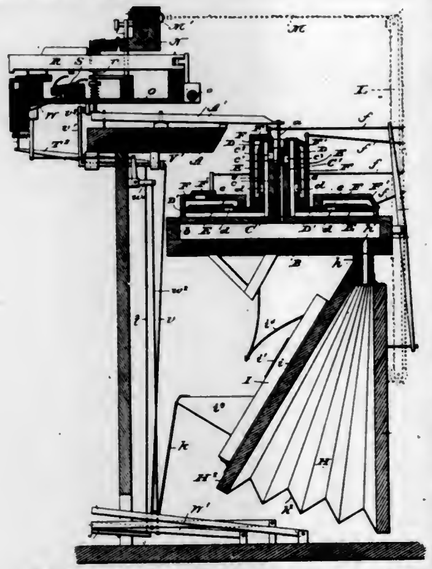
10. In a conveying apparatus, a supporting-cable, a carriage thereon, a fall-rope, a bucket suspended thereby and means whereby the sag of said fall-rope is maintained when relieved from the weight of the bucket, substantially as described.

574,040. **REED-ORGAN.** WILLIAM S. MOSER, Tracy, Minn. Filed Nov. 29, 1895. Serial No. 570,491. (No model.)

Claim.—1. The combination in a reed-organ, of air-exhaust mechanism having a movable board, the board being connected to a plurality of valves covering the reed-chambers, whereby the movement of the board will open the valves successively.

2. In a reed-organ, the combination, of air-exhaust mechanism communicating with a sounding-chamber, a plurality of reed-chambers having valves, and means substantially as shown connected to the air-exhaust mechanism for operating the valves successively.

3. In a reed-organ, the combination, of air-exhaust mechanism communicating with the sounding-chamber, the air-exhaust mechanism having a swinging board, a plurality of reed-chambers and passages connecting said reed-chambers with the sounding-chamber valves covering openings in the reed-chambers, and a lever, or levers, connected to the swinging board and to the valves, substantially as shown and described.



4. In a reed-organ, the combination, of air-exhaust mechanism, a sounding-chamber communicating therewith, and a plurality of reed-chambers connected to the sounding-chamber and provided with valves; together with means connected to the valves and to a board of the air-exhaust mechanism for opening the valves successively as said board is moved, and an indicator or slide for indicating the number of valves that are opened.

5. In a reed-organ, the combination, of air-exhaust mechanism, a sounding-chamber communicating therewith, a strip having a series of vertical openings and ports which lead to the reed-chambers, valves covering openings in the reed-chambers, and means connected to the valves and to a swinging board of the air-exhaust mechanism, substantially as shown and described.

6. The combination in a reed-organ, of a sounding-chamber connected with means for exhausting the air therein, a strip having a series of openings communicating with the sounding-chamber and ports at different heights or distances apart which lead to the reeds, and pistons located in the openings and adapted to uncover the ports successively, substantially as shown and for the purpose set forth.

7. The combination in a reed organ, of a sounding-chamber connected with means for exhausting the air therein, a strip having a series of openings or passages communicating with the sounding-chamber and ports at different heights or distances apart which lead from said passages to the reeds, pistons located in the openings and adapted to uncover the ports successively, and means for operating the pistons, substantially as shown and for the purpose set forth.

8. The combination in a reed-organ, of a sounding-chamber, a strip having a series of openings communicating with the sounding-chamber and ports which lead to the reeds, valves covering openings in the reed-chambers; together with mechanism for exhausting the air in the sounding-chamber, and means connected to the air-exhaust mechanism and to the valves of the reed-chambers for opening said valves successively, substantially as shown and for the purpose set forth.

9. The combination in a reed-organ having a series of reed-chambers and a sounding-chamber communicating with each other by passages and ports, the ports being located at different heights, substantially as shown; of pistons located in the air-passages and adapted to be moved over the ports; key-levers for operating the pistons, and mechanism for exhausting the air in the sounding-chamber, substantially as shown and for the purpose set forth.

10. The combination in a reed-organ having a series of reed-chambers and a sounding-chamber communicating with each other by passages and ports, substantially as shown; of pistons located in the air-passages and connected to operating-levers for uncovering the ports; valves covering openings in the reed-chambers; together with mechanism for exhausting the air in the sounding-chamber, and means connected to the air-exhaust mechanism and to the valves for opening said valves successively, for the purpose set forth.

11. The combination in a reed-organ having a series of reed-chambers and a sounding-chamber communicating with each other by passages and ports, substantially as shown; of pistons located in the air-passages and connected to operating-levers for uncovering the ports; valves covering openings in the reed-chambers; bellows for exhausting the air in the sounding-chamber, said bellows having a swinging board, and means connected to the swinging board and to the valves for operating the valves by exhausting the air in the bellows, substantially as shown and for the purpose set forth.

12. The combination in a reed-organ having a series of reed-chambers and a sounding-chamber communicating with each other by passages and ports, substantially as shown; of pistons located in the air-passages and connected to operating-levers for uncovering the ports; valves covering openings in the reed-chambers; together with a bellows or chamber located below the sounding-chamber and communicating therewith, said bellows or chamber having a swinging board and supplemental bellows for exhausting the air therein; and means connecting the swinging board with the valves of the reed-chambers, substantially as shown and for the purpose set forth.

13. The combination in a reed-organ having a series of reed-chambers and a sounding-chamber communicating with each other by passages and ports, substantially as shown; of pistons located in the air-passages and connected to operating-levers for uncovering the ports; valves covering openings in the reed-chambers; bellows for exhausting air from the sounding-chamber, said bellows having a swinging board which is connected to the valves of the reed-chambers for opening them successively; and an indicator located at the front of the organ-frame and connected to the swinging board for indicating the number of valves that are open.

14. The combination in a reed-organ having a series of reeds located on opposite sides of passages which communicate with the sounding-chamber, ports connecting the passages with the reed-chambers and located at different planes, pistons located in the passages and connected to operating-keys, said pistons being adapted to cover and uncover the ports; together with means for exhausting the air in the sounding-chamber, substantially as shown and for the purpose set forth.

15. The combination in a reed-organ having a series of reeds located on opposite sides of passages which communicate with the sounding-chamber, ports connecting said reeds with said passages, and pistons located in the passages and operated to uncover the ports successively; of a substituting and transposing keyboard having keys which are connected to the pistons for operating the same; and means for tilting the forward end of the keyboard, substantially as shown and for the purpose set forth.

16. The combination in a reed-organ, of a substituting and transposing keyboard supported at its rear end upon a bar; levers pivoted to the organ-frame so that they will engage the under side of the keyboard; a pedal connected to the levers substantially as shown; a pivoted latch having notches which engage the pedal and a slot through which a guide-bar passes, a spring for throwing the latch in engagement with the pedal, and a catch for holding the latch against the action of the spring, substantially as shown and described.

17. In a reed-organ, the combination, of a transverse strip Z hinged to the frame so as to overlie the keys, the under edge of the strip being provided with a pad, substantially as shown and for the purpose set forth.

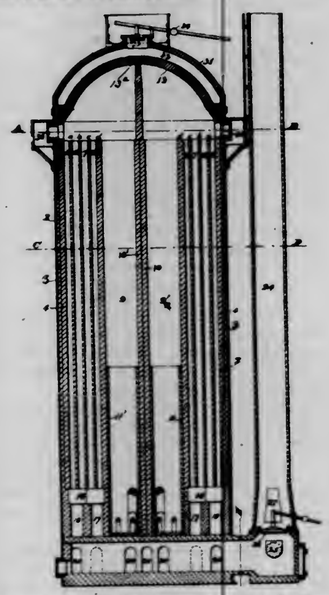
574,041. **HOT-BLAST STOVE.** GEORGE W. MCCLURE, Pittsburg, Pa. Filed Oct. 17, 1895. Serial No. 565,933. (No model.)

Claim.—1. In hot-blast stoves, the combination of a shell inclosing the combustion-chamber, flues, &c.; a vertical cross-wall dividing said shell into substantially two equal parts and extending down to the stack-flue; an independent combustion-chamber and semicircular vertical flues on each side of the wall; a stack-flue in the base of the stove and connections between the combustion-chambers and their respective vertical flues and between the said vertical flues and the smoke-stack.

2. In hot-blast stoves, the combination of a shell; a false roof or dome leaving an air-space between itself and the roof proper and permanent opening through the false roof into the stove whereby additional air may be supplied to the upper portion of the stove to quicken the combustion there.

3. In hot-blast stoves the combination of a shell, a lining for said shell; two sets of semicircular vertical flues built within but independent of said lining; two sets of inner semicircular flues built within the first sets but independent thereof and an annular wall inclosing the combustion-chambers built within but independent of said inner sets of vertical flues.

4. In hot blast stoves the combination of a shell inclosing the combustion-chambers, flues, &c., a vertical cross-wall dividing said shell into substantially two equal parts and extending down to the stack-flue; an independent combustion-chamber and semicircular vertical flues on each side of the said wall; a stack-flue in the base of the stove; a common gas-inlet to said two combustion-chambers and an air-inlet to each of said chambers and connections between the combustion-chambers and their respective vertical flues and between said vertical flues and the smoke-stack.



5. In hot-blast stoves, the combination of a shell; a central vertical dividing-wall; an annular wall in the center of said shell forming the outer wall of two combustion-chambers and a pair of arc shaped walls sprung from the interior of said annular wall and constituting the inner walls for said two combustion-chambers.

6. In hot-blast stoves, the combination of a shell; a central dividing vertical wall and a series of semicircular vertical flue-walls wedged between the two ends and on each side of said central dividing vertical wall.

7. In hot blast stoves, the combination of a shell; a dividing vertical wall within said shell; an independent combustion chamber and semicircular vertical flues on each side of said wall; semicircular horizontal flues communicating with the bottom of said semicircular vertical flues; vertical semicircular flues communicating with and beneath said horizontal semicircular flues: a second exterior vertical annular flue connecting with said last vertical semicircular flues; a stack flue and radial flues connecting the stack-flue with said exterior vertical flue.

8. In hot-blast stoves, the combination of a shell inclosing the combustion-chambers, flues, &c.: a vertical cross-wall dividing said shell into substantially two equal parts and extending from the level of the top of the semicircular vertical flues down to the stack-flue; an independent combustion-chamber and semicircular vertical flues on each side of said wall; a stack-flue in the base of said stove and connections between the combustion chambers and their respective vertical flues and between said vertical flues and the smoke-stack.

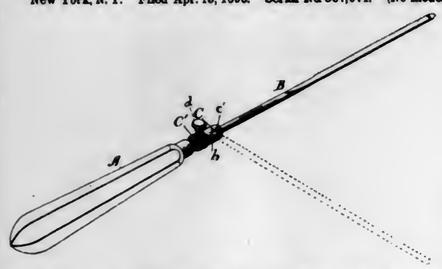
574,042. GLOVE-FASTENING. PAUL E. L. PERDRIZET, Paris, France. Filed Jan. 20, 1896. Serial No. 576,079. (No model.)



Claim.—1. In a three-ball fastening device, the combination with a one-ball member, of a two-ball member comprising a resilient wire coil having its free ends extending upwardly from the plane of the coil, balls *b b* carried one upon each of the free ends of the coil, and a fastening clamping the wire coil and provided with prongs to enter the material of the glove or other garment, substantially as described.

2. In a three-ball fastening device, the combination with a one-ball member, of a two-ball member comprising a wire coil having free ends, balls *b b* carried each upon one of the free ends of the coil and a fastening-plate comprising a tubular section *p* entered into the coil and flared outwardly to hold the said fastening-plate to the coil and attaching-prongs *q* for attaching the said two-ball member to a glove or other garment.

574,043. TOOL AND TOOL-HANDLE. FERDINAND A. REICHARDT, New York, N. Y. Filed Apr. 15, 1896. Serial No. 587,671. (No model.)



Claim.—1. A tool-handle having a screw-threaded and pointed end and an internally-screw-threaded coupling-piece or sleeve provided with a bit-socket and made adjustable on said pointed end for engaging a bit therewith, substantially as described.

2. The combination with a tool-handle provided with a screw-threaded and pointed, metallic end, of the longitudinally-perforated, removable head or coupling-piece engaging said end, said head having an open, lateral slot communicating with the central perforation, substantially as and for the purpose set forth.

3. The combination in a tool or implement of a handle having a screw-threaded and pointed end, a slotted and longitudinally-perforated head or coupling-piece engaging said screw-threaded end, and a bit or tool having a ball or bulb on the end of its shank for engaging said coupling piece, substantially as described.

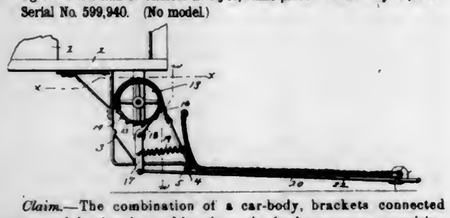
4. The combination with a tool-handle having a screw-threaded and pointed end of hard metal, of a bit or implement provided on its shank end with a ball or bulb of soft metal, and a coupling-piece or sleeve adjustable on said pointed end for the purpose and substantially as described.

5. The combination of the screw-threaded and pointed handle, the slotted head or coupling-piece, provided with the central bore and socket for the ball ended bit and an enlargement of the slot below the ball-socket for permitting the passage of the ball, substantially as described.

6. The herein-described tool, comprising a handle member having a pointed end, a bit member having a ball on the end of its shank, and a coupling piece or sleeve having a socket for said ball and made adjustable on said pointed end for forcing the latter into engagement with said ball, substantially as described.

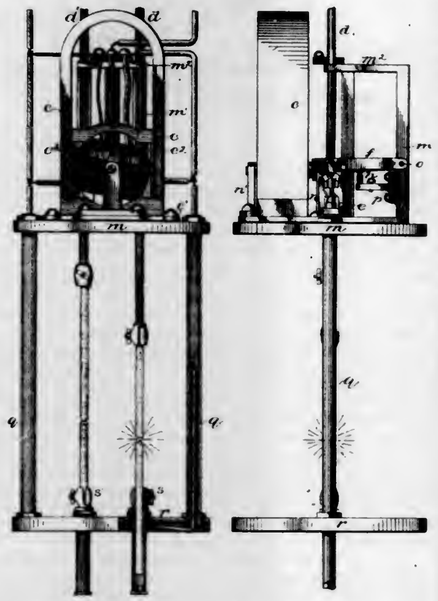
7. The herein-described tool or implement, comprising a handle member having a screw-threaded and pointed end, a slotted coupling-piece for connecting a bit member with said screw-threaded end, and a set-screw for holding the handle and bit members at the required relative adjustment, substantially as described.

574,044. CAR-FENDER. MATTHEW RINGS, Seattle, Wash., assignor of one-half to Charles E. Dyer, same place. Filed July 20, 1896. Serial No. 599,940. (No model.)



Claim.—The combination of a car-body, brackets connected thereto and having journal-bearings, the fender proper comprising the frame having the transverse bar 5, journaled in the bearings of the brackets, the forward cross-bar 8, the rear cross bar 9, arranged above the bar 5, side bars connecting the cross bars and the longitudinal central bar 20, connected to the bars 8, and 5, and extending upwardly from the latter, and the netting connected to the frame, the hanger connected to the car-body, the wheel carried by said hanger and having ratchet-teeth, a flexible connection between said wheel and the bar 20, of the fender-frame, the lever fulcrumed in the hanger and having the pawl engaging the teeth of the wheel, a spring connecting the opposite end of the lever and the fender proper, and the trigger connected to the lever and extending forwardly to a point in advance of the fender proper and having the forward cross bar, substantially as specified.

574,045. ELECTRIC-ARC LAMP. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 9, 1893. Serial No. 473,584. (No model.)



Claim.—1. The combination with two pairs of carbons in an electric circuit, of a differential oscillating magnet in the circuit, a source of permanent magnetic field wherein said magnet is located, and mechanism actuated by the said magnet adapted to bring into operation one pair or the other of the carbons according to the position which said magnet assumes with relation to the said magnetic field when current is sent through it, substantially as described.

2. The combination with two pairs of carbons in an electric circuit, of an oscillating magnet in the same circuit and a source of permanent magnetic field surrounding the said magnet, the magnet and source of magnetic field being capable of movement with relation to one another in response to changes of polarity of the magnet, and mechanism actuated by the movement of one of the elements adapted to bring about the operation of one pair or the other of the carbons according to the direction of said movement, substantially as described.

3. The combination with two pairs of carbons included in an electric circuit, of regulating mechanism adapted, when actuated, to effect the separation or approach of the members of each pair of carbons, an oscillating magnet in the said circuit or a branch thereof, a source of magnetic field of constant direction about the said magnet, and means connected with the magnet to be actuated thereby adapted to bring about the operation of one pair or the other of the carbons according to the movement of the said magnet with relation to the magnetic field wherein it is situated; whereby either pair of carbons may be brought into operation by suitably directing the current through the magnet, substantially as described.

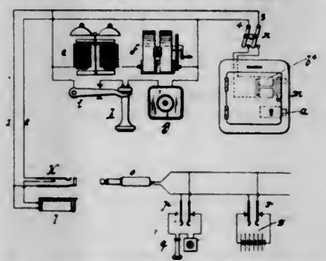
4. The combination with two pairs of carbons in an electric circuit, of two carbon-rods, each varying one member of a pair, clutches engaging with the different carbon-rods, lever mechanism controlling the clutches, an oscillating magnet in the said circuit, a source of magnetic field of constant direction, the said magnet being situated in the said field, and an arm controlled by the magnet in its movement adapted to engage with the lever controlling one pair of carbons or the other, according to its position, to actuate the same, substantially as described.

5. The combination with two pairs of carbons, of carbon-rods each carrying one member of a pair, clutches engaging with the said carbon-rods, levers controlling the movement of the clutches, an oscillating magnet provided with two helices, one helix included in circuit with the carbons, and the other helix included in a shunt of the said carbons connected with the first helix, said helix being wound differentially, a source of magnetic field of constant direction, and an arm connected with the said helices to be actuated thereby as the magnet moves in response to changes in strength or direction of the current through the coils thereof, said arm being adapted to engage with and actuate one or the other of the said clutch controlling levers; whereby the members of one pair of carbons or the other are separated and adjusted to form and control the arc according to the direction of the current through the lamp, substantially as described.

6. The combination with two pairs of carbons in series in an electric circuit, of an oscillating magnet in the said circuit, a source of magnetic field of constant direction surrounding the said magnet, contact-points and circuit connections adapted to short-circuit each pair of carbons when said contact-points are closed together, and mechanism controlled by the said magnet to separate one pair or the other of the contact-points according to the position of the helix, substantially as described.

7. The combination with an element adapted to produce a permanent magnetic field, of a coil comprising differentially-wound helices located in the field and revoluble therein, two sets of mechanism, each designed to be movable through different ranges, a device connected with the said coil adapted to be brought into engagement with either of said mechanisms according to the position of the coil in the field, means for reversing the current through one or both of the helices, and means for varying the currents in the two helices with relation to each other, substantially as described.

574,046. TOLL-BOX FOR TELEPHONES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 14, 1896. Serial No. 591,521. (No model.)



Claim.—1. The combination with the telephone and the telephone-line thereof at a toll-station, of the toll-box or coin-receptacle, an electrically-controlled locking device for the toll-box connected with the telephone-line, a spring-jack or socket for the line at a central station, and means for connecting therewith a source of electric current to release the said locking mechanism, substantially as described.

2. The combination with the toll box of a telephone-line, of locking mechanism therefor controlled by a manually-actuated part and an electrically-actuated part jointly, said electrically actuated part being connected with the telephone line, and means for connecting with said line a source of current to operate said electrical part substantially as described.

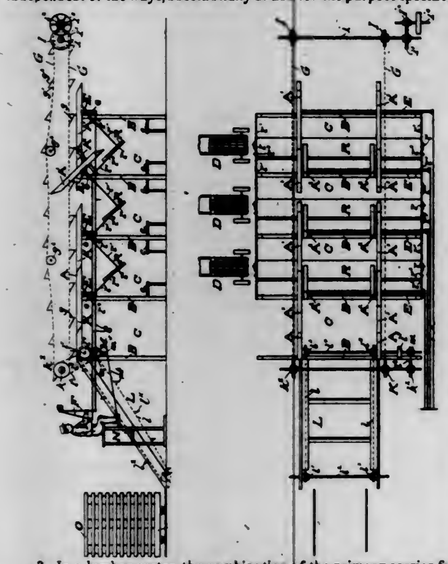
3. The combination with the toll-box of a telephone toll-station, of a manually-controlled lock for the said box, an electrically-controlled lock for the box connected with the telephone-line, a source of current at a central office of the line, and means for connecting the source of current with the line to actuate the said electrically-controlled lock, as described.

574,047. LUMBER-SORTER. EDGAR C. SKEDDEN, New Orleans, La., assignor of one-half to the J. A. Fay & Egan Company, Cincinnati, Ohio. Filed Aug 26, 1895. Serial No. 560,554. (No model.)

Claim.—1. In a lumber-sorter, the combination of sectional ways, shafts on which the sections are mounted, crank-arms secured to the shafts, operating-levers, links connecting the operating-levers to the crank-arms and extending from the crank-arms to the operating-levers, constructed and arranged to trip the sections irrespective of the position of the lumber on the ways, and continuous propelling-chains extending the length of the series of sections above and independent of the ways, substantially as and for the purpose specified.

2. In a lumber-sorter, the combination of a primary carrier for conducting the material to the ways, ways along which the material is propelled, sections in the ways, bins under the ways for receiving

the material, levers for tripping the sections, links extending from the levers to the sections, constructed and arranged to trip the latter independent of the material passing over the ways, and continuous propelling chains extending the length of the series of sections above and independent of the ways, substantially as and for the purpose specified.



3. In a lumber-sorter, the combination of the primary carrier for receiving the material to be sorted and conducting it to the ways, ways along which the material is propelled, sections in the ways, brackets at the rear end of the sections, bins under the ways, levers for tripping the sections, links connecting the levers to the sections, constructed and arranged to trip the latter independent of the position of the material passing over the ways, and continuous propelling-chains extending the length of the series of sections above and independent of the ways, substantially as and for the purpose specified.

4. In a lumber-sorter, the combination of a primary carrier for receiving the material to be sorted and conducting it to the ways, ways along which the material is propelled, sections in the ways, bins under the ways, links and levers for tripping the sections, deflectors for conducting the lumber to either side of the bins, and chains above the ways for propelling the lumber, substantially as and for the purpose specified.

5. In a lumber-sorter, the combination of sectional ways, links and levers for tripping the sections, propelling-chains above the ways, and shoes on the chains, consisting of a pivotally-mounted heel and pivotally-mounted brace, the heel and brace of each pivotally attached to each other and to separate links of the chain, substantially as and for the purpose specified.

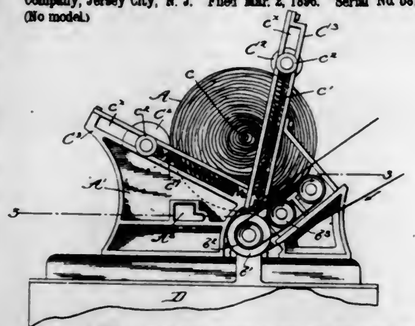
6. In a lumber-sorter, the combination of sectional ways, links and levers for tripping the sections, propelling-chains above the ways, bins under the sections, pivoted deflectors in the bins for conducting the lumber to either side thereof, and tie-rods on which the deflectors are mounted, substantially as and for the purpose specified.

7. In a lumber-sorter, the combination of sectional ways, links and levers for tripping the sections, deflectors in the bins pivotally mounted below their center of gravity, pins on the deflectors above the pivots, and supports on which the pins may rest, substantially as and for the purpose specified.

8. In a lumber-sorter, the combination of sectional ways, chains above the ways for propelling the lumber, sprocket-wheels for propelling the chains, a primary carrier, carrying chains therein, separate shafts about which the latter and the chains above the ways pass, and an eccentrically-mounted intermediate shaft between the latter for throwing the carrying-chains of the primary carrier in and out of operation, substantially as and for the purpose specified.

9. In a lumber-sorter, the combination of sectional ways, a driven shaft, sprocket-wheels thereon, horizontally-disposed chains actuated thereby, a second shaft, sprocket-wheels thereon over which the chains pass, a primary carrier, a third shaft for propelling the chains over the latter, an intermediate shaft propelled by the second shaft an eccentric bearing therefor, gears between the intermediate and the third shaft, and a crank and link for throwing the latter in and out of engagement, substantially as and for the purpose specified.

574,048. COTTON-BALE OPENING OR PICKING MACHINE. MAGNUS SWENSON, Chicago, Ill., assignor to the Cotton Ginners Compress Company, Jersey City, N. J. Filed Mar. 2, 1896. Serial No. 581,510. (No model.)



Claim.—1. In a cotton-bale opening or picking machine, the combination of a bale-support, consisting of a series of rods or fingers, each of which is rigidly supported at one end and the other end of which is free, a picker-cylinder, mounted beneath said bale-supporting fingers, said picker-cylinder consisting of a solid hub or body portion and a plurality of picker-teeth secured therein, the ends of which project above the bale-supporting fingers as said picker-cylinder revolves, and a dead-knife located adjacent to the free ends of said bale-supporting fingers in such position that the ends of the picker-teeth pass in close proximity thereto, substantially as described.

2. In a cotton-bale opening or picking machine, the combination of a bale-support, consisting of a series of rods or fingers, each of which is rigidly supported at one end and the other end of which is free, a picker-cylinder mounted beneath said bale-supporting fingers, said picker cylinder consisting of a solid hub or body portion and a plurality of picker-teeth secured therein, the ends of which project above the bale-supporting fingers, as said picker-cylinder revolves, the free ends of the bale-supporting fingers being bent or curved around the body portion of said picker-cylinder, and a dead-knife located adjacent to the free ends of said bale-supporting fingers, in such position that the ends of the picker-teeth will pass in close proximity thereto, substantially as described.

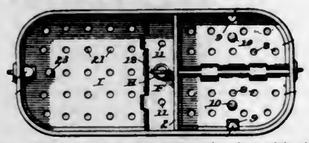
3. In a cotton bale opening or picking machine, the combination of a bale support, consisting of a series of rods or fingers, each of which is rigidly supported at one end and the other end of which is free, a picker-cylinder mounted beneath said bale-supporting fingers, said picker-cylinder consisting of a rigid hub or body portion and a plurality of picker teeth secured therein, the ends of which project above the bale-supporting fingers as said picker-cylinder revolves, a roll located adjacent to the free ends of said bale-supporting fingers, in such position that the ends of the picker-teeth will pass close to the surface thereof, and means for rotating said roll in the same direction as the picker-cylinder is rotated, substantially as described.

4. In a cotton-bale opening or picking machine, the combination of a bale-support, consisting of a series of rods or fingers, rigidly supported at one end and the other ends of which are free, a picker-cylinder mounted beneath said bale-supporting fingers, said picker-cylinder consisting of a hub or body portion and a plurality of picker-teeth secured therein, the ends of which project above the bale-supporting fingers as said picker-cylinder revolves, the free ends of the bale-supporting fingers being bent or curved around the body portion of said picker cylinder, a roll located adjacent to the free ends of said bale-supporting fingers in such position that the ends of the picker-teeth will pass close to the surface thereof and means for rotating said roll in the same direction as the picker-cylinder is rotated, substantially as described.

5. In a cotton-bale opening or picking machine, the combination of a bale support, consisting of a series of rods or fingers, each of which is rigidly supported at one end and the other end of which is free, a picker-cylinder mounted beneath said bale-supporting fingers, said picker cylinder consisting of a solid hub or body portion and a plurality of picker-teeth secured therein, the ends of which project above the bale-supporting fingers as said picker-cylinder revolves, a roll located adjacent to the free ends of said bale-supporting fingers, in such position that the ends of the picker-teeth will pass close to the surface thereof, means to rotate said roll and picker-cylinder in the same direction and means to maintain a bale in position upon the bale-supporting fingers, said means comprising a driven roll, mounted in stationary bearings, and a movable roll or rolls and means to hold said movable roll or rolls, yieldingly, in contact with the surface of a bale in said machine, substantially as described.

6. In a cotton-bale opening or picking machine, the combination of a bale-support, consisting of a series of rods or fingers, each of which is rigidly supported at one end and the other end of which is free, a picker-cylinder mounted beneath said bale-supporting fingers, said picker-cylinder consisting of a solid hub or body portion and a plurality of picker-teeth secured therein, the free ends of which project above the bale-supporting fingers, as said picker cylinder revolves, a roll located adjacent to the free ends of said bale-supporting fingers, in such position that the ends of the picker-teeth will pass close to the surface thereof, means to rotate said roll and said picker-cylinder in the same direction, and means to maintain a bale in position upon the bale-supporting fingers, said means comprising a driven roll and a movable roll or rolls and springs applied to said movable roll or rolls and adapted to hold the same, yieldingly, in contact with the surface of the bale, substantially as described.

574,049. BAIT-BUCKET. LEWIS B. TRIGG, Powhatan Point, Ohio. Filed July 1, 1896. Serial No. 597,761. (No model.)



Claim.—1. In a bait-bucket, the combination with the bucket proper, of a supplemental perforated bottom, a transversely-extending partition at one end of the bottom, a longitudinally-extending partition dividing the bottom thereby providing two compartments, and covers for said compartments.

2. In a bait-bucket, the combination with the bait-bucket proper, of a perforated supplemental bottom, a transversely-extending partition at one end of the bottom, a longitudinally-extending partition dividing the bottom so as to provide two bait-compartments, spring-catches connected to the bait-bucket, and hinged perforated covers adapted for engagement with the spring-catches so as to close the compartments.

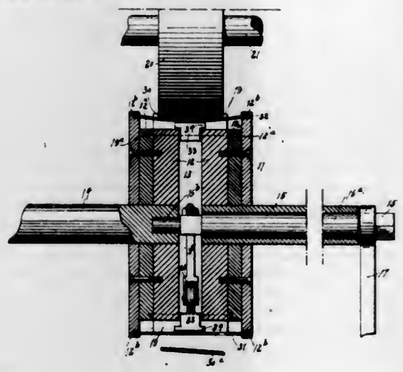
3. In a bait-bucket, the combination with the bucket proper, of a supplemental perforated hinged bottom located at one end of the bucket, a partition acting in connection with said bottom to provide a series of compartments, perforated hinged covers for said compartments, spring-catches adapted to lock said covers, an additional or main perforated hinged cover adapted to close the remainder of the bucket, and a spring-catch which locks with said cover.

4. In a bait-bucket, the combination with a perforated cover, of a pump adapted for pumping the water in the bucket up to the top of the cover so that it can again drain down through the latter.

5. In a bait-bucket the combination with a series of bait-compartments located in the upper part of the bucket, of a pump adapted to pump the water up to the compartments, so that it can again drain down through the latter.

6. In a bait bucket, the combination with a series of upper compartments located at one end of the bucket and provided with perforated bottoms, of covers for said compartments, a main perforated cover adapted to close the remainder of the bucket, and a pump for lifting the water up through the bottom of the bucket to the main cover and the compartments, so that it may again drain down through the latter.

574,050. SPLINT-CUTTING MACHINE. MILTON T. WESTON, New York, N. Y., and GEORGE H. MARSTON, Passaic, N. J. Filed Apr. 27, 1896. Serial No. 589,170. (No model.)



Claim.—1. A splint-cutting machine, comprising a rotatory cutting drum or head having radial knives, ejecting-springs held between the knives, a reinforcing device behind the springs to stiffen and assist the springs, and a bearing for the knife-edges, substantially as described.

2. A splint-cutting machine, comprising a rotatory cutting drum or head having radial knives, ejecting-springs held between the knives, a bearing opposite the knife-edges, and radially-movable reinforcing devices held behind the springs and adapted to contact with them, substantially as described.

3. A splint-cutting machine, comprising a rotatory cutting drum or head having radial knives, a bearing for the knife-edges, and ejecting-springs held between the knives, the said springs being supported at their ends only, whereby material cut by the knives will push in the central part of the springs, substantially as described.

4. A splint cutting machine, comprising a rotatory cutting drum or head having radial knives, a bearing opposite the knife-edges, ejecting-springs held between the knives, and outwardly moving abutment-blocks held behind the springs to engage and push out the latter, substantially as described.

5. A splint-cutting machine, comprising a rotatory cutting drum or head having radial knives, the said drum being formed of two separated end portions, a bearing opposite the knife-edges, ejecting-springs held between the knives, and outwardly-movable abutment-blocks held between the end parts of the drum and adapted to press against the springs during a part of the revolution of the drum, substantially as described.

6. A splint-cutting machine, comprising a rotary drum formed of separable end portions, radial knives held on the face of the drum and spanning the space between the end portions, ejecting-springs held between the knives, abutment-blocks held between the knives behind the springs and entering between the end portions of the drum, and a fixed abutment held between the drum ends to engage the abutment-blocks, substantially as described.

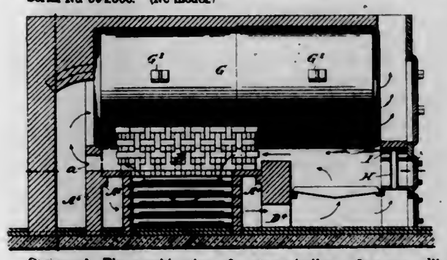
7. A splint-cutting machine, comprising a rotatory cutting drum or head formed of separated end portions and provided with radial knives, a bearing for the knife-edges, a stationary shaft entering the drum, ejecting-springs held between the knives of the drum, abutment-blocks arranged behind the springs and between the knives, and a fixed abutment supported on the stationary shaft and extending outward into contact with the abutment-blocks, substantially as described.

8. A splint-cutting machine, comprising a rotatory cutting drum or head formed of separable end portions, radial knives on the drum, a bearing for the edges of the knives, outwardly-movable abutment-blocks between the knives, and a stationary abutment held between the drum ends to engage and push out the abutment-blocks, substantially as described.

9. In a splint-cutting machine, the cutter-head comprising two similar end portions separated from each other, each having the separable parts 12, 12^a and 12^b, as specified, the radial knives 19 held in the parts 12 and 12^a, and the ejecting-springs held in the parts 12^b and extending between the knives, substantially as described.

10. In a splint-cutting machine, the cutter-head comprising the two end portions, each formed of the separable parts 12, 12^a and 12^b, as specified, the knives held rigidly on the drum and clamped in the parts 12 and 12^a as shown, and mechanism for ejecting material from between the knives, substantially as described.

574,051. STEAM-BOILER FURNACE. EDGAR J. WOOD, Brooklyn, N. Y., assignor to Margaret A. Wood, same place. Filed June 6, 1896. Serial No. 594,500. (No model.)



Claim.—1. The combination of a steam-boiler, a furnace, a liberal passage rearward from the latter under the boiler and a partial filling of checker-work in such passage, and air-pipes in a space below such checker work which space is in free communication with the checker-work adapted to allow a portion of the gaseous products of combustion to descend and circulate between such tubes, substantially as herein specified.

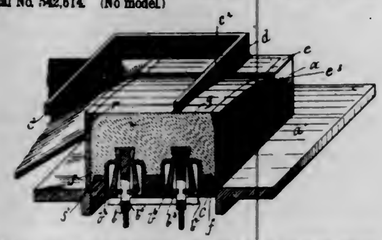
2. The combination of a steam-boiler, a closed furnace, two sets of air-heating pipes arranged to conduct the air first backward and then forward under the boiler before its introduction into the furnace, and the steam-nozzles C^5 and connecting steam-pipes C^4 adapted to blow steam mingled with air through such pipes, all substantially as herein specified.

3. The combination of a steam-boiler, a furnace and furnace-wall, a series of steam-blowing nozzles C^5 with connections for supplying steam and a series of pipes B in the base of such wall arranged to perform the double function of a support for the wall and to constitute small passages for the blowing, all arranged to serve substantially as herein specified.

4. The combination of a steam-boiler, a closed furnace, provisions for blowing, and two sets of heating-pipes arranged to conduct the air first backward and then forward under the boiler before its introduction into the furnace, and the hollow casing I having little depth and being widely extended laterally, arranged in the boiler-front with provisions for blowing therefrom into the gases near the top of the furnace, and the pipe H, arranged for supplying hot air at the required pressure to such casing, substantially as herein specified.

5. The combination of a steam-boiler having a closed furnace with checker-work arranged as shown, and with air-heating pipes below and with the tubes B and the steam-pipes C within the branches of the latter for blowing and with the rear wall A^5 with its aperture *a*, all adapted for joint service as herein specified.

574,052. METHOD OF AND APPARATUS FOR FORMING SAND MOLDS. STEPHEN J. ADAMS, Pittsburg, Pa. Filed Mar. 21, 1895. Serial No. 542,614. (No model.)



Claim.—1. The herein-described method of forming molds having irregular mold-faces on both sides thereof, each composing part of the walls of the mold-cavity, consisting in compacting the sand in the sand-holder around a pattern to form one mold-face and then cutting off the compacted sand to irregular shape corresponding to the other mold-face to be formed, substantially as set forth.

2. The herein-described method of forming molds having irregular mold-faces on both sides thereof, each composing part of the walls of the mold-cavity, consisting in compacting the sand in the sand-holder around a pattern to form one mold-face, and then cutting off the compacted sand to irregular shape corresponding to the other mold-face to be formed, and then slicking the surface of the mold-face so formed by cutting off the sand, substantially as set forth.

3. The herein-described method of forming molds having irregular mold-faces on both sides thereof, each composing part of the walls of the mold-cavity, consisting in compacting the sand in a reservoir above the sand, in the sand-holder around a pattern to form one mold-face and then cutting off the compacted sand to irregular shape corresponding to the other mold-face to be formed, substantially as set forth.

4. The herein-described method of forming molds having irregular mold-faces on both sides thereof, each composing part of the walls of the mold-cavity, consisting in compacting the sand in a reservoir above the sand, in the sand-holder around a pattern to form one mold-face and sliding the reservoir across the sand-holder, and thereby cutting off the upper mold-face to irregular shape corresponding to the other mold-face to be formed, substantially as set forth.

5. The herein described method of forming molds having irregular mold-faces on both sides thereof, each composing part of the walls of the mold, consisting in compacting the sand in the sand-holder around a pattern to form one mold-face and in a templet above the flask, and then cutting off the opposite mold-face to irregular shape corresponding to the templet to form the other mold-face of the mold, and removing the templet leaving such mold-face projecting beyond the flask, substantially as set forth.

6. The combination of a flask, a pattern extending up into the same and a templet fitting on the top edge of the flask, and having its upper edge of irregular shape corresponding to the irregular shape to be given to the upper mold face, substantially as set forth.

7. The combination of a flask, a pattern extending up into the same, and a templet fitting on the top edge of the flask, and having its upper edge of irregular shape corresponding to the irregular shape to be given to the upper mold face, and a reservoir having its lower edge corresponding to the templet and resting thereon, substantially as set forth.

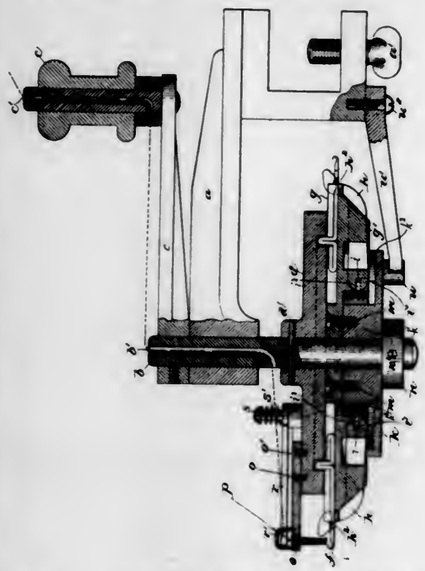
8. The combination of a flask, a pattern extending up into the same and a templet fitting on the top edge of the flask, and having its upper edge of irregular shape corresponding to the irregular shape to be given to the upper mold-face, the inner faces of the projections of the templet being inwardly flaring, substantially as set forth.

9. The combination of a pattern, a sand-holder having its upper edge of irregular shape corresponding to the irregular shape to be given to the upper mold-face, and a reservoir fitting on the sand-holder, and having its lower edge corresponding in shape to the sand-holder, and having a cutting edge formed along one lower edge of the reservoir, substantially as set forth.

10. The combination of a pattern, a sand-holder having its upper edge of irregular shape corresponding to the irregular shape to be given to the upper mold face and a reservoir resting on the sand-holder, and having its lower edge corresponding to the irregular shape thereof, and having a curved slicker formed along the lower edge of the reservoir, substantially as set forth

11. The combination of a rectangular flask, a separate templet placed thereon and having its upper irregular edge corresponding to the shape of one mold-face, a pattern entering the flask and a stripping-plate around the pattern, having a portion thereof entering the rectangular flask and corresponding in shape to the irregularity of the templet, so as to form a mold-face corresponding to that formed by the templet, substantially as set forth.

574,053. CIRCULAR HAND KNITTING-MACHINE. CHARLES J. APPLETON, Long Island City, N. Y., assignor to Orison Twombly, Laconia, N. H. Filed Sept. 26, 1895. Serial No. 563,600. (No model.)

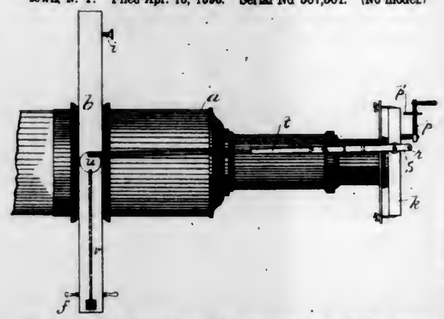


Claim.—1. A circular hand knitting-machine embodying in its construction a cam-dial equipped with needle-operating cams, a needle-dial provided in its upper face with reciprocatory needles and in its lower face with holddowns, a plate to assist in supporting the latter devices arranged below the needle-dial and connected to the latter, a dial-shaft extending through the said dials and plate and connected with the cam-dial to rotate the latter, a crank connected with the upper end of the dial-shaft, the said dial shaft and crank being provided with yarn-guiding holes as described, a yarn-guide, and means loosely connected with the needle-dial to hold the same against rotation by the dial shaft.

2. The combination, with the needle-dial having an annular chamber formed in its center and provided with a slot or groove in the wall of said chamber, needles operatively arranged in the upper face of the said dial, and needle-operating means, of loop or stitch holddown devices arranged in the lower face of the needle-dial, the said holddowns being provided in their heels with notches or slots adapted to match the slot or groove formed in the wall of the annular chamber of the needle-dial, a ring sprung into the said slots or notches, and a plate below the needle-dial to assist in supporting the holddowns.

3. The circular hand knitting-machine constructed, arranged, and operating substantially as herein shown and described, and employing in its construction the following-enumerated elements: the cam-dial and its needle-operating cams; the needle-dial; needles in the upper face of the needle-dial and holddowns in the lower face thereof; the plate *k* provided with the stud *w*; the dial-shaft, provided with the yarn-guiding hole *b'*; the crank, provided with the yarn-guiding hole *c*, the spring-actuated take-up *r*; the yarn-guide provided with the loop *r'*; a table clamp; and an arm *w'* secured at one end to the clamp and engaging the said stud *w* at the other end to prevent the said needle-dial from turning.

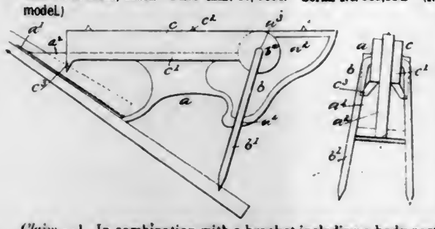
574,054. MAGIC LANTERN. THOMAS S. BARBOUR, Elizabethtown, N. Y. Filed Apr. 13, 1896. Serial No. 587,301. (No model.)



Claim.—1. In combination, the lens-tube *a* of a magic lantern, the carrier-case *b* containing slide-space for three slides end to end, the involute spring *c*, cord *d*, finger *f* and catch *h*, all substantially as described and for the purposes set forth.

2. In combination, the lens-tube *a*, carrier-case *b*, spring *c*, cord *d*, catch *h*, finger *f*, dissolver-case *k*, sliding double gates *i l* having endless-cord connection, and means intermediate of the carrier-case and the dissolver-case adapted to operate both simultaneously, all substantially as described and for the purposes set forth.

574,055. SHINGLING-BRACKET. EDWIN A. BARDWELL, Jr., Shelburne Falls, Mass. Filed Mar. 17, 1896. Serial No. 583,534. (No model.)



Claim.—1. In combination with a bracket including a body part having a broadened foot rigid therewith, a dog pivoted near the front end of the base and extending rearwardly and in a position to support the scaffold-boards, and a support pivoted to and projecting downward from the body part, all substantially as described.

2. In combination with a bracket including a body part having a broadened foot, a pivoted support attached to the body part, a dog pivotally attached to the body part, and a pivot common to both the support and the dog, all substantially as described.

3. In combination with a bracket including a body part having a broadened foot, a dog pivoted to the body part, and a support also pivoted to the body part and having arms extending downwardly on opposite sides thereof, all substantially as described.

4. In combination with a bracket including a body part having a broadened foot at one end rigid therewith, a dog pivoted to the opposite end and overlying the body part and having a groove the bottom of which rests upon the body part, and a support pivoted to the outer end of the body part, all substantially as described.

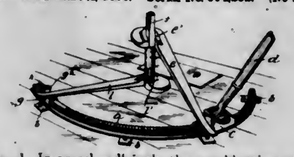
5. In combination with a bracket including a body part having a broadened foot at one end rigid therewith, a dog pivoted to the opposite end and overlying the body part and having teeth located adjacent to the broadened foot, and a support pivoted to the outer end of the body part, all substantially as described.

6. In combination with a bracket including a body part having a broadened foot at one end rigid therewith, a dog pivoted to the outer end of the body part and extending rearwardly and overlying the same, and a pivotal support extending through the body part and dog and projecting downward from the outer end of the former, all substantially as described.

7. In combination with a bracket including a body part having a foot at one end thereof, a support pivoted to the body part and having spring-arms located on opposite sides thereof, and locking devices for the spring-arms, all substantially as described.

8. In combination with a bracket having a body part with a broadened foot at one end thereof, a support pivoted to the body part and having spring-arms extending downwardly on opposite sides thereof, locking-recesses for the spring-arms, and a dog pivoted on the support and extending rearwardly from the pivot, all substantially as described.

574,056. RACK FOR OIL-WELL JACKS. JOSIAH BARRETT, Bellevue, Pa. Filed June 4, 1896. Serial No. 594,232. (No model.)



Claim.—1. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack bar against which the wrench-bar rests, and locking mechanism for holding said abutment in place, substantially as set forth.

2. In an oil-well jack, the combination with a suitable rack bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, a locking member on said sliding abutment, and a recess formed in said rack-bar with which said locking member engages, substantially as set forth.

3. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests having a seat therein, a pin engaging said seat, said rack-bar having a recess formed therein with which said pin engages, substantially as set forth.

4. In an oil-well jack, the combination with a suitable rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests having a seat therein, a pin in said seat, and a handle on said sliding abutment in line with said pin, said rack-bar having a recess therein adapted to receive said pin, substantially as set forth.

5. In an oil-well jack, the combination with a rack-bar having grooves in the sides thereof and having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, said sliding abutment having inwardly-projecting ledges adapted to engage said grooves, and locking mechanism for securing said sliding abutment to said rack-bar, substantially as set forth.

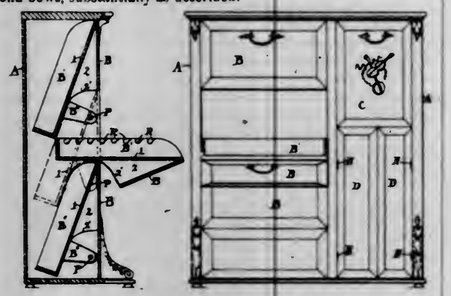
6. In an oil-well jack, the combination with a rack-bar having a carriage mounted to slide thereon and provided with means for advancing it thereon, of a sliding abutment mounted on said rack-bar against which the wrench-bar rests, said sliding abutment having a seat therein, a pin engaging said seat, said pin having a pintle at the upper end thereof and said rack bar having a recess adapted to receive said pin, substantially as set forth.

574,057. MUSIC-CABINET. JOHN F. BARROWS, Saginaw, Mich., assignor to Gertrude W. Barrows, same place. Filed Apr. 13, 1895. Serial No. 545,616. (No model.)

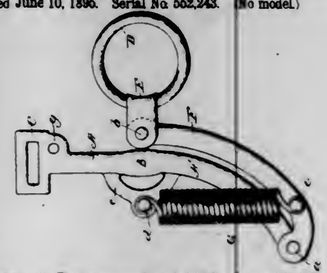
Claim.—1. In a cabinet, the combination with independent panels comprising the front of the cabinet, of independent movable receptacles having the outer edge of the bottom of each receptacle secured to the top of the panel, whereby when the receptacle is closed the panel of the upper receptacle will form a covering for the opening in the lower receptacle, substantially as specified.

2. In a cabinet for musical instruments, a pivotal receptacle for the instrument adapted to open out of the cabinet and be in a horizontal position when open, and a receptacle below the musical-instrument receptacle provided with hinged doors and means as described for opening the doors simultaneously with the opening of the receptacle.

3. In a cabinet for musical instruments, &c., a receptacle provided with doors opening out therefrom, a pivotal receptacle above and means connected with the doors and to the pivotal receptacle for opening the doors simultaneously with the opening of the upper receptacle, and racks on the inside of the doors for the reception of violin-bows, substantially as described.



574,058. BRIDLE-BIT. HENRY H. BATES, Washington, D. C. Filed June 10, 1895. Serial No. 552,243. (No model.)



Claim.—1. The improved curb-bit for horses' bridles herein described, comprising the mouthpiece, the fixed cheek-pieces, extended downward to form a leverage, link-pieces pivoted to the said cheek-pieces at the lower extremities thereof, a bridle-rein ring secured to each link-piece at its upper extremity, and a constricting-spring attached to each cheek-piece and to its corresponding link respectively, whereby the latter is normally held in close proximity to the former but allowed to expand under a sufficient strain, substantially as and for the purpose specified.

2. In an expanding bridle-bit, the combination of the mouthpiece, cheek-pieces, downwardly extended in a forward curve, curved link-pieces pivoted to the said cheek-pieces at their lower extremities, bridle-rein rings secured to the link-pieces at their upper extremities, and constricting-springs G, attached at one end to each cheek-piece near the mouthpiece, and at the other end to the corresponding curved link near the pivot thereof, and normally holding the two in juxtaposition, until expanded by an unusual strain on the bridle-rein, substantially as and for the purpose specified.

3. In an automatically-expanding curb-bit, the combination of mouthpiece B, cheek-piece A A', link F pivoted to the cheek-piece at its lower extremity, spring G, attached by its ends to the cheek-piece and the pivoted link respectively, whereby they are drawn together, and rein-ring D, secured to link F at its upper extremity, all substantially as and for the purpose specified.

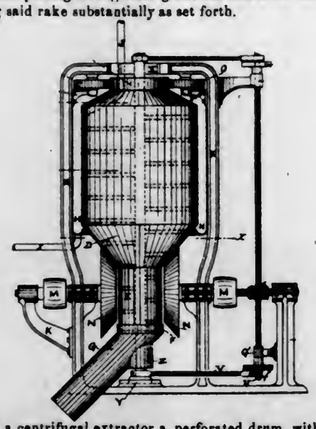
574,059. SENSITIVE PHOTOGRAPHIC PAPER. FERDINAND H. CZIZAR, Vienna, Austria-Hungary. Filed June 17, 1895. Serial No. 553,125. (No specimens.)

Claim.—1. A photographic paper or plate prepared in the well-known way with the well-known silver preparation for instance, collodio-silver-chlorid emulsion with retarding or weakening substances such as ferricyanids substantially as described and for the purpose set forth.

2. The process of making photographic silver-salt papers consisting in adding to the well-known silver preparations such as collodio-silver-chlorid emulsion, a weakening or retarding substance such as ferricyanids.

574,060. CENTRIFUGAL EXTRACTOR. THOMAS C. GOOCH, Louisville, Ky. Filed Aug. 27, 1895. Serial No. 560,664. (No model.)

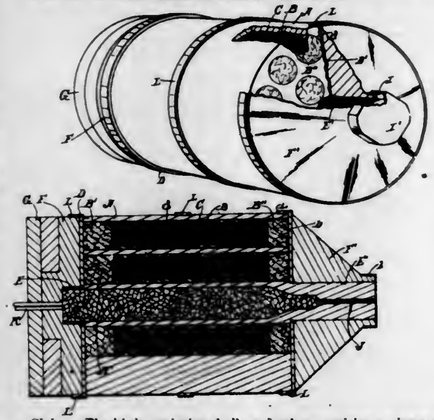
Claim.—1. In a centrifugal extractor, the combination of a revolving perforated drum having arranged on the frame above its upper end a shiftable grooved guide, and a rake arranged in said drum with its shaft passing through said guide and means for automatically oscillating said rake substantially as set forth.



2. In a centrifugal extractor a perforated drum, with a funnel-shaped bottom, which forms close contact with the beveled edges of the friction disks, and guide-pulleys which together with the friction-disks retain the drum in position, substantially as and for the purpose set forth.

3. In a centrifugal extractor an adjustable rake shifting automatically, in grooved guides and having two series of arms placed alternately on the sides, with ends beveled diagonally, so as to gradually move downward in the revolving drum and throat the material which is being filtered or separated substantially as and for the purpose set forth.

574,061. HIGH-EXPLOSIVE PROJECTILE. GEORGE GUSTAVE, Los Angeles, Cal., assignor of one-half to Edgar S. Joseph same place. Filed Dec. 11, 1894. Serial No. 531,446. (No model.)

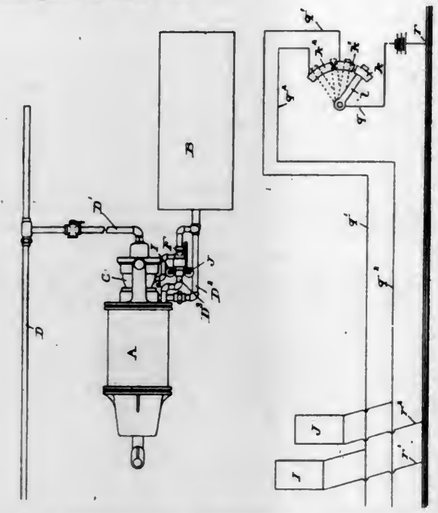


Claim.—The high-explosive shell set forth comprising an integral metal body provided with explosive-containing chambers extending therethrough from end to end and with the two screw-threaded axially-arranged spindles or necks E E', of comparatively small diameter, which project, respectively, from the opposite ends of the body beyond the ends of the explosive-containing chambers, and with a forwardly-tapering detonating-charge-containing axial bore extending from the rear end of the rear neck to the front end of the front neck; the conical head provided with the nose for the fulminating-cap and screwed upon the front neck; and the base-cap screwed upon the rear neck.

574,062. AUTOMATIC AIR-BRAKE FOR RAILWAY-TRAINS. WILLIAM H. HALL, Baltimore, Md., assignor, by direct and mesne assignments, of one-half to Thomas M. Dukehart and John T. Mason, R, same place. Filed Apr. 14, 1896. Serial No. 587,476. (No model.)

Claim.—1. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve whose case has three connections

two of which are made in the pipe between the auxiliary reservoir and brake-cylinder while the third connection is made with the exhaust-port of the triple valve.



2. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve having a movable bushing and a movable plug in said bushing—said two parts having different ports for the passage of air-pressure to effect the release of the brakes, the gradual or service application of the brakes, and the emergency application of the brakes.

3. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve controlling the passage of air-pressure when releasing, when gradually applying for service, and when applying for emergency stops; a spring to move said valve one way; and an electromagnet to move the valve the opposite way.

4. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve having two separately-movable parts; an electromagnet connected with and capable of moving one of said parts; another electromagnet connected with and capable of moving the other part; and electric-circuit connections with said two magnets, whereby either one or both may be operated at the same time.

5. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve having two separately-movable parts; an electromagnet in connection with said valve; a controller for the engineer to operate manually; and an electric circuit including the electromagnet and controller.

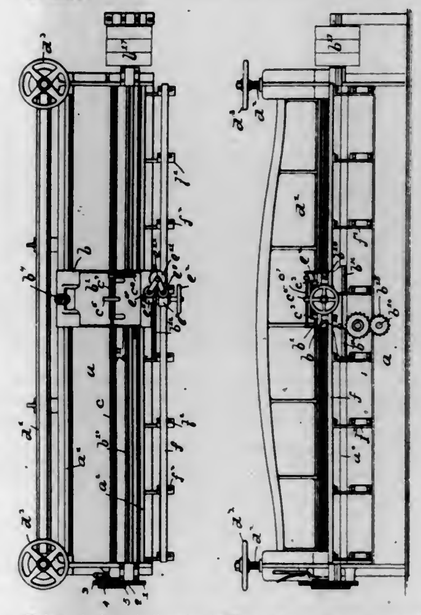
6. The combination of an air-brake pipe; a duplex valve having a bushing which partly rotates and a plug which partly rotates in the bushing; an electromagnet arranged to move the bushing; another electromagnet arranged to move the plug; a controller for the engineer to operate manually; and an electric circuit including the electromagnet and controller.

7. The combination of an air-brake pipe; a duplex valve having a bushing which partly rotates and a plug which partly rotates in the bushing; a lever to each of said valve parts; two holders each separately swiveled; an electromagnet mounted in each of said holders and each magnet connected with one of said levers; a controller for the engineer to operate manually; and an electric circuit including the electromagnet and controller.

8. An automatic air-brake comprising a brake-cylinder, an auxiliary reservoir, a triple valve and a train-pipe, in combination with an electrically-operated valve whose case has a port connected with the ordinary exhaust-port of the triple valve and provided with an exhaust-port to the atmosphere, whereby air discharged from the brake-cylinder by the triple valve must pass through the case of said electrically-operated valve; an electromagnet connected with and capable of moving said valve; a controller for the engineer to operate manually; and an electric circuit including the electromagnet and controller.

9. The combination of an air-brake pipe; a duplex valve having a bushing which partly rotates and a plug which partly rotates in the bushing—said bushing and plug having ports for the passage of air when releasing, ports for the passage of air when making service or gradual applications, and ports for the passage of air when making emergency applications; and an electromagnet and a spring to operate the said valve.

574,068. BOILER-PLATE-MILLING MACHINE. CHARLES E. HOPPES, Springfield, Ohio. Filed Aug. 8, 1896. Serial No. 602,162. (No model.)



Claim.—1. In a boiler-plate-milling machine, a stationary support, clamping devices adjacent to said support, a traveling carriage supported on guides or ways parallel and adjacent to said support, and a movable head having an angularly-arranged cutter supported on said carriage, driving devices for moving said traveling head and operating said cutter, and a flexible guiding-bar adjacent to the line of travel of said head, and engaging devices on said movable head to engage said bar to cause said head to follow the line of said bar, substantially as specified.

2. The combination with the moving carriage, the movable head thereon, and a guiding-bar adjacent to the line of travel of said carriage, and an adjusting-screw for said head, said adjusting-screw being supported in a sleeve in two independent clamping-bearings, one of said bearings being supported on said carriage and the other supported adjacent to the guiding-bar and having projections to engage said bar, and means as described for simultaneously operating said clamping devices in opposite directions to clamp one and unclamp the other, substantially as specified.

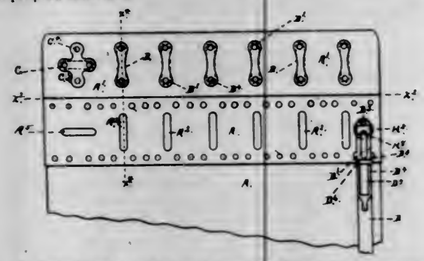
3. The combination with a traveling carriage and a movable head thereon having an angularly-arranged cutter as described, a guiding-bar supported on brackets having slotted openings, and means for securing said bar to said brackets, an adjusting-screw for said head mounted in a sleeve which is supported in clamping-bearings as described, projections on one of said bearings to engage said guiding-bar, clamping-screws for each of said bearings and intermeshing gears between said clamping-screws to cause said clamping-screws to be simultaneously operated, substantially as and for the purpose specified.

4. The combination with the traveling carriage and the cutter thereon, a feed-screw for said carriage, a driving-shaft for said cutter, movable supports for said shaft, raising and lowering devices operated by gear for raising and lowering said supports, and gear-segments on each side of said carriage for engaging said gear to alternately raise and lower said supports, substantially as specified.

574,064. MAIL-BAG. ARMER JOHNSTON, Jersey City, N. J., assignor of seventeen-twentieths to Herman Horlbeck, Edward Kelly, George B. Fielder, and Adolph R. Braunstein, same place. Filed Aug. 1, 1895. Serial No. 557,916. (No model.)

Claim.—1. A mail-bag provided with the slots A^2 and A^5, the

staples D' for holding the hasp D, the staple C having one edge C' inclined and the said staple C set at right angles to the staples B', in combination with the sliding hasp D having a curved tip D^2 as and for the purpose described.



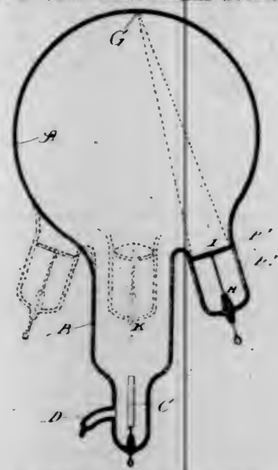
2. A mail bag provided with the slots A^5 and A^5, the staples B for holding the hasp D, the staple C having one edge C' inclined and the said staple C set at right angles to the staples B', in combination with the pivoted and sliding hasp D as and for the purpose described.

3. A mail-bag provided with the staple B' and staple C in combination with the sliding and turning hasp having and being held in place by the hasp-guide H^3 as and for the purpose described.

4. A mail-bag provided with the slots A^3 and A^5 the staple B' staple C and stop-pin H^5 in combination with the pivoted and sliding hasp D having and being held in place by the hasp-guide H^3 the said hasp-guide being prevented from turning too far by the pin H^5, as and for the purpose described.

5. A mail-bag provided with the slots A^3 and A^5 the staple B' and staple C having inclined wall C' in combination with the hasp D having recess D^7, and the turning hasp-guide H^3 as and for the purpose described.

574,065. **BULB FOR X-RAYS.** JOHN VON DER KAMMER, Chicago, Ill. Filed Mar. 17, 1896. Serial No. 583,583. (No model.)



Claim.—1. A bulb for the production of so-called "X-rays," provided with cavities containing respectively the anode and cathode electrodes, the electrodes in said cavities being so arranged that they are presented in substantially the same direction, substantially as described.

2. A bulb for the production of so called "X rays" provided with a cavity E, and a cathode electrode located at said cavity and substantially filling the same laterally and presenting one face only to the action within the bulb, substantially as described.

3. A bulb for the production of so called "X-rays" comprising a spherical body having on one side cavities for the electrodes, and electrodes in said cavities for the anode and cathode respectively, said electrodes being so disposed that their rays shall have a common focal point, substantially as described.

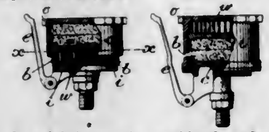
4. An X-ray bulb, comprising an action-chamber A, a receiving-chamber K leading into the action-chamber, and a discharge-chamber I leading into the action chamber, an anode-electrode in the receiving-chamber, and a cathode-electrode in the discharge-chamber, substantially as described.

5. An X-ray bulb, comprising an action-chamber A, a receiving-chamber K leading out of the action-chamber, a discharge-chamber I leading out of the action-chamber, an anode-electrode in the receiving-chamber, and a cathode-electrode in the discharge-chamber, said electrodes being presented to have a common focal point in the opposite wall of the action-chamber, substantially as described.

6. An X-ray bulb comprising an action-chamber, a receiving-chamber in the form of a cavity, open to the action-chamber, and a discharge-chamber in the form of a cavity, open to the action-chamber, in combination with a cathode-electrode located within and substantially filling the discharge-chamber diametrically and arranged to present its face at right angles to the side walls of the discharge chamber or cavity, substantially as described.

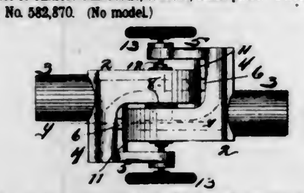
7. A bulb for the production of so-called "X-rays," comprising an action-chamber and cavities opening into said action-chamber, said cavities containing respectively the anode and cathode terminals, the anode-cavity being deeper than the cathode-cavity, as set forth.

574,066. **LUBRICATOR.** GEORG KLUG, Hamburg, Germany. Filed Sept. 13, 1895. Serial No. 562,418. (No model.) Patented in Germany May 9, 1894, No. 84 408.



Claim.—In a lubricator, the combination of a receptacle and plug which are screw-threaded together and one of which is composed of two parts fitted together to turn one relatively to the other and between which two parts are gearing for effecting such turning, an arresting device between the plug and receptacle to prevent the turning of the one relatively to the other and means for actuating the said gearing, all substantially as herein described.

574,067. **HOSE-COUPLING.** EDWARD J. KNAPP, Syracuse, N. Y., assignor to Charles Umbrecht, trustee, same place. Filed Mar. 12, 1896. Serial No. 582,870. (No model.)



Claim.—1. In a hose coupling, the body 2, provided with a shank 3, offset 4, arm 5, and a hooked lug, combined with a flanged gasket, a keeper-ring 9, screwed into the body; the wires 11, to engage with the hooked lugs, said wires being of a length to permit lateral movement of the hooks to allow the coupling members to be clamped and the screw-rods 12, passing through the arms and bearing against the bodies, substantially as shown.

2. A hose-coupling consisting of two detachably connected sections, recessed in their meeting faces, exteriorly-flanged ring-gaskets in the recesses, ring-nuts to secure the gaskets in place, arms parallel with the faces, wires extending from the faces to the arms, lugs on each section for engaging the wires for holding the sections, angularly connected screws passing through the arms and bearing against raised portions on the outer faces of the sections, whereby when the sections are submitted to longitudinal strains the wires will give or bend until the screws slip from the raised portions to detach the sections, substantially as described.

574,068. **PROCESS OF MANUFACTURING NICKEL AND COBALT.** PIERRE MANHES, Lyons, France, assignor of one-half to the Société Anonyme de Métallurgie du Cuivre, Procédés Pre. Manhes, same place. Filed Apr. 23, 1894. Serial No. 508,701. (No specimens.) Patented in France Dec. 9, 1893, No. 234,750; in Germany Jan. 21, 1894, No. 77,427, and in England Apr. 6, 1894, No. 6,914.

Claim.—1. The herein described process of producing pure commercial nickel, said process consisting in first, forming in the operating-furnace a false sole or bottom of an alkaline or basic reagent mixed with a chlorid of the same base; second, mixing the granulated nickel with a quantity of reagents of the same base as those forming the false sole or bottom and placing said nickel and reagents on the false sole or bottom; and finally, heating the mixture to a fusing-point to permit the separation of the sulfur, a portion of the latter being driven off as sulfurous acid and the remainder combining with the mixed reagent and with the reagent of which the false sole or bottom is formed as the fused nickel sinks by gravity through the false sole or bottom, substantially as specified.

2. The herein-described process of producing pure commercial nickel, said process consisting in first forming in the operating furnace a false sole or bottom of mixed lime and chlorid of lime; second, mixing the crushed or granulated ore or nickel with lime and chlorid of lime and heating the mass until the fused metal is separated and sinks by gravity through the reagent to the bottom of the furnace, the contained sulfur being partly driven off as sulfurous acid and the remaining sulfur being combined with the lime to form an alkaline or basic sulfid, substantially as specified.

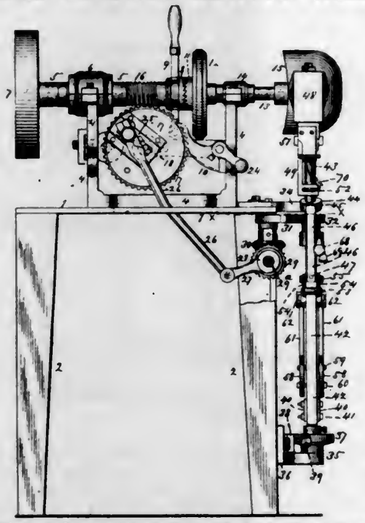
574,069. **PROCESS OF PRODUCING PHOTOGRAPHS IN RELIEF.** THEODORE C. MARCEAU, San Francisco, Cal. Filed Aug. 24, 1896. Serial No. 603,674. (No specimens.)



Claim.—1. The method of forming pictures in relief, consisting in simultaneously cutting the outline of one of the pictures and a supplemental sheet upon which it is overlaid, fixing the sheet and indicating said outline upon a prepared block, engraving an intaglio in said block, corresponding with the outline, applying the pictures to register with the engraved portion, and pressing the coincident portions into the engraved surface.

2. The method of forming pictures in relief, consisting in cutting the outline of one of the pictures and a supplemental sheet upon which it is overlaid, indicating said outline upon a block, and engraving an intaglio in said block corresponding with the outline, fitting the pictures successively to the opening in the supplemental sheet, inverting them and the sheet over the engraved surface, and retaining the pictures in register with said surface, while they are pressed thereinto by uniting the pictures and the supplemental sheet and entering corresponding holes in the block.

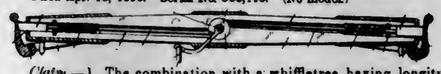
574,070. **HAT-IRONING MACHINE.** ELDRIDGE MESSER, Haverhill, Mass. Filed Jan. 24, 1896. Serial No. 576,684. (No model.)



Claim.—1. In a machine for ironing hats, a hat-block rotated on a vertical plane by the driving-shaft supported by the frame; the vertical shaft 33 located beneath the hat-block and supported by the frame; mechanism intermediate of said vertical shaft and the driving-shaft for reciprocatingly rotating the former; the bar 42 supporting the iron and pivotally connected at its lower end with the lower portion of said vertical shaft whereby said bar is adapted to swing in a vertical plane; the swinging bar 56 between said vertical shaft and bar 42 and pivotally connected with the lower ends of both; a spring connecting said intermediate bar 56 and the bar 42 and with its free end in adjustable engagement with a bar extending from the said bar 42; and a latch connected with the bar 56 and adapted to engage the vertical shaft 33, whereby the intermediate bar is drawn out of contact with the iron-supporting bar 42, and the iron thereon held yieldingly against the hat-block, substantially as set forth.

2. In a machine for ironing hats, the hat-block supported upon the frame and rotated by the driving-shaft; the vertical shaft 33 located beneath the hat-block and supported by the frame; a crank mechanism intermediate of the driving-shaft and said vertical shaft, whereby reciprocatingly rotative movement is imparted to the latter, the plates or supports 40 rigid with and extending from said shaft near its lower end; the iron-supporting swinging bar 42 pivotally connected at its lower end with said plates; the swinging bar 56 pivotally connected at its lower end with said plates and adapted to swing between the vertical shaft and the iron supporting bar; the toothed bars 62 extending from the bar 42; the springs 58 extending from the intermediate bar 56 and with their outer ends adjustably in engagement with said toothed bars; the latch 65 pivoted to the shank of the handle 68 which extends from the intermediate bar 56, said latch being adapted to engage with the said vertical shaft, and a suitable support extending from the vertical shaft for sustaining the iron supporting bar 42 when it is swung down, substantially as described.

574,071. **WHIFFLETREE.** WILLIAM A O'BAR, Everett, Wash. Filed Apr. 18, 1896. Serial No. 588,113. (No model.)

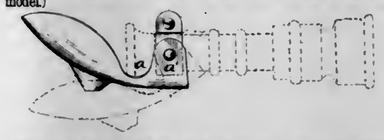


Claim.—1. The combination with a whiffletree having longitudinal passages, of a disk mounted on the king-bolt, rods connected with the disk and extended through openings in the ends of the whiffletree and forming locking-bolts, and springs acting on said rods to force them outward, and pivoted hooks on the ends of the whiffletree, with springs attached thereto, substantially as described.

2. The combination with a whiffletree having longitudinal passages, of a disk mounted on the king-bolt, rods connected with the disk and extended through openings in the ends of the whiffletree and forming locking-bolts, and springs acting on said rods to force them outward, and pivoted hooks on the ends of the whiffletree, and a spring bearing on the hook near its pivot, substantially as described.

3. The combination with the whiffletree formed in two parts having longitudinal slots and an encircling band, of a bolt passed through the same and rectangular in form, a disk mounted within the whiffletree on said bolt, rods connected to opposite sides of the disk and extending through the longitudinal slots of the whiffletree, with their ends forming bolts working through openings in the ends of the whiffletree, springs around said rods, guide-plates for the rods, a lever mounted on the bolt, a strap connected with the lever, end caps on the ends of the whiffletree and hooks pivotally mounted on said caps, substantially as described.

574,072. **ATTACHMENT FOR SPRINKLER-NOZZLES.** LOUIS L. ORDNER, Cleveland, Ohio. Filed Aug. 24, 1896. Serial No. 603,689. (No model.)



Claim.—In an attachment for hose-nozzles, the combination of a band, adapted to loosely embrace a hose-nozzle, with a deflector having a stem and two ears which are pivoted to said band, and a weighted leg on the under side of said deflector, substantially as and for the purpose specified.

574,073. **SEAT ATTACHMENT FOR HAMMOCKS.** ISAAC E. PALMER, Middletown, Conn. Filed Aug. 1, 1896. Serial No. 601,292. (No model.)

Claim.—1. A hammock attachment comprising a frame independent of the body of the hammock and provided with bearings for

the body of the hammock, the said bearings being so located with respect to one another that the hammock-body when engaged therewith and suspended will have its natural curve interrupted to form a seat, substantially as set forth.



2. A hammock attachment comprising a rigid frame provided with bearings for the body of the hammock, the said bearings being so located with respect to one another that the hammock-body when engaged therewith and suspended will have its natural curve interrupted to form a seat, substantially as set forth.

3. The combination with the body of a hammock, of a rigid frame provided with three or more bearing-points for the body of the hammock, an intermediate bearing point being in a different plane from the bearing-points upon opposite sides of it, whereby the natural curve of the hammock, when suspended is interrupted to form a seat, substantially as set forth.

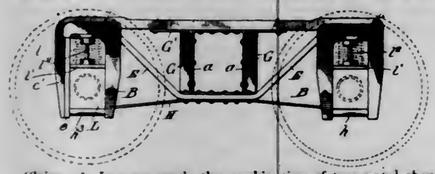
4. The combination with the body of a hammock, of a removable frame provided with three or more bearings for the body of the hammock, an intermediate bearing being out of the plane of adjacent bearings and suspending-cords engaged with the framework for holding it in the desired adjustment along the body of the hammock, substantially as set forth.

5. A hammock attachment, comprising a rigid frame consisting of side rails connected by cross bars or braces, the side rails each being angular in shape, the said cross-braces being arranged to form bearings for the body of the hammock when the hammock is passed under certain of the braces and over an intermediate brace, substantially as set forth.

6. The hammock attachment, comprising a framework having side rails angular in shape and connected by cross-braces and means for adjusting the length of the side rails, substantially as set forth.

7. The combination with the body of the hammock, of the hammock attachment, comprising side rails connected by cross-braces, the said side rails being hinged intermediate of their ends and means for locking the hinged parts at different angles to one another, substantially as set forth.

574,074. TRUCK FOR RAILWAY-CARS. WILLARD PENNOCK, Minerva, Ohio. Filed May 25, 1896. Serial No. 592,921. (No model.)



Claim.—1. In a car-truck, the combination of two metal channel-beams forming the bolster portion, arranged with their flanges extending toward each other to resist side or lateral strains, metal bars connecting the flanges of the end portion of the channel-beams, a main and internal strut arranged at the central portion of the bolster and extending down diagonally to the lower portion of the bolster so as to transmit vertical strains from the upper portion of the bolster to the lower portion thereof and prevent bulging or buckling of the bolster sides, substantially as described.

2. In a car-truck, the combination of two channel-beams forming a bolster or transom portion, jaw mechanism for holding the axle-boxes, the main portion formed of a metal member channel-shaped in cross-section, a metal channel-beam passed across the upper portion of and secured to the end of the bolster and to the metal channel member of the jaw mechanism to form the compression member of the truck-truss, an arch bar secured to the lower portion of the truck-bolster and brought up diagonally to connect with the channel-beam forming the compression member of the truck-truss and with the jaw mechanism, a metal tie bar or rod secured to the arch-bar, the main portion of the bolster and the lower portion of the jaw mechanism to prevent longitudinal displacement, substantially as described.

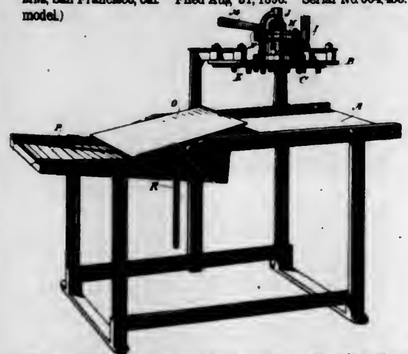
3. In a car-truck, the combination of two channel-beams forming a bolster or transom portion, jaw mechanism for holding the axle-boxes, the main portion formed of a metal member channel-shaped in cross-section, a metal channel-beam passed across the upper portion of and secured to the end of the bolster and to the metal channel member of the jaw mechanism to form the compression member of the truck-truss, an arch-bar secured to the lower portion of the truck-bolster and its upper ends arranged in the channel portion of the main member of the jaw mechanism between the compression member and the jaw, and a metal tie bar or rod secured to the main portion of the bolster and the lower portion of the jaw mechanism to prevent longitudinal displacement, substantially as described.

4. In a car-truck, the combination of two channel-beams forming the bolster portion, jaw mechanism made in at least two parts, the main inner portion of such jaw mechanism formed of a metal member channel-shaped in cross-section, a metal beam forming the compression member of the truck-truss secured to the end of the upper portion of the bolster arranged in the channel portion of the jaw mechanism and having at least one of its free ends bent at right angles thereto to form the outer portion of the jaw mechanism, a metal arch-bar forming the tension member of the truck-truss passed under and secured to the lower portion of the bolster and brought up and around the upper portion of the jaw mechanism between the compression member and the jaw mechanism and having its outer end or ends bent at right angles thereto and downwardly to form a portion of the outer-jaw mechanism, a metal tie-bar connecting the lower portion of the jaw mechanism and the truck-truss together to prevent longitudinal displacement, and bolt mechanism securing the lower portion of the jaws together to provide the operating space for and hold the axle-box, substantially as described.

5. In a car-truck, the combination of two channel-beams forming the bolster or transom portion, jaw mechanism for holding the axle-box, the main portion formed of a metal member channel-shaped in cross-section, a metal bar passed across the upper portion of and secured to the end of the bolster and to the channel portion of the jaw mechanism to form the compression member of the truck-truss, an arch-bar secured to the lower portion of the truck-bolster and its upper ends arranged in the channel portion of the jaw mechanism between the compression member of the jaw, a metal tie-bar secured to the lower portion of the bolster and the lower portion of the jaw mechanism to prevent longitudinal displacement, and a combined vertical metal strut and gusset-piece inserted between the upper and lower members of the truck-truss and provided with a lateral projecting piece connecting the truss members with the bolster-beams, to act as gusset-pieces, substantially as described.

6. In a car-truck, the combination of two metal channel-beams arranged to form the bolster portion with their flanges extending toward each other in a horizontal plane to jointly resist side or lateral strains and compression and their web portions arranged to resist vertical strain or compression, metal members forming the jaw portion for holding the axle-boxes in operative position, a metal beam passed across the upper portion of and secured to the end of the bolster and the jaw mechanism and forming the compression member of the truck-truss, a metallic bar forming the arch-bar secured to the lower portion of the truck-bolster and with its ends brought up and secured to the jaw mechanism and compression member of the truck-truss to form the tension member of the truck-truss, and angle-bars arranged vertically between and secured to the compression and tension members of the truck-truss and to the web portions of the channel-beams forming the bolster to stiffen the structure and distribute the load, substantially as described.

574,075. MULTIPLE SYRUPING-MACHINE. FREDERICK A. ROBBINS, San Francisco, Cal. Filed Aug. 31, 1896. Serial No. 604,453. (No model.)

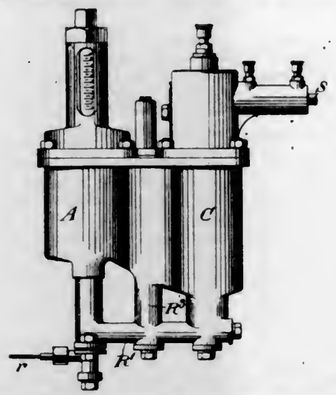


Claim.—1. A syruping-machine consisting of a plate the upper surface of which is provided with horizontal passages, the outer ends of which connect with discharge-nozzles, and the inner ends with a circle of holes or openings extending through a superposed plate, a spring-pressed valve turnable within a chamber upon said plate having openings coinciding with those in the plate, a lever fixed to the valve-stem exterior to the case, and stops fixed on the cover between which stops the movement of the valve-lever is limited to open and close the valve.

2. In a syruping-machine, a plate having grooves or channels made in its surface, the outer ends of said channels connecting with a series of discharge-nozzles leading downwardly therefrom the inner ends of the passages connecting with a series of vertical holes arranged in a circle about a common center, said passages being curved so that the distance to the nearest nozzle by way of the passage shall be approximately as great as that of the most distant, a valve-chamber situated above and surrounding the vertically-disposed holes or passages, a spring-pressed valve having corresponding perforations adapted to seat upon the plate or floor so as to cover the holes made therethrough, a valve-stem extending through the cover of the valve-chamber having a lever fixed to its outer end and stops fixed upon the cover to limit the movement of the valve stem so as to open or close the passages for the flow of syrup.

3. In a syruping-machine, a chamber containing an oscillatory valve, passages which are opened or closed by the movement of said valve, nozzles connecting with the outer ends of said passages, a table situated beneath the valve and passage-plate, upon which the cans are placed beneath the nozzles to receive syrup therefrom, a tilting plate fulcrumed to the end of the first-named table so that when the cans have been filled, they may be slipped thereon and all tilted to the same angle to discharge a portion of the syrup contained therein, and a second table situated beyond one end and slightly below the first-named table to receive the discharged syrup, having converging grooves or passages leading to a common discharge-opening.

574,076. SPEED-INDICATOR. HEINRICH SCHLOTFELDT, Kiel, Germany. Filed Mar. 21, 1896. Serial No. 584,251. (No model.) Patented in England Nov. 26, 1895, No. 22,607, and in Belgium Nov. 27, 1895, No. 118,576.

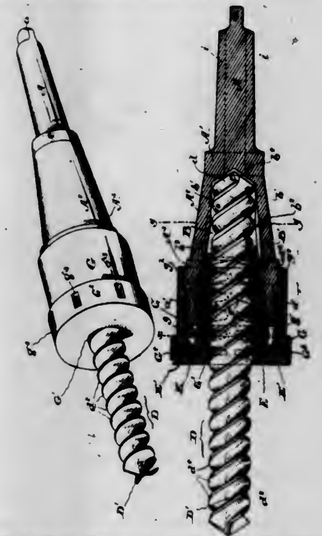


Claim.—1. The combination of the liquid-reservoir A, the hollow float B in said reservoir having an attached tube R open at the bottom but closed at the top and having communication with the upper and lower portions of the space within the float, the air-tube arranged within and open at its upper end to said tube R and having at its lower end provision for connection with a pressure-gage, the cylinder C having at its bottom a suction-passage R′ communicating with the open bottom of the tube R and having above a passage R^2 communicating with the bottom of the reservoir A, the said passages R′ R^2 having a connecting passage R^3 between them, the centrifugal disk K and its shaft L arranged in the cylinder C and having lateral openings forming communications through the center of said shaft between said passages R′ R^2, and the regulating-screw H for giving more or less opening to the said passage R^2, substantially as herein described.

2. The combination with the cylinder D and the centrifugal disk K and its shaft L contained within said cylinder, of the cylindrical body D filling the space between said cylinder and shaft above said centrifugal disk, substantially as and for the purpose herein described.

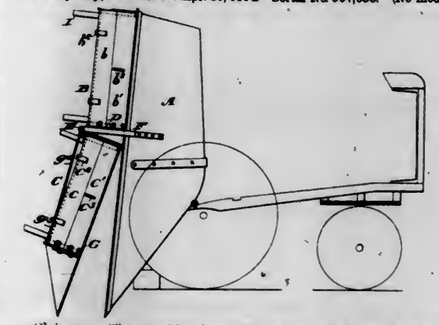
574,077. CHUCK. GEORGE H SELLERS, Ridley Park, Pa. Filed June 28 1890. Serial No. 357,136. (No model.)

Claim.—1. In a chuck, the combination of a chuck-body having a socket or cavity therein, a series of jaws E which are adapted to slide in said cavity, each having a flange as E′, and a forcing-cap having a central perforation G of substantially the same size as the drill or other object to be grasped and provided with a groove as G^2 in which the flange E′ is adapted to fit, whereby the jaws may be given positive motion in both directions; the whole so arranged, that in operation the cap will serve to protect the jaws.



2. In a chuck the combination of a chuck-body, jaws held from lateral displacement in a socket as B in said body, lugs, ribs and grooves relatively arranged in the socket and jaws, and flanges on the inner side of the jaws forming the female part corresponding to a drill designed to be grasped by the jaws of the chuck.

574,078. COVERED WAGON OR CART. MARTIN L. SENDERLING, Jersey City, N. J. Filed Apr. 10, 1894. Serial No. 507,050. (No model.)



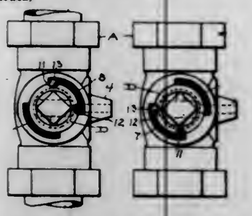
Claim.—1. The combination with the body and a cover section fixed thereto, of another cover-section hinged at the edge of such fixed section to swing away from the body and a yielding cushion interposed between the meeting edges of such cover-sections adjacent to the hinge, substantially as set forth.

2. The combination with the body, of a cover comprising a stationary section and a swinging section, the swinging section of the cover being provided with an edge frame terminating in hinge-straps and a hinge-pintle with which the said straps engage, substantially as set forth.

3. The combination with the body and a hinge-pintle secured to and extending across the body, of a cover-section hinged to the said pintle at or near the outer edges of the cover and an additional hinge-strap connected at one end with the hinge-pintle and at its opposite end with the swinging cover at a point a considerable distance from the hinge-pintle, substantially as set forth.

4. The combination with the body and a swinging cover, of a hinge-pintle, straps connecting the hinge-pintle with the swinging cover at or near its outer edges, additional straps connecting the central portion of the cover with the pintle and a centrally-located strap connected at one end with the hinge-pintle and at its opposite end with the swinging cover at a point to the rear of the point where the aforesaid straps connect with the cover, substantially as set forth.

574,079. STOP AND WASTE COCK. AUGUST STEINHAUER and HENRY STEINHAUER, Cleveland, Ohio. Filed Jan. 9, 1896. Serial No. 574,833. (No model.)



Claim.—1. The body of the cock having a hub at one side, in combination with the plug extending through said hub into the said body and one of said parts having opposite segmental channels at the outer edge of said hub and the other part having two cavities opposite one of said channels, a loose stop in one of said cavities projecting into the corresponding channel, and a cap engaged about the edge of said hub and closing said channels from the outside, substantially as described.

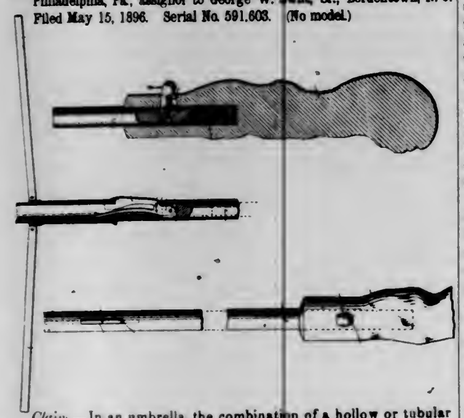
2. The body having segmental channels and the plug having cavities opposite said channels and a separate part interchangeable in said cavities and working in said channels, substantially as described.

3. The plug having two cavities in its outer end, and the body having two segmental channels on opposite sides of the plug-seat, a ball adapted to work in said cavities and means to confine the ball, substantially as described.

4. The body described having two segmental channels and a waste-water passage, in combination with a plug having two cavities opposite said channels, a ball in one of said cavities and a removable cap confining the ball, substantially as described.

5. The invention described comprising the body of the cock and the plug seated therein, and one of said parts having a cavity for a ball and the other a segmental channel to limit the travel of said ball, in combination with a ball in said cavity, substantially as described.

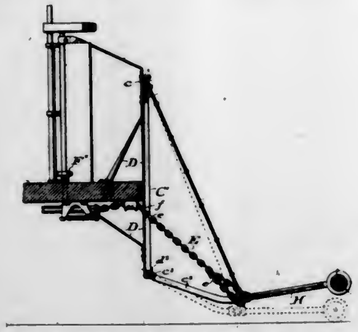
574,080. UMBRELLA OR PARASOL. GEORGE W. SWIFT, Jr., Philadelphia, Pa., assignor to George W. Swift, Sr., Bordentown, N. J. Filed May 15, 1896. Serial No. 591,603. (No model.)



Claim.—In an umbrella, the combination of a hollow or tubular stick embodying a slot for a spring-provided runner retainer, the lower end of which slot forms an abutment for said retainer,—a runner upon said stick,—a runner retainer embodying a spring and provided with a retracting incline adapted to co-act with the abutment of the slot in the projection and retraction of the retainer,—a longitudinally-movable retainer-operating rod fitted within the interior of the stick, to which the retainer is pivotally connected,—means located in the region of the handle of the stick applied to said rod for occasioning its downward or inward longitudinal movement to effect the retraction of the retainer,—and a spring for occasioning its movement in the opposite direction, to cooperate with the retainer spring in effecting the projection of the retainer,—substantially as set forth.

574,081. CAR-FENDER. WILLIAM M. WATTS, Philadelphia, Pa. Filed June 6, 1896. Serial No. 594,515. (No model.)

Claim.—1. In a car-fender, a depending barrier comprising a series of lazy-tongs levers, a support for the upper edge of the said barrier adapted to be secured upon a car, a basket secured to the lower edge of the said barrier, and a rock-frame for the said basket, substantially as set forth.



2. In a car fender, an extensible depending barrier comprising a series of lazy-tongs levers, a support for the upper edge of the said barrier adapted to be secured upon a car, a basket secured to the lower edge of the said barrier, a rock-frame for the said basket, means to secure said barrier in a retracted position, and means upon the car whereby the said barrier and basket may be released from the said retracted position, substantially as set forth.

3. In a car-fender, a barrier comprising a series of normally-retracted lazy-tongs levers, a support for the upper edge of the said barrier, a basket supported upon the front of the said barrier, a rock-frame for the said basket, and tripping mechanism whereby the said barrier may be alternately engaged and released, substantially as set forth.

4. In a car-fender, a depending barrier comprising a series of lazy-tongs levers, a support for the upper edge of the said barrier adapted to be secured upon a car, a basket secured to the lower edge of the said barrier, a rock-frame for the said basket, and a roller mounted upon the said rock-frame, substantially as set forth.

5. In a car-fender, a rectangular frame adapted to be vertically mounted upon a car, a rock-frame hingedly connected with said first frame, a barrier comprising a series of lazy-tongs levers, connected at its upper and lower edges respectively, with the first and second frames aforesaid, and means to secure said frames in a predetermined angular relation, substantially as set forth.

6. In a car-fender, a rectangular frame adapted to be vertically mounted upon a car, a rock-frame hingedly connected with the said first frame, a barrier comprising a series of lazy-tongs levers, connected at its upper and lower edges respectively, with the first and second frames aforesaid, and means to secure the said frames in a folded position, substantially as set forth.

7. In a car-fender, a distensible frame comprising two members hingedly connected, a chain by which the said frame members may be maintained in a predetermined angular relation, tripping mechanism whereby an operator upon the car may release said chain, and means by which the said chain may be automatically reengaged upon the return of the said frame members to the said predetermined angular relation, substantially as set forth.

8. In a car-fender, a frame comprising two members hingedly connected, a chain by which the said frame members may be maintained in a predetermined angular relation, tripping mechanism whereby an operator upon the car may release said chain, means by which the said chain may be automatically reengaged upon the return of the said frame members to the said predetermined angular relation, and an alarm operatively connected with the said tripping mechanism, substantially as set forth.

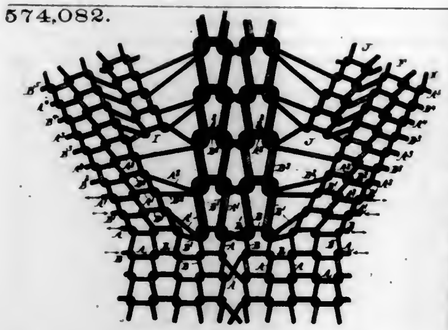
574,082. TUBULAR-KNIT FABRIC. CHARLES H. YOUNG, Laconia, N. H., assignor to himself, and Ralph Emerson, Rockford, Ill. Filed Aug. 21, 1896. Serial No. 603,450. (No specimens.)

Claim.—1. A tubular-knit fabric composed of yarns running in opposite directions said yarns being knit singly on the sides of the fabric and knit together at their point of intersection.

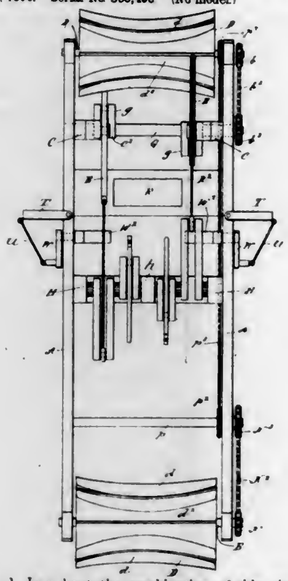
2. A tubular-knit fabric composed of yarns running in opposite directions said yarns being knit singly in the sides of the fabric and knit together for at least two wales at their point of intersection.

3. A tubular knit fabric composed of yarns running in opposite directions said yarns being knit singly on the sides of the fabric and knit together at their point of intersection and said fabric having widening-wales springing from the sides of the wale or wales in which the yarns are knit together.

574,082.



574,083. BOAT. FELIX DE BORGGRAVE, Jersey City, N. J. Filed Mar. 17, 1896. Serial No. 583,498 (No model.)

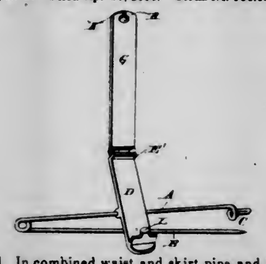


Claim.—1. In a boat, the combination of side plates or bars, between each of the ends of which is mounted a revoluble float, having longitudinal plates or wings secured thereto, a sprocket-wheel mounted on the shaft of the revoluble float, at the stern, and in operative connection with the revoluble float at the bow, a crank-shaft mounted in front of the stern float, and provided with two cranks, suitable standards arranged at the central portion of the boat and provided with a crank-shaft, each side of which is provided with two cranks, suitable levers pivoted above the crank-shaft, at the stern of the boat, and provided with slots at their lower ends which operate in connection with the cranks formed thereon, said levers being connected at their upper ends with two of the cranks on the crank-shaft at the central portion of the boat, and suitable levers mounted below said last-named crank-shaft, and provided with slots in their upper ends which operate in connection with the other cranks formed on said last-named crank shaft, the crank-shaft near the revoluble stern float being in operative connection with the shaft thereof, substantially as shown and described.

2. In a boat, the combination of a frame consisting of suitable side bars at each end of which is mounted a revoluble float provided with longitudinal wings or plates the shafts of said revoluble floats being in operative connection by means of suitable sprocket-wheels, and belts or bands, and means for revolving said floats, consisting of a crank-shaft mounted in front of the stern float, and in operative connection with the shaft thereof, suitable levers pivotally supported above said crank-shaft, and provided with slots in their lower ends which operate in connection with the cranks formed thereon, the upper ends of said levers being connected with cranks formed in a suitably-supported central crank-shaft, said central crank-shaft being also provided with other cranks, and suitable levers pivotally supported thereunder, and provided with slots in their upper ends which operate in connection therewith, substantially as shown and described.

3. In a boat, the combination of a frame consisting of suitable side bars at each end of which is mounted a revoluble float provided with longitudinal wings or plates, the shafts of said revoluble floats being in operative connection by means of suitable sprocket-wheels and belts or bands, and means for revolving said floats, consisting of a crank-shaft mounted in front of the stern float, and in operative connection with the shaft thereof, suitable levers pivotally supported above said crank-shaft, and provided with slots in their lower ends which operate in connection with the cranks formed thereon, the upper ends of said levers being connected with cranks formed on a suitably-supported central crank-shaft, said central crank-shaft being also provided with other cranks, and suitable levers pivotally supported thereunder, and provided with slots in their upper ends which operate in connection therewith, said boat being also provided with a seat, and with steering-plates at the sides thereof, which are adapted to be operated by the feet substantially as shown and described.

574,084. COMBINED WAIST AND SKIRT PIN AND BELT SLIDE AND KEEPER. CHARLES DEITSCH and EDWARD J. DEITSCH, New York, N. Y. Filed Apr 23, 1896. Serial No. 588,822. (No model.)



Claim.—1. In combined waist and skirt pins, and belt slides and keepers, consisting of the waist and skirt pin, of the belt slide and keeper, the said pin swiveled at right angles to the principal member of the said slide and keeper, about the center thereof, and the said principal member, provided with right-angled backwardly-projecting lugs, substantially as herein shown and described.

2. In combined waist and skirt pins, comprising the waist and skirt pin, the belt slide and keeper the said pin swiveled at right angles to the front face of the principal member of the belt slide and keeper, about the center thereof, the said principal member having right angles, rearwardly projecting lugs made integral therewith, and the hinged cover secured to one of said lugs, substantially as herein shown and described.

3. In combined waist and skirt pins, the combination of the waist and skirt pin, the belt slide and keeper, said pin secured at right angles to the front face of the principal member of the belt slide and keeper, about the center thereof, the backwardly-projecting lugs, upon the said principal member, the cover, hinged to the lower lug, the said cover provided upon its end with the hole, H, and open slot, the said upper backwardly-projecting lug, having a central lug, L, whereby the free end of the cover may be securely fastened to the principal member of the belt slide and keeper substantially as herein shown and described.

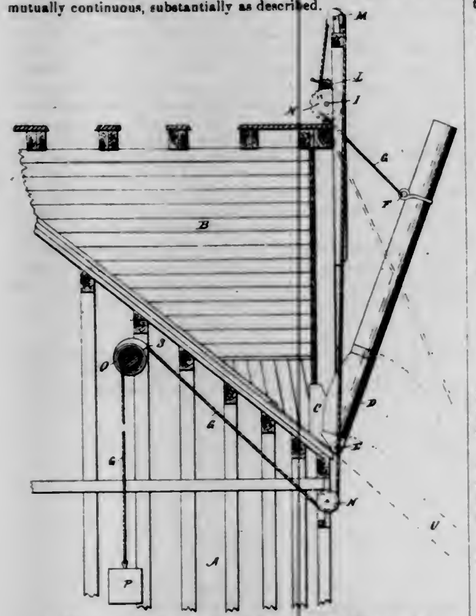
574,085. HOIST-DRUM. HERBERT R. DENTON, Lake View, Minn. Filed June 9, 1896. Serial No. 594,883. (No model.)

Claim.—1. In a coal or ore discharging dock, the combination of a bin provided with a discharge-opening, a discharge chute pivoted in front of said opening, a winch for raising and lowering said chute, an equalizing-sheave composed of a grooved frustum joined at its smaller base to the smaller base of another grooved frustum, said grooves being mutually continuous, with a single continuous cable connected to said chute and passing over said winch and also passing over said frustums of said equalizing-sheave to a counterweight, substantially as described.

2. In a coal or ore discharging dock, the combination of a bin provided with a discharge-opening, a discharge-chute pivoted in front of said opening, an equalizing-sheave composed of a grooved conoidal frustum joined at its smaller base to the smaller base of a grooved conical frustum, a winch for turning said sheave, with a single, continuous, cable connected to said chute and rove over, first, the conoidal portion of said sheave and next over its conical portion, thence leading to a counterweight, substantially as described.

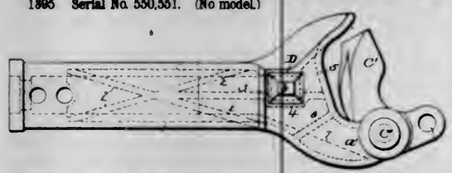
3. An article of manufacture consisting of a sheave composed of a grooved conoidal frustum joined at its smaller base to the

smaller base of a grooved conical frustum, said two grooves being mutually continuous, substantially as described.



4. An article of manufacture consisting of a pulley-sheave composed of a grooved conoidal frustum joined at its smaller base to the smaller base of a grooved conical frustum, said two grooves being mutually and spirally continuous, and the diameter of the conoidal portion increasing in a geometrical ratio from the meeting throat of said bases to its larger base, and the diameter of the conical portion increasing from said throat to its larger base in an arithmetical ratio, substantially as described.

574,086. CAR-COUPLING. OTTO FLOHR, Buffalo, N. Y.; Bridget A. Flohr administratrix of said Otto Flohr, deceased. Filed May 24, 1895. Serial No. 550,551. (No model.)

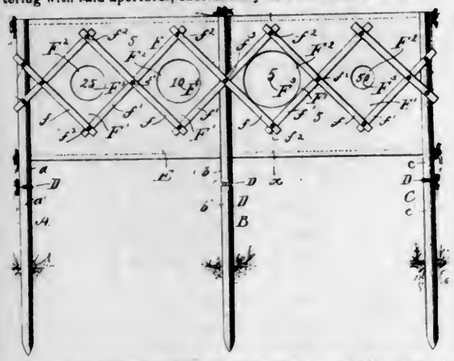


Claim.—1. In a car-coupling of the Janney type known as the "vertical-plane" type, the combination with a draw-head, and a knuckle pivoted therein and substantially fitting the interior thereof, the draw-head provided with a spiral flange or way on its bottom, and the knuckle having a curved lug adapted to rise on this flange or way, said knuckle also furnished with a beveled arm, of a pin constructed to play vertically in the draw-head and provided with a vertical portion which locks the arm of the knuckle between it and the inner wall of the draw-head, said pin having a beveled portion adapted to be struck by the beveled portion of the arm whereby the pin is automatically raised by the knuckle in swinging shut, substantially as set forth.

2. In a car coupling, the combination with a draw-head provided on its upper and lower inner walls with ribs which cross each other and on the side walls with longitudinal ribs, one of said longitudinal ribs terminating in the longer horn of the draw-head, of a knuckle provided with a recess 8 adapted to receive said rib, substantially as set forth.

574,087. GAME APPARATUS. ANTHONY C. FRICK, New York, N. Y. Filed May 25, 1896. Serial No. 592,981. (No model.)

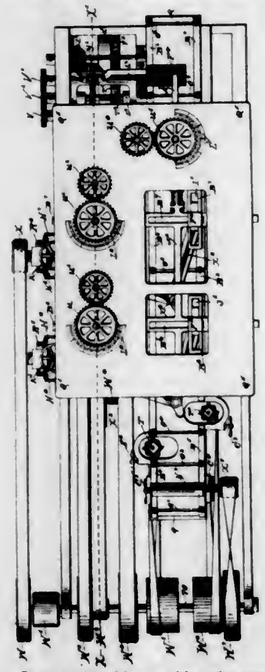
Claim.—1. A game apparatus comprising a series of uprights which are driven into the ground and which have a backing of fabric stretched thereon, and a sectional folding framework having a target with an aperture in each section thereof secured to the face of the said uprights, said backing having produced thereon numerals registering with said apertures, substantially as shown and described.



2. The combination of the folding uprights having a flexible backing stretched thereon, and the folding framework having apertured non-elastic targets secured thereto, substantially as shown and described.

3. The combination of the folding uprights and means for locking them in an upright position, and a flexible backing and means for securing it to the said uprights; with a removable folding framework having apertured rigid targets secured thereto, substantially as shown and described.

574,088. WOODWORKING-MACHINE. HENRY HARRER, Allegheny, Pa. Filed Feb. 17, 1894. Serial No. 500,493. (No model.)



Claim.—1. In a woodworking-machine, the combination of the two vertical cutter-arms carrying vertical cutters, an intermittent feed, and planer substantially as described.

2. In a woodworking-machine, the combination of the two vertical cutter-arms carrying vertical cutters, intermittent feed-rolls, an adjustable table, a planer, substantially as described and for the purpose set forth.

3. In a woodworking-machine, the combination of the two vertical cutter-arms guided by transverse slotted arms, continuous feed-rolls, a planer, cutters and an adjustable table substantially as described.

4. In a woodworking-machine, comprising vertical cutter-arms guided at the intersecting slots of transverse slotted arms in combination with an adjustable table, substantially as described.

5. In a woodworking-machine, comprising vertical cutter-arms, means to rotate and guide said arms in combination with continuous feed-rolls substantially as described and for the purpose set forth.

6. In a woodworking-machine, the combination of the vertical cutter-arms carrying vertical cutters, means to rotate and guide said arms, continuous feed-rolls and an adjustable table substantially as described.

7. In a woodworking-machine, comprising vertical cutter-arms carrying vertical cutters, means to independently rotate and guide said arms, in combination with continuous feed-rolls, substantially as specified and for the purpose set forth.

8. In a woodworking-machine, comprising vertical cutter-arms carrying vertical cutters, means to independently rotate and guide said arms, in combination with intermittent feed-rolls and an adjustable table substantially as described.

9. In a woodworking-machine, the combination of the vertical and horizontal cutters, the transverse slotted arms, a table, and a continuous feed of the lumber, substantially as set forth.

10 In a woodworking-machine, the combination of the two horizontal cutters, guided at the intersection of two transverse slotted arms and a lineal slotted arm and regulated by means of a duplicate set of transverse slotted arm and a lineal slotted arm, substantially as described and for the purpose set forth.

11. In a woodworking-machine, the combination of a horizontal cutter, guided at the intersection of a transverse slotted arm, and a lineal slotted arm, means to rotate said cutter and regulate the same by a duplicate set of slotted arms, substantially as described.

12. In a woodworking-machine, the combination of the cranks C, C', C^3, having scales, and carrying crank-pins S, S', S^3, the said crank-pins moving the compound transverse slotted arms A, A', and the transverse slotted arms B, B', means for carrying vertical rotating cutters and guiding the same by means of said arms, substantially as described.

13. In a woodworking-machine, a double-hinged arm, carrying a vertical rotating cutter-head, provided with pulleys carrying oil-cups communicating with one another, substantially as described and for the purpose set forth.

14. In a woodworking-machine, a double-hinged arm, having a vertical rotating cutter-head, provided with pulleys carrying oil-cups and siphons communicating with said cups, substantially as described.

15. In a woodworking-machine, a double-hinged arm carrying on its free extremity an electric motor 40, having attached to its base portion an arm 42, carrying the horizontal cutter-head frame 45, having secured thereto the cutter 80, fixed to the pulley 46, substantially as described.

16. In a woodworking-machine, a double-hinged arm, consisting of the parts 29 and 30, the latter carrying the brushes 31 and 32, an electric motor arranged to the shaft 35, having secured thereto the contact-wheels 33 and 34, inclosed by a hollow shaft 36 carrying on its upper extremity an arm 37, said arm provided with a slotted guide for the reception of the adjusting-pin 50, the motion of said pin serving to adjust the horizontal position of said motor about its vertical axis substantially as described

17. In a woodworking-machine, a double-hinged arm consisting of the parts 29 and 30, the latter carrying the shaft 35, having on its upper extremity the slotted guide-arm 37, and on its lower extremity the motor 40, the cutter 80 adjustably secured to the arm 42 of the said motor, substantially as described.

18. In a woodworking-machine, a double-hinged arm, consisting of the parts 29 and 30, the latter carrying the motor 40, said motor communicating motion to the cutter-head 80, suspended in a frame 45, substantially as described and for the purpose set forth.

19. In a woodworking-machine, a double-hinged arm, consisting of the parts 29 and 30, the latter carrying the brushes 31 and 32, adapted to convey electric currents to the contact wheels 33 and 34 of the shaft 35 and connected with suitable wires passing through a bore 39, conveying electric currents to the motor 40 of the shaft 35, the latter adapted to be turned on its axis by an adjusting arm 37, provided with a slotted guide 38, and means for revolving the same as specified.

20. In a woodworking-machine, a double-hinged arm carrying on its free end a shaft 35, having secured on its lower extremity a motor 40 and to its upper extremity the adjusting-arm 37 in combination with a horizontal rotating cutter, substantially as described.

21. In a woodworking-machine, a double-hinged arm carrying on its free end a shaft 35, having connected with it a horizontal rotating cutter-head, a slotted guide 38 of the adjusting arm 37 and means for independently revolving the same as specified.

22. In a woodworking-machine, a double-hinged arm, carrying a vertical shaft having connected with its lower extremity the horizontal rotating cutter and with its upper extremity an adjusting-arm provided with a slotted guide and means for independently revolving the same and suitable means for rotating said cutter, substantially as described.

23. In a woodworking-machine the combination of the gear-wheels V, V', and V^3, the feed-rolls F^3, F^4, the miter gear wheel Z^3, of the shaft S^3, and the miter gear-wheel Y^4, of the shaft S^3, miter gear-wheels Y, Y', Y^3, the gear-wheels Z^3, Z^4, of the shaft S^4, said gear-wheels communicating motion to the shafts S^3, S^7, S^8, of the cranks C', C^3, and C, respectively, said cranks guiding vertical cutters by means of transverse slotted arms, substantially as described and for the purpose set forth.

24. In a woodworking-machine, the combination of the cranks C, C', C^3, reciprocating the adjustable transverse slotted arm A, A', the transverse slotted arms B, B', carrying at the intersection of their slots the slides N, N', in combination with the double-hinged vertical rotating cutter-arms, substantially as described and for the purpose specified.

25. In a woodworking-machine, the combination of a continuous gear-wheel V^3, of the feed-rolls F^3, F^4, said wheel carrying on its axis a removable gear-wheel M^3, transmitting motion to the cranks C, C', C^3, said cranks reciprocating arms A, B, B', the latter guiding horizontal cutters substantially as described.

26. In a woodworking machine, the combination of a continuous gear-wheel V^3, of the feed-rolls F^3, F^4, said wheel carrying on its axis a removable intermittent gear-wheel transmitting motion to the crank C, C', C^3, said cranks reciprocating arms A, B, B', said arms guiding horizontal cutters substantially as described.

27. In a woodworking-machine the combination, of the continuous gear-wheel V^3, the feed-rolls F^3, F^4, means for conveying motion to the cranks C, C', said cranks guiding a horizontal cutter by means of the arms A, B, substantially as specified.

28. In a woodworking-machine, the combination of a continuous gear-wheel V^3, the feed-rolls F^3, F^4, intermediate gearing for carrying motion from the axis of V^3, to the cranks C, C', the arms A and B, and the vertical carving-arm X^3, substantially as described.

29. In a woodworking-machine, the combination of an intermittent gear, the feed-rolls F^3, F^4, intermediate gearing and means for conveying motion to the cranks C, C', the arms A and B and the vertically-adjustable carving-arm X^3, substantially as set forth.

30. In a woodworking-machine, the combination of the continuous gear-wheel V^3, the feed-rolls F^3, F^4, means for conveying motion to the crank C', the clamp 19 and vertical carving-arm X^3, substantially as specified.

31. In a woodworking-machine, the intermittent gear-wheel V^3, and vertically-adjustable cutter-arm X^3, guided by the transverse slotted arms A and B with means for transmitting motion from said intermittent gear to said transverse slotted arms substantially as set forth.

32. In a woodworking-machine the cranks C, C', C^3, reciprocating the compound transverse slotted arms A, A' and the transverse slotted arms B, B', respectively, the vertical rotating cutter-arms X^3, X^3, carried in the adjustable brackets R^3, R^3, with suitable means for rotating the said cranks C, C^3, and for rotating the cutters of said vertical cutter-arms X^3, X^3, substantially as described.

33. In a woodworking machine the combination of the cranks C, C', reciprocating the transverse slotted arms A and B, guiding the vertically-adjustable carver-arm X^3, means for operating said cranks and said carver, and the adjustable table Q, substantially as set forth.

34. In a woodworking-machine, the combination of the feed-rolls F^3, F^4, the shaft 72 carrying the gear-wheels V^3 and M^3, the gear-wheel M^4 attached to an adjustable arm D^4, the gear-wheel M^3, communicating motion to the cranks C, C' through a train of gears, the transverse slotted arms A, and B and the adjustable vertical rotating cutter X^3, substantially as described.

35. In a woodworking-machine, the combination of the pulleys R^4, R^3, transmitting motion to the pulleys 9, 9', rotating the vertical cutters of the arms X^3, and X^3, the cranks C, C', C^3, the compound transverse slotted arm A, A', the transverse slotted arms B, B' and suitable means to operate said mechanism, substantially as described.

36. In a woodworking-machine, the combination of the continuous gear-wheels V^3, the feed-rolls F^3, F^4, the cranks C, C', C^3, the compound transverse slotted arm, A, A', the transverse slotted arms B, B', said arms guiding at the intersection of their slots a vertical cutter, and suitable means to operate said mechanism, substantially as described and for the purpose set forth.

37. In a woodworking-machine, the combination of the intermittent gear wheel V^3, the feed-rolls F^3, F^4, means for transmitting motion from the axis of said intermittent gear-wheel V^3, to the cranks C, C', C^3, the double transverse slotted arm A, A', the transverse slotted arms B, B', guiding at the intersection of their slots a vertical rotating cutter, substantially as described.

38. In a woodworking-machine, the combination of the cranks

C, C', the transverse slotted arms A and B, guiding at the intersection of their slots a vertical rotating cutter, and suitable means for operating the same, substantially as described.

39. In a woodworking-machine the combination of the feed rolls F^3, F^4, the cranks C', C^3, reciprocating the transverse slotted arms B, B', said arms guiding vertical rotating cutters, means to operate said feed-rolls and said cranks, substantially as described.

40. In a woodworking machine, the combination of the continuous gear-wheel V^2, the feed-rolls F^3, F^4, means for transmitting motion from the axis of gear-wheel V^2, to the crank C, the arm B, guiding a vertical cutter and suitable means for operating the same, substantially as described.

41. In a woodworking machine, the combination of the feed-rolls F^3, F^4, the cranks C, C', C^3, the transverse slotted arms, B, B', the adjustable transverse slotted arm A, A', guiding the intersection of their slots the horizontal cutter-arms X^{13}, X^{13}, and a duplicate set of cranks and transverse slotted arms guiding at the intersection of their slots the adjusting-pins 50 and 50^a substantially as described.

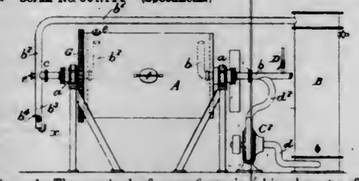
42. In a woodworking-machine, the combination of the cranks C, C', C^3, the compound transverse slotted arm A, A', the transverse slotted arm B, B', guiding the horizontal rotating cutter-arms, X^{13}, X^{13}, cutters of said arms adjusted by pins 50, 50^a, said pins guided at the intersections of a duplicate set of transverse slotted arms, operated by a duplicate set of cranks, and suitable means for operating the same, substantially as described.

43. In a woodworking-machine the combination of the cranks C', C^3, guiding horizontal rotating cutter-arms X^{13}, X^{13}, a set of duplicate cranks and arms guiding adjusting-pins 50 and 50^a substantially as described.

44. In a woodworking-machine, the cranks C, C', slotted arms A, B, guiding a horizontal cutter, said cutter adjusted by a pin 50 guided by the arms A^7, B^7, a duplicate set of cranks, substantially as described.

45. In a woodworking-machine, the combination of the crank C, C', reciprocating transverse slotted arms A and B, said arms guiding at the intersection of their slots a horizontal cutter a duplicate set of transverse slotted arms to adjust said cutters, means for operating said crank and said cutters, substantially as described.

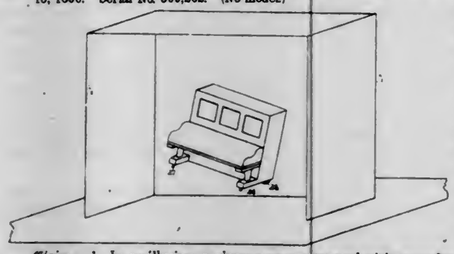
574,089. PROCESS OF MAKING SODIUM BICARBONATE FROM ROASTER-ASH. JOSEF HAWLICZEK, Liverpool, England, assignor to the United Alkali Company, Limited, Widnes, England. Filed Aug 31, 1895. Serial No. 561,144. (Specimens.)



Claim.—1. The method of manufacturing bicarbonate of soda by converting the sesquicarbonate of soda known as "roaster-ash" into hydrated roaster-ash, and then treating the latter with carbonic-acid gas, as set forth.

2 The manufacture of bicarbonate of soda from crude bicarbonate of soda from which ammonia or salts of ammonia have been eliminated by subjecting the said crude bicarbonate so treated first to the action of steam in a closed vessel and subsequently to the action of carbonic-acid gas while agitating the mass, substantially as hereinbefore described.

574,090. ILLUSION. ERNEST HOWARD, Boston, Mass. Filed July 15, 1896. Serial No. 599,262. (No model.)



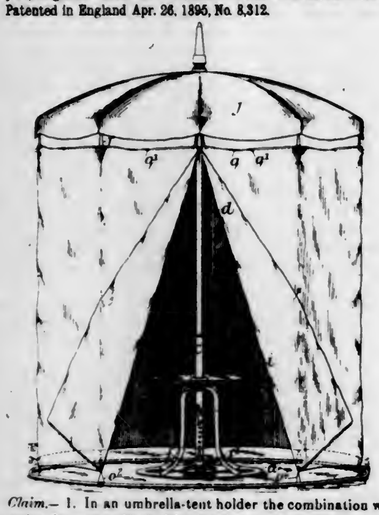
Claim.—1. In an illusion, a piano case constructed with space for a manipulator therein, and having a trap through which said manipulator may step upon the stage, and having staples with which a harness on the manipulator engages and handles which he grasps to raise and tip said piano case, in combination with means for rendering invisible the exposed portion of his body.

2. In an illusion, a piano-case constructed with space therein for a manipulator, and with a caster projecting into said space and pivoted vertically and horizontally so as to be rotatable by said manipulator.

3. In an illusion, a piano-case constructed with space therein for a manipulator, and with a caster projecting into said space and adapted to be rotated by him.

4. In an illusion, a piano case constructed with space for a manipulator therein, and having a trap through which said manipulator may reach some outside support, and having staples with which a harness on the manipulator engages and handles which he grasps to raise and tip said piano case, in combination with means for rendering invisible the exposed portion of his body.

574,091. UMBRELLA-TENT. ROBERT IRVINE, Jr., West Hartlepool, England. Filed Nov. 18, 1895. Serial No. 569,349. (No model.) Patented in England Apr. 26, 1895, No. 8,312.



Claim.—1. In an umbrella-tent holder the combination with the supporting-frame provided with a bearing-support, of a tubular socket adapted to receive the umbrella-stick, a spherical enlargement upon said socket adapted to engage the bearing-support, a clamping device connected with said bearing-support for adjusting the position of the said spherical enlargement and said tubular socket in respect to said bearing and an adjusting device on said tubular socket, separate from said clamping device for adjusting the umbrella stick longitudinally in said socket, substantially as described.

2. In an umbrella-tent holder, the combination with the supporting-frame provided with a bearing-support, of a tubular socket provided with a longitudinal series of apertures and a spherical enlargement for engaging said bearing-support, a clamping device for adjusting said spherical enlargement and said tubular socket with respect to the said bearing-support, and a pin for engaging one of said series of apertures in the tubular socket to adjust the umbrella-stick longitudinally in said socket, substantially as described.

3. In an umbrella-tent holder, the combination with a tubular socket adapted to receive an umbrella-stick, a supporting-frame, adjustable devices on said frame for holding the tubular socket in different angular positions and an auxiliary support for said tubular socket on said supporting-frame, in a different horizontal plane from said adjustable devices, substantially as described.

4. In an umbrella-tent holder, the combination with the tubular socket adapted to receive an umbrella-stick, of a supporting-frame provided adjacent to its upper part with adjustable devices for engaging said tubular socket and holding it in different angular positions, said frame having an auxiliary support adjacent to its lower portion in a vertical line with said adjustable devices, adapted to receive the lower end of said tubular socket to maintain it in vertical position and a retaining device for said auxiliary support, substantially as described.

5. In an umbrella-tent, the combination with an umbrella, of a central holder for the same, sides adapted to be hung from said umbrella, a separate weight ring and devices for detachably securing the bottom edges of said sides to said ring, substantially as described.

6. In an umbrella-tent, the combination with an umbrella, of a central holder for the same, sides adapted to be hung from said umbrella, a separate weight-ring provided with eyelets arranged at intervals, an adjustable flexible connection engaging said eyelets, and detachable retaining devices secured to the bottom edge of said sides, at intervals, and adapted to engage said flexible connection, substantially as described.

7. In an umbrella-tent, the combination with an umbrella, of side portions adapted to be supported from said umbrella, a supporting-frame for engaging the umbrella-stick, a detachable weight-ring, an adjustable flexible connection for engaging said detachable weight-ring and said sides, for holding said sides at a greater or less distance from the ground, substantially as described.

8. In an umbrella-tent the combination with an umbrella, of a holder for the same, side portions, flexible adjustable connections between the umbrella and the sides, a separate weight-ring and flexible, adjustable connections between the sides and the weight-ring, whereby the sides are adapted to be adjusted vertically to permit of ventilation at the top and bottom, substantially as described.

9. In an umbrella tent, the combination with an umbrella, and a holder therefor, of side portions and a jointed weight-ring, adapted to be folded in a compact form when not in use, substantially as described.

10. In an umbrella-tent, the combination of a holder, an umbrella, side portions, a weight ring and a flexible connection engaging the weight-ring at intervals and adapted to be engaged by parts connected with the side portions, substantially as described.

11. In an umbrella-tent, the combination of an umbrella, a holder, side portions, a weight-ring, and a continuous flexible connection engaging eyes upon said ring and adapted to be engaged by parts connected with said portions, substantially as described.

574,092. PAINT OR COATING COMPOSITION. HENRY M. JOHNSTON, Brooklyn, N. Y. Filed Apr. 29, 1896. Serial No. 589,553. (No specimens.

Claim.—1. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, and a strongly tenacious adhesive vehicle combined with such fibers, so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

2. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three quarters of an inch, and a strongly tenacious adhesive vehicle reduced or reducible with water, combined with such fibers so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or a squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearence, substantially as described.

3. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, and a substance, such as glue or starch, reduced or reducible with water to a jelly or tenacious adhesive solution, combined with such fibers so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

4. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, comminuted pigmentary or filling substance, and a strongly tenacious adhesive vehicle combined with such fibers and pigmentary or filling substance so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

5. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, comminuted pigmentary or filling substance, and a strongly tenacious adhesive vehicle, reduced or reducible with water, combined with such fibers and pigmentary or filling substance so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or a squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

6. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, comminuted pigmentary or filling substance, and a substance, such as glue or starch, reduced or reducible with water to a jelly or a tenacious adhesive solution, combined with such fibers and pigmentary or filling substance so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or a squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

7. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, intermingled in the dry state with a dry comminuted substance, such as glue or starch, reducible to a jelly or tenacious adhesive solution, so as to form when appropriately reduced compositions in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

8. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three quarters of an inch, intermingled in the dry state with a dry comminuted substance, such as starch or glue, reducible to a jelly or tenacious adhesive solution, and with dry comminuted pigmentary or filling substance, so as to form when appropriately reduced compositions in which the fibers shall remain diffused, which can be applied to walls with a brush or a squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

9. The method of obtaining fibrous-surfaced coatings with prominent fibers, by introducing the fibers into a paint or coating composition, forming the coating, and washing the surface with a solvent liquid, substantially as described.

10. The method of giving a fibrous appearance to surfaces or coatings, by mixing with a strongly tenacious adhesive vehicle which yields a transparent or translucent coat, fibers with a maximum length of three-quarters of an inch, and applying over the surface or coating to be rendered fibrous a transparent or translucent coat of such mixture leaving the fibers distributed over the same so that the said coating or surfaces may appear between the fibers, substantially as described.

11. A paint or coating composition composed of strong pliable fibers with a maximum length of three-quarters of an inch, in admixture with a strongly tenacious adhesive vehicle yielding a transparent or translucent coat, so as to form a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

12. A wall-coating in the form of a sheet, film, relief decoration or the like, comprising fibers with a maximum length of three-quarters of an inch arranged parallel or approximately parallel with the surface of the coating and appearing in sufficient number and at such small intervals as to impart a fibrous or textile appearance to the coating whose ground is visible between fibers, substantially as described.

13. A wall-coating in the form of a sheet, film, relief decoration or the like, comprising fibers with a maximum length of three-quarters of an inch arranged parallel or approximately parallel with the surface of the coating and of a different color from the ground of the coating, said fibers appearing at the surface of the coating as lines of contrasting color in sufficient number and at such small intervals as to impart a fibrous or textile appearance to the coating whose ground is visible between fibers, substantially as described.

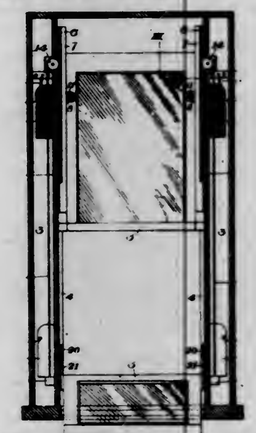
14. The improvement in ornamenting the interior walls of houses, by applying to the wall a fibrous-surfaced coating with separated fibers of a strong pliable nature and a maximum length of three quarters of an inch, so that said fibers shall lie parallel or approximately parallel with the surface of the wall and appear in sufficient number and at such small intervals as to impart a fibrous or textile appearance while permitting the ground to be visible in the spaces between fibers, substantially as described.

15. The improvement in ornamenting the interior walls of houses, by applying to the wall a suitably consistent and strongly tenacious adhesive substance or composition, and separated fibers of a strong pliable nature with a maximum length of three quarters of an inch, so that said fibers shall be cemented to the wall by said substance or composition in a position parallel or approximately parallel with the face of the wall and shall appear in sufficient number and at such small intervals as to impart a fibrous or textile appearance while permitting the ground to be visible through spaces between fibers, substantially as described.

16. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, mixed with a strongly tenacious adhesive vehicle in which are combined a strongly tenacious adhesive substance, and a toughening agent, such as glycerin, so that the whole forms a composition in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give toughened coatings with a fibrous or textile appearance, substantially as described.

17. A paint or coating composition, consisting of strong pliable fibers with a maximum length of three-quarters of an inch, mixed with a vehicle comprising both soluble and insoluble jellying substances, such as glue or starch, reduced or reducible with water, so as to form a composition in which the vehicle when jellied is less sensitive to heat than one comprising soluble substance only, in which the fibers shall remain diffused, which can be applied to walls with a brush or squeezing-tool or other decorator's tool, and which when so applied shall give coatings with a fibrous or textile appearance, substantially as described.

574,093. WINDOW. JAMES C. KAHLE, Oil City, Pa. Filed May 21, 1896. Serial No. 592,399. (No model.)



Claim.—1. The combination with a window-sash, of a vertical slide fitted to its side edge, a projecting screw upon the sash provided with a thumb-nut, and a lug upon the slide arranged to take over the screw and having a recess arranged to be engaged by the thumb-nut, substantially as described.

2 The combination with a window-frame and a sash movable therein, of a slide detachably secured to the edge of the sash, a sash-cord secured to said slide and passing through a weight which slides freely thereon, an adjustable catch for said weight and another weight secured to the outer end of said cord, substantially as described.

3. The combination with a window-sash having a slide detachably secured thereto, of a sash cord secured to said slide, a weight having a slot arranged to be engaged by a loop within the weight-channel, a longitudinal hole in said weight through which the sash-cord passes, and a second weight secured to the end of the cord, substantially as described.

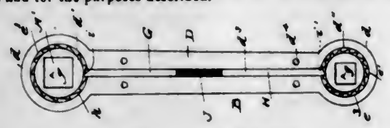
4 The combination with a window-sash, of a slide detachably secured to its side edge, a sash-cord secured to said slide, a weight having a flat side to hold it in the same relative position in the weight-channel and provided with an angular slot adapted to be engaged by a loosely-swinging loop in the channel, said weight having a longitudinal hole through which the sash-cord passes, and a weight secured to the end of said cord, substantially as described

5. The combination with a window-sash, of detachable slides secured to its side edges, these slides being made in two parts, the sash being hinged to the lower separable parts of the slides, substantially as described

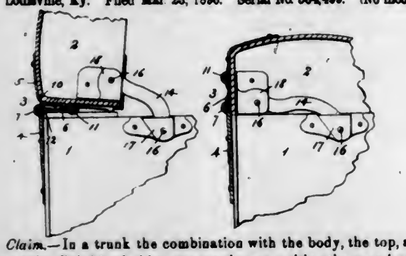
6. The combination with a window sash, of slides detachably secured to its side edges, each slide having a lower inner detachable strip to which the lower end of the sash is pivoted, these strips having lugs arranged to enter recesses in the slides proper, substantially as described

574,094. WRENCH. FRANK S. KAUFMAN and CHARLES W. KAUFMAN, Scranton, Pa. Filed July 16, 1896. Serial No. 599,454. (No model.)

Claim.—As a new article of manufacture, the ratchet-wrench herein shown and described comprising the plate D having the central continuous channel of uniform depth and width and the openings d', d'' provided with the internal flanges e', e'' arranged flush with the outer face of the plate and of less thickness than the body of the plate to form the annular recesses on the inner face of said plate, the plate C having a flat inner face and the openings c', c'' coincident with the openings d', d'' and of a diameter corresponding to the diameter of the openings formed by the flanges e', e'', the cylindrical hubs fitted in the openings c', c'' of plate C and the flanges of the plate D and provided with central ratchet-teeth that occupy the recesses of the plate D and bear laterally against the flanges e', e'' and the inner face of plate C, the straight rods fitted in the channel of plate D, and a single coiled spring interposed between the adjacent ends of the rods, as and for the purposes described.

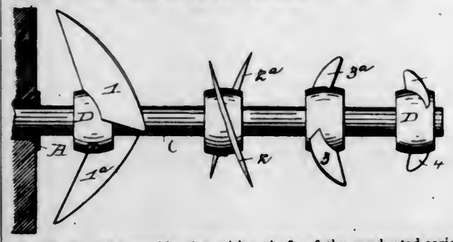


574,095. TRUNK AND HINGE THEREFOR. FRIEDRICH KEIPEL, Louisville, Ky. Filed Mar 23, 1896. Serial No. 584,499. (No model.)



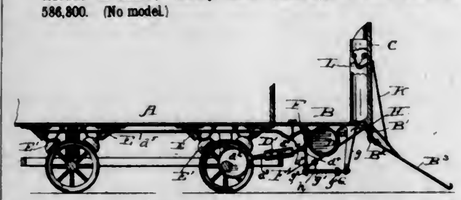
Claim.—In a trunk the combination with the body, the top, and a connecting-link 14, of a hinge connection comprising the open hooks 7 and 11, and the intermediate section 6 having the openings 12, substantially as set forth.

574,096. PROPELLER. ALBERT L. KRAUS, Peabody, Mass. Filed Apr. 6, 1896. Serial No. 586,313. (No model.)



Claim.—The combination with a shaft, of the graduated series of sets of blades spaced apart and secured on the shaft, the blades of the outer set being proportionately of greater width from side edge to side edge than those of the other sets, and the set of larger blades being in advance of the others, substantially as described.

574,097. COMBINED FENDER AND BRAKE MECHANISM. ALBERT L. KRAUS, Peabody, Mass. Filed Apr. 9, 1896. Serial No. 586,800. (No model.)



Claim.—1. In a street-car, the combination with a storage-tank, and means for charging the same with a fluid, of brakes for the wheels, mechanism for setting the brakes by fluid-pressure from the tank, comprising cylinders and pistons, a pipe connection from the cylinders to the tank, a valve in the pipe, a lever for actuating the valve, a hinged fender, a connection between the fender and valve-actuating lever, and adjustable means for supporting the feader in different positions and for limiting the movement of the valve-lever, substantially as described.

2. In a street car, the combination with the body, of a swinging fender hinged thereto, an air-storage tank on the car, means for charging the tank, a series of brake-cylinders adjacent to each wheel of the car, pipes leading from the cylinders a main pipe leading from the tank and into which the cylinder-pipes lead, brake-shoes carried by the pistons of the several cylinders, a valve in the main pipe, an actuating-lever on the valve, adjustable means for limiting the movement of the lever and a connection from said lever to the feader, substantially as described.

3. In a street-car, the combination with the body of the car and truck, of a fender hinged to the car, an air-storage tank, a system of braking-cylinders arranged obliquely to the wheels, shoes actuated by the piston in the cylinder to engage the upper face of the wheel, pipes communicating with the braking-cylinders and the storage-tank, a valve for controlling said pipes, a lever for controlling the valve, means for normally holding the lever in position, and a connection between such lever and the fender substantially as described.

4. In a street-car, the combination with the car, of an air-storage cylinder carried thereby, a series of brake-cylinders adjacent to each wheel communicating with the storage-cylinder, a valve in said communication, a spring-actuated lever for controlling the valve, adjustable means for regulating the movement of the lever, a connection from the lever extending forward, a fender connected and supported by said connection, a switch, and a connection between the switch and the fender, substantially as described.

574,098. MARBLE-SHOOTING DEVICE. CHARLES B. LANDES, Columbus, Ohio. Filed July 27, 1896. Serial No. 600,590. (No model.)



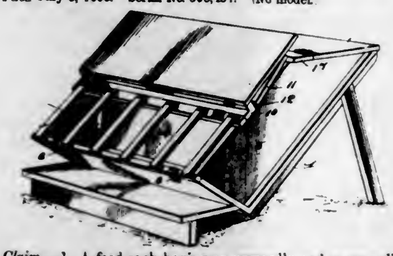
Claim.—In a marble-shooting device the combination with a barrel, the forward portion of which is open on one side, a tubular rear extension of said barrel, a spring-actuated plunger working in said barrel and extension, a stop-head on the rear end of said plunger and a catch-lug on said plunger-rod, of a handle portion projecting from said barrel portion and a spring-actuated fulcrumed trigger within said handle portion said trigger having a hook termination adapted to project within the path of said plunger catch-lug, substantially as and for the purpose specified.

574,099. LINEN-RUBBER. MAURICE S. LEWIS, Philadelphia, Pa. Filed Jan. 16, 1896. Serial No. 575,807. (No model.)



Claim.—A rubber for collars, cuffs, shirts and similar articles composed of suitable material, oblong in form, and having in one end U-shaped notches of different sizes and having the other end smooth and convex in cross-section substantially as shown and described.

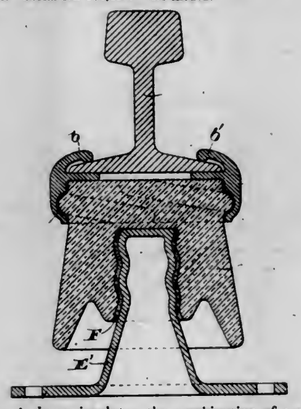
574,100. FEED-RACK. EDWIN M. MAGY, Viney Grove, Ark. Filed July 8, 1896. Serial No. 598,457. (No model.)



Claim.—1. A feed-rack having an upwardly and rearwardly inclined box open at the lower portion of its front side to give access to stock, a partition or cut-off adjustably fitted in the box and extending from the upper front corner approximately to the lower rear corner thereof to divide the interior of the box into front and rear compartments, means for securing the partition or cut-off at the desired adjustment whereby communication may be established between said compartments, and a door having a horizontal axis arranged to close an opening contiguous to the plane of said partition or cut-off and adapted to be inclined in the opposite direction therefrom to form a hopper to facilitate the introduction of feed, substantially as specified.

2. A feed-rack having an inclined box provided in its front side with an opening to give access to stock and also with a superjacent feed opening, a sliding cut-off or partition fitted in guides in the sides of the box and extending through and above said feed-opening with its lower edge contiguous to the rear wall of the box, means, as pins, for engaging a contiguous fixed portion of the box to secure the cut-off at the desired adjustment, a door hinged at its lower edge to the box contiguous to said feed-opening and adapted to be inclined forwardly and upwardly to combine with the contiguous extremity of the cut-off to form a hopper, and a lid fitting an opening in communication with the compartment of the box in rear of the cut-off, substantially as specified.

574,101. INSULATOR. CHARLES B. MARTIN, Schenectady, N. Y., assignor to the General Electric Company, of New York. Filed Sept. 28, 1896. Serial No. 607,153. (No model.)



Claim.—1. In an insulator, the combination of a non-rotatable clamp, an insulator provided with a screw-thread engaging therewith, and a metal base for the insulator.

2. In combination, a rail, a non-rotatable rail-clamp, a body of insulating material, a base therefor, and means for securing the body of insulating material by an angular movement to the rail-clamp after the latter has been mounted in place.

3. In combination, a rail, malleable iron rail-clamps adapted to be slid upon the rail from the ends, lugs on the clamp for gripping the rails and preventing any angular movement of the clamp, a metal base, a body of insulating material mounted on the base, and means on the insulator for securing it to the rail-clamp by an angular movement.

4. In an insulator, the combination of a conductor-rail, a clamp secured thereto and held against angular movement, a downwardly-extending portion of the clamp provided with a screw-thread, a body of insulating material provided with a thread corresponding to that of the clamp and adapted to be secured thereto by a slight angular movement, and a base for supporting the insulator.

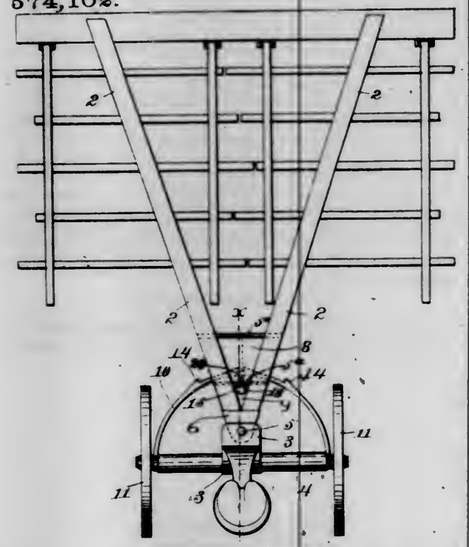
5. As an article of manufacture, a rail-clamp provided with lugs b, b' adapted to grip the rails and prevent any angular movement of the clamp, and a downwardly-extending portion provided with a double screw-thread.

574,102. WHEELED HARROW. DAVID C. MILLER, Cedarville, Kans. Filed Apr. 11, 1896. Serial No. 587,090. (No model.)

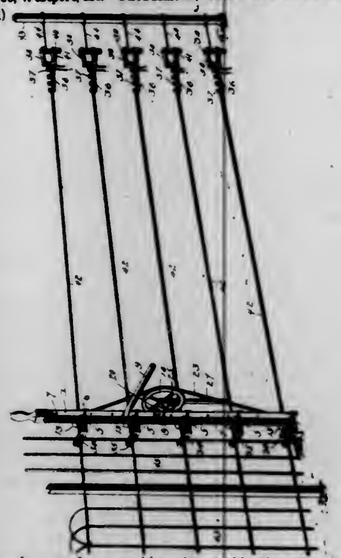
Claim.—1. The combination with a harrow, a sulky to which it is pivoted, a hound having lugs and an intervening notch, an automatic means for fixing the hound to the sulky comprising the foot-lever pivoted at one end to the harrow-platform, a guide-bolt secured to the lever and working through the platform, and a spiral spring between the bolt head and the platform, substantially as set forth.

2. The combination with a harrow having supporting-beams, a platform at the intersection of the rear ends of said beams, a sulky pivoted to said ends, a hound immovably secured to the sulky-axle and operated in guide-hangers secured to the said beams, a foot-lever pivoted to the platform, a bolt secured to the lever and extending through the platform and a spiral spring around the bolt upon the platform adapted to control the movement of the lever, as set forth.

574,102.



574,103. WIRE-AND-PICKET-FENCE MACHINE. LEWIS W. MOSHER, Westport, Mo. Filed Mar. 24, 1896. Serial No. 584,694. (No model.)



Claim.—1. In a fence-machine, the combination of a frame, a series of bearing-brackets secured at intervals in the length of the frame and having a lateral extension near their inner ends, twister-wheels mounted in the bearing-brackets, a series of arms located in the same plane with the bearing-brackets and forming stops to properly space the pickets and having their outer ends slotted, and fastenings securing the inner ends of the said arms to the frame and the lateral extensions of the bearing-brackets, substantially as shown and described.

2. In a fence-machine, the combination of a frame having a series of twister-wheels, a master-wheel, a sprocket-chain engaging with the master-wheel and the individual twister-wheels to transmit motion to the latter, a plate supporting the master-wheel and having adjustable connection with the frame, and a block secured to the frame and obtaining a bearing against the adjustable plate to brace and strengthen the latter, substantially as shown for the purpose described.

3. The combination with a fence-machine, of a picket-support comprising a vertical portion having a slot extending therein from its upper end to receive the fastening and admit of the support being readily detached, and a horizontal portion formed in its top side with a seat, substantially as and for the purpose set forth.

574,104. ADJUSTABLE OUTLET-GATE FOR VENTILATING-PIPES. JOSEPH MCCREERY, Toledo, Ohio. Filed June 20, 1896. Serial No. 596,297. (No model.)



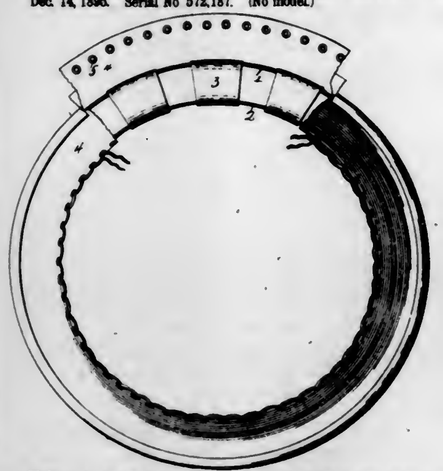
Claim.—1. An outlet provided with an axially-revoluble cap, and a valve in such cap, consisting of several leaves, whereby the opening in the outlet may be placed in different positions and be of different sizes, as set forth.

2. The combination of the axially-revoluble cap, and the valve-frame in such cap provided with the leaves, whereby the opening in the outlet may be placed in different positions and be of different sizes, as set forth.

3. The combination of the ring with the axially-revoluble cap upon such ring, and a valve in such cap, consisting of several leaves, whereby the opening in the outlet may be placed in different positions and be of different sizes, as set forth.

4. The combination of the cap, B, the valve frame, C; the leaves, D, held in such frame; the spring, E, between the cap and frame and having the point, e^3, projecting through a hole in the cap; and the handle, F, the nut, G, of which is provided with the depressions, *g*, as set forth.

574,105. BICYCLE-WHEEL. EDWIN NEILD, Laredo, Tex., assignor of one-half to A. Winslow and Henry Hein, same place. Filed Dec. 14, 1896. Serial No. 572,187. (No model.)

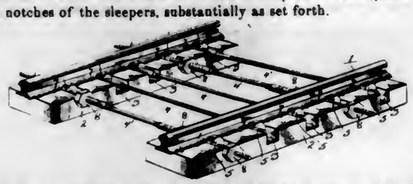


Claim.—1. A rim for bicycles composed of inner and outer sections with an intervening space, elastic bands enveloping the sections at regular intervals, an elastic casing surrounding and secured to the outer section and laced on the under side of the inner section as and for the purpose described.

2. A rim for bicycles composed of inner and outer sections with an intervening space, elastic bands enveloping the section at regular intervals an elastic casing surrounding and secured to the outer section and laced on the under side of the inner section and a band-tire semicircular in cross-section secured to the outer section, as and for the purpose described.

574,106. RAILROAD-TRACK BED. ORLANDO C. NEWSOM, Danville, Ind. Filed Apr. 25, 1896. Serial No. 589,097. (No model.)

Claim.—1. In a track-bed, the rails, sleepers disposed beneath said rails and adapted to support the same, said sleepers having notches formed therein, tie-rods connecting said rails, and oppositely-adjustable clamping-nuts for embracing the rails, said nuts being mounted on each end of said tie-rods and adapted to be disposed in the notches of the sleepers, substantially as set forth.



2. In a track-bed, the rails, sleepers disposed beneath said rails and longitudinally thereof, tie-rods connecting the rails and provided at each of their ends with right and left hand screw-threads, and clamping-nuts mounted on said screw-threads and adapted to embrace the rails, substantially as set forth.

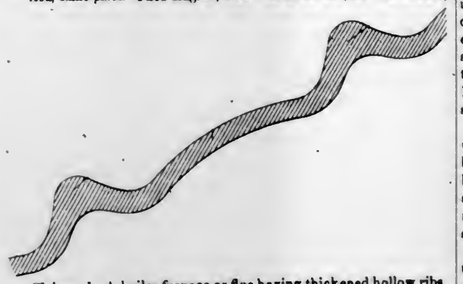
3. In a track-bed, the rails, sleepers disposed beneath said rails and longitudinally thereof, tie-rods connecting said rails and provided at each of their ends with right and left hand screw-heads, the outer threads being of a less diameter than the inner threads, and clamping-nuts provided with grooves adapted to receive the bottom flanges of the rails and hold the same therein, substantially as set forth.

4. In a track-bed, the rails, sleepers disposed beneath said rails and longitudinally thereof, tie-rods connecting said rails and provided at each of their ends with right and left hand screw-threads, the threads at one end being reversely arranged to the threads of the other end, a series of clamping-nuts mounted on said threads and adapted to embrace the rails, and a series of clamping-nuts also mounted on said tie rods and adapted to embrace the sides of the sleepers to hold the rails thereon, substantially as set forth.

5. In a track-bed, a tie-rod having right and left hand screw-threads at each of its ends, the threads at one end being reversely arranged to the threads of the other end, and clamping-nuts mounted on said threads and provided with grooves, said grooves being adapted to receive the rails and hold the same, substantially as set forth.

6. In a track-bed, a tie-rod having right and left hand screw-threads at each of its ends, the threads at one end being reversely arranged to the threads of the other end, a series of clamping-nuts mounted on said threads and adapted to embrace the rails, and a series of clamping-nuts also mounted on said threads and adapted to embrace the sleepers to hold the rails thereon, substantially as set forth.

574,107. STEAM-BOILER FURNACE AND FLUE. JOSEPH NODDER, Sheffield, England, assignor to the John Brown & Company, Limited, same place. Filed Aug. 20, 1896. Serial No. 603,400. (No model.)

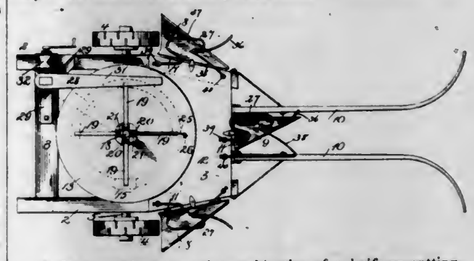


Claim.—1. A boiler furnace or flue having thickened hollow ribs, and arched portions between the ribs, the convexities of said parts being on the water side of the flue and the concavities thereof on the fire side of the flue, substantially as described.

2. A boiler furnace or flue having thickened hollow ribs, arched portions between the ribs, the convexities of said parts being on the water side of the flue and the concavities thereof on the fire side of the flue, curved portions intermediate of and connecting the arched portions to the ribs, substantially as described.

574,108. CORN-HARVESTER. JEPHTHA ODELL, Excelsior Springs, Mo. Filed Apr. 12, 1895. Renewed Nov 6, 1896. Serial No. 611,303. (No model.)

Claim.—1. In a corn-harvester, the combination of a knife or blade having a plate, upon which the cut stalks may be supported, immediately adjacent to its cutting edge, and the stationary collecting-bar, 27 arranged above the said knife or blade and having an outward-projecting portion which directs the corn to the cutting edge of the knife, and another bow-shaped portion situated directly above the said plate of the knife and adapted to support the stalks after they have been cut, substantially as set forth.



2. In a corn harvester, the combination of a knife or cutting-blade, a collecting and supporting bar arranged above the knife and having an outward-projecting arm to direct the stalks against the cutting edge of the knife, and a bow-shaped receiving portion in which the stalks may rest, and a spring arranged to direct the cut stalks to the receiving portion of the said bar, substantially as set forth.

3. In a corn-harvester, a shock-support having hinged radial arms, the arms being arranged at the upper end of the standard and so as to be turned up into a position substantially in line with the post or standard, substantially as set forth.

4. A corn harvester provided with a shock support consisting of a post or standard recessed at its upper end, as at 21, and a plurality of arms, 19, hinged or pivoted to the post, and having their inner ends seated in the said recesses, whereby the said arms may be turned up substantially into line with the post or standard, substantially as set forth.

5. In a corn harvester, a rotary shock-support hinged or pivoted at its lower end, and provided with means for holding it in an upright position, substantially as set forth.

6. In a corn-harvester, the combination with a rotary platform upon which the cut stalks are assembled into a shock, of a shock-support pivoted or hinged to the said platform so as to turn therewith and a hooked brace-rod by means of which the shock-support may be held in an upright position, substantially as set forth.

7. In a corn-harvester, the combination of a rotary platform upon which the cut stalks are assembled to form a shock, a pivoted or hinged shock-support supported by and turning with the rotary platform, means for holding the shock-support in an upright position, and a crane for removing the shock to the ground, substantially as set forth.

8. In a corn-harvester, the combination of a rotary platform upon which the stalks are assembled to form a shock, a shock support consisting of a post or standard hinged or pivoted at or near its lower end to the central portion of the rotary platform, whereby the shock-support turns with the platform, but is free to turn on its pivot when the shock is moved to the ground, and a plurality of hinged arms, 19, and means for removing the shock to the ground, substantially as set forth.

9. In a corn-harvester, the combination with a rotary platform upon which the stalks are assembled to form a shock, a pivoted or hinged shock-support, extensible or adjustable as to its length or height, carried by the said platform, means for holding the shock-support in an upright position, the said shock-support having a plurality of hinged or pivoted arms, 19, and means for removing the shock to the ground, substantially as set forth.

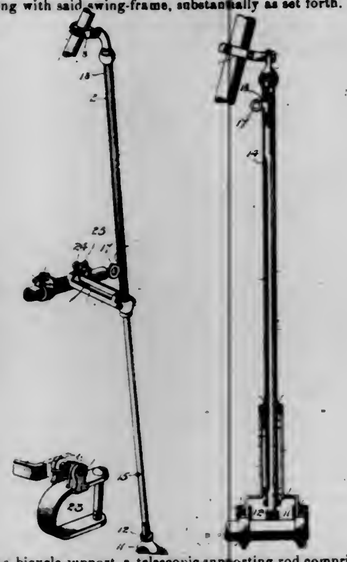
10. In a corn-harvester, the combination of the knife or blade, the collecting or gathering bar, 27, arranged adjacent to the blade and shaped to have an intermediate bow or C-shaped portion situated directly over the blade, and an outward-projecting arm at the end, and a spring, 38, the end of which is arranged opposite to that part of the bar where the said outward-projecting arm joins with the bow portion thereof, substantially as set forth.

574,109. BICYCLE-SUPPORT. ALBERT G. OLSON, West Superior, Wis. Filed Nov. 8, 1895. Serial No. 568,312. (No model.)

Claim.—1. In a bicycle-support, the combination with a telescopic supporting rod having provision whereby it may be hinged at its upper end to the machine-frame and comprising a longitudinally-slotted tubular member and a slide-rod arranged therein, of a swing-frame connected with the machine frame and having a sliding engagement with the supporting-rod, and one or more stops carried by said slide-bar and adapted to cooperate with the swing-frame, substantially in the manner and for the purpose specified.

2. In a bicycle-support, the combination of a slotted tube having provision at its upper end whereby it is adapted to be pivotally connected to the machine-frame, a slide bar or rod adapted to telescope

therein, a pivoted catch carried by said slide-bar and engaging notches in the tube for the purpose described, a swing-frame interposed between the machine frame and said tube, and a stop on the slide-rod coöperating with said swing-frame, substantially as set forth.



3. In a bicycle-support, a telescopic supporting rod comprising a tube having a longitudinal slot and spaced notches communicating with said slot, said tube being adapted to be pivotally connected to the frame of a bicycle, an extension-rod slidingly mounted in said tube, and a spring-actuated catch revolubly mounted on said extension-rod and working in said slot and adapted to turn on the rod so as to engage the notches in the tube, said catch also forming a finger-bold by which the rod may be slid, substantially as described.

4. In a bicycle-support, an extensible supporting-rod connected at its upper end to the machine-frame by a fixed pivot and free at its lower end to swing relatively thereto, in combination with a swing-frame hinged to the machine frame and having a loose sliding engagement with the supporting-rod, said swing-frame having an open free end and being adapted to swing inward with the rod and partially embrace the latter so as to permit said rod to occupy a position entirely within the plane of the machine-frame, substantially as described.

5. In a bicycle-support, the combination with the frame of a bicycle, of a tube connected at its upper end thereto by a fixed pivot, a rod sliding in said tube, a swing-frame having pivotal connection with the machine-frame, a collar swiveled on said swing-frame and having a sliding engagement with said rod, a spring located at the pivotal connection between said frames and adapted to move the swing frame downward, and a projection on the rod for lifting the swing-frame, substantially as described.

6. In a bicycle-support, the combination with the bicycle-frame, of an extensible supporting-rod hinged at its upper end thereto and provided at its lower extremity with a foot-piece adapted to engage or partially embrace one of the rear-fork members or bars of the machine-frame when said rod is in its folded position, in combination with a swing-frame interposed between and having connection with the machine-frame and supporting-rod, and adapted when swung inward, to receive and partially embrace the rod so as to permit the foot-piece to engage the frame, substantially as and for the purpose described.

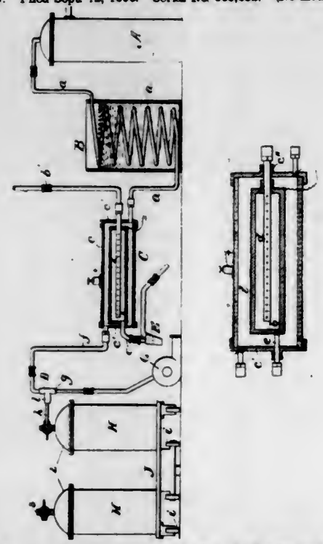
7. In a bicycle-support, a tube and means for pivotally attaching said tube to the frame of a bicycle, a rod sliding in said tube and means for retaining the rod in different positions vertically in the said tube, and a connecting member pivotally attached by one end to said rod, and by its other end attached to the frame of the bicycle.

574,110. SPIRIT-LEVEL. ROBERT L. PHEARS, Kansas City, Mo. Filed Oct. 25, 1895. Serial No. 566,853. (No model.)

Claim.—A spirit-level having a body or frame provided with lateral sight-openings, a swinging bubble-glass-supporting bar 15 provided at one end with a cross-head 16 which is pivoted at one extremity, as at 17, a terminally-exposed adjusting-screw threaded in the other extremity of the cross-head, a parallel sided fixed guide 23 in which the free extremity of the supporting bar opposite to said cross head operates, to prevent lateral deflection and vibration, and a terminally-exposed set-screw 21 threaded in one side of said guide and impinging at its extremity against the side of the supporting-bar to lock the latter at the desired adjustment, substantially as specified.



574,111. PROCESS OF AND APPARATUS FOR PURIFYING, RECTIFYING, AND DEODORIZING ALCOHOLIC OR OTHER LIQUIDS. MARSHALL PRIDHAM, Philadelphia, Pa., assignor, by direct and mesne assignments, to the Electric Rectifying and Refining Company, Camden, N. J. Filed Sept. 12, 1896. Serial No. 605,632. (No model.)



Claim.—1. As an improvement in the art of aging and rectifying alcoholic liquids, &c., the herein-described process consisting in first removing the air from said liquids, contained in suitable vessels, and then intimately mixing substantially pure ozone gas with said liquids, substantially as specified.

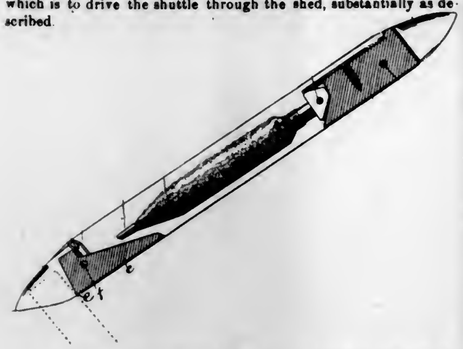
2. As an improvement in the art of aging and rectifying alcoholic liquids &c., the herein described process consisting in placing the liquids in a suitable vessel and exhausting the air therefrom, generating substantially pure ozone gas by the action of an electric brush-discharge, and then introducing into said liquid substantially pure ozone gas thus generated, substantially as specified.

3. As an improvement in apparatus for aging and rectifying alcoholic liquids, the combination with a vessel for holding the liquid, provided with a gage for indicating the liquid-level in the vessel and a thermometer in said gage for indicating the temperature of the liquid, of a fluid-conveyer located in the said vessel and arranged to be covered by the liquid, a discharge leading from said fluid-conveyer, and an inlet thereto adapted to be connected to a supply-pipe of a heating or cooling medium, an inlet-pipe for the liquid provided with a valve, and adapted to be connected to an ozone-supply pipe and the suction-pipe of a vacuum apparatus, substantially as described.

4 As an improvement in apparatus for aging and rectifying alcoholic liquids, the combination of a suitable vessel for holding the liquid provided with a suitable inlet and mounted upon a movable platform or truck, of an ozone-supply pipe, leading from a source of ozone, and an air exhaust pipe leading from an air-exhausting device, the said pipes being supported in position to be connected with the inlet of the vessel, said pipes adapted to be alternately connecting the vessel with the air-exhaust pipe and the ozone-supply pipe, substantially as and for the purposes specified.

574,112. SHUTTLE. JAMES RAILTON, New Bedford, Mass., assignor to the Northrop Loom Company, Saco, Me., and Hopedale, Mass. Filed Aug. 6, 1896. Serial No. 601,837. (No model.)

Claim.—1. A loom-shuttle composed of a body, and pointed U-shaped guards applied to its ends, said guards having each an inclosed recess, and blunt non-metallic buffers located in said recess back of the points of said guards and adapted to receive the blow which is to drive the shuttle through the shed, substantially as described.



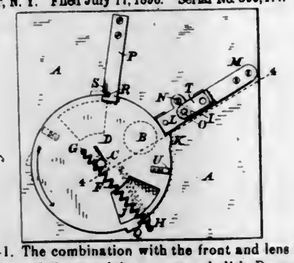
2. A loom shuttle composed of a body, and U-shaped guards applied thereto at the ends of said body, said guards being provided each with points and inclined ends located at different distances from said point, combined with non metallic buffers located in said shuttle-body and having their ends exposed within said guards and adapted to receive the blow of the picker stick or actuator, substantially as described.

3. A shuttle having a blunt non metallic buffer to receive the blow of a flat stick or actuator, and provided at its end with an overlapping pointed guard chambered to allow the passage of the stick or actuator through it when striking the buffer, substantially as described.

4. A shuttle-body, and a U-shaped chambered guard presenting arms and an intermediate connecting-neck, combined with a non-metallic buffer located in the shuttle-body between said arms, and presenting a substantially blunt or flat surface to receive the blow which is to send the shuttle through the shed, substantially as described.

5. A shuttle-body having a blunt end, and a buffer-receiving notch or opening, and a pointed U-shaped guard having arms to enter the body, and shoulders to rest against the ends of said body, the neck of said guard being at the upper side of the said shuttle, combined with a buffer placed in said notch or opening, and having one of its ends exposed in one of said guards, substantially as described.

574,113. PHOTOGRAPHIC SHUTTER. JOHN A. ROBERTSON, Rochester, N. Y. Filed July 17, 1896. Serial No. 599,477. (No model.)



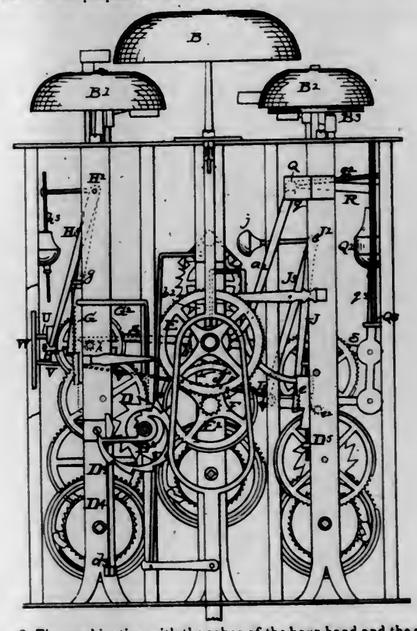
Claim.—1. The combination with the front and lens of a photographic camera, of the revolving apertured disk D, provided with lugs K and Q, the spring F, eccentrically pivoted at G to the disk, the movable catch L, and the elastic notched strap P, substantially as described.

2. The combination with the front and lens of a photographic camera, of the revolving apertured disk D, provided with lugs K and Q, and arm U the spring F, eccentrically pivoted at G to the disk, the movable catch L, and the detent T, substantially as described.

574,114. REPEATING MECHANISM FOR CLOCKS. CHARLES M. SAFFORD and WILLIAM M. ROSS, Cleveland, Ohio. Filed Sept. 11, 1895. Serial No. 562,220. (No model.)

Claim.—1. In a clock mechanism, the combination with the pull-rods U and V, joined to the bar W, and the locking-levers H^3 J^3; of the electromagnet X, adapted to pull said rods U and V, for unlocking and releasing the striking-trains from a distance and at irregular intervals, substantially as described.

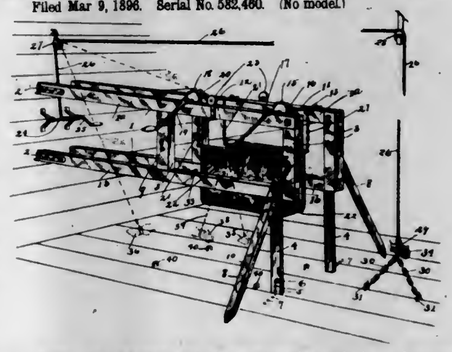
2. The combination with the arbor of the hour-hand, of the cam *a*, gear *b* and snail c, the gear-wheel E, pinion E^2, gear-wheel F, pins *f* on said wheel F, star-wheel D and snail D^2, adapted to operate as and for the purpose set forth.



3. The combination with the arbor of the hour-hand and the snail thereon, lever a^3, lever c^3, carrying the weight Q^3, angle-lever R, said levers supported by rock-shaft Q, push-rods S. and T, attached to lever R, adapted for unlocking the striking-trains, substantially as described.

4. The combination of the lock-levers H and J, having hooks engaging with the teeth of the rack-frame and the rack-plate respectively, and supported by the rock-shafts H^2 and J^2, respectively, levers H^3 and J^3, also supported by said rock-shafts respectively, the push-rods S and T, pivotally attached to the angle-lever R, pull-rods U and V, having hooks engaging with the hooks on the levers H^3 and J^3, and attached to the armature bar W, and adapted to pull the levers H^3 and J^3 by the application of an electric current, substantially as described and for the purpose set forth.

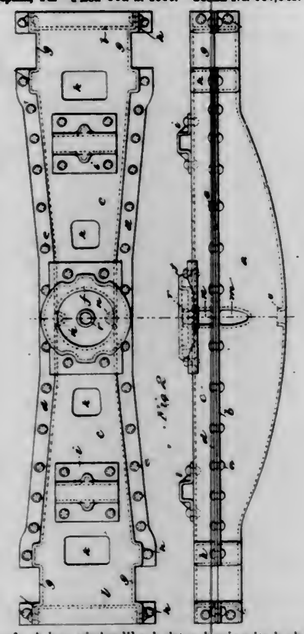
574,115. SHOEING-RACK. ANDREW C. SCHODORF, Galloway, Ohio. Filed Mar 9, 1896. Serial No. 582,460. (No model.)



Claim.—In a shoeing-rack the combination with the rack-frame sections having their inner ends hinged to a building-frame at opposite points and adapted to be supported at right angles from said building-frame or against the same, legs 4 extending from said rack-frame sections, said legs having an adjustable and detachable connection with the building floor and brace-arms 8 adjustably connected with said rack-sections, of removable shafts journaled on said rack-sections,

chains depending from said shafts and an apron supported from said chains, substantially as and for the purpose specified.

574,116. BOLSTER FOR RAILWAY-CARS. CHARLES T. SCHORR, Philadelphia, Pa. Filed Oct. 2, 1896. Serial No. 607,643. (No model.)



Claim.—1. A box-girder-like bolster, having its body composed of a lower portion deepest at its center and tapering thence toward its ends, and a top portion, these two portions having longitudinal outward projections which are united by rivets, substantially as described.

2. A box-girder-like bolster, having its body composed of a lower member deepest at its center and tapering thence toward its ends and having its upper longitudinal edges flanged or projected outwardly, and a top member also having its lower edges provided with outward lateral projections or flanges, the flanges of the two members being riveted together, substantially as described.

3. A bolster having its ends indented at their sides, and provided with parallel adjacent shoulders, forming integral guides for the bolster-columns, substantially as described.

4. A bolster formed substantially as a box-girder, and comprising two members riveted together, and having lateral indentations at their center, substantially as described.

5. A pressed-steel bolster, composed of a trough-like bottom member deepest at its center and tapering thence toward its ends, and having longitudinal outwardly-projecting flanges along the sides of its upper edges, and a top member having complemental lateral projections riveted to such flanges, substantially as described.

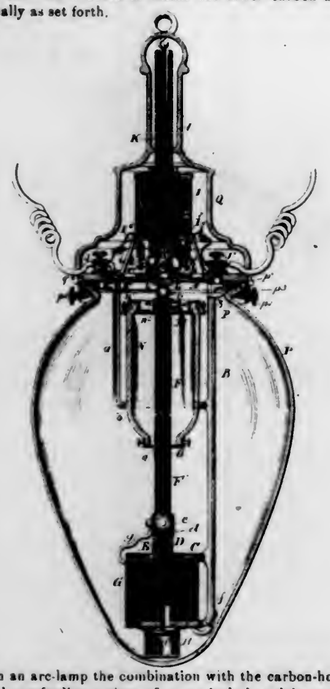
574,117. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C. Filed June 30, 1896. Serial No. 597,612. (No model.)

Claim.—1. In an arc-lamp, the combination with its carbons and means for retaining them slightly separated when no current is passing through the lamp, of means for automatically bringing the carbons into contact and means for separating them very slightly when current is sent through the lamp and means for slowly and gradually separating the non-feeding carbon from the feeding carbon and thereby slowly drawing the arc to any desired length, substantially as set forth.

2. In an arc-lamp, the combination with the lower and non-feeding carbon, of means for slowly and gradually separating it from the upper and feeding carbon and thereby drawing an arc of any desired length, of means for permitting of the quick upward movement of the lower carbon when the arc is extinguished, substantially as set forth.

3. In an arc-lamp, the combination with its carbons, of an arc-inclosing globe constructed and arranged to be fed downward with the upper carbon, and provided with a cover at its lower end within which the lower carbon snugly fits, substantially as set forth.

4. In an arc-lamp the combination with the carbon-holder and the upper and lower carbons, of an arc-inclosing globe connected with and suspended from the carbon-holder, said globe being provided at its lower end with a cover in which the lower carbon snugly fits, substantially as set forth.



5. In an arc-lamp the combination with the carbon-holder, and lower and non-feeding carbon, of an arc inclosing globe and feeding carbon, suspended from the carbon-holder by a universal joint, said globe being provided with a cover on its lower end having an opening in it through which the lower carbon passes, substantially as set forth.

6. In an arc-lamp the combination with the carbon-holder, lamp-floor and annular valve encircling the carbon holder and seating upon the lamp-floor, of a ring-clamp located over and adapted to rest upon said annular valve, substantially as set forth.

7. In an arc-lamp the combination with its carbons of an arc-inclosing globe suspended from its upper end, whereby its lower end is adapted to move laterally in any direction, the lower end of the globe being provided with a cover having an opening through which the lower carbon passes, substantially as set forth.

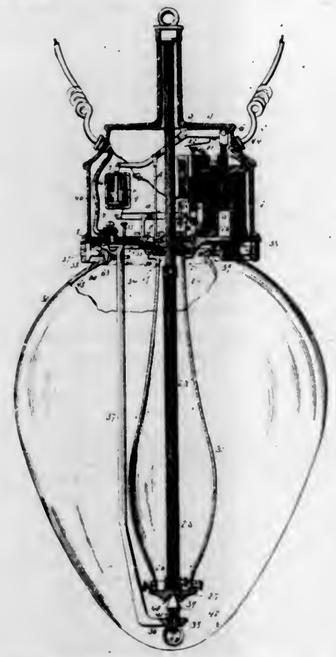
574,118. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C. Filed July 11, 1896. Serial No. 598,879. (No model.)

Claim.—1. In an arc-lamp, the combination with its carbons, and means for causing the carbons to be separated by a slow and gradual movement until an arc of normal length has been established, of means for automatically releasing the regulating mechanism from the action of such retarding mechanism and causing the feeding carbon to be sensitively adjusted and fed until consumed, substantially as set forth.

2. In an arc-lamp, the combination with the feeding carbon, means for retarding its initial separating movement, and means for checking its action while the lamp is burning an arc of normal length, of means for automatically releasing the feeding carbon from the action of its retarding mechanism and subjecting it to the action of its checking mechanism, substantially as set forth.

3. In an arc-lamp the combination with its feeding carbon and means for slowly and gradually separating it from the non-feeding carbon and slowly drawing the arc to any desired length, of means for automatically relieving the regulating mechanism from the action of such retarding mechanism and means for adjusting the clutch-tripping mechanism, so as to insure the sensitive adjustment and feed of the carbon, and maintain an arc of predetermined length, substantially as set forth.

4. In an arc-lamp, the combination with its feeding carbon, means for slowly and gradually separating the feeding carbon from its mate and slowly drawing the arc to any desired length, and means for slightly checking the movement of the feeding carbon while the lamp is burning a normal arc, of means for automatically relieving the regulating mechanism from the action of such arc-drawing retarding mechanism, and means for automatically adjusting the clutch-tripping floor or device, to insure the maintenance of a normal arc, substantially as set forth.



5. In an arc-lamp, the combination with means for retarding the movement of the feeding carbon in establishing an arc of normal length, and an adjustable feed releasing mechanism, of an electromagnet for automatically and simultaneously throwing the said retarding mechanism out of operation and the adjustable carbon-feeding mechanism into position when the arc has been drawn to its desired length, substantially as set forth.

6. In an arc-lamp the combination with its feeding carbon and regulating mechanism for establishing the arc and feeding the carbon, of a dash-pot constructed to retard the separation of the carbons in establishing the arc and render such separating movement slow and gradual, and means for automatically relieving the regulating mechanism of such arc-drawing retarding mechanism, when the arc shall have been drawn to its normal length, substantially as set forth.

7. In an arc-lamp, the combination with the feeding carbon, and a dash-pot for retarding and controlling the movement of the carbon in drawing and in regulating the arc, of an electromagnet for automatically varying the degree of retardation of the dash pot, substantially as set forth.

8 In an arc-lamp the combination with its feeding carbon and electromagnet-regulating mechanism, of a dash-pot the cylinder of which is provided with grooves throughout a portion of its length, and means for automatically adjusting the relative positions of the dash-pot cylinder and its piston, and thereby vary the retarding effect of the dash-pot on the action of the regulating mechanism, substantially as set forth.

9. In an arc-lamp the combination with its feeding carbon, and regulating mechanism for establishing the arc and feeding the carbon, of a dash pot constructed to retard the movement of its position throughout a portion of its stroke, and to relieve the piston from a portion of such retarding action throughout the remaining portion of its stroke, and means for automatically varying the position of the cylinder of the dash-pot and its piston, substantially as set forth.

10. In an arc-lamp the combination with a friction-clutch and regulating mechanism adapted to raise the friction-clutch out of contact with the lamp floor in the operation of establishing an arc of normal length, of an adjustable floor or support for the friction-clutch, an electromagnet; means for automatically switching said magnet into circuit when the arc has been drawn to its normal length and causing it to raise the adjustable floor or support, and means for restricting the upward movement of said floor or support and maintaining it in a position to actuate the friction-clutch and insure the gradual feeding of the carbon and the maintenance of an arc of normal length, substantially as set forth.

11. The combination with the regulating mechanism of an arc-lamp, an adjustable floor or support for a ring clamp or friction-clutch, and an electromagnet for lifting said floor or support, of means whereby said electromagnet is retained out of circuit until an arc of normal length has been established and retained in circuit throughout the operation of the regulating mechanism in adjusting and feeding the carbon, substantially as set forth.

12. The combination with the regulating mechanism of an arc-lamp, an adjustable floor or support for a ring-clamp or friction-clutch and an electromagnet for lifting said floor or support, of a contact carried by the regulating mechanism, and a contact carried by the movable portion of the electromagnet, said contacts being constructed and arranged to remain separated until an arc of normal length has been established, and then to be brought into and retained in contact and maintain the electromagnet in circuit throughout the burning of the carbons, substantially as set forth.

13. The combination with the regulating mechanism of an arc-lamp, and an adjustable floor or support for a ring-clamp or friction-clutch, of a shunt-magnet included in a high-resistance circuit around the arc, and means associated therewith for automatically switching the shunt-magnet into circuit and causing it to lift the adjustable floor or support after the arc has been drawn to the desired length, substantially as set forth.

14. The combination with the regulating mechanism of an arc-lamp, a lever, a dash-pot cylinder connected with one of its ends, and a friction-clutch floor or support with its other end, of an electromagnet for tilting said lever and simultaneously adjusting the dash-pot cylinder and the friction-clutch floor or support, substantially as set forth.

15. The combination with the regulating mechanism of an arc-lamp, an adjustable friction-clutch floor or support, and a shunt-magnet, of a contact mounted on a movable portion of the regulating mechanism, and a contact mounted on the movable portion of the electromagnet, one of said contacts being yielding, the parts being arranged to switch the electromagnet into circuit and cause it to lift the floor or support when an arc of predetermined length has been established, and to maintain the magnet in circuit throughout the burning of the carbons, substantially as set forth.

16. In an arc-lamp the combination with its carbons, carbon-holder or carbon-rod, and socket on the lower end of the rod, of an arc-inclosing globe, a seat against which the upper end of the globe snugly fits, an upwardly-spring-pressed support upon which the globe is mounted and a packing snugly encircling the carbon-rod and permanently retained thereon at a point above the socket in which the upper carbon is secured, substantially as set forth.

17. In an arc-lamp the combination with its feeding carbon, carbon rod or holder, arc-inclosing globe constructed and adapted to receive both carbons throughout their maximum length, the non-feeding carbon being secured to the cap upon the lower end of the globe, of an upwardly-spring-pressed support upon which the arc-inclosing globe is supported and by means of which its upper end is pressed against a stationary seat, and packing encircling the carbon rod or holder, substantially as set forth.

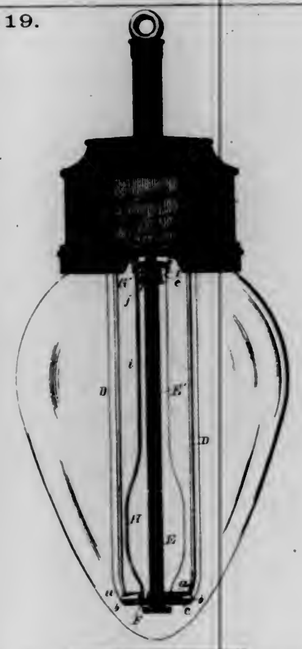
18. In an arc-lamp the combination with its carbons, carbon rod or holder and arc-inclosing globe the latter being constructed to receive both carbons throughout their maximum length, of a cover mounted on the upper end of the globe and provided with a hole through which the carbon-rod passes and within which it snugly fits and an independent annular packing-ring seated on the lamp-floor and encircling the carbon-rod and serving to exclude the entrance of gases to the interior of the casing containing the regulating mechanism.

19. In an arc-lamp the combination with the lamp-floor and a globe provided with an outwardly-flaring flange at its upper end, the upper edge of the flange forming a seat, of a sectional depending flange on the lamp-casing, said flanges being provided with bearings which engage the flange on the globe, and means for contracting the sectional flange and forcing the upper end of the globe against its seat on the under side of the lamp-floor, substantially as set forth.

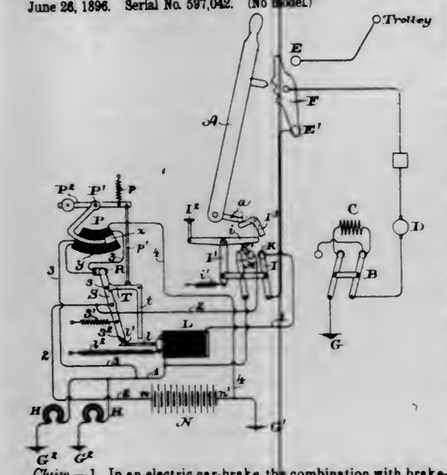
574,119. ELECTRIC-ARC LAMP. HENRY A. SEYMOUR, Washington, D. C. Filed July 18, 1896. Serial No. 599,692. (No model.)

Claim.—In an arc-lamp, the combination with its carbons, and carbon-holder, of an arc-inclosing globe provided with a cover which is mounted upon and supported by the carbon-holder, substantially as set forth.

574,119.



574,120. ELECTRIC CAR-BRAKE. ELMER A. SPERRY, Cleveland, Ohio, assignor to the General Electric Company, of New York. Filed June 26, 1896. Serial No. 597,042. (No model.)



Claim.—1. In an electric car-brake, the combination with brake-magnets, of a storage battery, circuit connections for supplying the magnets and the battery with current from the motor, means for automatically cutting out the battery when the armature current falls below a predetermined potential, and means for connecting the battery with the brake-magnets, as set forth.

2. In an electric brake the combination with brake-magnets, of a storage battery, circuit connections for supplying the magnets and the battery with current from the motor, a shunt around the battery, a high-resistance solenoid in said shunt, and devices controlled by said solenoid for breaking the battery-charging circuit, as set forth.

3. In an electric brake, the combination with brake-magnets, of a storage battery, circuit connections for supplying the magnets and the battery with current from the motor, a self-opening circuit-breaker controlling a battery-charging circuit, a shunt around the battery, and a high-resistance solenoid in said shunt controlling a circuit-breaker, as set forth.

4. In an electric brake, the combination with a brake-magnet, of a storage battery, circuit connections for supplying said magnet and the battery with current from the motor, a self-opening circuit-breaker controlling the battery-charging circuit, a shunt around the battery, a solenoid in said shunt controlling said circuit breaker, and a resetting-solenoid in the motor-circuit, as set forth.

5. In an electric brake, the combination with brake-magnets, of a storage battery, circuit connections for supplying said magnets and battery with current from the motor, a shunt around the battery, a differentially-wound solenoid having one of its coils in said shunt, and a circuit-breaker in the battery-charging circuit controlled by said solenoid, as set forth.

6. In an electric brake, the combination with brake-magnets, of a storage battery, circuit connections for supplying the current to said magnets and the battery from the motor, a circuit-breaker in the battery-charging circuit, a shunt around the battery, a differentially-wound solenoid having one of its coils in said shunt and the other between the motor and the circuit-breaker, and a tripping device for the circuit-breaker actuated by said solenoid, as set forth.

7. In an electric brake, the combination with brake-magnets, of a storage battery, circuit connections for supplying said magnets and battery with current from the motor, a shunt around the battery, a solenoid in said shunt controlling the battery-charging circuit, and means for automatically opening said shunt when the motor is connected with the trolley, as set forth.

574,121. COTTON-PRESS. MAGNUS SWENSON, Chicago, Ill., assignor to the Cotton Ginners Compress Company, Jersey City, N. J. Filed Aug. 24, 1895. Serial No. 560,384. (No model.)



Claim.—1. In a rotary cotton-compress, the combination of three compression-rolls, a bale-core, about which said compression rolls are arranged, said bale-core being smaller than the space between said compression rolls, when in the positions they occupy at the beginning of the baling operation, and means to hold the bale-core, yieldingly, in contact with one of the compression-rolls at the beginning of the baling operation, with desired force, independently of the other compression-rolls, and until the bale becomes large enough to acquire contact with all of the compression-rolls, substantially as described.

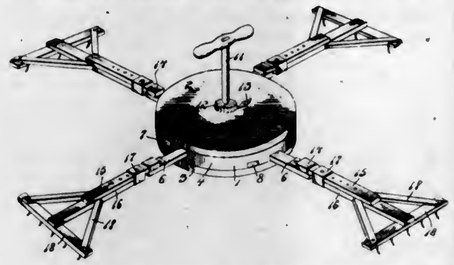
2. In a rotary cotton-compress, the combination of three compression rolls, a bale-core, about which said compression-rolls are arranged, said bale-core being smaller than the space between said compression rolls, when in the positions they occupy at the beginning of the baling operation, and springs applied to said bale-core, whereby it is held, yieldingly, in contact with one of the compression-rolls, at the beginning of the baling operation and until the bale becomes large enough to acquire contact with all of the compression-rolls, substantially as described.

3. In a rotary cotton-compress, the combination of three compression-rolls, a bale core, mounted in sliding bearing-blocks, about which said compression-rolls are arranged, said bale-core being smaller than the space between said compression-rolls, when in the positions they occupy at the beginning of the baling operation, and springs applied to the bearing-blocks of said bale-core, whereby said bale-core is held, yieldingly, in contact with one of the compression-rolls, at the beginning of the baling operation and until the bale becomes large enough to acquire contact with all of the compression-rolls, substantially as described.

4. In a rotary compress, the combination with three compression-rolls, comprising a roll or rolls mounted in sliding bearing-blocks, a bale-core, likewise mounted in sliding bearing-blocks, about which said compression-rolls are arranged, said bale-core being smaller than the space between said compression-rolls, when in the positions they occupy at the beginning of the baling operation, springs applied to the bearing-blocks of said bale-core, whereby said bale core is held, yieldingly, in contact with one of the compression-rolls, at the beginning of the baling operation and until the bale becomes large enough to acquire contact with all of the compression rolls and stops to arrest the forward movement of said movable roll or rolls, when in desired initial position, relatively to the stationary rolls or roll, respectively, substantially as described.

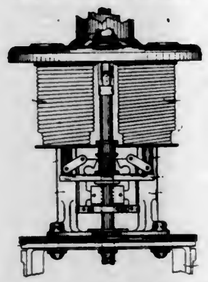
5. In a rotary cotton-compress, the combination of three compression-rolls, comprising two compression-rolls, mounted in stationary bearings and a compression-roll, mounted in sliding bearing blocks, a bale-core likewise mounted in sliding bearing-blocks, about which said compression-rolls are arranged, said bale-core being smaller than the space between said compression-rolls, when in the positions they occupy at the beginning of the baling operation, springs applied to the bale-core, whereby said bale-core is held, yieldingly, in contact with the movable compression-roll, at the beginning of the baling operation, with desired force, independently of the stationary compression-rolls and until the bale, in process of formation, acquires contact with all of said compression-rolls, and stops to arrest the forward movement of the movable roll when in desired initial position, relatively to the stationary rolls, substantially as described.

574,122. CARPET-STRETCHER. CHRISTOPHER C. THOMPSON, Grayson, Ky. Filed Aug. 5, 1896. Serial No. 601,766. (No model.)



Claim.—A carpet-stretcher comprising a casing composed of upper and lower plates having an intermediate rim, said rim provided with two pairs of ways arranged at right angles to each other and in different horizontal planes, two pairs of rack-bars arranged in said ways, the members of each pair extending from opposite sides of the casing, a pinion mounted within the casing and located between the members of both pairs of rack-bars and meshing with and adapted to actuate all of the latter simultaneously, means for operating the pinion and for locking the same against rotation, and carpet-engaging devices connected with the rack-bars, substantially as described.

574,123. ELECTRIC-ARC LAMP. ELIHU THOMSON, Swampscott, Mass., assignor to the General Electric Company, of New York. Filed Aug. 21, 1896. Serial No. 603,448. (No model.)



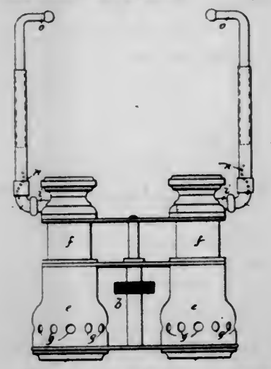
Claim.—1. In an electric-arc lamp, a pair of solenoids for regulating the lamp, and cores connected by a yoke cooperating with the solenoids, in combination with a clutch comprising a pair of levers connected with the cores by toggle-levers, and having portions engaging with the carbon rod; the whole arranged to increase the grip of the clutch as the cores are drawn upward.

2. A clutch for an electric-arc lamp, comprising a frame having levers pivoted therein at one end, toggle-levers connected with the other end of the first levers and also to the solenoid-cores, and a gripping part engaging with the carbon rod and situated nearer the fixed end of the levers than the movable end.

3. A clutch for an electric-arc lamp, comprising a frame to which the lower ends of a pair of levers are pivoted, toggle connections between the solenoid-cores and the upper ends of the levers, a sleeve sliding upon the carbon rod and having projecting portions cooperating with the upper ends of the levers, and a portion of the levers organized to grip the carbon rod.

4. A clutch for an electric-arc lamp, comprising a frame of adjustable length having a pair of levers pivoted at their lower ends therein, the upper ends of the levers connected to the solenoid-cores by links or toggles, and a pair of jaws actuated by the levers for gripping the carbon rod.

574,124. COMBINED OPERA GLASS AND PHONE. GEORGE J. WAINWRIGHT, New York, N. Y., assignor to Walter James Wainwright, same place. Filed Dec. 16, 1895. Serial No. 572,268. (No model.) Patented in France Feb. 7, 1896, No. 253,777.



Claim.—1. The herein-described opera or marine glass having the sound-receiving chamber comprising a series of openings in the lower part of the barrel, a sound-collector in the upper portion of the same, the lens above said sound-collector forming a diaphragm, and an ear tube extending outwardly from the upper portion of said barrel for the purpose set forth.

2. An opera or marine glass having the lens in the lower portion of the barrel, the sound-receiving openings above said lower lens, a sound-collecting chamber in the upper portion of the same, the lens above said sound-collector forming a diaphragm, and an ear-tube extending outwardly from the upper portion of the barrel below the upper lens or diaphragm and adjustably secured to and communicating with said barrel as set forth.

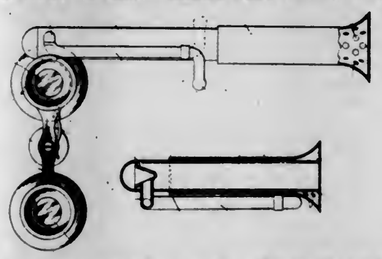
3. The combination with an opera-glass having the usual lens in its bottom, the sound-receiving openings above the same, a sound-collecting chamber in the upper portion of the barrel below the top lens, the said upper lens serving as a diaphragm, and an ear-tube communicating with the upper portion of said barrel at a point below the top lens thereof and adapted to enter the ears of the operator, as set forth.

4. The herein described opera glass and phone having two or more lenses, the upper lens acting as a deflector, the interposed diaphragm between said lenses, the sound receiving and conveying chambers, and an ear-tube connection, for the purpose set forth.

5. The herein-described opera or like glass having the sound-receiving chamber in its lower part, the conveying-chamber in its upper portion, the upper lens acting as a deflector, a tube connected to the conveying-chamber formed in telescopic sections, and a spring arranged within said tube for the purpose set forth.

6. An opera or like glass having the sound-receiving chamber in its lower section, a sound-conveyer in its upper portion, the upper lens acting as a deflector, the ear-tube attachment, the latter being constructed in telescopical sections and adapted to fold to the length of the glass, as described.

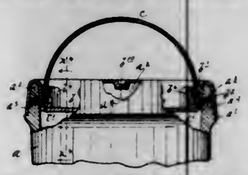
574,125. HANDLE AND PHONE ATTACHMENT FOR OPERA-GLASSES. GEORGE J. WAINWRIGHT, New York, N. Y., assignor to Walter James Wainwright, same place. Filed Dec. 16, 1895. Serial No. 572,269. (No model.) Patented in France Feb. 7, 1896, No. 253,778.



Claim.—1. A handle for opera-glasses forming an ear-trumpet comprising a sound-receiver in its lower portion, a sound collector and transmitter in its upper portion, ear attachments, and a clamp to embrace the barrel of the glasses, as set forth.

2. An attachment for opera or like glasses comprising a handle made in telescopic sections and adapted to be used as an ear trumpet, said handle being provided with a clamp to grip the barrel of said glass, and having a reversible support whereby either hand may be used to hold the glass to the eye substantially as set forth.

574,126. BUTTER JAR. ADDISON M. WYATT, Minneapolis, Minn.
Filed July 28, 1896. Serial No. 600,757. (No model.)



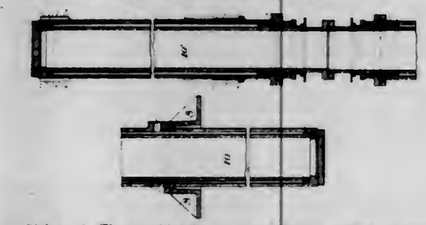
Claim.—1. The combination with a vessel and its cover, of a spring-bail operative to lock and unlock said parts, and a cam lug or lugs located in the path of said bail and to one side of its pivots, whereby said bail will be unlocked or disengaged when turned down on one side, but will be left in engagement with said vessel when raised or when turned down on the other side of said vessel, substantially as described.

2. The combination with a vessel and its cover, of a spring-bail operative to lock and unlock said parts, cam-lugs in the path of the bail for disengaging the same from the vessel, at some point in its pivotal movement, to unlock the cover, and stop-lugs operative, at other points of the bail's pivotal movement, to hold the same in engagement with the vessel, for locking the said parts together, substantially as described.

3. The combination with a vessel and its cover, of a spring-bail operative to lock and unlock said parts, the cam-lugs b^5 secured to the cover and operative to throw the bail into its unlocking position, and the stop-lugs b^6 also secured to the cover and operative to hold the bail in its locking position, with the said lugs b^5 and b^6 arranged to overlap and afford the passages b^7 and b^8, substantially as and for the purposes set forth.

4. The combination with the vessel a having the external collar a' and the externally-beveled rim a^3 provided with the bail-eyes a^4, of the cover composed of the parts b, b' b^3, as described, having the bail-eyes b^4, the spring-bail c, c', the cam-lugs b^5 secured to the cover, and the stop-lugs b^6 also secured to the cover, with said lugs b^5 and b^6 so related as to overlap and have clearance-passages b^7 and b^8, all for cooperation substantially as described.

574,127. HOISTING APPARATUS. HENRY AIKEN, Pittsburg, Pa.
Filed Mar. 25, 1896. Serial No. 584,786. (No model.)



Claim.—1. The combination of a stationary cylinder, a second movable cylinder of substantially as great area in line with it and connected with a common fluid-supply, and a connecting movable plunger; substantially as described.

2. The combination of a stationary cylinder, a second movable cylinder of substantially as great area in line with it and connected with a common fluid supply, and a connecting movable hollow plunger; substantially as described.

3. The combination of a stationary cylinder, a second movable cylinder of substantially as great area in line with it and connected with a common fluid supply, and a connecting movable plunger contained within the cylinder; substantially as described.

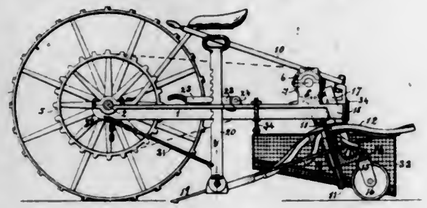
4. A fluid-motor composed of a series of three vertical cylindrical parts interfitting with each other, the two upper cylindrical parts being movable and the middle part fitting both the others on the same side as distinguished from fitting outside one part and inside the other part.

5. The combination of a stationary cylinder, a second movable cylinder of substantially as great area in line with it and connected with a common fluid-supply, a connecting movable plunger, said cylinders being set in upright position, a guide-frame or mast, and a platform carried by the upper cylinder; substantially as described.

6. The combination of a stationary hydraulic cylinder, a second movable cylinder in line therewith, a connecting-plunger which is also movable, said cylinders being set in upright position, and a frame carried by and depending from the upper cylinder and having a projecting platform; substantially as described.

7. The combination of a stationary hydraulic cylinder, a second movable cylinder in line therewith, a connecting-plunger which is also movable, said cylinders being set in upright position, a guide-frame or mast, and a frame which is carried by the upper cylinder and comprises a cross-beam fixed to the upper end of said cylinder and diagonal braces extending therefrom to a lower portion thereof; substantially as described.

574,128. POTATO-DIGGER. EDWARD R. ALLEN, Corning, N. Y.
Filed Mar. 21, 1896. Serial No. 584,335. (No model.)



Claim.—1. In a potato-digger, a plow-point provided with independent vertical and angular adjustments, in combination with a reel of the form described at the rear thereof upon an inclined shaft, the location of the reel being such that its periphery just clears the rear edge of the plow-point, its inclination being approximately that of the plow-point, and means for adjusting the reel upon the shaft to preserve this relation of the parts whatever may be the required vertical or angular adjustment of the plow-point.

2. In a potato-digger, the combination of a plow-point, standards for supporting said plow-point depending from the frame of the machine, couplings between the plow-point and the feet of the standards whereby the point is held at any desired angular adjustment, means for adjusting the standards vertically, a rearwardly-inclined shaft depending from the frame and adapted to be driven by the wheels of the machine, and a reel upon the shaft provided with a flat ring or rim fastened to its arms at their outer extremities, said reel being close to the rear of the plow-point and being also adjustable upon its shaft in order that its rim may be set approximately in line with the top of the plow-point whatever may be the required angular or vertical adjustment of the point.

3. In a potato-digger, the combination of an adjustable plow-point supported from the frame of the machine, an inclined reel at the rear of the plow-point mounted upon a rearwardly-inclined shaft, a wheel-truck for supporting the rear portion of the machine beneath the reel, a strap fastened to the wheel-truck and extending outward on either side of the reel thence upward around the reel and having its end portions passed through slots on either side of the frame, and means for holding the reel and wheel-truck in proper adjustment to conform with the adjustment of the plow point.

4. In a potato-digger, a reel-shaft inclined rearwardly from the rear of the machine, a hub loose upon the shaft beneath the reel-head, an arm extending backward from the hub, a yoke pivoted to the arm, a small wheel in the yoke, and a strap fastened to the arm and extending outward to either side of the reel thence upward around the reel and having its ends passed freely through slots on either side of the frame, all combined substantially as shown and for the purpose set forth.

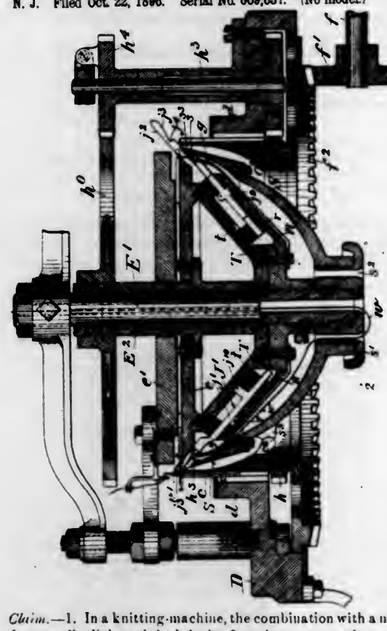
5. In a potato digger, the combination of a main shaft driven by the forward wheels of the machine, a counter-shaft driven by the main shaft, two bevel-gears on the counter-shaft, means for shifting the gears, a third shaft rearwardly inclined and provided with a pinion to mesh with one or the other of the gears on the counter-shaft, a reel of the form described on the inclined shaft, an adjustable wheel-truck for supporting the rear of the machine beneath the reel, a plow-point supported by standards in front of the reel, means for adjusting the plow-point vertically and angularly and the reel relatively thereto in the manner and for the purpose described, and a suitable frame by which all the parts are supported and connected substantially as shown and described.

6. In a potato-digger, a screen adapted to be hung at one side of the machine to receive the potatoes from the reel, said screen consisting of a vertical portion and a turned-over portion at the bottom having a backward slant to form a chute, the vertical portion being

provided with hinged couplings at its top whereby the entire screen may be turned up out of the way when not in use.

7. In a potato digger, a screen adapted to be hung at one side of the machine to receive the potatoes from the reel, the lower portion of the screen being turned over with a backward slant to form a chute, and the chute being broad and shallow forward and growing gradually narrower and deeper toward the rear, substantially as shown and for the purpose set forth.

574,129. KNITTING-MACHINE. DAVID C. BELLIS, Elizabeth, N. J.
Filed Oct. 22, 1896. Serial No. 609,637. (No model.)



Claim.—1. In a knitting-machine, the combination with a needle-cylinder, needle-dial, and jack-bed, of a ring supported centrally within the machine and having its peripheral edge between the edges of the needle-dial and needle-cylinder, substantially as and for the purposes set forth.

2. In a knitting-machine, the combination with a needle-cylinder, needle-dial and jack-bed, of a ring supported centrally within the machine and having its upper peripheral edge notched for the reception and guidance of jacks slidingly held in said jack-bed, substantially as and for the purposes set forth.

3. In a knitting-machine, the combination with a needle-cylinder, needle-dial, jack-bed, needles, jacks and cams therefor, of a ring supported centrally within the machine and having its upper peripheral edge between the edges of the needle-dial and needle-cylinder, said upper ring edge provided with a rounded-off rim and notches for the reception and guidance of jacks slidingly mounted in the said jack-bed, substantially as and for the purposes set forth.

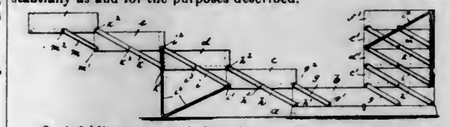
4. In a knitting-machine, the combination with a needle-cylinder, needle-dial, jack bed, needles and jacks therefor and means for operating the same, of a ring supported on a hollow spindle held centrally within the machine, thread-holes in the lower part of the ring, said ring having its upper peripheral edge notched and rounded off on the inner side, substantially as and for the purposes set forth.

5. A knitting-machine for producing ribbed knit fabrics, having two sets of needles and cams therefor, jacks or loopers operated by cams to bring an extra thread from the inside of the machine over certain of the needles, in combination with a ring supported centrally within the machine, substantially as and for the purposes set forth.

574,130. FOLDING SAMPLE-CASE. HENRY BRAEN, Paterson, N. J.
Filed Aug. 10, 1896. Serial No. 602,255. (No model.)

Claim.—1. A folding case consisting of a base-compartment, series of separate compartments of uniform size—but of half the area of the base-compartment—arranged on said base-compartment and on each side of the center thereof and pivotally connected therewith, and means for pivotally connecting the separate compartments of each series, substantially as and for the purposes described.

2. A folding case consisting of a base-compartment, and of two series of separate compartments arranged on said base compartment, a series of parallel arms pivotally connecting the separate compartments of each series, and arms pivotally connecting the lowermost compartments of each series with the said base compartment, substantially as and for the purposes described.

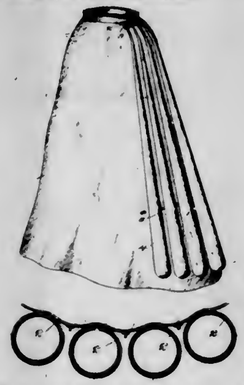


3. A folding case consisting of a base-compartment, a series of separate compartments arranged one above the other and on said base-compartment, a series of parallel arms on each side of, and pivotally connecting the said separate compartments, arms pivotally connecting the lowermost compartment of said series with the said base-compartment, and a leg on each side of the separate compartments and arranged on one of the parallel arms, all said parts, substantially as and for the purposes described.

4. A folding case consisting of a base-compartment, and of two series of separate compartments arranged on said base-compartment and pivotally connected therewith and between each other, and a cover arranged over said separate compartments and the base-compartment and removably connected therewith, all said parts, substantially as and for the purposes described

5. A folding case consisting of a base-compartment, a series of separate compartments arranged one above the other and on said base-compartment and pivotally connected therewith, a series of parallel arms pivotally connecting said separate compartments, a leg on each side of said separate compartments and arranged on one of said arms, and a cover on all of said compartments and removably connected with the base-compartment, all said parts, substantially as and for the purposes described.

574,131. SKIRT-DISTENDER. HARRY W. BURY, Frankfort, Ind., assignor of one-half to Charles Amos and N. S. Moore, same place.
Filed Aug. 8, 1896. Serial No. 602,112. (No model.)

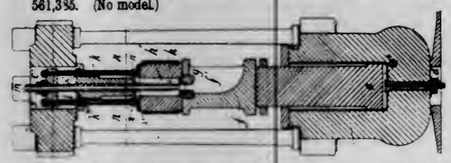


Claim.—1. The combination with a supporting-garment of a series of tapered sheaths of flexible material attached to the garment and open at their reduced ends contiguous to the waistband of the garment, and tapered pneumatically-inflatable tubes incased in said sheaths and having inlet tubes extending through the openings at the reduced ends of the sheaths, to facilitate inflation, substantially as specified.

2. The combination with a supporting-garment, of tapered sheaths of flexible material permanently attached exteriorly to the said garment and extending from the waistband approximately to the lower edge thereof, and tapered pneumatically-inflatable tubes arranged within the sheaths and provided with exposed means of inflation, substantially as specified.

3. A distending device for dress-skirts comprising tapered flexible sheaths adapted to be carried by the supporting-skirt and arranged at intervals with their reduced extremities contiguous to the waistband, inflatable tubes fitted in said sheaths and having extended and reduced upper extremities adapted to project through the open upper ends of the sheaths, said reduced extensions of the tubes being adapted to be folded or bent upon themselves to retain contained air, and a tie for securing said extension in its folded position, substantially as specified.

574,132. HYDRAULIC PRESS FOR COVERING CABLES WITH LEAD. DAVID CARLIN, Bellevue, Pa. Filed Sept. 4, 1895. Serial No. 561,335. (No model.)

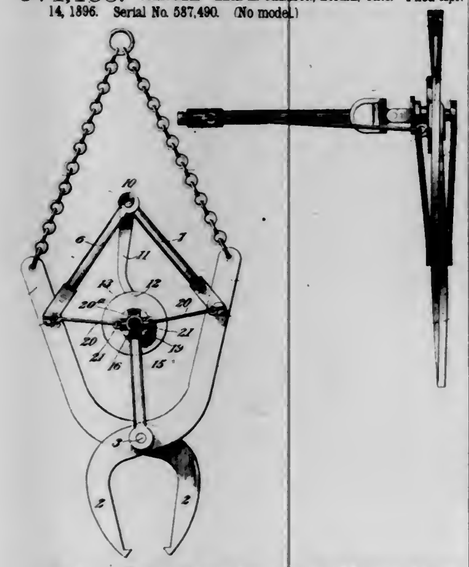


Claim.—1. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead-cylinder piston supported by the top plate, a ram carrying the lead-cylinder, and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, substantially as set forth.

2. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead-cylinder piston supported by the top plate, a ram carrying the lead-cylinder and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, the columns connecting the yoke and lead-cylinder resting upon the top of the cylinder and passing through openings in the top plate of the lead-cylinder piston, substantially as set forth.

3. In a hydraulic press for covering wire cables with lead, the combination of a press-frame having a central opening in its top plate, a lead cylinder piston supported by the top plate, a ram carrying the lead cylinder, said lead-cylinder piston having a seat at the lower end thereof, a bushing with a lip extending therefrom into said seat, and a yoke supported by the lead-cylinder within the body of the top plate and carrying a hollow core-bar passing down through the lead-piston into the lead-cylinder, substantially as set forth.

574,133. GRAPPLE. LARS H. CARLSON, Lorain, Ohio. Filed Apr. 14, 1896. Serial No. 587,490. (No model.)



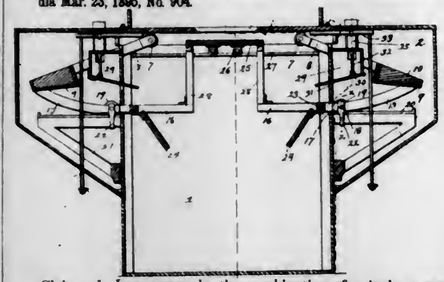
Claim.—1. The combination with a pair of tong-levers and their pivot, of the two members of a toggle-joint, pivotally united to each other and to the tong members, respectively, and of a length sufficient to cause them to maintain an angle with respect to each other at the farthest limit of expansion of the tong-levers, an oscillatory member operatively connected with the tong-levers, an arm pivotally united to the pivot-pin of the toggle-joint members, and eccentrically pivoted to the oscillatory member, and means for imparting motion to the oscillatory member, substantially as and for the purpose specified.

2. The combination with a pair of tong-levers and their pivot, of a pair of toggle-joint members pivotally united to each other, and to the tong-levers, respectively, arms loosely secured at one end to the pivot which unites the tong-levers, an oscillatory member pivotally secured to said arms between the tong-pivot and the toggle-joint pivot, and an arm eccentrically pivoted to the oscillatory member at one end and pivotally united at the other end to the toggle-joint pivot-pin, and means for actuating the oscillatory member, substantially as set forth.

3. The combination with a pair of tong-levers and their pivot, of a pair of toggle-joint members pivotally united to each other and to the tong-levers, respectively, an oscillatory member pivotally confined between the tong-lever pivot and toggle-joint pivot, an arm eccentrically pivoted to the oscillatory member and pivoted to the toggle-joint pivot, and means for actuating the oscillatory member, substantially as set forth.

4. The combination with a pair of tong-levers and their pivot, of a pair of toggle-joint members, pivotally united to each other and to the tong-levers, respectively, arms movably secured at one end to the pivot which unites the tong-levers, and pivotally supporting at their opposite ends an oscillatory member, and a curved arm eccentrically pivoted to the oscillatory member at one end, and pivotally united at the other end to the pivot pin of the toggle-joint members, and means for actuating the oscillatory member, substantially as set forth.

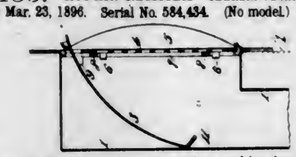
574,134. COMMODE. EDMUND L. CHALKE, Cocanada, India. Filed July 21, 1896. Serial No. 600,037. (No model.) Patented in India Mar. 23, 1895, No. 904.



Claim.—1. In a commode, the combination of a body, a vertically-movable seat, a box adapted to receive sand, a valve, for controlling communication between said box and the interior of the body, connected with the seat, a lever fulcrumed at an intermediate point of its length and having a weight at one end and its opposite end arranged beneath the seat, a frame connected with the weighted end of the lever and extending through a wall of the body, a flap connected in a hinged manner with said frame, tracks arranged in the body and a shutter movable on the tracks and connected with the said frame, substantially as specified.

2. In a commode the combination of a body, a vertically-movable seat, boxes adapted to receive sand, valves, for controlling communication between said boxes and the interior of the body, connected with the seat, valves, for controlling communication between a source of supply and the boxes, also connected with the seat, levers fulcrumed at an intermediate point of their length and having weights at their outer ends and their opposite ends arranged beneath the seat, frames connected with the weighted ends of the levers and extending through opposite walls of the body and provided with wheels, bracket-supports connected to the body and arranged beneath the frames and having tracks for the wheels thereof, links connecting the frames and the weighted ends of the levers, flaps connected in a hinged manner with said frames, tracks arranged in the body, and shutters movable on the tracks and connected with the frames, substantially as specified.

574,135. HOT-AIR REGISTER. CHARLES CLEAR, St. Louis, Mo. Filed Mar. 23, 1896. Serial No. 584,434. (No model.)



Claim.—1. In a hot-air register, the combination of a face-plate provided with a slot along the upper side, and a hood arranged to cover the register and to slide through the slot upon opening the register; substantially as set forth.

2. In a hot-air register, the combination of a face-plate provided with a slot along its upper side, and a hood arranged to cover the register and to slide through the slot upon opening the register, the arrangement being such that the hood acts as a deflector when moved to its inner position; substantially as set forth.

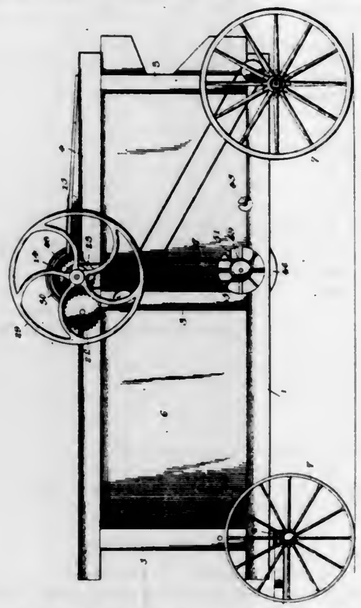
3. In a hot-air register, the combination of a face-plate provided with lugs and having a slot along its upper side, and a hood arranged to cover the register and to slide through the slot upon opening the register, said hood being guided and supported by said lugs; substantially as set forth.

4. In a hot-air register, the combination of a face-plate, a grille fitting in the face-plate leaving a slot between the upper side of the grille and the face-plate, and a hood arranged to cover the grille and to slide through the slot upon opening the register; substantially as set forth.

5. In a hot-air register, the combination of a face-plate provided with a projection at the lower outer side thereof, and a hood arranged to cover the register with its outer end fitting within the projection and to slide through the slot upon opening the register; substantially as set forth.

6. In a hot-air register, the combination of a face plate provided with cheek-plates at the sides, and a curved hood arranged to cover the register and to slide between the cheek-plates to a position back of the face-plate upon opening the register; substantially as set forth.

574,136. CORN-HUSKER. PATRICK H. CONNER and LEROY CLARK, Monticello, Iowa. Filed June 8, 1895. Serial No. 552,152 (No model.)



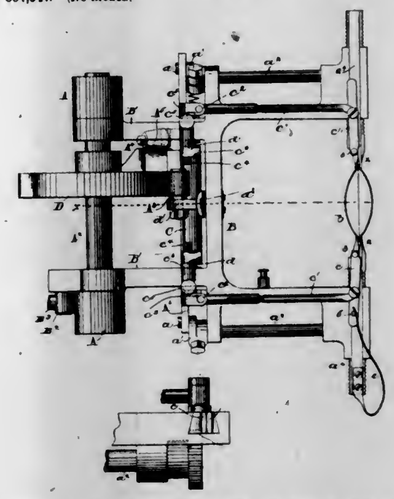
Claim.—1. In a corn-husking machine, the combination with the shredding and cutting cylinder having a spur-gear fast upon one end of its shaft and a pinion fast on the other end, of a pair of feed-rollers, one of which has at one end a spur-gear meshing with the spur-gear on the cylinder-shaft, and a spur-pinion secured to the opposite end of the shaft of the other feed-roller, and meshing with the spur-pinion on the cylinder-shaft through the medium of an interposed idler-pinion, all arranged for joint operation, substantially as and for the purpose described.

2. In a corn-husking machine, the combination with the cutting and shredding cylinder, and a spur-pinion keyed to the shaft thereof at one end, of a pair of feed-rollers, means for adapting one of said feed-rollers to yield with relation to the other feed-roller, and a spur-pinion mounted upon the shaft of the yielding feed-roller, said pinion having its central bore flared in such manner as to form an annular crest or ridge so that the pinion bears only at a single point upon the shaft, said point being in proximal relation to the diametrical center of said wheel, and a spring key for connecting said pinion with its shaft whereby the alinement of said pinion with the pinion on the cylinder-shaft is preserved and the yielding feed-roller is adapted to yield relatively to the fixed feed-roller, substantially as and for the purpose described.

3. In a corn-husking machine, the combination with the cutting and shredding cylinder arranged at the top of the machine and located about centrally longitudinally thereof, of several sets or series of overlapping tedders or kickers arranged near the rear of the machine and supported upon swinging links, a vibratory shaker and screen underlying said tedders and connected therewith for imparting motion thereto, and a hinged grate comprising a series of parallel rods or fingers, said grate being pivoted in advance of the vertical plane of the cylinder-shaft and having the lower ends of its rods or fingers resting upon and overlapping the shaft of the first set or series of tedders, whereby said grate is adapted to be actuated by and to direct the fodder to the tedders or kickers, substantially as specified.

4. In a corn-husking machine, the combination with the machine-frame, and the stationary part of the fan-casing, of an oscillating shaker mounted therein and forming a movable part of the fan-casing, a blast-fan and a grain-conveyer working in a plane below said shaker, and a flexible guard interposed between and connecting the stationary and movable portions of said casing so as to close the intervening space between the same at one side of the fan, substantially as described.

574,137. BAG-HOLDING MECHANISM. HENRY H. CUMMINGS, Malden, Mass., assignor, by mesne assignments, to the Brown Bag Filling Machine Company, Fitchburg, Mass. Filed July 1, 1890. Serial 357,347. (No model.)



Claim.—1. In a bag holder, a frame, two pairs of jaws therein, means to open and close the said jaws, and means to bodily move said pairs of jaws in opposite directions, substantially as described.

2. In a bag-machine, a frame, two pairs of jaws carried thereby, and means to reciprocate the said jaws in opposite directions to stretch the bag in the direction of its width, substantially as described.

3. The shaft A^3, the rocking frame thereon, and two pairs of jaws, combined with means to open and close the said jaws, and means to reciprocate the same to stretch the bag in the direction of its width, substantially as described.

4. In a bag-holder, a frame, two pairs of jaws therein, means to open and close the said jaws, a spring to act upon both pairs of jaws in closing, and an auxiliary spring to render one of the said pairs of jaws self-adapting to varying thicknesses of paper independently of the other pair, substantially as described.

574,138. MAIL-BAG FASTENER. THOMAS G. CUNNINGHAM, Fayetteville, Tenn. Filed Sept. 4, 1895. Serial No. 561,426. (No model.)

Claim.—In a mail bag fastener, the combination of a bag provided with keepers, a pair of locking-bars arranged in alinement, provided with bolts to engage the keepers and having enlargements at their adjacent ends arranged to abut when the bars are locked, one of the enlargements being provided at its abutting end with a socket, a lock mounted on one of the enlargements and adapted to engage the other, a spring interposed between the abutting edges of the enlargements, adapted to throw the latter outward to withdraw the bolts and being concealed in the said socket when the bars are locked, and guides mounted on the bag and supporting the lower edges of the enlargements of the locking-bars, substantially as described.

574,138.



574,139. DEVICE FOR SECURING SPOKES TO WHEEL-RIMS. CHARLES J. CURRY, Key West, Fla. Filed Apr 15, 1896. Serial No. 587,687. (No model.)



Claim.— 1. A spoke-socket comprising a sleeve inserted in the rim of a wheel, a flange at its outer end countersunk in the outer periphery of the rim, ears at its inner end adapted to turn back over a washer on the inner periphery of said rim as set forth and a sectional collar carrying a spoke, said collar secured in said sleeve for the purpose specified.

2. A spoke-securing device for wheels comprising a rim or felly carrying sockets, a hub having slots or openings, spokes headed at both ends and means for adjusting said spokes consisting of sleeve *e*, the washer *h*, a sectional collar secured in the sleeve for the purpose set forth.

574,140. HEEL-NAIL. GEORGE A. CURTIS, Malden, Mass., assignor to Charles F. Baker, Boston, Mass. Filed June 11, 1895. Serial No. 552,426. (No model.)



Claim.—As an article of manufacture, a nail having a clenching-point at one end, a notched or recessed spur at the other end, and an intermediate collar forming the head of the body portion of the nail and the base of the spur, the distance between the said collar and the outer end of the spur being greater than the operative length of the spur, so that the recessed end may be spread to form a head or enlargement and at the same time reduce the spur to its operative length, by the action of a suitable driver, the collar serving as a guard to limit the spreading action of the driver and thus determine the operative length of the spur.

574,141. SHADE-ROLLER. SAMUEL Y. DAVIS and HERMAN O. MOONEY, Farmington, N. H. Filed Apr. 11, 1896. Serial No. 587,073. (No model.)

Claim.—1. In a shade-roller, the spring winding and holding mechanism arranged at one end, in combination with a sliding dog free to move transversely of the roller at its opposite end in the space between the latter and its supporting-bracket and a stop projecting from said bracket and lying in the path of the dog to check the too-rapid rise of the shade, all substantially as herein specified.



2. In a shade roller, the spring winding and holding mechanism arranged at one end, in combination with a plate secured to the roller at its opposite end and having a transverse groove therein, a sliding dog guided in said groove and lying in the space between the end of the roller and its supporting-bracket, and a stop projecting from said bracket and extending parallel with the roller in the path of the dog to check the too-rapid rise of the shade, all substantially as herein specified

3. The roller A, having at one end the spring-spindle A^1 and catches A' engaging notches in said spindle to hold the shade at the desired height, in combination with plate B having the groove *b*, the pin B^3, the dog C guided in said groove and having the slot *c* matching to the pin and forming with the latter a stop to limit the motion of the dog, arranged at the opposite end, and with the bracket F receiving the said pin and supporting the end of the roller thereby, and the stop F' extending from the bracket and lying in the path of the dog to check the too-rapid rise of the shade, all substantially as herein specified.

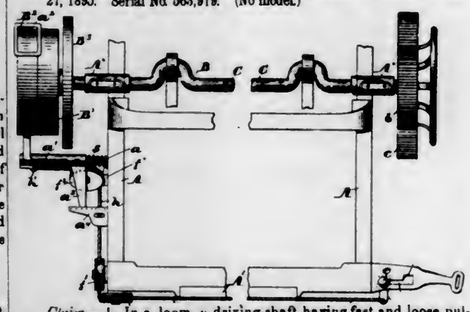
4. The spring roller A, plate B having the groove *b*, the pin B^3 and squared portion B^2 thereon, the dog C guided in said groove and having the slot *c* matching to said squared portion and forming a stop to limit the motion of the dog and the beveled nose C' on the latter, in combination with the washer D, bracket F receiving said pin and supporting the end of the roller thereby, and the stop F' extending from the bracket and lying in the path of the dog to check the revolutions of the said roller in one direction when struck by the dog and allow the roller to revolve freely in the opposite direction, all substantially as herein specified.

5. The spring roller A, plate B having the groove *b*, the dog C guided in the groove, and the beveled nose C' thereon, in combination with the bracket F and stop F' extending therefrom and lying in the path of said dog to check the revolutions of the said roller in one direction when struck by the dog and allow the roller to revolve freely in the opposite direction, all substantially as herein specified.

6. In combination with a shade-roller of the character herein described, a sliding dog arranged to move transversely of the roller in the space between the end of the latter and its supporting-bracket, a stop projecting from said bracket and lying in the path of the dog, and a deflecting-plate arranged in said path to limit the outward motion of the dog and thereby govern its action, all substantially as herein specified.

7. The spring-roller A, plate B having the groove *b*, the pin B^3 the dog C guided in said groove, in combination with the bracket F receiving said pin, the stop F' extending from the bracket and lying in the path of the dog, the adjustable deflecting-plate M M' and its securing means *m*, all substantially as herein specified.

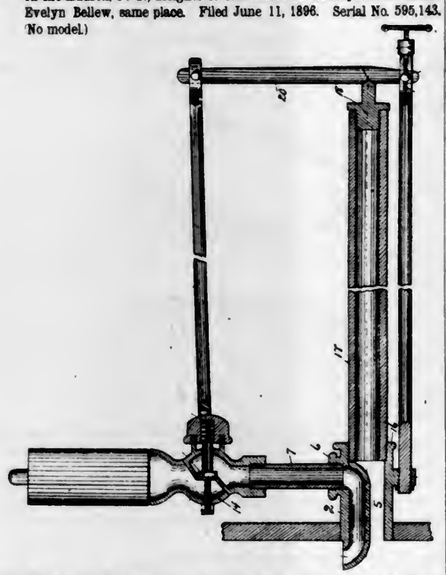
574,142. LOOM. EBEN S. DRAPER and GEORGE O. DRAPER, Hopedale, Mass., assignors to George Draper & Sons, same place. Filed Sept. 27, 1895. Serial No. 563,919. (No model.)



Claim.—1. In a loom, a driving-shaft having fast and loose pulleys thereon at one end of the loom, a shipper-handle located at the opposite end of the loom, a belt-fork located at the end of the loom where are located said fast and loose pulleys, and means to support said fork, combined with a flexible connection extended across the loom from said belt fork to said shipper-handle, and sheaves to support said connection, substantially as described.

2. In a loom, a driving-shaft having fast and loose pulleys thereon at one end thereof, a belt-fork located at the same end of the loom, a guide for said belt-fork, and a spring to move the belt-fork in one direction, combined with a shipper-handle located at the opposite end of the loom, flexible connections extended across the loom between said shipper-handle and belt-fork, and sheaves to support the said flexible connection, to operate substantially as described.

574,143. LOW-WATER ALARM. JOSEPH W. EBERMAN, Croton-on-the-Hudson, N. Y., assignor of two-thirds to Llewelyn J. Lewis and Evelyn Bellew, same place. Filed June 11, 1896. Serial No. 595,143. (No model.)



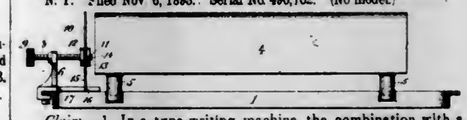
Claim.—1. The combination of the boiler, the horizontal nipple attached to a vertical boiler-wall and having upper and lower passages, the upper passage adapted to communicate with a steam-operated alarm, and the lower communicating with a horizontal expanding valve controlling tube, said tube having a part of its interior above the lower passage, a valve adapted to open and close a steam-conduit leading to the alarm and devices connecting the tube and the valve whereby the latter is operated by the expansion of the tube, substantially as described.

2. The combination of the boiler, the horizontal nipple having pper and lower passages, the first adapted to communicate with a steam operated alarm, and the latter communicating with a horizontal expanding valve-controlling tube, said tube having a part of its interior above the lower nipple-passage, a valve adapted to open and close a steam-conduit leading to the alarm and devices connecting the tube and the valve, whereby the latter is operated by the expansion of the tube, said connecting devices comprising a rod connected to the valve, a lever joined to said rod, a plug or like projection whereby the tube bears loosely on the lever, and a fulcrum for said lever, substantially as described.

3. The combination of the boiler, the horizontal nipple having upper and lower passages, the first adapted to communicate with a steam operated alarm, and having its inlet end turned upwardly to avoid entrance of foam or wet steam, and the latter communicating with a horizontal expanding valve-controlling tube, said tube having a part of its interior above the lower nipple-passage, a valve adapted to open and close a steam-conduit leading to the alarm and devices connecting the tube and the valve, whereby the latter is operated by the expansion of the tube, said connecting devices comprising a rod connected to the valve, a lever joined to said rod, a plug or like projection whereby the tube bears loosely on the lever, and a fulcrum for said lever, substantially as described.

4. The combination of the boiler, the horizontal nipple having upper and lower passages, the first adapted to communicate with a steam-operated alarm, and the latter communicating with a horizontal expanding valve-controlling tube said tube having a part of its interior above the lower nipple-passage, a valve adapted to open and close a steam-condnit leading to the alarm and devices connecting the tube and the valve, whereby the latter is operated by the expansion of the tube, said connecting devices comprising a rod connected to the valve, a lever joined to said rod, a plug or like projection whereby the tube bears loosely on the lever, and a fulcrum for said lever, substantially as described.

574,144. TYPE-WRITING MACHINE. JACOB FELBEL, New York, N. Y. Filed Nov 6, 1893. Serial No. 490,102. (No model.)



Claim.—1. In a type writing machine, the combination with a paper carriage, and the usual relatively-fixed paper-table, of a margin-regulator supported on said paper-carriage and independently of said paper-table and arranged in proximity to one end of the latter; substantially as described.

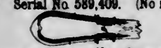
2. In a type-writing machine, the combination with a paper-carriage, and the usual relatively-fixed paper-table, of an adjustable margin-regulator supported on said paper-carriage and independently of said paper table; substantially as described.

3. In a type-writing machine, the combination with a paper-carriage and its relatively-fixed paper-table, of an independently-supported adjustable margin-regulator, and means, for moving it to and from the end of the paper-table, mounted on the paper-carriage.

4. In a type-writing machine, the combination with a paper-carriage and its relatively-fixed paper-table, of a margin-regulator mounted on a threaded spindle on the paper-carriage, and means for preventing rotative movements of the regulator during its movements to and from the paper-table.

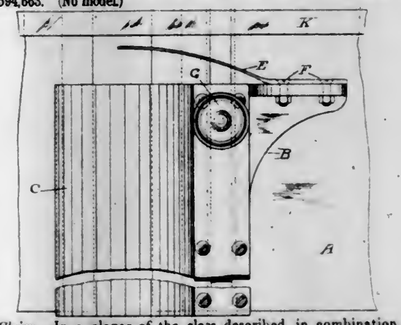
5. In a type-writing machine, the combination with a paper-table of a margin regulator consisting of the plate or bar 10, the arm 15, the spindle, the bracket or support therefor, and the bar 17.

574,145. HOOK FOR SPOON-HANDLES. ROBERT M. GANNON, San Felipe, Tex., assignor of one-half to Benjamin F. Davis, same place. Filed Apr. 28, 1896. Serial No. 589,409. (No model.)



Claim.—A hook for spoon-handles formed of a single piece of wire coiled centrally and the arms so formed being crossed, clamps formed near the ends of the arms by bending the wire outward and inward forming a loop in the wire at right angles to the plane of the arms, said wire being then bent longitudinally and then outward and inward again forming a loop similar to the one first formed, the clamps thus formed being bent at an angle to the plane of the arms, in combination with a spoon having a bead on one side and a groove on the other running parallel with the edge of the spoon, said loops of the holder being bent on one side to conform to the shape of the bead and on the other to engage the loop, and the lower end of the arms being bent toward the spoon to engage the glass as and for the purpose described.

574,146. PLANING-MACHINE. GEORGE GOCHER, Lorain, and JAMES D. SCHREONGOST, Elyria, Ohio. Filed June 8, 1896. Serial No. 594,663. (No model.)



Claim.—In a planer of the class described, in combination, a platen having a dovetailed slot across its face, said slot being parallel to the axis of the cutter, a slide movable in the slot and means for clamping it therein, a shield rigidly attached to the slide and extending over the cutter-head, and a horizontally-flexible spring attached to the inner side of the slide, all substantially as described.

574,147. MACHINE FOR MAKING COMPRESSIBLE TUBES. HANNIBAL GOODWIN, Newark, N. J. Filed Nov. 7, 1893. Serial No. 490,233. (No model.)



Claim.—1. The improved machine for forming compressible tubes, in which is combined with means for holding the pellicle upon the cylinder while being cemented and joined, a forming-cylinder having split ends to receive the end pieces and wedges for spreading the same substantially as set forth.

2. The machine for forming compressible tubes, in which are combined clamps or holders for clamping or holding the cylindrical pellicle upon the cylinder while the joints are drying, with the forming-cylinder having the peripheral knife-guiding groove, c^4, substantially as set forth.

3. In a machine for forming compressible tubes, the forming cylinder having the opposite ends split and centrally bored, in combination with spindle-like wedges for spreading said ends, clamps for holding the longitudinal edges of the pellicle together and pellicle-holders arranged contiguous to said forming-cylinder, substantially as set forth.

4. In a machine for forming compressible tubes, the combination with a longitudinally-grooved cylinder, of a removable pellicle-clamp held within the groove and having a flange, f, to clamp the edge of the pellicle longitudinally upon the periphery of the cylinder substantially as set forth.

5. In a machine for forming compressible tubes, the cylinder, c, having the opposite ends split and centrally bored and having the longitudinal groove at the periphery and the central knife-guiding groove, in combination with wedges h, and a clamp, f, substantially as set forth.

6. In combination, in a machine for forming tubes, the cylinder c, clamps f and k, and a sliding clamp adapted to hold the edge of the flat pellicle to the periphery of the cylinder, substantially as and for the purposes set forth.

7. The combination with the bed, a, having standards b, b, of cylinder, c, and a clamp adapted to hold the overlapping or cemented edges of the pellicle together onto the cylinder during the cementing and drying operation, and means for supporting the cylinder in the standards, substantially as set forth.

8. The combination with the bed a, standards b, cylinders c, and wedges h, of clamps for holding the pellicle in place upon said cylinders during the cementing operation, substantially as set forth.

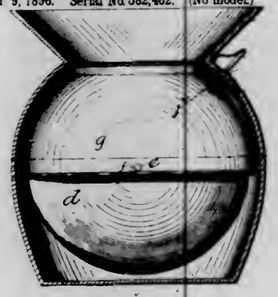
9. The combination with the standards, b, having recesses b', a plurality of cylinders c c, having spindles, b, arranged in said recesses, the contiguous ends of said cylinders being connected by a spindle, h, substantially as set forth.

10. In combination the standards b, cylinders c, c, split and grooved, longitudinally and peripherally, of wedges, h, one of which tapers oppositely and is provided with a central shoulder, h', substantially as set forth.

11. In combination with the cylinder adapted to receive the end pieces, g, at its ends, a longitudinal clamp, f, a clamp, d, adapted to hold the pellicle flat and admit of moving said pellicle toward said clamp, f, and a clamp k, adapted to hold the pellicle to the cylinder after the removal of the clamp, f, substantially as set forth.

12. In combination with the cylinder having a longitudinal clamp removable from said cylinder, a clamp k, having the strip k' and curved spring-arms, k^2, substantially as set forth.

574,148. CUSPIDOR. NICHOLAS J. GUTTENDORF, Pittsburg, Pa. Filed Mar. 9, 1896. Serial No. 582,462. (No model.)

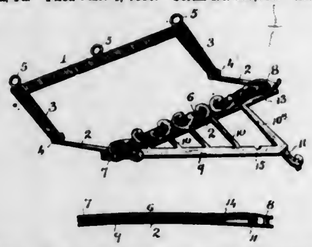


Claim.—1. In a cuspidor, the combination of a suitably-shaped bowl, shafts or pins journaled in bearings near the center of the bowl supporting a receptacle having an opening in its top, to conform with the opening of the bowl, and semispherical receptacle having pins journaled in bearings on the upper section, as and for the purpose described.

2. In a cuspidor, an outer bowl having an opening in the top, a receptacle consisting of semispherical sections, the upper section being pivoted to the bowl and the lower section pivotally connected to the upper section, as and for the purpose described.

3. A cuspidor, consisting of an outer bowl, an inner receptacle consisting of pivotally-connected sections, one of said sections being pivoted to the bowl and a lever for controlling the action of the top section, as and for the purpose described.

574,149. HAT-FASTENER. CHARLES E. HALLOWELL, Philadelphia, Pa. Filed June 1, 1896. Serial No. 593,916. (No model.)



Claim.—1. In a hat fastener, the combination with a frame consisting of two hinged leaves, one of which is provided with means for attachment to the hat, of a toothed bar pivoted at one end to the other leaf, and means for locking said bar in its operative position, substantially as described.

2. In a hat-fastener the combination with a frame provided with means for attachment to a hat, of a bar pivotally attached at one end to said frame, and adapted to oscillate in the arc of a circle and provided with a plurality of teeth, each succeeding tooth being longer than the preceding one, the shortest tooth being arranged adjacent to the pivotal point of the bar substantially as described and for the purpose specified.

3. In a hat fastener, the combination with a frame provided with means for attachment to a hat, of a toothed bar pivotally attached at one end to said frame, and stops for limiting the oscillating movement of said toothed bar in both directions, substantially as described.

4. In a hat-fastener, the combination with a frame provided with means for attachment to a hat, of a toothed bar pivotally attached at one end to said frame, stops for limiting the oscillating movement of said bar in both directions, and means for locking said toothed bar in its operative position, substantially as described.

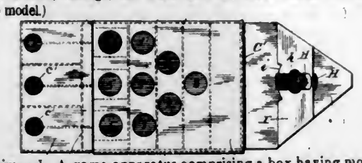
5. In a hat-fastener the combination with the frame consisting of the hinged leaves 2 3, of the bar 6 arranged parallel and attached to the leaf 2, the toothed bar 9 pivoted at one end between the bar 6 and leaf 2 and adapted to be folded between said bar and leaf to cause the teeth to penetrate the hair, and means for locking said bar in operative position substantially as described.

6. In a hat fastener, the combination with the frame consisting of the hinged leaves 2 3, of the bar 6 arranged parallel to and attached to the opposite ends of the leaf 2, the toothed bar 9 pivoted at one end between the bar 6 and leaf 2 and adapted to be folded between said bar and leaf to cause the teeth to penetrate the hair, and a head 16 formed on the end of one of said teeth and operating to limit the outward movement of said toothed bar, substantially as described.

7. In a hat-fastener, the combination with the frame consisting of the hinged leaves 2 3, of the bar 6 arranged parallel to and attached to the opposite ends of the leaf 2, the toothed bar 9 pivoted at one end between the bar 6 and leaf 2 and adapted to be folded between said bar and leaf to cause the teeth to penetrate the hair, the tooth 10^a carried by the free end of said bar and provided with an indentured spring finger 11, and a feather 13 formed on the leaf 2 and operating to engage the indenture in the spring finger and lock the toothed bar in operative position, substantially as described.

8. In a hat-fastener, the combination with the frame consisting of the hinged leaves 2 3, of the bar 6 arranged parallel to and attached to the opposite ends of the leaf 2, the toothed bar 9 pivoted at one end between the bar 6 and leaf 2, and adapted to be folded between said bar and leaf to cause the teeth to penetrate the hair, and a stop-pin 14 arranged on the inner side of the bar 6 and operating to engage the edge of said toothed bar and limit its inward movement, substantially as described.

574,150. GAME APPARATUS. ANNIE B. HEAP and HELEN H. VAN KURAN, Chicago, Ill. Filed Mar. 27, 1896. Serial No. 585,056. (No model.)



Claim.—1. A game apparatus comprising a box having movable figures supported by pivoted arms beneath openings through a rigid part of the cover, pans connected with the pivoted arms and supported beneath openings through a hinged part of the cover and a spring-pan for throwing counters into the pockets as specified.

2. A game apparatus comprising a box having movable figures supported by pivoted arms, beneath openings through one part of the cover, pans connected with the pivoted arms and supported in a pocket beneath openings through a removable cover, a series of other pockets beneath other openings through the cover and a spring-pan for throwing counters into the several pockets as specified.

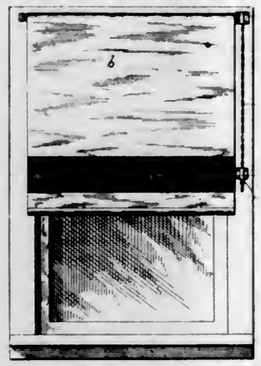
3. In a game apparatus of the class mentioned, the combination with the box having the pockets the cover with holes over the pockets, of the spring-holder provided with the curved edge i for adjusting the spring at different angles to the box for the purpose specified.

574,151. CUTTER AND HEAD. WILLIAM B. HOLBROOK, Paterson, N. J. Filed Nov. 2, 1895. Serial No. 567,780. (No model.)



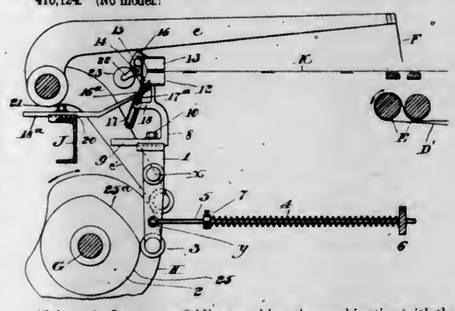
Claim.—In combination a cutter-head having T-shaped grooves in its sides, holders slidable on the faces of the cutter, brackets formed integral with the holders and extending outwardly at right angles therefrom, a tongue formed on the rear of each holder adapted to slide in the grooves, a bolt having a head engaging the undercuts of the grooves whereby the holders are held in position, cutters 11 having saw-teeth on the edge and provided with a straight rear edge to abut the holders and conform to the angle formed by the holder and bracket means for holding the cutters and the bracket and set-screws threaded through the holders and engaging the face of the cutter-head as and for the purpose described.

574,152. ROLLER AND BLIND ATTACHMENT. HUGH C. JOHNSTON, Freedom, Pa. Filed Aug. 7, 1896. Serial No. 602,108. (No model.)



Claim.—In combination, a pole supported at one end by a bracket, a rod secured in the opposite end having a square shank and an annular groove, a casing having a slot to receive the grooved end, a pulley on the shank, a chain engaging the pulley, a casing arranged to the side of the window, a slide supporting a pulley over which the chain operates, and a screw for adjusting the slide, as and for the purpose described.

574,153. SHEET-ADJUSTING DEVICE FOR PAPER-FOLDING MACHINES. HOWARD K. KING, Philadelphia, Pa., assignor to the Chambers Brothers Company, same place. Filed Oct. 28, 1891. Serial No. 410,124. (No model.)

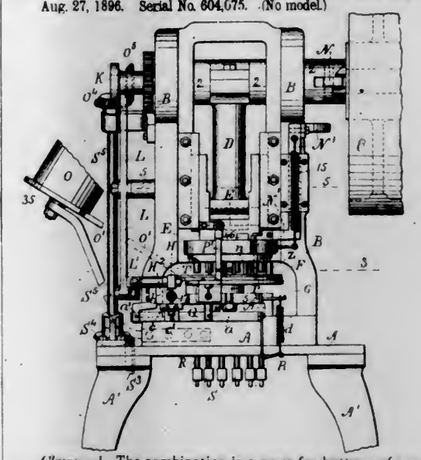


Claim.—1. In a paper-folding machine, the combination with the sheet-carrying tapes, the folding-rollers, and the folding-blade, of a guide-head adjacent to the folding-blade, a coacting clamp device therefor, means for laterally reciprocating the head and clamp device in the path traversed by the edge of the sheet as it is fed to the machine, means to close the clamp during the inward movement of the head and maintain it closed until the head is retracted, and means whereby the folding-blade in its descent opens the clamp, substantially as described.

2. The combination with the rock-arm, the shaft and the cam thereon adapted to operate said arm, of the guide-head supported upon said arm, the spring-controlled toggle mechanism arranged with close relation to said guide-head, and provided with the clamping-jaw adapted to operate upon the latter, and with the friction-roller disposed in the path of a vibrating arm, together with a trip-bar mounted in the path of the toggle-joint, substantially as described.

3. The combination with the rock-arm, the shaft and the cam thereon adapted to operate said arm, of the bracket supported upon the latter, the flaring guide-head upon said bracket, the clamping-lever, the spring-controlled rod pivotally connected therewith, the pivoted cylinder within which said rod is guided, and the friction-roller upon said lever, together with the vibrating arm and the fixed trip-lever, substantially as described.

574,154. ROTARY BUTTON-PRESS. SPENCER B. LANE, Waterbury, Conn., assignor to the American Ring Company, same place. Filed Aug. 27, 1896. Serial No. 604,075. (No model.)



Claim.—1. The combination in a press for buttons, of a range of dies and punches adapted to receive and act upon the sheet-metal blanks, a rotary carrier and means for moving the same between the dies and punches, such carrier having openings through it, fingers upon such carrier, springs for closing the fingers, and openers acting on the fingers and receiving their movements from the head carrying the punches, substantially as set forth.

2. The combination in a press for buttons, of a range of dies and punches adapted to receive and act upon the sheet-metal blanks, a rotary carrier and means for moving the same between the dies and punches, such carrier having openings through it, fingers upon such carrier, springs for closing the fingers, openers acting on the fingers and receiving their movements from the head carrying the punches, and lifters for raising the blanks from the lower die into the carrier and between the spring-fingers, whereby they are carried from one pair of dies to the next, substantially as set forth.

3. The rotary carrier formed of two plates connected together, fingers in pairs between the plates pivoted at their inner ends, and having jaws at the outer ends, springs between the fingers for acting upon the same, tapering openers acting between the pairs of fingers, substantially as set forth.

4. The carrier having a plate with openings through it, in combination with fingers in pairs pivoted at their inner ends and having jaws at the outer ends, springs acting upon the fingers for closing them, and tapering openers acting between the fingers and mechanism for moving the same and for revolving the carrier, substantially as set forth.

5. The combination in a rotary button-press, of a slide down which the cup-shaped blanks pass, a lifter upon the upper end of which the blank is received, a rotary carrier having spring-fingers in pairs, means for actuating the lifter and raising the blank between the spring-fingers, dies and punches for acting upon the blanks in succession and lifters for raising the blanks and passing them in between the spring-fingers of the rotary carrier, substantially as set forth.

6. A rotary carrier and its supporting-shaft and means for revolving the same progressively, such carrier having a circular range of openings through it, in combination with fingers in pairs pivoted at their inner ends, stop pins and springs between the pairs of fingers and tapering openers for opening such fingers, substantially as set forth.

574,155. BOTTLE-WASHER. JAMES F. LEEPER, Lewistown, Pa.

Filed May 7, 1896. Serial No. 590,557. (No model.)



Claim.—1. In a bottle-washing machine, the combination with a rotary hollow shaft, a wheel carried thereby, arms pivoted in said wheel and standing approximately parallel with the shaft, brushes carried by the free ends of said arms, and springs pressing said brushes normally inward; of a disk whose hub slides longitudinally on said shaft and is provided with a conical mouth, said disk having a series of radial slots in which the arms move, and a spring forcing said conical mouth toward the end of the shaft, as and for the purpose set forth.

2. In a bottle-washing machine, the combination with a rotary hollow shaft, a wheel carried thereby, arms pivoted in said wheel and standing approximately parallel with the shaft, brushes carried by the free ends of said arms, and means for limiting the movement of the brushes; of a disk sliding on the shaft and having radial slots in which said arms move and provided with a conical mouth for the reception of the mouth of the bottle, as and for the purpose set forth.

3. In a bottle-washing machine, the combination with a rotary hollow shaft, a wheel carried thereby, and a radially-slotted disk also carried thereby and having a hub with a conical mouth; of arms pivoted in said wheel and movable radially in the slots of said disk, inwardly-facing brushes carried by the free ends of said arms, rods radiating from said shaft and passing through the inner ends of the arms, expansive springs between the shaft and said inner ends, and thumb-nuts on the outer ends of said rods, as and for the purpose set forth.

4. In a bottle-washing machine, the combination with a rotary hollow shaft, and a wheel carried thereby, the end of the shaft having a conical mouth; of a series of arms pivoted in said wheel, inwardly-facing brushes at their outer ends, wedges on the outer sides of their inner ends, a collar surrounding said inner ends and wedges, expansive springs between the shaft and said inner ends, and means for limiting the outward throw of said springs, as and for the purpose set forth.

5. In a bottle-washing machine, the combination with a rotary hollow shaft having a sleeve forming a shoulder, a wheel carried by said shaft and having brackets, a series of arms pivoted in said brackets and standing approximately parallel with the shaft, brushes of wire and of bristles carried by the front ends of alternate arms, and means for adjusting the opposite ends of said arms to and away from the shaft; of a disk whose hub slides longitudinally on said shaft and is provided with a conical mouth, the body of the disk having radial slots for the reception of said arms, and an expansive spring between said disk and the shoulder of the shaft, as and for the purpose set forth.

6. In a bottle-washing machine, the combination with a hollow rotary shaft, a disk thereon whose hub has a conical mouth and whose body is provided with radial slots, and a series of arms pivotally connected with the shaft, extending through said slots, and having inwardly-facing brushes on their free ends; of pipes leading outwardly from said shaft, extending through holes in said disk, standing parallel with the shaft, and having their delivery ends directed toward the brushes, as and for the purpose set forth.

7. In a bottle-washing machine, the combination with a base having bearings, a hollow rotary shaft journaled therein and carrying at its extremity an interior-washing device, a spring-pressed cone mounted on said shaft, and a series of brushes carried by the shaft for washing the exterior of the bottle; of a bottle-support mounted upon said base, posts rising therefrom, longitudinal rods connecting the posts in pairs, and a presser-plate for the bottom of the bottle having lateral perforated ears sliding on said rods, as and for the purpose set forth.

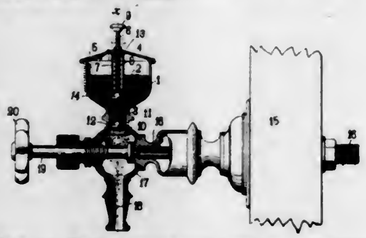
8. In a bottle-washing machine, the combination with a base, a hollow rotary shaft, carried thereby, a spring-pressed cone mounted on said shaft, and a series of brushes connected with the shaft for washing the exterior of the bottle; of a bottle-support, also carried by the base, a presser-plate movable longitudinally on guides carried by the support, a handle on the rear of said plate, and a facing on the front of said plate making frictional contact with the exterior of the bottom of the bottle, as and for the purpose set forth.

9. In a bottle-washing machine, the combination with a base, a rotary shaft thereon having a spring-pressed conical mouth for the reception of the bottle-mouth, and a series of brushes carried by said shaft for washing the exterior of the bottle; of a bottle-support on the base, a presser-plate movable longitudinally thereon and having a facing-sheet on its front face bearing frictionally against the exterior of the bottom of the bottle, and a pin movable longitudinally through said support and through the center of such sheet so as to impinge against the bottom of the bottle, as and for the purpose set forth.

10. In a bottle-washing machine, the combination with a base, a hollow rotary shaft carrying interior bottle-washing devices, a spring-pressed cone mounted on said shaft, and a series of radially-adjustable brushes carried by said shaft for washing the exterior of the bottle; of a bottle-support, a presser plate mounted longitudinally thereon, a sheet carried by the face of said plate and bearing frictionally against the exterior of the bottom of the bottle, and a longitudinally-movable pin adjustable through the center of said sheet, as and for the purpose set forth.

574,156. DEVICE FOR SUPPLYING SALTS FOR SODA-FOUNTAINS. FISHER H. LIPPINCOTT, Philadelphia, Pa., assignor to the American Soda Fountain Company, Trenton, N. J.

Filed Mar. 31, 1896. Serial No. 585,574. (No model.)



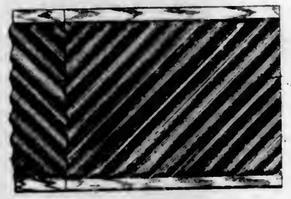
Claim.—1. The combination with a soda-fountain faucet or the like, of the salts-receptacle having an aperture therein communicating with the interior of said faucet, means for opening and closing said aperture, substantially as shown, and for limiting the salts that may escape from said aperture when the same is opened, to a predetermined quantity, substantially as and for the purpose described.

2. The combination with the soda-fountain faucet or the like, of the salts-receptacle secured thereto, and having an opening at its lower extremity registering with an opening into the faucet-chamber, the nozzle communicating with said chamber, and depending vertically in line with said opening in the receptacle, a movable valve or stopper in the said opening of the receptacle, and means for causing said valve or stopper to normally close said opening, substantially as and for the purpose set forth.

3. The combination with the soda-fountain faucet or the like, of the salts receptacle, secured thereto, having an opening at its lower extremity registering with an opening into the faucet-chamber, the nozzle communicating with said chamber and depending vertically in line with said opening in the receptacle, a vertically-movable rod having at its lower end a valve or stopper adapted to close and open said opening in the receptacle, a head or enlargement on said rod above said valve or stopper, together with means for causing the latter to normally close said opening, substantially as and for the purpose set forth.

574,157. STEAM GENERATOR AND CONDENSER. FREDRIK LJUNGSTROM, Stockholm, Sweden.

Filed June 19, 1896. Serial No. 596,118. (No model.) Patented in England Dec. 10, 1895, No. 23,664.



Claim.—1. In a generator or condenser the corrugated plates or walls between which are alternating chambers for fluids of different temperatures, the corrugations of one plate or wall crossing the corrugations of the other and so that the apices of the corrugations are in contact at the crossing-points in the adjacent walls and hence the corrugated walls rest upon and support each other throughout the structure without obstructing the passage-ways for the fluids within the chambers, substantially as set forth.

2. In steam generators or condensers three or more corrugated walls between which are two or more chambers, the corrugations of one wall being in a diverse direction to the corrugations of the adjacent walls and so that the apices of the corrugations of one wall are in contact at the crossing-points with the apices of the corrugations of the adjacent walls, these walls being laid in contact with each other so that the apices of the corrugations of the exterior surfaces of the said walls are brought into contact, the adjacent exterior corrugations extending in diverse directions thereby forming adjacent, equal and alternate communicating passages in each chamber for water or steam and for the heating or cooling fluids, and inlet and outlet tubes to and from such chambers, substantially as set forth.

3. In steam generators or condensers three or more corrugated walls between which are two or more chambers the corrugations of one wall being in a diverse direction to the corrugations of the adjacent walls and so that the apices of the corrugations of one wall are in contact at the crossing-points with the apices of the corrugations of the adjacent walls, these walls being laid in contact with each other so that the apices of the corrugations of the exterior surfaces of the said walls are brought into contact, the adjacent exterior corrugations extending in diverse directions, thereby forming adjacent, equal and alternate communicating passages in each chamber for water or steam and for the heating or cooling fluids and an inclosing exterior casing and inlet and outlet tubes to and from such chambers, substantially as set forth.

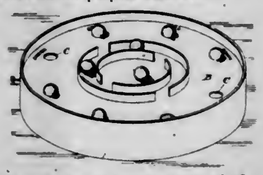
4. In steam generators or condensers, three or more corrugated walls between which are two or more chambers, the corrugations of the adjacent walls extending in diverse directions and the apices of the corrugations of one wall in contact at points with the apices of the corrugations of the adjacent walls, one such wall of the series being arranged in contact with the next adjacent wall so that the apices of the corrugations on the exterior surfaces of the walls are in contact at points while the exterior surface corrugations of one wall extend in diverse directions to the adjacent exterior corrugations of the next wall, thereby forming adjacent, equal and alternate chambers for water or steam and the heating or cooling fluids, substantially as set forth.

5. In steam generators or condensers, three or more corrugated walls between which are two or more chambers, the corrugations of one wall being in a diverse direction to the corrugations of the adjacent walls and so that the apices of the corrugations of one wall are in contact at the crossing points with the apices of the corrugations of the adjacent walls, these walls being laid in contact with each other and coiled or rolled spirally together so that the apices of the corrugations of the exterior surfaces of the said walls are brought into contact, the adjacent exterior corrugations extending in diverse directions, thereby forming adjacent, equal and alternate communicating passages in each chamber for water or steam and for the heating or cooling fluids, and an inclosing exterior case and inlet and outlet tubes to and from such chambers, substantially as set forth.

574,158. PUZZLE. ORA A. MAPEL, Statler's Run, W. Va.

Filed July 1, 1896. Serial No. 597,749. (No model.)

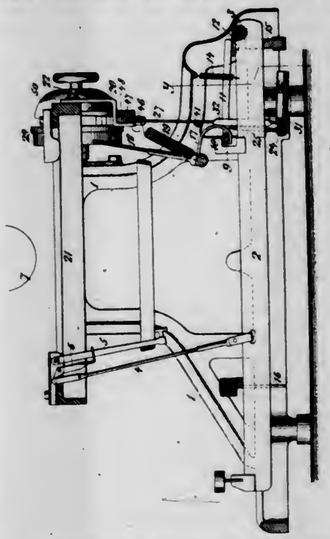
Claim.—1. A puzzle consisting of a tray composed of a circular wall, a transverse partition dividing the tray into two compartments, said partition having holes formed therethrough, balls of different colors adapted to fit in said holes and protrude through to the opposite side of the partition, said holes being designated by names of colors on one side and the colors corresponding to the name on the opposite side, as and for the purpose described.



2. A puzzle consisting of a tray composed of a circular wall, a transverse partition dividing the tray into two compartments, one being shallower than the other, said partition having holes formed therethrough, balls of different colors adapted to fit in said holes and protrude through to the opposite side of said partition, names in said holes being designated by names of colors on the same side as the balls and by rings of colors corresponding to the name on the opposite side from the balls, a cover for retaining the balls in their position, as and for the purpose described.

574,159. TYPE-WRITING MACHINE. HENRY W. MERRITT, Springfield, Mass. assignor to the Merritt Manufacturing Company, same place.

Filed May 29, 1894. Serial No. 512,893. (No model.)



Claim.—1. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a locking-bar arranged transversely of the key-levers and movable therewith, a transverse rock-shaft provided with intercepting means adapted to be moved into the path of said locking-bar, and also provided with means for maintaining said intercepting means normally out of the path of said locking-bar, a vertical longitudinally-movable rocker-rod, and a rotatory actuator therefor carried by the carriage driving mechanism; substantially as described.

2. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a transversely-arranged locking-bar normally movable with the key-levers, a rock-shaft provided with one or more stops or abutments and with a weight, a rocker arm provided at its upper end with a hook, and a rotatory catch-plate to engage said hook, rock said shaft, and throw said stops or abutments into the path of the locking-bar and thus prevent depression of the key-levers and movement of the types to the paper.

3. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a transversely-arranged locking bar movable with the key-levers, a rock-shaft provided with one or more stops or abutments to intercept said locking-bar, and with a weight to maintain said stop

or stops normally out of the path of the locking-bar, a rocker-rod attached at one side of the line of pivots of said rock-shaft and having a longitudinal and also a vibratory motion and a rotatory catch traveling with the spring-drum adapted to move said rocker-rod; substantially as described.

4. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a transversely-arranged locking-bar, a rock-shaft provided with one or more stops or abutments and with a weight, a rocker-rod provided with a spring and having a hook at its upper end, a rotary catch-plate provided with a pin, and means for disengaging the hook and the pin after the line-locking operation.

5. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a transversely-arranged locking-bar, a rock-shaft provided with one or more stops or abutments, and with a weight, a rocker-rod, a rotatory catch adapted to lift said rod, and a push-pin connected to said rod for effecting its disengagement from the said catch.

6. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of the transversely-arranged locking-bar, a rock-shaft provided with one or more stops or abutments and with a weight, a vertically-arranged rocker-rod having a spring and a hook, a rotatory catch, a push-pin connected to said rod, and a latch for holding said hook normally out of the path of rotation of said catch.

7. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, provided each with a hook, of a universal bar extending transversely over the key-levers and under the key-lever hooks, one or more rocking stops or abutments normally out of the path of said universal bar, a rock-shaft, a rocker-arm, and a rotatory catch to engage said rod and rock said stops or abutments underneath the universal bar at the end of the predetermined line.

8. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, each provided with a hook, of a universal bar arranged above the plane of the key-levers but beneath the key-lever hooks, the underlying rock-shaft provided with one or more stops or abutments and with a weight, a vertically-arranged spring-pressed rocker-rod having a hook at its upper end, a rotatory, adjustable catch connected to the carriage-driving mechanism, and means for disengaging said catch and said hook at the end of a line for the purpose of adding one or more characters thereto.

9. In a line locking mechanism, the combination of a universal bar normally actuated by the key-levers, a rock-shaft provided with one or more stops or abutments for said universal bar and also with means for maintaining said stops or abutments normally out of the path of movement of said universal bar, a vertically-arranged rocker-rod, and means for lifting said rod and causing said stops or abutments to swing in the path of movement of said universal bar.

10. In a line-locking mechanism, the combination of a universal bar, the rock-shaft having one or more stops or abutments, the weight, the vertically-arranged rocker arm, the catch therefor connected to the carriage-driving mechanism and adjustable thereon to effect the swinging of the stops or abutments into the path of movement of the universal bar at any desired point of travel of the paper-carriage.

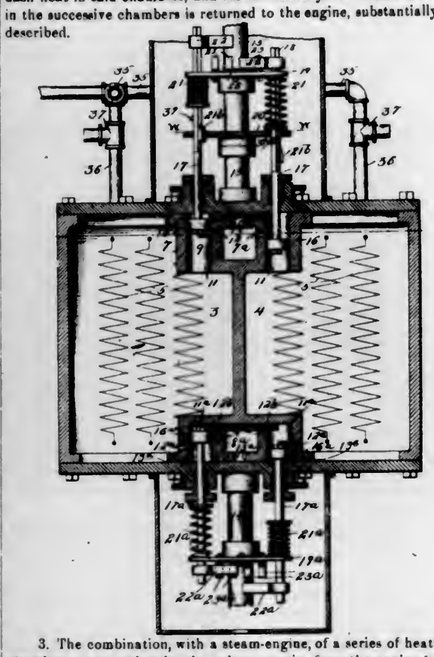
11. In a line-locking mechanism, the combination of the universal bar, the rock-shaft, the stops or abutments, and the weight thereon, the rocker-rod, the adjustable arm 36 connected to the carriage-driving drum and carrying a pivoted catch-plate to engage with and lift said rocker-arm.

12. In a type-writing machine, the combination with the paper-carriage, the driving mechanism therefor, the types, and the key-levers, of a universal bar, a rock shaft provided with one or more stops or abutments and with a weight, a vertically-arranged rocker-rod provided with a hook, a gong connected to the carriage-driving mechanism, a spring-actuated gong hammer, and the adjustable member 28 adapted both to actuate the gong-hammer and also the stops or abutments.

574,160. MEANS FOR REHEATING EXHAUST-STEAM. OSCAR D. MCCLELLAN and WILKINSON T. GIRLING, Philadelphia, Pa., assignors to themselves, John J. Torpey, and Robert Cunningham, same place. Filed July 1, 1896. Serial No. 597,707. (No model.)

Claim.—1. The combination, with a steam-engine, of a heating-chamber, means whereby the exhaust-steam from the engine is delivered to said chamber, electrical heating devices in said chamber, means for supplying an electric current thereto at predetermined intervals and means whereby the reheated steam in said chamber is returned to the engine, substantially as described.

2. The combination, with a steam-engine, of a series of heating-chambers, means whereby the exhaust-steam from the engine is delivered to the successive chambers, means for producing an electrical flash heat in said chambers, and means whereby the reheated steam in the successive chambers is returned to the engine, substantially as described.



3. The combination, with a steam-engine, of a series of heating-chambers means whereby the exhaust-steam from the engine is delivered to said chambers, valves to control such delivery, resistance-coils in said chambers, switch devices for controlling the passage of the electrical current thereto at predetermined intervals, and means whereby the reheated steam in the successive chambers is returned to the engine, substantially as described.

4 The combination, with a steam-engine, of a series of heating-chambers, ingress and egress pipes providing communication between said chambers and the steam-engine, valves controlling the communication between said pipes and the chambers, means for locking and releasing said valves at predetermined intervals, electrical resistance devices in said chambers, a source of electric energy, and electrical connections between the same and said devices, substantially as described.

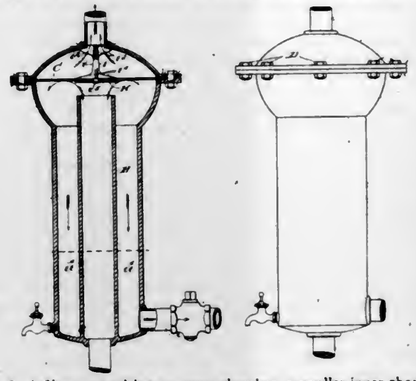
5. The combination, with a steam-engine, of a series of heating-chambers, ingress and egress pipes providing communication between said chambers and the steam-engine, valves controlling the communication between said pipes and the chambers, means for locking and releasing said valves at predetermined intervals, electrical resistance devices in said chambers, switches connected with said valves and resistance devices, a source of electric energy, and electrical connections between the same and said switches, substantially as described.

6. The combination, with a steam-engine, of a series of heating-chambers, ingress and egress pipes providing communication between said chambers and the steam-engine, valves controlling the communication between said pipes and the chambers, means for locking and releasing said valves at predetermined intervals, electrical resistance devices in said chambers, a source of electric energy, and electrical connections between the same and said devices, together with a rheostat, and controlling devices therefor between the same and the governor of the engine, substantially as described.

574,161. FILTER. CHARLES E. OSGOOD and JOHN M. OSGOOD, Lowell, Mass. Filed May 1, 1896. Serial No. 589,879. (No model.)

Claim.—1. A filter, comprising an outer chamber, a smaller inner chamber, communicating with said outer chamber at the top only, a supply pipe, entering the bottom of said inner chamber, a screen, arranged above said inner chamber and extending across said outer chamber above said inner chamber, and a discharge-pipe leading out of said outer chamber above said screen, as and for the purpose specified.

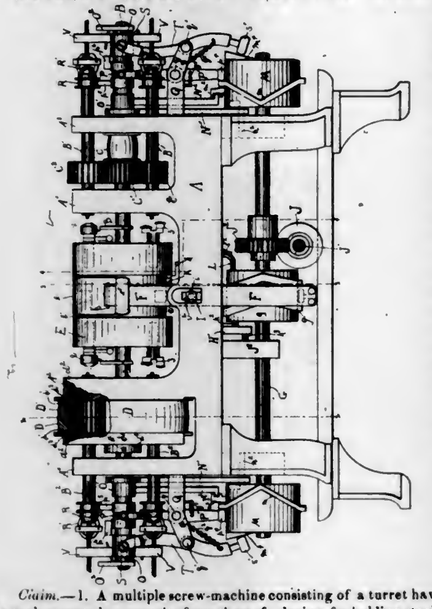
2. A filter, comprising an outer chamber, a smaller inner chamber, communicating with said outer chamber at the top only, a supply-pipe, entering the bottom of said inner chamber, a screen, arranged above said inner chamber and extending across said outer chamber above said inner chamber, a discharge-pipe leading out of said outer chamber above said screen, a shield or plate arranged above said inner chamber to protect said screen from the direct impact of a liquid issuing from said inner chamber, as and for the purpose specified.



3. A filter, comprising an outer chamber, a smaller inuer chamber, communicating with said outer chamber at the top only, a supply-pipe, entering the bottom of said inner chamber, a screen, arranged above said inner chamber and extending across said outer chamber above said inner chamber, a discharge-pipe leading out of said outer chamber above said screen, a shield or plate arranged above said inner chamber to protect said screen from the direct impact of a liquid issuing from said inner chamber, and a brace to hold said screen in place, as and for the purpose specified.

4. A filter, comprising an outer chamber, a smaller inner chamber, communicating with said outer chamber at the top only, a supply-pipe, entering the bottom of said inner chamber, a screen, arranged above said inner chamber and extending across said outer chamber above said inner chamber, a discharge-pipe leading out of said outer chamber above said screen, a brace, secured in said outer chamber above said screen and bearing upon said screen, and a shield, arranged on the under side of said screen and with said screen secured to said brace, as and for the purpose specified.

574,162. MULTIPLE SCREW-MACHINE. GEORGE G. PRENTICE, New York, N. Y. Filed May 25, 1895. Serial No. 550,660. (No model.)



Claim.—1. A multiple screw-machine consisting of a turret having tools mounted on opposite faces thereof; devices for holding stock on opposite sides of said turret; and means for reciprocating said turret between said stock-holding devices to bring the tools alternately into operation on said stock, substantially as described.

2. The combination in a screw-machine with two sets of horizontal revolving spindles for holding the stock; of a turrent adapted to reciprocate and bring tools alternately into operation with the two sets of spindles; and means for reciprocating said turret, substantially as described.

3. A multiple screw-machine consisting of a turret having a set of tools mounted on opposite faces thereof; devices for holding stock on opposite sides of said turret; means for reciprocating said turret between said stock-holding devices to bring the tools alternately into operation on said stock; said turret being capable of an intermittent rotary movement to bring the tools of each set successively into operation upon the stock carried by the devices on the same side of said tool-holder; and mechanism for operating said turret, substantially as described.

4. A multiple screw-machine consisting of a turret having a set of tools mounted on opposite faces thereof; two sets of a plurality of revolving spindles for holding stock on opposite sides of said turret; said turret having a reciprocating movement to bring tools alternately into operation with the two sets of spindles, and an intermittent rotary movement about an axis parallel to said spindles to bring the tools of each set successively into operation with the spindles of the set on the same side of the turret; and mechanism for operating said turret and revolving said spindles, substantially as described.

5. A multiple screw-machine consisting of a tool-holder, with sets of tools on two faces thereof; two sets of revolving spindles for holding the stock and presenting it to the two sets of tools on the tool-holder, each spindle corresponding to a tool; devices for holding the stock in each spindle; mechanism for feeding the stock into each spindle in a set successively; and mechanism for rotating said tool-holder and for reciprocating the same between said two sets of spindles, said feed mechanism and rotating and reciprocating mechanism being operated from the same driving-shaft, substantially as described.

6. In a screw-machine the combination with uprights; of a series of parallel spindles mounted to revolve in said uprights; a pulley surrounding said spindles, being internally geared to mesh with gears on said spindles; an adjustable plate mounted on a shaft parallel to the axis of said pulley; said pulley, upright, and adjustable plate being provided with corresponding channels for ball-bearings, substantially as described.

7. In a screw-machine the combination with the lathe-bed; of a tool-holder mounted on a horizontal shaft, said tool-holder having a centrally-disposed annular groove; a semicircular band adapted to fit in said annular groove; a lever pivoted to said band and to said lathe-bed; and mechanism for oscillating said lever, substantially as described.

8. In a screw-machine the combination with two sets of spindles; of a driving-shaft, having a cam-wheel mounted thereon; an oscillating lever operated by cams on said cam-wheel; and a tool-holder having tools in both ends thereof brought alternately into operation with said two sets of spindles by said oscillating lever, substantially as described.

9. In a screw-machine, the combination with the bed thereof; of two sets of spindles; a tool-holder having tools on both ends thereof and capable of a eciprocating motion: a driving-shaft having a cam-wheel mounted thereon; a lever pivoted on the bed to be oscillated by cams on said cam-wheel, said lever being connected to said tool-holder to reciprocate the same between the two sets of spindles to bring the tools alternately into operation on stock in said two sets of spindles, said tool-holder having a rotary motion independent of said lever, substantially as described.

10 In a screw-machine, the combination with a series of parallel spindles; of a tool-holder mounted on a shaft parallel to said spindles; a driving-shaft having a cam wheel mounted thereon; a lever swung from a center above the driving-shaft; a tripper on said cam-wheel adapted to eugage with said lever during a part of the revolution of said cam-wheel; and a pawl pivoted to the free end of said lever to engage with and rotate said tool-holder, substantially as described.

11. In a screw-machine, the combination with a driving-shaft; of a cam wheel; two levers operated by said cam wheel, one of said levers having a pawl connected therewith; a turret reciprocated by one of said levers and rotated by the other lever and pawl, and having tools on both ends; and two sets of parallel spindles presenting stock to both ends of said turret, substantially as described.

12. In a screw-machine, the combination with the bed thereof; of a tool-holder capable of a rotary and reciprocating motion; of a lock-bolt to hold said tool-holder against rotation, carried in a traveler dovetailed in the bed, to slide longitudinally when said tool-holder is reciprocated; a driving-shaft having a cam-wheel mounted thereon; and a lever connected with said lock-bolt to operate the same upon the engagement therewith of a tripper on said cam-wheel, substantially as described.

13. In a screw-machine, the combination with a tool-holder, capable of a rotary and reciprocating motion; of a lock-bolt adapted to hold said tool-holder against rotation, and carried on a traveler capable of a longitudinal motion when said tool-holder is reciprocated; a bell crank lever pivoted to said lathe-bed, and having one end substantially at right angles to said lock-bolt, and extending through a slot in the same; and mechanism for operating said lever, substantially as described.

14. In a screw-machine, the combination with a series of parallel revolving spindles; of devices for holding wire or rods in said spindles; reciprocating feed mechanism in alinement with each spindle; mechanism mounted to rotate on an axis parallel to said spindles, against which said feed mechanism for each spindle is adapted to come in contact successively upon the reciprocation thereof, substantially as described.

15. In a screw-machine, the combination with a series of parallel revolving spindles; of devices for holding wire or rods in said spindles; a reciprocating collar mounted on a shaft parallel to said spindles, carrying feed mechanism in alinement with each spindle; and a rotary sleeve carrying devices adapted to engage with and operate the feed mechanism for each spindle successively, substantially as described.

16. In a screw-machine, the combination with a series of spindles; of a reciprocating collar having arms in alinement with each spindle; and a friction-clutch in each arm adapted to feed stock into said spindles upon the reciprocation of the collar, substantially as described.

17. In a screw-machine, the combination with a series of parallel spindles; of devices for holding the wire or rods in said spindle; a reciprocating collar mounted on a shaft parallel to said spindles having arms in alinement with each spindle; a friction-clutch in each arm adapted to engage with the stock; rotary sleeves mounted on said shaft parallel to said spindles, carrying arbors adapted to come in contact with said clutches successively to engage and disengage the same with the stock, substantially as described.

18. In a screw-machine, a feeding device consisting of a reciprocating arm having a perforation therein, and a friction-clutch pivoted in said arm, and having an enlarged portion adapted to be swung about the pivot by contact-pieces upon the reciprocation of said arm, substantially as described.

19. In a screw machine, a feeding device, consisting of a reciprocating piece; a binding-screw in said piece; a friction-clutch pivoted in said piece having an enlarged portion adapted to engage stock with said screw when said clutch is turned on its pivot; and mechanism for reciprocating said piece and turning said clutch upon its pivot, substantially as described.

20. In a screw-machine, the combination with a series of parallel spindles; of devices on said spindles for holding the stock therein; reciprocating sleeve mounted on a shaft parallel to said spindles for operating said holding devices; and a rotary sleeve mounted on said shaft to connect said reciprocating sleeve with the holding device and to operate said feed mechanism for each spindle successively, substantially as described.

21. In a screw-machine, the combination with a series of parallel revolving spindles having friction-arms pivoted at the ends thereof, the outer ends of which are adapted to engage with the stock, and loosely-mounted collets beveled at their outer ends to wedge between the inner ends of said friction-arms; and mechanism for reciprocating said collets in succession, substantially as described.

22. In a screw-machine, the combination with a series of parallel revolving spindles having friction-arms pivoted at the ends thereof, and loosely-mounted collets beveled at one end to wedge between the inner ends of said friction arms; of a rotary and reciprocating sleeve mounted on a shaft parallel to said spindles adapted to engage with the collets in succession to reciprocate the same, substantially as described.

23. In a screw-machine, the combination with a series of parallel spindles; of devices for holding the stock in said spindles; a sleeve mounted on a shaft parallel to said spindles, capable of a rotary motion to engage successively with the holding device on each spindle, and of a reciprocating motion to operate the holding device engaged therewith; and mechanism for operating said sleeve, substantially as described.

24. In a screw-machine, the combination with a series of parallel spindles; of devices for holding the stock in said spindles; a rotary and reciprocating sleeve mounted on a shaft parallel to said spindles having an arm adapted to engage successively with the holding devices on each spindle, and to operate the device so engaged, substantially as described.

25. In a screw-machine, the combination with a tool-holder; of a head having mounted therein dies; a shank adapted to slide in said tool-holder; a sleeve adapted to surround said head and shank and capable of sliding thereon; a lever pivoted to said tool holder and connected with said sleeve; and mechanism against which said lever is adapted to come in contact upon the forward movement of said shank, substantially as described.

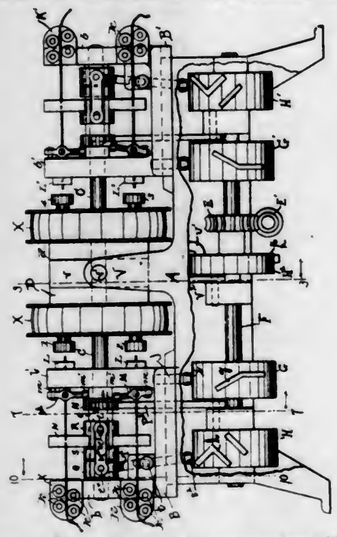
26. In a screw-machine, the combination with a tool-holder; of a head having dies mounted therein; a shank adapted to slide in said tool-holder; a sleeve surrounding said head and shank and adapted to engage with said dies to force them toward the center; and a spring connecting said shank and tool-holder to draw said head within said sleeve, substantially as described.

27. In a screw-machine, the combination with a tool-holder; of a head having dies mounted therein; a shank connected to said head adapted to slide in said tool-holder; a sleeve surrounding said head and shank capable of sliding thereon, and having a beveled surface to engage with said dies and force the same positively toward the center; a lever pivoted to said tool-holder and connected to said sleeve; a spring forcing said shank inward to draw said head within said sleeve; and mechanism against which said lever is adapted to come in contact upon the forward movement of said shank, substantially as described.

28. In a screw-machine, the combination with a tool-holder; of a head having dies mounted therein; a shank adapted to slide in said tool-holder; a sleeve surrounding said head and shank, and adapted to engage with said dies to force them toward the center; and an arm having a beveled surface against which a lug in said head may come in contact upon the rotation of said tool-holder, substantially as described.

29. In a screw-machine, the combination with the tool-holder; of a shank capable of a longitudinal movement therein; a spring constantly tending to press said shank outward; a forked head to said shank having two carriages dovetailed in the forks thereof to slide transversely; levers pivoted to said head and to said sliding carriages; and beveled blocks against which the ends of said levers are adapted to bear to draw said carriages toward the center when said shank is pressed inward against the tension of said spring, substantially as described.

574,163. MULTIPLE SCREW-MACHINE. GEORGE G. PRENTICE, New York, N. Y. Filed Aug. 2, 1895. Serial No. 558,021. (No model.)



Claim.—1. The combination in a screw-machine with a tool-holder having similar tools on opposite sides thereof; of separate devices for holding and feeding stock on opposite sides of said tool-holder, said devices being mounted on reciprocating carriages; and means for reciprocating said carriages, substantially as described.

2. The combination in a screw-machine, with a tool-holder adapted to hold therein revolving tools; of devices on opposite sides of said tool-holder for holding a plurality of parallel lengths of stock; carriages upon which said devices are mounted, adapted to bring the stock into operation with the tools; and means for operating said carriages, substantially as described.

3. In a screw-machine, the combination with a tool-holder adapted to hold revolving tools on two faces thereof; of devices for holding stock against rotation; reciprocating carriages on which said devices are mounted, adapted to bring stock simultaneously into operation with the tools on the two sides of said tool-holder; and means for operating said carriages, substantially as described.

4. A multiple screw-machine, consisting of a turret having a set of revolving tools on opposite sides thereof; devices for holding stock against rotation; two carriages on which said devices are mounted on opposite sides of said turret, said carriages being adapted to reciprocate synchronously to bring the stock into operation simultaneously with said tools; said turret being adapted to rotate to bring the tools of each set successively into operation upon the stock on the carriage on the corresponding side of said turret; and means for operating said carriages and tool-holders, substantially as described.

5. A multiple screw machine, consisting of a tool-holder with sets of revolving tools on opposite sides thereof; devices for holding stock against rotation; carriages on opposite sides of said tool-holder, upon which said devices are mounted, each device corresponding to a tool; mechanism for feeding stock into each device on a carriage successively; and mechanism for rotating said tool-holders and reciprocating said carriages being operated from the same driving-shaft which operates said feed mechanism, substantially as described.

6. In a screw-machine, the combination with devices for holding stock against rotation; of carriages upon which said devices are mounted; a tool-holder having tools on opposite sides thereof; mechanism for revolving said tools in said tool-holder; means for rotating said tool holder; and mechanism for bringing said tools into operation with stock on all the carriages simultaneously, substantially as described.

7. In a screw-machine, the combination with devices for holding stock against rotation; of carriages upon which said devices are mounted; a tool holder mounted between said carriages, and having tools on opposite sides thereof; mechanism for rotating said tool-holder; gearing on each of said tools for revolving the same, driven by mechanism independent of the mechanism for operating said turret; and means for reciprocating said carriages to bring the stock into operation with said tools, substantially as described.

8. In a screw-machine, the combination with devices for holding the stock, against rotation; of reciprocating carriages upon which said devices are mounted; a tool-holder mounted between said carriages, having tools on opposite sides thereof; mechanism for rotating said turret; gearing on each of said tools for revolving the same; pulleys internally geared to mesh with said gearing on tools; channel-plates for securing said pulleys to said tool-holders; and mechanisms for driving said pulleys and reciprocating said carriages, substantially as described.

9. In a screw-machine, the combination with a tool-holder; of tools mounted on shafts in either end thereof; pulleys on said tool-holders capable of an independent rotary movement thereon, being internally geared to mesh with gearing on said shafts; channel-plates for securing said pulleys on said tool-holders; and mechanism for rotating said tool-holders and driving said pulleys, substantially as described.

10. In a screw-machine, the combination with a tool-holder having tools on opposite sides thereof; of reciprocating carriages on opposite sides of said tool-holder; devices for holding stock against rotation, mounted on said carriages; and feeding mechanism mounted on said carriages to feed the stock into each device on either carriage successively; and mechanism for reciprocating said carriages, substantially as described.

11. In a screw-machine, the combination with a tool-holder of a carriage; a plurality of chucks mounted on said carriage, said chucks being internally conically beveled; split collets having conically-tapered heads adapted to engage with said conical beveling in said chucks; levers hinged to said collets, and pivoted to, engage and disengage said collets with said chucks; and mechanism for successively swinging said levers on their pivots, substantially as described.

12. In a screw-machine, the combination with a tool-holder; of a carriage; a plurality of chucks mounted on said carriage, said chucks being internally conically beveled; split collets having heads conically tapered to engage in said internal beveling in said chucks; levers hinged to said collets, and pivoted to engage and disengage said collets with said chucks; a rotary collar mounted on a shaft to come in contact with the free ends of said levers, having an eccentric adapted to swing each lever successively on its pivot; and means for rotating said collar, substantially as described.

13. In a screw-machine, the combination with a carriage, having mounted thereon a plurality of devices for holding stock against rotation; of a collar having feeding mechanism mounted thereon corresponding to each device, said collar being capable of a reciprocating movement; means for operating each feeding mechanism successively; and mechanism for reciprocating said collar, substantially as described.

14. In a screw-machine, the combination with a carriage, having mounted thereon a plurality of devices for holding stock against rotation, of a reciprocating collar having arms corresponding to each of said devices; friction-clutches mounted on said arms being adapted to be turned about their center; mechanism for reciprocating said collar; and means for operating said friction-clutches successively on the forward movement of said collar, substantially as described.

15. In a screw-machine, the combination with a carriage having mounted thereon a plurality of devices for holding stock against rotation; of a reciprocating collar mounted on a shaft on said lathe, having arms corresponding to each of said devices; feed mechanism on said arms; a supplementary collar on said shaft, capable of a rotary movement, having thereon an eccentric adapted to operate said mechanism on said arms successively; and mechanisms for reciprocating said collar and rotating said supplementary collar, substantially as described.

16. In a screw-machine, the combination with a plurality of devices for holding stock against rotation; of a reciprocating collar having arms in alinement with each of said devices; feed mechanism on said arms; a supplementary collar, capable of an intermittent rotary movement and a reciprocating movement; an eccentric on said supplementary collar for operating the mechanism on said arms; a lever pivoted to reciprocate said collars; and means for rotating said supplementary collar independent of said lever to bring the eccentric thereon in alinement with each arm successively, substantially as described.

17. In a screw-machine, the combination with a tool-holder; of a head having threading-dies mounted thereon; a shank capable of a revolving and longitudinal movement in said tool-holder; a spring constantly tending to draw said head and shank inward to said tool-holder; a sleeve surrounding said head and shank, and adapted to engage with said dies to force them toward the center; and a lever pivoted to said tool-holder and connected to said sleeve, allowing the same an independent rotary movement, while controlling its longitudinal movement; and means for revolving said shank, substantially as described.

18. In a screw-machine, the combination with a tool-holder; of a shaft capable of a revolving and limited longitudinal movement therein; a forked head having a plurality of tool-carriages adapted to slide transversely therein; means for communicating to said carriages their transverse movement upon the rearward movement of said shaft; a stud-piece having swiveling connections with said shaft, adapted to come in contact with the stock and force said shaft rearward; and mechanism for rotating said shaft, substantially as described.

19. A multiple screw-machine, consisting of a plurality of devices for holding stock against rotation; a reciprocating carriage on which said devices are mounted; a tool-holder having revolving tools on one end corresponding to the number of holding devices on said carriage, and capable of an intermittent rotary motion on a horizontal axis to bring each tool successively into operation with the stock in each of said devices, and all the tools simultaneously into operation on stock; and mechanism for revolving said tools, reciprocating said carriage, and rotating said tool-holder, substantially as described.

20. A multiple screw-machine, consisting of a plurality of devices for holding stock against rotation; a reciprocating carriage on which said devices are mounted; mechanism for feeding stock into each of said devices successively; a tool-holder having revolving tools on one end corresponding to the number of holding devices on said carriage, and capable of an intermittent rotary movement on a horizontal axis to bring each tool successively into operation with the stock in each of said devices, and all the tools simultaneously into operation upon stock; and mechanisms for revolving said tools, reciprocating said carriage, and rotating said tool-holder, substantially as described.

21. In a screw-machine the combination with a tool-holder; of shafts on which tools may be mounted; a pulley surrounding said shafts being internally geared to mesh with gears on said shafts; and an adjustable plate mounted on said tool-holders, substantially as described.

22. In a screw-machine the combination with a tool-holder having an annular flange thereon; an adjustable plate adapted to be mounted on said tool-holder; a pulley mounted on said tool-holder and plate; and revoluble shafts on which tools may be mounted, having gearing meshing with gearing on the interior of said pulley, substantially as described.

574,164. SPRING BELT-PUNCH. ROBERT W. PRYOR and CHARLES SCHAETZLE, Newark, N. J., assignors to the W. W. Pryor Hardware Manufacturing Company, of New Jersey. Filed Feb. 27, 1896. Serial No. 581,021. (No model.)

Claim.—1. The improved punch herein described, in which is combined with pivoted cutter members *a*, *b*, one of which is provided with a tubular cutter and the other with a recess and transverse perforations, the recess being funnel-shaped at its bottom or inner extremity, and a cooperating cutter-head *c*, having a shank with a conical

extremity and a transverse perforation, and a pin held in the perforations of the member *a*, and passing through the shank of the head, the latter having a loose movement in said member *a*, and on said head, substantially as set forth.



2. The improved punch herein described, comprising the pivotal members *a*, *b*, one of which is provided with a cotter and the other a recess and transverse perforation, and a cutter-head *c*, loosely held in said recess, having a shank bearing firmly on the bottom of said recess, but having a rocking movement thereon in all directions, and a pin arranged in said transverse perforation and loosely holding said shank permanently within the recess, substantially as set forth.

574,165. ADJUSTABLE TRACE-LOOP. SAMUEL E. PURDUM, Macomb, Ill. Filed Mar. 23, 1896. Serial No. 584,809 (No model.)



Claim.—1. The combination with the strap, of the loops embracing the same and adapted to slide thereon, the elongated loop and the pivoted keeper, pivotally connected in the hook on the rear end of the loop, substantially as described.

2. The combination with the strap, of the loops embracing the same and adapted to slide thereon, the elongated loop and the pivoted keeper, the latter being provided with a depending portion adapted to pass through the loops into the strap, substantially as described.

3. The combination with the strap in two pieces, one above the other, of the loops embracing the upper and lower pieces of the strap, the loop extending from the upper loop and terminating at the other end in a loop embracing the upper strap, and a keeper pivotally mounted on the last-mentioned loop, substantially as described.

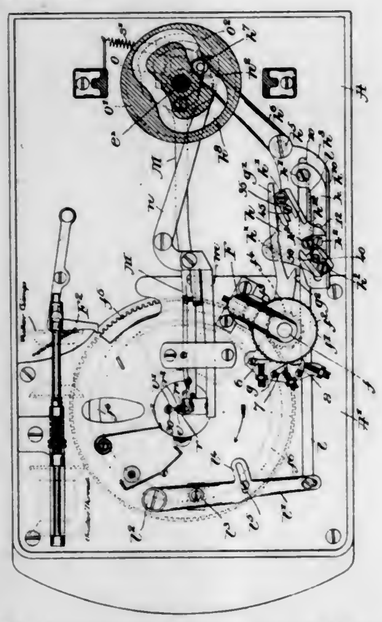
4. The combination with the strap in two pieces, one above the other, of the loops embracing the upper and lower pieces of the strap, the loop extending from the upper loop and terminating at the other end in a loop embracing the upper strap, and a keeper pivotally mounted on the last-mentioned loop, and having depending pins, substantially as described.

5. The combination with the strap in two pieces, one above the other, of the loops embracing the upper and lower pieces of the strap, the loop extending from the upper loop and terminating at the other end in a loop embracing the upper strap, and a keeper pivotally mounted on the last-mentioned loop, and having depending pins and an elongated slot, substantially as described.

574,166. BUTTONHOLE-SEWING MACHINE. WM. RAHUCHLE, Boston, Mass., assignor to the Champion Button-Hole Machine Company, same place. Filed May 3, 1895. Serial No. 548,013. (No model.)

Claim.—1. In a buttonhole-sewing machine, feed mechanism, including a pawl-carrier, an oscillating support, projections movable therewith, one or the other of which is adapted to cooperate with and actuate the pawl-carrier at different distances from its axis, and means independent of said pawl-carrier and of said support, to automatically move said projections relatively to said support and to said pawl-carrier to bring the said projections singly into operative position, substantially as described.

2. In a buttonhole-sewing machine, feed mechanism, including a ratchet-wheel, a pawl, and a pawl-carrier, the latter having an extended arm, an oscillating support, projections movable therewith to cooperate one at a time with said arm, to give the pawl carrier a different stroke, and means to automatically move one projection into operative, and the other projection into inoperative position, substantially as described.



3. In a buttonhole-sewing machine, a ratchet-wheel, and a pawl-carrier provided with a pawl to engage the teeth of and move said ratchet-wheel intermittingly, and an actuating-arm therefor, a swinging plate pivoted on said arm and provided with projections to engage said pawl-carrier, and means to automatically move said plate to bring one or the other of said projections into operative position to give said pawl-carrier a greater or less movement thereby, substantially as described.

4. In a buttonhole-sewing machine, an oscillating support having a constant throw, a roll-carrier thereon, adjustable rolls on the carrier, a ratchet-wheel, a pawl-carrier provided with a pawl to actuate the ratchet wheel, and extended into the path of movement of one or the other of said rolls, a cam-disk rotated by the ratchet-wheel, and means controlled by said disk to automatically shift the roll-carrier and thereby alter the throw of the pawl-carrier at predetermined times, substantially as described.

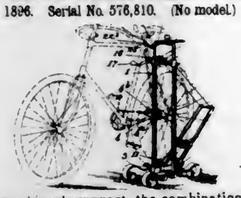
5. In a buttonhole sewing machine, a clamp guide-plate, a button thereon having an elongated slot, and an adjustable lower gimp-guide having its delivery end extended into the elongated slot of the button, substantially as described.

6. In a buttonhole-sewing machine, a lower gimp-guide having an upturned tubular extension through which the gimp is led and delivered, and means to adjust the position of said extension, substantially as described.

7. In a buttonhole-sewing machine, an upper purl-thread guide, and mechanism to move said guide from one to the other side of the needle-path, to lay the purl-thread around the needle-thread at the upper side of the work, said mechanism consisting of a reciprocating rocking rod carrying said guide, said rod being provided with a laterally-extending arm rigid therewith, a fixed V-shaped cam-slot to receive the free end of said arm to thereby positively rock said rod in either direction, and a vibrating bell-crank in loose engagement at one end with said rod to reciprocate the same, and connected at its other end to a moving part of the machine to be properly vibrated thereby, substantially as described.

8. In a buttonhole-sewing machine, a vertically-reciprocating needle, a vibrating needle-bar carrier, an upper purl-thread guide arranged to vibrate beyond and about said needle, a reciprocating rocking rod carrying said guide, means to vibrate said carrier and guide together at different speeds in the same direction, and a V-shaped cam-slot to engage an arm projecting from said rod, to rock the said rod as it is reciprocated to thereby carry the purl-thread around the needle-thread at the upper side of the work, substantially as described.

574,167. BICYCLE-TRAINER. FRANCIS B. RAY, New York, N. Y. Filed Jan. 25, 1896. Serial No. 576,810. (No model.)

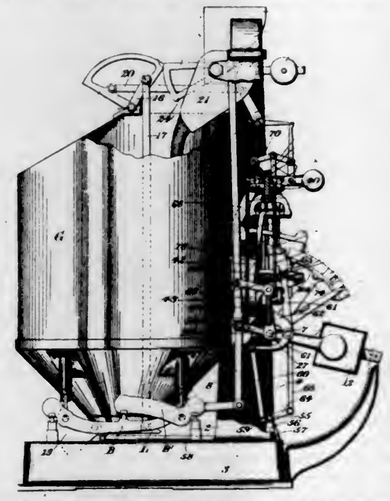


Claim.—1. In a bicycle-support, the combination of a base and the vertical rods or standards, extending therefrom, constituting a supporting-frame, rods pivoted to said supporting-frame, the braking-wheel rotatably mounted upon said rods, a winding-drum journaled upon said standards, the rope or chain attached to said rods and adapted to be wound upon said drum, and means for supporting the rear wheel of a bicycle between said standards free of the ground, substantially as set forth.

2. In a bicycle-support, the combination of suitable means for supporting the rear wheel of a bicycle free of the ground, a pivotally-mounted braking-arm, a friction-drum journaled upon said arm, a winding-drum provided with pawl-and-ratchet mechanism mounted on said standards, means for operating the winding-drum, and cords or chains connecting the free end of the pivoted braking-arm with the drum, substantially as set forth.

3. In a bicycle-support, the combination of the upright rods or standards, the braking-rods pivoted thereto, the braking-drum journaled between the pivoted rods, winding-drum journaled in the upper end of the upright rods or standards, an operating-crank keyed to said winding-drum, pawl-and-ratchet mechanism for said drum, means for supporting the rear wheel of a bicycle free of the ground within said standards, and cords or chains connecting the upper ends of the pivoted braking-rods to the winding-drum, substantially as set forth.

574,168. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Aug. 15, 1896. Serial No. 602,865. (No model.)



Claim.—1. The combination with a load-receiver, of overloading means therefor; load-reducing and auxiliary load-supply means, each comprehending a valve; and a reciprocatory bar provided with an actuator for the load-reducing valve and having also a pair of actuators for said auxiliary load-supply valve.

2. The combination with a load-receiver, of overloading means therefor; load-reducing and auxiliary load-supply means, each comprehending a valve; and a reciprocatory bar provided with an actuator for the load-reducing valve and having also a pair of actuators for the auxiliary load-supply valve, one of which is a by-pass actuator.

3. The combination with a load-receiver and overloading means therefor, of a supporting scale-beam for said load-receiver; load-reducing and auxiliary load-supply means, each comprehending a valve: and a reciprocatory bar provided with an actuator for the load-reducing valve and having also a pair of actuators for said auxiliary load-supply valve, said bar being controlled by said scale-beam.

4. The combination with a load-receiver and beam mechanism therefor, of overloading means; load-reducing and auxiliary load-supply means, each comprehending a valve; and a pair of operatively-connected bars controlled by the beam mechanism, one of which has a pair of actuators, one for each of said valves.

5. The combination with framework, of a load-receiver and beam mechanism therefor; load reducing and auxiliary load-supply means, each comprehending a valve; a rock-shaft mounted on the framework and having a pair of rock-arms attached thereto; and rods connected to said rock-arms, one of which is controlled by the beam mechanism, the other being furnished with a pair of actuators for the valves.

6. The combination with a bucket, of a series of supporting scale-beams therefor; a chute; a valve for said chute, provided with a depending rod; a scale-beam supported independently of said series of scale-beams and operatively connected to one of them; a shaft for sustaining said independently-supported scale-beam; and a valve-actuator oscillatory about said shaft and positioned for transmitting a thrust to said rod.

7. The combination with a bucket, of a series of supporting scale-beams therefor; a chute; a valve for said chute, provided with a depending rod; a scale-beam supported independently of said series of scale beams and operatively connected to one of them and having a hub provided with a projection; a shaft passing through said hub; and a valve-actuator normally resting on said projection and oscillatory about said shaft and also positioned for transmitting a thrust to said rod.

8. The combination with a bucket, of a series of supporting scale-beams therefor, each consisting of two longitudinal sections joined at points adjacent to its ends; an independently-supported weight-beam operatively connected to one of said series of beams by a rod; a supply-hopper; a valve for said hopper; and actuating means for said valve.

9. The combination with a bucket having a closer, of a rod passing through said bucket and attached to said closer; a rocker mounted on the bucket and operatively connected to said rod, said rocker also constituting a stop; means for holding said rocker against movement; a chute having a valve; and a stop operative with the valve and coactive with said first-mentioned stop.

10. The combination with a bucket having a closer, of a rod attached to said closer and passing through the bucket; overloading and load-reducing means for causing the descent of the bucket below and above the poising-line; and means for holding said rod and thereby the closer against movement as the bucket passes below and above the poising-line.

11. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against movement; a toggle attached to said latch; and a latch-tripper operatively connected to said toggle.

12. The combination with framework, of a bucket having a closer; means comprehending a latch for holding said closer against movement; a toggle attached to said latch and also to the framework; and a movably-mounted latch-tripper operatively connected to said toggle.

13. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against movement; a toggle attached to said latch; and a rod operatively connected to said toggle and also to a tripper for said latch.

14. The combination with framework, of a bucket having a closer; means comprehending a latch for holding said closer against movement, said latch being supported by the framework; and a toggle attached to said latch and also to the framework and operatively connected to a tripper for said latch.

15. The combination with a bucket having a closer, of means comprehending a latch for holding the same against movement; a latch tripper; a trigger for operating the latter; and a reciprocatory member having a device operative therewith for engaging said trigger.

16. The combination with a bucket having a closer, of means comprehending a latch for holding the same against movement; a latch tripper; a trigger for operating the latter; and means operative with the closer for engaging said trigger.

17. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against movement; a toggle attached to said latch; and a self-active latch tripper operatively connected to said latch.

18. The combination with a bucket having a closer, of means comprehending a latch for holding said closer against movement; a toggle attached to said latch; a latch-tripper; a trigger for actuating said latch-tripper; and a reciprocatory member having a device operative therewith for engaging said trigger.

19. The combination with framework, of a bucket having a closer; means comprehending a latch for holding said closer against movement; a latch-tripper; a trigger mounted on the framework and

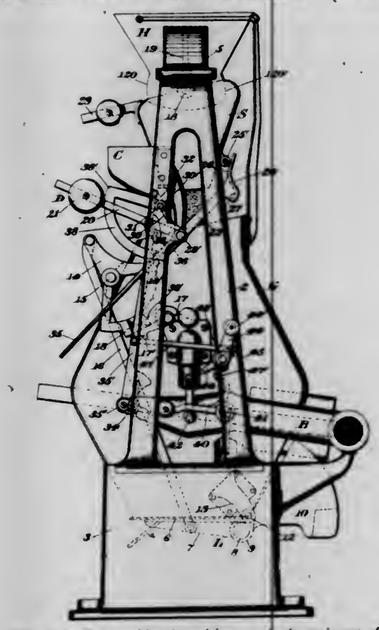
adapted for operating said latch tripper; and means operative with the closer for engaging said trigger.

20. The combination with a bucket and with load-reducing and auxiliary load-supply means, each comprehending a valve, the hub of the auxiliary load-supply valve being sleeved to a support and constituting one member of a clutch; of a complemental clutch member on said support; an operating lever for the latter; and a rock-shaft having three rods pivoted to rock-arms thereon, said rods being operatively connected, respectively, with said load reducing valve, said lever, and said closer.

21. The combination with a bucket having a closer normally held against movement by means comprehending a latch, of a latch tripper; a trigger for the latter; load-reducing means comprehending a valve; and a rod operatively connected to said valve and the closer and provided with a projection for engaging said trigger.

22. The combination with a bucket having a closer, of means comprehending a latch for holding the same against movement; a toggle attached to said latch and having a latch tripper operatively connected thereto, said latch-tripper having a tooth; a pair of reciprocatory plates; and means for reciprocating said plates, whereby the notches may be caused to register at a point opposite the tooth of the latch-tripper and into which said tooth may be thrust.

574,169. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 15, 1896. Serial No. 608,999. (No model.)



Claim.—1. The combination with a spout, of a main cut-off therefor; a shaft; and an auxiliary cut-off sleeved to said shaft, the sleeve of said auxiliary cut-off bearing against the discharge edge of the main cut-off and preventing the entrance of material between said parts.

2. The combination with a supply-hopper, of a stationary cut-off; an interposed oscillatory spout adapted to deliver a stream of material into said stationary cut-off; a shaft; a second cut-off sleeved to said shaft, the sleeve of which bears against the discharge edge of the stationary cut-off and preventing the entrance of material between said parts.

3. The combination with weighing mechanism including a bucket, of a hopper; a shaft; a cut off sleeved to said shaft, the sleeve of which is adapted to bear against the discharge edge of said hopper and prevent the entrance of material between said parts.

4. The combination with weighing mechanism including a bucket, of a supply-hopper; a cut-off; an oscillatory spout cooperative with said hopper and controlled by the weighing mechanism, the lower portion of said hopper being convex, against which convexity the adjacent portion of the spout is adapted to run approximately in contact as it swings back and forth, said convexity being concentric with the axis of movement of said spout; a shaft; and an auxiliary cut-off sleeved to said shaft, the sleeve of which bears against the discharge edge of said main cut-off.

5. The combination with weighing mechanism including a bucket, of a supply-hopper; a stream-controller having a projection; an arm provided with a cam, the working face of which is adapted to travel along said projection, said cam also having a concavity which is adapted to receive said projection; and means for operating said arm.

6. The combination with weighing mechanism including a bucket, of a supply-hopper; a cut-off; an oscillatory spout located between said cut-off and supply-hopper and having a projection; an arm provided with a cam, the working face of which is adapted to travel in contact with said projection, said cam also being furnished with a concavity adapted to receive said projection; and means for operating said arm.

7. The combination with weighing mechanism including a bucket, of a supply hopper; an oscillatory stream-controller having a projection; a shaft having an arm thereon provided with a cam, the working face of which is adapted to travel in contact with said projection, said cam also having a concavity for receiving said projection; and a counterweighted arm on said shaft.

8. The combination with a bucket and with a scale-beam for supporting the same, of a supply-hopper; an oscillatory stream-controller cooperative therewith; an arm provided with a cam, the working face of which is adapted to travel in contact with said projection, said cam also having a concavity for receiving said projection; means for operating said arm; and a connection between said operating means and the scale-beam.

9. The combination with weighing mechanism including a bucket, of a supply-hopper; a main cut off; an oscillatory spout located between said main cut-off and supply-hopper, and having a projection; a shaft having an arm provided with a cam, the working face of which is adapted to travel in contact with said projection; an operating arm connected to said shaft and controlled by the weighing mechanism; a second shaft having an auxiliary cut-off coöperative with the main cut-off; and a connection between said second shaft and said operating-arm.

10. The combination with a bucket and with a scale-beam for supporting the same, said bucket having a closer; of means comprehending a latch for holding said closer against movement; a supply-hopper; a cut-off; an oscillatory spout located between said cut-off and supply-hopper; an actuating device for said oscillatory spout; a weighted member normally carried by the scale-beam; a rod directly connected to said actuating device and bearing against the scale-beam, said rod having a tripper for the latch; and shifting means simultaneously operative for elevating said weighted member and for throwing said rod into an inoperative position, whereby it will be disengaged from the scale-beam.

574,170. WEIGHING-MACHINE. FRANCIS H. RICHARDS, Hartford, Conn. Filed Oct. 19, 1896. Serial No. 609,286. (No model.)



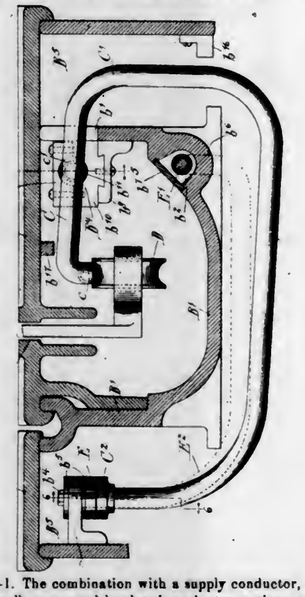
Claim.—1. In a weighing-machine, the combination with a supply-spout; of a main and a supplemental valve pivotally connected together; means for advancing said valves simultaneously; a crank-arm located on the supplemental valve; and an actuator for said supplemental valve comprising a stationary arm having a valve-opening and a valve closing cam-face located in operative relation with the crank-arm and between which it is received and effective for controlling the opening and closing movements of the valve and for positively holding said valve against vibratory movement during the closing movement thereof.

2. The combination with a supply-hopper, of a main and supplemental valve pivotally connected with their discharge edges facing in the same direction and having their adjacent connected edges beveled to form a knife-edge joint, the point of one edge being in contact with the point of the other edge and in alinement with the axis of movement of the supplemental valve; and independent means for actuating the supplemental valve during the movement of the main valve.

3. The combination with a supply-hopper, of a main valve pivotally supported for oscillatory movement across the discharge end of said hopper and having a grooved guard-plate depending from the lower side of the discharge end thereof; a supplemental valve pivotally supported on the discharge edge of said main valve, concentric to the curved guard-plate, and having a concave material-supporting plate located in a plane parallel to and below the curved guard-plate and having its discharge end in advance of the discharge end of the main valve; a knife-edge joint between the main and supplemental valves located in alinement with the axis of movement of the supplemental valve; means for advancing the main and supplemental valves in unison; and means for effecting a closing and opening movement, alternately, of the supplemental valve at predetermined points in the advancing and retracting movements of the main valve.

4. The combination with a supply-hopper, of a main valve pivotally supported for oscillatory movement across the discharge end of said hopper and having a curved guard-plate depending from the lower side of the discharge end thereof; a supplemental valve pivotally supported on the discharge edge of said main valve concentric to the curved guard-plate and having a concave material-supporting plate located in a plane parallel to and below the curved guard-plate and having its discharge end in advance of the discharge end of the main valve; a knife-edge joint between the main and supplemental valves, located in alinement with the axis of movement of the supplemental valve; and a supplemental-valve actuator embodying two opposing cams, one of which is effective on the advancing movement of the main valve for imparting a closing movement to the supplemental valve, and the other of which is effective on the retracting movement of the main valve for imparting an opening movement to the supplemental valve, for holding said supplemental valve against accidental vibratory movement.

574,171. ELECTRIC RAILWAY. JOHN A. ROCHE, Chicago, Ill. Filed Apr. 13, 1895. Serial No. 545,573. (No model.)



Claim.—1. The combination with a supply conductor, of a plurality of pivotally-supported insulated conductor-sections, stationary and movable contact-pieces, said contact-pieces being located at the side of the conductor-sections opposite the pivotal axes of the same, and oscillating arms which are rigidly attached to and move with the conductor-sections and which carry the movable contact-pieces, substantially as described.

2. The combination with a slotted conduit and a supply-conductor, of movably supported, insulated, conductor-sections located in the upper part of the conduit at one side of the slot therein, stationary and movable contact-pieces located near the top of the conduit at the side of the conduit-slot opposite the conductor-sections, and means for actuating the movable contact-pieces from the conductor-sections embracing arms which extend across the conduit beneath the said slot, substantially as described.

3. The combination with a slotted conduit and a supply-conductor, of pivotally-supported, insulated conductor-sections, stationary and movable contact-pieces located at the side of the conduit-slot opposite the pivots of the conductor sections, such stationary contact-plates being connected with the supply-conductor, and oscillating arms carrying said movable contact-plate, said arms being rigidly attached to the conductor-sections and extending across the conduit below said conductor-sections, substantially as described

4. The combination with a slotted conduit and supply-conductor located therein, of pivotally-supported, insulated conductor-sections, and means for connecting the conductor-sections with the supply-conductor comprising downwardly-facing contact-plates connected by means of branch conductors with the supply-conductor and oscillating arms rigidly attached to the conductor-sections and carrying vertically-movable upwardly-facing contact-plates which are rigidly attached to said arm and adapted to be lifted against the stationary contact-plates by upward pressure on the conductor-sections, substantially as described.

5. The combination with a slotted conduit and a supply-conductor of pivotally-supported, insulated conductor-sections located in the conduit, stationary and movable contact-plates located outside of the conduit-wall at the side thereof opposite that at which the pivots of the conductor sections are located and rigid arms for carrying the movable contact-pieces which arms are attached to the conductor-sections and pass around and beneath the conduit, and exterior housings surrounding the said contact-plates and arms, substantially as described.

6. The combination with a supply conductor of oscillating frames, which frames consist of conductor-sections, bars arranged parallel therewith and forming pivots for the frames and arms rigidly connecting the conductor-sections with said bars and means for connecting the supply-conductor with the said sections comprising stationary and movable contact-pieces and rigid arms for carrying said movable contact-pieces, said arms being rigidly attached to said frames, substantially as described.

7. The combination with a supply conductor, of oscillating frames, which frames consist of conductor-sections, pivot-bars arranged parallel therewith and arms rigidly connecting the conductor-sections with said bars and means for connecting the supply-conductor with the said sections comprising stationary and movable contact-pieces and arms rigidly attached to the frame, for carrying said movable contact-pieces, and bearings of insulating material for said pivot-bars of the frames, substantially as described.

8. The combination with a slotted conduit of oscillatory frames pivotally mounted within the conduit at one side of the slot thereof, conductor-sections supported on said frames in position for engagement by an underrunning trolley, stationary and movable contact-pieces at the opposite side of the slot, a line wire connected with said stationary pieces, and rigid arms on the frames, extending beneath the slot and actuating the movable contact-pieces to afford connection between the supply-conductor and conductor-sections when the frames are oscillated by the trolley, substantially as described.

9. The combination with a slotted conduit, of oscillatory frames pivotally mounted within the conduit at one side of the slot thereof, conductor-sections supported on said frames in position for engagement by an underrunning trolley, rigid arms on the frames extending outside of and beneath the conduit to the opposite side of the slot from the frames, contact-pieces located above the ends of said arms, and a line conductor connected with said contact-pieces, whereby the lifting of each frame by the passage of the trolley beneath its conductor-strip will raise the rigid arm against the superjacent contact-piece, substantially as described.

10. The combination with a slotted conduit, of oscillatory frames pivotally mounted within the conduit, conductor sections supported upon said frames in position for engagement by an underrunning trolley, rigid arms on the frames extending around and beneath the conduit, exterior housings on the conduit inclosing said arms, stationary contact-pieces in said exterior chambers above the free ends of the arms, and a line conductor connected with the said contact-pieces, substantially as described.

11. The combination with a slotted conduit, of oscillatory frames pivotally mounted within the conduit, conductor-sections supported upon said frames in position for engagement by an underrunning trolley, rigid arms on the frames extending out of the conduit through an aperture in the upper side wall thereof, and extending around and beneath the conduit, exterior chambers cast integral with the conduit, inclosing said arms, contact-pieces in said chambers above the free ends of the arms, an insulated line conductor within the conduit and connections between each contact-piece and the line conductor, substantially as described.

12. The combination with a slotted conduit, of oscillatory metallic frames pivotally mounted in insulating bearings at one side of the conduit-slot and each supporting an exposed conductor-section in position for engagement by an underrunning trolley, contact-pieces at the opposite side of the conduit-slot, a supply-conductor connected with each of said contact-pieces, and rigid arms on the frames extending around and beneath the conduit and adapted for contact with said plates when the conductor-section is engaged by the trolley, substantially as described.

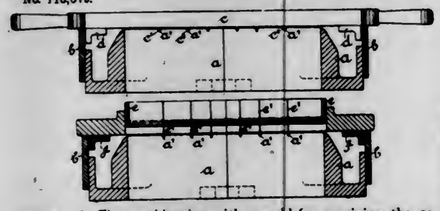
13. The combination with a slotted conduit, of oscillatory metallic frames pivotally mounted within the conduit at one side of the

slot thereof, said frames being formed of two parallel bars, one journaled in insulating bearings on the conduit and the other forming a conductor section adapted for engagement with a trolley, and transverse arms connecting said parallel bars, arms on the frames extending around and beneath the conduit, exterior housings on the conduit inclosing said arms, and contact pieces mounted on insulating-supports in said exterior chambers above the free ends of said arms, substantially as described.

14. The combination with a slotted conduit and a supply-conductor of oscillating frames which frames consist of conductor-sections, pivot-bars arranged parallel therewith and arms rigidly connecting the conductor-sections with the said pivot-bars, bearings for said frames consisting of brackets on the side walls of the conduit, two-part bearings of insulating material secured to said brackets, rigid arms attached to the said frames and stationary and movable contact-pieces of which the movable contact-pieces are carried by said arms and a supply-conductor connected with the stationary contact-pieces, substantially as described.

15. The combination with a slotted conduit, of pivotally-mounted conductor-sections, adapted for the engagement therewith of an underrunning trolley, rigid arms attached to said sections and moving therewith a supply-conductor and contact devices for connecting the said conductor-section with the supply conductor, comprising rigid arms attached to the conductor-sections and provided with contact-pieces at their free ends, insulated contact-plates attached to the under side of brackets secured to the conduit and branch conductors extending from said contact-plates to the supply conductor, substantially as described

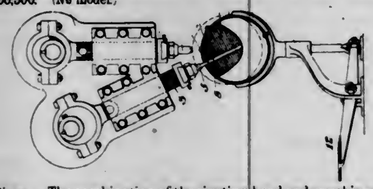
574,172. MEANS FOR MAKING ARTIFICIAL STONE. FERDINAND J. ROHTS, Mügeln, Germany. Filed June 19, 1896. Serial No. 596,108. (No model.) Patented in Germany Dec. 21, 1894, No. 83,600; in Austria May 4, 1895, No. 45/1,592, and in Belgium Dec. 16, 1895, No. 118,879.



Claim.—1. The combination with a mold for receiving the cement, mortar or concrete, having slots in its upper edges, of a strike-iron having projecting teeth corresponding in position and depth with the slots in the upper edges of the mold and means connected with the mold for guiding the strike-iron over the mold, substantially as set forth.

2. The combination with a mold for receiving the cement, mortar or concrete, having slots in its upper edges, of a color-distributing box having partition-walls forming compartments for receiving different colors, and the lower edges of whose walls project to fit the slots in the upper edges of the mold, and means connected with the mold for guiding the color-distributing box over the mold, substantially as set forth

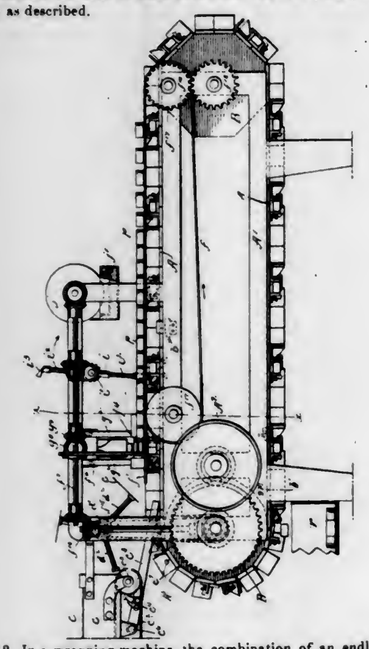
574,173. PUNCHING AND RIVETING MACHINE. WILLIAM B. SCAIFE, Allegheny, and GUSTAVE A. MOSCHEL, Oakmont, Pa., assignors to Charles C. Scaife, Allegheny, Pa. Filed July 25, 1896. Serial No. 600,500. (No model.)



Claim.—The combination of the riveting head and punching-head set side by side and directed radially to a supporting-anvil and means for actuating the same.

574,174. PARCEL-WRAPPING MACHINE. MEYER W. SCHLOSS, New York, N. Y., assignor to the Automatic Wrapping Machine Company, of New York. Filed July 6, 1896. Serial No. 598,093. (No model.)

Claim.—1. In a wrapping-machine, an endless belt provided with a parcel holder or holders adapted to open and release the parcel when the belt bends, in combination with two polygonal drums having different numbers of sides over which the belt passes, substantially as described.



2. In a wrapping-machine, the combination of an endless belt carrying a series of parcel-holders, and two folding-blades for each holder also carried by the belt and acting in opposite directions upon the wrapper, substantially as described.

3. In a wrapping-machine, the combination of an endless belt carrying a series of parcel-holders and two folding-blades for each holder also carried by the belt and acting in opposite directions upon the wrapper and mechanism located under the belt for operating said blades.

4. In a wrapping-machine the combination of an endless belt carrying a series of parcel-holders, two arms pivoted to the belt for each holder and extending through openings in the belt, folding-blades carried by said arms and a stationary cam located under the belt for operating said arms.

5. In a wrapping-machine, the combination of a parcel-holder, a folding-blade moving therewith, a latch for holding said blade against the folded wrapper and a releasing device for the latch, substantially as described.

6. In a wrapping-machine, the combination of a series of traveling parcel holders, a stationary label or wrapper holder, a hollow shaft, a series of hollow radial arms carried by said shaft, and means for creating a suction therethrough; said arms adapted to successively lift labels from the label-holder and deposit them upon the parcel-holders as they travel along.

7. The combination of a stationary label-holder, a hollow shaft carrying a series of hollow radial arms, means for creating a suction through said arms and shaft, means for rotating the shaft, and a cut-off valve for the purpose set forth.

8. The combination with an open-ended arm through which a suction is created, said arm swinging upon an axis, a stationary label or wrapper holder having a front plate against which the wrappers rest, said plate having a spring-tongue against which the open end of the arm strikes before it comes in contact with the label or wrapper.

9. In a wrapping machine, the combination of a pair of pivoted plates, a parcel-holder adapted to move past said plates, and two plungers, one adapted to force a parcel to be wrapped between the plates, and the other to force it from the plates into the holder.

10. In a wrapping-machine, the combination of a parcel-holder, a feeding-plate with an opening in it located above the holder, a pair of squeezing-plates flanking the opening, and a plunger adapted to drop the parcel from its position between the plates through the opening and into the holder.

11. In a parcel-wrapping machine, the combination of a belt carrying a series of holders, a flange on said belt, a plunger located above the path of the holders and riding upon the flange, the flange having notches located opposite the holders permitting the plunger to fall, substantially as described.

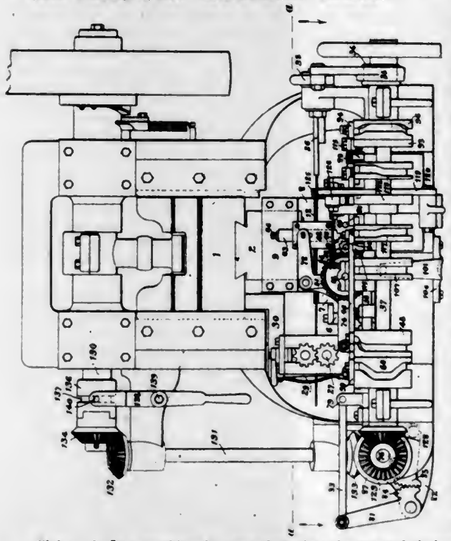
574,175. PLATEN FOR TYPE-WRITING MACHINES. CLARENCE W. SEAMANS, Brooklyn, N. Y., assignor to The Wyckoff, Seamans & Benedict, New York, N. Y. Filed June 13, 1894. Serial No. 514,375. (No model.)



Claim.—1. A platen for a type-writing machine, consisting of a hollow core formed with a circumferential depression, a sound-deadening filling within the bore of said core, a similar filling within said depression, and a sheath or cover.

2. A platen for a type-writing machine, consisting of a hollow wooden core having a circumferential depression and end collars, a filling within the bore of said core, a filling within said depression, a sheath or cover, and heads secured to said collars.

574,176. MACHINE FOR AUTOMATICALLY MANUFACTURING CHAIN FROM SHEET METAL. CHARLES F. SMITH, Bridgeport, Conn., assignor to the Smith & Egge Manufacturing Company, same place. Filed Apr. 9, 1896 Serial No. 586,851. (No model.)



Claim.—1. In a machine for manufacturing sheet metal chain, the combination with means for advancing the metal strip step by step, of the vertically-reciprocatory punches, the dies over which said strip is fed, and means for shifting said punches and dies laterally across the strip, substantially as set forth.

2. In a machine for manufacturing sheet-metal chain, the combination of means for advancing the metal strip step by step, the vertically-reciprocatory press-gate, the subpress gate carried by the press-gate and capable of being shifted laterally within suitable ways therein the standard having a housing within which the subpress gate is guided as to its vertical movements, the dies carried by said standard and means for laterally shifting said standard at right angles to said strip, substantially as set forth.

3. The combination with the punches and dies of means for feeding the metal strip between the same, of means for shifting said punches and dies transversely to the strip, whereby the blanks are cut out in a row across the strip, substantially as set forth.

4. The combination of the vertically-reciprocatory press gate, the subpress rigid with said press-gate as to vertical movements but capable of sliding transversely within suitable ways in the same, the slide capable of reciprocating within suitable ways on the bed of the machine, the standard carried by said slide and provided with a housing within which the subpress is guided as to vertical movements, the punches depending from said subpress, the dies carried by the standard beneath the punches, means for feeding the metal strip step by step in the direction of its length between said punches and dies, and means for shifting said slide step by step transversely to said strip and intermediate of consecutive feeding movements of the latter, substantially as set forth.

5. In a machine for manufacturing sheet-metal chain, the combination of mechanism for feeding the metal strip step by step in the direction of its length, the punches and dies whereby the blanks are cut out from said strip, devices for shifting said punches and dies transversely across said strip, and means carried and operated by said devices for preventing the feeding of the metal strip except at the termination of the shifting movement of the punches and dies in each direction, substantially as set forth.

6. In a machine for manufacturing sheet-metal chain, the combination of means for feeding the metal strip and for cutting out the blanks therefrom, of mechanism for bending said blanks and forming them into completed chain, a pair of screw conveyers leading to said mechanism, and a push finger for delivering the blanks one by one into said conveyers, substantially as set forth.

7. In a machine for manufactnring sheet-metal chain, the combination of the two screw conveyers whose threads are separated by a distance about equal to the width of the ends of the blanks while the distance between the conveyers is such that the blanks may be accommodated therein lengthwise with their ends substantially abutting against the bodies of the conveyers, means for supplying the blanks one by one to the outer extremities of said conveyers, means for revolving the latter whereby said blanks are carried inward, and means located at the inner terminals of said conveyers whereby the blanks are received from the latter and are bent up and formed into completed chain, substantially as set forth.

8. In a machine for manufacturing sheet-metal chain, the combination of the standard capable of a lateral reciprocation, the punches and dies carried by said standard, the well in said standard beneath the dies, the passage-way beneath the well and separated from the bottom of the latter by a space about equal to the thickness of a blank, the pair of screw conveyers, the push-finger capable of a uniform reciprocation throughout said passage-way beneath said well whereby the blanks are one by one delivered to said conveyers, and mechanism located at the inner ends of said conveyers whereby the link-blanks are received from the conveyers and moved to mechanism for forming the blanks into completed chain, substantially as set forth.

9. The combination of the feed-rolls whereby the metal strip is advanced, the ratchet secured upon the shaft of one of the feed-rolls, the vertically-reciprocatory press gate, the resilient pawl carried by said gate and engaging with said ratchet to operate the feed-rolls, the slide whereby the punches and dies are shifted transversely across the strip, and the trip carried by said slide and engaging with the pawl to keep the latter away from the ratchet at all times except when said slide has reached the respective limits of its sliding movements, substantially as set forth.

10. In a machine for manufacturing sheet-metal chain, the combination with the blanking-out mechanism, the well for receiving the blanks carried by said mechanism, the instrumentalities for forming the blanks into completed chain, the screw conveyers for feeding the blanks to said instrumentalities, the push-finger adapted to reciprocate immediately beneath said well whereby the blanks are delivered to said conveyers, and means for disconnecting the blank-feeding and link-forming mechanisms from the blanking-out mechanism while said finger is at the limit of its forward movement immediately beneath said well, substantially as set forth.

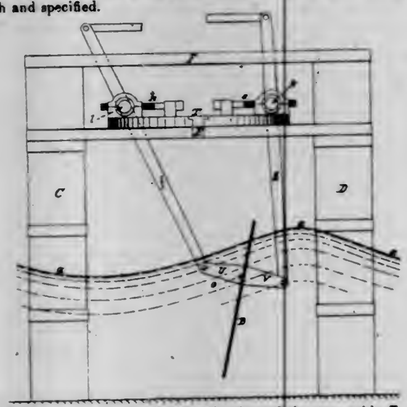
11. In a machine for manufacturing sheet-metal chain, the combination of the screw conveyers, instrumentalities for cutting out the link-blanks and for delivering them to the screw conveyers, devices for threading said blanks through the eyes of previously-completed links, and a pair of vertical slides between the meeting ends of which said link-blanks are successively received from the screw conveyer and then carried by said slides to the blank-threading devices, substantially as set forth.

12. In a machine for manufacturing sheet-metal chain, the combination of the blanking-out mechanism, the screw conveyers, the finger for pushing the blanks into the conveyers, the link-forming devices, instrumentalities for threading the blanks through the eyes of previously-formed links, and a pair of vertically-operating slides between which the blanks are delivered by the conveyers and by which slides said blanks are carried to said threading instrumentalities, substantially as set forth.

574,177. WAVE-MOTOR. ALBERT W. STAHL, U. S. Navy, and FRANCES R. GATEWOOD, Annapolis, Md., administratrix of Richard Gatewood, deceased. Filed Mar. 22, 1892. Renewed Dec. 4, 1896 Serial No. 614,521. (No model.)

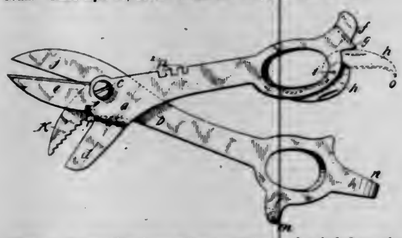
Claim.—1. In a wave-motor, the vane B, suspended, as shown in Fig. 7, at some point along its length conformable to the depth of water and the motion of the distorted verticals of wave motion, as

hereinabove explained; the crank-arms U and V, rigidly connected to the vane B; the cranks *f* and *g*, pivotally connected to the cranks U and V and provided with bearings *l* and *k*; the screws *n* and *s* for adjusting the distance between the bearings *l* and *k*, so as to cause a certain predetermined ratio to exist between the rotation of the vane B and its translation or displacement as a whole; all arranged and operating substantially in the manner and for the purposes herein set forth and specified.



2. In a wave-motor, the combination of the turn-table T, the bearings *l* and *k*, the screws *n* and *s*, the crank-arms U and V, the cranks *f* and *g* and the vane B suspended as shown in Fig. 7; all arranged and operating substantially in the manner and for the purposes herein set forth and specified.

574,178. COMBINATION-TOOL. NATHAN M. STEBBINS, Stafford, Conn. Filed Apr. 10, 1894. Serial No. 507,004. (No model.)



Claim.—A combination-tool, comprising a shank *b* formed with a cutting-jaw *j*, and a wrench-jaw *k* projected from the shank, as shown, and a shank *a* pivotally connected to the shank *b* and formed with a cutting-jaw *e* disposed coincident with the cutting-jaw *j* of the other shank, and a wrench-jaw *d* projected from the shank *a* and disposed in coincident alinement with the wrench-jaw *k*, substantially as specified and for the purpose stated.

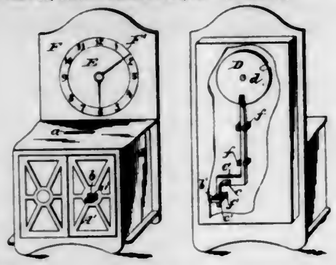
574,179. LOCK. SWEN E. SWENSON, New York, N. Y., assignor of one-half to E. Melvern Roche, Bloomfield, N. J. Filed Apr. 29, 1896. Serial No. 589,506. (No model.)



Claim.—1. The combination in a lock of a dial-plate having a series of markings circumferentially arranged upon it, a back plate attached to said dial-plate having an annular chamber, a bolt arranged to operate in a bolt-slot formed in said chamber, a centrally-located post fixed in said chamber having two or more centrally-perforated ratchet-disks arbored upon it, said disks having correspondential segments removed from them, one or more pawls to engage the ratchet-teeth of said disks and a series of two or more indicators attached to and arranged to rotate said disks as herein shown as described.

2. The herein-described lock consisting of a centrally perforated fixed dial-plate having an indicating edge and a series of raised indicating-marks upon its surface, a back plate having a central fixed post, an annular chamber a fixed spring-pawl and a lock-bolt chamber, in combination with a series of partially-toothed centrally-perforated disks, each disk having a uniform portion removed, said disks provided with collars arranged to sleeve over the said fixed post and over each other, a bolt having a curved recess on one side adapted to be lodged in said bolt-chamber, and indicators provided with collars, adapting them to be fixed to the said disk-collars, and to operate or rotate the same, as herein shown and described.

574,180. COIN-BANK. SWEN E. SWENSON, New York, N. Y. Filed June 22, 1896. Serial No. 596,383. (No model.)

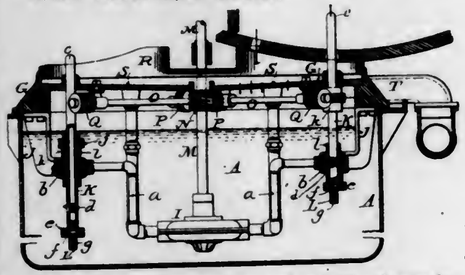


Claim.—1. In a coin-receptacle the combination of a box provided with a slot, a movable door, a dial having a series of circumferentially-arranged markings upon it, two or more pointers adjustably fixed and adapted to indicate said markings, a series of slotted disks operated by and connected to said indicators, a bolt arranged to operate in the slots of said disks; said bolt provided with a lug upon one end arranged to hold in position a bar passing through and retaining said door in position, as herein shown and described.

2. In a bank or other receptacle for coin the combination of a dial and indicators to indicate the markings on said dial, disks secured to said indicators said disks provided with corresponding apertures and a bolt C having a lug upon it adapted to afford a purchase for the fingers, adapted to fit said apertures, with a removable door, a bolt B passing through the said door and means whereby the said bolt B is caused to retain the said door in position until the said bolt C is allowed to be moved by the alinement of the said disks, as herein shown and described.

3. In a bank or other receptacle for coin the combination of a dial and indicators to indicate the markings on said dial, disks secured to said indicators said disks provided with corresponding apertures and a bolt C having a lug upon it adapted to afford a purchase for the fingers, adapted to fit said apertures, with a removable door a bolt B passing through the said door and removable in one direction only, and means whereby the said bolt B is caused to retain the said door in position until the said bolt C is allowed to be moved by the alinement of the said disks, as herein shown and described.

574,181. CASK-PITCHING APPARATUS. JACOB F. THEURER and OSCAR MUELLER, Milwaukee, Wis., assignors, by mesne assignments, to Alonzo Pawling and Henry Harnischfeger, same place. Filed Aug. 30, 1895. Serial No. 561,000. (No model.)



Claim.—1. In combination with a tank and with a furnace for heating the same; a trunk opening directly from the tank into the furnace to carry off fumes from the tank; and a steam-pipe opening into the trunk and serving to induce a current through the same.

2. In combination with a tank and with a furnace for heating the same; a trunk connecting the tank and furnace and provided with a valve or damper, and a pipe communicating with the tank and with a source of carbonic-acid gas; whereby fumes arising within the tank may normally pass to the furnace; and whereby communication between the furnace and tank may be closed and carbonic-acid gas be introduced into the tank without entering the furnace.

3. In combination with tank A, and its furnace B, trunks T, U, steam-pipe V, carbonic-acid-gas pipe W, and valves for controlling the flow of steam and gas; whereby the same jet device is made to serve for both.

4. In combination with tank A and its top or cover G, a pump suspended from said top, and a shaft extending from the pump to an overhead bearing or support and provided with a removable section; whereby upon the removal of said section the top G may be lifted off with the parts attached thereto.

5. In combination with a tank, a bracket provided with an annular chamber *b*; a pipe K provided with a nozzle *c* and with a lateral opening *d*; a pump I; a pipe *a* connecting the pump and chamber *b*, and means for moving pipe K longitudinally to carry the opening *d* into or out of chamber *b*, as desired.

6. In combination with the tank of a cask cleaning or enameling apparatus, a jet or spray device comprising a shell or casing having an annular chamber *b*, and a pipe closed at one end, provided with a delivery-orifice at the other end, and having an inlet-orifice at an intermediate point, said pipe being longitudinally movable and thereby adapted to bring the inlet-opening into communication with chamber *b*, and to close it against direct communication with the tank; or to carry said opening out of communication with the inlet and into direct communication with the tank, whereby liquid is permitted to drain from the nozzle.

7. In combination with tank A and a top or cover therefor, a pump I; a shaft X for imparting motion thereto; a worm-wheel N carried by said shaft; a shaft O provided with worm-gear P and worm or screw Q, and a jet-pipe K provided with a worm gear-wheel *j*; all arranged substantially as described and shown; whereby the jet-pipe is thrown into gear and is caused to rotate when moved to operative position but is disconnected from the gearing when withdrawn from operative position.

8. In combination with a tank and pump; a rotatable shaft O provided with a gear-wheel Q; a bracket or support J provided with a chamber *b*; a pipe *a* connecting chamber *b* with the pump; a pipe K provided with a nozzle *c* and with lateral orifice *d*; a gear-wheel *j* secured to pipe K and adapted to mesh with gear Q, and means for moving pipe K longitudinally.

9. In combination with a tank and with a bracket or support as J, a jet pipe K movable longitudinally through the support; and a neck and collar formed one upon the support and the other upon the pipe; whereby the liquid of the tank is confined and caused to cushion the descent of the pipe.

10. In combination with bracket J provided with neck *l*; pipe K; and gear-wheel *j* secured to said pipe and provided with collar *k*, substantially as and for the purpose explained.

11. In combination with tank A and its top or cover G provided with lip *i*; vertically movable jet pipe K; and lifting-bar L provided with notch *h*.

12. In combination with tank A and bracket J; jet-pipe K; lifting-bar L, and a swivel connection between the pipe and bar, consisting of a two-part shell *e*, and a disk *f* seated within said shell and having a stem *g* seated in the bar L.

13. In a cask cleansing or enameling apparatus, the combination of a tank; a frame or support to hold a cask above said tank, and a screen interposed between the cask and tank to prevent large particles of matter from flowing from the cask into the tank.

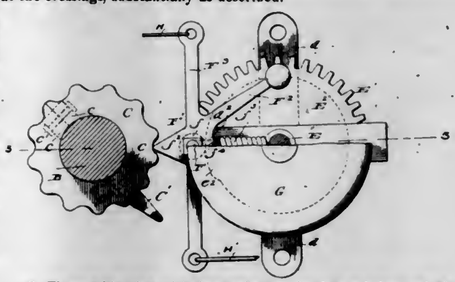
14. In combination with a tank or vat, a cask holder or support adapted to sustain a cask on its side and to extend beyond the two side openings of the cask, and a screen interposed between the tank and the side opening of the cask nearest its end.

15. In combination with a furnace-tank, having an opening in its top; a cask-support surrounding said opening; an injecting-nozzle extending upward within the cask-support; and a trunk leading into the furnace and serving to carry fumes and odors from a cask placed upon said cask-support, into the furnace, substantially as set forth.

574,182. AUTOMATIC CAR-SIGNAL. DANIEL W. TROY, Montgomery, Ala. Filed Sept. 5, 1896. Serial No. 604,978. (No model.)

Claim.—1. An automatic signal or alarm, for street-cars, comprising an alarm or signal proper for attachment to a car, and an intermittently-actuated mechanism for operating the said alarm or signal, automatically from the car-axle, and provided with means for holding it active while the car is passing over a predetermined distance, whereby the signal or alarm may be actuated at and across the street crossings.

2. The combination with the gong or bell provided with a striking device operated automatically at stated intervals from the car-axle, and normally held out of operative connection with said axle, of mechanism actuated automatically from said car-axle to throw the striking device into operative connection therewith, whereby the alarm will be silent between the crossings and sounded automatically at the crossings, substantially as described.



3. The combination with the tooth or projection and the toothed striker operating wheel carried by the car-axle, of a gong or bell having a normally-retracted striker, a cam for throwing the striker into the path of the said striker-wheel when the car approaches a crossing and retaining it there till the car passes the crossing, and a gear-wheel for operating said cam and located in the path of the said axle-operated tooth or projection to be turned thereby the distance of one tooth for every revolution of the axle, substantially as described.

4. A crossing alarm or signal mechanism for street-cars, comprising a gear-operating tooth or projection and a toothed striker-operating wheel on the car-axle, a gong or bell having a normally-retracted vibrating striker provided with a sliding axis, a cam-wheel engaging said axis and having a cam-surface to push the axis outward and throw the striker into engagement with the toothed striker-operating wheel, and a gear-wheel for operating the cam and located in the path of said gear-operating tooth or projection to be turned thereby the distance of one tooth at every revolution of the car-axle, substantially as described.

5. A crossing alarm or signal mechanism for street-cars, comprising a gear-operating tooth or projection and a toothed striker-operating wheel for the car-axle, a gong, a V-shaped vibrating striker under the gong and secured at its angle to a pivot stud mounted to slide and turn in a slotted bearing, the angular end of the striker projecting toward said striker operating wheel, a spring normally withdrawing the striker from said wheel, a shaft parallel with the striker-axis and forming the gong-support, a gear-wheel secured to said shaft and in the path of said gear-operating tooth or projection to be turned thereby the distance of one tooth at every revolution of the car-axle, and a cam-wheel at one side of the gear-wheel engaging the striker stud or pivot and provided with a cam-surface to project the stud and throw the striker into engagement with the striker-operating wheel when the car approaches a crossing, the said spring retracting the striker when the car passes the crossing, substantially as described.

6. The combination with the toothed striker-operating wheel formed in two sections adapted to be bolted together on the car-axle, one section having a gear-operating tooth or projection extending beyond the periphery of the wheel, of a U-shaped base-plate adapted to be secured to some portion of the car adjacent to the axle, a transverse gong-carrying shaft journaled in the two arms of said base and provided with a gear-wheel engaged by said gear-operating tooth or projection and having a cam-wheel on one side, a vibrating striker having its pivot mounted in the slotted end of one arm of said base and engaged by said cam-wheel for movement thereby to throw the striker into the path of said striker-operating wheel, and a spring connected to the striker to retract it after the cam-surface of the cam-wheel has passed from behind its axis or pivot, substantially as described.

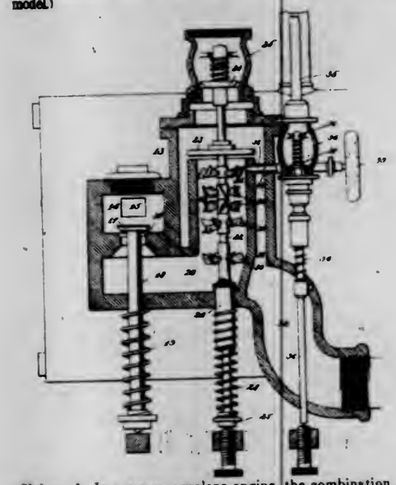
7. The combination with the striker having a sliding axis and means for operating the striker, of a shaft having a cam for throwing the striker into engagement with its operating mechanism and a gear-wheel for operating the cam, means for intermittently operating said gear-wheel, and a gong secured to the shaft and having a thumb-piece and an indicating arrow or mark pointing in the direction of the cam, whereby the shaft and its gear and cam may be turned by means of the thumb or finger piece on the bell, substantially as set forth.

8. The combination with the alarm or signal and mechanism for automatically sounding the alarm or signal when the car approaches a crossing, of separate and independent mechanism in connection with the sounding device of the alarm or signal, for actuating the same from the ends of the car, by the motorman, at any time, without interfering with the mechanism by which the automatic sounding is effected.

9. The combination with the car, a gong or bell thereon provided with a normally-retracted striker adapted to be operated automat-

ically at stated intervals from the car-axle, mechanism also operated from the car axle to automatically throw the striker into operative connection with the car-axle, independent lever mechanisms on the car-platform and connected to the striker, and push rods or devices by which the motorman may operate said lever mechanisms and sound the alarm at any time, substantially as described.

574,183. MIXER FOR GAS-ENGINES. FRANK M. UNDERWOOD, Upper Sandusky, Ohio. Filed Mar 14, 1895. Serial No. 541,704. (No model.)



Claim.—1. In a gas or gasolene engine, the combination with a cylinder, and a main shaft, of a mixing-chamber communicating by a valve-controlled port with the cylinder, a valve-stem passing through the mixing-chamber and carrying a valve 23 and a series of rotary fans which are mounted loosely on the valve stem, within the mixing-chamber, a valve-controlled gas or gasolene inlet to the mixing-chamber, and mechanism to actuate the valves, substantially as and for the purposes described.

2. The combination with a cylinder, of a mixer, controlling-valves for regulating the admission of air and gas or gasolene to the mixer, a cam-shaft, a governor driven by said shaft, a tripper arranged to open the controlling-valves and carrying a slidable head or disk normally in the path of a cam on the cam-shaft, and means actuated by the governor to move the slidable head or disk out of the range of the cam, substantially as and for the purposes described.

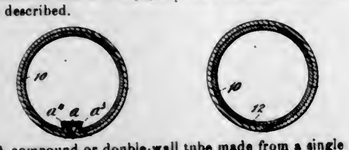
3. The combination with a cylinder, of a mixer connected to said cylinder and having valves for admitting air and gas, or air and gasolene, to the mixer-chamber, a controlling-valve operating to establish and shut off communication between the mixer and cylinder, a tripper having a lifter-foot to raise all of the controlling-valves, and a cam-shaft to actuate the tripper, for the purposes described, substantially as set forth.

4. The combination with a cylinder, of a mixer having valves for admitting air and gas thereto, a separate valve arranged to establish and cut off communication between the mixer and cylinder, a shaft having a cam, a tripper having a lifter foot to open all of the valves, a head or disk normally controlled by a spring which moves the head or disk into the path of the cam, a governor-shaft geared to the cam-shaft and having the weighted levers and grooved sleeve, and a shipper-lever connected with the governor and having a tappet to act against the slidable sleeve and head on the tripper-lever to force the head beyond the range of the cam when the speed becomes abnormal, substantially as and for the purposes described.

5. The combination with a cylinder, of a valved mixer mechanism having means for the admission of air and gas thereto and a vertically-movable valve for establishing and cutting off communication with the cylinder, and agitators loosely mounted on the valve-stem to partake of the endwise movement of the same and arranged in the mixer chamber to agitate the air and gas admitted to said chamber and intimately mix or combine the same, as and for the purposes described.

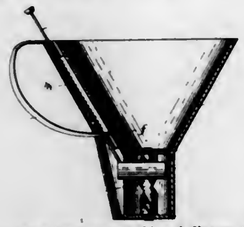
574,184. COMPOUND TUBE. GEORGE T. WARWICK, Newark, N. J. Filed Mar. 25, 1896. Serial No. 584,756. (No model.)

Claim.—1. A compound or double-wall tube made from a single strip of sheet metal, the same being bent longitudinally between its edges to produce a longitudinal channel, the metal to one side thereof being bent around into tubular form and having its edge disposed adjacent the wall of the channel, while the metal to the other side of the channel is bent around the so-formed tube and has its edge portion introduced into and engaged within the said channel, substantially as described.



2. A compound or double-wall tube made from a single strip of sheet metal, the same being bent longitudinally between its edges to produce a longitudinal dovetail channel, the metal to one side thereof being bent around into tubular form with its edge proximate to the flank at one side of the dovetail channel, while the sheet metal to the other side of the said channel is bent around on the so-formed tube and has its edge portion introduced into and engaged within the said dovetail channel, substantially as described.

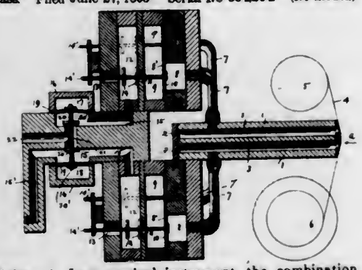
574,185. ICE-CREAM MOLD AND DIPPER. JOHN ZIMMER and SUSANNA ZIMMER, Pittsburg, Pa. Filed Apr. 14, 1896. Serial No. 587,456. (No model.)



Claim.—1. In an ice-cream mold and dipper, the mold, a cylinder secured thereunder, a worm screw journaled in said cylinder, a block operating in the cylinder and having a roll or wheel to engage the groove of the worm-screw, said block reciprocating through the cylinder and a rod for operating the block, as and for the purpose described.

2. An ice cream mold and dipper consisting of a mold with a cylinder at the bottom, a worm-screw supported and operating in the cylinder, a block carrying a roller to operate in the groove of the worm-screw, a cutter-arm secured at the top of the screw, a rod for operating the block and a spring on the rod for retracting the block as and for the purpose described.

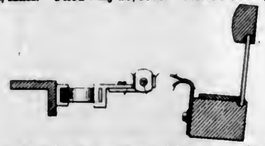
574,186. AUTOMATIC ORGAN. THEODORE P. BROWN, Worcester, Mass. Filed June 27, 1895 Serial No 554,204. (No model.)



Claim.—1. In a musical instrument, the combination with a tracker-board provided with two sets of openings or channels, and two sets of valve mechanisms, one set for each set of channels in the tracker-board, of a supplemental attachment or switch device located intermediate the valve mechanisms and the sound-producing devices, for disconnecting one set of valve mechanisms from the sound-producing devices controlled thereby, and connecting said sound producing devices to the other set of valve mechanisms, so that all the sound-producing devices may be operated, substantially as set forth.

2. In a musical instrument, the combination with a tracker-board provided with two sets of channels, the outer openings of which alternate with each other across the tracker-board, and are arranged one set in advance of the other, a set of valve mechanisms for each set of channels, each channel communicating with a separate and independent valve mechaeism, of a music-sheet provided with two sets of perforations, the perforations of the two sets alternating with each other transversely of the sheet, and the perforations of one set being in advance of the perforations of the other set, substantially as set forth.

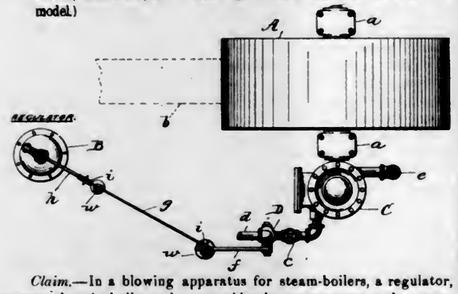
574,187. LOOM. LEON BRUNETTE and AUGUSTUS P. HORNE, Manchester, N. H., assignors to the Northrop Loom Company, Saco, Me., and Hopedale, Mass. Filed July 21, 1896. Serial No. 600,074. (No model.)



Claim.—1. In a loom provided with automatic filling-supplying mechanism, the lay, a temple, a cutting-blade rigidly held between the outer ends of the cap and pod and with its edge adjacent the selvage of the cloth, and a guide on the lay, upturned to engage the end of a fresh supply of filling and press it against the edge of the blade, to be severed thereby, substantially as described.

2. In a loom provided with automatic filling-supplying mechanism, the lay, a cutting-blade adjacent the selvage, a stationary support for and to rigidly hold said blade, with its edge toward the lay, and a guide having its upper end diverging toward said blade, to receive in its diverging end the end of a fresh supply of filling opposite said blade and press said filling against the blade to be severed thereat, substantially as described.

574,188. AUTOMATIC BLOWING APPARATUS. THOMAS P. BURKE, Pawtucket, R. I. Filed Sept. 4, 1896. Serial No. 604,842. (No model.)



Claim.—In a blowing apparatus for steam-boilers, a regulator, connected to the boiler and operated by the steam-pressure, the steam-pipe, provided with a valve D, and the blower-engine connected to the steam-pipe, combined with the weighted lever *f*, connected to the valve D, a supporting-arm *k*, a regulating-nut *j*, passed through the arm and bearing against the lever to prevent the valve from entirely closing; and a flexible connection between the lever *f*, and the regulator-lever, substantially as shown.

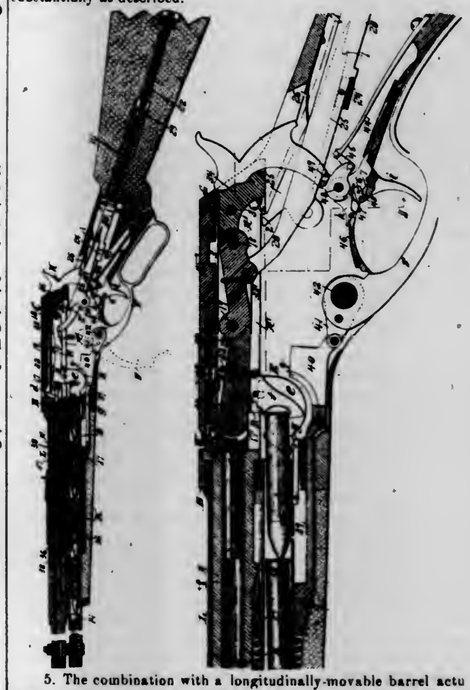
574,189. RECOIL-OPERATED FIREARM. HOWARD CARR, San Francisco, Cal., assignor, by direct and mesne assignments, to the San Francisco Arms Company, same place. Filed Sept. 25, 1894. Serial No. 524,051. (No model.)

Claim.—1. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech bolt and barrel to normal position, and a locking device for holding the links in position to lock the breech bolt to the barrel at the commencement of the recoil, substantially as described.

2. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, mechanism for breaking the links downward to withdraw the breech-bolt and open the breech and for returning the breech-bolt and barrel to normal position, and a locking device for holding the links to lock the breech bolt to the barrel at the commencement of the recoil, substantially as described.

3. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt and barrel to normal position, and a locking device having a member engaging one of the links to lock the breech-bolt to the barrel and releasing the link when the parts have reached the position for the withdrawal of the breech-bolt, substantially as described.

4. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for actuating the links to withdraw the breech-bolt and open the breech, and a spring for returning the breech-bolt to normal position connected to operate upon one of the links between the points of connection of the links to the breech-bolt and barrel, substantially as described.



5. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for actuating the links to withdraw the breech-bolt and open the breech, and a spring for returning the breech-bolt having a fixed bearing at one end and the other end connected to operate upon the rear link at one side of its barrel-pivot, substantially as described.

6. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, and mechanism for actuating the links after the rearward movement of the barrel is completed to withdraw the breech-bolt and open the breech and for returning the breech bolt to normal position, substantially as described.

7. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, and mechanism for actuating the links during the return movement of the barrel to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, substantially as described.

8. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, devices for holding one of the links, whereby said link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt and open the breech, and means for releasing the breech-bolt and returning it to normal position, substantially as described.

9. The combination with a longitudinally movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech bolt and barrel, means for returning the barrel to position after recoil, a catch and connections between said catch and one of the links, whereby said link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt and open the breech, and means for tripping said catch and for returning the breech bolt to normal position, substantially as described.

10. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, said links being locked in their normal position during recoil and unlocked for the return movement of the barrel, means for

returning the barrel to position after recoil, and mechanism for actuating said links during the return movement of the barrel to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, substantially as described.

11. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, and mechanism for actuating the links during the return movement of the barrel to withdraw the breech-bolt and open the breech and for actuating the links to return the breech-bolt to normal position, substantially as described.

12. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel and breech-bolt to normal position, a catch and connections between said catch and the rear link between its points of connection to the other link and the barrel for holding said link by the catch, whereby the rear link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt, and means for tripping said catch for the return of the breech-bolt, substantially as described.

13. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, a catch and connections between said catch and the rear link between its points of connection to the other link and the barrel for holding said link by the catch, whereby the rear link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt, means for tripping said catch for the return of the breech-bolt, and a spring for returning the breech-bolt to normal position, substantially as described.

14. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel and breech-bolt to position, a member carried by and pivoted on the rear link, and means for holding said member during the return of the barrel whereby said link is actuated as a lever to withdraw the breech-bolt and open the breech, substantially as described.

15. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, a member carried by and pivoted on the rear link, means for holding said member during the return of the barrel, whereby the said link is actuated as a lever to withdraw the breech-bolt and open the breech, and means for actuating said member to return the breech-bolt, substantially as described.

16. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech bolt and barrel, means for returning the barrel and breech-bolt to position, a member carried by and pivoted on the rear link, a catch holding said member during the return of the barrel, and means for tripping said catch for the return of the breech-bolt, substantially as described.

17. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel and breech-bolt to position, a member carried by and pivoted on the rear link, and a catch holding said member during the return of the barrel and tripped by the returning barrel as the latter reaches its normal position, substantially as described.

18. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, a pressure-bar pivoted on the rear link, means for holding said pressure-bar during the return of the barrel whereby the link is actuated as a lever to withdraw the breech-bolt and open the breech, and a spring acting upon said bar to return the breech-bolt, substantially as described.

19. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech bolt and barrel, means for returning the barrel to position, a pressure-bar pivoted on the rear link, means for holding said pressure-bar during the return of the barrel, whereby the link is actuated as a lever to withdraw the breech-bolt and open the breech, and a spring put under tension by the operation of the breech mechanism and reacting upon said bar to return the breech-bolt, substantially as described.

20. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, a pressure-bar extending into the stock of the gun and pivoted on the rear link, means for holding said pressure-bar during the return of the barrel whereby the link is actuated as a lever to withdraw the breech-bolt and open the breech, and a spring in said stock put under tension by the operation of the breech mechanism and reacting upon said bar to return the breech-bolt, substantially as described.

21. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, a pressure-bar pivoted on the rear link, a catch for holding said bar during the return of the barrel whereby the link is actuated as a lever to withdraw the breech-bolt and open the breech, a spring acting upon said bar to return the breech-bolt, and means for tripping said catch for the return of the breech-bolt, substantially as described.

22. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech bolt and barrel, means for returning the barrel to position after recoil, a pressure-bar pivoted on the rear link, a catch for holding said bar during the return of the barrel and tripped by the barrel as it reaches its normal position, whereby the link is actuated as a lever to withdraw the breech-bolt and open the breech, and a spring acting upon the bar to return the breech-bolt, substantially as described.

23. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, and a carrier carried by the forward link, substantially as described.

24. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, and a carrier carried by the forward link and having a pivoted member actuated by the closing of the links together to carry the cartridge into line with the breech-bolt, substantially as described.

25. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, and a carrier carried by the forward link and having a pivoted member, and a pin on said member extending into an opening through the link and actuated from the other link when the links are closed together, substantially as described.

26. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech bolt and open the breech and for returning the breech bolt to normal position, and a carrier carried by the forward link and having a pivoted member, a pin on said member extending into an opening through the link, and a pin carried by the other link to actuate said pivoted member, substantially as described.

27. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech bolt to normal position, a carrier carried by the forward link and consisting of two side wings engaging the head of the cartridge, and a central lever actuated by the closing of the links together, substantially as described.

28. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech bolt to normal position, a carrier carried by the forward link and consisting of two side wings engaging the head of the cartridge, a central lever actuated by the closing of the links together to carry the cartridge into line with the breech-bolt, and means for pressing said wings together upon the head of the cartridge as the breech-bolt is withdrawn, substantially as described.

29. The combination with a longitudinally-movable barrel, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position, mechanism for actuating the links to withdraw the breech-bolt and open the breech, a carrier for transferring a cartridge to the barrel, and a cartridge-stop actuated by the links for stopping the head of the cartridge in line with the breech-bolt as the cartridge is advanced into line with the breech-bolt by the carrier, substantially as described.

30. The combination with a longitudinally-movable barrel, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position, mechanism for actuating the links to withdraw the breech-bolt and open the breech, a carrier for transferring a cartridge to the barrel, and a spring pressed cartridge-stop advanced by the links into position to stop the head of the cartridge in line with the breech-bolt as the cartridge is advanced by the carrier, substantially as described.

31. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, a spring arranged under the barrel put under tension by the recoil of the barrel and reacting to return the barrel to normal position, and mechanism actuated by said spring for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, subetantially as described.

32. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, a magazine arranged below the barrel, a spring coiled about the magazine put under tension by the recoil of the barrel and reacting to return the barrel to normal position, and mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, substantially as described.

33. A gun or other firearm having a longitudinally-movable barrel, a breech-bolt, links connecting said breech-bolt and barrel, a magazine arranged below the barrel, a spring coiled about the magazine between a lug on the barrel at the forward end of the spring and a sleeve at the rear end, a lug on the barrel rearward of the sleeve, a hand-lever and connections to said sleeve for drawing back the barrel by hand, substantially as described.

34. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, a spring arranged under the barrel put under tension by the recoil of the barrel and reacting to return the barrel to normal position, mechanism actuated by said spring for actuating the links to withdraw the breech-bolt, and a spring for returning the breech-bolt, substantially as described.

35. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel and normally lying in straightened position with their point of connection beyond the dead-center, mechanism for actuating the links to withdraw the breech-bolt and for returning the breech-bolt and barrel to normal position, and a member engaging one of the links to lock the breech-bolt to the barrel at the commencement of the recoil, substantially as described.

36. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, mechanism for actuating the links to withdraw the breech-bolt and for returning the breech-bolt to normal position, and a hammer cocked by the recoil and coacting with said mechanism to lock the links in their normal position at the commencement of the recoil, substantially as described.

37. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, mechanism for actuating the links to withdraw the breech-bolt and for returning the breech bolt to normal position, a hammer cocked by the recoil, and a projection on the hammer positioned to engage the links during the latter part of the firing movement of the hammer if the links are not fully returned to normal position, substantially as described.

38. The combination with barrel A and breech-bolt C, of links *a*, *b*, bar 20 pivoted to link *b*, a spring for returning the barrel, stop 24 carried by said bar, spring-pressed lever 25 having catch 1 engaging said stop, a spring pressing on bar 20, and means for tripping catch 1, substantially as described.

39. The combination with barrel A and breech bolt C, of links *a*, *b*, bar 20 pivoted to link *b*, a spring for returning the barrel, stop 24 carried by said bar, spring-pressed lever 25 having catch 1 engaging said stop, and shoulder 2 on the lever, a spring pressing on bar 20, and shoulder 2* on the barrel engaging the shoulder 2 on the return of the barrel to trip the catch, substantially as described.

40. The combination with barrel A and breech-bolt C, of links *a*, *b*, bar 20 pivoted to link *b*, a spring for returning the barrel, hammer H having projection 49 coacting with said bar to lock the links, stop 24 carried by said bar, spring-pressed lever 25 having catch 1 engaging said stop, a spring pressing on bar 20, and means for tripping catch 1, substantially as described.

41. The combination with barrel A and breech-bolt C, of links *a*, *b*, bar 20 pivoted to link *b*, spring K below the barrel for returning the latter, stop 24 carried by said bar, spring-pressed lever 25 having catch 1 engaging said stop, a spring pressing on bar 20, and means for tripping catch 1, substantially as described.

42. The combination with barrel A, breech-bolt C and links *a*, *b*, of spring K below the barrel acting on lug 38 on the barrel, and mechanism for actuating the links, substantially as described.

43. The combination with the barrel, breech-bolt, and links *a*, *b*, of carrier E on link *a* consisting of side wings *e* and central lever *f*, pin 32 on said lever entering an opening in link *a*, and pin 33 on link *b* engaging pin 32 to actuate the lever when the links are closed together, substantially as described.

44. The combination with a longitudinally moving breech-bolt and carrier moving therewith having side wings *e*, of inclined surfaces *q* by which the wings are pressed together as the carrier moves rearward, substantially as described.

45. The combination with the barrel and breech-bolt, and links *a*, *b*, connecting the breech-bolt and barrel of carrier E on link *a* having side wings *e*, and inclined surfaces *q* by which the wings are pressed together as the carrier moves rearward, substantially as described.

46. Carrier E having side wings *e* for engaging the sides of the cartridge and central hooked lever *f* for engaging the under side of the head of the cartridge, substantially as described.

47. The combination with a barrel, breech-bolt and carrier, and means for opening the breech and actuating the carrier, of stop *c* in the breech-bolt for the head of the cartridge, and means for advancing the stop into the path of the cartridge as the latter is advanced by the carrier and retracting the stop as the breech-bolt returns to position, substantially as described.

48. The combination with a barrel, breech-bolt and carrier, and means for opening the breech and actuating the carrier, of spring-returned stop *c* in the breech-bolt for the head of the cartridge, and means for advancing the stop, substantially as described.

49. The combination with a barrel, breech-bolt and carrier, and means for opening the breech and actuating the carrier, of stop *c* in the breech-bolt for the head of the cartridge, and means for advancing said stop under a yielding pressure and returning it to position, substantially as described.

50. Breech-bolt C having a longitudinal recess, stop *c* carried by rod 28 in said recess and having actuating-lug 5, and spring 29 for returning the stop, substantially described.

51. Breech-bolt C having a longitudinal recess, stop *c* carried by rod 28 in said recess and having actuating-lug 5, loose on the rod and acting against spring 30, and spring 29 for returning the stop, substantially as described.

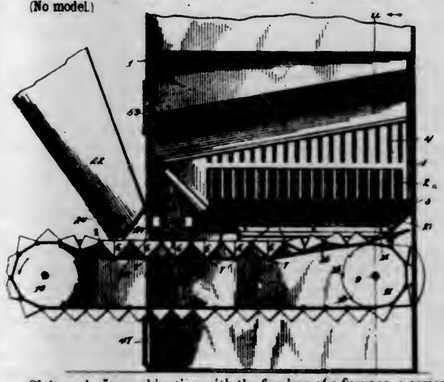
52. Breech-bolt C having a longitudinal recess, stop *c* carried by rod 28 in said recess and having actuating-lug 5, spring 29 for returning the stop, and firing-pin G closing the recess, substantially as described.

53. The combination with a hammer and recoil-operated cocking mechanism, of sear *h* having tailpiece 47, trigger *i* carrying catch 48 pivoted on the trigger at a point different from the trigger-pivot and spring-pressed against the tailpiece 47, and pin 6 on the catch entering a slot in the trigger, said slot being concentric with the pivot of the catch on the trigger or of such size as to permit the pin to move in the slot independently of the trigger, whereby the pin is moved to the upper end of the slot when the trigger is actuated to release the sear and returned by the sear as the hammer is cocked, substantially as described.

54. The combination with the barrel A, of barrel extension A′ mortised through at the rear end, a breech-bolt moving in said mortise, and a removable plug closing the rear end of the mortise, substantially as described.

55. The combination with the barrel A, of barrel extension A′ mortised through at the rear end, breech-bolt C moving in said mortise, links *a*, *b*, and removable plug 34 closing the rear end of the mortise, substantially as described.

574,190. AUTOMATICALLY-FEEDING FURNACE. BENJAMIN D. CHILDREY, Philadelphia, Pa. Filed May 29, 1896. Serial No. 593,638. (No model.)



Claim.—1. In combination with the fire box of a furnace, a series of buckets adapted to pass beneath said fire-box and be opened and

elevated therein so as to deliver the fuel carried by said buckets to the under side of the bed of fuel within said box, substantially as shown and described.

2. A furnace, consisting of a fire-box having suitable grate-bars and an open bottom in combination with a series of buckets adapted to pass beneath said fire-box and forming the bottom thereof, means for feeding fuel to said box, and means for delivering said fuel from the buckets to the fire-box upon the under side of the bed of fuel therein, substantially as shown and described.

3. In a furnace, a fire-box composed of a number of grate-bars in combination with a series of buckets adapted to travel beneath said fire-box, said buckets being made in halves, whereby they may be formed to receive the fuel from a suitable source and opened after passing beneath the fire-box for the delivering of the fuel conveyed thereby to said fire-box, means for feeding said buckets, and means for causing them to travel, substantially as shown and described.

4. In combination with a fire-box of the character described, a series of buckets linked together, each bucket being composed of two sections pivoted at their lower ends, pulleys over which said buckets travel, means for imparting motion to said pulleys, means for closing the buckets at a predetermined portion of their travel, and means for opening said buckets whereby the fuel conveyed thereby is delivered to the fire-box, substantially as and for the purposes set forth.

5. In combination with a furnace of the character described, a series of grate-bars arranged upon either side thereof and a series of grate-bars arranged upon the front thereof, each of said grate-bars being adapted to oscillate in combination with a traveling chain composed of a series of buckets each made in two sections, said buckets being adapted to close for the reception of fuel from a suitable chute, and after having passed within the fire-box to be elevated, thereby delivering said fuel to said fire-box, pulleys upon which said chain travels, cross-shafts upon which said pulleys are mounted, and means for imparting motion from said shafts to the grate-bars, substantially as and for the purposes set forth.

6. In combination with a furnace of the character described, the bottom of which is open, a series of buckets each composed of two sections pivoted together at their lower edges, rods, by means of which said buckets are pivoted together, said rods extending sidewise beyond the sides of the buckets, a series of rods by which the buckets are pivoted to each other, the last-named rods also extending beyond the sides of the buckets, guideways in which the last-named rods are adapted to travel so as to hold the upper edges of the buckets in horizontal alinement, guideways in which the first-named rods are adapted to travel whereby the two sections of each bucket may be closed to enable the bucket to hold fuel or be opened for delivering said fuel to the under side of the fire-box, pulleys upon which said buckets are mounted, and means for imparting motion to said pulleys, substantially as and for the purposes set forth.

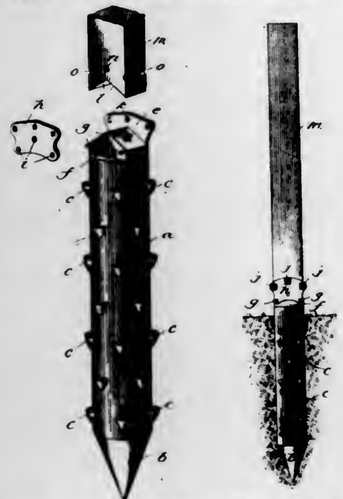
7. In combination with a furnace, a series of grate-bars 2 adapted to be oscillated continuously during the workings of the furnace, a series of grate-bars 3 also adapted to be oscillated, a series of buckets each composed of two sections, rods 7 by which the sections are hinged together, rods 8 by which each bucket is pivoted to the next adjacent bucket, pulleys upon which said buckets are mounted, guideways 18, rolls 17 secured upon the outer ends of the rods 8 and adapted to engage with the guideways 18, guideways 19, rolls 20 secured upon the outer ends of the rods 7 and adapted to engage with the guideways 19, said guideways being so disposed relative to each other as to close the sections of the buckets prior to their entering the furnace and open the same so as to deliver the fuel therefrom to the fire-box, a scraper arranged at the rear of the fire-box, the lower edge of which is in juxtaposition to the bottoms of the buckets when elevated, a chute for conveying fuel to the buckets, and means for causing said buckets to travel, substantially as and for the purposes set forth.

8. The herein-described combination of the grate-bars 2 adapted to oscillate, pinions by means of which said bars are geared together so as to move in unison, the grate-bars 3 arranged at the front of the fire-box, pinions secured to said grate-bars, a rack-bar adapted to mesh with said pinions whereby said grate-bars are moved in unison, means for transmitting motion to said rack-bar, and a traveling chain of buckets adapted to convey fuel from a suitable chute to the under side of the fire-box, whereby the fuel previously located in said box will be elevated to take the place of the consumed fuel, as specified.

9. In combination with a locomotive-boiler, a series of arches, grate-bars 84 located upon said arches, stoking-bars for agitating the fuel so as to remove the clinkers therefrom, grates 85 and 89 also arranged upon said arches, threaded rods for operating the grates 85, whereby the clinkers which fall upon said grates may be removed, levers for operating said stoking-bars, said levers being also adapted to serve as dampers for regulating the amount and course of the draft admitted to the arches, a series of grate-bars 80 and a series of grate-bars 81 arranged therebeneath at some distance therefrom, a series of grate-bars 82 arranged beneath and in contact with the grate-bars 81, means for oscillating said grate-bars 82, a series of grate bars 90, dampers 117 for regulating the draft admitted to the grate-bars 90, means for operating said dampers, a series of pipes having perforations therein for the admission of steam to the fire-box, induction-pipes leading to said pipes, a series of buckets, each composed of two sections hinged together so as to be closed to receive fuel and opened to deliver said fuel, said buckets being pivoted together to form an endless chain, pulleys over which said chain is adapted to pass, means for causing said pulleys to revolve, a chute arranged to deliver fuel to said buckets when passing therebeneath, a roll revolving in a reverse direction to the flow of the fuel for regulating the amount thereof delivered to said buckets, means for revolving said roll, guideways adapted to effect the closing of said buckets at the proper point in their travel and open the same after passing within the fire-box, whereby the coal conveyed by said buckets will be forced upward against the under side of the fuel previously delivered to the fire-box, and a spring-actuated scraper, the inner end of which is adapted to bear against the buckets when opened to prevent the carrying of fuel from the fire-box, substantially as and for the purposes set forth.

10. A bucket for use in conjunction with a furnace of the character described, consisting of the two sections 140 hinged together at their lower edges by a suitable rod, said sections being provided with meshed or perforated bottoms, whereby exhaust or live steam may be admitted to the green fuel, substantially as and for the purpose set forth.

574,191. FENCE-POST. GEORGE W. CLAYTON, Lebanon, Iowa. Filed June 1, 1896. Serial No. 593,939. (No model.)



Claim.—1. The herein-described fence-post made up of a base-piece and a top piece; the base-piece provided with cup-like projections *c* and the top piece detachably secured to the base by bolts, substantially as described.

2. The herein-described fence-post consisting of the top and base; the base provided with projections *c*, a point *b*, and an angular seat *d*; and the top piece shaped to fit the seat *d*, and secured in position by bolts, substantially as described.

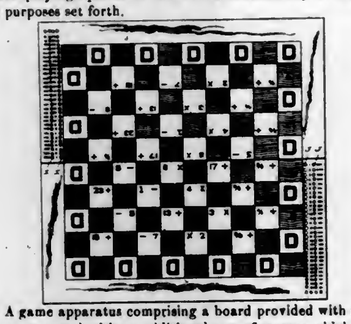
3. A fence-post made up of a base having a flange *e*, removable plate *h* and angular seat *d*; and a top adapted to fit the seat and to be detachably secured in position between the flange *e* and the plate *h*, substantially as described.

4. A base for a fence-post having a seat *d*, flange *e*, seat *f*, a removable plate *h* fitting the seat *f* and lugs *g*; and adapted to receive and secure the top piece in position, substantially as described.

5. The combination with the base *a* having the flange *e*, seat *d*, lugs *g*, and removable plate *h*; of the bolts *j* and the top *m* having a perforation *n* and recesses *o* to receive the bolts *j*, substantially as described.

574,192. GAME APPARATUS. WILLIAM W. CLEMENSON, Honey Brook, Pa. Filed Nov. 27, 1895. Serial No. 570,303. (No model.)

Claim.—1. A numerical game comprising a board divided into rows of alternate playing and non-playing squares, each row having the playing-squares thereof provided with the four arithmetical symbols of addition, subtraction, multiplication and division, and with numbers, or fractions thereof, appropriate to such arithmetical symbols, and two sets of numbered men or pieces to be used in connection with such playing-squares of the board, substantially as described, for the purposes set forth.



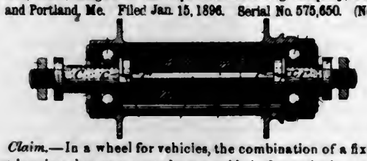
2. A game apparatus comprising a board provided with rows of playing squares and with an additional row of squares which extend around the board outside of the playing-squares and diagonally contiguous to them and provided with a mark distinguishing them as disqualifying-squares and two sets of men or pieces which are moved on the playing squares and are adapted, when moved or "jumped" into any of the squares so marked, to be disqualified from further participation in the game, substantially as and for the purposes set forth.

3. A numerical game apparatus comprising a board divided into rows of playing-squares and with a dead-line of squares surrounding the playing-squares, each row of playing-squares having different arithmetical symbols and figures, or fractions thereof, appropriate to the symbols, and two sets of numbered pieces or men, substantially as described.

574,193. NON-REFILLABLE BOTTLE. FRANCIS L. COOK, Springfield, Mass., assignor of one-half to Sylvester A. Ryan, same place. Filed Apr. 15, 1896. Serial No. 587,616. (No model.)

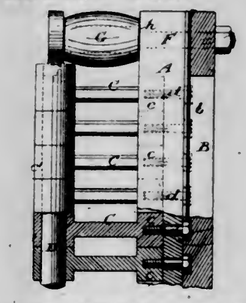
Claim.—In a non-refillable bottle the combination with the neck proper having the integrally-formed centrally-apertured partition G, and thereabove, and separated therefrom, the partition-plug B having the central perforation, the upwardly-flaring seat *b*, and the radially-arranged passages, *d*, *d*, leading from the seat down through said plug, of the cone-valve C fitted in said seat, and, when seated closing the upper ends of said passages *d*, and having the stem playing with a sliding fit through said central perforation, depending below the plug and provided at its lower end with the valve, *h*, normally adapted to seat itself in the central aperture of said partition, G, and serving as a stop to limit the upward movement of the valve C by abutment against the lower end of the plug, substantially as described.

574,194. WHEEL FOR VEHICLES. JAMES S. COPELAND, Hartford, Conn., assignor to the Pope Manufacturing Company, same place and Portland, Me. Filed Jan. 15, 1896. Serial No. 575,650. (No model.)



Claim.—In a wheel for vehicles, the combination of a fixed shaft, short bearing-sleeves mounted upon said shaft, a tube interposed between said sleeves and supported thereby and forming a chamber about said shaft, a mass of absorbent material in said chamber, said sleeves having channels to permit the outward passage of the oil from said mass of absorbent material, means to clamp said tube and sleeves together longitudinally, a barrel adapted for the attachment of the spokes of the wheel, and bearing devices interposed between said barrel and sleeves, substantially as shown and described.

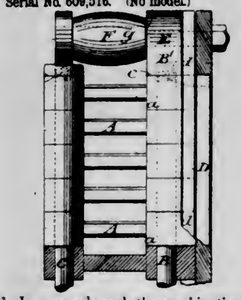
574,195. TOOTHED RACK FOR PRINTING OR OTHER MACHINES. CHARLES P. COTTRELL, Stonington, Conn., assignor to the C. B. Cottrell & Sons Company, same place and New York, N. Y. Filed Oct. 21, 1896. Serial No. 609,515. (No model.)



Claim.—1. In a mangle-rack the combination of a bar in which is a longitudinal groove, separate teeth each having at one end a stock fitted to the said groove and having at the other end an eye, a clamping bar or bolt passing through the eyes of the several teeth for clamping them together, and screw-bolts one for each tooth inserted through holes provided in the said grooved bar and screwing into the stocks of the teeth, substantially as herein described.

2. The combination of a rack-bar in which is a longitudinal groove, separate teeth each having at one end a stock fitted to the said groove and having at the other end an eye, a screw-threaded clamping-bolt passing through the eyes of the several teeth, a nut on said bolt having provided on it an eye, a roller between the last-mentioned eye and the rack-bar, a hanger for the rack bar, and a bolt which passes through the latter eye and through a hole in the rack-bar and which constitutes both a pivot for said roller and a means for securing the rack-bar to the hanger, substantially as herein described.

574,196. TOOTHED RACK FOR PRINTING OR OTHER MACHINES. CHARLES P. COTTRELL, Stonington, Conn., assignor to the C. B. Cottrell & Sons Company, same place and New York, N. Y. Filed Oct. 21, 1896. Serial No. 609,516. (No model.)



Claim.—1. In a mangle-rack the combination of separate teeth having each a stock at one end and an eye at the other the thickness of said stock and eye in the direction of the length of the rack being equal to the pitch of the rack, screw threaded bolts one passing through the stocks and another passing through the eyes of the several teeth and nuts applied to said bolts to clamp the several teeth together, substantially as herein described.

2 The combination of a rack composed of separate teeth having each a stock at one end and an eye at the other end, screw-threaded clamping-bolts passing one through the stocks and the other through the eyes of the several teeth, a hanger against which the said stocks severally abut and which is provided with flanges between which said stocks are received, and means of securing the so-formed rack to the said hanger, substantially as herein set forth.

3. The combination of a rack composed of separate teeth each having a stock at one end and an eye at the other end, screw-threaded clamping-bolts passing one through the stocks and another through the eyes of the several teeth, nuts on said bolts one of said nuts forming a head-piece to the rack and the other forming an eye-piece, a hanger against which the stocks of the teeth abut, a roller

between said head-piece and eyepiece, and a bolt which passes through said head-piece and eyepiece and which constitutes both a pivot for said roller and a means for securing the rack to the hanger, substantially as herein described.

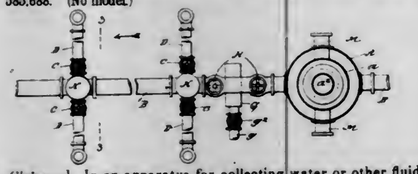
574,197. COMBINED CAN-OPENER, SCREW-DRIVER, TACK-PULLER, AND HAMMER. JOHN P. DALY, Savannah, Ga. Filed June 6, 1896. Serial No. 594,467. (No model.)



Claim—1. In a combination-tool an arm having an elongated slot, a cutter-head adapted to slide in said slot, a curved shield secured to said cutter-head, a blade removably secured to said head and extending downwardly parallel to the shield, said blade having a flat face and a back beveled in two directions, a handle secured to said cutter-head on the opposite side to the shield, a prong extending through the arm near one end, a handle secured to the shank of said prong, a screw-driver projecting from one end of the arm, a tack-puller projecting from the other end and a hammer-head formed with said arm as and for the purpose described.

2. In a combination-tool an arm having an elongated slot therein, a cutter-head adapted to slide in said slot, a curved shield secured to said cutter-head, to act as a finger-guard and prevent an upward displacement of the head, said head being prevented from a downward displacement by a washer, a handle secured to said head on the opposite side of the arm to the shield, a blade secured to the inner face of the cutter-head parallel with said shield, said blade having a flat face and a back beveled from the center line of the blade to the cutting edges, a prong secured near one end of the arm, said prong having a shoulder adapted to abut against the under side of said arm, the shank of said prong extending through the arm, a handle adapted to be attached to said shank, a screw-driver projecting from one end of the arm, a tack-puller projecting from the other and a hammer-head formed with said arm, as and for the purpose described.

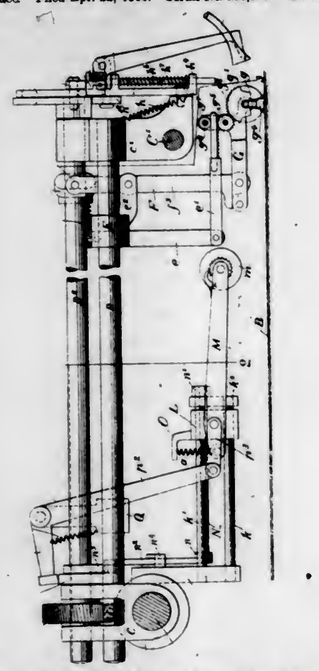
574,198. SYSTEM FOR COLLECTING WATER FROM WELLS. LAURENCE C. EISENHUT, Brooklyn, N. Y. Filed Apr. 1, 1896. Serial No. 585,888. (No model.)



Claim.—1. In an apparatus for collecting water or other fluids, from a suitable area, the combination with a central receiver, of a branch main or mains leading therefrom, said main or mains being arranged at an inclination or inclined downwardly at their extreme ends in the direction of said receiver, and said main or mains being provided with branch pipes which communicate with the tops thereof, said branch pipes being provided with tubes or pipes which extend downwardly into wells, and said branch pipes being also provided with suitable back-pressure valves, and air drums arranged over the points where said branch pipes communicate with said mains, and partition-plates arranged vertically across the ends of said branch pipes and extending upwardly in the direction of said air-drums and downwardly into said mains, and said mains being provided adjacent to the receiver with sand-traps and with cut-off valves adjacent thereto, and said receiver being provided with an inner casing which extends downwardly to near the bottom thereof, and with water conveying or supply pipes, which extend through said receiver and into said casing, substantially as shown and described.

2. In an apparatus for collecting water or other fluids, from a suitable area, the combination with a central receiver, of a branch main or mains leading therefrom, said main or mains being arranged at an inclination or inclined downwardly at their extreme ends in the direction of said receiver, and said main or mains being provided with branch pipes which communicate with the tops thereof, said branch pipes being provided with tubes or pipes which extend downwardly into wells, and said branch pipes being also provided with suitable back-pressure valves, and air-drums arranged over the points where said branch pipes communicate with said mains, and partition-plates arranged vertically across the ends of said branch pipes and extending forwardly in the direction of said air-drums and downwardly into said mains, and said mains being provided adjacent to the receiver with sand-traps and with cut-off valves adjacent thereto, and said receiver being provided with an inner casing which extends downwardly to near the bottom thereof, and with water conveying or supply pipes which extend through said receiver and into said casing, and said receiver being also provided centrally of its upper side with a pipe which extends downwardly into said casing and which is provided with an extension or pipe which communicates with the upper end thereof, substantially as shown and described.

574,199. AUTOMATIC PAPER-FEEDING MACHINE. NELSON E. FUNK, New York, N. Y., assignor of one-half to Emmerich & Vonderlehr, same place. Filed Apr. 22, 1896. Serial No. 588,545. (No model.)



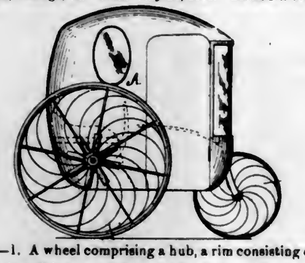
Claim.—1. In a paper-feeding machine, a device for lifting the edge of the top sheet of a stack from the next succeeding sheet, comprising a carriage having rollers adapted to roll along the top sheet, a suction device on the carriage adapted to engage the said top sheet and means for positively rotating the rolls as the carriage is moved back along the sheet to positively roll the edge of the top sheet upwardly, substantially as set forth.

2. In combination, a suitable supporting-bracket, a vertically-sliding plate secured thereto, a vertically-sliding rod mounted in the plate, a presser-foot carried by said rod, means for yieldingly holding the presser-foot at the limit of its downward movemeot relative to the plate, means for yieldingly holding the plate at the limit of its upward movement relative to the bracket and an operating-shaft having an eccentric thereon adapted to engage the plate for depressing it for causing the presser-foot to engage the stack of paper, substantially as set forth.

3. In combination, the supporting-bracket, a vertically-sliding plate secured thereto, a vertically-sliding rod mounted in said plate, a swinging presser-foot carried by said rod, means for yieldingly holding the presser-foot at the limit of its downward movement relative to the plate, means for yieldingly holding the lower end of the presser-foot at the limit of its inwardly-swinging movement, means for yieldingly holding the plate at the limit of its upward movement and a shaft having eccentrics thereon, the one adapted to release the presser-foot and allow it to swing inwardly and the other adapted to depress the plate and the presser-foot to cause the presser-foot to engage the stack of paper, substantially as set forth.

4. A paper-advancing mechanism, comprising a sliding block, a support therefor, a rocking lever pivoted on the block and carrying a paper-gripper on one arm and a guide-roller on the other arm, a guide-bar engaging the guide-roller, means for raising and lowering the guide-bar to raise and lower the gripper and means for sliding the block along its support for advancing the top sheet of paper and bringing the gripper back into position to engage the next succeeding sheet of paper, substantially as set forth.

574,200. MOTOR AND WHEEL FOR VEHICLES. CHARLES F. GODDARD, Chicago, Ill. Filed July 24, 1895. Serial No. 557,031. (No model.)



Claim.—1. A wheel comprising a hub, a rim consisting of a series of pieces U-shaped in cross-section, and a series of spokes connecting the rim and the hub arranged so that a spring effect is introduced between the hub and the rim, the rim consisting of sections hinged to each other, means associated with said wheel for moving said sections with relation to one another and an elastic tire seated in the U-shaped rim-sections.

2. The combination of a wheel with a series of substantially radially-disposed cylinders, a series of pistons and outwardly-projecting rods associated with such cylinders, and means for successively introducing an energizing fluid into such cylinders to outwardly impel the rods and thus propel the wheel, a flexible rim with which said rods are connected, said hub and rim being connected by flexible spokes.

3. The combination of a wheel with a conduit leading to the hub thereof, a series of cylinders arranged about the hub, a passage-way from the hub to the line of motion of the cylinders whereby they are successively connected with such conduit, pistons and piston-rods associated with such cylinders and adapted to be moved outwardly by an energizing fluid, and means for supplying such energizing fluid to the conduit, a flexible rim to which said piston-rods are connected, and a series of flexible posts connected to said hub and rim.

4. The combination of a wheel with a hub-like portion slotted and hollow, a series of cylinders rotating with the wheel about the hub and provided each with a supply-slot, and pistons and rods associated one with each cylinder and adapted to be moved outwardly when the energizing fluid is introduced through such slots, a rim consisting of a series of pieces U shaped in cross-section, and hinged together, an elastic tire seated in the U-shaped cross-section, and a series of elastic spokes connecting said hub with said rim, substantially as described.

5. The combination of a wheel with a hub-like portion slotted and hollow, a series of cylinders rotating with the wheel about the hub and provided each with a supply-slot, pistons and rods associated one with each cylinder and adapted to be moved outwardly when the energizing fluid is introduced through such slots, and means for rocking such hub-like portion so as to vary the angular position of the slot to determine the point at which the piston shall be outwardly forced.

6. The combination of a wheel with a conduit leading to the hub thereof, a series of cylinders arranged about the hub, a passage-way from the hub to the line of motion of the cylinders whereby they are successively connected with such conduit, pistons and piston-rods associated with such cylinders and adapted to be moved outwardly by an energizing fluid, means for supplying such energizing fluid to the conduit, and a discharge way provided with a series of inlet-apertures in the path of the cylinders whereby they are successively brought into connection with such passages to exhaust, each cylinder being repeatedly connected with said discharge-way, substantially as described.

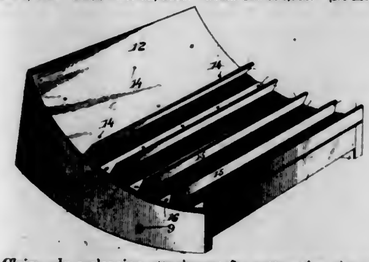
7. The combination of a wheel-like construction with a hollow central portion divided into two parts, a supply-way connected with one part and discharge-apertures leading from the other, a hole through the wall of that part connected with the supply and a hole through the wall of the other part, and a series of cylinders rotating about such hollow part and adapted each successively to connect with each of such holes, and a series of pistons and piston-rods associated one with each cylinder and adapted to be forced outwardly when the energizing fluid is admitted to each cylinder.

8. The combination of a wheel-like construction with a hollow central portion divided into two parts, a supply-way connected with one part and discharge-apertures leading from the other, a hole through the wall of that part connected with the supply and a series of holes through the wall of the other part, a series of cylinders rotating about such hollow part and adapted each successively to connect with said hole and said series of holes, and a series of pistons and piston-rods associated one with each cylinder and adapted to be forced outwardly when the energizing fluid is admitted to each cylinder, whereby the energizing fluid is received at a given point and is subsequently exhausted continuously through a considerable portion of its revolution.

9. The combination of a wheel-like construction with a central tubular portion divided by a diaphragm into two parts, a supply-way leading into one part and a discharge-aperture leading from the other part, a hole through the wall of that part connected with supply and a series of holes leading from the other part, a series of cylinders revolving around such tubular portion, said apertures and holes being in the path of said cylinders so that they are successively in connection therewith, and means for introducing the energizing fluid through such supply-passage and thence into the cylinders, and a series of pistons and piston-rods associated one with each cylinder.

10. The combination of a hub with a sectional rim the sections of which are adapted to move relatively and means for elastically connecting the two together, a series of substantially radially-disposed movable rods connected with said rim, and means for moving such rods outwardly to propel the wheel.

574,201. SCREEN FOR COTTON-GINS. JOHN S. JENKINS, Hartsell's, Ala. Filed June 12, 1895. Serial No. 552,508. (No model.)



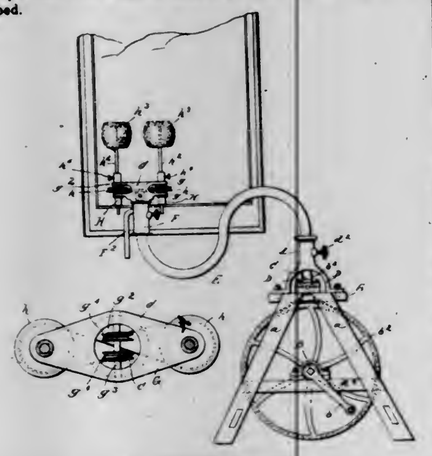
Claim.—In a cleaning attachment for cotton-gins, the combination with the gin saws and brush; of a supporting-frame fitted within the gin stand or casing below and at one side of the vertical center of the brush and provided with a curved upper side, a curved separating-screen fitted on the curved upper side of the frame and extending to one edge thereof, a series of spaced parallel transverse bars fitted in the supporting-frame against the under side of the curved separating-screen, an imperforate curved deflecting-plate fitted on the curved upper side of the frame and extended from one edge of the curved screen, in the same circular plane as the screen, to the front side of the gin stand or casing, below the saws, to deflect the cotton directed thereagainst toward the screen, said deflecting plate being provided at its lower edge with an offstanding flange forming a transverse drag-strip, and a plurality of parallel spaced drag strips or plates fitted transversely on the upper surface of the screen, so as to leave the portions of the screen therebetween exposed to the rubbing action of the cotton, as it is worked thereover by the brush, substantially as described.

574,202. MACHINE FOR CLEANING WINDOWS OR OTHER SURFACES. CHARLES KINKEL, New York, N. Y., assignor of five-eighths to Frank Ruppert and Henry Mock, same place. Filed Feb. 4, 1896. Serial No. 577,982. (No model.)

Claim.—1. In a machine for washing windows, constructed substantially as herein shown and described, the combination with the flexible tube E, of cylinder F, slotted cross-head G, having a central opening, shaft g^2 in said opening, pulleys g^4 on said shaft, shafts H mounted on said cross-head, pulleys h on shafts H, rods h^3 on shafts H, and scrubbing or cleaning devices on the ends of said rods, all constructed and arranged substantially as herein shown and described.

2. In a machine, for washing windows, and other surfaces, the combination with a frame or support, of a power-wheel mounted therein, a cord or belt passed over said power-wheel and over pulleys supported in the top thereof, a flexible tube connected with said frame or support through which said cord or belt is passed, a head provided with a shaft, said shaft being provided with two pulleys over which said cord or belt is passed, and said head being provided with a tubular shaft in each end thereof, each of which is provided with a pulley over which said cord or belt is passed, and said tubular shafts being

each provided with a mop or sponge, substantially as shown and described.



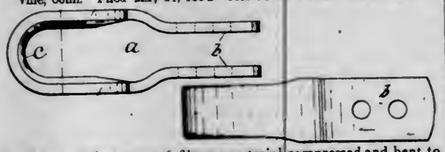
574,203. ELECTRIC BRANDING-STAMP. JAMES M. KIRKER, MCGONIGALE MILLER, and JAMES A. WILLIAMS, Louisville, Ky. Filed Mar. 16, 1896. Serial No. 583,421. (No model.)



Claim.—1. An electric branding-stamp consisting of a plate, an annular flange located on said plate, a second plate composed of non-heat-conducting material secured to the under side of said first plate; an electric conductor secured to the under side of the said non-heat-conducting plate, said electric conductor being connected with an electric generator; a metallic plate located within the annular flange of the first said plate screws passing through said annular flange and securing said metallic plate in position, the upper surface of the last said plate coming in contact or close proximity with the electric conductor, the under side of the last said plate being provided with suitable characters.

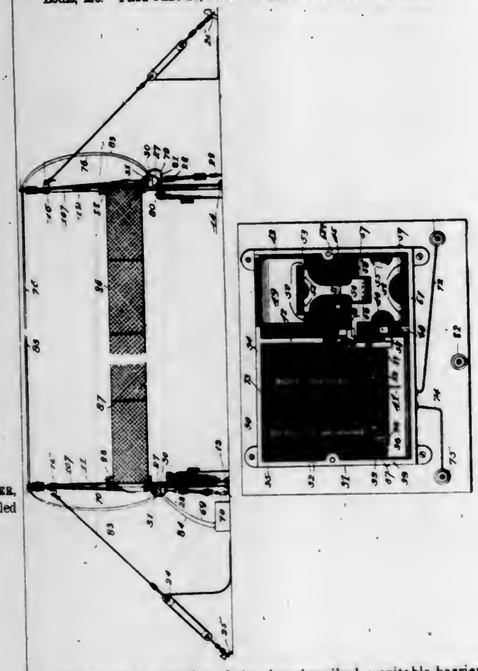
2. An electric branding-stamp consisting of a plate, an annular flange located on said plate, a second plate composed of non-heat-conducting material secured to the under side of said first plate; an electric conductor secured to the under side of the said non-heat-conducting plate, said electric conductor being connected with an electric generator; a metallic plate located within the annular flange of the first said plate, a non-heat-conducting strip interposed between the edge of the last said plate and the said annular flange; screws passing through said annular flange and securing said metallic plate in position, the upper surface of the last said plate coming in contact or close proximity with the electric conductor, the under side of the last said plate being provided with suitable characters.

574,204. LUG-STRAP FOR LOOMS. CHARLES P. LIVSEY, Norwich, Conn., assignor to the E. H. Jacobs Manufacturing Company, Danielsonville, Conn. Filed May 21, 1894. Serial No. 511,896. (No model.)



Claim.—A lug-strap of fibrous material compressed and bent to present a bow eod reduced in width and increased in thickness, and plano-convex in cross section, to thereby form an integral, interiorly-convexed impact-surface, substantially as described.

574,205. RACE-STARTING MACHINE. WILLIAM MAXWELL, St. Louis, Mo. Filed June 29, 1896. Serial No. 597,504. (No model.)



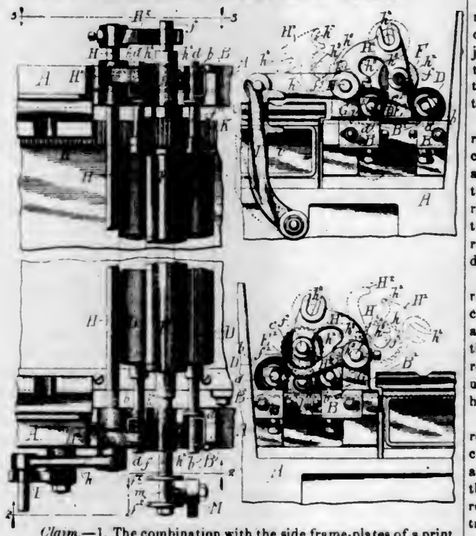
Claim.—1. In a device of the class described, a suitable barrier movably suspended across the track and electrically-operated mechanism for holding and releasing said barrier, which mechanism consists of electromagnets, armatures operated by said magnets, pivotally-mounted jaws adjacent to said magnets, toggle-joints operating the free ends of the posts supporting said jaws, trip mechanisms for holding and releasing said toggle joints and in positions to be operated by said armatures, and hooks attached to said barriers and designed to engage said jaws, substantially as specified.

2. In a device of the class described, inclined wires upon opposite sides of the track and extending in a direction parallel with the track, frames slidingly positioned upon said wires, rollers carried by said frames in a vertical position, a netting attached to and connecting said rollers, electrically-controlled mechanisms rigidly fixed in positions adjacent the lower ends of said wires, each of said electrically-controlled mechanisms consisting of an electromagnet, an armature operated by said magnet, a post pivotally mounted adjacent said magnet, a jaw extending from the free end of said post at right angles thereto, a toggle-joint operating the free end of said post, trip mechanism for holding and releasing said toggle-joint and in a position to be operated by said armature; an electric circuit operating said magnets, and hooks upon said sliding frames and engaging said jaws, substantially as specified.

3. In a device of the class described, inclined wires upon opposite sides of the track and extending in a direction parallel with the track, frames slidingly positioned upon said wires, elastic cords attached to said frames in such a way that their tension will be exerted to elevate said frames, a suitable barrier connecting said frames, electrically-controlled mechanism rigidly fixed in positions adjacent the lower ends of said wires; each of said electrically controlled mechanisms consisting of an electromagnet, an armature operated by said magnet, a post pivotally mounted adjacent said magnet, a jaw extending from the free end of said post at right angles thereto, a toggle joint operating the free end of said post, trip mechanism for holding and releasing said toggle-joint and in a position to be operated by said armature; an electric circuit operating said magnets, and hooks upon said sliding frame and engaging said jaws, substantially as specified.

4. In a device of the class described, posts upon opposite sides of the track, guy-ropes extending from the tops of said posts in an inclined direction to the ground, stakes driven in the ground, to which the lower ends of said guy-ropes are attached, certain of said guy-ropes forming inclined supports upon opposite sides of the track, a suitable barrier suspended across the track and slidingly connected with said inclined supports, electrically-operated mechanism for holding and releasing said barrier carried by said inclined supports, elastic cords attached to said barrier in such a way that their tension will be exerted to elevate said barrier; which electrically-controlled mechanism consists of electromagnets, armatures operated by said magnets, pivotally mounted jaws adjacent to said magnets, toggle-joints operating the free ends of the posts supporting said jaws, trip mechanisms for holding and releasing said toggle-joints and in position to be operated by said armatures, and hooks attached to said barriers and designed to engage said jaws, substantially as specified.

574,206. PRINTING-PRESS. ROBERT MIEHLE, Chicago, Ill., assignor to the Miehle Printing Press and Manufacturing Company, same place. Filed Jan. 25, 1893. Serial No. 459,736. (No model.)



Claim.—1. The combination with the side frame-plates of a printing press, of an inking roller, a distributing-roller, standards rising from the side plates and notched at their upper ends to form the lower parts of bearings for the distributing-roller, pivoted arms provided at their ends with notches to form the upper parts of the bearings for the distributing-roller, a rigid connection between said arms by which the same are moved together when turned on their pivots, a crank rigidly attached to one of said arms, and a pivoted detent constructed to engage said crank to hold the parts of the bearings together, substantially as described.

2. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller, consisting of standards provided with recesses forming the lower parts of the bearings, pivoted arms provided at their free ends with notches forming the upper parts of said bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, and a connection between the said several arms, by which the same may be simultaneously turned upon their pivots, substantially as described.

3. The combination with an inking-roller, and a distributing-roller located over the same, of bearings for the distributing roller, consisting of standards provided with recesses forming the lower parts of the bearings, pivoted arms provided at their free ends with notches forming the upper parts of said bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, said arm being provided with an upturned end, and a connection between the said several arms by which the same may be simultaneously turned upon their pivots, substantially as described.

4. The combination with an inking roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, pivoted arms carrying the movable parts of the bearings and provided with recesses to support the distributing-roller when the latter is removed from its bearings, and a connection between the arms by which the same may be simultaneously turned upon their pivots, substantially as described.

5. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, pivoted arms carrying the movable parts of the bearings and provided with recesses to support the distributing-roller when the latter is removed from its bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, and a connection between the said several arms by which the same may be simultaneously turned upon their pivots, substantially as described.

6. The combination with the side plates of a printing-press, of an inking-roller, a distributing-roller located over the same, standards rising from the frame-plates and having notches at their upper ends forming the lower parts of the distributing-roller bearings, a rock-shaft journaled adjacent to the inking-roller, arms rigidly attached to the rock-shaft and provided with notches which form the upper parts of the distributing-roller bearings, a crank attached to the said shaft, and a pivoted detent constructed to engage said crank to hold the parts of the bearings together, substantially as described.

7. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings and a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, substantially as described.

8. The combination with an inking roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, and means adapted to engage a part of or upon the rock-shaft for holding the latter in different positions, substantially as described.

9. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, and a detent acting upon a part of or upon the shaft for holding the parts of the bearings together, substantially as described.

10. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock shaft and adapted to engage the shaft or journal of the distributing-roller, and a crank or hand lever attached to said shaft for actuating the same, substantially as described.

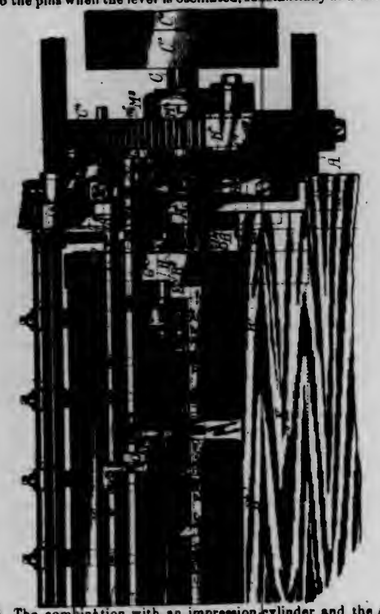
11. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, a crank attached to the shaft, and a pivoted detent adapted to engage said crank to hold the parts of the bearings together, said detent being provided with an arm or spur adapted to engage the crank when the arms upon the rock-shaft are in an intermediate position, substantially as described.

574,207. PRINTING-PRESS. ROBERT MIEHLE, Chicago, Ill., assignor to the Miehle Printing Press and Manufacturing Company, same place. Filed Feb. 21, 1893. Serial No. 463,268. (No model.)

Claim.—1. The combination with an impression-cylinder, the sheet-nippers thereof, and an oscillating shaft supporting said nippers, of actuating mechanism for the nippers, comprising a wheel which turns with the impression cylinder and is provided with a cam-groove which encircles the wheel twice, an actuating-lever which is given oscillatory movement by the action of said cam-groove, and actuating connections between said shaft and said lever at opposite sides of the pivot of the latter embracing oblique flanges at opposite ends of the lever, whereby the shaft is turned in one direction or the other at each movement of the lever, substantially as described.

2. The combination with an impression-cylinder, the sheet-nippers and lifting-fingers thereof, and oscillating shafts supporting said nippers and fingers, of actuating mechanism for said shafts, comprising a wheel which turns with the cylinder and is provided with a single cam-groove which encircles the wheel twice, an actuating-lever which is given oscillatory movement by the action of said cam-groove, actuating connections between one end of said lever and the lifting-finger shaft, and actuating connections between the parts of said actuating-lever at opposite sides of its pivot and the said nipper-shaft, whereby said shafts are given motion from the actuating lever, substantially as described.

3. The combination with an impression cylinder and the sheet-nippers thereof, of a shaft supporting the said nippers, a spring applied to hold the nippers at the opposite limits of their movement, a slotted cross-head attached to said shaft, sliding pins on the machine-frame adapted to engage the said cross head, and means for actuating said pins comprising a wheel turning with the cylinder and provided with a cam-groove which encircles the wheel twice, and an oscillating lever actuated by said cam-groove, said oscillating lever being provided with oblique flanges acting to give longitudinal movement to the pins when the lever is oscillated, substantially as described.



4. The combination with an impression-cylinder and the sheet-nippers thereof, of a rock shaft supporting the nippers, and a cross-head for actuating the rock-shaft located outside of the cylinder-head, said rock-shaft comprising a separate shaft section attached to the cross-head and passing through the cylinder-head and which is journaled in the cylinder head and is made not larger at its inner than at its outer part, and a coupling-piece located inside of the head and to which the main part of the shaft and the said separate section are detachably secured, said coupling-piece being larger in diameter than the cross-head section and bearing against the inner face of the cylinder-head, substantially as described.

5. The combination with an impression-cylinder and the lifting-fingers thereof, of a rock-shaft supporting the lifting-fingers, a spring applied to thrown the lifting-fingers toward the cylinder, a rocking arm rigidly attached to the rock-shaft, a movable cam-lever adapted to engage said arm, and means for actuating said cam lever comprising a wheel turning with the cylinder and provided with a cam groove which encircles the wheel twice, an oscillating lever moved by said groove, a rock-shaft provided with a rigid arm engaging said lever and with a cam projection engaging said cam-lever, and a spring acting on the said rock-shaft to hold the rigid arm thereof in contact with said oscillating lever, substantially as described.

6 The combination with an impression-cylinder, the tympan-clamps thereof and the lifting-fingers thereof, of a shaft supporting said tympan-clamps, a rock-shaft supporting the lifting-fingers, a rigid arm attached to said lifting-finger shaft and a spring acting on said arm for throwing the lifting-fingers toward the cylinder, said spring being movably supported on the cylinder, and means, moved by the tympan-clamp shaft and acting on the spring to hold the same in operative position when the tympan-clamps are in position to grip the tympan, substantially as described.

7. The combination with an impression-cylinder and the tympan-gripping fingers and sheet lifting fingers thereof, of a rock-shaft supporting the gripping-fingers, a rock-shaft supporting the sheet-lifting fingers, a rocking arm attached to the shaft of the lifting fingers, a leaf-spring acting on said rocking arm and pivotally connected with the cylinder, an arm attached to said spring, and a projection on the gripping-finger rock-shaft acting on said arm to hold the said spring in operative position when the gripping fingers are engaged with the tympan, substantially as described.

8. The combination with an impression cylinder and the sheet-nippers and lifting-fingers thereof, of means for actuating the nippers comprising a rock-shaft supporting the same, a slotted cross-head on the rock-shaft, sliding pins engaging the said cross-head, a cam provided with a cam-groove which encircles the same twice, and an oscillating lever moved by the action of the cam-groove, and giving motion to said sliding pins, and means for actuating the lifting fingers comprising a rock-shaft supporting the same, a rocking arm on the rock-shaft, a movable cam-arm adapted to engage said rocking arm, and a rock-shaft provided with a cam projection which acts on the said cam-lever and with a rigid arm which engages the said oscillating lever, substantially as described.

9. The combination with an impression-cylinder, of guide-fingers, a rock-shaft supporting the same, and means for actuating the rock-shaft comprising an oscillating actuating-arm on the frame, a cam turning with the cylinder and giving oscillatory movement to the said actuating-arm, and means operating to produce engagement of the said actuating-arm with the rock-shaft at every alternate rotation of the cylinder, substantially as described.

10. The combination with an impression-cylinder, the guide-fingers thereof and a rock-shaft supporting the same, of means for actuating the rock-shaft comprising a spring applied to throw the fingers toward the cylinder, an oscillating actuating-arm provided with a sliding pin, a rigid arm on the rock shaft adapted for engagement with said pin, a cam turning with the cylinder and acting on the said actuating-arm to give oscillatory movement thereto, and means for actuating said sliding pin constructed to shift the same into position for engagement with the said arm on the rock-shaft at each alternate rotation of the cylinder, substantially as described.

11. The combination with an impression cylinder and the sheet-guides thereof, of a rock-shaft supporting said guides, and an actuating device for the rock-shaft embracing an oscillating, actuating-arm, an arm on the rock-shaft and means for periodically engaging the actuating arm with the arm on the rock-shaft, comprising a wheel which turns with the cylinder and is provided with a cam-groove encircling the same twice, and an oscillating lever which is actuated by the said cam groove, and the movement of which determines the time at which the actuating arm is engaged with the arm on the rock-shaft and the guide-fingers are lifted, substantially as described.

12. The combination with an impression-cylinder and the guide-fingers thereof, of a rock-shaft supporting the guide-fingers, a spring throwing the guide-fingers toward the cylinder, an oscillating actuating-arm, a cam turning with the cylinder and operating said actuating-arm, a rigid arm on the rock-shaft adjacent to the actuating-arm, a sliding pin on said actuating-arm, a wheel turning with the cylinder and provided with a cam-groove which encircles it twice, and an oscillating lever moved by said cam-groove and adapted to actuate said sliding pin in the actuating-arm, substantially as described.

13. The combination with an impression-cylinder and the guide-fingers thereof, of a rock-shaft supporting the guide-fingers, an oscillating actuating-arm, a cam turning with the cylinder and moving said actuating-arm, a rigid arm on the rock-shaft adjacent to the actuating-arm, a sliding pin in the said actuating-arm, a spring applied to move said sliding pin in one direction and means for moving the pin comprising a wheel turning with the cylinder and provided with a cam-groove which encircles it twice, and an oscillating lever which is actuated by said cam-groove and operates to move said pin against the action of said spring, substantially as described.

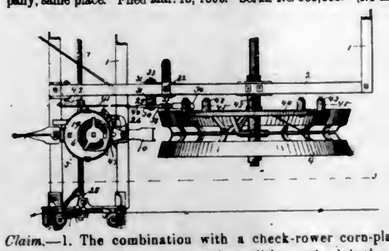
14. The combination with an impression-cylinder and sheet-guides, of a rock-shaft supporting the guides, a spring turning the rock-shaft in one direction, a rigid arm on the rock-shaft, an oscillating actuating arm, a cam turning with the cylinder and moving said actuating-arm, a sliding pin in the actuating-arm adapted to engage the said rigid arm on the rock shaft, a wheel provided with a cam-groove which encircles it twice, and an oscillating lever operated by the cam-groove and provided with an inclined or oblique flange through the medium of which motion is given to said sliding pin, substantially as described.

15. The combination with an impression-cylinder and sheet-guides, of a rock-shaft supporting the sheet guides, an oscillating arm for giving movement to said shaft, a rigid arm attached to the shaft adjacent to said oscillating arm, a sliding pin in the oscillating arm adapted for engagement with the said rigid arm on the shaft, a spring holding the said pin normally free from said rigid arm, means acting against the said spring and having spring or elastic connection with the pin for advancing the same into position to engage said rigid arm on the rock-shaft, substantially as described.

16. The combination with an impression-cylinder, the sheet-nippers thereof and sheet-guides, of a rock-shaft supporting the nippers, a spring applied to hold the rock-shaft at either limit of its movement, a slotted cross-head on the rock-shaft, sliding pins in the machine-frame adapted to engage said cross-head, a wheel turning with the cylinder and provided with a cam-groove which encircles it twice, an oscillating lever provided with oblique flanges which give endwise movement to the said sliding pins, a rock shaft supporting the sheet-guides, an oscillating actuating-arm for giving movement to said rock-shaft, a sliding pin in said actuating-arm through the medium of which motion is given to the guide-fingers, and a spring tending to hold the said sliding pin out of operative position, the said oblique flange on the said oscillating lever being adapted to transmit motion also to said sliding pin in the actuating-arm, substantially as described.

574,208. DRILLING ATTACHMENT FOR CORN-PLANTERS.

RODERICK MURCHISON, Kewanee, Ill., assignor to the Peters Pump Company, same place. Filed Mar. 13, 1896. Serial No. 583,063. (No model.)



Claim.—1. The combination with a check-rower corn-planter comprising intermittently-rotating seed-cup disks or wheels in the seed-boxes, discharging valve or valves in the seed-tubes, a rock-shaft, a check-rower line with tappets, which line gives motion to the rock-shaft in one direction, and a spring which gives motion in a reverse direction to said rock-shaft; of a drilling attachment, comprising actuating mechanism connected with the wheels or axle of the planter, and means for transmitting motion therefrom to the rock-shaft to turn or swing it in one direction only, substantially as described.

2. The combination with a check-rower corn-planter comprising intermittently rotating seed-cup disks or wheels in the seedboxes, discharging valve or valves in the seed tubes, a rock shaft, a check-rower line with tappets, which line gives motion to the rock-shaft in one direction, and a spring which gives a reverse motion to said rock-shaft; of a drilling attachment comprising a tappet-wheel actuated by the wheel or wheels of the planter, a lever hinged to or pivotally mounted on the planter, one end of which lever is adapted to be acted on by said tappet-wheel to swing the lever in one direction, a radius-arm projecting from said rock-shaft, and a link connecting said radius-arm and one end of said lever, whereby the movement of the lever in one direction will give a movement in one direction to the rock-shaft, substantially as described.

3. The combination with a check-rower corn-planter having a rotary seed-cup disk or wheel, a valve or valves in the seed-tube, a rock-shaft, means for transmitting motion from said rock shaft to said disk and valve or valves, and a spring for giving return motion to said rock-shaft; of a drilling attachment comprising a tappet-wheel actuated by the wheel or wheels of the planter, a lever hinged to or pivotally connected with the planter, the rear end part of which lever is pivoted to or hinged to its main portion and adapted to be acted on by said tappet-wheel to swing the lever in its forward direction, a radius-arm projecting from said rock-shaft, and a link connecting said radius-arm and one end of said lever, whereby the swing of said lever in one direction will swing the rock-shaft in one direction to operate the seed-cup disk and valve or valves, and thereby the check-rower spring will give a reverse movement to said lever, rock-shaft, and the disk and valve-operating mechanism, substantially as described.

4. In a combined check-rower corn-planter and drill attachment, a rock-shaft and seed-cup disk and seed-tube valve operated thereby, a tappet-wheel, a lever hinged or journaled to the planter, with its rear end part located in the common orbital path of the tappets of the tappet-wheel for operation, and hinged to the main portion of the lever, whereby it can be turned upwardly to throw it out of the common path of said tappets, substantially as described.

5. In a combined check-rower corn-planter and drill attachment, a seed-cup disk and seed-tube valve, a rock-shaft and means for actuating said disk and valve by oscillations of the rock-shaft, a tappet-wheel, a lever hinged or journaled to the planter, with its rear end part located in the orbital path of the tappets of the tappet-wheel for operation, and hinged to the main portion of the lever, substantially as described.

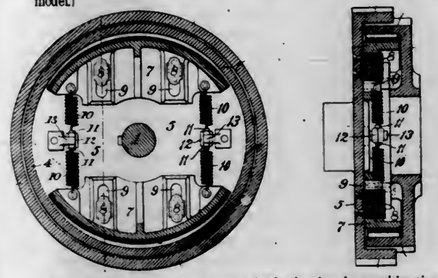
6. A drilling attachment to corn-planters, comprising and in combination, a drive-wheel having tappets, an arm or lever adapted to be actuated by said tappets, a rocking arm which receives motion from said arm or lever, and a rod connecting said rocking arm with the dropper-actuating shaft of the planter, substantially as described.

7. In a corn-planter, in combination substantially as described, with the seed-dropping mechanism in the seedbox and seed-tube, a tappet-wheel, and a lever hinged or journaled to the planter, with its rear end part located in the orbital path of the tappets of said tappet-wheel and hinged to the main portion of the lever.

8. In a coro-planter, and in combination with the seed-dropping mechanism in the seedbox, a tappet wheel, an arm projecting laterally from the planter-frame, a forwardly-projecting lever for which said arm is a center of motion, and a rearwardly projecting lever for which said arm is also a center of motion, said rearwardly-projecting lever being hinged so that its rear end may be turned upwardly, substantially as described.

574,209. GOVERNOR FOR POWER-SHAFTS.

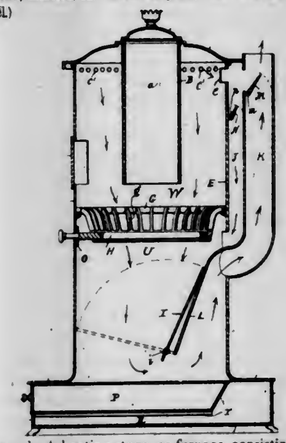
WILLIAM H. MCFADDEN, Allegheny, Pa. Filed Mar. 23, 1896. Serial No. 584,403. (No model.)



Claim.—A governor for power shafts having in combination a bearing provided with a laterally-projecting rim, a disk or plate secured to the power-shaft, shoes mounted on the disk or plate and adapted to be forced outwardly against the stationary rim by centrifugal action, springs having their outer ends connected to the shoes, and their inner ends to threaded pins, an internally-threaded sleeve engaging said pins, and an open-sided clip for holding the sleeve as against rotation, substantially as set forth.

574,210. DOWNDRAFT STOVE OR FURNACE.

EDWIN D. MCLEAN, Marissa, Ill. Filed May 21, 1896. Serial No. 592,411. (No model.)



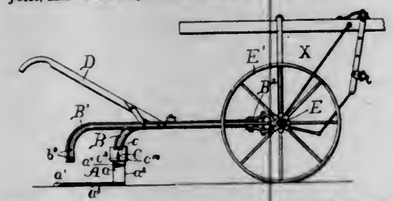
Claim.—1. A heating stove or furnace consisting of a base, an ash-pan having air-circulating spaces at bottom and around the back and sides thereof a casing above said base, a basket-grate and shaking-grate supported in said casing, a fire-chamber above and a combustion-chamber below said grates, a magazine above said grates arranged to be filled at the top thereof, a door opening into said fire-chamber, means for admitting air into the upper part of said fire-chamber, and auxiliary downdraft-passage leading from the upper part of said fire-chamber to the upper part of said combustion chamber, a damper hung in said downdraft-passage arranged to open and close said passage, a partition situated below said downdraft-passage lower opening extending across said combustion chamber and to near the bottom thereof, a damper hung and arranged to connect the bottom of said partition and divide said combustion-chamber into an upper and a lower compartment, an updraft-passage leading from said lower compartment to the upper part of said furnace, a communicating passage between said auxiliary passage and said updraft-passage near the top thereof, and a damper arranged to either close

said communicating passage or said updraft-passage, substantially as and for the purposes shown and described.

2. The combination in a stove or furnace, of a casing, a fire-grate within said casing, a partition located beneath said fire grate and extending downward to a point near the bottom of the combustion-chamber, a damper closing the space between said partition and the casing, an updraft-passage provided at the rear of the casing and opening into the combustion-chamber back of said partition, and opening into the flue, an auxiliary downdraft-passage provided contiguous to said updraft passage, a damper in said auxiliary downdraft-passage, and a damper in said updraft-passage arranged to control either of said passages or the opening between said updraft passage and said auxiliary downdraft-passage, substantially as and for the purpose shown and described.

3. The combination in a stove or furnace, of a casing, a fire-grate within said casing, a partition located beneath said fire-grate and extending downward to a point near the bottom of the combustion-chamber, a damper closing the space between said partition and the casing, an updraft-passage provided at the rear of the casing and opening into the combustion-chamber back of said partition and opening into the flue, a damper located in said passage, an auxiliary downdraft-passage provided with an opening into the fire-chamber above the grate and an opening into combustion-chamber beneath the grate, and a damper located in said auxiliary passage, substantially as and for the purpose shown and described.

574,211. PLOW ATTACHMENT. WILBUR H. MCMULLEN, Lafayette, Ind. Filed July 1, 1896. Serial No. 597,764. (No model.)



Claim.—1. A vine and weed cutting attachment for cultivators consisting of a knife having a short vertical shank and a longer horizontal blade, sloping backward therefrom; a cutting edge on the front of said vertical portion, and a cutting edge on the front of said horizontal portion; the said vertical portion having a plurality of holes through its upper end, and a vertical slot therethrough near its upper end for the passage of bolts, substantially as and for the purposes described.

2. A vine and weed cutting attachment for cultivators consisting of the knife A having vertical portion a with a plurality of holes a^9 through its upper end; and having horizontal portion a' sloping backward from said vertical portion a; having beveled cutting edge a^2 on the front of said vertical portion, and similarly-beveled cutting edge a^3 on said horizontal portion forming together a continuous cutting edge, substantially as and for the purposes described.

3. In a vine and weed cutting attachment for cultivators, the combination with a knife having a vertical shank provided with a plurality of holes through its upper end and a vertical slot near said end, and provided with a cutting edge on the front thereof, and having a horizontal portion sloping backward from said vertical portion and also provided with a cutting edge on the front thereof; of a flat band having a plurality of coincident openings through opposite sides and a pair of slots also through its opposite sides, the said band being adapted to encircle the foot of the cultivator and the shank of the knife; and a pair of bolts, adapted to engage said slots and said openings, substantially as described.

4. In a vine and weed cutting attachment for cultivators, the combination with the knife A having vertical shank a provided with a plurality of holes a^9 through its upper end and a vertical slot a^{10} near said end, and having a horizontal portion sloping backward from said vertical portion, and integral therewith; and having vertical and horizontal cutting edges a^2 and a^3 forming a continuous cutting edge on the front thereof; of the flat band C having a plurality of openings c^9 through opposite sides thereof and vertical slots c^{10} also through said opposite sides, and bolts c and c^3 adapted to engage said openings c^9 and said slots c^{10}, substantially as described.

574,212. ARTIFICIAL LIMB. JOHN HEYQUIST, Coburn, Pa. Filed Oct. 30, 1896. Serial No. 610,577. (No model.)

Claim.—In an artificial leg, the combination, with the foot and leg irons jointed together as specified, of the ankle portion formed of a metal cylinder riveted to the leg-irons, a wooden filling recured in said cylinder, and elastic blocks socketed in such filling and the foot, on front and rear sides of the joint, as shown and described.



574,213. NUT-LOCK. WILLIAM C. NOWES, Louisville, Ky. Filed July 27, 1896. Serial No. 600,705. (No model.)



Claim.—1. An improved device for locking nuts on axle-skein, axles, and bolts, consisting of a bifurcated metal plate, having ribs or flanges for embracing a nut, a fastening-bar which is formed of or attached to one side or arm of such plate, and means for engaging and locking it with the opposite side or arm, substantially as shown and described.

2. An improved nut-locking device composed of a bifurcated or slotted metal plate provided with flanges for embracing a nut, and a fastening device consisting of a bar pivoted to said plate, and means for engaging its free end when closed, substantially as shown and described.

3. The improved nut-locking device composed of a slotted metal plate, having flanges on one side for embracing a nut, other flanges on the opposite side for embracing a bolt-head, and a spring locking-bar pivoted to such plate, and a means for temporarily securing the bar at its free end, substantially as shown and described.

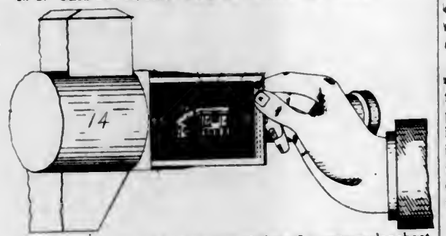
4. The improved locking device composed of the metal plate having an open slot, flanges and a lug, or projection, on its face or back and a spring fastening bar which is pivoted to the plate, and provided with an opening at its free end, to engage said lug, as shown and described.

5. The improved locking device composed of the metal plate having an open slot, integral flanges for embracing a nut, and lug on its face or back which is beveled as and for the purpose specified, and a spring locking-bar, attached to one side or arm of said plate, and having a recess in its free end, whereby the latter is adapted to ride over and engage the lug when being closed, as shown and described.

6. The combination with a wooden axle fitted with metal thimble-skeins and nuts, of a skein-bolt provided with parallel grooves in opposite sides of its head and threaded respectively right and left and the locking device applied to the nuts on each end of such axles composed of the plate having flanges to embrace the nut and a spring fastening-bar which is pivoted to said plate, and a lug which is formed on the plate and detachably engages the free end of said bar, as shown and described.

7. The combination with an iron or steel axle fitted with nuts and having its journals extended beyond the nuts and such extensions provided with opposite parallel side grooves and the locking device applied to the nuts on each end of such axles composed of the plate having flanges to embrace the nut and a spring fastening-bar which is pivoted to said plate and a lug which is formed on the plate and detachably engages the free end of said bar as shown and described.

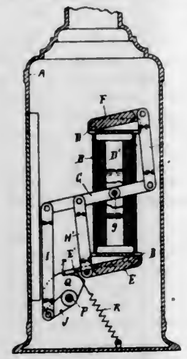
574,214. LANTERN-SLIDE MAT. WILL H. OLMSTED, Syracuse, N. Y. Filed Dec. 14, 1895. Serial No. 572,213. (No model.)



Claim.—1. A lantern-slide mat, consisting of a rectangular sheet of opaque material having a series of lines crossing each other at right angles and parallel with the edges of the sheet, whereby a guide for cutting rectangular openings is formed, and a series of concentric circular lines marked on said surface and centered on the center of the sheet, to form a guide for cutting circular openings, or in conjunction with the rectangular lines to form a guide for cutting oval openings or openings with rounded corners, substantially as specified.

2. A lantern slide mat, consisting of a rectangular sheet of opaque material having a series of lines crossing each other at right angles and parallel with the edges of the sheet, whereby a guide for cutting rectangular openings is formed, a series of concentric circular lines marked on said surface and centered on the center of the sheet, to form a guide for cutting circular openings, or in conjunction with the rectangular lines to form a guide for cutting oval openings or openings with rounded corners, and a conspicuous thumb-mark at or near one of its corners, to indicate the position in which the slide is to be inserted in the lantern, all substantially as specified.

574,215. ELECTROMOTOR-MAGNET. CHARLES PARTINGTON, Newport, Ky., assignor to The Weir Frog Company, Cincinnati, Ohio. Filed Mar. 6, 1896. Serial No. 582,111. (No model.)



Claim.—1. The combination of an electromotor magnet having operative circuits of greater and lesser resistance, independent terminals for each circuit for changing the circuits through the same helices, an armature pivoted within the magnetic field, lever mechanism actuated by the armature, a cam actuated by said lever mechanism, and a switch operated by said cam to change the currents during the armature movements, substantially as specified.

2. The combination with an electromotor-magnet having two or more limbs, wire-terminals for each limb, and a switch adapted to change the electric current through the wire-terminals of the magnet from parallel circuits to serial circuits, of a rock-shaft having a cam to control said switch, an armature pivoted within the magnetic field, and lever mechanism for connecting said armature and rock-shaft, substantially as specified.

3. The combination of an electromotor magnet having the wire-terminals of its separate limbs arranged opposite each other, a switch adapted to be moved from one set of terminals to the other for changing the current through the terminals of the magnet from parallel circuits to serial circuits and vice versa, an armature; and a cam controlled from said armature to actuate the switch, substantially as specified.

4. The combination of an electromotor-magnet having the wire-terminals of its separate limbs arranged opposite each other, an armature pivoted within the magnetic field, a cam-actuated switch automatically controlled from said armature to make and break the circuits through the magnet-terminals, thereby establishing parallel circuits or serial circuits according to the direction in which the said switch is moved, and means for locking the armature, substantially as specified.

5. The combination with the coils of an electromotor-magnet, and two sets of magnet-terminals, of a switch adapted to be moved from one set of said terminals to the other set and thereby establish parallel circuits for the magnet-coils when the said switch is moved in one direction and a serial circuit through the coils when the switch is moved in the opposite direction, an armature pivoted within the magnetic field, and a rock-shaft controlled from said armature and carrying a cam to actuate the switch and change the circuits during the armature movement, substantially as specified.

6. The combination of an electromotor-magnet having operative circuits of greater and lesser resistance and two sets of wire-terminals arranged opposite to each other, an armature pivoted within the magnetic field at each end of the magnet, lever mechanism connected with and operated by the two armatures, and a switch actuated through said lever mechanism and adapted to be moved from one set of terminals to the other set and thereby establish parallel circuits for the magnet-coils when the switch is in one position and a serial circuit through said coils when the switch is in another position, substantially as described.

7. An electromotor-magnet having an armature pivoted within the magnetic field at each end of the coils, each of which armatures controls an operating-lever connected to a common transmitting lever and adapted to exert force in the same direction upon the same transmitting-lever, substantially as specified

8. The combination of an electromotor-magnet with an armature at each end of the coil, each connected to a device which is moved by the two armatures simultaneously and conjunctively, substantially as specified.

9. In an electromotor-magnet having a movable armature at each end and located within the magnetic field, a lever connected to and operated by each armature which are in turn pivoted to a common transmitting-lever at equidistant points from its center, and connecting mechanism for transmitting motion from said transmitting lever to the point of work, substantially as specified.

10. The combination with an electromotor-magnet, of an armature pivoted within the magnetic field at one extremity of the magnet and having an independently-movable arm extended beyond said field, and a rock-shaft adapted to be actuated from the armature and carrying a locking-cam adapted to engage and be locked by the said independently-movable armature-arm, substantially as specified.

11. The combination of an electromotor-magnet having two sets of terminals for operative circuits of greater and lesser resistance, respectively, armatures pivoted in the magnetic field at opposite ends of the magnet, lever mechanism connected with and operated by the two armatures, simultaneously, a switch-lever actuated through said lever mechanism to change the circuits during the armature movements, and means for transmitting power from the armature-actuated lever mechanism to the point of work, substantially as specified.

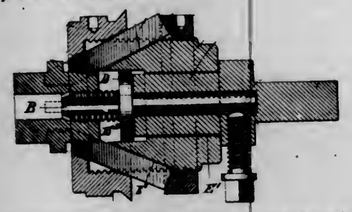
12. An electric-motor magnet composed of two or more parallel bars provided with energizing-coils, an armature pivoted at each end of the said magnet and within the magnetic field, in combination with lever-moving mechanism actuated conjointly by both armatures, substantially as specified.

13. An electromotor-magnet composed of one or more bars provided with energizing-coils, in combination with an armature pivoted at each end of said magnet and within the magnetic field, said armatures being jointly connected to the same power-transmitting mechanism, substantially as specified.

574,216. COMBINATION TAP AND DIE. STEPHEN E. FRANKE, Buchanan, Va. Filed Sept. 8, 1896. Serial No. 605,138. (No model.)

Claim.—1. A combination tap and die, comprising a holder adapted to carry a tap, a collet having its rear end shaped to fit on

the said holder, and having its front end formed with a circular bore adapted to receive the article to be treated and into which extends the said tap, and inclined guideways formed on the said collet and adapted to receive thread-cutting chasers the said thread-cutting chasers being arranged concentric to the said tap, and the collet and tap being adapted to rotate together, whereby internal and external threads are simultaneously cut on the article under treatment, substantially as shown and described.



2. A combination tap and die, comprising a holder adapted to carry a tap, and a collet having a central opening in its rear end shaped to fit the said holder, the front end of the said collet being formed with a circular bore into which extends the said tap, the said collet rotating with the said tap holder and carrying thread-cutting chasers, substantially as shown and described.

3. A combination tap and die, comprising a holder formed at its rear with a spindle and provided with a central longitudinally-extending recess, a tap provided with a shank adapted to engage the said recess, a washer held between the inner face of the tap and the front end of the said holder, and a collet held on and rotating with the said tap-holder, and carrying thread-cutting chasers, substantially as shown and described.

4. A combination tap and die, comprising a revoluble holder formed with a central longitudinally-extending recess and having a lug projecting into the said recess, a tap provided with a shank adapted to engage the said recess, the said shank being formed with a longitudinally-extending groove adapted to engage the said lug, means for fastening the shank in place in the holder, a collet fitted on and rotating with the said tap-holder and formed at its front end with a central circular bore adapted to receive the article to be treated and into which extends the said tap, the said collet being provided with a thread cutting device, the teeth of which extend into the said bore, substantially as shown and described.

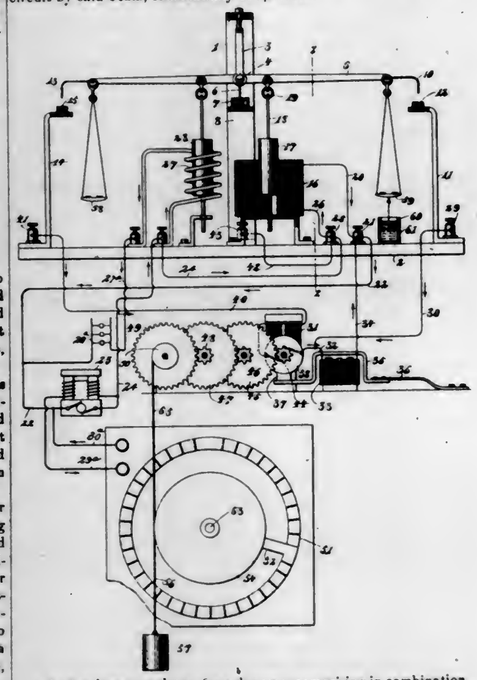
5. A combination tap and die, comprising a revoluble holder having a polygonal cross-section and formed with a central longitudinally-extending recess adapted to receive the shank of a tap, a collet having a corresponding polygonal-shaped opening formed centrally in its rear end, and adapted to fit on the said tap holder, the front end of said collet being formed with a circular bore concentric with the polygonal-shaped opening and into which extends the said tap, thread-cutting chasers carried by the said collet, the teeth of which extend into the said bore, and means for holding the said chasers in position on the collet after proper adjustment is made, the said tap-holder and collet being arranged to rotate together, whereby the tap and chasers act simultaneously on the article fed into the circular bore of the collet to cut internal and external threads thereon, as set forth.

574,217. VOLTAGE-REGULATOR FOR DYNAMOS. THOMAS M. PUSEY, Kennet, Pa. Filed May 22, 1896. Serial No. 592,538. (No model.)

Claim.—1. A voltage-regulator for dynamos, comprising a main circuit, a rheostat in a shunt-circuit of the dynamo, a helix also comprised in a shunt-circuit, a balanced beam operated by said helix and serving as a contact closer, a rheostat-operating motor, an electrically-operated brake for the armature of said motor, and connections between the said armature and the rheostat, for operating said rheostat, substantially as specified.

2. A voltage-regulator for dynamos, comprising a rheostat located in a shunt-circuit of a dynamo or generator, a high-resistance helix in a shunt-circuit, a balanced beam having contact-fingers and serving as a part of the circuit, a core suspended from said beam into the helix, an electromagnet energized by a current closed by a movement of the beam, a motor also operated by a current closed by a movement of said beam, a brake for the motor operated in one direction by the electromagnet, a chain of gearing operated from the armature-shaft of said motor, a drum on the shaft of one of the gear-wheels, a flexible connection between said drum and a drum on the shaft of the rheostat-arm, and a weight having a flexible connection with the drum on the shaft of the rheostat-arm, substantially as specified.

3. A voltage-regulator for dynamos, comprising, in connection with the main current of the dynamo or generator, a balanced beam carrying circuit-closers, two helixes, one located in the main circuit and the other located in a shunt-circuit and adapted to operate said beam, means for changing the resistance at the ends of said beam, and a rheostat in a shunt circuit operating upon the closing of the circuit by said beam, substantially as specified.



4. A voltage-regulator, for a dynamo, comprising in combination with a main circuit and a rheostat located in a shunt from the main circuit, a yoke, a hanger on the yoke, a beam fulcrumed on said hanger, contact-fingers on the ends of said beam, weight-attaching devices at the ends of said beam, and the electrical connections closed by the operation of said beam to regulate the voltage of a dynamo, substantially as specified.

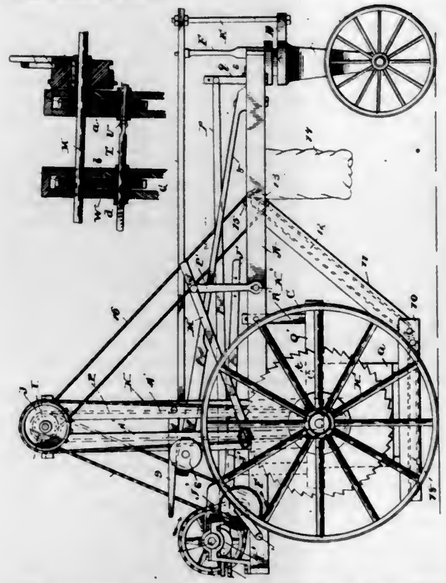
5. The combination with a base, of a yoke mounted thereon, a fulcrumed beam supported by said yoke, weight-pans suspended from the opposite ends of said beam, a plate suspended from one of the said pans into a liquid-containing vessel, and electrical connections the circuit through which may be closed by the movements of the beam, substantially as specified.

6. The combination, with a rheostat comprising an arm mounted on a rotary shaft, of a chain of gearing having a flexible connection with said shaft, a motor, the armature-shaft of which has operative connection with the chain of gearing, the said motor being in the circuit comprising the rheostat, a disk mounted on the armature-shaft of said motor, a frictional shoe adapted for engagement with said disk, an electromagnet for drawing the shoe out of engagement with the disk, the said electromagnet being also included in the circuit comprising the rheostat, and means for automatically closing the circuit through said electromagnet and through the motor, substantially as specified.

7. A voltage-regulator for dynamos, comprising a base a yoke extended upward from said base, a fulcrumed beam supported by said yoke, arms extended upward from the base, mercury contacts on the upper ends of said arms, contact-fingers on the ends of said beam for engaging the said mercury contacts, a metal support on the base, a mercury-cup on said support, a finger extended from the central portion of the beam into said mercury-cup, a helix located in a shunt of the circuit to be governed and serving to operate said beam, a rheostat comprised in a shunt-circuit of the circuit leading to a generator, a motor for operating said rheostat, and the electrical connections, substantially as specified.

574,218. COTTON-PICKER. DAVID RAWL, Batesburg, S. C. Filed Jan. 31, 1896. Serial No. 577,596. (No model.)

Claim.—1. In a cotton-picker, the combination with a thrust picking mechanism adapted to enter the plants, of a propelling mechanism therefor and an intermittently-operated mechanism for propelling the picker when the cotton-picking mechanism has been withdrawn from the plants.



2. In a cotton-picker, the combination of the supporting and driving wheels carrying ratchet-wheels, a thrust picking mechanism and means for driving the same, and a reciprocating device driven by the thrust mechanism to engage the ratchet of the wheels when the thrust mechanism has withdrawn the picking devices from the cotton, the parts combined to operate as described.

3. A picking mechanism, comprising a stationary frame carrying a series of rotating cleaning devices, a movable frame carrying a series of rotating gathering devices passing through the cleaning devices, a driving-shaft extending through the frames, the driving-shaft carrying a rigid pinion meshing with the rotating cleaning devices, and a gear situated loosely upon the driving-shaft and carried by the movable frames, said gear meshing with and driving the gathering devices, substantially as described.

4. In a cotton-picker, the combination of a thrust gathering mechanism, an intermittent actuating mechanism for the vehicle, a driving mechanism common to the thrust mechanism and the vehicle-driving mechanism, and reciprocating devices actuated by the driving mechanism, said reciprocating mechanism operating alternately and connected respectively with the thrust and vehicle-driving mechanisms, the same adapted to operate as described.

5. In a cotton-picker, the combination with a thrust gathering mechanism, of a driving mechanism including a crank, and a pitman having one end adapted to operate the thrust gathering mechanism, the opposite end of the pitman provided with an elongated slot through which the crank passes, for the purpose of permitting the thrust gathering mechanism to remain in the cotton for a predetermined time regulated by the length of the slot, substantially as described.

6. In a cotton-picking machine, the combination of a thrust gathering mechanism, a driving mechanism including a crank, a pitman actuating the thrust gathering mechanism, said pitman provided with an elongated slot receiving the said crank, and an adjustable means projecting within the said pitman-slot whereby its length is adapted to be regulated for the purpose of regulating the time the thrust mechanism shall remain in the cotton, substantially as described.

7. A cotton-picking mechanism comprising a stationary frame carrying a series of rotating hollow cleaning devices, a movable frame carrying a series of rotating gears, a series of spindles projecting through the hollow rotating cleaning devices, the spindles being flexibly connected with the gears on the movable frame, whereby binding of the spindles in the rotating cleaning devices is prevented, substantially as described.

8. A combined gathering and cleaning device comprising a hollow rotatable cleaning device having cams constructed to engage and force the cotton outward, and a spindle projecting through the said hollow cleaning device and provided with a spiral serrated flange, substantially as shown.

574,219. UMBRELLA. RAY P. SAFFOLD, Selma, Ala. Filed Sept. 25, 1896. Serial No. 606,987. (No model.)



Claim.—As a new article of manufacture, a blank for use as a fastener for attaching the cover of an umbrella to the ribs thereof, comprising the relatively widened, and rounded body portion *b* having a pair of oppositely-disposed ears *b'* connected thereto by a reduced portion or neck b^2, the whole being stamped or cut from a single piece of thin flexible material, substantially as and for the purposes described.

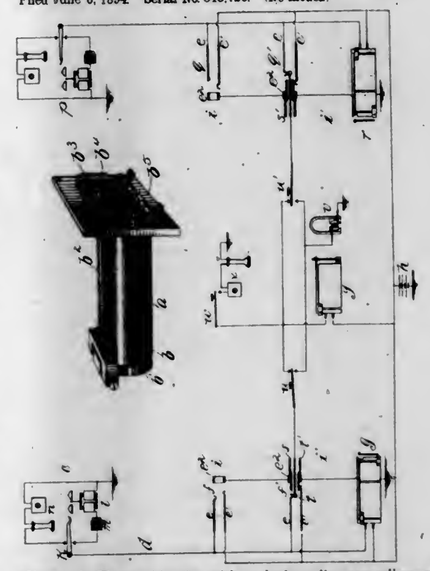
574,220. MOIST COLORS. AUGUST SARTORIUS, New York, N. Y. Filed Mar. 21, 1896. Serial No. 584,321. (No specimens.)

Claim.—1. Moist colors whose chief ingredients are soft soap, mucilage and salicylic acid in about the proportions specified.

2. Moist colors, whose chief ingredients are soft soap, mucilage, salicylic acid and glycerin, in about the proportions specified.

3. Moist colors, whose chief ingredients are soft soap, mucilage, salicylic acid, glycerin and mirbane-oil, in about the proportions specified.

574,221. TELEPHONE-EXCHANGE SYSTEM. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 6, 1894. Serial No. 513,720. (No model.)

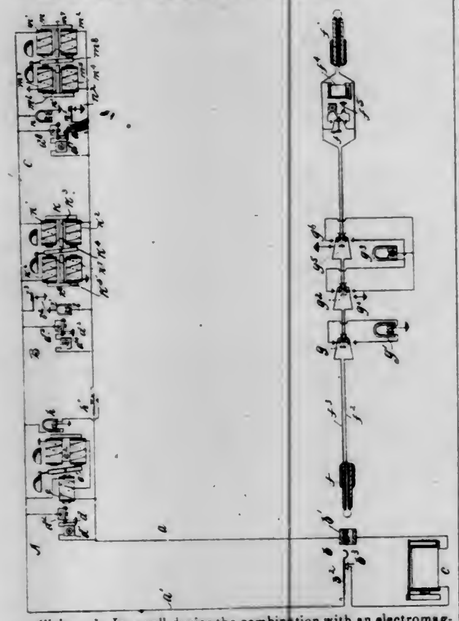


Claim.—1. The combination with a telephone line normally open at a substation, provided with a switch adapted to close a circuit through a telephone there, of an annunciator together with a source of current in the line-circuit at a central station, a connecting-plug for making connection with the line, a magnet-coil separate from the main coil on the said annunciator adapted to reset and retain the indicator thereof, the normally open local-circuit connections distinct from the line-circuit including the said magnet-coil adapted to be closed when the said connecting-plug is inserted into a line spring-jack, a clearing-out annunciator adapted to display its indicator upon the cessation of current through it, and circuit connections completed with the said line when connection is made therewith including said clearing-out annunciator, substantially as described.

2. The combination with a telephone-line normally open as to continuous currents at its substation, having a switch adapted to close the circuit during the use of the telephone, of an annunciator together with a source of current permanently connected with the line at a central station, an electromagnet adapted when excited to conceal the indicator of the line-annunciator, a normally open local circuit including the said electromagnet, a clearing-out annunciator

adapted to display its signal upon the cessation of current in it, and means for making connection with the line and simultaneously connecting therewith the said clearing-out annunciator and closing the said local circuit, substantially as described.

574,222. SELECTIVE-SIGNAL SYSTEM. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Jan. 8, 1895. Serial No. 534,209. (No model.)



Claim.—1. In a call device the combination with an electromagnet and an armature polarized by said electromagnet, said magnet having two helices, of a second motor-electromagnet adapted to vibrate said armature when excited by an alternating current, an electric circuit including said motor-electromagnet and divided into branches including the different helices of said polarizing magnet, and means for transmitting alternate pulsations of current through the said branches, substantially as described.

2. The combination with an intermittent or direct current generator, of means for alternately grounding the opposite limbs of the metallic circuit, and a call device comprising a polarizing-electromagnet connected between the metallic limbs of the circuit, an armature polarized by said polarizing-electromagnet, and a second or motor electromagnet connected between said metallic circuit and ground; whereby a current of uniform direction traverses the polarizing-electromagnet to polarize the armature, while an alternating current traverses the motor-electromagnet to vibrate the armature, substantially as described.

3. The combination with a metallic circuit, of a coil device comprising an electromagnet bridged between the limbs of the circuit, a second electromagnet connected between one of the limbs and ground, and an armature responding to a current traversing one of said electromagnets but irresponsive to current traversing both, a generator or source of current adapted to be connected between the limbs of the circuit, and a key for grounding the limb of the line opposite that to which said second electromagnet is connected, whereby when said key is depressed both electromagnets are energized and the call device remains irresponsive.

4. The combination with a metallic circuit, of two call devices, each comprising two electromagnets, one electromagnet of each of said call devices being bridged between the limbs of the circuit, the other electromagnets of said call devices being connected respectively between the opposite limbs of the circuit and ground, an armature provided in connection with each of said call devices responding to currents traversing one of the electromagnets, but irresponsive to currents traversing both, a generator or source of current adapted to be bridged between the limbs, and keys for grounding one or the other of the limbs of the circuit to actuate one or the other of the call devices, substantially as described.

5. The combination with a metallic circuit, of two call devices, each comprising two electromagnets, one electromagnet of each of said call devices being bridged between the limbs of the circuit, the other electromagnets of said call devices being connected respectively between the opposite limbs of the circuit and ground, an armature provided in connection with each of said call devices responding to an alternating current traversing one of the electromagnets, but irresponsive to currents of uniform direction, or to alternating currents traversing both of the electromagnets, an alternating-current generator adapted to be bridged between the limbs of the circuit, keys for grounding one or the other of the limbs of the circuit to actuate one or the other of the call devices, a third call device comprising a polarizing-electromagnet bridged between the limbs of the circuit, and a motor-electromagnet connected between the metallic circuit and ground, a generator of direct currents adapted to be connected between the limbs of the circuit, and means for alternately grounding the opposite limbs of the circuit during the operation of said generator, substantially as described.

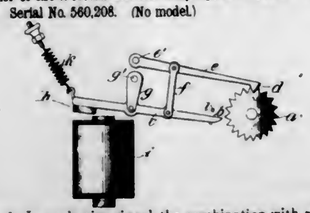
6. In a system of selective signals, the combination with a metallic-circuit telephone-line, of several call devices connected therewith, each of said call devices being provided with two electromagnets adapted to act upon the same armature, the magnets being arranged to actuate the armature when separately excited, like magnets of the different call devices being differently connected with the line circuit, and means for sending current in the line conductors adapted to actuate any one of said call devices, substantially as described.

7. The combination with two electromagnets, each comprising two coils arranged in parallel positions, of a centrally-pivoted armature provided in connection with each of said electromagnets, the ends of the armatures being disposed opposite the poles of their respective electromagnets, said armatures being rigidly connected together, the coils of said electromagnets being wound to act with opposite effect upon their respective armatures when both electromagnets are simultaneously energized, substantially as described.

8. The combination with the permanent magnets p', p^2, of the bars p^3 p^5 supported upon the upper ends thereof, the bell-gongs supported upon said bars, the coils of the electromagnets r and s suspended respectively from said bars, the rods p^{13}, p^{13}, p^{14}, p^{13} suspended from said bars and provided with threaded ends, the armature-supporting plate p^{16} adjustably secured to the ends of said rods by nuts p^{17}, and the centrally-pivoted armatures r^3 and s^3 connected by a cross-piece r^4, and mounted upon said plate p^{16}, substantially as described.

9. The combination with the upright posts l l, the bell-gongs and the bar l^3 supported thereby, the coils of the motor-electromagnet suspended from said bar, the polarizing electromagnet provided with extended pole-pieces, one of said pole-pieces being secured to said bar l^3 and the other extended beneath the coils of said motor-electromagnet, and a centrally-pivoted armature having its ends disposed opposite the poles of said motor-electromagnet coils, the middle of said armature being situated opposite the lower pole-piece of said polarizing-electromagnet, substantially as described.

574,223. SELECTIVE SIGNAL. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed Aug. 23, 1895. Serial No. 560,208. (No model.)



Claim.—1. In a selective signal, the combination with a ratchet-wheel and an electromagnetic device adapted to advance the said wheel through successive stages in response to pulsations of current, a contact-point moving with said ratchet-wheel, circuit connections adapted to be closed when said contact-point is in a particular position, a disk moving with said ratchet-wheel, and a target carried by said disk adapted to be displayed when the commutator is in position to close said circuits, substantially as described.

2. The combination with a ratchet wheel of a pawl, means for imparting to the pawl successively a longitudinal movement radially to the wheel and then a transverse movement, a detent, and a link connecting said detent and pawl adapted to cause the detent to be disengaged from the ratchet-wheel during the transverse movement of the pawl, as described.

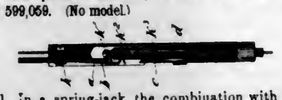
3. In combination, a ratchet-wheel, a lever and a pawl carried thereby, a second end-pivoted lever parallel with the first lever, and a detent carried thereby normally engaging the ratchet-wheel, a link connecting the levers, and means for imparting to the pawl-lever successively a forward movement radially to the ratchet-wheel and a transverse movement, as described.

4. In combination, a ratchet-wheel, a lever c and a pawl carried thereby, a link g at one end of which said pawl is pivoted, a lever e pivoted at one extremity a detent engaging the ratchet-wheel carried at the other extremity of said lever e, a link f connecting the levers, an armature carried by lever c, and an electromagnet adapted to exert its attraction obliquely upon its armature to effect a forward and a transverse movement of the armature, as described.

5. In combination, a ratchet-wheel, a lever free to move longitudinally and transversely, and a pawl carried by the lever a detent, and a link connecting the detent with the pawl, a spring adapted to oppose the transverse movement of the lever more than its longitudinal movement, and a motor device for moving the lever, as described.

6. In combination, a ratchet-wheel, a lever pivoted to one extremity of a pivoted link, a pawl carried by the lever adapted to engage the ratchet-wheel, an end-pivoted lever parallel therewith, and a detent engaging the ratchet-wheel carried thereon, a link connecting the pawl with the detent, an armature on the pawl-lever, an electromagnet adapted to act obliquely upon the armature to produce a forward and transverse movement of the pawl, a switch contact operated by the ratchet-wheel, and a station-circuit including any suitable electrical instruments controlled by the switch-contact, as described.

574,224. SPRING-JACK FOR TELEPHONE-SWITCHBOARDS. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed July 5, 1894. Renewed July 13, 1896. Serial No. 599,059. (No model.)



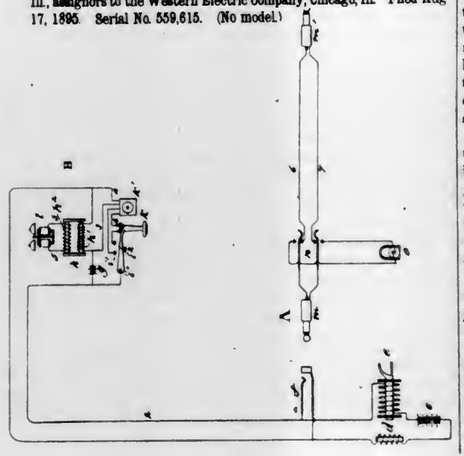
Claim.—1. In a spring-jack the combination with the plate e having the tubular channel i, the transverse saw cut i^3, and the oblique duct i' leading from the tubular channel to the saw cut, of the thimble d inserted in the tubular channel, the extension d^2 thereof passing through the oblique duct into the saw cut and twisted at its rear extremity to prevent its withdrawal from the saw cut, substantially as described.

2. The combination with the plate e having the transverse saw cut i^3 therein, of the thimble d, the extension d^2 thereof lying in the saw cut i^3 and twisted at its rear extremity to prevent its withdrawal from the saw cut, as described.

3. The combination with the plate e, of the thimble d inserted in an opening thereof, the extension d^2 of the thimble lying in the saw cut i^3, the countersunk opening i^3, the tongue d^3 being twisted to produce a shoulder bearing upon the bottom of the opening i^4, substantially as described.

4. The combination with the plate e having a number of thimbles d mounted therein, of the groove m in the face thereof having its edges undercut at m' and a plate l lying in said groove and having its edges engaging said undercut portions m', substantially as described.

574,225. SIGNALING APPARATUS FOR TELEPHONE-LINES. CHARLES E. SCRIBNER, Chicago, and FRANK R. MCBERTY, Downer's Grove, Ill., assignors to the Western Electric Company, Chicago, Ill. Filed Aug 17, 1895. Serial No. 559,615. (No model.)

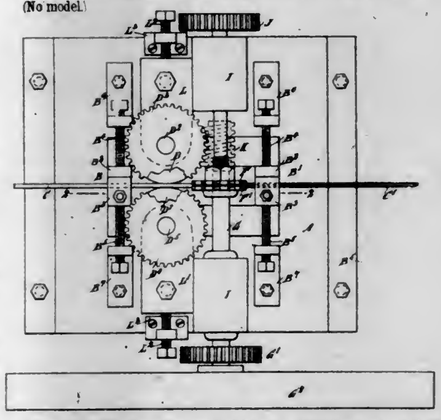


Claim.—1. In combination with a telephone-line, a source of continuous current permanently connected in the line-circuit at a central station, a transformer at the substation having one of its helices in the line-circuit, a polarized bell at the substation in circuit with the other helix of the transformer, a source of alternating current at the central station, and means for connecting it with the telephone-line to operate the signal-bell, as described.

2. In combination with a telephone-line, a source of continuous current permanently connected in a line-circuit at the central station, means for producing undulations in the current therefrom a local storage battery in the circuit at the substation adapted to be charged by the current in the line, a transformer at the substation having its primary helix connected with the line-circuit, and a polarized electric bell in a local circuit with the secondary helix of the transformer, as described.

3. In combination, a telephone-line circuit, a transformer having a primary helix of high impedance and resistance permanently connected across the line-circuit at the substation, a polarized signal-bell in a local circuit with the secondary helix of the transformer, a local storage battery in the line-circuit, a telephone-transmitter and the primary helix of an induction-coil in a normally open local circuit of the storage battery, and means for closing the local circuit, a receiving-telephone and the secondary helix of the same induction-coil in a bridge of the line-circuit, a source of charging current permanently connected with the line at the central station; a source of alternating signaling current, and means for connecting the said source of current with the telephone-line to operate the bell, as described.

574,226. MACHINE FOR MAKING SCRAPED BRASS. EDWARD G. SMITH, New York, N. Y. Filed Sept. 16, 1896. Serial No. 605,971. (No model.)



Claim.—1. The combination with a table, of a rotary shaft mounted thereon, a cutter fixed to the shaft, a second rotary shaft geared with the first shaft, two feed-disks geared with each other, a worm-wheel in connection with one of the feed-disks, a worm fixed to the said second shaft and meshed with the worm-wheel of one of the feed-disks and two guides located respectively at the front and rear of the cutters and feed-disks, the guides being formed of two longitudinally extending blocks the ends of which have coacting portions which form the guides proper, said guides proper being longitudinally alined with the cutters and feed-disks, substantially as described.

2. The combination with a table of a rotary shaft, a cutter fixed to the rotary shaft, two feed-disks feeding to the cutter, gearing driving the feed disks from the rotary shaft, two longitudinally-elongated guide-blocks located beneath the cutter and beneath the feed-disks the ends of the guide-blocks cooperating to form two guides respectively located at the front and rear of the cutter and feed-disks, and means for adjusting the guide-blocks transversely toward and from each other, substantially as described.

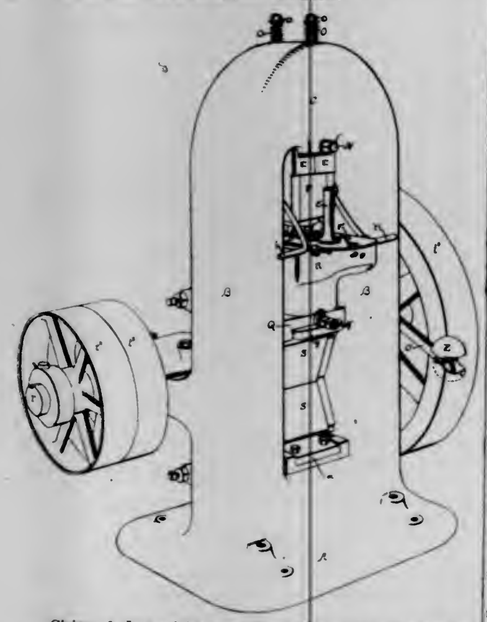
3. The combination with a table, of a rotary shaft mounted above the table, a cutter fixed to the rotary shaft, a second rotary shaft journaled beneath the table and geared with the first rotary shaft, a worm on the second rotary shaft, two vertical shafts passing through the table, a feed disk fixed to each vertical shaft and located above the table, gearing connecting the two vertical shafts, a worm wheel fixed to one vertical shaft and meshing with the worm on the second rotary shaft, two longitudinally-elongated guide-blocks extending beneath the feed disks and cutter and having their ends coacting to form two guides respectively located at the front and rear of the feed-

disks and cutter, and means for adjusting the guide blocks transversely toward and from each other, substantially as described.

4. The combination with a table, of a cutter, two feed disks coacting with the cutter, means for driving the cutter and feed-disks in unison, and two longitudinally-elongated guide-blocks running beneath the feed-disks and cutters, and extended beyond the same, the extremities of the guide-blocks coacting to form guides proper through which the work passes, substantially as described.

5. The combination with a table, of a cutter, two feed disks coacting with the cutter, means for driving the feed-disks and cutter in unison, two longitudinally elongated guide-blocks extending beneath the feed-disks and cutter and extending beyond the same, the extremities of the guide-blocks coacting to form guides proper through which the work passes, and a screw pressing each guide-block, the screws being in connection with the table and serving to move the guide-blocks toward and from each other, substantially as described.

574,227. COINING-PRESS. OBERLIN SMITH, Bridgeton, N. J. Filed June 5, 1896. Serial No. 594,454. (No model.)



Claim.—1. In a coining-press, the combination of the two coining-dies, means for moving one die toward and from the other for coining, a swinging support or holder for the other die, and means for holding said support immovable on its pivot, substantially as and for the purpose specified.

2. In a coining-press, the combination of the two coining-dies, arranged one above the other, means for moving the lower one toward and from the other, for coining, a movable support for the upper die by which the latter may be moved to expose itself and the lower die and means for holding said support immovable, substantially as and for the purpose shown.

3. In a die-press, the combination of the lower, movable die, the upper die, a support for the latter mounted on a horizontal pivot whereby said upper die may be moved outward and upward, to give access to itself and to the lower die, and means to hold said support in a fixed position during a coining operation, substantially as and for the purpose specified.

4. In a coining-press, the combination of the pivoted die holder or chuck, and a holding device therefor, adapted to be engaged with and disengaged therefrom, to respectively prevent and permit its movement on its pivot, substantially as and for the purpose described.

5. In a coining-press, the combination of the pivoted die holder or chuck, the sectional part within which the same is pivoted, and means for clamping the sections of said part upon the chuck, substantially as and for the purpose specified.

6. In a die-press, the combination of the pivoted die holder or chuck, the two-part support within which the same is pivoted a bolt passing through said support and through the chuck, and a clamping nut on the bolt, substantially as and for the purpose shown

7. In a die-press, the combination of the pivoted die holder or chuck, the part to which the same is pivoted, a locking-pin engaging said chuck, and a cam arm engaging said pin, substantially as and for the purpose set forth.

8. In a die-press, the combination of the pivoted die holder or chuck, the part to which the same is pivoted, adapted to be clamped thereon, a locking-pin engaging said chuck, and means for operating said clamping device and the locking-pin, substantially as and for the purpose described.

9. In a die-press, the combination of the pivoted die holder or chuck, the part to which the same is pivoted, adapted to be clamped thereon, a locking-pin, and a single lever for operating the clamping device and the locking-pin, substantially as and for the purpose shown.

10. In a die-press, the combination of the pivoted die holder or chuck, the two-part support therefor, a bolt passing through said support and the chuck, a clamping-nut on the bolt, a sliding locking-pin, and a cam-arm attached to the nut, engaging said pin, substantially as and for the purpose specified.

11. In a die-press, the combination of two die parts mounted each on a suitable support, and means for imparting a differential movement to said parts, substantially as and for the purpose specified.

12. In a die press, the combination of the two dies adapted to form opposite sides of the article to be formed, a die-ring, movable relative to said dies and means for imparting a differential movement to said ring and one of the dies, substantially as and for the purpose set forth.

13. In a die-press, the combination of the two dies adapted to form opposite sides of the article to be formed, a die-ring, a support for the latter and for one of said dies, that are movable independently of each other and means for imparting a differential movement to said independently-movable supports, substantially as and for the purpose described.

14. In a die-press, the combination of the two dies, the plunger upon which one of the same is mounted, the frame in which said plunger is movable, the die-ring carried by said frame, and means to move said frame, substantially as and for the purpose specified.

15. In a die-press, the combination of the two dies, the plunger upon which one of the same is mounted, the frame in which said plunger is movable, the die-ring carried by said frame, and the spring or springs for moving said frame toward the other die, substantially as and for the purpose shown.

16. In a die-press, the combination of the die, the plate around the same, and the clamping-rods at opposite sides for holding said die, substantially as and for the purpose set forth.

17. In a die-press, the combination of the die, the bushing provided with flattened sides, the plate around the bushing, and the two rods engaging the flattened sides thereof, substantially as and for the purpose described.

18. In a die-press, the combination of the die, the bushing provided with flattened sides, the plates surrounding the bushing, the two rods engaging the flattened sides thereof, and a screw device for moving said rods, substantially as and for the purpose specified..

19. In a die-press, the combination of the reciprocating die-carrying plunger, the reciprocating ring-carrying frame or part, the spring or springs engaging both of said parts, and means to move each in opposition to the springs, substantially as and for the purpose shown.

20. In a die-press, the combination of the dies, feed mechanism, and two pivoted arms having each fingers that project in the path of a blank moved by the feed mechanism, adjacent to the dies, engage and hold the blank in line with the latter, and engage and expel the finished product, substantially as and for the purpose specified.

21. In a die-press, the combination of the stamping-dies, the feed mechanism, and the two pivoted, spring-actuated arms extending in the direction of the line of feed having each fingers that are engaged by the forward side of the blank as it moves to the dies, and fingers that engage the rear side of the product of the dies, substantially as and for the purpose shown.

22. In a die-press, the combination of the dies, the hopper, the passage or way leading from the latter to the dies, the reciprocating feeder-bar, and the pivoted spring-actuated fingers projecting into such way in line with the dies, substantially as and for the purpose set forth.

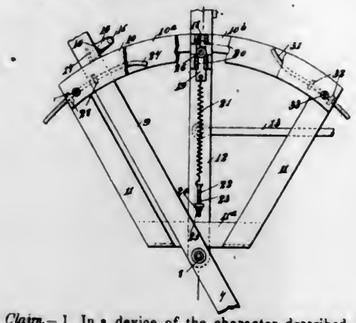
23. In a press, the combination of the plunger or part to be moved, the relatively stationary part, the two toggle-blocks, interposed between and abutting against said parts, and abutting against each other, the abutting surfaces of the blocks being rounded convexly, a crank, and connections between the latter and one of said blocks, substantially as and for the purpose described.

24. In a press, the combination of the plunger or part to be moved, the relatively stationary part, the two toggle-blocks interposed between and abutting said parts and against each other, the abutting surfaces of the blocks being rounded convexly, intermeshing teeth gearing said blocks together and to said other parts, a crank, and a pitman connecting the same to one of said blocks, substantially as and for the purpose specified.

25. In a press, the combination of the dies, the discharge-chute, and a temporary receptacle pivoted to the chute and movable into and out of position at the discharge end of the chute, substantially as and for the purpose described.

26. In a press, the combination of the plunger or the part to be moved, the relatively stationary part, the two toggle-blocks interposed between and abutting against said parts, and abutting against each other, certain of said abutting surfaces being cam-like or irregular, a crank, and connections between the crank and one of said blocks, substantially as and for the purpose specified.

574,228. MEANS FOR OPERATING GATES OF COAL-JIGS, &c. THEODORE E. SMITH, Shamokin, Pa. Filed Nov. 27, 1895. Renewed Dec. 3, 1896. Serial No. 614,381. (No model.)



Claim.—1. In a device of the character described, the combination with a gate-operating lever, of a continuously-reciprocating lever, means for automatically locking the levers together, whereby the gate-operating lever will move with and in the same direction as the reciprocating lever to open the gate, and means for controlling the locking means by the resistance offered to the said levers by the weight of the material on the gate, whereby the gate will be opened in proportion to the amount of material thereon, substantially as described.

2. In a device of the character described, the combination with a gate-operating lever, of a continuously-reciprocating lever, a bolt and latch for locking the levers together, the said bolt and latch having their engaging faces similarly beveled or inclined, whereby the levers will be held locked together for a greater or less time according to the resistance offered by the material, substantially as and for the purpose set forth

3. In a device of the character described, the combination with a pivoted gate-operating lever, of a pivoted and continuously-reciprocating lever, a spring actuated bolt carried by one lever, a latch carried by the other lever and adapted to be engaged by the bolt to lock the levers together, and means for automatically disconnecting the levers, substantially as described.

4. In a device of the character described, the combination with a gate-operating lever, of a reciprocating lever, a spring-actuated bolt carried by one lever, a pivoted latch carried by the other lever and means for raising and lowering the bolt to engage and disengage it from the latch, substantially as described.

5. In a device of the character described, the combination with a gate-operating lever, of a reciprocating lever, a spring-actuated bolt carried by the reciprocating lever and provided with a projection, a pivoted latch carried by the gate-operating lever, and bars for alternately engaging opposite sides of the said projection of the bolt to raise and lower it, substantially as described.

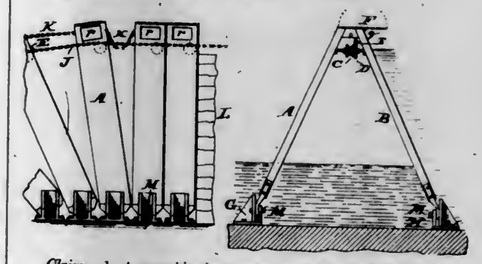
6. In a device of the character described, the combination with guideways, and a pivoted gate-operating lever working in one of said guideways, of a pivoted and reciprocating lever working in the other guideway, a spring actuated bolt on the reciprocating lever, and provided with a projection, a pivoted latch on the gate-operating lever, and bars arranged at opposite ends of the guideways, said bars having their ends oppositely curved to alternately engage opposite sides of the projection of the bolt, substantially as described.

7. In a device of the character described, the combination with a receptacle, a gate therein, a pivoted lever, and a connection between the lower end of the lever and the valve, for operating the latter from the former, of a pivoted and reciprocating lever, a spring-actuated bolt carried by the reciprocating lever, and provided with a roller, a pivoted latch carried by the lever connected with the gate, and oppositely-arranged bars having their ends bent in opposite directions, substantially as described.

8. In a device of the character described, the combination with a jig, and a pivoted gate in the bottom of the jig, of a frame above the jig and provided with guideways, a lever pivoted in the frame and having its lower end connected with the gate, the upper end of the lever working in one of the guideways, a second lever pivoted in the frame and working in the other guideway thereof, said lever being adapted to be reciprocated from the jig, a pivoted latch carried by the first lever, a spring-actuated bolt carried by the second lever and provided with a laterally-projecting roller, and bars having oppositely-bent ends secured at opposite ends of the said guideways, substantially as described.

9. In a device of the character described, the combination with a frame provided with guideways, of two pivoted levers working in the said guideways, one of said levers being continuously reciprocated, a sliding and spring-actuated bolt carried by one lever, said bolt having a jaw at its upper end, and provided with a roller projecting laterally therefrom, a pivoted latch on the upper end of the other lever, and having its end bent laterally, and an adjustable bar at each side of the frame, said bars having their ends oppositely bent, substantially as herein shown and described.

574,229. MOVABLE DAM. BENJAMIN F. THOMAS, Louisa, Ky. Filed June 9, 1896. Serial No. 594,877. (No model.)



Claim.—1. A movable dam composed of a series of frames, or trestles, which are pivoted side by side, their pivots being arranged substantially in the direction of the flow of water, so that when said frames stand vertical they are parallel to the general direction of such flow, and when folded they move transversely, or at right angle, to the same, as shown and described.

2. A movable dam composed of a series of frames pivoted at the base, side by side and adapted, when placed in horizontal or reclining position, to lie one within another, as shown and described.

3. A movable dam composed of a series of triangular trestles, each formed of two rigidly-connected beams arranged at an angle to each other and pivoted at their widely-separated bases, which are alined in the direction directly opposing the pressure of water in the dam, a folding foot-bridge consisting of boards or flat sections hinged to the truncated tops of the respective trestles, and means for supporting the foot-bridge when thrown out and adjusted for use, as shown and described.

4. In a movable dam, the combination with the pivoted trestles having flat tops, of foot-bridge sections which are hinged to said tops, and adapted to fold outward as specified, and pieces *q* attached to such sections on the outer side, whereby they are adapted to support the same by contact with the side of the trestles, as shown and described.

5. A movable dam composed of a series of triangular frames or trestles which are pivoted at their bases side by side, and whose faces, when erect, abut and form a practically continuous front or waterbreast, as shown and described.

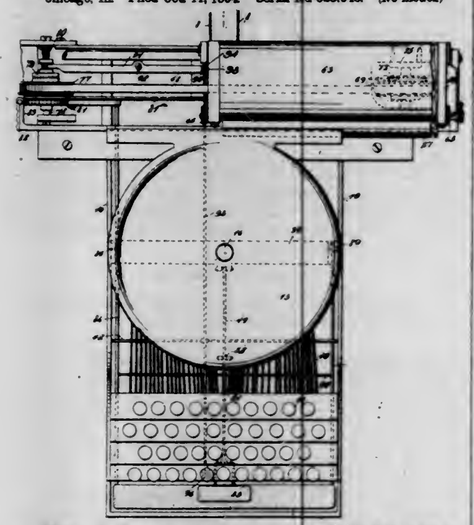
6. A movable dam composed of a series of frames which are pivoted and adapted to swing and fold laterally, means for loosely connecting them, and means for raising and automatically adjusting and holding them in close contact, substantially as shown and described.

7. In a movable dam, the combination with a series of pivoted and laterally-swinging frames, of a series of chain-wheels journaled in their upper portions, means for locking them against rotation, and consisting of a pawl, a chain resting free on said wheels and extending from one to another, substantially as shown and described, whereby when the chain is tightened or slackened, the wheels are held immovable, but may be released to allow the frames to swing downward, as shown and described.

8. In a movable dam, the combination with a series of pivoted frames adapted to be folded or laid down in the direction of the dam, chain-rollers journaled in the heads of such frames, a chain running on said wheels, for raising and lowering the trestles, pawls pivoted adjacently and their free ends projecting laterally, a fixed abutment against which and the adjacent trestles such free ends of the pawls

strike when the trestles are raised to a vertical position, thus tilting the pawls and unlocking the chain-wheels, as shown and described.

574,230. TYPE-WRITING MACHINE. LAWRENCE F. URBANUS, Chicago, Ill. Filed Oct. 11, 1894. Serial No. 525,648. (No model.)



Claim.—1. In a type-writing machine, a revoluble disk, types secured near the periphery of the disk and slidable individually toward and from the same, in a direction approximately perpendicular to the plane of the disk and means for moving any one of the types relatively to the disk and independently of the other types, substantially as described.

2. In a type-writing machine, a revoluble disk, types secured near the periphery thereof and each independently slidable relatively to the disk in a direction substantially parallel to the axis of the same, each type having a plurality of characters thereon, and means for independently moving the individual types relatively to the disk, substantially as described.

3. In a type-writing machine the combination with the revoluble disk and the vertically-movable type-carrying spindles thereon, of the inking-roller and platen above the disk, and means, as the pinion on the spindles and the stationary rack, for turning the spindles, substantially as described.

4. In a type-writing machine, the combination, with the revoluble disk, of the vertically-movable type-spindles on its periphery, the key-operated mechanism for raising the spindles, type-heads on the spindles, an arm extending above the disk and terminating in a cam to engage the tops of the spindles, and an inking-roller carried by the arm and extending into the path of the raised type heads, substantially as described.

5. The combination, with the revoluble disk and the vertically-movable type-carrying spindles thereon, of the type-levers journaled on the under side of the disk and provided with arms to engage the spindles, and a key mechanism for moving any desired type lever, substantially as described.

6. The combination, with the revoluble disk and the vertically-movable type-carrying spindles thereon, of the type-heads journaled on the disk, there being a lever for each spindle, arms at the outer ends of the levers to engage the spindles, a second series of arms, each secured to the type-levers and arranged in different radii on the disk, and key-operated type bars to engage the second series of arms and tilt the type-levers, substantially as described.

7. The combination, with the revoluble disk, the vertically movable type-carrying spindles thereon, the tilting levers on the disk to engage the spindles, and the arms on the levers, of a guide-plate beneath the levers, vertically movable type-bars to engage the arms, and a key-operated device to regulate the movement of the type-bars and the throw of the levers, substantially as described.

8. The combination, with the revoluble disk, the vertically-movable type carrying spindles, the tilting levers to operate the spindles, and the operating-arms on the levers, of the perforated guide-bar beneath the lever-arms, a key-operated slotted slide-bar beneath the guide-bar, and the key-operated type bars adapted to move through the slots of the slide-bar and having reduced ends to enter the perforations of the guide-bar and engage the lever-arms, substantially as described.

9. The combination of a revoluble type disk, means for continuously revolving the same, type heads carried by the disk and movable independently thereon in a line parallel with the axis of the disk, a pinion on the trunnion of each type-head, a stationary rack-bar raised above the normal positions of the pinions, and means for elevating the pinions into engagement with the rack-bar, substantially as described.

10. In a type-writer, a paper-roller, a hollow shaft rigid therewith and having a spiral groove therein, a second shaft having a pin projecting therefrom and capable of being received within the hollow shaft, and pawl and-ratchet-mechanism for the solid shaft, substantially as described.

11. In a type-writer, a paper-roller having a cammed surface, a revoluble shaft having a pin thereon capable of engaging with the cam-surface of the paper-roller, and pawl-and-ratchet mechanism operating with the shaft, substantially as described.

12. The combination with the type-actuating and carriage-moving mechanism, of a transverse rod, a parallel track extending with the rod, a carriage having an eye receiving the rod, two oppositely-located rollers on the carriage and embracing the track, two arms pivotally mounted on the carriage and provided with downwardly-extending portions engaging the same, and paper rollers carried by the arms, substantially as described.

13. In a type-writer, the combination of a disk, means for continuously revolving the same, a series of type revolving with the disk and movable vertically, means for moving them vertically, an inking-roller, a platen, and a rack, substantially as described.

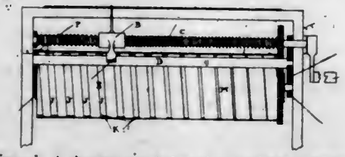
14. In a type-writer, the combination of a post, a disk revolving thereon, an arm projected from the post, an inking-roller carried by the arm, type vertically movable on the disk, a platen, a stationary rack, and pinions on the type, substantially as described.

15. In a type-writer, the combination of a mounted disk, type movable vertically on the disk, bent levers of varying lengths respectively connected to the type, bars movable into engagement with the levers, keys actuating the bars, and a platen, substantially as described.

16. In a type-writer, the combination of a disk, type movable vertically thereon, bent levers of varying lengths respectively connected with the type, bars movable into engagement with the levers, keys controlling the bars, a stationary rack, pinions on the type and movable with the type to engage the rack, and a platen, substantially as described.

17. In a type writer, the combination with a frame, of type-operating bars each having a shoulder thereon, type, and a slide-plate adapted to reciprocate and formed with a series of slots respectively receiving the type-operating bars, the plate being capable of engaging with the shoulders of the type operating bars or permitting said shoulders to pass through the slots, substantially as described.

574,231. CURRENT-CONTROLLER OR RHEOSTAT. ERNEST E. WERNER, Dallas, Tex. Filed June 22, 1896. Serial No. 596,402. (No model.)



Claim.—1. A rheostat consisting of a revoluble cylinder having upon its periphery a substance adapted to resist an electrical current, composed of black-lead and an alcoholic solution of shellac, with a brush adapted to travel laterally along said cylinder and making contact with said resistance and means for revolving said cylinder and imparting motion to said brush, substantially as described.

2. In a rheostat, the combination with a cylinder, or roller having a helical groove in its periphery, of a resistance substance, composed of black-lead and an alcoholic solution of shellac, carried in said groove; a screw mounted parallel with the axis of said cylinder; a brush-holder engaging, and adapted to move on, said screw; a brush carried by said brush-holder, and engaging said resistance substance, and means for revolving said screw and cylinder, and means for indicating the amount of resistance in circuit, substantially as described.

3. In a rheostat, the combination with a revoluble cylinder having a helical groove in its periphery, said groove increasing in depth and width from one end of said cylinder toward the other end, of a resistance substance carried in said groove, composed of black-lead and an alcoholic solution of shellac; a screw mounted parallel with the axis of said cylinder; a brush-holder engaging, and adapted to move on, said screw, a brush, carried by said brush-holder engaging said resistance substance, and means for revolving said screw and cylinder, and means for indicating the amount of resistance in circuit, substantially as described.

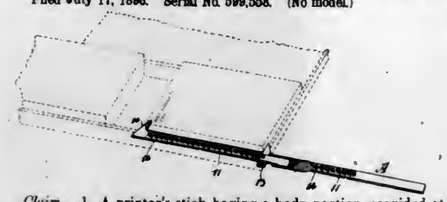
4. In a rheostat, the combination with a revoluble cylinder having a helical groove in its periphery, of a resistance substance composed of a mixture of black-lead and an alcoholic solution of shellac, carried in said groove; a screw mounted parallel with the axis of said cylinder; a gear-wheel carried on the same axis with said screw and a gear carried on the same shaft with said cylinder engaging said first gear; a brush-holder adapted to engage and move on said screw; a brush carried by said brush-holder and engaging said resistance substance; a scale with graduations to indicate the amount of resistance in circuit; a pointer adapted to pass over said scale; a crank for revolving said screw and electrical connection with said brush and resistance substance, substantially as described.

5. In a rheostat, the combination with a revoluble cylinder, having a helical groove in its periphery, increasing in depth and width from one end of said cylinder toward the other end, of a resistance substance composed of black-lead and an alcoholic solution of shellac, carried in said groove; a screw mounted parallel with the axis of said cylinder; a gear-wheel keyed on same axis with said screw and a gear-wheel keyed on same shaft with said cylinder and meshing with said first gear; a brush-holder adapted to engage and move on said screw; a brush carried by said holder and engaging said resistance substance; a scale and a pointer adapted to travel on said screw and pass over the face of said scale; a sliding contact-maker between said resistance substance and terminal contact and a crank for revolving said screw, substantially as described.

6. In a rheostat, the combination with a revoluble cylinder, having a helical groove in its periphery, increasing in depth and width from one end of said cylinder toward the other end, of a resistance substance carried in said groove; a screw mounted parallel with the axis of said cylinder; a gear-wheel keyed on same axis with said screw and a gear-wheel keyed on same shaft with said cylinder and meshing with said first gear; a brush-holder adapted to engage and move on said screw; a brush carried by said holder and engaging said resistance substance; a scale; a pointer adapted to travel on said screw and pass over the face of said scale; a sliding contact-maker between said resistance substance and terminal contact, and a crank for revolving said screw, substantially as described.

7. In a rheostat, the combination with a revoluble cylinder, having a helical groove in its periphery, increasing in depth and width from one end of said cylinder toward the other end, of a resistance substance composed of black-lead and an alcoholic solution of shellac carried in said groove; a screw mounted parallel with the axis of said cylinder; a gear-wheel keyed on same axis with the said screw and a gear-wheel keyed on same shaft with said cylinder and meshing with said first gear; a brush-holder adapted to engage and move on said screw; a brush carried by said holder and engaging said resistance substance, a scale, and a pointer adapted to travel on said screw and pass over the face of said scale; a sliding contact-maker between said resistance substance and terminal contact, and a crank for revolving said screw, and a guide-rod mounted parallel with the axis of said screw and an arm from said brush-holder engaging said rod, substantially as described

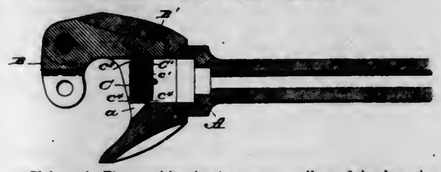
574,232. PAGE-STICK. ALARIC G. ALRICH, Lawrence, Kans. Filed July 17, 1896. Serial No. 599,558. (No model.)



Claim.—1. A printer's stick having a body portion provided at one end with a fixed jaw and having a series of orifices arranged equidistant in the body portion, a jaw movable on the orificed part of the body and provided with alined orifices registering with the respective orifices in the body portion, and a clamping device consisting of a plate having a pin capable of passing through the orifices in the movable jaw and in the body portion, the clamping device also having two lugs and a thumb piece, the lugs receiving one edge of the body portion and the thumb piece projecting laterally beyond the body portion, substantially as described.

2. A printer's stick, having a body portion provided at one end with a fixed jaw and having a number of orifices therein, a movable jaw running on the orificed portion of the body and having an orifice capable of registering with the respective orifices of the body, and a clamping device having a transverse pin capable of being removably passed through the orifice in the movable jaw and into the body portion, the movable jaw also having portions which embrace the body as the jaw swings on its pin and toward the body, substantially as described.

574,233. CAR-COUPLING. CYRUS F. BAKE, Fullerton, Nebr. Filed Oct. 22, 1896. Serial No. 609,643. (No model.)



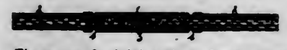
Claim.—1. The combination in a car coupling, of the draw-head having a chamber with a forwardly-inclined bottom and a mouth with a recess or opening *a* in one side; a knuckle presenting an operating-arm having the upper edge *b* inclined downward; together with a pivoted vertical latch C, and a roller C' journaled in said latch to be engaged by the operating-arm of the knuckle, substantially as shown and for the purpose set forth.

2. The combination, in a car-coupling, of the draw-head having a chamber with a recess in one side and a mouth with an opening *a* opposite said recess; a knuckle presenting an operating-arm B' having an upper inclined edge, and a rounded corner; together with a pivoted vertical latch C having a beveled forward edge c^3 and a recess *c'* adjoining the same, and a roller C' journaled in said recess to engage the operating-arm, the parts being organized substantially as shown and for the purpose set forth.

3. The combination with the draw head having a knuckle pivoted thereto, of the vertical latch C pivoted in the draw-head and provided with a shoulder c^2 at its upper end, a rounded corner c^3, and a recess *c'* in one edge; and a roller C' journaled in said recess to bear against the operating-arm of the knuckle when the latch is being raised, substantially as shown and for the purpose set forth.

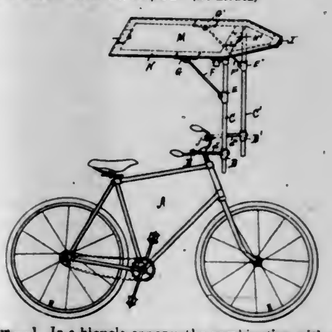
4. The combination with the draw-head having a knuckle pivoted thereto, of the vertical latch C pivoted in the draw-head and provided with a shoulder c^2, a rounded edge c^4, a rounded corner c^3, and a recess *c'*; together with a roller C' journaled in said recess to bear against the operating-arm of the knuckle when the latch is being raised, substantially as shown and for the purpose set forth.

574,234. BELT-FASTENER. BENJAMIN F. BARNES, Rockford, Ill., assignor to The W. F. & John Barnes Company, same place. Filed July 13, 1891. Serial No. 399,431. (No model.)



Claim.—The means for joining the ends of a braided-rope cable consisting of a metallic sleeve placed over the ends of the rope, an annular groove formed in the sleeve near each end and cement placed within the sleeve between the ends of the rope.

574,235. BICYCLE-CANOPY. ALICE A. BENNITT, Elgin, Ill. Filed Mar 6, 1896. Serial No. 582,134. (No model.)

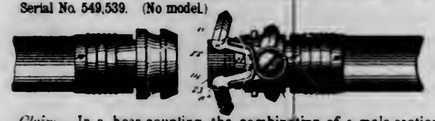


Claim.—1. In a bicycle-canopy, the combination with a suitably-covered frame; of the standard C C suitably supported; the cap-plates L secured to the upper ends of said standards and having the parts L' hinged thereto and secured to said frame by means of which the latter

may be folded down against said standards; the brackets G G' attached to the under side of said frame; the angle-braces F F' pivotally attached at one end to said brackets; the spring-clamps E E' pivotally attached to the opposite ends of said braces and slidable on said standards, said clamps having suitable binding screws whereby they may be secured adjustably, substantially as shown and described.

2. In a bicycle canopy, the combination of the frame, the standards, the hinged cap and angle-braces adjustably connecting said frame and standards; the bracket R having the spring-clamp *r* adapted to be attached to a bicycle, said bracket comprising an arm turned upward and provided with jaws S having a set-screw *t*, a circular blade S' centrally pivoted in the jaws, the part T formed integrally with the blade, the cross-arm U, formed integrally with the part T, and the spring clamps V V' rigid at the ends of the cross-arm, said clamps supporting the said standards, substantially as shown and described.

574,236. HOSE-COUPLING. JOSEPH S BLACKBURN, Salem, Ohio, assignor to the W. J. Clark Company, same place. Filed May 16, 1895. Serial No. 549,539. (No model.)



Claim.—In a hose-coupling, the combination of a male section having a counterbore, a flexible sleeve fitted on the counterbore and extended forward therefrom, a female section having a bore to receive the flexible sleeve, and a beveled counterbore to receive a beveled extension of the male section, locking-jaws pivoted on the male section and adapted to swing in opposite directions, each jaw having side bars and a front arched bar beveled outward on its inner surface, an annular shoulder on the female section for engagement with the arched sections, and a spring mounted on each of the jaw-pivots and engaging with the jaw side arms, substantially as specified.

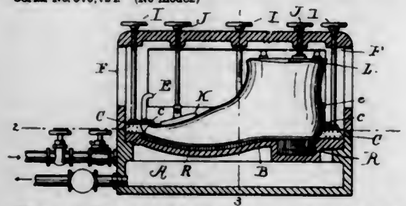
574,237. BLOWPIPE APPARATUS. MAURICE D. BROWN and DENNIS J. GRIFFIN, Waterbury, Conn. Filed May 18, 1896. Serial No. 591,892. (No model.)

Claim.—1. In a blowpipe apparatus, the combination with a gas-valve and an air-valve, each having an inwardly-projecting hub, of gas and air inlet and outlet connections for the said valves, a blowpipe, means for connecting the said outlet connections therewith, a rock-shaft interposed between the said valves, and rigidly connected with their inwardly-projecting hubs for the simultaneous operation of the valves, foot-power connection with the said shaft for rocking it in one direction, and a spring arranged to operate the shaft in the other direction

2. In a blowpipe apparatus, the combination with two supporting-arms having valve boxes located in their outer ends, and provided with removable caps, gas and air valves located in the said boxes and provided with inwardly-projecting hubs which extend toward each other through the walls of the boxes, air and gas inlet and outlet pipes connected with the said boxes, a blowpipe, connection between the said outlet-pipes and the blowpipe, a rock-shaft interposed between the valves and rigidly connected with their hubs, and means for rocking the said shaft in opposite directions for opening and closing the valves.

3 In a blowpipe apparatus, the combination with a frame-plate, of supporting-arms extending forwardly therefrom, valve-boxes located at the outer ends of the said arms, valves located in the said boxes, air and gas inlet and outlet pipes connected with the said boxes, a blowpipe, connection between the said outlet pipes and blowpipe, a rock-shaft interposed between the valves and rigidly connected at its ends with the same, and means for rocking the said shaft for opening and closing the valves.

574,238. APPARATUS FOR VULCANIZING RUBBER SOLES TO SHOES. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed Feb. 18, 1896. Serial No. 579,724. (No model.)



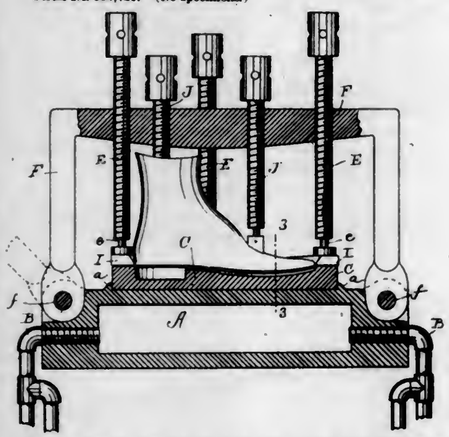
Claim.—1. The steam chamber A having an opening in its top, and provided with steam connections, in combination with the removable mold-plate B recessed to receive the rubber soling, and adapted to fit over and close said opening, and with suitable clamping means to secure said plate upon the chamber and the shoe upon the plate, over its recess, substantially as set forth.

2. The steam-chamber A open at its top and provided with steam connections, and the mold-plate B fitting over said opening, secured by screws *b*, and having a sole-shaped recess in its upper surface, in combination with a skeleton frame above said plate and the shoe held thereon, the laterally-adaptable plates C, C, and screws D, D, and with clamp-screws through said frame, serving to secure said plates and shoe in place, above the mold-plate, substantially as set forth.

3. The steam-chamber A open at its top, the removable mold-plate B having a sole-shaped recess in its upper surface and fitting marginally as a cover for said opening, and clamping means to hold said plate firmly in position, in combination with laterally-adjustable plates fitting along the inseam of the shoe to confine it and the rubber, and with the movable frame carrying pressure-screws for said plates and shoe, substantially as set forth.

4. In a vulcanizing apparatus, a steam-chamber, a mold-plate having a rubber-containing mold in its outer face, in combination with a skeleton frame hinged to the chamber and provided with fastenings for securing a shoe over and upon the rubber inclosed in said mold, leaving the upper-leather of the shoe practically uncovered and exposed to the open air during vulcanizing of the rubber, whereby injury to the upper by heating is obviated, substantially as set forth.

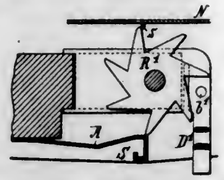
574,239. METHOD OF VULCANIZING RUBBER SOLES TO SHOES. GEORGE F. BUTTERFIELD, Stoneham, Mass. Filed June 1, 1896. Serial No. 593,725. (No specimens.)



Claim.—The described method of uniting vulcanized-rubber soles to the leather bottoms of boots and shoes, consisting in forming such sole in a mold and suitably vulcanizing it therein; then coating the upper surface of such sole with rubber cement and applying thereon a sheet of unvulcanized-rubber compound; then coating the shoe-bottom with rubber cement and holding the shoe pressed firmly upon said unvulcanized sheet, and finally vulcanizing such sheet while the shoe is so held, thereby firmly uniting said sole to the shoe, substantially as set forth.

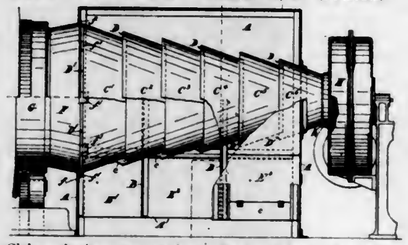
574,240. MECHANICAL MUSICAL INSTRUMENT. MAX OTTO CLAUS, THEODOR BRUNO PUTTMANN, and HANS EUGEN CURT FELIX, Leipsic, Germany. Filed June 20, 1896. Serial No. 596,323. (No model.)

Claim.—1. The combination with vibratory sound-producers and dampers therefor, of means for applying such damping devices severally to each sound producer before and after it is vibrated.



2. The combination with a vibratory sound-producer, of two dampers, means for operating said sound-producer, two toothed wheels adapted severally to operate the respective dampers and a music sheet adapted to cause the movement of said toothed wheels and of the sound-operating mechanism for damping before and after the operation of the sound-producer.

574,241. APPARATUS FOR CONCENTRATING, GRADING, OR CLASSIFYING CRUSHED ORES, &c. WILLIAM H. COWARD, London, England. Filed Feb. 10, 1896 Serial No. 578,741. (No model.)



Claim.—1. An apparatus for grading ores, the apparatus having a casing with openings in two opposite sides and with interior partitions forming compartments, a series of conical shells of varying sizes, the shells being rigidly connected with each other and having spaces between them and one shell being projected through one opening at the side of the casing and an additional shell of conicality opposite to that of the first-named shells, the said additional shell being connected to the shell contiguous to the remaining opening and being passed through said opening, substantially as described.

2. An apparatus for gradiug ores, the apparatus having a casing provided with openings in opposite sides and having interior partitions forming compartments, a series of conical shells rigidly joined to each other and having spaces between them, one end shell being projected through one opening and the remaining end shell being contiguous to the remaining opeding, and an additional shell of conicality reversed to that of the first-named shells and passed through the said remaining opening, the said additional shell having an annular flange forming a closure for the said remaining opening and having lugs by which it may be connected to the contiguous conical shell, substantially as described.

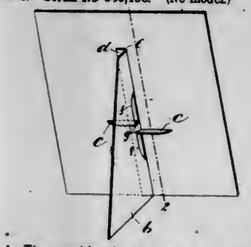
3. An apparatus for grading ores, the apparatus having a casing forming a receiver and having two oppositely-arranged openings in its side, a series of conical shells arranged in line and connected to each other, the shells having spaces between them, one end shell being passed through one opening and the remaining end shell being located adjacent to the remaining opening, and an additional shell of conicality reversed to that of the first-named shell, the said additional shell being connected to the said remaining end shell and passed through the said remaining opening, substantially as described.

4. An apparatus for grading ore, the apparatus having a series of tapering shells rigidly connected to each other and having intervening spaces, an additional shell forming the inlet to the series of shells, said additional shell being tapered oppositely to the taper of the remaining shells and being joined to the large end of one of the end shells with a space between the two, substantially as described.

5. An apparatus for grading ore, the apparatus having a casing with two oppositely-disposed openings, a series of tapering shells arranged in longitudinal alinement and in rigid connection with each other, the shells having spaces intervening between each other and the end shells being revolubly fitted within the openings in the casing, a fan at one end of the series of shells, and means for turning the series of shells, substantially as described.

6. An apparatus for grading ores, the apparatus having a casing with openings in two opposite sides, and a series of tapering shells longitudinally alined with each other and rigidly connected with spaces intervening between each other, the shells being located within the casing and the end shells being respectively fitted within the openings thereof, the shells being adapted to have a current of air passed through them and to engage particles of ore carried in the current of air whereby to cause said particles to drop through the spaces between the shells, substantially as described.

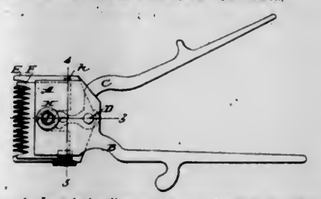
574,242. EASEL. GUSTAV L. R. DAHLBERG, Somerset, N. J. Filed Apr. 27, 1896. Serial No. 589,150. (No model.)



Claim.—1. The combination in an easel, of the face plate, and the single wing backstay, said backstay having the marginal attaching-flange partly separated from it by a score-line, to enable the backstay to be set in a position for supporting the face-plate in use, and also having two flap-braces to secure it in such position, said flap-braces produced out of the backstay by cut lines, and a score-line, one of which cut lines is coincident with the score line of the attaching-flange, said flap-braces adapted to be set laterally on opposite sides of said backstay respectively, with one edge bearing against the face-plate, said backstay secured by its attaching-flange to the back of the face-plate substantially as described.

2. The combination in an easel, of the face-plate and the single-wing backstay, said backstay having the marginal attaching-flange partly separated from it by a score-line to enable the backstay to be set in the position for supporting the face-plate in use, and also having two flap-braces to secure it in such positiou, said flap-braces produced out of the backstay by cut lines and a score-line, one of which cut lines is coincident with the score-line of the attaching-flange, said flap-braces adapted to be set laterally on opposite sides of said backstay respectively, with one edge bearing against the face-plate, and the score-lines of the flap-braces having the inclination to draw the points of said braces against the face plate, said backstay secured by its attaching-flange to the back of the face plate substantially as described.

574,243. HAIR-CLIPPER. HUGH DRYSDALE, Cleveland, Ohio. Filed Mar. 14, 1894. Serial No. 503,604. (No model.)



Claim.—1. In a hair-clipper, the combination of a frame having side pieces *b b*, slide-bearings *k'*, therein, guideways *n n*, and heels *d d*, with a slide-pin *h*, having guide-pins *l l'*, engaging a movable cutter-plate and an interposed spiral push-spring S within said frame together with means for operating said cutter-plate and slide-pin, substantially as set forth.

2. In a hair-clipper, the combination of the movable cutter, with a frame having a slide-pin *h*, guideways *n, n*, guide-pins *l, l'*, and a push spiral spring S arranged and located within the said frame to act directly upon said cutter-plate.

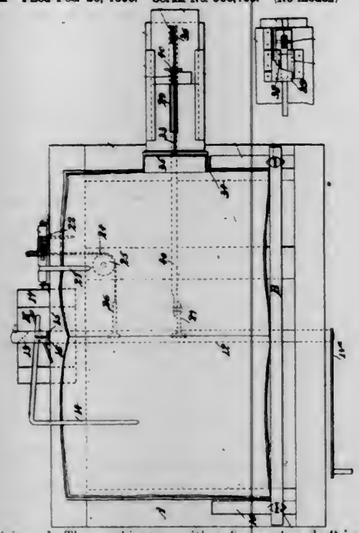
3. The combination in a hair-clipper, of a frame having side pieces *b, b*, slide-bearings therein, inward-extending guideways *n, n*, with a slide pin *h*, and spiral push-spring S secured within the frame by a pin *l'*, and sleeve *k*, and interposed between a shoulder, or wall *o*, within the frame and a pin *l'*, or projection on said slide-pin, guide-pins *l* and *l'*, extending through guide-slits *a, a*, past said guideways and engaging the movable cutter-plate, and operating same in one direction on the comb plate.

4. The combination in a hair-clipper of a frame having side pieces, slide-bearings therein, inward-extending guideways, with a slide-pin and spiral push-spring secured within the frame by said pin and a sleeve, said spring being interposed between a shoulder or wall

within the frame and a pin or projection on the said pin, guide pins *l* and *l'*, extending through guide-slots *a*, *a*, and engaging the movable cutter-plate and guiding the same on the comb-plate

5. A hair-clipper, having a comb-plate, a movable cutter-plate, and an operating-lever therefor, with a frame having pins J, J, tension-bolt G, and thumb-nut H, engaging said plates to the frame, a stud D, engaging the lever thereto, a slide-pin carrying guide-pins and a push spiral spring S arranged within the frame in a manner to act upon the said movable cutter, substantially as set forth.

574,244. MUSIC-LEAF TURNER. THOMAS A. FARRELL, Chicago, Ill. Filed Feb. 26, 1896. Serial No. 580,768. (No model.)



Claim.—1. The combination with a frame of a shaft journaled in the frame, a music-holding arm located upon the frame and operated from the said shaft, a turning arm pivoted to the shaft and capable of vertical movement, a trip controlling the vertical movement of the said turning arm, and a plunger operated by the shaft and having movement to and from the edges of the sheets of music located on the support, as and for the purpose specified.

2. In a music-leaf turner, a support for the music, a plunger having sliding movement over the music-receiving face of the support and adapted for engagement with the sheets of music at their edges, a turning shaft, a connection between the turning-shaft and plunger, a spring controlled shaft provided with a music holding arm and controlling the movement of the turning-shaft in one direction, a turning-arm pivoted upon the said turning-shaft, and an inclined plane in engagement with which the inner end of the turning arm travels as the turning shaft is operated, as and for the purpose specified.

3. The combination, with a rack adapted to support music, a turning-shaft journaled in the said rack and capable of end movement, an angular turning-arm pivoted to the said shaft, and an inclined plane secured upon the rack in engagement with which the inner end of the turning-arm travels as the turning-shaft is rotated, of a spring-controlled holding-arm having rocking movement on the rack, a connection between the said rocking arm and the turning-shaft, and a plunger arranged to have movement over the forward face of the rack and operated from the turning-shaft, as and for the purpose specified.

4. The combination, with a rack adapted to support music, a turning-shaft journaled in the said rack and capable of end movement, an angular turning arm pivoted to the said shaft, and an inclined plane secured upon the rack, in engagement with which the inner end of the turning-arm travels as the turning-shaft is rotated, of a spring-controlled holding-arm, having rocking movement on the rack, a connection between the said rocking arm and the turning-shaft, a plunger arranged to have movement over the forward face of the rack and operated from the turning-shaft, a guide supported from the rack, a pivoted arm to which the plunger is attached, a link pivotally connected with the outer end of the said arm, and a foot pivoted to the said link, the said foot traveling between the guides at the inward movement of the plunger and upon the guides at the return movement of said plunger, substantially as set forth.

5. The combination with a rack, of a shaft journaled in the said rack and having end movement therein, an arm pivoted upon the said shaft, an inclined plane supported by the rack and located in the path of one end of the said arm, and a plunger held to slide over the rack, operating in connection with the aforesaid shaft, as and for the purpose specified.

6. In a music-leaf turner, the combination with a frame and leaf-turning devices, of a slideway rigid on the frame, a plate movable in the slideway, and connected with the leaf-turning devices, a lever carried by the plate, a link connected to the lever, a spring-pressed foot pivoted on the link, and an auxiliary slideway held by the main slideway, substantially as described.

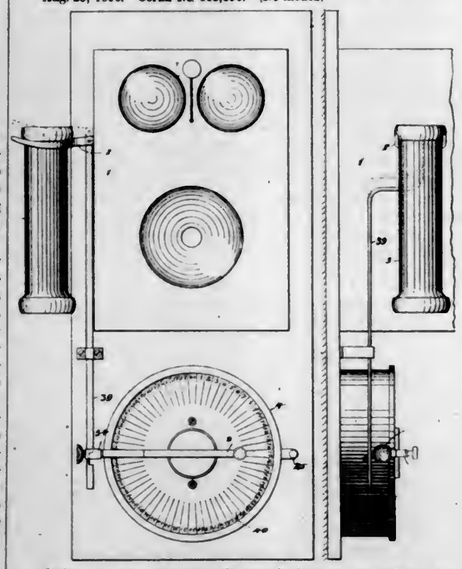
7. In a music-leaf turner, the combination with a frame, of a rock-shaft, a leaf-turning arm pivotally carried by the rock shaft, an inclined plate engaged by the leaf-turning arm, a leaf-holding arm, and a connection between the leaf-holding arm and the rock-shaft, substantially as described.

8. The combination with a frame, of a rock-shaft, an arm pivotally mounted on the rock-shaft, an inclined plate engaging the arm, a leaf-holding arm, a connection between the rock-shaft and the leaf-holding arm, and a horizontally-sliding plunger also in connection with the rock-shaft, substantially as described.

9. In a music-leaf turner, the combination with a frame of a rock shaft, a leaf-turning arm carried by the rock-shaft, a leaf-holding arm a spring pressing the leaf-holding arm, a connection between the leaf-holding arm and the rock-shaft, and a horizontally-movable plunger having connection with and operated by the rock-shaft, substantially as described.

10. The combination with a support, of a slideway, a slide movable on the slideway, a lever fulcrumed on the slide, a pivoted spring-pressed foot carried by the lever, and an auxiliary slideway held by the main slideway, substantially as described.

574,245. TELEPHONE SWITCH-BOX. WALLACE A. HOUTS, Parker, S. D., and LARS G. NILSON, Sioux City, Iowa, assignors to the Houts Automatic Telephone Switch Company, Parker, S. D. Filed Aug. 25, 1896. Serial No. 603,830. (No model.)



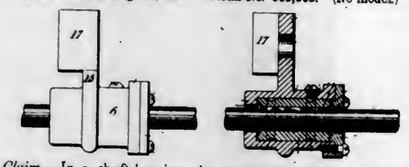
Claim.—1. An automatic call for telephones, comprising a casing, an escapement wheel mounted therein and adapted to make and break an electric circuit, a locking device for said escapement-wheel, a second wheel mounted to rotate relatively to the first-named wheel and carrying a disk having telephone call-numbers thereon, a spring connection between said wheels, a locking device for said last-named wheel, and means for automatically releasing said locking device through the weight of the telephone-receiver, substantially as specified.

2. An automatic call for telephones, comprising a casing, an escapement-wheel mounted to rotate therein, electrical contacts adapted to be closed by said escapement wheel and transmit electrical impulses, a second wheel mounted in the casing and adapted to rotate relatively to the first-named or escapement wheel, a spring having one end engaged with the escapement-wheel and the other end engaged with the second-named wheel, a numbered disk on said second wheel, a radially-movable pin for engaging between teeth of said second-named wheel, a locking device for said pin, a spring for moving said pin outward, and a push-bar having connection with the lever supporting a receiver and engaging with a part extended laterally from said pin, substantially as specified.

3. An automatic call for telephones, comprising a casing, a tubular stud in said casing, an escapement-wheel, means for retarding the movement of said escapement-wheel, a locking-lever for said escapement-wheel, a toothed wheel also mounted on the stud in the casing, a spring connection between said two wheels, a pin on one of the wheels adapted to engage with a pin on the other wheel, a sleeve mounted to rotate on the stud, a spring connection with said sleeve and the toothed wheel, a bracket carried by said sleeve, a lever fulcrumed to said bracket and adapted to engage one of its ends in a notch in the periphery of the casing, a rod extended through the tubular stud, for operating the lock of the escapement wheel, a pin adapted for locking engagement with the toothed wheel, and a connection with the receiver-hanging lever for releasing said pin, substantially as specified.

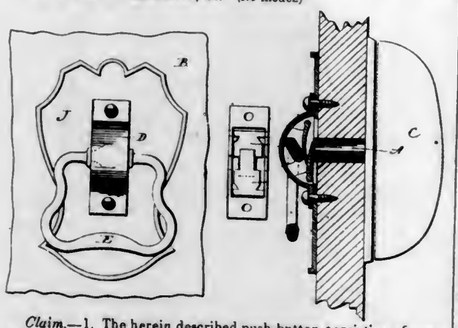
4. An automatic call for telephones, comprising a casing, circuit making and breaking devices substantially as described arranged therein and comprising a toothed wheel, a sleeve supported by the casing and extended radially of said wheel, a pin movable in said sleeve and having a lug extended through a bayonet-slot in said sleeve, a spring for normally holding said pin outward, a finger extending laterally from the outer end of said pin, and a push-bar extended through a bearing in the telephone-casing or base-board, the said rod being pivoted at its upper end to the lever for supporting a receiver and having a lost-motion engagement at its lower end with said laterally-extended finger, substantially as specified.

574,246. BEARING FOR SHAFTS. MORDECAI JEFFERSON, Bradford, WALTER W. L. LISHMAN, Cornholme, and JOHN CLAPHAM, Bradford, England. Filed Aug. 22, 1896. Serial No. 603,663. (No model.)



Claim.—In a shaft-bearing, the combination with the shaft, a cylindrical bose having an annular groove to receive lubricating material and an inwardly-beveled end, and a key for holding the said boss firmly upon the shaft; of a fixed casing having one end closed around the said shaft, in which the said boss is adapted to rotate, the said casing having an opening for the admission of lubricating material, means for closing the said opening, a cover closing the open end of the said casing, means for securing the said cover in place, and an inwardly-beveled ring formed on the cover and bearing on the said boss, substantially as described.

574,247. PUSH-BUTTON. GEORGE JEPSON, Meriden, Conn. Filed Oct. 5, 1896. Serial No. 607,861. (No model.)



Claim.—1. The herein described push-button, consisting of a casing, a lever mounted in the casing and formed at its upper end with oppositely-inclined cam-faces, two fingers mounted in the case one above and one below said cams, and overlapping each other in the path of movement of said cams, substantially as described.

2. The herein-described push-button, consisting of a casing, a lever mounted in the casing and formed with oppositely-inclined cam-faces, two inwardly-bowed fingers mounted in the said case one above and one below said cams and overlapping each other in the path of movement of said cams, substantially as described.

3. In a push-button, the combination with the escutcheon-plate formed with an opening, of a casing adapted to be secured to said plate over the opening therein, a lever mounted in the said casing, and formed with oppositely-inclined cams, and bowed fingers mounted above and below the said lever, and crossing each other in the path of said cams and over the opening in the said plate, substantially as described.

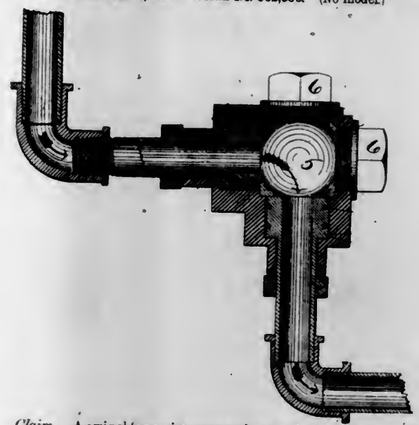
574,248. SKIRT-SUPPORTER. GEORGE KIERSKI, New York, N. Y., assignor to Dora Kierski, same place. Filed Mar. 6, 1896. Renewed Nov. 12, 1896. Serial No. 611,907. (No model.)



Claim.—1. A skirt-supporter comprising a strip of resilient metal bent to form two substantially parallel members, one of said members having an opening in its free end, and the other member having at its free end an outwardly-turned portion and a downwardly-turned portion curved inward to engage over the lower walls of the opening in the first-named member, substantially as specified.

2. A skirt-supporter, consisting of a single strip of metal bent to form two members adapted to slide on a belt, one of said members having an opening in its free end, and the other member having its free end bent inward, upward, outward and downward to form a clamping-book, substantially as specified.

574,249. UNIVERSAL-JOINT PIPE CONNECTION. EDWARD J. KNAPP, Syracuse, N. Y., assignor to Charles Umbrecht, trustee, same place. Filed Mar. 9, 1896. Serial No. 582,336. (No model.)



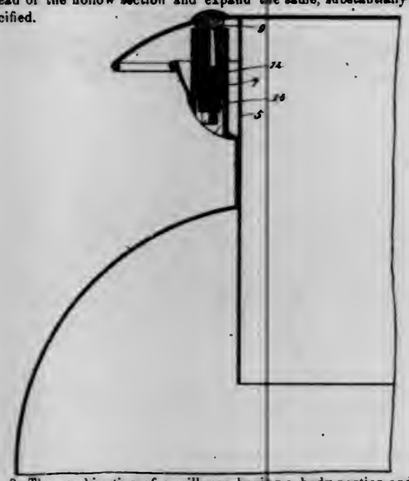
Claim.—A swivel for a pipe connection consisting of an interiorly chambered angular body and tubular extensions opening into the body, and plugs fitted therein, seats bored into the extensions and having angular shoulders at their outer ends, pipes inserted into the extensions and having heads fitted in the seats and provided with peripheral packings, and jam-nuts outside the extensions on the pipe for holding the parts in place, substantially as described.

574,250. LOCK. PATRICK J. LEONARD and WILLIAM HEAD, New York, N. Y. Filed May 11, 1896. Serial No. 591,076. (No model.)

Claim.—1. The combination with a can, of a lock comprising a tubular part attached to a portion of the can, an expanding part secured to another portion of the can and adapted to enter the tubular

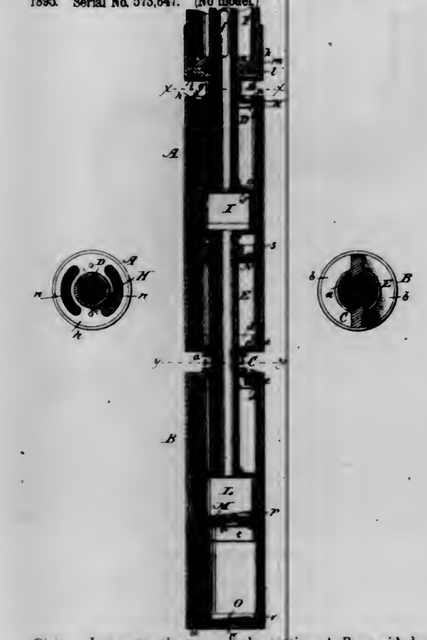
part and a screw-plug for expanding the expanding part, substantially as specified.

2. The combination with a milk-can comprising a body portion and cover, of a lock consisting of a tubular section secured to the body portion of the can, a hollow section secured to the cover of the can and adapted to enter the tubular section, the said hollow section being longitudinally split and provided with an interior screw-thread, and a bolt having a conical screw-threaded portion to engage the thread of the hollow section and expand the same, substantially as specified.



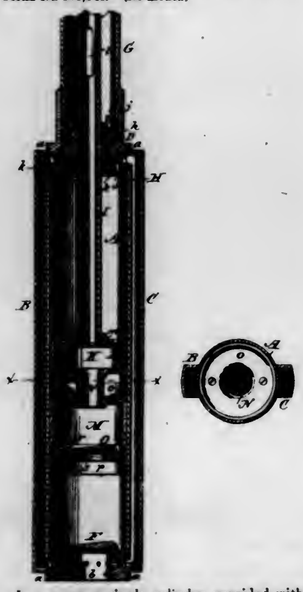
3. The combination of a milk-can having a body portion and a cover, an outwardly-extended lip on the neck of the body portion, a tubular lock-section having its lower end expanded in an opening in said neck, a hollow section attached to the cover, and adapted to enter the tubular section, the body portion of the hollow section being longitudinally split and having an interior screw-thread and an expanding-bolt for engaging said screw thread, substantially as specified.

574,251. PUMP. DAVID LIPPY, Mansfield, Ohio. Filed Dec. 28, 1895. Serial No. 573,647. (No model.)



Claim.—In a pump, the two cylinder sections A, B, provided with valved openings in their outer ends; the contracted neck *a* for connecting the cylinders at their inner ends and which neck is provided with valveless openings for admission of water to the inner ends of the cylinders, the two hollow pistons I, L, provided with valves at their outer ends, and the hollow piston rod divided into sections which extend in a line with each other, and one of which connects the inner ends of the two pistons; combined with the disk N, secured to the piston-rod, and provided with the packing S, there being a space left between the inner end of the cylinder I, and the disk, substantially as described.

574,252. PUMP. DAVID LIPPY, Mansfield, Ohio. Filed Dec. 28, 1895. Serial No. 573,648. (No model.)



Claim.—In a pump, a single cylinder provided with a valve at each end, a hollow piston-rod, a piston having a water-chamber at each end, and a valve in the outer end of each chamber, and a pipe, of smaller diameter than the two chambers, for connecting them, combined with suitable packings, the two chambers having an intervening space between them and in which one of the packings is placed, and the short pipe which connects the two chambers being in a line with the hollow piston-rod, substantially as shown and described.

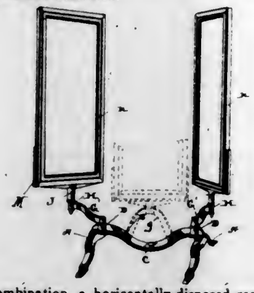
574,253. BICYCLE-HOLDER. LEWIS K. MILLER, Clarksburg, Mo. Filed Apr. 16, 1896. Serial No. 587,852. (No model.)



Claim.—In a bicycle-holder, the combination of a slotted sleeve, a stem arranged to slide in the sleeve and having a pin projecting through the slot thereof, and provided with a head, a locking-sleeve mounted to slide on the pin and having a recess to receive the head thereof, a spring to hold the locking-sleeve normally engaged with the side of the main sleeve to lock the stem in adjusted position, and a bolt carried by the head of the pin to engage the said locking-sleeve and hold the stem against movement, substantially as set forth.

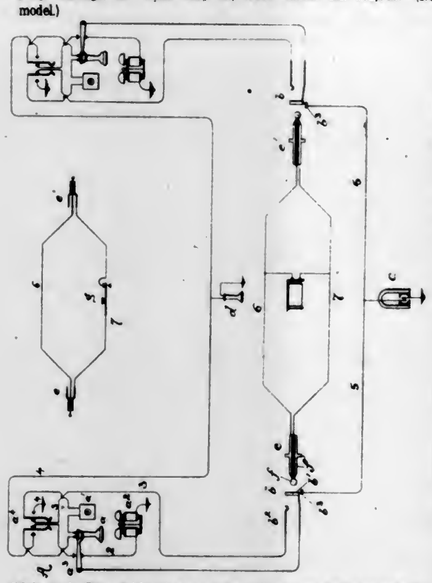
574,254. FLOOR-MIRROR. CHARLES P. MOSHER and NELSON R. STREETER, Groton, N. Y. Filed June 8, 1895. Serial No. 552,149. (No model.)

Claim.—1. In combination, a horizontally-disposed support, the two swinging arms at corresponding ends pivoted to opposite portions of said support respectively, each arm free to swing in a complete circle above said support and in length equal approximately to one-half the distance between the arm-pivots on said support, and the two mirrors extending vertically from said arms, each mirror having a bottom supporting-frame, each frame mounted to turn on the free end of its arm by a vertical pivot, so that the two mirrors are supported entirely by said arms and bottom supporting-frames, and can be arranged back to back above the central portion of the support or can be swung to any angle beyond opposite ends of the support leaving a free passage between them and over the support, substantially as shown and described.



2. In combination, a horizontally-disposed reach-bar provided with a support, the two horizontally-swinging arms of approximately the same length and each in length equal approximately to one-half of the distance between the arm-pivots on the reach, the arms, respectively, pivoted at corresponding ends to opposite portions of the reach so that each arm can swing in a complete circle, and the two mirrors carried by said arms and each provided with a U-shaped upright supporting-frame provided with a vertical pivot centrally arranged beneath the mirror and mounted to turn in the free end of an arm, whereby the two mirrors can be arranged back to back above the central portion of the reach or can be swung to any angle beyond opposite ends of the reach leaving a free passage between them and over the reach, substantially as described.

574,255. TELEPHONE-EXCHANGE APPARATUS. FRANK R. MCBERTY, Downer's Grove, Ill., assignor to the Western Electric Company, Chicago, Ill. Filed May 25, 1896. Serial No. 592,905. (No model.)



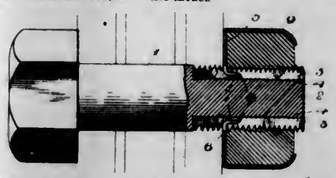
Claim.—1. In combination, two metallic-circuit telephone-lines, a ground branch at the different substations from like line conductors, and a signal-bell in each ground branch, a spring-jack for each line in a switchboard, a double connecting-plug in each spring-jack, unlike contact-pieces of said plugs being connected together, a grounded generator of calling-current, and means for applying the free pole of said generator to either of the conductors of the plug-circuit, substantially as described.

2. In combination, two metallic-circuit telephone-lines, normally open at telephone-switches at the substations, a bell at each substation in a normally-closed ground branch from the line, said ground branches being taken from like line conductors, a spring-jack in the switchboard forming the terminal of each line, a ringing-stud near each spring-jack constituting the terminal of a grounded generator, a connecting-plug in each spring-jack, one of said plugs having a shoulder connected with one of the contact-pieces of the plug and adapted to make contact with said ringing-stud when the plug is inserted fully into the spring-jack, unlike contact-pieces of said plugs being connected together, whereby ringing-current sent to one line is prevented from operating the bell of the other line, substantially as described.

3. The combination with a metallic-circuit telephone-line, of a telephone in a bridge thereof, a signal-bell in a ground from one line conductor of the line, a spring-jack having a thimble forming the terminal of said grounded line conductor, and a spring constituting the terminal of the other line conductor, a ringing-stud connected with the free pole of a grounded generator of signaling-current, placed near the thimble of the spring-jack, and a connecting-plug adapted for insertion into the spring jack and having a shoulder constructed to connect together said thimble and said ringing-stud when the plug is fully inserted into the spring-jack, substantially as described.

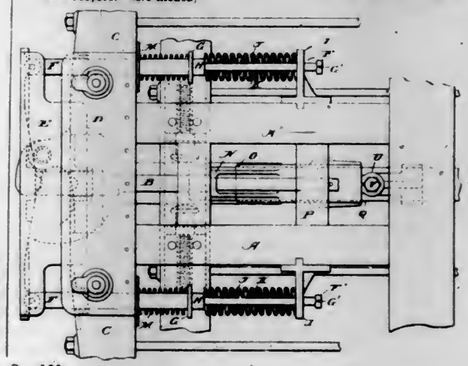
4. In combination two metallic-circuit telephone-lines each having a ground branch from one line conductor and a signal-bell included in the ground branch, a spring-jack for each line connected with the line conductors thereof, a plug inserted in each spring-jack, a ringing-stud near the thimble of each jack, said plugs having shoulders adapted to cross together the ringing-stud and the thimble of the spring-jack when the plug is fully inserted in the jack, a grounded generator connected with each of said ringing-studs, whereby the operation of inserting the plug into the spring-jack closes a ringing-current to one of the lines, and a switch adapted to interrupt the circuit to the bell of the other line, substantially as described.

574,256. NUT-LOCK. HOWARD L. MCCANN, Coatesville, Pa., assignor of one-half to Walter P. Jackson, same place. Filed June 22, 1896. Serial No. 596,487. (No model.)



Claim.—A nut lock comprising a bolt 1, the threaded portion 2 of which is provided with two oppositely-disposed longitudinal radial slots 3 3, the bottom of which is formed with ratchet-shaped teeth 4, in combination with the spring-metal washer 5 having the central opening 6, provided with the two oppositely-disposed inwardly-projecting spring-arms 7, having beveled ends 8, and radially projecting spurs 9, and the nut 10, substantially as shown and described.

574,257. BUFFER-PLATFORM FOR RAILROAD-CARS. THOMAS L. MCKEEN and ALFRED H. RENSHAW, New York, N. Y., assignors to the Trojan Car Coupler Company, Troy, N. Y. Filed Sept. 10, 1896. Serial No. 605,403. (No model.)



Claim.—1. In combination with the main platform D and coupler Q, the buffer-platform E pivoted at each end to side buffer-stems F, constructed as described, the springs J, K, brackets I, and springs M interposed between the collars G and beam C, substantially as and for the purposes set forth.

2. In combination with the main platform, auxiliary or buffer platform, side buffer-stems, pivoted to the buffer-platform, and the coupler Q, a center buffer-stem free from the buffer-platform and having its rear end passing through an arm on the shoe O, and having a shoulder bearing against the said arm, the hollow shoe O formed with the arm N and projection T, the springs R, S, and stop U on the coupler Q, substantially as and for the purpose set forth.

3. The buffer-stems F formed with a fixed collar G and shoulder H, in combination with the brackets I, exterior spring J and interior spring K, substantially as and for the purpose set forth.

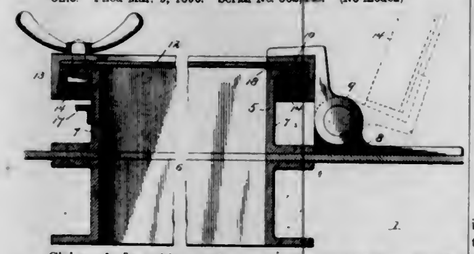
4. In combination with the buffer-platform E and side stems F provided with fixed collars G, and transverse beam C, the righting-springs M interposed between and bearing against the collars G and the rear face of the beam C, whereby the stems F are restored to normal position, substantially as and for the purpose described.

574,258. WELL-ROPE TAKE-UP. HERSHEL L. MCWHIRTER, South McAlester, Ind. Ter. Filed July 29, 1895. Serial No. 557,458. (No model.)



Claim.—An apparatus to be used in connection with a well for automatically taking up the slack in the well-rope as the latter is drawn from the well hand over hand, the same consisting of an elevated pulley, a casing adjacent to the well and open at its upper end, and having bearing-notches in its sides at the open end, and having an opening in the wall facing the well provided at its top edge with a direction-pulley, a shaft journaled in the said bearing-notches, a drum mounted upon the shaft so as to revolve therewith, a cover for the casing, blocks secured to the ends of the cover to close the said bearing notches and retain the shaft therein, a well-rope having a bucket at one end and having its other end passing through the aforesaid opening of the casing and under the direction-pulley and adapted to wind upon the said drum, a cord adapted to wind upon the shaft in an inverse direction to the winding of the well-rope upon the drum, and a weight at the lower end of the cord for automatically taking up and housing the well-rope, substantially as set forth.

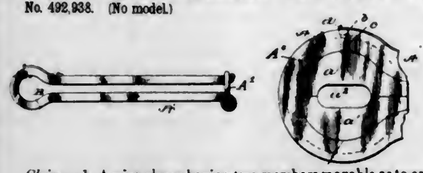
574,259. HATCH FOR SHIPS. JOSEPH R. OLDHAM, Cleveland, Ohio. Filed Mar. 9, 1896. Serial No. 582,445. (No model.)



Claim.—1. In a ship or other vessel, the combination with the hatch-coaming consisting of channel bars secured to the deck and provided with bolt-holes in the upper horizontal portions, of the metal hatch formed with coinciding bolt holes near its edges and downwardly-depending flanges at the sides, the angle-bars at the ends, the hinges connected with one of these bars and with one of the bars of the coaming and the securing-bolts, passing through said bolt-holes, substantially as described.

2. In a ship or other vessel, the combination with the hatch-coaming consisting of channel-bars secured to the deck and formed with bolt holes in the upper horizontal portions, of the hinged hatch provided with downwardly depending flanges and formed with bolt-holes coinciding with the bolt-holes in said channel-bars, the inverted headed bolts passing through said holes, the nuts, and the angle lugs secured to the coaming in vertical alinement with said bolts, substantially as described.

574,260. SPLICING-CLAMP. DAVID N. OGYOR, Columbus, Ohio, assignor to Joseph A. Jeffrey, same place. Filed Dec. 6, 1893. Serial No. 492,938. (No model.)



Claim.—1. A wire-clamp having two members movable as to each other, each member having a passage-way for the entrance of the wire, adapted to permit such entrance on lines radial to the wire, and one of said members having a laterally-prolonged handle, the walls of the wire socket being adapted to bear against two wires on their tops and bottoms and the outer edge of each, substantially as set forth.

2. A wire-clamp having two members movable as to each other, each member having a passage-way for the entrance of the wire, adapted to permit such entrance on lines radial to the wire, and one of said members having a laterally-prolonged handle, the walls of the wire-socket being adapted to bear against two wires on their tops and bottoms and the outer edge of each, in combination with means for fastening the said members together after the insertion of the wires.

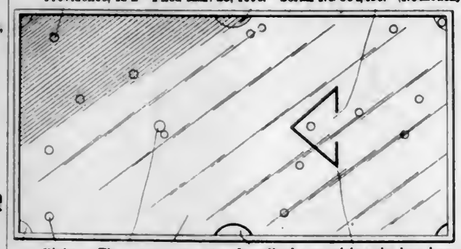
3. The combination with the separable clamp-blocks, of the handle adapted to secure said blocks together, said handle having the centrally open head in which said blocks are mounted, the parallel legs, and means for clamping said legs together, substantially as set forth.

4. In a wire-clamp, the combination with the separable clamp-blocks each having a lateral extension A^1, of the handle having an aperture adapted to receive said clamp-blocks and said extension, and means for securing said clamp-blocks in said aperture, substantially as set forth.

5. In a wire-clamp, the combination with a handle having an opening in the head, and an aperture or slot communicating with said opening for the insertion of wires, of the separable clamp-blocks adapted to be inserted in said opening in the handle on lines transverse to the handle, and means for securing said blocks in said opening, substantially as set forth.

6. In a wire clamp, the combination with the handle having a centrally open head, of the detachably separable clamp blocks adapted to be inserted in said head and having a flange at one end, whereby said blocks are secured against movement transverse to the handle, substantially as and for the purposes set forth.

574,261. PUZZLE. JULIUS G. PEGEL, Philadelphia, Pa., assignor of two-thirds to Louis Scowcroft, same place, and John Ruckstinat, East Providence, R. I. Filed Mar. 23, 1896. Serial No. 584,490. (No model.)

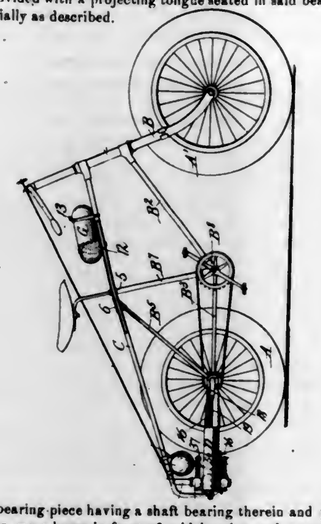


Claim.—The game apparatus described comprising the box having indentures at the corners and sides as shown, a cavity in its bottom near one end, a triangle secured to the bottom near the other end with its apex in line with said cavity and having an opening in the side opposite said apex, and balls loosely arranged within the box and one distinguishable from the others, as and for the purpose specified.

574,262. MOTOR-VEHICLE. EDWARD J. PENNINGTON, Cleveland, Ohio, assignor to the Motor Cycle Company, Chicago, Ill. Filed Oct. 3, 1894. Serial No. 524,833. (No model.) Patented in England Dec. 11, 1895, No. 23,771.

Claim.—1. The combination with the shaft of a propelling-wheel, of a pair of explosion-engine cylinders whose pistons are connected with the said shaft, and a frame having top braces extended back of the seat to the rear ends of the engine-cylinders and cross-braced at or near the rear ends of said braces, substantially as described.

2. A bearing-piece having a shaft bearing therein and a seat for an engine-cylinder behind said bearing, in combination with such cylinder provided with a projecting tongue seated in said bearing piece, substantially as described.



3. A bearing-piece having a shaft bearing therein and provided with one or more horns in front of said bearing and a seat for the front end of an engine-cylinder behind said bearing, in combination with a brace or braces of a vehicle-frame secured to said horn or horns, an engine-cylinder having a projecting tongue seated on said bearing-piece, a brace extending to the rear end of said cylinder, and connections between the last-mentioned and the before-mentioned braces, substantially as described.

4. In combination with an explosion propelling-engine, a hollow vehicle-frame having a valve controlled pipe connection with said engine, so that said frame forms part of the combustible-fluid reservoir, and also provided with a can opening into the hollow part of said frame, substantially as described.

5. In connection with an explosion engine cylinder, a hollow brace forming a part of the frame of a vehicle and having a mechanical connection with said cylinder for upholding the said cylinder and also a valve controlled pipe connection with said cylinder, substantially as described.

6. The two top braces, the cross-piece, and the valve on said cross-piece, in combination with the wheels and main frame of a vehicle, and an explosion propelling-engine whose fluid-supply is controlled by said valve, substantially as described.

7. The combination with a wheeled vehicle, and an explosion propelling-engine, of a flexible valve-rod supported at one end on the handle-bar or guiding means of said vehicle and there provided with a handle within reach of the rider, substantially as described.

8. The combination with a wheeled vehicle, of a needle valve, arranged at the back of the vehicle, a flexible valve-rod extending forward in continuation of the needle of said valve to within reach of the rider, and the parts—as the cylinder, piston, inlet and exhaust valves—which make with the said needle-valve an explosion propelling-engine, substantially as described.

9. The cylinder of steel tubing having the end cut away to form a tongue, and provided with a head which carries the inlet and exhaust valves and reinforces the explosion end of said cylinder, substantially as described.

10. The cylinder of steel tubing having the end cut away to form a tongue, and provided with a head which carries the inlet and exhaust valves and reinforces the explosion end of said cylinder, in combination with supports for upholding the said cylinder through said tongue and said head, substantially as described.

11 The combination with a cylinder of steel tubing having the end cut away to leave a tongue of curved cross-section, of a support having a seat for said tongue of corresponding curvature, substantially as described.

12. The combination with the pitman of a propelling-engine, and the cranked axle, of a bushing interposed between the end of said pitman and the crank-pin and provided with internal and external flanges which overlap said parts respectively, substantially as described.

13. The combination with a wheeled vehicle, two engine-cylinders on opposite sides of a wheel, supports for the front ends of said cylinders, top braces connected with the rear ends of said cylinders, and a cross-piece connecting the rear ends of the cylinders with each other and forming a brace between them, substantially as described.

14. The combination with two engine-cylinders, of a chambered cross-piece between them, and the ignition-tubes in said cross-piece, substantially as described.

15. The combination with two engine-cylinders, of a chambered cross-piece between them, and the burners supported on said cross-piece with their flame ends within the same, substantially as described.

16. The combination of the two engine-cylinders, the top braces connected with the rear ends of said cylinders, the supports for the ends of said cylinders, the chambered cross-piece between them, and devices for effecting the explosion—such as the ignition-tubes and burners—within said cross-piece, substantially as described.

17. The combination of the two engine-cylinders, the chambered cross-piece between them, and devices for effecting the explosion—such as the ignition-tubes and burners—within said cross-piece, substantially as described.

18. The combination with the two engine-cylinders, the cross-piece between said cylinders, a rock-bar pivoted to said cross-piece, valve connections at opposite ends of said rock-bar, and valves operated by said connections, substantially as described.

19. The combination of the engine-cylinders, the chambered cross piece between the cylinders, explosion devices—such as ignition-tubes and burners—within said cross-piece, a rock-bar pivoted to said cross-piece, valve connections at opposite ends of said rock-bar, and valves operated by said connections, substantially as described.

20. A valve for an explosion-engine, consisting of a chambered body with the opening and seat for the valve-disk in a partition between the chambers, a lateral opening the full diameter of said valve-disk provided with a closure, and an elongated hollow cylindrical extension, in connection with the valve-disk, stem, and spring, substantially as described.

21. The combination with the cylinder, and other parts of an explosion-engine, of one or more valves each consisting of a chambered body with the opening and seat for the valve-disk in a partition between the chambers, a lateral opening the full diameter of said valve-disk provided with a closure, and an elongated hollow cylindrical extension, in connection with the valve-disk, stem, and spring, substantially as described.

22. The combination with the two engine-cylinders, of the automatic inlet-valves, spring-held inwardly-opening exhaust-valves, the valve-rods and tappets, and the rock-bar between the said rods, substantially as described.

23. The combination with the two engine-cylinders, and the inlet valves, of the explosive-mixture pipe between the said valves, and means for admitting air and delivering a regulated supply of combustible fluid into said pipe, substantially as described.

24. The combination with a wheeled vehicle, and a double-cylinder propelling-engine having an inlet-valve for each cylinder, of the explosive-mixture pipe between the inlet-valves, and means for admitting air and delivering a regulated supply of combustible fluid into said pipe, the said means including a handle within the rider's reach which regulates the supply for both cylinders, substantially as described.

25. The combination with a wheeled vehicle, of the double-cylinder propelling-engine having the cylinders supported at their front and rear ends and connected at their rear ends by a cross-piece, the pinion and valve-gear, the valve-rods, the rock-bar pivoted on said cross-piece, and the means for operating the exhaust valve through said valve rods and rock-bar, substantially as described.

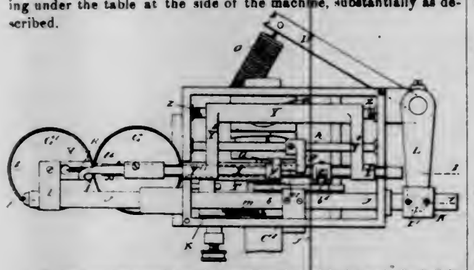
26 The combination of the wheels, frame, engine-cylinders, cross-pieces, valves, valve-operating means, and explosion devices, such as ignition-tubes and burners, said frame having hollow top braces connected by a cross-piece, the fluid-delivery valve being arranged in one cross piece, and explosion devices being placed in another cross-piece which is chambered, substantially as described.

574,263. OVEREDGE SEWING-MACHINE. EMILE J. PERDREAUX, New York, N. Y., assignor to Harry S. Stallknecht, same place. Filed May 16, 1895. Serial No. 549,549. (No model.)

Claim.—1. In a sewing-machine, the combination with the main feed-disk, of the auxiliary feed-disk, the sliding arm carrying the auxiliary feed-disk toward and from the main feed-disk, and the operating-lever fulcrumed on an approximately vertical axis at the rear of the casing and operatively connected with the sliding arm, the said lever having an approximately horizontal portion extending under the table and an approximately vertical end portion, the latter portion being located at the side of the machine, substantially as described.

2. In a sewing-machine, the combination with the main feed-disk, of the auxiliary feed-disk, the slide-arm carrying the auxiliary feed-disk toward and from the main feed-disk, a sleeve secured to the rear end of the said arm and having a transverse groove in its lower sur-

face, and a lever pivoted about an approximately vertical axis and having one end engaging the said groove and the other end extending under the table at the side of the machine, substantially as described.



3. In a sewing-machine, the combination with the main feed-disk, of the auxiliary feed-disk, the slide-arm for carrying the auxiliary feed-disk toward and from the main feed-disk, a sleeve secured to the rear end of the said slide-arm, and having a transverse groove in its lower surface, an operating-lever pivoted about an approximately vertical axis and engaging the said groove in the slide-arm, the said lever extending under the table of the machine and having an approximately horizontal portion and an approximately vertical end portion, and a spring having one end connected with the horizontal portion of the lever, and the other end connected with the frame of the machine, the vertical end portion of the said lever being located at the side of the machine, substantially as described.

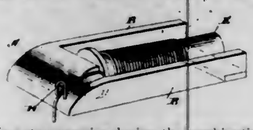
4. In a sewing machine, longitudinally-alined bearings, a looper and a looper-bar supported to rock in said bearings and to reciprocate longitudinally therein, means for reciprocating the looper-bar, means for moving the alined bearings so that the longitudinal axis thereof shall constantly remain parallel to its original position, a radially-slotted arm rigidly secured to the looper-bar and extending upwardly therefrom, and a lever provided with a pin engaging the slot of the arm and operated to impart an oscillating motion to the looper-bar, said pin being of sufficient length to permanently engage the slotted arm during the reciprocating movement of the looper-bar, substantially as described.

5. In a sewing-machine, and in combination with a reciprocating needle-bar, a looper-bar longitudinally reciprocatory in a path substantially parallel with that of the needle and also bodily movable to and from the needle-bar in parallelism therewith, and means for imparting said movements to the looper-bar, substantially as and for the purposes hereinbefore set forth.

6. In a sewing-machine, and in combination with a reciprocating needle, a looper bar longitudinally reciprocatory in a path substantially parallel with that of the needle, and also bodily movable to and from the needle bar in parallelism therewith, as well as capable of a movement of partial rotation about its longitudinal axis, and means for imparting these several movements to the looper bar at the times and in the manner, substantially as hereinbefore set forth.

7. In a sewing machine, and in combination with a reciprocating needle-bar, a looper-bar, longitudinally reciprocatory in a path substantially parallel with that of the needle-supporting bearings in which said looper bar is mounted and moves, and means for moving said bearings to and from the needle bar in parallelism therewith, substantially as and for the purposes hereinbefore set forth.

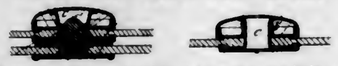
574,264. WIRE-FENCE MACHINE. GEORGE D. PEUGH, Salem, Ind. Filed Apr. 29, 1896. Serial No. 589,513. (No model.)



Claim.—1. In a stay-weaving device, the combination of an elongated frame, adapted to rest upon the fence-strand in a position parallel therewith, a pin D secured to the front end of the frame and extended rearward therein, a transverse support rigid with the rear portion of the frame and located beneath the line of the pin, the spool adapted to turn upon the pin and be supported at its rear end by the said transverse support, and a guide at the front end of the frame through which the wire is adapted to feed from the spool to the fence-strands as the device is operated, substantially as shown and described.

2. An improved fence-wiring device comprising a frame having the rounded end A, and the parallel sides B, strip C connecting the extremities of said sides, pin D projected from end A toward strip C, the spool adapted to revolve on said pin and at its outer extremity adapted to rest on said strip, and the guide on the rounded end of the frame through which the wire passes from the spool, the device operating substantially as herein shown and described.

574,265. SEPARABLE BUTTON. EUGENE PRINGLE, Gloversville, N. Y., assignor to Madison D. Shipman and Charles E. Bradt, De Kalb, Ill. Filed Mar. 20, 1888. Serial No. 267,866. (No model.)



Claim.—1. A button-head having an aperture in its cap, an engaging piece having an upturned flange upon its outer edge for connection with the cap, and a central upwardly-projecting cylindrical portion, and a fastening-eyelet passed through the material and clenched over the upper edge of the cylindrical portion by a tool inserted in the aperture of the cap.

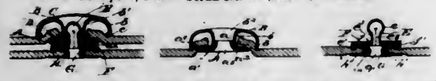
2. A button-head comprising a cap, a fastening-eyelet having a flange at one end and connected to the cap, an engaging piece upon the opposite side of the material and having an aperture therein, for the insertion of a tool for turning a flange upon the opposite end of the eyelet for holding the head to the material, both of the flanges of the fastening-eyelet being within the button-head and concealed, substantially as described.

3. A button-head comprising a cap or shell, a clamping-piece secured thereto and bearing underneath a shoulder or projection formed upon the fastening-eyelet, for securing the head to the material, substantially as described.

4. A stud for a separable button consisting of a post having an annular recess, a hollow, split, resilient ring within the recess, and a fastening-eyelet for holding the stud to the material substantially as described.

5. A stud for a separable button comprising a base, having an annular offset or shoulder, a head-piece connected thereto, and forming an annular recess, and a resilient ring in the recess, substantially as described.

574,266. SEPARABLE BUTTON. EUGENE PRINGLE, Gloversville, N. Y., assignor to Madison D. Shipman and Charles E. Bradt, De Kalb, Ill. Filed Sept. 8, 1888. Serial No. 284,943. (No model.)



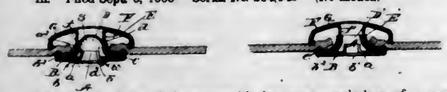
Claim.—1 In the button-head of a separable button the combination of the stud catch A, provided with tubular portion a, base-flange a' and clench a^4 integral therewith, and with slit a^3 extending vertically through the half of said catch, and the eyelet B, provided with the external annular dependent flange b adapted to engage one side of the fabric, and with the tube b' adapted to receive the tubular portion a of the stud catch A and to have its lower portion forced radially outward into the clench a^4, of said stud-catch, substantially as shown and for the purpose described.

2. A cap or shell for a separable button having its outlying rim bearing on the face of the material or fabric, a downwardly-extending central eyelet portion extending through the fabric, and a stud-catch below the material, said parts being clenched together, with the material between them, substantially as described.

3. In a button-head of a separable button, a stud-catch having a projecting neck, a, an outwardly and inwardly extending flange, said neck and flange being slitted, for resiliency, and a fastening-eyelet therefor, substantially as described.

4. A stud for a separable button, consisting of a post and base-flange provided with a slit extending through the flange, up into the shank of the post and into the head, the sections then pressed together to practically close the slit, and leaving an aperture or opening for resiliency in the head only, substantially as described.

574,267. SEPARABLE BUTTON. EUGENE PRINGLE, Gloversville, N. Y., assignor to Madison D. Shipman and Charles E. Bradt, De Kalb, Ill. Filed Sept. 8, 1888. Serial No. 284,945. (No model.)



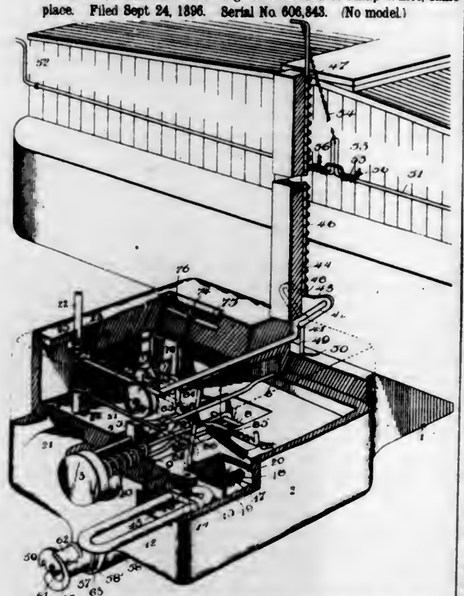
Claim.—1. A head for separable buttons, consisting of a cap-plate, a fastening-eyelet therefor, a centrally-apertured plate secured by the fastening-eyelet to the opposite side of the material, and a stud-catch formed from an eyelet slitted through its tubular and flanged portion, and held within the head in alinement with the aperture of the plate, substantially as described.

2. A head for separable buttons consisting of a cap-plate and a fastening-eyelet therefor, a holding-space for said eyelet, a slitted eyelet to catch the stud, said eyelet having a base-flange supported upon a centrally-apertured plate on the under side of the material or fabric, substantially as described.

3. In a separable button the combination of a single-flanged slitted stud-catch A, a catch-retaining piece B, a plate C, secured together and forming the lower or under side portion of the button-head, with a cap as G, and a doubly-flanged fastening-eyelet as F, adapted with its two flanges, to hold the upper and lower portions of said button-head to the fabric, substantially as and for the purpose set forth.

4. In a separable button-head, the combination of the single-flanged slitted tubular stud-catch A, the pieces B and D′ clamping the base of said catch at one side of the fabric, the piece E seated above the piece D′, and projected through the fabric, the shell G, having an inwardly-turned periphery seated against the opposite side of the fabric, and the eyelet-tube F, having its outer upper edge seated in said curved periphery of said shell G, and its outwardly-flanged base forced outwardly between the pieces E and D′, substantially as shown and for the purpose described.

574,268. AUTOMATIC CAR AND AIR-BRAKE COUPLING. JOHN M. RAINEY, Kellerton, Iowa, assignor of one-half to Philip White, same place. Filed Sept. 24, 1896. Serial No. 606,843. (No model.)



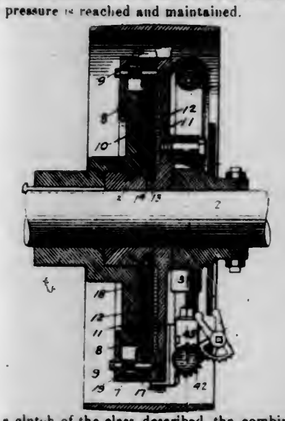
Claim.—1. An automatic car-coupling, comprising the draw-head, the coupling-pin 22, the spring 25 mounted on said pin, and the pivoted lever 31, in combination with the bumper 3 provided with the guide-rod 4 having wedge shaped block 5, substantially as shown and described.

2. An automatic car-coupling, comprising the draw-head, the coupling-pin 22 mounted therein and provided with the integral lug 26, the chain 27 connecting said lug with the lever 27ª, having transverse rod 80, the lever 78 having tooth 79, in combination with the lever 34, the free end of which is connected by a chain 27 to said lever 27ª, the flanged eccentric disk 38 mounted on the longitudinal shaft 39, provided with the crank-arm 41 engaging a V-shaped slot 42 in the plate 43 secured to the vertical rod 44, provided with the spiral spring 46, substantially as shown and described.

3. A coupling of the class described comprising the sleeve 62, spring 63, and square portion 66, the arm 68, the lever 70 engaging said arm and provided with a lug 72, the pendulating lever 72 provided with a toe 73, in combination with the lever 78, the shaft 85, the rod 86, and the link 7 formed with the offset 87 and bumper 3, substantially as and for the purpose set forth.

574,269. AUTOMATIC FLUID-PRESSURE FRICTION-CLUTCH. GEORGE M. RICHARDS, Erie, Pa. Filed July 31, 1896. Serial No. 601,137. (No model.)

Claim.—1. In a clutch of the class described, the combination with the driving and driven elements, of the automatic mechanism for creating pressure between said elements carried by said driving element, and automatic means actuated by the pressure produced, for throwing said mechanism out of action when and so long as a predetermined pressure is reached and maintained.



2. In a clutch of the class described, the combination with the driving and driven members thereof and the interposed friction-device, of automatic means actuated by the movement of the driving member for creating pressure in said friction device, and automatic means for throwing said pressure-creating mechanism out of action when and so long as a predetermined pressure is produced.

3. In a fluid-pressure clutch, the combination with the driving and driven members, and the interposed expansible friction device, of the pump carried by the driving member and operative by its movement, and means for automatically throwing said pump out of action when and so long as a predetermined limit of pressure is attained.

4. In a fluid-pressure clutch, the combination with the driving and driven elements thereof, of the pump carried by the driving element, the relatively stationary pump operating device, and the regulator actuated by the pressure produced by said pump adapted to throw and hold said pump out of action when and so long as a predetermined pressure is attained

5. In a fluid-pressure clutch, the combination with the driving element, its fluid-chamber, the expansible friction-surface operative by the pressure within the chamber, the driven element and its friction-surface, of the pump carried by the driving element, automatic means for operating said pump during and by means of the movement of said driving element, means for throwing said pump-operating mechanism into and out of engagement therewith, and an automatic regulator adapted to throw and hold the pump out of action when and so long as a predetermined pressure in said chamber is attained.

6. In a fluid-pressure clutch, the combination with the driving element, its fluid-chamber closed by a flexible diaphragm, a friction-surface actuated thereby, and the driven element having a friction-surface adjacent to that of the diaphragm, of the pump carried by said driving element communicating with said chamber, its operating-lever, the spring engaging said lever, the eccentric engaged by said lever and operating it against the tension of said spring, and means for automatically throwing the lever out of engagement with said eccentric when a predetermined limit of pressure is attained.

7. In a fluid-pressure clutch, the combination with the driving element having a fluid-chamber with an expansible wall, and a friction device actuated thereby and the driven element, of the pump connected with said fluid-chamber and carried by said driving element, the spring for actuating said pump in one direction, the relatively fixed eccentric engaged by the lever and operating it in the other direction, and means for controlling the action of the pump within predetermined limits of pressure.

8. In a fluid-pressure clutch, the combination with the driving element, its fluid-chamber, diaphragm and friction device, and the driven element, of the pump carried by said driving element communicating with said chamber, the shifting eccentric adapted to be brought into position to be engaged by the pump-lever, automatic means for throwing the lever out of engagement with said eccentric at a predetermined limit of pressure in the fluid-chamber, and means for automatically releasing the pressure in the chamber when the eccentric is thrown out of engaging position with the lever

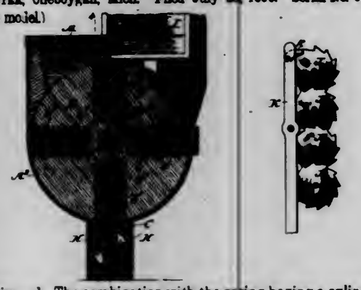
9. In a clutch of the class described, the combination with its driving and driven elements and the interposed friction device, of the fluid circulating system, comprising an expansible chamber for actu-

ating the friction device, a collapsible reservoir, the relief-valve connecting the chamber with the reservoir, and the pump for forcing the contents of the reservoir into the chamber, and the automatic means for actuating said pump within a predetermined limit of pressure in said chamber.

10. In a clutch of the class described, the combination with its driving and driven elements, the interposed friction device, and the relatively stationary part, of the fluid-circulating system comprising a collapsible reservoir, an expansion-chamber for actuating the friction device, the pump for forcing the contents of the reservoir into the expansion-chamber actuated by operative connection with the relatively fixed part, and the automatic means for throwing the pump out of action, controlled by the pressure in the chamber.

11. In a clutch of the class described, the combination with the driving and driven elements, the interposed friction device, and the adjustable relatively fixed part of the fluid circulating system comprising an expansible chamber for actuating the friction device, a collapsible storage-reservoir, a relief-valve connecting the chamber with the reservoir, means for connecting the pump with the chamber, means for throwing it into operative connection with the relatively fixed part, and the regulator for controlling the pump, itself controlled by the pressure in the expansible chamber.

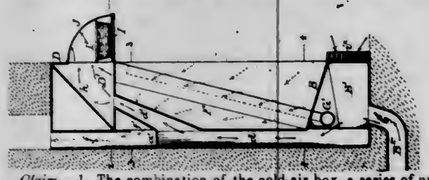
574,270. GRAIN PROPORTIONER AND MIXER. FRANKLIN S. RITTER, Cheboygan, Mich. Filed July 23, 1896. Serial No. 600,271. (No model.)



Claim.—1. The combination with the casing having a cylindrical portion A^2, a mixing-chamber F, at the bottom and a feed-hopper having a plurality of compartments, such hopper having its discharge-mouths arranged at one side of the vertical axis of the cylindrical portion A^2, of the cylinder B, having a plurality of sets of pockets, having their mouths of a width less than the discharge-mouths of the hopper, said pockets having their side and end walls arranged parallel in the direction of their depth, slide members adjustably held in such pockets, a rotary mixer and conveyer H, held in the mixing-chamber and means for operating the cylinder and conveyer substantially as shown and for the purposes described.

2. The combination with the casing having feedways A and A', at the upper end, a collecting and mixing chamber at the lower end having a combined mixing and conveyer mechanism, such casing having an intermediate cylindrical chamber, such chamber having covered openings in the ends, of the cylinder B, having two or more members B' B^2, each having a series of radial pockets provided with a series of slide receiving grooves, and the slide members b^2, for regulating the depth of the pockets, all being arranged substantially as shown and for the purposes described.

574,271. VENTILATING AIR-HEATER. CLARENCE V. ROBERTS, Philadelphia, Pa. Filed Jan. 31, 1895. Serial No. 536,840. (No model.)



Claim.—1. The combination of the cold-air box, a series of upright air-ducts communicating therewith and open at their upper ends for the discharge of heated air therefrom, said air-ducts being separated laterally one from another with upright gas-burner tubes located in proximity to said air-ducts and discharging their jets toward the front of the same, whereby the products of combustion pass from front to rear of the air-ducts through the vertical spaces between the latter, substantially as specified.

2. The combination of the lower cold-air box and the upper hot-air box, upright air-ducts connecting the same and providing for the flow of air from one to the other, said air-ducts being separated laterally one from another, and upright gas-burners discharging jets in front of said upright air-ducts, whereby the products of combustion can escape through the vertical spaces between the latter, substantially as specified.

3. The combination of the cold-air box, and the concave air-ducts communicating therewith, projecting upwardly therefrom, and open at their upper ends for the discharge of heated air, with perforated gas-burner pipes disposed in the concave fronts of said ducts, substantially as specified.

4. The combination of the bottom cold-air box, the top casing inclosing the hot-air chamber, a hollow rear casing projecting upwardly from the cold-air box and inclosing a duct which communicates at the lower end with said cold-air box and at the upper end with the hot-air chamber, a series of upright air-ducts located in front of said casing and likewise communicating with said cold-air box at the bottom and discharging into the hot-air chamber at the top, and upright gas-burner pipes discharging their jets in proximity to said upright air-ducts, substantially as specified.

5. The combination of the casing inclosing the combustion-chamber and having a cold air box at the bottom and a hot-air chamber at the top, the double back partitioned to form an air-duct in the lower portion and a discharge-flue in the upper portion, said air-duct communicating with the cold-air box at the bottom and with the hot-air chamber at the top, and said discharge-flue communicating with the combustion-chamber, upright air-ducts communicating with the cold-air box and discharging into the hot-air chamber, and upright gas-burner pipes discharging their jets in proximity to said ducts, substantially as specified.

6. The combination of the casing having a cold-air box at the bottom, upright air-ducts communicating therewith and open at their upper ends for the escape of heated air, upright gas-burner pipes discharging their jets in proximity to said ducts, a discharge-flue communicating with the combustion-chamber, and air-exhaust flues flanking the discharge-flue, said air-exhaust flues communicating at their upper ends with the chimney and at their lower ends with air-inlets at the lower portion of the casing, substantially as specified.

7. A casing having an air-box at the bottom and a hollow back partitioned so as to divide the chamber within it into three parts, namely, an air-duct communicating with said air-box, a discharge-flue communicating with the combustion-chamber, and ventilating-flues communicating with the chimney and with the room or apartment at the bottom of the casing, in combination with upright air-ducts communicating with the cold-air box, and open at their upper ends for the discharge of heated air, and upright burner-tubes discharging their jets in proximity to said upright air-ducts, substantially as specified.

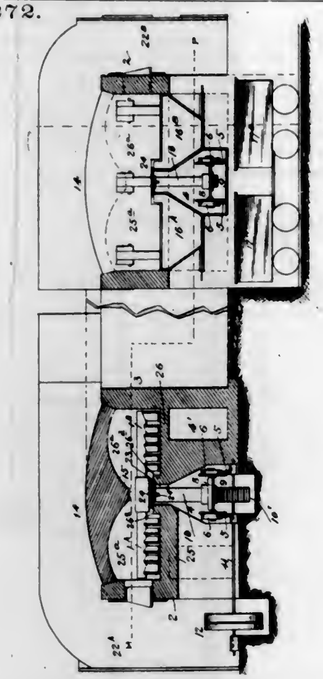
574,272. ORE-ROASTING FURNACE. JOHN ROGER, Denver, Colo. Filed Aug. 1, 1895. Serial No. 557,849. (No model.)

Claim.—1. A roasting furnace having an outer circular wall, an inner circular wall concentric to the outer wall, a roof extending from one wall to the other, circularly-arranged concentric hearths between said walls, said hearths having a space separating them from each other, said space terminating in a carriage-chamber, spaces separating the walls of the carriage-chamber from the inner and outer concentric walls of the furnace, a downward-curved extension carried by the roof directly over the space between the hearths, a carriage adapted to travel within its chamber, and a circular shield carried by the carriage and resting and rotating upon shoulders of the roasting-hearths and adapted to close the opening separating the hearths, as specified.

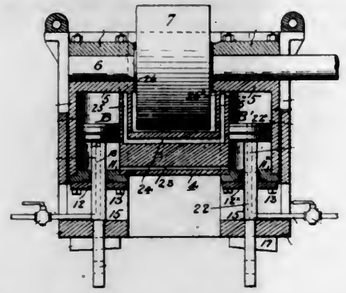
2. A roasting furnace having an outer circular wall, an inner circular wall concentric to the outer wall, a roof extending from one wall to the other, circularly-arranged concentric hearths between said walls, said hearths having a space separating them from each other, said space terminating in a carriage-chamber, spaces separating the walls of the carriage-chamber from the inner and outer concentric walls of the furnace, and a downwardly-curved extension carried by the roof directly over the space between the hearths.

3. The combination with a roasting-furnace, consisting of a circular roasting-chamber, a concentric carriage-chamber beneath the roasting-chamber and communicating with the roasting-chamber through an opening in the hearth of said chamber, a carriage within said carriage-chamber, agitators in said roasting-chamber and supported by said carriage, a shield for covering the opening between the roasting-chamber and the carriage-chamber, said shield being supported by said carriage, a circular rack secured to the carriage, a drive-shaft having at one end a toothed gear engaging said rack and at its other end drive-pulleys, substantially as set forth.

574,272.



574,273. ORE-CRUSHER. JOHN ROGER, Denver, Colo. Filed Feb. 13, 1896. Serial No. 579,133. (No model.)

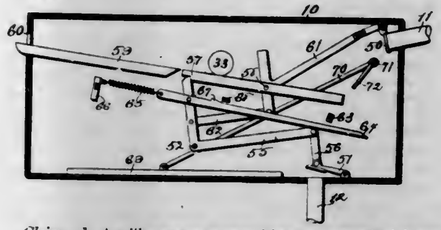


Claim.—1. In an ore crushing mill, the combination of a crushing-roller journaled in stationary bearings, movable cylinders formed with bearings, and having upper and lower conduits communicating between the cylinders, a crushing-roller journaled in the bearings of the cylinders, and stationary pistons in the cylinders having hollow stems opening, respectively, above and below the piston-heads, whereby the elastic medium is delivered into the cylinders above or below the piston-heads.

2. In a crushing-roller mill, the combination of vertically-arranged housings, sliding bearings in the housings, formed with cylinders and connected by a cross-piece having a passage opening into the base of each cylinder, pistons in the cylinders, one of which is formed with a stem having an interior passage opening into the cylinder below the piston, and a pipe leading into the hollow piston stem to conduct an elastic fluid into the cylinder, substantially as and for the purpose specified.

3. In a crushing-roller mill, the combination of oppositely-arranged vertical housings, sliding bearings in the housings formed with cylinders and connected by a cross-piece having upper and lower passages opening respectively at the top and bottom of the cylinders, pistons in the cylinders provided with hollow stems, opening respectively above and below the pistons into the cylinders, and pipes leading into the passages of the piston-stems to conduct an elastic fluid above or below the pistons, substantially as described.

574,274. AUTOMATIC MEASURER FOR CREAMERIES. OLIVER B. ROSS, Spencer, Iowa. Filed May 11, 1896. Serial No. 591,101. (No model.)



Claim.—1. A milk-measurer comprising a receptacle, inlet and outlet pipes communicating with said receptacle, valves controlling the inlet and outlet pipes and their communication with the receptacle, lever mechanism, comprising two bell-crank levers suitably connected, for operating the port-closing valves, locking mechanism comprising a pivoted runway engaging one of said bell-crank levers to hold the valves in one position, locking mechanism comprising interengaging studs to hold the valves in another position, which locking mechanisms are arranged to be successively released by a traveling check, a movable stop arranged to interrupt the travel of the check between the first and second locking mechanisms, float mechanism acted upon by fluid substance within the receptacle to move the movable stop, a hand-lever arranged to operate the lever mechanism when the first locking mechanism is released by the check, and a spring arranged to operate the lever mechanism when the second locking mechanism is released by the check.

2. A receptacle having inlet and outlet pipes, valves located within the receptacle and controlling said pipes, levers 55, 61, pivotally connected and connected to said valves, an ingress-port for a check or operating device, a pivoted runway arranged to lock the levers in one position and check-releasable, a lever arranged for manual actuation and connected with the lever 55, a rod arranged to lock the levers in another position and check-releasable and a float-controlled stop interrupting and distinguishing for a predetermined period the successiveness of the check-releasing operations.

3. The combination of a receptacle for return products having ingress and egress ports, an inclosure above said receptacle and communicating therewith, a lever mounted in the inclosure, a trigger spring-pressed to lock said lever in a given position, a raceway leading from the exterior to said trigger, a stop adjacent to the end of the lever when in its lowest position arranged to engage and retain a check thereon, a check-receiver communicating with the inclosure adjacent to said stop and a float mechanism for elevating the lever into engagement with the trigger and arranged to discharge the check from the lever to the receiver.

4. The combination of a receptacle provided with ingress and egress ports, valves alternately closing and opening said ports successively, lever mechanism manually actuated in one direction to operate said valves and spring-actuated in the other direction to operate said valves, locking mechanism to retain said mechanism in a given position, a check for releasing said locking mechanism, intermeshing projections for locking said lever mechanism in another position, a float acting to release the check from the first locking mechanism and so arranged as to permit said check to disengage the intermeshing projections and an aperture and runway whereby the check is directed to the locking mechanism.

5. The combination of a receptacle having inlet and outlet pipes, a valve controlling the inlet-pipe, a valve controlling the outlet-pipe, a runway 59, a pivoted runway communicating with the runway 59, a bell-crank lever pivoted coincidently with the pivoted runway and connected to the valve controlling the inlet pipe, a bell-crank lever fulcrumed within the receptacle and connected with the valve controlling the outlet-pipe, the runways being arranged to receive a check through an ingress slot and provide an inclined way for said check across the receptacle, a bell-crank lever having an arm arranged to obstruct the passage of the check from the pivoted runway, a float attached to said bell-crank lever, a lever 53 whereby the bell-crank lever controlling the outlet-valve is operated, locking mechanism and connections between the locking mechanism and pivoted runway whereby when the check falls from the pivoted runway the locking mechanism is released.

6. An inclosed receptacle having a port in one end for the admission of an operating check, ingress and egress pipes communicating with said receptacle and valvularly controlled in open and closed positions respectively, a manually-operated lever outside of said receptacle, connections between said lever and the valves, whereby the positions of said valves may be reversed and check-controlled locking mechanism governing the connections between said lever and valves.

7. In a machine of the class described, a check controlled mechanism consisting essentially of the following elements, to wit: valve-levers, a runway arranged to lock said valve-levers pending the application to said runway of an operating check whereby said runway is tilted against its natural gravity, a movable stop whereby said check is engaged and retained on the runway after said runway is tilted, a float connected to said movable stop and acted upon by liquid within the machine whereby said stop is withdrawn from engagement with and releases the check, interengaging lugs whereby the valve-levers are locked in another position and a releasing rod or trigger arranged to receive an impact of the operating-check when said check is released by the stop aforesaid and in turn release the interengaging lugs, a hand lever whereby the valve-levers are moved in one direction while the check is retained by the stop and a spring whereby the valve-levers are moved in the opposite direction when the rod is released by impact of the check.

8. In a machine of the class described, a check-controlled mechanism consisting of the following elements, to wit: an inlet-pipe-controlling valve; an outlet-pipe-controlling valve, connected levers pivotally connected to said valves, whereby said valves may be alternately opened and closed respectively simultaneously; a runway locking said levers in one position and check-operated to release the levers; a movable stop whereby the check is retained in engagement with the runway; a float whereby the movable stop is caused to travel; a hand-lever whereby the connected levers are operated in one direction; a locking rod whereby the connected levers are locked in the position into which they are moved by the hand lever; the said locking-rod being check-operated for release; and a spring whereby the connected levers are reversely moved when the locking-rod is check-released.

9. In a device of the class described, a locking-lever fulcrumed near one end on a movable fulcrum, a lug on the locking-lever arranged to engage a mating lug suitably supported in proximity thereto, a spring acting to move said locking-rod in one direction, a check-runway located above the locking-rod and a stop to limit the movement of the check and arranged to retain said check temporarily in advance of the impact thereof with the locking-rod.

10. In a machine of the class described, a locking-rod mounted for oscillation and rectilinear reciprocation, which rod is check-operated for oscillation, manually operated for movement rectilinearly in one direction and spring-operated for oscillation and rectilinear movement in the opposite direction.

11. In a machine of the class described, a stop mechanism comprising a float, a float-arm and a stop or crank arm connected to said float-arm and arranged in the path of travel of a check.

12. In a machine of the class described, a locking-rod arranged for check operation for release, a check-runway pivoted above the locking-rod, a stop limiting the oscillation of the check-runway in one direction, a movable stop limiting and interrupting the travel of a check on said runway temporarily, the stop being arranged to travel out of engagement with the check whereby the check may fall upon the locking-rod.

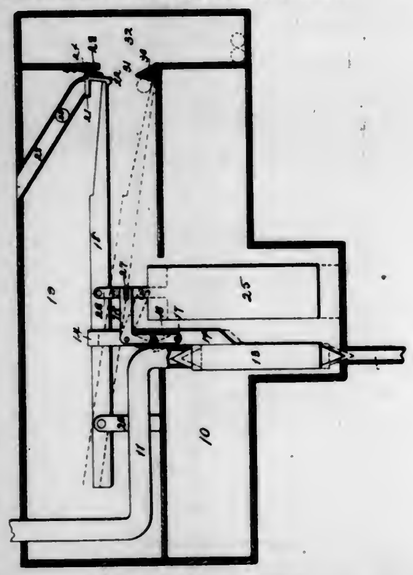
13. In a machine of the class described, an inlet-valve 50, a bell-crank lever 61 connected by one arm to said valve, an outlet-valve 51, a bell crank lever 55 connected to said outlet-valve by one arm, the other arms of the bell-crank levers being interconnected and means for operating said levers.

574,275. AUTOMATIC MEASURER FOR CREAMERIES. OLIVER B ROSS, Spencer, Iowa. Original application filed May 11, 1896, Serial No. 591,101. Divided and this application filed July 13, 1896. Serial No. 598,956. (No model.)

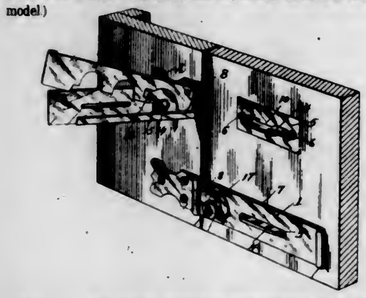
Claim.—1. The combination of a receptacle, ingress and egress ports to said receptacle, a valve controlling said ports alternately, a connecting-rod carrying said valve, a bell-crank lever fulcrumed on said rod and toggle-jointed to the receptacle, a lever fulcrumed above said receptacle and check-operated in one direction, and float mechanism connecting said bell-crank lever and the main lever to operate the valve in opposition to the check operation.

2. The combination of a receptacle provided with a depression or chamber arranged to receive milk or whey from a separator or cheese-machine and provided with inlet and outlet ports, a single valve controlling both of said ports, a bell crank lever fulcrumed on the valve and flexibly connected to the receptacle, a float extended within the depression or chamber of the receptacle and flexibly connected to the bell-crank lever, a lever fulcrumed near one end within the receptacle, and carrying the float at its center, and check-controlled tripping mechanism whereby the last-named lever may be released to permit the operation of the valve for delivery of milk into the chamber or depression of the receptacle.

3. The combination of a receptacle, a chamber for milk communicating with said receptacle and having a depression or well in its bottom, a check-controlled lever mechanism mounted in the receptacle and extended within the chamber, whereby the flow of milk to and from said chamber is governed and a lesser chamber communicating with the receptacle adjacent to the path of travel of the checks by which the lever mechanism is controlled and designed to receive the used checks from the receptacle and a stop 30 arranged between the receptacle and lesser chamber whereby the checks temporarily are retained in advance of delivery into the lesser chamber.



574,276. HASP-FASTENER. HENRY SCHLICHTING, Camden, N. J. Filed Feb. 7, 1896. Renewed Oct. 12, 1896. Serial No. 608,678. (No model.)

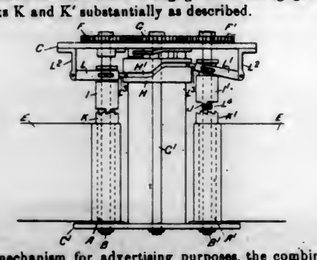


Claim.—1. The herein described combination of a hinged hasp a latch pivoted to the under side thereof, a bead formed upon the outer end of said latch and adapted to pass over the outer edge of the hasp when closed, a tongue projecting from the latch and staple having a suitable opening into which said tongue passes when the latch is brought into alinement with the hasp, as shown and specified.

2. In combination with a strap, a staple adapted to be attached to the door, a jamb or other equivalent of a hasp hinged to said strap, a latch pivoted to said hasp, a bead formed upon said latch adapted to embrace the outer end of the hasp when closed, a tongue projecting from the latch adapted to enter a suitable opening in the staple, a notch formed in the latch and a block adapted to slide into engagement with said notch to prevent the swinging of the latch, substantially as and for the purposes set forth.

574,277. ADVERTISING DEVICE. FRANK S. D. SCOTT, London, England. Filed May 23, 1896. Serial No. 592,751. (No model.) Patented in England Nov. 21, 1895, No. 22,196.

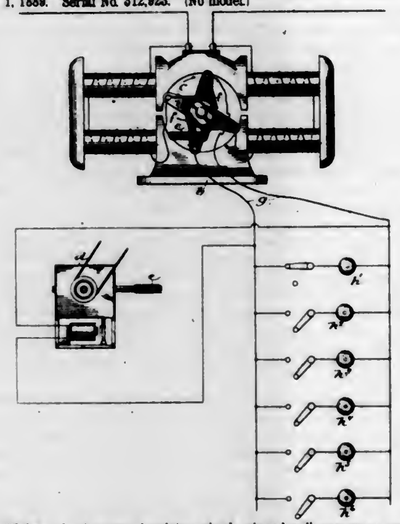
Claim.—1. In mechanism for advertising purposes, the combination of the rollers A and A' carrying a strip of calico or other suitable material containing advertisements, with a frame D carrying the spindles B, B' and G', the spindles B and B' having upon them the rollers A and A' which carry the strip E while on G' is the cam H having a groove H' in which two levers L and L' engage so as to cause the clutch-sleeves I and I' to engage or be disengaged from the clutch-racks K and K' substantially as described.



2. In mechanism for advertising purposes, the combination of the rollers A and A' carrying a strip of calico or other suitable material containing advertisements, with the wheels F F' G' and Q with or without Q' for imparting movement to the spindles B and B' carrying the rollers A and A', the wheels similar to M N' and striking-arms M³ N to regulate the movements of the cam H so that its speed shall be in proportion to the length of the strip.

3. In mechanism for advertising purposes, the combination of the rollers A and A' carrying a strip of calico or other suitable material containing advertisements, with the spindle P having upon the upper end the wheels R and Q engaging with the wheel G, the lower end sliding in a sleeved wheel O' in gear with the bevel-wheel O attached to the hub of a vehicle-wheel substantially as described.

574,278. MOTOR-GENERATOR. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed June 1, 1889. Serial No. 312,923. (No model.)



Claim.—1. A motor having a single closed-coil armature and a pair of adjustable brushes in a supply-current and a second pair of brushes in a working circuit in combination with a regulator for moving said adjustable brushes responsively to variations in the potential between the different sides of said working circuit to maintain said potential practically constant, substantially as and for the purpose specified.

2. A motor having a single closed-coil armature and provided with two sets of brushes in combination with a main circuit through the machine and a derived or local circuit connected with one set of brushes and a regulator connected with said local circuit to maintain a constant voltage in the local or working circuit, substantially as and for the purpose specified.

3. A motor having a single closed-coil armature and commutator therefor provided with two sets of brushes, one set having a particular relation to the commutator and the other set being adjustable in combination with a main circuit through the machine and a derived or local circuit connected with the working circuit brushes and a regulator connected with said local circuit, substantially as and for the purpose specified.

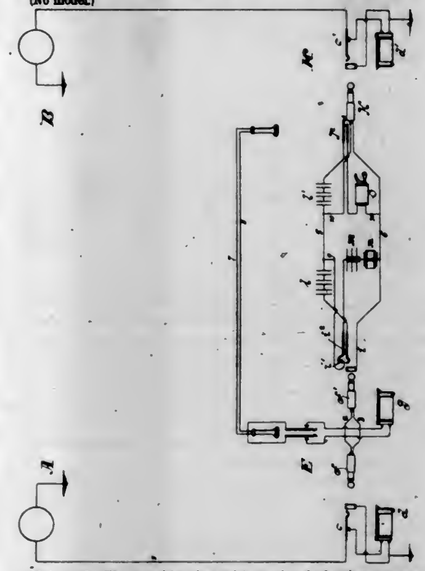
4. A motor placed in a main circuit and provided with two sets of brushes in combination with a group of lamps arranged in multiple arc, said lamp-circuit being connected with one pair of brushes and a regulator in a multiple circuit with the lamps, substantially as described.

5. In a system for the distribution of electrical energy an electric motor having a single closed-coil armature-winding adapted when traversed by a current of electricity in a main circuit connecting to a central station or point of supply to give varying amounts of electrical energy to a local circuit connected to a pair of brushes resting upon its commutator and to electric lamps or other translating devices that may be included in said local circuit, substantially as specified.

6. In a system for the distribution of electrical energy, the combination with a dynamo-electric machine having a single closed-coil armature winding of a supply circuit in which said armature is included and a working circuit connected with a pair of brushes bearing on the single commutator of said dynamo-electric machine, substantially as described.

7. The combination with a single closed-coil armature, of a pair of adjustable brushes on the commutator thereof in a supply-circuit and a second pair of brushes in a working circuit, the said adjustable pair of brushes being revoluble about the commutator for the purpose of varying the potential between the terminals of the working circuit, substantially as described.

574,279. SIGNALING-CIRCUIT FOR TELEPHONE TRUNK-LINES. CHARLES E. SCRIBNER, Chicago, Ill., assignor to the Western Electric Company, same place. Filed May 14, 1896. Serial No. 591,526. (No model.)



Claim.—1. The combination with a circuit having a source of current in it, of two groups of polarization-cells interposed in a conductor of the circuit, and a closed circuit including the said conductor intermediate of the polarization-cells together with a source of current and a signaling instrument, substantially as described.

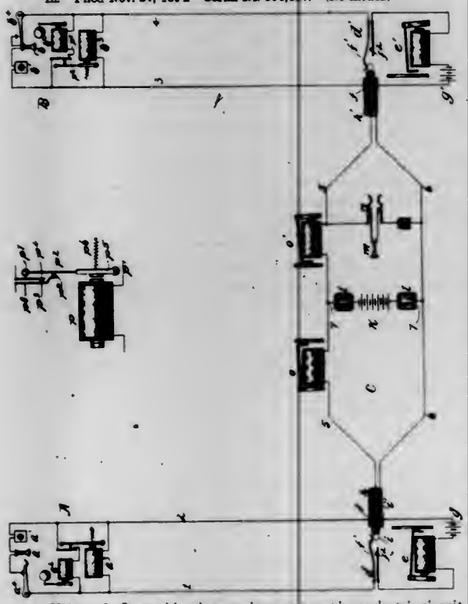
2. The combination with a circuit grounded at different points, of two groups of polarization-cells at different points in a conductor of the circuit, and a signaling-circuit formed in part of a portion of said conductor intermediate of the polarization-cells and including the source of current and a signaling instrument, whereby interference with the operation of the signaling instrument by differences of potential at the ground connections is prevented.

3. The combination with a trunk-line, of two groups of polarization-cells interposed in a line conductor of the trunk-line, a signaling-circuit formed in part of the line conductor intermediate of said polarization-cells, a source of current at one terminal station, and a signaling instrument at the other terminal station included in said signaling-circuit, and a switch for controlling the operation of the signaling instrument, substantially as described.

4. The combination with a trunk-line terminating in a spring-jack at one station and in a plug at another station, of a group of po-

larization-cells interposed in a line conductor of the trunk-line at each station, a signaling circuit formed in part of a portion of said line conductor intermediate of the polarization cells, a source of current at one station and a visible signal at the other station in the signaling-circuit, and a switch in the spring-jack adapted to be opened when a plug is inserted into the spring-jack, controlling the continuity of the signaling-circuit, substantially as described.

574,280. **AUTOMATIC SIGNALING DEVICE FOR TELEPHONE-EXCHANGES.** CHARLES E. SCRIBNER, Chicago, and FRANK R. MCBERTY, Downer's Grove, Ill., assignors to the Western Electric Company, Chicago, Ill. Filed Nov. 27, 1894. Serial No. 530,139. (No model.)



Claim.—1. In combination, an electromagnet in an electric circuit together with a source of current and means for closing the circuit, a tongue adapted to be thrown into vibration when the said magnet attracts its armature, switch contacts actuated by the vibrating tongue to open or close a subsidiary branch or circuit, and an electric bell in the subsidiary branch or circuit, substantially as described.

2. The combination with a telephone-line, of a bell at the substation, a source of current in circuit therewith, and mechanism adapted to periodically break and close the circuit through the bell a limited number of times while the magnet remains continuously excited, substantially as described

3. The combination with a telephone-line, of a bell at the substation, and a source of current in circuit therewith, a circuit-controller or relay adapted to periodically break and close the circuit of the bell a limited number of times while the magnet remains continuously excited, and means for actuating the circuit-controller, substantially as described.

4. The combination with a telephone-line, of a bell at the substation, an electromagnetic relay or circuit-controller thereat adapted to periodically break and close the circuit of a source of current through the bell a limited number of times, and means for closing current through the magnet of the relay when connection is made with the line at the central station, substantially as described.

5. The combination with a telephone-line, of a bell at the substation thereof, an electromagnetic relay or circuit controller adapted to periodically break and close the circuit of a source of current through the bell a limited number of times, the magnet of the relay being connected with the telephone-line at the substation, and means for closing a source of current to the line when connection is made therewith, to operate the relay, substantially as described.

6. The combination with a tongue or pendulum adapted to vibrate, of an electromagnet adapted when excited to set the tongue or pendulum into vibration, switch-contacts controlled by the tongue or pendulum, and an electric bell in circuit with the switch-contacts, substantially as described.

7. The combination with a telephone-line, of a relay comprising a magnet, a flexible weighted tongue carried by the armature thereof, and switch-contacts adapted to be actuated by the tongue, when the latter is thrown into vibration by the movement of the armature, a bell in a circuit controlled by said switch-contacts, and means for closing a source of electric current to the line when connection is made therewith at the central station, the magnet of the relay being connected with the line to receive current therefrom, substantially as described.

574,281. **PLUG FOR TELEPHONE-SWITCHBOARDS.** CHARLES E. SCRIBNER, Chicago, and FRANK R. MCBERTY, Downer's Grove, Ill., assignors to the Western Electric Company, Chicago, Ill. Filed May 31, 1894. Renewed June 19, 1896. Serial No. 596,221. (No model.)



Claim.—1. In a connecting-plug the combination with a tube forming or carrying one contact portion of the plug, of a second contact portion surrounding and secured upon a projecting portion of said tube, and a wire extending from said second contact portion through the tube to the interior of the plug, substantially as described.

2. The combination in a connecting-plug, of a tube carrying one contact-surface in an intermediate position, a second contact portion supported upon and surrounding the projecting extremity of said tube but insulated therefrom, and a conductor extending from said second contact portion through the tube to a suitable connecting-post within the body of the plug, substantially as described.

3. The combination with a tube of conducting material carrying a collar or sleeve forming one contact portion of a connecting-plug, but projecting beyond said collar, of a spherical tip constituting another contact piece of the plug supported upon and surrounding the projecting extremity of the tube but insulated therefrom, and an insulated conductor extending through the tube and connected with the spherical tip, substantially as described.

4. In combination, a conducting-tube carrying a collar constituting one contact-piece of the plug but projecting beyond the same, the projection being enlarged at its outer extremity, a spherical tip constituting another contact-piece of the plug having an axial opening corresponding in shape to the enlarged projection of the tube, insulating material filling the perforation in the tip about the tube, and an insulated conductor connected with the tip and extending through the tube, substantially as described.

5. In combination, a tubular body or shank of a connecting-plug having a portion formed into a contact-piece for a spring-jack, a conducting-tube extending longitudinally therein but insulated therefrom, a collar carried upon said tube constituting a second contact-piece of the plug, said tube projecting beyond the collar, a spherical tip secured upon said projecting extremity of the tube but insulated therefrom, a conducting-wire connected with said tip and extending through said tube, and independent means for connecting with both the tube and the conducting-wire within the body of the plug, substantially as described.

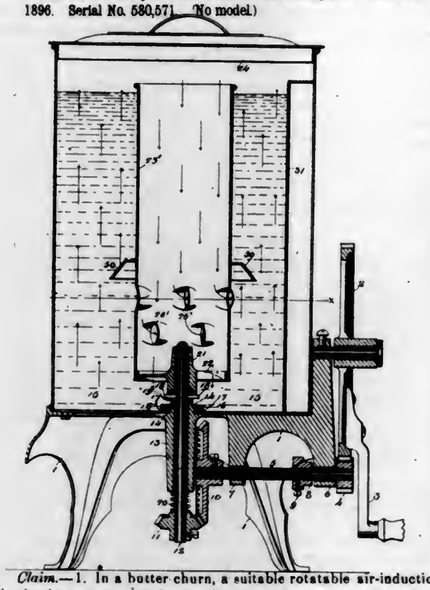
6. The combination with the tube g, of the spherical tip a having the lip a^2 formed thereon, said spherical tip being secured upon said tube but insulated therefrom, and a conducting-wire connected with said tip within its central perforation, and extending through the tube, said lip a^2 being finally turned down to close the opening in the tip, substantially as described.

7. The combination with the tube g carrying the collar b and having the enlarged projecting extremity, of the sleeve l of insulating material surrounding said extremity, the tip a having an axial perforation corresponding in form to said enlarged extremity and having the lip a^2 formed upon it, the insulating-washer l placed over the extremity of the tube g, said lip a^2 being turned in to compress the enlarged portion of said tube into the corresponding opening of the tip to secure the latter firmly in place upon the tube, substantially as described.

8. In combination with the tip a having the lip a^2 formed thereon, the tube g to which the said tip is secured, the washer l of insulating material covering the extremity of said tube, the conducting-plate n forming the terminal of conductor m, and the soft conducting material o placed over the plate n, whereby when the lip a^2 is turned down the conducting material is compressed and caused to make perfect contact between the plate n and the tip a, substantially as described.

9. In a connecting-plug, the combination with a central conducting-stem forming a conduit, of two contact portions carried thereby and suitably insulated the one from the other and one insulated from such stem or conduit, and a wire extending through such conduit from the contact insulated from the stem for the purpose set forth.

574,282. **CHURN.** CHARLES SEBASTIAN, St. Louis, Mo., assignor to Thomas J. Cheney and James M. Davis, same place. Filed Feb. 24, 1896. Serial No. 580,571. (No model.)



Claim.—1. In a butter-churn, a suitable rotatable air-induction tube, having one or more elongated openings formed along the periphery of the tube, the major axis of each opening being substantially parallel to the axis of rotation of the tube, the minor axis of each opening being substantially in line with the radius of a cross sectional circle of the tube, a large outwardly-convex wall bounding the outer limit of each opening, and an inwardly convex and smaller wall bounding the inward limit of each opening, substantially as set forth.

2. In a butter-churn, a suitable cream-receptacle, a spindle mounted in the same, a transverse pin carried by the upper end of the spindle, a rotatable air-induction tube located in the receptacle, a tubular hub forming part of said tube and adapted to pass over said spindle, and a finger formed with the hub and having an engaging depression with which the end of the transverse pin is adapted to engage during the rotation of the spindle, substantially as set forth.

3. In a butter-churn, an air-induction tube or cylinder, having a series of peripheral openings formed at one end thereof, a blade-disk having a series of blades radiating from a common center forming the bottom of the tube, and means for imparting rotation to the tube and disk, substantially as set forth.

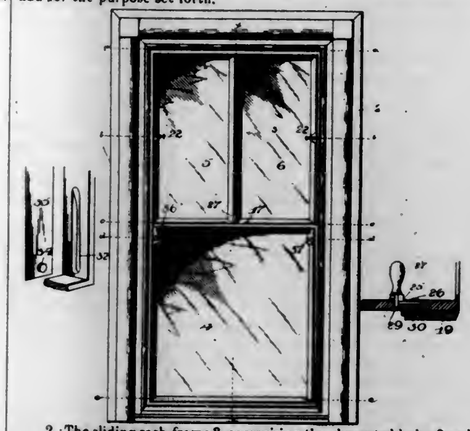
4. In a butter-churn, a suitable cream-receptacle, a spindle projecting through the bottom of the same on either side thereof, a pinion carried at the lower end of said spindle, a coiled spring encircling the spindle and interposed between the terminal pinion and the bottom of the receptacle, and a block carried by the spindle above the bottom and adjacent thereto and bearing down upon the same by reason of the resilient action of the spring, whereby a tight joint is made between the spindle and the bottom, substantially as set forth.

5. In a butter-churn, a suitable rotatable spindle, an air induction tube having a bottom provided with a hub adapted to embrace or pass over the upper end of the spindle, a circular block carried by the spindle and adapted to be embraced by the lower portion of the hub, a pin passed transversely through the block and spindle, and a finger forming a continuation of the tubular portion of the hub and adapted to engage the projecting end of the pin, substantially as set forth.

6. In a butter-churn, an air-induction tube or cylinder, having a series of openings disposed along the peripheral walls of the same, a blade disk forming the perforated bottom of said tube, said disk having a series of inclined blades radiating from a common center to the walls of the tube, and means for imparting rotation to the tube and disk, substantially as set forth.

574,283. **WINDOW.** FRANK STARACE, New York, N. Y. Filed July 14, 1896. Serial No. 599,149. (No model.)

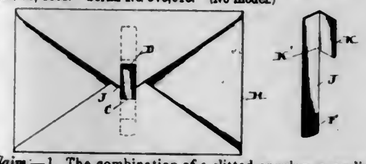
Claim.—1. The sliding sash-frame 3, formed with the elongated holes 8 and 10, in combination with the hinged panel frames 5 and 6, each of which is formed with the pivot-stud 7, and provided with the removable pivot screw-stud 9, by means of which said panel-frames are independently hinged in said sliding sash-frame, substantially as and for the purpose set forth.



2. The sliding sash-frame 3, comprising the elongated holes 8 and 10, in combination with the hinged panel-frames 5 and 6, each of which is formed with a rigid pivot-stud 7 and a removable pivot screw-stud 9, the adjacent studs 9 9 on the panels 5 and 6 being connected by a spring 16, substantially as and for the purpose set forth.

3. The combination with the frame 3, having elongated holes 8 and 10 of the panel-frames 5 and 6 provided with the removable screw-studs 9 9 and spring 16 and having their adjacent side rails formed with a recess 14 and a corresponding rib 15, substantially as and for the purpose set forth.

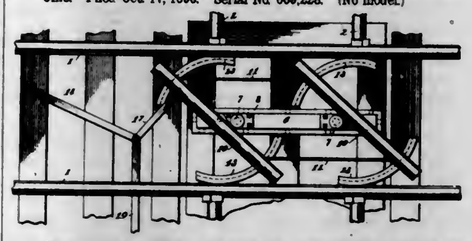
574,284. **ENVELOP.** LEWIS G. STOCKING, Limona, Fla. Filed Nov. 30, 1895. Serial No. 570,618. (No model.)



Claim.—1. The combination of a slitted envelop, a sealing-strip adapted to be secured at one end to the envelop and to hold the lip thereof closed, tongue K at one end of the strip and folded thereover on a line parallel with the longitudinal extent of the strip, the tongue being separated a portion of its length from said strip on the fold-line whereby a hook is formed to engage the inner side of the envelop when the strip end carrying the tongue is inserted through the envelop, slit, substantially as described.

2. The combination of the envelop having its body portion and lip each formed with a slit, the locking-strip, the tongues projected laterally from opposite ends of the strip and folded thereover, the tongues being separated at their inner ends from the strip on the fold-line, for the purpose substantially as herein shown and described.

574,285. **RAILWAY-CROSSING.** EDWARD J. TAGUE, McLuney, Ohio. Filed Oct. 17, 1896. Serial No. 609,228. (No model.)



Claim.—1. In a railway-crossing, the combination with an unbroken track, and a broken track approaching the same at an angle thereto and in a slightly higher plane, of movable rail-sections, a vertically-movable plate to which said rail-sections are pivoted, and means for rotating said rail-sections on their pivots, substantially as set forth.

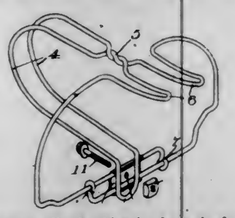
2. In a railway-crossing, the combination with an unbroken track and a broken track approaching the same at an angle and in a slightly-higher plane, of movable rail-sections, a vertically-movable plate to which said rail-sections are pivoted, inclined segments upon which said rail-sections move in their rotation, and means for rotating said rail-sections, substantially as set forth.

3. In a railway-crossing, the combination with an unbroken track, and a broken track approaching the same at an angle and in a slightly-higher plane, of movable rail-sections, a vertically-movable plate to which said rail-sections are pivoted, inclined undercut segments upon which said rail-sections move in their rotation, lugs on said rail-sections engaging with the undercut portions of said segments, and means for rotating said rail-sections on their pivots, substantially as set forth.

4. In a railway-crossing, the combination with an unbroken track, a broken track, rotatable rail-sections, and inclined segments upon which said rail-sections move, of a central vertically-movable plate to which said rail-sections are pivoted, a fixed plate thereunder, bolts connecting said plates, caps on said upper plate over the bolts but permitting a limited vertical movement to said plate, a curtain connected to said plates, outwardly-bending hinges for forcing said curtain outward, and means for rotating said rail-sections, substantially as set forth.

5. In a railway-crossing, the combination with an unbroken track, a broken track, centrally-pivoted rotatable rail-sections, connecting-rods for said rail-sections, and inclined segments upon which said rail-sections move, of knife-edged stops for limiting the movement of said rail-sections in one direction, an arm pivoted to one of said rail-sections, a second arm having a fixed pivotal point at one end, and a lever pivotally connecting the adjacent ends of said arms, the said arms adapted to lie in a straight line when said rail-sections are against their stops and to be broken by a pull exerted on said lever, substantially as set forth.

574,286. TOE-CLIP FOR BICYCLES. EDWARD A. THIEM, St. Paul, Minn. Filed Mar. 5, 1895. Serial No. 540,629. (No model.)



Claim.—1. A toe-clip for bicycles formed of a single piece of wire comprising a foot-holding section and a toe-embracing section with the ends of the wire underlapping beneath the ball of the foot and having eyes upon the ends embracing the adjacent underlapping sections, and means for coupling said clip to a pedal to permit the lateral adjustment of the adjacent underlapping sections, to vary the width of the clip, substantially as and for the purpose set forth.

2. As an improved article of manufacture, a toe-clip of the class described, comprising a foot-embracing loop secured to the pedal in substantial alinement with the forward pedal-plate, and a forwardly-projecting toe-receiving bend, whereby as the foot is in position upon the pedal, with the toe of the shoe projecting into the toe-loop, and the ball of the foot standing between the front and rear of the pedal, the foot-embracing loop will bear upon the top of the foot in a vertical plane with the front pedal-plate, so as to furnish a support at that point in the upward pull of the foot.

3. As an improved article of manufacture, a toe-clip of the class described, comprising a toe-holding bend and a foot-embracing loop connected thereto upon the top of the foot, said foot-embracing loop having its ends adjustably connected underneath the foot to accommodate shoes of varying widths.

4. As an improved article of manufacture, a toe-clip of the class described, consisting of a toe-receiving bend, adjustable side guards, and means for securing the side guards at any desired width

5. As an improved article of manufacture, a bicycle pedal-clip, comprising a toe-holding bend, a continuous foot embracing loop connected thereto, and means for adjusting both the lateral and vertical dimensions of said clip, and securing the same in adjusted positions to the pedal.

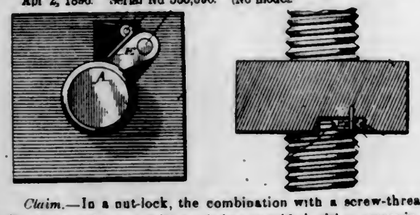
6. As an improved article of manufacture, a bicycle-pedal toe-clip, consisting of a foot-embracing loop, with the ends slidably connected underneath the foot, to permit of their relatively lateral adjustment, the toe-holding bend rigidly connected to the top of said foot-loop, and engaging the interlocked ends of said first-named loop underneath the foot, and the clamp for securing the ends of said loop and bend in adjusted positions to the pedal.

7. As an improved article of manufacture, a bicycle-pedal toe-clip, consisting of a single piece of wire forming the foot-embracing loop, and a toe-receiving bend rigidly connected thereto on the top of the foot, and with their ends adjustably interlocked beneath the foot, and means for securing them in adjusted positions upon the pedal.

8. A toe-clip for bicycle-pedals, consisting of the toe-receiving bend, the adjustable side guards, and the bolt for securing the side guards at any desired width and attaching the clip to the pedal.

9. The combination with the bicycle-pedal, of a toe-clip consisting of the U shaped portion for the toe, the loop below, and the loops above said portion, the side guards, and the clamping-bolt for securing the side guards at any desired width.

574,287. NUT-LOCK. JAMES M. THOMPSON, Burnett, Okla. Filed Apr 2, 1896. Serial No. 585,890. (No model.)



Claim.—In a nut-lock, the combination with a screw-threaded bolt, of a nut thereon, said nut being provided with a recess in one face which leads out from the bolt-opening in the nut, a dog pivoted to the nut and lying in the recess, said dog having its face adjacent to the nut inclined from the pivotal point of the dog to the free end thereof, and said dog being provided with a notch at its end, which is adapted to receive one of the screw-threads of the bolt, a pin connected to the nut, and a spring coiled around said pin and having one end abutting on the wall of the recess in the nut, and its other and free end pressing against the dog so as to hold it normally in engagement with the bolt.

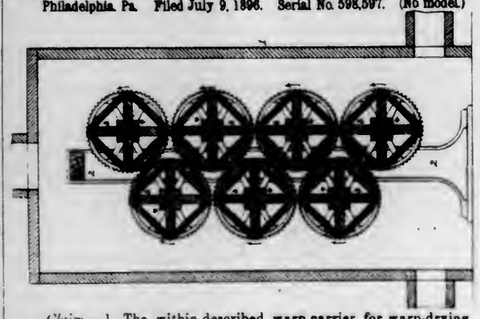
574,288. HAIR-PIN. JOSEPH W. TIMMONS, Clallam, Wash. Filed Aug. 6, 1896. Serial No. 601,901. (No model.)



Claim.—1. As a new article of manufacture, the herein-described hair-pin comprising a head, and a shank secured thereto and formed into two concentric circular coils, the inner portion of each coil being adjacent to and parallel with the outer portion of the other coil, each of said coils terminating in a point, substantially as specified.

2. As a new article of manufacture, the herein-described hair-pin comprising a disk or button forming a head and two concentric circular coils secured to the central portion of said head, and terminating in oppositely-disposed points, the starting portion of each coil forming a clamping-arm, and its inner portion being parallel with the outer portion of the other coil, substantially as specified.

574,289. WARP-DRYING MACHINE. FREDERICK TURNBULL, Philadelphia, Pa. Filed July 9, 1896. Serial No. 598,597. (No model.)



Claim.—1. The within described warp-carrier for warp-drying machines, said carrier consisting of a central shaft or support having blades or paddles projecting therefrom, substantially as specified.

2. The within-described warp-carrier for warp-drying machines, said carrier consisting of a central shaft or support having blades or paddles projecting therefrom, each of said blades or paddles consisting of a solid strip or bar presenting an outer edge of wood for the support of the warp, substantially as specified.

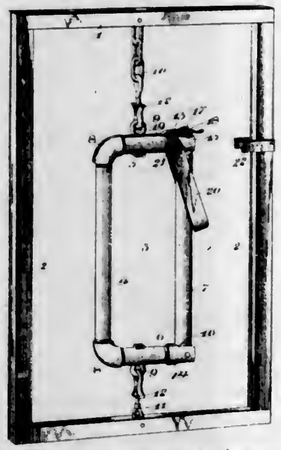
3. The combination in a warp drying apparatus, of a casing having inlet and outlet for the heated air, with a series of warp carriers mounted in said casing and each consisting of a central shaft or support with blades or paddles projecting therefrom, and means for rotating said carriers at uniform speed, substantially as specified.

574,290. WINDMILL. MYRON TWISS, Norfolk, Nebr. Filed Sept. 6, 1895. Serial No. 561,616. (No model.)



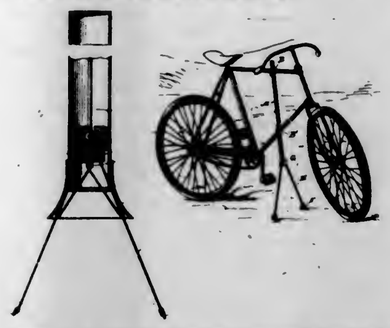
Claim.—In a windmill, the combination with a tower, of the wheel journaled therein, the blades secured to the wheel, as described, a series of links pivotally connected together and extending circumferentially around the wheel and concentrically thereto, a series of lugs pivotally connected at one end to the links and extending inwardly therefrom, a series of uprights or posts arranged around the wheel, a series of blinds pivotally connected at one end to the posts and secured to the inner end of the lugs and each of said blinds adapted to extend across and temporarily close the opening between two adjacent posts, a bracket secured to one of the posts, a lever pivoted centrally to the bracket, links pivoted at one end to the opposite ends of the lever, and at the opposite end pivoted to two of the circumferentially-arranged links, ropes connected at one end to said two links, a bell-crank lever to which the other ends of the ropes are connected, all as specified.

574,291. CATTLE-STANCHION. JACOB H. VIRKLER, Croghan, N. Y. Filed Jan. 16, 1896. Serial No. 575,746. (No model.)



Claim.—A cattle-stanchion comprising a rectangular frame having opposite fixed and movable sides, and upper and lower end pieces, the movable side being pivoted at its lower end to the lower end piece and carrying a stud at its upper end, a spring catch fitted to the upper end piece of the frame and adapted to engage with said stud, and a normally-pendent U-shaped loop 20, loosely embracing the movable side of the frame and loosely and pivotally suspended at its extremities from the upper end piece of the frame, said loop being sufficiently heavy to act as a gravity-check for normally returning the movable side toward its catch when released from the latter, substantially as set forth.

574,292. BICYCLE-SUPPORT. DE WITT C. WALLACE, Paducah, Ky., assignor of one-half to Joseph J. Bornschein, same place. Filed May 13, 1896. Serial No. 591,350. (No model.)



Claim.—1. In a bicycle-support, the combination with the slotted tube having a bell-shaped ferrule, the operating-rod and plunger, the supporting-legs attached to said plunger the spreading-spring arranged in the bell-shaped ferrule, and having eyes or loops at each end through which the supporting legs pass, substantially as shown and described.

2. The combination with the tube, slotted as described, having a bell-shaped ferrule, of the plunger and operating-rod, the supporting-legs attached to the plunger, the connecting-pin connecting the tube, the bell-shaped ferrule, the spreading-spring arranged upon said pin, and having eyes or loops at its lower end, the ends of the main tube being slotted within the bell-shaped ferrule, the compound clips for attaching the tube to the machine, and the spring-locking catch carried by the upper clip, and adapted to engage the handle of the operating-rod, substantially as shown and described.

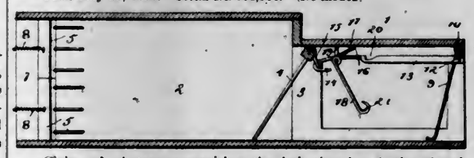
574,293. ADJUSTABLE LANDSIDE-SHOE FOR PLOWS. FRANK E. WERNTZ, Meinert, Mo., assignor of four-fifths to Daniel Ballenger, Ben Ballenger, and William Allan, Golden City, and E. Glammier, Dade County, Mo. Filed July 14, 1896. Serial No. 599,155. (No model.)



Claim.—1. A plow comprising the landside A provided with the recess *a* in which is removably secured the plow-point D, and the dovetail recess a^2, in which is hinged the lug *b* on the forward end of the shoe B, the rear end of which is formed with an integral slotted arm *b'*, by means of which the rear end of said shoe is adjustably secured to said landside by a bolt *c*, substantially as and for the purpose set forth.

2. A plow comprising the landside A provided with the recess *a*, the removable point D secured in said recess by a bolt *a'*, and having the dovetail recess a^2, in combination with the shoe B formed with the integral dovetail lug *b*, the internal slotted arm *b'*, and the landside plate C secured to said shoe by the bolts *c* and *d*, substantially as and for the purpose set forth.

574,294. ANIMAL-TRAP. JOHN M. WILKINSON, Batesville, Ark. Filed July 29, 1896. Serial No. 600,908. (No model.)

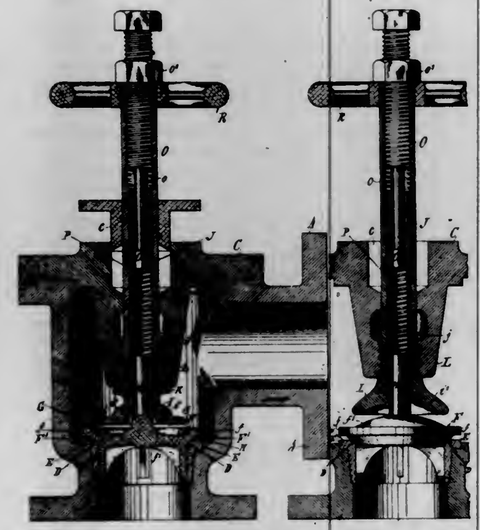


Claim.—1. A trap comprising the bait-chamber 1, the closed chamber 2 provided with the inwardly-opening vertically-hinged doors 5 5 and 6 6 having springs 8, in combination with the grating door 4 in the passage 3, the trap-door 9 having staple 12 to which is pivoted the trip-rod 13 formed with a detent 20, and the bait-trigger

18 fulcrumed in the bracket 19 and provided with the horizontal arm 17 and the depending arm 21 to which the bait is attached, substantially as and for the purpose set forth.

2. A trap comprising the closed chamber 2 provided with the inwardly-opening double doors 5 5 and 6 6, each of which is provided with a spring 8, and the bait-chamber 1 connected to the chamber 2 by a passage 3, a grated door 4, having a staple 15, a trip-rod 13, having a detent 20, and having one end formed with a link 14 connected to the staple 15, and its opposite end pivoted to the staple 12 of the trap-door 9, in combination with the bait-trigger 18, having the horizontal arm 17, the end 16 of which is located in the path of the detent 20, and having depending arms 21, to which the bait is attached, substantially as and for the purpose set forth.

574,295. CHECK-VALVE. JAMES S. WYNDHAM and JOHN H. HALLETT, Cardiff, England. Filed Jan. 24, 1896. Serial No. 576,714. (No model.) Patented in England Nov. 18, 1895, No. 21,922, and Nov. 22, 1895, No. 22,358.



Claim.—The combination of mitered valve-seat, a flange outside the same in the plane of the top of it, a mitered valve, a lip outside the same and projecting therefrom in a plane sufficiently high to stand at a distance above and clear of the top of the above mentioned valve-seat flange when the valve is down on its seat, a spindle standing up from the center of the back of the valve, a tubular spindle adapted to receive the said spindle, an annular cavity in the back of the valve between the crown and the lip of the flange and an adjustable valve-stop of the same diameter as the said annular cavity and presenting a corresponding sectional contour to the said annular cavity and crown.

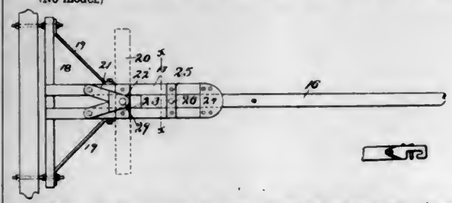
574,296. GATE. ROBERT J. YOUNG, Gardiner, Kans., assignor of one-half to John F. Higgins, same place. Filed Aug. 17, 1896. Serial No. 603,066. (No model.)

Claim.—A swinging gate arranged at its inner or hinged end between spaced posts and provided at its lower inner angle with a double hinge whereby the gate is capable of horizontal and vertical swinging movement, an angular bracket connecting the posts at their upper ends, a horizontally-swinging rocker mounted upon the bracket, approximately coaxially with the vertical spindle of the double hinge, contiguous to the upper inner angle of the gate, a continuous looped truss wire or cable terminally attached to the rocker at opposite sides of its pivotal point and extending loosely at its looped portion through a transverse seat at the outer lower angle of the gate, and a clevis or rider adjustably seated upon the top rail of the gate contiguous to the outer end thereof and provided with terminal hooks engaging the side portions of the truss wire or cable at intermediate points, whereby the sides of the truss-wire extend in approximately horizontal positions from the rocker to the clevis or rider and from thence in downwardly and outwardly inclined directions to the lower outer angle of the gate, substantially as specified.

574,296.

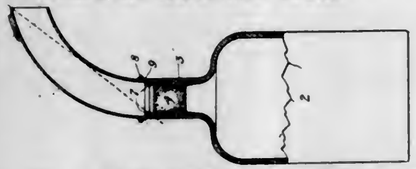


574,297. EXTENSIBLE POLE FOR SEPARATORS. JOHN B. BARTHOLOMEW, Des Moines, Iowa. Filed Apr. 11, 1892. Serial No. 428,602. (No model.)



Claim.—In the running-gear of a threshing-machine, the combination of the hounds 17 17 extending forward from said running-gear, the cross bracing-plates 24 at the front of the hounds, the bracing-plates 25 above and below the hounds and behind the front ends, the straddle bracket 21 having the top plate 29, the straddle-bracket 23, the whiffletree pivoted between the said brackets, and the tongue adapted to be adjusted forward and back in the guideway between the hounds 17 and the bracing-plates 24, 25, and passing freely under the whiffletree and the straddle-brackets, and the bolt 26 for securing it in either of two positions, substantially as set forth.

574,298. NON-REFILLABLE BOTTLE. GEORGE W. BENNETT, Pittsburg, Pa., assignor of one-half to Charles M. Johnson, same place. Filed June 12, 1896. Serial No. 595,345. (No model.)

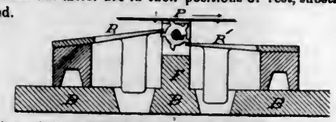


Claim.—1. A bottle provided with a straight neck to receive the cork, an inwardly-projecting annular rib inside of such straight neck, an outwardly-projecting external annular rib, and an extended curved neck above the straight neck, substantially as set forth.

2. A bottle provided with a straight neck to receive the cork, an inwardly projecting annular rib inside of such straight neck, an outwardly-projecting external annular rib immediately above such internal rib, an intervening thin easily-broken portion between such ribs, and an extended curved neck above the straight neck, substantially as set forth.

574,299. MUSIC-BOX. JOSEPH BORNAND, New York, N. Y. Filed May 22, 1896. Serial No. 592,618. (No model.)

Claim.—1. A music-box having a comb and star-wheels in combination with a traveling tune-sheet and a bearing-piece having its bearing-face for the tune-sheet extending beyond the teeth of the star-wheels when the latter are in their positions of rest, substantially as described.



2. A music-box having a comb and star-wheels in combination with a traveling tune-sheet having short projections and adjacent perforations and a bearing-piece having its bearing-face for the tune-sheet extending beyond the teeth of the star-wheels when the latter are in their positions of rest, but the teeth of the star-wheels extending beyond the said bearing-face as the wheels are turned, substantially as described.

3. A music-box having a comb and star-wheels in combination with a traveling tune-sheet having projections, and a bearing-face for the tune-sheet and grooves f^2 into which said projections of the tune-sheet pass, substantially as described.

574,300. OIL-CAN. BENJAMIN BRISCOE, Detroit, Mich. Filed Jan. 10, 1896. Serial No. 574,929. (No model.)



Claim.—1. The combination with a self-righting can, of a valve-controlled spout thereon, a vent-tube extending down beside the spout having an unsealing port therein between its ends, and connected into the air-space in the can, said tube adapted to be sealed by the liquid in the receptacle to be filled, and means whereby said unsealing-port is opened to vent the can upon the righting of the same, substantially as described.

2. The combination with a self-righting pivoted can, of a valve-controlled spout at the front, a rearwardly and downwardly extending vent-tube from the end of the spout to the top of the can, adapted to be sealed by the liquid in the receptacle to be filled, a vent-valve in the vent-tube, closed in the tipped position of the can, and an arm adapted to strike the casing to open the valve in the righted position thereof.

574,301. ELECTRIC-LAMP BASE. WALDO C. BRYANT, Bridgeport, Conn. Filed Oct. 31, 1896. Serial No. 610,737. (No model.)



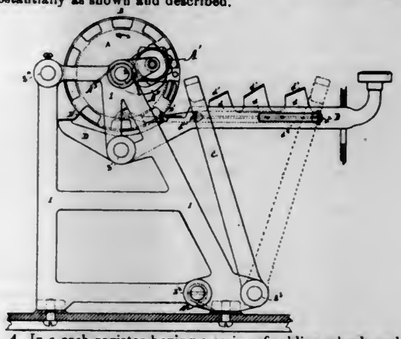
Claim.—A Thomson-Houston incandescent-electric-lamp base of porcelain or other such material having a reduced lower end for the reception of a flanged ring terminal and passages extending from the interior of the hollow base to the reduced end to form lateral openings in the latter, into which the ring-terminal can be indented, all substantially as and for the purpose described.

574,302. CASH-REGISTER. LEE S. BURRIDGE and NEWMAN R. MARSHMAN, New York, N. Y. Filed Dec. 16, 1893. Serial No. 493,867. (No model.)

Claim.—1. The combination of a numeral-adding wheel having teeth cut in the periphery, with an indicator on the same shaft having a pawl engaging in the teeth of the adding-wheel, and a spring impelling the indicator and thereby the adding-wheel substantially as shown and described.

2. The combination of the arm H, small arm h and pin h', with the slotted frame C and slotted sector H', motion being imparted to the frame first and sector afterward as set forth.

3. In a carrying-over device the combination of a frame C having fingers c, with trip-levers adapted to be acted upon by said fingers substantially as shown and described.



4. In a cash-register having a series of adding-wheels and indicators, each marked with the numerals, the combination therewith of a crank-arm, mechanism intermediate of the crank-arm and indicators to return the latter to zero, and the frame C connected to the crank-arm for advancing the adding-wheels, substantially as set forth.

5. The combination with the adding-wheel A, the indicator-wheels B having slots b^4, the disks E having pins e and a series of stops arranged in the path of said pins e to arrest the indicator-wheels, substantially as shown and described.

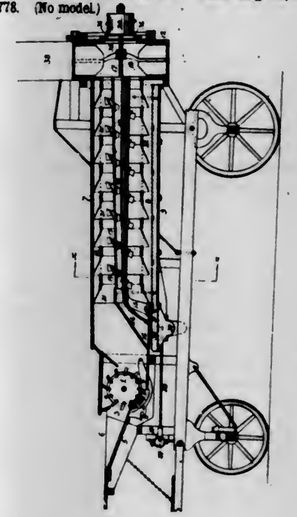
6. The combination of the adding-wheels A, indicators B, mounted on the same shaft as the wheels and key-levers D with the trip-levers d and fingers c all cooperating substantially as shown and described.

7. In a carrying-over device, the combination of the oscillating frame C pivoted near the bottom of the frame of the machine, having fingers c depending therefrom, with trip-levers adapted to be acted on by said fingers, substantially as described.

8. In a cash-register having a series of adding and indicator wheels, each marked with numerals, the combination of a lever H, mounted on a shaft carrying an arm h and pin h', and a frame C having fingers c, and a slot c^3 in which pin h' works, curved for a portion of its length corresponding to the path of said pin h', with a series of key-levers adapted to be operated by the fingers c, substantially as described.

9. In a cash-register having a series of adding and indicator wheels, each marked with numerals, the combination of a lever H, a pin h' deriving motion from said lever, a sector H' having a curved slot H^3 and adapted to return the indicators to zero through intermediate mechanism, and an oscillating frame C operatively connected with said lever H and having fingers c, with a series of trip-levers adapted to be operated by the fingers c, substantially as described.

574,308. THRESHING-MACHINE. WILLIAM H. BUTTERWORTH and JOHN BUTTERWORTH, Trenton, N. J. Filed Aug. 19, 1895. Serial No. 559,778. (No model.)



Claim.—1. A threshing-machine having a cylinder, a concave and a feed-board adjustable vertically with the concave, in combination with side plates inclosing the cylinder, concave and feed-board, those portions of the side plates which inclose the feed-board being separated more widely than those which inclose the concave, and being united thereto by flaring connections, all portions of the side plates, however, being vertical, substantially as specified.

2. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer leading rearwardly therefrom, and a discharge-fan at the rear or delivery end of the conveyer, the casing of the conveyer presenting a series of inclined deflectors with discharge-openings adjacent thereto whereby particles such as grain thrown against the conveyer-casing from the inside will be directed by said deflectors to the outside of the conveyer, substantially as specified.

3. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer leading rearwardly therefrom, and means within said conveyer for throwing the material as it passes through the conveyer outwardly against the sides of the same, said conveyer presenting a series of deflectors with discharge-openings adjacent thereto, whereby particles such as grain thus thrown out against them will be directed to the outside of the conveyer, substantially as specified.

4. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer leading rearwardly therefrom, a discharge-fan at the rear end of said tubular conveyer, and means within the conveyer for throwing outwardly against the inside of the conveyer material passing through the same, said conveyer presenting a series of inclined deflectors with discharge-openings adjacent thereto, whereby material thrown against the deflectors will be directed to the outside of the conveyer, substantially as specified.

5. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer extending rearwardly therefrom, and presenting a series of inclined deflectors with discharge-openings adjacent thereto, means for causing material delivered by the threshing-machine to pass through said tubular conveyer and for throwing said material outwardly against the inside of the conveyer, whereby particles such as grain will be directed by the deflectors to the outside of the conveyer, and a trunk or casing inclosing said conveyer, substantially as specified.

6. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer extending rearwardly therefrom and presenting inclined deflectors with discharge-openings adjacent thereto, means for causing material delivered by the threshing-machine to pass through said conveyer and to be thrown outward against the inside of the same, whereby particles such as grain will be directed by the inclined deflectors to the outside of the conveyer, a trunk or casing inclosing said conveyer, and a sieve in the lower portion of said trunk or casing adapted to receive the material thrown to the outside of the conveyer, substantially as specified.

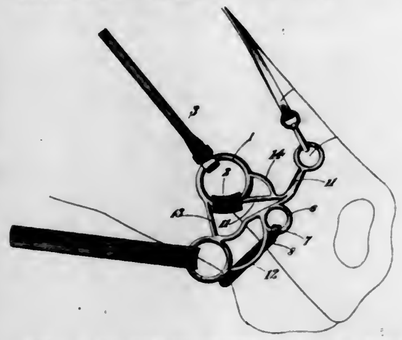
7. The combination in a threshing-machine, of the threshing mechanism, a tubular deflector extending rearwardly therefrom and presenting a series of inclined deflectors with discharge-openings adjacent thereto, a trunk or casing inclosing said conveyer and forming a series of chambers for receiving the discharge from each of the openings of the same, means for providing a regulated flow of air into said chambers, a discharge-fan at the rear or delivery end of the conveyer, and means whereby the material passing through the conveyer is thrown outward against the inside of the same whereby particles such as grain are directed by the inclined deflectors to the outside of the conveyer against the currents of air passing into the conveyer through the grain-discharge openings, substantially as specified.

8. The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer extending rearwardly therefrom and composed of a series of flaring deflectors disposed so that the contracted end of one is adjacent to the flaring end of the next, whereby each deflector is adapted to direct to the outside of the next deflector particles such as grain thrown against it from the inside of the conveyer, and means for causing material from the threshing-machine to pass through the conveyer and to be thrown outwardly against the deflectors, substantially as specified.

9 The combination in a threshing-machine, of the threshing mechanism, a tubular conveyer extending rearwardly therefrom and consisting of a series of inclined deflectors disposed so that the contracted end of one is adjacent to the expanded end of the next, spiders mounted upon the contracted end of each deflector and constituting an end bearing for the expanded end of the adjoining deflector, longitudinal bolts for retaining the deflectors in contact with said spiders, and means for causing the material from the threshing-machine to pass through the conveyer and to be thrown outwardly against the deflectors constituting the same, substantially as specified.

10. The combination in a threshing-machine of the threshing mechanism, a tubular conveyer extending rearwardly therefrom and presenting a series of inclined deflectors with discharge-openings adjacent thereto, whereby particles such as grain thrown outwardly against said deflectors will be directed thereby to the outside of the conveyer, a shaft extending through the conveyer and having beaters thereon, said shaft being located above the bottom of the threshing-cylinder, a bearing for the front end of said shaft, and a deflecting-shield covering the end of the shaft and its bearing whereby the material thrown into the front end of the conveyer by the threshing-machine will be prevented from striking the end of said shaft and its bearing, substantially as specified.

574,304. BRIDLE-BIT. JOHN CRAMER, Lock Haven, Pa., assignor of two-thirds to John C. Shank and Torrence C. Hipple, same place. Filed Apr. 14, 1896. Serial No. 587,437. (No model.)



Claim.—1. In a bridle-bit, the combination with a mouthpiece and cheek-piece, rings secured thereto, of overdraw, chin-straps, and rein-rings secured to the cheek-piece rings, and to one side of the same, substantially as set forth.

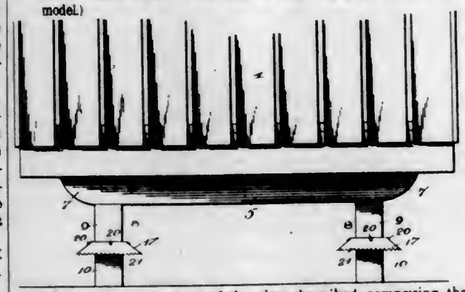
2. In a bridle-bit, the combination with a mouthpiece, and cheek-piece ring secured thereto, of an overdraw-ring above and in front of the mouthpiece, a chin-strap ring below and in front of the mouthpiece, and a depending rein ring, all substantially as set forth.

3. In a bridle-bit, the combination with a mouthpiece, and cheek-piece rings, of three rings carried substantially in line with each other and all three located to one side of the cheek-piece rings, respectively, substantially as set forth.

4. As a part of a bridle-bit, a side piece consisting of a cheek-piece ring and three other rings united together, the three rings being arranged to one side of the cheek-piece ring, substantially as set forth.

5. As a part of a bridle-bit, a side piece composed of a cheek-piece ring, overdraw, chin-strap and rein rings, and a body part uniting the same, of braces connecting the chin-strap, rein and cheek-piece rings, and the body part respectively, substantially as set forth.

574,305. RAT OR VERMIN PROOF BUILDING. JOHN T. CRAWFORD, Wilsonville, Ala. Filed Sept. 15, 1896. Serial No. 605,854. (No model.)



Claim.—1. A structure of the class described, comprising the superstructure, and the sills 5 5 having upwardly-curved ends and connected by the cross-braces 6 6, in combination with the posts 8, consisting of the upper and lower sections 9 10, and the rectangular plate 12 inserted between said sections, substantially as and for the purpose set forth.

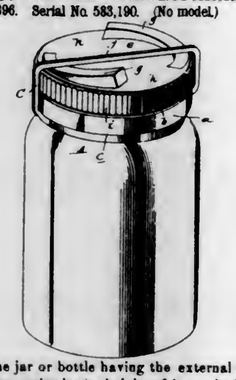
2. A structure of the class described, comprising the superstructure resting on the sills, which in turn rest upon the posts 8 8, each post comprising an upper section 9 and a lower section 10, a rectangular plate 12 secured between said sections and formed with an integral

trough or gutter extending entirely around its outer edge, substantially as shown and described.

3. A structure of the class described, comprising the superstructure, the sills and the posts 8, consisting of the sections 9 and 10, and the rectangular plate provided with the trough or gutter, and the inclined plates 17 hinged to said trough or gutter, substantially as shown and described.

4. A structure of the class described, comprising the superstructure, the sills and the sectional posts 9 and 10, in combination with the plate 12 having trough or gutter 13 formed with sleeves 15, the inclined plates 17 having sleeves 16 hinged thereto by a rod 18 and the springs 19 engaging said gutter or trough and inclined plates substantially as shown and described.

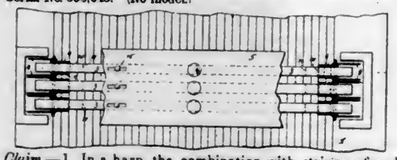
574,306. FRUIT-JAR. JOSEPH L. DE STEIGER, La Salle, Ill. Filed Mar. 14, 1896. Serial No. 583,190. (No model.)



Claim.—The jar or bottle having the external annular flange *a*, at an intermediate point in the height of its neck, forming an upper and a lower shoulder; in combination with the gasket surrounding the neck and arranged on the upper shoulder, the cover adapted to embrace the mouth and having the depending flange *f*, to bear on the gasket on said upper shoulder, and also having the two oppositely-directed curvilinear inclined elevations on the upper side, and the metallic fastener comprising the horizontal portion *j*, and the two depending branches *k*, terminating in the lateral and curvilinear branches turned in opposite directions to engage the lower shoulder of said flange, substantially as specified

---

574,307. HARP. RUDOLF DOLGE, New York, N. Y., assignor to the C. F. Zimmermann Company, Dolgeville, N. Y. Filed Aug. 8, 1895. Serial No. 558,645. (No model.)



Claim.—1. In a harp, the combination with strings, of a shiftable bar or manual, and a swinging support for the bar or manual, substantially as described.

2. In a harp the combination with strings, of bars crossing said strings, and swinging supports for the bars, said bars being made shiftable on the supports substantially as described.

3. In a harp the combination with strings, of bars crossing said strings, and swinging supports to which the ends of the bars are shiftably attached substantially as described.

4. In a harp, the combination with strings, of a shiftable bar or manual, and spring links or supports made to engage the bar clear of or above its damping or contacting face while leaving said bar or manual clear or unobstructed along the line of its damping or contacting face, substantially as described.

5. In a harp the combination with strings, of a swinging spring-support and a shiftable bar carried by the support substantially as described.

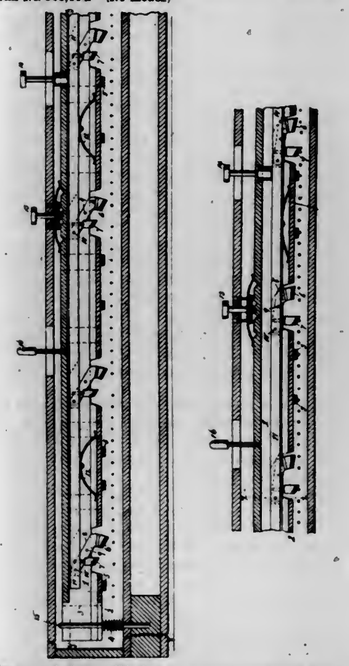
6. In a harp the combination with springs of a shiftable bar, and swinging supports therefor, said supports serving not only to support and permit movement of the bar toward and from the string, but to guide the same while shifting substantially as described.

7. The combination with a stringed instrument, of a bar having a swinging support, and a hammer carried by and independently movable of said bar and adapted to engage or leave open a string or strings substantially as described.

8. The combination with a stringed instrument of a shiftable bar having a swinging support, and a hammer carried by and independently movable of said bar and adapted to engage or leave open a string or strings substantially as described

---

574,308. HARP. RUDOLF DOLGE, New York, N. Y., assignor to the C. F. Zimmermann Company, Dolgeville, N. Y. Filed Sept. 21, 1895. Serial No. 563,194. (No model.)



Claim.—1. A depressible bar or manual combined with individual dampers or contactors (one or more), a depressible link for actuating the individual damper or contactor, and a depressible key or keys for actuating the said link, substantially as described.

2. A hollow or chambered bar or manual provided with a link housed and made depressible in said bar or manual, combined with springs housed in said bar or manual and made to directly support the link, an actuating-key for said link, and dampers or contactors (one or more) actuated by said link, substantially as described.

3. A hollow or chambered bar or manual provided with a depressible link adapted to abut against or be arrested by the top of the bar or manual, combined with springs housed in the lower part of the bar or manual and made to directly support the link for normally holding the latter against the top of the bar, a handle for actuating the link, and dampers or contactors (one or more) actuated by said link, substantially as described.

4. A bar or manual, combined with a group of individually-movable alternating dampers or contactors, and a link common to the alternating dampers or contactors of the group, substantially as described.

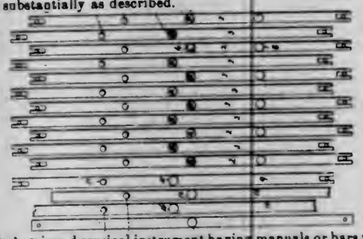
5. A bar or manual provided with a link housed in the bar, dampers or contactors carried by the link, damping or contacting levers fulcrumed to the bar and actuated by the link, and an actuating-handle for the link substantially as described.

6. A bar or manual made depressible or movable toward and from the strings of a musical instrument and provided with a damper or contactor provided with an inclined contacting face and made depressible or movable toward and from the strings in the direction corresponding to the direction of motion of the bar or manual, substantially as described.

574,309. HARP. RUDOLF DOLGE, New York, N. Y., assignor to the C. F. Zimmermann Company, Dolgeville, N. Y. Filed Sept. 26, 1895. Serial No. 563,775. (No model.)

Claim.—1. A stringed musical instrument having manuals or bars

with depressing or actuating handles arranged in a group of three, the center handle being located higher than the outer handles of the group substantially as described.



2. A stringed musical instrument having manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than and out of alinement with the outer handles of the group substantially as described.

3. A stringed musical instrument having shiftable manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than the outer handles of the group substantially as described.

4. A stringed musical instrument having manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than the outer handles of the group, and changing-handles for the bars substantially as described.

5. A stringed musical instrument having manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than the outer handles of the group, and said outer bars being provided with change-handles substantially as described.

6. A stringed musical instrument having manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than and out of alinement with the outer handles of the group, and said outer bars being provided with change-handles substantially as described.

7. A stringed musical instrument having shiftable manuals or bars with depressing or actuating handles arranged in a group of three, the center handle being located higher than the outer handles of the group, and changing-handles for the bars substantially as described.

8. A stringed musical instrument provided with a group of major manuals or bars, and with dominant seventh manuals or bars, said major bars being arranged in a relation of fifths and fourths and provided with minor changes, the depressing or actuating handles of said major bars or manuals being placed below the level of the handles of the dominant seventh bars substantially as described.

9. A stringed musical instrument provided with bars or manuals adapted for silencing or leaving dead certain strings, combined with a general damper bar or manual for silencing all the strings, said general damper bar or manual being provided with an actuated surface located above the level of the other bars or manuals substantially as described.

10. A stringed musical instrument provided with bars or manuals adapted for silencing or leaving dead certain strings, combined with a general damper bar or manual for silencing all the strings, said general damper bar or manual being located at the left of and above the level of the other bars substantially as described.

11. In a stringed musical instrument a damper bar or bars provided with a plurality of depressing or actuating handles one of which is adjustable in height, substantially as described.

12. A damper bar or manual provided with a change-handle made adjustable in height substantially as described.

13. A stringed musical instrument having a group of three manuals or bars for producing dominant, subdominant and dominant seventh chords, the dominant seventh manual being located between the dominant and subdominant manuals substantially as described.

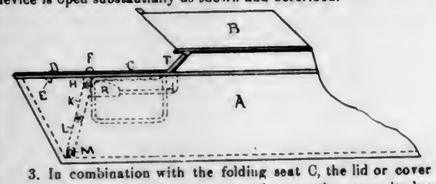
14. A stringed musical instrument having a group of three shiftable manuals or bars for producing dominant, subdominant, and dominant seventh chords, the dominant seventh manual being located between the dominant and subdominant manuals substantially as described

---

574,310. FOLDING SEAT FOR VEHICLES. JAMES A. EDWARDS, Owosso, Mich., assignor, by direct and mesne assignments, to James A. Cooper, same place. Filed Aug. 17, 1896. Serial No. 603,009. (No model.)

Claim.—1. In combination with the vehicle boot, the folding seat C, and the toggle-arms K, L, pivotally connected to each other and to the seat C and the vehicle-body, whereby the seat may be moved back and forth horizontally in a right line, substantially as described.

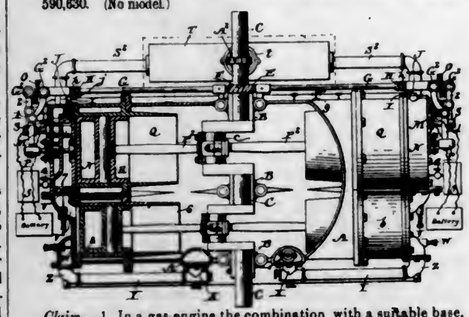
2. The combination of the folding seat C attached to the vehicle-body by suitable hinge connections and the lid or cover D, adapted to give access to the interior of the boot when the device is closed, and to be moved backward and form support for the seat when the device is open substantially as shown and described.



3. In combination with the folding seat C, the lid or cover D connected to the seat by hinge connection carrying upon its lower surface the stop E, such lid or cover adapted to be raised and drawn back over the rear end of the box and the stop adapted to hold the same in position, substantially as shown and described.

4. The combination with a vehicle provided with a fixed front seat B, of a rear folding seat C provided at its free end with an upturned lip or flange T, arranged to form a close connection with the rear of the front seat when the seat C is folded down, and toggle-arms K, L, pivotally connected to each other and to the seat C and the body of the vehicle, substantially as described and for the purpose specified.

574,311. EXPANSION GAS-ENGINE. JOHN W. EISENHUTH, San Francisco, Cal. Filed Oct. 5, 1893. Renewed May 7, 1896. Serial No. 590,630. (No model.)



Claim.—1. In a gas engine the combination, with a suitable base, of an operating-cylinder, a valve-controlled compression-chamber connected to the same, a measuring-cylinder connected to said chamber, a gas-supply connected to said latter cylinder, means for operating the measuring cylinder to force its contents into the compression-chamber, electrodes mounted in the compression-chamber, and a cross-grooved frog-switch connected to the moving parts of the engine and adapted to oscillate one of the said electrodes against and past the other to produce an electric spark, substantially as described.

2. In a gas-engine the combination, with a suitable base, of an operating-cylinder, valves for the same, pivoted levers for operating said valves, a double-faced cam connected to the moving parts of the engine for operating said levers, a valve controlled compression-chamber connected to the operating-cylinder, means for supplying gas in predetermined quantities to said compression chamber, and electrodes mounted in the said chamber for producing a spark therein, substantially as described.

3. In a gas-engine the combination with a suitable base, of an operating-cylinder, a valve-controlled compression-chamber connected to the same, means for supplying gas to said chamber, a longitudinally-moving electrode projecting into said chamber, a spring restraining the movements of the same, an oscillating electrode connected to the movable parts of the machine and adapted to engage, elevate and snap by the spring restrained electrode to produce a spark, substantially as described.

4. In a gas-engine the combination with a suitable base of an operating-cylinder, a valve-controlled compression-chamber connected to the same, a measuring cylinder connected to said chamber, a gas-supply to said latter cylinder, an independent gas-supply to the compression-chamber, electrodes movably mounted in the walls of the compression-chamber, means for operating one of the electrodes by hand and means for connecting one of the electrodes with the moving parts of the engine whereby said electrode is oscillated to produce a sparking in the compression-chamber, substantially as described.

5. In a gas-engine the combination with a suitable base, of an operating-cylinder, a valve-controlled compression-chamber connected to the same, means for supplying gas to said chamber, electrodes mounted in said chamber for producing a spark therein, an operating-lever keyed to one of said electrodes, a hand-operated lever connected to said keyed lever, an operating-lever loosely mounted on said electrode, means for connecting said operating-lever and said keyed lever at will and means for connecting the operating-lever with the moving parts of the engine, substantially as described.

6. In a gas-engine the combination, with a suitable base, of an operating-cylinder, valves for the same, pivoted levers for operating said valves, a double-faced cam connected to the moving parts of the engine and operating said levers, a valve-controlled compression-chamber connected to the operating-cylinder, a condenser also connected to said cylinder, a measuring-cylinder connected to said compression-chamber, a carbureter connected to said measuring-cylinder, means for operating the measuring-cylinder and electrodes mounted in the compression-chamber for producing a spark therein, substantially as described.

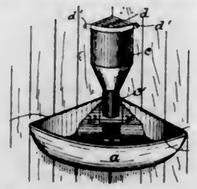
7. In a gas-engine the combination with a suitable base, of an operating-cylinder, a valve-controlled compression-chamber connected to the same, a condenser connected to said cylinder, a pump for creating a vacuum in said condenser, a measuring-cylinder connected to said chamber, means connecting the measuring-cylinder with the moving parts of the engine, electrodes for producing a spark in the compression-chamber, means for operating said electrodes by hand, means for connecting said electrodes to the moving parts of the engine, and a gas-supply to the measuring-cylinder, substantially as described.

8. In a gas-engine, the combination with a suitable base, of an operating-cylinder, a valve-controlled compression-chamber connected to the same, means for supplying gas to said chamber in predetermined quantities, electrodes mounted in the walls of said compression-chamber, means for oscillating one of said electrodes by hand and means connecting said electrode to the moving parts of the engine whereby it is oscillated upon the movement of the same, substantially as described.

9. In a gas-engine, the combination with a suitable base, of a crank-shaft mounted thereon, operating-cylinders having their pistons connected to said crank-shaft so as to alternately operate the same, valve-controlled compression-chambers connected respectively to said cylinders, a condenser connected to said operating-cylinders, a pump operated by the crank-shaft for creating a vacuum in said condenser, measuring-cylinders connected to the respective compression-chambers and having their pistons connected to the crank-shaft, a carbureter connected to said measuring-cylinders, governor-controlled valves for regulating the supply from said carbureter to said measuring-cylinders and electric devices for producing a spark in the compression-chambers, substantially as described.

10. In a gas-engine, the combination with a suitable base, of an operating-cylinder, a valve-controlled compression chamber connected to the same, means for supplying gas to said chamber in predetermined quantities, electrodes mounted in said compression-chamber, means for oscillating one of said electrodes during one-half of the revolution of the engine; said means permitting the electrode to remain stationary during the remainder of the revolution, substantially as described.

574,312. FEED-TROUGH. CHARLES B. EMERY, Boston, Mass. Filed May 8, 1896. Serial No. 590,689. (No model.)



Claim.—1. In a feed-trough, the combination with a bowl, of a removable partition secured thereto and provided at its upper end with a tubular neck adapted to connect with a source of supply substantially as described.

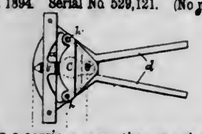
2. In a feed-trough, the combination with a bowl, of a partition having at its upper end a tubular neck provided with a flange adapted to be removably secured to the bowl whereby said partition may be removed, said tubular neck being adapted to connect with a source of supply, substantially as described.

3. In a feed-trough, the combination with a bowl, of inwardly-extending flanges provided with recesses on their opposing faces, a removable partition supported by said flanges and fitting said recesses and formed at its upper end with a tubular neck for connecting with a source of supply, and means for removably securing said partition to said bowl, substantially as described.

4. In a feed-trough, the combination with a bowl, of a removable partition provided at its upper end with a tubular neck, a flange extending from said neck and detachably secured to the bowl, and a feeding-hopper removably connected with said tubular neck, substantially as described.

5. In a feed-trough, the combination of a bowl having a downwardly-inclined bottom, a partition arranged in parallelism with said inclined bottom and formed at its upper end with a tubular neck, a feed-hopper fitted on said neck and provided at its upper end with a grating comprising bars triangular in cross-section having their angular sides arranged uppermost, substantially as described.

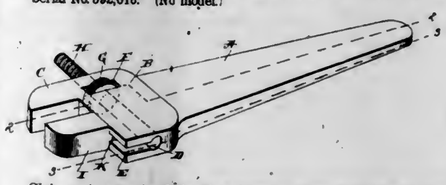
574,313. CARRIAGE-GEAR. WILLIAM H. ENOND, Boston, Mass. Filed Nov. 17, 1894. Serial No. 529,121. (No model.)



Claim.—1. In a carriage-gear, the upper bearing plate provided with one or more reach-sockets, the lower bearing-plate and means for cushioning said plate against the intermediate plate: in combination therewith, the intermediate plate regulated to swing in the sector of a circle whose pivotal point is rearward of the forward axle, all substantially as shown and for the purposes set forth.

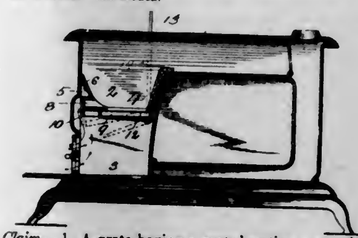
2. In a front carriage-gear, the combination of an upper bearing-plate, an intermediate bearing-plate having a rearward extension, and a safety clamp-plate provided with a cushion of rubber or equivalent material and also provided with a light rearward extension for engaging the king-bolt nut at the turning center, all as shown and described.

574,314. WRENCH. FLETCHER EXELL, San Antonio, Tex., assignor of one-half to P. T. Shields, same place. Filed May 18, 1896. Serial No. 592,016. (No model.)



Claim.—A wrench of the class described, comprising the handle A, the integral head B, and jaw C provided with a rectangular transverse nut-recess F, the rectangular guide-slot E, and the semicircular guide-orifice D communicating with said slot E, in combination with the movable jaw I formed with an integral rectangular web K and a screw threaded shank H and the nut G, substantially as shown and described.

574,315. GRATE FOR STOVES OR FURNACES. EDWARD FALES, Winthrop, Mass. Filed Mar. 27, 1896. Renewed Dec. 3, 1896. Serial No. 614,382. (No model.)



Claim.—1. A grate having a grated section, a movable plate arranged below said section and adapted, in its normal position, to support ashes and prevent the passage of air through the grated section, and means for supplying air above said section.

2. In a grate, the combination of a grated section, a downwardly-swinging plate adapted, in its normal position, to support ashes and prevent the passage of air through the grated section, and means for supplying air above said section.

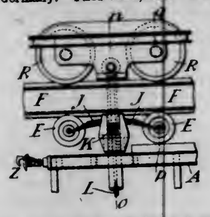
3. A grate having a grated section, an inclined plate and a horizontal plate, said plates being so arranged as to form an air-draft passage above said grated section, and a damper for controlling said passage.

4. A grate having a grate-bar section provided with a depending flange or surrounding ledge, a downwardly-swinging plate pivoted to said ledge, and means for holding said plate in normally-closed

position to prevent the passage of air through the grate-bar section and to support the ashes.

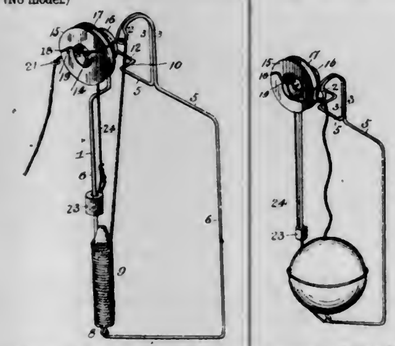
5. A grate having a grate-bar section, a depending flange and an air-inlet above the grate-bar section, a downwardly-swinging plate and a damper, both pivoted to said flange, and, respectively, adapted to control the flow of air through said grate-bar section and through the air-inlet.

574,316. ELEVATED RAILWAY WITH SUSPENDED VEHICLE. WILHELM FELDMANN, Nuremberg, Germany, assignor to Eugen Langen's Erben, Cologne, Germany. Filed Oct. 3, 1896. Serial No. 607,768. (No model.)



Claim.—In suspended vehicles of elevated railways, the combination of guard-rollers E pressed against the under side of the rail by means of springs, such as J, a brake block M, also pressed against the under side of the rail by springs K, which at the same time press the first-named springs J upward, the action of these parts being controlled by a rod L, in such manner that on exerting a certain pull upon the said rod, the brake-block is alone removed from the rail, while on exerting a further pull the guard-rollers are also more or less relieved of the spring-pressure acting upon them, substantially as and for the purposes described.

574,317. TWINE-HOLDER. GEORGE W. FIELDS and VICTOR A. BOYNTON, Shannon City, Iowa. Filed May 23, 1896. Serial No. 592,807. (No model.)

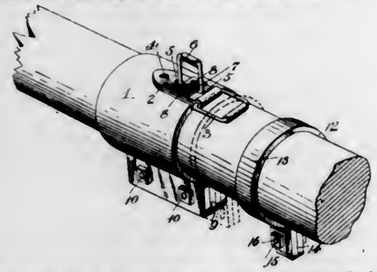


Claim.—1. In a twine holder, the combination with the frame, provided with means for holding a spool or ball of twine or cord, of the large pulley having a peripheral groove, a cord or twine opening and an intersecting slot and the small pulley moving therewith, of the cord secured to said small pulley, the vertically-movable weight through which one of the arms of the frame passes, and the guide-rod formed with a loop; substantially as described.

2. In a twine-holder, the combination with the frame consisting of a single piece of wire bent to form the arms and loops, as described, and the ends twisted together forming a vertical spindle or mandrel, and a shaft or rod, of the large and small pulleys rotatable on said shaft, the large pulley being formed with a peripheral groove, a cord or twine opening, and an intersecting slot, the cord secured to the small pulley, the vertically-movable weight, and the guide-rod formed with a loop; substantially as shown and set forth.

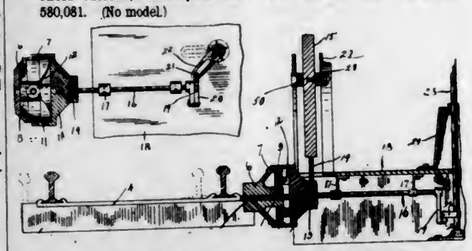
574,318. HOLDBACK FOR BUGGIES. SILAS J. FRIEND and CHARLES P. BROWN, Atwater, Ill. Filed July 24, 1896. Serial No. 600,436. (No model.)

Claim.—1. The combination with the shafts of a buggy or other vehicle, of the holdback consisting of the leather band, the lugs and the screw-bolts, the fastener consisting of the strip bent over upon itself forming a loop to receive a breeching-strap loop, and the upper portion of said fastener formed with a slot, the belly-band loop seated in said slot, the metal plate secured to said fastener for holding the same in place, and the removable and adjustable stop located to the rear of the holdback, substantially as described.



2. In a holdback for vehicles, the combination with the leather strap, of the fastener consisting of a metal plate bent over upon itself, forming a loop, the breeching-strap loop connected therewith, and the upper portion of said plate formed with a slot, the tongue having a groove therein, bent over upon said plate, and the belly-band loop engaging with said groove and slot; substantially as described.

574,319. RAILWAY-SWITCH-OPERATING MECHANISM. JACOB GESSLER, Indianapolis, Ind. Filed Feb. 20, 1896. Serial No. 580,081. (No model.)



Claim.—1. In a switch-operating mechanism, a bar secured to the switch-rails, a stationary disk loosely mounted on said bar beside the railway-track, a separate rotary disk mounted on the bar face to face with the stationary disk and having on its face one or more inclined lugs that engage the stationary disk, and means for actuating the rotary disk.

2. In a switch-operating mechanism, a bar secured to the switch-rails, a stationary disk loosely mounted on said bar beside the railway-track and having mounted in its face friction rollers, a rotary disk mounted face to face with the stationary disk and having on its face one or more inclined lugs that engage the friction-rollers on the stationary disk, and means for actuating the rotary disk.

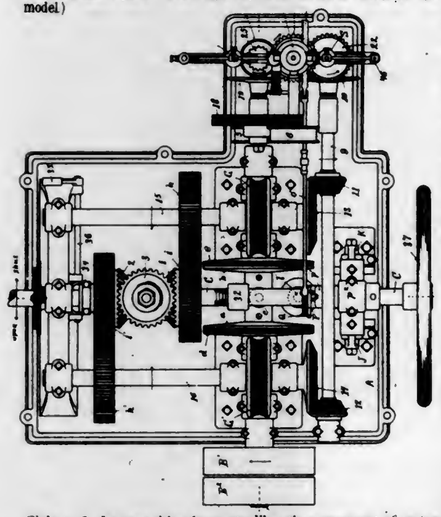
3. In a switch-operating mechanism, a bar secured to the switch-rails with an extension to one side of the track, having a head on its outer end, a rotary disk mounted on the outer end of such extension with a seat for the head on such bar, said disk having on one of its faces one or more inclined lugs, a lever extending up from said disk and attached at its lower end to the disk, means for throwing said lever so as to rotate the disk, a stationary disk mounted face to face with the rotary disk and having in its adjacent face friction-rollers that are engaged by the inclined lugs on the rotary disk.

4. In a railway-switch-operating mechanism, a bar secured to the switch-rails and having an extension to one side of the track, a rotary disk mounted on the extension of said bar having on one face a laterally-extending rim and within the hollow formed by said rim inclined lugs, a stationary disk mounted face to face with the rotary disk and having on the side adjacent to the rotary disk a rim and a hub, the rims of said disks at all times overlapping each other, friction rollers mounted in the stationary disk between its hub and rim, and means for actuating the rotary disk.

5. In a railway-switch-operating device, a suitable switch-shifting mechanism, an upwardly-extending lever secured thereto, means to limit the downward throw of the lever to prevent centering, wheels mounted beside the track on each side of the switch-throwing mechanism, links extending from such wheels to the upwardly-extending lever, and arms extending from such wheels inward toward the track whereby the wheels may be rotated from a moving train and the switch thereby operated.

6. In a railway switch-operating device, a suitable switch-shifting mechanism, a vertical lever connected therewith, means to limit the downward throw of the lever to prevent centering, a wheel mounted some distance from the switch alongside the main track, a link extending from the upper portion of said wheel to the vertical lever, a wheel mounted in the opposite direction beside the side-track, a link extending from the lower portion of said wheel to the vertical lever, and arms extending inwardly toward the track from the upper portion of said wheels whereby the wheels may be rotated from the moving train and thereby the switch is opened by the train as it approaches the same and it closes the switch as it runs in on the side-track and also opens the switch as the train runs off of the side track and closes it as it runs onto the main track.

574,320. ELECTRIC WATER-WHEEL GOVERNOR. ARTHUR GIESLER, Dayton, Ohio, assignor to the Stilwell-Bierce & Smith-Vaile Company, same place. Filed Apr. 20, 1896. Serial No. 588,346. (No model.)



Claim.—1. In a machine for controlling the movement of water-wheel gates, the combination with a governor positively driven by the water-wheel, of two electric circuits the terminals of which are controlled by said governor, mechanism operated by the circuits for actuating gate-operating mechanism in both directions, and means operated by the governor for quickly breaking the circuits to prevent excessive movement of the gate and slowly bring back the parts into position for the next operation, substantially as described.

2. In a device for controlling water-wheel gates, employing a governor operating two circuits, two terminals, two opposing terminals, and mechanism for automatically moving said opposing terminals away from the primary terminals and returning the same to their normal position, which mechanism is brought into operation by the closing of either of said circuits, substantially as specified.

3. In combination with an electric governor operating two circuit-terminals, two electric circuits adapted to be opened and closed thereby, mechanism operated by said circuits controlling a shipping lever for bringing into operation alternate trains of driving-gears driven by a main shaft, mechanism for automatically returning the governor terminals to their normal position, operated through said gate-shaft, substantially as specified.

4. In combination with a governor positively driven, two electric circuits, terminals for said circuits operated alternately by mechanism controlled by the variations of the governor's speed, two secondary terminals supported upon a carrier, two sets of driving mechanism one of which is in continuous operation, and the other mechanism is intermittingly brought into operation by the closing of either circuit, and mechanism operated thereby for returning said secondary terminals to their normal position, substantially as specified.

5. In combination with a positively-driven governor journaled upon a vertically-moving shaft, the movement of which is controlled by the variable governor speed, electric-circuit terminals connected to and operated by said shaft, adjusting mechanism connected to one end of said shaft and operated automatically by a power-gear and lever mechanism to adjust said primary terminals independent of the governor ball adjustment, whereby said terminals are automatically brought into their normal position, substantially as specified.

6. The combination of a positively-driven governor journaled upon a vertically-moving shaft which is raised or lowered by the variable governor speed, circuit-terminals mounted upon a lever operated by said governor-shaft, an independent terminal connected to said lever and adapted to engage at its extreme movement in one direction with the terminal of a branch circuit 42, substantially as specified.

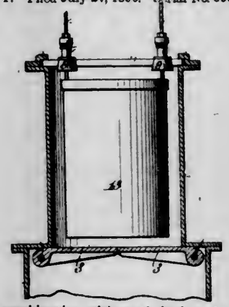
7. In combination with a positively-driven governor journaled upon a vertically-moving shaft, a primary electric-circuit terminal connected to and operated by said shaft, a secondary opposing terminal supported upon a carrier, power mechanism connected to and operated by the mechanism set in motion by the circuit established by the primary terminal, whereby said terminals are moved to and from contact, substantially as specified.

8. The combination of a positively-driven governor journaled upon a vertically-moving shaft which is raised or lowered by the variable governor speed, circuit-terminals mounted upon a lever operated by said governor-shaft, an independent terminal connected to said lever and adapted to engage at its extreme movement in one direction with the terminal of a branch circuit 44, whereby the circuit is maintained and the train of gears for closing the gate is kept in motion, substantially as specified.

9. In a machine for controlling the movement of water-wheel gates, the combination with a governor which controls an electric circuit, of a lever-shipping mechanism operated by said circuit, and adjustable stops for limiting the movement of the shipping lever, substantially as specified.

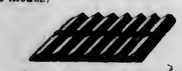
10. In a machine for controlling the movement of water-wheel gates, the combination with a governor which controls an electric circuit, of a lever-shipping mechanism operated by said circuit and a traveling graduated guide moving between said stops and connected with the shipping lever whereby the movements of the electrically-controlled shipping lever are determined by the adjustment of said stops, substantially as specified.

574,321. AIR-LOCK FOR CAISSONS, &c. RICHARD S. GILLESPIE, New York, N. Y. Filed July 27, 1896. Serial No. 600,695. (No model.)



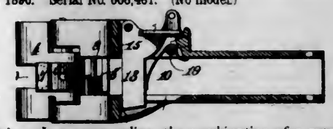
Claim.—The combination with an air-lock casing, of the top sliding doors having inclined or sloping semicircular recesses in their inner edges, a stuffing-box having a conoidal-shaped or tapering portion adapted to seat in said recesses when the doors are closed, and a bucket-hoisting cable extending through the stuffing-box, substantially as described.

574,322. ELECTRODE FOR SECONDARY VOLTAIC BATTERIES. GEORGE A. GRINDLE, Prestwich, England. Filed Oct. 13, 1896. Serial No. 608,735. (No model.)



Claim.—For filling the holes of an electrode plate for a secondary voltaic battery, plugs each consisting of a rolled-up strip of lead, having on its one side transverse ridges and furrows, all the ridges being connected by a central longitudinal ridge, substantially as and for the purpose set forth.

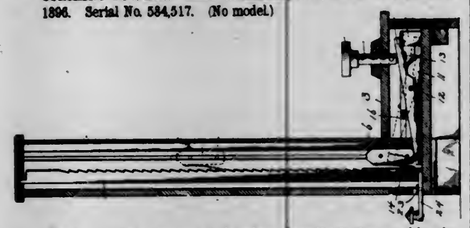
574,323. CAR-COUPLING. CORNELIUS HALPIN, Tarrytown, N. Y., assignor of one-half to Frederick William Smith, same place. Filed Oct. 10, 1896. Serial No. 608,481. (No model.)



Claim.—In a car-coupling, the combination of a recessed draw-head slotted at top and bottom, a pivotal hooked jaw provided with a tailpiece normally projecting across the draw-head mouth and hav-

ing in its end a V-shaped notch with squared vertical sides, a locking-dog pivoted to swing forward and rearward in the slotted and recessed draw-head and adapted to be swung back by said tailpiece and become interlocked with the V-notch therein to secure the hooked jaw in a closed and locked position, a spring to hold the said dog to its engagement with the notched tailpiece, a transversely-arranged pin to support said spring, means for swinging the said dog rearward to release the closed jaw, and a spring to throw the released jaw outward, substantially as shown and described.

574,324. COIN-CONTROLLED APPARATUS FOR TESTING STRIKING POWERS. HANS K. HANSEN, Alta, Iowa. Filed Mar. 23, 1896. Serial No. 584,517. (No model.)



Claim.—1. In a device of the class described, the combination of a vertical post or standard, a sliding indicator mounted thereon, an actuating-lever arranged to engage the sliding indicator and adapted to receive a blow, whereby the indicator is thrown upward, and a movable rack arranged to engage the indicator when thrown upward, to maintain it in an elevated position, and adapted to be moved out of such engagement to return the indicator to its initial position, substantially as described.

2. In a device of the class described, the combination of a vertical post or standard, a vertically-movable indicator mounted therein, an actuating-lever arranged to engage the indicator and adapted to throw the same upward, a resilient pawl carried by the indicator, and a vertically disposed pivotally-mounted rack-bar provided with teeth arranged to be engaged by the pawl to maintain the indicator in an elevated position, said rack-bar being adapted to be turned out of engagement with the pawl to permit the indicator to fall, substantially as described.

3. In a device of the class described, the combination of a frame or casing, a vertical post or standard rising therefrom, a vertically-movable indicator mounted on the post or standard, an actuating-lever fulcrumed intermediate of its ends in the frame or casing and having one end arranged to engage the indicator, a stem loosely mounted in the top of the frame or casing, resting upon the actuating-lever and provided with a head adapted to receive a blow, whereby the indicator is thrown upward, and a coin-operated lever extending beneath the actuating-lever at a point below the stem and forming a stop, substantially as described.

4. In a device of the class described, the combination of a hollow post or standard provided at opposite sides with ways and having a scale, a vertically-movable indicator mounted in said ways and provided with an index finger or pointer arranged adjacent to the scale, a lever fulcrumed intermediate of its ends in the frame or casing, and having its rear end arranged beneath the indicator, a stem mounted on the frame or casing and provided with a head and resting upon the front end of the actuating lever, and a movable rack mounted in the post or standard and arranged to engage the indicator to maintain the latter in an elevated position, substantially as described.

5. In a device of the class described, the combination of a frame or casing, a post or standard, a vertically-movable indicator mounted thereon, an actuating-lever fulcrumed intermediate of its ends and having its rear end arranged beneath the indicator, a spring engaging the front end of the lever and adapted to hold the same normally elevated; a spring-actuated coin-operated lever having one end arranged beneath the front end of the actuating-lever, and a coin-chute terminating above the other end of the coin-operated lever and adapted to direct a coin into engagement with the same, whereby the coin-operated lever is moved from beneath the actuating-lever, substantially as described.

6. In a device of the class described, the combination of a post or standard, a vertically-movable indicator, a movable rack adapted to hold the indicator in an elevated position and provided with an arm or handle, an actuating-lever fulcrumed within the casing and having its rear end arranged to engage the indicator, a coin-operated lever, having one end arranged beneath the front end of the actuating-lever, a cut-off lever arranged beneath the rear end of the coin-operated lever and adapted to support a coin in engagement with the same and connected with the arm or handle, whereby, when the rack is moved out of engagement with the indicator, the support will be withdrawn from the coin to release the coin-operated lever, and a spring for moving the front end of the latter to a position beneath the actuating-lever, substantially as and for the purpose described.

574,325. HAT-MARK. JOSEPH S. B. HARTSOCK, Washington, D. C., assignor to Robert L. Garber, same place. Filed Mar. 12, 1896. Serial No. 582,906. (No model.)



Claim.—1. A hat-mark comprising a body portion having at its upper edge attaching-prongs bent forwardly and downwardly for connecting directly with the upper edge of the sweat-band and having beside the prongs and immediately adjacent to the same hinge-pin sockets formed of the curled upper edge of the body portion, and a reversible label-holder hinged to said upper edge of the body portion on a level with said prongs and sockets and adapted to fold downwardly in front of the sweat-band near its lower edge and a spring for holding the label-holder to its two positions substantially as and for the purpose described.

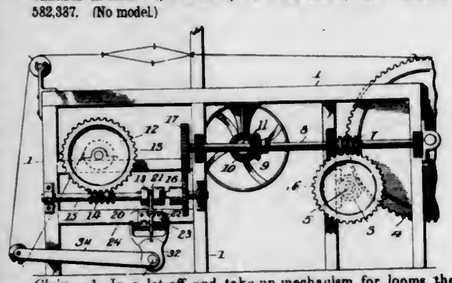
2. A hat-mark comprising a body portion adapted for attachment to the sweat-band and having hinged to its upper edge a reversible label-holder provided at its extreme outer or free edge with pricking-points formed upon the margin of the label-holder substantially as and for the purpose described.

3. A hat-mark comprising a body portion having at its upper edge prongs formed upon the edge of the body portion bent forwardly and downwardly for attachment to the sweat-band and having hinge-pin sockets immediately beside and on the same level as the prongs, a hinge-pin arranged thereon, a label-holder hinged thereupon and having pricking-points formed on the margin of its free or outer edge and a spring for holding the label-holder in its two positions substantially as and for the purpose described.

4. A hat-mark comprising a body portion with prongs *a a* and curled pintle-sockets *a' a'* at its upper end, the pintle-pin *c*, the label-holder B with curled sockets *b' b'*, tongue b^3 and projection b^2, and a spring *d* secured to the body portion and bearing against the tongue to hold the label-holder in its two positions as described.

5. A label for a hat-mark comprising a marginal frame with outturned teeth *s* at its edge, and a ring *r* with intermediate card *b* said ring and marginal frame being connected by prongs or clips substantially as shown and described.

574,326. LET-OFF AND TAKE-UP MECHANISM FOR LOOMS. CHARLES H. HEINDEL, Glen Rock, Pa. Filed Mar. 9, 1896. Serial No. 582,387. (No model.)



Claim.—1. In a let-off and take-up mechanism for looms, the combination with the cloth-winding drum, of a shaft for transmitting motion to said drum, a gear-wheel loosely mounted on said shaft, a driven gear meshing therewith, a clutch to engage said loosely-mounted wheel, a lever connected with said clutch, a shaft, a cloth-stretching beam connected to said shaft and adapted to rotate it, and arms arranged on opposite sides of said lever and connected to said rotating shaft to be oscillated thereby so as to alternately bear against opposite sides of the lever to clutch and unclutch the shaft which

transmits motion to the cloth winding drum, substantially as and for the purpose described.

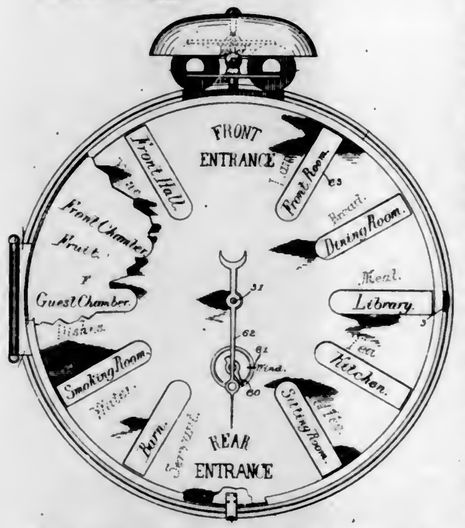
2. In a let-off and take-up mechanism for looms, the combination with the cloth winding drum, of a clutch-shaft for transmitting motion to said drum, a lever connected with the clutch of said shaft, a shaft, a cloth-stretching beam connected to said shaft and adapted to rotate it, arms arranged on opposite sides of said lever and connected to said rotating shaft to be oscillated thereby so as to alternately bear against opposite sides of the lever to clutch and unclutch the shaft which transmits motion to the cloth-winding drum, and means for locking the clutch in opposite positions, substantially as and for the purposes described.

3. In a let-off and take-up mechanism for looms, the combination with the cloth-winding drum and the cloth-stretching beam, of a shaft for transmitting power to said drum provided with a clutch, a pivoted lever connected with said clutch, a locking finger passed through a part of said lever and carried thereby, a rotatable shaft provided with arms one lying on each side of said pivoted lever and actuated by the cloth-stretching beam so as to shift said lever to clutch and unclutch the shaft which transmits motion to the windiag-drum, and a cam actuated from the shaft of the cloth-stretching beam and located to be brought into and out of contact with said locking-finger to retract the same and permit said arms to shift the pivoted lever by contact therewith, substantially as and for the purposes described.

4. In a let-off and take-up mechanism for looms, the combination with the cloth-winding drum and the cloth-stretching beam, of a shaft for transmitting motion to the winding-drum, a clutch for throwing said shaft into and out of operation, a lever for shifting said clutch provided with a foot, a locking-finger movable vertically in the foot of said lever and provided with a projection, a casting formed with arms lying on opposite sides of said lever and having a cam to actuate said locking-finger, and the shaft of the cloth-stretching beam having said casting connected thereto so as to be operated therefrom, substantially as and for the purposes described.

5. In a let-off and take-up mechanism for looms, the combination with the cloth-winding drum and the cloth-stretching beam, of a shaft for transmitting motion to said drum, a clutch for throwing said shaft into and out of operation, a lever for shifting said clutch provided with a foot, a locking-finger movable vertically in the foot of said lever, a locking-plate with which said finger is adapted to engage, a spring for throwing said finger into engagement with said plate, a cam for releasing said finger, and means connected with the shaft of the cloth-stretching beam for shifting said lever, substantially as and for the purposes described.

574,327. ELECTRICAL ANNUNCIATOR. ROBERT L. HUNTER and HENRY B. HIGGINS, Minneapolis, Minn., assignors to the American Signal and Power Company, of Minnesota. Filed Nov. 19, 1895. Serial No. 569,453. (No model.)



Claim.—1. In a bell of the class described, the combination with the magnet having its coils in the battery-circuit, the gong, the armature connected to said circuit, the hammer carried by said armature, the contact-screw connected to said battery-circuit on the other side of the magnet-coils from the armature connection, and the carbon contacts interposed between the armature and screw.

2. In an apparatus of the class described, the combination with the train of gear, its indicating mechanism, the releasing-magnet, its battery, the signal-bell in circuit with said train of gear and the circuit-closers, of the relay-magnet in circuit with said train and its armature, and the make-and-break device operated by said armature, both included in the main-magnet circuit, whereby the closing of the circuit through the train of gear energizes said relay-magnet so as to cut the main magnet out of circuit, and prevent interference with the operation of the apparatus by the actuating of another circuit-closer, either subsequent in time of operation or electrical connection to the circuit-closer first operated.

3. In an apparatus of the class described, the combination with the train of gear, the indicating mechanism, the signal-bell, the main magnet for tripping said train of gear, and the series of push-buttons for closing the circuit through said magnet to release said train, of the relay-magnet in a divided circuit with said train of gear and battery, and having its armature and a make-and-break device operative by said armature in circuit with said main magnet.

4. In an apparatus of the class described, the combination with the battery, the spring-actuated train of gear, its indicating mechanism and the train-releasing magnet, of the signal-bell in circuit alternately with said magnet and with said train, whereby simultaneously with the making of the circuit through said magnet, and so long as the train operates, said bell is sounded, and when said train stops the bell is switched into circuit therewith, so as to continue ringing until the circuit is broken.

5. In an apparatus of the class described, the combination with the battery, the spring-actuated train of gear, its indicating mechanism, the train-releasing magnet, the relay-magnet in circuit with the train, its armature and a make-and-break device operative by the armature both in circuit with the main magnet, and the signal-bell in circuit alternately with the main magnet, and with the train of gear, whereby the signal-bell is operated from the time the circuit is closed through the main magnet until the circuit is broken at the push-button, and the main magnet is cut out of circuit from the time the train is stopped and the indication made until the circuit is broken at the push-button.

6. In an apparatus of the class described, the combination with the battery, the spring-actuated train of gear, the main magnet for releasing the train, the relay-magnet in a divided circuit with said train alternative with the circuit of the main magnet, the relay-magnet armature and a make-and-break device operative by it both in the main-magnet circuit, and the signal-bell alternately in the circuit of the main magnet while energized, and in the circuit of the train when the main magnet is deenergized, whereby the current from said battery is uninterrupted from the time the circuit-closer is actuated until it is released.

7. In an apparatus of the class described, the combination of the open-circuit battery, the train of gear normally out of circuit, but adapted to be switched into circuit therewith in the operation of the machine, its indicating mechanism, the main magnet for releasing the train in the main circuit, the relay-maguet in a divided or secondary circuit with the train, its armature, and a make-and-break device operative by it both in the main circuit, the signal-bell, its magnet in a divided circuit with the main maguet when energized, and in a divided circuit with the train of gear when the magnet is deenergized, its hammer-carrying armature, and the make-and-break device operative by it, both in a branch circuit around the bell-magnet, and the armature of the main magnet arranged in the divided circuit of the signal bell and train of gear, and serving in its operation to switch said bell-maguet from the main circuit to the divided train-circuit, whereby the bell is sounded continuously from the time the circuit-closer is operated until it is released, and the current through the apparatus and the bell is uninterrupted.

8. In an apparatus of the class described, the combination with the train of gear, and its releasiug-magnet, of the secondary magnet in an auxiliary circuit with said train automatically closed by the operation of said train, and its armature and a make-and-break device operative by it both in circuit with the main magnet.

9. In an apparatus of the class described, the combination with the indicating mechanism, its actuating-train, the train-releasing magnet, the signal-bell, the secondary magnet for cutting out the releasing magnet, and the series of circuit-closers, of the battery and its circuits so connected that the current from said battery is uninterrupted during the performance of all the functions of the described parts, and said functions cannot be suspended or interfered with before completion by the actuating of a circuit-closer subsequent in time or in electrical connection with relation to the one first operated.

10. In an apparatus of the class described, the combination with the train of gear, its releasing-magnet and the circuit-closer in circuit therewith, of the secondary magnet in an auxiliary circuit with said train automatically closed by the operation thereof, and the derived

circuit through said secondary magnet automatically closed by its attracted armature.

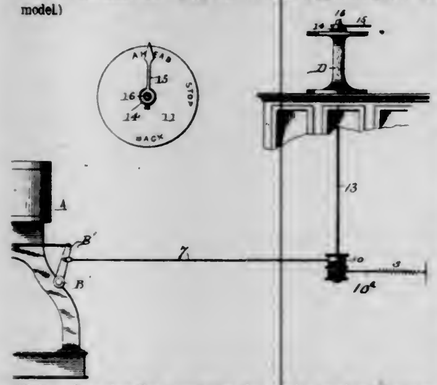
11. In an apparatus of the class described, the combination with the indicating mechanism, its actuating means, the releasing-magnet, the electric signal-bell, and the series of circuit-closers, of the battery and its plurality of circuits in the apparatus, and automatic means for closing one of the circuits before the breaking of another by the operation of the apparatus, so as to maintain an uninterrupted current through the apparatus so long as the circuit-closer is actuated.

12. In an apparatus of the class described, the combination with the train of gear, its releasing-magnet, the circuit-closer, the signal-bell, the secondary magnet in an auxiliary circuit with said train automatically closed by the completion of its operation, its spring-restrained armature, and the switch for connecting said secondary magnet and signal-bell through a derived circuit with the battery, automatically closed by the energizing of said secondary magnet, whereby the same remains closed so long as the battery-current is sufficient to withstand the tension of said armature-spring.

13. In an apparatus of the class described, the combination with the train of gear, its releasing-magnet, the secondary magnet in an auxiliary circuit closed by the completion of the operation of said train, its spring-restrained armature, the alarm and battery in a derived circuit adapted to be closed by said armature when attracted, and the switch for throwing said secondary magnet into said derived circuit, whereby said circuit is closed by the closing of said auxiliary circuit, and remains closed until the battery is weakened sufficiently to allow the spring of said armature to withdraw it from said magnet, and to open said circuit.

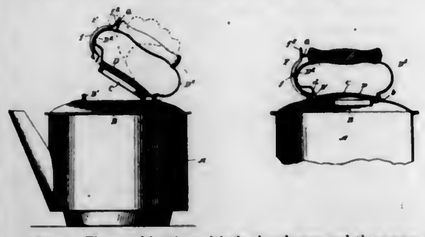
14. In an apparatus of the class described, the combination with the train of gear, the releasing-magnet and the circuit-closer, of a secondary magnet in an auxiliary circuit with said train, automatically closed by the completion of its operation, its spring-restrained armature in the circuit of said releasing-magnet, adapted when drawn to said secondary magnet to open the circuit through said releasing-magnet, an alarm-signal in a derived circuit, adapted to be closed at one point by the attracted armature of said secondary magnet, and the switch for throwing said secondary magnet and its armature into said derived circuit, whereby after the operation of said apparatus the main circuit therethrough is held open, and said derived circuit through said alarm remains closed so long as the battery has sufficient strength to resist the spring of said armature.

574,328. ENGINE-SHAFT-ROTATION INDICATOR. SILAS H. HUNTER, Cleveland, Ohio. Filed Mar. 13, 1896. Serial No. 583,038. (No model.)



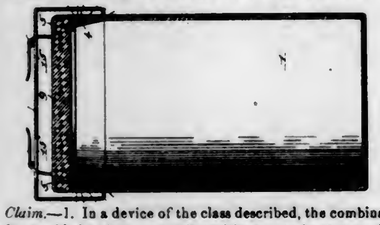
Claim.—In a signaling apparatus for marine engines, the combination with the reversing-arm, of an engine reverse-shaft and a dial-stand situated adjacent to the pilot-house and provided with a suitable indicating-dial and with a vertical-shaft bearing, of a vertical shaft extending through said bearing and between-decks, said shaft having on its upper end a pointer, the free end of which extends beyond the periphery of the dial, a double drum secured to the lower end of the shaft, a cable connected to the reversing-arm and wound around and connected to one section of the double drum, a short cable or strand having one end wound reversely around the other section of the drum and secured thereto, a retracting-spring connected to the other end of the short cable or strand and to a fixed part of the vessel, whereby when the movement of the reversing-arm rotates the drum to move the pointer to a certain point on the dial, the recoil of the spring will exert itself when the arm is moved from such position and turn the drum accordingly, substantially as and for the purpose set forth.

574,329. TEA-KETTLE COVER. EDWIN S. INGALSBE, Wheaton, Kans. Filed May 15, 1896. Serial No. 591,599. (No model.)



Claim.—The combination with the kettle top and the cover, said top having apertured guides at one edge of the opening, of a handle consisting of curved metallic end portions, and the wooden handle member connecting said end portions at the upper end, and the flat bar connecting said end portion to the lower end, said bar being also fixedly connected to the cover, one of said handle ends being hinged to the kettle-top, the other having an apertured lower end adapted to fit between the apertured guides of the top, and the curved lever F pivotally connected to the apertured handle end, its upper end terminating in a thumb-piece, its lower end terminating in the toe portion and adapted to pass through the apertures in the guides and in the handle end, and the spring for normally holding the lever F, to its locked position, all arranged substantially as shown and described.

574,330. JAR-FASTENER. FRANK A. JABERG, New Philadelphia, Ohio. Filed Oct. 8, 1896. Serial No. 608,312. (No model.)

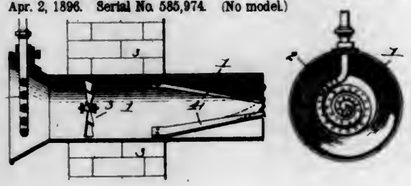


Claim.—1. In a device of the class described, the combination of a body provided at its upper edge with an exterior groove forming a horizontal shoulder and an inwardly-inclined shoulder or face, a cover or lid having a depending flange, an elastic gasket fitting in the groove of the body and comprising a tapering body portion interposed between the said inclined face or shoulder and the flange, and the upper and lower horizontal flanges extending, respectively, inwardly and outwardly and interposed between the upper edge of the body and the cover and between the horizontal shoulder and the flange, and a locking device, substantially as described.

2. In a device of the class described, the combination with the body of a jar or analogous receptacle provided with exterior recesses or grooves, and a cover, of a locking device comprising a frame extending across the cover and engaging the said recesses or grooves, and the oppositely-disposed locking-levers located at opposite ends of the frame, pivoted to the same at points intermediate of their ends and adapted to engage the cover, substantially as and for the purpose described.

3. In a device of the class described, the combination with the body of a jar or analogous receptacle, and a cover, of a locking device comprising a frame extending across the cover, engaging the body and provided at opposite sides with openings, and a pair of locking-levers pivoted intermediate of their ends to the frame at opposite sides thereof and having curved engaging portions operating through the said openings and adapted to engage the cover, substantially as described.

574,331. FURNACE-FEEDING DEVICE. GEORGE R. JARMAN, Richmond, Va., assignor to George A. Lathrop, Jr., same place. Filed Apr. 2, 1896. Serial No. 585,974. (No model.)



Claim.—A furnace-feeding device consisting of an open-ended tube, a steam-jet at the front end of the tube, adapted to inject a jet of steam through the tube and draw air therethrough, and a pair of nozzle-plates inclosed within the tube at its inner end, these nozzle-plates being arranged one above the other and being secured to the tube at their forward ends and converging toward their rear, free ends, said nozzle-plates being malleable to adapt them to be permanently flexed transversely and longitudinally.

574,332. DECORATING INTERIOR WALLS OF HOUSES OR OTHER SURFACES. HENRY M. JOHNSTON, Brooklyn, N. Y. Filed June 11, 1896. Serial No. 595,215. (No specimens.)



Claim.—1. The method of decorating wall or other surfaces, by causing strong pliable fibers with a maximum length of three-quarters of an inch to adhere temporarily to a transfer-surface, and then transferring the so-adherent fibers to the surface to be decorated while the latter is in a sticky condition, in such a manner as to adhere or mainly to adhere throughout their length to said surface in a position parallel or approximately parallel thereto and to leave the ground visible between the fibers, substantially as described.

2. The method of decorating wall or other surfaces, by coating the wall or other surface with a strongly tenacious adhesive liquid or paste, causing strong pliable fibers with a maximum length of three-quarters of an inch to adhere temporarily to a transfer-surface of a material of less adhesiveness than said liquid or paste, and then transferring the so-adherent fibers to the surface to be decorated while the latter is in a sticky condition, in such a manner as to adhere or mainly to adhere throughout their length to said surface in a position parallel or approximately parallel thereto and to leave the ground visible between the fibers, substantially as described.

3. An article surfaced with hardened adhesive material and having separated fibers of a strong pliable nature with a maximum length of three-quarters of an inch overlying the said hardened material and adhering thereto throughout or mainly throughout their length in a position parallel or approximately parallel to the surfaces of said article, leaving the ground visible between the fibers, substantially as described.

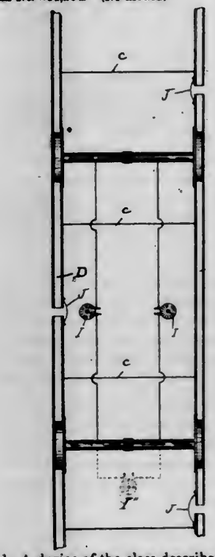
4. An article surfaced with a transparent or translucent coat of hardened adhesive material and having separated fibers of a strong pliable nature with a maximum length of three-quarters of an inch overlying the said coat and adhering throughout or mainly throughout their length in a position parallel or approximately parallel to the surface of said article, leaving the ground visible through said coat between the fibers, substantially as described.

5. An article surfaced with a hardened adhesive material and colored with paint or color and having separated fibers of a strong pliable nature with a maximum length of three-quarters of an inch overlying the said hardened material and adhering throughout or mainly throughout their length in a position parallel or approximately parallel to the surface of said article leaving the painted or colored ground visible between the fibers, substantially as described.

6. An article surfaced with hardened adhesive material and having separated fibers of a strong pliable nature with a maximum length of three quarters of an inch overlying the said hardened material and adhering thereto throughout or mainly throughout their length in a position parallel or approximately parallel to the surface of said article, leaving the ground visible between the fibers, the said ground and said fibers being different in color so as to contrast more or less with each other, substantially as described.

7. An article surfaced with hardened adhesive material and having separated fibers of a strong pliable nature, with a maximum length of three quarters of an inch and a minimum length sufficient to give a definite thread-like appearance such as about a sixteenth of an inch, overlying said hardened material and adhering thereto throughout or mainly throughout their length in a position parallel or approximately parallel to the surface of the said article, said fibers arranged relatively to each other to leave the ground between them visible and crossing one another to give an effect of interlacing, substantially as described.

574,333. MECHANISM FOR LOCATING AND DETERMINING DEFECTS IN RAIL-BONDING. PIERRE O. KEILHOLTZ, Baltimore, Md., assignor of one-half to James F. Heyward, same place. Filed Feb. 29, 1896. Serial No. 581,294. (No model.)



Claim.—1. A device of the class described comprising a series of contacts connected in pairs through potential indicating or recording instruments and electrical conductors, each pair of contacts being arranged to make sliding or rubbing contact at simultaneously-corresponding points of a separate conductor.

2. A device of the class described comprising a series of contacts connected in pairs through the medium of potential indicating or recording instruments and electrical conductors, said pairs being adapted to connect an electric current in parallel, each pair of contacts being arranged to make sliding or rubbing contact at simultaneously-corresponding points on a separate conductor.

3. A device of the class described comprising a series of contacts connected in pairs and adapted to make contact with electrical conductors and means for comparing the difference of potentials between each pair under working conditions, each pair of contacts being arranged to make sliding or rubbing contact at simultaneously-corresponding points on a separate conductor.

4. A device of the class described comprising a series of contacts arranged in pairs, and adapted to make contact with electrical conductors, and means for determining the difference of potential in said conductors between said pairs, said pairs being arranged in parallel, each pair of contacts being arranged to make sliding or rubbing contact at simultaneously-corresponding points on a separate conductor.

5. A device of the class described comprising a series of contacts connected in pairs to make connection with electrical conductors along which they are adapted to be moved, means for showing the difference in potential between the points of contact of each pair, and means for determining the movement of the contacts, each pair of contacts being arranged to make sliding or rubbing contact at simultaneously-corresponding points on a separate conductor.

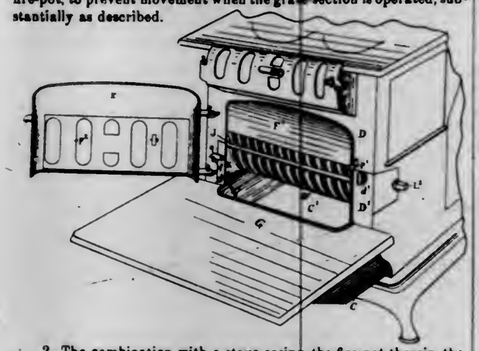
6. A device of the class described comprising a framework provided with wheels arranged in pairs adapted to bear upon the rails of a railway, the wheels of each pair being insulated from each other, and galvanometers connected with each pair of a line of wheels.

7. A device of the class described comprising a framework provided with moving contact-points arranged in pairs and adapted to engage the rails of a railway, the points of each pair being insulated from each other and galvanometers connected with each pair of alined points.

574,334. STOVE. THOMAS R. KENNEDY, Rochester, N. Y. Filed Jan. 20, 1896. Serial No. 576,176. (No model.)

Claim.—1. The combination with the stove-casing, the fire-pot therein, the ash-pit and ways at the sides thereof extending out beyond the stove-casing, of a grate-frame independent of the fire-pot, having one or more movable grate-sections therein, said grate frame being movable on the ways and beneath the fire-pot, and detachable locking devices for fastening the grate-frame in position beneath the

fire-pot, to prevent movement when the grate-section is operated, substantially as described.



2. The combination with a stove-casing, the fire-pot therein, the ash-pit and ways at the sides thereof extending out beyond the stove-casing, of the frame having the shaking and dumping grate-section therein and movable on the ways and beneath the fire-pot, the ash-pit door hinged to the casing, securing devices therefor, and the stove-casing section engaging the grate-frame and engaged and held by the ash-pit door, substantially as described.

3. The combination with the stove-casing, the fire-pot therein, the ash-pit and ways at the sides thereof extending out beyond the stove casing, of the frame movable on the ways and having the movable grate therein provided with the extended operating-shaft L^3, a catch between the grate-frame and casing, the removable casing-section D', and a fastening device therefor, substantially as described.

4. The combination with the stove having the ways extending out beyond the casing and at the sides of the ash-pit, of the grate-frame movable on the ways, the movable grate thereon having the operating-shaft extension, the removable casing-section, and securing devices for attaching it to the stove-casing, substantially as described.

5. The combination with the stove, having the fire-pot, the ash-pit and supports at the sides thereof, of the removable grate-frame, having the end plates resting and movable upon the supports, and the lugs in the stove-casing engaging the end plates of the grate-frame when the frame is in the casing to prevent warping, substantially as described.

6. The combination with the stove having the fire-pot, the ash-pit extended as shown, the ways at the side of the ash-pit, and the movable hearth plate, of the grate-frame sliding on the ways, and having the movable grate-sections and the operating-shaft, the removable casing-section D', the catch d', the catch e, and the ash-pit door, substantially as described.

574,335. COMBINED OIL-CAN AND TORCH. THOMAS W. KESTER, Treichler, Pa., assignor of one-half to A. L. Lentz, same place. Filed Mar. 4, 1896. Serial No. 581,775. (No model.)

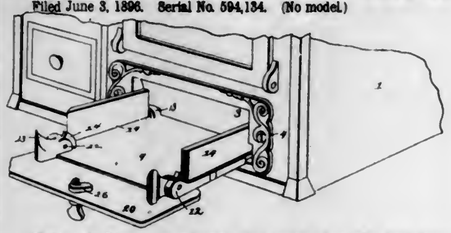


Claim.—1. The combination with the oil-can spout and nozzle, of the transverse locking-bar K, attached to the handle of oil-can, the detachable reservoir-spout and wick-tube, and the locking-bail I, having its upper member i', rigidly attached to the reservoir, and its ends i^3, bent to engage the bars K, all arranged substantially as shown and described.

2. In an oil-can of the kind described, the combination with the can and lock-bar, of the handle of the detachable torch having a spring-bail adapted to engage said lock-bar, the finger of said torch and the guide-sleeve upon the oil-can adapted to receive said finger, substantially as shown and described.

3. An improved detachable torch adapted to be attached to oil-cans of the kind described, said torch comprising a reservoir, spout, tube, and the wick-tube detachably connected to said spout-tube, the spring bail rigidly connected at its upper end to said reservoir, the free ends of said bail being bent as shown and adapted for engagement with the lock-bar on the handle of the oil-can, substantially as shown and described.

574,336. STOVE OR RANGE. MAX M. KOCH, Cleveland, Ohio. Filed June 3, 1896. Serial No. 594,134. (No model.)



Claim.—1. In a stove or range, the combination of a body having a flue or space where soot is deposited and an opening in one of its walls communicating with such space, a door for closing said opening and an imperforate apron connected with said door and adapted when the door is opened to receive soot from the space in the body and facilitate the discharge of the same into a receptacle, substantially as specified.

2. In a stove or range, the combination of a body having a flue or space where soot is deposited and an opening in one of its walls communicating with such space, a door for closing said opening, and an apron connected with said door and having guards; said apron being adapted when the door is opened to receive soot from the space in the body and facilitate the discharge of the same into a receptacle, substantially as specified.

3. In a stove or range, the combination of a body having an opening in one of its walls, an apron arranged and adapted to be moved in said opening, and a door connected at an intermediate point of its width in a hinged manner with the outer end of the apron so as to enable it to assume and remain in a horizontal position; said door being also adapted to close the opening in the wall of the body, substantially as specified.

4. In a stove or range, the combination of a body having an opening in one of its walls, a movable apron arranged in said opening and guards connected in a hinged manner with the apron, substantially as specified.

5. In a stove or range, the combination of a body having an opening in one of its walls, a movable apron arranged in said opening, guards connected in a hinged manner with the apron, and a door connected with the apron and equipped with devices for raising the guards, said door being also adapted to close the opening in the body, substantially as specified.

6. In a stove or range, the combination of a body having an opening in one of its walls, a movable apron arranged in said opening, guards connected in a hinged manner with the apron, and a door connected with the apron and equipped with devices for raising the guards, and devices for lowering the guards; said door being also adapted to close the opening in the body, substantially as specified.

7. In a stove or range, the combination of a body having an opening in one of its walls, an apron, guards connected in a hinged manner with the apron, and a device connected in a hinged manner with the apron and engaging the guards, substantially as and for the purpose set forth.

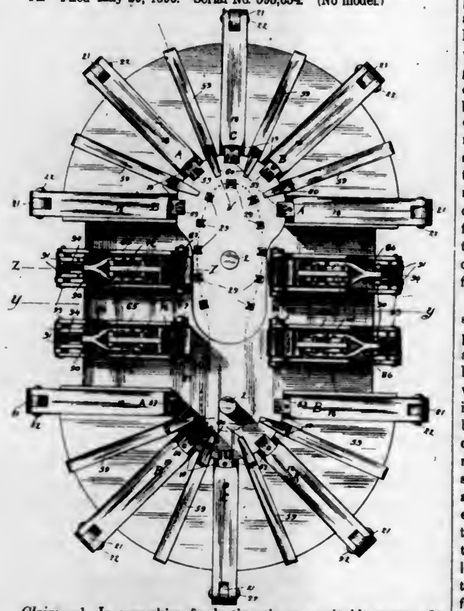
8. In a stove or range, the combination of a body having an opening in one of its walls and also having guideways, an apron movable in said guideways and having a recess 19, guards connected in a hinged manner with the apron, one of said guards having a projection 18, and a door connected with the apron and equipped with devices for raising the guards when the door is opened, substantially as and for the purpose set forth.

9. In a stove or range, the combination of a body having an opening in one of its walls and inwardly-extending flanges at opposite ends of the opening provided with guideways, an apron movable in said guideways and having a recess 19, guards connected in a hinged manner with the apron, one of said guards having a projection 18, and a door connected with the apron and equipped with devices for raising the guards when the door is lowered, substantially as specified.

10. In a stove or range, the combination of a body having an opening in one of its walls, an apron, guards connected in a hinged manner with the apron and having their outer ends beveled, and a door

also connected in a hinged manner with the apron and having cam portions adapted to engage and raise the guards and cam portions adapted to engage and lower the guards, substantially as specified.

574,337. SHOE-MACHINE. JULIUS KOTZLOVSKY, Philadelphia, Pa. Filed May 29, 1896. Serial No. 593,654. (No model.)



Claim.—1. In a machine for lasting shoes, a suitable support for the last, means for clamping said last in position upon said support, a series of stretchers for drawing the leather downward and into conformity with the shape of the last, a series of clamp-bars arranged radially about the heel and toe of said last, means for moving said bars to and from the last, a series of folding-bars for turning the depending edges of the leather inward against the under surface of the last or insole carried thereby, a series of shoes 76 adapted to bear against the shank of the last, a series of shoes 88 to bear and move upon the surface of the last or the material placed thereon and means for bringing about the operation, substantially as shown and described.

2. In a machine for lasting shoes, a frame for supporting the operating parts thereof, supports projecting upward from said frame upon which the last may be placed, means for clamping said last upon the supports, a series of clamp-bars adapted to slide in suitable bearings and be brought into contact with the leather upon the last, a series of crimping-bars for turning certain portions of the depending leather inward, a series of folding-bars for carrying said leather inward against the insole carried by the last, and means for effecting these movements, substantially as shown and described.

3. In a machine for lasting shoes, a frame for supporting the operating parts thereof, supports projecting upward from said frame upon which the last may be placed, means for clamping said last upon the supports, a series of clamp-bars adapted to slide in suitable bearings and be brought into contact with the leather upon the last, a series of crimping-bars for turning certain portions of the depending leather inward, a series of folding-bars for carrying said leather inward against the insole carried by the last, a series of shoes 76, means for bringing said shoes into conjunction with the shank of the last, a series of shoes 88 adapted to bear and move upon the surface of the last or material placed thereon, and means for bringing about the operations of the machine, substantially as shown and described.

4. In a machine for lasting shoes, a frame for supporting the operating parts thereof, supports projecting upward from said frame upon which the last may be placed, means for clamping said last upon the supports, a series of clamp-bars adapted to slide in suitable bearings and be brought into contact with the leather upon the last, a series of crimping-bars for turning certain portions of the depending leather inward, a series of folding-bars for carrying said leather inward against the insole carried by the last, a series of shoes 76, means for bringing said shoes into conjunction with the shank of the last, a series of shoes 88 adapted to bear and move upon the surface of the last or material placed thereon, a cam-shaft carrying a series of cams and cam-disks, means for starting and stopping said shaft, and means for transmitting motion from said cams to the mechanisms for operating upon the shoe, substantially as shown and described.

5. In a machine for lasting shoes, the combination of a frame, supports projecting upward therefrom adapted to receive the last, a presser-rod, means for depressing said rod into contact with the last, a clutch for holding said rod in contact with said last, means for releasing said clutch, a lever 123 adapted to be swung into engagement with the fore part of the last, a series of stretchers having jaws for grasping the depending edges of the leather upon the last, means for effecting the movements of said jaws and stretchers, a series of clamp-bars arranged radially about the heel and toe of the last, means for carrying said bars into contact with the material upon the last, a series of crimping-bars adapted to crimp the leather against the under side of the last or insole carried thereby, a series of folding-bars adapted to fold said leather after it has been crimped, means for effecting these movements, tilting frames, pivoted upon each side of the last, shoes carried by a series of spring-actuated levers pivoted to said tilting frames, a series of shoes 88 also carried by a series of levers pivoted to said tilting frames, means for tilting said frames, and means for operating the shoes 88 independent of the movements of the tilting frames, substantially as shown and described.

6. In a machine for lasting shoes, the combination of a frame, supports projecting upward therefrom adapted to receive the last, a presser-rod, means for depressing said rod into contact with the last, a clutch for holding said rod in contact with said last, means for releasing said clutch, a lever 123 adapted to be swung into engagement with the fore part of the last, a series of stretchers having jaws for grasping the depending edges of the leather upon the last, a series of clamp-bars arranged radially about the heel and toe of the last, means for carrying said bars into contact with the material upon the last, a series of crimping-bars adapted to crimp the leather against the under side of the last or insole carried thereby, a series of folding-bars adapted to fold said leather after it has been crimped, means for effecting these movements, tilting frames, pivoted upon each side of the last, shoes carried by a series of spring-actuated levers pivoted to said tilting frames, a series of shoes 88 also carried by a series of levers pivoted to said tilting frame, levers 79 connected by links 82 to the last-named levers, rods 97 pivoted to the levers 79, and means for operating the machine, as and for the purpose described.

7. In a device of the character described, a presser-rod composed of a frame, a spring-pressed rod slidable therein, a handle on the rod, a tapering plug formed of two sections fitting in a tapering aperture of the frame and surrounding the rod, a lever pivoted to the frame, and connected to said plug, a spring-pressed bell-crank lever also pivoted to the frame, a rod connecting the two levers and means for operating the bell-crank lever against the action of its spring, as and for the purpose described.

8. In a device of the character described, an upright having a passage therethrough, a movable spring-pressed bottom in the passage a folding bar slidable on the bottom, a clamping-bar slidable on the folding-bar, a cam-nose on the end of the folding-bar adapted to slide beneath the edge of the last against the action of the spring-pressed bottom as and for the purpose described.

9. In a device of the character described, an upright having a passage therethrough, a movable bottom in the passage, a spring-pressed button in the passage beneath said bottom, a folding-bar slidable on the bottom, a clamping-bar slidable on the folding-bar, a cam-nose on the end of the folding-bar adapted to slide beneath the edge of the last against the action of the spring-pressed button and means for operating the folding-bar and the clamping-bar, as and for the purpose described.

10. In a device of the character described, a rocking frame pivoted to the frame of the machine, two parallel upright levers pivoted to the rocking frame, two parallel levers pivoted to the upright levers a shoe pivoted to the second pair of parallel levers and adapted to bear on the side of the last when the frame is rocked and means for rocking the frame, as and for the purpose described.

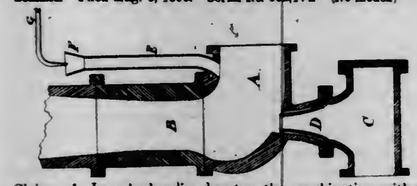
11. In a device of the character described, a rocking frame pivoted to the frame of a machine, a spring-actuated bell-crank lever pivoted to the rocking frame, a lever pivoted to the rocking frame, a link connecting the lever to the bell-crank lever, a spring-pressed arm pivoted to the lever, a shoe pivoted to the end thereof, a link connecting the shoe and lever, a link connected to the arm and slidably connected to the rocking frame and means for operating the rocking frame and bell-crank lever, as and for the purpose described.

12. In a device of the character described a drive-pulley, a shaft on which said pulley is journaled, a clutch connecting the pulley to the shaft, a worm on the shaft, a worm-wheel operated thereby a spring pressed rod connected to the movable member of the clutch, a lever pivoted to the frame of the machine having its end connected to the rod, a bell crank treadle connected to the lever, a catch for

holding the treadle in its operative position and a releasing mechanism for automatically removing the catch, as and for the purpose described.

13. In a device of the character described, a shaft, a drive-pulley journaled thereon, a clutch connecting the pulley to the shaft, a worm on the shaft, a worm-wheel operated thereby, a spring-pressed rod connected to the movable member of the clutch, a lever pivoted to the frame of the machine having its end connected to the rod, a bell-crank treadle connected to the lever, a catch for holding the treadle in its operative position, a pin carried by the worm-wheel, a lever pivoted to the frame having its end projecting in the path of the pin and adapted to release the catch when engaged thereby, as and for the purpose described.

574,338. HYDRAULIC ELEVATOR. GEORGE LEE, Dunedin, New Zealand. Filed Aug. 8, 1896. Serial No. 602,174. (No model.)

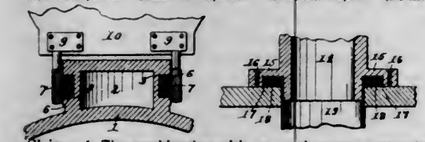


Claim.—1. In a hydraulic elevator, the combination with the elevator-pipe having an oval-shaped intake, of a jet communicating with said pipe, said jet being arranged at a right angle to the major axis of the oval-shaped intake, substantially as shown and described and for the purpose specified.

2. In a hydraulic elevator, the combination of an oval opening A, with a pipe for the introduction of air under pressure E, F, G, substantially as shown and described.

3. In a hydraulic elevator, the combination with an elevator-pipe having a contracted throat B and an oval-shaped intake A, of a jet D communicating with said elevator-pipe, said jet being arranged at a right angle to the major axis of the intake and in alinement with the elevator-pipe, substantially as shown and described and for the purpose specified.

574,339. WATER-CLOSET APPARATUS. CHARLES H. MOORE, New York, N. Y. Filed Oct. 19, 1895. Serial No. 566,260. (No model.)



Claim.—1. The combination with an earthenware water-closet, of apertures made in the vertical sides of a portion of the closet projecting out from the rear of the bowl, hinge fittings having the top portion secured to the seat, and each having a separate pintle secured to the closet and central with the apertures and secured within them, and a seat secured to the hinges as and for the purpose set forth.

2. The combination with an earthenware water-closet, of a chamber or receptacle made on the back of the bowl or closet and having an aperture in each of the vertical sides but not extending through the walls of the said vertical sides, hinge-fittings having their pintles operating in the said apertures, and a seat secured to the hinge fittings.

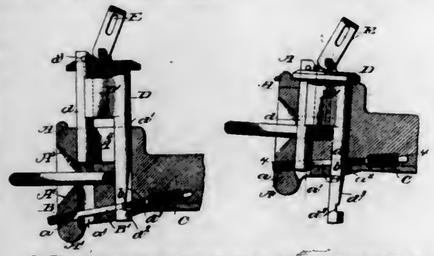
3. The combination with an earthenware water closet bowl, of a chamber or receptacle made on the back of it of less length than the width of the bowl and having an aperture in it at each side, a rubber ring fitted in each of the apertures, a ferrule fitted in each of the rubber rings, hinge-fittings having their pintles operating in the ferrules, and a seat secured to the hinges as and for the purpose set forth.

4. The combination with an earthenware water-closet having an earthen flange or foot on the discharge-limb, of a metal fitting 17 cemented to the discharge limb under the earthen flange, and a metal fitting or floor plate 18 arranged to be secured to the soil-pipe 19 and fitted to the metal fitting 17 so as to admit the closet to be secured to the soil-pipe 19 and form a perfect joint.

574,340. CAR-COUPLING. VALLOO V. MOORE, Baraboo, Wis. Filed May 12, 1896. Serial No. 591,224. (No model.)

Claim.—1. In a car-coupling, the combination of the draw-bar, and the pin having front detachable stem *d*, rear stem *d'* and web D'; with a spring-actuated catch projecting beyond the front end of the draw-bar adapted to engage a notch in the rear stem when the pin is raised, substantially as and for the purpose described.

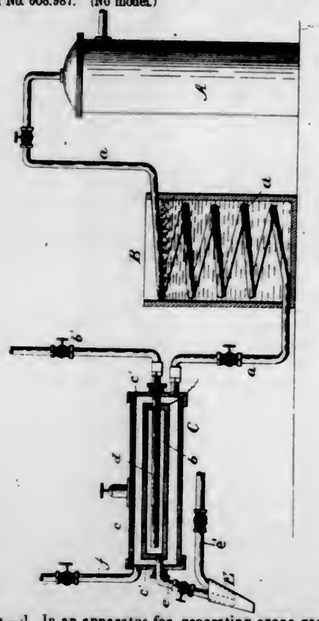
2. In a car-coupling, the combination of the draw-bar, and the pin having front and rear stems, the latter being notched in its lower end; with the slotted spring-actuated plate B below the floor of the draw-bar, and projecting beyond the front end thereof, adapted to engage the notch in the rear stem when the pin is raised, substantially as and for the purpose described.



3. The combination of the draw-bar A having bevels A^3, A^3, and slot A^4, and openings a', a^3, with the pin D, having stems *d*, *d'*, and web D', and the spring-catch for upholding said pin, all substantially as and for the purpose set forth.

4. The combination of the draw-bar A having slot A^4, openings a', a^3, and the slot *a* below the mouth of the draw-bar; and the plate B having slot B' and the spring C, substantially as described; with the pin D having stems *d*, *d'*, and web D', and the link-lifting devices, all substantially as and for the purpose set forth.

574,341. APPARATUS FOR GENERATING OZONE. MARSHALL PRIDHAM, Philadelphia, Pa., assignor to the Electric Rectifying and Refining Company, Camden, N. J. Original application filed Sept. 12, 1896, Serial No. 605,632. Divided and this application filed Oct. 15, 1896. Serial No. 608,987. (No model.)



Claim.—1. In an apparatus for generating ozone gas, the combination of separated casings, one being dielectric, each provided with a thin-sprinkled coating of powdered or granular conducting material, suitable for producing an electrical brush-discharge, the dielectric being between the coatings, means for causing a flow of oxygen through the space between said casing, and means for conveying an electric current to one and away from the other of said coatings, substantially as specified.

2. In an apparatus for generating ozone gas, the combination of separated casings, one being dielectric, and each having a thin-sprinkled coating of powdered or granular conducting material suitable for producing an electrical brush-discharge, the dielectric being between the coatings, means for causing a flow of oxygen gas through the space between said casings, and means for reducing the temperature of said gas before it enters the generator, substantially as specified.

3. In an apparatus for generating ozone gas, the combination of separated casings, one being dielectric, and each having a thinly-sprinkled exterior coating of powdered or granular conducting material suitable for producing an electrical brush-discharge, means for conveying an electrical current to one and away from the other of said coatings, means for causing a flow of oxygen gas through the space between the casings, and means for maintaining said gas at a low temperature during its passage, substantially as specified.

4. In an apparatus for generating ozone gas, the combination of separated casings, one being dielectric, and each provided with a thinly-sprinkled exterior coating of powdered or granular conducting material suitable for producing an electrical brush-discharge, means for conveying an electric current to one and away from the other of said coatings, means for causing a flow of oxygen gas through the space between the casings, means for reducing the temperature of said gas before it enters the generator, and means for maintaining such low temperature of the gas while it is passing through the generator, substantially as specified.

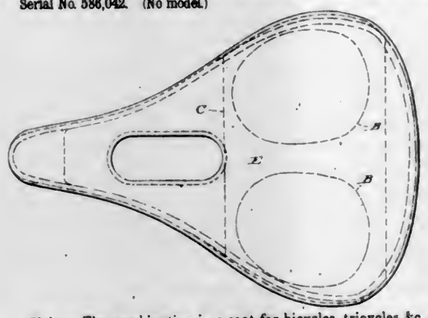
5. In an apparatus for generating ozone gas, the combination of an inner and outer casing separated from each other, the outer casing being dielectric, and each having a thinly-sprinkled exterior coating of powdered or granular conducting material suitable for producing an electrical brush-discharge, with an inlet for admitting oxygen gas to the space between the inner and outer casing, an outlet from said space, and connections between the conducting-coatings and a suitable generator of electricity, substantially as specified.

6. In an apparatus for generating ozone gas, the combination of the inner and outer casing mounted so as to provide a space between them, the outer casing being dielectric, and each having a thinly-sprinkled exterior coating of granular or powdered conducting material suitable for producing an electrical brush discharge, connections between said coatings and an electrical generator, a pipe for supplying oxygen gas to the space between the two casings, and a refrigerating-tank through which the oxygen supply pipe passes on its way to the generator, substantially as specified.

7. In apparatus for generating ozone gas, the combination of inner and outer casings mounted so as to form a space between the two, the outer casing being dielectric and each having an external coating of material suitable for producing an electrical brush discharge, connections between said external coatings and a suitable source of electricity, a perforated pipe extending within the inner casing and having connection with a supply of cooling fluid, a pipe for withdrawing the cooling fluid from said inner casing, and means for causing a flow of oxygen gas through the space between the two casings, substantially as specified.

8. In apparatus for generating ozone gas, the combination of inner and outer casings mounted so as to provide a space between the two, the outer casing being dielectric, and each provided with an external coating of material suitable for producing an electrical brush-discharge, connections between said coatings and a generator of electricity, a spraying device for introducing jets of cooling liquid within the inner casing, a suitable source of oxygen-supply, a pipe leading therefrom to the space between the two casings, and a refrigerating vessel through which said pipe passes on its way to the generator, substantially as specified.

574,342. BICYCLE-SEAT. FRANCIS B. RAY, New York, N. Y., assignor of one-half to Frank S. Ray, same place. Filed Apr. 3, 1896. Serial No. 586,042. (No model.)



Claim.—The combination in a seat for bicycles, tricycles &c., of a frame A extending entirely around the periphery of the seat and having inclosed openings B one upon each side of the median line in the rear part of the saddle, a bridging lining C arranged as shown, cover E and the interposed cushion D, all constructed and arranged substantially as and for the purposes set forth.

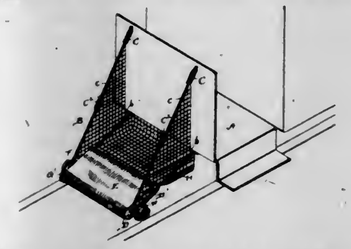
574,343. TERMINAL FOR ELECTRIC CABLES. EDWIN S. REID, New York, N. Y., assignor to the Standard Underground Cable Company, Pittsburg, Pa. Filed Mar. 29, 1892. Serial No. 426,921. (No model.)



Claim.—1. A terminal for electric cables consisting of a case or shell formed in two longitudinal sections, and means for securing said sections together around a cable, the sections being made of substantially uniform cross-sectional shape throughout their entire length and of such internal dimensions as to form a tight joint with the covering of the cable when applied thereto, substantially as set forth.

2. A cable-terminal having a sectional socket portion adapted to fit tightly around the end of the cable, and a sectional head portion formed integral with the socket portion by the regular prolongation thereof, and provided with binding-posts for connection with the wires of the cable and the exterior distributing-wires, substantially as set forth.

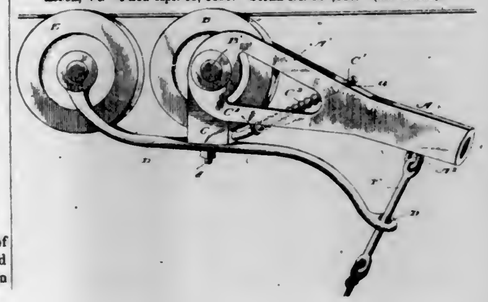
574,344. CAR-FENDER. CHARLES E. RICE and SAMUEL F. ETTINGER, Little Rock, Ark., assignors of one-half to Allen N. Johnson, trustee, same place. Filed Mar. 21, 1896. Serial No. 584,235. (No model.)



Claim.—1. A car-fender having a pick-up consisting of an endless rearwardly-moving apron having a body portion of strong fabric and an upper covering of sheet metal having numerous points or projections struck upwardly therefrom, and carrying and driving rollers for said apron, substantially as specified.

2. The car-fender having the frame composed of the lower inclined rods *b* hinged or pivoted to the car, the upper inclined rods *c*, whose lower forward ends are connected to the lower forward ends of the rods *b*, said rods *c* being made in two sections adjustably connected, the springs connecting said rods *c* to the car, the upwardly and rearwardly inclined apron at the forward portion of said frame, the carrying-rollers for said apron journaled in said frame the track-wheels geared to one of the carrying-rollers of the said apron, and the basket or receiver to the rear of said apron, substantially as specified.

574,345. TROLLEY. NELSON D. STANLEY and JOHN S. REYNOLDS, Essex, Vt. Filed Apr. 16, 1896. Serial No. 587,813. (No model.)



Claim.—1. The combination with the trolley-pole and main wheel, of a vertically-swinging yoke depending from the spindle or axis of said wheel, an arm secured to the lower end of the yoke and having an auxiliary or rear trolley-wheel, and a spring pressing the yoke rearwardly and upwardly to hold its wheel to the wire, substantially as described.

2. The combination with the trolley-pole having a fork in which is mounted the main wheel; said pole having an aperture through it at the base of the fork, of a vertically-swinging yoke depending from the axis of said main wheel and having a rod extending upwardly through the aperture in which it slides, a spiral spring on the rod, and bearing against the pole and a shoulder on the rod to press the yoke rearwardly and upwardly, an arm projecting rearwardly and upwardly from the bottom of the yoke and the auxiliary trolley-wheel carried by said arm, substantially as described.

3. The combination with the trolley-pole and the main wheel, of a vertically and transversely movable arm mounted beneath said wheel and extending in front and rear thereof, an auxiliary trolley-wheel carried by the rear upper end of said arm, a link pivoted to the pole and in sliding connection with the lower or forward end of said movable arm and adapted at its lower end to be connected to the trolley-rope, and a spring for holding the auxiliary wheel up to the wire, substantially as described.

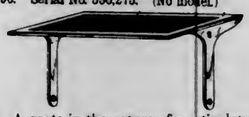
4. The combination with the trolley-pole and its main wheel, of a vertically-swinging spring-pressed yoke depending from the upper end of the pole, an arm pivoted between its ends to the lower end of the yoke to be swung upwardly therewith and also to swing laterally thereon, an auxiliary wheel mounted on the rear upper end of the arm, and a freely-swinging link depending from the trolley-pole and passing through an aperture in the forward end of said pivoted arm; the lower end of the link being adapted for connection with the trolley-rope, substantially as described.

5. The combination with the forked trolley-pole and the main trolley-wheel mounted in said fork, of a vertically-swinging yoke depending freely from the wheel-spindle and having a rod extending upwardly and forwardly through the fork and through an aperture in the pole, a spring encircling the rod and pressing it rearwardly, an arm pivoted between its ends to the bottom of the yoke to be swung upwardly therewith and laterally thereon, an auxiliary trolley-wheel mounted on the rear upper end of the arm; an aperture formed in the lower forward end of said arm, and a link pivotally connected with the pole and extending down through said aperture in the arm for connection with the trolley-pole, substantially as described.

6. The combination with the trolley-pole and its main wheel, of a transversely-swinging arm at the under side of the upper end of the pole and projecting rearwardly and upwardly beyond the pole and there provided with an auxiliary trolley-wheel; the lower forward end of the arm being provided with an eye, and a freely-swinging link or connection extending from the pole down through said eye for connection with the trolley-rope, substantially as described.

574,346. WITHDRAWN.

574,347. GRATE. GAMALIEL C. ST. JOHN, New York, N. Y. Filed Feb. 21, 1896. Serial No. 580,273. (No model.)



Claim.—1. A grate in the nature of a reticulated structure, and a reinforcing frame or rim secured to and constituting the perimeter of the grate, the grate being substantially a plane surface freely exposed underneath, substantially as described.

2. A grate having its body portion constructed of interlaced or interwoven wires or rods, and a reinforcing frame or rim secured to and constituting the perimeter of the grate, the combined area of the draft-spaces of the grate being greatly in excess of the area of the metal presented to the direct action of the heat, whereby a strong and constant upward draft will be generated by the rapid intake of air beneath the grate, operating to convey the heat away from the meshes or webs constituting the fuel-supporting surfaces and, also, shielding these surfaces, thereby protecting them from rapid destruction, substantially as described.

3. A grate in the nature of a reticulated or woven structure having raised portions at the air-openings constituting fuel supports, and a reinforcing frame or rim secured to and constituting the perimeter of the grate, substantially as described.

4. A grate comprising an open-work body portion and a frame or rim cast integral therewith, substantially as described.

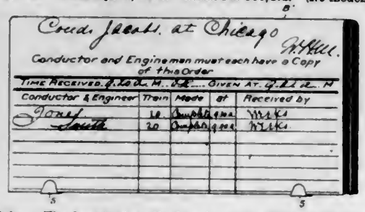
574,348. CURTAIN-SUPPORT. DE KALB TURBEVILLE, Roanoke, Ala., assignor of two-thirds to Robert Brown and William G. Floyd, same place. Filed Jan. 28, 1896. Serial No. 577,187. (No model.)



Claim.—1. The curtain-support herein described comprising the bracket having its end arms provided with bearings for the shade-roller and near their outer ends with seats for the curtain-pole, the cornice having its arms provided near their inner ends with catches engaging upon the arms of the brackets and also, having openings in line with the pole-seats and projecting in the openings in the arms of the cornice, substantially as and for the purposes set forth.

2. The improved curtain support herein described, consisting of the bracket and having a connecting portion and end arms the latter being provided with bearings for the shade-rollers and between the same and their free ends with notches forming seats for the curtain-pole, the cornice having its end arms provided near their inner free ends with hook-like catches fitting over the arms of the bracket and having openings in line with the pole-seats in said bracket-arms and the pole resting in the notched seats and projecting through the openings in the cornice-arms substantially as shown and described.

574,349. TRAIN-ORDER-BLANK PAD. FRANK W. WEEKS, Denver, Colo. Filed Apr. 6, 1896. Serial No. 586,472. (No model.)


Cond. Jacobs at Chicago
Conductor and Engineman must each have a Copy of this Order
TIME RECEIVED 9:10 A. M. DATE ... GIVEN AT 9:22 A. M.

Conductor & Engineer	Train	Mode of	Received by
Jones	10	Duplicate	Wells
Smith	20	Duplicate	Wells

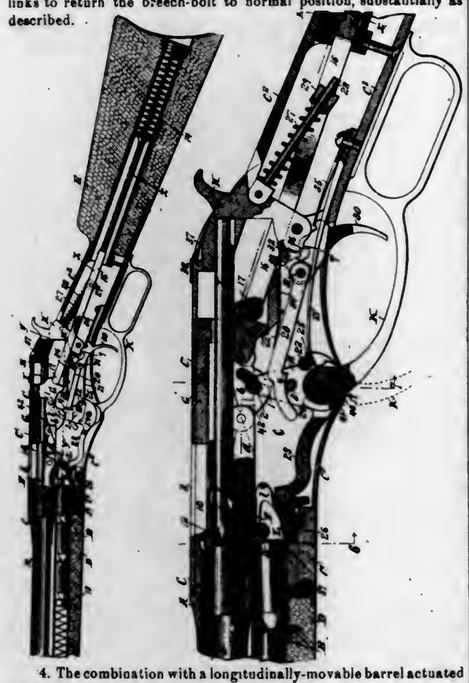
Claim.—The herein-described train-order-blank pad comprising the inner cardboard sheet A forming the writing-pad and adapted to receive a copy of the order, and the flexible sheets B' B² bent around the inner sheet A, a gummed label applied to the edges of the sheets B' B² on opposite sides of the writing pad for the purpose of holding the sheets in place on said pad, the inner surface of the sheets B' B² being carboned or otherwise suitably prepared to produce a copy on the adjacent surface of the next sheet, while the outer surface of the sheets B' B² are adapted to be written upon directly with a pen or pencil, substantially as described.

574,350. RECOIL-OPERATED FIREARM. ROBERT M. CATLIN, Tuscarora, Nev., assignor to the San Francisco Arms Company, San Francisco, Cal. Filed Sept. 20, 1894. Serial No. 523,602. (No model.)

Claim.—1. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, a catch and connections between said catch and one of the links, whereby said link is actuated as a lever by the returning barrel to withdraw the breech-bolt and open the breech, a carrier tripping said catch, and means for returning the breech-bolt to normal position, substantially as described.

2. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, a spring put under tension by the recoil of the barrel and by which the barrel is returned to normal position, mechanism operated by said spring for actuating the links to withdraw the breech-bolt and open the breech, and a spring put under tension by the withdrawal of the breech-bolt and reacting upon the links to return the breech-bolt to normal position, substantially as described.

3. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, a catch and connections between said catch and the rear link between its points of connection to the other link and the barrel for holding said link by the catch, whereby the rear link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt, means for tripping said catch for the return of the breech-bolt, and a spring put under tension by the withdrawal of the breech-bolt and actuating the links to return the breech-bolt to normal position, substantially as described.



4. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, a catch acting during the return of the barrel and tripped for the return of the breech-bolt, a member having a sliding connection with the rear link, and devices whereby said member is held by the catch during the return movement of the barrel and actuated on the tripping of the catch to return the breech-bolt to normal position, substantially as described.

5. The combination with a longitudinally-movable barrel actuated by the recoil, of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to normal position, a catch acting during the return of the barrel and tripped for the return of the breech-bolt, a member having a pin-and-slot connection with the rear link, said slot being formed to lock the links in their normal position for the recoil movement, and devices whereby said member is held by the catch during the return movement of the barrel and actuated on the tripping of the catch to return the breech-bolt to normal position, substantially as described.

6. The combination with a longitudinally-movable barrel, actuated by the recoil of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel and breech-bolt to normal position, a catch and connections between said catch and the rear link between its points of connection to the other link and the barrel for holding said link by the catch, whereby the rear link is actuated as a lever during the return movement of the barrel to withdraw the breech-bolt, an extractor, a magazine, and a carrier actuated by the links and tripping the catch for the return movement of the breech-bolt, substantially as described.

7. The combination with a longitudinally-movable barrel, actuated by the recoil of a breech-bolt, links connecting said breech bolt and barrel, means for returning said barrel to normal position, a member having a pin-and-slot connection with the rear link, and mechanism coacting with said member for actuating said links during the return movement of the barrel to withdraw the breech-bolt and open the breech and to return the breech-bolt to normal position, substantially as described.

8. The combination with a longitudinally-movable barrel, actuated by the recoil of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, and means for transmitting recoil-pressure from the breech-bolt to the barrel independently of the rear link, substantially as described.

9. The combination with a longitudinally-movable barrel, actuated by the recoil of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, and lugs on the front link and barrel engaging during the recoil movement for transmitting the recoil-pressure, substantially as described.

10. The combination with the longitudinally-movable barrel actuated by the recoil, breech-bolt, barrel extension G and links *a*, *b* connecting the breech-bolt and barrel extension, of lugs on link *a* and barrel extension G engaging during the recoil movement, substantially as described.

11. The combination with a longitudinally-movable barrel, actuated by the recoil of a breech-bolt, links connecting said breech-bolt and barrel, means for returning the barrel to position after recoil, mechanism for actuating the links during the return movement of the barrel to withdraw the breech-bolt and open the breech and for returning the breech-bolt to normal position, a firing-pin, a hammer cocked by the recoil, and a safety device holding the firing-pin away from the cartridge until the parts are fully returned to normal position, substantially as described.

12. The combination with a hammer and recoil-operated cocking mechanism, of a sear, a trigger, and a pivoted member on the sear engaged by the trigger to release the hammer and rocked by the hammer to release the sear when the hammer falls, substantially as described.

13. The combination with a hammer and recoil operated cocking mechanism, of sear 32 carrying pawl 33, trigger 30 having projection 9 beneath said pawl when the trigger is in its normal position, and projection 36 on the hammer arranged to rock said pawl off the projection 9 as the hammer falls, substantially as described.

14. The combination with a carrier L having the spring-wings *l*, of the breech-bolt E having a projection separating said wings for the receipt of the cartridge from the magazine, substantially as described.

15. The combination with the barrel, barrel extension, breech-bolt and links *a*, *b*, and removable part frame *d'* carrying said members, of breech-actuating mechanism detachably connected to said links and barrel extension and means for detachably securing the parts of the gun-frame together, substantially as described.

16. The combination with the barrel, barrel extension, breech-bolt, and links *a*, *b*, and removable part frame *d'* carrying said members, said link *b* having an open slot, of breech-actuating mechanism connected with said lever by a pin entering said open slot, and means for detachably securing the parts of the gun-frame together, substantially as described.

17. The combination with the longitudinally-movable barrel, breech bolt F and barrel-extension G, of links *a*, *b*, connecting the breech-bolt and barrel extension link *b* having slot 1, lever 18 having pin 2 entering said slot, catch 4 engaging said lever, and means for tripping said catch, substantially as described.

18. The combination with the longitudinally-movable barrel, breech-bolt F and barrel extension G, of links *a*, *b*, connecting the breech-bolt and barrel-extension link *b* having slot 1, lever 18 having pin 2 entering said slot, catch-arm 20, carrying catch 4 for holding the lever 18, and a carrier having arm 23 engaging said catch-arm to trip the catch, substantially as described.

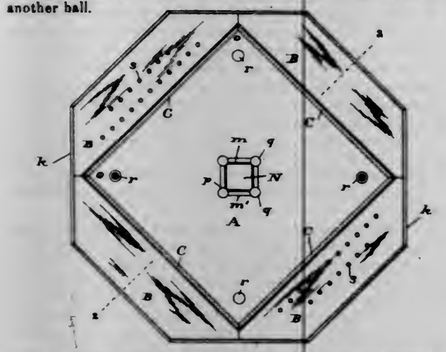
19. The combination with the longitudinally-movable barrel, breech-bolt F and barrel extension G, of links *a*, *b*, connecting the breech-bolt and barrel extension link *b* having slot 1, lever 18 having pin 2 entering said slot, catch-arm 20 carrying catch 4 for holding the lever 18, and a carrier having arm 23 engaging said catch-arm to trip the catch and having projections 24, 25 engaged by the links to actuate the carrier, substantially as described.

20. The combination with the longitudinally-movable barrel, breech-bolt F and barrel extension G, of a breech mechanism having links *a*, *b*, connecting the breech-bolt and barrel extension and a carrier having projections 24, 25 engaged by said links to actuate the carrier, substantially as described.

574,351. GAME APPARATUS. JOSEPH CONNER, New York, N. Y., assignor of forty-nine one-hundredths to George T. Keeler, Baltimore, Md. Filed July 3, 1894. Renewed June 30, 1896. Serial No. 597,648. (No model.)

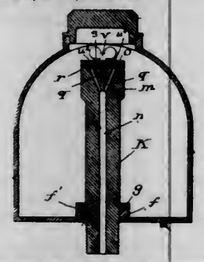
Claim.—1. A game board or table comprising a rectangular playing surface, A; a frame, B, inclosing the playing-surface; a rectangular block secured centrally upon the playing-surface and projecting above said surface and having at each corner a stop-notch, *p*; and

retaining-depressions, *q*, in the said playing-surface, each of which is partially encircled by one of the said stop-notches, whereby a moving ball will be arrested by the stop-notch and then held in the retaining-depression from which it may be extricated by the knock of another ball.



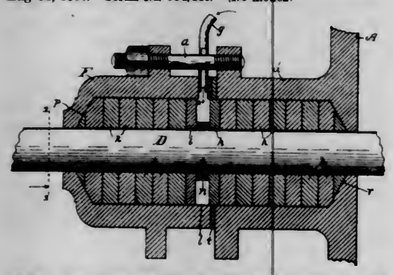
2. A game apparatus comprising a playing-surface inclosed by a rectangular frame provided with a cushion-rail, C; a starting-spot, *r*, located near each angle of the playing-surface; a rectangular block, N; secured centrally upon the playing-surface with each of its sides, *m*, facing one of the said angles of the playing-surface, and said block having at each corner a stop-notch, *p*; and retaining-depressions, *q*, in the said playing-surface, each of which is partially encircled by one of the said stop-notches, as set forth.

574,352. LUBRICATOR. WILLIAM J. FERGUSON, Baltimore, Md., assignor of one-half to William G. H. Stump, same place. Filed Mar. 16, 1896. Serial No. 583,325. (No model.)



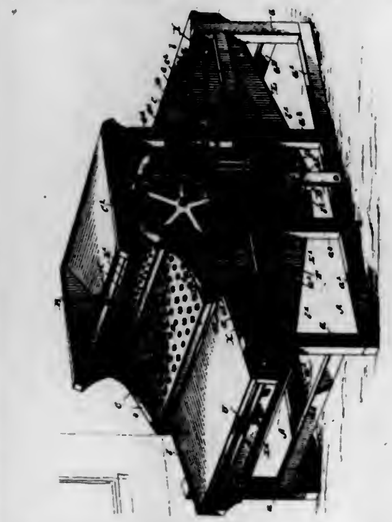
Claim.—An automatic oiler for attachment to parts of machinery, comprising a case having an exterior flat bottom provided with an opening and a lug on the under side of said bottom projecting down, said lug to fit in a socket on the machinery part to which the oiler may be attached; a tube having a screw threaded lower end projecting through the said opening in the case-bottom to engage with a threaded opening in the machinery part to be oiled, and bearing against the upper side of the bottom of the case, said tube having at its upper end a head for the application of a wrench.

574,353. PISTON-ROD PACKING. OLIN J. GARLOCK, Rochester, N. Y., assignor to the Garlock Packing Company, Palmyra, N. Y. Filed Aug 31, 1896. Serial No. 604,446. (No model.)



Claim.—In a piston-rod packing, the combination, with a stuffing-box, of an extension of substantially the same interior diameter secured to the outer end thereof and each having its bottom conically inclined, two annular plates within the same, the inner face of one of the plates being provided with two rings and the face of the other plate being provided with one ring which lies between the two rings, packing material between each plate and the conical portion, and a pipe through the extension and communicating with the space between the adjacent faces of the plates, substantially as set forth.

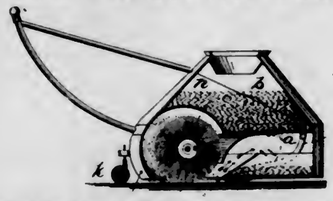
574,354. GRAIN AND SEED CLEANER. THOMAS J. HATFIELD, Dublin, Ind. Filed Jan. 27, 1896. Serial No. 577,028. (No model.)



Claim.—1. In a machine as described, the combination with the fan, the crank on the fan-shaft, the hopper and separator-shoe, of the vibrating levers B^3, one pivoted at each side at its lower end, to the main frame, and at its upper end engaging the crank of the fan-shaft, the rod A^3, and the shoe L, detachably hung at the lower end on the rod A^3, and having a swinging connection with the main frame at the upper end all arranged substantially as shown and described.

2. In a machine as described the combination with the fan-shaft having crank-disks W W, having crank-pins on the separator-frame arranged substantially as described, of the arms B^3, pivoted at the lower end to the main frame, the cross-rod A^3, the shoe L, pivotally connected to the main frame at the upper end and having its lower end mounted on the said cross-rod A^3, said arms B^3, being slotted as at b^3, to receive the pins *w*, the arms G, pivotally connected to the main frame, having crank portions d^3, fitting the slotted ends of the arms B^3, and having their upper ends connected to the separator-frame substantially as shown and described.

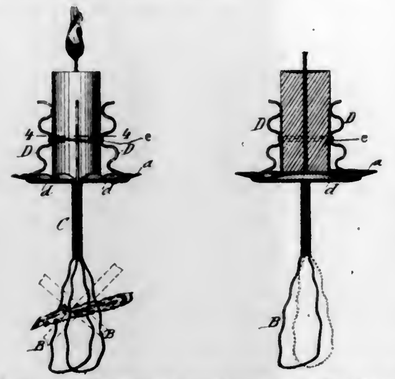
574,355. SCRUBBING-MACHINE. JOHN S. HITCHCOCK, Syracuse, N. Y. Filed Feb. 14, 1896. Serial No. 579,209. (No model.)



Claim.—1. In a scrubbing-machine the combination with the casing and the brushes, of an inclined plate attached to one edge to the casing, and means for adjusting the other edge with reference to said brushes, whereby they will pick up therefrom the moisture which collects upon said edge.

2. In a scrubbing-machine a casing having brushes mounted therein and driven at an angle to each other, the combination with each brush of a flat disk secured upon its body interior to the inner row of bristles around it, and engaging with said bristles to hold them in position to properly engage with those of the adjoining brush.

574,356. CANDLE-HOLDER. ALFRED W. HOFFMANN, New York, N. Y., assignor of one-half to Emil R. Hoffmann, same place. Filed June 24, 1896. Serial No. 596,683. (No model.)



Claim.—1. A Christmas-tree candle-holder, composed of a drip-cup, spring-jaws below said drip-cup, said jaws being twisted into a shank having radial arms, and spring-prongs extending from said radial arms above the drip-cup, substantially as set forth.

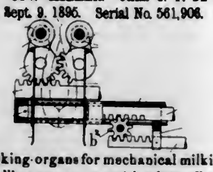
2. A Christmas-tree candle-holder, composed of a drip-cup, provided with a flaring flange having recesses in its circumference, spring-prongs above the drip-cup, spring-jaws below the drip-cup provided with a shank, and radial arms connecting said shank below the drip-cup with the spring-prongs, substantially as set forth.

3. A Christmas-tree candle-holder, composed of a drip-cup having a flaring flange with radial recesses, corrugated spring-jaws below the drip-cup, said jaws being united into a twisted shank below the drip-cup, radial arms extending from the shank through the recesses of the drip-cup, and corrugated spring prongs above said drip-cup connected with said radial arms, substantially as set forth

4. A Christmas tree candle-holder, composed of a drip-cup having radial recesses in its circumference, corrugated spring-jaws arranged below the drip-cup and twisted together so as to form a shank below the drip-cup, spring-prongs above the drip-cup, and radial arms connecting the twisted shank with the lower ends of said spring-prongs, said arms and spring-prongs being integral with the jaws, substantially as set forth.

5. In a candle-holder, the combination of a drip cup, transversely-corrugated prongs extending upwardly from the drip-cup, and an extensible wire guard-ring located in one of the lower corrugations of each prong so as to retain the remaining portion of the nearly-consumed wick, substantially as set forth.

574,357. COW-MILKER. CARL G. P. DE LAVAL, Stockholm, Sweden. Filed Sept. 9, 1895. Serial No. 561,906. (No model.)



Claim.—In milking-organs for mechanical milking apparatus, the combination of a pulling-organ, comprising laterally and downwardly movable members such as rolls, with a squeezing or straining organ, comprising members such as plates, situated beneath the pulling organ and means for successively operating the pulling and the squeezing organs, substantially as set forth.

574,358. LIGHT-EMITTING BODY AND METHOD OF PRODUCING SAME. THEODORE MACH, Philadelphia, Pa. Filed July 1, 1896. Serial No. 597,720. (No model.)

Claim.—1. A mantle or hood formed from a pulpy or gelatinous mass saturated with a salt or oxid of a metal so that under the influence of a gas or other flame the same is adapted to become incandescent, substantially as and for the purposes described.

2. A mantle or hood formed from a pulpy or gelatinous mass into threads and caused to assume a substantial structure by the intimate union or winding of said threads, the structure being perforated and saturated or impregnated with a salt or oxid of the metals, substantially as and for the purposes described.

3. A mantle or hood formed of a pulpy or gelatinous mass and transformed into required shape saturated or impregnated with a salt or oxid of a metal substantially as and for the purposes described.



4. The method of making a mantle or hood for a gas or other flame, which consists in subjecting a pulpy or a gelatinous mass, such as cellulose, to the influence of pressure to cause the same to assume thread-like form, casting or molding the threads into a structure, saturating or impregnating the structure with the salt or oxid of a metal and drying the same, substantially as and for the purposes described.

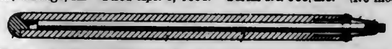
5. The method of making a mantle or hood, which consists in converting a pulpy or gelatinous mass, such as cellulose, into ribbons or sheets, casting or molding into a structure, subjecting to the influence of hydrochloric or other acid, saturating or impregnating with a salt or oxid of a metal and drying the same, substantially as and for the purposes described.

574,359. MECHANICAL LEAD-PENCIL. FREDERICK W. MUSSON, Chicago, Ill. Filed Apr. 6, 1896. Serial No. 586,422. (No model.)



Claim.—An automatic lead-pencil consisting of a body having a longitudinal aperture, a lead screw-threaded throughout its length, and of such size as to snugly fit and make a holding frictional engagement with the walls of the aperture, and a device engaging the threads of the lead and rotatably mounted on the body so as when rotated to reciprocate the lead along the body.

574,360. MECHANICAL LEAD-PENCIL. FREDERICK W. MUSSON, Chicago, Ill. Filed Apr. 6, 1896. Serial No. 586,423. (No model.)



Claim.—1. In an automatic lead-pencil the combination of a body with a central longitudinal aperture, a lead therein shaped so as to have a cross-section other than circular, a threaded device which engages the surface of the lead and reciprocates it when the lead is rotated, and a thumb-controlled device associated with the body and adapted to rotate the lead.

2. In an automatic lead-pencil the combination of a body having a central aperture, with a lead which is free to reciprocate and rotate therein, a screw-thread on the inside of the body to engage the lead, and a thumb-controlled washer through which the lead passes and whereby it is turned.

3. In an automatic lead-pencil the combination of a body with a central longitudinal aperture, a lead having a cross-section other than circular and free to rotate and reciprocate in the aperture, a screw-threaded part in the aperture adapted to engage the lead, and a thumb-controlled washer having an aperture which fits the lead and which when turned rotates the lead.

574,361. LEAD-PENCIL. FREDERICK W. MUSSON, Chicago, Ill. Filed May 8, 1896. Serial No. 590,684. (No model.)

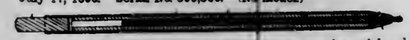


Claim.—1. In a lead-pencil, the combination of a cylindrical body with a tip portion consisting of an internally-screw-threaded tip and parts received into slots in the body so as to hold the tip in position in fixed relation to the body, and a screw-threaded free lead to be received into the screw-threads on the tip.

2. As a new article of manufacture, a lead-pencil with a removable lead consisting of a case having a longitudinal aperture, a removable and outwardly-projecting but normally-fixed tip on the case, having an internally-screw-threaded aperture of less cross-section than the aperture of the case, and a free lead screw-threaded throughout its length and received in the tip so that the lead can be reciprocated by being rotated, and lead and tip can be removed from the case together.

3. As a new article of manufacture, a lead-pencil with a removable lead, consisting of a case having a longitudinal aperture, a removable and outwardly-projecting but normally-fixed tip on the case, having an internally-screw-threaded aperture, and a free lead screw-threaded throughout its length and received in the tip so that the lead can be reciprocated by being rotated by hand, and lead and tip can be removed from the case together.

574,362. PENCIL. FREDERICK W. MUSSON, Chicago, Ill. Filed July 17, 1896. Serial No. 599,586. (No model.)



Claim.—A lead-pencil comprising an outer portion with a longitudinal aperture, a tip removably attached to the outer portion and consisting of two interlocking parts separable along the line of the lead-aperture, and a free lead adapted to pass through the tip.

574,363. PENCIL. FREDERICK W. MUSSON, Chicago, Ill. Filed Aug. 10, 1896. Serial No. 602,272. (No model.)



Claim.—1. As a new article of manufacture a lead-pencil consisting of a case composed of a substance capable of being cut with a knife and having an enlarged aperture, an internally-threaded relatively long tip portion, a free lead threaded and adapted to engage the internal thread of the case so that the lead can be reciprocated by being rotated by the hand and when broken off at the point the case can be cut down to uncover the lead

2. A lead-pencil comprising a continuous case having a cylindrical body with a tip shaped in the usual manner, a relatively long internally-screw-threaded aperture at such tip of the pencil to receive the lead, the aperture of the cylindrical body being of such cross-section as to permit free motion of the lead, and the length of the tip being such as to permit the same to be cut down to sharpen the pencil and uncover the lead when occasion may require, substantially as described.

574,364. TELEGRAPH-POLE. CYRUS A. PETERSON, Stratton, Nebr. Filed Nov. 11, 1891. Serial No. 411,571. (No model.)



Claim.—1. A telegraph-pole consisting of an angularly-bent metal sheet having a series of holes in the angle thereof, and an angular supporting-plate riveted thereto, in combination with insulator-carrying bars having converging grooves therein to receive the edges of the pole, and bolts passing through said bars and through the aforesaid holes substantially as described.

2. A telegraph-pole consisting of a tapering and angularly-bent metal sheet having a series of holes in the angle thereof, in combination with steps or rounds having transverse notches therein adjacent to their ends: and bolts having each a hook at one end and a nut at the other, said bolts engaging the rounds and passing through the aforesaid holes, substantially as described.

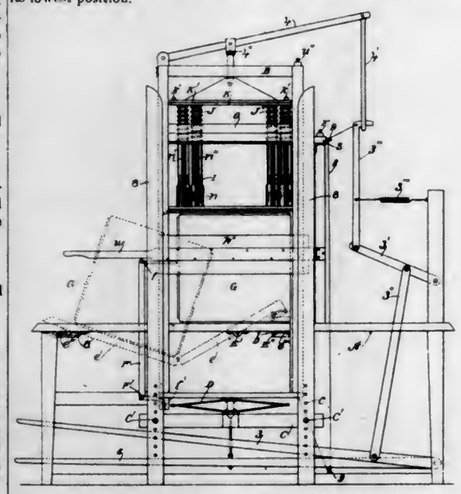
3. In combination with the upper section of a telegraph-pole consisting of a tapering and angularly-bent metal sheet having a series of holes in the angle thereof, a series of rounds, and hooked bolts secured to said rounds and passing through the aforesaid holes of said upper section, a lower section having two angularly-arranged wings riveted to the upper section and a bracing-wing and base-plate substantially as described.

574,365. BOX-NAILING MACHINE. HERVEY R. KUMLER, Etiwanda, Cal. Filed Mar. 2, 1896. Serial No. 581,475. (No model.)

Claim.—1. In a box nailing machine, the combination of the reciprocating frame carrying the nail feeding and driving appliances; the box-support comprising two members hinged together and pivoted to tilt and arranged to support the box beneath the reciprocating frame.

2. In a box-nailing machine, the combination of the reciprocating frame carrying the nail feeding and driving appliances; the tilting box-support arranged to support the box beneath the reciprocating frame; automatic means arranged to tilt the box-support to turn the box; and automatic means for replacing the box beneath the reciprocating frame.

3. In a box-nailing machine, the combination set forth of the box-support; the reciprocating frame carrying the nail feeding and driving appliances; means for reciprocating the frame; and independent means arranged to engage the nail-driving appliances and to operate such appliances only after the reciprocating frame has reached its lowest position.



4. In a box-nailing machine, the combination of the tilting box-support; the reciprocating frame connected with such box-support and arranged to tilt it when the frame is in its elevated position; nail feeding and driving appliances carried by the reciprocating frame; means for reciprocating the frame; and independent means for operating the nail-driving appliances after the frame has reached its lowest position.

5. In a box-nailing machine, the combination set forth of the tilting box-support; the reciprocating frame connected with the box-support and arranged to tilt such support when the frame is upon its upward movement; nail feeding and driving appliances secured to the reciprocating frame and each comprising a slotted nail-tube, a magnet arranged to feed nails into such tube, and a plunger arranged to reciprocate in such tube; means for reciprocating the frame; and independent means for reciprocating the plungers and the magnets.

6. A box-nailing machine comprising the box-support; the reciprocating frame provided with the nail feeding and driving appliances and having the plunger operating lever pivoted thereto and arranged to operate the nail-driving plungers; means for reciprocating the frame; and suitable independent means arranged to engage the plunger-operating lever to operate such lever only after the frame has reached its lowest position.

7. In a box-nailing machine the combination set forth of the box support; the reciprocating frame carrying the nail feeding and driving appliances; the nail-driving lever pivoted at one end to the reciprocating frame and provided at its other end with the eye; the pitman provided with a hook arranged to enter the eye when the frame is in its lowest position; the spring arranged to hold the hook normally in engagement with the eye; suitable means for operating the pitman-arm; and suitable means arranged connecting the arm with the reciprocating frame to withdraw the hook from its engagement with the eye when such frame starts upon its upward movement.

8. In combination, the slotted nail-tube; the plunger arranged to reciprocate in the nail-tube; the magnet suspended by an arm and arranged to reciprocate through the slotted nail-tube, and the magnet-operating lug secured to the plunger and adapted to engage the arm of the magnet to retract the magnet when the plunger is forced into the nail-tube, and the nail-chute arranged to feed nails to the magnet.

9. In a box-nailing machine, the combination of the box-support; the reciprocating frame carrying the nail feeding and driving mechanism; the lever for operating the nail-driving mechanism, pivoted by one end to the reciprocating frame, operatively connected with the nail-driving mechanism, and provided at its other end with the eye; the power-lever pivoted by one end to the frame; the intermediate lever pivoted by one end to the frame; the connecting-rod connecting the operating-lever with the intermediate lever; the pitman-rod pivoted at one end to the intermediate lever and having its other end provided with a hook arranged to enter the eye of the nail-driving operating-lever when the reciprocating frame is in its lowest position; the spring arranged to normally hold the pitman in position in the eye; and the cord having one end secured to the pitman and at its other end secured to the reciprocating frame and arranged to draw the hook out of engagement with the eye when the reciprocating frame starts upon its upward movement.

10. In a box-nailing machine, the combination of the box-support; the reciprocating frame carrying the nail feeding and driving mechanism; the lever for operating the nail-driving mechanism, pivoted by one end to the reciprocating frame, operatively connected with the nail-driving mechanism, and provided at its other end with the eye; the power-lever pivoted by one end to the frame; the intermediate lever pivoted by one end to the frame; the connecting rod connecting the operating-lever with the intermediate lever; the pitman-rod pivoted at one end to the intermediate lever and having its other end provided with a hook arranged to enter the eye of the nail-driving operating-lever when the reciprocating frame is in its lowest position; the spring arranged to normally hold the pitman in position in the eye; and means connecting the pitman with the reciprocating frame and arranged to draw the hook out of engagement with the eye when the reciprocating frame starts upon its upward movement.

11. In a box-nailing machine, the combination set forth of the tilting box-support; the reciprocating frame arranged above the box-support; intermediate means connecting the reciprocating frame with the box-support and arranged to tilt such support when the frame is in its elevated position; the box-replacer having one end operatively connected with the reciprocating frame and having its other end arranged to operate to replace the box in position beneath the reciprocating frame during the downward movement of such frame.

12. In a box-nailing machine, the combination set forth of the stationary frame provided with the guideways; the box-support consisting of two members pivoted together, one of such members being pivoted to the stationary frame, and the other of such members being provided with studs arranged to slide in the guideways provided in the stationary frame; the reciprocating frame carrying the nail feeding and driving mechanism; means for reciprocating the frame; and means operatively connecting the frame with the box-support to tilt such support when the frame is upon its upward movement.

13. In a box-nailing machine, the combination set forth of the stationary frame; the box-support secured to such stationary frame; the reciprocating frame arranged to move vertically in the stationary frame; the springs arranged to normally hold the reciprocating frame elevated; nail-driving mechanism carried by the reciprocating frame; the nail-chutes arranged to supply nails to the nail-driving mechanism; the nail-holding trough or hopper secured to the movable frame and adapted to supply nails to the nail-chutes; and the bumper secured to the reciprocating frame and adapted to engage the stationary frame to jar the nail-holding trough to feed nails into the nail-chutes.

14. A box-nailing machine comprising a box-support; a reciprocating frame carrying nail feeding and driving mechanism; suitable means for reciprocating the frame; and independent means arranged to operate the nail-driving mechanism.

15. In a box-nailing machine, the combination set forth of the stationary frame; the cross bars adjustably secured to the stationary frame; the springs secured to the cross-bars; the reciprocating frame mounted upon the springs and carrying the nail feeding and driving appliances; suitable means for reciprocating the frame in opposition to the springs; and suitable means for operating the nail driving mechanism.

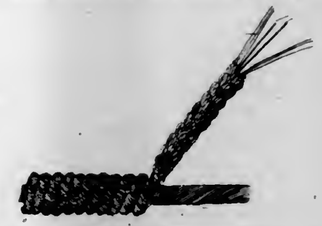
16. In a box-nailing machine, the combination set forth of the tilting box-support; the reciprocating frame; the box-replacer; and suitable means connecting the box-support and the box-replacer with the reciprocating frame and arranged to tilt the support when the frame is raised, and to retract the box-replacer when the frame is tilted.

17. In a box-nailing machine having adjustable nail-tubes, the combination of the plunger-head plate arranged above such nail-tubes and provided along its length with the slots; the plunger-engaging members each consisting of two bars arranged to chamber between them the heads of the plungers and secured to the plunger head plate by means of bolts passing through the slots in the plate; and the plungers having their ends provided with heads arranged to be engaged by the plunger-engaging bars, and having their lower ends arranged to reciprocate in the nail-tubes.

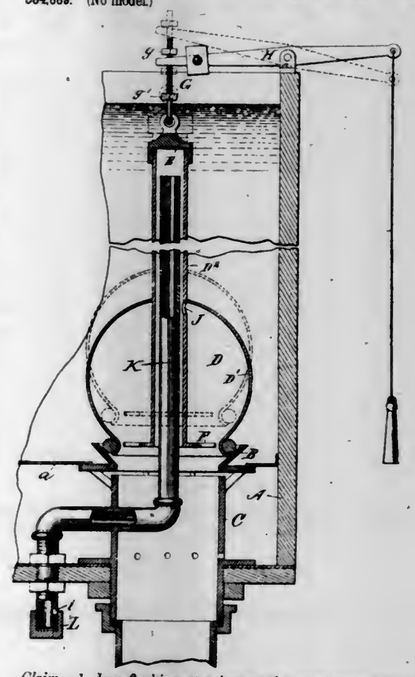
18. In a box-machine, the combination set forth of the stationary frame; the tilting box-support; the reciprocating frame; the box-replacer; suitable means connecting the reciprocating frame with the box-support to tilt such support when the frame is elevated; and suitable yielding means connecting the box-replacer with the reciprocating frame to operate the replacer to replace the box when the tilting support is returned to its horizontal position.

574,366. CHENILLE TRIMMING. ADOLPH LEDERER, New York, N. Y. Filed Sept. 3, 1896. Serial No. 604,760. (No specimens.)

Claim.—A cord for trimming consisting of a core of loosely-assembled threads having wound thereon an uncut strand of chenille, the chenille strand having a core consisting of wires, the convolutions of the strand lying side by side and in engagement, whereby a cord having a stable construction and a chenille effect is produced.



574,367. FLUSHING ATTACHMENT FOR WATER-CLOSETS. PATRICK J. MADDEN, Chicago, Ill. Filed Mar. 25, 1896. Serial No. 584,889. (No model.)



Claim.—1. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air tight at top and open at bottom for the admission and escape of water, means for lifting the valve, and a tube communicating at one end with the upper part of the valve, whence it extends downward through the valve, past the bottom thereof, and communicates with the atmosphere, substantially as set forth.

2. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air-tight at top and open at bottom for the admission and escape of water, means for lifting said valve, a tube communicating at one end with the upper part of the valve whence it extends downward through the valve, past the bottom thereof, and at its other end communicates with the atmosphere, and a valve in the projecting end of said tube for regulating the flow of air through it, substantially as set forth.

3. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air tight at top and open at bottom for the admission and escape of water, means for lifting the valve, and a fixed tube communicating at one end with the atmosphere and extending upward through the bottom of the valve and terminating within it at a level above the level to which the water rises, substantially as set forth.

4. In a flushing attachment, the combination of a tank having a discharge opening, a hollow valve adapted to close said opening, the

valve being air-tight at top and open at bottom for the admission and escape of water, means for lifting the valve, a fixed tube communicating at one end with the atmosphere and extending upward through the bottom of the valve and terminating within it at a point above the level to which the water rises, and a device interposed between the tube and valve whereby the tube guides the valve in its vertical movements, substantially as set forth.

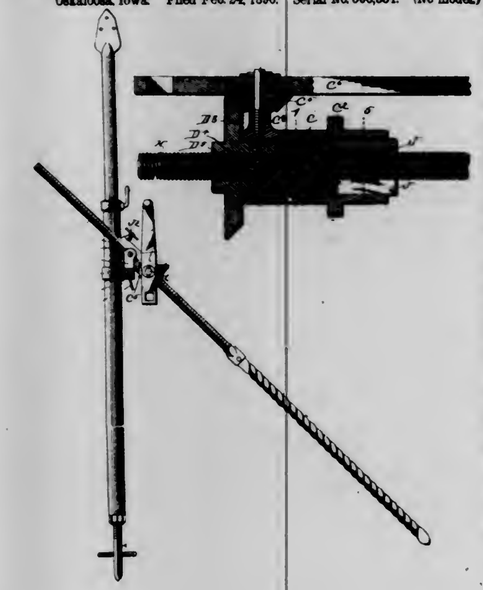
5. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air-tight at top and open at bottom for the admission and escape of water, and consisting of a hollow bulb having at top a hollow, contracted, upward extension, means for lifting the valve, and a tube communicating at one end with the atmosphere and extending upward through the bottom of the valve, terminating at its upper end within the contracted extension aforesaid, substantially as set forth.

6. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air-tight at top and open at bottom for the admission and escape of water, and consisting of a hollow bulb, a tube fixed to and extending upward within the bulb, the upper portion of the bulb being in communication with the interior of the tube, and a second tube communicating at one end with the atmosphere and extending upward through the bottom of the valve and into the first-named tube, substantially as set forth.

7. In a flushing attachment, the combination of a tank having a discharge-opening, a hollow valve adapted to close said opening, the valve being air-tight at top and open at bottom for the admission and escape of water, and consisting of a hollow bulb, a tube extending from the bottom portion of the bulb upward through it and terminating some distance above it, said tube having an opening by which its interior is placed in communication with the upper portion of the bulb, and a second tube communicating at one end with the atmosphere and extending upward through the bottom of the valve, terminating in that portion of the first-named tube which projects above the top of the bulb, substantially as set forth.

8. In a flushing attachment, the combination with a tank having a discharge-opening, of a hollow valve adapted to close said opening, said valve consisting of a bulb D′ open at bottom for the admission and escape of water, the tube D^3 extending from the bottom portion of the bulb upward through it and terminating some distance above it, said tube being closed at its upper end and having an opening J by which it communicates with the upper portion of the bulb, and the spider F connecting the lower end of the tube with the bulb, and a second tube K communicating at one end with the atmosphere and extending upward through the bottom of the bulb and into the tube D^3, terminating at a level above the top of the bulb, substantially as set forth.

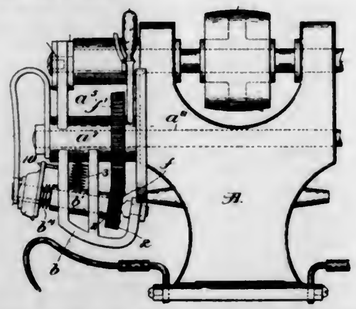
574,868. COAL-DRILLING APPARATUS. WARREN C. JOHNSON, Oskaloosa, Iowa. Filed Feb. 24, 1896. Serial No. 580,351. (No model.)



Claim.—In a coal-drilling apparatus, the combination of the following elements, a suitable sleeve cast complete in one piece and having trunnions on its sides and a boss near one end, a straight axle screwed into the boss, a bevel gear-wheel rotatably mounted on said axle, a crank secured to the hub of the gear-wheel, a hub designed to enter said sleeve, and having annular grooves on its exterior and a feather on its interior designed to enter a groove in the auger-shaft, a bevel gear-wheel on the end of the hub in mesh with the aforesaid bevel-gear and a Babbitt-metal filler placed between the sleeve and hub to permit a free rotation of the hub and prevent its longitudinal movement in the sleeve, substantially as and for the purposes stated.

REISSUES.

11,580. EDGE-FINISHING MACHINE. SETH D. TRIPP, Lynn, Mass. Filed Oct. 21, 1896. Serial No. 609,625. Original No. 566,819, dated Sept. 1, 1896.



Claim.—1. In an edge-finishing machine, a frame, means for moving it back and forth, an edge-finishing tool carried by said frame, and means for moving it back and forth in unison with said frame, substantially as described.

2. In an edge finishing machine, a frame, means for moving it back and forth, an edge-finishing tool carried by said frame, and means for moving said tool back and forth in the arc of a circle in unison with said frame, substantially as described.

3. In an edge-finishing machine, a frame, means for moving it back and forth, an edge-finishing tool, carried by said frame, and means for moving it back and forth in unison with said frame, and in a like direction, substantially as described.

4. In an edge-finishing machine, a frame, means for moving it back and forth in the arc of a circle, an edge-finishing tool carried by said frame, and means for moving said tool back and forth in the arc of a circle in unison with said frame, substantially as described.

5. In an edge finishing machine, the combination of an oscillating frame, an oscillating shaft carried by it, and means for oscillating said shaft in unison with the oscillatory movement of the frame, and an edge-finishing tool mounted on said shaft, substantially as described.

6. In an edge-finishing machine, the combination of an oscillating frame, an oscillating shaft carried by it and pivotally connected to it to be moved independently of the frame, and means for oscillating said shaft during the oscillatory movement of the frame, and an edge-finishing tool mounted on said shaft, substantially as described.

7. In an edge-finishing machine, the combination of an oscillating frame, oscillating shaft carried by it, an edge finishing tool secured to said oscillating shaft, friction heating-plates on said oscillating shaft bearing directly against said tool, and means for holding said plates in frictional engagement with said tool, substantially as described.

8. In an edge-finishing machine, the combination of a frame, means for moving it rapidly back and forth, an oscillating shaft carried by said frame, and means for oscillating said shaft during the back and forth movements of the frame, an edge-finishing tool mounted on said shaft having a plurality of working faces, and means for turning said shaft to adjust the tool while it is oscillating, substantially as described.

9. In an edge-finishing machine, an edge-finishing tool having a plurality of working faces, a shaft supporting it, an oscillating frame supporting said shaft, and means for turning said shaft to adjust the tool, consisting of a toothed gear on the shaft, a toothed sector, and means for turning said sector, substantially as described.

10. In an edge-finishing machine, an edge-finishing tool having a plurality of working faces, a shaft supporting it, an oscillating frame supporting said shaft, and means for turning said shaft to adjust the tool, consisting of a toothed gear on the shaft, a toothed sector, and means for turning said sector, and a locking device for said sector, substantially as described.

11. In an edge finishing machine, the combination of an oscillating frame, an oscillating shaft carried by it, and supported obliquely, as shown, and means for oscillating said shaft during the oscillatory movement of the frame, and an edge-finishing tool mounted on said shaft, substantially as described.

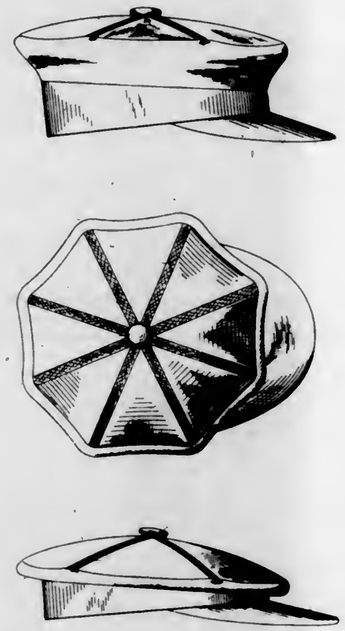
12. In an edge-finishing machine, the combination of an oscillating frame, an oscillating shaft supported obliquely by it, means for oscillating said shaft during the oscillatory movement of said frame, and an edge-finishing tool having a plurality of working faces splined on said oblique shaft, and moving longitudinally thereon, substantially as described.

13. In an edge-finishing machine, the combination of an oscillating frame, a shaft borne by it carrying an edge-finishing tool, a toothed gear on said shaft, and a toothed sector which it engages, whereby the shaft is oscillated on its axis during the oscillations of the frame, substantially as described.

14. In an edge-finishing machine, the combination of an oscillating frame, a shaft supported by it carrying an edge-finishing tool, a toothed gear on said shaft, and toothed sector engaging it, and a hand-lever for turning said sector to turn the shaft and adjust the tool carried by it, and a locking device for said sector, substantially as described.

DESIGNS.

26,451. CAP. ADOLPH WOLFGANG, Detroit, Mich., assignor to Detroit Cap Manufacturing Co., same place. Filed Oct. 27, 1896. Serial No. 610,229. Term of patent 3½ years.



Claim.—The design for a cap as herein described and shown.

26,452. ORNAMENTAL PATTERN OR PRINT FOR BOOK-COVERS, &c. JOHN ARBUCKLE, Brooklyn, N. Y., assignor to the Woman's Sunshine Publishing Company, of New York. Filed July 9, 1896. Serial No. 598,614. Term of patent 14 years.

26,452.



Claim.—The design for an ornamental print or pattern for book-covers and magazines, substantially as shown and described.

26,453. BADGE OR BUTTON. THOMAS GHOLSON VIVION, Columbia, Mo. Filed Oct. 3, 1896. Serial No. 607,805. Term of patent 3½ years.



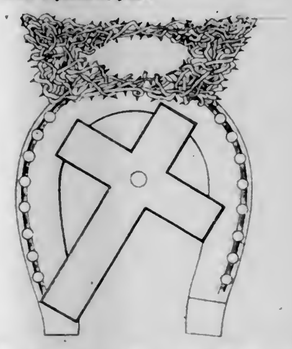
Claim.—The design herein shown and described for a badge or button, as set forth.

26,454. BADGE. THOMAS P. HALPIN, Chicago, Ill. Filed June 22, 1896. Serial No. 596,542. Term of patent 7 years.



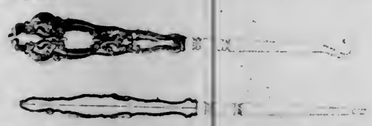
Claim.—The design for a badge or jewel substantially as herein shown and described.

26,455. BADGE. JOSEPH H. MISHLER, FRANK B. STUMPF, and MICHAEL E. DONAHAY, Eureka, Ill. Filed Sept. 2, 1896. Serial No. 604,687. Term of patent 3½ years.



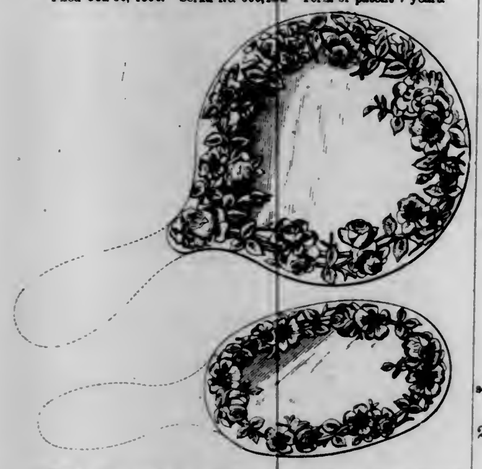
Claim.—The design for a badge as herein shown and described.

26,456. HANDLE FOR BUTTON-HOOKS. FERDINAND THIELKE, Brooklyn, N. Y., assignor to the Woodside Sterling Company, New York, N. Y. Filed Nov. 27, 1896. Serial No. 613,704. Term of patent 7 years.



Claim.—The design for a handle for button-hooks, and similar articles, substantially as herein shown and described.

26,457. BRUSH-BACK. HENRY A. WEINMAN, Philadelphia, Pa. Filed Oct. 16, 1896. Serial No. 609,154. Term of patent 7 years.



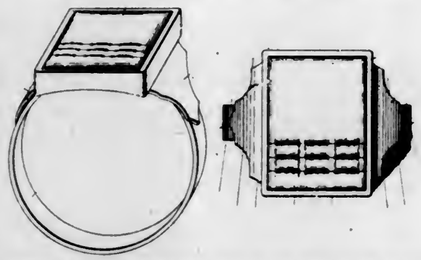
Claim.—The design for the backs of brushes and similar articles substantially as shown and described.

26,458. MIRROR-BACK. WILLIAM C. CODMAN, Providence, R. I., assignor to the Gorham Manufacturing Company, same place. Filed Sept. 23, 1896. Serial No. 606,795. Term of patent 7 years.



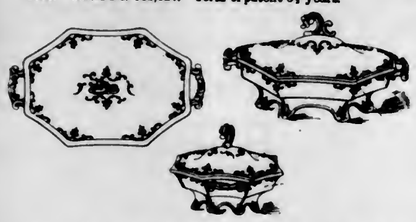
Claim.—The design for the back of a mirror or similar article herein shown and described.

26,459. JEWELRY-TRAY. FRANK H. SADLER, Attleborough, Mass. Filed Nov. 6, 1896. Serial No. 611,301. Term of patent 3½ years.



Claim.—The design for a jewelry-tray herein shown and described.

26,460. COVERED DISH. WILLIAM H. GRINDLEY, Congleton, England, assignor to William S. Pitcairn, New York, N. Y. Filed Nov. 13, 1896. Serial No. 612,027. Term of patent 3½ years.



Claim.—The design for dishes substantially as shown and described.

26,461. PRICE-CARD HOLDER. ERNESTO SASSENHOFF, New York, N. Y. Filed Nov. 25, 1896. Serial No. 613,462. Term of patent 7 years.



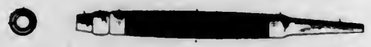
Claim.—The design for a price-card holder, substantially as shown and described.

26,462. PADLOCK-CASE. CHARLES A. ERICHSON, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, same place. Filed Nov. 16, 1896. Serial No. 612,372. Term of patent 3½ years.



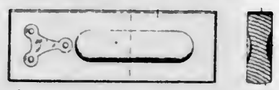
Claim.—The design for a padlock-case substantially as herein shown and described.

26,463. NAIL-SET. CHARLES WILLIAM FIELD, Rockland, Me. Filed Nov. 23, 1896. Serial No. 613,206. Term of patent 7 years.



Claim.—The design for a nail set herein shown and described.

26,464. TOOL-HANDLE. JUSTUS A. TRAUT, New Britain, Conn., assignor to the Stanley Rule and Level Company, same place. Filed Oct. 3, 1896. Serial No. 607,806. Term of patent 14 years.



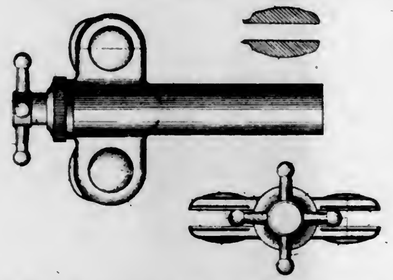
Claim.—The design for a tool-handle, substantially as shown and described.

26,465. TOE-CLIP FOR BICYCLES. FRANK K. HESSE, Boston, Mass., assignor to Codman & Shurtleff, same place. Filed May 8, 1895. Serial No. 548,603. Term of patent 14 years.



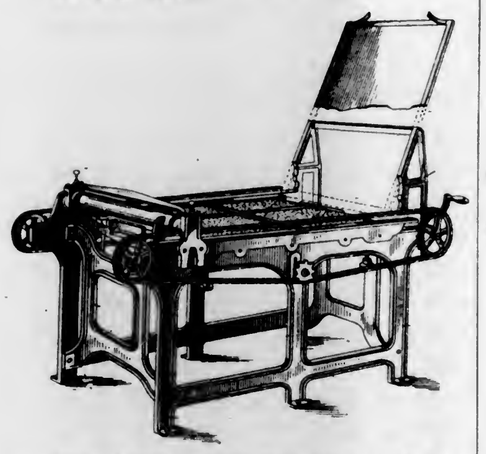
Claim.—The design for a toe-clip herein shown and described.

26,466. HANDLE-BAR HEAD. JAMES EDGAR LEE, Chicago, Ill. Filed Oct. 6, 1896. Serial No. 608,063. Term of patent 7 years.



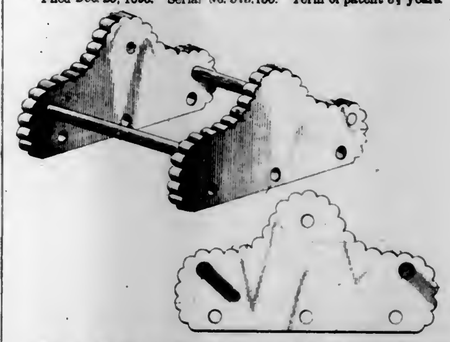
Claim.—The new and original design or useful shape for handle-bar heads for velocipedes, substantially as herein shown and described.

26,467. FRAME FOR HAND CYLINDER PRINTING-PRESSES. JAMES L. LEE, Chicago, Ill. Filed July 19, 1894. Serial No. 518,056. Term of patent 7 years.



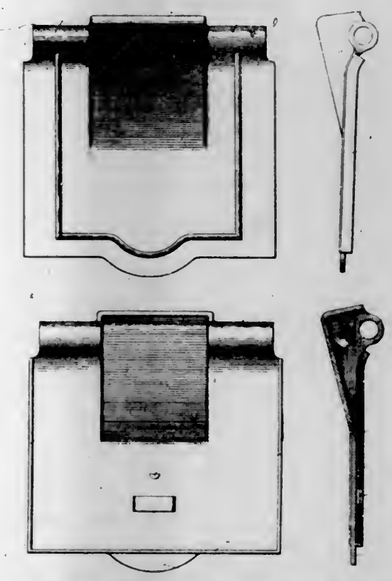
Claim.—The design for a hand cylinder printing-press frame substantially as herein shown and described.

26,468. HAND-RUBBER FRAME. JAMES B. GLASSCOCK, Wheeling, W. Va., assignor to F. M. Churchman and W. L. Tripp, same place. Filed Dec. 23, 1895. Serial No. 573,155. Term of patent 3½ years.



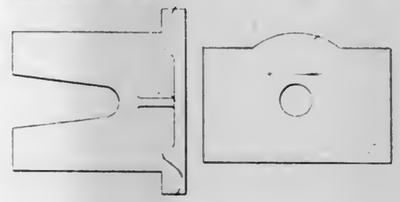
Claim.—The design for the frame of a hand-rubber for washboards herein shown and described.

26,469. JOURNAL-BOX LID. EDWARD S. MARSHALL, St. Louis, Mo., assignor to the Missouri Railway Equipment Company, same place. Filed Nov. 23, 1896. Serial No. 613,204. Term of patent 14 years.

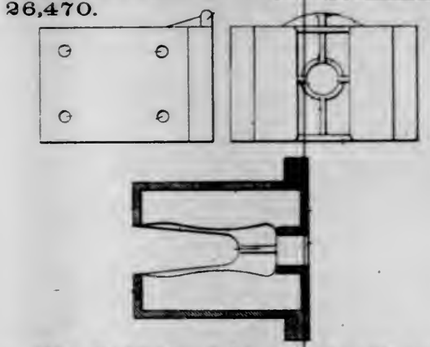


Claim.—The design for a lid for journal-boxes, substantially as herein shown and described.

26,470. DRAFT-LUG AND DRAW-BAR FOLLOWER. EDWARD S. MARSHALL, St. Louis, Mo., assignor to the Western Railway Equipment Company, East St. Louis, Ill. Filed Nov. 23, 1896. Serial No. 613,205. Term of patent 14 years.

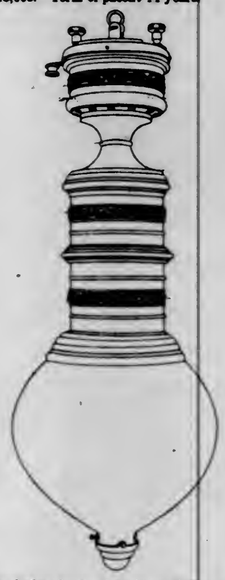


26,470.



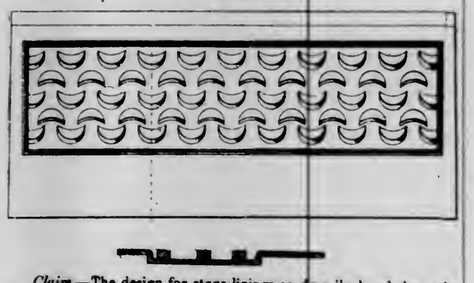
Claim.—The design for a draft-lug and draw-bar follower, substantially as herein shown and described.

26,471. ARC-LAMP. CHARLES R. HARTMAN, Lynn, Mass., assignor to the General Electric Company, of New York. Filed Nov. 27, 1896. Serial No. 613,695. Term of patent 14 years.



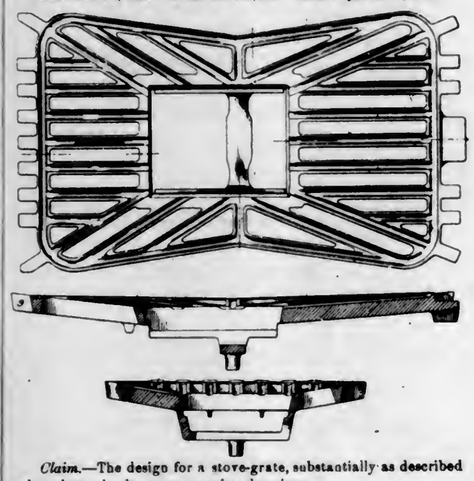
Claim.—The design for an electric-arc lamp, as herein shown and described.

26,472. STOVE-LINING. FAY O. FARWELL, Dubuque, Iowa, assignor to The Adams Company, same place. Filed Nov. 27, 1896. Serial No. 613,696. Term of patent 14 years.



Claim.—The design for stove-linings as described and shown in the drawings.

26,473. STOVE-GRATE. WALTER S. STEVENSON, Philadelphia, Pa. Filed Nov. 23, 1896. Serial No. 613,201. Term of patent 7 years.



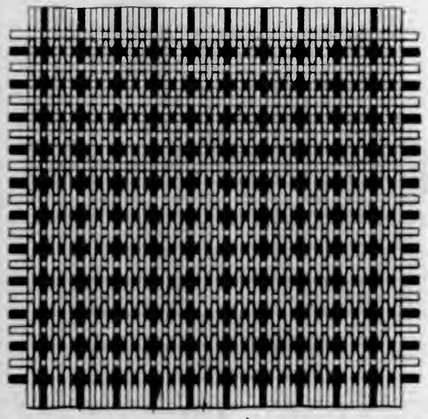
Claim.—The design for a stove-grate, substantially as described and as shown in the accompanying drawings.

26,474. HEATING-STOVE. ANTON OHNEMUS, Quincy, Ill. Filed Mar. 2, 1896. Serial No. 581,594. Term of patent 7 years.



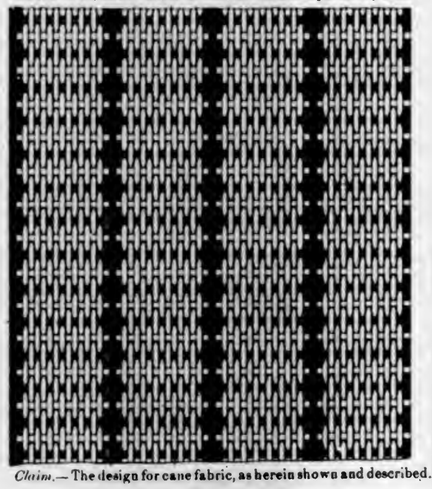
Claim.—The design for a stove substantially as herein shown and described.

26,475. CANE FABRIC. HENRY M. COLLESTER, Worcester, Mass. Filed Nov. 27, 1896. Serial No. 613,697. Term of patent 7 years.



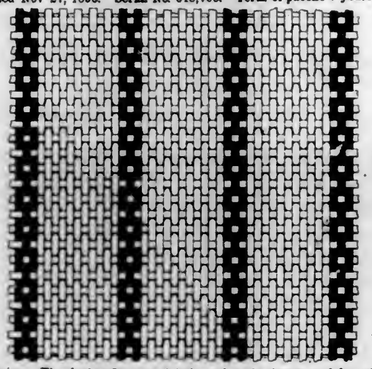
Claim.—The design for cane fabric, as herein shown and described.

26,476. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov. 27, 1896. Serial No. 613,707. Term of patent 7 years.



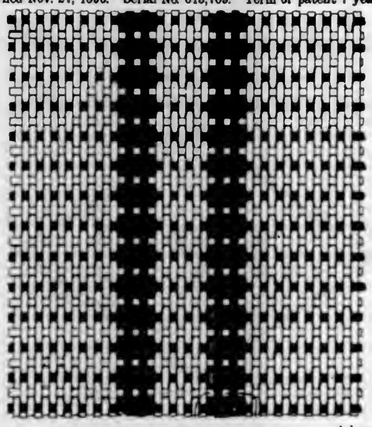
Claim.—The design for cane fabric, as herein shown and described.

26,477. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov 27, 1896. Serial No. 613,708. Term of patent 7 years.



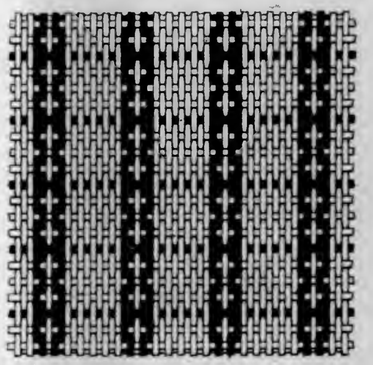
Claim.—The design for cane fabric, as herein shown and described.

26,478. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov. 27, 1896. Serial No. 613,709. Term of patent 7 years.



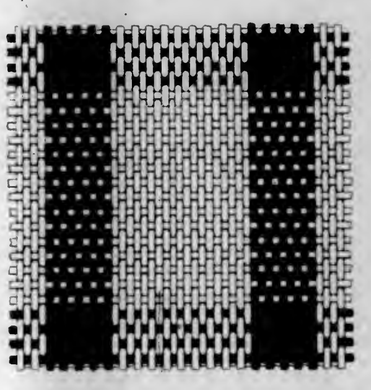
Claim.—The design for cane fabric, as herein shown and described.

26,479. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov. 27, 1896. Serial No. 613,710. Term of patent 7 years.



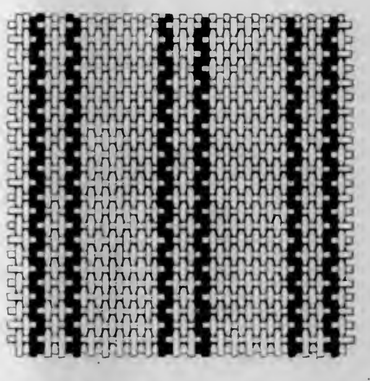
Claim.—The design for cane fabric, as herein shown and described.

26,480. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov. 27, 1896. Serial No. 613,711. Term of patent 7 years.



Claim.—The design for cane fabric, as herein shown and described.

26,481. CANE FABRIC. EDWARD G. WATKINS, Gardner, Mass. Filed Nov. 27, 1896. Serial No. 613,712. Term of patent 7 years.



Claim.—The design for cane fabric, as herein shown and described.

TRADE-MARKS

REGISTERED DECEMBER 29, 1896.

29,342. MEN'S, BOYS', AND WOMEN'S HATS AND CAPS. DUNLAP & COMPANY, New York, N. Y. Filed Nov. 23, 1896.



Essential feature.—A design of two fields united by a bar, which bar is made wider at its central part than at its ends, where it is joined by said fields, and of a Maltese cross with a stag's head on its face placed over said bar. Used since 1867.

29,343. BOOTS AND SHOES. MCKAY NEVERSLIP SOLE COMPANY, Detroit, Mich. Filed Oct. 26, 1896.



Essential feature.—The word "NEVERSLIP" associated with a representation of a part of a sole of a shoe. Used since May 1, 1896.

29,344. ALL-WOOL BOOTS. HASTINGS WOOL BOOT COMPANY, Hastings, Mich. Filed Oct. 2, 1896.

BO-PEEP

Essential feature.—The compound word "BO-PEEP." Used since March 15, 1896.

29,345. SILK GOODS. KNICKERBOCKER SILK COMPANY, New York, N. Y. Filed Nov. 28, 1896.



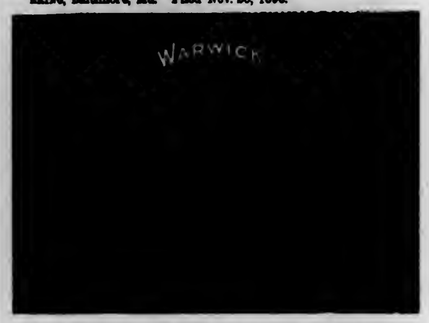
Essential feature.—The word "KNICKERBOCKER" and a representation of a man holding a roll of silk. Used since October 1, 1896.

29,346. SHEETINGS AND DRILLINGS. GEORGE L. MONTGOMERY, New York, N. Y. Filed Oct. 30, 1896.



Essential feature.—A representation of a bear's head. Used since December, 1887.

29,347. RUFFLING AND FLOUNCING. CASSANDRA BROOKE LEVERING, Baltimore, Md. Filed Nov. 20, 1896.



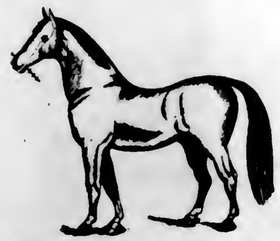
Essential feature.—A picture of a piece of section or ruffling in connection with the arbitrary word "WARWICK." Used since August, 1896.

29,348. SPLIT-LEATHER. JOHN P. CRANE, Woburn, Mass. Filed Nov. 30, 1896.

J.P.C.

Essential feature.—The initials "J. P. C." inclosed within a border of rhomboidal form. Used since 1886.

29,349. LINIMENTS. PETER S. MILLER, Funk, Nebr. Filed Nov. 23, 1896.



Essential feature.—A representation of a standing horse and a short single strand of barbed wire disposed below and intersecting with the lower jaw of the horse. Used since March 1, 1894.

29,350. LINIMENT. AUGUSTUS GILDERSLEEVE, Newark, N. J. Filed Nov. 30, 1896.



Essential feature.—A representation of a sleeve with the word "GILDER" used in connection therewith. Used since November 5, 1896.

29,351. OILS FOR INTERNAL AND EXTERNAL USE. JOHN C. ESTELLE, Norfolk, Va. Filed Nov. 25, 1896.

TI-YE

Essential feature.—The compound word "TI-YE." Used since February 1, 1892.

29,352. REMEDIES FOR GOUT AND RHEUMATISM. ALBERT E. HUGHES, New York, N. Y. Filed Nov. 19, 1896.

ALBERT'S



Essential feature.—The word "ALBERT'S" and a monogram composed of the letters "A E H." Used since May 1, 1878.

29,353. REMEDY FOR HEADACHE, NEURALGIA, RHEUMATISM, AND PAINS IN THE STOMACH AND BOWELS. HIRAM R. KELLY, Galion, Ohio. Filed Oct. 14, 1896.



Essential feature.—The words "E-MEER, THE PRINCE OF REMEDIES" and a representation of the bust of a man wearing a Turkish fez ornamented with a feather and nine jewels. Used since June 1, 1895.

29,354. ANTIRHEUMATIC, ANTINEURALGIC, AND ANTIPYRETIC MEDICINE. CHARLES Graham BACON, Jr., New York, N. Y. Filed Aug. 8, 1896.

BA-QUINOL

Essential feature.—The compound word "BA-QUINOL." Used since January 1, 1896.

29,355. REMEDIES FOR WOMEN'S DISEASES. LA PORTE MEDICINE COMPANY, La Porte, Ind. Filed Nov. 21, 1896.

FLEUR-DE-LIS
LADIES HOME TREATMENT

Essential feature.—The words "FLEUR-DE-LIS, LADIES' HOME TREATMENT." Used since January 1, 1896.

29,356. VERMIFUGAL REMEDIES. HANCE BROS. & WHITE, Philadelphia, Pa. Filed Nov. 27, 1896.

WORM NEWS

Essential feature.—The words "WORM NEWS." Used since January 1, 1894.

29,357. CHEMICAL PREPARATION. MCKESSON & ROBBINS, New York, N. Y. Filed Nov. 3, 1896.

BLENNOSTASINE.

Essential feature.—The word "BLENNOSTASINE." Used since October 20, 1896.

29,358. LOTION FOR THE SKIN AND HAIR. BERNETTA HAFER, Los Angeles, Cal. Filed Nov. 30, 1896.

BEVIER'S CURE.

Essential feature.—The words "BEVIER'S CURE." Used since January 1, 1881.

29,359. HAIR AND SCALP REMEDIES. LAURA P. ELLIOTT, Newton, Mass. Filed Nov. 28, 1896.

CAPILLACIA

Essential feature.—The word "CAPILLACIA." Used since December 1894.

29,360. OINTMENT FOR TOILET PURPOSES. THE EDWARD R. MARSHALL CO., Philadelphia, Pa. Filed Nov. 25, 1896.

VELVETOLA
(VELVET OIL)

Essential feature.—The words "VELVETOLA VELVET OIL." Used since August 1, 1896.

29,361. MEDICINAL TEA. CLARA STEINKRAUS and HERMAN STEINKRAUS, Chicago, Ill. Filed Nov. 28, 1896.

MRS. LOGAN'S

ROCKY

MOUNTAIN TEA

Essential feature.—The words "MRS. LOGAN'S ROCKY MOUNTAIN TEA." Used since June, 1889.

29,362. FINELY-POWDERED TALC OR AQUALITE. INTERNATIONAL PULP COMPANY, Gouverneur and New York, N. Y. Filed Nov. 21, 1896.

NOGRITALC

Essential feature.—The word "NOGRITALC." Used since April 15, 1896.

29,363. ALUM. HARRISON BROTHERS & CO., Philadelphia, Pa. Filed Nov. 24, 1896.

PEARL

Essential feature.—The word "PEARL." Used since February, 1879.

29,364. CIGARETTES. HENRY WOLKIND, Pittsburg, Pa. Filed Aug. 15, 1896.



Essential feature.—The word "WANDA" and a representation of a female figure. Used since May, 1894.

29,365. TOBACCO AND CIGARS. S. HERNSHEIM BROS. & COMPANY, LIMITED, New Orleans, La. Filed June 18, 1896.



BLACK LION

Essential feature.—The words "BLACK LION" or a symbol thereof. Used since 1865.

29,366. TOBACCO AND CIGARS. S. HERNSHEIM BROS. & COMPANY, LIMITED, New Orleans, La. Filed June 18, 1896.



BLACK TIGER

Essential feature.—The words "BLACK TIGER" or a symbol thereof. Used since 1865.

29,367. POWDER FOR CARBONATING LIQUIDS. CHURCH & DWIGHT COMPANY, New York, N. Y. Filed Oct. 23, 1896.



Essential feature.—A representation of a star or the word "STAR." Used since October 14, 1896.

29,368. ALE. THOMAS MCMULLEN & CO., New York, N. Y. Filed Oct. 27, 1896.



Essential feature.—A representation of a heraldic device consisting of a scroll supporting a shield surmounted by a crown and flanked at one side by a representation of a lion rampant and on the other side by a representation of a unicorn, with the facsimile signature of "THOMAS MCMULLEN & CO." obliquely across it. Used since August 22, 1896.

29,369. GIN, RUM, AND WHISKY. CLARENCE M. ROOF, New York, N. Y. Filed Nov. 28, 1896.



Essential feature.—A representation of a hotel-sign upon which appears the representation of a white deer or hart. Used since November, 1895.

29,370. WHISKY. CLARENCE M. ROOF, New York, N. Y. Filed Nov. 28, 1896.

GLEN LONACH

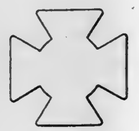
Essential feature.—The words "GLEN LONACH." Used since November, 1895.

29,371. WHISKY. CLARENCE M. ROOF, New York, N. Y. Filed Nov. 28, 1896.

TOBERCURRY

Essential feature.—The word "TOBERCURRY." Used since November, 1895.

29,372. WHISKY. THE ANDERSON & NELSON DISTILLERIES COMPANY, Louisville, Ky. Filed Dec. 1, 1896.



Essential feature.—A representation of a Maltese or Templar cross. Used since January 1, 1874.

29,373. WHISKY. THE ANDERSON & NELSON DISTILLERIES COMPANY, Louisville, Ky. Filed Dec. 1, 1896



ANDERSON

Essential feature.—A representation of a Maltese or Templar cross and a panel below the same and bearing the word "ANDERSON," in white letters, the cross and panel appearing in red and each having a border in gold. Used since May 1, 1896.

29,374. LOZENGES AND OTHER CONFECTIONERY. SMITH & PETERS, Philadelphia, Pa. Filed Apr. 28, 1896.



Essential feature.—A representation of a clover-leaf. Used since June 23, 1890.

29,375. SUGAR SYRUPS. J. D. HAGE & CO., New York, N. Y. Filed Dec. 1, 1896.

SILVER

Essential feature.—The word "SILVER." Used since December 5, 1894.

29,376. SUGAR SYRUPS. J. D. HAGE & CO., New York, N. Y. Filed Dec. 1, 1896.

ROYAL

Essential feature.—The word "ROYAL." Used since January 31, 1892.

29,377. SUGAR SYRUPS. J. D. HAGE & CO., New York, N. Y. Filed Dec. 1, 1896.

LILY

Essential feature.—The word "LILY." Used since April 28, 1892.

29,378. SUGAR SYRUPS. J. D. HAGH & Co., New York, N. Y. Filed Dec. 1, 1896.

IMPERIAL

Essential feature.—The word "IMPERIAL." Used since March 18, 1893.

29,379. OYSTER-CRACKERS. AMERICAN BISCUIT AND MANUFACTURING COMPANY, Chicago, Ill. Filed Nov. 24, 1896.

BAYOU COOK

Essential feature.—The words "BAYOU COOK." Used since August 1, 1896.

29,380. SOFT BREAD. SMITH, COLLINS & Co., Buffalo, N. Y. Filed Apr. 24, 1896.

CROWN BREAD

Essential feature.—The words "CROWN BREAD." Used since July, 1886.

29,381. PATENT WHEAT-FLOUR. WILLIAM H. STOKES, Watertown, S. D. Filed Sept. 28, 1896.



Essential feature.—The word "TOWEL" or a pictorial representation of a towel. Used since September 1, 1896.

29,382. PATENT WHEAT-FLOUR. WILLIAM H. STOKES, Watertown, S. D. Filed Sept. 28, 1896.



Essential feature.—The word "TOWELING" or a pictorial representation of a towel. Used since September 1, 1896.

29,383. MIDDLINGS. FREEMAN MILLING COMPANY, West Superior, Wis. Filed Nov. 23, 1896.



Essential feature.—The word "PIG" and a representation of a pig, used either separately or together. Used since December 1, 1895.

29,384. BUTTER. KURZMAN BROS., New York, N. Y. Filed Nov. 28, 1896.

"LA FAVORITA"

Essential feature.—The words "LA FAVORITA." Used since May 28, 1892.

29,385. PACKED SALMON, FRUITS, AND VEGETABLES. JOSEPH G. MEGLER, Brookfield, Wash. Filed Nov. 23, 1896.

Forget me not

Essential feature.—The words "FORGET ME NOT." Used since September 1, 1895.

29,386. DRIED FRUITS. LOUIS SCHRÖTER & Co., Hamburg, Germany. Filed Sept. 19, 1896.

ATLAS

Essential feature.—The word "ATLAS." Used since September, 1895.

29,387. OLIVES, OLIVE-OIL, FRENCH PEAS, AND MACARONI. FALCON PACKING Co., New York, N. Y. Filed Nov. 30, 1896.

COCKTAIL

Essential feature.—The word "COCKTAIL." Used since November 21, 1896.

29,388. ARTICLES OF AMMUNITION. THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Nov. 23, 1896.

P. C. C.

Essential feature.—The letters "P. C. C." Used since November, 1896.

29,389. ARTICLES OF AMMUNITION. THE PETERS CARTRIDGE COMPANY, Cincinnati, Ohio. Filed Nov. 23, 1896.

REFEREE

Essential feature.—The word "REFEREE." Used since November, 1896.

29,390. SHOTGUN-SHELLS. THE AUSTIN CARTRIDGE COMPANY, Cleveland, Ohio. Filed Nov. 25, 1896.

FLASH.

Essential feature.—The word "FLASH." Used since November 1, 1896.

29,391. SHOTGUNS AND SHOTGUN-SHELLS. THE AUSTIN CARTRIDGE COMPANY, Cleveland, Ohio. Filed Nov. 25, 1896.

WINNER.

Essential feature.—The word "WINNER." Used since November 1, 1896.

29,392. SOAP. WILLIAM WALTKE & Co., St. Louis, Mo. Filed Dec. 8, 1896.

LAVA

Essential feature.—The word "LAVA." Used since September, 1893.

29,393. MATCHES. ENTERPRISE SPECIALTY COMPANY, New York, N. Y. Filed Nov. 27, 1896.

SONTEE

Essential feature.—The word "SONTEE." Used since April 1, 1896.

29,394. APPARATUS FOR PHOTOGRAPHICALLY EXHIBITING OBJECTS IN MOTION. A. LUMIÈRE & SES FILS, Lyons, France. Filed Dec. 3, 1896.

CINÉMATOGRAPHE

Essential feature.—The word "CINÉMATOGRAPHE." Used since November 1, 1895.

29,395. SHEET-GLASS. CHAMBERS GLASS COMPANY, New Kensington, Pa. Filed Oct. 26, 1896.

DRY PLATE

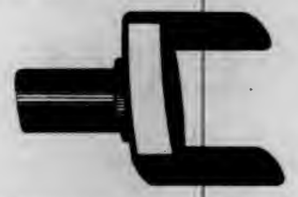
Essential feature.—The words "DRY PLATE." Used since September 29, 1896.

29,396. CEMENT COMPOSITION FOR MENDING PNEUMATIC TIRES. PUNCTUROID MANUFACTURING CO., Chelsea, Mass. Filed Oct. 7, 1896.



Essential feature.—The word "PUNCTUROID." Used since September 23, 1896.

29,397. BICYCLES AND LIKE VEHICLES. POPE MANUFACTURING COMPANY, Hartford, Conn. Filed Nov. 23, 1896.



Essential feature.—A fork-crown having displayed on its front portion within the limits of the fork-crown a surface of contrasting color less in length and width than the limits of the fork-crown. Used since August, 1896.

29,398. CERTAIN EDGE-TOOLS. THE COLLINS COMPANY, Canton, Conn. Filed Nov. 30, 1896.



Essential feature.—The word "COLLINS." Used since 1826.

THE NORRIS PETERS CO. PHOTO-LITH. WASHINGTON, D.C.

DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS IN PATENT CASES.

COMMISSIONER'S DECISIONS.

EX PARTE BORTON.

Decided October 31, 1896.

APPEAL FEE—RETURN OF—FAILURE TO PROSECUTE APPEAL.

A request for the return of an appeal fee where the appeal was not prosecuted denied, as the law establishes certain payments to be made upon filing certain papers, and this irrespective of whether the case is further prosecuted or not.

ON request.

DRIVING MECHANISM FOR SEWING-MACHINES.

Application of Stockton Borton filed August 10, 1895, No. 558,848.

Messrs. Pollok & Mauro for the applicant.

SEYMOUR, *Commissioner:*

This is a request for the return of the appeal fee paid upon taking an appeal from the decision of the Examiners-in-Chief to the Commissioner. It appears that the appeal was not prosecuted.

Section 4934, Revised Statutes, prescribing the rates for patent fees, among other things provides as follows:

On every appeal from the Examiners-in-Chief to the Commissioner, twenty dollars.

In but few cases are patent fees considered to be in payment for any particular service rendered. The law establishes certain payments to be made upon filing certain papers or taking certain actions, and this irrespective of what may follow or what becomes of the case or whether the case is further prosecuted or not.

It is considered that there is no authority of law for returning this fee, and the request must therefore be denied.

JOHNSTON v. STONE.

Decided November 30, 1896.

1. INTERFERENCE—PRIORITY OF INVENTION—FAILURE TO ASSERT PRIORITY ON THE PART OF A JUNIOR PARTY.

A contention that an article embodying the issue was in existence at a time anterior to the production of any such article by the senior party is rendered doubtful by the failure of such junior party, when he learned of the other's invention, to make any suggestion or otherwise assert that he was the true inventor.

2. TESTIMONY—CREDIBILITY OF WITNESSES.

Numerous witnesses of unquestioned credibility concurring in one matter may nevertheless be mistaken, particularly upon the question whether what is shown them as they testify is the identical thing which they saw more than two years before In such a case, in weighing the testimony, the circumstances must be taken into account, considering that that which is conformable to experience is more probable than that which runs counter to it.

APPEAL from the Examiners-in-Chief.

DRESS-STAYS.

Application of Walter S. Johnston filed June 1, 1895, No. 551,392. Patent granted to Harrison D. Stone February 12, 1895, No. 534,233.

Messrs. Munn & Co. and *Messrs. Burton & Parker* for Johnston.

Messrs. Paul & Hawley for Stone.

SEYMOUR, *Commissioner:*

This case comes before me on appeal from the decision of the Examiners-in-Chief adjudicating priority of invention in favor of Johnston on the following issue:

As an improved article of manufacture, a dress-stay comprising in its construction an elastic stiffening-blade, fibrous, non-corrosive protection-caps folded over and cemented to the ends of the blade, an inner protecting textile covering of the same width as the stiffening-blade and extending the entire length of the same and over the inner caps, outer fibrous protecting and attaching caps applied on each end of the stiffening-blade over the inner covering and inner caps and projecting beyond the stiffening-blade on each side, an outer textile covering, applied over the inner covering and over the protecting and attaching caps and projecting over the sides and ends of the stiffening-blade and secured by cement to both faces of the inner covering and having its projecting edges cemented together, and eyelets passed through each end of the projecting sides of the outer covering and through the outer attaching caps outside the stiffening-blade and adapted to hold said outer covering firmly in position and prevent the stiffening-blade from having a lateral movement and at the same time furnish strong, permanent means of attachment, substantially as described.

About April 2, 1894, Johnston, the junior party, who had prior to this time been living in Detroit, Mich., went to Duluth, Minn., and soon afterward met Richard C. Stone of that city. Johnston was at that time the owner of the patent for making dress-stays granted to C. W. Bell June 20, 1891, No. 444,809, and desired to enlist R. C. Stone with himself in the business of making paper boxes and of manufacturing dress-stays. In the course of Stone's investigations and conferences with Johnston, Johnston gave him parts of the Bell dress-stay and a small quantity of some of the materials out of which they were made, explained to him the construction, and showed him a copy of the Bell specification. R. C. Stone conferred with his son, Harrison D. Stone, about this matter, who is the senior party to this interference and who was then a boy at school of the age of sixteen. Harrison D. Stone had been experimenting in electrical matters, had constructed a crude telegraphic instrument with his fellow-students, and had operated it between his home and theirs. He knew a little of chemistry and physics and had carried on other elementary experiments.

R. C. Stone, the father, considered that the Bell dress-stay was imperfect in that the metal strip would punch through the coverings at the ends, and at once he and his son concluded that a better stay might be

devised. The son immediately interested himself in this work and in the course of a few days and prior to May 30, 1894, produced dress-stays of the improved form described in this issue.

It is not necessary to detail the precise steps of his operations nor how one thing led to another, for it clearly appears that the completed stay had been made for Gearhart and that several of them had been set into a belt for him which he wore on Decoration Day, the 30th of May, 1894, on a parade.

Some attack has been made on the evidence of this fact by counsel for Johnston in that the stays upon the Gearhart belt are stamped with the words "The Duluth Dress Stay, Patent Applied for," and it is claimed that this stamp was put upon the back of a sheet of stays before they were separated; that one of the stays shows the upper part of one line of these words and the lower part of another line; that it is spaced five-sixteenths of an inch, exactly as was the rubber roll which the company hereinafter referred to caused to be made for this purpose, and that the stamp could not have been put on by a hand-stamp, as Stone and his mother testify. It is further claimed by Johnston that Ephraim F. Barker, who made the rubber roll, establishes that it was not made prior to July 6, 1894, and that this is shown by an entry in Barker's book charging this roll on that day. While it is extremely probable that the impression on the back of the stays of the Gearhart belt was made with the roll, it is quite uncertain from Barker's testimony when the roll was charged by him, and I am unable to find that it could not have been used by Stone to stamp a sheet of the stays or to stamp the cloth backing which he put upon the stays which he made for the Gearhart belt. It is, however, quite clear that Stone and his mother are mistaken in thinking that any hand-stamp was used. Nor is it clear that the pinking-machine, a small-sized affair which Johnston brought to Duluth with him, was not accessible to Stone in such wise that for the making of the first stays, preliminary to manufacturing them in the course of his business, it was used, even if Johnston did not happen to know or does not recollect that he knew of such use.

Johnston and Harrison D. Stone did not meet personally until about the 21st or 22d of June, 1894; but prior to that time the father, R. C. Stone, and Johnston had conducted negotiations about the manufacture of dress-stays and of paper boxes, which resulted in an agreement between Johnston and Harrison D. Stone, the son, drawn up on July 11, 1894, and executed and acknowledged on July 14, 1894, in which, among other things, the parties recited that Harrison D. Stone was the owner of an undivided three-fourths interest in the Bell patent and was also the owner of an invention for an improvement in garment-stays for which he would apply for a patent. It is manifest from all the circumstances, as well as admitted by Johnston, that this invention for an improvement in garment-stays referred to in the recital of the written agreement concerns the improvement in question, and none other, and it is equally clear that no agreement had been made between them for Stone to become the owner of any improvement in dress-stays which Johnston ever owned, except a three-fourths interest in the improvement covered by the Bell patent. It is not pretended that any consideration ever moved from Stone to Johnston in exchange for the transfer to Stone of an invention of Johnston's, and the want of such a transfer itself is still more significant.

The business of manufacturing these stays went on in a small but growing way under the personal supervision of Johnston, with the personal coöperation of Harrison D. Stone as soon as he left school in the latter part of June, and on August 14, 1894, Harrison D. Stone applied for a patent, with the knowledge of Johnston. On February 12, 1895, the patent was granted, also with the knowledge of Johnston.

Under date of August 27, 1895, the Ypsilanti Dress Stay Manufacturing Company notified the Duluth Dress Stay Company to discontinue the manufacture of their dress-stay or a contest in court upon their patent would result.

Under date of February 2, 1895, Johnston rendered a bill to the company containing an item of $105 for a time-keeper seventy days at $1.50 a day, and another item for seventy days' use of shears for cloth-cutting at $1 a day, $70, as to which a dispute arose between Johnston and Stone.

About the 12th day of November, 1894, Stone bought the interest of Johnston in the dress-stay business and Johnston withdrew. It was not until June 1, 1895, that Johnston made an application in this Office for a patent upon the same improvement which, with his knowledge, had been theretofore patented to Stone, and on which they had notified the public that a patent had been applied for, and under which they had jointly been engaged in manufacturing up to the time of the purchase of the Johnston interest by Stone.

William E. Richardson, a lawyer of Duluth, became a stock-holder in the Duluth Dress Stay Company, and in September or October, 1894, he went to the company's place of business, found Johnston there at the noon hour, told him that he had been approached and requested to go in with other gentlemen of that city in the purchase of the invention of Deane Stone and to engage in the manufacture of the invention, and that he had come to look it up. He asked Johnston if the young man was there who had made the invention, to which Johnston replied that he was, but had stepped out for a minute, but that he would show him around, which he did. While they were examining the different processes of manufacturing the stay a young man came up from down stairs and Johnston advised Mr. Richardson that that was Harrison D. Stone.

Stone is the patentee, and upon the question of the priority of his invention a strong *prima facie* case is made out for him by the mere issue to him of the patent, as well as by the entire circumstances of the extended business transactions between him and Johnston at a time when the record discloses no reason or occasion for any veiling of the facts, any misrepresentation, or any concealment. In answer to this position of Stone's Johnston explains the unobstructed application of Stone for a patent by the assertion that Stone, the father, desired that his son should be an in-

ventor and patentee at the age of sixteen and that he consented to it for the sake of allowing Stone the glory; but in answer to this the business transactions between them show no consideration moving from Stone to Johnston in exchange for the transfer of this invention from Johnston to Stone, then considered valuable. Nor is it shown to be a part of the consideration of the agreement of July 14, 1894.

Johnston has produced a dress-stay, called "Exhibit stay produced by applicant Johnston," which embodies this issue and this invention, and which he states with details of circumstance and urges with earnestness that he made in Detroit as early as the 15th day of November, 1893. He was then making the Bell stay on a small scale in his mother's barn, in Detroit, and was selling them himself. He produces his sister; his brother-in-law Otto, a bookbinder; Macauley, a salesman; Watkins, a paper-box manufacturer, and Schieber, a shoemaker, to all of whom the dress-stay was shown, and of whom the inquiry was made whether they had seen it before, and each answered that he had, and that it was in Detroit on or about November, 1893. Louisa A. Horn was asked:

Q. 4. Do you know anything about his making a stay during the month of November, 1893? A. Yes, sir.
Q. I will show you the "Exhibit stay produced by applicant Johnston" and ask you if you recognize it? A. Yes, sir.
Q. 9. Now state when you first saw it? A. November the 15th, 1893.

Charles F. Horn, after being asked where Johnston lived and where he lived in November, 1893, was asked:

Q. 9 Do you know of his making a sample of a stay during the month of November, which he said or claimed was a new invention? A. Yes, sir.
Q. 10. I show you the stay, which has been marked for identification "Exhibit stay produced by applicant Johnston;" I ask you if you have ever seen that stay before, and, if so, where and at what time did you first see it? A. I have seen it before, at 42 Charles street, November 15th, 1893.

He then states the circumstances.

Julius C. Otto was asked:

Q. 3. Did you know him in November, 1893? A. Yes, sir.
Q. 4. Has he ever showed you the stay which has been introduced and marked for identification "Exhibit stay produced by applicant Johnston"? A. Mr. Johnston showed me this stay, or one very much like it.
Q. 5. When and where? A. The latter part of November, on Charles street, in his barn, in 1893.

Johnston says but one of these stays was ever made by him prior to going to Duluth.

On cross-examination Otto was asked:

X-Q. 24. Did you ever see more than this one stay at Mr. Johnston's barn that had eyelets in it? A. Yes, sir.
X-Q. 25. How many others did you see that had eyelets? A. That is something I could not tell you. I never counted. I wasn't interested in them. I couldn't tell you how many there were.
X Q 26. And those other stays that you saw that had eyelets in them had the eyelets arranged substantially the same as they are in this exhibit stay? A. They all appeared the same. They couldn't be any other way. All eyelets are put in alike.

In answer to another question he said:

The stays that I saw had two eyelet-holes on each side, at the upper and lower ends, similar to that.

Macauley was asked:

Q. 4. I show you the "Exhibit stay produced by applicant Johnston" and ask you if you recognize the exhibit as one that you have ever seen before? A. Yes, I did see it.
Q. 5. When and where did you see it? A. I saw it at his house in the latter part of November, 1893.

The other witnesses were examined in a similar way.

It is needful to advert to the superior probative force of testimony elicited without any suggestion whatever concerning the answer, and especially of the dates of past transactions, when the date is the particularly material point. It is not impossible that testimony of this character should, along with other circumstances, become completely conclusive. On the other hand, in a case like this, when it is extraordinary, if not incredible, that Johnston should have entered into negotiations with Stone for the manufacture of an article publicly put forth as the invention of Stone alone, patented by Stone as his sole invention, with his knowledge and apparent approval, and not disputed as the sole invention of Stone until after a business disagreement had worked a separation between them, these acts are equivalent to a formal declaration to the world that Stone was the inventor, and not only to the world in general but to Richardson in particular, who upon that representation became a stock-holder in the company; and the language of such acts is of more moment even than the language of Johnston himself to Richardson that Stone, who had just then appeared before them, was the inventor.

These words of Johnston, against his interest and in favor of Stone, and the still louder language of his acts just referred to speak impressively to one effect, and comparing them with what is now alleged to the contrary through the mouth of these witnesses whose testimony has just been examined, and who seem to have been led to the answers which they gave, present something of the situation which the Court referred to, speaking by Mr. Justice White, in the case of the *Singer Manufacturing Co.* v. *June Manufacturing Co.*, (75 O. G., 1703; 163 U. S., 169, 183:)

It is true that this conclusive statement, made by the vice-president of the company, is followed in the continuation of his testimony by several leading questions, which could not have failed to suggest to him that it was desired that the statement thus made should be materially qualified. But the result of this effort to lead the witness rather strengthens than weakens the force of the testimony just quoted.

In one case Mr. Justice Blatchford, then a judge of the circuit court, said in substance of a witness who deposed to facts impeaching the patent sued on, but had testified in prior suits on the same patent and said nothing about such alleged facts, that it was impossible to accept what the witness said as worthy of reliance. (*Atlantic Giant Powder Co.* v. *Dittmar Powder Mfg. Co.*, 17 O. G., 969; 17 Blatchf., 531.) About the other witnesses, who, no doubt, honestly state their impressions, but with many possibilities of mistake, the language of Judge Nixon in *Greenwood* v. *Bracher* (17 O. G., 1115; 1 Fed. Rep., 856) is relevant when he says that it is easy to exhibit an article to an honest and well-meaning person and procure an affidavit that many years before he saw or made something like it.

In the recent case of *Kirk* v. *United States* (163 U. S., 49) it was remarked by the Court that Strong's application, made after a Government contract was approaching its termination, was suggested by the fact that his contract was about to expire.

Taking all the circumstances of this case together I am forced to the conclusion that it is doubtful, notwithstanding the testimony of these several witnesses, that the Johnston exhibit, marked in pencil "November 15, 1893," was really in existence at the time he states, or prior to the Stone invention. If the fact were indubitably established that this one stay was then in existence, it would doubtless justify the decision of the Examiners-in-Chief that Johnston was the first inventor. But was it in existence, or is that allegation so completely established as that it must be

taken as true beyond a reasonable doubt? Johnston's subsequent conduct is astonishing, if, as he states, he then had an invention which he had long been seeking and yet did not take the stay with him to Duluth or send for it as soon as he found that Stone was making the same thing, or protest against the patent to Stone, or make some suggestion in some disinterested quarter that he was the true inventor, or take some means to convince impartial minds that the invention was really his.

Numerous witnesses of unquestioned credibility concurring in one matter may nevertheless be mistaken, particularly upon the question whether what is shown them as they testify is the identical thing which they saw more than two years before. In the *Barbed Wire Patent Case* (58 O. G., 1555; 143 U. S., 275, 287) twenty-four witnesses were sworn on behalf of the defendants to the existence of what was called in that case the "Delhi Fair" fence, and yet the Court approved of the contention of the appellant that no fence of the precise construction of the patentee's was built at that time, and of testimony of this kind the Court observed, at page 284:

> In view of the unsatisfactory character of such testimony, arising from the forgetfulness of witnesses, their liability to mistakes, their proneness to recollect things as the party calling them would have them recollect them, aside from the temptation to actual perjury, courts have not only imposed upon defendants the burden of proving such devices, but have required that the proof shall be clear, satisfactory and beyond a reasonable doubt. Witnesses whose memories are prodded by the eagerness of interested parties to elicit testimony favorable to themselves are not usually to be depended upon for accurate information. The very fact, which courts as well as the public have not failed to recognize, that almost every important patent, from the cotton-gin of Whitney to the one under consideration, has been attacked by the testimony of witnesses who imagined they had made similar discoveries long before the patentee had claimed to have invented his device, has tended to throw a certain amount of discredit upon all that class of evidence, and to demand that it be subjected to the closest scrutiny. Indeed, the frequency with which testimony is tortured, or fabricated outright, to build up the defence of a prior use of the thing patented, goes far to justify the popular impression that the inventor may be treated as the lawful prey of the infringer. The doctrine was laid down by this Court in *Coffin* v. *Ogden* (5 O. G., 270; 18 Wall., 120, 124) that "the burden of proof rests upon him," the defendant, "and every reasonable doubt should be resolved against him If the thing were embryotic or inchoate; if it rested in speculation or experiment; if the process pursued for its development had failed to reach the point of consummation, it cannot avail to defeat a patent founded upon a discovery or invention which was completed, while in the other case there was only progress, however near that progress may have approximated to the end in view." This case was subsequently cited with approval in *Cantrell* v. *Wallick*, (85 O. G., 871; 117 U. S., 689, 696.) and its principle has been repeatedly acted upon in the different circuits. (*Hitchcock* v. *Tremaine*, 1 O. G., 633; 9 Blatchf., 550; *Parham* v. *American Button-Hole Machine Co.*, 4 Fish., 468; *American Bell Telephone Co.* v. *People's Telephone Co.*, 29 O. G., 1029; 22 Fed. Rep., 309.)

I am forced to weigh the testimony of conflicting parties upon this question in a case where it must be found that one party or the other is utterly mistaken. I take the circumstances into account—the business conduct of the man—considering that that which is conformable with experience is more probable than that which runs counter to it. I prefer the testimony of Stone to that of Johnston, and, without criticizing the intentions or the sincerity of the various witnesses who have testified in Johnston's behalf, I am inclined to think that there are many possibilities of error; that there is some mistake about his "exhibit stay;" that, whatever it was, it was not the stay drawn into controversy here, and that there is no ground for issuing another patent on an invention already covered by a patent granted with Johnston's knowledge and approval.

It is considered, therefore, that Stone, the patentee, is the prior inventor, and accordingly the decision of the Examiners-in-Chief is reversed.

DECKER *v.* LOOSLEY.

Decided August 11, 1896.

1. DECEASED INVENTOR—STANDING OF APPLICATION—ABANDONMENT.

   The fact that an inventor is dead and that his executor has not asserted his rights does not deprive an application of standing before the Office. It cannot be considered abandoned until the expiration of the time allowed by law for amendments.

2. SAME—INTERFERENCE—HEIRS.

   The Office, when it has reason to believe that an inventor is dead, should endeavor to ascertain the identity of his heirs before the declaration of an interference, and should send the interference notices to such heirs if no formal or authentic notice of the death of the inventor has been given.

ON reference.

CHAIN-GUARD FOR BICYCLES.

Application of William L. Decker filed November 7, 1895, No. 568,140. Application of Ernest A. Loosley filed February 9, 1895, No. 537,737.

Mr. Rufus B. Fowler for Decker.
Mr. P. Byrne for Loosley.

FISHER, *Acting Commissioner:*

This case is before me on a reference by the Primary Examiner under Rule 99.

It appears that there was an amendment presented to the application of Loosley on March 21, 1895, signed by Mr. P. Byrne, the attorney of record, together with a statement by Mr. Byrne that the applicant Loosley was dead and that no executor had been appointed to his knowledge. The Examiner refused to enter the amendment and notified Mr. Byrne that the death of the applicant acted as a revocation of his power of attorney.

Some time after this the application of Decker was filed, covering the invention at issue, and an interference was declared between the applications of Loosley and Decker.

The attention of the Examiner of Interferences was not called to the fact that Loosley was dead, and therefore he mailed the notice of interference to Mr. Byrne, the attorney of record. In reply the Examiner of Interferences was notified that the applicant was dead and that no executor or administrator had been appointed, and Mr. Byrne stated that he did not think that the heirs would take any steps to prosecute the interference.

Upon the receipt of this letter the Examiner of Interferences declined to proceed with the interference on the ground that there was no properly-declared interference before him, it being held that the interference was void *ab initio*. The Examiner of Interferences holds that the application of Loosley has no standing in the Office, since the rules provide that a patent shall issue to the executor only upon proper intervention by him, and there has been no such intervention in this case.

I do not think that it can be properly held that an application has no standing before the Office because the inventor is dead and the executor has not asserted his rights. The legal representatives of the deceased

have the right to prosecute the application, and the mere fact that they are not known to the Office and that they have not actually prosecuted the case by any action on their part cannot be considered an abandonment of the application until the expiration of the two years allowed by law for amendments. Since the application of Loosley is a live application, the Primary Examiner was correct in declaring the interference. He should, however, have taken pains to ascertain who the heirs of the deceased are. This he may do by forwarding an Office letter to the proper post-office, addressed to the heirs of E. A. Loosley, deceased, and asking for the names of the heirs, without stating the reason for the request.

In the present case, even if the Office knew that the interference would not be prosecuted on behalf of Loosley, which it does not, still the interference should proceed, since Loosley is the senior party and may prevail in the interference on his record date, even if no testimony is taken on his behalf.

Even if the death of the inventor without the intervention of the executor worked an abandonment of the application, I do not think that there is sufficient proof of Loosley's death before the Office for it to hold his application abandoned. The statement by the attorney, Mr. Byrne, may properly be taken against himself and is sufficient ground on which to refuse to recognize him further in the prosecution of the case, but I do not think that it can be considered legal proof of Loosley's death.

This interference should be redeclared, and the notice to the applicant Loosley should be sent to his heirs, if their names are learned within a reasonable time. If these names are not learned, notice of the interference may be forwarded to the heirs of E. A. Loosley, deceased. If this notice is returned and it is found impossible to communicate with the legal representatives, in case the inventor is dead, the interference should proceed as in other cases where it is impossible to communicate with the applicant.

DECISIONS OF THE U. S. COURTS.

Court of Appeals of the District of Columbia.

ROSS *v.* LOEWER.

Decided December 17, 1896.

1. APPEAL TO COURT OF APPEALS—LIMIT OF.

   The rule that all appeals taken from the Commissioner of Patents shall be taken within forty days from the date of the ruling appealed from, and not afterward, is a positive law to the court and to the suitors therein.

2. SAME—MOTION FOR REHEARING IN PATENT OFFICE—STAY OF TIME OF APPEAL.

   The contention that a motion for rehearing in the Patent Office should operate as a stay of the running of the time for the prosecution of appeal to this court till after the motion for rehearing has been determined cannot be admitted.

3. APPEALS—MOTION FOR REHEARING—RULES OF COURT IN CERTAIN CASES DOES NOT APPLY TO PATENT OFFICE.

   The ruling that the time for prosecuting appeals from decrees in equity or writs of error from a judgment at law is stayed by a motion for rehearing or for new trial and only begins to run from the refusal of such motion is founded upon the principle that the judgment is not complete until the rehearing is disposed of; but the proceedings of the Patent Office are not controlled by the ordinary rules of practice that obtain in the courts of the country, but are controlled by statutory provisions and a code of rules made in pursuance of statutory provisions wholly unlike the rules of practice enforced in the courts.

4. CONSTRUCTION OF RULE—DILATORY MOTION TO AVOID APPEAL.

   A construction of the rules of the Office by means of which motions for mere dilatory purposes could be resorted to should not be adopted unless by express terms such construction cannot be avoided.

5. APPEAL—STAY OF PROCEEDINGS—RULE OF PATENT OFFICE APPLIES TO APPEAL TO COURT.

   Rule 123 of the Patent Office, which provides that in order to obtain a stay of proceedings motion must be made specifically to that effect, applies in reason and analogy to this case. The running of the time for appeal was not arrested by filing the motion for rehearing.

Mr. James L. Norris, Messrs. Wood & Boyd, and *Mr. George W. Rea* for Ross.

Mr. R. G. Dyrenforth for Loewer.

ALVEY, *J.:*

There is a motion to dismiss the appeal in this case, grounded upon the allegation that the appeal was not taken in time under the second section of Rule XX of this court. That section provides that all appeals taken from the Commissioner of Patents—

> shall be taken within forty days from the date of the ruling or order appealed from, and not afterward.

That rule was made to avoid delay and to expedite the final determination of patent-rights; and the rule was made in pursuance of the acts of Congress of February 9, 1893, and July 30, 1894. The rule is a positive law to this court as well as to the suitors therein. This has recently been decided by this court in the case in the matter of the application of George Bryant.

The date of the ruling or order appealed from is the 6th day of July, 1896, and notice of the present appeal, under the statute, was not given until the 30th of September, 1896, some eighty-six days after the date of the decision appealed from. It is conceded that ordinarily the appeal would be too late; but it is contended that a motion for rehearing which was filed in the Patent Office on the 10th of August, 1896, operated as a stay or as a suspension of the running of the time for the prosecution of appeal to this court until after the motion for rehearing had been determined. To this we cannot assent.

The motion for rehearing was in fact denied on the 11th of August, 1896, though there was a subsequent application filed to have the motion for rehearing opened and further considered, and this latter application was filed, or, rather, notified to the opposition that such motion would be made, on the 21st of August, 1896, and such application was finally denied on September 25, 1896.

The appellant relies upon certain decisions of the Supreme Court of the United States, which holds that the time for prosecuting appeals from decrees in equity or writs of error from judgments at law will be stayed by the pendency of a motion for rehearing or a motion for new trial, and that the time for the prosecution of the appeal or writ of error will only commence to run from the time such motion for rehearing or new trial is refused. This is founded upon the principle that the judgment or decree is not complete or is suspended until the motion for rehearing is disposed of; but the proceedings of the Patent Office are not con-

trolled by the ordinary rules of practice that obtain in the courts of the country, but are controlled by statutory provisions and a code of rules made in pursuance of statutory provisions wholly unlike the rules of practice enforced in the courts. Applications for rehearing in courts of equity and for new trial in courts of law are governed by certain fixed rules and restrictions in respect to time, and are subject to certain terms and conditions that in no manner apply in the case of motions for rehearing in the Patent Office. If the contention of the appellant were sustained, it would virtually abrogate the rule of this court prescribing the time within which appeals from the Commissioner of Patents must be taken. A losing party in any case who desired delay could produce that effect by simply entering a motion for rehearing even at the last day of the limit of the right of appeal. This was certainly not contemplated by the rule.

No appeal, of course, will lie from the refusal of a motion for rehearing, and this accords with all the cases. Forty days from the decision of the principal question afford ample time within which to make a motion for rehearing and to have the same disposed of by the Commissioner, who will doubtless act in all cases on such motions with respect to the right of appeal from the original order or decision.

If the time for prosecuting appeals from the Commissioner of Patents could be prolonged or the running of the time suspended or deferred by motions for rehearing, such rule of practice would be subject to great abuse, as such motions could and most likely would be frequently resorted to for mere dilatory purposes, and thus defeat the rules intended to effect expedition in disposing of patent appeals. Such construction of the rules ought not to be adopted, unless by express terms such construction cannot be avoided.

The Patent Office is governed by a very salutary rule which applies to all motions made in that Office in interference proceedings. It is Rule 123, relating to the practice of the Patent Office in interference proceedings. By that rule it is provided that—

> the filing of motions will not operate as a stay of proceedings in any case; but to effect that object motion should be made before the tribunal having jurisdiction of the interference, who will, sufficient ground appearing therefor, order a suspension of the interference pending the determination of such motion.

Without such order of suspension the interference is effective, notwithstanding the pendency of a motion to rehear the case. That rule applies in reason and by analogy, if not in terms, to this case. The running of the time for appeal was not arrested or stayed by filing the motion for rehearing, and the order overruling such motion is not the subject of appeal.

The appeal, therefore, must be dismissed, and it is so ordered.

U. S. Circuit Court of Appeals—Eighth Circuit.

SHICKLE, HARRISON & HOWARD IRON COMPANY *v.* ST. LOUIS CAR COUPLER COMPANY.

Decided November 30, 1896.

1. RIGHT TO REPAIR.

Where a patent covers the combination of a draw-head, a knuckle, a pivot-pin, and a locking-pin, it is not infringed by a defendant who furnishes the knuckles to replace broken ones.

2. SAME.

The sale of a patented article by the patentee frees it from the grasp of the monopoly, and the purchaser may thereafter exercise the same dominion over it which he exercises over his other property. The right to repair a patented device is incidental to ownership. The fact that it is patented does not lessen the owner's right to put it in order when it gets out of repair, unless, considered as a whole, it is worn out and useless.

3. REPLACEMENT.

When a patented machine is accidentally destroyed or when it is practically worn out, the owner thereof, under the guise of repairing it, cannot make a new machine. In such cases he must cast it aside and buy a new one from the patentee.

APPEAL from the Circuit Court of the United States for the Eastern District of Missouri.

Before CALDWELL, SANBORN, and THAYER, Judges.

Mr. T. A. Post and *Mr. George H. Knight* for the appellant.

Mr. Henry M. Post for the appellee.

THAYER, *J.*, delivered the opinion of the court.

The St. Louis Car Coupler Company, the appellee, sued the Shickle, Harrison & Howard Iron Company, the appellant, for the infringement of several patents, among others for the infringement of reissued Letters Patent No. 10,941, granted to Madison J. Lorraine and Charles T. Aubin, dated June 26, 1888, and original Letters Patent No. 519,216, granted to William V. Wolcott and Henry O'Hara on May 1, 1894. On the trial of the case in the circuit court the complainant below abandoned its charge of infringement, except as to the two patents last described. No reference therefore need be made to the other patents referred to in the bill of complaint. Both of the aforesaid patents on which the claim of infringement is predicated cover an improvement in car-couplers, and counsel for the complainant below concedes that the patented device covered by both patents consists, as an entirety, of four parts or elements: first, the draw-heads or shanks; second, the coupling-head or knuckle which is used to connect them; third, the pivot-pin on which the knuckle turns, and, fourth, the locking-pin. All the claims of the patents are of the class known as "combination claims," in which the several parts of the device are claimed in combination in several different ways. In no instance is any one part or element of the complete coupler claimed by itself as a new article of manufacture or otherwise; but each claim is founded upon a combination of three or more of the aforesaid elements. Usually three parts or elements of the device are brought into combination by the language of a claim. Counsel for the complainant below further admits that the proof at the trial did not show that the defendant had either manufactured or sold or offered to sell the complete coupler. He claims, however, and of that fact there is no doubt, that the defendant has manufactured and sold that part of the device which in the specification is termed the "coupling-head." This part of the device may be aptly called the "knuckle," and it will be referred to hereinafter by that name. It is accordingly insisted that the manufacture and sale of that part of the device without the consent of the complainant constitutes an infringement of the patents.

The proof shows without substantial contradiction that the knuckles which have been manufactured and sold by the defendant company were manufactured and sold by it under the following circumstances: The defendant at one time had manufactured the entire coupler covered by the patents in suit under and by virtue of a contract with the complainant company, and the couplers thus manufactured had been sold by the complainant to various railway companies for use on their cars. After the aforesaid contract between the parties had been terminated and the defendant had ceased to manufacture the entire coupler it made and at various times sold to the purchasing agents of the aforesaid railway companies certain knuckles, which were bought by said companies, as it seems, to take the place of knuckles that had been broken. The question to be determined, therefore, upon this record is whether the manufacture and sale of knuckles for the purpose last stated – that is to say, the sale thereof for the sole purpose of repairing broken couplers – to persons or corporations who had previously purchased such patent couplers from the complainant and were entitled to use them on their cars constitutes in law an infringement of the patents. The decision of this question turns on the further inquiry whether the purchase of new knuckles by said railroad companies and the substitution of the same in place of other knuckles that had been worn out or broken amounted to a reconstruction or a repair of the couplers which were then in use. If the respective railway companies who had bought couplers which were covered by the patents in suit had the right to repair them to the extent of replacing knuckles that had been broken, then it is obvious that they had the right to employ the defendant company to make the knuckles for that purpose, and the latter company incurred no liability by so doing.

The rule is well established that one who purchases a machine or mechanical contrivance consisting of several distinct parts which as a whole is covered by a patent has the right, by virtue of his purchase from the patentee, to repair a part of the machine or device which happens to be broken through accident or which becomes so far worn as to render the machine inoperative, provided the machine as a whole still retains its identity and what is done in the way of rendering it operative does not amount to reconstruction, and provided, further, that the part so replaced is not separately covered by a patent. The sale of a patented article by the patentee frees it from the grasp of the monopoly, and the purchaser may thereafter exercise the same dominion over it which he exercises over his other property. The right to thus repair a patented device is incidental to ownership. The fact that it is patented does not lessen the owner's right to put it in order when it gets out of repair, unless, considered as a whole, it is worn out and useless. When a patented machine is accidentally destroyed or when it is practically worn out, the owner thereof, under the guise of repairing it, cannot make a new machine. In such cases he must cast it aside and buy a new one from the patentee. (*Wilson* v. *Simpson et al.*, 9 How., 109, 123; *Chaffee* v. *Boston Belting Co.*, 22 How., 217, 223; *Cotton Tie Company* v. *Simmons*, 22 O. G., 1976; 106 U. S., 89; *Farrington* v. *Board of Water Commissioners of the City of Detroit*, 4 Fish. Pat. Cas., 216; *Gottfried* v. *Conrad-Seipp Brewing Co.*, 8 Fed. Rep., 322; *Aiken* v. *Manchester Printing Works*, 2 Cliff., 435; 1 Fed. Cas., 245; *Singer Manufacturing Co.* v. *Springfield Foundry Co.*, 34 Fed. Rep., 393; *Wallace & Sons* v. *Holmes, Booth & Haydens*, 1 O. G., 117; 5 Fish. Pat. Cas., 37, 16.)

While the foregoing propositions are well settled, a difficulty is sometimes encountered in applying them. It is not always easy to determine whether the replacing of a part or element of a patented machine should be regarded as a reconstruction of the machine or simply as a repair which does not destroy its identity. This remark is applicable in a measure to the case in hand. It may be conceded that the question to be decided is not altogether free from doubt. While no one would deny that a purchaser of one of the patent couplers now in question would have the right to replace the pivot-pin or the locking-pin, if one of these should happen to be broken, yet it may be admitted that it is not so obvious that he would have the right to replace a broken knuckle. The circuit court concluded that the manufacture and substitution of new knuckles for those which had been broken should be regarded as a reconstruction of the car-coupler rather than a repair. It was led to entertain this view, as it seems, because it regarded the knuckle as the chief element of the patented combination; also because the knuckle is unique in form and structure and only susceptible of use in connection with the other elements of the complainant's device. (*St. Louis Car Coupler Co.* v. *Shickle, Harrison & Howard Iron Co.*, 70 Fed. Rep., 783.) It is undoubtedly true that the patentee did display considerable ingenuity in devising the peculiar-shaped knuckle. It is also true that the knuckle is an important element of the coupling device in question and that it is utterly useless except in combination with the draw-heads forming the coupler. But we are not able to say that for these reasons the substitution of new knuckles for others that had been broken should be regarded as a reconstruction of the coupler. Other considerations, we think, are entitled to greater weight. The knuckle, or "coupling-head," as it is termed in the patent, is an irregular hook-shaped piece of cast iron or steel which is interposed between the draw-heads or shanks of the car-coupler and is perforated with holes in which to insert the locking pin and pivot-pin. Owing to its position between the draw-heads it frequently receives a severe blow or shock when in the act of coupling two cars come together, besides being subjected to a great strain when a train is started or is in motion. The proof shows that it is much more liable to be broken than other parts of the coupling device, and from the peculiar shape of the knuckle and its location between the draw-heads it seems obvious that the knuckle will be broken frequently, while the draw-heads remain intact, and that the knuckle is therefore less durable than other parts of the coupler. The president of the complainant company admitted that the knuckle of the coupling device is generally the first to break, and we can readily credit his further statement that knuckles have been known to break the first time they were used in pulling an empty car out of the yard. More-

over, the draw-heads of the coupling device, besides being more durable than the knuckle, are also an essential part of the patented combination. It is not wholly accurate to say that the knuckle is the chief element of the combination. The draw-heads have an equally important function to perform. They are not like the draw-heads in use in the ordinary coupling device, but are of a peculiar design, being so cast as to fit or complement the knuckle and render it operative. The draw-heads are also much the larger part of the coupling device and doubtless cost more than the knuckle. Neither can we say that the knuckle is the only part of the coupler which affords evidence of invention, for that is found in the conception of the coupler as a whole and in the shape and arrangement of all its parts, including the draw-heads.

In view of the foregoing considerations we think that a purchaser of the patent coupling device should be accorded the right to replace a broken knuckle without the payment of an additional royalty, provided the draw-heads remain intact and serviceable. It can hardly be supposed that a railroad company would equip its cars with a patent coupling apparatus like the one in controversy, one part whereof is liable to be broken long before the draw-heads are worn out, unless the purchase of the coupling apparatus was made on the implied understanding that the purchaser should have the right to replace that part of the apparatus, if it was accidentally broken, without being compelled to pay further tribute to the owner of the patent. In all of its essential features the case disclosed by the record bears a strong resemblance to several cases heretofore cited, in which the right of a purchaser of a patented device to replace a part thereof which had been worn out was upheld. Thus in the leading case of *Wilson* v. *Simpson et al.* (9 How., 109) the patent covered a planing-machine the cutters and knives of which were not as durable as other parts of the patented combination, but had to be renewed at intervals to render the planing-machine serviceable. It was held that a purchaser of the machine, by virtue of his purchase from the patentee, acquired the right to renew the cutters and knives when they were worn out, and that such renewal should be regarded as a repair of the machine which did not destroy its identity. In the case of *Farrington* v. *Board of Water Commissioners of the City of Detroit* (4 Fish. Pat. Cas., 216) the patent covered a tubular or hollow auger for boring pump-logs. Attached to the outer end of the hollow tube and forming a part of the patented combination were certain bits or lips turned inward toward the center of the tube, by means of which the boring was effected. These lips were not as durable as other parts of the patented combination, but would wear out after the auger had been in use for about forty days. It was held that the owner of the device might replace the bits or lips when they were so far worn as to be no longer fit for use. In the case of *Gottfried* v. *Conrad-Seipp Brewing Co.* (8 Fed. Rep., 322) the patent involved covered a device for pitching barrels, consisting, as it seems, of a furnace, grate, ash-pit, and blower-pipes, by means of which a blast of hot air was driven into a barrel for the purpose of pitching it. It was ruled that a purchaser of the device had the right to renew the blower-pipes and grates of the furnace when they were burned out without being subject to the charge of infringement, inasmuch as it appeared that these parts of the patented combination were less durable than the other parts. In our judgment the principle which underlies these decisions is strictly applicable to the case at bar. The knuckle of the complainant's car-coupler is shown to be less durable than the draw-heads, but no more essential to the successful operation of the coupling apparatus. The knuckle is not claimed separately and is not in itself a patented article. It follows, we think, that within the rule which is deducible from the cases last cited a person who purchases one of the patent car-couplers thereby acquires the right to replace a knuckle which happens to be broken, provided the draw-heads still remain serviceable. To that end we think that a purchaser may either manufacture a knuckle or procure some one else to manufacture it for his use.

It must be borne in mind, however, that the right to manufacture and sell the knuckle in question should be confined strictly within the limits last stated. We would not be understood as deciding that the defendant company has the right to manufacture the knuckles which form a part of the complainant's device and to sell them indiscriminately to all persons who see fit to buy them, for clearly such is not the law. We have no doubt that the defendant would be liable as an infringer if it so happened that the knuckles by it made and sold should be used by the purchasers in the construction of complete couplers such as are described in the complainant's patents. (*Wallace & Sons* v. *Holmes, Booth & Haydens*, 1 O. G., 117; 5 Fish. Pat. Cas., 37, 45.) Therefore if the defendant continues to manufacture the coupling-heads or knuckles and keeps them in stock it must see to it that they are sold for the purpose of repairing the patent coupling device to persons or corporations who have acquired the right to make and use them for that purpose.

The testimony contained in the present record does not show that any sales have been made by the defendant company except to certain railroad companies who had theretofore bought patent car-couplers from the complainant or its predecessors in interest and were entitled to use them. Neither does it show that the knuckles so bought by said railroad companies were used for other purposes than to repair such couplers as were then in use. Under these circumstances it must be held that the complainant below failed to show an infringement of its patents.

The decree of the circuit court is accordingly reversed, and the case is remanded to that court, with directions to dismiss the bill of complaint at the complainant's cost.

INDEX TO DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—October–December, 1896.

VOL. 77 O G—2

INDEX TO DECISIONS.

[Decisions of United States courts are indicated by an asterisk (*).]

	Page.
*American Road Machine Company *et al.* v. Pennock & Sharp Company, Limited	633
Appert. Schmertz *v*	1784
*Beach *v.* Inman *et al*	1275
*Bennett & Shepherd *v.* Schooley	1432
Bent. Foster and Foster *v.*	1781
Borton. *Ex parte*	2137
*Brush Electric Company *v.* Western Electric Company	1273
Bryant. *Ex parte*	451
*Bryant *v.* Seymour, Commissioner of Patents	1599
*Buck's Stove and Range Company *v.* Kiechle *et al*	1785
Burke. Jenkins *v*	973
*Caldwell *et al. v.* Powell	1272
*Chauche *et al. v.* Pare	1123
*Claflin *et al.* Tuttle, trustee, etc., *v.*	973
Clarke *v.* Pettengill *v.* Crancer	1271
Couch *v.* Finnegan	1595
Crancer. Clarke *v.* Pettengill *v*	1271
*Crane Elevator Company *et al.* Standard Elevator Company *et al. v*	811
Cushman *v.* Lines	153
Decker *v.* Loosley	2140
*Drawbaugh *v.* Seymour, Commissioner of Patents	313
*Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al*	154
*Eastman Company *v.* Getz & Hoover	1938
*Edison Electric Light Company *v.* Kaelber	1430
*Electric Boot and Shoe Finishing Company *v.* Little *et al*	456
*Evered. Pelton *v*	1600
*F. E. Kohler & Company *v.* George Worthington Company *et al*	1938
Finnegan. Couch *v*	1595
Foster and Foster *v.* Bent	1781
Frasch. *Ex parte*	1427
Gattman and Stern. Phelps *v.* Hardy *v*	631
*George Worthington Company *et al.* F. E. Kohler & Company *v*	1938
*Getz & Hoover. Eastman Company *v*	1938
*Globe Mineral Wool Company. Western Mineral Wool and Insulating Fibre Company *v*	1127
Hanson. Morgan *v*	154
Hardy *v.* Gattman and Stern. Phelps *v*	631
*Hien *v.* Pungs	1600
*Inman *et al.* Beach *v*	1275
*J. G. Brill Company *v.* Wilson *et al*	1937
Jenkins *v.* Burke	973
Johnston *v.* Stone	2137
*Kaelber. Edison Electric Light Company *v*	1430
*Kiechle *et al.* Buck's Stove and Range Company *v*	1785
Leidgen. Richardson *v*	153
Lines. Cushman *v*	153
*Little *et al.* Electric Boot and Shoe Finishing Company *v.*	456
*Loewer. Ross *v*	2141
*Long *et al. v.* Pope Manufacturing Company	1428
Loosley. Decker *v*	2140
Morgan *v.* Hanson	154
*Pare. Chauche *et al. v*	1123
*Pelton *v.* Evered	1600
*Pennock & Sharp Company, Limited. American Road Machine Company *et al. v*	633
Pettengill *v.* Crancer. Clarke *v*	1271
Phelps *v.* Hardy *v.* Gattman and Stern	631
*Pope Manufacturing Company. Long *et al. v*	1428
*Powell. Caldwell *et al. v*	1272
*Pungs. Hien *v*	1600
*Raymond *v.* Royal Baking Powder Company	1124
Richardson *v.* Leidgen	153
*Robbins *et al.* Dueber Watch Case Manufacturing Company *et al. v*	154
*Ross *v.* Loewer	2141
*Royal Baking Powder Company. Raymond *v*	1124
*Sawyer Spindle Company. Taylor *et al. v*	452
Schmertz *v.* Appert	1784
*Schooley. Bennett & Shepherd *v*	1432
*Seymour, Commissioner of Patents. Bryant *v*	1599
*Seymour, Commissioner of Patents. Drawbaugh *v*	313
*Shickle, Harrison & Howard Iron Company *v.* St. Louis Car Coupler Company	2142
*St. Louis Car Coupler Company. Shickle, Harrison & Howard Iron Company *v*	2142
*Standard Elevator Company *et al. v.* Crane Elevator Company *et al*	811
Stone. Johnston *v*	2137
*Strom Manufacturing Company *v.* Weir Frog Company	1125
*Taylor *et al. v.* Sawyer Spindle Company	452
*Tuttle, trustee, etc., *v.* Claflin *et al*	973
*Weir Frog Company. Strom Manufacturing Company *v*	1125
*Western Electric Company. Brush Electric Company *v*	1273
*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company	1127
*Wilson *et al.* J. G. Brill Company *v*	1937

SUBJECT-MATTER.

[Decisions of the United States courts are indicated by an asterisk (*).]

Page.

Abandonment of claims eliminated from divisional applications, Richardson v. Leidgen 153
Abandonment of pending application caused by death of inventor, Decker v. Loosley 2140
*Accounting, will not be ordered to delay suit, Tuttle, trustee, etc., v. Claflin et al 973
Acquiescence in use of invention by opposing in interference, Couch v. Finnegan 1595
Adjustable handle-bars, Clarke v. Pettengill v. Crancer 1271
*Affidavit under Rule 75, Drawbaugh v. Seymour, Commissioner of Patents 313
*Analogous use, application to by mechanical skill not invention, Eastman Company v. Getz & Hoover 1938
*Anticipation by analogous devices, Taylor et al. v. Sawyer Spindle Company 452
*Anticipation by former process, Western Mineral Wool and Insulating Fibre Company v. Globe Mineral Wool Company 1127
Appeal, failure to prosecute not reason for return of fee, ex parte Borton 2137
*Appeal to the Circuit Court of Appeals pending a report from a master in chancery in the matter of profits be dismissed on the ground that the decree appealed from was interlocutory, Raymond v. Royal Baking Powder Company 1124
Appeals to the Commissioner of Patents, a holding that an affidavit under Rule 75 is insufficient not appealable, Schmertz v. Appert 1784
*Appeal to the Court of Appeals of the District of Columbia, Pelton v. Evered 1600
*Standard Elevator Company et al. v. Crane Elevator Company et al 811
*Appeals to the Court of Appeals of the District of Columbia, rigid adherence to time rules, Bryant v. Seymour, Commissioner of Patents 1599
*Appeals to the Court of Appeals of the District of Columbia, time limit may be fixed or altered by rule, Hien v. Pungs 1600
*Appeals to the Court of Appeals of the District of Columbia, time limit must be observed and motion for rehearing in United States Patent Office does not operate as a stay, Ross v. Loewer 2141
Application, incomplete, Phelps v. Hardy v. Gattman and Stern 631
*Application for patents, statutory requirements, Drawbaugh v. Seymour, Commissioner of Patents 313
*Assignment by attorney, if in excess of his power, void, Chauche et al. v. Pare 1123
*Assignments, genuine and spurious, record of, Standard Elevator Company et al. v. Crane Elevator Company et al 811
*Assignments, recording of not obligatory under the statute, but, if recorded, record is *prima facie* evidence of legality of title, Standard Elevator Company et al. v. Crane Elevator Company et al 811
*Attorney, assignment by, Chauche et al. v. Pare 1123
Bed, Foster and Foster v. Bent 1781
*Bill of review, Bennett & Shepherd v. Schooley 1432
*Blacking and burnishing boots or shoes, Electric Boot and Shoe Finishing Company v. Little et al 456
Boot and shoe, ex parte Bryant 451
*Brake-beam, Hien v. Pungs 1600
*Burden of proof, Drawbaugh v. Seymour, Commissioner of Patents 313
Phelps v. Hardy v. Gattman and Stern 631
Richardson v. Leidgen 153
*Burden of proof in infringement cases, Tuttle, trustee, etc., v. Claflin et al 973
Cancellation of claims, Richardson v. Leidgen 153
Car-fender, Phelps v. Hardy v. Gattman and Stern 631

Page.

Chain-guard for bicycles, Decker v. Loosley 2140
*Claims, construction of, Taylor et al. v. Sawyer Spindle Company 452
*Claims, may cover functions specified and non-specified if within the claims, Long et al. v. Pope Manufacturing Company 1428
Claims, reissue to broaden, ex parte Bryant 451
*Commissioner of Patents, authority and duty of as head of the Bureau, Drawbaugh v. Seymour, Commissioner of Patents 313
*Commissioner of Patents, decision affirmed, Bryant v. Seymour, Commissioner of Patents 1599
*Commissioner of Patents, duty of in recording assignments, Standard Elevator Company et al. v. Crane Elevator Company et al 811
Conception of invention, doctrine of may be invoked in interference cases, Schmertz v. Appert 1784
*Construction of Rule 75, Drawbaugh v. Seymour, Commissioner of Patents 313
Construction of Rule 116, Phelps v. Hardy v. Gattman and Stern 631
*Construction of section 892, Standard Elevator Company et al. v. Crane Elevator Company et al 811
*Construction of section 4888, Revised Statutes, Strom Manufacturing Company v. Weir Frog Company 1125
*Construction of section 4894, Revised Statutes, as applied to the Court of Appeals of the District of Columbia, Hien v. Pungs 1600
*Construction of section 4898, Standard Elevator Company et al. v. Crane Elevator Company et al 811
Construction of section 7, act March 3, 1895, relative to appeals to the Court of Appeals of the District of Columbia, Standard Elevator Company et al. v. Crane Elevator Company et al 811
*Construction of specifications and patents, American Road Machine Company et al. v. Pennock & Sharp Company, Limited 633
*Caldwell et al. v. Powell 1272
*Dueber Watch Case Manufacturing Company et al. v. Robbins et al 154
*Electric Boot and Shoe Finishing Company v. Little et al 456
Ex parte Frasch 1427
*Strom Manufacturing Company v. Weir Frog Company 1125
*Taylor et al. v. Sawyer Spindle Company 452
*Tuttle, trustee, etc., v. Claflin et al 973
*Western Mineral Wool and Insulating Fibre Company v. Globe Mineral Wool Company 1127
*Construction of specifications and patents where patent has lain dormant for years, Long et al. v. Pope Manufacturing Company 1428
*Court of Appeals of the District of Columbia, appeals from interlocutory order or decree, Standard Elevator Company et al. v. Crane Elevator Company et al. 811
*Currycomb, F. E. Kohler & Company v. George Worthington Company et al 1938
*Damages and profits, apportionment of, Tuttle, trustee, etc., v. Claflin et al 973
*Damages and profits, estimates, experiments, Tuttle, trustee, etc., v. Claflin et al 973
Death of inventor does not deprive an application of its standing before the Office, Decker v. Loosley 2140
*Decree, appeal from after expiration of limit of time, Raymond v. Royal Baking Powder Company 1124
*Decree or interlocutory order appealable to the Court of Appeals of the District of Columbia, Standard Elevator Company et al. v. Crane Elevator Company et al .. 811
*Defense, invention conceded, but priority contended, Drawbaugh v. Seymour, Commissioner of Patents 313

Page.

*Demurrer, Strom Manufacturing Company *v.* Weir Frog Company 1125
*Demurrer, effect upon a bill in equity, Caldwell *et al. v.* Powell 1272
Deposition, second by same witness, Jenkins *v.* Burke 973
*Description, imperfect, will affect judicial interpretation of invention, Long *et al. v.* Pope Manufacturing Company 1428
*Description, sufficiency of, Strom Manufacturing Company *v.* Weir Frog Company 1125
Designs, identity of, Cushman *v.* Lines 153
*Design for a college-badge, Caldwell *et al. v.* Powell 1272
Division of application, Richardson *v.* Leidgen 153
Divisional application, departure from original, Phelps *v.* Hardy *v.* Gattman and Stern 631
*Double use, Taylor *et al. v.* Sawyer Spindle Company 452
Dress-stay, Johnston *v.* Stone 2137
Driving mechanism for sewing-machines, *ex parte* Borton 2137
*Electric lamp, Brush Electric Company *v.* Western Electric Company 1273
*Elements, omission of, Taylor *et al. v.* Sawyer Spindle Company 452
*Elevator, hydraulic. Elevator, means for controlling. Elevator, the operation of. Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Estoppel by acquiescence in the action of the Patent Office, American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited 633
*Estoppel of licensee to dispute validity of patent, Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Evidence, diligence and care in securing, Bennett & Shepherd *v.* Schooley 1432
*Evidence of invention, Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
Evidence, original application as, Phelps *v.* Hardy *v.* Gattman and Stern 631
Evidence, testimony as to character of parties not evidence in interference cases, Jenkins *v.* Burke 973
Examiner of Interferences, petition for reversal of his decision, Clarke *v.* Pettingill *v.* Crancer 1271
*Examiners, rejection by, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Examiners-in-Chief, rejection by, Drawbaugh *v.* Seymour, Commissioner of Patents 313
Fees in appeal cases not returnable, *ex parte* Borton 2137
*Former decision cited, Taylor *et al. v.* Sawyer Spindle Company 452
*Former decision cited and affirmed, F. E. Kohler & Company *v.* George Worthington Company *et al* 1938
*Former decision followed, Strom Manufacturing Company *v.* Weir Frog Company 1125
*Fruit-press, Chauche *et al. v.* Pare 1123
*Functions, enumerated and not enumerated. Long *et al. v.* Pope Manufacturing Company 1428
*Identity of structure, Beach *v.* Inman *et al* 1275
*Infringement, Brush Electric Company *v.* Western Electric Company 1273
*Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Tuttle, trustee, etc., *v.* Claflin *et al* 973
*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company 1127
*Infringement, analogous devices, Beach *v.* Inman *et al* 1275
*Infringement, change of structure, Taylor *et al. v.* Sawyer Spindle Company 452
*Infringement, grant of patent implies non-infringement of former patent, F. E. Kohler & Company *v.* George Worthington Company *et al* 1938
*Infringement, liability of an agent or party to an agreement, Edison Electric Light Company *v.* Kaelber 1430
*Infringement, notice of, Tuttle, trustee, etc., *v.* Claflin *et al* 973
*Infringement *quia timet*, Edison Electric Light Company *v.* Kaelber 1430
*Infringement, right to repair a patented article, Shickle, Harrison & Howard Iron Company *v.* St. Louis Car Coupler Company 2142

Page.

*Injunction, appeal to the Court of Appeals of the District of Columbia, Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Injunction, preliminary, Beach *v.* Inman *et al* 1275
Interference, Phelps *v.* Hardy *v.* Gattman and Stern 631
Richardson *v.* Leidgen 153
Interference, affidavit under Rule 75, Schmertz *v.* Appert 1784
Interference, failure to assert priority by junior party, Johnston *v.* Stone 2137
Interference, issue in, Morgan *v.* Hanson 154
Interference, laches of party having knowledge that opposing party had obtained patent and was manufacturing goods marked "patented," Couch *v.* Finnegan 1595
Interference, motion to amend granted by Examiner of Interferences denied by the Commissioner, Foster and Foster *v.* Bent 1781
Interference, motion to dissolve, Morgan *v.* Hanson 154
Interference, motion to dissolve dismissed, Schmertz *v.* Appert 1784
Interference, notice of in event of death of inventor, Decker *v.* Loosley 2140
Interference, petition for reversal of judgment, Clarke *v.* Pettengill *v.* Crancer 1271
Interference, rule in regard to amendments to preliminary statements, Foster and Foster *v.* Bent 1781
Interference, testimony as to character of parties and second depositions as evidence, Jenkins *v.* Burke 973
*Interlocutory decree, appeal from the Circuit Court of Appeals dismissed, Raymond *v.* Royal Baking Powder Company 1124
Invention by substituting new element in process, *ex parte* Frasch 1427
*Invention, change of structure, Taylor *et al v.* Sawyer Spindle Company 452
*Invention exists where process gives new and useful result the knowledge of which kept from the public would cause it loss, Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company. 1127
*Invention in design patents, Caldwell *et al. v.* Powell ... 1272
*Invention, means, not purpose, constitutes, Brush Electric Company *v.* Western Electric Company 1273
*Invention, new process, same result, Strom Manufacturing Company *v.* Weir Frog Company 1125
*Judgment of court, parties bound thereby, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Laches, Taylor *et al. v.* Sawyer Spindle Company 452
*Licensee as defendant, Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Licensee has no authority to sue for infringement in his own name, Chauche *et al. v.* Pare 1123
Limitation imposed by Patent Office acquiesced in by applicant, *ex parte* Bryant 451
*Limitation imposed by Patent Office, acquiescing in, applicant bound thereby, American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited 633
*Machine for attaching stays to boxes, Beach *v.* Inman *et al.* 1275
*Machine for crimping textile materials, Tuttle, trustee, etc., *v.* Claflin *et al* 973
*Machine for making photographic films, Eastman Company *v.* Getz & Hoover 1938
*Machine for making, repairing, and cleaning roads, American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited 633
*Object of invention not patentable, while means may be, Brush Electric Company *v.* Western Electric Company. 1273
Oil-can, design, Cushman *v.* Lines 153
*Parties to suit, technical party, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Patents, refusal of, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Patent void because of implied purpose to deceive the public, Electric Boot and Shoe Finishing Company *v.* Little *et al* 456
Petition to Commissioner to direct Examiner of Interferences to reconsider his decision, Clarke *v.* Pettengill *v.* Crancer 1271
*Photographic films, machine for making, Eastman Company *v.* Getz & Hoover 1938

Page.

*Photographic paper, process of coating, Eastman Company *v.* Getz & Hoover 1938
*Pioneer invention, Tuttle, trustee, etc., *v.* Claflin *et al* ... 973
*Pleadings in Appellate Courts, Tuttle, trustee, etc., *v.* Claflin *et al* 973
*Practice in the courts, Beach *v.* Inman *et al* 1275
*Practice in the Patent Office, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Prior adjudication, effect of in suits for infringement, Beach *v.* Inman *et al* 1275
*Priority of invention, Drawbaugh *v.* Seymour, Commissioner of Patents 313
Richardson *v.* Leidgen 153
Process and product, Richardson *v.* Leidgen 153
Process, claims for eliminated from divisional application, Richardson *v.* Leidgen 153
Process, employment of new elements in, *ex parte* Frasch. 1427
Process of and apparatus for manufacturing water-gas, Schmertz *v.* Appert 1784
Process of making lock-nuts, Richardson *v.* Leidgen. 153
*Process of manufacturing mineral-wool, Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company 1127
Process of purifying oil, *ex parte* Frasch 1427
*Processes, analogous, may not infringe, Eastman Company *v.* Getz & Hoover 1938
*Public appreciation as evidence of invention, Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Rail-brace, Strom Manufacturing Company *v.* Weir Frog Company 1125
*Railway torpedo, Bennett & Shepherd *v.* Schooley 1432
*Record of assignments, copies of, how authenticated and of what value, Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Record of assignments, duty of Commissioner of Patents in relation thereto, discrimination between genuine and spurious, Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Record of assignments is a record belonging to the Patent Office under section 892, Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Record, transcript of not printed, appeal dismissed, Pelton *v.* Evered 1600
*Records of court, transcript of not necessary, Drawbaugh *v.* Seymour, Commissioner of Patents 313
Reduction to practice, incomplete application not evidence of, Phelps *v.* Hardy *v.* Gattman and Stern 631
*Rehearing, motion for before the Patent Office does not operate as a stay in time limit of appeal to the Court of Appeals, Ross *v.* Loewer 2141
Reissue to enlarge claims, *ex parte* Bryant 451
*Rejected cases, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Result by a different process, Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company 1127
Revolver, Couch *v.* Finnegan 1595
Revolving chair, Morgan *v.* Hanson 154
*Rules of Practice in United States Patent Office are made in pursuance of statutory provisions wholly unlike rules of practice in courts, Ross *v.* Loewer 2141
*Safety-catch for electric-light circuits, Edison Electric Light Company *v.* Kaelber 1430
*Shoe, Bryant *v.* Seymour, Commissioner of Patents 1599
*Sole-trimming, Ross *v.* Loewer 2141
*Specification, defective and deceptive, Electric Boot and Shoe Finishing Company *v.* Little *et al* 456

Page.

Specification, execution of, Phelps *v.* Hardy *v.* Gattman and Stern 631
*Specification, function not described, but covered by the claims, Long *et al. v.* Pope Manufacturing Company . 1428
*Specification, insufficient, will affect scope of patent, Long *et al. v.* Pope Manufacturing Company 1428
*Stay of proceedings upon appeal to the Court of Appeals of the District of Columbia, Standard Elevator Company *et al. v.* Crane Elevator Company *et al* 811
*Steering-head for road vehicles, Long *et al. v.* Pope Manufacturing Company 1428
*Street-car, J. G. Brill Company *v.* Wilson *et al* 1937
Subsequent application for improvements involved in interference, but not shown in original patent, Couch *v.* Finnegan 1595
*Substitution of material, J. G. Brill Company *v.* Wilson *et al* 1937
*Substitution of parts, Beach *v.* Inman *et al* 1275
*Suits for infringement, Beach *v.* Inman *et al* 1275
*Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Tuttle, trustee, etc., *v.* Claflin *et al* 973
*Suits for infringement, delay in instituting, Taylor *et al. v.* Sawyer Spindle Company 452
*Support for spindles for spinning-machine, Taylor *et al. v.* Sawyer Spindle Company 452
*Supreme Court of the United States, findings of conclusive, Drawbaugh *v.* Seymour, Commissioner of Patents 313
*Telephone, Drawbaugh *v.* Seymour, Commissioner of Patents 313
Testimony as to character of parties not considered and should be stricken from record, Jenkins *v.* Burke 973
Testimony as to identity of devices after lapse of time, Johnston *v.* Stone 2137
*Testimony, practice of enlarging records with irrelevant, discountenanced, Eastman Company *v.* Getz & Hoover. 1938
Testimony, second deposition of witness cannot be excluded from consideration, Jenkins *v.* Burke 973
*Trade-mark, deception, Buck's Stove and Range Company *v.* Kiechle *et al* 1785
For soap, Jenkins *v.* Burke 973
*"Royal" for baking-powder, Raymond *v.* Royal Baking Powder Company 1124
*"White Enamel" for cooking-stoves, Buck's Stove and Range Company *v.* Kiechle *et al* 1785
*Use of a patented article, right to repair incidental to ownership, but not the right to replace it, Shickle, Harrison & Howard Iron Company *v.* St. Louis Car Coupler Company 2142
*Valid patent, Caldwell *et al. v.* Powell 1272
*Taylor *et al. v.* Sawyer Spindle Company 452
*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company 1127
*Void patents, American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited 633
*Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
*Eastman Company *v.* Getz & Hoover 1938
*Electric Boot and Shoe Finishing Company *v.* Little *et al* 456
*J. G. Brill Company *v.* Wilson *et al* 1937
*Strom Manufacturing Company *v.* Weir Frog Company 1125
*Watch-pendant, Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al* 154
Witness, twice calling of touches his credability, not the competency of his evidence, Jenkins *v.* Burke 973

DIGEST OF DECISIONS

OF THE

COMMISSIONER OF PATENTS

AND OF

UNITED STATES COURTS

IN THE MATTER OF

PATENTS, TRADE-MARKS, &c.

OFFICIAL GAZETTE—October-December, 1896.

VOL. 77—O G—3

DIGEST OF DECISIONS.

[Decisions of the United States courts indicated by an asterisk (*).]

ABANDONED CLAIMS.

(See Division of Application, 1.)

ABANDONMENT.

(See Death of Applicant for Patent, 1.)

ACQUIESCENCE.

(See Construction of Specifications and Patents, 2; Interference, 7.)

AFFIDAVITS.

(See Interference, 11, 15, 16, 17.)

AFFIDAVIT UNDER RULE 75.

(See Interference, 15, 16, 17.)

AFFIDAVIT UNDER RULE 75.

In an affidavit under Rule 75 total omission of a statement of facts as to the time and circumstances of the conception of the invention and its development to completion prior to the filing date of the reference is fatal.

[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

AMENDMENTS TO PRELIMINARY STATEMENTS.

(See Interference, 9, 10, 11, 12, 13.)

ANALOGOUS DEVICES.

(See Infringement, 1, 3, 4, 5; Injunction; Invention, 1; Particular Patents.)

ANALOGOUS USE.

(See Invention, 6, 7.)

ANTICIPATION.

(See Construction of Specifications and Patents, 6.)

APPEAL FEES.

(See Refundment of Appeal Fees.)

APPEAL FROM INJUNCTION.

(See Appeal to the Circuit Court of Appeals, 3.)

APPEAL TO THE CIRCUIT COURT OF APPEALS.

(See Infringement, 2.)

1. APPEALS—"INTERLOCUTORY ORDER OR DECREE" OF AMENDED SECTION 7, ACT MARCH, 1891—STATE OF RECORD.

The "interlocutory order or decree" made appealable by section 7 of act of March 3, 1891, for the organization of the Courts of Appeal, as amended February 18, 1895, must be one which leaves the cause pending on the issues in the court of original jurisdiction. The state of the record or progress of the cause must be such when said appealable "interlocutory order or decree" is entered that a "final decree" upon the matter with which said "interlocutory order or decree" has to do may yet be made.

[*Standard Elevator Company *et al.* *v.* Crane Elevator Company *et al.*, 811.

2. SAME—SAME—"FINAL DECREE" OF SAME ACT.

The contrast suggested by the words "interlocutory order or decree" and "final decree," as used in the first paragraph of amended section 7, is between a decree which is preliminary to a hearing on the merits, and hence discretionary in the court, and one which follows a hearing on the merits and is hence final, conclusive, and as of right in the prevailing party—between a decree which is meant to preserve the subject-matter of the litigation or prevent irreparable injury till a hearing on the merits can be had and a decree which follows the hearing on the merits and ultimately determines the rights of the litigants. [*Id.

3. APPEAL FROM PRELIMINARY INJUNCTION—"FINAL DECISION" OF SECTION 6, SAME ACT.

By providing an appeal from a preliminary or *pendente lite* injunction and in an adjoining section of the same act giving an appeal from any "final decision" the law-makers indicated that a perpetual injunction decreed as the outcome of a final hearing on the merits in a patent case was appealable as a "final decision." [*Id.

4. SAME—PERFECTING APPEAL—STAY OF PROCEEDINGS.

The words "the proceedings in other respects in the court below shall not be stayed unless otherwise ordered by that court during the pendency of such appeal," in section 7, seem to imply that the mere perfecting the appeal shall not in legal effect stay the suit. [*Id.

5. FINAL DECREE OF CIRCUIT COURT—POWER OF THE COURT OF APPEALS.

There is no power in the Court of Appeals whereby its affirmance or approval on review of a decree of the circuit court can give a finality to that decree which it did not have when entered of record in the circuit court. [*Id.

6. SAME—SAME.

The power incidental to appellate jurisdiction is the power to direct the circuit court to enter such a decree as on the showing of the record ought to have been entered by that court. What is done by a court of original jurisdiction pursuant to a mandate from a court of review on reversal is precisely what ought to have been done by the court of original jurisdiction in the first instance. [*Id.

7. DISSENTING OPINION.

Dissenting opinion by Judge Woods. [*Id.

8. APPEALS—DISMISSING—INTERLOCUTORY APPEAL—APPEAL TAKEN OUT OF TIME.

Where the lower court held that defendant had infringed and referred the cause to a master in chancery, to take, state, and report to the court an account with respect to the infringement and the gains, profits, and advantages which the defendant had received or which had arisen or accrued by reason of such infringement, and while the matter was so pending before the master and before any report by him the appellant (here) perfected an appeal from that decree to the Court of Appeals, *Held* that the appeal should be dismissed, as the decree appealed from was interlocutory, and that the appeal was taken after the expiration of thirty days from the entry of the interlocutory decree.

[*Raymond *v.* Royal Baking Powder Company, 1124.

APPEAL TO THE COMMISSIONER OF PATENTS.

(See Interference, 6, 14, 15.)

APPEAL TO THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

(See Former Decisions Affirmed.)

1. VIOLATION OF RULE 20 OF THE COURT OF APPEALS OF THE DISTRICT OF COLUMBIA.

Appeal from the decision of the Commissioner of Patents, nearly a year after such decision, is brought in violation of Rule 20 of the rules of this court, and should not be entertained, especially when no excuse for the delay is urged.

[*Bryant *v.* Seymour, Commissioner of Patents, 1599.

2. RULES OF THE COURT—TIME OF APPEAL—BINDING POWER OF SUCH RULE.

While some rules of court may be modified in special cases, they are in general as binding upon the court as upon parties and counsel, and rigid adherence is required to time rules which are intended to have the effect of statutes. [*Id.

3. LIMITATION OF TIME.
There is no justification for the theory that, since Revised Statutes, Section 4894 gives an applicant a possible two years in which to prosecute his application, he has two years in which to take an appeal to the Court of Appeals of the District of Columbia.
[*Hien *v.* Pungs, 1600.

4. APPEAL—ALTERATION OF TIME.
The right of appeal is not a vested right, but may be altered by statute or by rule of court made in pursuance of statutory authority to enact such rule. [*Id.

5. APPEAL RULE BINDING AFTER PROMULGATION.
Even if there were no rule at the time the right of appeal accrued, after the promulgation of a rule regulating the time for taking appeals the appellant became bound by it. [*Id.

6. APPEAL—FAILURE TO PRINT RECORD.
The parties failing to print the transcript of record, the appeal was dismissed.
[*Pelton *v.* Evered, 1600.

7. APPEAL TO COURT OF APPEALS—LIMIT OF.
The rule that all appeals taken from the Commissioner of Patents shall be taken within forty days from the date of the ruling appealed from, and not afterward, is a positive law to the court and to the suitors therein.
[*Ross *v.* Loewer, 2141.

8. SAME—MOTION FOR REHEARING IN PATENT OFFICE—STAY OF TIME OF APPEAL.
The contention that a motion for rehearing in the Patent Office should operate as a stay of the running of the time for the prosecution of appeal to this court till after the motion for rehearing has been determined cannot be admitted. [*Id.

9. APPEALS—MOTION FOR REHEARING—RULES OF COURT IN CERTAIN CASES DO NOT APPLY TO PATENT OFFICE.
The ruling that the time for prosecuting appeals from decrees in equity or writs of error from a judgment at law is stayed by a motion for rehearing or for new trial and only begins to run from the refusal of such motion is founded upon the principle that the judgment is not complete until the rehearing is disposed of; but the proceedings of the Patent Office are not controlled by the ordinary rules of practice that obtain in the courts of the country, but are controlled by statutory provisions and a code of rules made in pursuance of statutory provisions wholly unlike the rules of practice enforced in the courts.
[*Id

10. CONSTRUCTION OF RULE—DILATORY MOTION TO AVOID APPEAL.
A construction of the rules of the Office by means of which motions for mere dilatory purposes could be resorted to should not be adopted unless by express terms such construction cannot be avoided. [*Id.

11. APPEAL—STAY OF PROCEEDINGS—RULE OF PATENT OFFICE APPLIES TO APPEAL TO COURT.
Rule 123 of the Patent Office, which provides that in order to obtain a stay of proceedings motion must be made specifically to that effect, applies in reason and analogy to this case. The running of the time for appeal was not arrested by filing the motion for rehearing. [*Id.

APPLICATIONS.

(See Death of Applicant for Patent, 1; Division of Application, 1; Reduction to Practice.)

STATUTORY REQUIREMENTS—COMPLIANCE WITH—ONUS ON APPLICANT.
In an application for a patent the onus of showing that all the conditions and provisions of the law have been fully complied with, making it appear that the inventor is justly entitled to a patent under the law, and showing that the invention is sufficiently useful and important to justify the issue of a patent is upon the applicant.
[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

ASSIGNMENT BY ATTORNEY.

(See Assignments, 4, 5.)

ASSIGNMENTS.

1. RECORDING ASSIGNMENTS—SECTION 4898—PRIMA FACIE INFERENCE OF RECORD OR OFFICIAL COPY OF AN ASSIGNMENT.
Section 4898 does not require that any instrument in the chain of title to a patent shall be recorded; but all such assignments may be recorded. The sense, the essential significance and intent, of this section is that the record or official copy of any assignment shall give to any person interested the *prima facie* assurance that an original assignment was made in terms as shown in the record; that such instrument was subscribed as shown; that it was delivered; that the signature thereto is the genuine signature of the assignor, and that such assignor had an assignable interest according to the purport of the instrument.
[*Standard Elevator Company *et al. v.* Crane Elevator Company *et al.*, 811.

2. RECORD OF ASSIGNMENTS—"BELONGING TO THE PATENT OFFICE," IN SECTION 892, REVISED STATUTES.
The record of assignments in the Patent Office is a record "belonging to the Patent Office" within the literal terms of section 892; but in the absence of that section and on the general principles of evidence a paper purporting to be a copy of a record in the Patent Office could be proven to be such copy by the sworn testimony of the person who made it or of a person who had compared it with the original record in the Patent Office.
[*Id.

3. RECORDING ASSIGNMENTS—SPURIOUS INSTRUMENTS—DUTY OF COMMISSIONER.
The statute makes it the duty of the Commissioner of Patents to record assignments, meaning assignments that are genuine. He has no authority to record a spurious instrument. A spurious assignment recorded in the Patent Office would not be in law a record of that Office. The record of an assignment is in law tantamount to a finding or certificate by the Commissioner that the original is genuine. It matters not that the Commissioner may act on the mere assumption that whatever paper of this kind is presented for record is genuine. He is a public officer charged by law with the duty of recording only such as are genuine. The law attaches to his act in making the record the *prima facie* presumption that the instrument copied upon his record-book is entitled to record—that is to say, is genuine. (The view announced in *Mayor of New York et al* v. *American Cable Railway Company* not acceded to.) [*Id.

4. ASSIGNMENT BY ATTORNEY IN FACT—LACK OF AUTHORITY.
A patentee appointed an attorney with full authority to grant licenses and also with authority to assign the patent, but on terms and conditions to be "agreed on and approved by the grantor, or every bargain closed will be void." The attorney thereafter, without referring the matter to his principal, transferred in his own name, as grantor, to the plaintiff, his executors, etc., "the exclusive liberty, license, power, and authority to make, use, and sell" the machines in all the States and Territories of the Union for the remainder of the term of the patent. *Held* that this was an assignment of the patent and was void as such both because made in excess of the attorney's authority and because it was his own act and deed and not that of his principal.
[*Chauche *et al. v.* Pare, 1123.

5. SAME—SAME—RATIFICATION BY PRINCIPAL.
After this transfer the principal wrote several letters to the plaintiff recognizing his interest in the invention, but all of which indicated that the patentee understood the plaintiff to have merely a license. *Held* that they did not amount to a ratification of the assignment which the attorney had attempted to make. [*Id.

ATTORNEYS.

(See Assignments, 4, 5.)

BILL OF REVIEW.

SUPPLEMENTAL BILL IN THE NATURE OF A BILL OF REVIEW—NEW EVIDENCE—DILIGENCE.
A party asking relief by bill of review must satisfy the court that the evidence upon which he relies could not, with the exercise of due diligence, have been secured prior to the hearing.
[*Bennett & Shepherd *v.* Schooley, 1432.

BURDEN OF PROOF.

(See Applications; Damages and Profits, 1; Interference, 1, 3.)

CHANGE OF STRUCTURE.

(See Infringement, 1; Invention, 1, 5, 6.)

COMBINATIONS.

(See Invention, 1.)

COMMISSIONER OF PATENTS.

(See Appeal to the Court of Appeals of the District of Columbia, 11; Assignments, 3; Former Decisions Affirmed; Interference, 6, 9; Practice in the Patent Office.)

COMMISSIONER—AUTHORITY AND DUTY OF.
Notwithstanding that the law has provided certain official agencies to advance the work of the Patent Office the Commissioner is the head of the Bureau, and if there be any reasonable ground within his knowledge why a patent should not issue, whether specific objection be raised by the Examiners or not, it is his duty to refuse the patent, and it is especially his duty to do so when the Primary Examiner and the Examiners-in-Chief have found such ground for refusal to exist.
[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

CONCEPTION OF INVENTION.

(See Interference, 18.)

CONSTRUCTION OF CLAIMS.

(See Construction of Specifications and Patents, 2, 8, 9, 10.)

OMISSION OF ELEMENTS.
In a claim for a particular form of spindle and support there is no necessity for expressing in terms the devices for revolving the spindle, since the appropriate means for operating it will be understood.
[*Taylor *et al. v.* Sawyer Spindle Company, 452.

CONSTRUCTION OF RULES.

(See Interference, 3, 14, 15, 16, 17, 18.)

CONSTRUCTION OF SPECIFICATIONS AND PATENTS.

(See Construction of Claims; Designs, 2; Invention; Patentability.)

1. DECEPTIVE SPECIFICATION—VOID PATENT.
Where the patentee at the time of his application considered that a dye to be used should be waterproof and that the yielding surface used in polishing must be an inflated air-cushion, neither of which facts was disclosed by the specification, *Held* that the patent is void because of implied purpose to deceive the public.
[*Electric Boot and Shoe Finishing Company *v.* Little *et al.*, 456.

2. ESTOPPEL—ACQUIESCING IN REJECTION BY OFFICE.
Where the patentee acquiesced in the ruling of the Patent Office that the application of hand-wheels to a road-grading machine for imparting motion to the devices for raising and depressing the scraper-blade was old, and, for the purpose of obtaining his patent, restricted his claims in this particular to momentum or balance wheels, *Held* that he is bound by such restriction.
[*American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited, 633.

3. PIONEER INVENTION.
The mechanism of the patent in suit was original with the inventors for the manufacture of "plaits," and for that purpose their machine is a pioneer invention, notwithstanding the hints of a prior device. It is not an addition to an old structure.
[*Tuttle, trustee, etc., *v.* Claflin *et al.* 973.

4. SUFFICIENT DESCRIPTION—SECTION 4888, REVISED STATUTES.
In view of the antiquity of the art of swaging, *Held* that claims 1, 2, 3, 9, and 10 are not void for want of a sufficient description to comply with Revised Statutes, section 4888 though the process is not stated in full. (*Kilbourne* v. *W. Bingham Co.*, C. D., 1892, 477; 60 O. G., 577; 1 C. C. A., 617; 50 Fed. Rep., 697, followed.)
[*Strom Manufacturing Company *v.* Weir Frog Company, 1125.

5. ANTICIPATION—NEW USE OF OLD MATERIAL—RESULT SUPERIOR.
A patent for the reuse of previously-cooled slag, which consists of remelting it with lime, or with silica, or with both, and then converting the mixture into mineral wool, is not anticipated by processes which consist in using slag before it has cooled, for the same purpose, when it appears that the patentee was the first to use successfully previously cooled slag and when it appears that his product is superior to the former product.
[*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company, 1127.

6. SAME—RESULT DIFFERENT.
Such patents are not anticipated by the use of fresh hot slag to which lime has been added in order to produce a cement.
[*Id

7. SPECIFICATION—FAILURE TO DESCRIBE INVENTION CLEARLY—EFFECT OF ON DECISION OF JUDICIAL TRIBUNAL.
Where a patent fails to state the inventor's conception of the state of the art, the particular advance which he understood himself to have accomplished, or the parts of his device or its functions, except incidentally and in a crude and incomplete manner, *Held* that if judicial tribunals misapprehend the scope of the invention the cause will lie in the want of a full and frank disclosure on the face of the patent of what it was and as this is the fault of the inventor, or in law attributable to him, he must accept the result as one of his own making.
[*Long *et al. v* Pope Manufacturing Company, 1428.

8. CLAIMS—INTERPRETATION OF—FUNCTIONS NOT MENTIONED.
The fact that an inventor claims only certain functions for his invention does not prevent him from reaping the advantage of any other function within the claim, as properly construed, available without a modification of the machine which involves the use of further inventive faculty, although known to him and omitted in the specification without fraud or not known to him. (*Reece Co.* v. *Globe Co.*, 61 Fed. Rep., 958.) [*Id.

9. SPECIFYING FUNCTIONS—BROADENING CLAIMS.
So much of the mere form given in the specification, drawings, and claim as is necessary to accomplish all the functions expressly enumerated is essential and must be retained. A function afterward discovered cannot be used to broaden a claim, and such function is available to the patentee only when the patent, construed in the light of the circumstances existing when it is applied for, is broad enough to embrace it. When there is nothing to show that the new function was in the mind of either the inventor or of the Patent Office when the patent issued, it cannot be said that if the patent be narrow on its face it should be broadened out by construction to cover this new function. [*Id.

10. PAPER PATENT—NEW FUNCTIONS OF THE INVENTION—BROADENING THE INVENTION.
It would establish a very dangerous precedent to give to a mere paper patent which has lain dormant for years a breadth not contemplated on its face by reason of some new function discovered long after its issue and after that function had been availed of in practice by others. Such precedent, if established, would on the whole operate more to entrap honest manufacturers than to advance the useful arts. [*Id.

CONSTRUCTION OF STATUTES.

(See Appeal to the Circuit Court of Appeals, 1, 2, 3, 4; Appeal to the Court of Appeals of the District of Columbia, 3, 4, 9; Applications; Assignments, 1, 2, 3; Construction of Specifications and Patents, 4; Particular Patents, 2.)

COPY OF RECORD IN PATENT OFFICE.

(See Assignments, 2, 3.)

CROSS-EXAMINATION.

(See Testimony, 1.)

DAMAGES AND PROFITS.

(See Infringement.)

1. PROFITS IN INFRINGEMENT—IMPROVEMENT, EFFECT OF—BURDEN OF PROOF.
If defendants took complainants' device in its original form, the latter are entitled to the pecuniary advantage which the infringers derived from the unauthorized use of the patent. If the infringers added an improvement, they have a right to an apportionment, the burden of proof being upon them to show that a portion of the profits was the result of the improvement.
[*Tuttle, trustee, etc., *v.* Claflin *et al.*, 973.

2. SAME—ESTIMATES—EXPERIMENTS.
Estimates only and estimates based upon experiments by the complainants made only in a small way, which include estimates for the expense of an unnecessary feature of a process and which make no allowance for the economies which result from a subdivision of work, such as would be employed in manufacturing for wholesale trade, are unsatisfactory. [*Id.

3. ADDITIONAL DELAY TO BE AVOIDED—PROFITS.
A court will hesitate to compel a large additional expenditure of time by ordering an accounting in a suit which has been pending for a long time, especially when the manufacture which forms the basis of the suit has ceased and it is likely that further testimony would result in mere estimates. The court will itself determine the profits. [*Id.

DEATH OF APPLICANT FOR PATENT.

1. DECEASED INVENTOR—STANDING OF APPLICATION—ABANDONMENT.
The fact that an inventor is dead and that his executor has not asserted his rights does not deprive an application of standing before the Office. It cannot be considered abandoned until the expiration of the time allowed by law for amendments.
[Decker *v.* Loosley, 2140.

2. SAME—INTERFERENCE—HEIRS.
The Office, when it has reason to believe that an inventor is dead, should endeavor to ascertain the identity of his heirs before the declaration of an interference, and should send the interference notices to such heirs if no formal or authentic notice of the death of the inventor has been given. [Id.

DECREE.

(See Appeal to the Circuit Court of Appeals, 1, 2, 3, 5, 6, 8.)

DEFENSE.

(See Priority of Invention.)

DELAY IN PROSECUTING SUITS FOR INFRINGEMENT.

(See Suits for Infringement, 2.)

DELAY IN TAKING APPEAL.

See Appeal to the Circuit Court of Appeals, 8; Appeal to the Court of Appeals of the District of Columbia, 1, 2, 3, 4, 5.)

DEMURRER.

(See Designs, 2.)

1. DEMURRER FOR WANT OF INVENTION.
The cause should be considered upon the merits on demurrer to the bill whenever it appears upon the face of the patent that it lacks invention. (*Risdon Iron and Locomotive Works* v. *Medart*, C. D., 1895, 330; 71 O. G., 751; 15 Sup. Ct., 745; 158 U. S., 68, followed.)
[*Strom Manufacturing Company *v.* Weir Frog Company, 1125.

2. EFFECT UPON BILL.
The effect of a demurrer is to admit the truth of the charges in the bill when the latter are well pleaded.
[*Caldwell *et al. v.* Powell, 1272.

DESCRIPTION.

(See Construction of Claims; Construction of Specifications and Patents, 1, 4, 7; Particular Patents, 2.)

DESIGNS.

(See Particular Patents, 20.)

1. INTERFERENCE—OIL-CAN—IDENTITY.
The design of Fig. 2 differs from the design of Fig. 3 as clearly as either differs from the design of Fig 1. Priority is accordingly awarded to Lines.
[Cushman *v.* Lines, 153.

2. COLLEGE-BADGE—PATENTABILITY.
A design for a college-badge, consisting of a pin having the shape of a guidon flag, upon which the letters "U. P." are placed, is not so absolutely void of invention upon its face as to justify the court in sustaining a demurrer upon that ground.
[*Caldwell *et al v.* Powell, 1272.

DILIGENCE.

(See Bill of Review.)

DIVISION OF APPLICATION.

(See Interference, 3.)

1. CANCELLATION OF CLAIMS—SECOND APPLICATION—ABANDONMENT.
When upon a requirement of division claims for a process were canceled and an application was limited to the claims for an article and a second application for the process was filed while the first application was pending, but not within two years from the cancellation of the process claims from the first application, *Held* that the process claims were not abandoned and that the second application was a division of the first.
[Richardson *v.* Leidgen, 153.

2. ORIGINAL DISCLOSURE—DETAILS.
In a divisional application the addition of mere details, such as braces for a frame, does not affect the status of such application as properly divisional, especially when such details were shown in other figures of the original not included in the divisional application.
[Phelps *v.* Hardy *v.* Gattman and Stern, 631.

DOUBLE USE.

(See Invention, 1.)

DUTY OF COMMISSIONER OF PATENTS.

(See Commissioner of Patents.)

ENLARGEMENT OF CLAIMS.

(See Construction of Specifications and Patents; Reissues.)

ESTOPPEL.

(See Suits for Infringement, 1.)

EVIDENCE.

(See Testimony, 1.)

PROOF OF CARE IN SECURING EVIDENCE.
Proof that respondent wrote to a firm of attorneys instructing them to send him copies of all patents relating to a certain subject does not amount to proof that such attorneys made a search to discover all such patents, though they sent a number, and presumption in favor of such search having been made is negatived by the discovery of the patents now urged in the place where prudence would have suggested a search.
[*Bennett & Shepherd *v* Schooley, 1432.

EXAMINERS.

(See Commissioner of Patents.)

EXAMINERS-IN-CHIEF.

(See Commissioner of Patents.)

EXAMINER OF INTERFERENCES.

(See Interference, 6, 9.)

EXECUTORS.

(See Death of Applicant for Patent.)

FINAL DECISIONS.

(See Appeal to the Circuit Court of Appeals, 3.)

FIRST AND ORIGINAL INVENTOR.

(See Interference, 7, 8; Particular Patents, 9.)

FORMER DECISIONS.

(See Infringement, 5, 6; Injunction; Priority of Invention, 2.)

FORMER DECISION AFFIRMED.

COMMISSIONER'S DECISION AFFIRMED.
Upon a consideration of the merits of the case, *Held* that there was no sufficient reason to disturb the decision of the Commissioner of Patents.
[*Bryant *v.* Seymour, Commissioner of Patents, 1599.

FRAUDULENT ASSIGNMENT.

(See Assignments, 3.)

FUNCTIONS.

(See Construction of Specifications and Patents, 8, 9, 10.)

INADVERTENCE.

(See Reissues.)

INFRINGEMENT.

(See Appeal to the Circuit Court of Appeals, 8; Damages and Profits; Injunction; Particular Patents, 3, 5, 6, 8, 11, 13, 14, 15, 16, 17, 18; Suits for Infringement.)

1. DIFFERENCES IN FORM.
Mere differences in form are not sufficient to avoid infringement.
[*Taylor *et al. v.* Sawyer Spindle Company, 452.

2. PLEADING—NOTICE—WAIVER.
After alleging the invention and grant of the patent and the assignment the pleader averred that the defendants, knowing the premises, infringed. This is not an averment that they had notice or knew that their machines infringed. The allegation in regard to infringement was traversed, but nothing was said below upon the subject of notice. It is too late to raise for the first time, in an appellate court, technical questions of pleading or proof which are not jurisdictional in their character.
[*Tuttle, trustee, etc., *v.* Claflin *et al*, 973.

3. CONSTRUCTION OF INVENTION.
Devices which effect a distinctly simultaneous separation of pairs of carbons of a lamp do not infringe a patent in which there is claimed a device for securing a dissimultaneous separation of such pairs of carbons.
[*Brush Electric Company *v.* Western Electric Company, 1273.

4. SAME.
The contention that, since it is physically impossible for two sets of carbons to be separated at one and the same electrical instant, the defendant's devices must infringe is manifestly fallacious.
[*Id.

5. SUBSTITUTION OF EQUIVALENTS—PRIOR LITIGATION—WORDING OF CLAIMS.
The substitution of a horizontally-moving roller presser and cutter for a vertically-moving direct plunger and cutter will not suffice to avoid infringement in the case of a defendant who was also an unsuccessful defendant in a long course of prior litigations, even though the structure complained of evades the wording of the claims in suit.
[*Beach *v.* Inman *et al.*, 1275.

6. PREVIOUS ADJUDICATION.
A court of equity will not be overzealous in behalf of a defendant who persists in producing an old article which concededly contains all the elements save one of a combination uniformly forbidden him in previous suits.
[*Id.

7. TESTIMONY.
Testimony on behalf of complainant that there was no arrangement between complainant and defendant whereby the latter should procure articles from the former to be used at a particular place is very far from a denial that the particular articles in dispute could be purchased in the open market and does not amount to a charge of infringement.
[*Edison Electric Light Company *v.* Kaelber, 1430.

8. AGENT DEFENDANT—QUIA TIMET ACTION.
The expression "was awarded to the Western Electric Company through its agent, Mr. Kaelber" is not sufficient to establish the character of Mr. Kaelber's agency or to justify an apprehension of infringement from him. A *quia timet* action will not lie unless there is something to fear.
[*Id.

9. LIABILITY.
A series of guesses will not suffice to inculpate a defendant. Neither will the fact that he received a bid for alleged infringing devices in behalf of another party, in the absence of any threat on his part and in the absence of any showing of profit resulting to him, render him liable.
[*Id.

10. INFRINGEMENT OF PRIOR PATENT—GRANT OF SUBSEQUENT PATENT—PRESUMPTION CREATED THEREBY.
The grant of Letters Patent by the United States Patent Office creates a presumption of non-infringement of a prior patent claiming a similar device. (*Ney Manufacturing Co. v. Superior Drill Co.*, C. D., 1893, 475; 64 O. G., 1133; 56 Fed. Rep., 152, cited and approved.)
[*F. E. Kohler & Company *v.* George Worthington Company *et al.*, 1938.

11. CONSTRUCTION OF PATENT.
A claim for "applying coating material evenly" and for "causing the paper to emerge from the level surface" is not infringed by a process in which the coating emulsion is kept stirred by an agitator.
[*Eastman Company *v.* Getz & Hoover, 1938.

12. RIGHT TO REPAIR
Where a patent covers the combination of a draw-head, a knuckle, a pivot-pin, and a locking-pin, it is not infringed by a defendant who furnishes the knuckles to replace broken ones.
[*Shickle, Harrison & Howard Iron Company *v.* St. Louis Car Coupler Company, 2142.

INJUNCTION.

(See Appeal to the Circuit Court of Appeals, 3.)

PRELIMINARY INJUNCTION—SUBSTANTIAL IDENTITY OF STRUCTURE—PRIOR ADJUDICATION.
A motion for a preliminary injunction will be granted when it appears that the defendant's structure is the same as the complainant's in all respects save one, and that one, though differing in a narrow technical sense, is the same in principle, and when it further appears that the complainant's patent has been uniformly upheld during years of arduous litigation with the present defendant.
[*Beach *v.* Inman *et al.*, 1275.

INTERFERENCE.

(See Death of Applicant for Patent, 2; Designs, 1; Testimony, 2.)

1. BURDEN OF PROOF—FIRST TO MAKE CLAIM—RULE 116.
The first to make a claim in substance and effect covering the invention is the senior party. (*Edison v. Ball*, C. D., 1895, 811; 71 O. G., 1313.)
[Richardson *v.* Leidgen, 153.

2. MOTION TO DISSOLVE—IRREGULARITY—BREADTH OF ISSUE.
It is a cardinal principle that in declaring an interference the issue must be as broad as the broadest claim included thereunder.
[Morgan *v.* Hanson, 154.

3. PURPOSE OF RULE 116—DIVISIONAL APPLICATION—ORIGINAL APPLICATION AS EVIDENCE.
The sole purpose of Rule 116 is to determine the position of parties as plaintiff and defendant, in order to determine who shall first take testimony. Failure of junior party to bring motion to shift the burden of proof raises no presumption that his application involved is not a division of an earlier one. In any case he may introduce his earlier one to show that he made the invention of the issue before the date of the application involved.
[Phelps *v.* Hardy *v.* Gattman and Stern, 631.

4. TESTIMONY RELATING TO CHARACTER OF PARTIES—STRIKING FROM RECORD.
Testimony concerning the general character of the parties is not evidence and should not be before the various tribunals of the Office, and it should therefore be stricken from the record.
[Jenkins *v.* Burke, 978.

5. TESTIMONY—SECOND DEPOSITION—STRIKING FROM RECORD.
That a witness may be twice called is a circumstance touching his credibility alone and not the competency of the evidence. A second deposition by a witness, therefore, cannot, as mere matter of law, be excluded from the consideration of the various tribunals.
[Id.

6. PETITION FOR RECONSIDERATION.
A petition asking that the Examiner of Interferences be directed to reconsider his decision awarding priority, upon the ground that such decision is a travesty on equity practice, a gross injustice, that it is in direct contradiction to the evidence, and that the Examiner has exceeded his powers, when the record of the case discloses that the Examiner acted with deliberation and apparent fairness, is wholly unjustifiable and should not have been presented.
[Clarke *v.* Pettengill *v.* Crancer, 1271.

7. INVENTORSHIP—ACQUIESCENCE IN USE.
After C learned of F's patent he continued to make the patented article and made no protest about F's marking the article "Patented" and did not claim the article so marked as his own invention until after his employers had got into trouble with the owners of the patent. This conduct is not that of a person who had made the invention.
[Couch *v.* Finnegan, 1595.

8. SAME—FAILING TO CLAIM THE INVENTION IN PRIOR PATENT.
C obtained a patent which discloses all the improvements embraced in the issue before he filed his present application; but such patent contained no claim to the present interfering subject-matter. This is significant of the fact that C did not consider himself the inventor of the invention in question.
[Id.

9. PRELIMINARY STATEMENT—MOTION TO AMEND—DENIED ON APPEAL.
Bent's motion to amend his preliminary statement, granted by the Examiner of Interferences, was denied by the Commissioner on appeal, since the facts do not show sufficient ground for the motion.
[Foster and Foster *v.* Bent, 1781.

10. SAME—AMENDMENT TO—PRACTICE OF THE OFFICE.
The practice of the Office should conform to the modern practice in courts, which allows amendments to pleadings upon a proper showing at any stage in the case; but it is not proper to allow an amendment to a preliminary statement at any stage of the case, as a matter of course, whenever asked for, without a showing of facts to justify it.
[Id.

11. SAME—SAME—CONSIDERATION OF—AFFIDAVITS.
Motions to amend preliminary statements should not be disposed of upon affidavits alone, but upon the entire record.
[Id.

12. SAME—SAME—WHEN PERMITTED.
Amendments to preliminary statements should be permitted where indisputable facts or clearly-proved circumstances support the necessary inference that a mistake has been made which would defeat the ends of justice and where such facts or circumstances by the exercise of reasonable diligence could not have been found and in fact were not found earlier.
[Id.

13. SAME—SAME.
The fact that an affiant who is one of the parties did not give the original preliminary statement adequate study, did not follow back the details in his mind, did not at the time it was made recollect anything important about it, and confused the article which he afterward manufactured with the one which he then invented are not sufficient grounds to justify disposing of the original statement by substituting therefor an amended one.
[Id.

14. MOTION TO DISSOLVE—NO INTERFERENCE—OVERCOMING REFERENCE—RULE 75.
Appeal by Appert from refusal to grant motion to dissolve, brought upon the ground of no interference in fact and also upon the ground that Schmertz has not overcome French patent to Appert under Rule 75, dismissed upon both grounds.
[Schmertz *v.* Appert, 1784.

15. APPEAL—AFFIDAVIT—RULE 75.
A holding that an applicant has not presented an affidavit sufficient to overcome a foreign patent under Rule 75, since it relates to the merits, is not properly appealable to the Commissioner. [Id.

16. AFFIDAVIT UNDER RULE 75—STATING FACTS.
An affidavit under Rule 75 should contain not merely the deponent's conclusion that he had invented prior to the time of the reference sought to be overcome, but should state the facts supporting such conclusion. [Id.

17. SAME—AIDED BY PRELIMINARY STATEMENT.
An affidavit under Rule 75 may be aided and supplemented by a preliminary statement made in an interference in which the application is involved. [Id.

18. SAME—PRELIMINARY STATEMENT—CONSIDERATION OF BOTH JOINTLY.
An affiant under Rule 75, when his application becomes involved in interference, is entitled to invoke the doctrine of priority of mere conception. Even though he can show evidence of nothing but mental acts prior to the date of the reference sought to be overcome, it is the duty of the Office to consider whether his conception was sufficiently clear and distinct and whether under all the circumstances of the case his progress was marked by due diligence. This can only be done upon the full record of the case. [Id.

19. PRIORITY OF INVENTION—FAILURE TO ASSERT PRIORITY ON THE PART OF A JUNIOR PARTY.
A contention that an article embodying the issue was in existence at a time anterior to the production of any such article by the senior party is rendered doubtful by the failure of such junior party, when he learned of the other's invention, to make any suggestion or otherwise assert that he was the true inventor.
[Johnston *v.* Stone, 2137.

INTERLOCUTORY DECREES.

(See Appeal to the Circuit Court of Appeals, 1, 2.)

INVENTION.

(See Designs, 2; Patentability.)

1. ANTICIPATION—DOUBLE USE.
A new combination and arrangement of old parts, whereby spinning-spindles instead of running in rigid bearings are flexibly mounted on the rails, so as to allow of greatly-increased speed of revolution, *Held* to involve invention and not to be anticipated by the use of similar devices in centrifugal machines for drying sugar or creaming milk. The two devices are so different in size, structure, and uses to which they are adapted that it is not a case of double use. (*Potts & Co. v. Creager*, C. D., 1895, 143; 70 O. G., 494; 15 Sup. Ct., 194; 155 U. S., 607, applied.)
[*Taylor *et al. v.* Sawyer Spindle Company, 452.

2. PATENTABILITY.
There is no patentable invention involved in swaging or striking up by means of a die, from a blank of iron or steel, a rail-brace of a form which had previously been made of cast metals. (*Kilbourne* v. *W. Bingham Co.*, C. D., 1892, 477; 60 O. G., 577; 1 C. C. A., 617; 50 Fed Rep., 697, followed.)
[*Strom Manufacturing Company *v.* Weir Frog Company, 1125.

3. SIMPLICITY—RESULT NEW AND USEFUL—PUBLIC LOSS.
Simplicity does not negative invention, when a new and useful result is accomplished, where the process has clearly assisted in the manufacture of the product and where, if the process were to be eliminated from public knowledge, loss to the public would result.
[*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company, 1127.

4. PATENTABILITY—PROCESS OF PURIFYING OIL—USE OF COPPER MATTE.
In a process of purifying oil the use of pulverized copper matte to remove the "skunk" from the oil is an improvement upon the use of a mixture of pulverized copper oxid and pulverized iron oxid of such character as is not to be expected from those versed in the art, and required invention.
[*Ex parte* Frasch, 1427.

5. SUBSTITUTION OF MATERIAL.
An improvement consisting mainly in the use of metal instead of wooden panels for the ends or sides of seats for street-cars does not amount to invention.
[*J. G. Brill Company *v.* Wilson *et al.*, 1937.

6. ANALOGOUS USE—SKILL OF MECHANIC.
The use of ironing-rolls for smoothing webs of bromid-paper is analogous to their use in making carbon-paper. It requires nothing beyond mechanical skill to increase the distance between such rollers and a set of hang-ups.
[*Eastman Company *v.* Getz & Hoover, 1938.

7. SAME—NON-INVENTION.
The application of parts of a sandpapering-machine, used in their ordinary relations, to the manufacture of bromid-paper does not involve invention, since the process of coating with glue is closely allied to, if not identical with, that of coating paper with gelatin. [*Id.

INVENTION DESCRIBED BUT NOT CLAIMED.

(See Construction of Specifications and Patents, 8, 9, 10; Interference, 8.)

ISSUE IN INTERFERENCE CASES.

(See Interference, 2.)

JUDGMENT.

(See Parties to Suit.)

JUDICIAL NOTICE.

(See Practice in the Patent Office.)

LICENSEES.

ACTION BY LICENSEE.
A mere licensee has no authority to sue infringers in his own name.
[*Chauche *et al. v.* Pare, 1123.

LICENSES.

(See Assignments, 4, 5; Suits for Infringement, 1.)

LIMITATION IMPOSED BY THE UNITED STATES PATENT OFFICE.

(See Construction of Specifications and Patents, 2; Reissues.)

LIMIT OF APPEAL.

(See Appeal to the Circuit Court of Appeal, 8; Appeal to the Court of Appeals of the District of Columbia.)

MASTER'S REPORT.

(See Appeal to the Circuit Court of Appeals, 8.)

MECHANICAL SKILL.

(See Construction of Specifications and Patents, 6; Invention, 3, 6, 7.)

MISTAKE.

(See Interference, 12, 13.)

MOTION TO DISSOLVE INTERFERENCE.

(See Interference, 2, 14, 15.)

NEW USE.

(See Invention, 3, 6, 7.)

NOTICE OF INFRINGEMENT.

(See Infringement, 2.)

OLD ELEMENTS.

(See Invention, 1, 2.)

OMISSION OF PARTS.

(See Infringement, 5, 12.)

PARTIAL USE.

(See Infringement, 5, 6, 12; Injunction.)

PARTICULAR PATENTS.

1. ALKINS—RAIL-BRACE—No. 352,286—VOID.
Letters Patent No. 352,286, dated November 9, 1886, to Charles Alkins, for improvements in rail-braces, *Held* void on its face for want of novelty and invention.
[*Strom Manufacturing Company *v.* Weir Frog Company, 1125.

2. SAME—SAME—SUFFICIENT DESCRIPTION—SECTION 4888, REVISED STATUTES.
In view of the antiquity of the art of swaging, *Held* that claims 1, 2, 3, 9, and 10 are not void for want of a sufficient description to comply with Revised Statutes, section 4888, though the process is not stated in full. (*Kilbourne v. W. Bingham Co.*, C. D., 1892, 477; 60 O. G., 577; 1 C. C. A., 617; 50 Fed. Rep., 697, followed.)
[*Id.

3. ATWOOD—SUPPORT FOR SPINDLES FOR SPINNING-MACHINES—No. 253,572—INFRINGEMENT—VALID.
Letters Patent No. 253,572, dated February 14, 1882, granted to John E. Atwood, for supports for spindles for spinning-machines, *Held* valid and infringed as to claims 3, 4, and 5.
[*Taylor *et al. v.* Sawyer Spindle Company, 452.

4. BRILL—STREET-CAR—No. 315,898—VOID.
Letters Patent No. 315,898, granted April 14, 1885, to George M. Brill, for improvements in summer-cars for street or tram railways, *Held* to be void for want of invention.
[*J. G. Brill Company *v.* Wilson *et al.*, 1937.

5. BRUSH—ELECTRIC LAMP—No. 219,208—NOT INFRINGED.
Letters Patent No. 219,208, granted September 2, 1879, to Charles F. Brush, for a double-carbon electric lamp, examined and *Held* not infringed.
[*Brush Electric Company *v.* Western Electric Company, 1273.

6. COLBY—WATCH-PENDANT—No. 287,001—VOID AND NOT INFRINGED.
Letters Patent No. 287,001, granted October 23, 1883, to Caleb K. Colby, for a watch-pendant, examined and claim 1 thereof *Held* void for want of invention in view of the prior state of the art, and, if valid, *Held* not infringed.
[*Dueber Watch Case Manufacturing Company *et al. v.* Robbins *et al.*, 154.

7. CROOKER—BLACKING AND BURNISHING BOOTS OR SHOES—DEFECTIVE SPECIFICATION—REISSUE No. 11,144—VOID.
Reissue Letters Patent No. 11,144, issued February 10, 1891, to William W. Crooker, for blacking and burnishing boots or shoes, *Held* to be void, because the specification does not disclose the whole truth in relation to the invention.
[*Electric Boot and Shoe Finishing Company *v.* Little *et al.*, 456.

8. CROSBY AND KELLOGG—MACHINE FOR CRIMPING TEXTILE MATERIALS—No. 87,034—INFRINGEMENT.
Letters Patent No. 87,033, granted December 2, 1862, to C. O. Crosby and Henry Kellogg, for a machine for crimping textile materials, examined and in view of the art *Held* to be for a pioneer invention and to be infringed.
[*Tuttle, trustee, etc., *v.* Claflin *et al.*, 973.

9. DRAWBAUGH—TELEPHONE—REJECTION.
Applications of Daniel Drawbaugh, Serial No. 111,554, filed November 12, 1893, and Serial No. 126,530, filed April 3, 1884, for telephone-transmitters, examined and *Held* to have been properly rejected by the Patent Office, as Drawbaugh was not the inventor.
[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

10. EASTMAN AND WALKER—APPARATUS FOR MANUFACTURING SENSITIVE PHOTOGRAPHIC FILMS—No. 358,848—VOID.
Letters Patent No. 358,848, granted March 8, 1887, to George Eastman and William H. Walker, for a machine for making photographic films, examined and *Held* void for want of patentability in view of the prior art.
[*Eastman Company *v.* Getz & Hoover, 1938.

11. SAME—COATING PHOTOGRAPHIC PAPER—No. 370,110, NON-INFRINGEMENT.
Letters Patent No. 370,110, granted September 20, 1887, to William H. Walker and George Eastman, for a process of coating photographic paper, examined and *Held* not infringed.
[*Id.

12. SAME—COATING PHOTOGRAPHIC PAPER—No. 370,111—VOID.
Letters Patent No. 370,111, granted September 20, 1887, to William H. Walker and George Eastman, for a process of coating photographic paper, examined and *Held* void for want of patentability in view of the prior art. [*Id.

13. LONG—STEAM ROAD-VEHICLE—No. 281,091—NOT INFRINGED.
Claim 5 of Letters Patent No. 281,091, granted July 10, 1883, to George A. Long, for an improved steering-head for road-vehicles, construed and *Held* not infringed.
[*Long *et al. v.* Pope Manufacturing Company, 1428.

14. PLANT—CURRYCOMB—No. 220,986—NOT INFRINGED.
Letters Patent No. 220,986, granted October 28, 1879, to Paschal Plant, for an improvement in curry combs, *Held* not infringed by curry combs made under Letters Patent No. 407,313, granted July 16, 1889, to James Du Shane.
[*F. E. Kohler & Company *v.* George Worthington Company *et al.*, 1938.

15. REYNOLDS—CONTROLLING DEVICE FOR ELEVATORS—No. 456,122—VALID—INFRINGED.
Letters Patent No. 456,122, granted July 14, 1891, to G. H. Reynolds, for means for controlling the operation of elevators, *Held* to be valid and infringed.
[*Standard Elevator Company *et al. v.* Crane Elevator Company *et al.*, 811.

16. SAME—HYDRAULIC ELEVATOR—No. 328,614—VALIDITY—INFRINGEMENT.
Claims 2, 4, and 6 of Letters Patent No. 328,614, granted October 20, 1885, to George H. Reynolds, for improvements in hydraulic elevators, *Held* to be valid and claims 2 and 4 infringed, but claim 6 not infringed. [*Id.

17. ROCKWELL—MANUFACTURING MINERAL WOOL—Nos. 447,360 AND 452,333—PATENTABLE AND INFRINGED.
Letters Patent No. 447,360, granted March 3, 1891, and No. 452,733, granted May 19, 1891, to Charles H. Rockwell, for processes of manufacturing mineral wool, examined and *Held* not anticipated, patentable, and infringed.
[*Western Mineral Wool and Insulating Fibre Company *v.* Globe Mineral Wool Company, 1127.

18. STIERINGER—SAFETY CATCH FOR ELECTRIC-LIGHT CIRCUITS—No. 281,576—INFRINGEMENT NOT PROVEN.
Letters Patent No. 281,576, granted July 17, 1883, to Luther Stieringer, for an improvement in safety-catches for electric-light circuits, not proven to have been infringed and bill dismissed.
[*Edison Electric Light Company *v.* Kaelber, 1430.

19. TAFT—MACHINE FOR MAKING, REPAIRING, AND CLEANING ROADS—No. 331,920—INVALID.
Claims 4, 10, 11, and 13 of Letters Patent No. 331,920, granted December 8, 1885, to G. W. Taft, for a machine for making, repairing, and cleaning roads, construed in connection with the prior art and *Held* to be invalid.
[*American Road Machine Company *et al. v.* Pennock & Sharp Company, Limited, 633.

20. VAN RODEN—DESIGN No. 20,748—NOT VOID.
Design patent No. 20,748, granted May 19, 1891, to George C. Van Roden, for a badge, *Held* not void on its face for want of invention.
[*Caldwell *et al. v.* Powell, 1272.

PARTIES TO SUIT.

(See Infringement, 8, 9; Suits for Infringement, 1.)

TECHNICAL PARTY—JUDGMENT.
It is not necessary that a person should appear upon the record as a technical party to the proceedings in order to be bound by a judgment. If he be a substantial party, he will be bound by the finding in the case.
[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

PATENTABILITY.

MEANS—OBJECT.
The object of an invention is not patentable, the means may be. "Mechanism * * * to separate * * * pairs dissimultaneously" is an element of means.
[*Brush Electric Company *v.* Western Electric Company, 1273.

PATENT OFFICE.

(See Practice in the Patent Office.)

PATENTS.

(See Applications; Construction of Specifications and Patents; Particular Patents.)

PETITION FOR RECONSIDERATION.

(See Interference, 6.)

PIONEER INVENTION.

(See Construction of Specifications and Patents, 3.)

PLEADINGS.

(See Infringement, 2.)

PRACTICE IN THE COURTS.

(See Appeal to the Circuit Court of Appeals; Appeal to the Court of Appeals of the District of Columbia; Bill of Review; Construction of Specifications and Patents, 7; Damages and Profits, 3; Demurrer; Evidence; Infringement, 2; Parties to Suit; Priority of Invention; Suits for Infringement.)

PRACTICE IN THE PATENT OFFICE.

(See Appeal to the Court of Appeals of the District of Columbia, 9, 11; Commissioner of Patents; Death of Applicant for Patent, 2; Division of Application; Interference; Reduction to Practice; Refundment of Appeal Fees.)

UNCERTIFIED COURT RECORD—OFFICIAL REPORT, TAKING NOTICE OF.

It is not necessary that a duly certified transcript record of a case in a Federal court be filed in the Patent Office in order to render it competent for its tribunals to take notice of and be guided thereby. The officials of the Patent Office are not obliged to find their conclusions and judgments upon such evidence produced in such manner and form as is required by the rules of common law. They are not confined to merely technical evidence, but may resort to any source of intelligence upon which they can reasonably and safely act. The findings and judgment of a court as published in an official report are therefore competent to them, and were in this case ample ground for the rejection of claims.

[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

PRELIMINARY STATEMENTS.

(See Interference, 9, 10, 11, 12, 13, 17, 18.)

PRINTING THE RECORD.

(See Appeal to the Court of Appeals of the District of Columbia, 6.)

PRIOR DEVICES.

(See Injunction.)

PRIORITY OF INVENTION.

(See Affidavit under Rule 75; Interference, 7, 8, 19.)

1. DEFENSE OF PRIORITY—PRIOR INVENTION MUST HAVE BEEN COMPLETE.

Where a plaintiff claims to be an original inventor and the defense is that the defendant is a prior inventor, thus conceding the invention of the plaintiff, but challenging his claim to priority of invention, it is imperative that the invention or discovery relied upon as a defense must have been complete and capable of producing the result sought to be accomplished, and this fact must be shown by the defendant. Progress, as such, no matter how near it may have approximated the end in view, cannot avail to defeat a patent. (Citing *Coffin* v. *Ogden*, 5 O. G., 270; 18 Wall., 120–124.)

[*Drawbaugh *v.* Seymour, Commissioner of Patents, 313.

2. FINDING BY SUPREME COURT CONCLUSIVE.

It is not for a moment supposable that if a device produced in an incomplete state by the defense in a court suit was or had been practically operative it would not have been produced in evidence in an operative condition. In view of this and in view of a finding by the Supreme Court that the original instrument did not disclose the complete invention and that all claims to the contrary are wholly unfounded in truth such finding will be accepted as final and conclusive. [*Id.

PROCEEDINGS IN THE PATENT OFFICE.

(See Appeal to the Court of Appeals of the District of Columbia, 9, 11.)

PROCESS.

(See Construction of Specifications and Patents, 5, 6; Infringement, 11; Invention, 2, 3, 4, 7; Particular Patents, 2, 10, 11, 12, 19.)

PROCESS AND PRODUCT.

(See Division of Application, 1; Invention, 3.)

PUBLIC APPRECIATION AS EVIDENCE OF INVENTION.

INVENTION—EXTENSIVE USE—OTHER CAUSE.

Extensive use is only to be considered evidence of invention in doubtful cases and it loses its force when attributable to another device used in connection with the alleged invention and which was useful and popular.

[*Dueber Watch Case Manufacturing Company *et al.* v. Robbins *et al.*, 154.

RECORD OF ASSIGNMENTS.

(See Assignments, 1, 2, 3.)

RECORD OF COURT PROCEEDINGS.

(See Practice in the Patent Office.)

REDUCTION TO PRACTICE.

EXECUTION OF SPECIFICATION—INCOMPLETE APPLICATION.

Neither an executed specification nor an incomplete application nor anything except a complete allowable application can be regarded as a constructive reduction to practice.

[Phelps *v.* Hardy *v.* Gattman and Stern, 631.

REFERENCES.

(See Affidavit under Rule 75; Interference, 14, 15, 16, 17.)

REFUNDMENT OF APPEAL FEES.

FAILURE TO PROSECUTE APPEAL.

A request for the return of an appeal fee where the appeal was not prosecuted denied, as the law establishes certain payments to be made upon filing certain papers, and this irrespective of whether the case is further prosecuted or not.

[*Ex parte* Borton, 2137.

REHEARING.

(See Appeal to the Court of Appeals of the District of Columbia, 8, 9, 10, 11; Bill of Review; Interference, 6.)

REISSUES.

REISSUE TO BROADEN CLAIMS—ACQUIESCING IN REJECTION OF ORIGINAL CLAIMS.

Where an applicant acquiesced in the limited construction put on his invention, and at no time during the prosecution of his original application suggested or intimated that the invention resided in the broad device now sought to be claimed in the reissue application, *Held* that the failure to make the claim in the original patent did not arise through inadvertence, accident, or mistake, and the reissue claim refused.

[*Ex parte* Bryant, 451.

REJECTED CASES.

(See Commissioner of Patents; Particular Patents, 9.)

RESULTS.

(See Invention, 3.)

RIGHT TO PATENT.

(See Applications; Commissioner of Patents.)

RIGHT TO REPAIR PATENTED ARTICLES.

(See Use and Sale of Patented Articles.)

SENIOR PARTY.

(See Interference, 1.)

SPECIFICATIONS.

(See Construction of Specifications and Patents, 1, 7.)

STATUTORY REQUIREMENTS TO OBTAIN A PATENT.

(See Applications.)

STAY OF PROCEEDINGS.

(See Appeal to the Court of Appeals of the District of Columbia, 4, 8, 9, 10, 11.)

SUBSEQUENT PATENT.

(See Infringement, 10; Interference, 8.)

SUBSTITUTION OF MATERIAL.

(See Invention, 5.)

SUBSTITUTION OF PARTS.

(See Infringement, 5.)

SUITS FOR INFRINGEMENT.

(See Bill of Review; Damages and Profits, 3; Demurrer, 1; Licensees; Parties to Suit; Priority of Invention.)

1. INFRINGEMENT—LICENSE—ESTOPPEL.

The fact that defendant was a licensee cannot estop him from disputing the validity of the patent under which he takes his license in a suit for infringements charged to have taken place after the license was drawn, though in a doubtful case it might have considerable evidential force as an admission of validity.

[*Dueber Watch Case Manufacturing Company *et al* v. Robbins *et al*, 154.

2. INFRINGEMENT SUITS—LACHES.

Mere delay in prosecuting infringers, unaccompanied by circumstances amounting to equitable estoppel, will not prevent a patent owner from maintaining suits for equitable relief.

[*Taylor *et al.* v. Sawyer Spindle Company, 452.

TECHNICAL TERMS.

(See Appeal to the Circuit Court of Appeals, 3, 4.)

TESTIMONY.

(See Infringement, 7; Interference, 5.)

1. UNDULY ENLARGING THE RECORD.

It is bad practice to stuff the records of patent causes with prolix cross-examinations and irrelevant testimony.

[*Eastman Company *v.* Getz & Hoover, 1938.

2. CREDIBILITY OF WITNESSES.

Numerous witnesses of unquestioned credibility concurring in one matter may nevertheless be mistaken, particularly upon the question whether what is shown them as they testify is the identical thing which they saw more than two years before In such a case, in weighing the testimony, the circumstances must be taken into account, considering that that which is conformable to experience is more probable than that which runs counter to it.

[Johnston *v.* Stone, 2137.

TESTIMONY RELATIVE TO CHARACTER OF PARTIES.

(See Interference, 4.)

TITLE TO PATENT.

(See Assignments.)

TRADE-MARKS

UNFAIR COMPETITION—DECEPTION.

It is sufficient to justify the interposition of a court of equity if articles manufactured by the defendant are purposely constructed and marked in the similitude of those manufactured by the complainant, with the intention and result of deceiving the trade and the public and inducing them to purchase the articles of the defendant in the belief that they are purchasing those of the complainant.

[*Buck's Stove and Range Company *v.* Kiechle *et al.*, 1785.

USE AND SALE OF PATENTED ARTICLES.

1. RIGHTS OF PURCHASER.

The sale of a patented article by the patentee frees it from the grasp of the monopoly, and the purchaser may thereafter exercise the same dominion over it which he exercises over his other property The right to repair a patented device is incidental to ownership. The fact that it is patented does not lessen the owner's right to put it in order when it gets out of repair, unless, considered as a whole, it is worn out and useless.

[*Shickle, Harrison & Howard Iron Company *v.* St. Louis Car Coupler Company, 2142.

2. REPLACEMENT.

When a patented machine is accidentally destroyed or when it is practically worn out, the owner thereof, under the guise of repairing it, cannot make a new machine. In such cases he must cast it aside and buy a new one from the patentee.

[*Id.

VALID PATENTS.

(See Particular Patents, 2, 3, 13, 15, 16, 17, 20.)

VALIDITY OF PATENT.

(See Public Appreciation Evidence of Invention.)

VOID PATENTS.

(See Construction of Specifications and Patents, 6; Particular Patents, 1, 4, 6, 7, 9, 10, 12, 19.)

WAIVER.

(See Infringement, 2.)

WITNESSES.

(See Interference, 5; Testimony, 2.)

ALPHABETICAL LIST OF PATENTEES

FOR

THE QUARTER ENDING DECEMBER 31, 1896.

[Claims and drawings of Designs do not appear in the Monthly Volumes. Separate indexes for Designs, Trade-Marks, Prints, and Disclaimers follow this.]

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Specification.	Drawing.	Volume.	Page.
A. Booth Packing Company. (See Atwood, John W., assignor.)						
A. G. Spalding & Bros. (See Nisbet, Alexander, assignor.)						
A. I. Root Company. (See Weed, Edward B., assignor.)						
Aabel, George, San Francisco, Cal. Car-coupling	573,253	Dec. 15	2049	491	77	1706
Abbott, Hamer U. (See Cook and Abbott.)						
Abbott, William W., New Haven, Conn. Match-machine	573,802	Dec. 22	3068	727, 728, 729, 730	77	1914
Abell, William P., Essequebo, British Guiana. Centrifugal machine	571,912	Nov. 24	2645	626	77	1191
Abrahams, Alfred. (See Thornewell, Charles, assignor.)						
Abrahams, John W., Allegheny, assignor of one-half to H. A. Marlin, Pittsburg, Pa. Bending-machine	570,655	Nov. 3	448	105, 106	77	722
Abrahams, Meyer, *et al.* (See Lotze, Ernst J., assignor.)						
Acheson, Edward G., Monongahela City, Pa. Composition of matter for abrading articles	572,852	Dec. 8	1339	.....	77	1553
Acheson, William, Pittsburg, Pa. Washing-machine	570,360	Oct. 27	2933	697	77	592
Ackers, Thomas B., Chicago, Ill. Match-pouch	571,737	Nov. 24	2321	555	77	1131
Ackley, Wilbur C., Adrian, Mich. Window-screen	573,803	Dec. 22	3074	730	77	1915
Acme Company. (See Hofmann, John, assignor.)						
Acme Electric Lamp Company. (See Jackson, Louis A., assignor.)						
Acme Package Company. (See Brown, Henry J. S., assignor.)						
Actien-Gesellschaft für Fein Mechanic, vormals Jetter & Scheerer. (See Scheerer, Wilhelm, assignor.)						
Actien-Gesellschaft für Glas Industrie, vormals Friedr. Siemens. (See Herrmann, Carl M., assignor.)						
Adair, Alexander, Jr., Philadelphia, Pa. Frame for supporting car-fenders	572,394	Dec. 1	562	133	77	1385
Adams, Albert L., Cedar Rapids, Iowa. Rope-fastener	568,827	Oct. 6	192	46	77	39
Adams, Charles F. and H. F., Reading, Pa. Machine for cutting ribbed fabrics	572,094	Dec. 1	1	1	77	1279
Adams Company. (See Farwell, Fay O., assignor.)						
Adams, Cyrus L., Orange, assignor of one-half to J. L. Ballard, Los Angeles, Cal. Combination card-case with cards and memorandum attachment	569,000	Oct. 6	497	112	77	95
Adams, Daniel, Philadelphia, Pa. Wood-turning lathe	569,946	Oct. 20	2162	512, 513	77	435
Adams, George B., Newark, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Key-ring or the like	570,442	Nov. 3	1	1	77	639
Adams, George B., Irvington, N. J., assignor to Whitehead & Hoag Company, of New Jersey. Stamp or coin case	572,237	Dec. 1	252	60	77	1326
Adams, Henry F. (See Adams, Charles F. and H. F.)						
Adams, James F., Killingly, assignor to C. D. & C. S. Chase, Danielson, Conn. Steering mechanism	571,964	Nov. 24	2739	645	77	1200
Adams, John F., Worcester, Mass. Chin-rest for dental operating-chairs	571,209	Nov. 10	1407	329	77	928
Adams, John M., *et al.* (See Churchill, Henry P., assignor.)						
Adams, John Q. (See Idler, Charles A., assignor.)						
Adams, Lawson, assignor of one-half to A. Reith, Buffalo, N. Y. Combined lightning and water conductor	573,750	Dec. 22	2992	709	77	1899
Adams, P. K. (See Bohon, Joseph A., assignor.)						
Adams, Stephen J., Pittsburg, Pa. Method of and apparatus for forming cores	569,986	Oct. 27	2225	528	77	459
Adams, Stephen J., Pittsburg, Pa. Method of and apparatus for forming sand molds	574,052	Dec. 29	3546	846, 847	77	2016
Adams & Westlake Company. (See Mosher, John A., assignor.)						
Adams, William A., Elizabeth, N. J. Car-replacing frog	573,380	Dec. 15	2287	545	77	1748
Adamson, Joseph, Pawtucket, R. I. Loom-reed	571,182	Nov. 10	1365	318	77	920
Addington, William B., *et al.* (See Reily, John P., assignor.)						
Adgate, Joseph J., Liberty, N. Y. Wagon-jack	570,078	Nov. 10	1184	277, 278	77	887
Adler, George W., Philadelphia, Pa. Tawing hides	573,631	Dec. 22	2787	.....	77	1862
Adler, Henry, trustee. (See Kampf, Joseph, assignor.)						
Adler, Marcus A., New York, N. Y. Exhibiting samples of garments	569,531	Oct. 13	1397	330	77	279
Adler, Marcus A., New York, N. Y. Tailor's table	569,947	Oct. 20	2164	513	77	435
Adriance, John S., New York, N. Y. Decolorizing tannin extract	571,635	Nov. 17	2132	.....	77	1076
Adt, John B. (See Guethler, Maximilian, assignor.)						
Æolian Company. (See Chase, Joseph H., assignor.)						
Æolian Company. (See Tremaine, Harry B., assignor.)						
Agelasto, Michael A., Norfolk, Va. Electric thermometer	571,426	Nov. 17	1765	421	77	1009
Agesen, John H., Higganum, Conn. Attachment for drill-grinding machines	572,944	Dec. 15	1509	361	77	1603
Agnew, Benjamin S. (See Crosby, James H., assignor.)						
Ahearn, William F., assignor of one-half to P. Gagnon, Two Rivers, Wis. Net-lifting machine	571,033	Nov. 10	1104	258	77	872
Aicklen, William J., New Orleans, La. Folding crate	573,804	Dec. 22	3075	731	77	1915
Aigler, Noah W., Beavertown, Pa. Car-coupling	572,395	Dec. 1	564	133	77	1385
Aiken, Henry, Pittsburg, Pa. Tipping metallurgical vessels	569,987	Oct. 27	2228	528, 529	77	459
Aiken, Henry, Pittsburg, Pa. Hoisting apparatus	574,127	Dec. 29	3683	877, 878	77	2040
Aiken, Henry, Pittsburg, Pa., F. W. Wood, Baltimore, Md., and H. H. Campbell, Steelton, Pa. Open-hearth furnace. (Reissue)	11,572	Oct. 13	1534	359, 360	77	305
Ainsworth, Edwin, Wilmington, Del., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Tentering-machine	569,734	Oct. 20	1795	426	77	368
Ajello, Vincent, assignor of one-third to F. Mainella, New York, N. Y. Billiard-cue	573,845	Dec. 29	3153	752	77	1945
Akerman, John W., Newburyport, Mass. Delivery-wagon	571,324	Nov. 17	1607	382	77	981

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Aktiebolaget Per Persaons Vaf Och Stickmaskin. (See Persson, Per, assignor.)						
Albee, George H., Windsor, Conn. Household reminder	573,319	Dec. 15	2188	523	77	1730
Albers, William, Pittsburg, Pa. Envelop	573,123	Dec. 15	1819	439	77	1664
Albert, Heinrich, assignor to Chemische Werke, vormals H. & E. Albert, Biebrich, Germany. Manufacturing phosphates of alkalies	572,512	Dec. 8	745	178	77	1435
Albree, Chester B., Allegheny, Pa. Pneumatic tool	572,324	Dec. 1	424	100	77	1360
Albrecht, Herman S., St. Louis, Mo. Pulverizing and mixing machine	571,588	Nov. 17	2049	488, 489	77	1060
Albright, Harry W., assignor of one-half to J. C. Spyker, York, Pa. Weather-strip	573,193	Dec. 15	1949	469	77	1687
Alden, Andrew D., Brockport, Pa. Car-coupling	569,481	Oct. 13	1301	306, 307	77	962
Alden Type Machine Company. (See Johnson and Low, assignors.)						
Alderson, George, La Salle, assignor to C. Brunner, Peru, Ill. Valve-actuating mechanism	573,194	Dec. 15	1950	469	77	1687
Aldrich, Orlando W., *et al.* (See Shaw, William F., assignor.)						
Alexander, Horace C., Bonham, Tex. Telephone-transmitter	569,908	Oct. 20	2085	496	77	421
Alexander, Moses, *et al.* (See Hand, Townson, assignor.)						
Alexander, Robert E., Forest City, Pa. Car-replacer	572,669	Dec. 8	1018	246	77	1492
Alexander, Samuel, Meriden, Conn. Bottle	569,988	Oct. 27	2229	529	77	460
Alexander, William W., Kansas City, Mo., and M. C. Gillham, Kansas City, Kans. Mechanical telegraph-sounder	572,945	Dec. 15	1509	361	77	1603
Allan, Thomas W., London, England. Electric storage battery	571,059	Nov. 10	1142	267	77	880
Allan, William, *et al.* (See Werntz, Frank E., assignor.)						
Allen, Edward R., Corning, N. Y. Potato-digger	574,128	Dec. 29	3685	878	77	2040
Allen, Fred E., assignor of five-eighths to M. B. Marsh and W. F. Weiblen, Erie, Pa. Suction-roll for paper-making machines	573,752	Dec. 22	2995	709	77	1900
Allen, George, Franklin, Pa. System for operating oil-wells	569,157	Oct. 13	761	177	77	161
Allen, Horace R., Indianapolis, Ind. Disinfecting apparatus	569,596	Oct. 20	1537	361	77	321
Allen, Isaac M., and J. M. Miller, Harrisburg, Ill. Vehicle running-gear	568,889	Oct. 6	299	68	77	57
Allen, James L., Kansas City, Mo. Barrel	572,624	Dec. 8	942	229	77	1477
Allen, James M., assignor of one-half to A. J. Welcker, St. Louis, Mo. Rotary pump	572,082	Nov. 24	2959	696	77	1251
Allen, Leicester, Brooklyn, N. Y. Machine for bookkeeping and registering cash	570,620	Nov. 3	344	85, 86, 87	77	702
Allen, Luther E., Detroit, Mich. Registering-machine	573,381	Dec. 15	2288	545, 546	77	1748
Allen, Samuel W., Port Chester, N. Y. Optical lantern	569,849	Oct. 20	1992	475, 476	77	403
Allen, William C. (See Davidson, Le Grand B., assignor.)						
Allen, William T., *et al.* (See Clark and Munger, assignors.)						
Allington, William E., East Saginaw, Mich. Dust-collector	570,443	Nov. 3	2	1	77	639
Almack, John W., Coshocton, Ohio. Egg-carrier	572,466	Dec. 1	665	157	77	1405
Alrich, Alaric G., Lawrence, Kans. Page-stick	574,232	Dec. 29	3926	934	77	2083
Altham, George J., Swansea, Mass. Power-transmitting mechanism	569,013	Oct. 6	514	117	77	98
Altimira, José, New York, N. Y. Detergent	572,853	Dec. 8	1339	.....	77	1553
Altman, Benjamin. (See Royce, Thomas H., assignor.)						
Altman, David L., Eau Claire, Wis. Self-oiling journal-bearing	570,782	Nov. 3	662	152	77	760
Altman, Samuel L. (See Hirsch, Charles, assignor.)						
Altmeyer, Mathias, Wheeling, W. Va. Attachment for caskets	573,124	Dec. 15	1820	439	77	1664
Alvord, Bert C. (See Schumann and Alvord.)						
Alwies, Herman, St. Louis, Mo. Electric street or station indicator	571,738	Nov. 24	2322	555	77	1131
Amborn, George, Jr., assignor to J. H. Williams & Company, Brooklyn, N. Y. Chain wrench	570,213	Oct. 27	2631	624	77	527
Amborn, George, Jr., assignor to J. H. Williams & Company, Brooklyn, N. Y. Chain wrench	570,214	Oct. 27	2633	624	77	537
American Alkali Company. (See Sadler and Wilson, assignors.)						
American Bell Telephone Company. (See Barrett, John A., assignor.)						
American Bell Telephone Company. (See Field, Stephen D., assignor.)						
American Bell Telephone Company. (See Khotinsky, Achilles de, assignor.)						
American Bell Telephone Company. (See Wales and Arnold, assignors.)						
American Electric Meter Company. (See Burger and McFall, assignors.)						
American Electric Meter Company. (See Green, George R., assignor.)						
American Electric Meter Company. (See Marks, William D., assignor.)						
American Electric Meter Company. (See Wirt, Green, and Burger, assignors.)						
American Electrical Works. (See Sawyer, William H., assignor.)						
American Engine Company. (See Knudsen, Conrad, assignor.)						
American Engine Company. (See Spaulding, Elijah F., assignor.)						
American Fire Engine Company. (See Fox, Charles H., assignor.)						
American Graphophone Company. (See Macdonald, Thomas H., assignor.)						
American Incandescent Gas Company. (See Hennessy, Thomas, assignor.)						
American Incandescent Light Company. (See Böhm, Lndwig K., assignor.)						
American Lithographic Company of New York. (See Spiegle, Fred M., assignor.)						
American Metallic Cushion Company. (See Cowley, James T., assignor.)						
American Music Box Company. (See Bernard, Frank J., assignor.)						
American Postal Machines Company. (See Barnard, George E., assignor.)						
American Postal Machines Company. (See Hansen, John S., assignor.)						
American Railway Equipment Company. (See Eubank, Thomas, assignor.)						
American Ring Company. (See Lane, Spencer B., assignor.)						
American Ship Windlass Company. (See Grater, Frank B., assignor.)						
American Ship Windlass Company. (See Smith, Henry L., assignor.)						
American Ship Windlass Company. (See Whitney, Edwin H., assignor.)						
American Signal and Power Company. (See Hunter and Higgins, assignors.)						
American Soda-Fountain Company. (See Cappers, William A., Jr., assignor.)						
American Soda-Fountain Company. (See Lippincott, Fisher H., assignor.)						
American Stoker Company. (See Brown, Arthur F., assignor.)						
American Stoker Company. (See Graham, David F., assignor.)						
American Street Car Sprinkler Company. (See Gathright, John R. and J. B., assignors.)						
American Tap Bush Company. (See Fischer, Albert, assignor.)						
American Tap Bush Company. (See Mohn, John, assignor.)						
American Viscose Company. (See Beadle, Clayton, assignor.)						
American Waltham Manufacturing Company. (See Howe, Elmer C., assignor.)						
American Well Works. (See Chapman, Matthew T., assignor.)						
Ames, Alden T. (See Fulton and Ames.)						
Ames, Charles D., Portland, Ind., assignor to Creamery Package Manufacturing Company, Chicago, Ill. Machine for sanding butter-tubs	573,846	Dec. 29	3154	752	77	1945

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ames Iron Works. (See Armstrong, Edwin J., assignor.)						
Amet, Edward H., Waukegan, Ill. Talking-machine apparatus	573,071	Dec. 15	1728	414	77	1646
Amick, Myron J., New York, N. Y. Gas-regulator	572,044	Nov. 24	2861	673	77	1233
Amick, Oscar P. (See Dallas and Amick.)						
Amonsen, Gilbert. (See Halling, Charles O., assignor.)						
Amos, Charles, *et al.* (See Bury, Harry W., assignor.)						
Ams, Max, New York, N. Y. Sheet-metal can	570,591	Nov. 3	293	72	77	693
Amstutz, Noah S., Cleveland, Ohio. Engraving	569,595	Oct. 13	1531	359	77	304
Anderson, Andrew, assignor to Improved Match Company, Detroit, Mich. Machine for sanding match-boxes	570,244	Oct. 27	2691	639	77	548
Anderson, Arlando H. (See Brunner, Jacob H., assignor.)						
Anderson, August R., Cameron, Idaho. Rolling harrow	570,532	Nov. 3	173	46	77	670
Anderson, Carl P., Everett, Mass. Set-screw cover for shafting	573,751	Dec. 22	2994	709	77	1900
Anderson, Fredrick, Lantz, Pa. Pipe-clamp	570,975	Nov. 10	999	232	77	853
Anderson, George S. and R., Jeffersonville, assignors to S. Watson, Dublin, Ind. Wire-fence machine	573,632	Dec. 22	2789	660	77	1863
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesborough, Pa. Friction-clutch	572,238	Dec. 1	254	61	77	1327
Anderson, Gustaf A., assignor to Geiser Manufacturing Company, Waynesborough, Pa. Pneumatic stacker	573,125	Dec. 15	1821	439, 440, 441	77	1664
Anderson, James A., Kansas City, Mo. Collar-folding machine	572,239	Dec. 1	255	61	77	1327
Anderson, James W. (See Perry, John, assignor.)						
Anderson, John, Newcastle-upon-Tyne, England. Valve for power-motors	572,396	Dec. 1	565	133	77	1385
Anderson, Ole, New Sweden, Minn. Match-delivering and cigar-cutting apparatus	569,482	Oct. 13	1303	309	77	202
Anderson, Robert. (See Anderson, George S. and R.)						
Andersson, Julins, Chatham, N. J. Tobacco-pipe	572,240	Dec. 1	257	61	77	1327
Andreas, John H., *et al.* (See Buxbaum, Karl, assignor.)						
Andreoli, Emile, London, England. Apparatus for electrodeposition of gold or silver	568,724	Oct. 6	1	1	77	3
Andrew, William E., Atlantic Highlands, N. J. Blind for windows	572,045	Nov. 24	2864	673	77	1234
Andrews, Charles W., assignor to Mallory & Wheeler Company, New Haven, Conn. Hotel-door lock	571,210	Nov. 10	1408	329	77	928
Andrews, Ezra R., *et al.* (See Dustin, Leander, assignor.)						
Andrews, Jacob E., assignor to Hyde Windlass Company, Bath, Me. Riding or mooring bitt	572,397	Dec. 1	566	134	77	1385
Andrews, James C., New Haven, Conn. Underwaist	571,636	Nov. 17	2133	512	77	1076
Androvett, Edward. (See Chadborn and Androvett.)						
Andrus, Elmer M., Mitchell, Oreg. Furnace-door	573,847	Dec. 29	3156	752	77	1945
Andrus, Thomas O., and T. J. Newton, Albany, Vt. Pan-lifter	572,187	Dec. 1	159	39	77	1308
Angell, Augustus, Hartford, Conn., assignor of one-half to W. E. Wright, Burlington, N. J. Office-indicator	571,325	Nov. 17	1608	382	77	981
Angell, John W., assignor of one-half to D. M. Estey, Owosso, Mich. Safety-fender for street-cars	571,256	Nov. 10	1485	349, 350	77	942
Angell, Ransom S., Oakes, N. D. Traction-engine	571,326	Nov. 17	1609	382	77	981
Ann Arbor Manufacturing Company. (See Stevenson, John H., assignor.)						
Annan, John, Brooklyn, N. Y. Automatic safety spring-clutch	569,396	Oct. 13	1169	278	77	239
Annesley, Reginald B., *et al.* (See Sykes and O'Donnell, assignors.)						
Anthony, Elliott E., Detroit, Mich. Boring-machine	569,597	Oct. 20	1538	361	77	321
Anthony, William A., Newark, N. J. Electric-motor regulator	569,949	Oct. 27	2230	529	77	460
Applegate, Eugene W., assignor to W. E. Gorton, Corning, N. Y. Brake-shoe	569,963	Oct. 20	2217	527	77	444
Applegate, Hugh M., Unionville, Mo. Shackle for wagon-shafts	573,633	Dec. 22	2791	660	77	1863
Appleman, Louis D., assignor of one-half to W. N. Fishburne, Waynesborough, Va. Telephone-transmitter	572,188	Dec. 1	161	39	77	1309
Appleton, Charles J., Long Island City, N. Y., assignor to O. Twombly, Laconia, N. H. Circular hand knitting-machine	574,053	Dec. 29	3350	847	77	2016
Appleton, John, Middletown, Cal. Vehicle	569,779	Oct. 20	1880	446	77	382
Appleyard, Arthur E., Natick, Mass., assignor, by mesne assignments, to National Electric Heating Company, Manchester, N. H. Electric heating apparatus	571,257	Nov. 10	1488	350	77	943
Arbuckle Brothers. (See Smyser, Henry E., assignor.)						
Archbold, George, assignor of one-half to W. S. Gordon, New York, N. Y. Composition of matter as substitute for wood, &c.	570,361	Oct. 27	2934	.....	77	593
Archer Manufacturing Company *et al.* (See Bergh, Bror F., assignor.)						
Armleder, Otto, assignor to O. Armleder Company, Cincinnati, Ohio. Front gear for vehicles	568,828	Oct. 6	193	46	77	39
Armstrong, Albert H., Schenectady, N. Y., assignor to General Electric Company, of New York. Regulating polyphase circuits	571,467	Nov. 17	1836	438	77	1023
Armstrong, Augustus. (See Clark, Horace L., assignor.)						
Armstrong, Charles M., assignor of one-half to J. Weber and J. Day, Barry, Ill. Smoke-consumer	570,533	Nov. 3	175	47	77	670
Armstrong, Edwin J., Oswego, N. Y. Governor for steam-engines	570,307	Oct. 27	2852	676	77	577
Armstrong, Edwin J., assignor to Ames Iron Works, Oswego, N. Y. Piston for steam-engines	569,532	Oct. 13	1398	330	77	280
Armstrong, Frederic B. (See Scott, Charles W., Jr., assignor.)						
Armstrong, Harry W., Oakmont, Pa. Track-gage	568,725	Oct. 6	3	1	77	3
Armstrong, Henry T., Joshua, Tex. Cotton-picking machine	570,444	Nov. 3	4	1, 2	77	639
Armstrong, John E., Santa Cruz, Cal. Cooking-stove	569,397	Oct. 13	1171	278	77	239
Armstrong, John R., assignor to International Gas and Fuel Company, Chicago, Ill. Oil-burner	569,315	Oct. 13	1038	247	77	214
Armstrong, Lewis D., deceased, Lock Haven, Pa.; M. M. Armstrong, administrator, assignor to New York and Pennsylvania Company, of Pennsylvania. Apparatus for leaching	570,861	Nov. 3	802	184	77	788
Armstrong, Mylert M., administrator. (See Armstrong, Lewis D.)						
Armstrong, Thomas J., Cleveland, Ohio. Bicycle propelling mechanism	572,398	Dec. 1	566	134	77	1386
Arner, William H., Groveland, N. Y. End-gate fastening	573,848	Dec. 29	3157	752	77	1946
Arndt, Max, Aix-la-Chapelle, Germany. Electric apparatus for registering figures at distances	569,598	Oct. 20	1539	361	77	321
Arnhold, Hermann, Berlin, Germany. Gasolier	569,076	Oct. 6	618	140	77	118
Arnold, Benjamin, East Greenwich, R. I. Bicycle-alarm	569,158	Oct. 13	763	177	77	161
Arnold, Chester H. (See Wales and Arnold.)						
Arnold, Collins, Albany, N. Y. Night-drawers	569,483	Oct. 13	1306	307, 308	77	963
Arnold, George W., *et al.* (See Merritt, William B., assignor.)				107, 108, 109, 110		
Arnold, Horace L., Hartford, Conn. Type-writing machine	572,350	Dec. 1	458		77	1365
Arnold, Leman, Northville, and M. Lary, Amsterdam, N. Y.; said Arnold assignor to said Lary. Stovepipe-thimble	573,954	Dec. 29	3356	804	77	1981

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
Aron, Maurice, New York, N. Y. Bicycle-trousers	573,173	Dec. 15	1908	458	77	1680
Arrick, Clifford, Indianapolis, Ind. Garbage or rubbish receptacle	569,990	Oct. 27	2233	530	77	460
Art Stove Company. (See Cope, George W., assignor.)						
Arthur, Christopher M., Bethany, assignor of one-half to J. H. Hillis, McFall, Mo. Powder-distributer	571,145	Nov. 10	1311	305	77	910
Arthur, Frank D., New York, N. Y. Vending-machine	572,513	Dec. 8	746	178	77	1435
Ashby, Peter, Valley Falls, R. I., assignor to Whitin Machine Works, Whitinsville, Mass. Picker-strap dog for looms	569,570	Oct. 13	1480	348	77	295
Ashcroft, Edgar A., London, England. Method of and apparatus for generating steam	570,195	Oct. 27	2595	617	77	530
Asher, John A., Greencastle, Ind. Churn	572,148	Dec. 1	90	20	77	1295
Ashley, Frank M., Hawthorne, N. J. Sight-feed for lubricators	570,080	Oct. 27	2396	568	77	493
Ashley, Frank M., Hawthorne, N. J. Apparatus for sterilizing liquids	572,514	Dec. 8	749	178	77	1435
Ashley, Frank M., Hawthorne, N. J. Apparatus for sterilizing liquids	572,515	Dec. 8	750	179	77	1436
Ashley, Frank M., Hawthorne, N. J. Apparatus for sterilizing liquids	572,516	Dec. 8	752	179	77	1436
Askam, William F., Shelton, Conn. Rubber-separator	572,854	Dec. 8	1340	322	77	1553
Astenius, John O., Chicago, Ill. Reed	572,286	Dec. 1	351	83	77	1346
Astor Manufacturing Company. (See Gladwin, Albert L., assignor.)						
Atherton, Robert. (See Faber du Faur, Adolf, assignor.)						
Atherton, Robert. (See Faber du Faur and Gartner, assignors.)						
Atkins, Elias C., and R. Coyle, assignors to E. C. Atkins & Company, Indianapolis, Ind. Metal-straightening machine	573,955	Dec. 29	3357	805	77	1981
Atkins, George J., London, England. Manufacture of mineral colors for ceramic photography	572,095	Dec. 1	3	.....	77	1279
Atkinson, Henry C., and W. Miller, Louisville, Ky. Hand fire-engine	572,096	Dec. 1	4	1, 2	77	1279
Atkinson, Herbert C., assignor of one-half to A. F. Coghill, Auburn, Ky. Combined pipe wrench and cutter	569,533	Oct. 13	1399	331	77	280
Atkinson, Joseph, Florence, Canada. Adjustable collar	569,534	Oct. 13	1401	331	77	280
Atkinson, Mahlon B., assignor of two-thirds to B. J. Coyle and J. Fitzmorris, Washington, D. C. Street-sweeper	571,183	Nov. 10	1365	319	77	920
Atkinson, William, Granby, Canada. Vehicle-gear	571,589	Nov. 17	2051	489	77	1061
Atwood, Charles W., Middle Granville, N. Y. Line-number and position attachment for type-writers	569,909	Oct. 20	2085	496	77	421
Atwood, John W., Malden, Mass., assignor to himself, and A. Booth Packing Company, Chicago, Ill. Net-lifting device	572,399	Dec. 1	568	134, 135	77	1386
Auerbach-Woolverton Electric Company. (See Schefbauer, Rupert, assignor.)						
Angensen, Olaus S., Chicago, Ill. Shoe-lace clasp	569,398	Oct. 13	1173	278	77	240
Auman, Harvey E., Reading, Pa. Blank furnace and burner	573,126	Dec. 15	1828	441	77	1666
Austin, Frederick C. (See Bunnell, Morton G., assignor.)						
Austin, Thomas, *et al.* (See Yeakley, Melvin A., assignor.)						
Austing, Joseph, Cincinnati, Ohio. Wooden hub for vehicles	570,215	Oct. 27	2635	624	77	538
Automatic Castor and Wheel Company. (See Lachman, Maurice, assignor.)						
Automatic Cycle Stand. (See Spencer, Sidney E., assignor.)						
Automatic Mine Door Company. (See Bonenberger, George, assignor.)						
Automatic Track Sanding Company. (See Boulter, Mark E., assignor.)						
Automatic Wrapping Machine Company. (See Schloss, Meyer W., assignor.)						
Avery, William C., assignor of one-third to W. A. Cox, Springfield, Mo. Wire-fabric machine	571,079	Nov. 10	1185	278	77	887
Aydelott, Jacob S., Marion, Ind. Paper holder and cutter	572,351	Dec. 1	468	110	77	1367
Ayer, Melville C., Biddeford, Me. Pressing or ironing board	570,741	Nov. 3	599	137	77	748
Ayres, David J., Keokuk, Iowa. Post-office letter-box case and memorandum	570,802	Nov. 3	804	184	77	788
Aze, Emile, assignor, by mesne assignments, of one-half to F. T. Fowler, Chicago, Ill. Crank-hanger bearing for bicycles	573,634	Dec. 22	2792	660	77	1863
Aze, Emile, assignor, by mesne assignments, of one-half to F. T. Fowler, Chicago, Ill. Vehicle-wheel	573,635	Dec. 22	2793	661	77	1863
Baake, Charles A., *et al.* (See Cronin, William D., assignor.)						
Baasel, William, Chicago, Ill. Tailor's cutting-chart	570,834	Nov. 3	756	172	77	779
Baasel, William, Chicago, Ill. Sleeve-chart	570,835	Nov. 3	758	173	77	780
Babcock, Curtis F., Auburn, Me. Heel-trimming pattern and holding device therefor	569,484	Oct. 13	1307	308	77	243
Babcock, Erskine L., Cuyahoga Falls, Ohio. Pulley	569,850	Oct. 20	1994	476	77	403
Babcock & Wilcox Company. (See Pratt, Nat W., assignor.)						
Bachmann, Louis H., and O. R. Sulzer, Louisville, Ky. Ammonia-gas generator	573,956	Dec. 29	3359	805	77	1981
Backhouse, John, Jr., Liverpool, England. Grain-drier	570,783	Nov. 3	663	152	77	760
Backstrom, Charles A., New York, N. Y., assignor to G. Westinghouse, Pittsburg, Pa. Steam-engine	572,946	Dec. 15	1512	361, 362	77	1603
Bacon, Gilbert, Antigo, Wis. Spring-bed	572,147	Dec. 1	92	20	77	1295
Bader, Edward, assignor of one-half to A. Friz, St. Louis, Mo. Fluid-pressure regulator	571,913	Nov. 24	2648	627	77	1192
Badgley, Edwin L., assignor of two-thirds to O. E. Bryant, E. E. Smith, Clayton, and G. B. Oder, Springfield, Ill. Leaf-turner	569,399	Oct. 13	1174	278, 279	77	240
Badt, Francis B., Chicago, Ill. Electromagnetic sentinel	571,739	Nov. 24	2325	556	77	1132
Baer, Henry, New York, N. Y. Thermostatic fire-alarm	569,851	Oct. 20	1996	476	77	404
Bagley, Allen, Ypsilanti, Mich. Dress-stay	571,327	Nov. 17	1611	383	77	982
Bagley, Charles H., New York, N. Y., assignor of one-half to H. S. Prentiss, Elizabeth, N. J. Detachable spout for cans	571,852	Nov. 24	2528	599	77	1170
Bailey, Edward L., *et al.* (See Toye, William H. R., assignor.)						
Bailey, George F., Peabody, assignor of one-half to J. N. Dows, Salem, Mass. Combined door-securer and key-ring chain	572,046	Nov. 24	2866	674	77	1234
Bailey, James M., Allegheny, Pa. Apparatus for finishing pipe	569,014	Oct. 6	516	118	77	98
Bailey, Joseph A., Morristown, N. J. Harrow	569,736	Oct. 20	1798	427	77	368
Bailey, Leonard, Wethersfield, Conn. Type-writing machine	569,737	Oct. 20	1799	427	77	369
Bailey, Marcus B., Chicago, Ill., assignor of one-third to P. W. Heermans, Brooklyn, N. Y. Globe for electric-arc lamps	570,446	Nov. 3	5	2	77	639
Bailey, Thomas, New York, N. Y. Fireproof floor	570,863	Nov. 3	805	185	77	788
Bailey, Thomas, New York, N. Y. Fireproof door, door-frame, and window frame and shutter combination	570,895	Nov. 10	871	203	77	829
Bailey, William E., Beverly, and R. D. Burns, Wenham, assignors to R. H. Woodbury, Beverly, Mass. Sewing-machine	573,382	Dec. 15	2290	546, 547	77	1749
Bailey, William H., Piqua, Ohio. Reheating-furnace	571,258	Nov. 10	1489	350	77	943
Bailor, Silas I., Geneva, Nebr. Two-row cultivator	571,146	Nov. 10	1312	305, 306	77	910
Bain, Forée, Chicago, Ill. Oil-filter	569,159	Oct. 13	764	177	77	162
Bain, Forée, assignor of one-half to J. P. Barrett, Chicago, Ill. Street-sweeper	571,891	Nov. 24	2597	616	77	1183
Baird, Archie M., Topeka, Kans. Riveting-machine	571,503	Nov. 17	1912	456	77	1036
Baird, John P., Lockport, N. Y., assignor of one-third to J. Stetler, Philadelphia, Pa. Device for washing vehicles	570,890	Nov. 3	863	201	77	801

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
Bake, Cyrus F., Fullerton, Nebr. Car-coupling	574,233	Dec. 29	3927	934	77	2083
Baker, Burton E., New Britain, Conn. Electric heater	572,467	Dec. 1	066	157	77	1405
Baker, Charles A. (See Keyes and Baker.)						
Baker, Charles F. (See Curtis, George A., assignor.)						
Baker, Frank D., Knoxville, Iowa. Car-coupling	570,976	Nov. 10	1000	232	77	853
Baker, Frank R., *et al.* (See Gottschalk, Louis, assignor.)						
Baker, Gilbert L., Waterford, Cal. Permutation-padlock	573,805	Dec. 22	3077	731	77	1915
Baker, Jackson R., Jersey City, N. J., assignor to A. J. Weil, New York, N. Y. Car-axle box and bearing	572,517	Dec. 8	753	179	77	1437
Baker, Manville W. (See Butterfield, Alvor, assignor.)						
Baker, Milo A., Los Angeles, Cal. Collapsible and adjustable mold-pattern	571,060	Nov. 10	1142	267, 268	77	880
Baker, Robert, *et al.* (See Gartner, Alfred, assignor.)						
Baker, William B., assignor of one-half to W. E. Klumbach, Shamokin, Pa. Car-fender	568,969	Oct. 6	434	97	77	83
Baker, William S. G., Baltimore, Md. Car-brake	572,518	Dec. 8	754	180	77	1437
Bakewell, James K., Allegheny, Pa. Explosive projectile and firing same	572,400	Dec. 1	570	135	77	1386
Bakewell, James K., Allegheny, Pa. Explosive projectile and firing same	572,401	Dec. 1	572	135	77	1387
Balanced Locomotive and Engineering Company. (See Strong, George S., assignor.)						
Balch, Samuel W., Yonkers, N. Y. Means for propelling canal-boats, &c.	569,400	Oct. 13	1176	279	77	240
Baldt, Frederick, Chester, Pa. Anchor	570,420	Oct. 27	3051	722	77	615
Baldwin, Chalkley B. (See Redmond and Baldwin.)						
Baldwin, Charles H., Auburn, N. Y. Hair curler	570,836	Nov. 3	760	173	77	780
Baldwin, Edwin J. (See Lee and Baldwin.)						
Baldwin, George D., Passaic, N. J. Railway system	570,447	Nov. 3	6	2	77	640
Ballman, Robert R., *et al.* (See Flood, Benjamin P., assignor.)						
Ball, Aaron T. (See Bancum and Ball.)						
Ball and Socket Fastener Company. (See Richardson, William S., assignor.)						
Ball, Edward W., and L. E. Vacheron, Wood Haven, assignors to Lelance & Grosjean Manufacturing Company, New York, N. Y. Enameler's tripod	569,160	Oct. 13	766	178	77	162
Ball, Herman F. (See Waitt and Ball.)						
Ball, Lorenzo D., and E. S. Barnes, Canton, Ohio. Vehicle-hub	570,448	Nov. 3	7	3	77	640
Ballantine, William D., *et al.* (See Beal, William C., assignor.)						
Ballard, Calvert L., Fort Worth, Tex. Revolving book-holder	571,717	Nov. 17	2264	544	77	1101
Ballard, John L. (See Adams, Cyrus L., assignor.)						
Ballard, Mary E., Indianapolis, Ind. Catamenial sack	570,216	Oct. 27	2636	624	77	538
Ballenger, Ben, *et al.* (See Werntz, Frank E., assignor.)						
Ballenger, Daniel, *et al.* (See Werntz, Frank E., assignor.)						
Ballon, George W., New York, N. Y., and A. Seaver, Boston, Mass., assignors to United States Prism Glass Globe Company, of New York. Lamp-globe	570,896	Nov. 10	872	203	77	829
Balls, Philip T., Melbourne, Victoria. Knife attachment for linotype-machines	573,383	Dec. 15	2292	548	77	1749
Balph, Charles A., Pittsburg, and E. P. S. Wright, Avalon, Pa. Fireproof construction	573,127	Dec. 15	1829	441	77	1666
Balschun, Adolph, Jr., New York, N. Y. Railway-signal	570,837	Nov. 3	760	173	77	780
Balsley, James R., Connellsville, Pa. Hatchet	569,161	Oct. 13	767	178	77	162
Balsley, James R., Connellsville, Pa. Ink-well	569,162	Oct. 13	768	179	77	162
Balsley, Joseph F., and F. C. Priestly, Denver, Colo. Rock drill	572,855	Dec. 8	1341	322, 323	77	1554
Balzer, Emil, Chicago, Ill. Car-coupling	568,726	Oct. 6	4	1	77	3
Balzer, Emil, Chicago, Ill. Switch	568,727	Oct. 6	5	2	77	3
Balzer, Stephen M., New York, N. Y., assignor of one-half to W. H. Humphrey, Norfolk, Conn. Motor or engine	573,174	Dec. 15	1909	459	77	1681
Bamford, George W., assignor to A. F. Cordes, Richmond, Va. Curtain fixture or support	571,184	Nov. 10	1368	319	77	921
Bane, A. Clark, *et al.* (See Minniss, Thomas S., assignor.)						
Banfield, Jose A. (See Sharpe and Banfield.)						
Banwell, James, assignor of two-thirds to G. Caunter and F. R. Wall, Cleveland, Ohio. Machine for making rims for pneumatic wheels	571,080	Nov. 10	1189	279	77	888
Barber, Henry S., Hopkinton, R. I. Balance-escapement for timepieces	569,852	Oct. 20	1998	476	77	404
Barber, John C., St. Paul, Minn. Car-truck	569,077	Oct. 6	619	141	77	119
Barber, John C., St. Paul, Minn. Car-truck	571,914	Nov. 24	2649	627, 628	77	1192
Barber, John C., St. Paul, Minn. Car-truck	573,636	Dec. 22	2794	661	77	1863
Barbour, Lucy A., Providence, and J. J. Edwards, Pawtucket, R. I. Hat-fastener	570,150	Oct. 27	2519	597	77	515
Barbour, Thomas P., San Antonio, Tex. Treating ores	571,468	Nov. 17	1838	438	77	1024
Barbour, Thomas S., Elizabethtown, N. Y. Magic lantern	574,054	Dec. 29	3551	847, 848	77	2016
Barclay, Frank, Beatrice, Nebr. Antifriction-clip for reapers and mowers	572,402	Dec. 1	573	136	77	1387
Barclay, John. (See Watson, George A., assignor.)						
Barcus, James S., New York, N. Y. Coin-controlled apparatus	572,496	Dec. 1	712	170, 171	77	1413
Bardshar, Guy E., and A. Heiberger, Sandusky, Ohio. Device for converting motion	571,939	Nov. 24	2690	636	77	1202
Bardwell, Edwin A., Jr., Shelburne Falls, Mass. Shingling-bracket	574,055	Dec. 29	3553	848	77	2017
Barkalow, Edgar A., and N. Crawford, Kokomo, Ind. Microphone-transmitter	571,504	Nov. 17	1913	456	77	1037
Barker, Charles E., St. David, Ill., assignor to What Cheer Drill and Miners Tool Company. Pick	572,856	Dec. 8	1344	324	77	1554
Barker, Frank A. (See Coles and Barker.)						
Barker, James. (See Walton, Barker, and Van Dyke.)						
Barker, John A., Pasadena, assignor to F. J. Moll, Sr., Los Angeles, Cal. Head-rest	569,078	Oct. 6	621	141	77	119
Barker, John T., Wallingford, Conn. Dental instrument	571,965	Nov. 24	2731	645	77	1209
Barlow, Henry C., assignor of one-third to A. E. Miller, Converse, Ind. Wrench	573,637	Dec. 22	2796	661	77	1864
Barlow, Lewis M., Donaldsonville, La. Boiler	573,195	Dec. 15	1954	470	77	1688
Barnard, Charles A. (See Magill, Jerome B., assignor.)						
Barnard, De Lonson E., Beloit, Wis. Grinding-mill	569,571	Oct. 13	1481	348, 349	77	295
Barnard, Fayette, assignor to National Cash Register Company, Dayton, Ohio. Transferring and resetting mechanism for cash-registers	570,196	Oct. 27	2598	618	77	531
Barnard, George A., New York, N. Y. Steam-engine	571,740	Nov. 24	2327	556	77	1132
Barnard, George E., Fitchburg, assignor to American Postal Machines Company, Boston, Mass. Mail-marking machine	569,780	Oct. 20	1821	447	77	382
Barnard & Leas Manufacturing Company. (See Cornwall, John B., assignor.)						
Barndollar, Lizzie S., Trinidad, Colo. Thermometer for ovens	571,211	Nov. 10	1409	330	77	929
Barnes, Amanda, *et al.* (See Voegtlein, John, assignor.)						
Barnes, Benjamin F., assignor to W. F. & John Barnes Company, Rockford, Ill. Belt-fastener	574,234	Dec. 29	3928	934	77	2083
Barnes, Ewing S. (See Ball and Barnes.)						
Barnes, Frederick E., Fair Haven, Vt. Rein-holder	572,148	Dec. 1	93	20, 21	77	1295

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Barnes, George L., North Haven, Conn. Cash indicating and registering apparatus	568,728	Oct. 6	7	2, 3	77	4
Barnes, George L., Montowese, Conn. Cash register and indicator	573,435	Dec. 22	2415	575, 576	77	1789
Barnes, George W., *et al.* (See Voegtlein, John, assignor.)						
Barnes, Luther H., Nemaha, Nebr. Wrench	572,857	Dec. 8	1346	324	77	1554
Barnes, Preston B., Hubbard City, Tex. Dental-plate-polishing tool	569,535	Oct. 13	1403	341	77	281
Barnes, Willis W. (See Haberer, Charles B., assignor.)						
Barnett, M. V., *et al.* (See Bidwell, Alonso, assignor.)						
Barnett, William H. (See Welch, Michael I., assignor.)						
Barney, Edward S., assignor of one-third to A. T. Dewey, San Francisco, Cal. Adjustable sliding and swinging window-sash	569,146	Oct. 6	733	172	77	139
Barney, Finis M., Elm Creek, Nebr. Power-transmitting gear	572,593	Dec. 8	889	215	77	1466
Barnhill, Alva H., and T. I. Thurman, Altoona, Kans. Gate	570,362	Oct. 27	2935	697	77	593
Barnsdale, Walter, Plover, Wis. Combined steam and explosion engine	571,147	Nov. 10	1315	306, 307	77	911
Barnum, Russell S. (See Goodrich and Barnum.)						
Barnum, Russell S., assignor to F. L. Goodrich, Chicago, Ill. Hemmer for sewing-machines	569,368	Oct. 13	1127	268	77	232
Barr Cash and Package Carrier Company. (See Barr, Samuel W., assignor.)						
Barr Cash and Package Carrier Company. (See Barr and Weaver, assignors.)						
Barr Cash and Package Carrier Company. (See Weaver, Henry M., assignor.)						
Barr, David J. (See Maines, John B., assignor.)						
Barr, John H., assignor of fifty-one one-hundredths to C. V. Fyke, Kansas City, Mo. Mail-stamping machine	573,128	Dec. 15	1830	442, 443	77	1666
Barr, John U., Jr., Pittsburg, assignor of one-half to D. J. Richardson, Allegheny, Pa. Illuminated-sign apparatus	573,436	Dec. 22	2429	576	77	1792
Barr, Samuel W., assignor to Barr Cash and Package Carrier Company, Mansfield, Ohio. Pneumatic-despatch apparatus	570,421	Oct. 27	3052	723	77	615
Barr, Samuel W., and H. M. Weaver, assignors to Barr Cash and Package Carrier Company, Mansfield, Ohio. Cash and package carrier	570,422	Oct. 27	3055	723, 724	77	615
Barratt, William T., assignor to C. Cooper, Bennington, Vt. Cam and work-presser for knitting-machines	572,690	Dec. 8	1059	258	77	1500
Barrett, Addison D., Norfolk, Va. Blowpipe	570,656	Nov. 3	450	106	77	723
Barrett, Charles L., Allegan, Mich. Bicycle-path-excavating machine	571,915	Nov. 24	2652	628	77	1193
Barrett, John A., Rutland, Vt., assignor to American Bell Telephone Company, Boston, Mass. Multiple-station telephone-circuit	569,401	Oct. 13	1179	280	77	241
Barrett, John F. (See Bain, Forée, assignor.)						
Barrett, John P., Chicago, Ill. Electrically-operated water-supply system	571,328	Nov. 17	1612	383	77	982
Barrett, Josiah, Bellevue, Pa. Rack for oil-well jacks	574,056	Dec. 29	3554	848	77	2017
Barrett, Oliver D. (See Dion, Charles, assignor.)						
Barrett, Thomas J., New Orleans, La. Puzzle	570,363	Oct. 27	2936	697	77	593
Barrett, Zephaniah A., Chicago, Ill. Box	573,753	Dec. 22	2996	710	77	1900
Barrow, Samuel, Kempton, assignor to F. B. Hart and J. G. Brown, Lafayette, Ind. Blower	573,196	Dec. 15	1954	470	77	1688
Barrows, Elvin S., Clarendon, Vt. Wire-stretcher	568,829	Oct. 6	194	47	77	39
Barrows, Gertrude W. (See Barrows, John F., assignor.)						
Barrows, John F., assignor to G. W. Barrows, Saginaw, Mich. Music-cabinet	574,057	Dec. 29	3556	849	77	2017
Barselou, Alexandre, assignor of one-half to L. N. Marcil, Cohoes, N. Y. Rocker and shoe connection for loom picker-sticks	570,364	Oct. 27	2938	697, 698	77	593
Barstow, H. M. (See Painter, Arthur, assignor.)						
Bartelmes, Louis, Brooklyn, N. Y. Hinge	573,197	Dec. 15	1956	470	77	1689
Bartelt, Henry. (See Eckhardt, Heinrich, assignor.)						
Bartholomew, John B., Des Moines, Iowa. Extensible pole for separators	574,297	Dec. 29	4027	956	77	2102
Bartlett, Charles, Pomona, Cal. Collar-pad or bridge-support for harness	568,890	Oct. 6	300	69	77	58
Barton, James, assignor to himself, H. S. Blanchard, Clearwater, Mont., and S. J. Morriss, Atlanta, Tex. Steam-engine	571,034	Nov. 10	1106	258, 259	77	873
Barton, John C., Port Huron, Mich. Railway cross-tie	571,329	Nov. 17	1614	384	77	982
Bartusch, Oswald, Brooklyn, assignor to W. A. Force & Co., New York, N. Y. Numbering-head	573,175	Dec. 15	1914	459	77	1681
Basch, David, assignor to I. B. Kleinert Rubber Company, New York, N. Y. Dress-shield	569,599	Oct. 20	1541	361	77	321
Bass, William A. (See Lamson, James H., assignor.)						
Bassett, Asahel O. (See Keller, James M., assignor.)						
Bassett, George B., Buffalo, N. Y. Water-meter	569,271	Oct. 13	954	228, 229	77	198
Bassett, Norman C., Lynn, Mass., assignor to Thomson-Houston Electric Company, of Connecticut. Electric-motor truck	568,891	Oct. 6	302	69	77	58
Bassett, Norman C., Lynn, Mass., assignor to General Electric Company, of New York. Underrunning trolley	569,738	Oct. 20	1801	427	77	369
Bassett, Norman C., Chicago, Ill., assignor to Hydraulic Elevator Company, of Illinois. Elevator	570,592	Nov. 3	294	72, 73	77	693
Bassett, William, Kansas City, Mo. Cash register and indicator	570,114	Oct. 27	2454	583	77	504
Bates, Albert J., Joliet, Ill. Cell-case machine	570,621	Nov. 3	365	87, 88, 89, 90	77	705
Bates, Francis G. (See Lorois and Bates.)						
Bates, Francis G., Philadelphia, Pa. Process of and apparatus for manufacturing gas	573,957	Dec. 29	3361	806	77	1982
Bates, Francis G., Philadelphia, Pa. Gas apparatus	573,958	Dec. 29	3368	806, 807	77	1983
Bates, George A., Brooklyn, N. Y., assignor to Mergenthaler Linotype Company, of New York. Linotype-machine	572,947	Dec. 15	1514	362	77	1604
Bates, Henry A., Yonkers, N. Y. Shuttle for sewing-machines	569,316	Oct. 13	1040	247	77	215
Bates, Henry H., Washington, D. C. Bridle-bit	574,058	Dec. 29	3557	849	77	2018
Bates, James J., St. Louis, Mo. Stuffing-box for propeller-shafts	571,741	Nov. 24	2330	557	77	1132
Bates, Richard, Bloomsburg, Pa. Carpenter's gage	569,739	Oct. 20	1803	428	77	369
Bates, William D., assignor of one-half to J. L. Cashel, Grafton, N. D. Manifold sales-book	570,365	Oct. 27	2939	698	77	593
Bates, William S., Chicago, Ill. Puzzle	569,600	Oct. 20	1541	362	77	322
Batty, Thomas, Colchester, England, assignor to A. T. Otto, Chicago, Ill., and F. R. Blount, New York, N. Y. Gas stove and heater	571,916	Nov. 24	2653	629	77	1193
Bancum, Samuel C., and A. T. Ball, Waco, Tex. Sofa or lounge	569,163	Oct. 13	769	179	77	163
Bauer, Albert L. (See Bauer, Raymond and A. L.)						
Bauer, Joseph, Jr., Le Roy, Wis. Feeder for corn-husking machines	571,148	Nov. 10	1319	307	77	912
Bauer, Raymond and A. L., Wheeling, W. Va. Rotary engine	573,959	Dec. 29	3373	807	77	1984
Bauer, Theodore L. (See Perrault and Bauer.)						
Baumgartner, Joseph, Dubuque, Iowa. Musical machine	572,287	Dec. 1	352	84	77	1346

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Baumgartner, Joseph P., Philadelphia, Pa. Shade supporter or bracket	572,594	Dec. 8	891	216	77	1467
Bausch & Lomb Optical Company. (See Bausch, William, assignor.)						
Bausch, William, assignor to Bausch & Lomb Optical Company. Rochester, N. Y. Eye-glasses and spectacles	572,670	Dec. 8	1019	246	77	1492
Bausman, David H., Bausman, Pa. Automatic stock-watering device	569,079	Oct. 6	622	142	77	119
Baxter, Byron S., Providence, R. I. Brush	573,198	Dec. 15	1957	470	77	1689
Baxter, John O. (See Bristol, Baxter, and Searles.)						
Bayer, Otto, Esslingen, Germany. Rolling shutter or screen	571,988	Nov. 24	2771	654	77	1217
Baylan, Nicholas J. (See Wolf, Albert H., assignor.)						
Bayles, Edward O., *et al.* (See Gorrell, William R., assignor.)						
Bayley, Arthur J., Milwaukee, Wis. Steam-trap	571,330	Nov. 17	1615	384	77	982
Bayley, George W., *et al.* (See McElroy, William, assignor.)						
Beach, Milo D., Litchfield, assignor of one-half to H. J. Hendey, Torrington, Conn. Waterproof garment	570,081	Oct. 27	2397	568	77	493
Beadle, Clayton, London, England, assignor to American Viscose Company, Boston, Mass. Adhesive compound	569,704	Oct. 20	1750	.....	77	359
Beal, William C., assignor of two-thirds to D. E. Maxwell and W. D. Ballantine, Fernandina, Fla. Car-coupling	574,016	Dec. 29	3478	831	77	2002
Beall, Thomas H. C., McCordsville, Ind. Carriage-curtain fastener	572,671	Dec. 8	1020	247	77	1492
Beale, Albert E., Norwich, N. Y. Rossing-machine	572,948	Dec. 15	1516	362, 363	77	1604
Beale, William F., Decatur, Ill. Fence	571,331	Nov. 17	1617	384	77	983
Beard, Asa M., New Boston, N. H. Wagon-jack	569,080	Oct. 6	624	142	77	119
Beaudry, Henri, *et al.* (See Fréchette, Isaïe, assignor.)						
Beaudry, Joseph, *et al.* (See Fréchette, Isaïe, assignor.)						
Beaumont, Thomas C., assignor to Henry Huber Company, New York, N. Y. Flushing-tank, &c	568,729	Oct. 6	20	4	77	7
Bebby, Frederick. (See Rathbun and Bebby.)						
Bechman, Henry F., assignor to Duplex Printing Press Company, Battle Creek, Mich. Printing-press	569,081	Oct. 6	625	142, 143, 144	77	119
Bechtold, William S., Newark, N. J. Fastening device	573,754	Dec. 22	2997	710	77	1900
Beck, John G. (See Pillings, George T., assignor.)						
Beck, John W., Toledo, Ohio. Toilet-box	569,402	Oct. 13	1187	280	77	242
Becker, Adolph, Jersey City, N. J., assignor of six twenty-fifths to C. Joselin, Brooklyn, and O. B. Reed, New York, N. Y. Mechanism for transmitting motion	570,366	Oct. 27	2941	698	77	594
Becker, Frederick P., Chicago, Ill. Ticket-punch	572,025	Dec. 8	943	229	77	1477
Beckwith, David O., assignor of one-half to W. S. Walker, Jr., St. Louis, Mo. Car-fender	573,638	Dec. 22	2797	662	77	1864
Beckwith, Dean A., New York, N. Y. Library-stack	570,657	Nov. 3	451	106	77	723
Beebe, Dillon, Newark, N. J. Faucet-bung	570,725	Nov. 3	561	130	77	742
Beebe, Dillon, Newark, N. J. Faucet-bung and flushing-key for same	573,254	Dec. 15	2051	491	77	1706
Beebe, Philip. (See Quintus, Ritchie, Quintus, Beebe, and Lukermann.)						
Beebe, Walter A., King City, Cal. Newspaper wrapping and addressing machine	569,991	Oct. 27	2234	530, 531, 532	77	461
Beehler, Charles W., St. Louis, Mo. Box-fastener	568,936	Oct. 6	368	84	77	71
Beekman, Edwin H., Plainfield, N. J. Locking device for windows	569,317	Oct. 13	1042	247	77	215
Beeman, Joseph S., Melbourne, Victoria. Pasting mechanism for cigarette-machines	571,061	Nov. 10	1145	268	77	881
Beemer, Dennis, assignor of one-eighth to W. Buckow, Detroit, Mich. Station-indicator	572,189	Dec. 1	162	39	77	1309
Beer, Charles H., and Charles H., Jr., New York, N. Y. Sash-holder for preventing rattling of windows	572,047	Nov. 24	2867	674	77	1234
Beers, Philo M., Bridgeport, Conn. Machine for slabbing needles	570,367	Oct. 27	2941	698, 699, 700	77	594
Behlen, Charles A., Cincinnati, Ohio. Combined body-loop and spring-coupling	572,097	Dec. 1	8	2	77	1280
Behlen, Charles A., Cincinnati, Ohio. Carriage-gear	573,384	Dec. 15	2294	548	77	1750
Behrens, Charles P., Lindenhurst, N. Y. Bottle	571,505	Nov. 17	1914	457	77	1037
Beith, George S., New York, N. Y. Pipe-plate	570,368	Oct. 27	2950	700	77	596
Belcher, Henry G., Los Angeles, Cal. Washing-machine	569,740	Oct. 20	1804	428	77	369
Belcher, Warren J., Hartford, Conn. Combined triangle and protractor	570,977	Nov. 10	1002	233	77	853
Belknap, Frank D., New York, N. Y. Addressing-machine	573,849	Dec. 29	3158	753	77	1946
Belknap, Frank D., New York, N. Y. Stencil-card	573,850	Dec. 29	3162	754	77	1947
Belknap, Frank D., New York, N. Y. Manufacturing stencil-type	573,851	Dec. 29	3163	754	77	1947
Belknap, Harry H., Philadelphia, Pa. Tree-protector	569,082	Oct. 6	632	144	77	121
Belknap, Harry H., Philadelphia, Pa. Tree-protector	569,083	Oct. 6	633	145	77	121
Belknap, Harry H., Philadelphia, Pa. Tree-protector	569,084	Oct. 6	633	145	77	121
Bell, Alexander C., New Alexandria, Pa. Spring	571,637	Nov. 17	2134	512	77	1077
Bell, Charles W. (See Schmidt, Theodore F. W., assignor.)						
Bell, Elmer I., Whiting, Me. Fish-cutting machine	572,626	Dec. 8	946	229	77	1478
Bell, George A., assignor of one-half to C. E. Slye, Sandwich, Ill. Smoke-consuming furnace	573,385	Dec. 15	2295	548, 549	77	1750
Bell, Henry H. (See Lane, William G., assignor.)						
Bell Telephone Company of Missouri. (See Dean, William W., assignor.)						
Bell Telephone Company of Missouri. (See Johnston, Wilbur H., assignor.)						
Bellew, Evelyn, *et al.* (See Eberman, Joseph W., assignor.)						
Bellis, David C., Elizabeth, N. J. Knitting-machine	574,129	Dec. 29	3687	878	77	2041
Belser, Julius. (See Buch and Belser.)						
Belyea, Frederick S., Brookline, Mass. Dental plugger	570,364	Nov. 3	806	185	77	788
Bem, Francisco V. de, Gloucester, Mass. Folding and reefing apparatus for jibs	569,601	Oct. 20	1542	362	77	322
Bem, Francisco V. de, Gloucester, Mass. Reefing apparatus for fore-and-aft sails	569,602	Oct. 20	1543	362, 363	77	322
Bement, Miles & Co. (See Zinn, Johan A., assignor.)						
Bemis, Albert T., assignor to Standard Dry-Kiln Company, Indianapolis, Ind. Lumber-truck	569,992	Oct. 27	2241	532	77	462
Bemis, George W., Worcester, Mass. Drum	570,693	Nov. 3	515	120	77	734
Benard, Henry. (See Smith and Benard.)						
Bendit, Leopold, Fuerth, Germany. Device for throwing out of gear belt-gearing	572,098	Dec. 1	7	2	77	1280
Benedict, Austin, Merrill, Wis. Ironing-table	572,519	Dec. 8	757	180	77	1437
Benedict, Daniel B., assignor of one-half to C. A. Tarbell, Kenosha, Wis. Drawing-board	572,739	Dec. 8	1159	278	77	1518
Benedict, Frank E., Newark, N. J. Sash-fastener	573,255	Dec. 15	2053	491	77	1706
Benedik, Michael. (See Platz, Frank A., assignor.)						
Benham, Elijah B., Mystic, Conn., and J. McAllister, Providence, R. I.; said Benham assignor to said McAllister. Water-return system for steam-generators	569,318	Oct. 13	1044	248	77	215
Bennett, Edward E., Lincoln, Nebr. Table	570,897	Nov. 10	874	203	77	829

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bennett, Calvin M. (See Parker and Bennett.)						
Bennett, George W., assignor of one-half to C. M. Johnson, Pittsburg, Pa. Non-refillable bottle	574,298	Dec. 29	4028	956	77	2102
Bennett, John A., and W. B. Clark, Cohoes, N. Y. Cuff or border for undergarments	570,694	Nov. 3	518	120, 121	77	734
Bennett, Richard, Racket Lake, N. Y. Saw-tool	569,993	Oct. 27	2242	532	77	462
Bennett, Wellington, Chicago, Ill. Awning	573,639	Dec. 22	2799	662	77	1864
Bennett, William F., and S. Hill, Goldsmith, Ind. Earth-auger	572,325	Dec. 1	426	100, 101	77	1360
Bennett, William J., Fond du Lac, Wis. Fire-kindler	569,910	Oct. 20	2088	496	77	421
Bennitt, Alice A., Elgin, Ill. Bicycle-canopy	574,235	Dec. 29	3929	935	77	2083
Benoit, Elie, Pawtucket, R. I. Self-cleaning cuspidor	570,217	Oct. 27	2637	625	77	538
Benson, Thomas W. (See Whalley, Clegg, Benson, Parratt, and Robinson.)						
Bent, Richard M., New York, N. Y. Duplicate-whist apparatus	569,603	Oct. 20	1544	363	77	322
Bent, Richard M., New York, N. Y. Duplicate-whist apparatus	571,185	Nov. 10	1369	320	77	921
Bente, Henry F., assignor to Wm. A. Stickney Cigar Company, St. Louis, Mo. Cigar-box	570,534	Nov. 3	176	47	77	670
Bentley, Dozier T., Atlanta, assignor of one-third to E. L. C. Ward, Fulton county, Ga. Syringe	570,245	Oct. 27	2692	639	77	548
Bentley, George, St. Louis, Mo. Tobacco-cutting machine	572,149	Dec. 1	94	21	77	1296
Benton, John L., assignor of one-half to C. R. Bishop, New Haven, Conn. Bicycle-supporting stand	573,811	Dec. 22	3088	734	77	1917
Berez, John, Chicago, Ill. Fire-escape	570,151	Oct. 27	2519	597	77	515
Berg, Per T., Munhall, Pa. Apparatus for operating soaking-pits	569,485	Oct. 13	1309	308	77	263
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Tubular lantern	572,949	Dec. 15	1520	364	77	1605
Bergener, Charles, assignor to C. T. Ham Manufacturing Company, Rochester, N. Y. Switch and signal lamp	573,501	Dec. 22	2542	602	77	1813
Berger, Jules, Paris, France. Apparatus for dyeing	573,755	Dec. 22	2998	710	77	1901
Bergh, Bror F., New York, assignor to M. H. Wilson, Brooklyn, and Archer Manufacturing Company, Rochester, N. Y. Apparatus for producing designs in cakes of soap	569,604	Oct. 20	1545	363	77	323
Bergmann, Carl, Hanover, Germany, assignor to W. Mallmann, Brussels, Belgium. Obtaining vanillin	571,917	Nov. 24	2654	.....	77	1193
Bergmann, Emanuel. (See Erben, Carl, assignor.)						
Bergstresser, Edwin L., Hublersburg, Pa. Combined tub-support, clothes-horse, and ironing-board	573,756	Dec. 22	3000	711	77	1901
Berkstresser, John E. (See Holloway, Young E., assignor.)						
Bergstrom, Andrew G. (See Harmanson, Israel, assignor.)						
Bernard, Frank J., West New York, N. J. Music-box damper	570,898	Nov. 10	876	204	77	829
Bernard, Frank J., Jersey City, assignor to American Music Box Company, West New York, N. J. Music-box	572,950	Dec. 15	1522	364	77	1606
Bernard, William, *et al.* (See Huebel and Manger, assignors.)						
Bernardin, Alfred L., Evansville, Ind. Bottle-stopper	572,951	Dec. 15	1523	364	77	1606
Bernardin, Francois. (See Harris and Bernardin.)						
Bernson, Charles W., New York, N. Y. Pneumatic tire	573,838	Dec. 22	3144	749	77	1928
Berntsen, John, Albert Lea, Minn. Bread-raising apparatus	569,605	Oct. 20	1549	364	77	323
Berri, William, Brooklyn, N. Y. Matrices and apparatus for distributing same	573,199	Dec. 15	1958	471, 472, 473	77	1689
Berry, Alfred N. (See Marshall, Cassius M., assignor.)						
Berry Engineering Company. (See Berry, William H., assignor.)						
Berry, William H., assignor to Berry Engineering Company, Chester, Pa. Steam-boiler	573,256	Dec. 15	2054	492	77	1706
Berryman, Nannie, Buechel, Ky. Curling-iron	569,536	Oct. 13	1404	332	77	281
Bertrand Sewing Machine Company. (See Crosby, Hanford T., assignor.)						
Berwanger, Jacob, Bellevue, Ky. Rod or roller supporting device	569,319	Oct. 13	1045	248	77	216
Besse, Edward. (See Hall, Charles H., assignor.)						
Besson, Hyppolite, London, England. Brush-case	573,852	Dec. 29	3164	754	77	1947
Best, Charles J., and A. E. Meanor, Chicago, Ill. Combined calciner and smelter	569,537	Oct. 13	1405	332	77	281
Best, Thomas C., Chicago, Ill. Boiler-lug	569,164	Oct. 13	771	179	77	163
Beatgen, John G., Somerville, Mass. Scissors or sheats	570,658	Nov. 3	452	106	77	723
Bettcher, Gottlieb, Cleveland, Ohio. Safety-socket for taps or drills	572,099	Dec. 1	8	3	77	1280
Betts, Lewis F. Brooklyn, assignor to Betts Patent Head Light Company, New York, N. Y. Lamp-support	569,741	Oct. 20	1806	428	77	370
Betts Machine Company. (See Moreton, George W., assignor.)						
Betts Patent Head Light Company. (See Betts, Lewis F., assignor.)						
Betz, Ernest, Washington, D. C. Hot-air furnace	568,730	Oct. 6	23	4	77	7
Bevin Brothers Manufacturing Company. (See Scranton, Frederick A., assignor.)						
Bible, John F., Ionia, Mich. Wheel and axle connection	570,742	Nov. 3	600	138	77	748
Bicheroux, Toussaint, Dusseldorf, assignor to Duisburger Eisen und Stahlwerke, Duisburg, Germany. Process of and apparatus for compressing, &c., and new-shapening hollow ingots in matrices	571,332	Nov. 17	1618	384, 385	77	983
Bickle, P. J., *et al.* (See Glass, George A., assignor.)						
Biddle, Lemuel D., assignor of one-half to A. D. Garrison, Los Angeles, Cal. Machine for grinding cocks or taps	570,431	Oct. 27	3071	728, 729	77	618
Bidelman, Thomas, assignor of one-half to P. Dormire, Parshallville, Mich. Potato-planter	569,948	Oct. 20	2165	513, 514	77	435
Bidwell, Alonzo, Sedgwick, Ark., assignor of seven twenty-fourths to J. V. Dabbs, J. Glunz, and M. V. Barnett, Fort Scott, Kans. Railway cross-tie	571,316	Nov. 10	1591	377	77	964
Bidwell, Robert G., Orlando, Fla. Bottle	571,035	Nov. 10	1108	259	77	873
Biedler, Frank R. (See Hamilton, Christopher H., assignor.)						
Bielhen, Frederick, St. Joseph, Mo. Stone-sawing machine	568,731	Oct. 6	25	5, 6	77	8
Bigelman, Augustus. (See Simpson and Bigelman.)						
Bigelow, Charles A., Parker City, and T. C. Gates, Hoodville, Pa. Wrench	573,806	Dec. 22	3078	731	77	1916
Bilger, George M. (See Taylor, James M., assignor.)						
Bilgram, Hugo, Philadelphia, Pa., assignor, by mesne assignments, to Bonsack Machine Company, Salem, Va. Cigarette-machine	572,150	Dec. 1	96	22	77	1296
Billings, Charles E. (See Wilson, Thomas B., assignor.)						
Binder, Gottlob, Philadelphia, Pa. Ironing-machine	568,732	Oct. 6	27	6	77	8
Binford, William, Ogden, Utah. Spray-nozzle	571,940	Nov. 24	2692	637	77	1202
Bingham, Robert O., and B. P. Wagner, assignors to Wagner Manufacturing Company, Sidney, Ohio. Waffle-iron	569,444	Oct. 13	1250	293	77	253
Binkerd, Aaron T., Allegheny, Pa. Saw-clamp	571,742	Nov. 24	2331	557	77	1133
Binner, Charles S., Malden, Mass. Carbon-sheet holder for manifolding books or pads	572,241	Dec. 1	258	62	77	1327
Biorn, Christian A., assignor of one-half to J. M. Jones, Piermont, N. Y. Mucilage-bottle	573,129	Dec. 15	1837	443	77	1667

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bird, Charles S., and E. D. Weston, Jackson, Mich. Ice-tongs	572,952	Dec. 15	1524	365	77	1606
Bird, Frederick G., Dunkirk, N. Y. Device for removing scale from boiler-tubes	573,853	Dec. 29	3165	754	77	1947
Bird, Thomas. (See Hargreaves and Bird.)						
Birkett, Edward J. (See Crandall and Birkett.)						
Bisbee, Luke L., Spencer, Iowa. Stacker	572,151	Dec. 1	98	22, 23	77	1296
Bisbing, Charles I., assignor of one-half to O. D. Holmes and C. J. Kirk, Philadelphia, Pa. Railway-switch	569,949	Oct. 20	2167	514	77	436
Bishop & Babcock Company. (See Champ, Joseph H., assignor.)						
Bishop, Charles R. (See Benton, John L., assignor.)						
Bishop, Clark. (See Haiman, Huettich, and Bishop.)						
Bishop, John J. (See Whitehead, Henry B., assignor.)						
Bishop, McKendree F., Alameda, Cal. Axle and axle-box	572,925	Dec. 8	1466	352	77	1579
Bissell Carpet Sweeper Company. (See Drew, Walter J., assignor.)						
Bissell, Emerson R. (See Frost, Newland E., assignor.)						
Black, Albert B., Lexington, Mass. Snow-plow	573,854	Dec. 29	3166	755	77	1947
Black, J. Hiram. (See Black, William W., assignor.)						
Black, John F., Carl Junction, Mo. Keyboard	572,953	Dec. 15	1525	365	77	1607
Black, Robert H., Homestead, Pa. Flue-cleaner	572,740	Dec. 8	1160	279	77	1518
Black, William W., Melrose, Mass., assignor of one-third to J. H. Black, Searletown, Canada. Boring-machine	570,197	Oct. 27	2601	618	77	531
Blackburn, Arthur H. (See Downs and Blackburn.)						
Blackburn, Joseph S., assignor to W. J. Clark Company, Salem, Ohio. Hose-coupling	574,236	Dec. 29	3930	935	77	2084
Blackburn, Nathan C., and E. E. Howell, Fairbury, Nebr. Wheat-steamer	571,638	Nov. 17	2135	512	77	1077
Blackford, Atwell J., assignor of one-half to Durand Manufacturing Company, Medina, Ohio. Oil-burner. (Reissue)	11,575	Nov. 24	3019	706, 707	77	1260
Blackwell, Francis O. (See Knight and Blackwell.)						
Blackwell, Francis O., Schenectady, N. Y., assignor to General Electric Company, of New York. Attaching field-magnet poles	573,130	Dec. 15	1739	443	77	1667
Blair, Benjamin L., Indianapolis, Ind. Bridge	568,830	Oct. 6	1[illegible]5	47	77	39
Blair, Calvin C., Beloit, Kans. Grain-drill	569,035	Oct. 6	551	127	77	105
Blake, Clarence R. (See Waite, Milo K., assignor.)						
Blake, Ira G., Worcester, Mass. Time-lock	573,855	Dec. 29	3168	755	77	1948
Blakeslee, George S., Chicago, Ill. Dish-cleaner	569,606	Oct. 20	1550	364	77	324
Blakey, Edwin, *et al.* (See Sykes and O'Donnell, assignors.)						
Blakey, Mildred, Pittsburg, Pa. Operation of gas-engines	571,966	Nov. 24	2732	646	77	1210
Blanchard, Albert D., Wichita, Kans. Hinge-pin for breakdown guns	572,520	Dec. 8	758	180	77	1438
Blanchard, Hiram S., *et al.* (See Barton, James, assignor.)						
Blanchard, Kirk S., Albion, assignor of two-thirds to R. E. Boschert, Syracuse, N. Y. Filtering apparatus	572,672	Dec. 8	1021	247	77	1493
Blanchard, Sidney R. (See Zellers and Blanchard.)						
Blanchard, Virgil W., New York, N. Y. Gas-stove	569,085	Oct. 6	634	145	77	121
Blanchard, Virgil W., New York, N. Y. Gas-stove	569,086	Oct. 6	636	145	77	122
Blanchard, Virgil W., New York, N. Y. Air and gas mixer and hydrocarbon-furnace	569,984	Oct. 20	2218	527	77	444
Blasdell, Grant C., Hazleton, Pa. Razor-strop	572,784	Dec. 8	1236	299	77	1532
Blaubach, Albert, Milwaukee, Wis. Lawn-mower	571,550	Nov. 17	1993	474	77	1050
Blechschmidt, Gustave. (See Blechschmidt, Paul and G.)						
Blechschmidt, Paul and G., Rock Island, Ill. Match-safe	572,100	Dec. 1	10	3	77	1280
Bliss, Abel, New Lenox, Ill. Roadway	573,757	Dec. 22	3001	711	77	1901
Bliss, Henry H., Washington, D. C. Mining-machine	568,937	Oct. 6	368	85	77	71
Bliss, James F., Boston, Mass. Propelling apparatus for boats	568,831	Oct. 6	196	47	77	39
Bliss, Samuel B., Pasadena, Cal. Raisin-seeder	572,858	Dec. 8	1347	324	77	1555
Bliss, William L., Brooklyn, N. Y. System of automatic electric regulation	572,627	Dec. 8	947	230	77	1478
Bliven, Alonzo P., Brooklyn, N. Y. Tie-plate and spike for railway-rails	571,743	Nov. 24	2332	557	77	1133
Bliven, Alonzo P., Brooklyn, N. Y. Bottle	573,200	Dec. 15	1963	473	77	1690
Block, Charles W., *et al.* (See Reily, John P., assignor.)						
Blodgett, Elbert, Muskegon, Mich. Grain-tempering machine	570,449	Nov. 3	9	3	77	640
Bloede, Victor G., Catonsville, Md. Vapor-dyeing	570,115	Oct. 27	2458	.....	77	504
Bloede, Victor G., Catonsville, Md. Vapor-dyeing	570,116	Oct. 27	2459	.....	77	504
Bloede, Victor G., Catonsville, Md., assignor to Victor G. Bloede Company of Baltimore City. Dyeing anilin-black	570,117	Oct. 27	2460	.....	77	504
Blood, Maurice E., Kalamazoo, Mich. Book-holder	573,072	Dec. 15	1730	415	77	1647
Bloodgood, Devan P. (See De Mott, Charles W., assignor.)						
Blount, Frederick R., *et al.* (See Batty, Thomas, assignor.)						
Blount, John G., Everett, assignor to C. W. Fox, Saugus, Mass. Suppository-machine	569,985	Oct. 20	2222	527	77	445
Blue, George B. M., Traverse City, Mich. Caster	574,017	Dec. 29	3480	831	77	2003
Blumberg, Hyman, and L. Jacobson, New York, N. Y. Bottle-filling apparatus	571,104	Nov. 10	1242	289	77	897
Blumer, Doscher Manufacturing Company. (See Blumer, James, assignor.)						
Blumer, James, assignor to Blumer, Doscher Manufacturing Company, Brooklyn, N. Y. Corrugating and cutting tool	570,218	Oct. 27	2639	625	77	538
Boardman, Harris. (See Boardman, Walter and H.)						
Boardman, Walter and H., Lancaster, Pa. Electric switch	573,807	Dec. 22	3080	731	77	1916
Bock, Johan, New York, N. Y. Combined couch, bed, and bath-tub	569,001	Oct. 6	499	112	77	95
Bodley, James W. (See Mallon, James, assignor.)						
Boehm, Edward, Woodbury, N. J. Artificial stone	569,002	Oct. 6	500	113	77	95
Boehringer & Soehne, C. F. (See Fischer, Emil, assignor.)						
Boettcher, Friedrich W. G., Duluth, Minn. Display apparatus	569,950	Oct. 20	2169	514, 515	77	436
Boettcher, Friedrich W. G., Duluth, Minn. Sounding device	571,639	Nov. 17	2137	513	77	1077
Bogar, Harry G. (See Hoffman, George A., assignor.)						
Bohannan, Jenetta V., assignor of one-fourth to J. T. Jones, Baltimore, Md. Ice-shaving machine	571,609	Nov. 17	2087	501	77	1067
Bohler, Albert, *et al.* (See Outhouse, Thomas A., assignor.)						
Böhm, Ludwig K., New York, N. Y., assignor to American Incandescent Light Company, of West Virginia. Composition of material for incandescent gas-lights	572,101	Dec. 1	12	.....	77	1280
Bohon, Joseph A., assignor of one-half to P. K. Adams, Terra Alta, W. Va. Water-carrier	571,640	Nov. 17	2139	513	77	1078
Bohrisch, Richard. (See Marcotte, Ephrem, assignor.)						
Bohy, Aimé, What Cheer, Iowa. Detachable fastening for tool-handles	573,565	Dec. 22	3049	629	77	1833
Boice, John R., Toledo, Ohio. Cushion-tire for vehicles	569,403	Oct. 13	1187	280	77	242
Boisvert, William R., Levis, Canada. Spring-bed	569,994	Oct. 27	2243	532	77	462
Boland, Joseph, and G. W. Fritz, Pittsburg, Pa. Mining-machine	571,259	Nov. 10	1491	350, 351	77	944
Bolger, Joseph J., assignor of one-third to C. Meerse, Chicago, Ill. Automatic car-coupling	572,954	Dec. 15	1527	365	77	1607

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bolles, Luzerne M., Brooklyn, N. Y. Support for window-sashes	571,551	Nov. 17	1994	474	77	1050
Bolte Cycle Manufacturing Company. (See Bolte, Frank H., assignor.)						
Bolte, Frank H., assignor to Bolte Cycle Manufacturing Company, Milwaukee, Wis. Bicycle	571,941	Nov. 24	2692	637	77	1202
Bolthoff, Henry, Denver, Colo. Hoisting-machine	568,832	Oct. 6	198	47, 48	77	39
Bolton, James M., and G. H. Howell, Sioux City, Iowa. Upholstering-pin	570,838	Nov. 3	762	174	77	780
Bolusa, Alfred R., assignor of one-half to C. Linn, Jersey City, N. J. Valve for steering apparatus, elevators, &c	570,246	Oct. 27	2693	640	77	548
Bonar, James, Pittsburg, Pa. Combined heater and purifier	572,955	Dec. 15	1528	366	77	1607
Bond, George D., Hillsborough, Tex. Autographic register	570,535	Nov. 3	177	47, 48	77	670
Bond, George T., Topeka, Kans. Roller-skate	572,403	Dec. 1	575	136	77	1387
Bond, John, Turlock, Cal. Device for propelling vessels	569,951	Oct. 20	2171	515	77	436
Bonebrake, Millard P., Stockton, Kans. Tablet-machine for stenographers' use	571,149	Nov. 10	1320	307	77	912
Bonenberger, George, Evansville, assignor to Automatic Mine Door Company, Terre Haute, Ind. Mine trap-door	569,952	Oct. 20	2173	515, 516	77	437
Bonnallie, David G., assignor of one-half to J. R. Brown, Detroit, Mich. Brush-head	569,003	Oct. 6	501	113	77	95
Bonnet, Joseph. (See Placet and Bonnet.)						
Bonney, Charles A., assignor to Brockton Folding Machine Company, Brockton, Mass. Leather-snipping machine	572,352	Dec. 1	470	110	77	1367
Bonney, Peter I., Hyde Park, Mass. Mounting chromos	572,956	Dec. 15	1530	366	77	1607
Bonowitz, Jacob, Philadelphia, Pa. Sifter for ashes, &c	569,320	Oct. 13	1047	248	77	216
Bonsack, James A., Philadelphia, Pa., assignor to Bonsack Machine Company, Salem, Va. Cigarette-machine	572,152	Dec. 1	101	24	77	1297
Bonsack, James A., Philadelphia, Pa., assignor to Bonsack Machine Company, Salem, Va. Cigarette-machine	573,640	Dec. 22	2800	662, 663	77	1864
Bonsack Machine Company. (See Bilgram, Hugo, assignor.)						
Bonsack Machine Company. (See Bonsack, James A., assignor.)						
Bonsack Machine Company. (See Evans, Nash J., assignor.)						
Bonta, Arthur K., Hoboken, N. J., assignor to Bonta Manufacturing Company, of New Jersey. Automatic engine-stop	569,445	Oct. 13	1251	293, 294	77	253
Bonta Manufacturing Company. (See Bonta, Arthur K., assignor.)						
Boose, Norman T., Rockwood, Pa. Chock-block	571,641	Nov. 17	2140	514	77	1078
Booth, Albert C., Cedar Rapids, Iowa. Automatic cut-out for electrical transformers	569,538	Oct. 13	1406	332	77	282
Bopp, Amos, Hagerstown, Md. Car-coupling	572,288	Dec. 1	354	84	77	1347
Borchardt, Hugo, Berlin, Germany. Recoil magazine-pistol	571,260	Nov. 10	1493	351, 352	77	944
Borel, François, Cortaillod, Switzerland. Electric cable	573,176	Dec. 15	1916	460	77	1681
Borios, Alphonse, La Sarraz, Switzerland. Feeding apparatus for carding-engines	572,153	Dec. 1	106	25	77	1298
Borland, George, and A. K. Sherwood, assignors to Hartford Carpet Company, Thompsonville, Conn. Loom	572,926	Dec. 8	1468	353	77	1580
Bornand, Joseph, New York, N. Y. Music-box	574,299	Dec. 29	4029	957	77	2102
Borneman, Louis A., *et al.* (See Ertheller, Philip H., assignor.)						
Bornschein, Joseph J. (See Wallace, De Witt C., assignor.)						
Börreson, Börre H., assignor of one-half to B. A. Jackson, Minneapolis, Minn. Trolley-pole safety device	573,257	Dec. 15	2056	492	77	1707
Borry, Alexander G., New York, N. Y. Chimney	571,333	Nov. 17	1621	385	77	983
Borton, Stockton. (See Willcox and Borton.)						
Borton, Stockton, Brooklyn, assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Pull-off device for sewing-machines	572,048	Nov. 24	2867	674	77	1234
Borton, Stockton, Brooklyn, assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Lock-stitch sewing-machine	572,090	Nov. 24	2989	702, 703	77	1255
Boschert, Rufus E. (See Blanchard, Kirk S., assignor.)						
Bosley, Daniel W. (See Fairchild, Charles B., assignor.)						
Bossert Electric Construction Company. (See Bossert, William F., assignor.)						
Bossert, William F., Utica, N. Y., assignor to Bossert Electric Construction Company. Electric wall-box	571,297	Nov. 10	1561	371	77	958
Boston Automatic Fire Alarm Company. (See Burgher, Charles, assignor.)						
Boston Electric Insulated Pole Company. (See Buckner, James, assignor.)						
Boston Rubber Shoe Company. (See Kinsley, William B., assignor.)						
Bostwick, Charles F. (See Mertens and Bostwick.)						
Bostwick, George C., assignor of one-half to S. M. Hall, Kansas City, Kans. Hame-fastener	573,131	Dec. 15	1840	443	77	1668
Bostwick, John R., Clifton Springs, N. Y. Stovepipe-thimble	569,165	Oct. 13	772	179	77	163
Botto, Mary G., Philadelphia, Pa. Hook and eye	569,607	Oct. 20	1553	365	77	324
Bouck, John M., Gouverneur, N. Y. Valve mechanism	569,166	Oct. 13	773	180	77	163
Boulanger, Emile, St. Louis, Mo. Drum	573,320	Dec. 15	2189	523	77	1730
Boulter, Mark E., Somerville, Mass., assignor to Automatic Track Sanding Company, Portland, Me., and Boston, Mass. Automatic valve for track-sanding apparatus	572,087	Nov. 24	2972	698, 699	77	1253
Bourke, Alphege. (See Seifert, Bourke, and Wilken.)						
Bourne, Willard A., New York, N. Y. Ventilator for lanterns, &c	569,572	Oct. 13	1484	349	77	296
Bovet, Armand de, Paris, France. Towing apparatus	570,839	Nov. 3	763	174, 175	77	780
Bowdoin, Harry L. (See Bowdoin, Rufus P. and H. L.)						
Bowdoin, Rufus P. and H. L., Wilmington, N. C. Hair-drier	573,437	Dec. 22	2432	577	77	1793
Bowen, Edward B., *et al.* (See Gross, Elmer S., assignor.)						
Bowen, John W. (See Harbaugh, Samuel V., assignor.)						
Bowen, Menard K. (See Price, William G., assignor.)						
Bower, Joseph H. (See Gleason and Bower.)						
Bower, Rosalind H., San Francisco, Cal. Strike-plate for locks	572,859	Dec. 8	1349	325	77	1555
Bowman, George F., and A. G. Langell, Cleveland, Ohio. Polishing appliance for shoes	568,833	Oct. 6	200	48	77	40
Bowman, Henry G., Frankfort, Ind. Gate	571,081	Nov. 10	1190	279	77	888
Bowne, Robert T., *et al.* (See Lehmann, Anthony A., assignor.)						
Bowne, Robert T., Wimbledon, assignor of one-half to J. W. Brown, Baltimore, Md. Railway time-signal	569,953	Oct. 20	2174	516	77	437
Boyd, Charles L. (See Harmon and Boyd.)						
Boyd, Elmer E. (See Wiley and Boyd.)						
Boyd, Henry P., Bellevue, assignor of one-fourth to G. A. Dickson, Pittsburg, Pa. Rod connection	569,995	Oct. 27	2243	533	77	462
Boynton, Fred L., Kingfisher, Okla. Ter. Mail-bag	570,899	Nov. 10	877	204	77	830
Boynton, Victor A. (See Fields and Boynton.)						
Bracken, Howard W., assignor to G. Draper & Sons, Hopedale, Mass. Separator for ring-spinning frames	570,423	Oct. 27	3056	724	77	616
Bradbury, Frederick G., St. Paul, and N. Nilson, Minneapolis, assignors to G. W. Hughes, St. Paul, Minn. Book-file	572,741	Dec. 8	1162	279	77	1518

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bradford, Samuel G., Benton Harbor, Mich. Photographic retoucher	571,642	Nov. 17	2142	514	77	1078
Bradley, Charles S., Avon, N. Y., assignor to General Electric Company, of New York. System of distribution for alternating currents	570,118	Oct. 27	2462	584	77	505
Bradley, Charles S., Avon, N. Y., assignor to General Electric Company, of New York. Electric-car motor	570,119	Oct. 27	2464	584	77	505
Bradley, Frank S., New Haven, assignor to West Haven Manufacturing Co., West Haven, Conn. Saw	573,812	Dec. 22	3089	734	77	1918
Bradley, Hazen W., Ilion, assignor to Remington Arms Company, New York, N. Y. Extractor for breech-loading firearms	572,102	Dec. 1	13	3	77	1280
Bradley, Henry A., New York, N. Y. Hydrocarbon-burner	570,450	Nov. 3	10	3	77	640
Bradshaw, Silas S., Brooklyn, assignor of one-half to C. Lyons, Jr., New York, N. Y. Reversible window	572,521	Dec. 8	759	181	77	1438
Bradt, Charles E., *et al.* (See Pringle, Eugene, assignor.)						
Bradt, Samuel E., *et al.* (See Pringle, Eugene, assignor.)						
Braen, Henry, Paterson, N. J. Folding sample-case	574,130	Dec. 29	3689	879	77	2041
Bragg, Robert, assignor of three-fourths to W. F., S. S., and W. D. Chamberlin, Dayton, Ohio. Crank-pin	572,497	Dec. 1	716	171	77	1414
Braine, Lawrence F., Ridgewood, N. J. Railway frog and crossing	570,082	Oct. 27	2398	568, 569	77	493
Brake, Archibald, Toronto, Canada. Brake-shoe	573,429	Dec. 15	2404	573	77	1770
Brammer, Henry F., and M. J. Kremer, Davenport, Iowa. Washing-machine	570,152	Oct. 27	2521	597, 598	77	516
Brand, Charles P., Allegheny, Pa. Hat and coat hook	573,258	Dec. 15	2058	493	77	1707
Brand, George, Brooklyn, N. Y. Rail grip-joint for iron bedsteads	570,369	Oct. 27	2452	700	77	596
Brand, William, Pittsburg, Pa. Boiler and boiler-furnace	569,996	Oct. 27	2244	533	77	463
Brandenberger, Mathias J., Philadelphia, Pa. Ash-sifter	572,242	Dec. 1	259	62	77	1328
Brandle, Henry. (See Smith, John, assignor.)						
Branham, Alvin J., Springfield, Mo. Bicycle-support	570,659	Nov. 3	453	107	77	723
Branson, James L., assignor to Branson Machine Company, Philadelphia, Pa. Sinker mechanism for knitting-machines	570,695	Nov. 3	518	121	77	735
Branson Machine Company. (See Branson, James L., assignor.)						
Brasch, Richard, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Alizarin dye and making same	569,404	Oct. 13	1188	.....	77	242
Brasch, Richard, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Green alizarin dye and making same	569,405	Oct. 13	1190	.....	77	242
Brasseur, Charles L. A. (See Sampolo and Brasseur.)						
Brauer, August, Independence, Mo. Power mechanism for bicycles	571,469	Nov. 17	1841	439	77	1024
Braun, John, *et al.* (See Deck, Henry, assignor.)						
Braun, John, *et al.* (See Harvey, William F. H., assignor.)						
Braun, John F., *et al.* (See Deck, Henry, assignor.)						
Braun, Lina, New York, assignor to herself and J. Hain, Brooklyn, N. Y. Hat-pin fastener	571,822	Nov. 24	2467	586	77	1159
Braun, William P. M., *et al.* (See Deck, Henry, assignor.)						
Braunstein, Adolph R., *et al.* (See Johnston, Abner, assignor.)						
Brawley, William H., assignor of two-thirds to C. N. Coles, New York, N. Y., and J. B. Coles, Bayonne, N. J. Slating compound	569,004	Oct. 6	502	.....	77	96
Bray, Thomas A., Kansas City, Mo. Meat-puncturing instrument	570,593	Nov. 3	298	73	77	694
Breakspear, William H., O. Spannaus, and C. Weisbecker, New York, N. Y. Sales-pad	571,552	Nov. 17	1997	474	77	1051
Brearley, Henry K., West Duluth, Minn. Well-point	572,860	Dec. 8	1350	325	77	1555
Breed, Charles O., Lynn, Mass. Life-saving device for elevator-cars	568,733	Oct. 6	29	7	77	8
Breeding, Enoch, Fort Worth, Tex. Folding minnow-net	572,785	Dec. 8	1237	299	77	1532
Brenizer, Warren F., assignor to Washington Venetian Blind Company, Washington, D. C. Machine for painting or varnishing surfaces	572,861	Dec. 8	1351	325, 320	77	1555
Brennan, Charles E., Minneapolis, Minn. Combined single and tandem bicycle	569,705	Oct. 20	1752	416	77	359
Brentini, Peter, London, England. Apparatus for manufacturing gas	571,062	Nov. 10	1147	268	77	881
Brenzinger, Julius, and E. F. Klée, New York, N. Y. Coin-receptacle	572,691	Dec. 8	1060	258	77	1500
Breuchand, Jules, New York, N. Y. Construction of supports for walls, &c	572,103	Dec. 1	14	4	77	1281
Brew, William. (See Standfield and Brew.)						
Brewster, Elias M., Norwich, Conn. Utensil-receptacle for stoves	570,275	Oct. 27	2749	654	77	539
Breyer, Friedrich, Vienna, Austria-Hungary. Asbestos filter	571,744	Nov. 24	2333	558	77	1133
Brick, Julia E., *et al.* (See Stanley, Ira N., assignor.)						
Bridgeport Brass Company. (See Rhind, Frank, assignor.)						
Bridgeport Gas Machine Company. (See Tallmadge, James W., assignor.)						
Bridger, Herbert K. (See Scetrini and Bridger.)						
Briggs, Adelbert F., New Lisbon, Wis. Adjustable folding chair	571,823	Nov. 24	2468	586	77	1159
Briggs, Francis W., Auburn, Me. Adjustable binder for index-files	568,734	Oct. 6	30	7	77	8
Briggs, James C. (See Ream, John L., assignor.)						
Briggs, Samuel M., San Francisco, Cal. Ore-crushing mill	569,272	Oct. 13	956	229	77	198
Briggs, Thomas A., Niagara, Canada, and W. A. Philpott, Jr., Niagara Falls, N. Y. Paper-feeding machine	572,154	Dec. 1	108	25, 26	77	1298
Brigham, Eugene O., administrator. (See Brigham, Morrill F.)						
Brigham, Morrill F., deceased, Marlborough, Mass.; E. O. Brigham, administrator. Carriage attachment for lamps	571,317	Nov. 10	1592	378	77	964
Bright, Joseph T., Midway, Ky. Spark-arrester	568,735	Oct. 6	31	7	77	9
Brill, George M. (See Brill, John A. and G. M.)						
Brill, John A., Philadelphia, Pa. Car-truck	571,824	Nov. 24	2471	586, 587	77	1159
Brill, John A. and G. M., Philadelphia, Pa. Electric-motor railway-truck	571,825	Nov. 24	2475	587	77	1160
Brinckerhoff, Clarence E., *et al.* (See Rau, John, assignor.)						
Brings, Hans, Cologne, Germany. Cycle	571,298	Nov. 10	1562	371	77	958
Brinkman, John H., Indianapolis, Ind. Knife-sharpener	572,190	Dec. 1	164	39	77	1309
Brinkman, Oscar F., assignor to A. B. Hostetter, Lancaster, Pa. Match receptacle or holder	570,891	Nov. 3	864	201	77	802
Brinkman, Sebastian G., assignor to New York Electric Motor and Ventilator Company, New York, N. Y. Electric motor	570,424	Oct. 27	3058	724	77	616
Brinkmann, Heinrich, Munich, Germany. Means for adjusting blades of screw-propellers	571,745	Nov. 24	2338	558, 559	77	1134
Briscoe, Benjamin, Detroit, Mich. Oil-can	574,300	Dec. 29	4030	957	77	2103
Bristly, Joseph, Scranton, Pa. Grate	571,506	Nov. 17	1916	457	77	1037
Bristol, Lucius F., Shell Rock, J. O. Baxter, and J. M. Searles, Cedar Rapids, Iowa. Towel-holder	569,608	Oct. 20	1553	365	77	324
Britton, William, Boone, assignor of one-half to J. Halbert, Boonesborough, Iowa. Water-gage	569,167	Oct. 13	775	181	77	164
Brobeck, George R., and L. D. Lewis, Tulso, Ind. Ter. Gravity-lock	572,628	Dec. 8	952	230	77	1479

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brock, Andrew L., Lockhart, Tex. Disk cultivator	570,660	Nov. 3	454	107	77	724
Brock, Levi M., Mackinaw, Ill. Fence-post	570,784	Nov. 3	665	153	77	760
Brocksmith, William H., Carrollton, Mo. Antirattler attachment for thill-couplings	572,629	Dec. 8	953	230	77	1480
Brockton Folding Machine Company. (See Bonney, Charles A., assignor.)						
Broderick, Daniel, Laurel Hill, N. Y. Lifting and carrying device	570,622	Nov. 3	380	91	77	708
Broderick, James H., *et al.* (See McGinley, James, assignor.)						
Brodeur, Rémi, Fall River, Mass. Shuttle-threader	569,853	Oct. 20	1999	477	77	404
Bromwell, Jacob H. (See Weber, Charles G., assignor.)						
Bronaugh, John C. (See Dunn and Bronaugh.)						
Brunnert, Emile, Mulhouse, Germany, assignor to T. Schlumberger. Manufacture of solutions of tetranitrocellulose	573,132	Dec. 15	1841	.....	77	1668
Brooks, Byron A., Brooklyn, assignor to Wyckoff, Seamans & Benedict, Ilion, N. Y. Type-writing machine	572,289	Dec. 1	355	85	77	1347
Brooks, Clarence M., Oconto, Wis. Attachment for bicycle-frames	570,536	Nov. 3	180	48	77	671
Brooks, Edward J., East Orange, N. J., assignor to E. J. Brooks & Company, New York, N. Y. Seal-press	569,742	Oct. 20	1809	429	77	370
Brooks, Edward J., East Orange, N J., assignor to E. J. Brooks & Company, New York, N. Y. Seal	573,758	Dec. 22	3002	711	77	1901
Brooks, James W., *et al.*, trustees. (See Glidden, Charles W., assignor.)						
Brooks, James W., *et al.*, trustees. (See Hatch, Charles, Jr., assignor.)						
Brooks, James W., *et al.*, trustees. (See Newton, Arthur, assignor.)						
Brooks, James W., *et al.*, trustees. (See Raymond, Freeborn F., 2d, assignor.)						
Brooks, James W., *et al.*, trustees. (See Raymond and Fogg, assignors.)						
Brooks, John, *et al.*, trustees. (See Glidden, Charles W., assignor.)						
Brooks, John, *et al.*, trustees. (See Hatch, Charles, Jr., assignor.)						
Brooks, John, *et al.*, trustees. (See Newton, Arthur, assignor.)						
Brooks, John, *et al.*, trustees. (See Raymond, Freeborn F., 2d, assignor.)						
Brooks, John, *et al.*, trustees. (See Raymond and Fogg, assignors.)						
Brooks, John E., Calumet, Pa. Game apparatus	570,743	Nov. 3	601	138	77	748
Brooks Locomotive Works. (See Carney, Charles J., assignor.)						
Brooks, Morgan, Minneapolis, Minn. Automatic telephone system	570,840	Nov. 3	764	175	77	781
Brooks, Stephen H., assignor to Foot & Brooks Company, New York, N. Y. Manufacture of buffer-wheels	572,243	Dec. 1	260	62	77	1328
Brophy, John J. (See Schurmann and Brophy.)						
Broström, Carl F., Chicago, Ill. Clutch	570,247	Oct. 27	2695	{640 641}	77	549
Brott, George F., Washington, D. C. Elevator	569,539	Oct. 13	1408	332	77	282
Broussard, Aman, New Iberia, La. Support and tripping device for slings	572,522	Dec. 8	762	181	77	1438
Brownley, Patrick, *et al.* (See Pattison, Richard, assignor.)						
Brown, Alexander T., Syracuse, N. Y. Type-making machine	572,673	Dec. 8	1023	{248 249}	77	1493
Brown, Andrew B., Edinburgh, Scotland. Steering vessels	568,736	Oct. 6	32	8, 9	77	9
Brown, Andrew B., Edinburgh, Scotland. Telemotor apparatus for steering machinery	568,737	Oct. 6	36	9	77	10
Brown, Andrew B., Edinburgh, Scotland. Apparatus for steering vessels	568,738	Oct. 6	39	9, 10	77	10
Brown, Andrew J., Chicago, Ill. Safety-guard for cars	569,168	Oct. 13	776	{181 182}	77	164
Brown, Arthur F., assignor to American Stoker Company, Dayton, Ohio. Underfeed stoker	570,978	Nov. 10	1003	{232 233}	77	853
Brown, Augustus P., Fort Madison, Iowa. Machine for reducing paper-stock to pulp	569,321	Oct. 13	1047	{248 249}	77	216
Brown Bag Filling Machine Company. (See Cummings, Henry H., assignor.)						
Brown, Berry A., Franklin, assignor of one-half to R. J. Meiser, Cincinnati, Ohio. Collar-button	570,371	Oct. 27	2954	701	77	596
Brown, Calvin. (See Brown, Wilfred L. and C.)						
Brown, Charles. (See Fletcher and Brown.)						
Brown, Charles A., Troy, N. Y. Undergarment	570,696	Nov. 3	520	121	77	735
Brown, Charles P. (See Friend and Brown.)						
Brown, Charles T., assignor of one-half to F. L. Brown, Chicago, Ill. Ball-bearing for bicycles	569,005	Oct. 6	502	113	77	96
Brown, Clarence E., Chicago, Ill. Wire joint	573,386	Dec. 15	2298	549	77	1751
Brown, Edward, Philadelphia, Pa. Recording-pyrometer	571,334	Nov. 17	1622	385	77	984
Brown, Flora L. (See Brown, Charles T., assignor.)						
Brown Folding Machine Company. (See Wendt, Fredrick H., assignor.)						
Brown, Franklin, assignor to T. Cunningham, L. and G. Brown, F. P. Pendleton, J. A. S. Brown, Philadelphia, Pa., and H. B. Lincoln, Worcester, Mass. Rod-packing	572,862	Dec. 8	1353	326	77	1556
Brown, Frederick R., Waukesha, Wis. Incubator	571,553	Nov. 17	1998	475	77	1051
Brown, George, *et al.* (See Brown, Franklin, assignor.)						
Brown, George R., *et al.* (See Travers, Lawrence S., assignor.)						
Brown, Henry J. S., Cambuslang, assignor to Acme Package Company, Limited, Bridgeton, Glasgow, Scotland. Metallic or composite box	571,427	Nov. 17	1767	422	77	1010
Brown, James D., and J. A. Cleaveland, Great Valley, N. Y. Hoisting and dumping platform	572,468	Dec. 1	667	157	77	1406
Brown, James E. and W. M., Toledo, Ohio. Combination gas and electric fixture	573,387	Dec. 15	2299	549	77	1751
Brown, James R. (See Bonnallie, David G., assignor.)						
Brown, James S., Eureka, Cal. Neck-yoke	570,785	Nov. 3	666	153	77	761
Brown, John A. S., *et al.* (See Brown, Franklin, assignor.)						
Brown, John G., *et al.* (See Barrow, Samuel, assignor.)						
Brown, John W. (See Bowne, Robert T., assignor.)						
Brown, John W., *et al.* (See Lehmann, Anthony A., assignor.)						
Brown, Joseph N., Muskegon, Mich. Weighing-truck	569,997	Oct. 27	2246	533	77	463
Brown, Lucien, *et al.* (See Brown, Franklin, assignor.)						
Brown, Maurice D., and D. J. Griffin, Waterbury, Conn. Blowpipe apparatus	574,237	Dec. 29	3932	935	77	2084
Brown, Richard L., Salisbury, N. C. Sash-balance	568,739	Oct. 6	42	10	77	11
Brown, Robert, *et al.* (See Turbeville, De Kalb, assignor.)						
Brown, Robert P., *et al.* (See Tove, William H. R., assignor.)						
Brown, Sampson H., Lockhart, Tex. Tag	573,321	Dec. 15	2190	523	77	1730
Brown, Samuel, Philadelphia, Pa. Friction-clutch	572,957	Dec. 15	1531	{366 367}	77	1607
Brown, Sherman E. (See Pratt, George F., assignor.)						
Brown, Silas P., Canova, S. D. Molasses-pitcher	573,759	Dec. 22	3003	711	77	1901
Brown, Theodore P., Worcester, Mass. Automatic organ	574,186	Dec. 29	3816	{911 912}	77	2062
Brown, Thomas E., Jr. (See Thorpe and Brown.)						
Brown, Thomas E., Jr., and R. H. Thorpe, New York, N. Y., assignors to National Company, Chicago, Ill. Apparatus for controlling speed of fluid flowing through pipes	569,781	Oct. 20	1883	447	77	383

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Brown, Wilford C., Sinai, Ky. Horse-detaching device	568,834	Oct. 6	201	48	77	40
Brown, Wilfred L. and C., assignors of one-half to L. S. Roylance, and C. A. W. Wagner, San Francisco, Cal. Amalgamator	572,353	Dec. 1	471	111	77	1368
Brown, William M. (See Brown, James E. and W. M.)						
Browne, Arthur W., Prince's Bay, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental chair	573,133	Dec. 15	1842	{444 445}	77	1668
Browne, John D., Springfield, Mass. Rotatable sign for street-cars	571,942	Nov. 24	2693	637	77	1202
Browne, Walram S., Brooklyn, N. Y. Electrically-actuated switch mechanism	570,373	Oct. 27	2956	702	77	597
Browne, William F., New York, N. Y. Pneumatic pump	570,372	Oct. 27	2955	701	77	597
Brownell, Frank A., assignor to Eastman Kodak Company, Rochester, N. Y. Tripod	572,326	Dec. 1	428	101	77	1360
Browning, George, assignor of two-thirds to W. A. Johnson and H. F. Maydwell, Hinsdale, Ill. Apparatus for weaving selvages	572,674	Dec. 8	1026	{249 250}	77	1494
Brownlee, Hamett A., Cadeville, La. Earth-auger	573,388	Dec. 15	2301	549	77	1751
Brownley Manufacturing Company. (See Brownley, Patrick, assignor.)						
Brownley Manufacturing Company. (See Brownley and Sticker, assignors.)						
Brownley, Patrick, New York, N. Y., assignor to Brownley Manufacturing Company, of New Jersey. Steam-injector	571,718	Nov. 17	2266	544	77	1101
Brownley, Patrick, and F. Sticker, New York, N. Y., assignors to Brownley Manufacturing Company, of New Jersey. Steam-injector	571,719	Nov. 17	2268	545	77	1102
Bruce, Holiday B., Jefferson City, Mo. Combined chair and box	571,335	Nov. 17	1624	386	77	984
Bruhn, Friedrich W. G., Berlin, Germany. Fare-registering apparatus	571,989	Nov. 24	2772	654	77	1217
Bruner, Preston M., assignor to P. M. Bruner Granitoid Company, St. Louis, Mo. Fireproof studding	573,839	Dec. 22	3145	749	77	1928
Brunette, Leon, and A. P. Horne, Manchester, N. H., assignors to Northrop Loom Company, Saco, Me., and Hopedale, Mass. Loom	574,187	Dec. 29	3819	912	77	2063
Brunner, Charles. (See Alderson, George, assignor.)						
Brunner, Danton O., and J. L. Shough, Somerset, Ohio. Bottle	571,826	Nov. 24	2478	587	77	1161
Brunner, Jacob H., assignor of one-half to A. H. Anderson, Peoria, Ill. Binder	573,201	Dec. 15	1964	473	77	1690
Brunson, Charles B., administrator. (See Winters, John W.)						
Brunswick-Balke-Collender Company. (See Cunningham, Patrick M., assignor.)						
Brunzell, Charles A. (See Kullberg and Brunzell, assignors.)						
Brunzell, Charlie. (See Kullberg and Brunzell.)						
Brush, George E., Danbury, Conn. Machine for pouncing crowns of hats	573,856	Dec. 29	3170	756	77	1948
Brusie, James, Oakland, Cal. Cloth or twine cutter	570,537	Nov. 3	184	48	77	671
Brusa, Julius, Milwaukee, Wis. Table	573,960	Dec. 29	3377	808	77	1984
Bruton, Qualls, Kansas City, Kans. Branding and dehorning device	571,428	Nov. 17	1768	422	77	1010
Bryan, Joseph E., West Winsted, Conn. Bottle-filler guard	572,327	Dec. 1	430	101	77	1361
Bryant, Alice E. (See Bryant, George, assignor.)						
Bryant, George, assignor to A. E. Bryant, San Francisco, Cal. Machine for grooving boot or shoe soles	568,892	Oct. 6	303	69	77	58
Bryant Iron Works Company. (See Bryant, Orrin, assignor.)						
Bryant, Orion E., *et al.* (See Badgley, Edwin L., assignor.)						
Bryant, Orrin, assignor to Bryant Iron Works Company, Buffalo, N. Y. Molding-machine	569,743	Oct. 20	1810	{429 430 431 432}	77	370
Bryant, Waldo C., Bridgeport, Conn. Electric-lamp base	574,301	Dec. 29	4031	957	77	2103
Bryce, Robert. (See Selkirk, Alexander, assignor.)						
Buch, Royer S., and J. Belser, Elizabethtown, Pa. Milk-heating vat	573,389	Dec. 15	2301	550	77	1751
Buchanan, Adelaide T., *et al.* (See McKechine, Archibald E., assignor.)						
Buchanan, Alexander D., deceased, Long Island City, N. Y.; A. C. P. Buchanan, administratrix. Road-ramming machine	569,573	Oct. 13	1187	350	77	296
Buchanan, Anna C. P., administratrix. (See Buchanan, Alexander D.)						
Buchanan, John P., Boston, Mass., assignor to Hall Signal Company, of Maine. Electric signaling system	571,507	Nov. 17	1917	457	77	1037
Buchanan, Thomas N., *et al.* (See Klettner, Charles R., assignor.)						
Bucher, Alfred S., Decatur, Ga. Acetylene-gas generator	569,273	Oct. 13	957	229	77	198
Bucher, Benjamin, White House, Ohio. Corn-harvester	572,958	Dec. 15	1533	{367 368}	77	1608
Bucher, Clinton H., Staunton, Va. Folding bed	571,643	Nov. 17	2143	514	77	1078
Bucher, David H., Carthage, Ohio. Connection for vehicle-tops	572,595	Dec. 8	893	216	77	1467
Buchsbaum, Samuel, Chicago, Ill. Ring	569,998	Oct. 27	2249	534	77	463
Buchtel, Joseph, assignor of one-half to E. D. White, Portland, Oreg. Cigar-tray	572,469	Dec. 1	668	158	77	1406
Buckeye Iron and Brass Works. (See Hubbell, Joseph H., assignor.)						
Buckeye Malleable Iron and Coupler Company. (See MacKenzie, John, assignor.)						
Buckeye Manufacturing Company. (See Lambert, John W., assignor.)						
Buckeye Manufacturing Company. (See Rettig, Frank J., assignor.)						
Buckius, Albert O., Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Lid for car-axle boxes	570,374	Oct. 27	2958	702	77	597
Buckius, Albert O., Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Lid for car-axle boxes	571,299	Nov. 10	1564	371	77	959
Buckius, Albert O., Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Center plate for cars	571,610	Nov. 17	2088	501	77	1067
Buckler, James. (See France and Buckler.)						
Buckner, James, assignor to Boston Electric Insulated Pole Company, Boston, Mass. Electric-lamp post	572,354	Dec. 1	474	111	77	1368
Buckow, William. (See Beemer, Dennis, assignor.)						
Bucksath, William, New York, N. Y. Book	573,202	Dec. 15	1965	{473 474}	77	1690
Budke, John F., Cannonsburg, Pa. Coupling for rolls	573,203	Dec. 15	1967	474	77	1690
Budlong, William G., Providence, R. I. Drill-grinder	571,336	Nov. 17	1626	386	77	984
Buell, Charles E. (See Howland, Stephen H., assignor.)						
Buell, Charles E., North Plainfield, N. J. Automatic fire-extinguisher	570,900	Nov. 10	878	204	77	830
Buell, Charles E., North Plainfield, N. J. Automatic sprinkler	570,901	Nov. 10	879	204	77	830
Buell, Charles E., North Plainfield, N. J. Automatic fire-extinguisher	572,404	Dec. 1	576	137	77	1387
Bueter, Bernard H. (See Pendergast and Bueter.)						
Buffum, Herbert H., Abington, Mass., assignor to Steam Heated Horn Company, Portland, Me. Sewing-machine	570,902	Nov. 10	879	205	77	830
Bufkin, Sam. (See Outram, John B., assignor.)						
Buhoup, Harry C., Chicago, Ill. Car-coupling	569,954	Oct. 20	2175	{516 517}	77	437
Buhoup, Harry C., Chicago, Ill., assignor to W. McConway, Pittsburg, Pa. Car-coupling	573,961	Dec. 29	3378	{808 809}	77	1985

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Builder's Insulating Tube Company. (See Knight, George H., assignor.)						
Builder's Insulating Tube Company. (See Knight and Blackwell, assignors.)						
Bull, Edward C., Edgewater, assignor to H. Bull, New York, N. Y. Game-counter	570,120	Oct. 27	2465	584	77	505
Bull, Harcourt. (See Bull, Edward C., assignor.)						
Bull, William C., Camden, N. J., assignor to W. A. Macan and R. W. Lysle, Philadelphia, Pa. Metal band for sectional jackets or steam-pipe coverings	570,276	Oct. 27	2750	654	77	559
Bullard, James H., Springfield, Mass. Metallic bottle-seal	569,854	Oct. 20	2001	477	77	405
Bullard, James H., Springfield, Mass. Bottle-sealing device	572,328	Dec. 1	431	101	77	1361
Bullard, James H., Springfield, Mass. Registering device for bottles	572,329	Dec. 1	432	102	77	1361
Bullard, James H., Springfield, Mass. Bottle-seal	572,330	Dec. 1	434	102	77	1362
Bullock, Daniel, Fort Atkinson, Wis. Woodworking-machine	571,186	Nov. 10	1370	320	77	921
Bullock, Elmer J. (See Bullock, James C. and E. J.)						
Bullock, James C. and E. J., Reedsborough, Vt. Boring-machine	573,857	Dec. 29	3173	756, 757	77	1949
Bullock, Milan C., Chicago, Ill. Steam-engine	571,892	Nov. 24	2599	617, 618	77	1182
Bullock, Milan C., Chicago, Ill. Steam-engine valve	571,893	Nov. 24	2611	618, 619	77	1185
Bultman, Frederick H., Cleveland, Ohio. Bottle	573,760	Dec. 22	3005	712	77	1902
Bumpus, Ebenezer F. (See Stirckler, John D., assignor.)						
Bundy Manufacturing Company. (See Stowell, Byron F., assignor.)						
Bunker, Le Roy S., Webster City, Iowa. Radiator-support	573,259	Dec. 15	2059	493	77	1707
Bunker, William I., La Grange, Ill. Platform rocking-chair	569,446	Oct. 13	1253	294	77	253
Bunker, William I., La Grange, Ill. Platform rocking-chair	569,447	Oct. 13	1254	294, 295	77	253
Bunnell, Morton G., assignor to F. C. Austin, Chicago, Ill. Current-motor	571,063	Nov. 10	1149	268, 269	77	881
Burchell, Robert T., Trenton, N. J. Hose-machine	571,261	Nov. 10	1497	352, 353	77	945
Burchill, Thomas, assignor to Emerson & Fisher Company, Cincinnati, Ohio. Screw-severing attachment for screw-driving machines	569,744	Oct. 20	1821	432	77	371
Burdge, Franklin P., Montezuma, Ohio. Cultivator, planter, and roller	571,827	Nov. 24	2479	588	77	1161
Burger, Herman. (See Wirt, Green, and Burger.)						
Burger, Herman, and W. H. McFall, assignors to American Electric Meter Company, Philadelphia, Pa. Electric meter	571,036	Nov. 10	1109	259	77	873
Burger, Herman, and W. H. McFall, assignors, by mesne assignments, to American Electric Meter Company, Philadelphia, Pa. Electric meter	571,037	Nov. 10	1110	260	77	874
Burger, William, Delphos, Ohio. Discharge-valve for gas-engines	570,376	Oct. 27	2961	703	77	597
Burgess, George M., assignor to Hopedale Machine Company, Hopedale, Mass. Apparatus for assembling spindle-blades and whirls	570,375	Oct. 27	2959	702	77	597
Burgess, John F., London, England. Gas-burner	574,018	Dec. 29	3482	851	77	2003
Burgher, Charles, Newton, Mass., assignor to Boston Automatic Fire Alarm Company, Portland, Me. Thermostat	573,134	Dec. 15	1846	445	77	1669
Burgin, John F., assignor of two-fifths to W. Eberhardt, Allegheny, Pa. Brake	569,486	Oct. 13	1310	309	77	264
Burgis, Thomas C., New York, assignor of nine-sixteenths to J. E. James, Brooklyn, and E. V. Van Duzer, Tompkinsville, N. Y. Making detergent compounds	573,438	Dec. 22	2433		77	1793
Burke, John, Janesville, Wis. Saw-sharpening device	572,470	Dec. 1	669	158	77	1406
Burke, John R., Boston, Mass. Vertically-adjustable seat	569,809	Oct. 20	1926	457	77	391
Burke, Rua E., Spokane, Wash. Flower-stand and bracket therefor	573,073	Dec. 15	1735	415	77	1648
Burke, Thomas P., Pawtucket, R. I. Automatic blowing apparatus	574,188	Dec. 29	3820	912	77	2063
Burket, Marion T., assignor of one-half to G. Hall, Lima, Ohio. Convertible rake and fork	573,135	Dec. 15	1847	445	77	1669
Burkhardt, Robert W., Laramie City, Wyo., assignor to G. B. Hurd, New York, N. Y., and G. S. Porter, Glen Ridge, N. J. Hose-coupling	571,212	Nov. 10	1411	330	77	929
Burlich, Jacob H., New York, N. Y. Clothes-line hanger	570,377	Oct. 27	2962	703	77	598
Burnes, Oliver A., Minneapolis, assignor to L. Johnson, Northfield, Minn. Can-opener	569,609	Oct. 20	1554	365	77	324
Burnham, Charles, assignor of one-half to L. L. Stone and T. L. Foulkes, Rochester, N. Y. Trousers-stretcher	572,155	Dec. 1	111	26	77	1299
Burnham, Della R., Pullman, Wash. Gate	570,198	Oct. 27	2603	619	77	532
Burnham, Frank A., assignor to Chandler & Price Company, Cleveland, Ohio. Platen printing-press	572,405	Dec. 1	577	137	77	1388
Burnham, George E., Minneapolis, Kans. Can-cover	572,471	Dec. 1	670	159	77	1406
Burnham, John P., Chicago, Ill. Expansion or telescopic joint for pipes containing fluid under pressure	571,337	Nov. 17	1628	386	77	985
Burnham, John P., assignor to T. Wilce, Chicago, Ill. Machine for forming interfitting tongues and grooves on opposite ends of flooring-boards	569,610	Oct. 20	1556	365	77	324
Burnham, John P., assignor to T. Wilce, Chicago, Ill. Machine for tonguing and grooving ends of flooring-boards	569,611	Oct. 20	1558	366	77	325
Burnham, Rollin, Storm Lake, Iowa. Car-coupling	573,858	Dec. 29	3177	757	77	1949
Burnham, William G., Boston, Mass. Wire-grooving machine	569,087	Oct. 6	639	146	77	123
Burns, Albert J., Fairport, N. Y. Machine for lacquering cans	570,538	Nov. 3	185	49	77	672
Burns, Robert D. (See Bailey and Burns.)						
Burpee, Frank H., *et al.* (See Reynolds, John H., assignor.)						
Burrell & Co., D. H. (See Lundstrom, Carl J., assignor.)						
Burridge, Lee S., and N. R. Marshman, New York, N. Y. Cash-register	574,302	Dec. 29	4032	957, 958	77	2103
Burrill, Harvey D. (See Sanderson, William, assignor.)						
Burrows, Taylor. (See Radclyffe and Burrows.)						
Burrows, William E. (See Pratt, Timothy D., assignor.)						
Bursch, Frederick J. W. (See Bursch, Gustavus A., assignor.)						
Bursch, Gustavus A., assignor to F. J. W. Bursch, Brooklyn, N. Y. Railway-switch	569,612	Oct. 20	1561	366	77	326
Burton, Charles, assignor to C. H. Kraft, Salt Lake City, Utah, and F. L. Shoch, Philadelphia, Pa. Coin-controlled vending-machine	572,523	Dec. 8	764	181, 182	77	1439
Burton, Charles C., assignor of four-fifths to J. C. Dee Granges, Pittsburg, Pa., L. E. Holden, Beloit, Wis., G. M. Ludlow, Chicago, Ill., and C. G. Hussey, Allegheny, Pa. Equalizing-gear	571,167	Nov. 10	1371	320, 321	77	922
Burton, Charles S., Oak Park, Ill. Locomotive smoke-stack	570,083	Oct. 27	2400	569	77	494
Bury, Harry W., assignor of one-half to C. Amoe and N. S. Moore, Frankfort, Ind. Skirt-distender	574,131	Dec. 29	3690	879	77	2041
Bush, Henry, Columbus, Ohio. Fire-extinguisher	574,019	Dec. 29	3484	832	77	2003
Bushey, Nelson C. (See Rioux, Bushey, and Byron.)						
Buswell, Columbus, Camden, Me. Dust-excluder for vehicle-hubs	571,990	Nov. 24	2773	654	77	1217
Butler, James H., Columbia Heights, Ill. Piano sounding-board	570,153	Oct. 27	2522	598	77	516
Butterfield, Alvor, assignor to M. W. Baker, Indianapolis, Ind. Farm-gate	569,855	Oct. 20	2002	477	77	405

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Butterfield, George F., Stoneham, Mass. Apparatus for vulcanizing rubber soles to shoes	574,238	Dec. 29	3933	935, 936	77	2084
Butterfield, George F., Stoneham, Mass. Vulcanizing rubber soles to shoes	574,239	Dec. 29	3935	936	77	2084
Butterworth, Harry W., Philadelphia, Pa., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Automatic clamp for cloth-stretching machines	571,105	Nov. 10	1243	289	77	897
Butterworth, Harry W., Philadelphia, Pa., assignor to H. W. Butterworth & Sons Company. Automatic clamp for textile machinery	571,508	Nov. 17	1018	458	77	1038
Butterworth, John. (See Butterworth, William H. and J.)						
Butterworth, William H. and J., Trenton, N. J. Threshing-machine	574,303	Dec. 29	4035	959	77	2103
Button, John E. (See Kloninger and Button.)						
Butts, Daniel G. (See Schuchat and Butts.)						
Butts, Edward C., Belleville, N. J. Stuffing-box for pumps, &c	570,726	Nov. 3	563	130	77	742
Butts, Elias H., Oriental, assignor of one-half to W. H. Lewis, Merritt, N. C. Baling-press	570,865	Nov. 3	809	185	77	789
Buxbaum, Karl, assignor to W. S. and M. H. Gans and J. H. Andreas, Philadelphia, Pa. Binding attachment for sewing-machines	570,121	Oct. 27	2469	584	77	506
Butzer, Albert, Deer Park, Wash. Extension-bedstead	573,390	Dec. 15	2303	550, 551	77	1751
Buxton, Frederick. (See Gemmell and Buxton.)						
Byers, David I., Hartwell, Ohio. Reversibly-supporting writing-tablet	569,169	Oct. 13	777	182	77	164
Bynon, William, Audenreid, Pa. Drilling-machine	573,808	Dec. 22	3081	732	77	1916
Byrne, William A., Boston, Mass., assignor to Wm. Knabe & Co. Manufacturing Company, Baltimore, Md. Piano	571,106	Nov. 10	1246	289, 290	77	898
Byrnes, Thomas C. (See Siron, Ernest, assignor.)						
Byron, Napoleon L. (See Rioux, Bushey, and Byron.)						
C. B. Cottrell & Sons Company. (See Cottrell, Charles P., assignor.)						
C. F. Zimmermann Company. (See Dolge, Rudolf, assignor.)						
C. H. Olson Gold Dredger Company. (See Olson, Christopher H., assignor.)						
C. T. Ham Manufacturing Company. (See Bergener, Charles, assignor.)						
Cable, Daniel J., assignor of one-half to C. J. Petgen, Pittsburg, and D. S. Scott, Fitchburg, Pa. Combination-lock	573,136	Dec. 15	1850	446	77	1669
Cahill, Henry D., assignor of one-third to J. E. McCafferty, Boston, Mass. Bicycle-carrier	573,502	Dec. 22	2543	602	77	1813
Cahoon, James B., Corning, N. Y. Sash fastener and support	573,439	Dec. 22	2433	577	77	1793
Cain, Charles E. (See Jacobson and Cain.)						
Cain, William J. (See Caplinger, Joseph E., assignor.)						
Caldwell, Edward P., Minneapolis, Minn. Track-jack	569,574	Oct. 13	1488	350, 351	77	297
Caldwell, Emory. (See Caldwell, James and E.)						
Caldwell, James and E., Auburn, N. Y. Turbine water-wheel	569,613	Oct. 20	1563	366	77	326
Callahan, Cornelius, Canton, Mass. Hose-nozzle	570,903	Nov. 10	881	205	77	831
Callender, Romaine, Brantford, Canada. Automatic telephone-exchange system	573,859	Dec. 29	3178	757, 758, 759	77	1949
Calvert, Thomas E., Lincoln, Nebr. Railway-switch stand	568,938	Oct. 6	375	85	77	73
Cambridge City Punch, Shear, and Roll Company. (See Guild, George, assignor.)						
Campbell, Andrew C., assignor to E. J. Manville Machine Company, Waterbury, Conn. Machine for making rivets or the like	569,406	Oct. 13	1191	281	77	242
Campbell, Channing B. (See Sheppey and Moore, assignors.)						
Campbell & Clute *et al.* (See Vermilyea, Eugene, assignor.)						
Campbell, Harry H. (See Aiken, Wood, and Campbell.) (Reissue.)						
Campbell, Jeremiah, Chelsea, Mass. Steam-shovel	573,204	Dec. 15	1968	474	77	1691
Campbell, John S., Paris, France, assignor to Dentenax Company, Limited, London, England. Artificial teeth	571,644	Nov. 17	2144	515	77	1079
Campbell, Julius R., Litchfield, Ill. Automatic car-holder for hoisting-cages	569,999	Oct. 27	2250	534	77	463
Campbell Printing Press and Manufacturing Company. (See Hoyt, James G., assignor.)						
Campbell Printing Press and Manufacturing Company. (See Huson, Winfield S., assignor.)						
Campbell Printing Press and Manufacturing Company. (See Southgate, Louis W., assignor.)						
Campbell Printing Press and Manufacturing Company. (See Wood, Henry A. W., assignor.)						
Campbell, William, assignor of one-third to F. Todd, Hontzdale, Pa. Rail-chair	571,064	Nov. 10	1151	269	77	882
Canada, Adolphus G., Memphis, Tenn. Non-refillable bottle	573,566	Dec. 22	2650	630	77	1833
Canan, Harry M., Altoona, Pa. Mucilage-bottle	572,524	Dec. 8	767	182	77	1439
Canfield, Charles F. (See Macevoy, Peter C., assignor.)						
Canfield, Mortimer M., Seattle, Wash. Device for operating windows	570,841	Nov. 3	769	176	77	782
Canfield, Robert H., Corning, N. Y. Locking mechanism for switch-levers	573,567	Dec. 22	2651	630	77	1834
Cannon, John B., West Suffield, Conn. Bog-cutter	569,170	Oct. 13	779	182	77	164
Cantrell, Roy J. (See Cantrell, William B., assignor.)						
Cantrell, William B., Seattle, Wash., assignor to R. J. Cantrell, San Francisco, Cal. Step or extenston ladder	570,661	Nov. 3	455	107	77	724
Capewell, George J., assignor to Specialty Manufacturing Company, Hartford, Conn. Combination-tool	572,406	Dec. 1	579	137	77	1388
Capitaine, Emil, Leipsic, Germany, assignor to G. T. Harris, Philadelphia, Pa. Motor-vehicle	572,498	Dec. 1	718	171	77	1414
Capitaine, Emil, Leipsic, Germany, assignor to G. T. Harris, Philadelphia, Pa. Apparatus for regulating temperature of combustion-chambers and vaporizers of petroleum-motors	572,499	Dec. 1	720	171	77	1415
Capitaine, Emil, Frankfort-on-the-Main, Germany, assignor to G. T. Harris, Philadelphia, Pa. Pump for raising and measuring liquids	573,641	Dec. 22	2804	664	77	1865
Capitaine, Emil, Frankfort-on-the-Main, Germany, assignor to G. T. Harris, Philadelphia, Pa. Speed-regulator for gas-engines	573,642	Dec. 22	2806	664	77	1865
Caplinger, Joseph E., San Antonio, Tex., assignor of one-half to W. J. Cain, Carrollton, Ky. Cabinet	570,199	Oct. 27	2605	619	77	532
Capps, Frank L., assignor to United States Phonograph Company, Newark, N.J. Spring-motor for phonographs, &c	570,378	Oct. 27	2964	703	77	598
Card, Benjamin F., Brooklyn, N. Y. Speed-indicating alarm	569,171	Oct. 13	779	182	77	165
Card, Benjamin F., Brooklyn, N. Y. Speed-indicating alarm	573,568	Dec. 22	2652	630	77	1834
Carey, John, and W. A. Reid, assignors of one-half to G. Myers, Schenectady, N. Y. Grinding and drilling machine	569,126	Oct. 6	697	162	77	133
Carey, William, Viola, Mich. Fire-escape	569,810	Oct. 20	1928	458	77	391
Carleton, Cyrus. (See Willcox and Carleton.)						
Carlin, David, Bellevue, Pa. Hydraulic press for covering cables with lead	574,132	Dec. 29	3691	879	77	2042
Carlson, Gustave, and P. Lawson, Valentine, Nebr. Barber's case	569,274	Oct. 13	959	230	77	199
Carlson, Lars H., Lorain, Ohio. Grapple	574,133	Dec. 29	3693	879, 880	77	2042
Carlton, Edmund E., Cambridge, Mass. Neck-protector	569,540	Oct. 13	1409	333	77	283

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Carnahan, Charles M., Newport, Ky., assignor to Globe Company, Cincinnati, Ohio. Paper-file	573,569	Dec. 22	2654	630	77	1834
Carney, Charles J., assignor to Brooks Locomotive Works, Dunkirk, N. Y. Key-seating machine	572,863	Dec. 8	1353	326, 327	77	1556
Carney, Thomas, Central City, W. Va. Kitchen-cabinet	569,541	Oct. 13	1410	333	77	283
Carns, John W., and E. Failor, Pierce, Ohio. Bicycle-tire	569,172	Oct. 13	781	183	77	165
Carpenter, Benjamin F., Roselle, N. J. Bitransit railway system	570,451	Nov. 3	12	4	77	641
Carpenter, Charles W., *et al.* (See Crowell, Luther C., assignor.)						
Carpenter, Charles W., *et al.* (See North, Thomas M., assignor.)						
Carpenter, Charles W., *et al.* (See Shelton, Edward P., assignor.)						
Carpenter, Charles W., *et al.* (See Tucker, Edwin D., assignor.)						
Carpenter, Charles W., *et al.* (See Tucker, Stephen D., assignor.)						
Carpenter, Charles W., *et al.* (See Turner, George W., assignor.)						
Carpenter, James H. (See Hamilton, Isaac N., assignor.)						
Carpenter, Rolla C., Ithaca, N. Y., assignor to T. Olsen, Philadelphia, Pa. Machine for testing lubricants	569,407	Oct. 13	1195	282	77	243
Carpentier, Georges J. N., Newport News, Va. Safety device for steam-boilers	569,811	Oct. 20	1931	459	77	391
Carpet Loom Company. (See Martin, James E., assignor.)						
Carr, Howard, assignor to San Francisco Arms Company, San Francisco, Cal. Recoil-operated firearm	574,189	Dec. 29	3821	912, 913	77	2063
Carr, Matthew, London, England. Bottle	569,614	Oct. 20	1564	367	77	326
Carrey, John, De Soto, Mo. Stalk-cutter	569,856	Oct. 20	2003	478	77	405
Carriage Cycle Company. (See Pfautz, Daniel M., assignor.)						
Carrington, Arthur H., *et al.* (See Sinclair, John B., Jr., assignor.)						
Carrington, Edward N., *et al.* (See Sinclair, John B., Jr., assignor.)						
Carroll, Joseph A., Beaumont, Tex. Log-carrier	572,742	Dec. 8	1163	279	77	1519
Carroll, Richard M., Sydney, New South Wales. Wrench	572,191	Dec. 1	165	40	77	1310
Carryl, Henry D., New York, N. Y., assignor to Lamb Manufacturing Company, Jersey City, N. J., and Chicopee Falls, Mass. Skate	572,500	Dec. 1	721	172	77	1415
Carryl, Henry D., New York, N. Y., assignor to Lamb Manufacturing Company, Jersey City, N. J., and Chicopee Falls, Mass. Skate	572,501	Dec. 1	724	172	77	1415
Carson, George J., assignor to H. G. Willard, Chicago, Ill. Electric slide for chandeliers	568,740	Oct. 6	43	11	77	11
Carter, C. M., *et al.* (See Wood, James B., assignor.)						
Carter, Chapel S., *et al.* (See Wenger, Julius D. C., assignor.)						
Carter, George M., J. H. and C. L. Drew, East Prairie, Mo. Pumping power	571,611	Nov. 17	2089	501, 502	77	1068
Carter, John W., Brooklyn, N. Y. Gas-heater	573,205	Dec. 15	1969	474	77	1691
Cartwright, William J., New York, N. Y. Car-brake	570,594	Nov. 3	300	74	77	694
Carver, George H., Plano, assignor to Plano Manufacturing Company, Chicago, Ill. Sprocket-chain tightener	572,864	Dec. 8	1345	327	77	1556
Carver, Jacob N. (See Showalter and Carver.)						
Casco Paper Box Company. (See MacRonald, Fred S., assignor.)						
Case, Charles E., assignor of one-half to W. F. Sluyter, Fenton, Mich. Lantern-lighter	570,379	Oct. 27	2968	704	77	599
Case, William, Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Metal bolster for cars	570,979	Nov. 10	1007	233, 234	77	854
Case, William, Chicago, Ill., assignor to National Malleable Castings Company, Cleveland, Ohio. Draft-iron for railway-cars	570,980	Nov. 10	1008	234	77	854
Casey, J. J. (See Thomas, Wesley A., assignor.)						
Casey, John P., Bloomsburg, Pa. Electric elevator	572,525	Dec. 8	768	182	77	1439
Cashel, John L. (See Bates, William D., assignor.)						
Cassel, Henry R. (See Waring, John B., assignor.)						
Cassel, Henry R., New York, N. Y. Extracting gold from substances containing it	568,741	Oct. 6	45	11	77	12
Cassel, Henry R., New York, N. Y. Apparatus for disinfecting ships or other structures	569,173	Oct. 13	782	183	77	165
Casterline, Edwin D., San José, Cal. Toilet-paper holder	572,331	Dec. 1	435	102	77	1362
Castleden, George, Framlingham, England. Candlestick	571,338	Nov. 17	1630	387	77	985
Castner, Hamilton Y., London, England. Anode for electrolytic processes	572,472	Dec. 1	671	.....	77	1406
Catlin, Robert M., Tuscarora, Nev., assignor to San Francisco Arms Company, San Francisco, Cal. Recoil-operated firearm	574,350	Dec. 29	4114	977, 978	77	2118
Caunter, George, *et al.* (See Banwell, James, assignor.)						
Cavalli, Joseph A., San Francisco, Cal. Nailing-machine for boots or shoes	572,692	Dec. 8	1061	258, 259, 260	77	1500
Cave, Henry, Rangiora, New Zealand. Crupper for restraining horses from kicking	569,812	Oct. 20	1932	459	77	392
Cazier, Perry H., Nashville, assignor to S. McIntosh, H. Parmer, and I. Sponable, Hastings, Mich. Grinding-machine	569,782	Oct. 20	1886	448	77	383
Cederberg, Carl, Sydney, assignor to H. Shute, Ashfield, New South Wales. Venetian blind	572,927	Dec. 8	1471	354	77	1580
Cedzo, Martin. (See Cedzo, Stefan, assignor.)						
Cedzo, Stefan, assignor of one-half to M. Cedzo, Milwaukee, Wis. Animal-trap	573,761	Dec. 22	3006	712	77	1902
Celluloid Company. (See Stevens, John H., assignor.)						
Celluloid Company. (See Stevens and Lefferts, assignors.)						
Center, John W., *et al.* (See Paige, James H., assignor.)						
Chaboche, Edmond, Paris, France. Rotary engine	569,408	Oct. 13	1198	282	77	243
Chace, Albert F., Boston, Mass. Vehicle-wheel	570,697	Nov. 3	521	121	77	735
Chadborn, John B., and E. Androvett, Newburg, N. Y. Ash-sifter	569,745	Oct. 20	1823	432	77	372
Chaddock, William H., Cleveland, Ohio. Bunsen burner	570,084	Oct. 27	2404	569	77	494
Chadwick, Everett D., Boston, Mass. Detachable fastening	572,865	Dec. 8	1356	327	77	1557
Chalke, Edmund L., Cocanada, India. Commode	574,134	Dec. 29	3694	880	77	2042
Challenge Wind Mill and Feed Mill Company. (See Todd, James, assignor.)						
Challoner, Frank, Oshkosh, Wis. Shingle-sawing machine	570,539	Nov. 3	187	49, 50	77	672
Chalmers, Alexander M., Nanaimo, Canada. Envelop	570,380	Oct. 27	2968	704	77	590
Chamberlain, Daniel, Boston, Mass. Baggage-support for bicycles	569,813	Oct. 20	1933	459	77	392
Chamberlain, George D. (See Graham, David F., assignor.)						
Chamberlain, Rufus N., *et al.* (See Madden, Albert F., assignor.)						
Chamberlin, S. Scovel, *et al.* (See Bragg, Robert, assignor.)						
Chamberlin, Willard D., *et al.* (See Bragg, Robert, assignor.)						
Chamberlin, William F., *et al.* (See Bragg, Robert, assignor.)						
Chambers Brothers Company. (See King, Howard K., assignor.)						
Chambers, Perry F., La Cygne, Kans. Shaft for vehicles	571,213	Nov. 10	1412	330	77	929
Champ, Joseph H., assignor to Bishop & Babcock Company, Cleveland, Ohio. Hydraulic air-compressor	570,540	Nov. 3	190	51	77	673
Champion Button Hole Machine Company. (See Raeuchle, William, assignor.)						
Chandler & Price Company. (See Burnham, Frank A., assignor.)						
Chaney, James M., Independence, Mo. Planetarium	573,137	Dec. 15	1851	446	77	1669

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Chapin, William R., *et al.* (See Lindsay, Archibald L., assignor.)						
Chapin, William R., assignor of two-thirds to A. L. Lindsay, Wyoming, and J. W. Howarth, Scranton, Pa. Thill-tug	570,904	Nov. 10	883	206	77	831
Chapman, Andrew W. (See Orr and Chapman.)						
Chapman & Co., J. B., *et al.* (See Cleasby, William H., assignor.)						
Chapman, James L. (See Taft, Edward L., assignor.)						
Chapman, Mark C. (See Chapman, Matthew T. and M. C.)						
Chapman, Matthew T., assignor to American Well Works, Aurora, Ill. Pump	573,860	Dec. 29	3190	759, 760	77	1950
Chapman, Matthew T. and M. C., Aurora, Ill. Pump	572,959	Dec. 15	1536	368	77	1608
Chapman, Matthew T. and M. C., Aurora, Ill. Steam-engine	572,960	Dec. 15	1541	369	77	1609
Charlier, Henri, Paris, France, assignor to J. G. Hendrickson, Philadelphia, Pa. Smelting-furnace	570,981	Nov. 10	1009	234, 235	77	855
Charouzek, Rudolph. (See Schlimp and Charouzek.)						
Chartener, Victor, Pittsburg, Pa. Truck	572,104	Dec. 1	15	4	77	1281
Charter, John J., Sterling, Ill. Gas-engine	573,762	Dec. 22	3007	712, 713	77	1902
Chase, C. D. & C. S. (See Adams, James F., assignor.)						
Chase, Charles H., Newport, R. I. Coffee-pot	573,440	Dec. 22	2435	577	77	1793
Chase, Frank, Waterville, Me., assignor to Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Lasting-machine	571,339	Nov. 17	1630	387	77	986
Chase, Frank, Waterville, Me., assignor to Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Lasting-machine	571,429	Nov. 17	1772	422, 423, 424	77	1011
Chase, Frank, Waterville, Me., assignor to Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Clamping mechanism for lasting-machines	571,509	Nov. 17	1920	458	77	1038
Chase, Joseph H., Meriden, Conn., assignor to Æolian Company, New York, N. Y. Organ	570,200	Oct. 27	2606	699	77	532
Chase, Joseph H., Meriden, Conn., assignor to Æolian Company, New York, N. Y. Tempo indicator and governor for musical instruments	571,746	Nov. 24	2341	560	77	1135
Chase Lasting Machine Company. (See Chase, Frank, assignor.)						
Chase Lasting Machine Company. (See Dunphy, James A., assignor.)						
Chase Lasting Machine Company. (See Ray, Charles O., assignor.)						
Chase, Milton, and M. H. Foster, Haverhill, assignors to A. S. Vose, Boston, and C. E. Kennard, Longwood, Mass. Skiving-machine	572,083	Nov. 24	2960	696	77	1251
Chavanne, Andre, Grass Valley, Cal. Shifting apparatus	570,623	Nov. 3	381	91	77	708
Chavanne, Andre, Grass Valley, Cal. Water-wheel bucket	571,510	Nov. 17	1921	458	77	1038
Chavez, Rafael J., and C. C. Herman, Pana, Ill. Apparatus for producing ornamental surfaces	573,206	Dec. 15	1971	475	77	1691
Chazotte, Jean F., Montreal, Canada. Fire-escape ladder	572,244	Dec. 1	261	63	77	1328
Cheeseman, William E., Monroe, N. J. Planting-machine	570,905	Nov. 10	884	206	77	831
Chemische Fabrik auf Actien vormals E. Schering. (See Hauser, Gustav C. F., assignor.)						
Chemische Werke, vormals H. & E. Albert. (See Albert, Heinrich, assignor.)						
Cheney, Danforth, Brookfield, Mo. Stand-pipe and watering-crane	569,542	Oct. 13	1411	333, 334	77	283
Cheney, Thomas J., *et al.* (See Sebastian, Charles, assignor.)						
Chenoweth, Edward. (See Lankford, William J., assignor.)						
Cherry, Felix F., Aurora, N. C. Hame-hook	571,894	Nov. 24	2614	619	77	1186
Chesney, Cummings C. (See Kelly and Chesney.)						
Chesney, Cummings C., and J. F. Kelly, assignors to Stanley Electric Manufacturing Company, Pittsfield, Mass. System of electrical distribution	571,300	Nov. 10	1565	372	77	959
Chesney, Oliver M., Topeka, Kans. Combination-tool	569,955	Oct. 20	2177	517	77	437
Chicago Brake and Manufacturing Company. (See Park, Harvey S., assignor.)						
Chicago Cotton Picker Company. (See Turner, William A., assignor.)						
Chicago Hardware Manufacturing Company. (See Sedgwick, Earl P., assignor.)						
Chichester, Lemuel A., Phœnicia, assignor to Chichester Manufacturing Company, New York, N. Y. Convertible chair	571,038	Nov. 10	1112	260	77	874
Chichester Manufacturing Company. (See Chichester, Lemuel A., assignor.)						
Childrey, Benjamin D., Philadelphia, Pa. Automatically-feeding furnace	574,190	Dec. 29	3829	913, 914, 915	77	2065
Childs, Orlando J., Utica, N. Y. Harrow	571,895	Nov. 24	2615	619	77	1186
Chism, David E., Stafford, Conn. Cash-carrier	572,407	Dec. 1	579	138	77	1388
Chisolm, William G., assignor of one-half to T. L. Dodd, Charleston, S. C. Transferring device for knitting-machines	571,554	Nov. 17	1999	475	77	1051
Chittenden, Giles E., Niles, Cal. Ladder	572,693	Dec. 8	1068	260	77	1501
Chouinard, Anthony. (See Dore, Evariste, assignor.)						
Chouteau Manufacturing Company. (See Rinsche, Frank C., assignor.)						
Chouvelon, Alphonse M., assignor to H. Rigby, Paterson, N. J. Shuttle bow or conductor	573,861	Dec. 29	3192	760	77	1950
Christ, Edward M., Pine Grove, Pa. Drinking-fountain	568,835	Oct. 6	202	49	77	40
Christensen, Niels A., Milwaukee, Wis. Air-pump valve	572,192	Dec. 1	166	40	77	1310
Christian, Wilhelm M. (See Jokl and Christian.)						
Christiansen, John, and R. W. Pittman, Hartford, Conn.; said Christiansen assignor to said Pittman. Bracket for pendent electric-light globes	570,452	Nov. 3	18	4	77	642
Christie, Gamaliel R. (See Greene, Edward E., assignor.)						
Christopher, William O., Hillsborough, Tex. Telephone attachment	573,441	Dec. 22	2436	577	77	1793
Chritton, James M. (See Goodner and Chritton.)						
Chunn, Charles M., Powersville, Ga. Fish-plate and coupling for railway-rails	573,442	Dec. 22	2437	578	77	1794
Church, Benjamin S., New York, N. Y. Pump	568,742	Oct. 6	47	11, 12	77	12
Church, Edgar D. (See McGregor and Jackson, assignors.)						
Church, Isaac, Toledo, Ohio. Expansion-bolt	570,786	Nov. 3	668	153	77	761
Churchill, Henry P., assignor to A. S. Wilcox and J. M. Adams, Deering, Me. Receiving and delivering spout for toothpick-machines	570,744	Nov. 3	602	138	77	749
Cigrand, Bernard J. (See Schwartz and Cigrand.)						
City Metal Works. (See Munro, William, assignor.)						
Clancy, William. (See Farrell and Clancy.)						
Clapham, John. (See Jefferson, Lishman, and Clapham.)						
Clare, James. (See Webb and Clare.)						
Clark, Alfred J., Lenox, Mass. Horseshoe	573,503	Dec. 22	2544	603	77	1813
Clark, Alfred L., Dubuque, Iowa. Bottle	569,615	Oct. 20	1565	367	77	327
Clark, Charles. (See Clark, John A. and C.)						
Clark, Charles F., assignor to Clark Manufacturing Company, Boston, Mass. Boot or shoe tree	569,857	Oct. 20	2004	478	77	405

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clark, Daniel J. (See Eldridge, Clark, and Wambaugh.)						
Clark, Frank B. (See Robbins, George A., assignor.)						
Clark, Fred D., McDonald, Pa. Ice-cream mold and dipper	571,188	Nov. 10	1375	321	77	922
Clark, Henry A., trustee. (See Ray, Forest A., assignor.)						
Clark, Horace L., Beaver Dam, Wis., assignor of one-fourth to A. Armstrong, Albert Lea, Minn. Tablet-compressing machin	573,443	Dec. 22	2438	578, 579	77	1794
Clark, John A. and C., assignors to Crompton Loom Works, Worcester, Mass. Loom-reed	570,381	Oct. 27	2970	704	77	599
Clark, John B., New York, N. Y., assignor of one-half to F. W. Lyman, Minneapolis, Minn. Means for converting wave motion into power	571,511	Nov. 17	1922	459	77	1039
Clark, John H., assignor to Whittier Machine Company, Boston, Mass. Elevator mechanism	573,809	Dec. 22	3083	732, 733	77	1916
Clark, Joseph H., Deering, Me. Pianoforte	571,615	Nov. 17	2145	515	77	1079
Clark, Leander, Greenville, Ohio. Gate	569,558	Oct. 20	2006	478, 479	77	406
Clark, Louie H., Fond du Lac, Wis. Temporary binder	570,541	Nov. 3	192	51	77	673
Clark, Louie H., and E. A. Munger, Fond du Lac, Wis., assignors to W. T. Allen and A. C. Ewen, Brooklyn, N. Y. Bicycle-lock	568,743	Oct. 6	50	12	77	13
Clark, Leroy. (See Conner and Clark.)						
Clark Manufacturing Company. (See Clark, Charles F., assignor.)						
Clark, Merrill E., Worcester, Mass. Burnishing-machine	570,866	Nov. 3	810	185, 186, 187	77	789
Clark, Merrill E., Worcester, Mass. Machine for finishing stock	570,867	Nov. 3	814	187, 188	77	790
Clark, Merrill E., Worcester, Mass. Rotary engine	572,961	Dec. 15	1544	369, 370	77	1610
Clark, Peter, New York, N. Y. Friction sash-balance	572,049	Nov. 24	2869	674	77	1235
Clark, William B. (See Bennett and Clark.)						
Clark, William B. (See Norlund, Olof A., assignor.)						
Clark, William H., Providence, R. I. Bicycle-tire cleaner	572,355	Dec. 1	475	111	77	1369
Clark, Zachriah T., and J. R. Neill, Portland, Oreg. Liquid compound used for tempering and toughening steel, iron, or other metals	571,646	Nov. 17	2146	.....	77	1079
Clarke, Alexander, Brooklyn, N. Y. Faucet	571,065	Nov. 10	1152	269	77	882
Clarke, Charles J., Kingsburg, Cal. Sash fastener	572,408	Dec. 1	580	138	77	1388
Clarke, Joseph T., Boston, Mass. Pack of photographic films	571,470	Nov. 17	1843	439	77	1024
Clarke, William E., and J. W. McEachron, Cleveland, Ohio. Furnace for pulverized fuel	573,662	Dec. 29	3194	760	77	1950
Clarkson, William, Cleburne, Tex. Pump	572,962	Dec. 15	1547	371	77	1611
Clarkson, William, Cleburne, Tex. Hydraulic pump	572,963	Dec. 15	1549	371	77	1611
Clarkson, William, Cleburne, Tex. Hydraulic pump	572,964	Dec. 15	1551	371, 372	77	1611
Clasen, John, assignor of one-half to A. Hastrup & Co., Hamburg, Germany. Painters' size	570,122	Oct. 27	2470	.....	77	506
Clason, Martin, Providence, R. I. Snow-guard	572,332	Dec. 1	436	102	77	1362
Claus, Max O., T. B. Püttmann, and H. E. C. Felix, Leipsic, Germany. Mechanical musical instrument	574,240	Dec. 29	3936	936	77	2084
Claussen, Edward E. (See Lorenz and Claussen.)						
Claussen, Edward E., Hartford, Conn. Paper-bag machine	574,020	Dec. 29	3486	832, 833	77	2003
Clausson, Ole, assignor of one-half to W. M. Cronan and A. Larson, Nassau, Minn. Fracture apparatus	570,085	Oct. 27	2405	569, 570	77	494
Claviez, Emil Chemnitz, assignor to Kunstweberei, Claviez & Co., Gesellschaft mit Beschränkter Haftung, Leipsic, Germany. Change-box mechanism for power-looms	572,245	Dec. 1	262	63, 64	77	1328
Clawson, Charles H., Everett, assignor to J. W. Wilson, Boston, Mass. Cyclometer	569,322	Oct. 13	1050	249	77	216
Claxton, Langley, assignor of one-fourth to W. P. Herrmann, Paterson, N. J. Pneumatic tire	573,444	Dec. 22	2441	579	77	1795
Claybourne Burner Company. (See Claybourne and Moore, assignors.)						
Claybourne, Colin W., Indianapolis, Ind., and M. Moore, Detroit, Mich., assignors to Claybourne Burner Company, Chicago, Ill. Mechanism for burning oil	572,866	Dec. 8	1356	328	77	1557
Claypool, William, and C. E. Dooley, Gering, Nebr. Water-elevator	572,596	Dec. 8	894	216	77	1468
Clayton, Americus J., *et al.* (See Eddy, George W., assignor.)						
Clayton, George W., Lebanon, Iowa. Fence-post	574,191	Dec. 29	3837	915	77	2066
Clayton, Horatio C., *et al.* (See Eddy, George W., assignor.)						
Clayton, John, Minneapolis, Minn. Bob-sleigh	571,647	Nov. 17	2147	515	77	1079
Clear, Charles, St. Louis, Mo. Hot-air register	574,135	Dec. 29	3696	880	77	2042
Cleary, James, and T. M. Miller, Paterson, N. J. Wire rod for jacquard-cards	573,813	Dec. 22	3090	734	77	1918
Cleasby, Alice F., *et al.* (See Cleasby, William H., assignor.)						
Cleasby, William H., assignor to A. F. Cleasby, Hartford, Conn., and J. B. Chapman & Co., Springfield, Mass. Cash register and indicator	571,720	Nov. 17	2271	545	77	1102
Cleathero, Edward T., assignor of one-half to E. W. H. Walker, London, England. Paper-feeding machine	570,000	Oct. 27	2253	534, 535, 536	77	464
Cleaveland, Joseph A. (See Brown and Cleaveland.)						
Clegg, Arthur. (See Whalley, Clegg, Benson, Parratt, and Robinson.)						
Clement, Burton H., Chester, assignor of one-half to E. Johnson, Waupun, Wis. Breech-loading firearm	572,290	Dec. 1	359	85	77	1347
Clement, John F., Philadelphia, Pa., assignor to Clement Pneumatic Tool Company, Camden, N. J. Impact-tool	573,260	Dec. 15	2060	493	77	1707
Clement Pneumatic Tool Company. (See Clement, John F., assignor.)						
Clementa-Kropp, Charles, Newark, N. J. Musical instrument	572,550	Dec. 8	804	193	77	1447
Clennam, Milton A., assignor of one-fifth to H. Sylvester, San Francisco, Cal. Nut	572,743	Dec 8	1164	280	77	1510
Clerk, W. B. (See Henry, George A., assignor.)						
Cleveland, George A., assignor of one-third to E. G. Durfee, Providence, R. I. Ore-pulverizing machine	570,745	Nov. 3	603	138, 139	77	749
Cleveland Safety Gate Company. (See Hobbs, John T., assignor.)						
Cleveland Time Register Company. (See Heene, George W., assignor.)						
Click, Isaac A. (See Click, Washington B. and I. A.)						
Click, Washington B. and I. A., Whitewright, Tex. Quilting attachment for sewing-machines	569,616	Oct. 20	1566	367	77	327
Clifford, Thomas G., assignor of one-half to A. Hartkorn, Jr., Hoboken, N. J. Axle-nut wrench	571,214	Nov. 10	1413	330	77	929
Clifford, Thomas G., assignor of one-half to A. Hartkorn, Jr., Hoboken, N. J. Wheel-drag	572,356	Dec. 1	476	111	77	1369
Climenson, William W., Honey Brook, Pa. Game apparatus	574,192	Dec. 29	3838	916	77	2066
Cling, William H., Charleston, S. C. Passenger-register	569,543	Oct. 13	1414	334	77	283

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Clinton, Homer, Eldora, Iowa. Windmill	570,123	Oct. 27	2471	585	77	506
Clopton, Guy. (See Waters and Clopton.)						
Close, Benjamin M., Cato, N. Y. Orchard-ladder	571,853	Nov. 24	2529	599	77	1170
Clough, John, and R. Illingworth, Bradford, England. Gear for bicycles	569,706	Oct. 20	1754	416, 417	77	359
Clouston, Samuel J., Brooklyn, N. Y. Leak-alarm	571,340	Nov. 17	1631	387	77	986
Clover, Eliot K., Baton Rouge, La. Seeder	571,896	Nov. 24	2616	620	77	1186
Clow, George E., Chicago, Ill. Box	571,747	Nov. 24	2343	560	77	1135
Clunie, John S., *et al.* (See Wilson, Andrew, assignor.)						
Coakley, Thomas H., assignor of one-fourth to E. M. Mitchell, Baltimore, Md. Self-locking can-top	569,088	Oct. 6	640	146	77	123
Coates, Charles E., and L. Hancock, Woodbridge, N. J. Brick-kiln	573,445	Dec. 22	2442	579, 580	77	1793
Cobb, Charles N., *et al.* (See Shaw, Clarance P., assignor.)						
Cobb, Dewey A., Philadelphia, Pa. Means for imparting helical forms to wire	573,763	Dec. 22	3009	713	77	1902
Cobb, George W. (See McCawley, Joel A., assignor.)						
Cochran, Charles J., assignor of one-half to G. H. Flett, Sisson, Cal. Railway-rail joint	572,694	Dec. 8	1070	260	77	1502
Cochran, Jacob S., Salina, Kans. Automatic wagon-brake	573,446	Dec. 22	2446	581	77	1795
Cochran, James M., Jackson, Tenn. Cotton-condenser	572,650	Dec. 8	986	237, 238	77	1485
Cochran, John C., Ripley, Ohio. Sewing-machine table	571,748	Nov. 24	2344	560, 561	77	1135
Cochran, William R., Jr., Delphos, Ohio. Railway-crossing	570,542	Nov. 3	193	51	77	673
Cocke, John, Greensborough, Ala. Cotton chopper and cultivator	571,648	Nov. 17	2148	515, 516	77	1079
Cocks, Joel N., Stony Creek, Va. Plow attachment	573,504	Dec. 22	2545	603	77	1813
Cody, Miles S., Stockton, Cal., assignor to Universal Mail Equipment Improvement Company. Mail-bag fastener	573,074	Dec. 15	1736	416	77	1648
Coe, James N. (See Coe, Nelson D., assignor.)						
Coe, Louis K., Saginaw, Mich. Type-writer	570,453	Nov. 3	21	5	77	642
Coe, Nelson D., New Haven, assignor of one-third to J. N. Coe, Noroton, Conn. Vehicle-wheel	573,764	Dec. 22	3011	713	77	1903
Coffee, Robert W., assignor to Coffee Stemming Machine Company, Richmond, Va. Tobacco-leaf-stemming machine	569,575	Oct. 13	1491	351, 352, 353	77	297
Coffee Stemming Machine Company. (See Coffee, Robert W., assignor.)						
Coffield, Peter T., Springfield, Ohio. Lubricator	571,555	Nov. 17	2000	475	77	1052
Coffin, Charles W. (See Jones and Talbot, assignors.)						
Coggin, Frank F. (See Whitcomb and Coggin.)						
Coggshall, Henry F., *et al.* (See Gates, Eugene N., assignor.)						
Cogbill, Aaron F. (See Atkinson, Herbert C., assignor.)						
Cohill, Edmund P. (See Seavolt, John W., assignor.)						
Cohn, Charles, Baltimore, Md. Skirt	573,765	Dec. 22	3013	714	77	1903
Coker, James L., Jr., Hartsville, S. C. Apparatus for making bisulfite solutions	572,193	Dec. 1	168	40, 41	77	1310
Colby, Jesse A., Wilmington, Del. Shoemaker's last	570,154	Oct. 27	2524	598	77	516
Coldiron, John J., *et al.* (See Cullens, John T., assignor.)						
Cole, Anson D., assignor of one-half to B. S. Smith, Philadelphia, Pa. Attachment for preventing refilling of bottles	571,967	Nov. 24	2733	646	77	1210
Cole, Anson D., assignor of one-half to B. S. Smith, Philadelphia, Pa. Attachment for preventing refilling of bottles	571,968	Nov. 24	2734	646	77	1210
Cole, John L., Radford Furnace, Va. Machine for sawing fellies, &c.	569,956	Oct. 20	2179	517	77	438
Cole, R. D., Sr. (See Florence, George, assignor.)						
Cole, William E., Atlanta, Ga. Smoke-consumer	570,001	Oct. 27	2257	536	77	464
Coleman, Clyde, assignor of two-thirds to A. L. Deane and J. W. Donnell, Chicago, Ill. Galvanometer	570,454	Nov. 3	25	5, 6	77	643
Coleman, Clyde, assignor of two-thirds to A. L. Deane and J. W. Donnell, Chicago, Ill. Electric burglar-alarm	570,906	Nov. 10	886	206, 207	77	832
Coleman, John P., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Electrically-controlled derails for railway-crossings	571,107	Nov. 10	1247	290	77	898
Coleman John P., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Track-drill	572,156	Dec. 1	113	27	77	1299
Coleman, John P., assignor to Union Switch and Signal Company, Swissvale, Pa. Indicator or signal	573,207	Dec. 15	1972	475	77	1691
Coleman, Michael P., Boston, Mass. Core-press	573,643	Dec. 22	2807	665	77	1866
Coleman, Thomas S. and W. P., Marshall, Tex. Plumbing system	570,455	Nov. 3	27	6	77	643
Coleman, William P. (See Coleman, Thomas S. and W. P.)						
Coles, Charles N., *et al.* (See Brawley, William H., assignor.)						
Coles, John B., *et al.* (See Brawley, William H., assignor.)						
Coles, William G., and F. A. Barker, assignors to H. Verbeek, Chicago, Ill. Water-closet	570,543	Nov. 3	194	52	77	674
Colgate, Arthur E., New York, assignor to G. J. Schoeffel, Brooklyn, N. Y. Search-light	573,962	Dec. 29	3381	809	77	1985
Colhapp, Daniel W., Chicago, Ill. Repair-plug for pneumatic tires	571,108	Nov. 10	1249	290	77	898
Collard, Job B., and H. J. Hensarling, Rogersville, Tex. Cultivator	570,842	Nov. 3	771	176	77	782
Collen, Daniel, Inwood, Canada. Railway-crossing	571,215	Nov. 10	1413	331	77	929
Colley, Robert B., St. Helier's, Island of Jersey. Trousers presser and stretcher	571,991	Nov. 24	2774	654	77	1217
Collins, Henry A., Brooklyn, N. Y. Filter or oil-extractor	573,786	Dec. 22	3014	714	77	1904
Collins, Herman B., Fulton, N. Y. Electric motor	569,746	Oct. 20	1824	433	77	372
Collins, Hiram B., Frankfort, Ind. Eraser	570,456	Nov. 3	30	7	77	644
Collins, Stephen, Portland, Oreg. Car-axle box	573,301	Dec. 15	2305	551	77	1752
Collins, Warren E., Boston, Mass. Valve for pneumatic tires	573,392	Dec. 15	2306	551	77	1752
Collins, Wheeler R. (See Schorr and Collins.)						
Collins, William A., Bayonne, N. J. Dredging-bucket	572,651	Dec. 8	987	238	77	1486
Colman, Frederick. (See Richard and Colman.)						
Colton, Albert R., Rochester, N. Y. Invisible lacing	571,749	Nov. 24	2347	561	77	1136
Colt's Patent Fire Arms Manufacturing Company. (See Ehbets, Carl J., assignor.)						
Columbia Cash Register Company. (See Jacques and Trask, assignors.)						
Colver, Eleanor C., New York, N. Y. Last or tree	573,644	Dec. 22	2810	665	77	1866
Colvin, Frank D., Baltimore, Md., assignor of one-half to Foster Brothers Manufacturing Company of Baltimore City, of Maryland. Spring bed-bottom	570,425	Oct. 27	3059	724, 725	77	616
Colwell, Llewellyn R. (See Graham and Colwell.)						
Comer, Frank, London, England. Bridging teeth	571,556	Nov. 17	2002	475	77	1052
Comfort, David, Albany, Ga. Seal-lock	570,907	Nov. 10	890	207	77	833
Compagnie Internationale des Procédés Adolphe Seigle. (See Seigle, Adolphe, assignor.)						
Composite Brake Shoe Company. (See Whitcomb and Coggin, assignors.)						
Compton, Shelby, administrator. (See Swift and Stewart.)						
Comrie, Jennings, Milwaukee, Wis. Glove	573,447	Dec. 22	2447	581	77	1796

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Comstock, Alfred H., *et al.* (See Flood, Benjamin P., assignor.)						
Comstock, Oscar A., Amboy, Ill. Headlight	573,177	Dec. 15	1917	460	77	1682
Conaway, John L., Philadelphia, Pa. Fastening for shoes, leggings, &c	572,157	Dec. 1	114	27	77	1299
Condé, Jesse C., Boston, Mass. Liquid-testing device	569,783	Oct. 20	1867	448	77	383
Conderman, Martin I., Hornellsville, N. Y. End-gate for wagons	574,021	Dec. 29	3490	834	77	2004
Congelton, Osborn, New York, N. Y. Cuff-link	570,457	Nov. 3	31	7	77	644
Conklin, Don C., and J. Hughes, Corder, Mo. Baggage-loader	571,828	Nov. 24	2481	588	77	1161
Connell, Richard T. (See Stephens and Connell.)						
Connell, William, Pittsburg, Pa. Electric sign	572,158	Dec. 1	116	27	77	1300
Connelly, William, Toledo, Ohio. Means for cleaning oil-wells	572,867	Dec. 8	1358	328	77	1557
Conner, Benjamin, Philadelphia, Pa. Shade-holder	573,138	Dec. 15	1856	446	77	1670
Conner, Daniel E., assignor to J. Steffin, Covington, Ky. Station-indicator	571,301	Nov. 10	1566	372	77	959
Conner, Joseph, New York, N. Y., assignor of forty-nine one-hundredths to G. T. Keeler, Baltimore, Md. Game apparatus	574,351	Dec. 29	4120	978	77	2119
Conner, Patrick H., and L. Clark, Monticello, Iowa. Corn-husker	574,136	Dec. 29	3698	881 882	77	2043
Conover, John T., Flemington, N. J. Fence	571,150	Nov. 10	1321	308	77	912
Conrad, Hugh V., North Tarrytown, N. Y. Inlet-valve for air-compressors	569,323	Oct. 13	1052	249 250	77	917
Conrad, Otto. (See Phifer, Washington L., assignor.)						
Conrad, William, Atlanta, N. Y. Wire fence	569,275	Oct. 13	960	230	77	199
Conrow, Roland, Cinnaminson, N. J. Indicating device for bicycles, &c	574,022	Dec. 29	3491	834	77	2004
Consolidated Car-Heating Company. (See McElroy, James F., assignor.)						
Consolidated S. O. S. Bag Company. (See Lorenz, William A., assignor.)						
Consolidated S. O. S. Bag Company. (See Lorenz and Reising, assignors.)						
Consolidated S. O. S. Bag Company *et al.* (See Lorenz and Claussen, assignors.)						
Consolidated Sterling Incandescent Gas Lamp Company. (See Inch, Philip, assignor.)						
Consolidated Sterling Incandescent Gas Lamp Company. (See Voelker, William L., assignor.)						
Constable, Robert S. (See Cunningham, Logan M., assignor.)						
Converse, Edmund. (See Turner, William A., assignor.)						
Converse, Merton E., Winchendon, Mass. Rocking or similar horse	570,002	Oct. 27	2259	537	77	465
Conway, John, Union, N. J., assignor of two-thirds to B. Feeney and W. I. McCoy. Washtub	572,597	Dec. 8	897	217	77	1468
Cook, Adolphus H., assignor of one-half to A. Hood, Markham, Canada. Fence	568,744	Oct. 6	52	13	77	13
Cook, Adolphus H., assignor of one-half to A. Hood, Markham, Canada. Fence	569,174	Oct. 13	784	183	77	165
Cook & Bro., E. C. (See Frazier, Horace B., assignor.)						
Cook, Charles H., Trenton, N. J. Venting device for water-closet bowls	570,982	Nov. 10	1010	235	77	855
Cook, David F., and H. U. Abbott, Converse, Ind. Broom-head	568,836	Oct. 6	203	49	77	40
Cook, Francis L., assignor of one-half to S. A. Ryan, Springfield, Mass. Non-refillable bottle	574,193	Dec. 29	3841	916	77	2067
Cook, Francis M., Tupelo, Ark. Colter-holder	571,189	Nov. 10	1376	321	77	923
Cook, James M., Mount Gilead, Ohio. Motor-vehicle	569,175	Oct. 13	785	183 184	77	166
Cook, Lewis I., *et al.* (See Wenger, Julina D. C., assignor.)						
Cook, Richard R. (See Walker and Cook.)						
Cook, Willber B., C. R. Stout, and R. S. Morris, Siloam Springs, Ark. Rail lock and support	570,003	Oct. 27	2259	537	77	465
Cooley, William H., Brockport, N. Y. Automatic system of distribution and control for electric railways, &c	573,645	Dec. 22	2810	666	77	1866
Coombs, Stephen H., Helena, Mont. Batter-mixer, &c	573,208	Dec. 15	1973	475	77	1691
Coons, James, New York, N. Y. Combined gas-meter and gas-regulator	573,863	Dec. 29	3195	761	77	1951
Cooper, Ashley R., Mooresville, Ind. Steam-boiler	572,194	Dec. 1	172	41, 42	77	1311
Cooper, Charles. (See Barratt, William T., assignor.)						
Cooper, Charles. (See Hurley, Daniel, assignor.)						
Cooper, James, New York, N. Y. Chair-brace	572,409	Dec. 1	582	138	77	1389
Cooper, James A. (See Edwards, James A., assignor.)						
Cooper, Thomas, King's Lynn, England. Machinery for cultivating and clearing land	571 082	Nov. 10	1191	280	77	888
Cope, George W., assignor to Art Stove Company, Detroit, Mich. Coal-stove	569,176	Oct. 13	787	184	77	166
Cope, John C., *et al.* (See Hand, Townson, assignor.)						
Copeland, George W. (See Crisp and Copeland.)						
Copland, Henry M., Scottsburg, Oreg. Ore-separator	570,843	Nov. 3	773	176	77	782
Copeland, James S., Hartford, Conn., assignor to Pope Manufacturing Company, Hartford, Conn., and Portland, Me. Wheel for vehicles	574,194	Dec. 29	3842	916	77	2067
Copeland, Wesley A., C. Roberts, and T. J. McCrary, Alvord, Tex. Calculator	569,544	Oct. 13	1415	334	77	284
Corbin, George A. (See Harris and Corbin.)						
Cordes, August F. (See Bamford, George W., assignor.)						
Cork, William H. (See Hopkins, Meshach, assignor.)						
Corkhill, Henry R., Jr., assignor to Stecher Lithographic Company, Rochester, N. Y. Apparatus for making paper-box blanks	569,957	Oct. 20	2180	517	77	438
Corliss, William, Providence, R. I. Mechanism for varying speed	569,369	Oct. 13	1128	269	77	232
Corliss, William, Providence, R. I. Wheel-tire	569,370	Oct. 13	1130	269	77	232
Cormack, George H., Rockford, Ill. Grain-drier	570,662	Nov. 3	457	107	77	724
Corn, James M., Tempe, Ariz. Ter. Water-elevator	573,963	Dec. 29	3384	809	77	1986
Corne, Noah F., Saluda, N. C. Car-brake	570,004	Oct. 27	2260	537	77	465
Corneau, Armidas J., assignor to Rotary King Manufacturing Co., Westfield, Mass. Mechanical movement	569,006	Oct. 6	504	114	77	96
Cornwall, John B., Moline, Ill. Combined corn sheller and cleaner	572,084	Nov. 24	2963	696 697	77	1252
Cornwall, John B., assignor to Barnard & Leas Manufacturing Company, Moline, Ill. Tubular grain-separator	569,089	Oct. 6	641	146	77	123
Corre, Albert G. (See Granville, Bernard, assignor.)						
Costello, Simon, Greenwich, Conn. Bottle	571,430	Nov. 17	1777	424	77	1012
Costigan, Dennis W., Providence, R. I. Gem-setting	573,139	Dec. 15	1857	447	77	1671
Coston, William F., New York, N. Y. Pyrotechnic-signal holder	570,458	Nov. 3	32	7	77	644
Cota, Louis P., and I. L. Edwards, Aurora, Ill. Farm-gate	572,473	Dec. 1	672	159 160	77	1406
Cotter, Timothy, and T. H. Walker, assignors of one-third to J. McDonnell, Kansas City, Mo. Composition of matter	569,859	Oct. 20	2008	------	77	406
Cottle, Thomas M., Albertville, Ala. Spring bed-bottom	568,745	Oct. 6	53	13	77	13
Cotton Ginners Compress Company. (See Swenson, Magnus, assignor.)						
Cottrell, Charles P., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, Stonington, Conn., and New York, N. Y. Toothed rack for printing or other machines	574,195	Dec. 29	3843	917	77	2067
Cottrell, Charles P., Stonington, Conn., assignor to C. B. Cottrell & Sons Company, Stonington, Conn., and New York, N. Y. Toothed rack for printing or other machines	574,196	Dec. 29	3844	917	77	2067

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cottrell, Edgar H., Stonington, Conn., assignor to C. B. Cottrell & Sons, Westerly, R. I. Holder for electrotype and stereotype plates	572,695	Dec. 8	1071	260 261	77	1502
Cottrell & Sons, C. B. (See Cottrell, Edgar H., assignor.)						
Coulson, Austin A., *et al.* (See Henery, Alvanes G., assignor.)						
Coupal, Joseph, trustee. (See Conpal and Gray, assignors.)						
Coupal, Joseph, Winchester, and L. E. Gray, Boston, assignors of one-third to J. Coupal, trustee, Winchester, Mass. Coin-controlled playing-card holder	573,810	Dec. 22	3085	733	77	1917
Coupland, Charles, and F. Pearson, Seymour, Conn. Loom for weaving pile fabrics	569,814	Oct. 20	1934	460	77	392
Cournyer, Albert R. (See Cournyer, John B. and A. R.)						
Cournyer, John B., Coopersville, and A. R. Cournyer, Fruitport, Mich. Wagon-dump	572,630	Dec. 8	935	231	77	1480
Coursac, Jacques F. M. H. de. (See Pascault and Coursac.)						
Coursen, Robert R., Newark, N. J. Saw-setting machine	569,545	Oct. 13	1416	335	77	284
Courtney, Herbert F., and F. Schwartz, assignors of one-third to J. B. Kimes, Philadelphia, Pa. Apparatus for making fertilizers	572,965	Dec. 15	1532	372	77	1612
Courtright, George C., and J. W. Purdy, Philadelphia, Pa. Rotary tooth-brush	569,409	Oct. 13	1201	283	77	244
Cousy, Constant E., New York, N. Y. Pencil-sharpener	572,868	Dec. 8	1359	329	77	1557
Coward, William H., London, England. Apparatus for concentrating, grading, or classifying crushed ores, &c	574,241	Dec. 29	3936	936	77	2085
Cowart, Andrew M. (See Daughtrey and Cowart.)						
Cowart, Andrew M., Punta Gorda, Fla. Bottle-sealing device	571,262	Nov. 10	1499	353	77	945
Cowen, Charles B., *et al.* (See Yost, George B., assignor.)						
Cowen, John, Hartford, Conn. Sprocket-wheel	568,837	Oct. 6	204	49	77	40
Cowley, James T., Lowell, Mass., assignor, by mesne assignments, to American Metallic Cushion Company, of West Virginia. Seat or cushion	569,784	Oct. 20	1888	448	77	383
Cox, Benjamin L., Alliance, Ohio. Cloth-laying machine	573,448	Dec. 22	2450	581	77	1796
Cox, Daniel, and L. Spence, Martin's Ferry, Ohio. Tin-plate cleaning and polishing machine	569,090	Oct. 6	643	147	77	123
Cox, William A. (See Avery, William C., assignor.)						
Coyle, Bernard J., *et al.* (See Atkinson, Mahlon B., assignor.)						
Coyle, Robert. (See Atkins and Coyle.)						
Crabtree, John, Philadelphia, Pa. Brick-machine	571,750	Nov. 24	2348	561 562	77	1136
Cracknell, Richard J., Rochester, England. Refrigerating machinery	572,696	Dec. 8	1072	261	77	1502
Craig, George, Glasgow, Scotland. Purifying ammonium nitrate	573,964	Dec. 29	3385	810	77	1986
Craig, Gilbert T., New York, assignor to R. H. Mayland and J. H. Foote, Brooklyn, N. Y. Musical instrument	569,707	Oct. 20	1756	417	77	360
Cram, William E., Boston, Mass. Electric gas-lighting burner	569,785	Oct. 20	1890	448	77	384
Cramblitt, Frank, Baltimore, Md. Reversible window-sash	573,261	Dec. 15	2062	494	77	1708
Cramer, John, assignor of two-thirds to J. C. Shank and T. C. Hipple, Lock Haven, Pa. Bridle-bit	574,304	Dec. 29	4038	959	77	2104
Crampton, Orlando W., *et al.* (See Hann, Francis S., assignor.)						
Crandall, Emmet M., St. Joseph, Mo. Steam, air, or water motor	569,546	Oct. 13	1417	335	77	284
Crandall, Henry F., and E. J. Birkett, assignors to Milwaukee Harvester Company, Milwaukee, Wis. Driving connection for harvesters	568,893	Oct. 6	304	70	77	58
Crandall, John W., Jeffersonville, Ind. Combined snap hook and buckle	570,277	Oct. 27	2751	655	77	559
Crane, Charles A. (See Hastings, James T., assignor.)						
Crane Company. (See Doolittle, William W., assignor.)						
Crane Company. (See Hayden, James T., assignor.)						
Crane & Company. (See Knight, Jonathan L., assignor.)						
Crane Elevator Company. (See Reynolds, George H., assignor.)						
Craney, Thomas, Bay City, Mich. Evaporating apparatus	572,333	Dec. 1	437	103	77	1362
Crawford, John T., Wilsonville, Ala. Rat or vermin proof building	574,305	Dec. 29	4039	959 960	77	2104
Crawford, Jonathan S., Scranton, Pa. Fire-escape	570,908	Nov. 10	891	207	77	833
Crawford, Nehemiah. (See Barkalow and Crawford.)						
Crawford, Samuel S., Holt, Mo. Wagon end-gate	572,869	Dec. 8	1360	329	77	1558
Crawford, Thomas, Green Island, N. Y. Car-truck	571,263	Nov. 10	1500	353 354	77	946
Crawford, William W., assignor to G. E. Kuhn, Wilmerding, and W. S. Guffey, Pittsburg, Pa. Lock-wedge	572,291	Dec. 1	360	86	77	1348
Creager, Samuel, assignor of one-half to C. S. Emmert, Hagerstown, Md. Stop-motion for knitting-machines	569,324	Oct. 13	1054	250	77	217
Creamery Package Manufacturing Company. (See Ames, Charles D., assignor.)						
Crehan, Hubert. (See Oliver and Crehan.)						
Creighton, Thomas C., Haywards, Cal. Nail-extractor	569,958	Oct. 20	2182	518	77	438
Cre-Ozone Company. (See Stratton and Murdock, assignors.)						
Crisp, Joseph E., Somerville, Mass. Tack-driving machine	573,449	Dec. 22	2451	582	77	1796
Crisp, Joseph E., Somerville, and G. W. Copeland, Malden, Mass., assignors, by mesne assignments, to Goodyear Shoe Machinery Company, Portland, Me. Hand pegging-machine	569,617	Oct. 20	1568	368	77	327
Critchfield, Charles W., *et al.* (See Shaw, William F., assignor.)						
Crocker, John B., Hamilton, Ohio. Direct-acting pump	571,751	Nov. 24	2351	562	77	1136
Crompton Loom Works. (See Clark, John A. and C., assignors.)						
Cronan, William M., *et al.* (See Clausson, Ole, assignor.)						
Crone, Seth A., New York, N. Y. Fluid-controlled gate	572,410	Dec. 1	582	138 139	77	1389
Cronin, Edward, and H. P. Shields, Homestead, Pa. Metallic tie	570,005	Oct. 27	2263	537	77	466
Cronin, William D., assignor to G. L. Horn, Philadelphia, Pa., M. Senger, and C. A. Baake, Atlantic City, N. J. Cue-rest	570,459	Nov. 3	33	7	77	644
Crook, Charles M., Elgin, Ill. Self-winding mechanism for electric clocks	573,430	Dec. 15	2405	573	77	1770
Crosby, Hanford T., Boston, Mass., assignor to Bertrand Sewing Machine Company, Portland, Me. Thread-tension for sewing-machine shuttles	572,334	Dec. 1	438	103	77	1362
Crosby, Hanford T., Boston, Mass., assignor to Bertrand Sewing Machine Company, Portland, Me. Shuttle for sewing-machines	572,335	Dec. 1	439	103	77	1363
Crosby, James H., Somerville, assignor to B. S. Agnew, Boston, Mass. Smoke-consuming furnace	571,752	Nov. 24	2352	562 563	77	1137
Crosby, Oliver, St. Paul, Minn. Sectional derrick	570,124	Oct. 27	2472	585 586	77	507
Crosby, Oliver, St. Paul, Minn. Locomotive-crane	572,195	Dec. 1	171	42, 43	77	1311
Cross, Albert P., and I. H. Hill, Los Angeles, Cal. Street-sprinkler	571,649	Nov. 17	2149	516	77	1060
Cross, Frank H. (See Van Wye, Garry P., assignor.)						
Cross, George W., Pittston, Pa. Separator	570,460	Nov. 3	34	8	77	644
Cross, George W., Pittston, Pa. Screen	572,697	Dec. 8	1074	261	77	1503
Cross, George W., Pittston, Pa. Screen	572,966	Dec. 15	1554	372	77	1612

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Crossley, Charles, Sudbury, assignor to F. N. Fennell, London, England. Means for treating woven fabrics	569,015	Oct. 6	518	118, 119	77	98
Crotty, John S., New York, N. Y. Apparatus for pressing and drying garment-stays	571,992	Nov. 24	2775	655	77	1217
Crotty, John S., New York, N. Y. Corset-stiffener	573,570	Dec. 22	2655	631	77	1835
Crouch, Edward M., Hartland, Wis. Wire-stay-weaving device	568,746	Oct. 6	54	13	77	13
Crouch, George, New York, N. Y. Trunk	571,152	Nov. 10	1324	308	77	913
Crouch, Otis E., *et al.* (See Darling, Ernest T., assignor.)						
Crouch, Walker L., assignor to Pierce-Crouch Engine Company, New Brighton, Pa. Valve device for gas-engines	573,322	Dec. 15	2190	523, 524	77	1730
Crow, John W., New York, N. Y. Horseshoe-machine	572,870	Dec. 8	1362	329	77	1558
Crowell, Hilen C., Dunkirk, N. Y. Wood pulley	570,909	Nov. 10	892	207	77	833
Crowell, Luther C., Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Sheet-perfecting printing-machine and its tympan	573,393	Dec. 15	2308	551, 552	77	1752
Crowell, Sommers, Philadelphia, Pa. Fence-guard	573,571	Dec. 22	2656	631	77	1835
Crowley, Roy O., Elizabeth, N. J. Night signaling	568,838	Oct. 6	206	49	77	41
Crowson, Wiley E., Montgomery, Ala. Automatic pipe-coupling device	571,216	Nov. 10	1416	331	77	930
Crump, Jimmie B., Mobile, Ala. Fireplace-heater	571,897	Nov. 24	2618	620	77	1186
Crutsinger, Charles W., St. Louis, Mo. Apparatus for casting printers' rollers	572,744	Dec. 8	1166	280	77	1519
Csiszár, Ferdinand H., Vienna, Austria-Hungary. Sensitive photographic paper	574,059	Dec. 29	3558	.....	77	2018
Cuckson, Frederick C., Duane, N. Y. Attachment for pen stocks or holders	572,526	Dec. 8	769	182	77	1440
Cuenot, Paul A., Canton, Ohio. Billiard-cue tip	570,006	Oct. 27	2263	538	77	466
Culgan, John P., assignor to Union Switch and Signal Company, Swissvale, Pa. Lightning-arrester	571,109	Nov. 10	1250	291	77	898
Cullens, John T., assignor of two-thirds to J. J. Coldiron and J. W. Wooten, Edwardsville, Ill. Brick-kiln	572,474	Dec. 1	674	160, 161	77	1407
Cullison, William R., Chicago, Ill. Churn	571,039	Nov. 10	1113	260	77	874
Culver, Fitz E., Chicago, Ill. Gas-engine	573,209	Dec. 15	1974	475	77	1692
Culver, Willard B., Scranton, Pa. Coal crushing or breaking rolls	571,264	Nov. 10	1302	354, 355	77	946
Culver, William C., Jersey City, N. J., and W. D. Culver, New York, N. Y. Pipe-cleaner.	569,371	Oct. 13	1132	270	77	232
Culver, William D. (See Culver, William C. and W. D.)						
Cumine, George L., London, England. Lacing of boots or shoes	571,341	Nov. 17	1632	387	77	986
Cummings, George K., and F. W. Mussen, Chicago, Ill. Pencil	572,105	Dec. 1	17	5	77	1281
Cummings, George W. (See Turner and Cummings.)						
Cummings, Henry H., Malden, assignor, by mesne assignments, to Brown Bag Filling Machine Company, Fitchburg, Mass. Bag-holding mechanism	574,137	Dec. 29	3702	882, 883	77	2043
Cummings, Montrovill D., Columbus, Ohio. Mail-sack catching and delivering mechanism.	568,747	Oct. 6	54	13, 14	77	14
Cunningham, Edward, Horton, Kans. Wrench	569,372	Oct. 13	1133	270	77	232
Cunningham, James E., *et al.* (See Hickey, Thomas W., assignor.)						
Cunningham, Logan M., assignor of one-half to R. S. Constable, Erie, Pa. Nut-lock	571,721	Nov. 17	2274	546	77	1103
Cunningham, Martin J., assignor of one-half to E. J. Ruschitzka, Springfield, Mo. Warehouse-truck	572,411	Dec. 1	584	139	77	1389
Cunningham, Patrick M., assignor to Brunswick-Balke-Collender Company, New York, N. Y. Pocket billiard-table	573,262	Dec. 15	2064	494	77	1708
Cunningham, Robert, *et al.* (See McClellan and Girling, assignors.)						
Cunningham, Thomas, *et al.* (See Brown, Franklin, assignor.)						
Cunningham, Thomas G., Fayetteville, Tenn. Mail-bag fastener	574,138	Dec. 29	3704	883	77	2043
Cunningham, William R., assignor to Wallace Manufacturing Company, Frankfort, Ind., Brick or tile cutting machine	573,263	Dec. 15	2066	494, 495, 496	77	1708
Cuppers, William A., Jr., Revere, assignor to American Soda-Fountain Company, Boston, Mass. Apparatus for ornamenting soft-metal hollow ware	568,839	Oct. 6	208	50	77	41
Curley, George, Salt Lake City, Utah. Saucepan-cover	568,970	Oct. 6	435	97	77	84
Curley, Thomas, Troy, N. Y. Lemon-juice extractor	569,747	Oct. 20	1828	433	77	373
Curley, Thomas, Waltham, Mass. Door-check	571,153	Nov. 10	1326	309	77	913
Curry, Charles J., Key West, Fla. Device for securing spokes to wheel-rims	574,139	Dec. 29	3705	883	77	2044
Curtis, Daniel D., Sidney Centre, N. Y. Bedstead-joint	572,412	Dec. 1	586	139	77	1390
Curtis, Frederic A., assignor to Wheel Company, Anderson, Ind. Gearing	570,698	Nov. 3	522	122	77	735
Curtis, George A., Malden, assignor to C. F. Baker, Boston, Mass. Heel-nail	574,140	Dec. 29	3706	884	77	2044
Curtis, George W., Long Grove, Iowa. Liquid-measuring device	571,217	Nov. 10	1419	331	77	930
Curtis, Will C. (See Kious, Jasper D., assignor.)						
Curtis, William G., and J. D. Isaacs, San Francisco, Cal. Car and retort for wood-preserving plants	570,746	Nov. 3	606	139	77	749
Cuscaden, Robert, and W. F. Poiesz, Philadelphia, Pa. Loom	572,246	Dec. 1	265	64	77	1329
Cushman, Henry W., *et al.* (See Gross, Elmer S., assignor.)						
Custer, Levitt E., Dayton, Ohio. Electrical muffle or heater	569,911	Oct. 20	2089	497	77	421
Custodis, Alphons, Dusseldorf, Germany. Scale for weighing gaseous substances	569,177	Oct. 13	789	185	77	167
Cutler, Arther E., and R. Donkin, Mosman, New South Wales. Hydraulic compensating pump or engine	569,091	Oct. 6	645	147, 148, 149	77	124
D. K. Miller Lock Company. (See Jackson and Taylor, assignors.)						
D. M. Osborne & Company. (See Sharp, Charles S., assignor.)						
Dabbs, James V., *et al.* (See Bidwell, Alonzo, assignor.)						
Daellenbach, Charles R., and J. R. Phillips, assignors to Ellwood Tin-Plate Company, Ellwood City, Pa. Branning-machine	573,450	Dec. 22	2454	582	77	1797
Dahlberg, Gustaf L. R., Somerset, N. J. Easel	569,410	Oct. 13	1202	283	77	244
Dahlberg, Gustaf L. R., Somerset, N. J. Easel	574,242	Dec. 29	3938	937	77	2085
Dain, Albert E., Pittsburg, Pa. Vehicle axle-bearing and hub	573,394	Dec. 15	2311	552	77	1753
Dain, Joseph Jr., Carrollton, Mo. Corn-harvester	572,967	Dec. 15	1556	373	77	1612
Dale, Charles H. (See Schaeffer and Dale.)						
Dale, Thomas, Kirkcaldy, Scotland. Machine for printing linoleum or floor-cloth, &c	573,965	Dec. 29	3386	810, 811, 812, 813	77	1986
Dales, William R., Brooklyn, N. Y. Bait-guard	573,572	Dec. 22	2657	631	77	1835
Dallas, Alexander, and O. P. Amick, Herington, Kans. Fluid-pressure brake	572,871	Dec. 8	1364	330	77	1558
Dalton, Edward E., Menominee, Mich. Window-sash lock	570,007	Oct. 27	2264	538	77	466
Dalton-Ingersoll Company. (See Scott, William, assignor.)						
Daly, John P., Savannah, Ga. Combined can-opener, screw-driver, tack-puller, and hammer.	574,197	Dec. 29	3845	917	77	2068
Dame, John E., Brooklyn, N. Y. Heater	573,451	Dec. 22	2457	583	77	1797
Damon, Charles E., assignor to Edgar Manufacturing Co., Reading, Mass. Nutmeg-grater.	571,218	Nov. 10	1421	332	77	931
Danckwardt, Paul, New York, N. Y. Process of and apparatus for producing cyanids	569,325	Oct. 13	1056	250	77	218
Danforth, Oscar L., Mansfield, Ohio. Barber's turn	569,178	Oct. 13	789	185	77	167
Dangler, Karl H., Steubenville, Ohio. Composition for glass	572,968	Dec. 15	1558	.....	77	1613

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dangler, Karl H., Steubenville, Ohio. Composition for fire-brick	572,969	Dec. 15	1558	.....	77	1613
Daniels, Fred H., Worcester, Mass. Manufacture of tinned wire	573,573	Dec. 22	2658	631	77	1835
Daniels, H. S., *et al.* (See West, William H. H., assignor.)						
Daniels, Howard, Atlanta, Ga., assignor of one-half to J. H. Simonson, Fort Wayne, Ind. Lumber-piling machine	570,868	Nov. 3	816	189, 190	77	790
Daniels, Howard, Atlanta, Ga., assignor of one-half to J. H. Simonson, Fort Wayne, Ind. Lumber-piler	570,869	Nov. 3	819	190, 191	77	791
Daniels, John P., Chicago, Ill., assignor to F. B. Meck, Davenport, Iowa. Alarm-lock for bicycles	571,083	Nov. 10	1193	280	77	889
Danner, Albert E. S. (See Mitchell, Gideon D., assignor.)						
Darby, Ion. (See Darby, Walter and I.)						
Darby, Ion. (See Darby and Punchard.)						
Darby, Walter and I., assignors of one-third to J. H. Punchard, London, England. Heating attachment for oil-stoves	571,722	Nov. 17	2275	546	77	1103
Darby, Walter and I., and J. H. Punchard, London, England. Water-heating apparatus	569,815	Oct. 20	1936	460, 461	77	392
Darby, Walter and I., and J. H. Punchard, London, England. Heating-stove	569,816	Oct. 20	1938	461	77	393
Darling, Ernest T., assignor of two-thirds to F. Hanks and O. E. Crouch, Colfax, Ill. Lamp-filler	572,502	Dec. 1	725	172, 173	77	1415
Darling, Jeremiah, Erlanger, Ky. Cultivating implement	571,130	Nov. 10	1292	300	77	906
Darnell, Calvin F., Indianapolis, Ind. Fence	569,276	Oct. 13	962	230	77	199
Darrow, Frank L. (See Nash, Alice C., assignor.)						
Darrow, Jennie C. (See Newton, Daniel H., assignor.)						
Darrow, Oliver A., O'Fallon, Ill. Oil-separator	569,016	Oct. 6	519	119	77	99
Dashiell, Robert B., Washington, D. C. Gun-mount	573,210	Dec. 15	1975	476	77	1692
Dashiell, Robert B., Washington, D. C., assignor to Hathaway High Explosive Company, New York, N. Y. Fuse for high explosives	571,342	Nov. 17	1633	388	77	986
Dauber, August, Bochum, Germany. Gas-generator	570,008	Oct. 27	2265	538	77	466
Dauber, August, Bochum, Germany. Calcining-furnace	573,140	Dec. 15	1858	447	77	1671
Dandelin, Felix E., Chicago, Ill. Work-table for paper-hangers	572,698	Dec. 8	1075	262	77	1503
Daugherty, James D., Kittanning, assignor to Daugherty Typewriting Company, Pittsburg, Pa. Type-writing-machine platen	569,092	Oct. 6	648	149	77	124
Daugherty Typewriting Company. (See Daugherty, James D., assignor.)						
Daughtrey, Thomas R. L., and A. M. Cowart, Punta Gorda, Fla. Insect-trap	573,814	Dec. 22	3091	734	77	1918
Davenport, Herbert, Paterson, N. J. Reed for warping	569,179	Oct. 13	791	185, 186	77	167
David, Cyrenius A., *et al.* (See Gilliland, Lee O., assignor.)						
Davidson, Charles W. (See Reynolds, Noah H., assignor.)						
Davidson, Frank B., Chicago, Ill. Paper box	571,512	Nov. 17	1924	459	77	1039
Davidson, Herbert E. (See Hunter and Davidson.)						
Davidson, James W., Syracuse, N. Y. Bag-filler	571,513	Nov. 17	1926	459	77	1039
Davidson, John M., assignor to J. V. Scaife, Allegheny, Pa. Filter	570,910	Nov. 10	893	208	77	833
Davidson, Le Grand B., Denver, Colo., assignor of one-half to W. C. Allen, Philadelphia, Pa. Cutting and panning machine	570,870	Nov. 3	821	191	77	792
Davies, Ebenezer P., Scranton, Pa. Toaster	573,574	Dec. 22	2660	632	77	1835
Davies, Edward, and A. Harrison, Adelaide, South Australia. Protector for pneumatic tires	572,159	Dec. 1	117	28	77	1300
Davis, Benjamin F. (See Gannon, Robert M., assignor.)						
Davis, Bethuel M., Peoria, Ill. Combined door closer and stop	573,395	Dec. 15	2312	553	77	1753
Davis, Charles F. (See Woodworth, Charles H., assignor.)						
Davis, Edward L., Buffalo, N. Y. Water-closet joint	571,471	Nov. 17	1844	439	77	1094
Davis, Fred H. M., Los Angeles, Cal. Horse-power pumping-machine	571,993	Nov. 24	2776	655, 656	77	1218
Davis, George H., New York, N. Y. Electrical self-playing piano	570,911	Nov. 10	895	208	77	833
Davis, Harry P., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electric-arc lamp	569,817	Oct. 20	1940	462	77	393
Davis, Harry P., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electric-arc lamp	569,818	Oct. 20	1941	462	77	393
Davis, James M., *et al.* (See Sebastian, Charles, assignor.)						
Davis, Jerome E. (See Kerr, Charles, assignor.)						
Davis, Jerome E., Oak Park, Ill. Rack for presses	569,547	Oct. 13	1419	336	77	285
Davis, John, Allegheny, Pa. Filter	572,196	Dec. 1	176	43	77	1312
Davis, Jordon G. (See Morris, Thomas R., assignor.)						
Davis, Leonard D., Erie, Pa. Tubulous steam-boiler	571,650	Nov. 17	2151	516	77	1080
Davis, Linval W., Mineral, W. Va. Telephone-switchboard	568,840	Oct. 6	210	50	77	42
Davis, Nathan H., Philadelphia, Pa. Axle-box lid	570,912	Nov. 10	898	209	77	834
Davis, Samuel Y., and H. O. Mooney, Farmington, N. H. Shade-roller	574,141	Dec. 29	3707	884	77	2044
Davis, Septimus, *et al.* (See Gorrell, William R., assignor.)						
Davis, William D., Fort Assiniboine, Mont. Riding-saddle	568,939	Oct. 6	377	85	77	73
Davis, William E., and S. A. Miller, Centralia, Pa. Combination hitching-post and cut-off plug	569,819	Oct. 20	1943	462	77	394
Davis, William F. (See McPherron, William R., assignor.)						
Davis, William T., Battle Creek, Mich. Governor	570,461	Nov. 3	36	8	77	645
Davison, Albert, Belvidere, Ill. Gate	572,475	Dec. 1	675	161	77	1407
Davy, William H., Pewaukee, Wis. Chair	572,503	Dec. 1	727	173	77	1416
Dawson, John A., assignor of one-half to J. J. McCaughey, Northville, S. D. Newspaper-rack	572,336	Dec. 1	440	104	77	1363
Dawson, Lydia E., Downing, Wis. Ironing-table	570,462	Nov. 3	38	9	77	646
Day, John, *et al.* (See Armstrong, Charles M., assignor.)						
Day, Sherman W., assignor of one-half to I. C. Ewing, Avonmore, Pa. Hose-coupling	568,841	Oct. 6	211	50	77	42
Day, Stillman, assignor to F. A. Whitney Carriage Company, Leominster, Mass. Hub-attaching device	568,894	Oct. 6	306	70	77	59
Day, Willard W., Kossuth, Ohio. Windmill-gearing	569,277	Oct. 13	962	230	77	200
Dayton Gas Engine and Manufacturing Company. (See Weinman and Euchenhofer, assignors.)						
De Borggrave, Felix, Jersey City, N. J. Boat	574,083	Dec. 29	3596	859	77	2025
De Gear, Jefferson D., San Francisco, Cal. Steam-beer governor	570,086	Oct. 27	2408	570	77	495
De Graffenried, Allen. (See De Graffenried, Charles T. and A.)						
De Graffenried, Charles T. and A., Savannah, Ga. Nut-lock	573,397	Dec. 15	2314	553	77	1753
De Leon, Carlos, Hamilton, Ohio, assignor to National Autographic Register Company, New York, N. Y. Numbering-machine	571,487	Nov. 17	1875	447	77	1029
De Marce, Gilbert. (See Stephens and De Marce.)						
De Moss, John P., Jr., Grand Pass, Mo. Harrow	573,505	Dec. 22	2546	603	77	1813

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
De Mott, Charles W., assignor of one-fourth to D. P. Bloodgood, Brooklyn, N. Y. Electric gas-lighting apparatus	571,723	Nov. 17	2276	516	77	1104
De Remer, Jared R., assignor of one-half to C. W. Durand, Glenwood Springs, Colo. Boiler tube or flue	573,646	Dec. 22	2819	666	77	1867
De Rome, Louis, San Francisco, Cal. Bicycle	571,302	Nov. 10	1567	372	77	960
De Steiger, Joseph L., La Salle, Ill. Fruit-jar	574,306	Dec. 29	4040	960	77	2105
De Tamble, Edward S., assignor to Union Embossing Machine Company, Indianapolis, Ind. Embossing-machine	572,197	Dec. 1	177	43	77	1312
De Vilbiss, Allen, Toledo, Ohio. Bone-forceps	571,040	Nov. 10	1114	261	77	874
Deadwyler, Joseph P., Fort Lamar, Ga. Adjustable spine-protecting back-band	573,396	Dec. 15	2313	553	77	1753
Deal, Josiah J., Canton, Ohio. Toy	570,595	Nov. 3	301	74	77	694
Dean, Alvin H. B., New Bedford, Mass. Washing-machine	572,337	Dec. 1	441	104	77	1363
Dean, Frank H., Seymour, Wis. Stump-puller	572,598	Dec. 8	899	217	77	1468
Dean, Truman W. (See Meats and Dean.)						
Dean, William W., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Telephone-exchange system	573,575	Dec. 22	2662	632	77	1836
Dean, William W., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Common battery telephone system	573,576	Dec. 22	2664	632	77	1836
Deane, Albert L., *et al.* (See Coleman, Clyde, assignor.)						
Dearborn, George W., Lynn, Mass. Seat for counters	571,651	Nov. 17	2153	517	77	1080
Dearmont, Lee, Mound City, Mo. Sliding gate	571,343	Nov. 17	1635	388	77	986
Debombourg, Guillaume, Collonges, France, assignor of one-half to G., J., and A. Saxon, Openshaw, England. Forging and welding machine	571,344	Nov. 17	1636	388	77	987
Dechenne, Henry A., Woburn, Ill. Mop-wringer	568,895	Oct. 6	307	70	77	59
Deck, Henry, assignor to J., W. P. M., and J. F. Braun, Philadelphia, Pa. Lawn-mower	570,699	Nov. 3	523	122	77	736
Deck, Thomas F., Swanton, Ohio. Level	573,211	Dec. 15	1979	476	77	1693
Decker, Judd. (See Waite, John H., assignor.)						
Decker, William L., Worcester, Mass. Crank and pedal	571,753	Nov. 24	2334	563	77	1137
Deering Harvester Company. (See Hanson, Paul, assignor.)						
Degener, Heinrich, Rummelsburg, and R. Deissler, Treptow, Germany; said Degener assignor to said Deissler. Draft-regulator for locomotives	570,983	Nov. 10	1011	235, 236	77	855
Dehn, Carl W., assignor to C. J. Rosen, Jr., Topeka, Kans. Rail-joint	569,036	Oct. 6	553	127	77	105
Delhm, John R., Pottsville, Pa. Folding bedstead	569,548	Oct. 13	1423	336	77	285
Deimel, Francis. (See Gras, Charles A., assignor.)						
Deissler, Robert. (See Degener and Deissler.)						
Deissler, Robert, Treptow, Germany. Combined spark-arrester and draft-regulator	570,984	Nov. 10	1012	236	77	855
Deissler, Robert, Treptow, Germany. Combined draft-regulator and spark-arrester	570,985	Nov. 10	1015	236, 237	77	856
Deitsch, Charles and E. J., New York, N. Y. Combined waist and skirt pin and belt slide and keeper	574,084	Dec. 29	3598	860	77	2025
Deitsch, Edward J. (See Deitsch, Charles and E. J.)						
Delahunt, Charles, Olathe, Kans. Means for rigidly connecting parts of buildings with each other and with the foundations	573,452	Dec. 22	2459	583	77	1798
Delaney, John, assignor to Helme & McIlhenny, Philadelphia, Pa. Prepayment sale and delivery mechanism	569,147	Oct. 6	735	172, 173, 174	77	139
Delaney, John, assignor to Helme & McIlhenny, Philadelphia, Pa. Prepayment sale and delivery mechanism	569,148	Oct. 6	742	174	77	140
Dellinger, Thomas G., assignor to L. Schmidt, Bremond, Tex. Horseshoe	570,278	Oct. 27	2752	655	77	560
Dellwik, Carl, Rogers Park, Ill. Apparatus for manufacturing fuel-gas	570,382	Oct. 27	2971	704	77	600
Dellwik, Carl, Rogers Park, Ill. Gas-generating apparatus	570,383	Oct. 27	2973	705	77	600
Delmar, William J. (See Nicolaus and Delmar.)						
Delong, Richard, Torch Lake, Mich. Meat-tenderer	572,527	Dec. 8	770	183	77	1440
Deming, Ferdinand, Waterbury, Conn. Safety-pin	571,943	Nov. 24	2695	638	77	1203
Demorest, Allen T., assignor of one-half to M. L. Wilson, A. T. Dimmick, and W. D. Sinclair, Belding, Mich. Wall-rack	570,384	Oct. 27	2975	705	77	600
Demorest, Charles, Fort Ann, N. Y. Toy	571,754	Nov. 24	2356	563	77	1137
Denayrouze, Louis, Paris, France. Automatic speed-regulator for electromotors	573,767	Dec. 22	3017	714, 715	77	1904
Denekas, Claas, Washington, D. C. Machine for cutting yeast-cakes	571,345	Nov. 17	1637	389	77	987
Denig, Augustus M., Riverside, Cal. Fruit-picker's basket or can	570,385	Oct. 27	2976	705	77	600
Denis, James H., *et al.* (See Morris, James E., assignor.)						
Denis, Jules, Wygmael, Belgium. Sieve for flour-mills	571,219	Nov. 10	1422	332	77	931
Denmead, John W., Akron, Ohio, assignor to Diamond Match Company, Chicago, Ill. Match	571,154	Nov. 10	1327	309	77	913
Dennin, Edwin C. (See Lundquiste, Charles P., assignor.)						
Dennis, Clara E. (See Dennis, James W., assignor.)						
Dennis, Henry P., assignor of two-thirds to J. H. Ellis and A. D. Potter, Peoria, Ill. Automatic weighing and filling apparatus	572,504	Dec. 1	728	173	77	1416
Dennis, James W., assignor to C. E. Dennis, Cincinnati, Ohio. Dental tool and plugger	569,093	Oct. 6	649	149	77	124
Densmore Typewriter Company. (See Merritt, Mortimer G., assignor.)						
Dentenax Company. (See Campbell, John S., assignor.)						
Denton, Herbert B., Lake View, Minn. Hoist-drum	574,085	Dec. 29	3599	860, 861	77	2025
Denton, Lemi B., assignor of one-half to O. A. Ward, Grand Rapids, Mich. Caster-case	569,959	Oct. 20	2184	518	77	438
Dentzel, Gustav A., Philadelphia, Pa. Carousel	573,577	Dec. 22	2666	632	77	1837
Denver Automatic Car Coupler Company. (See Moe, Leonidas L., assignor.)						
Depew, Granson. (See Frick, Louis C. S., assignor.)						
Deport, Joseph A., Paris, France. Gun-carriage	571,557	Nov. 17	2003	476	77	1052
Des Granges, John C., *et al.* (See Burton, Charles C., assignor.)						
Detling, Charles E., Ausonia, Ohio. Corn-harvester	569,549	Oct. 13	1424	337	77	285
Detrick, Jacob S., Baltimore, Md. Bottle-sealing device	572,338	Dec. 1	442	104	77	1363
Detrick, James, King's Ferry, N. Y. Combined carpet-stretcher and tack-holder	570,463	Nov. 3	39	9	77	646
Dettmar, John F., executor. (See Weeks, John, assignor.)						
Detwiler, Alfred E., assignor to Milwaukee Gas Stove Company, Milwaukee, Wis. Gas-burner	571,431	Nov. 17	1778	424	77	1012
Deutsche Bierfass-Antomat-Gesellschaft. (See Dräger, Heinrich and B., assignors.)						
Devoe, Benjamin G., Lima, Ohio. Hydrocarbon generator and burner	568,748	Oct. 6	58	14	77	14
Devore, Levi M., Freeport, Ill. Device for repairing pneumatic tires	570,155	Oct. 27	2525	599	77	517
Dewey, A. T. (See Barney, Edward, assignor.)						
Dewey, Edwin B., Jamestown, N. Y. Printer's chase	572,413	Dec. 1	586	139	77	1390
Dial, Robert, Chelsea, Ind. Ter. Fence-making machine	573,815	Dec. 22	3091	735, 736	77	1918

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dial, Wilbur F. (See Dimond and Dial.)						
Diamond Match Company. (See Denmead, John W., assignor.)						
Diamond Match Company. (See Whelan, Henry W., assignor.)						
Diamond Truck and Car Gear Company. (See Gee, Horace L., assignor.)						
Dick, George A., London, England. Apparatus for treating heated metals under pressure	571,265	Nov. 10	1504	355, 356	77	947
Dick, George A., London, England. Apparatus for manufacturing wire, &c., from copper	572,872	Dec. 8	1367	330, 331	77	1559
Dickerboom, Frederick, Windom, Minn. Device for attaching harness to vehicle-shafts	572,873	Dec. 8	1369	331	77	1559
Dickerson, Edward N., New York, N. Y., and J. J. Suckert, Ridgewood, N. J. Pressure-reducing valve	571,346	Nov. 17	1639	389	77	987
Dickerson, Malcolm, Fort Wayne, Ind. Electric conduit and appurtenances	569,618	Oct. 20	1571	369	77	328
Dickinson, Charles, New Britain, Conn. Holder for powder-papers	571,041	Nov. 10	1115	261	77	874
Dickinson, Joseph H., Trenton, N. J. Aerial tramway	570,386	Oct. 27	2977	705, 706	77	601
Dickinson, Joseph H., Trenton, N. J. Aerial tramway	570,387	Oct. 27	2979	706	77	601
Dickson, Archibald A., Toronto, Canada. Reducing metallic sand or pulverized ores	569,820	Oct. 20	1944	462	77	394
Dickson, Archibald A., Toronto, Canada. Reducing metallic sand or pulverized ores	569,821	Oct. 20	1946	463	77	394
Dickson, George A. (See Boyd, Henry P., assignor.)						
Diehl, Philip, Elizabeth, N. J., assignor to Singer Manufacturing Company, of New Jersey. Shuttle for sewing-machines	573,864	Dec. 29	3196	761	77	1951
Diehl, Justus, New York, N. Y. Upright piano	570,787	Nov. 3	669	153	77	761
Dietz, Charles, Chicago, Ill. Vehicle-starter	572,970	Dec. 15	1559	373, 374	77	1613
Dietz, Conrad, Covington, Ky. Washing-machine	569,619	Oct. 20	1572	370	77	328
Dietz, Conrad, West Covington, Ky. Bearing and journal for washing-machines	572,745	Dec. 8	1169	280, 281	77	1520
Dill, William F., Philadelphia, Pa. Wagon-standard	571,514	Nov. 17	1927	460	77	1039
Dillenburg, Michel, San Francisco, Cal. Trolley-way	572,874	Dec. 8	1371	331	77	1560
Dilley, Zena J., and H. J. Hayes, Muir, Mich. Bicycle-support	570,464	Nov. 3	39	9	77	646
Dilley, Zena J., and H. J. Hayes, Muir, Mich. Wall attachment for supporting bicycles	570,465	Nov. 3	41	10	77	646
Dillon, Benjamin R., Providence, R. I. Bottle	571,515	Nov. 17	1928	460	77	1039
Dillon, Peter, assignor of one-half to H. C. King, Lawrence, Mass. Apparatus for recording output of machinery	571,110	Nov. 10	1251	291	77	899
Dillon, Thomas L., Nashville, Tenn. Gable ornament	569,550	Oct. 13	1426	337	77	286
Dils, Joseph M., South Bend, Ind. Show-case	569,620	Oct. 20	1573	370	77	328
Dimick, Augustus D., Wakefield, Mass. Side guard for open cars	569,786	Oct. 20	1891	449	77	384
Dimmick, Alvin T., *et al.* (See Demorest, Allen T., assignor.)						
Dimond, George H., and W. F. Dial, assignors to Wheeler & Wilson Manufacturing Company, Bridgeport, Conn. Seam-trimming mechanism	568,896	Oct. 6	308	71	77	59
Dingee, William W., assignor to J. I. Case Threshing Machine Company, Racine, Wis. Pneumatic stacker	571,898	Nov. 24	2619	620, 621	77	1187
Dinkey, Alva C., Munhall, Pa. Rheostat	570,009	Oct. 27	2266	538, 539	77	466
Dinkle, Charles F., Carlisle, Pa. Power-transmitting device	573,768	Dec. 22	3018	715	77	1905
Dion, Charles, Paris, France, assignor of one-fourth to O. D. Barrett, Washington, D. C. Device for treating near-sightedness	570,279	Oct. 27	2753	655	77	560
Disch, Charles F., New Haven, Conn. Bank	569,860	Oct. 20	2009	479	77	406
Disrud, Gabriel, Forward, Wis. Calf-weaner	572,339	Dec. 1	443	105	77	1363
Diss, Albert B., Brooklyn, N. Y., assignor, by mesne assignments, to Thomas Braid Company, of New York. Braiding-machine	572,357	Dec. 1	477	112	77	1369
Ditmar, Gerhard, Vienna, Austria-Hungary. Annular liquid-combustible burner for incandescent lights	573,578	Dec. 22	2668	633	77	1837
Diven, Samuel L. (See Forrey, George J., assignor.)						
Dixon, Alexander H. (See Steele, John C., assignor.)						
Dixon, John H., Marietta, Ohio. Meter	572,414	Dec. 1	587	140	77	1310
Dixon, Thomas, McKeesport, Pa. Combined pipe and nut wrench	569,037	Oct. 6	554	128	77	106
Dixon, Thomas B., Henderson, Ky. Track instrument	570,700	Nov. 3	525	122	77	736
Dixon, Thomas B., Henderson, Ky. Track instrument	571,472	Nov. 17	1846	440	77	1025
Dobrick, August C., assignor to Turner Brass Works, Chicago, Ill. Electric-arc lamp	569,487	Oct. 13	1311	309	77	264
Docharty, Augustus T., *et al.* (See Grobet, Charles E., assignor.)						
Dodd, John, Cleveland, Ohio. Gas-meter	573,399	Dec. 15	2315	554	77	1754
Dodd, Silas N., Toledo, Iowa. Calculating device	573,506	Dec. 22	2347	603, 604	77	1814
Dodd, T. L. (See Chisolm, William G., assignor.)						
Dodd, William T., Prescott, Wash. Desk	571,652	Nov. 17	2154	517	77	1081
Doddridge, John S., *et al.* (See Vulpius, Herman, assignor.)						
Doddridge, William B., St. Louis, Mo. Railway-ditcher	572,875	Dec. 8	1371	332	77	1560
Dodge, James M., assignor to Link-Belt Engineering Company, Philadelphia, Pa. Conveyer	571,347	Nov. 17	1641	389	77	988
Dods, John C., assignor to J. Green, St. Louis, Mo. Gas-generator	571,558	Nov. 17	2005	476, 477	77	1052
Doering, Charles, Library, Pa. Vehicle brake-lever	571,854	Nov. 24	2530	599	77	1170
Doherty, Anthony, Jr., Baton Rouge, La. Lamp-chimney protector	571,131	Nov. 10	1294	300	77	906
Dohnal, Ignaz, Chicago, Ill. Shears	573,075	Dec. 15	1738	416	77	1648
Dolge, Rudolf, New York, assignor to C. F. Zimmermann Company, Dolgeville, N. Y. Harp	574,307	Dec. 29	4041	960	77	2105
Dolge, Rudolf, New York, assignor to C. F. Zimmermann Company, Dolgeville, N. Y. Harp	574,308	Dec. 29	4042	960	77	2105
Dolge, Rudolf, New York, assignor to C. F. Zimmermann Company, Dolgeville, N. Y. Harp	574,309	Dec. 29	4044	961	77	2105
Dollison, Jasper, and S. Rimer, Salesville, Ohio. Boot	570,201	Oct. 27	2609	620	77	533
Donahoo, John C. (See Donahoo, Patrick M., assignor.)						
Donahoo, Patrick M., Platteville, assignor of one-third to J. C. Donahoo, Cuba City, Wis. Horse-cleaner	573,570	Dec. 22	2670	633	77	1838
Donahue, William J., and W. B. Hausman, Philadelphia, Pa. Trolley-finder	571,994	Nov. 24	2782	656	77	1218
Donald, William, Saltcoats, assignor of one-half to R. Main, Stevenston Scotland Making chlorin	570,624	Nov. 3	383		77	709
Donaldson, Hay F., London, England. Lift or hoist for warehouses	570,913	Nov. 10	899	209	77	834
Donally, Melvin E., New York, N. Y. Bottling apparatus	569,180	Oct. 13	793	186	77	167
Donato, Cornelius, *et al.* (See Donato, John B. G., assignor.)						
Donato, John B. G., assignor of one-tenth to C. Donato and T. S. Fontenot, Opelousas, La. Liquid supply system	570,844	Nov. 3	774	177	77	783

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Donbavand, Joseph E., Millville, N. J. Block-signal system	569,351	Oct. 13	1427	337, 338, 339	77	286
Donkin, Reginald. (See Cutler and Donkin.)						
Donnell, James W., *et al.* (See Coleman, Clyde, assignor.)						
Donnell, John G. (See Hartman and Donnell.)						
Donnell, John W. (See Friede, Samuel M., assignor.)						
Donnellon, Alice, Brooklyn, N. Y. Hook and eye for garments	572,528	Dec. 8	771	183	77	1440
Dooley, Charles E. (See Claypool and Dooley.)						
Doolittle, John H., Greystone, Conn. Chain-machine	568,749	Oct. 6	59	15	77	14
Doolittle, William W., assignor to Crane Company, Chicago, Ill. Facing-machine	572,599	Dec. 8	901	217, 218, 219	77	1469
Doran, Joseph M., Ogden, Utah. Train-pipe	571,755	Nov. 24	2358	563	77	1138
Doray, Joseph P., Worcester, Mass. Window-frame	570,701	Nov. 3	528	122	77	736
Dore, Evariste, assignor of one-half to A. Chouinard, Minneapolis, Minn. Sled	569,621	Oct. 20	1574	370	77	328
Dorman, George E., assignor to J. E. Dorman, Chicago, Ill. Dynamo-electric machine	570,914	Nov. 10	900	209	77	834
Dorman, John E. (See Dorman, George E., assignor.)						
Dormire, Philip. (See Bidelman, Thomas, assignor.)						
Dorsey, Parmer, Bellmont, Ill. Engine	571,348	Nov. 17	1642	390, 391	77	988
Dorn, Christian, and N. Reinstine, Philadelphia, Pa. Bottle-stopper and bottle	569,181	Oct. 13	796	186	77	168
Dorn, Clare M., Chautauqua, N. Y. Appliance for coupling cars	572,675	Dec. 8	1031	250	77	1495
Dornan, Thomas B., Philadelphia, Pa. Carpet fabric	574,023	Dec. 29	3492	834	77	2005
Dougherty, Parke C. (See Worrall, Clarence A., assignor.)						
Douglas, Anna M., Leamington, England. Bedstead for invalids	572,529	Dec. 8	771	183, 184	77	1440
Douglass, John. See Smith, John P., assignor.)						
Douthett, William C., Pittsburg, Pa. Means for transmitting motion	570,871	Nov. 3	828	192	77	793
Dow, Albert N., Exeter, N. H. Ruling-pen and holder	569,038	Oct. 6	556	128	77	106
Dow, Alexander, New York, N. Y., assignor to Dow Composing Machine Company, of West Virginia. Type-distributer	572,050	Nov. 24	2870	675, 676, 677, 678, 679	77	1235
Dow Composing Machine Company. (See Dow, Alexander, assignor.)						
Dowd, Frank, Cleveland, Ohio. Safety apparatus for street or other railways	572,971	Dec. 15	1560	374, 375	77	1613
Dowd, John P. (See Kurz, August W., assignor.)						
Dowden, Charles H., Newark, N. J. Circuit-closer for burglar-alarms	569,861	Oct. 20	2010	479	77	406
Downes, Charles. (See King, Downes, and Waddington.)						
Downes, Louis W., assignor of one-half to W. C. Woodward, Providence, R. I. Cut-out for electric circuits	569,373	Oct. 13	1134	270	77	233
Downey, William, Worcester, Mass. Apparatus for tapping pipes or mains	572,786	Dec. 8	1238	299	77	1532
Downs, Lewis A., Chicago, Ill. Corset	572,787	Dec. 8	1240	299	77	1533
Downs, William, New York, and A. H. Blackburn, Matteawan, N. Y. Feed-water heater	572,247	Dec. 1	268	65	77	1329
Dows, Justin N. (See Bailey, George F., assignor.)						
Dräger, Bernhard. (See Dräger, Heinrich and B.)						
Dräger, Heinrich and B., assignors, by mesne assignments, to Deutsche Bierfass-Automat-Gesellschaft, Lubeck, Germany. Receptacle for preserving, transporting, and selling beer, &c	572,248	Dec. 1	269	65	77	1330
Drake, Charles C., Trenton, N. J. Automatic circuit breaker and closer	569,960	Oct. 20	2184	518	77	438
Draper, Eben S. and G. O., assignors to G. Draper & Sons, Hopedale, Mass. Loom	574,142	Dec. 29	3710	884	77	2044
Draper, George A., Hopedale, Mass., assignor to Northrop Loom Company, Saco, Me. Loom	573,264	Dec. 15	2070	496	77	1708
Draper, George O. (See Draper, Eben S. and G. O.)						
Draper, George O., Hopedale, Mass., assignor to Northrop Loom Company, Hopedale, Mass., and Saco, Me. Loom-heddle	569,149	Oct. 6	746	174	77	141
Draper & Sons, George. (See Bracken, Howard W., assignor.)						
Draper & Sons, George. (See Draper, Eben S. and G. O., assignors.)						
Draper & Sons, George. (See Draper and Northrop, assignors.)						
Draper & Sons, George. (See Mooney, Timothy, assignor.)						
Draper & Sons, George. (See Shuttleworth, Alpheus C., assignor.)						
Draper & Sons, George. (See Smith, Oberlin, assignor.)						
Draper & Sons, George, *et al.* (See Montgomery, John R., assignor.)						
Draper, William F. (See O'Sullivan, John E., assignor.)						
Draper, William F., and J. H. Northrop, assignors to G. Draper & Sons, Hopedale, Mass. Self-threading loom-shuttle	569,862	Oct. 20	2011	479	77	407
Draper, William F., and J. H. Northrop, Hopedale, Mass., assignors to Northrop Loom Company, Hopedale, Mass., and Saco, Me. Loom	572,746	Dec. 8	1171	281	77	1520
Draube, Eva, New Orleans, La. Ring for curtain, mosquito-bar, and other poles	568,897	Oct. 6	309	71	77	60
Drawbaugh, Daniel, Eberly's Mill, Pa. Substance for telephone-electrodes	570,845	Nov. 3	777	.....	77	793
Dreadner, Isidor, Brooklyn, N. Y. Fur-plucking machine	568,750	Oct. 6	68	15	77	16
Dressel, Charles H., New York, N. Y. Car signaling device	570,156	Oct. 27	2527	599	77	517
Dresser, Solomon R., Bradford, Pa. Repair device for stopping leaky joints	571,220	Nov. 10	1424	332	77	931
Drew, Charles L. (See Carter and Drew.)						
Draw, John H. (See Carter and Drew.)						
Drew, Walter J., assignor to Bissell Carpet Sweeper Company, Grand Rapids, Mich. Display-stand	569,961	Oct. 20	2185	518	77	439
Dreyfus, Edward, *et al.* (See Williams, Alfred G., assignor.)						
Dreyfus, Leon, *et al.* (See Loesser, Edward E., assignors.)						
Driver, George E. (See Williams, William M., assignor.)						
Drobisch, Judson H., Decatur, Ill. Bonus-determining device	573,076	Dec. 15	1739	416	77	1649
Drosch, Charles, *et al.* (See Warn, Edward T., assignor.)						
Drucklieb, Charles A., *et al.* (See Pattison, Richard, assignor.)						
Drummond, Ward B., Minneapolis, Minn. Folding fire-hose trestle	569,622	Oct. 20	1575	370	77	329
Drury, Alfred C., and G. E. Sims, Canton, N. Y. Bicycle-saddle	569,326	Oct. 13	1057	251	77	218
Drysdale, Hugh, Cleveland, Ohio. Hair-clipper	574,243	Dec. 29	3939	937	77	2085
Drysdale, William A., Overbrook, Pa. Armature jack	573,323	Dec. 15	2192	524	77	1731
Du Bois, Dallas, Montclair, N. J. Puzzle	569,863	Oct. 20	2013	480	77	407
Du Bois, Edwin, Ralston, Pa. Apparatus for tanning	573,077	Dec. 15	1740	417	77	1640
Du Pont, Francis G., Wilmington, Del. Machine for shaping smokeless powder	569,669	Oct. 20	1659	392, 393	77	344
Dubois, Samuel H., Fall River, Mass. Ring-spinning frame	570,986	Nov. 10	1017	237	77	856
Duckworth, Caleb, Colne, England. Fruit-cleaning machine	573,769	Dec. 22	3019	715	77	1905

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dudley, James, Killbuck, Ohio. Grab for hoisting-chains	569,448	Oct. 13	1256	295	77	253
Duell, Charles H. (See Terry, Eugene, assignor.)						
Duff, Alfred B. (See Duff, Edward J. and A. B.)						
Duff, Edward J., Glengarriff, near Liverpool, England, and A. B. Duff, Pittsburg, Pa. Boiler-furnace	573,265	Dec. 15	2071	496	77	1709
Duffield, Charles H., Philadelphia, Pa. Tilting appliance for jars of soda-fountains	573,453	Dec. 22	2461	583, 584	77	1798
Duisburger Eisen und Stahlwerke. (See Bicheroux, Toussaint, assignor.)						
Duke, Alexander, Brooklyn, N. Y. Strainer for discharge-spouts for washbasins	572,788	Dec. 8	1240	300	77	1533
Dukehart, Thomas M., *et al.* (See Hall, William H., assignor.)						
Dumas, Melbert, Ripon, Wis. Bedstead	570,788	Nov. 3	670	154	77	761
Dun, Robert G., *et al.* (See McKechnie, Archibald E., assignor.)						
Dunaway, Oscar E., and D. N. Jones, Hardaway, Ala. Spike-extractor and railway-tie lifter	569,552	Oct. 13	1437	339	77	287
Dunbar, Alexander, Liverpool, England. Apparatus for closing staves	571,516	Nov. 17	1929	460	77	1040
Duncan & Co., J. (See Werner, Paul F., assignor.)						
Duncan, Nancy P., Pittsburg, Pa. Casing or shield for pots or kettles	571,829	Nov. 24	2483	589	77	1162
Duncan, Robert, San Francisco, Cal. Insulator-hanger	573,966	Dec. 29	3396	814	77	1988
Duncan, Thomas, Fort Wayne, Ind. Wattmeter	573,078	Dec. 15	1741	417, 418	77	1649
Duncan, Thomas, Fort Wayne, Ind. Meter for measuring electric currents	573,079	Dec. 15	1747	418, 419	77	1650
Duncan, Thomas, Fort Wayne, Ind. Electric meter	573,080	Dec. 15	1750	419, 420, 421	77	1651
Duncan's Sons & Co., George. (See Miller, John E, assignor.)						
Dunham, Ralph E., Warthen, Ga. Pea-planter	572,876	Dec. 8	1373	333	77	1560
Dunlap, Joseph L., Wadesborough, N. C. Ventilator for railway-cars	572,877	Dec. 8	1374	333	77	1560
Dunlop, Henry W. D., Lucan, assignor to Dunlop's Patent Truck Company, Limited, Dublin, Ireland. Car or carriage	569,094	Oct. 6	650	150	77	124
Dunlop's Patent Truck Company. (See Dunlop, Henry W. D., assignor.)						
Dunmore, Lewis N., Douglass, Kans. Flue and smoke-stack protector	572,415	Dec. 1	588	140	77	1390
Dunn, Benjamin F., and J. C. Bronaugh, Kansas City, Mo. Theatrical structure	573,141	Dec. 15	1859	447, 448	77	1671
Dunn, Beverly W., U. S. Army. Chronometric apparatus	572,699	Dec. 8	1077	262	77	1503
Dunn, Dennis, Mahanoy City, Pa. Fluid-pressure brake	570,915	Nov. 10	902	210	77	835
Dunn, Seely. (See Williams, Edwin C., assignor.)						
Dunning, Robert, Buffalo, N. Y. Pilot for cars	572,652	Dec. 8	990	238, 239	77	1486
Dunphy, James A., Groton, Mass., assignor to Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Last-clasp for lasting-machines	569,182	Oct. 13	798	187	77	168
Dunshee, Carlos E., assignor of one-half to W. C. Streabell, Chicago, Ill. Newspaper-holder	569,553	Oct. 13	1439	339	77	287
Duplex Printing Press Company. (See Bechman, Henry F., assignor.)						
Duplex Weaving Appliance Company. (See Simpson, William, assignor.)						
Dupmeyer, Guillaume, Antwerp, Belgium. Furnace-grate	571,111	Nov. 10	1255	291	77	899
Durand, C. W. (See De Remer, Jared R., assignor.)						
Durand Manufacturing Company. (See Blackford, Atwell J., assignor.) (Reissue.)						
Durfee, Edgar G. (See Cleveland, George A., assignor.)						
Dürr, Ludwig, Bremen, Germany. Petroleum-vapor burner with overheater	568,842	Oct. 6	213	50	77	42
Duryea, James F., assignor to Duryea Motor Wagon Company, Springfield, Mass. Motor-vehicle	572,051	Nov. 24	2880	679, 680	77	1237
Duryea Motor Wagon Company. (See Duryea, James F., assignor.)						
Dustin, Leander, assignor to E. R. Andrews and A. L. Lehnkering, Rochester, N. Y. Magazine-camera	571,995	Nov. 24	2783	656, 657	77	1218
Dutcher Temple Company. (See Stimpson, Wallace I., assignor.)						
Dutro, Oliver T., Buffalo, N. Y. Stone-dressing machine	570,466	Nov. 3	43	10, 11	77	646
Dwyer, Edward L., Cambridge, Mass. Street-car sign	570,747	Nov. 3	607	139	77	750
Dyer, Clarence E. (See Ringe, Matthew, assignor.)						
Dyer, Isaac T., assignor to Dyer Power Company, Chicago, Ill. Wheel-pump	573,580	Dec. 22	2670	633	77	1838
Dyer, Isaac T., assignor to Dyer Power Company, Chicago, Ill. Electric engine	573,584	Dec. 22	2672	634	77	1838
Dyer Power Company. (See Dyer, Isaac T., assignor.)						
Dyer, William E., and F. Soley, Philadelphia, Pa.; said Soley assignor to said Dyer. Padlock	572,653	Dec. 8	992	239	77	1487
E. C. Atkins & Company. (See Atkins and Coyle, assignors.)						
E. C. Atkins & Company. (See Meyer, George, assignor.)						
E. D. Jones & Sons Company. (See McSweeney, James, assignor.)						
E. H. Jacobs Manufacturing Company. (See Livesey, Charles P., assignor.)						
E. H. Stafford Company. (See Field, Frank, assignor.)						
E. & H. T. Anthony & Company. (See Trueman, William, assignor.)						
E. J. Brooks & Company. (See Brooks, Edward J., assignor.)						
E. J. Manville Machine Company. (See Campbell, Andrew C., assignor.)						
E. Jenckes Manufacturing Company. (See Rowe, James E., assignor.)						
E. W. Ross Company. (See Woodman, John J., assignor.)						
Eads, Oliver T., Harvey, Ill. Badge	569,039	Oct. 6	557	128	77	106
Earle, Edward J. V. (See Reid and Earle.)						
Eastern Electric Company. (See Hogan, John J., assignor.)						
Eastman Kodak Company. (See Brownell, Frank A., assignor.)						
Easton, James W., Brooklyn, N. Y., assignor to L. H. Slaght, Waterford, Canada, and S. G. Metcalf, New York, N. Y. Method of and apparatus for regulating dynamo-electric generators or motors	570,663	Nov. 3	457	108	77	724
Eastwood Wire Manufacturing Company. (See Frisbie, Henry R., assignor.)						
Eaton, Arthur W. (See Hamm and Eaton.)						
Eaton, Joseph S. (See Meats and Eaton.)						
Eaton, William S., Sag Harbor, N. Y. Engraving	573,967	Dec. 29	3397	814	77	1988
Eberman, Joseph W., assignor of two-thirds to L. J. Lewis and E. Bellew, Croton-on-the-Hudson, N. Y. Low-water alarm	574,143	Dec. 29	3711	884	77	2045
Eberhardt, William. (See Burgin, John F., assignor.)						
Ebert, Octavius S., Galesburg, Ill. Vehicle-axle	569,183	Oct. 13	799	187	77	168
Ebert, Octavius S., Galesburg, Ill. Nut-lock	571,066	Nov. 10	1155	270	77	882
Ebert, Octavius S., Galesburg, Ill. Axle-nut lock	571,067	Nov. 10	1156	270	77	882
Eby, Amos, Leaman Place, Pa. Deflector	574,024	Dec. 29	3495	835	77	2005
Eckert, Hiram, Marine City, Mich. Curtain-pole	572,249	Dec. 1	271	66	77	1330
Eckhardt, Heinrich, Toledo, Ohio, assignor of one-half to H. Bartelt, Cedarburg, Wis. Educational appliance	572,972	Dec. 15	1562	375	77	1614
Eddowes, William, Newark, N. J. Photographic vignetter	572,928	Dec. 8	1474	354	77	1581

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Eddy, George W., assignor to A. J. and H. C. Clayton, Bristol, Conn. Door-bell	570,202	Oct. 27	2609	620	77	533
Edgar Manufacturing Co. (See Damon, Charles E., assignor.)						
Edgecomb, Harry A., Mechanics Falls, Me., assignor of one-half to H. Stansfield, Haverhill, Mass. Dental plugger or mallet	574,025	Dec. 29	3496	835	77	2005
Edgecomb, John S., Mystic, Conn. Paper-cutter	572,358	Dec. 1	480	112	77	1370
Edgerton, Charles, Philadelphia, Pa. Water-tube boiler	572,476	Dec. 1	677	162	77	1407
Edmiston, Robert H., Los Angeles, Cal. Trigonometrical elucidator	570,157	Oct. 27	2528	599	77	517
Edmunds, Henry, London, England. Armoring or covering for electric cables	569,748	Oct. 20	1829	434	77	373
Edquist, Andrew, Denver, Colo. Clamp-joint	571,042	Nov. 10	1116	261	77	875
Edward Miller & Company. (See Homan, William C., assignor.)						
Edward Miller & Company. (See Williams, Frank T., assignor.)						
Edwards, Arthur H., and J. Hazard, Wheatland, Mo. Combined square and level	568,751	Oct. 6	70	16	77	16
Edwards, Dolph, assignor of one-half to J. C. Thorpe, Sanford, Fla. Bottle	572,477	Dec. 1	678	162	77	1408
Edwards, Edward W., Johnstown, Pa. Nut-lock	573,840	Dec. 22	3146	749	77	1928
Edwards, Isaac L. (See Cota and Edwards.)						
Edwards, James A., assignor to J. A. Cooper, Owosso, Mich. Folding seat for vehicles	574,310	Dec. 29	4046	961	77	2106
Edwards, John J. (See Barbour and Edwards.)						
Edwards, Oliver M., Syracuse, N. Y. Window	570,916	Nov. 10	903	210	77	835
Edwards, Richard J., Galena, Ill. Car-coupling	569,374	Oct. 13	1136	270, 271	77	233
Edwards, Thomas C. (See Thompson and Edwards.)						
Edwards, William B., and G. E. Potter, Holyoke, Mass. Dough-mixer	569,449	Oct. 13	1256	295	77	254
Edwin Harrington, Son & Company. (See McGregor, John A., assignor.)						
Eggert, George E., Scranton, Pa. Combination pencil-tip	570,248	Oct. 27	2696	641	77	549
Ehbets, Carl J., assignor to Colt's Patent Fire Arms Manufacturing Company, Hartford, Conn. Gas-operated magazine-gun	570,388	Oct. 27	2980	706, 707	77	601
Ehrhardt, William, Union, N. J. Multifuse cut-out	568,971	Oct. 6	436	97	77	84
Eibee, Carl, Brooklyn, N. Y. Coal-bucket	571,303	Nov. 10	1569	372	77	960
Eichhorn, Augustus, Orange, N. J. Steam-radiator	569,040	Oct. 6	558	128, 129	77	106
Eichhorn, Augustus, Orange, N. J. Steam-fitting	571,612	Nov. 17	2091	502	77	1068
Eisele, Stephen A., San Antonio, Fla. Nut-lock	570,917	Nov. 10	908	211	77	836
Eisenberg, Christian, Berlin, Germany. Nailless horseshoe	569,623	Oct. 20	1576	371	77	329
Eisenhut, Laurense C., Brooklyn, N. Y. System for collecting water from wells	574,198	Dec. 29	3847	917	77	2068
Eisenhuth, John W., San Francisco, Cal. Expansion gas-engine	574,311	Dec. 29	4047	961, 962	77	2106
Elder, Edward E., Lynn, Mass., assignor to Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Machine for making bungs, &c	569,554	Oct. 13	1439	339, 340, 341	77	287
Elder, Edward E., Lynn, and H. S. Kelly, Salem, Mass., assignors to Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Machine for making bungs	569,488	Oct. 13	1313	309, 310, 311	77	264
Elder, Edward E., and E. H. Taylor, Lynn, Mass., assignors to Elder Manufacturing Company, Portland, Me., and Lynn, Mass. Machine for making bungs, &c	569,555	Oct. 13	1445	341, 342	77	289
Elder, James A., assignor of one-half to R. Hardwick, Galena, Kans. Flooring and ceiling tool	571,432	Nov. 17	1779	424	77	1013
Elder Manufacturing Company. (See Elder, Edward E., assignor.)						
Elder Manufacturing Company. (See Elder and Kelly, assignors.)						
Elder Manufacturing Company. (See Elder and Taylor, assignors.)						
Elder, Samuel S., Springfield, Ill. Tire for vehicle-wheels	569,864	Oct. 20	2014	480	77	407
Eldridge, Hilliary, D. J. Clark, and M. W. Wambaugh, Galveston, Tex. Composition of matter for manufacturing calcium carbid	571,084	Nov. 10	1194	.....	77	889
Eldridge, Lewis, Marilla, N. Y. Neck-yoke	572,530	Dec. 8	773	184	77	1440
Electric Bulletin Company. (See Jennings, Franklin A., assignor.)						
Electric Car Company of America. (See Hunter, Rudolph M., assignor.)						
Electric Chemical Company. (See Porsch, Ottokar, assignor.)						
Electric Gas Lighting Company. (See Thomson, Henry C., assignor.)						
Electric Motor Company. (See Merritt, Frank W., assignor.)						
Electric Rectifying and Refining Company. (See Pridham, Marshall, assignor.)						
Electric Storage Battery Company. (See Madden, Albert F., assignor.)						
Electro Gas Company. (See Willson, Thomas L., assignor.)						
Electro-Magnetic Traction Company. (See Westinghouse, George, assignor.)						
Electro-Metallurgical Company. (See Georges, Ernest A., assignor.)						
Electro-Metallurgical Company. (See Placet and Bonnet, assignors.)						
Ellson, Oliver, Concord, Nebr. Device for demonstrating financial problems	571,613	Nov. 17	2092	502	77	1068
Elkin, Charles, Jersey City, N. J., assignor to Singer Manufacturing Company, of New Jersey. Account-card	570,249	Oct. 27	2697	641, 642	77	549
Ellermann, Friedrich W., assignor to M. Engl and F. Wüste, Vienna, Austria-Hungary. Accumulator or secondary battery	572,198	Dec. 1	178	.....	77	1312
Elliot, Joseph M., Philadelphia, Pa. Photographic camera	569,328	Oct. 13	1060	251, 252	77	219
Elliott, George C., Chicago, Ill., assignor, by mesne assignments, to W. P. Hatch, New York, N. Y. Type-writing machine	573,081	Dec. 15	1754	421	77	1651
Elliott, James W., Corsicana, Tex. Cotton elevator and distributer	571,473	Nov. 17	1849	440	77	1025
Elliott, Walter V. (See Watrous, Thomas A., assignor.)						
Ellis, Charles A., and E. S. Miller, Kansas City, Kans. Pneumatic cushion for elevators	572,531	Dec. 8	774	184	77	1440
Ellis, George H., and J. F. Steward, Chicago, Ill. Gear for motocycles	570,203	Oct. 27	2611	620, 621	77	534
Ellis, George L. (See Ellis, James M., assignor.)						
Ellis, James M., assignor of one-half to G. L. Ellis, Galesburg, Ill. Cant-hook for lumbermen	573,844	Dec. 22	3150	751	77	1929
Ellis, John, assignor of one-half to C. H. Van Pelt, Jersey City, N. J. Miter-box	569,327	Oct. 13	1058	251	77	218
Ellis, John H., *et al.* (See Dennis, Henry P., assignor.)						
Ellwood Tin-Plate Company. (See Daellenbach and Phillips, assignors.)						
Elmore, Riverious P., Chicago, Ill. Hand-power rock-drilling machine	573,454	Dec. 22	2462	584	77	1798
Ely, Frederick. (See Mason and Ely.)						
Emerson Company. (See Emerson, Victor L., assignor.)						
Emerson & Fisher Company. (See Burchill, Thomas, assignor.)						
Emerson, Ralph. (See Young, Charles H., assignor.)						
Emerson, Victor L., assignor to Emerson Company, Baltimore, Md. Lumber-truck	569,962	Oct. 20	2186	519	77	439
Emery, Charles B., Boston, Mass. Feed-trough	574,312	Dec. 29	4051	962	77	2107
Emery, Harry, and W. Morgan, High Bridge, N. J. Milk-can	573,865	Dec. 29	3197	761	77	1951
Emery, John B., Lynn, Mass. Sole-trimming machine	572,878	Dec. 8	1375	333	77	1561

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Emery, Lewis, Jr. (See Whitmore, Edwin B., assignor.)						
Emlong, George. (See Grove and Emlong.)						
Emmerich & Vonderlehr. (See Funk, Nelson E., assignor.)						
Emmert, Charles S. (See Creager, Samuel, assignor.)						
Emmet, Nathaniel P., Newburg, N. Y. Flushing device for water-closets	573,582	Dec. 22	2674	634	77	1839
Emmett, George, Attleborough, assignor to New England Electric Supply Company, Boston, Mass. Electric switch	569,576	Oct. 13	1497	353	77	299
Emmons, John W., Brooklyn, N. Y. Bridle-blind	571,944	Nov. 24	2696	638	77	1203
Emond, William H., Boston, Mass. Carriage-gear	574,313	Dec. 29	4052	962	77	2107
Empire Drill Company. (See Mason, Charles H., assignor.)						
Empire Plow Company. (See Haiman, Huettich, and Bishop, assignors.)						
Empire Type Setting Machine Company. (See Hughes, Charles D., assignor.)						
Endres, John, Madison, Wis. Window	570,918	Nov. 10	909	211	77	837
Engel, Clement, New York, N. Y. Toy	568,972	Oct. 6	438	98	77	84
Engelhardt, Christian. (See Klemm, Hermann A., assignor.)						
Engelhardt, Victor, and A. Nettel, Vienna, Austria-Hungary. Treating metallic sulfids	568,843	Oct. 6	214	51	77	42
Engl, Moricz, *et al.* (See Ellermann, Friedrich W., assignor.)						
English, Fred G., Rochester, N. Y. Thill-coupling	570,846	Nov. 3	778	177	77	783
English, Richard, S. Vann, and A. H. Jones, Albuquerque, N. Mex. Ter. Sash-fastener	573,866	Dec. 29	3198	761	77	1951
Engman Olof, Kewanee, Ill. Combination-tool	569,963	Oct. 20	2188	519	77	439
Engstrom, Axel H. (See Immendorf and Engstrom.)						
Ennes, Carrie C. (See Ennes, Lorenzo D., assignor.)						
Ennes, Lorenzo D., assignor to C. C. Ennes, Lyons, Ind. Well-drilling machine	572,973	Dec. 15	1564	375, 376	77	1614
Enos, Alanson T. (See Schmidt, George A., assignor.)						
Enos, J. W., *et al.* (See West, William H. H., assignor.)						
Enos, John A., Washington, D. C. Gas-generating machine	571,221	Nov. 10	1425	333	77	931
Epstein, Baer, New York, N. Y. Revolving stand for photographs	573,968	Dec. 29	3399	814	77	1988
Erb, Louis M., Leavenworth, Kans. Automatic trolley-switch	571,517	Nov. 17	1930	460	77	1040
Erben, Carl, assignor to E. Bergmann, Berlin, Germany. Electric meter	573,092	Dec. 15	1756	421, 422	77	1652
Erben, John. (See Koch and Erben.)						
Erdbrink, Christian, Hanover, Germany. Oil-port lid for railway-car axle-boxes	574,026	Dec. 29	3497	835, 836	77	2005
Erickson, Erick H., Minneapolis, Minn. Artificial limb	573,266	Dec. 15	2072	407	77	1709
Ericsson, John N., Chicago, Ill. Gravity-motor	573,583	Dec. 22	2676	634, 635, 636	77	1839
Ertheiler, Philip H., assignor to W. Z. Ertheiler and L. A. Borneman, Philadelphia, Pa. Cigar-box	571,945	Nov. 24	2697	638	77	1203
Ertheiler, Wilhelmina Z., *et al.* (See Ertheiler, Philip H., assignor.)						
Ervin, James M., Cleveland, Ohio. Sectional brick-mold	573,455	Dec. 22	2465	585	77	1799
Eschler, Richard T. (See Richter and Eschler.)						
Eschwei, Charles, Long Island City, N. Y. Electric-arc lamp	571,946	Nov. 24	2699	639	77	1203
Espegren, John N., Omaha, Nebr. Rotary pump	571,756	Nov. 24	2359	564	77	1138
Essick, Walter S., Reading, Pa. Nose-piece gage for eyeglasses	572,106	Dec. 1	17	5	77	1281
Essick, Walter S., assignor to Interchangeable Frameless Spectacle Company, Limited, Reading, Pa. Frameless spectacles or eyeglasses	572,107	Dec. 1	18	5	77	1281
Essick, Walter S., Reading, Pa., and C. S. Rees, Selma, Ala., assignors, by mesne assignments, to Interchangeable Frameless Spectacle Co., Limited, Reading, Pa. Frameless spectacles or eyeglasses	570,625	Nov. 3	384	91	77	709
Estabrook, Alanson C., Northampton, Mass. Device for making covered eyelets	568,940	Oct. 6	378	86	77	73
Estabrook, Alanson C., Northampton, Mass. Device for use in punching from sheets of plastic material	568,941	Oct. 6	381	86	77	73
Estabrook, Alanson C., Northampton, Mass. Assembling and transferring mechanism for eyelets	572,340	Dec. 1	444	105	77	1364
Estabrook, Alanson C., Northampton, Mass. Mirror	573,770	Dec. 22	3020	716	77	1905
Estes, John H., assignor of one-half to J. W. Springer, Everton, Mo. Washing-machine	571,304	Nov. 10	1570	373	77	960
Estey, David M. (See Angell, John W., assignor.)						
Etheridge, Carrol L., Peryear, Tenn. Post-winder and wire-fastener	573,771	Dec. 22	3021	716	77	1905
Etly, David J., Louisville, Ky. Advertising device	569,095	Oct. 6	651	150	77	125
Etly, David J., Louisville, Ky. Paper reel and printer	569,096	Oct. 6	652	151	77	125
Etnyre, Edward D., Oregon, Ill. Portable water-tank	573,584	Dec. 22	2678	636	77	1840
Ettinger, Samuel F. (See Rice and Ettinger.)						
Eubank, Thomas, Little Rock, Ark., assignor to American Railway Equipment Company, East St. Louis, Ill. Truck-end casting	569,964	Oct. 20	2189	519, 520	77	439
Eubank, Thomas, Little Rock, Ark., assignor to American Railway Equipment Company, East St. Louis, Ill. Draft-rigging	570,987	Nov. 10	1018	237, 238	77	856
Euchenhofer, Edward E. (See Weinman and Euchenhofer.)						
Evans, Arthur G., London, England. Pulley for wires of railway-signals and point-bolts	569,007	Oct. 6	506	114	77	96
Evans, Lynden. (See Fisher, William, assignor.)						
Evans, Nash J., assignor to Bonsack Machine Company, Salem, Va. Manufacture of cigarettes	569,184	Oct. 13	801	187	77	168
Evans, Roland, Washington, D. C. Neck-yoke	573,507	Dec. 22	2549	604	77	1814
Evans, Samuel J., Elkhorn, W. Va. Extension-step	571,996	Nov. 24	2785	657	77	1219
Evans, William, Philadelphia, Pa. Finishing-roll	572,532	Dec. 8	776	185	77	1441
Evans, William, Philadelphia, Pa. Machine for treating hides, skins, or leather	572,533	Dec. 8	777	186	77	1441
Even, Adam, Port Washington, Wis. Snow-plow	572,747	Dec. 8	1172	281, 282	77	1520
Evens, Edward L., Malvern, South Australia. Velocipede	573,456	Dec. 22	2467	585	77	1799
Everest, Myra L., Clayton, N. Y. Oven-door for cooking stoves or ranges	572,193	Dec. 1	179	44	77	1312
Everett, Edward H., and A. Samuelson, Newark, Ohio. Conveyer for articles of glass	570,626	Nov. 3	386	91, 92	77	709
Everhard, Henry H., Massillon, Ohio. Steam-boiler furnace	568,752	Oct. 6	72	16	77	17
Everline, John E. (See Wagner, Christian, assignor.)						
Eversman, John G., Denver, Colo. Envelop-moistener	569,185	Oct. 13	803	187	77	169
Evetts, James, and F. C. Schurz, Chicago, Ill. Annealing metal castings	570,919	Nov. 10	911	211	77	837
Ewen, Arthur C., *et al.* (See Clark and Munger, assignors.)						
Ewers, Frank H. (See Pyle, George C., assignor.)						
Ewing, George A., *et al.* (See Wood, James B., assignor.)						
Ewing, Ira C. (See Day, Sherman W., assignor.)						
Excelsior Wrapper Company. (See Shadbolt, Helon F., assignor.)						
Exeter Machine Works. (See Le Grand, Augustus L., assignor.)						
Exley, John H., Bradford, England. Apparatus for manufacturing acetylene gas	569,708	Oct. 20	1757	417	77	360
Eynon, Thomas M., Philadelphia, Pa. Apparatus for improving combustion in furnaces	569,329	Oct. 13	1063	252	77	219

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ezzell, Fletcher, assignor of one-half to P. T. Shields, San Antonio, Tex. Wrench	574,314	Dec. 29	4053	962	77	2107
F. A. Whitney Carriage Company. (See Day, Stillman, assignor.)						
Faber du Faur, Adolf, Newark, assignor to R. Atherton, Paterson, N. J. Multiplier for looms	572,250	Dec. 1	271	66	77	1330
Faber du Faur, Adolf, and A. Gartner, Newark, assignors to R. Atherton, Paterson, N. J. Box-loom	572,251	Dec. 1	274	66, 67	77	1331
Fabien, Remy. (See Lagelouze, Gueton, assignor.)						
Fabrik Lochmann'scher Musicwerke, Actien-Gesellschaft. (See Heine, Arthur, assignor.)						
Fagan, William, *et al.* (See Layton, Edward L., assignor.)						
Failor, Edward. (See Carne and Failor.)						
Fairchild, Ben L., assignor, by mesne assignments, to Mergenthaler Linotype Company, New York, N. Y. Means for justifying type	572,974	Dec. 15	1566	376	77	1615
Fairchild, Charles B., New York, N. Y., assignor of one-eighth to D. W. Bosley, Chicago, Ill. Vehicle-brake	569,150	Oct. 6	747	174, 175	77	141
Fairchild, Charles B., New York, N. Y., assignor of one-eighth to D. W. Bosley, Chicago, Ill. Vehicle-brake	572,939	Dec. 8	1491	358	77	1584
Fairman, Frank E. (See Hanna and Fairman.)						
Faitoute, James B., Newark, N. J. Elastic waistband	569,411	Oct. 13	1203	283	77	244
Fales, Edward, Winthrop, Mass. Grate for stoves or furnaces	574,315	Dec. 29	4054	963	77	2107
Fales, Ferris R., Syracuse, N. Y. Chin-support for laying out the dead	573,178	Dec. 15	1918	460	77	1682
Fales, Thomas, Bridgeport, Cal. Car-coupling	572,416	Dec. 1	589	140	77	1390
Falk, Moses, New York, N. Y. Air-tight package	571,112	Nov. 10	1256	292	77	899
Fall, Albert W., Hoboken, N. J. Game apparatus	571,997	Nov. 24	2786	657	77	1219
Farbwerke, vormals Meister, Lucius & Brüning. (See Brasch, Richard, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Hinsberg, Oscar, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Laubmann, Heinrich, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Pintti, Arnaldo, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Schiff, Roberto, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Storck, Fritz, assignor.)						
Farbwerke, vormals Meister, Lucius & Brüning. (See Ullrich and Gallois, assignors.)						
Faris, Richard W., assignor of one-fourth to W. A. Ransom, Jr., Murfreesborough, Tenn. Windlass water-elevator	570,702	Nov. 3	530	123	77	736
Farnell, George T., Bayborough, N. C. Money-changer	569,912	Oct. 20	2091	497, 498	77	421
Farnham, Frank G., Honesdale, Pa. Rotary brush	571,559	Nov. 17	2006	477	77	1053
Farnsworth, Erwin D., Newark, N. J. Switch-operating device	572,292	Dec. 1	361	86	77	1348
Farnsworth, Ezra, Minneapolis, Minn. Bicycle-support	571,433	Nov. 17	1781	425	77	1013
Farnum, William C., Arlington, Vt. Type-writing machine	570,158	Oct. 27	2529	600	77	518
Farnum, William C., Arlington, Vt. Type-writing machine	570,159	Oct. 27	2531	600, 601	77	518
Farnum, William C., Arlington, Vt. Type-writing machine	571,757	Nov. 24	2360	564	77	1138
Farquhar, Frank S., Uniontown, Pa. Combined dough-board and bread-cutting tray	571,349	Nov. 17	1644	391	77	988
Farr, Henry H., *et al.* (See Kennel, Joseph A., assignor.)						
Farrell, James P. (See Kehoe, Michael J., assignor.)						
Farrell, Thomas A., Chicago, Ill. Music-leaf turner	574,244	Dec. 29	3942	937	77	2056
Farrell, Thomas J., and W. Clancy, Virginia City, Mont. Wagon-brake	573,585	Dec. 22	2679	637	77	1840
Farrington, Claude S. (See Storm, Alfred W., assignor.)						
Farrington, De Witt C., Washington, D. C. Earpiece for telephone-receivers	572,108	Dec. 1	20	5	77	1282
Farrington, Mary A., Boston, Mass. Garment-supporter	571,222	Nov. 10	1427	333	77	932
Farwell, Fay O., assignor of one-half to Adams Company, Dubuque, Iowa. Front grate	573,816	Dec. 22	3095	736	77	1919
Faulconer, R. C., trustee. (See Fredrick, William, assignor.)						
Faulconer, R. C., trustee. (See Fredrick and Wachter, assignors.)						
Faulkner, Hugh, Leicester, England, assignor, by mesne assignments, to F. W. Morgan and R. Wright, Chicago, Ill. Pneumatic tire	571,947	Nov. 24	2700	639	77	1204
Faut, Charles H., Palestine, Ind. Wire-reel	570,920	Nov. 10	912	211	77	837
Favor, Moses P., Hill, N. H. Thill-coupling	569,577	Oct. 13	1498	353	77	299
Favrow, Michael, St. Cloud, Minn. Roller-mill adjustment	571,266	Nov. 10	1507	356	77	947
Fawcett, Francis B. (See Webb, Whittall, and Fawcett.)						
Fawcett, Francis B., Kidderminster, assignor to G. M. Whittall, Spring Bank, Wribbenhall, England. Jacquard apparatus	569,749	Oct. 20	1829	434	77	373
Fay, Rimmon C., Ilion, assignor to Remington Arms Company, New York, N. Y. Bicycle-wheel	570,250	Oct. 27	2698	642	77	549
Fay, Stillman M., assignor to J. T. Macdonald, Jr., Boston, Mass. Brake mechanism for elevators	572,789	Dec. 8	1241	300, 301	77	1533
Fayette, Henry W., assignor to A. M. Pierce, New York, N. Y. Oil-injector for boilers	571,350	Nov. 17	1645	391	77	988
Fearis, James H., Connersville, Ind. Envelop-sealer	571,873	Nov. 24	2562	607	77	1176
Feaz, Ernest A. (See Nicolans and Delmar, assignors.)						
Feder, Harry, New York, N. Y. Station-indicator	571,518	Nov. 17	1932	461	77	1041
Fee, John W., assignor of one-half to W. H. Price, Chicago, Ill. Ash-sifter	572,879	Dec. 8	1377	334	77	1561
Feeney, Bernard, *et al.* (See Conway, John, assignor.)						
Feist, John A. (See Hull, Forney, and Feist.)						
Feistner, William F., Newport, Ky. Lock	570,087	Oct. 27	2409	570	77	495
Felbel, Jacob, New York, N. Y. Type-writing machine	574,144	Dec. 29	3712	885	77	2045
Feldhanser, Philip, *et al.* (See Walsh, James R., assignor.)						
Feldhoff, Walter F., Chicago, Ill. Puzzle	570,921	Nov. 10	914	212	77	837
Feldmann, Wilhelm, Nuremberg, assignor to E. Lang. 's Erben, Cologne, Germany. Apparatus for increasing adhesion of driving-wheels of motor-vehicles for railways	573,772	Dec. 22	3022	716	77	1995
Feldmann, Wilhelm, Nuremberg, assignor to E. Langen's Erben, Cologne, Germany. Elevated railway with suspended vehicle	574,316	Dec. 29	4055	963	77	2108
Felix, Hans E. C. (See Claus, Püttmann, and Felix.)						
Fennell, Francis N. (See Crossley, Charles, assignor.)						
Fenner, George P., New London, Conn. Printing-press	572,478	Dec. 1	679	163	77	1408
Fensky, Gustav, Chesterton, Ind. Protector for railway defect-cards	573,324	Dec. 15	2193	525	77	1731
Ferguson, Edmund M., Pittsburg, Pa. Apparatus for shaping metals	570,010	Oct. 27	2267	539	77	467
Ferguson, George, Boston, Mass. Lasting-machine	569,017	Oct. 6	521	119, 120	77	99
Ferguson, Walter T., Bickley Mills, Va. Portable photographic dark room	571,085	Nov. 10	1195	281	77	889
Ferguson, William C., Jacksonville, Fla. Railway-rail	572,534	Dec. 8	779	186	77	1441
Ferguson, William J., assignor of one-half to W. G. H. Stump, Baltimore, Md. Lubricator	574,352	Dec. 29	4121	978	77	2120
Fergusson, Henry A., Jersey City, N. J. Bolt-cutting machine	571,434	Nov. 17	1782	425	77	1013
Fernandes, Louis J. A., New York, N. Y. Bottle and stopper	573,773	Dec. 22	3024	717	77	1906
Ferres, Ainslie W., Memphis, Tenn., assignor to W. M. Van Nortwick and T. R. Troendle, Batavia, Ill. Veneer-dish machine	570,088	Oct. 27	2412	570, 571, 572	77	496

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Ferris, Henry L., Harvard, Ill. Harrow-frame	569,913	Oct. 20	2095	496	77	422
Ferris, Henry L., Harvard, Ill. Fence-post	573,508	Dec. 22	2549	604	77	1814
Ferris, Henry L., assignor to Hunt, Helm & Ferris, Harvard, Ill. Door-hanger	569,965	Oct. 20	2190	520	77	440
Fey, William F., Cincinnati, Ohio. Combined cooling, condensing, and sterilizing apparatus	569,750	Oct. 20	1831	435	77	374
Fiechter, Louis B., Basle, Switzerland. Filtering material or fabric	570,219	Oct. 27	2641	625	77	539
Field, Frank, assignor to E. H. Stafford Company, Muskegon, Mich. Type-writer desk	569,914	Oct. 20	2096	499	77	422
Field, Stephen D., Stockbridge, assignor to American Bell Telephone Company, Boston, Mass. Electromagnetic signal-receiving instrument	571,351	Nov. 17	1646	391, 392	77	989
Fielder, George B., *et al.* (See Johnston, Abner, assignor.)						
Fields, George W., and V. A. Boynton, Shannon City, Iowa. Twine-holder	574,317	Dec. 29	4056	963	77	2108
Filer & Stowell Company. (See Wilkin, Theodore S., assignor.)						
Fillebrown, Thomas, Boston, Mass. Easel	571,068	Nov. 10	1157	270	77	882
Filmer, John, *et al.* (See Gartner, Alfred, assignor.)						
Finger, Gilbert H., New York, N. Y., and W. J. Ford, Leicester, England. Leg-covering	571,918	Nov. 24	2655	629	77	1193
Fink, Christian, Philadelphia, Pa. Car-fender	569,330	Oct. 13	1064	252	77	220
Finley, Avard E., Everett, Mass. Railway switching apparatus	570,988	Nov. 10	1020	238	77	857
Fire Extinguisher Manufacturing Company. (See Robinson and Steck, assignors.)						
Fire Extinguisher Manufacturing Company. (See Steck, Ernst F., assignor.)						
Firmstone, Harry. (See Markley, John A., assignor.)						
Firth, William. (See Ulbrich, Richard C., assignor.)						
Fischer, Albert, assignor to American Tap Bush Company, Detroit, Mich. Tap and bushing	573,867	Dec. 29	3199	762	77	1951
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Making xanthin derivatives	569,489	Oct. 13	1318	.....	77	265
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Making derivatives of xanthin	569,490	Oct. 13	1320	.....	77	265
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Obtaining tetra-alkyl uric acid	571,352	Nov. 17	1653	.....	77	990
Fischer, Emil, Berlin, assignor to C. F. Boehringer & Soehne, Waldhof, Germany. Bromotheophyllin and making same	571,353	Nov. 17	1654	.....	77	990
Fischer, Ferdinand, Cheseaning, Mich. Wagon	570,467	Nov. 3	47	11	77	647
Fischer, John M., De Soto, Mo. Folding wagon-body	569,450	Oct. 13	1258	295, 296	77	254
Fischer, Max, Denver, Colo. Match-igniting and cigar-cutting device	572,942	Dec. 8	1497	358, 359	77	1585
Fishburne, W. Nevins. (See Appleman, Louis D., assignor.)						
Fisher, Alice M., *et al.* (See Fisher, Robert J., assignor.)						
Fisher, Howard D., Reading, Pa. Car-fender	569,624	Oct. 20	1577	371	77	329
Fisher, Lewis H., Walpole, Mass. Heat or draft regulator	569,166	Oct. 13	803	188	77	169
Fisher, Robert J., Athens, Tenn. Type-writing machine	569,491	Oct. 13	1322	311	77	266
Fisher, Robert J., Athens, Tenn. Type-writing machine	569,626	Oct. 20	1583	373, 374, 763	77	330
Fisher, Robert J., Athens, Tenn. Type-writing machine	569,627	Oct. 20	1587	374, 375	77	331
Fisher, Robert J., Athens, Tenn. Type-writing machine	572,535	Dec. 8	780	186, 187	77	1441
Fisher, Robert J., Athens, Tenn. Type-writing machine	573,868	Dec. 29	3200	762, 763	77	1952
Fisher, Robert J., assignor to A. M. Fisher, T. Stackpole, and W. M. Nixon, Athens, Tenn. Type-writing machine	569,625	Oct. 20	1578	371, 372, 373	77	329
Fisher, William, assignor to L. Evans, Chicago, Ill. Combined toilet-paper holder and advertising device	573,586	Dec. 22	2682	637	77	1840
Fitch, Eugene, East Molesey, England. Type-writing machine	570,389	Oct. 27	2990	707, 708	77	603
Fitzgerald, Harrington, and G. H. Zane, Philadelphia, Pa. Combined car platform and fender	572,700	Dec. 8	1079	262	77	1503
Fitzharris, E. J. (See Waters, John J., assignor.)						
Fitzmorris, John, *et al.* (See Atkinson, Mahlon B., assignor.)						
Flagg, George H. P., trustee. (See Webster, Harold A., assignor.)						
Flagg, James R., Frewsburg, and C. E. Lilly, Jamestown, N. Y. Railway switching device	569,751	Oct. 20	1833	435, 436	77	374
Flammang, Mathias, Newark, N. J., and F. Moniot, New York, N. Y. Photographic-plate holder	571,855	Nov. 24	2531	599	77	1170
Flanagan, Thomas J. (See Olney, Allan E., assignor.)						
Flanegin, Francis A., Washington, D. C. Method of and means for removing paraffin from oil-wells	573,142	Dec. 15	1861	448	77	1671
Flannigain, Edward, assignor of one-half to F. W. Klocke, St. Louis, Mo. Ball-bearing	572,880	Dec. 8	1379	334	77	1561
Fleischer, Otto H. (See Syme, David A., assignor.)						
Fleming, Thomas C., Ayr, Nebr. Cultivator	573,143	Dec. 15	1863	448, 449	77	1672
Flemming, Dudley D., Jersey City, N. J. Boiler-furnace	572,417	Dec. 1	591	140, 141	77	1390
Flesher, Henry L., Prairieton, Ind. Harrow	569,492	Oct. 13	1325	312	77	266
Fletcher, Charles R. (See Forsyth and Fletcher.)						
Fletcher, Donald, assignor to J. Fletcher, Denver, Colo. Bedside sash lift and lock	573,267	Dec. 15	2073	497	77	1709
Fletcher, Joseph, Clayton-le-Moors, and C. Brown, Preston, England. Sewing-machine	571,653	Nov. 17	2156	517, 518	77	1081
Fletcher, Julia. (See Fletcher, Donald, assignor.)						
Flett, George H. (See Cochran, Charles J., assignor.)						
Floeter, Philip C., Bay City, Mich. Automatic car-stopper for drawbridges	572,252	Dec. 1	278	67	77	1332
Flohr, Bridget A., administratrix. (See Flohr, Otto.)						
Flohr, Otto, deceased, Buffalo, N. Y.; B. A. Flohr, administratrix. Car-coupling	574,086	Dec. 29	3601	861	77	2026
Flood, Benjamin P., assignor of two-thirds to A. H. Comstock and R. R. Ballman, Omaha, Nebr. Perforating device	569,187	Oct. 13	804	188	77	169
Florence, Charles, Columbus, Ohio. Corn-planter	570,847	Nov. 3	780	178	77	784
Florence, George, assignor of one-half to R. D. Cole, Sr., Newnan, Ga. Machine for making twine or cord	572,479	Dec. 1	681	163	77	1409
Florence Manufacturing Company. (See Look, Frank N., assignor.)						
Flores, Alfredo, A. D., and M., San Antonio, Tex. Means for operating fans, &c	573,774	Dec. 22	3025	717	77	1906
Flores, Antonio D. (See Flores, Alfredo, A. D., and M.)						
Flores, Marcos. (See Flores, Alfredo, A. D., and M.)						
Flournoy, William T., Marionville, Mo. Barometer	572,536	Dec. 8	782	187	77	1442
Floyd, William G., *et al.* (See Turbeville, De Kalb, assignor.)						
Flucks, Paul, and G. P. McDonnell, St. Louis, Mo. Bicycle-bell	572,881	Dec. 8	1380	334, 335	77	1561

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fluehr, Emile, Sprague, Wash. Nut-lock	570,789	Nov. 3	670	154	77	762
Flye, Winfield W., East Hiram, Me. Toy or game device	570,544	Nov. 3	195	52	77	674
Flynn, John J., Aurora, Ill. Car-coupling	571,155	Nov. 10	1328	309	77	913
Flynt, Chester D., assignor of one-half to J. T. Jones, Brooklyn, N. Y. Journal-box	572,882	Dec. 8	1382	335	77	1562
Flynt, Chester D., assignor of one-half to J. T. Jones, Brooklyn, N. Y. Dust-guard for journal-boxes	572,883	Dec. 8	1383	335	77	1562
Focer, Daniel, Cape May, N. J., assignor to G. J. Richardson, trustee, Philadelphia, Pa. Dust-guard	571,354	Nov. 17	1655	392	77	990
Fogg, Charles H. (See Raymond and Fogg.)						
Folks, Thomas, assignor of one-half to A. R. Perry, New York, N. Y. Antirefilling bottle	573,775	Dec. 22	3026	717	77	1906
Fontaine, John L. (See Richner and Fontaine.)						
Fontenot, Theophile S. (See Donato, John B. G., assignor.)						
Foot & Brooks Company. (See Brooks, Stephen H., assignor.)						
Foote, J. Howard, *et al.* (See Craig, Gilbert T., assignor.)						
Forbes, Arthur A., St. Hyacinthe, Canada. Let-off mechanism for looms	569,865	Oct. 20	2015	480	77	407
Forbush, Orrin, Miller's Falls, Mass. Gage	573,457	Dec. 22	2468	585	77	1799
Force & Co., William A. (See Bartusch, Oswald, assignor.)						
Force, Robert J., Jamison City, Pa. Churn	573,400	Dec. 15	2317	554	77	1754
Ford, I. N. (See Whiteley, Ben, assignor.)						
Ford, Johnson & Co. (See Morris, Henry B., assignor.) (Reissue.)						
Ford, Micajah M. (See Revelle, Ford, and Kelley.)						
Ford, Samuel D., assignor of one-half to W. E. Trufant, Whitman, Mass. Box-nailing machine	572,418	Dec. 1	592	141	77	1391
Ford, William J. (See Finger and Ford.)						
Fordham, John N., Brooklyn, N. Y. Ash-sifter	569,041	Oct. 6	560	129	77	106
Fordyce, Edmond A., Chicago, Ill. Pneumatic-despatch apparatus	570,160	Oct. 27	2534	601, 602	77	518
Fordyce, Edmond A., Chicago, Ill. Pneumatic-despatch apparatus	570,161	Oct. 27	2536	602	77	519
Fordyce, Edmond A., Chicago, Ill. Means for controlling supply of motor fluid	570,162	Oct. 27	2537	602, 603	77	519
Fordyce, Edmond A., Chicago, Ill. Store-service apparatus	570,163	Oct. 27	2539	603	77	520
Fordyce, Edmond A., Chicago, Ill. Electric switchboard	572,748	Dec. 8	1175	282	77	1521
Forney, Jesse S. (See Hull, Forney, and Feist.)						
Forrey, George J., assignor of one-half to S. L. Diven, Carlisle, Pa. Electric-railway system	571,435	Nov. 17	1785	426, 427	77	1014
Forsberg, Fredrik, Sandviken, Sweden. Wire-reel	571,156	Nov. 10	1329	309, 310	77	914
Forschner, George S., New York, N. Y. Scale-pan	571,157	Nov. 10	1330	310	77	914
Forslund, Hugo W., Chicago, Ill. Engine	570,280	Oct. 27	2754	656	77	560
Forslund, Hugo W., Chicago, Ill. Compound steam-engine	573,869	Dec. 29	3206	763	77	1953
Forsman, Charles, New York, N. Y. Registry-block for electrotypes	572,884	Dec. 8	1384	335	77	1562
Forst, Emil M. (See Van Opstal and Forst.)						
Forster, John, St. Helens, England. Automatic railway signaling apparatus	569,008	Oct. 6	507	114, 115	77	96
Forsyth, Daniel M., Franklin, Ind. Ice-creeper	572,975	Dec. 15	1568	376	77	1615
Forsyth, James B., Boston, Mass. Safety stop device for grinders, &c	570,848	Nov. 3	782	178, 179	77	784
Forsyth, James B., and C. R. Fletcher, Boston, Mass. Apparatus for producing wire-bars by electrodeposition	570,125	Oct. 27	2474	586	77	507
Fosdick, Frederick, Fitchburg, Mass. Steam-engine	569,628	Oct. 20	1592	375	77	332
Fossett, William H., Walsenburg, Colo. Nut-lock	573,776	Dec. 22	3028	717	77	1906
Foster, Abraham G. W., Sargent, Ga. Plow-fender	571,223	Nov. 10	1428	334	77	932
Foster Bros., *et al.* (See Foster and Wilcox, assignors.)						
Foster Brothers Manufacturing Company of Baltimore City. (See Colvin, Frank D., assignor.)						
Foster, Charles E., Washington, D. C., assignor to Standard Equipment Company, Jersey City, N. J. Switch-stand	570,390	Oct. 27	2994	709	77	604
Foster, Ephriam A., Port Clinton, Ohio. Mail-bag catcher	570,468	Nov. 3	49	12	77	648
Foster, Jacob H., Rising City, Nebr. Ironing-table	571,158	Nov. 10	1331	310	77	914
Foster, Matthew H. (See Chase and Foster.)						
Foster, Oscar S., Utica, and F. E. Wilcox, Syracuse, assignors to Foster Bros., Utica, and F. E. Wilcox, Syracuse, N. Y. Slat-hanger for beds	572,600	Dec. 8	905	219	77	1469
Foster, Whilldin S., Philadelphia, Pa. Washing-machine	571,758	Nov. 24	2362	564	77	1139
Foth, William, Orange, N. J. Clamp for repairing bicycle-tires	568,753	Oct. 6	73	16	77	17
Fotheringham, John, assignor to Sweetmeat Automatic Delivery Company, Limited, London, England. Coin-freed apparatus for delivering tickets, sweetmeats, &c	570,849	Nov. 3	783	179, 180	77	784
Fouche, Joseph, Visalia, Cal. Plow	568,942	Oct. 6	384	87	77	74
Foulkes, Thomas L., *et al.* (See Burnham, Charles, assignor.)						
Fontrel, Emile, San Antonio, Tex. Wagon-standard	573,458	Dec. 22	2470	585	77	1800
Fowler, Albert C. (See Heald, Joseph C., assignor.)						
Fowler, Charles M., assignor to N. F. Tucker, Worcester, and A. A. Stebbins, Fitchburg, Mass. Window-fastener	572,052	Nov. 24	2884	681	77	1237
Fowler, Frank T. (See Aze, Emile, assignor.)						
Fowler, William F., Youngstown, Ohio. Binder	571,998	Nov. 24	2788	657	77	1219
Fowler, William M., Stamford, Conn. Liquid-meter	570,748	Nov. 3	609	140	77	750
Fox, Charles H., Cincinnati, Ohio, assignor to American Fire Engine Company, Seneca Falls, N. Y. Steam-fire-engine pump	569,966	Oct. 20	2192	520, 521	77	440
Fox, Clarence W. (See Blount, John G., assignor.)						
Fox, George, 2d, assignor of one-half to C. S. Wright, New York, N. Y. Fireproof door	570,391	Oct. 27	2997	709	77	604
Fox, Jacob E., Seattle, Wash. Circular saw	568,754	Oct. 6	74	17	77	17
Fox Machine Company. (See Fox, William R., assignor.)						
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Machine for cutting bicycle-tubing	570,850	Nov. 3	786	180	77	785
Fox, William R., assignor to Fox Machine Company, Grand Rapids, Mich. Bicycle-hub	572,976	Dec. 15	1570	376	77	1615
Frake Manufacturing Company. (See Paul, Isaac H., Jr., assignor.)						
Fraley, George B., Philadelphia, Pa., assignor to Globe Electric Heating Company. Electric heater	569,278	Oct. 13	964	231	77	200
Frambach, Matt J., Rock, Iowa. Fanning-mill	569,629	Oct. 20	1594	376	77	332
France, Edward W., and J. Buckler, Philadelphia, Pa. Jacquard mechanism for looms	570,703	Nov. 3	532	123	77	737
Francis, Frank E., Auburn, Me., assignor to Goodyear Shoe Machinery Company, Boston, Mass. Jack for shoe-machines	573,144	Dec. 15	1865	449	77	1672
Francis, John C., assignor to E. M. Greene, New York, N. Y. Magneto-generator	571,305	Nov. 10	1571	373	77	961
Franco-American Patent Can Opening Company. (See McColl, Francis P., assignor.)						
Frank, David, Brooklyn, assignor of one-half to J. Trounstine, New York, N. Y. Metal bedstead	572,253	Dec. 1	279	67	77	1332

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Frank, Leo, *et al.* (See Huebel and Manger, assignors.)						
Frankel, Simeon. (See Potter, Henry W., assignor.)						
Frankl, Alexander. (See Macek, Johann, assignor.)						
Franklin, Robert L. (See Pendley, William, assignor.)						
Frantz, Ezra A., Mount Morris, Ill. Fence-stay	571,355	Nov. 17	1656	392	77	990
Frasch, Herman, Cleveland, Ohio, assignor to Solar Refining Company, of Ohio. Treatment of petroleum for removing sulfur compounds	572,676	Dec. 8	1032	.....	77	1495
Frazier, Horace B., assignor to E. C. Cook & Bro., Chicago, Ill. Punching-bag support	571,874	Nov. 24	2563	607, 608	77	1176
Fréchette, Isaïe, assignor to H. and J. Beaudry, Montreal, Canada. Hat-pin guide or retainer	570,627	Nov. 3	388	92	77	709
Frederick, Christian, and R. L. Plumley, assignors to Trump Brothers Machine Company, Wilmington, Del. Sewing-machine	573,969	Dec. 29	3400	815, 816	77	1988
Fredericks, Gustave W., Detroit, Mich. Switch-opener	571,356	Nov. 17	1657	393	77	990
Frederickson, Lars, Pewaukee, Wis. Potato-digger	572,885	Dec. 8	1386	336	77	1563
Fredin, Perjohan, New Haven, Conn. Truss	571,969	Nov. 24	2736	646	77	1210
Fredrick, William, Toledo, Ohio, assignor to R. C. Faulconer, trustee, Detroit, Mich. Type-writing machine	570,546	Nov. 3	202	53, 54	77	675
Fredrick, William and H. W. Wachter, Toledo, Ohio, assignors to R. C. Faulconer, trustee, Detroit, Mich. Type-writing machine	570,545	Nov. 3	198	52, 53	77	674
Fredricksen, James. (See Steffenson, Jacob, assignor.)						
Freeman, Carl A. (See Page, Charles E., assignor.)						
Freeman, Herbert H., Pierre, S. D. Safe-alarm	570,011	Oct. 27	2268	539	77	467
Freeman, Wallace E., Long Island City, N. Y. Electric motor	569,866	Oct. 20	2018	481	77	408
Freeman, William H., Lexington, Nebr. Insect-destroyer	573,587	Dec. 22	2683	638	77	1841
Freer, Charles S., Brooklyn, assignor to E. Todd & Co., New York, N. Y. Combination pencil-point protector	570,922	Nov. 10	915	212	77	838
Freer, Robert, Providence, R. I. Attachment for steam-engines	570,547	Nov. 3	207	55	77	675
Frees, Charles D., New York, N. Y. Apparatus for tipping gas-tubing	572,419	Dec. 1	595	141	77	1391
Freese, Francis J., Montreal, Canada. Sole splitting machine	570,164	Oct. 27	2540	604	77	520
Freese, Francis J., Lowell, Mass. Trimmer-guide	570,392	Oct. 27	2998	710	77	604
French, Henry A., Providence, R. I. Apparatus for use in painting trolley-poles	571,560	Nov. 17	2007	477	77	1053
French, Reginald T., *et al.* (See Gogle, John E., assignor.)						
Freund, Julius, London, England, and L. Sappey, Grenoble, France. Glove, boot, or apparel fastener	573,401	Dec. 15	2319	554	77	1754
Frey, Otto J., administrator. (See Neracher, Charles.)						
Friant, Thomas, *et al.* (See Linn, Allen D. and A. B., assignors.)						
Frick, Anthony C., New York, N. Y. Game apparatus	574,087	Dec. 29	3603	861	77	2026
Frick, Louis C. S., assignor of one-half to G. Depew, Buffalo, N. Y. Stuffing-box	571,759	Nov. 24	2365	565	77	1139
Fried. Krupp Grusonwerk. (See Mohr, Frederik, assignor.)						
Friede, Samuel M., Chicago, Ill., assignor of one-third to J. W. Donnell, St. Louis, Mo. Stop and waste cock	569,967	Oct. 20	2194	521	77	440
Friedheim, Arthur, Berlin, Germany. Device for stamping out cartons, &c	571,999	Nov. 24	2789	658	77	1219
Friedley, George W. (See Rush, Stephen P., assignor.)						
Friedman, Henry, New York, and H. M. Koelbel, Brooklyn, N. Y. Bottle-stopper	573,212	Dec. 15	1980	477	77	1693
Friedrich, Frank, *et al.* (See Fulghum, Elisha J., assignor.)						
Friend, Silas J., and C. P. Brown, Atwater, Ill. Holdback for buggies	574,318	Dec. 29	4058	968	77	2108
Frink, Edmund B., Oxford, Mich. Potato-digger	572,886	Dec. 8	1387	336	77	1563
Frisbie, Henry R., Newark, assignor to Eastwood Wire Manufacturing Company, Belleville, N. J. Whistle	571,357	Nov. 17	1658	393	77	990
Frith, Arthur J., New York, N. Y. Bucket conveyer	570,251	Oct. 27	2699	642, 643	77	549
Fritz, George W. (See Boland and Fritz.)						
Friz, August. (See Bader, Edward, assignor.)						
Fröland, Hans H., Iola, Wis. Automatic railway-switch	568,844	Oct. 6	215	51	77	43
Fromm, Gustav P. (See Konrad, Fromm, and Kauer.)						
Frost, John H., Six Mile, Ala. Rotary plow	569,630	Oct. 20	1595	376, 377	77	332
Frost, Newland E., Boston, Mass., assignor to E. R. Bissell, Tyrone, N. Y. Heating apparatus	569,151	Oct. 6	753	175	77	143
Frost, Thomas G., Chester, England. Grain-drying apparatus	570,986	Nov. 10	1023	239	77	857
Frowein, Otto, and W. Oberstebrink, Barmen, Germany. Woven tubular fabric	570,012	Oct. 27	2269	539	77	467
Fry, John H., Grand Rapids, Mich. Lawn-sprinkler	572,000	Nov. 24	2790	658	77	1219
Fry, Stephen D., Attica, and W. H. Johnson, assignors of one-third to A. F. Johnson, Veedersburg, Ind. Fence-post or columnar pillar	573,777	Dec. 22	3030	718	77	1907
Fryer, Robert M., Washington, D. C. Elevated railway	569,097	Oct. 6	653	151	77	125
Fuchs, Charles K., assignor of three-fourths to V. L. Sawyer, Waterbury, Conn. Bottle stopper and fastener	573,588	Dec. 22	2685	638	77	1841
Fuchs, Charles K., assignor of three-fourths to V. L. Sawyer, Waterbury, Conn. Bottle-stopper	573,589	Dec. 22	2686	638	77	1841
Fulghum, Elijah C., *et al.* (See Fulghum, Elisha J., assignor.)						
Fulghum, Elisha J., assignor of two-thirds to E. C. Fulghum and F. Friedrich, Traverse City, Mich. Electric-light support	573,817	Dec. 22	3096	736	77	1919
Fuller, Charles D. (See Wood, Thomas E., assignor.)						
Fuller, Henry F., Chicago, Ill. Fluid-pressure-reducing apparatus	573,213	Dec. 15	1981	477	77	1694
Fuller, Henry F., assignor to Walmsley, Fuller & Company, Chicago, Ill. Burner for acetylene gas	571,675	Nov. 24	2565	608	77	1177
Fuller, James T., Calvert, Tex. Grate-bar	569,375	Oct. 13	1138	271	77	234
Fuller, Oscar B., Duane, N. Y. Thorough-brace for vehicles	569,451	Oct. 13	1259	296	77	254
Fuller, Samuel B. (See Miller, Lee A., assignor.)						
Fulton, Samuel M., and A. T. Ames, Galt, Cal. Pump-power	571,086	Nov. 10	1199	281	77	890
Funk, Daniel D., Springfield, Ohio. Cultivator	570,281	Oct. 27	2756	656	77	561
Funk, Nelson E., assignor of one-half to Emmerich & Vonderlehr, New York, N. Y. Automatic paper-feeding machine	574,199	Dec. 29	3849	918	77	2068
Furgason, James, Odessa, N. Y. Combination-ladder	570,469	Nov. 3	50	12	77	648
Fürst, Maximilian, Berlin, Germany. Station-indicator	572,977	Dec. 15	1571	377	77	1615
Fyke, Charles V. (See Barr, John H., assignor.)						
Gabel, Theodore W., Lancaster, Pa. Window	573,402	Dec. 15	2320	554, 555	77	1754
Gaddes, Thomas, Harrowgate, England. Tea or coffee pot strainer	569,188	Oct. 13	805	188	77	169
Gaffney, James, *et al.* (See Harvey, William F. H., assignor.)						
Gagnon, Peter. (See Ahearn, William F., assignor.)						
Gaiennie, Alphonse F., Lafourche, assignor of one-third to J. V. Teche, Thibodeaux, La. Separator	570,790	Nov. 3	672	154	77	762

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gale, Herbert N., Bristol, Conn. Ball-bearing trolley-pulley	569,631	Oct. 20	1597	377	77	333
Gale, Horace B., San Francisco, Cal. Valve mechanism	570,727	Nov. 3	564	130, 131	77	743
Gale, John M., *et al.* (See Kennel, Joseph A., assignor.)						
Gale, John M., Eaton, and O. A. Gale, West Alexandria, Ohio. Machine for grading and assorting leaf-tobacco	569,189	Oct. 13	806	189, 190	77	169
Gale, Oscar A. (See Gale, John M. and O. A.)						
Gallagher, Edward G., South Framingham, Mass. Boot or shoe	572,887	Dec. 8	1388	336	77	1563
Gallagher, Richard D., Jr., Chicago, Ill. Coin-controlled mechanism for telephones	571,390	Nov. 17	2032	490, 491, 492	77	1061
Gallinowsky, Hugo, Longbeach, Miss. Means for protecting piles from aqueous insects	571,654	Nov. 17	2157	518	77	1081
Gallois, Moritz von. (See Ulrich and Gallois.)						
Galloway, Frank C. (See Mullin and Galloway.)						
Galloway, Joseph, Blackburn, England. Lappet-loom	570,791	Nov. 3	674	155	77	762
Galloway, Robert, Buffalo, N. Y. Speed-gearing for grain-drills	571,224	Nov. 10	1429	334	77	932
Gallsworthy, Frank, Leeds, England. Means for lighting billiard-tables	574,027	Dec. 29	3499	836	77	2006
Galpin, Samuel A., assignor to New Haven Clock Company, New Haven, Conn. Clock-bell	573,778	Dec. 22	3031	718	77	1907
Galt, Thomas A., Sterling, Ill. Corn-harvester	572,749	Dec. 8	1176	282, 283	77	1521
Gambetta, John, Stockton, Cal. Construction and propulsion of vehicles	573,214	Dec. 15	1984	477	77	1694
Gambrell, James F., Ronea Path, S. C. Harness attachment	570,548	Nov. 3	209	55	77	676
Gammell, William A., Draper, Utah. Sash-fastener	573,509	Dec. 22	2550	604	77	1814
Gandee, Floyd C. (See Lowe and Gandee.)						
Gannon, Robert M., assignor of one-half to B. F. Davis, San Felipe, Tex. Hook for spoon-handles	574,145	Dec. 29	3713	885	77	2045
Gans, Milton H., *et al.* (See Brixbaum, Karl, assignor.)						
Gans, Walter S., *et al.* (See Brixbaum, Karl, assignor.)						
Ganson, John F., Lodge Pole, Nebr. Hand-planter	571,614	Nov. 17	2094	503	77	1069
Ganzenmüller, Adolf, New York, N. Y. Scuttle-hole protector	569,867	Oct. 20	2018	481	77	408
Garber, Robert I. (See Hartsock, Joseph S. B., assignor.)						
Gardner, Charles M., *et al.* (See Young, John R., assignor.)						
Gardner, George, Winsted, Conn. Pocket-knife	569,452	Oct. 13	1259	296	77	254
Gardner, John, assignor to Winchester Repeating Arms Company, New Haven, Conn. Primer	572,868	Dec. 8	1389	336	77	1563
Gardner, John H., Dalton, Ga. Pea-thresher	570,282	Oct. 27	2759	657	77	561
Gardner, Joseph N., assignor of one-half to C. West, Tuckerman, Ark. Button	570,872	Nov. 3	829	192	77	793
Garford, Arthur L., Elyria, Ohio. Bicycle-saddle	568,973	Oct. 6	439	98	77	85
Garford, Arthur L., Elyria, Ohio. Bicycle-saddle	568,974	Oct. 6	441	98	77	85
Garford, Arthur L., Elyria, Ohio. Bicycle-saddle	571,113	Nov. 10	1258	292	77	900
Garlock, Olin J., Rochester, assignor to Garlock Packing Company, Palmyra, N. Y. Piston-rod packing	572,053	Nov. 24	2886	681	77	1237
Garlock, Olin J., Rochester, assignor to Garlock Packing Company, Palmyra, N. Y. Piston-rod packing	574,353	Dec. 29	4122	978	77	2120
Garlock Packing Company. (See Garlock, Olin J., assignor.)						
Garrels, William L., St. Louis, Mo. Fall-rope carrier	569,127	Oct. 6	697	163	77	133
Garrison, Andrew D. (See Biddle, Lemuel D., assignor.)						
Garrison, Samuel W., Philadelphia, Pa. Gas or water switch	573,403	Dec. 15	2321	555	77	1754
Garrood, John C., Lynn, Mass. Drive-chain	569,632	Oct. 20	1597	378	77	333
Gartner, Alfred. (See Faber du Faur and Gartner.)						
Gartner, Alfred, assignor to C. H. McIntire, Newark, N. J. Wire-connector	569,752	Oct. 20	1835	436	77	374
Gartner, Alfred, assignor of three-fourths to C. H. McIntire, Newark, N. J. Wire-connector	569,753	Oct. 20	1836	436	77	374
Gartner, Alfred, Newark, N. J., assignor to P. S. Page, Scranton, Pa. Street-sweeper	572,790	Dec. 8	1244	301	77	1533
Gartner, Alfred, Newark, N. J., assignor to P. S. Page, Scranton, Pa. Street-sweeper	572,791	Dec. 8	1245	301	77	1534
Gartner, Alfred, Newark, N. J., assignor to R. Baker and J. Filmer, Brooklyn, and E. L. Ryder, Sing Sing, N. Y. Telephone	569,018	Oct. 6	523	120	77	99
Gartner, Alfred, Newark, N. J., assignor to R. Baker, J. Filmer, Brooklyn, and E. L. Ryder, Sing Sing, N. Y. Adjustable telephone-transmitter	570,204	Oct. 27	2614	621	77	534
Gartner, Alfred, Newark, N. J., assignor to Sawyer Spindle Company of Maine, Portland, Me. Spindle-support	570,205	Oct. 27	2615	621	77	534
Gartside, William N., Richmond, Ind. Metallic dowel-pin for pattern-makers	573,970	Dec. 29	3405	816	77	1989
Garvin Machine Company. (See Schrader, Frederick, assignor.)						
Gary, Albert J., Denison, Iowa. Folding box	572,537	Dec. 8	763	187	77	1442
Gas-Motoren-Fabrik-Deutz. (See Schumm, Hermann, assignor.)						
Gaschlin, Frederick G., assignor of one-third to J. Maas, San Francisco, Cal. Letter-box	570,628	Nov. 3	389	92	77	710
Gascoine, James. (See Weber, Albert R., assignor.)						
Gates, Charles W., Elgin, Ill. Soap-frame	573,459	Dec. 22	2471	586	77	1800
Gates, Eugene N., Holliston, assignor to H. F. Coggshall and W. E. Putney, Fitchburg, Mass. Work-holding device	573,325	Dec. 15	2194	525	77	1731
Gates, Henry L., assignor to Utility Manufacturing Company, Milwaukee, Wis. Jacketed can	571,724	Nov. 17	2278	547	77	1104
Gates, Louis W. (See Gates, William and L. W.)						
Gates, Olus, Estherville, Iowa. Hog catching and lifting machine	572,792	Dec. 8	1247	301	77	1534
Gates, Thomas C. (See Bigelow and Gates.)						
Gates, William, Woodbridge, and L. W. Gates, West Haven, assignors of one-third to G. H. Smith, New Haven, Conn. Safety gas-burner	569,868	Oct. 20	2019	481, 482	77	408
Gatewood, Frances B., administratrix. (See Stahl and Gatewood.)						
Gatewood, Richard. (See Stahl and Gatewood.)						
Gathmann, Louis, Chicago, Ill. High-explosive projectile and gun for throwing same	569,190	Oct. 13	812	190	77	171
Gathmann, Louis, Chicago, Ill. Projectile and gun for throwing same	569,191	Oct. 13	813	191	77	171
Gathmann, Louis, Chicago, Ill. High-explosive shell	569,192	Oct. 13	816	191	77	171
Gathmann, Louis, assignor to D. T. McMullen, Chicago, Ill., J. B. McMullen, New York, N. Y., G. W. McMullen, Picton, Canada, D. S. and R. B. McMullen, Evanston, Ill. Rotary gas-engine	570,470	Nov. 3	51	12, 13	77	648
Gathright, John R. and J. B., Louisville, Ky., assignors to American Street Car Sprinkler Company, Worcester, Mass. Railway street-sprinkler	570,990	Nov. 10	1024	239, 240	77	857
Gathright, John R. and J. B., Louisville, Ky., assignors to American Street Car Sprinkler Company, Worcester, Mass. Railway street-sprinkler	570,991	Nov. 10	1026	240	77	858
Gathright, Josiah B. (See Gathright, John R. and J. B.)						
Gaynor, William T., Fayetteville, N. Y. Barge for transporting and launching mattresses for jetty-work	572,001	Nov. 24	2791	658	77	1220
Geary, James, assignor of part to J. C. Greenewald and M. E. Geary, Bradford, Pa. Machine for marking envelops or the like	568,845	Oct. 6	218	52	77	42

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Geary, Mary E., *et al.* (See Geary, James, assignor.)						
Gebert, William, Trenton, N. J. Puzzle or game device	572,701	Dec. 8	1081	263	77	1504
Geddes, Charles A., Philadelphia, Pa., assignor to Kirby Manufacturing Company, Camden, N. J. Apparatus for dispensing soda-water	569,633	Oct. 20	1599	378	77	333
Gee, Horace L., Kingston, assignor to Diamond Truck and Car Gear Company, New York, N. Y. Means for supporting housings of car-axle journals in pedestals	574,028	Dec. 29	3500	836	77	2006
Geesey, E. O., *et al.* (See Lee, William, assignor.)						
Geiger, John J., Clyde, Ohio. Beer-pump cleaner	572,631	Dec. 8	956	231	77	1480
Geigy & Co., John R. (See Ris, Christopher, assignor.)						
Geigy & Co., John R. (See Sandmeyer, Traugott, assignor.)						
Geisel, Adam, St. Louis, Mo. Concrete bridge	571,225	Nov. 10	1432	334	77	933
Geisenhöner, Henry. (See Thomson and Geisenhöner.)						
Geiser Manufacturing Company. (See Anderson, Gustaf A., assignor.)						
Geisler, Hugo P., Saginaw, Mich. Suspenders	571,114	Nov. 10	1259	292	77	900
Geissmer, Friedrich J. T., Mittweida, Germany. Horseshoe	572,002	Nov. 24	2794	659	77	1220
Gelina, John, *et al.* (See Winters, John W., assignor.)						
Gelina, Mary L., *et al.* (See Winters, John W., assignor.)						
Gemmell, Rosa, and F. Buxton, Whaley Bridge, near Stockport, England. Apparatus for washing printers' blankets	572,889	Dec. 8	1391	337	77	1564
General Compressed Air Company. (See Haupt, Herman, assignor.)						
General Electric Company. (See Armstrong, Albert H., assignor.)						
General Electric Company. (See Bassett, Norman C., assignor.)						
General Electric Company. (See Blackwell, Francis O., assignor.)						
General Electric Company. (See Bradley, Charles S., assignor.)						
General Electric Company. (See Green, Charles M., assignor.)						
General Electric Company. (See Hand, William M., assignor.)						
General Electric Company. (See Hewlett, Edward M., assignor.)						
General Electric Company. (See Hunter, Rudolph M., assignor.)						
General Electric Company. (See Martin, Charles B., assignor.)						
General Electric Company. (See Martin and Hewlett, assignors.)						
General Electric Company. (See Potter, William B., assignor.)						
General Electric Company. (See Raymond, Edward B., assignor.)						
General Electric Company. (See Reist, Henry G., assignor.)						
General Electric Company. (See Seymour, Henry A., assignor.)						
General Electric Company. (See Sperry, Elmer A., assignor.)						
General Electric Company. (See Steinmetz, Charles P., assignor.) (Reissue.)						
General Electric Company. (See Thomson, Elihu, assignor.)						
General Electric Company. (See Thomson and Geisenhöner, assignors.)						
General Incandescent Arc Light Company. (See Herrick, Albert B., assignor.)						
Genereux, Francois H. (See Joncas, Louis, assignor.)						
Geoffroy, Arthur R., New York, N. Y. Name-plate for bicycles, &c	573,870	Dec. 29	3211	764	77	1954
Geometric Drill Company. (See Smith, William J., assignor.)						
Georg, Carl R., assignor of one-half to W. H. Siehr, Milwaukee, Wis. Box-cover brace or support	569,193	Oct. 13	818	191	77	171
George, Japhus, Ithaca, N. Y. Glass-annealing furnace	569,279	Oct. 13	965	231	77	200
George, Jerome R. (See Miller and George.)						
George P. Steel Iron Company. (See Steel, Canby, assignor.)						
George, William B., Columbus, Ohio. Car-fender	574,029	Dec. 29	3501	836, 837	77	2006
Georges, Ernest A., (called Charles Street,) Paris, France, assignor to Electro-Metallurgical Company, Limited, London, England. Making alloys	572,092	Nov. 24	2997	.....	77	1257
Gerondale, John J. (See Gravel, Octave, assignor.)						
Gerow, Anna C., Port Huron, Mich. Dust-pan	573,460	Dec. 22	2472	586	77	1800
Gerstlauer, David. (See Minich, Daniel, assignor.)						
Gerwing, Robert. (See White, Charles F., assignor.)						
Gessler, Jacob, Indianapolis, Ind. Railway-switch-operating mechanism	574,319	Dec. 29	4058	964	77	2108
Geyer, George H., assignor to Jones & Laughlins, Limited, Pittsburg, Pa. Apparatus for treating rods or bars	571,306	Nov. 10	1574	374	77	961
Gharky, William D., Philadelphia, Pa. System of distributing electrical power, &c	569,634	Oct. 20	1601	378, 379	77	333
Giacinto, Ferrand, New York, N. Y. Bicycle-stand	569,493	Oct. 13	1327	312	77	266
Gibboney, John W., Lynn, Mass. Electric lighting by wind-power	569,754	Oct. 20	1637	436	77	375
Gibbs, George, Milwaukee, Wis. Safety apparatus for railway-crossings	569,709	Oct. 20	1758	418	77	360
Gibbs, George, Milwaukee, Wis. Safety apparatus for railway-crossings	570,069	Oct. 27	2415	572	77	496
Gibbs, George, Milwaukee, Wis. Derailing device for railways	570,596	Nov. 3	302	74	77	684
Gibbs, John W., New York, N. Y. Electric roller for therapeutical and massage purposes	572,341	Dec. 1	446	105	77	1364
Gibson, Charles R., Woodsville, N. H. Sand-band	569,869	Oct. 20	2021	482	77	408
Gibson, Edward. (See Scott, Walter E., assignor.)						
Gibson, John, and J. Watson, Toledo, Ohio. Car-fender	569,822	Oct. 20	1947	463	77	395
Gier, James J., Detroit, Mich. Extension and retraction device	569,494	Oct. 13	1329	312	77	267
Giesler, Arthur, assignor to Stilwell-Bierce & Smith-Vaile Company, Dayton, Ohio. Electric water-wheel governor	574,320	Dec. 29	4061	965, 966	77	2109
Giesy, Edward H., assignor to A. M. Stearns, Wyoming, and H. H. Giesy, Lancaster, Ohio. Refrigerator	570,436	Oct. 27	3059	725	77	616
Giesy, Henry H., *et al.* (See Giesy, Edward H., assignor.)						
Gilbert & Barker Manufacturing Company. (See Griffen, Arthur B., assignor.)						
Gilbert, Fred S. (See Herring, Henry M., assignor.)						
Gilbert, William E., *et al.* (See Nicholes, Herbert W., assignor.)						
Gilbert, William T., Brooklyn, N. Y. Car-seal	573,145	Dec. 15	1866	449	77	1672
Gilchrist, Joseph C. (See Ramage, Alexander S., assignor.)						
Giles, Harvey, Bound Brook, N. J. Puzzle	569,194	Oct. 13	819	192	77	172
Gill, John. (See Hughes and Gill.)						
Gill, Richard M., Ruston, La. Machinery for handling cotton	570,471	Nov. 3	55	13	77	648
Gillespie, Alexander P., Pittsburg, Pa. Pencil-holder	572,682	Dec. 8	938	231	77	1480
Gillespie, John, assignor to G. M. Porter, Boston, Mass. Bicycle	573,779	Dec. 22	3032	718	77	1907
Gillespie, Richard S., New York, N. Y. Construction of supports for building-walls	570,792	Nov. 3	676	155, 156	77	763
Gillespie, Richard S., New York, N. Y. Air-lock for caissons, &c	570,793	Nov. 3	679	156	77	764
Gillespie, Richard S., New York, N. Y. Air-lock for caissons, &c	570,794	Nov. 3	681	156	77	764
Gillespie, Richard S., New York, N. Y. Means for sinking wall or other supporting columns	573,404	Dec. 15	2322	555	77	1755
Gillespie, Richard S., New York, N. Y. Air-lock for caissons, &c	573,405	Dec. 15	2325	555, 556	77	1755
Gillespie, Richard S., New York, N. Y. Air-lock for caissons, &c	573,406	Dec. 15	2327	556	77	1756

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gillespie, Richard S., New York, N. Y. Air-lock for caissons, &c	574,321	Dec. 29	4064	966	77	2109
Gillette, William R., New Haven, Mich. Credit-coupon system	572,978	Dec. 15	1572	377	77	1615
Gillham, Mancellila C. (See Alexander and Gillham.)						
Gilliland, Lee O., assignor of five-ninths to C. A. David and W. S. Sharpneck, Chicago, Ill. Roller-bearing for shafting	568,898	Oct. 6	310	71	77	60
Gilmore, Evangeline, Hamilton, Canada. Grater	571,358	Nov. 17	1659	393	77	991
Gilmore, James M., New York, N. Y. Nut-lock	569,098	Oct. 6	656	152	77	125
Gilpin, Eli J., Fowler, Ind. Removable handle for saucepans	569,635	Oct. 20	1609	379	77	335
Gimnich, Joseph H., Red Wing, Minn. Combined counter and show-case	570,795	Nov. 3	682	156	77	764
Gingrich, Isaiah H., Cadillac, Mich. Lawn-sprinkler	573,063	Dec. 15	1758	422	77	1652
Girard, Adam C., and E. A. G. Street, Paris, France. Electric furnace	571,655	Nov. 17	2158	519	77	1081
Girardet, Pierre L., assignor to R. A. Poitrimol, Paris, France. Lamp	572,505	Dec. 1	729	173	77	1416
Girling, Wilkinson T. (See McClellan and Girling.)						
Girod, François E., Geneva, Switzerland. Electric clock striking mechanism	569,099	Oct. 6	657	152	77	125
Gladstone Washboard Company. (See Merriam and Sears, assignors.)						
Gladwin, Albert L., assignor to Aster Manufacturing Company, Boston, Mass. Burner for liquid fuel	570,629	Nov. 3	392	93	77	710
Gladwin, Fred A., Rochester, N. Y. Brake for bicycles	571,561	Nov. 17	2008	478	77	1053
Glammier, E., *et al.* (See Werntz, Frank E., assignor.)						
Glasgow, Arthur G., *et al.* (See Woods, George E., assignor.)						
Glass, George A., assignor of two-thirds to P. J. Bickle and D. G. Smith, Freeburg, Pa. Air-brake mechanism for street-cars	569,915	Oct. 20	2098	499, 500	77	423
Glass, J. W. (See Kennedy, Robert T. and S. W., assignors.)						
Glasser, Charles T. (See Turner and Glasser.)						
Glasser, Henry J. (See Turner and Glasser, assignors.)						
Gleason, William J., and J. H. Bower, Philadelphia, Pa. Apparatus for dyeing skeins	569,453	Oct. 13	1260	296, 297	77	254
Gleim, Charles H., Portland, Oreg. Hand-protector	573,215	Dec. 15	1986	478	77	1695
Glentworth, Charles E., Sharon Hill, assignor to G. M. Walter, Philadelphia, Pa. Medicine-dose indicator	571,436	Nov. 17	1790	427	77	1014
Glidden, Charles W., deceased; J. E. Glidden, Lawrence, administrator, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Heel-nailing machine	571,067	Nov. 10	1201	282	77	890
Glidden, John E., administrator. (See Glidden, Charles W.)						
Globe Company. (See Carnahan, Charles M., assignor.)						
Globe Electric Heating Company. (See Fraley, George B., assignor.)						
Glover, Fred D., and A. H. Smith, Duluth, Minn. Car-ventilating window	572,979	Dec. 15	1573	377	77	1616
Gluns, John, *et al.* (See Bidwell, Alonzo, assignor.)						
Gocher, George, Lorain, and J. D. Schrecongost, Elyria, Ohio. Planing-machine	574,146	Dec. 29	3714	885	77	2045
Goddard, Charles F., Chicago, Ill. Motor and wheel for vehicles	574,200	Dec. 29	3852	918	77	2069
Goddard, George O., assignor to F. S. Tolman, Brockton, Mass. Strip-feeding attachment for printing-presses	572,793	Dec. 8	1248	302	77	1534
Goddu, George. (See Goddu, Napoleon and G.)						
Goddu, Napoleon and G., Winchester, Mass. Sewing-machine	572,538	Dec. 8	784	187, 188	77	1442
Goddu, William, Winchester, assignor to A. Van Wagenen, Newton, Mass. Tacker	569,152	Oct. 6	754	175	77	143
Goertz, August, Newark, N. J. Bag-frame catch	571,159	Nov. 10	1332	310	77	914
Goettel, John, Boston, Mass. Car-coupling	572,794	Dec. 8	1250	302	77	1535
Goettel, John, assignor of one-half to E. B. Newton, Boston, Mass. Bicycle	569,636	Oct. 20	1609	379	77	335
Goff, Samuel B. (See Richter and Eschler, assignors.)						
Gogle, John E., assignor of two-thirds to R. T. French, Middleville, and J. McQueen, Grand Rapids, Mich. Seal	570,126	Oct. 27	2476	586	77	507
Gogle, John E., assignor of two-thirds to R. T. French, Middleville, and J. McQueen, Grand Rapids, Mich. Car-seal	570,127	Oct. 27	2477	586	77	507
Going, Hosea F. (See Phelps, Walter J. and E., assignors.)						
Gold and Bromine Separating Company. (See Hinman, Bertrand C., assignor.)						
Gold, Edward E., New York, N. Y. Heating apparatus for cars, &c	569,637	Oct. 20	1611	380	77	335
Gold, Edward E., New York, N. Y. Car-heating apparatus	571,359	Nov. 17	1660	393, 394	77	991
Gold, Edward E., New York, N. Y. Car-heating apparatus	572,254	Dec. 1	280	67, 68	77	1332
Golding, Joseph H., New York, N. Y. Advertising device	571,656	Nov. 17	2160	519	77	1082
Golding, William H., Boston, Mass. Printer's composing-stick	571,899	Nov. 24	2623	621	77	1187
Golding, William H., Boston, Mass. Rule and lead cutter	571,919	Nov. 24	2656	629	77	1194
Goldschmidt, Carl, Frankfort-on-the-Main, Germany. Vanillin paraphenetidin	572,890	Dec. 8	1392	.....	77	1564
Gooch, Thomas C., Louisville, Ky. Centrifugal extractor	574,060	Dec. 29	3559	849, 850	77	2018
Goodhue, Frank M., St. Charles, Ill. Windmill	573,510	Dec. 22	2551	605	77	1815
Goodlett, Johnston E. J., Memphis, Tenn. Barrel-filling machine	570,851	Nov. 3	787	180, 181	77	785
Goodman, Edward H. (See O'Kain, Domenec C., assignor.)						
Goodner, James A., and J. M. Chrittton, Mosca, Colo. Rotary engine	573,179	Dec. 15	1920	460, 461	77	1682
Goodnow, Daniel, Boston, Mass. Buckle	569,638	Oct. 20	1614	380	77	336
Goodrich, Frank L. (See Barnum, Russel S., assignor.)						
Goodrich, Frank L., and R. S. Barnum, Chicago, Ill. Hemmer	569,578	Oct. 13	1499	353	77	299
Goodridge, Ira C., Rochester, N. Y. Envelop-stamper	569,454	Oct. 13	1262	317	77	255
Goodsell, Zalmon. (See Grunow, William, Jr., assignor.)						
Goodspeed, Charles E., New York, N. Y. Holder for tools	570,923	Nov. 10	916	212	77	838
Goodwin, George, assignor to D. Mayer, London, England. String-fastening for sounding-boards of musical instruments	572,677	Dec. 8	1033	251	77	1405
Goodwin, Hannibal, Newark, N. J. Process of and apparatus for making tubes for artists' colors, &c	570,728	Nov. 3	570	131	77	743
Goodwin, Hannibal, Newark, N. J. Machine for making compressible tubes	574,147	Dec. 29	3715	885, 886	77	2046
Goodwin, John B., Pittsburg, Pa. Seat	569,153	Oct. 6	755	176	77	143
Goodwin, McAllister. (See Hart, Griffith, and Goodwin.)						
Goodyear, Charles, Jr., New York, N. Y. Electric-arc lamp	572,539	Dec. 8	785	188	77	1443
Goodyear Shoe Machinery Company. (See Crisp and Copeland, assignors.)						
Goodyear Shoe Machinery Company. (See Francis, Frank E., assignor.)						
Goodyear Shoe Machinery Company. (See Snow, Stephen, assignor.)						
Goodyear Shoe Machinery Company. (See Winkley, Erastus E., assignor.)						
Gordon, Andrew Y., Massillon, Ohio. Adjustable bracket for transmitters	569,376	Oct. 13	1139	271	77	234
Gordon-Burnham Battery Company. (See Gordon, Ralph W., assignor.)						
Gordon, Charles A., assignor of one-half to C. A. Sullens, Scruggs, Mo. Fodder-binder	572,980	Dec. 15	1574	378	77	1616
Gordon, Elonso J., Greenville, Mich. Furnace-grate	574,030	Dec. 29	3503	837	77	2006

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Gordon, Ralph W., New York, N. Y., assignor to Gordon-Burnham Battery Company, Portland, Me., and New York, N. Y. Galvanic battery	570,013	Oct. 27	2271	540	77	467
Gordon, Thomas. (See Smith and Gordon.)						
Gordon, Thomas, New York, N. Y. Life-preserver	572,109	Dec. 1	22	6	77	1282
Gordon, William S. (See Archbold, George, assignor.)						
Gore, Alfred D., Boston, Mass. Machine for drilling railway rails	570,427	Oct. 27	3062	725, 726	77	617
Gorman, Henry W. (See Maxwell and Gorman.)						
Gorman, James F., Wilkes-Barré, Pa. Radiator-rest	569,916	Oct. 20	2100	500	77	423
Gorrell, William R., Carsin's Run, assignor of two-thirds to E. O. Bayles and S. Davis, Harford county, Md. Cheese-cutter	570,472	Nov. 3	58	14	77	649
Gorsuch, Edward, Roaring Spring, Pa. Tire-tightener	573,780	Dec. 22	3033	718	77	1907
Gorsuch, Edward, Roaring Spring, Pa. Tire-coupling	573,781	Dec. 22	3033	719	77	1907
Gorton, Adelos, Philadelphia, Pa. Electric railway	569,331	Oct. 13	1065	252, 253	77	220
Gorton, Charles, New York, N. Y. Sectional steam-boiler	571,657	Nov. 17	2161	520	77	1082
Gorton, William E. (See Applegate, Eugene W., assignor.)						
Goschel, Otto, and B. Sutter, assignors of one-third to H. Muselmann, St. Louis, Mo. Street-sweeper	570,749	Nov. 3	611	140, 141	77	750
Goschel, Otto, and B. Sutter, assignors of two-thirds to H. Muselmann, St. Louis, Mo. Street-sweeper	570,750	Nov. 3	613	141	77	751
Goss Printing Press Company. (See Goss, Samuel G., assignor.)						
Goss, Samuel G., assignor to Goss Printing Press Company, Chicago, Ill. Folding-machine	569,917	Oct. 20	2101	500, 501	77	423
Gotsch, C. J. (See Remus, August E., assignor.)						
Gotthelf, Harry J., *et al.* (See Gottschalk, Louis, assignor.)						
Gottschalk, Louis, assignor of two-thirds to H. J. Gotthelf and F. R. Baker, Chicago, Ill. Making soap	573,084	Dec. 15	1759	.....	77	1652
Goulvin, Francois L., Valence, France. Resonator for pianos	572,981	Dec. 15	1576	378	77	1616
Grabert, Gus W. (See Staiger and Grabert.)						
Grable, V. L. (See Laube, Godfried, assignor.)						
Graebing, Henry S., assignor of two-thirds to J., Sr., and J. Olliffe, Jr., Allegheny, Pa. Air-brake for railway-cars	569,923	Oct. 20	1949	463	77	395
Graf, Charles L., Allegheny, Pa. Druggist's prescription-file	570,308	Oct. 27	2253	677	77	578
Graff, Conrad, assignor of one-half to J. S. Phillips, Gunnison, Colo. Gold-amalgamating apparatus	569,710	Oct. 20	1761	418	77	361
Graham, David F., Springfield, Mass., assignor to American Stoker Company, Dayton, Ohio. Underfeed stoker	570,924	Nov. 10	917	212, 213	77	838
Graham, David F., assignor of one-half to G. D. Chamberlain, Springfield, Mass. Stopper-lock	572,160	Dec. 1	118	28	77	1300
Graham, Evander M., and L. R. Colwell, Ruston, La. Axle-skein	572,161	Dec. 1	119	28	77	1300
Graham, Jesse A., assignor of one-half to D. P. Shields, St. Louis, Mo. Car-fender	572,001	Dec. 8	906	219	77	1470
Graham, John H., Boston, Mass. Car-truck	570,473	Nov. 3	60	14	77	649
Graham, Robert S., and W. B. Savell, assignors to Type-Writer Cushion-Key Company, Newark, N. J. Type-writing-machine cushion-key	569,196	Oct. 13	922	192	77	172
Graham, Thomas W., Dubuque, Iowa. Corrugating-machine	570,789	Nov. 3	572	131	77	743
Graham, William A., Carlisle, Pa. Hydrant	570,283	Oct. 27	2762	657	77	562
Grandjean, née Unold, Albertine, Paris, France. Filter	571,474	Nov. 17	1851	441	77	1096
Granger, Frank D., New York, N. Y. Single-trigger lock for double-barrel guns	572,480	Dec. 1	689	164	77	1409
Granjon, Jean B., Chatonnay, France. Steam-generator	572,750	Dec. 8	1177	283	77	1521
Granville, Bernard, Chicago, Ill., assignor to A. G. Corre, Cincinnati, Ohio. Type-writing machine	570,432	Oct. 27	3073	729, 730	77	618
Granville, Bernard, Chicago, Ill., assignor to A. G. Corre, Cincinnati, Ohio. Type-writer	570,433	Oct. 27	3075	730, 731	77	619
Gras, Charles A., assignor to F. Deimel, New York, N. Y. Furnace apparatus	568,899	Oct. 6	311	71, 72	77	60
Gras, Charles A., assignor to F. Deimel, New York, N. Y. Furnace	568,900	Oct. 6	313	72	77	60
Grater, Frank B., assignor to American Ship Windlass Company, Providence, R. I. Hoisting-winch	573,326	Dec. 15	2196	525	77	1731
Gravel, Octave, assignor of one-half to J. J. Gerondale, Ingalls, Mich. Running-gear for vehicles	571,856	Nov. 24	2532	600	77	1171
Graves, Frank W., Woburn, Mass. Regulating-damper for controlling incoming currents of air	571,658	Nov. 17	2163	520	77	1082
Gray, Elisha, Highland Park, Ill. Lock	572,633	Dec. 8	959	232	77	1481
Gray, J. G., assignee. (See Harris, Edward P., assignor.)						
Gray, John W., Stillwood, S. C. Bit-stock	571,267	Nov. 10	1509	357	77	947
Gray, Luke E. (See Coupal and Gray.)						
Gray National Telautograph Company. (See Tiffany, George S., assignor.)						
Gray, Robert. (See Jamieson and Gray.)						
Gray Telephone Pay Station Company. (See Gray, William, assignor.)						
Gray, William, assignor to Gray Telephone Pay Station Company, Hartford, Conn. Coin-controlled signal apparatus	569,195	Oct. 13	890	192	77	172
Gray, William, assignor of one-half to C. Soby, Hartford, Conn. Base-ball mask	571,437	Nov. 17	1791	427	77	1015
Gray, William H., Eddyville, Iowa. Corn-harvester	572,110	Dec. 1	23	6	77	1282
Green, Charles M., Chicago, Ill. Sash-fastener	571,360	Nov. 17	1668	394	77	991
Green, Charles M., Highland Park, Ill. Dyer's basket	572,634	Dec. 8	963	232	77	1481
Green, Charles M., Highland Park, Ill. Box	573,782	Dec. 22	3034	719	77	1906
Green, Charles M., Cleveland, Ohio, assignor to General Electric Company, of New York. System for generating and distributing electrical energy	573,647	Dec. 22	2920	666	77	1867
Green, Edward A., Battle Creek, Mich. Bicycle-bearing	572,003	Nov. 24	2795	659	77	1220
Green, George R. (See Wirt, Green, and Burger.)						
Green, George R., assignor to American Electric Meter Company, Philadelphia, Pa. Electric motor	571,043	Nov. 10	1117	261	77	875
Green, J. Frank, Mansfield, Ohio. Carbon-book	573,671	Dec. 29	3212	764	77	1954
Green, James. (See Dods, John C., assignor.)						
Green, John G., assignor of one-half to A. J. Harpole, Union City, Tenn. Car-coupling	570,796	Nov. 3	684	157	77	765
Green, William W., Yorktown, Kans. Corn-harvester	571,857	Nov. 24	2533	600	77	1171
Greene, Anna P., *et al.* (See Greene, Thomas C., assignor.)						
Greene, Darwin A., Brooklyn, N. Y. Wood-bundling machine	573,971	Dec. 29	3406	816, 817	77	1969
Greene, Edward E., assignor to himself and G. R. Christie, New York, N. Y. Combined walking-stick and umbrella	572,983	Dec. 15	1579	379	77	1617
Greene, Elias M. (See Francis, John C., assignor.)						
Greene, Thomas C., assignor to A. P. Greene, Liberty, Ind., B. C. Koch, Tremont, Ill., and L. A. Kinsey, Indianapolis, Ind. Fence	569,019	Oct. 6	594	121	77	100

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Greenewald, Joseph C., *et al.* (See Geary, James, assignor.)						
Greenfield Automatic Fastener Company. (See Greenfield, Edwin T., assignor.)						
Greenfield Automatic Fastener Company. (See Keyes, James A., assignor.)						
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Lining metal tubes with fibrous material	570,165	Oct. 27	2542	604, 605	77	520
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Insulating-joint for metal or armored conduit-tubes	570,166	Oct. 27	2545	605	77	521
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Metallic junction-box and means for uniting metal conduit-tubes thereto	570,167	Oct. 27	2546	605	77	521
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Underground conduit	570,168	Oct. 27	2547	605, 606	77	522
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York. N. Y. Conduit-tube	570,169	Oct. 27	2550	606	77	522
Greenfield, Edwin T., assignor to Interior Conduit and Insulation Company, New York, N. Y. Insulating-joint for conduit-tubes	570,170	Oct. 27	2551	606	77	522
Greenfield, Edwin T., assignor to Greenfield Automatic Fastener Company, New York, N. Y. Stapling-machine	572,293	Dec. 1	363	86, 87	77	1348
Greenfield, Edwin T., assignor to Greenfield Automatic Fastener Company, New York, N. Y. Stapling machine	572,420	Dec. 1	597	141, 142	77	1391
Greengard, Morris D., St. Louis, Mo. Shade-holder for incandescent-lamp sockets	569,556	Oct. 13	1450	342	77	289
Greenleaf, Agnes S., Chicago, Ill. Skirt for riding-habits	568,943	Oct. 6	385	87	77	74
Greenough, George G., Fort McPherson, Ga. Apparatus for indicating distance and direction of remote objects	568,753	Oct. 6	75	17, 18	77	18
Gregory, Charles E., Nashville, Tenn. Blackboard-rubber	570,797	Nov. 3	688	157	77	765
Gregory, Charles E., Nashville, Tenn. Blackboard	572,004	Nov. 24	2796	659	77	1221
Gregory, George H., Somerville, Mass. Apparatus for manufacturing gas	572,795	Dec. 8	1251	303	77	1535
Gregory, Giles A., *et al.* (See Gregory, Josiah G., assignor.)						
Gregory, Josiah G., assignor to himself, W. L. and G. A. Gregory, Norwalk, Conn. Game apparatus	570,393	Oct. 27	2999	710	77	605
Gregory, Walter I., *et al.* (See Gregory, Josiah G., assignor.)						
Gregory, William F., Buffalo, N. Y. Lubricator	570,549	Nov. 3	210	55	77	676
Gregson, John, and C. J. Murray, Fall River, assignors to Whitin Machine Works, Whitinsville, Mass. Spinning and twisting frame	573,640	Dec. 22	2897	667, 668	77	1868
Gremmels, Henry W., Denver, Colo. Device for scaling fish	572,982	Dec. 15	1577	378	77	1617
Grenier, François M. J., Providence, R. I. Stopping mechanism for looms	573,648	Dec. 22	2823	667	77	1868
Grevel, William. (See Prange, Robert L., assignor.)						
Grier, Garrett L., Milford, Del. Coat-hanger	568,901	Oct. 6	314	72	77	60
Grier, Matthew J., Philadelphia, Pa. Slack-adjuster for railway-car brakes	570,925	Nov. 10	919	213	77	838
Grier, William W., Hulton, Pa. Apparatus for manufacturing doors, &c.	570,992	Nov. 10	1098	240, 241	77	858
Griffen, Arthur B., Verona, N. J., assignor to Gilbert & Barker Manufacturing Company, Springfield, Mass. Device for charging hydrocarbon-gas generators	568,944	Oct. 6	388	88	77	74
Griffin, Dennis J. (See Brown and Griffin.)						
Griffin, James C., Allegheny, Pa. Shelf-bracket	571,519	Nov. 17	1934	461	77	1041
Griffith, Jacob R., Kansas City, Mo. Baling-press	568,846	Oct 6	220	52	77	43
Griffith, Luther. (See Hart, Griffith, and Goodwin.)						
Griffiths, James A., Philadelphia, Pa. Combined electric and gravity pleasure-railway	572,111	Dec. 1	26	7	77	1288
Grindle, George A., Prestwich, England. Electrode for secondary voltaic batteries	574,322	Dec. 29	4065	966	77	2109
Griscom, William W., Haverford, Pa. Hair-spring for watches	570,394	Oct 27	3000	710	77	605
Grist, Benjamin W., assignor to Pennsylvania Iron Works Company, Philadelphia, Pa. Pipe-hanger	569,755	Oct 20	1842	437	77	375
Griswold, John W., Troy, N. Y. Bale-tie	573,672	Dec. 29	3213	764	77	1954
Gritzner, Rudolf. (See Hunger, Oskar, assignor.)						
Grobet, Charles E., assignor of two-thirds to A. T. Docharty and J. Hatchwell, New York, N. Y. Transfer-ticket register	571,659	Nov. 17	2165	520, 521	77	1082
Grodzik, Henry, and F. C. Luethi, Fort Wayne, Ind. Music-holder	571,980	Nov. 24	2658	630	77	1194
Groeber, Otto A. (See Platti, Paul J., assignor.)						
Gross, Elmer S., assignor to H. W. Cushman, Ellsworth, Me., and E. B. Bowen, Newton, Mass. Heel-building machine	569,711	Oct. 20	1753	419	77	361
Gross, Joseph M., Dublin, Pa. Fence	568,945	Oct. 6	389	88	77	75
Gross, Mannin, Burlington, Kans. Combination wire-stretcher and domestic scale	572,054	Nov. 24	2886	661	77	1238
Gross, William, Philadelphia, Pa. Combined puzzle purse and receptacle	572,796	Dec. 8	1253	303	77	1535
Grosvenor, Wallace, Casselton, N. D. Transportation system	569,280	Oct. 13	966	231, 232	77	200
Grote, Ferdinand, Evansville, Ind. Sectional boiler	572,005	Nov. 24	2798	659, 660	77	1221
Grout, John C., Brooklyn, N. Y. Bottle-stopper	572,006	Nov. 24	2799	660	77	1221
Grove, Samuel B., and G. Emlong, Muncie, Ind. Combined pair and reheating furnace	568,847	Oct. 6	226	53	77	45
Grover, Henry M., assignor of one-half to J. H. Niles, Anoka, Minn. Potato-digger	572,511	Dec. 1	742	177	77	1418
Grover, Johnson M., Toronto, Canada. Washing-machine	571,475	Nov. 17	1852	441	77	1036
Groves, Samuel, Pittsburg, Pa. Molding-machine	573,782	Dec. 22	3035	719, 720	77	1908
Grube, Max, San Francisco, Cal. Machine for fixing threads in envelops. (Reissue)	11,577	Dec. 8	1500	359	77	1586
Grubinski, Jan, Warsaw, Russia. Steam-generator	571,502	Nov. 17	2010	478	77	1054
Grubinski, Jan, Warsaw, Russia. Feed-pump	573,085	Dec. 15	1760	423	77	1652
Grueninger, Carl F., *et al.* (See Williams, Hubbard D. B., assignor.)						
Gruhlkey, Daniel, assignor of one-half to W. H. Gruhlkey, Marseilles, Ill. Railway-crossing	572,702	Dec. 8	1092	263	77	1504
Gruhlkey, William H. (See Gruhlkey, Daniel, assignor.)						
Grumbacher, J., *et al.* (See Layton, Edward L., assignor.)						
Grunow, William, Jr. assignor to Z. Goodsell, Bridgeport, Conn. Snow-plow, sweeper, scraper, and sprinkler for car-tracks	573,511	Dec. 22	2553	605, 606	77	1815
Guarino, Domenico, New York, N. Y. Car-fender	572,984	Dec. 15	1580	379	77	1617
Guérard, Pierre E., assignor of one-half to N. Mathieu, Montreal, Canada. Hose-coupling	571,361	Nov. 17	1663	394	77	991
Guethler, Maximilian, assignor of one-half to J. B. Adt, Baltimore, Md. Pitching apparatus	573,818	Dec. 22	3098	736, 737	77	1919
Guffey, Wesley S., *et al.* (See Crawford, William W., assignor.)						
Guhl, Albert F., Rowenna, Pa. Car-coupling	569,639	Oct. 20	1615	380	77	336
Guhl, Albert F., Landisville, Pa. Car-coupling	570,171	Oct. 27	2552	606	77	523
Guild, George, assignor to Cambridge City Punch, Shear, and Roll Company, Cambridge City, Ind. Shearing-machine	569,261	Oct. 13	971	232, 233	77	201
Guild, Hiram A., Knoxville, Pa. Reel	569,128	Oct. 6	699	163	77	133
Guilleaume, Max, Mülheim-on-the-Rhine, Germany. Insulated electric cable	568,756	Oct. 6	81	18	77	18

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Guilleaume, Theodore, Mülheim-on-the-Rhine, Germany. Means for insulating electric conductors	571,760	Nov. 24	2367	565	77	1140
Guillemet, François L., San Francisco, Cal., assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	571,115	Nov. 10	1260	292, 293	77	900
Guillemet, François L., San Francisco, Cal., assignor to Westinghouse Air Brake Company, Wilmerding, Pa. Air-brake	571,116	Nov. 10	1262	293	77	901
Gulliford, George L., Bement, Ill. Electric-light-cord adjuster	571,761	Nov. 24	2389	565	77	1140
Gunning, Thomas, Pittsburg, Pa. Steam-boiler	571,660	Nov. 17	2167	521	77	1083
Gunther, Fredrick, Kewanee, Ill. Check-row corn-planter	570,474	Nov. 3	61	15	77	649
Gunther, George P. A., Schwenksville, Pa. Jewelry	569,100	Oct. 6	658	152	77	126
Gunther, George P. A., Schwenksville, Pa. Cuff-button	569,495	Oct. 13	1331	313	77	267
Gurley, Frank. High Point, N. C. Show-case	569,455	Oct. 13	1263	297	77	255
Gurnee, Isaac Q., Butler, N. J. Syringe	572,506	Dec. 1	731	174	77	1417
Gustave, George, assignor of one-half to E. S. Joseph, Los Angeles, Cal. High-explosive projectile	574,061	Dec. 29	3560	850	77	2018
Gutmann, Alfred, Ottensen, Germany. Sand-blast and apparatus employed in operating by sand-blasts	573,180	Dec. 15	1923	461, 462	77	1683
Guttendorf, Nicholas J., Pittsburg, Pa. Cnapidor	574,148	Dec. 29	3718	886	77	2046
Gutzkow, Frederick, San Francisco, Cal. Refining coppery silver bullion	572,342	Dec. 1	447	.....	77	1364
Guye, Charles E. (See Naville and Guye.)						
Guye, Philippe A. (See Naville and Guye.)						
H. C. White Company. (See White, Hawley C., assignor.)						
H. W. Butterworth & Sons Company. (See Ainsworth, Edwin, assignor.)						
H. W. Butterworth & Sons Company. (See Butterworth, Harry W., assignor.)						
H. W. Butterworth & Sons Company. (See Mackinney, William C., assignor.)						
H. W. Butterworth & Sons Company. (See McLean, Andrew, assignor.)						
H. W. Butterworth & Sons Company. (See Weichelt, Charles, assignor.)						
H. W. Johns Manufacturing Company. (See Meek and Powers, assignors.)						
H. W. Johns Manufacturing Company. (See Thompson, Mark S., assignor.)						
Haas, Frederick. (See Steffens, James P., assignor.)						
Haas, Samuel, New York, N. Y. Skirt	573,650	Dec. 22	2899	668	77	1868
Haas, William, New York, N. Y. Pipe-cutter	570,751	Nov. 3	615	142	77	751
Haase, Paul, Chemnitz, Germany. Shears	571,100	Nov. 10	1333	311	77	914
Haberer, Charles H., assignor of one-half to W. W. Barnes, Louisville, Ky. Electric switch	572,929	Dec. 8	1475	354, 355	77	1581
Hacker, George J., Mokena, Ill. Lighting device	572,930	Dec. 8	1476	355	77	1581
Hackett, John C., St. Louis, Mo. Lifting-jack	569,020	Oct. 6	527	121	77	100
Hadaway, John B., Brockton, Mass. Welt-beveling attachment for sole-sewing machines. (Reissue)	11,578	Dec. 8	1503	360	77	1586
Hadfield, Frederick, Woonsocket, R. I. Machine for working rubber	571,226	Nov. 10	1434	335	77	933
Hadfield, Robert A., Sheffield, England. Toughening manganese-steel castings	572,891	Dec. 8	1392	.....	77	1564
Haeberlin, Hermann, assignor to Horix Manufacturing Company, Cleveland, Ohio. Water-heater	570,128	Oct. 27	2477	587	77	507
Hagaman, S. Wallace. (See Weidner, John A., assignor.)						
Hager, Willard, Athol Centre, Mass. Display-rack	570,704	Nov. 3	534	124	77	737
Hahn, Frederick W., New York, N. Y. Cushioned horseshoe	569,009	Oct. 6	508	115	77	97
Hahn, Frederick W., New York, N. Y. Soft-tread horseshoe	572,602	Dec. 8	907	219	77	1470
Hahn, George. (See Sears, George H., assignor.)						
Haight, Frederick, Poughkeepsie, N. Y. Tube-cleaner	572,359	Dec. 1	482	113	77	1370
Haight, William E., New Milford, Ill. Neck-yoke center	573,181	Dec. 15	1925	462	77	1683
Haiman, Elias, R. Huettich, and C. Bishop, assignors to Empire Plow Company, Cleveland, Ohio. Cultivator	571,307	Nov. 10	1576	375	77	961
Hain, Joseph. (See Braun, Lina, assignor.)						
Haish, Jacob, assignor to Haish Manufacturing Company, De Kalb, Ill. Wire fence	570,752	Nov. 3	616	142	77	751
Haish Manufacturing Company. (See Haish, Jacob, assignor.)						
Hakes, Hudson W., Millbury, Mass. Harness-frame for looms	570,926	Nov. 10	921	214	77	839
Hakins, George B., Norwood, N. Y., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental disk-holder	574,031	Dec. 29	3505	837	77	2007
Halbert, James. (See Britton, William, assignor.)						
Haldeman, Benjamin F., Pittsburg, Pa. Vehicle running-gear	572,481	Dec. 1	686	164	77	1409
Hale, Edward E., *et al.* (See Martindale, Benjamin F., assignor.)						
Hale, Henry S., Philadelphia, Pa. Car-seat	572,654	Dec. 8	993	239	77	1487
Hale, Henry S., Philadelphia, Pa. Car-seat	572,655	Dec. 8	994	239	77	1487
Hale, Orlando C., Cincinnati, Ohio. Machine for embossing cards	573,407	Dec. 15	2329	556	77	1756
Hale, Roswell W., West Bay City, Mich. Reciprocating scraper for band-saw wheels	571,876	Nov. 24	2566	608	77	1177
Haley, Brinckle H., West Chester, Pa. Wire fence	570,090	Oct. 27	2419	573	77	497
Hall, Charles H., Glidden, assignor of one-half to E. Bease, Butternut, Wis. Automatic whistle	572,112	Dec. 1	28	8	77	1283
Hall, Charles M., Oberlin, Ohio. Metallic alloy or compound and producing same	570,014	Oct. 27	2272	.....	77	467
Hall, Edward S., New York, N. Y. Device for actuating brakes	572,255	Dec. 1	284	68	77	1333
Hall, Elijah C., Braintree, Mass. Heater	570,993	Nov. 10	1030	241, 242	77	859
Hall, Frank R., Boston, Mass. Composition of matter	571,117	Nov. 10	1284	.....	77	901
Hall, George. (See Burket, Marion T., assignor.)						
Hall, Henry, Portsmouth, Ohio. Clock striking mechanism	571,615	Nov. 17	2096	503	77	1069
Hall, Lewis L., Bourne, Oreg. Wrench	573,651	Dec. 22	2930	668	77	1909
Hall, Lynn, and A. Petzold, Philadelphia, Pa. Creeper for horseshoes	572,256	Dec. 1	287	69	77	1334
Hall, Martha E., Newmarket, Ind. Pattern or chart	573,408	Dec. 15	2332	557	77	1756
Hall, Samuel M. (See Bostwick, George C., assignor.)						
Hall Signal Company. (See Buchanan, John P., assignor.)						
Hall, Thomas, Manchester, England. Velocipede	570,015	Oct. 27	2273	540	77	467
Hall, Willard L., Spokane, Wash. Lifting-jack	570,550	Nov. 3	212	56	77	676
Hall, William H., assignor of one-half to T. M. Dukehart and J. T. Mason, R, Baltimore, Md. Automatic air-brake for railway-trains	574,062	Dec. 29	3562	850, 851	77	2018
Haller, Nicholas S. (See Weaver and Haller.)						
Hallett, Hervey H., Rockland, Mass. Heater for attachment to oil or gas burners	569,377	Oct. 13	1140	272	77	234
Hallett, John H. (See Wyndham and Hallett.)						
Halley, Walter C., Halley, Ark. Cattle-guard	571,616	Nov. 17	2098	503	77	1069
Halling, Charles O., assignor of one-half to G. Amonsen, Minneapolis, Minn. Device for transporting trees	569,042	Oct. 6	561	129	77	107
Hallock, Ira P. (See Hallock, L. T. and I. P.)						
Hallock, Lee T., Danbury, Conn., and I. P. Hallock, Yonkers, N. Y. Round-paper-box machine	569,496	Oct. 13	1332	313, 314	77	267

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hallowell, Charles E., Philadelphia, Pa. Hat-fastener	574,149	Dec. 29	3719	866	77	9046
Hallstrom, John G., Jamestown, N. Y. Attachment for woodworking-lathes	569,197	Oct. 13	823	192, 193	77	173
Hallwood, Henry S. (See McCormick, John H., assignor.)						
Halpin, Cornelius, assignor of one-half to F. W. Smith, Tarrytown, N. Y. Car-coupling	574,323	Dec. 29	4066	966	77	2109
Halsey, Francis A., San Rafael, Cal. Smokeless powder	568,902	Oct. 6	315	.....	77	61
Halsey, Francis A., San Rafael, Cal. Smokeless powder	570,705	Nov. 3	535	.....	77	738
Halvorsen, Halbert B., assignor of one-half to W. K. Millholland, Chicago, Ill. Steam-engine	573,216	Dec. 15	1988	478	77	1695
Ham, Albert W., Troy, N. Y. Button-setting machine	569,579	Oct. 13	1501	354, 355	77	299
Hamilton, Christopher H., New York, N. Y., assignor to F. R. Biedler, Baltimore, Md. Car-coupling	571,590	Nov. 17	1935	462	77	1041
Hamilton, Edward H., Poona, India. Tooth-brush	569,670	Oct. 20	2022	482	77	409
Hamilton, Frederick, Cranford, N. J. Sliding-drawer support	573,461	Dec. 22	2473	586	77	1801
Hamilton, Frederick R., and C. H. Moore, Jr., Bath, N. Y. Belt-fastener	568,842	Oct. 6	227	53	77	45
Hamilton, Isaac N., assignor of one-half to J. H. Carpenter, Reading, Pa. Shafting-hanger	573,182	Dec. 15	1925	462	77	1683
Hamilton, James A., Indianapolis, Ind. Game-table	573,972	Dec. 29	3409	817	77	1990
Hamilton, Joseph B., Springfield, Mass. Magnetic separator	571,362	Nov. 17	1664	394, 395	77	992
Hamilton, Joseph B. Springfield, Mass. Magnetic separator	572,162	Dec. 1	120	28, 29	77	1300
Hamilton, Mark K., New York, N. Y. Bottle-collar	571,088	Nov. 10	1203	282	77	890
Hamilton, Ralph S., Providence, R. I. Tea-strainer	572,482	Dec. 1	687	164	77	1410
Hamilton, Samuel, Wilson, Mo. Clover-seed harvester	569,043	Oct. 6	563	130	77	107
Hamilton, William R., *et al.* (See Hann, Francis S., assignor.)						
Hamley, Henry R. (See Simon, William, Jr., assignor.)						
Hamlin, Thomas W., Sarawak, Canada. Machine for pointing skewers	570,630	Nov. 3	394	93, 94	77	711
Hamm, William S., Newton, assignor to A. Seaver, Boston, Mass. Lasting-machine	570,290	Oct. 27	2641	626	77	539
Hamm, William S., Newton, assignor to A. Seaver, Boston, Mass. Sewing-machine for lasting boots or shoes	570,252	Oct. 27	2703	643	77	550
Hamm, William S., Newton, and A. W. Eaton, assignors to Staple Fastening Machine Company, Boston, Mass. Machine for making and driving metallic fastenings	571,227	Nov. 10	1436	335, 336	77	933
Hammond, Eugene G. (See Reinert, John F., assignor.)						
Hammond, Grant, Mulberry, Cal. Solder for soldering aluminium	572,200	Dec. 1	181	.....	77	1313
Hammonds, Julia T., Lebanon, Ill. Apparatus for holding yarn-skeins	572,985	Dec. 15	1561	379	77	1617
Hampson, Joseph, Fall River, Mass. Loom-harness for weaving leno goods	572,007	Nov. 24	2800	660	77	1222
Hanable, Charles A., assignor of one-half to W. L. Taylor, Indianapolis, Ind. Hydrocarbon-burner	569,412	Oct. 13	1204	283	77	244
Hance, James A., assignor of one-half to A. B. Lail, St. Louis, Mo. Trolley	570,475	Nov. 3	63	15	77	650
Hancock, Clinton C. (See Rehfuss, George, J. G., and M. O., assignors.)						
Hancock, Llewellyn. (See Coates and Hancock.)						
Hand, Townson, assignor of two-fifths to M. Alexander and J. C. Cope, North Vernon, Ind. Nut-lock	571,661	Nov. 17	2169	521	77	1083
Hand, William M., St. Louis, Mo., assignor to General Electric Company, of New York. Brush-holder for dynamos	569,824	Oct. 20	1950	464	77	395
Handy, John R., Jameson, Mo. Barometer-inkstand	572,483	Dec. 1	688	164, 165	77	1410
Handy, William W., Baltimore, Md. Electric governor for water-wheels	571,363	Nov. 17	1666	395	77	992
Hanka, Frank, *et al.* (See Darling, Ernest T., assignor.)						
Hanley, Michael. (See Marable, Benjamin F., assignor.)						
Hann, Francis S., York, assignor to W. R. Hamilton, Indiana, Pa., and O. W. Crampton, Hampstead, Md. Broom or brush bridle	570,927	Nov. 10	923	214	77	839
Hanna, George A., and F. E. Fairman, said Fairman assignor to T. A. Swanson, Whittemore, Iowa. Weighing and registering machine	572,986	Dec. 15	1592	379, 380	77	1618
Hanna, James O., assignor of one-half to W. W. Matthews, Amity, Ark. Grappling device for carpenters	572,751	Dec. 8	1179	283	77	1321
Hanna, William H., Petersburg, Ill. Sewing-machine needle	568,946	Oct. 6	390	88	77	75
Hanna, William H., Petersburg, Ill. Needle-throat for sewing-machines	573,327	Dec. 15	2192	526	77	1732
Hanna, William P. (See MacKenzie, Sloane, and Hanna.)						
Hannah, John C., R. J., and J. W., Stockton, Cal. Potato-digger	569,787	Oct. 20	1894	449	77	384
Hannah, Joseph W. (See Hannah, John C., R. J., and J. W.)						
Hannah, Rupert J. (See Hannah, John C., R. J., and J. W.)						
Hannan, James, Muscatine, Iowa. Toy cannon and target	569,282	Oct. 13	974	233	77	201
Hannum, Charles U., Philadelphia, Pa. Sash-cord holder	570,631	Nov. 3	396	94	77	711
Hansen, Hans K., Alta, Iowa. Coin-controlled apparatus for testing striking powers	574,324	Dec. 29	4068	967	77	2110
Hansen, John S., assignor to American Postal Machines Company, Boston, Mass. Mail-marking machine	572,085	Nov. 24	2964	697, 698	77	1252
Hansen, John S., Medford, Mass., assignor to American Postal Machines Company, Portland, Me. Mail-marking machine	573,652	Dec. 22	2831	669	77	1869
Hansen, John S., Medford, Mass., assignor to American Postal Machines Company, Portland, Me. Mail-marking machine	573,653	Dec. 22	2833	669	77	1869
Hanson, Paul, assignor to Deering Harvester Company, Chicago, Ill. Bundle-carrier for harvesters	573,086	Dec. 15	1761	423	77	1653
Hanstine, Harry S., assignor of one-half to J. F. Thompson, Pittsburg, Pa. Adjusting tool-holder	571,900	Nov. 24	2924	621	77	1188
Happoldt, Henry P., *et al.* (See Hickey, Thomas W., assignor.)						
Harbaugh, Samuel V., assignor to J. W. Bowen, Baltimore, Md. Making soap powder	569,154	Oct. 6	756	.....	77	143
Harbaugh, Samuel V., and G. Radiger, Sr., assignors of one-third to H. P. Stewart, Baltimore, Md. Sounding wheeled toy	573,217	Dec. 15	1991	478	77	1695
Hardesty, James W., Montgomery, Ala. Inflatable mattress	569,712	Oct. 20	1764	419	77	362
Hardie, James S., El Dorado, Kans. Metallic car-truck	569,044	Oct. 6	564	130	77	107
Hardin, Thomas W., Grant, Iowa. Windlass	570,306	Oct. 27	2616	621	77	534
Harding, Horace J., and B. A. Osborn, Albion, N. Y. Printer's chase	570,928	Nov. 10	994	214	77	839
Hardwick, Robert. (See Elder, James A., assignor.)						
Hardy, Francis A., Evanston, Ill. Opera-glasses	572,540	Dec. 8	787	188	77	1443
Hardy, James F., New York, N. Y. Sewing-machine	571,318	Nov. 10	1593	378	77	964
Hare, George F., Limerick, Ireland. Maclage-bottle	572,603	Dec. 8	906	220	77	1470
Hare, John T., Fresno, Cal. Hay-loader	570,753	Nov. 3	617	142, 143	77	751
Hargreaves, James, Farnworth-in-Widnes, and T. Bird, Cressington, England. Apparatus for electrolysis of chlorids, &c	571,591	Nov. 17	2057	492	77	1062
Hargrove, Byron L., Bottom, Tex. Printing attachment for letter-boxes	570,994	Nov. 10	1034	242	77	860

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Harkness, Charles A., Providence, R. I. Elevator	569,129	Oct. 6	701	163, 164, 165, 166	77	134
Harkness, Charles A., Providence, R. I. Elevator	570,253	Oct. 27	2704	643, 644	77	550
Harlow, Theodore L., Gardner, Mass. Brush-cleaner	571,438	Nov. 17	1792	427	77	1015
Harman, Ananias, Roann, Ind. Crosscut-saw	572,604	Dec. 8	910	220	77	1470
Harman, Daniel M., Philadelphia, Pa. Amusement apparatus	570,016	Oct. 27	2274	541	77	468
Harmanson, Israel, assignor of one-third to A. G. Bergstrom, Hopkins, Minn. Bridle-bit	571,563	Nov. 17	2012	478	77	1054
Harmon, Charles W. and J. E., and C. L. Boyd, Allegheny, Pa. Ice-cream mold and dipper	572,987	Dec. 15	1585	380	77	1618
Harmon, James E. (See Harmon and Boyd.)						
Harmon Manufacturing Company. (See Mitchell, John E., assignor.)						
Harmsen, Wilhelm G. C. (See Ljungström, Lars G., assignor.)						
Harnischfeger, Henry, *et al.* (See Theurer and Mueller, assignors.)						
Harnsberger, Audley E., and E. Wright, Staunton, Va. Type-writing machine	573,654	Dec. 22	2836	669, 670	77	1870
Harper, David, Neelyville, Ill. Band-cutter and feeder	571,161	Nov. 10	1334	311	77	915
Harper, John A. D., and D. R. Smith, Magnolia, Ark. Churn	572,484	Dec. 1	690	165	77	1410
Harpole, Andrew J. (See Green, John G., assignor.)						
Harrell, Andrew J., New Orleans, La. Nut-lock	570,551	Nov. 3	213	56	77	677
Harrell Bureau-Desk Company. (See Harrell, John H., assignor.)						
Harrell, John H., Baltimore, Md., assignor to Harrell Bureau-Desk Company, New York, N. Y. Bureau and desk	569,825	Oct. 20	1951	464	77	395
Harrer, Henry, Allegheny, Pa. Woodworking-machine	574,088	Dec. 29	3604	861, 862, 863, 864	77	2096
Harris, Benjamin S. H. (See Harris, William A. and B. S. H.)						
Harris, B et H., and G. A. Corbin, Denver, Colo. Spacing-rule and lining-gage	573,973	Dec. 29	3411	818	77	1990
Harris, Edward P., Chester, assignor to J. G. Gray, assignee, Philadelphia, Pa. Gas-generator	568,903	Oct. 6	315	73	77	61
Harris, George T. (See Capitaine, Emil, assignor.)						
Harris, George W. (See Harris, William R., assignor.)						
Harris, Helen S., administratrix. (See Harris, William R.)						
Harris, Henry, and F. Bernardin, Antwerp, Ohio. Danger-signal	573,218	Dec. 15	1992	479	77	1696
Harris, Henry W., Detroit, Mich. Door-clasp	570,017	Oct. 27	2276	541	77	468
Harris, Hiram. (See Springsteen and Harris.)						
Harris, Hugh O., Brooklyn, assignor to Seamless Structural Tube Company, New York, N. Y. Machine for rolling metal tubes	573,873	Dec. 29	3214	764	77	1954
Harris, Samuel, assignor to Steel Motor Company, Johnstown, Pa. Drum for electric controllers	573,874	Dec. 29	3215	765	77	1955
Harris, Samuel J., Milliville, Mass. Car-fender	572,752	Dec. 8	1180	284	77	1522
Harris, William A. and B. S. H., Greenville, S. C. Air-brake coupling	571,662	Nov. 17	2170	522	77	1083
Harris, William R., deceased; H. S. Harris, administratrix, assignor to G. W. Harris, Lowell, Mass. Machine for winding yarn	573,268	Dec. 15	2074	497	77	1709
Harrison, Arthur. (See Davies and Harrison.)						
Harrison, Edward M., Chicago, Ill. Telephone-switch	571,162	Nov. 10	1336	312	77	915
Harrison, Edward M. and W. S., Chicago, Ill. Magneto-telephone	571,190	Nov. 10	1377	322	77	923
Harrison, John C., Bowness, England. Slot-drilling machine	570,091	Oct. 27	2420	573, 574	77	497
Harrison, William S. (See Harrison, Edward M. and W. S.)						
Harry, Edward, Buffalo, N. Y. Multiform lounge or settee	570,907	Oct. 27	2617	622	77	535
Harry, Edward, Buffalo, N. Y. Convertible couch or settee	570,908	Oct. 27	2620	622	77	535
Harshaw, Seth T., *et al.* (See Vermilyea, Eugene, assignor.)						
Hart, Andrew H., Brooklyn, N. Y. Lens, spectacles, or eyeglasses	573,087	Dec. 15	1764	423	77	1653
Hart, Frank B., *et al.* (See Barrow, Samuel, assignor.)						
Hart, Gerald W., assignor to Hart & Hegeman Manufacturing Company, Hartford, Conn. Snap-switch	569,332	Oct. 13	1067	253	77	220
Hart & Hegeman Manufacturing Company. (See Hart, Gerald W., assignor.)						
Hart, Henry C., Detroit, Mich. Gas-engine	569,918	Oct. 20	2103	501	77	423
Hart, James H., Meaderville, Mont. Primer for blasting-fuses	569,871	Oct. 20	2023	482	77	409
Hart, John W., L. Griffith, and M. Goodwin, Pittsburg, Kans. Match-safe	572,541	Dec. 8	789	189	77	1443
Hart, Ozias P., assignor of one-half to J. L. Rainey, Murphysborough, Ill. Valve-gear	573,875	Dec. 29	3216	765	77	1955
Hart, Thomas F. (See McManus and Hart.)						
Hart, William M., New York, N. Y. Self-supporting toy derrick	568,975	Oct. 6	441	98	77	85
Hartford Carpet Company. (See Borland and Sherwood, assignors.)						
Hartford, David F., Boston, Mass. Machine for cutting soles	568,757	Oct. 6	82	19	77	18
Hartford, Isaac J., Kirkeville, Mo. Stock-watering tank	570,254	Oct. 27	2710	644	77	552
Hartkorn, August, Jr. (See Clifford, Thomas G., assignor.)						
Hartland, Frederic W. T., and A. Malpas, West Bromwich, England. Molding-machine	572,656	Dec. 8	997	240	77	1488
Hartman, Daniel M., and J. G. Donnell, Philadelphia, Pa. Machine for stacking cakes	571,663	Nov. 17	2172	522, 523	77	1084
Hartman, Jacob. (See Heberline and Hartman.)						
Hartman, John M., Philadelphia, Pa. Device for preventing obstruction of blast in blast-furnaces	570,129	Oct. 27	2479	587	77	508
Hartman, John W., Bethlehem, Pa. Device for preventing accumulation of air in pressure-pipes	571,364	Nov. 17	1670	396	77	992
Hartmann, August. (See Paulus, Jacob, assignor.)						
Hartmann, Jean, Mulhouse, Germany. Perforated door for steam-boilers	569,872	Oct. 20	2023	483	77	409
Hartmann, Louis H., *et al.* (See Young, John R., assignor.)						
Harton, Pembroke D., Philadelphia, Pa. Triplet-cake-making machine	571,921	Nov. 24	2659	630	77	1194
Hartshorn, Edmund F., Newark, N. J., assignor to Stewart Hartshorn Company, of New Jersey. Attaching window-shades to rollers	572,294	Dec. 1	366	87	77	1349
Hartsock, Joseph S. B., assignor to R. I. Garber, Washington, D. C. Hat-mark	574,325	Dec. 29	4070	967	77	2110
Hartt, Eugene R. (See Thompson, William, assignor.)						
Harts, William D., Talley Cavey, Pa. Railway-signal	571,191	Nov. 10	1379	322	77	923
Hartzell, Frank E., Alliance, Ohio. Shelving	569,640	Oct. 20	1618	381	77	337
Harvey, Frank A., Minneapolis, Minn. Boxing-glove	570,092	Oct. 27	2422	575	77	497
Harvey, Herbert F., Cleveland, Ohio. Dental obtunder	571,970	Nov. 24	2737	647	77	1210
Harvey, Victoria J., Red Jacket, Mich. Key-holder	568,758	Oct. 6	84	20	77	19
Harvey, William F. H., assignor to J. W. Lappin, J. Braun, and J. Gaffney, Kokomo, Ind. Wheel	571,439	Nov. 17	1794	428	77	1015

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hasenpflug, Ezra W. (See Hasenpflug, John A. and E. W.)						
Hasenpflug, John A. and E. W., Cleveland, Ohio. Water-filter	573,409	Dec. 15	2334	557	77	1757
Haskell, William H. (See Randlett, William D., assignor.)						
Hastie, W. G., *et al.* (See Mummery, Edwin G., assignor.)						
Hastings, Henry. (See Voss, Detlef C., assignor.)						
Hastings, James T., assignor of one-half to C. A. Crane, Chicago, Ill. Fish-hook	570,632	Nov. 3	397	94	77	711
Hastrup & Co., A. (See Clasen, John, assignor.)						
Hatch, Charles, Jr., Revere, assignor, by mesne assignments, to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail	570,633	Nov. 3	398	94	77	711
Hatch, Charles F. (See Ryan and Whitney, assignors.)						
Hatch, Henry C., Windham, Conn. Trousers-stretcher	569,021	Oct. 6	528	121	77	100
Hatch, W. P. (See Elliott, George C., assignor.)						
Hatchwell, Julio, *et al.* (See Grobet, Charles E., assignor.)						
Hatfield, Thomas J., Dublin, Ind. Grain and seed cleaner	574,354	Dec. 29	4123	979	77	2120
Hatfield, William H., Sulphur Springs, Ala. Car-coupling	572,542	Dec. 8	791	189	77	1444
Hathaway High Explosive Company. (See Dashiell, Robert B., assignor.)						
Hathaway, Jesse E., Santa Fé Springs, Cal. Gas-generator	572,737	Dec. 8	1255	303	77	1536
Haubner, Frank O., New York, N. Y. Stair-pad or carpet-lining	570,221	Oct. 27	3643	626	77	539
Haubtman, Leon F., New Orleans, La. Apparatus for evaporating liquids	569,456	Oct. 13	1264	297, 298	77	255
Haubtman, Leon F., New Orleans, La. Evaporating-pan	573,219	Dec. 15	1993	479	77	1696
Hauerwas, Edgar A., Saratoga Springs, N. Y. Automatic electromagnetic brake for rail-way-cars	569,101	Oct. 6	660	152, 153	77	196
Haug, Herman, assignor to C. H. McIntire, Newark, N. J. Wire-connector	569,713	Oct. 20	1765	419	77	362
Hauk, Charles D., Chicago, Ill. Manufacture of illuminating-gas	572,703	Dec. 8	1083	263, 264	77	1504
Haupt, Herman, Washington, D. C., assignor to General Compressed Air Company, of New Jersey. Car-truck	570,798	Nov. 3	689	158	77	765
Hauser, Gustav C. F., Erlangen, assignor to Chemische Fabrik auf Actien, vormals E. Schering, Berlin, Germany. Waterproof composition	572,295	Dec. 1	367	.....	77	1349
Hausman, Ward B. (See Donahue and Hausman.)						
Hansmann, Charles G., Cleveland, Ohio. Ladder	572,201	Dec. 1	181	44	77	1313
Havell, George, assignor to Havell Manufacturing Company, Newark, N. J. Pocket-book frame and catch	572,931	Dec. 8	1478	355	77	1592
Havell Manufacturing Company. (See Havell, George, assignor.)						
Haven, David B., Ste. Genevieve, Mo. Swimming device	571,858	Nov. 24	2334	601	77	1171
Haverly, Elmer J., Sayre, Pa. Combined game apparatus and cigar-cutter	569,130	Oct. 6	708	166	77	135
Haviland, Frank W., New York, N. Y. Vehicle driving-gear	570,395	Oct. 27	3002	710, 711	77	605
Haviland, Frank W., New York, N. Y. Vehicle driving-gear	570,396	Oct. 27	3005	711, 712	77	606
Hawker, William, Montreal, Canada. Regulator for incandescent electric lamps	572,421	Dec. 1	600	142	77	1392
Hawkins, Frederick H., assignor to L. A. Hayward, New York, N. Y. Electric sign	573,088	Dec. 15	1765	424	77	1653
Hawkins, Millard J., Newport, N. Y. Machine for soldering caps on cans	568,849	Oct. 6	228	53, 54, 55	77	45
Hawkridge, Arthur, Weehawken, N. J. Lid for ink-wells	568,976	Oct. 6	442	99	77	85
Hawley, Lincoln H., Canandaigua, N. Y. Pressure reducing and regulating valve	573,462	Dec. 22	2475	586, 587	77	1801
Hawliczek, Josef, Liverpool, assignor to United Alkali Company, Limited, Widnes, England. Making sodium bicarbonate from roaster-ash	574,089	Dec. 29	3613	864	77	2028
Haworth, George D., Decatur, Ill. Corn-planter	572,543	Dec. 8	792	189, 190	77	1444
Hay & Willits Manufacturing Company. (See Willits, Van Burton, assignor.)						
Hayden, James T., Oak Park, assignor to Crane Company, Chicago, Ill. Safety-vent	571,476	Nov. 17	1854	441	77	1026
Hayes, Edward, Rochester, N. Y. Generator	571,702	Nov. 24	2389	566	77	1140
Hayes, George, New York, N. Y. Wheel for bicycles	572,892	Dec. 8	1393	337	77	1564
Hayes, Hector J. (See Dilley and Hayes.)						
Hayes, Porter C., assignor of one-half to S. W. Sigler, Burghill, Ohio. Thill-coupling	569,131	Oct. 6	710	166, 167	77	135
Haynes, Charles F., Boston, Mass. Book-rest for school-desks, tables, &c	573,089	Dec. 15	1766	454	77	1654
Haynes, John L., Pawling, N. Y. Can-opener	571,664	Nov. 17	2177	524	77	1085
Hays, William J., Decatur, Ill. Gate-latch	572,485	Dec. 1	691	165	77	1410
Hayward, L. A. (See Hawkins, Frederick H., assignor.)						
Hazard, John. (See Edwards and Hazard.)						
Hazen, Jacob P., Shirley, Mass. Chicken-coop	571,592	Nov. 17	2059	493	77	1062
Head, Katie D., Lawrenceburg, Ky. Hat-fastening	572,202	Dec. 1	183	44	77	1313
Head, William. (See Leonard and Head.)						
Heald, Joseph C., assignor of one-half to A. C. Fowler, Lawrence, Mass. Hub-turning lathe	571,901	Nov. 24	2625	622, 623	77	1188
Heap, Annie B., and H. H. Van Kuran, Chicago, Ill. Game apparatus	574,150	Dec. 29	3721	886	77	2047
Hearnshaw, Frank, *et al.* (See Hearnshaw, Frank J., assignor.)						
Hearnshaw, Frank J., assignor of one-half to F. Hearnshaw and A. Wintermute, Chicago, Ill. Support for wire laths and partitions	573,512	Dec. 22	2555	606	77	1815
Heath, Charlotte, London, England. Machine for perforating documents	571,365	Nov. 17	1672	396	77	993
Heath, Webster L. (See Holmes and Heath.)						
Heberline, Fred A., New Brighton, and J. Hartman, Pittsburg, Pa. Package for powders	571,521	Nov. 17	1937	462	77	1041
Hecker, Jacob S., Philadelphia, Pa. Keyhole-guard	573,998	Dec. 15	1596	380	77	1619
Heckert, William, Findlay, Ohio. Apparatus for casting tubular ingots or metal tubes	569,641	Oct. 20	1619	381	77	337
Heckert, William, Findlay, Ohio. Furnace for iron-working	573,590	Dec. 22	2688	639	77	1841
Hedges, Vespasian V., Coffeyville, Kans. Electric fan for ventilating streets or alleys	572,008	Nov. 24	2401	560, 561	77	1222
Heene, Edward G., assignor to G. W. Heene, Cleveland, Ohio. Key for time-recorders	571,268	Nov. 10	1511	357	77	948
Heene, George W. (See Heene, Edward G., assignor.)						
Heene, George W., assignor to Cleveland Time Register Company, Cleveland, Ohio. Printing-machine	569,826	Oct. 20	1952	464, 465	77	396
Heer, Isak, Zurich, Switzerland. Loom	571,192	Nov. 10	1381	322	77	924
Heermans, Paul W. (See Bailey, Marcus B., assignor.)						
Hegarty, Reuben, Madera, Pa. Measuring-pole	571,366	Nov. 17	1675	396	77	993
Heggem, Charles O., assignor to Russell & Company, Massillon, Ohio. Locomotive-boiler	571,118	Nov. 10	1365	293	77	901
Heiberger, August. (See Bardshar and Heiberger.)						
Heiberger, Isaac. (See Mahler, Adam G., assignor.)						
Heidenreich, Eyvind L., and G. Monrath, Chicago, Ill.; said Monrath assignor to said Heidenreich. Cable-carrier	571,440	Nov. 17	1795	428	77	1015

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Heim, Lewis R., Danbury, Conn. Hat-stiffening machine	573,876	Dec. 29	3217	765, 766	77	1955
Heimberger, Harry J., Columbus, Ohio. Printing machine	568,904	Oct. 6	316	73	77	61
Hein, Henry, *et al.*, (See Neild, Edwin, assignor.)						
Heindel, Charles H., Glen Rock, Pa. Let-off and take-up mechanism for looms	574,326	Dec. 29	4071	967	77	2110
Heine, Arthur, assignor to Fabrik Lochmann'scher Musicwerke, Actien-Gesellschaft, Leipsic-Gohlis, Germany. Apparatus for sounding stringed musical instruments	571,763	Nov. 24	2372	566	77	1141
Heinecke, Hermann, assignor of one-half to B. Herting, Reinickendorf, Germany. Artificial leg	572,989	Dec. 15	1588	3-1	77	1619
Heineken, Theodore S., Burlington, N. J. Combined soap-cup and holder for washbasins	572,635	Dec. 8	964	232	77	1481
Heinemann, Albert, Berlin, Germany. Hermetically-closing jug	572,257	Dec. 1	288	69	77	1334
Heinemann, Felix, Charlottenburg, Germany. Baking and cooking oven	569,413	Oct. 13	1205	284	77	245
Heitmann, Hans H. W. (See Seibel, William A., assignor.)						
Helios Electric Company. (See Spencer and Toerring, assignors.)						
Hellwig, Justus W., Baltimore, Md. Bicycle-lock	572,798	Dec. 8	1256	303, 304	77	1536
Helme & McIlhenny. (See Delaney, John, assignor.)						
Helmore, Robert E., West Bay City, Mich. Bicycle-seat	568,977	Oct. 6	444	99	77	86
Helprin, David T., New York, N. Y. Folding cot	572,492	Dec. 1	601	142	77	1392
Hemp, Lewis W., St. Louis, Mo. Portable oil tank and pump	571,877	Nov. 24	2567	609	77	1177
Hemp, Lewis W., St. Louis, Mo. Stove	571,878	Nov. 24	2569	609	77	1178
Hemphill, Alexander L., Gillespie, Ill. Device for washing forms	573,440	Dec. 15	2335	557	77	1757
Henderson, George, Philadelphia, Pa. Curve-molding machine	569,714	Oct. 20	1766	419	77	362
Henderson, George, Philadelphia, Pa. Cornice-machine	573,655	Dec. 22	2840	670	77	1870
Henderson, Mary F., Washington, D. C. Bicycle-saddle	572,163	Dec. 1	123	29	77	1301
Henderson, Mary F., Washington, D. C. Bicycle-saddle	572,164	Dec. 1	124	29	77	1301
Henderson, Walker G. (See Rodd, William J., assignor.)						
Henderson, William, and O. A. Morse, New York, N. Y., assignors to themselves, and H. Stockdale, Newark, N. J. Display-rack	569,715	Oct. 20	1769	420	77	362
Hendey, Henry J. (See Beach, Milo D., assignor.)						
Hendrickson, Joseph G. (See Charlier, Henri, assignor.)						
Henery, Alvanes G., assignor of one-half to J. B. Naylor and A. A. Coulson, Malta, Ohio. Folding canopy-cover for vehicle-seats	573,974	Dec. 29	3412	816	77	1990
Henius, Max W., Brooklyn, N. Y. Means for and method of preventing corrosion of metals	572,678	Dec. 8	1034	251	77	1496
Henlein, Siegmund, Frankfort-on-the-Main, Germany. Incandescent oil lighting	569,198	Oct. 13	825	193	77	173
Henn, John, San Francisco, Cal. Bung for barrels	570,799	Nov. 3	690	158	77	766
Henneböhle, Frank, Chicago, Ill. Back-pressure valve	572,296	Dec. 1	368	87	77	1349
Henneböhle, Frank, Chicago, Ill. Safety-valve	572,297	Dec. 1	369	87	77	1349
Hennessy, Thomas, Excelsior Springs, Mo. Gas apparatus	5 9,716	Oct. 20	1771	420, 421	77	363
Hennicke, Charles A., Buffalo, N. Y. Vehicle	571,859	Nov. 24	2535	601	77	1171
Hennessy, Thomas, Grand Forks, N. D., assignor to American Incandescent Gas Company, Kansas City, Mo. Gas-generator	573,183	Dec. 15	1927	462, 463	77	1684
Henriel, William A. E., Chelsea, Mass. Bosom stretcher for shirt-ironing machines	568,850	Oct. 6	237	55	77	46
Henry, George A., assignor of one-third to W. B. Clerk, Wilmington, Del. Car-fender	569,457	Oct. 13	1965	298	77	255
Henry, George E., Terre Haute, Ind. Successive drive mechanism for machines in series	569,414	Oct. 13	1906	281	77	245
Henry, Hiram F., Cleveland, Ohio. Distention-valve for musical instruments	572,799	Dec. 8	1259	304	77	1536
Henry, Hiram F., Cleveland, Ohio. Screw-driver	572,800	Dec. 8	1260	304	77	1536
Henry Hinber Company. (See Beaumont, Thomas C., assignor.)						
Henry, John C., Westfield, N. J. Single-wire electric railway	569,827	Oct. 20	1954	465	77	396
Hensarling, Hiram J. (See Collard and Hensarling.)						
Hentz, James W., Baltimore, Md. Letter-box	572,893	Dec. 8	1395	337	77	1564
Hentz, James W., Baltimore, Md. Safety street letter-box	573,220	Dec. 15	1994	480	77	1696
Heppner, Frederick, New York, N. Y. Folding carriage	571,228	Nov. 10	1439	336	77	934
Herbers, Rudolph, Beardsley, Minn. Inside pipe-cutter	572,703	Dec. 1	183	45	77	1313
Herbert, George H., Anaconda, Mont. Strainer for air-brake hose-couplings	572,009	Nov. 24	2393	561	77	1222
Herdman, Frank E., Winnetka, Ill. Door opening or closing apparatus for elevators	570,476	Nov. 3	64	15 16	77	630
Herforth, Gustav, Philadelphia, Pa. Fan attachment for rocking-chairs	569,497	Oct. 13	1335	314	77	268
Herman, Albert R., *et al.* (See Rolfson, Rolf J., assignor.)						
Herman, Charles C. (See Chaves and Herman.)						
Herman, John M., Scotia, Nebr. Device for operating whips	570,800	Nov. 3	691	158	77	766
Herrburger, Joseph, Paris, France. Grand piano	571,163	Nov. 10	1338	312	77	916
Herreid, Peter T. (See Johnsen and Herreid.)						
Herreid, Thomas. (See Johnsen and Herreid.)						
Herrick, Albert B., Jersey City, N. J., assignor to General Incandescent Arc Light Company, New York, N. Y. Snap-switch	570,172	Oct. 27	2553	607	77	523
Herrick, Robert F., trustee. (See Little, Charles H., assignor.)						
Herring, Henry M., assignor to F. S. Gilbert, North Attleborough, Mass. Checkrein-fastener	571,830	Nov. 24	2485	589	77	1162
Herrling, Alfred, Jersey City, N. J. Means for sounding combs	572,055	Nov. 24	2388	681	77	1238
Herrmann, Carl M., assignor to Actien-Gesellschaft für Glas Industrie, vormals Friedr. Siemens, Dresden, Germany. Twin furnace for enameling and heating without muffles	573,975	Dec. 29	3414	818	77	1991
Herrmann, William P. (See Claxton, Langley, assignor.)						
Herron, Fred. (See Herron, Harry P., assignor.)						
Herron, Harry P., Los Angeles, Cal., assignor of one-half to F. Herron, Worthington, Minn. Toboggan	571,665	Nov. 17	2177	524	77	1085
Herron, Mary E., Oska'oosa, Iowa. Garment-supporter	569,919	Oct. 20	2105	501	77	494
Hersey Manufacturing Company. (See Hood, Freeman F., assignor.)						
Hersey Manufacturing Company. (See Tilden, James A., assignor.)						
Herting, Bertha. (See Heinecke, Hermann, assignor.)						
Herz, Alfred, New York, N. Y. Broiler	570,754	Nov. 3	620	143	77	732
Herzberg, Albert, assignor of one-half to R. Holtkötter, Berlin, Germany. Knapsack-carrier	571,563	Nov. 17	2060	493	77	1062
Herzfeld, Albert, Halle-on-the-Saale, Germany. Ball grinding-mill	569,828	Oct. 20	1955	466	77	396
Herzog Electric Appliance Company. (See Herzog and Wheeler, assignors.)						
Herzog, Felix B., and S. S. Wheeler, New York, N. Y.; said Wheeler assignor to said Herzog. Electric signaling apparatus	573,221	Dec. 15	1996	480	77	1696
Herzog, Felix B., and S. S. Wheeler, New York, N. Y., assignors, by mesne assignments, to Herzog Electric Appliance Company, of New York. Electric signaling apparatus	573,591	Dec. 22	2690	639	77	1842
Herzog, Felix B., and S. S. Wheeler, New York, N. Y.; said Wheeler assignor to said Herzog. Electric signaling apparatus	573,592	Dec. 22	2696	640	77	1843
Hess, George A. (See Raverot and Hess.)						
Hess, Henry, assignor to Niles Tool Works Company, Hamilton, Ohio. Metal-planing machine	570,093	Oct. 27	2423	575	77	498

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hess, Wendell, Jr., Troy, N. Y. Ironing-machine	570,397	Oct. 27	3010	712, 713	77	607
Hessemer, Frederick, and C. S. Smith, Philadelphia, Pa. Burglar-alarm	570,755	Nov. 3	621	143	77	752
Hewes, James E., Philadelphia, Pa. Electric furnace	572,636	Dec. 8	965	232, 233	77	1482
Hewes, Virgil H. (See Terry, John W., assignor.)						
Hewitt, Herbert H., Buffalo, N. Y. Side frame for car-trucks	571,522	Nov. 17	1938	462, 463	77	1042
Hewitt, Herbert H., Buffalo, N. Y. Side frame for car-trucks	571,523	Nov. 17	1940	463	77	1042
Hewitt, Herbert H., Buffalo, N. Y. Car-truck	571,524	Nov. 17	1941	463, 464	77	1042
Hewitt, Herbert H., Buffalo, N. Y. Making side frames for car-trucks	571,525	Nov. 17	1943	464	77	1043
Hewlett, Edward M. (See Martin and Hewlett.)						
Hewlett, Edward M., Schenectady, N. Y., assignor to General Electric Company, of New York. Switch	573,146	Dec. 15	1867	450	77	1672
Hewson, Robert, San Francisco, Cal. Steam-turbine	570,756	Nov. 3	622	143	77	752
Hey, George W., Syracuse, N. Y. Mechanical movement	569,132	Oct. 6	711	167	77	135
Heyl, Charles W. (See Lents, Henry P., assignor.)						
Heyl, Edmund W. (See Patterson and Heyl.)						
Heyn, Johannes, Stettin, Germany. Saw-hanging	570,094	Oct. 27	2425	575	77	498
Heyn, Sabina, Omaha, Nebr. Opera-glass shield	572,637	Dec. 8	968	233	77	1482
Heyward, James F. (See Keilholtz, Pierre O., assignor.)						
Heywood, Arthur and A. T., Chicago, Ill. Tool for mending punctures in pneumatic tires	570,664	Nov. 3	463	109	77	725
Heywood, Arthur T. (See Heywood, Arthur and A. T.)						
Heywood Brothers & Co. (See Watkins, Edward G., assignor.)						
Hibbard, Maury W., assignor to W. W. Sprague Company, Chicago, Ill. Tramway-switch	569,199	Oct. 13	826	193, 194, 195	77	173
Hibbard, William W., Rochester, N. Y. Electric switch	571,119	Nov. 10	1266	294	77	902
Hibbard, William W., assignor to Standard Electric Signal Company, Rochester, N. Y. Electric signal-box	571,441	Nov. 17	1796	429	77	1016
Hibbs, Weston J. (See Fedrick, Howard A., assignor.)						
Hibshman, Henry E., assignor of one-half to W. H. Moore, New York, N. Y. Musical instrument	572,010	Nov. 24	2804	661	77	1222
Hickey, Thomas W., assignor to W. F. Hogg, H. P. Happoldt, and J. E. Cunningham, Worcester, Mass. Comb-dabbing mechanism	570,095	Oct. 27	2427	576	77	498
Hickok, Franklin K., New Haven, Conn. Corset	570,398	Oct. 27	3013	713	77	607
Hicks, George C., Boston, Mass. Heat-insulator	570,634	Nov. 3	399	95	77	711
Hicks Manufacturing Company. (See Hicks, Simeon J., assignor.)						
Hicks, Mary A., Hartford, Conn. Umbrella attachment for bicycles	572,298	Dec. 1	370	88	77	1350
Hicks, Oliver H., assignor to Hicks-Troy Electric Door Company, Chicago, Ill. Door-operating apparatus	572,299	Dec. 1	371	88	77	1350
Hicks, Oliver H., assignor to Hicks-Troy Electric Door Company, Chicago, Ill. Door-operating apparatus	572,300	Dec. 1	372	88	77	1350
Hicks, Oliver H., and R. F. Troy, assignors to Hicks-Troy Electric Door Company, Chicago, Ill. Electric door-operating apparatus	572,301	Dec. 1	374	88, 89, 90, 91	77	1350
Hicks, Simeon J., Chicago, Ill. Confectionery-machine	573,463	Dec. 22	2476	587	77	1801
Hicks, Simeon J., Chicago, Ill., assignor to Hicks Manufacturing Company, of Illinois. Confectionery-machine	572,423	Dec. 1	603	143	77	1392
Hicks, Thomas H., Detroit, Mich. Oscillating reciprocating tripolar electric motor	568,947	Oct. 6	393	88, 89	77	75
Hicks-Troy Electric Door Company. (See Hicks, Oliver H., assignor.)						
Hicks-Troy Electric Door Company. (See Hicks and Troy, assignors.)						
Hicok, Hiram A. and M. M., Viroqua, Wis. Jar or bottle	570,096	Oct. 27	2428	576	77	499
Hicok, Mary M. (See Hicok, Hiram A. and M. M.)						
Hien, Phillip, Chicago, Ill. Car-coupling	571,044	Nov. 10	1119	262	77	875
Higgins, Charles M., Brooklyn, N. Y. Bottle cap and brush	571,367	Nov. 17	1676	397	77	993
Higgins, Frederick H. W., London, England. Type-printing telegraphic apparatus	570,852	Nov. 3	788	181	77	785
Higgins, George T., Milwaukee, Wis. Head-rest	572,147	Dec. 15	1869	450	77	1673
Higgins, Henry B. (See Hunter and Higgins.)						
Higgins, John F. (See Young, Robert J., assignor.)						
Higgins, Thomas, assignor of one-fourth to F. Norris, Pittsburg, Pa. Apparatus for manufacturing axles, &c., from iron or steel	572,204	Dec. 1	185	45, 46	77	1313
Higson, James. (See Riffle, John A., assignor.)						
Hildburgh, Leo W., New York, N. Y. Telegraph	571,948	Nov. 24	2701	639	77	1204
Hildebrandt, Rudolph, assignor to A. Song, Chicago, Ill. Binder	570,399	Oct. 27	3014	714	77	607
Hill, Burton W., Somerville, Mass. Valve	573,656	Dec. 22	2843	670	77	1871
Hill, Ebenezer, South Norwalk, Conn. Air-compressor	571,971	Nov. 24	2738	647, 648	77	1211
Hill, Hally P., Washington, D. C., assignor of one-half to G. P. Phillips, Evansville, Ind. Street-lamp hanger	570,801	Nov. 3	693	158	77	766
Hill, Harrison A., Huntsville, Kans. Post-brace	568,948	Oct. 6	396	89	77	76
Hill, Henry D. (See Hill, William P. and H. D.)						
Hill, Irwin H. (See Cross and Hill.)						
Hill, John T., Cleveland, Ohio. Dry-plate valve for automatic sprinkler systems	570,018	Oct. 27	2277	541	77	468
Hill, Myron F., Cambridge, Mass. Telephone-exchange	572,801	Dec. 8	1261	305	77	1537
Hill, Robert B. (See Hochholzer, Hill, and Rigga.)						
Hill, Stephen. (See Bennett and Hill.)						
Hill, Sylvester P., and F. Van Winkle, Newark, N. J. Non-refillable bottle	572,302	Dec. 1	384	91	77	1352
Hill, Thomas. (See Hunt and Walker, assignors.)						
Hill, Thomas, Jersey City, N. J. Cart	570,400	Oct. 27	3015	714	77	608
Hill, William E., Kalamazoo, Mich. Log loader and turner	570,552	Nov. 3	214	56	77	677
Hill, William P. and H. D., St. Louis, Mo. Acetylene-gas generator	572,113	Dec. 1	30	8	77	1224
Hilles & Jones Company. (See Jones, Henry C., assignor.)						
Hillis, James H. (See Arthur, Christopher M., assignor.)						
Hiltner, Lorenz. (See Nobbe and Hiltner.)						
Hilton, Albert B., New York, N. Y. Holder for tally-sheet and manifolding detachable sales-sheet systems	572,990	Dec. 15	1869	381	77	1619
Hilton, John W., assignor of one-half to C. R. Mullen, Cincinnati, Ohio. Braiding-machine	573,411	Dec. 15	2336	558	77	1757
Hilyard, James S., Columbus, Ohio. Washing-machine	570,853	Nov. 3	791	182	77	785
Himebaugh, Joseph M. (See Van Cise, William C., assignor.)						
Hinchliffe, William, Huntsville, Ala. Penholder	572,894	Dec. 8	1396	338	77	1565
Hinchman, William A., Tarentum, Pa. Capsule	573,976	Dec. 29	3416	819	77	1991

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hinckley, Henrietta R., Waterbury, Conn. Doll-walker	569,333	Oct. 13	1069	253	77	221
Hinckley, Henry D., assignor of one-half to H. N. Hinckley, Hartford, Conn. Electric-railway trolley	571,120	Nov. 10	1269	294	77	902
Hinckley, Howard N. (See Hinckley, Henry D., assignor.)						
Hines, William, Middletown, Conn. Hammock	572,424	Dec. 1	605	143	77	1393
Hink, J. F. (See White, Charles G., assignor.)						
Hinks, Harry D., Birmingham, England. Hurricane-lantern	572,895	Dec. 8	1397	338	77	1565
Hinman, Bertrand C., New York, N. Y., assignor to Gold and Bromine Separating Company, New York, N. Y., and West Virginia. Extracting gold	569,334	Oct. 13	1070	253	77	221
Hinsberg, Oscar, Geneva, Switzerland, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Antipyrin mandelate and making same	569,415	Oct. 13	1208	.....	77	245
Hinsberg, Oscar, Geneva, Switzerland, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Ester of alkoylamidophenols and making same	569,416	Oct. 13	1208	.....	77	245
Hinson, James A., Chicago, Ill. Draft-rigging for car-couplings	570,477	Nov. 3	67	16	77	650
Hinson, James A., Chicago, Ill. Car-coupling	571,229	Nov. 10	1442	337	77	935
Hipperling, Georg C. W. and W. A. D., Wandsbeck, Germany. Cycle	572,544	Dec. 8	796	190	77	1445
Hipperling, Wilhelm A. D. (See Hipperling, Georg C. W. and W. A. D.)						
Hipple, Torrence C., *et al.* (See Cramer, John, assignor.)						
Hirsch, Charles, assignor of one-half to S. L. Altman, Buffalo, N. Y. Hose-nozzle	570,757	Nov. 3	625	144	77	753
Hirt, Louis J., Brookline, Mass. Cable-railway grip	570,173	Oct. 27	2555	607, 608	77	523
Hirt, Louis J., Brookline, Mass. Mechanism for cable-railways	570,635	Nov. 3	400	95	77	712
Hise, George J., Chicago, Ill. Package-carrier for bicycles	571,132	Nov. 10	1295	301	77	907
Hiss, William J. (See Tiff, Franklin D., assignor.)						
Hitchcock, Charles M., Utica, N. Y. Mud-guard for bicycles	574,032	Dec. 29	3507	838	77	2007
Hitchcock, John S., Syracuse, N. Y. Scrubbing-machine	574,355	Dec. 29	4126	979, 980	77	2120
Hitchcock, William E., *et al.* (See Waugh and Older, assignors.)						
Hitchings, Walter P., Wanbay, S. D. Straw-burning stove	569,557	Oct. 13	1451	343	77	290
Hite, John L., Johnstown, Pa. Fish-plate	569,156	Oct. 6	758	176	77	144
Hitzert, Albert, assignor of one-half to Jackson & Church, Saginaw, Mich. Barrel-head machine	568,978	Oct. 6	445	99, 100	77	86
Hoagland, Ellery M., East Oakland, Cal. Well-casing spear	569,378	Oct. 13	1141	272	77	234
Hoak, George B., Pittsburg, Pa. Car fender	572,753	Dec. 8	1181	284	77	1522
Hoare, Timothy J. (See McCullough, Van Rensselaer and M., assignors.)						
Hobbs, Clarence W., Worcester, Mass. Machine for scoring cardboard	569,200	Oct. 13	898	195	77	174
Hobbs, John T., assignor to Cleveland Safety Gate Company, Cleveland, Ohio. Safety mechanism for operating elevator-gates	571,442	Nov. 17	1797	429	77	1016
Hobbs, W. I. (See Waters and Clopton, assignors.)						
Hobson, Joseph W., Bayonne, N. J. Wheeled earth-scraper	570,401	Oct. 27	3016	714, 715	77	608
Hochholzer, Alois L., R. B. Hill, Rome, Ga., and J. D. Riggs, Selma, Ala. Lubricator	573,657	Dec. 22	2845	671	77	1871
Hochner, David. (See Van Hoesen, Casper, assignor.)						
Hodel, Henry, Congerville, Ill. Gate-latch	572,638	Dec. 8	969	233	77	1483
Hodell, Victor, and A. Olson, Minneapolis, Minn. Lumber-truck	573,269	Dec. 15	2076	498	77	1710
Hodge, Thomas L., *et al.*, administrators. (See Janeway, John L.)						
Hodges, Addison S., assignor to E. A. Hodges, Chelsea, Mass. Flask for making seamless sash-weights	571,308	Nov. 10	1578	375	77	962
Hodges, Esther A. (See Hodges, Addison S., assignor.)						
Hodgson, William, Tremont, N. Y. Curtain-pole	572,165	Dec. 1	126	29	77	1301
Hoe, Robert, *et al.* (See Crowell, Luther C., assignor.)						
Hoe, Robert, *et al.* (See North, Thomas M., assignor.)						
Hoe, Robert, *et al.* (See Sheldon, Edward P., assignor.)						
Hoe, Robert, *et al.* (See Tucker, Edwin D., assignor.)						
Hoe, Robert, *et al.* (See Tucker, Stephen D., assignor.)						
Hoe, Robert, *et al.* (See Turner, George W., assignor.)						
Hoff, John A., and J. W. Munson, St. Louis, Mo. Stencil-cutting machine	573,841	Dec. 22	3147	750	77	1928
Hoffman, Charles, Spokane, Wash. Sash-fastener	570,665	Nov. 3	465	109	77	725
Hoffman, Edmund. (See Lambert and Hoffman.)						
Hoffman, Edward J., Rockford, Ill. Glass-polishing machine	571,564	Nov. 17	2013	479	77	1054
Hoffman, George A., assignor of one-half to H. G. Bogar, Millersburg, Pa. Bottle-stopper	572,704	Dec. 8	1087	264	77	1505
Hoffman, Henry A., Lancaster, Ohio. Spring-hinge	571,133	Nov. 10	1295	301	77	907
Hoffman, Peter E., Whitesborough, N. Y. Insect-powder duster	573,184	Dec. 15	1934	464	77	1684
Hoffmann, Alfred W., assignor of one-half to E. R. Hoffmann, New York, N. Y. Candle-holder	574,356	Dec. 29	4127	980	77	2121
Hoffmann, Emil R. (See Hoffmann, Alfred W., assignor.)						
Hoffmann, William A., New York, N. Y. Toy	572,166	Dec. 1	127	30	77	1302
Hoffner, William C., Prospect Park, Cal. Power-transmitting gear for windmills	569,458	Oct. 13	1267	298	77	256
Hofmann, John, assignor to Acme Company, Covington, Ky. Washing-machine	569,379	Oct. 13	1143	272	77	234
Hofwolt, Charles L., Santa Rosa, Cal. Ironing-table	570,636	Nov. 3	401	96	77	712
Hogan, James T., Jersey City, N. J., assignor to National Machine Company, of New York. Sewing-machine	570,478	Nov. 3	68	16, 17	77	651
Hogan, John J., assignor to Eastern Electric Company, New Haven, Conn. Current-controlling device	572,507	Dec. 1	731	174	77	1417
Hogan, Joseph W., Atlanta, Ga. Smoke-consuming furnace	572,896	Dec. 8	1399	338, 339	77	1565
Hogan, Peter, Ballston, N. Y. Apparatus for making fertilizers	572,258	Dec. 1	289	70	77	1334
Hogg, William F., *et al.* (See Hickey, Thomas W., assignor.)						
Holbrook, William B., Paterson, N. J. Cutter and head	574,151	Dec. 29	3722	887	77	2047
Holden, Lewis E., *et al.* (See Burton, Charles C., assignor.)						
Holderness, Harry I., Pine Bluff, Ark. Dust-guard for car-axle boxes	571,666	Nov. 17	2179	524	77	1085
Holford, Charles M. (See Tyrrell and Holford.)						
Holford, Lee. (See Windmiller and Holford.)						
Holland, Robert N., *et al.* (See Nicholes, Herbert W., assignor.)						
Hollar, William H., Philadelphia, Pa., and H. W. Pidgeon, Boston, Mass.; said Pidgeon assignor to said Hollar. Stop mechanism for time-locks	571,319	Nov. 10	1595	378	77	964
Hollett, Ira W., Chicago, Ill., assignor to J. W. Sefton Manufacturing Company, Chicago, Ill., and Anderson, Ind. Paper vessel	571,526	Nov. 17	1944	464	77	1043
Hollett, Ira W., Chicago, Ill., assignor to J. W. Sefton Manufacturing Company, Chicago, Ill., and Anderson, Ind. Paper vessel	571,831	Nov. 24	2485	589	77	1162
Holley, Seymour H., and S. V. Rawlings, Marquette, Mich. Saw-sharpening machine	570,929	Nov. 10	925	214, 215, 216	77	839
Holliday, Frank A. (See Moore and Holliday.)						
Hollingsworth, Aquilla W., West Liberty, Iowa. Sunshade for canopied vehicles	571,443	Nov. 17	1798	429	77	1016

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hollingsworth, Merrill W., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Dental cataphoric apparatus	569,380	Oct. 13	1144	272	77	235
Hollingsworth, Merrill W., assignor to S. S. White Dental Manufacturing Company, Philadelphia, Pa. Appliance for bleaching teeth	574,033	Dec. 29	3508	838	77	2007
Hollis, Henry W., Spennymoor, England. Furnace for heating steel or iron ingots	571,667	Nov. 17	2181	524, 525	77	1085
Holloway, John J., and J. W. Starkweather, Los Alamos, Cal. Unremitting rotary car-feeder	571,320	Nov. 10	1597	379	77	965
Holloway, Young E., Woodlawn, assignor to J. E. Berkstresser, Sylacauga, Ala. Trousers-leg-folding device	573,784	Dec. 22	3038	720	77	1908
Holman, William A., Philadelphia, Pa. Easel-support for books, &c	571,045	Nov. 10	1121	262	77	876
Holmer, Samuel C., Brockton, Mass. Nursery-gate	569,642	Oct. 20	1622	382	77	337
Holmes, Abram G. (See Rund and Holmes.)						
Holmes, Britain, assignor to J. Sangster, Buffalo, N. Y. Variable-speed counter-shaft	571,879	Nov. 24	2571	609, 610	77	1178
Holmes, Chester D., Boston, Mass. Refrigerator	569,788	Oct. 20	1896	450	77	385
Holmes, John D., and W. L. Heath, St. Louis, Mo. Automatic circuit-closing device for galvanic batteries	572,754	Dec. 8	1182	284	77	1522
Holmes, Oscar D., *et al.* (See Bisbing, Charles I., assignor.)						
Holmes, Samuel J., Montclair, N. J. Towel-rack	568,905	Oct. 6	320	74	77	61
Holmgren, Emil F., Brooklyn, assignor to Seamless Structural Tube Company, New York, N. Y. Machine for rolling metal tubes	573,877	Dec. 29	3220	766	77	1956
Holstein, Christian. (See Kruse and Holstein.)						
Holt, Addison C., Lynchville, Me. Oiling device for vehicle axles and wheels	569,045	Oct. 6	566	130	77	108
Holt, Albert A., Fitchburg, Mass. Vehicle running-gear	571,764	Nov. 24	2373	566, 567	77	1141
Holt, Benjamin, Stockton, Cal. Link for driving-chains	570,637	Nov. 3	403	96	77	712
Holt, Benjamin, Stockton, Cal. Traction-engine and harvester attachment	573,593	Dec. 22	2698	640	77	1844
Holtkötter, Richard. (See Hersberg, Albert, assignor.)						
Holton, Thomas J., *et al.* (See Holton and Malsch, assignors.)						
Holton, Thomas J., and F. Malsch, assignors to J. Shoemaker and T. J. Holton, Philadelphia, Pa. Sewing-machine	570,479	Nov. 3	73	17, 18	77	651
Holz, Otto, Schenectady, N. Y. Trolley-support for trolley-cars	569,756	Oct. 20	1843	437	77	375
Homan, William C., assignor to Edward Miller & Company, Meriden, Conn. Lantern	573,148	Dec. 15	1870	450	77	1673
Home Ice Maker Company. (See Singer, William F., assignor.)						
Homer, Howard H., Franklin, Me. Sled-propeller	569,201	Oct. 13	830	195	77	174
Hontas, William H., and W. A. Lorenz, Hartford, Conn. Machine for applying paste to paper, &c.	571,527	Nov. 17	1946	464, 465	77	1043
Hood, Adam. (See Cook, Adolphus H., assignor.)						
Hood, Freeman W., Newton, assignor to Hersey Manufacturing Company, Boston, Mass. Water-meter	568,759	Oct. 6	85	20	77	19
Hood, John D., Columbia, Pa. Car-coupling	572,425	Dec. 1	607	143	77	1393
Hood, John J., and A. G. Salamon, London, England. Manufacture of cyanogen compounds	570,480	Nov. 3	75	....	77	651
Hook, Benjamin F., Holmesville, Ohio. Sled	569,459	Oct. 13	1268	299	77	256
Hook, James, Jr., Manilla, Iowa. Evener for two-horse vehicles	571,134	Nov. 10	1297	301	77	907
Hooker, Lucy. (See Hooker, William and L.)						
Hooker, William and L., North Fitzroy, Victoria. Solution for illuminant mantles for Bunsen gas-burners	573,513	Dec. 22	2557	.....	77	1816
Hooper, Forest, Woburn, Mass. Clean-out for soil-pipes	572,114	Dec. 1	34	8	77	1284
Hooper, Irvin G., Newark, N. J. Floor or roof construction for cold-storage or other buildings	572,250	Dec. 1	290	70	77	1334
Hooper, William, Ticonderoga, N. Y. Machine for jigging ore	573,594	Dec. 22	2700	641	77	1844
Hopedale Machine Company. (See Burgess, George M., assignor.)						
Hopkins, Edward P., New York, N. Y. Electric-arc lamp	573,464	Dec. 22	2478	587, 588	77	1802
Hopkins, Harvey J. (See Rappe, Emil, assignor.)						
Hopkins, Meshach, London, England, assignor of one-half to W. H. Cork, Chicago, Ill. Speed-gear	570,638	Nov. 3	404	96, 97	77	713
Hopkins, Walter J. (See Percy, Sylvanus T., assignor.)						
Hopkins, Walter J., St. Clair, Mich. Dust-pan	572,343	Dec. 1	449	105	77	1364
Hopper, Charles S., Philadelphia, Pa. Can-opener	573,465	Dec. 22	2461	588	77	1802
Hoppes, Charles E., Springfield, Ohio. Boiler-plate-milling machine	574,063	Dec. 29	3565	851	77	2019
Hoppes, John J., Springfield, Ohio. Steam-separator	573,878	Dec. 29	3221	766	77	1956
Horix Manufacturing Company. (See Haeberlin, Hermann, assignor.)						
Horlbeck, Herman, *et al.* (See Johnston, Abner, assignor.)						
Horlocker, Milo, Park's Mills, Ohio. Roofing-tile	573,398	Dec. 15	2200	526	77	1732
Horn, George L., *et al.* (See Cronin, William D., assignor.)						
Horn, Gustav, Brunswick, Germany. Gas-cooker	572,486	Dec. 1	692	165, 166	77	1410
Horn, Thomas W., *et al.*, trustees. (See Pennycnick, James G., assignor.)						
Horne, George A., assignor to Syracuse Arms Company, Syracuse, N. Y. Ejector mechanism for breakdown firearms	568,760	Oct. 6	86	20	77	19
Horne, Augustus P. (See Brunette and Horne.)						
Horne, George A., assignor to Syracuse Arms Company, Syracuse, N. Y. Ejector mechanism for breakdown guns	572,735	Dec. 8	1184	285	77	1522
Horner, Samuel S., Conemaugh, Pa. Boiler-furnace	570,995	Nov. 10	1035	242	77	860
Horrocks Desk Company. (See Horrocks, William, assignor.)						
Horrocks, William, assignor to Horrocks Desk Company, Herkimer, N. Y. Type-writer cabinet	571,765	Nov. 24	2374	567	77	1141
Horton, Nicholas P., Owen Sound, Canada. Napkin-holder	570,802	Nov. 3	695	159	77	737
Hostetter, Amos B. (See Brinkman, Oscar F., assignor.)						
Hostetter, Enoch M. (See Hurt and Hostetter.)						
Hotsapillar, Jacob, Dayton, Ohio. Folding bed	569,202	Oct. 13	832	196	77	175
Hottinger, Henry. (See Lesser, Max, assignor.)						
Houck, George O., assignor of one-half to W. H. Houck, Springfield, Ohio. Corn-harvester	573,270	Dec. 15	2078	498	77	1710
Houck, William H. (See Houck, George O., assignor.)						
Hough, Elijah, Saginaw, Mich. Heater and ventilator	569,381	Oct. 13	1145	273	77	235
House, Henry A., Bridgeport, Conn. Vapor-burner	571,860	Nov. 24	2539	602	77	1172
House, Henry A., Bridgeport, Conn. Steam-turbine	571,861	Nov. 24	2541	602	77	1173
Household Specialty Company. (See Spurr, George W., assignor.)						
Housholder, Joseph M., West Elizabeth, N. J. Coal-mining machine	573,271	Dec. 15	2080	498, 499	77	1710
Housman, James H., Clifton Forge, Va. Equalizer for car-trucks	570,875	Nov. 3	830	193	77	794
Houston, Edwin J., and A. E. Kennelly, Philadelphia, Pa. Apparatus for measuring candle-power of arc-lamps	569,643	Oct. 20	1623	382, 383	77	338

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Houston, Everett A. (See Whyman, Horatio O., assignor.)						
Houts Antomatic Telephone Switch Company. (See Houts and Nilson, assignors.)						
Houts, Wallace A., Parker, S. D., and L. G. Nilson, Sioux City, Iowa, assignors to Houts Automatic Telephone Switch Company, Parker, S. D. Telephone switch-box	574,245	Dec. 29	3945	837, 838	77	2086
Howard, Ernest, Boston, Mass. Illusion	574,090	Dec. 29	3615	864, 865	77	2028
Howard, Lyman D., Philadelphia, Pa., assignor to J. A. Jeffrey, Columbus, Ohio. Chain	572,991	Dec. 15	1590	381	77	1619
Howarth, John W., *et al.* (See Chapin, William R., assignor.)						
Howarth, John W., *et al.* (See Lindsay, Archibald L., assignor.)						
Howe, Elmer C., assignor to American Waltham Manufacturing Company, Waltham, Mass. Ball-bearing for bicycles	570,428	Oct. 27	3064	726	77	617
Howe, Eugene E. (See Kohlenberg, Ferdinand, assignor.)						
Howe, Henry L., Canandaigua, assignor to Standard Brake Company, New York, N. Y. Triple valve for air-brakes	568,979	Oct. 6	449	100, 101	77	87
Howe, Henry L., Canandaigua, assignor to Standard Brake Company, New York, N. Y. Triple valve	568,980	Oct. 6	454	102, 103	77	87
Howe, Percy C., Boston, assignor of one-half to H. J. Howes, Hyde Park, Mass. Thermostat-actuated fire-alarm	570,892	Nov. 3	866	201	77	802
Howe, Simon H. (See Proctor, Joseph E., assignor.)						
Howe, Solon G., Detroit, Mich. Pipe-testing device	571,725	Nov. 17	2278	547	77	1104
Howe, Solon G., Detroit, Mich. Car-brake	572,802	Dec. 8	1267	305, 306	77	1138
Howe, Warren B., Chicago, Ill. Machine for cutting and scoring paper	569,873	Oct. 20	2024	483	77	409
Howe, Warren B., Chicago, Ill. Moisture-proof paper	569,874	Oct. 20	2027	....	77	409
Howe, William H., Watertown, Mass. Sounding-board for pianos	572,897	Dec. 8	1401	339	77	1566
Howe, William R., Dayton, Ohio. Car-fender	568,906	Oct. 6	321	74	77	62
Howell, Edgar E. (See Blackburn and Howell.)						
Howell, George H. (See Bolton and Howell.)						
Howell, William E., Los Angeles, Cal. Ventilated receptacle	572,167	Dec. 1	128	30	77	1302
Howes Grain Cleaner Company. (See Keith, Elgin, assignor.)						
Howes, Henry J. (See Howe, Percy C., assignor.)						
Howland, Stephen H., Springfield, Mass., assignor of one-half to C. E. Buell, North Plainfield, N. J. Steam-trap	573,658	Dec. 22	2846	671	77	1772
Howlett, Michael J., Bayonne, N. J. Toy puzzle	571,477	Nov. 17	1855	441	77	1026
Hoyer, Olof, Chicago, Ill. Adjustable and folding shutter or screen	573,659	Dec. 22	2847	671	77	1772
Hoyer, Rudolph C., Memphis, Tenn. Car-fender	570,758	Nov. 3	626	144	77	753
Hoyt, James G., Brooklyn, assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Printing-machine	573,595	Dec. 22	2703	641	77	1845
Hubbard, Edward L., Baltimore, Md. Device for inspecting bottoms of streams, &c	572,803	Dec. 8	1270	306	77	1539
Hubbard, George W., Chicago, Ill. Screw-propeller	573,977	Dec. 29	3417	819	77	1991
Hubbard, Moses G., Jr. (See McGuire and Hubbard.)						
Hubbard, Moses G., Jr., assignor to McGuire Manufacturing Company, Chicago, Ill. Brake connection for trucks	572,992	Dec. 15	1592	381	77	1620
Hubbell, Harvey C., Springfield, Ohio. Meat-tenderer	573,060	Dec. 22	2848	672	77	1872
Hubbell, Joseph H., Dayton, Ohio. Link system for oil-press boxes	569,920	Oct. 20	2106	501	77	424
Hubbell, Joseph H., assignor to Buckeye Iron and Brass Works, Dayton, Ohio. Hydraulic relief-valve mechanism	569,921	Oct. 20	2108	502	77	424
Huber, Berthold, assignor to Huber Printing Press Company, Taunton, Mass. Printing-press	571,089	Nov. 10	1203	282	77	891
Huber, Edward, and J. W. Miller, Marion, Ohio. Straw-stacker	570,903	Nov. 3	695	159	77	767
Huber, Herman, Kansas City, Mo. Smelting-furnace	572,011	Nov. 24	2505	661	77	1222
Huber, Mary R., Marysville, Kans. Shocker attachment for harvesters	571,617	Nov. 17	2100	504	77	1070
Huber Printing Press Company. (See Huber, Berthold, assignor.)						
Huber, Sigmund V., Youngstown, Ohio. Feed-table for rolling-mills	568,949	Oct. 6	397	89, 90	77	76
Huber, Sigmund V., Youngstown, Ohio. Feed-table for rolling-mills	569,283	Oct. 13	975	234	77	201
Huber, Sigmund V., Youngstown, Ohio. Feed-table for rolling-mills	572,168	Dec. 1	129	30, 31	77	1302
Huber, Sigmund V., Pittsburg, Pa. Feed-table for rolling-mills	573,185	Dec. 15	1934	464, 465	77	1684
Hübner, Ernst, Halle, Germany. Filter-press and filter-press plate	571,368	Nov. 17	1677	397	77	994
Hudson, George M., Birmingham, Ala. Display-box cover	573,661	Dec. 22	2849	672	77	1872
Hudson, James, Birmingham, England. Draw-plate	569,335	Oct. 13	1071	254	77	221
Hudson, Louis E., Ellisburg, N. Y. Tool-box for bicycles	572,993	Dec. 15	1593	382	77	1620
Huebel, Otto H. (See Manger and Huebel.)						
Huebel, Otto H., Brooklyn, N. Y. Soap-holder	570,666	Nov. 3	466	109	77	725
Huebel, Otto H., and F. W. Manger, Brooklyn, assignors to W. Bernard and L. Frank, New York, N. Y. Match-safe	571,121	Nov. 10	1274	295	77	903
Huestis, Frederick W. (See Leigh, Richard A., assignor.)						
Huettich, Reinhold. (See Haiman, Huettich, and Bishop.)						
Huffman, Albert L., Columbus, Ohio. Device for aiding work of addition	568,907	Oct. 6	323	75	77	62
Hufschmidt, Henry. (See Hufschmidt and Styles, assignors.)						
Hufschmidt, Louis A., and R. Styles, assignors to themselves and H. Hufschmidt, San Francisco, Cal. Car-fender	570,402	Oct. 27	3018	715	77	608
Hughes, Charles D., Brooklyn, assignor to Empire Type Setting Machine Company, New York, N. Y. Type-distributing machine	572,705	Dec. 8	1088	264	77	1505
Hughes, George W. (See Bradbury and Nilson, assignors.)						
Hughes, Henry E., Pawtucket, assignor of one-half to T. J. Risk, Central Falls, R. I. Spindle	570,996	Nov. 10	1036	248	77	860
Hughes, Henry E., Pawtucket, assignor of one-half to T. J. Risk, Central Falls, R. I. Spindle	570,997	Nov. 10	1038	243	77	860
Hughes, James, Bridgeport, Conn. Drawbridge-gate	568,761	Oct. 6	88	21	77	19
Hughes, John. (See Conklin and Hughes.)						
Hughes, Marshall L. (See Jackson, Benjamin F., assignor.)						
Hughes, Ralph T., Saltburn, and J. Gill, Leeds, England. Apparatus for pressing brick	573,514	Dec. 22	2558	606, 607	77	1816
Hulett, George H., Cleveland, Ohio. Car-dumping machine	568,851	Oct. 6	239	55, 56	77	47
Hull, Eugene E., J. S. Forney, and J. A. Feist, Silver Cliff, Colo. Carpet-stretcher	573,140	Dec. 15	1872	451	77	1673
Hull, Jedediah D., El Dorado, Kans. Attachment for harness	568,762	Oct. 6	89	21	77	20
Hull, Nicholas A., assignor to F. Patzack, Chicago, Ill. Sewing-machine table	571,193	Nov. 10	1382	323	77	924
Humbrecht, Erasmus, Cincinnati, Ohio. Velocipede	571,069	Nov. 10	1159	270, 271	77	883
Hume, Robert D., Gold Beach, Oreg. Can-heading machine	572,360	Dec. 1	482	113, 114	77	1370
Hummel, Georg, Munich, Germany. Wattmeter	570,019	Oct. 27	2280	542	77	469
Humphrey, William H. (See Balzer, Stephen M., assignor.)						
Humphreys, Alexander C., *et al.* (See Woods, George E., assignor.)						
Humphreys, Daniel F., Milton, N. D. Antifreezing pump attachment	570,284	Oct. 27	2763	657	77	562

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Hauger, Oskar, assignor to R. Gritzner, Durlach, Germany. Superheater	568,763	Oct. 6	90	21	77	20
Hunn, Albert B., assignor to New Departure Bell Company, Bristol, Conn. Bicycle-bell	572,932	Dec. 8	1481	355	77	1582
Hunt, Albert F., Jr., and G. L. Walker, New York, N. Y., assignors of one-third to T. Hill, Jersey City, N. J. Booth	570,403	Oct. 27	3090	715, 716	77	608
Hunt, Alva, St. Paul, Minn. Automatic grain-measuring apparatus	571,922	Nov. 24	2662	631	77	1195
Hunt, Bertram, Cripple Creek, Colo. Refining gold and silver bullion	571,369	Nov. 17	1679	.....	77	994
Hunt, David, Boston, Mass. Dust-pan	569,829	Oct. 20	1957	466	77	397
Hunt, David, Boston, Mass. Dust-bag	569,830	Oct. 20	1958	466	77	397
Hunt, Frank M., Round Oak, Ga. Singletree-hook	571,370	Nov. 17	1680	397	77	994
Hunt, Helm & Ferris. (See Ferris, Henry L., assignor.)						
Hunt, Henry and Henry, Jr., Wilkes-Barré, Pa. Tobacco-pipe	573,662	Dec. 22	2850	672	77	1872
Hunt, Henry L. (See Johnson and Hunt.)						
Hunt, Thomas B., Chicago, Ill. Strainer for air-brakes of cars	569,203	Oct. 13	832	196	77	175
Hunt, William. (See Phillips and Hunt.)						
Hunt, William W. (See Jerguson and Hunt.)						
Hunter, David E., Cambridge, and H. E. Davidson, Watertown, Mass. Drawer and support therefor	573,978	Dec. 29	3418	819	77	1991
Hunter, Griffith, Chicago, Ill. Hoisting and stone-laying apparatus	571,122	Nov. 10	1275	295, 296	77	903
Hunter, John W., Tabor, Iowa. Portable weighing-scale	570,553	Nov. 3	216	57	77	677
Hunter, Robert L., and H. B. Higgins, Minneapolis, Minn. Telephone-transmitter	572,756	Dec. 8	1125	285	77	1523
Hunter, Robert L., and H. B. Higgins, Minneapolis, Minn., assignors to American Signal and Power Company, of Minnesota. Electrical annunciator	574,327	Dec. 29	4073	968, 969	77	2111
Hunter, Rudolph M., Philadelphia, Pa. Combined shearing or cutting tool	570,930	Nov. 10	929	216, 217	77	840
Hunter, Rudolph M., Philadelphia, Pa. Regulating-valve	571,833	Nov. 24	2492	590	77	1164
Hunter, Rudolph M., Philadelphia, Pa., assignor to Thomson-Houston Electric Company, of Connecticut. Instrument for measuring electric currents	570,481	Nov. 3	76	18	77	652
Hunter, Rudolph M., Philadelphia, Pa., assignor to Thomson-Houston Electric Company, of Connecticut. Electric lamp	571,123	Nov. 10	1279	296	77	904
Hunter, Rudolph M., assignor to Electric Car Company, of America, Philadelphia, Pa. Electrical railway	571,832	Nov. 24	2489	590	77	1163
Hunter, Rudolph M., assignor to Electric Car Company of America, Philadelphia, Pa. Electric railway	572,706	Dec. 8	1090	265	77	1505
Hunter, Rudolph M., Philadelphia, Pa., assignor to General Electric Company, of New York. Electrically-actuated railway-switch	572,199	Dec. 1	131	31	77	1302
Hunter, Silas H., Cleveland, Ohio. Engine-shaft-rotation indicator	574,328	Dec. 29	4078	969	77	2112
Huntington, William D., Lynn, Mass. Agricultural hand-tool	571,371	Nov. 17	1681	398	77	994
Huntley, Wesley P., Jr., Richmond, Va. Seal-lock	571,230	Nov. 10	1443	337	77	935
Huntress, Franklin E. (See Neal, James H., assignor.)						
Hurd, Frank F., Denver, Colo. Clasp for dress-shields	572,508	Dec. 1	732	174	77	1417
Hurd, George B., *et al.* (See Burkhardt, Robert W., assignor.)						
Hurd, Oscar P., Syracuse, N. Y. Traveling-case	571,124	Nov. 10	1282	297	77	904
Hurlburt, Lansing W., Creston, Iowa. Handle for knives or forks	569,831	Oct. 20	1959	466	77	397
Hurley, Daniel, assignor to C. Cooper, Bennington, Vt. Circular-knitting machine	572,679	Dec. 8	1036	251, 252	77	1496
Hurley, Daniel, assignor to C. Cooper, Bennington, Vt. Stop attachment for knitting-machines	572,680	Dec. 8	1039	252	77	1496
Hurt, Edwin G., and E. M. Hostetter, Caldwell, Idaho. Means for closing punctures in pneumatic tires	569,757	Oct. 20	1844	437	77	376
Hurwitz & Co., Hermann. (See Rudolph, Emil, assignor.)						
Huson, Winfield S., Taunton, Mass., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Mechanical movement	570,597	Nov. 3	304	75, 76	77	695
Huson, Winfield S., Taunton, Mass., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Machine for printing from collotype or albertype plates	573,596	Dec. 22	2704	641, 642	77	1845
Hussey, Charles A., New York, N. Y. Bicycle-tire	571,444	Nov. 17	1799	429, 430	77	1016
Hussey, Curtis G., *et al.* (See Burton, Charles C., assignor.)						
Hussey, John W., assignor of one-half to C. W. Seamans, Brooklyn, N. Y. Apparatus for making wedges	573,466	Dec. 22	2482	588, 589	77	1802
Hutchins, Abner B., assignor to J. D. Luther and C. Lederhos, New York, N. Y. Gasolene-stove	570,482	Nov. 3	78	18, 19	77	652
Hutchinson, John B., Columbia, Pa. Damper-regulator	570,804	Nov. 3	697	159	77	767
Hutchinson, Samuel P., Philadelphia, Pa. Boiler-furnace	570,998	Nov. 10	1039	243	77	860
Hutchinson, Samuel P., and S. L. Wiegand, Philadelphia, Pa.; said Wiegand assignor to said Hutchinson. Steam-furnace	570,999	Nov. 10	1040	244	77	861
Hutchinson, William F., New York, N. Y. Boxing-machine	569,133	Oct. 6	714	168	77	136
Hutchinson, William F., New York, N. Y. Shuck-gluing machine	571,321	Nov. 10	1598	379	77	965
Hutchison, John, Jackson, Mich. Mounting and driving bolting-reels	573,412	Dec. 15	2338	559	77	1758
Hutchison, John W., Gower, Mo. Woven-wire stretcher	573,150	Dec. 15	1872	451	77	1673
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Electricité, Paris, France. Alternating-current motor	571,478	Nov. 17	1856	442	77	1026
Hutin, Maurice, and M. Leblanc, assignors to Société Anonyme pour la Transmission de la Force par l'Électricité, Paris, France. Method of and apparatus for transforming alternating electric currents	572,510	Dec. 1	734	175, 176, 177	77	1417
Huttinger, Ambrose, Cleveland, Ohio. Couch or bed hinge	571,194	Nov. 10	1384	323	77	924
Hutton, Caroline L., St. Louis, Mo. Bed-pan	569,922	Oct. 20	2111	502	77	425
Hutton, Robert W., *et al.* (See Wilday, John H., assignor.)						
Hyde Windlass Company. (See Andrews, Jacob R., assignor.)						
Hydraulic Elevator Company. (See Bassett, Norman C., assignor.)						
Hyle, Nettie, Syracuse, N. Y. Hook and eye	573,879	Dec. 29	3222	766	77	1956
I. B. Kleinert Rubber Company. (See Basch, David, assignor.)						
Ide, Albert L., Springfield, Ill. Engine	569,832	Oct. 20	1960	467	77	397
Idler, Charles A., Atlantic City, assignor of one-half to J. Q. Adams, Atco, N. J. Artificial slide and lake and conveyer therefor	572,426	Dec. 1	608	144	77	1393
Illingworth, Rochester. (See Clough and Illingworth.)						
Illingworth, Harry I., Lynn, assignor to C. E. Riley, Newton, Mass. Sewing-machine	573,880	Dec. 29	3223	767, 768	77	1956
Imhof, George, Philadelphia, Pa. Cloth-cutting machine	573,186	Dec. 15	1936	465, 466	77	1685
Imhoff, Ludwig, Berlin, Germany. Apparatus for varying speed of electromotors	573,979	Dec. 29	3420	820	77	1992
Imler, Joseph, Kendallville, Ind. Vehicle pole and coupling	570,020	Oct. 27	2282	542	77	469
Imler, Joseph, Kendallville, Ind. Cross-bar for thills	570,021	Oct. 27	2283	542	77	470
Immendorf, George H., and A. H. Engstrom, Philadelphia, Pa.; said Engstrom assignor to said Immendorf. Tank-pump governor	569,134	Oct. 6	716	168	77	136

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Immendorf, George H., and A. H. Engstrom, Philadelphia, Pa.; said Engstrom assignor to said Immendorf. Boiler-feed-pump governor	571,834	Nov. 24	2493	590, 591	77	1164
Improved Match Company. (See Anderson, Andrew, assignor.)						
Inch, Philip, Washington, D. C., assignor, by mesne assignments, to Consolidated Sterling Incandescent Gas Lamp Company, of New Jersey. Process of and machine for making mantles or hoods for incandescent gas-lights	571,372	Nov. 17	1682	398, 399	77	994
Indiana Manufacturing Company. (See Smith, John S., assignor.)						
Ingalls, Willis A., Manchester, N. H. Stop-motion for knitting-machines	571,479	Nov. 17	1858	442	77	1027
Ingalsbe, Edwin S., Wheaton, Kans. Tea-kettle cover	574,329	Dec. 29	4079	969	77	2112
Ingersoll-Sergeant Drill Company. (See Sergeant, Henry C., assignor.)						
Ingraham, Charles W., assignor of one-half to H. Warren, Heppner, Oreg. Carbureter	569,460	Oct. 13	1270	299	77	256
Interchangeable Frameless Spectacle Company. (See Essick, Walter S., assignor.)						
Interchangeable Frameless Spectacle Co. (See Essick and Rees, assignors.)						
Interior Conduit and Insulation Company. (See Greenfield, Edwin T., assignor.)						
International Gas and Fuel Company. (See Armstrong, John R., assignor.)						
Ireland, Robert H., New York, N. Y. Device for operating shutters	572,804	Dec. 8	1971	306	77	1539
Ireys, Harriet B., Minneapolis, Minn. Belt	573,515	Dec. 22	2560	608	77	1816
Irvine, John E., Brooklyn, N. Y. Game apparatus	569,102	Oct. 6	661	153	77	126
Irvine, Robert, Jr., West Hartlepool, England. Umbrella-tent	574,091	Dec. 29	3616	865	77	2028
Isaacs, John D. (See Curtis and Isaacs.)						
Isley, William H., Jersey City, N. J., assignor to D. Wood, Brooklyn, N. Y. Cigar-bunching machine	572,170	Dec. 1	134	32	77	1303
Iver Johnson's Arms and Cycle Works. (See Johnson, Frederick I., assignor.)						
Ives, Albert C., London, England. Billard-table	572,545	Dec. 8	797	191	77	1445
Iwan, Louis, Streator, Ill. Ditching-spade	573,597	Dec. 22	2706	642	77	1846
J. A. Fay & Egan Company. (See Seebohm, Edgar C., assignor.)						
J. A. Lamy Manufacturing Company. (See Raiffeisen, Carl J., assignor.)						
J. H. Williams & Company. (See Amborn, George, Jr., assignor.)						
J. I. Case Threshing Machine Company. (See Dingee, William W., assignor.)						
J. L. Mott Iron Works. (See Mott, Jordan L., Jr., assignor.)						
J. W. Sefton Manufacturing Company. (See Hollett, Ira W., assignor.)						
Jaberg, Frank A., New Philadelphia, Ohio. Jar-fastener	574,330	Dec. 29	4080	969	77	2112
Jack, Joseph H., Dayton, Ohio. Dumping-wagon	572,344	Dec. 1	450	106	77	1364
Jacks, Richard, Quincy, Cal. Combined pruning, clipping, and holding implement	569,284	Oct. 13	977	234	77	202
Jackson, Albert, North Fitzroy, Victoria. Tube or pipe cleaner	572,994	Dec. 15	1594	382	77	1620
Jackson, Ambrose F., Oklahoma, Okla. Ter. Pipe-wrench	572,757	Dec. 8	1186	285	77	1523
Jackson, Benjamin F., assignor of one-half to M. L. Hughes, Sutton, W. Va. Car-brake	573,663	Dec. 22	2851	672	77	1872
Jackson, Bertha A. (See Börreson, Börre H., assignor.)						
Jackson & Church. (See Hitzert, Albert, assignor.)						
Jackson, Henry A., Washington, D. C. Kitchen-table	569,133	Oct. 6	718	169	77	137
Jackson, John A., and G. S. White, Toronto, Canada. Mangle	570,404	Oct. 27	3021	716	77	609
Jackson, John L. (See McGregor and Jackson.)						
Jackson, Larkin H., and W. E. Rhegness, Dyer, Tenn. Harrow	571,164	Nov. 10	1339	312	77	916
Jackson, Louis A., assignor to Acme Electric Lamp Company, New York, N. Y. Electric lamp	572,805	Dec. 8	1272	306	77	1539
Jackson, Milton, and A. Taylor, assignors to D. K. Miller Lock Company, Philadelphia, Pa. Padlock	572,115	Dec. 1	35	9	77	1294
Jackson, Percy B., Newburyport, Mass. Combination-divan	571,000	Nov. 10	1042	244	77	861
Jackson, Walter P. (See McCann, Howard L., assignor.)						
Jackson, William H., assignor to J. Marshall, Fall River, Mass. Staple forming and driving machine	573,329	Dec. 15	2201	526, 527	77	1732
Jackson, William H., and B. N. Moss, Des Moines, Iowa. Water-tower	572,995	Dec. 15	1595	382	77	1620
Jacobowitz, Mayer, Keyport, N. J. Necktie	569,498	Oct. 13	1336	315	77	268
Jacobs, Benjamin W., Chicago, Ill. Nail-file	569,285	Oct. 13	978	235	77	202
Jacobs, James W., Jeffersonville, Ind. Lock bottle-stopper	572,758	Dec. 8	1188	286	77	1523
Jacobson, Leon. (See Blumberg and Jacobson.)						
Jacobson, Morris S., New York, N. Y. Razor attachment	570,598	Nov. 3	309	76	77	696
Jacobson, Peter, and C. E. Cain, Milwaukee, Wis. Street-sweeper	569,644	Oct. 20	1625	383, 384	77	338
Jacobus, Alvah B., Udall, Kans. Trimming attachment for sewing-machines	570,805	Nov. 3	698	159	77	767
Jacobus, James W., Great Neck, N. Y. Inkstand	571,046	Nov. 10	1122	262	77	876
Jacques, James, and C. S. Trask, Lowell, assignors to Columbia Cash Register Company, Portland, Me. Cash register and indicator	568,764	Oct. 6	91	21, 22	77	20
Jagielski, Wladislaw F., Hanover, Germany, assignor to Singer Manufacturing Company, of New Jersey. Fancy-stitch sewing-machine	573,881	Dec. 29	3228	768, 769	77	1957
Jahant, Augustus, assignor of one-half to J. C. Weber, Akron, Ohio. Draft attachment for furnaces	569,204	Oct. 13	835	196	77	175
Jahn, Robert, Scotch Plains, N. J. Roof-valley	571,565	Nov. 17	2014	479	77	1054
Jahnsen, Otto, and G. Meinhardt, New York, N. Y., assignors to said Jahnsen. Carving-machine	571,566	Nov. 17	2015	479	77	1054
Jakson, Charles, Philadelphia, Pa. Rein-guard	570,097	Oct. 27	2429	576	77	499
James, John E., *et al.* (See Burgis, Thomas C., assignor.)						
Jamieson, James, and R. Gray, Pittsburg, Pa. Car-brake	568,908	Oct. 6	324	75	77	62
Jamison, Wheeler M., and F. Tuttle, Auburn, Ky. Apparatus for making tufted articles	572,759	Dec. 8	1189	286	77	1523
Jandus Electric Company. (See Lean, George R., assignor.)						
Janeway, John L., deceased, Oaks; P. W. Janeway and T. L. Hodge, administrators, assignors to Phoenix Gas and Improvement Company, Philadelphia, Pa. Manufacturing gas	571,269	Nov. 10	1512	357, 358	77	948
Janeway, Price W., *et al.*, administrators. (See Janeway, John L.)						
Janney, George C., Muncie, Ind. Corn-husker and stalk-cutter	568,981	Oct. 6	458	104, 105, 106	77	88
Janney, Reynold, Westborough, Mass. Spring	571,972	Nov. 24	2740	648	77	1211
Janse, Barend, and J. de Witte, Utrecht, Netherlands. Gas-heater for carriages, &c	569,286	Oct. 13	979	235	77	202
Jansen, Edmund, Höhscheid-Solingen, Germany. Knife	569,103	Oct. 6	663	154	77	126
Janssen, Henry, Reading, Pa. Braiding-machine	573,598	Dec. 22	2707	642, 643	77	1846
Jarecki, Alexander, Erie, Pa. Ceiling and floor plate	571,766	Nov. 24	2376	567	77	1141
Jarman, George R., assignor to G. A. Lathrop, Jr., Richmond, Va. Furnace-feeding device	574,331	Dec. 29	4082	970	77	2112
Jarrett, Henry T., New York, N. Y. Making potassium bitartrate	572,345	Dec. 1	451	.....	77	1364
Jarvis, Franklin W., Chicago, Ill. Furnace-grate	569,205	Oct. 13	836	196, 197	77	175

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Jeavons, William R. (See Lannert and Jeavons.)						
Jefferson, Mordecai, Bradford, W. W. L. Lishman, Cornholme, and J. Clapham, Bradford, England. Bearing for shafts	574,246	Dec. 29	3947	938	77	2087
Jeffrey, Joseph A. (See Howard, Lyman D., assignor.)						
Jeffrey, Joseph A. (See Osyor, David N., assignor.)						
Jeffrey, Joseph A. (See Patterson and Heyl, assignors.)						
Jeffries, Gideon S., Reading, Pa. Game-table	572,056	Nov. 24	2889	682	77	1238
Jenkins, Ebenezer C., Shrewsbury, Mass. Elevator attachment	569,336	Oct. 13	1072	254	77	221
Jenkins, Ebenezer C., Shrewsbury, Mass. Elevator attachment	572,996	Dec. 15	1596	382, 383	77	1620
Jenkins, Ebenezer C., Shrewsbury, Mass. Elevator attachment	572,997	Dec. 15	1599	383, 384	77	1621
Jenkins, Edward W., Durbin, N. D. Commode	569,206	Oct. 13	839	197	77	176
Jenkins, John S., Hartsell's, Ala. Screen for cotton-gins	574,201	Dec. 29	3855	919	77	2069
Jenkins, Leona H., Philadelphia, Pa. Rock-drill	571,231	Nov. 10	1445	337, 338, 339	77	935
Jenks, Edward W. (See Jenks, Thomas M., assignor.)						
Jenks Ship Building Company. (See Perley, Chauncy B., assignor.)						
Jenks, Thomas M., Galesburg, assignor of one-fourth to E. W. Jenks, Chicago, Ill. Automatic pump for pneumatic tires	571,001	Nov. 10	1042	244	77	861
Jenne, William K., Ilion, assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Type-writing machine	571,002	Nov. 10	1046	245	77	862
Jennings, Byron, San José, Cal. Railway-rail bond	573,980	Dec. 29	3422	820	77	1992
Jennings, Franklin A., Ithaca, N. Y., assignor to Electric Bullentin Company, Ithaca, N. Y., and Chicago, Ill. Annunciator	571,445	Nov. 17	1800	430	77	1016
Jennings, Franklin A., Ithaca, N. Y., assignor to Electric Bullentin Company, Ithaca, N. Y., and Chicago, Ill. Annunciator	572,057	Nov. 24	2889	682	77	1238
Jennings, William E., Bath, England. Horseshoe-pad	569,022	Oct. 6	529	122	77	100
Jepson, George, Meriden, Conn. Push-button	574,247	Dec. 29	3948	938	77	2087
Jerguson, Andrew P., and W. W. Hunt, Hull, Fla. Flexible pipe-joint	570,405	Oct. 27	3023	716	77	609
Jerome, Edgar, Norwalk, Conn. Toilet-paper	570,806	Nov. 3	699	160	77	768
Jerome, Edgar, Norwalk, Conn. Toilet-paper	573,599	Dec. 22	2709	643	77	1846
Jerome, Edgar, Norwalk, Conn. Toilet-paper	573,600	Dec. 22	2710	644	77	1846
Jessen, Jacob H., San Francisco, Cal. Stocking	570,807	Nov. 3	700	160	77	768
Jessup, Robert W., Los Angeles, and F. H. Wheelan, San Francisco, Cal. Polishing-machine	570,639	Nov. 3	408	97	77	713
Jewell, Omar H., assignor to O. H. Jewell Filter Company, Chicago, Ill. Strainer for filters	572,605	Dec. 8	911	220, 221	77	1470
Jewell, Omar H., assignor to O. H. Jewell Filter Company, Chicago, Ill. Screen for filters	572,606	Dec. 8	912	221	77	1470
Jewett, George A., Chicago, Ill. Automatic grounding device for electric conductors	573,222	Dec. 15	1999	480	77	1697
Jewett, John H., Menominee, Mich. Shipping-crate	572,998	Dec. 15	1602	384	77	1622
Jogada Furnace Company. (See Jones, Evan W., assignor.)						
Johansen, Olaus, Racine, Wis. Flaxseed-cleaning mill	571,767	Nov. 24	2377	567, 568	77	1142
Johanson, Johan A. (See Olson and Johanson.)						
John Brown & Company. (See Nodder, Joseph, assignor.)						
Johns, Zacharia D., Visalia, assignor of one-half to G. X. Wendling, Hanford, Cal. Heater	568,852	Oct. 6	241	56	77	47
Johnson, Andrew W., P. T. and T. Herreid, Blair, Wis. Tank-heater	571,668	Nov. 17	2182	525	77	1086
Johnson, Alfred F. (See Fry and Johnson, assignors.)						
Johnson, Allen N. (See Rice and Ettinger, assignors.)						
Johnson, Amos E., assignor of one-half to L. P. Johnson, Northumberland, Pa. Means for feeding and controlling supply of water to boilers	572,171	Dec. 1	136	32	77	1303
Johnson, August, *et al.* (See Winters, John W., assignor.)						
Johnson, Carrie L., Glendale, N. Y. Bird-cage	571,165	Nov. 10	1340	312, 313	77	916
Johnson, Charles A., Everett, Mass. Cleaning device for hot-water heaters	568,765	Oct. 6	95	22, 23	77	20
Johnson, Charles A., Chicago, Ill. Weighing-scoop	570,434	Oct. 27	3032	731	77	620
Johnson, Charles A., assignor to T. W. Myers, New York, N. Y. Barrel-washer	572,116	Dec. 1	36	9, 10	77	1284
Johnson, Charles G., Helmetta, N. J. Liniment	572,898	Dec. 8	1403	.....	77	1566
Johnson, Charles M. (See Bennett, George W., assignor.)						
Johnson, Dawson. (See West and Johnson.)						
Johnson, Ead. (See Clement, Burton H., assignor.)						
Johnson, Edgar H., Seymour, Conn. Lead-press	572,546	Dec. 8	798	191	77	1445
Johnson, Edward H. (See Lundell, Robert, assignor.)						
Johnson, Elias M., New York, N. Y. Manufacturing steel	569,461	Oct. 13	1272	.....	77	256
Johnson, Frederick I., assignor to Iver Johnson's Arms and Cycle Works, Fitchburg, Mass. Fastening for bicycle-posts	570,309	Oct. 27	2854	677	77	578
Johnson, George P., Gloversville, N. Y. Automatic lightning-arrester	570,406	Oct. 27	3023	716	77	609
Johnson, George T., Chicago, Ill. Clip for toilet-paper packages	570,667	Nov. 3	467	109	77	725
Johnson, George W., Toronto, Canada. Non-refillable bottle	572,012	Nov. 24	2806	662	77	1223
Johnson, Hastings H., C. O. White, and M. B. Lloyd, Minneapolis, Minn.; said Johnson and Lloyd assignors to said Johnson and White. Listing and computing machine	569,499	Oct. 13	1337	315, 316, 317	77	268
Johnson, Henry, New York, N. Y. Job-printing press	573,413	Dec. 15	2339	559	77	1758
Johnson, Henry H. (See Ries and Johnson.)						
Johnson, Isaac G., New York, N. Y. Armor-piercing projectile	571,195	Nov. 10	1385	323	77	924
Johnson, Isak, Milwaukee, Wis. Mechanical motor	568,853	Oct. 6	242	56	77	47
Johnson, John A., Jr. (See Newman and Johnson.)						
Johnson, John A., Hoquiam, Wash. Baby-carriage	570,407	Oct. 27	3024	717	77	609
Johnson, John W., Sheffield, Ala. Sifter	573,272	Dec. 15	2081	499	77	1711
Johnson, Laura. (See Burnes, Oliver A., assignor.)						
Johnson, Lewis, assignor to R. J. Rasbury, Ruston, La. Drag-saw	571,446	Nov. 17	1802	430, 431	77	1017
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Type-setting appliance	569,337	Oct. 13	1075	255, 256	77	222
Johnson, Louis K., and A. A. Low, Brooklyn, assignors to Alden Type Machine Company, New York, N. Y. Type-setting appliance	570,098	Oct. 27	2429	576, 577	77	499
Johnson, Louisiana P. (See Johnson, Amos E., assignor.)						
Johnson, Nis, assignor to Meriden Bronze Company, Meriden, Conn. Wick-adjuster for central-draft lamps	573,223	Dec. 15	2002	481	77	1697
Johnson, Noah, and H. L. Hunt, Padua, Ill. Belt-guide	571,923	Nov. 24	2864	631	77	1195
Johnson, Phelps, Montreal, Canada. Column	573,151	Dec. 15	1874	451	77	1674

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Johnson, Sinclair J., New York, N. Y. Dumping-car	571,480	Nov. 17	1859	442, 443	77	1027
Johnson, Sinclair J., New York, N. Y. Dumping-car	571,481	Nov. 17	1861	444	77	1027
Johnson, Sinclair J., New York, N. Y. Dumping-car	571,482	Nov. 17	1863	445	77	1027
Johnson, Sinclair J., New York, N. Y. Dumping-car	571,483	Nov. 17	1865	445	77	1028
Johnson, Thomas C., assignor to Winchester Repeating Arms Company, New Haven, Conn. Temporary cartridge-holder	571,484	Nov. 17	1866	446	77	1028
Johnson, Thomas C., assignor to Winchester Repeating Arms Company, New Haven, Conn. Temporary cartridge-holding clip	571,973	Nov. 24	2743	648	77	1211
Johnson, Warren C., Oskaloosa, Iowa. Coal-drilling machine	572,361	Dec. 1	487	114	77	1371
Johnson, Warren S., Milwaukee, Wis. Temperature regulating or controlling device	574,368	Dec. 29	4144	984	77	2124
Johnson, William, Penn Yan, N. Y. Car-coupling	568,950	Oct. 6	399	90	77	76
Johnson, William A., *et al.* (See Browning, George, assignor.)	572,999	Dec. 15	1603	384	77	1622
Johnson, William H. (See Fry and Johnson.)						
Johnston, Abner, assignor of seventeen-twentieths to H. Horlbeck, E. Kelly, G. B. Fielder, and A. R. Braunstein, Jersey City, N. J. Mail-bag	574,064	Dec. 29	3567	852	77	2019
Johnston, Henry M., Brooklyn, N. Y. Paint or coating composition	574,092	Dec. 29	3618	.....	77	2029
Johnston, Henry M., Brooklyn, N. Y. Decorating interior walls of houses or other surfaces	574,332	Dec. 29	4083	970	77	2113
Johnston, Hugh C., Freedom, Pa. Roller and blind attachment	574,152	Dec. 29	3723	887	77	2047
Johnston, Lawrence M., assignor to New Era Iron Works Company, Dayton, Ohio. Friction-clutch	572,205	Dec. 1	187	46	77	1314
Johnston, Wilbur H., assignor to Bell Telephone Company of Missouri, St. Louis, Mo. Cable terminal-box	571,594	Nov. 17	2060	493	77	1002
Johnston, William A., Homer, La. Spectacle-case and holder for pencils, pens, &c	571,373	Nov. 17	1686	399	77	995
Johnston, William J., Port Huron, Mich. Grain-car door	569,923	Oct. 20	2112	502	77	425
Johnstone, George, New York, N. Y. Support for window-sashes	570,022	Oct. 27	2285	543	77	470
Jokl, Edmund, and W. M. Christian, Vienna, Austria-Hungary, assignors of one-third to G. Kemp, New York, N. Y. Safety-switch	570,808	Nov. 3	701	160	77	768
Joly, Marie J. H., Paris, France. Chronophotographic apparatus	569,875	Oct. 20	2028	483, 484	77	409
Joly-Sambra Company. (See Sampolo and Brasseur, assignors.)						
Joncas, Louis, assignor of one-half to F. H. Genereux, Salem, Mass. Carpenter's gage	569,558	Oct. 13	1452	343	77	290
Jones, Albert F., Salem, Mass., assignor to Vaughn Machine Company, Portland, Me. Putting-out roll	569,136	Oct. 6	718	169	77	137
Jones, Albert H. (See English, Vann, and Jones.)						
Jones, Alfred E., Walton, England. Scaffold-bracket	569,645	Oct. 20	1628	384	77	339
Jones, Anna L., Philadelphia, Pa. Dressmaker's stand	570,931	Nov. 10	933	217	77	841
Jones, Charles E., Hillsborough, Tex. Hay-press	573,785	Dec. 22	3039	720	77	1908
Jones, Charles F., Troy, Ohio. Meat-cutter and meat-cutting mechanism	570,222	Oct. 27	2644	626, 627	77	540
Jones, Charles S., and K. McCreery, Toledo, Ohio. Thermal-bath cabinet	569,417	Oct. 13	1209	284	77	245
Jones, Clarence R., Alton Bay, N. H. Thill-coupling	573,152	Dec. 15	1875	451	77	1674
Jones, Daniel N. (See Dunaway and Jones.)						
Jones, Evan W., Portland, Oreg., assignor to Jogada Furnace Company, Chicago, Ill. Boiler or other furnace	569,207	Oct. 13	841	198, 199	77	176
Jones, Francis W., New York, N. Y. Electrical switching apparatus	573,601	Dec. 22	2711	644	77	1846
Jones, Harry, Richmond, Ind. Pump	572,260	Dec. 1	292	70	77	1335
Jones, Henry C., assignor to Hilles & Jones Company, Wilmington, Del. Motive-fluid supply and discharge device for rotary power-driven machines	569,924	Oct. 20	2113	502, 503	77	425
Jones, James B. (See Quigley, John H., assignor.)						
Jones, John M. (See Biorn, Christian A., assignor.)						
Jones, John R., Philadelphia, Pa. Rolling-mill	573,000	Dec. 15	1606	385, 386	77	1623
Jones, John T. (See Bohannan, Jennetta V., assignor.)						
Jones, John T. (See Flynt, Chester D., assignor.)						
Jones, Joseph R., Philadelphia, and J. W. Jones, Harrisburg, assignors of one-third to T. A. Jones, Philadelphia, Pa. Compensating device for railway-signals	572,117	Dec. 1	41	10	77	1286
Jones, Joseph R., Philadelphia, and J. W. Jones, Harrisburg, assignors of one-third to T. A. Jones, Philadelphia, Pa. Distant-switch signal-wire compensator	573,822	Dec. 29	3230	760	77	1958
Jones, Joshua W. (See Jones, Joseph R. and J. W.)						
Jones & Laughlins. (See Geyer, George H., assignor.)						
Jones, Nathaniel M., and R. Talbot, Lincoln; said Talbot assignor to C. W. Coffin, Bangor, Me. Preparing wood chips for making pulp	573,981	Dec. 29	3423	820	77	1992
Jones, Thomas A. (See Jones, Joseph R. and J. W., assignors.)						
Jones, William F., Baltimore, Md. Display-card and holder	570,408	Oct. 27	3027	717	77	610
Jones, Willis, *et al.* (See Norman, Addison, assignor.)						
Jones, Zachary T., New York, N. Y. Bedstead	571,768	Nov. 24	2378	568	77	1142
Jonson Engineering and Foundry Company *et al.* (See Jonson, Julius, assignor.)						
Jonson, Julius, assignor to Jonson Engineering and Foundry Company and J. H. Robertson, New York, N. Y. Grip and brake operating mechanism	570,023	Oct. 27	2289	543	77	471
Jordan, Llewellyn E. (See Wills and Jordan.)						
Jordis, Eduard, Munich, Germany. Electrodeposition	570,554	Nov. 3	217	.....	77	678
Jorgensen, Sophus, Copenhagen, Denmark. Slag cement	569,833	Oct. 20	1964	.....	77	398
Joselin, Charles, *et al.* (See Becker, Adolph, assignor.)						
Joseph, Edgar S. (See Gustave, George, assignor.)						
Joseph Schneible Company. (See Schneible, Joseph, assignor.)						
Joslin, Herbert A. (See Paul and Joslin.)						
Jouve, Casimir R., Dax, France. Calculating-ruler	571,567	Nov. 17	2017	480	77	1055
Joy, John M. (See Merritt and Joy.)						
Joy, Robert, assignor to T. Kingsford, Oswego, N. Y. Steam-boiler	573,001	Dec. 15	1609	386, 387	77	1623
Judd, William A., *et al.* (See Travers, Lawrence S., assignor.)						
Juney, Frank G., Rochester, N. Y. Plumb-level	569,500	Oct. 13	1348	317	77	270
Jungels, Johann P., Gross Glogau, Germany. Support for maps	572,547	Dec. 8	801	191, 192	77	1446
Justi, Henry D., Philadelphia, Pa. Support and carrier for artificial teeth	571,166	Nov. 10	1341	313	77	916
Justin, Joel G., assignor to Justin Projectile Company of West Virginia, Syracuse, N. Y. Shell for high explosives	572,261	Dec. 1	294	70, 71	77	1335
Justin Projectile Company of West Virginia. (See Justin, Joel G., assignor.)						
Juul, Christian W., Ellensburg, Wash. Automatic air-brake retainer	570,483	Nov. 3	81	19, 20	77	653
Kahle, James C., Oil City, Pa. Window	574,093	Dec. 29	3624	866	77	2030
Kahn, H., *et al.* (See Vulpius, Herman, assignor.)						
Kahn & Levy. (See Young and Rauk, assignors.)						
Kalamaikowski, Stanislaw, New York, N. Y. Fireproofing liquid	568,766	Oct. 6	96	.....	77	21

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kalamazoo Sled Company *et al.* (See Nivison, Charles, assignor.)						
Kallmerten, Arnold, *et al.* (See Williams, Hubbard D. B., assignor.)						
Kaltenbeck, William H., Roxbury, assignor of one-half to T. Winters, Margaretville, N. Y. Car-fender	571,528	Nov. 17	1948	465	77	1043
Kaltenbrunn, Anton, St. Nazianz, Wis. Feed-cutter	573,883	Dec. 29	3233	770	77	1958
Kamm, Leo, London, England. Printing-telegraph	572,760	Dec. 8	1190	286, 287, 288	77	1524
Kammer, John von der, Chicago, Ill. Bulb for X-rays	574,065	Dec. 29	3568	852	77	2020
Kampf, Joseph, assignor to H. Adler, trustee, Allegheny, Pa. Lamp-burner	569,501	Oct. 13	1349	317	77	270
Kapp, Gisbert, Berlin, Germany. Return-circuit for electric railways	570,599	Nov. 3	310	76	77	606
Kapp, James. (See Walkinshaw and Kapp.)						
Karavodin, Victor, St. Petersburg, Russia. Boiler	569,287	Oct. 13	980	235	77	202
Karnicki, Michael, Warsaw, Russia. Coffin	572,118	Dec. 1	42	10, 11	77	1286
Karnicki, Michael, Warsaw, Russia. Apparatus for saving people buried alive	572,119	Dec. 1	44	11	77	1287
Kato, George P., Jr., Jersey City, N. J. Stand for lamps	571,568	Nov. 17	2018	480	77	1055
Kato, George P., Jr., Jersey City, N. J. Brush	571,569	Nov. 17	2019	480	77	1055
Kauer, Hans. (See Konrad, Fromm, and Kauer.)						
Kaufhold, Friedrich, Merseburg, Germany. Lubricator	569,717	Oct. 20	1773	421	77	363
Kaufman, Charles W. (See Kaufman, Frank S. and C. W.)						
Kaufman, Frank S. and C. W., Scranton, Pa. Wrench	574,094	Dec. 29	3626	866	77	2030
Kaufman, John, Philadelphia, Pa. Folding canopy for bicycles	570,285	Oct. 27	2765	658	77	562
Kay, Joseph W. (See Lambert, Frank, assignor.)						
Kea, John W., Minden, La. Indexer	573,153	Dec. 15	1876	452	77	1674
Keach, Alfred S., Providence, R. I. Lamp-burner	572,943	Dec. 8	1499	359	77	1586
Kearns, William D., Pittsburg, Pa. Flexed fracture-splint	568,951	Oct. 6	401	90	77	77
Keating, Robert M., Springfield, Mass. Crank-shaft and bearing for bicycles	568,767	Oct. 6	97	23	77	21
Keating, Robert M., Springfield, Mass. Crank-shaft and bearing for bicycles, &c	568,768	Oct. 6	98	23	77	21
Keck, Albert J., St. Paul, Minn. Necktie	573,467	Dec. 22	2486	589	77	1803
Keeler, August, Layton Corners, Mich. Fence	573,468	Dec. 22	2487	589	77	1803
Keeler, Elisha S., New Albany, Pa. Sulky	571,003	Nov. 10	1050	245	77	862
Keeler, Elisha S., New Albany, Pa. Bicycle or other vehicle coupling	573,469	Dec. 22	2488	590	77	1803
Keeler, George T. (See Conner, Joseph, assignor.)						
Keeney, Marble D., Antioch, Cal. Apparatus for cooking paper-stock	570,640	Nov. 3	409	97	77	714
Keeney, Marble D., Antioch, Cal. Paper-stock cooker	570,641	Nov. 3	411	97	77	714
Kehoe, Michael J., assignor of one-half to J. P. Farrell, St. Louis, Mo. Carpet-holder	572,806	Dec. 8	1274	307	77	1539
Keifel, Friedrich, Louisville, Ky. Trunk and hinge therefor	574,095	Dec. 29	3627	866	77	2030
Keilholtz, Pierre O., assignor of one-half to J. F. Heyward, Baltimore, Md. Mechanism for locating and determining defects in rail-bonding	574,333	Dec. 29	4085	970	77	2113
Keith, Alexander E., assignor to Strowger Automatic Telephone Exchange, Chicago, Ill. Automatic telephone-exchange	573,884	Dec. 29	3235	770	77	1959
Keith, Elgin, assignor to Howes Grain Cleaner Company, Silver Creek, N.Y. Grain-scourer	570,600	Nov. 3	312	76, 77	77	606
Keithley, Herbert R., New York, N. Y. Road-rail for highways	572,303	Dec. 1	386	91	77	1352
Keller, David A., Louisville, Ky. Hat-identifying mark	570,642	Nov. 3	415	98	77	714
Keller, George W., Shenandoah, Va. Railway-signal	573,414	Dec. 15	2343	559, 560	77	1758
Keller, James M., Denver, Colo., assignor of one-half to A. O. Bassett, Chicago, Ill. Feed-water heater and condenser	570,435	Oct. 27	3083	731, 732	77	620
Keller, John D., assignor of one-half to O. Len, Santa Clara, Cal. Rotary pump	570,643	Nov. 3	415	98	77	715
Keller, Moses A., Batavia, N. Y. Binding mechanism for harvesters	569,580	Oct. 13	1504	355	77	300
Keller, Peter, Chicago, Ill. Gas-burner	569,155	Oct. 6	757	176	77	143
Kelley, Edward W., Lowell, Mass. Car-coupling	568,952	Oct. 6	402	91	77	77
Kelley, Harry H., Elyria, Ohio. Speed-measure	570,024	Oct. 27	2291	544	77	472
Kelley, Isaac M., assignor of one-fourth to L. Reed, Clarksburg, W. Va. Apparatus for separating sulfur from coal	572,548	Dec. 8	801	192	77	1446
Kelley, Joe W. (See Revelle, Ford, and Kelley.)						
Kellogg, Charles, Athens, Pa. Boiler	571,595	Nov. 17	2061	493, 494	77	1063
Kellogg, George W., Rochester, N. Y. Sterilizing apparatus	573,273	Dec. 15	2082	500	77	1711
Kelly, Edward, *et al.* (See Johnston, Abner, assignor.)						
Kelly, Edward J., Monongahela City, Pa. Ball-bearing	573,982	Dec. 29	3424	820	77	1992
Kelly, Henry, assignor to himself and O. B. Taneyhill, Waterloo, Iowa. Well-drilling machine	570,130	Oct. 27	2481	587, 588	77	508
Kelly, Herbert S. (See Elder and Kelly.)						
Kelly, John F. (See Cheaney and Kelly.)						
Kelly, John F., Pittsfield, Mass. Electrical apparatus	570,310	Oct. 27	2856	.....	77	578
Kelly, John F., and C. C. Cheaney, assignors to Stanley Electric Manufacturing Company, Pittsfield, Mass. System of electrical distribution	571,270	Nov. 10	1515	358	77	948
Kelly, Thomas, New Orleans, La. Actuating device for street-car gongs	573,224	Dec. 15	2003	481	77	1697
Kelly, W. J., *et al.* (See Maxon, Stiles E., assignor.)						
Kelly, William H., New York, N. Y. Rotary blotter	571,862	Nov. 24	2544	602	77	1173
Kelso, Robert, and M. Rosenbaum, Philadelphia, Pa. Safety-pin	573,002	Dec. 15	1610	387	77	1623
Kemp, George. (See Jokl and Christian, assignors.)						
Kemp, Horace L., Camden, N. J. Shoe-tip-punching machine	573,274	Dec. 15	2084	500, 501	77	1712
Kemp, William, Jr., Washington, D. C. Type-matrix	569,876	Oct. 20	2030	484	77	410
Kempshall, Eleazer, Sharon, assignor to T. King, trustee, Boston, Mass. Lacing-stud	569,968	Oct. 20	2195	521	77	441
Kempshall, Eleazer, Newton, assignor to T. King, trustee, Boston, Mass. Apparatus for covering lacing-hooks	569,969	Oct. 20	2196	521, 522	77	441
Kempshall, Eleazer, Newton, assignor to T. King, trustee, Boston, Mass. Eyelet	569,970	Oct. 20	2198	522	77	441
Kempshall, Eleazer, Newton, assignor to T. King, trustee, Boston, Mass. Lacing-hook	569,971	Oct. 20	2199	522	77	441
Kempshall, Eleazer, New York, N. Y., assignor to T. King, trustee, Boston, Mass. Lacing-hook	571,596	Nov. 17	2064	495	77	1063
Kendall, Frederick P. (See Troyer, Nelson, assignor.)						
Kendall, James A., assignor of one-half to J. W. Swan, London, England. Process of and apparatus for making cyanids	569,104	Oct. 6	663	154	77	127
Kendall, Joseph W. (See Ward, Turner, and Kendall.)						
Kendall, William J., Reading, Pa. Car-fender	573,415	Dec. 15	2346	560, 561	77	1759
Keana, James E., Pittsburg, Pa. Button	569,581	Oct. 13	1505	355	77	300
Kennard, Charles E., *et al.* (See Chase and Foster, assignors.)						
Kennard, Samuel C., *et al.* (See Paige, James H., assignor.)						
Kennedy, Horace G., Denver, Colo. Bicycle-support	568,855	Oct. 6	246	57	77	48
Kennedy, Jonathan B., Collins, Ga. Draft appliance	570,484	Nov. 3	67	20	77	655

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kennedy, Robert T. and S. W., assignors of one-third to J. W. Glass, Bronwood, Ga. Churn	569,718	Oct. 20	1775	421	77	363
Kennedy, Samuel V., St. Paul, Minn. Mower	572,540	Dec. 8	802	192	77	1446
Kennedy, Samuel W. (See Kennedy, Robert T. and S. W.)						
Kennedy, Thomas, and T. Slattery, Chicago, Ill. Butchering appliance	570,025	Oct. 27	2292	544	77	472
Kennedy, Thomas R., Rochester, N. Y. Stove	574,334	Dec. 29	4087	970, 971	77	2113
Kennel, Joseph A., assignor of two-thirds to H. H. Farr and J. M. Gale, Eaton, Ohio. Advertising device	572,262	Dec. 1	299	71, 72	77	1336
Kennelly, Arthur E. (See Houston and Kennelly.)						
Kenney, James H., *et al.* (See McGinley, James, assignor.)						
Kenny, Paul T., New York, N. Y. Automatic-figure advertising device	568,854	Oct. 6	243	57	77	47
Kent, Deville H., *et al.* (See Winters, John W., assignor.)						
Kerner, John G., Chicago, Ill. Dish-drainer	573,983	Dec. 29	3425	821	77	1993
Kerner, Marion H., New York, N. Y. Apparatus for producing tableaux vivants	570,255	Oct. 27	2711	645	77	553
Kerngood, Herman, Baltimore, Md. Garment-fastener	573,470	Dec. 22	2492	590	77	1804
Kerr, Charles, Chicago, assignor to J. E. Davis, Oak Park, Ill. Rack for presses	569,502	Oct. 13	1351	317	77	270
Kerr, Josiah A., Greenville, Ohio. Shingling-bracket	571,374	Nov. 17	1686	399	77	995
Kester, Thomas W., assignor of one-half to A. L. Lentz, Treichler, Pa. Combined oil-can and torch	574,335	Dec. 29	4089	971	77	2114
Ketchum, J. E., *et al.* (See Lotze, Ernst J., assignor.)						
Keyes, Edward C. (See Mitchell, James A., assignor.)						
Keyes, Frank R., and C. A. Baker, Binghamton, N. Y. Cigar-bunch-rolling machine	571,375	Nov. 17	1687	400, 401, 402	77	995
Keyes, Horatio, Terre Haute, Ind. Mine trap-door	571,570	Nov. 17	2021	480, 481	77	1056
Keyes, James A., assignor, by mesne assignments, to Greenfield Automatic Fastener Company, New York, N. Y. Stapling-machine	572,346	Dec. 1	452	106	77	1364
Keyes, Pearl, Hot Springs, Ark. Adjustable reflecting-screen	569,501	Oct. 13	1352	318	77	271
Keystone Watch Case Company. (See Mink, Fritz, assignor.)						
Khotinsky, Achilles de, assignor to American Bell Telephone Company, Boston, Mass. Lightning-arrester	571,669	Nov. 17	2183	526	77	1086
Kidder, Wellington P., Boston, Mass. Desk	570,311	Oct. 27	2857	677	77	578
Kiefer, John, Cleveland, Ohio. Device for washing and cleaning windows	569,105	Oct. 6	666	154	77	127
Kiehl, August F., Norfolk, Nebr., assignor of one-third to F. O. Kiehl, Reedsville, Wis. Bridle-bit	570,312	Oct. 27	2858	677	77	578
Kiehl, Frederick O. (See Kiehl, August F., assignor.)						
Kierski, Dora. (See Kierski, George, assignor.)						
Kierski, George, assignor to D. Kierski, New York, N. Y. Skirt-supporter	574,248	Dec. 29	3949	938	77	2087
Kies, Charles B., Rochester, N. Y. Printing device	573,003	Dec. 15	1611	387, 388	77	1624
Kihn, John L., and W. T. Reed, assignors to C. Pabst, Hamilton, Ohio. Bottle-washer	573,885	Dec. 29	3237	770	77	1959
Kilgore, John H. (See Mowery, Robert, assignor.)						
Kilgour, Bayard L., Cincinnati, Ohio. Safety-brake for street-cars	573,516	Dec. 22	2561	608	77	1816
Killian, Conrad J., assignor to United States Axle and Skein Company, Milwaukee, Wis. Wagon-axle	572,807	Dec. 8	1275	307	77	1540
Killian, Martin, Central City, Colo. Tool for miners' and blasters' use	572,808	Dec. 8	1276	307	77	1540
Kimball, Samuel, Lawrence, Kans. Bale-tie machine	570,555	Nov. 3	220	57, 58	77	678
Kimee, Jesse B. (See Courtney and Schwartz, assignors.)						
Kincade, John M., Westville, Ohio. Car-coupling	569,023	Oct. 6	530	122	77	101
Kinder, Joseph J. de. (See Wronski, André, assignor.)						
Kindig, Samuel C., Baltimore, Md. Extension-ladder and fire-escape	570,730	Nov. 3	575	132	77	744
Kindl, Frederick H., Pittsburg, Pa. Car-truck	570,226	Oct. 27	2766	658	77	563
King, Henry C. (See Dillon, Peter, assignor.)						
King, Howard K., assignor to Chambers Brothers Company, Philadelphia, Pa. Sheet-adjusting device for paper-folding machines	574,153	Dec. 29	3724	887, 888	77	2047
King, James M., Blue Springs, Nebr. Grain-drill	573,416	Dec. 15	2347	561	77	1759
King, John, C. Downes, and J. Waddington, Buenos Ayres, Argentine Republic. Fire-bar support and deflector	569,646	Oct. 20	1628	384, 385	77	339
King, Theophilus, trustee. (See Kempshall, Eleazer, assignor.)						
King, William L., Winston, N. C. Underground electric power system for railways	572,013	Nov. 24	2808	662	77	1223
Kingsford, Thomson. (See Joy, Robert, assignor.)						
Kinkel, Charles, assignor of five-eighths to F. Ruppert and H. Mock, New York, N. Y. Machine for cleaning windows or other surfaces	574,202	Dec. 29	3857	919	77	2069
Kinnear, William J., Luzerne, N. Y. Can-opener	571,895	Nov. 24	2495	591	77	1164
Kinnear, William R., Columbus, Ohio. Fireproof blind	572,014	Nov. 24	2810	662, 663	77	1223
Kinnear, William R., Columbus, Ohio. Machine for making metallic slats	572,015	Nov. 24	2811	663, 664	77	1224
Kinney, Edward H., *et al.* (See Merritt, William B., assignor.)						
Kinney, Fred O., Egypt, Ark. Combined harrow and roller	573,984	Dec. 29	3426	821	77	1993
Kinney, Frederick S., St. Louis, Mo. Baker's oven and stove	572,206	Dec. 1	189	46, 47	77	1314
Kinsey, Lottie A., *et al.* (See Greene, Thomas C., assignor.)						
Kinsley, James D., and S. L. Powers, Newton, Mass. Toy water-wheel	568,856	Oct. 6	247	58	77	48
Kinsley, William B., Melrose, assignor to Boston Rubber Shoe Company, Boston, Mass. Rubber shoe	573,664	Dec. 22	2853	673	77	1873
Kintner, Charles J., *et al.* (See McKechnie, Archibald E., assignor.)						
Kious, Jasper D., Momence, assignor to W. C. Curtis, Grant Park, Ill. Combined pencil and pen holder	570,932	Nov. 10	934	217	77	841
Kirby Manufacturing Company. (See Geddes, Charles A., assignor.)						
Kirk, Carlton J., *et al.* (See Bisbing, Charles I., assignor.)						
Kirkendall, John S. (See Mosher, Charles P., assignor.)						
Kirker, James M., M. Miller, and J. A. Williams, Louisville, Ky. Electric branding-stamp	574,203	Dec. 29	3858	920	77	2070
Kirkwood, Robert G., Wheeling, W. Va. Gas-mixing apparatus	571,196	Nov. 10	1386	323	77	924
Kirschbaum, August, Solingen, Germany. Tube	573,602	Dec. 22	2713	644	77	1847
Kisinger-Ison Company. (See Kisinger, William S., assignor.)						
Kisinger, William S., Bantam, assignor to Kisinger-Ison Company, Cincinnati, Ohio. Trolley-wire hanger	569,338	Oct. 13	1077	256	77	222
Kisinger, William S., Bantam, assignor to Kisinger-Ison Company, Cincinnati, Ohio. Water-sprinkler	572,120	Dec. 1	45	11	77	1287
Kitsee, Isidor, Philadelphia, Pa. Telegraphy	572,639	Dec. 8	970	233	77	1483
Kitson Machine Company. (See Morton, Albert H., assignor.)						
Kjellstrom, Mary S., New York, N. Y. Spout attachment for kettles	573,330	Dec. 15	2204	527	77	1733
Klahr, Howard, Orwigsburg, assignor to J. H. Weible, Strausstown, Pa. Thill-coupling	570,131	Oct. 27	2485	588	77	509

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Kleckner, William E., Hicksville, Ohio. Axle-nut wrench	570,933	Nov. 10	936	217	77	842
Klée, Ernest F. (See Brenzinger and Klée.)						
Kleemann, Fritz, Berlin, Germany. Evaporating-pan	572,304	Dec. 1	388	92	77	1352
Klemm, Hermann A., assignor of one-half to C. Engelhardt, New York, N. Y. Overedge sewing-machine	571,125	Nov. 10	1284	298	77	905
Klemm, Hermann A., assignor of one-half to C. Engelhardt, New York, N. Y. Hair-dividing attachment for overedge sewing-machines	571,126	Nov. 10	1286	298	77	905
Klemm, Hermann A., assignor of one-half to C. Engelhardt, New York, N. Y. Overedge sewing-machine	571,322	Nov. 10	1599	379 / 380	77	965
Klemm, Hermann A., assignor of one-half to C. Engelhardt, New York, N. Y. Hair-dividing attachment for overedge sewing-machines	571,323	Nov. 10	1604	381	77	966
Klenk, John G., Philadelphia, Pa. Centrifugal machine	573,090	Dec. 15	1768	424 / 425	77	1654
Klettner, Charles R., assignor of one-half to D. O. Laws and T. N. Buchanan, Cincinnati, Ohio. Illuminated and changeable street-car sign	571,726	Nov. 17	2280	547	77	1105
Klinck, Charles H., *et al.* (See Reynolds, John H., assignor.)						
Klingenberg, Emil and J., Commonwealth, Wis. Vise	573,886	Dec. 29	3239	771	77	1959
Klingenberg, John. (See Klingenberg, Emil and J.)						
Klocke, Frank W. (See Flannigain, Edward, assignor.)						
Kloninger, Charles, and J. E. Button, Salt Lake City, Utah. Folding-machine	573,603	Dec. 22	2713	644 / 645	77	1847
Klose, Karl A., Richfield, Minn., assignor of one-half to W. K. Seward, Butte, Mont. Pump	568,909	Oct. 6	325	75	77	62
Klug, Georg, Hamburg, Germany. Lubricator	574,066	Dec. 29	3570	852 / 853	77	2020
Klumbach, William E. (See Baker, William B., assignor.)						
Knapp, Edward J., assignor to C. Umbrecht, trustee, Syracuse, N. Y. Hose-coupling	574,067	Dec. 29	3572	853	77	2020
Knapp, Edward J., assignor to C. Umbrecht, trustee, Syracuse, N. Y. Universal-joint pipe connection	574,249	Dec. 29	3949	939	77	2037
Knapp, Eugene L., Cooperstown, N. Y. Saw	571,376	Nov. 17	1691	402	77	995
Knapp, John H., Pearl City, Ill. Device for holding screws	573,331	Dec. 15	2206	527	77	1733
Knapp, William C., assignor to Model Casket Company, Kalamazoo, Mich. Burial-casket	569,339	Oct. 13	1079	256	77	222
Knarr, Henrietta. (See Knarr, John A., assignor.)						
Knarr, John A., assignor to H. Knarr, Punxsutawney, Pa. Grave-lining	571,090	Nov. 10	1206	283	77	891
Knause, Frank V., Portsmouth, Ohio. Removable mica frame or holder for heating-stoves	571,597	Nov. 17	2065	495	77	1063
Knight, Edward E., San Francisco, Cal. Railway-spike	570,601	Nov. 3	313	77	77	697
Knight, Edward M., New York, N. Y. Filter	569,382	Oct. 13	1146	273	77	235
Knight, George H., assignor to Builders Insulating Tube Company, Lynn, Mass. Paper-tube machine	574,034	Dec. 29	3510	838 / 839	77	2008
Knight, Henry W., Toledo, Ohio. Street-sprinkler	572,640	Dec. 8	972	234	77	1483
Knight, Jesse A., Enfield, R. I. Woven bag	570,174	Oct. 27	2558	608	77	524
Knight, Jonathan L., assignor of one-half to Crane & Company, Topeka, Kans. Tax-calculating machine	571,070	Nov. 10	1160	271	77	883
Knight, Thomas G., Rockville Centre, N. Y. Drawer for holding documents, &c	573,665	Dec. 22	2854	673	77	1873
Knight, Walter H., and F. O. Blackwell, Schenectady, N. Y., assignors to Builder's Insulating Tube Company, Lynn, Mass. Paper-tube machine	573,004	Dec. 15	1613	388	77	1624
Knippenberg, August, Fehternhausen, Germany. Crochet-hook	572,809	Dec. 8	1277	307	77	1540
Knobeloch, John P. (See Rueter, Edward E., assignor.)						
Knoch, Heinrich P. (See Knoch, Paul, assignor.)						
Knoch, Paul, assignor to H. P. Knoch, Adlershof, Germany. Elastic bed-plate	571,618	Nov. 17	2101	504	77	1070
Knopp, Peter M., Kansas City, Mo. Street-car-transfer printing, delivering, and recording device	571,485	Nov. 17	1867	446 / 447	77	1028
Knowles, George, Milwaukee, Wis. Electric signal apparatus	572,607	Dec. 8	913	221 / 222	77	1471
Knowles, Nathaniel, Philadelphia, Pa. Adjustable partition for boxes, shelving, &c	568,910	Oct. 6	327	75	77	63
Knudsen, Conrad, assignor to American Engine Company, Bound Brook, N. J. Valve for steam-engines	572,608	Dec. 8	919	222	77	1472
Koch, Benjamin C., *et al.* (See Greene, Thomas C., assignor.)						
Koch, Edouard A. (See Lorio, Anthony A., assignor.)						
Koch, Eli, Harrisburg, Pa. Weather-strip	572,810	Dec. 8	1277	308	77	1540
Koch, George P., Boston, Mass. Railway-signal flagstaff	569,024	Oct. 6	532	122	77	101
Koch, Max M., Cleveland, Ohio. Stove or range	574,336	Dec. 29	4091	971	77	2114
Koch, Max M., and J. Erben, Cleveland, Ohio; said Erben assignor to said Koch. Stove or range	568,769	Oct. 6	100	23, 24	77	21
Koch, Max M., and J. Erben, Cleveland, Ohio; said Erben assignor to said Koch. Stove or range	570,485	Nov. 3	88	20	77	655
Koehler, Albert, Baker City, Oreg. Dust-pan	570,026	Oct. 27	2294	544	77	472
Koehler, Albert H., St. Paul, Minn. Whistling bicycle handle-bar	573,666	Dec. 22	2856	673	77	1873
Koehler, Gotthard, San Francisco, Cal. Bottle-stopper	571,949	Nov. 24	2720	640	77	1205
Koelbel, Herman M. (See Friedman and Koelbel.)						
Koelzer, Bernard, and J. Thaney, Milwaukee, Wis. Horseshoe-calk	568,857	Oct. 6	248	58	77	48
Kohl, Paul, and H. Paulus, St. Louis, Mo. Bottle-labeling machine	573,667	Dec. 22	2857	674 / 675	77	1874
Kohlenberg, Ferdinand, assignor of one-half to E. E. Howe, Albany, N. Y. Egg-beater	570,668	Nov. 3	470	110	77	726
Kohler, Arthur L., Geneva, N. Y. Baling-press	570,027	Oct. 27	2295	545	77	473
Kohn, David, Paris, France. Bicycle-bell	573,668	Dec. 22	2862	675	77	1874
Kohne, John M., Toledo, Ohio. Smoke-consumer	570,731	Nov. 3	577	132 / 133	77	745
Kollock, Harry, Philadelphia, Pa. Shoe-lace fastener	571,670	Nov. 17	2184	526	77	1066
Konrad, Louis, G. P. Fromm, Brooklyn, and H. Kauer, New York, N. Y. Life-saving apparatus for vessels	568,982	Oct. 6	463	105	77	88
Kordick, John E., Bridgewater, Iowa. Self-watering trough	573,005	Dec. 15	1615	388	77	1624
Korda, William L. (See Lewis, Lyman S., assignor.)						
Körner, Johannes, Mannheim, Germany. Manufacture of plates for electric accumulators	571,598	Nov. 17	2065	.....	77	1064
Kos, Albert J., *et al.* (See Winters, John W., assignor.)						
Köster, Carl, Cologne, Germany. Composition of matter for manufacturing artificial veneers	572,016	Nov. 24	2813	.....	77	1224
Kotva, Vaclav. (See Schneberger and Kotva.)						
Kotzlovsky, Julius, Philadelphia, Pa. Shoe-machine	574,337	Dec. 29	4093	972 / 973	77	2115
Kraft, Charles H., *et al.* (See Burton, Charles, assignor.)						
Kramer, George W., Racine, Wis. Apparatus for weighing and conveying grain	571,571	Nov. 17	2023	481 / 482	77	1056
Kramer, Ludwig. (See Rosenthal and Kramer.)						
Kramer, William R., Coldwater, Mich. Churn	569,925	Oct. 20	2114	503	77	436

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Krasel, Paul R., Montreal, Canada. Ash-sifter	570,132	Oct. 27	2485	589	77	509
Kraaky, Henry G., San Francisco, Cal. Folding bed	571,529	Nov. 17	1950	466	77	1044
Kraus, Albert L., Peabody, Mass. Propeller	574,096	Dec. 29	3628	867	77	2030
Kraus, Albert L., Peabody, Mass. Combined fender and brake mechanism	574,097	Dec. 29	3629	867	77	2030
Kraus, Herman T. C., Brooklyn, N. Y. Process of and apparatus for extracting oil	569,208	Oct. 13	846	199 / 200	77	177
Kraus, Ignatz G., Berlin, Germany. Curling-comb	573,887	Dec. 29	3240	771	77	1960
Krauth, Ferdinand E., Hebron, N. D. Self-setting animal-trap	572,811	Dec. 8	1279	308	77	1540
Krebs, Gustav, Halle-on-the-Saale, and A. Weil, Steinheim, Germany. Roofing-tile machine	573,604	Dec. 22	2715	645	77	1847
Kremer, John C., Wadsworth, Ohio. Wire-fastener	571,271	Nov. 10	1517	358	77	949
Kremer, Michael J. (See Brammer and Kremer.)						
Kress, August, West Bend, Wis. Purse	573,332	Dec. 15	2206	527	77	1733
Krick, Elijah, Wolfcale, Ohio. Check-row attachment for corn-planters	569,209	Oct. 13	849	200	77	178
Krider, Amis, Chicago Heights, Ill. Carriage-top connection	573,006	Dec. 15	1616	388	77	1624
Krider, Amis, Chicago Heights, Ill. Carriage-top connection	573,007	Dec. 15	1617	389	77	1625
Krieger, Edward C. (See Lamprecht and Krieger.)						
Krieger, Gottfried F., Kiel, Germany. Electric igniting device for gas-burners	571,769	Nov. 24	2380	568	77	1142
Kries, John F., Charleston, W. Va. Non-refillable bottle	571,047	Nov. 10	1123	262	77	876
Krimmel, Albert, Detroit, Mich. Bung-hole protector and funnel combined	573,333	Dec. 15	2207	528	77	1733
Kriner, John H., Golden Rod, Pa. Oil-catching device	572,641	Dec. 8	974	235	77	1483
Kritcher, Davis, and C. Weinstein, Worcester, Mass. Combination-tool for pipe-fitters	570,934	Nov. 10	937	218	77	842
Kroegher, Wilhelm C., Allegheny, Pa. Welding-machine	568,911	Oct. 6	328	76	77	63
Krueger, George, Albany, N. Y. Circular extension-table	572,172	Dec. 1	137	32, 33	77	1303
Krumscheid, Peter, Boston, Mass. Fabric for tires	573,008	Dec. 15	1618	389	77	1625
Kruse, Frederick W., and C. Holstein, Millard, Nebr. Brake	571,004	Nov. 10	1052	245	77	863
Kryszat, Albert A., Aschersleben, Germany. Rotary engine	571,377	Nov. 17	1691	402 / 403	77	996
Kuhfahl, Herman, assignor of three-fourths to W. & W. A. Lang, New York, N. Y. Gas-burner	571,902	Nov. 24	2627	623	77	1188
Kuhn, George E., *et al.* (See Crawford, William W., assignor.)						
Kulage, Joseph J., St. Louis, Mo. Gathering and loading apparatus	568,770	Oct. 6	102	24, 25	77	22
Kulage, Joseph J., St. Louis, Mo. Wheeled vehicle	573,334	Dec. 15	2208	528 / 529	77	1734
Kulage, Otto. (See Langer, Gotthold, assignor.)						
Kulcsar, Josef, Concord, Mass. Lamp-chimney protector	573,155	Dec. 15	1676	452	77	1674
Kullberg, John, and C. Brunzell; said Kullberg assignor to C. A. Brunzell, Minneapolis, Minn. Cloth-measuring machine	573,335	Dec. 15	2214	529	77	1734
Kumler, Hervey R., Etiwanda, Cal. Box-nailing machine	574,365	Dec. 29	4137	982 / 983	77	2122
Kunstweberei, Claviez & Co., Gesellschaft mit Beschränkter Haftung. (See Claviez, Emil, assignor.)						
Kunz, Alfred R., Brooklyn, N. Y. Bracket	573,985	Dec. 29	3428	821	77	1993
Kunzel, Charles A., Jr., Hoboken, N. J. Gas-engine	571,447	Nov. 17	1803	431	77	1017
Kurtz, Henry W., New York, N. Y. Christmas-tree stand	573,225	Dec. 15	2005	481	77	1698
Kurz, August W., assignor of one-half to J. P. Dowd, Cleveland, Ohio. Rotary blower, exhauster, or pump	571,770	Nov. 24	2381	569	77	1142
Kuykendall, Blanche L. (See Moore, Joseph R., assignor.)						
L'Hommedieu, Joseph S., Great Neck, N. Y. Mucilage-bottle	570,030	Oct. 27	2299	546	77	474
La Fountain, Maxim, Jr., Springfield, Vt. Adjustable means for instrumentalities in cloth-finishing machines	573,669	Dec. 22	2863	675 / 676	77	1875
Laar, Andries F. S. van de, Amsterdam, Netherlands. Rotary engine	571,727	Nov. 17	2282	547 / 548	77	1105
Laass, John J., Syracuse, N. Y. Wheel-hub	568,912	Oct. 6	329	76	77	63
Lachance, Joseph, Little Falls, Minn. Washing-machine	571,671	Nov. 17	2185	526	77	1066
Lachman, Maurice, assignor to Automatic Castor and Wheel Company, Limited, London, England. Furniture-caster	571,167	Nov. 10	1342	313	77	916
Lagelouze, Gaston, assignor of one-half to R. Fabien, New York, N. Y. Bake-pan	573,986	Dec. 29	3429	822	77	1993
Lagrelle, Alexandre D., Louvres, France. Regulator for electric heaters	573,670	Dec. 22	2865	676	77	1875
Lail, Andrew B. (See Hance, James A., assignor.)						
Laird, John E. B., Elgin, Tex. Knee-pad	572,642	Dec. 8	975	235	77	1484
Lake, Robert G., Corona, N. Y. Sign letter or character	570,313	Oct. 27	2860	678	77	578
Lalance & Groajean Manufacturing Company. (See Ball and Vacheron, assignors.)						
Lamb Manufacturing Company. (See Carryl, Henry D., assignor.)						
Lambert, Albert S., and E. Hoffman, assignors, by mesne assignments, to Practical Closure Con pany, Bridgeton, N. J. Closure	568,771	Oct. 6	105	25	77	22
Lambert, Albert S., and E. Hoffman, assignors, by mesne assignments, to Practical Closure Company, Bridgeton, N. J. Tool for finishing glass bottles, &c	568,772	Oct. 6	106	25	77	22
Lambert, Albert S., and E. Hoffman, assignors, by mesne assignments, to Practical Closure Company, Bridgeton, N. J. Closure	568,773	Oct. 6	108	25	77	23
Lambert, Albert S., and E. Hoffman, assignors, by mesne assignments, to Practical Closure Company, Bridgeton, N. J. Closure	568,774	Oct. 6	109	26	77	23
Lambert, Emile L. C., Boulogne, France. Developing-tray	573,888	Dec. 29	3241	771	77	1960
Lambert, Frank, assignor of one-half to J. W. Kay, Brooklyn, N. Y. Meter	569,137	Oct. 6	721	169 / 170	77	137
Lambert, John W., assignor to Buckeye Manufacturing Company, Anderson, Ind. Gas-engine governor	571,448	Nov. 17	1806	431	77	1018
Lamme, Benjamin G., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. System of alternating-current regulation and distribution	571,836	Nov. 24	2495	591	77	1164
Lamme, Benjamin G., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Direct-current dynamo-electric generator	573,009	Dec. 15	1619	389	77	1625
Lamme, Benjamin G., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Method of and means for regulating alternating-current generators	574,035	Dec. 29	3514	819	77	2008
Lampe, Johannes L., Jr., Bloomington, Ill. Rotary steam-engine	571,378	Nov. 17	1693	403	77	996
Lamprecht, William, Sedan, and E. C. Krieger, Cuero, Tex. Chimney-protector	572,761	Dec. 8	1196	288	77	1524
Lampton, Eugene T. (See Prindle and Lampton.)						
Lamson, James H., Streator, assignor of one-half to W. A. Bass, Oswego, Ill. Washing-machine	573,336	Dec. 15	2217	530	77	1735
Land, Charles H., Detroit, Mich. Rest for dental-engine tools	569,210	Oct. 13	851	200 / 201	77	178
Landers, Dennis J., Holyoke, Mass. Drainer-floor and tile therefor	572,702	Dec. 8	1197	289	77	1524
Landes, Charles B., Columbus, Ohio. Marble-shooting device	574,098	Dec. 29	3631	867	77	2031
Landes, Isaiah C. and M. C., Yerkes, Pa. Flour bolting or scalping machine	569,211	Oct. 13	853	201	77	178
Landes, Jacob G., Norristown, Pa. Means for unlocking nut-locks	573,337	Dec. 15	2219	530	77	1735

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Landes, Milton C. (See Landès, Isaiah C. and M. C.)						
Landis, Abraham A. (See Vogt, Wilhelm, assignor.)						
Landis, Frank F., Waynesborough, Pa. Pneumatic stacker	569,504	Oct. 13	1353	318	77	271
Landis, William A. (See Smith and Landis.)						
Lane, Delbert E., Beloit, Wis. Stool	569,212	Oct. 13	854	201	77	178
Lane, Leslie C., Minneapolis, Minn. Seal for bottles	571,903	Nov. 24	2628	623	77	1188
Lane, Spencer B., assignor to American Ring Company, Waterbury, Conn. Rotary button-press	574,154	Dec. 29	3726	888, 889	77	2047
Lane, William G., North Sydney, Canada. Coal-dumping car	568,775	Oct. 6	110	26	77	23
Lane, William G., North Sydney, assignor of one-half to H. H. Bell, Halifax, Canada. Type-writing machine	569,928	Oct. 20	2119	504	77	427
Laney, Thomas G., Lima, Ohio. Pumping-jack	569,926	Oct. 20	2115	503	77	426
Laney, Thomas G., Lima, Ohio. Pull-rod-bending apparatus	569,927	Oct. 20	2117	504	77	426
Lang, W. & W. A. (See Kuhfahl, Herman, assignor.)						
Lange, Arthur, Milwaukee, Wis. Table	572,643	Dec. 8	976	235	77	1484
Langelaan, Jacobus, Cologne, Germany. End electrode for electric-power storage batteries	570,028	Oct. 27	2297	545	77	473
Langell, Albert G. (See Bowman and Langell.)						
Langen, Eugen, deceased, Cologne, Germany; G. Langen, ancillary administrator. Switch for single-rail railways	569,972	Oct. 20	2200	523	77	441
Langen, Gustav, administrator. (See Langen, Eugen.)						
Langen's Erben, Eugen. (See Feldmann, Wilhelm, assignor.)						
Langer, Charles A., Fort Wayne, Ind. Vegetable cutting and grating machine	573,431	Dec. 15	2407	573	77	1770
Langer, Gotthold, assignor to O. Kulage, St. Louis, Mo. Hydraulic brick-press	570,314	Oct. 27	2861	678, 679	77	579
Langer, Gotthold, assignor of one-half to G. W. Rarer, St. Louis, Mo. Motor-vehicle	573,010	Dec. 15	1622	389, 390	77	1625
Langhans, Rudolf, Berlin, Germany. Method of and composition for making artificial silk	571,530	Nov. 17	1952	.....	77	1044
Langhans, Rudolf, Berlin, Germany. Producing coatings composed of earthy oxids	571,531	Nov. 17	1954	466	77	1044
Langhans, Rudolf, Berlin, Germany. Producing coatings composed of earthy oxids	571,532	Nov. 17	1957	.....	77	1045
Langhans, Rudolf, Berlin, Germany. Electrolytic process of converting hydroxids of earth and earth alkali metals into indissoluble organic or inorganic salts, &c	571,533	Nov. 17	1959	.....	77	1045
Langley, Sarah. (See Walton, Andrew, assignor.)						
Langlotz, Frederick, Cincinnati, Ohio. Mail-bag fastener	572,763	Dec. 8	1198	289	77	1524
Langton, James H., assignor of one-half to O. L. Palmer, Centreville, Mich. Butcher's tool-rack	572,764	Dec. 8	1199	289	77	1525
Langworthy, Lucius H. (See Meier, August H., assignor.)						
Lankford, William J., assignor of one-half to E. Chenoweth, Ottawa, Kans. Harvester	571,904	Nov. 24	2630	623, 624	77	1188
Lannert, John A., and W. R. Jeavons, Cleveland, Ohio. Vapor-burner	570,854	Nov. 3	792	182	77	786
Lansdowne, James M., Greenville, Ohio. Blank check, draft, &c	569,973	Oct. 20	2201	523	77	442
Lanzone, Edward. (See Lanzone, Rudolph and E.)						
Lanzone, Rudolph and E., South River, N. J. Rotary engine	572,707	Dec. 8	1094	265, 266	77	1506
Lappin, John W., *et al.* (See Harvey, William F. H., assignor.)						
Lapworth, Charles A., Hopedale, Mass. Lamp shade or reflector holder	570,669	Nov. 3	471	110	77	786
Larimer, John J., Crab Tree, Pa. Gate-spring	572,899	Dec. 8	1403	340	77	1566
Larimore, Wilson H., Girard, Kans. Smoke and cinder conveyer	570,315	Oct. 27	2866	679, 680	77	579
Larsen, Anton, New York, N. Y. Hoisting apparatus	569,046	Oct. 6	568	131	77	108
Larson, Axel, *et al.* (See Clausson, Ole, assignor.)						
Lary, Morris. (See Arnold and Lary.)						
Lassen, Andreas J., Chicago, Ill. Measuring-faucet	572,017	Nov. 24	2813	664	77	1224
Latham, Albert, Springfield, Mass. Die for applying plastic coverings on eyelets	571,837	Nov. 24	2497	591	77	1165
Lathrop, George A., Jr. (See Jarman, George R., assignor.)						
Lathrop, William A., Wilkes-Barré, Pa. Mechanism for unloading, storing, and reloading coal	572,900	Dec. 8	1404	340	77	1566
Latimer, Thomas H. (See Pusey, Latimer, and Savery.)						
Latrige, Paul B., St. Etienne, France. Magazine-pistol	573,338	Dec. 15	2220	530	77	1735
Latta, John L. (See Martin and Latta.)						
Laube, Godfried, Huron, S. D., assignor of one-half to V. L. Grable, Malakoff, Tex. Rotary pneumatic toy	571,449	Nov. 17	1807	431, 432	77	1018
Laube, Godfried, assignor of one-half to A. Vandenburg, Huron, S. D. Trace-holder	572,427	Dec. 1	609	144	77	1394
Laube, Godfried, assignor of one-half to A. Vandenburg, Huron, S. D. Trace-holder	572,487	Dec. 1	693	166	77	1410
Laubmann, Heinrich, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Blue dye and making same	569,418	Oct. 13	1210	.....	77	246
Laubmann, Heinrich, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Dinitroanthrachrysone-disulfonic acid and making same	569,419	Oct. 13	1211	.....	77	246
Lauer, Joseph W. (See Mayes, Wilton P., assignor.)						
Laughlin, James C., Columbus, Ind. Duplicate desk	571,486	Nov. 17	1874	447	77	1029
Laval, Carl G. P. de, Stockholm, Sweden. Governor for motors	569,834	Oct. 20	1965	467	77	398
Laval, Carl G. P. de, Stockholm, Sweden. Cow-milker	574,357	Dec. 29	4128	980	77	2121
Lavens, Erwin, Brooklyn, N. Y. Making interior conduits	570,256	Oct. 27	2715	645	77	533
Lavey, Curtis J., Bristol, Wis. Drawbridge-gate	570,029	Oct. 27	2298	545, 546	77	473
Lavigne & Scott Manufacturing Company. (See Scott, William W., assignor.)						
Lavoie, Auguste, Fitchburg, Mass. Railway-crossing	573,011	Dec. 15	1624	390	77	1626
Law, Alfred A., New York, N. Y. Dose-measuring bottle	570,759	Nov. 3	628	144	77	753
Lawrence, Herbert W., Montevideo, Minn. Antirattler for thill-couplings	573,786	Dec. 22	3041	721	77	1909
Laws, Daniel O., *et al.* (See Klettner, Charles R., assignor.)						
Lawson, Alonzo M., Washington, D. C. Boiler-cleaner	573,296	Dec. 15	2006	481	77	1698
Lawson, Benjamin S., Red Bank, N. J., assignor to Roller-Bearing Truck Company, New York, N. Y. Roller-bearing	572,681	Dec. 8	1041	252	77	1497
Lawson, Perry. (See Carlson and Lawson.)						
Laybourne, Richard, *et al.* (See Price, Benjamin, assignor.)						
Layton, Edward L., assignor of four-fifths to J. Grumbacher, W. Fagan, W. G. Sickell, and W. H. Limberg, Trenton, N. J. Dumping-wagon	573,987	Dec. 29	3430	822	77	1993
Le Blanc, Ben C. (See Nadler and Le Blanc.)						
Le Blois, Leopold, and G. Picent, Elbeuf, France. Process of and apparatus for dyeing	570,316	Oct. 27	2867	680	77	580
Le Grand, Augustus L., assignor to Exeter Machine Works, Pittston, Pa. Conveying apparatus	570,876	Nov. 3	831	193, 194	77	794
Le Sieur, St. Vrain, assignor of one-half to C. A. Peterson, St. Louis, Mo. Composition of matter	572,645	Dec. 8	978	.....	77	1484
Lea, Samuel H., assignor of one-half to E. T. Ogle, New York, N. Y. Tool for reseating faucets	571,572	Nov. 17	2027	482	77	1057

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Leach, Henry L., Cambridge, Mass. Automatic track-sanding apparatus	572,428	Dec. 1	610	144, 145	77	1394
Leach, John F., Independence, Mo. Spring-mattress	569,420	Oct. 13	1212	285	77	246
Lean, George R., assignor to Jandus Electric Company, Cleveland, Ohio. Electric-arc lamp	571,974	Nov. 24	2745	648, 649	77	1211
Lean, George R., assignor to Jandus Electric Company, Cleveland, Ohio. Carbon-holder	571,975	Nov. 24	2751	649	77	1213
Lean, George R., assignor to Jandus Electric Company, Cleveland, Ohio. Electric-arc lamp	571,976	Nov. 24	2752	649	77	1213
Leary, John E., Brooklyn, N. Y. Canopy or netting support	569,025	Oct. 6	533	123	77	101
Leary, William A., Norfolk, Va. Drier-truck	570,644	Nov. 3	417	98	77	715
Leblanc, Maurice. (See Hutin and Leblanc.)						
Lechner, Francis M., Columbus, Ohio. Mining-machine	569,758	Oct. 20	1845	437	77	376
Ledden, John J., Baltimore, Md. Hose-nozzle	571,048	Nov. 10	1124	263	77	877
Lederer, Adolph, New York, N. Y. Chenille trimming	574,366	Dec. 29	4142	984	77	2123
Lederhos, Charles, *et al.* (See Hutchins, Abner R., assignor.)						
Ledoux, Aug. D. (See O'Brien, Andrew P., assignor.)						
Lee, Charles, San Antonio, Tex. Car-coupling	571,771	Nov. 24	2383	569	77	1143
Lee, Charles, and E. J. Baldwin, Cardiff, Tenn. Envelop	572,488	Dec. 1	694	166, 167	77	1411
Lee, Elmer, Chicago, Ill. Reservoir for liquid soap	570,935	Nov. 10	939	218	77	842
Lee, Elmer, Chicago, Ill. Case for surgical instruments	570,936	Nov. 10	940	219	77	842
Lee, George, Dunedin, New Zealand. Hydraulic elevator	574,338	Dec. 29	4099	974	77	2116
Lee, Jacob M., Houston, Tex. Stock-guard	571,232	Nov. 10	1450	340	77	936
Lee, James T., and U. P. Sawyer, Camilla, Ga. Fence	571,049	Nov. 10	1125	262	77	877
Lee, John T., Atlanta, Ga. Fan attachment for sewing-machines	573,012	Dec. 15	1626	390	77	1626
Lee, Thomas, Philadelphia, Pa. Puzzle	569,106	Oct. 6	667	154	77	127
Lee, William, assignor of five-sixths to E. O. Geesey and C. S. Myer, Altoona, Pa. Nipple-holder	573,013	Dec. 15	1627	391	77	1626
Lee, William, assignor of five-sixths to E. O. Geesey and C. S. Myer, Altoona, Pa. Cellar-drainer	573,014	Dec. 15	1628	391	77	1627
Leeper, James F., Lewistown, Pa. Bottle-washer	574,155	Dec. 29	3730	880	77	2048
Lefebvre, Julian L., and C. S. Upton, Eureka Junction, Wash. Force and lift pump	569,047	Oct. 6	569	131	77	108
Lefever, Charles F., Syracuse, N. Y. Bicycle-saddle	571,379	Nov. 17	1695	404	77	996
Lefferts, Marshall C. (See Stevens and Lefferts.)						
Leffler Electro Magnetic Railway Company. (See Leffler, Paul W., assignor.)						
Leffler, Paul W., assignor to Leffler Electro Magnetic Railway Company, Chicago, Ill. Electric railway	573,819	Dec. 22	3100	737, 738	77	1920
Leffler, Paul W., assignor to Leffler Electro Magnetic Railway Company, Chicago, Ill. Electric elevator	573,820	Dec. 22	3101	738, 739, 740	77	1920
Leffler, Paul W., assignor to Leffler Electro Magnetic Railway Company, Chicago, Ill. Electric railway, &c	573,821	Dec. 22	3108	740, 741	77	1921
Leffler, Paul W., assignor to Leffler Electro Magnetic Railway Company, Chicago, Ill. Electric railway, &c	573,822	Dec. 22	3111	741, 742	77	1922
Leffler, Paul W., assignor to Leffler Electro Magnetic Railway Company, Chicago, Ill. Motor-car truck	573,823	Dec. 22	3119	742, 743	77	1923
Leger, Edward, Chicago, Ill. Hat-holder	571,772	Nov. 24	2385	569	77	1143
Leggett, Clinton H., New York, N. Y. Discharge-spout for powder-distributers	568,776	Oct. 6	111	27	77	23
Leggett, Clinton H., New York, N. Y. Fly-catcher	570,486	Nov. 3	89	21	77	655
Lehlbach, Gustav, Jersey City, N. J. Making joints of pipes having bell ends	572,901	Dec. 8	1406	341	77	1567
Lehman, Frank H., Lebanon, Pa. Puzzle	571,672	Nov. 17	2186	526	77	1087
Lehmann, Adolph, Moorefield, Ohio. Fruit-evaporator	573,787	Dec. 22	3042	721	77	1909
Lehmann, Anthony A., assignor to J. W. Brown, Baltimore, and R. T. Bowne, Wimbledon, Md. Railway time-signal	569,974	Oct. 20	2202	523, 524	77	442
Lehmann, Oscar H., Evansville, Ind. Fastener for tailpieces of musical instruments	569,647	Oct. 20	1630	385	77	339
Lehmann, Richard, assignor of one-half to J. A. Quell, Brooklyn, N. Y. Hub-attaching device for vehicle-axles	572,489	Dec. 1	697	167	77	1411
Lehnig, Friedrich M., Barmen, Germany. Corset-fastening	569,213	Oct. 13	855	201	77	179
Lehnkering, August L., *et al.* (See Dustin, Leander, assignor.)						
Leiber, William C., Philadelphia, Pa. Fastener for shoes, &c	571,450	Nov. 17	1807	432	77	1018
Leigh, Richard A., assignor to F. W. Huestis, Boston, Mass. Rubber tire	573,671	Dec. 22	2866	677	77	1875
Leighton, George A., and J. H. Rice, assignors to Leighton Machine Company, Manchester, N. H. Circular automatic rib-knitting machine	573,275	Dec. 15	2087	501, 502	77	1712
Leighton Machine Company. (See Leighton and Rice, assignors.)						
Leland, Charles, Mount Desert, Me. Animal-trap	571,773	Nov. 24	2386	570	77	1143
Leland & Faulconer Manufacturing Company. (See Leland, Henry M., assignor.)						
Leland, Henry M., assignor to Leland & Faulconer Manufacturing Company, Detroit, Mich. Trimming-machine	569,789	Oct. 20	1897	450	77	385
Lemaire, Louis J., Alexandria, Ind. Regenerative gas-furnace	569,421	Oct. 13	1213	285	77	246
Lemen, David S. (See Swearingen and Lemen.)						
Lemm, Adolph C., Clyde, Ohio. Shears	572,644	Dec. 8	977	235	77	1484
Lencke, John K., assignor to C. F. Quincy, Chicago, Ill. Slack-adjuster for brakes	568,777	Oct. 6	114	27	77	23
Lenker, Will G., Sunbury, Pa. Weighing-scale	573,015	Dec. 15	1629	391	77	1627
Lenox Manufacturing Company. (See Schoonmaker, John D., assignor.)						
Lent, Cyrenus W., assignor of three-fourths to T. Swift, L. Schaffer, Oakland, and J. W. Swift, San Francisco, Cal. Odorless crematory	573,605	Dec. 22	2717	646	77	1848
Lentz, A. L. (See Keeter, Thomas W., assignor.)						
Lentz, Henry P., assignor of one-half to C. W. Heyl, Columbus, Ohio. Tree extractor and carrier	572,902	Dec. 8	1408	341	77	1567
Leonard, Harry W., New York, N. Y. Regulating electric motors	572,903	Dec. 8	1410	341	77	1568
Leonard, Patrick J., and W. Head, New York, N. Y. Lock	574,240	Dec. 29	3950	939	77	2087
Lesser, Max, assignor of one-half to H. Hottinger, Cincinnati, Ohio. Window	572,551	Dec. 8	806	193	77	1447
Leu, Otto. (See Keller, John D., assignor.)						
Levalley, Christopher W., Milwaukee, Wis. Conveyer	573,988	Dec. 29	3434	823	77	1994
Levin, Adolph L., Denver, Colo. Coin-changing device	569,214	Oct. 13	856	202	77	179
Levy, Louis W., *et al.* (See Williams, Alfred G., assignor.)						
Lewin, Maurice S., Philadelphia, Pa. Linen-rubber	574,099	Dec. 29	3632	867	77	2031
Lewinson, Julius N., New York, N. Y. Bicycle-skirt	572,429	Dec. 1	612	145	77	1394
Lewis, Caroline L. (See Mixer and Lewis.)						
Lewis, Caroline L., and C. E. Mixer, Boston, Mass. Hook	570,855	Nov. 3	794	182	77	786
Lewis, Franklin F. (See Lewis, Stephen B. and F. F.)						
Lewis, George, and C. E. Pointon, Wellington, New Zealand. Machine for making bread	571,774	Nov. 24	2387	570, 571	77	1144
Lewis, George, and C. E. Pointon, Wellington, New Zealand. Machine for molding dough	571,775	Nov. 24	2389	571	77	1144

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lewis, George W., Chicago, Ill. Gas-engine	571,534	Nov. 17	1960	466, 467	77	1045
Lewis, John E., Reading, Pa. Axle-nut for vehicles	569,215	Oct. 13	861	203	77	180
Lewis, Lee D. (See Brobeck and Lewis.)						
Lewis, Llewelyn J., *et al.* (See Eberman, Joseph W., assignor.)						
Lewis, Lyman S., assignor of one-half to W. L. Korda, Guttenberg, Iowa. Car-coupling	571,673	Nov. 17	2187	527	77	1087
Lewis, Lyman S., assignor of one-half to W. L. Korda, Guttenberg, Iowa. Railway-switch	571,674	Nov. 17	2189	527	77	1087
Lewis, Moses. (See Ream and Lewis.)						
Lewis, Nathaniel D., Joliet, Ill. Machine for polishing tin and terne plates	571,071	Nov. 10	1165	272	77	883
Lewis, Overton H., Richards, Mo. Hay-fork	572,490	Dec. 1	698	167	77	1411
Lewis, Stephen B. and F. F., Janesville, Wis. Waistband for nether garments	570,317	Oct. 27	2869	680	77	580
Lewis, W. T., *et al.* (See Yeakley, Melvin A., assignor.)						
Lewis, Walter F. (See White, Louis L., assignor.)						
Lewis, William H. (See Butts, Elias H., assignor.)						
Lhote, George, New Orleans, La. Planing and resawing machine	569,288	Oct. 13	982	236	77	203
Libbey, Hosea W., Boston, Mass. Cotton-gin and wool-burring machine	572,263	Dec. 1	300	72	77	1336
Libbey, Hosea W., Boston, Mass. Speaking-tube	572,264	Dec. 1	302	72	77	1337
Lilly, Charles E. (See Flagg and Lilly.)						
Limberg, W. H., *et al.* (See Layton, Edward L., assignor.)						
Liming, John, Philadelphia, Pa. Hydraulic air-compressor	569,929	Oct. 20	2120	504	77	427
Lincoln, Horatio B., *et al.* (See Brown, Franklin, assignor.)						
Lindahl, Caleb. (See Lindahl, Josua and C.)						
Lindahl, Josua, Chicago, Ill., and C. Lindahl, National Military Home, Los Angeles county, Cal. Zodiacal chart	573,091	Dec. 15	1769	425	77	1654
Lindenau, Eric W., Joliet, Ill. Employee's time-recorder	571,272	Nov. 10	1518	358, 359, 360	77	949
Lindley, Alva A., Oskaloosa, Iowa. Brake-shoe	573,227	Dec. 15	2010	482	77	1699
Lindsay, Archibald L., *et al.* (See Chapin, William R., assignor.)						
Lindsay, Archibald L., assignor of two-thirds to W. R. Chapin, Wyoming, and J. W. Howarth, Scranton, Pa. Thill-tug	572,352	Dec. 8	808	194	77	1447
Lindsay, Charles R., Jr., Philadelphia, Pa., assignor to Pennsylvania Globe Gas Light Company, of Pennsylvania. Street-lamp	571,005	Nov. 10	1053	246	77	863
Lindsay, John, Millbury, Mass. Sprocket-wheel	569,216	Oct. 13	862	203	77	180
Lindsay, Joseph, Dublin, Ireland. Elastic sectional tire for vehicle-wheels	573,471	Dec. 22	2492	591	77	1804
Lindsay, Thomas J., Lafayette, Ind. Gear-cutting machine	572,207	Dec. 1	192	47, 48	77	1315
Lindsey, Julian R., Fort Robinson, Nebr. Bottle	572,058	Nov. 24	2892	683	77	1239
Linegar, Charles. (See Simmonds and Linegar.)						
Link-Belt Engineering Company. (See Dodge, James M., assignor.)						
Link-Belt Machinery Company. (See Peck, Staunton B., assignor.)						
Linke, Theodore, New York, N. Y. Valve	568,858	Oct. 6	249	58	77	48
Linn, Allen B. (See Linn, Allen D. and A. B.)						
Linn, Allen D. and A. B., assignors to T. S. White, T. Friant, G. W. Perkins, and C. J. Reed, Grand Rapids, Mich. Carpet-sweeper	571,451	Nov. 17	1808	432	77	1018
Linn, Clarence. (See Boluss, Alfred R., assignor.)						
Linstrom, Charles, Vicksburg, Miss. Boiler check-valve	573,788	Dec. 22	3043	721	77	1909
Lippincott, Alpheus C., New York, N. Y. Planimeter	569,107	Oct. 6	668	155	77	127
Lippincott, Fisher H., Philadelphia, Pa., assignor to American Soda Fountain Company, Trenton, N. J. Device for supplying salts for soda-fountains	574,156	Dec. 29	3733	890	77	2048
Lippy, David, Mansfield, Ohio. Pump	574,251	Dec. 29	3952	939	77	2088
Lippy, David, Mansfield, Ohio. Pump	574,252	Dec. 29	3953	940	77	2088
Lishman, Walter W. L. (See Jefferson, Lishman, and Clapham.)						
Lisk, Sidney J., Clifton Springs, N. Y. Fail-bottom	571,380	Nov. 17	1696	404	77	997
Little, Charles H., Melrose, assignor to R. F. Herrick, trustee, Milton, Mass. Cash-register	571,728	Nov. 17	2284	548	77	1105
Little, Francis C., Portland, Oreg. Apparatus for utilizing wave-power	570,223	Oct. 27	2646	628, 629	77	540
Little, Orton C., assignor of one-half to M. M. Scholtz, Menasha, Wis. Weather-strip	569,582	Oct. 13	1506	355	77	300
Littlefield, George B., San Francisco, Cal. Stove-lid	570,937	Nov. 10	942	219	77	843
Livengood, Winfield S., Kansas City, Mo. Whipping attachment for horse-powers	568,778	Oct. 6	117	27, 28	77	24
Livermore, Darwin O., Los Gatos, Cal. Sash-lock	570,670	Nov. 3	472	110	77	726
Livermore, John W., Kingsbury, Cal. Feeder for threshing-machines	570,257	Oct. 27	2714	645, 646	77	553
Livsey, Charles P., Norwich, assignor to E. H. Jacobs Manufacturing Company, Danielsonville, Conn. Lug-strap for looms	574,204	Dec. 29	3859	920	77	2070
Ljungström, Birger, Stockholm, Sweden. Mechanism for working velocipedes	571,197	Nov. 10	1387	324	77	924
Ljungström, Fredrik, Stockholm, Sweden. Treadle mechanism	573,016	Dec. 15	1631	391, 392	77	1627
Ljungstrom, Fredrik, Stockholm, Sweden. Steam generator and condenser	574,157	Dec. 29	3734	890, 891	77	2049
Ljungström, Lars G., assignor of one-half to W. G. C. Harmsen, Stockholm, Sweden. Rotary steam-engine	571,381	Nov. 17	1697	404	77	997
Lloyd, Marshall B. (See Johnson, White, and Lloyd.)						
Lobner, William B. (See Ranson, George O., assignor.)						
Locher, Charles H., Rockbridge county, Va. Cableway for dumping purposes	570,429	Oct. 27	3065	726, 727	77	617
Locher, Charles H., Glasgow, Va. Cableway for conveying and dumping rock, &c	572,491	Dec. 1	699	167, 168	77	1412
Lochman, Emil, St. Louis, Mo. Wood-carving machine	571,535	Nov. 17	1963	467, 468, 469	77	1045
Lochmann, Oskar P., Leipsic, Germany. Note-disk holder	573,017	Dec. 15	1632	392	77	1628
Lochmann, Oskar P., Leipsic, Germany. Music-box	573,018	Dec. 15	1633	392	77	1628
Locke, Fred M., Victor, N. Y. Insulator	573,092	Dec. 15	1770	425, 426	77	1655
Lockhart, Robert P., Patoka, Ind. Harvester and binder	571,619	Nov. 17	2102	504, 505	77	1070
Lockwood, Amos, Halifax, England. Shuttle-box-operating mechanism for looms	573,276	Dec. 15	2090	502, 503	77	1713
Lockwood, Joseph E., Detroit, Mich. Electric locomotive	568,779	Oct. 6	119	28	77	24
Lodge, Edward B., Cleveland, and W. R. Lodge, Cuyahoga Falls, Ohio. Station or street indicator	568,859	Oct. 6	250	58	77	49
Lodge, William R. (See Lodge, Edward B. and W. R.)						
Loesser, Edward and E., assignors of four-ninths to L. Dreyfus, New York, and R. Loesser, Brooklyn, N. Y. Diamond-polishing dop	573,672	Dec. 22	2868	677	77	1875

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Loesser, Ernest. (See Loesser, Edward and E.)						
Loesser, Richard, *et al.* (See Loesser, Edward and E., assignors.)						
Loetzer, Christian E., Williamsport, Pa. Fire-hydrant	570,031	Oct. 27	2301	546, 547	77	474
Logan, Paul H., El Paso, Tex. Fastening device for fence-runners	569,648	Oct. 20	1631	385	77	339
Logue, John M., Belle Vernon, Pa. Rope-clamp	570,267	Oct. 27	2768	658	77	563
Lohr, Charles, Milwaukee, Wis. Stone-dressing machine	569,719	Oct. 20	1776	422	77	364
Lomas, John R., West Haven, Conn. Combined clothes-drier and fire-escape	573,673	Dec. 22	2869	677	77	1876
Lombard, Frank, Hartford, Conn. Lifting-jack	574,036	Dec. 29	3515	839	77	2009
Long, Alfred, London, England. Apparatus for regulating water supply to closets, urinals, &c	570,487	Nov. 3	91	21	77	655
Long, Clinton E., Williamsport, Pa. Valve-stopper	570,671	Nov. 3	474	110	77	726
Long, Henry L., assignor of one-half to J. D. Roberts, St. Paul, Minn. Potato-digger	572,646	Dec. 8	960	236	77	1484
Long, Nathan H., Muncie, Ind. Rain-water filter	571,776	Nov. 24	2391	571	77	1144
Long, Timothy, Cleveland, assignor to McMyler Car Dumping Machine Company, of Cuyahoga county, Ohio. Car-unloading apparatus	568,860	Oct. 6	251	59	77	49
Longden, John, Bay State, Mass. Belt polishing-frame	572,812	Dec. 8	1280	308	77	1541
Longyear, J. M. (See McKenney and Welton, assignors.)						
Look, Frank N., assignor to Florence Manufacturing Company, Northampton, Mass. Brush	572,347	Dec. 1	453	106	77	1365
Loos, Friedrich, Nuremberg, Germany. Lubricator	570,706	Nov. 3	536	124	77	738
Lorash, Henry D., Indianapolis, Ind. Dumping wagon-body	569,108	Oct. 6	609	153, 156	77	128
Lorenz, William A. (See Honiss and Lorenz.)						
Lorenz, William A., Hartford, Conn., assignor to Consolidated S. O. S. Bag Company, New York, N. Y. Sheet-separating machine	570,175	Oct. 27	2559	608, 609	77	524
Lorenz, William A., Hartford, Conn., assignor, by mesne assignments, to Pope Manufacturing Company, Hartford, Conn., and Portland, Me. Bicycle	572,208	Dec. 1	195	48, 49	77	1316
Lorenz, William A., Hartford, and C. Reising, Southington, Conn., assignors to Consolidated S. O. S. Bag Company, New York, N. Y. Sheet-separating machine	570,176	Oct. 27	2560	609, 610	77	524
Lorenz, William A., and E. E. Claussen, assignors to A. H. Walker, trustee, Hartford, Conn., and Consolidated S. O. S. Bag Company, New York, N. Y. Paper-bag machine	573,277	Dec. 15	2094	503, 504	77	1714
Lorenz, William A., and E. E. Claussen, assignors to A. H. Walker, trustee, Hartford, Conn., and Consolidated S. O. S. Bag Company, New York, N. Y. Paper-bag machine	573,278	Dec. 15	2097	504, 505	77	1714
Lorimer, Joseph H., Philadelphia, Pa. Apparatus for dyeing	570,488	Nov. 3	93	21, 22	77	656
Loring, Atherton, Cambridge, Mass. Pipe connection for water-closets	569,790	Oct. 20	1899	450	77	385
Loring, Jacob P. (See Meldrum, Charles, assignor.)						
Lorio, Anthony A., Lakeland La. Apparatus for handling cane	571,233	Nov. 10	1451	340, 341	77	936
Lorio, Anthony A., Lakeland, assignor of one-half to E. A. Koch, Bayou Goula, La. Vehicle for hauling sugar-cane	571,309	Nov. 10	1580	375, 376	77	962
Lorois, Maurice, Nantes, France, and F. G. Bates, Philadelphia, Pa.; said Lorois assignor to said Bates. Process of and apparatus for manufacturing gas	573,989	Dec. 29	3436	823	77	1994
Loryea, William D. F., assignor of one-half to E. S. and I. S. Rosenblat, San Francisco, Cal. Flour or condiment dredge	572,362	Dec. 1	488	114	77	1371
Lotze, Ernst J., assignor of thirteen-thirtieths to M. Abrahams and J. E. Ketchum, Northport, Wash. Reversible plow	573,894	Dec. 22	3123	743, 744	77	1924
Lotzgesell, Henry, Philadelphia, Pa. Car-fender	570,099	Oct. 27	2431	578	77	499
Loucks, Zachariah K., *et al.* (See Wilday, John H., assignor.)						
Louden, William, Fairfield, Iowa. Hay-carrier and attachment therefor	568,953	Oct. 6	405	91	77	77
Lougee, Frederick G., Providence, R. I. Dial for recording apparatus	573,606	Dec. 22	2720	646	77	1848
Lough, William J., Altamont, Kans., assignor of one-half to A. Wolf, Chambersburg, Pa. Cleaner for sieves of bolting-machines	573,674	Dec. 22	2870	678	77	1876
Loughran, Albert C. L. (See Savage and Loughran.)						
Loughridge, William J., Lexington, Ky. Water-cooling apparatus	570,318	Oct. 27	2870	681, 682	77	580
Loughry, William A., Yates Centre, Kans. Feather-renovating apparatus	569,791	Oct. 20	1901	451	77	386
Love, Robert, Loyalhanna, Pa. Farm-gate	569,026	Oct. 6	534	123	77	101
Lovejoy, Thomas H., Chicago, Ill. Street-car truck	571,091	Nov. 10	1208	283	77	891
Lovette, John A., Manhattan, Kans. Band-cutter and feeder attachment	573,019	Dec. 15	1634	393	77	1628
Loving, James D., Bowling Green, Ky. Fence-machine	570,938	Nov. 10	943	219	77	843
Low, Abbot A. (See Johnson and Low.)						
Low, Abbot A., Brooklyn, N. Y. Tide-indicator	569,340	Oct. 13	1060	257	77	223
Lowdon, David. (See Marquand and Lowdon.)						
Lowe, Henry C., and F. C. Gandee, Gandeeville, W. Va. Pruning implement	573,339	Dec. 15	2221	531	77	1736
Lowe, James A. (See Van Vechten, Junius T. B., assignor.)						
Lowenberg, Georg, Berlin, Germany. Composition of matter for use in manufacturing glow bodies for incandescent lamps	568,780	Oct. 6	121	.....	77	25
Lowenberg, George. (See Rammoser, Albert, assignor.)						
Lowman, Benjamin J., assignor to himself and E. L. C. Ward, Bridgeport, Ala. Fire and burglar alarm	570,258	Oct. 27	2715	646	77	553
Lowther, Granville, Winfield, Kans. Traveling-bag	570,809	Nov. 3	702	160	77	768
Lucas, François, Munson Station, Pa. Foot-lantern	571,924	Nov. 24	2664	631	77	1195
Lucas, Harry, Birmingham, England. Bicycle-bell	571,777	Nov. 24	2392	572	77	1145
Lucas, Simeon B., Hinsdale, N. Y. Tug-holder	573,889	Dec. 29	3242	772	77	1960
Luce, John E., Minneapolis, Minn. Electric band	569,649	Oct. 20	1632	386	77	339
Ludl, Eduard E., New York, N. Y. Explosive-engine	572,209	Dec. 1	198	49, 50	77	1316
Ludlow, George M., *et al.* (See Burton, Charles C., assignor.)						
Ludlow, James T., San Francisco, Cal. Wire ropeway	572,305	Dec. 1	390	92, 93	77	1353
Luebbers, John, assignor to J. B. Schroder & Co., Cincinnati, Ohio. Lock	570,032	Oct. 27	2303	547	77	475
Lueders, Caroline. (See Van Graafeiland, Charles, assignor.)						
Luethi, Fredrick C. (See Grodzik and Luethi.)						
Lufkin, Charles M., Langdon, N. H. Swivel-plow	570,177	Oct. 27	2563	610	77	525
Lukermann, Frederic. (See Quintus, Ritchie, Quintus, Beebe, and Lukermann.)						
Lumley, William, Chicago, Ill. File-box	573,020	Dec. 15	1635	393	77	1628
Lundell, Robert, Brooklyn, assignor of two-thirds to E. H. Johnson, New York, N. Y. Dynamo-electric machine	571,310	Nov. 10	1581	376	77	962
Lundquiste, Charles P., assignor of one-half to E. C. Dennin, Brooklyn, N. Y. Bottle	569,217	Oct. 13	864	203	77	180
Lundqvist, Richard, Laguna de Terminos, Mexico. Laundry-list indicator	576,319	Oct. 27	2872	682	77	581
Lundstrom, Carl J., assignor to D. H. Burrell & Co., Little Falls, N. Y. Centrifugal liquid-separator	571,838	Nov. 24	2498	592	77	1165
Lunken, Edmund H., assignor to Lunkenheimer Company, Cincinnati, Ohio. Straight-way valve	571,880	Nov. 24	2576	610	77	1179
Lunkenheimer Company. (See Lunken, Edmund H., assignor.)						
Luscomb, Henry H., Hartford, Conn. Handle for velocipedes	569,877	Oct. 20	2031	484	77	410

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Luther, Frederick A. (See Topping, Alfred S., assignor.)						
Luther, James D., *et al.* (See Hutchins, Abner B., assignor.)						
Luther, William M., Buffalo, N. Y. Fumigator	573,675	Dec. 22	2871	678	77	1876
Lutteke, Peter, assignor of one-half P. J. Netzer, St. Louis, Mo. Combined thill-coupling and antirattler	570,100	Oct. 27	2432	578	77	500
Lutten, William J., Paterson, N. J. Pattern-chain support for looms	573,279	Dec. 15	2100	505	77	1715
Luxeder, Guido. (See Schwarz and Luxeder.)						
Lycan, Albert E., Paris, Ill. Device for cutting plug-tobacco	571,905	Nov. 24	2631	624	77	1189
Lydecker, Albert A., Paterson, N. J. Car-fender	570,645	Nov. 3	419	99	77	716
Lyman, Frederick W. (See Clark, John B., assignor.)						
Lynch, Edward W. (See Veon, Andrew E., assignor.)						
Lynch, James S., Brooklyn, N. Y. Support for bicycles	569,289	Oct. 13	985	236	77	203
Lynch, Matthew W., Madison, Wis. Lock-buckle	573,093	Dec. 15	1771	426	77	1655
Lynch, Robert L., Leeport, Ky. Insect-destroyer	571,925	Nov. 24	2665	632	77	1196
Lynch, Vernon T., assignor of one-half to J. M. Roach, Chicago, Ill. Trolley-pole governor	573,517	Dec. 22	2562	608	77	1817
Lyon, James W., Brooklyn, N. Y. Reel for tape-measures	569,792	Oct. 20	1904	451	77	386
Lyons, Charles, Jr. (See Bradshaw, Silas S., assignor.)						
Lyons, Mary, New York, N. Y. Hat box or trunk	573,789	Dec. 22	3044	721, 722	77	1909
Lysle, Robert W., *et al.* (See Bull, William C., assignor.)						
Maas, Jacob. (See Gaschlin, Frederick G., assignor.)						
Mable, William, Fort Collins, Colo. Air-brake	572,553	Dec. 8	808	194	77	1448
MacColl, James R., Pawtucket, R. I. Lappet-loom	570,259	Oct. 27	2717	646, 647	77	554
MacColl, James R., Pawtucket, R. I. Lappet-loom	570,260	Oct. 27	2720	647, 648	77	554
MacKenzie, Edwin Y., Kingston, Jamaica. Bicycle	570,320	Oct. 27	2873	682	77	581
MacKenzie, George W., T. C. Sloane, Beaver, and W. P. Hanna, Pittsburg, Pa.; said MacKenzie and said Sloane assignors of one-fourth to said Hanna. Calculating-machine	573,228	Dec. 15	2011	482, 483	77	1699
MacKenzie, John, Cleveland, Ohio, assignor to Buckeye Malleable Iron and Coupler Company. Locomotive-tender coupling	569,218	Oct. 13	865	203, 204	77	181
MacKenzie, John, Cleveland, Ohio, assignor to Buckeye Malleable Iron and Coupler Company. Engine-coupling	570,672	Nov. 3	474	111	77	726
MacLaren, David. (See Sharpe and Banfield, assignors.)						
MacRonald, Fred S., Portland, Me., assignor to Casco Paper Box Company, of Maine. Packing-case	572,657	Dec. 8	999	241	77	1489
Macan, William A., *et al.* (See Bull, William C., assignor.)						
Macdonald, John T., Jr. (See Fay, Stillman M., assignor.)						
Macdonald, Thomas H., Bridgeport, Conn., assignor to American Graphophone Company, of West Virginia. Graphophone	569,290	Oct. 13	986	237	77	204
Mace, Theodore, Philadelphia, Pa. Light-emitting body and producing same	574,358	Dec. 29	4129	981	77	2121
Macek, Johann, Buda-Pesth, Austria-Hungary, assignor to A. Frankl. Device for closing bottles	573,094	Dec. 15	1773	426	77	1655
Macevoy, Peter C., Brooklyn, N. Y., assignor of one-half to C. F. Canfield, Newark, N. J. Trolley for electric railways	571,092	Nov. 10	1210	283	77	892
Macey, Fred. (See Walton, Barker, and Van Dyke, assignors.)						
Macfarlane, James S., Mansfield, Conn. Spinning-machine	573,676	Dec. 22	2872	678	77	1876
Machold, Anthony F., Philadelphia, Pa. Saddle-cover	570,033	Oct. 27	2305	547	77	475
Mack, John F., Little Valley, N. Y. Extension-ladder	570,939	Nov. 10	945	219, 220	77	843
Mackey, Michael C., St. Louis, Mo. Ditching or excavating machine	569,975	Oct. 20	2204	594	77	442
Mackey, Samuel P., Ridgefield, Wash. Weighing or measuring machine	569,878	Oct. 20	2033	484	77	410
Mackinney, William C., Philadelphia, Pa., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Textile-stretching device	573,095	Dec. 15	1774	427	77	1655
Macy, Edwin M., Viney Grove, Ark. Feed-rack	574,100	Dec. 29	3633	868	77	2031
Madden, Albert F., Newark, N. J. Cigarette-roller	571,778	Nov. 24	2393	572	77	1145
Madden, Albert F., Newark, assignor to Electric Storage Battery Company, Gloucester City, N. J. Machine for making grids for secondary-battery plates	570,224	Oct. 27	2649	629	77	541
Madden, Albert F., assignor to A. Van Winkle and R. N. Chamberlain, Newark, N. J. Battery-grid and machine for producing same	572,363	Dec. 1	489	114, 115	77	1371
Madden, James W., Brooklyn, N. Y. Foot-belt	571,488	Nov. 17	1877	448	77	1030
Madden, Patrick J., Rochester, N. Y. Flushing attachment for water-closets	569,341	Oct. 13	1081	257	77	223
Madden, Patrick J., Rochester, N. Y. Flushing attachment for water-closets	569,559	Oct. 13	1453	343	77	290
Madden, Patrick J., Rochester, N. Y. Flushing attachment for water-closets	569,560	Oct. 13	1455	344	77	290
Madden, Patrick J., Chicago, Ill. Flushing attachment for water-closets	574,367	Dec. 29	4142	984	77	2123
Maercklin, Friedrich. (See Stoll and Maercklin.)						
Magee, Francis E., Brooklyn, N. Y. Electric-lighting mechanism for bicycles	572,430	Dec. 1	613	145	77	1394
Magee, Francis E., Brooklyn, N. Y. Electric lamp	572,431	Dec. 1	614	145	77	1395
Magee, John H., assignor of one-half to J. T. Noble, Buffalo, N. Y. Cooking stove or range	572,265	Dec. 1	303	72	77	1337
Magill, Jerome B., assignor of one-half to C. A. Barnard, Moline, Ill. Cupola-furnace	573,925	Dec. 22	3124	744	77	1924
Mahedy, James, Kellerton, Iowa. Heater	571,135	Nov. 10	1298	301	77	907
Mahle, Lewis G., Carrollton, N. Y. Carpet-stretcher	572,018	Nov. 24	2815	664	77	1224
Mahler, Adam G., assignor of one-half to I. Heiberger, New York, N. Y. Pick-holder	570,321	Oct. 27	2874	682	77	581
Mahon, Hubert C., Junction City, Oreg. Can supporting and tilting device	568,781	Oct. 6	122	28	77	25
Maier, John J. (See Wagner and Maier.)						
Main, Jacob F., Boston, Mass. Coat and hat holder	569,422	Oct. 13	1215	285	77	246
Main, Robert. (See Donald, William, assignor.)						
Mainardi, Romolo, Cincinnati, Ohio. Automatic pump for inflating pneumatic tires	573,826	Dec. 22	3125	744	77	1924
Mainella, Felix (See Ajello, Vincent, assignor.)						
Maines, John B., assignor to himself and D. J. Barr, Providence, R. I. Thill-coupling jack	569,583	Oct. 13	1509	356	77	301
Maisch, Charles F., Philadelphia, Pa. Car-fender	571,779	Nov. 24	2395	572	77	1145
Mallmann, Wilhelm. (See Bergmann, Carl, assignor.)						
Mallon, James, New Orleans, La., assignor of one-half to J. W. Bodley, Staunton, Va. Sugar-cane sling	571,675	Nov. 17	2192	528	77	1088
Mallory & Wheeler Company. (See Andrews, Charles W., assignor.)						
Maloney, James A., Washington, D. C. Saddle for bicycles	572,432	Dec. 1	615	146	77	1395
Malpas, Arthur. (See Hartland and Malpas.)						
Malsch, Frank. (See Holton and Malsch.)						
Maltzahn, Carl A. von, Blücherhof, Germany. Cultivation of asparagus	571,273	Nov. 10	1521	360	77	949
Manger, Frederick W. (See Huebel and Manger.)						
Manger, Frederick W., and O. H. Huebel, Brooklyn, N. Y. Binding-post for electric bells, &c	571,977	Nov. 24	2755	650	77	1213
Manhes, Pierre, assignor of one-half to Société Anonyme de Métallurgie du Cuivre, Procédés Pre. Manhes, Lyons, France. Manufacturing nickel and cobalt	574,068	Dec. 29	3573	.....	77	2020

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Manley, Mandelbert L., Ferry, Mich. Potato-planter	574,037	Dec. 29	3517	840	77	2009
Mann, Cora G., Brooklyn, N. Y. Commode	571,620	Nov. 17	2104	505	77	1071
Mann, John Q., Pursley, Tex. Attachment for sulky-plows	569,201	Oct. 13	989	237	77	204
Mansfeld, Frederick W. R., Louisville, Ky. Show-case	570,322	Oct. 27	2874	683	77	581
Mansfield, Albert K., Salem, Ohio. Steam-engine	569,292	Oct. 13	991	238	77	204
Mantey, Henry, Orizaba, Mexico. Edge runner mill	573,890	Dec. 29	3242	772	77	1960
Manton, Joseph P., Providence, R. I. Apparatus for singeing cloth	569,109	Oct. 6	671	156, 157	77	128
Manton, Joseph P., Providence, R. I. Ship's windlass	569,110	Oct. 6	672	156, 157	77	128
Mapel, Ora A., Statler's Run, W. Va. Puzzle	574,158	Dec. 29	3737	891	77	2049
Marable, Benjamin F., assignor of one-half to M. Hanley, Dubuque, Iowa. Saw-dressing device	568,782	Oct. 6	123	29	77	25
Marble, Galett L., Seattle, Wash. Heating and ventilating apparatus	568,954	Oct. 6	407	91	77	78
Marceau, Theodore C., San Francisco, Cal. Producing photographs in relief	574,069	Dec. 29	3575	853	77	2021
Marcil, L. N. (See Barselou, Alexandre, assignor.)						
Marcotte, Ephrem, Las Vegas, assignor of one-half to R. Bohrisch, East Las Vegas, N. Mex. Ter. Hanger for brake-beams	570,323	Oct. 27	2878	683	77	582
Mardis, Martin L., Salem, Ohio. Car-coupling	571,274	Nov. 10	1522	360	77	950
Margraf, Fricke & Co. (See Thompson, John L., assignor.)						
Marichal, Arthur, assignor to Southwark Foundry and Machine Company, Philadelphia, Pa. Valve	573,607	Dec. 22	2721	647	77	1848
Marion, Henri, Annapolis, Md. Message-holder for use with homing pigeons	569,111	Oct. 6	673	157	77	128
Markley, John A., Clifton Forge, assignor of three-fifths to H. Firmstone, Longdale, Va. Equalizing device for railway-brakes	573,677	Dec. 22	2875	678, 679	77	1877
Markmann, Anton, Jersey City, N. J. Paper-hanging machine	569,835	Oct. 20	1967	468	77	399
Marks, Richard J., assignor of one-half to W. P. O'Toole, Hartford, Conn. Electroplating apparatus	574,038	Dec. 29	3519	840	77	2010
Marks, William D., assignor to American Electric Meter Company, Philadelphia, Pa. Detent for ratchet-wheels	571,050	Nov. 10	1126	263	77	877
Marks, William D., assignor to American Electric Meter Company, Philadelphia, Pa. Electric meter	573,021	Dec. 15	1637	393	77	1629
Marlin, Harry A. (See Abrahams, John W., assignor.)						
Marquand, Augustus J., Cardiff, and D. Lowdon, Barry Dock, England. Manufacture of electrical resistances	571,489	Nov. 17	1878	448	77	1030
Marr, Alexander W., assignor to National Cash Register Company, Dayton, Ohio. Transferring and resetting mechanism for cash-registers	570,178	Oct. 27	2564	610, 611	77	525
Marsden, Mark W., Philadelphia, Pa. Floating dry-dock and ship-cleaning device	570,489	Nov. 3	96	22, 23, 24	77	656
Marsden, Mark W., Philadelphia, Pa. Corn product and making same	572,019	Nov. 24	2816	665	77	1224
Marsden, Mark W., Philadelphia, Pa. Reduction of pithy plants	572,091	Nov. 24	2996	703	77	1256
Marsh, Charles W. E., *et al.* (See Price, Benjamin, assignor.)						
Marsh, George A., Carnegie, Pa. Softening base bullion	569,293	Oct. 13	995	.....	77	205
Marsh, George A., Carnegie, Pa. Softening base bullion. (Reissue)	11,579	Dec. 8	1505	.....	77	1587
Marsh, John A., St. Louis, Mo. Device for operating railway-switches	571,006	Nov. 10	1055	246	77	863
Marsh, Marion B., *et al.* (See Allen, Fred E., assignor.)						
Marsh, William T., Rich Hill, Mo. Box-lid holder	573,156	Dec. 15	1878	452	77	1674
Marshall, Cassius M., assignor of one-half to A. N. Berry, Frankfort, Ind. Exhaust-nozzle	569,561	Oct. 13	1457	344	77	291
Marshall, Dana K., Manchester, N. H. Musical figure	569,219	Oct. 13	866	204	77	181
Marshall Gold Saver Company. (See Marshall, John, assignor.)						
Marshall, James. (See Jackson, William H., assignor.)						
Marshall, James, Fall River, Mass. Means for conveying steam from tubs	573,340	Dec. 15	2222	531	77	1736
Marshall, John, assignor to Marshall Gold Saver Company, Fairfield, Cal. Apparatus for separating gold from sand, &c	568,913	Oct. 6	331	76	77	64
Marshman, Newman R. (See Burridge and Marshman.)						
Marston, George H. (See Weston and Marston.)						
Marteeny, Tillman A., Kansas City, Mo. Skating-cycle	573,096	Dec. 15	1777	427	77	1656
Martin, Albert L. (See West, William A., assignor.)						
Martin, Charles B., Schenectady, N. Y., assignor to General Electric Company, of New York. Insulator	574,101	Dec. 29	3634	868	77	2031
Martin, Charles B., and E. M. Hewlett, Schenectady, N. Y., assignors to General Electric Company, of New York. Insulator	570,034	Oct. 27	2306	548	77	475
Martin, Daniel, Cambridge, Mass. Carpenter's square	569,220	Oct. 13	868	204	77	181
Martin, Frank. (See Storer and Martin.)						
Martin, Frank A., Harrison, Ohio. Plow-point	570,673	Nov. 3	476	111	77	727
Martin, Frank D., Perkinsville, Vt. Bracket	573,891	Dec. 29	3244	772	77	1960
Martin, James A., and J. L. Latta, Hickory, N. C. Compressed-air water-elevator	569,294	Oct. 13	997	239	77	206
Martin, James E., assignor to Carpet Loom Company, Worcester, Mass. Needle-loom	573,827	Dec. 22	3126	745	77	1924
Martin, James W., Manchester, England. Hoist, &c	573,678	Dec. 22	2878	679	77	1877
Martin, Jeremiah M. (See Reppeto and Martin.)						
Martin, Jonathan, Topeka, Kans. Nut-lock	573,022	Dec. 15	1639	394	77	1629
Martin, Joseph L., Dawson, Pa. Journal-box	571,490	Nov. 17	1879	448	77	1030
Martin, Robert H., Brooklyn, N. Y. Composition of matter	569,759	Oct. 20	1847	.....	77	376
Martindale, Benjamin F., Wichita, assignor of one-third to E. R. Mead and E. E. Hale, Fort Scott, Kans. Baling-press	573,023	Dec. 15	1640	394	77	1629
Marx, Conrad, Brooklyn, N. Y. Baby-carriage	572,658	Dec. 8	1000	241	77	1489
Marzahn, William F., Buffalo, N. Y. Dynamo-electric machine	571,780	Nov. 24	2396	572, 573	77	1145
Mason, Charles H., Shortsville, N. Y., assignor to Empire Drill Company, of New York. Horse hay-rake	572,647	Dec. 8	981	236	77	1485
Mason, George W., Sharon, Pa. Bottle-stopper	570,602	Nov. 3	314	77	77	697
Mason, John T., *et al.* (See Hall, William H., assignor.)						
Mason Machine Works. (See Meats, John T., assignor.)						
Mason Machine Works. (See Meats and Dean, assignors.)						
Mason Machine Works. (See Meats and Eaton, assignors.)						
Mason, Richard, and F. Ely, Newark, N. J. Ball-caster	570,603	Nov. 3	315	77	77	697
Mason, Sidney. (See Moreau and Mason.)						
Mason, William, assignor to Winchester Repeating Arms Company, New Haven, Conn. Reducing-die for cartridge-cases	570,780	Nov. 3	629	145	77	753
Mason, William H., East Monroe, Ohio. Fence	571,491	Nov. 17	1880	449	77	1030
Massie, Mitford C. (See Wilshire and Massie.)						
Matatall, Albert H. and I. C., Harrison, N. J. Electrically-welded pipe-joint	569,836	Oct. 20	1968	468	77	399
Matatall, Ira C. (See Matatall, Albert H. and I. C.)						
Mater, Henry, La Gro, Ind. Fence-post	573,097	Dec. 15	1779	427	77	1656

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
Matheny, John, Indianapolis, Ind. Safety egg-case	569,760	Oct. 20	1848	438	77	376
Mathieu, Napoléon. (See Guérard, Pierre E., assignor.)						
Mattes, John R., *et al.* (See Norton, James A., assignor.)						
Matthews, Francis M., Cameron, Mo. Insect or vermin guard for organs	569,505	Oct. 13	1357	319	77	272
Matthews, Luther, Paris, Tenn. Training hedges	569,720	Oct. 20	1778	422	77	364
Matthews, Walter W. (See Hanna, James O., assignor.)						
Mattison, Charles J., Oswego, N. Y. Machine for packing granulated or powdered substances	571,492	Nov. 17	1881	449	77	1031
Mauser, Paul, Oberndorf, Germany. Means for affixing side-arms to guns	572,266	Dec. 1	304	73	77	1337
Maxon, Stiles E., assignor of one-half to L. W. Wynkoop, J. M. Nickum, and W. J. Kelly, Portland, Oreg. Marine velocipede	573,828	Dec. 22	3129	746	77	1925
Maxwell, David E., *et al.* (See Beal, William C., assignor.)						
Maxwell, Edmund L., and H. W. Gorman, Los Angeles, Cal. Guard or screen for urinals	571,275	Nov. 10	1524	361	77	950
Maxwell, William, St. Louis, Mo. Race-starting machine	574,205	Dec. 29	3860	920	77	2070
May, William D., Niagara Falls, N. Y. Apparatus for electrolytic deposition	570,133	Oct. 27	2486	589	77	509
Maydwell, Harry F., *et al.* (See Browning, George, assignor.)						
Mayer, Daniel. (See Goodwin, George, assignor.)						
Mayer, James R., Erie, Pa. Sand-heater	571,382	Nov. 17	1699	404	77	997
Mayer, Otto F., Berlin, Germany. Type-writing machine	572,348	Dec. 1	455	107	77	1365
Mayer, Walter S., Galveston, Tex. Envelop	572,554	Dec. 8	812	195	77	1449
Mayes, Wilton P., assignor of one-half to J. W. Lauer, Terre Haute, Ind. Bottle-closure	573,518	Dec. 22	2564	609	77	1817
Mayhew, James N., Indianapolis, Ind. Axiometer	571,781	Nov. 24	2398	573	77	1146
Mayland, Rowland H., *et al.* (See Craig, Gilbert T., assignor.)						
Maynard, William C., Canton, Ohio. Embroidery-holder	570,940	Nov. 10	948	220	77	844
McAdams, George F., Brooklyn, N. Y. Ringed roller for printing-machines, &c	570,226	Oct. 27	2654	630	77	542
McAleese, Bernard. (See Pardee and McAleese.)						
McAllister, James. (See Benham and McAllister.)						
McAusland, William, Taunton, Mass. Foot for pitchers, &c	570,325	Oct. 27	2879	684	77	582
McBerty, Frank R. (See Scribner and McBerty.)						
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Keyboard apparatus	573,992	Dec. 29	3442	824	77	1996
McBerty, Frank R., Downer's Grove, assignor to Western Electric Company, Chicago, Ill. Telephone-exchange apparatus	574,255	Dec. 29	3958	941	77	2089
McBeth, William, Hamilton, Canada. Band-saw guide	573,028	Dec. 15	1647	396	77	1631
McBride, Albert P., Independence, Kans. Gas, oil, and water separator	569,345	Oct. 13	1092	259	77	225
McBride, Henry S. (See Sweet and McBride.)						
McBride, John H., Topeka, Kans. Inkstand	568,865	Oct. 6	264	61	77	51
McCabe, James W., New York, N. Y. Manufacturing photographic mounts	569,510	Oct. 13	1366	320	77	274
McCabe, Peter, New York, N. Y. Construction of fireproof buildings	573,476	Dec. 22	2499	592	77	1805
McCabe, Thomas W. R., assignor to William L. Gilbert Clock Company, Winsted, Conn. Calendar-clock mechanism	571,198	Nov. 10	1389	324, 325	77	925
McCabe, William, *et al.* (See Norman, Addison, assignor.)						
McCafferty, James E. (See Cahill, Henry D., assignor.)						
McCall, Donald T., Jackson, Mich. Bevel-edge-cardboard cutter	570,180	Oct. 27	2572	611	77	526
McCallen, John C., Russellville, Ky. Churn	573,993	Dec. 29	3444	824	77	1996
McCance, Alexander, White Ash, Pa. Envelop	570,289	Oct. 27	2770	659	77	563
McCandless, Alexander, Moberly, Mo. Window-screen	570,326	Oct. 27	2880	684	77	582
McCane, Charles T., Rockspring, Ky. Fodder packer and binder	571,385	Nov. 17	1703	405	77	998
McCann, Howard L., assignor of one-half to W. P. Jackson, Coatesville, Pa. Nut-lock	574,256	Dec. 29	3960	941	77	2089
McCann, James L., Roanoke, W. Va. Railway-switch	569,653	Oct. 20	1636	387	77	340
McCarthy, Frank E., Allegheny, Pa. Horseshoe	570,493	Nov. 3	105	26	77	658
McCarthy, J. J. (See Pickles, Charles K., assignor.)						
McCarthy, Louis, Boston, Mass. Section-insulator	570,140	Oct. 27	2496	591, 592	77	511
McCartney, James, New York, N. Y. Pincushion	571,169	Nov. 10	1344	314	77	917
McCaskill, Donald A. (See Seanor and McCaskill.)						
McCaughey, John J. (See Dawson, John A., assignor.)						
McCauly, William D., Elmore, Ark. Cultivator	568,866	Oct. 6	265	61	77	51
McCawley, Joel A., assignor of one-half to G. W. Cobb, Canton, Ky. Cistern-cleaner	571,278	Nov. 10	1528	362	77	951
McCheaney, Edwin, Cincinnati, Ohio. Mucilage-bottle	573,994	Dec. 29	3445	824	77	1996
McClellan, Edward J., New York, N. Y. Lathe	572,709	Dec. 8	1098	266	77	1507
McClellan, Oscar D., and W. T. Girling, assignors to themselves, J. J. Torpey, and R. Cunningham, Philadelphia, Pa. Means for reheating exhaust-steam	574,160	Dec. 29	3741	892, 893, 894	77	2050
McClelland, David H., Allegheny, Pa. Railway-switch	573,477	Dec. 22	2500	592, 593	77	1805
McClelland, George B., *et al.* (See Webster, Charles A., assignor.)						
McClure, George W., Pittsburg, Pa. Hot-blast stove	573,900	Dec. 29	3257	776	77	1963
McClure, George W., Pittsburg, Pa. Hot-blast stove	573,901	Dec. 29	3259	777	77	1963
McClure, George W., Pittsburg, Pa. Hot-blast stove	573,902	Dec. 29	3260	777, 778	77	1964
McClure, George W., Pittsburg, Pa. Hot-blast stove	574,041	Dec. 29	3526	842	77	2011
McClung, Frank H., Jr., Knoxville, Tenn. Garter and belt	569,511	Oct. 13	1368	320	77	274
McColl, Francis P., Brooklyn, N. Y., assignor to Franco-American Patent Can Opening Company, of New Jersey. Metal can	570,494	Nov. 3	106	26, 27	77	658
McCollin, Thomas H., Philadelphia, Pa. Photographer's press	569,761	Oct. 20	1849	438	77	376
McConechy, James, Glasgow, Scotland. Wheel for cycles	572,683	Dec. 8	1044	253	77	1497
McConnell, Louis Y., Rochester, N. Y. Voting-machine	570,812	Nov. 3	706	161, 162	77	769
McConway, William. (See Buhoup, Harry C., assignor.)						
McCorkindale, Duncan L., Childs, Md. Plug	572,365	Dec. 1	496	116	77	1372
McCormick Harvesting Machine Company. (See Peck, Albert S., assignor.)						
McCormick Harvesting Machine Company. (See Severance, James R., assignor.)						
McCormick, Herbert S., Oakland, Cal. Register for folding mattresses	571,009	Nov. 10	1061	247	77	864
McCormick, John H., assignor to H. S. Hallwood, Columbus, Ohio. Cash register and indicator	570,141	Oct. 27	2498	592, 593	77	511
McCormick, John T., San Francisco, Cal. Metallic furring for buildings	573,158	Dec. 15	1881	453	77	1675
McCormick, Joseph B. (See Roberts and McCormick.)						
McCormick, Michael A., *et al.* (See Welch, Rosia W., assignor.)						
McCormick, Theodore J., Pomona, Cal. Step-ladder	569,119	Oct. 6	682	160	77	130
McCoy, James F., Winona, Minn. Cylinder-cock	572,211	Dec. 1	207	51	77	1317
McCoy, Walter I., *et al.* (See Conway, John, assignor.)						
McCrary, Thomas J. (See Copeland, Roberts, and McCrary.)						
McCreery, Joseph, Toledo, Ohio. Adjustable outlet-gate for ventilating-pipes	574,104	Dec. 29	3638	869	77	2032

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Drg.	Vol.	Page.
McCreery, King. (See Jones and McCreery.)						
McCullough, Morgan. (See McCullough, Van Rensselaer and M.)						
McCullough, Van Rensselaer and M., Vernonia; said Van Rensselaer McCullough assignor to said M. McCullough and said M. McCullough assignor of one-half to T. J. Hoare, Multnomah county, Oreg. Device for converting motion	571,679	Nov. 17	2197	529	77	1088
McCutcheon, William S., El Paso, Tex. Implement for replacing inner tubes of pneumatic tires	570,142	Oct. 27	2506	594	77	513
McDaniel, James, Minneapolis, Minn. Wheat-washing machine	573,686	Dec. 22	2887	682	77	1879
McDaniel, James, Minneapolis, Minn. Wheat-washing machine	573,687	Dec. 22	2888	682, 683	77	1880
McDonald, James H., Olympia, Wash. Propelling mechanism for boats	573,522	Dec. 22	2570	610	77	1818
McDonald, Martin J., Trenton, N. J. Power-accumulator	569,049	Oct. 6	572	131, 132	77	109
McDonell, Angus. (See Peterson, Charles, assignor.)						
McDonnell, George P. (See Flucks and McDonnell.)						
McDonnell, John. (See Cotter and Walker, assignors.)						
McDonough, Frank, Eau Clair, Wis. Loading or unloading apparatus	572,023	Nov. 24	2822	666	77	1226
McDowall, Robert, Owen Sound, Canada. Machine for sounding and drawing profiles of beds of rivers, &c	572,610	Dec. 8	923	223	77	1473
McDuffee, Andrew J. (See Sunderland, Jesse W., assignor.)						
McEachren, John W. (See Clarke and McEachren.)						
McElroy, George W., Adrian, Mich. Wrench	570,856	Nov. 3	796	183	77	787
McElroy, James F., Albany, N. Y. Multiple-series controller	570,878	Nov. 3	836	194, 195	77	795
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Gas-lamp	569,562	Oct. 13	1458	344	77	291
McElroy, James F., assignor to Consolidated Car-Heating Company, Albany, N. Y. Gas-lamp	571,311	Nov. 10	1583	376	77	962
McElroy, William, assignor of two-thirds to G. W. Bayley, Brooklyn, and F. White, New York, N. Y. Insulated joint for light-fixtures	572,124	Dec. 1	54	14	77	1288
McEvoy, Charles H., Lowell, Mass. Electrical connecting-cord	573,612	Dec. 22	2728	648	77	1850
McEwen, George C., Newark, N. J. Means for controlling flow of liquids	570,436	Oct. 27	3085	732	77	621
McFadden, William H., Allegheny, Pa. Feed-table for rolling-mills	572,175	Dec. 1	142	34	77	1304
McFadden, William H., Allegheny, Pa. Governor for power-shafts	574,209	Dec. 29	3878	923	77	2073
McFall, William H. (See Burger and McFall.)						
McFarland, James D., Jr., Prosper, Oreg. Crank-handle	569,346	Oct. 13	1093	259	77	225
McFarland, William E. (See Moors, George F., assignor.)						
McFarlane, James L., Medina, Wis. Cutting-tool	572,559	Dec. 8	820	197	77	1450
McGahy, John A., New York, N. Y. Fire-alarm	573,903	Dec. 29	3262	779	77	1964
McGehee, Abner J., Jackson, Tenn. Pneumatic signaling system	569,120	Oct. 6	683	160	77	130
McGiffin, John L., Scottdale, Pa. Valve mechanism for steam-pumps	570,042	Oct. 27	2318	550	77	477
McGill, Harry F., Akron, Ohio. Japan-board-point cleaner	570,181	Oct. 27	2573	611	77	526
McGinley, James, Kingston, assignor of two-thirds to J. H. Broderick and J. H. Kenney, Parsons, Pa. Lubricator	570,605	Nov. 3	318	79	77	697
McGinty, Bernard, Doylestown, Pa. Tympan-gage	573,345	Dec. 15	2229	533	77	1737
McGregor, Duncan J., Duluth, Minn. Snow-plow and rutter	572,212	Dec. 1	208	51	77	1317
McGregor, James, and J. L. Jackson; said McGregor assignor to E. D. Church, Saginaw, Mich. Steam-generator	573,688	Dec. 22	2891	683	77	1880
McGregor, John A., assignor to Edwin Harrington, Son & Company, Incorporated, Philadelphia, Pa. Hoisting-machine	573,904	Dec. 29	3263	779	77	1964
McGuire Manufacturing Company. (See Hubbard, Moses G., Jr., assignor.)						
McGuire Manufacturing Company. (See McGuire and Hubbard, assignors.)						
McGuire, Michael L., Syracuse, N. Y. Water-closet	569,383	Oct. 13	1149	273	77	235
McGuire, William A., and M. G. Hubbard, Jr., assignors to McGuire Manufacturing Company, Chicago, Ill. Pivotal car-truck	573,029	Dec. 15	1648	396	77	1631
McIlroy, Archibald Y. and J. L., Tolar, Tex. Rake	569,654	Oct. 20	1638	387	77	341
McIlroy, Joseph L. (See McIlroy, Archibald Y. and J. L.)						
McIntire, Charles H. (See Gartner, Alfred, assignor.)						
McIntire, Charles H. (See Haug, Herman, assignor.)						
McIntire, Charles L., South Norridgewock, Me. Checkrein-hook	572,905	Dec. 8	1418	342	77	1571
McIntosh, Hezekiah P., Denver, Colo. Display refrigerator and counter	570,043	Oct. 27	2322	551	77	477
McIntosh, Scott, *et al.* (See Cazier, Perry H., assignor.)						
McIntyre, Charles, Fort Benton, Mont. Centrifugal pump	569,655	Oct. 20	1639	387	77	341
McIntyre, Charles, Fort Benton, Mont. Centrifugal pump	569,656	Oct. 20	1641	388	77	341
McIntyre, John J., Hartford, Conn. Umbrella attachment	569,762	Oct. 20	1851	438	77	377
McIntyre, John J., Hartford, Conn. Micrometer-beam gage	571,094	Nov. 10	1213	284	77	892
McKain, George L., Washington, Pa. Tool-fishing apparatus	571,279	Nov. 10	1528	362	77	951
McKay Neverslip Sole Company. (See McKay, Robert, assignor.)						
McKay, Robert, assignor to McKay Neverslip Sole Company, Detroit, Mich. Machine for recessing leather	570,558	Nov. 3	236	59	77	682
McKay, Robert, assignor to McKay Neverslip Sole Company, Detroit, Mich. Heel-plate for boots or shoes	570,707	Nov. 3	537	124	77	738
McKechnie, Archibald E., assignor of five-eighths to R. G. Dun, C. J. Kintner, and A. T. Buchanan, New York, N. Y. Bung for barrels	571,494	Nov. 17	1886	450	77	1031
McKee, Robert, Philadelphia, Pa. Paper-feeding machine	571,601	Nov. 17	2070	496, 497	77	1064
McKeen, Thomas L., New York, assignor to Trojan Car Coupler Company, Troy, N. Y. Buffer-platform for railway-cars	573,187	Dec. 15	1938	466	77	1685
McKeen, Thomas L., and A. H. Renshaw, New York, assignors to Trojan Car Coupler Company, Troy, N. Y. Buffer-platform for railway-cars	574,257	Dec. 29	3961	941	77	2089
McKeever, Robert, Alburtis, Pa. Handle for steam-valves	570,764	Nov. 3	636	146	77	754
McKenney, Franklin S., and F. R. Welton, Detroit; said Welton assignor to said McKenney and said McKenney assignor of one-half to J. M. Longyear, Marquette, Mich. Hand button-setting implement	571,954	Nov. 24	2715	642	77	1207
McKerrow, Herbert G., Medford, Mass. Apparatus for bleaching	570,675	Nov. 3	478	112	77	727
McKesson, Charles L., Howard, Kans. Office-indicator	569,384	Oct. 13	1150	274	77	236
McLachlan, John, assignor to F. P. Stone, Chicago, Ill. Brake-shoe	573,523	Dec. 22	2572	610	77	1818
McLane, Jared B., Reading, Mass. Metal-shearing machine	569,226	Oct. 13	881	209	77	184
McLane, Richard, Harrow, Canada. Combined hay and stock rack	568,867	Oct. 6	267	62	77	51
McLaren, Henry. (See McLaren, John and H.)						
McLaren, John and H., Leeds, England. Speed altering or adjusting mechanism for shaft-governors	569,512	Oct. 13	1369	321	77	274
McLarty, Farquhar M., Penang, Straits Settlements. Apparatus for boring earth, minerals, &c., for prospecting purposes	569,121	Oct. 6	686	160, 161	77	131

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
McLaughlin, Charles H., Philadelphia, Pa. Car-coupling	570,559	Nov. 3	238	59	77	682
McLaughlin, James F., Philadelphia, Pa. Electric locomotive	570,945	Nov. 10	955	221, 222	77	845
McLaughlin, James F., Philadelphia, Pa. Electric locomotive	573,905	Dec. 29	3264	779	77	1964
McLaughlin, Robert and W., Philadelphia, Pa. Steam stop-valve	571,010	Nov. 10	1062	248, 249	77	865
McLaughlin, Samuel. (See Moore and McLaughlin.)						
McLaughlin, William. (See McLaughlin, Robert and W.)						
McLean, Andrew, Passaic, N. J., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Textile-tentering machine	569,763	Oct. 20	1852	438, 439	77	377
McLean, Edwin D., Marissa, Ill. Downdraft stove or furnace	574,210	Dec. 29	3878	923	77	2073
McLean, William J., Gloster, Miss. Axle-box	571,235	Nov. 10	1454	341	77	937
McLennan, John F., Chicago, Ill. Chin-rest for horses	572,648	Dec. 8	984	237	77	1485
McLeod, Hugh, Hatfield, Mass. Friction-clutch	573,699	Dec. 22	2892	683	77	1880
McManus, John R., and T. F. Hart, Lynn, Mass. Machine for manufacturing shoe-stiffenings	568,868	Oct. 6	268	62	77	52
McMaster, Elbert S., Grand Forks, N. D. Ticket-case	573,524	Dec. 22	2574	611	77	1819
McMillin, Andrew T., Paris, Tenn. Means for constructing seamless metal tooth-crowns	570,044	Oct. 27	2323	551	77	478
McMullen, Daniel T., *et al.* (See Gathmann, Louis, assignor.)						
McMullen, David S., *et al.* (See Gathmann, Louis, assignor.)						
McMullen, George W., *et al.* (See Gathmann, Louis, assignor.)						
McMullen, James B., *et al.* (See Gathmann, Louis, assignor.)						
McMullen, Roger B., *et al.* (See Gathmann, Louis, assignor.)						
McMullen, Wilbur H., Lafayette, Ind. Plow attachment	574,211	Dec. 29	3880	924	77	2074
McMyler Car Dumping Machine Company. (See Long, Timothy, assignor.)						
McMyler, John, Cleveland Ohio. Portable device for loading vessels	568,869	Oct. 6	271	63	77	52
McNaughton, John G., assignor of one-half to L. Shultz, Salisbury, N. C. Bicycle attachment	573,282	Dec. 15	2112	507	77	1717
McNeal, Andrew H., Burlington, N. J. Making pipe-cores	570,708	Nov. 3	537	124	77	738
McNichol, Edgar, Jonesport, Me. Stringed instrument	572,906	Dec. 8	1419	342	77	1571
McPherson, Donald H., Le Roy, N. Y. Wire fence	570,290	Oct. 27	2771	659	77	563
McPherson, Donald H., Le Roy, N. Y. Wire fence	573,831	Dec. 22	3135	747	77	1926
McPherron, William R., assignor of one-half to W. F. Davis, Jacksonville, Ill. Washing-machine	570,709	Nov. 3	538	125	77	738
McQueen, John, *et al.* (See Gogle, John E., assignor.)						
McQuilkin, James C. (See Pauly and McQuilkin.)						
McQuoid, A. E. (See Sallee, William H. H., assignor.)						
McQuown, Thomas H., Somerville, Mass. Handle-bar for bicycles	570,560	Nov. 3	239	60	77	682
McRae, John C., Lake Providence, La. Button or clasp	573,906	Dec. 29	3265	779	77	1965
McSweeney, James, assignor to E. D. Jones & Sons Company, Pittsfield, Mass. Hand-drill	573,231	Dec. 15	2018	484	77	1700
McTaggart, David, Worcester, Mass. Warp-compressor	573,346	Dec. 15	2232	533, 534	77	1738
McTaggart, Francis, Iroquois, S. D. Car-coupling	571,926	Nov. 24	2066	632	77	1196
McWhirter, Hershel L., South McAlester, Ind. Ter. Well-rope take-up	574,258	Dec. 29	3963	941	77	2090
Mead, Edwin D., Phelps, N. Y. Fertilizer-distributer	570,490	Nov. 3	100	24	77	657
Mead, Edwin R., *et al.* (See Martindale, Benjamin F., assignor.)						
Mead, Theodore H., *et al.* (See Crowell, Luther C., assignor.)						
Mead, Theodore H., *et al.* (See North, Thomas M., assignor.)						
Mead, Theodore H., *et al.* (See Sheldon, Edward P., assignor.)						
Mead, Theodore H., *et al.* (See Tucker, Edwin D., assignor.)						
Mead, Theodore H., *et al.* (See Tucker, Stephen D., assignor.)						
Mead, Theodore H., *et al.* (See Turner, George W., assignor.)						
Meade, Norman G., Jamestown, N. Y. Electric-arc lamp	568,861	Oct. 6	254	60	77	49
Meanor, Anson E. (See Best and Meanor.)						
Measure, Walter. (See Sidwell, Arthur, assignor.)						
Meath, Thomas F., Humboldt, Kans. Bale-elevator	569,976	Oct. 20	2206	594	77	443
Meats, John T., assignor to Mason Machine Works, Taunton, Mass. Spinning-machine	570,409	Oct. 27	3028	717	77	610
Meats, John T., and J. S. Eaton, assignors to Mason Machine Works, Taunton, Mass. Coiler	572,433	Dec. 1	617	146	77	1395
Meats, John T., and T. W. Dean, assignors to Mason Machine Works, Taunton, Mass. Spinning-mule	573,280	Dec. 15	2101	505, 506, 507	77	1715
Mechanical Manufacturing Company. (See Young, Albert A., assignor.)						
Meck, Flora B. (See Daniels, John P., assignor.)						
Meek, John E., New York, and F. L. Powers, Brooklyn, N. Y., assignors to H. W. Johns Manufacturing Company, New York, N. Y. Switch for electric heating devices	568,783	Oct. 6	124	29	77	25
Meerse, Cornelius. (See Bolger, Joseph J., assignor.)						
Megill, Edward L., Brooklyn, N. Y. Feed-gage for printing-presses	571,782	Nov. 24	2400	573	77	1147
Megson, Richard, Cambridge, Mass. Depositing apparatus for bakers' or confectioners' use	573,432	Dec. 15	2409	574	77	1770
Mehl, George, St. Paul, Minn. Sash-fastener	570,035	Oct. 27	2307	548	77	475
Mehring, William M., York Road, Md. Cow-milker	571,573	Nov. 17	2027	482	77	1057
Meier, August H., Marble Rock, assignor of one-half to L. H. Langworthy, Dubuque, Iowa. Earth-auger	570,810	Nov. 3	703	161	77	768
Meinhardt, Gottfried. (See Jahnsen and Meinhardt.)						
Meiser, Rudolph J. (See Brown, Berry A., assignor.)						
Meisel, Emerich, Vienna, Austria-Hungary. Refining and bleaching animal fats	568,983	Oct. 6	465	.....	77	89
Meisener, Adolf E. W., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Tetrapod for drills	573,608	Dec. 22	2722	647	77	1849
Melcher, William H., Philadelphia, Pa. Kiln	571,599	Nov. 17	2066	495	77	1064
Meldrum, Charles, assignor of one-half to J. P. Loring, Buffalo, N. Y. Beer-bottling apparatus	572,708	Dec. 8	1096	266	77	1506
Melvin, John F., Mayfield, Ky. Fence	569,138	Oct. 6	723	170	77	138
Mendenhall, Walter W., Greensborough, N. C. Coop for chickens	569,295	Oct. 13	999	239	77	206
Mercer, Alfred C., Syracuse, N. Y. Photographic finder	572,173	Dec. 1	139	33	77	1304
Meredith, James S., Philadelphia, Pa. Car-fender	570,134	Oct. 27	2467	580	77	510
Meredith, John T., Shawnee, Ohio. Spectacles	569,462	Oct. 13	1272	299	77	257
Mergenthaler Linotype Company. (See Bates, George A., assignor.)						
Mergenthaler Linotype Company. (See Fairchild, Ben L., assignor.)						
Meriden Bronze Company. (See Johnson, Nia, assignor.)						
Meriwether, James. (See Pruitt, Andrew L., assignor.)						
Merriam, Frederic J., and J. A. W. Sears, Escanaba, assignors to Gladstone Washboard Company, Gladstone, Mich. Washboard	569,879	Oct. 20	2035	485	77	410
Merrick, Frank W., Boston, Mass. Stay-guide for sewing-machines	570,036	Oct. 27	2308	548	77	475

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Merrick, Frank W., Boston, Mass. Stay-guide for sewing-machines	570,037	Oct. 27	2311	548	77	476
Merrick, Frank W., Boston, Mass. Lap-seam guide for sewing-machines	570,288	Oct. 27	2769	659	77	563
Merrill, Cassius M., Louisville, Ky. Computing-scale	573,892	Dec. 29	3246	773	77	1960
Merritt, Benjamin F., Orange, N. J., and J. M. Joy, assignors to Printing Telegraph News Company, New York, N. Y. Telegraph system	572,609	Dec. 8	992	223	77	1473
Merritt, Charles C. (See Merritt, James I., assignor.)						
Merritt, Frank W., assignor to Electric Motor Company, Duluth, Minn. Controller for electric pumps	571,600	Nov. 17	2067	496	77	1064
Merritt, Henry W., assignor to Merritt Manufacturing Company, Springfield, Mass. Type-writing machine	574,159	Dec. 29	3738	892	77	2049
Merritt, James I., assignor to C. C. Merritt, Brockton, Mass. Leather-folding machine	569,930	Oct. 20	2122	505	77	427
Merritt, Louis G., Lockport, N. Y. Knife and cutter-head for lathes	573,098	Dec. 15	17e0	428	77	1656
Merritt Manufacturing Company. (See Merritt, Henry W., assignor.)						
Merritt, Mortimer G., Rome, assignor to Denemore Typewriter Company, Syracuse, N. Y. Type-writing machine	573,472	Dec. 22	2494	591	77	1804
Merritt, William B., Braintree, Mass., assignor of two-thirds to G. W. Arnold and E. H. Kinney, Brooklyn, N. Y. Device for closing tube punctures	570,941	Nov. 10	950	220	77	844
Merritt, William B., Braintree, Mass., assignor of two-thirds to G. W. Arnold and E. H. Kinney, Brooklyn, N. Y. Device for closing tube punctures	570,942	Nov. 10	951	221	77	844
Merrow, Joseph M., Mansfield, Conn. Take-up for sewing-machines	570,135	Oct. 27	2488	590	77	510
Merrow, Joseph M., Mansfield, Conn. Take-up for sewing-machines	570,136	Oct. 27	2490	590	77	510
Merrow, Joseph M., Mansfield, Conn. Feeding mechanism for sewing-machines	572,682	Dec. 8	1043	252, 253	77	1497
Mershon, Ralph D., Pittsburg, Pa. Station potential-indicator	571,839	Nov. 24	2501	592	77	1165
Mershon, Ralph D., Pittsburg, Pa. Rotary-transformer regulation	571,863	Nov. 24	2545	603	77	1173
Mertens, Louis, and C. F. Bostwick, Erie, Pa. Lubricator	570,556	Nov. 3	233	58, 59	77	681
Mesick, Nelson H., Glencoe Mills, N. Y. Harness	569,048	Oct. 6	171	131	77	109
Messer, Elbridge, Haverhill, Mass. Hat-ironing machine	574,070	Dec. 29	3575	854	77	2021
Messing, Heinrich, Offenbach, Germany. Mold for casting hollow articles	570,324	Oct. 27	2378	684	77	582
Metcalf, Samuel G., *et al.* (See Easton, James W., assignor.)						
Metz, Herman A., Brooklyn, N. Y. Apparatus for dyeing	573,229	Dec. 15	2014	483	77	1699
Metz, Rudolph, Philadelphia, Pa. Waste-oil purifier	572,020	Nov. 24	2812	665	77	1225
Metzger, Charles A. and W. E., Rutland, Vt. Awning	572,434	Dec. 1	618	147	77	1396
Metzger, Ferdinand F., Philadelphia, Pa. Centrifugal machine	571,783	Nov. 24	2401	573	77	1147
Metzger, Ferdinand F., Philadelphia, Pa. Centrifugal machine	572,121	Dec. 1	46	12	77	1287
Metzger, William E. (See Metzger, Charles A. and W. E.)						
Meyer, Berthold E., Springfield, Mo. Fan attachment for sewing-machines	572,021	Nov. 24	2820	665	77	1225
Meyer, Edward H., *et al.* (See Outhouse, Thomas A., assignor.)						
Meyer, Edward J., Lock Haven, Pa. Sprayer or sprinkler	573,157	Dec. 15	1880	453	77	1675
Meyer, George, assignor to E. C. Atkins & Company, Indianapolis, Ind. Handsaw	573,893	Dec. 29	3247	773	77	1961
Meyer, John W. (See Pries and Meyer.)						
Meyerholz, Christian J., Mountain View, Cal. Bung	572,435	Dec. 1	620	147	77	1396
Meyrowitz, Emil B., assignor to Meyrowitz Manufacturing Company, Ridgefield, N. J. Eyeglass nose-guard	572,306	Dec. 1	392	93	77	1353
Meyrowitz, Emil B., assignor to Meyrowitz Manufacturing Company, Ridgefield, N. J. Eyeglass nose-guard	572,307	Dec. 1	394	93	77	1353
Meyrowitz Manufacturing Company. (See Meyrowitz, Emil B., assignor.)						
Micou, Benjamin, Anniston, Ala. Revolving file case or cabinet	572,904	Dec. 8	1417	341	77	1570
Midford, Albert G., assignor to Midford Pneumatic Salvage Company, New York, N. Y. Apparatus for raising sunken vessels	572,364	Dec. 1	493	115, 116	77	1372
Midford Pneumatic Salvage Company. (See Midford, Albert G., assignor.)						
Miehle Printing Press and Manufacturing Company. (See Miehle, Robert, assignor.)						
Miehle, Robert, Chicago, Ill. Velocipede	568,862	Oct. 6	255	60	77	50
Miehle, Robert, assignor to Miehle Printing Press and Manufacturing Company, Chicago, Ill. Printing-press	574,206	Dec. 29	3863	921	77	2071
Miehle, Robert, assignor to Miehle Printing Press and Manufacturing Company, Chicago, Ill. Printing-press	574,207	Dec. 29	3866	921, 922	77	2071
Mikami, Sakaye, Oakland, Cal. Potato-cutter	573,099	Dec. 15	1782	428	77	1657
Milbourne, Joseph K. (See Shrope, Albert J., assignor.)						
Miles, Thomas C. (See Perry, William A., assignor.)						
Milford Manufacturing Company. (See Worz, Gustav A., assignor.)						
Milliard, Martin S., assignor of one-half to H. L. Nicol, Kansas City, Mo. Refrigerating shipping-crate	569,506	Oct. 13	1358	319	77	272
Milliard, Orson, Flint, Mich. Powder-mixing device	573,473	Dec. 22	2495	591	77	1804
Milledge, John H., Marlin, Tex. Musical hoop	572,555	Dec. 8	814	195	77	1449
Millen, Thomas, New York, N. Y. Car-brake	573,024	Dec. 15	1642	395	77	1630
Miller, Albert E. (See Barlow, Henry C., assignor.)						
Miller, Anthoney, Huntingburg, Ind. Bobbin case and holder for revolving-hook sewing-machines	573,894	Dec. 29	3248	773	77	1961
Miller, August, Lindsborg, Kans. Velocipede	570,761	Nov. 3	631	145	77	754
Miller, Charles L., and J. R. George, Chicago, Ill. Metal-breaking machine	569,793	Oct. 20	1905	451, 452	77	386
Miller, David C., Cedarville, Kans. Wheeled harrow	574,102	Dec. 29	3635	868	77	2031
Miller, Edmund S. (See Ellis and Miller.)						
Miller, Edward L., Chicago, Ill. Automatic recording instrument	568,784	Oct. 6	126	29, 30	77	26
Miller, Jacob N., Bellefontaine, Ohio. Vehicle-body	569,794	Oct. 20	1906	452, 453	77	387
Miller, Jacob W. (See Huber and Miller.)						
Miller, James, Sault Ste. Marie, Canada. Alluvial-gold washer	569,113	Oct. 6	675	158	77	129
Miller, John A., Indianapolis, Ind. Car-wheel	572,556	Dec. 8	815	195	77	1449
Miller, John E., assignor to G. Duncan's Sons & Co., Washington, Pa. Glass-holding snap	572,308	Dec. 1	395	94	77	1353
Miller, John J. A., Denver, Colo. Bed-spring tightener	569,114	Oct. 6	675	158	77	129
Miller, John J. A., Denver, Colo. Railway-car wheel	573,519	Dec. 22	2565	609	77	1817
Miller, John M. (See Allen and Miller.)						
Miller, John S., Goshen, Ind. Hydraulic press	571,493	Nov. 17	1884	449, 450	77	1031
Miller, Joseph A., Providence, R. I. Wire-wound gun	568,914	Oct. 6	332	77	77	64
Miller, Joseph H., assignor of one-third to F. Springer, Oklahoma, Okla. Ter. Vehicle-brake	569,342	Oct. 13	1085	257	77	224
Miller, Lee A., Milwaukee, assignor of one-half to S. B. Fuller, Watertown, Wis. Sewing-machine	572,557	Dec. 8	816	195, 196	77	1449
Miller, Lewis, Akron, Ohio. Grain-binder	571,072	Nov. 10	1168	272, 273, 274, 275	77	884
Miller, Lewis, Akron, Ohio. Grain-binding harvester	571,073	Nov. 10	1173	275	77	884

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Miller, Lewis K., Clarksburg, Mo. Bicycle-holder	574,253	Dec. 29	3954	940	77	2088
Miller, McGonigale. (See Kirker, Miller, and Williams.)						
Miller, Orison C., Harveyville, Kans. Corn-harvester	573,895	Dec. 29	3270	774	77	1961
Miller, Samuel A. (See Davis and Miller.)						
Miller, Thomas M. (See Cleary and Miller.)						
Miller, Thomas M., assignor of one-half to C. G. Nickum, Bethlehem, Pa. Car-fender	570,943	Nov. 10	953	221	77	844
Miller, Thomas S., Burlington, Iowa. Bicycle	570,179	Oct. 27	2572	611	77	526
Miller, Thomas S., South Orange, N. J. Conveying apparatus	574,039	Dec. 29	3521	840	77	2010
Miller, William. (See Atkinson and Miller.)						
Miller, William H., Philadelphia, Pa. Device for securing delivery-receptacles	573,341	Dec. 15	2294	532	77	1736
Miller, William I., Edgar, Nebr. Check-valve	573,342	Dec. 15	2295	532	77	1736
Millholland, William K. (See Halvorsen, Halbert B., assignor.)						
Milliken, Foster, New York, N. Y. Driving mechanism for drills	569,115	Oct. 6	677	158	77	129
Milliken, George F., Boston, Mass. Fire-alarm signal-box	571,950	Nov. 24	2705	640	77	1205
Mills, Benjamin F., Cambridge, Mass. Tank-valve	573,025	Dec. 15	1643	385	77	1630
Mills, Edmund J., Glasgow, Scotland. Preparing soluble colloids	569,112	Oct. 6	674	.....	77	129
Mills, Francis A., assignor of one-half to J. Mundell, Philadelphia, Pa. Sewing-machine	571,007	Nov. 10	1057	246, 247	77	864
Mills, William, Sunderland, England. Head for golf-clubs	572,436	Dec. 1	620	147	77	1396
Milne, Joseph J., assignor to Milne Manufacturing Company, Monmouth, Ill. Stump-extractor	569,507	Oct. 13	1360	319	77	272
Milne Manufacturing Company. (See Milne, Joseph J., assignor.)						
Milwaukee Brass and Copper Works. (See Peters, Leonard A., assignor.)						
Milwaukee Gas Stove Company. (See Detwiler, Alfred E., assignor.)						
Milwaukee Harvester Company. (See Crandall and Birkett, assignors.)						
Miner, William H., Chicago, Ill. Draft-rigging for cars	570,038	Oct. 27	2312	549	77	476
Mingle, William J., Lancaster, Pa., assignor, by mesne assignments, to Specialty Manufacturing Company, Indianapolis, Ind. Water-motor fan	572,558	Dec. 8	819	197	77	1450
Minich, Daniel, assignor of one-half to D. Gerstlauer, Philadelphia, Pa. Circular-knitting device	569,463	Oct. 13	1273	300	77	257
Minich, Verne E., Chillicothe, Ohio. Penholder	573,520	Dec. 22	2566	609	77	1817
Mink, Fritz, assignor to Keystone Watch Case Company, Philadelphia, Pa. Machine for spinning circular forms of metal	568,984	Oct. 6	466	105, 106	77	89
Mink, Fritz, assignor to Keystone Watch Case Company, Philadelphia, Pa. Chuck	568,985	Oct. 6	471	106	77	90
Minnich, Mary C. (See Minnich, Simon B., assignor.)						
Minnich, Simon B., assignor to M. C. Minnich, Landisville, Pa. Rotary blower	573,609	Dec. 22	2723	647	77	1849
Minnise, Thomas S., assignor to R. B. Thompson, Meadville, and A. C. Bane, Pittsburg, Pa. Combined child's carriage and sled	572,059	Nov. 24	2894	683	77	1239
Mishel, Moses, Gloversville, N. Y. Vehicle	569,343	Oct. 13	1086	258	77	224
Mitchell, E. Madison. (See Coakley, Thomas H., assignor.)						
Mitchell, Frederick J., New York, N. Y. Operating mechanism for air-forcing apparatus	573,026	Dec. 15	1644	395	77	1631
Mitchell, George, London, England. Press for extracting oil or other liquids	570,491	Nov. 3	102	24, 25	77	657
Mitchell, Gideon D., assignor to himself and A. E. S. Danner, Newton, Kans. Cultivator-beam coupling	572,813	Dec. 8	1282	308	77	1541
Mitchell, James A., Warren, Ind., assignor of one-half to E. C. Keyes, Tiffin, Ohio. Implement for plashing hedges	573,343	Dec. 15	2226	532	77	1737
Mitchell, John E., assignor to Harmon Manufacturing Company, Jackson, Mich. Sifting-machine	568,915	Oct. 6	333	77, 78	77	64
Mitchell, John S., Greensborough, Md. Metallic railway-tie	572,437	Dec. 1	621	147	77	1396
Mixer, Charles E. (See Lewis and Mixer.)						
Mixer, Charles E., and C. L. Lewis, Boston, Mass. Fastener or clasp for articles of apparel	573,929	Dec. 22	3131	746	77	1925
Mock, Henry, *et al.* (See Kinkel, Charles, assignor.)						
Model Casket Company. (See Knapp, William C., assignor.)						
Moe, Leonidas L., assignor to Denver Automatic Car Coupler Company, Denver, Colo. Car-coupling	573,896	Dec. 29	3252	774, 775	77	1962
Moeckel, Gustave A. (See Scaife and Moeckel.)						
Moffat, John M., London, England. Socket and switch for incandescent lamps	569,931	Oct. 20	2123	505	77	427
Moffat, John M., London, England. Cell or box for electric batteries	572,438	Dec. 1	622	148	77	1396
Mohn, John, assignor to American Tap Bush Company, Detroit, Mich. Tap-bushing	573,990	Dec. 29	3440	823	77	1995
Mohr, Frederik, assignor, by mesne assignments, to Fried. Krupp Grusonwerk, Magdeburg, Germany. Primer	573,897	Dec. 29	3253	775	77	1962
Moldenke, Richard G. G., Pittsburg, Pa. Apparatus for melting metals	569,221	Oct. 13	869	205	77	182
Mole, James R., Janesville, Wis. Harness-buckle	569,584	Oct. 13	1510	356	77	301
Moll, Frederick J., Sr. (See Barker, John A., assignor.)						
Moniot, Frank. (See Flammang and Moniot.)						
Monkiewicz, Alexander, Pittsburg, Pa. Gearing for bicycles	573,230	Dec. 15	2016	483, 484	77	1699
Monnett, John P., Rensselaer, Ind. Recleaner for threshing-machines	572,086	Nov. 24	2968	698	77	1253
Monrath, Gustave. (See Heidenreich and Monrath.)						
Monroe, Nathaniel S., Arcola, Ill. Washboard	571,574	Nov. 17	2029	483	77	1057
Monroe, Publius V., Waukesha, Wis. Carpet-stretcher	569,650	Oct. 20	1633	386	77	340
Montgomery, Edwin H., assignor of one-third to M. Thommes, St. Paul, Minn. Multiple fuse-block	571,093	Nov. 10	1212	284	77	892
Montgomery, George M., *et al.* (See Montgomery, John R., assignor.)						
Montgomery, Harry C., Cleveland, Ohio. Supply valve or faucet	570,811	Nov. 3	704	161	77	768
Montgomery, John R., assignor of three-fourths to G. M. Montgomery, Windsor Locks, Conn., and G. Draper & Sons, Hopedale, Mass. Spinning or twisting machine	572,659	Dec. 8	1001	241	77	1489
Montzheimer, Arthur, Milwaukee, Wis. Mail-crane	568,955	Oct. 6	408	92	77	78
Moon, Robert G., Bedford, Iowa. Safety flue and ventilator	572,174	Dec. 1	140	33	77	1304
Mooney, Herman O. (See Davis and Mooney.)						
Mooney, Timothy, Fall River, assignor to G. Draper & Sons, Hopedale, Mass. Check for picker-sticks	569,880	Oct. 20	2036	485	77	411
Moore, Alfred C., and S. McLaughlin, Los Angeles, Cal. Photographic-printing frame	573,521	Dec. 22	2567	609, 610	77	1817
Moore, Arthur D. (See Strecker and Moore.)						
Moore, Bart. (See Summers, Dewitt C., assignor.)						
Moore, Charles C., Jr., Lexington, Ky. Sampling-machine	573,610	Dec. 22	2726	648	77	1849
Moore, Charles H., Jr. (See Hamilton and Moore.)						
Moore, Charles H., New York, N. Y. Water-closet apparatus	574,339	Dec. 29	4100	974	77	2116
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Means for generating electric waves or oscillations	568,863	Oct. 6	259	60, 61	77	50
Moore, Edson C., Riverside, Iowa. Gate	568,785	Oct. 6	128	30	77	26
Moore Electrical Company. (See Moore, Daniel M., assignor.)						
Moore, Ethelbert A., New Britain, Conn. Stairs	569,464	Oct. 13	1274	300	77	257

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Moore, Franklin D. (See Sheppey and Moore.)						
Moore, George C., Worcester, Mass. Endless tubular fabric	570,137	Oct. 27	2491	590	77	510
Moore, Ira W., New York, N. Y., assignor of one-half to E. Simmons, Keyport, N. J. Permutation-lock	568,864	Oct. 6	262	61	77	51
Moore, Jane, Cambridge, Mass. Leather-dressing	572,439	Dec. 1	624	.....	77	1397
Moore, John G. (See Myers, William H., assignor.)						
Moore, Joseph R., assignor to B. L. Kuykendall, Denver, Colo. Bicycle-bell	570,944	Nov. 10	954	221	77	845
Moore, Martin. (See Claybourne and Moore.)						
Moore, Melvin, and F. A. Holliday, Sciotoville, Ohio. Door-check	570,039	Oct. 27	2314	549	77	476
Moore, N. S., *et al.* (See Bury, Harry W., assignor.)						
Moore, Valleo V., Baraboo, Wis. Car-coupling	574,340	Dec. 29	4102	974	77	2116
Moore, William F., Plainfield, N. J. Puzzle	570,762	Nov. 3	633	145	77	754
Moore, William H. (See Hibshman, Henry E., assignor.)						
Moore, William J., New Westminster, Canada. Dredge-bucket for placer-mining	569,837	Oct. 20	1969	468	77	399
Moorman, Charles T., Packwood, Iowa. Lifting-jack	569,5e5	Oct. 13	1511	356	77	301
Moors, George F., assignor of one-half to W. E. McFarland, Owensborough, Ky. Wagon-brake	570,138	Oct. 27	2493	591	77	510
Moran, Hanorah B., New York, N. Y. Lamp	572,122	Dec. 1	48	12	77	1287
Moran, James T., Ashburn, Va., assignor of one-half to E. L. Pleasants. Drill-rod coupling	573,433	Dec. 15	2411	574	77	1771
Moreau, Eugène, and S. Mason, Philadelphia, Pa., assignors to G. A. Myers & Co., Baltimore, Md. Bunson burner	569,139	Oct. 6	724	170	77	138
Morehead, King, Salisbury, Mo. Reel-carrier	568,916	Oct. 6	336	78	77	64
Morein, Jules, Norfolk, Va. Awning-frame	570,877	Nov. 3	834	194	77	795
Moreton, George W., assignor to Betts Machine Company, Wilmington, Del. Boring and turning mill	569,344	Oct. 13	1088	258, 259	77	224
Morey, Thomas J., Nelson, N. Y. Apparatus for mowing hay	573,679	Dec. 22	2879	690	77	1878
Morgan, Benjamin B., assignor to Morgan Signal Company, Ypsilanti, Mich. Block-signal	572,267	Dec. 1	306	73, 74	77	1338
Morgan, Benjamin B., assignor to Morgan Signal Company, Ypsilanti, Mich. Railway-signal apparatus	572,268	Dec. 1	312	74	77	1339
Morgan, Benjamin B., assignor to Morgan Signal Company, Ypsilanti, Mich. Railway-signal	572,269	Dec. 1	315	75	77	1339
Morgan, Benjamin B., assignor to Morgan Signal Company, Ypsilanti, Mich. Interlocking switch-signal	572,270	Dec. 1	317	75	77	1339
Morgan, Fred W., *et al.* (See Faulkner, Hugh, assignor.)						
Morgan, Henry W., Rochester, N. Y. Power-transmitting mechanism	568,917	Oct. 6	337	78, 79	77	65
Morgan, John R., *et al.* (See Morgan, Thomas R., Jr., assignor.)						
Morgan, John T., *et al.* (See Taylor, James T., assignor.)						
Morgan, Morgan, Foxburg, Pa. Gate-hinge	571,383	Nov. 17	1701	405	77	998
Morgan, Rachel A., Braddock, Pa. Lid for frying-pans, &c.	573,680	Dec. 22	2880	680	77	1878
Morgan Signal Company. (See Morgan, Benjamin B., assignor.)						
Morgan, Thomas R., Jr., assignor of three-fourths to T. R., Sr., W. H. and J. R. Morgan, Alliance, Ohio. Plant for annealing tin-plate	568,786	Oct. 6	129	30, 31	77	27
Morgan, Walter. (See Emery and Morgan.)						
Morgan, William F., *et al.* (See Taylor, James T., assignor.)						
Morgan, William H., *et al.* (See Morgan, Thomas R., Jr., assignor.)						
Morgan, William H., Alliance, Ohio. Counterpoise disappearing gun-carriage	569,222	Oct. 13	871	205, 206	77	182
Morgan, William H., Alliance, Ohio. Disappearing counterpoise gun-carriage	569,223	Oct. 13	874	206, 207	77	182
Morgan, William H., Alliance, Ohio. Disappearing counterpoise gun-carriage	569,224	Oct. 13	876	207	77	183
Morgan, William H., Alliance, Ohio. Disappearing gun-carriage	569,225	Oct. 13	878	208, 209	77	183
Morison, Donald B., Hartlepool, England. Propeller-shaft for marine engines	569,116	Oct. 6	678	159	77	129
Morley, William, Fontanell, Iowa. Band-cutter and feeder	573,898	Dec. 29	3254	775	77	1962
Morrell, Henry L., Brooklyn, N. Y., assignor to J. M. E. Morrill, Dorchester, Mass. Sawfiling machine	570,732	Nov. 3	578	133	77	745
Morrill, Eben R., Truckee, Cal. Fruit-box	570,763	Nov. 3	635	146	77	754
Morrill, John M. E. (See Morrell, Henry L., assignor.)						
Morris, Charles E., *et al.* (See Morris, James E., assignor.)						
Morris, Henry B., assignor to Ford, Johnson & Co., Michigan City, Ind. Loom for weaving cane. (Reissue)	11,573	Nov. 24	3000	703, 704, 705, 706	77	1257
Morris, Henry G., Hoboken, Pa. Ice-cream mold and disher	573,681	Dec. 22	2881	681	77	1878
Morris, James E., assignor of two-thirds to C. E. Morris and J. H. Denis, Chester, Pa. Electric arc lamp	569,881	Oct. 20	2037	485	77	411
Morris, John P., Denman, Tex. Vehicle-axle	573,281	Dec. 15	2112	507	77	1717
Morris, Robert S. (See Cook, Stout, and Morris.)						
Morris, Thomas R., assignor of one-half to J. G. Davis, Billington, Tex. Attachment for cultivators	570,492	Nov. 3	104	25, 26	77	657
Morrison, Emma. (See Morrison, William, assignor.)						
Morrison, Joseph C., assignor of one-half to J. K. Williams, Akron, Ohio. Boiler-tube expander	569,651	Oct. 20	1634	386	77	340
Morrison, Joshua H., Connersville, Ind. Folding bed	573,027	Dec. 15	1646	395, 396	77	1631
Morrison, Singleton M. (See Sauvage, William H., assignor.)						
Morrison, Thomas, Williamsport, Pa. Shuttle for looms	569,721	Oct. 20	1779	423	77	365
Morrison, William, Philadelphia, Pa. Retainer and stop for umbrellas or parasols	572,765	Dec. 8	1200	290	77	1525
Morrison, William, assignor to E Morrison, Lansingburg, N. Y. Brush-machine	570,604	Nov. 3	316	78	77	769
Morriss, Simon J., *et al.* (See Barton, James, assignor.)						
Morrow, Allan T., Hamilton, Canada. Oil-filter	572,814	Dec. 8	1284	309	77	1541
Morrow, John T., Great Falls, Mont. Plating apparatus	569,722	Oct. 20	1780	423	77	365
Morrow, William I., Pine Grove, Tex. Wire-stretcher	572,349	Dec. 1	456	107	77	1365
Morse, Alfred B. Easton, Mass. Winding-machine	572,309	Dec. 1	395	94, 95	77	1354
Morse, Orson A. (See Henderson and Morse.)						
Morse, Stephen B., Rahway, N. J., assignor to Solar Manufacturing Company, of New Jersey. Lamp-burner	569,795	Oct. 20	1907	453	77	387
Morton, Albert H., assignor to Kitson Machine Company, Lowell, Mass. Conveyer for treating cotton staple or other fiber	572,492	Dec. 1	703	168	77	1412
Morton, Horace J., Chicago, Ill. Lumber-drier	572,210	Dec. 1	204	50	77	1317
Morton, William M., New Haven, Conn. Spirit-level and plumb	573,682	Dec. 22	2882	681	77	1878
Moseley, Thomas J., Salem, Mo. Weather-strip	573,683	Dec. 22	2884	681	77	1878
Moses, William S., Tracy, Minn. Reed-organ	574,040	Dec. 29	3522	841	77	2010

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mosher, Charles P., Groton, assignor of one-half to J. S. Kirkendall, Ithaca, N. Y. Eye-shade	569,117	Oct. 6	680	159	77	130
Mosher, Charles P., and N. R. Streeter, Groton, N. Y. Floor-mirror	574,254	Dec. 29	3956	940	77	2088
Mosher, John A., Chicago, Ill., assignor to Adams & Westlake Company, of Illinois. Electric-arc lamp	573,830	Dec. 22	3133	746	77	1925
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Means for generating electricity from car-wheel axles	571,951	Nov. 24	2707	640 641	77	1205
Moskowitz, Morris, Newark, N. J., assignor to National Electric Car Lighting Company, of West Virginia. Electric switch	571,952	Nov. 24	2712	641	77	1206
Mosley, John H., St. Louis, Mo. Propulsion of vessels	571,127	Nov. 10	1987	298 299	77	906
Moss, Berkley N. (See Jackson and Moss.)						
Moss, Thomas F., Hudson, Wis. Fumigating apparatus	571,784	Nov. 24	2403	574	77	1147
Mostkowitz, Herman, Brooklyn, N. Y. Bicycle riding-habit	569,027	Oct. 6	535	123	77	101
Motheral, Samuel A., Cincinnati, Ohio. Vehicle-wheel	569,118	Oct. 6	681	159	77	130
Motie, Frank P., *et al.* (See Norton, James A., assignor.)						
Motor Cycle Company. (See Pennington, Edward J., assignor.)						
Mott, Jordan L., Jr., assignor to J. L. Mott Iron Works, New York, N. Y. Valve for closet-cisterns	571,168	Nov. 10	1343	313	77	917
Moudy, John E., Berkeley Springs, W. Va. Table attachment for chairs	569,508	Oct. 13	1363	320	77	273
Moulart, Adrien J., Paris, France. Lock with electric safety attachment	569,882	Oct. 20	2038	485	77	411
Mousette, Oliver J., Brooklyn, N. Y. Non-refillable bottle	571,234	Nov. 10	1453	341	77	936
Mowat, Oliver M., Pittsburg, Pa. Pulley-block	572,766	Dec. 8	1201	290	77	1525
Mower, Edwin F., assignor to F. W. Whitcher, Boston, Mass. Tool for pricking and marking lines of stitches	570,139	Oct. 27	2495	591	77	511
Mowery, Robert, assignor of one-fourth J. H. Kilgore, Hot Springs, Ark. Tellurian	571,785	Nov. 24	2406	574	77	1148
Mowrer, James, Casper, Wyo. Winding-indicator for clocks	572,440	Dec. 1	625	148	77	1397
Moyer, Jesse H., Temple, Tex. Piano-action	573,474	Dec. 22	2490	591	77	1805
Moyes, Alexander H., assignor to Ogden Train Jack and Manufacturing Company, Ogden, Utah. Screw-jack	573,684	Dec. 22	2884	681	77	1879
Mozingo, Lewis W., Westport, Mo. Wire-and-picket-fence machine	574,103	Dec. 29	3636	869	77	2032
Mueller, Franz, Spokane, Wash. Music-chart	569,509	Oct. 13	1364	320	77	273
Mueller, Frederick A., Indianapolis, Ind. Shaft or axle bearing	570,040	Oct. 27	2315	549	77	476
Mueller, Oscar. (See Theurer and Mueller.)						
Muenchinger, Paul G., Newport, R. I. Envelop	570,557	Nov. 3	235	59	77	681
Muir, William, Michigan Bluff, Cal. Ejector for mining and dredging	573,611	Dec. 22	2726	648	77	1849
Mulkey, James A., *et al.* (See Slight, Emsley L., assignor.)						
Mullarky, Michael C., Montreal, Canada. Sewing-machine	569,652	Oct. 20	1635	386	77	340
Mullen, Charles R. (See Hilton, John W., assignor.)						
Mullen, Michael, *et al.* (See Welch, Rosia W., assignor.)						
Müller, Carl H., Solingen, Germany. Corkscrew-knife	573,475	Dec. 22	2498	592	77	1805
Muller, Ernst J., Butte, Mont. Latch-lever	570,674	Nov. 3	477	112	77	727
Müller, Gustave, assignor to Patent Shoe Pull Company, Bridgeport, Conn. Shoe-pull	571,276	Nov. 10	1325	361	77	950
Müller, Wilhelm, Frankfort-on-the-Main, assignor of one-half to H. Steinhäuser, Offenbach-on-the-Main, Germany. Composition for waterproofing felt	571,384	Nov. 17	1702	.....	77	998
Mullin, Clarence, and F. C. Galloway, Cincinnati, Ohio. Hand-brake	571,676	Nov. 17	2193	528	77	1068
Mullins, John W., London, Ky. Magazine-firearm	571,840	Nov. 24	2503	593	77	1165
Mumford, Joseph F., Camden, N. J. Brush-machine	570,261	Oct. 27	2722	648	77	534
Mummery, Edwin G., assignor of three-twentieths to W. G. Hastie and N. S. Wright, Detroit, Mich. Hydrocarbon-generator	568,956	Oct. 6	409	92	77	78
Mundell, James. (See Mills, Francis A., assignor.)						
Mundt, Paul, Broadwell, Ill. Valve-gear for engines	573,100	Dec. 15	1782	429	77	1657
Munger, Ernest A. (See Clark and Munger.)						
Munoz, Adolfo C., Philadelphia, Pa. Floor construction	572,123	Dec. 1	50	12, 13	77	1287
Munro, Andrew A., Flushing, N. Y. Cycle	572,941	Dec. 8	1496	358	77	1585
Munro, John E., Carlisle, Pa. Combination can-opener	573,991	Dec. 29	3441	823	77	1995
Munro, William, Brooklyn, assignor to City Metal Works, New York, N. Y. Fastening device	573,685	Dec. 22	2886	682	77	1879
Munroe, William, New York, N. Y. Upright-piano action	570,041	Oct. 27	2316	550	77	477
Munson, John W. (See Hoff and Munson.)						
Munson, Morton L., Detroit, Mich. Curtain-ring	572,441	Dec. 1	626	148	77	1397
Murchison, Roderick, assignor to Peters Pump Company, Kewanee, Ill. Drilling attachment for corn-planters	574,208	Dec. 29	3875	923	77	2073
Murdoch, William H., Youngstown, Ohio. Picture-matting cutter	571,677	Nov. 17	2195	528	77	1068
Murdock, Edwin H., Cincinnati, Ohio. Canceling-punch	571,881	Nov. 24	2579	610	77	1179
Murdock, Frank. (See Stratton and Murdock.)						
Murdock, Thomas J., assignor of one-half to J. Roney, Woonsocket, R. I. Bobbin-holder and thread-catcher. (Reissue)	11,574	Nov. 24	3017	706	77	1260
Murphy, Bernard T., Marengo, Iowa. End-gate for wagons	571,277	Nov. 10	1526	361	77	950
Murphy, James, Chicago, Ill. Gas producer and burner for steam-boilers	573,899	Dec. 29	3256	776	77	1962
Murphy, John H., New York, N. Y. Manifold cash-sales book	572,022	Nov. 24	2820	666	77	1225
Murphy, William, assignor to National Cash Register Company, Dayton, Ohio. Cash-register	571,953	Nov. 24	2713	641 642	77	1206
Murray, Charles J. (See Gregson and Murray.)						
Muselmann, Henry. (See Goschel and Sutter, assignors.)						
Musson, Frederick W. (See Cummings and Musson.)						
Musson, Frederick W., Chicago, Ill. Mechanical lead-pencil	574,359	Dec. 29	4130	981	77	2121
Musson, Frederick W., Chicago, Ill. Mechanical lead-pencil	574,360	Dec. 29	4131	981	77	2121
Musson, Frederick W., Chicago, Ill. Lead-pencil	574,361	Dec. 29	4132	981	77	2121
Musson, Frederick W., Chicago, Ill. Pencil	574,362	Dec. 29	4133	982	77	2122
Musson, Frederick W., Chicago, Ill. Pencil	574,363	Dec. 29	4134	982	77	2122
Mustain, Bailey J. (See Mustain, Shadrach A., assignor.)						
Mustain, Shadrach A., assignor to B. J. Mustain, Rincon, N. Mex. Ter. Switch for electric railways	573,344	Dec. 15	2226	533	77	1737
Mutschler, Albert, *et al.* (See Wolf, Joseph, assignor.)						
Myer, C. S., *et al.* (See Lee, William, assignor.)						
Myers, Abraham A., assignor to M. G. Myers, Lancaster, Pa. Tanning machinery	571,678	Nov. 17	2196	529	77	1068
Myers & Co., George A. (See Moreau and Mason, assignors.)						
Myers, Frederick, New York, N. Y. Sprocket-chain	571,978	Nov. 24	2756	650	77	1214
Myers, Garrett. (See Carey and Reid, assignors.)						
Myers, Herbert D., Bowdle, S. D. Band-cutter and feeder	571,008	Nov. 10	1059	247	77	864
Myers, Margaret G. (See Myers, Abraham A., assignor.)						
Myers, Stanley L., Santa Rosa, Cal. Bicycle-saddle	569,796	Oct. 20	1908	453	77	387
Myers, Theodore W. (See Johnson, Charles A., assignor.)						
Myers, William H., Brooklyn, assignor to J. G. Moore, New York, N. Y. Saw-sharpener	570,225	Oct. 27	2652	629	77	541

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
N. O. Nelson Manufacturing Company. (See Reid, William A., assignor.)						
Nablo, Ephraim R., Fort Wayne, Ind. Glove-holder	573,232	Dec. 15	2020	485	77	1700
Nadig, Henry and P., Allentown, Pa. Single acting steam-engine	573,030	Dec. 15	1650	397	77	1632
Nadig, Philip. (See Nadig, Henry and P.)						
Nadler, Henry, and B. C. Le Blanc, Plaquemine, La. Sling-trip	571,074	Nov. 10	1176	276	77	885
Nagel, William F., Philadelphia, Pa. Device for securing bedclothes on beds	568,986	Oct. 6	474	107	77	91
Nalder, John F., Flushing, N. Y. Non-refillable bottle	572,060	Nov. 24	2895	683	77	1239
Naregang, John J., Leesport, Pa. Bicycle	570,327	Oct. 27	2882	684	77	582
Nash, Alice C., assignor of one-half to F. L. Darrow, Minneapolis, Minn. Bicycle-suit	570,676	Nov. 3	480	113	77	728
Nason, Charles L., New York, N. Y. Illuminated sign	569,764	Oct. 20	1854	439	77	377
Nason, Edwin J., Washington, Kans. Feed-trough	571,280	Nov. 10	1530	362	77	951
Nathan, Leopold, Rottweil, Germany. Vessel for storing and transporting liquors containing gas under pressure	569,028	Oct. 6	536	123	77	102
National Autographic Register Company. (See De Leon, Carlos, assignor.)						
National Cash Register Company. (See Barnard, Fayette, assignor.)						
National Cash Register Company. (See Marr, Alexander W., assignor.)						
National Cash Register Company. (See Murphy, William, assignor.)						
National Company. (See Brown and Thorpe, assignors.)						
National Company. (See Perkins, Francis B., assignor.)						
National Company. (See Thorpe and Brown, assignors.)						
National Electric Car Lighting Company. (See Moskowitz, Morris, assignor.)						
National Electric Heating Company. (See Appleyard, Arthur E., assignor.)						
National Machine Company. (See Hogan, James T., assignor.)						
National Malleable Castings Company. (See Buckius, Albert O., assignor.)						
National Malleable Castings Company. (See Case, William, assignor.)						
National Metal Edge Box Company. (See Temler, Josef, assignor.)						
National Opalite Glazed Brick and Tile Syndicate. (See Shelmerdine, Anthony, assignor.)						
Naumann, Emil, Alten Essen, Germany. Horse-detacher	570,606	Nov. 3	319	79	77	697
Naville, Aloys A., P. A. and C. E. Guye, Geneva, Switzerland. Electrical gas-reaction apparatus	569,122	Oct. 6	691	161	77	132
Naylor, James B., *et al.* (See Henery, Alvanes G., assignor.)						
Neal, George P., assignor of one-half to J. P. Thurston, Evansville, Ind. Curtain-pole bracket	569,563	Oct. 13	1460	344	77	292
Neal, James H., Boston, assignor to F. E. Huntress, Somerville, Mass. Headlight for electric cars	573,283	Dec. 15	2113	508	77	1717
Neal, Lemuel C., Lewiston, Idaho. Bicycle-tire	573,907	Dec. 29	3266	780	77	1965
Neale, David, Fort Calhoun, Nebr. Shore or bank protector and method of and apparatus for constructing and placing same	570,946	Nov. 10	957	223	77	845
Neely, Harry J. (See Wilson and Neely.)						
Neely, Herbert G., South Salem, Ohio. Cornet	571,011	Nov. 10	1067	249	77	865
Neff, Elijah, Milford, Ind. Pump for domestic water systems	571,680	Nov. 17	2199	530	77	1069
Neighbours, Charles C., assignor of one-half to J. W. Reed, Fort Smith, Ark. Cotton-picker	572,611	Dec. 8	924	223 224	77	1473
Neilan, James P., New London, Conn. Alarm device for folding-machines	569,723	Oct. 20	1781	423	77	365
Neild, Edwin, assignor of one-half to A. Winslow and H. Hein, Laredo, Tex. Bicycle-wheel	574,105	Dec. 29	3639	869	77	2092
Neill, James W., Salt Lake City, Utah. Apparatus for compressing and agglomerating roasted ores or other materials	570,947	Nov. 10	959	222	77	846
Neill, Jonathan R. (See Clark and Neill.)						
Nelsen, Nels K., Rockland, Idaho. Nursery-chair	572,271	Dec. 1	318	76	77	1340
Neracher, Charles, deceased, Cleveland, Ohio; O. J. Frey, administrator. Sprinkler	571,012	Nov. 10	10 8	249	77	865
Nester, Daniel N., assignor of one-half to A. M. Vallee, St. Paul, Minn. Pneumatic stacker	570,182	Oct. 27	2574	612	77	526
Nettel, Ado. (See Engelhardt and Nettel.)						
Netto, Max, Almazarron, Spain. Precipitating precious metals from their alkali cyanid solutions	573,233	Dec. 15	2020	.....	77	1700
Netzer, Peter J. (See Lutteke, Peter, assignor.)						
Neuens, Michael W., assignor of one-half to R. Stelling, Port Washington, Wis. Window	570,948	Nov. 10	961	222 223	77	846
Neuens, Michael W., assignor of one-half to R. Stelling, Port Washington, Wis. Chair	571,536	Nov. 17	1939	469	77	1046
New Departure Bell Company. (See Hunn, Albert B., assignor.)						
New England Electric Supply Company. (See Emmett, George, assignor.)						
New Era Iron Works Company. (See Johnston, Lawrence M., assignor.)						
New Haven Clock Company. (See Galpin, Samuel A., assignor.)						
New Haven Clock Company. (See Porter, Wilson E., assignor.)						
New York and Pennsylvania Company. (See Armstrong, Lewis D., assignor.)						
New York Electric Motor and Ventilator Company. (See Brinkman, Sebastian G., assignor.)						
Newbaker, Charles A., Pittsburg, Pa. Timing mechanism for races	569,296	Oct. 13	1000	239 240	77	206
Newcomb, Albert C., Springfield, assignor to Newcomb Filter Company, Holyoke, Mass. Apparatus for filtering and clarifying liquids	571,312	Nov. 10	1584	376	77	963
Newcomb Filter Company. (See Newcomb, Albert C., assignor.)						
Newell, Augustus W., Bradford, Pa. Convertible trunk	571,681	Nov. 17	2202	530	77	1069
Newhall, Henry B., Plainfield, N. J. Thermal door-closing mechanism	570,710	Nov. 3	539	125	77	738
Newhall, Henry B., Plainfield, N. J. Trolley-door system	570,711	Nov. 3	540	126	77	739
Newman, Albert G., and J. A. Johnson, Jr., Stratford, Iowa. Power attachment for pumps	573,525	Dec. 22	2575	611	77	1819
Newman, George R. J., Washington, D. C. Car-coupling	572,710	Dec. 8	1100	266	77	1507
Newman, Hugo, New York, N. Y. Transom-adjuster	571,386	Nov. 17	1706	405	77	999
Newman, Reuben F., Manasquan, N. J. Neck-strap for horses	572,024	Nov. 24	2224	606	77	1226
Newman, Theodore R., Roesland, Canada. Car-holder	569,797	Oct. 20	1910	453	77	388
Newsom, Orlando C., Danville, Ind. Railway-track bed	574,106	Dec. 29	3640	870	77	2032
Newton, Arthur, Boston, assignor, by mesne assignments, to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-package	572,061	Nov. 24	2896	683 684	77	1239
Newton, Daniel H., Rochester, assignor, by mesne assignments, of one-half to J. C. Darrow, Minneapolis, Minn. Starching-machine	571,281	Nov. 10	1531	363	77	951
Newton, E. Bertram. (See Goettel, John, assignor.)						
Newton, Ella J. (See Tiner, John F., assignor.)						
Newton, Henry S., Syracuse, N. Y. Rail-bond	568,918	Oct. 6	340	79	77	65
Newton, Herbert B. (See Webster, Harold A., assignor.)						
Newton, Joseph A., Columbus, Ind. Sash-lock	573,347	Dec. 15	2234	534	77	1738
Newton, Sarah F., *et al.* (See Taylor, James T., assignor.)						
Newton, Thomas J. (See Andrus and Newton.)						
Ney, Nannie U. (See Woolfolk and Ney.)						
Neyquist, John, Coburn, Pa. Artificial limb	574,212	Dec. 29	3881	924	77	2074

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Nicely, Frank P., South Bend, Ind. Paper-machine	570,949	Nov. 10	963	223, 224	77	846
Nicholas, William H., Boston, and R. Stephenson, Quincy, Mass. Blackleading-machine	571,199	Nov. 10	1390	325	77	925
Nicholes, Herbert W., assignor of two-thirds to R. N. Holland and W. E. Gilbert, Marietta, Ga. Pan holder and lifter	572,815	Dec. 8	1285	309	77	1542
Nicholls, Mark M., New York, N. Y. Tubing	568,870	Oct. 6	273	63	77	53
Nichols, Benjamin, Revere, Mass. Advertisement-shifter	571,882	Nov. 24	2581	611	77	1180
Nichols, John S., Edgerton, Minn. Power-transmitting device	572,816	Dec. 8	1286	309	77	1542
Nichols, Mortimore O. (See Yocum and Nichols.)						
Nichols, Seth A., Fowlerville, Mich. Can-opener	572,560	Dec. 8	821	197	77	1450
Nickum, Charles G. (See Miller, Thomas M., assignor.)						
Nickum, J. M., *et al.* (See Maxon, Stiles E., assignor.)						
Nicol, Harry L. (See Millard, Martin S., assignor.)						
Nicolaus, August, and W. J. Delmar, Bridgeport, assignors of one-third to E. A. Feaz, Plattsville, Conn. Bouquet-holder	572,612	Dec. 8	926	224	77	1474
Nielson, Samuel A., Madison, Wis. Wire fence	570,646	Nov. 3	421	99	77	716
Niles, John H. (See Grover, Henry M., assignor.)						
Niles Tool Works Company. (See Hess, Henry, assignor.)						
Nilson, Lars G. (See Houts and Nilson.)						
Nilson, Lars G. (See Walker and Nilson.)						
Nilson Manufacturing Company. (See Nilson, Nils, assignor.)						
Nilson, Nils. (See Bradbury and Nilson.)						
Nilson, Nils, Minneapolis, assignor to Nilson Manufacturing Company, St. Paul, Minn. Automatic steam-trap	573,908	Dec. 29	3268	780	77	1965
Nilsson, George F., Whitinsville, Mass. Damper-regulator	569,513	Oct. 13	1370	321	77	275
Nisbet, Alexander, New York, N. Y., assignor to A. G. Spalding & Bros., New York, N. Y., and Chicago, Ill. Foot-ball	568,871	Oct. 6	274	63	77	53
Nivison, Charles, assignor to Kalamazoo Sled Company and F. W. Underwood, Kalamazoo, Mich. Folding chair	569,657	Oct. 20	1643	388	77	341
Nixon, W. M., *et al.* (See Fisher, Robert J., assignor.)						
Noad, James, London, England. Method of and means for producing lead oxid	570,712	Nov. 3	542	126	77	739
Nobbe, Friedrich, and L. Hiltner, Tharand, Germany. Inoculation of the soil for cultivating leguminous plants	570,813	Nov. 3	713	.....	77	770
Noble, James T. (See Magee, John H., assignor.)						
Nobs, Charles, Jr., Newark, N. J. Watchcase-spring	569,297	Oct. 13	1003	240	77	207
Nodder, Joseph, assignor to John Brown & Company, Limited, Sheffield, England. Steam-boiler furnace and flue	574,107	Dec. 29	3641	870	77	2033
Nolan, Michael J., New York, N. Y. Bottle	570,607	Nov. 3	320	79	77	698
Nollendorf, Eugen H. A. H. von, Vienna, Austria-Hungary. Electric-arc lamp	573,526	Dec. 22	2576	611	77	1819
Nones, William C., Louisville, Ky. Nut-lock	574,213	Dec. 29	3882	924	77	2074
Norlund, Olof A., assignor of one-half to W. B. Clark, Cedar Run, Pa. Nut-lock	570,101	Oct. 27	2434	578	77	500
Norman, Addison, assignor of part to W. McCabe, W. Jones, and W. B. Taylor, Toronto, Canada. Electric railway	570,328	Oct. 27	2383	685	77	583
Norrington, Henry H., West Bay City, Mich. Savings-bank	569,798	Oct. 20	1912	454	77	388
Norris, Frederick. (See Higgins, Thomas, assignor.)						
Norris, James A. (See Young and Norris.)						
Norris, Rollin, assignor to United Gas Improvement Company, Philadelphia, Pa. Differential indicator for gas apparatus	572,366	Dec. 1	497	116	77	1372
North, Charles H., Cleveland, Ohio. Magneto-electric generator	569,385	Oct. 13	1152	274	77	236
North, Thomas M., Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Rotary folding-machine	573,348	Dec. 15	2235	534, 535	77	1739
Northrop, James H. (See Draper and Northrop.)						
Northrop, James H., Hopedale, Mass., assignor to Northrop Loom Company, Saco, Me. Cloth-evening device	569,586	Oct. 13	1512	356	77	301
Northrop Loom Company. (See Brunette and Horne, assignors.)						
Northrop Loom Company. (See Draper, George A., assignor.)						
Northrop Loom Company. (See Draper, George O., assignor.)						
Northrop Loom Company. (See Draper and Northrop, assignors.)						
Northrop Loom Company. (See Northrop, James H., assignor.)						
Northrop Loom Company. (See Railton, James, assignor.)						
Norton, Frank J., Ithaca, N. Y. Stovepipe-holder	569,123	Oct. 6	692	162	77	132
Norton, James A., assignor of two-thirds to J. R. Mattes and F. P. Motie, Odebolt, Iowa. Table attachment for beds	573,909	Dec. 29	3270	780, 781	77	1966
Norton, James T., Boston, Mass. Electric switch	571,927	Nov. 24	2667	632	77	1196
Norton, Joseph C., Lynn, Mass. Hot-water heating apparatus	568,872	Oct. 6	275	63, 64	77	53
Norton, Stephen, Rochester, assignor of one-fourth to E. D. Watkins, Lima, N. Y. Wheel-fender	569,465	Oct. 13	1276	300, 301	77	257
Norton, Sylvanus, Sinclairville, N. Y. Storm-guard for vehicles	569,466	Oct. 13	1278	301	77	258
Norton, William H., Mexico, N. Y. Poison-distributer	572,907	Dec. 8	1421	342, 343	77	1571
Norwood, Joseph, Brooklyn, N. Y. Screen for sand, &c.	571,575	Nov. 17	2029	483	77	1057
Noyes, Henry F., Elgin, Ill., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake	571,095	Nov. 10	1216	284, 285	77	893
Noyes, Henry F., Elgin, Ill., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Air-brake	571,786	Nov. 24	2408	574, 575	77	1149
Nurick, Alexander, Pittsburg, Pa. Game-board	569,140	Oct. 6	726	171	77	138
Nutt, Edward F., deceased; Jasper N. Nutt, Sidney, Ohio, administrator. Waffle-iron	569,227	Oct. 13	883	210	77	184
Nutt, Jasper N., administrator. (See Nutt, Edward F.)						
Nuttall, Thomas B., Pittsburg, assignor of one-half to J. Rhodes, Allegheny, Pa. Pipe-shears	572,767	Dec. 8	1202	291	77	1525
Nutter, Seth C., Sherbrooke, Canada. Sleigh-truck	569,050	Oct. 6	577	132	77	110
Nyberg, Matts L., Erie, Pa. Gas heating apparatus	569,658	Oct. 20	1644	388	77	342
Nye, Frank A., assignor to Nye & Tredick, Philadelphia, Pa. Knitting-machine	573,527	Dec. 22	2578	612	77	1820
Nye & Tredick. (See Nye, Frank A., assignor.)						
Nylander, Joseph L., Duluth, Minn. Logging-sled	570,677	Nov. 3	481	113	77	728
O. Armleder Company. (See Armleder, Otto, assignor.)						
O. H. Jewell Filter Company. (See Jewell, Omar H., assignor.)						
O'Bar, William A., Everett, Wash. Whiffletree	574,071	Dec. 29	3578	855	77	2021
O'Brien, Andrew P., assignor of one-half to A. D. Ledoux, Richmond, Va. Combined bag-holder and scale	570,561	Nov. 3	241	60	77	682
O'Brien, Lawrance C. (See Waddell, Thomas J., assignor.)						
O'Brien, Mary, *et al.* (See Winters, John W., assignor.)						
O'Brien, William S., Lafayette, Ind. Wagon-wheel	569,467	Oct. 13	1280	301	77	258
O'Connor, Andrew C., Lynn, Mass. Electric railway	573,234	Dec. 15	2021	485	77	1700

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
O'Connor, William H., Providence, R. I. Fluid-pressure brake	570,678	Nov. 3	485	113, 114	77	729
O'Donnell, John P. (See Sykes and O'Donnell.)						
O'Kain, Domenec C., Wilkinsburg, assignor to E. H. Goodman, Pittsburg, Pa. Slack-adjuster for brake-rigging	573,613	Dec. 22	2730	648, 649	77	1850
O'Neill, James J., Boston, Mass. Wall-insulator	573,101	Dec. 15	1784	429	77	1657
O'Neill, William, Brooklyn, N. Y. Button	571,387	Nov. 17	1707	406	77	999
O'Sullivan, John E., Hayden Row, assignor of one-half to W. F. Draper, Hopedale, Mass. Cow-milker	572,713	Dec. 8	1106	268	77	1508
O'Toole, William P. (See Marks, Richard J., assignor.)						
Obenauer, Frederick A. (See Slaker, Frank J., assignor.)						
Oberlaeuter, Hugo, Leipsic, Germany. Automatic ball-coupling for railway-wagons	571,682	Nov. 17	2203	531	77	1090
Oberleithner, Eduard von, Mährisch-Schönberg, Austria-Hungary. Loom	571,236	Nov. 10	1455	341	77	937
Oberly, Virginia H., Concord, N. H. Corset-waist	572,025	Nov. 24	2825	667	77	1226
Oberstebrink, Wilhelm. (See Frowein and Oberstebrink.)						
Ocaña y Mellan, Ignacio M. de, New York, N. Y. Aerial railway	569,468	Oct. 13	1281	302	77	258
Odell, Jephtha, Excelsior Springs, Mo. Corn-harvester	574,108	Dec. 29	3642	870	77	2033
Oder, George B., *et al.* (See Badgley, Edwin L., assignor.)						
Odinet, Conrad, New York, N. Y. Vessel	573,690	Dec. 22	2893	684	77	1881
Oehler, Firm of K. (See Rudolph, Christian, assignor.)						
Oehlmann, Emil H. C., Berlin, Germany. Incandescent burner for fluid combustibles	573,031	Dec. 15	1653	397	77	1632
Oehms, Anguat G. H., Berlin, Germany. Recording apparatus	573,478	Dec. 22	2502	593	77	1805
Oesterheld, Carl, Gotha, Germany. Box for distributing pulverulent material	573,032	Dec. 15	1655	398	77	1633
Oestmann, Rudolph A. W., Philadelphia, Pa. Shutter-fastener	569,724	Oct. 20	1783	424	77	365
Ogden, Mancelia E., Newark, N. J. Fire-extinguisher	570,262	Oct. 27	2727	649	77	555
Ogden Train Jack and Manufacturing Company. (See Moyes, Alexander H., assignor.)						
Ogle, Edwin T. (See Lea, Samuel H., assignor.)						
Ohlson, Olof, Newark, N. J. Centrifugal machine	573,910	Dec. 29	3271	781	77	1966
Ohmart, Charles, Girard, Ill. Fence-stay	571,683	Nov. 17	2205	531	77	1090
Older, Charles S. (See Waugh and Older.)						
Oldershaw, Henry A., Leicester, England. Edge-setting machine	571,602	Nov. 17	2072	497	77	1065
Oldfield, John, Medford, Mass. Sand-depositing apparatus for cars	571,136	Nov. 10	1298	302	77	907
Oldfield, John F., Baltimore, Md. Dry-kiln	568,967	Oct. 6	475	107	77	91
Oldham, George, Philadelphia, Pa. Shedding-motion for looms	572,711	Dec. 8	1102	267	77	1507
Oldham, Joseph R., Cleveland, Ohio. Hatch for ships	574,259	Dec. 29	3964	942	77	2090
Oldham, Joshua, Brooklyn, N. Y. Saw	571,200	Nov. 10	1392	325	77	925
Oldroyd, Thomas, New London, Conn. Nut-lock	569,423	Oct. 13	1216	286	77	246
Olds, Ransom E., Lansing, Mich. Combined gas and steam engine	570,963	Oct. 27	2729	649	77	555
Oles, Abram D., Unadilla, N. Y. Water-motor	572,684	Dec. 8	1045	253, 254	77	1497
Oligny, John D., St. Henry, Canada. Artificial fuel	570,495	Nov. 3	109	.....	77	658
Olin, Fred C., Buffalo, N. Y. Gas-engine	569,386	Oct. 13	1154	275	77	236
Olin, Fred C., Buffalo, N. Y. Gas-engine	569,564	Oct. 13	1461	345, 346	77	292
Olin, Fred C., Buffalo, N. Y. Gas-engine	571,495	Nov. 17	1888	450, 451	77	1031
Olinger, Jacob M., Vienna Cross-Roads, Ohio. Street-car motor	572,817	Dec. 8	1287	309, 310	77	1542
Oliver Iron and Steel Company. (See Oliver and Crehan, assignors.)						
Oliver, James B., Shields, and H. Crehan, assignors to Oliver Iron and Steel Company, Pittsburg, Pa. Grip-nut	569,659	Oct. 20	1646	388	77	342
Oliveri, Giuseppe, Washington, D. C. Clarinet	570,647	Nov. 3	422	99	77	716
Olivey, Richard J., Buffalo, N. Y. Separating-machine	570,608	Nov. 3	321	79, 80	77	698
Ollard, James C., assignor to himself and W. J. Ollard, Tacoma, Wash. Spraying apparatus	569,863	Oct. 20	2039	486	77	411
Ollard, William J. (See Ollard, James C., assignor.)						
Olliffe, James, Sr., *et al.* (See Graebing, Henry S., assignor.)						
Olmsted, Will H., Syracuse, N. Y. Lantern-slide mat	574,214	Dec. 29	3884	925	77	2075
Olney, Allan E., assignor to T. J. Flanagan, Holyoke, Mass. Chiming mechanism	571,075	Nov. 10	1177	276	77	885
Olson, Englebrecht, Walkerville, Mont. Signal-bell	571,013	Nov. 10	1070	250	77	866
Olsen, Tiniua. (See Carpenter, Rolin C., assignor.)						
Olson, Albert G., West Superior, Wis. Bicycle-support	574,109	Dec. 29	3645	871	77	2033
Olson, Alfred. (See Hodell and Olson.)						
Olson, Christopher H., Tacoma, Wash., assignor to C. H. Olson Gold Dredger Company. Dredging-machine	573,832	Dec. 22	3137	747	77	1926
Olson, Olaus, and J. A. Johanson, Brooklyn, N. Y. Merry-go-round	572,712	Dec. 8	1104	268	77	1508
Olson, Tenia, Harlan, Iowa. Revolving show-rack	569,660	Oct. 20	1647	389	77	342
Ongley, Charles E., assignor to G. J. Schoeffel, New York, N. Y. Valve-controlling device	570,045	Oct. 27	2324	551	77	478
Opdyke, Stacy B., Jr., Philadelphia, Pa. Elevator signal apparatus	572,561	Dec. 8	822	197, 198	77	1450
Opdyke, Stacy B., Jr., Philadelphia, Pa. Elevator signal mechanism	572,562	Dec. 8	827	198, 199	77	1453
Opdyke, Stacy B., Jr., Philadelphia, Pa. Elevator signal apparatus	572,563	Dec. 8	833	199, 200	77	1455
Ordner, Louis L., Cleveland, Ohio. Attachment for sprinkler-nozzles	574,072	Dec. 29	3579	855	77	2021
Orford Copper Company. (See Thomson, Joseph L., assignor.)						
Orr, Alfred, and A. W. Chapman, Charleston, Mo. Inhaler-mask	573,691	Dec. 22	2894	684	77	1881
Orr, Henry A., Bedford, England. Drying-tray	572,660	Dec. 8	1002	242	77	1489
Orth, Christian F. L., New York, N. Y. Support for trolley-wheels	572,940	Dec. 8	1495	358	77	1585
Orton, Lewis W., Bellevue, Tex. Wire-fence tool	572,272	Dec. 1	319	76	77	1340
Osborn, Ben A. (See Harding and Osborn.)						
Osborn, Byron E., Auburn, N. Y. Electric-railway system	573,033	Dec. 15	1656	398	77	1633
Osborn, Elisha H., Des Moines, Iowa. Magnetic separator for threshing-machines	570,496	Nov. 3	110	27	77	638
Osborne, John H., Anderson, Ind. Bolt-cutter	569,661	Oct. 20	1649	389	77	342
Osburn, Henry C., Scio, Ohio. Automatic vehicle-brake	573,995	Dec. 29	3447	824, 825	77	1997
Osgood, Charles E. and J. M., Lowell, Mass. Filter	574,161	Dec. 29	3743	894	77	2050
Osgood, John M. (See Osgood, Charles E. and J. M.)						
Oshkosh Match Works. (See Wyman, William H., assignor.)						
Osment, William, London, England. Apparatus for producing raised panels and moldings on square balusters, &c.	569,029	Oct. 6	537	124	77	102
Oster, John, Jr., Newport, Ky. Filter	568,787	Oct. 6	132	32	77	87
Osterhaus, Frank H., New York, N. Y. Grain-car	571,841	Nov. 24	2507	593	77	1166
Osyor, David N., assignor to J. A. Jeffrey, Columbus, Ohio. Splicing-clamp	574,260	Dec. 29	3965	942	77	2090

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Otis Brothers & Company. (See Otis and Smith, assignors.)						
Otis, Norton P., and R. C. Smith, Yonkers, assignors to Otis Brothers & Company, New York, N. Y. Screw elevator	570,329	Oct. 27	2285	685	77	583
Ottersten, Carl G., Brooklyn, N. Y. Snow or dirt collecting and dumping machine	572,213	Dec. 1	209	51	77	1318
Otteson, John C., Brooklyn, N. Y. Hand-stamp	570,264	Oct. 27	2730	649	77	556
Otto, Albert T., *et al.* (See Batty, Thomas, assignor.)						
Otto, Henry, Bloomington, Ill. Bicycle-leg	571,979	Nov. 24	2757	650	77	1214
Otto, William E. H., Kansas City, Mo. Controlling mechanism for elevators	572,214	Dec. 1	211	51	77	1318
Outhouse, Thomas A., assignor to himself, A. Bohler, and E. H. Meyer, Mount Olive, Ill. Angle-cock	571,201	Nov. 10	1391	326	77	926
Outram, John B., Urbana, assignor to S. Bufkin, Columbus, Ohio. Threshing-machine	569,298	Oct. 13	1004	240, 241	77	207
Owen, Henry A., assignor to Whitin Machine Works, Whitinsville, Mass. Top-roll saddle for spinning-machines	570,765	Nov. 3	637	146	77	755
Owen, Henry A., assignor to Whitin Machine Works, Whitinsville, Mass. Spinning-machine	573,692	Dec. 22	2896	684	77	1881
Owen, Oscar L., Whitinsville, Mass. Tongs	572,564	Dec. 8	837	201	77	1456
Owen, Robert L., Muscogee, Ind. Ter. Gas-distributing apparatus	573,996	Dec. 29	3448	825	77	1997
Owen, William, Petersham, New South Wales. Boot or shoe	570,814	Nov. 3	714	162	77	770
Owens, Michael J., Toledo, Ohio. Mechanical glass-blower	570,879	Nov. 3	838	195, 196	77	795
P. M. Bruner Granitoid Company. (See Bruner, Preston M., assignor.)						
Paarmann, Hans J., Davenport, Iowa. Washing-machine	573,349	Dec. 15	2237	535	77	1739
Pabst Brewing Company. (See Theurer, Jacob F., assignor.)						
Pabst, Christian. (See Kihn and Reed, assignors.)						
Packard, Granville F., Fort Wayne, Ind. Baby-walker	572,613	Dec. 8	927	224	77	1474
Packham, Frank R., assignor to Superior Drill Company, Springfield, Ohio. Seeding-machine	570,265	Oct. 27	2732	649, 650	77	556
Page, Charles E., assignor of three-fifths to C. A. Freeman, Denver, Colo. Bicycle-saddle	571,388	Nov. 17	1708	406	77	999
Page, Levi H., Chicago, Ill. Electric-arc lamp	573,911	Dec. 29	3273	781	77	1967
Page, Plummer S. (See Gartner, Alfred, assignor.)						
Paige, James H., assignor to J. W. Center and S. C. Kennard, Manchester, N. H. Picker mechanism for looms	571,729	Nov. 17	2287	548	77	1106
Paige, Sam K., *et al.* (See Pease, Charles, assignor.)						
Painchaud, Ludger, Salem, Mass. Loom-temple	571,886	Nov. 24	2590	614	77	1182
Painter, Arthur, San Francisco, assignor to H. M. Barstow, Napa, Cal. Clip for wire-rope ways	569,228	Oct. 13	884	210	77	184
Pálfy, Andres, Buda-Pesth, Austria-Hungary. Station-indicator for railways	573,350	Dec. 15	2238	535, 536	77	1739
Palica, Frank J., Racine, Wis. Trunk	572,714	Dec. 8	1107	268, 269	77	1508
Palmer, Frank A., Brooklyn, N. Y. Jar-closure	573,693	Dec. 22	2897	684	77	1881
Palmer, Frank H., Brooklyn, N. Y. Sheet-metal can	572,818	Dec. 8	1209	310	77	1542
Palmer, Harry R., Norfolk, Va. Electric-arc lamp	571,137	Nov. 10	1300	302	77	907
Palmer, Henry U., Brooklyn, N. Y. Barrel-hooping machine	573,159	Dec. 15	1882	453	77	1675
Palmer, Isaac E., Middletown, Conn. Let-off mechanism for looms	573,160	Dec. 15	1884	454	77	1675
Palmer, Isaac E., Middletown, Conn. Seat attachment for hammocks	574,073	Dec. 29	3580	855	77	2021
Palmer, John. (See Palmer, Joseph and J.)						
Palmer, John S., Providence, R. I. Means for squaring edges of and finishing finger-rings	572,442	Dec. 1	627	148	77	1397
Palmer, Joseph, Aurora, and J. Palmer, Chicago, Ill. Folding table	569,514	Oct. 13	1372	322	77	275
Palmer, Orsin L. (See Langton, James H., assignor.)						
Palmer, Wilford L., Washington, D. C. Can-opener	569,932	Oct. 20	2124	505	77	428
Palmetto Fibre Company. (See Young, McClintock, assignor.)						
Pancoast, George E., New York, N. Y. Storage and delivery system	571,389	Nov. 17	1709	406	77	999
Panoff, Meyer, Brooklyn, N. Y. Hat or cap	573,614	Dec. 22	2731	649	77	1851
Papke, Godfrey W., Echo, Minn. Threshing-machine	573,479	Dec. 22	2503	593	77	1806
Paquet, John. (See Waldron and Paquet.)						
Parbel, Jacob. (See Parbel, Joseph, assignor.)						
Parbel, Joseph, assignor of one-half to J. Parbel, Grand Rapids, Mich. Bung	571,842	Nov. 24	2507	594	77	1166
Pardee, George W., and B. McAleese, Hoboken, N. J. Window-guard	570,713	Nov. 3	543	126	77	739
Park, Harvey S., assignor, by mesne assignments, to Chicago Brake and Manufacturing Company, Chicago, Ill. Fluid-pressure brake	573,790	Dec. 22	3047	722	77	1910
Parker, Elisha J., Dallas, Tex. Propeller-wheel	573,351	Dec. 15	2240	536	77	1739
Parker, George, Whiting, Ind. Pump-valve	569,884	Oct. 20	2042	486	77	412
Parker, George W., Bainbridge, N. Y. Spring-motor	570,266	Oct. 27	2733	650	77	556
Parker, John F., and C. M. Bennett, Portland, Me. Bench-vise	572,367	Dec. 1	499	117	77	1373
Parker, Sewell M., Robbinsdale, Minn. Cow-stable appliance	568,788	Oct. 6	132	32	77	27
Parker, Theodore R., Binghamton, N. Y. Grain-door for grain-cars	570,950	Nov. 10	965	224	77	847
Parker, William D. (See White and Parker.)						
Parker, William H., West, Tex. Animal-poke	568,873	Oct. 6	277	64	77	53
Parkhurst, Edward B., Woburn, Mass. Gearing for elevators	571,864	Nov. 24	2546	603	77	1174
Parkhurst, Edward B., Woburn, Mass. Upright-boiler furnace	573,912	Dec. 29	3274	781, 782	77	1967
Parkinson Elevator Company. (See Parkinson, John, assignor.)						
Parkinson, John, Los Angeles, Cal., assignor, by mesne assignments, to Parkinson Elevator Company, Los Angeles, Cal., and Phœnix, Ariz. Ter. Combined electric hydraulic elevator	569,933	Oct. 20	2126	505, 506	77	428
Parkinson, John, Los Angeles, Cal., assignor, by mesne assignments, to Parkinson Elevator Company, Los Angeles, Cal., and Phœnix, Ariz. Ter. Combined electric hydraulic elevator	569,934	Oct. 20	2131	506, 507	77	429
Parkinson, John, Los Angeles, Cal., assignor, by mesne assignments, to Parkinson Elevator Company, Los Angeles, Cal., and Phœnix, Ariz. Ter. Combined electric hydraulic elevator	571,730	Nov. 17	2288	549, 550	77	1106
Parkinson, John, Los Angeles, Cal., assignor, by mesne assignments, to Parkinson Elevator Company, Los Angeles, Cal., and Phœnix, Ariz. Ter. Combined electric hydraulic screw-controlled elevator-engine	571,731	Nov. 17	2299	550, 551	77	1108
Parkinson, John, Los Angeles, Cal., assignor, by mesne assignments, to Parkinson Elevator Company, Los Angeles, Cal., and Phœnix, Ariz. Ter. Combined electric hydraulic elevator	571,732	Nov. 17	2304	551, 552	77	1109
Parmer, Horace, *et al.* (See Cazier, Perry H., assignor.)						
Parratt, William. (See Whalley, Clegg, Henson, Parratt, and Robinson.)						
Parrish, Charles A., Jackson, Mich. Electric signal for street-car crossings	570,046	Oct. 27	2325	551	77	478
Parrish, Homer A., Jackson, Mich. Electric trolley-railway signal	569,424	Oct. 13	1217	286	77	247
Parson, Henry E., Brooklyn, N. Y. Steam-blower	573,480	Dec. 22	2505	594	77	1806

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Parsons, Frank, Montgomery, Miss. Grinding-machine	570,766	Nov. 3	639	146	77	755
Parthier, Friedrich, Chicago, Ill. Basket	571,452	Nov. 17	1810	432	77	1018
Partington, Charles, Newport, Ky., assignor to Weir Frog Company, Cincinnati, Ohio. Electromotor-magnet	574,215	Dec. 29	3886	925	77	2075
Pascault, André M., and J. F. M. H. de Coursac, Vivonne, France. Water-wheel	570,951	Nov. 10	966	224, 225	77	847
Paas, James, and A. P. Seymour, Syracuse, N. Y. Socket for incandescent electric lamps	568,919	Oct. 6	341	79	77	65
Patch, Fred R., Rutland, Vt. Planing or molding machine	572,443	Dec. 1	629	149	77	1397
Patent Shoe Pull Company. (See Müller, Gustave, assignor.)						
Patrick, Thomas W., New York, N. Y. Toy or puzzle	570,047	Oct. 27	2327	552	77	478
Patterson, Cary P. (See Shafer, John W., assignor.)						
Patterson, David R. W. (See Peck and Patterson.)						
Patterson, Edward, Oakland, Cal., and W. Patterson, Scranton, Pa. Mining-machine	570,330	Oct. 27	2888	686	77	584
Patterson, Helen. (See Patterson, William H., assignor.)						
Patterson, James, assignor of one-half to J. R. Sandilands, Glasgow, Scotland. Apparatus for treating fire-gases evolved in steam-boilers, &c	572,176	Dec. 1	143	34, 35	77	1305
Patterson, James, Gonrock, assignor of one-half to J. R. Sandilands, Glasgow, Scotland. Apparatus for treating fire-gases	572,177	Dec. 1	145	36	77	1305
Patterson, James, Gonrock, assignor of one-half to J. R. Sandilands, Glasgow, Scotland. Blower for treating gases evolved in furnaces	572,178	Dec. 1	147	36	77	1305
Patterson, William. (See Patterson, Edward and W.)						
Patterson, William H., assignor to H. Patterson, Cuyahoga Falls, Ohio. Machine for making paper bags	571,603	Nov. 17	2073	497, 498, 499	77	1065
Patterson, William J., and E. W. Heyl, Pittsburg, Pa., assignors to J. A. Jeffrey, Columbus, Ohio. Portable elevator	573,913	Dec. 29	3276	783, 784	77	1967
Patterson, William R., assignor to Western Electric Company, Chicago, Ill. Insulated electric conductor	572,215	Dec. 1	212	52	77	1318
Pattison, Richard, assignor to himself, P. Brownley, and C. A. Druckleb, New York, N. Y. Pneumatic tire	573,997	Dec. 29	3449	825	77	1997
Pattisson, Sidney, London, England. Saddle for velocipedes	570,497	Nov. 3	111	27	77	658
Patton, James E., Jr., Milwaukee, Wis. Interchangeable-color-exhibiting device	572,216	Dec. 1	213	52	77	1318
Patzack, Frank. (See Hull, Nicholas A., assignor.)						
Paul, Andrew G., and H. A. Joslin, Boston, Mass.; said Joslin assignor to said Paul. Paper-drier	571,787	Nov. 24	2413	575	77	1149
Paul, Charles S., Faribault, Minn. Mangle	572,614	Dec. 8	928	225	77	1474
Paul, Isaac H., Jr., assignor to Frake Manufacturing Company, Bridgeport, Conn. Hose-supporter	569,662	Oct. 20	1650	389	77	343
Paul, Lewis G., Huddersfield, England. Making nitrites	572,819	Dec. 8	1290	.....	77	1542
Paulus, Henry. (See Kohl and Paulus.)						
Paulus, Jacob, Brooklyn, N. Y., assignor of one-half to A. Hartmann, East Orange, N. J. Bottle	572,179	Dec. 1	147	36	77	1307
Pauly, Peter J., Sr., and J. C. McQuilkin, assignors to St. Louis Art Metal Company, St. Louis, Mo. File-rack	570,679	Nov. 3	486	114	77	729
Pawling, Alonzo, *et al.* (See Theurer and Mueller, assignors.)						
Payne, Horace D., Thompson, Pa. Hydraulic engine	571,021	Nov. 17	2105	505	77	1071
Payne, Robert H., Roanoke, Va. Hose-supporter	570,143	Oct. 27	2507	591	77	613
Peabody, Charles E., Lynn, Mass. Rake-tooth	573,481	Dec. 22	2506	594	77	1806
Pearson, Fred. (See Coupland and Pearson.)						
Pearson, Harvey, De Peyster, N. Y. Stubble-rejecter	571,138	Nov. 10	1301	302	77	908
Pearson, Peter, Menominee, Mich. Garment-protector	573,998	Dec. 29	3450	825	77	1997
Pease, Charles, assignor of two-thirds to K. D. Pierce, Hillsborough, and S. K. Paige, Warner, N. H. Device for drying textile articles	568,874	Oct. 6	278	61	77	54
Peavey, Frank A., Port Huron, Mich. Pneumatic stacker	572,768	Dec. 8	1203	291	77	1526
Peavey, John N., Jr., Ashland, N. H. Calipers	571,788	Nov. 24	2415	575	77	1150
Peck, Albert S., Geneva, Ill., assignor to McCormick Harvesting Machine Company. Corn-harvester	570,498	Nov. 3	112	27	77	659
Peck, Arthur E., Minneapolis, Minn. Bicycle-saddle	572,062	Nov. 24	2898	684	77	1240
Peck, Edmund E., Brooklyn, N. Y. Folding bed and couch	570,048	Oct. 27	2328	552	77	479
Peck, John M. (See Totham, James, assignor.)						
Peck, Staunton B., assignor to Link-Belt Machinery Company, Chicago, Ill. Package-elevator	570,562	Nov. 3	242	61	77	683
Peck, William H., and D. R. W. Patterson, Pittsburg, Pa. Furnace	573,235	Dec. 15	2022	485	77	1701
Peckinpaugh, Sebastian S., Centralia, assignor of one-half to T. A. Taylor, Grand Rapids, Wis. Bottle	568,875	Oct. 6	279	64	77	54
Pedrick, Howard A., assignor of one-half to W. J. Hibbs, Philadelphia, Pa. Mechanism for grinding car-wheels	573,694	Dec. 22	2898	685	77	1881
Peet, James M., Pittsburg, Pa. Freight-car	570,331	Oct. 27	2890	686	77	584
Peet, Walter F., Philadelphia, Pa. Fastening for garments	570,267	Oct. 27	2736	650	77	557
Pegel, Julius. (See Ruckstinat, John, assignor.)						
Pegel, Julius G., assignor of two-thirds to L. Scowcroft, Philadelphia, Pa., and J. Ruckstinat, East Providence, R. I. Puzzle	574,261	Dec. 29	3966	942	77	2090
Peisar, Edward L., Aspen, Colo. Portable stand for bicycles	573,482	Dec. 22	2507	594	77	1806
Pell, Harry S., Akron, Ohio, assignor to Stirling Company, Chicago, Ill. Steam-boiler	571,282	Nov. 10	1533	361	77	952
Pelton, Leander, Des Moines, Iowa. Broom-sewing machine	572,615	Dec. 8	930	225, 226	77	1474
Pence, Thomas J., Troy, Ohio. Veterinary tooth-cutter	571,283	Nov. 10	1534	363, 364	77	952
Pendergast, Thomas H., and B. H. Bueter, Louisville, Ky. Veterinary smoke-injector	570,332	Oct. 27	2891	686	77	584
Pendergast, Thomas J., Easthampton, Mass. Foot-rest for boot-blacks	573,224	Dec. 15	2116	508	77	1717
Pendleton, Frank P., *et al.* (See Brown, Franklin, assignor.)						
Pendleton, Gurdon, Jr., Carbondale, Pa. Package	571,928	Nov. 24	2569	632	77	1197
Pendley, William, Hinton, assignor of one-half to R. L. Franklin, Calhoun, Ga. Wagon-brake	570,333	Oct. 27	2892	687	77	585
Pendley, William, Hinton, assignor of one-half to R. L. Franklin, Calhoun, Ga. Automatic brake	573,791	Dec. 22	3051	723	77	1911
Penfield, Edward G., New Haven, Conn. Adjustable folding stand	571,980	Nov. 24	2758	650	77	1214
Penfield, William A., Meriden, Conn. Joint for members of bicycle-frames	573,695	Dec. 22	2899	685	77	1882
Péniakoff, Demitry A., Huy, Belgium. Making aluminate	572,026	Nov. 24	2827	.....	77	1247
Pennington, Edward J., Mount Carmel, Ill. Engine	570,439	Oct. 27	3091	735, 736	77	622
Pennington, Edward J., Cleveland, Ohio. Motor-vehicle	570,441	Oct. 27	3095	737	77	623
Pennington, Edward J., Chicago Heights, assignor to Motor Cycle Company, Chicago, Ill. Motor-vehicle	570,440	Oct. 27	3093	737	77	623

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Pennington, Edward J., Cleveland, Ohio, assignor to Motor Cycle Company, Chicago, Ill. Motor-vehicle	574,262	Dec. 29	3967	942, 943	77	2090
Pennington, John C., Paterson, N. J. Apparatus for filling and corking bottles	573,792	Dec. 22	3052	723	77	1911
Pennington, Walter W., Butte, Mont. Protractor	570,767	Nov. 3	640	147	77	755
Pennock, Willard, Minerva, Ohio. Metallic car	571,823	Nov. 24	2582	611, 612, 613	77	1180
Pennock, Willard, Minerva, Ohio. Metallic car	571,884	Nov. 24	2585	613, 614	77	1181
Pennock, Willard, Minerva, Ohio. Truck for railway-cars	574,074	Dec. 29	3382	856	77	2022
Pennsylvania Globe Gas Light Company. (See Lindsay Charles R., Jr., assignor.)						
Pennsylvania Iron Works Company. (See Grist, Benjamin W., assignor.)						
Penny, G. L. (See Rout, Benjamin F., assignor.)						
Pennycuick, James G., Toronto, Canada. Apparatus for lighting, heating, and cooking	571,014	Nov. 10	1072	250	77	866
Pennycuick, James G., assignor to J. L. Spink and T. W. Horn, trustees, Toronto, Canada. Vault-light	568,789	Oct. 6	134	32	77	27
Percifield, Clarence W., Rising Star, Tex. Riding-saddle	571,684	Nov. 17	2206	531	77	1090
Percy, Sylvanus T., Port Huron, assignor, by mesne assignments, to W. J. Hopkins, St. Clair, Mich. Dust-pan	572,180	Dec. 1	150	37	77	1307
Perdreaux, Emile J., assignor to H. S. Stallknecht, New York, N. Y. Overedge sewing machine	574,263	Dec. 29	3972	943, 944	77	2091
Perdrizet, Paul E. L., Paris, France. Glove-fastening	574,042	Dec. 29	3598	849	77	2012
Perdue, William J., Fort Smith, Ark. Ticket-book cover	571,390	Nov. 17	1710	407	77	1000
Perisse, Lucien, Paris, France. Cycle-saddle	569,977	Oct. 20	2206	525	77	443
Perkins, Charles G., assignor to Perkins Electric Switch Manufacturing Company, Hartford, Conn. Electric snap-switch	569,299	Oct. 13	1009	241	77	208
Perkins, Charles O., Petaluma, Cal. Handpiece for dental engines	572,310	Dec. 1	400	95	77	1355
Perkins Electric Switch Manufacturing Company. (See Perkins, Charles G., assignor.)						
Perkins Electric Switch Manufacturing Company. (See Powell, William H., assignor.)						
Perkins Electric Switch Manufacturing Company. (See Thomas, George B., assignor.)						
Perkins, Francis B., Boston, Mass., assignor to National Company, Chicago, Ill. Electric elevator	570,410	Oct. 27	3029	718	77	610
Perkins, Gaine W., *et al.* (See Linn, Allen D. and A. B., assignors.)						
Perkins, George E., Cambridge, Mass. Split roll or pulley	569,663	Oct. 20	1651	390	77	343
Perkins, Willis J., Grand Rapids, Mich. Shingle-machine	569,051	Oct. 6	578	132, 133	77	110
Perky, Henry D., Worcester, Mass. Machine for reducing and preparing cereals for food	571,284	Nov. 10	1535	364, 365	77	952
Perky, Henry D., Worcester, Mass. Machine for reducing cereals	571,285	Nov. 10	1538	365	77	953
Perley, Chauncy B., assignor to Jenks Ship Building Company, Port Huron, Mich. Steam steering apparatus	570,680	Nov. 3	487	114	77	729
Perlich, Albin, Dresden-Striesen, Germany. Lamp for producing spirit-gas incandescent gas-light	570,049	Oct. 27	2329	552	77	479
Perlich, Albin, Leipsic, Germany. Burner for spirit-gas incandescent lights	572,565	Dec. 8	838	201	77	1457
Perrault, Samuel J., and T. L. Bauer, Natchez, Miss. Stove attachment	573,793	Dec. 22	3053	723	77	1911
Perry, Arthur R. (See Folks, Thomas, assignor.)						
Perry, James A., Chicago, Ill. Sofa-bed	569,664	Oct. 20	1652	390	77	343
Perry, John, assignor of one-half to J. W. Anderson, Missouri Valley, Iowa. Regulator for feed-water heaters	570,927	Oct. 27	2655	630	77	542
Perry, Walter B., Dublin, Ga. Penholder	573,696	Dec. 22	2900	685	77	1882
Perry, William A., assignor to T. C. Miles, New York, N. Y. Furnace	569,665	Oct. 20	1653	390, 391	77	343
Person, Charles, St. Joseph, Mo. Bread box and slicer	572,920	Dec. 8	1291	310	77	1543
Persson, Per, assignor to Aktiebolaget Per Perssons Vaf-Och Stickmaskin, Stockholm, Sweden. Knitting-machine	569,347	Oct. 13	1094	260	77	226
Petreit, Albert, New York, N. Y. Burring or milling lathe	571,391	Nov. 17	1711	407	77	1000
Peters, Charles A. T., Dexter, Mo. Railway-tie	569,469	Oct. 13	1283	302	77	258
Peters, Heber C., assignor of one-half to J. H. Reed, Boston, Mass. Machine for cutting twist-drills, &c	569,565	Oct. 13	1469	346	77	293
Peters, John P., Philadelphia, Pa. Portable stove and burner	572,908	Dec. 8	1422	343	77	1572
Peters, Leonard A., Wauwatosa, assignor of one-half to Milwaukee Brass and Copper Works, Milwaukee, Wis. Oil-cup	568,920	Oct. 6	344	80	77	66
Peters Pump Company. (See Murchison, Roderick, assignor.)						
Petersen, Edward A. C., Chicago, Ill. Baker's oven	569,799	Oct. 20	1913	454	77	388
Petersen, Ernest, London, England. Automatic feed-water regulator, heater, and purifier	569,935	Oct. 20	2141	507	77	431
Peterson, Charles, assignor of one-half to A. McDonell, Omer, Mich. Kettle bail and cover	572,821	Dec. 8	1292	311	77	1543
Peterson, Cyrus A. (See Le Sieur, St. Vrain, assignor.)						
Peterson, Cyrus A., Stratton, Nebr. Telegraph-pole	574,364	Dec. 29	4135	982	77	2122
Peterson, Emil A., Appleton, Wis. Snow-shoe attachment for bicycles	573,034	Dec. 15	1660	399	77	1634
Peterson, John A., and G. Soderstrom, Sturgis, Mich. Combination bed and sofa	570,563	Nov. 3	245	61	77	683
Peterson, Oscar, Paterson, N. J. Sliding saddle-support for bicycles	572,273	Dec. 1	321	77	77	1340
Petgen, Charles J. *et al.* (See Cable, Daniel J., assignor.)						
Petithomme, Joseph L., Oakland, Cal. Car-axle box	573,417	Dec. 15	2349	561, 562	77	1760
Petraeus, Carl V., assignor to O. H. Picher, Joplin, Mo. Paint compound	571,128	Nov. 10	1288	.....	77	906
Petry, Nicholas A., Philadelphia, Pa. Cleaning or polishing implement	573,697	Dec. 22	2901	686	77	1882
Pettenkofer, Adolph, Brooklyn, N. Y. Kinetoscope	571,496	Nov. 17	1896	451	77	1033
Pettinati, Antonio, Rome, Italy. Bicycle	571,051	Nov. 10	1127	263, 264	77	877
Pettingill, Albert K. (See Pratt, John C., assignor.)						
Pettit, William V., New York, N. Y. Partition-block	570,733	Nov. 3	582	133	77	745
Petzold, Adolph. (See Hall and Petzold.)						
Peugh, George D., Salem, Ind. Wire-fence machine	574,264	Dec. 29	3975	944	77	2092
Pfauts, Daniel M., Philadelphia, Pa., assignor to Carriage Cycle Company, of New Jersey. Tricycle	573,285	Dec. 15	2117	508, 509	77	1718
Pfeiffer, Henry J., Pittsburg, Pa. Ice-cream mold and disher	571,170	Nov. 10	1346	314	77	917
Pfouts, Leroy S., assignor to F. M. Wyant, Canton, Ohio. Hot-air furnace	570,430	Oct. 27	3068	727, 728	77	618
Pfund, Herman, Madison, Wis. Device for handling books	571,789	Nov. 24	2416	576	77	1150
Phears, Robert L., Kansas City, Mo. Spirit-level	574,110	Dec. 29	3648	871	77	2034
Phelps, Albert E., Irvington, N. Y. Garment-stretching frame	569,885	Oct. 20	2043	486	77	412
Phelps, Edward P., Chicago, Ill. Ventilating apparatus for vehicles, &c	572,444	Dec. 1	631	149	77	1398

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Phelps, Edwin. (See Phelps, Walter J. and E.)						
Phelps, Walter J. and E., assignors of one-half to H. F. Going, Baltimore, Md. Can-soldering machine	573,035	Dec. 15	1661	399	77	1634
Phelps, Walter S., Indianapolis, Ind. Compound feed-motion for boring cylinders	570,050	Oct. 27	2331	552	77	479
Phifer, Washington I., assignor of one-fourth to O. Conrad, California, Mo. Pump	571,929	Nov. 24	2671	633	77	1197
Phillips, Cornelius J., New York, N. Y. Boiler-patch	571,096	Nov. 10	1219	285	77	894
Phillips, David E., Mahanoy City, Pa. Slate-picker	572,661	Dec. 8	1004	242, 243	77	1489
Phillips, Dewey, Arlington, Vt. Saw	571,955	Nov. 24	2717	643	77	1207
Phillips, Francis M., and E. Stebinger, Portland, Oreg. Excavator	573,698	Dec. 22	2902	686	77	1883
Phillips, George A., Columbus, Ind. Registering device	569,348	Oct. 13	1096	260	77	226
Phillips, George H., Geneva, N. Y. Grate	568,790	Oct. 6	135	33	77	28
Phillips, George P. (See Hill, Hally P., assignor.)						
Phillips, Henry, and W. Hunt, Ottumwa, Iowa. Car-loader	570,880	Nov. 3	839	195	77	796
Phillips, Henry J., Cranford, N. J. Range-shield	572,715	Dec. 8	1111	269	77	1509
Phillips, James R. (See Daellenbach and Phillips.)						
Phillips, James S. (See Graff, Conrad, assignor.)						
Phillips, William G., Hopedale, Ill. Stay-wire-winding machine	568,791	Oct. 6	137	33	77	28
Philpott, Horatio V., Buffalo, Tex. Gate	571,237	Nov. 10	1457	342	77	937
Philpott, William A., Jr. (See Briggs and Philpott.)						
Phinney, Edgar E., Haverhill, Mass. Car-fender	573,352	Dec. 15	2242	536	77	1740
Phinney, Etta W., Deering, Me., and L. Trinder, Boston, Mass.; said Phinney assignor to M. E. Whitney, Deering, Me. Running-board guard for street-cars	573,914	Dec. 29	3280	785	77	1968
Phinney, Horatio, Providence, R. I. Car-signal	571,885	Nov. 24	2588	614	77	1181
Phipps, Edward L., Milford, Mich. Refrigerator	572,822	Dec. 8	1293	311	77	1543
Phoenix Gas and Improvement Company. (See Janeway, John L., assignor.)						
Piaget, Louis A., Paterson, N. J. Diamond-tweezers	573,036	Dec. 15	1665	399	77	1635
Piatti, Paul J., assignor of one-third to O. A. Groeber, Woodside, N. Y. Combined coat and hat hanger and lock	570,228	Oct. 27	2656	630	77	542
Piceni, Gaëtan. (See Le Biois and Piceni.)						
Picher, Oliver H. (See Petraeus, Carl V., assignor.)						
Pick, Frank, *et al.* (See Warn, Edward T., assignor.)						
Pickett, Rufus S., New Haven, Conn. Book-mark	571,453	Nov. 17	1811	433	77	1019
Pickles, Charles K., assignor, by mesne assignments, to J. V. Pickles, St. Louis, Mo. Manufacture of cigarettes	569,052	Oct. 6	582	133	77	111
Pickles, Charles K., St. Louis, Mo., assignor to J. J. McCarthy, Chicago, Ill. Brake-beam	569,666	Oct. 20	1655	391	77	344
Pickles, Charles K., St. Louis, Mo., assignor to J. J. McCarthy, Chicago, Ill. Brake-beam	569,667	Oct. 20	1656	391	77	344
Pickles, J. V. (See Pickles, Charles K., assignor.)						
Pickring, Charles, Richmond, Canada. Smoke-stack	570,144	Oct. 27	2508	594	77	513
Pidgeon, Harry W. (See Hollar and Pidgeon.)						
Piedfort, Alfred, Paris, France. Receiver for submarine telegraphs	573,286	Dec. 15	2119	509	77	1718
Pieper, Gustav A., Rotterdam, Netherlands. Preparing cocoa	571,238	Nov. 10	1459	.....	77	938
Pierce, Arthur M. (See Fayette, Henry W., assignor.)						
Pierce-Crouch Engine Company. (See Crouch, Walker L., assignor.)						
Pierce, Frank M., and A. C. Warner, Allentown, Ill. End-gate	573,794	Dec. 22	3055	724	77	1912
Pierce, James H., West Bay City, Mich. Pipe-wrench	573,999	Dec. 29	3451	826	77	1998
Pierce, Kirk D., *et al.* (See Pease, Charles, assignor.)						
Pike, Charles F., Philadelphia, Pa. Pneumatic-despatch tube	573,037	Dec. 15	1666	400	77	1635
Pike, Edwin B., Haverhill, N. H. Bicycle attachment	570,681	Nov. 3	491	115	77	730
Pilkington, Robert G., St. Louis, Mo. Apparatus for dressing or polishing rolls	573,528	Dec. 22	2580	612, 613	77	1820
Pillings, George T., Cincinnati, Ohio, assignor to J. G. Beck, Baltimore, Md. Can-soldering machine	569,765	Oct. 20	1856	439, 440	77	377
Pimlott, Charles H. (See Plack and Pimlott.)						
Pinckert, Wilhelm, Stettin, and C. Prutz, Stargard, Germany. Railway-car coupling	569,668	Oct. 20	1658	391, 392	77	344
Pineo, Aubrey M., Gardner, Mass. Machine for setting saw-teeth	569,766	Oct. 20	1857	440	77	378
Pinkney, Charles W., Smethwick, assignor to Tangyes, Limited, Birmingham, England. Internal-combustion engine	571,239	Nov. 10	1460	342, 343	77	938
Piper, Charles E., Laconia, N. H. Currycomb	572,063	Nov. 24	2690	684	77	1240
Piesinger, Josef, Munich, Germany. Water-gage glass	572,181	Dec. 1	152	37	77	1307
Pillot, Theophile J. B., Marseilles, France. Knockdown box	571,790	Nov. 24	2417	576	77	1150
Pittavino, Giovani B., New York, N. Y. Stock and barrel extension for pistols or revolvers	570,145	Oct. 27	2509	595	77	514
Pittis, Charles D., St. Joseph, Mo. Clamp	573,227	Dec. 15	2120	509	77	1718
Pittman, Moses S., assignor of one-half to J. W. Wood, Independence, Mo. Stationary railway-switch	568,957	Oct. 6	412	92	77	78
Pittman, Reinhart W. (See Christiansen and Pittman.)						
Pittsburg Meter Company. (See Rund and Holmes, assignors.)						
Piutti, Arnaldo, Naples, Italy, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Parsethoxyphenylsuccinamic acid and making same	569,425	Oct. 13	1219	.....	77	247
Place, Phil S., Alfred, N. Y. Clay-separator	572,311	Dec. 1	401	95	77	1355
Placet, Emile, and J. Bonnet, Paris, France, assignors to Electro Metallurgical Company, Limited, London, England. Introducing chrome into metals or alloys	573,615	Dec. 22	2732	.....	77	1851
Plack, Henry, Jr., and C. H. Pimlott, Johnstown, Pa. Umbrella	570,857	Nov. 3	798	183	77	787
Plano Manufacturing Company. (See Carver, George H., assignor.)						
Plass, Reuben H., Brooklyn, N. Y. Self-propelling vehicle	570,952	Nov. 10	967	225	77	847
Plass, Reuben H., Brooklyn, N. Y. Self-propelling vehicle	571,392	Nov. 17	1712	407, 408	77	1000
Platt, James F. (See Tracy and Platt.)						
Platz, Frank A., Brooklyn, assignor of one-half to M. Benedik, New York, N. Y. Shirt-waist	570,051	Oct. 27	2332	553	77	480
Playford, George, Jr., Cleveland, Ohio. Mechanical-stoker furnace	570,268	Oct. 27	2737	651	77	557
Pleasants, Edward L. (See Moran, James T., assignor.)						
Pledger, Junius L., Pelham, Ala. Car-coupling	571,622	Nov. 17	2107	505	77	1072
Pless Dredging and Reclamation Company. (See Pless, William B., assignor.)						
Pless, William B., San Francisco, Cal., assignor to Pless Dredging and Reclamation Company. Dredging apparatus	572,769	Dec. 8	1205	291, 292	77	1526
Plumb, George E. (See Post, Adelbert E., assignor.)						
Plumley, Raymond L. (See Frederick and Plumley.)						
Plummer, William S., St. Louis, Mo. Can-filling machine	569,030	Oct. 6	539	124, 125	77	102
Pocock, Caroline S., Loudon, England. Mechanical toy and advertising-machine	571,015	Nov. 10	1074	250	77	866
Poehnert, Edward, Rockville, Conn. Loom	571,956	Nov. 24	2719	643	77	1207

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Poiesz, William F. (See Cuscaden and Poiesz.)						
Poindexter, Robert E., Indianapolis, Ind. Combined weather-boarding and try square	573,795	Dec. 22	3057	724	77	1912
Pointon, Charles E. (See Lewis and Pointon.)						
Poittimol, René A. (See Girardet, Pierre L., assignor.)						
Pokrants, Charles L. J., and J. C. de St. Hubert, San Francisco, Cal. Faucet and air-inlet attachment	568,921	Oct. 6	345	80	77	66
Polke, Josef, Vienna, Austria-Hungary. Barrel-machine	573,915	Dec. 29	3382	785	77	1968
Pollard, James H., Clarence, Mo. Folding shipping-crate	573,529	Dec. 22	2582	613	77	1820
Polleys, Charles G., Newport, R. I. Brake	569,124	Oct. 6	694	162	77	132
Pollock, James, Millburn, Ill. Tire-tightening washer	573,616	Dec. 22	2733	649	77	1851
Pond, Nathan C., Port Chester, N. Y. Seal-padlock	569,307	Oct. 13	1159	275	77	237
Pope, Charles, Chicago, Ill. Apparatus for manufacturing glucose or sugar from starch	570,183	Oct. 27	2576	612	77	527
Pope Manufacturing Company. (See Coppeland, James S., assignor.)						
Pope Manufacturing Company. (See Lorenz, William A., assignor.)						
Porsch, Ottokar, Orangeburg, assignor to Electric Chemical Company, New York, N. Y. Making chloroform and apparatus therefor	573,483	Dec. 22	2508	595	77	1807
Porteous, John, Cincinnati, Ohio. Ball-cock valve	573,530	Dec. 22	2583	613	77	1821
Porter, Benjamin, Ellendale, N. D. Adjustable bicycle handle-bar	568,349	Oct. 13	1098	260	77	226
Porter, David W., Allegheny, Pa. Mechanism for manufacturing car-axles	570,499	Nov. 3	113	28	77	659
Porter, George M. (See Gillespie, John, assignor.)						
Porter, George S., *et al.* (See Burkhardt, Robert W., assignor.)						
Porter, John C., St. Louis, Mo. Gas-generator	571,576	Nov. 17	2030	483	77	1058
Porter, Joseph E., Ottawa, Ill. Rail for hay-carriers, &c	570,334	Oct. 27	2893	687	77	585
Porter, Wilson E., assignor to New Haven Clock Company, New Haven, Conn. Watch-carrier	572,368	Dec. 1	501	118	77	1373
Porzelt, Eugene, Buda-Pesth, Austria-Hungary. Apparatus for setting type and signs by means of photography	568,988	Oct. 6	477	108	77	91
Post, Adelbert E., assignor to G. E. Plumb, Cleveland, Ohio. Harness-saddletree	571,393	Nov. 17	1714	408	77	1001
Post, Edward C., Monroe, Mich. Beer-tap	569,800	Oct. 20	1913	454	77	388
Post, Edward C., Monroe, Mich. Beer-tap	569,801	Oct. 20	1914	454	77	389
Potter, Albertus D., *et al.* (See Dennis, Henry P., assignor.)						
Potter, Edgar W., Rochester, N. Y. Finger-guard	569,936	Oct. 20	2144	508	77	432
Potter, Georgianna E. (See Edwards and Potter.)						
Potter, Henry W., Titusville, Pa. Rotary pump	569,350	Oct. 13	1099	261	77	227
Potter, Henry W., Wellington, New Zealand, assignor of one-half to S. Frankel, Sydney, New South Wales. Appliance for branding sheep or other animals	569,515	Oct. 13	1373	322	77	275
Potter, Hubbard C., New York, N. Y. Circular diamond saw and saw-tooth	570,564	Nov. 3	246	62	77	683
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Rail-support	571,454	Nov. 17	1811	433	77	1019
Potter, William B., Schenectady, N. Y., assignor to General Electric Company, of New York. Rail-support	571,455	Nov. 17	1812	433	77	1019
Potterton, Albert B. (See Potterton, Thomas, assignor.)						
Potterton, Thomas, assignor to A. B. Potterton, London, England. Safety-valve for boilers	569,670	Oct. 20	1664	393	77	345
Pottin, Henry, Paris, France. Cash-register	573,699	Dec. 22	2905	686, 687, 688	77	1883
Potts, Richard B., Edmond, Okla. Ter. Platoon gun-battery	573,353	Dec. 15	2244	537	77	1740
Powell, Albert M., Worcester, Mass. Feed-operator for metal-planing machines	570,953	Nov. 10	968	226	77	847
Powell, Albert M., Worcester, Mass. Automatic feed-stop for metal-planing machines	570,954	Nov. 10	971	226	77	848
Powell, Edward. (See Powell, John G., assignor.)						
Powell, James A., Ashland, Ky. Combined platform and gang-plank	571,497	Nov. 17	1897	452	77	1033
Powell, John G., assignor of one-half to E. Powell, Philadelphia, Pa. Knitting-machine	570,335	Oct. 27	2894	687, 688	77	585
Powell, William H., Hartford, Conn. Automatic circuit-breaker	571,097	Nov. 10	1220	285	77	894
Powell, William H., assignor to Perkins Electric Switch Manufacturing Company, Hartford, Conn. Electric switch	569,300	Oct. 13	1010	242	77	208
Powell, William H., assignor to Perkins Electric Switch Manufacturing Company, Hartford, Conn. Electric switch	569,301	Oct. 13	1014	242	77	209
Powell, William H., assignor to Perkins Electric Switch Manufacturing Company, Hartford, Conn. Electric switch	569,302	Oct. 13	1017	243	77	210
Powers, Edward, assignor of one-half to S. J. and J. H. Smith, Arkansas City, Kans. Farrowing-pen	569,516	Oct. 13	1375	322, 323	77	275
Powers, Frederick L. (See Meek and Powers.)						
Powers, Samuel L. (See Kinsley and Powers.)						
Powers, W. S. (See Reynolds, Adrian J., assignor.)						
Powers, Walter W., Rochester, N. Y. Office-directory	573,354	Dec. 15	2247	537	77	1741
Poyser, John, Mansfield, England. Weft-stopping mechanism for looms	570,815	Nov. 3	716	162, 163, 269, 270	77	771
Practical Closure Company. (See Lambert and Hoffman, assignors.)						
Prall, William E., Jr., New York, N. Y. Reversing mechanism for rotary engines	572,716	Dec. 8	1113		77	1510
Pramer, Philip M., Clear Lake, Iowa. Device for forming heel-calks on horseshoes	572,125	Dec. 1	56	14	77	1288
Prange, Robert L., assignor of one-half to W. Grevel, New York, N. Y. Ice-cream mold	571,171	Nov. 10	1347	314	77	917
Pranke, Stephen E., Buchanan, Va. Combination tap and die	574,216	Dec. 29	3888	925	77	2075
Pratt, Arthur E., Andover, S. D. Feeder for threshing-machines	570,336	Oct. 27	2897	688	77	585
Pratt, Charles A., Clinton, Mass. Tire for vehicle-wheels	569,566	Oct. 13	1473	346	77	294
Pratt, Charles R., New York, N. Y., assignor of one-half to Whittier Machine Company, Boston, Mass. Elevator	573,531	Dec. 22	2585	614	77	1821
Pratt, Edward H., Jersey City, N. J. Game apparatus	568,792	Oct. 6	138	33	77	28
Pratt, Frederick A., Pawtucket, R. I. Bowling-alley	572,073	Nov. 24	2946	693	77	1249
Pratt, George F., Canton, assignor of one-half to S. E. Brown, Collinsville, Conn. Wire-stretcher	569,229	Oct. 13	885	210	77	184
Pratt, George W., Peabody, assignor of one-half to S. A. Walton, Salem, Mass. Game apparatus	571,843	Nov. 24	2508	594	77	1166
Pratt, Henry C., Canandaigua, N. Y. Tension device for wire fences	571,930	Nov. 24	2672	633	77	1197
Pratt, Herbert L., Lewiston, Me., and C. T. Upton, Lowell, Mass. Machine for winding yarn from chains onto filling-bobbins	573,288	Dec. 15	2121	510, 511	77	1718
Pratt, John C., Hartford, Conn., assignor of one-half to A. K. Pettingill, Boston, Mass. Chainless change-gear bicycle	573,102	Dec. 15	1785	429, 430, 630	77	1657
Pratt, Nat W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Steam-generator	570,229	Oct. 27	2638	631, 632, 633	77	542
Pratt, Nat W., Brooklyn, assignor to Babcock & Wilcox Company, New York, N. Y. Means for closing tubes of steam-generators	571,016	Nov. 10	1075	251	77	866

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pratt, Timothy D., assignor of one-half to W. E. Burrows, Providence, R. I. Curtain-rod	569,010	Oct. 6	509	115	77	97
Pratt, Walter L., and F. E. Ripley; said Ripley assignor to R. F. Steele, Adams, N. Y. Automatic safety circuit-closer	570,955	Nov. 10	972	227	77	848
Pratt & Whitney Company. (See Thompson, Frank E., assignor.)						
Prentice, Albert F., *et al.* (See Prentice, Benjamin W., assignor.)						
Prentice, Benjamin W., assignor to V. F. and A. F. Prentice, Worcester, Mass. Sectional expansion-tap	572,445	Dec. 1	633	150	77	1398
Prentice, George G., New York, N. Y. Multiple screw-machine	574,162	Dec. 29	3745	894, 895	77	2051
Prentice, George G., New York, N. Y. Multiple screw-machine	574,163	Dec. 29	3751	895, 896	77	2052
Prentice, Vernon F., *et al.* (See Prentice, Benjamin W., assignor.)						
Prentiss Clock Improvement Company. (See Prentiss, Henry S., assignor.)						
Prentiss, Henry S. (See Bagley, Charles H., assignor.)						
Prentiss, Henry S., Elizabeth, N. J., assignor to Prentiss Clock Improvement Company, of New Jersey. Self-winding clock	572,274	Dec. 1	322	77	77	1341
Prescott, George W., Eau Claire, Wis. Steam-offset for sawmill-carriages	569,671	Oct. 20	1665	394	77	345
Prew, David, Providence, R. I. Brake-shoe	569,878	Oct. 20	2210	525	77	443
Price, Abel F., U. S. Navy. Bicycle-gearing	570,052	Oct. 27	2333	553	77	480
Price, Benjamin, Mortiston, assignor of two-thirds to R. Laybourne and C. W. E. Marsh, Newport, England. Apparatus for manufacturing metal tubes	570,816	Nov. 3	717	163, 164, 165	77	771
Price, Edgar F., Newark, N. J. Electric furnace	572,312	Dec. 1	403	96	77	1355
Price, Isaac W., Rossean, Ohio. Vehicle-brake	571,240	Nov. 10	1463	343	77	938
Price, Thomas. (See Robertson, James C., assignor.)						
Price, William G., assignor of one-half to M. K. Bowen, Chicago, Ill. Street-car brake	572,823	Dec. 8	1295	311	77	1543
Price, William G., assignor of one-half to M. K. Bowen, Chicago, Ill. Street-car brake	572,824	Dec. 8	1300	312	77	1545
Price, William G., assignor of one-half to M. K. Bowen, Chicago, Ill. Street-car brake	572,825	Dec. 8	1302	312	77	1545
Price, William H. (See Fee, John W., assignor.)						
Price, William M., Philadelphia, Pa. Automatic measuring and registering faucet	571,685	Nov. 17	2207	532	77	1090
Prideaux, Lewis, Philadelphia, Pa. Shaft or tongue coupling	569,426	Oct. 13	1220	286	77	247
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Camden, N. J. Purifying and decolorizing saccharine or other liquids	573,289	Dec. 15	2126	511	77	1719
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Philadelphia, Pa., and Camden, N. J. Purifying and decolorizing saccharine or other liquids	573,290	Dec. 15	2130	511, 512	77	1720
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Camden, N. J. Apparatus for purifying and decolorizing saccharine or other liquids	573,355	Dec. 15	2249	538	77	1741
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Camden, N. J. Apparatus for decolorizing sugar	574,000	Dec. 29	3452	826	77	1998
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Camden, N. J. Process of and apparatus for purifying, rectifying, and deodorizing alcoholic or other liquids	574,111	Dec. 29	3649	871	77	2034
Pridham, Marshall, Philadelphia, Pa., assignor to Electric Rectifying and Refining Company, Camden, N. J. Apparatus for generating ozone	574,341	Dec. 29	4103	974, 975	77	2116
Pries, Herman, and J. W. Meyer, Michigan City, Ind. Grain-door	570,269	Oct. 27	2739	651, 652	77	537
Priest, Joseph K., Nashua, N. H. Animal-shears	571,241	Nov. 10	1467	343	77	939
Priest, Joseph K., Nashua, N. H. Hair-clipper	572,027	Nov. 24	2228	667	77	1227
Priestly, Frank C. (See Balsley and Priestly.)						
Prindle, Henry U., and E. T. Lampton, Woodland, Cal. Bicycle-handle and bell-ringer	571,394	Nov. 17	1715	408	77	1001
Pringle, Eugene, Gloversville, N. Y., assignor to M. D. Shipman and C. E. Bradt, De Kalb, Ill. Separable button	573,532	Dec. 22	2587	614	77	1822
Pringle, Eugene, Gloversville, N. Y., assignor to M. D. Shipman and C. E. Bradt, De Kalb, Ill. Separable button	574,965	Dec. 29	3975	944	77	2092
Pringle, Eugene, Gloversville, N. Y., assignor to M. D. Shipman and C. E. Bradt, De Kalb, Ill. Separable button	574,966	Dec. 29	3977	945	77	2092
Pringle, Eugene, Gloversville, N. Y., assignor to M. D. Shipman and C. E. Bradt, De Kalb, Ill. Separable button	574,967	Dec. 29	3979	945	77	2092
Pringle, Eugene, Gloversville, N. Y., assignor to M. D. Shipman, C. E. and S. E. Bradt, De Kalb, Ill. Separable button	573,573	Dec. 22	2589	614	77	1822
Pringle, Mark W., Cloud Chief, Okla. Ter. Device for cutting corn, &c	569,725	Oct. 20	1785	424	77	366
Printing Telegraph News Company. (See Merritt and Joy, assignors.)						
Pritchard, Albert R., and J. M. Selimayer, Rochester, N. Y. Abrading-machine	570,184	Oct. 27	2578	612	77	527
Proctor, James M., Sturgeon, Mo. Gate or door hook	572,446	Dec. 1	634	150	77	1398
Proctor, Joseph E., assignor of five-eighths to S. H. Howe, Marlborough, Mass. Machine for attaching uppers to soles of boots or shoes	570,768	Nov. 3	641	147	77	735
Proctor, Lewis S., Sheffield, Ala. Railway-rail and chair or bed	569,388	Oct. 13	1160	276	77	227
Prokop, Frank J., Dolgeville, N. Y. Hair-pin	569,053	Oct. 6	585	133	77	112
Prouty, Enoch, assignor of one-half to O. S. Prouty, Chicago, Ill. Power-transmitter for road-wagons	570,501	Nov. 3	119	29	77	660
Prouty, Enoch, assignor to O. S. and E. Prouty, Chicago, Ill. Gasolene or vapor engine	570,500	Nov. 3	115	28, 29	77	659
Prouty, Enoch, assignor to O. S. and E. Prouty, Chicago, Ill. Muffler for engines	570,502	Nov. 3	121	30	77	661
Prouty, Olive S., *et al.* (See Prouty, Enoch, assignor.)						
Provoost, Charlotte A., Buffalo, N. Y. Bandage	571,172	Nov. 10	1348	314	77	917
Pruitt, Andrew L., Hico, assignor of one-half to J. Meriwether, Pearsall, Tex. Wire-stretcher and reel-carrier	570,817	Nov. 3	721	165	77	772
Prutz, Carl. (See Pinckert and Prutz.)						
Pryor, Robert W., and C. Schaetzle, Newark, N. J., assignors to W. W. Pryor Hardware Manufacturing Company, of New Jersey. Spring belt-punch	574,164	Dec. 29	3756	896	77	2053
Puffer, Frederic E., Newton, Mass., assignor to Warren-Scharf Asphalt Paving Company, New York, N. Y. Paving-roller	572,447	Dec. 1	635	150	77	1399
Pullen, Leon W., Camden, N. J. Telephone-transmitter	573,356	Dec. 15	2254	538	77	1742
Punchard, John H. (See Darby, Walter and I., assignors.)						
Punchard, John H. (See Darby and Punchard.)						
Purdum, Samuel E., Macomb, Ill. Adjustable trace-loop	574,165	Dec. 29	3757	897	77	2054
Purdy, Henry E., Michigan City, Ind. Router	569,054	Oct. 6	586	134	77	112
Purdy, John W. (See Courtright and Purdy.)						
Purdy, Walter, Somerset, Pa. Device for sharpening edged tools	570,337	Oct. 27	2899	688	77	586
Purinton, Judson K., Des Moines, Iowa. Cooking utensil	573,291	Dec. 15	2135	512	77	1720
Purnell, Richard H., Rosedale, Miss. Plow	572,028	Nov. 24	2830	667	77	1227
Pursell, John, New Haven, Conn. Device for suspending curtains	572,616	Dec. 8	932	226	77	1475
Pusey, Joshua, Lima, Pa. Package-tie	573,700	Dec. 22	2912	688	77	1884

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Pusey, Thomas, Stockton, Cal., T. H. Latimer and T. H. Savery, Wilmington, Del. Automatic tightener for drier-felts of paper-making machines	569,031	Oct. 6	543	125	77	103
Pusey, Thomas M., Kennet, Pa. Voltage-regulator for dynamos	574,217	Dec. 29	3690	926	77	2076
Putnam, Alfred E., Milan, Mich. Bicycle-holder	572,770	Dec. 8	1207	292	77	1526
Putnam, John, Philadelphia, Pa. Pitcher or other vessel	569,351	Oct. 13	1101	261	77	227
Putney, W. E., *et al.* (See Gates, Eugene N., assignor.)						
Putt, John W., Nine Mile, Ind. Farm-gate	570,714	Nov. 3	544	126	77	739
Püttmann, Theodor B. (See Claus, Püttmann, and Felix.)						
Pyle, George C., assignor of one-half to F. H. Ewers, Indianapolis, Ind. Electric-arc lamp	570,053	Oct. 27	2335	553, 554	77	480
Pyott, Louis T., Philadelphia, Pa. Variable-speed mechanism	571,395	Nov. 17	1717	409	77	1001
Quast, Charles, Bucyrus, Ohio. Clutch	571,396	Nov. 17	1719	409	77	1002
Queisser, Paul F. H., Charlottenburg, Germany, assignor to Siemens & Halske Electric Company of America, Chicago, Ill. Electric-arc lamp	573,617	Dec. 22	2734	650	77	1851
Quell, John A. (See Lehmann, Richard, assignor.)						
Quereau, Evelyn M., Peekskill, N. Y. Hook and eye	569,767	Oct. 20	1860	441	77	378
Querfurth, Thurso von, New York, N. Y. Oil-engine	569,672	Oct. 20	1667	394, 395	77	346
Quiggin, Daniel A., Blundell Sands, England. Evaporator	571,242	Nov. 10	1469	344	77	939
Quigley, John H., assignor to J. B. Jones, Milwaukee, Wis. Wire-fence tool	572,826	Dec. 8	1304	312	77	1516
Quinby, Henry R., Rochester, N. Y. Switch for electric lamps	571,791	Nov. 24	2419	576	77	1150
Quinby, Henry R., Rochester, N. Y. Electric-arc lamp	571,792	Nov. 24	2420	577	77	1150
Quincy, Charles F. (See Lencke, John K., assignor.)						
Quintus, Charles. (See Quintus, Frank, P., and C.)						
Quintus, Charles and F., J. Ritchie, P. Quintus, P. Beebe, and F. Lukermann, Freeport, Ill. Threshing-machine	573,916	Dec. 29	3284	785, 786	77	1968
Quintus, Frank. (See Quintus, Ritchie, Quintus, Beebe, and Lukermann.)						
Quintus, Frank, P., and C., Freeport, Ill. Band-cutter and feeder for threshing-machines	569,230	Oct. 13	886	210, 211, 212	77	125
Quintus, Paul. (See Quintus, Frank, P., and C.)						
Quintus, Paul. (See Quintus, Ritchie, Quintus, Beebe, and Lukermann.)						
R. E. Dietz Company, *et al.* (See Wright, Frederick K., assignor.)						
Raburn, John C. F., *et al.* (See Taylor, James T., assignor.)						
Rach, Carl, Chicago, Ill. Malted food	573,236	Dec. 15	2024	.....	77	1701
Radant, August F., Wausau, Wis. Calipers	572,827	Dec. 8	1305	313	77	1516
Radclyffe, Dick E., and T. Burrows, London, England. Machine for preparing fiber	571,173	Nov. 10	1349	315	77	918
Rader, Jackson L., *et al.* (See Taylor, James T., assignor.)						
Raders, Joseph F., New York, N. Y. Yielding device	573,534	Dec. 22	2590	614	77	1822
Radke, Charles H., Kaukauna, Wis. Furnace-grate	572,275	Dec. 1	324	77	77	1341
Rae, John, New York, N. Y. Arc-lamp	572,064	Nov. 24	2900	684	77	1240
Raenchle, William, assignor to Champion Button Hole Machine Company, Boston, Mass. Buttonhole-sewing machine	574,166	Dec. 29	3758	897	77	2054
Raiffeisen, Carl J., assignor to J. A. Lamy Manufacturing Company, Sedalia, Mo. Overalls, &c.	573,292	Dec. 15	2136	512	77	1720
Railsback, Lafayette D., Indianapolis, Ind. Ice-cream freezer	573,293	Dec. 15	2137	513	77	1721
Railton, James, New Bedford, Mass., assignor to Northrop Loom Company, Saco, Me., and Hopedale, Mass. Shuttle	574,112	Dec. 29	3652	871	77	2034
Rainey, James L. (See Hart, Ozias P., assignor.)						
Rainey, John M., assignor of one-half to P. White, Kellerton, Iowa. Automatic car and air-brake coupling	574,268	Dec. 29	3981	945, 946	77	2093
Ramage, Alexander S., assignor to J. C. Gilchrist, Cleveland, Ohio. Electrolysis of iron	570,956	Nov. 10	974	.....	77	848
Rammoser, Albert, assignor to G. Lowenberg, Berlin, Germany. Self-igniting burner	572,093	Nov. 24	2998	703	77	1257
Ranck, Joseph H., Hustontown, Pa. Horseshoe-nail clencher	570,185	Oct. 27	2580	613	77	528
Rand, Charles N., Geneva, assignor of one-half to E. G. Wetherbee, Painesville, Ohio. Organ-reed-tuning machine	573,103	Dec. 15	1789	430, 431	77	1658
Randall, Charles F., Denver, Colo. Trolley-catcher	569,352	Oct. 13	1102	261	77	227
Randall, Charles F., Denver, Colo. Trolley adjusting and regulating device	573,535	Dec. 22	2392	615	77	1822
Rankin, James W., Deep River, Conn. Chair	572,717	Dec. 8	1115	270	77	1510
Ransom, William A., Jr. (See Faris, Richard W., assignor.)						
Ransome, Ernest L., Chicago, Ill. Illuminating-floor	570,102	Oct. 27	2435	578	77	500
Ranson, George O., assignor to himself and W. B. Lobner, Portland, Oreg. Vending device	572,029	Nov. 24	2831	667	77	1227
Rappe, Emil, Chicago, Ill., assignor to H. J. Hopkins, Pleasantville, Pa. Gas-engine	571,498	Nov. 17	1899	452, 453	77	1034
Rarer, George W. (See Langer, Gotthold, assignor.)						
Rasbury, Robert J. (See Johnson, Lewis, assignor.)						
Rathbun, Henry E., and F. Bebby, Pawtucket, R. I.; said Rathbun assignor to said Bebby. Flash-light apparatus for photographic purposes	572,718	Dec. 8	1116	270	77	1510
Rau, John, assignor to F. L. and J. E. Salisbury and C. E. Brinckerhoff, Chicago, Ill. Bicycle	571,793	Nov. 24	2421	577	77	1151
Rauert, Henry A., assignor of one-half to R. Swain, Portland, Oreg. Combined bicycle pants-guard and lock	573,104	Dec. 15	1791	431	77	1658
Rauk, William. (See Young and Rauk.)						
Raverot, Pierre E., and G. A. Hess, Paris, France. Telephone-exchange system	569,470	Oct. 13	1224	302	77	259
Rawl, David, Batesburg, S. C. Cotton-picker	574,218	Dec. 29	3992	926, 927	77	2076
Rawlings, Samuel V. (See Holley and Rawlings.)						
Ray, Charles O., Gray, Me., assignor to Chase Lasting Machine Company, Portland, Me., and Boston, Mass. Pad-holder for lasting-machines	569,231	Oct. 13	890	212	77	186
Ray, Forest A., Boston, Mass. Telephone-transmitter	572,182	Dec. 1	153	37	77	1307
Ray, Forest A., assignor to H. A. Clark, trustee, Boston, Mass. Telephone-transmitter	573,294	Dec. 15	2139	513	77	1721
Ray, Francis B., New York, N. Y. Bicycle-trainer	574,167	Dec. 29	3762	898	77	2055
Ray, Francis B., assignor of one-half to F. S. Ray, New York, N. Y. Bicycle-seat	574,342	Dec. 29	4105	975	77	2117
Ray, Frank S. (See Ray, Francis B., assignor.)						
Ray, Frederick L., East Haddam, Conn. Handle	569,768	Oct. 20	1861	441	77	378
Ray, George R., Manistee, Mich. Duplex steam-engine	570,054	Oct. 27	2338	554, 555	77	481
Ray, Henry S. G., Louisiana, Mo. Sash-fastener	573,295	Dec. 15	2140	513	77	1721
Ray, Joseph T., 2d, Newport, R. I. Shoe-polishing machine	573,917	Dec. 29	3986	786	77	1969
Raybould, Samuel, Nelsonville, Ohio. Combined coal cutting and drilling machine	574,237	Dec. 15	2025	485	77	1701
Raymond, Edward B., Schenectady, N. Y., assignor to General Electric Company, of New York. Collecting-brush	573,105	Dec. 15	1791	431	77	1659
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Heel-nailing machine	569,055	Oct. 6	587	134	77	112

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Heel-nailing machine	569,517	Oct. 13	1377	323, 324	77	276
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-strip	569,886	Oct. 20	2044	487	77	412
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Heel nailing and compressing machine	570,437	Oct. 27	3087	732, 733, 734	77	621
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Heel-nailing machine	570,648	Nov. 3	423	99, 100, 101	77	716
Raymond, Freeborn F., 2d, Newton, assignor to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail distributing and driving machine	571,499	Nov. 17	1903	453, 454	77	1034
Raymond, Freeborn F., 2d, Newton, and C. H. Fogg, Hyde Park, assignors to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Nail-feeding device	569,518	Oct. 13	1380	324, 325, 326	77	276
Raymond, Freeborn F., 2d, Newton, and C. H. Fogg, Hyde Park, assignors to J. W. Brooks, Petersham, and J. Brooks, Cambridge, Mass., trustees. Device for feeding nails	571,931	Nov. 24	2673	633, 634	77	1198
Reagan, Harry C., Jr., Philadelphia, Pa. Electric railway	570,565	Nov. 3	247	62	77	684
Reagan, Harry C., Jr., Philadelphia, Pa. Magnetic path for underground electric railways	570,566	Nov. 3	251	63	77	684
Ream, James D., and M. Lewis, Broken Bow, Nebr. Grain-elevator	572,448	Dec. 1	636	150, 151	77	1399
Reain, John L., assignor of one-half to J. C. Briggs, Axtell, Kans. Horseshoeing-rack	570,692	Nov. 3	492	115	77	730
Rebmann, Harry F., Philadelphia, Pa. Cover for stop-cock boxes and frame therefor	572,217	Dec. 1	214	52	77	1318
Record, George J., Conneaut, Ohio. Device for removing covers of cans or other receptacles	571,794	Nov. 24	2423	577	77	1151
Redding, Jacob, New Castle, Ind. Device for changing gear of bicycles	572,628	Dec. 8	1306	313	77	1546
Redding, William H., Worcester, Mass. Doup-heddle for leno-weaving	571,795	Nov. 24	2424	578	77	1151
Redfield, Charles T., Glen Haven, N. Y. Nut-lock	571,286	Nov. 10	1540	365	77	953
Redmond, Daniel H., and C. B. Baldwin, Philadelphia, Pa. Umbrella rib and stretcher	571,623	Nov. 17	2108	506	77	1072
Reece, John, deceased, Boston, Mass.; M. Reece and F. A. Shea, administrators. Sewing-machine for finishing buttonhole-pieces	571,796	Nov. 24	2425	578	77	1152
Reece, Marietta, *et al.*, administrators. (See Reece, John.)						
Reece, William H., assignor to J. Stone, Northampton, Mass. Switch-throwing device	571,733	Nov. 17	2312	552	77	1110
Reed, Carroll H., New York, N. Y. Mucilage-bottle	568,922	Oct. 6	346	80	77	66
Reed, Charles J., *et al.* (See Linn, Allen D. and A. B., assignors.)						
Reed, Charles J., Orange, N. J. Magnetic ore-separator	572,369	Dec. 1	502	118	77	1373
Reed, Charles J., Orange, N. J. Mechanism for separating magnetic from non-magnetic substances	572,370	Dec. 1	505	119	77	1374
Reed, J. Warren. (See Neighbours, Charles C., assignor.)						
Reed, James H. (See Peters, Heber C., assignor.)						
Reed, James F., Millvale, Pa. Air-chamber	571,243	Nov. 10	1470	344	77	940
Reed, John C., Allegheny, Pa. Cast-metal article	570,769	Nov. 3	643	147	77	756
Reed, John C., Allegheny, Pa. Water-closet	571,244	Nov. 10	1471	345	77	940
Reed, Lloyd. (See Kelley, Isaac M., assignor.)						
Reed, Norman H., Santa Barbara, Cal. Photographic-card drier	570,338	Oct. 27	2900	688	77	586
Reed, Orlando B., *et al.* (See Becker, Adolph, assignor.)						
Reed, William T. (See Kihn and Reed.)						
Reel, John, assignor of one-half to J. A. Sanderson, French Camps, Miss. Clevis	571,680	Nov. 17	2209	532	77	1091
Reel, John, assignor of one-half to J. A. Sanderson, French Camps, Miss. Harness attachment for vehicles	571,797	Nov. 24	2428	578	77	1152
Rees, Charles S. (See Essick and Rees.)						
Rees, Thomas M., Pittsburg, Pa. Steam-boiler	574,001	Dec. 29	3454	826, 827	77	1998
Reeve, Budd, Buxton, N. D. Means for treating seed	571,017	Nov. 10	1076	251	77	867
Reeves, Clinton W., Los Angeles, Cal. Mucilage-bottle	571,456	Nov. 17	1813	433	77	1019
Regan, John W., Boston, Mass. Hose-nozzle	568,876	Oct. 6	220	65	77	54
Regan, John W., Boston, Mass. Door-opener	569,056	Oct. 6	588	134	77	113
Regan, Valley C., Rockford, Ill. Starching-machine	571,798	Nov. 24	2429	579	77	1152
Regnier, Moses, Ghent, Minn. Band-cutter and spreader for threshing-machines	573,701	Dec. 22	2914	629	77	1894
Rehbein, Albert C., Menominee, Mich. Patch for bicycle-tires	568,794	Oct. 6	139	34	77	29
Rehfuss, George, J. G., and M. O., assignors to C. C. Hancock, Philadelphia, Pa. Apparatus for manufacturing hair-pins	573,536	Dec. 22	2594	615, 616	77	1823
Rehfuss, John G. (See Rehfuss, George, J. G., and M. O.)						
Rehfuss, Martin O. (See Rehfuss, George, J. G., and M. O.)						
Rehill, John W., Somerville, N. J. Cash-register	570,818	Nov. 3	723	165, 166	77	772
Rehm, Jacob F., Chicago, Ill. Fruit cutting and pitting machine	569,838	Oct. 20	1970	468, 469	77	399
Reichard, George A., Minneapolis, Minn. Condenser	570,103	Oct. 27	2435	579	77	500
Reichardt, Ferdinand A., New York, N. Y. Tool and tool-handle	574,043	Dec. 29	3529	843	77	2012
Reichel, Carl G. M., Altona, Germany. Smoke-helmet	571,018	Nov. 10	1077	251	77	867
Reichenbach, John, Egg Harbor City, N. J. Axle-lubricator	572,276	Dec. 1	325	78	77	1341
Reichenbach, William F., Rochester, N. Y. Indicator	573,106	Dec. 15	1792	432	77	1659
Reid, Charles H., Danbury, Conn. Hat-pinning-out machine	570,715	Nov. 3	546	127	77	740
Reid, Charles H., Danbury, Conn. Hand-operated hat-rounding machine	570,734	Nov. 3	584	134, 135	77	746
Reid, Edwin S., New York, N. Y., assignor to Standard Underground Cable Company, Pittsburg, Pa. Terminal for electric cables	574,343	Dec. 29	4106	975	77	2117
Reid, Walter F., Addlestone, and E. J. V. Earle, London, England. Nitro compound	568,877	Oct. 6	282	.....	77	54
Reid, William A. (See Carey and Reid.)						
Reid, William A., assignor to N. O. Nelson Manufacturing Company, St. Louis, Mo. Chain-making machine	573,537	Dec. 22	2600	616, 617	77	1824
Reilly, Robert M., Baltimore, Md. Clamping-jaw for vises	569,057	Oct. 6	589	135	77	113
Reily John P., assignor of two-thirds to W. B. Addington, and C. W. Block, St. Louis, Mo. Sleeve-protector	569,471	Oct. 13	1286	303	77	259
Reily, John P., assignor of two-thirds to W. B. Addington, and C. W. Block, St. Louis, Mo. Sleeve-protector	569,472	Oct. 13	1287	303	77	259
Reimer, Johann D. H., Hamburg, Germany. Jacket for steam-pipes	568,989	Oct. 6	480	109	77	91
Reimers, Ferdinand, Davenport, Iowa. Cultivator or plow	572,829	Dec. 8	1310	314	77	1547
Reinert, John F., assignor of one-half to E. G. Hammond, Elgin, Ill. Automatic hoisting, carrying, and lowering mechanism	568,990	Oct. 6	481	109	77	92
Reinstine, Nathan. (See Dorn and Reinstine.)						
Reising, Casper. (See Lorens and Reising.)						
Reissmann, Frederick, West Point, N. Y. Miter-gage attachment for rules	571,052	Nov. 10	1129	264	77	878
Reist, Henry G., Schenectady, N. Y., assignor to General Electric Company, of New York. Securing field-magnet poles	573,107	Dec. 15	1794	432	77	1659

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Reith, Anton. (See Adams, Lawson, assignor.)						
Remington Arms Company. (See Bradley, Hazen W., assignor.)						
Remington Arms Company. (See Fay, Rimmon C., assignor.)						
Remus, August E., assignor of one-third to C. J. Gotsch, Oak Park, Ill. Wheel-measure	571,313	Nov. 10	1586	377	77	963
Renshaw, Alfred H. (See McKeen and Renshaw.)						
Rensselaer Manufacturing Company. (See Rowe, Ellis L., assignor.)						
Reppeto, William H., and J. M. Martin, Greenville, Ohio. Fence	572,719	Dec. 8	1117	270	77	1511
Rethey, Benjamin N., Champaign, Ill. Mandolin	573,357	Dec. 15	2256	539	77	1743
Rettig, Frank J., North Manchester, assignor to Buckeye Manufacturing Company, Anderson, Ind. Igniter for gas-engines	573,296	Dec. 15	2141	514	77	1721
Reuther, John. (See Reuther, William and J.)						
Reuther, William and J., Elma, N. Y. Potato-digger	572,567	Dec. 8	840	202	77	1457
Revelle, Hardy N., M. M. Ford, and J. W. Kelley, Buchanan, Ga. Traction-motor	572,371	Dec. 1	508	119, 120	77	1374
Reyburn, John E., Philadelphia, Pa. Air-brake	568,923	Oct. 6	347	80	77	67
Reynolds, Adrian J., assignor of one-half to W. S. Powers, Nashville, Mich. Hose-nozzle	571,799	Nov. 24	2430	579	77	1192
Reynolds, Edward F., Ashland, Wis. Discharge apparatus for pivoted spouts	570,055	Oct. 27	2340	555	77	481
Reynolds, George H., assignor to Crane Elevator Company, Chicago, Ill. Pump check and relief valve	571,887	Nov. 24	2391	614, 615	77	1182
Reynolds, John H., assignor of one-half to C. H. Klinck and F. H. Burpee, New London, Conn. Air-compressor	572,372	Dec. 1	509	120	77	1375
Reynolds, John R., Hartford, Conn. Automatic speed-limit for engines	571,957	Nov. 24	2720	643	77	1208
Reynolds, John S. (See Stanley and Reynolds.)						
Reynolds, Noah H., assignor of one-half to C. W. Davidson, Grand Rapids, Mich. Automatic shutter for fire protection	574,002	Dec. 29	3457	827	77	1999
Rheaum, Emere. (See Sjolander, Eric O., assignor.)						
Rhegness, William E. (See Jackson and Rhegness.)						
Rhind, Frank, assignor to Bridgeport Brass Company, Bridgeport, Conn. Bicycle-lantern	570,893	Nov. 3	867	201	77	802
Rhind, Frank, assignor to Bridgeport Brass Company, Bridgeport, Conn. Bicycle-lamp	570,894	Nov. 3	869	202	77	802
Rhodes, Daniel H., Wellington, Kans. Railway-track gage	569,587	Oct. 13	1514	357	77	302
Rhodes, John F., Athens, Ga. Pea-thresher	570,209	Oct. 27	2623	622	77	536
Rhodes, Joshua. (See Nuttall, Thomas B., assignor.)						
Rice, Charles E., and S. F. Ettinger, assignors of one-half to A. N. Johnson, trustee, Little Rock, Ark. Car-fender	574,344	Dec. 29	4107	976	77	2117
Rice, Edmund, U. S. Army. Cape	573,618	Dec. 22	2735	650	77	1851
Rice, Edmund, U. S. Army. Shelter-tent	573,918	Dec. 29	3287	786, 787	77	1969
Rice, John H. (See Leighton and Rice.)						
Rice, John T., Little River, Tex. Knee-pad	573,919	Dec. 29	3288	787	77	1969
Rice, Richard H., Providence, R. I. Cylindrical rotary valve	571,687	Nov. 17	2210	532	77	1091
Rich, Francis A., Telluride, Colo. Electric steam and gas engine	572,449	Dec. 1	639	151	77	1400
Richard, Julius, and F. Colman, Bisbee, Ariz. Ter.; said Richard assignor to said Colman. Wrench	573,702	Dec. 22	2916	689	77	1884
Richards, Dora L. (See Richards, Sierra L., assignor.)						
Richards, Edward N., Springfield, Mass. Truck for railway-cars	571,932	Nov. 24	2680	634, 635	77	1200
Richards, Francis H., Hartford, Conn. Weighing-machine	570,291	Oct. 27	2774	660, 661	77	564
Richards, Francis H., Hartford, Conn. Weighing-machine	570,292	Oct. 27	2780	661, 662	77	564
Richards, Francis H., Hartford, Conn. Weighing-machine	570,293	Oct. 27	2785	662, 663	77	565
Richards, Francis H., Hartford, Conn. Weighing-machine	570,294	Oct. 27	2789	664	77	566
Richards, Francis H., Hartford, Conn. Weighing-machine	570,295	Oct. 27	2796	665, 666	77	567
Richards, Francis H., Hartford, Conn. Weighing-machine	570,296	Oct. 27	2803	666	77	568
Richards, Francis H., Hartford, Conn. Weighing-machine	570,297	Oct. 27	2807	667	77	568
Richards, Francis H., Hartford, Conn. Weighing-machine	570,298	Oct. 27	2812	668, 669	77	569
Richards, Francis H., Hartford, Conn. Weighing-machine	570,299	Oct. 27	2818	669, 670	77	570
Richards, Francis H., Hartford, Conn. Supply apparatus for weighing-machines	570,300	Oct. 27	2824	671	77	571
Richards, Francis H., Hartford, Conn. Weighing-machine	570,301	Oct. 27	2826	671, 672	77	572
Richards, Francis H., Hartford, Conn. Weighing-machine	570,302	Oct. 27	2831	672, 673	77	573
Richards, Francis H., Hartford, Conn. Weighing-machine	570,303	Oct. 27	2836	673, 674	77	574
Richards, Francis H., Hartford, Conn. Weighing-machine	570,304	Oct. 27	2842	674, 675	77	575
Richards, Francis H., Hartford, Conn. Shuttle-actuating mechanism for sewing-machines	571,457	Nov. 17	1814	434	77	1019
Richards, Francis H., Hartford, Conn. Weighing-machine	572,065	Nov. 24	2901	685	77	1240
Richards, Francis H., Hartford, Conn. Weighing-machine	572,066	Nov. 24	2904	685, 686	77	1241
Richards, Francis H., Hartford, Conn. Automatic weighing-machine	572,067	Nov. 24	2909	686, 687	77	1242
Richards, Francis H., Hartford, Conn. Weighing-machine	572,068	Nov. 24	2914	687, 688	77	1243
Richards, Francis H., Hartford, Conn. Weighing-machine	572,069	Nov. 24	2919	688, 689	77	1244
Richards, Francis H., Hartford, Conn. Transferring apparatus	572,070	Nov. 24	2923	690, 691	77	1244
Richards, Francis H., Hartford, Conn. Weighing-machine	572,071	Nov. 24	2934	691, 692, 693	77	1246
Richards, Francis H., Hartford, Conn. Weighing-machine	572,088	Nov. 24	2974	699, 700	77	1254
Richards, Francis H., Hartford, Conn. Weighing-machine	572,089	Nov. 24	2985	701, 702	77	1255
Richards, Francis H., Hartford, Conn. Machine for applying paste	572,373	Dec. 1	512	121	77	1375
Richards, Francis H., Hartford, Conn. Rod-cutting apparatus	572,374	Dec. 1	517	121, 122	77	1376
Richards, Francis H., Hartford, Conn. Cigarette-machine	572,375	Dec. 1	524	123, 124	77	1377

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Richards, Francis H., Hartford, Conn. Weighing-machine	573,418	Dec. 15	2354	562, 563	77	1761
Richards, Francis H., Hartford, Conn. Weighing-machine	573,419	Dec. 15	2361	564, 565	77	1762
Richards, Francis H., Hartford, Conn. Weighing apparatus	573,420	Dec. 15	2366	565, 566	77	1763
Richards, Francis H., Hartford, Conn. Weighing-machine	573,421	Dec. 15	2371	566	77	1763
Richards, Francis H., Hartford, Conn. Key-operated mechanism	573,619	Dec. 22	2736	650, 651	77	1851
Richards, Francis H., Hartford, Conn. Gearing	573,620	Dec. 22	2741	651, 652	77	1852
Richards, Francis H., Hartford, Conn. Jacquard mechanism	573,621	Dec. 22	2748	652, 653	77	1854
Richards, Francis H., Hartford, Conn. Jacquard mechanism	573,622	Dec. 22	2752	653, 654, 655	77	1855
Richards, Francis H., Hartford, Conn. Jacquard mechanism	573,623	Dec. 22	2759	655, 656	77	1856
Richards, Francis H., Hartford, Conn. Weighing-machine	574,168	Dec. 29	3763	898, 899, 900	77	2055
Richards, Francis H., Hartford, Conn. Weighing-machine	574,169	Dec. 29	3771	901	77	2056
Richards, Francis H., Hartford, Conn. Weighing-machine	574,170	Dec. 29	3775	902	77	2056
Richards, George M., Erie, Pa. Automatic fluid-pressure friction-clutch	574,269	Dec. 29	3983	946	77	2093
Richards, Marcius C., Aurora, Ill. Door-hanger	573,108	Dec. 15	1795	432	77	1659
Richards, Robert, Brooklyn, N. Y. Reclining-chair, cot, or lounge	572,277	Dec. 1	326	78	77	1341
Richards, Sierra L., assignor to D. L. Richards, Baltimore, Md. Gas or oil stove	570,957	Nov. 10	974	227	77	848
Richards, William G., Hillsborough, Ohio. Railway-car	571,577	Nov. 17	2032	483	77	1058
Richardson, Charles F., Athol, Mass. Spirit-level	570,056	Oct. 27	2342	555	77	481
Richardson, Christopher, *et al.* (See Whiting, William M., assignor.)						
Richardson, David J. (See Barr, John U., Jr., assignor.)						
Richardson, George E., Pomona, Mich. Scraper	569,887	Oct. 20	2044	487	77	412
Richardson, George J., trustee. (See Focer, Daniel, assignor.)						
Richardson, Herbert, London, England. Machine for forming organ-pipes	572,830	Dec. 8	1311	314	77	1547
Richardson, Hymen L., Gainesville, Ga. Coffee or tea pot	572,909	Dec. 8	1423	343	77	1572
Richardson, James, New York, N. Y. Combination-lock	568,795	Oct. 6	140	34	77	29
Richardson, Paris, Deshler, Nebr. Vehicle-wheel	573,238	Dec. 15	2026	486	77	1701
Richardson, Solon O., Jr., Toledo, Ohio. Glass-blowing machine	570,881	Nov. 3	842	197	77	796
Richardson, William H., assignor to himself, W. and C. H. Walton, Trenton, N. J. Wrist-guide and tailpiece for stringed instruments	569,032	Oct. 6	545	126	77	103
Richardson, William S., Boston, Mass. Fastener for gloves	573,188	Dec. 15	1939	467	77	1685
Richardson, William S., Boston, Mass., assignor to Ball and Socket Fastener Company, Boston, Mass., and Nashua, N. H. Fastener for gloves	572,566	Dec. 8	839	201	77	1457
Richmond, Romulus R., Chariton, Iowa. Automatic machine-gun	572,771	Dec. 8	1207	292, 293	77	1527
Richmond, Sterling P., Billings, Mo. Plow	571,688	Nov. 17	2211	532, 533	77	1091
Richner, Herman J., and J. L. Fontaine, Cleveland, Ohio. Mail-box	570,270	Oct. 27	2741	652	77	558
Richter, Charles, and R. T. Eschler, assignors of one-third to S. B. Goff, Camden, N. J. Electric-arc lamp	573,161	Dec. 15	1886	454	77	1676
Richter, Charles, and R. T. Eschler, assignors of one-half to S. B. Goff, Camden, N. J. Electric-arc lamp	573,162	Dec. 15	1887	454	77	1676
Ridge, Joseph, Chicago, Ill. Spring-tire for vehicle-wheels	573,920	Dec. 29	3290	787	77	1970
Ridge, Joseph, Chicago, Ill. Spring-tire for vehicle-wheels	573,921	Dec. 29	3291	788	77	1970
Ridge, Joseph, Chicago, Ill. Spring-tire for vehicle-wheels	573,922	Dec. 29	3293	788	77	1970
Riedler, Alois, Berlin, Germany. Valve-gear	572,720	Dec. 8	1119	271	77	1511
Rieffel, John P., New York, N. Y. Kiln for decorating porcelain or glass	569,232	Oct. 13	891	212, 213	77	186
Ries, Frederick C., and H. H. Johnson, Macon, Ga. Dental engine	572,030	Nov. 24	2832	668	77	1228
Riessner, Ernst P., Leipsic, Germany. Mechanical musical instrument	569,233	Oct. 13	893	213, 214	77	186
Riffle, John A., assignor of one-sixteenth to J. Higson, Denver, Colo. Amalgamator	573,163	Dec. 15	1888	454	77	1676
Rigby, Clark F., Mannington, W. Va. Rod-packing	572,910	Dec. 8	1425	343	77	1572
Rigby, Holden. (See Chouvelon, Alphonse M., assignor.)						
Riggs, John D. (See Hochholzer, Hill, and Riggs.)						
Riggs, John D., Hiawatha, Kans. Bicycle	571,397	Nov. 17	1720	409	77	1002
Righter, Edmund K., Jersey City, N. J. Ball-retainer for antifriction wheel-bearings	570,146	Oct. 27	2510	595	77	514
Riley, Charles E. (See Illingworth, Harry I., assignor.)						
Riley, S. E. (See Woods, Granville T., assignor.)						
Rimer, Solomon. (See Dollison and Rimer.)						
Ringland, Adam W., Toledo, Ohio. Heater	569,473	Oct. 13	1288	303, 304	77	259
Ringle, William H., Van Buren, Ohio. Combined wire fence and stretcher	569,058	Oct. 6	590	135	77	113
Rings, Matthew, assignor of one-half to C. E. Dyer, Seattle, Wash. Car-fender	574,044	Dec. 29	3530	843	77	2012
Rinsche, Frank C., assignor to Chouteau Manufacturing Company, St. Louis, Mo. Engine	574,003	Dec. 29	3458	828	77	1999
Rioux, David, N. C. Bushey, and N. L. Byron, Springfield, Mass. Switch-operating device for street-railway cars	572,313	Dec. 1	406	96	77	1356
Ripley, Fredrick E. (See Pratt and Ripley.)						
Ripley, Lewis W., *et al.* (See Williams, Henry E., assignor.)						
Ris, Christopher, assignor to J. R. Geigy & Co., Basle, Switzerland. Black triazo dye	571,933	Nov. 24	2682	.....	77	1200
Risk, Thomas J. (See Hughes, Henry E., assignor.)						
Ritchie, John. (See Quintus, Ritchie, Quintus, Beebe, and Lukermann.)						
Rites, Francis M., Pittsburg, Pa. Fluid-compressor	568,796	Oct. 6	142	34	77	29
Rites, Francis M., Pittsburg, Pa. Fluid-compressor	570,770	Nov. 3	644	147	77	756
Rites, Francis M., Braddock, Pa. Valve-gear	572,721	Dec. 8	1120	271, 272	77	1511
Rites, Francis M., Ithaca, N. Y. Valve-gear	572,722	Dec. 8	1125	272	77	1512
Ritter, Franklin S., Cheboygan, Mich. Grain proportioner and mixer	574,270	Dec. 29	3985	947	77	2094
Ritz, August N., Milwaukee, Wis. Receptacle for paste	572,617	Dec. 8	933	227	77	1475
Roach, John M. (See Lynch, Vernon T., assignor.)						
Roach, Michael J., Anderson, Ind. Washing-machine for paper-stock	569,673	Oct. 20	1670	395	77	346
Roake, John S., Brooklyn, N. Y. Grate	573,164	Dec. 15	1890	455	77	1676
Robbins, Frederick A., San Francisco, Cal. Multiple syruping-machine	574,075	Dec. 29	3585	856	77	2022

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Robbins, George A., assignor, by mesne assignments, of one-half to F. B. Clark, Slate Hill, N. Y. Easel attachment	573,703	Dec. 22	2918	689, 690	77	1885
Robbins, N. C., *et al.* (See Waugh and Older, assignors.)						
Roberts, Charles E., Oak Park, Ill. Machine for finishing spoke-nipples for bicycles	572,376	Dec. 1	532	124, 125, 126	77	1379
Roberts, Charles W., North Bennington, assignor to Roberts Grinder Company, Bennington, Vt. Apparatus for pulping	571,019	Nov. 10	1079	251, 252	77	867
Roberts, Clarence V., Philadelphia, Pa. Ventilating air-heater	574,271	Dec. 29	3987	947	77	2094
Roberts, Cyrus. (See Copeland, Roberts, and McCrary.)						
Roberts, Elijah J., Boone, Iowa. Extension-table	569,059	Oct. 6	591	135	77	113
Roberts, Frank C., Philadelphia, Pa. Hot-blast stove	570,104	Oct. 27	2437	579	77	501
Roberts, Frederick A., Gardner, Mass. Adjustable support	573,923	Dec. 29	3295	788	77	1970
Roberts Grinder Company. (See Roberts, Charles W., assignor.)						
Roberts, John D. (See Long, Henry L., assignor.)						
Roberts, John I., and J. B. McCormick, Granville, N. Y. Boiler-scraper	569,060	Oct. 6	592	135	77	114
Roberts, Richard A., Brooklyn, N. Y. Construction of vessels	573,297	Dec. 15	2142	514	77	1722
Roberts, Thomas H., Detroit, Mich. Air-compressor	572,314	Dec. 1	407	97	77	1356
Roberts, William M., Jr., Cumberland, Md. Track-cleaner or current-collector	570,339	Oct. 27	2901	689	77	586
Robertson, James C., Glenglade, assignor of one-third to T. Price, Vintondale, Pa. Sled-propeller	572,568	Dec. 8	844	202, 203	77	1458
Robertson, John A., *et al.* (See Wolf, Joseph, assignor.)						
Robertson, John A., Rochester, N. Y. Photographic shutter	574,113	Dec. 29	3653	872	77	2035
Robertson, John H., *et al.* (See Jonson, Julius, assignor.)						
Robertson, Thomas, Minneapolis, Minn. Window-lock	570,503	Nov. 3	122	30	77	661
Robertson, Thomas J., Golden, Mo. Street-sweeper	568,958	Oct. 6	416	93	77	79
Robins, Thomas, Jr., New York, N. Y. Conveyer-belt apparatus	571,604	Nov. 17	2079	499	77	1066
Robinson, Andrew J., Boston, Mass. Stopper attachment for bottles	572,772	Dec. 8	1212	293	77	1528
Robinson, Charles W., Florence, Ala. Antifriction-bearing	570,504	Nov. 3	124	30	77	661
Robinson & Co., J. T. (See Robinson and Smith, assignors.)						
Robinson, Edwin, Zanesville, Ohio. Dipping apparatus for paste glass-molds	570,735	Nov. 3	588	135	77	746
Robinson, George H., New York, N. Y., and E. F. Steck, Chicago, Ill., assignors to Fire Extinguisher Manufacturing Company, Chicago, Ill., and New York, N. Y. Automatic fire-extinguishing system	571,578	Nov. 17	2032	484, 485	77	1058
Robinson, Henry, Springfield, Mass. Canister	569,061	Oct. 6	593	136	77	114
Robinson, Howard B., Hartford, Conn. Automatically-opening die for cutting screw-threads	569,769	Oct. 20	1862	441	77	378
Robinson, Joe. (See Whalley, Clegg, Benson, Parratt, and Robinson.)						
Robinson, John M., Bozeman, Mont. Cultivator	573,704	Dec. 22	2919	690	77	1885
Robinson, John T., Hyde Park, and D. M. Smith, Boston, assignors to J. T. Robinson & Co., Hyde Park, Mass. Paper-grooving machine	573,705	Dec. 22	2921	691	77	1886
Robinson, Joshua, Lawrence, Mass. Utilizing partially-worn fibrous harness	570,683	Nov. 3	493	115	77	700
Robinson, William, Boston, Mass. Power-brake	572,662	Dec. 8	1007	243	77	1490
Robinson, William, Boston, Mass. Car-motor	572,685	Dec. 8	1047	254	77	1498
Robinson, William, Boston, Mass. Car-truck	572,686	Dec. 8	1050	255	77	1498
Robischung, Henry B., Kalamazoo, Mich. Brake-beam	570,057	Oct. 27	2342	556	77	482
Roche, E. Melvern. (See Swenson, Swen E., assignor.)						
Roche, John A., Chicago, Ill. Electric railway	574,171	Dec. 29	3779	902	77	2057
Rockwell, Edward D., Bristol, Conn. Bicycle-bell clamp	572,450	Dec. 1	644	151	77	1401
Rockwell, Frederick C., Hartford, Conn. Handle	570,186	Oct. 27	2581	613	77	528
Rockwell, Frederick C., Hartford, Conn. Bicycle handle-bar	570,187	Oct. 27	2583	613	77	528
Rockwell, Frederick C., Hartford, Conn. Bottle-stopper	573,239	Dec. 15	2028	486	77	1701
Rockwell, Frederick C., Hartford, Conn. Handle	573,796	Dec. 22	3058	724	77	1912
Rockwell, Frederick C., Hartford, Conn. Tenpins	573,797	Dec. 22	3059	724	77	1912
Rockwell, George, Bainbridge, N. Y. Swing	572,773	Dec. 8	1214	294	77	1528
Rockwell, Henry H., Milwaukee, Wis. Machine for making dowel-pins	569,234	Oct. 13	896	214, 215	77	187
Rockwell, Henry H., Milwaukee, Wis. Dowel pin and joint	569,235	Oct. 13	899	215	77	188
Rodd, William J., St. Leonards, assignor to W. G. Henderson, Sydney, New South Wales. Billiard-table cushion	569,519	Oct. 13	1363	326	77	277
Rodes, Tyree, Nashville, Tenn. Hinge	569,474	Oct. 13	1291	304	77	260
Rodigraas, George W., Haverhill, Mass. Sole-molding apparatus	569,979	Oct. 20	2210	525	77	443
Roehl, Charles E. (See Wetmore and Roehl.)						
Roeloffs, John T. R., New York, N. Y. Retractor	569,839	Oct. 20	1974	469	77	400
Roescher, Isidor, New York, N. Y. Eye and tongue support for artificial heads and masks	569,475	Oct. 13	1292	304	77	260
Roger, John, Denver, Colo. Ore-roasting furnace	574,272	Dec. 29	3980	947, 948	77	2094
Roger, John, Denver, Colo. Ore-crusher	574,273	Dec. 29	3990	948	77	2095
Rogers, Albert C., Plainfield, N. J. Fire-alarm system	573,924	Dec. 29	3296	788, 780	77	1970
Rohr, Henry. (See Rohr, John N. and H.)						
Rohr, John N. and H., Kenton, Ohio. Revolving-chair swing	570,505	Nov. 3	125	30, 31	77	661
Rolfson, Rolf J., assignor of one-half to S. S. Simrak and A. R. Herman, San Francisco, Cal. Gas-engine	570,649	Nov. 3	426	101, 102	77	717
Roller-Bearing Truck Company. (See Lawson, Benjamin S., assignor.)						
Roney, John. (See Murdock, Thomas J., assignor.) (Reissue.)						
Roney, William R., Chicago, Ill., assignor to Westinghouse, Church, Kerr & Company, New York, N. Y. Furnace-grate	569,353	Oct. 13	1103	261, 262	77	227
Rönitz, Ferdinand J., Mügeln, Germany. Means for making artificial stone	574,172	Dec. 29	3783	902, 903	77	2058
Rontke, Albert, Chicago, Ill., assignor to Singer Manufacturing Company, of New Jersey. Double-chain-stitch sewing-machine	573,926	Dec. 29	3304	789, 790	77	1972
Roof, William S., Franklin, Ohio. Hanger for folding doors	569,937	Oct. 20	2145	508	77	432
Rosback, Fredrick P., Chicago, Ill. Railway-alarm	570,058	Oct. 27	2344	556	77	482
Roseman, Frank A., Lanham, Nebr. Combination-tool	570,188	Oct. 27	2584	613	77	528
Roseman, Frank A., Lanham, Nebr. Fence-picket vise	570,958	Nov. 10	975	227	77	848
Rosen, Carl J., Jr. (See Dehn, Carl W., assignor.)						
Rosen, Carl J., Jr., Topeka, Kans. Brake-beam	572,569	Dec. 8	846	203	77	1458
Rosenbaum, Morris. (See Kelso and Rosenbaum.)						
Rosenberg, Jacob, New York, N. Y. Waistband for trousers	569,840	Oct. 20	1975	470	77	400
Rosenblat, E. S., *et al.* (See Loryea, William D. F., assignor.)						
Rosenblat, I. S., *et al.* (See Loryea, William D. F., assignor.)						
Rosencrantz, William D., Hohokus, N. J. Spinning-frame	573,925	Dec. 29	3303	789	77	1971
Rosenstock, Moritz, New York, N. Y. Bottle	573,484	Dec. 22	2510	595	77	1807

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Rosenthal, Henry, New York, N. Y. Bung	573,624	Dec. 22	2771	657	77	1859
Rosenthal, Herman, New York, and L. Kramer, Brooklyn, N. Y.; said Kramer assignor to said Rosenthal. Heating-burner	570,771	Nov. 3	647	148	77	756
Ross, A. L. (See Shank, David A., assignor.)						
Ross, Enoch. (See Taylor, John C., assignor.)						
Ross-Moyer Manufacturing Company. (See Ross, Simon, assignor.)						
Ross, Oliver B., Spencer, Iowa. Automatic measurer for creameries	574,274	Dec. 29	3992	949	77	2095
Ross, Oliver B., Spencer, Iowa. Automatic measurer for creameries	574,275	Dec. 29	3995	949	77	2096
Ross, Simon, assignor to Ross-Moyer Manufacturing Company, Cincinnati, Ohio. Heel-former and nail-driver	569,938	Oct. 20	2146	508	77	432
Ross, William J., Boston, Mass. Sprocket-wheel	571,398	Nov. 17	1721	409	77	1002
Ross, William M. (See Safford and Ross.)						
Rossiter, Reuben W., Minneapolis, Minn. Grain-separator	573,706	Dec. 22	2923	691	77	1886
Rossman, Conrad, Pittsburg, Pa. Eye-forming machine for picks, &c	573,109	Dec. 15	1796	433	77	1660
Rotary King Manufacturing Co. (See Corneau, Armidas J., assignor.)						
Roth, William L., Washington, D. C. Nursing-bottle	571,245	Nov. 10	1472	345	77	940
Rottach, August, New York, N. Y. Cigar-branding machine	570,230	Oct. 27	2863	633	77	543
Rout, Benjamin F., assignor of one-half to G. L. Penny, Stanford, Ky. Electric cut-out	571,734	Nov. 17	2314	553	77	1111
Routzong, John A. and J. C., Xenia, Ohio. Fence-post	572,831	Dec. 8	1312	314	77	1547
Routzong, Joseph C. (See Routzong, John A. and J. C.)						
Rowan, David N., Irvington, N. Y. Telephone-transmitter	571,399	Nov. 17	1722	410	77	1002
Rowand, Lewis G., assignor to Universal Fire Alarm Company, Camden, N. J. Automatic safety device for electric circuits	570,882	Nov. 3	846	197, 198	77	797
Rowe, Ellis L., assignor to Rensselaer Manufacturing Company, Troy, N. Y. Valve	572,451	Dec. 1	643	152	77	1401
Rowe, James E., assignor to E. Jenckes Manufacturing Company, Pawtucket, R. I. Knitting-machine	570,059	Oct. 27	2347	556, 557, 558, 559, 560	77	483
Rowland, Harriet A., Evanston, Ill. Shirt-drying frame	571,537	Nov. 17	1971	469	77	1047
Rowlands, Hugh, Ty Criston, near Valley, England. Mop	571,246	Nov. 10	1473	345	77	940
Rowley, Everett A. (See Rowley, John D., assignor.)						
Rowley, John D., assignor of one-half to E. A. Rowley, Kansas City, Mo. Truss	569,236	Oct. 13	900	216	77	188
Royce, Thomas H., Brooklyn, assignor to B. Altman, New York, N. Y. Bicycle-mitten	571,020	Nov. 10	1080	252	77	863
Roylance, Leon S., *et al.* (See Brown, Wilfred L. and C., assignors.)						
Rozell, Charles, Hutchinson, Kans. Billet-loop	571,689	Nov. 17	2212	533	77	1091
Ruby, Charles W., Brooklyn, N. Y. Support for reels or hose	570,819	Nov. 3	725	166	77	773
Rucker, George W., Belle Plaine, Iowa. Feeding attachment for threshing-machines	569,588	Oct. 13	1517	357	77	302
Ruckstinat, John, *et al.* (See Pegel, Julius G., assignor.)						
Ruckstinat, John, East Providence, R. I., assignor of one-half to J. Pegel, Philadelphia, Pa. Window-cleaner	570,231	Oct. 27	2865	633	77	543
Rudiger, Gustavus, Sr. (See Harbaugh and Rudiger.)						
Rudolph, Christian, assignor to Firm of K. Oehler, Offenbach-on-the-Main, Germany. Trisazo dye	572,723	Dec. 8	1128	.....	77	1512
Rudolph, Emil, assignor of one-half to H. Hurwitz & Co., Berlin, Germany. Ink-well	570,959	Nov. 10	976	227	77	849
Rueter, Edward E., Allentown, assignor to J. P. Knobeloch, Philadelphia, Pa. Lounge	571,247	Nov. 10	1474	345, 346	77	940
Ruffner, Margaret O., St. Louis, Mo. Invalid's bath-tub	573,625	Dec. 22	2772	657	77	1859
Ruggles, Thomas D. S., Kent, Ohio. Flue-cleaner	570,506	Nov. 3	127	31	77	662
Ruhl, Wilhelm, Berlin, Germany. Fuel-feeder for furnaces	571,139	Nov. 10	1302	302, 303	77	908
Rumely, Andrew P., Chicago, Ill. Pipe-cleaner	572,724	Dec. 8	1129	272	77	1512
Rundlett, William D., North Andover, Mass. Sewing-machine	570,902	Nov. 10	981	228	77	849
Rundlett, William D., North Andover, Mass., assignor to W. H. Haskell, Pawtucket, R. I. Sewing-machine	570,960	Nov. 10	977	228	77	849
Rundlett, William D., Providence, assignor to W. H. Haskell, Pawtucket, R. I. Sewing-machine	570,961	Nov. 10	980	228	77	849
Runkle, William Z., Delphi, Ind. Mail receiver and delivering apparatus	572,315	Dec. 1	408	97, 98	77	1356
Runyon, Lewis M., Allamuchy, N. J. Wire fence	570,567	Nov. 3	254	63	77	685
Ruppert, Frank, *et al.* (See Kinkel, Charles, assignor.)						
Ruppert, Henry, Sebewaing, Mich. Mortising-chisel	571,400	Nov. 17	1724	410	77	1002
Rusby, Joseph H., Nutley, N. J. Electric-light attachment	571,248	Nov. 10	1476	346	77	941
Ruschitzka, Edward J. (See Cunningham, Martin J., assignor.)						
Rusden, Richard J. N., Didsbury, England. Show-card, &c., or means for displaying velveta, &c	573,538	Dec. 22	2603	617	77	1825
Rush, Stephen P., assignor of one-half to G. W. Friedley, Tyrone, Pa. Pan-lifter	572,031	Nov. 24	2840	668	77	1229
Russell & Company (See Heggem, Charles O., assignor.)						
Russell & Erwin Manufacturing Company. (See Voight, Henry G., assignor.)						
Russell, George K., New York, N. Y. Car-coupling	570,684	Nov. 3	495	116	77	731
Russell, John R., Lynn, Mass. Combination waste-barrel and truck	569,520	Oct. 13	1385	326	77	277
Russell, Martin C., Saratoga Springs, N. Y. Match-safe	573,358	Dec. 15	2257	539	77	1743
Russo, Louis. (See Sparmo and Russo.)						
Ruth, Thomas D., Buffalo, N. Y. Flue-cutter	572,570	Dec. 8	847	203	77	1458
Ruthenberg, August, Rochester, N. Y. Car-brake	568,959	Oct. 6	417	93	77	80
Rutherford, Eugene W. (See White, William H., assignor.)						
Rund, Edwin, and A. G. Holmes, assignors to Pittsburg Meter Company, Pittsburg, Pa. Disk meter	568,924	Oct. 6	340	81	77	67
Ryan, Emily. (See Ryan, Thomas J., assignor.)						
Ryan, John J., Memphis, Tenn. Shore-anchor	571,624	Nov. 17	2109	506	77	1072
Ryan, Michael B., Bridgeport, Conn. Folding bicycle	569,354	Oct. 13	1105	262	77	228
Ryan, Sylvester A. (See Cook, Francis L., assignor.)						
Ryan, Thomas A., and I. Whitney, assignors to C. F. Hatch, Lowell, Mass. Game apparatus	570,105	Oct. 27	2438	579	77	501
Ryan, Thomas J., Buffalo, N. Y. Sand-core-molding machine	571,458	Nov. 17	1818	434, 435	77	1020
Ryan, Thomas J., assignor to E. Ryan, Buffalo, N. Y. Molding-machine	572,278	Dec. 1	328	78, 79, 80	77	1342
Ryder, Charles J., Patchogue, N. Y. Bicycle-holder	573,038	Dec. 15	1667	400	77	1635
Ryder, Edgar L., *et al.* (See Gartner, Alfred, assignor.)						
Ryder, Josiah F., Attleborough, Mass. Combination-tool	571,287	Nov. 10	1541	366	77	953
Rylander, James B., assignor of one-half to R. B. Williams, Lockhart, Tex. Folding ironing-table	571,800	Nov. 24	2431	580	77	1152

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
S. S. White Dental Manufacturing Company. (See Browne, Arthur W., assignor.)						
S. S. White Dental Manufacturing Company. (See Hakins, George B., assignor.)						
S. S. White Dental Manufacturing Company. (See Hollingsworth, Merrill W., assignor.)						
Sabine, John, Taunton, Mass. Lacing-strip for laced shoes	570,963	Nov. 10	984	229	77	850
Sabourin, David C. and J., Lowell, Mass. Vise	570,340	Oct. 27	2903	689	77	587
Sabourin, Joseph. (See Sabourin, David C. and J.)						
Sadler, Samuel A., and R. H. Wilson, Middlesborough, assignors, by mesne assignments, to American Alkali Company, Limited, London, England. Apparatus for making chlorin	573,039	Dec. 15	1668	400, 401	77	1636
Saffold, Ray P., Selma, Ala. Umbrella	574,219	Dec. 29	3896	927	77	2077
Safford, Charles M., and W. M. Ross, Cleveland, Ohio. Repeating mechanism for clocks	574,114	Dec. 29	3655	672, 673	77	2035
Saint, Robert M., Des Moines, Iowa. Music-writing machine	572,571	Dec. 8	849	203, 204	77	1459
Salamon, Alfred G. (See Hood and Salamon.)						
Salenius, Erik G. N., Stockholm, Sweden. Centrifugal apparatus	573,707	Dec. 22	2924	691	77	1886
Salisbury, Frank L., *et al.* (See Rau, John, assignor.)						
Salisbury, John E., *et al.* (See Rau, John, assignor.)						
Sallee, William H. H., assignor of one-half to A. E. McQuoid, Rutledge, Mo. Lid for crates	573,040	Dec. 15	1671	401	77	1636
Sallot, Victor A., Fort Wayne, Ind. Universal chuck	570,736	Nov. 3	590	135, 136	77	746
Saltsman, Daniel J., Memphis, Tenn. Log-turner	571,801	Nov. 24	2433	580	77	1153
Salvin, Maurice. (See Wilde, Louis J., assignor.)						
Salvotti, Ugo, Milan, Italy. Apparatus for fixing and supporting rock-drills	572,183	Dec. 1	154	37	77	307
Sammis, Mary, Bloomfield, N. J. Combined carver and steel	568,878	Oct. 6	283	65	77	54
Sample, Richard S., Huntington, W. Va. Bed-spring frame	570,341	Oct. 27	2904	689	77	587
Sampolo, Sebastien P., and C. L. A. Brasseur, New York, N. Y., assignors to Joly-Sambra Company, of New York. Forming photographic prints	571,314	Nov. 10	1587	377	77	963
Sampson, Sidney W., Hudson, Mass. Valve	570,772	Nov. 3	648	148	77	757
Samohod, Pedro, Lima, Peru. Nautical registering apparatus	572,832	Dec. 8	1313	315	77	1547
Samson Cordage Works. (See Tolman, James P., assignor.)						
Samuelson, Alexander. (See Everett and Samuelson.)						
San Francisco Arms Company. (See Carr, Howard, assignor.)						
San Francisco Arms Company. (See Catlin, Robert M., assignor.)						
Sandbeck, Christian N., Harmony, Minn. Telephone-switch	570,773	Nov. 3	650	148	77	757
Sanders, Richard H., and C. T. Thompson, Philadelphia, Pa. Process of and machine for magnetic separation	573,485	Dec. 22	2512	595, 596	77	1807
Sanderson, Frederick H., Cambridge, England. Photographic camera	570,774	Nov. 3	652	149	77	758
Sanderson, Harold W., London, England. Printing wall-paper	569,237	Oct. 13	902	216	77	188
Sanderson, James A. (See Reel, John, assignor.)						
Sanderson, James G., Scranton, Pa. Furnace-grate and automatic stoker	573,298	Dec. 15	2145	514, 515	77	1722
Sanderson, William, assignor of one-half to H. D. Burrill, Syracuse, N. Y. Machine for assembling parts of wheels	569,888	Oct. 20	2046	487, 488	77	412
Sandilands, James R. (See Patterson, James, assignor.)						
Sandillon, Ferdinand M., Las Palmas, Canary Islands. Automatic feed-water regulator for steam-generators	569,841	Oct. 20	1976	470	77	400
Sandmeyer, Traugott, assignor to J. R. Geigy & Co., Basle, Switzerland. Red dye	573,299	Dec. 15	2148	.....	77	1722
Sanford, Alexander G., Warren, R. I. Sprinkling device for stopples	570,716	Nov. 3	549	127	77	740
Sangster, James. (See Britain, Holmes, assignor.)						
Sanlter, Ernest H., Wigan, England. Purifying iron or steel	571,538	Nov. 17	1972	.....	77	1047
Sapper, Frank C., assignor to Sima Company, Limited, Erie, Pa. Injector	568,797	Oct. 6	146	34	77	30
Sappey, Louis. (See Freund and Sappey.)						
Sargent, Allan C. (See Sargent, Frederick G. and A. C.)						
Sargent, Benjamin F. (See Stone, Charles E., assignor.)						
Sargent, Frederick G. and A. C., Graniteville, Mass. Wool-washing machine	569,980	Oct. 20	2212	525, 526	77	443
Sartorius, August, New York, N. Y. Moist colors	574,220	Dec. 29	3896	.....	77	2077
Sauce, Carl A. E. de la, Berlin, Germany. Apparatus for removal and transportation of refuse	570,060	Oct. 27	2358	560, 561	77	484
Sauerbrey, Richard, Stassfurt, Germany. Centrifugal crushing-mill	569,238	Oct. 13	903	216	77	189
Saulsbury, Nehemiah R., Ridgely, Md. Fluxing-machine	569,062	Oct. 6	594	136	77	114
Saunders, Solomon. (See White, Moses H., assignor.)						
Sauvage, William H., assignor of one-half to S. M. Morrison, Denver, Colo. Brake	569,476	Oct. 13	1293	304	77	260
Savage, Bernard G., and A. C. L. Longaran, Victor, Colo. Shaving-mug	573,240	Dec. 15	2029	486	77	1701
Savage, John T., assignor of one-half to W. B. Withauer, Middletown, Pa. Non-refilling bottle	572,120	Dec. 1	58	14	77	1289
Savell, William B. (See Graham and Savell.)						
Savery, Thomas H. (See Pusey, Latimer, and Savery.)						
Sawhill, James T., *et al.* (See Woodard, Alvin N., assignor.)						
Sawhill, John L., *et al.* (See Woodard, Alvin N., assignor.)						
Sawyer, Edgar L., Perrysburg, Ohio. Metal tie	569,427	Oct. 13	1221	286	77	247
Sawyer, Harry, Muskegon, Mich. Tongs or grapple	569,939	Oct. 20	2148	508, 509	77	432
Sawyer, Harry, Muskegon, Mich. Discharging mechanism for buckets, tongs, &c	573,708	Dec. 22	2926	692	77	1886
Sawyer Spindle Company of Maine. (See Gartner, Alfred, assignor.)						
Sawyer, Uriah P. (See Lee and Sawyer.)						
Sawyer, Victory L. (See Fuchs, Charles K., assignor.)						
Sawyer, William H., assignor to American Electrical Works, Providence, R. I. Electrical switch-conductor	571,539	Nov. 17	1974	470	77	1047
Saxer, Jacob P. J., Cleveland, Ohio. Paint-mixer	569,428	Oct. 13	1221	287	77	248
Saxon, Alfred, *et al.* (See Debombourg, Guillaume, assignor.)						
Saxon, George, *et al.* (See Debombourg, Guillaume, assignor.)						
Saxon, James, *et al.* (See Debombourg, Guillaume, assignor.)						
Saylor, Benjamin F., Lancaster, Pa. Flying target	571,958	Nov. 24	2722	643	77	1208
Scaife, Charles C. (See Scaife and Moeckel, assignors.)						
Scaife, James V. (See Davidson, John M., assignor.)						
Scaife, William B., Allegheny, and G. A. Moeckel, Oakmont, assignors to C. C. Scaife, Allegheny, Pa. Punching and riveting machine	574,173	Dec. 29	3785	903	77	2058
Scaife, William L., Allegheny, Pa. Coil-washer	570,232	Oct. 27	2666	634	77	544
Scatchard, Fannie H., Oneonta, N. Y. Sleeping-sack	569,521	Oct. 13	1385	327	77	277
Scetrini, George H., and H. K. Bridger, London, England; said Scetrini assignor to said Bridger. Sewing-machine	571,053	Nov. 10	1130	264, 265	77	878

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Schacht, Edward L., Chicago, Ill. Door-check	573,300	Dec. 15	2149	515	77	1722
Schade, Henry. (See Schade, John, assignor.)						
Schade, John, assignor to H. Schade, Brooklyn, N. Y. Roller-skate	571,690	Nov. 17	2214	533	77	1091
Schaeffer, Arthur D., and C. H. Dale, Hartford City, Ind. Wood-pulp grinder	572,572	Dec. 8	850	204	77	1459
Schaetzle, Charles. (See Pryor and Schaetzle.)						
Schaffer, Louis, *et al.* (See Lent, Cyrenus W., assignor.)						
Schallenberger, Stephan, Fort Wayne, Ind. Sliding car-door	573,486	Dec. 22	2515	596	77	1808
Schaller, Michael D., Lowell, N. Y. Wrench	573,487	Dec. 22	2517	596	77	1808
Schaper, William C., St. Louis, Mo. Match-receptacle	573,422	Dec. 15	2375	567	77	1764
Scharrer, Carl, Heidenheim-on-the-Brens, Germany. Machine for cleaning carpets	571,981	Nov. 24	2750	651	77	1214
Schatz, Adam E., New York, N. Y. Electric towing apparatus	572,377	Dec. 1	536	127	77	1380
Schatz, Adolf, New Haven, Conn. Parallel-jaw pliers	571,021	Nov. 10	1081	253	77	868
Schaum, Otto W., Philadelphia, Pa. Shuttle-box motion for looms	573,488	Dec. 22	2519	597	77	1808
Scheerer, Wilhelm, assignor to Actien-Gesellschaft für Fein Mechanic, vormals Jetter & Scheerer, Tuttlingen, Germany. Bottle-closure	570,342	Oct. 27	2906	689	77	587
Schefbauer, Rupert, assignor to Auerbach-Woolverton Electric Company, Hoboken, N. J. Electric-arc lamp	568,798	Oct. 6	147	33	77	30
Schenck, Samuel H., Zionsville, Ind. Combined camp-stool and cot	571,579	Nov. 17	2038	485	77	1059
Schenker, Francis, Vincennes, Ind. Inkstand	571,401	Nov. 17	1725	410	77	1002
Schermerhorn, Herschel A., Waterman, Ill. Cover-holder for culinary pots or kettles	572,774	Dec. 8	1215	294	77	1528
Scherrer, Franz, Essen-on-the-Ruhr, Germany. Safety-window in shape of a ladder	573,165	Dec. 15	1892	455	77	1677
Scheuer, Joseph F., Milwaukee, Wis. Cash register and recorder	569,674	Oct. 20	1671	395, 396, 397	77	347
Schieffer, Fred, West Bay City, Mich. Pneumatic signaling apparatus	571,315	Nov. 10	1590	377	77	963
Schiff, Roberto, Pisa, Italy, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Salicylic compound and making same	569,429	Oct. 13	1223	.....	77	248
Schindler-Jenny, Friedrich W. (See Stotz and Schindler-Jenny.)						
Schindler-Jenny, Friedrich W., Kennelbach, Austria-Hungary. Electric boiling apparatus	573,042	Dec. 15	1673	402	77	1637
Schindler, Martin, Neuhausen, Switzerland. Electric furnace	573,041	Dec. 15	1672	401, 402	77	1636
Schirra, Julius, Pittsburg, Pa. Seal-lock	570,061	Oct. 27	2360	561	77	485
Schisler, George, Mansfield, Ohio. Water-tube boiler	569,239	Oct. 13	904	216	77	189
Schlegel, Robert, San Francisco, Cal. Rotary engine	572,127	Dec. 1	59	14	77	1289
Schleicher, Charles, assignor of one-half to J. H. Sumser, Louisville, Ky. Car-coupling	573,043	Dec. 15	1674	402	77	1637
Schleicher, Robert, Louisville, Ky. Woodworking-machine	569,940	Oct. 20	2151	509, 510	77	433
Schlichting, Henry, Camden, N. J. Hasp-fastener	574,276	Dec. 29	3997	949	77	2096
Schlimp, Carl, Vienna, Austria-Hungary, and R. Charouzek, Niedersedlitz, near Dresden, Germany. Hydraulic press	573,710	Dec. 22	2929	692	77	1887
Schloer, Frederick J., Trenton, N. J. Curtain pole and fixture	572,687	Dec. 8	1054	256	77	1499
Schloss, Meyer W., New York, N. Y., assignor to Automatic Wrapping Machine Company, of New York. Parcel-wrapping machine	574,174	Dec. 29	3786	903, 904	77	2058
Schlotfeldt, Heinrich, Kiel, Germany. Speed-indicator	574,076	Dec. 29	3586	856, 857	77	2023
Schlumberger, Theodore. (See Bronnert, Emile, assignor.)						
Schmid, Albert, assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electric machine	569,802	Oct. 20	1915	455	77	389
Schmidt, Alois, St. Paul, Minn. Basket	571,605	Nov. 17	2081	500	77	1066
Schmidt, Charles R., Baltimore, Md. Faucet	572,911	Dec. 8	1426	344	77	1572
Schmidt, Edward D., Cuyahoga Falls, Ohio. Furniture-caster	569,842	Oct. 20	1978	470	77	401
Schmidt, Ernest, Berlin, Germany. Electric gas-lighting device	571,288	Nov. 10	1542	366	77	954
Schmidt, George A., Brooklyn, N. Y., assignor to A. T. Enos, Englewood, N. J. Electric-light fixture	570,411	Oct. 27	3032	718	77	611
Schmidt, Hulda E., Silverton, Ohio. Milk-can	569,770	Oct. 20	1863	441	77	379
Schmidt, Lulu. (See Dellinger, Thomas G., assignor.)						
Schmidt, Theodore F. W., Dayton, assignor to C. W. Bell, Cincinnati, Ohio. Collapsible box	571,691	Nov. 17	2215	533	77	1092
Schmidt, Wilhelm, Ballenstädt, Germany. Feed-water heater	572,573	Dec. 8	851	204, 205	77	1459
Schmitz, Gustav A., Hanover, Germany. Device for feeding oxygen or carbonic acid in circulating bathing-waters	573,927	Dec. 29	3305	790	77	1973
Schneberger, John, and V. Kotva, Chicago, Ill. Egg-tester	569,941	Oct. 20	2155	510, 511	77	433
Schneible, Joseph, New York, N. Y. Aspirator	571,692	Nov. 17	2216	534	77	1092
Schneible, Joseph, New York, N. Y. Apparatus for charging liquids with gas	571,694	Nov. 17	2219	534, 535	77	1093
Schneible, Joseph, New York, N. Y., assignor to Joseph Schneible Company, New York, N. Y., and Jersey City, N. J. Manufacture of fermented liquors	571,693	Nov. 17	2218	534	77	1092
Schneider, Adolph F., Castell, Tex. Car-coupling	568,799	Oct. 6	150	35	77	31
Schneider, Charles, New York, N. Y. Steam-valve	570,609	Nov. 3	323	80	77	698
Schneider, Fritz, Erie, Pa. Lathe	571,402	Nov. 17	1726	410, 411	77	1003
Schneider, Jacob M. (See Stump, Ira E., assignor.)						
Schnorr, Julius, Woodbury, N. J. String-bearing for pianos	572,032	Nov. 24	2841	669	77	1229
Schodorf, Andrew C., Galloway, Ohio. Shoeing-rack	574,115	Dec. 29	3657	873	77	2035
Schock, Gustav, New York, N. Y. Barrel-washer	570,610	Nov. 3	325	80	77	699
Schoeffel, George J. (See Colgate, Arthur E., assignor.)						
Schoeffel, George J. (See Ongley, Charles E., assignor.)						
Schoen, Charles T., Philadelphia, Pa. Bolster for railway-cars	568,925	Oct. 6	351	81	77	67
Schoen, Charles T., Philadelphia, Pa. Pressed-steel truck-frame for railway-cars	571,934	Nov. 24	2683	635	77	1200
Schoen, Charles T., Philadelphia, Pa. Bolster for railway-cars	574,116	Dec. 29	3650	873, 874	77	2036
Schofield, Albert B., Brooklyn, N. Y. Storage-receptacle	571,844	Nov. 24	2510	594	77	1167
Schofield, Albert B., Brooklyn, N. Y. Storage-receptacle	571,845	Nov. 24	2511	594	77	1167
Scholl, Adam, Murray, Iowa. Double-action force-pump	568,800	Oct. 6	151	35	77	31
Scholtz, Maximillian M. (See Little, Orton C., assignor.)						
Schoonmaker, John D., Chicago, Ill., assignor to Lenox Manufacturing Company, Jersey City, N. J. Work-moving attachment for sewing-machines	571,459	Nov. 17	1825	435	77	1021
Schorr, William A., and W. R. Collins, Denver, Colo. Can-opener	573,359	Dec. 15	2258	539	77	1743
Schott, Mathilde, Brooklyn, N. Y. Cigar-cutting attachment for lead-pencils	572,452	Dec. 1	647	152	77	1402
Schrader, Frederick, Rockaway, N. J., assignor to Garvin Machine Company, New York, N. Y. Wheel-truing device	569,033	Oct. 6	546	126	77	104
Schrantz, Edward, St. Louis, Mo. Globe attachment for electric lamps	571,802	Nov. 24	2435	581	77	1153

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Pages.
Schrecongost, James D. (See Gocher and Schrecongost.)						
Schreuder, Jens G., Edgewood Park, assignor to Union Switch and Signal Company, Swissvale, Pa. Signal apparatus	570,062	Oct. 27	2362	562	77	485
Schroder & Co., J. B. (See Luebbers, John, assignor.)						
Schroeder, Charles, Columbus, Ohio. Leak-stopper	569,430	Oct. 13	1223	287	77	248
Schroeder, William S., Chicago, assignor to himself, and C. A. Schroyer, Oak Park, Ill. Gondola car	572,279	Dec. 1	336	80	77	1343
Schroyer, Charles A. (See Schroeder, William S., assignor.)						
Schubert, Hermann, New York, N. Y. Double safety-clutch for supports for scaffolds	569,240	Oct. 13	905	217	77	189
Schubert, Max. (See Schubert, Otto and M.)						
Schubert, Otto and M., Charlottenburg, Germany, assignors to United States Metal Box Corner Company, Atlanta, Ga. Apparatus for applying metal stripe to box-corners	569,567	Oct. 13	1474	347	77	294
Schubert, Otto and M., Charlottenburg, Germany, assignors to United States Metal Box Corner Company, Atlanta, Ga. Metal strip for corners of boxes	569,568	Oct. 13	1478	348	77	294
Schuchat, Jonas, and D. G. Butts, Chicago, Ill.; said Butts assignor to said Schuchat. Machine for making tufts	570,685	Nov. 3	496	116, 117	77	731
Schuck, Aloys, Brooklyn, N. Y. Brush	573,711	Dec. 22	2931	693	77	1887
Schuelke, William, Milwaukee, Wis. Organ	572,128	Dec. 1	60	15	77	1289
Schuelke, William, Milwaukee, Wis. Organ	572,129	Dec. 1	64	15	77	1290
Schuelke, William, Milwaukee, Wis. Organ	572,130	Dec. 1	67	15	77	1290
Schuerman, Frederick G., Twin Bluffs, Wis. Corn-harvester	571,846	Nov. 24	2512	595, 596	77	1167
Schuler, Louis, Goeppingen, Germany. Hydraulic drawing-press	570,063	Oct. 27	2363	562	77	485
Schulte, Joseph A., Arcadia, Iowa. Electric clock	572,131	Dec. 1	68	16	77	1291
Schulte, Robert W., Glenfield, Pa. Ironing-table	573,539	Dec. 22	2604	618	77	1825
Schultz, Joachim, Chicago, Ill. Draw-bar lift	571,540	Nov. 17	1975	470	77	1047
Schulze, Charles, Deer Plain, Ill. Corn-harvester	571,202	Nov. 10	1395	326, 327	77	926
Schulze, Karl, Hanover, Germany. Piano-pedal	572,316	Dec. 1	413	98	77	1357
Schulze, Theodore, New York, N. Y. Tool for holding pipe-nipples	570,233	Oct. 27	2668	634	77	544
Schumacher, Charles F., Hartford, Conn. Flush-tank valve	573,540	Dec. 22	2606	618	77	1825
Schumacher, James E., York, England. Hydraulic or other engine	571,129	Nov. 10	1289	299, 300	77	906
Schumacher, John, Chicago, Ill. Bottle-stopper	573,301	Dec. 15	2150	515, 516	77	1722
Schumacher, John, Chicago, Ill. Bottle-stopper	573,360	Dec. 15	2259	539	77	1743
Schuman, James B., Columbia, Ind. Grain recleaner and separator	569,389	Oct. 13	1162	276	77	237
Schumann, Henry, and B. C. Alverd, Graf, Nebr. Door-catch	574,004	Dec. 29	3460	828	77	1999
Schumm, Hermann, Cologne, assignor to Gas-Motoren-Fabrik-Deutz, Cologne-Deutz, Germany. Appliance for starting gas and oil motor engines	569,942	Oct. 20	2156	511	77	434
Schumm, Hermann, Cologne, assignor to Gas-Motoren-Fabrik-Deutz, Cologne-Deutz, Germany. Driving-gear for motor-cars	572,453	Dec. 1	649	152, 153	77	1402
Schurmann, Clemens, and J. J. Brophy, St. Louis, Mo. Fan attachment for rocking-chairs, &c.	573,541	Dec. 22	2607	618, 619	77	1825
Schurs, Francis C. (See Evetts and Schurs.)						
Schuster, Albert, Berlin, Germany. Match-box-filling machine	568,801	Oct. 6	153	36	77	31
Schutte, Louis, Philadelphia, Pa. Exhauster	571,022	Nov. 10	1062	253	77	868
Schütz, Conrad, Philadelphia, Pa. Folding-machine	569,355	Oct. 13	1107	263, 264	77	228
Schwagerman, William, Yonkers, N. Y., assignor of one-half to O. Wiederhold, Summit, N. J. Annunciator-drop	572,378	Dec. 1	537	127	77	1380
Schwartz, Frederick. (See Courtney and Schwartz.)						
Schwartz, George W., and B. J. Cigrand, Chicago, Ill. Dental furnace	573,361	Dec. 15	2260	540	77	1743
Schwarz, Daniel, and G. Luxeder, Temesvar, Austria-Hungary. Combined cycle-stand and mud-guard	573,542	Dec. 22	2610	619	77	1826
Schwarze, Carl J., Adrian, Mich. Telephonic apparatus	572,775	Dec. 8	1216	294, 295	77	1528
Schweitzer, Frank, Grand Rapids, Mich. Furniture-clamp	572,725	Dec. 8	1131	273	77	1513
Schweitzer, Hugo, Englewood, N. J. Tanning	573,362	Dec. 15	2262	.....	77	1744
Schwill & Co., Albert. (See Stier, Hermann, assignor.)						
Scott, Charles F., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Fuse for electric circuits	569,803	Oct. 20	1918	455	77	389
Scott, Charles W., Jr., Stockton, assignor of one-half to F. B. Armstrong, Camden, N. J. Knockdown racking-stand for barrels	572,574	Dec. 8	854	205	77	1460
Scott, D. S., *et al.* (See Cable, Daniel J., assignor.)						
Scott, Frank P., Terre Haute, Ind. Telegraph switch mechanism	571,695	Nov. 17	2296	535, 536	77	1094
Scott, Frank S. D., London, England. Advertising device	574,277	Dec. 29	3998	949, 950	77	2096
Scott, George H., Worcester, Mass. Electric rail-bond	571,888	Nov. 24	2592	615	77	1182
Scott, Henry R., Kansas City, Mo. Steam-generator	571,847	Nov. 24	2517	596	77	1168
Scott, Henry R., Kansas City, Mo. Steam-generator	571,848	Nov. 24	2519	597	77	1168
Scott, Robert W. (See Williams, Louis N. D., assignor.)						
Scott, Walter, Plainfield, N. J. Printing-machine	571,982	Nov. 24	2761	651, 652	77	1215
Scott, Walter, Plainfield, N. J. Folding-machine	572,280	Dec. 1	337	80, 81	77	1344
Scott, Walter E., New York, N. Y., assignor to E. Gibson, Jersey City, N. J. Grate	569,063	Oct. 6	595	136	77	114
Scott, William, Medford, Mass. Tank-supply valve	571,023	Nov. 10	1063	253	77	868
Scott, William, Medford, Mass., assignor to Dalton-Ingersoll Company, of Massachusetts. Siphon water-closet	572,575	Dec. 8	854	205, 206	77	1460
Scott, William W., assignor to Lavigne & Scott Manufacturing Company, New Haven, Conn. Yacht-cannon	570,507	Nov. 3	127	31, 32	77	662
Scovill Manufacturing Company. (See Welton, Edwin D., assignor.)						
Scowcroft, Louis. (See Pegel, Julius G., assignor.)						
Scranton, Frederick A., assignor to Bevin Brothers Manufacturing Company, East Hampton, Conn. Bicycle-bell clamp	572,379	Dec. 1	538	127	77	1380
Scratton, Edward J. B., St. Andrews, Scotland. Portable safety-target	570,820	Nov. 3	796	166	77	773
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Apparatus for multiple switchboards for telephone-exchanges	571,906	Nov. 24	2632	624	77	1189
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone	571,907	Nov. 24	2636	625	77	1189
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Safety-valve for mercurial air-pumps	571,908	Nov. 24	2638	625	77	1190
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Explosive projectile	571,909	Nov. 24	2639	625	77	1190

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Pages.
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange system	571,910	Nov. 24	2642	626	77	1190
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Needle-plug test system for multiple switchboards	572,218	Dec. 1	215	53	77	1319
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Cord switch for telephone-switchboards	572,219	Dec. 1	218	53	77	1319
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric signal-bell	572,220	Dec. 1	221	54	77	1320
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange system	572,221	Dec. 1	223	54	77	1320
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-circuit	572,222	Dec. 1	226	54	77	1321
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-circuit	574,005	Dec. 29	3461	828	77	1999
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Test system for multiple switchboards	574,006	Dec. 29	3464	829	77	2000
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Electric-arc lamp	574,045	Dec. 29	3532	843	77	2013
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Toll-box for telephones	574,046	Dec. 29	3534	844	77	2013
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Telephone-exchange system	574,221	Dec. 29	3898	928	77	2077
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Selective-signal system	574,222	Dec. 29	3900	928	77	2078
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Selective signal	574,223	Dec. 29	3904	928	77	2078
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Spring-jack for telephone-switchboards	574,224	Dec. 29	3906	929	77	2079
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Motor-generator	574,278	Dec. 29	4000	950	77	2097
Scribner, Charles E., assignor to Western Electric Company, Chicago, Ill. Signaling-circuit for telephone trunk-lines	574,279	Dec. 29	4002	950	77	2097
Scribner, Charles E., Chicago, and F. R. McBerty, Downer's Grove, assignors to Western Electric Company, Chicago, Ill. Apparatus for telephone-switchboards	572,223	Dec. 1	227	54	77	1321
Scribner, Charles E., Chicago, and F. R. McBerty, Downer's Grove, assignors to Western Electric Company, Chicago, Ill. Signaling apparatus for telephone-lines	574,225	Dec. 29	3908	929	77	2079
Scribner, Charles E., Chicago, and F. R. McBerty, Downer's Grove, assignors to Western Electric Company, Chicago, Ill. Automatic signaling device for telephone-exchanges	574,280	Dec. 29	4005	951	77	2098
Scribner, Charles E., Chicago, and F. R. McBerty, Downer's Grove, assignors to Western Electric Company, Chicago, Ill. Plug for telephone-switchboards	574,281	Dec. 29	4007	951	77	2098
Scrimgeour, John, Jr., Pittston, Pa. Ceiling-plate	570,775	Nov. 3	653	149	77	758
Scudder, Heyward, Boston, Mass. Rib-tip holder for umbrellas or parasols	572,833	Dec. 8	1314	315	77	1548
Seaman, Benjamin S., Canton, Ohio. Means for attaching bicycle-saddles	568,802	Oct. 6	154	36	77	31
Seamans, Clarence W. (See Hussey, John W., assignor.)						
Seamans, Clarence W., Brooklyn, assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Platen for type-writing machines	574,175	Dec. 29	3789	904	77	2059
Seamless Leather Company. (See Sweet, Alonzo L., assignor.)						
Seamless Structural Tube Company. (See Harris, Hugh O., assignor.)						
Seamless Structural Tube Company. (See Holmgren, Emil F., assignor.)						
Seanor, William E., and D. A. McCaskill, Lytton, Canada. Gold-mining dredge	569,064	Oct. 6	597	136, 137	77	114
Searles, James M. (See Bristol, Baxter, and Searles.)						
Sears, George H., assignor of one-half to G. Hahn, Rochester, N. Y. Bicycle	570,271	Oct. 27	2742	652, 653	77	558
Sears, James A. W. (See Merriam and Sears.)						
Seaver, August. (See Ballou and Seaver.)						
Seaver, Augustus. (See Hamm, William S., assignor.)						
Seavolt, John W., Lock 53, assignor of one-fourth to E. P. Cohill, Hancock, Md. Carbonating device	573,712	Dec. 22	2932	693	77	1888
Sebastian, Charles, assignor to T. J. Cheney and J. M. Davis, St. Louis, Mo. Churn	574,282	Dec. 29	4009	951	77	2099
Sedgwick, Earl P., assignor to Chicago Hardware Manufacturing Company, Chicago, Ill. Spring-hinge	573,713	Dec. 22	2933	693	77	1888
See, De Witt C., Sandy Hill, N. Y. Eyelet	572,033	Nov. 24	2842	669	77	1229
Seebohm, Edgar C., New Orleans, La., assignor of one-half to J. A. Fay & Egan Company, Cincinnati, Ohio. Lumber-sorter	574,047	Dec. 29	3536	844	77	2013
Seeley, Jennie Y. (See Seeley, Marquis F. and J. Y.)						
Seeley, Marquis F. and J. Y., Chicago, Ill. Grain-storage elevator	572,726	Dec. 8	1132	273, 274	77	1513
Seely, Thomas, Tampa, Fla. Nut-lock	573,044	Dec. 15	1676	403	77	1637
Segar, Ellie, Chicago, Ill. Puzzle	572,727	Dec. 8	1137	274	77	1514
Segar, Eugene D., Randolph, Vt. Support for lanterns	571,803	Nov. 24	2436	581	77	1153
Segassie, Edward, New Orleans, La. Lamp-chimney	571,804	Nov. 24	2437	581	77	1154
Segerdahl, Rudolph, Chicago, Ill. Electric alarm-bell	570,508	Nov. 3	130	32	77	662
Seibel, William A., Independence, Iowa. Tag-fastener	568,803	Oct. 6	155	37	77	31
Seibel, William A., assignor, by mesne assignments, of one-half to H. H. W. Heitmann, Independence, Iowa. Harness attachment	570,964	Nov. 10	985	229	77	850
Seibert, James D. (See Williams, Frank C., assignor.)						
Seibert, Thomas B., North Indianapolis, Ind. Wheel	573,166	Dec. 15	1893	455, 456	77	1677
Seide, Joseph, New York, N. Y. Type-binder	571,625	Nov. 17	2110	506	77	1072
Seifert, Arthur C. D., Chemnitz, Germany. Convertible game-table	572,688	Dec. 8	1055	256	77	1499
Seifert, August J., A. Bourke, and F. J. Wilken, Valparaiso, Ind. Railway-signal	570,064	Oct. 27	2364	562	77	486
Seigle, Adolphe, assignor to Compagnie Internationale des Procédés Adolphe Seigle, Paris, France. Automatic reignition apparatus for hydrocarbon-furnaces	571,076	Nov. 10	1181	277	77	886
Seigle, Adolphe, assignor to Compagnie Internationale des Procédés Adolphe Seigle, Paris, France. Steam-generator	571,696	Nov. 17	2229	536	77	1095
Seiler, Philipp, Chicago, Ill. Pocket coin-holder	569,675	Oct. 20	1679	397	77	348
Selders, Henry, Lodi, Ohio. Folding table	570,509	Nov. 3	131	32	77	663
Self, Albert E., Philadelphia, Pa. Hat-pin	574,007	Dec. 29	3468	829	77	2001
Self, Edward D., South Orange, N. J. Crushing apparatus	568,926	Oct. 6	333	81, 82	77	68
Selkirk, Alexander, assignor of one-half to R. Bryce, Albany, N. Y. Conductor of electricity and conduit for holding same	573,302	Dec. 15	2155	516	77	1723
Sellentine, Robert J., Cleveland, Ohio. Toy money-box	569,241	Oct. 13	907	217	77	189
Sellers, George H., Ridley Park, Pa. Chuck	574,077	Dec. 29	3587	857	77	2023
Sellers, Morris, Chicago, Ill. Tie-plate	573,543	Dec. 22	2610	619	77	1826
Sellmayer, John M. (See Pritchard and Sellmayer.)						
Selman, Joseph T. B., Toronto, Canada. Filter	569,065	Oct. 6	601	137	77	115

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Semler, Wilhelmine, Vienna, Austria-Hungary. Folding chair	570,776	Nov. 3	654	150	77	758
Senat, Prosper L., Philadelphia, Pa. Combined golf-tee and score-card	570,821	Nov. 3	727	166	77	773
Senderling, Martin L., Jersey City, N. J. Covered wagon or cart	574,078	Dec. 29	3589	857	77	2023
Senger, Max, *et al.* (See Cronin, William D., assignor.)						
Serge-Klaslow, Paul, assignor to E. S. Stretch, East Orange, N. J. Automatic fan device and rocking-chair	573,167	Dec. 15	1895	456	77	1677
Sergeant, Henry C., Westfield, N. J., assignor to Ingersoll-Sergeant Drill Company, New York, N. Y. Air-compressor	568,804	Oct. 6	156	37	77	32
Sergeant, Samuel S., Chicago, Ill. Machine for corrugating pipe or tubing	569,431	Oct. 13	1224	287	77	248
Severance, James R., Chicago, Ill., assignor to McCormick Harvesting Machine Company. Self-binding harvester	571,403	Nov. 17	1728	411, 412	77	1003
Sevier, Samuel G., Oenaville, Tex. Plow	570,922	Nov. 3	728	167	77	773
Sévigné, Henri A., Boston, Mass. Automatically-attachable button	574,008	Dec. 29	3469	829	77	2001
Seward, William K. (See Klose, Karl A., assignor.)						
Seybold, Christian, Zweibrücken, Germany. Loom	570,234	Oct. 27	2669	635	77	544
Seybold, Christian, Zweibrücken, Germany. Variable-speed friction-gear	570,235	Oct. 27	2670	635	77	544
Seymour, Albert P. (See Pass and Seymour.)						
Seymour, Benjamin F., Cleveland, Ohio, assignor to B. F. Seymour, Jr., Denver, Colo. Street-car fender	573,434	Dec. 15	2412	574	77	1771
Seymour, Henry A., Washington, D. C. Electric-arc lamp	570,823	Nov. 3	730	167	77	774
Seymour, Henry A., Washington, D. C. Electric-arc lamp	570,824	Nov. 3	732	167, 168	77	774
Seymour, Henry A., Washington, D. C. Electric-arc lamp	574,117	Dec. 29	3661	874	77	2036
Seymour, Henry A., Washington, D. C. Electric-arc lamp	574,118	Dec. 29	3664	874, 875	77	2036
Seymour, Henry A., Washington, D. C. Electric-arc lamp	574,119	Dec. 29	3669	875	77	2037
Seymour, Henry A., Washington, D. C., assignor to General Electric Company, of New York. Trolley for electric railways	569,889	Oct. 20	2049	488	77	413
Seymour, Henry A., Washington, D. C., assignor to General Electric Company, of New York. Trolley for electric railways	572,933	Dec. 8	1462	356	77	1562
Shadbolt, Helon F., assignor to Excelsior Wrapper Company, Sheboygan, Wis. Machine for manufacturing excelsior wrappers or pads	570,236	Oct. 27	2672	636, 637	77	545
Shadburn, Wylie B., Buford, Ga. Collar-machine	572,912	Dec. 8	1427	344	77	1573
Shaeffer, Urias, Lancaster, Ohio. Hand corn-planter	571,915	Nov. 24	2684	635	77	1201
Shafer, John W., assignor of one-half to C. P. Patterson, Chicago, Ill. Car-signal	570,510	Nov. 3	133	33	77	663
Shallenberger, Oliver B., Rochester, assignor, by mesne assignments, to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. System of electrical distribution	571,849	Nov. 24	2521	597	77	1168
Shank, David A., assignor of one-half to A. L. Ross, Versailles, Mo. Hay-fork	573,709	Dec. 22	2928	692	77	1867
Shank, John C., *et al.* (See Cramer, John, assignor.)						
Shannon, Dewitt C., Cherokee City, Ark. Stock-marker	573,110	Dec. 15	1800	433	77	1661
Sharar, Fredrick H., Williamsport, Pa. Valve	570,568	Nov. 3	255	63, 64	77	685
Sharp, Charles S., assignor to D. M. Osborne & Company, Auburn, N. Y. Corn-harvester	569,242	Oct. 13	908	217, 218	77	190
Sharpe, John, and J. A. Banfield, assignors to D. MacLaren, Ottawa, Canada. Cash-register	571,098	Nov. 10	1223	286, 287	77	894
Sharples, Philip M., West Chester, Pa. Centrifugal separator	570,737	Nov. 3	592	136	77	747
Sharpneck, William S., *et al.* (See Gilliland, Lee O., assignor.)						
Shaw, Clarence P., assignor of two-thirds to C. N. Cobb, Abington, and E. L. Sprague, Boston, Mass. Heel-cushion for boots or shoes	569,589	Oct. 13	1519	357	77	302
Shaw, Clifford. (See Young and Shaw.)						
Shaw Electric Rasp Company. (See Shaw, William, assignor.)						
Shaw, John, Woodburn, Oreg. Railway-car	569,676	Oct. 20	1679	398	77	348
Shaw, Lorenzo D. B., Brooklyn, N. Y. Life-saving apparatus	568,960	Oct. 6	419	93, 94	77	80
Shaw, Noah T., *et al.* (See Shaw, William F., assignor.)						
Shaw, Walter, Boston, Mass. Hand tacking-machine	569,590	Oct. 13	1521	358	77	302
Shaw, Walter, Boston, Mass. Lasting-machine	571,404	Nov. 17	1731	412	77	1003
Shaw, Walter W., Texarkana, Ark. Bicycle	571,983	Nov. 24	2764	652	77	1215
Shaw, William, assignor to Shaw Electric Rasp Company, Detroit, Mich. Rasp	570,511	Nov. 3	134	33	77	663
Shaw, William F., Columbus, assignor of three-fourths to N. T. Shaw, C. W. Critchfield, and O. W. Aldrich, Franklin county, Ohio. Combined coffin-truck, embalming-table, &c.	573,303	Dec. 15	2167	517	77	1723
Shea, Francis A., *et al.*, administrators. (See Reece, John.)						
Sheahen, Maurice, Decatur, Mich. Railway and leveling same	568,879	Oct. 6	284	65	77	54
Shearer, Arthur B., Arroyo Grande, Cal. Fruit-drier	572,224	Dec. 1	231	55	77	1322
Shearer, George W. M., Jackson, Mich. Potato-digger	573,798	Dec. 22	3061	725	77	1912
Shek, Frank P., Brooklyn, N. Y. Jumping toy	573,241	Dec. 15	2030	486	77	1702
Sheldon, Edward P., Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Printing-machine	572,225	Dec. 1	232	55, 56	77	1322
Shellaberger, Edward F. (See Shellaberger, George H., assignor.)						
Shellaberger, Edward F., De Kalb, Ill. Wire fence	572,317	Dec. 1	414	98	77	1358
Shellaberger, George H., assignor to E. F. Shellaberger, De Kalb, Ill. Fence-stretcher	571,405	Nov. 17	1732	412	77	1004
Shelmerdine, Anthony, Liverpool, assignor to National Opalite Glazed Brick and Tile Syndicate, Limited, London, England. Tile	572,454	Dec. 1	650	153	77	1402
Shelton, George W., Webb City, Mo. Inhaler	573,363	Dec. 15	2263	540	77	1744
Shepard, Charles H., Ilion, assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Type-writing machine	573,626	Dec. 22	2773	657, 658	77	1859
Shepard, Wilbur L., Elmwood, Conn. Feed-water heater	573,111	Dec. 15	1801	434	77	1661
Shepherd, Benjamin F., Mendon, Ill. Guard for cutter-bars	572,728	Dec. 8	1138	274	77	1514
Shepherd, Laura M. Crete, Nebr. Canning-basket	568,805	Oct. 6	157	37	77	32
Sheppey, Medor, and F. D. Moore, assignors of one-third to C. B. Campbell, Fort Scott, Kans. Station-indicator	569,771	Oct. 20	1864	442, 443	77	379
Sheridan, Frank, assignor of one-half to W. E. Yager, Covington, Ky. Means and construction for inserting fittings under pressure	570,077	Nov. 10	1182	277	77	887
Sherman, Chauncey A. (See Snow and Sherman.)						
Sherman, Guy, Lawrence, Kans. Wheel-hub	572,618	Dec. 8	934	227	77	1475
Sherman, William C., Sidney, N. Y. Horse's hoof protector	568,961	Oct. 6	420	94	77	80
Sherman, William C., Orlando, Fla. Fountain-pen	570,717	Nov. 3	549	128	77	740
Sherwood, Arthur K. (See Borland and Sherwood.)						
Shesler, Daniel A., Toledo, Ohio. Carbon for arc-lamps	570,825	Nov. 3	735	.....	77	775
Shields, D. P. (See Graham, Jesse A., assignor.)						
Shields, Henry P. (See Cronin and Shields.)						
Shields, John, Jr., *et al.* (See Young, John R., assignor.)						
Shields, P. T. (See Ezzell, Fletcher, assignor.)						
Shimer, Samuel J., Milton, Pa. Templet for cutter-heads	573,304	Dec. 15	2169	517	77	1726
Shinsky, Morris, Newark, N. J. Interchangeable slat for shutters, blinds, &c	572,776	Dec. 8	1218	295	77	1529

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume.		Official Gazette.	
			Spec.	Dr'g.	Vol.	Page.
Shipman, Madison D., *et al.* (See Pringle, Eugene, assignor.)						
Shirley, William W., Westlake, La. Relief-valve	569,943	Oct. 20	2157	511	77	434
Shober, Will B., Cumberland, Md., and H. M. Ullmann, Springfield, Mo. Compound for grease-proofing articles	570,965	Nov. 10	985	.....	77	850
Shoch, Fred L., *et al.* (See Burton, Charles, assignor.)						
Shockley, Lemuel R., Milford, Del. Rail-joint	569,066	Oct. 6	602	137	77	115
Shoemaker, John, *et al.* (See Holton and Malsch, assignors.)						
Sholder, Louis H., Cleveland, Ohio. Lawn-sprinkler	569,243	Oct. 13	911	218	77	190
Short, Robert L., assignor of one-half to C. Smith, Cleveland, Ohio. Automatic regulator for furnaces	569,944	Oct. 20	2158	512	77	434
Short, Sidney H., Cleveland, Ohio. Method of and means for electric generation	569,591	Oct. 13	1521	358	77	303
Short, Sidney H., Cleveland, Ohio. Trolley-support for electric railways	569,772	Oct. 20	1868	443	77	320
Shough, Jacob L. (See Brunner and Shough.)						
Shoup, Joel O., *et al.* (See Yost, George B., assignor.)						
Shourek, John, Allegheny, Pa. Brake mechanism	571,697	Nov. 17	2230	536, 537	77	1095
Shover, Barton R., Indianapolis, Ind., and F. P. Townsend, Asbury Park, N. J. Electric-railway system	569,432	Oct. 13	1227	288	77	249
Showalter, John W., and J. N. Carver, Altoona, Kans. Gate	571,140	Nov. 10	1304	303	77	908
Shrope, Albert J., assignor of one-half to J. K. Milbourne, Mechanicsville, Iowa. Device for opening or closing gates, barn-doors, &c	570,412	Oct. 27	3034	719	77	611
Shull, John H., Wellesley, assignor of one-half to F. W. Stevens, Boston, Mass. Window appliance	573,489	Dec. 22	2522	597, 598	77	1809
Shull, John H., Boston, assignor of one-half to F. W. Stevens, Newton, Mass. Blind-hinge	573,544	Dec. 22	2611	620	77	1826
Shull, John H., Boston, assignor of one-half to F. W. Stevens, Newton, Mass. Window-sash	573,545	Dec. 22	2613	620	77	1826
Shultz, Edward L., Chicago, Ill. Bearing-bracket for bicycles	571,289	Nov. 10	1544	366	77	954
Shultz, Leo. (See McNaughton, John G., assignor.)						
Shute, Henry. (See Cederberg, Carl, assignor.)						
Shuttleworth, Alpheus C., Philadelphia, Pa., assignor to G. Draper & Sons, Hopedale, Mass. Electromagnetic warp stop-motion for looms	570,738	Nov. 3	594	136	77	747
Sickell, W. G., *et al.* (See Layton, Edward L., assignor.)						
Siddall, Archibald, Bondi, New South Wales. Picture-hanger	571,698	Nov. 17	2234	537	77	1095
Sidwell, Arthur, Waltham, assignor to himself, and W. Measure, Highlandville, Mass. Bicycle-frame	571,406	Nov. 17	1732	413	77	1004
Siebenfoercher, Anthony S., Kenton, Ohio. Folding portable confessional	570,512	Nov. 3	135	33	77	663
Siegenthaler, George, Fremont, Ohio. Hame attachment	568,880	Oct. 6	285	65	77	55
Siehr, William H. (See Georg, Carl R., assignor.)						
Siemens & Halske Electric Company of America. (See Meissner, Adolf E. W., assignor.)						
Siemens & Halske Electric Company of America. (See Queisser, Paul F. H., assignor.)						
Sigler, Samuel W. (See Hayes, Porter C., assignor.)						
Sigmund, Louis, Naperville, Ill. Cheese-press	572,455	Dec. 1	651	153	77	1402
Silberman, Jacob, New York, N. Y. Bicycle costume	573,168	Dec. 15	1896	456, 457	77	1678
Silcott, Loudon, Mount Vernon, Ohio. Rod or bolt cutter	569,067	Oct. 6	603	137	77	116
Sill, Alfred, deceased, Philadelphia, Pa.; E. M., A. H., and C. Sill, executors. Breech-loading firearm	569,244	Oct. 13	913	218	77	190
Sill, Alfred H., *et al.*, executors. (See Sill, Alfred.)						
Sill, Clarence, *et al.*, executors. (See Sill, Alfred.)						
Sill, Edwin M., *et al.*, executors. (See Sill, Alfred.)						
Silverston, Anthony B., assignor of one-half to C. Thaw, St. Louis, Mo. Fastener	574,009	Dec. 29	3470	829	77	2001
Simmance, John F., assignor to Wright's Gas Meter Syndicate, Limited, London, England. Coin-freed apparatus for fluid-meters	572,913	Dec. 8	1429	345	77	1573
Simmonds, William, and C. Linegar, Yonkers, N. Y. Water-closet	568,881	Oct. 6	285	66	77	55
Simmons, Andrew L., Union City, Ind. Animal-poke	571,984	Nov. 24	2765	652	77	1216
Simmons, Charles, Atlanta, Ga. Umbrella	568,806	Oct. 6	158	37	77	32
Simmons, Edward. (See Moore, Ira W., assignor.)						
Simmons, Ross C., East Tawas, Mich. Car-coupling	573,546	Dec. 22	2615	621	77	1827
Simon, William, Jr., assignor of one-half to H. R. Hamley, St. Louis, Mo. Curtain-stretcher	570,210	Oct. 27	2626	623	77	536
Simonds, Alvin A., Dayton, Ohio. Voltmeter	572,380	Dec. 1	539	127	77	1381
Simonds, William E., Canton, Conn. Pencil-pointer	573,364	Dec. 15	2264	540	77	1744
Simonin, Isaac M., Philadelphia, Pa. Process of and apparatus for treating garbage	573,714	Dec. 22	2934	693	77	1888
Simons, James W., Port Chester, N. Y. Sewing-machine attachment	569,773	Oct. 20	1870	443	77	380
Simons, Joseph W., Port Chester, N. Y. Valve-stopper for bottles	573,490	Dec. 22	2524	598	77	1809
Simonson, James H. (See Daniels, Howard, assignor.)						
Simpson, Anson D., West Troy, and A. Bigelman, Troy, N. Y. Car-fender	570,611	Nov. 3	326	80, 81	77	699
Simpson, William Salford, assignor to Duplex Weaving Appliance Company, Limited, Manchester, England. Selvage-producing device for looms	573,715	Dec. 22	2936	694	77	1888
Simpson, William X., Aurora, Ill. Merry-go-round	571,626	Nov. 17	2111	506, 507	77	1072
Simrak, Samuel S., *et al.* (See Rolfson, Rolf J., assignor.)						
Sims Company. (See Sapper, Frank C., assignor.)						
Sims, George E. (See Drury and Sims.)						
Sinclair, Charles S., Cincinnati, Ohio. Feed attachment for printing-presses	571,699	Nov. 17	2234	537, 538	77	1095
Sinclair, John B., Jr., Seymour, assignor of two-thirds to E. N. and A. H. Carrington, Derby, Conn. Driving mechanism for bicycles	572,729	Dec. 8	1139	275	77	1514
Sinclair, Willis D., *et al.* (See Demorest, Allen T., assignor.)						
Singer, Frank K. (See Singer, George F. and F. K.)						
Singer, George F. and F. K., Mingo Junction, Ohio. Electric signal-operating device for railway-trains	573,716	Dec. 22	2940	695	77	1889
Singer, Joseph, Los Angeles, Cal. Expansion-reamer	569,303	Oct. 13	1019	243	77	210
Singer Manufacturing Company. (See Diehl, Philip, assignor.)						
Singer Manufacturing Company. (See Elkin, Charles, assignor.)						
Singer Manufacturing Company. (See Jagielski, Wladislaw F., assignor.						
Singer Manufacturing Company. (See Rontke, Albert, assignor.)						
Singer, William F., assignor to Home Ice Maker Company, Nashville, Tenn. Apparatus for manufacturing ice	571,141	Nov. 10	1305	303	77	908
Singerly, William M. (See Speer, Edward D., assignor.)						
Singin, Louis N., Walls, Pa. Car-coupling	570,211	Oct. 27	2627	623	77	536
Sintz Gas Engine Company. (See Winter, Harry A., assignor.)						
Siron, Ernest, assignor of one-half to T. C. Byrnes, New York, N. Y. Decoration for textile fabrics	570,612	Nov. 3	328	81	77	699
Siviter, Francis P., U. S. Army. Non-refillable bottle	572,456	Dec. 1	652	154	77	1402

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sjolander, Eric O., Cedar Bayou, assignor of one-half to E. Rheaum, Chambers county, Tex. Fire-escape	572,576	Dec. 8	857	206	77	1460
Sjolander, Jacob R., Ironwood, Mich. Sleigh-runner	569,011	Oct. 6	510	115	77	97
Skeels, Charles W., New Cumberland, Ohio. Digging and stable fork	568,902	Oct. 6	422	91	77	81
Skinner, Albert B., St. Louis, Mo. Paper-file	572,619	Dec. 8	935	227	77	1476
Skinner, Charles E., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Electrical-discharge device	571,099	Nov. 10	1235	287	77	896
Skinner, George, London, England. Curling-iron	573,112	Dec. 15	1802	434	77	1661
Skreberg, Hans A., Milan, Minn. Bag-holder	570,343	Oct. 27	2906	690	77	587
Slack, Wilbert L. (See Wagener, Christian J., assignor.)						
Slade, Daniel, Ashfield, assignor to C. Tayler, Sydney, New South Wales. Fog signaling apparatus	571,203	Nov. 10	1398	327	77	927
Slade, William H., Columbus, Ohio. Holding mechanism for mining-machines	572,074	Nov. 24	2947	693	77	1249
Slaght, Lewis H., *et al.* (See Easton, James W., assignor.)						
Slaker, Frank J., assignor of one-half to F. A. Obenauer, Chicago, Ill. Barrel	570,883	Nov. 3	849	198	77	799
Slattery, Frank S., assignor of one-half to L. W. Young, Bradford, Pa. Clay-elevator	570,106	Oct. 27	2439	580	77	501
Slattery, Thomas. (See Kennedy and Slattery.)						
Slaymaker-Barry Company. (See Troost, William F., assignor.)						
Slaymaker, Jasper, assignor of two-thirds to Sunbury Water Company, Sunbury, Pa. Stop-cock for water-service systems	569,304	Oct. 13	1020	243	77	210
Slee, Richard B., Washington, D. C. Barber's appliance	570,107	Oct. 27	2440	580	77	501
Slight, Emsley L., assignor of two-thirds to J. A. Mulkey and E. Wilkins, Ennis, Tex. Curtain-fixture	569,592	Oct. 13	1527	358	77	303
Sloane, Thomas C. (See MacKenzie, Sloane, and Hanna.)						
Sluyter, Walter F. (See Case, Charles E., assignor.)						
Sly, Thomas. (See Sommer and Sly.)						
Slye, Clarence E. (See Bell, George A., assignor.)						
Small, Abraham, *et al.* (See Woodard, Alvin N., assignor.)						
Smalley, Albert G., Chelsea, Mass. Fruit-jar	572,281	Dec. 1	340	82	77	1344
Smalley, Joseph. (See Tweedale and Smalley.)						
Smead & Wills Warming and Ventilating Company. (See Wills and Jordan, assignors.)						
Smith, Abram H., Vancouver, Canada, assignor to E. P. Smith, Tacoma, Wash. Stove-pipe shelf	572,381	Dec. 1	540	128	77	1381
Smith, Albert H. (See Glover and Smith.)						
Smith, Alfred J., New Britain, Conn. Raisin-seeder	572,075	Nov. 24	2948	694	77	1249
Smith, Allen H., Snoqualmie, Wash. Trolling-hook	570,344	Oct. 27	2908	690	77	588
Smith, Barclay S. (See Cole, Anson D., assignor.)						
Smith, Benjamin F., assignor of one-half to C. G. Smith, Somerville, Mass. Driven-well system	572,034	Nov. 24	2844	669	77	1230
Smith, Charles. (See Short, Robert L., assignor.)						
Smith, Charles A., Minerva, Ohio. Stovepipe	572,076	Nov. 24	2949	694	77	1249
Smith, Charles F., assignor to Smith & Egge Manufacturing Company, Bridgeport, Conn. Machine for automatically manufacturing chain from sheet metal	574,176	Dec. 29	3790	904, 905, 906, 907	77	2059
Smith, Charles G. (See Smith, Benjamin F., assignor.)						
Smith, Comly S. (See Hessemer and Smith.)						
Smith, Cyrus M., Lake City, Iowa. Apparatus for boring and tubing wells	570,513	Nov. 3	136	34	77	663
Smith, D. G., *et al.* (See Glass, George A., assignor.)						
Smith, Daniel R. (See Harper and Smith.)						
Smith, Desbrow M. (See Robinson and Smith.)						
Smith, Edward G., New York, N. Y. Machine for making scraped brass	574,226	Dec. 29	3909	929	77	2079
Smith, Edwin B., and H. Benard, Fremont, Ohio. Oil-well jack and pumping apparatus	569,068	Oct. 6	604	138	77	116
Smith & Egge Manufacturing Company. (See Smith, Charles F., assignor.)						
Smith, Elmer E., *et al.* (See Badgley, Edwin L., assignor.)						
Smith, Emmett L., Birmingham, Ala. Pneumatic seed-cotton conveyer and distributer	568,882	Oct. 6	287	66	77	55
Smith, Eugenia P. (See Smith, Abram H., assignor.)						
Smith Exhaust Pipe Company. (See Smith, John Y., assignor.)						
Smith, Francis A., assignor, by mesne assignments, to St. Louis Art Metal Company, St. Louis, Mo. Suspension card-index	570,686	Nov. 3	505	118	77	732
Smith, Frederick M., assignor of one-half to T. E. Webster, Bay City, Mich. Bridge-gate	572,318	Dec. 1	415	98	77	1358
Smith, Frederick W. (See Halpin, Cornelius, assignor.)						
Smith, George H. (See Gates, William and L. W., assignors.)						
Smith, Henry L., Seekonk, Mass., assignor to American Ship Windlass Company, Providence, R. I. Capstan	572,457	Dec. 1	653	154, 155	77	1403
Smith, Herbert, Bayonne, N. J., and T. Gordon, New York, N. Y. Regenerative lamp	573,113	Dec. 15	1803	435	77	1661
Smith, Hugh, Newark, N. J. Polishing or finishing machine	569,843	Oct. 20	1979	470, 471	77	401
Smith, Jacob A., Holland, Mich. Adjustable window-screen	573,365	Dec. 15	2265	540	77	1744
Smith, James O., Newark, N. J. Expansible chuck	569,245	Oct. 13	915	219	77	191
Smith, John, assignor of one-half to H. Brandle, Philadelphia, Pa. Vacuum-pan	572,382	Dec. 1	542	128	77	1381
Smith, John D., New York, N. Y. Condenser	572,834	Dec. 8	1315	315	77	1548
Smith, John G., assignor to Union Wire Mattress Company, Chicago, Ill. Spring bed-bottom	572,577	Dec. 8	859	206, 207	77	1461
Smith, John H., *et al.* (See Powers, Edward, assignor.)						
Smith, John P., Kahoka, assignor of one-half to J. Douglass, Millport, Mo. Stock-feeder	570,569	Nov. 3	257	64	77	686
Smith, John S., La Fontaine, assignor to Indiana Manufacturing Company, Indianapolis, Ind. Pneumatic straw-stacker	568,883	Oct. 6	289	66, 67	77	55
Smith, John Y., assignor to Smith Exhaust Pipe Company, Doylestown, Pa. Exhaust apparatus	573,547	Dec. 22	2616	621	77	1827
Smith, Joseph H., and W. A. Landis, St. Cloud, Minn. Egg-tester	573,305	Dec. 15	2170	518	77	1736
Smith, Josephine, Jacksonville, Ill. Curtain-stretcher	568,991	Oct. 6	484	109	77	92
Smith, Jud, Sayre, Pa. Fire-box for steam-boilers	572,077	Nov. 24	2950	694	77	1249
Smith, Lewis, Brooklyn, N. Y. Bicycle-rest	571,700	Nov. 17	2236	538	77	1096
Smith, Louis E., Denver, Colo. Spool-holder for sewing-machines	571,024	Nov. 10	1086	253	77	869
Smith, Luther C., Carbondale, Pa. Block-signal	569,246	Oct. 13	916	219, 220	77	191
Smith, Nathaniel E., Jersey City, N. J. Pipe-patch	573,491	Dec. 22	2525	598	77	1809
Smith, Norbourn H., Bristol, Tenn. Stack blower attachment	569,804	Oct. 20	1919	455	77	389
Smith, Oberlin, Bridgeton, N. J. Coining-press	574,227	Dec. 29	3911	929, 930, 931	77	2080
Smith, Oberlin, Bridgeton, N. J., assignor of one-half to G. Draper & Sons, Hopedale, Mass. Loom	569,805	Oct. 20	1920	456	77	390

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Smith, Oscar L., Edgewater, N. Y. Air compressor and blower	572,383	Dec. 1	543	128	77	1381
Smith, Otis H., Cambridge, Mass. Kiln for drying kindling-wood	571,407	Nov. 17	1733	413, 414	77	1004
Smith, Rudolph C. (See Otis and Smith.)						
Smith, Samue. C., Philadelphia, Pa. Photographic-plate lifter	572,668	Dec. 8	1010	244	77	1490
Smith, Samuel J., *et al.* (See Powers, Edward, assignor.)						
Smith, Samuel N., Minneapolis, Minn. Boat-propelling attachment	570,613	Nov. 3	329	81, 82	77	699
Smith, Samuel N., Minneapolis, Minn. Primary battery	571,460	Nov. 17	1827	435	77	1022
Smith, Sarah M., St. Augustine, Fla. Skirt-supporter	569,356	Oct. 13	1109	264	77	228
Smith, Theodore E., Shamokin, Pa. Means for operating gates of coal-jigs, &c	574,228	Dec. 29	3915	932	77	2081
Smith, Thomas N., assignor of one-half to W. A. Symington, Independence, Mo. Hose-reel	571,701	Nov. 17	2238	538	77	1096
Smith, Warren B. (See Tymeson, Eugene, assignor.)						
Smith, William, Trenton, N. J. Pipe connection	569,247	Oct. 13	921	220	77	191
Smith, William, Ashton-under-Lyne, England. Hinge	571,408	Nov. 17	1737	415	77	1005
Smith, William, London, England. Guide-bearing for railway connection-rods	572,384	Dec. 1	545	128, 129	77	1382
Smith, William H., Oakville, Conn. Saw-set	572,835	Dec. 8	1316	316	77	1548
Smith, William J., New Haven, Conn. Time-fuse for shells	570,065	Oct. 27	2366	562	77	486
Smith, William J., New Haven, Conn., assignor to Geometric Drill Company, of Delaware. Die-head for screw-cutting	572,934	Dec. 8	1483	356	77	1582
Smith, William T., assignor of one-third to B. Walmsley, Bolton, England. Boring and cutting tool	569,433	Oct. 13	1228	288	77	249
Smith, Willis A., New York, N. Y. Antirefilling bottle	571,204	Nov. 10	1399	327	77	927
Smurthwaite, Hubert F., Coatesville, Pa. Expansion steam-trap	570,777	Nov. 3	655	150	77	758
Smyser, Henry E., Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Mechanism for feeding granulated substances	570,108	Oct. 27	2441	580	77	501
Smyser, Henry E., Philadelphia, Pa., assignor to Arbuckle Brothers, New York, N. Y. Feed mechanism for weighing-machines	570,109	Oct. 27	2443	581, 582	77	502
Smyth, Thomas, Fredericktown, Mo. Weather-board saw	571,889	Nov. 24	2593	615, 616	77	1182
Smyth, William H., Berkeley, Cal. Can-soldering machine	573,423	Dec. 15	2376	567, 568	77	1764
Snell, Arthur T., Santa Barbara, Cal. Safety-pin	571,054	Nov. 10	1132	265	77	878
Snell, Charles M., Danbury, Conn. Hat-crown-pouncing machine	569,890	Oct. 20	2051	488, 489	77	414
Snelling, David, Baker, Ill. Separator for grain-threshers	568,807	Oct. 6	159	38	77	32
Snider, Clarence A., Cleveland, Ohio. Centrifugal drying and filtering machine	569,677	Oct. 20	1681	398	77	349
Snow, Charles B., and C. A. Sherman, Norwich, Conn. Knife-grinding machine	570,966	Nov. 10	986	229	77	850
Snow, Clark, Oxford, Ala. Vehicle-brake	570,345	Oct. 27	2909	690	77	588
Snow, Frank P., Baker City, Oreg. Quartz-mill	569,069	Oct. 6	607	138	77	116
Snow, Stephen, Everett, Mass., assignor to Goodyear Shoe Machinery Company. Lasting-machine	569,357	Oct. 13	1110	264	77	229
Snowden, John W., Evanston, Ill. Umbrella	569,248	Oct. 13	923	220	77	192
Snyder, Charles H. (See Williams, Hubbard D. B., assignor.)						
Snyder, George W., Orangeville, Ohio. Machine for grading potatoes or onions	570,305	Oct. 27	2848	675, 676	77	576
Snyder, Robert C., Colfax, Ill. Bake-pan	573,045	Dec. 15	1677	403	77	1637
Soby, Charles. (See Gray, William, assignor.)						
Société Anonyme de Métallurgie du Cuivre, Procédés Pre. Manhes. (See Manhes, Pierre, assignor.)						
Société Anonyme pour la Transmission de la Force par l'Électricité. (See Hutin and Leblanc, assignors.)						
Soderstrom, Gus. (See Peterson and Soderstrom.)						
Solar Manufacturing Company. (See Morse, Stephen B., assignor.)						
Solar Refining Company. (See Frasch, Herman, assignor.)						
Solatinow, Joseph, Paterson, N. J. Game-counter	571,174	Nov. 10	1351	315	77	918
Soley, Frank. (See Dyer and Soley.)						
Solomon, Emmet G., Omaha, Nebr. Yacht-racing toy	568,808	Oct. 6	161	38	77	33
Sommer, George P., and T. Sly, Honesdale, Pa. Device for reducing size of rings	569,522	Oct. 13	1386	327	77	278
Sommerfeldt, Halfdan, Baltimore, Md. Draftman's measure	569,358	Oct. 13	1111	264	77	229
Somes, Edgar R., Melrose, Mass. Card-catalogue for libraries, &c	572,132	Dec. 1	71	16	77	1292
Song, Arvid. (See Hildebrandt, Rudolph, assignor.)						
Sonne, Otto F., Boston, Mass. Grade-delineator	573,717	Dec. 22	2941	695	77	1869
Sorenson, Theolinda B., Chicago, Ill. Combined coal-shovel and ash-sifter	571,205	Nov. 10	1400	327	77	927
Sorgan, Otto, New York, N. Y. Mechanical musical instrument	572,458	Dec. 1	656	155	77	1403
Sorsoleil, Isaac, Owatonna, Minn. Stop-box	572,836	Dec. 8	1317	316	77	1548
Soto, Abelardo J., Martinez, Cal. Arm-rest for books	571,936	Nov. 24	2886	636	77	1201
Sours, John L., Anoka, Minn. Nippers	573,548	Dec. 22	2619	628	77	1827
Southgate, Louis W., Worcester, Mass., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Printing-press	569,434	Oct. 13	1229	288, 289	77	249
Southwark Foundry and Machine Company. (See Marichal, Arthur, assignor.)						
Southwick, Albert N., New York, N. Y. Apparatus for sales-checking	574,010	Dec. 29	3472	830	77	2001
Spamer, Eliza M. and R. F., St. Louis, Mo. Removable cover for bicycle handle-bars	571,025	Nov. 10	1087	254	77	869
Spamer, Richard F. (See Spamer, Eliza M. and R. F.)						
Spangler, John A., Washington, Pa. Pile-driver	569,435	Oct. 13	1234	289, 290	77	250
Spannaus, Otto. (See Breakspear, Spannaus, and Weisbecker.)						
Sparmo, Mariano, and L. Russo, New York, N. Y. Car-fender	573,242	Dec. 15	2031	487	77	1702
Spaulding, Elijah F., Bound Brook, N. J. Cash-register	573,046	Dec. 15	1678	403, 404	77	1637
Spaulding, Elijah F., assignor to American Engine Company, Bound Brook, N. J. Valve for steam-engines	572,579	Dec. 8	862	207, 208	77	1461
Spaulding, Henry F., Canastota, S. D. Grain-bundle stacker	571,865	Nov. 24	2547	603, 604, 605	77	1174
Specialty Manufacturing Company. (See Capewell, George J., assignor.)						
Specialty Manufacturing Company. (See Mingle, William J., assignor.)						
Speer, Edward D., Providence, Md., assignor to himself, and W. M. Singerly, Philadelphia, Pa. Paper-pulping engine	573,627	Dec. 22	2778	658	77	1860
Spence, Harvey S., Jewett, Ohio. Lifting-jack	570,614	Nov. 3	331	82	77	700
Spence, Lavoslor. (See Cox and Spence.)						
Spencer, Albert E., Brooklyn, N. Y. Cushion-tire for vehicle-wheels	569,523	Oct. 13	1387	327	77	278
Spencer, George O., Manchester, N. H. Road snow-plow	569,249	Oct. 13	924	221	77	192
Spencer, Lucretia P., Dover, Del. Slate-pencil sharpener	570,570	Nov. 3	258	64	77	686

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spencer, Ripley F., Ashland, Wis. Harness	573,306	Dec. 15	2172	518	77	1727
Spencer, Sidney E., assignor to Automatic Cycle Stand, Limited, London, England. Bicycle-rest	572,664	Dec. 8	1010	244, 245	77	1401
Spencer, Slaughter L., assignor of one-half to T. A. Taylor, Roanoke, Va. Automatic cattle-guard	571,142	Nov. 10	1307	304	77	909
Spencer, Thomas, and C. Toerring, Jr., assignors to Helios Electric Company, Philadelphia, Pa. Electric-arc lamp	572,777	Dec. 8	1219	295	77	1529
Sperry, Elmer A., Cleveland, Ohio, assignor to General Electric Company, of New York. System of control for electric motors	569,305	Oct. 13	1022	244	77	211
Sperry, Elmer A., Cleveland, Ohio, assignor to General Electric Company, of New York. Electric brake	571,409	Nov. 17	1738	415	77	1005
Sperry, Elmer A., Cleveland, Ohio, assignor to General Electric Company, of New York. Electric controller	571,410	Nov. 17	1740	415	77	1005
Sperry, Elmer A., Cleveland, Ohio, assignor to General Electric Company, of New York. Electric car-brake	574,120	Dec. 29	3670	875, 876	77	2038
Spiegel, James C., Middletown, N. Y. Bicycle-handle	572,226	Dec. 1	238	57	77	1324
Spiegle, Fred M., Philadelphia, Pa., assignor to American Lithographic Company of New York. Articulated toy figure	572 730	Dec. 8	1140	275	77	1514
Spindler, Valentine, Saginaw, Mich. Hose-carriage	570,237	Oct. 27	2682	637	77	547
Spink, John L., *et al.*, trustees. (See Pennycnick, James G., assignor.)						
Spitzenberg, Philip, Brooklyn, N. Y. Valve	572,580	Dec. 8	865	208	77	1402
Sponable, Isaac, *et al.* (See Cazier, Perry H., assignor.)						
Sporleder, Michael, Lexington, Okla. Ter. Watch-regulator	569,844	Oct. 20	1981	471	77	401
Sprague, Anson, San Leandro, Cal. Electric railway	573,169	Dec. 15	1897	457	77	1678
Sprague, Arthur A., New York, N. Y. Railway-station signal	573,047	Dec. 15	1693	405	77	1640
Sprague, Austin V. M., New York, N. Y. Sterilizer	571,541	Nov. 17	1977	470	77	1048
Sprague, Austin V. M., New York, N. Y. Door for sterilizing-ovens	571,542	Nov. 17	1979	471	77	1048
Sprague, Edwin L. (See Stevenson, Daniel W., assignor.)						
Sprague, Edwin L., *et al.* (See Shaw, Clarence P., assignor.)						
Sprague, Frederick H., Orange, Mass. Vest	571,543	Nov. 17	1981	471	77	1048
Springer, Franklin. (See Miller, Joseph H., assignor.)						
Springer, Joseph W. (See Estes, John H., assignor.)						
Springer, Narcissa S., assignor of one-half to J. N. Weld, Cleveland, Ohio. Medicine dose-indicating cabinet	569,359	Oct. 13	1111	265	77	229
Springer Separator Company. (See Springer, Thomas H., assignor.)						
Springer, Thomas H., assignor to Springer Separator Company, Incorporated, Philadelphia, Pa. Dirt-arrester for liquid-separators	573,873	Dec. 22	3138	747	77	1926
Springsteel, Arthur E., Bluffton, Ind. Combined chair and cane	574,011	Dec. 29	3472	830	77	2001
Springsteel, Henry, Schenectady, N. Y. Barrel-cover	571,544	Nov. 17	1985	471	77	1049
Springsteen, Silas, and H. Harris, Holland, Mich. Adjustable school desk and seat	572,731	Dec. 8	1141	275, 276	77	1514
Sprinkle, William H., Lincoln, Ind. Band-cutter and feeder	570,514	Nov. 3	138	34, 35	77	664
Spurr, Charles O., Brockton, Mass. Bicycle-handle	569,436	Oct. 13	1237	290	77	250
Spurr, George W., assignor to Household Specialty Company, Wabash, Ind. Egg-crate	569,390	Oct. 13	1163	277	77	238
Sputh, Robert, Dresden, Germany. Apparatus for making wood felt	571,580	Nov. 17	2039	485	77	1059
Spyker, James C. (See Albright, Harry W., assignor.)						
St. Croix, Edward J., Seattle, Wash. Air-ship	573,549	Dec. 22	2619	622	77	1827
St. Hubert, Jules C. de. (See Pokrantz and St. Hubert.)						
St. John, Gamaliel C., New York, N. Y. Grate	574,347	Dec. 29	4110	976	77	2118
St. John, Marsena, Ottawa, Kans. Overshoe-fastener	570,347	Oct. 27	2912	691	77	588
St. Louis Art Metal Company. (See Pauly and McQuilkin, assignors.)						
St. Louis Art Metal Company. (See Smith, Francis A., assignor.)						
Stackpole, T., *et al.* (See Fisher, Robert J., assignor.)						
Stacy, Fred M., Portsmouth, N. H. Music holder and turner	569 726	Oct. 20	1786	424	77	366
Staede, Edward I. P., Mankato, Minn. Carbureter	572,837	Dec. 8	1318	316	77	1549
Stahl, Albert W., U. S. Navy, and R. Gatewood, deceased; F. B. Gatewood, Annapolis, Md., administratrix. Wave-motor	574,177	Dec. 29	3799	907	77	2059
Stahl, Karl M., New York, N. Y. Automatic gas-pressure regulator	572,838	Dec. 8	1319	316	77	1549
Staiger, John F., and G. W. Grabert, Mount Vernon, Ind.; said Grabert assignor to said Staiger. Cleaner for dust-collectors	572,620	Dec. 8	936	227, 228	77	1476
Staley, James M., Reading, Pa. Car-fender	570,571	Nov. 3	250	64	77	686
Stallknecht, Harry S. (See Perdreaux, Emile J., assignor.)						
Stamm, Jacob, Stuttgart, Germany. Electric annunciator	570,967	Nov. 10	988	230	77	850
Stancil, Jesse W., Farmerville, La. Planter	569,891	Oct. 20	2058	489, 490	77	415
Standard Brake Company. (See Howe, Henry L., assignor.)						
Standard Dry-Kiln Company. (See Bemis, Albert T., assignor.)						
Standard Electric Signal Company. (See Hibbard, William W., assignor.)						
Standard Equipment Company. (See Foster, Charles E., assignor.)						
Standard Underground Cable Company. (See Reid, Edwin S., assignor.)						
Standfield, Edwin R., and W. Brew, Christchurch, New Zealand. Hat-securing apparatus	573,492	Dec. 22	2526	598	77	1809
Stanley Electric Manufacturing Company. (See Cheseney and Kelly, assignors.)						
Stanley Electric Manufacturing Company. (See Kelly and Cheseney, assignors.)						
Stanley, Henry O., Dixfield, Me. Artificial minnow	570,687	Nov. 3	506	118	77	733
Stanley, Ira N., assignor to himself, E. D. White, and J. E. Brick, Brooklyn, N. Y. Car-fender	571,175	Nov. 10	1353	316	77	918
Stanley, Nelson D., and J. S. Reynolds, Essex, Vt. Trolley	574,345	Dec. 29	4108	976	77	2117
Stannard, John E., Springfield, Mass. Bicycle-pedal clip	570,778	Nov. 3	656	150	77	759
Stansfield, Howarth. (See Edgecomb, Harry A., assignor.)						
Staple Fastening Machine Company. (See Hamm and Eaton, assignors.)						
Staples, John A., Newburg, N. Y. Upholstery	572,581	Dec. 8	866	208, 209	77	1462
Starace, Frank, New York, N. Y. Window	574,283	Dec. 29	4011	952	77	2099
Stark, Ernst P., Markneukirchen, Germany. Harp	570,236	Nov. 3	736	168	77	775
Stark, Gustav, assignor to M. Stark, New York, N. Y. Tobacco-pipe	571,805	Nov. 24	2438	581	77	1154
Stark, Marianna. (See Stark, Gustav, assignor.)						
Stark, Paul, Markneukirchen, Germany. Motor	573,366	Dec. 15	2266	541	77	1744
Starkweather, James W. (See Holloway and Starkweather.)						
Starr, Calvin R., Columbus, Ohio. Trunk	568,927	Oct. 6	353	82	77	68
Starritt, Joseph W., Richmond, Va. Rotary brush or cleaner	572,459	Dec. 1	658	155	77	1404
Startzel, Lavinia V. (See Startzel, Nathan F., assignor.)						
Startzel, Nathan F., assignor to L. V. Startzel, Sayre, Pa. Badge	570,515	Nov. 3	140	35	77	664
Stäubli, Jacob, Calw, Germany. Machine for securing stretching-bands to card-cloths	571,985	Nov. 24	2765	653	77	1216
Stauffiger, Charles J., Buffalo, N. Y. Game apparatus	569,391	Oct. 13	1164	277	77	238

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Steam Gauge and Lantern Company *et al.* (See Wright, Frederick K., assignor.)						
Steam Heated Horn Company. (See Buffum, Herbert H., assignor.)						
Stearns, Albert, Brooklyn, N. Y. Machinery for wrapping and securing wrappers around boxes, &c.	570,615	Nov. 3	332	82, 83, 84	77	700
Stearns, Alfred M., *et al.* (See Giesy, Edward H., assignor.)						
Stebbins, Albyn A., *et al.* (See Fowler, Charles M., assignor.)						
Stebbins, Nathan M., Stafford, Conn. Combination-tool	574,178	Dec. 29	3802	908	77	2060
Stebinger, Eugene. (See Phillips and Stebinger.)						
Stecher Lithographic Company. (See Corkhill, Henry R., Jr., assignor.)						
Steck, Ernst F. (See Robinson and Steck.)						
Steck, Ernst F., Chicago, Ill., assignor to Fire Extinguisher Manufacturing Company, Chicago, Ill., and New York, N. Y. Automatic sprinkler for fire-extinguishers	571,581	Nov. 17	2040	485, 486	77	1059
Steck, Ernst F., Chicago, Ill., assignor to Fire Extinguisher Manufacturing Company, Chicago, Ill., and New York, N. Y. Chemical fire-extinguisher	571,582	Nov. 17	2042	486	77	1059
Steel, Canby, Philadelphia, Pa., assignor to George P. Steel Iron Company, Camden, N. J. Sectional water-heater	569,360	Oct. 13	1113	265	77	229
Steel Motor Company. (See Harris, Samuel, assignor.)						
Steele, James S., Pittsburg, Pa. Feed-water regulator and low-water alarm	570,066	Oct. 27	2368	563	77	486
Steele, John C., Vaughan, assignor of one-half to A. H. Dixon, Toronto, Canada. Road-planer	573,243	Dec. 15	2034	487	77	1702
Steele, Ruben F. (See Pratt and Ripley, assignors.)						
Steeles, William B., New Britain, Conn. Cutlery-handle	570,346	Oct. 27	2911	690	77	588
Steere, Frederick E., Lynchburg, Va. Ice cracking and shaving machine	569,250	Oct. 13	925	221	77	192
Steffens, James P., assignor of one-half to F. Haas, Chicago, Ill. Speed-gear for bicycles	571,890	Nov. 24	2595	616	77	1182
Steffenson, Jacob, assignor of one-half to J. Fredricksen, North Cape, Wis. Manual motor	571,545	Nov. 17	1983	472	77	1049
Steffin, James. (See Conner, Daniel E., assignor.)						
Steinberger, Julius, San Francisco, Cal. Fastening-button for gloves	573,550	Dec. 22	2621	622	77	1827
Steinhauer, August and H., Cleveland, Ohio. Stop and waste cock	574,079	Dec. 29	3590	858	77	2024
Steinhauer, Henry. (See Steinhauer, August and H.)						
Steinhäuser, Hermann. (See Müller, Wilhelm, assignor.)						
Steinkoenig, Fred, Sioux City, Iowa. Burglar-alarm	570,616	Nov. 3	339	84	77	701
Steinmetz, Charles P., Schenectady, N. Y., assignor to General Electric Company, of New York. Inductor-dynamo. (Reissue)	11,576	Nov. 24	3021	707	77	1260
Stelling, Reinhard. (See Neuens, Michael W., assignor.)						
Stephens, Albert F., and R. T. Connell, St. Joseph, Mo. Individual coffee or tea service utensil	569,678	Oct. 20	1692	398	77	349
Stephens, Harry A., Missoula, Mont. Ball-bearing	572,385	Dec. 1	547	129	77	1382
Stephens, James, and G. De Marce, Canisteo, N. Y. Extension-table	570,572	Nov. 3	260	65	77	686
Stephens, John H., Vernon, Tex. Weighing-scale	573,367	Dec. 15	2267	541	77	1745
Stephens, Mordecai H., Dayton, Ohio. Tree-box	572,133	Dec. 1	72	16	77	1292
Stephens, William, Franklin, Tex. Plow	573,368	Dec. 15	2268	541	77	1745
Stephenson, Albert E., Chicago, Ill. Electric battery	573,493	Dec. 22	2527	599	77	1810
Stephenson, Edwin N., Boston, Mass. Machine for stuffing mattresses	572,914	Dec. 8	1430	345, 346, 347	77	1573
Stephenson, Richard. (See Nicholas and Stephenson.)						
Sterling, Charles B., New York, N. Y. Electric switch	572,319	Dec. 1	417	99	77	1358
Stern Manufacturing Company. (See Stern, Philip K., assignor.)						
Stern, Philip K., assignor to Stern Manufacturing Company, St. Louis, Mo. Camera	571,806	Nov. 24	2439	582	77	1154
Sternberg, Lambert, Mitchelville, Iowa. Potato-cutter	573,551	Dec. 22	2622	622	77	1828
Sterns, Julius C., Buffalo, N. Y. Automatic pump-regulator	570,968	Nov. 10	989	230	77	851
Stetler, Jonas. (See Baird, John P., assignor.)						
Stevens, Edgar, Lawrence, Mass. Web-selvage guide	568,884	Oct. 6	291	67	77	56
Stevens, F. W. (See Shull, John H., assignor.)						
Stevens, Frank W. (See Shull, John H., assignor.)						
Stevens, George W., Elyria, Ohio. Brake-shoe	568,809	Oct. 6	163	39	77	33
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	572,134	Dec. 1	74	.....	77	1292
Stevens, John H., Newark, N. J., assignor to Celluloid Company, New York, N. Y. Pyroxylin compound	572,135	Dec. 1	76	.....	77	1293
Stevens, John H., Newark, N. J., and M. C. Lefferts, assignors to Celluloid Company, New York, N. Y. Apparatus for producing pyroxylin sheets	573,928	Dec. 29	3306	790	77	1972
Stevens, Josiah P., Atlanta, Ga. Machine for inking printing-plates	573,552	Dec. 22	2023	623, 624	77	1828
Stevens, Levi, Trenton, N. J. Non-oxidizable lining for superheaters	569,251	Oct. 13	927	221	77	192
Stevens, Levi, Trenton, N. J. Process of and apparatus for making gas	570,516	Nov. 3	141	35	77	664
Stevens, Richard, Braddock, Pa. Furnace-valve	570,272	Oct. 27	2745	653	77	558
Stevenson, Albert H. (See Stevenson, Hugh and A. H.)						
Stevenson, Daniel W., Brockton, assignor of one-half to E. L. Sprague, Boston, Mass. Sewing-machine	570,969	Nov. 10	990	230	77	851
Stevenson, Hugh and A. H., Manchester, England. Fancy box	571,206	Nov. 10	1401	328	77	927
Stevenson, John H., assignor to Ann Arbor Manufacturing Company, Ann Arbor, Mich. Pole-socket	572,778	Dec. 8	1221	296	77	1529
Stevenson, Robert F., Silverton, Tex. Body-armor	570,067	Oct. 27	2369	563	77	486
Stevenson, William, Philadelphia, Pa. Weather-board gage and support	572,582	Dec. 8	868	209	77	1463
Steward, John A., Clarendon, Vt. Can-seaming mechanism	568,885	Oct. 6	293	67	77	56
Steward, John A., Clarendon, Vt. Seaming sheet-metal vessels	570,147	Oct. 27	2511	595, 596	77	514
Steward, John F. (See Ellis and Steward.)						
Steward, John F., Chicago, Ill. Sheaf-carrier for self-binding harvesters	573,244	Dec. 15	2035	488	77	1703
Stewart, Benjamin F., West Pullman, Ill. Grain-binder	568,810	Oct. 6	164	39, 40	77	33
Stewart, Benjamin F., West Pullman, Ill. Bundle-carrier for harvesters	571,807	Nov. 24	2441	582	77	1155
Stewart, Benjamin F., Chicago, Ill. Trip mechanism for grain-binders	573,048	Dec. 15	1694	405	77	1640
Stewart, Benjamin F., Chicago, Ill. Tying mechanism for grain-binders	573,307	Dec. 15	2173	518	77	1727
Stewart Hartshorn Company. (See Hartshorn, Edmund F., assignor.)						
Stewart Hartshorn Company. (See Temple, Ansel F., assignor.)						
Stewart, Hyland P. (See Harbaugh and Rudiger, assignors.)						
Stewart, John H., Williamsport, assignor of one-half to J. Vasbinder, Dubois, Pa. Washing-machine	569,141	Oct. 6	728	171	77	138
Stewart, Samuel A., Waltham, Mass. Electric switch	570,068	Oct. 27	2370	563	77	487
Stewart, William W. (See Swift and Stewart.)						
Sticker, Francis. (See Brownley and Sticker.)						
Stiens, Peter, London, England. Incandescent mantle	569,892	Oct. 20	2060	.....	77	415

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Stier, Hermann, assignor of one-half to A. Schwill & Co., Cincinnati, Ohio. Malting apparatus	572,665	Dec. 8	1012	245	77	1491
Stikeman, George, Brooklyn, N. Y. Library-shelving	571,249	Nov. 10	1477	346	77	941
Stillson, Daniel C., Somerville, Mass. Automatic fire-extinguisher	568,886	Oct. 6	294	67	77	56
Stilwell-Bierce & Smith-Vaile Company. (See Giesler, Arthur, assignor.)						
Stimpson, Wallace L., assignor to Dutcher Temple Company, Hopedale, Mass. Loom-temple	573,308	Dec. 15	2175	519	77	1727
Stimson, Charles W., New York, N. Y. Clasp or buckle	572,915	Dec. 8	1443	347	77	1575
Stirckler, John D., assignor of one-half to E. F. Bumpus, Boston, Mass. Fastener-socket	570,069	Oct. 27	2371	563	77	487
Stirling Company. (See Pell, Harry S., assignor.)						
Stites, George, Philadelphia, Pa. Filter	572,136	Dec. 1	78	17	77	1293
Stitt, Louise G., Chicago, Ill. Bust-girdle	572,021	Dec. 8	938	228	77	1476
Stitzel, Frank R., Loudonville, Ohio. Cleaner for flour-bolts	571,411	Nov. 17	1742	416	77	1006
Stockdale, Henry. (See Henderson and Morse, assignors.)						
Stockford, Charles E., Sulphur Creek, Cal. Ore-roasting furnace	569,361	Oct. 13	1115	265, 266	77	229
Stocking, Lewis G., Limona, Fla. Envelop	574,284	Dec. 29	4012	952	77	2099
Stockstrom, Charles A. (See Stockstrom, Louis, assignor.)						
Stockstrom, Louis, assignor of one-half to C. A. Stockstrom, St. Louis, Mo. Vapor-burner	569,594	Oct. 13	1388	327	77	278
Stockton, Robert N., Philadelphia, Pa. Dental plugger	570,176	Nov. 10	1355	316	77	919
Stokes, Charles S., Brooklyn, N. Y. Umbrella or parasol	571,911	Nov. 24	2644	626	77	1191
Stokes, Henry M., Boston, Mass. Sofa-bed	569,679	Oct. 20	1683	399	77	349
Stokes, Walter C., New York, N. Y. Wrench	572,035	Nov. 24	2845	669	77	1230
Stoll, Albert A., Louisville, Ky. Combination bed and bath for invalids	568,811	Oct. 6	169	40	77	34
Stoll, Heinrich, and F. Maercklin, Reutlingen, Germany. Knitting-machine	572,839	Dec. 8	1321	317	77	1549
Stone, Charles E., assignor of one-half to B. F. Sargent, Amesbury, Mass. Garment-supporter	568,812	Oct. 6	170	41	77	34
Stone, Frank P. (See McLachlan, John, assignor.)						
Stone, James. (See Reece, William H., assignor.)						
Stone, Lauriston L., *et al.* (See Burnham, Charles, assignor.)						
Stoody, Charley H., Ripley, Ohio. Harness attachment	571,808	Nov. 24	2444	582	77	1155
Storch, John H., Wetona, Pa. Neck-yoke	571,412	Nov. 17	1744	416	77	1006
Storck, Fritz, Prague, Austria-Hungary, assignor to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Producing azo colors on fiber	569,392	Oct. 13	1165	.....	77	238
Storer, Jacob J., and F. Martin, Helena, Mont., assignors to United Mill and Furnace Company, of Montana. Amalgamator	573,834	Dec. 22	3139	748	77	1926
Storm, Alfred W., assignor of one-eighth to C. S. Farrington, New York, N. Y. Automatic justifier	571,809	Nov. 24	2445	583	77	1155
Storrs, Aaron P., Owego, N. Y. Transparent chimney	571,866	Nov. 24	2553	605	77	1175
Storrs, Aaron P., Owego, N. Y. Chimney for light-giving burners	571,867	Nov. 24	2554	606	77	1175
Storrs, Aaron P., Owego, N. Y. Lamp-post cap	571,868	Nov. 24	2555	606	77	1175
Stotz, Paul, Stuttgart, Germany, and F. W. Schindler-Jenny, Kennelbach, Austria-Hungary. Electric soldering-club	573,245	Dec. 15	2037	488	77	1703
Stouffer, Oliver J., Logansport, Ind. Roof-truss	571,055	Nov. 10	1134	265, 266	77	878
Stough, Leona A., Durango, Colo. Pencil-sharpener	570,617	Nov. 3	340	84	77	701
Stout, Cyrus R. (See Cook, Stout, and Morris.)						
Stover, Edward C., Trenton, N. J. Siphon water-closet	571,026	Nov. 10	1088	254	77	869
Stover, John J., Erwinna, Pa. Shaft-brake	572,649	Dec. 8	985	237	77	1485
Stow, Nelson, Binghamton, N. Y. Flexible shaft	571,869	Nov. 24	2556	606	77	1175
Stow, William H., Frankfort, Mich. Sash-fastener	573,553	Dec. 22	2628	624	77	1829
Stowe, John N., Jr., Galveston, Tex. Thill-coupling	570,718	Nov. 3	550	128	77	740
Stowell, Byron F., assignor to Bundy Manufacturing Company, Binghamton, N. Y. Engraving-machine	570,070	Oct. 27	2372	564	77	487
Strakosch, Edgar, Baltimore, Md. Bicycle-saddle	569,981	Oct. 20	2214	526	77	444
Strasburger, Alvin L., New York, N. Y. Apparatus for manipulating precious stones while being polished	569,258	Oct. 13	928	222	77	193
Stratton, Andrew, Augusta, Wis. Crate	573,718	Dec. 22	2944	696	77	1889
Stratton, Henry W., Boston, Mass. Toy building-block	570,688	Nov. 3	508	118	77	733
Stratton, Jairus L., and F. Murdock, Kansas City, assignors to Cre-Ozone Company, Reading, Kans. Evaporating or vaporizing apparatus	568,928	Oct. 6	356	82	77	68
Streabell, William C. (See Dunshee, Carlos E., assignor.)						
Strecker, William H., and A. D. Moore, New York, N. Y. Pin-and-catch device	569,303	Oct. 13	1166	277	77	238
Street, Charles. (See Georges, Ernest A.)						
Street, Ernest A. G. (See Girard and Street.)						
Streeter, Nelson R. (See Mosher and Streeter.)						
Stretch, Eleakim S. (See Serge-Kisslow, Paul, assignor.)						
Stretton, William. (See Terry, Samuel L., assignor.)						
Stroeter, Henry H., Butte, Mont. Transposing-keyboard	572,227	Dec. 1	239	57	77	1324
Strohm Elevator Safety Device Company. (See Strohm, Samuel D., assignor.)						
Strohm, Samuel D., assignor to Strohm Elevator Safety Device Company, Philadelphia, Pa. Electrically-controlled elevator	570,827	Nov. 3	737	168, 169	77	775
Stromberg, John, Kenosha, Wis. Micrometer-gage	570,189	Oct. 27	2585	614	77	528
Strong, Edwin J., Plover, Iowa. Wagon-body lifter	573,719	Dec. 22	2945	696	77	1890
Strong, George S., assignor to Balanced Locomotive and Engineering Company, New York, N. Y. Steam-engine	572,732	Dec. 8	1144	276	77	1515
Strout, Joseph M., Portland, Me. Dental matrix carrier and retainer	574,012	Dec. 29	3475	830	77	2002
Strowger Automatic Telephone Exchange. (See Keith, Alexander E., assignor.)						
Struben, Jacob, Kalamazoo, Mich. Feed-water heater and purifier	569,362	Oct. 13	1116	266	77	230
Stuart, John C., Chicago, Ill. Safety appliance for railway-switches	573,494	Dec. 22	2528	599	77	1810
Stuart, Robert J., New Hamburg, N. Y. Folding bed	570,348	Oct. 27	2913	691	77	589
Stubblebine, William, Bethlehem, Pa. Air-heating apparatus for furnaces	573,799	Dec. 22	3063	725, 726	77	1913
Stubbs, Frederic. (See Wilson and Stubbs.)						
Stubbs, Frederic, Sheffield, England. Magazine-camera	573,309	Dec. 15	2176	519	77	1727
Stump, Ira E., assignor of one-half to J. M. Schneider, Canton, Ohio. Carpet-sweeper	573,554	Dec. 22	2629	625	77	1829
Stump, William G. H. (See Ferguson, William J., assignor.)						
Stumpf, John, Chicago, Ill. Pump	571,702	Nov. 17	2240	539	77	1097
Stuparich, Paul J., San Francisco, Cal. Cutter for bevel-cards	572,320	Dec. 1	419	99	77	1359
Sturgis, Charles H. and W. H., Swartz Creek, Mich. Railway-switch	569,034	Oct. 6	549	126	77	105
Sturgis, Wilbur H. (See Sturgis, Charles H. and W. H.)						
Sturtevant Mill Company. (See Sturtevant, Thomas L. and T. J., assignors.)						
Sturtevant, Thomas J. (See Sturtevant, Thomas L. and T. J.)						
Sturtevant, Thomas L., Quincy, and T. J. Sturtevant, Framingham, Mass., assignors to Sturtevant Mill Company, Portland, Me., and Boston, Mass. Grinding-mill	572,386	Dec. 1	548	129, 130	77	1382

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Styles, Robert. (See Hufschmidt and Styles.)						
Suckert, Julius J. (See Dickerson and Suckert.)						
Suffolk Nailing Machine Company. (See Weeks, Horace, assignor.)						
Sullens, Charles A. (See Gordon, Charles A., assignor.)						
Sullivan, John L., Albia, Iowa. Mail-bag crane	572,916	Dec. 8	1444	348	77	1575
Sullivan, Michael H., Carbondale, Pa. Carpet-holder	569,525	Oct. 13	1390	328	77	278
Sulzer, Oscar R. (See Bachmann and Sulzer.)						
Summers, Bertrand S. and L. L., Chicago, Ill. Electrolytic process of bleaching and refining	569,680	Oct. 20	1685	399	77	349
Summers, Dewitt C., assignor of one-half to B. Moore, Waco, Tex. Cotton chopper and cultivator	573,369	Dec. 15	2269	541, 542	77	1745
Summers, James G., Charleston, W. Va. Rotary water-meter	571,703	Nov. 17	2242	539	77	1097
Summers, Leland L. (See Summers, Bertrand S. and L. L.)						
Sumner, George F., Canton, Mass. Knit fabric for mattresses	573,720	Dec. 22	2947	696	77	1890
Sumser, John H. (See Schleicher, Charles, assignor.)						
Sunbury Water Company. (See Slaymaker, Jasper, assignor.)						
Sunderland, Jesse W., assignor of one-half to A. J. McDuffee, Chicago, Ill. Washing-machine	570,190	Oct. 27	2586	614, 615	77	528
Superior Drill Company. (See Packham, Frank R., assignor.)						
Suppes, Maximilian M., Lorain, Ohio. Conveyer	569,681	Oct. 20	1687	400	77	349
Sustins, Alfred A., A. F., and E. G., Stevens Point, Wis. Roundabout	570,739	Nov. 3	597	137	77	748
Sustins, Arthur F. (See Sustins, Alfred A., A. F., and E. G.)						
Sustins, Ernest G. (See Sustins, Alfred A., A. F., and E. G.)						
Sutter, Benjamin. (See Goschel and Sutter.)						
Sutton, Thomas J., New York, N. Y. Sash-lock	568,992	Oct. 6	485	110	77	92
Swain, Robert. (See Rauert, Henry A., assignor.)						
Swan, Alfred, New York, N. Y. Incandescent lamp and socket	570,517	Nov. 3	144	36	77	665
Swan, Alfred, New York, N. Y. Incandescent-lamp fitting	573,929	Dec. 29	3310	791	77	1972
Swan, Alfred F., Bayonne, N. J. Telephone system	572,840	Dec. 8	1322	317	77	1550
Swan, Henry C., Oshkosh, Wis. Vehicle-spring	572,733	Dec. 8	1147	277	77	1515
Swan, Joseph W. (See Kendall, James A., assignor.)						
Swanger, Peter, Washington, Pa. Making metal tubes	572,583	Dec. 8	869	209	77	1463
Swanson, Nils O., Lead, S. D. Drill-chuck	571,461	Nov. 17	1828	436	77	1022
Swanson, Olof P., Jobs, Ohio. Nut-lock	573,800	Dec. 22	3066	726	77	1913
Swanson, Theodore A. (See Hanna and Fairman, assignors.)						
Swaren, William A., Oblong, Ill. Vote-recording machine	569,682	Oct. 20	1688	400, 401	77	350
Swearingen, Claude, and D. S. Lemen, Milwaukee, Wis. Bicycle-alarm	573,555	Dec. 22	2630	625	77	1829
Sweeney, John J., Louisville, Ky. Floating skimmer for boiler-cleaners	569,070	Oct. 6	609	138	77	117
Sweeney, Vardiman T., Springfield, Ky. Vehicle-brake	573,246	Dec. 15	2038	489	77	1703
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Machine for forming and pressing loops	571,290	Nov. 10	1545	366, 367	77	954
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Machine for splitting leather for forming pockets	571,291	Nov. 10	1549	367, 368	77	955
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Machine for cutting leather	571,292	Nov. 10	1551	368, 369	77	956
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Machine for trimming leather	571,293	Nov. 10	1553	369	77	956
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Machine for finishing leather loops	571,294	Nov. 10	1554	369, 370	77	957
Sweet, Alonzo L., Chicago, Ill., assignor to Seamless Leather Company, of Illinois. Leather-slitting machine	571,295	Nov. 10	1558	370	77	958
Sweet, Ruxton S., and H. S. McBride, Bowling Green, Ohio. Hot-air furnace	573,930	Dec. 29	3311	791	77	1972
Sweetmeat Automatic Delivery Company. (See Fotheringham, John, assignor.)						
Swenson, Magnus, Chicago, Ill., assignor to Cotton Ginners Compress Company, Jersey City, N. J. Machine for picking or opening bales of cotton	573,931	Dec. 29	3313	791	77	1973
Swenson, Magnus, Chicago, Ill., assignor to Cotton Ginners Compress Company, Jersey City, N. J. Cotton-bale opening or picking machine	574,048	Dec. 29	3538	845	77	2014
Swenson, Magnus, Chicago, Ill., assignor to Cotton Ginners Compress Company, Jersey City, N. J. Cotton-press	574,121	Dec. 29	3673	876	77	2038
Swenson, Swen E., New York, N. Y. Coin-bank	574,180	Dec. 29	3804	908	77	2060
Swenson, Swen E., New York, N. Y., assignor of one-half to E. M. Roche, Bloomfield, N. J. Lock	574,179	Dec. 29	3803	908	77	2060
Swift, George W., Jr., Philadelphia, Pa., assignor to G. W. Swift, Sr., Bordentown, N. J. Umbrella or parasol	574,080	Dec. 29	3592	858	77	2024
Swift, J. W., *et al.* (See Lent, Cyrenus W., assignor.)						
Swift, Theodore, *et al.* (See Lent, Cyrenus W., assignor.)						
Swift, William A., deceased, (S. Compton, administrator,) and W. W. Stewart, Columbus, Ga. Nozzle	573,721	Dec. 22	2947	697	77	1890
Swift, William R., New York, N. Y. Regenerative gas-lamp	571,704	Nov. 17	2243	539, 540	77	1097
Swindell, Charles, Pollard, Tenn. Saddle-stirrup	569,071	Oct. 6	611	139	77	117
Swindell, James D., Pittsburg, Pa. Gas-producer	572,184	Dec. 1	155	38	77	1307
Swink, Irving H., Dublin, Pa. Oil-paint	569,306	Oct. 13	1025	.....	77	211
Swink, Irving H., Dublin, Pa. Gate	572,228	Dec. 1	240	57	77	1324
Swinscoe, Henry K., Clinton, Mass. Wire-netting	573,370	Dec. 15	2272	542	77	1746
Sykes, William R., Jr., and J. P. O'Donnell, London, assignors to R. B. Annesley, Liverpool, and E. Blakey, Bradford, England. Lock-and-block signaling on railways	568,993	Oct. 6	486	110	77	93
Sylvester, Edward G., Thornton, Iowa. Harness head-gear	569,526	Oct. 13	1391	328	77	279
Sylvester, Henry. (See Clennam, Milton A., assignor.)						
Syme, David A., Elmhurst, assignor of one-third to O. H. Fleischer, Chicago, Ill. Tool for repairing pneumatic tires	573,049	Dec. 15	1696	406	77	1640
Symington, William A. (See Smith, Thomas N., assignor.)						
Syracuse Arms Company. (See Horne, George A., assignor.)						
Tackaberry, John A., New York, N. Y. Truck	569,072	Oct. 6	611	139	77	117
Taft, Edward L., Gardner, assignor of one-half to J. L. Chapman, Fitchburg, Mass. Molding-machine for forming warped or irregular surfaces	573,050	Dec. 15	1698	406	77	1641
Taft, Jerome C., Providence, R. I. Swaging-machine	573,051	Dec. 15	1701	407	77	1641
Taggart, Robert, Decatur, Ill. Fan attachment for rocking-chairs	573,114	Dec. 15	1805	435	77	1662
Tague, Edward J., McLuney, Ohio. Railway-crossing	574,285	Dec. 29	4013	952	77	2099
Talbot, Benjamin, Pencoyd, Pa. Metallurgical furnace	571,250	Nov. 10	1479	347	77	941
Talbot, George, Lynn, Mass., assignor to Talbot Heater Manufacturing Company, of Maine. Heater for hot water or steam	568,994	Oct. 6	488	110	77	93

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Talbot Heater Manufacturing Company. (See Talbot, George, assignor.)						
Talbot, Reginald. (See Jones and Talbot.)						
Tallmadge, James W., assignor, by mesne assignments, to Bridgeport Gas Machine Company, Bridgeport, Conn. Receptacle for holding hydrocarbon or other volatile liquids	570,884	Nov. 3	850	198	77	799
Taneyhill, Olin B. (See Kelly, Henry, assignor.)						
Tangyes, Limited. (See Pinkney, Charles W., assignor.)						
Tanner, Grace L., *et al.* (See Whitcomb, Willis E., assignor.)						
Tarbell, Charles A. (See Benedict, Daniel B., assignor.)						
Taussig, Emil, New York, N. Y. Apparatus for delivering disinfecting material, &c	570,518	Nov. 3	146	36	77	665
Taylor, Christopher. (See Slade, Daniel, assignor.)						
Taylor, Albert. (See Jackson and Taylor.)						
Taylor, Benjamin W., Evansville, Ind. Game apparatus	570,779	Nov. 3	657	150	77	759
Taylor, David F., Wichita, Kans. Spool-holder	569,307	Oct. 13	1026	244	77	211
Taylor, Elijah F., Sheffield, England. Paper bag	572,229	Dec. 1	241	57	77	1324
Taylor, Eugene H. (See Elder and Taylor.)						
Taylor, Eugene H., Lynn, Mass. Mechanical movement	572,584	Dec. 8	670	209	77	1463
Taylor, James A., Lima, Ind. Road-scraper and carrier	570,885	Nov. 3	852	199	77	799
Taylor, James M., Dubois, assignor of one-half to G. M. Bilger, Clearfield, Pa. Display-rack	573,835	Dec. 22	3141	748	77	1927
Taylor, James T., assignor of one-half to S. F. Newton, J. T. and W. F. Morgan, J. L. Rader, and J. C. F. Raburn, Severy, Kans. Tire-adjuster	573,310	Dec. 15	2177	519	77	1728
Taylor, John C., assignor of one-half to E. Rosa, Findlay, Ohio. Car-coupling	571,251	Nov. 10	1480	347	77	941
Taylor, Joseph S. *et al.* (See Welch, Rosa W., assignor.)						
Taylor, Richard H., Westport, Conn. Weighing-machine	569,893	Oct. 20	2061	490	77	415
Taylor, Samuel, Houston, Tex. Non-refilling bottle	570,238	Oct. 27	2683	637	77	547
Taylor, Theodore A. (See Peckinpaugh, Sebastian S., assignor.)						
Taylor, Tidal A. (See Spencer, Slaughter L., assignor.)						
Taylor, Warren H., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Rim-lock	571,027	Nov. 10	1089	254	77	869
Taylor, William B., *et al.* (See Norman, Addison, assignor.)						
Taylor, William H., Narragansett Pier, R. I. Tire for bicycles	568,813	Oct. 6	172	41	77	35
Taylor, William L. (See Hanable, Charles A., assignor.)						
Taylor, William L., East Liverpool, Ohio. Locking electric-lamp socket	569,727	Oct. 20	1787	424	77	366
Tebbetts, Leslie W. (See Tebbetts, Marston and L. W.)						
Tebbetts, Marston and L. W., San Diego, Cal. Bottle	572,387	Dec. 1	551	130	77	1322
Teche, John V. (See Galennie, Alphonse F., assignor.)						
Teeter, Charles N., Hagerstown, Ind. Railway-velocipede	569,683	Oct. 20	1698	402	77	351
Teltschik, Emil, Vienna, Austria-Hungary. Button-shank and button	571,986	Nov. 24	2767	653	77	1216
Temler, Josef, London, England, assignor, by mesne assignments, to National Metal Edge Box Company, of New Jersey. Rivet	571,177	Nov. 10	1356	316	77	919
Temple, Ansel F., Muskegon, Mich., assignor to Stewart Hartshorn Company, Newark, N. J. Extension curtain-roller	570,719	Nov. 3	552	128	77	741
Temple, Ansel F., Muskegon, Mich., assignor to Stewart Hartshorn Company, Newark, N. J. Extension curtain-roller	570,720	Nov. 3	554	128	77	741
Temple, Simpson G., Nottingham, Ohio. Fastening device	569,308	Oct. 13	1026	244	77	212
Terpening, Clinton W., Bedford, Iowa. Bicycle-brake	572,137	Dec. 1	80	17	77	1293
Terry, Eugene, Ithaca, assignor of one-half to C. H. Duell, Syracuse, N. Y. Type-writing machine	570,886	Nov. 3	857	199, 200	77	800
Terry, John W., assignor, by mesne assignments, to V. H. Hewes, Bridgeport, Conn. Grinding-machine	570,110	Oct. 27	2448	582	77	502
Terry, Samuel L., assignor of one-half to W. Stretton, Phillipsburg, Kans. Pressure-recorder for fluid-pressure brakes	568,963	Oct. 6	422	94, 95	77	81
Tessaro, Angelo, Padua, Italy. Apparatus for printing or ruling on paper or metal	569,845	Oct. 20	1984	472, 473, 474	77	402
Thacher, Edwin, Detroit, Mich. Bridge	570,239	Oct. 27	2684	637	77	547
Thaison, Andrew, Laredo, Tex. Kiln	572,841	Dec. 8	1324	318, 319	77	1350
Thaney, John. (See Koelzer and Thaney.)						
Thatcher, Frederick B., Providence, R. I. Salt-shaker	572,138	Dec. 1	82	17	77	1293
Thatcher, Frederick B., Pawtucket, R. I. Bottle-stopper	574,013	Dec. 29	3476	830	77	2002
Thaw, Charlie. (See Silverston, Anthony B., assignor.)						
Thayer, George B., and E. D. Wheeler, Benton Harbor, Mich. Mechanism for wiring baskets	573,311	Dec. 15	2178	520	77	1728
Thayer, Sanders M., Jamestown, N. Y. Dumping device for earth-scrapers	571,959	Nov. 24	2724	644	77	1208
Theiring, Andrew J., Cincinnati, Ohio. Axle-bearing	570,111	Oct. 27	2449	582	77	502
Theobald, John J., Mount Oliver, Pa. Die	573,371	Dec. 15	2274	542	77	1746
Théryc, Charles, Marseilles, France. Wheel with electrical motor-hub for vehicles	572,036	Nov. 24	2846	670	77	1230
Theurer, Jacob F., assignor to Pabst Brewing Company, Milwaukee, Wis. Process of and apparatus for reclaiming gas employed in displacing liquids	572,779	Dec. 8	1222	296, 297	77	1529
Theurer, Jacob F., and O. Mueller, assignors, by mesne assignments, to A. Pawling and H. Harnischfeger, Milwaukee, Wis. Cask-pitching apparatus	574,181	Dec. 29	3805	908, 909	77	2060
Thiem, Edward A., St. Paul, Minn. Toe-clip for bicycles	574,286	Dec. 29	4015	953	77	2100
Thode, Gustav A., Osmond, Nebr. Gas-engine	568,814	Oct. 6	173	41	77	35
Thom, Joseph R., Girard, Kans. Adjustable curtain-fixture	570,349	Oct. 27	2915	691	77	589
Thomas, Benjamin F., Louisa, Ky. Movable dam	574,229	Dec. 29	3918	932	77	2081
Thomas Braid Company. (See Diss, Albert B., assignor.)						
Thomas, Edward G., Waltham, Mass. Automatic weighing-machine	573,247	Dec. 15	2041	489	77	1704
Thomas, Edward W., Lowell, Mass. Fire-extinguishing system	570,689	Nov. 3	509	119	77	733
Thomas, Francis L., Youngstown, Ohio. Vehicle fifth-wheel	573,722	Dec. 22	2949	697	77	1891
Thomas, George B., assignor to Perkins Electric Switch Manufacturing Company, Hartford, Conn. Electric snap-switch	569,309	Oct. 13	1027	244	77	212
Thomas, Henry O., Chicago, Ill. Hand-truck	571,705	Nov. 17	2246	540	77	1098
Thomas, Joseph H., Paterson, N. J. Baby-walker	571,583	Nov. 17	2043	486	77	1060
Thomas, Lancaster, Philadelphia, Pa. Centering device	571,584	Nov. 17	2044	487	77	1060
Thomas, Rosalie P., Martinsburg, W. Va. Drop-step attachment for railway passenger-cars	570,350	Oct. 27	2916	692	77	589
Thomas, Wesley A., Vicksburg, Miss., assignor of one-half to J. J. Casey, Chicago, Ill. Lateral support for sides and ends of cars	570,148	Oct. 27	2515	596	77	515
Thommes, Mathias. (See Montgomery, Edwin H., assignor.)						
Thompson, Charles T. (See Sanders and Thompson.)						
Thompson, Christopher C., Grayson, Ky. Carpet-stretcher	574,122	Dec. 29	3676	876	77	2039
Thompson, Frank E., assignor to Pratt & Whitney Company, Hartford, Conn. Weighing-machine	573,424	Dec. 15	2384	568, 569	77	1767
Thompson, Franklin, Brooklyn, N. Y. Sling-pulley	573,248	Dec. 15	2043	490	77	1705

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thompson, George, Cleveland, Ohio. Micrometer-gage	571,178	Nov. 10	1357	316	77	919
Thompson, George C., and T. C. Edwards, Salinas, Cal. Thill-coupling	572,734	Dec. 8	1148	277	77	1516
Thompson, George L., Chicago, Ill. Crimping-tongs	570,413	Oct. 27	3035	719	77	611
Thompson, Hezekiah J., Nassau, Bahama Islands. Bicycle	569,394	Oct. 13	1167	277	77	239
Thompson, James F. (See Hanstine, Harry S., assignor.)						
Thompson, James M., Burnett, Okla. Ter. Nut-lock	574,287	Dec. 29	4016	953	77	2100
Thompson, James W., St. Louis, Mo. Ore washer and collector	569,894	Oct. 20	2062	490	77	416
Thompson, John G., Leominster, and T. E. Thompson, Lawrence, Mass. Apparatus for teaching words and identifying objects	569,846	Oct. 20	1987	474	77	402
Thompson, John L., assignor to Margraf, Fricke & Co., Cincinnati, Ohio. Wind-wheel	571,056	Nov. 10	1135	266	77	879
Thompson, Mark S., New York, N. Y., assignor to H. W. Johns Manufacturing Company, New York, N. Y., and Jersey City, N. J. Flat-iron support	573,052	Dec. 15	1702	407	77	1641
Thompson, Robert P. (See Thompson, William P. and R. P.)						
Thompson, Roland B., *et al.* (See Minnis, Thomas S., assignor.)						
Thompson, Silvanus P., London, England. Electric cable	568,964	Oct. 6	426	95	77	82
Thompson, Silvanus P., London, England. Electric cable	571,706	Nov. 17	2249	540	77	1098
Thompson, Silvanus P., London, England. Electric cable	571,707	Nov. 17	2251	540, 541	77	1099
Thompson, Thomas E. (See Thompson, John G. and T. E.)						
Thompson, Walter V., Pasadena, Cal. Fastener	572,735	Dec. 8	1149	277	77	1516
Thompson, William, assignor to E. R. Hartt, Albany, N. Y. Car-fender	569,684	Oct. 20	1700	402	77	351
Thompson, William P. and R. P., Philadelphia, Pa. Drainage-valve for radiators	573,556	Dec. 22	2633	625	77	1830
Thompson, William Y., Fort Howard, Wis. Dust-guard for air-brake hose-couplings	571,708	Nov. 17	2254	541	77	1099
Thomson, Benjamin T. L., London, England. Manufacturing carbonic-acid gas	573,053	Dec. 15	1702	408	77	1642
Thomson, David P., and H. Geisenhöner, Schenectady, N. Y., assignors to General Electric Company, of New York. Field-magnet structure	571,462	Nov. 17	1829	436	77	1022
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Controlling electric arcs	571,463	Nov. 17	1830	436, 437	77	1022
Thomson, Elihu, Swampscott, Mass., assignor to General Electric Company, of New York. Electric-arc lamp	574,123	Dec. 29	3677	876	77	2039
Thomson, George. (See Thomson, James and G.)						
Thomson, Henry C., Boston, Mass., assignor to Electric Gas Lighting Company, of Maine. Electric floor-push	573,723	Dec. 22	2950	697	77	1891
Thomson-Houston Electric Company. (See Bassett, Norman C., assignor.)						
Thomson-Houston Electric Company. (See Hunter, Rudolph M., assignor.)						
Thomson, James, Hamilton, and G. Thomson, Dundas, Canada. Iron-pipe pattern	571,413	Nov. 17	1745	416	77	1006
Thomson, John, Brooklyn, N. Y. Inkstand	570,191	Oct. 27	2590	615	77	529
Thomson, Joseph L., Bayonne, N. J., assignor to Orford Copper Company, New York, N. Y. Slag-buggy-train coupling	573,724	Dec. 22	2952	698	77	1891
Thornewell, Charles, assignor of one-half to A. Abrahams, Brooklyn, N. Y. Switch-operating apparatus	568,815	Oct. 6	174	42	77	35
Thornycroft, John I., London, England. Automatic feed-water regulator	570,351	Oct. 27	2918	692, 693	77	589
Thorp, Adelbert H., Toledo, Ohio. Electropneumatic block-signal system	573,932	Dec. 29	3314	791, 792	77	1973
Thorpe, John C. (See Edwards, Dolph, assignor.)						
Thorpe, Robert H. (See Brown and Thorpe.)						
Thorpe, Robert H., and T. E. Brown, Jr., New York, N. Y., assignors to National Company, Chicago, Ill. Apparatus for filling air vessels under pressure	569,774	Oct. 20	1871	443, 444	77	381
Thorson, Soren D., Chicago, Ill. Steamboat	569,253	Oct. 13	929	222	77	193
Threlkeld, John H. (See Threlkeld, Thomas G. and J. H.)						
Threlkeld, Thomas G. and J. H., Liberty Centre, Iowa. Hay rake and loader	570,071	Oct. 27	2375	564	77	488
Thunen, Charles G., Oroville, Cal. Sight for firearms	573,725	Dec. 22	2953	698	77	1891
Thurman, Robert E., Victoria, Canada. Bottle	573,495	Dec. 22	2330	599	77	1810
Thurman, Thomas I. (See Barnhill and Thurman.)						
Thurston, Joel P. (See Neal, George P., assignor.)						
Thwaites, Harry, Philadelphia, Pa. Flush-tank	568,995	Oct. 6	489	110	77	93
Tibbetts, Samuel F., Biddeford, Me. Wood-mortising machine	573,312	Dec. 15	2180	520	77	1728
Tice, Frederic C., Roanoke, Va. Dilating-irrigator	572,736	Dec. 8	1151	277	77	1516
Tiff, Franklin D., Beaver Falls, N. Y., assignor to W. J. Hiss, East Orange, N. J. Apparatus for shaping wood and pulp plates	569,685	Oct. 20	1702	402, 403	77	351
Tiffany, George S., Highland Park, Ill., assignor to Gray National Telautograph Company, Richmond, Va. Telautograph	570,072	Oct. 27	2376	565	77	488
Tiffany, George S., Highland Park, Ill., assignor to Gray National Telautograph Company, Richmond, Va. Telautograph	570,112	Oct. 27	2452	583	77	503
Tiffany, George S., assignor of one-half to T. S. Wheelright, Highland Park, Ill. Gas or vapor engine	573,628	Dec. 22	2779	658	77	1861
Tilden, James A., Hyde Park, assignor to Hersey Manufacturing Company, Boston, Mass. Fluid-atomizer	570,721	Nov. 3	556	129	77	741
Tilghman, Benjamin C., Jr., Philadelphia, Pa. Apparatus for preventing collisions on electric railways	573,496	Dec. 22	2531	600	77	1811
Tilton, Wilfred R., Prairie Depot, Ohio. Cotter-pin press	569,527	Oct. 13	1392	328	77	279
Timmons, Joseph W., Clallam, Wash. Hair-pin	574,288	Dec. 29	4017	953	77	2100
Timms, James, Columbus, Ohio. Safety attachment for car-couplings	570,650	Nov. 3	431	102	77	718
Tiner, John F., Sutherland Springs, assignor of three-eighths to E. J. Newton, Austin, Tex. Wrench	573,313	Dec. 15	2181	520	77	1728
Tirard, Joseph L., Caen, France. Fire-extinguishing apparatus	569,686	Oct. 20	1703	403	77	352
Titus, John T., San Francisco, Cal. Sewer-trap and flushing-gate	572,078	Nov. 24	2951	694	77	1250
Toben, George C., Bay City, Mich. Device for cooling hot boxes	570,519	Nov. 3	148	36	77	665
Tobey, Fred W., Grand Rapids, Mich. Door-catch	573,378	Dec. 15	2275	543	77	1746
Tobin, James A., Lancaster, Ohio. Office-indicator	571,585	Nov. 17	2045	487	77	1060
Todd & Co., Edward. (See Freer, Charles S., assignor.)						
Todd, Ferd. (See Campbell, William, assignor.)						
Todd, James, assignor to Challenge Wind Mill and Feed Mill Company, Batavia, Ill. Metal tower	569,687	Oct. 20	1705	403	77	352
Todd, Robert T. (See Walsh and Todd.)						
Todd, Walter, Paterson, N. J. Loom-shuttle	568,929	Oct. 6	358	82	77	69
Toepper, Richard, Naumburg-on-the-Saale, Germany. Type-writing machine	571,414	Nov. 17	1746	416, 417	77	1006
Toerring, Christian, Jr. (See Spencer and Toerring.)						
Toler, Henry W., Massey, Tex. Clothes-pounder	573,314	Dec. 15	2182	521	77	1729
Tolman, Fred S. (See Goddard, George O., assignor.)						
Tolman, James P., Newton, assignor to Samson Cordage Works, Boston, Mass. Lacing-cord	573,249	Dec. 15	2044	490	77	1705
Tomkins, Mark H., New York, N. Y. Yarn-testing machine	570,970	Nov. 10	992	230	77	851

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Toof, Edwin J., New Haven, Conn. Sewing-machine	570,722	Nov. 3	557	129	77	741
Topping, Alfred S., Hart, Mich., assignor of one-half to F. A. Luther. Interchangeable weeder and raker	572,935	Dec. 8	1486	357	77	1583
Topping, Charles P., Poughkeepsie, N. Y. Multiple-spindle lathe	573,726	Dec. 22	2954	698, 699	77	1891
Torbert, Alfred C., Austin, Ill. Rubber boot or shoe	569,125	Oct. 6	695	162	77	132
Torney, Julius L., Milwaukee, Wis. Book-carrying device	570,520	Nov. 3	149	36	77	666
Torpey, John J., *et al.* (See McClellan and Girling, assignors.)						
Torrey, Jay L., Embar, Wyo. Self-adjusting horse-collar	568,887	Oct. 6	295	68	77	57
Totham, James, assignor of one-half to J. M. Peck, New Haven, Conn. Coupling for water-closets	568,996	Oct. 6	491	111	77	94
Tousley, Edgar M., Jamestown, N. Y., assignor to Tousley Harvester Company. Self-binding harvester	572,585	Dec. 8	871	210, 211	77	1463
Tousley Harvester Company. (See Tousley, Edgar M., assignor.)						
Toussaint, Emile, Berlin, Germany. Field-glass	569,528	Oct. 13	1393	328, 329	77	979
Tower, Daniel W., Grand Rapids, Mich. Tooth-brush	570,573	Nov. 3	261	65	77	686
Towler, William, Leeds, England. Compound tramway-rail	571,709	Nov. 17	2255	541	77	1099
Towne, Allan W., Pomona, Cal. Irrigating plant	572,842	Dec. 8	1325	319	77	1550
Townsend, Frank P. (See Shover and Townsend.)						
Toye, William H. R., assignor to himself, R. P. Brown, and E. L. Bailey, Philadelphia, Pa. Printing-machine	571,415	Nov. 17	1748	417	77	1006
Tracy, James B., Meriden, Conn. Apparatus for producing music-rolls	570,352	Oct. 27	2921	694	77	590
Tracy, John D., Sterling, Ill. Circular cutter	570,828	Nov. 3	746	170	77	777
Tracy, John D., and J. F. Platt, Sterling, Ill. Cornstalk-shredder and snapping-machine	571,057	Nov. 10	1136	266	77	879
Trapp, Edward A., New York, N. Y. Dump-car	571,058	Nov. 10	1138	266, 267	77	879
Trask, Clarence S. (See Jacques and Trask.)						
Travers, Lawrence S., assignor of two-thirds to G. R. Brown, Palmyra, and W. A. Judd, Clifton Springs, N. Y. Meat-hanger	569,142	Oct. 6	729	171	77	138
Travis, Charles L., Minneapolis, Minn. Lawn-sprinkler	573,933	Dec. 29	3316	792	77	1973
Treasure, Frank R., Brooklyn, N. Y. Toy	569,728	Oct. 20	1788	425	77	366
Treat, Francis H., Chicago, Ill. Draft-regulator	569,254	Oct. 13	930	222, 223	77	193
Treat, James E., Boston, assignor to United States Tubular Bell Company, Methuen, Mass. Tubular bell	568,816	Oct. 6	175	42	77	35
Tremaine, Harry B., assignor to Æolian Company, New York, N. Y. Stop-indicator for musical instruments	572,666	Dec. 8	1015	245	77	1491
Trenta, Hyacinthe, Lyons, France. Step for vertical shafts	572,282	Dec. 1	342	82	77	1345
Trenta, Hyacinthe, Lyons, France. Turbine	572,667	Dec. 8	1016	246	77	1492
Trepte, Alfred H. C., St. Paul, Minn. Sliding-door lock	573,934	Dec. 29	3317	792	77	1974
Trescott, Stephen O., Pittsburg, Kans. Mucilage-bottle	572,079	Nov. 24	2953	695	77	1250
Trewhella, William, Meriden, Conn. Portable mill for reducing crackers to powder	568,997	Oct. 6	492	111	77	94
Trigg, Lewis B., Powhatan Point, Ohio. Bait-bucket	574,049	Dec. 29	3540	845	77	2015
Trimborn, Anna. (See Trimborn, Peter W., assignor.)						
Trimborn, Peter W., assignor of one-half to A. Trimborn, Milwaukee, Wis. Safety device for elevators	573,935	Dec. 29	3319	792	77	1974
Trinder, Lizzie. (See Phinney and Trinder.)						
Tripp, Henry A. and W., Sodus, N. Y. Apple-parer	572,689	Dec. 8	1056	257	77	1499
Tripp, Seth D., Lynn, Mass. Edge-finishing machine. (Reissue)	11,580	Dec. 29	4146	984, 985	77	2124
Tripp, Walter. (See Tripp, Henry A. and W.)						
Troast, William F., assignor to Slaymaker-Barry Company, Lancaster, Pa. Padlock	572,586	Dec. 8	876	212	77	1464
Troendle, Theodore R., *et al.* (See Ferres, Ainslie W., assignor.)						
Trojan Car Coupler Company. (See McKeen, Thomas L., assignor.)						
Trojan Car Coupler Company. (See McKeen and Renshaw, assignors.)						
Trounstine, John. (See Frank, David, assignor.)						
Troutman, Adam R., Millerstown, Pa. Harrow	573,315	Dec. 15	2183	521	77	1729
Troy, Daniel W., Montgomery, Ala. Automatic car-signal	574,182	Dec. 29	3809	909	77	2061
Troy, Robertus F. (See Hicks and Troy.)						
Troyer, Nelson, assignor of one-half to F. P. Kendall, Astoria, Oreg. Can-soldering machine	571,627	Nov. 17	2113	507, 508	77	1073
Trueman, William, New Haven, Conn., assignor to E. & H. T. Anthony & Company, New York, N. Y. Curtain-slide camera attachment	569,895	Oct. 20	2064	491	77	416
Truex, Charles O., New York, N. Y. Game device	571,464	Nov. 17	1833	437	77	1023
Trnfant, Walker E. (See Ford, Samuel D., assignor.)						
Trump Brothers Machine Company. (See Frederick and Plumley, assignors.)						
Tubbs, Amos C., Trading Post, Kans. Flooring and ceiling lever	571,810	Nov. 24	2448	583	77	1156
Tucker, Clinger, Best, Ohio. Folding egg-crate	570,574	Nov. 3	262	65, 66	77	687
Tucker, Edwin D., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Lubricating device	569,847	Oct. 20	1989	474	77	402
Tucker, Frederick D., St. Louis, Mo. Subsoil-plow	570,192	Oct. 27	2591	615	77	529
Tucker, Norman F., *et al.* (See Fowler, Charles M., assignor.)						
Tucker, Stephen D., assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Tripping-motion for printing-machines	573,425	Dec. 15	2390	569, 570, 571	77	1768
Tucker, Thomas N., Celeste, Tex. Fence	571,937	Nov. 24	2687	636	77	1201
Tucker, William M., Nelsonpoint, Cal. Propeller	571,628	Nov. 17	2120	508	77	1074
Tuerk, Samuel O., Fulton, N. Y. Motor-driven fan	570,651	Nov. 3	432	103	77	718
Tufts, Samuel F. Westbrook, Me. Trolley for electric cars	571,710	Nov. 17	2256	541	77	1099
Tully, William J., Crystal Falls, Mich. Car-ventilating mechanism	570,353	Oct. 27	2924	695	77	591
Turbeville, De Kalb, assignor of two-thirds to R. Brown and W. G. Floyd, Roanoke, Ala. Curtain-support	574,348	Dec. 29	4111	977	77	2118
Turkington, Alexander, Lafayette, Ind. Washing-machine for piece goods	573,936	Dec. 29	3321	793	77	1975
Turnbull, Frederick, Philadelphia, Pa. Warp-drying machine	574,289	Dec. 29	4018	953, 954	77	2100
Turner Brass Works. (See Dobrick, August C., assignor.)						
Turner, Charles P., New York, N. Y. Scouring-brush for cleaning ships' bottoms	573,115	Dec. 15	1806	435	77	1662
Turner, George D., Cleveland, Ohio, and G. W. Cummings, Monroe Centre, Mich.; said Turner assignor to said Cummings. Governor for propellers	573,116	Dec. 15	1807	436	77	1662
Turner, George E., Marion, Ohio. Track-cleaner for railways	573,842	Dec. 22	3148	750	77	1929
Turner, George W., Brooklyn, assignor to R. Hoe, T. H. Mead, and C. W. Carpenter, New York, N. Y. Web-printing press	572,283	Dec. 1	343	82, 83	77	1345
Turner, Howard A., Jr., Urbana, Ohio. Apparatus for treating dried fruits	571,100	Nov. 10	1236	287	77	896

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Turner, Joseph R. (See Ward, Turner, and Kendall.)						
Turner, Moses R., Greensburg, assignor to C. L. White, Decatur county, Ind. Automatic drain for pumps	568,817	Oct. 6	176	42	77	35
Turner, Samuel J., and C. T. Glasser, assignors of one-fourth to H. J. Glasser, Minneapolis, Minn. Pants-leg guard	569,945	Oct. 20	2161	512	77	435
Turner, William, Wilkinsburg, Pa. Nut-lock	570,354	Oct. 27	2926	695	77	591
Turner, William A., assignor to E. Converse, Worcester, Mass. Self-closing faucet	570,306	Oct. 27	2850	676	77	577
Turner, William A., assignor to Chicago Cotton Picker Company, Chicago, Ill. Cotton-picking machine	572,493	Dec. 1	704	168, 169, 170	77	1412
Turner, William W., Chicago, Ill. Roof	571,416	Nov. 17	1749	417	77	1007
Turner, William W., Chicago, Ill. Roof	571,417	Nov. 17	1750	418	77	1007
Turner, William W., Chicago, Ill. Metal roofing	573,937	Dec. 29	3324	794	77	1975
Turney, Frederick N., Nottingham, England. Apparatus for extracting fat from wool	573,727	Dec. 22	2957	699, 700, 701	77	1892
Turnock, Charles E., Liverpool, England. Circular sawing machine	572,230	Dec. 1	242	58	77	1325
Turton, James E., Washington, D. C. Bicycle-lock	570,521	Nov. 3	151	37	77	666
Tuttle, Frank. (See Jamison and Tuttle.)						
Tuttle, John F., Springdale, Wash. Device for operating hay-forks	569,437	Oct. 13	1238	290, 291	77	250
Tweedale, Edmund and S., and J. Smalley, Manchester, England. Mechanism for driving traveling flats	570,829	Nov. 3	748	170	77	777
Tweedale, Edmund and S., and J. Smalley, Manchester, England. Jack or apparatus for insuring differential motion on slubbing and roving frames	572,917	Dec. 8	1446	348	77	1576
Tweedale, Samuel. (See Tweedale and Smalley.)						
Twiss, Myron, Norfolk, Nebr. Windmill	574,290	Dec. 29	4019	954	77	2101
Twist, Sylvester A., Coldwater, Mich. Eaves-trough strainer	571,711	Nov. 17	2257	542	77	1100
Twombly, Orison. (See Appleton, Charles J., assignor.)						
Tyldesley, Samuel, Watertown, N. Y. Valve	568,965	Oct. 6	429	95	77	82
Tyler, Harry L., Corning, N. Y. Electric heater	573,629	Dec. 22	2782	659	77	1861
Tymeson, Eugene, assignor to W. B. Smith, Yonkers, N. Y. Moquette-fabric and moquette-loom	571,418	Nov. 17	1752	418, 419	77	1008
Type-Writer Cushion-Key Company. (See Graham and Savell, assignors.)						
Tyrrell, Herbert H., and C. M. Holford, Slate Run, Pa. Device for overcoming dead-centers	573,601	Dec. 22	3067	727	77	1914
Ulbrich, Richard C., Boston, Mass., assignor to W. Firth, Winchester, Mass. Humidifier system and apparatus	572,780	Dec. 8	1228	297	77	1531
Ullman, Albert, Macon, Ga. Bottle	568,818	Oct. 6	178	42	77	36
Ullmann, Harry M. (See Shober and Ullmann.)						
Ullrich, Eduard, and M. von Gallois, assignors to Farbwerke, vormals Meister, Lucius & Brüning, Höchst-on-the-Main, Germany. Dyeing phenetidin red	569,395	Oct. 13	1168	.....	77	239
Ulmann, Jacques G., Zurich, Switzerland. Machine for producing metal shavings	573,728	Dec. 22	2960	701	77	1893
Umbach, John A. H., Savannah, Ga. Sash-fastener	571,465	Nov. 17	1834	437	77	1023
Umbrecht, Charles, trustee. (See Knapp, Edward J., assignor.)						
Underhill, James W., Pine Grove, Mich. Potato-planter	573,054	Dec. 15	1703	408	77	1642
Underwood, Frank W., *et al.* (See Nivison, Charles, assignor.)						
Underwood, Frank M., Upper Sandusky, Ohio. Mixer for gas-engines	574,183	Dec. 29	3811	910, 911	77	2062
Union Embossing Machine Company. (See De Tamble, Edward S., assignor.)						
Union Switch and Signal Company. (See Coleman, John P., assignor.)						
Union Switch and Signal Company. (See Culgan, John P., assignor.)						
Union Switch and Signal Company. (See Schrender, Jens G., assignor.)						
Union Wire Mattress Company. (See Smith, John G., assignor.)						
United Alkali Company. (See Hawliczek, Josef, assignor.)						
United Gas Improvement Company. (See Norris, Rollin, assignor.)						
United Glass Company. (See Zellers and Blanchard, assignors.)						
United Mill and Furnace Company. (See Storer and Martin, assignors.)						
United States Axle and Skein Company. (See Kilian, Conrad J., assignor.)						
United States Metal Box Corner Company. (See Schubert, Otto and M., assignors.)						
United States Phonograph Company. (See Capps, Frank L., assignor.)						
United States Prism Glass Globe Company. (See Ballou and Seaver, assignors.)						
United States Tubular Bell Company. (See Treat, James E., assignor.)						
Universal Fire Alarm Company. (See Rowand, Lewis G., assignor.)						
Universal Mail Equipment Improvement Company. (See Cody, Miles S., assignor.)						
Unz, Henry H., Philadelphia, Pa. Type-writing machine	569,255	Oct. 13	931	223	77	193
Unz, Henry H., Philadelphia, Pa. Type-writing machine	570,522	Nov. 3	152	37	77	666
Upton, Charles S. (See Lefebvre and Upton.)						
Upton, Charles T. (See Pratt and Upton.)						
Urbanus, Lawrence F., Chicago, Ill. Type-writing machine	574,230	Dec. 29	3920	932, 933	77	2082
Urquhart, David I., Glasgow, and R. L. Urquhart, Edinburgh, Scotland. Golf-club	569,438	Oct. 13	1239	291	77	251
Urquhart, Robert L. (See Urquhart, David I. and R. L.)						
Utility Manufacturing Company. (See Gates, Henry L., assignor.)						
Vacheron, Louis E. (See Ball and Vacheron.)						
Vail, Stephen, New York, N. Y. Coin-controlled vending-machine	569,775	Oct. 20	1873	444	77	381
Valentine, James H., Chatham, N. J. Volatilizer	571,811	Nov. 24	2448	583	77	1156
Valentine, William J., Warrensburg, N. Y. Pedal-crank for bicycles, &c	573,055	Dec. 15	1704	408	77	1642
Vallee, Alice M. (See Nester, Daniel N., assignor.)						
Van Cauwenberg, Edmund, New York, N. Y. Bit-gage	569,896	Oct. 20	2066	491	77	417
Van Cise, William C., assignor to J. M. Himebaugh, Jamestown, N. Y. Connection for coiled springs	569,256	Oct. 13	932	223	77	194
Van Derveer, Joseph P., Clanton, Ala. Nut-lock	572,460	Dec. 1	659	155	77	1404
Van Derveer, Robert C., Carlisle, Ohio. Collar-pad	569,363	Oct. 13	1117	266	77	230
Van Dorn, William T., Lincoln, Nebr. Draw-bar attachment for street-cars	569,729	Oct. 20	1789	425	77	366
Van Duzer, Edward V., *et al.* (See Burgis, Thomas C., assignor.)						
Van Dyke, Henry. (See Walton, Barker, and Van Dyke.)						
Van Etten, Helen M., Moravia, N. Y. Phragmite structure	568,930	Oct. 6	359	83	77	69
Van Graafeiland, Charles, assignor to C. Lueders, St. Louis, Mo. Registering-faucet	569,439	Oct. 13	1240	291	77	251
Van Hoesen, Casper, assignor of one-half to D. Hochner, New York, N. Y. Skirt-slit holder	573,729	Dec. 22	2962	701	77	1893
Van Kuran, Helen H. (See Heap and Van Kuran.)						
Van Kuran, Helen M., Chicago, Ill. Game apparatus	572,388	Dec. 1	552	130	77	1383
Van Meter, James M., Cambridge City, Ind. Vise	573,056	Dec. 15	1706	408, 409	77	1642
Van Name, Joshua V., Mariner's Harbor, N. Y. Bottle	573,557	Dec. 22	2633	626	77	1830

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Van Norman, Charles E., Springfield, Mass. Milling-machine	570,723	Nov. 3	558	129	77	741
Van Nortwick, William M., *et al.* (See Ferres, Ainslie W., assignor.)						
Van Nostran, Homer J., assignor of two-thirds to J. E. Van Nostran, Canton, Ohio. Hay rake and loader	569,688	Oct. 20	1706	404	77	352
Van Nostran, Joseph E. (See Van Nostran, Homer J., assignor.)						
Van Oostrum, Otte, Portland, Oreg. Garment-fastener	573,057	Dec. 15	1707	409	77	1643
Van Oostrum, Otte, Portland, Oreg. Garment-fastener	573,058	Dec. 15	1708	409	77	1643
Van Oostrum, Otte, Portland, Oreg. Garment-fastener	573,059	Dec. 15	1709	409	77	1643
Van Oostrum, Otte, Portland, Oreg. Garment	573,060	Dec. 15	1711	410	77	1643
Van Opstal, John, New York, and E. M. Forst, Woodside, N. Y. Artificial fuel	569,689	Oct. 20	1708	.....	77	353
Van Pelt, Charles H. (See Ellis, John, assignor.)						
Van Sickle, William B., Cleveland, Ohio. Air-valve for hot-water heating systems	570,073	Oct. 27	2385	566	77	490
Van Tilburg, Ira, St. Paul, Minn. Metallic barrel	573,062	Dec. 15	1713	410	77	1644
Van Tine, George W., Bayonne, N. J. Molding-press	568,819	Oct. 6	180	43, 44	77	36
Van Tine, George W., Bayonne, N. J. Molding-press	569,690	Oct. 20	1708	404, 405	77	353
Van Tine, George W., Bayonne, N. J. Molding-press	569,691	Oct. 20	1709	405	77	353
Van Vechten, Junius T. B., Brooklyn, N. Y., assignor of one-half to J. A. Lowe, Leonia, N. J. Canopy for bicycles	572,843	Dec. 8	1326	319	77	1550
Van Vleck, John P., Cooksville, Wis. Gage	572,321	Dec. 1	421	99	77	1359
Van Wagenen, Albert. (See Goddu, William, assignor.)						
Van Winkle, Abram, *et al.* (See Madden, Albert F., assignor.)						
Van Winkle, Frank. (See Hill and Van Winkle.)						
Van Wye, Garry P., Chicago, Ill., assignor to F. H. Cross, Grand Rapids, Mich. Printing-machine for duplicating type-written work	571,028	Nov. 10	1090	254	77	870
Vandenburg, A. (See Laube, Godfried, assignor.)						
Vandervoort, Manly R., Clinton, Ill. Detachable heel	570,830	Nov. 3	749	170	77	778
Vann, Samuel. (See English, Vann, and Jones.)						
Vanstrum, Fredrick T. and J. P., Minneapolis, Minn. Non-refillable bottle	573,061	Dec. 15	1712	410	77	1644
Vanstrum, John P. (See Vanstrum, Fredrick T. and J. P.)						
Vasbinder, Joseph. (See Stewart, John H., assignor.)						
Vaughn Machine Company. (See Jones, Albert F., assignor.)						
Velasko, Adolph G., Philadelphia, Pa. Undergarment	570,971	Nov. 10	995	231	77	852
Vellines, Benton H., Norfolk, Va. Electrotherapeutic band	569,529	Oct. 13	1395	329	77	279
Venn, Frank, Malden, Mass. Hand-stamp	570,724	Nov. 3	560	130	77	742
Veon, Andrew E., assignor of one-half to E. W. Lynch, Brainerd, Minn. Combined door-fastener and alarm	571,546	Nov. 17	1984	472	77	1049
Veon, Andrew E., assignor of one-half to E. W. Lynch, Brainerd, Minn. Gun-sight	572,494	Dec. 1	708	170	77	1413
Verbeek, Hermann. (See Colee and Barker, assignors.)						
Vermilyea, Eugene, Waterford, assignor of two-thirds to S. T. Harshaw, Lansingburg, and Campbell & Clute, Cohoes, N. Y. Rotary knitting-machine	573,063	Dec. 15	1714	411, 412	77	1644
Vester, John, Philadelphia, Pa. Smoking-tube	573,064	Dec. 15	1718	412	77	1644
Vian, Charles T., Montreal, Canada. Chocolate-coating apparatus	570,575	Nov. 3	263	66	77	687
Vickerman, John, Longford, England, assignor to P. Whiting, Lamy, N. Mex. Ter. Warp stop-motion for looms	572,918	Dec. 8	1447	348, 349	77	1576
Victor G. Bloede Company of Baltimore City. (See Bloede, Victor G., assignor.)						
Vilter Manufacturing Company. (See Vilter, William O., assignor.)						
Vilter, William O., assignor to Vilter Manufacturing Company, Milwaukee, Wis. Vent attachment for corking-machines	573,426	Dec. 15	2397	571	77	1769
Virkler, Jacob H., Croghan, N. Y. Cattle-stanchion	574,291	Dec. 29	4020	954	77	2101
Voegtlein, John, assignor of one-half to G. W. and A. E. Barnes, Republic, Mich. Artificial hand	569,593	Oct. 13	1528	358	77	304
Voelker, William L., Elizabeth, N. J., assignor to Consolidated Sterling Incandescent Gas Lamp Company, of New Jersey. Manufacturing hoods or mantles for incandescent gas-burners	571,419	Nov. 17	1757	.....	77	1008
Vogel, Ernest H., New York, N. Y. Chuck	573,189	Dec. 15	1941	467	77	1686
Vogel, George L., New York, N. Y. Shutter-fastener	571,586	Nov. 17	2046	487	77	1060
Vogt, Wilhelm, Philadelphia, assignor to A. A. Landis, Collegeville, Pa. Gripping mechanism for cars	571,812	Nov. 24	2450	583	77	1156
Voight, Henry G., assignor to Russell & Erwin Manufacturing Company, New Britain, Conn. Lock	572,844	Dec. 8	1328	320	77	1551
Voorhees Electric Company. (See Voorhees, Gardner T., assignor.)						
Voorhees, Gardner T., assignor to Voorhees Electric Company, Boston, Mass. Multiple-fuse cut-out	569,692	Oct. 20	1711	406	77	353
Voorhees, John H., Brooklyn, N. Y. Steam-boiler-tube cleaner	572,037	Nov. 24	2848	670, 671	77	1231
Vose, Ambrose S., *et al.* (See Chase and Foster, assignors.)						
Voss, Detlef C., Malden, assignor to H. Hastings, Boston, Mass. Electrical resistance device	573,558	Dec. 22	2634	626	77	1830
Voss, William H., Davenport, Iowa. Surgical apparatus	572,139	Dec. 1	83	18	77	1293
Vulpius, Herman, assignor of two-thirds to H. Kahn and J. S. Doddridge, Leadville, Colo. Heater for explosives	571,712	Nov. 17	2258	542	77	1100
Vulté, Hermann T., New Rochelle, assignor to J. H. Wingfield, New York, N. Y. Treating suint and products resulting therefrom	571,870	Nov. 24	2557	.....	77	1175
W. F. & John Barnes Company. (See Barnes, Benjamin F., assignor.)						
W. J. Clark Company. (See Blackburn, Joseph S., assignor.)						
W. & W. Manufacturing Company. (See Worden, Will J., assignor.)						
W. W. Pryor Hardware Manufacturing Company. (See Pryor and Schaetzle, assignors.)						
W. W. Sprague Company. (See Hibbard, Maury W., assignor.)						
Wachter, Harry W. (See Fredrick and Wachter.)						
Waddel, John M., Greenfield, Ohio. Combined paper-weight and game or puzzle	570,858	Nov. 3	799	183	77	787
Waddell, Thomas J., assignor of one-half to L. C. O'Brien, Des Moines, Iowa. Signal-lantern	568,920	Oct. 6	183	44	77	37
Waddington, John. (See King, Downes, and Waddington.)						
Wadell, Frank B., Clinton, Mo. Separable button	570,576	Nov. 3	266	66	77	688
Wagener, Christian J., assignor of one-half to W. L. Slack, Pittsburg, Pa. Door closer, check, and holder	573,497	Dec. 22	2535	601	77	1811
Wagner, Bernard P. (See Bingham and Wagner.)						
Wagner, Charles A. W., *et al.* (See Brown, Wilfred L. and C., assignors.)						
Wagner, Chriestian, assignor of one-half to J. E. Everline, Reading, Pa. Shutter-worker	570,577	Nov. 3	268	66	77	688
Wagner, Frank A., Cleveland, Ohio. Awning-fixture	572,461	Dec. 1	660	156	77	1404
Wagner, Frank B., Cleveland, Ohio. Coin-holder	571,179	Nov. 10	1359	317	77	919
Wagner, John L., Terre Haute, Ind. Railway-switch	569,730	Oct. 20	1790	425	77	367
Wagner Manufacturing Company. (See Bingham and Wagner, assignors.)						
Wagner, Robert, and J. J. Maier, Philadelphia, Pa. Tanning hides or skins	574,014	Dec. 29	3477	.....	77	2002

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wainwright, George J., assignor to W. J. Wainwright, New York, N. Y. Combined opera glass and phone	574,124	Dec. 29	3678	877	77	2039
Wainwright, George J., assignor to W. J. Wainwright, New York, N. Y. Handle and phone attachment for opera-glasses	574,125	Dec. 29	3680	877	77	2039
Wainwright, Walter J. (See Wainwright, George J., assignor.)						
Waite, John H., Rock Falls, assignor to J. Decker, Sterling, Ill. Acetylene-gas generator	573,938	Dec. 29	3324	794	77	1975
Waite, Mile K., assignor of one-half to C. R. Blake, Northville, N. Y. Window-shelf	572,231	Dec. 1	243	58	77	1325
Waitt, Arthur M., Cleveland, Ohio. Car-door	570,074	Oct. 27	2386	566	77	491
Waitt, Arthur M., and H. F. Ball, Cleveland, Ohio. Car-door	570,075	Oct. 27	2388	566	77	491
Walda, William C., Fort Wayne, Ind. Sash-weight	571,813	Nov. 24	2452	584	77	1156
Waldron, Francis X., Jersey City, N. J., and J. Paquet, Brooklyn, N. Y. Support for umbrellas, canes, &c.	569,257	Oct. 13	933	224	77	194
Waldron, William H., New Brunswick, N. J. Reeling-machine for paper or other fabrics	570,355	Oct. 27	2926	695	77	591
Wales, Thomas C., Jr., and C. H. Arnold, assignors to American Bell Telephone Company, Boston, Mass. Telephone-circuit line-signal	573,117	Dec. 15	1809	436	77	1662
Walker, Albert H., trustee, *et al.* (See Lorenz and Claussen, assignors.)						
Walker, Charles F., Chicago, Ill. Bicycle-lamp bracket	570,240	Oct. 27	2685	638	77	547
Walker, Charles W., Bridgeport, Conn., assignor to Yost Writing Machine Company, New York, N. Y. Type-writing machine	572,737	Dec. 8	1153	278	77	1517
Walker, Charles W., Bridgeport, Conn., assignor to Yost Writing Machine Company, New York, N. Y. Type-writing machine	572,845	Dec. 8	1329	320	77	1551
Walker, Edmund W. H. (See Cleathero, Edward T., assignor.)						
Walker, George L. (See Hunt and Walker.)						
Walker, Irvin B., and L. G. Nilson, Sioux City, Iowa. Rail-bond	572,668	Dec. 8	1017	246	77	1492
Walker, Joseph C., Lewistown, Mont. Wire-stretcher	569,897	Oct. 20	2066	491	77	417
Walker, Joseph H., Grand Rapids, Mich. Casket	570,356	Oct. 27	2927	696	77	591
Walker, Thomas, and R. R. Cook, Philadelphia, Pa. Air-brake	569,258	Oct. 13	935	224	77	194
Walker, Thomas H. (See Cotter and Walker.)						
Walker, William S., Jr. (See Beckwith, David O., assignor.)						
Walkinshaw, Hugh, and J. Kapp, Lebanon, Mo. Attachment for sales-counters	571,252	Nov. 10	1481	347	77	942
Wall, Frank R., *et al.* (See Banwell, James, assignor.)						
Wallace, De Witt C., assignor of one-half to J. J. Bornschein, Paducah, Ky. Bicycle-support	574,292	Dec. 29	4021	955	77	2101
Wallace Manufacturing Company. (See Cunningham, William R., assignor.)						
Waller, Francois G., Delft, Netherlands. Apparatus for collecting gases	570,357	Oct. 27	2928	696	77	591
Waller, William A. C., London, England. Tile	573,939	Dec. 29	3326	794	77	1976
Wallis, Adelbert J., Columbus, Ohio. Bottle-display case	570,972	Nov. 10	996	231	77	852
Walmsley, Ben. (See Smith, William T., assignor.)						
Walmsley, Fuller & Company. (See Fuller, Henry F., assignor.)						
Walsh, Carrie, *et al.* (See Walsh, James R., assignor.)						
Walsh, Francis A., Milwaukee, Wis. Closure for vessels	571,814	Nov. 24	2455	584	77	1157
Walsh, James R., assignor to C. Walsh and P. Feldhauser, Denver, Colo. Turn-down-collar shaper	571,606	Nov. 17	2092	500	77	1066
Walsh, Lawrence C., and R. T. Todd, Lawrence, Mass. Device for branding cigars	573,730	Dec. 22	2963	702	77	1893
Walter, George M. (See Glentworth, Charles E., assignor.)						
Walton, Andrew, Huntington, Ind., assignor of one third to S. Langley, Chicago, Ill. Adjustable curtain bracket and support	569,898	Oct. 20	2068	491, 492	77	417
Walton, Charles H., *et al.* (See Richardson, William H., assignor.)						
Walton, Dayton D., J. Barker, and H. Van Dyke, assignors to F. Macey, Grand Rapids, Mich. Type-writer cabinet	569,259	Oct. 13	937	224	77	194
Walton, Freeman T., Portland, Me. Trolley	570,740	Nov. 3	598	137	77	748
Walton, George O., Easton, Pa. Strainer	569,260	Oct. 13	938	225	77	195
Walton, Susan A. (See Pratt, George W., assignor.)						
Walton, William, *et al.* (See Richardson, William H., assignor.)						
Wambaugh, Mahlon W. (See Eldridge, Clark, and Wambaugh.)						
Wambaugh, Mahlon W., Galveston, Tex. Rail-joint	570,618	Nov. 3	341	84, 85	77	701
Wanner, Isaac, Vera Cruz, Ind. Rotary engine	569,693	Oct. 20	1713	406	77	354
Waplee, Rufus, Jr., Philadelphia, Pa. Umbrella	569,569	Oct. 13	1479	348	77	294
Ward, Edward L. C. (See Bentley, Dozier T., assignor.)						
Ward, Edward L. C. (See Lowman, Benjamin J., assignor.)						
Ward, Edward L. C., Atlanta, Ga. Self-identifying check, draft, order, &c.	569,364	Oct. 13	1119	266, 267	77	230
Ward, John E., Waverly, N. Y. Nut-lock	571,871	Nov. 24	2560	606	77	1176
Ward, Joseph T., Philadelphia, Pa. Car-fender	572,587	Dec. 8	879	212	77	1464
Ward, Orin A. (See Denton, Lemi B., assignor.)						
Ward, Theodore A., J. R. Turner, and J. W. Kendall, Tacoma, Wash. Advertisement-wagon	569,982	Oct. 20	2215	526	77	444
Warden, Leonard. (See Wood, Joseph, assignor.)						
Wardwell, Simon W., Jr., Boston, Mass. Wrench	573,940	Dec. 29	3328	794, 795	77	1976
Wardwell, Simon W., Jr., Providence, R. I. Wrench	573,941	Dec. 29	3329	795	77	1976
Waring, John B., Newark, N. J., and H. R. Cassel, New York, N. Y. Centrifugal filter	568,821	Oct. 6	184	44	77	37
Waring, John T. (See Waring, Pierre C., assignor.)						
Waring, Pierre C., assignor to J. T. Waring, Yonkers, N. Y. Device for supporting hats in stacks	572,284	Dec. 1	348	83	77	1346
Waring, Thomas, Camden, N. J. Pencil-sharpener	573,731	Dec. 22	2965	702	77	1894
Warn, Edward T., assignor of two-thirds to F. Pick and C. Drosch, Malden, Mont. Ratchet-wrench	573,732	Dec. 22	2967	702	77	1894
Warner, Albert C. (See Pierce and Warner.)						
Warner, Henry D., New Britain, Conn. Breast-strap slide	573,559	Dec. 22	2637	626	77	1831
Warner, Isaac M., Batavia, Mich. Wire fence	572,322	Dec. 1	422	100	77	1359
Warren, Aldred K., New Brighton, N. Y. Commutator-brush	571,420	Nov. 17	1758	419	77	1008
Warren, Andrew, St. Louis, Mo. Bicycle	571,029	Nov. 10	1093	255	77	870
Warren, Charles G. (See Warren, John F. and C. G.)						
Warren, Freemont A., *et al.* (See Waugh and Older, assignors.)						
Warren, Harry. (See Ingraham, Charles W., assignor.)						
Warren, John F. and C. G., Worcester, Mass. Picker-staff strap for looms	572,140	Dec. 1	84	18	77	1294
Warren, Newton L., Springfield, Ohio. Boiler	569,477	Oct. 13	1296	305	77	261
Warren-Scharf Asphalt Paving Company. (See Puffer, Frederic E., assignor.)						
Warren, William E., Victor, N. Y. Attachment for increasing diameter of sprocket-wheels	570,690	Nov. 3	512	119	77	733
Warwick, George T., Newark, N. J. Compound reinforced tubing	569,261	Oct. 13	939	225	77	195
Warwick, George T., Newark, N. J. Compound tube	574,184	Dec. 29	3814	911	77	2002
Washburn, George P., McGregor, Iowa. Boiler	571,713	Nov. 17	2259	542	77	1100

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washington Venetian Blind Company. (See Brenizer, Warren F., assignor.)						
Waterbury Brass Company. (See Wooster, Frederick J., assignor.)						
Waterbury, William W., Mobile, Ala. Necktie-fastener	573,733	Dec. 22	2969	703	77	1895
Waters, Gwendoline R., Denver, Colo. Device for use in drying hair on the head	571,960	Nov. 24	2725	644	77	1208
Waters, John J., assignor of one-half to E. J. Fitzharris, Saginaw, Mich. Mechanical movement	570,578	Nov. 3	269	67	77	688
Waters, John T., and G. Clopton, assignors to themselves and W. I. Hobbs, Gainesville, Ga. Cider-press and juice-extractor	572,936	Dec. 8	1487	357	77	1583
Waters, Patrick J., Bristol, Pa. Car-fender	571,714	Nov. 17	2259	543	77	1100
Watkins, Edward G., assignor of one-half to Heywood Brothers & Co., Gardner, Mass. Workman's time-recorder	570,241	Oct. 27	2686	638	77	547
Watkins, Edwin D. (See Norton, Stephen, assignor.)						
Watkins, Maerne M., Fernwood, Miss. Ratchet-drill	570,973	Nov. 10	997	231	77	852
Watkins, Weston E., assignor to W. A. White, Phelps, N. Y. Device for converting motion	571,296	Nov. 10	1559	370	77	958
Watrous, Thomas A., assignor of two-thirds to W. V. Elliott, Elmira, N. Y. Thill-coupling	572,141	Dec. 1	85	18	77	1294
Watson, George A., Toronto, assignor to J. Barclay, Montreal, Canada. Heater	573,170	Dec. 15	1899	457	77	1678
Watson, John. (See Gibson and Watson.)						
Watson, Samuel. (See Anderson, George S. and R., assignors.)						
Watson, William H., Eau Claire, Wis. Case construction	573,942	Dec. 29	3331	795, 796	77	1976
Watts, William M., Philadelphia, Pa. Car-fender	574,081	Dec. 29	3593	858, 859	77	2024
Waugh, Eugene. (See Waugh and Older.)						
Waugh, Jesse S., *et al.* (See Waugh and Older, assignors.)						
Waugh, Merriweather J., *et al.* (See Waugh and Older, assignors.)						
Waugh, Robert E. and E., and C. S. Older, Colorado Springs, Colo., assignors of nine-twentieths to J. S. Waugh, W. E. Hitchcock, Omaha, M. J. Waugh, F. A. Warren, Lincoln, Nebr., and N. C. Robbins, St. Louis, Mo. Dry ore concentrator and separator	570,831	Nov. 3	750	171	77	778
Way, Harry A., Burlington, Vt. Extension-screen	569,073	Oct. 6	613	139	77	117
Wayland, James, Newark, N. J. Electromagnet	569,262	Oct. 13	940	225	77	195
Wayland, James, Newark, N. J. Railway-signal	569,263	Oct. 13	942	226	77	195
Wayland, James, Newark, N. J. Railway-signal	569,264	Oct. 13	943	226	77	195
Wayland, James, Newark, N. J. Railway-signal	569,265	Oct. 13	945	226	77	196
Weaver, Henry M. (See Barr and Weaver.)						
Weaver, Henry M., assignor to Barr Cash and Package Carrier Company, Mansfield, Ohio. Basket bail or fork	570,438	Oct. 27	3090	734, 735	77	622
Weaver, Julius M., Fall River, Mass. Apparatus for leveling silk thread	570,691	Nov. 3	513	119	77	733
Weaver, Philip, and N. S. Haller, Allegheny, Pa. Display-stand	571,961	Nov. 24	2726	644	77	1209
Webb, Albert, Worcester, G. M. Whittall, and F. B. Fawcett, Kidderminster, England. Pile fabric	573,118	Dec. 15	1811	436	77	1663
Webb, George B., assignor to Wyckoff, Seamans & Benedict, New York, N. Y. Type-writing machine	570,523	Nov. 3	154	37, 38	77	667
Webb, George H., and J. Clare, Pawtucket, R. I.; said Clare assignor to said Webb. Machine for threading nuts	570,193	Oct. 27	2592	616	77	529
Webb, Harry C., Tacoma, Wash. Machine-gun	569,899	Oct. 20	2069	492, 493	77	417
Webber, Joseph L., Syracuse, N. Y. Fire-extinguishing composition	569,731	Oct. 20	1791	.....	77	367
Weber, Albert R., assignor to J. Gascoine, Brooklyn, N. Y. Non-refillable bottle	570,524	Nov. 3	157	38	77	667
Weber, Charles G., assignor of one-third to J. H. Bromwell, Cincinnati, Ohio. Election-booth	573,250	Dec. 15	2045	490	77	1705
Weber, John, *et al.* (See Armstrong, Charles M., assignor.)						
Weber, John C. (See Jabant, Augustus, assignor.)						
Webster, Charles A., assignor of one-half to G. B. McClelland, Oakland, Cal., and M. F. Webster, Spokane, Wash. Coin-holder	573,251	Dec. 15	2047	490	77	1705
Webster, Harold A., assignor to H. B. Newton, Haverhill, Mass. Car-fender	572,389	Dec. 1	553	131	77	1383
Webster, Harold A., Haverhill, assignor to G. H. P. Flagg, trustee, Boston, Mass. Buffing or polishing device	573,734	Dec. 22	2970	703	77	1895
Webster, Harold A., Haverhill, assignor to G. H. P. Flagg, trustee, Boston, Mass. Buffing or polishing appliance	573,735	Dec. 22	2972	703	77	1895
Webster, Le Roy C., U. S. Navy. Bottle or jug	573,373	Dec. 15	2276	543	77	1747
Webster, Milton F., *et al.* (See Webster, Charles A., assignor.)						
Webster, Thomas E. (See Smith, Frederick M., assignor.)						
Weed, Alfred, Anderson, Ind. Round file	570,579	Nov. 3	272	67	77	688
Weed, Edward B., assignor to A. I. Root Company, Medina, Ohio. Method of and apparatus for making sheeted wax and artificial honeycomb foundations	573,588	Dec. 8	881	213	77	1465
Weed, George A., New York, N. Y. Car-fender	569,848	Oct. 20	1990	475	77	403
Weeks, Andrew C., Alhambra, Cal. Device for opening knives	568,998	Oct. 6	494	111	77	94
Weeks, Frank W., Denver, Colo. Train-order-blank pad	574,349	Dec. 29	4112	977	77	2118
Weeks, Horace, Boston, Mass., assignor, by mesne assignments, to Suffolk Nailing Machine Company, Portland, Me. Sole-nail	572,937	Dec. 8	1489	357	77	1583
Weeks, John, New York, N. Y., assignor to J. F. Dettmar, executor of R. Dudgeon, deceased. Hydraulic jack	571,547	Nov. 17	1987	472, 473	77	1049
Weible, Jacob H. (See Klahr, Howard, assignor.)						
Weiblen, William F., *et al.* (See Allen, Fred E., assignor.)						
Weichelt, Charles, Philadelphia, Pa., assignor to H. W. Butterworth & Sons Company, of Pennsylvania. Cloth-clamp for textile machinery	573,065	Dec. 15	1720	413	77	1645
Weider, John A., assignor to S. W. Hagaman, Rochester, N. Y. Horse-collar	570,887	Nov. 3	859	200	77	801
Weidler, Theophilus P., Glenola, Pa. Car-coupling	570,652	Nov. 3	433	103	77	718
Weigand, Alfred, Milwaukee, Wis. Shoe-stay	570,076	Oct. 27	2390	566	77	491
Weigand, George, Minneapolis, Minn. Match-safe	570,859	Nov. 3	800	183	77	787
Weil, Abraham. (See Krebs and Weil.)						
Weil, August J. (See Baker, Jackson R., assignor.)						
Weinman, Christian J., and E. E. Euchenhofer, assignors to Dayton Gas Engine and Manufacturing Company, Dayton, Ohio. Gas-engine starter	569,365	Oct. 13	1120	267	77	230
Weinstein, Charles. (See Kritcher and Weinstein.)						
Weir Frog Company. (See Partington, Charles, assignor.)						
Weir, John H., New York, N. Y. Plumb-support	572,390	Dec. 1	555	131	77	1383
Weir, Max W., Newark, N. J. Gas-engine	569,694	Oct. 20	1715	407	77	354
Weisbecker, Charles. (See Breakspear, Spannaus, and Weisbecker.)						
Weise, Carl H., Pösneck, Germany. Manufacturing plates for secondary batteries	570,619	Nov. 3	342	85	77	702
Weisel, Morris, New York, N. Y. Car-fender	571,938	Nov. 24	2689	636	77	1202
Weiss, George L., Cleveland, Ohio. Draft-rigging for cars	569,695	Oct. 20	1716	407	77	355

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Weiss, George L., Cleveland, Ohio. Draft-rigging for cars	569,696	Oct. 20	1717	408	77	355
Weiss, George W., Brooklyn, N. Y. Pneumatic tire	569,074	Oct. 6	614	139	77	118
Weiss, Rudolph, Nottingham, England. Embroidering-machine	573,119	Dec. 15	1812	436, 437, 438	77	1663
Weissenborn, Oscar A., Jersey City, N. J. Face-steaming apparatus	571,587	Nov. 17	2048	488	77	1060
Welch, Michael I., Cordele, assignor of one-half to W. H. Barnett, Atlanta, Ga. Car-coupling	571,030	Nov. 10	1094	255	77	870
Welch, Rosia W., assignor of five-sixths to M. A. McCormick, M. Mullen, and J. S. Taylor, Baltimore, Md. Roller-mill	572,589	Dec. 8	883	213	77	1465
Welch, Samuel F., assignor to Western Wheeled Scraper Company, Aurora, Ill. Locking device for extensible axles	573,836	Dec. 22	3142	748	77	1927
Welch, William P., Grand Forks, N. D. Shoe-holder	573,498	Dec. 22	2537	601	77	1812
Welcker, Armand J. (See Allen, James M., assignor.)						
Weld, John N. (See Springer, Narcissa S., assignor.)						
Welke, Hermann F., Hagen, Germany. Button-fastener	572,846	Dec. 8	1332	320	77	1552
Wellman, Charles H. (See Wellman, Samuel T. and C. H.)						
Wellman, Samuel T., Upland, Pa., and C. H. Wellman, South Chicago, Ill. Furnace-charging apparatus	569,075	Oct. 6	615	140	77	118
Wells, Chester H., Meshoppen, Pa. Ring attachment	569,900	Oct. 20	2073	493	77	418
Wells, Frank E. (See Wells, Willet C. and F. E.)						
Wells, James L., Leadville, Colo. Roasting-furnace	569,901	Oct. 20	2074	494	77	418
Wells, Willet C. and F. E., Fostoria, Ohio. Machine for making nipples	569,902	Oct. 20	2076	494	77	419
Welsh, Artemus, Lawrence, Kans. Spike or bolt puller	571,815	Nov. 24	2456	584	77	1157
Welsh, Artemus, Lawrence, Kans. Spike-extractor	571,816	Nov. 24	2457	584	77	1158
Welsh, Artemus, Lawrence, Kans. Spike-extractor	573,943	Dec. 29	3332	796	77	1977
Welton, Edwin D., assignor to Scovill Manufacturing Company, Waterbury, Conn. Button-setting machine	571,207	Nov. 10	1402	328	77	927
Welton, Frank R. (See McKenney and Welton.)						
Wendling, George X. (See Johns, Zacharia D., assignor.)						
Wendt, Fredrick H., assignor to Brown Folding Machine Company, Erie, Pa. Packer for folding-machines	570,580	Nov. 3	272	67, 68	77	689
Wendt, Fredrick H., assignor to Brown Folding Machine Company, Erie, Pa. Folding-machine	570,581	Nov. 3	274	68	77	689
Wenger, Julius D. C., assignor to L. I. Cook and C. S. Carter, Ansonia, Conn. Finger-nail clipper	569,903	Oct. 20	2079	495	77	419
Wenger, Milton, New Holland, Pa. Wrench	572,185	Dec. 1	156	38	77	1308
Wenger, Milton, New Holland, Pa. Wrench	572,186	Dec. 1	158	38	77	1308
Wenzelmann, Gustave, Missal, Ill. Elevator and dump	569,697	Oct. 20	1719	408, 409, 410	77	355
Werner, Ernest E., Dallas, Tex. Current-controller or rheostat	574,231	Dec. 29	3924	934	77	2082
Werner, Paul F., Vailsburg, N. J., assignor to J. Duncan & Co., Boston, Mass. Overhead switch and hanger	571,607	Nov. 17	2083	500	77	1066
Werntz, Frank E., Meinert, assignor of four-fifths to D. and B. Ballenger, W. Allan, Golden City, and E. Glammier, Dade county, Mo. Adjustable landside-shoe for plows	574,293	Dec. 29	4022	935	77	2101
Wert, Mason O., Poplar, Ohio. Corn-harvester	570,832	Nov. 3	753	171, 172	77	778
Weser, John A., New York, N. Y. Musical instrument	570,582	Nov. 3	275	68	77	689
Wesle, Henry. (See Wesle, Herman and H.)						
Wesle, Herman and H., Medford, Wis. Sleigh-knee	572,847	Dec. 8	1333	321	77	1552
Wesselmann, Bruno and T., Berlin, Germany. Drilling or boring tool	571,253	Nov. 10	1492	348	77	942
Wesselmann, Theodor. (See Wesselmann, Bruno and T.)						
Wesson, Daniel B. and J. H., Springfield, Mass. Safety device for revolvers	573,736	Dec. 22	2974	703	77	1896
Wesson, Joseph H. (See Wesson, Daniel B. and J. H.)						
West, Asa H., Lynchburg, Va. Fire-alarm	573,944	Dec. 29	3334	796	77	1977
West, Crawford. (See Gardner, Joseph N., assignor.)						
West, Derrick S., and D. Johnson, Boston, Mass. Saw-clamp	573,737	Dec. 22	2975	704	77	1896
West Haven Manufacturing Co. (See Bradley, Frank S., assignor.)						
West, John L., Norristown, Pa. Apparatus for distributing air	571,500	Nov. 17	1904	454, 455	77	1035
West, John L., Norristown, Pa. Washing-machine	571,501	Nov. 17	1906	455	77	1035
West, Jonathan B., Rochester, N. Y. Car-wheel	570,525	Nov. 3	159	38	77	667
West, Robert S., Cleveland, Ohio. Advertising toy	571,548	Nov. 17	1989	473	77	1050
West, William A., assignor of one-half to A. L. Martin, Boone, Iowa. Device for feeding anti-incrustation compounds to boilers	569,440	Oct. 13	1241	291	77	251
West, William H. H., assignor of two-thirds to H. S. Daniels and J. W. Enos, Jerseyville, Ill. Fence-wire-crimping device	568,931	Oct. 6	360	83	77	69
Westenfeld, E. F. Herman, Toledo, Ohio. Ruling-machine for slates	573,843	Dec. 22	3149	751	77	1929
Western Electric Company. (See McBerty, Frank R., assignor.)						
Western Electric Company. (See Patterson, William R., assignor.)						
Western Electric Company. (See Scribner, Charles E., assignor.)						
Western Electric Company. (See Scribner and McBerty, assignors.)						
Western Wheeled Scraper Company. (See Welch, Samuel F., assignor.)						
Westinghouse Air Brake Company. (See Guilliemet, François L., assignor.)						
Westinghouse Air Brake Company. (See Noyes, Henry F., assignor.)						
Westinghouse Air Brake Company. (See Westinghouse, George, Jr., assignor.)						
Westinghouse, Church, Kerr & Company. (See Roney, William R., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Davis, Harry P., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Lamme, Benjamin G., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Schmid, Albert, assignor.)						
Westinghouse Electric and Manufacturing Company. (See Scott, Charles F., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Shallenberger, Oliver B., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Skinner, Charles E., assignor.)						
Westinghouse Electric and Manufacturing Company. (See Wurts, Alexander J., assignor.)						
Westinghouse, George. (See Backstrom, Charles A., assignor.)						
Westinghouse, George, Pittsburg, Pa., assignor to Electro-Magnetic Traction Company, Washington, D. C. Electric-railway construction	573,066	Dec. 15	1721	413	77	1645
Westinghouse, George, Jr., assignor to Westinghouse Air Brake Company, Pittsburg, Pa. Fluid-pressure automatic brake	573,190	Dec. 15	1943	467, 468	77	1686
Weston, Edward D. (See Bird and Weston.)						
Weston, Eugene C., Gallatin, Mo. Counter-shaft and belt-tightener	573,191	Dec. 15	1947	469	77	1687

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Weston, Milton T., New York, N. Y., and G. H. Marston, Passaic, N. J. Splint-cutting machine	574,050	Dec. 29	3542	845, 846	77	2015
Westphal, Henry, Chicago, Ill. Bicycle-rack	573,171	Dec. 15	1903	458	77	1679
Westphal, Peter J., Holyoke, Mass. Journal-bearing	573,738	Dec. 22	2976	704	77	1896
Westra, Peter and S., Kalamazoo, Mich. Door stop or holder	572,622	Dec. 8	940	228	77	1477
Westra, Sikke. (See Westra, Peter and S.)						
Wetherbee, Emery G. (See Rand, Charles N., assignor.)						
Wethered, Edwin R., London, England. Friction pulley-block	573,739	Dec. 22	2977	704	77	1896
Wetmore, Earl P., and C. E. Roehl, St. Joseph, Mo. Electric heater	570,077	Oct. 27	2391	567	77	491
Whalley, William, A. Clegg, T. W. Benson, W. Parratt, and J. Robinson, Halifax, England. Combing-machine	573,740	Dec. 22	2979	705	77	1897
Whayne, Robert C., Louisville, Ky. Lamp-bracket for velocipedes	571,101	Nov. 10	1237	288	77	896
What Cheer Drill and Miners Tool Company. (See Barker, Charles E., assignor.)						
Wheel Company. (See Curtis, Frederic A., assignor.)						
Wheelan, Fairfax H. (See Jessup and Wheelan.)						
Wheeler, Charles C., Holland, Mich. Window-screen	569,732	Oct. 20	1792	425	77	367
Wheeler, Charles Y., Allegheny, Pa. Armor-piercing projectile	569,143	Oct. 6	730	171	77	139
Wheeler, Charles Y., Allegheny, Pa. Projectile-coating	573,120	Dec. 15	1816	.....	77	1663
Wheeler, Erskine D. (See Thayer and Wheeler.)						
Wheeler, Mark D., Redfield, S. D. Strainer for Artesian wells	572,848	Dec. 8	1335	321	77	1552
Wheeler, Ralph H., Mystic, Conn. Sash holder and lifter	573,374	Dec. 15	2279	543	77	1747
Wheeler, Schuyler S. (See Herzog and Wheeler.)						
Wheeler & Wilson Manufacturing Company. (See Dimond and Dial, assignors.)						
Wheelright, Thomas S. (See Tiffany, George S., assignor.)						
Whelan, Henry W., Detroit, Mich., assignor to Diamond Match Company, Chicago, Ill. Machine for making and sanding match-box shucks	571,180	Nov. 10	1360	317, 318	77	920
Whipple, Effinger E., St. Johns, Mich. Harrow	571,715	Nov. 17	2261	543	77	1100
Whisenhant, Lemuel M., Perdue Hill, Ala. Liquid-blacking brush	572,462	Dec. 1	661	156	7	1404
Whittacre, Harvey H., and A. C. Wolfe, Wellsville, Ohio. Electric metal separator	573,741	Dec. 22	2980	705	77	1897
Whitaker, Charles Z., Durham, N. C. Fountain marking-brush	570,583	Nov. 3	278	69	77	690
Whitcher, Frank W. (See Mower, Edwin F., assignor.)						
Whitcomb, Rufus P., Jr., *et al.* (See Whitcomb, Willie E., assignor.)						
Whitcomb, William W., Brookline, and F. F. Coggin, Wakefield, assignors to Composite Brake Shoe Company, Boston, Mass. Brake-shoe	573,252	Dec. 15	2048	491	77	1706
Whitcomb, Willie E., assignor to G. L. Tanner and R. P. Whitcomb, Jr., Worcester, Mass. Harp	570,242	Oct. 27	2687	638	77	547
Whitcomb, Wilson W., Batavia, N. Y. Bicycle driving-gear	572,038	Nov. 24	2851	671	77	1231
White, Charles E., Monmouth, Ill. Plow	571,421	Nov. 17	1759	419	77	1009
White, Charles F., assignor of one-third to R. Gerwing, Denver, Colo. Needle for repairing punctured bicycle-tires with cement	571,422	Nov. 17	1760	420	77	1009
White, Charles G., assignor of one-half to J. F. Hink, Woodland, Cal. Rotary engine	570,584	Nov. 3	279	69	77	690
White, Charles L. (See Turner, Moses R., assignor.)						
White, Clarence O. (See Johnson, White, and Lloyd.)						
White, Edward D., *et al.* (See Stanley, Ira N., assignor.)						
White, Edward H., and W. D. Parker, Meriden, Conn.; said Parker assignor of one-half to said White. Automatic piano	573,427	Dec. 15	2399	572	77	1769
White, Eugene D. (See Buchtel, Joseph, assignor.)						
White, Fred, *et al.* (See McElroy, William, assignor.)						
White, George A., Potsdam, N. Y. Chalk-screen for blackboard-troughs	570,692	Nov. 3	514	120	77	734
White, George S. (See Jackson and White.)						
White, Harvey, assignor to Whitman & Barnes Manufacturing Company, Syracuse, N. Y. Grindstone-frame	569,806	Oct. 20	1922	456, 457	77	390
White, Hawley C., assignor to H. C. White Company, Bennington, Vt. Stereoscope	571,716	Nov. 17	2263	544	77	1101
White, Hedley, Marques, Tex. Plow attachment	571,466	Nov. 17	1835	437	77	1023
White, James W., Lincoln, Ill. Corn-harvester	573,067	Dec. 15	1723	413	77	1645
White, John T., New York, N. Y. Lemon-squeezer	572,849	Dec. 8	1336	321	77	1553
White, Lewis B., New York, N. Y. Apparatus for flavoring cigars	572,323	Dec. 1	423	100	77	1359
White, Louis L., assignor of one-half to W. F. Lewis, Oakland, Cal. Mold for shaping metallic tooth-crowns	571,102	Nov. 10	1239	288	77	896
White, Moses H., Wanatchee, Wash., assignor of one-half to S. Saunders, Minneapolis, Minn. Water-elevator	570,526	Nov. 3	159	38, 39	77	667
White, Philip. (See Rainey, John M., assignor.)						
White, T. Stewart, *et al.* (See Linn, Allen D. and A. B., assignors.)						
White, William A. (See Watkins, Weston E., assignor.)						
White, William H., Nyack, assignor of one-half to E. W. Rutherford, Brooklyn, N. Y. Pencil-sharpener	569,698	Oct. 20	1724	410	77	356
Whitehead, Henry B., assignor of one-half to J. J. Bishop, Memphis, Tenn. Brick-machine	571,629	Nov. 17	2121	509, 510	77	1074
Whitehead & Hoag Company. (See Adams, George B., assignor.)						
Whiteley, Ben, assignor of one-half to I. N. Ford, Sterling, Colo. Hair-pin and button-hook	569,144	Oct. 6	731	172	77	139
Whiteman, Charles, Rugby, England. Gate-latch	569,904	Oct. 20	2060	495	77	420
Whitford, Charles, Milwaukee, Wis. Combination-table	572,391	Dec. 1	555	131	77	1384
Whitin Machine Works. (See Ashby, Peter, assignor.)						
Whitin Machine Works. (See Gregson and Murray, assignors.)						
Whitin Machine Works. (See Owen, Henry A., assignor.)						
Whiting, Paul. (See Vickerman, John, assignor.)						
Whiting, Rachel M., *et al.* (See Whiting, William M., assignor.)						
Whiting, William M., assignor to R. M. Whiting, East Orange, N. J., and C. Richardson, New York, N. Y. Trolley for electric railways	570,078	Oct. 27	2393	567	77	492
Whitman & Barnes Manufacturing Company. (See White, Harvey, assignor.)						
Whitmarsh, William P., Quincy, Mass. Machine for feeding horseshoe-nail blanks	573,560	Dec. 22	2637	626, 627, 628	77	1831
Whitmore, Edwin B., assignor of one-half to L. Emery, Jr., Three Rivers, Mich. Dust-collector	573,837	Dec. 22	3143	749	77	1927
Whitmore, James T., Cleveland, Ohio. Book-holder	571,254	Nov. 10	1483	348	77	942
Whitney, Arthur E., Winchester, Mass. Hide-working cylinder	570,653	Nov. 3	434	103	77	719
Whitney, Edwin H., East Providence, assignor to American Ship Windlass Company, Providence, R. I. Ship's windlass	572,781	Dec. 8	1230	297, 298	77	1531
Whitney, Isaac. (See Ryan and Whitney.)						
Whitney, Mary E. (See Phinney and Trinder, assignors.)						
Whitney, William O., Glens Falls, N. Y. Folding umbrella	573,375	Dec. 15	2280	544	77	1747
Whiton, Lucius E., New London, Conn. Centering-machine	571,817	Nov. 24	2459	585	77	1158

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Whittall, George M. (See Webb, Whittall, and Fawcett.)						
Whittall, George M. (See Fawcett, Francis B., assignor.)						
Whittemore, James M., Washington, D. C. Magazine-gun	572,919	Dec. 8	1450	349, 350	77	1577
Whitten, John T., Passaic, N. J. Splint-machine	572,232	Dec. 1	244	58	77	1325
Whittier Machine Company. (See Clark, John H., assignor.)						
Whittier Machine Company. (See Pratt, Charles R., assignor.)						
Whyman, Horatio O., Norfolk, assignor of one-fourth to E. A. Houston, Niobrara, Nebr. Boot or shoe lacing	570,585	Nov. 3	280	69	77	690
Wiatt, Addison M., Minneapolis, Minn. Butter-jar	574,126	Dec. 29	3681	877	77	2040
Wicks, John L., Fitzgerell, Ill. Brake-shoe	573,376	Dec. 15	2282	544	77	1748
Wickwire, Edward G., Larned, Kans. Pen or pencil holder	571,630	Nov. 17	2127	511	77	1075
Widmer, Charles, Sr., Brooklyn, N. Y. Game-counter	572,920	Dec. 8	1458	350	77	1578
Wiederhold, Oscar. (See Schwagerman, William, assignor.)						
Wiegand, S. Lloyd. (See Hutchinson and Wiegand.)						
Wiggins, William, Brockton, Mass. Safety appliance for street-cars	570,888	Nov. 3	860	200	77	801
Wightman, Merle J., Scranton, Pa. Electric bond	569,266	Oct. 13	946	227	77	196
Wilbur, George H., Boston, Mass. Lamp-wick and producing same	568,822	Oct. 6	186	45	77	38
Wilce, Thomas. (See Burnham, John P., assignor.)						
Wilcox, Alvin S., *et al.* (See Churchill, Henry P., assignor.)						
Wilcox, Darius, Mechanicsburg, Pa. Fifth-wheel	570,194	Oct. 27	2594	616, 617	77	530
Wilcox, Fred E. (See Foster and Wilcox.)						
Wilcox, Melvin L., Bay City, Mich. Bicycle ball-bearing	570,860	Nov. 3	861	184	77	787
Wilcox, Samuel W., Mendon, Mass. Centering device for bits	568,932	Oct. 6	361	83	77	69
Wild, Daniel J. (See Wild, James W., assignor.)						
Wild, James W., Boston, assignor of one-half to D. J. Wild, Cambridge, Mass. Candle-stick	571,962	Nov. 24	2727	644	77	1209
Wild, William E., Denver, Col. Ore-concentrator	568,888	Oct. 6	297	68	77	57
Wilday, John H., assignor of two-thirds to R. W. Hutton and Z. K. Loucks, Philadelphia, Pa. Darning apparatus	572,921	Dec. 8	1459	351	77	1578
Wilde, Louis J., assignor of one-half to M. Salvin, New York, N. Y. Elastic tubular tire	572,738	Dec. 8	1158	278	77	1518
Wilder, Charles W., Fitchburg, Mass. Wood-turning lathe	569,776	Oct. 20	1875	445	77	381
Wilder, William H., Florence, Mass. Lamp-stove	570,527	Nov. 3	161	39, 40	77	668
Wiles, Robert H., Freeport, Ill. Electric mining-machine	568,933	Oct. 6	363	83	77	70
Wiley, Jonas T., and E. K. Boyd, Liscomb, Iowa. Pipe-wrench	568,966	Oct. 6	430	95	77	83
Wilgus, Daniel C., Los Angeles, Cal. Automatic sight-feed crude-oil burner	568,934	Oct. 6	364	84	77	70
Wilken, Frederick J. (See Seifert, Bourke, and Wilken.)						
Wilkerson, Pery L., York Station, Ala. Automatic photographic shutter	573,499	Dec. 22	2538	601	77	1812
Wilkin, Theodore S., assignor to Filer & Stowell Company, Milwaukee, Wis. Valve	569,366	Oct. 13	1121	267, 268	77	231
Wilkin, William M., Erie, Pa. Gang-saw mill	572,922	Dec. 8	1461	351	77	1578
Wilkins, Edward, *et al.* (See Slight, Emsley L., assignor.)						
Wilkins, Willie A., Travis, Tex. Inkstand	572,623	Dec. 8	941	228	77	1477
Wilkinson, John M., Batesville, Ark. Animal-trap	574,294	Dec. 29	4023	955	77	2101
Wilkinson, William J., Philadelphia, Pa. Clutch for holding glass articles while being finished	571,255	Nov. 10	1484	349	77	942
Wilks, William U., Curtis, Ala. Car-coupling	572,938	Dec. 8	1490	357	77	1584
Willard, George W., Detroit, Mich. Picture and picture-hook hanger	573,945	Dec. 29	3336	797	77	1977
Willard, Henry G. (See Carson, George J., assignor.)						
Willard, William A., *et al.* (See Williams, Henry E., assignor.)						
Willcox, Charles H., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Needle-threader for sewing-machines	571,818	Nov. 24	2463	585	77	1158
Willcox, Charles H., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Feed mechanism for sewing-machine	572,039	Nov. 24	2852	671, 622	77	1231
Willcox, Charles H., assignor to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Sewing-machine	572,040	Nov. 24	2854	672	77	1232
Willcox, Charles H., New York, and S. Borton, Brooklyn, assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Feed mechanism for sewing-machines	572,041	Nov. 24	2857	672	77	1232
Willcox, Charles H., New York, N. Y., and C. Carleton, Providence, R. I., assignors to Willcox & Gibbs Sewing Machine Company, New York, N. Y. Sewing-machine	572,042	Nov. 24	2859	672	77	1233
Willcox & Gibbs Sewing Machine Company. (See Borton, Stockton, assignor.)						
Willcox & Gibbs Sewing Machine Company. (See Willcox, Charles H., assignor.)						
Willcox & Gibbs Sewing Machine Company. (See Willcox and Borton, assignors.)						
Willcox & Gibbs Sewing Machine Company. (See Willcox and Carleton, assignors.)						
Willey, George W., Philadelphia, Pa. Car-fender	569,699	Oct. 20	1726	410	77	356
William L. Gilbert Clock Company. (See McCabe, Thomas W. R., assignor.)						
Williams, Ahijah C., Janesville, Wis. Checkrein attachment	571,987	Nov. 24	2769	653	77	1217
Williams, Albert P., Galveston, Ind. Gravel-dump	572,233	Dec. 1	246	59	77	1325
Williams, Alfred G., Newark, N. J., assignor to L. W. Levy, Castleton, and E. Dreyfus, New York, N. Y. Clasp for eyeglass-cases, &c	569,267	Oct. 13	948	227	77	196
Williams, Angus M., Philadelphia, Pa. Tire-fastening	571,872	Nov. 24	2561	607	77	1176
Williams, Edwin C., assignor of one-fourth to S. Dunn, Clarksville, Tenn. Automatic circuit-closer	572,923	Dec. 8	1462	351	77	1579
Williams, Frank C., assignor of one-half to J. D. Seibert, Bellefonte, Pa. Flue-cleaner	573,946	Dec. 29	3337	797	77	1977
Williams, Frank T., assignor to Edward Miller & Company, Meriden, Conn. Lamp-burner	571,631	Nov. 17	2127	511	77	1075
Williams, George H., Boston, Mass. Leaf-spring	573,121	Dec. 15	1817	438	77	1663
Williams, Henry E., assignor of two-thirds to W. A. Willard and L. W. Ripley, Hartford, Conn. Portable power-skid	573,630	Dec. 22	2784	659	77	1862
Williams, Hubbard D. B., assignor of one-half to C. H. Snyder, Mansfield, Ohio. Musical instrument	569,777	Oct. 20	1878	446	77	382
Williams, Hubbard D. B., assignor of three-fourths to A. Kallmerten and C. F. Grueninger, Mansfield, Ohio. Pump	572,782	Dec. 8	1233	298	77	1531
Williams, Hubbard D. B., assignor of three-fourths to A. Kallmerten and C. F. Grueninger, Mansfield, Ohio. Double-acting submerged force-pump	572,783	Dec. 8	1234	298	77	1531
Williams, James A. (See Kirker, Miller, and Williams.)						
Williams, Jane P. (See Wright, Arthur W., assignor.)						
Williams, John K. (See Morrison, Joseph C., assignor.)						
Williams, John S., Krebs, Ind. Ter. Attachment for brooms	570,358	Oct. 27	2929	696	77	592
Williams, John T., Brooklyn, N. Y. Telephony	569,807	Oct. 20	1923	457	77	390
Williams, Louis N. D., Ashbourne, assignor of one-half to R. W. Scott, Philadelphia, Pa. Rib-knitting machine	573,743	Dec. 22	2983	706	77	1897
Williams, Percy G., Brooklyn, N. Y. Maze	572,142	Dec. 1	87	19	77	1294

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Williams, R. Burks. (See Rylander, James B., assignor.)						
Williams, Robert S., Merchantville, N. J. Bicycle-tire	572,463	Dec. 1	662	156	77	1404
Williams, Thomas H., Mount Carmel, Pa. Miner's safety-lamp	570,780	Nov. 3	659	151	77	759
Williams, William E., Chicago, Ill. Machinery for manufacturing cell-cases	573,947	Dec. 29	3338	797, 798, 799, 800, 801, 802	77	1978
Williams, William F., London, England. Dressing-bag	573,742	Dec. 22	2982	706	77	1897
Williams, William M., assignor to G. E. Driver, Opelika, Ala. Automatic valve for service-pipes	570,833	Nov. 3	755	172	77	779
Willits, Van Burton, assignor to Hay & Willits Manufacturing Company, Indianapolis, Ind. Bicycle	573,316	Dec. 15	2184	521	77	1729
Willmann, Joseph, Solms, Tex. Corn-husker	573,561	Dec. 22	2644	628	77	1832
Willment, George M., New York, N. Y. Adjustable washbasin-clamp	569,268	Oct. 13	949	227	77	197
Wilms, Charles, Baltimore, Md. Battery-cell	572,285	Dec. 1	349	83	77	1346
Willmunder, Hermann, Philadelphia, Pa. Swivel-loom	570,359	Oct. 27	2931	696	77	592
Wills, James A., Philadelphia, and L. E. Jordan, Wilkinsburg, assignors to Smead & Wills Warming and Ventilating Company, Philadelphia, Pa. Latrine	573,744	Dec. 22	2984	707	77	1898
Willson, Thomas L., New York, N. Y., assignor to Electro Gas Company, of West Virginia. Consuming hydrocarbon gas	573,377	Dec. 15	2288	.....	77	1748
Wilshire, Henry G., Los Angeles, Cal., and M. C. Massie, Washington, D. C. Speeding device for race-tracks	572,080	Nov. 24	2955	695	77	1251
Wilson, Addison, Lowell, Mass. Woodworker's clamp	573,745	Dec. 22	2987	707	77	1898
Wilson, Alexander, and F. Stubbs, Sheffield, England. Apparatus for manufacturing armor-plates	572,590	Dec. 8	884	214	77	1465
Wilson, Alonzo T. and A. R., Houston, Tex. Rotary engine	570,889	Nov. 3	861	200	77	801
Wilson, Andrew, assignor of two-thirds to F. Wilson and J. S. Clunie, Montreal, Canada. Bearing	569,733	Oct. 20	1794	426	77	367
Wilson, Anna R. (See Wilson, Alonzo T. and A. R.)						
Wilson, Dalton K., Crystal, Iowa. Automatic gate	569,269	Oct. 13	950	227, 228	77	197
Wilson, Frank, *et al.* (See Wilson, Andrew, assignor.)						
Wilson, George M., and H. J. Neely, Wilbur, Wash. Cork-cabinet	570,113	Oct. 27	2454	583	77	504
Wilson, James L., Mountain Peak, Tex. Gate-hinge	568,967	Oct. 6	431	96	77	83
Wilson, John C., Allegheny, Pa. Washing machine	571,819	Nov. 24	2464	585	77	1158
Wilson, John M., Conway Springs, Kans. Wire stretcher and tightener	568,823	Oct. 6	188	45	77	38
Wilson, John W. (See Clawson, Charles H., assignor.)						
Wilson, Joseph W., Salt Lake City, Utah. Dust-collector	568,968	Oct. 6	432	96	77	83
Wilson, Mary L., *et al.* (See Demorest, Allen T., assignor.)						
Wilson, Michael H., *et al.* (See Bergh, Bror F., assignor.)						
Wilson, Patrick, Pittsburg, Pa. Non-refillable bottle	569,778	Oct. 20	1879	446	77	382
Wilson, Robert, Louisville, Ky. Electric elevator	571,502	Nov. 17	1908	456	77	1036
Wilson, Robert H. (See Sadler and Wilson.)						
Wilson, Robert M., Rome, N. Y. Range-boiler	573,746	Dec. 22	2988	707	77	1898
Wilson, Thomas A., Alton, Mo. Cake-pan	572,509	Dec. 1	733	175	77	1417
Wilson, Thomas B., Springfield, Mass., assignor to C. E. Billings, Hartford, Conn. Lock for bolt-guns	571,608	Nov. 17	2086	501	77	1067
Wilson, William T., London, England. Sheet calendar	571,031	Nov. 10	1097	256, 257	77	871
Winchester Repeating Arms Company. (See Gardner, John, assignor.)						
Winchester Repeating Arms Company. (See Johnson, Thomas C., assignor.)						
Winchester Repeating Arms Company. (See Mason, William, assignor.)						
Windle, John C., St. Louis, Mo. Ice-freezing can	572,234	Dec. 1	247	59	77	1325
Windmiller, Samuel M., and L. Holford, Nebo, Ill. Gearing for washing-machines	568,824	Oct. 6	189	45	77	38
Wingfield, John H. (See Vulté, Hermann T., assignor.)						
Winkley, Erastus E., Lynn, assignor to Goodyear Shoe Machinery Company, Boston, Mass. Jack for sole-machines	573,068	Dec. 15	1724	414	77	1645
Winkley, Erastus E., Lynn, assignor to Goodyear Shoe Machinery Company, Boston, Mass. Pressing-form for sole-laying machines	573,069	Dec. 15	1725	414	77	1646
Winslow, A., *et al.* (See Neild, Edwin, assignor.)						
Winslow, Francis A. (See Winslow, William H. and F. A.)						
Winslow, William H. and F. A., Chicago, Ill. Library-shelving	568,825	Oct. 6	190	46	77	38
Winslow, William H. and F. A., Chicago, Ill. Library-shelving	569,270	Oct. 13	952	228	77	197
Winspear, James H., Omaha, Nebr. Automatic signal pressure-head	572,495	Dec. 1	710	170	77	1413
Winter, Harry A., assignor to Sintz Gas Engine Company, Grand Rapids, Mich. Gas-engine	569,530	Oct. 13	1396	329, 330	77	279
Wintermute, Aquilla, *et al.* (See Hearnshaw, Frank J., assignor.)						
Wintermute, Edwin H., Jr., Newark, N. J. Bookkeeper's posting-guide	569,478	Oct. 13	1298	305	77	261
Winters, John W., deceased, (C. G. Branson, administrator,) assignor of five-eighths to M. O'Brien, M. L. and J. Gelina, A. J. Koe, D. H. Kent, and A. Johnson, St. Paul, Minn. Automatic safety angle-cock	571,735	Nov. 17	2315	553	77	1111
Winters, Thomas. (See Kaltenbeck, William H., assignor.)						
Wirt, Charles, G. R. Green, and H. Burger, assignors, by mesne assignments, to American Electric Meter Company, Philadelphia, Pa. Electric meter	571,032	Nov. 10	1100	257	77	872
Withauer, W. B. (See Savage, John T., assignor.)						
Witherow, James P., Pittsburg, Pa. Bosh-plate	572,143	Dec. 1	87	19	77	1294
Witte, Jakob de. (See Janse and Witte.)						
Witte, Victor, London, England. Sewing-machine	569,441	Oct. 13	1242	292	77	251
Wittram, Frederick, San Francisco, Cal. Propeller	573,562	Dec. 22	2645	629	77	1833
Wm. A. Stickney Cigar Company. (See Bente, Henry F., assignor.)						
Wm. Knabe & Co. Manufacturing Company. (See Byrne, William A., assignor.)						
Wolf, Albert H., West Dover, assignor of one-half to N. J. Baylan, Cleveland, Ohio. Apparatus for raising sunken vessels	569,442	Oct. 13	1245	293	77	252
Wolf, Augustus. (See Lough, William J., assignor.)						
Wolf, Joseph, assignor of one-half to J. A. Robertson and A. Mutschler, Rochester, N. Y. Flash-light apparatus	571,632	Nov. 17	2128	511	77	1076
Wolfe, Andrew C. (See Whitacre and Wolfe.)						
Wolfe, Wiltsie F., Newton, Mass. Heating and ventilating apparatus	571,423	Nov. 17	1761	420	77	1009
Wolfe, Wiltsie F., Newton, Mass. Heating and ventilating apparatus	571,424	Nov. 17	1763	420, 421	77	1009
Wollenhaupt, Bruno E., New York, N. Y. Musical instrument	572,392	Dec. 1	557	131	77	1384
Wollin, John C., Williamsport, Pa. Circuit-closer for electrical alarm-circuits	573,948	Dec. 29	3348	803	77	1979

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wolters, John A. G. O., Philadelphia, Pa. Car-fender	572,235	Dec. 1	248	59	77	1326
Wood, David. (See Isley, William H., assignor.)						
Wood, Edgar J., assignor to M. A. Wood, Brooklyn, N. Y. Steam-boiler furnace	574,051	Dec. 29	3544	846	77	2015
Wood, Edwin A., Utica, N. Y. Heating-boiler	571,208	Nov. 10	1405	329	77	928
Wood, Ellery W., Chicago, Ill. Fence-post	573,748	Dec. 22	2990	708	77	1899
Wood, Frank W., Indianapolis, Ind. Manufacturing pneumatic tires	571,820	Nov. 24	2465	.....	77	1158
Wood, Frederick W. (See Aiken, Wood, and Campbell.) (Reissue.)						
Wood, Henry A. W., New York, N. Y., assignor to Campbell Printing Press and Manufacturing Company, of New York. Printing-press	569,310	Oct. 13	1029	245	77	212
Wood, Henry A. W., New York, N. Y., assignor to Campbell Printing Press and Manufacturing Company, of New York. Mechanical movement	570,586	Nov. 3	283	69, 70	77	691
Wood, Henry A. W., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Mechanical movement	570,587	Nov. 3	286	70, 71	77	691
Wood, Henry A. W., assignor to Campbell Printing Press and Manufacturing Company, New York, N. Y. Printing-machine	571,850	Nov. 24	2523	597, 598	77	1169
Wood, James B., assignor of one-half to G. A. Ewing and C. M. Carter, Gate City, Va. Locomotive ash-pan	569,905	Oct. 20	2081	495	77	420
Wood, James J., Fort Wayne, Ind. Field-magnet pole	571,181	Nov. 10	1363	318	77	920
Wood, Jeanie F., Hoboken, N. J. Button	571,425	Nov. 17	1764	421	77	1009
Wood, John E., Beverly, Mass. Wrench	573,070	Dec. 15	1727	414	77	1646
Wood, John W. (See Pittman, Moses S., assignor.)						
Wood, Joseph, assignor of one-half to L. Warden, Chicago, Ill. Bed-bottom or cot	571,821	Nov. 24	2466	586	77	1159
Wood, Joseph S., Sr., Brooklyn, N. Y. Non-refillable bottle	570,273	Oct. 27	2746	654	77	559
Wood, Margaret A. (See Wood, Edgar J., assignor.)						
Wood, Thomas E., assignor of one-half to C. D. Fuller, Kalamazoo, Mich. Combination display-cabinet	569,367	Oct. 13	1125	268	77	231
Wood, William C., Brooklyn, N. Y. Railway-crossing	573,747	Dec. 22	2989	708	77	1899
Woodard, Alvin N., assignor of three-fourths to J. T. and J. L. Sawhill and A. Small, Mansfield, Ohio. Sash-fastener	572,591	Dec. 8	885	214	77	1466
Woodbury, Charles B., Washington, D. C. Bicycle-lock	569,594	Oct. 13	1529	359	77	304
Woodbury, Charles H., Franklin, Mass. Clutch for card-feeding machines	571,963	Nov. 24	2728	645	77	1209
Woodbury, Rufus H. (See Bailey and Burns, assignors.)						
Woodhouse, Frank L., Waupun, Wis. Tire for bicycles	574,015	Dec. 29	3477	831	77	2002
Woodman, John J., assignor to E. W. Ross Company, Springfield, Ohio. Corn-husking machine	573,500	Dec. 22	2541	602	77	1812
Woodruff, Edmund W., Washington, D. C. Bill-file	569,700	Oct. 20	1727	411, 412	77	356
Woodruff, John W., Wise, W. Va. Non-refillable bottle	573,949	Dec. 29	3350	803	77	1980
Woods, Frank J., Chicago, Ill. Ore-concentrator	570,243	Oct. 27	2689	639	77	548
Woods, Frank J., Chicago, Ill. Gearing	570,974	Nov. 10	998	231	77	852
Woods, George E., assignor to A. C. Humphreys and A. G. Glasgow, New York, N. Y. Safety device for gas-producers	570,149	Oct. 27	2516	597	77	515
Woods, Granville T., assignor, by mesne assignments, to S. E. Riley, New York, N. Y. System of electrical distribution	569,443	Oct. 13	1246	293	77	252
Woods, Isaiah W., Harrisville, W. Va. Fluid-pressure regulator	572,464	Dec. 1	663	156	77	1405
Woodward, Erastus, Somerville, Mass., assignor to Woodward Manufacturing Company, Saco, Me. Machine for loading heels with nails	570,654	Nov. 3	436	104, 105	77	719
Woodward, Henry, Toronto, Canada. Electrode for secondary batteries	571,143	Nov. 10	1309	304	77	909
Woodward, John W., South Royalton, Vt. Blind-holder	569,479	Oct. 13	1299	306	77	262
Woodward Manufacturing Company. (See Woodward, Erastus, assignor.)						
Woodward, Robert G., Alameda, Cal. Car-brake	569,311	Oct. 13	1031	245	77	213
Woodward, Robert G., Alameda, Cal. Car-brake	569,312	Oct. 13	1033	245	77	213
Woodward, Warner C., Scranton, Pa. Lifting-jack	573,950	Dec. 29	3350	803	77	1980
Woodward, William C. (See Downes, Louis W., assignor.)						
Woodworth, Charles H., Chicago, Ill., assignor of one-half to C. F. Davis, El Paso, Tex. Journal-bearing	572,236	Dec. 1	249	60	77	1326
Woolfolk, Sallie M., and N. U. Ney, Orange, Va. Abdominal supporter	572,465	Dec. 1	665	157	77	1405
Woolley, George, Goulburn, New South Wales. Adjustable support or rest for bicycles	573,378	Dec. 15	2284	544	77	1748
Wooster, Frederick J., assignor to Waterbury Brass Company, Waterbury, Conn. Power-driven tool for dressing bars and ingots	570,079	Oct. 27	2395	567	77	492
Wooten, James W., *et al.* (See Cullens, John T., assignor.)						
Worden, Will J., assignor to W. & W. Manufacturing Company, Detroit, Mich. Hat or cap	573,192	Dec. 15	1948	469	77	1687
Worrall, Clarence A., assignor of one-half to P. C. Dougherty, Philadelphia, Pa. Fastening for pins	572,144	Dec. 1	89	19	77	1295
Worrall, Clarence A., assignor of one-half to P. C. Dougherty, Philadelphia, Pa. Razor-strop	572,145	Dec. 1	89	20	77	1295
Worz, Gustav A., assignor to Milford Manufacturing Company, Milford, Ohio. Carpet-sweeper	571,549	Nov. 17	1990	473	77	1050
Wright, Allen J., Cleveland, Ohio. Safety water-column for steam-boilers	572,592	Dec. 8	886	215	77	1466
Wright, Arthur W., assignor of one-thirtieth to J. P. Williams, Detroit, Mich. Car-axle lubricator	569,480	Oct. 13	1300	306	77	262
Wright, Edwin. (See Harnaberger and Wright.)						
Wright, Elisha P. S. (See Ralph and Wright.)						
Wright, Frank, London, England. Dry gas-meter	572,924	Dec. 8	1466	352	77	1579
Wright, Frederick K., assignor to Steam Gauge and Lantern Company, Syracuse, N. Y. Lantern-frame	570,589	Nov. 3	292	71	77	692
Wright, Frederick K., assignor to Steam Gauge and Lantern Company, Syracuse, and R. E. Dietz Company, New York, N. Y. Tubular lantern	570,588	Nov. 3	290	72	77	692
Wright, Garret S. (See Fox, George, 2d, assignor.)						
Wright, John, Richmond, Va. Apparatus for treating tobacco	569,313	Oct. 13	1035	246	77	214
Wright, Lucile C., St. Louis, Mo. Corset	573,951	Dec. 29	3351	803	77	1980
Wright, Mary E. (See Wright, William, assignor.)						
Wright, N. S., *et al.* (See Mummery, Edwin G., assignor.)						
Wright, Rufus, *et al.* (See Faulkner, Hugh, assignor.)						
Wright, Thomas, Emaus, Pa. Detachable handle for pans	571,851	Nov. 24	2527	598	77	1170
Wright, William, assignor to M. E. Wright, Newburg, N. Y. Steam-boiler	569,314	Oct. 13	1037	246, 247	77	214
Wright, William E. (See Angell, Augustus, assignor.)						
Wright's Gas Meter Syndicate. (See Simmance, John F., assignor.)						
Wrightson, Arthur, Philadelphia, Pa. Automatic circular-knitting machine	569,701	Oct. 20	1731	412, 413, 414	77	357
Wrightson, Arthur, Philadelphia, Pa. Machine for knitting seamless fleece-lined hose	569,702	Oct. 20	1745	414, 415	77	358

Alphabetical list of patentees, October to December, inclusive—Continued.

Name, residence, and invention.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Wronski, André, assignor of one-third to J. J. de Kinder, Philadelphia, Pa. Metallurgical furnace and process	572,393	Dec. 1	558	132, 133	77	1384
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Circuit-breaker	570,212	Oct. 27	2629	623	77	536
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Circuit-breaker	570,415	Oct. 27	3037	720	77	611
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Circuit-interrupting device	570,416	Oct. 27	3039	720	77	612
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Automatic circuit-breaker	570,417	Oct. 27	3040	720, 721	77	612
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Switch for electric circuits	570,418	Oct. 27	3044	721, 722	77	613
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Circuit-breaker	570,419	Oct. 27	3047	722	77	614
Wurts, Alexander J., assignor to Westinghouse Electric and Manufacturing Company, Pittsburg, Pa. Lightning-arrester	571,103	Nov. 10	1240	288	77	896
Wurtz, George B., Shreveport, La. Sheet-feeder	573,952	Dec. 29	3352	804	77	1960
Wüste, Floris, *et al.* (See Ellermann, Friedrich W., assignor.)						
Wyant, Frank M. (See Pfouts, Leroy S., assignor.)						
Wyckoff, Hiram E., Silver Creek, N. Y. Portable steam and shower bath house	569,808	Oct. 20	1924	457	77	390
Wyckoff, Seamans & Benedict. (See Brooks, Byron A., assignor.)						
Wyckoff, Seamans & Benedict. (See Jenne, William K., assignor.)						
Wyckoff, Seamans & Benedict. (See Seamans, Clarence W., assignor.)						
Wyckoff, Seamans & Benedict. (See Shepard, Charles H., assignor.)						
Wyckoff, Seamans & Benedict. (See Webb, George B., assignor.)						
Wyeth, Henry M., Salt Lake City, Utah. Double-acting pump	570,528	Nov. 3	163	40	77	668
Wyman, William H., assignor to Oshkosh Match Works, Oshkosh, Wis. Match-making machine	570,529	Nov. 3	164	40, 41, 42, 43, 44, 45	77	668
Wyndham, James S., and J. H. Hallett, Cardiff, England. Check-valve	574,295	Dec. 29	4024	956	77	2102
Wynkoop, L. W., *et al.* (See Maxon, Stiles E., assignor.)						
Wyssinger, Leonard, assignor of one-half to C. C. Zeigler, Leitersburg, Md. Wire fence	569,906	Oct. 20	2083	495	77	420
Yager, William E. (See Sheridan, Frank, assignor.)						
Yale & Towne Manufacturing Company. (See Taylor, Warren H., assignor.)						
Yeakel, Abraham M., Perkasie, Pa. Spool-holder	572,043	Nov. 24	2860	673	77	1233
Yeakel, Abraham M., Perkasie, Pa. Spool-holder	573,563	Dec. 22	2645	629	77	1833
Yeakel, George P., Royersford, Pa. Wheel	569,703	Oct. 20	1749	415	77	359
Yeakley, Melvin A., Cleveland, assignor of two-thirds to T. Austin, Massillon, and W. T. Lewis, Columbus, Ohio. Engine	571,144	Nov. 10	1309	304	77	909
Yocum, Eira A., and M. O. Nichols, Mendon, Ohio. Car-coupling	570,274	Oct. 27	2748	654	77	559
Yost, George B., Columbus, Ohio, assignor to J. O. Shoup and C. B. Cowen. Knockdown table	573,428	Dec. 15	2403	573	77	1770
Yost Writing Machine Company. (See Walker, Charles W., assignor.)						
Young, Albert A., Greenwood, Mass., assignor to Mechanical Manufacturing Company, Nashua, N. H. Air goods	573,122	Dec. 15	1818	438	77	1663
Young, Charles H., Laconia, N. H., assignor to himself, and R. Emerson, Rockford, Ill. Tubular knit fabric	574,082	Dec. 29	3595	859	77	2024
Young, Edwin, Pittsburg Pa. Device for polishing shoes	573,379	Dec. 15	2286	545	77	1748
Young, Frank, and W. Rauk, assignors to Kahn & Levy, New York, N. Y. Embossing-machine	569,145	Oct. 6	732	172	77	139
Young, George R., Ridgewood, N. J., and C. Shaw, New York, N. Y. Water-raising apparatus	572,850	Dec. 8	1336	321	77	1553
Young, John A., Indianapolis, Ind. Automatic temperature-annunciator	572,081	Nov. 24	2958	695	77	1251
Young, John R., assignor of three-fourths to C. M. Gardner, L. H. Hartmann, and J. Shields, Jr., San José, Cal. Beer-drawing apparatus	573,172	Dec. 15	1906	458	77	1680
Young, Lemuel W. (See Slattery, Frank S., assignor.)						
Young, Loy B., Newport, Ark. Handle attachment	572,851	Dec. 8	1338	322	77	1553
Young, McClintock, Frederick, Md., assignor to Palmetto Fibre Company, Frederick, Md., and Chicago, Ill. Box	570,530	Nov. 3	172	45, 46	77	669
Young, Ralph S., Kearney, N. J. Combined extension-ladder and fire-escape	568,999	Oct. 6	494	112	77	94
Young, Robert J., assignor of one-half to J. F. Higgins, Gardner, Kans. Gate	574,296	Dec. 29	4026	956	77	2102
Young, Samuel L., and J. A. Norris, East Liverpool, Ohio. Adjustable picture or mirror frame holder	568,826	Oct. 6	191	46	77	38
Younger, Alfred E., Huntington, N. Y. Photographic shutter	573,953	Dec. 29	3354	804	77	1981
Younger, George W., London, England. Means for attaching studs, buttons, &c., to wearing-apparel	573,317	Dec. 15	2185	521	77	1729
Zane, George H. (See Fitzgerald and Zane.)						
Zeigler, Charles C. (See Wyssinger, Leonard, assignor.)						
Zellers, Theodor A., and S. R. Blanchard, Ottawa, Ill., assignors to United Glass Company, Syracuse, N. Y. Conveyer for carrying glass from flattening-ovens	573,318	Dec. 15	2186	522	77	1729
Zenke, Henry C., Sandy Point, Wash. Air-brake mechanism	571,736	Nov. 17	2318	553, 554	77	1112
Zetterlund, August T., Chicago, Ill. Seal	571,633	Nov. 17	2129	511	77	1076
Ziegler, Charles W., Scranton, Pa. Coal-separator	570,781	Nov. 3	661	151, 152	77	760
Ziegler-Reinacher, Heinrich, Aadorf, Switzerland. Producing celluloid rollers with printing-surfaces	573,564	Dec. 22	2646	629	77	1833
Zimmer, John and S., Pittsburg, Pa. Ice-cream mold and dipper	574,185	Dec. 29	3815	911	77	2062
Zimmer, Susanna. (See Zimmer, John and S.)						
Zimmerman, Casper, Big Stone City, S. D. Sleigh	568,935	Oct. 6	367	84	77	71
Zimmermann, Josef, Aachen, Germany. Needle	570,590	Nov. 3	293	72	77	693
Zingerman, Maria L. W., Long Island City, N. Y. Music holder and turner	573,749	Dec. 22	2991	709	77	1899
Zink, George, Clear Spring, Md. Well-boring machine	569,012	Oct. 6	511	116	77	97
Zinn, Johan A., assignor to Bement, Miles & Co., Philadelphia, Pa. Hydraulic valve	569,907	Oct. 20	2083	496	77	420
Zuck, Boyd, Lanark, Ill. Wire-fence stay	570,531	Nov. 3	173	46	77	669
Zumdahl, Frederick C. and W. J., Forreston, Ill. Agricultural boiler	571,634	Nov. 17	2130	512	77	1076
Zumdahl, William J. (See Zumdahl, Frederick C. and W. J.)						

ALPHABETICAL LIST OF PATENTEES OF DESIGNS.

Name, residence, and design.	No.	Date.	Official Gazette. Volume.	Official Gazette. Page.
A. L. Moore Company. (See Meilink, Charles F., assignor.)				
Adams Company. (See Farwell, Fay O., assignor.)				
Allen, Bonapart, Buford, Ga. Horse-collar	26,362	Dec. 1	77	1420
Allen, George H., Clinton, N. Y. Match-safe	26,295	Nov. 17	77	1116
American Lithographic Company. (See Witsch, Nicholas, assignor.)				
Anderson, William Y. (See Willoughby and Anderson.)				
Arbuckle, John, Brooklyn, N. Y., assignor to Woman's Sunshine Publishing Company, of New York. Ornamental pattern or print for book-covers, &c	26,452	Dec. 29	77	2125
Arkin, Lazarus, Brooklyn, N. Y. Paper-holder or similar article	26,320	Nov. 24	77	1262
Bailey, Charles A., Cromwell, Conn. Toy stove	26,326	Nov. 24	77	1263
Ball, Webster C., Cleveland, Ohio. Watch-plate	26,267	Nov. 17	77	1112
Barbour, James, Kingsland, Ark. Broadax	26,335	Nov. 24	77	1265
Barrows, Andrew, East St. Louis, Ill. Railway-spike	26,408	Dec. 15	77	1774
Barrows, William E., Philadelphia, Pa., assignor to Welsbach Light Company, Gloucester City, N. J. Gallery for incandescent lights	26,148	Oct. 6	77	145
Basch, David, New York, N. Y. Toe-clip for velocipedes	26,284	Nov. 17	77	1114
Bayley, William, Springfield, Ohio. Tobacco-cutter	26,355	Dec. 1	77	1419
Bean, George W., Philadelphia, Pa. Bottle-stopper	26,349	Dec. 1	77	1418
Beardsley, William N., Bridgeport, Conn. Foot-rest for pedals	26,160	Oct. 6	77	146
Beattie, Herbert W., Quincy, Mass., assignor to Sill Stove Works, Rochester, N. Y. Shelf-section for stoves	26,261	Nov. 10	77	967
Beattie, Herbert W., Quincy, Mass., assignor to Sill Stove Works, Rochester, N. Y. Cooking-stove	26,262	Nov. 10	77	967
Behm, Gustav, Chicago, Ill. Guitar-body	26,398	Dec. 15	77	1773
Benjamin, Darius C., Alpha, Minn. Fence-strand	26,410	Dec. 15	77	1775
Billings, Luther G., Clifton, N. Y. Bicycle-frame	26,179	Oct. 13	77	306
Billings, Luther G., Clifton, N. Y. Handle-bar	26,339	Nov. 24	77	1265
Birge, Henry M. (See Booz, Charles, assignor.)				
Bitter, Clarence B. R., Toledo, Ohio. Puzzle-box	26,162	Oct. 6	77	146
Blair, George W., Pittsburg, Pa. Lamp-chimney	26,147	Oct. 6	77	144
Blair, George W., Pittsburg, Pa. Lamp-chimney	26,350	Dec. 1	77	1419
Blair, George W., Pittsburg, Pa. Lamp-chimney	26,351	Dec. 1	77	1419
Blake Manufacturing Company. (See Blake, William E., assignor.)				
Blake, William E., assignor to Blake Manufacturing Company, Springfield, Mass. Bicycle-handle	26,445	Dec. 22	77	1933
Blumenthal, Max, Chicago, Ill. Advertising-stand	26,370	Dec. 1	77	1422
Boeck, Charles H., assignor to Novelty Manufacturing Company, Jackson, Mich. Sad-iron heater	26,302	Nov. 17	77	1117
Booz, Charles, assignor to H. M. Birge, Buffalo, N. Y. Wall-paper	26,210	Oct. 20	77	448
Booz, Charles, assignor to H. M. Birge, Buffalo, N. Y. Wall-paper	26,211	Oct. 20	77	448
Bren, Robert R., New York, N. Y. Sash-weight	26,174	Oct. 13	77	306
Brill, George M., Philadelphia, Pa. Car-truck frame	26,382	Dec. 8	77	1588
Brill, George M., Philadelphia, Pa. Truck side frame	26,383	Dec. 8	77	1588
Brill, John A., Philadelphia, Pa. Side frame for car-trucks	26,405	Dec. 15	77	1774
Brill, John A., Philadelphia, Pa. Side frame for car-trucks	26,406	Dec. 15	77	1774
Brill, John A., Philadelphia, Pa. Side frame for car-trucks	26,407	Dec. 15	77	1774
Brindle, Ira, Markes, Pa. Strainer-box	26,225	Oct. 27	77	625
Brobst, William L., assignor of two-thirds to M. E. Hicks, Oleona, and N. Wykoff, Hammersley's Fork, Pa. Envelop	26,378	Dec. 8	77	1587
Brockway, William F., Adel, Iowa. Campaign-badge	26,191	Oct. 20	77	445
Bromley, Edward, *et al.* (See Wilde, Arthur W., assignor.)				
Bromley, John H., *et al.* (See Wilde, Arthur W., assignor.)				
Bromley, Joseph H., *et al.* (See Wilde, Arthur W., assignor.)				
Bromley, William H., *et al.* (See Wilde, Arthur W., assignor.)				
Brown, Lydia J., New Haven, Conn. Balance-weight	26,357	Dec. 1	77	1420
Brown, William I., assignor to Thistle Cheese Company, Utica, N. Y. Cheese	26,312	Nov. 17	77	1119
Bruce, James, Capelton, Canada. Toy	26,425	Dec. 22	77	1930
Burnett, James W., Huntington, W. Va. Kitchen-cabinet	26,184	Oct. 13	77	307
Butler, William, and L. H. Zeigler, assignors to Marietta Glass Company, Redkey, Ind. Pattern for sheet-glass	26,311	Nov. 17	77	1119
Carney, Bernard M., McKeesport, Pa. Flush-tank	26,409	Dec. 15	77	1774
Casseday, David W., Minneapolis, Minn. Badge	26,145	Oct. 6	77	144
Cather, Ezra. (See Whiting and Cather.)				
Chaplin, William B., West Newbury, Mass. Last	26,161	Oct. 6	77	146
Chapman, Charles H., *et al.* (See Gates, Eugene N., assignor.)				
Chisholm, Toliver L., assignor of one-third to R. M. Grubbs, Atoka, Ind. Ter. Strap-hinge	26,381	Dec. 8	77	1588
Christian, Lorenzo L., Eureka Springs, Miss. Plow-handle or grip	26,444	Dec. 22	77	1933
Churchman, F. M., *et al.* (See Glasscock, James B., assignor.)				
Clark, Allison N., Plainville, Conn. Match-box	26,252	Nov. 10	77	966
Clark, Allison N., Plainville, Conn. Body for match-boxes	26,316	Nov. 24	77	1261
Clark, James G., and S. F. Price, Oshkosh, Wis. Handkerchief or similar fabric	26,169	Oct. 6	77	147
Clarke, Charles F., Highlands, Del. Toy bank	26,197	Oct. 20	77	446
Clunies, Arthur B., assignor to Sill Stove Works, Rochester, N. Y. Fire-brick	26,292	Nov. 17	77	1115
Clunies, Arthur B., assignor to Sill Stove Works, Rochester, N. Y. Fire-brick	26,403	Dec. 15	77	1773
Codman & Shurtleff. (See Hesse, Frank K., assignor.)				
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Mirror-back	26,458	Dec. 29	77	2126
Cohen, Israel B., New York, N. Y. Handle for feather dusters	26,199	Oct. 20	77	446
Cohen, Morris I., Chicago, Ill. Fireplace-front	26,367	Dec. 1	77	1421
Collester, Henry M., Worcester, Mass. Cane fabric	26,475	Dec. 29	77	2128
Conover, Charles I., Charleston Four Corners, N. Y. Butter-receptacle	26,153	Oct. 6	77	145
Cocke, George M., Milwaukee, Wis., assignor to Fuller-Warren Company, of Wisconsin. Heating-stove	26,249	Nov. 3	77	805
Codman, William C., assignor to Gorham Manufacturing Company, Providence, R. I. Brush-back or similar article	26,250	Nov. 10	77	966

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Copland, Virginia, Washington, D. C. Erasing-plate	26,251	Nov. 10	77	966
Cornell, Willis F., Alameda, Cal. Font of type	26,310	Nov. 17	77	1118
Coyne, Frederick W., Toronto, Canada. Campaign pin or button	26,234	Nov. 3	77	803
Craig, John. (See Craig, Samuel and J.)				
Craig, Samuel and J., Garden City, Kans. Weed-hoe	26,183	Oct. 13	77	307
Crowell, Gilbert L., Jr., Arlington, N. J., assignor to Dominick & Haff, New York, N. Y. Spoon, &c.	26,393	Dec. 15	77	1772
Curwen, Samuel M., Philadelphia, Pa. Truck side bar	26,442	Dec. 22	77	1932
Dann, Jesse L., Columbus, Ohio. Elastic tire	26,338	Nov. 24	77	1265
Dann, Jesse L., Columbus, Ohio. Felly or wheel-rim	26,345	Nov. 24	77	1266
Davies, Benjamin, Hoboken, N. J., assignor to L. Straus & Sons, of New York. Glass vessel	26,190	Oct. 13	77	308
Deknatel, Herman A., New York, N. Y. Box	26,400	Dec. 15	77	1773
Detroit Cap Manufacturing Co. (See Wolfgang, Adolph, assignor.)				
Detroit Lawn Mower Company. (See Maynard, Frederick T., assignor.)				
Diall, Martin N., Terre Haute, Ind. Heater for curling-irons	26,328	Nov. 24	77	1263
Dickinson, Philemon O., assignor to Unger Brothers, Newark, N. J. Border for comb-backs	26,270	Nov. 17	77	1113
Dickinson, Philemon O., assignor to Unger Brothers, Newark, N. J. Back for brushes, &c	26,271	Nov. 17	77	1113
Dickinson, Philemon O., assignor to Unger Brothers, Newark, N. J. Back for brushes, &c	26,272	Nov. 17	77	1113
Dickinson, Philemon O., assignor to Unger Brothers, Newark, N. J. Back for brushes, &c	26,273	Nov. 17	77	1113
Dickinson, Philemon O., assignor to Unger Brothers, Newark, N. J. Back and handle for mirrors, &c	26,422	Dec. 22	77	1929
Dixon, Robert M., East Orange, N. J., assignor to Safety Car Heating and Lighting Company, New York, N. Y. Casing for heating apparatus	26,181	Oct. 13	77	307
Dominick & Haff. (See Crowell, Gilbert L., Jr., assignor.)				
Donahay, Michael E. (See Mishler, Stumpf, and Donahay.)				
Doyle, Zoher, Spring Creek, Mo. Washing-machine frame	26,366	Dec. 1	77	1421
Drew, Anna E., New York, N. Y. Sheller for green peas, &c	26,283	Nov. 17	77	1114
Dueber, John C., Canton, Ohio. Watch-case	26,421	Dec. 22	77	1929
Duerr, Philip J., Buffalo, N. Y. Ornamental chain	26,265	Nov. 17	77	1112
Duraton, David H., Weedsport, N. Y. Price-list standard	26,308	Nov. 17	77	1118
Dykeman, Emma J., Rural Grove, N. Y. Baking-tin	26,152	Oct. 6	77	145
Eagle Pencil Company. (See Kraus, Samuel, assignor.)				
Earle, Philip M., Jacksonville, Fla. Duplex egg-tester	26,329	Nov. 24	77	1264
Eckert, Clark, Loeantville, Ind. Insole	26,306	Nov. 17	77	1118
Eibach, Hermann A., Rockford, Ill. Toe-clip for bicycles	26,336	Nov. 24	77	1265
Erichson, Charles A., assignor to Yale & Towne Manufacturing Company, Stamford, Conn. Pad-lock-case	26,462	Dec. 29	77	2126
Esty, William, Laconia, N. H. Sprinkler	26,253	Nov. 10	77	966
Esty, William, Laconia, N. H. Distributer for fire-extinguishers	26,254	Nov. 10	77	966
Esty, William, Laconia, N. H. Yoke for automatic fire-extinguishers	26,255	Nov. 10	77	966
Esty, William, Laconia, N. H. Valve-support	26,256	Nov. 10	77	967
F. M. Whiting Company. (See Maillot, John W., assignor.)				
Fairley, Fannie, and E. E. Gunston, Wilkinsburg, Pa. Ash-pan	26,151	Oct. 6	77	145
Farnham, Paulding, assignor to Tiffany & Company, New York, N. Y. Spoon	26,212	Oct. 27	77	623
Farwell, Fay O., assignor to Adams Company, Dubuque, Iowa. Stove-lining	26,472	Dec. 29	77	2128
Fellman, Edward J. (See Romünder and Fellman.)				
Field, Charles W., Rockland, Me. Nail-set	26,463	Dec. 29	77	2126
Fiske, John M., New York, N. Y. Stall-floor support	26,443	Dec. 22	77	1932
Floyd, Roscoe M., Boston, Mass. Watch-plate	26,266	Nov. 17	77	1112
Folsom, John M. (See Pierce, John F., assignor.)				
Foster, Theodore W., Providence, R. I. Handle for button-hooks or similar articles	26,214	Oct. 27	77	623
Foster, Theodore W., Providence, R. I. Metal brush-back, &c	26,274	Nov. 17	77	1113
Foster, Theodore W., Providence, R. I. Metal mirror-back, &c	26,275	Nov. 17	77	1113
Frasher, Octavia, Pittsburg, Pa. Torch attachment	26,200	Oct. 20	77	446
Friedenwald, Benj. B. (See Johnston, William T., assignor.)				
Fuller-Warren Company. (See Cooke, George M., assignor.)				
Fuller-Warren Company. (See Herrick, John W., assignor.)				
Garaghty, Charles F., Bay City, Mich. Campaign-badge	26,144	Oct. 6	77	144
Garling, Anna B., Bloom Centre, Ohio. Oven-shelf	26,402	Dec. 15	77	1773
Gates, Eugene N., Holliston, assignor of two-thirds to W. E. Putney, Fitchburg, Mass., and C. H. Chapman. Bicycle-frame	26,263	Nov. 10	77	967
General Electric Company. (See Harthan, Charles E., assignor.)				
Gérard, Emile, Limoges, France. Covered dish	26,299	Nov. 17	77	1116
Gerbig, Theodore A., Archbald, Pa. Badge	26,420	Dec. 22	77	1929
Gilmore, James L., Sharpsburg, Iowa. Hog-pen	26,228	Oct. 27	77	625
Glasscock, James B., assignor to F. M. Churchman and W. L. Tripp, Wheeling, W. Va. Hand-rubber frame	26,468	Dec. 29	77	2127
Goldberger, Ignatz, Cleveland, Ohio. Undergarment	26,232	Oct. 27	77	626
Gorham Manufacturing Company. (See Codman, William C., assignor.)				
Graff, Charles D., assignor to Redlich & Co., New York, N. Y. Border for silverware	26,195	Oct. 20	77	446
Graff, Charles D., assignor to Redlich & Co., New York, N. Y. Border for silverware	26,196	Oct. 20	77	446
Graff, Charles D., assignor to Redlich & Co., New York, N. Y. Back for brushes or similar articles	26,216	Oct. 27	77	624
Graham, Edward M., Chicago, Ill. Bicycle-frame	26,285	Nov. 17	77	1114
Graves, John J., assignor to S. S. Jewett & Co., Buffalo, N. Y. Cooking stove or range	26,369	Dec. 1	77	1421
Grell, Henry J., Johnson's Creek, Wis. Support for carboy-stands	26,221	Oct. 27	77	624
Grindley, William H., Congleton, England, assignor to W. S. Pitcairn, New York, N. Y. Covered dish	26,460	Dec. 29	77	2126
Grubbs, Robert M. (See Chisholm, Tolliver L., assignor.)				
Gunston, Eleanor E. (See Fairley and Gunston.)				
Haase, Henry, Philadelphia, Pa., assignor to Hensel, Colladay Company, of Pennsylvania. Garment-edging	26,189	Oct. 13	77	308
Halladay, Lewis P., Marion, Ind. Clamp for bicycle-handles	26,361	Dec. 1	77	1420
Hallowell, William B., Washington, D. C. Fan for sewing-machines	26,155	Oct. 6	77	146
Halpin, Thomas P., Chicago, Ill. Badge	26,454	Dec. 29	77	2125
Hammerstein, Oscar, New York, N. Y. Shirt-collar	26,304	Nov. 17	77	1117
Hanford, Eugene G., Westfield, N. J. Trousers-hanger	26,280	Nov. 17	77	1114
Hanington, Alfred W., New York, N. Y. Pillow-case	26,417	Dec. 15	77	1776
Harden, William, Jamesport, Mo. Open link	26,380	Dec. 8	77	1588
Harris, Charles R., Williamsport, Pa. Steam-radiator	26,159	Oct. 6	77	146
Hart, Charles W., assignor to H. A. Hart, Troy, N. Y. Sheet-metal can	26,364	Dec. 1	77	1420
Hart, Harriet A. (See Hart, Charles W., assignor.)				
Hart, Loui. (See Wetherbee, Hiram E., assignor.)				
Harthan, Charles E., Lynn, Mass., assignor to General Electric Company, of New York. Arc-lamp	26,471	Dec. 29	77	2128
Havell, George, assignor to Havell Manufacturing Company, Newark, N. J. Bicycle-lamp body	26,177	Oct. 13	77	306

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Havell Manufacturing Company. (See Havell, George, assignor.)				
Hawkins, Samuel K., New York, N. Y. Scrubbing-brush	26,154	Oct. 6	77	145
Heacock Manufacturing Company. (See Steele, George H., assignor.)				
Hensel, Colladay Company. (See Haase, Henry, assignor.)				
Herrick, John W., assignor to Fuller-Warren Company, Milwaukee, Wis. Heating-stove	26,248	Nov. 3	77	805
Hersen, Ernest, New York, N. Y. Puzzle-box	26,164	Oct. 6	77	147
Heskett, John W., Salem, Nebr. Badge	26,170	Oct. 13	77	305
Hess, Hugo G., Cincinnati, Ohio. Casing for indicators	26,426	Dec. 22	77	1930
Hesse, Frank K., assignor to Codman & Shurtleff, Boston, Mass. Toe-clip for bicycles	26,465	Dec. 29	77	2127
Heydrick, Alfred M., South Norwalk, Conn. Exercising-club	26,418	Dec. 15	77	1776
Hicks, Mary E., *et al.* (See Brobst, William L., assignor.)				
Hill, Joseph B., Philadelphia, Pa., assignor to Imperial Cut Glass Company, of Pennsylvania. Glass dish	26,396	Dec. 15	77	1772
Hill, Robert E., North East, Pa. Game-board	26,167	Oct. 6	77	147
Hodges, Frederick W. (See Siebert and Hodges.)				
Holman William A., Philadelphia, Pa. Mounting for book or album covers	26,231	Oct. 27	77	626
Homan, Joseph T. (See Leavenworth and Homan.)				
Homan Silver Plate Company. (See Leavenworth and Homan, assignors.)				
Householder, Addison B., *et al.* (See Thomas, Stonewall J., assignor.)				
Hubbard, George M., assignor to W. & E. T. Fitch Company, New Haven, Conn. Snap-hook	26,279	Nov. 17	77	1114
Hunter, William D., Elizabethton, Tenn. Coffee-pot	26,300	Nov. 17	77	1117
Hutchinson, James E., Washington, D. C., assignor to Westcott-Jewell Company, Seneca Falls, N. Y. Box or holder for blocks, &c	26,318	Nov. 24	77	1261
Hygienic Wheel Company. (See Travis, Charles L., assignor.)				
Imperial Cut Glass Company. (See Hill, Joseph B., assignor.)				
Ingraham, Titus S., Cleveland, Ohio. Advertising-card	26,309	Nov. 17	77	1118
Jack, Fannie L., Chillicothe, Ohio. Handle for pans, &c	26,401	Dec. 15	77	1773
Janney, Reynold, Westborough, Mass. Foot-piece for pedals	26,412	Dec. 15	77	1775
Jewett & Co., Sherman S. (See Graves, John J., assignor.)				
Johnson, Ferdinand M., Philadelphia, Pa. Hat-band	26,209	Oct. 20	77	448
Johnson, Thomas C., assignor to Winchester Repeating Arms Company, New Haven, Conn. Temporary cartridge-holder	26,386	Dec. 8	77	1589
Johnston, William T., Washington, D. C., assignor to B. B. Friedenwald, Baltimore, Md. Bottle-stopper	26,278	Nov. 17	77	1114
Kampfer, William, Brooklyn, N. Y. Game-board	26,391	Dec. 8	77	1589
Kaufmann, Max L., New York, N. Y. Pipe-ferrule	26,324	Nov. 24	77	1263
Keefe, John M., Camden, N. J. Brush	26,215	Oct. 27	77	624
Kelly, William, and O. G. Olson, Seattle, Wash. Fire-hose nozzle	26,358	Dec. 1	77	1420
Kinports, Henry M., Boston, Mass. Chair	26,207	Oct. 20	77	447
Kirby, Edward W. (See Martin, James M., assignor.)				
Kisch, David, New York, N. Y. Lady's collar	26,374	Dec. 1	77	1422
Kloman, Theodore W., Bayonne, N. J. Puzzle	26,317	Nov. 24	77	1261
Knapp, Charles, Brooklyn, N. Y. Ring	26,392	Dec. 15	77	1772
Kohler, Frederick E., Canton, Ohio. Lawn-rake	26,246	Nov. 3	77	804
Kraus, Samuel, assignor to Eagle Pencil Company, New York, N. Y. Lead-pencil	26,395	Dec. 15	77	1772
Krieger, George F., Chicago, Ill. Cigar-lighter	26,219	Oct. 27	77	624
Lamotte, Thomas A., Philadelphia, Pa. Holder for sharpening-tools	26,257	Nov. 10	77	967
Lane, Henry M., Cincinnati, Ohio. Frame for steam-engines	26,180	Oct. 13	77	307
Langenbach, Edward A., Canton, Ohio. Molding-plate	26,236	Nov. 3	77	803
Langenbach, Edward A., Canton, Ohio. Molding-plate	26,237	Nov. 3	77	803
Langenbach, Edward A., Canton, Ohio. Ceiling-plate	26,238	Nov. 3	77	803
Langenbach, Edward A., Canton, Ohio. Ceiling-plate	26,239	Nov. 3	77	803
Langenbach, Edward A., Canton, Ohio. Ceiling-plate	26,240	Nov. 3	77	803
Langenbach, Edward A., Canton, Ohio. Border-plate	26,241	Nov. 3	77	804
Langenbach, Edward A., Canton, Ohio. Border-plate	26,242	Nov. 3	77	804
Langenbach, Edward A., Canton, Ohio. Border-plate	26,243	Nov. 3	77	804
Langenbach, Edward A., Canton, Ohio. Metallic border-plate	26,413	Dec. 15	77	1775
Langenbach, Edward A., Canton, Ohio. Metallic border-plate	26,414	Dec. 15	77	1775
Langenbach, Edward A., Canton, Ohio. Metallic ceiling-plate	26,446	Dec. 22	77	1933
Langenbach, Edward A., Canton, Ohio. Metallic border-plate	26,447	Dec. 22	77	1933
Langton, Joseph F., Waltham, Mass. Savings-bank	26,198	Oct. 20	77	446
Latta, Eugene E., Lafayette, Ind. Display-jar	26,321	Nov. 24	77	1262
Leavenworth, Seth H., and J. T. Homan, assignors to Homan Silver Plate Company, Cincinnati, Ohio. Candelabrum	26,277	Nov. 17	77	1113
Lee, James E., Chicago, Ill. Handle-bar head	26,466	Dec. 29	77	2127
Lee, James L., Chicago, Ill. Frame for hand cylinder printing-presses	26,467	Dec. 29	77	2127
Lee, James L., Chicago, Ill. Printer's wrench	26,157	Oct. 6	77	146
Lengel, Irvin D., assignor to Packer Cycle Company, Reading, Pa. Crank-axle hanger for bicycles	26,341	Nov. 24	77	1265
Lennox, Levi J., Detroit, Mich. Heating-stove	26,368	Dec. 1	77	1421
Livermore, Ernest N., Port Townsend, Wash. Violin	26,423	Dec. 22	77	1930
Livermore, Ernest N., Port Townsend, Wash. Mandolin	26,424	Dec. 22	77	1930
Locke, Fred M., Victor, N. Y. Insulator	26,323	Nov. 24	77	1262
Loeser, Daniel A., Sag Harbor, N. Y. Back for brushes, &c	26,146	Oct. 6	77	144
MacKenzie, George W., Beaver, Pa. Badge	26,233	Oct. 27	77	626
Macdonald, Andrew A., Lenox, Mass. Box	26,298	Nov. 17	77	1116
Mack, Abram E., New Haven, Conn. Check-bit	26,281	Nov. 17	77	1114
Maillot, John W., assignor to F. M. Whiting Company, North Attleborough, Mass. Handle for spoons, &c	26,268	Nov. 17	77	1112
Marietta Glass Company. (See Butler and Zeigler, assignors.)				
Marshall, Edward S., assignor to Missouri Railway Equipment Company, St. Louis, Mo. Journal-box lid	26,469	Dec. 29	77	2127
Marshall, Edward S., St. Louis, Mo., assignor to Western Railway Equipment Company, East St. Louis, Ill. Draft-lug and draw-bar follower	26,470	Dec. 29	77	2127
Martin, James M., assignor of one-half to E. W. Kirby, Knoxville, Tenn. Pattern for wire fabric	26,235	Nov. 3	77	803
Mason & Mason Company. (See Moore, Amos G., assignor.)				
Maynard, Frederick T., assignor to Detroit Lawn Mower Company, Detroit, Mich. Frame for lawn-mowers	26,286	Nov. 17	77	1114
McArthur, Frederick A., Springfield, Mo. Angle-cock for air-brake pipes	26,441	Dec. 22	77	1932
McElroy, Bernard I., Providence, R. I. Button	26,143	Oct. 6	77	144
McIntosh, George T., Cleveland, Ohio. Name-plate for velocipedes	26,385	Dec. 8	77	1589
McKenzie, Jennie F., Providence, R. I. Table	26,448	Dec. 22	77	1933
Meier, Henry, New York, N. Y. Nursing-nipple	26,377	Dec. 8	77	1587
Meilink, Charles F., Toledo, assignor to A. L. Moore Company, Cleveland, Ohio. Thimble for bicycle-fork ends	26,360	Dec. 1	77	1420

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Merritt, Mortimer G., assignor to Rome Metallic Bed Company, Rome, N. Y. Bedstead	26,449	Dec. 22	77	1933
Merritt, Mortimer G., assignor to Rome Metallic Bed Company, Rome, N. Y. Bedstead	26,450	Dec. 22	77	1933
Mesinger Bicycle Saddle Company. (See Mesinger, Frederick, assignor.)				
Mesinger, Frederick, assignor to Mesinger Bicycle Saddle Company, New York, N. Y. Bicycle-saddle	26,343	Nov. 24	77	1266
Mesinger, Frederick, assignor to Mesinger Bicycle Saddle Company, New York, N. Y. Bicycle-saddle	26,344	Nov. 24	77	1266
Miller, George, Baltimore, Md. Box	26,218	Oct. 27	77	624
Miller, George, Baltimore, Md. Box	26,314	Nov. 24	77	1261
Miller, George, Baltimore, Md. Box	26,315	Nov. 24	77	1261
Miller, Nelson A., New York, N. Y. Box-trimming	26,296	Nov. 17	77	1116
Milliken, Foster, New York, N. Y. Frame for drilling-machines	26,287	Nov. 17	77	1115
Milliken, Foster, New York, N. Y. Frame for drilling-machines	26,288	Nov. 17	77	1115
Mishler, Joseph H., F. B. Stumpf, and M. E. Donahay, Eureka, Ill. Badge	26,455	Dec. 29	77	2125
Missouri Railway Equipment Company. (See Marshall, Edward S., assignor.)				
Mitchell, Walter M., Evanston, Ill. Display-stand	26,322	Nov. 24	77	1262
Moore, Amos G., Chicago, Ill., assignor to Mason & Mason Company, of Illinois. Fork and crown for velocipedes	26,411	Dec. 15	77	1775
Moore, Daniel M., Newark, N. J., assignor to Moore Electrical Company, New York, N. Y. Alphabet	26,428	Dec. 22	77	1930
Moore Electrical Company. (See Moore, Daniel M., assignor.)				
Moore, Ira C., and C. F. Trott, Waterbury, Conn. Grave-marker	26,182	Oct. 13	77	307
Morse, Williams & Company. (See Rebmann, Godfrey R., assignor.)				
Murphy, Robert W., New York, N. Y. Handle-bar	26,340	Nov. 24	77	1265
Myers, Clarence J., Middletown, Pa. Game-board	26,166	Oct. 6	77	147
Myers, Phineas B., Brooklyn, N. Y. Paper box	26,297	Nov. 17	77	1116
Neumeyer, Horace F., Macungie, Pa., and J. F. Young, Niagara Falls, N. Y. Lawn-sprinkler body	26,205	Oct. 20	77	447
Newell, Maurice L., Denver, Colo. Sad-iron holder	26,330	Nov. 24	77	1264
Nichols, Jean, Denver, Colo. Seat for commodes, &c	26,365	Dec. 1	77	1420
Norman, Robert C., Melbourne, Victoria. Game-board	26,390	Dec. 8	77	1589
Novelty Manufacturing Company. (See Boeck, Charles H., assignor.)				
Numan, Christie M., Canton, Ohio. Curtain-tack	26,260	Nov. 10	77	967
O. B. North & Company. (See Smith, Charles H., assignor.)				
Oehley, Frederick M., Yonkers, N. Y. Badge	26,375	Dec. 8	77	1587
Oehrle, Franklin W., Philadelphia, Pa. Portière-rope	26,303	Nov. 17	77	1117
Ohnemus, Anton, Quincy, Ill. Heating-stove	26,474	Dec. 29	77	2128
Olson, Olaf G. (See Kelly and Olson.)				
Packer Cycle Company. (See Lengel, Irvin D., assignor.)				
Palmer, Isaac E., Middletown, Conn. Hammock-support	26,258	Nov. 10	77	967
Palmer, Theodore J., Hackensack, N. J. Chair	26,185	Oct. 13	77	307
Patterson, William S., Homestead, Pa. Rail-splice	26,404	Dec. 15	77	1773
Peabody, Henry O., Boston, Mass. Shoulder-rest for violins	26,220	Oct. 27	77	624
Pendergast, Patrick H., Syracuse, N. Y. Bidet and foot bath	26,331	Nov. 24	77	1264
Peterkin, John, Brooklyn, N. Y. Puzzle-box	26,163	Oct. 6	77	146
Pierce, John F., assignor of one-half to J. M. Folsom, Elizabethton, Tenn. Eaves-trough hanger	26,175	Oct. 13	77	306
Pigg, Wallace B., Calhoun, Mo. Kitchen-cabinet	26,416	Dec. 15	77	1775
Pitcairn, William S. (See Grindley, William H., assignor.)				
Pretat, Frederick E., assignor to Rogers & Hamilton Company, Waterbury, Conn. Handle for spoons	26,269	Nov. 17	77	1112
Price, Samuel F. (See Clark and Price.)				
Pringle, Alice N., Preston, Canada. Painter's cabinet	26,332	Nov. 24	77	1264
Putney, W. E., *et al.* (See Gates, Eugene N., assignor.)				
Read, Orrin B., Charlotte, Vt. Currycomb and card	26,334	Nov. 24	77	1264
Rebmann, Godfrey R., Philadelphia, Pa., assignor to Morse, Williams & Company, of Pennsylvania. Elevator-guide	26,289	Nov. 17	77	1115
Redlich & Co. (See Graff, Charles D., assignor.)				
Rice & Hutchins. (See Stephens, Howard M., assignor.)				
Ripley, Alfred J., Long Branch, N. J. Picture-frame	26,348	Dec. 1	77	1418
Rogers, Corinna T., Ansonia, Conn. Pin-tray	26,217	Oct. 27	77	624
Rogers & Hamilton Company. (See Pretat, Frederick E., assignor.)				
Rome Metallic Bed Company. (See Merritt, Mortimer G., assignor.)				
Romünder, William, and E. J. Fellman, Milwaukee, Wis. Separable hinge	26,224	Oct. 27	77	625
Rosenstein, Albert, Lancaster, Pa. Cane or umbrella handle	26,213	Oct. 27	77	623
Rosenthal, Herman, New York, N. Y. Collar	26,313	Nov. 24	77	1261
Sadler, Frank H., Attleborough, Mass. Jewelry-tray	26,459	Dec. 29	77	2126
Safety Car Heating and Lighting Company. (See Dixon, Robert M., assignor.)				
Sanders, James M., Nevin, Ohio. Thinning-tool for cotton, &c	26,333	Nov. 24	77	1264
Sassenhoff, Ernesto, New York, N. Y. Price-card holder	26,461	Dec. 29	77	2126
Saxon, George, Openshaw, England. Frame for forging-machines	26,440	Dec. 22	77	1932
Scharlea Brothers. (See Scharlea, Max B., assignor.)				
Scharlea, Max B., New York, N. Y., assignor to Scharlea Brothers. Frame for toy sand-mills	26,325	Nov. 24	77	1263
Scherer, Joseph, Buffalo, N. Y. Radiator	26,388	Dec. 8	77	1589
Scheuer, Ralph, New York, N. Y. Belt-buckle	26,193	Oct. 20	77	446
Schmidt, John D., New York, N. Y. Puzzle-box	26,165	Oct. 6	77	147
Schneider, Henry, Tottenville, N. Y. Puzzle-box	26,229	Oct. 27	77	625
Schriver, Oliver P., Newport, Ky. Fence-wire ratchet-frame	26,222	Oct. 27	77	624
Schwartz, James M., New York, N. Y. Game-board	26,186	Oct. 13	77	308
Seaman, Benjamin S., Canton, Ohio. Support for saddle-seats	26,384	Dec. 8	77	1588
Sears, Henry C., Boston, Mass. Carriage-body	26,347	Nov. 24	77	1266
Selkirk, Alexander A., St. Louis, Mo. Voting-booth	26,227	Oct. 27	77	625
Semel, George, New York, N. Y. Bedstead	26,415	Dec. 15	77	1775
Sessler, Arnold, New York, N. Y. Stocking	26,305	Nov. 17	77	1117
Settles, Otto L., Argentine, Kans. Tie and scarf holder	26,194	Oct. 20	77	446
Severance, Horace B., Lansing, Mich. Hoop-ing	26,202	Oct. 20	77	447
Siebert, Henry A., Detroit, Mich. Loop-radiator	26,203	Oct. 20	77	447
Shepard, John J., Darlington, S. C. Corset-case	26,294	Nov. 17	77	1116
Sidwell, Arthur, Waltham, Mass. Tread-piece for bicycle-pedals	26,337	Nov. 24	77	1265
Siebert, Henry A., and F. W. Hodges, Detroit, Mich. Radiator-loop	26,247	Nov. 3	77	804
Sill Stove Works. (See Beattie, Herbert W., assignor.)				
Sill Stove Works. (See Clunies, Arthur B., assignor.)				
Sitterly, Wesley E., Auburn, N. Y. Chopping-knife blade	26,282	Nov. 17	77	1114
Slaymaker-Barry Company. (See Troast, William F., assignor.)				
Small, Abraham. (See Woodard, Alvin N., assignor.)				
Smith, Charles H., Newfield, N. J. Trowel	26,204	Oct. 20	77	447

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Smith, Charles H., assignor to O. B. North & Company, New Haven, Conn. Snap-hook	26,356	Dec. 1	77	1419
Smith, Edward S., Waterbury, Conn. Tobacco-pipe mounting	26,354	Dec. 1	77	1419
Smith, Edwin F. and F. A., Union City, Conn. Garment-hook	26,259	Nov. 10	77	967
Smith, Frank A. (See Smith, Edwin F. and F. A.)				
Smith, Robert H., Washington, D. C. Safety wick-tube	26,176	Oct. 13	77	306
Smith, Thomas N., assignor of one-half to W. A. Symington, Independence, Mo. Hose-reel frame	26,359	Dec. 1	77	1420
Snyder, Edward L., Brooklyn, N. Y. Soap dish or holder	26,352	Dec. 1	77	1419
Sommer, William L., New York, N. Y. Bagatelle-board	26,187	Oct. 13	77	308
Southwick, Albert A., Providence, R. I. Dish	26,397	Dec. 15	77	1772
Spencer, John S., New York, N. Y. Eyeglass-case	26,394	Dec. 15	77	1772
Stanley Rule and Level Company. (See Traut, Justus A., assignor.)				
Steele, George H., assignor to Heacock Manufacturing Company, Gloversville, N. Y. Egg-beater	26,438	Dec. 22	77	1932
Stein, Necholas, Philadelphia, Pa. Frame for pictures, &c	26,276	Nov. 17	77	1113
Stephens, Howard M., assignor to Rice & Hutchins, Incorporated, Boston, Mass. Shoe	26,307	Nov. 17	77	1118
Stevenson, Walter S., Philadelphia, Pa. Stove-grate	26,473	Dec. 29	77	2128
Stone, Richard F., Indianapolis, Ind. Badge	26,376	Dec. 8	77	1587
Straus & Sons, L. (See Davies, Benjamin, assignor.)				
Studebaker, John M., South Bend, Ind. Collar for axle-skeins	26,223	Oct. 27	77	625
Stumpf, Frank B. (See Mishler, Stumpf, and Donahay.)				
Stuparich, Paul J., San Francisco, Cal. Photographic card-mount	26,427	Dec. 22	77	1930
Suter, Albert P., New York, N. Y. Hair ornament	26,172	Oct. 13	77	305
Sweeney, Mary, Allegheny, Pa. Sad-iron	26,301	Nov. 17	77	1117
Symington, William A. (See Smith, Thomas N., assignor.)				
Taber, Winfield H., Boston, Mass. Corner-block for mattress-frames	26,244	Nov. 3	77	804
Taber, Winfield H., Boston, Mass. Corner-block for mattress-frames	26,245	Nov. 3	77	804
Taylor Burner and Electroplating Co. (See Taylor, William G., assignor.)				
Taylor, William A., Portland, Me. Bird-scarer	26,419	Dec. 15	77	1776
Taylor, William G., assignor to Taylor Burner and Electroplating Co., Limited, Pittsburg, Pa. Gas-burner	26,149	Oct. 6	77	145
Thielke, Ferdinand, Brooklyn, assignor to Woodside Sterling Company, New York, N. Y. Handle for button-hooks	26,456	Dec. 29	77	2126
Thistle Cheese Company. (See Brown, William L., assignor.)				
Thomas, Stonewall J., assignor of two-thirds to C. L. Wiley and A. B. Householder, Lovettsville, Va. Belt-pin	26,192	Oct. 20	77	446
Thomas, William H., Jenkintown, Pa. Fence-post	26,363	Dec. 1	77	1420
Tiffany & Company. (See Farnham, Paulding, assignor.)				
Trainer, John B. H., Williamsport, Pa. Game-board	26,168	Oct. 6	77	147
Traut, Justus A., assignor to Stanley Rule and Level Company, New Britain, Conn. Tool-handle	26,464	Dec. 29	77	2127
Travis, Charles L., Minneapolis, Minn., assignor to Hygienic Wheel Company, Philadelphia, Pa. Bicycle brace or fork	26,342	Nov. 24	77	1266
Tripp, W. L., *et al.* (See Glasscock, James B., assignor.)				
Troast, William F., assignor to Slaymaker-Barry Company, Lancaster, Pa. Lock-case	26,158	Oct. 6	77	146
Trott, Charles F. (See Moore and Trott.)				
Turner, William W., Chicago, Ill. Roof plate	26,201	Oct. 20	77	447
Turner, William W., Chicago, Ill. Roof-cap	26,226	Oct. 27	77	625
Unger Brothers. (See Dickinson, Philemon O., assignor.)				
Vivion, Thomas G., Columbia, Mo. Badge or button	26,453	Dec. 29	77	2125
Vogt, Gustave C. C., Limoges, France. Covered dish	26,430	Dec. 22	77	1931
W. & E. T. Fitch Company. (See Hubbard, George M., assignor.)				
Waite, Henry E., Newton, Mass. Mail-packer	26,293	Nov. 17	77	1116
Waite, Henry E., Newton, Mass. Guide for mail-packing machines	26,439	Dec. 22	77	1932
Walden, Joseph, Orange, N. J. Welt for shoes	26,399	Dec. 15	77	1773
Walker, Arthur W., Malden, Mass. Casing-ring for furnaces	26,291	Nov. 17	77	1115
Wallace, William, New York, N. Y. Campaign-badge	26,264	Nov. 17	77	1112
Warner, De Ver H., Bridgeport, Conn. Corset	26,373	Dec. 1	77	1422
Warren, Robert H., Newark, N. J. Stair-carpet button	26,353	Dec. 1	77	1419
Warner, Warren E., Rochester, N. Y. Foot-plate for bicycle-pedals	26,178	Oct. 13	77	306
Warner, William H., Melvern, Kans. Woven-wire fence-panel	26,290	Nov. 17	77	1115
Watkins, Edward G., Gardner, Mass. Cane fabric	26,476	Dec. 29	77	2129
Watkins, Edward G., Gardner, Mass. Cane fabric	26,477	Dec. 29	77	2129
Watkins, Edward G., Gardner, Mass. Cane fabric	26,478	Dec. 29	77	2129
Watkins, Edward G., Gardner, Mass. Cane fabric	26,479	Dec. 29	77	2129
Watkins, Edward G., Gardner, Mass. Cane fabric	26,480	Dec. 29	77	2129
Watkins, Edward G., Gardner, Mass. Cane fabric	26,481	Dec. 29	77	2129
Webb, Samuel B., Personville, Tex. Kitchen-cabinet	26,371	Dec. 1	77	1422
Weihman, Henry A., Philadelphia, Pa. Brush-back	26,457	Dec. 29	77	2126
Welsbach Light Company. (See Barrows, William E., assignor.)				
Westcott-Jewell Company. (See Hutchinson, James E., assignor.)				
Western Railway Equipment Company. (See Marshall, Edward S., assignor.)				
Wetherbee, Hiram E., Greenville, Miss., assignor of one-half to L. Hart, Cincinnati, Ohio. Back-band hook	26,173	Oct. 13	77	305
Whiting, Junius F., and E. Cather, Lebanon, Oreg. Badge	26,171	Oct. 13	77	305
Wilde, Arthur W., assignor to J. H., J. H., E., and W. H. Bromley, Philadelphia, Pa. Lace curtain	26,372	Dec. 1	77	1422
Wiley, Charles L., *et al.* (See Thomas, Stonewall J., assignor.)				
Wilkinson, William H., New York, N. Y. Gas-stove	26,150	Oct. 6	77	145
Williams, Horace D., Poplar Bluff, Mo. Bottle	26,429	Dec. 22	77	1931
Williams, John R., Scranton, Pa. Horseshoe-calk	26,156	Oct. 6	77	146
Willoughby, William J., and W. Y. Anderson, Horatio, Ark. Churn-stand	26,206	Oct. 20	77	447
Wilson, Harold, New York, N. Y. Puzzle-box	26,230	Oct. 27	77	626
Winchester Repeating Arms Company. (See Johnson, Thomas C., assignor.)				
Witsch, Nicholas, Jersey City, N. J., assignor to American Lithographic Company, New York, N. Y. Print or pattern for cigar-boxes	26,188	Oct. 13	77	308
Witsch, Nicholas, Jersey City, N. J., assignor to American Lithographic Company, New York, N. Y. Print or pattern for cigar-boxes	26,208	Oct. 20	77	448
Wojidkow, Louis, Brooklyn, N. Y. Chafing-dish	26,431	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Stand for chafing-dishes	26,432	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Stand for chafing-dishes	26,433	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Stand for chafing-dishes	26,434	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Stand for chafing-dishes	26,435	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Coffee-pot	26,436	Dec. 22	77	1931
Wojidkow, Louis, Brooklyn, N. Y. Toaster	26,437	Dec. 22	77	1931
Wolff, Aaron H., assignor to Wolff Gas Radiator Manufacturing Company, New York, N. Y. Gas-stove	26,327	Nov. 24	77	1263

Alphabetical list of patentees of designs, October to December, inclusive—Continued.

Name, residence, and design.	No.	Date.	Official Gazette. Vol.	Page.
Wolff Gas Radiator Manufacturing Company. (See Wolff, Aaron H., assignor.)				
Wolfgang, Adolph, assignor to Detroit Cap Manufacturing Co., Detroit, Mich. Cap	26,451	Dec. 29	77	2125
Wolfsheim, Louis, New York, N. Y. Display-tray	26,387	Dec. 8	77	1589
Woman's Sunshine Publishing Company. (See Arbuckle, John, assignor.)				
Wood, Francis, Brooklyn, N. Y. Pen-rack	26,319	Nov. 24	77	1262
Woodard, Alvin N., assignor of one-half to A. Small, Mansfield, Ohio. Pen-guard	26,379	Dec. 8	77	1588
Woodruff, Theron R., Mentor, Ohio. Fruit-basket	26,389	Dec. 8	77	1589
Woodside Sterling Company. (See Thielke, Ferdinand, assignor.)				
Wykoff, Nancy, *et al.* (See Brobst, William L., assignor.)				
Yale & Towne Manufacturing Company. (See Erichson, Charles A., assignor.)				
Young, Jonas F. (See Neumeyer and Young.)				
Zeigler, Lyman H. (See Butler and Zeigler.)				

ALPHABETICAL LIST OF REGISTRANTS OF TRADE-MARKS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
A. D. M. Cranberry Co., Wareham, Mass. Cranberries	29,085	Nov. 3	77	808
A. G. Spalding & Bros., Chicago, Ill. Athletic, bicyclists', and sportsmen's wear	29,028	Oct. 20	77	450
A. G. Spalding & Bros., Chicago, Ill. Velocipedes and their parts and bicycle sundries	29,032	Oct. 20	77	450
A. G. Spalding & Bros., Chicago, Ill. Certain apparatus for tennis, croquet, golf, and other games and sports	29,055	Oct. 27	77	629
A. G. Spalding & Bros., Chicago, Ill. Exercising devices and appliances	29,113	Nov. 3	77	810
A. H. Atwood Company, Boston, Mass. Pressed corned beef	29,042	Oct. 27	77	627
Æsculap Bitter Water Company, Limited, London, England, and Buda-Pesth, Austria-Hungary. Natural mineral water	29,312	Dec. 15	77	1779
Albany Billiard Ball Company, Albany, N. Y. Billiard and pool balls	29,149	Nov. 10	77	971
Albany Brewing Company, Albany and New York, N. Y. Ale	29,075	Nov. 3	77	807
Alden, Charles S., and C. F. Nicholson, Rochester, N. Y. Canned food	29,041	Oct. 27	77	627
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,053	Oct. 27	77	629
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,054	Oct. 27	77	629
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,206	Nov. 24	77	1268
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,207	Nov. 24	77	1268
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,208	Nov. 24	77	1269
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,209	Nov. 24	77	1269
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,210	Nov. 24	77	1269
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,211	Nov. 24	77	1269
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,212	Nov. 24	77	1269
Alden & Co., Geo. A., Boston, Mass. India-rubber, gutta-percha, and other vulcanizable gums	29,213	Nov. 24	77	1269
Allen B. Wrisley Company, Chicago, Ill. Laundry soap	29,285	Dec. 8	77	1593
American Biscuit and Manufacturing Company, Chicago, Ill. Oyster-crackers	29,379	Dec. 29	77	2134
American Tobacco Company, Newark, N. J., and New York, N. Y. Smoking-tobacco	29,035	Oct. 27	77	627
American Tobacco Company, Newark, N. J., and New York, N. Y. Smoking-tobacco	29,036	Oct. 27	77	627
American Waltham Watch Company, Boston and Waltham, Mass. Watches, movements, and parts of watches	29,246	Dec. 8	77	1590
American Wringer Company, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Clothes-wringers and the parts thereof	28,948	Oct. 6	77	150
American Wringer Company, Providence and Woonsocket, R. I., New York and Auburn, N. Y., and Erie, Pa. Clothes-wringers and the parts thereof	28,949	Oct. 6	77	150
American Writing Machine Company, Ilion and New York, N. Y. Type-writer supplies	29,290	Dec. 8	77	1594
Anchor Brewing Company, Dobbs Ferry and New York, N. Y. Beer and ale	28,933	Oct. 6	77	149
Anderson & Nelson Distilleries Company, Louisville, Ky. Whisky	29,372	Dec. 29	77	2133
Anderson & Nelson Distilleries Company, Louisville, Ky. Whisky	29,373	Dec. 29	77	2133
Animarium Company. (See Sanche, Hercules, assignor.)				
Armstrong & Co., Wm. H., Indianapolis, Ind. Nasal syringes	28,946	Oct. 6	77	150
Aucoc et Darracq, J., Paris, France. Cycles, velocipedes, bicycles, and tricycles	29,153	Nov. 10	77	972
Austin Cartridge Company, Cleveland, Ohio. Shotgun-shells	29,390	Dec. 29	77	2135
Austin Cartridge Company, Cleveland, Ohio. Shotguns and shotgun-shells	29,391	Dec. 29	77	2135
Babcock, George H., Westerly, R. I. Shirts	29,255	Dec. 8	77	1591
Backes Sons, M., Wallingford, Conn. Toy torpedoes and toy paper caps	29,299	Dec. 15	77	1777
Bacon, Charles G., Jr., New York, N. Y. Antirheumatic, antineuralgic, and antipyretic medicine	29,354	Dec. 29	77	2131
Bartholomay Brewery Company, Rochester, N. Y. Lager-beer	29,100	Nov. 3	77	809
Bartram Bros., New York, N. Y. Butter	29,040	Oct. 27	77	627
Basle Chemical Works Bindschedler, Basle, Switzerland. Medical compound of antipyretic and antineuralgic properties	29,091	Nov. 3	77	808
Bass, Solomon, New York, N. Y. Cement	28,967	Oct. 6	77	151
Bassett, Estate of Robert N., Derby, Conn. Dress-stays	29,026	Oct. 20	77	450
Bassford & Robertson, Pittsburg, Pa. Remedies for whooping-cough, colds and hoarseness, and throat and lung troubles	28,945	Oct. 6	77	149
Bechman, Victor J., and N. A. Stirn, Bridgeport, Conn. Wall-size	29,007	Oct. 13	77	312
Beckel & Co., Joseph, New York, N. Y. Ladies' corsets	29,254	Dec. 8	77	1591
Becker, Gustav A., New York, N. Y. Sauces	29,229	Dec. 1	77	1494
Belle Springs Creamery Company, Abilene, Kans. Butter	29,315	Dec. 15	77	1779
Beltaire, Lurch & Co., New York, N. Y. Boys' and men's fur hats	29,061	Nov. 3	77	806
Bird & Co., J. A. & W., Boston, Mass. Paint	28,968	Oct. 6	77	151
Bode & Daly, New York, N. Y. Medicated soap	29,183	Nov. 17	77	1122
Böhringer & Reuss, Cannstadt, Germany. Remedies for perspiring feet	28,943	Oct. 6	77	149
Bolte Cycle Manufacturing Company, Milwaukee, Wis. Cycles	29,289	Dec. 8	77	1594
Borsum Bros, New York, N. Y. Polishing material for metals	29,105	Nov. 3	77	810
Bosisto & Co., J., Richmond, Victoria. Oil of eucalyptus or rheumatic oil	29,261	Dec. 8	77	1591
Boston Woven Hose and Rubber Company, Boston, Mass., New York, N. Y., Chicago, Ill., San Francisco, Cal., and Cleveland, Ohio. Composition for repairing pneumatic tires	29,051	Oct. 27	77	629
Boston Woven Hose and Rubber Company, Boston, Mass., New York, N. Y., San Francisco, Cal., and Cleveland, Ohio. Compressible tubular holders for plastic cementitious material	29,155	Nov. 10	77	972
Bosworth & Co., C. T., New Bedford, Mass. Preparation of witch-hazel balsam	29,310	Dec. 15	77	1778
Bright's Chemical Co., Little Falls, N. Y. Remedies for diseases of the blood, liver, and kidneys	28,993	Oct. 13	77	310
Brion & Paté, Rheims, France. Flannels made wholly or in part of peat fiber	29,248	Dec. 8	77	1590
Brion & Paté, Rheims, France. Flannels made wholly or in part of peat fiber	29,249	Dec. 8	77	1590
Brummer, Max B., New York, N. Y. Ready-made garments	29,126	Nov. 10	77	969
Bryan, Miner & Read, New Haven, Conn. Teas	29,099	Nov. 3	77	809
Bryan, William H., Baltimore, Md. Cakes of soap	29,021	Oct. 20	77	450
Burke & Beyer, Newark, N. J. Printed publications	29,295	Dec. 15	77	1774
Burns, Peter C., Kokomo, Ind. Telephones	29,111	Nov. 3	77	810
Burns, Peter C., Kokomo, Ind. Transmitters	29,112	Nov. 3	77	810
Burst, Emil, St. Louis, Mo. Saponaceous and alkali solutions to be mixed with soap and water for cleaning purposes	29,136	Nov. 10	77	970
Butterick Publishing Company, Limited, New York, N. Y. Periodical fashion magazines	29,023	Oct. 20	77	450
Cameron, Elizabeth W. M., Brooklyn, N. Y. Remedy for inebriety	28,995	Oct. 13	77	310

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Candy, Walter W., St. Louis, Mo. Molasses candy	29,271	Dec. 8	77	1592
Carstairs, McCall & Co., Philadelphia, Pa. Whiskies	29,004	Oct. 13	77	311
Carstairs, McCall & Co., Philadelphia, Pa. Whiskies	29 005	Oct. 13	77	311
Chambers Glass Company, New Kensington, Pa. Sheet-glass	29,395	Dec. 29	77	2135
Chase & Co., L. C., Boston, Mass. Pneumatic or solid-rubber tires	29,052	Oct. 27	77	629
Chemisch-Elektrischo Fabrik "Prometheus" Gesellschaft mit Beschränkter Haftung, Frankfort-on-the-Main, Germany. Certain named electrical apparatus	29,150	Nov. 10	77	971
Chemische Fabrik Grünau Landshoff & Meyer, Grünau, Germany. Remedies for blood diseases	28 994	Oct. 13	77	310
Chemische Fabrik von Heyden Gesellschaft mit Beschränkter Haftung, Radebeul, Germany. Pharmaceutical preparations for internal use	28,957	Oct. 6	77	150
Chemische Fabrik von Heyden, Gesellschaft, mit Beschränkter Haftung, Radebeul, Germany. Lactate of silver, citrate of silver, and all pharmaceutical preparations of silver	29,133	Nov. 10	77	969
Chemische Fabrik von Heyden, Gesellschaft, mit Beschränkter Haftung, Radebeul, Germany. Artificial saccharine compounds	29,146	Nov. 10	77	971
Chemische Fabrik Rhenania, Aix-la-Chapelle, Germany. Remedy for wounds and sores	29,262	Dec. 8	77	1591
Chemische Fabrik Rhenania, Aix-la-Chapelle, Germany. Remedy for wounds and sores	29,263	Dec. 8	77	1591
Chemische Fabrik Rhenania, Aix-la-Chapelle, Germany. Remedy for wounds and sores	29,264	Dec. 8	77	1592
Chemische Fabrik Rhenania, Aix-la-Chapelle, Germany. Remedy for wounds and sores	29,265	Dec. 8	77	1592
Chicago Brewing Company, Chicago, Ill. Lager-beer	29,196	Nov. 24	77	1267
Chicago Brewing Company, Chicago, Ill. Lager-beer	29,230	Dec. 1	77	1424
Church & Dwight Company, New York, N. Y. Carbonating-powder	29,168	Nov. 17	77	1121
Church & Dwight Company, New York, N. Y. Baking-soda, saleratus, and baking-powders	29,226	Dec. 1	77	1423
Church & Dwight Company, New York, N. Y. Powder for carbonating liquids	29,367	Dec. 29	77	2132
Clough, Theodore, Estate of, Dobbs Ferry, N. Y. Gas-burners	28,971	Oct. 6	77	152
Coleman, Solomon, Memphis, Tenn. Preparation for laying dust	28,938	Oct. 6	77	149
Collins Company, Canton, Conn. Certain edge-tools	29,398	Dec. 29	77	2136
Colman, J. & J., London, England. Mustard and table-mustard	28,924	Oct. 6	77	148
Colman, J. & J., London, England. Table-mustard	28,925	Oct. 6	77	148
Colman, J. & J., London, England. Mustard and table-mustard	28,926	Oct. 6	77	148
Colman, J. & J., London, England. Mustard and table-mustard	28,927	Oct. 6	77	148
Commonwealth Cotton Manufacturing Company, Durham, N. C. Yarns, underwear, and knit goods, including hosiery	29,062	Nov. 3	77	806
Cook, Charles C., Baltimore, Md. Remedy for headache	29,172	Nov. 17	77	1121
Cook, Elizabeth M., San Francisco, Cal. Remedies for female complaints	29,173	Nov. 17	77	1121
Cooper Cooper & Company, Limited, London, England. Coffee and tea	29,076	Nov. 3	77	807
Cooper Cooper & Company, Limited, London, England. Coffee and tea	29,077	Nov. 3	77	807
Courtenay, William H., Worcester, England. Sauces	29,197	Nov. 24	77	1267
Crane, John P., Woburn, Mass. Split leather	29,348	Dec. 29	77	2130
Crane, Z. & W. M., Dalton, Mass. Writing-paper and envelops	29,024	Oct. 20	77	450
Crawford, William, New York, N. Y. Bicycles or like vehicles	28,975	Oct. 6	77	152
Cross Abbott Company, Hartford, Vt. Japan tea	28,961	Oct. 6	77	151
Davis & Co., Curtis, Cambridge, Mass. Soap	29,070	Nov. 3	77	806
Davis & Co., Curtis, Cambridge, Mass. Soap	29,318	Dec. 15	77	1779
Davis & Co., Curtis, Cambridge, Mass. Soap	29,319	Dec. 15	77	1779
Davis & Co., Curtis, Cambridge, Mass. Soap	29,320	Dec. 15	77	1779
Davis & Co., Curtis, Cambridge, Mass. Soap	29,321	Dec. 15	77	1780
Davis Sewing Machine Company, Dayton, Ohio. Sewing-machines and attachments	29,238	Dec. 1	77	1425
Dazian & Burchell Bros., New York, N. Y. Umbrellas and parasols	29,027	Oct. 20	77	450
Deering Harvester Company, Chicago, Ill. Binding-twine	28,981	Oct. 13	77	309
Densmore, Emmet and H., New York, N. Y. Medicine composed mainly of herbs	28,958	Oct. 6	77	150
Densmore, Helen. (See Densmore, Emmet and H.)				
Diamond Ink Co., Milwaukee, Wis. Mucilage, paste, and glue	29,050	Oct. 27	77	628
Dixon & Co., Emmett E., Gainesville, Ga. Remedy for colds, la grippe, influenza, hay-fever, and kindred ailments	29,231	Dec. 1	77	1424
Dowaley, Robert N., Athens, Canada. Household remedies	29,305	Dec. 15	77	1778
Dreka, Louis, Philadelphia, Pa. Pens	29,114	Nov. 10	77	968
Dryer, Margaret, Owensborough, Ky. Remedy for dysentery or bowel complaints	29,259	Dec. 8	77	1591
Dunlap & Company, New York, N. Y. Men's, boys', and women's hats and caps	29,342	Dec. 29	77	2130
Dunlop Pneumatic Tyre Company, Limited, London, England. Vehicle-tires and parts thereof	29,240	Dec. 1	77	1425
Durkee & Co., E. R., New York, N. Y. Spices, condiments, and bird-food	29,274	Dec. 8	77	1592
Durkee & Co., E. R., New York, N. Y. Spices, condiments, and bird-food	29,275	Dec. 8	77	1593
Durkee & Co., E. R., New York, N. Y. Spices, condiments, and bird-food	29,276	Dec. 8	77	1593
Durkee & Co., E. R., New York, N. Y. Spices, condiments, and bird-food	29,277	Dec. 8	77	1593
E. B. Millar & Company, Chicago, Ill. Japan teas	29,038	Oct. 27	77	627
Eddystone Manufacturing Company, Philadelphia, Pa. Printed woven fabrics	29,159	Nov. 17	77	1120
Edward R. Marshall Co., Philadelphia, Pa. Ointment for toilet purposes	29,360	Dec. 29	77	2131
Edwards & Co., William, Cleveland, Ohio. Certain named articles designated groceries	29,201	Nov. 24	77	1268
Electric Emery Wheel Company, Newark, N. J. Emery and corundum wheels	28,973	Oct. 6	77	152
Electro Silicon Company, New York, N. Y. Cleaning and polishing powders and soaps	29,233	Dec. 1	77	1424
Elliman Sons & Co., Slough, England. Embrocation	29,094	Nov. 3	77	809
Elliott, Laura P., Newton, Mass. Hair and scalp remedies	29,359	Dec. 29	77	2131
Ellshunt Medicine Co., Des Moines, Iowa. Cough mixtures, blood-purifiers, powders, liniments, pills, syrups, extracts, tonics, and bitters	28,992	Oct. 13	77	310
Embalmers Supply Company, Westport, Conn., New York, N. Y., and St. Louis, Mo. Embalming fluids	29,130	Nov. 10	77	969
Emerson, Louisa, Natick, Mass. Soap powder	28,965	Oct. 6	77	151
England, Henry C., Reading, Pa. Bicycles	29,185	Nov. 17	77	1122
Enterprise Specialty Company, New York, N. Y. Matches	29,393	Dec. 29	77	2135
Esche, Firm of Maurice S., Chemnitz, Germany. Gloves and hosiery	29,297	Dec. 15	77	1777
Esche, Firm of Maurice S., Chemnitz, Germany. Hosiery and gloves	29,327	Dec. 22	77	1934
Estelle, John C., Norfolk, Va. Oils for internal and external use	29,351	Dec. 29	77	2131
Ewart & Co., S., Pittsburg, Pa. Tobies	29,148	Nov. 10	77	971
Fabery, Robert, Boston, Mass. Medicinal preparations containing iron or manganese	29,194	Nov. 24	77	1267
Fairchild, Solomon R., Tacoma, Wash. Assessment and tax ledgers	29,115	Nov. 10	77	968
Falcon Packing Co., New York, N. Y. Olives, olive-oil, French peas, and macaroni	29,387	Dec. 29	77	2135
Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Substitute for sugar	29,314	Dec. 15	77	1779
Farbenfabriken, vormals Fr. Bayer & Co., Elberfeld, Germany. Dyestuffs	29,323	Dec. 15	77	1780
Farbwerk Friedrichsfeld, Dr. Paul Remy, Mannheim, Germany. Hog remedies	29,177	Nov. 17	77	1121
Farbwerk Friedrichsfeld, Dr. Paul Remy, Mannheim, Germany. Preventive against animal diseases	29,178	Nov. 17	77	1122
Fayerweather & Ladew, New York, N. Y. Power-belting	28,983	Oct. 13	77	309
Fayerweather & Ladew, New York, N. Y. Power-belting	28,984	Oct. 13	77	309
Fincke Sons, A., Syracuse, N. Y. Overgaiters, leggings, shoe nails, pegs, dressing, cement, blacking, ink, insoles, and laces	29,256	Dec. 8	77	1591

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Flügge & Co., Frankfort-on-the-Main, Germany. Pharmaceutical preparations containing myrrh	29 171	Nov. 17	77	1121
Foerderer, Robert H., Philadelphia, Pa. Dressings and polishes for shoes	29,188	Nov. 17	77	1122
Forest City Chemical Gum Co., Portland, Me. Chewing-gum	29,045	Oct. 27	77	628
Francis-Frost Company, Limited, Toronto, Canada. Ready-mixed paints	29,237	Dec. 1	77	1425
Fraser, Russell, Brooklyn, N. Y. Wire	29,030	Oct. 20	77	450
Freeman Milling Company, West Superior, Wis. Middlings	29,383	Dec. 29	77	2134
French Manufacturing Co., Philadelphia, Pa. Substitute for eggs	29,039	Oct. 27	77	627
Frowein, John J., Cleveland, Ohio. Metals for linotyping, stereotyping, and electrotyping	29,058	Oct. 27	77	630
Gallagher, Charles J., Philadelphia, Pa. Whisky	29,269	Dec. 8	77	1592
George Frost Company, Boston, Mass. Liquid antiseptic court-plaster	29,182	Nov. 17	77	1122
Gildersleeve, Augustus, Newark, N. J. Liniment	29,350	Dec. 29	77	2131
Glover & Co., W. T., London, England. High-resistance electrical conductors	29,110	Nov. 3	77	810
Goldmark, James, and W. J. Wallace, New York, N. Y. Electric rotary fans	28,947	Oct. 6	77	150
Goldschmidt, Firm of Th., Essen-on-the-Ruhr, Germany. Salt that serves as a covering layer for molten zinc and tin	29,222	Dec. 8	77	1593
Gotthelf, Joseph B., Memphis, Tenn. External remedy for headache	29,043	Oct. 27	77	628
Greasley, James S., Harrisburg, Pa. Compounds for making non-alcoholic drinks	28,934	Oct. 6	77	149
Greenberg, Charles F., Scranton, Pa. Soap	29,336	Dec. 22	77	1935
Groneth & Olsen, Duluth, Minn. Wheat-flour, coffee, potato-flour, starch, soaps, syrups, salaratus, and cigars	29,260	Dec. 8	77	1593
Grove Company, Salem, Ohio. Chewing-gum	29,322	Dec. 15	77	1780
H. Channon Company, Chicago, Ill. Transmission-rope	28,962	Oct. 13	77	309
H-O (Hornby's Oatmeal) Company, New York, N. Y. Farinaceous food products	29,228	Dec. 1	77	1424
Hafer, Bernetta, Los Angeles, Cal. Lotion for the skin and hair	29,358	Dec. 29	77	2131
Hage & Co., J. D., New York, N. Y. Sugar syrups	29,375	Dec. 29	77	2133
Hage & Co., J. D., New York, N. Y. Sugar syrups	29,376	Dec. 29	77	2133
Hage & Co., J. D., New York, N. Y. Sugar syrups	29,377	Dec. 29	77	2133
Hage & Co., J. D., New York, N. Y. Sugar syrups	29,378	Dec. 29	77	2134
Hall, Eliza N., New York, N. Y. Lye and caustic potash	29,234	Dec. 1	77	1424
Hall, Eliza N., New York, N. Y. Lye and caustic potash	29,235	Dec. 1	77	1425
Halsted, George W., Glidden, Iowa. Vegetable compound for the cure of liver, kidney, and other complaints	29,012	Oct. 20	77	449
Hamburger & Company, New York, N. Y. Tooth-brushes	28,986	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	28,987	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	28,988	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	28,989	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	28,990	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	28,991	Oct. 13	77	310
Hamburger & Company, New York, N. Y. Tooth-brushes	29,301	Dec. 15	77	1778
Hamburger & Company, New York, N. Y. Tooth-brushes	29,302	Dec. 15	77	1778
Hamburger & Company, New York, N. Y. Tooth-brushes	29,303	Dec. 15	77	1778
Hamburger & Company, New York, N. Y. Tooth-brushes	29,304	Dec. 15	77	1778
Hamilton, Brown Shoe Company, St. Louis, Mo. Women's shoes	29,120	Nov. 10	77	968
Hamilton, Brown Shoe Company, St. Louis, Mo. Men's shoes	29,222	Dec. 1	77	1423
Hamilton, Brown Shoe Company, St. Louis, Mo. Men's shoes	29,223	Dec. 1	77	1423
Hanan & Son, Brooklyn, N. Y. Shoes for men and boys	29,158	Nov. 17	77	1120
Hance Bros. & White, Philadelphia, Pa. Remedies for common and simple disorders	29,131	Nov. 10	77	969
Hance Bros. & White, Philadelphia, Pa. Vermifugal remedies	29,356	Dec. 29	77	2131
Handy, Herbert L., Springfield, Mass. Remedy for rheumatism	29,013	Oct. 20	77	449
Harrison Bros. & Co., Philadelphia, Pa. Paint and varnish removers	29,2-6	Dec. 8	77	1593
Harrison Brothers & Co., Philadelphia, Pa. Alum	29,363	Dec. 29	77	2132
Hastings Wool Boot Company, Hastings, Mich. All-wool boots	29,344	Dec. 29	77	2130
Hart & Hegeman Manufacturing Company, Hartford, Conn. Certain designated electrical appliances	29,217	Nov. 24	77	1270
Hartford Rubber Works Company, Hartford, Conn. Pneumatic tires of the single-tube variety	28,974	Oct. 6	77	152
Hartman, Leopold, New York, N. Y. Gas-fixtures for incandescent gas-lamps	29,151	Nov. 10	77	971
Hartman, Leopold, New York, N. Y. Fixtures for incandescent gas-lamps	29,152	Nov. 10	77	971
Henry Zeltner Brewing Company, New York, N. Y. Lager-beer	29,267	Dec. 8	77	1592
Herndon-Carter Company, Louisville, Ky. Dried apples	28,929	Oct. 6	77	148
Hewitt, Alvin E., Derby, Conn. Hooks and eyes	29,065	Nov. 3	77	806
Hewlett Bros., Salt Lake City, Utah. Baking-powders, spices, extracts, and soda-waters	29,281	Dec. 8	77	1593
Hibbard, Spencer, Bartlett & Company, Chicago, Ill. Bicycles, trioycles, velocipedes, sundries, and all articles relating to a bicycle business	29,341	Dec. 22	77	1936
Higgins, Charles D. (See Higgins, Edward T. and C. D.)				
Higgins, Edward T. and C. D., Greensborough, N. C. Cough-syrup	29,191	Nov. 24	77	1267
Hills Union Brewery Company, Limited, Newark, N. J., and London, England. Lager-beer	28,932	Oct. 6	77	148
Hitchings & Co., George O. (See Munro and Hitchings.)				
Holmberg, Emil A., New York, N. Y. Canned lobster	29,225	Dec. 1	77	1423
Honey Dew Gum Company, New York, N. Y. Chewing-gum and breath-perfumes	29,103	Nov. 3	77	810
Hook Bros. & Aston, Zanesville, Ohio. Wheat-flour	29,227	Dec. 1	77	1423
Horn, Louis C., Baltimore, Md. Remedies for epilepsy and nervous diseases	28,944	Oct. 6	77	149
Howe, Edwin C., Bridgeport, Conn. Fever and ague remedies	29,193	Nov. 24	77	12 7
Hughes, Albert E., New York, N. Y. Remedies for gout and rheumatism	29,352	Dec. 29	77	2131
Hugon & Co., Limited, Pendleton, England. Refined beef suet or fat	29,203	Nov. 24	77	1268
Hull, Sallie B., Fort Worth, Tex. Remedy for burns	28,996	Oct. 13	77	310
Hunicke, Felix H., St. Louis, Mo. Workingmen's gloves and mittens	29,190	Nov. 24	77	1267
Huntoon, Harrison B., Providence, R. I. Tobacco	29,335	Dec. 22	77	1935
Hyams, Harry H., Cincinnati, Ohio. Remedies for rheumatism and all blood diseases	29,044	Oct. 27	77	628
I. B. Kleinert Rubber Company, New York, N. Y. Garment-clasps	29,247	Dec. 8	77	1590
Illinois Canning Co., Hoopeston, Ill. Canned corn	29,163	Nov. 17	77	1120
International Art Publishing Company, Limited, New York, N. Y. Sunday-school cards	29,189	Nov. 24	77	1267
International Pulp Company, Gouverneur and New York, N. Y. Powdered talc or agalite	29,205	Nov. 24	77	1268
International Pulp Company, Gouverneur and New York, N. Y. Finely-powdered talc or agalite	29,382	Dec. 29	77	2132
Inter-State Casualty Company of New York, New York, N. Y. Coupon tickets or contracts	29,116	Nov. 10	77	968
Irwin, McBride, Catherwood & Co., Philadelphia, Pa. Japan tea	29,078	Nov. 3	77	807
Isaacs, G. & D., Brooklyn, N. Y. Oleo-oil, stearine, and tallow	29,019	Oct. 20	77	449
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	29,087	Nov. 3	77	808
J. W. Beardsley's Sons, New York, N. Y. Salted and boneless fish	29,224	Dec. 1	77	1423
Jaffé & Darmstaedter, Benno, Martinikenfelde, Germany. Toilet preparations manufactured from wool-fat	29,204	Nov. 24	77	1268
James Epps & Company, Limited, London, England. Prepared cocoa	29,270	Dec. 8	77	1592
John Jameson & Son, Limited, Dublin, Ireland. Whisky	28,931	Oct. 6	77	148
Johnson, Mary E., Fitchburg, Mass. Bicycles	29,325	Dec. 15	77	1780

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Jones Brothers, New York, N. Y. Tea, coffee, spices, baking-powder, flavoring extracts, soap, and starch	29,144	Nov. 10	77	971
Jones Shoe Manufacturing Company, Columbus, Ohio. Shoes	29,118	Nov. 10	77	966
Joseph Crosfield & Sons, Limited, Warrington, England. Caustic soda and silicate of soda	29,134	Nov. 10	77	969
Joseph Crosfield & Sons, Limited, Warrington, England. Caustic soda and silicate of soda	29,135	Nov. 10	77	970
Kais. Kön. Privilegirte Oesterreichische Länderbank, Vienna, Austria-Hungary. Ozocerite	29,106	Nov. 3	77	810
Kasey, Thomas A., Salem, Va. Soap	29,317	Dec. 15	77	1779
Kaufmann & Strauss Company, New York, N. Y. Lithographic prints	28,985	Oct. 13	77	309
Keith, Alonzo F., Omaha, Nebr. Starch	28,964	Oct. 6	77	151
Keller, Wilmer L., Baltimore, Md. Effervescent powders, salts, and tablets	29,047	Oct. 27	77	628
Kelly Axe Manufacturing Company, Alexandria, Ind., Louisville, Ky., and New York, N. Y. Axes	29,088	Nov. 3	77	808
Kelly, Hiram R., Galion, Ohio. Remedy for headache, neuralgia, rheumatism, and pains in the stomach and bowels	29,353	Dec. 29	77	2131
Kentora Brewery Company, Limited, Nottingham, England. Non-intoxicating effervescent botanic beverage	29,142	Nov. 10	77	970
Kestner, Firm of J. D., Jr., Waltershausen, Germany. Kid-body bisque-head dolls	29,129	Nov. 10	77	969
Kespohl & Co., H. A., Quincy, Ill. Baking-powder	29,200	Nov. 24	77	1268
Keyser, William S., Pensacola, Fla. Pitch-pine boards, timber, and deals	29,344	Dec. 1	77	1426
King & Co., J. B., New York, N. Y. Asbestos cement for finishing walls	29,236	Dec. 1	77	1425
King, Orion, Cleveland, Ohio. Medicated tablets	28,998	Oct. 13	77	311
Kingsford & Son, T., Oswego, N. Y. Laundry starch	29,202	Nov. 24	77	1268
Kirby, John B., Yardville, N. J. Wheat-flour	29,279	Dec. 8	77	1593
Klahn, Emil. (See Strauss and Klahn.)				
Kloman, William C., Baltimore, Md. Tablets for colds and hay-fever, also a tonic and disinfectant	29,132	Nov. 10	77	969
Klotz, Victor, Paris, France, and New York, N. Y. Soaps, perfumes, oils, and like toilet articles	29,071	Nov. 3	77	807
Klotz, Victor, Paris, France, and New York, N. Y. Soaps, perfumes, oils, and like toilet articles	29,072	Nov. 3	77	807
Klotz, Victor, Paris, France, and New York, N. Y. Soaps, perfumes, oils, and other toilet articles	29,073	Nov. 3	77	807
Klotz, Victor, Paris, France, and New York, N. Y. Soap and other toilet preparations	29,181	Nov. 17	77	1122
Klotz, Victor, Paris, France, and New York, N. Y. Toilet preparations, including soap	29,232	Dec. 1	77	1424
Knickerbocker Silk Company, New York, N. Y. Silk goods	29,345	Dec. 29	77	2130
Krug & Co., Rheims, France. Champagne wine	28,960	Oct. 6	77	150
Kullman, Salz & Company, Incorporated, San Francisco, Cal. Leather	29,298	Dec. 15	77	1777
Kurzman Bros., New York, N. Y. Butter	29,384	Dec. 29	77	2134
L. Bolton & Company, Des Moines, Iowa. Soap of a dark color	28,966	Oct. 6	77	151
L. Wolff Manufacturing Company, Chicago, Ill. Kitchen boilers, sinks, bath-tubs, water closets, and tanks	29,291	Dec. 8	77	1594
La Porte Medicine Company, La Porte, Ind. Remedies for women's diseases	29,355	Dec. 29	77	2131
Lanman & Kemp, New York, N. Y. Rubber syringes and articles of like character	29,029	Oct. 20	77	450
Larcom, Rufus E., Beverly, Mass. Boots and shoes	29,257	Dec. 8	77	1591
Larkin, Peter C., Toronto, Canada. Tea	28,962	Oct. 6	77	151
Leeson & Co., J. R., Boston, Mass. Yarns and threads	28,950	Oct. 6	77	150
Leeson & Co., J. R., Boston, Mass. Yarns and threads	28,951	Oct. 6	77	150
Leeson & Co., J. R., Boston, Mass. Yarns and threads	28,952	Oct. 6	77	150
Leeson & Co., J. R., Boston, Mass. Yarns and threads	28,953	Oct. 6	77	150
Lesher, Whitman & Co., New York, N. Y. Italian cloths, serges, silks, velvets, bindings, braids, and linings	29,127	Nov. 10	77	969
Levering, Cassandra B., Baltimore, Md. Ruffling and flouncing	29,347	Dec. 29	77	2130
Liebig, Anton, New York, N. Y. Specifics for the extermination of zymotic and contagious diseases	28,997	Oct. 13	77	311
Liquid Fuel Engineering Company, East Cowes and London, England. Engines, machinery or its parts, boats, and goods pertaining to marine and general engineering	29,187	Nov. 17	77	1122
Lord & Taylor, New York, N. Y. Cotton linings used in dresses	29,025	Oct. 20	77	450
Loring, Abbott, Boston, Mass., New York, N. Y., and Chicago, Ill. Certain named fat-producing food	29,311	Dec. 15	77	1778
Lozier Manufacturing Company, Toledo, Ohio. Bicycles, velocipedes, and articles accessory thereto	29,008	Oct. 13	77	312
Lumière & Ses Fils, A., Lyons, France. Apparatus for photographically exhibiting objects in motion	29,394	Dec. 29	77	2135
Maillard, Henry, New York, N. Y. Cocoa	29,143	Nov. 10	77	970
Major, David E., Ogden, Utah. Certain named remedies	29,016	Oct. 20	77	449
Manheimer, Louis, Chicago, Ill. Watches	29,066	Nov. 3	77	806
Marcus Ward & Company, Limited, London, England, and Belfast, Ireland. Linen writing-paper	29,292	Dec. 15	77	1777
Marcus Ward & Company, Limited, London, England, and Belfast, Ireland. Linen writing-paper	29,293	Dec. 15	77	1777
Marcus Ward & Company, Limited, London, England, and Belfast, Ireland. Linen writing-paper	29,294	Dec. 15	77	1777
Mason, Frederic S., New York, N. Y. Remedy for rheumatism and kindred diseases	29,192	Nov. 24	77	1267
Maypole Soap Syndicate, Limited, London, England. Dyes	29,283	Dec. 8	77	1593
Maypole Soap Syndicate, Limited, London, England. Preparation used in the laundry for coloring purposes	29,284	Dec. 8	77	1593
McCord, Henry Y., and A. H. Spain, Atlanta, Ga. Medicated smoking compounds	29,170	Nov. 17	77	1121
McCort, Charles F., Philadelphia, Pa. Raw and roasted peanuts	29,164	Nov. 17	77	1120
McKay Neverslip Sole Company, Detroit, Mich. Boots and shoes	29,343	Dec. 29	77	2130
McKesson & Robbins, New York, N. Y. Chemical preparation	29,357	Dec. 29	77	2131
McMullen & Co., Thomas, New York, N. Y. Ale	29,313	Dec. 15	77	1779
McMullen & Co., Thomas, New York, N. Y. Ale	29,368	Dec. 29	77	2132
McWilliam, James E., Hubbardston, Mass. Cement for rubber goods, especially for bicycle-tires	29,137	Nov. 10	77	970
Megler, Joseph G., Brookfield, Wash. Packed salmon, fruits, and vegetables	29,385	Dec. 29	77	2134
Mellwood Distillery Company, Louisville, Ky. Whisky	29,332	Dec. 22	77	1934
Mellwood Distillery Company, Louisville, Ky. Whisky	29,333	Dec. 22	77	1935
Mellwood Distillery Company, Louisville, Ky. Whisky	29,334	Dec. 22	77	1935
Mergenthaler, Marie H., Albany, N. Y. Fastening-tabs which are attachable to wearing-apparel	29,296	Dec. 15	77	1777
Mexican Chile Supply Company, Fort Worth, Tex. Condiments containing Mexican chilli pepper	29,081	Nov. 3	77	807
Miller, Peter S., Funk, Nebr. Liniments	29,349	Dec. 29	77	2131
Miller, Sloss & Scott, San Francisco, Cal., and New York, N. Y. Cutlery and edge-tools	29,059	Oct. 27	77	630
Miller & Sons, Leopold, New York, N. Y. Cigars, cigarettes, and cheroots and manufactured tobacco	29,101	Nov. 3	77	809
Miller & Sons, Leopold, New York, N. Y. Cigars, cigarettes, and cheroots and manufactured tobacco	29,102	Nov. 3	77	809
Milwaukee Novelty Co., Milwaukee, Wis. Badges	29,089	Nov. 3	77	808
Monadnock Mills, Claremont, N. H., and Boston, Mass. Cotton goods, such as bedspreads, bedquilts, counterpanes, and other Jacquard-woven goods, except towelings	29,198	Nov. 10	77	969
Moore & Co., Salisbury, Mo. Hog and cholera remedy	29,330	Dec. 22	77	1934
Montgomery, George L., New York, N. Y. Sheetings and drillings	29,346	Dec. 29	77	2130
Munro, Alexander F., and G. O. Hitchings, Boston, Mass. Leather and leather pneumatic tires for bicycles and other wheels	29,288	Dec. 8	77	1594

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
National Ammonia Company, St. Louis, Mo. Ammonia	29,049	Oct. 27	77	628
National Sewing Machine Company, Belvidere, Ill. Bicycles	29,033	Oct. 20	77	450
Nawrath & Co., J. P., New York, N. Y. Cotton yarns	28,990	Oct. 13	77	309
Neer, Elizabeth A., Paterson, N. J. Certain liquid medicine for external and internal use	29,175	Nov. 17	77	1121
New York Standard Watch Company, Jersey City, N. J. Watch-movements	29,220	Dec. 1	77	1423
Nicholson, Charles F. (See Alden and Nicholson.)				
North & Judd Manufacturing Company, New Britain, Conn. Sole and heel protectors	29,122	Nov. 10	77	968
Noyes, George E., Boston, Mass. Boots and shoes made of leather or of leather and cloth	29,258	Dec. 8	77	1591
Nusbaum, Simon I., Albany, N. Y. Preparations in which whisky predominates	29,167	Nov. 17	77	1121
O'Keefe, Julia A., Randolph, Mass. Salve	28,941	Oct. 6	77	149
Oakland Manufacturing Company, Baltimore, Md. Woolen cloth	29,250	Dec. 8	77	1590
Oehme & Baier, Leipsic, Germany. Colors for confectioners	29,002	Oct. 13	77	311
Ohio Cultivator Company, Bellevue, Ohio. Sulky-cultivators, stalk-cutters, harrows, bean-harvesters, and corn-planters	29,243	Dec. 1	77	1426
Openhym, Adolphe, New York, N. Y. Silk ribbons	29,064	Nov. 3	77	806
Orr & Co., Limited, J. B., London, England. Paints	29,107	Nov. 3	77	810
Paro et Cie., J. Bessard du, Jort, France. Cheese	29,098	Nov. 3	77	809
Patterson, James W., New York, N. Y. Lenses and lens-cases and all optical goods using lenses	29,056	Oct. 27	77	629
Patterson, William J., Cresco, Iowa. Remedy for the tobacco habit	29,309	Dec. 15	77	1778
Pearl Roller Mill Company, Oswego, Kans. Wheat-flour	29,147	Nov. 10	77	971
Perkins & Co., A. W., Rutland, Vt. Fertilizer for house-plants	28,969	Oct. 6	77	151
Peters Cartridge Company, Cincinnati, Ohio. Ammunition	29,067	Nov. 3	77	806
Peters Cartridge Company, Cincinnati, Ohio. Articles of ammunition	29,388	Dec. 29	77	2135
Peters Cartridge Company, Cincinnati, Ohio. Articles of ammunition	29,389	Dec. 29	77	2135
Phœnix Glass Company, Pittsburg, Pa. Lamps, lamp or gas globes, chimneys, shades, reflectors, and stands	28,972	Oct. 6	77	152
Piedmont Manufacturing Company, Greenville and Anderson counties, S. C. Sheetings, drillings, shirtings, and yarns	29,063	Nov. 3	77	806
Pillsbury-Washburn Flour Mills Company, (Limited,) Minneapolis, Minn. Wheat-flour	29,082	Nov. 3	77	807
Pillsbury-Washburn Flour Mills Company, (Limited,) Minneapolis, Minn. Wheat-flour	29,083	Nov. 3	77	807
Pillsbury-Washburn Flour Mills Company, (Limited,) Minneapolis, Minn. Flour	29,096	Nov. 3	77	809
Pillsbury-Washburn Flour Mills Company, (Limited,) Minneapolis, Minn. Flour	29,097	Nov. 3	77	809
Pingree & Smith, Detroit, Mich. Shoes	29,119	Nov. 10	77	968
Plymouth Stove Foundry Co., Plymouth, Mass. Stoves and ranges	29,219	Nov. 24	77	1270
Plymouth Stove Foundry Co., Plymouth, Mass. Oil and other stoves	29,239	Dec. 1	77	1425
Pope Manufacturing Company, Hartford, Conn. Velocipedes and parts thereof	28,977	Oct. 6	77	152
Pope Manufacturing Company, Hartford, Conn. Bicycles and like vehicles	29,397	Dec. 29	77	2136
Postal Telegraph-Cable Company, New York, N. Y. Printed blanks and envelops	29,221	Dec. 1	77	1423
Potter & Wrightington, Boston, Mass. Crackers, wafers, and malt extracts	29,140	Nov. 10	77	970
Press Publishing Company, New York, N. Y. Newspapers	29,245	Dec. 8	77	1590
Prösal, Agathe, Nuremberg, Germany. Corn-curers	28,940	Oct. 6	77	149
Puncturoid Manufacturing Co., Chelsea, Mass. Cement composition for mending pneumatic tires	29,396	Dec. 29	77	2135
Puritas Mineral Springs Company, Cleveland and Rockport, Ohio. Mineral-spring water	29,003	Oct. 13	77	311
R. & W. Jenkinson Company, Pittsburg and Allegheny, Pa. Stogies	28,006	Oct. 13	77	311
Rasin, Robert W. L., Baltimore, Md. Guano	29,108	Nov. 3	77	810
Rasin, Robert W. L., Baltimore, Md. Guanos, phosphates, manures, and superphosphates	29,109	Nov. 3	77	810
Raworth, Schodde & Co., Chicago, Ill. Soap	29,020	Oct. 20	77	449
Reddeman, Lebrecht T., Sun Prairie, Wis. Salve	29,095	Nov. 3	77	809
Reed, Walsh & Lange, Chicago, Ill. Tea	28,928	Oct. 6	77	148
Reeve & Co., C. A., Syracuse, N. Y. Wood-fillers	29,324	Dec. 15	77	1780
Rhode, Rudolph E., Chicago, Ill. Iron tonic	28,959	Oct. 6	77	150
Rice & Hutchins, Incorporated, Boston, Mass. Boots and shoes	29,121	Nov. 10	77	968
Riley & Co., William B., Philadelphia, Pa. Horse-blankets	28,954	Oct. 6	77	150
Riley & Co., Wm. B., Philadelphia, Pa. Wraps, boas, hoods, collarettes, and other garments	29,251	Dec. 8	77	1590
Riley & Co., Wm. B., Philadelphia, Pa. Wraps, boas, hoods, collarettes, and other garments	29,252	Dec. 8	77	1590
Roach, Charles A., St. Paul, Minn. Remedies for throat and lung affections	28,956	Oct. 6	77	150
Roberts Brothers, West Jefferson, Ohio. Butter-powder	29,160	Nov. 17	77	1120
Rochester Brewing Company, Rochester, N. Y. Malt tonics	28,935	Oct. 6	77	149
Rockford Sugar Refining Company, Limited, Rockford, Ill. Glucose and grape-sugar	28,963	Oct. 6	77	151
Romeo & Co., F., New York, N. Y. Olive-oil	29,145	Nov. 10	77	971
Roof, Clarence M., New York, N. Y. Gin, rum, and whisky	29,369	Dec. 29	77	2133
Roof, Clarence M., New York, N. Y. Whisky	29,370	Dec. 29	77	2133
Roof, Clarence M., New York, N. Y. Whisky	29,371	Dec. 29	77	2133
S. Hernsheim, Bros. & Company, Limited, New Orleans, La. Tobacco and cigars	29,365	Dec. 29	77	2132
S. Hernsheim, Bros. & Company, Limited, New Orleans, La. Tobacco and cigars	29,366	Dec. 29	77	2132
Sacket, Edward A., Chicago, Ill. Compounds for exterminating bugs, roaches, moths, insects, and germs	29,017	Oct. 20	77	449
Sadler, Firth & Ross, Limited, London, England. Mustard and spices	29,273	Dec. 8	77	1592
Salvation Blood Purifier Company, Atlanta, Ga. Internal remedy for the blood	29,014	Oct. 20	77	449
Salvation Blood Purifier Company, Atlanta, Ga. Internal remedy for blood and skin diseases	29,015	Oct. 20	77	449
Sanche, Hercules, Detroit, Mich., assignor to Animarium Company, New York, N. Y. Clinical and office instruments and apparatus	29,214	Nov. 24	77	1270
Sanche, Hercules, Detroit, Mich., assignor to Animarium Company, New York, N. Y. Clinical and office instruments and apparatus	29,215	Nov. 24	77	1270
Sanche, Hercules, Detroit, Mich., assignor to Animarium Company, New York, N. Y. Clinical instruments and apparatus	29,216	Nov. 24	77	1270
Sanche, Hercules, Detroit, Mich., assignor to Animarium Company, New York, N. Y. Clinical and office instruments and apparatus	29,300	Dec. 15	77	1777
Sanderson & Co., E. J., Madelia, Minn. Veterinary remedies	29,329	Dec. 22	77	1934
Santa Barbara Lemon Growers' Exchange, Santa Barbara, Cal. Lemons	29,000	Oct. 13	77	311
Santa Barbara Lemon Growers' Exchange, Santa Barbara, Cal. Lemons	29,001	Oct. 13	77	311
Schetter, Louis, New York, N. Y. Wines and liquors	29,331	Dec. 22	77	1934
Schmidt & Ziegler, New Orleans, La. Claret-wine	29,268	Dec. 8	77	1592
Schoeller, Gebrüder, Düren, Germany. Carpets, covers, and furniture stuffs	28,979	Oct. 13	77	309
Schoenfelder & Kehle, Newark, N. J. Cameras, boxes, plate-holders, and packing-cases	29,057	Oct. 27	77	629
Schröter & Co., Louis, Hamburg, Germany. Dried fruits	29,396	Dec. 29	77	2135
Seth Thomas Clock Company, New York, N. Y. Wooden clock-cases	29,218	Nov. 24	77	1270
Seymour, Robert H., Holyoke, Mass. Shears and scissors	29,184	Nov. 17	77	1122
Sharp & Dohme of Baltimore City, Baltimore, Md., New York, N. Y., and Chicago, Ill. Gelatin capsules of sandalwood and other oils	29,046	Oct. 27	77	628
Shattuck, Joseph, Nashua, N. H. Pepsin wafers	29,195	Nov. 24	77	1267
Shaw & Co., Alex. D., New York, N. Y. Whisky	29,037	Oct. 27	77	627
Shaw Stocking Company, Lowell, Mass. Hosiery	29,157	Nov. 17	77	1120
Shelby Mill Company, Shelby, Ohio. Ground or milled cereals	29,278	Dec. 8	77	1593

Alphabetical list of registrants of trade-marks, October to December, inclusive—Continued.

Name, residence, and title.	No.	Date.	Official Gazette. Vol.	Page.
Silver Lake Company, Boston, Mass. Solid-braided cords for windows and the like	29,090	Nov. 3	77	808
Skilton, Foote & Co., Somerville, Mass. Pickles	29,198	Nov. 24	77	1267
Smith, Collins & Co., Buffalo, N. Y. Soft bread	29,380	Dec. 29	77	2134
Smith & Peters, Philadelphia, Pa. Lozenges and other confectionery	29,139	Nov. 10	77	970
Smith & Peters, Philadelphia, Pa. Lozenges and other confectionery	29,374	Dec. 29	77	2133
Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp, Fécamp, France. Liquor	29,166	Nov. 17	77	1121
Southworth Company, Mittineague, Mass. Writing-paper and envelops	29,034	Oct. 27	77	627
Spain, Albertus H. (See McCord and Spain.)				
Spencer, Thomas P., Lynchburg, Va. Composition for preserving patent-leather	28,939	Oct. 6	77	149
Standard Oil Company of New York, New York, N. Y. Illuminating-oils	29,337	Dec. 22	77	1935
Standard Oil Company of New York, New York, N. Y. Illuminating-oils	29,338	Dec. 22	77	1935
Standard Oil Company of New York, New York, N. Y. Illuminating-oils	29,339	Dec. 23	77	1935
Star Knitting Company, La Crosse, Wis. Knit mittens	29,253	Dec. 8	77	1591
Stedman, James H., London, England. Teething-powders	28,999	Oct. 13	77	311
Steinert, Morris, New Haven, Conn. Keyed stringed instruments	28,970	Oct. 6	77	152
Steinkraus, Clara and H., Chicago, Ill. Medicinal tea	29,361	Dec. 29	77	2132
Steinkraus, Herman. (See Steinkraus, Clara and H.)				
Sterling Cycle Works, Chicago, Ill. Bicycles	29,340	Dec. 22	77	1936
Stevens & Co., S. J., Cincinnati, Ohio. Elgin creamery-butter	29,161	Nov. 17	77	1120
Still, Allen H., New York, N. Y. Antipyretic and analgesic preparations	29,307	Dec. 15	77	1778
Still, Allen H., New York, N. Y. Medicinal wine	29,308	Dec. 15	77	1778
Stirn, Norma A. (See Bechman and Stirn.)				
Stoddard Manufacturing Company, Dayton, Ohio. Bicycles	28,976	Oct. 6	77	152
Stoddard Manufacturing Company, Dayton, Ohio. Bicycles	29,009	Oct. 13	77	312
Stokes, William H., Watertown, S. D. Patent wheat-flour	29,084	Nov. 3	77	808
Stokes, William H., Watertown, S. D. Patent wheat-flour	29,381	Dec. 29	77	2134
Stokes, William H., Watertown, S. D. Patent wheat-flour	29,382	Dec. 29	77	2134
Strauss, Gustavus E., and E. Klahn, New York, N. Y. Nut-locks	29,031	Oct. 20	77	450
Swan, James A., Passaic, N. J. Cold cure and remedy for diseases of the throat, lungs, and nasal organs	29,328	Dec. 22	77	1934
Tarrant & Company, New York, N. Y. Laxative medicines	29,093	Nov. 3	77	809
Tarrant & Company, New York, N. Y. Laxative medicines	29,174	Nov. 17	77	1121
Tarrant & Company, New York, N. Y. Laxative medicines	29,306	Dec. 15	77	1778
Taylor, George H., Chicago, Ill. Writing-paper	29,326	Dec. 22	77	1934
Testurine Company, Chicago, Ill. Remedies for kidney and similar diseases	29,260	Dec. 8	77	1591
Tete Bros., Philadelphia, Pa. Teas	29,079	Nov. 3	77	807
Thistle Cheese Company, Utica, N. Y. Cheese	29,272	Dec. 8	77	1592
Thomas Evans Company, Pittsburg, Pa. Lamp-chimneys	29,060	Oct. 27	77	630
Thompson, Edgar, New York, N. Y. Preparations for cleaning and renovating carpets and destroying moths	29,069	Nov. 3	77	806
Thompson & Norris Company, Brooklyn, N. Y. Pasteboard and boxes, cases, wrappers, uvelops, and other articles manufactured therefrom	29,117	Nov. 10	77	968
Thompson, William T., and J. D. Wilson, Lexington, Ky. Tonic bitters for the stomach	29,266	Dec. 8	77	1592
Thomsen's Sons, John J., Baltimore, Md. Preparation for washing, scouring, and cleansing	29,104	Nov. 3	77	810
Thomson & Taylor Spice Company, Chicago, Ill. Compounds of kola and malt for foods and beverages	29,141	Nov. 10	77	970
Timms, Walter B., New York, N. Y. Canned meats, fish, vegetables, fruits, and condensed milk	29,316	Dec. 15	77	1779
Tonk Manufacturing Company, Chicago, Ill. Bicycles	29,186	Nov. 17	77	1122
Triolo, Charles, Chicago, Ill. Lemons	29,165	Nov. 17	77	1120
Uhland, John A., Denver, Colo. Preparation for sore throat, hoarseness, coughs, colds, and earache	29,092	Nov. 3	77	808
Union Soap Co., Baltimore, Md. Laundry and toilet soap	29,180	Nov. 17	77	1122
United States Graphite Company, Saginaw, Mich. Graphite and its products	29,138	Nov. 10	77	970
Urben, Joseph P., Allegheny, Pa. Salve	29,176	Nov. 17	77	1121
Vacuum Oil Company, Rochester, N. Y. Oils and lubricants of all kinds	28,936	Oct. 6	77	149
Vacuum Oil Company, Rochester, N. Y. Oils and lubricants of all kinds	28,937	Oct. 6	77	149
Vaughan-Jones, Edward, London, England. Gin and other spirits	28,930	Oct. 6	77	148
Venning, Ralph J., Cleveland, Ohio. Refined illuminating-oil	29,179	Nov. 17	77	1122
Victoria Date Company, Limited, London, England. Dates and preparations and extracts of dates, including vinegar made therefrom	29,080	Nov. 3	77	807
Wadsworth, Howland & Company, Incorporated, Boston, Mass. Shellac	29,018	Oct. 20	77	449
Walker, W. & F., Liverpool, England. Liquid and other soaps	29,022	Oct. 20	77	450
Wall, Thomas B., Newark, N. J. Roof-paint	29,068	Nov. 3	77	806
Wallace, William J. (See Goldmark and Wallace.)				
Waltke & Co., William, St. Louis, Mo. Soap	29,392	Dec. 29	77	2135
Warner Brothers Company, New York, N. Y., Chicago, Ill., and Bridgeport, Conn. Corsets and similar underwear	28,978	Oct. 13	77	309
Warner, William R., Philadelphia, Pa. Tonic, stimulant, and remedy for nervousness	29,046	Oct. 27	77	628
Warren Chemical and Manufacturing Company, New York, N. Y. Roofing-felt	28,955	Oct. 6	77	150
Weber's Medical Tea Co., Brooklyn, N. Y. Herb teas	29,011	Oct. 20	77	449
Weingard, William, Toledo, Ohio. Veterinary liniment	28,942	Oct. 6	77	149
Weingarten Bros., New York, N. Y. Corsets	29,123	Nov. 10	77	968
Weingarten Bros., New York, N. Y. Corsets	29,124	Nov. 10	77	969
Weingarten Bros., New York, N. Y. Corsets	29,125	Nov. 10	77	969
Weiss & Co., Apotheker, Giessen, Germany. Perfumes, soap, and creams	29,010	Oct. 13	77	312
Wellman & Minsel, Defiance, Ohio. Medicated chewing-gum	29,169	Nov. 17	77	1121
Wenham's Sons, A. J., Cleveland, Ohio. Tomato mustard	29,086	Nov. 3	77	808
Willard, John W., Boston, Mass. Antirattlers for thill-couplings	29,241	Dec. 1	77	1425
Willard, John W., Boston, Mass. Antirattlers for thill-couplings	29,242	Dec. 1	77	1425
Willcox, Edwin B., Westport, Conn. Bicycles and tricycles	29,154	Nov. 10	77	972
Wilson & Co., Archdale, Hamilton, Canada. Cement for mending punctures in pneumatic tires	29,287	Dec. 8	77	1594
Wilson, James D. (See Thompson and Wilson.)				
Winchester Repeating Arms Company, New Haven, Conn. Shotguns	29,156	Nov. 10	77	972
Wolfe, McMillan & Co., Philadelphia, Pa. Formosa tea	29,199	Nov. 24	77	1268
Wolkind, Henry, Pittsburg, Pa. Cigarettes	29,364	Dec. 29	77	2132
Wright, Firm of Alfred, Rochester, N. Y. Perfumery	29,074	Nov. 3	77	807
Young, Frederick W., New Orleans, La. Baking and yeast powders	29,162	Nov. 17	77	1120

PRINTS.

Name, residence, and title.	No.	Date.	Official Gazette. Volume.	Page.
American Lithographic Company, New York, N. Y. "Ivy Crown." (For Cigars and Tobacco)	39	Dec. 29	77	1944
American Lithographic Company, New York, N. Y. "Arabesque." (For Cigars and Tobacco)	40	Dec. 29	77	1944
L. Candee & Company, New Haven, Conn. "Fairy Boots." (For Boots and Shoes)	37	Nov. 17	77	980
Myers, Abraham A., Lancaster, Pa. "Harness-Leather"	27	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. R. S."	28	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. A. I."	29	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. ¾ P."	30	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. 12 G. V."	31	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. 1¼ P. V."	32	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. 567—B. V."	33	Oct. 27	77	457
Palmer, Isaac E., Middletown, Conn. "Cut No. 34—S."	34	Oct. 27	77	457
United States Playing Card Company, New York, N. Y. "A Gallery of Celebrities"	35	Nov. 10	77	828
United States Playing Card Company, New York, N. Y. "Circus Playing Cards"	36	Nov. 17	77	980
United States Printing Company, Cincinnati, Ohio. "Caezar." (For Soap)	41	Dec. 29	77	1944
Woonsocket Rubber Company, Providence, R. I. "Woonsocket Rubbers." (For Rubbers and Overshoes)	38	Nov. 17	77	980

DISCLAIMER.

Name, residence, and invention.	No.	Filed.	Official Gazette. Volume.	Page.
Stonemetz, John H., Erie, Pa.; disclaimer filed by assignee. Web-printing machine	376,053	Dec. 11, 1896	77	1601

ALPHABETICAL LIST OF INVENTIONS.

Invention.	Name.	No.	Date.	Monthly volume. Specification.	Monthly volume. Drawing.	Official Gazette. Volume.	Official Gazette. Page.
Abdominal supporter	S. M. Woolfolk and N. U. Ney	572,465	Dec. 1	665	157	77	1405
Abrading articles. Composition of matter for	E. G. Acheson	572,852	Dec. 8	1339	.....	77	1553
Abrading-machine	A. B. Pritchard and J. M. Sellmayer	570,184	Oct. 27	2578	612	77	527
Accumulator or secondary battery	F. W. Ellermann	572,198	Dec. 1	178	.....	77	1312
Acid and making same. Dinitroanthrachrysone disulfonic	H. Laubmann	569,419	Oct. 13	1211	.....	77	216
Acid and making same. Paraethoxyphenylsuccinamic	A. Piutti	569,425	Oct. 13	1219	.....	77	247
Acid. Obtaining tetra-alkyl uric	E. Fischer	571,352	Nov. 17	1653	.....	77	990
Addition. Device for aiding work of	A. L. Huffman	568,907	Oct. 6	323	75	77	62
Addressing-machine	F. D. Belknap	573,849	Dec. 29	3158	753	77	1946
Adhesive compound	C. Beadle	569,704	Oct. 20	1750	.....	77	359
Adjustable seat. Vertically-	J. R. Burke	569,809	Oct. 20	1926	457	77	391
Advertisement-shifter	B. Nichols	571,892	Nov. 24	2581	611	77	1180
Advertisement-wagon	T. A. Ward, J. R. Turner, and J. W. Kendall	569,982	Oct. 20	2215	526	77	444
Advertising device	D. J. Etly	569,095	Oct. 6	651	150	77	125
Advertising device	J. H. Golding	571,636	Nov. 17	2160	519	77	1082
Advertising device	J. A. Kennel	572,202	Dec. 1	299	71, 72	77	1336
Advertising device	F. S. D. Scott	574,277	Dec. 29	3998	949, 950	77	2096
Advertising device. Automatic-figure	P. T. Kenny	568,854	Oct. 6	243	57	77	47
Agricultural boiler	F. C. and W. J. Zumdahl	571,634	Nov. 17	2130	512	77	1076
Agricultural hand-tool	W. D. Huntington	571,371	Nov. 17	1681	398	77	994
Air and gas mixer and hydrocarbon-furnace	V. W. Blanchard	569,984	Oct. 20	2218	527	77	444
Air-brake	F. L. Guillemet	571,115	Nov. 10	1260	292, 293	77	900
Air-brake	F. L. Guillemet	571,116	Nov. 10	1262	293	77	901
Air-brake	W. Mable	572,553	Dec. 8	608	194	77	1448
Air-brake	H. F. Noyes	571,095	Nov. 10	1216	284, 285	77	893
Air-brake	H. F. Noyes	571,786	Nov. 24	2408	574, 575	77	1149
Air-brake	J. E. Reyburn	568,923	Oct. 6	347	80	77	67
Air-brake	T. Walker and R. R. Cook	569,258	Oct. 13	935	224	77	194
Air-brake coupling	W. A. and B. S. H. Harris	571,662	Nov. 17	2170	522	77	1083
Air-brake for railway-trains. Automatic	W. H. Hall	574,062	Dec. 29	3562	850, 851	77	2018
Air-brake hose-couplings. Dust-guard for	W. Y. Thompson	571,708	Nov. 17	2254	541	77	1099
Air-brake hose-couplings. Strainer for	G. H. Herbert	572,009	Nov. 24	2403	601	77	1222
Air-brake mechanism	H. C. Zenke	571,736	Nov. 17	2318	553, 554	77	1112
Air-brake mechanism. Street-car	G. A. Glass	569,915	Oct. 20	2098	499, 500	77	423
Air-brake. Railway-car	H. S. Graebing	569,823	Oct. 20	1949	463	77	395
Air-brake retainer. Automatic	C. W. Juul	570,483	Nov. 3	81	19, 20	77	653
Air-chamber	J. F. Reed	571,243	Nov. 10	1470	344	77	940
Air-compressor	E. Hill	571,971	Nov. 24	2738	647, 648	77	1211
Air-compressor	J. H. Reynolds	572,372	Dec. 1	509	120	77	1375
Air-compressor	T. H. Roberts	572,314	Dec. 1	407	97	77	1356
Air-compressor	H. C. Sergeant	568,804	Oct. 6	156	37	77	32
Air compressor and blower	O. L. Smith	572,383	Dec. 1	543	128	77	1381
Air-compressor. Hydraulic	J. H. Champ	570,540	Nov. 3	190	51	77	673
Air-compressor. Hydraulic	J. Liming	569,929	Oct. 20	2120	504	77	427
Air-compressors. Inlet-valve for	H. V. Conrad	569,323	Oct. 13	1052	249, 250	77	217
Air-distributing apparatus	J. L. West	571,500	Nov. 17	1904	454, 455	77	1035
Air-forcing apparatus. Operating mechanism for	E. J. Mitchell	573,026	Dec. 15	1644	395	77	1631
Air goods	A. A. Young	573,122	Dec. 15	1818	438	77	1663
Air-heater. Ventilating	C. V. Roberts	574,271	Dec. 29	3987	947	77	2094
Air-lock for caissons, &c	R. S. Gillespie	573,405	Dec. 15	2325	555, 556	77	1755
Air-lock for caissons, &c	R. S. Gillespie	573,406	Dec. 15	2327	556	77	1756
Air-lock for caissons, &c	R. S. Gillespie	574,321	Dec. 29	4064	966	77	2109
Air. Regulating-damper for controlling incoming currents of	F. W. Graves	571,658	Nov. 17	2163	520	77	1082
Air-ship	E. J. St. Croix	573,549	Dec. 22	2619	622	77	1827
Air vessels under pressure. Apparatus for filling	R. H. Thorpe and T. E. Brown, Jr.	569,774	Oct. 20	1871	443, 444	77	381
Alarm: *See* Bicycle-alarm. Burglar-alarm. Fire-alarm. Fire and burglar alarm. Leak-alarm. Low-water alarm. Railway-alarm. Safe-alarm. Speed-indicating alarm.							
Alkalies. Manufacturing phosphates of	H. Albert	572,512	Dec. 8	745	178	77	1435

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Alloy or compound and producing same. Metallic	C. M. Hall	570,014	Oct. 27	2272	.....	77	467
Alloys. Making	E. A. Georges (called C. Street)	572,092	Nov. 24	2997	.....	77	1257
Aluminate. Making	D. A. Péniakoff	572,026	Nov. 24	2827	.....	77	1227
Amalgamating apparatus. Gold	C. Graff	569,710	Oct. 20	1761	418	77	361
Amalgamator	W. L. and C. Brown	572,353	Dec. 1	471	111	77	1368
Amalgamator	J. A. Riffle	573,163	Dec. 15	1888	454	77	1676
Amalgamator	J. J. Storer and F. Martin	573,834	Dec. 22	3139	748	77	1926
Ammonia-gas generator	L. H. Bachmann and O. R. Sulzer	573,956	Dec. 29	3359	805	77	1981
Ammonium nitrate. Purifying	G. Craig	573,964	Dec. 29	3385	810	77	1986
Amusement apparatus	D. M. Harman	570,016	Oct. 27	2274	541	77	468
Anchor	F. Baldt	570,420	Oct. 27	3051	722	77	615
Anchor. Shore	J. J. Ryan	571,624	Nov. 17	2109	506	77	1072
Animal-shears	J. K. Priest	571,241	Nov. 10	1467	343	77	939
Animal-trap	S. Cedzo	573,761	Dec. 22	3006	712	77	1902
Animal-trap	C. Leland	571,773	Nov. 24	2386	570	77	1143
Animal-trap	J. M. Wilkinson	574,294	Dec. 29	4023	955	77	2101
Animal-trap. Self-setting	F. E. Kranth	572,811	Dec. 8	1279	308	77	1540
Annealing metal castings	J. Evetts and F. C. Schurz	570,919	Nov. 10	911	211	77	837
Annealing tin-plate. Plant for	T. R. Morgan, Jr	568,786	Oct. 6	129	30, 31	77	27
Annunciator	F. A. Jennings	571,445	Nov. 17	1800	430	77	1016
Annunciator	F. A. Jennings	572,057	Nov. 24	2890	682	77	1238
Annunciator. Automatic temperature	J. A. Young	572,081	Nov. 24	2958	695	77	1251
Annunciator-drop	W. Schwagerman	572,378	Dec. 1	537	127	77	1380
Annunciator. Electric	J. Stamm	570,967	Nov. 10	988	230	77	850
Annunciator. Electrical	R. L. Hunter and H. B. Higgins	574,327	Dec. 29	4073	{968 969}	77	2111
Anode for electrolytic processes	H. Y. Castner	572,472	Dec. 1	671	.....	77	1406
Antipyrin mandelate and making same	O. Hinsberg	569,415	Oct. 13	1208	.....	77	245
Arm-rest for books	A. J. Soto	571,936	Nov. 24	2686	636	77	1201
Armature-jack	W. A. Drysdale	573,323	Dec. 15	2192	524	77	1731
Armor. Body	R. F. Stevenson	570,067	Oct. 27	2369	563	77	486
Armor-plates. Apparatus for manufacturing	A. Wilson and F. Stubbs	572,580	Dec. 8	884	214	77	1465
Aspirator	J. Schneible	571,692	Nov. 17	2216	534	77	1092
Atomizer. Fluid	J. A. Tilden	570,721	Nov. 3	556	129	77	741
Auger. Earth	W. F. Bennett and S. Hill	572,325	Dec. 1	426	{100 101}	77	1360
Auger. Earth	H. A. Brownlee	573,388	Dec. 15	2301	549	77	1751
Auger. Earth	A. H. Meier	570,810	Nov. 3	703	161	77	768
Autographic register	G. D. Bond	570,535	Nov. 3	177	47, 48	77	670
Automatic brake	W. Pendley	573,791	Dec. 22	3051	723	77	1911
Automatic gate	D. K. Wilson	569,269	Oct. 13	950	{227 228}	77	197
Automatic sprinkler	C. E. Buell	570,901	Nov. 10	879	204	77	830
Awning	W. Bennett	573,639	Dec. 22	2799	662	77	1864
Awning	C. A. and W. E. Metzger	572,434	Dec. 1	618	147	77	1396
Awning-fixture	F. A. Wagner	572,461	Dec. 1	660	156	77	1404
Awning-frame	J. Morein	570,877	Nov. 3	834	194	77	795
Axiometer	J. N. Mayhew	571,781	Nov. 24	2398	573	77	1146
Axle and axle-box	M. F. Bishop	572,925	Dec. 8	1466	352	77	1579
Axle-box	W. J. McLean	571,235	Nov. 10	1454	341	77	937
Axle box and bearing. Car	J. R. Baker	572,517	Dec. 8	753	179	77	1437
Axle box. Car	S. Collins	573,391	Dec. 15	2305	551	77	1752
Axle box. Car	J. L. Petithomme	573,417	Dec. 15	2349	{561 562}	77	1760
Axle-box lid	N. H. Davis	570,912	Nov. 10	898	209	77	834
Axle-box lid. Car	A. O. Buckius	570,374	Oct. 27	2958	702	77	597
Axle-box lid. Car	A. O. Buckius	571,299	Nov. 10	1564	371	77	959
Axle boxes. Dust-guard for car	H. I. Holderness	571,666	Nov. 17	2179	524	77	1085
Axle-boxes. Oil-port lid for railway-car	C. Erdbrink	574,026	Dec. 29	3497	{835 836}	77	2005
Axle journals in pedestals. Means for supporting housings of car	H. L. Gee	574,028	Dec. 29	3500	836	77	2006
Axle-lubricator	J. Reichenbach	572,276	Dec. 1	325	78	77	1341
Axle lubricator. Car	A. W. Wright	569,480	Oct. 13	1300	306	77	262
Axle-skein	E. M. Graham and L. R. Colwell	572,161	Dec. 1	119	28	77	1300
Axle. Vehicle	O. S. Ebert	569,183	Oct. 13	799	187	77	168
Axle. Vehicle	J. P. Morris	573,281	Dec. 15	2112	507	77	1717
Axle. Wagon	C. J. Kilian	572,807	Dec. 8	1275	307	77	1540
Axles, &c., from iron or steel. Apparatus for manufacturing	T. Higgins	572,204	Dec. 1	185	45, 46	77	1313
Axles. Locking device for extensible	S. F. Welch	573,836	Dec. 22	3142	748	77	1927
Axles. Mechanism for manufacturing car	D. W. Porter	570,490	Nov. 3	113	28	77	659
Baby-walker	G. F. Packard	572,613	Dec. 8	927	224	77	1474
Baby-walker	J. H. Thomas	571,583	Nov. 17	2043	486	77	1060
Back-band. Adjustable spine-protecting	J. P. Deadwyler	573,396	Dec. 15	2313	553	77	1753
Badge	O. T. Eads	569,039	Oct. 6	557	128	77	106
Badge	N. F. Startzel	570,515	Nov. 3	140	35	77	664
Bag: *See* Dressing-bag. Dust-bag. Mail-bag. Paper bag. Traveling-bag. Woven bag.							
Bag-filler	J. W. Davidson	571,513	Nov. 17	1926	459	77	1039
Bag-frame catch	A. Goertz	571,159	Nov. 10	1332	310	77	914
Bag-holder	H. A. Skreberg	570,343	Oct. 27	2906	690	77	587
Bag-holder and scale. Combined	A. P. O'Brien	570,561	Nov. 3	241	60	77	682
Bag-holding mechanism	H. H. Cummings	574,137	Dec. 29	3702	{882 883}	77	2043
Bail and cover. Kettle	C. Peterson	572,821	Dec. 8	1292	311	77	1543
Bail or fork. Basket	H. M. Weaver	570,438	Oct. 27	3090	{734 735}	77	622
Bait-guard	W. R. Dales	573,572	Dec. 22	2657	631	77	1835
Bake-pan	G. Lagelouze	573,986	Dec. 29	3429	822	77	1993
Bake-pan	R. C. Snyder	573,045	Dec. 15	1677	403	77	1637

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bakers' or confectioners' use. Depositing apparatus for	R. Megson	573,432	Dec. 15	2409	574	77	1770
Bale-elevator	T. F. Meath	569,976	Oct. 20	2206	524	77	443
Bale-tie	J. W. Griswold	573,872	Dec. 29	3214	764	77	1954
Bale-tie machine	S. Kimball	570,555	Nov. 3	220	57, 58	77	678
Baling-press	E. H. Butts	570,865	Nov. 3	809	185	77	789
Baling-press	J. R. Griffith	568,846	Oct. 6	220	52	77	43
Baling-press	A. L. Kohler	570,027	Oct. 27	2293	545	77	473
Baling-press	B. F. Martindale	573,023	Dec. 15	1640	394	77	1629
Ball: *See* Foot-ball.							
Ball grinding-mill	A. Herzfeld	569,828	Oct. 20	1955	466	77	396
Band-cutter and feeder	D. Harper	571,161	Nov. 10	1334	311	77	915
Band-cutter and feeder	W. Morley	573,898	Dec. 29	3254	775	77	1962
Band-cutter and feeder	H. D. Myers	571,008	Nov. 10	1059	247	77	864
Band-cutter and feeder	W. H. Sprinkle	570,514	Nov. 3	138	34, 35	77	664
Band-cutter and feeder attachment	J. A. Lovette	573,019	Dec. 15	1634	393	77	1628
Bandage	C. A. Provoost	571,172	Nov. 10	1348	314	77	917
Bank	C. F. Disch	569,960	Oct. 20	2009	479	77	406
Bank. Coin	S. E. Swenson	574,180	Dec. 29	3804	908	77	2060
Bank. Savings	H. H. Norrington	569,796	Oct. 20	1912	454	77	388
Barber's appliance	R. B. Slee	570,107	Oct. 27	2440	580	77	501
Barber's case	G. Carlson and P. Lawson	569,274	Oct. 13	959	230	77	199
Barber's turn	O. L. Danforth	569,178	Oct. 13	789	185	77	167
Barge for transporting and launching mattresses for jetty-work	W. T. Gaynor	572,001	Nov. 24	2791	658	77	1220
Barometer	W. T. Flournoy	572,536	Dec. 8	782	187	77	1442
Barrel	J. L. Allen	572,694	Dec. 8	942	239	77	1477
Barrel	F. J. Slaker	570,883	Nov. 3	849	198	77	799
Barrel and truck. Combination waste	J. R. Russell	569,520	Oct. 13	1385	326	77	277
Barrel-cover	H. Springsted	571,544	Nov. 17	1982	471	77	1049
Barrel-filling machine	J. E. J. Goodlett	570,851	Nov. 3	787	{180 181}	77	785
Barrel-head machine	A. Hitzert	568,978	Oct. 6	445	{99 100}	77	86
Barrel-hooping machine	H. U. Palmer	573,159	Dec. 15	1882	453	77	1675
Barrel-machine	J. Polke	573,915	Dec. 29	3282	785	77	1968
Barrel. Metallic	I. Van Tilburg	573,062	Dec. 15	1713	410	77	1644
Barrel-washer	C. A. Johnson	572,116	Dec. 1	37	9, 10	77	1284
Barrel-washer	G. Schock	570,610	Nov. 3	325	80	77	699
Bars and ingots. Power-driven tool for dressing	F. J. Wooster	570,079	Oct. 27	2295	567	77	492
Basin clamp. Adjustable wash	G. M. Willment	569,268	Oct. 13	949	227	77	197
Basket	F. Parthier	571,452	Nov. 17	1810	432	77	1018
Basket	A. Schmidt	571,605	Nov. 17	2081	500	77	1066
Basket or can. Fruit-picker's	A. M. Denig	570,385	Oct. 27	2976	705	77	600
Basket-wiring mechanism	G. B. Thayer and E. D. Wheeler	573,311	Dec. 15	2178	520	77	1728
Bath cabinet. Thermal	C. S. Jones and K. McCreery	569,417	Oct. 13	1209	284	77	245
Bath house. Portable steam and shower	H. E. Wyckoff	569,808	Oct. 20	1924	457	77	390
Bath-tub. Invalid's	M. O. Ruffner	573,625	Dec. 22	2772	657	77	1859
Bathing-waters. Device for feeding oxygen or carbonic acid in circulating	G. A. Schmitz	573,927	Dec. 29	3305	790	77	1972
Batter-mixer, &c	S. H. Coombs	573,208	Dec. 15	1973	475	77	1691
Batteries. Automatic circuit-closing device for galvanic	J. D. Holmes and W. L. Heath	572,754	Dec. 8	1182	284	77	1522
Battery: *See* Electric battery. Galvanic battery. Gun-battery. Primary battery. Storage battery.							
Battery-cell	C. Willms	572,285	Dec. 1	349	83	77	1346
Battery cell or box. Electric	J. M. Moffat	572,438	Dec. 1	622	148	77	1396
Battery-grid and machine for producing same	A. F. Madden	572,363	Dec. 1	489	{114 115}	77	1371
Battery plates. Machine for making grids for secondary	A. F. Madden	570,224	Oct. 27	2649	{628 629}	77	541
Battery plates. Manufacturing secondary	C. H. Welse	570,619	Nov. 3	342	85	77	702
Bearing	A. Wilson	569,733	Oct. 20	1794	426	77	367
Bearing and hub. Vehicle axle	A. E. Dain	573,394	Dec. 15	2311	552	77	1753
Bearing. Antifriction	C. W. Robinson	570,504	Nov. 3	124	30	77	661
Bearing. Axle	A. J. Theiring	570,111	Oct. 27	2449	582	77	502
Bearing. Ball	E. Flannigain	572,880	Dec. 8	1379	334	77	1561
Bearing. Ball	E. J. Kelly	573,982	Dec. 29	3424	820	77	1992
Bearing. Ball	H. A. Stephens	572,385	Dec. 1	547	129	77	1382
Bearing for shafting. Roller	L. O. Gilliland	568,898	Oct. 6	310	71	77	60
Bearing. Roller	B. S. Lawson	572,681	Dec. 8	1041	252	77	1497
Bearing. Shaft	M. Jefferson, W. W. L. Lishman, and J. Clapham.	574,246	Dec. 29	3947	938	77	2057
Bearing. Shaft or axle	F. A. Mueller	570,040	Oct. 27	2315	549	77	476
Bearings. Ball-retainer for antifriction wheel	E. K. Righter	570,146	Oct. 27	2310	595	77	514
Bed and bath for invalids. Combination	A. A. Stoll	568,811	Oct. 6	169	40	77	34
Bed and couch. Folding	E. E. Peck	570,048	Oct. 27	2328	552	77	479
Bed and sofa. Combination	J. A. Peterson and G. Soderstrom	570,563	Nov. 3	245	61	77	683
Bed-bottom or cot	J. Wood	571,821	Nov. 24	2466	586	77	1159
Bed-bottom. Spring	F. D. Colvin	570,425	Oct. 27	3059	{724 725}	77	616
Bed-bottom. Spring	T. M. Cottle	568,745	Oct. 6	53	13	77	13
Bed-bottom. Spring	J. G. Smith	572,577	Dec. 8	859	{206 207}	77	1461
Bed. Folding	C. H. Bucher	571,643	Nov. 17	2143	514	77	1078
Bed. Folding	J. Hotsapillar	569,202	Oct. 13	892	196	77	175
Bed. Folding	H. G. Krasky	571,529	Nov. 17	1950	466	77	1044
Bed. Folding	J. H. Morrison	573,027	Dec. 15	1646	{395 396}	77	1631
Bed. Folding	R. J. Stuart	570,348	Oct. 27	2913	691	77	589
Bed-pan	C. L. Hutton	569,922	Oct. 20	2111	502	77	425

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bed-plate. Elastic	P. Knoch	571,618	Nov. 17	2101	504	77	1070
Bed slat-hanger	O. S. Foster and F. E. Wilcox	572,600	Dec. 8	905	219	77	1469
Bed. Sofa	J. A. Perry	569,679	Oct. 20	1653	399	77	349
Bed. Sofa	H. M. Stokes	572,147	Dec. 1	92	20	77	1295
Bed. Spring	G. Bacon	569,994	Oct. 27	2243	532	77	462
Bed. Spring	W. R. Boisvert	570,341	Oct. 27	2904	689	77	587
Bed-spring frame	R. S. Sample	569,114	Oct. 6	675	158	77	129
Bed-spring tightener	J. J. A. Miller	568,986	Oct. 6	474	107	77	91
Beds. Device for securing bedclothes on	W. F. Nagel	570,788	Nov. 3	670	154	77	761
Bedstead	M. Dumas	571,768	Nov. 24	2378	568	77	1142
Bedstead	Z. T. Jones	573,390	Dec. 15	2303	550, 551	77	1750
Bedstead. Extension	A. Butzer	569,548	Oct. 13	1423	336	77	285
Bedstead. Folding	J. R. Delhm	572,529	Dec. 8	771	183, 184	77	1440
Bedstead. Invalid's	A. M. Douglas	572,412	Dec. 1	586	139	77	1390
Bedstead-joint	D. D. Curtis	572,253	Dec. 1	279	67	77	1332
Bedstead. Metal	D. Frank	570,369	Oct. 27	2952	700	77	596
Bedsteads. Rail grip-joint for iron	G. Brand	573,909	Dec. 29	3270	780, 781	77	1966
Bed table attachment	J. A. Norton	573,172	Dec. 15	1906	458	77	1680
Beer-drawing apparatus	J. D. De Gear	570,086	Oct. 27	2408	570	77	495
Beer governor. Steam	H. and B. Dräger	572,248	Dec. 1	269	65	77	1330
Beer, &c. Receptacle for preserving, transporting, and selling	P. Flucks and G. P. McDonnell	572,881	Dec. 8	1380	334, 335	77	1561
Bell. Bicycle	A. B. Hunn	572,932	Dec. 8	1481	355	77	1582
Bell. Bicycle	D. Kohn	573,668	Dec. 22	2862	675	77	1874
Bell. Bicycle	H. Lucas	571,777	Nov. 24	2392	572	77	1145
Bell. Bicycle	J. R. Moore	570,944	Nov. 10	954	221	77	845
Bell. Bicycle	E. D. Rockwell	572,450	Dec. 1	644	151	77	1401
Bell clamp. Bicycle	F. A. Scranton	572,379	Dec. 1	538	127	77	1380
Bell clamp. Bicycle	G. W. Eddy	570,202	Oct. 27	2609	620	77	533
Bell. Door	R. Segerdahl	570,508	Nov. 3	130	32	77	662
Bell. Electric alarm	C. E. Scribner	572,220	Dec. 1	221	54	77	1320
Bell. Electric signal	E. Olsen	571,013	Nov. 10	1070	250	77	866
Bell. Signal	J. E. Treat	568,816	Oct. 6	175	42	77	35
Bell. Tubular	H. B. Ireys	573,515	Dec. 22	2560	608	77	1816
Belt	T. Robins, Jr.	571,604	Nov. 17	2079	499	77	1066
Belt apparatus. Conveyer	B. F. Barnes	574,234	Dec. 29	3928	934	77	2083
Belt-fastener	F. R. Hamilton and C. H. Moore, Jr	568,848	Oct. 6	227	53	77	45
Belt-fastener	J. W. Madden	571,488	Nov. 17	1877	448	77	1030
Belt. Foot	L. Bendit	572,098	Dec. 1	7	2	77	1280
Belt-gearing. Device for throwing out of gear	N. Johnson and H. L. Hunt	571,923	Nov. 24	2664	631	77	1195
Belt-guide	J. Longden	572,812	Dec. 8	1280	308	77	1541
Belt polishing-frame	J. W. Abrahams	570,655	Nov. 3	448	105, 106	77	722
Bending-machine	F. H. Bolte	571,941	Nov. 24	2692	637	77	1202
Bicycle	L. De Rome	571,302	Nov. 10	1567	372	77	960
Bicycle	J. Gillespie	573,779	Dec. 22	3032	718	77	1907
Bicycle	J. Goettel	569,636	Oct. 20	1609	379	77	335
Bicycle	W. A. Lorenz	572,208	Dec. 1	195	48, 49	77	1316
Bicycle	E. Y. MacKenzie	570,320	Oct. 27	2873	682	77	581
Bicycle	T. S. Miller	570,179	Oct. 27	2572	611	77	526
Bicycle	J. J. Naregang	570,327	Oct. 27	2882	684	77	582
Bicycle	A. Pettinati	571,051	Nov. 10	1127	263, 264	77	877
Bicycle	J. Ran	571,793	Nov. 24	2421	577	77	1151
Bicycle	J. D. Riggs	571,397	Nov. 17	1720	409	77	1002
Bicycle	G. H. Sears	570,271	Oct. 27	2742	652, 653	77	558
Bicycle	W. W. Shaw	571,963	Nov. 24	2764	652	77	1215
Bicycle	H. J. Thompson	569,394	Oct. 13	1167	277	77	239
Bicycle	A. Warren	571,029	Nov. 10	1093	255	77	870
Bicycle	V. Willits	573,316	Dec. 15	2184	521	77	1729
Bicycle	B. Arnold	569,158	Oct. 13	763	177	77	161
Bicycle-alarm	C. Swearingen and D. S. Lemen	573,555	Dec. 22	2630	625	77	1829
Bicycle-alarm	J. P. Daniels	571,083	Nov. 10	1193	280	77	889
Bicycle alarm-lock	J. G. McNaughton	573,282	Dec. 15	2112	507	77	1717
Bicycle attachment	E. B. Pike	570,681	Nov. 3	491	115	77	730
Bicycle attachment	D. Chamberlain	569,813	Oct. 20	1933	459	77	392
Bicycle baggage-support	E. C. Howe	570,428	Oct. 27	3064	726	77	617
Bicycle ball-bearing	M. L. Wilcox	570,860	Nov. 3	801	184	77	787
Bicycle ball-bearing	E. A. Green	572,003	Nov. 24	2795	659	77	1220
Bicycle-bearing	E. L. Shultz	571,289	Nov. 10	1544	366	77	954
Bicycle bearing-bracket	F. A. Gladwin	571,561	Nov. 17	2008	478	77	1053
Bicycle-brake	C. W. Terpening	572,137	Dec. 1	80	17	77	1293
Bicycle-brake	A. A. Bennitt	574,235	Dec. 29	3929	935	77	2083
Bicycle-canopy	J. T. B. Van Vechten	572,843	Dec. 8	1326	319	77	1550
Bicycle-canopy	J. Kaufman	570,285	Oct. 27	2765	658	77	562
Bicycle-canopy. Folding	H. D. Cahill	573,502	Dec. 22	2543	602	77	1813
Bicycle-carrier	J. C. Pratt	573,102	Dec. 15	1785	429, 430	77	1657
Bicycle. Chainless change-gear	C. E. Brennan	569,705	Oct. 20	1752	416	77	359
Bicycle. Combined single and tandem	J. Silberman	573,168	Dec. 15	1896	456, 457	77	1678
Bicycle costume	E. Aze	573,634	Dec. 22	2792	660	77	1863
Bicycle crank-hanger bearing	R. M. Keating	568,767	Oct. 6	97	23	77	21
Bicycle crank-shaft and bearing	W. W. Whitcomb	572,038	Nov. 24	2851	671	77	1231
Bicycle driving-gear	J. B. Sinclair, Jr.	572,729	Dec. 8	1139	275	77	1514
Bicycle driving mechanism	M. B. Ryan	569,354	Oct. 13	1105	262	77	228
Bicycle. Folding	A. Sidwell	571,406	Nov. 17	1732	413	77	1004
Bicycle-frame	C. M. Brooks	570,536	Nov. 3	180	45	77	671
Bicycle-frame attachment	W. A. Penfield	573,695	Dec. 22	2899	685	77	1882
Bicycle-gear	J. Clough and R. Illingworth	569,706	Oct. 20	1754	416, 417	77	359
Bicycle-gear. Device for changing	J. Redding	572,828	Dec. 8	1306	313	77	1546
Bicycle-gearing	A. Monkiewicz	573,230	Dec. 15	2016	483, 484	77	1699
Bicycle-gearing	A. F. Price	570,052	Oct. 27	2333	553	77	480
Bicycle-handle	J. C. Spiegel	572,226	Dec. 1	238	57	77	1324
Bicycle-handle	C. O. Spurr	569,436	Oct. 13	1237	290	77	250
Bicycle-handle and bell-ringer	H. U. Prindle and E. T. Lampton	571,394	Nov. 17	1715	408	77	1001
Bicycle handle-bar	T. H. McQuown	570,560	Nov. 3	239	60	77	682
Bicycle handle-bar	F. C. Rockwell	570,187	Oct. 27	2583	613	77	528
Bicycle handle-bar. Adjustable	B. Porter	569,349	Oct. 13	1098	260	77	226
Bicycle handle-bar. Whistling	A. H. Koehler	573,666	Dec. 22	2856	673	77	1873
Bicycle handle-bars. Removable cover for	E. M. and R. F. Spamer	571,025	Nov. 10	1087	254	77	869
Bicycle-holder	L. K. Miller	574,253	Dec. 29	3954	940	77	2088
Bicycle-holder	A. E. Putnam	572,770	Dec. 8	1207	292	77	1526
Bicycle-holder	C. J. Ryder	573,038	Dec. 15	1667	400	77	1635
Bicycle-hub	W. R. Fox	572,976	Dec. 15	1570	376	77	1615
Bicycle-lamp bracket	C. F. Walker	570,240	Oct. 27	2685	638	77	547
Bicycle-leg	H. Otto	571,979	Nov. 24	2757	650	77	1214
Bicycle-lock	L. H. Clark and E. A. Munger	568,743	Oct. 6	50	12	77	13
Bicycle-lock	J. W. Hellwig	572,798	Dec. 8	1256	303, 304	77	1536
Bicycle-lock	J. E. Turton	570,521	Nov. 3	151	37	77	666
Bicycle-lock	C. B. Woodbury	569,594	Oct. 13	1529	359	77	304
Bicycle mud-guard	C. M. Hitchcock	574,032	Dec. 29	3507	838	77	2007
Bicycle or other vehicle coupling	E. S. Keeler	573,469	Dec. 22	2488	590	77	1803
Bicycle package-carrier	G. J. Hise	571,132	Nov. 10	1295	301	77	907
Bicycle-pedal clip	J. E. Stannard	570,778	Nov. 3	656	150	77	759
Bicycle-post fastening	F. I. Johnson	570,309	Oct. 27	2854	677	77	578
Bicycle power mechanism	A. Brauer	571,469	Nov. 17	1841	439	77	1024
Bicycle-propelling mechanism	T. J. Armstrong	572,398	Dec. 1	566	134	77	1386
Bicycle-rack	H. Westphal	573,171	Dec. 15	1903	458	77	1679
Bicycle-rest	L. Smith	571,700	Nov. 17	2236	538	77	1096
Bicycle-rest	S. E. Spencer	572,664	Dec. 8	1010	244, 245	77	1491
Bicycle-saddle	A. C. Drury and G. E. Sims	569,326	Oct. 13	1057	251	77	218
Bicycle-saddle	A. L. Garford	568,973	Oct. 6	439	98	77	85
Bicycle-saddle	A. L. Garford	568,974	Oct. 6	441	98	77	85
Bicycle-saddle	A. L. Garford	571,113	Nov. 10	1258	292	77	900
Bicycle-saddle	M. F. Henderson	572,163	Dec. 1	123	29	77	1301
Bicycle-saddle	M. F. Henderson	572,164	Dec. 1	124	29	77	1301
Bicycle-saddle	C. F. Lefever	571,379	Nov. 17	1695	404	77	996
Bicycle-saddle	J. A. Maloney	572,432	Dec. 1	615	146	77	1395
Bicycle-saddle	S. L. Myers	569,796	Oct. 20	1908	453	77	387
Bicycle-saddle	C. E. Page	571,388	Nov. 17	1708	406	77	999
Bicycle-saddle	A. E. Peck	572,062	Nov. 24	2698	684	77	1240
Bicycle-saddle	E. Strakosch	569,981	Oct. 20	2214	526	77	444
Bicycle-saddles. Means for attaching	B. S. Seaman	568,802	Oct. 6	154	36	77	31
Bicycle-seat	R. E. Helmore	568,977	Oct. 6	444	99	77	86
Bicycle-seat	F. B. Ray	574,342	Dec. 29	4105	975	77	2117
Bicycle snow-shoe attachment	E. A. Peterson	573,034	Dec. 15	1660	399	77	1634
Bicycle speed-gear	J. P. Steffens	571,890	Nov. 24	2595	616	77	1182
Bicycle spoke-nipples. Machine for finishing	C. E. Roberts	572,376	Dec. 1	532	124, 125, 126	77	1379
Bicycle-stand	F. Giacinto	569,493	Oct. 13	1327	312	77	266
Bicycle-stand. Portable	E. L. Peisar	573,482	Dec. 22	2507	594	77	1806
Bicycle-suit	A. C. Nash	570,676	Nov. 3	480	113	77	728
Bicycle-support	A. J. Branham	570,659	Nov. 3	453	107	77	723
Bicycle-support	Z. J. Dilley and H. J. Hayes	570,464	Nov. 3	39	9	77	646
Bicycle-support	E. Farnsworth	571,433	Nov. 17	1781	425	77	1013
Bicycle-support	H. G. Kennedy	568,855	Oct. 6	246	57	77	48
Bicycle-support	J. S. Lynch	569,289	Oct. 13	935	236	77	203
Bicycle-support	A. G. Olson	574,109	Dec. 29	3645	871	77	2033
Bicycle-support	D. C. Wallace	574,292	Dec. 29	4021	955	77	2101
Bicycle-supporting stand	J. L. Benton	573,811	Dec. 22	3068	734	77	1917
Bicycle toe-clip	E. A. Thiem	574,286	Dec. 29	4015	953	77	2100
Bicycle tool-box	L. E. Hudson	572,993	Dec. 15	1593	382	77	1690
Bicycle-trainer	F. B. Ray	574,167	Dec. 29	3762	898	77	2055
Bicycle tubing. Machine for cutting	W. R. Fox	570,850	Nov. 3	786	180	77	725
Bicycle umbrella attachment	M. A. Hicks	572,296	Dec. 1	370	88	77	1350
Bicycle-wheel	R. C. Fay	570,250	Oct. 27	2698	642	77	549
Bicycle-wheel	G. Hayes	572,892	Dec. 8	1393	337	77	1564
Bicycle-wheel	E. Neild	574,105	Dec. 29	3639	869	77	2032
Bicycles. Adjustable support or rest for	G. Woolley	573,378	Dec. 15	2284	544	77	1748
Bicycles. Ball-bearing for	C. T. Brown	569,005	Oct. 6	502	113	77	96
Bicycles, &c. Crank-shaft and bearing for	R. M. Keating	568,768	Oct. 6	98	23	77	21
Bicycles, &c. Pedal-crank for	W. J. Valentine	573,055	Dec. 15	1704	408	77	1642
Bicycles. Sliding saddle-support for	O. Peterson	572,273	Dec. 1	321	77	77	1340
Bicycles. Wall attachment for supporting	Z. J. Dilley and H. J. Hayes	570,465	Nov. 3	41	10	77	646
Billiard-cue	V. Ajello	573,845	Dec. 29	3153	752	77	1945
Billiard-cue tip	P. A. Cuenot	570,006	Oct. 27	2263	538	77	466
Billiard-table	A. C. Ives	572,545	Dec. 8	797	191	77	1445
Billiard-table cushion	W. J. Rodd	569,519	Oct. 13	1383	326	77	277
Billiard-table. Pocket	P. M. Cunningham	573,262	Dec. 15	2064	494	77	1708
Billiard-tables. Means for lighting	F. Gallsworthy	574,027	Dec. 29	3499	836	77	2006
Billet-loop	C. Rozell	571,689	Nov. 17	2212	533	77	1091
Binder	J. H. Brunner	573,201	Dec. 15	1964	473	77	1690
Binder	W. F. Fowler	571,998	Nov. 24	2788	657	77	1219
Binder	R. Hildebrandt	570,399	Oct. 27	3014	714	77	607
Binder for index-files. Adjustable	F. W. Briggs	568,734	Oct. 6	30	7	77	8
Binder. Temporary	L. H. Clark	570,541	Nov. 3	192	51	77	673

Alphabetical list of inventions, October to December, inclusive—Continued.

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Binding-post for electric bells, &c	F. W. Manger and O. H. Huebel	571,977	Nov. 24	2755	650	77	1213
Bird-cage	C. L. Johnson	571,165	Nov. 10	1340	312, 313	77	916
Bisulfite solutions. Apparatus for making	J. L. Coker, Jr	572,193	Dec. 1	168	40, 41	77	1310
Bit: *See* Bridle-bit.							
Bit-centering device	S. W. Wilcox	568,932	Oct. 6	361	83	77	69
Bit-gage	E. Van Cauwenberg	569,896	Oct. 20	2066	491	77	417
Bit-stock	J. W. Gray	571,267	Nov. 10	1509	357	77	947
Bitt. Riding or mooring	J. R. Andrews	572,397	Dec. 1	566	134	77	1385
Blackboard	C. E. Gregory	572,004	Nov. 24	2796	659	77	1221
Blackboard-rubber	C. E. Gregory	570,797	Nov. 3	688	157	77	765
Blackboard-troughs. Chalk-screen for	G. A. White	570,692	Nov. 3	514	120	77	734
Blackleading-machine	W. H. Nicholas and R. Stephenson	571,199	Nov. 10	1390	325	77	925
Blank furnace and burner	H. E. Auman	573,126	Dec. 15	1828	441	77	1666
Bleaching and refining. Electrolytic process for	B. S. and L. L. Summers	569,680	Oct. 20	1685	399	77	349
Bleaching apparatus	H. G. McKerrow	570,675	Nov. 3	478	112	77	727
Blind-holder	J. W. Woodward	569,479	Oct. 13	1299	306	77	262
Blind. Venetian	C. Cederberg	572,927	Dec. 8	1471	354	77	1580
Blind. Window	W. E. Andrew	572,045	Nov. 24	2864	673	77	1234
Block: *See* Chock-block. Toy building-block. Partition-block.							
Block-signal	B. B. Morgan	572,267	Dec. 1	306	73, 74	77	1338
Block-signal	L. C. Smith	569,246	Oct. 13	916	219, 220	77	191
Block-signal system	J. E. Donbavand	569,551	Oct. 13	1427	337, 338, 339	77	286
Block-signal system. Electropneumatic	A. H. Thorp	573,932	Dec. 29	3314	791, 792	77	1973
Blotter. Rotary	W. H. Kelly	571,862	Nov. 24	2544	602	77	1173
Blower	S. Barrow	573,196	Dec. 15	1954	470	77	1688
Blower attachment. Stack	N. H. Smith	569,804	Oct. 20	1919	455	77	389
Blower, exhauster, or pump. Rotary	A. W. Kurz	571,770	Nov. 24	2381	569	77	1142
Blower. Rotary	S. B. Minnich	573,609	Dec. 22	2723	647	77	1849
Blower. Steam	H. E. Parson	573,480	Dec. 22	2505	594	77	1806
Blowing apparatus. Automatic	T. P. Burke	574,188	Dec. 29	3820	912	77	2063
Blowpipe	A. D. Barrett	570,656	Nov. 3	450	106	77	723
Blowpipe apparatus	M. D. Brown and D. J. Griffin	574,237	Dec. 29	3932	935	77	2084
Board: *See* Drawing-board. Pressing or ironing board. Game-board.							
Boat: *See* Steamboat.							
Boat	F. De Borggrave	574,063	Dec. 29	3596	859	77	2025
Bobbin-holder and thread-catcher	T. J. Murdock. (Reissue)	11,574	Nov. 24	3017	706	77	1260
Body-loop and spring-coupling. Combined	C. A. Behlen	572,097	Dec. 1	6	2	77	1280
Bog-cutter	J. B. Cannon	569,170	Oct. 13	779	182	77	164
Boiler: *See* Agricultural boiler. Sectional boiler. Heating-boiler. Steam-boiler. Locomotive-boiler. Water-tube boiler. Range-boiler.							
Boiler	L. M. Barlow	573,195	Dec. 15	1954	470	77	1688
Boiler	V. Karavodin	569,287	Oct. 13	980	235	77	202
Boiler	C. Kellogg	571,595	Nov. 17	2061	493, 494	77	1063
Boiler	N. L. Warren	569,477	Oct. 13	1296	305	77	261
Boiler	G. P. Washburn	571,713	Nov. 17	2259	542	77	1100
Boiler and boiler-furnace	W. Brand	569,906	Oct. 27	2244	533	77	463
Boiler-cleaner	A. M. Lawson	573,226	Dec. 15	2006	481	77	1698
Boiler-cleaners. Floating skimmer for	J. J. Sweeney	569,070	Oct. 6	609	138	77	117
Boiler fire-box. Steam	J. Smith	572,077	Nov. 24	2950	694	77	1249
Boiler-furnace	E. J. and A. B. Duff	573,265	Dec. 15	2071	496	77	1709
Boiler-furnace	D. D. Flemming	572,417	Dec. 1	591	140, 141	77	1390
Boiler-furnace	S. S. Horner	570,995	Nov. 10	1035	242	77	860
Boiler-furnace	S. P. Hutchinson	570,998	Nov. 10	1039	243	77	860
Boiler furnace and flue. Steam	J. Nodder	574,107	Dec. 29	3641	870	77	2033
Boiler furnace. Steam	H. H. Everhard	568,752	Oct. 6	72	16	77	17
Boiler furnace. Steam	E. J. Wood	574,051	Dec. 29	3544	846	77	2015
Boiler furnace. Upright	E. B. Parkhurst	573,912	Dec. 29	3274	781, 782	77	1967
Boiler-lug	T. C. Best	569,164	Oct. 13	771	179	77	163
Boiler or other furnace	E. W. Jones	569,207	Oct. 13	841	198, 199	77	176
Boiler-patch	C. J. Phillips	571,096	Nov. 10	1219	285	77	894
Boiler-plate-milling machine	C. E. Hoppes	574,063	Dec. 29	3565	851	77	2019
Boiler safety device. Steam	G. J. N. Carpentier	569,811	Oct. 20	1931	459	77	391
Boiler-scraper	J. I. Roberts and J. B. McCormick	569,060	Oct. 6	592	135	77	114
Boiler-tube cleaner. Steam	J. H. Voorhees	572,037	Nov. 24	2848	670, 671	77	1231
Boiler-tube expander	J. C. Morrison	569,651	Oct. 20	1636	386	77	340
Boiler tube or flue	J. R. De Remer	573,646	Dec. 22	2819	666	77	1867
Boiler-tubes. Device for removing scale from	F. G. Bird	573,853	Dec. 29	3165	754	77	1947
Boilers. Device for feeding anti-incrustation compounds to	W. A. West	569,440	Oct. 13	1241	291	77	251
Boilers. Gas producer and burner for steam	J. Murphy	573,899	Dec. 29	3256	776	77	1902
Boilers. Means for feeding and controlling supply of water to	A. E. Johnson	572,171	Dec. 1	136	32	77	1303
Boilers. Perforated door for steam	J. Hartmann	569,872	Oct. 20	2023	483	77	409
Boilers. Safety water-column for steam	A. J. Wright	572,592	Dec. 8	886	215	77	1466
Boiling apparatus. Electric	F. W. Schindler-Jenny	573,042	Dec. 15	1673	402	77	1637

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bolt: *See* Expansion-bolt.							
Bolt-cutter	J. H. Osborne	569,661	Oct. 20	1649	389	77	342
Bolt-cutting machine	H. A. Ferguason	571,434	Nov. 17	1782	425	77	1013
Bolting-machine sleeves. Cleaner for	W. J. Lough	573,674	Dec. 22	2870	678	77	1876
Bolting-reels. Mounting and driving	J. Hutchison	573,412	Dec. 15	2338	559	77	1758
Bonus-determining device	J. H. Drobisch	573,076	Dec. 15	1739	416	77	1649
Book	W. Buckeath	573,202	Dec. 15	1965	473, 474	77	1690
Book-carrying device	J. L. Torney	570,520	Nov. 3	149	36	77	666
Book-handling device	H. Pfund	571,789	Nov. 24	2416	576	77	1150
Book-holder	M. E. Blood	573,072	Dec. 15	1730	415	77	1647
Book-holder	J. T. Whitmore	571,254	Nov. 10	1483	348	77	942
Book-holder. Revolving	C. L. Ballard	571,717	Nov. 17	2264	544	77	1101
Bookkeeper's posting-guide	E. H. Wintermute, Jr	569,478	Oct. 13	1298	305	77	261
Bookkeeping and registering cash. Machine for	L. Allen	570,620	Nov. 3	344	85, 86, 87	77	702
Book. Manifold cash-sales	J. H. Murphy	572,022	Nov. 24	2820	666	77	1225
Book. Manifold sales	W. D. Bates	570,365	Oct. 27	2930	698	77	593
Book-mark	R. S. Pickett	571,453	Nov. 17	1811	433	77	1019
Book-rest for school-desks, tables, &c	C. F. Haynes	573,089	Dec. 15	1766	424	77	1654
Boot	J. Dolliaon and S. Rimer	570,201	Oct. 27	2609	620	77	533
Boot-black's foot-rest	T. J. Pendergast	573,264	Dec. 15	2116	508	77	1717
Boot or shoe	E. G. Gallagher	572,867	Dec. 8	1388	336	77	1563
Boot or shoe	W. Owen	570,814	Nov. 3	714	162	77	770
Boot or shoe heel-cushion	C. P. Shaw	569,589	Oct. 13	1519	357	77	302
Boot or shoe nailing machine	J. A. Cavalli	572,692	Dec. 8	1061	258, 259, 260	77	1500
Boot or shoe sole grooving machine	G. Bryant	568,892	Oct. 6	303	69	77	58
Boot or shoe tree	C. F. Clark	569,857	Oct. 20	2004	478	77	405
Boots or shoes. Machine for attaching uppers to soles of	J. E. Proctor	570,768	Nov. 3	641	147	77	755
Booth	A. F. Hunt, Jr., and G. L. Walker	570,403	Oct. 27	3020	715, 716	77	608
Boring and cutting tool	W. T. Smith	569,433	Oct. 13	1228	288	77	249
Boring and turning mill	G. W. Moreton	569,344	Oct. 13	1088	258, 259	77	224
Boring cylinders. Compound feed-motion for	W. S. Phelps	570,050	Oct. 27	2331	552	77	479
Boring earth, minerals, &c., for prospecting purposes. Apparatus for	F. M. McLarty	569,121	Oct. 6	606	160, 161	77	131
Boring-machine	E. E. Anthony	569,597	Oct. 20	1538	361	77	321
Boring-machine	W. W. Black	570,197	Oct. 27	2601	618	77	531
Boring-machine	J. C. and E. J. Bullock	573,857	Dec. 29	3173	756, 757	77	1949
Boah-plate	J. P. Witherow	572,143	Dec. 1	87	19	77	1294
Bottle	S. Alexander	569,988	Oct. 27	2229	529	77	466
Bottle	C. P. Behrens	571,505	Nov. 17	1914	457	77	1037
Bottle	R. G. Bidwell	571,035	Nov. 10	1108	259	77	873
Bottle	A. P. Bliven	573,200	Dec. 15	1963	473	77	1690
Bottle	D. O. Brunner and J. L. Shough	571,826	Nov. 24	2478	587	77	1161
Bottle	F. H. Bultman	573,760	Dec. 22	3005	712	77	1902
Bottle	M. Carr	569,614	Oct. 20	1564	367	77	326
Bottle	A. L. Clark	569,615	Oct. 20	1565	367	77	327
Bottle	S. Costello	571,430	Nov. 17	1777	424	77	1012
Bottle	B. R. Dillon	571,515	Nov. 17	1928	460	77	1039
Bottle	D. Edwards	572,477	Dec. 1	678	162	77	1408
Bottle	J. R. Lindsey	572,058	Nov. 24	2892	683	77	1239
Bottle	C. P. Lundquiste	569,217	Oct. 13	864	203	77	180
Bottle	M. J. Nolan	570,607	Nov. 3	320	79	77	698
Bottle	J. Paulus	572,170	Dec. 1	147	36	77	1306
Bottle	S. S. Peckinpaugh	568,875	Oct. 6	279	64	77	54
Bottle	M. Rosenstock	573,484	Dec. 22	2510	595	77	1807
Bottle	M. and L. W. Tebbetts	572,387	Dec. 1	551	130	77	1382
Bottle	R. E. Thurman	573,495	Dec. 22	2530	599	77	1810
Bottle	A. Ullman	568,818	Oct. 6	178	42	77	36
Bottle	J. V. Van Name	573,557	Dec. 22	2633	626	77	1830
Bottle and stopper	L. J. A. Fernandes	573,773	Dec. 22	3024	717	77	1906
Bottle. Antirefilling	T. Folks	573,775	Dec. 22	302	717	77	1906
Bottle. Antirefilling	W. A. Smith	571,204	Nov. 10	1399	327	77	927
Bottle cap and brush	C. M. Higgins	571,367	Nov. 17	1676	397	77	993
Bottle-closing device	J. Macek	573,094	Dec. 15	1773	426	77	1655
Bottle-closure	W. P. Mayes	573,518	Dec. 22	2564	609	77	1817
Bottle-closure	W. Scheerer	570,342	Oct. 27	2906	689	77	587
Bottle-collar	M. K. Hamilton	571,068	Nov. 10	1203	282	77	890
Bottle. Dose-measuring	A. A. Law	570,759	Nov. 3	628	144	77	753
Bottle-filler guard	J. E. Bryan	572,327	Dec. 1	430	101	77	1361
Bottle filling and corking apparatus	J. C. Pennington	573,792	Dec. 22	3052	723	77	1911
Bottle-filling apparatus	H. Blumberg and L. Jacobson	571,104	Nov. 10	1242	289	77	897
Bottle labeling machine	P. Kohl and H. Paulus	573,667	Dec. 22	2857	674, 675	77	1874
Bottle. Mucilage	C. A. Biorn	573,129	Dec. 15	1837	443	77	1667
Bottle. Mucilage	H. M. Canan	572,524	Dec. 8	767	182	77	1439
Bottle. Mucilage	G. F. Hare	572,603	Dec. 8	908	220	77	1470
Bottle. Mucilage	J. S. L'Hommedieu	570,030	Oct 27	2299	546	77	474
Bottle. Mucilage	E. McChesney	573,994	Dec. 29	3445	824	77	1996
Bottle. Mucilage	C. H. Reed	568,922	Oct. 6	346	80	77	66
Bottle. Mucilage	C. W. Reeves	571,456	Nov. 17	1813	433	77	1019
Bottle. Mucilage	S. O. Trescott	572,079	Nov. 24	2053	695	77	1250
Bottle. Non-refillable	G. W. Bennett	574,298	Dec. 29	4028	956	77	2102
Bottle. Non-refillable	A. G. Canada	573,566	Dec. 22	2650	630	77	1833
Bottle. Non-refillable	F. L. Cook	574,193	Dec. 29	3841	916	77	2067
Bottle. Non-refillable	S. P. Hill and F. Van Winkle	572,302	Dec. 1	384	91	77	1352

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Bottle. Non-refillable	G. W. Johnson	572,012	Nov. 24	2806	662	77	1223
Bottle. Non-refillable	J. F. Kries	571,047	Nov. 10	1123	262	77	876
Bottle. Non-refillable	O. J. Moussette	571,234	Nov. 10	1453	341	77	936
Bottle. Non-refillable	J. F. Nalder	572,060	Nov. 24	2895	683	77	1239
Bottle. Non-refillable	F. P. Siviter	572,456	Dec. 1	652	154	77	1402
Bottle. Non-refillable	F. T. and J. P. Vanstrum	573,061	Dec. 15	1712	410	77	1644
Bottle. Non-refillable	A. R. Weber	570,524	Nov. 3	157	38	77	667
Bottle. Non-refillable	P. Wilson	569,778	Oct. 20	1879	446	77	382
Bottle. Non-refillable	J. S. Wood, Sr.	570,273	Oct. 27	2746	654	77	559
Bottle. Non-refillable	J. W. Woodruff	573,949	Dec. 29	3350	803	77	1980
Bottle. Non-refilling	J. T. Savage	572,126	Dec. 1	58	14	77	1289
Bottle. Non-refilling	S. Taylor	570,238	Oct. 27	2683	637	77	547
Bottle. Nursing	W. L. Roth	571,245	Nov. 10	1472	345	77	940
Bottle or jug	L. C. Webster	573,373	Dec. 15	2276	543	77	1747
Bottle-stopper	A. L. Bernardin	572,951	Dec. 15	1523	364	77	1606
Bottle-stopper	H. Friedman and H. M. Koelbel	573,212	Dec. 15	1960	477	77	1693
Bottle-stopper	C. K. Fuchs	573,589	Dec. 22	2686	638	77	1841
Bottle-stopper	J. C. Grout	572,006	Nov. 24	2799	660	77	1221
Bottle-stopper	G. A. Hoffman	572,704	Dec. 8	1087	264	77	1405
Bottle-stopper	G. Koehler	571,949	Nov. 24	2704	640	77	1205
Bottle-stopper	G. W. Mason	570,602	Nov. 3	314	77	77	697
Bottle-stopper	F. C. Rockwell	573,239	Dec. 15	2028	486	77	1701
Bottle-stopper	J. Schumacher	573,301	Dec. 15	2150	515, 516	77	1723
Bottle-stopper	J. Schumacher	573,360	Dec. 15	2259	539	77	1743
Bottle-stopper	F. B. Thatcher	574,013	Dec. 29	3476	830	77	2002
Bottle-stopper and bottle	C. Dorn and N. Reinstine	569,181	Oct. 13	796	186	77	168
Bottle stopper and fastener	C. K. Fuchs	573,588	Dec. 22	2685	638	77	1841
Bottle stopper attachment	A. J. Robinson	572,772	Dec. 8	1212	293	77	1528
Bottle-stopper. Lock	J. W. Jacobs	572,758	Dec. 8	1188	286	77	1523
Bottle valve-stopper	J. W. Simons	573,490	Dec. 22	2524	598	77	1809
Bottle-washer	J. L. Kihn and W. T. Reed	573,885	Dec. 29	3237	770	77	1959
Bottle-washer	J. F. Leeper	574,155	Dec. 29	3730	889	77	2048
Bottles. Attachment for preventing refilling of	A. D. Cole	571,967	Nov. 24	2733	646	77	1210
Bottles. Attachment for preventing refilling of	A. D. Cole	571,968	Nov. 24	2734	646	77	1210
Bottling apparatus	M. E. Donally	569,180	Oct. 13	793	186	77	167
Bottling apparatus. Beer	C. Meldrum	572,708	Dec. 8	1096	266	77	1506
Bouquet-holder	A. Nicolaus and W. J. Delmar	572,612	Dec. 8	926	224	77	1474
Bowling-alley	F. A. Pratt	572,073	Nov. 24	2946	693	77	1249
Box:							
See Axle-box. Bicycle tool-box. Bread-box. Cigar-box. Collapsible box. Electric wall-box. Fancy box. File-box. Folding box. Fruit-box. Hat-box. Journal-box. Junction-box. Knockdown box. Letter-box. Mail-box. Metallic or composite box. Miter-box. Music-box. Paper box. Signal-box. Stop-box. Stuffing-box. Toilet-box.							
Box	Z. A. Barrett	573,753	Dec. 22	2996	710	77	1900
Box	G. E. Clow	571,747	Nov. 24	2343	560	77	1135
Box	C. M. Green	573,782	Dec. 22	3034	719	77	1908
Box	M. Young	570,530	Nov. 3	172	45, 46	77	669
Box-corners. Apparatus for applying metal strips to	O. and M. Schubert	569,567	Oct. 13	1474	347	77	294
Box-corners. Metal strip for	O. and M. Schubert	569,568	Oct. 13	1478	348	77	294
Box-cover brace or support	C. R. Georg	569,193	Oct. 13	818	192	77	171
Box-fastener	C. W. Beehler	568,936	Oct. 6	368	84	77	71
Box for distributing pulverulent material	C. Oesterheld	573,032	Dec. 15	1655	398	77	1633
Box-lid holder	W. T. Marsh	573,156	Dec. 15	1878	432	77	1674
Box-nailing machine	S. D. Ford	572,418	Dec. 1	592	141	77	1391
Box-nailing machine	H. R. Kumler	574,365	Dec. 29	4137	982, 983	77	2122
Boxes, shelving, &c. Adjustable partition for	N. Knowles	568,910	Oct. 6	327	75	77	67
Boxing-machine	W. F. Hutchinson	569,123	Oct. 6	714	168	77	136
Brace:							
See Chair-brace. Post-brace.							
Bracket:							
See Bicycle-lamp bracket. Curtain-bracket. Curtain-pole bracket. Scaffold-bracket. Shelf-bracket. Shingling-bracket. Transmitter-bracket.							
Bracket	A. R. Kunz	573,985	Dec. 29	3428	821	77	1993
Bracket	F. D. Martin	573,891	Dec. 29	3244	772	77	1960
Braiding-machine	A. B. Diss	572,357	Dec. 1	477	112	77	1369
Braiding-machine	J. W. Hilton	573,411	Dec. 15	2336	556	77	1757
Braiding-machine	H. Janssen	573 598	Dec. 22	2707	642, 643	77	1846
Brake:							
See Air-brake. Automatic brake. Bicycle-brake. Car-brake. Car safety-brake. Electric brake. Fluid-pressure brake. Fluid-pressure automatic brake. Hand-brake. Power-brake. Shaft-brake. Vehicle-brake. Wagon-brake.							
Brake	J. F. Burgin	569,486	Oct. 13	1310	309	77	264
Brake	F. W. Kruse and C. Holstein	571,004	Nov. 10	1052	245	77	863
Brake	C. G. Polleys	569,124	Oct. 6	694	162	77	132
Brake	W. H. Sauvage	569,476	Oct. 13	1293	304	77	260
Brake-actuating device	E. S. Hall	572,255	Dec. 1	284	68	77	1333
Brake-beam	C. K. Pickles	569,666	Oct. 20	1655	391	77	344

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Brake-beam	C. K. Pickles	569,667	Oct. 20	1656	391	77	344
Brake-beam	H. B. Robischung	570,057	Oct. 27	2342	556	77	482
Brake-beam	C. J. Rosen, Jr	572,569	Dec. 8	846	203	77	1458
Brake-beam hanger	E. Marcotte	570,393	Oct. 27	2878	683	77	582
Brake-lever. Vehicle	C. Doering	571,854	Nov. 24	2530	599	77	1170
Brake mechanism	J. Shourek	571,697	Nov. 17	2230	536, 537, 648, 649	77	1095
Brake-rigging slack-adjuster	D. C. O'Kain	573,613	Dec. 22	2730		77	1850
Brake-shoe	E. W. Applegate	569,963	Oct. 20	2217	527	77	444
Brake-shoe	A. Brake	573,429	Dec. 15	2404	573	77	1770
Brake-shoe	A. A. Lindley	573,227	Dec. 15	2010	482	77	1699
Brake-shoe	J. McLachlan	573,593	Dec. 22	2572	610	77	1818
Brake-shoe	D. Prew	569,976	Oct. 20	2210	525	77	443
Brake-shoe	G. W. Stevens	568,809	Oct. 6	163	39	77	33
Brake-shoe	W. W. Whitcomb and F. F. Coggin	573,252	Dec. 15	2048	491	77	1706
Brake-shoe	J. L. Wicks	573,376	Dec. 15	2282	544	77	1748
Brake slack-adjuster	J. K. Leucke	568,777	Oct. 6	114	27	77	23
Branding and dehorning device	Q. Bruton	571,498	Nov. 17	1768	422	77	1010
Branding sheep or other animals. Appliance for	H. W. Potter	569,515	Oct. 13	1373	322	77	275
Branning-machine	C. R. Daellenbach and J. R. Phillips	573 450	Dec. 22	2454	582	77	1797
Brass. Machine for making scraped	E. G. Smith	574,226	Dec. 29	3909	929	77	2079
Bread box and slicer	C. Person	572,820	Dec. 8	1291	310	77	1543
Bread-making machine	G. Lewis and C. E. Pointon	571,774	Nov. 24	2387	570, 571	77	1144
Bread-raising apparatus	J. Berntsen	569,605	Oct. 20	1549	364	77	323
Breast-strap slide	H. D. Warner	573,559	Dec. 22	2637	626	77	1831
Brick. Composition for fire-	K. H. Dangler	572,969	Dec. 15	1558	.....	77	1613
Brick-kiln	C. E. Coates and L. Hancock	573,445	Dec. 22	2442	579, 580	77	1795
Brick-kiln	J. T. Cullens	572,474	Dec. 1	674	160, 161	77	1407
Brick-machine	J. Crabtree	571,750	Nov. 24	2348	561, 562	77	1136
Brick-machine	H. B. Whitehead	571,629	Nov. 17	2121	509, 510	77	1074
Brick-mold. Sectional	J. M. Ervin	573,455	Dec. 22	2465	585	77	1799
Brick or tile cutting machine	W. R. Cunningham	573,263	Dec. 15	2066	494, 495, 496	77	1708
Brick-press. Hydraulic	G. Langer	570,314	Oct. 27	2861	678, 679	77	579
Brick-pressing apparatus	R. T. Hughes and J. Gill	573,514	Dec. 22	2558	606, 607	77	1816
Bridge	B. L. Blair	568,830	Oct. 6	195	47	77	39
Bridge	E. Thacher	570,229	Oct. 27	2684	637	77	547
Bridge. Concrete	A. Geisel	571,225	Nov. 10	1432	334	77	933
Bridge-gate	F. M. Smith	572,318	Dec. 1	415	98	77	1358
Bridge gate. Draw-	J. Hughes	568,761	Oct. 6	68	21	77	19
Bridge gate. Draw-	C. J. Lavey	570,029	Oct. 27	2298	545, 546	77	473
Bridle-bit	H. H. Bates	574,058	Dec. 29	3557	849	77	2018
Bridle-bit	J. Cramer	574,304	Dec. 29	4038	959	77	2104
Bridle-bit	I. Harmanson	571,563	Nov. 17	2012	478	77	1054
Bridle-bit	A. F. Kiehl	570,312	Oct. 27	2858	677	77	578
Bridle-blind	J. W. Emmons	571,944	Nov. 24	2696	638	77	1203
Broiler	A. Herz	570,754	Nov. 3	620	143	77	752
Bromotheophyllin and making same	E. Fischer	571,353	Nov. 17	1654	.....	77	990
Broom attachment	J. S. Williams	570,358	Oct. 27	2929	696	77	592
Broom-head	D. F. Cook and H. U. Abbott	568,836	Oct. 6	203	49	77	40
Broom or brush bridle	F. S. Hann	570,927	Nov. 10	923	214	77	839
Brush	B. S. Baxter	573,198	Dec. 15	1957	470	77	1689
Brush	G. P. Kato, Jr	571,569	Nov. 17	2019	480	77	1055
Brush	F. N. Look	572,347	Dec. 1	453	106	77	1365
Brush	A. Schuck	573,711	Dec. 22	2931	693	77	1887
Brush-case	H. Besson	573,852	Dec. 29	3164	754	77	1947
Brush-cleaner	T. L. Harlow	571,438	Nov. 17	1792	427	77	1015
Brush. Collecting	E. B. Raymond	573,105	Dec. 15	1791	431	77	1659
Brush. Fountain marking	C. Z. Whitaker	570,583	Nov. 3	278	69	77	690
Brush-head	D. G. Bonnallie	569,003	Oct. 6	501	113	77	95
Brush. Liquid-blacking	L. M. Whisenhant	572,462	Dec. 1	661	156	77	1404
Brush-machine	W. Morrison	570,604	Nov. 3	316	78	77	697
Brush-machine	J. F. Mumford	570,261	Oct. 27	2722	648	77	554
Brush or cleaner. Rotary	J. W. Starritt	572,459	Dec. 1	658	155	77	1404
Brush. Rotary	F. G. Farnham	571,559	Nov. 17	2006	477	77	1053
Brush. Rotary tooth	G. C. Courtright and J. W. Purdy	569,409	Oct. 13	1201	283	77	244
Brush. Tooth	E. H. Hamilton	569,870	Oct. 20	2022	482	77	409
Brush. Tooth	D. W. Tower	570,573	Nov. 3	261	65	77	686
Bucket. Bait	L. B. Trigg	574,049	Dec. 29	3540	845	77	2015
Bucket. Coal	C. Elbee	571,303	Nov. 10	1569	372	77	960
Buckets, tongs, &c. Discharging mechanism for	H. Sawyer	573,708	Dec. 22	2926	692	77	1886
Buckle	D. Goodnow	569,638	Oct. 20	1614	380	77	336
Buckle. Harness	J. R. Mole	569,584	Oct. 13	1510	356	77	301
Buckle. Lock	M. W. Lynch	573,093	Dec. 15	1771	426	77	1655
Buffer-wheels. Manufacture of	S. H. Brooks	572,243	Dec. 1	260	62	77	1328
Buffing or polishing appliance	H. A. Webster	573,735	Dec. 22	2972	703	77	1895
Buffing or polishing device	H. A. Webster	573,734	Dec. 22	2970	703	77	1895
Building. Rat or vermin proof	J. T. Crawford	574,305	Dec. 29	4039	959, 960	77	2104
Buildings with each other and with the foundations. Means for rigidly connecting parts of	C. Delahunt	573,452	Dec. 22	2459	583	77	1798
Bullion. Softening base	G. A. Marsh	569,293	Oct. 13	995	.....	77	205
Bullion. Softening base	G. A. Marsh. (Reissue)	11,579	Dec. 8	1505	.....	77	1587
Bung	C. J. Meyerholz	572,435	Dec. 1	620	147	77	1396

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Bung	J. Parbel	571,842	Nov. 24	2507	594	77	1166
Bung	H. Rosenthal	571,924	Dec. 22	2771	657	77	1859
Bung and flushing-key for same. Faucet	D. Beebe	573,254	Dec. 15	2051	491	77	1706
Bung. Barrel	J. Henn	570,799	Nov. 3	690	158	77	766
Bung. Barrel	A. E. McKechnie	571,494	Nov. 17	1886	450	77	1031
Bung. Faucet	D. Beebe	570,725	Nov. 3	561	130	77	742
Bung-hole protector and funnel combined	A. Krimmel	573,333	Dec. 15	2207	528	77	1733
Bung-making machine	E. E. Elder and H. S. Kelly	569,488	Oct. 13	1313	309, 310, 311	77	264
Bungs, &c. Machine for making	E. E. Elder	569,554	Oct. 13	1439	339, 340, 341	77	287
Bungs, &c. Machine for making	E. E. Elder and E. H. Taylor	569,555	Oct. 13	1445	341, 342	77	289
Bunsen burner	W. H. Chaddock	570,084	Oct. 27	2404	569	77	494
Bunsen burner	E. Moreau and S. Mason	569,139	Oct. 6	724	170	77	138
Bureau and desk	J. H. Harrell	569,825	Oct. 20	1951	464	77	395
Burglar-alarm	F. Hessemer and C. S. Smith	570,755	Nov. 3	621	143	77	752
Burglar-alarm	F. Steinkoenig	570,616	Nov. 3	339	84	77	701
Burglar alarm circuit-closer	C. H. Dowden	569,861	Oct. 20	2010	479	77	406
Burglar-alarm. Electric	C. Coleman	570,906	Nov. 10	886	206, 207	77	832
Burial casket	W. C. Knapp	569,339	Oct. 13	1079	256	77	222
Buried alive. Apparatus for saving people	M. Karnicki	572,119	Dec. 1	44	11	77	1287
Burner: *See* Bunsen burner. Gas-burner. Heating-burner. Hydrocarbon-burner. Incandescent burner. Lamp-burner. Liquid-fuel burner. Oil-burner. Self-igniting burner. Vapor-burner.							
Burnishing-machine	M. E. Clark	570,866	Nov. 3	810	185, 186, 187	77	789
Bushing. Tap	J. Mohn	573,990	Dec. 29	3440	823	77	1995
Butchering appliance	T. Kennedy and T. Slattery	570,025	Oct. 27	2292	544	77	472
Butcher's tool-rack	J. H. Langton	572,764	Dec. 8	1199	289	77	1525
Butter-jar	A. M. Wiatt	574,126	Dec. 29	3681	877	77	2040
Butter-tub-sanding machine	C. D. Ames	573,846	Dec. 29	3154	752	77	1945
Button	J. N. Gardner	570,872	Nov. 3	829	192	77	793
Button	J. E. Kenna	569,581	Oct. 13	1505	355	77	300
Button	W. O'Neill	571,387	Nov. 17	1707	406	77	999
Button	J. F. Wood	571,425	Nov. 17	1764	421	77	1009
Button. Automatically-attachable	H. A. Sévigné	574,008	Dec. 29	3469	829	77	2001
Button. Collar	B. A. Brown	570,371	Oct. 27	2954	701	77	596
Button. Cuff	G. P. A. Gunther	569,495	Oct. 13	1331	313	77	267
Button-fastener	H. F. Welke	572,846	Dec. 8	1332	320	77	1552
Button for gloves. Fastening	J. Steinberger	573,550	Dec. 22	2621	622	77	1827
Button or clasp	J. C. McRae	573,906	Dec. 29	3265	779	77	1965
Button-press. Rotary	S. B. Lane	574,154	Dec. 29	3726	888, 889	77	2047
Button. Separable	E. Pringle	573,532	Dec. 22	2587	614	77	1822
Button. Separable	E. Pringle	573,533	Dec. 22	2589	614	77	1822
Button. Separable	E. Pringle	574,265	Dec. 29	3975	944	77	2092
Button. Separable	E. Pringle	574,266	Dec. 29	3977	945	77	2092
Button. Separable	E. Pringle	574,267	Dec. 29	3979	945	77	2092
Button. Separable	F. B. Wadell	570,576	Nov. 3	266	66	77	688
Button-setting implement. Hand	F. S. McKenney and F. R. Welton	571,954	Nov. 24	2715	642	77	1207
Button-setting machine	A. W. Ham	569,579	Oct. 13	1501	354, 355	77	299
Button-setting machine	E. D. Welton	571,207	Nov. 10	1402	328	77	927
Button-shank and button	E. Teltschik	571,986	Nov. 24	2767	653	77	1216
Cabinet	J. E. Caplinger	570,199	Oct. 27	2605	619	77	532
Cable-carrier	E. L. Heidenreich and G. Monrath	571,440	Nov. 17	1795	428	77	1015
Cable terminal-box	W. H. Johnston	571,594	Nov. 17	2060	493	77	1062
Cableway for conveying and dumping rock, &c	C. H. Locher	572,491	Dec. 1	699	167, 168	77	1412
Cableway for dumping purposes	C. H. Locher	570,429	Oct. 27	3065	726, 727	77	617
Caissons, &c. Air-lock for	R. S. Gillespie	570,793	Nov. 3	679	156	77	764
Caissons, &c. Air-lock for	R. S. Gillespie	570,794	Nov. 3	681	156	77	764
Cake-making machine. Triplet	P. D. Harton	571,921	Nov. 24	2659	630	77	1194
Cake-pan	T. A. Wilson	572,509	Dec. 1	733	175	77	1417
Cake-stacking machine	D. M. Hartman and J. G. Donnell	571,663	Nov. 17	2172	522, 523	77	1084
Calciner and smelter. Combined	C. J. Best and A. E. Meanor	569,537	Oct. 13	1405	332	77	281
Calcining-furnace	A. Dauber	573,140	Dec. 15	1858	447	77	1671
Calcium carbid. Composition of matter for manufacturing	H. Eldridge, D. J. Clark, and M. W. Wambaugh.	571,064	Nov. 10	1194	.....	77	889
Calculating device	S. N. Dodd	573,506	Dec. 22	2547	603, 604	77	1814
Calculating-machine	G. W. MacKenzie, T. C. Sloane, and W. P. Hanna.	573,228	Dec. 15	2011	482, 483	77	1699
Calculating machine. Tax	J. L. Knight	571,070	Nov. 10	1160	271	77	883
Calculator	W. A. Copeland, C. Roberts, and T. J. McCrary.	569,544	Oct. 13	1415	334	77	284
Calendar. Sheet	W. T. Wilson	571,031	Nov. 10	1097	256, 257	77	871
Calipers	J. N. Peavey, Jr.	571,788	Nov. 24	2415	575	77	1150
Calipers	A. F. Radant	572,827	Dec. 8	1305	313	77	1546
Camera	P. K. Stern	571,806	Nov. 24	2439	582	77	1154
Camera attachment. Curtain-slide	W. Trueman	569,895	Oct. 20	2064	491	77	416
Camera. Magazine	L. Dustin	571,995	Nov. 24	2783	656, 657	77	1218

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Camera. Magazine	F. Stubbs	573,309	Dec. 15	2176	519	77	1727
Camera. Photographic	J. M. Elliot	569,328	Oct. 13	1060	251, 252	77	219
Camera. Photographic	F. H. Sanderson	570,774	Nov. 3	652	149	77	758
Can: *See* Ice-freezing can. Jacketed can. Metal can. Milk-can. Oil-can. Sheet-metal can.							
Can-cover	G. E. Burnham	572,471	Dec. 1	670	159	77	1406
Can-filling machine	W. S. Plummer	569,030	Oct. 6	539	124, 125	77	102
Can-heading machine	R. D. Hume	572,360	Dec. 1	482	113, 114	77	1370
Can-lacquering machine	A. J. Burns	570,538	Nov. 3	185	49	77	672
Can-opener	O. A. Burnes	569,609	Oct. 20	1554	365	77	324
Can-opener	J. L. Haynes	571,664	Nov. 17	2177	524	77	1085
Can-opener	C. S. Hopper	573,465	Dec. 22	2481	588	77	1802
Can-opener	W. J. Kinnear	571,835	Nov. 24	2495	591	77	1164
Can-opener	S. A. Nichols	572,560	Dec. 8	821	197	77	1450
Can-opener	W. L. Palmer	569,932	Oct. 20	2124	505	77	428
Can-opener	W. A. Schorr and W. R. Collins	573,359	Dec. 15	2258	539	77	1743
Can-opener. Combination	J. E. Munro	573,991	Dec. 29	3441	823	77	1995
Can-opener, screw-driver, tack-puller, and hammer. Combined	J. P. Daly	574,197	Dec. 29	3845	917	77	2068
Can-spout. Detachable	C. H. Bagley	571,852	Nov. 24	2528	599	77	1170
Can supporting and tilting device	H. C. Mahon	568,781	Oct. 6	122	28	77	25
Can-top. Self-locking	T. H. Coakley	569,688	Oct. 6	640	146	77	123
Canning-basket	L. M. Shepherd	568,805	Oct. 6	157	37	77	32
Candle-holder	A. W. Hoffmann	574,356	Dec. 29	4127	980	77	2121
Candlestick	G. Castleden	571,338	Nov. 17	1630	387	77	985
Candlestick	J. W. Wild	571,962	Nov. 24	2727	644	77	1209
Cane-handling apparatus	A. A. Lorio	571,233	Nov. 10	1451	340, 341	77	936
Cane sling. Sugar	J. Mallon	571,675	Nov. 17	2192	528	77	1088
Cane. Vehicle for hauling sugar	A. A. Lorio	571,309	Nov. 10	1580	375, 376	77	962
Cane-weaving loom	H. B. Morris. (Reissue)	11,573	Nov. 24	3000	703, 704, 705, 706	77	1257
Canister	H. Robinson	569,061	Oct. 6	593	136	77	114
Cannon. Yacht	W. W. Scott	570,507	Nov. 3	127	31, 32	77	662
Canopy or netting support	J. E. Leary	569,025	Oct. 6	533	123	77	101
Cant-hook. Lumberman's	J. M. Ellis	573,844	Dec. 22	3150	751	77	1929
Cape	E. Rice	573,618	Dec. 22	2735	650	77	1851
Capstan	H. L. Smith	572,457	Dec. 1	653	154, 155	77	1403
Capsule	W. A. Hinchman	573,976	Dec. 29	3416	819	77	1991
Car and air-brake coupling. Automatic	J. M. Rainey	574,268	Dec. 29	3981	945, 946	77	2093
Car-bolster. Metal	W. Case	570,979	Nov. 10	1007	231, 234	77	854
Car bolster. Railway	C. T. Schoen	568,925	Oct. 6	351	81	77	67
Car bolster. Railway	C. T. Schoen	574,116	Dec. 29	3659	873, 874	77	2036
Car-brake	W. S. G. Baker	572,518	Dec. 8	754	180	77	1437
Car-brake	W. J. Cartwright	570,594	Nov. 3	300	71	77	694
Car-brake	N. F. Corne	570,004	Oct. 27	2260	537	77	465
Car-brake	S. G. Howe	572,802	Dec. 8	1267	305, 306	77	1538
Car-brake	B. F. Jackson	573,663	Dec. 22	2851	672	77	1872
Car-brake	J. Jamieson and R. Gray	568,908	Oct. 6	324	75	77	62
Car-brake	T. Millen	573,024	Dec. 15	1642	395	77	1630
Car-brake	A. Ruthenberg	568,959	Oct. 6	417	93	77	80
Car-brake	R. G. Woodward	569,311	Oct. 13	1031	245	77	213
Car-brake	R. G. Woodward	569,312	Oct. 13	1033	245	77	213
Car-brake. Electric	E. A. Sperry	574,120	Dec. 29	3670	875, 876	77	2038
Car brake. Street	W. G. Price	572,823	Dec. 8	1295	311	77	1543
Car brake. Street	W. G. Price	572,824	Dec. 8	1300	312	77	1545
Car brake. Street	W. G. Price	572,825	Dec. 8	1302	312	77	1545
Car brakes. Slack-adjuster for railway	M. J. Grier	570,925	Nov. 10	919	213	77	833
Car buffer-platform. Railway	T. L. McKeen	573,187	Dec. 15	1938	466	77	1685
Car buffer-platform. Railway	T. L. McKeen and A. H. Renshaw	574,257	Dec. 29	3961	941	77	2089
Car center plate	A. O. Buckius	571,610	Nov. 17	2088	501	77	1067
Car. Coal-dumping	W. G. Lane	568,775	Oct. 6	110	26	77	23
Car-coupling	G. Aabel	573,253	Dec. 15	2049	491	77	1706
Car-coupling	N. W. Aigler	572,395	Dec. 1	564	133	77	1385
Car-coupling	A. D. Alden	569,481	Oct. 13	1301	306, 307	77	202
Car-coupling	C. F. Bake	574,233	Dec. 29	3927	934	77	2083
Car-coupling	F. D. Baker	570,976	Nov. 10	1000	232	77	853
Car-coupling	E. Balzer	568,726	Oct. 6	4	1	77	3
Car-coupling	W. C. Beal	574,016	Dec. 29	3478	831	77	2002
Car-coupling	A. Bopp	572,288	Dec. 1	354	84	77	1347
Car-coupling	H. C. Buhoup	569,954	Oct. 20	2175	516, 517	77	437
Car-coupling	H. C. Buhoup	573,961	Dec. 29	3378	808, 809	77	1985
Car-coupling	R. Burnham	573,658	Dec. 29	3177	757	77	1949
Car-coupling	R. J. Edwards	569,374	Oct. 13	1136	270, 271	77	233
Car-coupling	T. Fales	572,416	Dec. 1	580	140	77	1390
Car-coupling	O. Flohr	574,086	Dec. 29	3601	861	77	2026

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-coupling	J. J. Flynn	571,155	Nov. 10	1328	309	77	913
Car-coupling	J. Goettel	572,794	Dec. 8	1250	302	77	1535
Car-coupling	J. G. Green	570,796	Nov. 3	684	157	77	765
Car-coupling	A. F. Guhl	569,639	Oct. 20	1615	380	77	336
Car-coupling	A. F. Guhl	570,171	Oct. 27	2552	606	77	523
Car-coupling	C. Halpin	574,323	Dec. 29	4066	966	77	2109
Car-coupling	C. H. Hamilton	571,520	Nov. 17	1935	462	77	1041
Car-coupling	W. H. Hatfield	572,542	Dec. 8	791	189	77	1444
Car-coupling	P. Hien	571,044	Nov. 10	1119	262	77	875
Car-coupling	J. A. Hinson	571,229	Nov. 10	1442	337	77	935
Car-coupling	J. D. Hood	572,425	Dec. 1	607	143	77	1393
Car-coupling	W. Johnson	572,999	Dec. 15	1603	384	77	1622
Car-coupling	E. W. Kelley	568,952	Oct. 6	402	91	77	77
Car-coupling	J. M. Kincade	569,023	Oct. 6	530	122	77	101
Car-coupling	C. Lee	571,771	Nov. 24	2383	569	77	1143
Car-coupling	L. S. Lewis	571,673	Nov. 17	2187	527	77	1067
Car-coupling	M. L. Mardis	571,274	Nov. 10	1522	360	77	950
Car-coupling	C. H. McLaughlin	570,559	Nov. 3	238	59	77	682
Car-coupling	F. McTaggart	571,926	Nov. 24	2666	632	77	1196
Car-coupling	L. L. Moe	573,896	Dec. 29	3252	774, 775	77	1962
Car-coupling	V. V. Moore	574,340	Dec. 29	4102	974	77	2116
Car-coupling	G. R. J. Newman	572,710	Dec. 8	1100	266	77	1507
Car-coupling	J. L. Pledger	571,622	Nov. 17	2107	505	77	1072
Car-coupling	G. K. Russell	570,684	Nov. 3	495	116	77	731
Car-coupling	C. Schleicher	573,043	Dec. 15	1674	402	77	1637
Car-coupling	A. F. Schneider	568,799	Oct. 6	150	35	77	31
Car-coupling	R. C. Simmons	573,546	Dec. 22	2615	621	77	1827
Car-coupling	L. N. Singin	570,211	Oct. 27	2627	623	77	536
Car-coupling	J. C. Taylor	571,251	Nov. 10	1480	347	77	941
Car-coupling	T. P. Weidler	570,652	Nov. 3	433	103	77	718
Car-coupling	M. I. Welch	571,030	Nov. 10	1094	255	77	870
Car-coupling	W. U. Wilks	572,938	Dec. 8	1490	357	77	1584
Car-coupling	E. A. Yocum and M. O. Nichols	570,274	Oct. 27	2748	654	77	559
Car-coupling appliance	C. M. Dorn	572,675	Dec. 8	1031	250	77	1495
Car-coupling. Automatic	J. J. Bolger	572,954	Dec. 15	1527	365	77	1607
Car-coupling draft-rigging	J. A. Hinson	570,477	Nov. 3	67	16	77	650
Car coupling. Railway	W. Pinckert and C. Prutz	569,668	Oct. 20	1658	391, 392	77	344
Car-coupling safety attachment	J. Timms	570,650	Nov. 3	431	102	77	718
Car crossings. Electric signal for street	C. A. Parrish	570,046	Oct. 27	2325	551	77	478
Car-door	A. M. Waitt	570,074	Oct. 27	2386	566	77	491
Car-door	A. M. Waitt and H. F. Ball	570,075	Oct. 27	2388	566	77	491
Car door. Grain	W. J. Johnston	569,923	Oct. 20	2112	502	77	425
Car-door. Sliding	S. Schallenberger	573,486	Dec. 22	2515	596	77	1808
Car draft-rigging	W. H. Miner	570,038	Oct. 27	2312	549	77	476
Car draft-rigging	G. L. Weiss	569,695	Oct. 20	1716	407	77	355
Car draft-rigging	G. L. Weiss	569,696	Oct. 20	1717	408	77	355
Car draft-iron. Railway	W. Case	570,980	Nov. 10	1008	234	77	854
Car draw-bar attachment. Street	W. T. Van Dorn	569,729	Oct. 20	1789	425	77	366
Car driving-gear. Motor	H. Schnmm	572,453	Dec. 1	649	152, 153	77	1402
Car. Dump	E. A. Trapp	571,058	Nov. 10	1138	266, 267	77	879
Car. Dumping	S. J. Johnson	571,480	Nov. 17	1859	442, 443	77	1027
Car. Dumping	S. J. Johnson	571,481	Nov. 17	1861	444	77	1027
Car. Dumping	S. J. Johnson	571,482	Nov. 17	1863	445	77	1027
Car. Dumping	S. J. Johnson	571,483	Nov. 17	1865	445	77	1028
Car. Dumping	S. J. Johnson	571,484	Nov. 17	1866	446	77	1028
Car-dumping machine	G. H. Hulett	568,851	Oct. 6	239	55, 56	77	47
Car-fender	W. B. Baker	568,969	Oct. 6	434	97	77	83
Car-fender	D. O. Beckwith	573,638	Dec. 22	2797	662	77	1864
Car-fender	C. Fink	569,330	Oct. 13	1064	252	77	220
Car-fender	H. D. Fisher	569,624	Oct. 20	1577	371	77	329
Car-fender	W. B. George	574,029	Dec. 29	3501	836, 837	77	2006
Car-fender	J. Gibson and J. Watson	569,822	Oct. 20	1947	463	77	395
Car-fender	J. A. Graham	572,601	Dec. 8	906	219	77	1470
Car-fender	D. Guarino	572,964	Dec. 15	1580	379	77	1617
Car-fender	S. J. Harris	572,752	Dec. 8	1160	284	77	1522
Car-fender	G. A. Henry	569,457	Oct. 13	1265	298	77	955
Car-fender	G. B. Hoak	572,753	Dec. 8	1161	284	77	1522
Car-fender	W. R. Howe	568,906	Oct. 6	321	74	77	62
Car-fender	R. C. Hoyer	570,756	Nov. 3	626	144	77	753
Car-fender	L. A. Hufschmidt and R. Styles	570,402	Oct. 27	3018	715	71	608
Car-fender	W. H. Kaltenbeck	571,528	Nov. 17	1948	465	77	1043
Car-fender	W. J. Kendall	573,415	Dec. 15	2346	560, 561	77	1759
Car-fender	H. Lotzgesell	570,099	Oct. 27	2431	578	77	499
Car-fender	A. A. Lydecker	570,645	Nov. 3	419	99	77	716
Car-fender	C. F. Maisch	571,779	Nov. 24	2395	572	77	1145
Car-fender	J. S. Meredith	570,134	Oct. 27	2487	590	77	510
Car-fender	T. M. Miller	570,943	Nov. 10	953	221	77	844
Car-fender	E. E. Phinney	573,352	Dec. 15	2242	536	77	1740
Car-fender	C. E. Rice and S. F. Ettinger	574,344	Dec. 29	4107	976	77	2117
Car-fender	M. Rings	574,044	Dec. 29	3530	843	77	2012
Car-fender	A. D. Simpson and A. Bigelman	570,611	Nov. 3	326	80, 81	77	699
Car-fender	M. Sparmo and L. Russo	573,942	Dec. 15	2031	487	77	1702
Car-fender	J. M. Staley	570,571	Nov. 3	259	64	77	686
Car-fender	I. N. Stanley	571,175	Nov. 10	1353	316	77	918
Car-fender	W. Thompson	569,684	Oct. 20	1700	402	77	351
Car-fender	J. T. Ward	573,587	Dec. 8	879	212	77	1464
Car-fender	P. J. Waters	571,714	Nov. 17	2259	543	77	1100

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Car-fender	W. M. Watts	574,081	Dec. 29	3393	858, 859	77	2024
Car-fender	H. A. Webster	572,389	Dec. 1	553	131	77	1383
Car-fender	G. A. Weed	569,848	Oct. 20	1990	475	77	403
Car-fender	M. Weisel	571,938	Nov. 24	2629	636	77	1202
Car-fender	G. W. Willey	569,699	Oct. 20	1736	410	77	356
Car-fender	J. A. G. O. Wolters	572,235	Dec. 1	248	59	77	1326
Car fender. Street	B. F. Seymour	573,434	Dec. 15	2412	574	77	1771
Car-fender. Unremitting rotary	J. J. Holloway and J. W. Starkweather.	571,320	Nov. 10	1597	379	77	965
Car-fenders. Frame for supporting	A. Adair, Jr.	572,394	Dec. 1	562	133	77	1385
Car. Freight	J. M. Peet	570,331	Oct. 27	2890	686	77	584
Car. Gondola	W. S. Schroeder	572,279	Dec. 1	336	80	77	1343
Car gongs. Actuating device for street	T. Kelly	573,224	Dec. 15	2003	481	77	1697
Car. Grain	F. H. Osterhaus	571,841	Nov. 24	2597	593	77	1166
Car grain-door	T. R. Parker	570,950	Nov. 10	965	224	77	847
Car gripping mechanism	W. Vogt	571,812	Nov. 24	2450	583	77	1156
Car-heating apparatus	E. E. Gold	571,359	Nov. 17	1660	393, 394	77	991
Car-heating apparatus	E. E. Gold	572,254	Dec. 1	280	67, 68	77	1332
Car-holder	T. R. Newman	569,797	Oct. 20	1910	453	77	388
Car-loader	H. Phillips and W. Hunt	570,880	Nov. 3	839	196	77	796
Car. Metallic	W. Pennock	571,883	Nov. 24	2582	611, 612, 613	77	1160
Car. Metallic	W. Pennock	571,884	Nov. 24	2585	613, 614	77	1161
Car-motor	W. Robinson	572,685	Dec. 8	1047	254	77	1498
Car motor. Electric	C. S. Bradley	570,119	Oct. 27	2464	584	77	505
Car motor. Street	J. M. Olinger	572,817	Dec. 8	1287	309, 310	77	1542
Car or carriage	H. W. D. Dunlop	569,094	Oct. 6	650	150	77	124
Car-pilot	R. Dunning	572,652	Dec. 8	990	238, 239	77	1486
Car platform and fender. Combined	H. Fitzgerald and G. H. Zane	572,700	Dec. 8	1079	262	77	1503
Car. Railway	W. G. Richards	571,577	Nov. 17	2032	483	77	1058
Car. Railway	J. Shaw	569,676	Oct. 20	1679	398	77	348
Car-replacer	R. E. Alexander	572,669	Dec. 8	1018	246	77	1492
Car-replacing frog	W. A. Adams	573,380	Dec. 15	2287	545	77	1748
Car safety appliance. Street	W. Wiggins	570,888	Nov. 3	560	200	77	801
Car safety-brake. Street	B. L. Kilgour	573,516	Dec. 22	2561	608	77	1816
Car safety-fender. Street	J. W. Angell	571,256	Nov. 10	1485	349, 350	77	942
Car safety-guard	A. J. Brown	569,168	Oct. 13	776	181, 182	77	164
Car sand-depositing apparatus	J. Oldfield	571,136	Nov. 10	1298	302	77	907
Car-seat	H. S. Hale	572,654	Dec. 8	993	239	77	1487
Car-seat	H. S. Hale	572,655	Dec. 8	994	239	77	1487
Car-seat	W. A. Thomas	570,148	Oct. 27	2515	596	77	515
Car sides and ends. Lateral support for	C. R. Klettner	571,796	Nov. 17	2280	547	77	1105
Car sign. Illuminated and changeable street	J. D. Browne	571,942	Nov. 24	2693	637	77	1202
Car sign. Rotatable street	E. L. Dwyer	570,747	Nov. 3	607	139	77	450
Car sign. Street	H. Phinney	571,885	Nov. 24	2588	614	77	1161
Car-signal	J. W. Shafer	570,510	Nov. 3	133	33	77	663
Car-signal	D. W. Troy	574,182	Dec. 29	3809	909	77	2061
Car signaling device	C. H. Dressel	570,156	Oct. 27	2527	599	77	517
Car-stopper for drawbridges. Automatic	P. C. Floeter	572,252	Dec. 1	278	67	77	1332
Car-unloading apparatus	T. Long	568,860	Oct. 6	251	59	77	49
Car-ventilating mechanism	W. J. Tully	570,353	Oct. 27	2921	695	77	591
Car-ventilating window	F. D. Glover and A. H. Smith	572,979	Dec. 15	1573	377	77	1616
Car ventilator. Railway	J. I. Dunlap	572,877	Dec. 8	1374	333	77	1560
Car-wheel	J. A. Miller	572,556	Dec. 8	815	195	77	1449
Car-wheel	J. B. West	570,525	Nov. 3	159	38	77	667
Car-wheel-grinding mechanism	H. A. Pedrick	573,694	Dec. 22	2898	685	77	1881
Car wheel. Railway	J. J. A. Miller	573,519	Dec. 22	2565	609	77	1817
Cars. Automatic electromagnetic brake for railway	E. A. Hauerwas	569,101	Oct. 6	660	152, 153	77	126
Cars. Drop-step attachment for railway passenger	R. P. Thomas	570,350	Oct. 27	2916	692	77	589
Cars, &c. Heating apparatus for	E. E. Gold	569,637	Oct. 20	1611	380	77	335
Cars. Running-board guard for street	E. W. Phinney and L. Trinder	573,914	Dec. 29	3280	785	77	1968
Cars. Side guard for open	A. D. Dimick	569,786	Oct. 20	1891	449	77	384
Cars. Strainer for air-brakes of	T. B. Hunt	569,203	Oct. 13	832	196	77	175
Cars. Switch-operating device for street-railway	D. Rioux, N. C. Bushey, and N. L. Byron.	572,313	Dec. 1	406	96	77	1356
Carbon. Arc-lamp	D. A. Shealer	570,825	Nov. 3	735	.....	77	775
Carbon-book	J. F. Green	573,871	Dec. 29	3212	764	77	1954
Carbon-holder	G. R. Lean	571,975	Nov. 24	2751	649	77	1213
Carbon-sheet holder for manifolding books or pads	C. S. Binner	572,241	Dec. 1	258	62	77	1327
Carbonating device	J. W. Seavolt	573,712	Dec. 22	2932	693	77	1868
Carbureter	C. W. Ingraham	569,460	Oct. 13	1270	299	77	256
Carbureter	E. I. P. Staede	572,837	Dec. 8	1318	316	77	1549
Card. Account	C. Elkin	570,249	Oct. 27	2697	641, 642	77	549
Card and holder. Display	W. F. Jones	570,408	Oct. 27	3027	717	77	610
Cardboard cutter. Bevel-edge	D. T. McCall	570,180	Oct. 27	2572	611	77	526
Cardboard-scoring machine	C. W. Hobbs	569,200	Oct. 13	828	195	77	174
Card-case with cards and memorandum attachment. Combination	C. L. Adams	569,000	Oct. 6	497	112	77	95
Card-cloths. Machine for securing stretching-bands to	J. Stäubli	571,985	Nov. 24	2765	653	77	1216
Card cutter. Bevel	P. J. Stnparich	572,320	Dec. 1	419	99	77	1359
Card-embossing machine	O. C. Hale	573,407	Dec. 15	2329	556	77	1756
Card holder. Coin-controlled playing	J. Coupal and L. E. Gray	573,810	Dec. 22	3085	733	77	1917
Card. Stencil	F. D. Belknap	573,850	Dec. 29	3162	754	77	1947

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Cards. Wire rod for jacquard	J. Cleary and T. M. Miller	573,813	Dec. 22	3090	734	77	1918
Carding-engine feeding apparatus	A. Borios	572,153	Dec. 1	106	25	77	1298
Carousel	G. A. Dentzel	573,577	Dec. 22	2666	632	77	1637
Carpenter's gage	R. Bates	569,739	Oct. 20	1803	428	77	369
Carpenter's gage	L. Joncas	569,558	Oct. 13	1452	343	77	290
Carpet-cleaning machine	C. Scharrer	571,981	Nov. 24	2759	651	77	1214
Carpet fabric	T. B. Dornan	574,023	Dec. 29	3492	834	77	2005
Carpet-holder	M. J. Kehoe	572,806	Dec. 8	1274	307	77	1539
Carpet-holder	M. H. Sullivan	569,525	Oct. 13	1390	328	77	278
Carpet-stretcher	E. E. Hull, J. S. Forney, and J. A. Feist	573,149	Dec. 15	1872	451	77	1673
Carpet-stretcher	L. G. Mahle	572,018	Nov. 24	2815	664	77	1224
Carpet-stretcher	P. V. Monroe	569,650	Oct. 20	1633	386	77	340
Carpet-stretcher	C. C. Thompson	574,122	Dec. 29	3676	876	77	2039
Carpet-stretcher and tack-holder. Combined	J. Detrick	570,463	Nov. 3	39	9	77	646
Carpet-sweeper	A. D. and A. B. Linn	571,451	Nov. 17	1808	432	77	1018
Carpet-sweeper	I. E. Stump	573,554	Dec. 22	2629	625	77	1829
Carpet-sweeper	G. A. Worz	571,549	Nov. 17	1990	473	77	1050
Carriage and sled. Combined child's	T. S. Minnies	572,059	Nov. 24	2894	683	77	1239
Carriage attachment for lamps	M. F. Brigham	571,317	Nov. 10	1592	378	77	964
Carriage. Baby-	J. A. Johnson	570,407	Oct. 27	3024	717	77	609
Carriage. Baby-	C. Marx	572,658	Dec. 8	1000	241	77	1489
Carriage-curtain fastener	T. H. C. Beall	572,671	Dec. 8	1020	247	77	1492
Carriage. Folding	F. Heppner	571,228	Nov. 10	1439	336	77	934
Carriage-gear	C. A. Behlen	573,384	Dec. 15	2294	548	77	1750
Carriage-gear	W. H. Emond	574,313	Dec. 29	4052	962	77	2107
Carriage-top connection	A. Krider	573,006	Dec. 15	1616	388	77	1624
Carriage-top connection	A. Krider	573,007	Dec. 15	1617	389	77	1625
Carrier: *See* Cash-carrier. Egg-carrier. Hay-carrier. Reel-carrier. Rope-carrier.							
Cart	T. Hill	570,400	Oct. 27	3015	714	77	608
Cartridge-case reducing-die	W. Mason	570,760	Nov. 3	629	145	77	753
Cartridge-holder. Temporary	T. C. Johnson	571,973	Nov. 24	2743	648	77	1211
Cartridge-holding clip. Temporary	T. C. Johnson	572,361	Dec. 1	487	114	77	1371
Carver and steel. Combined	M. Sammis	568,878	Oct. 6	283	65	77	54
Carving-machine	O. Jahnsen and G. Meinhardt	571,566	Nov. 17	2015	479	77	1054
Carving machine. Wood	E. Lochman	571,535	Nov. 17	1963	467, 468, 469	77	1045
Case: *See* Barber's case. Brush-case. Card-case. Caster-case. Display case. Egg-case. File-case. Packing-case. Sample-case. Show-case. Spectacle-case. Stamp or coin case. Surgical-instrument case. Ticket-case. Traveling-case.							
Case construction	W. H. Watson	573,942	Dec. 29	3331	795, 796	77	1976
Cash and package carrier	S. W. Barr and H. M. Weaver	570,422	Oct. 27	3055	723, 724	77	615
Cash-carrier	D. E. Chism	572,407	Dec. 1	579	138	77	1388
Cash indicating and registering apparatus	G. L. Barnes	568,728	Oct. 6	7	2, 3	77	4
Cash-register	L. S. Burridge and N. R. Marshman	574,302	Dec. 29	4032	957, 958	77	2103
Cash-register	C. H. Little	571,728	Nov. 17	2284	548	77	1105
Cash-register	W. Murphy	571,953	Nov. 24	2713	641, 642	77	1206
Cash-register	H. Pottin	573,699	Dec. 22	2905	686, 687, 688	77	1883
Cash-register	J. W. Rehill	570,818	Nov. 3	723	165, 166	77	772
Cash-register	J. Sharpe and J. A. Banfield	571,098	Nov. 10	1223	286, 287	77	894
Cash-register	E. F. Spaulding	573,046	Dec. 15	1678	403, 404	77	1637
Cash register and indicator	G. L. Barnes	573,435	Dec. 22	2415	575, 576	77	1789
Cash register and indicator	W. Bassett	570,114	Oct. 27	2454	583	77	504
Cash register and indicator	W. H. Cleasby	571,720	Nov. 17	2271	545	77	1102
Cash register and indicator	J. Jacques and C. S. Trask	568,764	Oct. 6	91	21, 22	77	20
Cash register and indicator	J. H. McCormick	570,141	Oct. 27	2498	592, 593	77	511
Cash register and recorder	J. F. Scheuer	569,674	Oct. 20	1671	395, 396, 397	77	347
Cash-registers. Transferring and resetting mechanism for	F. Barnard	570,196	Oct. 27	2598	618	77	531
Cash-registers. Transferring and resetting mechanism for	A. W. Marr	570,178	Oct. 27	2564	610, 611	77	525
Cask-pitching apparatus	J. F. Theurer and O. Mueller	574,181	Dec. 29	3805	908, 909	77	2060
Casket	J. H. Walker	570,356	Oct. 27	2927	696	77	591
Casket attachment	M. Altmeyer	573,124	Dec. 15	1820	439	77	1664
Cast-metal article	J. C. Reed	570,769	Nov. 3	643	147	77	756
Caster	G. B. M. Blue	574,017	Dec. 29	3460	831	77	2003
Caster. Ball-	R. Mason and F. Ely	570,603	Nov. 3	315	77	77	697
Caster-case	L. B. Denton	569,959	Oct. 20	2184	518	77	438
Caster. Furniture-	E. D. Schmidt	569,842	Oct. 20	1978	470	77	401
Caster. Furniture-	M. Lachman	571,167	Nov. 10	1342	313	77	916

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Casting hollow articles. Mold for	H. Messing	570,324	Oct. 27	2878	684	77	582
Casting tubular ingots or metal tubes. Apparatus for	W. Heckert	569,641	Oct. 20	1619	381	77	337
Castings. Toughening manganese-steel	R. A. Hadfield	572,891	Dec. 8	1392	.....	77	1564
Catalogue for libraries, &c. Card-	E. R. Somes	572,132	Dec. 1	71	16	77	1292
Catamenial sack	M. E. Ballard	570,216	Oct. 27	2636	624	77	538
Cattle-guard	W. C. Halley	571,616	Nov. 17	2098	503	77	1069
Cattle-guard. Automatic	S. L. Spencer	571,142	Nov. 10	1307	304	77	909
Ceiling and floor plate	A. Jarecki	571,766	Nov. 24	2376	567	77	1141
Ceiling-plate	J. Scrimgeour, Jr	570,775	Nov. 3	653	149	77	758
Cell-case machine	A. J. Bates	570,621	Nov. 3	365	87, 88, 89, 90	77	705
Cell-cases. Machinery for manufacturing	W. E. Williams	573,947	Dec. 29	3338	797, 798, 799, 800, 801, 802	77	1978
Cement. Slag	S. Jorgensen	569,833	Oct. 20	1964	.....	77	398
Centering device	L. Thomas	571,584	Nov. 17	2044	487	77	1060
Centering-machine	L. E. Whiton	571,817	Nov. 24	2459	585	77	1158
Centrifugal apparatus	E. G. N. Salenius	573,707	Dec. 22	2924	691	77	1886
Centrifugal extractor	T. C. Gooch	574,060	Dec. 29	3559	849, 850	77	2018
Centrifugal machine	W. P. Abell	571,912	Nov. 24	2645	626	77	1191
Centrifugal machine	J. G. Klenk	573,090	Dec. 15	1768	424, 425	77	1654
Centrifugal machine	F. F. Metzger	571,783	Nov. 24	2401	573	77	1147
Centrifugal machine	F. F. Metzger	572,121	Dec. 1	46	12	77	1287
Centrifugal machine	O. Ohlson	573,910	Dec. 29	3271	781	77	1966
Centrifugal separator	P. M. Sharples	570,737	Nov. 3	592	136	77	747
Cereals for food. Machine for reducing and preparing	H. D. Perky	571,284	Nov. 10	1535	364, 365	77	952
Cereals. Machine for reducing	H. D. Perky	571,285	Nov. 10	1538	365	77	953
Chain	L. D. Howard	572,991	Dec. 15	1590	381	77	1619
Chain. Drive-	J. C. Garrood	569,632	Oct. 20	1597	378	77	333
Chain from sheet metal. Machine for automatically manufacturing	C. F. Smith	574,176	Dec. 29	3790	904, 905, 906, 907	77	2059
Chain link. Driving-	B. Holt	570,637	Nov. 3	403	96	77	712
Chain-machine	J. H. Doolittle	568,749	Oct. 6	59	15	77	14
Chain-making machine	W. A. Reid	573,537	Dec. 22	2600	616, 617	77	1824
Chain. Sprocket-	F. Myers	571,978	Nov. 24	2756	650	77	1214
Chain tightener. Sprocket-	G. H. Carver	572,864	Dec. 8	1355	327	77	1556
Chain wrench	G. Amborn, Jr	570,213	Oct. 27	2631	624	77	537
Chain wrench	G. Amborn, Jr	570,214	Oct. 27	2633	624	77	537
Chair: *See* Convertible chair. Dental chair. Folding chair. Nursery-chair. Reclining-chair. Rocking-chair.							
Chair	W. H. Davy	572,503	Dec. 1	727	173	77	1416
Chair	M. W. Neuens	571,536	Nov. 17	1969	469	77	1046
Chair	J. W. Rankin	572,717	Dec. 8	1115	270	77	1510
Chair and box. Combined	H. H. Bruce	571,335	Nov. 17	1624	386	77	984
Chair and cane. Combined	A. E. Springsted	574,011	Dec. 29	3472	830	77	2001
Chair-brace	J. Cooper	572,409	Dec. 1	582	138	77	1389
Chair fan attachment. Rocking-	G. Herfurth	569,497	Oct. 13	1335	314	77	268
Chair fan attachment. Rocking-	R. Taggart	573,114	Dec. 15	1805	435	77	1662
Chair table attachment	J. E. Moudy	569,508	Oct. 13	1363	320	77	273
Chandeliers. Electric slide for	G. J. Carson	568,740	Oct. 6	43	11	77	11
Chart. Sleeve-	W. Baasel	570,835	Nov. 3	758	173	77	780
Chart. Tailor's cutting-	W. Baasel	570,834	Nov. 3	756	172	77	779
Chart. Zodiacal	J. and C. Lindahl	573,091	Dec. 15	1769	425	77	1654
Check, draft, &c. Blank	J. M. Lansdowne	569,973	Oct. 20	2201	523	77	442
Check, draft, order, &c. Self-identifying	E. L. C. Ward	569,364	Oct. 13	1119	266, 267	77	230
Checkrein attachment	A. C. Williams	571,987	Nov. 24	2769	653	77	1217
Checkrein-fastener	H. M. Herring	571,830	Nov. 24	2485	589	77	1162
Checkrein-hook	C. L. McIntire	572,905	Dec. 8	1418	342	77	1571
Cheese-cutter	W. R. Gorrell	570,472	Nov. 3	58	14	77	649
Cheese-press	L. Sigmund	572,455	Dec. 1	651	153	77	1402
Chenille trimming	A. Lederer	574,366	Dec. 29	4142	984	77	2123
Chiming mechanism	A. E. Olney	571,075	Nov. 10	1177	276	77	885
Chimney	A. G. Borry	571,333	Nov. 17	1621	385	77	983
Chimney for light-giving burners	A. P. Storrs	571,867	Nov. 24	2554	606	77	1175
Chimney-protector	W. Lamprecht and E. C. Krieger	572,761	Dec. 8	1196	288	77	1524
Chimney. Transparent	A. P. Storrs	571,866	Nov. 24	2553	605	77	1175
Chin-support for laying out the dead	F. R. Fales	573,178	Dec. 15	1918	460	77	1682
Chisel. Mortising-	H. Ruppert	571,400	Nov. 17	1724	410	77	1002
Chlorin. Apparatus for making	S. A. Sadler and R. H. Wilson	573,039	Dec. 15	1668	400, 401	77	1636
Chlorin. Making	W. Donald	570,624	Nov. 3	381	.....	77	709
Chloroform and apparatus therefor. Making	O. Porsch	573,483	Dec. 22	2508	595	77	1807
Chock-block	N. T. Boose	571,641	Nov. 17	2140	514	77	1078
Chocolate-coating apparatus	C. T. Viau	570,575	Nov. 3	263	66	77	697
Chopper: *See* Cotton-chopper.							
Christmas-tree stand	H. W. Kurtz	573,225	Dec. 15	2005	481	77	1696
Chromos. Mounting	P. I. Bonney	572,956	Dec. 15	1930	366	77	1607
Chronometric apparatus	B. W. Dunn	572,699	Dec. 8	1077	262	77	1503

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Chronophotographic apparatus	M. J. H. Joly	569,875	Oct. 20	2028	483, 484	77	409
Chuck	F. Mink	568,985	Oct. 6	471	106	77	90
Chuck	G. H. Sellers	574,077	Dec. 29	3587	857	77	2023
Chuck	E. H. Vogel	573,189	Dec. 15	1941	467	77	1686
Chuck. Drill-	N. O. Swanson	571,461	Nov. 17	1828	436	77	1022
Chuck. Expansible	J. O. Smith	569,245	Oct. 13	915	219	77	191
Chuck. Universal	V. A. Sallot	570,736	Nov. 3	590	135, 136	77	746
Churn	J. A. Asher	572,146	Dec. 1	90	20	77	1295
Churn	W. R. Cullison	571,039	Nov. 10	1113	260	77	874
Churn	R. J. Force	573,400	Dec. 15	2317	554	77	1754
Churn	J. A. D. Harper and D. R. Smith	572,484	Dec. 1	690	165	77	1410
Churn	R. T. and S. W. Kennedy	569,718	Oct. 20	1775	421	77	363
Churn	W. R. Kramer	569,925	Oct. 20	2114	503	77	426
Churn	J. C. McCallen	573,993	Dec. 29	3444	824	77	1996
Churn	C. Sebastian	574,282	Dec. 29	4009	951	77	2099
Cider-press and juice-extractor	J. T. Waters and G. Clopton	572,936	Dec. 8	1487	357	77	1583
Cigar-branding device	L. C. Walsh and R. T. Todd	573,730	Dec. 22	2963	702	77	1893
Cigar-branding machine	A. Rottach	570,230	Oct. 27	2663	633	77	543
Cigar-box	H. F. Bente	570,534	Nov. 3	176	47	77	670
Cigar-box	P. H. Ertheller	571,945	Nov. 24	2697	638	77	1203
Cigar-bunch-rolling machine	F. R. Keyes and C. A. Baker	571,375	Nov. 17	1687	400, 401, 402	77	995
Cigar-bunching machine	W. H. Isley	572,170	Dec. 1	134	32	77	1303
Cigar-flavoring apparatus	L. B. White	572,323	Dec. 1	423	100	77	1359
Cigar-tray	J. Buchtel	572,469	Dec. 1	668	158	77	1406
Cigarette-machine	H. Bilgram	572,150	Dec. 1	96	22	77	1296
Cigarette-machine	J. A. Bonsack	572,152	Dec. 1	101	24	77	1297
Cigarette-machine	J. A. Bonsack	573,640	Dec. 22	2800	662, 663	77	1864
Cigarette-machine	F. H. Richards	572,375	Dec. 1	524	123, 124	77	1377
Cigarette-machine pasting mechanism	J. S. Beeman	571,061	Nov. 10	1145	268	77	881
Cigarette-roller	A. F. Madden	571,778	Nov. 24	2393	572	77	1145
Cigarettes. Manufacture of	N. J. Evans	569,184	Oct. 13	801	187	77	168
Cigarettes. Manufacture of	C. K. Pickels	569,052	Oct. 6	582	133	77	111
Circuit-breaker	A. J. Wurts	570,212	Oct. 27	2629	623	77	536
Circuit-breaker	A. J. Wurts	570,415	Oct. 27	3037	720	77	611
Circuit-breaker	A. J. Wurts	570,419	Oct. 27	3047	722	77	614
Circuit breaker and closer. Automatic	C. C. Drake	569,960	Oct. 20	2184	518	77	438
Circuit-breaker. Automatic	W. H. Powell	571,097	Nov. 10	1220	285	77	894
Circuit-breaker. Automatic	A. J. Wurts	570,417	Oct. 27	3040	720, 721	77	612
Circuit-closer. Automatic	E. C. Williams	572,923	Dec. 8	1462	351	77	1579
Circuit closer. Automatic safety	W. L. Pratt and F. E. Ripley	570,955	Nov. 10	972	227	77	848
Circuit-closer for electrical alarm-circuits	J. C. Wollin	573,948	Dec. 29	3348	803	77	1979
Circuit-interrupting device	A. J. Wurts	570,416	Oct. 27	3039	720	77	612
Circuits. Regulating polyphase	A. H. Armstrong	571,467	Nov. 17	1836	438	77	1023
Circular cutter	J. D. Tracy	570,828	Nov. 3	746	170	77	777
Cistern-cleaner	J. A. McCawley	571,278	Nov. 10	1528	362	77	951
Clamp:							
See Basin-clamp. Bell-clamp. Furniture-clamp. Pipe-clamp. Rope-clamp. Saw-clamp. Splicing-clamp. Woodworker's clamp.							
Clamp	C. D. Pittis	573,287	Dec. 15	2120	509	77	1718
Clamp for textile machinery. Automatic	H. W. Butterworth	571,508	Nov. 17	1918	458	77	1038
Clamp for textile machinery. Cloth-	C. Weichelt	573,065	Dec. 15	1720	413	77	1645
Clamp-joint	A. Edquist	571,042	Nov. 10	1116	261	77	875
Clarinet	G. Oliveri	570,647	Nov. 3	422	99	77	716
Clasp:							
See Door-clasp. Dress-shield clasp. Lace-clasp. Last-clasp.							
Clasp or buckle	C. W. Stimson	572,915	Dec. 8	1443	347	77	1575
Clay-elevator	F. S. Slattery	570,106	Oct. 27	2439	580	77	501
Clay-separator	P. S. Place	572,311	Dec. 1	401	95	77	1355
Cleaner:							
See Boiler-cleaner. Brush-cleaner. Flour-bolt cleaner. Flue cleaner. Grain and seed cleaner. Pipe-cleaner. Pump-cleaner. Tube or pipe cleaner.							
Cleaning or polishing implement	N. A. Petry	573,697	Dec. 22	2901	686	77	1882
Clevis	J. Reel	571,686	Nov. 17	2209	532	77	1091
Clip:							
See Bicycle toe-clip.							
Clipper. Hair-	H. Dryedale	574,243	Dec. 29	3939	937	77	2085
Clipper. Hair-	J. K. Priest	572,027	Nov. 24	2928	667	77	1227
Clock-bell	S. A. Galpin	573,778	Dec. 22	3031	718	77	1907
Clock. Electric	J. A. Schulte	572,131	Dec. 1	68	16	77	1291
Clock mechanism. Calendar-	T. W. R. McCabe	571,198	Nov. 10	1389	324, 325	77	925
Clock repeating mechanism	C. M. Safford and W. M. Ross	574,114	Dec. 29	3655	672, 673	77	2035
Clock. Self-winding	H. S. Prentiss	572,274	Dec. 1	322	77	77	1341
Clock striking mechanism	H. Hall	571,615	Nov. 17	2096	503	77	1069
Clock striking mechanism. Electric	F. E. Girod	569,099	Oct. 6	657	152	77	125
Clock-winding indicator	J. Mowrer	572,440	Dec. 1	625	148	77	1397
Clocks. Self-winding mechanism for electric	C. M. Crook	573,430	Dec. 15	2405	573	77	1770
Closet:							
See Water-closet.							
Closure	A. S. Lambert and E. Hoffman	568,771	Oct. 6	105	25	77	22
Closure	A. S. Lambert and E. Hoffman	568,773	Oct. 6	108	25	77	23

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Closure	A. S. Lambert and E. Hoffman	568,774	Oct. 6	109	26	77	23
Cloth-cutting machine	G. Imbof	573,186	Dec. 15	1936	465, 466	77	1685
Cloth-evening device	J. H. Northrop	569,586	Oct. 13	1512	356	77	301
Cloth-finishing machines. Adjustable means for instrumentalities in	M. La Fountain, Jr.	573,669	Dec. 22	2863	675, 676	77	1875
Cloth-laying machine	B. L. Cox	573,448	Dec. 22	2450	581	77	1796
Cloth or twine cutter	J. Brusie	570,537	Nov. 3	184	48	77	671
Cloth-singeing apparatus	J. P. Manton	569,109	Oct. 6	671	156	77	128
Cloth-stretching machines. Automatic clamp for	H. W. Butterworth	571,105	Nov. 10	1243	289	77	897
Clothes-drier and fire-escape. Combined	J. R. Lomas	573,673	Dec. 22	2969	677	77	1876
Clothes-line hanger	J. H. Burlich	570,377	Oct. 27	2962	703	77	598
Clothes-pounder	H. W. Toler	573,314	Dec. 15	2182	521	77	1729
Clutch	C. F. Broström	570,247	Oct. 27	2695	640, 641	77	549
Clutch	C. Quast	571,396	Nov. 17	1719	409	77	1002
Clutch. Automatic fluid-pressure friction-	G. M. Richards	574,269	Dec. 29	3983	946	77	2093
Clutch. Automatic safety spring-	J. Annan	569,396	Oct. 13	1169	278	77	239
Clutch for card-feeding machines	C. H. Woodbury	571,963	Nov. 24	2728	645	77	1209
Clutch. Friction-	G. A. Anderson	572,238	Dec. 1	254	61	77	1327
Clutch. Friction-	S. Brown	572,957	Dec. 15	1531	366, 367	77	1607
Clutch. Friction-	L. M. Johnston	572,205	Dec. 1	187	46	77	1314
Clutch. Friction-	H. McLeod	573,689	Dec. 22	2892	683	77	1880
Coal. Apparatus for separating sulfur from	I. M. Kelley	572,548	Dec. 8	801	192	77	1446
Coal crushing and breaking rolls	W. B. Culver	571,264	Nov. 10	1502	354, 355	77	946
Coal cutting and drilling machine. Combined	S. Raybould	573,237	Dec. 15	2025	485	77	1701
Coal-drilling machine	W. C. Johnson	574,368	Dec. 29	4144	984	77	2124
Coal-jigs, &c. Means for operating gates of	T. E. Smith	574,228	Dec. 29	3915	932	77	2081
Coal-separator	C. W. Ziegler	570,781	Nov. 3	661	151, 152	77	760
Coal-shovel and ash-sifter. Combined	T. B. Sorenson	571,205	Nov. 10	1400	327	77	927
Coal unloading, storing, and reloading mechanism	W. A. Lathrop	572,900	Dec. 8	1404	340	77	1566
Coal-washer	W. L. Scaife	570,232	Oct. 27	2666	634	77	544
Coat and hat hanger and lock. Combined	P. J. Piatti	570,228	Oct. 27	2656	630	77	542
Coat and hat holder	J. F. Main	569,422	Oct. 13	1215	285	77	246
Coat-hanger	G. L. Grier	568,901	Oct. 6	314	72	77	60
Cock. Angle-	T. A. Outhouse	571,201	Nov. 10	1394	326	77	926
Cock. Automatic safety angle-	J. W. Winters	571,735	Nov. 17	2315	553	77	1111
Cock boxes and frame therefor. Cover for stop-	H. F. Rebmann	572,217	Dec. 1	214	52	77	1318
Cock. Cylinder-	J. F. McCoy	572,211	Dec. 1	207	51	77	1317
Cock for water-service systems. Stop-	J. Slaymaker	569,304	Oct. 13	1020	243	77	210
Cock. Stop and waste	S. M. Friede	569,967	Oct. 20	2194	521	77	440
Cock. Stop and waste	A. and H. Steinhauer	574,079	Dec. 29	3590	858	77	2024
Cocks or taps. Machine for grinding	L. D. Biddle	570,431	Oct. 27	3071	728, 729	77	618
Cocoa. Preparing	G. A. Pieper	571,238	Nov. 10	1459	.....	77	938
Coffee or tea pot	H. L. Richardson	572,909	Dec. 8	1423	343	77	1572
Coffee or tea service utensil. Individual	A. F. Stephens and R. T. Connell	569,678	Oct. 20	1682	398	77	349
Coffee-pot	C. H. Chase	573,440	Dec. 22	2435	517	77	1763
Coffin	M. Karnicki	572,118	Dec. 1	42	10,411	77	1286
Coffin-truck, embalming-table, &c. Combined	W. F. Shaw	573,303	Dec. 15	2167	517	77	1726
Coiler	J. T. Meats and J. S. Eaton	572,433	Dec. 1	617	146	77	1395
Coin-changing device	A. L. Levin	569,214	Oct. 13	856	202	77	179
Coin-controlled apparatus	J. S. Barcus	572,496	Dec. 1	712	170, 171, 179, 180	77	1413
Coin-freed apparatus for delivering tickets, sweetmeats, &c.	J. Fotheringham	570,849	Nov. 3	783	.....	77	784
Coin-holder	F. B. Wagner	571,179	Nov. 10	1359	317	77	919
Coin-holder	C. A. Webster	573,251	Dec. 15	2047	490	77	1705
Coin-holder. Pocket	P. Seiler	569,675	Oct. 20	1679	397	77	348
Coin-receptacle	J. Brenzinger and E. F. Klée	572,691	Dec. 8	1060	258	77	1500
Coining-press	O. Smith	574,227	Dec. 29	3911	929, 930, 931	77	2080
Collapsible box	T. F. W. Schmidt	571,691	Nov. 17	2215	533	77	1092
Collar. Adjustable	J. Atkinson	569,534	Oct. 13	1401	331	77	280
Collar-folding machine	J. A. Anderson	572,259	Dec. 1	255	61	77	1327
Collar. Horse-	J. A. Weider	570,887	Nov. 3	859	200	77	801
Collar-machine	W. B. Shadburn	572,912	Dec. 8	1427	344	77	1573
Collar-pad	R. C. Van Derveer	569,363	Oct. 13	1117	266	77	230
Collar-pad or bridge-support for harness	C. Bartlett	568,890	Oct. 6	300	69	77	58
Collar. Self-adjusting horse-	J. L. Torrey	568,867	Oct. 6	295	68	77	57
Collar shaper. Turn-down-	J. R. Walsh	571,606	Nov. 17	2082	500	77	1066
Colloids. Preparing soluble	E. J. Mills	569,112	Oct. 6	674	.....	77	129
Color-exhibiting device. Interchangeable-	J. E. Patton, Jr.	572,216	Dec. 1	213	52	77	1318
Colors. Moist-	A. Sartorius	574,220	Dec. 29	3896	.....	77	2077
Colors on fiber. Producing azo	F. Storck	569,392	Oct. 13	1165	.....	77	238
Colors, &c. Process of and apparatus for making tubes for artists'	H. Goodwin	570,728	Nov. 3	570	131	77	743
Colter-holder	F. M. Cook	571,189	Nov. 10	1376	321	77	923
Column	P. Johnson	573,151	Dec. 15	1874	451	77	1674
Columns. Means for sinking wall or other supporting	R. S. Gilleapie	573,404	Dec. 15	2322	555	77	1755
Comb:							
See Curling-comb.							
Comb-dabbing mechanism	T. W. Hickey	570,095	Oct. 27	2427	576	77	498
Combing-machine	W. Whalley, A. Clegg, T. W. Benson, W. Parratt, and J. Robinson.	573,740	Dec. 22	2979	705	77	1897
Combination-lock	D. J. Cable	573,136	Dec. 15	1850	446	77	1669
Combination-lock	J. Richardson	568,795	Oct. 6	140	34	77	29
Combination-table	C. Whitford	572,391	Dec. 1	555	131	77	1384

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Commode	E. L. Chalke	574,134	Dec. 29	3694	880	77	2042
Commode	E. W. Jenkins	569,206	Oct. 13	839	197	77	176
Commode	C. G. Mann	571,620	Nov. 17	2104	505	77	1071
Commutator-brush	A. K. Warren	571,420	Nov. 17	1758	419	77	1008
Composition of matter	T. Cotter and T. H. Walker	569,859	Oct. 20	2008	.....	77	404
Composition of matter	F. R. Hall	571,117	Nov. 10	1964	.....	77	901
Composition of matter	R. H. Martin	569,759	Oct. 20	1847	.....	77	376
Composition of matter	S. Le Sieur	572,645	Dec. 8	978	.....	77	1484
Compound tube	G. T. Warwick	574,184	Dec. 29	3814	911	77	2062
Condenser	G. A. Reichard	570,103	Oct. 27	2435	579	77	500
Condenser	J. D. Smith	572,834	Dec. 8	1315	315	77	1548
Conduit-tube	E. T. Greenfield	570,169	Oct. 27	2550	606	77	522
Conduit. Underground	E. T. Greenfield	570,168	Oct. 27	2547	605, 606	77	522
Conduits. Making interior	E. Lavens	570,256	Oct. 27	2713	645	77	553
Confectionery-machine	S. J. Hicks	572,423	Dec. 1	603	143	77	1392
Confectionery-machine	S. J. Hicks	573,463	Dec. 22	2476	587	77	1801
Confessional. Folding portable	A. S. Siebenfoercher	570,512	Nov. 3	135	33	77	663
Convertible chair	L. A. Chichester	571,038	Nov. 10	1112	260	77	874
Conveyer	J. M. Dodge	571,347	Nov. 17	1641	389	77	988
Conveyer	C. W. Levalley	573,988	Dec. 29	3434	823	77	1994
Conveyer	M. M. Suppes	569,681	Oct. 20	1687	400	77	349
Conveyer. Bucket	A. J. Frith	570,251	Oct. 27	2699	642, 643	77	549
Conveying apparatus	A. L. Le Grand	570,876	Nov. 3	831	193, 194	77	794
Conveying apparatus	T. S. Miller	574,039	Dec. 29	3521	840	77	2010
Cooker. Gas-	G. Horn	572,486	Dec. 1	692	165, 166	77	1410
Cooking utensil	J. K. Purinton	573,291	Dec. 15	2135	512	77	1720
Cooling, condensing, and sterilizing apparatus. Combined	W. F. Fey	569,750	Oct. 20	1831	435	77	374
Coop. Chicken-	J. P. Hazen	571,592	Nov. 17	2059	493	77	1062
Coop Chicken-	W. W. Mendenhall	569,295	Oct. 13	999	239	77	206
Coppery silver bullion. Refining	F. Gutzkow	572,342	Dec. 1	447	.....	77	1364
Core-press	M. P. Coleman	573,643	Dec. 22	2807	665	77	1866
Cores. Method of and apparatus for forming	S. J. Adams	569,986	Oct. 27	2225	528	77	459
Cork-cabinet	G. M. Wilson and H. J. Neely	570,113	Oct. 27	2454	583	77	504
Corking-machine vent attachment	W. O. Vilter	573,426	Dec. 15	2397	571	77	1769
Corkscrew-knife	C. H. Müller	573,475	Dec. 22	2498	592	77	1805
Corn, &c. Device for cutting	M. W. Pringle	569,725	Oct. 20	1785	424	77	366
Corn-husker	P. H. Conner and L. Clark	574,136	Dec. 29	3698	881, 882	77	2043
Corn-husker	J. Willmann	573,561	Dec. 22	2644	628	77	1832
Corn-husker and stalk-cutter	G. C. Janney	568,981	Oct. 6	458	103, 104, 105	77	88
Corn-husking machine	J. J. Woodman	573,500	Dec. 22	2541	602	77	1812
Corn-husking-machine feeder	J. Bauer, Jr	571,148	Nov. 10	1319	307	77	912
Corn product and making same	M. W. Marsden	572,019	Nov. 24	2816	665	77	1224
Corn sheller and cleaner. Combined	J. B. Cornwall	572,084	Nov. 24	2963	696, 697	77	1252
Cornstalk-shredder and snapping-machine	J. D. Tracy and J. F. Platt	571,057	Nov. 10	1136	266	77	879
Cornet	H. G. Neely	571,011	Nov. 10	1067	249	77	865
Cornice-machine	G. Henderson	573,655	Dec. 22	2840	670	77	1870
Corrugating and cutting tool	J. Blumer	570,218	Oct. 27	2639	625	77	538
Corrugating-machine	T. W. Graham	570,729	Nov. 3	572	131	77	743
Corset	L. A. Downs	572,787	Dec. 8	1240	299	77	1533
Corset	F. K. Hickok	570,398	Oct. 27	3013	713	77	607
Corset	L. C. Wright	573,951	Dec. 29	3351	803	77	1980
Corset-fastening	F. M. Lehnig	569,213	Oct. 13	855	201	77	179
Corset-stiffener	J. S. Crotty	573,570	Dec. 22	2655	631	77	1835
Corset-waist	V. H. Oberly	572,025	Nov. 24	2825	667	77	1226
Cot. Folding	D. T. Helprin	572,422	Dec. 1	601	142	77	1392
Cotter-pin press	W. R. Tilton	569,527	Oct. 13	1392	328	77	279
Cotton-bale opening or picking machine	M. Swenson	574,048	Dec. 29	3538	845	77	2014
Cotton-bale picking or opening machine	M. Swenson	573,931	Dec. 29	3313	791	77	1973
Cotton chopper and cultivator	J. Cocke	571,648	Nov. 17	2148	515, 516	77	1079
Cotton chopper and cultivator	D. C. Summers	573,369	Dec. 15	2269	541, 542	77	1745
Cotton-condenser	J. M. Cochran	572,650	Dec. 8	986	237, 238	77	1485
Cotton conveyer and distributer. Pneumatic seed-	E. L. Smith	568,882	Oct. 6	287	66	77	55
Cotton elevator and distributer	J. W. Elliott	571,473	Nov. 17	1849	410	77	1025
Cotton-gin and wool-burring machine	H. W. Libbey	572,263	Dec. 1	300	72	77	1336
Cotton-gin screen	J. S. Jenkins	574,201	Dec. 29	3855	919	77	2069
Cotton. Machinery for handling	R. M. Gill	570,471	Nov. 3	55	13	77	648
Cotton-picker	C. C. Neighbours	572,611	Dec. 8	924	223, 224	77	1473
Cotton-picker	D. Rawl	574,218	Dec. 29	3892	926, 927	77	2076
Cotton-picking machine	H. T. Armstrong	570,444	Nov. 3	4	1, 2	77	639
Cotton-picking machine	W. A. Turner	572,493	Dec. 1	704	168, 169, 170	77	1412
Cotton-press	M. Swenson	574,121	Dec. 29	3673	876	77	2038
Cotton staple, &c. Conveyer for treating	A. H. Morton	572,492	Dec. 1	703	168	77	1412
Couch, bed, and bath-tub. Combined	J. Bock	569,001	Oct. 6	499	112	77	95
Couch or settee. Convertible	E. Harry	570,208	Oct. 27	2620	622	77	535
Counter and show-case. Combined	J. H. Gimnich	570,795	Nov. 3	682	156	77	764
Counter attachment. Sales-	H. Walkinshaw and J. Kapp	571,252	Nov. 10	1481	347	77	942
Counter-seat	G. W. Dearborn	571,651	Nov. 17	2153	517	77	1080

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Coupling: *See* Air-brake coupling. Engine-coupling. Air-brake hose-coupling. Hose-coupling. Car-coupling. Locomotive-tender coupling. Car and air-brake coupling. Shaft or tongue coupling. Cultivator-beam coupling. Thill-coupling. Drill-rod coupling. Tire-coupling. Water-closet coupling.							
Coupling for rolls	J. F. Budke	573,203	Dec. 15	1967	474	77	1690
Coupon system. Credit-	W. R. Gillette	572,978	Dec. 15	1572	377	77	1615
Cover-holder for culinary pots or kettles	H. A. Schermerhorn	572,774	Dec. 8	1215	294	77	1528
Covers of cans or other receptacles. Device for removing	G. J. Record	571,794	Nov. 24	2423	577	77	1151
Crank and pedal	W. L. Decker	571,753	Nov. 24	2354	563	77	1137
Crank-handle	J. D. McFarland, Jr	569,346	Oct. 13	1093	259	77	225
Crank-pin	R. Bragg	572,497	Dec. 1	716	171	77	1414
Crate	A. Stratton	573,718	Dec. 22	2944	695	77	1889
Crate. Egg-	G. W. Spurr	569,390	Oct. 13	1163	277	77	238
Crate. Folding	W. J. Aicklen	573,804	Dec. 22	3075	731	77	1915
Crate. Folding egg-	C. Tucker	570,574	Nov. 3	262	65, 66	77	687
Crate. Folding shipping-	J. H. Pollard	573,529	Dec. 22	2582	613	77	1820
Crate-lid	W. H. H. Sallee	573,040	Dec. 15	1671	401	77	1636
Crate. Shipping-	J. H. Jewett	572,998	Dec. 15	1602	384	77	1692
Crematory. Odorless	C. W. Lent	573,605	Dec. 22	2717	646	77	1848
Crimping-tongs	G. L. Thompson	570,413	Oct. 27	3035	719	77	611
Crochet-hook	A. Knippenberg	572,809	Dec. 8	1277	307	77	1540
Crupper for restraining horses from kicking	H. Cave	569,812	Oct. 20	1932	459	77	392
Crusher: *See* Ore-crusher.							
Crushing apparatus	E. D. Self	568,926	Oct. 6	353	81, 82	77	68
Crushing-mill. Centrifugal	R. Sauerbrey	569,238	Oct. 13	903	216	77	189
Cue-rest	W. D. Cronin	570,459	Nov. 3	33	7	77	614
Cuff-link	O. Congelton	570,457	Nov. 3	31	7	77	644
Cuff or border for undergarments	J. A. Bennett and W. B. Clark	570,694	Nov. 3	518	120, 121	77	734
Cultivating and clearing land. Machinery for	T. Cooper	571,082	Nov. 10	1191	280	77	880
Cultivating implement	J. Darling	571,130	Nov. 10	1292	300	77	906
Cultivation of asparagus	C. A. von Maltzahn	571,273	Nov. 10	1521	360	77	949
Cultivator	J. B. Collard and H. J. Hensarling	570,842	Nov. 3	771	176	77	782
Cultivator	T. C. Fleming	573,143	Dec. 15	1863	448, 449	77	1672
Cultivator	D. D. Funk	570,281	Oct. 27	2756	656	77	561
Cultivator	E. Haiman, R. Huettich, and C. Bishop.	571,307	Nov. 10	1576	375	77	961
Cultivator	W. D. McCauly	568,866	Oct. 6	265	61	77	51
Cultivator	J. M. Robinson	573,704	Dec. 22	2919	690	77	1885
Cultivator attachment	T. R. Morris	570,492	Nov. 3	104	25, 26	77	657
Cultivator-beam coupling	G. D. Mitchell	572,813	Dec. 8	1252	308	77	1541
Cultivator. Disk	A. L. Brock	570,660	Nov. 3	454	107	77	724
Cultivator or plow	F. Reimers	572,829	Dec. 8	1310	314	77	1547
Cultivator, planter, and roller	F. P. Burdge	571,827	Nov. 24	2479	588	77	1161
Cultivator. Two-row	S. I. Ballor	571,146	Nov. 10	1312	305, 306	77	910
Cup: *See* Oil-cup.							
Cupola-furnace	J. B. Magill	573,895	Dec. 22	3124	744	77	1924
Curling-comb	I. G. Kraus	573,887	Dec. 29	3240	771	77	1960
Curling-iron	N. Berryman	569,536	Oct. 13	1404	332	77	281
Curling-iron	G. Skinner	573,112	Dec. 15	1802	434	77	1661
Current-controller or rheostat	E. E. Werner	574,231	Dec. 29	3924	934	77	2082
Current-controlling device	J. J. Hogan	572,507	Dec. 1	731	174	77	1417
Current generators. Method of and means for regulating alternating-	B. G. Lamme	574,035	Dec. 29	3514	839	77	2008
Current-motor	M. G. Bunnell	571,063	Nov. 10	1149	268, 269	77	881
Current motor. Alternating-	M. Hutin and M. Leblanc	571,478	Nov. 17	1856	442	77	1026
Current regulation and distribution. System of alternating-	B. G. Lamme	571,836	Nov. 24	2495	591	77	1164
Currents. System of distribution for alternating	C. S. Bradley	570,118	Oct. 27	2462	584	77	505
Currycomb	C. E. Piper	572,063	Nov. 24	2899	684	77	1240
Curtain bracket and support. Adjustable	A. Walton	569,898	Oct. 20	2068	491, 492	77	417
Curtain-fixture	E. L. Slight	569,592	Oct. 13	1527	358	77	303
Curtain-fixture. Adjustable	J. R. Thom	570,349	Oct. 27	2915	691	77	589
Curtain fixture or support	G. W. Bamford	571,184	Nov. 10	1368	319	77	921
Curtain-pole	H. Eckert	572,249	Dec. 1	271	66	77	1330
Curtain-pole	W. Hodgson	572,165	Dec. 1	126	29	77	1301
Curtain pole and fixture	F. J. Schloer	572,687	Dec. 8	1054	256	77	1499
Curtain-pole bracket	G. P. Neal	569,563	Oct. 13	1460	344	77	292
Curtain-ring	M. L. Munson	572,441	Dec. 1	626	148	77	1397
Curtain-rod	T. D. Pratt	569,010	Oct. 6	509	115	77	97
Curtain-roller. Extension	A. F. Temple	570,719	Nov. 3	552	128	77	741
Curtain-roller. Extension	A. F. Temple	570,720	Nov. 3	554	128	77	741
Curtain-stretcher	W. Simon, Jr	570,210	Oct. 27	2626	623	77	536
Curtain-stretcher	J. Smith	568,991	Oct. 6	484	109	77	92
Curtain-support	D. Turbeville	574,848	Dec. 29	4111	977	77	2118
Curtain-suspending device	J. Pursell	572,616	Dec. 8	932	226	77	1475
Cuspidor	N. J. Guttendorf	574,148	Dec. 29	3718	886	77	2046
Cuspidor. Self-cleaning	E. Benoit	570,217	Oct. 27	2637	625	77	538
Cut-out. Multifuse	W. Ehrhardt	568,971	Oct. 6	436	97	77	84
Cutlery-handle	W. B. Steeles	570,346	Oct. 27	2911	690	77	588

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Cutter: *See* Band-cutter. Bog-cutter. Bolt-cutter. Card-cutter. Cardboard-cutter. Cheese-cutter. Circular cutter. Cloth or twine cutter. Feed-cutter. Flue-cutter. Fuel-cutter. Meat-cutter. Paper-cutter. Pipe-cutter. Potato-cutter. Rod or bolt cutter. Stalk-cutter.							
Cutter and head	W. B. Holbrook	574,151	Dec. 29	3722	887	77	2047
Cutter-bar guard	B. F. Shepherd	572,728	Dec. 8	1138	274	77	1514
Cutter-head templet	S. J. Shimer	572,304	Dec. 15	2169	517	77	1796
Cutting and panning machine	L. B. Davidson	570,870	Nov. 3	821	191	77	792
Cutting-tool	J. L. McFarlane	572,559	Dec. 8	820	197	77	1450
Cyanids. Process of and apparatus for making	J. A. Kendall	569,104	Oct. 6	663	153	77	127
Cyanida. Process of and apparatus for producing	P. Danckwardt	569,325	Oct. 13	1056	250	77	218
Cyanogen compounds. Manufacture of	J. J. Hood and A. G. Salamon	570,480	Nov. 3	75	.....	77	651
Cycle	H. Brings	571,298	Nov. 10	1562	371	77	958
Cycle	G. C. W. and W. A. D. Hipperling	572,544	Dec. 8	796	190	77	1445
Cycle	A. A. Munro	572,941	Dec. 8	1498	358	77	1585
Cycle-saddle	L. Perissé	569,977	Oct. 20	2206	525	77	443
Cycle. Skating	T. A. Marteeny	573,096	Dec. 15	1777	427	77	1656
Cycle-stand and mud-guard. Combined	D. Schwarz and G. Luxeder	573,542	Dec. 22	2610	619	77	1898
Cycle-wheel	J. McConochy	572,683	Dec. 8	1044	253	77	1497
Cyclometer	C. H. Clawson	569,322	Oct. 13	1050	249	77	216
Dam. Movable	B. F. Thomas	574,229	Dec. 29	3018	821	77	2061
Damper-regulator	J. B. Hutchinson	570,804	Nov. 3	697	159	77	767
Damper-regulator	G. F. Nilsson	569,513	Oct. 13	1370	321	77	275
Danger-signal	H. Harris and F. Bernardin	573,518	Dec. 15	1992	479	77	1696
Darning apparatus	J. H. Wilday	572,921	Dec. 8	1459	351	77	1578
Dead-centers. Device for overcoming	H. H. Tyrrell and C. M. Holford	573,801	Dec. 22	3067	727	77	1914
Decorating interior walls of houses or other surfaces	H. M. Johnston	574,332	Dec. 29	4063	970	77	2113
Decoration for textile fabrics	E. Siron	570,612	Nov. 3	328	81	77	699
Deflector	A. Eby	574,094	Dec. 29	3495	835	77	2005
Delivery-receptacles. Device for securing	W. H. Miller	573,341	Dec. 15	2224	532	77	1736
Dental cataphoric apparatus	M. W. Hollingsworth	569,380	Oct. 13	1144	272	77	225
Dental chair	A. W. Browne	573,133	Dec. 15	1842	{444 {445	77	1668
Dental disk-holder	G. B. Hakins	574,031	Dec. 29	3505	837	77	2007
Dental engine	F. C. Ries and H. H. Johnson	572,030	Nov. 24	2832	668	77	1228
Dental-engine handpiece	C. O. Perkins	573,310	Dec. 1	400	95	77	1355
Dental-engine-tool rest	C. H. Land	569,210	Oct. 13	851	{200 {201	77	178
Dental furnace	G. W. Schwartz and B. J. Cigrand	573,361	Dec. 15	2260	540	77	1743
Dental instrument	J. T. Barker	571,965	Nov. 24	2731	645	77	1209
Dental matrix carrier and retainer	J. M. Strout	574,012	Dec. 29	3475	830	77	2002
Dental obtunder	H. F. Harvey	571,970	Nov. 24	2737	647	77	1210
Dental operating-chairs. Chin-rest for	J. F. Adams	571,209	Nov. 10	1407	329	77	928
Dental-plate-polishing tool	P. B. Barnes	569,535	Oct. 13	1403	331	77	281
Dental plugger	F. S. Belyea	570,864	Nov. 3	806	185	77	788
Dental plugger	R. N. Stockton	571,176	Nov. 10	1355	316	77	919
Dental plugger or mallet	H. A. Edgecomb	574,025	Dec. 29	3496	835	77	2005
Dental tool and plugger	J. W. Dennis	569,063	Oct. 6	649	149	77	124
Derrick. Sectional	O. Crosby	570,124	Oct. 27	2472	{585 {586	77	507
Desk	W. T. Dodd	571,652	Nov. 17	2154	517	77	1081
Desk	W. P. Kidder	570,311	Oct. 27	2857	677	77	578
Desk and seat. Adjustable school	S. Springsteen and H. Harris	572,731	Dec. 8	1141	{275 {276	77	1514
Desk. Duplicate	J. C. Laughlin	571,486	Nov. 17	1874	447	77	1029
Detergent	J. Altimira	572,853	Dec. 8	1339	.....	77	1533
Detergent compounds. Making	T. C. Burgis	573,438	Dec. 22	2433	.....	77	1793
Developing-tray	E. L. C. Lambert	573,888	Dec. 29	3241	771	77	1960
Dial for recording apparatus	F. G. Louge	573,606	Dec. 22	2720	646	77	1848
Diamond-polishing dop	E. and E. Loesser	573,672	Dec. 22	2868	677	77	1875
Die	J. J. Theobald	573,371	Dec. 15	2274	542	77	1746
Digger: *See* Potato-digger.							
Digging and stable fork	C. W. Skeels	568,962	Oct. 6	422	94	77	81
Directory. Office	W. W. Powers	573,354	Dec. 15	2247	537	77	1741
Dish-cleaner	G. S. Blakeslee	569,606	Oct. 20	1550	364	77	324
Dish-drainer	J. G. Kerner	573,963	Dec. 29	3425	821	77	1993
Disinfecting apparatus	H. R. Allen	569,396	Oct. 20	1537	361	77	321
Disinfecting material, &c. Apparatus for delivering	E. Taussig	570,518	Nov. 3	146	36	77	665
Disinfecting ships or other structures. Apparatus for	H. R. Cassel	569,173	Oct. 13	782	183	77	165
Disk meter	E. Ruud and A. G. Holmes	568,924	Oct. 6	349	81	77	67
Display apparatus	F. W. G. Boettcher	569,950	Oct. 20	2169	{514 {515	77	436
Display-box cover	G. M. Hudson	573,661	Dec. 22	2849	672	77	1872
Display-cabinet. Combination	T. E. Wood	569,367	Oct. 13	1125	268	77	231
Display case. Bottle	A. J. Wallis	570,972	Nov. 10	996	231	77	852
Display-rack	W. Hager	570,704	Nov. 3	534	124	77	737
Display-rack	W. Henderson and O. A. Morse	569,715	Oct. 20	1769	420	77	362
Display-rack	J. M. Taylor	573,835	Dec. 22	3141	748	77	1927
Display-stand	W. J. Drew	569,961	Oct. 20	2185	518	77	439
Display-stand	P. Weaver and N. S. Haller	571,961	Nov. 24	2726	644	77	1209
Distance and direction of remote objects. Apparatus for indicating	G. G. Greenough	568,755	Oct. 6	75	17, 18	77	18
Ditching or excavating machine	M. C. Mackey	569,975	Oct. 20	2204	524	77	442
Divan. Combination	P. B. Jackson	571,000	Nov. 10	1042	244	77	861

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Dock and ship-cleaning device. Floating dry	M. W. Marsden	570,489	Nov. 3	96	{22 {23 {24	77	656
Doll-walker	H. R. Hinckley	569,333	Oct. 13	1069	253	77	221
Door-catch	H. Schumann and B. C. Alvord	574,004	Dec. 29	3460	828	77	1999
Door-catch	F. W. Tobey	573,372	Dec. 15	2275	543	77	1746
Door-check	T. Curley	571,153	Nov. 10	1326	309	77	913
Door-check	M. Moore and F. A. Holliday	570,039	Oct. 27	2314	549	77	476
Door-check	E. L. Schacht	573,300	Dec. 15	2149	515	77	1722
Door-clasp	H. W. Harris	570,017	Oct. 27	2276	541	77	468
Door closer and stop. Combined	B. M. Davis	573,395	Dec. 15	2312	553	77	1753
Door closer, check, and holder	C. J. Wagener	573,497	Dec. 22	2535	601	77	1811
Door-closing mechanism. Thermal	H. B. Newhall	570,710	Nov. 3	539	125	77	738
Door-fastener and alarm. Combined	A. E. Veon	571,546	Nov. 17	1984	472	77	1049
Door. Grain	H. Pries and J. W. Meyer	570,269	Oct. 27	2739	{651 {652	77	557
Door-hanger	H. L. Ferris	569,965	Oct. 20	2190	520	77	440
Door-hanger	M. C. Richards	573,108	Dec. 15	1795	432	77	1659
Door hanger. Folding	W. S. Roof	569,937	Oct. 20	2145	508	77	432
Door lock. Hotel	C. W. Andrews	571,210	Nov. 10	1408	329	77	928
Door lock. Sliding	A. H. C. Trepte	573,934	Dec. 29	3317	792	77	1974
Door-opener	J. W. Regan	569,056	Oct. 6	588	134	77	113
Door-operating apparatus	O. H. Hicks	572,299	Dec. 1	371	88	77	1350
Door-operating apparatus	O. H. Hicks	572,300	Dec. 1	372	88	77	1350
Door-operating apparatus. Electric	O. H. Hicks and R. F. Troy	572,301	Dec. 1	374	{88 {89 {90 {91	77	1350
Door-securer and key-ring chain. Combined	G. F. Bailey	572,046	Nov. 24	2866	674	77	1234
Door stop or holder	P. and S. Westra	572,622	Dec. 8	940	228	77	1477
Door system. Trolley	H. B. Newhall	570,711	Nov. 3	540	126	77	739
Doors, &c. Apparatus for manufacturing	W. W. Grier	570,992	Nov. 10	1028	{240 {241	77	858
Dough-board and bread-cutting tray. Combined	F. S. Farquhar	571,349	Nov. 17	1644	391	77	968
Dough-mixer	W. B. Edwards and G. E. Potter	569,449	Oct. 13	1256	295	77	254
Dough-molding machine	G. Lewis and C. E. Pointon	571,775	Nov. 24	2389	571	77	1144
Dowel pin and joint	H. H. Rockwell	569,235	Oct. 13	899	215	77	188
Dowel-pin for pattern-makers. Metallic	W. N. Garteide	573,970	Dec. 29	3405	816	77	1969
Dowel-pins. Machine for making	H. H. Rockwell	569,234	Oct. 13	896	{214 {215	77	187
Draft appliance	J. B. Kennedy	570,484	Nov. 3	87	20	77	655
Draft-regulator	F. H. Treat	569,254	Oct. 13	930	{222 {223	77	193
Draft-regulator and spark-arrester. Combined	R. Deissler	570,985	Nov. 10	1015	{236 {237	77	856
Draft-rigging	T. Eubank	570,987	Nov. 10	1018	{237 {238	77	856
Drainer. Cellar	W. Lee	573,014	Dec. 15	1628	391	77	1627
Draw-bar lift	J. Schultz	571,540	Nov. 17	1975	470	77	1047
Draw-plate	J. Hudson	569,335	Oct. 13	1071	254	77	221
Drawer and support therefor	D. E. Hunter and H. E. Davidson	573,978	Dec. 29	3418	819	77	1991
Drawer for holding documents, &c	T. G. Knight	573,665	Dec. 22	2854	673	77	1873
Drawer support. Sliding	F. Hamilton	573,461	Dec. 22	2473	586	77	1801
Drawers. Night	C. Arnold	569,483	Oct. 13	1306	{307 {308	77	263
Drawing-board	D. B. Benedict	572,739	Dec. 8	1159	278	77	1518
Drawing-press. Hydraulic	L. Schuler	570,063	Oct. 27	2363	562	77	485
Dredge. Flour or condiment	W. D. F. Loryea	572,362	Dec. 1	488	114	77	1371
Dredging apparatus	W. B. Pless	572,769	Dec. 8	1205	{291 {292	77	1526
Dredging-bucket	W. A. Collins	572,651	Dec. 8	987	238	77	1486
Dredging-machine	C. H. Olson	573,832	Dec. 22	3137	747	77	1926
Dress-shield	D. Baach	569,599	Oct. 20	1541	361	77	321
Dress-shield clasp	F. F. Hurd	572,508	Dec. 1	732	174	77	1417
Dressing-bag	W. F. Williams	573,742	Dec. 22	2982	706	77	1897
Dressmaker's stand	A. L. Jones	570,931	Nov. 10	933	217	77	841
Drier: *See* Clothes-drier. Fruit-drier. Grain-drier. Hair-drier. Lumber-drier. Paper-drier.							
Dry-kiln	J. F. Oldfield	568,987	Oct. 6	475	107	77	91
Drying and filtering machine. Centrifugal	C. A. Snider	569,677	Oct. 20	1681	398	77	349
Drying frame. Shirt	H. A. Rowland	571,537	Nov. 17	1971	469	77	1047
Drying textile articles. Device for	C. Pease	568,874	Oct. 6	278	64	77	54
Drying-tray	H. A. Orr	572,660	Dec. 8	1002	242	77	1489
Drill: *See* Grain-drill. Hand-drill. Ratchet-drill. Rock-drill. Track-drill.							
Drill-rod coupling	J. T. Moran	573,433	Dec. 15	2411	574	77	1771
Drill-tetrapod	A. E. W. Meissner	573,608	Dec. 22	2722	647	77	1849
Drills. Driving mechanism for	F. Milliken	569,115	Oct. 6	677	158	77	129
Drills, &c. Machine for cutting twist	H. C. Peters	569,565	Oct. 13	1469	346	77	293
Drilling-machine	W. Bynon	573,808	Dec. 22	3081	732	77	1916
Drilling machine. Slot	J. C. Harrison	570,091	Oct. 27	2420	{573 {574	77	497
Drilling or boring tool	B. and T. Wesselmann	571,253	Nov. 10	1482	348	77	942
Drinking-fountain	E. M. Christ	568,835	Oct. 6	202	49	77	40
Drive mechanism for machines in series. Successive	G. E. Henry	569,414	Oct. 13	1206	284	77	245
Drum	G. W. Bemis	570,693	Nov. 3	515	120	77	734
Drum	E. Boulanger	573,320	Dec. 15	2189	523	77	1730
Dust-bag	D. Hunt	569,830	Oct. 20	1958	466	77	397
Dust-collector	W. E. Allington	570,443	Nov. 3	2	1	77	639
Dust-collector	E. B. Whitmore	573,837	Dec. 22	3143	749	77	1927

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Dust-collector	J. W. Wilson	568,968	Oct. 6	432	96	77	83
Dust-collector cleaner	J. F. Staiger and G. W. Grabert	572,620	Dec. 8	936	227, 228	77	1476
Dust-guard	D. Focer	571,354	Nov. 17	1655	392	77	990
Dust-pan	A. C. Gerow	573,460	Dec. 22	2472	586	77	1800
Dust-pan	W. J. Hopkins	572,343	Dec. 1	449	105	77	1364
Dust-pan	D. Hunt	569,829	Oct. 20	1957	466	77	397
Dust-pan	A. Koehler	570,026	Oct. 27	2294	544	77	472
Dust-pan	S. T. Percy	572,180	Dec. 1	150	37	77	1307
Dye and making same. Alizarin	R. Brasch	569,404	Oct. 13	1188	.....	77	242
Dye and making same. Blue	H. Laubmann	569,418	Oct. 13	1210	.....	77	246
Dye and making same. Green alizarin	R. Brasch	569,405	Oct. 13	1190	.....	77	242
Dye. Black triazo	C. Ris	571,933	Nov. 24	2682	.....	77	1200
Dye. Red	T. Sandmeyer	573,299	Dec. 15	2148	.....	77	1722
Dye. Triazo	C. Rudolph	572,723	Dec. 8	1128	.....	77	1512
Dyeing anilin-black	V. G. Bloede	570,117	Oct. 27	2460	.....	77	504
Dyeing apparatus	J. Berger	573,755	Dec. 22	2798	710	77	1901
Dyeing apparatus	J. H. Lorimer	570,488	Nov. 3	93	21, 22	77	656
Dyeing apparatus	H. A. Metz	573,229	Dec. 15	2014	483	77	1699
Dyeing phenetidin-red	E. Ullrich and M. von Gallois	569,395	Oct. 13	1168	.....	77	239
Dyeing. Process of and apparatus for	L. Le Blois and G. Piceni	570,316	Oct. 27	2867	680	77	580
Dyeing skeins. Apparatus for	W. J. Gleason and J. H. Bower	569,453	Oct. 13	1260	296, 297	77	254
Dyeing. Vapor-	V. G. Bloede	570,115	Oct. 27	2458	.....	77	504
Dyeing. Vapor-	V. G. Bloede	570,116	Oct. 27	2459	.....	77	504
Dyer's basket	C. M. Green	572,634	Dec. 8	963	232	77	1481
Dynamo brush-holder	W. M. Hand	569,824	Oct. 20	1950	464	77	395
Dynamo. Inductor-	C. P. Steinmetz. (Reissue)	11,576	Nov. 24	3021	707	77	1260
Dynamo voltage-regulator	T. M. Pusey	574,217	Dec. 29	3890	926	77	2076
Earth and earth alkali metals into indissoluble organic or inorganic salts, &c. Electrolytic process of converting hydroxids of	R. Langhans	571,533	Nov. 17	1959	.....	77	1045
Earthy oxids. Producing coatings composed of	R. Langhans	571,531	Nov. 17	1954	466	77	1044
Earthy oxids. Producing coatings composed of	R. Langhans	571,532	Nov. 17	1957	.....	77	1045
Easel	G. L. R. Dahlberg	569,410	Oct. 13	1202	283	77	244
Easel	G. L. R. Dahlberg	574,242	Dec. 29	3938	937	77	2085
Easel	T. Fillebrown	571,068	Nov. 10	1157	270	77	882
Easel attachment	G. A. Robbins	573,703	Dec. 22	2918	689, 690	77	1885
Easel-support for books, &c	W. A. Holman	571,045	Nov. 10	1121	262	77	876
Edge-finishing machine	S. D. Tripp. (Reissue)	11,580	Dec. 29	4146	984, 985	77	2124
Edge-runner mill	H. Mantey	573,890	Dec. 29	3242	772	77	1960
Edge-setting machine	H. A. Oldershaw	571,602	Nov. 17	2072	497	77	1065
Educational appliance	H. Eckhardt	572,972	Dec. 15	1562	375	77	1614
Egg-beater	F. Kohlenberg	570,668	Nov. 3	470	110	77	726
Egg-carrier	J. W. Almack	572,466	Dec. 1	665	157	77	1405
Egg-case. Safety	J. Matheny	569,760	Oct. 20	1848	438	77	376
Egg-tester	J. Schneberger and V. Kotva	569,941	Oct. 20	2155	510, 511	77	433
Egg-tester	J. H. Smith and W. A. Landis	573,305	Dec. 15	2170	518	77	1726
Election-booth	C. G. Weber	573,250	Dec. 15	2045	490	77	1705
Electric accumulators. Manufacture of plates for	J. Körner	571,598	Nov. 17	2065	.....	77	1064
Electric arcs. Controlling	E. Thomson	571,463	Nov. 17	1830	436, 437	77	1022
Electric band	J. E. Luce	569,649	Oct. 20	1632	386	77	339
Electric battery	A. E. Stephenson	573,493	Dec. 22	2527	599	77	1810
Electric bond	M. J. Wightman	569,266	Oct. 13	946	227	77	196
Electric brake	E. A. Sperry	571,409	Nov. 17	1738	415	77	1005
Electric cable	F. Borel	573,176	Dec. 15	1916	460	77	1681
Electric cable	S. P. Thompson	568,964	Oct. 6	426	95	77	82
Electric cable	S. P. Thompson	571,706	Nov. 17	2249	540	77	1098
Electric cable	S. P. Thompson	571,707	Nov. 17	2251	540, 541	77	1099
Electric-cable terminal	E. S. Reid	574,343	Dec. 29	4106	975	77	2117
Electric cables. Armoring or covering for	H. Edmunds	569,748	Oct. 20	1829	434	77	373
Electric-circuit switch	A. J. Wurts	570,418	Oct. 27	3044	721, 722	77	613
Electric circuits. Automatic safety device for	L. G. Rowand	570,882	Nov. 3	846	197, 198	77	797
Electric circuits. Cut-out for	L. W. Downes	569,373	Oct. 13	1134	270	77	233
Electric conductors. Automatic grounding device for	G. A. Jewett	573,222	Dec. 15	1999	480	77	1697
Electric conduit and appurtenances	M. Dickerson	569,618	Oct. 20	1571	369	77	328
Electric controller	E. A. Sperry	571,410	Nov. 17	1740	415	77	1005
Electric controllers. Drum for	S. Harris	573,874	Dec. 29	3215	765	77	1955
Electric currents. Method of and apparatus for transforming alternating	M. Hutin and M. Leblanc	572,510	Dec. 1	734	175, 176, 177	77	1417
Electric cut-out	B. F. Rout	571,734	Nov. 17	2314	553	77	1111
Electric elevator	J. P. Casey	572,525	Dec. 8	768	182	77	1439
Electric elevator	P. W. Leffler	573,820	Dec. 22	3101	738, 739, 740	77	1920
Electric elevator	F. B. Perkins	570,410	Oct. 27	3029	708	77	610
Electric elevator	R. Wilson	571,502	Nov. 17	1908	456	77	1036
Electric engine	I. T. Dyer	573,581	Dec. 22	2672	634	77	1838
Electric floor-push	H. C. Thomson	573,723	Dec. 22	2950	697	77	1891
Electric furnace	A. C. Girard and E. A. G. Street	571,655	Nov. 17	2158	519	77	1081
Electric furnace	J. E. Hewes	572,636	Dec. 8	965	232, 233	77	1462
Electric furnace	E. F. Price	572,312	Dec. 1	403	96	77	1355
Electric furnace	M. Schindler	573,041	Dec. 15	1672	401, 402	77	1636

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electric generation. Method of and means for	S. H. Short	569,591	Oct. 13	1521	358	77	303
Electric generator. Direct-current dynamo-	B. G. Lamme	573,009	Dec. 15	1619	389	77	1625
Electric generator. Magneto-	C. H. North	569,385	Oct. 13	1152	274	77	236
Electric generators or motors. Method of and apparatus for regulating dynamo-	J. W. Easton	570,663	Nov. 3	457	108	77	724
Electric heater	B. E. Baker	572,467	Dec. 1	666	157	77	1405
Electric heater	G. B. Fraley	569,278	Oct. 13	964	231	77	200
Electric heater	H. L. Tyler	573,629	Dec. 22	2782	659	77	1861
Electric heater	E. P. Wetmore and C. E. Roehl	570,077	Oct. 27	2391	567	77	491
Electric-heater regulator	A. D. Lagrelle	573,670	Dec. 22	2865	676	77	1875
Electric hydraulic elevator. Combined	J. Parkinson	569,933	Oct. 20	2126	505, 506	77	428
Electric hydraulic elevator. Combined	J. Parkinson	569,934	Oct. 20	2131	506, 507	77	429
Electric hydraulic elevator. Combined	J. Parkinson	571,730	Nov. 17	2288	549, 550	77	1106
Electric hydraulic elevator. Combined	J. Parkinson	571,732	Nov. 17	2304	551, 552	77	1109
Electric-light attachment	J. H. Rusby	571,248	Nov. 10	1476	346	77	941
Electric-light-cord adjuster	G. L. Gulliford	571,761	Nov. 24	2369	565	77	1140
Electric-light fixture	G. A. Schmidt	570,411	Oct. 27	3032	718	77	611
Electric-light globes. Bracket for pendent	J. Christiansen and R. W. Pittman	570,452	Nov. 3	18	4	77	642
Electric-light support	E. J. Fulghum	573,817	Dec. 22	3096	736	77	1919
Electric lighting by wind-power	J. W. Gibboney	569,754	Oct. 20	1837	436	77	375
Electric-lighting mechanism for bicycles	F. E. Magee	572,430	Dec. 1	613	145	77	1394
Electric machine	A. Schmid	569,802	Oct. 20	1915	455	77	389
Electric machine. Dynamo-	G. E. Dorman	570,914	Nov. 10	900	209	77	834
Electric machine. Dynamo-	R. Lundell	571,310	Nov. 10	1581	376	77	962
Electric machine. Dynamo-	W. F. Marzahn	571,780	Nov. 24	2396	572, 573	77	1145
Electric meter	H. Burger and W. H. McFall	571,036	Nov. 10	1109	259	77	873
Electric meter	H. Burger and W. H. McFall	571,037	Nov. 10	1110	260	77	874
Electric meter	T. Duncan	573,079	Dec. 15	1747	418, 419	77	1650
Electric meter	T. Duncan	573,080	Dec. 15	1750	419, 420, 421	77	1651
Electric meter	C. Erben	573,082	Dec. 15	1756	421, 422	77	1652
Electric meter	W. D. Marks	573,021	Dec. 15	1637	393	77	1629
Electric meter	C. Wirt, G. R. Green, and H. Burger	571,032	Nov. 10	1100	257	77	872
Electric motor	S. G. Brinkman	570,424	Oct. 27	3058	724	77	616
Electric motor	H. B. Collins	569,746	Oct. 20	1824	433	77	372
Electric motor	W. E. Freeman	569,866	Oct. 20	2018	481	77	408
Electric motor	G. R. Green	571,043	Nov. 10	1117	261	77	875
Electric motor. Oscillating reciprocating tripolar	T. H. Hicks	568,947	Oct. 6	393	88, 89	77	75
Electric-motor regulator	W. A. Anthony	569,989	Oct. 27	2230	529	77	460
Electric motors. Regulating	H. W. Leonard	572,903	Dec. 8	1410	341	77	1568
Electric motors. System of control for	E. A. Sperry	569,305	Oct. 13	1022	244	77	211
Electric regulation. System of automatic	W. L. Bliss	572,627	Dec. 8	947	230	77	1478
Electric snap-switch	C. G. Perkins	569,299	Oct. 13	1009	241	77	208
Electric snap-switch	G. B. Thomas	569,309	Oct. 13	1027	244	77	212
Electric steam and gas engine	F. A. Rich	572,449	Dec. 1	639	151	77	1400
Electric switch	W. and H. Boardman	573,807	Dec. 22	3080	731	77	1916
Electric switch	G. Emmett	569,576	Oct. 13	1497	353	77	299
Electric switch	C. H. Haberer	572,929	Dec. 8	1475	354, 355	77	1581
Electric switch	W. W. Hibbard	571,119	Nov. 10	1266	294	77	902
Electric switch	M. Moskowitz	571,952	Nov. 24	2712	641	77	1206
Electric switch	J. T. Norton	571,927	Nov. 24	2667	632	77	1196
Electric switch	W. H. Powell	569,300	Oct. 13	1010	242	77	208
Electric switch	W. H. Powell	569,301	Oct. 13	1014	242	77	209
Electric switch	W. H. Powell	569,302	Oct. 13	1017	243	77	210
Electric switch	C. B. Sterling	572,319	Dec. 1	417	99	77	1358
Electric switch	S. A. Stewart	570,068	Oct. 27	2370	563	77	487
Electric wall-box	W. F. Bossert	571,297	Nov. 10	1561	371	77	958
Electric waves or oscillations. Means for generating	D. M. Moore	568,963	Oct. 6	259	60, 61	77	50
Electrical apparatus	J. F. Kelly	570,310	Oct. 27	2856	..	77	578
Electrical connecting-cord	C. H. McEvoy	573,612	Dec. 22	2728	648	77	1850
Electrical discharge device	C. E. Skinner	571,099	Nov. 10	1235	267	77	896
Electrical-distribution system	C. C. Chesney and J. F. Kelly	571,300	Nov. 10	1565	372	77	959
Electrical-distribution system	J. F. Kelly and C. C. Chesney	571,270	Nov. 10	1515	358	77	948
Electrical-distribution system	O. B. Shallenberger	571,849	Nov. 24	2521	597	77	1168
Electrical-distribution system	G. T. Woods	569,443	Oct. 13	1246	293	77	252
Electrical energy. System for generating and distributing	C. M. Green	573,647	Dec. 22	2820	667	77	1867
Electrical power, &c. System of distributing	W. D. Gharky	569,634	Oct. 20	1601	378, 379	77	333
Electrical resistance device	D. C. Voss	573,558	Dec. 22	2634	626	77	1830
Electrical resistances. Manufacture of	A. J. Marquand and D. Lowdon	571,489	Nov. 17	1878	448	77	1030
Electrical transformers. Automatic cut-out for	A. C. Booth	569,538	Oct. 13	1406	332	77	282
Electrically-controlled elevator	S. D. Strohm	570,827	Nov. 3	737	168, 169	77	775
Electricity and conduit for holding same. Conductor of	A. Selkirk	573,302	Dec. 15	2155	516	77	1723
Electricity from car-wheel axles. Means for generating	M. Moskowitz	571,951	Nov. 24	2707	640, 641	77	1205
Electrode for electric-power storage batteries. End	J. Langelaan	570,028	Oct. 27	2297	545	77	473
Electrode for secondary voltaic batteries	G. A. Grindle	574,322	Dec. 29	4065	966	77	2109
Electrode. Secondary-battery	H. Woodward	571,143	Nov. 10	1309	304	77	909
Electrodes. Substance for telephone-	D. Drawbaugh	570,845	Nov. 3	777	.....	77	783
Electrodeposition	E. Jordis	570,554	Nov. 3	217	.....	77	678
Electrolysis of chlorids, &c. Apparatus for	J. Hargreaves and T. Bird	571,501	Nov. 17	2057	492	77	1002
Electrolytic-deposition apparatus	W. D. May	570,133	Oct. 27	2486	589	77	509

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Electromagnet	J. Wayland	569,262	Oct. 13	940	225	77	195
Electromagnetic sentinel	F. B. Badt	571,739	Nov. 24	2325	556	77	1132
Electroplating apparatus	R. J. Marks	574,038	Dec. 29	3519	840	77	2010
Electrotherapeutic band	B. H. Vellines	569,529	Oct. 13	1395	329	77	279
Electrotype and stereotype plate holder	E. H. Cottrell	572,695	Dec. 8	1071	260, 261	77	1502
Electrotype registry-block	C. Foreman	572,884	Dec. 8	1384	335	77	1562
Elevator: *See* Bale-elevator. Clay-elevator. Cotton-elevator. Electric elevator. Electric hydraulic elevator. Electrically-controlled elevator. Grain-elevator. Grain-storage elevator. Hydraulic elevator. Package-elevator. Portable elevator. Screw elevator. Water-elevator.							
Elevator	N. C. Bassett	570,592	Nov. 3	294	72, 73	77	693
Elevator	G. F. Brott	569,539	Oct. 13	1408	332	77	282
Elevator	C. A. Harkness	569,129	Oct. 6	701	163, 164, 165, 166	77	134
Elevator	C. A. Harkness	570,253	Oct. 27	2704	643, 644	77	550
Elevator	C. R. Pratt	573,531	Dec. 22	2585	614	77	1821
Elevator and dump	G. Wenzelmann	569,697	Oct. 20	1719	408, 409, 410	77	355
Elevator attachment	E. C. Jenkins	569,336	Oct. 13	1072	254	77	221
Elevator attachment	E. C. Jenkins	572,996	Dec. 15	1596	382, 383	77	1620
Elevator attachment	E. C. Jenkins	572,997	Dec. 15	1599	383, 384	77	1621
Elevator brake mechanism	S. M. Fay	572,789	Dec. 8	1241	300, 301	77	1533
Elevator-cars. Life-saving device for	C. O. Breed	568,733	Oct. 6	29	7	77	8
Elevator controlling mechanism	W. E. H. Otto	572,214	Dec. 1	211	51	77	1318
Elevator-door opening or closing apparatus	F. E. Herdman	570,476	Nov. 3	64	15, 16	77	650
Elevator-engine. Combined electric hydraulic screw-controlled	J. Parkinson	571,731	Nov. 17	2299	550, 551	77	1108
Elevator-gates. Safety mechanism for operating	J. T. Hobbs	571,442	Nov. 17	1797	429	77	1016
Elevator-gearing	E. B. Parkhurst	571,864	Nov. 24	2546	603	77	1174
Elevator mechanism	J. H. Clark	573,809	Dec. 22	3083	732, 733	77	1916
Elevator pneumatic cushion	C. A. Ellis and E. S. Miller	572,531	Dec. 8	774	184	77	1440
Elevator safety device	P. W. Trimborn	573,935	Dec. 29	3319	792	77	1974
Elevator signal apparatus	S. B. Opdyke, Jr.	572,561	Dec. 8	822	197, 198	77	1450
Elevator signal apparatus	S. B. Opdyke, Jr.	572,563	Dec. 8	833	199, 200	77	1455
Elevator signal mechanism	S. B. Opdyke, Jr.	572,562	Dec. 8	827	198, 199	77	1453
Embossing-machine	E. S. De Tamble	572,197	Dec. 1	177	43	77	1312
Embossing-machine	F. Young and W. Rauk	569,145	Oct. 6	732	172	77	139
Embroidering-machine	R. Weiss	573,119	Dec. 15	1812	436, 437, 438	77	1663
Embroidery-holder	W. C. Maynard	570,940	Nov. 10	948	220	77	844
End-gate	F. M. Pierce and A. C. Warner	573,794	Dec. 22	3055	734	77	1912
End-gate fastening	W. H. Arner	573,848	Dec. 29	3157	752	77	1946
End-gate. Wagon	M. I. Conderman	574,021	Dec. 29	3490	834	77	2004
End-gate. Wagon	S. S. Crawford	572,869	Dec. 8	1360	329	77	1558
End-gate. Wagon	B. T. Murphy	571,277	Nov. 10	1526	361	77	950
Engine: *See* Dental engine. Electric engine. Electric steam or gas engine. Elevator-engine. Explosive-engine. Fire-engine. Gas-engine. Gas and steam engine. Gas or vapor engine. Gasolene or vapor engine. Hydraulic engine. Hydrocarbon or other engine. Internal-combustion engine. Oil-engine. Paper-pulping engine. Rotary engine. Rotary steam-engine. Steam-engine. Traction-engine.							
Engine	P. Dorsey	571,348	Nov. 17	1642	390, 391	77	988
Engine	H. W. Forslund	570,280	Oct. 27	2754	656	77	560
Engine	A. L. Ide	569,832	Oct. 20	1060	467	77	397
Engine	E. J. Pennington	570,439	Oct. 27	3091	735, 736	77	622
Engine	F. C. Rinsche	574,003	Dec. 29	3458	828	77	1999
Engine	M. A. Yeakley	571,144	Nov. 10	1309	304	77	909
Engine attachment. Steam-	R. Freer	570,547	Nov. 3	207	55	77	675
Engine-coupling	J. MacKenzie	570,672	Nov. 3	474	111	77	726
Engine igniter. Gas-	F. J. Rettig	573,296	Dec. 15	2141	514	77	1721
Engine-shaft rotation indicator	S. H. Hunter	574,328	Dec. 29	4078	969	77	2112
Engine starter. Gas-	C. J. Weinman and E. E. Euchenhofer.	569,365	Oct. 13	1190	267	77	930
Engine-stop. Automatic	A. K. Bonta	569,445	Oct. 13	1251	293, 294	77	253
Engines. Appliance for starting gas and oil motor	H. Schumm	569,942	Oct. 20	2156	511	77	434
Engines. Automatic speed-limit for	J. R. Reynolds	571,957	Nov. 24	2720	643	77	1208

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Engines. Mixer for gas-	F. M. Underwood	574,183	Dec. 29	3811	910, 911	77	2062
Engines. Operation of gas-	M. Blakey	571,966	Nov. 24	2732	646	77	1210
Engines. Reversing mechanism for rotary	W. E. Prall, Jr	572,716	Dec. 8	1113	269, 270	77	1510
Engraving	N. S. Amstutz	569,595	Oct. 13	1531	359	77	304
Engraving	W. S. Eaton	573,967	Dec. 29	3397	814	77	1988
Engraving-machine	B. F. Stowell	570,070	Oct. 27	2372	564	77	487
Envelop	W. Albers	573,123	Dec. 15	1819	439	77	1664
Envelop	A. M. Chalmers	570,380	Oct. 27	2968	704	77	599
Envelop	C. Lee and E. J. Baldwin	572,488	Dec. 1	694	166, 167	77	1114
Envelop	W. S. Mayer	572,554	Dec. 8	812	195	77	1449
Envelop	A. McCance	570,289	Oct. 27	2770	659	77	563
Envelop	P. G. Muenchinger	570,557	Nov. 3	235	59	77	681
Envelop	L. G. Stocking	574,284	Dec. 29	4012	952	77	2099
Envelops. Machine for fixing threads in	M. Grube. (Reissue)	11,577	Dec. 8	1500	359	77	1586
Envelops or the like. Machine for marking	J. Geary	568,845	Oct. 6	218	52	77	43
Eraser	H. B. Collins	570,456	Nov. 3	30	7	77	644
Ester of alkoylamidophenols and making same	O. Hinsberg	569,416	Oct. 13	1208	.....	77	245
Evaporating apparatus	T. Craney	572,333	Dec. 1	437	103	77	1362
Evaporating apparatus. Liquid-	L. F. Haubtman	569,456	Oct. 13	1264	297, 298	77	255
Evaporating or vaporizing apparatus	J. L. Stratton and F. Murdock	568,928	Oct. 6	356	82	77	68
Evaporating-pan	L. F. Haubtman	573,219	Dec. 15	1993	479	77	1696
Evaporating-pan	F. Kleemann	572,304	Dec. 1	388	92	77	1352
Evaporator	D. A. Quiggin	571,242	Nov. 10	1469	344	77	939
Evaporator. Fruit-	A. Lehmann	573,787	Dec. 22	3042	721	77	1909
Excavating machine. Bicycle-path-	C. L. Barrett	571,915	Nov. 24	2652	628	77	1193
Excavator	F. M. Phillips and E. Stebinger	573,698	Dec. 22	2902	686	77	1882
Excelsior wrappers or pads. Machine for manufacturing	H. F. Shadbolt	570,236	Oct. 27	2672	636, 637	77	545
Exhaust apparatus	J. Y. Smith	573,547	Dec. 22	2616	621	77	1827
Exhauster	L. Schutte	571,022	Nov. 10	1082	253	77	868
Exhibiting samples of garments	M. A. Adler	569,531	Oct. 13	1397	330	77	279
Expansion-bolt	I. Church	570,786	Nov. 3	668	153	77	761
Explosive-engine	E. E. Ludl	572,209	Dec. 1	198	49, 50	77	1316
Explosives. Heater for	H. Vulpius	571,712	Nov. 17	2258	542	77	1100
Extension and retraction device	J. J. Gier	569,494	Oct. 13	1329	312	77	267
Extension-screen	H. A. Way	569,073	Oct. 6	613	139	77	117
Extension-table	E. J. Roberts	569,059	Oct. 6	591	135	77	113
Extension-table	J. Stephens and G. De Marce	570,572	Nov. 3	260	65	77	686
Extension-table. Circular	G. Krueger	572,172	Dec. 1	137	32, 33	77	1303
Extractor: *See* Centrifugal extractor. Lemon-juice extractor. Nail-extractor. Spike-extractor. Stump-extractor. Tree-extractor.							
Eye and tongue support for artificial heads and masks	I. Roescher	569,475	Oct. 13	1292	304	77	260
Eye-shade	C. P. Mosher	569,117	Oct. 6	680	159	77	130
Eyeglass-cases, &c. Clasp for	A. G. Williams	569,267	Oct. 13	948	227	77	196
Eyeglass nose-guard	E. B. Meyrowitz	572,306	Dec. 1	392	93	77	1353
Eyeglass nose-guard	E. B. Meyrowitz	572,307	Dec. 1	396	93	77	1353
Eyeglass nose-piece gage	W. S. Essick	572,106	Dec. 1	17	5	77	1281
Eyeglasses and spectacles	W. Bausch	572,670	Dec. 8	1019	246	77	1492
Eyelet	E. Kempshall	569,970	Oct. 20	2198	522	77	441
Eyelet	D. C. See	572,033	Nov. 24	2842	660	77	1229
Eyelets. Assembling and transferring mechanism for	A. C. Estabrook	572,340	Dec. 1	444	105	77	1364
Eyelets. Device for making covered	A. C. Estabrook	568,940	Oct. 6	378	86	77	73
Eyelets. Die for applying plastic coverings on	A. Latham	571,837	Nov. 24	2497	591	77	1165
Fabric: *See* Carpet fabric. Knit fabric. Moquette fabric. Pile fabric. Tire fabric. Tubular fabric.							
Fabrics. Machine for cutting ribbed	C. F. and H. F. Adams	572,094	Dec. 1	1	1	77	1279
Fabrics. Means for treating woven	C. Crossley	569,015	Oct. 6	518	118, 119	77	98
Face-steaming apparatus	O. A. Weissenborn	571,587	Nov. 17	2048	488	77	1060
Facing-machine	W. W. Doolittle	572,599	Dec. 8	901	217, 218, 219	77	1469
Fan attachment for rocking-chairs, &c	C. Schurmann and J. J. Brophy	573,541	Dec. 22	2607	618, 619	77	1825
Fan device and rocking-chair. Automatic	P. Serge-Kisslow	573,167	Dec. 15	1895	456	77	1677
Fan for ventilating streets or alleys. Electric	V. V. Hedges	572,008	Nov. 24	2801	660, 661	77	1222
Fan. Motor-driven	S. O. Tuerk	570,651	Nov. 3	432	103	77	718
Fan. Water-motor	W. J. Mingle	572,558	Dec. 8	819	197	77	1450
Fans, &c. Means for operating	A., A. D., and M. Flores	573,774	Dec. 22	3025	717	77	1906
Fanning-mill	M. J. Frambach	569,629	Oct. 20	1594	376	77	332
Fancy box	H. and A. H. Stevenson	571,206	Nov. 10	1401	328	77	927
Fare-registering apparatus	F. W. G. Bruhn	571,989	Nov. 24	2772	654	77	1217
Farm-gate	A. Butterfield	569,855	Oct. 20	2002	477	77	405
Farm-gate	L. P. Cota and I. L. Edwards	572,473	Dec. 1	672	159, 160	77	1406
Farm-gate	R. Love	569,026	Oct. 6	534	123	77	101
Farm-gate	J. W. Putt	570,714	Nov. 3	544	126	77	739
Fastener	A. B. Silverston	574,009	Dec. 29	3470	829	77	2001
Fastener	W. V. Thompson	572,735	Dec. 8	1149	277	77	1516
Fastener for shoes, &c	W. C. Leiber	571,450	Nov. 17	1907	432	77	1018
Fastener or clasp for articles of apparel	C. E. Mixer and C. L. Lewis	573,829	Dec. 22	3131	746	77	1925
Fastener-socket	J. D. Stirckler	570,069	Oct. 27	2371	563	77	487
Fastening. Detachable	E. D. Chadwick	572,865	Dec. 8	1356	327	77	1557

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fastening device	W. S. Bechtold	573,754	Dec. 22	2997	710	77	1900
Fastening device	W. Munro	573,685	Dec. 22	2886	682	77	1879
Fastening device	S. G. Temple	569,308	Oct. 13	1026	244	77	212
Fastenings. Machine for making and driving metallic	W. S. Hamm and A. W. Eaton	571,227	Nov. 10	1436	335, 336	77	933
Fats. Refining and bleaching animal	E. Meisel	568,983	Oct. 6	465	.....	77	89
Faucet	A. Clarke	571,065	Nov. 10	1152	269	77	882
Faucet	C. R. Schmidt	572,911	Dec. 8	1426	344	77	1572
Faucet and air-inlet attachment	C. L. J. Pokrants and J. C. de St. Hubert.	568,921	Oct. 6	345	80	77	66
Faucet. Automatic measuring and registering	W. M. Price	571,685	Nov. 17	2207	532	77	1090
Faucet. Measuring	A. J. Lassen	572,017	Nov. 24	2813	664	77	1224
Faucet. Registering	C. Van Graafeiland	569,439	Oct. 13	1240	291	77	251
Faucet-reseating tool	S. H. Lea	571,572	Nov. 17	2027	482	77	1057
Faucet. Self-closing	W. A. Turner	570,306	Oct. 27	2850	676	77	577
Feather-renovating apparatus	W. A. Loughry	569,791	Oct. 20	1901	451	77	386
Feed-cutter	A. Kaltenbrunn	573,883	Dec. 29	3233	770	77	1958
Feed-rack	E. M. Macy	574,100	Dec. 29	3633	868	77	2031
Feed-trough	C. B. Emery	574,312	Dec. 29	4051	962	77	2107
Feed-trough	E. J. Nason	571,280	Nov. 10	1530	362	77	951
Feed-water heater	W. Downs and A. H. Blackburn	572,247	Dec. 1	268	65	77	1329
Feed-water heater	W. Schmidt	572,573	Dec. 8	851	204, 205	77	1459
Feed-water heater	W. L. Shepard	573,111	Dec. 15	1801	434	77	1661
Feed-water heater and condenser	J. M. Keller	570,435	Oct. 27	3083	731, 732	77	620
Feed-water heater and purifier	J. Struben	569,362	Oct. 13	1116	266	77	230
Feed-water-heater regulator	J. Perry	570,227	Oct. 27	2655	630	77	542
Feed-water regulator and low-water alarm	J. S. Steele	570,066	Oct. 27	2368	563	77	486
Feed-water regulator. Automatic	J. I. Thornycroft	570,351	Oct. 27	2918	692, 693	77	589
Feed-water regulator for steam-generators. Automatic	F. M. Sandillon	569,841	Oct. 20	1976	470	77	400
Feed-water regulator, heater, and purifier. Automatic	E. Petersen	569,935	Oct. 20	2141	507	77	431
Feeder. Stock	J. P. Smith	570,569	Nov. 3	257	64	77	686
Feeding granulated substances. Mechanism for	H. E. Smyser	570,108	Oct. 27	2441	580	77	501
Fence	W. F. Beals	571,331	Nov. 17	1617	384	77	963
Fence	J. T. Conover	571,150	Nov. 10	1321	308	77	912
Fence	A. H. Cook	568,744	Oct. 6	52	13	77	13
Fence	A. H. Cook	569,174	Oct. 13	784	183	77	165
Fence	C. F. Darnell	569,276	Oct. 13	962	230	77	199
Fence	T. C. Greene	569,019	Oct. 6	524	121	77	100
Fence	J. M. Gross	568,945	Oct. 6	389	88	77	75
Fence	A. Keeler	573,468	Dec. 22	2487	589	77	1803
Fence	J. T. Lee and U. P. Sawyer	571,049	Nov. 10	1125	263	77	877
Fence	W. H. Mason	571,491	Nov. 17	1880	449	77	1030
Fence	J. F. Melvin	569,138	Oct. 6	723	170	77	138
Fence	W. H. Reppeto and J. M. Martin	572,719	Dec. 8	1117	270	77	1511
Fence	T. N. Tucker	571,987	Nov. 24	2687	636	77	1201
Fence and stretcher. Combined wire	W. H. Ringle	569,058	Oct. 6	590	135	77	113
Fence-guard	S. Crowell	573,571	Dec. 22	2656	631	77	1835
Fence-machine	J. D. Loving	570,938	Nov. 10	943	219	77	843
Fence machine. Wire	G. S. and R. Anderson	573,632	Dec. 22	2789	660	77	1863
Fence machine. Wire	W. F. Dobbs	569,487	Oct. 13	1311	309	77	264
Fence machine. Wire	G. D. Peugh	574,264	Dec. 29	3975	944	77	2092
Fence machine. Wire-and-picket	L. W. Mozingo	574,103	Dec. 29	3636	869	77	2032
Fence-making machine	R. Dial	573,815	Dec. 22	3091	735, 736	77	1918
Fence-picket vise	F. A. Roseman	570,958	Nov. 10	975	227	77	848
Fence-post	L. M. Brock	570,784	Nov. 3	665	153	77	760
Fence-post	G. W. Clayton	574,191	Dec. 29	3837	915	77	2066
Fence-post	H. L. Ferris	573,508	Dec. 22	2549	604	77	1814
Fence-post	H. Mater	573,097	Dec. 15	1779	427	77	1656
Fence-post	J. A. and J. C. Routzong	572,831	Dec. 8	1312	314	77	1547
Fence-post	E. W. Wood	573,748	Dec. 22	2990	708	77	1899
Fence-post or columnar pillar	S. D. Fry and W. H. Johnson	573,777	Dec. 22	3030	718	77	1907
Fence-runners. Fastening device for	P. H. Logan	569,648	Oct. 20	1631	385	77	339
Fence-stay	E. A. Frantz	571,355	Nov. 17	1656	392	77	990
Fence-stay	C. Ohmart	571,683	Nov. 17	2205	531	77	1090
Fence stay. Wire	B. Zuck	570,531	Nov. 3	173	46	77	669
Fence-stretcher	G. H. Shellaberger	571,405	Nov. 17	1732	412	77	1004
Fence tension device. Wire	H. C. Pratt	571,930	Nov. 24	2672	633	77	1197
Fence tool. Wire	L. W. Orton	572,272	Dec. 1	319	76	77	1340
Fence tool. Wire	J. H. Quigley	572,826	Dec. 8	1304	312	77	1546
Fence. Wire	W. Conrad	569,275	Oct. 13	960	230	77	199
Fence. Wire	J. Haish	570,752	Nov. 3	616	142	77	751
Fence. Wire	B. H. Haley	570,090	Oct. 27	2419	573	77	497
Fence. Wire	D. H. McPherson	570,290	Oct. 27	2771	659	77	563
Fence. Wire	D. H. McPherson	573,831	Dec. 22	3135	747	77	1926
Fence. Wire	S. A. Nielson	570,646	Nov. 3	421	99	77	716
Fence. Wire	L. M. Runyon	570,567	Nov. 3	254	63	77	685
Fence. Wire	E. F. Shellaberger	572,317	Dec. 1	414	98	77	1358
Fence. Wire	I. M. Warner	572,322	Dec. 1	422	100	77	1359
Fence. Wire	L. Wyesinger	569,906	Oct. 20	2083	495	77	420
Fence-wire-crimping device	W. H. H. West	568,931	Oct. 6	360	83	77	69
Fender: *See* Car-fender. Plow-fender. Car safety-fender. Wheel-fender.							
Fender and brake mechanism. Combined	A. L. Kraus	574,097	Dec. 29	3629	867	77	2030
Fertilizer-distributer	E. D. Mead	570,490	Nov. 3	100	24	77	657
Fertilizers. Apparatus for making	H. F. Courtney and F. Schwartz	572,965	Dec. 15	1552	372	77	1612
Fertilizers. Apparatus for making	P. Hogan	572,258	Dec. 1	289	70	77	1334
Fiber-preparing machine	D. E. Radclyffe and T. Burrows	571,173	Nov. 10	1349	315	77	918

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Fibrous harness. Utilizing partially-worn	J. Robinson	570,683	Nov. 3	493	115	77	730
Field-glass	E. Toussaint	569,528	Oct. 13	1393	328, 329	77	279
Fifth-wheel	D. Wilcox	570,194	Oct. 27	2594	616, 617	77	530
Fifth-wheel. Vehicle	F. L. Thomas	573,722	Dec. 22	2949	697	77	1891
File. Bill	E. W. Woodruff	569,700	Oct. 20	1727	411, 412	77	356
File. Book	F. G. Bradbury and N. Nilson	572,741	Dec. 8	1162	279	77	1518
File-box	W. Lumley	573,020	Dec. 15	1635	393	77	1628
File case or cabinet. Revolving	B. Micou	572,904	Dec. 8	1417	341	77	1570
File. Druggist's prescription	C. L. Graf	570,308	Oct. 27	2853	677	77	578
File. Nail	B. W. Jacobs	569,285	Oct. 13	978	235	77	202
File. Paper	C. M. Carnahan	573,569	Dec. 22	2654	630	77	1834
File. Paper	A. B. Skinner	572,619	Dec. 8	935	227	77	1476
File-rack	P. J. Pauly, Sr., and J. C. McQuilkin.	570,679	Nov. 3	486	114	77	729
File. Round	A. Weed	570,579	Nov. 3	272	67	77	688
Filter	J. M. Davidson	570,910	Nov. 10	893	208	77	833
Filter	J. Davis	572,196	Dec. 1	176	43	77	1312
Filter	A. Grandjean, née Unold	571,474	Nov. 17	1851	441	77	1026
Filter	E. M. Knight	569,382	Oct. 13	1146	273	77	235
Filter	C. E. and J. M. Osgood	574,161	Dec. 29	3743	894	77	2050
Filter	J. Oster, Jr	568,787	Oct. 6	132	32	77	27
Filter	J. T. B. Selman	569,065	Oct. 6	601	137	77	115
Filter	G. Stites	572,136	Dec. 1	78	17	77	1293
Filter. Asbestos	F. Brever	571,744	Nov. 24	2333	558	77	1133
Filter. Centrifugal	J. B. Waring and H. R. Cassel	568,821	Oct. 6	184	44	77	37
Filter. Oil	F. Bain	569,159	Oct. 13	764	177	77	162
Filter. Oil	A. T. Morrow	572,814	Dec. 8	1284	309	77	1541
Filter or oil-extractor	H. A. Colline	573,766	Dec. 22	3014	714	77	1904
Filter-press and filter-press plate	E. Hübner	571,368	Nov. 17	1677	397	77	994
Filter. Rain-water	N. H. Long	571,776	Nov. 24	2391	571	77	1144
Filter-screen	O. H. Jewell	572,606	Dec. 8	912	221	77	1470
Filter-strainer	O. H. Jewell	572,605	Dec. 8	911	220, 221	77	1470
Filter. Water	J. A. and E. W. Hasenpflug	573,409	Dec. 15	2334	557	77	1757
Filtering and clarifying liquids. Apparatus for	A. C. Newcomb	571,312	Nov. 10	1584	376	77	963
Filtering apparatus	K. S. Blanchard	572,672	Dec. 8	1021	247	77	1493
Filtering material or fabric	L. B. Flechter	570,219	Oct. 27	2641	625	77	539
Financial problems. Device for demonstrating	O. Elison	571,613	Nov. 17	2092	502	77	1068
Finger-guard	E. W. Potter	569,936	Oct. 20	2144	508	77	432
Finger-nail clipper	J. D. C. Wenger	569,903	Oct. 20	2079	495	77	419
Finishing-roll	W. Evans	572,532	Dec. 8	776	185	77	1441
Fire-alarm	J. A. McGahy	573,903	Dec. 29	3262	779	77	1964
Fire alarm	A. H. West	573,944	Dec. 29	3334	796	77	1977
Fire-alarm signal-box	G. F. Milliken	571,950	Nov. 24	2705	640	77	1205
Fire-alarm system	A. C. Rogers	573,924	Dec. 29	3296	788, 789	77	1970
Fire-alarm. Thermostat-actuated	P. C. Howe	570,892	Nov. 3	866	201	77	602
Fire-alarm. Thermostatic	H. Baer	569,851	Oct. 20	1996	476	77	404
Fire and burglar alarm	B. J. Lowman	570,258	Oct. 27	2715	646	77	553
Firearm. Breech-loading	B. H. Clement	572,290	Dec. 1	359	85	77	1347
Firearm. Breech-loading	A. Sill	569,244	Oct. 13	913	218	77	190
Firearm. Magazine	J. W. Mullins	571,840	Nov. 24	2503	593	77	1165
Firearm. Recoil-operated	H. Carr	574,189	Dec. 29	3821	912, 913	77	2063
Firearm. Recoil-operated	R. M. Catlin	574,350	Dec. 29	4114	977, 978	77	2118
Firearm-sight	C. G. Thunen	573,725	Dec. 22	2953	698	77	1891
Firearms. Ejector mechanism for breakdown	G. A. Horne	568,760	Oct. 6	86	20	77	19
Firearms. Extractor for breech-loading	H. W. Bradley	572,102	Dec. 1	13	3	77	1220
Fire-bar support and deflector	J. King, C. Downes, and J. Waddington.	569,646	Oct. 20	1628	384, 385	77	339
Fire-engine. Hand	H. C. Atkinson and W. Miller	572,096	Dec. 1	4	1.2	77	1279
Fire-engine pump. Steam	C. H. Fox	569,966	Oct. 20	2192	520, 521	77	440
Fire-escape	J. Berez	570,151	Oct. 27	2519	597	77	515
Fire-escape	W. Carey	569,810	Oct. 20	1928	458	77	391
Fire-escape	J. S. Crawford	570,908	Nov. 10	891	207	77	833
Fire-escape	E. O. Sjolander	572,576	Dec. 8	857	206	77	1460
Fire-escape ladder	J. F. Chazotte	572,244	Dec. 1	261	63	77	1328
Fire-extinguisher	H. Bush	574,019	Dec. 29	3484	832	77	2003
Fire-extinguisher	M. E. Ogden	570,262	Oct. 27	2727	649	77	555
Fire-extinguisher. Automatic	C. E. Buell	570,900	Nov. 10	878	204	77	830
Fire-extinguisher. Automatic	C. E. Buell	572,404	Dec. 1	576	137	77	1387
Fire-extinguisher. Automatic	D. C. Stillson	568,886	Oct. 6	294	67	77	56
Fire-extinguisher. Chemical	E. F. Steck	571,582	Nov. 17	2042	486	77	1059
Fire-extinguishers. Automatic sprinkler for	E. F. Steck	571,581	Nov. 17	2040	485, 486	77	1059
Fire-extinguishing apparatus	J. L. Tirard	569,686	Oct. 20	1703	403	77	352
Fire-extinguishing composition	J. L. Webber	569,731	Oct. 20	1791	.....	77	367
Fire-extinguishing system	E. W. Thomas	570,689	Nov. 3	509	119	77	733
Fire-extinguishing system. Automatic	G. H. Robinson and E. F. Steck	571,578	Nov. 17	2032	484, 485	77	1058
Fire-hose trestle. Folding	W. B. Drummond	569,622	Oct. 20	1575	370	77	329
Fire-kindler	W. J. Bennett	569,910	Oct. 20	2088	496	77	421
Fireplace-heater	J. B. Crump	571,897	Nov. 24	2618	620	77	1186
Fireproof blind	W. R. Kinnear	572,014	Nov. 24	2810	662, 663	77	1223
Fireproof buildings. Construction of	P. McCabe	573,476	Dec. 22	2499	592	77	1805
Fireproof construction	C. A. Balph and E. P. S. Wright	573,127	Dec. 15	1829	441	77	1666
Fireproof door	G. Fox, 2d	570,391	Oct. 27	2997	709	77	604

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fireproof door, door-frame, and window frame and shutter combination.	T. Bailey	570,895	Nov. 10	871	203	77	829
Fireproof floor	T. Bailey	570,863	Nov. 3	805	185	77	788
Fireproof studding	P. M. Bruner	573,839	Dec. 22	3145	749	77	1928
Fireproofing liquid	S. Kalamalkowski	568,766	Oct. 6	96	.....	77	21
Fish-cutting machine	E. I. Bell	572,626	Dec. 8	946	229	77	1478
Fish-hook	J. T. Hastings	570,632	Nov. 3	397	94	77	711
Fish-plate	J. L. Hite	569,156	Oct. 6	758	176	77	144
Fish-scaling device	H. W. Gremmels	572,982	Dec. 15	1577	378	77	1617
Fittings under pressure. Means and construction for inserting	F. Sheridan	571,077	Nov. 10	1182	277	77	887
Flash-light apparatus	J. Wolf	571,632	Nov. 17	2128	511	77	1076
Flat-iron support	M. S. Thompson	573,052	Dec. 15	1702	407	77	1641
Flats. Mechanism for driving traveling	E. and S. Tweedale and J. Smalley	570,829	Nov. 3	748	170	77	777
Floor and tile therefor. Drainer	D. J. Landers	572,762	Dec. 8	1197	289	77	1524
Floor construction	A. C. Munos	572,123	Dec. 1	50	12, 13	77	1287
Floor. Illuminating	E. L. Ransome	570,102	Oct. 27	2435	578	77	500
Floor or roof construction for cold-storage or other buildings.	I. G. Hooper	572,259	Dec. 1	200	70	77	1334
Flooring and ceiling lever	A. C. Tubbs	571,810	Nov. 24	2448	583	77	1156
Flooring and ceiling tool	J. A. Elder	571,432	Nov. 17	1779	424	77	1013
Flooring-boards. Machine for forming interfitting tongues and grooves on opposite ends of	J. P. Burnham	569,610	Oct. 20	1556	365	77	324
Flooring-boards. Machine for tonguing and grooving ends of	J. P. Burnham	569,611	Oct. 20	1558	366	77	325
Flour-bolt cleaner	F. R. Stitzel	571,411	Nov. 17	1742	416	77	1006
Flour bolting or scalping machine	I. C. and M. C. Landes	569,211	Oct. 13	853	201	77	178
Flower-stand and bracket therefor	R. E. Burke	573,073	Dec. 15	1735	415	77	1648
Flue and smoke-stack protector	L. N. Dunmore	572,415	Dec. 1	588	140	77	1390
Flue and ventilator. Safety	R. G. Moon	572,174	Dec. 1	140	33	77	1304
Flue-cleaner	R. H. Black	572,740	Dec. 8	1160	279	77	1518
Flue-cleaner	T. D. S. Ruggles	570,506	Nov. 3	127	31	77	662
Flue-cleaner	F. C. Williams	573,946	Dec. 29	3337	797	77	1977
Flue-cleaner	T. D. Ruth	572,570	Dec. 8	847	203	77	1458
Flue-cutter	F. M. Rites	570,770	Nov. 3	644	147	77	756
Fluid-compressor	F. M. Rites	568,796	Oct. 6	142	34	77	29
Fluid-compressor	S. A. Crone	572,410	Dec. 1	582	138, 139	77	1389
Fluid-controlled gate	T. E. Brown, Jr., and R. H. Thorpe	569,781	Oct. 20	1863	447	77	383
Fluid flowing through pipes. Apparatus for controlling speed of	J. F. Simmance	572,913	Dec. 8	1429	345	77	1573
Fluid-meters. Coin-freed apparatus for	G. Westinghouse, Jr	573,190	Dec. 15	1943	467, 468	77	1686
Fluid-pressure automatic brake	A. Dallas and O. P. Amick	572,871	Dec. 8	1364	330	77	1558
Fluid-pressure brake	D. Dunn	570,915	Nov. 10	902	210	77	835
Fluid-pressure brake	W. H. O'Connor	570,678	Nov. 3	485	113, 114	77	729
Fluid-pressure brake	H. S. Park	573,790	Dec. 22	3047	722	77	1910
Fluid-pressure brakes. Pressure-recorder for	S. L. Terry	568,963	Oct. 6	422	94, 95	77	81
Fluid-pressure-reducing apparatus	H. F. Fuller	573,213	Dec. 15	1981	477	77	1694
Fluid-pressure regulator	E. Bader	571,913	Nov. 24	2648	627	77	1192
Fluid-pressure regulator	I. W. Woods	572,464	Dec. 1	663	156	77	1405
Flush-tank	H. Thwaites	568,995	Oct. 6	489	110	77	93
Flushing-tank, &c	T. C. Beaumont	568,729	Oct. 6	20	4	77	7
Fluxing-machine	N. R. Saulsbury	569,092	Oct. 6	594	136	77	114
Fly-catcher	C. H. Leggett	570,496	Nov. 3	89	21	77	655
Fodder-binder	C. A. Gordon	572,960	Dec. 15	1574	378	77	1616
Fodder packer and binder	C. T. McCane	571,385	Nov. 17	1703	405	77	998
Folding box	A. J. Gary	572,537	Dec. 8	783	187	77	1442
Folding chair	C. Nirison	569,657	Oct. 20	1643	388	77	341
Folding chair	W. Semler	570,776	Nov. 3	654	150	77	758
Folding chair. Adjustable	A. F. Briggs	571,893	Nov. 24	2468	586	77	1159
Folding-machine	S. G. Goss	569,917	Oct. 20	2101	500, 501	77	423
Folding-machine	C. Kloninger and J. E. Button	573,603	Dec. 22	2713	644, 645	77	1847
Folding-machine	W. Scott	572,280	Dec. 1	337	80, 81	77	1344
Folding-machine	C. Schütts	569,355	Oct. 13	1107	263, 264	77	228
Folding-machine	F. H. Wendt	570,581	Nov. 3	274	68	77	689
Folding-machine packer	F. H. Wendt	570,580	Nov. 3	272	67, 68	77	689
Folding-machine. Rotary	T. M. North	573,348	Dec. 15	2235	534, 535	77	1739
Folding-machines. Alarm device for	J. P. Neilan	569,723	Oct. 20	1781	423	77	365
Folding stand. Adjustable	E. G. Penfield	571,980	Nov. 24	2758	650	77	1214
Folding table	J. and J. Palmer	569,514	Oct. 13	1372	322	77	275
Folding table	H. Selders	570,509	Nov. 3	131	32	77	663
Foot-ball	A. Nisbet	568,871	Oct. 6	274	63	77	53
Forceps. Bone	A. De Vilbiss	571,040	Nov. 10	1114	261	77	874
Forging and welding machine	G. Debombourg	571,344	Nov. 17	1636	388	77	987
Fork: *See* Hay-fork.							
Form-washing device	A. L. Hemphill	573,410	Dec. 15	2335	557	77	1757
Fountain: *See* Drinking-fountain.							
Fracture apparatus	O. Clausson	570,085	Oct. 27	2405	569, 570	77	494
Frame: *See* Drying-frame.							
Fruit-box	E. R. Morrill	570,763	Nov. 3	635	146	77	754
Fruit-cleaning machine	C. Duckworth	573,769	Dec. 22	3019	715	77	1905
Fruit cutting and pitting machine	J. F. Rehm	569,838	Oct. 20	1970	468, 469	77	399

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Fruit-drier	A. B. Shearer	572,224	Dec. 1	231	55	77	1329
Fruit-jar	J. L. De Steiger	574,306	Dec. 29	4040	960	77	2105
Fruit-jar	A. G. Smalley	572,281	Dec. 1	340	82	77	1344
Fruits. Apparatus for treating dried	H. A. Turner, Jr	571,100	Nov. 10	1236	287	77	896
Frying-pans, &c. Lid for	R. A. Morgan	573,680	Dec. 22	2880	680	77	1878
Fuel. Artificial	J. D. Oligny	570,495	Nov. 3	109	.....	77	658
Fuel. Artificial	J. Van Opstal and E. M. Forst	569,689	Oct. 20	1708	.....	77	353
Fumigating apparatus	T. F. Moss	571,784	Nov. 24	2403	574	77	1147
Fumigator	W. M. Luther	573,675	Dec. 22	2871	678	77	1876
Fur-plucking machine	I. Dresdner	568,750	Oct. 6	68	15	77	16
Furnace: *See* Blank furnace. Hot-air furnace. Boiler-furnace. Metallurgical furnace. Boiler or other furnace. Open-hearth furnace. Calcining-furnace. Ore-roasting furnace. Cupola-furnace. Pair and reheating furnace. Dental furnace. Roasting-furnace. Electric furnace. Smelting-furnace. Gas-furnace. Smoke-consuming furnace. Glass-annealing furnace. Steam-furnace.							
Furnace	C. A. Gras	568,900	Oct. 6	313	72	77	60
Furnace	W. H. Peck and D. R. W. Patterson	573,235	Dec. 15	2022	485	77	1701
Furnace	W. A. Perry	569,665	Oct. 20	1653	390, 391	77	343
Furnace air-heating apparatus	W. Stubblebine	573,799	Dec. 22	3063	725, 726	77	1913
Furnace apparatus	C. A. Gras	568,899	Oct. 6	311	71, 72	77	60
Furnace. Automatically-feeding	B. D. Childrey	574,190	Dec. 29	3829	913, 914, 915	77	2065
Furnace-charging apparatus	S. T. and C. H. Wellman	569,075	Oct. 6	615	140	77	118
Furnace-door	E. M. Andrus	573,847	Dec. 29	3156	752	77	1945
Furnace draft attachment	A. Jahant	569,204	Oct. 13	835	196	77	175
Furnace-feeding device	G. R. Jarman	574,331	Dec. 29	4082	970	77	2112
Furnace for enameling and heating without muffles. Twin	C. M. Herrmann	573,975	Dec. 29	3414	818	77	1991
Furnace for heating steel and iron ingots	H. W. Hollis	571,667	Nov. 17	2181	524, 525	77	1085
Furnace for iron-working	W. Heckert	573,590	Dec. 22	2688	639	77	1841
Furnace for pulverized fuel	W. E. Clarke and J. W. McEachren	573,862	Dec. 29	3194	760	77	1950
Furnace fuel-feeder	W. Ruhl	571,139	Nov. 10	1302	302, 303	77	908
Furnace-grate	G. Dupmeyer	571,111	Nov. 10	1255	291	77	899
Furnace-grate	E. J. Gordon	574,030	Dec. 29	3503	837	77	2006
Furnace-grate	F. W. Jarvis	569,205	Oct. 13	836	196, 197	77	175
Furnace-grate	C. H. Radke	572,275	Dec. 1	324	77	77	1341
Furnace-grate	W. R. Roney	569,353	Oct. 13	1103	261, 262, 514, 515	77	227
Furnace-grate and automatic stoker	J. G. Sanderson	573,298	Dec. 15	2145	514, 515	77	1722
Furnace. Mechanical-stoker	G. Playford, Jr	570,268	Oct. 27	2737	651	77	557
Furnace-valve	R. Stevens	570,272	Oct. 27	2745	653	77	558
Furnaces. Apparatus for improving combustion in	T. M. Eynon	569,329	Oct. 13	1063	252	77	219
Furnaces. Automatic regulator for	R. L. Short	569,944	Oct. 20	2158	512	77	434
Furnaces. Automatic reignition apparatus for hydrocarbon-	A. Seigle	571,076	Nov. 10	1181	277	77	886
Furnaces. Device for preventing obstruction of blast in blast-	J. M. Hartman	570,129	Oct. 27	2479	587	77	508
Furniture-clamp	F. Schweitzer	572,725	Dec. 8	1131	273	77	1513
Furring for buildings. Metallic	J. T. McCormick	573,158	Dec. 15	1881	453	77	1675
Fuse-block. Multiple	E. H. Montgomery	571,093	Nov. 10	1212	284	77	852
Fuse cut-out. Multiple	G. T. Voorhees	569,692	Oct. 20	1711	406	77	353
Fuse for electric circuits	C. F. Scott	569,803	Oct. 20	1918	455	77	389
Fuse for high explosives	R. B. Dashiell	571,342	Nov. 17	1633	388	77	986
Fuse for shells. Time	W. J. Smith	570,065	Oct. 27	2366	562	77	486
Fuses. Primer for blasting	J. H. Hart	569,871	Oct. 20	2023	482	77	409
Gable ornament	T. L. Dillon	569,550	Oct. 13	1426	337	77	286
Gage: *See* Bit-gage. Railway-track gage. Carpenter's gage. Track-gage. Micrometer-gage. Tympan-gage. Micrometer-beam gage. Water-gage. Weather-board gage. Printing-press feed-gage.							
Gage	O. Forbush	573,457	Dec. 22	2468	585	77	1799
Gage	J. P. Van Vleck	572,321	Dec. 1	421	99	77	1350
Galvanic battery	R. W. Gordon	570,013	Oct. 27	2271	540	77	467
Galvanometer	C. Coleman	570,454	Nov. 3	95	5, 6	77	643
Game apparatus	J. E. Brooks	570,743	Nov. 3	601	138	77	748
Game apparatus	W. W. Climenson	574,192	Dec. 29	3838	916	77	2056
Game apparatus	J. Couner	574,351	Dec. 29	4120	978	77	2119
Game apparatus	A. W. Fall	571,997	Nov. 24	2786	667	77	1219
Game apparatus	A. C. Frick	574,067	Dec. 29	3603	861	77	2036
Game apparatus	J. G. Gregory	570,393	Oct. 27	2999	710	77	605
Game apparatus	A. B. Heap and H. H. Van Kuran	574,150	Dec. 29	3721	886	77	2047
Game apparatus	J. E. Irvine	569,102	Oct. 6	661	153	77	136
Game apparatus	E. H. Pratt	568,792	Oct. 6	138	33	77	28
Game apparatus	G. W. Pratt	571,843	Nov. 24	2508	594	77	1166
Game apparatus	T. A. Ryan and I. Whitney	570,105	Oct. 27	2438	579	77	501
Game apparatus	C. J. Stauffiger	569,391	Oct. 13	1164	277	77	238
Game apparatus	B. W. Taylor	570,779	Nov. 3	657	150	77	759

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Game apparatus	H. M. Van Kuran	572,388	Dec. 1	552	130	77	1383
Game apparatus and cigar-cutter. Combined	E. J. Haverly	569,130	Oct. 6	708	166	77	135
Game-board	A. Nurick	569,140	Oct. 6	726	171	77	138
Game-counter	E. C. Bull	570,190	Oct. 27	2465	584	77	505
Game-counter	J. Solatinow	571,174	Nov. 10	1351	315	77	918
Game-counter	C. Widmer, Sr	572,920	Dec. 8	1458	350	77	1578
Game device	C. O. Truex	571,464	Nov. 17	1836	437	77	1023
Game-table	J. A. Hamilton	573,972	Dec. 29	3409	817	77	1990
Game-table	G. S. Jeffries	572,056	Nov. 24	2889	682	77	1238
Game-table. Convertible	A. C. D. Seifert	572,688	Dec. 8	1055	256	77	1499
Garbage or rubbish receptacle	C. Arrick	569,990	Oct. 27	2233	530	77	460
Garbage. Process of and apparatus for treating	I. M. Simonin	573,714	Dec. 22	2934	693	77	1888
Garment	O. Van Oostrum	573,060	Dec. 15	1711	410	77	1643
Garment-fastener	H. Kerngood	573,470	Dec. 22	2492	590	77	1804
Garment-fastener	O. Van Oostrum	573,057	Dec. 15	1707	409	77	1643
Garment-fastener	O. Van Oostrum	573,058	Dec. 15	1708	409	77	1643
Garment-fastener	O. Van Oostrum	573,059	Dec. 15	1709	409	77	1643
Garment-fastening	W. F. Peet	570,267	Oct. 27	2736	650	77	557
Garment-protector	P. Pearson	573,998	Dec. 29	3450	825	77	1997
Garment-stretching frame	A. E. Phelps	569,885	Oct. 20	2043	486	77	412
Garment-supporter	M. A. Farrington	571,222	Nov. 10	1427	333	77	932
Garment-supporter	M. E. Herron	569,919	Oct. 20	2105	501	77	424
Garment-supporter	C. E. Stone	568,812	Oct. 6	170	41	77	34
Garter and belt	F. H. McClung, Jr	569,511	Oct. 13	1368	320	77	274
Gas and electric fixture. Combination	J. E. and W. M. Brown	573,387	Dec. 15	2299	549	77	1751
Gas and steam engine. Combined	R. E. Olds	570,263	Oct. 27	2729	649	77	555
Gas apparatus	F. G. Bates	573,958	Dec. 29	3368	806, 807	77	1983
Gas apparatus	T. Hennessy	569,716	Oct. 20	1771	420, 421	77	363
Gas apparatus. Differential indicator for	R. Norris	572,366	Dec. 1	497	117	77	1372
Gas. Apparatus for charging liquids with	J. Schneible	571,694	Nov. 17	2219	534, 535	77	1093
Gas. Apparatus for manufacturing acetylene	J. H. Exley	569,708	Oct. 20	1757	417	77	360
Gas. Apparatus for manufacturing fuel	C. Dellwik	570,382	Oct. 27	2971	704	77	600
Gas-burner	J. F. Burgess	574,018	Dec. 29	3482	831	77	2003
Gas-burner	A. E. Detwiler	571,431	Nov. 17	1778	424	77	1012
Gas-burner	P. Keller	569,155	Oct. 6	757	176	77	143
Gas-burner	H. Kuhfahl	571,902	Nov. 24	2627	623	77	1188
Gas burner. Acetylene	H. F. Fuller	571,875	Nov. 24	2565	608	77	1177
Gas-burner. Safety	W. and L. W. Gates	569,868	Oct. 20	2019	481, 482	77	408
Gas-burners. Electric igniting device for	G. F. Krieger	571,769	Nov. 24	2380	568	77	1142
Gas-burners. Manufacturing hoods or mantles for incandescent	W. L. Voelker	571,419	Nov. 17	1757	.....	77	1008
Gas-burners. Solution for illuminant mantles for Bunsen	W. and L. Hooker	573,513	Dec. 22	2557	.....	77	1816
Gas-collecting apparatus	F. G. Waller	570,357	Oct. 27	2928	696	77	591
Gas. Consuming hydrocarbon	T. L. Willson	573,377	Dec. 15	2283	.....	77	1748
Gas-distributing apparatus	R. L. Owen	573,996	Dec. 29	3448	825	77	1997
Gas employed in displacing liquids. Process of and apparatus for reclaiming	J. F. Theurer	572,779	Dec. 8	1222	296, 297	77	1529
Gas-engine	J. Charter, Jr	573,762	Dec. 22	3007	712, 713	77	1902
Gas-engine	F. E. Culver	573,909	Dec. 15	1974	475	77	1692
Gas-engine	H. C. Hart	569,918	Oct. 20	2103	501	77	423
Gas-engine	C. A. Kunzel, Jr	571,447	Nov. 17	1803	431	77	1017
Gas-engine	G. W. Lewis	571,534	Nov. 17	1960	466, 467	77	1045
Gas-engine	F. C. Olin	569,386	Oct. 13	1154	275	77	236
Gas-engine	F. C. Olin	569,564	Oct. 13	1461	345, 346	77	292
Gas-engine	F. C. Olin	571,495	Nov. 17	1888	450, 451	77	1031
Gas-engine	E. Rappe	571,498	Nov. 17	1899	452, 453	77	1034
Gas-engine	R. J. Rolfson	570,649	Nov. 3	426	101, 102	77	717
Gas-engine	G. A. Thode	568,814	Oct. 6	173	41	77	35
Gas-engine	M. W. Weir	569,694	Oct. 20	1715	407	77	354
Gas-engine	H. A. Winter	569,530	Oct. 13	1396	329, 330	77	279
Gas-engine. Expansion	J. W. Eisenhuth	574,311	Dec. 29	4047	961, 962	77	2106
Gas-engine. Rotary	L. Gathmann	570,470	Nov. 3	51	12, 13	77	648
Gas-furnace. Regenerative	L. J. Lemaire	569,421	Oct. 13	1213	285	77	246
Gas-generating apparatus	C. Dellwik	570,383	Oct. 27	2973	705	77	600
Gas-generating machine	J. A. Enos	571,221	Nov. 10	1425	333	77	931
Gas-generator	A. Dauber	570,008	Oct. 27	2265	538	77	466
Gas-generator	J. C. Dods	571,558	Nov. 17	2005	476, 477	77	1052
Gas-generator	E. P. Harris	568,903	Oct. 6	315	73	77	61
Gas-generator	J. E. Hathaway	572,797	Dec. 8	1255	303	77	1536
Gas-generator	T. Hennessy	573,183	Dec. 15	1927	462, 463	77	1684
Gas-generator	J. C. Porter	571,576	Nov. 17	2030	483	77	1058
Gas generator. Acetylene	A. S. Bucher	569,273	Oct. 13	957	229	77	198
Gas generator. Acetylene	W. P. and H. D. Hill	572,113	Dec. 1	30	8	77	1284
Gas generator. Acetylene	J. H. Waite	573,938	Dec. 29	3394	794	77	1975
Gas generators. Device for charging hydrocarbon	A. B. Griffen	568,944	Oct. 6	388	88	77	74
Gas-heater	J. W. Carter	573,205	Dec. 15	1969	474	77	1691
Gas-heater for carriages, &c	B. Janse and J. de Witte	569,286	Oct. 13	979	235	77	202
Gas incandescent lights. Burner for spirit	A. Perlich	572,565	Dec. 8	838	201	77	1457
Gas-lighting apparatus. Electric	C. W. De Mott	571,723	Nov. 17	2276	546	77	1104

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume.		Official Gazette.	
				Spec.	Dr'g.	Vol.	Page.
Gas-lighting burner. Electric	W. E. Cram	569,785	Oct. 20	1890	448	77	384
Gas-lighting device. Electric	E. Schmidt	571,288	Nov. 10	1542	366	77	954
Gas-lights. Composition of material for incandescent	L. K. Böhm	572,101	Dec. 1	12	.....	77	1280
Gas-lights. Process of and machine for making mantles or hoods for incandescent	P. Inch	571,372	Nov. 17	1682	398	77	994
Gas. Manufacture of illuminating	C. D. Hauk	572,703	Dec. 8	1063	263, 264	77	1504
Gas. Manufacturing	J. L. Janeway	571,269	Nov. 10	1512	357, 358	77	948
Gas-manufacturing apparatus	P. Brentini	571,062	Nov. 10	1147	268	77	881
Gas-manufacturing apparatus	G. H. Gregory	572,795	Dec. 8	1251	303	77	1535
Gas. Manufacturing carbonic-acid	B. T. L. Thomson	573,053	Dec. 15	1702	408	77	1642
Gas-meter	J. Dodd	573,399	Dec. 15	2316	554	77	1754
Gas-meter and gas-regulator. Combined	J. Coons	573,863	Dec. 29	3195	761	77	1951
Gas-meter. Dry	F. Wright	572,924	Dec. 8	1466	352	77	1579
Gas-mixing apparatus	R. G. Kirkwood	571,196	Nov. 10	1386	323	77	924
Gas, oil, and water separator	A. P. McBride	569,345	Oct. 13	1092	259	77	225
Gas or vapor engine	G. S. Tiffany	573,628	Dec. 22	2779	658	77	1861
Gas or water switch	S. W. Garrison	573,403	Dec. 15	2321	555	77	1754
Gas-pressure regulator. Automatic	K. M. Stahl	572,838	Dec. 8	1319	316	77	1549
Gas. Process of and apparatus for making	L. Stevens	570,516	Nov. 3	141	35	77	664
Gas. Process of and apparatus for manufacturing	F. G. Bates	573,957	Dec. 29	3361	806	77	1982
Gas. Process of and apparatus for manufacturing	M. Lorois and F. G. Bates	573,989	Dec. 29	3436	823	77	1994
Gas-producer	J. D. Swindell	572,184	Dec. 1	155	38	77	1307
Gas-producer safety device	G. E. Woods	570,149	Oct. 27	2516	597	77	515
Gas-reaction apparatus. Electrical	A. A. Naville and P. A. and C. E. Guye.	569,122	Oct. 6	691	161	77	132
Gas-regulator	M. J. Amick	572,044	Nov. 24	2861	673	77	1233
Gases. Apparatus for treating fire	J. Patterson	572,177	Dec. 1	145	36	77	1305
Gases evolved in furnaces. Blower for treating	J. Patterson	572,178	Dec. 1	147	36	77	1305
Gases evolved in steam-boilers, &c. Apparatus for treating fire	J. Patterson	572,176	Dec. 1	143	34, 35	77	1305
Gaselier	H. Arnhold	569,076	Oct. 6	618	140	77	118
Gasolene or vapor engine	E. Prouty	570,500	Nov. 3	115	28, 29	77	659
Gate: *See* Automatic gate. Bridge-gate. End-gate. Farm-gate. Fluid-controlled gate. Nursery-gate. Sliding gate.							
Gate	A. H. Barnhill and T. I. Thurman	570,362	Oct. 27	2935	697	77	393
Gate	H. G. Bowman	571,081	Nov. 10	1190	279	77	888
Gate	D. R. Burnham	570,198	Oct. 27	2603	619	77	532
Gate	L. Clark	569,858	Oct. 20	2006	478, 479	77	406
Gate	A. Davison	572,475	Dec. 1	675	161	77	1407
Gate	E. C. Moore	568,785	Oct. 6	128	30	77	26
Gate	H. V. Philpott	571,237	Nov. 10	1457	342	77	937
Gate	J. W. Showalter and J. N. Carver	571,140	Nov. 10	1304	303	77	908
Gate	I. H. Swink	572,228	Dec. 1	240	57	77	1324
Gate	R. J. Young	574,296	Dec. 29	4026	956	77	2102
Gate or door hook	J. M. Proctor	572,446	Dec. 1	634	150	77	1398
Gate-spring	J. J. Larimer	572,899	Dec. 8	1403	340	77	1566
Gates, barn-doors, &c. Device for opening or closing	A. J. Shrope	570,412	Oct. 27	3034	719	77	611
Gathering and loading apparatus	J. J. Kulage	568,770	Oct. 6	102	24, 25	77	22
Gear-cutting machine	T. J. Lindsay	572,207	Dec. 1	192	47, 48	77	1315
Gear. Equalizing	C. C. Burton	571,187	Nov. 10	1371	320, 321	77	922
Gear for motocycles	G. H. Ellis and J. F. Steward	570,203	Oct. 27	2611	620, 621	77	534
Gearing	F. A. Curtis	570,698	Nov. 3	522	122	77	735
Gearing	F. H. Richards	573,620	Dec. 22	2741	651, 652	77	1852
Gearing	F. J. Woods	570,974	Nov. 10	998	231	77	852
Gem-setting	D. W. Costigan	573,139	Dec. 15	1857	447	77	1671
Generator: *See* Ammonia-gas generator. Electric generator. Gas-generator. Hydrocarbon-generator. Magneto-generator. Motor-generator. Steam-generator.							
Generator	E. Hayes	571,762	Nov. 24	2369	566	77	1140
Girdle. Bust	L. G. Stitt	572,621	Dec. 8	938	228	77	1476
Glass-annealing furnace	J. George	569,279	Oct. 13	965	231	77	200
Glass articles. Conveyer for	E. H. Everett and A. Samuelson	570,626	Nov. 3	386	91, 92	77	709
Glass articles while being finished. Clutch for holding	W. J. Wilkinson	571,255	Nov. 10	1464	349	77	942
Glass-blower. Mechanical	M. J. Owens	570,879	Nov. 3	838	195, 196	77	795
Glass-blowing machine	S. O. Richardson, Jr	570,881	Nov. 3	842	197	77	796
Glass bottles, &c. Tool for finishing	A. S. Lambert and E. Hoffman	568,772	Oct. 6	106	25	77	22
Glass. Composition for	K. H. Dangler	572,968	Dec. 15	1558	.....	77	1613
Glass from flattening-ovens. Conveyer for carrying	T. A. Zellers and S. R. Blanchard	573,318	Dec. 15	2186	522	77	1729
Glass-holding snap	J. E. Miller	572,308	Dec. 1	395	94	77	1353
Glass-molds. Dipping apparatus for paste	E. Robinson	570,735	Nov. 3	588	135	77	746
Glass-polishing machine	E. J. Hoffman	571,564	Nov. 17	2013	479	77	1054
Glove	J. Comrie	573,447	Dec. 22	2447	581	77	1796
Glove, boot, or apparel fastener	J. Freund and L. Sappey	573,401	Dec. 15	2319	554	77	1754
Glove. Boxing	F. A. Harvey	570,092	Oct. 27	2422	575	77	497
Glove-fastener	W. S. Richardson	572,566	Dec. 8	839	201	77	1457
Glove-fastener	W. S. Richardson	573,188	Dec. 15	1939	467	77	1685
Glove-fastening	P. E. L. Perdrizet	574,042	Dec. 29	3528	842	77	2012
Glove-holder	E. R. Nablo	573,232	Dec. 15	2020	485	77	1700
Glucose or sugar from starch. Apparatus for manufacturing	C. Pope	570,183	Oct. 27	2576	612	77	527
Gluing machine. Shuck	W. F. Hutchinson	571,321	Nov. 10	1598	379	77	965

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Gold and silver bullion. Refining	B. Hunt	571,369	Nov. 17	1679	.....	77	994
Gold. Extracting	B. C. Hinman	569,334	Oct. 13	1070	253	77	221
Gold from sand, &c. Apparatus for separating	J. Marshall	568,913	Oct. 6	331	76	77	64
Gold from substances containing it. Extracting	H. R. Cassel	568,741	Oct. 6	45	11	77	12
Gold or silver. Apparatus for electrodeposition of	E. Andreoli	568,734	Oct. 6	1	1	77	3
Gold washer. Alluvial	J. Miller	569,113	Oct. 6	675	158	77	129
Golf-club	D. I. and R. L. Urquhart	569,438	Oct. 13	1239	291	77	251
Golf-club head	W. Mills	572,436	Dec. 1	620	147	77	1396
Golf-tee and score-card. Combined	P. L. Senat	570,821	Nov. 3	727	166	77	773
Governor	W. T. Davis	570,461	Nov. 3	36	8	77	645
Governor for power-shafts	W. H. McFadden	574,209	Dec. 29	3878	923	77	2073
Governor. Gas-engine	J. W. Lambert	571,448	Nov. 17	1806	431	77	1018
Governor. Motor	C. G. P. de Laval	569,834	Oct. 20	1965	467	77	398
Governor. Steam-engine	E. J. Armstrong	570,307	Oct. 27	2852	676	77	577
Grade-delineator	O. F. Sonne	573,717	Dec. 22	2941	695	77	1889
Grain and seed cleaner	T. J. Hatfield	574,354	Dec. 29	4123	979	77	2120
Grain-binder	L. Miller	571,072	Nov. 10	1168	272, 273, 274, 275	77	884
Grain-binder	B. F. Stewart	568,810	Oct. 6	164	39, 40	77	33
Grain-binder trip mechanism	B. F. Stewart	573,048	Dec. 15	1694	405	77	1640
Grain-binder tying mechanism	B. F. Stewart	573,307	Dec. 15	2173	518	77	1727
Grain-drier	J. Backhouse, Jr.	570,783	Nov. 3	663	152	77	760
Grain-drier	G. H. Carmack	570,662	Nov. 3	457	107	77	724
Grain-drill	C. C. Blair	569,035	Oct. 6	551	127	77	105
Grain-drill	J. M. King	573,416	Dec. 15	2347	561	77	1759
Grain-drill speed-gearing	R. Galloway	571,224	Nov. 10	1429	334	77	932
Grain-drying apparatus	T. G. Frost	570,989	Nov. 10	1023	239	77	857
Grain-elevator	J. D. Ream and M. Lewis	572,448	Dec. 1	636	150, 151	77	1399
Grain proportioner and mixer	F. S. Ritter	574,270	Dec. 29	3985	947	77	2094
Grain recleaner and separator	J. B. Schuman	569,389	Oct. 13	1162	276	77	237
Grain-scourer	E. Keith	570,600	Nov. 3	312	76, 77	77	696
Grain-separator	R. W. Rossiter	573,706	Dec. 22	2923	691	77	1886
Grain-separator. Tubular	J. B. Cornwall	569,069	Oct. 6	641	146	77	123
Grain-storage elevator	M. F. and J. Y. Seeley	572,726	Dec. 8	1132	273, 274	77	1513
Grain-tempering machine	E. Blodgett	570,449	Nov. 3	9	3	77	640
Graphophone	T. H. Macdonald	569,290	Oct. 13	986	237	77	204
Grapple	L. H. Carlson	574,133	Dec. 29	3693	879, 880	77	2042
Grappling device for carpenters	J. O. Hanna	572,751	Dec. 8	1179	283	77	1521
Grate	J. Bristly	571,506	Nov. 17	1916	457	77	1037
Grate	G. H. Phillips	568,790	Oct. 6	135	33	77	28
Grate	J. S. Roake	573,164	Dec. 15	1890	455	77	1676
Grate	W. E. Scott	569,063	Oct. 6	595	136	77	114
Grate	G. C. St. John	574,347	Dec. 29	4110	976	77	2118
Grate-bar	J. T. Fuller	569,375	Oct. 13	1138	271	77	234
Grate. Front	F. O. Farwell	573,816	Dec. 22	3095	736	77	1919
Grater	E. Gilmore	571,358	Nov. 17	1659	393	77	991
Grater. Nutmeg	C. E. Damon	571,218	Nov. 10	1421	332	77	931
Grave-lining	J. A. Knarr	571,090	Nov. 10	1206	283	77	891
Gravel-dump	A. P. Williams	572,233	Dec. 1	246	59	77	1325
Gravity-lock	G. R. Brobeck and L. D. Lewis	572,628	Dec. 8	952	230	77	1479
Gravity-motor	J. N. Ericsson	573,583	Dec. 22	2676	634, 635, 636	77	1839
Grease-proofing articles. Compound for	W. B. Shober and H. M. Ullmann	570,965	Nov. 10	985	.....	77	850
Grinder. Drill	W. G. Budlong	571,336	Nov. 17	1626	386	77	984
Grinding and drilling machine	J. Carey and W. A. Reid	569,126	Oct. 6	697	162	77	133
Grinding-machine	P. H. Cazier	569,782	Oct. 20	1886	448	77	383
Grinding-machine	F. Parsons	570,766	Nov. 3	639	146	77	755
Grinding-machine	J. W. Terry	570,110	Oct. 27	2448	582	77	502
Grinding-machine attachment. Drill	J. H. Agesen	572,944	Dec. 15	1509	361	77	1603
Grinding machine. Knife	C. B. Snow and C. A. Sherman	570,966	Nov. 10	986	229	77	850
Grinding-mill	D. E. Barnard	569,571	Oct. 13	1481	348, 349	77	295
Grinding-mill	T. L. and T. J. Sturtevant	572,386	Dec. 1	548	129, 130	77	1382
Grindstone-frame	H. White	569,806	Oct. 20	1922	456, 457	77	390
Grip and brake operating mechanism	J. Jonson	570,023	Oct. 27	2289	543	77	471
Gun. Automatic machine	R. R. Richmond	572,771	Dec. 8	1207	292, 293	77	1527
Gun-battery. Platoon	R. B. Potts	573,353	Dec. 15	2344	537	77	1740
Gun-carriage	J. A. Deport	571,557	Nov. 17	2003	476	77	1052
Gun-carriage. Counterpoise disappearing	W. H. Morgan	569,222	Oct. 13	871	205, 206	77	182
Gun-carriage. Disappearing	W. H. Morgan	569,225	Oct. 13	878	208, 209	77	183
Gun-carriage. Disappearing counterpoise	W. H. Morgan	569,223	Oct. 13	874	206, 207	77	182
Gun-carriage. Disappearing counterpoise	W. H. Morgan	569,224	Oct. 13	876	207	77	183
Gun. Gas-operated magazine	C. J. Ehbets	570,388	Oct. 27	2980	706, 707	77	601
Gun lock. Bolt	T. B. Wilson	571,608	Nov. 17	2086	501	77	1067
Gun. Machine	H. C. Webb	569,899	Oct. 20	2069	492, 493	77	417
Gun. Magazine	J. M. Whittemore	572,919	Dec. 8	1450	349, 350	77	1577
Gun-mount	R. B. Dashiell	573,210	Dec. 15	1975	476	77	1692
Gun-sight	A. E. Veon	572,494	Dec. 1	708	170	77	1413
Gun. Wire-wound	J. A. Miller	568,914	Oct. 6	332	77	77	64

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Guns. Ejector mechanism for breakdown	G. A. Horne	572,755	Dec. 8	1184	285	77	1522
Guns. Hinge-pin for breakdown	A. D. Blanchard	572,590	Dec. 8	758	180	77	1438
Guns. Means for affixing side-arms to	P. Mauser	572,266	Dec. 1	304	73	77	1337
Guns. Single-trigger lock for double-barrel	F. D. Granger	572,480	Dec. 1	682	164	77	1409
Hair-curler	C. H. Baldwin	570,836	Nov. 3	760	173	77	780
Hair-drier	R. P. and H. L. Bowdoin	573,437	Dec. 22	2432	577	77	1793
Hair on the head. Device for use in drying	G. R. Waters	571,960	Nov. 24	2725	644	77	1208
Hair-pin	F. J. Prokop	569,053	Oct. 6	585	133	77	112
Hair-pin	J. W. Timmons	574,288	Dec. 29	4017	953	77	2100
Hair-pin and button-hook	B. Whiteley	569,144	Oct. 6	731	172	77	139
Hair-pins. Apparatus for manufacturing	G., J. G., and M. O. Rehfuss	573,536	Dec. 22	2594	615, 616	77	1823
Hame attachment	G. Siegenthaler	568,880	Oct. 6	285	65	77	55
Hame-fastener	G. C. Bostwick	573,131	Dec. 15	1840	443	77	1668
Hame-hook	F. F. Cherry	571,894	Nov. 24	2614	619	77	1186
Hammock	W. Hines	572,424	Dec. 1	605	143	77	1393
Hammock seat attachment	I. E. Palmer	574,073	Dec. 29	3580	855	77	2021
Hand. Artificial	J. Voegtlein	569,593	Oct. 13	1528	358	77	304
Hand-brake	C. Mullin and F. C. Galloway	571,676	Nov. 17	2193	528	77	1068
Hand-drill	J. McSweeney	573,231	Dec. 15	2018	484	77	1700
Hand-protector	C. H. Gleim	573,215	Dec. 15	1986	478	77	1695
Handle: *See* Bicycle-handle. Crank-handle. Cutlery-handle. Knife or fork handle. Pan-handle. Saucepan-handle. Velocipede-handle.							
Handle	F. L. Ray	569,768	Oct. 20	1861	441	77	378
Handle	F. C. Rockwell	570,186	Oct. 27	2581	613	77	528
Handle	F. C. Rockwell	573,796	Dec. 22	3058	724	77	1912
Handle attachment	L. B. Young	572,851	Dec. 8	1338	322	77	1553
Hanger: *See* Clothes-line hanger. Coat-hanger. Coat and hat hanger. Meat-hanger.							
Harness	N. H. Meaick	569,048	Oct. 6	571	131	77	109
Harness	R. F. Spencer	573,306	Dec. 15	2172	518	77	1727
Harness attachment	J. F. Gambrell	570,548	Nov. 3	209	55	77	676
Harness attachment	J. D. Hull	568,762	Oct. 6	89	21	77	20
Harness attachment	W. A. Seibel	570,964	Nov. 10	985	229	77	850
Harness attachment	C. H. Stoody	571,808	Nov. 24	2444	582	77	1155
Harness attachment. Vehicle	J. Reel	571,797	Nov. 24	2428	578	77	1152
Harness head-gear	E. G. Sylvester	569,526	Oct. 13	1391	328	77	279
Harness to vehicle-shafts. Device for attaching	F. Dickerboom	572,873	Dec. 8	1369	331	77	1559
Harp	R. Dolge	574,307	Dec. 29	4041	960	77	2105
Harp	R. Dolge	574,308	Dec. 29	4042	960	77	2105
Harp	R. Dolge	574,309	Dec. 29	4044	961	77	2105
Harp	E. P. Stark	570,826	Nov. 3	736	168	77	775
Harp	W. E. Whitcomb	570,242	Oct. 27	2687	638	77	547
Harrow	J. A. Bailey	569,736	Oct. 20	1798	427	77	368
Harrow	O. J. Childs	571,895	Nov. 24	2615	619	77	1186
Harrow	J. P. De Moss, Jr.	573,505	Dec. 22	2546	603	77	1813
Harrow	H. L. Flesher	569,492	Oct. 13	1325	312	77	266
Harrow	L. H. Jackson and W. E. Rhegness	571,164	Nov. 10	1339	312	77	916
Harrow	A. R. Troutman	573,315	Dec. 15	2183	521	77	1729
Harrow	E. E. Whipple	571,715	Nov. 17	2261	543	77	1100
Harrow and roller. Combined	F. O. Kinney	573,984	Dec. 29	3426	821	77	1993
Harrow-frame	H. L. Ferris	569,913	Oct. 20	2095	498	77	422
Harrow. Rolling	A. R. Anderson	570,532	Nov. 3	173	46	77	670
Harrow. Wheeled	D. C. Miller	574,102	Dec. 29	3635	868	77	2031
Harvester	W. J. Lankford	571,904	Nov. 24	2630	623, 624	77	1188
Harvester and binder	R. P. Lockhart	571,619	Nov. 17	2102	504, 505	77	1070
Harvester binding mechanism	M. A. Keller	569,580	Oct. 13	1504	355	77	300
Harvester bundle-carrier	P. Hanson	573,066	Dec. 15	1761	423	77	1653
Harvester bundle-carrier	B. F. Stewart	571,807	Nov. 24	2441	582	77	1155
Harvester. Clover-seed	S. Hamilton	569,043	Oct. 6	563	130	77	107
Harvester. Corn	B. Bucher	572,958	Dec. 15	1533	367, 368	77	1608
Harvester. Corn	J. Dain, Jr.	572,967	Dec. 15	1556	373	77	1612
Harvester. Corn	C. E. Detling	569,549	Oct. 13	1424	337	77	285
Harvester. Corn	T. A. Galt	572,749	Dec. 8	1176	282, 283	77	1521
Harvester. Corn	W. H. Gray	572,110	Dec. 1	93	6	77	1382
Harvester. Corn	W. W. Green	571,857	Nov. 24	2533	600	77	1171
Harvester. Corn	G. O. Houck	573,270	Dec. 15	2078	498	77	1710
Harvester. Corn	O. C. Miller	573,895	Dec. 29	3250	774	77	1961
Harvester. Corn	J. Odell	574,108	Dec. 29	3642	870	77	2033
Harvester. Corn	A. S. Peck	570,498	Nov. 3	112	27	77	659
Harvester. Corn	F. G. Schuerman	571,846	Nov. 24	2512	595, 596	77	1167
Harvester. Corn	C. Schulze	571,202	Nov. 10	1395	326, 327	77	926
Harvester. Corn	C. S. Sharp	569,242	Oct. 13	908	217, 218	77	190
Harvester. Corn	M. O. Wert	570,832	Nov. 3	753	171, 172	77	778
Harvester. Corn	J. W. White	573,067	Dec. 15	1723	413	77	1645
Harvester. Grain-binding	L. Miller	571,073	Nov. 10	1173	275	77	884
Harvester. Self-binding	J. R. Severance	571,403	Nov. 17	1728	411, 412	77	1003
Harvester. Self-binding	E. M. Tousley	572,585	Dec. 8	871	210, 211	77	1463
Harvester sheaf-carrier. Self-binding	J. F. Steward	573,244	Dec. 15	2035	488	77	1703
Harvester shocker attachment	M. R. Huber	571,617	Nov. 17	2100	504	77	1070

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Harvesters. Driving connection for	H. F. Crandall and E. J. Birkett	568,893	Oct. 6	304	70	77	58
Hasp-fastener	H. Schlichting	574,276	Dec. 29	3997	949	77	2096
Hat and coat hook	C. P. Brand	573,258	Dec. 15	2058	493	77	1707
Hat box or trunk	M. Lyons	573,789	Dec. 22	3044	721, 722	77	1909
Hat-crown-pouncing machine	G. E. Brush	573,856	Dec. 29	3170	756	77	1948
Hat-crown-pouncing machine	C. M. Snell	569,890	Oct. 20	2051	488, 489	77	414
Hat-fastener	L. A. Barbour and J. J. Edwards	570,150	Oct. 27	2519	597	77	515
Hat-fastener	C. E. Hallowell	574,149	Dec. 29	3719	886	77	2046
Hat-fastening	K. D. Head	572,202	Dec. 1	183	44	77	1313
Hat-holder	E. Leger	571,772	Nov. 24	2385	569	77	1143
Hat-identifying mark	D. A. Keller	570,642	Nov. 3	415	98	77	714
Hat-ironing machine	E. Messer	574,070	Dec. 29	3575	854	77	2021
Hat-mark	J. S. B. Hartsock	574,325	Dec. 29	4070	967	77	2110
Hat or cap	M. Panoff	573,614	Dec. 22	2731	649	77	1851
Hat or cap	W. J. Worden	573,192	Dec. 15	1948	469	77	1687
Hat-pin	A. E. Self	574,007	Dec. 29	3468	829	77	2001
Hat-pin fastener	L. Braun	571,822	Nov. 24	2467	586	77	1159
Hat-pin guide or retainer	I. Fréchette	570,627	Nov. 3	388	92	77	709
Hat-pinning-out machine	C. H. Reid	570,715	Nov. 3	546	127	77	740
Hat-rounding machine. Hand-operated	C. H. Reid	570,734	Nov. 3	584	134, 135	77	746
Hat-securing apparatus	E. R. Standfield and W. Brew	573,492	Dec. 22	2526	598	77	1809
Hat-stiffening machine	L. R. Heim	573,876	Dec. 29	3217	765, 766	77	1955
Hats in stacks. Device for supporting	P. C. Waring	572,284	Dec. 1	348	83	77	1346
Hatchet	J. R. Baisley	569,161	Oct. 13	767	178	77	162
Hay and stock rack. Combined	R. McLane	568,867	Oct. 6	267	62	77	51
Hay-carrier and attachment therefor	W. Londen	568,953	Oct. 6	405	91	77	77
Hay-carriers, &c. Rail for	J. E. Porter	570,334	Oct. 27	2893	687	77	585
Hay-fork	O. H. Lewis	572,490	Dec. 1	698	167	77	1411
Hay-fork	D. A. Shank	573,709	Dec. 22	2928	692	77	1887
Hay-fork-operating device	J. F. Tuttle	569,437	Oct. 13	1238	290, 291	77	250
Hay-loader	J. T. Hare	570,753	Nov. 3	617	142, 143	77	751
Hay-press	C. E. Jones	573,785	Dec. 22	3039	720	77	1908
Hay rake and loader	T. G. and J. H. Threlkeld	570,071	Oct. 27	2375	564	77	488
Hay rake and loader	H. J. Van Nostran	569,688	Oct. 20	1706	404	77	352
Hay-rake. Horse	C. H. Mason	572,647	Dec. 8	981	236	77	1485
Headlight	O. A. Comatock	573,177	Dec. 15	1917	460	77	1682
Headlight. Electric-car	J. H. Neal	573,263	Dec. 15	2113	508	77	1717
Head-rest	J. A. Barker	569,078	Oct. 6	621	141	77	119
Head-rest	G. T. Higgins	573,147	Dec. 15	1869	450	77	1673
Heat-insulator	G. C. Hicks	570,634	Nov. 3	399	95	77	711
Heat or draft regulator	L. H. Fisher	569,186	Oct. 13	803	188	77	169
Heater: *See* Air-heater. Hot-water or steam heater. Electric heater. Feed-water heater. Sand-heater. Fireplace-heater. Tank-heater. Gas-heater. Water-heater.							
Heater	J. E. Dame	573,451	Dec. 22	2457	583	77	1797
Heater	E. C. Hall	570,993	Nov. 10	1030	241, 242	77	859
Heater	Z. D. Johns	568,852	Oct. 6	241	56	77	47
Heater	J. Mahedy	571,135	Nov. 10	1298	301	77	907
Heater	A. W. Ringland	569,473	Oct. 13	1288	303, 304	77	259
Heater	G. A. Watson	573,170	Dec. 15	1899	457	77	1678
Heater and purifier. Combined	J. Bonar	572,955	Dec. 15	1528	366	77	1607
Heater and ventilator	E. Hough	569,381	Oct. 13	1145	273	77	235
Heating and ventilating apparatus	G. L. Marble	568,954	Oct. 6	407	91	77	78
Heating and ventilating apparatus	W. F. Wolfe	571,423	Nov. 17	1761	420	77	1009
Heating and ventilating apparatus for buildings	W. F. Wolfe	571,424	Nov. 17	1763	420, 421	77	1009
Heating apparatus	N. E. Frost	569,151	Oct. 6	753	175	77	143
Heating apparatus. Electric	A. E. Appleyard	571,257	Nov. 10	1488	350	77	943
Heating apparatus. Gas	M. L. Nyberg	569,658	Oct. 20	1644	388	77	342
Heating apparatus. Hot-water	J. C. Norton	568,872	Oct. 6	275	63, 64	77	53
Heating-boiler	E. A. Wood	571,208	Nov. 10	1405	329	77	928
Heating-burner	H. Rosenthal and L. Kramer	570,771	Nov. 3	647	148	77	756
Heating devices. Switch for electric	J. E. Meek and F. L. Powers	568,783	Oct. 6	124	29	77	25
Heating systems. Air-valve for hot-water	W. B. Van Sickle	570,073	Oct. 27	2385	566	77	490
Heddle for leno-weaving. Doup	W. H. Redding	571,795	Nov. 24	2424	578	77	1151
Hedge-plashing implement	J. A. Mitchell	573,343	Dec. 15	2226	532	77	1737
Hedges. Training	L. Matthews	569,720	Oct. 20	1778	422	77	364
Heel. Boot or shoe spring	J. Bresman	572,103	Dec. 1	14	4	77	1281
Heel-building machine	E. S. Groes	569,711	Oct. 20	1763	419	77	361
Heel. Detachable	M. R. Vandervoort	570,830	Nov. 3	749	170	77	778
Heel-former and nail-driver	S. Ross	569,938	Oct. 20	2146	508	77	432
Heel-nail	G. A. Curtis	574,140	Dec. 29	3706	884	77	2044
Heel nailing and compressing machine	F. F. Raymond, 2d	570,437	Oct. 27	3067	732, 733, 734	77	621
Heel-nailing machine	C. W. Glidden	571,087	Nov. 10	1201	282	77	890
Heel-nailing machine	F. F. Raymond, 2d	569,055	Oct. 6	587	134	77	112
Heel-nailing machine	F. F. Raymond, 2d	569,517	Oct. 13	1377	323, 324	77	276
Heel-nailing machine	F. F. Raymond, 2d	570,648	Nov. 3	428	99, 100, 101	77	716
Heel-plate. Boot or shoe	R. McKay	570,707	Nov. 3	537	124	77	738

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Heel-trimming pattern and holding device therefor	C. F. Babcock	569,484	Oct. 13	1307	308	77	263
Heels with nails. Machine for loading	E. Woodward	570,654	Nov. 3	436	104, 105	77	719
Helmet. Smoke	C. G. M. Reichel	571,018	Nov. 10	1077	251	77	867
Hemmer	F. L. Goodrich and R. S. Barnum	569,578	Oct. 13	1499	353	77	299
Hide-working cylinder	A. E. Whitney	570,653	Nov. 3	434	103	77	719
Hides, skins, or leather. Machine for treating	W. Evans	572,533	Dec. 8	777	186	77	1441
Hinge	L. Bartelmes	573,197	Dec. 15	1956	470	77	1689
Hinge	T. Rodes	569,474	Oct. 13	1291	304	77	260
Hinge	W. Smith	571,408	Nov. 17	1737	415	77	1005
Hinge, Blind	J. H. Shull	573,544	Dec. 22	2611	620	77	1826
Hinge. Couch or bed	A. Huttinger	571,194	Nov. 10	1384	323	77	924
Hinge. Gate	M. Morgan	571,383	Nov. 17	1701	405	77	998
Hinge. Gate	J. L. Wilson	568,967	Oct. 6	431	96	77	83
Hinge. Spring	H. A. Hoffman	571,133	Nov. 10	1295	301	77	907
Hinge. Spring	E. P. Sedgwick	573,713	Dec. 22	2633	693	77	1888
Hitching-post and cut-off plug. Combination	W. E. Davis and S. A. Miller	569,819	Oct. 20	1943	462	77	394
Hog catching and lifting machine	O. Gates	572,792	Dec. 8	1247	301	77	1534
Hoist, &c	J. W. Martin	573,678	Dec. 22	2878	679	77	1877
Hoist-drum	H. B. Denton	574,085	Dec. 29	3599	860, 861	77	2025
Hoisting and dumping platform	J. D. Brown and J. A. Cleaveland	572,468	Dec. 1	667	157	77	1406
Hoisting and stone-laying apparatus	G. Hunter	571,122	Nov. 10	1275	295, 296	77	903
Hoisting apparatus	H. Aiken	574,127	Dec. 29	3683	877, 878	77	2040
Hoisting apparatus	A. Larsen	569,046	Oct. 6	568	131	77	108
Hoisting-cages. Automatic car-holder for	J. R. Campbell	569,999	Oct. 27	2250	534	77	463
Hoisting, carrying, and lowering mechanism. Automatic	J. F. Reinert	568,990	Oct. 6	481	109	77	92
Hoisting-chains. Grab for	J. Dudley	569,448	Oct. 13	1256	295	77	253
Hoisting-machine	H. Bolthoff	568,842	Oct. 6	198	47, 48	77	39
Hoisting-machine	J. A. McGregor	573,904	Dec. 29	3263	779	77	1964
Holdback. Buggy	S. J. Friend and C. P. Brown	574,318	Dec. 29	4058	963	77	2108
Hoof protector. Horse's	W. C. Sherman	568,961	Oct. 6	420	94	77	80
Hook: *See* Cant-hook. Hat or coat hook. Checkrein-hook. Lacing-hook. Crochet-hook. Singletree-hook. Fish-hook. Snap-hook. Gate or door hook. Trolling-hook. Hame-hook.							
Hook	C. L. Lewis and C. E. Mixer	570,855	Nov. 3	794	182	77	786
Hook and eye	M. G. Botto	569,607	Oct. 20	1553	365	77	324
Hook and eye	N. Hyle	573,879	Dec. 29	3222	760	77	1956
Hook and eye	E. M. Quereau	569,767	Oct. 20	1860	441	77	378
Hook and eye for garments	A. Donnellon	572,528	Dec. 8	771	183	77	1440
Hoop: *See* Musical hoop.							
Horse chin-rest	J. F. McLennan	572,648	Dec. 8	984	237	77	1485
Horse-cleaner	P. M. Donahoo	573,579	Dec. 22	2670	633	77	1838
Horse-detacher	E. Naumann	570,606	Nov. 3	319	79	77	697
Horse-detaching device	W. C. Brown	568,834	Oct. 6	201	48	77	40
Horse neck-strap	R. F. Newman	572,024	Nov. 24	2324	566	77	1226
Horse-powers. Whipping attachment for	W. S. Livengood	568,778	Oct. 6	117	27, 28	77	24
Horseshoe	A. J. Clark	573,503	Dec. 22	2544	603	77	1813
Horseshoe	T. G. Dellinger	570,278	Oct. 27	2752	655	77	560
Horseshoe	F. J. T. Geissmer	572,002	Nov. 24	2794	659	77	1220
Horseshoe	F. E. McCarthy	570,493	Nov. 3	105	26	77	658
Horseshoe-calk	B. Koelzer and J. Thaney	568,857	Oct. 6	248	58	77	48
Horseshoe-creeper	L. Hall and A. Petzold	572,256	Dec. 1	287	69	77	1334
Horseshoe. Cushioned	F. W. Hahn	569,009	Oct. 6	508	115	77	97
Horseshoe-machine	J. W. Crow	572,870	Dec. 8	1362	329	77	1558
Horseshoe-nail blanks. Machine for feeding	W. P. Whitmarsh	573,560	Dec. 22	2637	626, 627, 628	77	1831
Horseshoe-nail clencher	J. H. Ranck	570,185	Oct. 27	2580	613	77	528
Horseshoe. Nailless	C. Eisenberg	569,023	Oct. 20	1576	371	77	329
Horseshoe-pad	W. E. Jennings	569,022	Oct. 6	529	122	77	100
Horseshoe. Soft-tread	F. W. Hahn	572,602	Dec. 8	907	219	77	1470
Horseshoes. Device for forming heel-calks on	P. M. Pramer	572,125	Dec. 1	56	14	77	1288
Horseshoeing-rack	J. L. Ream	570,682	Nov. 3	492	115	77	730
Hose-carriage	V. Spindler	570,237	Oct. 27	2682	637	77	547
Hose-coupling	J. S. Blackburn	574,236	Dec. 29	3930	935	77	2084
Hose-coupling	R. W. Burkhardt	571,212	Nov. 10	1411	330	77	929
Hose-coupling	S. W. Day	568,841	Oct. 6	211	50	77	42
Hose-coupling	P. E. Guérard	571,361	Nov. 17	1663	394	77	991
Hose-coupling	E. J. Knapp	574,067	Dec. 29	3572	853	77	2020
Hose-machine	R. T. Burchell	571,261	Nov. 10	1497	352, 353	77	945
Hose-nozzle	C. Callahan	570,903	Nov. 10	881	205	77	831
Hose-nozzle	C. Hirsch	570,757	Nov. 3	625	144	77	753
Hose-nozzle	J. J. Ledden	571,048	Nov. 10	1124	263	77	877
Hose-nozzle	J. W. Regan	568,876	Oct. 6	280	65	77	54
Hose-nozzle	A. J. Reynolds	571,799	Nov. 24	2430	579	77	1152
Hose-reel	T. N. Smith	571,701	Nov. 17	2238	538	77	1096
Hose-supporter	I. H. Paul, Jr.	569,662	Oct. 20	1650	389	77	343
Hose-supporter	R. H. Payne	570,143	Oct. 27	2507	594	77	513
Hot-air furnace	E. Betz	568,730	Oct. 6	23	4	77	7
Hot-air furnace	L. S. Pfouts	570,430	Oct. 27	3068	727, 728	77	618
Hot-air furnace	R. S. Sweet and H. S. McBride	573,930	Dec. 29	3311	791	77	1972
Hot-air register	C. Clear	574,135	Dec. 29	3696	880	77	2042
Hot-box-cooling device	G. C. Toben	570,519	Nov. 3	148	36	77	665

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Hot-water heaters. Cleaning device for	C. A. Johnson	568,765	Oct. 6	95	22, 23	77	20
Hot-water or steam heater	G. Talbot	568,994	Oct. 6	488	110	77	93
House: *See* Bath-house.							
Household reminder	G. H. Albee	573,319	Dec. 15	2188	523	77	1730
Hub-attaching device	S. Day	568,894	Oct. 6	306	70	77	59
Hub-attaching device for vehicle-axles	R. Lehmann	572,489	Dec. 1	697	167	77	1411
Hub dust-excluder. Vehicle-	C. Buswell	571,990	Nov. 24	2773	654	77	1217
Hub for vehicles. Wooden	J. Austing	570,215	Oct. 27	2635	624	77	538
Hub. Vehicle-	L. D. Ball and E. S. Barnes	570,448	Nov. 3	7	3	77	640
Hub. Wheel-	J. J. Lasas	568,912	Oct. 6	329	76	77	63
Hub. Wheel-	G. Sherman	572,618	Dec. 8	934	227	77	1475
Humidifier system and apparatus	R. C. Ulbrich	572,780	Dec. 8	1228	297	77	1531
Hydrant	W. A. Graham	570,283	Oct. 27	2762	657	77	562
Hydrant. Fire-	C. E. Loetzer	570,031	Oct. 27	2301	546, 547	77	474
Hydraulic elevator	G. Lee	574,338	Dec. 29	4099	974	77	2116
Hydraulic engine	H. D. Payne	571,621	Nov. 17	2105	505	77	1071
Hydraulic jack	J. Weeks	571,547	Nov. 17	1987	472, 473	77	1049
Hydraulic or other engine	J. E. Schumacher	571,129	Nov. 10	1289	299, 300	77	906
Hydraulic press	J. S. Miller	571,493	Nov. 17	1884	449, 450	77	1031
Hydraulic press	C. Schlimp and R. Charouzek	573,710	Dec. 22	2929	692	77	1887
Hydraulic press for covering cables with lead	D. Carlin	574,132	Dec. 29	3691	879	77	2042
Hydrocarbon-burner	H. A. Bradley	570,450	Nov. 3	10	3	77	640
Hydrocarbon-burner	C. A. Hanable	569,412	Oct. 13	1204	283	77	244
Hydrocarbon-generator	E. G. Mummery	568,956	Oct. 6	409	92	77	78
Hydrocarbon generator and burner	B. G. Devoe	568,748	Oct. 6	58	14	77	14
Hydrocarbon or other volatile liquids. Receptacle for holding	J. W. Tallmadge	570,884	Nov. 3	850	198	77	799
Ice. Apparatus for manufacturing	W. F. Singer	571,141	Nov. 10	1305	303	77	908
Ice cracking and shaving machine	F. E. Steere	569,250	Oct. 13	925	221	77	192
Ice-cream freezer	L. D. Railsback	573,293	Dec. 15	2137	513	77	1721
Ice-cream mold	R. L. Prange	571,171	Nov. 10	1347	314	77	917
Ice-cream mold and dipper	F. D. Clark	571,188	Nov. 10	1375	321	77	922
Ice-cream mold and dipper	C. W. and J. E. Harmon and C. L. Boyd.	572,987	Dec. 15	1585	380	77	1618
Ice-cream mold and dipper	J. and S. Zimmer	574,185	Dec. 29	3815	911	77	2062
Ice-cream mold and disher	H. G. Morris	573,681	Dec. 22	2881	681	77	1878
Ice-cream mold and disher	H. J. Pfeiffer	571,170	Nov. 10	1346	314	77	917
Ice-creeper	D. M. Forsyth	572,975	Dec. 15	1568	376	77	1616
Ice-freezing can	J. C. Windle	572,234	Dec. 1	247	59	77	1325
Ice-shaving machine	J. V. Bohannan	571,609	Nov. 17	2087	501	77	1067
Ice-tongs	C. S. Bird and E. D. Weston	572,952	Dec. 15	1524	365	77	1606
Illusion	E. Howard	574,090	Dec. 29	3615	864, 865	77	2028
Impact-tool	J. F. Clement	573,260	Dec. 15	2060	493	77	1707
Incandescent burner for fluid combustibles	E. H. C. Oehlmann	573,031	Dec. 15	1653	397	77	1632
Incandescent lights. Annular liquid-combustible burner for	G. Ditmar	573,578	Dec. 22	2668	633	77	1837
Incandescent mantle	P. Stiens	569,892	Oct. 20	2060	.....	77	415
Incandescent oil lighting	S. Henlein	569,198	Oct. 13	825	193	77	173
Incubator	F. R. Brown	571,553	Nov. 17	1998	475	77	1051
Index. Suspension card-	F. A. Smith	570,686	Nov. 3	505	118	77	732
Indexer	J. W. Kea	573,153	Dec. 15	1876	452	77	1674
Indicating device for bicycles, &c	R. Conrow	574,022	Dec. 29	3491	834	77	2004
Indicator: *See* Clock-winding indicator. Laundry-list indicator. Medicine-dose indicator. Office-indicator. Speed-indicator. Station-indicator. Station or street indicator. Station potential-indicator. Street or station indicator. Tide-indicator.							
Indicator	W. F. Reichenbach	573,106	Dec. 15	1792	432	77	1659
Indicator or signal	J. P. Coleman	573,207	Dec. 15	1972	475	77	1691
Ingots in matrices. Process of and apparatus for compressing, &c., and new-shapening hollow	T. Bicheroux	571,332	Nov. 17	1618	384, 385	77	983
Inhaler	G. W. Shelton	573,363	Dec. 15	2263	540	77	1744
Inhaler-mask	A. Orr and A. W. Chapman	573,691	Dec. 22	2894	684	77	1881
Injector	F. C. Sapper	568,797	Oct. 6	146	34	77	30
Injector. Boiler oil-	H. W. Fayette	571,350	Nov. 17	1645	391	77	988
Injector. Steam-	P. Brownley	571,718	Nov. 17	2266	544	77	1101
Injector. Steam-	P. Brownley and F. Sticker	571,719	Nov. 17	2268	545	77	1102
Inkstand	J. W. Jacobus	571,046	Nov. 10	1122	262	77	876
Inkstand	J. H. McBride	568,865	Oct. 6	264	61	77	51
Inkstand	F. Schenker	571,401	Nov. 17	1725	410	77	1002
Inkstand	J. Thomson	570,191	Oct. 27	2590	615	77	529
Inkstand	W. A. Wilkins	572,623	Dec. 8	941	228	77	1477
Inkstand. Barometer-	J. R. Handy	572,483	Dec. 1	688	164, 165	77	1410
Ink-well	J. R. Balsley	569,162	Oct. 13	768	179	77	162
Ink-well	E. Rudolph	570,959	Nov. 10	976	237	77	849
Ink-well lid	A. Hawkridge	568,976	Oct. 6	442	99	77	85
Insect-destroyer	W. H. Freeman	573,587	Dec. 22	2683	638	77	1841
Insect-destroyer	R. L. Lynch	571,925	Nov. 24	2665	632	77	1196
Insect-powder duster	P. E. Hoffman	573,184	Dec. 15	1934	464	77	1684
Insect-trap	T. R. L. Daughtrey and A. M. Cowart.	573,814	Dec. 22	3091	734	77	1918
Insulated electric cable	M. Guilleaume	568,756	Oct. 6	81	18	77	18
Insulated electric conductor	W. R. Patterson	572,215	Dec. 1	212	52	77	1318
Insulated joint for light-fixtures	W. McElroy	572,124	Dec. 1	54	14	77	1288

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Insulating electric conductors. Means for	T. Guilleaume	571,560	Nov. 24	2367	565	77	1140
Insulating-joint for conduit-tubes	E. T. Greenfield	570,170	Oct. 27	2551	606	77	522
Insulating-joint for metal or armored conduit-tubes	E. T. Greenfield	570,166	Oct. 27	2545	605	77	521
Insulator	F. M. Locke	573,092	Dec. 15	1770	425, 426	77	1655
Insulator	C. B. Martin	574,101	Dec. 29	3634	868	77	2031
Insulator	C. B. Martin and E. M. Hewlett	570,034	Oct. 27	2306	548	77	475
Insulator-hanger	R. Duncan	573,966	Dec. 29	3396	813	77	1968
Insulator. Section-	L. McCarthy	570,140	Oct. 27	2496	591, 592	77	511
Insulator. Wall-	J. J. O'Neill	573,101	Dec. 15	1784	429	77	1657
Internal-combustion engine	C. W. Pinkney	571,239	Nov. 10	1460	342, 343	77	938
Iron. Electrolysis of	A. S. Ramage	570,956	Nov. 10	974	.....	77	848
Iron or steel. Purifying	E. H. Saniter	571,538	Nov. 17	1972	.....	77	1047
Ironing-machine	G. Binder	568,732	Oct. 6	27	6	77	8
Ironing-machine	W. Hess Jr	570,397	Oct. 27	3010	712, 713	77	607
Ironing machines. Bosom-stretcher for shirt-	W. A. E. Henrici	568,850	Oct. 6	237	55	77	46
Ironing-table	A. Benedict	572,519	Dec. 8	757	180	77	1437
Ironing-table	L. E. Dawson	570,462	Nov. 3	38	9	77	646
Ironing-table	J. H. Foster	571,158	Nov. 10	1331	310	77	914
Ironing-table	C. L. Hofwolt	570,636	Nov. 3	401	96	77	712
Ironing-table	R. W. Schulte	573,539	Dec. 22	2604	618	77	1825
Ironing-table. Folding	J. B. Rylander	571,800	Nov. 24	2431	580	77	1152
Irrigating plant	A. W. Towne	572,842	Dec. 8	1325	319	77	1350
Irrigator. Dilating-	F. C. Tice	572,736	Dec. 8	1151	277	77	1516
Jack: *See* Armature-jack. Hydraulic jack. Lifting-jack. Pumping-jack. Screw-jack. Shoe-machine jack. Sole-machine jack. Thill-coupling jack. Track-jack. Wagon-jack. Well-jack.							
Jacketed can	H. L. Gates	571,724	Nov. 17	2278	547	77	1104
Jacquard apparatus	F. B. Fawcett	569,749	Oct. 20	1829	434	77	373
Jacquard mechanism	F. H. Richards	573,621	Dec. 22	2748	652, 653	77	1854
Jacquard mechanism	F. H. Richards	573,622	Dec. 22	2752	653, 654, 655	77	1855
Jacquard mechanism	F. H. Richards	573,623	Dec. 22	2759	655, 656	77	1856
Japan-board-point cleaner	H. F. McGill	570,181	Oct. 27	2573	611	77	526
Jar: *See* Butter-jar. Fruit-jar.							
Jar-closure	F. H. Palmer	573,693	Dec. 22	2897	684	77	1881
Jar-fastener	F. A. Jaberg	574,330	Dec. 29	4060	969	77	2112
Jar or bottle	H. A. and M. M. Hickok	570,096	Oct. 27	2428	576	77	499
Jewelry	G. P. A. Gunther	569,100	Oct. 6	658	152	77	126
Jib folding and reefing apparatus	F. V. de Bem	569,601	Oct. 20	1542	362	77	322
Joint: *See* Bedstead-joint. Clamp-joint. Insulated joint. Pipe-joint. Rail-joint. Water-closet joint. Wire joint.							
Joints. Repair device for stopping leaky	S. R. Dresser	571,220	Nov. 10	1424	332	77	931
Journal-bearing	P. J. Westphal	573,738	Dec. 22	2976	704	77	1896
Journal-bearing	C. H. Woodworth	572,236	Dec. 1	249	60	77	1396
Journal-bearing. Self-oiling	D. L. Altman	570,782	Nov. 3	662	152	77	760
Journal-box	C. D. Flynt	572,882	Dec. 8	1382	335	77	1562
Journal-box	J. L. Martin	571,490	Nov. 17	1879	448	77	1030
Journal-box dust-gard	C. D. Flynt	572,883	Dec. 8	1383	335	77	1562
Jug. Hermetically-closing	A. Heinemann	572,257	Dec. 1	288	69	77	1334
Junction-box and means for uniting metal conduit-tubes thereto. Metallic	E. T. Greenfield	570,167	Oct. 27	2546	605	77	521
Justifier. Automatic	A. W. Storm	571,809	Nov. 24	2445	563	77	1155
Kettle spout attachment	M. S. Kjellstrom	573,330	Dec. 15	2204	527	77	1733
Key: *See* Time-recorder key.							
Keyboard	J. F. Black	572,953	Dec. 15	1525	365	77	1607
Keyboard apparatus	F. R. McBerty	573,992	Dec. 29	3442	824	77	1996
Keyboard. Transposing-	H. H. Stroeter	572,227	Dec. 1	239	57	77	1324
Keyhole-guard	J. S. Hecker	572,988	Dec. 15	1586	380	77	1619
Key-holder	V. J. Harvey	568,758	Oct. 6	84	20	77	19
Key-operated mechanism	F. H. Richards	573,619	Dec. 22	2736	650, 651	77	1851
Key-ring or the like	G. B. Adams	570,442	Nov. 3	1	1	77	639
Key-seating machine	C. J. Carney	572,863	Dec. 8	1353	326, 327	77	1556
Kiln: *See* Brick-kiln. Dry-kiln. Wood-drying kiln.							
Kiln	W. H. Melcher	571,599	Nov. 17	2066	495	77	1064
Kiln	A. Thaison	572,841	Dec. 8	1324	318, 319	77	1550
Kiln for decorating porcelain or glass	J. P. Rieffel	569,232	Oct. 13	891	212, 213	77	186
Kinetoscope	A. Pettenkofer	571,496	Nov. 17	1896	451	77	1033
Kitchen-cabinet	T. Carney	569,541	Oct. 13	1410	333	77	283
Kitchen-table	H. A. Jackson	569,135	Oct. 6	718	169	77	127
Knapsack-carrier	A. Herzberg	571,593	Nov. 17	2060	493	77	1062
Knee-pad	J. E. B. Laird	572,642	Dec. 8	975	235	77	1484
Knee-pad	J. T. Rice	573,919	Dec. 29	3288	787	77	1969

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Knife: *See* Corkscrew-knife. Pocket-knife. Lathe-knife.							
Knife	E. Jansen	569,103	Oct. 6	663	154	77	126
Knife-opening device	A. C. Weeks	568,998	Oct. 6	494	111	77	94
Knife or fork handle	L. W. Hurlburt	569,831	Oct. 20	1959	466	77	397
Knife or fork handle	G. F. Sumner	573,730	Dec. 22	2947	696	77	1890
Knit fabric for mattresses	C. H. Young	574,062	Dec. 29	3595	859	77	2024
Knit fabric. Tubular	D. Minich	569,463	Oct. 13	1273	300	77	257
Knitting device. Circular	D. C. Bellis	574,129	Dec. 29	3687	878	77	2041
Knitting-machine	F. A. Nye	573,527	Dec. 22	2578	612	77	1890
Knitting-machine	P. Persson	569,347	Oct. 13	1094	260	77	226
Knitting-machine	J. G. Powell	570,335	Oct. 27	2894	687, 688	77	585
Knitting-machine	J. E. Rowe	570,059	Oct. 27	2347	556, 557, 558, 559, 560	77	483
Knitting-machine	H. Stoll and F. Maercklin	572,830	Dec. 8	1321	317	77	1549
Knitting machine. Automatic circular	A. Wrightson	569,701	Oct. 20	1731	412, 413, 414	77	357
Knitting-machine cam and work-presser	W. T. Barratt	572,690	Dec. 8	1059	258	77	1500
Knitting machine. Circular	D. Hurley	572,679	Dec. 8	1036	251, 252	77	1496
Knitting machine. Circular automatic rib	G. A. Leighton and J. H. Rice	573,275	Dec. 15	2087	501, 502	77	1712
Knitting-machine. Circular hand	C. J. Appleton	574,053	Dec. 29	3550	847	77	2016
Knitting machine. Rib	L. N. D. Williams	573,743	Dec. 22	2983	706	77	1897
Knitting-machine. Rotary	E. Vermilyea	573,063	Dec. 15	1714	411, 412	77	1644
Knitting-machine sinker mechanism	J. L. Branson	570,695	Nov. 3	518	121	77	735
Knitting-machine stop attachment	D. Hurley	572,680	Dec. 8	1039	252	77	1496
Knitting-machine stop-motion	S. Creager	569,324	Oct. 13	1054	250	77	217
Knitting-machine stop-motion	W. A. Ingalls	571,479	Nov. 17	1858	442	77	1027
Knitting-machine transferring device	W. G. Chisolm	571,554	Nov. 17	1999	475	77	1051
Knitting seamless fleece-lined hose. Machine for	A. Wrightson	569,702	Oct. 20	1745	414, 415	77	358
Knockdown box	T. J. B. Pitiot	571,790	Nov. 24	2417	576	77	1150
Knockdown table	G. B. Yost	573,428	Dec. 15	2403	573	77	1770
Lace clasp. Shoe	O. S. Augensen	569,398	Oct. 13	1173	278	77	240
Lace fastener. Shoe	H. Kollock	571,670	Nov. 17	2184	526	77	1086
Lacing. Boot or shoe	H. O. Whyman	570,585	Nov. 3	280	69	77	690
Lacing-cord	J. P. Tolman	573,249	Dec. 15	2044	490	77	1705
Lacing-hook	E. Kempshall	569,971	Oct. 20	2199	522	77	441
Lacing-hook	E. Kempshall	571,596	Nov. 17	2064	495	77	1063
Lacing-hooks. Apparatus for covering	E. Kempshall	569,969	Oct. 20	2196	521, 522	77	441
Lacing. Invisible	A. R. Colton	571,749	Nov. 24	2347	561	77	1136
Lacing of boots or shoes	G. L. Cumine	571,341	Nov. 17	1632	387	77	986
Lacing-stud	E. Kempshall	569,968	Oct. 20	2195	521	77	441
Ladder	G. E. Chittenden	572,693	Dec. 8	1068	260	77	1501
Ladder	C. G. Hausmann	572,201	Dec. 1	181	44	77	1313
Ladder and fire-escape. Combined extension	R. S. Young	568,999	Oct. 6	494	112	77	94
Ladder and fire-escape. Extension	S. C. Kindig	570,730	Nov. 3	575	132	77	744
Ladder. Combination	J. Furgason	570,469	Nov. 3	50	12	77	648
Ladder. Extension	J. F. Mack	570,939	Nov. 10	945	219, 220	77	843
Ladder. Orchard	B. M. Close	571,853	Nov. 24	2529	599	77	1170
Ladder. Step	T. J. McCormick	569,119	Oct. 6	682	160	77	130
Ladder. Step or extension	W. B. Cantrell	570,661	Nov. 3	455	107	77	734
Lamp	P. L. Girardet	572,505	Dec. 1	729	173	77	1416
Lamp	H. B. Moran	572,122	Dec. 1	48	12	77	1287
Lamp and socket. Incandescent	A. Swan	570,517	Nov. 3	144	36	77	665
Lamp. Arc	J. Rae	572,064	Nov. 24	2900	684	77	1240
Lamp base. Electric	W. C. Bryant	574,301	Dec. 29	4031	957	77	2103
Lamp. Bicycle	F. Rhind	570,894	Nov. 3	869	202	77	802
Lamp-burner	J. Kampf	569,501	Oct. 13	1349	317	77	270
Lamp-burner	A. S. Keach	572,943	Dec. 8	1499	359	77	1586
Lamp-burner	S. B. Morse	569,795	Oct. 20	1907	453	77	387
Lamp-burner	F. T. Williams	571,631	Nov. 17	2127	511	77	1075
Lamp-burner	E. Segassie	571,904	Nov. 24	2437	581	77	1154
Lamp-chimney	A. Doherty, Jr	571,131	Nov. 10	1294	300	77	906
Lamp-chimney protector	J. Kulcsar	573,155	Dec. 15	1876	452	77	1674
Lamp-chimney protector	R. M. Hunter	571,123	Nov. 10	1279	296	77	904
Lamp. Electric	L. A. Jackson	572,805	Dec. 8	1272	306	77	1539
Lamp. Electric	F. E. Magee	572,431	Dec. 1	614	145	77	1395
Lamp. Electric	H. P. Davis	569,817	Oct. 20	1940	462	77	393
Lamp. Electric-arc	H. P. Davis	569,818	Oct. 20	1941	462	77	393
Lamp. Electric-arc	A. C. Dobrick	573,398	Dec. 15	2315	553	77	1754
Lamp. Electric-arc	C. Eschwei	571,946	Nov. 24	2099	639	77	1203
Lamp. Electric-arc	C. Goodyear, Jr	572,539	Dec. 8	785	188	77	1443
Lamp. Electric-arc	E. P. Hopkins	573,464	Dec. 22	2478	587, 588	77	1802
Lamp. Electric-arc	G. R. Lean	571,974	Nov. 24	2745	648, 649	77	1211
Lamp. Electric-arc	G. R. Lean	571,976	Nov. 24	2752	649	77	1213
Lamp. Electric-arc	N. G. Meade	568,861	Oct. 6	254	60	77	49
Lamp. Electric-arc	J. E. Morris	569,881	Oct. 20	2037	485	77	411
Lamp. Electric-arc	J. A. Mosher	573,930	Dec. 22	3133	746	77	1925
Lamp. Electric-arc	E. H. A. H. von Nollendorf	573,596	Dec. 22	2576	611	77	1819
Lamp. Electric-arc	L. H. Page	573,911	Dec. 29	3273	781	77	1967
Lamp. Electric-arc	H. R. Palmer	571,137	Nov. 10	1300	302	77	907

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Lamp. Electric-arc	G. C. Pyle	570,053	Oct. 27	2335	553, 554	77	480
Lamp. Electric-arc	H. R. Quinby	571,792	Nov. 24	2420	577	77	1150
Lamp. Electric-arc	P. F. H. Queisser	573,617	Dec. 22	2734	650	77	1851
Lamp. Electric-arc	C. Richter and R. T. Eschler	573,161	Dec. 15	1886	454	77	1676
Lamp. Electric-arc	C. Richter and R. T. Eschler	573,162	Dec. 15	1887	454	77	1676
Lamp. Electric-arc	R. Schefbauer	568,798	Oct. 6	147	35	77	30
Lamp. Electric-arc	C. E. Scribner	574,045	Dec. 29	3532	843	77	2013
Lamp. Electric-arc	H. A. Seymour	570,823	Nov. 3	730	167	77	774
Lamp. Electric-arc	H. A. Seymour	570,824	Nov. 3	732	167, 168	77	774
Lamp. Electric-arc	H. A. Seymour	574,117	Dec. 29	3661	874	77	2036
Lamp. Electric-arc	H. A. Seymour	574,118	Dec. 29	3664	874, 875	77	2036
Lamp. Electric-arc	H. A. Seymour	574,119	Dec. 29	3669	875	77	2037
Lamp. Electric-arc	T. Spencer and C. Toerring, Jr	572,777	Dec. 8	1219	295	77	1529
Lamp. Electric-arc	E. Thomson	574,123	Dec. 29	3677	876	77	2039
Lamp-filler	E. T. Darling	572,502	Dec. 1	725	172, 173	77	1415
Lamp fitting. Incandescent	A. Swan	573,929	Dec. 29	3310	791	77	1972
Lamp for producing spirit-gas incandescent gas-light	A. Perlich	570,049	Oct. 27	2329	532	77	479
Lamp. Gas	J. F. McElroy	569,562	Oct. 13	1458	344	77	291
Lamp. Gas	J. F McElroy	571,311	Nov. 10	1583	376	77	902
Lamp-globe	G. W. Ballou and A. Seaver	570,896	Nov. 10	872	203	77	829
Lamp globe attachment. Electric	E. Schrantz	571,802	Nov. 24	2435	581	77	1153
Lamp hanger. Street	H. P. Hill	570,801	Nov. 3	693	158	77	766
Lamp. Miner's safety	T. H. Williams	570,780	Nov. 3	659	151	77	759
Lamp-post cap	A. P. Storrs	571,868	Nov. 24	2555	606	77	1175
Lamp post. Electric	J. Buckner	572,354	Dec. 1	474	111	77	1368
Lamp. Regenerative	H. Smith and T. Gordon	573,113	Dec. 15	1803	435	77	1661
Lamp. Regenerative gas	W. R. Swift	571,704	Nov. 17	2243	539, 540	77	1097
Lamp regulator. Incandescent-electric	W. Hawker	572,421	Dec. 1	600	142	77	1392
Lamp shade or reflector holder	C. A. Lapworth	570,669	Nov. 3	471	110	77	736
Lamp socket and switch. Incandescent	J. M. Moffat	569,931	Oct. 20	2123	505	77	427
Lamp socket. Incandescent-electric	J. Pass and A. P. Seymour	568,919	Oct. 6	341	79	77	65
Lamp socket. Locking electric	W. L. Taylor	569,727	Oct. 20	1787	424	77	366
Lamp sockets. Shade-holder for incandescent	M. D. Greengard	569,556	Oct. 13	1450	342	77	289
Lamp-stand	G. P. Kato, Jr	571,568	Nov. 17	2018	480	77	1055
Lamp. Street	C. R. Lindsay, Jr	571,005	Nov. 10	1053	246	77	863
Lamp-support	L. F. Betts	569,741	Oct. 20	1806	428	77	370
Lamp. Switch and signal	C. Bergener	573,501	Dec. 22	2542	602	77	1813
Lamp switch. Electric	H. R. Quinby	571,791	Nov. 24	2419	576	77	1150
Lamp-wick and producing same	G. H. Wilbur	568,822	Oct. 6	186	45	77	38
Lamps. Apparatus for measuring candle-power of arc	E. J. Houston and A. E. Kennelly	569,643	Oct. 20	1623	382, 383	77	338
Lamps. Composition of matter for use in manufacturing glow bodies for incandescent	G. Lowenberg	568,780	Oct. 6	121	.....	77	95
Lamps. Globe for electric-arc	M. B. Bailey	570,446	Nov. 3	5	2	77	639
Lamps. Wick-adjuster for central-draft	N. Johnson	573,223	Dec. 15	2002	481	77	1697
Lantern	W. C. Homan	573,148	Dec. 15	1870	450	77	1673
Lantern. Bicycle	F. Rhind	570,893	Nov. 3	867	201	77	802
Lantern. Foot	F. Lucas	571,924	Nov. 24	2664	631	77	1195
Lantern-frame	F. K. Wright	570,589	Nov. 3	292	72	77	692
Lantern. Hurricane	H. D. Hinks	572,895	Dec. 8	1397	338	77	1565
Lantern-lighter	C. E. Case	570,379	Oct. 27	2968	704	77	599
Lantern. Magic	T. S. Barbour	574,054	Dec. 29	3551	847, 848	77	2017
Lantern. Optical	S. W. Allen	569,849	Oct. 20	1992	475, 476	77	403
Lantern. Signal	T. J. Waddell	568,820	Oct. 6	183	44	77	37
Lantern-slide mat	W. H. Olmsted	574,214	Dec. 29	3884	925	77	2075
Lantern-support	E. D. Segar	571,803	Nov. 24	2436	581	77	1153
Lantern. Tubular	C. Bergener	572,949	Dec. 15	1520	364	77	1605
Lantern. Tubular	F. K. Wright	570,588	Nov. 3	290	71	77	692
Lanterns, &c. Ventilator for	W. A. Bourne	569,572	Oct. 13	1484	349	77	296
Last-clasp for lasting-machines	J. A. Dunphy	569,182	Oct. 13	798	187	77	168
Last or tree	E. C. Colver	573,644	Dec. 22	2810	665	77	1866
Last. Shoemaker's	J. A. Colby	570,154	Oct. 27	2324	598	77	516
Lasting-machine	F. Chase	571,339	Nov. 17	1630	387	77	986
Lasting-machine	F. Chase	571,429	Nov. 17	1772	422, 423, 424	77	1011
Lasting-machine	G. Ferguson	569,017	Oct. 6	521	119, 120	77	99
Lasting-machine	W. S. Hamm	570,220	Oct. 27	2641	626	77	539
Lasting-machine	W. Shaw	571,404	Nov. 17	1731	412	77	1003
Lasting-machine	S Snow	569,357	Oct. 13	1110	264	77	229
Lasting-machine clamping mechanism	F. Chase	571,509	Nov. 17	1920	458	77	1038
Lasting-machine pad-holder	C. O. Ray	569,231	Oct. 13	890	212	77	186
Latch. Gate	W. J. Hays	572,485	Dec. 1	691	165	77	1410
Latch. Gate	H. Hodel	572,638	Dec. 8	969	233	77	1483
Latch. Gate	C. Whiteman	569,904	Oct. 20	2080	495	77	420
Latch-lever	E. J. Muller	570,674	Nov. 3	477	112	77	727
Lathe	E. J. McClellan	572,709	Dec. 8	1098	266	77	1507
Lathe	F. Schneider	571,402	Nov. 17	1726	410, 411	77	1003
Lathe. Burring or milling	A. Petereit	571,391	Nov. 17	1711	407	77	1000
Lathe. Hub-turning	J. C. Heald	571,901	Nov. 24	2625	622, 623	77	1188
Lathe knife and cutter-head	L. G. Merritt	573,098	Dec. 15	1780	428	77	1656
Lathe. Multiple-spindle	C. P. Topping	573,726	Dec. 22	2954	698, 699	77	1891

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Lathe. Wood-turning	D. Adams	569,946	Oct. 20	2162	512, 513	77	435
Lathe. Wood-turning	C. W. Wilder	569,776	Oct. 20	1875	445	77	381
Lathes. Attachment for woodworking	J. G. Hallstrom	569,197	Oct. 13	823	192, 193	77	173
Lathe and partitions. Support for wire	F. J. Hearnshaw	573,512	Dec. 22	2555	606	77	1815
Latrine	J. A. Wills and L. E. Jordan	573,744	Dec. 22	2984	707	77	1898
Laundry-list indicator	R. Lundqvist	570,319	Oct. 27	2872	682	77	581
Lawn-sprinkler	J. H. Fry	572,000	Nov. 24	2790	658	77	1219
Lawn-sprinkler	I. H. Gingrich	573,083	Dec. 15	1758	422	77	1652
Lawn-sprinkler	L. H. Sholder	569,243	Oct. 13	911	218	77	190
Lawn-sprinkler	C. L. Travis	573,933	Dec. 29	3316	792	77	1973
Leaching apparatus	L. D. Armstrong	570,861	Nov. 3	802	184	77	788
Lead oxid. Method of and means for producing	J. Noad	570,712	Nov. 3	542	126	77	739
Lead-press	E. H. Johnson	572,546	Dec. 8	798	191	77	1445
Leaf-spring	G. H. Williams	573,121	Dec. 15	1817	438	77	1663
Leaf-turner	E. L. Badgley	569,399	Oct. 13	1174	278, 279	77	240
Leak-alarm	S. J. Clouston	571,340	Nov. 17	1631	387	77	986
Leak-stopper	C. Schroeder	569,430	Oct. 13	1223	287	77	248
Leather-cutting machine	A. L. Sweet	571,292	Nov. 10	1551	368, 369	77	956
Leather-dressing	J. Moore	572,439	Dec. 1	624	.....	77	1397
Leather-folding machine	J. I. Merritt	569,930	Oct. 20	2122	505	77	427
Leather for forming pockets. Machine for splitting	A. L. Sweet	571,291	Nov. 10	1549	367, 368	77	955
Leather-loop-finishing machine	A. L. Sweet	571,294	Nov. 10	1554	369, 370	77	957
Leather. Machine for recessing	R. McKay	570,558	Nov. 3	236	59	77	692
Leather-slitting machine	A. L. Sweet	571,295	Nov. 10	1558	370	77	958
Leather-snipping machine	C. A. Bonney	572,352	Dec. 1	470	110	77	1367
Leather-trimming machine	A. L. Sweet	571,293	Nov. 10	1553	369	77	956
Leg. Artificial	H. Heinecke	572,989	Dec. 15	1588	381	77	1619
Leg-covering	G. H. Finger and W. J. Ford	571,918	Nov. 24	2655	629	77	1193
Lemon-juice extractor	T. Curley	569,747	Oct. 20	1828	433	77	373
Lemon-squeezer	J. T. White	572,849	Dec. 8	1336	321	77	1553
Lens, spectacles, or eyeglasses	A. H. Hart	573,087	Dec. 15	1764	423	77	1653
Letter-box	F. G. Gaschlin	570,628	Nov. 3	389	92	77	710
Letter-box	J. W. Hentz	572,893	Dec. 8	1395	337	77	1564
Letter-box case and memorandum. Post-office	D. J. Ayres	570,862	Nov. 3	804	184	77	788
Letter-box. Safety street	J. W. Hentz	573,220	Dec. 15	1994	480	77	1696
Letter or character. Sign	R. G. Lake	570,313	Oct. 27	2860	678	77	578
Level	T. F. Deck	573,211	Dec. 15	1979	476	77	1693
Level and plumb. Spirit	W. M. Morton	573,682	Dec. 22	2882	681	77	1878
Level. Plumb	F. G. Juney	569,500	Oct. 13	1348	317	77	270
Level. Spirit	R. L. Phears	574,110	Dec. 29	3648	871	77	2034
Level. Spirit	C. F. Richardson	570,056	Oct. 27	2342	555	77	481
Library-stack	D. A. Beckwith	570,657	Nov. 3	451	106	77	723
Life-preserver	T. Gordon	572,109	Dec. 1	22	6	77	1282
Life-saving apparatus	L. D. B. Shaw	568,960	Oct. 6	419	93, 94	77	80
Life-saving apparatus for vessels	L. Konrad, G. P. Fromm, and H. Kauer.	568,982	Oct. 6	463	105	77	88
Lift or hoist for warehouses	H. F. Donaldson	570,913	Nov. 10	899	209	77	834
Lifter: *See* Pan-lifter. Wagon-body lifter.							
Lifting and carrying device	D. Broderick	570,622	Nov. 3	380	91	77	708
Lifting-jack	J. C. Hackett	569,020	Oct. 6	527	121	77	100
Lifting-jack	W. L. Hall	570,550	Nov. 3	212	56	77	676
Lifting-jack	F. Lombard	574,036	Dec. 29	3515	839	77	2009
Lifting-jack	C. T. Moorman	569,585	Oct. 13	1511	356	77	301
Lifting-jack	H. S. Spence	570,614	Nov. 3	331	82	77	700
Lifting-jack	W. C. Woodward	573,950	Dec. 29	3350	803	77	1980
Light: *See* Search-light. Vault-light.							
Light-emitting body and producing same	T. Mace	574,358	Dec. 29	4129	981	77	2121
Lighting device	G. J. Hacker	572,930	Dec. 8	1476	355	77	1581
Lighting, heating, and cooking. Apparatus for	J. G. Pennycuick	571,014	Nov. 10	1072	250	77	866
Lightning and water conductor. Combined	L. Adams	573,750	Dec. 22	2992	709	77	1899
Lightning-arrester	J. P. Culgan	571,109	Nov. 10	1250	291	77	898
Lightning-arrester	A. de Khotinsky	571,669	Nov. 17	2183	526	77	1086
Lightning-arrester	A. J. Wurts	571,103	Nov. 10	1240	288	77	896
Lightning-arrester. Automatic	G. P. Johnson	570,406	Oct. 27	3023	716	77	609
Limb. Artificial	E. H. Erickson	573,266	Dec. 15	2072	497	77	1709
Limb. Artificial	J. Neyquist	574,212	Dec. 29	3881	924	77	2074
Linen-rubber	M. S. Lewin	574,099	Dec. 29	3632	867	77	2031
Liniment	C. G. Johnson	572,898	Dec. 8	1403	.....	77	1566
Linotype-machine	G. A. Bates	572,947	Dec. 15	1514	362	77	1604
Linotype-machine knife attachment	P. T. Balls	573,383	Dec. 15	2292	548	77	1749
Liquid-fuel burner	A. L. Gladwin	570,629	Nov. 3	392	93	77	710
Liquid-meter	W. M. Fowler	570,748	Nov. 3	609	140	77	750
Liquid-separator. Centrifugal	C. J. Lundstrom	571,838	Nov. 24	2498	592	77	1165
Liquid-separators. Dirt-arrester for	T. H. Springer	573,833	Dec. 22	3138	747	77	1926
Liquid-supply system	J. B. G. Donato	570,844	Nov. 3	774	177	77	783
Liquid-testing device	J. C. Condé	569,783	Oct. 20	1867	448	77	383
Liquids. Apparatus for purifying and decolorizing saccharine or other	M. Pridham	573,355	Dec. 15	2249	536	77	1741
Liquids. Means for controlling flow of	G. C. McEwen	570,436	Oct. 27	3085	732	77	621
Liquids. Process of and apparatus for purifying, rectifying, and deodorizing alcoholic or other	M. Pridham	574,111	Dec. 29	3649	871	77	2034
Liquids. Purifying and decolorizing saccharine or other	M. Pridham	573,289	Dec. 15	2126	511	77	1719
Liquids. Purifying and decolorizing saccharine or other	M. Pridham	573,290	Dec. 15	2130	511, 512	77	1720

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Liquors containing gas under pressure. Vessel for storing and transporting	L. Nathan	569,028	Oct. 6	536	123	77	102
Liquors. Manufacture of fermented	J. Schneible	571,693	Nov. 17	2218	534	77	1092
Listing and computing machine	H. H. Johnson, C. O. White, and M. B. Lloyd.	569,499	Oct. 13	1337	315, 316, 317	77	268
Loader. Baggage	D. C. Conklin and J. Hughes	571,828	Nov. 24	2481	588	77	1161
Loading or unloading apparatus	F. McDonough	572,023	Nov. 24	2822	666	77	1226
Loading vessels. Portable device for	J. McMyler	568,869	Oct. 6	271	63	77	52
Lock: *See* Bicycle-lock. Bicycle alarm-lock. Combination-lock. Door-lock. Gravity-lock. Nut-lock. Permutation-lock. Rail-lock. Rim-lock. Sash-lock. Seal-lock. Stopper-lock. Time-lock. Window-lock.							
Lock	W. F. Feistner	570,087	Oct. 27	2409	570	77	495
Lock	E. Gray	572,633	Dec. 8	959	232	77	1481
Lock	P. J. Leonard and W. Head	574,250	Dec. 29	3950	939	77	2087
Lock	J. Luebbers	570,032	Oct. 27	2303	547	77	475
Lock	S. E. Swenson	574,179	Dec. 29	3803	908	77	2060
Lock	H. G. Voight	572,844	Dec. 8	1328	320	77	1551
Lock strike-plate	R. H. Bower	572,859	Dec. 8	1349	325	77	1555
Lock-wedge	W. W. Crawford	572,291	Dec. 1	360	86	77	1348
Lock with electric safety attachment	A. J. Moulart	569,882	Oct. 20	2038	485	77	411
Locks. Stop mechanism for time	W. H. Hollar and H. W. Pidgeon	571,319	Nov. 10	1595	378	77	964
Locomotive ash-pan	J. B. Wood	569,905	Oct. 20	2081	495	77	420
Locomotive-boiler	C. O. Heggem	571,118	Nov. 10	1265	293	77	901
Locomotive-crane	O. Crosby	572,195	Dec. 1	174	42, 43	77	1311
Locomotive draft-regulator	H. Degener and R. Deissler	570,983	Nov. 10	1011	235, 236	77	855
Locomotive. Electric	J. E. Lockwood	568,779	Oct. 6	119	28	77	24
Locomotive. Electric	J. F. McLaughlin	570,945	Nov. 10	955	221, 222	77	845
Locomotive. Electric	J. F. McLaughlin	573,905	Dec. 29	3264	779	77	1964
Locomotive smoke-stack	C. S. Burton	570,083	Oct. 27	2400	569	77	494
Locomotive-tender coupling	J. MacKenzie	569,218	Oct. 13	865	203, 204	77	181
Log-carrier	J. A. Carroll	572,742	Dec. 8	1163	279	77	1519
Log loader and turner	W. E. Hill	570,552	Nov. 3	214	56	77	677
Log-turner	D. J. Saltsman	571,801	Nov. 24	2433	580	77	1153
Loom	G. Borland and A. K. Sherwood	572,926	Dec. 8	1468	353	77	1580
Loom	L. Brunette and A. P. Horne	574,187	Dec. 29	3819	912	77	2063
Loom	R. Cuscaden and W. F. Poiesz	572,246	Dec. 1	265	64	77	1329
Loom	E. S. and G. O. Draper	574,142	Dec. 29	3710	884	77	2044
Loom	G. A. Draper	573,264	Dec. 15	2070	496	77	1708
Loom	W. F. Draper and J. H. Northrop	572,746	Dec. 8	1171	281	77	1520
Loom	I. Heer	571,192	Nov. 10	1381	332	77	924
Loom	E. von Oberleithner	571,236	Nov. 10	1455	341	77	937
Loom	E. Poehnert	571,956	Nov. 24	2719	643	77	1207
Loom	C. Seybold	570,234	Oct. 27	2669	635	77	544
Loom	O. Smith	569,805	Oct. 20	1920	456	77	390
Loom. Box	A. Faber du Faur and A. Gartner	572,251	Dec. 1	274	66, 67	77	1331
Loom for weaving pile fabrics	C. Coupland and F. Pearson	569,814	Oct. 20	1934	460	77	392
Loom-harness for weaving leno goods	J. Hampson	572,007	Nov. 24	2800	660	77	1222
Loom harness-frame	H. W. Hakes	570,926	Nov. 10	921	214	77	839
Loom-heddle	G. O. Draper	569,149	Oct. 6	746	174	77	141
Loom Jacquard mechanism	E. W. France and J. Buckler	570,703	Nov. 3	532	123	77	737
Loom. Lappet	J. Galloway	570,791	Nov. 3	674	155	77	762
Loom. Lappet	J. R. MacColl	570,259	Oct. 27	2717	646, 647	77	554
Loom. Lappet	J. R. MacColl	570,260	Oct. 27	2720	647, 648	77	554
Loom let-off and take-up mechanism	C. H. Heindel	574,326	Dec. 29	4071	967	77	2110
Loom let-off mechanism	A. A. Forbes	569,865	Oct. 20	2015	480	77	407
Loom let-off mechanism	I. E. Palmer	573,160	Dec. 15	1854	454	77	1675
Loom lng-strap	C. P. Livsey	574,204	Dec. 29	3859	920	77	2070
Loom-multiplier	A. Faber du Faur	572,250	Dec. 1	271	66	77	1330
Loom. Needle	J. E. Martin	573,827	Dec. 22	3126	745	77	1924
Loom pattern-chain support	W. J. Lutton	573,279	Dec. 15	2100	505	77	1715
Loom picker mechanism	J. H. Paige	571,729	Nov. 17	2287	548	77	1106
Loom picker-staff strap	J. F. and C. G. Warren	572,140	Dec. 1	84	18	77	1294
Loom picker-sticks. Rocker and shoe connection for	A. Barselou	570,364	Oct. 27	2938	697, 698	77	593
Loom picker-strap dog	P. Ashby	569,570	Oct. 13	1480	348	77	295
Loom-reed	J. Adamson	571,182	Nov. 10	1365	318	77	920
Loom-reed	J. A. and C. Clark	570,381	Oct. 27	2970	704	77	599
Loom shedding-motion	G. Oldham	572,711	Dec. 8	1102	267	77	1507
Loom-shuttle	T. Morrison	569,721	Oct. 20	1779	423	77	365
Loom-shuttle	W. Todd	568,929	Oct. 6	358	82	77	69
Loom shuttle-box motion	O. W. Schaum	573,488	Dec. 22	2519	597	77	1808
Loom shuttle-box-operating mechanism	A. Lockwood	573,276	Dec. 15	2090	502, 503	77	1713
Loom-shuttle. Self-threading	W. F. Draper and J. H. Northrop	569,862	Oct. 20	2011	479	77	407
Loom stopping mechanism	F. M. J. Grenier	573,648	Dec. 22	2823	647	77	1868
Loom. Swivel	H. Willimander	570,359	Oct. 27	2931	696	77	592
Loom-temple	L. Painchaud	571,886	Nov. 24	2590	614	77	1182
Loom-temple	W. I. Stimpson	573,308	Dec. 15	2175	519	77	1727
Loom warp stop-motion	J. Vickerman	572,918	Dec. 8	1447	348, 349	77	1576
Loom weft-stopping mechanism	J. Poyser	570,815	Nov. 3	716	162, 163	77	771
Looms. Change-box mechanism for power	E. Claviez	572,245	Dec. 1	262	63, 64	77	1328

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Looms. Electromagnetic warp stop-motion for	A. C. Shuttleworth	570,738	Nov. 3	594	136	77	747
Looms. Selvage-producing device for	W. Simpson	573,715	Dec. 22	2936	694	77	1888
Loop forming and pressing machine	A. L. Sweet	571,290	Nov. 10	1545	366, 367	77	954
Lounge	E. E. Rueter	571,247	Nov. 10	1474	345, 346	77	940
Lounge or settee. Multiform	E. Harry	570,907	Oct. 27	2617	622	77	535
Low-water alarm	W. Eberman	574,143	Dec. 29	3711	884	77	2045
Lubricants. Machine for testing	R. C. Carpenter	569,407	Oct. 13	1195	282	77	243
Lubricating device	E. D. Tucker	569,847	Oct. 20	1989	474	77	402
Lubricator: *See* Axle-lubricator.							
Lubricator	P. T. Coffield	571,555	Nov. 17	2000	475	77	1052
Lubricator	W. J. Ferguson	574,352	Dec. 29	4121	978	77	2120
Lubricator	W. F. Gregory	570,549	Nov. 3	210	55	77	676
Lubricator	A. L. Hochholzer, R. B. Hill, and J. D. Riggs.	573,657	Dec. 22	2845	671	77	1871
Lubricator	F. Kaufhold	569,717	Oct. 20	1773	421	77	363
Lubricator	G. Klug	574,066	Dec. 29	3570	852, 853	77	2020
Lubricator	F. Loos	570,706	Nov. 3	536	124	77	738
Lubricator	J. McGinley	570,605	Nov. 3	318	79	77	697
Lubricator	L. Mertens and C. F. Bostwick	570,556	Nov. 3	233	58, 59	77	681
Lubricator sight-feed	F. M. Ashley	570,080	Oct. 27	2396	568	77	493
Lumber-drier	H. J. Morton	572,210	Dec. 1	204	50	77	1317
Lumber-piler	H. Daniels	570,869	Nov. 3	819	190, 191	77	791
Lumber-piling machine	H. Daniels	570,868	Nov. 3	816	189, 190	77	790
Lumber-sorter	E. C. Seebohm	574,047	Dec. 29	3536	844	77	2013
Magnet. Electromotor	C. Partington	574,215	Dec. 29	3886	925	77	2075
Magnet pole. Field	J. J. Wood	571,181	Nov. 10	1363	318	77	920
Magnet poles. Attaching field	F. O. Blackwell	573,130	Dec. 15	1839	443	77	1667
Magnet poles. Securing field	H. G. Reist	573,107	Dec. 15	1794	432	77	1659
Magnet structure. Field	D. P. Thomson and H. Geisenhöner	571,462	Nov. 17	1829	436	77	1022
Magnetic from non-magnetic substances. Mechanism for separating	C. J. Reed	572,370	Dec. 1	505	119	77	1374
Magnetic separation. Process of and machine for	R. H. Sanders and C. T. Thompson	573,485	Dec. 22	2512	595, 596	77	1807
Magnetic separator	J. B. Hamilton	571,362	Nov. 17	1664	394, 395	77	992
Magnetic separator	J. B. Hamilton	572,162	Dec. 1	120	28, 29	77	1300
Magneto-generator	J. C. Francis	571,305	Nov. 10	1371	373	77	961
Mail-bag	F. L. Boynton	570,899	Nov. 10	877	204	77	830
Mail-bag	A. Johnston	574,064	Dec. 29	3567	852	77	2019
Mail-bag catcher	E. A. Foster	570,468	Nov. 3	49	12	77	648
Mail-bag crane	J. L. Sullivan	572,916	Dec. 8	1444	347	77	1575
Mail-bag fastener	M. S. Cody	573,074	Dec. 15	1736	416	77	1648
Mail-bag fastener	T. G. Cunningham	574,138	Dec. 29	3704	883	77	2043
Mail-bag fastener	F. Langlotz	572,763	Dec. 8	1198	289	77	1524
Mail-box	H. J. Richner and J. L. Fontaine	570,270	Oct. 27	2741	652	77	558
Mail-crane	A. Montzheimer	568,955	Oct. 6	408	92	77	78
Mail-marking machine	G. E. Barnard	569,780	Oct. 20	1881	447	77	382
Mail-marking machine	J. S. Hansen	572,085	Nov. 24	2964	697, 698	77	1252
Mail-marking machine	J. S. Hansen	573,652	Dec. 22	2831	669	77	1869
Mail-marking machine	J. S. Hansen	573,653	Dec. 22	2833	669	77	1869
Mail receiver and delivering apparatus	W. Z. Runkle	572,315	Dec. 1	408	97, 98	77	1356
Mail-sack catching and delivering mechanism	M. D. Cummings	568,747	Oct. 6	54	13, 14	77	14
Malted foods	C. Rach	573,236	Dec. 15	2024	.....	77	1701
Malting apparatus	H. Stier	572,665	Dec. 8	1012	245	77	1491
Mandolin	B. N. Rethey	573,357	Dec. 15	2256	539	77	1743
Mangle	J. A. Jackson and G. S. White	570,404	Oct. 27	3021	716	77	609
Mangle	C. S. Paul	572,614	Dec. 8	928	225	77	1474
Manual motor	J. Steffenson	571,545	Nov. 17	1983	472	77	1049
Map-support	J. P. Jungels	572,547	Dec. 8	801	191, 192	77	1446
Marble-shooting device	C. B. Landes	574,098	Dec. 29	3631	867	77	2031
Mask. Base-ball	W. Gray	571,437	Nov. 17	1791	427	77	1015
Match	J. W. Denmead	571,154	Nov. 10	1327	309	77	913
Match-box-filling machine	A. Schuster	568,801	Oct. 6	153	36	77	31
Match-box-sanding machine	A. Anderson	570,244	Oct. 27	2691	639	77	548
Match-box shucks. Machine for making and sanding	H. W. Whelan	571,180	Nov. 10	1360	317, 318	77	920
Match-delivering and cigar-cutting apparatus	O. Anderson	569,482	Oct. 13	1303	307	77	262
Match-igniting and cigar-cutting device	M. Fischer	572,942	Dec. 8	1497	358, 359	77	1585
Match-machine	W. W. Abbott	573,802	Dec. 22	3068	727, 728, 729, 730	77	1914
Match-making machine	W. H. Wyman	570,529	Nov. 3	164	40, 41, 42, 43, 44, 45	77	668
Match-pouch	T. B. Ackers	571,737	Nov. 24	2321	555	77	1131
Match-receptacle	W. C. Schaper	573,422	Dec. 15	2375	567	77	1764
Match receptacle or holder	O. F. Brinkman	570,891	Nov. 3	864	201	77	802
Match-safe	P. and G. Blechschmidt	572,100	Dec. 1	10	3	77	1280
Match-safe	J. W. Hart, L. Griffith, and M. Goodwin.	572,541	Dec. 8	789	189	77	1443
Match-safe	O. H. Huebel and F. W. Manger	571,121	Nov. 10	1274	295	77	903

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Match-safe	M. C. Russell	573,358	Dec. 15	2257	539	77	1743
Match-safe	G. Weigand	570,859	Nov. 3	800	183	77	787
Matrices and apparatus for distributing same	W. Berri	573,199	Dec. 15	1958	471, 472, 473	77	1689
Mattress. Inflatable	J. W. Hardesty	569,712	Oct. 20	1764	419	77	362
Mattress. Spring	J. F. Leach	569,420	Oct. 13	1212	285	77	246
Mattress-stuffing machine	E. N. Stephenson	572,914	Dec. 8	1430	345, 346, 347	77	1573
Mattresses. Register for folding	H. S. McCormick	571,009	Nov. 10	1061	247	77	864
Maze	P. G. Williams	572,142	Dec. 1	87	19	77	1294
Measure. Draftsman's	H. Sommerfeldt	569,358	Oct. 13	1111	264	77	229
Measure reel. Tape	J. W. Lyon	569,792	Oct. 20	1904	451	77	386
Measurer for creameries. Automatic	O. B. Ross	574,274	Dec. 29	3992	949	77	2095
Measurer for creameries. Automatic	O. B. Ross	574,275	Dec. 29	3995	949	77	2096
Measuring apparatus. Automatic grain	A. Hunt	571,922	Nov. 24	2662	631	77	1195
Measuring device. Liquid	G. W. Curtis	571,217	Nov. 10	1419	331	77	930
Measuring electric currents. Instrument for	R. M. Hunter	570,481	Nov. 3	76	18	77	652
Measuring machine. Cloth	J. Kullberg and C. Brunzell	573,335	Dec. 15	2214	529	77	1734
Measuring-pole	R. Hegarty	571,366	Nov. 17	1675	396	77	993
Meat-cutter and meat-cutting mechanism	C. F. Jones	570,222	Oct. 27	2644	626, 627	77	540
Meat-hanger	L. S. Travers	569,142	Oct. 6	729	171	77	138
Meat-puncturing instrument	T. A. Bray	570,593	Nov. 3	298	73	77	694
Meat-tenderer	R. Delong	572,527	Dec. 8	770	183	77	1440
Meat-tenderer	H. C. Hubbell	573,660	Dec. 22	2848	672	77	1872
Mechanical motor	I. Johnson	568,853	Oct. 6	242	56	77	47
Mechanical movement	A. J. Corneau	569,006	Oct. 6	504	114	77	96
Mechanical movement	G. W. Hey	569,132	Oct. 6	711	167	77	135
Mechanical movement	W. S. Huson	570,597	Nov. 3	304	75, 76	77	695
Mechanical movement	E. H. Taylor	572,584	Dec. 8	870	209	77	1463
Mechanical movement	J. J. Waters	570,575	Nov. 3	269	67	77	688
Mechanical movement	H. A. W. Wood	570,586	Nov. 3	283	69, 70	77	691
Mechanical movement	H. A. W. Wood	570,587	Nov. 3	286	70, 71	77	691
Medicine dose-indicating cabinet	N. S. Springer	569,359	Oct. 13	1111	265	77	229
Medicine-dose indicator	C. E. Glentworth	571,436	Nov. 17	1790	427	77	1014
Merry-go-round	O. Olson and J. A. Johanson	572,712	Dec. 8	1104	268	77	1508
Merry-go-round	W. X. Simpson	571,626	Nov. 17	2111	506, 507	77	1072
Message-holder for use with homing pigeons	H. Marion	569,111	Oct. 6	673	157	77	128
Metal band for sectional jackets or steam-pipe coverings	W. C. Bull	570,276	Oct. 27	2750	654	77	559
Metal-breaking machine	C. L. Miller and J. R. George	569,793	Oct. 20	1905	451, 452	77	386
Metal can	F. P. McColl	570,494	Nov. 3	106	26, 27	77	658
Metal hollow ware. Apparatus for ornamenting soft	W. A. Cuppers, Jr.	568,839	Oct. 6	208	50	77	41
Metal. Machine for spinning circular forms of	F. Mink	568,984	Oct. 6	466	105, 106	77	89
Metal-planing machine	H. Hess	570,093	Oct. 27	2423	573	77	498
Metal-planing machines. Automatic feed-stop for	A. M. Powell	570,954	Nov. 10	971	226	77	848
Metal-planing machines. Feed-operator for	A. M. Powell	570,953	Nov. 10	968	226	77	847
Metal separator. Electric	H. H. Whitacre and A. C. Wolfe	573,741	Dec. 22	2980	705	77	1897
Metal-shaping apparatus	E. M. Ferguson	570,010	Oct. 27	2267	539	77	467
Metal shavings. Machine for producing	J. G. Ulmann	573,728	Dec. 22	2960	701	77	1893
Metal-shearing machine	J. B. McLane	569,226	Oct. 13	881	209	77	184
Metal-straightening machine	E. C. Atkins and R. Coyle	573,955	Dec. 29	3357	805	77	1981
Metal tie	E. L. Sawyer	569,427	Oct. 13	1221	286	77	247
Metals. Apparatus for melting	R. G. G. Moldenke	569,221	Oct. 13	869	205	77	182
Metals. Means for and method of preventing corrosion of	M. W. Henius	572,678	Dec. 8	1034	251	77	1496
Metals or alloys. Introducing chrome into	E. Placet and J. Bonnet	573,615	Dec. 22	2732	.....	77	1851
Metals under pressure. Apparatus for treating heated	G. A. Dick	571,265	Nov. 10	1504	355, 356	77	947
Metallic or composite box	H. J. S. Brown	571,427	Nov. 17	1767	422	77	1010
Metallic sand or pulverized ores. Reducing	A. A. Dickson	569,820	Oct. 20	1944	462	77	394
Metallic sand or pulverized ores. Reducing	A. A. Dickson	569,821	Oct. 20	1946	463	77	394
Metallic slats. Machine for making	W. R. Kinnear	572,015	Nov. 24	2811	663, 664	77	1224
Metallic tie	E. Cronin and H. P. Shields	570,005	Oct. 27	2263	537	77	466
Metallurgical furnace	B. Talbot	571,250	Nov. 10	1479	347	77	941
Metallurgical furnace and process	A. Wronski	572,393	Dec. 1	558	132, 133	77	1384
Metallurgical vessels. Tipping	H. Aiken	569,987	Oct. 27	2228	528, 529	77	459
Meter: *See* Disk meter. Electric meter. Gas-meter. Liquid-meter. Water-meter. Wattmeter.							
Meter	J. H. Dixon	572,414	Dec. 1	587	140	77	1390
Meter	F. Lambert	569,137	Oct. 6	721	169, 170	77	137
Micrometer-beam gage	J. J. McIntyre	571,094	Nov. 10	1213	284	77	892
Micrometer-gage	J. Stromberg	570,189	Oct. 27	2585	614	77	528
Micrometer-gage	G. Thompson	571,178	Nov. 10	1357	316	77	919
Microphone-transmitter	E. A. Barkalow and N. Crawford	571,504	Nov. 17	1913	456	77	1037
Milk-can	H. Emery and W. Morgan	573,865	Dec. 29	3197	761	77	1951
Milk-can	H. E. Schmidt	569,770	Oct. 20	1863	441	77	379
Milk-heating vat	R. S. Buch and J. Belser	573,389	Dec. 15	2301	550	77	1751
Milker. Cow	C. G. P. de Laval	574,357	Dec. 29	4128	980	77	2121
Milker. Cow	W. M. Mehring	571,573	Nov. 17	2027	482	77	1057
Milker. Cow	J. E. O'Sullivan	572,713	Dec. 8	1106	268	77	1508

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Mill: *See* Ball grinding-mill. Ore-crushing mill. Boring and turning mill. Quartz-mill. Crushing-mill. Roller-mill. Edge-runner mill. Rolling-mill. Fanning-mill. Sawmill. Grinding-mill. Seed-cleaning mill. Windmill.							
Mill for reducing crackers to powder. Portable	W. Trewhella	568,997	Oct. 6	492	111	77	94
Milling-machine	C. E. Van Norman	570,723	Nov. 3	558	129	77	741
Mine trap-door	G. Bonenberger	569,952	Oct. 20	2173	515, 516	77	437
Mine trap-door	H. Keyes	571,570	Nov. 17	2021	480, 481	77	1056
Miner's and blaster's tool	M. Killian	572,808	Dec. 8	1276	307	77	1540
Mining and dredging. Ejector for	W. Muir	573,611	Dec. 22	2726	648	77	1849
Mining. Dredge-bucket for placer-	W. J. Moore	569,837	Oct. 20	1969	468	77	399
Mining dredge. Gold-	W. E. Seanor and D. A. McCaskill	569,064	Oct. 6	597	136, 137	77	114
Mining-machine	H. H. Bliss	568,937	Oct. 6	368	85	77	71
Mining-machine	J. Boland and G. W. Fritz	571,259	Nov. 10	1491	350, 351	77	944
Mining-machine	F. M. Lechner	569,758	Oct. 20	1845	437	77	376
Mining-machine	E. and W. Patterson	570,330	Oct. 27	2888	686	77	584
Mining machine. Coal-	J. M. Householder	573,271	Dec. 15	2080	498, 499	77	1710
Mining-machine. Electric	R. H. Wiles	568,933	Oct. 6	363	83	77	70
Mining-machine holding mechanism	W. H. Slade	572,074	Nov. 24	2947	693	77	1249
Minnow. Artificial	H. O. Stanley	570,687	Nov. 3	506	118	77	733
Mirror	A. C. Estabrook	573,770	Dec. 22	3020	716	77	1905
Mirror. Floor-	C. P. Mosher and N. R. Streeter	574,254	Dec. 29	3956	940	77	2088
Miter-box	J. Ellis	569,327	Oct. 13	1058	251	77	218
Mitten. Bicycle-	T. H. Royce	571,020	Nov. 10	1080	252	77	868
Mixer: *See* Air and gas mixer. Dough-mixer. Batter-mixer. Paint-mixer.							
Moistener. Envelop-	J. G. Eversman	569,185	Oct. 13	803	187	77	169
Mold: *See* Brick-mold. Ice-cream mold.							
Mold-pattern. Collapsible and adjustable	M. A. Baker	571,060	Nov. 10	1142	267, 268	77	880
Molds. Method of and apparatus for forming sand-	S. J. Adams	574,052	Dec. 29	3546	846, 847	77	2016
Molding-machine	O. Bryant	569,743	Oct. 20	1810	429, 430, 431, 432	77	370
Molding-machine	S. Groves	573,783	Dec. 22	3035	719, 720	77	1908
Molding-machine	F. W. T. Hartland and A. Malpas	572,656	Dec. 8	997	240	77	1488
Molding-machine	T. J. Ryan	572,978	Dec. 1	328	78, 79, 80	77	1342
Molding machine. Curve-	G. Henderson	569,714	Oct. 20	1766	419	77	362
Molding-machine for forming warped or irregular surfaces.	E. L. Taft	573,050	Dec. 15	1698	406	77	1641
Molding machine. Sand-core-	T. J. Ryan	571,458	Nov. 17	1818	434, 435	77	1020
Molding-press	G. W. Van Tine	568,819	Oct. 6	180	43, 44	77	36
Molding-press	G. W. Van Tine	569,690	Oct. 20	1708	404, 405	77	353
Molding-press	G. W. Van Tine	569,691	Oct. 20	1709	405	77	353
Money-changer	G. T. Farnell	569,912	Oct. 20	2091	497, 498	77	421
Mop	H. Rowlands	571,246	Nov. 10	1473	345	77	940
Mop-wringer	H. A. Dechenne	568,895	Oct. 6	307	70	77	59
Moquette fabric and moquette-loom	E. Tymeson	571,418	Nov. 17	1752	418, 419	77	1008
Mortising machine. Wood-	S. F. Tibbetts	573,312	Dec. 15	2180	520	77	1728
Motion. Device for converting	G. E. Bardshar and A. Heiberger	571,939	Nov. 24	3090	636	77	1302
Motion. Device for converting	V. and M. McCullough	571,679	Nov. 17	2197	529	77	1068
Motion. Device for converting	W. E. Watkins	571,296	Nov. 10	1559	370	77	958
Motion. Means for transmitting	W. C. Donthett	570,871	Nov. 3	828	192	77	793
Motion. Mechanism for transmitting	A. Becker	570,366	Oct. 27	2941	698	77	594
Motive-fluid supply and discharge device for rotary power-driven machines.	H. C. Jones	569,924	Oct. 20	2113	502, 503	77	425
Motor: *See* Car-motor. Steam, air, or water motor. Current-motor. Electric motor. Traction-motor. Gravity-motor. Vehicle-motor. Manual motor. Water-motor. Mechanical motor. Wave-motor. Spring-motor.							
Motor	P. Stark	573,366	Dec. 15	2266	541	77	1744
Motor fluid. Means for controlling supply of	E. A. Fordyce	570,162	Oct. 27	2537	602, 603	77	519
Motor-generator	C. E. Scribner	574,278	Dec. 29	4000	950	77	2097
Motor or engine	S. M. Balser	573,174	Dec. 15	1909	459	77	1681
Mower	S. V. Kennedy	572,549	Dec. 8	802	192	77	1446
Mower. Lawn-	A. Blaubach	571,550	Nov. 17	1993	474	77	1050
Mower. Lawn-	H. Deck	570,699	Nov. 3	523	122	77	736
Mowing apparatus. Hay-	T. J. Morey	573,679	Dec. 22	2879	680	77	1878

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Muffle or heater. Electrical	L. E. Custer	569,911	Oct. 20	2089	497	77	421
Muffler. Engine-	E. Prouty	570,502	Nov. 3	121	30	77	661
Mug. Shaving-	B. G. Savage and A. C. L. Loughran	573,240	Dec. 15	2029	486	77	1701
Multiple-series controller	J. F. McElroy	570,878	Nov. 3	836	194, 195	77	795
Music-box	F. J. Bernard	572,950	Dec. 15	1522	364	77	1606
Music-box	J. Bornand	574,299	Dec. 29	4029	957	77	2102
Music-box	O. P. Lochmann	573,018	Dec. 15	1633	392	77	1628
Music-box	F. J. Bernard	570,898	Nov. 10	876	204	77	829
Music-box damper	J. F. Barrowe	574,057	Dec. 29	3556	849	77	2017
Music-cabinet	F. Mueller	569,509	Oct. 13	1364	320	77	273
Music-chart	H. Grodzik and F. C. Luethi	571,920	Nov. 24	2658	630	77	1194
Music-holder	F. M. Stacy	569,726	Oct. 20	1786	424	77	366
Music holder and turner	M. L. W. Zingerman	573,749	Dec. 22	2991	709	77	1899
Music holder and turner	T. A. Farrell	574,244	Dec. 29	3942	937	77	2086
Music-leaf turner	J. B. Tracy	570,352	Oct. 27	2921	694	77	590
Music-rolls. Apparatus for producing	R. M. Saint	572,571	Dec. 8	849	203, 204	77	1459
Music-writing machine	D. K. Marshall	569,219	Oct. 13	866	204	77	181
Musical figure	J. H. Milledge	572,555	Dec. 8	814	195	77	1449
Musical hoop	C. Clements-Kropp	572,550	Dec. 8	804	193	77	1447
Musical instrument	G. T. Craig	569,707	Oct. 20	1756	417	77	360
Musical instrument	H. E. Hibshman	572,010	Nov. 24	2804	661	77	1222
Musical instrument	J. A. Weser	570,582	Nov. 3	275	68	77	669
Musical instrument	H. D. B. Williams	569,777	Oct. 20	1878	446	77	382
Musical instrument	B. E. Wollenhaupt	572,392	Dec. 1	557	131	77	1384
Musical instrument	M. O. Claus, T. B. Püttmann, and H. E. C. Felix.	574,240	Dec. 29	3936	936	77	2084
Musical instrument. Mechanical	E. P. Riessner	569,233	Oct. 13	893	213, 214	77	186
Musical instrument. Mechanical	O. Sorgan	572,458	Dec. 1	656	155	77	1403
Musical-instrument stop-indicator	H. B. Tremaine	572,666	Dec. 8	1015	245	77	1491
Musical instruments. Apparatus for sounding stringed	A. Heino	571,763	Nov. 24	2372	566	77	1141
Musical instruments. Distention-valve for	H. F. Henry	572,799	Dec. 8	1259	304	77	1536
Musical instruments. Fastener for tailpieces of	O. H. Lehmann	569,647	Oct. 20	1630	385	77	339
Musical instruments. String-fastening for sounding-boards of	G. Goodwin	572,677	Dec. 8	1033	251	77	1495
Musical instruments. Tempo indicator and governor for	J. H. Chase	571,746	Nov. 24	2341	560	77	1135
Musical machine	J. Baumgartner	572,287	Dec. 1	352	84	77	1346
Nail: *See* Heel-nail. Sole-nail.							
Nail	C. Hatch, Jr.	570,633	Nov. 3	398	94	77	711
Nail distributing and driving machine	F. F. Raymond, 2d	571,499	Nov. 17	1903	453, 454	77	1034
Nail-extractor	T. C. Creighton	569,958	Oct. 20	2182	518	77	438
Nail-feeding device	F. F. Raymond, 2d, and C. H. Fogg	569,518	Oct. 13	1380	324, 325, 326	77	276
Nail-feeding device	F. F. Raymond, 2d, and C. H. Fogg	571,931	Nov. 24	2673	633, 634	77	1198
Nail-package	A. Newton	572,061	Nov. 24	2896	683, 684	77	1239
Nail-strip	F. F. Raymond, 2d	569,886	Oct. 20	2044	487	77	412
Name-plate for bicycles, &c	A. R. Geoffroy	573,670	Dec. 29	3211	764	77	1954
Napkin-holder	N. P. Horton	570,802	Nov. 3	695	159	77	767
Near-sightedness. Device for treating	C. Dion	570,279	Oct. 27	2753	655	77	560
Neck-protector	E. E. Carlton	569,540	Oct. 13	1409	333	77	283
Necktie	M. Jacobowitz	569,498	Oct. 13	1336	315	77	268
Necktie	A. J. Keck	573,467	Dec. 22	2486	589	77	1803
Necktie-fastener	W. W. Waterbury	573,733	Dec. 22	2969	703	77	1895
Needle	J. Zimmermann	570,590	Nov. 3	293	72	77	693
Needle-slabbing machine	P. M. Beers	570,367	Oct. 27	2941	698, 699, 700	77	594
Net. Folding minnow-	E. Breeding	572,785	Dec. 8	1237	299	77	1532
Net-lifting device	J. W. Atwood	572,399	Dec. 1	568	134, 135	77	1386
Net-lifting machine	W. F. Ahearn	571,033	Nov. 10	1104	258	77	872
Newspaper-holder	C. E. Dunshee	569,553	Oct. 13	1439	339	77	287
Newspaper-rack	J. A. Dawson	572,336	Dec. 1	440	104	77	1363
Nickel and cobalt. Manufacturing	P. Manhes	574,068	Dec. 29	3573	.....	77	2020
Nippers	J. L. Sours	573,548	Dec. 22	2619	622	77	1827
Nipple-holder	W. Lee	573,013	Dec. 15	1627	391	77	1626
Nipple-making machine	W. C. and F. E. Wells	569,902	Oct. 20	2076	494	77	419
Nitrites. Making	L. G. Paul	572,819	Dec. 8	1290	.....	77	1542
Nitro compound	W. F. Reid and E. J. V. Earle	568,877	Oct. 6	282	.....	77	54
Note-disk holder	O. P. Lochmann	573,017	Dec. 15	1632	392	77	1628
Nozzle	W. A. Swift and W. W. Stewart	573,721	Dec. 22	2947	697	77	1880
Nozzle attachment. Sprinkler-	L. L. Ordner	574,072	Dec. 29	3579	855	77	2021
Nozzle. Exhaust-	C. M. Marshall	569,561	Oct. 13	1457	344	77	291
Nozzle. Spray-	W. Binford	571,940	Nov. 24	2692	637	77	1202
Numbering-head	O. Bartusch	573,175	Dec. 15	1914	459	77	1681
Numbering-machine	C. De Leon	571,487	Nov. 17	1875	447	77	1039
Nursery-chair	N. K. Nelsen	572,271	Dec. 1	318	76	77	1340
Nursery-gate	S. C. Holmer	569,642	Oct. 20	1622	382	77	337
Nut	M. A. Clennam	572,743	Dec. 8	1164	280	77	1519
Nut for vehicles. Axle-	J. E. Lewis	569,215	Oct. 13	861	203	77	180
Nut. Grip-	J. B. Oliver and H. Crehan	569,659	Oct. 20	1646	388	77	342
Nut-lock	L. M. Cunningham	571,721	Nov. 17	2274	546	77	1103
Nut-lock	C. T. and A. De Graffenried	573,397	Dec. 15	2314	553	77	1752
Nut-lock	O. S. Ebert	571,066	Nov. 10	1155	270	77	882
Nut-lock	E. W. Edwards	573,840	Dec. 22	3146	749	77	1928

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Nut-lock	S. A. Eisele	570,917	Nov. 10	908	211	77	836
Nut-lock	E. Fluehr	570,789	Nov. 3	670	154	77	762
Nut-lock	W. H. Fossett	573,776	Dec. 22	3028	717	77	1906
Nut-lock	J. M. Gilmore	569,098	Oct. 6	656	152	77	125
Nut-lock	T. Hand	571,681	Nov. 17	2169	521	77	1083
Nut-lock	A. J. Harrell	570,551	Nov. 3	213	56	77	677
Nut-lock	J. Martin	573,022	Dec. 15	1639	394	77	1629
Nut-lock	H. L. McCann	574,256	Dec. 29	3960	941	77	2089
Nut-lock	W. C. Nones	574,213	Dec. 29	3882	924	77	2074
Nut-lock	O. A. Norlund	570,101	Oct. 27	2434	578	77	500
Nut-lock	T. Oldroyd	569,423	Oct. 13	1216	286	77	246
Nut-lock	C. T. Redfield	571,286	Nov. 10	1540	365	77	953
Nut-lock	T. Seely	573,044	Dec. 15	1676	403	77	1637
Nut-lock	O. P. Swanson	573,800	Dec. 22	3066	726	77	1913
Nut-lock	J. M. Thompson	574,287	Dec. 29	4016	953	77	2100
Nut-lock	W. Turner	570,354	Oct. 27	2926	695	77	591
Nut-lock	J. P. Van Derveer	572,460	Dec. 1	659	155	77	1404
Nut-lock	J. E. Ward	571,871	Nov. 24	2560	606	77	1176
Nut lock. Axle-	O. S. Ebert	571,067	Nov. 10	1156	270	77	822
Nut-locks. Means for unlocking	J. G. Landes	573,337	Dec. 15	2219	530	77	1735
Nut-threading machine	G. H. Webb and J. Clare	570,193	Oct. 27	2592	616	77	529
Nut wrench. Axle-	T. G. Clifford	571,214	Nov. 10	1413	330	77	929
Nut wrench. Axle-	W. E. Kleckner	570,933	Nov. 10	936	217	77	842
Office-indicator	A. Angell	571,325	Nov. 17	1608	382	77	981
Office-indicator	C. L. McKesson	569,384	Oct. 13	1150	274	77	236
Office-indicator	J. A. Tobin	571,585	Nov. 17	2045	487	77	1060
Oil-burner	J. R. Armstrong	569,315	Oct. 13	1038	247	77	214
Oil-burner	A. J. Blackford. (Reissue)	11,575	Nov. 24	3019	706, 707	77	1260
Oil burner. Automatic sight-feed crude-	D. C. Wilgus	568,934	Oct. 6	364	84	77	70
Oil-burning mechanism	C. W. Claybourne and M. Moore	572,866	Dec. 8	1356	328	77	1557
Oil-can	B. Briscoe	574,300	Dec. 29	4030	957	77	2103
Oil-can and torch. Combined	T. W. Kester	574,335	Dec. 29	4089	971	77	2114
Oil-catching device	J. H. Kriner	572,641	Dec. 8	974	235	77	1483
Oil-cup	L. A. Peters	568,920	Oct. 6	344	80	77	66
Oil-engine	T. von Querfurth	569,672	Oct. 20	1667	394, 395	77	346
Oil or gas burners. Heater for attachment to	H. H. Hallett	569,377	Oct. 13	1140	272	77	234
Oil. Process of and apparatus for extracting	H. T. C. Kraus	569,208	Oct. 13	846	199, 200	77	177
Oil purifier. Waste-	R. Metz	572,020	Nov. 24	2818	665	77	1225
Oil-separator	O. A. Darrow	569,016	Oct. 6	519	119	77	99
Oil tank and pump. Portable	L. W. Hemp	571,877	Nov. 24	2567	609	77	1177
Oil-wells. System for operating	G. Allen	569,157	Oct. 13	761	177	77	161
Oiling device for vehicle axles and wheels	A. C. Holt	569,045	Oct. 6	566	130	77	108
Open-hearth furnace	H. Aiken, F. W. Wood, and H. H. Campbell. (Reissue.)	11,572	Oct. 13	1534	359, 360	77	305
Opera glass and phone. Combined	G. J. Wainwright	574,124	Dec. 29	3678	877	77	2039
Opera-glass shield	S. Heyn	572,637	Dec. 8	968	233	77	1482
Opera-glasses	F. A. Hardy	572,540	Dec. 8	787	188	77	1443
Opera-glasses. Handle and phone attachment for	G. J. Wainwright	574,125	Dec. 29	3680	877	77	2039
Ore-concentrator	W. E. Wild	568,888	Oct. 6	297	68	77	57
Ore-concentrator	F. J. Woods	570,243	Oct. 27	2689	639	77	548
Ore concentrator and separator. Dry	R. E. and E. Waugh and C. S. Older	570,831	Nov. 3	750	171	77	778
Ore-crusher	J. Roger	574,273	Dec. 29	3990	948	77	2095
Ore-crushing mill	S. M. Briggs	569,272	Oct. 13	956	229	77	198
Ore-jigging machine	W. Hooper	573,594	Dec. 22	2700	641	77	1844
Ore-pulverizing machine	G. A. Cleveland	570,745	Nov. 3	603	138, 139	77	749
Ore-roasting furnace	J. Roger	574,272	Dec. 29	3989	947, 948	77	2094
Ore-roasting furnace	C. E. Stockford	569,361	Oct. 13	1115	265, 266	77	229
Ore-separator	H. M. Copland	570,843	Nov. 3	773	176	77	782
Ore-separator. Magnetic	C. J. Reed	572,369	Dec. 1	502	118	77	1373
Ore washer and collector	J. W. Thompson	569,894	Oct. 20	2062	490	77	416
Ores, &c. Apparatus for compressing and agglomerating roasted	J. W. Neill	570,947	Nov. 10	959	222	77	846
Ores, &c. Apparatus for concentrating, grading, or classifying crushed	W. H. Coward	574,241	Dec. 29	3936	936	77	2085
Ores. Treating	T. P. Barbour	571,468	Nov. 17	1838	438	77	1024
Organ	J. H. Chase	570,900	Oct. 27	2606	619	77	532
Organ	W. Schuelke	572,128	Dec. 1	60	15	77	1269
Organ	W. Schuelke	572,129	Dec. 1	64	15	77	1270
Organ	W. Schuelke	572,130	Dec. 1	67	15	77	1270
Organ. Automatic	T. P. Brown	574,186	Dec. 29	3816	911, 912	77	2062
Organ-pipes. Machine for forming	H. Richardson	572,830	Dec. 8	1311	314	77	1547
Organ. Reed-	W. S. Moses	574,040	Dec. 29	3522	841	77	2010
Organ-reed-tuning machine	C. N. Rand	573,103	Dec. 15	1789	430, 431	77	1657
Organs. Insect or vermin guard for	F. M. Matthews	569,605	Oct. 13	1357	319	77	272
Ornamental surfaces. Apparatus for producing	R. J. Chavez and C. C. Herman	573,206	Dec. 15	1971	475	77	1691
Oven and stove. Baker's	F. S. Kinney	572,206	Dec. 1	189	46, 47	77	1314
Oven. Baker's	E. A. C. Petersen	569,799	Oct. 20	1913	454	77	388
Oven. Baking and cooking	F. Heinemann	569,413	Oct. 13	1205	284	77	245
Overalls, &c.	C. J. Raiffeisen	573,292	Dec. 15	2136	512	77	1720
Overhead switch and hanger	P. F. Werner	571,607	Nov. 17	2083	500	77	1056
Overshoe-fastener	M. St. John	570,347	Oct. 27	2912	691	77	588
Ozone-generating apparatus	M. Pridham	574,341	Dec. 29	4103	974, 975	77	2116
Package	G. Pendleton, Jr	571,928	Nov. 24	2669	632	77	1197
Package. Air-tight	M. Falk	571,112	Nov. 10	1256	292	77	899
Package-elevator	S. B. Peck	570,562	Nov. 3	242	61	77	683

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Package. Powder-	F. A. Heberline and J. Hartman	571,591	Nov. 17	1937	462	77	1041
Package-tie	J. Pusey	573,700	Dec. 22	2912	688	77	1884
Packing-case	F. S. MacRonald	572,657	Dec. 8	999	241	77	1489
Packing granulated or powdered substances. Machine for	C. J. Mattison	571,492	Nov. 17	1881	449	77	1031
Packing. Piston-rod	O. J. Garlock	572,053	Nov. 24	2886	681	77	1237
Packing. Piston-rod	O. J. Garlock	574,353	Dec. 29	4122	978	77	2120
Packing. Rod-	F. Brown	572,862	Dec. 8	1353	326	77	1556
Packing. Rod-	C. F. Rigby	572,910	Dec. 8	1425	343	77	1572
Pad: *See* Collar-pad. Horseshoe-pad. Knee-pad. Sales-pad. Stair-pad. Train-order-blank pad.							
Padlock	W. E. Dyer and F. Soley	572,653	Dec. 8	992	239	77	1487
Padlock	M. Jackson and A. Taylor	572,115	Dec. 1	35	9	77	1284
Padlock	W. F. Troast	572,586	Dec. 8	876	212	77	1464
Padlock. Permutation-	G. L. Baker	573,805	Dec. 22	3077	731	77	1915
Padlock. Seal-	N. C. Pond	569,387	Oct. 13	1159	275	77	237
Page-stick	A. G. Alrich	574,232	Dec. 29	3926	934	77	2083
Pail bottom	S. J. Lisk	571,380	Nov. 17	1696	404	77	997
Paint compound	C. V. Petraeus	571,128	Nov. 10	1288	.....	77	906
Paint-mixer	J. P. J. Saxer	569,428	Oct. 13	1221	287	77	248
Paint. Oil-	I. H. Swink	569,306	Oct. 13	1025	.....	77	211
Paint or coating composition	H. M. Johnston	574,092	Dec. 29	3618	.....	77	2029
Painting or varnishing surfaces. Machine for	W. F. Brenizer	572,861	Dec. 8	1351	325, 326	77	1555
Painting trolley-poles. Apparatus for use in	H. A. French	571,560	Nov. 17	2007	477	77	1053
Pair and reheating furnace. Combined	S. B. Grove and G. Emlong	568,847	Oct. 6	226	53	77	45
Pan: *See* Bake-pan. Bed-pan. Cake-pan. Dust-pan. Evaporating-pan. Locomotive ash-pan. Vacuum-pan.							
Pan-handle. Detachable	T. Wright	571,851	Nov. 24	2527	598	77	1170
Pan holder and lifter	H. W. Nicholes	572,815	Dec. 8	1285	309	77	1542
Pan-lifter	T. O. Andrus and T. J. Newton	572,187	Dec. 1	159	39	77	1308
Pan-lifter	S. P. Rush	572,031	Nov. 24	2840	668	77	1229
Panels and moldings on square balusters, &c. Apparatus for producing raised	W. Osment	569,029	Oct. 6	537	124	77	102
Pants-guard and lock. Combined bicycle	H. A. Rauert	573,104	Dec. 15	1791	431	77	1658
Pants-leg guard	S. J. Turner and C. T. Glasser	569,945	Oct. 20	2161	512	77	435
Paper bag	E. F. Taylor	572,229	Dec. 1	241	57	77	1324
Paper-bag machine	E. E. Claussen	574,020	Dec. 29	3486	832, 833	77	2003
Paper-bag machine	W. A. Lorenz and E. E. Claussen	573,277	Dec. 15	2094	503, 504	77	1714
Paper-bag machine	W. A. Lorenz and E. E. Claussen	573,278	Dec. 15	2097	504, 505	77	1714
Paper-bag-making machine	W. H. Patterson	571,603	Nov. 17	2073	497, 498, 499	77	1065
Paper box	F. B. Davidson	571,512	Nov. 17	1924	451	77	1039
Paper-box blanks. Apparatus for making	H. R. Corkhill, Jr	569,957	Oct. 20	2180	517	77	438
Paper-box machine. Round-	L. T. and I. P. Hallock	569,496	Oct. 13	1332	313, 314	77	267
Paper-cutter	J. S. Edgecomb	572,358	Dec. 1	480	112	77	1370
Paper cutting and scoring machine	W. B. Howe	569,873	Oct. 20	2024	483	77	409
Paper-drier	A. G. Paul and H. A. Joslin	571,787	Nov. 24	2413	575	77	1149
Paper-feeding machine	T. A. Briggs and W. A. Philpott, Jr.	572,154	Dec. 1	108	25, 26	77	1298
Paper-feeding machine	E. T. Cleathero	570,000	Oct. 27	2253	534, 535, 536	77	464
Paper-feeding machine	R. McKee	571,601	Nov. 17	2070	496, 497	77	1064
Paper-feeding machine. Automatic	N. E. Funk	574,199	Dec. 29	3849	918	77	2068
Paper-folding machines. Sheet-adjusting device for	H. K. King	574,153	Dec. 29	3724	887, 888	77	2047
Paper-grooving machine	J. T. Robinson and D. M. Smith	573,705	Dec. 22	2921	691	77	1886
Paper-hanger's work-table	F. E. Daudelin	572,698	Dec. 8	1075	262	77	1503
Paper-hanging machine	A. Markmann	569,835	Oct. 20	1967	468	77	399
Paper holder and advertising device. Combined toilet-	W. Fisher	573,586	Dec. 22	2682	637	77	1840
Paper holder and cutter	J. S. Aydelott	572,351	Dec. 1	468	110	77	1367
Paper holder. Toilet-	E. D. Casterline	572,331	Dec. 1	435	102	77	1362
Paper-machine	F. P. Nicely	570,949	Nov. 10	963	223, 224	77	846
Paper-making machines. Automatic tightener for drier-felts of	T. Pusey, T. H. Latimer, and T. H. Savery.	569,031	Oct. 6	543	125	77	103
Paper-making machines. Suction-roll for	F. E. Allen	573,752	Dec. 22	2995	709	77	1900
Paper. Moisture-proof	W. B. Howe	569,874	Oct. 20	2027	.....	77	409
Paper packages. Clip for toilet-	G. T. Johnson	570,667	Nov. 3	467	109	77	725
Paper-pulping engine	E. D. Speer	573,627	Dec. 22	2778	658	77	1860
Paper reel and printer	D. J. Etly	569,096	Oct. 6	652	151	77	125
Paper-stock cooker	M. D. Keeney	570,641	Nov. 3	411	97	77	714
Paper-stock-cooking apparatus	M. D. Keeney	570,640	Nov. 3	409	97	77	714
Paper-stock to pulp. Machine for reducing	A. P. Brown	569,321	Oct. 13	1047	248, 249	77	216
Paper-stock-washing machine	M. J. Roach	569,673	Oct. 20	1670	395	77	346
Paper. Toilet-	E. Jerome	570,806	Nov. 3	699	160	77	768
Paper. Toilet-	E. Jerome	573,599	Dec. 22	2709	643	77	1846
Paper. Toilet-	E. Jerome	573,600	Dec. 22	2710	644	77	1846
Paper-tube machine	G. H. Knight	574,034	Dec. 29	3510	838, 839	77	2008
Paper-tube machine	W. H. Knight and F. O. Blackwell	573,004	Dec. 15	1613	388	77	1694
Paper vessel	I. W. Hollett	571,526	Nov. 17	1944	464	77	1043

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Paper vessel	I. W. Hollett	571,831	Nov. 24	2485	589	77	1162
Paper-weight and game or puzzle. Combined	J. M. Waddel	570,858	Nov. 3	799	183	77	787
Parer. Apple-	H. A. and W. Tripp	572,689	Dec. 8	1056	257	77	1499
Partition-block	W. V. Pettit	570,733	Nov. 3	582	133	77	745
Passenger-register	W. H. Cling	569,543	Oct. 13	1414	334	77	283
Paste-applying machine	F. H. Richards	572,373	Dec. 1	512	121	77	1375
Paste-receptacle	A. N. Ritz	572,617	Dec. 8	933	227	77	1475
Paste to paper, &c. Machine for applying	W. H. Honiss and W. A. Lorenz	571,527	Nov. 17	1946	464 / 465	77	1043
Pattern or chart	M. E. Hall	573,408	Dec. 15	2332	557	77	1756
Paving-roller	F. E. Puffer	572,447	Dec. 1	635	150	77	1399
Pegging-machine. Hand	J. E. Crisp and G. W. Copeland	569,617	Oct. 20	1568	368	77	327
Pen and holder. Ruling-	A. N. Dow	569,038	Oct. 6	556	128	77	106
Pen. Farrowing-	E. Powers	569,516	Oct. 13	1375	322 / 323	77	275
Pen. Fountain-	W. C. Sherman	570,717	Nov. 3	549	128	77	740
Penholder	W. Hinchliffe	572,894	Dec. 8	1396	338	77	1565
Penholder	V. E. Minich	573,520	Dec. 22	2566	609	77	1817
Penholder	W. B. Perry	573,696	Dec. 22	2900	685	77	1882
Pen or pencil holder	E. G. Wickwire	571,630	Nov. 17	2127	511	77	1075
Pen stock or holder attachment	F. C. Cuckson	572,526	Dec. 8	769	182	77	1440
Pencil	G. K. Cummings and F. W. Musson	572,105	Dec. 1	17	5	77	1281
Pencil	F. W. Musson	574,362	Dec. 29	4133	982	77	2122
Pencil	F. W. Musson	574,363	Dec. 29	4134	982	77	2122
Pencil and penholder. Combined	J. D. Kious	570,932	Nov. 10	934	217	77	841
Pencil cigar-cutting attachment. Lead-	M. Schott	572,452	Dec. 1	647	152	77	1402
Pencil-holder	A. P. Gilleapie	572,632	Dec. 8	958	231	77	1480
Pencil. Lead-	F. W. Musson	574,361	Dec. 29	4132	981	77	2121
Pencil. Mechanical lead-	F. W. Musson	574,359	Dec. 29	4130	981	77	2121
Pencil. Mechanical lead-	F. W. Musson	574,360	Dec. 29	4131	981	77	2121
Pencil-point protector. Combination	C. S. Freer	570,922	Nov. 10	915	212	77	838
Pencil-pointer	W. E. Simonds	573,364	Dec. 15	2264	540	77	1744
Pencil-sharpener	C. E. Cousy	572,868	Dec. 8	1359	322	77	1557
Pencil-sharpener	L. A. Stough	570,617	Nov. 3	340	84	77	701
Pencil-sharpener	T. Waring	573,731	Dec. 22	2965	709	77	1894
Pencil-sharpener	W. H. White	569,698	Oct. 20	1754	410	77	356
Pencil sharpener. Slate-	L. P. Spencer	570,570	Nov. 3	258	64	77	698
Pencil-tip. Combination	G. E. Eggert	570,348	Oct. 27	2696	641	77	549
Perforating device	B. P. Flood	569,187	Oct. 13	804	188	77	169
Perforating machine. Document-	C. Heath	571,365	Nov. 17	1672	396	77	993
Permutation-lock	I. W. Moore	568,864	Oct. 6	262	61	77	51
Petroleum for removing sulfur compounds. Treatment of	H. Frasch	572,676	Dec. 8	1032	.....	77	1495
Petroleum-motors. Apparatus for regulating temperature of combustion-chambers and vaporizers of	E. Capitaine	572,499	Dec. 1	720	171	77	1415
Phonographs, &c. Spring-motor for	F. L. Cappa	570,378	Oct. 27	2964	703	77	598
Photographer's press	T. H. McCollin	569,761	Oct. 20	1849	438	77	376
Photographs in relief. Producing	T. C. Marceau	574,069	Dec. 29	3575	853	77	2021
Photographs. Revolving stand for	B. Epstein	573,968	Dec. 29	3399	814	77	1988
Photographic-card drier	N. H. Reed	570,338	Oct. 27	2900	688	77	566
Photographic dark room. Portable	W. T. Ferguson	571,085	Nov. 10	1195	281	77	889
Photographic films. Pack of	J. T. Clarke	571,470	Nov. 17	1843	439	77	1024
Photographic finder	A. C. Mercer	572,173	Dec. 1	139	33	77	1304
Photographic mounts. Manufacturing	J. W. McCabe	569,510	Oct. 13	1366	320	77	274
Photographic paper. Sensitive	F. H. Csiszár	574,059	Dec. 29	3558	.....	77	2018
Photographic-plate holder	M. Flammang and F. Moniot	571,855	Nov. 24	2531	599	77	1170
Photographic-plate lifter	S. C. Smith	572,663	Dec. 8	1010	244	77	1490
Photographic-printing frame	A. C. Moore and S. McLaughlin	573,521	Dec. 22	2567	609 / 610	77	1817
Photographic prints. Forming	S. P. Sampolo and C. L. A. Brasseur	571,314	Nov. 10	1587	377	77	963
Photographic purposes. Flash-light apparatus for	H. E. Rathbun and F. Bebby	572,718	Dec. 8	1116	270	77	1510
Photographic retoucher	S. G. Bradford	571,642	Nov. 17	2142	514	77	1078
Photographic shutter	J. A. Robertson	574,113	Dec. 29	3653	872	77	2035
Photographic shutter	A. E. Younger	573,953	Dec. 29	3354	804	77	1981
Photographic shutter. Automatic	P. L. Wilkerson	573,499	Dec. 22	2538	601	77	1812
Photographic vignetter	W. Eddowes	572,928	Dec. 8	1474	354	77	1581
Photography. Apparatus for setting type and signs by means of	E. Porzsolt	568,988	Oct. 6	477	108	77	91
Photography. Manufacture of mineral colors for ceramic	G. J. Atkine	572,095	Dec. 1	3	.....	77	1279
Phragmite structure	H. M. Van Etten	568,930	Oct. 6	359	83	77	69
Piano	W. A. Byrne	571,106	Nov. 10	1246	289 / 290	77	898
Piano action. Upright-	W. Munroe	570,041	Oct. 27	2316	550	77	477
Piano attachment	J. H. Moyer	573,474	Dec. 22	2496	591	77	1805
Piano. Automatic	E. H. White and W. D. Parker	573,427	Dec. 15	2399	572	77	1769
Piano. Electrical self-playing	G. H. Davis	570,911	Nov. 10	895	208	77	833
Pianoforte	J. H. Clark	571,645	Nov. 17	2145	515	77	1079
Piano. Grand	J. Herrburger	571,163	Nov. 10	1338	312	77	916
Piano-pedal	K. Schulze	572,316	Dec. 1	413	98	77	1357
Piano-resonator	F. L. Goulvin	572,981	Dec. 15	1576	378	77	1616
Piano sounding-board	J. H. Butler	570,153	Oct. 27	2522	598	77	516
Piano sounding-board	W. H. Howe	572,897	Dec. 8	1401	339	77	1566
Piano string-bearing	J. Schnorr	572,032	Nov. 24	2841	669	77	1229
Piano. Upright	J. Diehl	570,787	Nov. 3	669	153	77	761
Pick	C. E. Barker	572,856	Dec. 8	1344	324	77	1554
Pick holder	A. G. Mahler	570,321	Oct. 27	2874	682	77	561
Picks, &c. Eye-forming machine for	C. Rossman	573,109	Dec. 15	1796	433	77	1660
Picker: *See* Cotton-picker. Slate-picker.							
Picker-stick check	T. Mooney	569,880	Oct. 20	2036	485	77	411
Picture and picture-hook hanger	G. W. Willard	573,945	Dec. 29	3336	797	77	1977
Picture-hanger	A. Siddall	571,698	Nov. 17	2234	537	77	1096
Picture-matting cutter	W. H. Murdoch	571,677	Nov. 17	2195	528	77	1088

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Picture or mirror frame holder. Adjustable	S. L. Young and J. A. Norris	568,826	Oct. 6	191	46	77	38
Pile-driver	J. A. Spangler	569,435	Oct. 13	1234	289 / 290	77	250
Pile fabric	A. Webb, G. M. Whittall, and F. B. Fawcett	573,118	Dec. 15	1811	436	77	1663
Piles from aqueous insects. Means for protecting	H. Gallinowsky	571,654	Nov. 17	2157	518	77	1081
Pin: *See* Crank-pin. Safety-pin. Dowel-pin. Upholstering-pin. Hair-pin. Waist and skirt pin. Hat-pin.							
Pin-and-catch device	W. H. Strecker and A. D. Moore	569,393	Oct. 13	1166	277	77	238
Pincushion	J. McCartney	571,169	Nov. 10	1344	314	77	917
Pin-fastening	C. A. Worrall	572,144	Dec. 1	89	19	77	1295
Pipe: *See* Stand-pipe. Train-pipe. Tobacco-pipe.							
Pipe and nut wrench. Combined	T. Dixon	569,037	Oct. 6	554	128	77	106
Pipe-clamp	F. Anderson	570,975	Nov. 10	999	232	77	853
Pipe-cleaner	W. C. and W. D. Culver	569,371	Oct. 13	1132	270	77	232
Pipe-cleaner	A. P. Rumely	572,724	Dec. 8	1129	272	77	1512
Pipe connection	W. Smith	569,247	Oct. 13	921	220	77	191
Pipe connection. Universal-joint	E. J. Knapp	574,249	Dec. 29	3949	939	77	2087
Pipe-cores. Making	A. H. McNeal	570,708	Nov. 3	537	124	77	733
Pipe-coupling device. Automatic	W. E. Crowson	571,216	Nov. 10	1416	331	77	930
Pipe-cutter	W. Haas	570,751	Nov. 3	615	142	77	751
Pipe-cutter. Inside	R. Herbers	572,203	Dec. 1	183	45	77	1313
Pipe-finishing apparatus	J. M. Bailey	569,014	Oct. 6	516	118	77	98
Pipe-fitter's combination-tool	D. Kritcher and C. Weinstein	570,934	Nov. 10	937	218	77	842
Pipe-hanger	B. W. Grist	569,755	Oct. 20	1842	437	77	375
Pipe-joint. Electrically-welded	A. H. and I. C. Matatall	569,836	Oct. 20	1968	468	77	399
Pipe-joint. Flexible	A. P. Jergusen and W. W. Hunt	570,405	Oct. 27	3023	716	77	609
Pipe-nipples. Tool for holding	T. Schulze	570,233	Oct. 27	2668	634	77	544
Pipe-nipples. Tool for holding	S. S. Sergeant	569,431	Oct. 13	1224	287	77	248
Pipe or tubing corrugating machine	N. E. Smith	573,491	Dec. 22	2525	598	77	1809
Pipe-patch	J. and G. Thomson	571,413	Nov. 17	1745	416	77	1006
Pipe pattern. Iron-	G. S. Beith	570,368	Oct. 27	2950	700	77	596
Pipe-plate	T. B. Nuttall	572,767	Dec. 8	1202	291	77	1525
Pipe-shears	S. G. Howe	571,725	Nov. 17	2278	547	77	1104
Pipe-testing device	A. F. Jackson	572,757	Dec. 8	1186	285	77	1523
Pipe-wrench	J. H. Pierce	573,999	Dec. 29	3451	826	77	1998
Pipe-wrench	J. T. Wiley and E. E. Boyd	568,966	Oct. 6	430	95	77	83
Pipe wrench and cutter. Combined	H. C. Atkinson	569,533	Oct. 13	1399	331	77	280
Pipes. Adjustable outlet-gate for ventilating-	J. McCreery	574,104	Dec. 29	3638	869	77	2032
Pipes. Clear-out for soil-	F. Hooper	572,114	Dec. 1	34	8	77	1284
Pipes containing fluid under pressure. Expansion or telescopic joint for	J. P. Burnham	571,337	Nov. 17	1628	396	77	985
Pipes. Device for preventing accumulation of air in pressure-	J. W. Hartman	571,364	Nov. 17	1670	396	77	992
Pipes having bell ends. Making joints for	G. Lehlbach	572,901	Dec. 8	1406	341	77	1567
Pipes. Jacket for steam-	J. D. H. Reimer	568,989	Oct. 6	480	109	77	91
Pistol. Magazine-	P. B. Latrige	573,338	Dec. 15	2220	530	77	1735
Pistols or revolvers. Stock and barrel extension for	G. B. Pittavino	570,145	Oct. 27	2509	595	77	514
Pistol. Recoil magazine	H. Borchardt	571,260	Nov. 10	1493	351 / 352	77	944
Piston. Steam-engine	E. J. Armstrong	569,532	Oct. 13	1398	330	77	280
Pitcher. Molasses-	S. P. Brown	573,759	Dec. 22	3003	711	77	1901
Pitcher or other vessel	J. Putnam	569,351	Oct. 13	1101	261	77	227
Pitchers, &c. Foot for	W. McAusland	570,325	Oct. 27	2879	684	77	582
Pitching apparatus	M. Guethler	573,818	Dec. 22	3098	736 / 737	77	1919
Planetarium	J. M. Chaney	573,137	Dec. 15	1851	446	77	1669
Planimeter	A. C. Lippincott	569,107	Oct. 6	668	155	77	127
Planing and resawing machine	G. Lhote	569,288	Oct. 13	982	236	77	203
Planing-machine	G. Gocher and J. D. Schrecongost	574,146	Dec. 29	3714	885	77	2045
Planing or molding machine	F. R. Patch	572,443	Dec. 1	629	149	77	1397
Planter	J. W. Stancil	569,891	Oct. 20	2058	489 / 490	77	415
Planter check-row attachment. Corn-	E. Krick	569,209	Oct. 13	849	200	77	178
Planter. Check-row corn-	F. Gunther	570,474	Nov. 3	61	15	77	649
Planter. Corn-	C. Florence	570,847	Nov. 3	780	178	77	784
Planter. Corn-	G. D. Haworth	572,543	Dec. 8	792	189 / 190	77	1444
Planter drilling attachment. Corn-	R. Murchison	574,208	Dec. 29	3875	923	77	2073
Planter. Pea-	R. E. Dunham	572,876	Dec. 8	1373	333	77	1560
Planter. Hand-	J. F. Ganson	571,614	Nov. 17	2094	503	77	1069
Planter. Hand corn-	U. Shaeffer	571,935	Nov. 24	2684	635	77	1201
Planter. Potato-	T. Bidelman	569,948	Oct. 20	2165	513 / 514	77	435
Planter. Potato-	M. L. Manley	574,037	Dec. 29	3517	840	77	2009
Planter. Potato-	J. W. Underhill	573,054	Dec. 15	1703	408	77	1642
Planting-machine	W. E. Cheeseman	570,905	Nov. 10	884	206	77	831
Plants. Inoculation of the soil for cultivating leguminous	F. Nobbe and L. Hiltner	570,813	Nov. 3	713	.....	77	770
Plants. Reduction of pithy	M. W. Marsden	572,091	Nov. 24	2996	703	77	1256
Platform: *See* Hoisting and dumping platform.							
Platform and gang-plank. Combined	J. A. Powell	571,497	Nov. 17	1697	452	77	1023
Plating apparatus	J. T. Morrow	569,722	Oct. 20	1780	423	77	365
Pliers. Parallel-jaw	A. Schatz	571,021	Nov. 10	1061	253	77	868
Plow	J. Fouche	568,942	Oct. 6	384	87	77	74
Plow	R. H. Purnell	572,028	Nov. 24	2830	667	77	1227
Plow	S. P. Richmond	571,688	Nov. 17	2211	532 / 533	77	1091

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Plow	S. G. Sevier	570,822	Nov. 3	728	167	77	773
Plow	W. Stephens	573,368	Dec. 15	2268	541	77	1745
Plow	C. E. White	571,421	Nov. 17	1759	419	77	1009
Plow attachment	J. N. Cocks	573,504	Dec. 22	2545	603	77	1813
Plow attachment	W. H. McMullen	574,211	Dec. 29	3880	924	77	2074
Plow attachment	H. White	571,466	Nov. 17	1835	437	77	1023
Plow attachment. Sulky	J. Q. Mann	569,291	Oct. 13	969	237	77	204
Plow-fender	A. G. W. Foster	571,223	Nov. 10	1428	334	77	932
Plow-point	F. A. Martin	570,673	Nov. 3	476	111	77	727
Plow. Reversible	E. J. Lotze	573,824	Dec. 22	3123	743, 744	77	1824
Plow. Rotary	J. H. Frost	569,630	Oct. 20	1595	376, 377	77	332
Plow. Subsoil	F. D. Tucker	570,192	Oct. 27	2501	615	77	529
Plow. Swivel	C. M. Lufkin	570,177	Oct. 27	2563	610	77	525
Plows. Adjustable landside-shoe for	F. E. Werntz	574,293	Dec. 29	4022	955	77	2101
Plug	D. L. McCorkindale	572,365	Dec. 1	496	116	77	1372
Plumb-support	J. H. Weir	572,390	Dec. 1	555	131	77	1383
Plumbing system	T. S. and W. P. Coleman	570,455	Nov. 3	27	6	77	643
Pneumatic-despatch apparatus	S. W. Barr	570,421	Oct. 27	3052	723	77	615
Pneumatic-despatch apparatus	E. A. Fordyce	570,160	Oct. 27	2534	601, 602	77	518
Pneumatic-despatch apparatus	E. A. Fordyce	570,161	Oct. 27	2536	602	77	519
Pneumatic-despatch tube	C. F. Pike	573,037	Dec. 15	1666	400	77	1635
Pneumatic tool	C. B. Albree	572,324	Dec. 1	424	100	77	1360
Pocket-book frame and catch	G. Havell	572,931	Dec. 8	1478	355	77	1582
Pocket-knife	G. Gardner	569,452	Oct. 13	1259	296	77	254
Poison-distributer	W. H. Norton	572,907	Dec. 8	1421	342, 343	77	1571
Poke. Animal	W. H. Parker	568,873	Oct. 6	277	64	77	53
Poke. Animal	A. L. Simmons	571,984	Nov. 24	2765	652	77	1216
Pole and coupling. Vehicle	J. Imler	570,020	Oct. 27	2282	542	77	469
Pole for separators. Extensible	J. B. Bartholomew	574,297	Dec. 29	4027	956	77	2102
Pole-socket	J. H. Stevenson	572,778	Dec. 8	1221	296	77	1529
Polishing-machine	R. W. Jessup and F. H. Wheelan	570,639	Nov. 3	408	97	77	713
Polishing or finishing machine	H. Smith	569,843	Oct. 20	1979	470, 471	77	401
Portable elevator	W. J. Patterson and E. W. Heyl	573,913	Dec. 29	3276	783, 784	77	1967
Post: *See* Fence-post. Lamp-post. Hitching-post.							
Post-brace	H. A. Hill	568,948	Oct. 6	396	89	77	76
Post-winder and wire-fastener	C. L. Etheridge	573,771	Dec. 22	3021	716	77	1905
Potassium bitartrate. Making	H. T. Jarrett	572,345	Dec. 1	451	.....	77	1364
Potato-cutter	S. Mikami	573,099	Dec. 15	1782	428	77	1657
Potato-cutter	L. Sternberg	573,551	Dec. 22	2622	622	77	1828
Potato-digger	E. R. Allen	574,128	Dec. 29	3685	878	77	2040
Potato-digger	L. Frederickson	572,885	Dec. 8	1396	336	77	1563
Potato-digger	E. B. Frink	572,886	Dec. 8	1397	336	77	1563
Potato-digger	H. M. Grover	572,511	Dec. 1	742	177	77	1418
Potato-digger	J. C., R. J., and J. W. Hannah	569,787	Oct. 20	1694	449	77	384
Potato-digger	H. L. Long	572,646	Dec. 8	980	236	77	1484
Potato-digger	W. and J. Reuther	572,567	Dec. 8	840	202	77	1457
Potato-digger	G. W. M. Shearer	573,798	Dec. 22	3061	725	77	1912
Potatoes or onions. Machine for grading	G. W. Snyder	570,305	Oct. 27	2848	675, 676	77	576
Pots or kettles. Casing or shield for	N. P. Duncan	571,829	Nov. 24	2483	589	77	1162
Powder: *See* Smokeless powder.							
Powder-distributer	C. M. Arthur	571,145	Nov. 10	1311	305	77	910
Powder-distributers. Discharge-spout for	C. H. Leggett	568,776	Oct. 6	111	27	77	23
Powder. Machine for shaping smokeless	F. G. Du Pont	569,669	Oct. 20	1659	392, 393	77	344
Powder-mixing device	O. Millard	573,473	Dec. 22	2495	591	77	1804
Powder-papers. Holder for	C. Dickinson	571,041	Nov. 10	1115	261	77	874
Powder. Smokeless	F. A. Halsey	570,705	Nov. 3	535	.....	77	738
Power: *See* Pump-power. Pumping-power.							
Power-accumulator	M. J. McDonald	569,049	Oct. 6	572	131, 132	77	109
Power-brake	W. Robinson	572,662	Dec. 8	1007	243	77	1490
Power. Means for converting wave motion into	J. B. Clark	571,511	Nov. 17	1922	459	77	1039
Power-transmitting device	C. F. Dinkle	573,768	Dec. 22	3018	715	77	1905
Power-transmitting device	J. S. Nichola	572,816	Dec. 8	1286	309	77	1542
Power-transmitting gear	F. M. Barney	572,593	Dec. 8	889	215	77	1466
Power-transmitting mechanism	G. J. Altham	569,013	Oct. 6	514	117	77	98
Power-transmitting mechanism	H. W. Morgan	568,917	Oct. 6	337	78, 79	77	65
Precious metals from their alkali cyanid solutions. Precipitating	M. Netto	573,233	Dec. 15	2020	.....	77	1700
Precious stones while being polished. Apparatus for manipulating	A. L. Strasburger	569,252	Oct. 13	928	222	77	193
Press: *See* Baling-press. Brick-press. Button-press. Cheese-press. Cider-press. Coining-press. Core-press. Cotter-pin press. Cotton-press. Drawing-press. Filter-press. Hay-press. Hydraulic press. Lead-press. Molding-press. Photographer's press. Printing-press. Seal-press.							
Press-boxes. Link system for oil	J. H. Hubbell	569,920	Oct. 20	2106	501	77	424
Press for extracting oil or other liquids	G. Mitchell	570,491	Nov. 3	102	24, 25	77	657

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Press-rack	J. E. Davis	569,547	Oct. 13	1419	336	77	285
Press-rack	C. Kerr	569,502	Oct. 13	1351	317	77	270
Pressing or ironing board	M. C. Ayer	570,741	Nov. 3	599	137	77	745
Primary battery	S. N. Smith	571,460	Nov. 17	1827	435	77	1022
Primer	J. Gardner	572,888	Dec. 8	1389	336	77	1563
Primer	F. Mohr	573,897	Dec. 29	3253	775	77	1962
Printers' blankets. Apparatus for washing	R. Gemmell and F. Buxton	572,889	Dec. 8	1391	337	77	1564
Printer's chase	E. B. Dewey	572,413	Dec. 1	586	139	77	1390
Printer's chase	H. J. Harding and B. A. Osborn	570,928	Nov. 10	924	214	77	839
Printer's composing-stick	W. H. Golding	571,899	Nov. 24	2623	621	77	1187
Printers' rollers. Apparatus for casting	C. W. Crutsinger	572,744	Dec. 8	1166	280	77	1519
Printing attachment for letter-boxes	B. L. Hargrove	570,994	Nov. 10	1034	242	77	860
Printing, delivering, and recording device. Street-car-transfer	P. M. Knopp	571,485	Nov. 17	1867	446, 447	77	1028
Printing device	C. B. Kies	573,003	Dec. 15	1611	387	77	1624
Printing from collotype or albertype plates. Machine for	W. S. Huson	573,596	Dec. 22	2704	641, 642	77	1845
Printing linoleum or floor-cloth, &c. Machine for	T. Dale	573,965	Dec. 29	3386	810, 811, 812, 813	77	1986
Printing-machine	G. W. Heene	569,826	Oct. 20	1952	464, 465	77	396
Printing-machine	H. J. Heimberger	568,904	Oct. 6	316	73	77	61
Printing-machine	J. G. Hoyt	573,595	Dec. 22	2703	641	77	1845
Printing-machine	W. Scott	571,982	Nov. 24	2761	651, 652	77	1215
Printing-machine	E. P. Sheldon	572,225	Dec. 1	232	55, 56	77	1322
Printing-machine	W. H. R. Toye	571,415	Nov. 17	1748	417	77	1006
Printing-machine	H. A. W. Wood	571,850	Nov. 24	2523	597, 598	77	1169
Printing-machine and its tympan. Sheet-perfecting	L. C. Crowell	573,393	Dec. 15	2308	551, 552	77	1752
Printing-machine for duplicating type-written work	G. P. Van Wye	571,028	Nov. 10	1090	254	77	870
Printing-machine tripping-motion	S. D. Tucker	573,425	Dec. 15	2390	569, 570, 571	77	1768
Printing-machines, &c. Ringed roller for	G. F. McAdams	570,226	Oct. 27	2654	630	77	542
Printing or other machines. Toothed rack for	C. P. Cottrell	574,195	Dec. 29	3843	917	77	2067
Printing or other machines. Toothed rack for	C. P. Cottrell	574,196	Dec. 29	3844	917	77	2067
Printing or ruling on paper or metal. Apparatus for	A. Tessaro	569,845	Oct. 20	1984	472, 473, 474	77	402
Printing-plate-inking machine	J. P. Stevens	573,552	Dec. 22	2622	623, 624	77	1822
Printing-press	H. F. Bechman	569,081	Oct. 6	625	142, 143, 144	77	119
Printing-press	G. P. Fenner	572,478	Dec. 1	679	163	77	1408
Printing-press	B. Huber	571,089	Nov. 10	1203	282	77	891
Printing-press	R. Miehle	574,206	Dec. 29	3863	921	77	2071
Printing-press	R. Miehle	574,207	Dec. 29	3866	921, 922	77	2071
Printing-press	L. W. Southgate	569,434	Oct. 13	1229	288, 289	77	249
Printing-press	H. A. W. Wood	569,310	Oct. 13	1029	245	77	212
Printing-press feed attachment	C. S. Sinclair	571,699	Nov. 17	2234	537, 538	77	1095
Printing-press feed-gage	E. L. Megill	571,782	Nov. 24	2400	573	77	1147
Printing press. Job	H. Johnson	573,413	Dec. 15	2339	559	77	1758
Printing-press. Platen	F. A. Burnham	572,405	Dec. 1	577	137	77	1388
Printing-press strip-feeding attachment	G. O. Goddard	572,793	Dec. 8	1248	302	77	1534
Printing press. Web	G. W. Turner	572,283	Dec. 1	343	82, 83	77	1345
Printing-surfaces. Producing celluloid rollers with	H. Ziegler-Reinacher	573,564	Dec. 22	2646	629	77	1833
Printing wall-paper	H. W. Sanderson	569,237	Oct. 13	902	216	77	188
Projectile and firing same. Explosive	J. K. Bakewell	572,400	Dec. 1	570	135	77	1386
Projectile and firing same. Explosive	J. K. Bakewell	572,401	Dec. 1	572	135	77	1387
Projectile and gun for throwing same	L. Gathmann	569,191	Oct. 13	813	190	77	171
Projectile and gun for throwing same. High-explosive	L. Gathmann	569,190	Oct. 13	812	190	77	171
Projectile. Armor-piercing	I. G. Johnson	571,195	Nov. 10	1385	323	77	924
Projectile. Armor-piercing	C. Y. Wheeler	569,143	Oct. 6	730	171	77	139
Projectile-coating	C. Y. Wheeler	573,120	Dec. 15	1816	.....	77	1663
Projectile. Explosive	C. E. Scribner	571,909	Nov. 24	2639	625	77	1190
Projectile. High-explosive	G. Gustave	574,061	Dec. 29	3560	850	77	2018
Propeller	A. L. Kraus	574,096	Dec. 29	3628	867	77	2030
Propeller	W. M. Tucker	571,628	Nov. 17	2120	508	77	1074
Propeller	F. Wittram	573,562	Dec. 22	2645	629	77	1833
Propeller blades. Means for adjusting screw	H. Brinkmann	571,745	Nov. 24	2338	558, 559	77	1134
Propeller-governor	G. D. Turner and G. W. Cummings	573,116	Dec. 15	1807	436	77	1662
Propeller. Screw	G. W. Hubbard	573,977	Dec. 29	3417	819	77	1991
Propeller-shaft for marine engines	D. B. Morison	569,116	Oct. 6	678	159	77	129
Propeller-wheel	E. J. Parker	573,351	Dec. 15	2240	516	77	1739
Propelling apparatus. Boat	J. F. Bliss	568,831	Oct. 6	196	47	77	39
Propelling attachment. Boat	S. N. Smith	570,613	Nov. 3	329	81, 82	77	699
Propelling canal-boats, &c. Means for	S. W. Balch	569,400	Oct. 13	1176	279	77	240
Propelling mechanism. Boat	J. H. McDonald	573,522	Dec. 22	2570	610	77	1818
Propelling vessels. Device for	J. Bond	569,951	Oct. 20	2171	515	77	416
Propulsion of vessels	J. H. Mosley	571,127	Nov. 10	1287	298, 299	77	906
Protector: *See* Tree-protector.							
Protractor	W. W. Pennington	570,767	Nov. 3	640	147	77	755

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Pruning, clipping, and holding implement. Combined.	R. Jacks	569,284	Oct. 13	977	234	77	202
Pruning implement	H. C. Lowe and F. C. Gandee	573,339	Dec. 15	2221	531	77	1736
Pull-rod-bending apparatus	T. G. Laney	569,927	Oct. 20	2117	504	77	426
Puller: *See* Spike or bolt puller. Stump-puller.							
Pulley	E. L. Babcock	569,850	Oct. 20	1994	476	77	403
Pulley-block	O. M. Mowat	572,766	Dec. 8	1201	290	77	1525
Pulley-block. Friction	E. R. Wethered	573,739	Dec. 22	2977	704	77	1896
Pulley. Sling	F. Thompson	573,248	Dec. 15	2043	490	77	1705
Pulley. Wood	H. C. Crowell	570,909	Nov. 10	892	207	77	833
Pulp grinder. Wood	A. D. Schaeffer and C. H. Dale	572,572	Dec. 8	850	204	77	1459
Pulp. Preparing wood chips for making	N. M. Jones and R. Talbot	573,931	Dec. 29	3423	820	77	1992
Pulping apparatus	C. W. Roberts	571,019	Nov. 10	1079	251, 252	77	867
Pulverizing and mixing machine	H. S. Albrecht	571,588	Nov. 17	2049	488, 489	77	1060
Pump	M. T. Chapman	573,860	Dec. 29	3190	759, 760	77	1950
Pump	M. T. and M. C. Chapman	572,959	Dec. 15	1536	368	77	1608
Pump	B. S. Church	568,742	Oct. 6	47	11, 12	77	12
Pump	W. Clarkson	572,962	Dec. 15	1547	371	77	1611
Pump	H. Jones	572,260	Dec. 1	292	70	77	1335
Pump	K. A. Klose	568,909	Oct. 6	325	75	77	62
Pump	D. Lippy	574,251	Dec. 29	3952	939	77	2088
Pump	D. Lippy	574,252	Dec. 29	3953	940	77	2088
Pump	W. I. Phifer	571,929	Nov. 24	2671	633	77	1197
Pump	J. Stumpf	571,702	Nov. 17	2240	539	77	1097
Pump	H. D. B. Williams	572,782	Dec. 8	1233	298	77	1531
Pump attachment. Antifreezing	D. F. Humphreys	570,284	Oct. 27	2763	657	77	562
Pump. Centrifugal	C. McIntyre	569,655	Oct. 20	1639	387	77	341
Pump. Centrifugal	C. McIntyre	569,656	Oct. 20	1641	388	77	341
Pump check and relief valve	G. H. Reynolds	571,887	Nov. 24	2591	614, 615	77	1182
Pump cleaner. Beer	J. J. Geiger	572,631	Dec. 8	956	231	77	1480
Pump controller. Electric	F. W. Merritt	571,600	Nov. 17	2067	496	77	1064
Pump. Direct-acting	J. B. Crocker	571,751	Nov. 24	2351	562	77	1136
Pump. Double-acting	H. M. Wyeth	570,528	Nov. 3	163	40	77	668
Pump. Double-acting submerged force	H. D. B. Williams	572,783	Dec. 8	1234	298	77	1531
Pump. Double-action force	A. Scholl	568,800	Oct. 6	151	35	77	31
Pump. Feed	J. Grubinski	573,085	Dec. 15	1760	423	77	1652
Pump for domestic water systems	E. Neff	571,680	Nov. 17	2199	530	77	1089
Pump for raising and measuring liquids	E. Capitaine	573,641	Dec. 22	2804	664	77	1865
Pump. Force and lift	J. L. Lefebvre and C. S. Upton	569,047	Oct. 6	569	131	77	108
Pump governor. Boiler-feed	G. H. Immendorf and A. H. Engstrom.	571,834	Nov. 24	2493	590, 591	77	1164
Pump governor. Tank	G. H. Immendorf and A. H. Engstrom.	569,134	Oct. 6	716	168	77	136
Pump. Hydraulic	W. Clarkson	572,963	Dec. 15	1549	371	77	1611
Pump. Hydraulic	W. Clarkson	572,964	Dec. 15	1551	371, 372	77	1611
Pump or engine. Hydraulic compensating	A. E. Cutler and R. Donkin	569,091	Oct. 6	645	147, 148, 149	77	124
Pump. Pneumatic	W. F. Browne	570,372	Oct. 27	2955	701	77	597
Pump-power	S. M. Fulton and A. T. Ames	571,086	Nov. 10	1199	281	77	890
Pump power attachment	A. G. Newman and J. A. Johnson, Jr.	573,525	Dec. 22	2575	611	77	1819
Pump-regulator. Automatic	J. C. Sterns	570,968	Nov. 10	989	230	77	851
Pump. Rotary	J. M. Allen	572,082	Nov. 24	2959	696	77	1251
Pump. Rotary	J. N. Espegren	571,756	Nov. 24	2359	564	77	1138
Pump. Rotary	J. D. Keller	570,643	Nov. 3	415	98	77	715
Pump. Rotary	H. W. Potter	569,350	Oct. 13	1099	261	77	227
Pump-valve	G. Parker	569,884	Oct. 20	2042	486	77	412
Pump valve. Air	N. A. Christensen	572,192	Dec. 1	166	40	77	1310
Pump valve mechanism. Steam	J. L. McGiffin	570,042	Oct. 27	2318	550	77	477
Pump. Wheel	I. T. Dyer	573,580	Dec. 22	2670	633	77	1838
Pumps. Automatic drain for	M. R. Turner	568,817	Oct. 6	176	42	77	35
Pumps. Safety-valve for mercurial air	C. E. Scribner	571,908	Nov. 24	2638	625	77	1190
Pumping-jack	T. G. Laney	569,926	Oct. 20	2115	503	77	426
Pumping-machine. Horse-power	F. H. M. Davis	571,993	Nov. 24	2776	655, 656	77	1218
Pumping power	G. M. Carter, J. H. and C. L. Drew	571,611	Nov. 17	2089	501, 502	77	1068
Punch. Canceling	E. H. Murdock	571,881	Nov. 24	2579	610	77	1179
Punch. Spring belt	R. W. Pryor and C. Schaetzle	574,164	Dec. 29	3756	896	77	2053
Punch. Ticket	F. P. Becker	572,625	Dec. 8	943	229	77	1477
Punching and riveting machine	W. B. Scaife and G. A. Moeckel	574,173	Dec. 29	3785	903	77	2058
Punching-bag support	H. B. Frazier	571,874	Nov. 24	2563	607, 608	77	1176
Punching from sheets of plastic material. Device for use in	A. C. Estabrook	568,941	Oct. 6	381	86	77	73
Purse	A. Kress	573,332	Dec. 15	2206	527	77	1733
Purse and receptacle. Combined puzzle	W. Gross	572,796	Dec. 8	1253	303	77	1535
Push-button	G. Jepson	574,247	Dec. 29	3948	938	77	2087
Putting-out roll	A. F. Jones	569,136	Oct. 6	718	169	77	137
Puzzle	T. J. Barrett	570,363	Oct. 27	2936	697	77	593
Puzzle	W. S. Bates	569,600	Oct. 20	1541	362	77	322
Puzzle	D. Du Bois	569,863	Oct. 20	2013	480	77	407
Puzzle	W. F. Feldhoff	570,921	Nov. 10	914	212	77	837
Puzzle	H. Giles	569,194	Oct. 13	819	192	77	172
Puzzle	T. Lee	569,106	Oct. 6	667	154	77	127
Puzzle	F. H. Lehman	571,672	Nov. 17	2186	526	77	1087
Puzzle	O. A. Mapel	574,158	Dec. 29	3737	891	77	2049
Puzzle	W. F. Moore	570,762	Nov. 3	633	145	77	754

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Puzzle	J. G. Pegel	574,261	Dec. 29	3966	942	77	2090
Puzzle	E. Segar	572,727	Dec. 8	1137	274	77	1514
Puzzle or game device	W. Gebert	572,701	Dec. 8	1081	263	77	1504
Pyrometer. Recording	E. Brown	571,334	Nov. 17	1622	385	77	984
Pyroxylin compound	J. H. Stevens	572,134	Dec. 1	74	.....	77	1292
Pyroxylin compound	J. H. Stevens	572,135	Dec. 1	76	.....	77	1293
Pyroxylin sheets. Apparatus for producing	J. H. Stevens and M. C. Lefferts	573,928	Dec. 29	3306	790	77	1972
Quartz-mill	F. P. Snow	569,069	Oct. 6	607	138	77	116
Race-starting machine	W. Maxwell	574,205	Dec. 29	3860	920	77	2070
Race-track speeding device	H. G. Wilshire and M. C. Massie	572,080	Nov. 24	2955	695	77	1251
Races. Timing mechanism for	C. A. Newbaker	569,296	Oct 13	1000	239, 240	77	206
Rack: *See* Butcher's tool-rack. Newspaper-rack. Display-rack. Press-rack. Feed-rack. Shoeing-rack. File-rack. Show-rack. Hay and stock rack. Towel-rack. Horseshoeing-rack. Wall-rack.							
Racking-stand for barrels. Knockdown	C. W. Scott, Jr	572,574	Dec. 8	854	205	77	1460
Radiator drainage-valve	W. P. and R. P. Thompson	573,556	Dec. 22	2632	625	77	1830
Radiator-rest	J. F. Gorman	569,916	Oct. 20	2100	500	77	423
Radiator. Steam	A. Eichhorn	569,040	Oct. 6	558	128, 129	77	106
Radiator-support	L. S. Bunker	573,259	Dec. 15	2059	493	77	1707
Rail-bond	H. S. Newton	568,918	Oct. 6	340	79	77	65
Rail-bond	I. B. Walker and L. G. Nilson	572,668	Dec. 8	1017	246	77	1492
Rail-bond. Electric	G. H. Scott	571,888	Nov. 24	2592	615	77	1182
Rail-bonding. Mechanism for locating and determining defects in	P. O. Keilholtz	574,333	Dec. 29	4085	970	77	2113
Rail-chair	W. Campbell	571,064	Nov. 10	1151	269	77	882
Rail. Compound tramway	W. Towler	571,709	Nov. 17	2255	541	77	1099
Rail-joint	C. W. Dehn	569,036	Oct. 6	553	127	77	105
Rail-joint	L. R. Shockley	569,066	Oct. 6	602	137	77	115
Rail-joint	M. W. Wambaugh	570,618	Nov. 3	341	84, 85	77	701
Rail lock and support	W. B. Cook, C. R. Stout, and R. S. Morris.	570,003	Oct. 27	2259	537	77	465
Rail-support	W. B. Potter	571,454	Nov. 17	1811	433	77	1019
Rail-support	W. B. Potter	571,455	Nov. 17	1812	433	77	1019
Railway. Aerial	I. M. de Oca y Melian	569,468	Oct. 13	1281	302	77	258
Railway-alarm	F. P. Rosback	570,058	Oct. 27	2344	556	77	482
Railway and leveling same	M. Sheahen	568,879	Oct. 6	284	65	77	54
Railway-brake equalizing device	J. A. Markley	573,677	Dec. 22	2875	678, 679	77	1877
Railway. Combined electric and gravity pleasure	J. A. Griffiths	572,111	Dec. 1	26	7	77	1283
Railway connection-rods. Guide-bearing for	W. Smith	572,384	Dec. 1	545	128, 129	77	1382
Railway construction. Electric	G. Westinghouse	573,066	Dec. 15	1721	413	77	1645
Railway cross-tie	J. C. Barton	571,329	Nov. 17	1614	384	77	982
Railway cross-tie	A. Bidwell	571,316	Nov. 10	1591	377	77	964
Railway-crossing	W. R. Cochran, Jr	570,542	Nov. 3	193	51	77	673
Railway-crossing	D. Collen	571,215	Nov. 10	1413	331	77	939
Railway-crossing	D. Grublkey	572,702	Dec. 8	1082	263	77	1504
Railway-crossing	A. Lavoie	573,011	Dec. 15	1624	390	77	1626
Railway-crossing	E. J. Tague	574,285	Dec. 29	4013	952	77	2099
Railway-crossing	W. C. Wood	573,747	Dec. 22	2989	708	77	1899
Railway-crossing safety apparatus	G. Gibbs	569,709	Oct. 20	1758	418	77	360
Railway-crossing safety apparatus	G. Gibbs	570,089	Oct. 27	2415	572	77	496
Railway-crossings. Electrically-controlled derails for	J. P. Coleman	571,107	Nov. 10	1247	290	77	898
Railway defect-cards. Protector for	G. Fensky	573,324	Dec. 15	2193	525	77	1731
Railway derailing device	G. Gibbs	570,586	Nov. 3	302	74	77	694
Railway-ditcher	W. B. Doddridge	572,875	Dec. 8	1371	332	77	1560
Railway. Electric	A. Gorton	569,331	Oct. 13	1065	252, 253	77	220
Railway. Electric	R. M. Hunter	572,706	Dec. 8	1090	265	77	1505
Railway. Electric	P. W. Leffler	573,819	Dec. 22	3100	737, 738	77	1920
Railway, &c. Electric	P. W. Leffler	573,821	Dec. 22	3108	740, 741	77	1921
Railway, &c. Electric	P. W. Leffler	573,822	Dec. 22	3111	741, 742	77	1922
Railway. Electric	A. Norman	570,328	Oct. 27	2883	685	77	583
Railway. Electric	A. C. O'Connor	573,234	Dec. 15	2021	485	77	1700
Railway. Electric	H. C. Reagan, Jr	570,565	Nov. 3	247	62	77	684
Railway. Electric	J. A. Roche	574,171	Dec. 29	3779	902	77	2057
Railway. Electric	A. Sprague	573,169	Dec. 15	1897	457	77	1678
Railway. Electrical	R. M. Hunter	571,832	Nov. 24	2489	590	77	1163
Railway. Elevated	R. M. Fryer	569,087	Oct. 6	653	151	77	125
Railway frog and crossing	L. F. Braine	570,082	Oct. 27	2398	568, 569	77	493
Railway grip. Cable	L. J. Hirt	570,172	Oct. 27	2555	607, 608	77	523
Railway-rail	W. C. Ferguson	572,534	Dec. 8	779	186	77	1441
Railway-rail and chair or bed	L. S. Proctor	569,388	Oct. 13	1160	276	77	237
Railway-rail bond	B. Jennings	573,980	Dec. 29	3422	820	77	1992
Railway-rail fish-plate and coupling	C. M. Chunn	573,442	Dec. 22	2437	578	77	1794
Railway-rail joint	C. J. Cochran	572,694	Dec. 8	1070	260	77	1502
Railway-rail tie-plate and spike	A. P. Bliven	571,743	Nov. 24	2332	557	77	1133
Railway-rails. Machine for drilling	A. D. Gore	570,427	Oct. 27	3062	725, 726	77	617
Railway-signal	A. Balschun, Jr	570,837	Nov. 3	760	173	77	780
Railway-signal	W. D. Hartz	571,191	Nov. 10	1379	322	77	923
Railway-signal	G. W. Keller	573,414	Dec. 15	2343	559, 560	77	1758

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Railway-signal	B. B. Morgan	572,269	Dec. 1	315	75	77	1339
Railway-signal	A. J. Seifert, A. Bourke, and F. J. Wilken.	570,064	Oct. 27	2364	562	77	486
Railway-signal	J. Wayland	569,263	Oct. 13	942	226	77	195
Railway-signal	J. Wayland	569,264	Oct. 13	943	226	77	195
Railway-signal	J. Wayland	569,265	Oct. 13	945	226	77	196
Railway signal apparatus	B. B. Morgan	572,268	Dec. 1	312	74	77	1339
Railway signal. Electric trolley	H. A. Parrish	569,424	Oct. 13	1217	286	77	247
Railway-signal flagstaff	G. P. Koch	569,094	Oct. 6	532	122	77	101
Railway-signals and point-bolts. Pulley for wires of	A. G. Evans	569,007	Oct. 6	506	114	77	96
Railway-signals. Compensating device for	J. R. and J. W. Jones	572,117	Dec. 1	41	10	77	1286
Railway signaling apparatus. Automatic	J. Forster	569,008	Oct. 6	507	114, 115	77	96
Railway. Single-wire electric	J. C. Henry	569,827	Oct. 20	1934	465	77	396
Railway-spike	E. E. Knight	570,601	Nov. 3	313	77	77	697
Railway-station signal	A. A. Sprague	573,047	Dec. 15	1693	405	77	1640
Railway street-sprinkler	J. R. and J. B. Gathright	570,990	Nov. 10	1024	239, 240	77	857
Railway street-sprinkler	J. R. and J. B. Gathright	570,991	Nov. 10	1026	240	77	858
Railway-switch	C. I. Bisbing	569,949	Oct. 20	2167	514	77	436
Railway-switch	G. A. Bursch	569,612	Oct. 20	1561	366	77	326
Railway-switch	L. S. Lewis	571,674	Nov. 17	2189	527	77	1087
Railway-switch	J. L. McCann	569,653	Oct. 20	1636	387	77	340
Railway-switch	D. H. McClelland	573,477	Dec. 22	2300	592, 593	77	1805
Railway-switch	C. H. and W. H. Sturgis	569,034	Oct. 6	549	126	77	105
Railway-switch	J. L. Wagner	569,730	Oct. 20	1790	425	77	367
Railway-switch. Automatic	H. H. Fröland	568,844	Oct. 6	215	51	77	43
Railway switch. Electric	S. A. Mustain	573,344	Dec. 15	2226	533	77	1737
Railway-switch. Electrically-actuated	R. M. Hunter	572,169	Dec. 1	131	31	77	1302
Railway-switch-operating mechanism	J. Geesler	574,319	Dec. 29	4058	964	77	2108
Railway-switch safety appliance	J. C. Stuart	573,494	Dec. 22	2528	599	77	1810
Railway switch. Single-rail	E. Langen	569,972	Oct. 20	2200	523	77	441
Railway-switch stand	T. E. Calvert	568,938	Oct. 6	375	85	77	73
Railway-switch. Stationary	M. S. Pittman	568,957	Oct. 6	412	92	77	78
Railway-switches. Device for operating	J. A. Marsh	571,006	Nov. 10	1055	246	77	863
Railway switching apparatus	A. E. Finley	570,988	Nov. 10	1020	238	77	857
Railway switching device	J. R. Flagg and C. E. Lilly	569,751	Oct. 20	1833	435, 436	77	374
Railway system	G. D. Baldwin	570,447	Nov. 3	6	2	77	640
Railway system. Bitransit	B. F. Carpenter	570,451	Nov. 3	12	4	77	641
Railway system. Electric	G. J. Forrey	571,435	Nov. 17	1785	426, 427	77	1014
Railway system. Electric	B. E. Osborn	573,033	Dec. 15	1656	398	77	1633
Railway system. Electric	B. R. Shover and F. P. Townsend	569,432	Oct. 13	1227	288	77	249
Railway-tie	C. A. T. Peters	569,469	Oct. 13	1283	302	77	258
Railway-tie. Metallic	J. S. Mitchell	572,437	Dec. 1	621	147	77	1396
Railway time-signal	R. T. Bowne	569,953	Oct. 20	2174	516	77	437
Railway time-signal	A. A. Lehmann	569,974	Oct. 20	2202	523, 524	77	442
Railway-track bed	O C. Newsom	574,106	Dec. 29	3640	870	77	2032
Railway-track cleaner	G. E. Turner	573,842	Dec. 22	3148	750	77	1929
Railway-track gage	D. H. Rhodes	569,587	Oct. 13	1514	357	77	302
Railway-trains. Electric signal-operating device for	G. F. and F. K. Singer	573,716	Dec. 22	2940	695	77	1889
Railway-wagons. Automatic ball-coupling for	H. Oberlaeuter	571,682	Nov. 17	2203	531	77	1090
Railway with suspended vehicle. Elevated	W. Feldmann	574,316	Dec. 29	4055	963	77	2108
Railways. Apparatus for increasing adhesion of driving-wheels of motor-vehicles for	W. Feldmann	573,772	Dec. 22	3022	716	77	1905
Railways. Apparatus for preventing collisions on electric	B. C. Tilghman, Jr	573,496	Dec. 22	2531	600	77	1811
Railways, &c. Automatic system of distribution and control for electric	W. H. Cooley	573,645	Dec. 22	2810	666	77	1866
Railways. Lock-and-block signaling on	W. R. Sykes, Jr., and J. P. O'Donnell	568,993	Oct. 6	486	110	77	93
Railways. Magnetic path for underground electric	H. C. Reagan, Jr	570,566	Nov. 3	251	63	77	684
Railways. Mechanism for cable	L. J. Hirt	570,635	Nov. 3	400	95	77	712
Railways. Return-circuit for electric	G. Kapp	570,599	Nov. 3	310	76	77	696
Railways. Safety apparatus for street or other	F. Dowd	572,971	Dec. 15	1560	374, 375	77	1613
Railways. Underground electric power system for	W. L. King	572,013	Nov. 24	2808	692	77	1223
Raisin-seeder	S. B. Bliss	572,858	Dec. 8	1347	324	77	1555
Raisin-seeder	A. J. Smith	572,075	Nov. 24	2948	694	77	1249
Rake: *See* Hay-rake.							
Rake	A. Y. and J. L. McIlroy	569,654	Oct. 20	1638	387	77	341
Rake and fork. Convertible	M. T. Burket	573,135	Dec. 15	1847	445	77	1669
Rake-tooth	C. E. Peabody	573,481	Dec. 22	2506	594	77	1806
Ramming machine. Road	A. D. Buchanan	569,573	Oct. 13	1487	350	77	296
Range-boiler	R. M. Wilson	573,746	Dec. 22	2988	707	77	1898
Range-shield	H. J. Phillips	572,715	Dec. 8	1111	269	77	1509
Rasp	W. Shaw	570,511	Nov. 3	134	33	77	663
Ratchet-drill	M. M. Watkins	570,973	Nov. 10	997	231	77	852
Ratchet-wrench	E. T. Warn	573,732	Dec. 22	2967	702	77	1894
Razor attachment	M. S. Jacobson	570,598	Nov. 3	309	76	77	696
Razor-strop	G. C. Blasdell	572,784	Dec. 8	1236	299	77	1532
Razor-strop	C. A. Worrall	572,145	Dec. 1	89	20	77	1295
Reamer. Expansion	J. Singer	569,303	Oct. 13	1019	243	77	210
Reapers and mowers. Antifriction-clip for	F. Barclay	572,402	Dec. 1	573	136	77	1387
Receptacle. Ventilated	W. E. Howell	572,167	Dec. 1	128	30	77	1302
Reclining-chair, cot, or lounge	R. Richards	572,277	Dec. 1	326	78	77	1341
Recorder: *See* Time-recorder.							
Recording apparatus	A. G. H. Oehms	573,478	Dec. 22	2502	593	77	1805
Recording instrument. Automatic	E. L. Miller	568,784	Oct. 6	196	29, 30	77	26
Recording output of machinery. Apparatus for	P. Dillon	571,110	Nov. 10	1251	291	77	899
Reed	J. O. Astenius	572,286	Dec. 1	351	83	77	1346

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Dr'g.	Official Gazette. Vol.	Official Gazette. Page.
Reed for warping	H. Davenport	569,179	Oct. 13	791	185, 186	77	167
Reel: *See* Measure-reel. Wire-reel. Paper-reel.							
Reel	H. A. Guild	569,128	Oct. 6	699	163	77	133
Reel-carrier	K. Morehead	568,916	Oct. 6	336	78	77	64
Reel or hose support	C. W. Ruby	570,819	Nov. 3	725	166	77	773
Reeling-machine for paper or other fabrics	W. H. Waldron	570,355	Oct. 27	2926	695	77	591
Reflecting-screen. Adjustable	P. Keyes	569,503	Oct. 13	1352	318	77	271
Refrigerating machinery	R. J. Cracknell	572,696	Dec. 8	1072	261	77	1502
Refrigerating shipping-crate	M. S. Millard	569,506	Oct. 13	1358	319	77	272
Refrigerator	E. H. Glesy	570,426	Oct. 27	3059	725	77	616
Refrigerator	C. D. Holmes	569,788	Oct. 20	1896	450	77	385
Refrigerator	E. L. Phippe	572,822	Dec. 8	1293	311	77	1543
Refrigerator and counter. Display	H. P. McIntosh	570,043	Oct. 27	2322	551	77	477
Refuse. Apparatus for removal and transportation of	C. A. E. de la Sauce	570,060	Oct. 27	2358	560, 561	77	484
Register: *See* Autographic register. Hot-air register. Passenger-register. Cash-register. Ticket-register.							
Registering apparatus. Nautical	P. Samohod	572,832	Dec. 8	1313	315	77	1547
Registering device	G. A. Phillips	569,348	Oct. 13	1086	260	77	226
Registering device. Bottle	J. H. Ballard	572,329	Dec. 1	432	102	77	1361
Registering figures at distances. Electric apparatus for	M. Arndt	569,598	Oct. 20	1539	361	77	321
Registering-machine	L. E. Allen	573,381	Dec. 15	2288	545, 546	77	1748
Regulator: *See* Damper-regulator. Fluid-pressure regulator. Draft-regulator. Gas-regulator. Electric-motor regulator. Gas-pressure regulator. Heat or draft regulator. Feed-water regulator. Speed-regulator. Watch-regulator.							
Reheating-furnace	W. H. Bailey	571,258	Nov. 10	1489	350	77	943
Rein-guard	C. Jakson	570,097	Oct. 27	2429	576	77	499
Rein-holder	F. E. Barnes	572,148	Dec. 1	93	20, 21	77	1295
Retractor	J. T. R. Roeloffs	569,639	Oct. 20	1974	469	77	400
Revolver safety device	D. B. and J. H. Wesson	573,736	Dec. 22	2974	703	77	1896
Rheostat	A. C. Dinkey	570,009	Oct. 27	2236	538, 539	77	466
Riding-habit. Bicycle	H. Moetkowitz	569,027	Oct. 6	535	123	77	101
Rim-lock	W. H. Taylor	571,027	Nov. 10	1089	254	77	869
Ring: *See* Curtain-ring. Key-ring.							
Ring	S. Buchsbaum	569,998	Oct. 27	2249	534	77	463
Ring attachment	C. H. Wells	569,900	Oct. 20	2073	493	77	418
Ring for curtain, mosquito-bar, and other poles	E. Dranbe	568,897	Oct. 6	309	71	77	60
Rings. Device for reducing size of	G. P. Sommer and T. Sly	569,522	Oct. 13	1386	327	77	278
Rings. Means for squaring edges of and finishing finger-	J. S. Palmer	572,442	Dec. 1	627	148	77	1397
Rivet	J. Temler	571,177	Nov. 10	1356	316	77	919
Rivets or the like. Machine for making	A. C. Campbell	569,406	Oct. 13	1191	281	77	242
Riveting-machine	A. M. Baird	571,503	Nov. 17	1912	456	77	1036
Road-planer	J. C. Steele	573,243	Dec. 15	2034	487	77	1702
Road-rail for highways	H. R. Keithley	572,303	Dec. 1	386	91	77	1352
Roadway	A. Bliss	573,757	Dec. 22	3001	711	77	1901
Roasting-furnace	J. L. Wells	569,901	Oct. 20	2074	494	77	418
Rock-drill	J. F. Balsley and F. C. Priestly	572,855	Dec. 8	1341	322, 323	77	1554
Rock-drill	L. H. Jenkins	571,231	Nov. 10	1445	337, 338, 339	77	935
Rock-drill fixing and supporting apparatus	U. Salvotti	572,183	Dec. 1	154	37	77	1307
Rock-drilling machine. Hand-power	R. P. Elmore	573,454	Dec. 22	2462	584	77	1798
Rocking-chair. Platform	W. I. Bunker	569,446	Oct. 13	1253	294	77	253
Rocking-chair. Platform	W. I. Bunker	569,447	Oct. 13	1254	294, 295	77	253
Rocking or similar horse	M. E. Converse	570,002	Oct. 27	2259	537	77	465
Rod: *See* Curtain-rod.							
Rod connection	H. P. Boyd	569,995	Oct. 27	2243	533	77	462
Rod-cutting apparatus	F. H. Richards	572,374	Dec. 1	517	121, 122	77	1376
Rod or bolt cutter	L. Silcott	569,067	Oct. 6	603	137	77	116
Rod or roller supporting device	J. Berwanger	569,319	Oct. 13	1045	248	77	216
Rods or bars. Apparatus for treating	G. H. Geyer	571,306	Nov. 10	1574	374	77	961
Roll or pulley. Split	G. E. Perkins	569,663	Oct. 20	1651	390	77	313
Rolls. Apparatus for dressing or polishing	R. G. Pilkington	573,528	Dec. 22	2580	612, 613	77	1820
Roller: *See* Shade-roller.							
Roller and blind attachment	H. C. Johnston	574,152	Dec. 29	3723	887	77	2047
Roller-mill	R. W. Welch	572,589	Dec. 8	883	213	77	1495
Roller-mill adjustment	M. Favrow	571,266	Nov. 10	1507	356	77	947
Rolling metal tubes. Machine for	H. O. Harris	573,873	Dec. 29	3214	764	77	1954
Rolling metal tubes. Machine for	E. F. Holmgren	573,877	Dec. 29	3220	766	77	1956
Rolling-mill	J. R. Jones	573,000	Dec. 15	1606	385, 386	77	1623
Rolling-mill feed-table	S. V. Huber	568,949	Oct. 6	397	89, 90	77	76
Rolling-mill feed-table	S. V. Huber	569,283	Oct. 13	975	234	77	201
Rolling-mill feed-table	S. V. Huber	572,168	Dec. 1	129	30, 31	77	1302

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Rolling-mill feed-table	S. V. Huber	573,185	Dec. 15	1934	464, 465	77	1684
Rolling-mill feed-table	W. H. McFadden	572,175	Dec. 1	142	34	77	1304
Roof	W. W. Turner	571,416	Nov. 17	1749	417	77	1007
Roof	W. W. Turner	571,417	Nov. 17	1750	418	77	1007
Roof-truss	O. J. Stouffer	571,055	Nov. 10	1434	265, 266	77	878
Roof-valley	R. Jahn	571,565	Nov. 17	2014	479	77	1054
Roofing. Metal	W. W. Turner	573,937	Dec. 29	3324	794	77	1975
Rope carrier. Fall	W. L. Garrels	569,127	Oct. 6	697	163	77	133
Rope-clamp	J. M. Logue	570,287	Oct. 27	2768	658	77	563
Rope-fastener	A. L. Adams	568,927	Oct. 6	192	46	77	39
Rossing-machine	A. E. Beals	572,948	Dec. 15	1516	362, 363	77	1604
Rotary engine	R. and A. L. Bauer	573,959	Dec. 29	3373	807	77	1984
Rotary engine	E. Chaboche	569,408	Oct. 13	1198	282	77	243
Rotary engine	M. E. Clark	572,961	Dec. 15	1544	369, 370	77	1610
Rotary engine	J. A. Goodner and J. M. Chritton	573,179	Dec. 15	1920	460, 461	77	1682
Rotary engine	A. A. Kryszat	571,377	Nov. 17	1691	402, 403	77	996
Rotary engine	A. F. S. van de Laar	571,727	Nov. 17	2282	547, 548	77	1105
Rotary engine	R. and E. Lanzone	572,707	Dec. 8	1094	265, 266	77	1506
Rotary engine	R. Schlegel	572,127	Dec. 1	59	14	77	1289
Rotary engine	I. Wanner	569,693	Oct. 20	1713	406	77	354
Rotary engine	C. G. White	570,584	Nov. 3	279	69	77	690
Rotary engine	A. T. and A. R. Wilson	570,889	Nov. 3	861	200	77	801
Rotary steam-engine	J. L. Lampe, Jr	571,378	Nov. 17	1693	403	77	996
Rotary steam-engine	L. G. Ljungström	571,381	Nov. 17	1697	404	77	997
Roundabout	A. A., A. F., and E. G. Snatine	570,739	Nov. 3	597	137	77	748
Router	H. E. Purdy	569,054	Oct. 6	586	134	77	112
Rubber boot or shoe	A. C. Torbert	569,125	Oct. 6	695	162	77	132
Rubber-separator	W. F. Askam	572,854	Dec. 8	1340	322	77	1553
Rubber shoe	W. B. Kinsley	573,664	Dec. 22	2853	673	77	1873
Rubber soles to shoes. Apparatus for vulcanizing	G. F. Butterfield	574,238	Dec. 29	3933	935, 936	77	2084
Rubber soles to shoes. Vulcanizing	G. F. Butterfield	574,239	Dec. 29	3935	936	77	2084
Rubber-working machine	F. Hadfield	571,226	Nov. 10	1434	335	77	933
Rule and lead cutter	W. H. Golding	571,919	Nov. 24	2656	629	77	1194
Rule and lining-gage. Spacing	B. H. Harris and G. A. Corbin	573,973	Dec. 29	3411	818	77	1990
Rule miter-gage attachment	F. Reissmann	571,052	Nov. 10	1129	264	77	878
Ruler. Calculating	C. R. Jouve	571,567	Nov. 17	2017	480	77	1055
Ruling machine. Slate	E. F. H. Westenfeld	573,843	Dec. 22	3149	751	77	1929
Sack. Sleeping	F. H. Scatchard	569,521	Oct. 13	1385	327	77	277
Saddle-cover	A. F. Machold	570,033	Oct. 27	2305	547	77	475
Saddle. Riding	W. D. Davis	568,939	Oct. 6	377	85	77	73
Saddle. Riding	C. W. Percifield	571,684	Nov. 17	2206	531	77	1090
Saddletree. Harness	A. E. Post	571,393	Nov. 17	1714	408	77	1001
Safe-alarm	H. H. Freeman	570,011	Oct. 27	2268	539	77	467
Safety-pin	F. Deming	571,943	Nov. 24	2695	638	77	1203
Safety-pin	R. Kelso and M. Rosenbaum	573,002	Dec. 15	1610	387	77	1623
Safety-pin	A. T. Snell	571,054	Nov. 10	1132	265	77	878
Safety-switch	E. Jokl and W. M. Christian	570,808	Nov. 3	701	160	77	768
Sails. Reefing apparatus for fore-and-aft	F. V. de Bem	569,602	Oct. 20	1543	362, 363	77	322
Sale and delivery mechanism. Prepayment	J. Delaney	569,147	Oct. 6	735	172, 173, 174	77	139
Sale and delivery mechanism. Prepayment	J. Delaney	569,148	Oct. 6	742	174	77	140
Sales-checking apparatus	A. N. Southwick	574,010	Dec. 29	3472	830	77	2001
Sales-pad	W. H. Breakspear, O. Spannaus, and C. Weisbecker.	571,552	Nov. 17	1997	474	77	1051
Salicylic compound and making same	R. Schiff	569,429	Oct. 13	1223	.....	77	248
Salt-shaker	F. B. Thatcher	572,138	Dec. 1	82	17	77	1293
Sample-case. Folding	H. Braen	574,130	Dec. 29	3689	879	77	2041
Sampling-machine	C. C. Moore, Jr.	573,610	Dec. 22	2726	648	77	1849
Sand-band	C. R. Gibson	569,869	Oct. 20	2021	482	77	408
Sand-blast and apparatus employed in operating by sand-blasts.	A. Gutmann	573,180	Dec. 15	1923	461, 462	77	1683
Sand-heater	J. R. Mayer	571,382	Nov. 17	1699	404	77	997
Sash. Adjustable sliding and swinging window	E. S. Barney	569,146	Oct. 6	733	172	77	139
Sash-balance	R. L. Brown	568,739	Oct. 6	42	10	77	11
Sash-balance. Friction	P. Clark	572,049	Nov. 24	2860	674	77	1235
Sash-cord holder	C. U. Hannum	570,631	Nov. 3	396	94	77	711
Sash-fastener	F. E. Benedict	573,255	Dec. 15	2053	491	77	1706
Sash-fastener	C. J. Clarke	572,408	Dec. 1	580	138	77	1398
Sash-fastener	R. English, S. Vann, and A. H. Jones.	573,866	Dec. 29	3198	761	77	1951
Sash-fastener	W. A. Gammell	573,509	Dec. 22	2550	604	77	1814
Sash-fastener	C. M. Green	571,360	Nov. 17	1663	394	77	991
Sash-fastener	C. Hoffman	570,665	Nov. 3	465	109	77	725
Sash-fastener	G. Mehl	570,035	Oct. 27	2307	548	77	475
Sash-fastener	H. S. G. Ray	573,295	Dec. 15	2140	513	77	1721
Sash-fastener	W. H. Stow	573,553	Dec. 22	2628	624	77	1829
Sash-fastener	J. A. H. Umbach	571,465	Nov. 17	1834	437	77	1023
Sash-fastener	A. N. Woodard	572,591	Dec. 8	885	214	77	1466
Sash fastener and support	J. B. Cahoon	573,439	Dec. 22	2433	577	77	1793
Sash holder and lifter	R. H. Wheeler	573,374	Dec. 15	2279	543	77	1747
Sash-holder for preventing rattling of windows	C. H. and C. H. Beer Jr.	572,047	Nov. 24	2867	674	77	1234
Sash lift and lock. Bedside	D. Fletcher	573,267	Dec. 15	2073	497	77	1709
Sash-lock	D. O. Livermore	570,670	Nov. 3	472	110	77	726

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sash-lock	J. A. Newton	573,347	Dec. 15	2234	534	77	1738
Sash-lock	T. J. Sutton	568,992	Oct. 6	485	110	77	92
Sash lock. Window	E. E. Dalton	570,007	Oct. 27	2264	538	77	466
Sash. Reversible window	F. Cramblitt	573,261	Dec. 15	2062	494	77	1708
Sash support. Window	L. M. Bolles	571,551	Nov. 17	1994	474	77	1050
Sash support. Window	G. Johnstone	570,022	Oct. 27	2295	543	77	470
Sash-weight	W. C. Walda	571,813	Nov. 24	2452	584	77	1156
Sash-weights. Flask for making seamless	A. S. Hodges	571,308	Nov. 10	1578	375	77	902
Sash. Window	J. H. Shull	573,545	Dec. 22	2613	620	77	1826
Saucepan-cover	G. Curley	568,970	Oct. 6	435	97	77	84
Saucepan-handle. Removable	E. J. Gilpin	569,635	Oct. 20	1609	379	77	335
Saw	F. S. Bradley	573,812	Dec. 22	3089	734	77	1918
Saw	E. L. Knapp	571,376	Nov. 17	1691	402	77	995
Saw	J. Oldham	571,200	Nov. 10	1392	325	77	925
Saw	D. Phillips	571,955	Nov. 24	2717	643	77	1207
Saw and saw-tooth. Circular diamond	H. C. Potter	570,564	Nov. 3	246	62	77	683
Saw. Circular	J. E. Fox	568,754	Oct. 6	74	17	77	17
Saw-clamp	A. T. Binkerd	571,742	Nov. 24	2331	557	77	1133
Saw-clamp	D. S. West and D. Johnson	573,737	Dec. 22	2975	704	77	1896
Saw. Crosscut	A. Harman	572,604	Dec. 8	910	220	77	1470
Saw. Drag	L. Johnson	571,446	Nov. 17	1802	430, 431	77	1017
Saw-dressing device	B. F. Marable	568,782	Oct. 6	123	29	77	25
Saw-filing machine	H. L. Morrell	570,732	Nov. 3	578	133	77	745
Saw guide. Band	W. McBeth	573,028	Dec. 15	1647	396	77	1631
Saw. Hand	G. Meyer	573,893	Dec. 29	3247	773	77	1961
Saw-hanging	J. Heyn	570,094	Oct. 27	2425	575	77	498
Sawmill-carriages. Steam-offset for	G. W. Prescott	569,671	Oct. 20	1665	391	77	345
Saw mill. Gang	W. M. Wilkin	572,922	Dec. 8	1461	351	77	1578
Saw-set	W. H. Smith	572,835	Dec. 8	1316	316	77	1548
Saw-setting machine	R. R. Coursen	569,545	Oct. 13	1416	335	77	284
Saw-sharpener	W. H. Myers	570,225	Oct. 27	2652	629	77	541
Saw-sharpening device	J. Burke	572,470	Dec. 1	669	158	77	1406
Saw-sharpening machine	S. H. Holley and S. V. Rawlings	570,929	Nov. 10	925	214, 215, 216	77	839
Saw-tool	R. Bennett	569,993	Oct. 27	2242	532	77	462
Saw-tooth-setting machine	A. M. Pineo	569,766	Oct. 20	1857	440	77	378
Saw. Weather-board	T. Smyth	571,989	Nov. 24	2593	615, 616	77	1182
Saw wheels. Reciprocating scraper for band	R. W. Hale	571,876	Nov. 24	2566	608	77	1177
Sawing fellies, &c. Machine for	J. L. Cole	569,956	Oct. 20	2179	517	77	438
Sawing machine. Circular	C. E. Turnock	572,230	Dec. 1	242	58	77	1325
Scaffold-bracket	A. E. Jones	569,645	Oct. 20	1628	384	77	339
Scaffolds. Double safety-clutch for supports for	H. Schubert	569,240	Oct. 13	905	217	77	189
Scale. Computing	C. M. Merrill	573,892	Dec. 29	3246	773	77	1960
Scale for weighing gaseous substances	A. Custodis	569,177	Oct. 13	789	185	77	167
Scale-pan	G. S. Forschner	571,157	Nov. 10	1330	310	77	914
Scale. Portable weighing	J. W. Hunter	570,553	Nov. 3	216	57	77	677
Scale. Weighing	W. G. Lenker	573,015	Dec. 15	1629	391	77	1627
Scale. Weighing	J. H. Stephens	573,367	Dec. 15	2367	541	77	1745
Scissors or shears	J. G. Bestgen	570,658	Nov. 3	452	106	77	723
Scoop. Weighing	C. A. Johnson	570,434	Oct. 27	3092	731	77	620
Scraper	G. E. Richardson	569,867	Oct. 20	2044	487	77	413
Scraper and carrier. Road	J. A. Taylor	570,855	Nov. 3	852	199	77	799
Scraper dumping device. Earth	S. M. Thayer	571,959	Nov. 24	2724	644	77	1208
Scraper. Wheeled earth	J. W. Hobson	570,401	Oct. 27	3015	714, 715	77	608
Screen: *See* Cotton-gin screen. Reflecting-screen. Extension-screen. Window-screen.							
Screen	G. W. Cross	572,697	Dec. 8	1074	261	77	1503
Screen	G. W. Cross	572,966	Dec. 15	1554	372	77	1612
Screen for sand, &c	J. Norwood	571,575	Nov. 17	2029	483	77	1057
Screw cover for shafting. Set	C. P. Anderson	573,751	Dec. 22	2994	709	77	1900
Screw-cutting die-head	W. J. Smith	572,934	Dec. 8	1463	356	77	1562
Screw-driver	H. F. Henry	572,800	Dec. 8	1260	304	77	1536
Screw-driving machines. Screw-severing attachment for	T. Burchill	569,744	Oct. 20	1821	432	77	371
Screw elevator	N. P. Otis and R. C. Smith	570,329	Oct. 27	2885	685	77	583
Screw-holding device	J. H. Knapp	573,331	Dec. 15	2206	527	77	1733
Screw-jack	A. H. Moyes	573,684	Dec. 22	2884	681	77	1879
Screw-machine. Multiple	G. G. Prentice	574,162	Dec. 29	3745	894, 895	77	2051
Screw-machine. Multiple	G. G. Prentice	574,163	Dec. 29	3751	895, 896	77	2052
Screw-threads. Automatically-opening die for cutting	H. B. Robinson	569,769	Oct. 20	1862	441	77	378
Scrubbing-machine	J. S. Hitchcock	574,355	Dec. 29	4126	979, 980	77	2120
Scuttle-hole protector	A. Ganzenmüller	569,867	Oct. 20	2018	481	77	408
Seal	E. J. Brooks	573,758	Dec. 22	3002	711	77	1901
Seal	J. E. Gogle	570,196	Oct. 27	2476	586	77	507
Seal	A. T. Zetterlund	571,533	Nov. 17	2129	511	77	1076
Seal. Bottle	J. H. Bullard	572,380	Dec. 1	434	102	77	1362
Seal. Bottle	L. C. Lane	571,903	Nov. 24	2628	623	77	1188
Seal. Car	W. T. Gilbert	573,145	Dec. 15	1966	449	77	1672
Seal. Car	J. E. Gogle	570,197	Oct. 27	2477	586	77	507
Seal-lock	D. Comfort	570,907	Nov. 10	890	207	77	833
Seal-lock	W. P. Huntley, Jr.	571,330	Nov. 10	1443	337	77	935
Seal-lock	J. Schirra	570,061	Oct. 27	2360	561	77	485
Seal. Metallic bottle	J. H. Bullard	569,854	Oct. 20	2001	477	77	405
Seal-press	E. J. Brooks	569,742	Oct. 20	1809	429	77	370
Sealer. Envelop	J. H. Fearis	571,873	Nov. 24	2582	607	77	1176

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sealing device. Bottle-	J. H. Bullard	572,328	Dec. 1	431	101	77	1361
Sealing device. Bottle-	A. M. Cowart	571,262	Nov. 10	1499	353	77	945
Sealing device. Bottle-	J. S. Detrick	572,338	Dec. 1	442	104	77	1363
Seam-trimming mechanism	G. H. Dimond and W. F. Dial	568,896	Oct. 6	308	71	77	59
Seaming mechanism. Can-	J. A. Steward	568,885	Oct. 6	293	67	77	56
Seaming sheet-metal vessels	J. A. Steward	570,147	Oct. 27	2511	595, 596	77	514
Search-light	A. E. Colgate	573,962	Dec. 29	3381	809	77	1985
Seat: *See* Adjustable seat. Counter-seat. Bicycle-seat.							
Seat	J. B. Goodwin	569,153	Oct. 6	755	176	77	143
Seat or cushion	J. T. Cowley	569,784	Oct. 20	1888	448	77	383
Sectional boiler	F. Grote	572,005	Nov. 24	2798	659, 660	77	1221
Seed-cleaning mill. Flax-	O. Johansen	571,767	Nov. 24	2377	567, 568	77	1142
Seed. Means for treating	B. Reeve	571,017	Nov. 10	1076	251	77	867
Seeder	E. K. Clover	571,896	Nov 24	2616	620	77	1186
Seeding-machine	F. R. Packham	570,265	Oct. 27	2732	649, 650	77	556
Selective signal	C. E. Scribner	574,223	Dec. 29	3904	928	77	2078
Self-igniting burner	A. Rammoser	572,093	Nov. 24	2998	703	77	1257
Selvage guide. Web-	F. Stevens	568,884	Oct. 6	291	67	77	56
Separating-machine	R. J. Olivey	570,608	Nov. 3	321	79, 80	77	698
Separator: *See* Centrifugal separator. Magnetic separator. Magneto-separator. Clay-separator. Metal separator. Coal-separator. Oil-separator. Gas, oil, and water separator. Ore-separator. Rubber-separator. Grain-separator. Steam-separator. Liquid-separator.							
Separator	G. W. Cross	570,460	Nov. 3	34	8	77	644
Separator	A. F. Gaiennie	570,790	Nov. 3	672	154	77	712
Sewer-trap and flushing-gate	J. T. Titus	572,078	Nov. 24	2951	694	77	1250
Sewing-machine	W. E. Bailey and R. D. Burns	573,382	Dec. 15	2290	546, 547	77	1740
Sewing-machine	H. H. Buffum	570,902	Nov. 10	879	205	77	830
Sewing-machine	J. Fletcher and C. Brown	571,653	Nov. 17	2156	517, 518	77	1081
Sewing-machine	C. Frederick and R. L. Plumley	573,969	Dec. 29	3400	815, 816	77	1988
Sewing-machine	N. and G. Goddu	572,538	Dec. 8	784	187, 188	77	1442
Sewing-machine	J. F. Hardy	571,318	Nov. 10	1593	378	77	964
Sewing-machine	J. T. Hogan	570,478	Nov. 3	68	16, 17	77	651
Sewing-machine	T. J. Holton and F. Malsch	570,479	Nov. 3	73	17, 18	77	651
Sewing-machine	H. I. Illingworth	573,880	Dec. 29	3223	767, 768	77	1956
Sewing-machine	L. A. Miller	572,557	Dec. 8	816	195, 196	77	1449
Sewing-machine	F. A. Mills	571,007	Nov. 10	1057	246, 247	77	864
Sewing-machine	M. C. Mullarky	569,652	Oct. 20	1635	386	77	340
Sewing-machine	W. D. Rundlett	570,960	Nov. 10	977	228	77	849
Sewing-machine	W. D. Rundlett	570,961	Nov. 10	980	228	77	849
Sewing-machine	W. D. Rundlett	570,962	Nov. 10	981	228	77	849
Sewing-machine	G. H. Scetrini and H. K. Bridger	571,053	Nov. 10	1130	264, 265	77	878
Sewing-machine	D. W. Stevenson	570,969	Nov. 10	990	230	77	851
Sewing-machine	E. J. Toof	570,722	Nov. 3	557	129	77	741
Sewing-machine	C. H. Willcox	572,040	Nov. 24	2854	672	77	1232
Sewing-machine	C. H. Willcox and C. Carleton	572,042	Nov. 24	2859	672	77	1233
Sewing-machine	V. Witte	569,441	Oct. 13	1242	292	77	251
Sewing-machine attachment	J. W. Simons	569,773	Oct. 20	1870	443	77	3?0
Sewing-machine binding attachment	K. Buxbaum	570,121	Oct. 27	2469	584	77	506
Sewing machine. Broom-	L. Pelton	572,615	Dec. 8	930	225, 226	77	1474
Sewing machine. Buttonhole-	W. Raeuchle	574,166	Dec. 29	3758	897	77	2054
Sewing-machine. Double-chain-stitch	A. Rontke	573,926	Dec. 29	3304	789, 790	77	1972
Sewing-machine fan attachment	J. T. Lee	573,012	Dec. 15	1626	390	77	1626
Sewing-machine fan attachment	B. E. Meyer	572 021	Nov. 24	2820	665	77	1225
Sewing-machine. Fancy-stitch	W. F. Jagielski	573,881	Dec. 29	3228	768, 769	77	1957
Sewing-machine feed mechanism	C. H. Willcox	572,039	Nov. 24	2852	671, 672	77	1231
Sewing-machine feed mechanism	C. H. Willcox and S. Borton	572,041	Nov. 24	2857	672	77	1232
Sewing-machine feeding mechanism	J. M. Merrow	572,682	Dec. 8	1043	252, 253	77	1497
Sewing-machine for finishing buttonhole-pieces	J. Reece	571,796	Nov. 24	2425	578	77	1152
Sewing-machine for lasting boots or shoes	W. S. Hamm	570,252	Oct. 27	2703	643	77	550
Sewing-machine hemmer	R. S. Barnum	569,368	Oct. 13	1127	268	77	232
Sewing-machine lap-seam guide	F. W. Merrick	570,288	Oct. 27	2769	659	77	563
Sewing-machine. Lock-stitch	S. Borton	572,090	Nov. 24	2989	702, 703	77	1255
Sewing-machine needle	W. H. Hanna	568,946	Oct. 6	390	88	77	75
Sewing-machine needle-threader	C. H. Willcox	571,818	Nov. 24	2463	585	77	1158
Sewing-machine needle-throat	W. H. Hanna	573,327	Dec. 15	2198	526	77	1732
Sewing-machine. Overedge	H. A. Klemm	571,125	Nov. 10	1284	298	77	905
Sewing-machine. Overedge	H. A. Klemm	571,322	Nov. 10	1599	379, 3?0	77	965

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sewing-machine. Overedge	E. J. Perdreaux	574,263	Dec. 29	3972	943, 944	77	2091
Sewing-machine pull-off device	S. Borton	572 048	Nov. 24	2867	674	77	1234
Sewing-machine quilting attachment	W. B. and I. A. Click	569,616	Oct. 20	1566	3?7	77	327
Sewing-machine shuttle	H. A. Bates	569,316	Oct. 13	1040	247	77	215
Sewing-machine shuttle	H. T. Crosby	572,335	Dec. 1	439	103	77	1363
Sewing-machine shuttle	P. Diehl	573,864	Dec. 29	3196	761	77	1951
Sewing-machine shuttle-actuating mechanism	F. H. Richards	571,457	Nov. 17	1814	434	77	1019
Sewing-machine-shuttle thread-tension	H. T. Crosby	572,334	Dec. 1	438	103	77	1362
Sewing-machine spool-holder	L. E. Smith	571,024	Nov. 10	1086	253	77	869
Sewing-machine stay-guide	F. W. Merrick	570,036	Oct. 27	2308	548	77	475
Sewing-machine stay-guide	F. W. Merrick	570,037	Oct. 27	2311	548	77	476
Sewing-machine table	J. C. Cochran	571,748	Nov. 24	2344	560, 561	77	1135
Sewing-machine table	N. A. Hull	571,193	Nov. 10	1382	323	77	924
Sewing-machine take-up	J. M. Merrow	570,135	Oct. 27	2484	590	77	510
Sewing-machine take-up	J. M. Merrow	570,136	Oct. 27	2490	590	77	510
Sewing-machine trimming attachment	A. B. Jacobus	570,805	Nov. 3	698	159	77	767
Sewing-machine work-moving attachment	J. D. Schoonmaker	571,459	Nov. 17	1825	435	77	1021
Sewing-machines. Bobbin case and holder for revolving hook	A. Miller	573,894	Dec. 29	3248	774	77	1961
Sewing-machines. Hair-dividing attachment for overedge	H. A. Klemm	571,126	Nov. 10	1286	298	77	905
Sewing-machines. Hair-dividing attachment for overedge	H. A. Klemm	571,323	Nov. 10	1604	381	77	966
Sewing machines. Welt-beveling attachment for sole-	J. B. Hadaway. (Reissue)	11,578	Dec. 8	1503	360	77	1586
Shade-holder	B. Conner	573,138	Dec. 15	1856	446	77	1670
Shade-roller	S. Y. Davis and H. O. Mooney	574,141	Dec. 29	3707	884	77	2044
Shade supporter or bracket	J. P. Baumgartner	572,594	Dec. 8	891	216	77	1467
Shades to rollers. Attaching window-	E. F. Hartshorn	572 294	Dec. 1	366	87	77	1349
Shaft and belt-tightener. Counter-	E. C. Weston	573,191	Dec. 15	1947	469	77	1687
Shaft-brake	J. J. Stover	572,649	Dec. 8	985	237	77	1485
Shaft. Flexible	N. Stow	571,869	Nov. 24	2556	606	77	1175
Shaft or tongue coupling	L. Prideaux	569,426	Oct. 13	1220	286	77	247
Shaft shackle. Wagon-	H. M. Applegate	573,633	Dec. 22	2791	660	77	1863
Shaft step. Vertical-	H. Trenta	572,282	Dec. 1	342	82	77	1345
Shaft. Variable-speed counter-	B. Holmes	571,879	Nov. 24	2571	609, 610	77	1178
Shaft. Vehicle-	P. F. Chambers	571,213	Nov. 10	1412	330	77	929
Shafting-hanger	I. N. Hamilton	573,182	Dec. 15	1925	462	77	1693
Sharpener. Knife-	J. H. Brinkman	572,190	Dec. 1	164	39	77	1309
Sharpening edged tools. Device for	W. Purdy	570,337	Oct. 27	2?99	688	77	586
Shearing-machine	G. Guild	569,281	Oct. 13	971	232, 233	77	201
Shearing or cutting tool. Combined	R. M. Hunter	570,930	Nov. 10	929	216, 217	77	840
Shears: *See* Animal-shears. Pipe-shears.							
Shears	I. Dohnal	573,075	Dec. 15	1738	416	77	1648
Shears	P. Haase	571,160	Nov. 10	1333	311	77	914
Shears	A. C. Lemm	572,644	Dec. 8	977	235	77	1484
Sheet-feeder	G. B. Wurtz	573,952	Dec. 29	3352	804	77	1980
Sheet-metal can	M. Ams	570,591	Nov. 3	293	72	77	693
Sheet-metal can	F. H. Palmer	572,818	Dec. 8	1289	310	77	1542
Sheet-separating machine	W. A. Lorenz	570,175	Oct. 27	2559	608, 609	77	524
Sheet-separating machine	W. A. Lorenz and C. Reising	570,176	Oct. 27	2560	609, 610	77	524
Shelf-bracket	J. C. Griffin	571,519	Nov. 17	1934	461	77	1041
Shelf. Window-	M. K. Waite	572,231	Dec. 1	243	58	77	1325
Shelving	F. E. Hartzell	569,640	Oct. 20	1618	381	77	337
Shelving. Library-	W. H. and F. A. Winslow	568,825	Oct. 6	190	46	77	38
Shelving. Library-	W. H. and F. A. Winslow	569,270	Oct. 13	952	228	77	197
Shelving. Library-	G. Stikeman	571,249	Nov. 10	1477	346	77	941
Shell for high explosives	J. G. Justin	572,961	Dec. 1	294	70, 71	77	1335
Shell. High-explosive	L. Gathmann	569,192	Oct. 13	816	192	77	171
Sheller: *See* Corn-sheller.							
Shifting apparatus	A. Chavanne	570,623	Nov. 3	381	91	77	703
Shingle-machine	W. J. Perkins	569,051	Oct. 6	578	132, 133	77	110
Shingle-sawing machine	F. Challoner	570,539	Nov. 3	187	49, 50	77	672
Shingling-bracket	E. A. Bardwell, Jr.	574,055	Dec. 29	3553	848	77	2017
Shingling-bracket	J. A. Kerr	571,374	Nov. 17	1686	399	77	995
Ships' bottoms. Scouring-brush for cleaning	C. P. Turner	573,115	Dec. 15	1806	435	77	1662
Ship's hatch	J. R. Oldham	574,259	Dec. 29	3964	942	77	2090
Ship's windlass	E. H. Whitney	572,781	Dec. 8	1230	297, 298	77	1531
Shirt-waist	F. A. Platz	570,651	Oct. 27	2332	553	77	480
Shoe-holder	W. P. Welch	573,498	Dec. 22	2537	601	77	1812
Shoe-machine	J. Kotzlovsky	574,337	Dec. 29	4093	972, 973	77	2115
Shoe-machine jack	F. E. Francis	573,144	Dec. 15	1865	449	77	1672
Shoe-polishing appliance	G. F. Bowman and A. G. Langell	568,833	Oct. 6	200	48	77	40
Shoe-polishing device	E. Young	573,379	Dec. 15	2286	545	77	1744
Shoe-polishing machine	J. T. Ray, 2d.	573,917	Dec. 29	3286	786	77	19?9
Shoe-pull	G. Müller	571,276	Nov. 10	1525	361	77	950
Shoe-stay	A. Weigand	570,076	Oct. 27	2390	566	77	491
Shoe-stiffenings. Machine for manufacturing	J. R. McManus and T. F. Hart	568,868	Oct. 6	268	62	77	52
Shoe-tip-punching machine	H. L. Kemp	573,274	Dec. 15	2084	500, 501	77	1712
Shoes. Lacing-strip for laced	J. Sabine	570,963	Nov. 10	984	229	77	850
Shoes, leggings, &c. Fastening for	J. L. Conaway	572,157	Dec. 1	114	27	77	1299
Shoeing-rack	A. C. Schodorf	574,115	Dec. 29	3657	873	77	2035

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Shore or bank protector and method of and apparatus for constructing and placing same.	D. Neale	570,946	Nov. 10	957	222	77	845
Shovel: *See* Steam-shovel.							
Show-card, &c., or means for displaying velvets, &c.	R. J. N. Rusden	573,538	Dec. 22	2603	617	77	1825
Show-case	J. M. Dils	569,620	Oct. 20	1573	370	77	328
Show-case	F. Gurley	569,455	Oct. 13	1263	297	77	255
Show-case	F. W. R. Mansfeld	570,322	Oct. 27	2874	683	77	581
Show-rack. Revolving	T. Olson	569,660	Oct. 20	1647	389	77	342
Shutter-fastener	R. A. W. Oestmann	569,794	Oct. 20	1783	424	77	365
Shutter-fastener	G. L. Vogel	571,586	Nov. 17	2046	487	77	1060
Shutter for fire protection. Automatic	N. H. Reynolds	574,002	Dec. 29	3457	827	77	1999
Shutter-operating device	R. H. Ireland	572,804	Dec. 8	1271	306	77	1539
Shutter or screen. Adjustable and folding	O. Hoyer	573,659	Dec. 22	2847	671	77	1872
Shutter or screen. Rolling	O Bayer	571,988	Nov. 24	2771	654	77	1217
Shutter-worker	C. Wagner	570,577	Nov. 3	268	66	77	688
Shutters, blinds, &c. Interchangeable slat for	M. Shinsky	572,776	Dec. 8	1218	295	77	1529
Shuttle	J. Railton	574,112	Dec. 29	3652	871	77	2034
Shuttle bow or conductor	A. M. Chouvelon	573,861	Dec. 29	3192	760	77	1950
Shuttle-threader	R. Brodeur	569,853	Oct. 20	1999	477	77	404
Sieve. Flour-mill	J. Denis	571,219	Nov. 10	1422	332	77	931
Sifter	J. W. Johnson	573,272	Dec. 15	2081	499	77	1711
Sifter. Ash-	M. J. Brandenberger	572,242	Dec. 1	259	62	77	1328
Sifter. Ash-	J. B. Chadborn and E. Androvett	569,745	Oct. 20	1823	432	77	372
Sifter. Ash-	J. W. Fee	572,879	Dec. 8	1377	334	77	1561
Sifter. Ash-	J. N. Fordham	569,041	Oct. 6	560	129	77	106
Sifter. Ash-	P. R. Krasel	570,132	Oct. 27	2485	589	77	509
Sifter for ashes, &c	J. Bonowits	569,320	Oct. 13	1047	248	77	216
Sifting-machine	J. E. Mitchell	568,915	Oct. 6	333	77, 78	77	64
Sign apparatus. Illuminated-	J. U. Barr, Jr.	573,436	Dec. 22	2429	576	77	1792
Sign. Electric	W. Connell	572,158	Dec. 1	116	27	77	1300
Sign. Electric	F. H. Hawkins	573,088	Dec. 15	1765	424	77	1653
Sign. Illuminated	C. L. Nason	569,764	Oct. 20	1854	439	77	377
Signal: *See* Block-signal. Car-signal. Danger-signal. Railway-signal. Railway-station signal. Selective signal. Switch-signal. Telephone-circuit line-signal.							
Signal apparatus	J. G. Schreuder	570,062	Oct. 27	2362	562	77	485
Signal apparatus. Coin-controlled	W. Gray	569,195	Oct. 13	820	192	77	172
Signal apparatus. Electric	G. Knowles	572,607	Dec. 8	913	221, 222	77	1471
Signal-box. Electric	W. W. Hibbard	571,441	Nov. 17	1796	429	77	1016
Signal holder. Pyrotechnic	W. F. Coston	570,458	Nov. 3	32	7	77	644
Signal pressure-head. Automatic	J. H. Winspear	572,495	Dec. 1	710	170	77	1413
Signal-receiving instrument. Electromagnetic	S. D. Field	571,351	Nov. 17	1646	391, 392	77	989
Signal system. Selective-	C. E. Scribner	574,222	Dec. 29	3900	928	77	2078
Signaling apparatus. Electric	F. B. Herzog and S. S. Wheeler	573,221	Dec. 15	1996	480	77	1696
Signaling apparatus. Electric	F. B. Herzog and S. S. Wheeler	573,591	Dec. 22	2690	639	77	1842
Signaling apparatus. Electric	F. B. Herzog and S. S. Wheeler	573,592	Dec. 22	2696	640	77	1843
Signaling apparatus. Fog	D. Slade	571,203	Nov. 10	1398	327	77	927
Signaling apparatus. Pneumatic	F. Schieffler	571,315	Nov. 10	1590	377	77	963
Signaling. Night	R. O. Crowley	568,838	Oct. 6	266	49	77	41
Signaling system. Electric	J. P. Buchanan	571,507	Nov. 17	1917	457	77	1037
Signaling system. Pneumatic	A. J. McGehee	569,120	Oct. 6	683	160	77	130
Silk. Method of and composition for making artificial	R. Langhans	571,530	Nov. 17	1952	.....	77	1044
Singletree-hook	F. M Hunt	571,370	Nov. 17	1680	397	77	994
Size. Painters'	J. Claasen	570,122	Oct. 27	2470	.....	77	506
Skate	H. D. Carryl	572,500	Dec. 1	721	172	77	1415
Skate	H. D. Carryl	572,501	Dec. 1	724	172	77	1415
Skirt for riding-habits	A. S. Greenleaf	568,943	Oct. 6	385	87	77	74
Skate. Roller-	G. T. Bond	572,403	Dec. 1	575	136	77	1387
Skate. Roller-	J. Schade	571,690	Nov. 17	2214	533	77	1091
Skewer-pointing machine	T. W. Hamlin	570,630	Nov. 3	394	93, 94	77	711
Skid. Portable power-	H. E. Williams	573,630	Dec. 22	2784	659	77	1862
Skirt	C. Cohn	573,765	Dec. 22	3013	714	77	1903
Skirt	S. Haas	573,650	Dec. 22	2829	668	77	1868
Skirt. Bicycle-	J. N. Lewinson	572,429	Dec. 1	612	145	77	1394
Skirt-distender	H. W. Bury	574,131	Dec. 29	3690	879	77	2041
Skirt-slit holder	C. Van Hoesen	573,729	Dec. 22	2962	701	77	1893
Skirt-supporter	G. Kierski	574,248	Dec. 29	3949	938	77	2087
Skirt-supporter	S. M. Smith	569,356	Oct. 13	1109	264	77	228
Skiving-machine	M. Chase and M. H. Foster	572,083	Nov. 24	2960	696	77	1251
Slag-buggy-train coupling	J. L. Thomson	573,724	Dec. 22	2952	698	77	1891
Slate-picker	D. E. Phillips	572,661	Dec. 8	1004	242, 243	77	1489
Slating compound	W. H. Brawley	569,004	Oct. 6	502	.....	77	96
Sled	E. Dore	569,621	Oct. 20	1574	370	77	328
Sled	B. F. Hook	569,459	Oct. 13	1268	299	77	256
Sled. Logging-	J. L. Nylander	570,677	Nov. 3	481	113	77	788
Sled-propeller	H. H. Homer	569,201	Oct. 13	830	195	77	174
Sled-propeller	J. C. Robertson	572,568	Dec. 8	844	302, 303	77	1458
Sleeve-protector	J. P. Reily	569,471	Oct. 13	1286	303	77	259
Sleeve-protector	J. P. Reily	569,472	Oct. 13	1287	303	77	259
Sleigh	C. Zimmerman	568,935	Oct. 6	367	84	77	71
Sleigh. Bob-	J. Clayton	571,647	Nov. 17	2147	515	77	1079
Sleigh-knee	H. and H. Wesle	572,847	Dec. 8	1333	321	77	1552
Sleigh-runner	J. R. Sjolander	569,011	Oct. 6	510	115	77	97
Slide and lake and conveyer therefor. Artificial	C. A. Idler	572,426	Dec. 1	608	144	77	1393
Sliding gate	L. Dearmont	571,343	Nov. 17	1635	388	77	966

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Sling support and tripping device	A. Broussard	572,522	Dec. 8	762	181	77	1438
Sling-trip	H. Nadler and B. C. Le Blanc	571,074	Nov. 10	1176	276	77	885
Slubbing or roving frames. Jack or apparatus for insuring differential motion on	E. and S. Tweedale and J. Smalley	572,917	Dec. 8	1446	348	77	1576
Smelting-furnace	H. Charlier	570,981	Nov. 10	1009	234, 235	77	855
Smelting-furnace	H. Huber	572,011	Nov. 24	2805	661	77	1222
Smoke and cinder conveyer	W. H. Larimore	570,315	Oct. 27	2866	679, 680	77	579
Smoke-consumer	C. M Armstrong	570,533	Nov. 3	175	47	77	670
Smoke-consumer	W. E. Cole	570,001	Oct. 27	2257	536	77	464
Smoke-consumer	J. M. Kohne	570,731	Nov. 3	577	132, 133	77	745
Smoke-consuming furnace	G. A. Bell	573,385	Dec. 15	2295	548, 549	77	1750
Smoke-consuming furnace	J. H. Crosby	571,752	Nov. 24	2352	562, 563	77	1137
Smoke-consuming furnace	J. W. Hogan	572,896	Dec. 8	1399	338, 339	77	1565
Smoke-stack	C. Pickring	570,144	Oct. 27	2508	594	77	513
Smokeless powder	F. A. Halsey	568,902	Oct. 6	315	.....	77	61
Smoking-tube	J. Vester	573,064	Dec. 15	1718	412	77	1644
Snap hook and buckle. Combined	J. W. Crandall	570,277	Oct. 27	2751	655	77	559
Snap-switch	G. W. Hart	569,332	Oct. 13	1067	253	77	220
Snap-switch	A. B. Herrick	570,172	Oct. 27	2553	607	77	523
Snow-guard	M. Clason	572,339	Dec. 1	436	102	77	1362
Snow or dirt collecting and dumping machine	C. G. Ottersten	572,213	Dec. 1	209	51	77	1318
Snow-plow	A. B. Black	573,854	Dec. 29	3166	755	77	1947
Snow-plow	A. Even	572,747	Dec. 8	1172	281, 282	77	1520
Snow-plow and rutter	D. J. McGregor	572,212	Dec. 1	208	51	77	1317
Snow-plow. Road	G. O. Spencer	569,249	Oct. 13	924	221	77	192
Snow-plow, sweeper, scraper, and sprinkler for car-tracks	W. Grunow, Jr	573,511	Dec. 22	2553	605, 606	77	1815
Soaking-pits. Apparatus for operating	P. T. Berg	569,485	Oct. 13	1309	308	77	263
Soap-cup and holder for washbasins. Combined	T. S. Heineken	572,635	Dec. 8	964	232	77	1481
Soap. Apparatus for producing designs in cakes of	B. F. Bergh	569,604	Oct. 20	1545	363	77	323
Soap-frame	C. W. Gates	573,459	Dec. 22	2471	586	77	1800
Soap-holder	O. H. Huebel	570,666	Nov. 3	466	109	77	725
Soap. Making	L. Gottschalk	573,084	Dec. 15	1759	.....	77	1652
Soap powder. Making	S. V. Harbaugh	569,154	Oct. 6	756	.....	77	143
Soap reservoir. Liquid-	E. Lee	570,935	Nov. 10	939	218	77	842
Soda-fountain jars. Tilting appliance for	C. H. Duffield	573,453	Dec. 22	2461	583, 584	77	1798
Soda-fountains. Device for supplying salts for	F. H. Lippincott	574,156	Dec. 29	3733	890	77	2048
Soda-water-dispensing apparatus	C. A. Geddes	569,633	Oct. 20	1599	378	77	333
Sodium bicarbonate from roaster-ash. Making	J. Hawliczek	574,089	Dec. 29	3613	864	77	2028
Sofa or lounge	S. C. Baucum and A. T. Ball	569,163	Oct. 13	769	179	77	163
Solder for soldering aluminium	G. Hammond	572,200	Dec. 1	181	.....	77	1313
Soldering caps on cans. Machine for	M. J. Hawkins	568,849	Oct. 6	228	53, 54, 55	77	45
Soldering-club. Electric	P. Stotz and F. W. Schindler-Jenny	573,245	Dec. 15	2037	488	77	1703
Soldering machine. Can	W. J. and E. Phelps	573,035	Dec. 15	1661	399	77	1634
Soldering machine. Can-	G. T. Pillings	569,765	Oct. 20	1856	439, 440	77	377
Soldering machine. Can-	W. H. Smyth	573,423	Dec. 15	2376	567, 568	77	1764
Soldering machine. Can-	N. Troyer	571,627	Nov. 17	2113	507, 508	77	1073
Sole-cutting machine	D. F. Hartford	568,757	Oct. 6	82	19	77	18
Sole-laying machines. Pressing-form for	E. E. Winkley	573,069	Dec. 15	1725	414	77	1646
Sole-machine jack	E. E. Winkley	573,068	Dec. 15	1724	414	77	1645
Sole-molding apparatus	G. W. Rodigrass	569,979	Oct. 20	2210	525	77	443
Sole-nail	H. Weeks	572,937	Dec. 8	1489	357	77	1583
Sole-splitting machine	F. J. Freese	570,164	Oct. 27	2540	604	77	520
Sole-trimming machine	J. B. Emery	572,878	Dec. 8	1375	333	77	1561
Sounding and drawing profiles of beds of rivers, &c. Machine for	R. McDowall	572,610	Dec. 8	923	223	77	1473
Sounding combs. Means for	A. Herrling	572,055	Nov. 24	2888	681	77	1238
Sounding device	F. W. G. Boettcher	571,639	Nov. 17	2137	513	77	1077
Spade. Ditching-	L. Iwan	573,597	Dec. 22	2706	642	77	1846
Spark-arrester	J. T. Bright	568,735	Oct. 6	31	7	77	9
Spark-arrester and draft-regulator. Combined	R. Deissler	570,984	Nov. 10	1012	236	77	855
Speaking-tube	H. W. Libbey	572,264	Dec. 1	302	72	77	1337
Spectacle-case and holder for pencils, pens, &c	W. A. Johnston	571,373	Nov. 17	1666	399	77	995
Spectacles	J. T. Meredith	569,462	Oct. 13	1272	299	77	257
Spectacles or eyeglasses. Frameless	W. S. Essick	572,107	Dec. 1	18	5	77	1281
Spectacles or eyeglasses. Frameless	W. S. Essick and C. S. Rees	570,695	Nov. 3	384	91	77	709
Speed altering or adjusting mechanism for shaft-governors	J. and H. McLaren	569,512	Oct. 13	1369	321	77	274
Speed friction-gear. Variable	C. Seybold	570,235	Oct. 27	2670	635	77	544
Speed-gear	M. Hopkins	570,638	Nov. 3	404	96, 97	77	713
Speed-indicating alarm	B. F. Card	569,171	Oct. 13	779	182	77	165
Speed-indicating alarm	B. F. Card	573,568	Dec. 22	2652	630	77	1834
Speed-indicator	H. Schlotfeldt	574,076	Dec. 29	3586	856, 857	77	2023
Speed-measure	H. H. Kelley	570,024	Oct. 27	2291	544	77	472
Speed mechanism. Variable-	L. T. Pyott	571,395	Nov. 17	1717	409	77	1001
Speed of electromotors. Apparatus for varying	L. Imhoff	573,979	Dec. 29	3490	820	77	1992
Speed-regulator for electromotors. Automatic	L. Denayrouze	573,767	Dec. 22	3017	714, 715	77	1904
Speed-regulator for gas-engines	E. Capitaine	573,642	Dec. 22	2806	664	77	1865
Speed-varying mechanism	W. Corliss	569,369	Oct. 13	1128	269	77	232

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Spike-extractor	A. Welsh	571,816	Nov. 24	2457	584	77	1158
Spike-extractor	A. Welsh	573,943	Dec. 29	3332	796	77	1977
Spike-extractor and railway-tie lifter	O. E. Dunaway and D. N. Jones	569,552	Oct. 13	1437	339	77	947
Spike or bolt puller	A. Welsh	571,815	Nov. 24	2456	584	77	1157
Spindle	H. E. Hughes	570,996	Nov. 10	1036	243	77	860
Spindle	H. E. Hughes	570,997	Nov. 10	1038	243	77	860
Spindle-blades and whirls. Apparatus for assembling	G. M. Burgess	570,375	Oct. 27	2959	702	77	597
Spindle-support	A. Gartner	570,905	Oct. 27	2615	621	77	534
Spinning and twisting frame	J. Gregson and C. J. Murray	573,649	Dec. 22	2827	667, 668	77	1868
Spinning-frame	W. D. Rosencrantz	573,925	Dec. 29	3303	789	77	1971
Spinning frame. Ring-	S. H. Dubois	570,986	Nov. 10	1017	237	77	856
Spinning-frame separator. Ring-	H. W. Bracken	570,423	Oct. 27	3056	724	77	616
Spinning-machine	J. S. Macfarlane	573,676	Dec. 22	2872	678	77	1876
Spinning-machine	J. T. Meats	570,409	Oct. 27	3028	717	77	610
Spinning-machine	H. A. Owen	573,692	Dec. 22	2896	684	77	1881
Spinning-machine top-roll saddle	H. A. Owen	570,765	Nov. 3	637	146	77	755
Spinning-mule	J. T. Meats and T. W. Dean	573,280	Dec. 15	2101	505, 506, 507	77	1715
Spinning or twisting machine	J. R. Montgomery	572,659	Dec. 8	1001	241	77	1489
Splicing-clamp	D. N. Osyor	574,260	Dec. 29	3965	942	77	2090
Splint-cutting machine	M. T. Weston and G. H. Marston	574,050	Dec. 29	3542	845, 846	77	2015
Splint. Flexed fracture-	W. D. Kearns	568,951	Oct. 6	401	90	77	77
Splint-machine	J. T. Whitten	572,232	Dec. 1	244	58	77	1325
Spool-holder	D. F. Taylor	569,307	Oct. 13	1026	244	77	211
Spool-holder	A. M. Yeakel	572,043	Nov. 24	2860	673	77	1233
Spool-holder	A. M. Yeakel	573,563	Dec. 22	2645	629	77	1833
Spoon-handle hook	R. M. Gannon	574,145	Dec. 29	3713	885	77	2045
Spouts. Discharge apparatus for pivoted	E. F. Reynolds	570,055	Oct. 27	2340	555	77	481
Sprayer or sprinkler	E. J. Meyer	573,157	Dec. 15	1880	453	77	1675
Spraying apparatus	J. C. Ollard	569,883	Oct. 20	2039	486	77	411
Spring: *See* Gate-spring. Vehicle-spring. Leaf-spring.							
Spring	A. C. Bell	571,637	Nov. 17	2134	512	77	1077
Spring	R. Janney	571,972	Nov. 24	2740	648	77	1211
Spring-motor	G. W. Parker	570,266	Oct. 27	2733	650	77	556
Springs. Connection for coiled	W. C. Van Cise	569,256	Oct. 13	932	223	77	194
Sprinkler: *See* Automatic sprinkler. Street-sprinkler. Lawn-sprinkler. Water-sprinkler. Railway street-sprinkler.							
Sprinkler	C. Neracher	571,012	Nov. 10	1068	249	77	865
Sprocket-wheel	J. Cowen	568,837	Oct. 6	204	49	77	40
Sprocket-wheel	J. Lindsay	569,216	Oct. 13	862	203	77	180
Sprocket-wheel	W. J. Ross	571,398	Nov. 17	1721	409	77	1002
Square and level. Combined	A. H. Edwards and J. Hazard	568,751	Oct. 6	70	16	77	16
Square. Carpenter's	D. Martin	569,220	Oct. 13	868	204	77	181
Square. Combined weather-boarding and try	R. E. Poindexter	573,795	Dec. 22	3057	724	77	1912
Stable appliance. Cow-	S. M. Parker	568,788	Oct. 6	132	32	77	27
Stacker	L. L. Bisbee	572,151	Dec. 1	98	22, 23	77	1296
Stacker. Grain-bundle	H. F. Spaulding	571,865	Nov. 24	2547	603, 604, 605	77	1174
Stacker. Pneumatic	G. A. Anderson	573,125	Dec. 15	1821	439, 440, 441	77	1664
Stacker. Pneumatic	W. W. Dingee	571,898	Nov. 24	2619	620, 621	77	1187
Stacker. Pneumatic	F. F. Landis	569,504	Oct. 13	1353	318	77	271
Stacker. Pneumatic	D. N. Nester	570,182	Oct. 27	2374	612	77	526
Stacker. Pneumatic	F. A. Peavey	572,768	Dec. 8	1203	291	77	1526
Stair-pad or carpet-lining	F. O. Hanbner	570,221	Oct. 27	2643	626	77	539
Stairs	E. A. Moore	569,464	Oct. 13	1274	300	77	257
Stalk-cutter	J. Carrey	569,856	Oct. 20	2003	478	77	405
Stamp. Electric branding-	J. M. Kirker, M. Miller, and J. A. Williams.	574,203	Dec. 29	3858	920	77	2070
Stamp. Hand-	J. C. Otteson	570,264	Oct. 27	2730	649	77	556
Stamp. Hand-	F. Venn	570,724	Nov. 3	560	130	77	742
Stamp or coin case	G. B. Adams	572,237	Dec. 1	952	60	77	1326
Stamper. Envelop-	I. C. Goodridge	569,454	Oct. 13	1262	297	77	255
Stamping machine. Mail-	J. H. Barr	573,128	Dec. 15	1830	442, 443	77	1666
Stamping out cartons, &c. Device for	A. Friedheim	571,999	Nov. 24	2789	658	77	1219
Stanchion. Cattle-	J. H. Virkler	574,291	Dec. 29	4020	954	77	2101
Stand: *See* Display-stand. Lamp-stand. Dressmaker's stand. Racking-stand. Flower-stand. Railway-switch stand. Folding stand.							
Stand-pipe and watering-crane	D. Cheney	569,542	Oct. 13	1411	333, 334	77	283
Staple forming and driving machine	W. H. Jackson	573,329	Dec. 15	2201	526, 527	77	1732
Stapling-machine	E. T. Greenfield	572,293	Dec. 1	363	86, 87	77	1348
Stapling-machine	E. T. Greenfield	572,420	Dec. 1	597	141, 142	77	1391
Stapling-machine	J. A. Keyes	573,346	Dec. 1	452	106	77	1364
Starching-machine	D. H. Newton	571,281	Nov. 10	1531	363	77	951
Starching-machine	V. C. Regan	571,798	Nov. 24	2429	579	77	1152
Station-indicator	D. Beemer	574,189	Dec. 1	162	39	77	1309

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Station-indicator	D. E. Conner	571,301	Nov. 10	1566	372	77	959
Station-indicator	H. Feder	571,518	Nov. 17	1932	461	77	1041
Station-indicator	M. Fürst	572,977	Dec. 15	1571	377	77	1615
Station-indicator	M. Sheppey and F. D. Moore	569,771	Oct. 20	1864	442, 443	77	379
Station indicator. Railway-	A. Pálfy	573,350	Dec. 15	2238	535, 536	77	1739
Station or street indicator	E. B. and W. R. Lodge	568,859	Oct. 6	250	58	77	49
Station potential-indicator	R. D. Mershon	571,839	Nov. 24	2501	592	77	1165
Staves. Apparatus for closing	A. Dunbar	571,516	Nov. 17	1929	460	77	1040
Stay. Dress-	A. Bagley	571,327	Nov. 17	1611	383	77	982
Stays. Apparatus for pressing and drying garment-	J. S. Crotty	571,992	Nov. 24	2775	655	77	1217
Steam, air, or water motor	E. M. Crandall	569,546	Oct. 13	1417	335	77	284
Steam and explosion engine. Combined	W. Barnsdale	571,147	Nov. 10	1315	306, 307	77	911
Steamboat	S. D. Thorson	569,253	Oct. 13	929	222	77	193
Steam-boiler	W. H. Berry	573,256	Dec. 15	2054	492	77	1706
Steam-boiler	A. R. Cooper	572,194	Dec. 1	172	41, 42	77	1311
Steam-boiler	T. Gunning	571,660	Nov. 17	2167	521	77	1083
Steam-boiler	R. Joy	573,001	Dec. 15	1609	386, 387	77	1023
Steam-boiler	H. S. Pell	571,282	Nov. 10	1533	363	77	952
Steam-boiler	T. M. Rees	574,001	Dec. 29	3454	826, 827	77	1998
Steam-boiler	W. Wright	569,314	Oct. 13	1037	246, 247	77	214
Steam-boiler. Sectional	C. Gorton	571,657	Nov. 17	2161	520	77	1082
Steam-boiler. Tubulous	L. D. Davis	571,650	Nov. 17	2151	518	77	1080
Steam-engine	C. A. Backstrom	572,946	Dec. 15	1512	361, 362	77	1603
Steam-engine	G. A. Barnard	571,740	Nov. 24	2327	556	77	1132
Steam-engine	J. Barton	571,034	Nov. 10	1106	258, 259	77	873
Steam-engine	M. C. Bullock	571,892	Nov. 24	2599	617, 618	77	1183
Steam-engine	M. T. and M. C. Chapman	572,960	Dec. 15	1541	369	77	1609
Steam-engine	F. Fosdick	569,628	Oct. 20	1592	375	77	332
Steam-engine	H. B. Halvorsen	573,216	Dec. 15	1988	478	77	1695
Steam-engine	A. K. Mansfield	569,292	Oct. 13	991	238	77	204
Steam-engine	G. S. Strong	572,732	Dec. 8	1144	276	77	1515
Steam-engine. Compound	H. W. Forslund	573,869	Dec. 29	3206	763	77	1953
Steam-engine. Duplex	G. R. Ray	570,054	Oct. 27	2338	554, 555	77	481
Steam-engine. Single-acting	H. and P. Nadig	573,030	Dec. 15	1650	397	77	1632
Steam-fitting	A. Eichhorn	571,612	Nov. 17	2091	502	77	1068
Steam from tubs. Means for conveying	J. Marshall	573,340	Dec. 15	2222	531	77	1736
Steam-furnace	S. P. Hutchinson and S. L. Wiegand	570,999	Nov. 10	1040	244	77	861
Steam-generator	J. B. Granjon	572,750	Dec. 8	1177	283	77	1521
Steam-generator	J. Grubinski	571,562	Nov. 17	2010	478	77	1054
Steam-generator	J. McGregor and J. L. Jackson	573,688	Dec. 22	2891	663	77	1880
Steam-generator	N. W. Pratt	570,229	Oct. 27	2658	630, 631, 632, 633	77	542
Steam-generator	H. R. Scott	571,847	Nov. 24	2517	596	77	1168
Steam-generator	H. R. Scott	571,848	Nov. 24	2519	597	77	1168
Steam-generator	A. Seigle	571,696	Nov. 17	2229	536	77	1095
Steam generator and condenser	F. Ljungstrom	574,157	Dec. 29	3734	890, 891	77	2049
Steam-generators. Means for closing tubes of	N. W. Pratt	571,016	Nov. 10	1075	251	77	866
Steam-generators. Water-return system for	E. B. Benham and J. McAllister	569,318	Oct. 13	1044	248	77	215
Steam. Means for reheating exhaust-	O. D. McClellan and W. T. Girling	574,160	Dec. 29	3741	892, 893, 894	77	2050
Steam. Method of and apparatus for generating	E. A. Ashcroft	570,195	Oct. 27	2595	617	77	530
Steam-separator	J. J. Hoppes	573,878	Dec. 29	3221	766	77	1956
Steam-shovel	J. Campbell	573,204	Dec. 15	1968	474	77	1691
Steam-trap	A. J. Bayley	571,330	Nov. 17	1615	384	77	982
Steam-trap	S. H. Howland	573,658	Dec. 22	2846	671	77	1872
Steam-trap. Automatic	N. Nilson	573,908	Dec. 29	3268	780	77	1965
Steam-trap. Expansion	H. F. Smurthwaite	570,777	Nov. 3	655	150	77	758
Steamer. Wheat-	N. C. Blackburn and E. E. Howell	571,638	Nov. 17	2135	512	77	1077
Steel, iron, or other metals. Liquid compound used for tempering and toughening	Z. T. Clark and J. R. Neill	571,646	Nov. 17	2146	.....	77	1079
Steel. Manufacturing	E. M. Johnson	569,461	Oct. 13	1272	.....	77	256
Steering apparatus. Steam	C. B. Perley	570,680	Nov. 3	487	114	77	729
Steering machinery. Telemotor apparatus for	A. B. Brown	568,737	Oct. 6	36	9	77	10
Steering mechanism	J. F. Adams	571,964	Nov. 24	2739	645	77	1209
Steering vessels	A. B. Brown	568,736	Oct. 6	32	8, 9	77	9
Steering vessels. Apparatus for	A. B. Brown	568,738	Oct. 6	39	9, 10	77	10
Stencil-cutting machine	J. A. Hoff and J. W. Munson	573,841	Dec. 22	3147	750	77	1928
Step. Extension-	S. J. Evans	571,996	Nov. 24	2785	657	77	1219
Stereoscope	H. C. White	571,716	Nov. 17	2263	544	77	1101
Sterilizer	A. V. M. Sprague	571,541	Nov. 17	1977	470	77	1048
Sterilizing apparatus	G. W. Kellogg	573,273	Dec. 15	2092	500	77	1711
Sterilizing apparatus. Liquid-	F. M. Ashley	572,514	Dec. 8	749	178	77	1435
Sterilizing apparatus. Liquid-	F. M. Ashley	572,515	Dec. 8	750	179	77	1436
Sterilizing apparatus. Liquid-	F. M. Ashley	572,516	Dec. 8	752	179	77	1436
Sterilizing-oven door	A. V. M. Sprague	571,542	Nov. 17	1979	471	77	1048
Stirrup. Saddle-	C. Swindell	569,071	Oct. 6	611	139	77	117
Stitches. Tool for pricking and marking lines of	E. F. Mower	570,139	Oct. 27	2495	591	77	511
Stock-finishing machine	M. E. Clark	570,867	Nov. 3	814	187, 188	77	790
Stock-guard	J. M. Lee	571,232	Nov. 10	1450	340	77	936

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Stock-marker	D. C. Shannon	573,110	Dec. 15	1800	433	77	1661
Stocking	J. H. Jessen	570,807	Nov. 3	700	160	77	768
Stoker. Underfeed	A. F. Brown	570,978	Nov. 10	1003	232, 233	77	853
Stoker. Underfeed	D. F. Graham	570,924	Nov. 10	917	212, 213	77	838
Stone. Artificial	E. Boehm	569,002	Oct. 6	500	113	77	95
Stone-dressing machine	O. T. Dutro	570,466	Nov. 3	43	10, 11	77	646
Stone-dressing machine	C. Lohr	569,719	Oct. 20	1776	422	77	364
Stone. Means for making artificial	F. J. Rönitz	574,172	Dec. 29	3783	902, 903	77	2058
Stone-sawing machine	F. Bielhen	568,731	Oct. 6	25	5, 6	77	8
Stool	D. E. Lane	569,212	Oct. 13	854	201	77	178
Stool and cot. Combined camp-	S. H. Schenck	571,579	Nov. 17	2838	485	77	1059
Stop-box	I. Sorsoleil	572,836	Dec. 8	1317	316	77	1548
Stop device for grinders, &c. Safety	J. B. Forsyth	570,848	Nov 3	782	178, 179	77	784
Stopper: *See* Bottle-stopper. Leak-stopper. Bottle valve-stopper. Valve-stopper.							
Stopper-lock	D. F. Graham	572,160	Dec. 1	118	28	77	1300
Stopple sprinkling device	A. G. Sanford	570,716	Nov. 3	549	127	77	740
Storage and delivery system	G. E. Pancoast	571,369	Nov. 17	1709	406	77	999
Storage battery. Electric	T. W. Allan	571,059	Nov. 10	1142	267	77	880
Storage-receptacle	A. B. Schofield	571,844	Nov. 24	2510	594	77	1167
Storage-receptacle	A. B. Schofield	571,845	Nov. 24	2511	594	77	1167
Store-service apparatus	E. A. Fordyce	570,163	Oct. 27	2539	603	77	520
Stove	L. W. Hemp	571,878	Nov. 24	2569	609	77	1178
Stove	T. R. Kennedy	574,334	Dec. 29	4087	970, 971	77	2113
Stove and burner. Portable	J. P. Peters	572,908	Dec. 8	1422	343	77	1572
Stove and heater. Gas	T. Batty	571,916	Nov. 24	2653	629	77	1193
Stove attachment	S. J. Perrault and T. L. Bauer	573,793	Dec. 22	3053	723	77	1911
Stove. Coal-	G. W. Cope	569,176	Oct. 13	787	184	77	166
Stove. Cooking-	J. E. Armstrong	569,397	Oct. 13	1171	278	77	239
Stove. Gas-	V. W. Blanchard	569,085	Oct. 6	634	145	77	121
Stove. Gas-	V. W. Blanchard	569,086	Oct. 6	636	145	77	122
Stove. Gas or oil	S. L. Richards	570,957	Nov. 10	974	227	77	848
Stove. Gasolene-	A. B. Hutchins	570,482	Nov. 3	78	18, 19	77	652
Stove. Heating-	W. and I. Darby and J. H. Punchard	569,816	Oct. 20	1938	461	77	393
Stove heating attachment. Oil-	W. and I. Darby	571,722	Nov. 17	2275	546	77	1103
Stove. Hot-blast	G. W. McClure	573,900	Dec. 29	3257	776	77	1963
Stove. Hot-blast	G. W. McClure	573,901	Dec. 29	3259	777	77	1963
Stove. Hot-blast	G. W. McClure	573,902	Dec. 29	3260	777, 778	77	1964
Stove. Hot-blast	G. W. McClure	574,041	Dec. 29	3526	842	77	2011
Stove. Hot-blast	F. C. Roberts	570,104	Oct. 27	2437	579	77	501
Stove. Lamp-	W. H. Wilder	570,527	Nov. 3	161	39, 40	77	668
Stove-lid	G. B. Littlefield	570,937	Nov. 10	942	219	77	843
Stove or furnace. Downdraft	E. D. McLean	574,210	Dec. 29	3878	923	77	2073
Stove or furnace grate	E. Fales	574,315	Dec. 29	4054	963	77	2107
Stove or range	M. M. Koch	574,336	Dec. 29	4091	971	77	2114
Stove or range	M. M. Koch and J. Erben	568,709	Oct. 6	100	23, 24	77	21
Stove or range	M. M. Koch and J. Erben	570,485	Nov. 3	88	20	77	655
Stove or range. Cooking	J. H. Magee	572,265	Dec. 1	303	72	77	1337
Stovepipe	C. A. Smith	572,076	Nov. 24	2949	694	77	1249
Stovepipe-holder	F. J. Norton	569,123	Oct. 6	692	162	77	132
Stovepipe-shelf	A. H. Smith	572,381	Dec. 1	540	128	77	1381
Stovepipe-thimble	L. Arnold and M. Lary	573,954	Dec. 29	3356	804	77	1981
Stovepipe-thimble	J. R. Bostwick	569,165	Oct. 13	772	179	77	163
Stove. Straw-burning	W. P. Hitchings	569,557	Oct. 13	1451	343	77	290
Stove utensil-receptacle	E. M. Brewster	570,275	Oct. 27	2749	654	77	559
Stoves or ranges. Oven-door for cooking	M. L. Everest	572,199	Dec. 1	179	44	77	1312
Stoves. Removable mica frame or holder for heating-	F. V. Knauss	571,597	Nov. 17	2065	495	77	1063
Strainer	G. O. Walton	569,260	Oct. 13	938	225	77	195
Strainer. Eaves-trough	S. A. Twist	571,711	Nov. 17	2257	542	77	1100
Strainer for discharge-spouts for washbasins	A. Duke	572,788	Dec. 8	1240	300	77	1533
Strainer. Tea-	R. S. Hamilton	572,482	Dec. 1	687	164	77	1410
Strainer. Tea or coffee pot	T. Gaddes	569,188	Oct. 13	805	188	77	169
Strap: *See* Horse neck-strap. Loom lug-strap.							
Straw-stacker	E. Huber and J. W. Miller	570,803	Nov. 3	696	159	77	767
Straw-stacker. Pneumatic	J. S. Smith	568,883	Oct. 6	289	66, 67	77	55
Streams, &c. Device for inspecting bottoms of	E. L. Hubbard	572,803	Dec. 8	1270	306	77	1539
Street or station indicator. Electric	H. Alwles	571,738	Nov. 24	2322	555	77	1131
Street-sprinkler	A. P. Cross and I. H. Hill	571,649	Nov. 17	2149	516	77	1060
Street-sprinkler	H. W. Knight	572,640	Dec. 8	972	234	77	1463
Street-sweeper	M. B. Atkinson	571,183	Nov. 10	1365	319	77	920
Street-sweeper	F. Bain	571,891	Nov. 24	2507	616	77	1183
Street-sweeper	A. Gartner	572,790	Dec. 8	1244	301	77	1533
Street-sweeper	A. Gartner	572,791	Dec. 8	1245	301	77	1534
Street-sweeper	O. Goschel and B. Sutter	570,749	Nov. 3	611	140, 141	77	750
Street-sweeper	O. Goschel and B. Sutter	570,750	Nov. 3	613	141	77	751
Street-sweeper	P. Jacobson and C. E. Cain	569,644	Oct. 20	1625	383, 384	77	338
Street-sweeper	T. J. Robertson	568,958	Oct. 6	416	93	77	79
Striking powers. Coin-controlled apparatus for testing	H. K. Hansen	574,324	Dec. 29	4068	967	77	2110
Stringed instrument	E McNichol	572,906	Dec. 8	1419	342	77	1571
Stringed instruments. Wrist-guide and tailpiece for	W. H. Richardson	569,032	Oct. 6	545	126	77	103
Stubble-rejecter	H. Pearson	571,138	Nov. 10	1301	302	77	908

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Studs, buttons, &c., to wearing-apparel. Means for attaching	G. W. Younger	573,317	Dec. 15	2185	521	77	1729
Stuffing-box	L. C. S. Frick	571,759	Nov. 24	2365	565	77	1139
Stuffing-box for propeller-shafts	J. J. Bates	571,741	Nov. 24	2330	557	77	1132
Stuffing-box for pumps, &c	E. C. Butts	570,726	Nov. 3	563	130	77	742
Stump-extractor	J. J. Milne	569,507	Oct. 13	1360	319	77	272
Stump-puller	F. H. Dean	572,598	Dec. 8	899	217	77	1468
Sugar-decolorizing apparatus	M. Pridham	574,000	Dec. 29	3452	826	77	1998
Suint and product resulting therefrom. Treating	H. T. Vulté	571,870	Nov. 24	2557	.....	77	1175
Sulfids. Treating metallic	V. Engelhardt and A. Nettel	568,843	Oct. 6	214	51	77	42
Sulky	E. S. Keeler	571,003	Nov. 10	1050	245	77	862
Superheater	O. Hunger	568,763	Oct. 6	90	21	77	20
Superheaters. Non-oxidizable lining for	L. Stevens	569,251	Oct. 13	927	221	77	192
Support. Adjustable	F. A. Roberts	573,923	Dec. 29	3295	788	77	1970
Suppository-machine	J. G. Blount	569,985	Oct. 20	2222	527	77	445
Surgical apparatus	W. H. Voss	572,139	Dec. 1	83	18	77	1293
Surgical-instrument case	E. Lee	570,936	Nov. 10	940	219	77	842
Suspenders	H. P. Geisler	571,114	Nov. 10	1259	292	77	900
Swaging-machine	J. C. Taft	573,051	Dec. 15	1701	407	77	1641
Swimming device	D. B. Haven	571,858	Nov. 24	2534	601	77	1171
Swing	G. Rockwell	572,773	Dec. 8	1214	294	77	1528
Swing. Revolving-chair	J. N. and H. Rohr	570,505	Nov. 3	125	30, 31	77	661
Switch: *See* Electric switch. Railway-switch. Electric-circuit switch. Safety-switch. Snap-switch. Electric snap-switch. Telephone-switch. Lamp-switch. Tramway-switch. Overhead switch. Trolley-switch.							
Switch	E. Balzer	568,727	Oct. 6	5	2	77	3
Switch	E. M. Hewlett	573,146	Dec. 15	1867	450	77	1672
Switchboard. Electric	E. A. Fordyce	572,748	Dec. 8	1175	282	77	1521
Switchboards. Needle-plug test system for multiple	C. E. Scribner	572,218	Dec. 1	215	53	77	1319
Switchboards. Test system for multiple	C. E. Scribner	574,006	Dec. 29	3464	829	77	2000
Switch-conductor. Electrical	W. H. Sawyer	571,539	Nov. 17	1974	470	77	1047
Switch-lever locking mechanism	R. H. Canfield	573,567	Dec. 22	2651	630	77	1834
Switch mechanism. Electrically-actuated	W. S. Browne	570,373	Oct. 27	9956	702	77	597
Switch-opener	G. W. Fredericks	571,356	Nov. 17	1657	393	77	990
Switch-operating apparatus	C. Thornewell	568,815	Oct. 6	174	42	77	35
Switch-operating device	E. D. Farnsworth	572,292	Dec. 1	361	86	77	1348
Switch-signal. Interlocking	B. B. Morgan	572,270	Dec. 1	317	75	77	1339
Switch signal-wire compensator. Distant	J. R. and J. W. Jones	573,882	Dec. 29	3230	769	77	1958
Switch-stand	C. E. Foster	570,390	Oct. 27	2994	709	77	604
Switch-throwing device	W. H. Reece	571,733	Nov. 17	2312	552	77	1110
Switching apparatus. Electrical	F. W. Jones	573,601	Dec. 22	2711	644	77	1846
Syringe	D. T. Bentley	570,245	Oct. 27	2692	639	77	548
Syringe	I. Q. Gurnee	572,506	Dec. 1	731	174	77	1417
Syruping-machine. Multiple	F. A. Robbins	574,075	Dec. 29	3585	856	77	2022
Table: *See* Billiard-table. Kitchen-table. Combination-table. Knockdown table. Extension-table. Paper-hanger's work-table. Folding table. Game-table. Rolling-mill feed-table. Ironing-table. Tailor's table.							
Table	E. E. Bennett	570,897	Nov. 10	874	203	77	829
Table	J. Bruss	573,960	Dec. 29	3377	808	77	1984
Table	A. Lange	572,643	Dec. 8	976	235	77	1484
Tableaux vivants. Apparatus for producing	M. H. Kerner	570,255	Oct. 27	2711	645	77	553
Tablet-compressing machine	H. L. Clark	573,443	Dec. 22	2436	578, 579	77	1794
Tablet-machine for stenographers' use	M. P. Bonebrake	571,149	Nov. 10	1320	307	77	912
Tablet. Reversibly-supporting writing-	D. I. Byers	569,169	Oct. 13	777	182	77	164
Tack-driving machine	J. E. Crisp	573,449	Dec. 22	2451	582	77	1796
Tacker	W. Goddu	569,152	Oct. 6	754	175	77	143
Tacking-machine. Hand	W. Shaw	569,590	Oct. 13	1521	358	77	302
Tag	S. H. Brown	573,321	Dec. 15	2190	523	77	1730
Tag-fastener	W. A. Seibel	568,803	Oct. 6	155	37	77	31
Tailor's table	M. A. Adler	569,947	Oct. 20	2164	513	77	435
Talking-machine apparatus	E. H. Amet	573,071	Dec. 15	1728	414	77	1646
Tally-sheet and manifolding detachable sales-sheet systems. Holder for	A. B. Hilton	572,990	Dec. 15	1589	381	77	1619
Tank: *See* Flush-tank. Water-tank. Flushing-tank. Watering-tank. Oil-tank.							
Tank-heater	A. W. Johnsen, P. T. and T. Herreid	571,668	Nov. 17	2182	525	77	1086
Tannin extract. Decolorizing	J. S. Adriance	571,635	Nov. 17	2132	.....	77	1076
Tanning	H. Schweitzer	573,362	Dec. 15	2962	.....	77	1744
Tanning apparatus	E. Du Bois	573,077	Dec. 15	1740	417	77	1649
Tanning hides or skins	R. Wagner and J. J. Maier	574,014	Dec. 29	3477	.....	77	2002
Tanning machinery	A. A. Myers	571,678	Nov. 17	2196	529	77	1088
Tap and bushing	A. Fischer	573,867	Dec. 29	3199	702	77	1951
Tap and die. Combination	S. E. Pranke	574,216	Dec. 29	3888	925	77	2075
Tap. Beer-	E. C. Post	569,800	Oct. 20	1913	454	77	388
Tap. Beer-	E C. Post	569,801	Oct. 20	1914	454	77	389
Tap. Sectional expansion-	B. W. Prentice	572,445	Dec. 1	633	150	77	1398
Taps or drills. Safety-socket for	G. Bottcher	572,069	Dec. 1	8	3	77	1280
Tapping pipes or mains. Apparatus for	W. Downey	572,786	Dec. 8	1238	299	77	1532
Target. Flying	B. F. Saylor	571,958	Nov. 24	2722	643	77	1208
Target. Portable safety-	E. J. B. Scratton	570,820	Nov. 3	726	166	77	773
Tawing hides	G. W. Adler	573,631	Dec. 22	2787	.....	77	1862
Tea-kettle cover	E. S. Ingalsbe	574,389	Dec. 29	4079	969	77	2112

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Teaching words and identifying objects. Apparatus for	J. G. and T. E. Thompson	569,846	Oct. 20	1987	474	77	402
Teeth. Appliance for bleaching	M. W. Hollingsworth	574,033	Dec. 29	3508	833	77	2007
Teeth. Artificial	J. S. Campbell	571,644	Nov. 17	2144	515	77	1079
Teeth. Bridging	F. Comer	571,556	Nov. 17	2002	475	77	1052
Teeth. Support and carrier for artificial	H. D. Justi	571,166	Nov. 10	1341	313	77	916
Telautograph	G. S. Tiffany	570,072	Oct. 27	2376	565	77	488
Telautograph	G. S. Tiffany	570,112	Oct. 27	2452	583	77	503
Telegraph	L. W. Hildburgh	571,948	Nov. 24	2701	639	77	1204
Telegraph-pole	C. A. Peterson	574,364	Dec. 29	4135	982	77	2122
Telegraph. Printing	L. Kamm	572,760	Dec. 8	1190	286, 287, 288	77	1524
Telegraph receiver. Submarine	A. Piedfort	573,286	Dec. 15	2119	509	77	1718
Telegraph-sounder. Mechanical	W. W. Alexander and M. C. Gillham	572,945	Dec. 15	1509	361	77	1603
Telegraph switch mechanism	F. P. Scott	571,695	Nov. 17	2226	535, 536	77	1094
Telegraph system	B. F. Merritt and J. M. Joy	572,609	Dec. 8	922	223	77	1473
Telegraphic apparatus. Type-printing	F. H. W. Higgins	570,852	Nov. 3	788	181	77	785
Telegraphy	I. Kitsee	572,639	Dec. 8	970	233	77	1483
Telephone	A. Gartner	569,018	Oct. 6	523	120	77	99
Telephone	C. E. Scribner	571,907	Nov. 24	2636	625	77	1189
Telephone attachment	W. O. Christopher	573,441	Dec. 22	2436	577	77	1793
Telephone-circuit	C. E. Scribner	572,222	Dec. 1	226	54	77	1321
Telephone-circuit	C. E. Scribner	574,005	Dec. 29	3461	828	77	1999
Telephone-circuit line signal	T. C. Wales, Jr., and C. H. Arnold	573,117	Dec. 15	1809	436	77	1662
Telephone-circuit. Multiple-station	J. A. Barrett	569,401	Oct. 13	1179	280	77	941
Telephone-exchange	M. F. Hill	572,601	Dec. 8	1961	305	77	1537
Telephone-exchange apparatus	F. R. McBerty	574,255	Dec. 29	3958	941	77	2089
Telephone-exchange. Automatic	A. E. Keith	573,684	Dec. 29	3235	770	77	1959
Telephone-exchange system	W. W. Dean	573,575	Dec. 22	2662	632	77	1836
Telephone-exchange system	P. E. Raverot and G. A. Hese	569,470	Oct. 13	1284	302	77	959
Telephone-exchange system	C. E. Scribner	571,910	Nov. 24	2642	626	77	1190
Telephone-exchange system	C. E. Scribner	572,221	Dec. 1	223	54	77	1320
Telephone-exchange system	C. E. Scribner	574,221	Dec. 29	3898	928	77	2077
Telephone-exchange system. Automatic	R. Callender	573,859	Dec. 29	3178	757, 758, 759	77	1949
Telephone-exchanges. Apparatus for multiple switchboards for	C. E. Scribner	571,906	Nov. 24	2632	624	77	1189
Telephone-exchanges. Automatic signaling device for	C. E. Scribner and F. R. McBerty	574,280	Dec. 29	4005	951	77	2098
Telephone-lines. Signaling apparatus for	C. E. Scribner and F. R. McBerty	574,225	Dec. 29	3908	929	77	2079
Telephone. Magneto-	E. M. and W. S. Harrison	571,190	Nov. 10	1377	322	77	923
Telephone-receivers. Earpiece for	D. C. Farrington	572,108	Dec. 1	20	5	77	1282
Telephone-switch	E. M. Harrison	571,162	Nov. 10	1336	312	77	915
Telephone-switch	C. N. Sandbeck	570,773	Nov. 3	650	148	77	757
Telephone-switchboard	L. W. Davis	568,840	Oct. 6	210	50	77	42
Telephone-switchboard apparatus	C. E. Scribner and F. R. McBerty	572,223	Dec. 1	227	54	77	1321
Telephone-switchboard plug	C. E. Scribner and F. R. McBerty	574,281	Dec. 29	4007	951	77	2098
Telephone-switchboards. Cord switch for	C. E. Scribner	572,219	Dec. 1	218	53	77	1319
Telephone-switchboards. Spring-jack for	C. E. Scribner	574,224	Dec. 29	3906	929	77	2079
Telephone switch-box	W. A. Houts and L. G. Nilson	574,245	Dec. 29	3945	937, 938	77	2086
Telephone system	A. F. Swan	572,840	Dec. 8	1322	317	77	1550
Telephone system. Automatic	M. Brooks	570,840	Nov. 3	764	175	77	781
Telephone system. Common battery	W. W. Dean	573,576	Dec. 22	2664	632	77	1836
Telephone toll-box	C. E. Scribner	574,046	Dec. 29	3534	844	77	2013
Telephone-transmitter	H. C. Alexander	569,908	Oct. 20	2085	496	77	491
Telephone-transmitter	L. D. Appleman	572,188	Dec. 1	161	39	77	1309
Telephone-transmitter	R. L. Hunter and H. B. Higgins	572,756	Dec. 8	1185	285	77	1523
Telephone-transmitter	L. W. Pullen	573,356	Dec. 15	2254	538	77	1742
Telephone-transmitter	F. A. Ray	572,182	Dec. 1	153	37	77	1307
Telephone-transmitter	F. A. Ray	573,294	Dec. 15	2138	513	77	1721
Telephone-transmitter	D. N. Rowan	571,399	Nov. 17	1722	410	77	1002
Telephone-transmitter. Adjustable	A. Gartner	570,204	Oct. 27	2614	621	77	534
Telephone trunk-lines. Signaling-circuit for	C. E. Scribner	574,279	Dec. 29	4002	950	77	2097
Telephones. Coin-controlled mechanism for	R. D. Gallagher, Jr	571,590	Nov. 17	2052	490, 491, 492	77	1061
Telephonic apparatus	C. J. Schwarze	572,775	Dec. 8	1216	294, 295	77	1528
Telephony	J. T. Williams	569,807	Oct. 20	1923	457	77	390
Telinrian	R. Mowery	571,785	Nov. 24	2406	574	77	1148
Temperature regulating or controlling device	W. S. Johnson	568,950	Oct. 6	399	90	77	76
Tenpins	F. C. Rockwell	573,797	Dec. 22	3059	724	77	1912
Tent. Shelter-	E. Rice	573,918	Dec. 29	3287	786, 787	77	1969
Tent. Umbrella-	R. Irvine, Jr	574,091	Dec. 29	3616	865	77	2028
Tentering-machine	E. Ainsworth	569,734	Oct. 20	1795	426	77	368
Tentering machine. Textile-	A. McLean	569,763	Oct. 20	1852	438, 439	77	377
Tetranitrocellulose. Manufacture of solutions of	E. Bronnert	573,132	Dec 15	1841	.....	77	1668
Textile-stretching device	W. C. Mackinney	573,095	Dec. 15	1774	427	77	1655
Theatrical structure	B. F. Dunn and J. C. Bronaugh	573,141	Dec. 15	1859	447, 448	77	1671
Therapeutical and massage purposes. Electric roller for	J. W. Gibbs	572,341	Dec. 1	446	105	77	1364
Thermometer. Electric	M. A. Agelasto	571,496	Nov. 17	1765	421	77	1009
Thermometer. Oven-	L. S. Barndollar	571,211	Nov. 10	1409	330	77	929
Thermostat	C. Burgher	573,134	Dec. 15	1846	445	77	1669
Thill-coupling	F. G. English	570,846	Nov. 3	778	177	77	783
Thill-coupling	M. P. Favor	569,577	Oct. 13	1498	353	77	299
Thill-coupling	P. C. Hayes	569,131	Oct. 6	710	167	77	135

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Thill-coupling	C. R. Jones	573,152	Dec. 15	1875	451	77	1674
Thill-coupling	H. Klahr	570,131	Oct. 27	2485	588	77	509
Thill-coupling	J. N. Stowe, Jr	570,718	Nov. 3	550	128	77	740
Thill-coupling	G. C. Thompson and T. C. Edwards	572,734	Dec. 8	1148	277	77	1516
Thill-coupling	T. A. Watrous	572,141	Dec. 1	85	18	77	1294
Thill-coupling and antirattler. Combined	P. Lutteke	570,100	Oct. 27	2432	578	77	500
Thill-coupling jack	J. B. Maines	569,583	Oct. 13	1509	356	77	301
Thill-couplings. Antirattler attachment for	W. H. Brocksmith	572,629	Dec. 8	953	230	77	1490
Thill-couplings. Antirattler for	H. W. Lawrence	573,786	Dec. 22	3041	721	77	1909
Thill cross-bar	J. Imler	570,021	Oct. 27	2283	542	77	470
Thread. Apparatus for leveling silk	J. M. Weaver	570,691	Nov. 3	513	119	77	733
Thresher. Pea-	J. H. Gardner	570,222	Oct. 27	2759	657	77	561
Thresher. Pea-	J. F. Rhodes	570,209	Oct. 27	2023	692	77	536
Threshers. Separator for grain-	D. Snelling	568,807	Oct. 6	159	38	77	32
Threshing-machine	W. H. and J. Butterworth	574,303	Dec. 29	4035	959	77	2103
Threshing-machine	J. B. Outram	569,298	Oct. 13	1004	240, 241	77	207
Threshing-machine	G. W. Papke	573,479	Dec. 22	2503	593	77	1806
Threshing-machine	C. and F. Quintus, J. Ritchie, P. Quintus, P. Beebe, and F. Lukermann.	573,916	Dec. 29	3284	785, 786	77	1968
Threshing-machine band-cutter and feeder	F., P., and C. Quintus	569,230	Oct. 13	886	210, 211, 212	77	185
Threshing-machine band-cutter and spreader	M. Regnier	573,701	Dec. 22	2914	689	77	1884
Threshing-machine feeder	J. W. Livermore	570,257	Oct. 27	2714	645, 646	77	553
Threshing-machine feeder	A. E. Pratt	570,336	Oct. 27	2897	688	77	585
Threshing-machine feeding attachment	G. W. Rucker	569,588	Oct. 13	1517	357	77	302
Threshing-machine magnetic separator	E. H. Osborn	570,496	Nov. 3	110	27	77	658
Threshing-machine recleaner	J. P. Monnett	572,086	Nov. 24	2968	698	77	1253
Ticket-book cover	W. J. Perdue	571,390	Nov. 17	1710	407	77	1000
Ticket-case	E. S. McMaster	573,524	Dec. 22	2574	611	77	1819
Ticket register. Transfer-	C. E. Grobet	571,659	Nov. 17	2165	520, 521	77	1082
Tide-indicator	A. A. Low	569,340	Oct. 13	1080	257	77	223
Tie: *See* Bale-tie. Metal tie. Metallic tie. Package-tie. Railway-tie.							
Tie-plate	M. Sellers	573,543	Dec. 22	2610	619	77	1826
Tile	A. Shelmerdine	572,454	Dec. 1	650	153	77	1402
Tile	W. A. C. Waller	573,939	Dec. 29	3326	794	77	1976
Tile machine. Roofing-	G. Kreba and A. Weil	573,604	Dec. 22	2715	645	77	1847
Tile. Roofing-	M. Horlocker	573,398	Dec. 15	2200	526	77	1732
Time-lock	I. G. Blake	573,855	Dec. 29	3168	755	77	1948
Timepiece balance-escapement	H. S. Barber	569,852	Oct. 20	1998	476	77	404
Time-recorder. Employee's	E. W. Lindenau	571,272	Nov. 10	1518	358, 359, 560	77	949
Time-recorder key	E. G. Heene	571,268	Nov. 10	1511	357	77	948
Time-recorder. Workman's	E. G. Watkins	570,241	Oct. 27	2686	638	77	547
Tin and terne plates. Machine for polishing	N. D. Lewis	571,071	Nov. 10	1165	272	77	883
Tin-plate cleaning and polishing machine	D. Cox and L. Spence	569,090	Oct. 6	643	147	77	123
Tire-adjuster	J. T. Taylor	573,310	Dec. 15	2177	519	77	1728
Tire. Bicycle-	J. W. Carns and E. Failor	569,172	Oct. 13	781	183	77	165
Tire. Bicycle-	C. A. Hussey	571,444	Nov. 17	1799	429, 430	77	1016
Tire. Bicycle-	L. C. Neal	573,907	Dec. 29	3266	780	77	1965
Tire. Bicycle-	R. S. Williams	572,463	Dec. 1	662	156	77	1404
Tire. Bicycle-	F. L. Woodhouse	574,015	Dec. 29	3177	831	77	2002
Tire cleaner. Bicycle-	W. H. Clark	572,355	Dec. 1	475	111	77	1369
Tire-coupling	E. Gorsuch	573,781	Dec. 22	3033	719	77	1907
Tire. Elastic tubular	L. J. Wilde	572,738	Dec. 8	1158	278	77	1518
Tire fabric	P. Krumscheid	573,008	Dec. 15	1618	389	77	1625
Tire-fastening	A. M. Williamson	571,872	Nov. 24	2361	607	77	1176
Tire for bicycles	W. H. Taylor	568,813	Oct. 6	172	41	77	35
Tire for vehicle-wheels. Cushion-	A. E. Spencer	569,523	Oct. 13	1387	327	77	278
Tire for vehicle-wheels. Elastic sectional	J. Lindsay	573,471	Dec. 22	2492	591	77	1804
Tire for vehicle-wheels. Spring-	J. Ridge	573,920	Dec. 29	3290	787	77	1970
Tire for vehicle-wheels. Spring-	J. Ridge	573,921	Dec. 29	3291	788	77	1970
Tire for vehicle-wheels. Spring-	J. Ridge	573,922	Dec. 29	3293	788	77	1970
Tire for vehicles. Cushion-	J. R. Boice	569,403	Oct. 13	1187	280	77	242
Tire. Pneumatic	C. W. Berneson	573,838	Dec. 22	3144	749	77	1928
Tire. Pneumatic	L. Claxton	573,444	Dec. 22	2441	579	77	1795
Tire. Pneumatic	H. Faulkner	571,947	Nov. 24	2700	639	77	1204
Tire. Pneumatic	R. Pattison	573,997	Dec. 29	3440	825	77	1997
Tire. Pneumatic	G. W. Weiss	569,074	Oct. 6	614	139	77	118
Tire. Rubber	R. A. Leigh	573,671	Dec. 22	2866	677	77	1875
Tire-tightener	E. Gorsuch	573,780	Dec. 22	3033	718	77	1907
Tire-tightening washer	J. Pollock	573,616	Dec. 22	2733	649	77	1851
Tire valve. Pneumatic-	W. E. Collins	573,392	Dec. 15	2306	551	77	1752
Tire. Vehicle-wheel	S. S. Elder	569,864	Oct. 20	2014	480	77	407
Tire. Vehicle-wheel	C. A. Pratt	569,566	Oct. 13	1473	346	77	294
Tire. Wheel	W. Corliss	569,370	Oct. 13	1130	269	77	232
Tires. Automatic pump for inflating pneumatic	R. Mainardi	573,826	Dec. 22	3125	744	77	1924
Tires. Automatic pump for pneumatic	T. M. Jenks	571,001	Nov. 10	1042	244	77	861
Tires. Clamp for repairing bicycle-	W. Foth	568,783	Oct. 6	73	16	77	17
Tires. Device for repairing pneumatic	L. M. Devore	570,155	Oct. 27	2525	599	77	517
Tires. Implement for replacing inner tubes of pneumatic	W. S. McCutcheon	570,142	Oct. 27	2506	594	77	513
Tires. Manufacturing pneumatic	F. W. Wood	571,820	Nov. 24	2465	.....	77	1158
Tires. Means for closing punctures in pneumatic	E. G. Hurt and E. M. Hostetter	569,757	Oct. 20	1841	437	77	376
Tires. Patch for bicycle-	A. C. Rehbein	568,794	Oct. 6	139	34	77	29
Tires. Protector for pneumatic	E. Davies and A. Harrison	572,159	Dec. 1	117	28	77	1300

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Tires. Repair-plug for pneumatic	D. W. Colhapp	571,108	Nov. 10	1249	290	77	898
Tires. Tool for mending punctures in pneumatic	A. and A. T. Heywood	570,664	Nov. 3	463	109	77	725
Tires. Tool for repairing pneumatic	D. A. Syme	573,049	Dec. 15	1896	406	77	1640
Tires with cement. Needle for repairing punctured bicycle	C. F. White	571,422	Nov. 17	1760	420	77	1009
Toaster	E. P. Davies	573,574	Dec. 22	2660	632	77	1835
Tobacco-cutting device. Plug	A. E. Lycan	571,905	Nov. 24	2631	624	77	1189
Tobacco-cutting machine	G. Bentley	572,149	Dec. 1	94	21	77	1296
Tobacco-leaf-stemming machine	R. W. Coffee	569,575	Oct. 13	1491	351, 352, 353	77	297
Tobacco. Machine for grading and assorting leaf	J. M. and O. A. Gale	569,189	Oct. 13	806	189, 190	77	169
Tobacco-pipe	J. Andersson	572,240	Dec. 1	257	61	77	1327
Tobacco-pipe	H. and H. Hunt, Jr.	573,662	Dec. 22	2850	672	77	1872
Tobacco-pipe	G. Stark	571,805	Nov. 24	2438	581	77	1154
Tobacco-treating apparatus	J. Wright	569,313	Oct. 13	1035	246	77	214
Toboggan	H. P. Herron	571,665	Nov. 17	2177	524	77	1005
Toilet-box	J. W. Beck	569,402	Oct. 13	1187	280	77	242
Tongs	O. L. Owen	572,564	Dec. 8	837	201	77	1456
Tongs or grapple	H. Sawyer	569,939	Oct. 20	2148	508, 509	77	432
Tool and tool-handle	F. A. Reichardt	574,043	Dec. 29	3529	843	77	2012
Tool. Combination	G. J. Capewell	572,406	Dec. 1	579	137	77	1388
Tool. Combination	O. M. Cheney	569,955	Oct. 20	2177	517	77	437
Tool. Combination	O. Engman	569,963	Oct. 20	2188	519	77	439
Tool. Combination	F. A. Roseman	570,188	Oct. 27	2584	613	77	528
Tool. Combination	J. F. Ryder	571,287	Nov. 10	1541	366	77	953
Tool. Combination	N. M. Stebbins	574,178	Dec. 29	3802	908	77	2060
Tool-fishing apparatus	G. L. McKain	571,279	Nov. 10	1528	362	77	951
Tool-handles. Detachable fastening for	A. Bohy	573,565	Dec. 22	2649	629	77	1833
Tool-holder	C. E. Goodspeed	570,923	Nov. 10	916	212	77	838
Tool-holder. Adjusting	H. S. Hanstine	571,900	Nov. 24	2624	621	77	1188
Tooth-crowns. Means for constructing seamless metal	A. T. McMillin	570,044	Oct. 27	2323	551	77	478
Tooth-crowns. Mold for shaping metallic	L. L. White	571,102	Nov. 10	1239	288	77	896
Toothpick-machine receiving and delivering spout	H. P. Churchill	570,744	Nov. 3	602	138	77	749
Towel-holder	L. F. Bristol, J. O. Baxter, and J. M. Searles.	569,608	Oct. 20	1553	365	77	324
Towel-rack	S. J. Holmes	568,905	Oct. 6	320	74	77	61
Tower. Metal	J. Todd	569,687	Oct. 20	1705	403	77	352
Towing apparatus	A. de Bovet	570,839	Nov. 3	763	174, 175	77	780
Towing apparatus. Electric	A. E. Schatz	572,377	Dec. 1	536	127	77	1380
Toy	J. J. Deal	570,595	Nov. 3	301	74	77	694
Toy	C. Demorest	571,754	Nov. 24	2356	563	77	1137
Toy	C. Engel	568,972	Oct. 6	438	98	77	84
Toy	W. A. Hoffmann	572,166	Dec. 1	127	30	77	1302
Toy	F. R. Treasure	569,728	Oct. 20	1788	425	77	366
Toy. Advertising	R. S. West	571,548	Nov. 17	1969	473	77	1050
Toy and advertising-machine. Mechanical	C. S. Pocock	571,015	Nov. 10	1074	250	77	866
Toy building-block	H. W. Stratton	570,688	Nov. 3	508	118	77	733
Toy cannon and target	J. Hannan	569,282	Oct. 13	974	233	77	201
Toy derrick. Self-supporting	W. M. Hart	568,975	Oct. 6	441	98	77	85
Toy figure. Articulated	F. M. Spiegle	572,730	Dec. 8	1140	275	77	1514
Toy. Jumping	F. P. Shek	573,241	Dec. 15	2030	486	77	1702
Toy money-box	R. J. Sellentine	569,241	Oct. 13	907	217	77	189
Toy or game device	W. W. Flye	570,544	Nov. 3	195	52	77	674
Toy or puzzle	T. W. Patrick	570,047	Oct. 27	2327	552	77	478
Toy puzzle	M. J. Howlett	571,477	Nov. 17	1855	441	77	1026
Toy. Rotary pneumatic	G. Laube	571,449	Nov. 17	1807	431, 432	77	1018
Toy. Sounding wheeled	S. V. Harbaugh and G. Rudiger, Sr.	573,217	Dec. 15	1991	478	77	1695
Toy water-wheel	J. D. Kinsley and S. L. Powers	568,856	Oct. 6	247	58	77	48
Toy. Yacht-racing	E. G. Solomon	568,808	Oct. 6	161	38	77	33
Trace-holder	G. Laube	572,427	Dec. 1	609	144	77	1394
Trace-holder	G. Laube	572,487	Dec. 1	693	166	77	1410
Trace-loop. Adjustable	S. E. Purdum	574,165	Dec. 29	3757	897	77	2054
Track-cleaner or current-collector	W. M. Roberts, Jr.	570,339	Oct. 27	2901	689	77	586
Track-drill	J. P. Coleman	572,156	Dec. 1	113	27	77	1299
Track-gage	H. W. Armstrong	568,725	Oct. 6	3	1	77	3
Track instrument	T. B. Dixon	570,700	Nov. 3	525	122	77	736
Track instrument	T. B. Dixon	571,472	Nov. 17	1846	440	77	1025
Track-jack	E. P. Caldwell	569,574	Oct. 13	1488	350, 351	77	297
Track-sanding apparatus. Automatic	H. L. Leach	572,428	Dec. 1	610	144, 145	77	1394
Track-sanding apparatus. Automatic valve for	M. E. Boulter	572,087	Nov. 24	2972	698, 699	77	1253
Traction-engine	R. S. Angell	571,326	Nov. 17	1609	382	77	981
Traction-engine and harvester attachment	B. Holt	573,593	Dec. 22	2698	640	77	1844
Traction-motor	H. N. Revelle, M. M. Ford, and J. W. Kelley.	572,371	Dec. 1	508	119, 120	77	1374
Train-order-blank pad	F. W. Weeks	574,349	Dec. 29	4112	977	77	2118
Train-pipe	J. M. Doran	571,755	Nov. 24	2358	563	77	1138
Tramway. Aerial	J. H. Dickinson	570,386	Oct. 27	2977	705, 706	77	601
Tramway. Aerial	J. H. Dickinson	570,387	Oct. 27	2979	706	77	601
Tramway-switch	M. W. Hibbard	569,199	Oct. 13	826	193, 194, 195	77	173
Transferring apparatus	F. H. Richards	572,070	Nov. 24	2923	689, 690, 691	77	1944
Transformer regulation. Rotary	R. D. Mershon	571,863	Nov. 24	2545	603	77	1173

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Transmitter-bracket. Adjustable	A. Y. Gordon	569,376	Oct. 13	1139	271	77	234
Transom-adjuster	H. Newman	571,386	Nov. 17	1706	405	77	999
Transportation system	W. Grosvenor	569,280	Oct. 13	966	231, 232	77	200
Trap: *See* Animal-trap. Sewer-trap. Insect-trap. Steam-trap.							
Traveling-bag	G. Lowther	570,809	Nov. 3	702	160	77	768
Traveling-case	O. P. Hurd	571,124	Nov. 10	1282	297	77	904
Treadle mechanism	F. Ljungström	573,016	Dec. 15	1631	391, 392	77	1627
Tree-box	M. H. Stephens	572,133	Dec. 1	72	16	77	1292
Tree extractor and carrier	H. P. Lentz	572,902	Dec. 8	1408	341	77	1567
Tree-protector	H. H. Belknap	569,082	Oct. 6	632	144	77	121
Tree-protector	H. H. Belknap	569,083	Oct. 6	633	145	77	121
Tree-protector	H. H. Belknap	569,084	Oct. 6	633	145	77	121
Trees. Device for transporting	C. O. Halling	569,042	Oct. 6	561	129	77	107
Triangle and protractor. Combined	W. J. Belcher	570,977	Nov. 10	1002	232	77	853
Tricycle	D. M. Pfautz	573,285	Dec. 15	2117	508, 509	77	1718
Trigonometrical elucidator	R. H. Edmiston	570,157	Oct. 27	2528	599	77	517
Trimmer-guide	F. J. Freese	570,392	Oct. 27	2998	710	77	604
Trimming-machine	H. M. Leland	569,789	Oct. 20	1897	450	77	385
Tripod	F. A. Brownell	572,326	Dec. 1	428	101	77	1360
Tripod. Enamelers'	E. W. Ball and L. E. Vacheron	569,160	Oct. 13	766	178	77	162
Trolley	J. A. Hance	570,475	Nov. 3	63	15	77	650
Trolley	N. D. Stanley and J. S. Reynolds	574,345	Dec. 29	4108	976	77	2117
Trolley	F. T. Walton	570,740	Nov. 3	598	137	77	748
Trolley adjusting and regulating device	C. F. Randall	573,535	Dec. 22	2592	615	77	1822
Trolley-catcher	C. F. Randall	569,352	Oct. 13	1102	261	77	227
Trolley. Electric-car	S. F. Tufts	571,710	Nov. 17	2256	541	77	1099
Trolley. Electric-railway	H. D. Hinckley	571,120	Nov. 10	1269	294	77	902
Trolley. Electric-railway	P. C. Macevoy	571,092	Nov. 10	1210	283	77	892
Trolley. Electric-railway	H. A. Seymour	572,933	Dec. 8	1482	356	77	1582
Trolley. Electric-railway	W. M. Whiting	570,078	Oct. 27	2393	567	77	492
Trolley-finder	W. J. Donahue and W. B. Hausman	571,994	Nov. 24	2782	656	77	1218
Trolley for electric railways	H. A. Seymour	569,889	Oct. 20	2049	488	77	413
Trolley-pole governor	V. T. Lynch	573,517	Dec. 22	2582	608	77	1817
Trolley-pole safety device	B. H. Börreson	573,257	Dec. 15	2056	492	77	1707
Trolley-pulley. Ball-bearing	H. N. Gale	569,631	Oct. 20	1597	377	77	333
Trolley-support for electric railways	S. H. Short	569,772	Oct. 20	1868	443	77	380
Trolley-support for trolley-cars	O. Holz	569,756	Oct. 20	1843	437	77	375
Trolley-switch. Automatic	L. M. Erb	571,517	Nov. 17	1930	460	77	1040
Trolley. Underrunning	N. C. Bassett	569,738	Oct. 20	1801	427	77	369
Trolley-way	M. Dillenburg	572,874	Dec. 8	1371	331	77	1560
Trolley-wheel support	C. F. L. Orth	572,940	Dec. 8	1495	358	77	1585
Trolley-wire hanger	W. S. Klainger	569,338	Oct. 13	1077	256	77	222
Trolling-hook	A. H. Smith	570,344	Oct. 27	2908	690	77	588
Trough: *See* Feed-trough. Watering-trough.							
Trousers. Bicycle	M. Aron	573,173	Dec. 15	1908	458	77	1680
Trousers-leg-folding device	Y. E. Holloway	573,784	Dec. 22	3038	720	77	1908
Trousers presser and stretcher	R. B. Colley	571,991	Nov. 24	2774	654	77	1217
Trousers-stretcher	C. Burnham	572,155	Dec. 1	111	26	77	1299
Trousers-stretcher	H. C. Hatch	569,021	Oct. 6	528	121	77	100
Trousers-waistband	J. Rosenberg	569,840	Oct. 20	1975	470	77	400
Truck	V. Chartener	572,104	Dec. 1	15	4	77	1281
Truck	J. A. Tackaberry	569,072	Oct. 6	611	139	77	117
Truck brake connection	M. G. Hubbard, Jr.	572,992	Dec. 15	1592	381	77	1620
Truck. Car	J. C. Barber	569,077	Oct. 6	619	141	77	119
Truck. Car	J. C. Barber	571,914	Nov. 24	2649	627, 628	77	1192
Truck. Car	J. C. Barber	573,636	Dec. 22	2794	661	77	1863
Truck. Car	J. A. Brill	571,824	Nov. 24	2471	586, 587	77	1159
Truck. Car	T. Crawford	571,263	Nov. 10	1500	353, 354	77	946
Truck. Car	J. H. Graham	570,473	Nov. 3	60	14	77	649
Truck. Car	H. Haupt	570,798	Nov. 3	689	158	77	765
Truck. Car	H. H. Hewitt	571,524	Nov. 17	1941	463, 464	77	1042
Truck. Car	F. H. Kindl	570,286	Oct. 27	2766	658	77	563
Truck. Car	W. Robinson	572,686	Dec. 8	1050	255	77	1498
Truck. Drier	W. A. Leary	570,644	Nov. 3	417	98	77	715
Truck. Electric-motor	N. C. Bassett	568,891	Oct. 6	302	69	77	58
Truck. Electric-motor railway	J. A. and G. M. Brill	571,825	Nov. 24	2475	567	77	1160
Truck-end casting	T. Eubank	569,964	Oct. 20	2189	519, 520	77	439
Truck equalizer. Car	J. H. Housman	570,875	Nov. 3	830	193	77	794
Truck-frame for railway-cars. Pressed-steel	C. T. Schoen	571,934	Nov. 24	2683	635	77	1200
Truck. Hand	H. O. Thomas	571,705	Nov. 17	2246	540	77	1098
Truck. Lumber	A. T. Bemis	569,992	Oct. 27	2241	532	77	402
Truck. Lumber	V. L. Emerson	569,962	Oct. 20	2186	519	77	439
Truck. Lumber	V. Hodell and A. Olson	573,269	Dec. 15	2076	498	77	1710
Truck. Metallic car	J. S. Hardie	569,044	Oct. 6	564	130	77	107
Truck. Motor-car	P. W. Leffler	573,823	Dec. 22	3119	742, 743	77	1923
Truck. Pivotal car	W. A. McGuire and M. G. Hubbard, Jr.	573,029	Dec. 15	1648	396	77	1631
Truck. Railway-car	W. Pennock	574,074	Dec. 29	3582	856	77	2022
Truck. Railway-car	E. N. Richards	571,932	Nov. 24	2680	634, 635	77	1200
Truck side frame. Car	H. H. Hewitt	571,522	Nov. 17	1938	462, 463	77	1042

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Truck side frame. Car	H. H. Hewitt	571,523	Nov. 17	1940	463	77	1042
Truck side frames. Making car	H. H. Hewitt	571,525	Nov. 17	1943	464	77	1043
Truck. Sleigh	S. C. Nutter	569,050	Oct. 6	577	132	77	110
Truck. Street-car	T. H. Lovejoy	571,091	Nov. 10	1208	283	77	891
Truck. Warehouse	M. J. Cunningham	572,411	Dec. 1	584	139	77	1369
Truck. Weighing	J. N. Brown	569,997	Oct. 27	2246	533	77	463
Trunk	G. Crouch	571,152	Nov. 10	1324	308	77	913
Trunk	F. J. Palica	572,714	Dec. 8	1107	268, 269	77	1508
Trunk	C. R. Starr	568,927	Oct. 6	355	82	77	68
Trunk and hinge therefor	F. Kelfel	574,095	Dec. 29	3627	866	77	2030
Trunk. Convertible	A. W. Newell	571,681	Nov. 17	2202	530	77	1089
Truss	P. Fredin	571,969	Nov. 24	2736	646	77	1210
Truss	J. D. Rowley	569,236	Oct. 13	900	216	77	188
Tub: *See* Bath-tub. Washtub.							
Tub-support, clothes-horse, and ironing-board. Combined	E. L. Bergstresser	573,756	Dec. 22	3000	711	77	1901
Tube: *See* Boiler-tube. Pneumatic-despatch tube. Compound tube. Smoking-tube. Conduit-tube. Speaking-tube.							
Tube	A. Kirschbaum	573,602	Dec. 22	2713	644	77	1847
Tube-cleaner	F. Haight	572,359	Dec. 1	482	113	77	1370
Tube or pipe cleaner	A. Jackson	572,994	Dec. 15	1594	382	77	1620
Tube punctures. Device for closing	W. B. Merritt	570,941	Nov. 10	950	220	77	844
Tube punctures. Device for closing	W. B. Merritt	570,942	Nov. 10	951	221	77	844
Tubes. Apparatus for manufacturing metal	B. Price	570,816	Nov. 3	717	163, 164, 165	77	771
Tubes. Machine for making compressible	H. Goodwin	574,147	Dec. 29	3715	885, 886	77	2046
Tubes. Making metal	P. Swanger	572,583	Dec. 8	869	209	77	1463
Tubes with fibrous material. Lining metal	E. T. Greenfield	570,165	Oct. 27	2542	604, 605	77	520
Tubing	M. M. Nicholls	568,870	Oct. 6	273	63	77	53
Tubing. Apparatus for tipping gas	C. D. Frees	572,419	Dec. 1	595	141	77	1391
Tubing. Compound reinforced	G. T. Warwick	569,261	Oct. 13	939	225	77	195
Tubular fabric. Endless	G. C. Moore	570,137	Oct. 27	2491	590	77	510
Tubular fabric. Woven	O. Frowein and W. Oberstebrink	570,012	Oct. 27	2269	539	77	467
Tufted articles. Apparatus for making	W. M. Jamison and F. Tuttle	572,759	Dec. 8	1189	286	77	1523
Tufts. Machine for making	J. Schuchat and D. G. Butts	570,685	Nov. 3	496	116, 117	77	731
Tug-holder	S. B. Lucas	573,689	Dec. 29	3242	772	77	1960
Tug. Thill	W. R. Chapin	570,904	Nov. 10	883	206	77	881
Tug. Thill	A. L. Lindsay	572,552	Dec. 8	808	194	77	1447
Turbine	H. Trenta	572,667	Dec. 8	1016	246	77	1492
Turbine. Steam	R. Hewson	570,756	Nov. 3	622	143	77	752
Turbine. Steam	H. A. House	571,861	Nov. 24	2541	602	77	1173
Tweezers. Diamond	L. A. Piaget	573,036	Dec. 15	1665	390	77	1635
Twine-holder	G. W. Fields and V. A. Boynton	574,317	Dec. 29	4056	963	77	2108
Twine or cord making machine	G. Florence	572,479	Dec. 1	681	163	77	1409
Tympan-gage	B. McGinty	573,345	Dec. 15	2229	533	77	1737
Type-binder	J. Seide	571,625	Nov. 17	2110	506	77	1072
Type-distributer	A. Dow	572,050	Nov. 24	2870	675, 676, 677, 678, 679	77	1235
Type-distributing machine	C. D. Hughes	572,705	Dec. 8	1088	264	77	1505
Type-making machine	A. T. Brown	572,673	Dec. 8	1023	248, 249	77	1493
Type. Manufacturing stencil	F. D. Belknap	573,851	Dec. 29	3163	754	77	1947
Type-matrix	W. Kemp, Jr	569,876	Oct. 20	2030	484	77	410
Type. Means for justifying	B. L. Fairchild	572,974	Dec. 15	1566	376	77	1615
Type-setting appliance	L. K. Johnson and A. A. Low	569,337	Oct. 13	1075	255, 256	77	222
Type-setting appliance	L. K. Johnson and A. A. Low	570,098	Oct. 27	2429	576, 577	77	499
Type-writer	L. K. Coe	570,453	Nov. 3	21	5	77	642
Type-writer	B. Granville	570,433	Oct. 27	3075	730, 731	77	619
Type-writer cabinet	W. Horrocks	571,765	Nov. 24	2374	567	77	1141
Type-writer cabinet	D. D. Walton, J. Barker, and H. Van Dyke.	569,259	Oct. 13	937	224	77	194
Type-writer desk	F. Field	569,914	Oct. 20	2096	499	77	422
Type-writer line-number and position attachment	C. W. Atwood	569,909	Oct. 20	2085	496	77	421
Type-writing machine	H. L. Arnold	572,350	Dec. 1	458	107, 108, 109, 110	77	1365
Type-writing machine	L. Bailey	569,737	Oct. 20	1799	427	77	369
Type-writing machine	B. A. Brooks	572,289	Dec. 1	355	85	77	1347
Type-writing machine	G. C. Elliott	573,081	Dec. 15	1754	421	77	1651
Type-writing machine	W. C. Farnum	570,158	Oct. 27	2529	600	77	517
Type-writing machine	W. C. Farnum	570,159	Oct. 27	2531	600, 601	77	518
Type-writing machine	W. C. Farnum	571,757	Nov. 24	2360	564	77	1138
Type-writing machine	J. Felbel	574,144	Dec. 29	3712	885	77	2045
Type-writing machine	R. J. Fisher	569,491	Oct. 13	1322	311	77	266
Type-writing machine	R. J. Fisher	569,625	Oct. 20	1578	371, 372, 373	77	329
Type-writing machine	R. J. Fisher	569,626	Oct. 20	1583	373, 374	77	330

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Type-writing machine	R. J. Fisher	569,627	Oct. 20	1587	374, 375	77	331
Type-writing machine	R. J. Fisher	572,535	Dec. 8	780	186, 187	77	1441
Type-writing machine	R. J. Fisher	573,868	Dec. 29	3200	762, 763	77	1952
Type-writing machine	E. Fitch	570,389	Oct. 27	2990	707, 708	77	603
Type-writing machine	W. Fredrick	570,546	Nov. 3	202	53, 54	77	675
Type-writing machine	W. Fredrick and H. W. Wachter	570,545	Nov. 3	198	52, 53	77	674
Type-writing machine	B. Granville	570,432	Oct. 27	3073	729, 730	77	618
Type-writing machine	A. E. Harnsberger and E. Wright	573,654	Dec. 22	2836	669, 670	77	1870
Type-writing machine	W. K. Jenne	571,002	Nov. 10	1046	245	77	892
Type-writing machine	W. G. Lane	569,928	Oct. 20	2119	504	77	427
Type-writing machine	O. F. Mayer	572,348	Dec. 1	455	107	77	1365
Type-writing machine	H. W. Merritt	574,159	Dec. 29	3738	892	77	2049
Type-writing machine	M. G. Merritt	573,472	Dec. 22	2494	591	77	1804
Type-writing machine	C. H. Shepard	573,626	Dec. 22	2773	657, 658	77	1859
Type-writing machine	E. Terry	570,886	Nov. 3	857	199, 200	77	800
Type-writing machine	R. Toepper	571,414	Nov. 17	1746	416, 417	77	1006
Type-writing machine	H. H. Unz	569,255	Oct. 13	931	223	77	193
Type-writing machine	H. H. Unz	570,522	Nov. 3	152	37	77	666
Type-writing machine	L. F. Urbanus	574,230	Dec. 29	3920	932, 933	77	2082
Type-writing machine	C. W. Walker	572,737	Dec. 8	1153	278	77	1517
Type-writing machine	C. W. Walker	572,845	Dec. 8	1329	320	77	1551
Type-writing machine	G. B. Webb	570,523	Nov. 3	154	37, 38	77	667
Type writing-machine cushion-key	R. S. Graham and W. B. Savell	569,196	Oct. 13	822	192	77	172
Type-writing-machine platen	J. D. Daugherty	569,092	Oct. 6	648	149	77	124
Type-writing-machine platen	C. W. Seamans	574,175	Dec. 29	3789	904	77	2059
Umbrella	R. P. Saffold	574,219	Dec. 29	3896	927	77	2077
Umbrella	H. Plack, Jr., and C. H. Pimlott	570,857	Nov. 3	798	183	77	787
Umbrella	C. Stumons	568,906	Oct. 6	158	37	77	32
Umbrella	J. W. Snowden	569,948	Oct. 13	923	220	77	192
Umbrella	R. Waples, Jr	569,569	Oct. 13	1479	348	77	294
Umbrella attachment	J. J. McIntyre	569,702	Oct. 20	1851	438	77	377
Umbrella. Folding	W. O. Whitney	573,375	Dec. 15	2280	544	77	1747
Umbrella or parasol	C. S. Stokes	571,911	Nov. 24	2644	626	77	1191
Umbrella or parasol	G. W. Swift, Jr	574,080	Dec. 29	3592	858	77	2024
Umbrella or parasol retainer and stop	W. Morrison	572,765	Dec. 8	1200	290	77	1525
Umbrella or parasol rib-tip holder	H. Scudder	572,833	Dec. 8	1314	315	77	1548
Umbrella rib and stretcher	D. H. Redmond and C. B. Baldwin	571,923	Nov. 17	2108	506	77	1072
Umbrellas, canes, &c. Support for	F. X. Waldron and J. Paquet	569,257	Oct. 13	933	224	77	194
Undergarment	C. A. Brown	570,606	Nov. 3	520	121	77	735
Undergarment	A. G. Velasko	570,971	Nov. 10	995	231	77	852
Underwaist	J. C. Andrews	571,636	Nov. 17	2133	512	77	1076
Upholstering-pin	J. M. Bolton and G. H. Howell	570,838	Nov. 3	762	174	77	780
Upholstery	J. A. Staples	572,581	Dec. 8	866	208, 209	77	1462
Urinal guard or screen	E. L. Maxwell and H. W. Gorman	571,275	Nov. 10	1524	361	77	950
Vacuum-pan	J. Smith	572,382	Dec. 1	542	128	77	1381
Valve	B. W. Hill	573,656	Dec. 22	2843	670	77	1871
Valve	T. Linke	568,858	Oct. 6	249	58	77	48
Valve	A. Marichal	573,607	Dec. 22	2721	647	77	1848
Valve	E. L. Rowe	572,451	Dec. 1	645	152	77	1401
Valve	S. W. Sampson	570,772	Nov. 3	648	148	77	757
Valve	F. H. Sharar	570,568	Nov. 3	255	63, 64	77	685
Valve	P. Spitzenberg	572,580	Dec. 8	865	208	77	1462
Valve	S. Tyldesley	568,965	Oct. 6	429	95	77	82
Valve	T. S. Wilkin	569,396	Oct. 13	1121	267, 268	77	231
Valve-actuating mechanism	G. Alderson	573,194	Dec. 15	1950	469	77	1687
Valve. Back-pressure	F. Henneböhle	572,296	Dec. 1	368	87	77	1349
Valve. Ball-cock	J. Porteous	573,530	Dec. 22	2583	613	77	1821
Valve. Boiler check	C. Linstrom	573,788	Dec. 22	3043	721	77	1909
Valve. Check	W. I. Miller	573,342	Dec. 15	2225	532	77	1736
Valve. Check	J. S. Wyndham and J. H. Hallett	574,295	Dec. 29	4024	956	77	2102
Valve. Closet-cistern	J. L. Mott, Jr	571,168	Nov. 10	1343	313	77	917
Valve-controlling device	C. E. Ongley	570,045	Oct. 27	2324	551	77	478
Valve. Cylindrical rotary	R. H. Rice	571,687	Nov. 17	2210	532	77	1091
Valve device. Gas-engine	W. L. Crouch	573,322	Dec. 15	2190	523, 524	77	1730
Valve. Flush-tank	C. F. Schumacher	573,540	Dec. 22	2606	618	77	1825
Valve for air-brakes. Triple	H. L. Howe	568,979	Oct. 6	449	100, 101	77	87
Valve for automatic sprinkler systems. Dry-pipe	J. T. Hill	570,018	Oct. 27	2277	541	77	468
Valve for boilers. Safety	T. Potterton	569,670	Oct. 20	1664	393	77	345
Valve for gas-engines. Discharge	W. Burger	570,376	Oct. 27	2961	703	77	597
Valve for service-pipes. Automatic	W. M. Williams	570,833	Nov. 3	755	172	77	779
Valve for steering apparatus, elevators, &c	A. R. Boluse	570,246	Oct. 27	2693	640	77	548
Valve-gear	O. P. Hart	573,875	Dec. 29	3216	765	77	1955
Valve-gear	A. Riedler	572,720	Dec. 8	1119	271	77	1511
Valve-gear	F. M. Rites	572,721	Dec. 8	1120	271, 272	77	1511
Valve-gear	F. M. Rites	572,722	Dec. 8	1125	272	77	1512
Valve-gear. Engine	P. Mundt	573,100	Dec. 15	1782	429	77	1657
Valve handle. Steam	R. McKeever	570,764	Nov. 3	636	146	77	754
Valve. Hydraulic	J. A. Zinn	569,907	Oct. 20	2083	496	77	420

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Valve mechanism	J. M. Bouck	569,166	Oct. 13	773	180	77	163
Valve mechanism	H. B. Gale	570,727	Nov. 3	564	130, 131	77	743
Valve mechanism. Hydraulic relief	J. H. Hubbell	569,921	Oct. 20	2108	102	77	424
Valve or faucet. Supply	H. C. Montgomery	570,811	Nov. 3	704	161	77	768
Valve. Power-motor	J. Anderson	572,396	Dec. 1	565	133	77	1385
Valve. Pressure-reducing	E. N. Dickerson and J. J. Suckert	571,346	Nov. 17	1639	389	77	987
Valve. Pressure reducing and regulating	L. H. Hawley	573,462	Dec. 22	2475	586, 587	77	1801
Valve. Regulating	R. M. Hunter	571,833	Nov. 24	2492	590	77	1164
Valve. Relief	W. W. Shirley	569,943	Oct. 20	2157	511	77	434
Valve. Safety	F. Henneböhle	572,297	Dec. 1	369	87	77	1349
Valve. Steam	C. Schneider	570,609	Nov. 3	323	80	77	698
Valve. Steam-engine	M. C. Bullock	571,893	Nov. 24	2611	618, 619	77	1185
Valve. Steam-engine	C. Knudsen	572,608	Dec. 8	919	222	77	1472
Valve. Steam-engine	E. F. Spaniding	572,579	Dec. 8	862	207, 208	77	1461
Valve. Steam stop	R. and W. McLaughlin	571,010	Nov. 10	1062	248, 249	77	865
Valve-stopper	C. E. Long	570,671	Nov. 3	474	110	77	726
Valve. Straightway	E. H. Lunken	571,880	Nov. 24	2576	610	77	1179
Valve. Tank	B. F. Mills	573,025	Dec. 15	1643	395	77	1630
Valve. Tank-supply	W. Scott	571,023	Nov. 10	1083	253	77	868
Valve. Triple	H. L. Howe	568,980	Oct. 6	454	102, 103	77	87
Vanillin. Obtaining	C. Bergmann	571,917	Nov. 24	2654	.....	77	1193
Vanillin paraphenetidin	C. Goldschmidt	572,890	Dec. 8	1392	.....	77	1564
Vapor-burner	H. A. Honse	571,860	Nov. 24	2539	602	77	1172
Vapor-burner	J. A. Lannert and W. R. Jeavons	570,854	Nov. 3	792	182	77	786
Vapor-burner	L. Stockstrom	569,524	Oct. 13	1388	327	77	278
Vapor burner with overheater. Petroleum	L. Dürr	568,842	Oct. 6	213	50	77	42
Vat: *See* Milk-heating vat.							
Vault-light	J. G. Pennycuick	568,789	Oct. 6	134	32	77	27
Vegetable cutting and grating machine	C. A. Langer	573,431	Dec. 15	2407	573	77	1770
Vehicle	J. Appleton	569,779	Oct. 20	1880	446	77	382
Vehicle	C. A. Hennicke	571,859	Nov. 24	2535	601	77	1171
Vehicle	M. Mishel	569,343	Oct. 13	1086	258	77	224
Vehicle-body	J. N. Miller	569,794	Oct. 20	1906	452, 453	77	387
Vehicle-brake	C. B. Fairchild	569,150	Oct. 6	747	174, 175	77	141
Vehicle-brake	C. B. Fairchild	572,939	Dec. 8	1491	358	77	1584
Vehicle-brake	J. H. Miller	569,342	Oct. 13	1085	257	77	224
Vehicle-brake	I. W. Price	571,240	Nov. 10	1463	343	77	938
Vehicle-brake	C. Snow	570,345	Oct. 27	2909	690	77	588
Vehicle-brake	V. T. Sweeney	573,246	Dec. 15	2038	489	77	1703
Vehicle-brake. Automatic	H. C. Osburn	573,995	Dec. 29	3447	824, 825	77	1997
Vehicle driving-gear	F. W. Haviland	570,395	Oct. 27	3002	710, 711	77	605
Vehicle driving-gear	F. W. Haviland	570,396	Oct. 27	3005	711, 712	77	606
Vehicle folding seat	J. A. Edwards	574,310	Dec. 29	4046	961	77	2106
Vehicle-gear	W. Atkinson	571,589	Nov. 17	2051	489	77	1061
Vehicle. Motor	E. Capitaine	572,498	Dec. 1	718	171	77	1414
Vehicle. Motor	J. M. Cook	569,175	Oct. 13	785	183, 184	77	166
Vehicle. Motor	J. F. Duryea	572,051	Nov. 24	2880	679, 680	77	1237
Vehicle. Motor	G. Langer	573,010	Dec. 15	1622	389, 390	77	1625
Vehicle. Motor	E. J. Pennington	570,440	Oct. 27	3093	737	77	623
Vehicle. Motor	E. J. Pennington	570,441	Oct. 27	3095	737	77	623
Vehicle. Motor	E. J. Pennington	574,262	Dec. 29	3967	942, 943	77	2080
Vehicle motor and wheel	C. F. Goddard	574,200	Dec. 29	3852	918	77	2069
Vehicle running-gear	I. M. Allen and J. M. Miller	568,889	Oct. 6	299	68	77	57
Vehicle running-gear	O. Gravel	571,856	Nov. 24	2532	600	77	1171
Vehicle running-gear	B. F. Haldeman	572,481	Dec. 1	686	164	77	1409
Vehicle running-gear	A. A. Holt	571,764	Nov. 24	2373	566, 567	77	1141
Vehicle-seats. Folding canopy-cover for	A. G. Henery	573,974	Dec. 29	3412	818	77	1990
Vehicle. Self-propelling	R. H. Plass	570,952	Nov. 10	967	225	77	847
Vehicle. Self-propelling	R. H. Plass	571,392	Nov. 17	1712	407, 408	77	1000
Vehicle-spring	H. C. Swan	572,733	Dec. 8	1147	277	77	1515
Vehicle-starter	C. Dietz	572,970	Dec. 15	1559	373, 374	77	1613
Vehicle storm-guard	S. Norton	569,466	Oct. 13	1278	301	77	258
Vehicle-top connection	D. H. Bucher	572,595	Dec. 8	893	216	77	1467
Vehicle-washing device	J. P. Baird	570,690	Nov. 3	863	201	77	801
Vehicle-wheel	E. Ase	573,635	Dec. 22	2793	661	77	1863
Vehicle-wheel	A. F. Chace	570,697	Nov. 3	521	121	77	735
Vehicle-wheel	N. D. Coe	573,764	Dec. 22	3011	713	77	1903
Vehicle-wheel	J. S. Copeland	574,194	Dec. 29	3842	916	77	2067
Vehicle-wheel	S. A. Motheral	569,118	Oct. 6	681	159	77	130
Vehicle-wheel	P. Richardson	573,238	Dec. 15	2026	486	77	1701
Vehicle. Wheeled	J. J. Kulage	573,334	Dec. 15	2208	528, 529	77	1734
Vehicles. Construction and propulsion of	J. Gambetta	573,214	Dec. 15	1984	477	77	1694

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Vehicles. Evener for two-horse	J. Hook, Jr.	571,134	Nov. 10	1297	301	77	907
Vehicles. Front gear for	O. Armleder	568,828	Oct. 6	193	46	77	39
Vehicles. Sunshade for canopied	A. W. Hollingsworth	571,443	Nov. 17	1798	429	77	1016
Vehicles. Thorough-brace for	O. B. Fuller	569,451	Oct. 13	1259	296	77	254
Velocipede	E. L. Evens	573,456	Dec. 22	2467	585	77	1799
Velocipede	T. Hall	570,015	Oct. 27	2273	540	77	467
Velocipede	E. Humbrecht	571,069	Nov. 10	1159	270, 271	77	883
Velocipede	R. Miehle	568,862	Oct. 6	255	60	77	50
Velocipede	A. Miller	570,761	Nov. 3	631	145	77	754
Velocipede-handle	H. H. Luscomb	569,877	Oct. 20	2031	484	77	410
Velocipede lamp-bracket	R. C. Whayne	571,101	Nov. 10	1247	288	77	896
Velocipede. Marine	S. E. Maxon	573,828	Dec. 22	3129	746	77	1925
Velocipede. Railway	C. N. Teetor	569,683	Oct. 20	1698	402	77	351
Velocipede-saddle	S. Pattisson	570,497	Nov. 3	111	27	77	658
Velocipede-working mechanism	B. Ljungström	571,197	Nov. 10	1387	324	77	924
Vending device	G. O. Ranson	572,029	Nov. 24	2831	667	77	1227
Vending-machine	F. D. Arthur	572,513	Dec. 8	746	178	77	1435
Vending-machine. Coin-controlled	C. Burton	572,523	Dec. 8	764	181, 182	77	1439
Vending-machine. Coin-controlled	S. Vail	569,775	Oct. 20	1873	444	77	381
Veneer-dish machine	A. W. Ferrea	570,088	Oct. 27	2412	570, 571, 572	77	496
Veneers. Composition of matter for manufacturing artificial	C. Köster	572,016	Nov. 24	2813	.....	77	1224
Vent. Safety	J. T. Hayden	571,476	Nov. 17	1854	441	77	1026
Ventilating apparatus for vehicles, &c.	E. P. Phelps	572,444	Dec. 1	631	149	77	1398
Ventilator: *See* Car-ventilator.							
Vessel	C. Odinet	573,690	Dec. 22	2893	684	77	1881
Vessel-closure	F. A. Walsh	571,814	Nov. 24	2455	584	77	1157
Vessels. Apparatus for raising sunken	A. H. Wolf	569,442	Oct. 13	1245	293	77	252
Vessels. Apparatus for raising sunken	A. G. Midford	572,364	Dec. 1	493	115, 116	77	1372
Vessels. Construction of	R. A. Roberts	573,297	Dec. 15	2142	514	77	1752
Vest	F. H. Sprague	571,543	Nov. 17	1931	471	77	1048
Veterinary smoke-injector	T. H. Pendergast and B. H. Bueter	570,332	Oct. 27	2891	686	77	584
Veterinary tooth-cutter	T. J. Pence	571,283	Nov. 10	1534	363, 364	77	932
Vise	E. and J. Klingenberg	573,886	Dec. 29	3239	771	77	1959
Vise	D. C. and J. Sabourin	570,340	Oct. 27	2903	689	77	567
Vise	J. M. Van Meter	573,056	Dec. 15	1706	408, 409	77	1642
Vise. Bench	J. F. Parker and C. M. Bennett	572,367	Dec. 1	499	117, 118	77	1373
Vises. Clamping-jaw for	R. M. Reilly	569,057	Oct. 6	580	135	77	113
Volatilizer	J. H. Valentine	571,811	Nov. 24	2448	583	77	1156
Voltmeter	A. A. Simonds	572,380	Dec. 1	539	127	77	1381
Vote-recording machine	W. A. Swaren	569,682	Oct. 20	1688	400, 401	77	350
Voting-machine	L. Y. McConnell	570,812	Nov. 3	706	161, 162	77	769
Waffle-iron	R. O. Bingham and B. P. Wagner	569,444	Oct. 13	1250	293	77	253
Waffle-iron	E. F. Nutt	569,227	Oct. 13	883	210	77	184
Wagon	F. Fischer	570,467	Nov. 3	47	11	77	647
Wagon-body. Dumping	H. D. Lorash	569,108	Oct. 6	669	155, 156	77	128
Wagon-body. Folding	J. M. Fischer	569,450	Oct. 13	1258	295, 296	77	254
Wagon-body lifter	E. J. Strong	573,719	Dec. 22	2945	690	77	1890
Wagon-brake	T. J. Farrell and W. Clancy	573,585	Dec. 22	2879	637	77	1840
Wagon-brake	G. F. Moore	570,138	Oct. 27	2493	591	77	510
Wagon-brake	W. Pendley	570,333	Oct. 27	2892	687	77	585
Wagon-brake. Automatic	J. S. Cochran	573,446	Dec. 22	2446	581	77	1795
Wagon. Delivery	J. W. Akerman	571,324	Nov. 17	1607	382	77	981
Wagon-dump	J. B. and A. R. Conmyer	572,630	Dec. 8	955	231	77	1480
Wagon. Dumping	J. H. Jack	572,344	Dec. 1	450	106	77	1364
Wagon. Dumping	E. L. Layton	573,987	Dec. 29	3430	822	77	1993
Wagon-jack	J. J. Adgate	571,078	Nov. 10	1184	277, 278	77	887
Wagon-jack	A. M. Beard	569,080	Oct. 6	624	142	77	119
Wagon or crate. Covered	M. L. Senderling	574,078	Dec. 29	3589	857	77	2023
Wagon-standard	W. F. Dill	571,514	Nov. 17	1927	460	77	1039
Wagon-standard	E. Foutrel	573,458	Dec. 22	2470	585	77	1800
Wagon-wheel	W. S. O'Brien	569,467	Oct. 13	1280	301	77	258
Wagons. Power-transmitter for road	E. Prouty	570,501	Nov. 3	119	29	77	660
Waist and skirt pin and belt slide and keeper. Combined	C. and E. J. Deitsch	574,084	Dec. 29	3598	860	77	2025
Waistband. Elastic	J. B. Faitoute	569,411	Oct. 13	1203	283	77	244
Waistband for nether garments	S. B. and F. F. Lewis	570,317	Oct. 27	2869	680	77	580
Walking-stick and umbrella. Combined	E. E. Greene	572,983	Dec. 15	1579	379	77	1617
Wall-rack	A. T. Demorest	570,384	Oct. 27	2975	705	77	600
Walls, &c. Construction of supports for	J. Brenchaud	570,370	Oct. 27	2953	701	77	396
Walls. Construction of supports for building	R. S. Gillespie	570,792	Nov. 3	676	155, 156	77	763
Warp-compressor	D. McTaggart	573,346	Dec. 15	2232	533, 534	77	1738
Warp-drying machine	F. Turnbull	574,289	Dec. 29	4018	953, 954	77	2100
Washboard	F. J. Merriam and J. A. W. Sears	569,879	Oct. 20	2035	485	77	410
Washboard	N. S. Monroe	571,574	Nov. 17	2029	483	77	1057
Washtub	J. Conway	572,597	Dec. 8	897	217	77	1468

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Washer: *See* Barrel-washer. Gold-washer. Bottle-washer. Ore-washer. Coal-washer. Tire-tightening washer.							
Washing-machine	W. Acheson	570,360	Oct. 27	2933	697	77	592
Washing-machine	H. G. Belcher	569,740	Oct. 20	1804	428	77	369
Washing-machine	H. F. Brammer and M. J. Kremer	570,152	Oct. 27	2521	597, 598	77	516
Washing-machine	A. H. B. Dean	572,337	Dec. 1	441	104	77	1363
Washing-machine	C. Dietz	569,619	Oct. 20	1572	370	77	328
Washing-machine	J. H. Estes	571,304	Nov. 10	1570	373	77	960
Washing-machine	W. S. Foster	571,758	Nov. 24	2362	564	77	1139
Washing-machine	J. M. Grover	571,475	Nov. 17	1852	441	77	1026
Washing-machine	J. S. Hilyard	570,853	Nov. 3	791	182	77	785
Washing-machine	J. Hofmann	569,379	Oct. 13	1143	272	77	234
Washing-machine	J. Lachance	571,671	Nov. 17	2185	526	77	1086
Washing-machine	J. H. Lamson	573,336	Dec. 15	2217	510	77	1735
Washing-machine	W. R. McPherron	570,709	Nov. 3	538	125	77	738
Washing-machine	H. J. Paarmann	573,349	Dec. 15	2237	535	77	1739
Washing-machine	J. H. Stewart	569,141	Oct. 6	728	171	77	138
Washing-machine	J. W. Sunderland	570,190	Oct. 27	2586	614, 615	77	528
Washing-machine	J. L. West	571,501	Nov. 17	1906	455	77	1035
Washing-machine	J. C. Wilson	571,819	Nov. 24	2464	585	77	1158
Washing-machine bearing and journal	C. Dietz	572,745	Dec. 8	1169	280, 281	77	1520
Washing-machine for piece goods	A. Turkington	573,936	Dec. 29	3321	793	77	1975
Washing-machines. Gearing for	S. M. Windmiller and L. Holford	568 824	Oct. 6	189	45	77	38
Watch-carrier	W. E. Porter	572 368	Dec. 1	501	118	77	1373
Watchcase-spring	C. Nobs, Jr	569,297	Oct. 13	1003	240	77	207
Watch hair-spring	W. W. Griscom	570,394	Oct. 27	3000	710	77	605
Watch-regulator	M. Sporleder	569,844	Oct. 20	1981	471	77	401
Water-carrier	J. A. Bohon	571,640	Nov. 17	2139	513	77	1078
Water-closet	W. G. Coles and F. A. Barker	570,543	Nov. 3	194	52	77	674
Water-closet	M. L. McGuire	569,383	Oct. 13	1149	273	77	235
Water-closet	J. C. Reed	571,244	Nov. 10	1471	345	77	940
Water-closet	W. Simmonds and C. Linegar	568,881	Oct. 6	285	66	77	55
Water-closet apparatus	C. H. Moore	574,339	Dec. 29	4100	974	77	2116
Water-closet bowls. Venting device for	C. H. Cook	570,992	Nov. 10	1010	235	77	855
Water-closet coupling	J. Totham	568,990	Oct. 6	491	111	77	94
Water-closet flushing attachment	P. J. Madden	569,3[illegible]	[illegible]	1081	257	77	223
Water-closet flushing attachment	P. J. Madden	569,5[illegible]	[illegible]13	1453	343	77	290
Water-closet flushing attachment	P. J. Madden	569,566	[illegible] 13	1455	344	77	290
Water-closet flushing attachment	P. J. Madden	574,367	Dec. 29	4142	984	77	2123
Water-closet flushing device	N. P. Emmet	573,592	Dec. 22	2674	634	77	1839
Water-closet joint	E. L. Davis	571,471	Nov. 17	1844	439	77	1024
Water-closet pipe connection	A. Loring	569,790	[illegible] 10	1899	450	77	385
Water-closet. Siphon	W. Scott	572,575	[illegible]	954	205, 206	77	1460
Water-closet. Siphon	E. C. Stover	571,026	[illegible] 10	[illegible]98	254	77	869
Water-cooling apparatus	W. J. Loughridge	570,318	Oct. 27	2870	681, 682	77	580
Water-elevator	W. Claypool and C. E. Dooley	572,596	Dec. 8	894	216	77	1468
Water-elevator	J. M. Corn	573,963	Dec. 29	3384	809	77	1986
Water-elevator	M. H. White	570,526	Nov. 3	159	38, 39	77	667
Water-elevator. Compressed-air	J. A. Martin and J. L. Latta	569,294	Oct. 13	997	239	77	206
Water-elevator. Windlass	R. W. Faris	570,702	Nov. 3	530	123	77	736
Water from wells. System for collecting	L. C. Eisenhut	574,198	Dec. 29	3847	917	77	2068
Water-gage	W. Britton	569,167	Oct. 13	775	181	77	164
Water-gage glass	J. Pissinger	572,181	Dec. 1	152	37	77	1307
Water-heater	H. Haeberlin	570,128	Oct. 27	2477	587	77	507
Water-heater. Sectional	C. Steel	569,360	Oct. 13	1113	265	77	229
Water-heating apparatus	W. and I. Darby and J. H. Punchard	569,815	Oct. 20	1936	460, 461	77	392
Water-meter	G. B. Bassett	569,271	Oct. 13	954	228, 229	77	198
Water-meter	F. W. Hood	568,759	Oct. 6	85	20	77	19
Water-meter. Rotary	J. G. Summers	571,703	Nov. 17	2242	539	77	1097
Water-motor	A. D. Oles	572,684	Dec. 8	1045	253, 254	77	1497
Waterproof composition	G. C. F. Hauser	572,295	Dec. 1	367	.....	77	1349
Waterproof garment	M. D. Beach	570,081	Oct. 27	2397	568	77	493
Waterproofing felt. Composition for	W. Müller	571,384	Nov. 17	1702	.....	77	998
Water-raising apparatus	G. R. Young and C. Shaw	572,850	Dec. 8	1336	321	77	1553
Water-sprinkler	W. S. Kisinger	572,120	Dec. 1	45	11	77	1287
Water-supply system. Electrically-operated	J. P. Barrett	571,328	Nov. 17	1612	383	77	982
Water supply to closets, urinals, &c. Apparatus for regulating	A. Long	570,487	Nov. 3	91	21	77	655
Water-tank. Portable	E. D. Etnyre	573,584	Dec. 22	2678	636	77	1840
Water-tower	W. H. Jackson and B. N. Moss	572,995	Dec. 15	1595	382	77	1620
Water-tube boiler	C. Edgerton	572,476	Dec. 1	677	162	77	1407
Water-tube boiler	G. Schisler	569,239	Oct. 13	904	216	77	189
Water-wheel	A. M. Pascault and J. F. M. H. de Coursac.	570,951	Nov. 10	966	224, 225	77	847
Water-wheel bucket	A. Chavanne	571,510	Nov. 17	1921	458	77	1038
Water-wheel governor. Electric	A. Giesler	574,320	Dec. 29	4061	965, 966	77	2109
Water-wheel. Turbine	J. and E. Caldwell	569,613	Oct. 20	1563	366	77	326
Water-wheels. Electric governor for	W. W. Handy	571,363	Nov. 17	1666	395	77	992
Watering device. Automatic stock-	D. H. Bauseman	569,079	Oct. 6	622	142	77	119
Watering tank. Stock-	I. J. Hartford	570,254	Oct. 27	2710	644	77	552
Watering trough. Self-	J. E. Kordick	573,005	Dec. 15	1615	388	77	1624
Wattmeter	T. Duncan	573,078	Dec. 15	1741	417, 418	77	1649

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wattmeter	G. Hummel	570,019	Oct. 27	2280	542	77	469
Wave-motor	A. W. Stahl and R. Gatewood	574,177	Dec. 29	3799	907	77	2059
Wave-power. Apparatus for utilizing	F. C. Little	570,223	Oct. 27	2646	627, 628	77	540
Wax and artificial honeycomb foundation. Method of and apparatus for making sheeted	E. B. Weed	572,588	Dec. 8	881	213	77	1465
Weaner. Calf-	G. Diarud	572,339	Dec. 1	443	105	77	1363
Weather-board gage and support	W. Stevenson	572,582	Dec. 8	868	209	77	1463
Weather-strip	H. W. Albright	573,193	Dec. 15	1949	469	77	1687
Weather-strip	E. Koch	572,810	Dec. 8	1277	308	77	1540
Weather-strip	O. C. Little	569,582	Oct. 13	1506	355	77	300
Weather-strip	T. J. Moseley	573,683	Dec. 22	2384	581	77	1878
Weaving apparatus. Selvage-	G. Browning	572,674	Dec. 8	1096	249, 250, 588, 589	77	1494
Wedge-making apparatus	J. W. Hussey	573,466	Dec. 22	2482	599	77	1802
Weeder and raker. Interchangeable	A. S. Topping	572,935	Dec. 8	1486	357	77	1583
Weighing and conveying grain. Apparatus for	G. W. Cramer	571,571	Nov. 17	2023	481, 482	77	1056
Weighing and filling apparatus. Automatic	H. P. Dennis	572,504	Dec. 1	728	173	77	1416
Weighing and registering machine	G. A. Hanna and F. E. Fairman	572,986	Dec. 15	1582	379, 380	77	1618
Weighing apparatus	F. H. Richards	573,420	Dec. 15	2366	565, 566	77	1763
Weighing-machine	F. H. Richards	570,291	Oct. 27	2774	660, 661	77	564
Weighing-machine	F. H. Richards	570,292	Oct. 27	2780	661, 662	77	564
Weighing-machine	F. H. Richards	570,293	Oct. 27	2785	662, 663	77	565
Weighing-machine	F. H. Richards	570,294	Oct. 27	2789	664	77	566
Weighing-machine	F. H. Richards	570,295	Oct. 27	2796	665, 666	77	567
Weighing-machine	F. H. Richards	570,296	Oct. 27	2803	666	77	568
Weighing-machine	F. H. Richards	570,297	Oct. 27	2807	667	77	568
Weighing-machine	F. H. Richards	570,298	Oct. 27	2812	668, 669	77	569
Weighing-machine	F. H. Richards	570,299	Oct. 27	2818	669, 670	77	570
Weighing-machine	F. H. Richards	570,301	Oct. 27	2826	671, 672	77	572
Weighing-machine	F. H. Richards	570,302	Oct. 27	2831	672, 673	77	573
Weighing machine	F. H. Richards	570,303	Oct. 27	2836	673, 674	77	574
Weighing-machine	F. H. Richards	570,304	Oct. 27	2842	674, 675	77	575
Weighing-machine	F. H. Richards	572,065	Nov. 24	2901	685	77	1240
Weighing-machine	F. H. Richards	572,066	Nov. 24	2904	685, 686	77	1241
Weighing-machine	F. H. Richards	572,068	Nov. 24	2914	687, 688	77	1243
Weighing-machine	F. H. Richards	572,069	Nov. 24	2919	688, 689	77	1244
Weighing-machine	F. H. Richards	572,071	Nov. 24	2934	691, 692, 693	77	1246
Weighing-machine	F. H. Richards	572,088	Nov. 24	2974	699, 700	77	1254
Weighing-machine	F. H. Richards	572,089	Nov. 24	2985	701, 702	77	1255
Weighing-machine	F. H. Richards	573,418	Dec. 15	2354	562, 563	77	1761
Weighing-machine	F. H. Richards	573,419	Dec. 15	2361	564, 565	77	1762
Weighing-machine	F. H. Richards	573,421	Dec. 15	2371	566	77	1763
Weighing-machine	F. H. Richards	574,168	Dec. 29	3763	898, 899, 900	77	2055
Weighing-machine	F. H. Richards	574,169	Dec. 29	3771	901	77	2056
Weighing-machine	F. H. Richards	574,170	Dec. 29	3775	902	77	2056
Weighing-machine	R. H. Taylor	569,893	Oct. 20	2061	490	77	415
Weighing-machine	F. E. Thompson	573,424	Dec. 15	2384	568, 569	77	1767
Weighing-machine. Automatic	F. H. Richards	572,067	Nov. 24	2909	686, 687	77	1242
Weighing-machine. Automatic	E. G. Thomas	573,247	Dec. 15	2041	489	77	1704
Weighing-machine feed mechanism	H. E. Smyser	570,109	Oct. 27	2443	581, 582	77	502
Weighing-machine supply apparatus	F. H. Richards	570,300	Oct. 27	2894	671	77	571
Weighing or measuring machine	S. P. Mackey	569,878	Oct. 20	2033	484	77	410
Welding-machine	W. C. Kroegher	568,911	Oct. 6	328	76	77	63
Well boring and tubing apparatus	C. M. Smith	570,513	Nov. 3	136	34	77	663
Well-boring machine	G. Zink	569,012	Oct. 6	511	116	77	97
Well-casing spear	E. M. Hoagland	569,378	Oct. 13	1141	272	77	234
Well-drilling machine	L. D. Ennes	572,973	Dec. 15	1564	375, 376, 587, 588	77	1614
Well-drilling machine	H. Kelly	570,130	Oct. 27	2481	588	77	508
Well jack and pumping apparatus. Oil-	E. B. Smith and H. Benard	569,068	Oct. 6	604	138	77	116
Well jacks. Rack for oil-	J. Barrett	574,056	Dec. 29	3554	848	77	2017
Well-point	H. K. Brearley	572,880	Dec. 8	1350	325	77	1555
Well-rope take-up	H. L. McWhirter	574,258	Dec. 29	3963	941	77	2090

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Well strainer. Artesian	M. D. Wheeler	572,848	Dec. 8	1335	321	77	1552
Well system. Driven	B. F. Smith	572,034	Nov. 24	2844	669	77	1230
Wells. Means for cleaning oil	W. Connelly	572,867	Dec. 8	1358	328	77	1557
Wells. Method of and means for removing paraffin from oil	F. A. Flanegin	573,142	Dec. 15	1861	448	77	1671
Wheat-washing machine	J. McDaniel	573,686	Dec. 22	2887	682	77	1879
Wheat-washing machine	J. McDaniel	573,687	Dec. 22	2888	682, 683	77	1880
Wheel: *See* Bicycle-wheel. Car-wheel. Cycle-wheel. Fifth-wheel. Propeller-wheel. Sprocket-wheel. Toy water-wheel. Vehicle-wheel. Wagon-wheel. Water-wheel. Wind-wheel.							
Wheel	W. F. H. Harvey	571,439	Nov. 17	1794	428	77	1015
Wheel	T. B. Seibert	573,166	Dec. 15	1893	455, 456	77	1677
Wheel	G. P. Yeakel	569,703	Oct. 20	1749	415	77	359
Wheel and axle connection	J. F. Bible	570,742	Nov. 3	600	138	77	748
Wheel-drag	T. G. Clifford	572,356	Dec. 1	476	111	77	1369
Wheel-fender	S. Norton	569,465	Oct. 13	1276	300, 301	77	257
Wheel-measure	A. E. Remus	571,313	Nov. 10	1586	377	77	963
Wheel-rims. Device for securing spokes to	C. J. Curry	574,139	Dec. 29	3705	883	77	2044
Wheel-truing device	F. Schrader	569,033	Oct. 6	546	126	77	104
Wheel with electrical motor-hub for vehicles	C. Théryc	572,036	Nov. 24	2846	670	77	1230
Wheels. Attachment for increasing diameter of sprocket-	W. E. Warren	570,690	Nov. 3	512	119	77	733
Wheels. Detent for ratchet-	W. D. Marks	571,050	Nov. 10	1126	263	77	877
Wheels. Machine for assembling parts of	W. Sanderson	569,888	Oct. 20	2046	487, 488	77	412
Wheels. Machine for making rims for pneumatic	J. Banwell	571,080	Nov. 10	1189	279	77	888
Whiffletree	W. A. O'Bar	574,071	Dec. 29	3578	855	77	2021
Whip-operating device	J. M. Herman	570,800	Nov. 3	691	158	77	766
Whist apparatus. Duplicate	R. M. Bent	569,603	Oct. 20	1544	363	77	322
Whist apparatus. Duplicate	R. M. Bent	571,185	Nov. 10	1369	320	77	921
Whistle	H. R. Frisbie	571,357	Nov. 17	1658	393	77	990
Whistle. Automatic	C. H. Hall	572,112	Dec. 1	28	8	77	1283
Winch. Hoisting	F. B. Grater	573,326	Dec. 15	2196	525	77	1731
Wind-wheel	J. L. Thompson	571,056	Nov. 10	1135	266	77	879
Winding-machine	A. B. Morse	572,309	Dec. 1	395	94, 95	77	1354
Winding machine. Yarn	W. R. Harris	573,268	Dec. 15	2074	497	77	1709
Winding yarn from chains onto filling-bobbins. Machine for	H. L. Pratt and C. T. Upton	573,288	Dec. 15	2121	510, 511	77	1718
Windlass	T. W. Hardin	570,206	Oct. 27	2616	621	77	534
Windlass. Ship's	J. P. Manton	569,110	Oct. 6	672	156, 157	77	128
Windmill	H. Clinton	570,123	Oct. 27	2471	585	77	506
Windmill	F. M. Goodhue	573,516	Dec. 22	2551	605	77	1815
Windmill	M. Twiss	574,290	Dec. 29	4019	954	77	2101
Windmill-gearing	W. W. Day	569,277	Oct. 13	962	230	77	200
Windmills. Power-transmitting gear for	W. C. Hoffner	569,458	Oct. 13	1267	298	77	256
Window	O. M. Edwards	570,916	Nov. 10	903	210	77	835
Window	J. Endres	570,918	Nov. 10	909	211	77	837
Window	T. W. Gabel	573,402	Dec. 15	2320	554, 555	77	1754
Window	J. C. Kahle	574,093	Dec. 29	3624	866	77	2030
Window	M. Lesser	572,551	Dec. 8	806	193	77	1447
Window	M. W. Neuens	570,948	Nov. 10	961	222, 223	77	846
Window	F. Starace	574,283	Dec. 29	4011	952	77	2099
Window appliance	J. H. Shull	573,489	Dec. 22	2522	597, 598	77	1809
Window-cleaner	J. Ruckstinat	570,231	Oct. 27	2665	633	77	543
Window-fastener	C. M. Fowler	572,052	Nov. 24	2884	681	77	1237
Window-frame	J. P. Doray	570,701	Nov. 3	528	122	77	736
Window-guard	G. W. Pardee and B. McAleese	570,713	Nov. 3	543	126	77	739
Window in shape of a ladder. Safety	F. Scherrer	573,165	Dec. 15	1892	455	77	1677
Window-lock	T. Robertson	570,503	Nov. 3	122	30	77	661
Window-locking device	E. H. Beekman	569,317	Oct. 13	1042	247	77	215
Window-operating device	M. M. Canfield	570,841	Nov. 3	769	176	77	782
Window. Reversible	S. S. Bradshaw	572,521	Dec. 8	759	181	77	1438
Window-screen	W. C. Ackley	573,803	Dec. 22	3074	730	77	1915
Window-screen	A. McCandless	570,326	Oct. 27	2380	564	77	582
Window-screen	C. C. Wheeler	569,732	Oct. 20	1792	425	77	367
Window-screen. Adjustable	J. A. Smith	573,365	Dec. 15	2265	540	77	1744
Window washing and cleaning device	J. Kiefer	569,105	Oct. 6	666	154	77	127
Windows, &c. Machine for cleaning	C. Kinkel	574,202	Dec. 29	3857	919	77	2069
Wire-bars by electrodeposition. Apparatus for producing	J. B. Forsyth and C. R. Fletcher	570,125	Oct. 27	2474	586	77	507
Wire-connector	A. Gartner	569,752	Oct. 20	1835	436	77	374
Wire-connector	A. Gartner	569,753	Oct. 20	1836	436	77	374
Wire-connector	H. Haug	569,713	Oct. 20	1765	419	77	362
Wire-fabric machine	W. C. Avery	571,079	Nov. 10	1185	278	77	887
Wire-fastener	J. C. Kremer	571,271	Nov. 10	1517	358	77	949
Wire, &c., from copper. Apparatus for manufacturing	G. A. Dick	572,872	Dec. 8	1367	330, 331	77	1559
Wire-grooving machine	W. G. Burnham	569,087	Oct. 6	639	146	77	123
Wire joint	C. E. Brown	573,386	Dec. 15	2298	549	77	1751
Wire. Manufacture of tinned	F. H. Daniels	573,573	Dec. 22	2658	631	77	1835
Wire. Means for imparting helical forms to	D. A Cobb	573,763	Dec. 22	3009	713	77	1902
Wire-netting	H. K. Swinscoe	573,370	Dec. 15	2272	542	77	1746

Alphabetical list of inventions, October to December, inclusive—Continued.

Invention.	Name.	No.	Date.	Monthly volume. Spec.	Monthly volume. Drg.	Official Gazette. Vol.	Official Gazette. Page.
Wire-reel	C. H. Faut	570,920	Nov. 10	912	211	77	837
Wire-reel	F. Forsberg	571,156	Nov. 10	1329	309, 310	77	914
Wire ropeway	J. T. Ludlow	572,305	Dec. 1	390	92, 93	77	1353
Wire-rope ways. Clip for	A. Painter	569,228	Oct. 13	884	210	77	184
Wire-stay-weaving device	E. M. Crouch	568,746	Oct. 6	54	13	77	13
Wire-stretcher	E. S. Barrows	568,829	Oct. 6	194	47	77	39
Wire-stretcher	W. I. Morrow	572,349	Dec. 1	456	107	77	1365
Wire-stretcher	G. F. Pratt	569,229	Oct. 13	885	210	77	184
Wire-stretcher	J. C. Walker	569,897	Oct. 20	2066	491	77	417
Wire-stretcher and domestic scale. Combination	M. Gross	572,054	Nov. 24	2886	681	77	1238
Wire-stretcher and reel-carrier	A. L. Pruitt	570,817	Nov. 3	721	165	77	772
Wire stretcher and tightener	J. M. Wilson	568,823	Oct. 6	188	45	77	38
Wire stretcher. Woven	J. W. Hutchison	573,150	Dec. 15	1872	451	77	1673
Wire-winding machine. Stay	W. G. Phillips	568,791	Oct. 6	137	33	77	28
Wood and pulp plates. Apparatus for shaping	F. D. Tiff	569,685	Oct. 20	1702	402, 403	77	351
Wood-bundling machine	D. A. Greene	573,971	Dec. 29	3406	816, 817	77	1989
Wood, &c. Composition of matter as substitute for	G Archbold	570,361	Oct. 27	2934	.....	77	593
Wood-drying kiln. Kindling	O H. Smith	571,407	Nov. 17	1733	413, 414	77	1004
Wood felt. Apparatus for making	R. Sputh	571,580	Nov. 17	2039	485	77	1059
Wood-preserving plants. Car and retort for	W. G. Curtis and J. D. Isaacs	570,746	Nov. 3	606	139	77	749
Woodworker's clamp	A. Wilson	573,745	Dec. 22	2987	707	77	1898
Woodworking-machine	D. Bullock	571,186	Nov. 10	1370	320	77	921
Woodworking-machine	H. Harrer	574,088	Dec. 29	3604	861, 862, 863, 864	77	2026
Woodworking-machine	R. Schleicher	569,940	Oct. 20	2151	509, 510	77	433
Wool-fat. Apparatus for extracting	F. N. Turney	573,727	Dec. 22	2957	699, 700, 701	77	1892
Wool-washing machine	F. G. and A. C. Sargent	569,980	Oct. 20	2212	525, 526	77	443
Work-holding device	E. N. Gates	573,325	Dec. 15	2194	525	77	1731
Woven bag	J. A. Knight	570,174	Oct. 27	2558	608	77	524
Wrapping and addressing machine. Newspaper	W. A. Beebe	569,991	Oct. 27	2234	530, 531, 532	77	461
Wrapping and securing wrappers around boxes, &c. Machinery for	A. Stearns	570,615	Nov. 3	332	82, 83, 84	77	700
Wrapping machine. Parcel	M. W. Schloss	574,174	Dec. 29	3786	903, 904	77	2058
Wrench: *See* Chain wrench. Nut-wrench. Pipe-wrench. Pipe and nut wrench. Ratchet-wrench.							
Wrench	H. C. Barlow	573,637	Dec. 22	2796	661	77	1864
Wrench	L. H. Barnes	572,857	Dec. 8	1346	324	77	1554
Wrench	C. A. Bigelow and T. C. Gates	573,806	Dec. 22	3078	731	77	1916
Wrench	R. M. Carroll	572,191	Dec. 1	165	40	77	1310
Wrench	E. Cunningham	569,372	Oct. 13	1133	270	77	232
Wrench	F. Ezzell	574,314	Dec. 29	4053	962	77	2107
Wrench	L. L. Hall	573,651	Dec. 22	2830	668	77	1869
Wrench	F. S. and C. W. Kaufman	574,094	Dec. 29	3626	866	77	2030
Wrench	G. W. McElroy	570,856	Nov. 3	796	183	77	787
Wrench	J. Richard and F. Colman	573,702	Dec. 22	2916	689	77	1884
Wrench	M. D Schaller	573,487	Dec. 22	2517	596	77	1808
Wrench	W. C. Stokes	572,035	Nov. 24	2845	669	77	1230
Wrench	J. F. Tiner	573,313	Dec. 15	2181	520	77	1798
Wrench	S. W. Wardwell, Jr	573,940	Dec. 29	3328	794, 795	77	1976
Wrench	S. W. Wardwell, Jr	573,941	Dec. 29	3329	795	77	1976
Wrench	M. Wenger	572,185	Dec. 1	156	38	77	1308
Wrench	M. Wenger	572,186	Dec. 1	158	38	77	1308
Wrench	J. E. Wood	573,070	Dec. 15	1727	414	77	1648
Wringer: *See* Mop-wringer.							
X-rays. Bulb for	J. von der Kammer	574,065	Dec. 29	3568	852	77	2020
Xanthin derivatives. Making	E. Fischer	569,489	Oct. 13	1318	.....	77	265
Xanthin derivatives. Making	E. Fischer	569,490	Oct. 13	1320	.....	77	265
Yarn-skeins. Apparatus for holding	J. T. Hammonds	572,985	Dec. 15	1581	379	77	1617
Yarn-testing machine	M. H. Tomkins	570,970	Nov. 10	992	230	77	851
Yeast-cakes. Machine for cutting	C. Denekas	571,345	Nov. 17	1637	389	77	967
Yielding device	J. F. Raders	573,534	Dec. 22	2590	614	77	1822
Yoke center. Neck	W. E. Haight	573,181	Dec. 15	1925	462	77	1662
Yoke. Neck	J. S. Brown	570,785	Nov. 3	666	153	77	761
Yoke. Neck	L. Eldridge	572,530	Dec. 8	773	184	77	1440
Yoke. Neck	R. Evans	573,507	Dec. 22	2549	604	77	1814
Yoke. Neck	J. H. Storch	571,412	Nov. 17	1744	416	77	1006

ALPHABETICAL LIST OF DESIGNS.

Design.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Advertising-card	T. S. Ingraham	26,309	Nov. 17	77	1118
Advertising-stand	M. Blumenthal	26,370	Dec. 1	77	1422
Alphabet	D. M. Moore	26,428	Dec. 22	77	1930
Ash-pan	F. Fairley and E. E. Gunston	26,151	Oct. 6	77	145
Ax. Broad	J. Barbour	26,335	Nov. 24	77	1265
Axle-skein collar	J. M. Studebaker	26,223	Oct. 27	77	625
Back-band hook	H. E. Wetherbee	26,173	Oct. 13	77	305
Badge	D. W. Casseday	26,145	Oct. 6	77	144
Badge	T. A. Gerbig	26,420	Dec. 22	77	1929
Badge	T. P. Halpin	26,454	Dec. 29	77	2125
Badge	J. W. Heskett	26,170	Oct. 13	77	305
Badge	G. W. MacKenzie	26,233	Oct. 27	77	626
Badge	J. H. Mishler, F. B. Stumpf, and M. E. Donahay.	26,455	Dec. 29	77	2125
Badge	F. M. Oehley	26,375	Dec. 8	77	1587
Badge	R. F. Stone	26,376	Dec. 8	77	1587
Badge	J. F. Whiting and E. Cather	26,171	Oct. 13	77	305
Badge. Campaign	W. F. Brockway	26,191	Oct. 20	77	445
Badge. Campaign	C. F. Garaghty	26,144	Oct. 6	77	144
Badge. Campaign	W. Wallace	26,264	Nov. 17	77	1112
Badge or button	T. G. Vivion	26,453	Dec. 29	77	2125
Bagatelle-board	W. L. Sommer	26,187	Oct. 13	77	308
Baking-tin	E. J. Dykeman	26,152	Oct. 6	77	145
Balance-weight	L. J. Brown	26,357	Dec. 1	77	1420
Bank. Savings	J. F. Langton	26,198	Oct. 20	77	446
Basket. Fruit	T. R. Woodruff	26,389	Dec. 8	77	1589
Bath. Bidet and foot	P. H. Pendergast	26,331	Nov. 24	77	1264
Bedstead	M. G. Merritt	26,449	Dec. 22	77	1933
Bedstead	M. G. Merritt	26,450	Dec. 22	77	1933
Bedstead	G. Semel	26,415	Dec. 15	77	1775
Belt-pin	S. J. Thomas	26,192	Oct. 20	77	446
Bicycle brace or fork	C. L. Travis	26,342	Nov. 24	77	1266
Bicycle crank-axle hanger	I. D. Lengel	26,341	Nov. 24	77	1265
Bicycle-fork ends. Thimble for	C. F. Meilink	26,360	Dec. 1	77	1420
Bicycle-frame	L. G. Billings	26,179	Oct. 13	77	306
Bicycle-frame	E. N. Gates	26,263	Nov. 10	77	967
Bicycle-frame	E. M. Graham	26,285	Nov. 17	77	1114
Bicycle-handle	W. E. Blake	26,445	Dec. 22	77	1933
Bicycle-handle clamp	L. P. Halladay	26,361	Dec. 1	77	1420
Bicycle-pedal tread-piece	A. Sidwell	26,337	Nov. 24	77	1265
Bicycle-pedals. Foot-plate for	W. E. Warner	26,178	Oct. 13	77	306
Bicycle-saddle	F. Mesinger	26,343	Nov. 24	77	1266
Bicycle-saddle	F. Mesinger	26,344	Nov. 24	77	1266
Bicycle toe-clip	H. A. Elbach	26,336	Nov. 24	77	1265
Bicycle toe-clip	F. K. Hesse	26,465	Dec. 29	77	2127
Bird-scarer	W. A. Taylor	26,419	Dec. 15	77	1776
Book-covers, &c. Ornamental pattern or print for	J. Arbuckle	26,452	Dec. 29	77	2125
Book or album covers. Mounting for	W. A. Holman	26,231	Oct. 27	77	626
Border-plate	E. A. Langenbach	26,241	Nov. 3	77	804
Border-plate	E. A. Langenbach	26,242	Nov. 3	77	804
Border-plate	E. A. Langenbach	26,243	Nov. 3	77	804
Border-plate. Metallic	E. A. Langenbach	26,413	Dec. 15	77	1775
Border-plate. Metallic	E. A. Langenbach	26,414	Dec. 15	77	1775
Border-plate. Metallic	E. A. Langenbach	26,447	Dec. 22	77	1933
Bottle	H. D. Williams	26,429	Dec. 22	77	1931
Bottle-stopper	G. W. Bean	26,349	Dec. 1	77	1418
Bottle-stopper	W. T. Johnston	26,278	Nov. 17	77	1114
Box	H. A. Deknatel	26,400	Dec. 15	77	1773
Box	A. A. Macdonald	26,298	Nov. 17	77	1116
Box	G. Miller	26,218	Oct. 27	77	624
Box	G. Miller	26,314	Nov. 24	77	1261
Box	G. Miller	26,315	Nov. 24	77	1261
Box body. Match	A. N. Clark	26,316	Nov. 24	77	1261
Box or holder for blocks, &c	J. E. Hutchinson	26,318	Nov. 24	77	1261
Box-trimming	N. A. Miller	26,296	Nov. 17	77	1116
Brick. Fire	A. B. Clunies	26,292	Nov. 17	77	1115
Brick. Fire	A. B. Clunies	26,403	Dec. 15	77	1773
Brush	J. M. Keefe	26,215	Oct. 27	77	624
Brush-back	H. A. Weihman	26,457	Dec. 29	77	2126
Brush-back, &c. Metal	T. W. Foster	26,274	Nov. 17	77	1113
Brush-back or similar article	W. C. Codman	26,250	Nov. 10	77	966
Brush. Scrubbing	S. K. Hawkins	26,154	Oct. 6	77	145
Brushes, &c. Back for	P. O. Dickinson	26,271	Nov. 17	77	1113
Brushes, &c. Back for	P. O. Dickinson	26,272	Nov. 17	77	1113
Brushes, &c. Back for	P. O. Dickinson	26,273	Nov. 17	77	1113
Brushes, &c. Back for	D. A. Loeser	26,146	Oct. 6	77	144
Brushes or similar articles. Back for	C. D. Graff	26,216	Oct. 27	77	624
Buckle. Belt	B. Scheuer	26,193	Oct. 20	77	446
Butter-receptacle	C. I. Conover	26,153	Oct. 6	77	145
Button	B. I. McElroy	26,143	Oct. 6	77	144
Button-hook handle	F. Thielke	26,456	Dec. 29	77	2126

Alphabetical list of designs, October to December, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Button-hooks or similar articles. Handle for	T. W. Foster	26,214	Oct. 27	77	623
Candelabrum	S. H. Leavenworth and J. T. Homan	26,277	Nov. 17	77	1113
Cane fabric	H. M. Collester	26,475	Dec. 29	77	2128
Cane fabric	E. G. Watkins	26,476	Dec. 29	77	2129
Cane fabric	E. G. Watkins	26,477	Dec. 29	77	2129
Cane fabric	E. G. Watkins	26,478	Dec. 29	77	2129
Cane fabric	E. G. Watkins	26,479	Dec. 29	77	2129
Cane fabric	E. G. Watkins	26,480	Dec. 29	77	2129
Cane fabric	E. G. Watkins	26,481	Dec. 29	77	2129
Cane or umbrella handle	A. Rosenstein	26,213	Oct. 27	77	623
Cap	A. Wolfgang	26,451	Dec. 29	77	2125
Carboy-stand support	H. J. Grell	26,221	Oct. 27	77	624
Card holder. Price	E. Sassenhoff	26,461	Dec. 29	77	2126
Carpet button. Stair	R. H. Warren	26,353	Dec. 1	77	1419
Carriage-body	H. C. Sears	26,347	Nov. 24	77	1266
Cartridge-holder. Temporary	T. C. Johnson	26,386	Dec. 8	77	1589
Ceiling-plate	E. A. Langenbach	26,238	Nov. 3	77	803
Ceiling plate	E. A. Langenbach	26,239	Nov. 3	77	803
Ceiling plate	E. A. Langenbach	26,240	Nov. 3	77	803
Ceiling-plate. Metallic	E. A. Langenbach	26,446	Dec. 22	77	1933
Chafing-dish	L. Wojidkow	26,431	Dec. 22	77	1931
Chafing-dish stand	L. Wojidkow	26,432	Dec. 22	77	1931
Chafing-dish stand	L. Wojidkow	26,433	Dec. 22	77	1931
Chafing-dish stand	L. Wojidkow	26,434	Dec. 22	77	1931
Chafing-dish stand	L. Wojidkow	26,435	Dec. 22	77	1931
Chain. Ornamental	P. J. Duerr	26,265	Nov. 17	77	1112
Chair	H. M. Kinports	26,207	Oct. 20	77	447
Chair	T. J. Palmer	26,185	Oct. 13	77	307
Check-bit	A. E. Mack	26,281	Nov. 17	77	1114
Cheese	W. I. Brown	26,312	Nov. 17	77	1119
Chopping-knife blade	W. E. Sitterly	26,282	Nov. 17	77	1114
Churn-stand	W. J. Willoughby and W. Y. Anderson.	26,206	Oct. 20	77	447
Cigar-boxes. Print or pattern for	N. Witsch	26,188	Oct. 13	77	308
Cigar-boxes. Print or pattern for	N. Witsch	26,208	Oct. 20	77	448
Cigar-lighter	G. F. Krieger	26,219	Oct. 27	77	624
Cock for air-brake pipes. Angle	F. A. McArthur	26,441	Dec. 22	77	1932
Coffee-pot	W. D. Hayter	26,300	Nov. 17	77	1117
Coffee-pot	L. Wojidkow	26,436	Dec. 22	77	1931
Collar	H. Rosenthal	26,313	Nov. 24	77	1261
Collar. Horse	B. Allen	26,362	Dec. 1	77	1420
Collar. Lady's	D. Kisch	26,374	Dec. 1	77	1422
Comb-backs. Border for	P. O. Dickinson	26,270	Nov. 17	77	1113
Corset	D. H. Warner	26,373	Dec. 1	77	1422
Corset-case	J. J. Shepard	26,294	Nov. 17	77	1116
Curling-iron heater	M. N. Diall	26,328	Nov. 24	77	1263
Currycomb and card	O. B. Read	26,334	Nov. 24	77	1264
Dish	A. A. Southwick	26,397	Dec. 15	77	1772
Dish. Covered	E. Gérard	26,299	Nov. 17	77	1116
Dish. Covered	W. H. Grindley	26,460	Dec. 29	77	2126
Dish. Covered	G. C. C. Vogt	26,430	Dec. 22	77	1931
Display-jar	E. E. Latta	26,321	Nov. 24	77	1262
Display-stand	W. M. Mitchell	26,322	Nov. 24	77	1262
Display-tray	L. Wolfsheim	26,387	Dec. 8	77	1589
Draft-lug and draw-bar follower	E. S. Marshall	26,470	Dec. 29	77	2127
Drilling-machine frame	F. Milliken	26,287	Nov. 17	77	1115
Drilling-machine frame	F. Milliken	26,288	Nov. 17	77	1115
Eaves-trough hanger	J. F. Pierce	26,175	Oct. 13	77	306
Egg-beater	G. H. Steele	26,438	Dec. 22	77	1932
Egg-tester. Duplex	P. M. Earle	26,329	Nov. 24	77	1264
Elevator-guide	G. R. Rebmann	26,289	Nov. 17	77	1115
Engine frame. Steam	H. M. Lane	26,180	Oct. 13	77	307
Envelop	W. L. Brobst	26,378	Dec. 8	77	1587
Erasing-plate	V. Copland	26,251	Nov. 10	77	966
Exercising-club	A. M. Heydrick	26,418	Dec. 15	77	1776
Eyeglass-case	J. S. Spencer	26,394	Dec. 15	77	1772
Felly or wheel-rim	J. L. Dann	26,345	Nov. 24	77	1266
Fence-panel. Woven-wire	W. H. Warner	26,290	Nov. 17	77	1115
Fence-post	W. H. Thomas	26,363	Dec. 1	77	1420
Fence-strand	D. C. Benjamin	26,410	Dec. 15	77	1775
Fence-wire ratchet-frame	O. P. Schriver	26,222	Oct. 27	77	624
Fire-extinguishers. Distributer for	W. Esty	26,254	Nov. 10	77	966
Fire-extinguishers. Yoke for automatic	W. Esty	26,255	Nov. 10	77	966
Fire-hose nozzle	W. Kelly and O. G. Olson	26,358	Dec. 1	77	1420
Fireplace-front	M. I. Cohen	26,367	Dec. 1	77	1421
Flush-tank	B. M. Carney	26,409	Dec. 15	77	1774
Forging-machine frame	G. Saxon	26,440	Dec. 22	77	1932
Furnace-casing ring	A. W. Walker	26,291	Nov. 17	77	1115
Game-board	R. E. Hill	26,167	Oct. 6	77	147
Game-board	W. Kampfer	26,391	Dec. 8	77	1589
Game-board	C. J. Myers	26,166	Oct. 6	77	147
Game-board	R. C. Norman	26,390	Dec. 8	77	1589
Game-board	J. M. Schwartz	26,186	Oct. 13	77	308
Game-board	J. B. H. Trainer	26,168	Oct. 6	77	147
Garment-edging	H. Haase	26,189	Oct. 13	77	308
Gas-burner	W. G. Taylor	26,149	Oct. 6	77	145
Glass dish	J. B. Hill	26,396	Dec. 15	77	1772
Glass pattern. Sheet	W. Butler and L. H. Zeigler	26,311	Nov. 17	77	1119
Glass vessel	B. Davies	26,190	Oct. 13	77	308
Grave-marker	I. C. Moore and C. F. Trott	26,182	Oct. 13	77	307
Guitar-body	G. Behm	26,398	Dec. 15	77	1773
Hair ornament	A. P. Suter	26,172	Oct. 13	77	305
Hammock-support	I. E. Palmer	26,258	Nov. 10	77	967
Handkerchief or similar fabric	J. G. Clark and S. F. Price	26,169	Oct. 6	77	147

Alphabetical list of designs, October to December, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Handle-bar	L. G. Billings	26,339	Nov. 24	77	1265
Handle-bar	R. W. Murphy	26,340	Nov. 24	77	1265
Handle-bar head	J. E. Lee	26,466	Dec. 29	77	2127
Handle for feather dusters	I. B. Cohen	26,199	Oct. 20	77	446
Handle for pans, &c	F. L. Jack	26,401	Dec 15	77	1773
Hat-band	F. M. Johnson	26,209	Oct. 20	77	448
Heating apparatus. Casing for	R. M. Dixon	26,181	Oct. 13	77	307
Hinge. Separable	W. Romünder and E. J. Fellman	26,224	Oct. 27	77	625
Hinge. Strap	T. L. Chisholm	26,381	Dec 8	77	1588
Hoe. Weed	S. and J. Craig	26,183	Oct. 13	77	307
Hook. Garment	E. T. and F. A. Smith	26,259	Nov. 10	77	967
Hoop-lug	H. B. Severance	26,202	Oct 20	77	447
Horseshoe-calk	J. R. Williams	26,156	Oct 6	77	146
Hose-reel frame	T. N. Smith	26,359	Dec. 1	77	1420
Incandescent-light gallery	W. E. Barrows	26,148	Oct. 6	77	145
Indicator-casing	H. G. Hess	26,426	Dec. 22	77	1930
Insole	C. Eckert	26,306	Nov. 17	77	1118
Insulator	F. M. Locke	26,323	Nov. 24	77	1262
Jewelry-tray	F. H. Sadler	26,459	Dec. 29	77	2126
Journal-box lid	E. S. Marshall	26,469	Dec. 29	77	2127
Kitchen-cabinet	J. W Burnett	26,184	Oct. 13	77	307
Kitchen-cabinet	W. B. Pigg	26,416	Dec. 15	77	1775
Kitchen-cabinet	S. B. Webb	26,371	Dec. 1	77	1422
Lace curtain	A. W. Wilde	26,372	Dec. 1	77	1422
Lamp. Arc	C. E. Harthan	26,471	Dec. 29	77	2128
Lamp body. Bicycle	G. Havell	26,177	Oct. 13	77	306
Lamp-chimney	G. W. Blair	26,147	Oct. 6	77	144
Lamp-chimney	G. W. Blair	26,350	Dec. 1	77	1419
Lamp-chimney	G. W. Blair	26,351	Dec. 1	77	1419
Last	W. B. Chaplin	26,161	Oct. 6	77	146
Lawn sprinkler body	H. F. Neumeyer and J. F. Young	26,205	Oct. 20	77	447
Link. Open	W. Harden	26,380	Dec. 8	77	1588
Lock-case	W. F. Troast	26,158	Oct. 6	77	146
Mail packer	H. E. Waite	26,293	Nov. 17	77	1116
Mail-packing-machine guide	H. E. Waite	26,439	Dec. 22	77	1932
Mandolin	E. N. Livermore	26,434	Dec. 22	77	1930
Match-box	A. N. Clark	26,252	Nov. 10	77	966
Match-safe	G. H. Allen	26,295	Nov. 17	77	1116
Mattress-frame corner-block	W. H. Taber	26,344	Nov. 3	77	804
Mattress-frame corner-block	W. H. Taber	26,345	Nov. 3	77	804
Mirror-back	W. C. Codman	26,458	Dec. 29	77	2126
Mirror-back, &c. Metal	T. W. Foster	26,275	Nov. 17	77	1113
Mirrors, &c. Back and handle for	P. O Dickinson	26,422	Dec. 22	77	1929
Molding-plate	E. A. Langenbach	26,236	Nov. 3	77	803
Molding-plate	E. A. Langenbach	26,237	Nov. 3	77	803
Mower frame. Lawn	F. T. Maynard	26,286	Nov. 17	77	1114
Nail-set	C. W. Field	26,463	Dec. 29	77	2126
Nipple. Nursing	H. Meier	26,377	Dec. 8	77	1587
Oven-shelf	A. B. Garling	26,402	Dec. 15	77	1773
Padlock-case	C. A. Erichson	26,462	Dec. 29	77	2126
Painter's cabinet	A. N. Pringle	26,332	Nov. 21	77	1264
Printing-press frame. Hand-cylinder	J. L. Lee	26,467	Dec. 29	77	2127
Paper box	P. B. Myers	26,297	Nov. 17	77	1116
Paper-holder or similar article	L. Arkin	26,390	Nov. 24	77	1262
Paper. Wall	C. Booz	26,210	Oct. 20	77	448
Paper. Wall	C. Booz	26,211	Oct. 20	77	448
Pedal foot-piece	R. Janney	26,412	Dec. 15	77	1775
Pedals. Foot-rest for	W. N. Beardsley	26,160	Oct. 6	77	146
Pen-guard	A. N. Woodard	26,379	Dec. 8	77	1588
Pen. Hog	J. L. Gilmore	26,228	Oct. 27	77	625
Pen-rack	F. Wood	26,319	Nov. 24	77	1262
Pencil. Lead	S. Kraus	26,395	Dec. 15	77	1772
Photographic card-mount	P. J. Stuparich	26,427	Dec. 22	77	1930
Picture-frame	A. J. Ripley	26,348	Dec. 1	77	1418
Pictures, &c. Frame for	N. Stein	26,276	Nov. 17	77	1113
Pillow-case	A. W. Hanington	26,417	Dec. 15	77	1776
Pin or button. Campaign	F. W. Coyne	26,234	Nov. 3	77	803
Pin-tray	C. T. Rogers	26,217	Oct. 27	77	624
Pipe-ferrule	M. L. Kaufmann	26,324	Nov. 24	77	1262
Pipe mounting. Tobacco	E. S. Smith	26,354	Dec. 1	77	1419
Plow-handle or grip	L. L. Christian	26,444	Dec. 22	77	1933
Portière-rope	F. W. Oehrle	26,303	Nov. 17	77	1117
Price-list standard	D. H. Durston	26,308	Nov. 17	77	1118
Printer's wrench	J. L. Lee	26,157	Oct. 6	77	146
Puzzle	T. W. Kloman	24,317	Nov. 24	77	1261
Puzzle-box	C. B. R. Bitter	26,162	Oct. 6	77	146
Puzzle-box	E. Hersen	26,164	Oct. 6	77	147
Puzzle-box	J. Peterkin	26,163	Oct. 6	77	146
Puzzle-box	J. D. Schmidt	26,165	Oct. 6	77	147
Puzzle-box	H. Schneider	26,229	Oct. 27	77	625
Puzzle-box	H. Wilson	26,230	Oct. 27	77	626
Radiator	J. Scherer	26,388	Dec. 8	77	1589
Radiator. Loop	H. A. Siebert	26,203	Oct. 20	77	447
Radiator-loop	H. A. Siebert and F. W. Hodges	26,247	Nov. 3	77	804
Radiator. Steam	C. R. Harris	26,159	Oct. 6	77	146
Rail-splice	W. S. Patterson	26,404	Dec. 15	77	1773
Railway-spike	A. Barrows	26,408	Dec. 15	77	1774
Rake. Lawn	F. E. Kohler	26,246	Nov. 3	77	804
Ring	C. Knapp	26,392	Dec. 15	77	1772
Roof-cap	W. W. Turner	26,226	Oct. 27	77	625
Roof-plate	W. W. Turner	26,201	Oct. 20	77	447
Rubber frame. Hand	J. B. Glasscock	26,468	Dec. 29	77	2127
Sad-iron	M. Sweeney	26,301	Nov. 17	77	1117
Sad-iron heater	C. H. Boeck	26,302	Nov. 17	77	1117

Alphabetical list of designs, October to December, inclusive—Continued.

Design.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Sad-iron holder	M. L. Newell	26,330	Nov. 24	77	1264
Saddle-seat support	B. S. Seaman	26,384	Dec. 8	77	1588
Sash-weight	R. R. Bren	26,174	Oct. 13	77	306
Seat for commodes, &c	J. Nichols	26,365	Dec. 1	77	1420
Sewing-machines. Fan for	W. B. Hallowell	26,155	Oct. 6	77	146
Sheet-metal can	C. W. Hart	26,364	Dec. 1	77	1420
Sheller for green peas, &c	A. E. Drew	26,263	Nov. 17	77	1114
Shirt-collar	O. Hammerstein	26,304	Nov. 17	77	1117
Shoe	H. M. Stephens	26,307	Nov. 17	77	1118
Shoe-welt	J. Walden	26,399	Dec. 15	77	1773
Silverware-border	C. D. Graff	26,195	Oct. 20	77	446
Silverware-border	C. D. Graff	26,196	Oct. 20	77	446
Snap-hook	G. M. Hubbard	26,279	Nov. 17	77	1114
Snap-hook	C. H. Smith	26,356	Dec. 1	77	1419
Soap dish or holder	E. L. Snyder	26,352	Dec. 1	77	1419
Spoon, &c	G. L. Crowell, Jr	26,393	Dec. 15	77	1772
Spoon	P. Farnham	26,212	Oct. 27	77	623
Spoon-handle	F. E. Pretat	26,269	Nov. 17	77	1112
Spoons, &c. Handle for	J. W. Maillot	26,268	Nov. 17	77	1112
Sprinkler	W. Esty	26,253	Nov. 10	77	966
Stall-floor support	J. M. Fiske	26,443	Dec. 22	77	1932
Stocking	A. Sessler	26,305	Nov. 17	77	1117
Stove. Cooking	H. W. Beattie	26,262	Nov. 10	77	967
Stove. Gas	W. H. Wilkinson	26,150	Oct. 6	77	145
Stove. Gas	A. H. Wolff	26,327	Nov. 24	77	1263
Stove-grate	W. S. Stevenson	26,473	Dec. 29	77	2128
Stove. Heating	G. M. Cocke	26,249	Nov. 3	77	805
Stove. Heating	J. W. Herrick	26,248	Nov. 3	77	805
Stove. Heating	L. J. Lennox	26,368	Dec. 1	77	1421
Stove. Heating	A. Ohnemus	26,474	Dec. 29	77	2128
Stove-lining	F. O. Farwell	26,472	Dec. 29	77	2128
Stove or range. Cooking	J. J. Graves	26,369	Dec. 1	77	1421
Stove shelf-section	H. W. Beattie	26,261	Nov. 10	77	967
Strainer-box	I. Brindle	26,225	Oct. 27	77	625
Table	J. F. McKenzie	26,448	Dec. 22	77	1933
Tack. Curtain	C. M. Numan	26,260	Nov. 10	77	967
Thinning-tool for cotton, &c	J. M. Sanders	26,333	Nov. 24	77	1264
Tie and scarf holder	O. L. Settles	26,194	Oct. 20	77	446
Tire. Elastic	J. L. Dann	26,338	Nov. 24	77	1265
Toaster	L. Wojdikow	26,457	Dec. 22	77	1931
Tobacco-cutter	W. Bayley	26,355	Dec. 1	77	1419
Tool-handle	J. A. Traut	26,464	Dec. 29	77	2127
Torch attachment	O. Frasher	26,200	Oct. 20	77	446
Toy	J. Bruce	26,425	Dec. 22	77	1930
Toy bank	C. F. Clarke	26,197	Oct. 20	77	446
Toy-sand-mill frame	M. B. Scharies	26,325	Nov. 24	77	1263
Toy stove	C. A. Bailey	26,326	Nov. 24	77	1263
Trousers-hanger	E. G. Hanford	26,280	Nov. 17	77	1114
Trowel	C. H. Smith	26,204	Oct. 20	77	447
Truck frame. Car	G. M. Brill	26,382	Dec. 8	77	1588
Truck side bar	S. M. Curwen	26,442	Dec. 22	77	1932
Truck side frame	G. M. Brill	26,383	Dec. 8	77	1588
Truck side frame. Car	J. A. Brill	26,405	Dec. 15	77	1774
Truck side frame. Car	J. A. Brill	26,406	Dec. 15	77	1774
Truck side frame. Car	J. A. Brill	26,407	Dec. 15	77	1774
Type. Font of	W. F. Cornell	26,310	Nov. 17	77	1118
Undergarment	I. Goldberger	26,232	Oct. 27	77	626
Valve-support	W. Esty	26,256	Nov. 10	77	967
Velocipede fork and crown	A. G. Moore	26,411	Dec. 15	77	1775
Velocipede name-plate	G. T. McIntosh	26,385	Dec. 8	77	1589
Velocipede toe-clip	D. Basch	26,284	Nov. 17	77	1114
Violin	E. N. Livermore	26,423	Dec. 22	77	1930
Violin shoulder-rest	H. O. Peabody	26,220	Oct. 27	77	624
Voting-booth	A. A. Selkirk	26,227	Oct. 27	77	625
Washing-machine frame	Z. Doyle	26,366	Dec. 1	77	1421
Watchcase	J. C. Dueber	26,421	Dec. 22	77	1929
Watch-plate	W. C. Ball	26,267	Nov. 17	77	1112
Watch-plate	R. M. Floyd	26,266	Nov. 17	77	1112
Wick-tube. Safety	R. H. Smith	26,176	Oct. 13	77	306
Wire-fabric pattern	J. M. Martin	26,235	Nov. 3	77	803

ALPHABETICAL LIST OF TRADE-MARKS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
Ale	Albany Brewing Company	29,075	Nov. 3	77	807
Ale	T. McMullen & Co	29,313	Dec. 15	77	1779
Ale	T. McMullen & Co	29,368	Dec. 29	77	2132
Alum	Harrison Brothers & Co	29,363	Dec. 29	77	2132
Ammonia	National Ammonia Company	29,049	Oct. 27	77	628
Ammunition	Peters Cartridge Company	29,067	Nov. 3	77	806
Ammunition. Articles of	Peters Cartridge Company	29,388	Dec. 29	77	2135
Ammunition. Articles of	Peters Cartridge Company	29,389	Dec. 29	77	2135
Antipyretic and analgesic preparations	A. H. Still	29,307	Dec. 15	77	1778
Asbestos cement for finishing walls	J. B. King & Co	29,236	Dec. 1	77	1425
Athletic, bicyclists', and sportsmen's wear	A. G. Spalding & Bros	29,028	Oct. 20	77	450
Axes	Kelly Axe Manufacturing Company	29,088	Nov. 3	77	808
Badges	Milwaukee Novelty Co	29,089	Nov. 3	77	808
Baking and yeast powders	F. W. Young	29,162	Nov. 17	77	1120
Baking-powder	H. A. Keapohi & Co	29,200	Nov. 24	77	1268
Baking-powders, spices, extracts, and soda-waters	Hewlett Bros	29,281	Dec. 8	77	1593
Beef. Pressed corned	A. H. Atwood Company	29,042	Oct. 27	77	627
Beer and ale	Anchor Brewing Company	28,933	Oct. 6	77	149
Beer. Lager	Bartholomay Brewery Company	29,100	Nov. 3	77	809
Beer. Lager	Chicago Brewing Company	29,196	Nov. 24	77	1267
Beer. Lager	Chicago Brewing Company	29,230	Dec. 1	77	1424
Beer. Lager	Henry Zeltner Brewing Company	29,267	Dec. 8	77	1592
Beer. Lager	Hills Union Brewery Company	28,932	Oct. 6	77	148
Belting. Power	Fayerweather & Ladew	28,983	Oct. 13	77	309
Belting. Power	Fayerweather & Ladew	28,984	Oct. 13	77	309
Beverage. Non-intoxicating effervescent botanic	Kentora Brewery Company	29,142	Nov. 10	77	970
Bicycles	H. C. England	29,185	Nov. 17	77	1122
Bicycles	M. E. Johnson	29,325	Dec. 15	77	1780
Bicycles	National Sewing Machine Company	29,033	Oct. 20	77	450
Bicycles	Sterling Cycle Works	29,340	Dec. 22	77	1936
Bicycles	Stoddard Manufacturing Company	28,976	Oct. 6	77	152
Bicycles	Stoddard Manufacturing Company	29,009	Oct. 13	77	312
Bicycles	Tonk Manufacturing Company	29,186	Nov. 17	77	1122
Bicycles	Pope Manufacturing Company	29,397	Dec. 29	77	2136
Bicycles and like vehicles	E. B. Willcox	29,154	Nov. 10	77	972
Bicycles and tricycles	W. Crawford	28,975	Oct. 6	77	152
Bicycles or like vehicles	Hibbard, Spencer, Bartlett & Company.	29,341	Dec. 22	77	1936
Bicycles, tricycles, velocipedes, sundries, and all articles relating to a bicycle business	Lozier Manufacturing Company	29,008	Oct. 13	77	312
Bicycles, velocipedes, and articles accessory thereto	Albany Billiard Ball Company	29,149	Nov. 10	77	971
Billiard and pool balls	W. S. Keyser	29,244	Dec. 1	77	1426
Boards, timber, and deals. Pitch-pine	L. Wolff Manufacturing Company	29,291	Dec. 8	77	1594
Boilers, sinks, bath-tubs, water-closets, and tanks. Kitchen	Hastings Wool Boot Company	29,344	Dec. 29	77	2130
Boots. All-wool	R. E. Larcom	29,257	Dec. 8	77	1591
Boots and shoes	McKay Neverslip Sole Company	29,343	Dec. 29	77	2130
Boots and shoes	Rice & Hutchins	29,121	Nov. 10	77	968
Boots and shoes	G. E. Noyes	29,258	Dec. 8	77	1591
Boots and shoes made of leather or of leather and cloth	Smith, Collins & Co	29,380	Dec. 29	77	2134
Bread. Soft	Hamburger & Company	28,986	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	28,987	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	28,988	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	28,989	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	28,990	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	28,991	Oct. 13	77	310
Brushes. Tooth	Hamburger & Company	29,301	Dec. 15	77	1778
Brushes. Tooth	Hamburger & Company	29,302	Dec. 15	77	1778
Brushes. Tooth	Hamburger & Company	29,303	Dec. 15	77	1778
Brushes. Tooth	Hamburger & Company	29,304	Dec. 15	77	1778
Butter	Bartram Bros	29,040	Oct. 27	77	627
Butter	Belle Springs Creamery Company	29,315	Dec. 15	77	1779
Butter	Kurzman Bros	29,384	Dec. 29	77	2134
Butter. Elgin creamery	S. J. Stevens & Co	29,161	Nov. 17	77	1120
Butter-powder	Roberts Brothers	29,160	Nov. 17	77	1120
Cameras, boxes, plate-holders, and packing-cases	Schoenfelder & Kehle	29,057	Oct. 27	77	629
Candy. Molasses	W. W. Candy	29,271	Dec. 8	77	1592
Canned corn	Illinois Canning Co	29,163	Nov. 17	77	1120
Canned food	C. S. Alden and C. F. Nicholson	29,041	Oct. 27	77	627
Canned lobster	E. A. Holmberg	29,225	Dec. 1	77	1423
Canned meats, fish, vegetables, fruits, and condensed milk	W. B. Timms	29,316	Dec. 15	77	1779
Capsules of sandalwood and other oils. Gelatin	Sharp & Dohme of Baltimore City	29,048	Oct. 27	77	628
Carbonating liquids. Powder for	Church & Dwight Company	29,367	Dec. 29	77	2132
Carbonating-powder	Church & Dwight Company	29,168	Nov. 17	77	1121
Cards. Sunday-school	International Art Publishing Company.	29,189	Nov. 24	77	1267
Carpets, covers, and furniture stuffs	Gebrüder Schoeller	28,979	Oct. 13	77	309
Cement	S. Base	28,967	Oct. 6	77	151
Cement for rubber goods, especially for bicycle-tires	J. E. McWilliam	29,137	Nov. 10	77	970
Cereals. Ground or milled	Shelby Mill Company	29,278	Dec. 8	77	1593
Cheese	J. Bessard du Parc et Cie	29,098	Nov. 3	77	809
Cheese	Thistle Cheese Company	29,272	Dec. 8	77	1592
Chemical preparation	McKesson & Robbins	29,357	Dec. 29	77	2131

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Cigarettes	H. Wolkind	29,364	Dec. 29	77	2132
Cigars, cigarettes, cheroots and manufactured tobacco	L. Miller & Sons	29,101	Nov. 3	77	809
Cigars, cigarettes, cheroots and manufactured tobacco	L. Miller & Sons	29,102	Nov. 3	77	810
Cleaning and polishing powders and soaps	Electro Silicon Company	29,233	Dec. 1	77	1424
Cleaning and renovating carpets and destroying moths. Preparations for	E. Thompson	29,069	Nov. 3	77	806
Clinical and office instruments and apparatus	H. Sanche	29,214	Nov. 24	77	1270
Clinical and office instruments and apparatus	H. Sanche	29,215	Nov. 24	77	1270
Clinical and office instruments and apparatus	H. Sanche	29,300	Dec. 15	77	1777
Clinical instruments and apparatus	H. Sanche	29,216	Nov. 24	77	1270
Clock-cases. Wooden	Seth Thomas Clock Company	29,218	Nov. 24	77	1270
Clothes-wringers and the parts thereof	American Wringer Company	28,948	Oct. 6	77	150
Clothes-wringers and the parts thereof	American Wringer Company	28,949	Oct. 6	77	150
Cocoa	H. Maillard	29,143	Nov. 10	77	970
Cocoa. Prepared	James Epps & Company	29,270	Dec. 8	77	1592
Coffee and tea	Cooper Cooper & Company	29,076	Nov. 3	77	807
Coffee and tea	Cooper Cooper & Company	29,077	Nov. 3	77	807
Cold cure and remedy for diseases of the throat, lungs, and nasal organs.	J. A. Swan	29,328	Dec. 22	77	1934
Coloring purposes. Preparation used in the laundry for	Maypole Soap Syndicate	29,284	Dec. 8	77	1593
Colors for confectioners	Oehme & Baier	29,002	Oct. 13	77	311
Compound for the cure of liver, kidney, and other complaints. Vegetable	G. W. Halsted	29,012	Oct. 20	77	449
Compounds for exterminating bugs, roaches, moths, insects, and germs.	E. A. Sacket	29,017	Oct. 20	77	449
Condiments containing Mexican chilli pepper	Mexican Chile Supply Company	29,081	Nov. 3	77	807
Cords for windows and the like. Solid-braided	Silver Lake Company	29,090	Nov. 3	77	808
Corn-curers	A. Prêsal	28,940	Oct. 6	77	149
Corsets	Weingarten Bros	29,123	Nov. 10	77	968
Corsets	Weingarten Bros	29,124	Nov. 10	77	969
Corsets	Weingarten Bros	29,125	Nov. 10	77	969
Corsets. Ladies'	J. Beckel & Co	29,254	Dec. 8	77	1591
Corsets and similar underwear	Warner Brothers Company	28,978	Oct. 13	77	309
Cotton goods, such as bedspreads, bedquilts, counterpanes, and other Jacquard-woven goods, except towellings.	Monadnock Mills	29,128	Nov. 10	77	969
Cotton linings used in dresses	Lord & Taylor	29,025	Oct. 20	77	450
Cotton yarns	J. P. Nawrath & Co	28,980	Oct. 13	77	309
Cough mixtures, blood-purifiers, powders, liniments, pills, syrups, extracts, tonics, and bitters.	Ellshunt Medicine Co	28,992	Oct. 13	77	310
Cough-syrup	E. T. and C. D. Higgins	29,191	Nov. 24	77	1267
Court-plaster. Liquid antiseptic	George Frost Company	29,182	Nov. 17	77	1122
Crackers. Oyster	American Biscuit and Manufacturing Company.	29,379	Dec. 29	77	2131
Crackers, wafers, and malt extracts	Potter & Wrightington	29,140	Nov. 10	77	970
Cranberries	A. D. M. Cranberry Co	29,085	Nov. 3	77	808
Cultivators, stalk-cutters, harrows, bean-harvesters, and corn-planters. Sulky	Ohio Cultivator Company	29,243	Dec. 1	77	1496
Cutlery and edge-tools	Miller, Sloss & Scott	29,059	Oct. 27	77	630
Cycles	Bolte Cycle Manufacturing Company	29,289	Dec. 8	77	1594
Cycles, velocipedes, bicycles, and tricycles	J. Aucoc et Darracq	29,153	Nov. 10	77	972
Dates and preparations and extracts of dates, including vinegar made therefrom.	Victoria Date Company	29,080	Nov. 3	77	807
Dolls. Kid-body bisque-head	Firm of J. D. Kestner, Jr	29,129	Nov. 10	77	969
Dried apples	Herndon-Carter Company	28,929	Oct. 3	77	148
Drinks. Compounds for making non-alcoholic	J. S. Greasley	28,934	Oct. 6	77	149
Dust-laying preparation	S. Coleman	28,938	Oct. 6	77	149
Dyes	Maypole Soap Syndicate	29,283	Dec. 8	77	1593
Dyestuffs	Farbenfabriken, vormals Fr. Bayer & Co.	29,323	Dec. 15	77	1780
Edge-tools. Certain	Collins Company	29,398	Dec. 29	77	2136
Eggs. Substitute for	French Manufacturing Co	29,039	Oct. 27	77	627
Electrical apparatus. Certain named	Chemisch-Elektrische Fabrik "Prometheus" Gesellschaft mit Beschränkter Haftung.	29,150	Nov. 10	77	971
Electrical appliances. Certain designated	Hart & Hegeman Manufacturing Company.	29,217	Nov. 24	77	1270
Electrical conductors. High-resistance	W. T. Glover & Co	29,110	Nov. 3	77	810
Embalming fluids	Embalmers Supply Company	29,130	Nov. 10	77	969
Embrocation	Elliman Sons & Co	29,094	Nov. 3	77	809
Emery and corundum wheels	Electric Emery Wheel Company	28,973	Oct. 6	77	152
Engines, machinery or its parts, boats, and goods pertaining to marine and general engineering.	Liquid Fuel Engineering Company	29,187	Nov. 17	77	1122
Exercising devices and appliances	A. G. Spalding & Bros	29,113	Nov. 3	77	810
Fans. Electric rotary	J. Goldmark and W. J. Wallace	28,947	Oct. 6	77	150
Fertilizer for house-plants	A. W. Perkins & Co	28,969	Oct. 6	77	151
Fish. Salted and boneless	J. W. Beardsley's Sons	29,087	Nov. 3	77	808
Fish. Salted and boneless	J. W. Beardsley's Sons	29,224	Dec. 1	77	1423
Flannels made wholly or in part of peat fiber	Brion & Paté	29,248	Dec. 8	77	1590
Flannels made wholly or in part of peat fiber	Brion & Paté	29,249	Dec. 8	77	1590
Flour	Pillsbury-Washburn Flour Mills Company.	29,096	Nov. 3	77	809
Flour	Pillsbury-Washburn Flour Mills Company.	29,097	Nov. 3	77	809
Flour, coffee, potato-flour, starch, soaps, syrups, saleratus, and cigars. Wheat	Gronseth & Olsen	29,280	Dec. 8	77	1593
Flour. Patent wheat	W. H. Stokes	29,084	Nov. 3	77	808
Flour. Patent wheat	W. H. Stokes	29,381	Dec. 29	77	2134
Flour. Patent wheat	W. H. Stokes	29,382	Dec. 29	77	2134
Flour. Wheat	Hook Bros. & Aston	29,227	Dec. 1	77	1423
Flour. Wheat	J. B. Kirby	29,279	Dec. 8	77	1593
Flour. Wheat	Pearl Roller Mill Company	29,147	Nov. 10	77	971
Flour. Wheat	Pillsbury-Washburn Flour Mills Company.	29,092	Nov. 3	77	807
Flour. Wheat	Pillsbury-Washburn Flour Mills Company.	29,093	Nov. 3	77	807

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Food. Certain named fat-producing	A. Loring	29,311	Dec. 15	77	1778
Food products. Farinaceous	H-O (Hornby's Oatmeal) Company	29,228	Dec. 1	77	1424
Fruits. Dried	L. Schröter & Co	29,386	Dec. 29	77	2135
Garment-clasps	I. B. Kleinert Rubber Company	29,247	Dec. 8	77	1590
Garments. Ready-made	M. B. Brummer	29,126	Nov. 10	77	969
Gas-burners	Estate of Theodore Clough	28,971	Oct. 6	77	152
Gin and other spirits	E. Vaughan-Jones	28,930	Oct. 6	77	148
Gin, rum, and whisky	C. M. Roof	29,369	Dec. 29	77	2133
Glass. Sheet	Chambers Glass Company	29,395	Dec. 29	77	2135
Gloves and hosiery	Firm of M. S. Esche	29,297	Dec. 15	77	1777
Gloves and mittens. Workingmen's	F. H. Hunicke	29,190	Nov. 24	77	1267
Glucose and grape-sugar	Rockford Sugar Refining Company	28,963	Oct. 6	77	151
Graphite and its products	United States Graphite Company	29,138	Nov. 10	77	970
Groceries. Certain named articles designated	W. Edwards & Co	29,201	Nov. 24	77	1268
Guano	R. W. L. Rasin	29,108	Nov. 3	77	810
Guano, phosphates, manures, and superphosphates	R. W. L. Rasin	29,109	Nov. 3	77	810
Gum and breath-perfumes. Chewing	Honey Dew Gum Company	29,103	Nov. 3	77	810
Gum. Chewing	Forest City Chemical Gum Co	29,045	Oct. 27	77	628
Gum. Chewing	Grove Company	29,322	Dec. 15	77	1780
Guns and shotgun-shells. Shot	Austin Cartridge Company	29,391	Dec. 29	77	2135
Guns. Shot	Winchester Repeating Arms Company.	29,156	Nov. 10	77	972
Hats and caps. Men's, boys', and women's	Dunlap & Company	29,342	Dec. 29	77	2131
Hats. Boys' and men's fur	Beltaire, Lurch & Co	29,061	Nov. 3	77	806
Hooks and eyes	A. E. Hewitt	29,065	Nov. 3	77	806
Horse-blankets	W. B. Riley & Co	28,954	Oct. 6	77	150
Hosiery and gloves	Firm of M. S. Esche	29,327	Dec. 22	77	1934
Hosiery	Shaw Stocking Company	29,157	Nov. 17	77	1120
Italian cloths, serges, silks, velvets, bindings, braids, and linings.	Lesher, Whitman & Co	29,127	Nov. 10	77	969
Kola and malt for foods and beverages. Compounds of	Thomson & Taylor Spice Company	29,141	Nov. 10	77	971
Lactate of silver, citrate of silver, and all pharmaceutical preparations of silver.	Chemische Fabrik von Heyden, Gesellschaft, mit Beschränkter Haftung.	29,133	Nov. 10	77	969
Lamps. Fixtures for incandescent gas	L. Hartman	29,152	Nov. 10	77	971
Lamps. Gas-fixtures for incandescent gas	L. Hartman	29,151	Nov. 10	77	971
Ledgers. Assessment and tax	S. R. Fairchild	29,115	Nov. 10	77	968
Lemons	C. Triolo	29,165	Nov. 17	77	1120
Liquor	Société Anonyme de la Distillerie de la Liqueur Bénédictine de l'Abbaye de Fécamp.	29,166	Nov. 17	77	1121
Lamp-chimneys	Thomas Evans Company	29,060	Oct. 27	77	630
Lamps, lamp or gas globes, chimneys, shades, reflectors, and stands.	Phœnix Glass Company	28,972	Oct. 6	77	152
Leather	Kullman, Salz & Company	29,298	Dec. 15	77	1777
Leather and leather pneumatic tires for bicycle and other wheels.	A. F. Munro and G. O. Hitchings	29,288	Dec. 8	77	1594
Leather-preserving composition. Patent	T. P. Spencer	28,939	Oct. 6	77	149
Leather. Split	J. P. Crane	29,348	Dec. 29	77	2131
Lemons	Santa Barbara Lemon Growers' Exchange.	29,000	Oct. 13	77	311
Lemons	Santa Barbara Lemon Growers' Exchange.	29,001	Oct. 13	77	311
Lenses and lens-cases and all optical goods using lenses	J. W. Patterson	29,056	Oct. 27	77	629
Liniment	A. Gildersleeve	29,350	Dec. 29	77	2131
Liniment	P. S. Miller	29,349	Dec. 29	77	2130
Linotyping, stereotyping, and electrotyping. Metals for	J. J. Frowein	29,058	Oct. 27	77	630
Lithographic prints	Kaufmann & Strauss Company	28,985	Oct. 13	77	309
Lotion for the skin and hair	B. Hafer	29,358	Dec. 29	77	2130
Lozenges and other confectionery	Smith & Peters	29,139	Nov. 10	77	970
Lozenges and other confectionery	Smith & Peters	29,374	Dec. 29	77	2133
Lye and caustic potash	E. N. Hall	29,234	Dec. 1	77	1424
Lye and caustic potash	E. N. Hall	29,235	Dec. 1	77	1425
Magazines. Periodical fashion	Butterick Publishing Company	29,023	Oct. 20	77	450
Matches	Enterprise Specialty Company	29,393	Dec. 29	77	2135
Medical compound of antipyretic and antineuralgic properties	Basle Chemical Works Bindschedler	29,091	Nov. 3	77	808
Medicated chewing-gum	Wellman & Minsel	29,169	Nov. 17	77	1121
Medicated smoking compounds	H. Y. McCord and A. H. Spain	29,170	Nov. 17	77	1121
Medicated tablets	O. King	28,998	Oct. 13	77	311
Medicinal preparations containing iron or manganese	R. Fabery	29,194	Nov. 24	77	1267
Medicinal tea	C. and H. Steinkraus	29,361	Dec. 29	77	2132
Medicinal wine	A. H. Still	29,308	Dec. 15	77	1778
Medicine. Antirheumatic, antineuralgic, and antipyretic	C. G. Bacon, Jr	29,354	Dec. 29	77	2131
Medicine composed mainly of herbs	E. and H. Densmore	28,958	Oct. 6	77	150
Medicine for external and internal use. Certain liquid	E. A. Neer	29,175	Nov. 17	77	1121
Medicine. Laxative	Tarrant & Company	29,093	Nov. 3	77	809
Medicine. Laxative	Tarrant & Company	29,174	Nov. 17	77	1121
Medicines. Laxative	Tarrant & Company	29,306	Dec. 15	77	1778
Metal-polishing material	Borsum Bros	29,105	Nov. 3	77	810
Middlings	Freeman Milling Company	29,383	Dec. 29	77	2134
Mineral-spring water	Puritas Mineral Springs Company	29,003	Oct. 13	77	311
Mineral water. Natural	Æsculap Bitter Water Company	29,312	Dec. 15	77	1779
Mittens. Knit	Star Knitting Company	29,253	Dec. 8	77	1591
Mucilage, paste, and glue	Diamond Ink Co	29,050	Oct. 27	77	628
Mustard and spices	Sadler, Firth & Ross	29,273	Dec. 8	77	1592
Mustard and table-mustard	J. & J. Colman	28,924	Oct. 6	77	148
Mustard and table-mustard	J. & J. Colman	28,926	Oct. 6	77	148
Mustard and table-mustard	J. & J. Colman	28,927	Oct. 6	77	148
Mustard. Table	J. & J. Colman	28,925	Oct. 6	77	148
Mustard. Tomato	A. J. Wenham's Sons	29,086	Nov. 3	77	808
Newspapers	Press Publishing Company	29,345	Dec. 8	77	1590
Nut-locks	G. E. Strauss and E. Klahn	29,031	Oct. 20	77	450
Oil for internal and external use	J. C. Estelle	29,351	Dec. 29	77	2131
Oil of eucalyptus or rheumatic oil	J. Bosisto & Co	29,261	Dec. 8	77	1591

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Oil. Olive	F. Romeo & Co	29,145	Nov. 10	77	971
Oil. Refined illuminating	R. J. Venning	29,179	Nov. 17	77	1122
Oil, stearine, and tallow. Oleo	G. & D. Isaacs	29,019	Oct. 20	77	449
Oils and lubricants of all kinds	Vacuum Oil Company	28,936	Oct. 6	77	149
Oils and lubricants of all kinds	Vacuum Oil Company	28,937	Oct. 6	77	149
Oils. Illuminating	Standard Oil Company of New York	29,337	Dec. 22	77	1935
Oils. Illuminating	Standard Oil Company of New York	29,338	Dec. 22	77	1935
Oils. Illuminating	Standard Oil Company of New York	29,339	Dec. 22	77	1935
Ointment for toilet purposes	Edward R. Marshall Co	29,360	Dec. 29	77	2131
Olives, olive-oil, French peas, and macaroni	Falcon Packing Co	29,387	Dec. 29	77	2135
Overgaiters, leggings, shoe nails, pegs, dressing, cement, blacking, ink, insoles, and lacee	A. Fincks Sons	29,256	Dec. 8	77	1591
Ozocerite	Kais. Kön. Privilegirte Österreichische Länderbank	29,106	Nov. 3	77	810
Paint	J. A. & W. Bird & Co	28,968	Oct. 6	77	151
Paint and varnish removers	Harrison Bros. & Co	29,286	Dec. 8	77	1593
Paint. Roof	T. B. Wall	29,068	Nov. 3	77	806
Paints	J. B. Orr & Co	29,107	Nov. 3	77	810
Paints. Ready-mixed	Francis-Frost Company	29,237	Dec. 1	77	1425
Paper and envelops. Writing	Z. & W. M. Crane	29,024	Oct. 20	77	450
Paper and envelops. Writing	Southworth Company	29,034	Oct. 27	77	627
Paper. Linen writing	Marcus Ward & Company	29,292	Dec. 15	77	1777
Paper. Linen writing	Marcus Ward & Company	29,293	Dec. 15	77	1777
Paper. Linen writing	Marcus Ward & Company	29,294	Dec. 15	77	1777
Paper. Writing	G. H. Taylor	29,396	Dec. 22	77	1934
Pasteboard and boxes, cases, wrappers, envelops, and other articles manufactured therefrom	Thompson & Norris Company	29,117	Nov. 10	77	968
Peanuts. Raw and roasted	C. F. McCort	29,164	Nov. 17	77	1120
Pens	L. Dreka	29,114	Nov. 10	77	968
Pepsin wafers	J. Shattuck	29,195	Nov. 24	77	1267
Perfumery	Firm of A. Wright	29,074	Nov. 3	77	807
Perfumes, soap, and creams	Apotheker Weiss & Co	29,010	Oct. 13	77	312
Pharmaceutical preparations containing myrrh	Flügge & Co	29,171	Nov. 17	77	1121
Pharmaceutical preparations for internal use	Chemische Fabrik von Heyden Gesellschaft mit Beschränkter Haftung.	28,957	Oct. 6	77	150
Photographically exhibiting objects in motion. Apparatus for	A. Lumière & Ses Fils	29,394	Dec. 29	77	2135
Pickles	Skilton, Foote & Co	29,198	Nov. 24	77	1267
Plastic cementitious material. Compressible tubular holders for	Boston Woven Hose and Rubber Company.	29,155	Nov. 10	77	972
Powders, salts, and tablets. Effervescent	W. L. Keller	29,047	Oct. 27	77	628
Powders. Teething	J. H. Stedman	28,999	Oct. 13	77	311
Preparation for sore throat, hoarseness, coughs, colds, and earache	J. A. Uhland	29,092	Nov. 3	77	808
Preparations in which whisky predominates	S. I. Nusbaum	29,167	Nov. 17	77	1121
Preventive against animal diseases	Farbwerk Friedrichsfeld, Dr. Paul Remy.	29,178	Nov. 17	77	1122
Printed blanks and envelops	Postal Telegraph-Cable Company	29,221	Dec. 1	77	1423
Printed publications	Burke & Beyer	29,295	Dec. 15	77	1777
Printed woven fabrics	Eddystone Manufacturing Company	29,159	Nov. 17	77	1120
Remedies. Certain named	D. E. Major	29,016	Oct. 20	77	449
Remedies. Fever and ague	E. C. Howe	29,193	Nov. 24	77	1267
Remedies for blood diseases	Chemische Fabrik Grünau Landshoff & Meyer.	28,994	Oct. 13	77	310
Remedies for common and simple disorders	Hance Bros. & White	29,131	Nov. 10	77	969
Remedies for diseases of the blood, liver, and kidneys	Bright's Chemical Co	28,993	Oct. 13	77	310
Remedies for epilepsy and nervous diseases	L. C. Horn	28,944	Oct. 6	77	149
Remedies for female complaints	E. M. Cook	29,173	Nov. 17	77	1121
Remedies for gout and rheumatism	A. E. Hughes	29,352	Dec. 29	77	2131
Remedies for kidney and similar diseases	Testurine Company	29,289	Dec. 8	77	1591
Remedies for perspiring feet	Böhringer & Reuse	28,943	Oct. 6	77	149
Remedies for rheumatism and all blood diseases	H. H. Hyams	29,044	Oct. 27	77	628
Remedies for throat and lung affections	C. A. Roach	28,956	Oct. 6	77	150
Remedies for whooping-cough, colds and hoarseness, and throat and lung troubles	Bassford & Robertson	28,945	Oct. 6	77	149
Remedies for women's diseases	La Porte Medicine Company	29,355	Dec. 29	77	2131
Remedies. Hair and scalp	L. P. Elliott	29,259	Dec. 29	77	2131
Remedies. Hog	Farbwerk Friedrichsfeld, Dr. Paul Remy.	29,177	Nov. 17	77	1121
Remedies. Household	R. N. Dowsley	29,305	Dec. 15	77	1778
Remedies. Vermifugal	Hance Bros. & White	29,356	Dec. 29	77	2131
Remedy for blood and skin diseases. Internal	Salvation Blood Purifier Company	29,015	Oct. 20	77	449
Remedy for burns	S. B. Hall	28,996	Oct. 13	77	310
Remedy for colds, la grippe, influenza, hay-fever, and kindred ailments	E. E. Dixon & Co	29,231	Dec. 1	77	1424
Remedy for dysentery or bowel complaints	M. Dryer	29,259	Dec. 8	77	1591
Remedy for headache	C. C. Cook	29,179	Nov. 17	77	1121
Remedy for headache. External	J. B. Gotthelf	29,043	Oct. 27	77	628
Remedy for headache, neuralgia, rheumatism, and pains in the stomach and bowels	H. R. Kelly	29,353	Dec. 29	77	2131
Remedy for inebriety	E. W. M. Cameron	28,995	Oct. 13	77	310
Remedy for rheumatism	H. L. Handy	29,013	Oct. 20	77	449
Remedy for rheumatism and kindred diseases	F. S. Mason	29,192	Nov. 24	77	1267
Remedy for the blood. Internal	Salvation Blood Purifier Company	29,014	Oct. 20	77	449
Remedy for the tobacco habit	W. J. Pattersen	29,309	Dec. 15	77	1778
Remedy for wounds and sores	Chemische Fabrik Rhenania	29,262	Dec. 8	77	1591
Remedy for wounds and sores	Chemische Fabrik Rhenania	29,263	Dec. 8	77	1592
Remedy for wounds and sores	Chemische Fabrik Rhenania	29,264	Dec. 8	77	1592
Remedy for wounds and sores	Chemische Fabrik Rhenania	29,265	Dec. 8	77	1592
Remedy. Hog and cholera	Moore & Co	29,330	Dec. 22	77	1934
Ribbons. Silk	A. Openhym	29,064	Nov. 3	77	806
Roofing-felt	Warren Chemical and Manufacturing Company.	28,955	Oct. 6	77	150
Rope. Transmission	H. Channon Company	28,982	Oct. 13	77	309

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,053	Oct. 27	77	629
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,054	Oct. 27	77	629
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,206	Nov. 24	77	1268
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,207	Nov. 24	77	1268
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,208	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,209	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,210	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,211	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,212	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	G. A. Alden & Co	29,213	Nov. 24	77	1269
Rubber, gutta-percha, and other vulcanizable gums. India	C. B. Levering	29,347	Dec. 29	77	2130
Ruffling and flouncing	Chemische Fabrik von Heyden, Gesellschaft, mit Beschränkter Haftung.	29,146	Nov. 10	77	971
Saccharine compounds. Artificial	J. G. Megler	29,385	Dec. 29	77	2134
Salmon, fruits, and vegetables. Packed	Firm of T. Goldschmidt	29,282	Dec. 8	77	1593
Salt that serves as a covering layer for molten zinc and tin	J. A. O'Keefe	28,941	Oct. 6	77	149
Salve	L. T. Reddeman	29,095	Nov. 3	77	809
Salve	J. P. Urben	29,176	Nov. 17	77	1121
Salve	E. Burst	29,136	Nov. 10	77	970
Saponaceous and alkali solutions to be mixed with soap and water for cleaning purposes	G. A. Becker	29,229	Dec. 1	77	1424
Sauces	W. H. Courtenay	29,197	Nov. 24	77	1267
Sauces	Davis Sewing Machine Company	29,238	Dec. 1	77	1425
Sewing-machines and attachments	R. H. Seymour	29,184	Nov. 17	77	1122
Shears and scissors	G. L. Montgomery	29,346	Dec. 29	77	2130
Sheetings and drillings	Piedmont Manufacturing Company	29,063	Nov. 3	77	806
Sheetings, drillings, shirtings, and yarns	Wadsworth, Howland & Company	29,018	Oct. 20	77	449
Shellac	Austin Cartridge Company	29,390	Dec. 29	77	2135
Shells. Shotgun	G. H. Babcock	29,255	Dec. 8	77	1591
Shirts	R. H. Foerderer	29,188	Nov. 17	77	1122
Shoe dressings and polishes	Jones Shoe Manufacturing Company.	29,118	Nov. 10	77	968
Shoes	Pingree & Smith	29,119	Nov. 10	77	968
Shoes for men and boys	Hanan & Son	29,158	Nov. 17	77	1120
Shoes. Men's	Hamilton, Brown Shoe Company	29,222	Dec. 1	77	1423
Shoes. Men's	Hamilton, Brown Shoe Company	29,223	Dec. 1	77	1423
Shoes. Women's	Hamilton, Brown Shoe Company	29,120	Nov. 10	77	968
Silk goods	Knickerbocker Silk Company	29,345	Dec. 29	77	2130
Size. Wall	V. J. Beechman and N. A. Stirn	29,007	Oct. 13	77	312
Soap	C. Davis & Co	29,070	Nov. 3	77	806
Soap	C. Davis & Co	29,318	Dec. 15	77	1779
Soap	C. Davis & Co	29,319	Dec. 15	77	1779
Soap	C. Davis & Co	29,320	Dec. 15	77	1779
Soap	C. Davis & Co	29,321	Dec. 15	77	1780
Soap	C. F. Greenberg	29,336	Dec. 22	77	1935
Soap	T. A. Kasey	29,317	Dec. 15	77	1779
Soap	Raworth, Schodde & Co	29,020	Oct. 20	77	449
Soap	W. Waltke & Co	29,392	Dec. 29	77	2135
Soap and other toilet preparations	V. Klotz	29,181	Nov. 17	77	1122
Soap. Cakes of	W. H. Bryan	29,021	Oct. 20	77	450
Soap. Laundry	Allen B. Wrisley Company	29,285	Dec. 8	77	1593
Soap. Laundry and toilet	Union Soap Co	29,180	Nov. 17	77	1122
Soap. Medicated	Bode & Daly	29,183	Nov. 17	77	1122
Soap of a dark color	L. Bolton Company	28,966	Oct. 6	77	151
Soap powder	L. Emerson	28,965	Oct. 6	77	151
Soaps. Liquid and other	W. & F. Walker	29,022	Oct. 20	77	450
Soaps, perfumes, oils, and like toilet articles	V. Klotz	29,071	Nov. 3	77	807
Soaps, perfumes, oils, and like toilet articles	V. Klotz	29,072	Nov. 3	77	807
Soaps, perfumes, oils, and other toilet articles	V. Klotz	29,073	Nov. 3	77	807
Soda and silicate of soda. Caustic	Joseph Crosfield & Sons	29,134	Nov. 10	77	969
Soda and silicate of soda. Caustic	Joseph Crosfield & Sons	29,135	Nov. 10	77	970
Soda, saleratus, and baking-powders. Baking	Church & Dwight Company	29,226	Dec. 1	77	1423
Sole and heel protectors	North & Judd Manufacturing Company.	29,122	Nov. 10	77	968
Specifics for the extermination of zymotic and contagious diseases	A. Liebig	28,997	Oct. 13	77	311
Spices, condiments, and bird-food	E. R. Durkee & Co	29,274	Dec. 8	77	1592
Spices, condiments, and bird-food	E. R. Durkee & Co	29,275	Dec. 8	77	1593
Spices, condiments, and bird-food	E. R. Durkee & Co	29,276	Dec. 8	77	1593
Spices, condiments, and bird-food	E. R. Durkee & Co	29,277	Dec. 8	77	1593
Starch	A. F. Keith	28,964	Oct. 6	77	151
Starch. Laundry	T. Kingsford & Son	29,202	Nov. 24	77	1268
Stays. Dress	Estate of R. N. Bassett	29,026	Oct. 20	77	450
Stogies	R. & W. Jenkinson Company	29,006	Oct. 13	77	311
Stoves and ranges	Plymouth Stove Foundry Co	29,219	Nov. 24	77	1270
Stoves. Oil and other	Plymouth Stove Foundry Co	29,239	Dec. 1	77	1425
Stringed instruments. Keyed	M. Steinert	29,270	Oct. 6	77	152
Suet or fat. Refined beef	Hugon & Co	29,203	Nov. 24	77	1268
Sugar substitute	Farbenfabriken, vormals Fr. Bayer & Co.	29,314	Dec. 15	77	1779
Syringes and articles of like character. Rubber	Lanman & Kemp	29,029	Oct. 20	77	450
Syringes. Nasal	W. H. Armstrong & Co	28,946	Oct. 6	77	150
Syrups. Sugar	J. D. Hage & Co	29,375	Dec. 29	77	2133
Syrups. Sugar	J. D. Hage & Co	29,376	Dec. 29	77	2133
Syrups. Sugar	J. D. Hage & Co	29,377	Dec. 29	77	2133
Syrups. Sugar	J. D. Hage & Co	29,378	Dec. 29	77	2134
Tablets for colds and hay-fever, also a tonic and disinfectant	W. C. Kloman	29,132	Nov. 10	77	969
Tabs which are attachable to wearing-apparel. Fastening	M. H. Mergenthaler	29,296	Dec. 15	77	1777
Talc or agalite. Finely-powdered	International Pulp Company	29,362	Dec. 29	77	2132
Talc or agalite. Powdered	International Pulp Company	29,205	Nov. 24	77	1268
Tea	P. C. Larkin	28,962	Oct. 6	77	151
Tea	Reed, Walsh & Lange	28,928	Oct. 6	77	148

Alphabetical list of trade-marks, October to December, inclusive—Continued.

Title.	Name.	No.	Date.	Official Gazette. Vol.	Page.
Tea, coffee, spices, baking-powder, flavoring extracts, soap, and starch.	Jones Brothers	29,144	Nov. 10	77	971
Tea. Formosa	Wolfe, McMillan & Co	29,199	Nov. 24	77	1268
Tea. Japan	Cross Abbott Company	28,961	Oct. 6	77	151
Tea. Japan	Irwin, McBride, Catherwood & Co	29,078	Nov. 3	77	807
Tea. Japan	E. B. Millar & Company	29,038	Oct. 27	77	627
Teas	Bryan, Miner & Read	29,099	Nov. 3	77	809
Teas	Tete Bros	29,079	Nov. 3	77	807
Teas. Herb	Weber's Medical Tea Co	29,011	Oct. 20	77	449
Telephones	P. C. Burns	29,111	Nov. 3	77	810
Tennis, croquet, golf, and other games and sports. Certain apparatus for	A. G. Spalding & Bros	29,055	Oct. 27	77	629
Thill-couplings. Antirattlers for	J. W. Willard	29,241	Dec. 1	77	1425
Thill-couplings. Antirattlers for	J. W. Willard	29,242	Dec. 1	77	1425
Tickets or contracts. Coupon	Inter-State Casualty Company of New York.	29,116	Nov. 10	77	968
Tires and parts thereof. Vehicle	Dunlop Pneumatic Tyre Company	29,240	Dec. 1	77	1425
Tires. Cement composition for mending pneumatic	Puncturoid Manufacturing Co	29,396	Dec. 29	77	2135
Tires. Cement for mending punctures in pneumatic	A. Wilson & Co	29,287	Dec. 8	77	1594
Tires. Composition for repairing pneumatic	Boston Woven Hose and Rubber Company.	29,051	Oct. 27	77	629
Tires of the single-tube variety. Pneumatic	Hartford Rubber Works Company	28,974	Oct. 6	77	152
Tires. Pneumatic or solid-rubber	L. C. Chase & Co	29,052	Oct. 27	77	629
Tobacco	H. B. Huntoon	29,335	Dec. 22	77	1935
Tobacco and cigars	S. Hernsheim, Bros. & Company	29,365	Dec. 29	77	2132
Tobacco and cigars	S. Hernsheim, Bros. & Company	29,366	Dec. 29	77	2132
Tobacco. Smoking	American Tobacco Company	29,035	Oct. 27	77	627
Tobacco. Smoking	American Tobacco Company	29,036	Oct. 27	77	627
Tobies	S. Ewart & Co	29,148	Nov. 10	77	971
Toilet preparations, including soap	V. Klotz	29,232	Dec. 1	77	1424
Toilet preparations manufactured from wool-fat	B. Jaffé & Darmstaedter	29,204	Nov. 24	77	1268
Tonic bitters for the stomach	W. T. Thompson and J. D. Wilson	29,266	Dec. 8	77	1592
Tonic. Iron	R. E. Rhode	28,959	Oct. 6	77	150
Tonic, stimulant, and remedy for nervousness	W. R. Warner	29,046	Oct. 27	77	628
Tonics. Malt	Rochester Brewing Company	28,935	Oct. 6	77	149
Tools. Holders for sharpening	T. A. Lamotte	26,257	Nov. 10	77	967
Toy torpedoes and toy paper caps	M. Backes Sons	29,299	Dec. 15	77	1777
Transmitters	P. C. Burns	29,112	Nov. 3	77	810
Twine. Binding	Deering Harvester Company	28,981	Oct. 13	77	309
Type-writer supplies	American Writing Machine Company.	29,290	Dec. 8	77	1594
Umbrellas and parasols	Dazian & Borchell Bros	29,027	Oct. 20	77	450
Velocipedes and parts thereof	Pope Manufacturing Company	28,977	Oct. 6	77	152
Velocipedes and their parts and bicycle sundries	A. G. Spalding & Bros	29,032	Oct. 20	77	450
Veterinary liniment	W. Weingard	28,942	Oct. 6	77	149
Veterinary remedies	E. J. Sanderson & Co	29,329	Dec. 22	77	1934
Washing, scouring, and cleansing. Preparation for	J. J. Thomsen's Sons	29,104	Nov. 3	77	810
Watch-movements	New York Standard Watch Company.	29,220	Dec. 1	77	1423
Watches	L. Manheimer	29,066	Nov. 3	77	806
Watches, movements, and parts of watches	American Waltham Watch Company.	29,246	Dec. 8	77	1590
Whiskies	Carstairs, McCall & Co	29,004	Oct. 13	77	311
Whiskies	Carstairs, McCall & Co	29,005	Oct. 13	77	311
Whisky	Anderson & Nelson Distilleries Company.	29,372	Dec. 29	77	2133
Whisky	Anderson & Nelson Distilleries Company.	29,373	Dec. 29	77	2133
Whisky	C. J. Gallagher	29,269	Dec. 8	77	1592
Whisky	John Jameson & Son	28,931	Oct. 6	77	148
Whisky	Mellwood Distillery Company	29,332	Dec. 22	77	1934
Whisky	Mellwood Distillery Company	29,333	Dec. 22	77	1935
Whisky	Mellwood Distillery Company	29,334	Dec. 22	77	1935
Whisky	C. M. Roof	29,370	Dec. 29	77	2133
Whisky	C. M. Roof	29,371	Dec. 29	77	2133
Whisky	A. D. Shaw & Co	29,037	Oct. 27	77	627
Wine. Champagne	Krug & Co	28,960	Oct. 6	77	150
Wine. Claret	Schmidt & Ziegler	29,268	Dec. 8	77	1592
Wines and liquors	L. Schetter	29,331	Dec. 22	77	1934
Wire	R. Fraser	29,030	Oct. 20	77	450
Witch-hazel balsam. Preparation of	C. T. Bosworth & Co	29,310	Dec. 15	77	1778
Wood-fillers	C. A. Reeve & Co	29,324	Dec. 15	77	1780
Woolen cloth	Oakland Manufacturing Company	29,250	Dec. 8	77	1590
Wraps, boas, hoods, collarettes, and other garments	W. B. Riley & Co	29,251	Dec. 8	77	1590
Wraps, boas, hoods, collarettes, and other garments	W. B. Riley & Co	29,252	Dec. 8	77	1590
Yarns and threads	J. R. Leeson & Co	28,950	Oct. 6	77	150
Yarns and threads	J. R. Leeson & Co	28,951	Oct. 6	77	150
Yarns and threads	J. R. Leeson & Co	28,952	Oct. 6	77	150
Yarns and threads	J. R. Leeson & Co	28,953	Oct. 6	77	150
Yarns, underwear, and knit goods, including hosiery	Commonwealth Cotton Manufacturing Company.	29,002	Nov. 3	77	806

PRINTS.

Title.	Name.	No.	Date.	Official Gazette. Volume.	Page.
"A Gallery of Celebrities"	United States Playing Card Company	35	Nov. 10	77	828
"Arabesque." (For Cigars and Tobacco)	American Lithographic Company	40	Dec. 29	77	1944
"Caezar." (For Soap)	United States Printing Company	41	Dec. 29	77	1944
"Circus Playing Cards"	United States Playing Card Company	36	Nov. 17	77	980
"Cut No. A. I."	I. E. Palmer	29	Oct. 27	77	457
"Cut No. 567—B. V."	I. E. Palmer	33	Oct. 27	77	457
"Cut No. 12 G. V."	I. E. Palmer	31	Oct. 27	77	457
"Cut No. ¾ P."	I. E. Palmer	30	Oct. 27	77	457
"Cut No. 1¼ P. V."	I. E. Palmer	32	Oct. 27	77	457
"Cut No. R. S."	I. E. Palmer	28	Oct. 27	77	457
"Cut No. 34—S."	I. E. Palmer	34	Oct. 27	77	457
"Fairy Boots." (For Boots and Shoes)	L. Candee & Company	37	Nov. 17	77	980
"Harness-Leather"	A. A. Myers	27	Oct. 27	77	457
"Ivy Crown." (For Cigars and Tobacco)	American Lithographic Company	39	Dec. 29	77	1944
"Woonsocket Rubbers." (For Rubbers and Overshoes)	Woonsocket Rubber Company	38	Nov. 17	77	980

DISCLAIMER.

Invention.	Patentee.	No. of patent.	Date of patent.	Disclaimer filed.	Official Gazette. Volume.	Page.
Web-printing machine	John H. Stonemetz	376,053	Jan. 3, 1888	Dec. 11, 1896	77	1601

OFFICIAL GAZETTE

UNITED STATES PATENT OFFICE

VOL 77

NO 1 THRU 13

OCT-DEC-1896